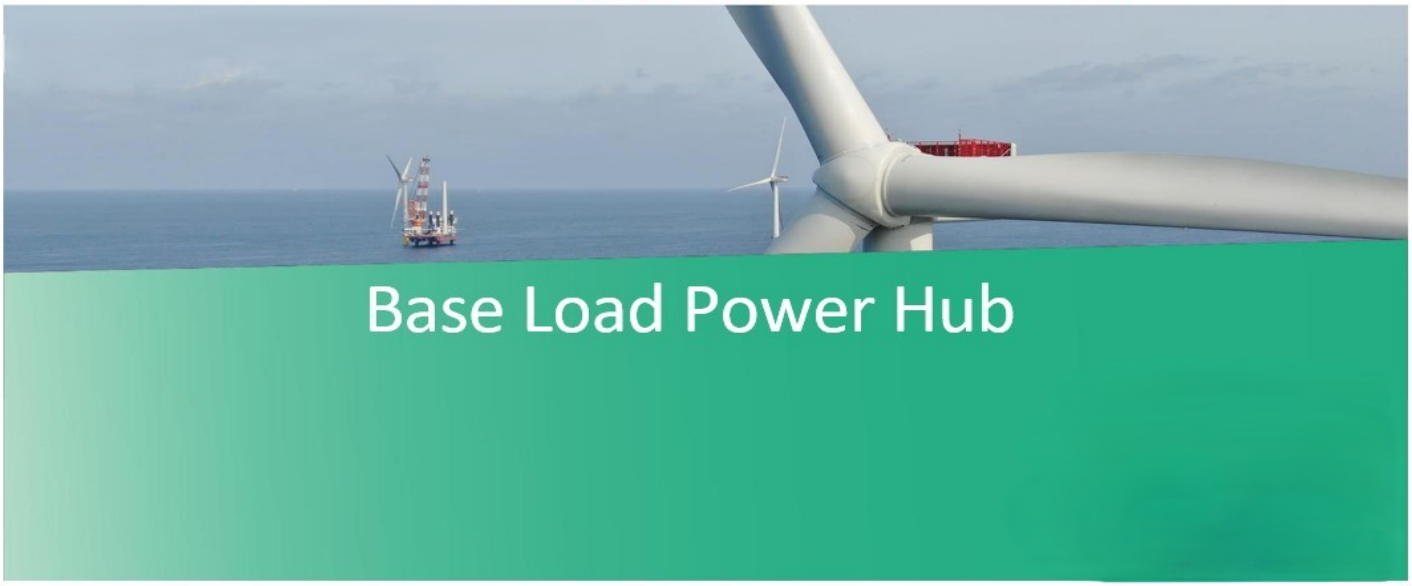
CROSSWIND

ROSETTI MARINO

PROVERLIS

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



MECHANICAL COMPLETION DOSSIER (ONSHORE)

SYSTEM	83 Main Power Distribution Low Voltage 440 V
SUBSYSTEM	83-65 Electrical Heat Tracing

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123A90 - HOLLANDSE KUST NOORD WIND PARK
BLPH Project

MECHANICAL COMPLETION DOSSIER INDEX

ROSETTI MARINO

Sub System N°:	83-65	**Tick as appropriate**	ONSHORE	O
Description:	Electrical Heat Tracing		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*	NA
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**

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123A90 - HOLLANDSE KUST NOORD WIND PARK
BLPH Project

CROSSWIND

Ready For Commissioning (RFC) Certificate

COMPLETE	●	PARTIAL	

Revision:	1		Issued on:	2025-04-03	
System:	83	/	Main Power Distribution Low Voltage 440 V		
SubSystem:	83-65	/	Electrical Heat Tracing		

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 0'	B 3

REMARKS: ONSHORE SOW completed, n. 6 outstanding tasks to be cleared in OFFSHORE phase.

	CONTRACTOR Construction Manager	**CONTRACTOR** Commissioning Manager	**COMPANY** Construction Lead (if required)	**COMPANY** Commissioning Lead (if required)
Name	Wolmer Borghi	Anthony Iveson	CPY NOT PRESENT	CPY NOT PRESENT
Date	2025-04-07	2025-04-05	2025-04-07	2025-04-07
Signature	PROVERLIS Digitaly signed by Wolmer Borghi 2025-04-07T06:58:10.459Z	PROVERLIS Digitaly signed by Anthony Iveson 2025-04-05T06:55:16.294Z	PROVERLIS Digitaly signed by CPY NOT PRESEN 2025-04-07T07:24:49.187Z	PROVERLIS Digitaly signed by CPY NOT PRESEN 2025-04-07T07:24:56.328Z

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Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 83-65 & process: MC

Electrical	83-65 Electrical Heat Tracing						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
EAT-200N1-01	Trace Heating Remote Ambient Thermostat	ONSHORE	C10004598	CPX31	100	2025-01-24	RFC 1
EHT-1001-A	Heat Tracing Tape	ONSHORE	C10004632	CPX22A	100	2025-02-24	RFC 1
		ONSHORE	C10004647	CPX22B	100	2025-03-28	RFC 1
EHT-1002-A	Heat Tracing Tape	ONSHORE	C10004633	CPX22A	100	2025-02-28	RFC 1
		ONSHORE	C10004648	CPX22B	100	2025-04-02	RFC 1
EHT-1003-A	Heat Tracing Tape	ONSHORE	C10004634	CPX22A	100	2025-03-12	RFC 1
		ONSHORE	C10004649	CPX22B	100	2025-04-02	RFC 1
EHT-1004-A	Heat Tracing Tape	ONSHORE	C10004635	CPX22A	100	2025-02-13	RFC 1
		ONSHORE	C10004650	CPX22B	100	2025-03-25	RFC 1
EHT-1004-B	Heat Tracing Tape	ONSHORE	C10004636	CPX22A	100	2025-02-13	RFC 1
		ONSHORE	C10004651	CPX22B	100	2025-03-25	RFC 1
EHT-1005-A	Heat Tracing Tape	ONSHORE	C10004637	CPX22A	100	2025-02-13	RFC 1
		ONSHORE	C10004652	CPX22B	100	2025-03-25	RFC 1
EHT-1006-A	Heat Tracing Tape	ONSHORE	C10004638	CPX22A	100	2025-02-20	RFC 1
		ONSHORE	C10004653	CPX22B	100	2025-04-02	RFC 1
EHT-1007-A	Heat Tracing Tape	ONSHORE	C10004639	CPX22A	100	2025-03-07	-
		ONSHORE	C10004654	CPX22B	100	2025-03-28	-
		OFFSHORE	C10004934	CPX22A	0	-	-
		OFFSHORE	C10004935	CPX22B	0	-	-
EHT-2002-A	Heat Tracing Tape	ONSHORE	C10004640	CPX22A	100	2025-02-13	RFC 1
		ONSHORE	C10004655	CPX22B	100	2025-03-25	RFC 1
EJB-200N1-14-L1-01	HEAT TRACING - PROCESS LINES - FEEDER 1 (SWS LINES) Cold JB	ONSHORE	C10002069	CPX31	100	2024-12-16	RFC 1
EJB-200N1-15-L2-01	HEAT TRACING - PROCESS LINES - FEEDER 2 (CI LINES) Cold JB	ONSHORE	C10002070	CPX31	100	2024-12-16	RFC 1
EJB-200N1-17-L1-01	HEAT TRACING - PROCESS LINES (WW LINES & LT) Cold JB	ONSHORE	C10002075	CPX31	100	2025-02-10	RFC 1
EJB-200N1-20-L1-01	HEAT TRACING - PROCESS LINES - FEEDER 7 (SEA WATER PUMPS) Cold JB	ONSHORE	C10004599	CPX31	100	2025-02-24	RFC 1
ETB-200N1-14-L1-01	HEAT TRACING - PROCESS LINES - FEEDER 1 (Pipe Line)	ONSHORE	C10004600	CPX31	100	2025-03-12	RFC 1
ETB-200N1-15-L2-01	HEAT TRACING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB	ONSHORE	C10004601	CPX31	100	2025-02-28	RFC 1
ETB-200N1-15-L2-02	TRACE HEATING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB	ONSHORE	C10004602	CPX31	100	2025-03-06	RFC 1
ETB-200N1-16-L3-01	HEAT TRACING - PROCESS LINES - FEEDER 3 (DM-001)	ONSHORE	C10004603	CPX31	100	2025-02-25	RFC 1

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 83-65 & process: MC

Electrical	83-65 Electrical Heat Tracing

ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
ETB-200N1-17-L1-01	HEAT TRACING - INSTRUMENT - 43-LT-003 Hot JB	ONSHORE	C10004604	CPX31	100	2025-02-20	RFC 1
ETB-200N1-20-L1-01A	HEAT TRACING - PROCESS LINES - FEEDER 7 (SEA WATER PUMPS)	OFFSHORE	C10004610	CPX31	0	-	-
ETB-200N1-20-L1-01B	HEAT TRACING - PROCESS LINES - FEEDER 7 (SEA WATER PUMPS)	OFFSHORE	C10004611	CPX31	0	-	-
P-EAT-200N1-01	LV 0,4 / 0,23 kV Distribution Switchgear/Trace Heating Remote Ambient Thermostat	ONSHORE	C10004656	CPX09	100	2025-01-21	RFC 1
P-EAT-200N1-02	Trace Heating Remote Ambient Thermostat/LV 0,4 / 0,23 kV Distribution Switchgear	ONSHORE	C10004666	CPX09	100	2025-01-21	RFC 1
P-EJB-200N1-14-L1-01	Lighting & Small Power DB BoP / TRACE HEATING - FEEDER 1 (SWS LINES) Cold JB	ONSHORE	C10002054	CPX09	100	2024-12-03	RFC 1
P-EJB-200N1-15-L2-01	Lighting & Small Power DB BoP / TRACE HEATING - FEEDER 2 (CI LINES) Cold JB	ONSHORE	C10002055	CPX09	100	2024-12-03	RFC 1
P-EJB-200N1-17-L1-01	Lighting & Small Power DB BoP / TRACE HEATING - FEEDER 4 (WW LINES) Cold JB	ONSHORE	C10002057	CPX09	100	2024-12-03	RFC 1
P-ETB-200N1-14-L1-01	Lighting & Small Power DB BoP / Trace Heating - Process Lines - Feeder 1	ONSHORE	C10000615	CPX09	100	2025-03-08	RFC 1
P-ETB-200N1-15-L2-01	Lighting & Small Power DB BoP / Trace Heating - Process Lines - Feeder 2	ONSHORE	C10000616	CPX09	100	2025-03-06	RFC 1
P-ETB-200N1-15-L2-02	TRACE HEATING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB/TRACE HEATING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB	ONSHORE	C10002056	CPX09	100	2025-03-06	RFC 1
P-ETB-200N1-16-L3-01	Lighting & Small Power DB BoP / Trace Heating - Process Lines - Feeder 3	ONSHORE	C10000617	CPX09	100	2025-02-25	RFC 1
P-ETB-200N1-17-L1-01	Lighting & Small Power DB BoP / Trace Heating - Process Lines - Feeder 4	ONSHORE	C10000618	CPX09	100	2025-02-10	RFC 1
P-ETB-200N1-17-L1-02	TRACE HEATING - INSTRUMENT - 43-LT-003 Hot JB/TRACE HEATING - PROCESS LINES - (WW LINES) Hot JB	ONSHORE	C10002442	CPX09	100	2025-02-10	RFC 1
P-ETB-200N1-17-L1-03	TRACE HEATING - PROCESS LINES - 4 (WW LINES) Hot JB/TRACE HEATING - PROCESS LINES - (WW LINES) Hot JB	ONSHORE	C10002443	CPX09	100	2025-02-20	RFC 1
P-ETB-200N1-17-L1-04	TRACE HEATING - PROCESS LINES - FEEDER 4 (WW LINES & LT) Cold JB / TRACE HEATING - PROCESS LINE (WW 259) JB	ONSHORE	C10002367	CPX09	100	2025-02-10	RFC 1
P-ETB-200N1-19-L3-01	Lighting & Small Power DB BoP / Trace Heating - Vent - Feeder 6	ONSHORE	C10000620	CPX09	100	2025-03-06	RFC 1
P-ETB-200N1-20-L1-01	Lighting & Small Power DB BoP / Trace Heating - V-43001 Vessel - Feeder 7	ONSHORE	C10000621	CPX09	100	2025-02-24	RFC 1
P-ETB-200N1-20-L1-02	HEAT TRACING - PROCESS LINES - FEEDER 7 (SEA WATER PUMPS) Cold JB/HEAT TRACING - PROCESS LINES - FEEDER 7 (SEA WATER PUMPS)	ONSHORE	C10004659	CPX09	100	2025-02-26	-
		OFFSHORE	C10004932	CPX09	0	-	-
P-ETB-200N1-20-L1-03	HEAT TRACING - PROCESS LINES - FEEDER 7 (SEA WATER PUMPS) Cold JB/HEAT TRACING - PROCESS LINES - FEEDER 7 (SEA WATER PUMPS)	ONSHORE	C10004660	CPX09	100	2025-02-26	-
		OFFSHORE	C10004933	CPX09	0	-	-

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 83-65 & process: MC

ATEX	83-65 Electrical Heat Tracing						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
EHT-1001-A	Heat Tracing Tape	ONSHORE	C10004645	CJX01	100	2025-02-24	RFC 1
EHT-1004-A	Heat Tracing Tape	ONSHORE	C10004646	CJX01	100	2025-02-13	RFC 1
EHT-1004-B	Heat Tracing Tape	ONSHORE	C10004641	CJX01	100	2025-02-13	RFC 1
EHT-1005-A	Heat Tracing Tape	ONSHORE	C10004642	CJX01	100	2025-02-13	RFC 1
EHT-1006-A	Heat Tracing Tape	ONSHORE	C10004643	CJX01	100	2025-02-20	RFC 1
EHT-2002-A	Heat Tracing Tape	ONSHORE	C10004644	CJX01	100	2025-02-13	RFC 1
ETB-200N1-17-L1-02	HEAT TRACING - PROCESS LINES - 4 (WW LINES) Hot JB	ONSHORE	C10004605	CJX01	100	2025-02-20	RFC 1
ETB-200N1-17-L1-03	HEAT TRACING - PROCESS LINES - (WW-202) Hot JB	ONSHORE	C10004606	CJX01	100	2025-02-20	RFC 1
ETB-200N1-17-L1-04	HEAT TRACING - PROCESS LINE (WW 259, V-43001, LT-001) Hot JB	ONSHORE	C10004607	CJX01	100	2025-02-20	RFC 1
ETB-200N1-17-L1-05	TRACE HEATING - PROCESS LINES - (WW LINES) 43-LT-001, Hot JB	ONSHORE	C10004608	CJX01	100	2025-02-20	RFC 1
ETB-200N1-19-L3-01	HEAT TRACING - PROCESS LINES - FEEDER 6 (H2 VENT)	ONSHORE	C10004609	CJX01	100	2025-03-06	RFC 1

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Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	83	Main Power Distribution Low Voltage 440 V
SUBSYSTEM	83-65	Electrical Heat Tracing

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001147	B	P-EJB-200N1-17-L1-01 C10002057	Missing core identification tags JB side	.		Pschintu 2024-12-03	2025-02-07	Pschintu 2025-02-07	2025-02-07
C30001148	B	P-EJB-200N1-17-L1-01 C10002057	Missing SS cable tags	.		Pschintu 2024-12-03	2025-02-04	Pschintu 2025-02-04	2025-02-04
C30001149	B	P-EJB-200N1-15-L2-01 C10002055	Missing SS cable tag	.		Pschintu 2024-12-03	2025-02-04	Pschintu 2025-02-04	2025-02-04
C30001150	B	P-EJB-200N1-15-L2-01 C10002055	Missing core identification tag JB side	.		Pschintu 2024-12-03	2024-12-11	Pschintu 2024-12-11	2024-12-11
C30001178	B	P-EJB-200N1-14-L1-01 C10002054	missing core identification tag both side	.		Pschintu 2024-12-03			
C30001179	B	P-EJB-200N1-14-L1-01 C10002054	Missing SS tag	.		Pschintu 2024-12-03	2025-02-04	Pschintu 2025-02-04	2025-02-04
C30001932	B	EJB-200N1-14-L1-01 C10002069	present cable gland on spare entry instead of plug	.		AAndreani 2024-12-16	2025-01-30	Gtangianu 2025-01-30	2025-01-30
C30001935	B	EJB-200N1-15-L2-01 C10002070	missing terminal identifiction of terminals	.		AAndreani 2024-12-16	2025-03-07	JKrizanic 2025-03-07	2025-03-07
C30003140	B	P-EAT-200N1-01 C10004656	Missing core identification tags by DP-200N1 side	.		Pschintu 2025-01-21	2025-02-26	Gtangianu 2025-02-26	2025-02-26

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 83 Main Power Distribution Low Voltage 440 V
SUBSYSTEM 83-65 Electrical Heat Tracing

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003141	B	P-EAT-200N1-01 C10004656	Missing SS cable tag under JB (EAT-200N1-01)	.		Pschintu 2025-01-21	2025-02-12	APolo 2025-02-12	2025-02-12
C30003142	B	P-EAT-200N1-02 C10004666	Missing cable tag on all routing (inside / outside B-200, on MCT and under JB - EAT-200N1-01)	.		Pschintu 2025-01-21	2025-02-12	APolo 2025-02-12	2025-02-12
C30003143	B	P-EAT-200N1-02 C10004666	Missing core identification tag both side (DP-200N1 / EAT-200N1-01)	.		Pschintu 2025-01-21	2025-02-24	JKrizanic 2025-02-24	2025-02-24
C30003195	B	EAT-200N1-01 C10004598	Missing plug	.		Pschintu 2025-01-24	2025-02-03	GBertuccelli 2025-02-03	2025-02-03
C30003625	B	P-ETB-200N1-17-L1-02 C10002442	Missing identification cable tag SS side the ETB-200N1-17-L1-02.See attached photo.	.		Gtangianu 2025-02-10	2025-02-25	AAndreani 2025-02-25	2025-02-25
C30003630	B	P-ETB-200N1-17-L1-04 C10002367	Missing cable tag SS side -ETB-200N1-17-L1-04.See attached photo.	.		Gtangianu 2025-02-10	2025-03-13	JKrizanic 2025-03-13	2025-03-13
C30003640	B	EJB-200N1-17-L1-01 C10002075	Missing internal identification terminal strip (PE). See attached photo.	.		Gtangianu 2025-02-10			
C30003641	B	P-ETB-200N1-17-L1-01 C10000618	Missing SS cable tag side the (ETB-200N1-17-L1-01)..	.		Gtangianu 2025-02-10	2025-02-25	AAndreani 2025-02-25	2025-02-25
C30003642	B	P-ETB-200N1-17-L1-01 C10000618	Missing earthing lug on the cableglande .Side ETB-200N1-17-L1-01 see doc.123A90-FDL-EL-DD-20090 page 10. See	.		Gtangianu 2025-02-11	2025-02-12	Gtangianu 2025-02-12	2025-02-12

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	83	Main Power Distribution Low Voltage 440 V
SUBSYSTEM	83-65	Electrical Heat Tracing

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003643	B	P-ETB-200N1-17-L1-04 C10002367	Missing earthing lug on the cableglande .SideETB-200N1-17-L1-04 see doc.123A90-FDL-EL-DD-20090 page 10. See	.		Gtangianu 2025-02-11	2025-02-12	Gtangianu 2025-02-12	2025-02-12
C30003644	B	P-ETB-200N1-17-L1-02 C10002442	Missing earthing lug on the cableglande .Side ETB-200N1-17-L1-02 see doc.123A90-FDL-EL-DD-20090 page 10. See	.		Gtangianu 2025-02-11	2025-02-12	Gtangianu 2025-02-12	2025-02-12
C30004052	B	P-ETB-200N1-17-L1-03 C10002443	Missing SS cable tag on the cable.See attached photo.	.		Gtangianu 2025-02-20	2025-02-28	AAndreani 2025-02-28	2025-02-28
C30004091	B	EJB-200N1-20-L1-01 C10004599	Missing trafolite tag on the JB. see attached photo.	.		Gtangianu 2025-02-24	2025-02-28	AAndreani 2025-02-28	2025-02-28
C30004094	B	P-ETB-200N1-20-L1-01 C10000621	Missing SS tags side the EJB-200N1-20-L1-01. See attached photo.	.		Gtangianu 2025-02-24	2025-02-25	Gtangianu 2025-02-25	2025-02-25
C30004122	B	P-ETB-200N1-16-L3-01 C10000617	Missing SS cable tag both side the cable (MCT to JB).See attached photo.	.		Gtangianu 2025-02-25	2025-03-13	JKrizanic 2025-03-13	2025-03-13
C30004123	B	P-ETB-200N1-16-L3-01 C10000617	The cable is not properly supported side the (ETB-200N1-16-L3-01).See attached photo.	.		Gtangianu 2025-02-25	2025-03-11	Gtangianu 2025-03-11	2025-03-11
C30004124	B	ETB-200N1-16-L3-01 C10004603	Missing the trafolite tag plate on the ETB-200N1-16-L3-01.See attached photo.	.		Gtangianu 2025-02-25	2025-02-27	Gtangianu 2025-02-27	2025-02-27
C30004182	B	ETB-200N1-15-L2-01 C10004601	Missing internal terminals strip (PE/L/N) . See attached photo.	.		Gtangianu 2025-02-28	2025-03-26	Gtangianu 2025-03-26	2025-03-26

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 83 Main Power Distribution Low Voltage 440 V
SUBSYSTEM 83-65 Electrical Heat Tracing

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30004198	B	P-ETB-200N1-19-L3-01 C10000620	Missing calbe tags side (E-MCT-U15) and side the ETB-200N1-19-L3-01. See attached photo.	.		Gtangianu 2025-03-06	2025-04-02	Gtangianu 2025-04-02	2025-04-02
C30004199	B	P-ETB-200N1-15-L2-01 C10000616	Missing cable tag side the ETB-200N1-15-L2-01. See attached photo.	.		Gtangianu 2025-03-06	2025-04-02	Gtangianu 2025-04-02	2025-04-02
C30004200	B	P-ETB-200N1-15-L2-02 C10002056	Missing cable tag side the ETB-200N1-15-L2-02.	.		Gtangianu 2025-03-06	2025-04-02	Gtangianu 2025-04-02	2025-04-02
C30004201	B	P-ETB-200N1-15-L2-02 C10002056	Missing secondary cabletray for protection cable to pass on the middle flanges. See attached photo.	.		Gtangianu 2025-03-06	2025-03-26	Gtangianu 2025-03-26	2025-03-26
C30004202	B	ETB-200N1-15-L2-02 C10004602	Missing trafolite tag on the cover (ETB-200N1-15-L2-02.)	.		Gtangianu 2025-03-06	2025-03-08	Gtangianu 2025-03-08	2025-03-08
C30004214	B	P-ETB-200N1-14-L1-01 C10000615	Missing cable tag side the ETB-200N1-14-L1-01. See attached photo.	.		Gtangianu 2025-03-08			
C30004215	B	P-ETB-200N1-14-L1-01 C10000615	Missing secondary cabletray side the ETB-200N1-14-L1-01.See attached photo.	.		Gtangianu 2025-03-08	2025-04-02	Gtangianu 2025-04-02	2025-04-02
C30004274	B	EHT-1004-A C10004650	Missing warning labels and the END SEAL on the cladding.	.		Gtangianu 2025-03-25	2025-04-02	Gtangianu 2025-04-02	2025-04-02
C30004275	B	EHT-1004-B C10004651	Missing warning labels and the END SEAL on the cladding.	.		Gtangianu 2025-03-25	2025-04-02	Gtangianu 2025-04-02	2025-04-02

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	83	Main Power Distribution Low Voltage 440 V
SUBSYSTEM	83-65	Electrical Heat Tracing

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30004276	B	EHT-1005-A C10004652	Missing warning labels and the END SEAL on the cladding.	.		Gtangianu 2025-03-25	2025-04-02	Gtangianu 2025-04-02	2025-04-02
C30004277	B	EHT-2002-A C10004655	Missing warning labels and the END SEAL on the cladding.	.		Gtangianu 2025-03-25	2025-04-02	Gtangianu 2025-04-02	2025-04-02

Section 2 CONSOLIDATED PUNCH LISTS

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	83	Main Power Distribution Low Voltage 440 V
SUBSYSTEM	83-65	Electrical Heat Tracing

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001147	B	P-EJB-200N1-17-L1-01 C10002057	Missing core identification tags JB side	.		Pschintu 2024-12-03	2025-02-07	Pschintu 2025-02-07	2025-02-07
C30001148	B	P-EJB-200N1-17-L1-01 C10002057	Missing SS cable tags	.		Pschintu 2024-12-03	2025-02-04	Pschintu 2025-02-04	2025-02-04
C30001149	B	P-EJB-200N1-15-L2-01 C10002055	Missing SS cable tag	.		Pschintu 2024-12-03	2025-02-04	Pschintu 2025-02-04	2025-02-04
C30001150	B	P-EJB-200N1-15-L2-01 C10002055	Missing core identification tag JB side	.		Pschintu 2024-12-03	2024-12-11	Pschintu 2024-12-11	2024-12-11
C30001178	B	P-EJB-200N1-14-L1-01 C10002054	missing core identification tag both side	.		Pschintu 2024-12-03	2025-06-16	Ecarotenuto 2025-06-16	2025-06-16
C30001179	B	P-EJB-200N1-14-L1-01 C10002054	Missing SS tag	.		Pschintu 2024-12-03	2025-02-04	Pschintu 2025-02-04	2025-02-04
C30001932	B	EJB-200N1-14-L1-01 C10002069	present cable gland on spare entry instead of plug	.		AAndreani 2024-12-16	2025-01-30	Gtangianu 2025-01-30	2025-01-30
C30001935	B	EJB-200N1-15-L2-01 C10002070	missing terminal identifiction of terminals	.		AAndreani 2024-12-16	2025-03-07	JKrizanic 2025-03-07	2025-03-07
C30003140	B	P-EAT-200N1-01 C10004656	Missing core identification tags by DP-200N1 side	.		Pschintu 2025-01-21	2025-02-26	Gtangianu 2025-02-26	2025-02-26

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 83 Main Power Distribution Low Voltage 440 V

SUBSYSTEM 83-65 Electrical Heat Tracing

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003141	B	P-EAT-200N1-01 C10004656	Missing SS cable tag under JB (EAT-200N1-01)	.		Pschintu 2025-01-21	2025-02-12	APolo 2025-02-12	2025-02-12
C30003142	B	P-EAT-200N1-02 C10004666	Missing cable tag on all routing (inside / outside B-200, on MCT and under JB - EAT-200N1-01)	.		Pschintu 2025-01-21	2025-02-12	APolo 2025-02-12	2025-02-12
C30003143	B	P-EAT-200N1-02 C10004666	Missing core identification tag both side (DP-200N1 / EAT-200N1-01)	.		Pschintu 2025-01-21	2025-02-24	JKrizanic 2025-02-24	2025-02-24
C30003195	B	EAT-200N1-01 C10004598	Missing plug	.		Pschintu 2025-01-24	2025-02-03	GBertuccelli 2025-02-03	2025-02-03
C30003625	B	P-ETB-200N1-17-L1-02 C10002442	Missing identification cable tag SS side the ETB-200N1-17-L1-02.See attached photo.	.		Gtangianu 2025-02-10	2025-02-25	AAndreani 2025-02-25	2025-02-25
C30003630	B	P-ETB-200N1-17-L1-04 C10002367	Missing cable tag SS side -ETB-200N1-17-L1-04.See attached photo.	.		Gtangianu 2025-02-10	2025-03-13	JKrizanic 2025-03-13	2025-03-13
C30003640	B	EJB-200N1-17-L1-01 C10002075	Missing internal identification terminal strip (PE). See attached photo.	.		Gtangianu 2025-02-10	2025-06-10	Ecarotenuto 2025-06-10	2025-06-10
C30003641	B	P-ETB-200N1-17-L1-01 C10000618	Missing SS cable tag side the (ETB-200N1-17-L1-01)..	.		Gtangianu 2025-02-10	2025-02-25	AAndreani 2025-02-25	2025-02-25
C30003642	B	P-ETB-200N1-17-L1-01 C10000618	Missing earthing lug on the cableglande .Side ETB-200N1-17-L1-01 see doc.123A90-FDL-EL-DD-20090 page 10. See	.		Gtangianu 2025-02-11	2025-02-12	Gtangianu 2025-02-12	2025-02-12

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	83	Main Power Distribution Low Voltage 440 V
SUBSYSTEM	83-65	Electrical Heat Tracing

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003643	B	P-ETB-200N1-17-L1-04 C10002367	Missing earthing lug on the cableglande .SideETB-200N1-17-L1-04 see doc.123A90-FDL-EL-DD-20090 page 10. See	.		Gtangianu 2025-02-11	2025-02-12	Gtangianu 2025-02-12	2025-02-12
C30003644	B	P-ETB-200N1-17-L1-02 C10002442	Missing earthing lug on the cableglande .Side ETB-200N1-17-L1-02 see doc.123A90-FDL-EL-DD-20090 page 10. See	.		Gtangianu 2025-02-11	2025-02-12	Gtangianu 2025-02-12	2025-02-12
C30004052	B	P-ETB-200N1-17-L1-03 C10002443	Missing SS cable tag on the cable.See attached photo.	.		Gtangianu 2025-02-20	2025-02-28	AAndreani 2025-02-28	2025-02-28
C30004091	B	EJB-200N1-20-L1-01 C10004599	Missing trafolite tag on the JB. see attached photo.	.		Gtangianu 2025-02-24	2025-02-28	AAndreani 2025-02-28	2025-02-28
C30004094	B	P-ETB-200N1-20-L1-01 C10000621	Missing SS tags side the EJB-200N1-20-L1-01. See attached photo.	.		Gtangianu 2025-02-24	2025-02-25	Gtangianu 2025-02-25	2025-02-25
C30004122	B	P-ETB-200N1-16-L3-01 C10000617	Missing SS cable tag both side the cable (MCT to JB).See attached photo.	.		Gtangianu 2025-02-25	2025-03-13	JKrizanic 2025-03-13	2025-03-13
C30004123	B	P-ETB-200N1-16-L3-01 C10000617	The cable is not properly supported side the (ETB-200N1-16-L3-01).See attached photo.	.		Gtangianu 2025-02-25	2025-03-11	Gtangianu 2025-03-11	2025-03-11
C30004124	B	ETB-200N1-16-L3-01 C10004603	Missing the trafolite tag plate on the ETB-200N1-16-L3-01.See attached photo.	.		Gtangianu 2025-02-25	2025-02-27	Gtangianu 2025-02-27	2025-02-27
C30004182	B	ETB-200N1-15-L2-01 C10004601	Missing internal terminals strip (PE/L/N) . See attached photo.	.		Gtangianu 2025-02-28	2025-03-26	Gtangianu 2025-03-26	2025-03-26

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 83 Main Power Distribution Low Voltage 440 V
SUBSYSTEM 83-65 Electrical Heat Tracing

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30004198	B	P-ETB-200N1-19-L3-01 C10000620	Missing calbe tags side (E-MCT-U15) and side the ETB-200N1-19-L3-01. See attached photo.	.		Gtangianu 2025-03-06	2025-04-02	Gtangianu 2025-04-02	2025-04-02
C30004199	B	P-ETB-200N1-15-L2-01 C10000616	Missing cable tag side the ETB-200N1-15-L2-01. See attached photo.	.		Gtangianu 2025-03-06	2025-04-02	Gtangianu 2025-04-02	2025-04-02
C30004200	B	P-ETB-200N1-15-L2-02 C10002056	Missing cable tag side the ETB-200N1-15-L2-02.	.		Gtangianu 2025-03-06	2025-04-02	Gtangianu 2025-04-02	2025-04-02
C30004201	B	P-ETB-200N1-15-L2-02 C10002056	Missing secondary cabletray for protection cable to pass on the middle flanges. See attached photo.	.		Gtangianu 2025-03-06	2025-03-26	Gtangianu 2025-03-26	2025-03-26
C30004202	B	ETB-200N1-15-L2-02 C10004602	Missing trafolite tag on the cover (ETB-200N1-15-L2-02.)	.		Gtangianu 2025-03-06	2025-03-08	Gtangianu 2025-03-08	2025-03-08
C30004214	B	P-ETB-200N1-14-L1-01 C10000615	Missing cable tag side the ETB-200N1-14-L1-01. See attached photo.	.		Gtangianu 2025-03-08	2025-04-14	Gtangianu 2025-04-14	2025-04-14
C30004215	B	P-ETB-200N1-14-L1-01 C10000615	Missing secondary cabletray side the ETB-200N1-14-L1-01.See attached photo.	.		Gtangianu 2025-03-08	2025-04-02	Gtangianu 2025-04-02	2025-04-02
C30004274	B	EHT-1004-A C10004650	Missing warning labels and the END SEAL on the cladding.	.		Gtangianu 2025-03-25	2025-04-02	Gtangianu 2025-04-02	2025-04-02
C30004275	B	EHT-1004-B C10004651	Missing warning labels and the END SEAL on the cladding.	.		Gtangianu 2025-03-25	2025-04-02	Gtangianu 2025-04-02	2025-04-02

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	83	Main Power Distribution Low Voltage 440 V
SUBSYSTEM	83-65	Electrical Heat Tracing

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30004276	B	EHT-1005-A C10004652	Missing warning labels and the END SEAL on the cladding.	.		Gtangianu 2025-03-25	2025-04-02	Gtangianu 2025-04-02	2025-04-02
C30004277	B	EHT-2002-A C10004655	Missing warning labels and the END SEAL on the cladding.	.		Gtangianu 2025-03-25	2025-04-02	Gtangianu 2025-04-02	2025-04-02

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004091

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004599	1.4 Discipline	Electrical
1.2 Item	EJB-200N1-20-L1-01		HEAT TRACING - PROCESS LINES - FEEDER 7 (SEA WATER PUMPS) Cold JB
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

Missing trafolite tag on the JB. see attached photo.

Name: Giovanni Tangianu

Date: 2025-02-24

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	2025-02-24
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-02-28

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004094

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000621	1.4 Discipline	Electrical
1.2 Item	P-ETB-200N1-20-L1-01		Lighting & Small Power DB BoP / Trace Heating - V-43001 Vessel - Feeder 7
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

Missing SS tags side the EJB-200N1-20-L1-01. See attached photo.

Name: Giovanni Tangianu

Date: 2025-02-24

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	2025-02-24
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-02-25

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


P-ETB-20-L1-01
P-ETB-20-L1-02

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004122

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000617	1.4 Discipline	Electrical
1.2 Item	P-ETB-200N1-16-L3-01		Lighting & Small Power DB BoP / Trace Heating - Process Lines - Feeder 3
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

Missing SS cable tag both side the cable (MCT to JB).See attached photo.

Name: Giovanni Tangianu

Date: 2025-02-25

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	2025-02-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date: 2025-03-13

Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic

Date: 2025-03-13

Signature:

6- CLEARANCE APPROVAL

Name:

Date: 2025-03-13

Signature:


ET · 200 N 2 - 16-23-01

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004123

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000617	1.4 Discipline	Electrical
1.2 Item	P-ETB-200N1-16-L3-01		Lighting & Small Power DB BoP / Trace Heating - Process Lines - Feeder 3
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

The cable is not properly supported side the (ETB-200N1-16-L3-01).See attached photo.

Name: Giovanni Tangianu

Date: 2025-02-25

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	2025-02-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

cabletray is installed.

Name: Giovanni Tangianu

Date: 2025-03-11

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


ET · 200 N 2 - 16-23-01

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004124

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004603	1.4 Discipline	Electrical
1.2 Item	ETB-200N1-16-L3-01	HEAT TRACING - PROCESS LINES - FEEDER 3 (DM-001)	
1.3 Subsystem	83-65	Electrical Heat Tracing	

2 - OBSERVATION

Missing the trafolite tag plate on the ETB-200N1-16-L3-01.See attached photo.

Name: Giovanni Tangianu

Date: 2025-02-25

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	2025-02-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-02-27

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



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JBS-100-E

PTB 20 ATEX 1008 U
II 2 G Ex eb IIC Gb
II 2 D Ex tb IIIC Db

IECEx PTB 20.0014U
Ex eb IIC Gb
Ex tb IIIC Db

Ta -55°C...+56°C IP66
Reg. No. 0598

EAC Ex
Ex e IIC Gb U Ex tb IIIC Db U
Ta -55°C...+56°C IP66
TC RU C-BE.МЮ62.В.00054/18

BAS21UKEX0657U
Reg. No. 1180

CL I ZN 1 AEx eb IIC T* Gb
Ex eb IIC T* Gb
ZN21 AEx tb IIIC T**°C Db
Ex tb IIIC T**°C Db
Ta -55°C...+56°C IP66
CSA02CA1333271X

接线盒 480Vac 原产地 印度
Ex eb IIC Gb
Ex tb IIIC Db
Ta -55°C...+56°C
警告：严禁带电开盖！

IECEx/ATEX ◂ SYSTEM DETAILS ▸ EAC

CE 0598
II 2 G Ex 60079-30-1 eb IIC T* Gb
II 2 D Ex 60079-30-1 tb IIIC T**°C Db
Ex 60079-30-1 eb IIC T* Gb
Ex 60079-30-1 tb IIIC T**°C Db

1Ex e IIC T* Gb X
Ex tb IIIC T**°C Db X

T*/T**- See below

	T code(*)	Temp(**)	ATEX	IECEx	EAC
BTV	T6	80°C	SGS20ATEX0048X	IECEx BAS 20.0011X	TC RU C-BE.МЮ62.В.00054/18
QTVR	T4	130°C	SGS20ATEX0050X	IECEx BAS 20.0013X	TC RU C-BE.МЮ62.В.00054/18
XTV	T*	T*	SGS20ATEX0049X	IECEx BAS 20.0012X	TC RU C-BE.МЮ62.В.00054/18
HTV	T*	T*	PTB21ATEX1003X	IECEx PTB 21.0007X	ЕАЭС RU C-BE.АЖ56.В.01728/21
KTV	T2	226°C	SGS20ATEX0051X	IECEx BAS 20.0014X	TC RU C-BE.МЮ62.В.00054/18
VPL	T*	T*	SGS20ATEX0045X	IECEx BAS 20.0008X	TC RU C-BE.МЮ62.В.00054/18

T* For maximum surface temperature, see heating cable, design documentation or schedule
T* Макс. темп. оболочки см. напр. кабеле, в расчетной документации или каталоге

Do not open while energized.
Nicht unter Spannung öffnen.
Ne pas ouvrir sous tension.
Открывать, отключив от сети.

WARNING – Explosion and Shock Hazard. Do not disconnect while the circuit is live or unless the area is free of ignitible concentrations.
AVERTISSEMENT – Risque d'explosion. Ne pas débrancher pendant que le circuit est sous tension ou à moins que l'emplacement ne soit exempt de concentrations inflammables.

M

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ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004182

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004601	1.4 Discipline	Electrical
1.2 Item	ETB-200N1-15-L2-01		HEAT TRACING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

Missing internal terminals strip (PE/L/N) . See attached photo.

Name: Giovanni Tangianu

Date: 2025-02-28

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	2025-02-28
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-03-26

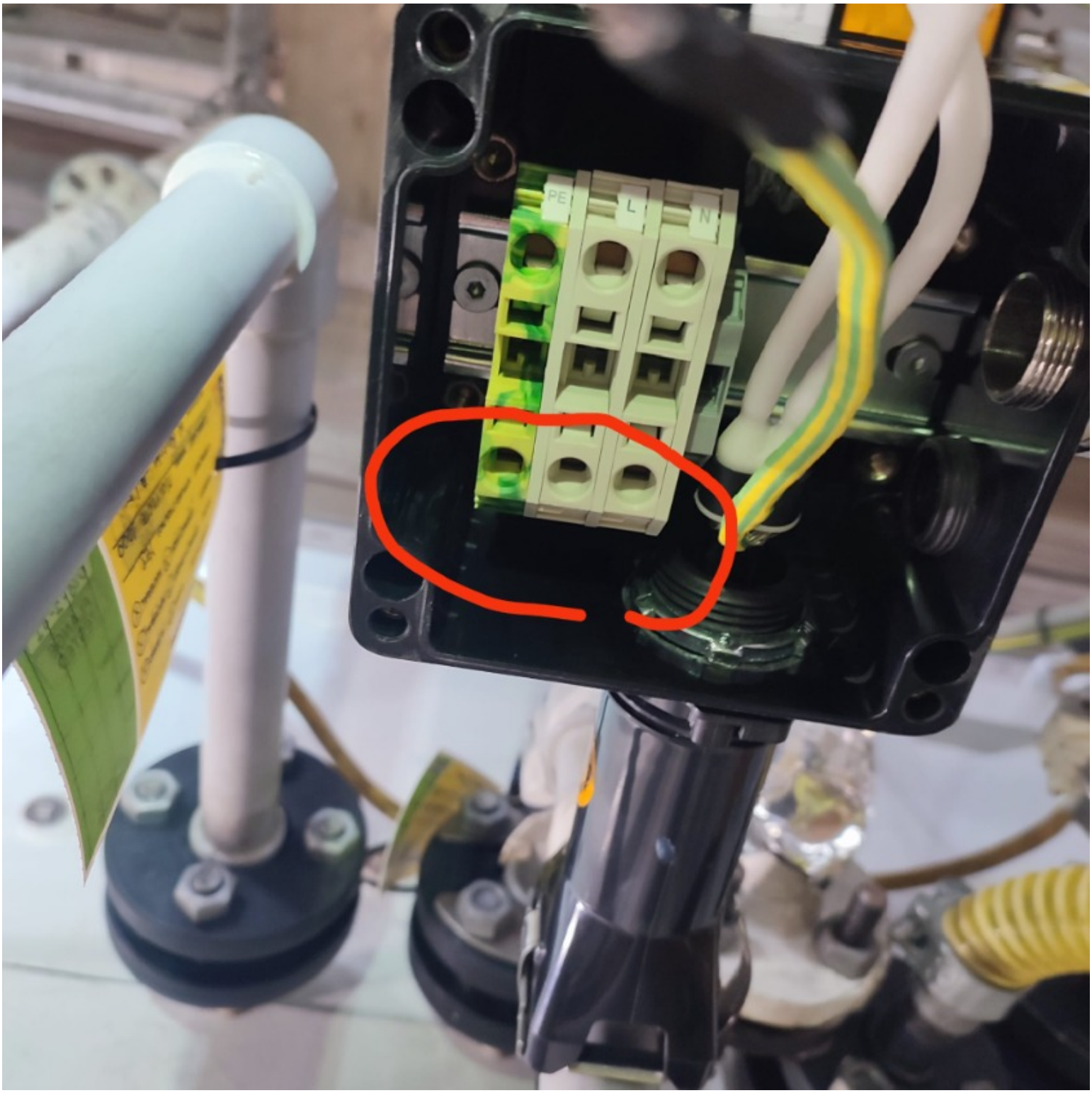
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


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L
N

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004198

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000620	1.4 Discipline	Electrical
1.2 Item	P-ETB-200N1-19-L3-01		Lighting & Small Power DB BoP / Trace Heating - Vent - Feeder 6
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

Missing calbe tags side (E-MCT-U15) and side the ETB-200N1-19-L3-01. See attached photo.

Name: Giovanni Tangianu

Date: 2025-03-06

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	2025-03-06
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:

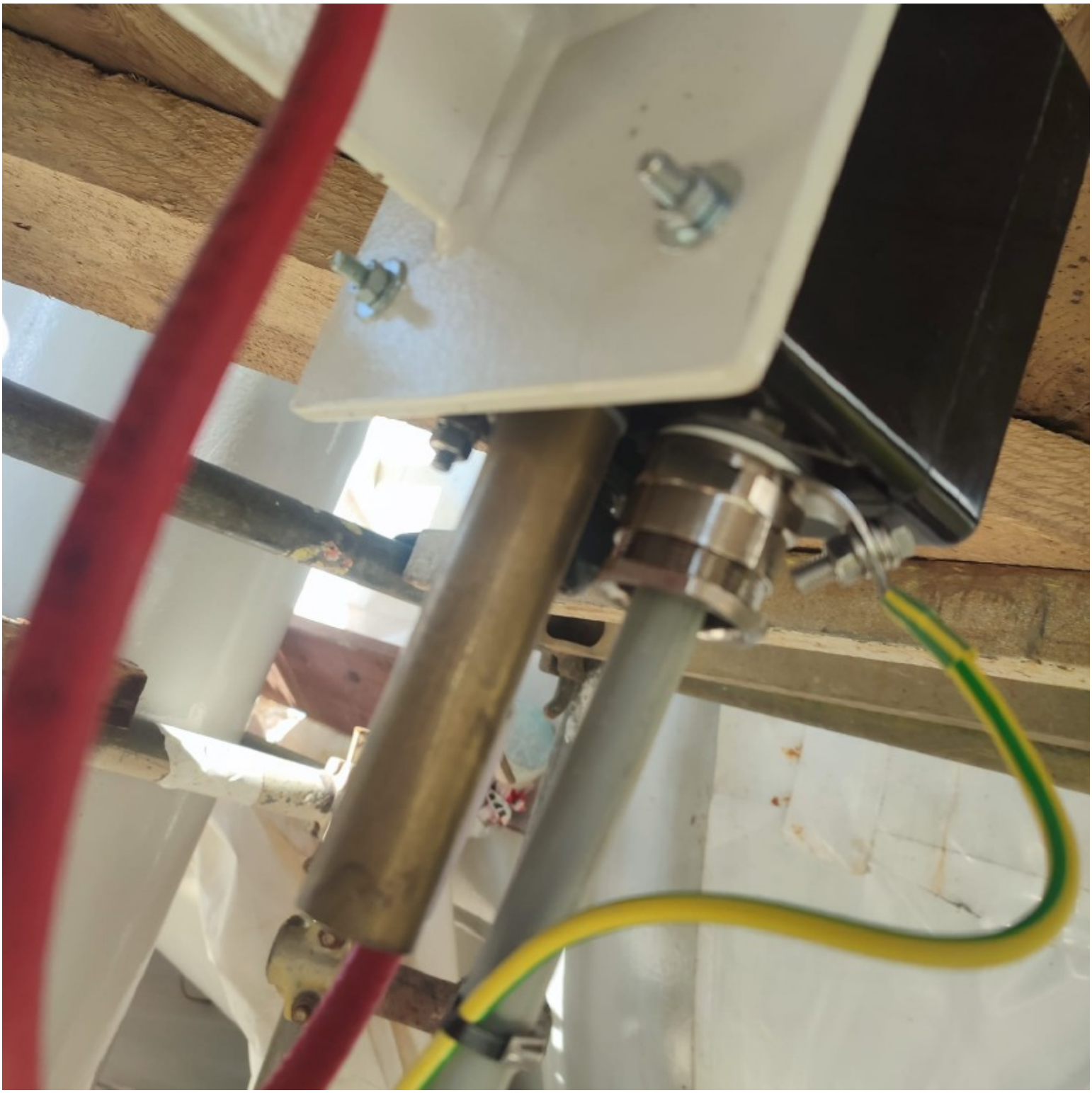
6- CLEARANCE APPROVAL

Name:

Date:

Signature:





ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004199

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000616	1.4 Discipline	Electrical
1.2 Item	P-ETB-200N1-15-L2-01		Lighting & Small Power DB BoP / Trace Heating - Process Lines - Feeder 2
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

Missing cable tag side the ETB-200N1-15-L2-01. See attached photo.

Name: Giovanni Tangianu

Date: 2025-03-06

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	2025-03-06
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

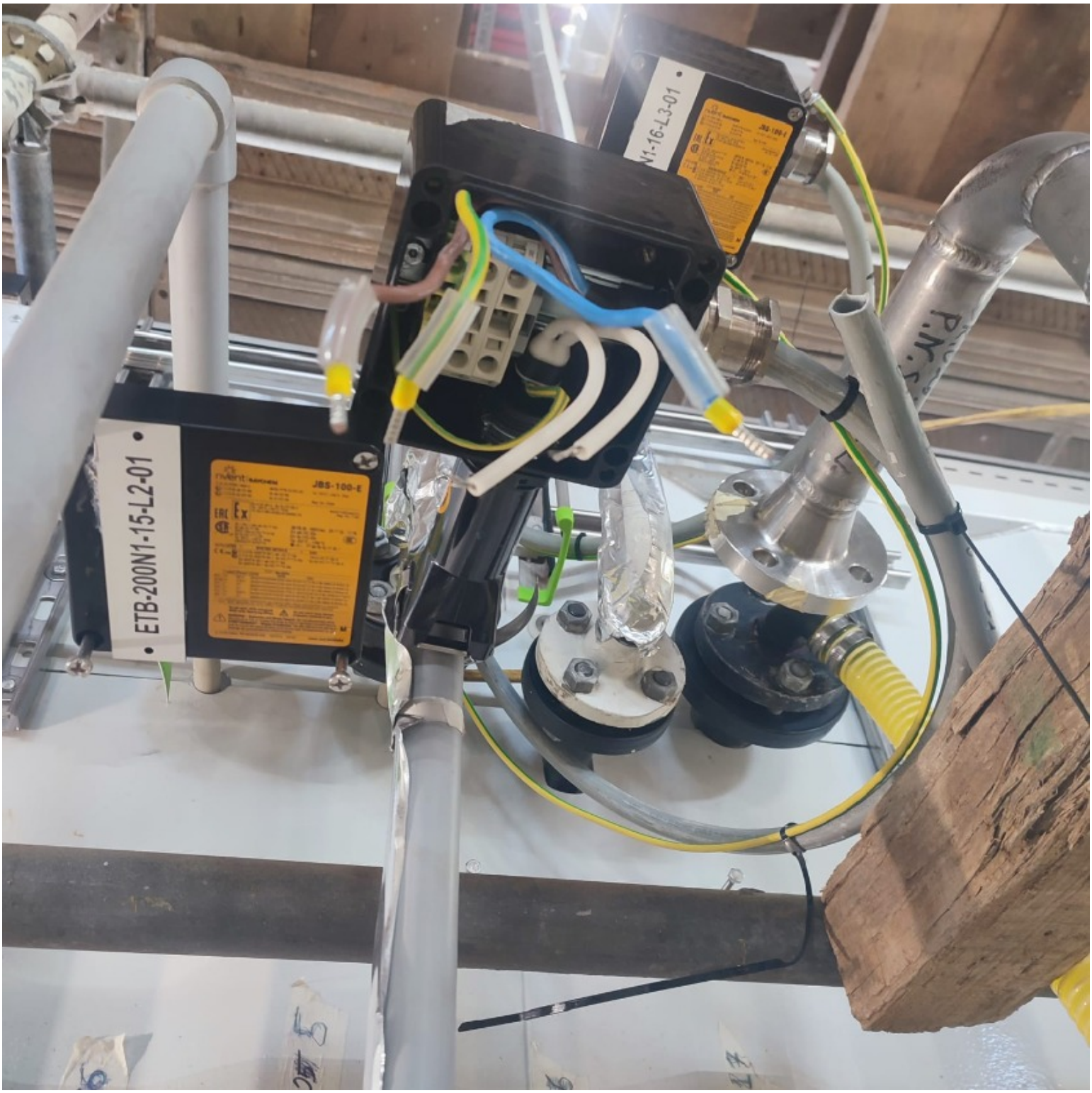
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


• ETB-200N1-15-L2-01 •
JBS-100-E
N1-16-L3-01 •

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004200

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002056	1.4 Discipline	Electrical
1.2 Item	P-ETB-200N1-15-L2-02		TRACE HEATING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB/TRACE HEATING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

Missing cable tag side the ETB-200N1-15-L2-02.

Name: Giovanni Tangianu

Date: 2025-03-06

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	2025-03-06
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

C30004201

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002056	1.4 Discipline	Electrical
1.2 Item	P-ETB-200N1-15-L2-02		TRACE HEATING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB/TRACE HEATING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

Missing secondary cabletray for protection cable to pass on the middle flanges. See attached photo.

Name: Giovanni Tangianu

Date: 2025-03-06

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	2025-03-06
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-03-26

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004202

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004602	1.4 Discipline	Electrical
1.2 Item	ETB-200N1-15-L2-02		TRACE HEATING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

Missing trafolite tag on the cover (ETB-200N1-15-L2-02.)

Name: Giovanni Tangianu

Date: 2025-03-06

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	2025-03-06
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-03-08

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004214

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000615	1.4 Discipline	Electrical
1.2 Item	P-ETB-200N1-14-L1-01		Lighting & Small Power DB BoP / Trace Heating - Process Lines - Feeder 1
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

Missing cable tag side the ETB-200N1-14-L1-01. See attached photo.

Name: Giovanni Tangianu

Date: 2025-03-07

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	2025-03-08
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date: 2025-04-14

Signature:

5 - CLEARANCE CHECK

DONE

Name: Giovanni Tangianu

Date: 2025-04-14

Signature:

6- CLEARANCE APPROVAL

Name:

Date: 2025-04-14

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004215

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000615	1.4 Discipline	Electrical
1.2 Item	P-ETB-200N1-14-L1-01		Lighting & Small Power DB BoP / Trace Heating - Process Lines - Feeder 1
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

Missing secondary cabletray side the ETB-200N1-14-L1-01.See attached photo.

Name: Giovanni Tangianu

Date: 2025-03-07

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	2025-03-08
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

C30004274

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004650	1.4 Discipline	Electrical
1.2 Item	EHT-1004-A	Heat Tracing Tape	
1.3 Subsystem	83-65	Electrical Heat Tracing	

2 - OBSERVATION

Missing warning labels and the END SEAL on the cladding.

Name: Giovanni Tangianu

Date: 2025-03-25

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	2025-03-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-03-28

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004275

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004651	1.4 Discipline	Electrical
1.2 Item	EHT-1004-B	Heat Tracing Tape	
1.3 Subsystem	83-65	Electrical Heat Tracing	

2 - OBSERVATION

Missing warning labels and the END SEAL on the cladding.

Name: Giovanni Tangianu

Date: 2025-03-25

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	2025-03-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-03-28

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004276

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004652	1.4 Discipline	Electrical
1.2 Item	EHT-1005-A	Heat Tracing Tape	
1.3 Subsystem	83-65	Electrical Heat Tracing	

2 - OBSERVATION

Missing warning labels and the END SEAL on the cladding.

Name: Giovanni Tangianu

Date: 2025-03-25

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	2025-03-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-03-28

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004277

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004655	1.4 Discipline	Electrical
1.2 Item	EHT-2002-A	Heat Tracing Tape	
1.3 Subsystem	83-65	Electrical Heat Tracing	

2 - OBSERVATION

Missing warning labels and the END SEAL on the cladding.

Name: Giovanni Tangianu
Date: 2025-03-25
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	2025-03-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu
Date: 2025-03-28
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001149

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002055	1.4 Discipline	Electrical
1.2 Item	P-EJB-200N1-15-L2-01		Lighting & Small Power DB BoP / TRACE HEATING - FEEDER 2 (CI LINES) Cold JB
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

Missing SS cable tag

Name: Paolo Schintu

Date: 2024-12-03

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	2024-12-03
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Paolo Schintu

Date: 2025-02-04

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001150

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002055	1.4 Discipline	Electrical
1.2 Item	P-EJB-200N1-15-L2-01		Lighting & Small Power DB BoP / TRACE HEATING - FEEDER 2 (CI LINES) Cold JB
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

Missing core identification tag JB side

Name: Paolo Schintu

Date: 2024-12-03

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	2024-12-03
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Paolo Schintu

Date: 2024-12-11

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001178

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002054	1.4 Discipline	Electrical
1.2 Item	P-EJB-200N1-14-L1-01		Lighting & Small Power DB BoP / TRACE HEATING - FEEDER 1 (SWS LINES) Cold JB
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

missing core identification tag both side

Name: Paolo Schintu

Date: 2024-12-03

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	2024-12-03
3.5 Action by	PRE-COMM	Signature	

4 - PERFORMED ACTION

Name:

Date: 2025-06-16

Signature:

5 - CLEARANCE CHECK

DONE

Name: Eleonora Carotenuto

Date: 2025-06-16

Signature:

6- CLEARANCE APPROVAL

Name:

Date: 2025-06-16

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001179

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002054	1.4 Discipline	Electrical
1.2 Item	P-EJB-200N1-14-L1-01		Lighting & Small Power DB BoP / TRACE HEATING - FEEDER 1 (SWS LINES) Cold JB
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

Missing SS tag

Name: Paolo Schintu

Date: 2024-12-03

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	2024-12-03
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Paolo Schintu

Date: 2025-02-04

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001932

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002069	1.4 Discipline	Electrical
1.2 Item	EJB-200N1-14-L1-01		HEAT TRACING - PROCESS LINES - FEEDER 1 (SWS LINES) Cold JB
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

present cable gland on spare entry instead of plug

Name: Andrea Andreani

Date: 2024-12-16

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	2024-12-16
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-01-30

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001935

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002070	1.4 Discipline	Electrical
1.2 Item	EJB-200N1-15-L2-01		HEAT TRACING - PROCESS LINES - FEEDER 2 (CI LINES) Cold JB
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

missing terminal identifiction of terminals

Name: Andrea Andreani

Date: 2024-12-16

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	2024-12-16
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic

Date: 2025-03-07

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003140

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004656	1.4 Discipline	Electrical
1.2 Item	P-EAT-200N1-01		LV 0,4 / 0,23 kV Distribution Switchgear/Trace Heating Remote Ambient Thermostat
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

Missing core identification tags by DP-200N1 side

Name: Paolo Schintu

Date: 2025-01-21

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	2025-01-21
3.5 Action by	PRE-COMM	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

C30003141

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004656	1.4 Discipline	Electrical
1.2 Item	P-EAT-200N1-01		LV 0,4 / 0,23 kV Distribution Switchgear/Trace Heating Remote Ambient Thermostat
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

Missing SS cable tag under JB (EAT-200N1-01)

Name: Paolo Schintu

Date: 2025-01-21

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	2025-01-21
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

C30003142

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004666	1.4 Discipline	Electrical
1.2 Item	P-EAT-200N1-02		Trace Heating Remote Ambient Thermostat/LV 0,4 / 0,23 kV Distribution Switchgear
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

Missing cable tag on all routing (inside / outside B-200, on MCT and under JB - EAT-200N1-01)

Name: Paolo Schintu

Date: 2025-01-21

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	2025-01-21
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

C30003143

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004666	1.4 Discipline	Electrical
1.2 Item	P-EAT-200N1-02		Trace Heating Remote Ambient Thermostat/LV 0,4 / 0,23 kV Distribution Switchgear
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

Missing core identification tag both side (DP-200N1 / EAT-200N1-01)

Name: Paolo Schintu

Date: 2025-01-21

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	2025-01-21
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic

Date: 2025-02-24

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003195

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004598	1.4 Discipline	Electrical
1.2 Item	EAT-200N1-01	Trace Heating Remote Ambient Thermostat	
1.3 Subsystem	83-65	Electrical Heat Tracing	

2 - OBSERVATION

Missing plug

Name: Paolo Schintu

Date: 2025-01-24

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	2025-01-24
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

C30003625

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002442	1.4 Discipline	Electrical
1.2 Item	P-ETB-200N1-17-L1-02		TRACE HEATING - INSTRUMENT - 43-LT-003 Hot JB/TRACE HEATING - PROCESS LINES - (WW LINES) Hot JB
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

Missing identification cable tag SS side the ETB-200N1-17-L1-02.See attached photo.

Name: Giovanni Tangianu

Date: 2025-02-10

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	2025-02-10
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:


ETB-200N1-17-L1-02

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003630

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002367	1.4 Discipline	Electrical
1.2 Item	P-ETB-200N1-17-L1-04		TRACE HEATING - PROCESS LINES - FEEDER 4 (WW LINES & LT) Cold JB / TRACE HEATING - PROCESS LINE (WW 259) JB
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

Missing cable tag SS side -ETB-200N1-17-L1-04.See attached photo.

Name: Giovanni Tangianu

Date: 2025-02-10

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	2025-02-10
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date: 2025-03-13

Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic

Date: 2025-03-13

Signature:

6- CLEARANCE APPROVAL

Name:

Date: 2025-03-13

Signature:


FLANGE TAG
FLANGE TESTED


• ETB-200N1-17-L1-04 •

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003640

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002075	1.4 Discipline	Electrical
1.2 Item	EJB-200N1-17-L1-01		HEAT TRACING - PROCESS LINES (WW LINES & LT) Cold JB
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

Missing internal identification terminal strip (PE). See attached photo.

Name: Giovanni Tangianu
Date: 2025-02-10
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	2025-02-10
3.5 Action by	PRE-COMM	Signature	

4 - PERFORMED ACTION

-

Name:
Date: 2025-06-10
Signature:

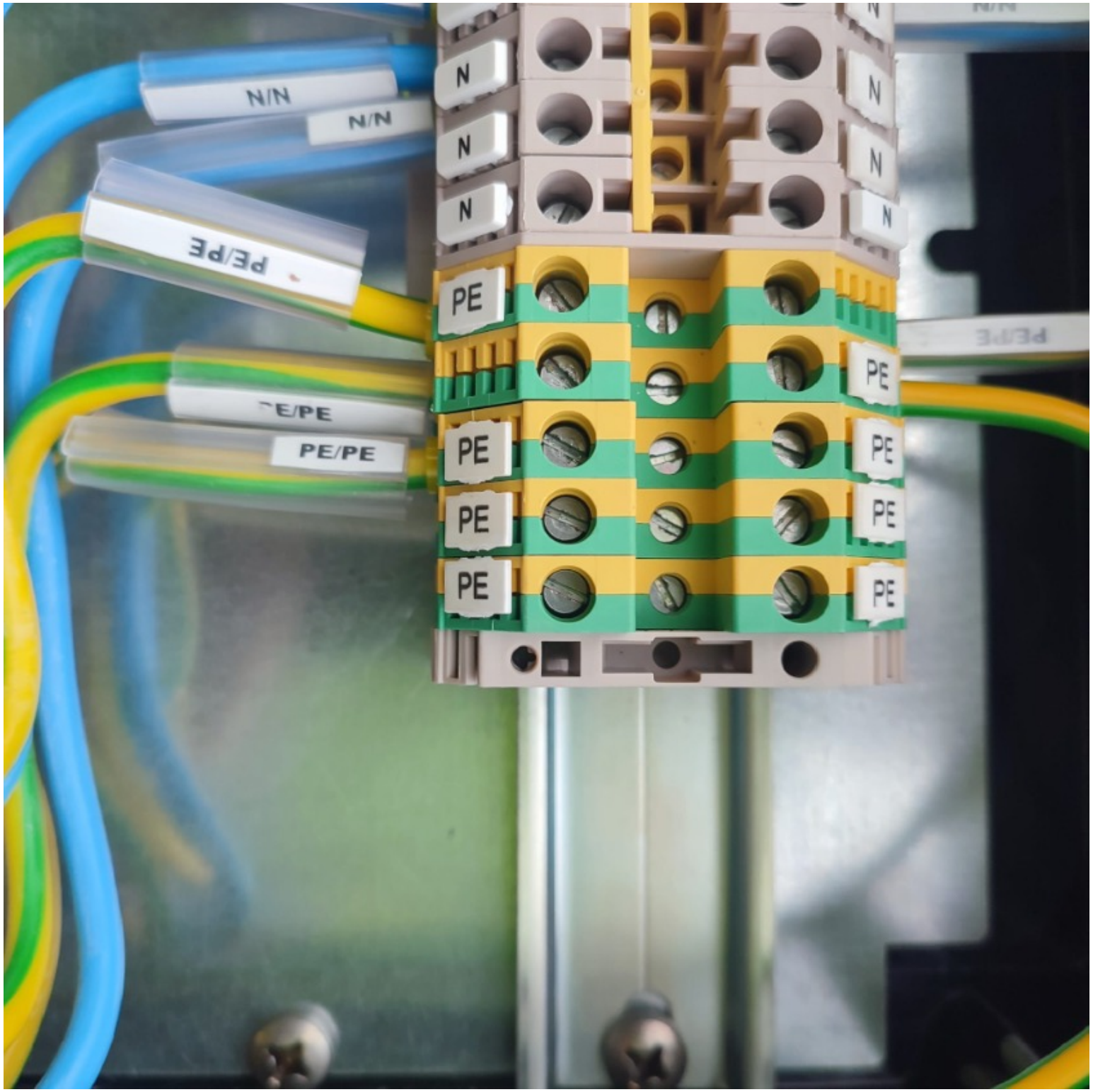
5 - CLEARANCE CHECK

Installed

Name: Eleonora Carotenuto
Date: 2025-06-10
Signature:

6- CLEARANCE APPROVAL

Name:
Date: 2025-06-10
Signature:


N/N
N/N
PE/PE
PE/PE
N
N
N
N
N
N
PE
PE
PE
PE
PE
PE
PE
PE

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003641

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000618	1.4 Discipline	Electrical
1.2 Item	P-ETB-200N1-17-L1-01		Lighting & Small Power DB BoP / Trace Heating - Process Lines - Feeder 4
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

Missing SS cable tag side the (ETB-200N1-17-L1-01)..

Name: Giovanni Tangianu

Date: 2025-02-10

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	2025-02-10
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:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003642

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000618	1.4 Discipline	Electrical
1.2 Item	P-ETB-200N1-17-L1-01		Lighting & Small Power DB BoP / Trace Heating - Process Lines - Feeder 4
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

Missing earthing lug on the cableglande .Side ETB-200N1-17-L1-01 see doc.123A90-FDL-EL-DD-20090 page 10. See atttached photo.

Name: Giovanni Tangianu
Date: 2025-02-11
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	2025-02-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu
Date: 2025-02-11
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:


23-1-73
FLANGE TAG
23-1-73
FLANGE TESTED

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003643

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002367	1.4 Discipline	Electrical
1.2 Item	P-ETB-200N1-17-L1-04		TRACE HEATING - PROCESS LINES - FEEDER 4 (WW LINES & LT) Cold JB / TRACE HEATING - PROCESS LINE (WW 259) JB
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

Missing earthing lug on the cableglande .SideETB-200N1-17-L1-04 see doc.123A90-FDL-EL-DD-20090 page 10. See atttached photo.

Name: Giovanni Tangianu
Date: 2025-02-11
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	2025-02-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu
Date: 2025-02-11
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:


ETB-200N1-17-L1-04

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003644

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002442	1.4 Discipline	Electrical
1.2 Item	P-ETB-200N1-17-L1-02		TRACE HEATING - INSTRUMENT - 43-LT-003 Hot JB/TRACE HEATING - PROCESS LINES - (WW LINES) Hot JB
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

Missing earthing lug on the cableglande .Side ETB-200N1-17-L1-02 see doc.123A90-FDL-EL-DD-20090 page 10. See atttached photo.

Name: Giovanni Tangianu
Date: 2025-02-11
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	2025-02-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu
Date: 2025-02-11
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:


ETB-200N1-17-L1-02

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004052

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002443	1.4 Discipline	Electrical
1.2 Item	P-ETB-200N1-17-L1-03		TRACE HEATING - PROCESS LINES - 4 (WW LINES) Hot JB/TRACE HEATING - PROCESS LINES - (WW LINES) Hot JB
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

Missing SS cable tag on the cable.See attached photo.

Name: Giovanni Tangianu

Date: 2025-02-20

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	2025-02-20
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-02-28

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


ETB-200N1-17-L1-03

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001147

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002057	1.4 Discipline	Electrical
1.2 Item	P-EJB-200N1-17-L1-01		Lighting & Small Power DB BoP / TRACE HEATING - FEEDER 4 (WW LINES) Cold JB
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

Missing core identification tags JB side

Name: Paolo Schintu

Date: 2024-12-03

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	2024-12-03
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Paolo Schintu

Date: 2024-12-11

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001148

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002057	1.4 Discipline	Electrical
1.2 Item	P-EJB-200N1-17-L1-01		Lighting & Small Power DB BoP / TRACE HEATING - FEEDER 4 (WW LINES) Cold JB
1.3 Subsystem	83-65		Electrical Heat Tracing

2 - OBSERVATION

Missing SS cable tags

Name: Paolo Schintu

Date: 2024-12-03

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	2024-12-03
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Paolo Schintu

Date: 2025-02-04

Signature:

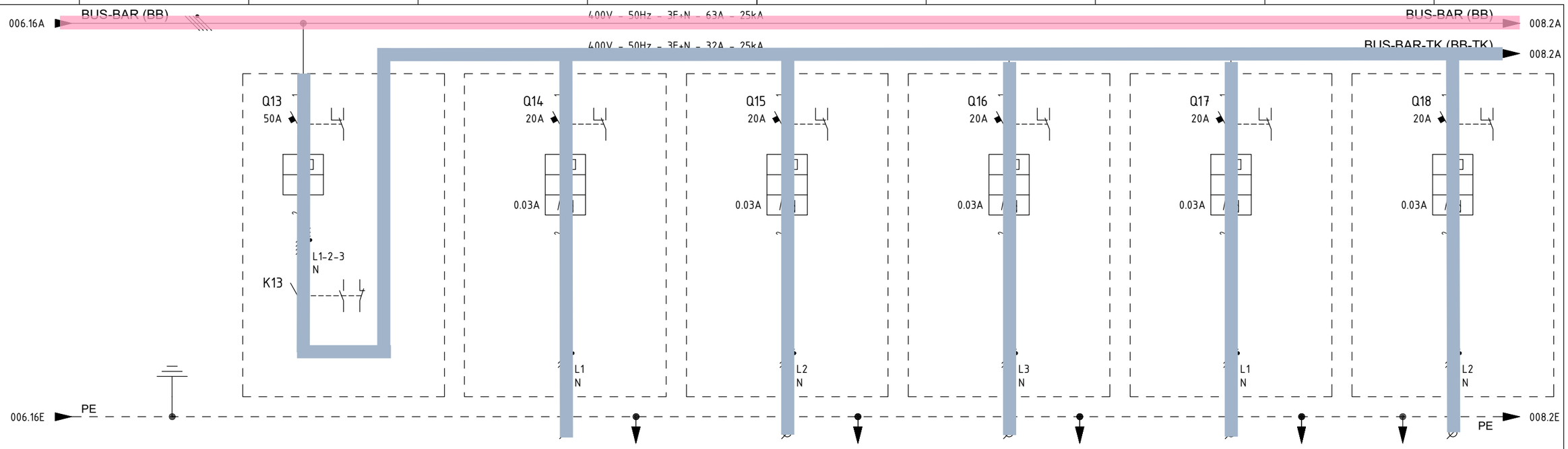
6- CLEARANCE APPROVAL

Name:

Date:

Signature:

Section 3 SYSTEM,SUB-SYSTEM LIMIT DRAWINGS



ITEM			1	-	ETB-200N1-14-L1-01	ETB-200N1-15-L2-01	ETB-200N1-16-L3-01	ETB-200N1-17-L1-01	ETB-200N1-18-L2-01
UTILITY			2	TRACE HEATING MAIN C.B.	TRACE HEATING - PROCESS LINES - FEEDER 1 (SWS LINES)	TRACE HEATING - PROCESS LINES - FEEDER 2 (CI LINES)	TRACE HEATING - PROCESS LINES - FEEDER 3 (DM LINE)	TRACE HEATING - PROCESS LINES - FEEDER 4 (WW LINES)	TRACE HEATING - PROCESS LINES - FEEDER 5 (VASSEL KO DRUM)
CUBICLE			3	+02	+02	+02	+02	+03	+03
RATED POWER | RATED CURRENT			4/5	34.6 KW | 50 A	3.5 KW | 15.22 A	3.5 KW | 15.22 A	3.5 KW | 15.22 A	3.5 KW | 15.22 A	3.5 KW | 15.22 A
TYPICAL FUNCTIONAL			6	-	-	-	-	-	-
CIRCUIT BREAKER (ABB)	TYPE		7	S804C-C50	S302P-C20 + DDA202 AC-25/0.03	S302P-C20 + DDA202 AC-25/0.03	S302P-C20 + DDA202 AC-25/0.03	S302P-C20 + DDA202 AC-25/0.03	S302P-C20 + DDA202 AC-25/0.03
	VERSION		8	4P / MINIATURE	2P / MINIATURE	2P / MINIATURE	2P / MINIATURE	2P / MINIATURE	2P / MINIATURE
	TRIP UNITS		9	In=50A - curve C	In=20A - Curve C / Id=0.03A Class AC	In=20A - Curve C / Id=0.03A Class AC	In=20A - Curve C / Id=0.03A Class AC	In=20A - Curve C / Id=0.03A Class AC	In=20A - Curve C / Id=0.03A Class AC
	Icu KA		10	25kA	25kA	25kA	25kA	25kA	25kA
OVERLOAD	L	Range A	11	-	-	-	-	-	-
		Range t	12	-	-	-	-	-	-
SEL. SHORT-CIRCUIT	S	Range A	13						
		Range t	14	SUB SYSTEM 83-65	SUBSYSTEM 83-65	SUBSYSTEM 83-65	SUBSYSTEM 83-65	SUBSYSTEM 83-65	SUBSYSTEM 83-65
INST. SHORT-CIRCUIT	I	Range A	15						
		Range t	16						
EARTH FAULT PROTECTION	G	Range A	17	-	-	-	-	-	-
		Range t	18	-	-	-	-	-	-
CONTACTOR (ABB)			19	ESB63-40N-06; 4x63A AC1; Vaux=230Vdc/ac	-	-	-	-	-
THERMAL OVERLOAD RELAY (ABB)			20	-	-	-	-	-	-
SURGE ARRESTERS (DHENN)			21	-	-	-	-	-	-
TOROIDAL CURRENT TRANSFORMER (FRER)			22	-	-	-	-	-	-
FUSE HOLDER (ABB)			23	-	-	-	-	-	-
TWILIGHT SWITCH (ABB)			24	-	-	-	-	-	-
VOLTMETER (FRER)			25	-	-	-	-	-	-
CURRENT TRANSFORMER FOR MEASURE (FRER)	TYPE		26	-	-	-	-	-	-
	PERFORMANCE/CLASS		27	-	-	-	-	-	-
VOLTAGE TRANSFORMER FOR MEASURE (FRER)	TYPE		28	-	-	-	-	-	-
	PERFORMANCE/CLASS		29	-	-	-	-	-	-
POWER TERM. BLOCK (CABUR)		Type/mm²	30	-	SCREW / 6	SCREW / 6	SCREW / 6	SCREW / 6	SCREW / 6
POWER CONDUCTOR		mm²	31	-	3G6	3G6	3G6	3G6	3G6

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
3	05/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for construction (AFC)
2	24/04/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
1	15/03/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
0	08/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

DWG n° : 231298/SD/13
Item n° : PF1002888/101

IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : "DP-200N1"

SINGLE LINE DIAGRAM

Single Line Drawing

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

SCALE : NTS

A3

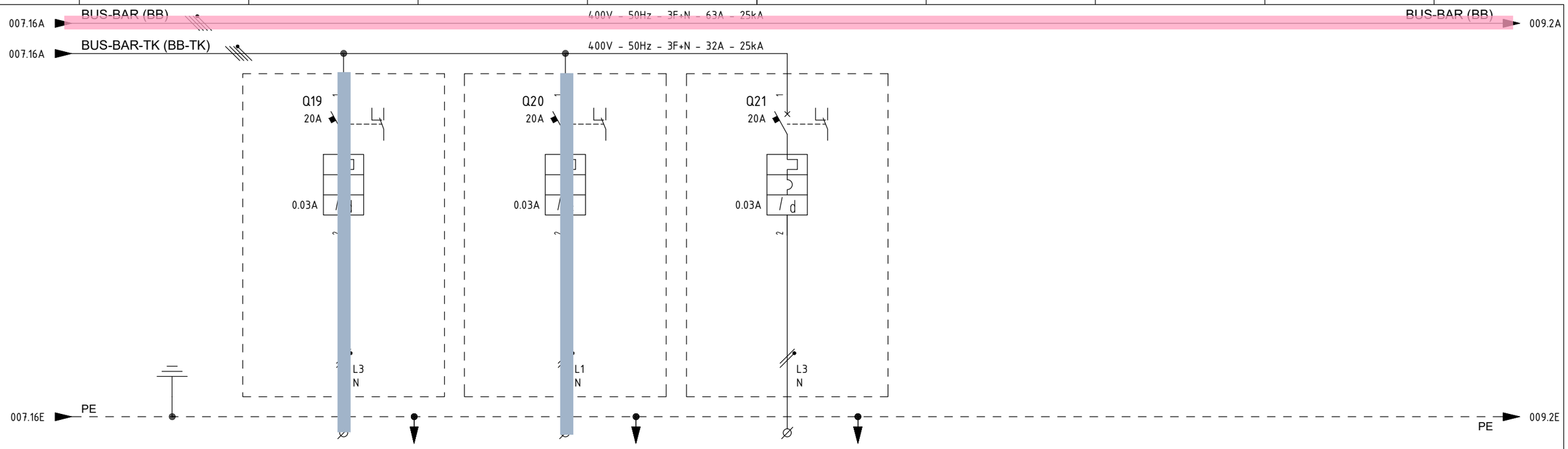
DRAWING NO. 1723002197-EL-DG-00013

SHEET 007

REV. 03

File Name : 1723002197-EL-DG-00013 Rev. 03

F.to UNI A3: 420mmx297mm



ITEM			1	ETB-200N1-19-L3-01		ETB-200N1-20-L1-01		-				
UTILITY			2	TRACE HEATING - PROCESS LINES - FEEDER 6 (H2 VENT)		TRACE HEATING - PROCESS LINES - FEEDER 7 (SEA WATER PUMPS)		TRACE HEATING - SPARE				
CUBICLE			3	+03		+03		+03				
RATED POWER | RATED CURRENT			4/5	2.5 KW	10.87 A	2.5 KW	10.87 A	3.5 KW	15.22 A			
TYPICAL FUNCTIONAL			6	-		-		-				
CIRCUIT BREAKER (ABB)	TYPE		7	S302P-C20 + DDA202 AC-25/0.03		S302P-C20 + DDA202 AC-25/0.03		S302P-C20 + DDA202 AC-25/0.03				
	VERSION		8	2P / MINIATURE		2P / MINIATURE		2P / MINIATURE				
	TRIP UNITS		9	In=20A - Curve C / Id=0.03A Class AC		In=20A - Curve C / Id=0.03A Class AC		In=20A - Curve C / Id=0.03A Class AC				
	Icu	KA	10	25kA		25kA		25kA				
OVERLOAD	L	Range A	11	-		-		-				
		Range t	12	-		-		-				
SEL. SHORT-CIRCUIT	S	Range A	13	-		-		-				
		Range t	14	-		-		-				
INST. SHORT-CIRCUIT	I	Range A	15	-		-		-				
		Range t	16	-		-		-				
EARTH FAULT PROTECTION	G	Range A	17	-		-		-				
		Range t	18	-		-		-				
CONTACTOR (ABB)			19	-		-		-				
THERMAL OVERLOAD RELAY (ABB)			20	-		-		-				
SURGE ARRESTERS (DHENN)			21	-		-		-				
TOROIDAL CURRENT TRANSFORMER (FRER)			22	-		-		-				
FUSE HOLDER (ABB)			23	-		-		-				
TWILIGHT SWITCH (ABB)			24	-		-		-				
VOLTMETER (FRER)			25	-		-		-				
CURRENT TRANSFORMER FOR MEASURE (FRER)	TYPE		26	-		-		-				
	PERFORMANCE/CLASS		27	-		-		-				
VOLTAGE TRANSFORMER FOR MEASURE (FRER)	TYPE		28	-		-		-				
	PERFORMANCE/CLASS		29	-		-		-				
POWER TERM. BLOCK (CABUR)		Type/mm²	30	SCREW / 6		SCREW / 6		SCREW / 6				
POWER CONDUCTOR		mm²	31	3G6		3G6		-				

SUBSYSTEM 83-65

SUBSYSTEM 83-65

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

DWG n° : 231298/SD/13

Item n° : PF1002888/101

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
3	05/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for construction (AFC)
2	24/04/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
1	15/03/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
0	08/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

TITLE : "DP-200N1"

SINGLE LINE DIAGRAM

Single Line Drawing

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00013

SHEET 008

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00013 Rev. 03

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: 83-65 & process: MC & discipline : E

Electrical	83-65 Electrical Heat Tracing						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
EAT-200N1-01	Trace Heating Remote Ambient Thermostat	ONSHORE	C10004598	CPX31	100	2025-01-24	RFC 1
EHT-1001-A	Heat Tracing Tape	ONSHORE	C10004632	CPX22A	100	2025-02-24	RFC 1
		ONSHORE	C10004647	CPX22B	100	2025-03-28	RFC 1
EHT-1002-A	Heat Tracing Tape	ONSHORE	C10004633	CPX22A	100	2025-02-28	RFC 1
		ONSHORE	C10004648	CPX22B	100	2025-04-02	RFC 1
EHT-1003-A	Heat Tracing Tape	ONSHORE	C10004634	CPX22A	100	2025-03-12	RFC 1
		ONSHORE	C10004649	CPX22B	100	2025-04-02	RFC 1
EHT-1004-A	Heat Tracing Tape	ONSHORE	C10004635	CPX22A	100	2025-02-13	RFC 1
		ONSHORE	C10004650	CPX22B	100	2025-03-25	RFC 1
EHT-1004-B	Heat Tracing Tape	ONSHORE	C10004636	CPX22A	100	2025-02-13	RFC 1
		ONSHORE	C10004651	CPX22B	100	2025-03-25	RFC 1
EHT-1005-A	Heat Tracing Tape	ONSHORE	C10004637	CPX22A	100	2025-02-13	RFC 1
		ONSHORE	C10004652	CPX22B	100	2025-03-25	RFC 1
EHT-1006-A	Heat Tracing Tape	ONSHORE	C10004638	CPX22A	100	2025-02-20	RFC 1
		ONSHORE	C10004653	CPX22B	100	2025-04-02	RFC 1
EHT-1007-A	Heat Tracing Tape	ONSHORE	C10004639	CPX22A	100	2025-03-07	-
		ONSHORE	C10004654	CPX22B	100	2025-03-28	-
		OFFSHORE	C10004934	CPX22A	0	-	-
		OFFSHORE	C10004935	CPX22B	0	-	-
EHT-2002-A	Heat Tracing Tape	ONSHORE	C10004640	CPX22A	100	2025-02-13	RFC 1
		ONSHORE	C10004655	CPX22B	100	2025-03-25	RFC 1
EJB-200N1-14-L1-01	HEAT TRACING - PROCESS LINES - FEEDER 1 (SWS LINES) Cold JB	ONSHORE	C10002069	CPX31	100	2024-12-16	RFC 1
EJB-200N1-15-L2-01	HEAT TRACING - PROCESS LINES - FEEDER 2 (CI LINES) Cold JB	ONSHORE	C10002070	CPX31	100	2024-12-16	RFC 1
EJB-200N1-17-L1-01	HEAT TRACING - PROCESS LINES (WW LINES & LT) Cold JB	ONSHORE	C10002075	CPX31	100	2025-02-10	RFC 1
EJB-200N1-20-L1-01	HEAT TRACING - PROCESS LINES - FEEDER 7 (SEA WATER PUMPS) Cold JB	ONSHORE	C10004599	CPX31	100	2025-02-24	RFC 1
ETB-200N1-14-L1-01	HEAT TRACING - PROCESS LINES - FEEDER 1 (Pipe Line)	ONSHORE	C10004600	CPX31	100	2025-03-12	RFC 1
ETB-200N1-15-L2-01	HEAT TRACING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB	ONSHORE	C10004601	CPX31	100	2025-02-28	RFC 1
ETB-200N1-15-L2-02	TRACE HEATING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB	ONSHORE	C10004602	CPX31	100	2025-03-06	RFC 1
ETB-200N1-16-L3-01	HEAT TRACING - PROCESS LINES - FEEDER 3 (DM-001)	ONSHORE	C10004603	CPX31	100	2025-02-25	RFC 1

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 83-65 & process: MC & discipline : E

Electrical	83-65 Electrical Heat Tracing						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
ETB-200N1-17-L1-01	HEAT TRACING - INSTRUMENT - 43-LT-003 Hot JB	ONSHORE	C10004604	CPX31	100	2025-02-20	RFC 1
ETB-200N1-20-L1-01A	HEAT TRACING - PROCESS LINES - FEEDER 7 (SEA WATER PUMPS)	OFFSHORE	C10004610	CPX31	0	-	-
ETB-200N1-20-L1-01B	HEAT TRACING - PROCESS LINES - FEEDER 7 (SEA WATER PUMPS)	OFFSHORE	C10004611	CPX31	0	-	-
P-EAT-200N1-01	LV 0,4 / 0,23 kV Distribution Switchgear/Trace Heating Remote Ambient Thermostat	ONSHORE	C10004656	CPX09	100	2025-01-21	RFC 1
P-EAT-200N1-02	Trace Heating Remote Ambient Thermostat/LV 0,4 / 0,23 kV Distribution Switchgear	ONSHORE	C10004666	CPX09	100	2025-01-21	RFC 1
P-EJB-200N1-14-L1-01	Lighting & Small Power DB BoP / TRACE HEATING - FEEDER 1 (SWS LINES) Cold JB	ONSHORE	C10002054	CPX09	100	2024-12-03	RFC 1
P-EJB-200N1-15-L2-01	Lighting & Small Power DB BoP / TRACE HEATING - FEEDER 2 (CI LINES) Cold JB	ONSHORE	C10002055	CPX09	100	2024-12-03	RFC 1
P-EJB-200N1-17-L1-01	Lighting & Small Power DB BoP / TRACE HEATING - FEEDER 4 (WW LINES) Cold JB	ONSHORE	C10002057	CPX09	100	2024-12-03	RFC 1
P-ETB-200N1-14-L1-01	Lighting & Small Power DB BoP / Trace Heating - Process Lines - Feeder 1	ONSHORE	C10000615	CPX09	100	2025-03-08	RFC 1
P-ETB-200N1-15-L2-01	Lighting & Small Power DB BoP / Trace Heating - Process Lines - Feeder 2	ONSHORE	C10000616	CPX09	100	2025-03-06	RFC 1
P-ETB-200N1-15-L2-02	TRACE HEATING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB/TRACE HEATING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB	ONSHORE	C10002056	CPX09	100	2025-03-06	RFC 1
P-ETB-200N1-16-L3-01	Lighting & Small Power DB BoP / Trace Heating - Process Lines - Feeder 3	ONSHORE	C10000617	CPX09	100	2025-02-25	RFC 1
P-ETB-200N1-17-L1-01	Lighting & Small Power DB BoP / Trace Heating - Process Lines - Feeder 4	ONSHORE	C10000618	CPX09	100	2025-02-10	RFC 1
P-ETB-200N1-17-L1-02	TRACE HEATING - INSTRUMENT - 43-LT-003 Hot JB/TRACE HEATING - PROCESS LINES - (WW LINES) Hot JB	ONSHORE	C10002442	CPX09	100	2025-02-10	RFC 1
P-ETB-200N1-17-L1-03	TRACE HEATING - PROCESS LINES - 4 (WW LINES) Hot JB/TRACE HEATING - PROCESS LINES - (WW LINES) Hot JB	ONSHORE	C10002443	CPX09	100	2025-02-20	RFC 1
P-ETB-200N1-17-L1-04	TRACE HEATING - PROCESS LINES - FEEDER 4 (WW LINES & LT) Cold JB / TRACE HEATING - PROCESS LINE (WW 259) JB	ONSHORE	C10002367	CPX09	100	2025-02-10	RFC 1
P-ETB-200N1-19-L3-01	Lighting & Small Power DB BoP / Trace Heating - Vent - Feeder 6	ONSHORE	C10000620	CPX09	100	2025-03-06	RFC 1
P-ETB-200N1-20-L1-01	Lighting & Small Power DB BoP / Trace Heating - V-43001 Vessel - Feeder 7	ONSHORE	C10000621	CPX09	100	2025-02-24	RFC 1
P-ETB-200N1-20-L1-02	HEAT TRACING - PROCESS LINES - FEEDER 7 (SEA WATER PUMPS) Cold JB/HEAT TRACING - PROCESS LINES - FEEDER 7 (SEA WATER PUMPS)	ONSHORE	C10004659	CPX09	100	2025-02-26	-
		OFFSHORE	C10004932	CPX09	0	-	-
P-ETB-200N1-20-L1-03	HEAT TRACING - PROCESS LINES - FEEDER 7 (SEA WATER PUMPS) Cold JB/HEAT TRACING - PROCESS LINES - FEEDER 7 (SEA WATER PUMPS)	ONSHORE	C10004660	CPX09	100	2025-02-26	-
		OFFSHORE	C10004933	CPX09	0	-	-

ITEM	Tag	P-ETB-200N1-14-L1-01	: Lighting & Small Power DB BoP / Trace Heating - Process Lines - Feeder 1			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10000615		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

CABLE DATA

Type: Cu Cl.2/EPR/LSZH | Cores/Size mm²: 3G6 mm2 | Color: GREY

From: EJB-200N1-14-L1-01 | To: ETB-200N1-14-L1-01

1	Confirm cable is as specified in project cable schedule	OK
2	Visual Check cable physical integrity.	OK
3	Check is installed in accordance with layout drawing (segregation, distance…).	OK
4	Check cable is supported and fixed to rack according to project specification.	PL
5	Check bending radius is within the specified limits.	OK
6	Confirm cable glands suit for cable type, correctly mounted and tightened.	OK
7	Check gland plate for single core cables is non ferrous (non -magnetic).	NA
8	Confirm cable labelling is in accordance with specifications.	PL
9	Check cable is correctly loomed and segregated in accordance with specification.	OK
10	Check cable earthing against lastest drawings.	OK
11	Check cores marking are in accordance with termination diagram	OK
12	Check terminations are in accordance with latest termination diagram	OK
13	If required produce Red Line Mark Up for "AS BUILT"	

REFER TO FINAL SHEET FOR ACCEPTANCE

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	P-ETB-200N1-14-L1-01	: Lighting & Small Power DB BoP / Trace Heating - Process Lines - Feeder 1			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10000615		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

	CONTINUITY			
5	CORE CONTINUITY Ω	PH 1	0.2	
6		PH 2	0.2	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		0.2	
	INSULATION			
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	>999	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

TESTING INSTRUMENTS USED

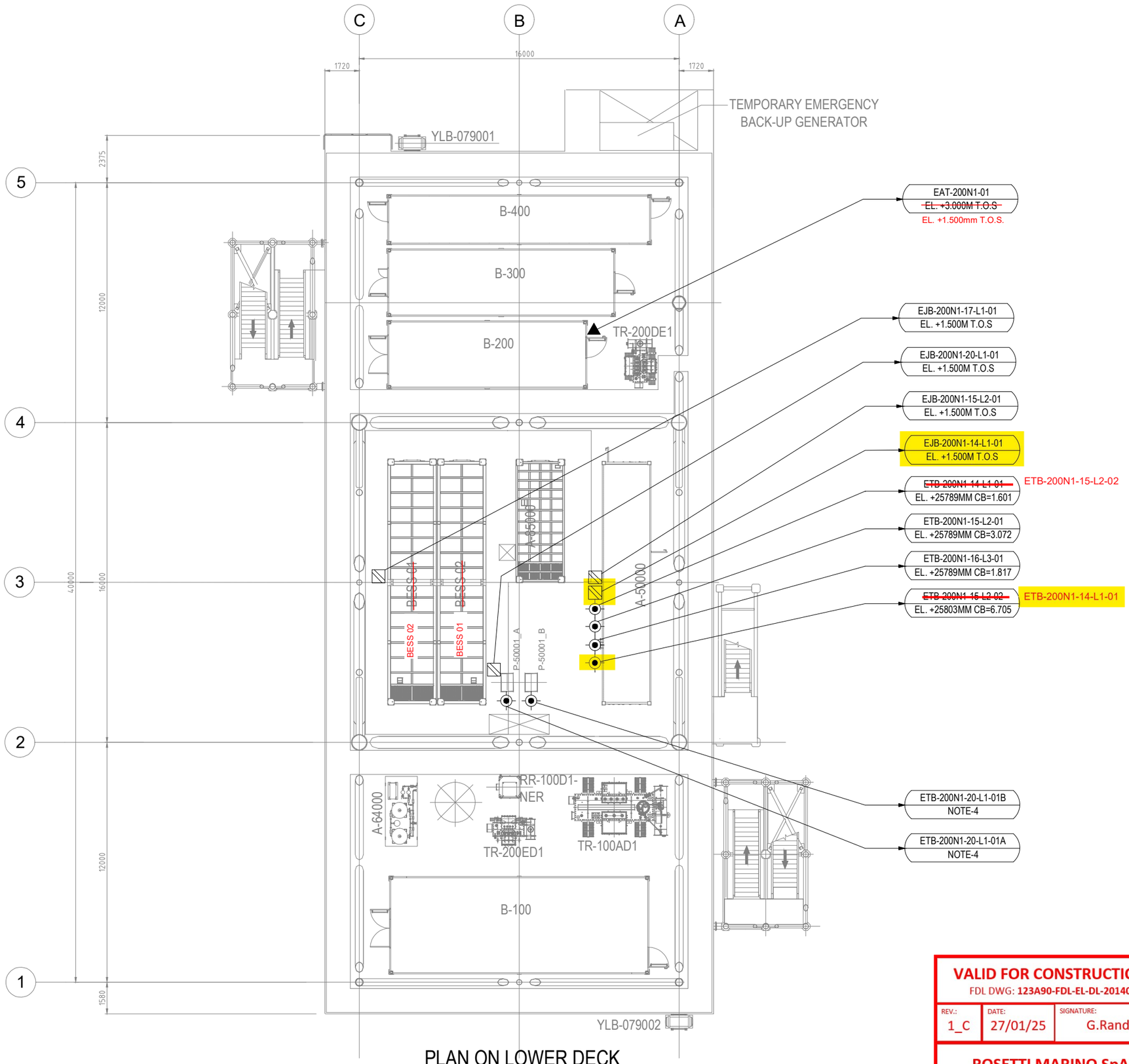
TYPE / SERIAL N° :	VOLCRAFT 1000V - ET-200 S/N:H240103023	TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207
Calibration certificate N° and date:	N°LAT 042 00768/24 _ 12/10/2024	Calibration certificate N° and date:	N°7722/24 _ 10/07/2024

Comments: Nota 4: refer to PL C30000679

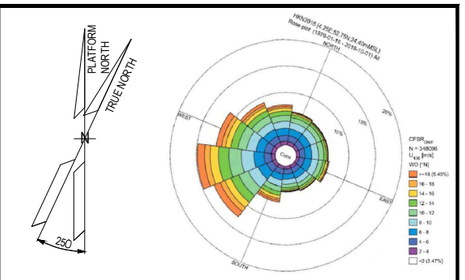
	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-18	2025-03-08	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-18T09:37:05.204Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-03-08T07:21:22.075Z	

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

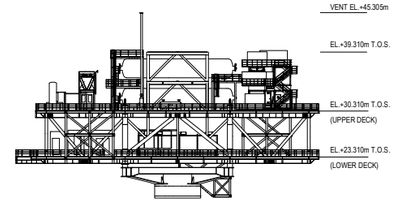
LEGEND

- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_C	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

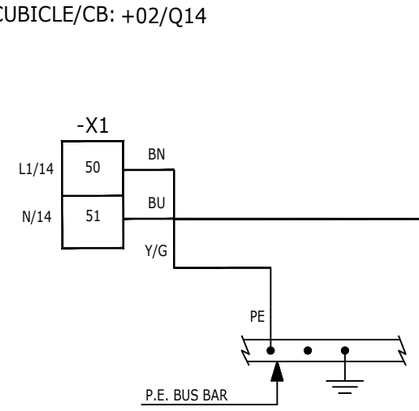
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 1of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

FROM	TO

DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1

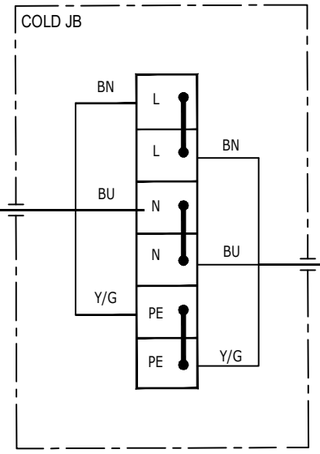
CUBICLE/CB: +02/Q14



P-EJB-200N1-14-L1-01
3G6 mm²

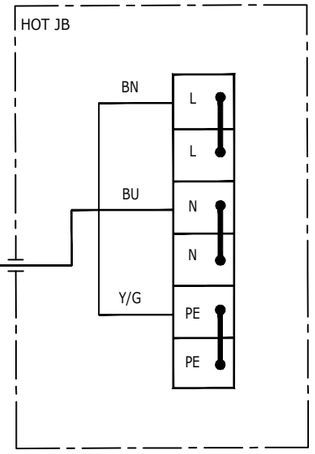
DESCRIPTION: TRACE HEATING - PROCESS LINES
- FEEDER 1 (SWS LINES)

TAG NUMBER: EJB-200N1-14-L1-01



P-ETB-200N1-14-L1-01
3G6 mm²

TAG NUMBER: ETB-200N1-14-L1-01
FOR PIPE LINE: SWS-35



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_K	12/02/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
TRACE HEATING PROCESS LINES

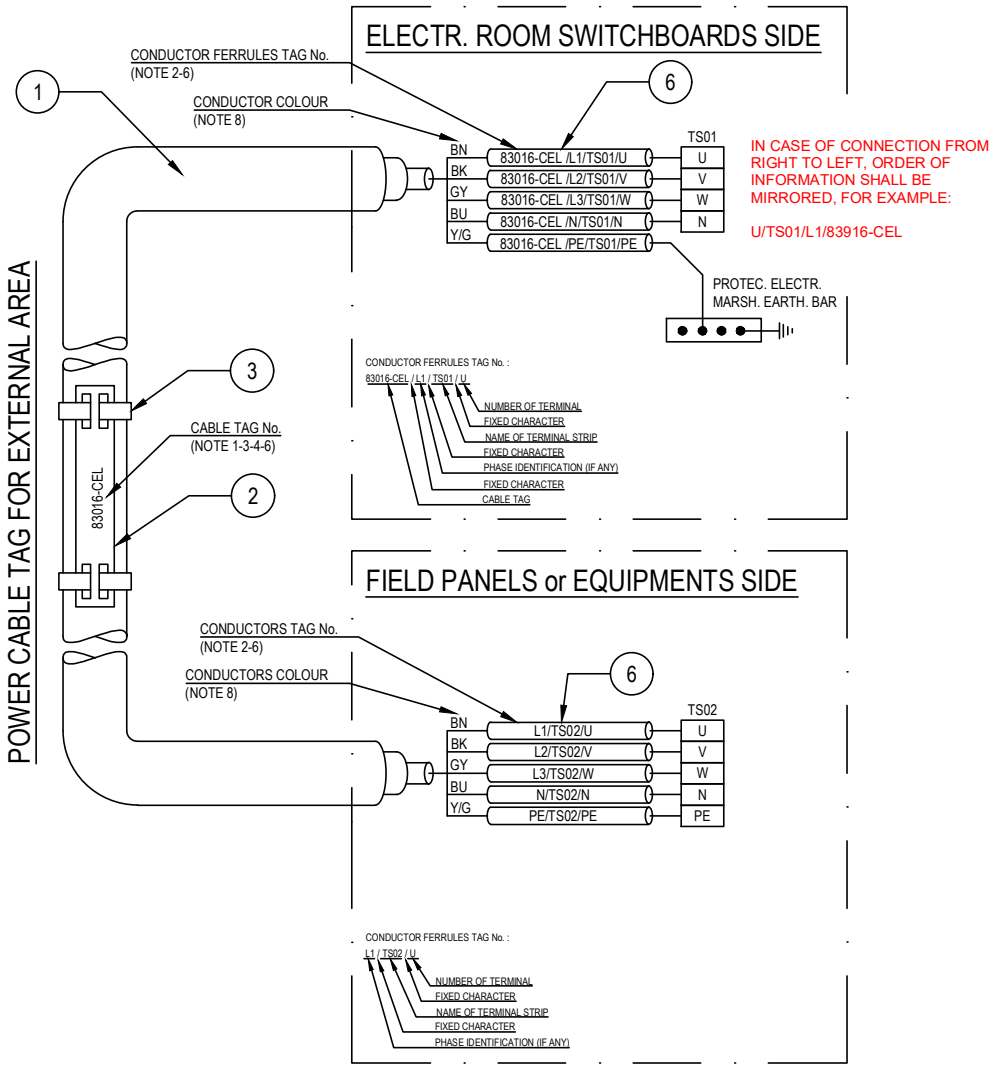
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-EL-DG-20149	048	02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

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.

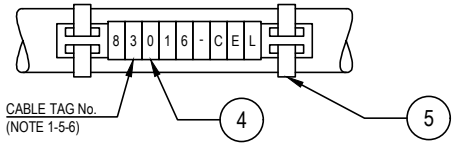
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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_D	20/12/24	V.Ramponi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

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. 123A90-DDL-EL-DD-20092 | SHEET 007 | REV. 02

F.to UNI A3: 420mmx297mm

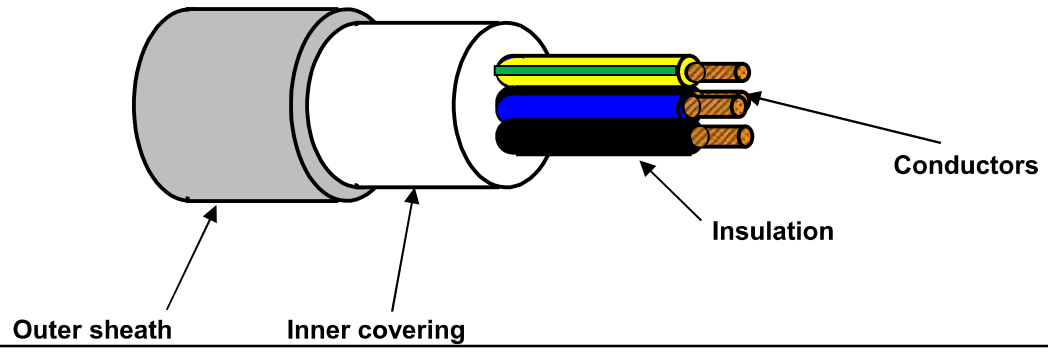
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Secti	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Stand	From Gland	From Entry	From Fitti	To Gland	To Entry	To Fitting	Routing	Routing Manual
P-ETB-200N1-14-L1-01	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						EJB-200N1-14-L1-01	HEAT TRACING - PROCESS LINES - FEEDER 1 (SWS LINES) Cold JB	Lower Deck	Heat Tracing Cold JB	ETB-200N1-14-L1-01	HEAT TRACING - PROCESS LINES - FEEDER 1 (Pipe Line)	Lower Deck		ELECV05-3G6	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 3G6mm² - Grey	M25	T1_M25_Single			T1_M25_Single				L-150-101-LVT-146 / L-150-101-LVT-139

FLEI s.r.l.

Cu Cl.2/EPR/LSZH 0,6/1 KV

3G6 - L.V. POWER CABLE - Flame Retardant



TECHNICAL FEATURES

Conductors :	**STRANDED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	EPR compound, quality to IEC 60092.360, Nominal Thickness 1,0 mm	
Cores colour code :	**Brown - Blue - Yellow/Green**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not Required	
Total Assembling :	Cores layed up with optimal lay length	
Overall Wrapping:	Not required	
Drain wire :	Not required	
Overall Shield:	Not required	
Inner covering :	Extruded LSZH compound, Average Thickness 1,0 mm	
Inner covering color code:	**Black or Natural**	
Armour :	Not required	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,2 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 3G6 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 -**	
	Year of Manufacture - CE + Meter Marking	
Outer diameter :	(15,6 ± 10%) mm	
Bending radius :	cable outer diameter x 10	(in fixed installation)
Voltage test :	3,5 kV a.c. for 5' (Between Cores)	
Conductors DC Resistance :		IEC 60228 Class 2
Insulation Resistance :	≥ 770 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.353**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance	IEC 61034.2 (LT ≥ 60%)	
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 covering together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	29/03/2024	Messa			
Checked :	29/03/2024	Spaccasassi			
Approved :	29/03/2024	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.

ITEM	Tag	P-ETB-200N1-15-L2-01	: Lighting & Small Power DB BoP / Trace Heating - Process Lines - Feeder 2			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10000616		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

CABLE DATA

Type Cu Cl.2/EPR/LSZH Cores/Size mm² 3G6 mm2 Color GREY

From EJB-200N1-15-L2-01 To ETB-200N1-15-L2-01

1	Confirm cable is as specified in project cable schedule	OK
2	Visual Check cable physical integrity.	OK
3	Check is installed in accordance with layout drawing (segregation, distance…).	OK
4	Check cable is supported and fixed to rack according to project specification.	Note
5	Check bending radius is within the specified limits.	OK
6	Confirm cable glands suit for cable type, correctly mounted and tightened.	OK
7	Check gland plate for single core cables is non ferrous (non -magnetic).	NA
8	Confirm cable labelling is in accordance with specifications.	PL
9	Check cable is correctly loomed and segregated in accordance with specification.	OK
10	Check cable earthing against lastest drawings.	OK
11	Check cores marking are in accordance with termination diagram	OK
12	Check terminations are in accordance with latest termination diagram	OK
13	If required produce Red Line Mark Up for "AS BUILT"	

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	P-ETB-200N1-15-L2-01	: Lighting & Small Power DB BoP / Trace Heating - Process Lines - Feeder 2			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10000616		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

	CONTINUITY			
5	CORE CONTINUITY Ω	PH 1	0.2	
6		PH 2	0.2	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		0.2	
	INSULATION			
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	>999	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

TESTING INSTRUMENTS USED

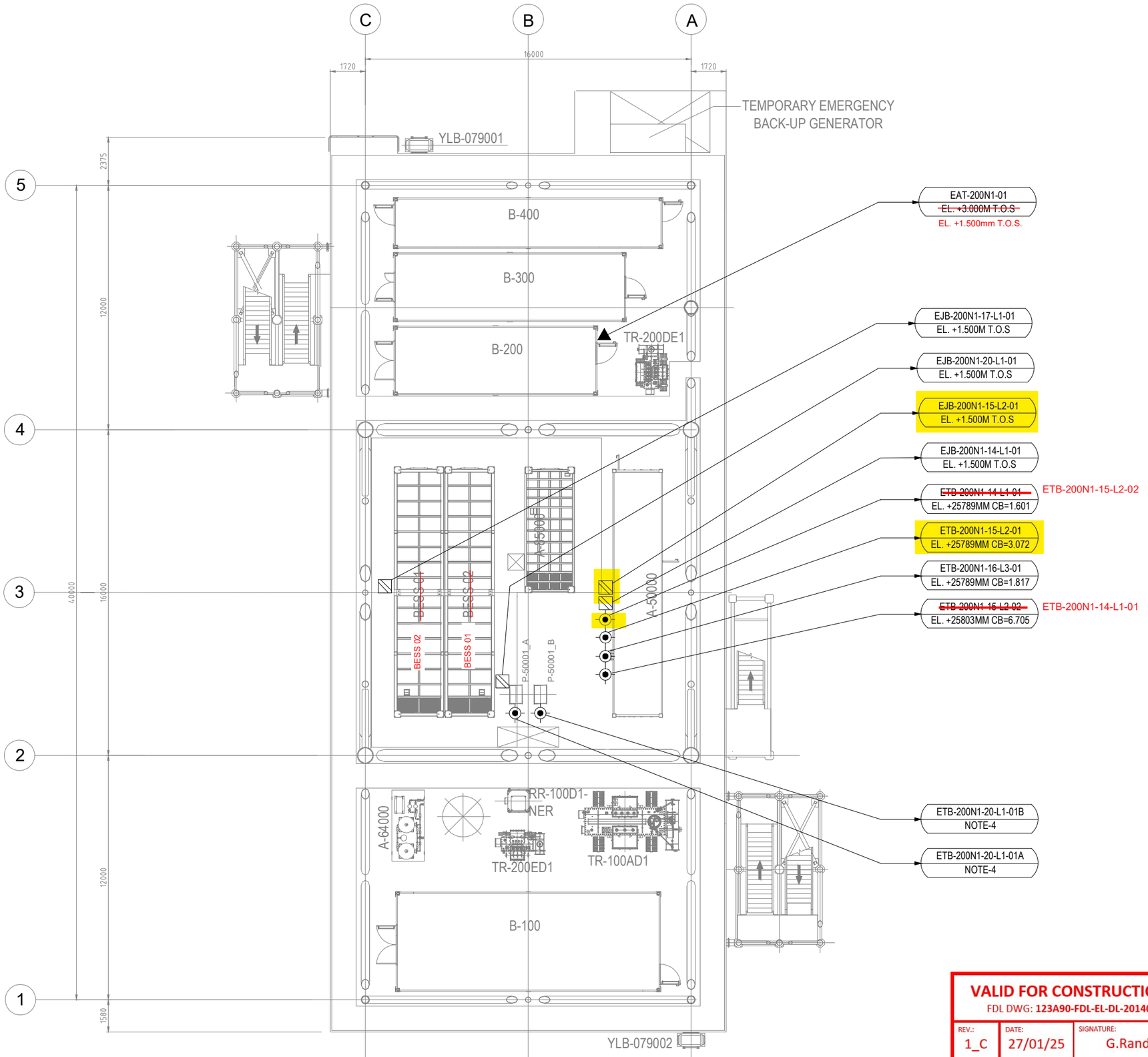
TYPE / SERIAL N° :	VOLCRAFT 1000V - ET-200 S/N:H240103023	TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207
Calibration certificate N° and date:	N°LAT 042 00768/24 _ 12/10/2024	Calibration certificate N° and date:	N°7722/24 _ 10/07/2024

Comments: Nota 4: refer to PL C30000679

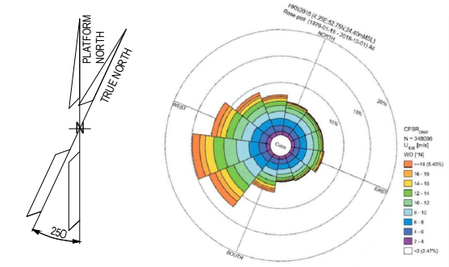
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-18	2025-03-06	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-18T09:37:16.542Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-03-06T13:33:43.670Z	

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

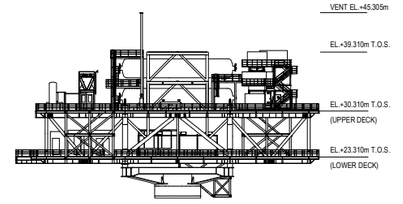
LEGEND

- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_C	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

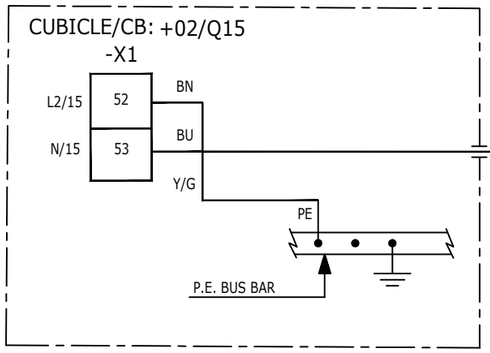
TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 1of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

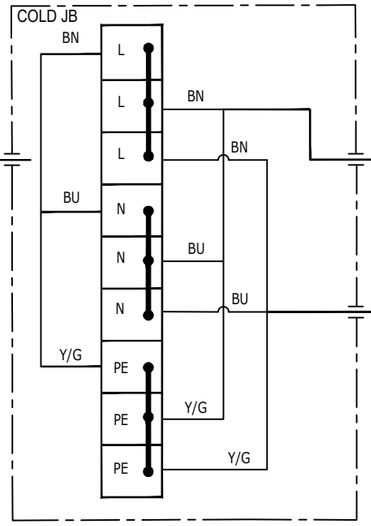
FROM	TO

DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1



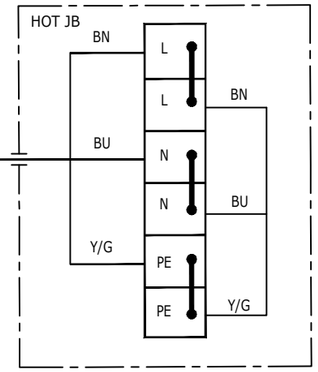
P-EJB-200N1-15-L2-01
3G6 mm²

DESCRIPTION: TRACE HEATING - PROCESS LINES
- FEEDER 2 (CI LINES)
TAG NUMBER: EJB-200N1-15-L2-01



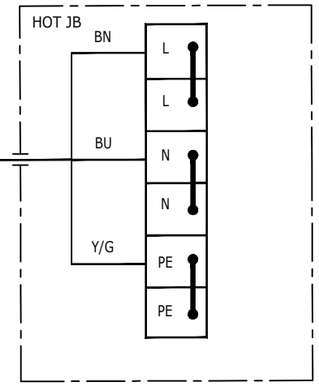
P-ETB-200N1-15-L2-01
3G6 mm²

TAG NUMBER: ETB-200N1-15-L2-01
FOR PIPE LINE: CI-029

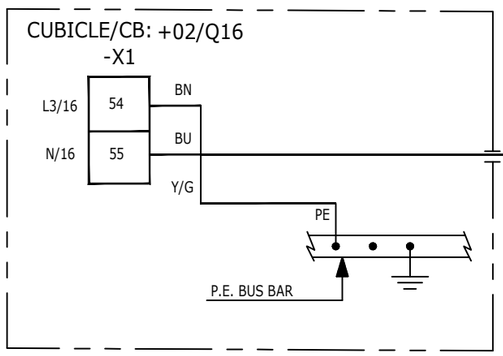


P-ETB-200N1-15-L2-02
3G6 mm²

TAG NUMBER: ETB-200N1-15-L2-02
FOR PIPE LINE: CI-043

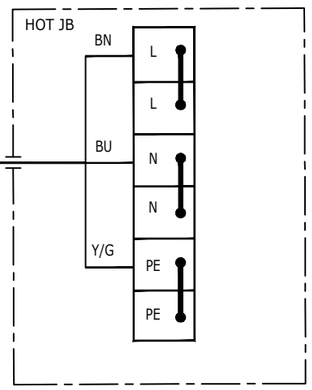


DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1



P-ETB-200N1-16-L3-01
3G6 mm²

DESCRIPTION: TRACE HEATING
PROCESS LINES - FEEDER 3 (DM 001)
TAG NUMBER: ETB-200N1-16-L3-01



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_K	12/02/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
TRACE HEATING PROCESS LINES

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

SCALE : 1:X

A3

DRAWING NO. 123A90-DDL-EL-DG-20149

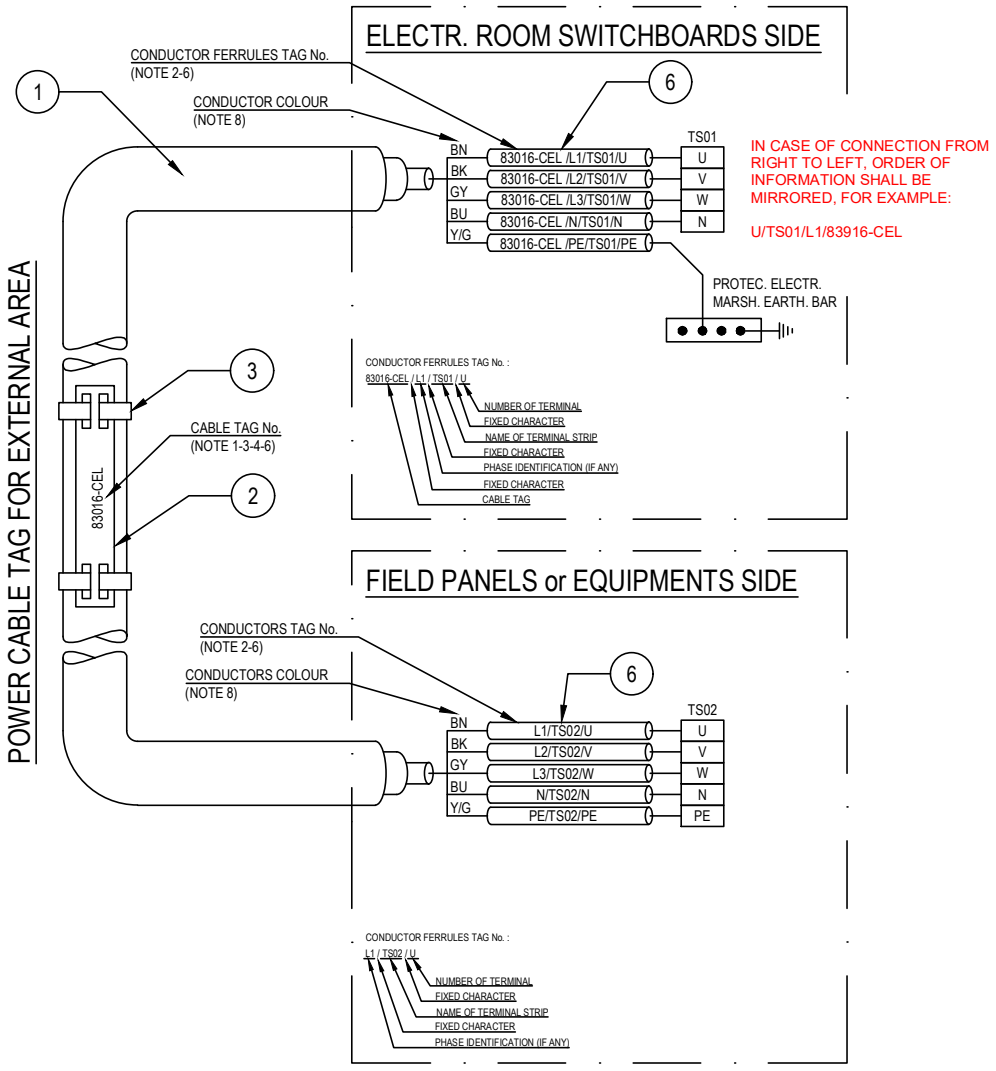
SHEET 049

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

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.

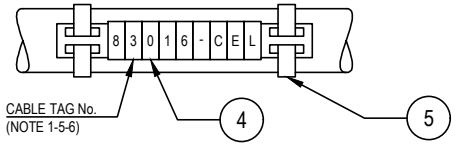
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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_D	20/12/24	V.Ramponi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

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. 123A90-DDL-EL-DD-20092 | SHEET 007 | REV. 02

F.to UNI A3: 420mmx297mm

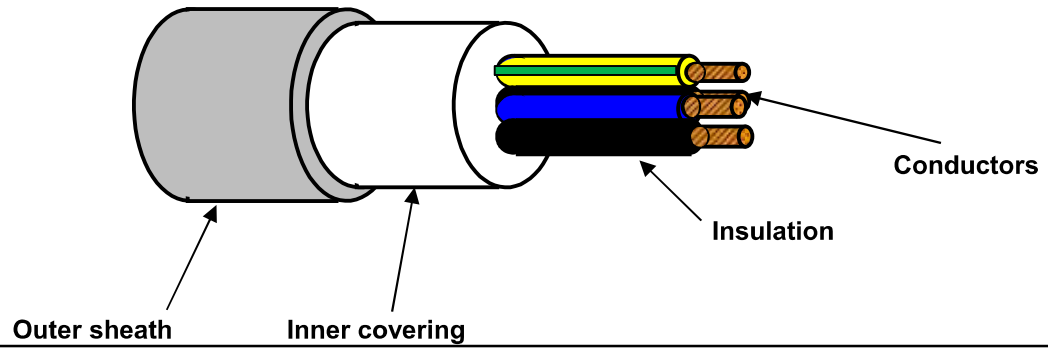
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Secti	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Stand	From Gland	From Entry	From Fitti	To Gland	To Entry	To Fitting	Routing	Routing Manual
P-ETB-200N1-15-L2-01	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						EJB-200N1-15-L2-01	HEAT TRACING - PROCESS LINES - FEEDER 2 (CI LINES) Cold JB	Lower Deck	Heat Tracing Cold JB	ETB-200N1-15-L2-01	HEAT TRACING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB	Lower Deck	Heat Tracing Hot JB	ELECV05-3G6	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 3G6mm² - Grey	M25	T1_M25_Single			T1_M25_Single				L-150-101-LVT-146 / L-150-101-LVT-139

FLEI s.r.l.

Cu Cl.2/EPR/LSZH 0,6/1 KV

3G6 - L.V. POWER CABLE - Flame Retardant



TECHNICAL FEATURES

Conductors :	**STRANDED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	EPR compound, quality to IEC 60092.360, Nominal Thickness 1,0 mm	
Cores colour code :	**Brown - Blue - Yellow/Green**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not Required	
Total Assembling :	Cores layed up with optimal lay length	
Overall Wrapping:	Not required	
Drain wire :	Not required	
Overall Shield:	Not required	
Inner covering :	Extruded LSZH compound, Average Thickness 1,0 mm	
Inner covering color code:	**Black or Natural**	
Armour :	Not required	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,2 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 3G6 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 -**	
	Year of Manufacture - CE + Meter Marking	
Outer diameter :	(15,6 ± 10%) mm	
Bending radius :	cable outer diameter x 10	(in fixed installation)
Voltage test :	3,5 kV a.c. for 5' (Between Cores)	
Conductors DC Resistance :		IEC 60228 Class 2
Insulation Resistance :	≥ 770 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.353**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance	IEC 61034.2 (LT ≥ 60%)	
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 covering together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	29/03/2024	Messa			
Checked :	29/03/2024	Spaccasassi			
Approved :	29/03/2024	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.

ITEM	Tag	P-ETB-200N1-16-L3-01	: Lighting & Small Power DB BoP / Trace Heating - Process Lines - Feeder 3			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10000617		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

CABLE DATA

Type Cu Cl.2/EPR/LSZH Cores/Size mm² 3G6 mm2 Color GREY

From DP-200N1 To ETB-200N1-16-L3-01

1	Confirm cable is as specified in project cable schedule	OK
2	Visual Check cable physical integrity.	OK
3	Check is installed in accordance with layout drawing (segregation, distance…).	OK
4	Check cable is supported and fixed to rack according to project specification.	PL
5	Check bending radius is within the specified limits.	OK
6	Confirm cable glands suit for cable type, correctly mounted and tightened.	OK
7	Check gland plate for single core cables is non ferrous (non -magnetic).	NA
8	Confirm cable labelling is in accordance with specifications.	PL
9	Check cable is correctly loomed and segregated in accordance with specification.	OK
10	Check cable earthing against lastest drawings.	OK
11	Check cores marking are in accordance with termination diagram	OK
12	Check terminations are in accordance with latest termination diagram	OK
13	If required produce Red Line Mark Up for "AS BUILT"	

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	P-ETB-200N1-16-L3-01	: Lighting & Small Power DB BoP / Trace Heating - Process Lines - Feeder 3			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10000617		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

	CONTINUITY			
5	CORE CONTINUITY Ω	PH 1	0.26	
6		PH 2	0.26	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		0.26	
	INSULATION			
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	>999	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

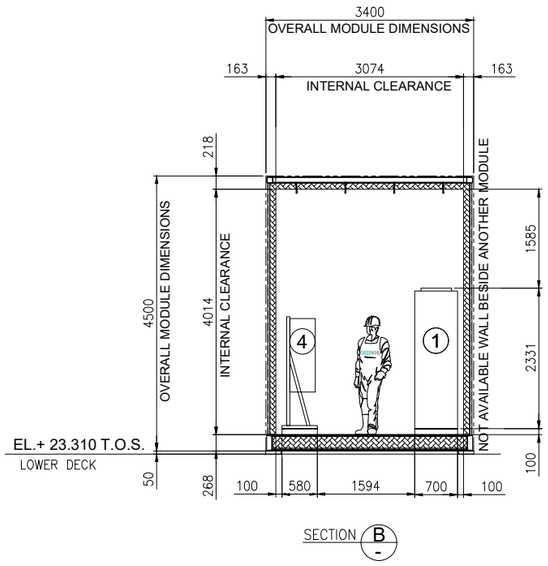
TESTING INSTRUMENTS USED

TYPE / SERIAL N° :	VOLCRAFT 1000V - ET-200 S/N:H240103023	TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207
Calibration certificate N° and date:	N°LAT 042 00768/24 _ 12/10/2024	Calibration certificate N° and date:	N°7722/24 _ 10/07/2024

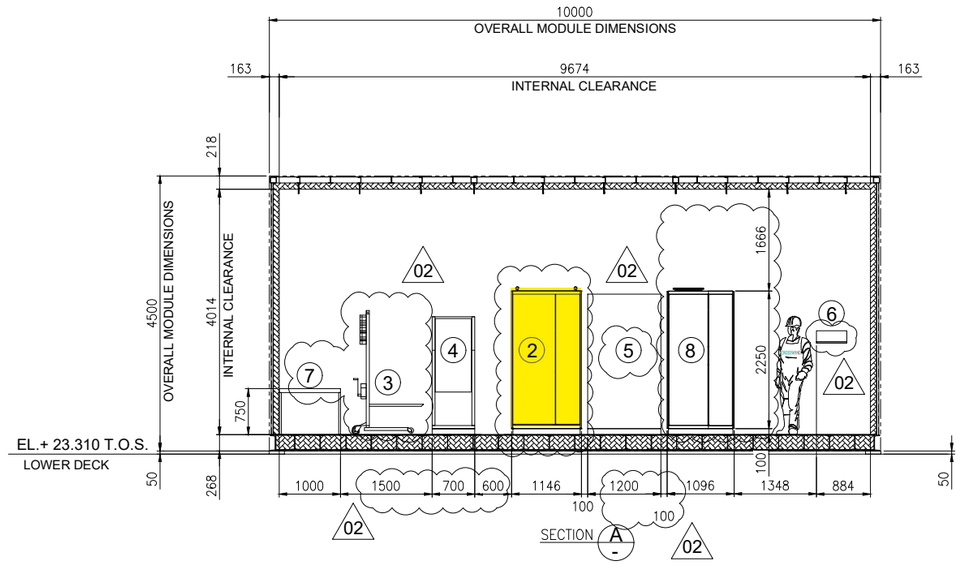
Comments: Nota 4: refer to PL C30000679

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-18	2025-02-25	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-18T09:37:28.970Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-25T12:31:43.507Z	

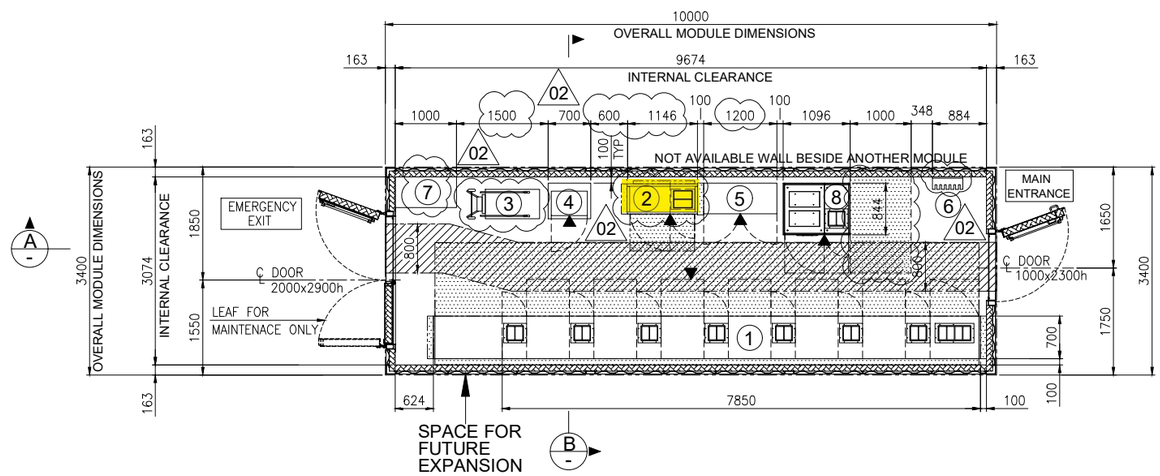
DRAWING NO. 123A90-DDL-EL-DL-20105 | REV. 02



SECTION B



SECTION A



A

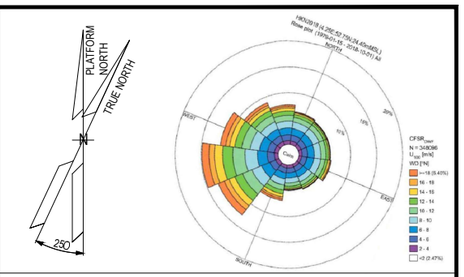
B

EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

1

EQUIPMENT LIST

REF.	TAG No.	DESCRIPTION	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)	NOTE
1	SG-200N1	400V SWITCHGEAR	7850	700	2331	
2	DP-200N1	DISTRIBUTION BOARD FOR LIGHTING AND SMALL POWER B.O.P.	1146	520	2250	
3	-	SERVICE TROLLEY FOR 400V SWITCHGEAR	1034	490	2030	
4	CN-200N1	ICCP PANEL	700	580	1830	
5	B200-HSB-001	DISTRIBUTION & HVAC PANEL - LV ROOM	1200	600	1900	02
6	-	TOOL BOX	495	200	200	
7	-	TABLE	1000	500	750	
8	SG-200D2	ACB PANEL FOR SOLAR PACKAGE	1096	844	2294	



NOTES

1. U.N.O. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DELETED.
3. DOCUMENT VALID ONLY FOR ELECTRICAL COMPONENT, FOR OTHER SCOPE LOCATION AND INFORMATION, PLEASE REFER TO VENDORS AND PROJECT DOCUMENTS.
4. FOR OTHER ITEMS, CORRECT LOCATION AND INFORMATION, PLEASE REFER TO VENDORS AND DEDICATED PROJECT DOCUMENTATION.
5. HEIGHT OF ALL PANELS IN THE EQUIPMENT LIST TABLE IS WITHOUT THE BASE FRAME (100mm)

02

LEGEND

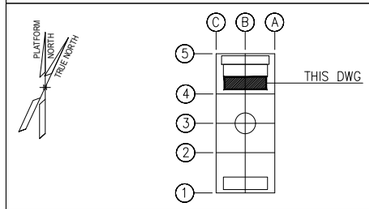
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

REFERENCES

DOCUMENT TITLE	DOCUMENT NUMBER
SG-200N1 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00007
SG-200D2 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00008
DP-200N1 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00009
AC UPS – GENERAL ARRANGEMENT AND DIMENSIONAL DRAWINGS	1724000372-EL-DA-00004
AC UPS – BATTERY LAYOUT INTERCONNECTING DIAGRAM	1724000372-EL-DG-00011
B-200 -GENERAL ARRANGEMENT DRAWINGS - E&I SHELTER	1724000049-AR-DA-00015
ICCC PANEL GENERAL ARRANGEMENT DRAWING	144671-CORR-TF-FAB-DWG-0003

02

KEY PLAN



VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-EL-DL-20105
REV.: 2_A | DATE: 08/08/24 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	27/05/2024	FMO	LMA/AMA	LMA/MDO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/03/2024	GPA	LMA/AMA	LMA/MDO	ISSUE FOR REVIEW (IFR)
00	08/11/2023	DSF	CB/AMA	OYFO/MDO	ISSUE FOR REVIEW (IFR)

CROSSWIND | ROSETTI MARINO

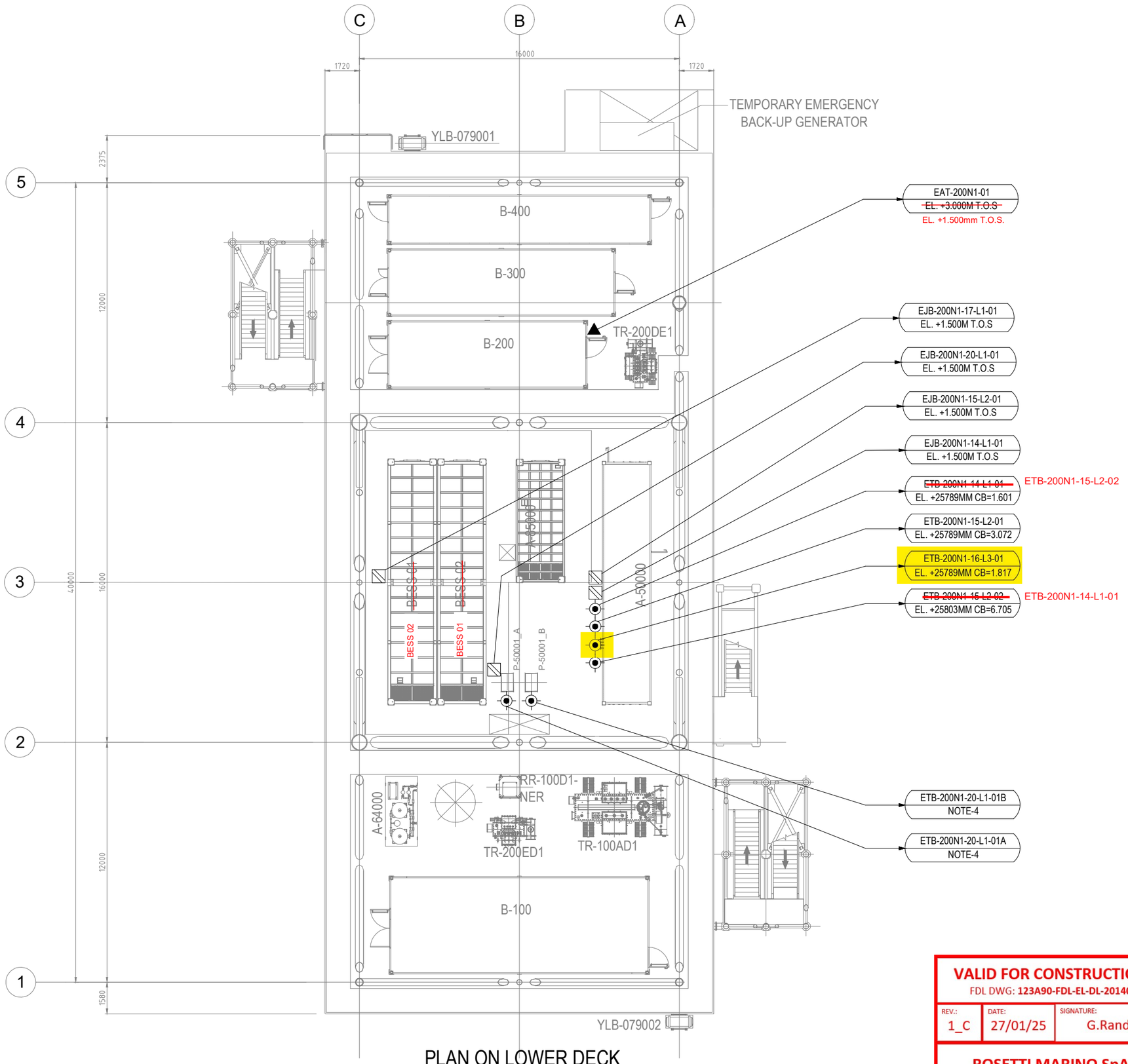
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LV SWITCHROOM

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE 1:50
DRAWN FMO | CHECKED LMA/AMA | APPROVED LMA/MDO | DATE 27/05/2024
A1 | DRAWING NO. 123A90-DDL-EL-DL-20105 | SHEET 001 | REV. 02

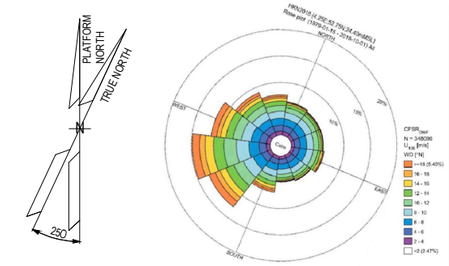
File Name : 123A90-DDL-EL-DL-20105_REV02.dwg

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

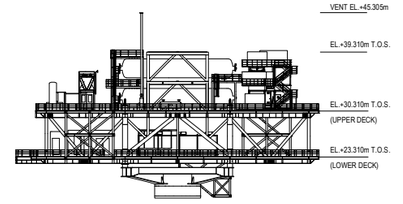
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_C	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

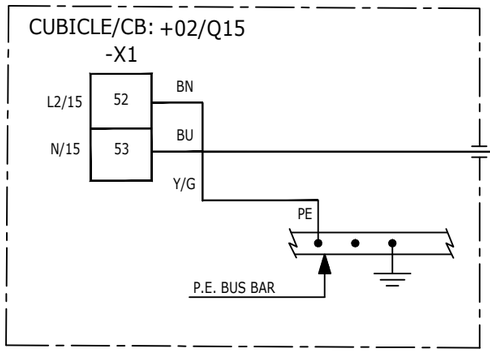
TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 1of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

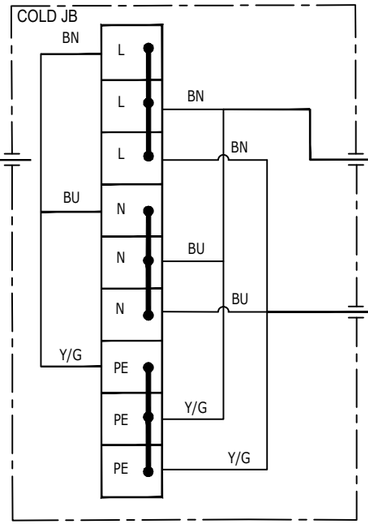
FROM	TO

DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1



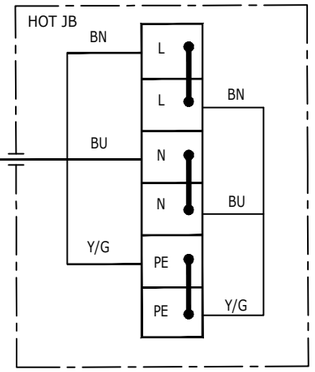
P-EJB-200N1-15-L2-01
3G6 mm²

DESCRIPTION: TRACE HEATING - PROCESS LINES
- FEEDER 2 (CI LINES)
TAG NUMBER: EJB-200N1-15-L2-01



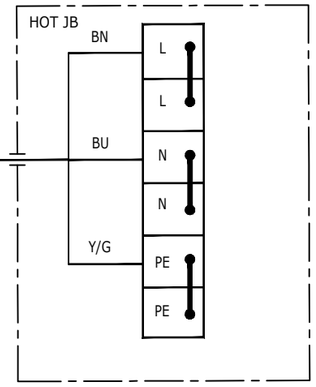
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3G6 mm²

TAG NUMBER: ETB-200N1-15-L2-01
FOR PIPE LINE: CI-029

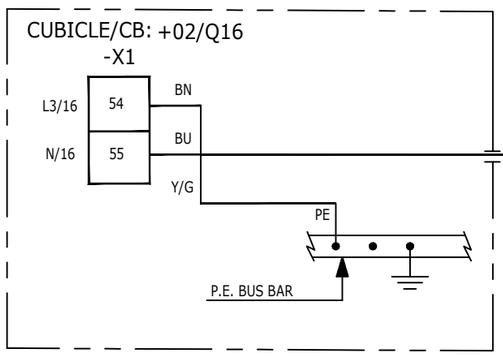


P-ETB-200N1-15-L2-02
3G6 mm²

TAG NUMBER: ETB-200N1-15-L2-02
FOR PIPE LINE: CI-043

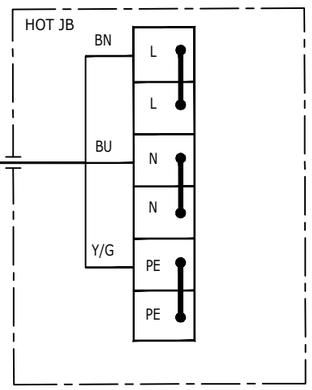


DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1



P-ETB-200N1-16-L3-01
3G6 mm²

DESCRIPTION: TRACE HEATING
PROCESS LINES - FEEDER 3 (DM 001)
TAG NUMBER: ETB-200N1-16-L3-01



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_K	12/02/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
TRACE HEATING PROCESS LINES

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

SCALE : 1:X

A3

DRAWING NO. 123A90-DDL-EL-DG-20149

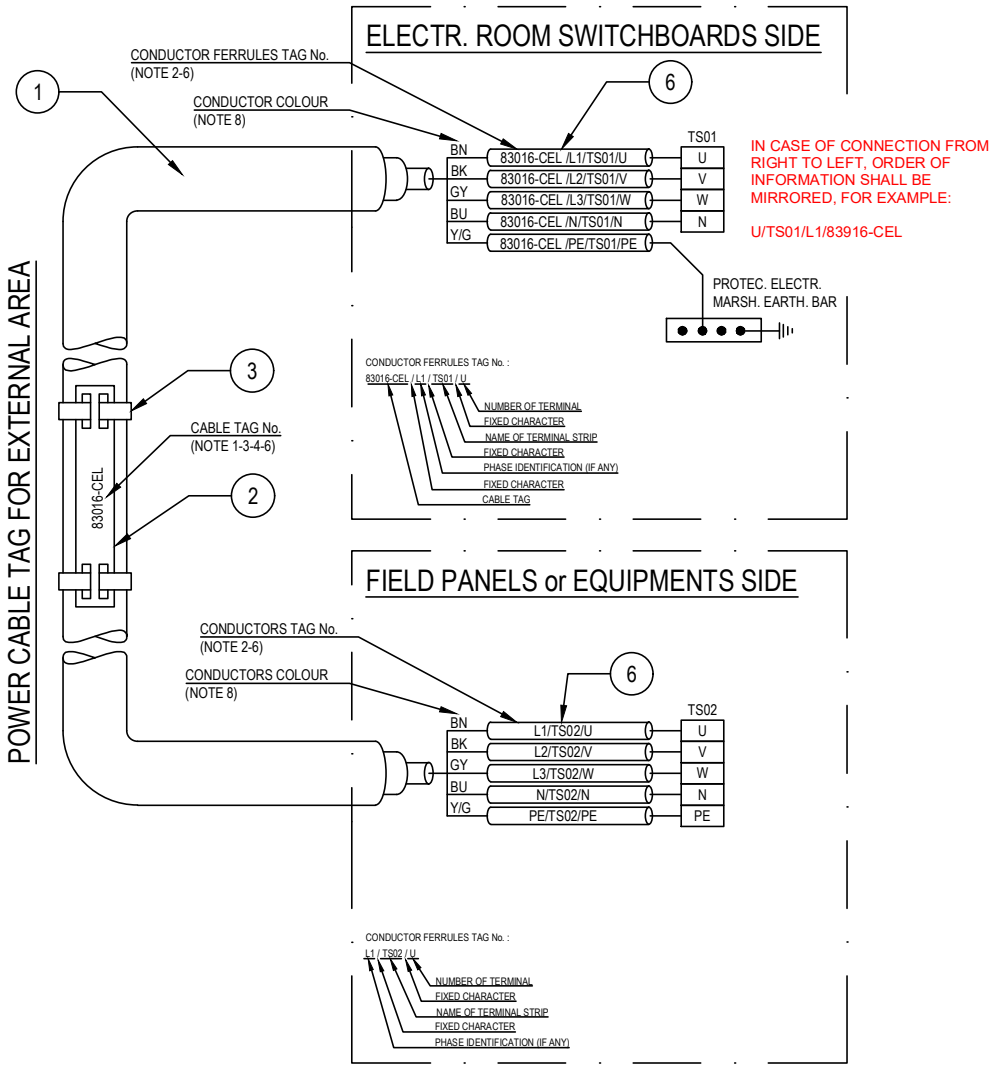
SHEET 049

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

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.

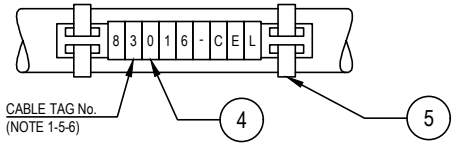
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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_D	20/12/24	V.Ramponi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

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. 123A90-DDL-EL-DD-20092 | SHEET 007 | REV. 02

F.to UNI A3: 420mmx297mm

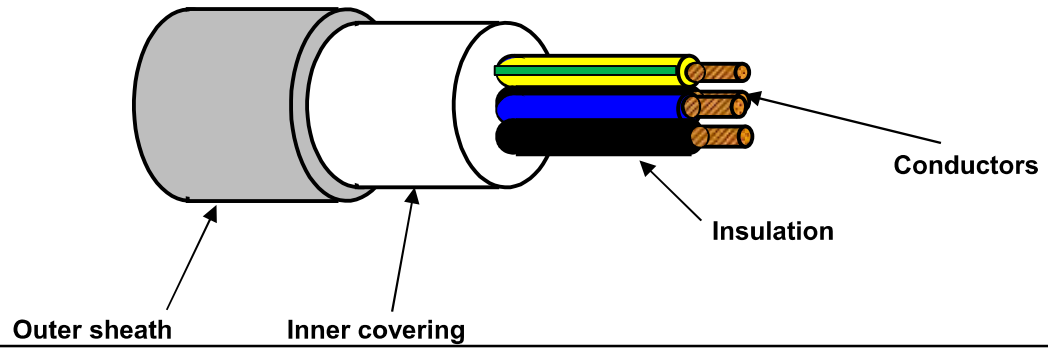
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Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Secti	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Stand	From Gland	From Entr	From Fitti	To Gland	To Entry	To Fitting	Routing	Routing Manual
P-ETB-200N1-16-L3-01	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						DP-200N1	LV 0,4 / 0,23 kV Distribution Switchgear	Lower Deck (B-200)	02/Q16	ETB-200N1-16-L3-01	HEAT TRACING - PROCESS LINES - FEEDER 3 (DM-001)	Lower Deck		ELECV05-3G6	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 3G6mm² - Grey	M25	n.a.			T1_M25_Single				L-450-101-LVT-030 / L-600-101-LVT-020 / L-600-101-LVT-019 / L-600-101-LVT-017 / E-MCT-203 / L-750-101-LVT-013 / L-750-101-LVT-014 / L-150-101-LVT-097

FLEI s.r.l.

Cu Cl.2/EPR/LSZH 0,6/1 KV

3G6 - L.V. POWER CABLE - Flame Retardant



TECHNICAL FEATURES

Conductors :	**STRANDED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	EPR compound, quality to IEC 60092.360, Nominal Thickness 1,0 mm	
Cores colour code :	**Brown - Blue - Yellow/Green**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not Required	
Total Assembling :	Cores layed up with optimal lay length	
Overall Wrapping:	Not required	
Drain wire :	Not required	
Overall Shield:	Not required	
Inner covering :	Extruded LSZH compound, Average Thickness 1,0 mm	
Inner covering color code:	**Black or Natural**	
Armour :	Not required	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,2 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 3G6 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 -**	
	Year of Manufacture - CE + Meter Marking	
Outer diameter :	(15,6 ± 10%) mm	
Bending radius :	cable outer diameter x 10	(in fixed installation)
Voltage test :	3,5 kV a.c. for 5' (Between Cores)	
Conductors DC Resistance :		IEC 60228 Class 2
Insulation Resistance :	≥ 770 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.353**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance	IEC 61034.2 (LT ≥ 60%)	
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 covering together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	29/03/2024	Messa			
Checked :	29/03/2024	Spaccasassi			
Approved :	29/03/2024	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.

ITEM	Tag	P-ETB-200N1-17-L1-01	: Lighting & Small Power DB BoP / Trace Heating - Process Lines - Feeder 4			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD/UD
TASK	code	C10000618	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form CPX09	LV Power Cable

CABLE DATA

Type Cu Cl.2/EPR/LSZH Cores/Size mm² 3G6 mm2 Color GREY

From EJB-200N1-17-L1-01 To ETB-200N1-17-L1-01

1	Confirm cable is as specified in project cable schedule	OK
2	Visual Check cable physical integrity.	OK
3	Check is installed in accordance with layout drawing (segregation, distance…).	OK
4	Check cable is supported and fixed to rack according to project specification.	Note
5	Check bending radius is within the specified limits.	OK
6	Confirm cable glands suit for cable type, correctly mounted and tightened.	OK
7	Check gland plate for single core cables is non ferrous (non -magnetic).	NA
8	Confirm cable labelling is in accordance with specifications.	PL
9	Check cable is correctly loomed and segregated in accordance with specification.	OK
10	Check cable earthing against lastest drawings.	OK
11	Check cores marking are in accordance with termination diagram	OK
12	Check terminations are in accordance with latest termination diagram	OK
13	If required produce Red Line Mark Up for "AS BUILT"	

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	P-ETB-200N1-17-L1-01	: Lighting & Small Power DB BoP / Trace Heating - Process Lines - Feeder 4			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD/UD
TASK	code	C10000618		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

	CONTINUITY			
5	CORE CONTINUITY Ω	PH 1	0.3	
6		PH 2	0.3	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		0.3	
	INSULATION			
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	>999	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

TESTING INSTRUMENTS USED

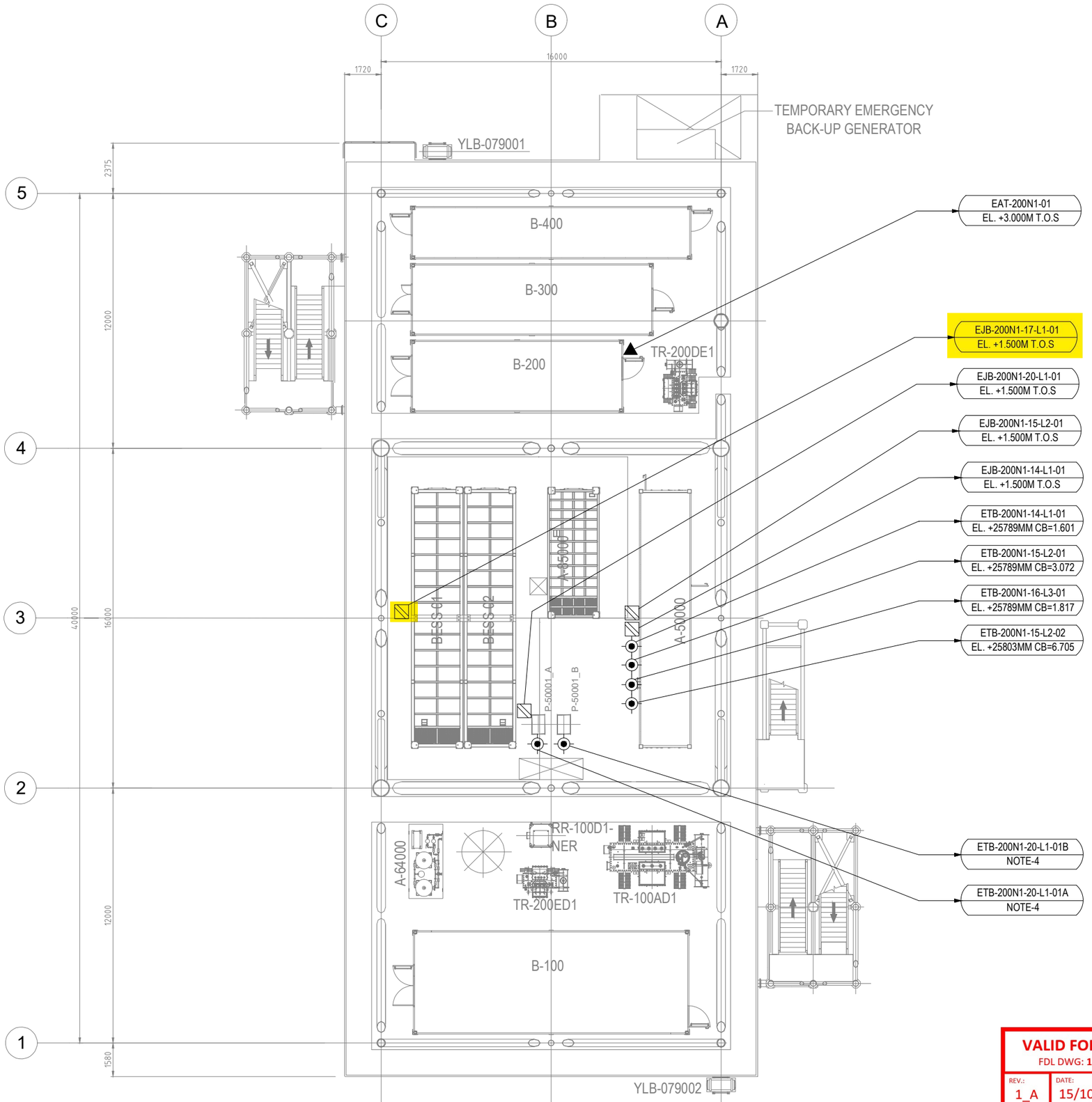
TYPE / SERIAL N° :	VOLCRAFT 1000V - ET-200 S/N:H240103023	TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207
Calibration certificate N° and date:	N°LAT 042 00768/24 _ 12/10/2024	Calibration certificate N° and date:	N°7722/24 _ 10/07/2024

Comments: Nota 4: refer to PL C30000679/C30000681

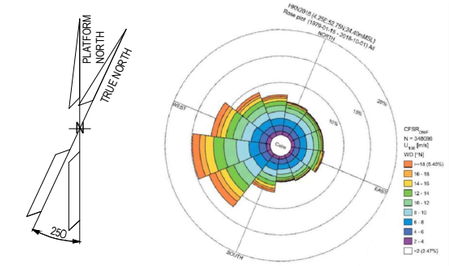
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-10	2025-02-10	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-10T08:55:46.848Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-10T15:29:33.264Z	

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

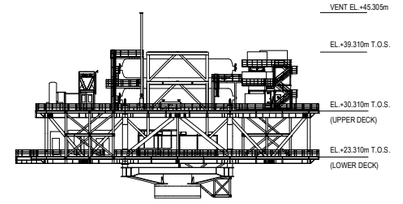
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 1of2	REV. 01

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

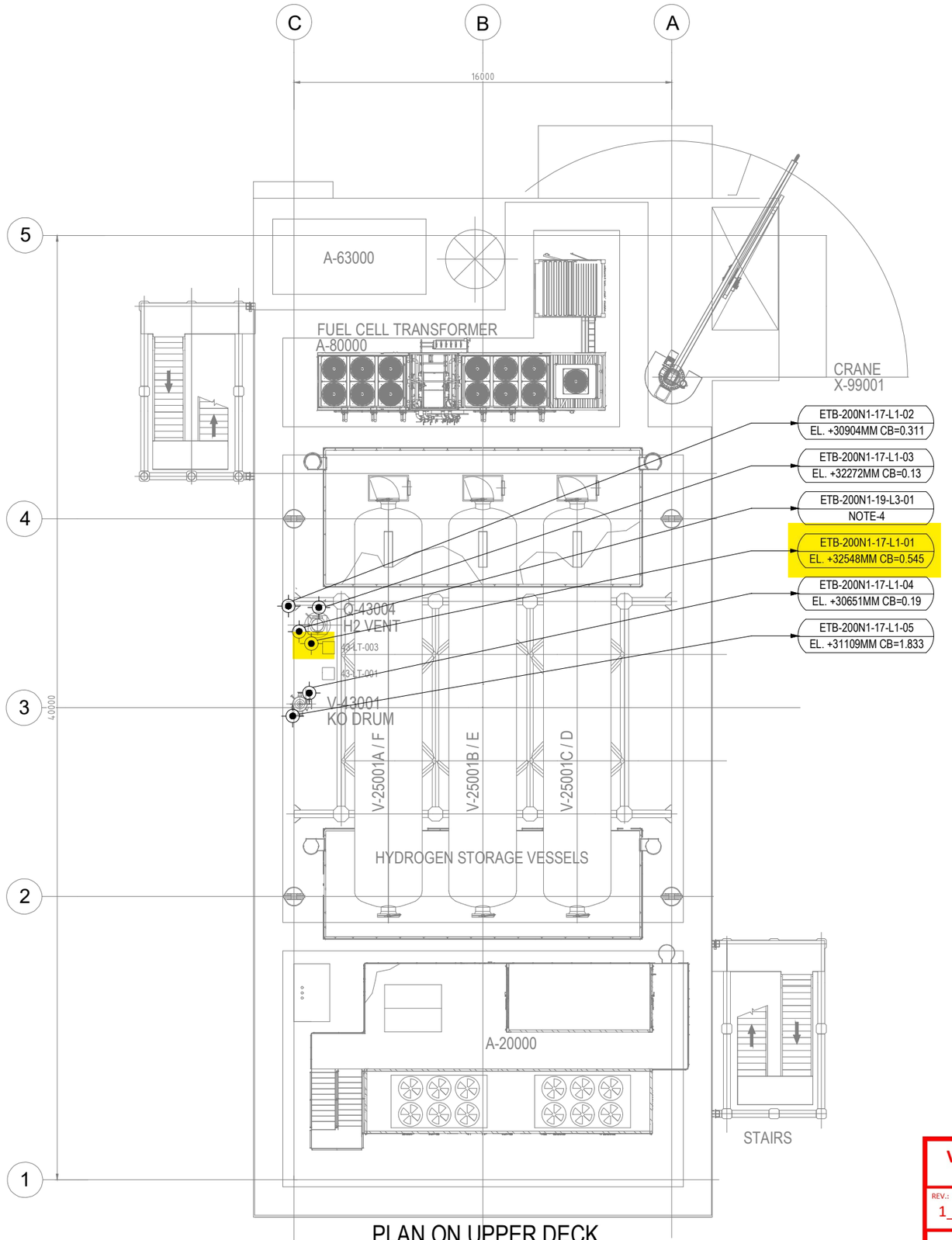
REV.:	DATE:	SIGNATURE:
1_A	15/10/24	G.Randi

ROSETTI MARINO SpA

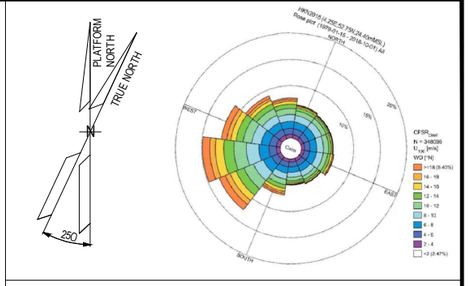
File Name : 123A90-DDL-EL-DL-20140

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

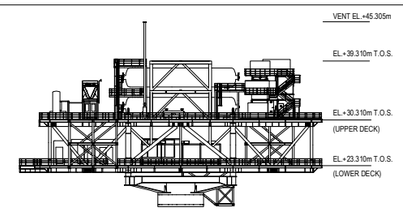
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_A	15/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 2of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

FROM	TO

DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1

CUBICLE/CB: +03/Q17

-X1

L1/17 — 56 — BN
N/17 — 57 — BU
Y/G
PE
P.E. BUS BAR

P-EJB-200N1-17-L1-01
3G6 mm²

DESCRIPTION: TRACE HEATING - PROCESS LINES - FEEDER 4 (WW LINES & LT)
TAG NUMBER: EJB-200N1-17-L1-01

COLD JB

BN — L — BN
BU — N — BU
Y/G — PE — Y/G

P-ETB-200N1-17-L1-01
3G6 mm²

DESCRIPTION: TRACE HEATING INSTRUMENT - 43-LT-003
TAG NUMBER: ETB-200N1-17-L1-01

HOT JB

BN — L — BN
BU — N — BU
Y/G — PE — Y/G

P-ETB-200N1-17-L1-02
3G6 mm²

DESCRIPTION: TRACE HEATING PROCESS LINE (WW 202)##
TAG NUMBER: ETB-200N1-17-L1-02

HOT JB

BN — L — BN
BU — N — BU
Y/G — PE — Y/G

P-ETB-200N1-17-L1-03
3G6 mm²

DESCRIPTION: TRACE HEATING PROCESS LINE (WW 260)
TAG NUMBER: ETB-200N1-17-L1-03

HOT JB

BN — L — BN
BU — N — BU
Y/G — PE — Y/G

DESCRIPTION: TRACE HEATING PROCESS LINE (WW 259) (V-43001 / 43-LT-001)
TAG NUMBER: ETB-200N1-17-L1-04

P-ETB-200N1-17-L1-04
3G6 mm²

HOT JB

BN — L — BN
BU — N — BU
Y/G — PE — Y/G

- PIPE LINE WW-202 TRACED FROM NOZZLE N3 UPTO SWAN NECK

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_J	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
TRACE HEATING PROCESS LINES

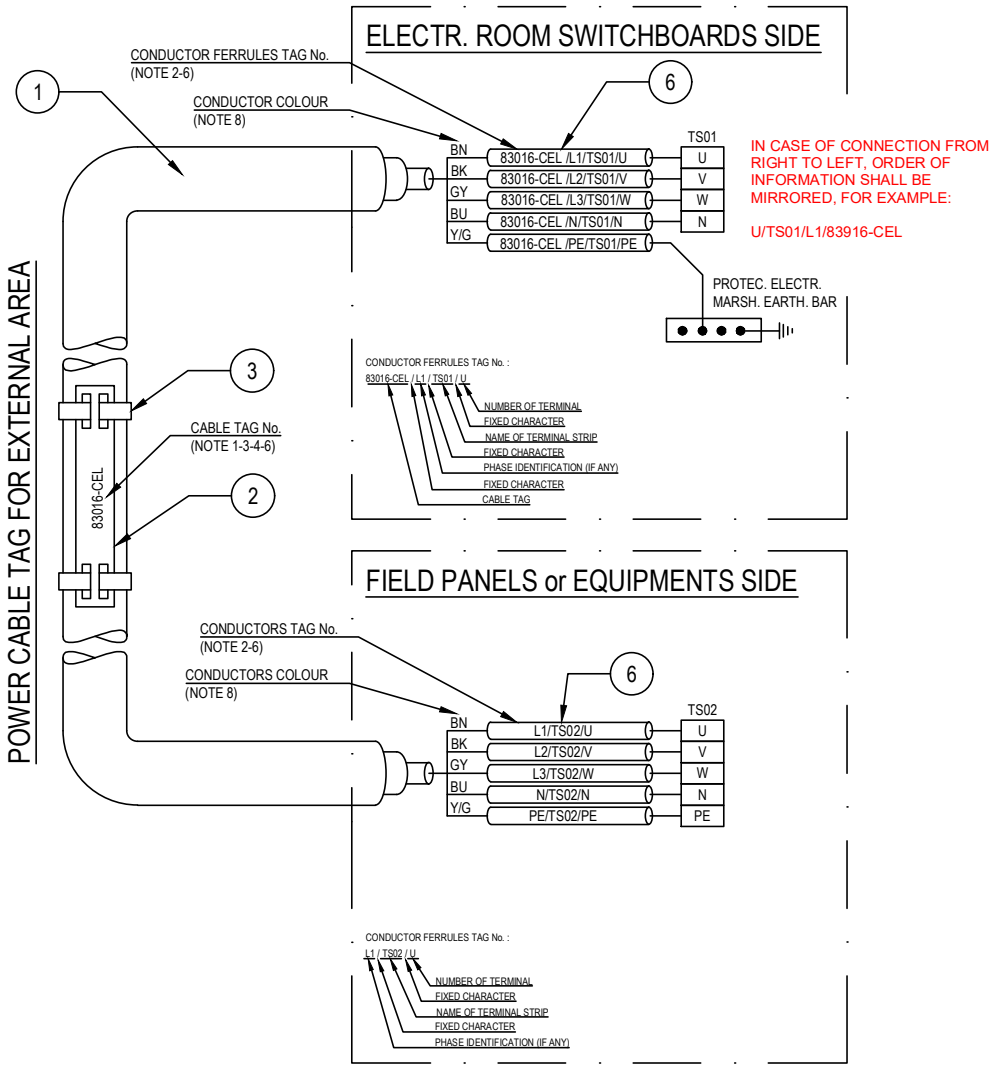
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 050 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

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.

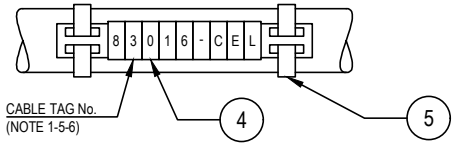
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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_D	20/12/24	V.Ramponi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

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. 123A90-DDL-EL-DD-20092 | SHEET 007 | REV. 02

F.to UNI A3: 420mmx297mm

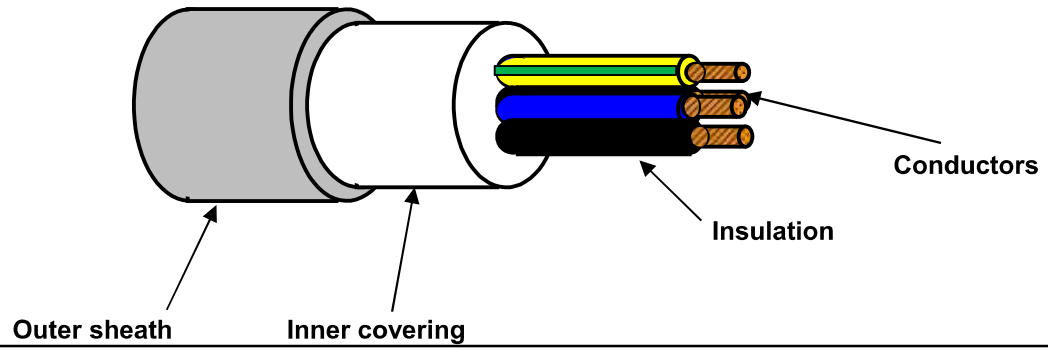
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Secti	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Stand	From Gland	From Entry	From Fitti	To Gland	To Entry	To Fitting	Routing	Routing Manual
P-ETB-200N1-17-L1-01	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						EJB-200N1-17-L1-01	HEAT TRACING - PROCESS LINES (WW LINES & LT) Cold JB	Lower Deck	Heat Tracing Cold JB	ETB-200N1-17-L1-01	HEAT TRACING - INSTRUMENT - 43-LT-003 Hot JB	Upper Deck	Heat Tracing Hot JB	ELECV05-3G6	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 3G6mm² - Grey	M25	T1_M25_Single			T1_M25_Single				L-150-101-LVT-099 / L-600-101-LVT-012 / E-MCT-U15

FLEI s.r.l.

Cu Cl.2/EPR/LSZH 0,6/1 KV

3G6 - L.V. POWER CABLE - Flame Retardant



TECHNICAL FEATURES

Conductors :	**STRANDED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	EPR compound, quality to IEC 60092.360, Nominal Thickness 1,0 mm	
Cores colour code :	**Brown - Blue - Yellow/Green**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not Required	
Total Assembling :	Cores layed up with optimal lay length	
Overall Wrapping:	Not required	
Drain wire :	Not required	
Overall Shield:	Not required	
Inner covering :	Extruded LSZH compound, Average Thickness 1,0 mm	
Inner covering color code:	**Black or Natural**	
Armour :	Not required	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,2 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 3G6 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 -**	
	Year of Manufacture - CE + Meter Marking	
Outer diameter :	(15,6 ± 10%) mm	
Bending radius :	cable outer diameter x 10	(in fixed installation)
Voltage test :	3,5 kV a.c. for 5' (Between Cores)	
Conductors DC Resistance :		IEC 60228 Class 2
Insulation Resistance :	≥ 770 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.353**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance	IEC 61034.2 (LT ≥ 60%)	
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 covering together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	29/03/2024	Messa			
Checked :	29/03/2024	Spaccasassi			
Approved :	29/03/2024	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	P-ETB-200N1-19-L3-01	: Lighting & Small Power DB BoP / Trace Heating - Vent - Feeder 6			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD_B-200/UD
TASK	code	C10000620		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

CABLE DATA

Type: Cu Cl.2/EPR/LSZH | Cores/Size mm²: 3G6 mm2 | Color: GREY

From: DP-200N1 | To: ETB-200N1-19-L3-01

1	Confirm cable is as specified in project cable schedule	OK
2	Visual Check cable physical integrity.	OK
3	Check is installed in accordance with layout drawing (segregation, distance…).	OK
4	Check cable is supported and fixed to rack according to project specification.	OK
5	Check bending radius is within the specified limits.	OK
6	Confirm cable glands suit for cable type, correctly mounted and tightened.	OK
7	Check gland plate for single core cables is non ferrous (non -magnetic).	NA
8	Confirm cable labelling is in accordance with specifications.	PL
9	Check cable is correctly loomed and segregated in accordance with specification.	OK
10	Check cable earthing against lastest drawings.	OK
11	Check cores marking are in accordance with termination diagram	OK
12	Check terminations are in accordance with latest termination diagram	OK
13	If required produce Red Line Mark Up for "AS BUILT"	

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	P-ETB-200N1-19-L3-01	: Lighting & Small Power DB BoP / Trace Heating - Vent - Feeder 6			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD_B-200/UD
TASK	code	C10000620		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

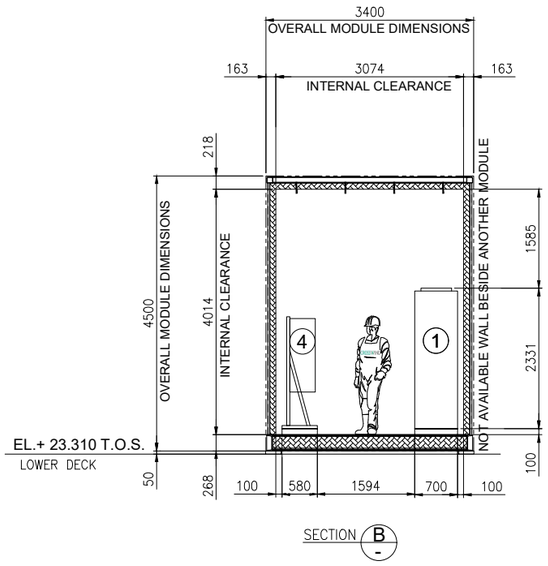
CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0.14	
6		PH 2	0.14	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		0.14	
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	>999	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

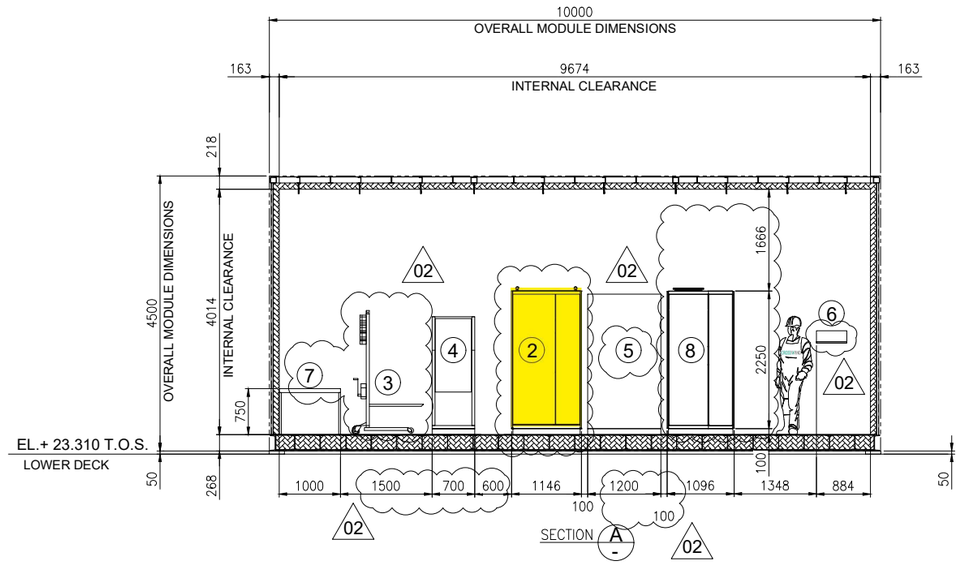
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	VOLCRAFT 1000V - ET-200 S/N:H240103023	TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207
Calibration certificate N° and date:	N°LAT 042 00768/24 _ 12/10/2024	Calibration certificate N° and date:	N°7722/24 _ 10/07/2024

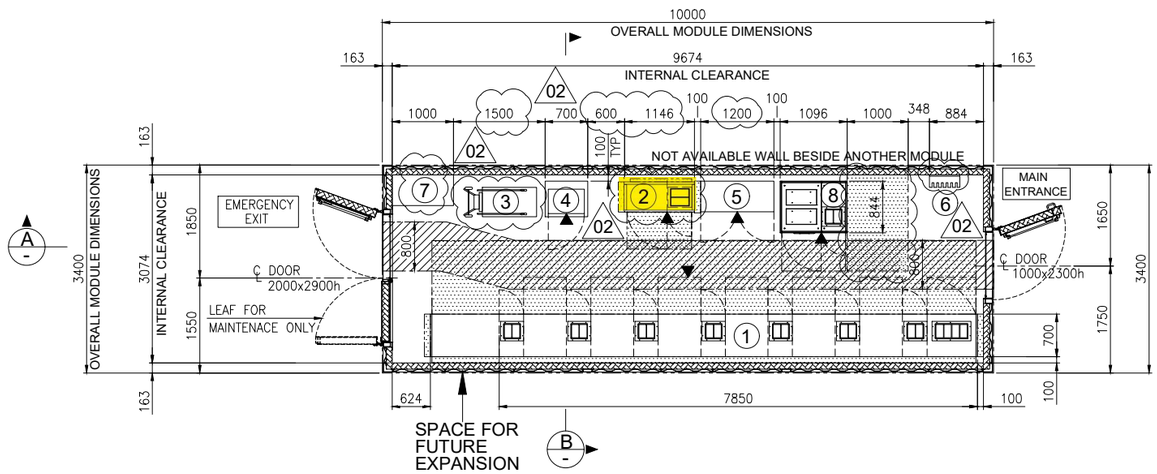
Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-18	2025-03-06	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-18T09:37:42.517Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-03-06T13:25:58.837Z	

DRAWING NO. 123A90-DDL-EL-DL-20105 | REV. 02





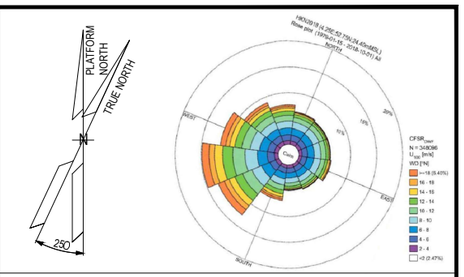


EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

1

EQUIPMENT LIST

REF.	TAG No.	DESCRIPTION	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)	NOTE
1	SG-200N1	400V SWITCHGEAR	7850	700	2331	
2	DP-200N1	DISTRIBUTION BOARD FOR LIGHTING AND SMALL POWER B.O.P.	1146	520	2250	
3	-	SERVICE TROLLEY FOR 400V SWITCHGEAR	1034	490	2030	
4	CN-200N1	ICCP PANEL	700	580	1830	
5	B200-HSB-001	DISTRIBUTION & HVAC PANEL - LV ROOM	1200	600	1900	02
6	-	TOOL BOX	495	200	200	
7	-	TABLE	1000	500	750	
8	SG-200D2	ACB PANEL FOR SOLAR PACKAGE	1096	844	2294	



NOTES

1. U.N.O. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DELETED.
3. DOCUMENT VALID ONLY FOR ELECTRICAL COMPONENT, FOR OTHER SCOPE LOCATION AND INFORMATION, PLEASE REFER TO VENDORS AND PROJECT DOCUMENTS.
4. FOR OTHER ITEMS, CORRECT LOCATION AND INFORMATION, PLEASE REFER TO VENDORS AND DEDICATED PROJECT DOCUMENTATION.
5. HEIGHT OF ALL PANELS IN THE EQUIPMENT LIST TABLE IS WITHOUT THE BASE FRAME (100mm)

02

LEGEND

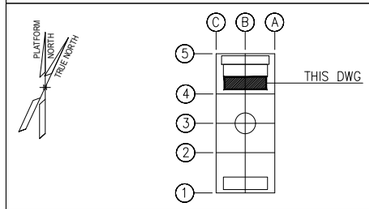
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

REFERENCES

DOCUMENT TITLE	DOCUMENT NUMBER
SG-200N1 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00007
SG-200D2 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00008
DP-200N1 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00009
AC UPS – GENERAL ARRANGEMENT AND DIMENSIONAL DRAWINGS	1724000372-EL-DA-00004
AC UPS – BATTERY LAYOUT INTERCONNECTING DIAGRAM	1724000372-EL-DG-00011
B-200 -GENERAL ARRANGEMENT DRAWINGS - E&I SHELTER	1724000049-AR-DA-00015
ICCC PANEL GENERAL ARRANGEMENT DRAWING	144671-CORR-TF-FAB-DWG-0003

02

KEY PLAN



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20105**

REV.:	DATE:	SIGNATURE:
2_A	08/08/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	27/05/2024	FMO	LMA/AMA	LMA/MDO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/03/2024	GPA	LMA/AMA	LMA/MDO	ISSUE FOR REVIEW (IFR)
00	08/11/2023	DSF	CB/AMA	OYFO/MDO	ISSUE FOR REVIEW (IFR)

CROSSWIND | ROSETTI MARINO

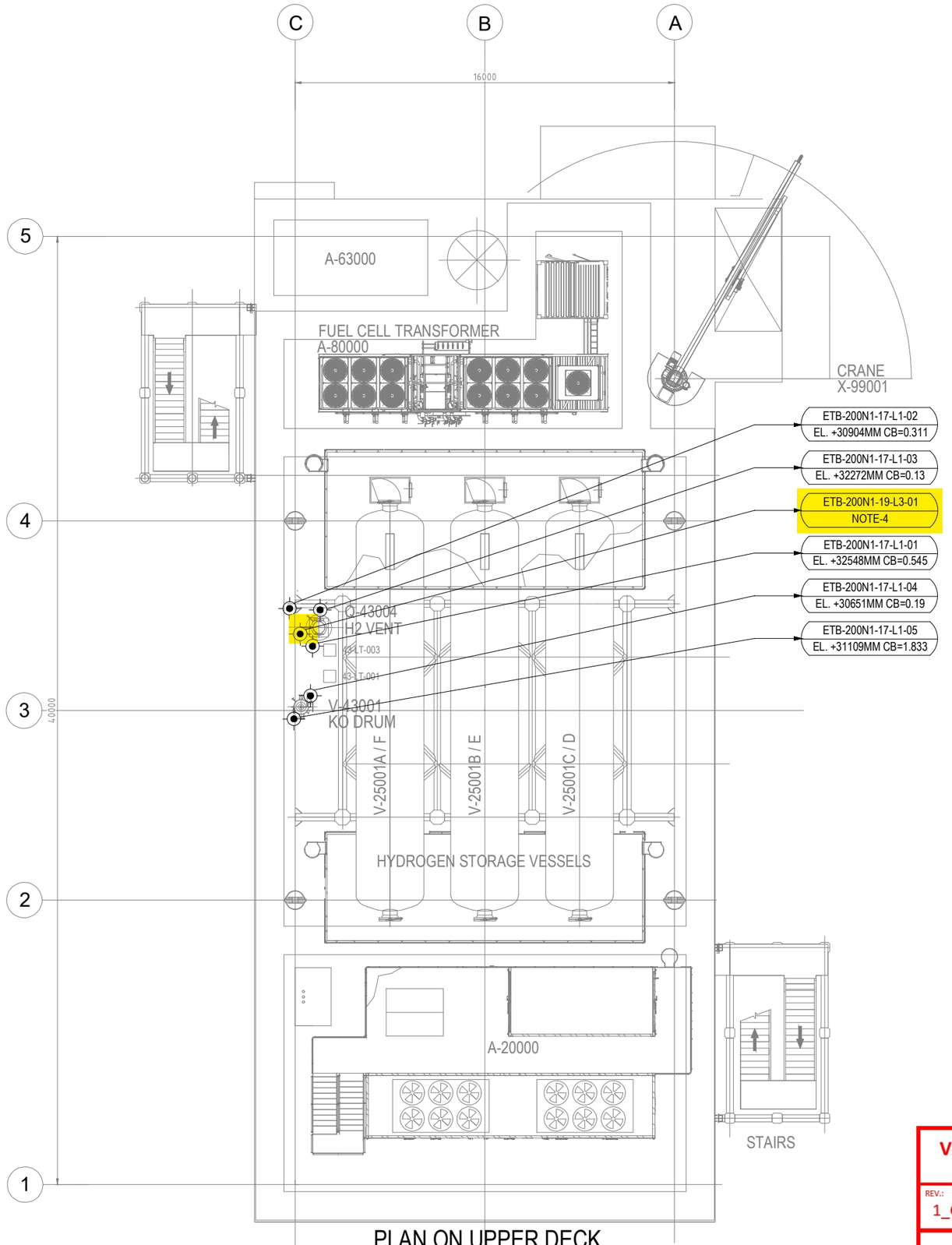
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LV SWITCHROOM

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN FMO	CHECKED LMA/AMA	APPROVED LMA/MDO	DATE 27/05/2024
A1	DRAWING NO. 123A90-DDL-EL-DL-20105	SHEET 001	REV. 02

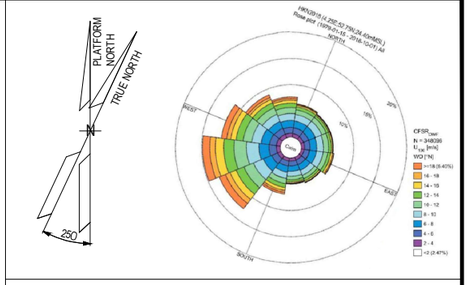
File Name : 123A90-DDL-EL-DL-20105_REV02.dwg

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

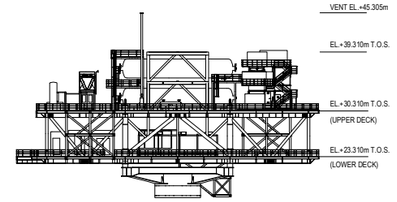
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_C	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

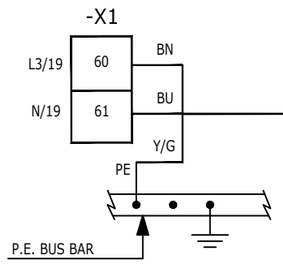
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 2of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

FROM	TO

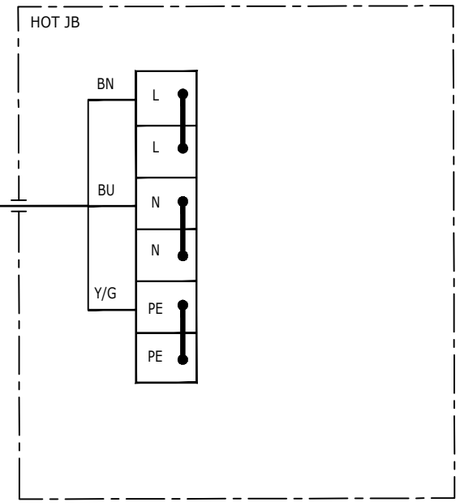
DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1

CUBICLE/CB: +03/Q19



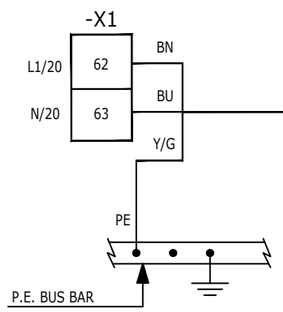
P-ETB-200N1-19-L3-01
3G6 mm²

DESCRIPTION: TRACE HEATING - PROCESS LINES - FEEDER 6 (H2 VENT)
TAG NUMBER: ETB-200N1-19-L3-01



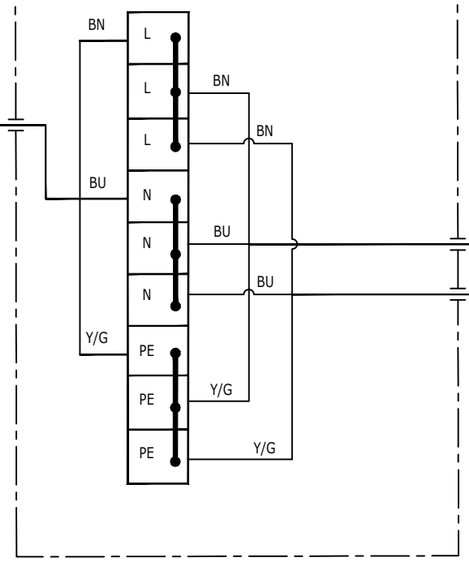
NOTE:
JB SUPPLIED BY
VENDOR OF PACKAGE

CUBICLE/CB: +03/Q20



P-EJB-200N1-20-L1-01
3G6 mm²

DESCRIPTION: TRACE HEATING - PROCESS LINES
- FEEDER 7 (SEA WATER PUMPS)
TAG NUMBER: EJB-200N1-20-L1-01

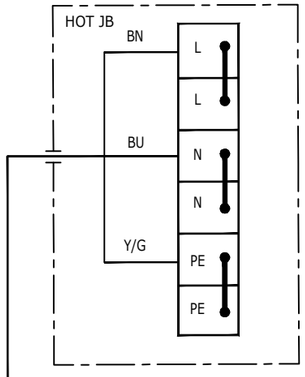


P-ETB-200N1-20-L1-02
~~P-ETB-200N1-20-L1-01A~~
3G6 mm²

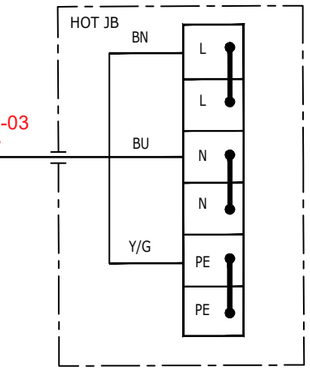
P-ETB-200N1-20-L1-03
~~P-ETB-200N1-20-L1-01B~~
3G6 mm²

NOTE:
HOT JB SUPPLIED BY
VENDOR OF PACKAGE

TAG NUMBER: ETB-200N1-20-L1-01A



TAG NUMBER: ETB-200N1-20-L1-01B



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_K	12/02/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
TRACE HEATING PROCESS LINES

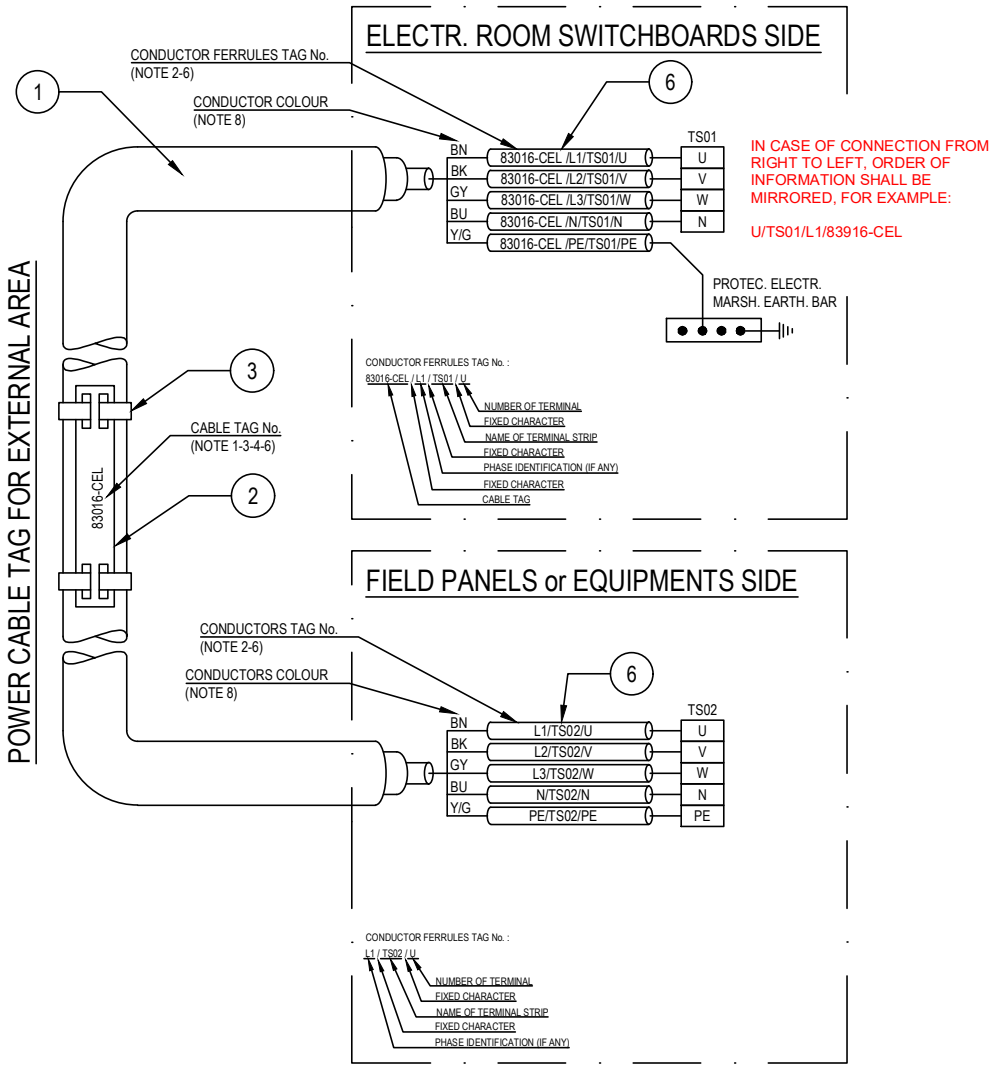
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 051 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

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.

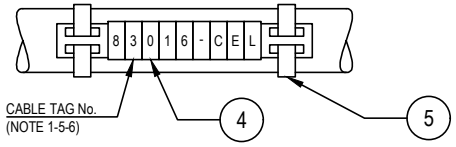
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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_D	20/12/24	V.Ramponi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

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. 123A90-DDL-EL-DD-20092 | SHEET 007 | REV. 02

F.to UNI A3: 420mmx297mm

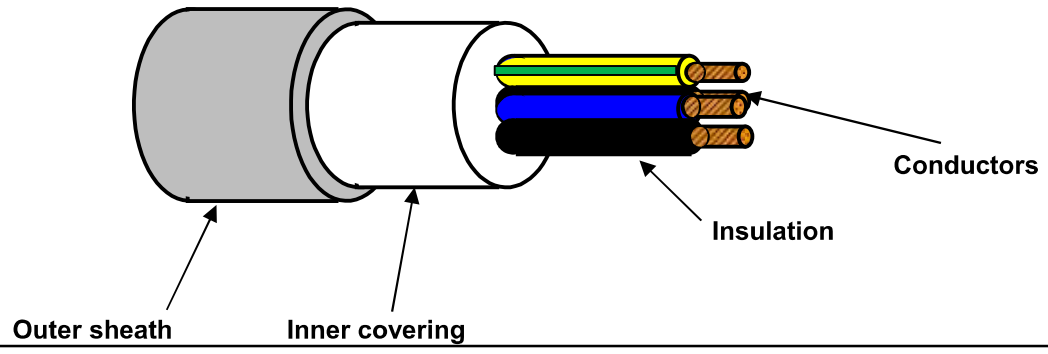
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Secti	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Stand	From Gland	From Entr	From Fitti	To Gland	To Entry	To Fitting	Routing	Routing Manual
P-ETB-200N1-19-L3-01	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						DP-200N1	LV 0,4 / 0,23 kV Distribution Switchgear	Lower Deck (B-200)	03/Q19	ETB-200N1-19-L3-01	HEAT TRACING - PROCESS LINES - FEEDER 6 (H2 VENT)	Upper Deck		ELECV05-3G6	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 3G6mm² - Grey	M25	n.a.			T1_M25_Single				L-450-101-LVT-030 / L-600-101-LVT-020 / L-600-101-LVT-018 / L-600-101-LVT-017 / E-MCT-201 / L-750-101-LVT-011 / L-600-101-LVT-012 / E-MCT-U15

FLEI s.r.l.

Cu Cl.2/EPR/LSZH 0,6/1 KV

3G6 - L.V. POWER CABLE - Flame Retardant



TECHNICAL FEATURES

Conductors :	**STRANDED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	EPR compound, quality to IEC 60092.360, Nominal Thickness 1,0 mm	
Cores colour code :	**Brown - Blue - Yellow/Green**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not Required	
Total Assembling :	Cores layed up with optimal lay length	
Overall Wrapping:	Not required	
Drain wire :	Not required	
Overall Shield:	Not required	
Inner covering :	Extruded LSZH compound, Average Thickness 1,0 mm	
Inner covering color code:	**Black or Natural**	
Armour :	Not required	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,2 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 3G6 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 -**	
	Year of Manufacture - CE + Meter Marking	
Outer diameter :	(15,6 ± 10%) mm	
Bending radius :	cable outer diameter x 10	(in fixed installation)
Voltage test :	3,5 kV a.c. for 5' (Between Cores)	
Conductors DC Resistance :		IEC 60228 Class 2
Insulation Resistance :	≥ 770 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.353**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance	IEC 61034.2 (LT ≥ 60%)	
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 covering together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	29/03/2024	Messa			
Checked :	29/03/2024	Spaccasassi			
Approved :	29/03/2024	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.

ITEM	Tag	P-ETB-200N1-20-L1-01	: Lighting & Small Power DB BoP / Trace Heating - V-43001 Vessel - Feeder 7		Dwg	123A90-DDL-EL-LIS-20148	
	S/Sys	83-65	: Electrical Heat Tracing		Module	LD_B-200/LD	
TASK	code	C10000621	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Electrical	Form	CPX09	LV Power Cable

CABLE DATA

Type Cu Cl.2/EPR/LSZH Cores/Size mm² 3G6 mm2 Color GREY

From DP-200N1 To EJB-200N1-20-L1-01

1	Confirm cable is as specified in project cable schedule	OK
2	Visual Check cable physical integrity.	OK
3	Check is installed in accordance with layout drawing (segregation, distance…).	OK
4	Check cable is supported and fixed to rack according to project specification.	Note
5	Check bending radius is within the specified limits.	OK
6	Confirm cable glands suit for cable type, correctly mounted and tightened.	OK
7	Check gland plate for single core cables is non ferrous (non -magnetic).	NA
8	Confirm cable labelling is in accordance with specifications.	PL
9	Check cable is correctly loomed and segregated in accordance with specification.	OK
10	Check cable earthing against lastest drawings.	OK
11	Check cores marking are in accordance with termination diagram	OK
12	Check terminations are in accordance with latest termination diagram	OK
13	If required produce Red Line Mark Up for "AS BUILT"	

REFER TO FINAL SHEET FOR ACCEPTANCE

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	P-ETB-200N1-20-L1-01	: Lighting & Small Power DB BoP / Trace Heating - V-43001 Vessel - Feeder 7			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD_B-200/LD
TASK	code	C10000621		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

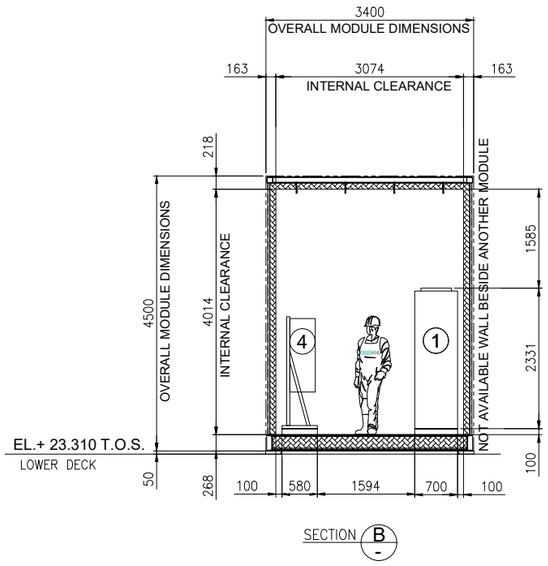
CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0.6	
6		PH 2	0.6	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		0.6	
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	>999	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

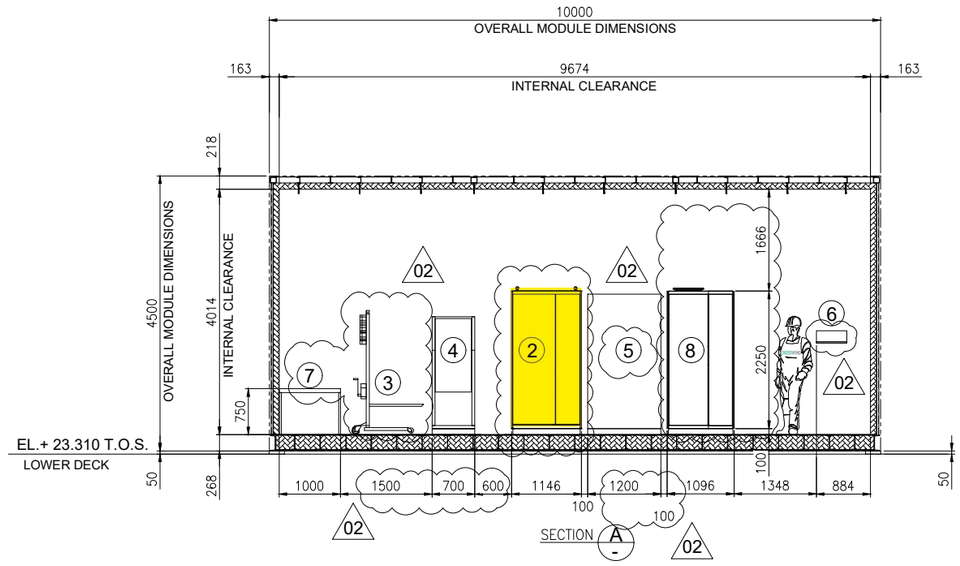
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	VOLCRAFT 1000V - ET-200 S/N:H240103023	TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207
Calibration certificate N° and date:	N°LAT 042 00768/24 _ 12/10/2024	Calibration certificate N° and date:	N°7722/24 _ 10/07/2024

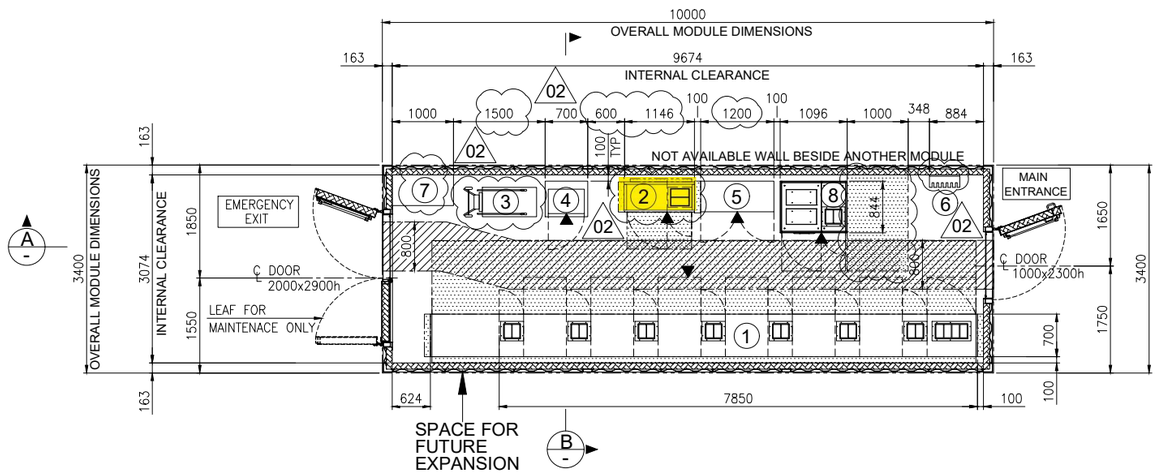
Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-18	2025-02-24	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-18T09:37:53.544Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-24T15:53:09.466Z	

DRAWING NO. 123A90-DDL-EL-DL-20105 | REV. 02





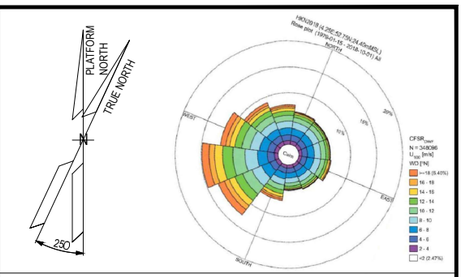


EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

1

EQUIPMENT LIST

REF.	TAG No.	DESCRIPTION	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)	NOTE
1	SG-200N1	400V SWITCHGEAR	7850	700	2331	
2	DP-200N1	DISTRIBUTION BOARD FOR LIGHTING AND SMALL POWER B.O.P.	1146	520	2250	
3	-	SERVICE TROLLEY FOR 400V SWITCHGEAR	1034	490	2030	
4	CN-200N1	ICCP PANEL	700	580	1830	
5	B200-HSB-001	DISTRIBUTION & HVAC PANEL - LV ROOM	1200	600	1900	02
6	-	TOOL BOX	495	200	200	
7	-	TABLE	1000	500	750	
8	SG-200D2	ACB PANEL FOR SOLAR PACKAGE	1096	844	2294	



NOTES

1. U.N.O. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DELETED.
3. DOCUMENT VALID ONLY FOR ELECTRICAL COMPONENT, FOR OTHER SCOPE LOCATION AND INFORMATION, PLEASE REFER TO VENDORS AND PROJECT DOCUMENTS.
4. FOR OTHER ITEMS, CORRECT LOCATION AND INFORMATION, PLEASE REFER TO VENDORS AND DEDICATED PROJECT DOCUMENTATION.
5. HEIGHT OF ALL PANELS IN THE EQUIPMENT LIST TABLE IS WITHOUT THE BASE FRAME (100mm)

02

LEGEND

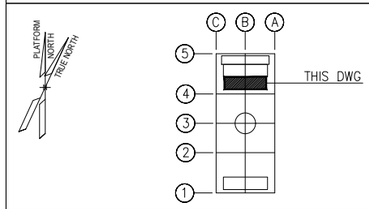
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

REFERENCES

DOCUMENT TITLE	DOCUMENT NUMBER
SG-200N1 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00007
SG-200D2 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00008
DP-200N1 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00009
AC UPS – GENERAL ARRANGEMENT AND DIMENSIONAL DRAWINGS	1724000372-EL-DA-00004
AC UPS – BATTERY LAYOUT INTERCONNECTING DIAGRAM	1724000372-EL-DG-00011
B-200 -GENERAL ARRANGEMENT DRAWINGS - E&I SHELTER	1724000049-AR-DA-00015
ICCC PANEL GENERAL ARRANGEMENT DRAWING	144671-CORR-TF-FAB-DWG-0003

02

KEY PLAN



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20105**

REV.:	DATE:	SIGNATURE:
2_A	08/08/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	27/05/2024	FMO	LMA/AMA	LMA/MDO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/03/2024	GPA	LMA/AMA	LMA/MDO	ISSUE FOR REVIEW (IFR)
00	08/11/2023	DSF	CB/AMA	OYFO/MDO	ISSUE FOR REVIEW (IFR)

CROSSWIND | ROSETTI MARINO

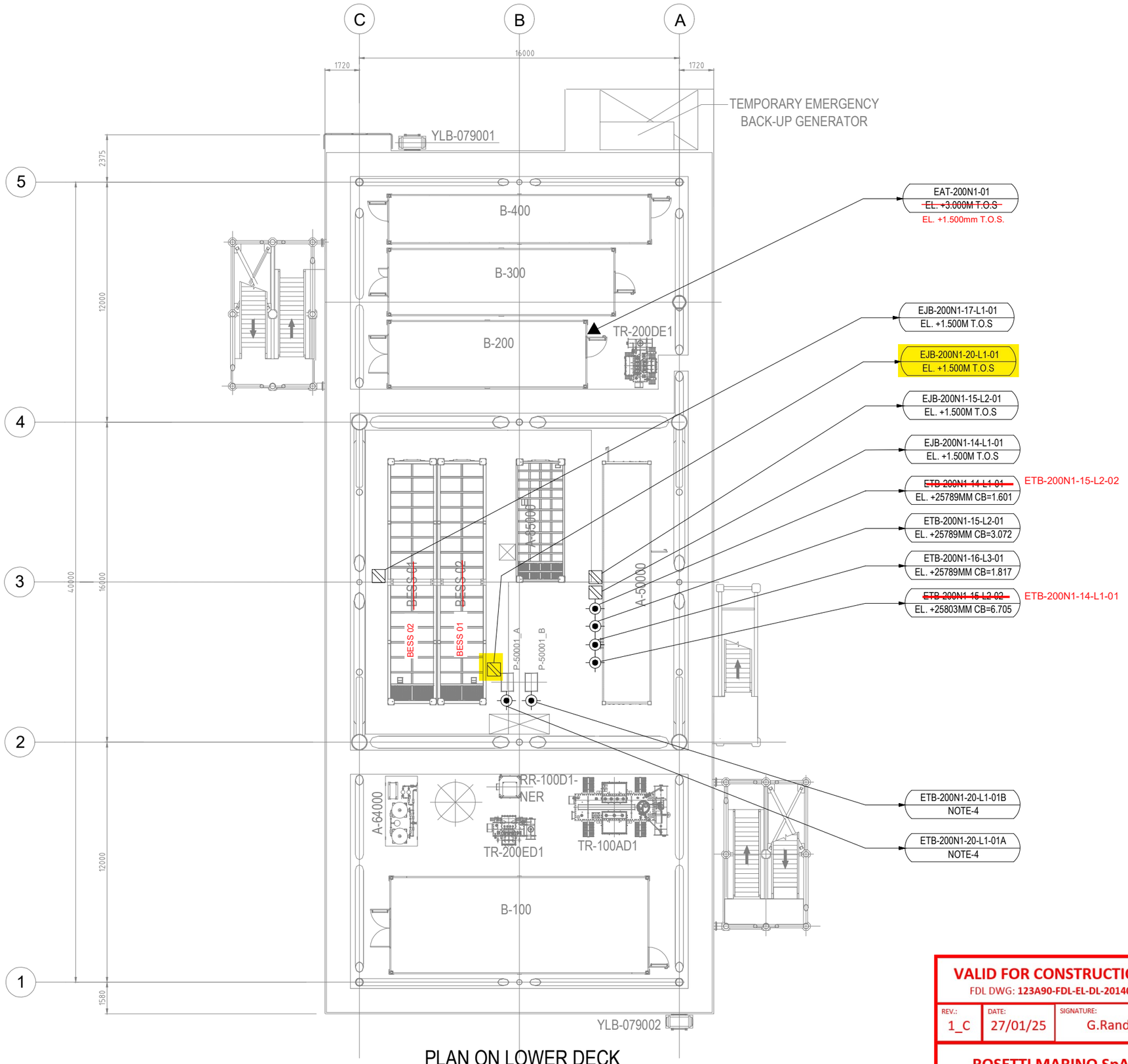
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LV SWITCHROOM

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN FMO	CHECKED LMA/AMA	APPROVED LMA/MDO	DATE 27/05/2024
A1	DRAWING NO. 123A90-DDL-EL-DL-20105	SHEET 001	REV. 02

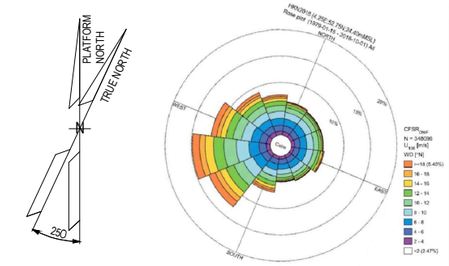
File Name : 123A90-DDL-EL-DL-20105_REV02.dwg

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

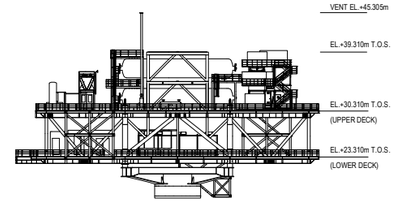
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_C	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

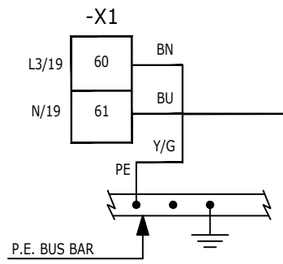
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 1of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

FROM	TO

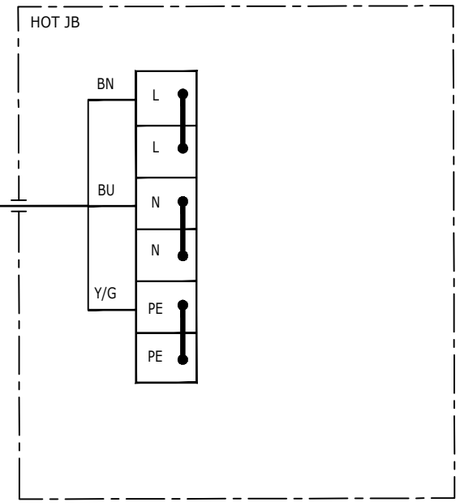
DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1

CUBICLE/CB: +03/Q19



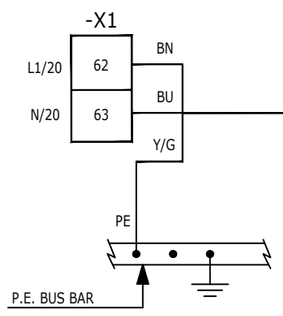
P-ETB-200N1-19-L3-01
3G6 mm²

DESCRIPTION: TRACE HEATING - PROCESS LINES - FEEDER 6 (H2 VENT)
TAG NUMBER: ETB-200N1-19-L3-01



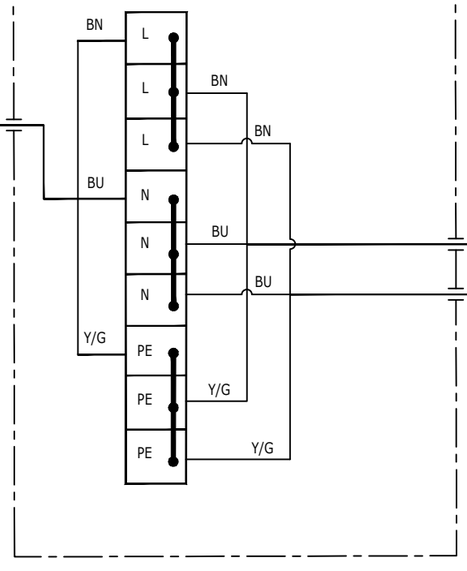
NOTE:
JB SUPPLIED BY
VENDOR OF PACKAGE

CUBICLE/CB: +03/Q20



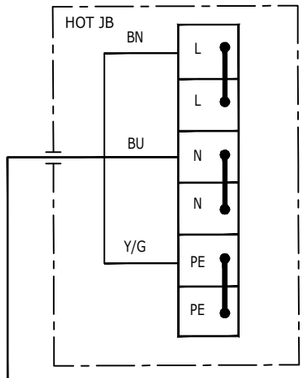
P-EJB-200N1-20-L1-01
3G6 mm²

DESCRIPTION: TRACE HEATING - PROCESS LINES
- FEEDER 7 (SEA WATER PUMPS)
TAG NUMBER: EJB-200N1-20-L1-01



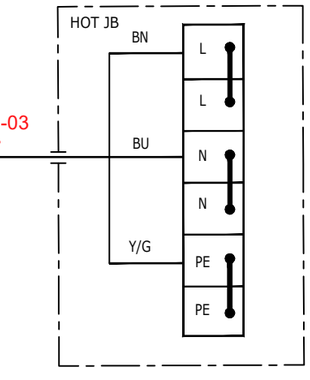
NOTE:
HOT JB SUPPLIED BY
VENDOR OF PACKAGE

TAG NUMBER: ETB-200N1-20-L1-01A



P-ETB-200N1-20-L1-02
~~P-ETB-200N1-20-L1-01A~~
3G6 mm²

TAG NUMBER: ETB-200N1-20-L1-01B



P-ETB-200N1-20-L1-03
~~P-ETB-200N1-20-L1-01B~~
3G6 mm²

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_K	12/02/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
TRACE HEATING PROCESS LINES

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

SCALE : 1:X

A3

DRAWING NO. 123A90-DDL-EL-DG-20149

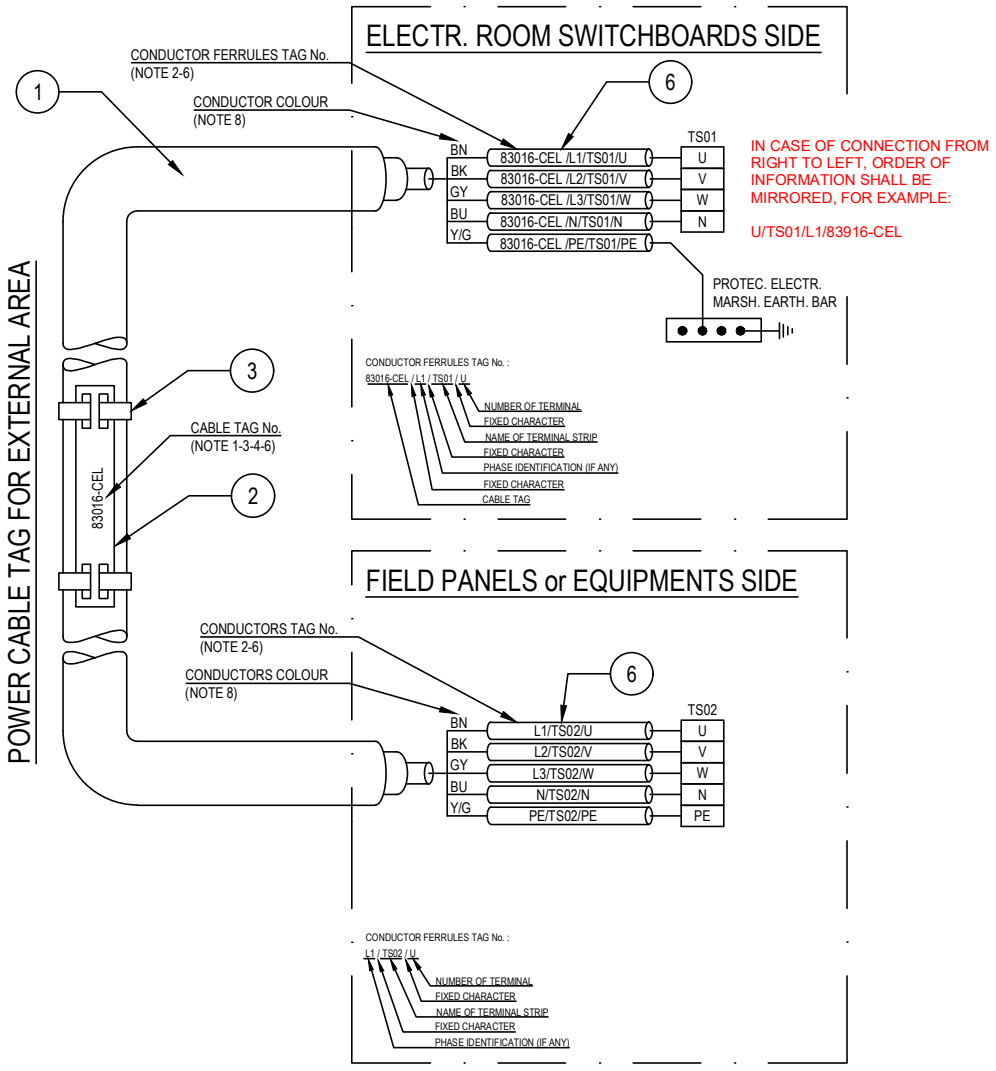
SHEET 051

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

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.

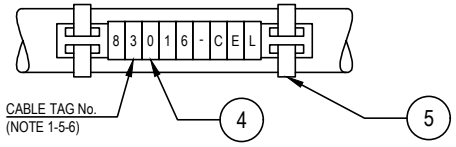
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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_D	20/12/24	V.Ramponi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

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. 123A90-DDL-EL-DD-20092 | SHEET 007 | REV. 02

F.to UNI A3: 420mmx297mm

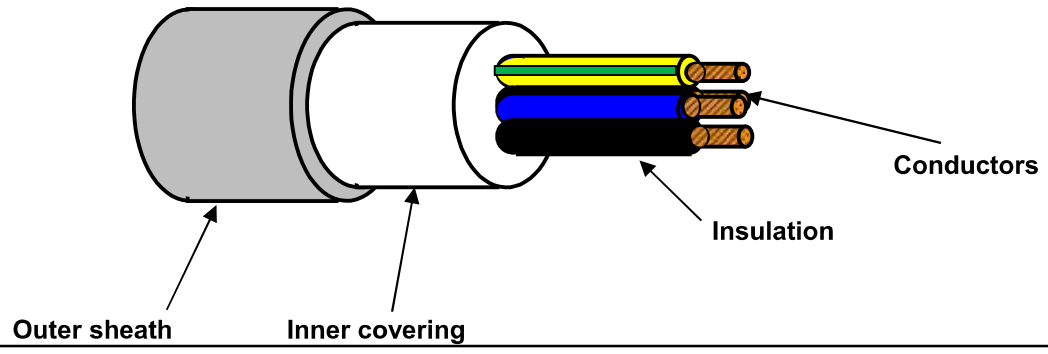
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Secti	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Stand	From Gland	From Entry	From Fitti	To Gland	To Entry	To Fitting	Routing	Routing Manual
P-ETB-200N1-20-L1-01	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						DP-200N1	LV 0,4 / 0,23 kV Distribution Switchgear	Lower Deck (B-200)	03/Q20	EJB-200N1-20-L1-01	HEAT TRACING - PROCESS LINES - FEEDER 7 (SEA WATER PUMPS) Cold JB	Lower Deck	Heat Tracing Cold JB	ELECV05-3G6	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 3G6mm² - Grey	M25	n.a.			T1_M25_Single				L-450-101-LVT-030 / L-600-101-LVT-020 / L-600-101-LVT-018 / L-600-101-LVT-017 / E-MCT-201 / L-750-101-LVT-011 / L-600-101-LVT-012 / L-300-101-LVT-069

FLEI s.r.l.

Cu Cl.2/EPR/LSZH 0,6/1 KV

3G6 - L.V. POWER CABLE - Flame Retardant



TECHNICAL FEATURES

Conductors :	**STRANDED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	EPR compound, quality to IEC 60092.360, Nominal Thickness 1,0 mm	
Cores colour code :	**Brown - Blue - Yellow/Green**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not Required	
Total Assembling :	Cores layed up with optimal lay length	
Overall Wrapping:	Not required	
Drain wire :	Not required	
Overall Shield:	Not required	
Inner covering :	Extruded LSZH compound, Average Thickness 1,0 mm	
Inner covering color code:	**Black or Natural**	
Armour :	Not required	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,2 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 3G6 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 -**	
	Year of Manufacture - CE + Meter Marking	
Outer diameter :	(15,6 ± 10%) mm	
Bending radius :	cable outer diameter x 10	(in fixed installation)
Voltage test :	3,5 kV a.c. for 5' (Between Cores)	
Conductors DC Resistance :		IEC 60228 Class 2
Insulation Resistance :	≥ 770 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.353**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance	IEC 61034.2 (LT ≥ 60%)	
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 covering together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	29/03/2024	Messa			
Checked :	29/03/2024	Spaccasassi			
Approved :	29/03/2024	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.

ITEM	Tag	P-EJB-200N1-14-L1-01	: Lighting & Small Power DB BoP / TRACE HEATING - FEEDER 1 (SWS LINES) Cold JB			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD_B-200/LD
TASK	code	C10002054		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

CABLE DATA

Type: Cu Cl.2/EPR/LSZH | Cores/Size mm²: 3G6 mm2 | Color: GREY

From: DP-200N1 | To: EJB-200N1-14-L1-01

1	Confirm cable is as specified in project cable schedule	OK
2	Visual Check cable physical integrity.	OK
3	Check is installed in accordance with layout drawing (segregation, distance…).	OK
4	Check cable is supported and fixed to rack according to project specification.	Note
5	Check bending radius is within the specified limits.	OK
6	Confirm cable glands suit for cable type, correctly mounted and tightened.	OK
7	Check gland plate for single core cables is non ferrous (non -magnetic).	NA
8	Confirm cable labelling is in accordance with specifications.	PL
9	Check cable is correctly loomed and segregated in accordance with specification.	OK
10	Check cable earthing against lastest drawings.	OK
11	Check cores marking are in accordance with termination diagram	PL
12	Check terminations are in accordance with latest termination diagram	OK
13	If required produce Red Line Mark Up for "AS BUILT"	

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	P-EJB-200N1-14-L1-01	: Lighting & Small Power DB BoP / TRACE HEATING - FEEDER 1 (SWS LINES) Cold JB			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD_B-200/LD
TASK	code	C10002054		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

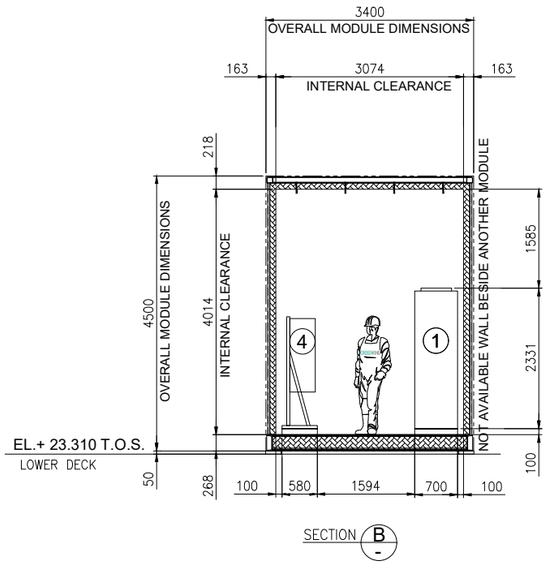
CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0,6	
6		PH 2	0,6	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		0,6	
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	>999	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207	TYPE / SERIAL N° :	MULTIMETER: FLUKE 175 SERIAL:AW1/018(17140769)
Calibration certificate N° and date:	N°7722/24 _ 10/07/2024	Calibration certificate N° and date:	N°7715/24 _ 10/07/2024

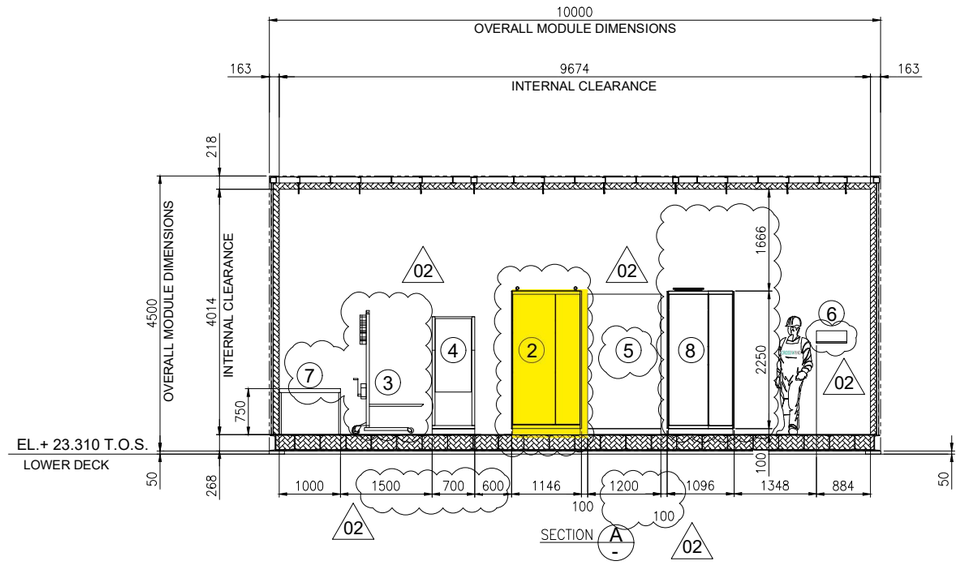
Comments: Nota 4: refer to PL C30000679

	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Paolo Schintu	
Date	2024-11-25	2024-12-03	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-11-25T16:34:08.271Z	PROVERLIS Digitaly signed by Paolo Schintu 2024-12-03T14:02:24.694Z	

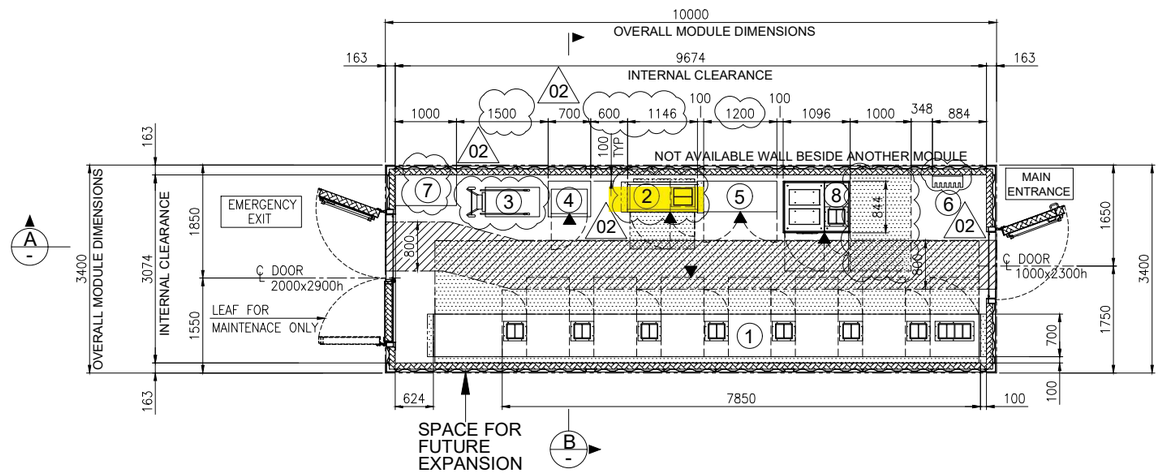
DRAWING NO. 123A90-DDL-EL-DL-20105 | REV. 02



SECTION B



SECTION A

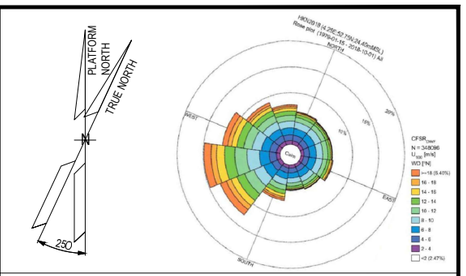


EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

1

EQUIPMENT LIST

REF.	TAG No.	DESCRIPTION	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)	NOTE
1	SG-200N1	400V SWITCHGEAR	7850	700	2331	
2	DP-200N1	DISTRIBUTION BOARD FOR LIGHTING AND SMALL POWER B.O.P.	1146	520	2250	
3	-	SERVICE TROLLEY FOR 400V SWITCHGEAR	1034	490	2030	
4	CN-200N1	ICCP PANEL	700	580	1830	
5	B200-HSB-001	DISTRIBUTION & HVAC PANEL - LV ROOM	1200	600	1900	02
6	-	TOOL BOX	495	200	200	
7	-	TABLE	1000	500	750	
8	SG-200D2	ACB PANEL FOR SOLAR PACKAGE	1096	844	2294	



NOTES

1. U.N.O. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DELETED.
3. DOCUMENT VALID ONLY FOR ELECTRICAL COMPONENT, FOR OTHER SCOPE LOCATION AND INFORMATION, PLEASE REFER TO VENDORS AND PROJECT DOCUMENTS.
4. FOR OTHER ITEMS, CORRECT LOCATION AND INFORMATION, PLEASE REFER TO VENDORS AND DEDICATED PROJECT DOCUMENTATION.
5. HEIGHT OF ALL PANELS IN THE EQUIPMENT LIST TABLE IS WITHOUT THE BASE FRAME (100mm)

02

LEGEND

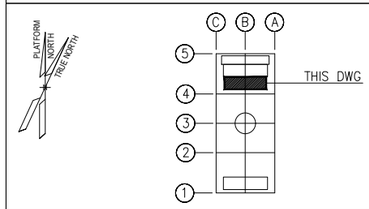
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

REFERENCES

DOCUMENT TITLE	DOCUMENT NUMBER
SG-200N1 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00007
SG-200D2 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00008
DP-200N1 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00009
AC UPS – GENERAL ARRANGEMENT AND DIMENSIONAL DRAWINGS	1724000372-EL-DA-00004
AC UPS – BATTERY LAYOUT INTERCONNECTING DIAGRAM	1724000372-EL-DG-00011
B-200 -GENERAL ARRANGEMENT DRAWINGS - E&I SHELTER	1724000049-AR-DA-00015
ICCC PANEL GENERAL ARRANGEMENT DRAWING	144671-CORR-TF-FAB-DWG-0003

02

KEY PLAN



VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-EL-DL-20105

REV.:	DATE:	SIGNATURE:
2_A	08/08/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	27/05/2024	FMO	LMA/AMA	LMA/MDO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/03/2024	GPA	LMA/AMA	LMA/MDO	ISSUE FOR REVIEW (IFR)
00	08/11/2023	DSF	CB/AMA	OYFO/MDO	ISSUE FOR REVIEW (IFR)

CROSSWIND | ROSETTI MARINO

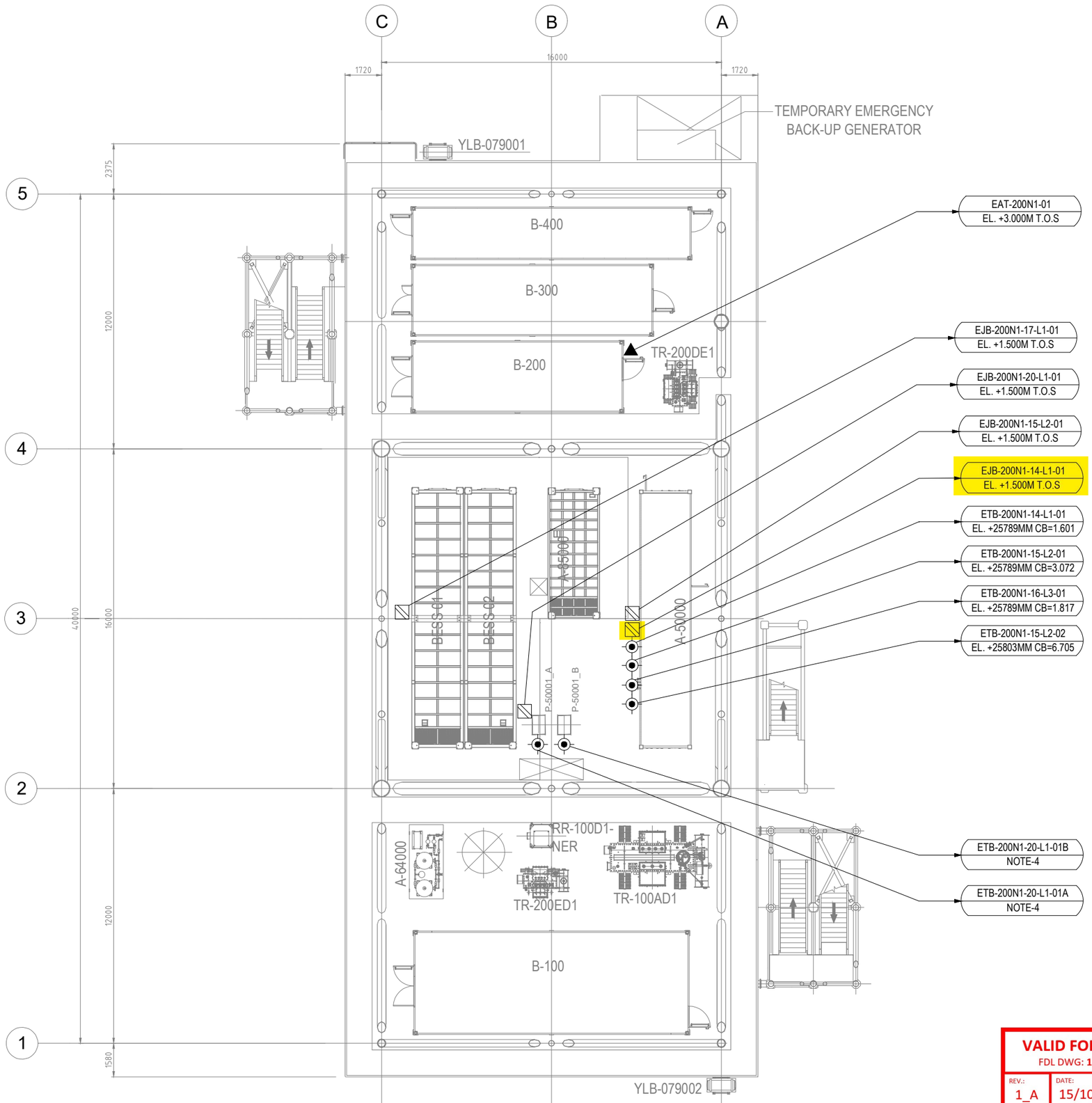
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LV SWITCHROOM

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN FMO	CHECKED LMA/AMA	APPROVED LMA/MDO	DATE 27/05/2024
A1	DRAWING NO. 123A90-DDL-EL-DL-20105	SHEET 001	REV. 02

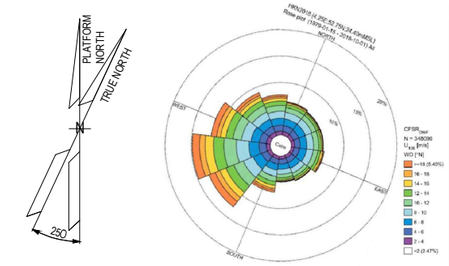
File Name : 123A90-DDL-EL-DL-20105_REV02.dwg

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

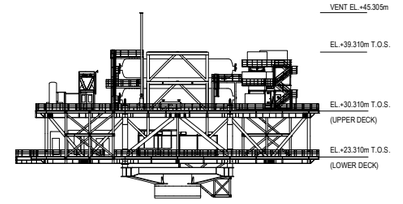
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_A	15/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

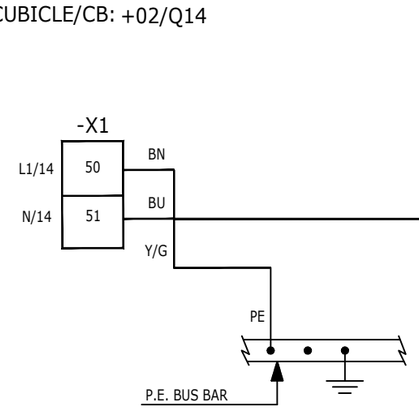
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 1of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

FROM	TO

DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1

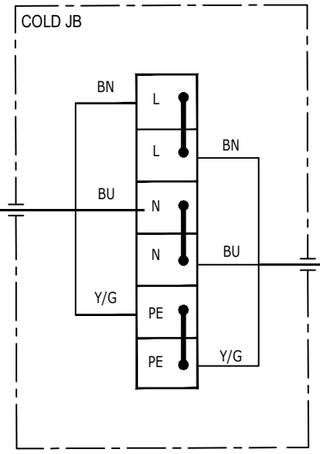
CUBICLE/CB: +02/Q14



P-EJB-200N1-14-L1-01
3G6 mm²

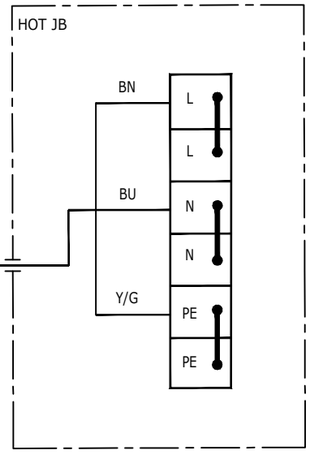
DESCRIPTION: TRACE HEATING - PROCESS LINES
- FEEDER 1 (SWS LINES)

TAG NUMBER: EJB-200N1-14-L1-01



P-ETB-200N1-14-L1-01
3G6 mm²

TAG NUMBER: ETB-200N1-14-L1-01
FOR PIPE LINE: SWS-35



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_B	26/11/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
TRACE HEATING PROCESS LINES

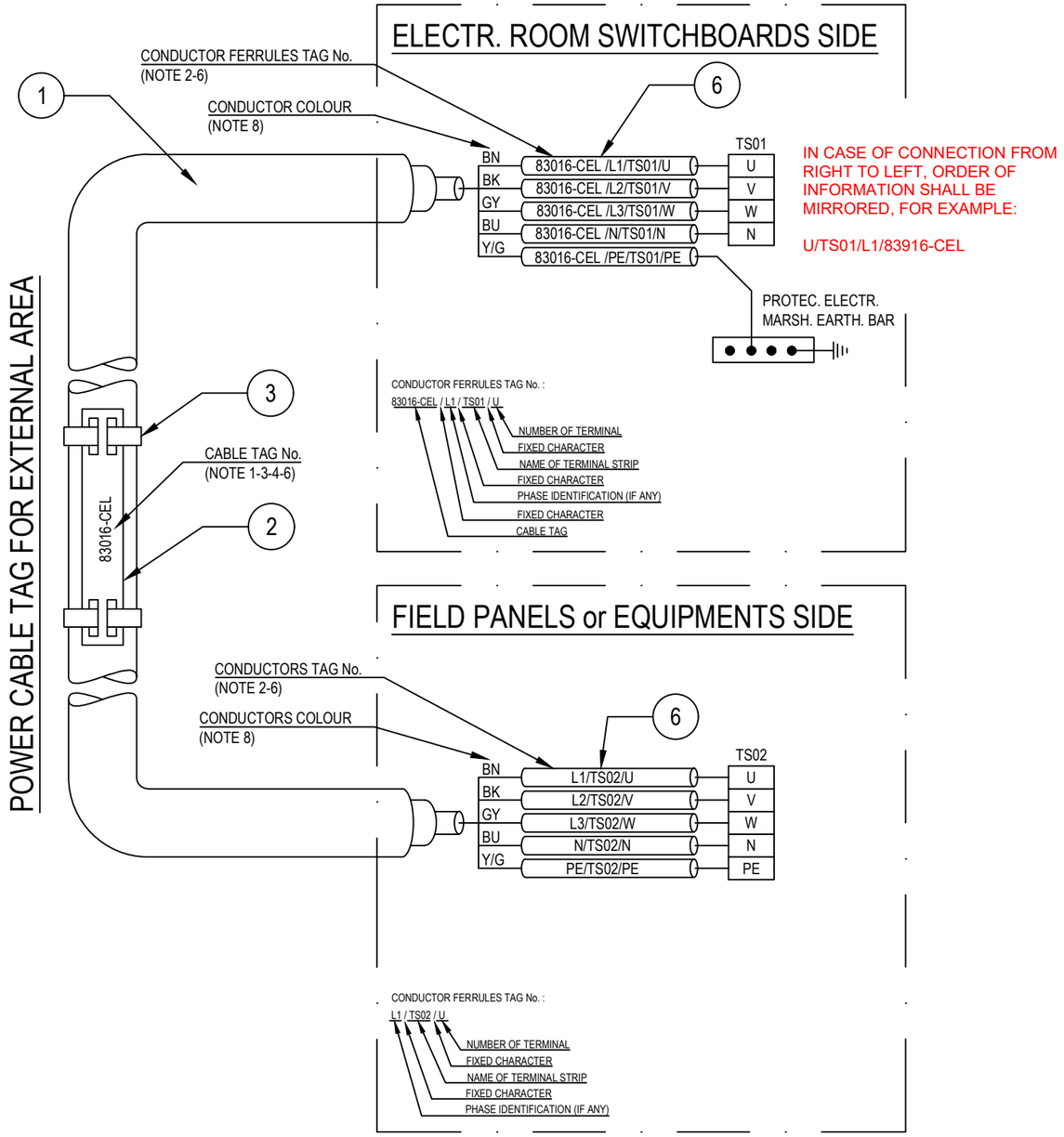
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 048 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

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.

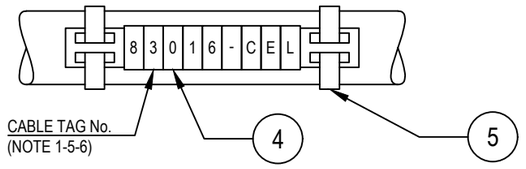
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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

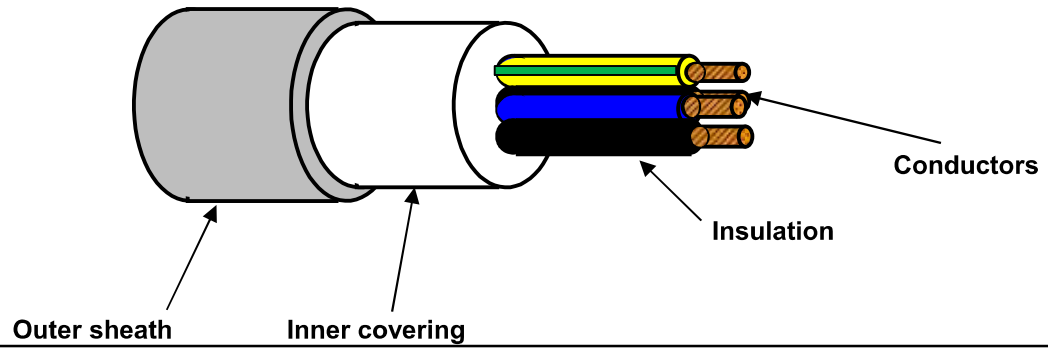
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Secti	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Stand	From Gland	From Entry	From Fitti	To Gland	To Entry	To Fitting	Routing	Routing Manual
P-EJB-200N1-14-L1-01	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						DP-200N1	LV 0,4 / 0,23 kV Distribution Switchgear	Lower Deck (B-200)	02/Q14	EJB-200N1-14-L1-01	HEAT TRACING - PROCESS LINES - FEEDER 1 (SWS LINES) Cold JB	Lower Deck	Heat Tracing Cold JB	ELECV05-3G6	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 3G6mm² - Grey	M25	n.a.			T1_M25_Single				L-450-101-LVT-030 / L-600-101-LVT-020 / L-600-101-LVT-019 / L-600-101-LVT-017 / E-MCT-203 / L-750-101-LVT-013 / L-750-101-LVT-014 / L-150-101-LVT-087 / L-150-101-LVT-138 / L-150-101-LVT-139 / L-150-101-LVT-146

FLEI s.r.l.

Cu Cl.2/EPR/LSZH 0,6/1 KV

3G6 - L.V. POWER CABLE - Flame Retardant



TECHNICAL FEATURES

Conductors :	**STRANDED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	EPR compound, quality to IEC 60092.360, Nominal Thickness 1,0 mm	
Cores colour code :	**Brown - Blue - Yellow/Green**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not Required	
Total Assembling :	Cores layed up with optimal lay length	
Overall Wrapping:	Not required	
Drain wire :	Not required	
Overall Shield:	Not required	
Inner covering :	Extruded LSZH compound, Average Thickness 1,0 mm	
Inner covering color code:	**Black or Natural**	
Armour :	Not required	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,2 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 3G6 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 -**	
	Year of Manufacture - CE + Meter Marking	
Outer diameter :	(15,6 ± 10%) mm	
Bending radius :	cable outer diameter x 10	(in fixed installation)
Voltage test :	3,5 kV a.c. for 5' (Between Cores)	
Conductors DC Resistance :		IEC 60228 Class 2
Insulation Resistance :	≥ 770 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.353**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance	IEC 61034.2 (LT ≥ 60%)	
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 covering together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	29/03/2024	Messa			
Checked :	29/03/2024	Spaccasassi			
Approved :	29/03/2024	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.

ITEM	Tag	P-EJB-200N1-15-L2-01	: Lighting & Small Power DB BoP / TRACE HEATING - FEEDER 2 (CI LINES) Cold JB		Dwg	123A90-DDL-EL-LIS-20148	
	S/Sys	83-65	: Electrical Heat Tracing		Module	LD_B-200/LD	
TASK	code	C10002055	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Electrical	Form CPX09	LV Power Cable	

CABLE DATA

Type Cu Cl.2/EPR/LSZH Cores/Size mm² 3G6 mm2 Color GREY

From DP-200N1 To ETB-200N1-15-L2-02

1	Confirm cable is as specified in project cable schedule	OK
2	Visual Check cable physical integrity.	OK
3	Check is installed in accordance with layout drawing (segregation, distance…).	OK
4	Check cable is supported and fixed to rack according to project specification.	Note
5	Check bending radius is within the specified limits.	OK
6	Confirm cable glands suit for cable type, correctly mounted and tightened.	OK
7	Check gland plate for single core cables is non ferrous (non -magnetic).	NA
8	Confirm cable labelling is in accordance with specifications.	PL
9	Check cable is correctly loomed and segregated in accordance with specification.	OK
10	Check cable earthing against lastest drawings.	OK
11	Check cores marking are in accordance with termination diagram	PL
12	Check terminations are in accordance with latest termination diagram	OK
13	If required produce Red Line Mark Up for "AS BUILT"	

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	P-EJB-200N1-15-L2-01	: Lighting & Small Power DB BoP / TRACE HEATING - FEEDER 2 (CI LINES) Cold JB			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD_B-200/LD
TASK	code	C10002055		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

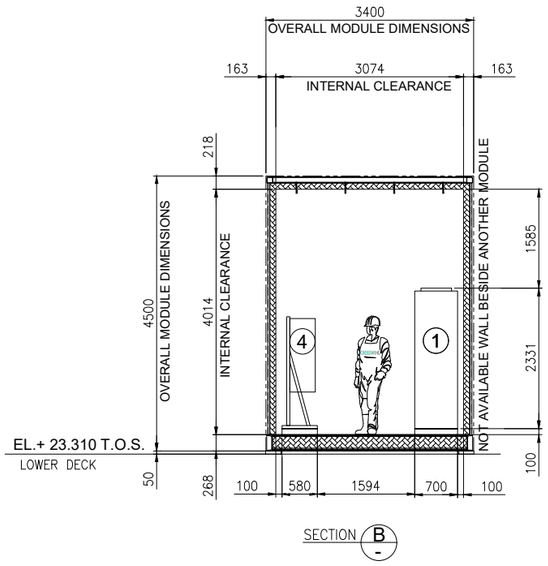
CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0,6	
6		PH 2	0,6	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		0,6	
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	>999	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

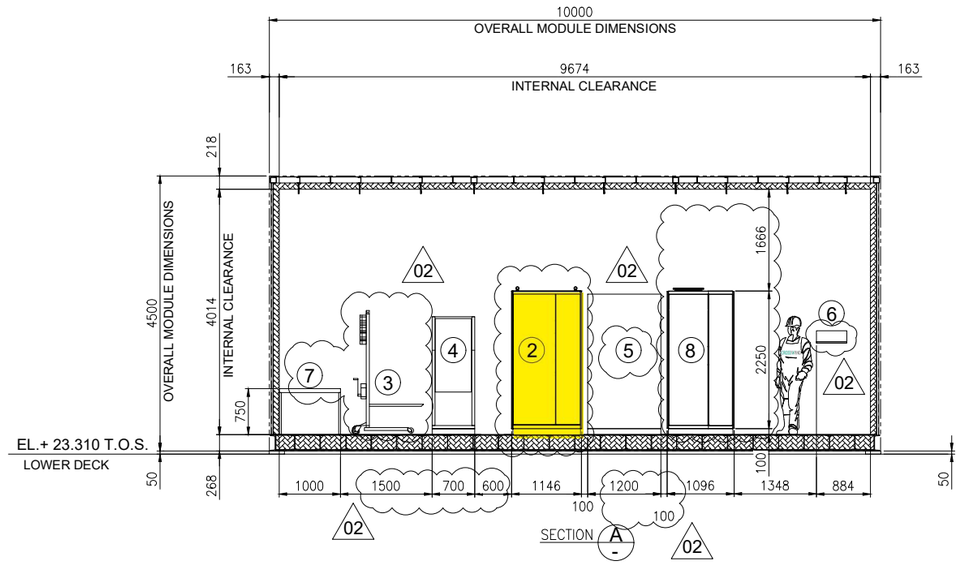
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207	TYPE / SERIAL N° :	MULTIMETER: FLUKE 175 SERIAL:AW1/018(17140769)
Calibration certificate N° and date:	N°7722/24 _ 10/07/2024	Calibration certificate N° and date:	N°7715/24 _ 10/07/2024

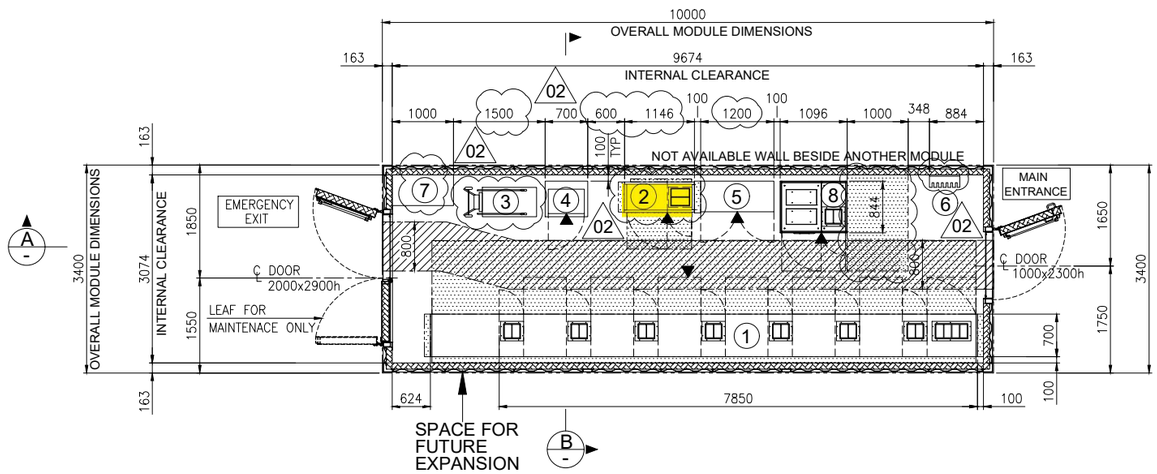
Comments: Nota 4: refer to PL C30000679

	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Paolo Schintu	
Date	2024-11-25	2024-12-03	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-11-25T16:34:24.694Z	PROVERLIS Digitaly signed by Paolo Schintu 2024-12-03T10:34:04.248Z	

DRAWING NO. 123A90-DDL-EL-DL-20105 | REV. 02





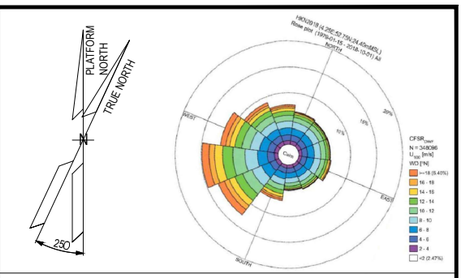


EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

1

EQUIPMENT LIST

REF.	TAG No.	DESCRIPTION	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)	NOTE
1	SG-200N1	400V SWITCHGEAR	7850	700	2331	
2	DP-200N1	DISTRIBUTION BOARD FOR LIGHTING AND SMALL POWER B.O.P.	1146	520	2250	
3	-	SERVICE TROLLEY FOR 400V SWITCHGEAR	1034	490	2030	
4	CN-200N1	ICCP PANEL	700	580	1830	
5	B200-HSB-001	DISTRIBUTION & HVAC PANEL - LV ROOM	1200	600	1900	02
6	-	TOOL BOX	495	200	200	
7	-	TABLE	1000	500	750	
8	SG-200D2	ACB PANEL FOR SOLAR PACKAGE	1096	844	2294	



NOTES

1. U.N.O. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DELETED.
3. DOCUMENT VALID ONLY FOR ELECTRICAL COMPONENT, FOR OTHER SCOPE LOCATION AND INFORMATION, PLEASE REFER TO VENDORS AND PROJECT DOCUMENTS.
4. FOR OTHER ITEMS, CORRECT LOCATION AND INFORMATION, PLEASE REFER TO VENDORS AND DEDICATED PROJECT DOCUMENTATION.
5. HEIGHT OF ALL PANELS IN THE EQUIPMENT LIST TABLE IS WITHOUT THE BASE FRAME (100mm)

02

LEGEND

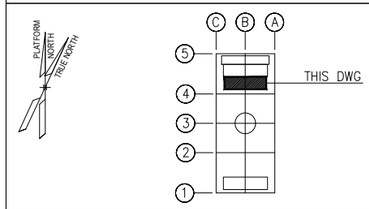
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

REFERENCES

DOCUMENT TITLE	DOCUMENT NUMBER
SG-200N1 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00007
SG-200D2 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00008
DP-200N1 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00009
AC UPS – GENERAL ARRANGEMENT AND DIMENSIONAL DRAWINGS	1724000372-EL-DA-00004
AC UPS – BATTERY LAYOUT INTERCONNECTING DIAGRAM	1724000372-EL-DG-00011
B-200 -GENERAL ARRANGEMENT DRAWINGS - E&I SHELTER	1724000049-AR-DA-00015
ICCC PANEL GENERAL ARRANGEMENT DRAWING	144671-CORR-TF-FAB-DWG-0003

02

KEY PLAN



VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-EL-DL-20105

REV.:	DATE:	SIGNATURE:
2_A	08/08/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	27/05/2024	FMO	LMA/AMA	LMA/MDO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/03/2024	GPA	LMA/AMA	LMA/MDO	ISSUE FOR REVIEW (IFR)
00	08/11/2023	DSF	CB/AMA	OYFO/MDO	ISSUE FOR REVIEW (IFR)

CROSSWIND | ROSETTI MARINO

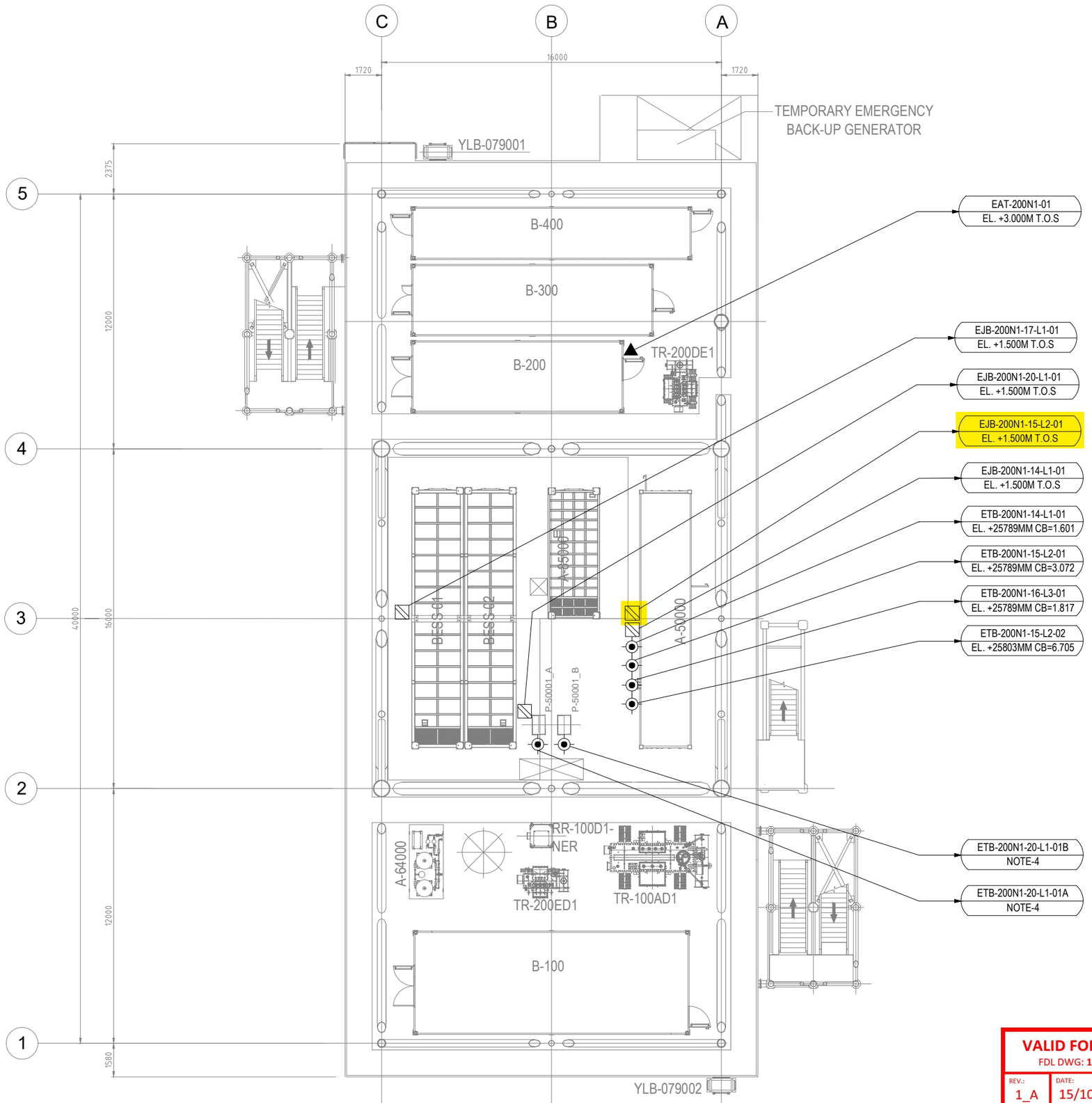
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LV SWITCHROOM

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN FMO	CHECKED LMA/AMA	APPROVED LMA/MDO	DATE 27/05/2024
A1	DRAWING NO. 123A90-DDL-EL-DL-20105	SHEET 001	REV. 02

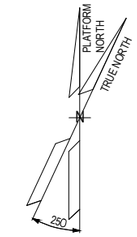
File Name : 123A90-DDL-EL-DL-20105_REV02.dwg

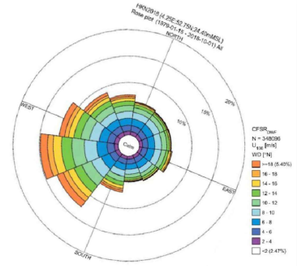
DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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





NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

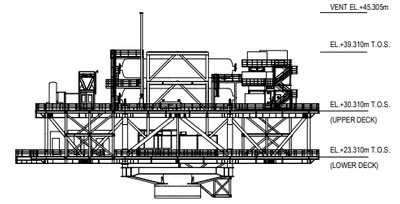
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_A	15/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

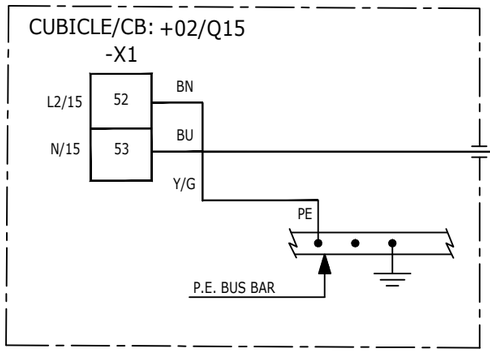
TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 1of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

FROM

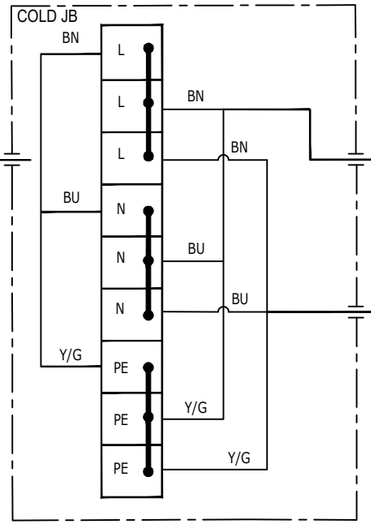
DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1



P-EJB-200N1-15-L2-01
3G6 mm²

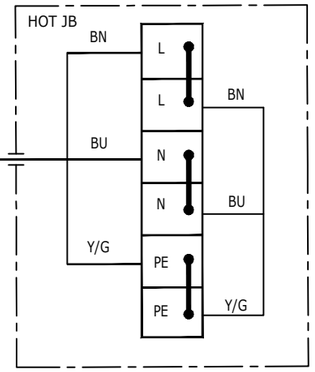
TO

DESCRIPTION: TRACE HEATING - PROCESS LINES
- FEEDER 2 (CI LINES)
TAG NUMBER: EJB-200N1-15-L2-01



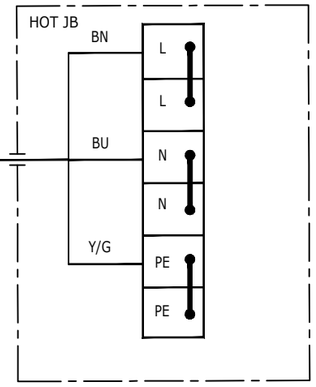
P-ETB-200N1-15-L2-01
3G6 mm²

TAG NUMBER: ETB-200N1-15-L2-01
FOR PIPE LINE: CI-029

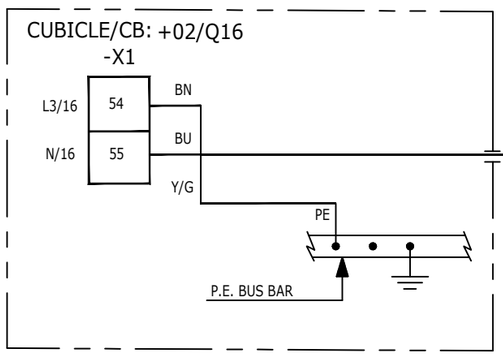


P-ETB-200N1-15-L2-02
3G6 mm²

TAG NUMBER: ETB-200N1-15-L2-02
FOR PIPE LINE: CI-043

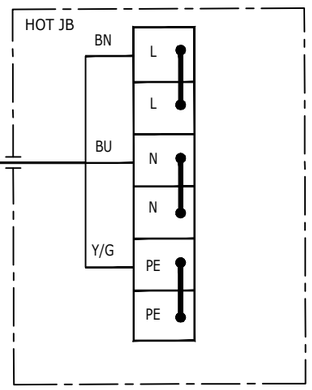


DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1



P-ETB-200N1-16-L3-01
3G6 mm²

DESCRIPTION: TRACE HEATING
PROCESS LINES - FEEDER 3 (DM 001)
TAG NUMBER: ETB-200N1-16-L3-01



VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-EL-DG-20149
REV.: 2_B | DATE: 26/11/24 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
TRACE HEATING PROCESS LINES

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

SCALE : 1:X

A3

DRAWING NO. 123A90-DDL-EL-DG-20149

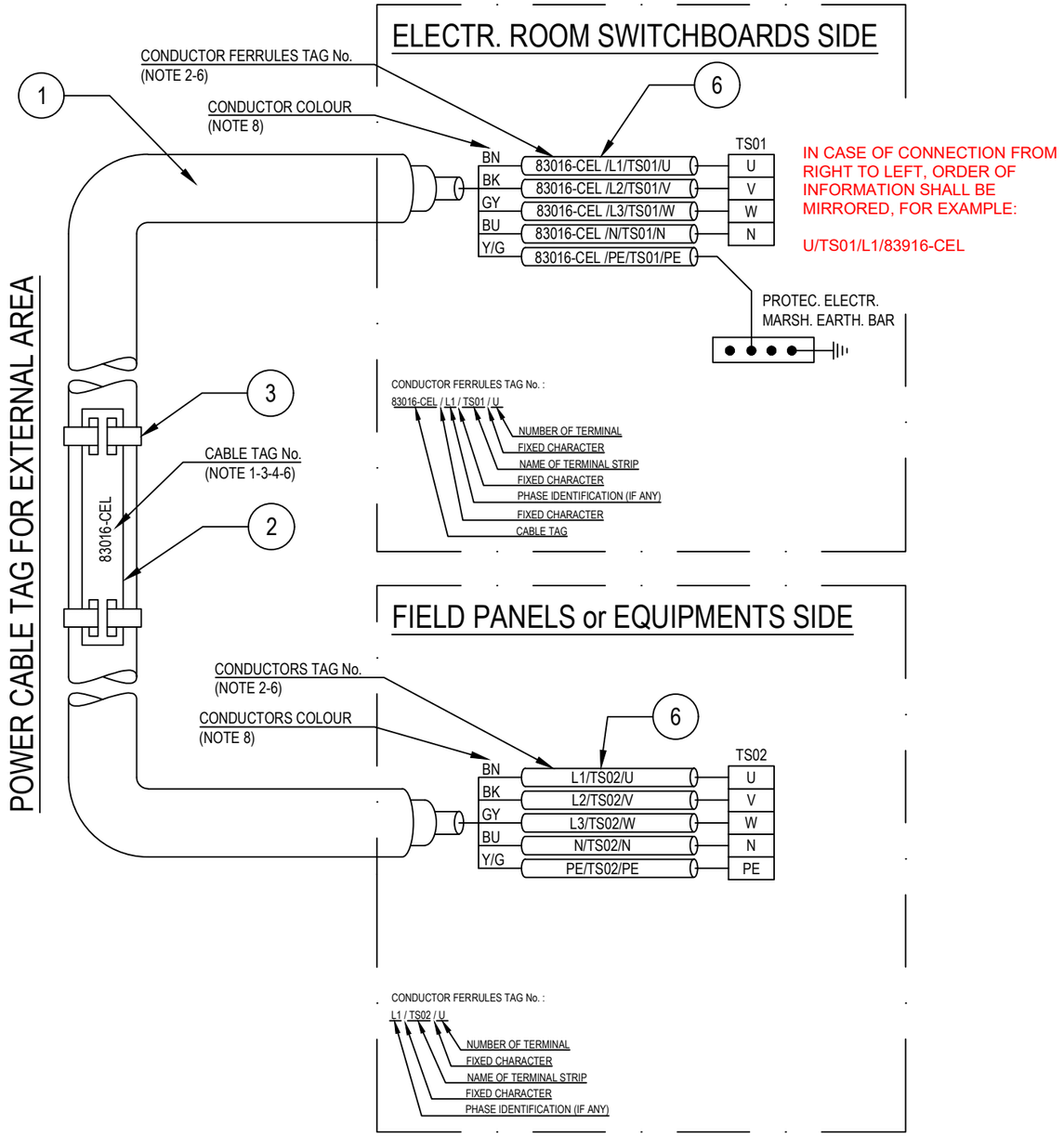
SHEET 049

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

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.

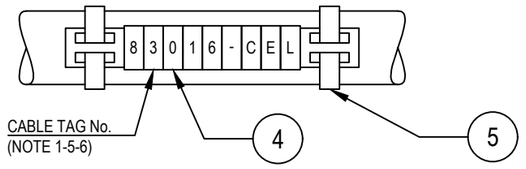
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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

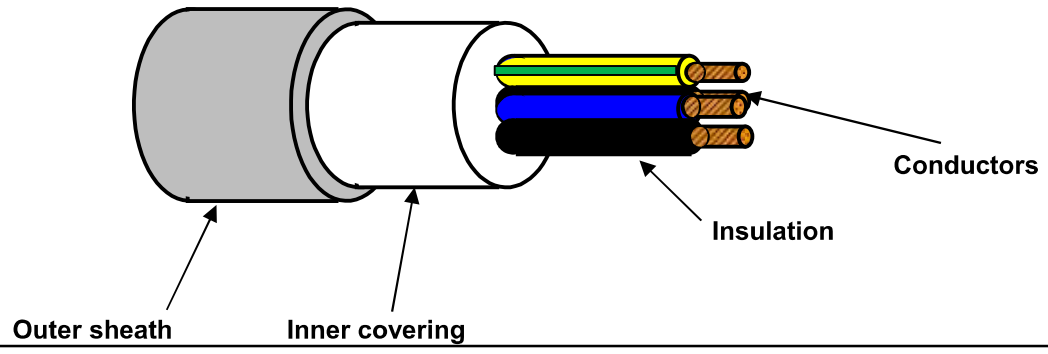
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Fun	Area	From Tag	From Main Function	From Area	From Tag Sectio	To Tag	To Main Function	To Area	To Tag Sectio	Material ID	Material Desc.	Gland Sta	From Gl	From Entr	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
P-EJB-200N1-15-L2-01	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						DP-200N1	LV 0,4 / 0,23 kV Distribution Switchgear	Lower Deck (B-200)	02/Q15	ETB-200N1-15-L2-02	TRACE HEATING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB	Lower Deck	Heat Tracing Hot JB	ELECV05-3G6	Cable Cu CI.2/EPR/LSZH 0,6/1kV 3G6mm² - Grey	M25	n.a.			T1_M25_Single				L-450-101-LVT-030 / L-600-101-LVT-020 / L-600-101-LVT-019 / L-600-101-LVT-017 / E-MCT-203 / L-750-101-LVT-013 / L-750-101-LVT-014 / L-150-101-LVT-087 / L-150-101-LVT-138 / L-150-101-LVT-139 / L-150-101-LVT-146

FLEI s.r.l.

Cu Cl.2/EPR/LSZH 0,6/1 KV

3G6 - L.V. POWER CABLE - Flame Retardant



TECHNICAL FEATURES

Conductors :	**STRANDED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	EPR compound, quality to IEC 60092.360, Nominal Thickness 1,0 mm	
Cores colour code :	**Brown - Blue - Yellow/Green**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not Required	
Total Assembling :	Cores layed up with optimal lay length	
Overall Wrapping:	Not required	
Drain wire :	Not required	
Overall Shield:	Not required	
Inner covering :	Extruded LSZH compound, Average Thickness 1,0 mm	
Inner covering color code:	**Black or Natural**	
Armour :	Not required	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,2 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 3G6 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 -**	
	Year of Manufacture - CE + Meter Marking	
Outer diameter :	(15,6 ± 10%) mm	
Bending radius :	cable outer diameter x 10	(in fixed installation)
Voltage test :	3,5 kV a.c. for 5' (Between Cores)	
Conductors DC Resistance :		IEC 60228 Class 2
Insulation Resistance :	≥ 770 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.353**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance	IEC 61034.2 (LT ≥ 60%)	
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 covering together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	29/03/2024	Messa			
Checked :	29/03/2024	Spaccasassi			
Approved :	29/03/2024	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	P-ETB-200N1-15-L2-02	: TRACE HEATING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB/TRACE HEATING - PROCES			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10002056		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

CABLE DATA

Type: Cu Cl.2/EPR/LSZH Cores/Size mm²: 3G6 mm2 Color: GREY

From: EJB-200N1-15-L2-01 To: ETB-200N1-15-L2-02

1	Confirm cable is as specified in project cable schedule	OK
2	Visual Check cable physical integrity.	OK
3	Check is installed in accordance with layout drawing (segregation, distance…).	OK
4	Check cable is supported and fixed to rack according to project specification.	PL
5	Check bending radius is within the specified limits.	OK
6	Confirm cable glands suit for cable type, correctly mounted and tightened.	OK
7	Check gland plate for single core cables is non ferrous (non -magnetic).	NA
8	Confirm cable labelling is in accordance with specifications.	PL
9	Check cable is correctly loomed and segregated in accordance with specification.	OK
10	Check cable earthing against lastest drawings.	OK
11	Check cores marking are in accordance with termination diagram	OK
12	Check terminations are in accordance with latest termination diagram	OK
13	If required produce Red Line Mark Up for "AS BUILT"	

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	P-ETB-200N1-15-L2-02	: TRACE HEATING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB/TRACE HEATING - PROCES			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10002056		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

	CONTINUITY			
5	CORE CONTINUITY Ω	PH 1	0,5	
6		PH 2	0,5	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		0,5	
	INSULATION			
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	>999	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

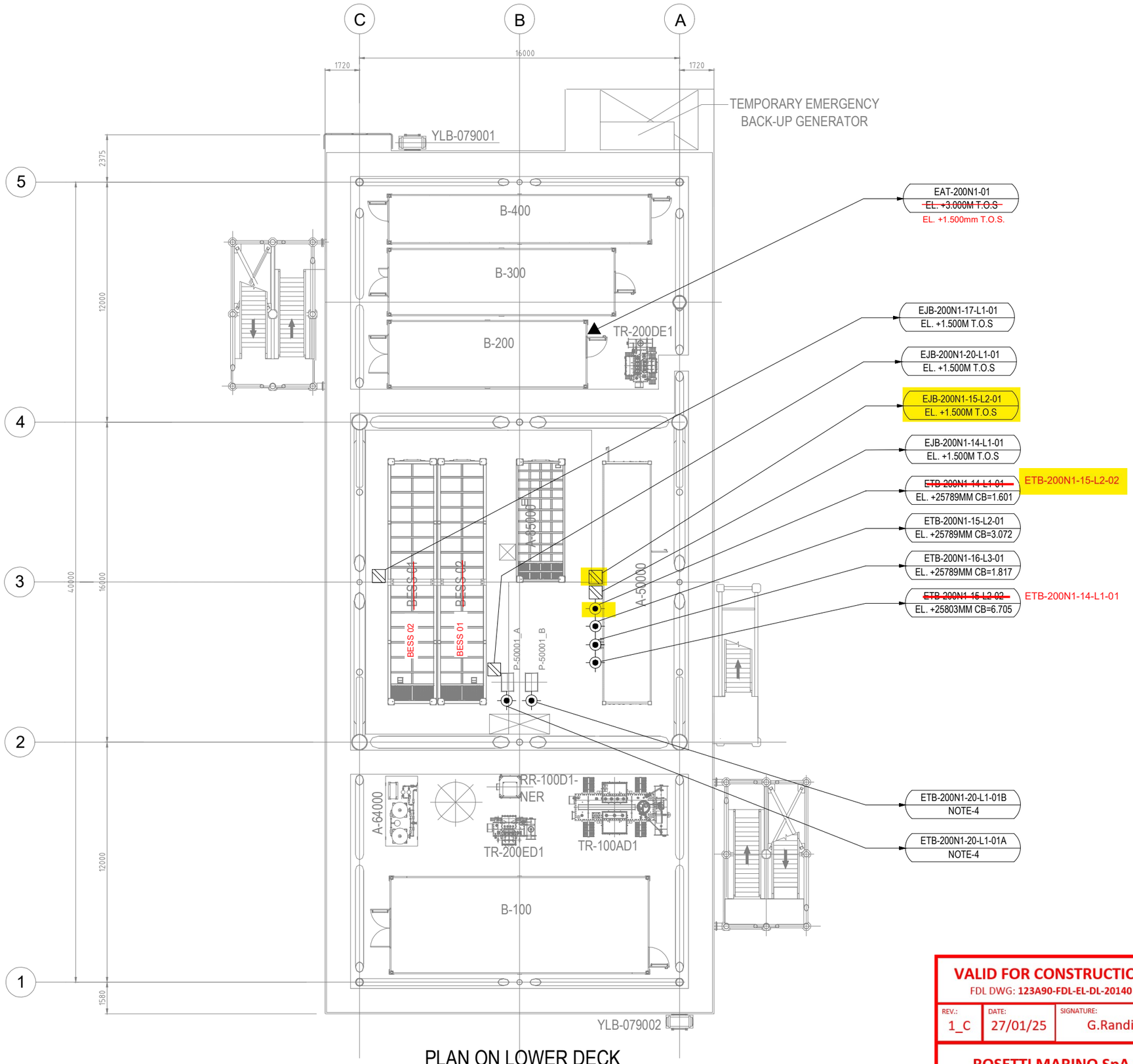
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	VOLCRAFT 1000V - ET-200 S/N:H240103023	TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207
Calibration certificate N° and date:	N°LAT 042 00768/24 _ 12/10/2024	Calibration certificate N° and date:	N°7722/24 _ 10/07/2024

Comments: Nota 4: refer to PL C30000679

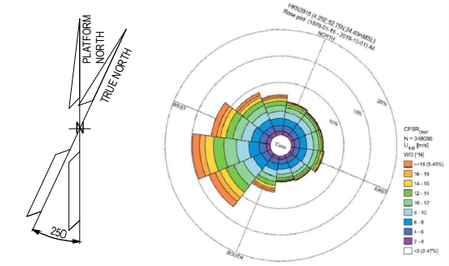
	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-18	2025-03-06	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-18T10:01:57.012Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-03-06T15:14:05.299Z	

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

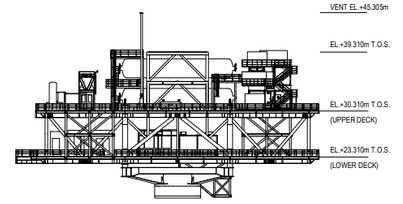
LEGEND

- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_C	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

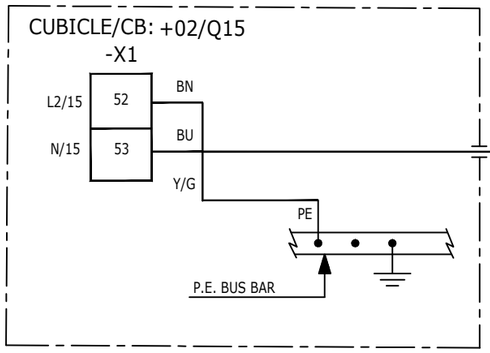
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 1of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

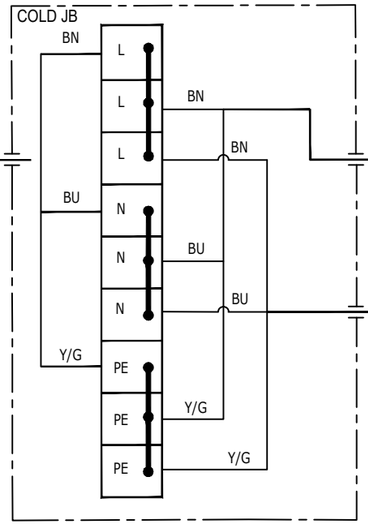
FROM	TO

DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1



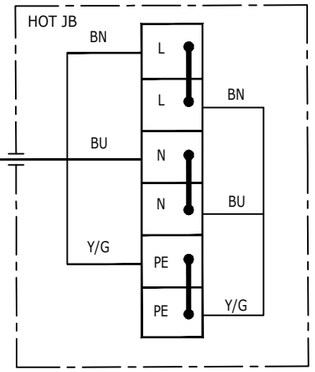
P-EJB-200N1-15-L2-01
3G6 mm²

DESCRIPTION: TRACE HEATING - PROCESS LINES
- FEEDER 2 (CI LINES)
TAG NUMBER: EJB-200N1-15-L2-01



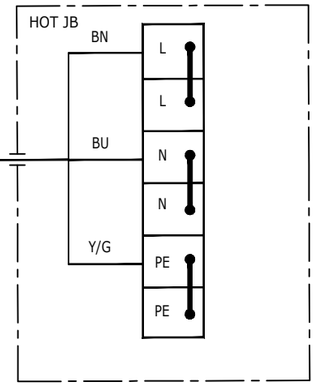
P-ETB-200N1-15-L2-01
3G6 mm²

TAG NUMBER: ETB-200N1-15-L2-01
FOR PIPE LINE: CI-029

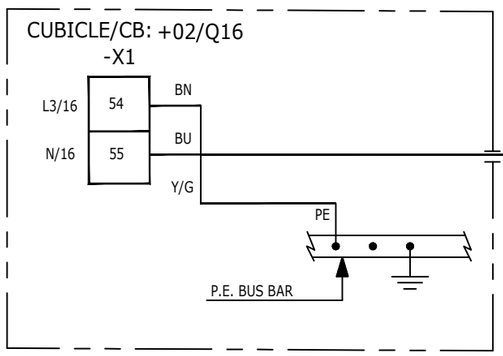


P-ETB-200N1-15-L2-02
3G6 mm²

TAG NUMBER: ETB-200N1-15-L2-02
FOR PIPE LINE: CI-043

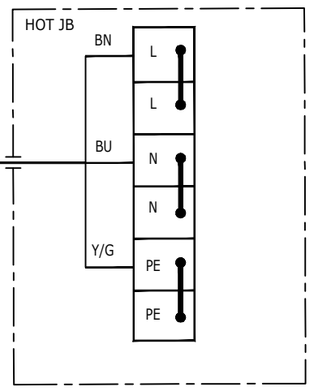


DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1



P-ETB-200N1-16-L3-01
3G6 mm²

DESCRIPTION: TRACE HEATING
PROCESS LINES - FEEDER 3 (DM 001)
TAG NUMBER: ETB-200N1-16-L3-01



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_K	12/02/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
TRACE HEATING PROCESS LINES

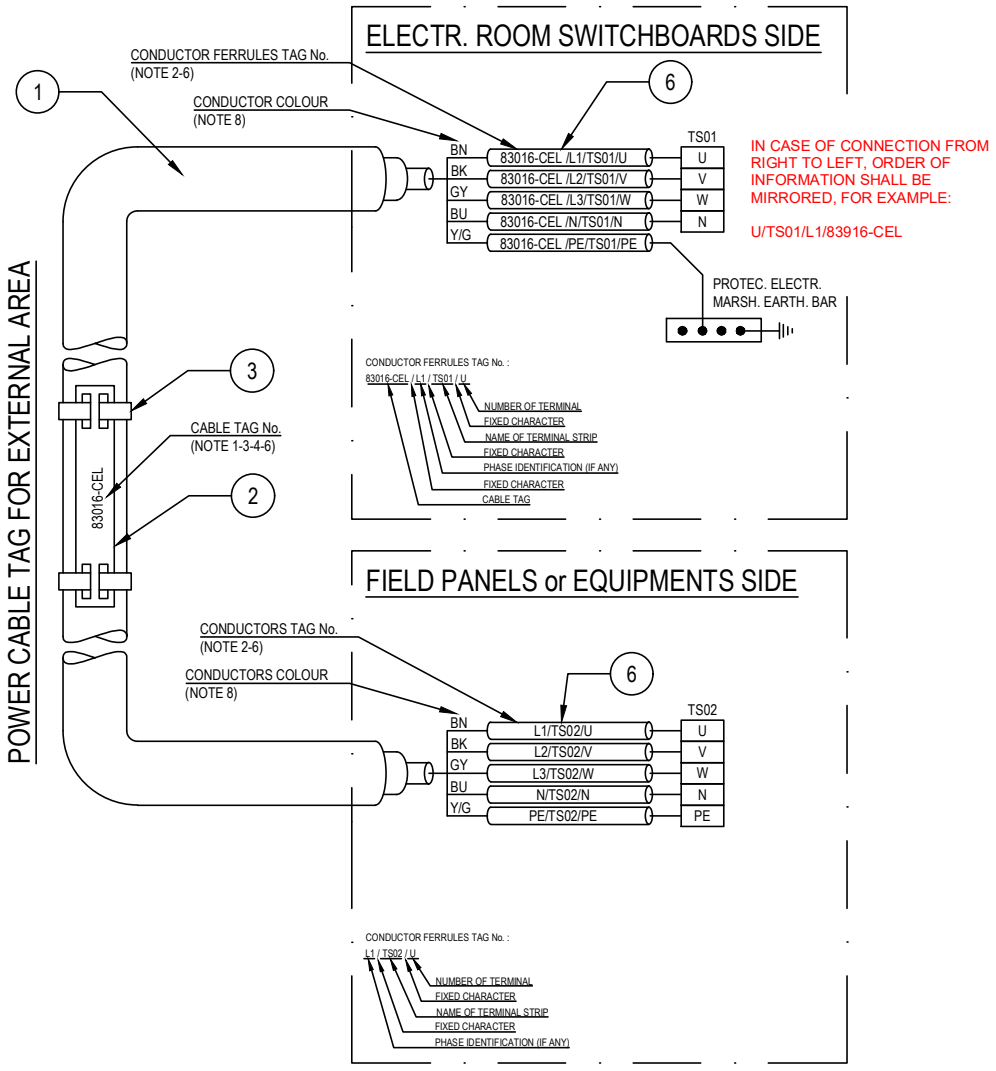
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 049 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

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.

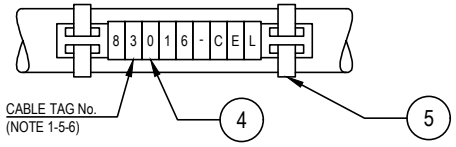
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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_D	20/12/24	V.Ramponi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

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. 123A90-DDL-EL-DD-20092 | SHEET 007 | REV. 02

F.to UNI A3: 420mmx297mm

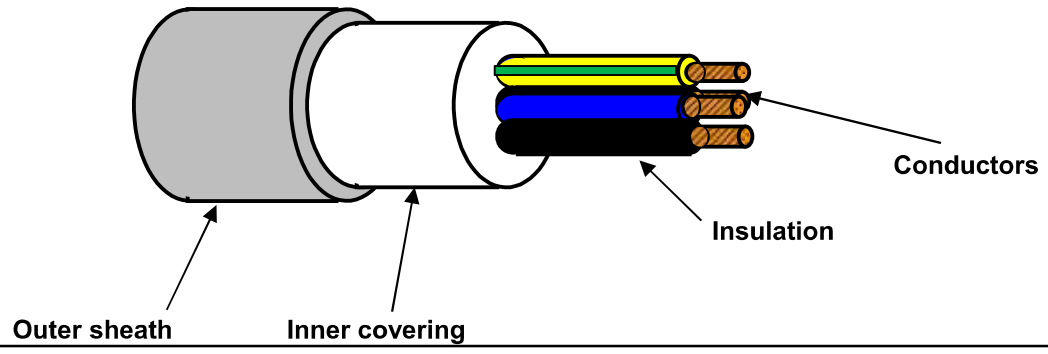
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Secti	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Stand	From Gland	From Entry	From Fitti	To Gland	To Entry	To Fitting	Routing	Routing Manual
P-ETB-200N1-15-L2-02	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						EJB-200N1-15-L2-01	HEAT TRACING - PROCESS LINES - FEEDER 2 (CI LINES) Cold JB	Lower Deck	Heat Tracing Cold JB	ETB-200N1-15-L2-02	TRACE HEATING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB	Lower Deck	Heat Tracing Hot JB	ELECV05-3G6	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 3G6mm² - Grey	M25	T1_M25_Single			T1_M25_Single				NA

FLEI s.r.l.

Cu Cl.2/EPR/LSZH 0,6/1 KV

3G6 - L.V. POWER CABLE - Flame Retardant



TECHNICAL FEATURES

Conductors :	**STRANDED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	EPR compound, quality to IEC 60092.360, Nominal Thickness 1,0 mm	
Cores colour code :	**Brown - Blue - Yellow/Green**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not Required	
Total Assembling :	Cores layed up with optimal lay length	
Overall Wrapping:	Not required	
Drain wire :	Not required	
Overall Shield:	Not required	
Inner covering :	Extruded LSZH compound, Average Thickness 1,0 mm	
Inner covering color code:	**Black or Natural**	
Armour :	Not required	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,2 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 3G6 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 -**	
	Year of Manufacture - CE + Meter Marking	
Outer diameter :	(15,6 ± 10%) mm	
Bending radius :	cable outer diameter x 10	(in fixed installation)
Voltage test :	3,5 kV a.c. for 5' (Between Cores)	
Conductors DC Resistance :		IEC 60228 Class 2
Insulation Resistance :	≥ 770 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.353**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance	IEC 61034.2 (LT ≥ 60%)	
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 covering together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	29/03/2024	Messa			
Checked :	29/03/2024	Spaccasassi			
Approved :	29/03/2024	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.

ITEM	Tag	P-EJB-200N1-17-L1-01	: Lighting & Small Power DB BoP / TRACE HEATING - FEEDER 4 (WW LINES) Cold JB		Dwg	123A90-DDL-EL-LIS-20148	
	S/Sys	83-65	: Electrical Heat Tracing		Module	LD_B-200/LD	
TASK	code	C10002057	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Electrical	Form	CPX09	LV Power Cable

CABLE DATA

Type Cu Cl.2/EPR/LSZH Cores/Size mm² 3G6 mm2 Color GREY

From DP-200N1 To EJB-200N1-17-L1-01

1	Confirm cable is as specified in project cable schedule	OK
2	Visual Check cable physical integrity.	OK
3	Check is installed in accordance with layout drawing (segregation, distance…).	OK
4	Check cable is supported and fixed to rack according to project specification.	Note
5	Check bending radius is within the specified limits.	OK
6	Confirm cable glands suit for cable type, correctly mounted and tightened.	OK
7	Check gland plate for single core cables is non ferrous (non -magnetic).	NA
8	Confirm cable labelling is in accordance with specifications.	PL
9	Check cable is correctly loomed and segregated in accordance with specification.	OK
10	Check cable earthing against lastest drawings.	OK
11	Check cores marking are in accordance with termination diagram	PL
12	Check terminations are in accordance with latest termination diagram	OK
13	If required produce Red Line Mark Up for "AS BUILT"	

ITEM	Tag	P-EJB-200N1-17-L1-01	: Lighting & Small Power DB BoP / TRACE HEATING - FEEDER 4 (WW LINES) Cold JB			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD_B-200/LD
TASK	code	C10002057		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

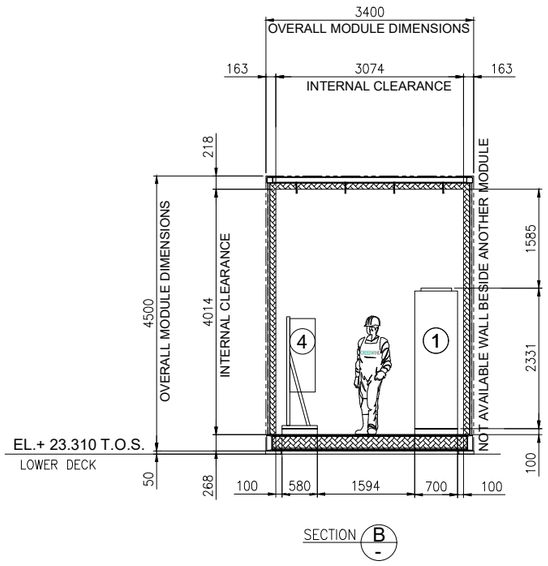
CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0,5	
6		PH 2	0,5	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		0,5	
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	>999	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

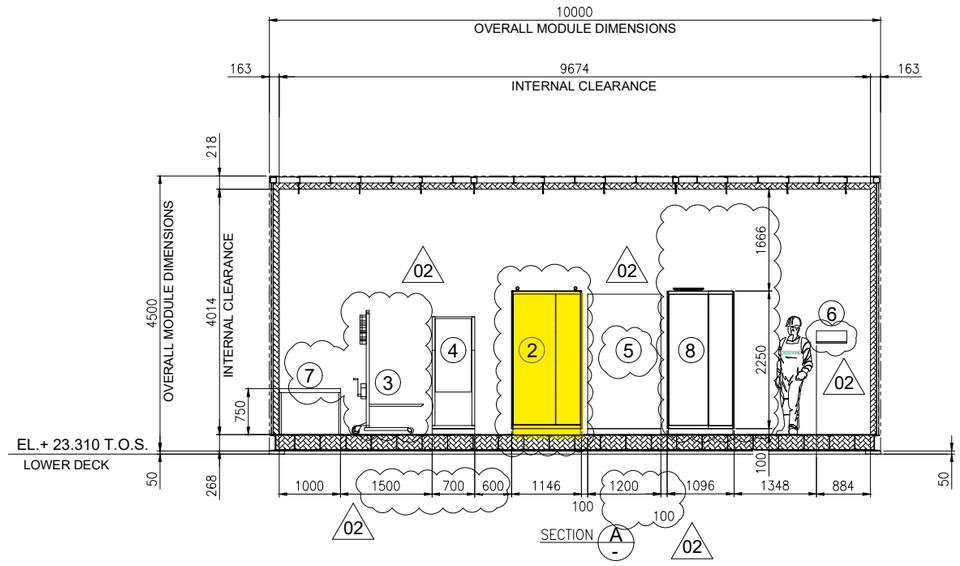
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207	TYPE / SERIAL N° :	MULTIMETER: FLUKE 175 SERIAL:AW1/018(17140769)
Calibration certificate N° and date:	N°7722/24 _ 10/07/2024	Calibration certificate N° and date:	N°7715/24 _ 10/07/2024

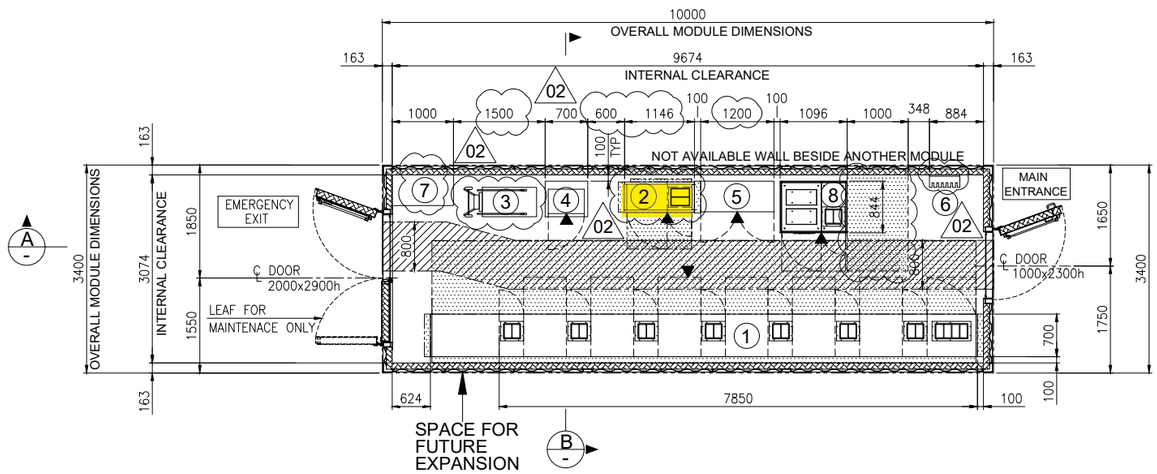
Comments: Nota 4: refer to PL C30000679

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Paolo Schintu	
Date	2024-12-02	2024-12-03	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-02T13:01:03.235Z	PROVERLIS Digitaly signed by Paolo Schintu 2024-12-03T10:24:42.065Z	

DRAWING NO. 123A90-DDL-EL-DL-20105 | REV. 02





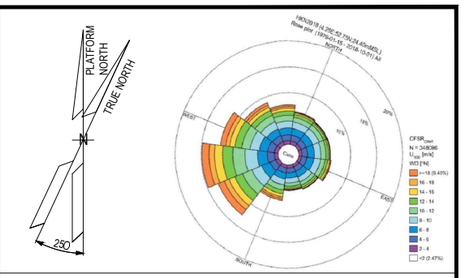


EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

1

EQUIPMENT LIST

REF.	TAG No.	DESCRIPTION	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)	NOTE
1	SG-200N1	400V SWITCHGEAR	7850	700	2331	
2	DP-200N1	DISTRIBUTION BOARD FOR LIGHTING AND SMALL POWER B.O.P.	1146	520	2250	
3	-	SERVICE TROLLEY FOR 400V SWITCHGEAR	1034	490	2030	
4	CN-200N1	ICCP PANEL	700	580	1830	
5	B200-HSB-001	DISTRIBUTION & HVAC PANEL - LV ROOM	1200	600	1900	02
6	-	TOOL BOX	495	200	200	
7	-	TABLE	1000	500	750	
8	SG-200D2	ACB PANEL FOR SOLAR PACKAGE	1096	844	2294	



NOTES

1. U.N.O. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DELETED.
3. DOCUMENT VALID ONLY FOR ELECTRICAL COMPONENT, FOR OTHER SCOPE LOCATION AND INFORMATION, PLEASE REFER TO VENDORS AND PROJECT DOCUMENTS.
4. FOR OTHER ITEMS, CORRECT LOCATION AND INFORMATION, PLEASE REFER TO VENDORS AND DEDICATED PROJECT DOCUMENTATION.
5. HEIGHT OF ALL PANELS IN THE EQUIPMENT LIST TABLE IS WITHOUT THE BASE FRAME (100mm)

02

LEGEND

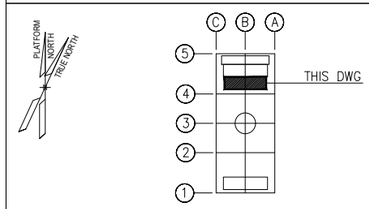
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

REFERENCES

DOCUMENT TITLE	DOCUMENT NUMBER
SG-200N1 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00007
SG-200D2 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00008
DP-200N1 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00009
AC UPS – GENERAL ARRANGEMENT AND DIMENSIONAL DRAWINGS	1724000372-EL-DA-00004
AC UPS – BATTERY LAYOUT INTERCONNECTING DIAGRAM	1724000372-EL-DG-00011
B-200 -GENERAL ARRANGEMENT DRAWINGS - E&I SHELTER	1724000049-AR-DA-00015
ICCC PANEL GENERAL ARRANGEMENT DRAWING	144671-CORR-TF-FAB-DWG-0003

02

KEY PLAN



VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-EL-DL-20105

REV.:	DATE:	SIGNATURE:
2_A	08/08/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	27/05/2024	FMO	LMA/AMA	LMA/MDO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/03/2024	GPA	LMA/AMA	LMA/MDO	ISSUE FOR REVIEW (IFR)
00	08/11/2023	DSF	CB/AMA	OYFO/MDO	ISSUE FOR REVIEW (IFR)

CROSSWIND | ROSETTI MARINO

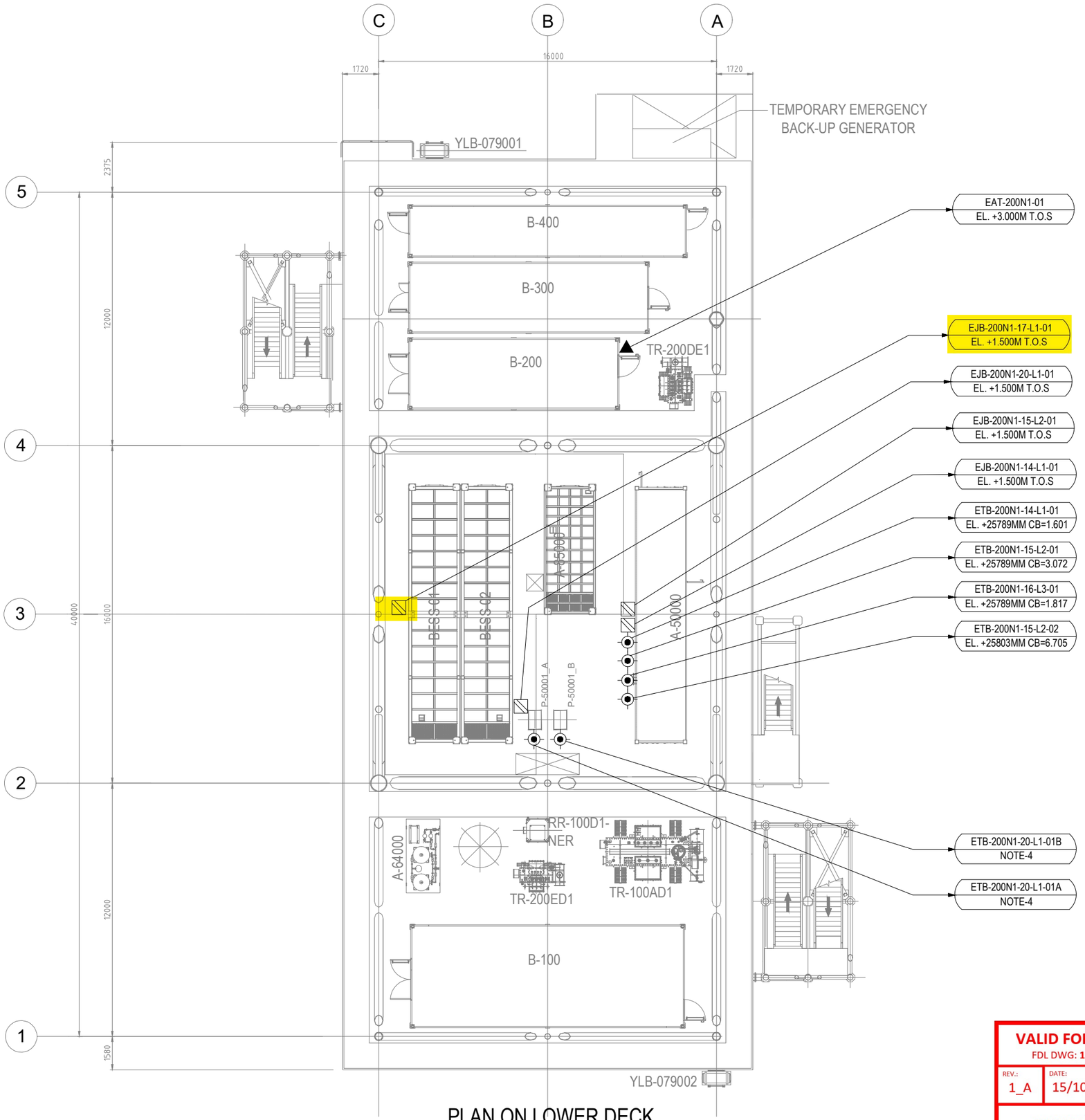
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LV SWITCHROOM

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN FMO	CHECKED LMA/AMA	APPROVED LMA/MDO	DATE 27/05/2024
A1	DRAWING NO. 123A90-DDL-EL-DL-20105	SHEET 001	REV. 02

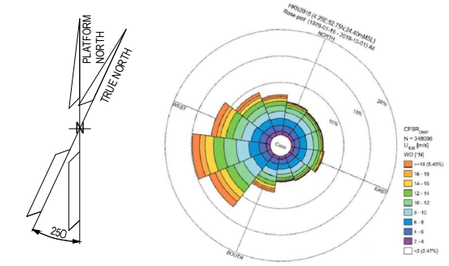
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DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

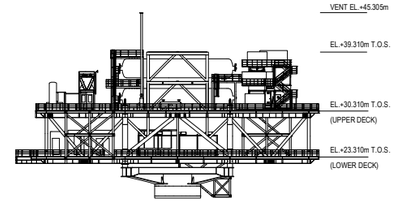
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_A	15/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 1of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

FROM

TO

DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1

CUBICLE/CB: +03/Q17

-X1

L1/17 56 BN

N/17 57 BU

Y/G

PE

P.E. BUS BAR

P-EJB-200N1-17-L1-01
3G6 mm²

DESCRIPTION: TRACE HEATING - PROCESS LINES - FEEDER 4 (WW LINES & LT)
TAG NUMBER: EJB-200N1-17-L1-01

COLD JB

BN L L L L BN BN BN

BU N N N N BU BU BU

Y/G PE PE PE PE Y/G Y/G Y/G

P-ETB-200N1-17-L1-01
3G6 mm²

DESCRIPTION: TRACE HEATING INSTRUMENT - 43-LT-003
TAG NUMBER: ETB-200N1-17-L1-01

HOT JB

BN L L BN

BU N N BU

Y/G PE PE Y/G

P-ETB-200N1-17-L1-02
3G6 mm²

DESCRIPTION: TRACE HEATING PROCESS LINE (WW 202)##
TAG NUMBER: ETB-200N1-17-L1-02

HOT JB

BN L L BN

BU N N BU

Y/G PE PE Y/G

P-ETB-200N1-17-L1-03
3G6 mm²

DESCRIPTION: TRACE HEATING PROCESS LINE (WW 260)
TAG NUMBER: ETB-200N1-17-L1-03

HOT JB

BN L L

BU N N

Y/G PE PE

DESCRIPTION: TRACE HEATING PROCESS LINE (WW 259)
TAG NUMBER: ETB-200N1-17-L1-04

P-ETB-200N1-17-L1-04
3G6 mm²

HOT JB

BN L L BN

BU N N BU

Y/G PE PE Y/G

- PIPE LINE WW-202 TRACED FROM NOZZLE N3 UPTO SWAN NECK

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_B	26/11/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
TRACE HEATING PROCESS LINES

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

SCALE : 1:X

A3

DRAWING NO. 123A90-DDL-EL-DG-20149

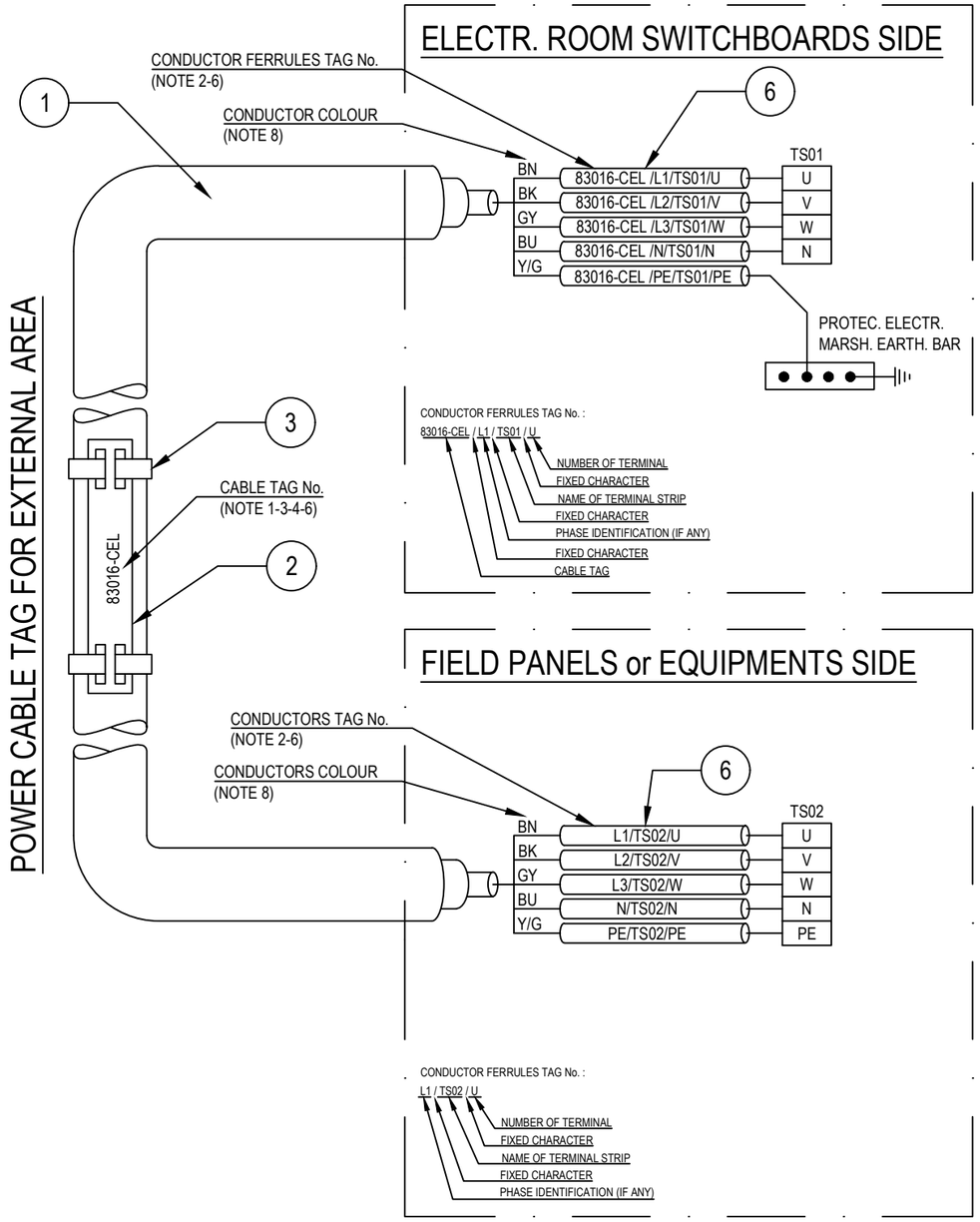
SHEET 050

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

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.

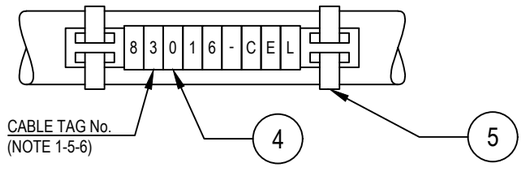
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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.: 2_A | DATE: 28/08/24 | SIGNATURE: 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. 123A90-DDL-EL-DD-20092 | SHEET 007 | REV. 02

F.to UNI A3: 420mmx297mm

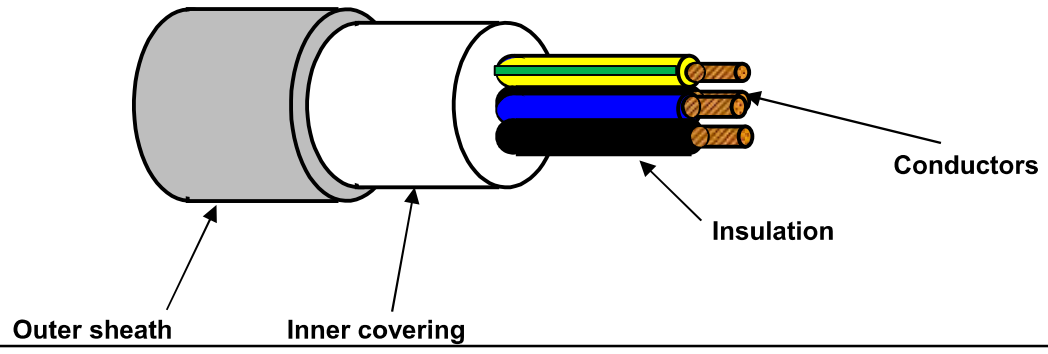
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Secti	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Stand	From Gland	From Entr	From Fitti	To Gland	To Entry	To Fitting	Routing	Routing Manual
P-EJB-200N1-17-L1-01	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						DP-200N1	LV 0,4 / 0,23 kV Distribution Switchgear	Lower Deck (B-200)	03/Q17	EJB-200N1-17-L1-01	HEAT TRACING - PROCESS LINES (WW LINES & LT) Cold JB	Lower Deck	Heat Tracing Cold JB	ELECV05-3G6	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 3G6mm² - Grey	M25	n.a.			T1_M25_Single				L-450-101-LVT-030 / L-600-101-LVT-020 / L-600-101-LVT-018 / L-600-101-LVT-017 / E-MCT-201 / L-750-101-LVT-011 / L-600-101-LVT-012 / L-150-101-LVT-099

FLEI s.r.l.

Cu Cl.2/EPR/LSZH 0,6/1 KV

3G6 - L.V. POWER CABLE - Flame Retardant



TECHNICAL FEATURES

Conductors :	**STRANDED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	EPR compound, quality to IEC 60092.360, Nominal Thickness 1,0 mm	
Cores colour code :	**Brown - Blue - Yellow/Green**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not Required	
Total Assembling :	Cores layed up with optimal lay length	
Overall Wrapping:	Not required	
Drain wire :	Not required	
Overall Shield:	Not required	
Inner covering :	Extruded LSZH compound, Average Thickness 1,0 mm	
Inner covering color code:	**Black or Natural**	
Armour :	Not required	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,2 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 3G6 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 -**	
	Year of Manufacture - CE + Meter Marking	
Outer diameter :	(15,6 ± 10%) mm	
Bending radius :	cable outer diameter x 10	(in fixed installation)
Voltage test :	3,5 kV a.c. for 5' (Between Cores)	
Conductors DC Resistance :		IEC 60228 Class 2
Insulation Resistance :	≥ 770 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.353**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance	IEC 61034.2 (LT ≥ 60%)	
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 covering together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	29/03/2024	Messa			
Checked :	29/03/2024	Spaccasassi			
Approved :	29/03/2024	Cucinotta			

The data provided, lending assent for the treatment, will be used to the sense of the article 13 of of the Regulation (UE) 2016/679, also through outsiders, in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

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ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	EJB-200N1-14-L1-01	: HEAT TRACING - PROCESS LINES - FEEDER 1 (SWS LINES) Cold JB			Dwg	123A90-DDL-EL-DL-20140
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10002069		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX31 Junction and Marshalling Box

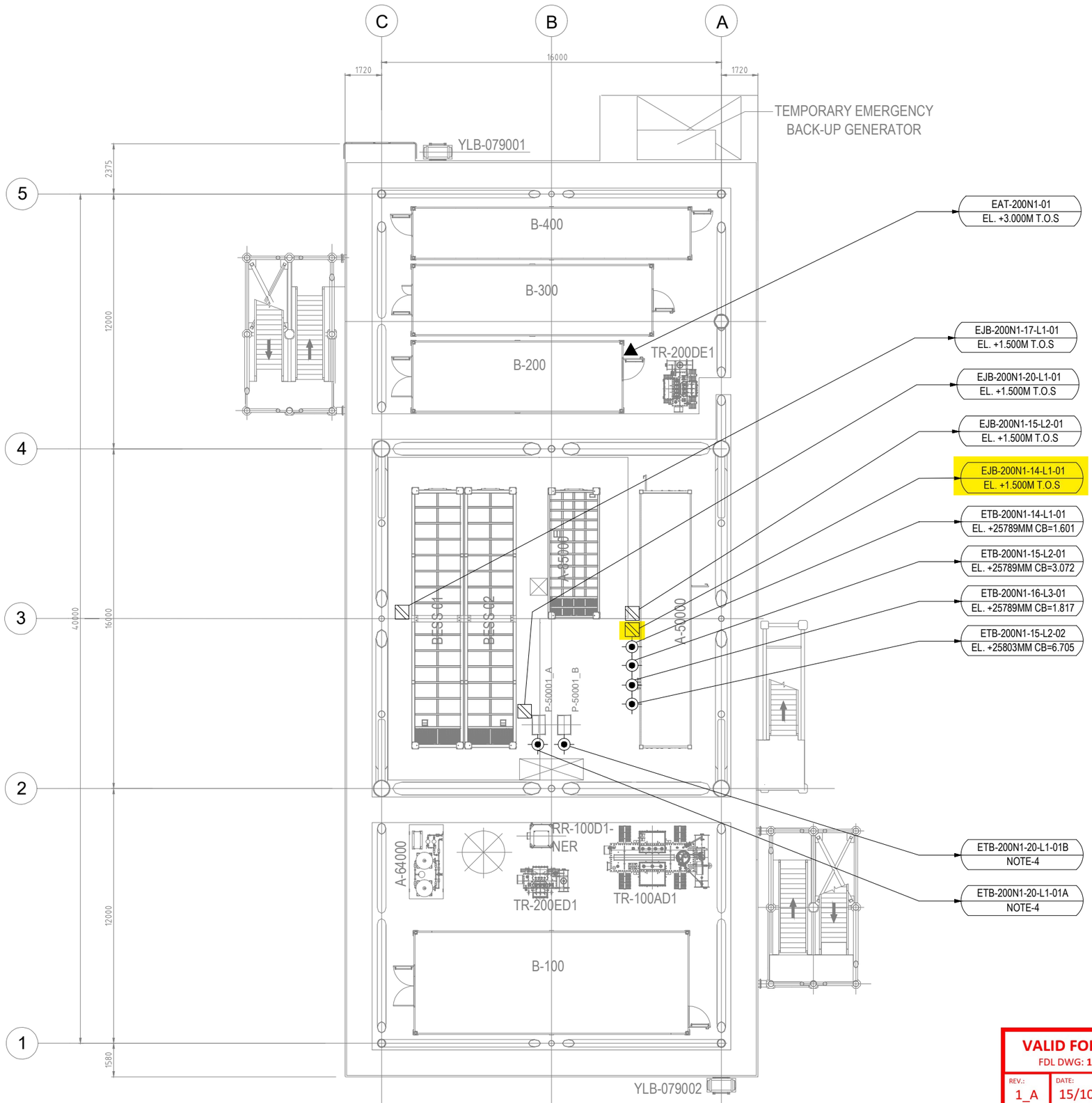
1	Check box is de-energized and safe.	OK
2	Check box is correctly mounted and easily accessible.	OK
3	Check box tagging against drawing.	OK
4	Check nameplate data is correct.	NA
5	Check flameproof joints are clean and greased with approved lubricants (if required).	NA
6	Check for damaging gaskets.	OK
7	Check all bolts are fitted and correcly tighted .	OK
8	Check all unused entries are suitably plugged.	PL
9	Check earthing and bonding against drawings.	OK
10	Check terminal blocks segregation barriers are fitted where necessary.	NA
11	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

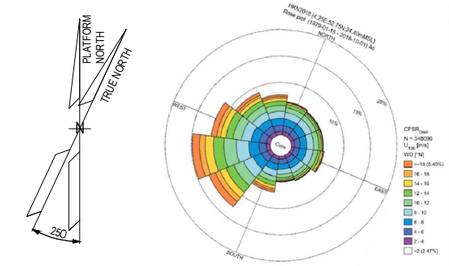
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Andrea Andreani	
Date	2024-12-13	2024-12-16	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-13T11:41:42.887Z	PROVERLIS Digitaly signed by Andrea Andreani 2024-12-16T16:27:35.926Z	

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

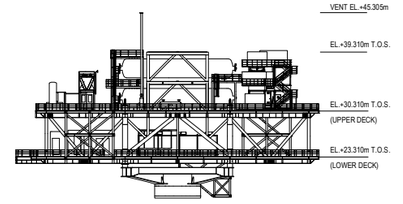
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_A	15/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

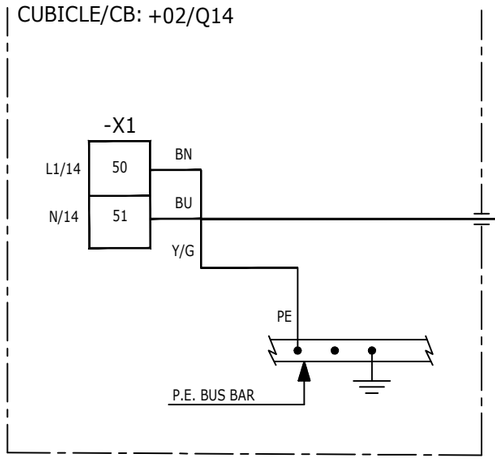
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 1of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

FROM	TO

DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1

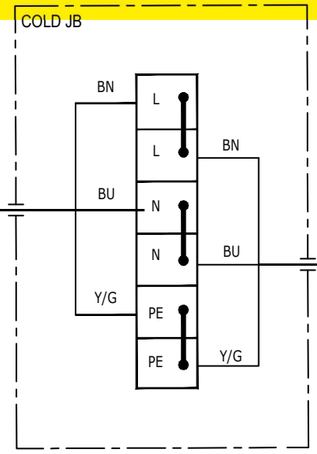
CUBICLE/CB: +02/Q14



P-EJB-200N1-14-L1-01
3G6 mm²

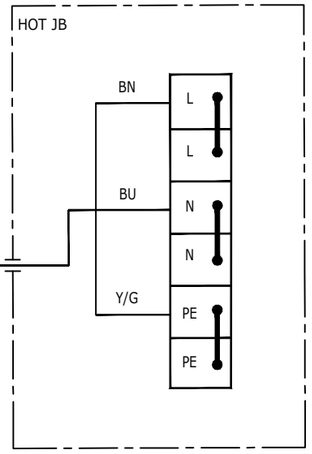
DESCRIPTION: TRACE HEATING - PROCESS LINES
- FEEDER 1 (SWS LINES)

TAG NUMBER: EJB-200N1-14-L1-01



P-ETB-200N1-14-L1-01
3G6 mm²

TAG NUMBER: ETB-200N1-14-L1-01
FOR PIPE LINE: SWS-35



VALID FOR CONSTRUCTION

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
TRACE HEATING PROCESS LINES

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

SCALE : 1:X

A3

DRAWING NO. 123A90-DDL-EL-DG-20149

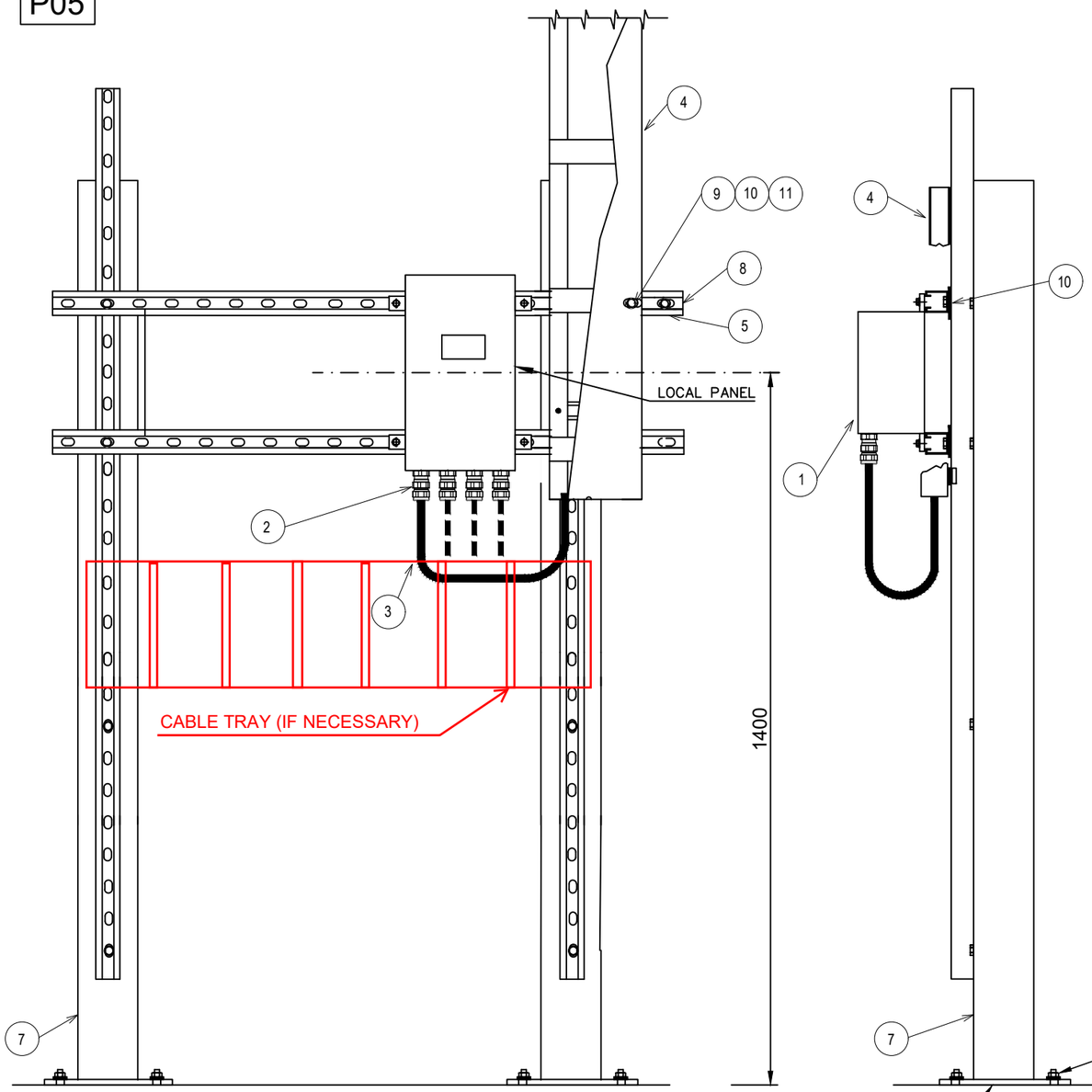
SHEET 048

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

P05



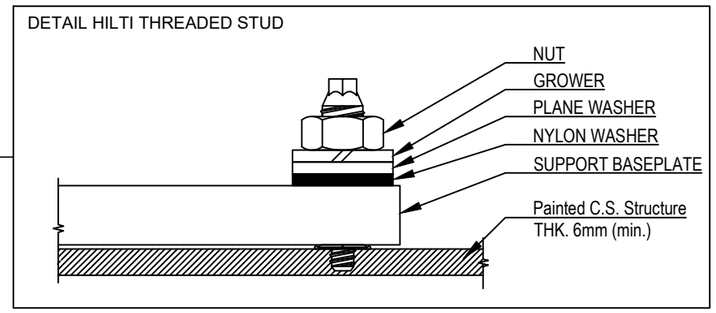
POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	LOCAL PANEL / JB	316 STAINLESS STEEL OR GRP		1	
2	SINGLE SEAL CABLE GLAND FOR UNARMOURED CABLE				
3	UNARMOURED CABLE				
4	CABLE LADDER WITH COVER	AISI 316L			
5	SINGLE U-CHANNEL PERFORATED ON NO.3 SIDE	AISI 316L			
7	PROFILE SUPPORT	PAINTED C.S.		2	
8	PLUG FOR U-CHANNEL	LPDE			
9	BOLT, LARGE PLANE WASHER, PLANE WASHER AND NUT.	AISI 316L			
10	ROUND HEAD SCREW WITH SQUARE NECK COMPLETE WITH PLANE WASHER AND NUT	AISI 316L			
11	BOLT, LARGE FLATE WASHER AND NUT FOR U-CHANNEL WITH SPRING	AISI 316L	M12x30		

02

02

SUPPORT BOLTED ON HILTI S-BT INSTALLED ON WELDED BEAM:

DETAIL HILTI THREADED STUD



02

SUPPORT BOLTED ON HILTI S-BT INSTALLED ON BEAM OR DECK

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-EL-DD-20092**

REV.:	DATE:	SIGNATURE:
2_C	06/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

TITLE : BASE LOAD POWER HUB (BLPH)

ELECTRICAL TYPICAL INSTALLATION DETAILS-POWER SYSTEM & CABLE INSTALLATION

POWER TYPICAL DETAILS LOCAL PANEL/JB FLOOR MOUNTED

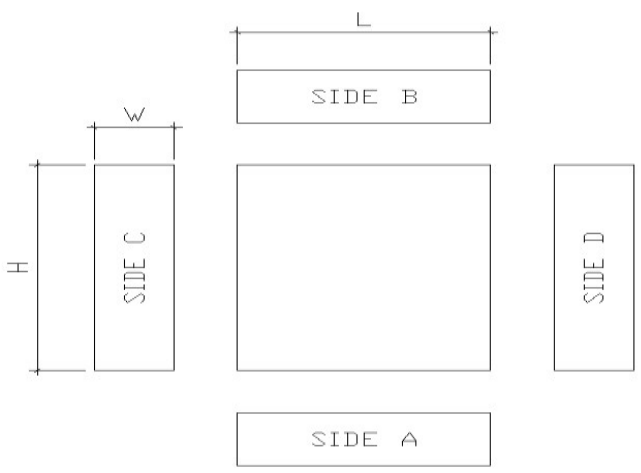
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

A3 | DRAWING NO. 123A90-DDL-EL-DD-20092 | SHEET 005 | REV. 02

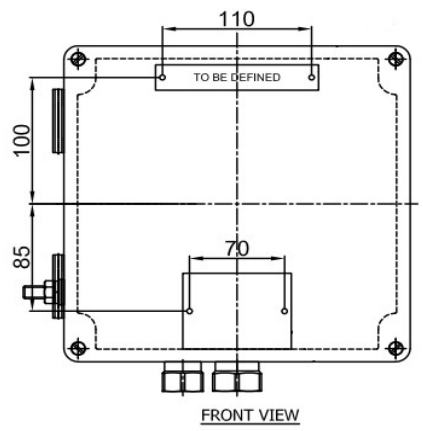
F.to UNI A3: 420mmx297mm

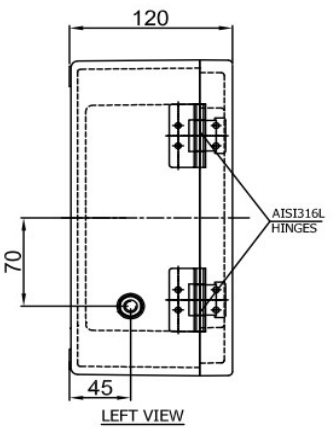
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Row	Data Sheet for Control Stations, Junction Boxes and Sockets				Rev.
1	Junction Box for Heat Tracing				
2	Item	Required	Manufacturer Proposal	Comments	
3	Model Number	by Vendor	AQ-252612P		01
4	Serial Number	by Vendor	B011041010004		01
5	Quantity	4+1(Spare)		(3+2 Spare)	01
6	Application	Heat Tracing			00
7	**Installation area**				
8	Indoor/Outdoor	Outdoor			00
9	Safe Area/Hazardous Area	Safe area			00
10	Zone 1/Zone 2	NA			00
11	Temp. Class	NA			00
12	**Electrical input data**				
13	Voltage	230 V ac	230 V ac		01
14	Number of Phases	1ph + N + PE			00
15	**Material**				
16	Body	GRP	GRP		01
17	Execution	Normal			00
18	Protection Degree	IP56	IP 66		01
19	**Accessories**				
20	Hinged Cover	Required	AISI316L Hinges		01
21	Gasket	Required			00
22	Removable Gland Plates	Required	Brass Continuity plate 0.8mm thick		01
23	Internal Mounting Plate	Thickness 3mm threaded		connected to Internal ground bar	00
24	Internal Ground Bar	Required		connected to earth stud	00
25	Earth Stud	Required			00
26	Drainage Valve	Required			00
27	Pad lockable Cover	Required			00
28	Identification Label	Trafolite/ Stainless Steel	Laminated Plastic	for all label	01
29	**Side 'A'**				
30	Hubs Qty.	5	5		01
31	Size	No.5 M25	No.5 Ø 25.2 mm		01
32	Thread	ISO-M			00
33	Plug	No. 3 M25	No.3 M25	nickel-plated brass	01
34	**Side 'B'**				
35	Hubs Qty.	Not Required			00
36	Size	NA			00
37	Thread	NA			00
38	**Side 'C'**				
39	Hubs Qty.	Not Required			00
40	Size	NA			00
41	Thread	NA			00
42	**Side 'D'**				
43	Hubs Qty.	Not Required			00
44	Size	NA			00
45	Thread	NA			00
46	**Terminals**				
47	Size [mm^2]	Suitable for 6 Sq.mm Cable	M25	suitable with wire-end ferrules DIN 46228	01
48	Qty.	n°5 for Ph // n°5 for N // n°5 for PE	n°5 for Ph // n°5 for N // n°5 for PE	jumpered	01
49	**Bonding Cable (yellow/Green)**				
50	Size [mm^2]	by vendor		6 mm^2	01
51	Qty.	Min. 0.15m			00
52	**Dimension**				
53	Height 'H' [mm]	by vendor	120 mm		01
54	Width 'W' [mm]	by vendor	250 mm		01
55	Length 'L' [mm]	by vendor	255 mm		01
56	Weight [Kg]	by vendor	2.65 Kg		01
57	JB Code (*)	Remarks			
58					

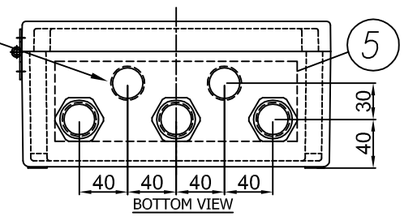


NOTES:
(*) Filled by Vendor





(8) (3) N°5 PASSING HOLES Ø25.2
C/W N°3 BNK PLUG M25 +
N°2 DUSTPROOF PVC PLUG



BOTTOM VIEW

(4) I2400722-B015I00029813

TECHNOR ITALSMEA
A COMPANY OF MARECHAL ELECTRIC
Via Italia 33 - 20060 Gessate (MI) ITALY

MADE IN ITALY

Serial Nr.:
Year of construction:

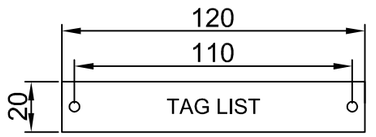
Type: AQ-252612P

230VAC 50Hz 20A

T.amb -20/+50°C

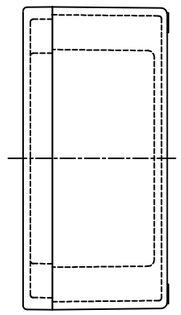
IP66

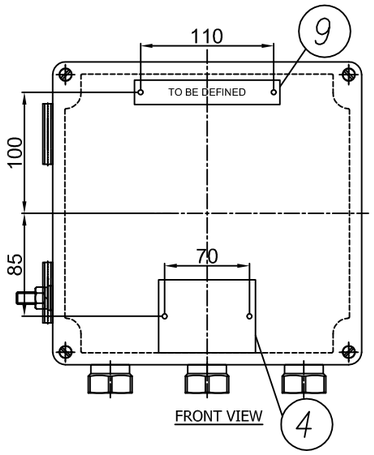
(9) PLATE DETAIL



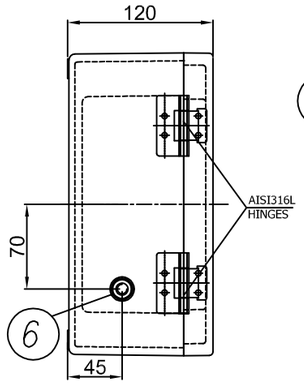
MATERIAL: LAMINATED PLASTIC
BACKGROUND: WHITE
LETTERS: BLACK

(7) TERMINALS NUMBERED
L-L-L-L-L,N-N-N-N-N,PE-PE-PE-PE-PE
BRIDGED

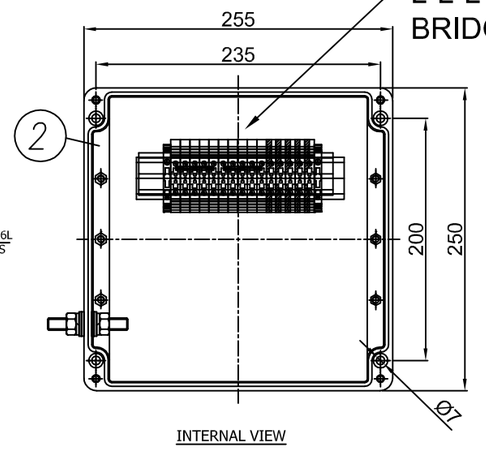

RIGHT VIEW



FRONT VIEW

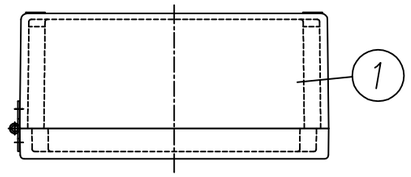


LEFT VIEW



INTERNAL VIEW

ENCLOSURE N°	TAG LIST
1	EJB-200N1-17-L1-01
2	EJB-200N1-14-L1-01
3	EJB-200N1-15-L2-01
4	EJB-200N1-20-L1-01
5	SPARE (TO BE PROVIDED BLANK)



TOP VIEW

-UNPAINTED (BLACK NATURAL)
Q.TY 5, ITEM 30: 2JBXXGPSA,
ELEJB03

ITEM	DESCRIPTION	Pcs Q.TY	NOTE/MAT.	CODE	MANUFACTURER
9	LAMINATED PLASTIC TAG 120X20	1	–	.	TECHNOR ITALSMEA
8	DUSTPROOF PVC PLUG Ø25	2	–	.	TECHNOR ITALSMEA
7	BEIGE TERMINAL BLOCK SIZE 6 SQMM EARTH TERMINAL BLOCK SIZE 6 SQMM	10 5	WDU-6 WPE-6	.	WEIDMULLER
6	AISI316L INT/EXT EARTH BOLT M10	1	BTP-10	.	TECHNOR ITALSMEA
5	BRASS CONTINUITY PLATE THK. 0.8 MM	1	–	.	TECHNOR ITALSMEA
4	AISI316L CERTIFICATE PLATE 80X60	1	–	.	TECHNOR ITALSMEA
3	NICKEL PLATED BRASS PLUG M25	3	T25	.	TECHNOR ITALSMEA
2	INTERNAL MOUNTING PLATE	1	PS-2526	.	TECHNOR ITALSMEA
1	GRP ENCLOSURE	1	AQ-252612P	.	TECHNOR ITALSMEA

Explosion Proof
Electrical Equipment
Materiali Elettrici Antideflagranti

TECHNOR ITALSMEA
A COMPANY OF MARECHAL ELECTRIC

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
05	20/12/24	FB	OB	OB	ACCEPTED FOR CONSTRUCTION (AFC)
04	26/11/24	FB	OB	OB	ACCEPTED FOR CONSTRUCTION (AFC)
03	25/10/24	FB	OB	OB	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/09/24	FB	OB	OB	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	FB	OB	OB	ACCEPTED FOR CONSTRUCTION (AFC)
00	30/07/24	FB	OB	OB	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)

Junction Box for Heat Tracing

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

SCALE : NTS

A3

DRAWING NO. 1724001481-EL-DA-00003

SHEET 006

REV. 05

F.to UNI A3: 420mmx297mm

File Name : 1724001481-EL-DA-00003 Rev. 01

ITEM	Tag	EJB-200N1-15-L2-01	: HEAT TRACING - PROCESS LINES - FEEDER 2 (CI LINES) Cold JB			Dwg	123A90-DDL-EL-DL-20140
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10002070		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX31 Junction and Marshalling Box

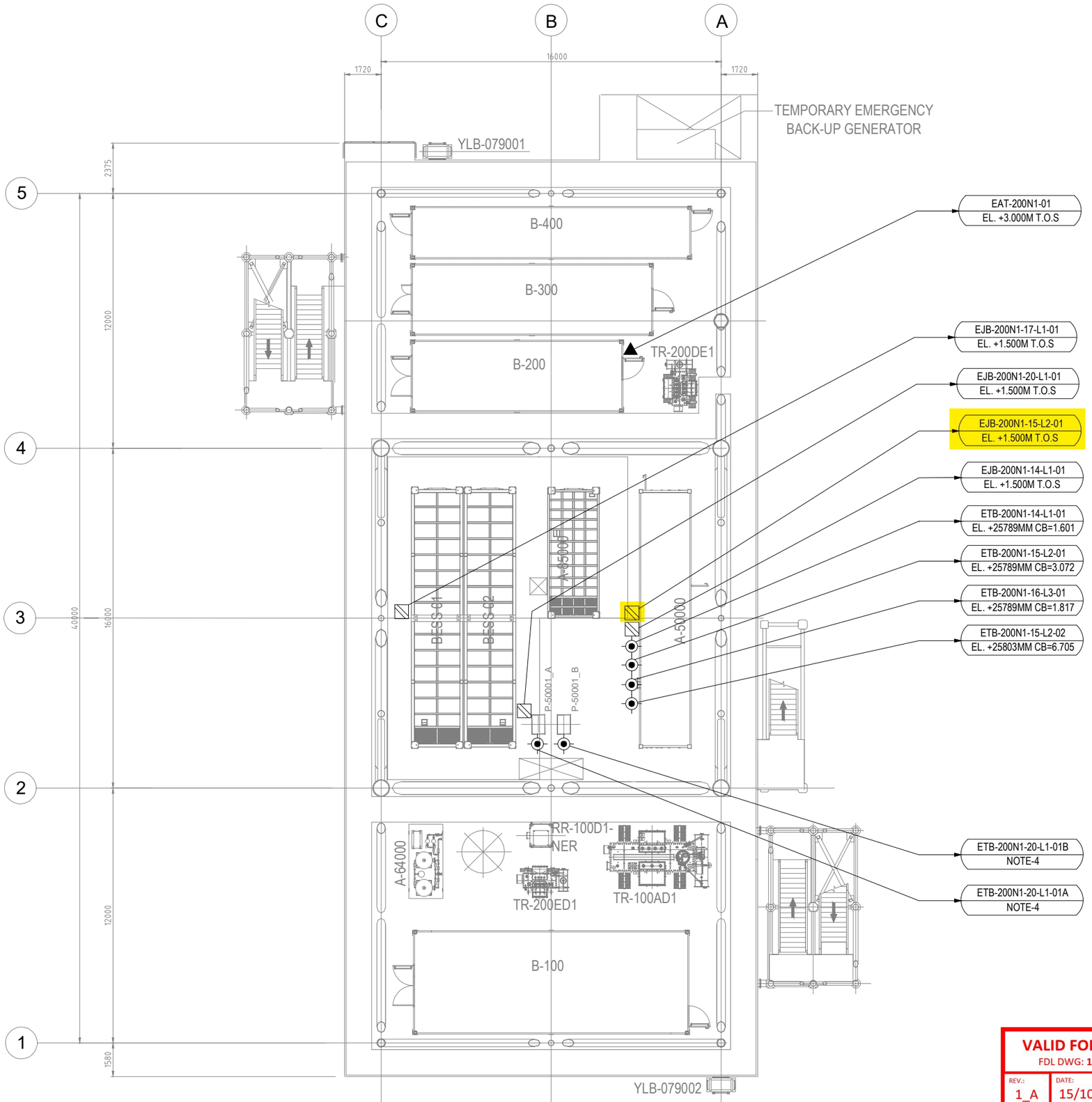
1	Check box is de-energized and safe.	OK
2	Check box is correctly mounted and easily accessible.	OK
3	Check box tagging against drawing.	PL
4	Check nameplate data is correct.	NA
5	Check flameproof joints are clean and greased with approved lubricants (if required).	NA
6	Check for damaging gaskets.	OK
7	Check all bolts are fitted and correcly tighted .	OK
8	Check all unused entries are suitably plugged.	OK
9	Check earthing and bonding against drawings.	OK
10	Check terminal blocks segregation barriers are fitted where necessary.	NA
11	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

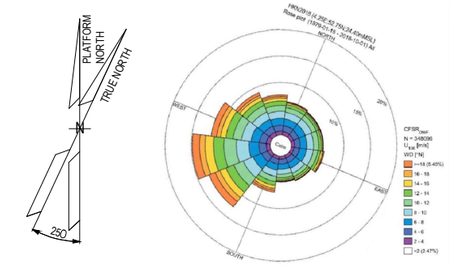
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Andrea Andreani	
Date	2024-12-13	2024-12-16	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-13T11:42:00.969Z	PROVERLIS Digitaly signed by Andrea Andreani 2024-12-16T16:32:13.425Z	

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

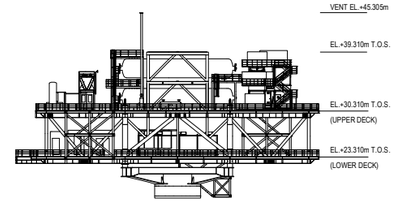
LEGEND

- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_A	15/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

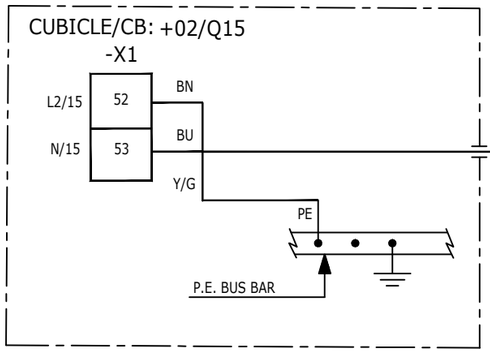
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 1of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

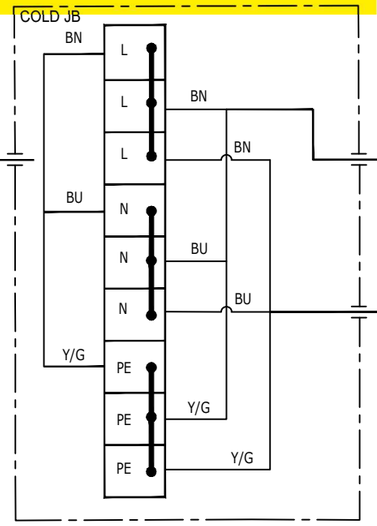
FROM	TO

DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1



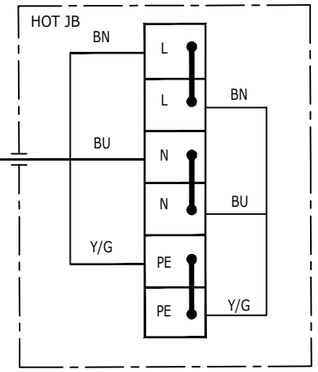
P-EJB-200N1-15-L2-01
3G6 mm²

DESCRIPTION: TRACE HEATING - PROCESS LINES
- FEEDER 2 (CI LINES)
TAG NUMBER: EJB-200N1-15-L2-01



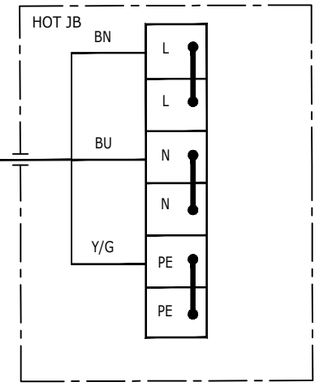
P-ETB-200N1-15-L2-01
3G6 mm²

TAG NUMBER: ETB-200N1-15-L2-01
FOR PIPE LINE: CI-029

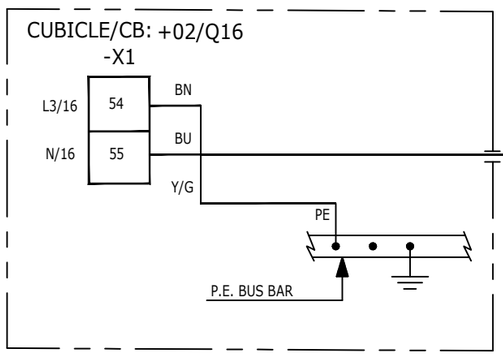


P-ETB-200N1-15-L2-02
3G6 mm²

TAG NUMBER: ETB-200N1-15-L2-02
FOR PIPE LINE: CI-043

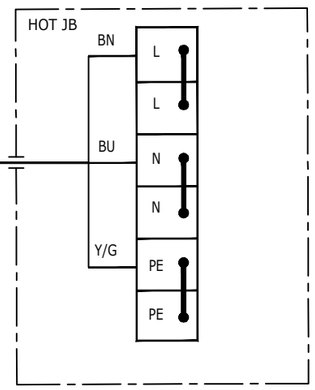


DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1



P-ETB-200N1-16-L3-01
3G6 mm²

DESCRIPTION: TRACE HEATING
PROCESS LINES - FEEDER 3 (DM 001)
TAG NUMBER: ETB-200N1-16-L3-01



VALID FOR CONSTRUCTION

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
TRACE HEATING PROCESS LINES

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

SCALE : 1:X

A3

DRAWING NO. 123A90-DDL-EL-DG-20149

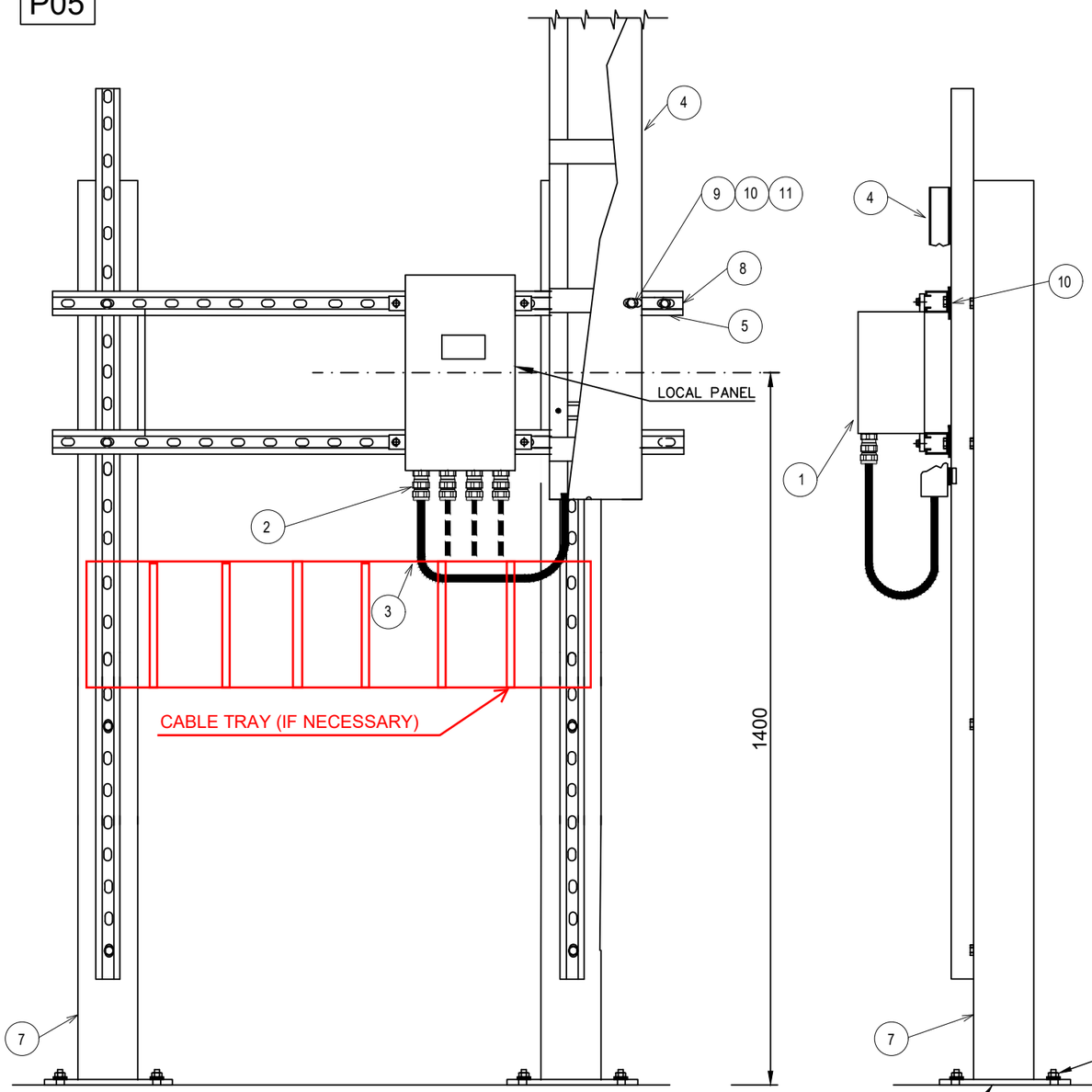
SHEET 049

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

P05



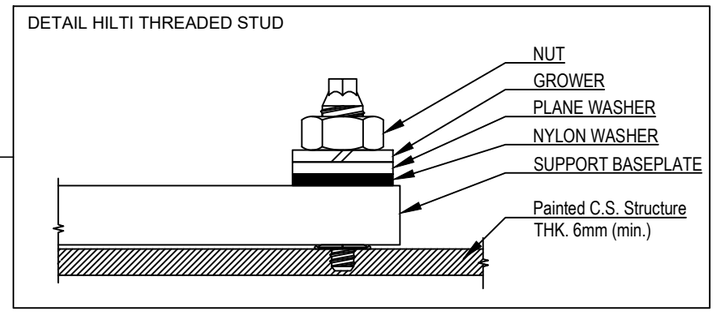
POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	LOCAL PANEL / JB	316 STAINLESS STEEL OR GRP		1	
2	SINGLE SEAL CABLE GLAND FOR UNARMOURED CABLE				
3	UNARMOURED CABLE				
4	CABLE LADDER WITH COVER	AISI 316L			
5	SINGLE U-CHANNEL PERFORATED ON NO.3 SIDE	AISI 316L			
7	PROFILE SUPPORT	PAINTED C.S.		2	
8	PLUG FOR U-CHANNEL	LPDE			
9	BOLT, LARGE PLANE WASHER, PLANE WASHER AND NUT.	AISI 316L			
10	ROUND HEAD SCREW WITH SQUARE NECK COMPLETE WITH PLANE WASHER AND NUT	AISI 316L			
11	BOLT, LARGE FLATE WASHER AND NUT FOR U-CHANNEL WITH SPRING	AISI 316L	M12x30		

02

02

SUPPORT BOLTED ON HILTI S-BT INSTALLED ON WELDED BEAM:

DETAIL HILTI THREADED STUD



02

SUPPORT BOLTED ON HILTI S-BT INSTALLED ON BEAM OR DECK

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-EL-DD-20092**

REV.:	DATE:	SIGNATURE:
2_C	06/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

TITLE : BASE LOAD POWER HUB (BLPH)

ELECTRICAL TYPICAL INSTALLATION DETAILS-POWER SYSTEM & CABLE INSTALLATION

POWER TYPICAL DETAILS LOCAL PANEL/JB FLOOR MOUNTED

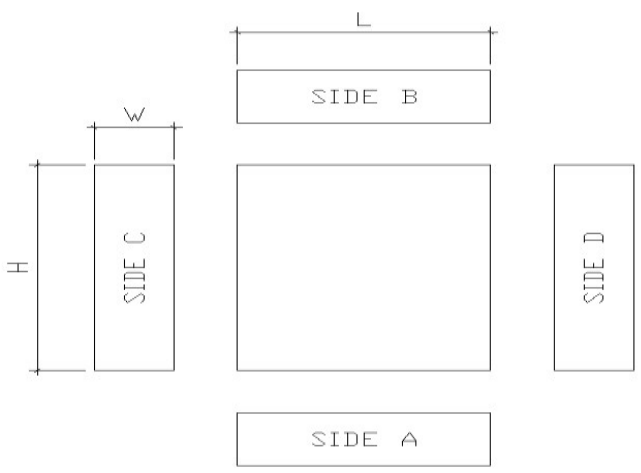
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

A3 | DRAWING NO. 123A90-DDL-EL-DD-20092 | SHEET 005 | REV. 02

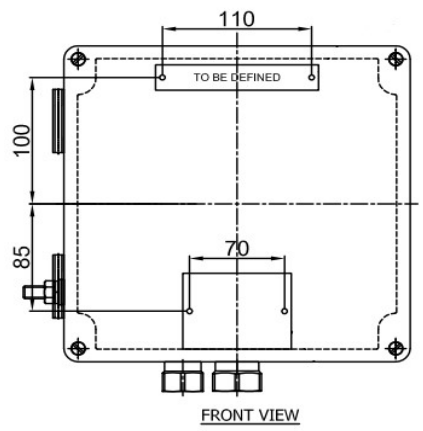
F.to UNI A3: 420mmx297mm

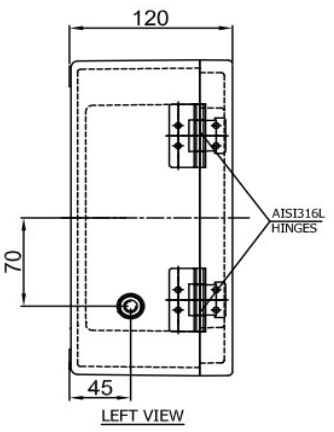
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Row	Data Sheet for Control Stations, Junction Boxes and Sockets				Rev.
1	Junction Box for Heat Tracing				
2	Item	Required	Manufacturer Proposal	Comments	
3	Model Number	by Vendor	AQ-252612P		01
4	Serial Number	by Vendor	B011041010004		01
5	Quantity	4+1(Spare)		(3+2 Spare)	01
6	Application	Heat Tracing			00
7	**Installation area**				
8	Indoor/Outdoor	Outdoor			00
9	Safe Area/Hazardous Area	Safe area			00
10	Zone 1/Zone 2	NA			00
11	Temp. Class	NA			00
12	**Electrical input data**				
13	Voltage	230 V ac	230 V ac		01
14	Number of Phases	1ph + N + PE			00
15	**Material**				
16	Body	GRP	GRP		01
17	Execution	Normal			00
18	Protection Degree	IP56	IP 66		01
19	**Accessories**				
20	Hinged Cover	Required	AISI316L Hinges		01
21	Gasket	Required			00
22	Removable Gland Plates	Required	Brass Continuity plate 0.8mm thick		01
23	Internal Mounting Plate	Thickness 3mm threaded		connected to Internal ground bar	00
24	Internal Ground Bar	Required		connected to earth stud	00
25	Earth Stud	Required			00
26	Drainage Valve	Required			00
27	Pad lockable Cover	Required			00
28	Identification Label	Trafolite/ Stainless Steel	Laminated Plastic	for all label	01
29	**Side 'A'**				
30	Hubs Qty.	5	5		01
31	Size	No.5 M25	No.5 Ø 25.2 mm		01
32	Thread	ISO-M			00
33	Plug	No. 3 M25	No.3 M25	nickel-plated brass	01
34	**Side 'B'**				
35	Hubs Qty.	Not Required			00
36	Size	NA			00
37	Thread	NA			00
38	**Side 'C'**				
39	Hubs Qty.	Not Required			00
40	Size	NA			00
41	Thread	NA			00
42	**Side 'D'**				
43	Hubs Qty.	Not Required			00
44	Size	NA			00
45	Thread	NA			00
46	**Terminals**				
47	Size [mm^2]	Suitable for 6 Sq.mm Cable	M25	suitable with wire-end ferrules DIN 46228	01
48	Qty.	n°5 for Ph // n°5 for N // n°5 for PE	n°5 for Ph // n°5 for N // n°5 for PE	jumpered	01
49	**Bonding Cable (yellow/Green)**				
50	Size [mm^2]	by vendor		6 mm^2	01
51	Qty.	Min. 0.15m			00
52	**Dimension**				
53	Height 'H' [mm]	by vendor	120 mm		01
54	Width 'W' [mm]	by vendor	250 mm		01
55	Length 'L' [mm]	by vendor	255 mm		01
56	Weight [Kg]	by vendor	2.65 Kg		01
57	JB Code (*)	Remarks			
58					

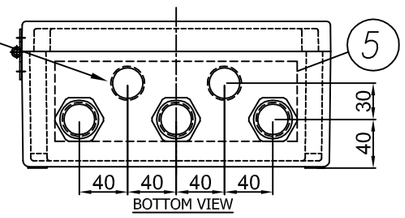


NOTES:
(*) Filled by Vendor





(8) (3) N°5 PASSING HOLES Ø25.2
C/W N°3 BNK PLUG M25 +
N°2 DUSTPROOF PVC PLUG



BOTTOM VIEW

(4) I2400722-B015I00029813

TECHNOR ITALSMEA
A COMPANY OF MARECHAL ELECTRIC
Via Italia 33 - 20060 Gessate (MI) ITALY

MADE IN ITALY

Serial Nr.:
Year of construction:

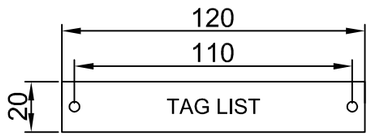
Type: AQ-252612P

230VAC 50Hz 20A

T.amb -20/+50°C

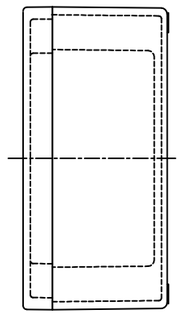
IP66

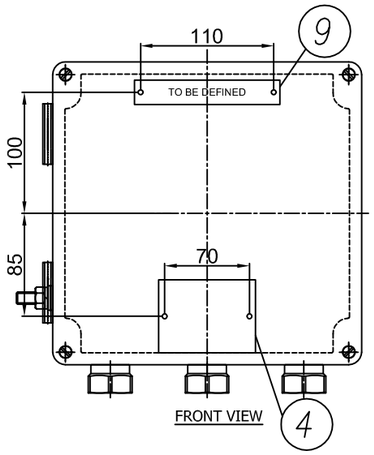
(9) PLATE DETAIL



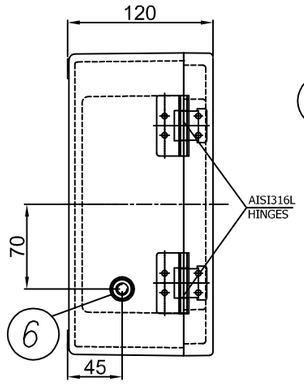
MATERIAL: LAMINATED PLASTIC
BACKGROUND: WHITE
LETTERS: BLACK

(7) TERMINALS NUMBERED
L-L-L-L-L,N-N-N-N-N,PE-PE-PE-PE-PE
BRIDGED

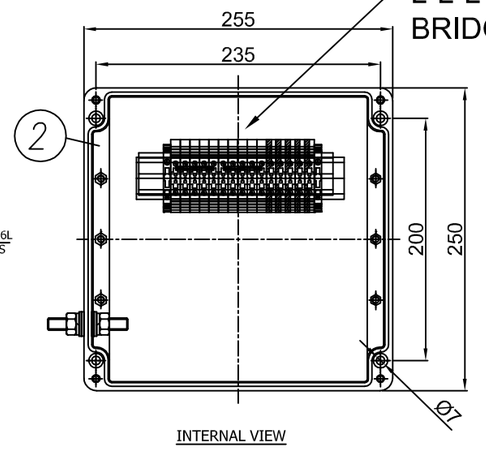

RIGHT VIEW



FRONT VIEW

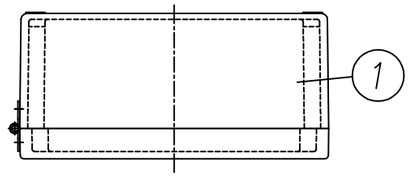


LEFT VIEW



INTERNAL VIEW

ENCLOSURE N°	TAG LIST
1	EJB-200N1-17-L1-01
2	EJB-200N1-14-L1-01
3	EJB-200N1-15-L2-01
4	EJB-200N1-20-L1-01
5	SPARE (TO BE PROVIDED BLANK)



TOP VIEW

-UNPAINTED (BLACK NATURAL)
Q.TY 5, ITEM 30: 2JBXXGPSA,
ELEJB03

ITEM	DESCRIPTION	Pcs Q.TY	NOTE/MAT.	CODE	MANUFACTURER
9	LAMINATED PLASTIC TAG 120X20	1	–	.	TECHNOR ITALSMEA
8	DUSTPROOF PVC PLUG Ø25	2	–	.	TECHNOR ITALSMEA
7	BEIGE TERMINAL BLOCK SIZE 6 SQMM EARTH TERMINAL BLOCK SIZE 6 SQMM	10 5	WDU-6 WPE-6	.	WEIDMULLER
6	AISI316L INT/EXT EARTH BOLT M10	1	BTP-10	.	TECHNOR ITALSMEA
5	BRASS CONTINUITY PLATE THK. 0.8 MM	1	–	.	TECHNOR ITALSMEA
4	AISI316L CERTIFICATE PLATE 80X60	1	–	.	TECHNOR ITALSMEA
3	NICKEL PLATED BRASS PLUG M25	3	T25	.	TECHNOR ITALSMEA
2	INTERNAL MOUNTING PLATE	1	PS-2526	.	TECHNOR ITALSMEA
1	GRP ENCLOSURE	1	AQ-252612P	.	TECHNOR ITALSMEA

Explosion Proof
Electrical Equipment
Materiali Elettrici Antideflagranti
TECHNOR ITALSMEA
A COMPANY OF MARECHAL ELECTRIC

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
05	20/12/24	FB	OB	OB	ACCEPTED FOR CONSTRUCTION (AFC)
04	26/11/24	FB	OB	OB	ACCEPTED FOR CONSTRUCTION (AFC)
03	25/10/24	FB	OB	OB	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/09/24	FB	OB	OB	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	FB	OB	OB	ACCEPTED FOR CONSTRUCTION (AFC)
00	30/07/24	FB	OB	OB	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)

Junction Box for Heat Tracing

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

SCALE : NTS

A3

DRAWING NO. 1724001481-EL-DA-00003

SHEET 006

REV. 05

F.to UNI A3: 420mmx297mm

File Name : 1724001481-EL-DA-00003 Rev. 01

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	EJB-200N1-17-L1-01	: HEAT TRACING - PROCESS LINES (WW LINES & LT) Cold JB			Dwg	123A90-DDL-EL-DL-20140
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10002075		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX31 Junction and Marshalling Box

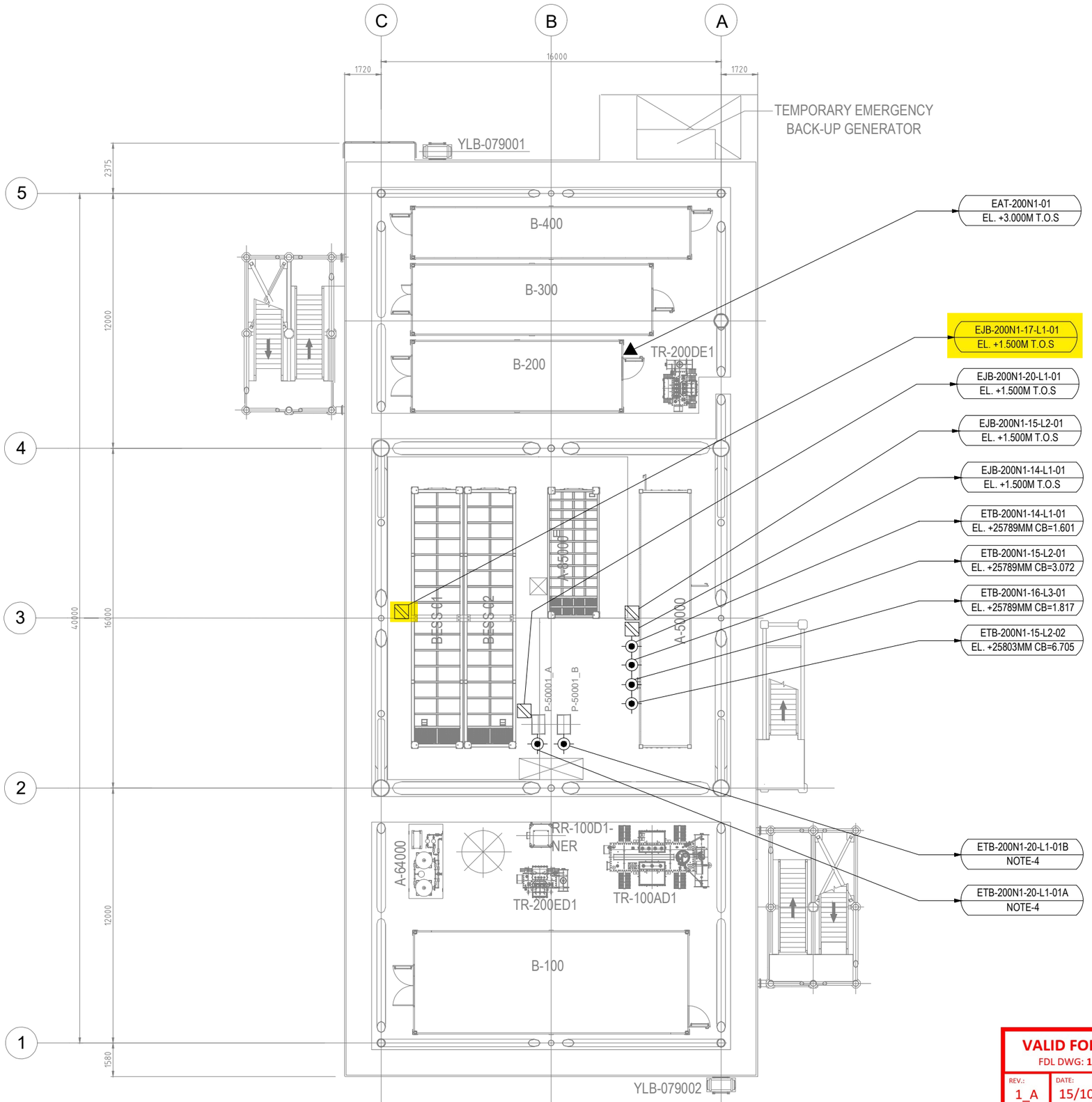
1	Check box is de-energized and safe.	OK
2	Check box is correctly mounted and easily accessible.	OK
3	Check box tagging against drawing.	OK
4	Check nameplate data is correct.	OK
5	Check flameproof joints are clean and greased with approved lubricants (if required).	NA
6	Check for damaging gaskets.	OK
7	Check all bolts are fitted and correcly tighted .	OK
8	Check all unused entries are suitably plugged.	OK
9	Check earthing and bonding against drawings.	OK
10	Check terminal blocks segregation barriers are fitted where necessary.	NA
11	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

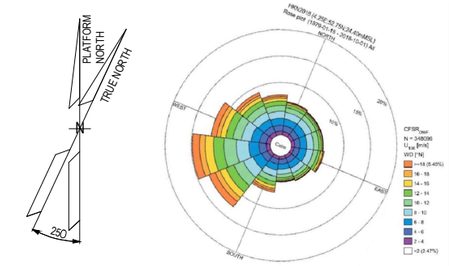
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-10	2025-02-10	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-10T08:56:19.620Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-10T15:22:29.435Z	

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

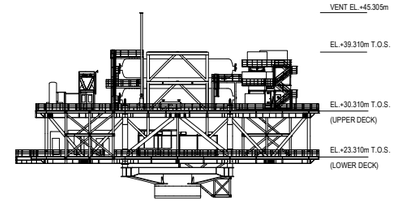
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 1of2	REV. 01

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_A	15/10/24	G.Randi

ROSETTI MARINO SpA

File Name : 123A90-DDL-EL-DL-20140

FROM	TO

DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1

CUBICLE/CB: +03/Q17

-X1

L1/17 — 56 — BN
N/17 — 57 — BU
Y/G
PE
P.E. BUS BAR

P-EJB-200N1-17-L1-01
3G6 mm²

DESCRIPTION: TRACE HEATING - PROCESS LINES - FEEDER 4 (WW LINES & LT)
TAG NUMBER: EJB-200N1-17-L1-01

COLD JB

BN — L — BN
BU — N — BU
Y/G — PE — Y/G

P-ETB-200N1-17-L1-01
3G6 mm²

DESCRIPTION: TRACE HEATING INSTRUMENT - 43-LT-003
TAG NUMBER: ETB-200N1-17-L1-01

HOT JB

BN — L — BN
BU — N — BU
Y/G — PE — Y/G

P-ETB-200N1-17-L1-02
3G6 mm²

DESCRIPTION: TRACE HEATING PROCESS LINE (WW 202)##
TAG NUMBER: ETB-200N1-17-L1-02

HOT JB

BN — L — BN
BU — N — BU
Y/G — PE — Y/G

P-ETB-200N1-17-L1-03
3G6 mm²

DESCRIPTION: TRACE HEATING PROCESS LINE (WW 260)
TAG NUMBER: ETB-200N1-17-L1-03

HOT JB

BN — L — BN
BU — N — BU
Y/G — PE — Y/G

DESCRIPTION: TRACE HEATING PROCESS LINE (WW 259) (V-43001 / 43-LT-001)
TAG NUMBER: ETB-200N1-17-L1-04

P-ETB-200N1-17-L1-04
3G6 mm²

HOT JB

BN — L — BN
BU — N — BU
Y/G — PE — Y/G

- PIPE LINE WW-202 TRACED FROM NOZZLE N3 UPTO SWAN NECK

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_J	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
TRACE HEATING PROCESS LINES

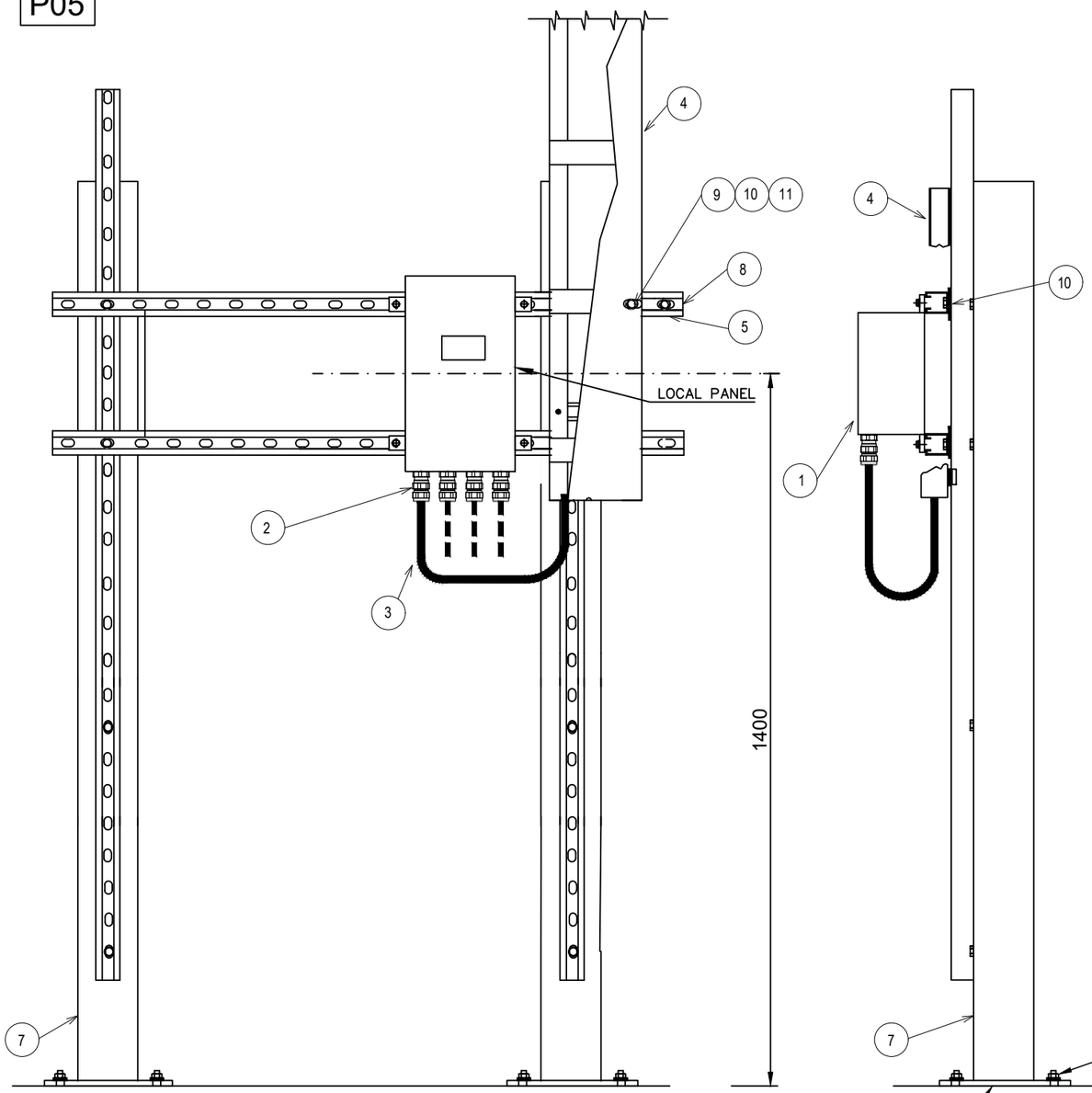
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 050 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

P05

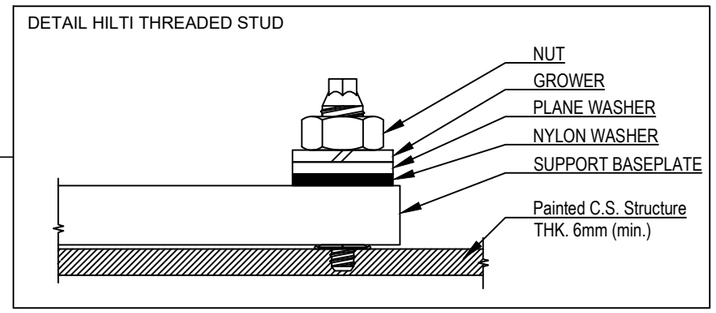


POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	LOCAL PANEL / JB	316 STAINLESS STEEL OR GRP		1	
2	SINGLE SEAL CABLE GLAND FOR UNARMOURED CABLE				
3	UNARMOURED CABLE				
4	CABLE LADDER WITH COVER	AISI 316L			
5	SINGLE U-CHANNEL PERFORATED ON NO.3 SIDE	AISI 316L			
7	PROFILE SUPPORT	PAINTED C.S.		2	
8	PLUG FOR U-CHANNEL	LPDE			
9	BOLT, LARGE PLANE WASHER, PLANE WASHER AND NUT.	AISI 316L			
10	ROUND HEAD SCREW WITH SQUARE NECK COMPLETE WITH PLANE WASHER AND NUT	AISI 316L			
11	BOLT, LARGE FLATE WASHER AND NUT FOR U-CHANNEL WITH SPRING	AISI 316L	M12x30		

02

02

SUPPORT BOLTED ON HILTI S-BT INSTALLED ON WELDED BEAM:



02

SUPPORT BOLTED ON HILTI S-BT INSTALLED ON BEAM OR DECK

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DD-20092**

REV.:	DATE:	SIGNATURE:
2_A	28/08/24	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
POWER TYPICAL DETAILS LOCAL PANEL/JB FLOOR MOUNTED

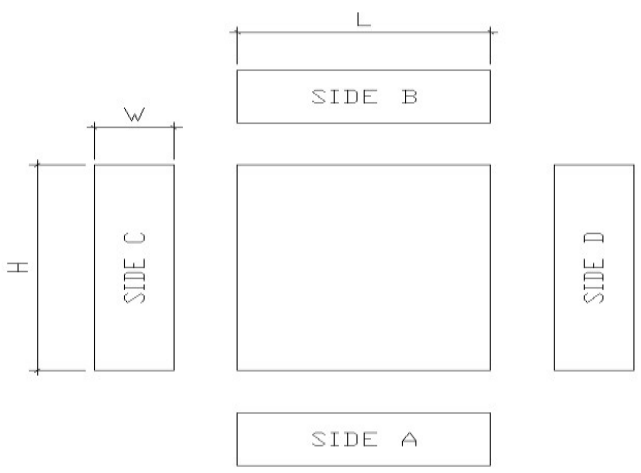
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

A3 | DRAWING NO. 123A90-DDL-EL-DD-20092 | SHEET 005 | REV. 02

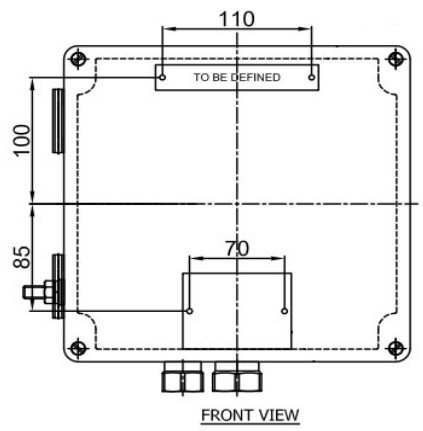
F.to UNI A3: 420mmx297mm

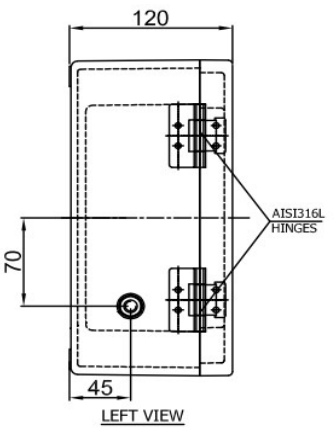
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Row	Data Sheet for Control Stations, Junction Boxes and Sockets				Rev.
1	Junction Box for Heat Tracing				
2	Item	Required	Manufacturer Proposal	Comments	
3	Model Number	by Vendor	AQ-252612P		01
4	Serial Number	by Vendor	B011041010004		01
5	Quantity	4+1(Spare)		(3+2 Spare)	01
6	Application	Heat Tracing			00
7	**Installation area**				
8	Indoor/Outdoor	Outdoor			00
9	Safe Area/Hazardous Area	Safe area			00
10	Zone 1/Zone 2	NA			00
11	Temp. Class	NA			00
12	**Electrical input data**				
13	Voltage	230 V ac	230 V ac		01
14	Number of Phases	1ph + N + PE			00
15	**Material**				
16	Body	GRP	GRP		01
17	Execution	Normal			00
18	Protection Degree	IP56	IP 66		01
19	**Accessories**				
20	Hinged Cover	Required	AISI316L Hinges		01
21	Gasket	Required			00
22	Removable Gland Plates	Required	Brass Continuity plate 0.8mm thick		01
23	Internal Mounting Plate	Thickness 3mm threaded		connected to Internal ground bar	00
24	Internal Ground Bar	Required		connected to earth stud	00
25	Earth Stud	Required			00
26	Drainage Valve	Required			00
27	Pad lockable Cover	Required			00
28	Identification Label	Trafolite/ Stainless Steel	Laminated Plastic	for all label	01
29	**Side 'A'**				
30	Hubs Qty.	5	5		01
31	Size	No.5 M25	No.5 Ø 25.2 mm		01
32	Thread	ISO-M			00
33	Plug	No. 3 M25	No.3 M25	nickel-plated brass	01
34	**Side 'B'**				
35	Hubs Qty.	Not Required			00
36	Size	NA			00
37	Thread	NA			00
38	**Side 'C'**				
39	Hubs Qty.	Not Required			00
40	Size	NA			00
41	Thread	NA			00
42	**Side 'D'**				
43	Hubs Qty.	Not Required			00
44	Size	NA			00
45	Thread	NA			00
46	**Terminals**				
47	Size [mm^2]	Suitable for 6 Sq.mm Cable	M25	suitable with wire-end ferrules DIN 46228	01
48	Qty.	n°5 for Ph // n°5 for N // n°5 for PE	n°5 for Ph // n°5 for N // n°5 for PE	jumpered	01
49	**Bonding Cable (yellow/Green)**				
50	Size [mm^2]	by vendor		6 mm^2	01
51	Qty.	Min. 0.15m			00
52	**Dimension**				
53	Height 'H' [mm]	by vendor	120 mm		01
54	Width 'W' [mm]	by vendor	250 mm		01
55	Length 'L' [mm]	by vendor	255 mm		01
56	Weight [Kg]	by vendor	2.65 Kg		01
57	JB Code (*)	Remarks			
58					

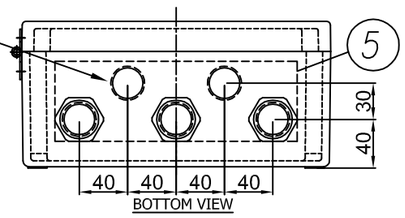


NOTES:
(*) Filled by Vendor





8 3 N°5 PASSING HOLES Ø25.2
C/W N°3 BNK PLUG M25 +
N°2 DUSTPROOF PVC PLUG



BOTTOM VIEW

4 I2400722-B015I00029813

TECHNOR ITALSMEA
A COMPANY OF MARECHAL ELECTRIC
Via Italia 33 - 20060 Gessate (MI) ITALY

MADE IN ITALY

Serial Nr.:
Year of construction:

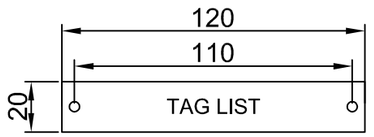
Type: AQ-252612P

230VAC 50Hz 20A

T.amb -20/+50°C

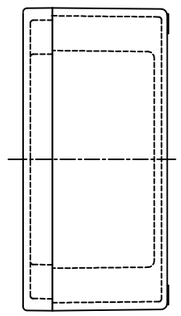
IP66

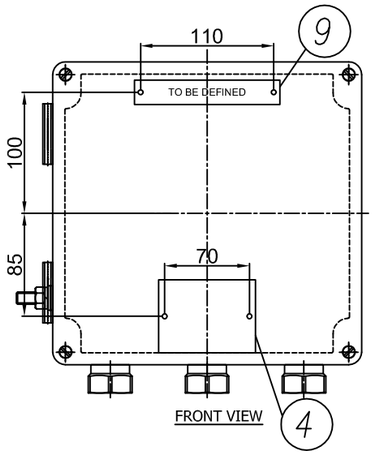
9 PLATE DETAIL



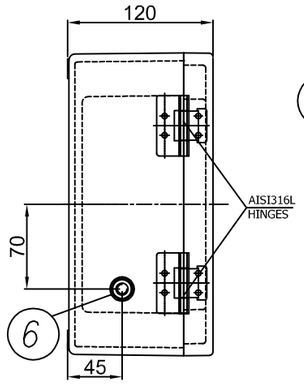
MATERIAL: LAMINATED PLASTIC
BACKGROUND: WHITE
LETTERS: BLACK

7 TERMINALS NUMBERED
L-L-L-L-L,N-N-N-N-N,PE-PE-PE-PE-PE
BRIDGED

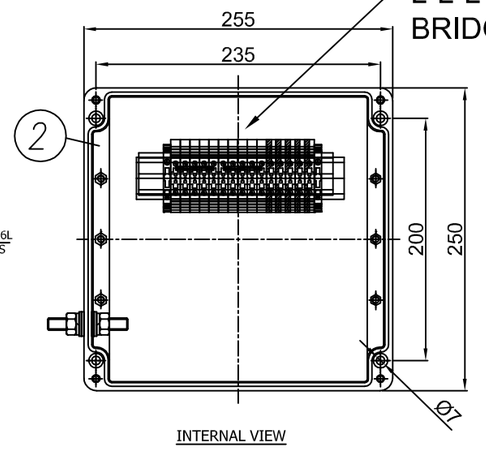

RIGHT VIEW



FRONT VIEW

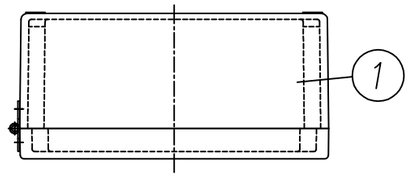


LEFT VIEW



INTERNAL VIEW

ENCLOSURE N°	TAG LIST
1	EJB-200N1-17-L1-01
2	EJB-200N1-14-L1-01
3	EJB-200N1-15-L2-01
4	EJB-200N1-20-L1-01
5	SPARE (TO BE PROVIDED BLANK)



TOP VIEW

-UNPAINTED (BLACK NATURAL)
Q.TY 5, ITEM 30: 2JBXXGPSA,
ELEJB03

ITEM	DESCRIPTION	Pcs Q.TY	NOTE/MAT.	CODE	MANUFACTURER
9	LAMINATED PLASTIC TAG 120X20	1	–	.	TECHNOR ITALSMEA
8	DUSTPROOF PVC PLUG Ø25	2	–	.	TECHNOR ITALSMEA
7	BEIGE TERMINAL BLOCK SIZE 6 SQMM EARTH TERMINAL BLOCK SIZE 6 SQMM	10 5	WDU–6 WPE–6	.	WEIDMULLER
6	AISI316L INT/EXT EARTH BOLT M10	1	BTP–10	.	TECHNOR ITALSMEA
5	BRASS CONTINUITY PLATE THK. 0.8 MM	1	–	.	TECHNOR ITALSMEA
4	AISI316L CERTIFICATE PLATE 80X60	1	–	.	TECHNOR ITALSMEA
3	NICKEL PLATED BRASS PLUG M25	3	T25	.	TECHNOR ITALSMEA
2	INTERNAL MOUNTING PLATE	1	PS–2526	.	TECHNOR ITALSMEA
1	GRP ENCLOSURE	1	AQ–252612P	.	TECHNOR ITALSMEA

Explosion Proof
Electrical Equipment
Materiali Elettrici Antideflagranti

TECHNOR ITALSMEA
A COMPANY OF MARECHAL ELECTRIC

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
05	20/12/24	FB	OB	OB	ACCEPTED FOR CONSTRUCTION (AFC)
04	26/11/24	FB	OB	OB	ACCEPTED FOR CONSTRUCTION (AFC)
03	25/10/24	FB	OB	OB	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/09/24	FB	OB	OB	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	FB	OB	OB	ACCEPTED FOR CONSTRUCTION (AFC)
00	30/07/24	FB	OB	OB	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)

Junction Box for Heat Tracing

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

SCALE : NTS

A3

DRAWING NO. 1724001481–EL–DA–00003

SHEET 006

REV. 05

F.to UNI A3: 420mmx297mm

File Name : 1724001481–EL–DA–00003 Rev. 01

ITEM	Tag	P-ETB-200N1-17-L1-04	: TRACE HEATING - PROCESS LINES - FEEDER 4 (WW LINES & LT) Cold JB / TRACE HEATING			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10002367		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

CABLE DATA

Type Cu Cl.2/EPR/LSZH Cores/Size mm² 3G6 mm2 Color GREY

From EJB-200N1-17-L1-01 To ETB-200N1-17-L1-04

1	Confirm cable is as specified in project cable schedule	OK
2	Visual Check cable physical integrity.	OK
3	Check is installed in accordance with layout drawing (segregation, distance…).	OK
4	Check cable is supported and fixed to rack according to project specification.	Note
5	Check bending radius is within the specified limits.	OK
6	Confirm cable glands suit for cable type, correctly mounted and tightened.	OK
7	Check gland plate for single core cables is non ferrous (non -magnetic).	NA
8	Confirm cable labelling is in accordance with specifications.	PL
9	Check cable is correctly loomed and segregated in accordance with specification.	OK
10	Check cable earthing against lastest drawings.	OK
11	Check cores marking are in accordance with termination diagram	OK
12	Check terminations are in accordance with latest termination diagram	OK
13	If required produce Red Line Mark Up for "AS BUILT"	

REFER TO FINAL SHEET FOR ACCEPTANCE

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	P-ETB-200N1-17-L1-04	: TRACE HEATING - PROCESS LINES - FEEDER 4 (WW LINES & LT) Cold JB / TRACE HEATING			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10002367		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0.14	
6		PH 2	0.14	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		0.14	
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	>999	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

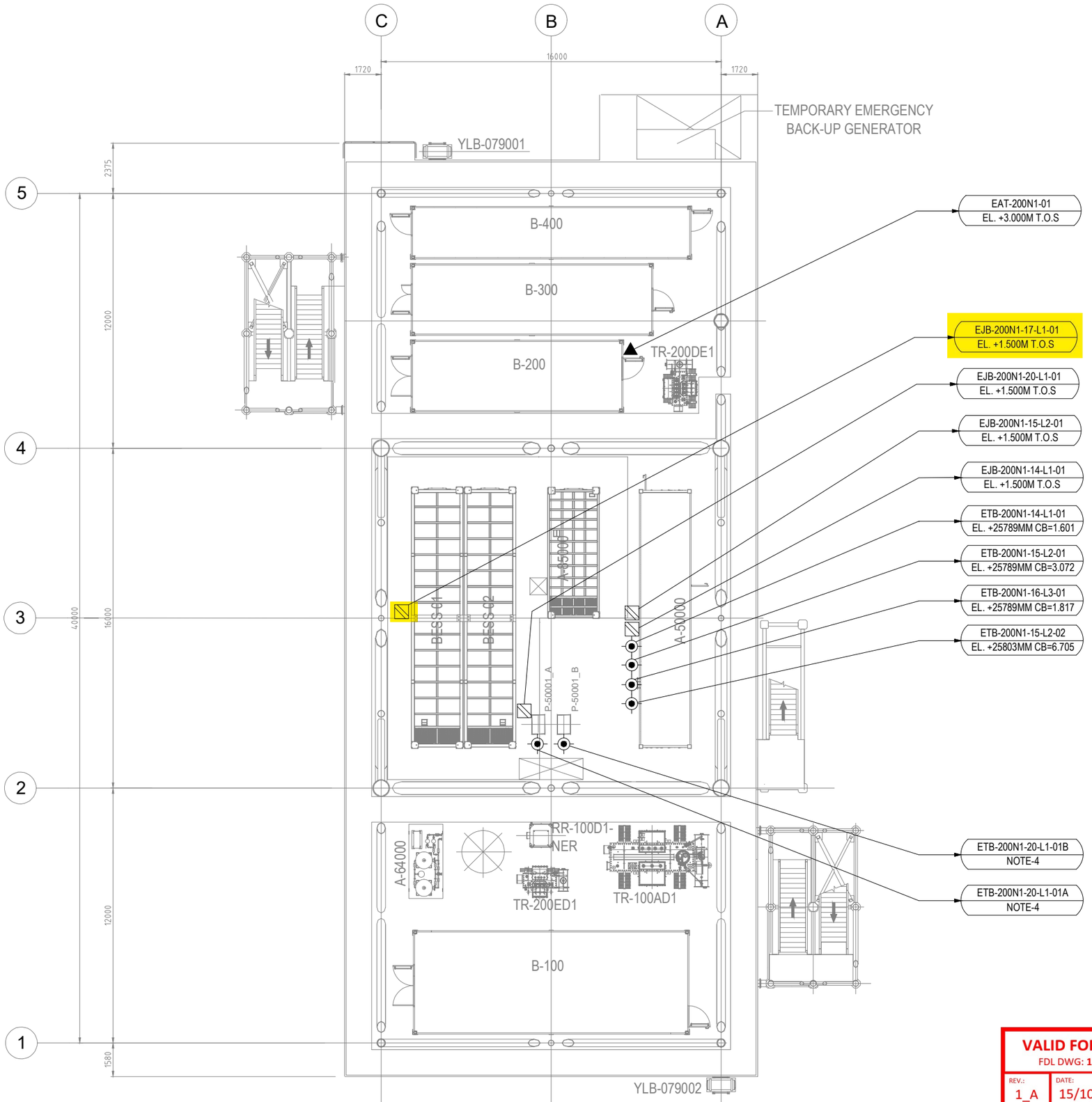
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	VOLCRAFT 1000V - ET-200 S/N:H240103023	TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207
Calibration certificate N° and date:	N°LAT 042 00768/24 _ 12/10/2024	Calibration certificate N° and date:	N°7722/24 _ 10/07/2024

Comments: Nota 4: refer to PL C30000679

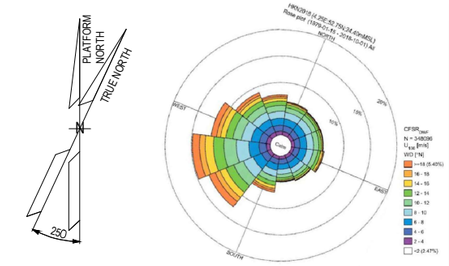
	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-10	2025-02-10	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-10T08:56:31.680Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-10T10:29:11.151Z	

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

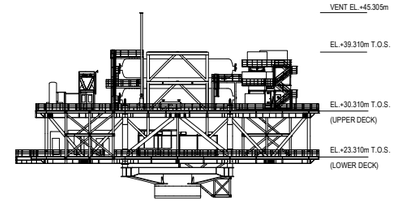
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 1of2	REV. 01

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

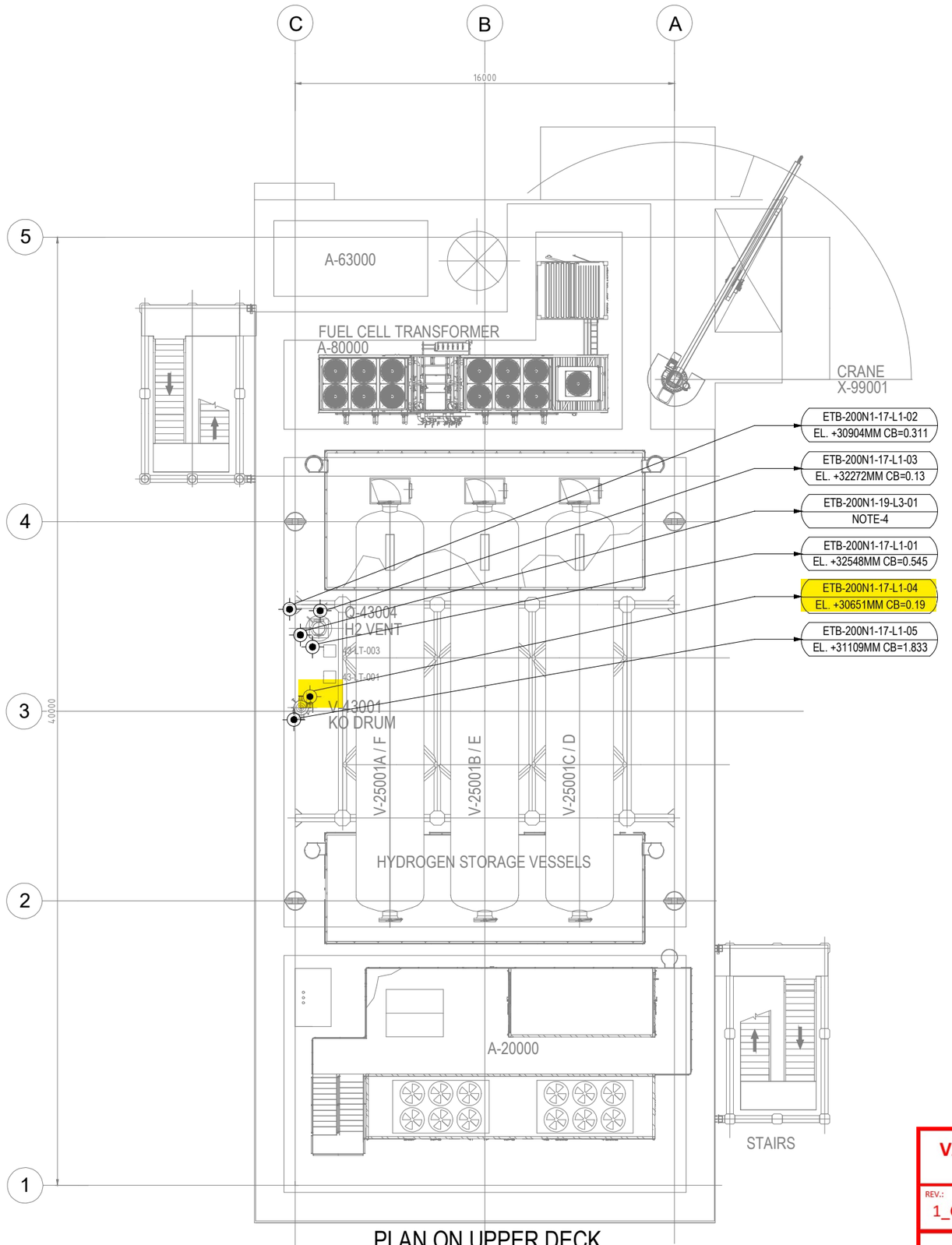
REV.:	DATE:	SIGNATURE:
1_A	15/10/24	G.Randi

ROSETTI MARINO SpA

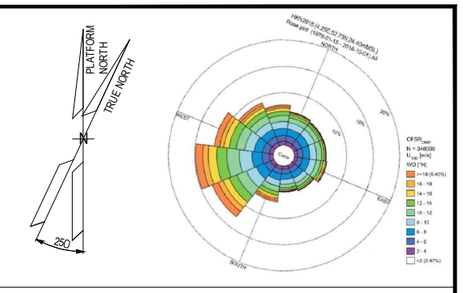
File Name : 123A90-DDL-EL-DL-20140

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

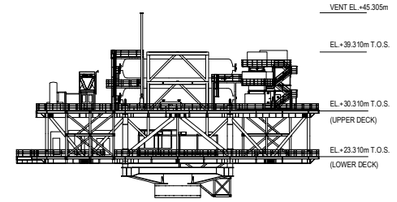
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_C	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 2of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

FROM	TO

DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1

CUBICLE/CB: +03/Q17

-X1

L1/17 56 BN
N/17 57 BU
Y/G
PE
P.E. BUS BAR

P-EJB-200N1-17-L1-01
3G6 mm²

DESCRIPTION: TRACE HEATING - PROCESS LINES - FEEDER 4 (WW LINES & LT)
TAG NUMBER: EJB-200N1-17-L1-01

COLD JB

BN L BN L BN L BN L
BU N BU N BU N BU N
Y/G PE Y/G PE Y/G PE Y/G PE

P-ETB-200N1-17-L1-01
3G6 mm²

DESCRIPTION: TRACE HEATING INSTRUMENT - 43-LT-003
TAG NUMBER: ETB-200N1-17-L1-01

HOT JB
BN L L BN
BU N N BU
Y/G PE PE Y/G

P-ETB-200N1-17-L1-02
3G6 mm²

DESCRIPTION: TRACE HEATING PROCESS LINE (WW 202)##
TAG NUMBER: ETB-200N1-17-L1-02

HOT JB
BN L L BN
BU N N BU
Y/G PE PE Y/G

P-ETB-200N1-17-L1-03
3G6 mm²

DESCRIPTION: TRACE HEATING PROCESS LINE (WW 260)
TAG NUMBER: ETB-200N1-17-L1-03

HOT JB
BN L L
BU N N
Y/G PE PE

DESCRIPTION: TRACE HEATING PROCESS LINE (WW 259) (V-43001 / 43-LT-001)
TAG NUMBER: ETB-200N1-17-L1-04

P-ETB-200N1-17-L1-04
3G6 mm²

HOT JB
BN L L BN
BU N N BU
Y/G PE PE Y/G

- PIPE LINE WW-202 TRACED FROM NOZZLE N3 UPTO SWAN NECK

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_J	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
TRACE HEATING PROCESS LINES

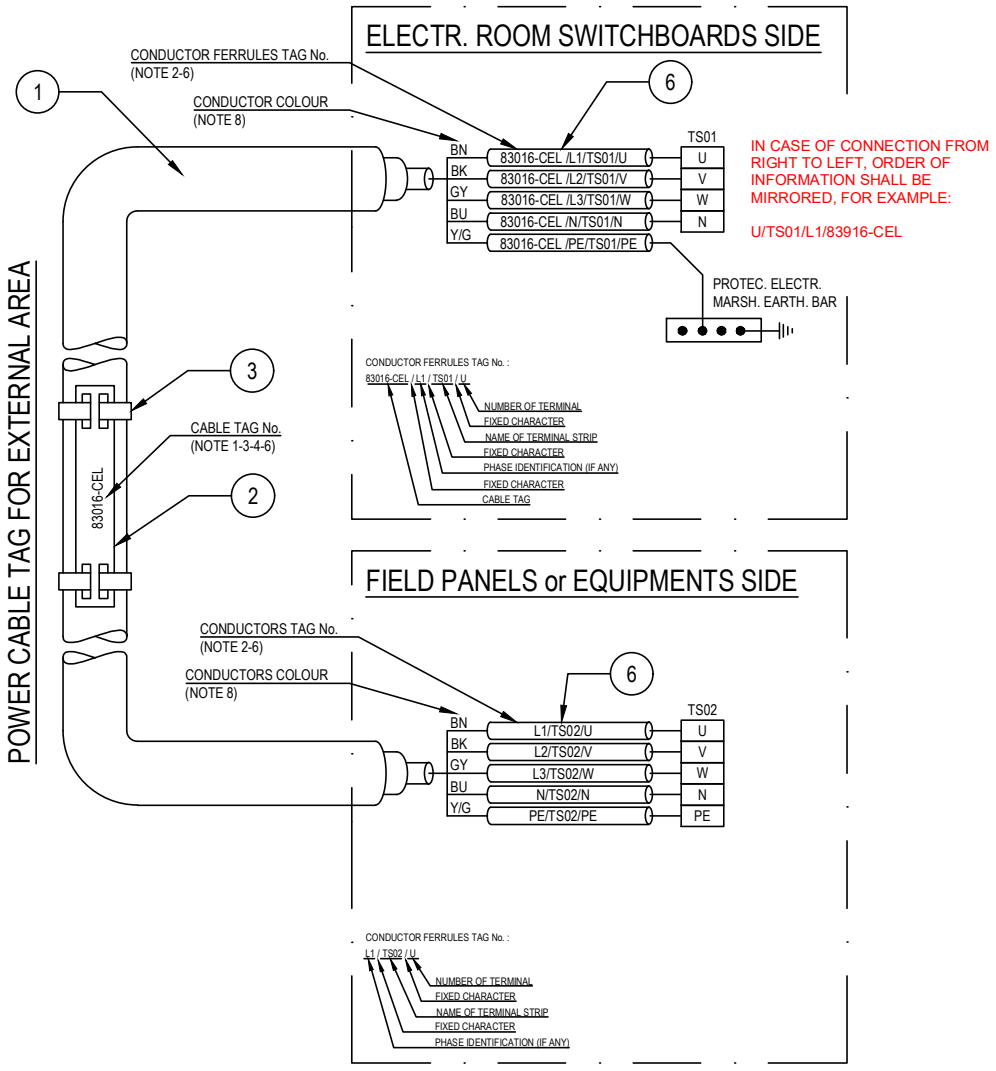
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 050 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

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.

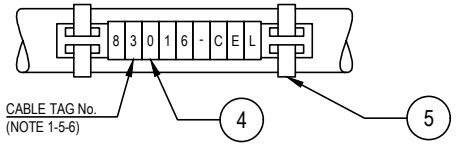
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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_D	20/12/24	V.Ramponi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

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. 123A90-DDL-EL-DD-20092 | SHEET 007 | REV. 02

F.to UNI A3: 420mmx297mm

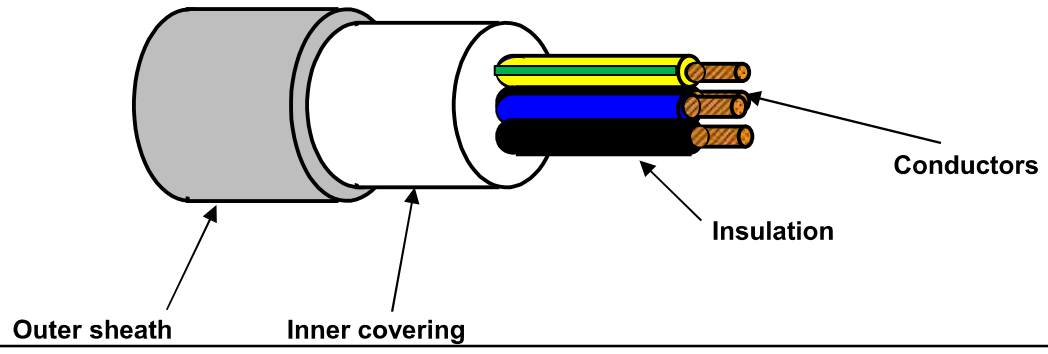
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Funct	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Sectio	Material ID	Material Desc.	Gland Star	From Gland	From Entr	From Fit	To Gland	To Entry	To Fitting	Routing	Routing Manual
P-ETB-200N1-17-L1-04	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						EJB-200N1-17-L1-01	HEAT TRACING - PROCESS LINES (WW LINES & LT) Cold JB	Lower Deck	Heat Tracing Cold JB	ETB-200N1-17-L1-04	HEAT TRACING - PROCESS LINE (WW 259, V-43001, LT-001) Hot JB	Upper Deck	Heat Tracing Hot JB	ELECV05-3G6	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 3G6mm² - Grey	M25	T1_M25_Single			T1_M25_Single				L-150-101-LVT-099 / L-600-101-LVT-012 / L-150-101-LVT-105 / E-MCT-U11 / L-50-102-LVT-071

FLEI s.r.l.

Cu Cl.2/EPR/LSZH 0,6/1 KV

3G6 - L.V. POWER CABLE - Flame Retardant



TECHNICAL FEATURES

Conductors :	**STRANDED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	EPR compound, quality to IEC 60092.360, Nominal Thickness 1,0 mm	
Cores colour code :	**Brown - Blue - Yellow/Green**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not Required	
Total Assembling :	Cores layed up with optimal lay length	
Overall Wrapping:	Not required	
Drain wire :	Not required	
Overall Shield:	Not required	
Inner covering :	Extruded LSZH compound, Average Thickness 1,0 mm	
Inner covering color code:	**Black or Natural**	
Armour :	Not required	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,2 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 3G6 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 -**	
	Year of Manufacture - CE + Meter Marking	
Outer diameter :	(15,6 ± 10%) mm	
Bending radius :	cable outer diameter x 10	(in fixed installation)
Voltage test :	3,5 kV a.c. for 5' (Between Cores)	
Conductors DC Resistance :		IEC 60228 Class 2
Insulation Resistance :	≥ 770 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.353**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance	IEC 61034.2 (LT ≥ 60%)	
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 covering together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	29/03/2024	Messa			
Checked :	29/03/2024	Spaccasassi			
Approved :	29/03/2024	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.

ITEM	Tag	P-ETB-200N1-17-L1-02	: TRACE HEATING - INSTRUMENT - 43-LT-003 Hot JB/TRACE HEATING - PROCESS LINES - (WV			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD/UD
TASK	code	C10002442		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

CABLE DATA

Type Cu Cl.2/EPR/LSZH Cores/Size mm² 3G6 mm2 Color GREY

From EJB-200N1-17-L1-01 To ETB-200N1-17-L1-02

1	Confirm cable is as specified in project cable schedule	OK
2	Visual Check cable physical integrity.	OK
3	Check is installed in accordance with layout drawing (segregation, distance…).	OK
4	Check cable is supported and fixed to rack according to project specification.	Note
5	Check bending radius is within the specified limits.	OK
6	Confirm cable glands suit for cable type, correctly mounted and tightened.	OK
7	Check gland plate for single core cables is non ferrous (non -magnetic).	NA
8	Confirm cable labelling is in accordance with specifications.	PL
9	Check cable is correctly loomed and segregated in accordance with specification.	OK
10	Check cable earthing against lastest drawings.	OK
11	Check cores marking are in accordance with termination diagram	OK
12	Check terminations are in accordance with latest termination diagram	OK
13	If required produce Red Line Mark Up for "AS BUILT"	

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	P-ETB-200N1-17-L1-02	: TRACE HEATING - INSTRUMENT - 43-LT-003 Hot JB/TRACE HEATING - PROCESS LINES - (WI			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD/UD
TASK	code	C10002442		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0.3	
6		PH 2	0.3	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		0,3	
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	>999	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

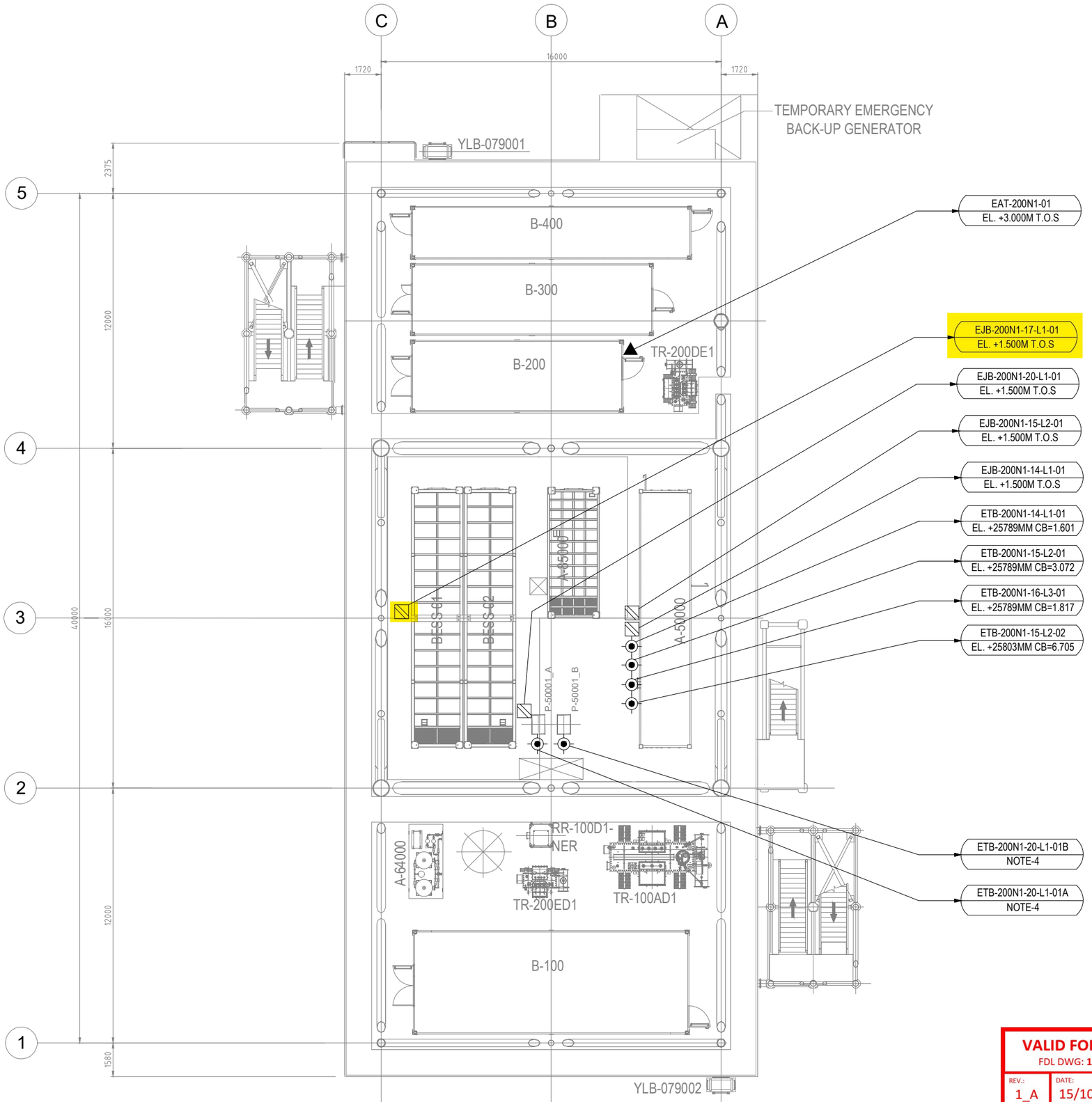
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	VOLCRAFT 1000V - ET-200 S/N:H240103023	TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207
Calibration certificate N° and date:	N°LAT 042 00768/24 _ 12/10/2024	Calibration certificate N° and date:	N°7722/24 _ 10/07/2024

Comments: Nota 4: refer to PL C30000679/C30000681

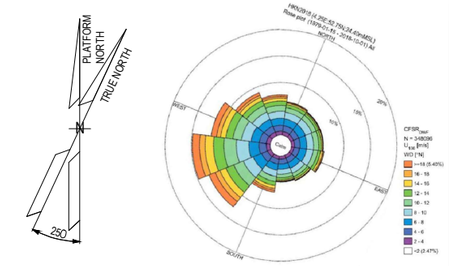
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-10	2025-02-10	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-10T08:56:44.884Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-10T15:33:05.616Z	

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

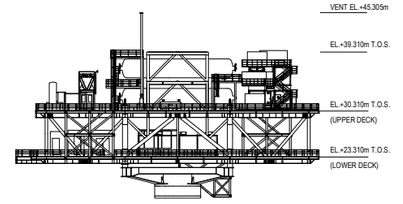
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 1of2	REV. 01

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

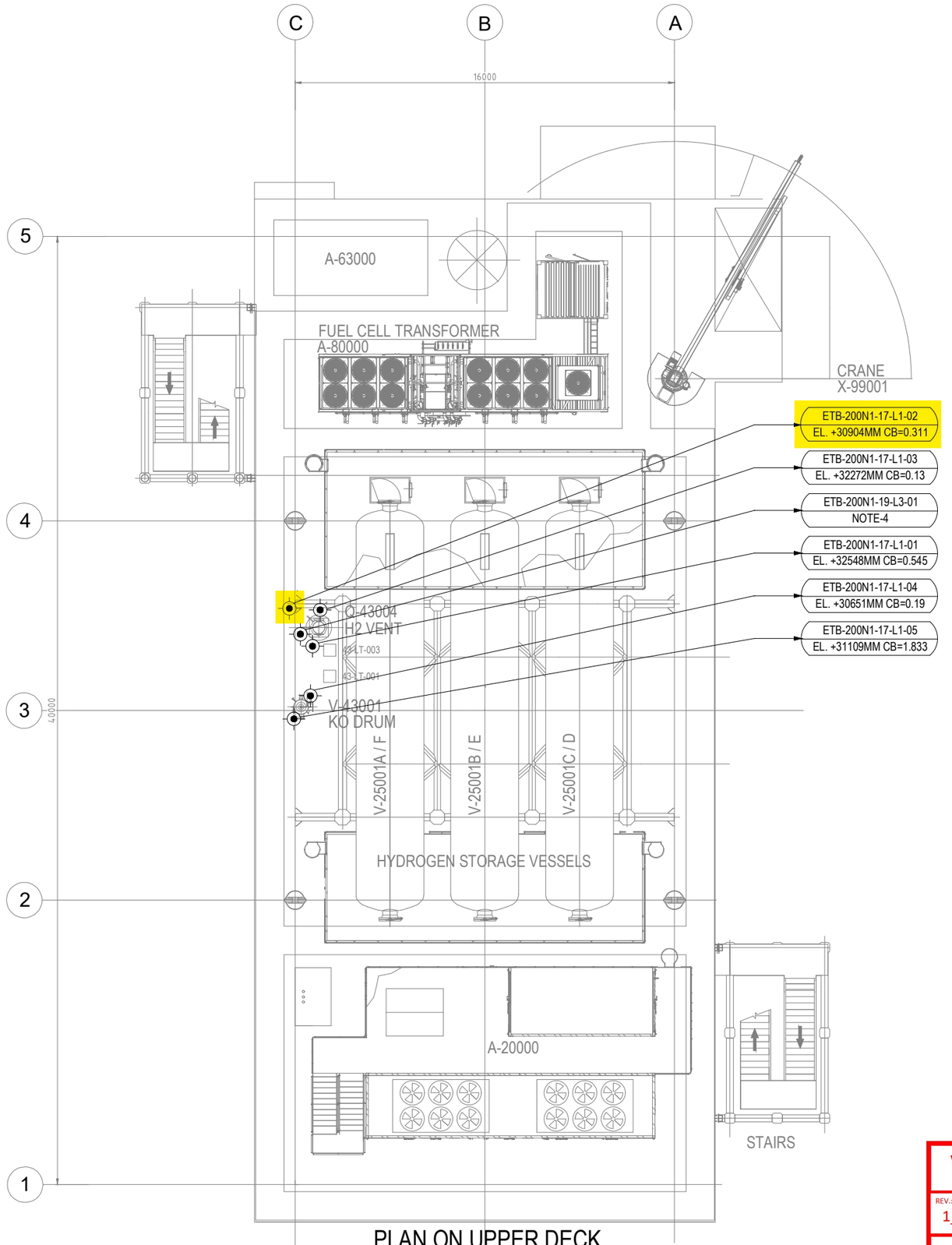
REV.:	DATE:	SIGNATURE:
1_A	15/10/24	G.Randi

ROSETTI MARINO SpA

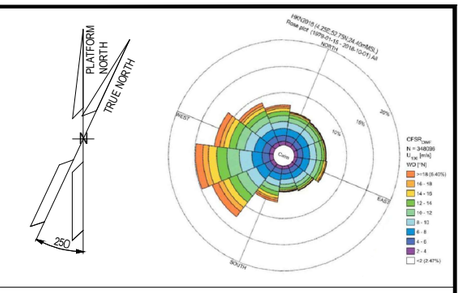
File Name : 123A90-DDL-EL-DL-20140

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

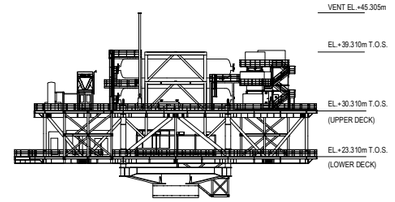
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_A	15/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 2of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

FROM	TO

DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1

CUBICLE/CB: +03/Q17

-X1

L1/17 56 BN
N/17 57 BU
Y/G
PE
P.E. BUS BAR

P-EJB-200N1-17-L1-01
3G6 mm²

DESCRIPTION: TRACE HEATING - PROCESS LINES - FEEDER 4 (WW LINES & LT)
TAG NUMBER: EJB-200N1-17-L1-01

COLD JB

BN L L L L BN BN BN
BU N N N N BU BU BU
Y/G PE PE PE PE Y/G Y/G Y/G

P-ETB-200N1-17-L1-01
3G6 mm²

DESCRIPTION: TRACE HEATING INSTRUMENT - 43-LT-003
TAG NUMBER: ETB-200N1-17-L1-01

HOT JB

BN L L BN
BU N N BU
Y/G PE PE Y/G

P-ETB-200N1-17-L1-02
3G6 mm²

DESCRIPTION: TRACE HEATING PROCESS LINE (WW 202)##
TAG NUMBER: ETB-200N1-17-L1-02

HOT JB

BN L L BN
BU N N BU
Y/G PE PE Y/G

P-ETB-200N1-17-L1-03
3G6 mm²

DESCRIPTION: TRACE HEATING PROCESS LINE (WW 260)
TAG NUMBER: ETB-200N1-17-L1-03

HOT JB

BN L L
BU N N
Y/G PE PE

DESCRIPTION: TRACE HEATING PROCESS LINE (WW 259) (V-43001 / 43-LT-001)
TAG NUMBER: ETB-200N1-17-L1-04

HOT JB

BN L L BN
BU N N BU
Y/G PE PE Y/G

P-ETB-200N1-17-L1-04
3G6 mm²

- PIPE LINE WW-202 TRACED FROM NOZZLE N3 UPTO SWAN NECK

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_J	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
TRACE HEATING PROCESS LINES

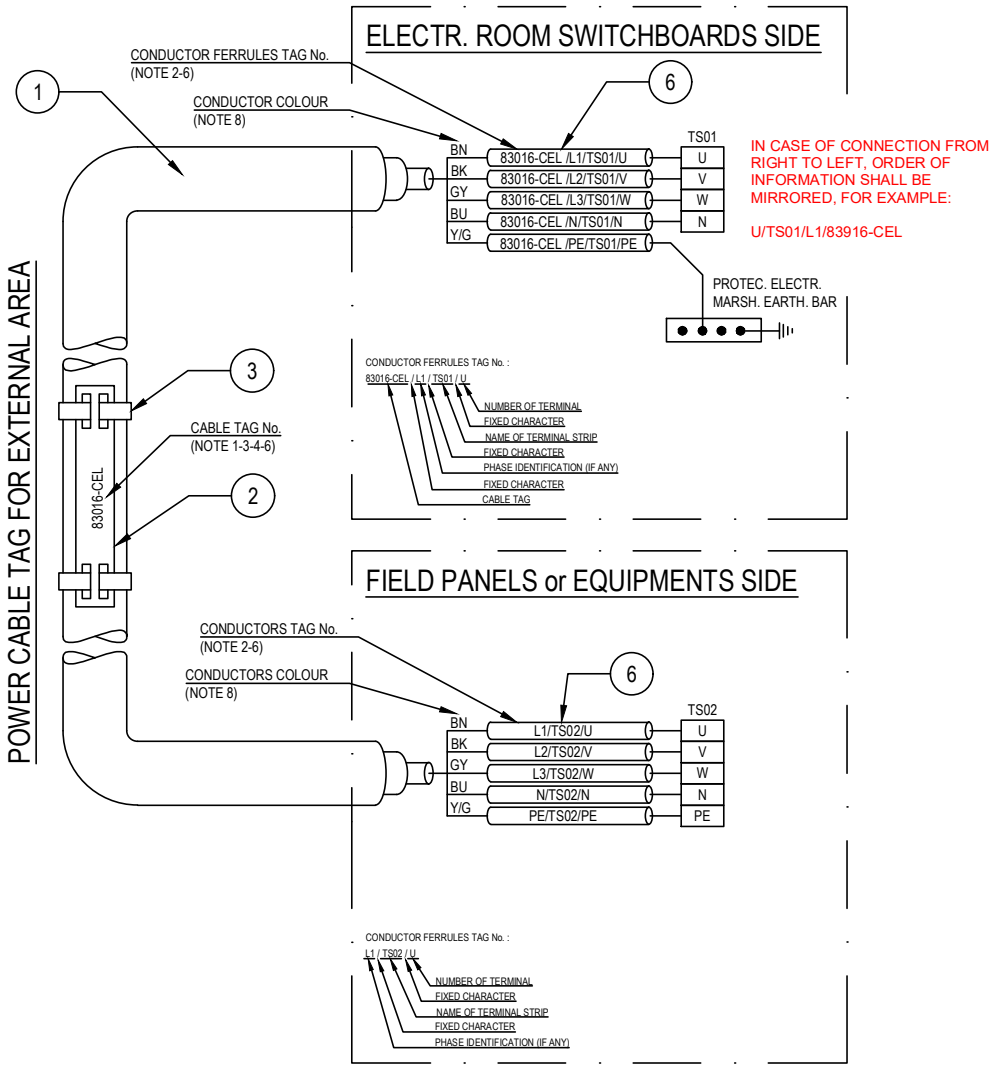
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 050 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

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.

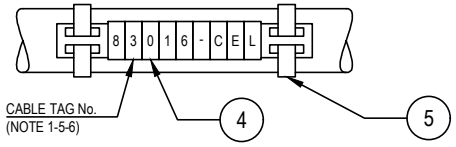
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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_D	20/12/24	V.Ramponi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

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. 123A90-DDL-EL-DD-20092 | SHEET 007 | REV. 02

F.to UNI A3: 420mmx297mm

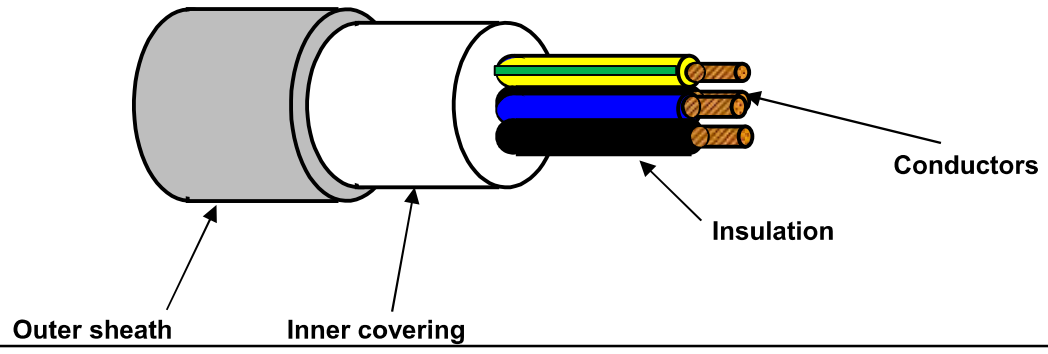
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Funct	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Sectio	Material ID	Material Desc.	Gland Star	From Gland	From Entr	From Fit	To Gland	To Entry	To Fitting	Routing	Routing Manual
P-ETB-200N1-17-L1-02	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						EJB-200N1-17-L1-01	HEAT TRACING - PROCESS LINES (WW LINES & LT) Cold JB	Lower Deck	Heat Tracing Cold JB	ETB-200N1-17-L1-02	HEAT TRACING - PROCESS LINES - 4 (WW LINES) Hot JB	Upper Deck	Heat Tracing Hot JB	ELECV05-3G6	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 3G6mm² - Grey	M25	T1_M25_Single			T1_M25_Single				

FLEI s.r.l.

Cu Cl.2/EPR/LSZH 0,6/1 KV

3G6 - L.V. POWER CABLE - Flame Retardant



TECHNICAL FEATURES

Conductors :	**STRANDED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	EPR compound, quality to IEC 60092.360, Nominal Thickness 1,0 mm	
Cores colour code :	**Brown - Blue - Yellow/Green**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not Required	
Total Assembling :	Cores layed up with optimal lay length	
Overall Wrapping:	Not required	
Drain wire :	Not required	
Overall Shield:	Not required	
Inner covering :	Extruded LSZH compound, Average Thickness 1,0 mm	
Inner covering color code:	**Black or Natural**	
Armour :	Not required	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,2 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 3G6 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 -**	
	Year of Manufacture - CE + Meter Marking	
Outer diameter :	(15,6 ± 10%) mm	
Bending radius :	cable outer diameter x 10	(in fixed installation)
Voltage test :	3,5 kV a.c. for 5' (Between Cores)	
Conductors DC Resistance :		IEC 60228 Class 2
Insulation Resistance :	≥ 770 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.353**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance	IEC 61034.2 (LT ≥ 60%)	
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 covering together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	29/03/2024	Messa			
Checked :	29/03/2024	Spaccasassi			
Approved :	29/03/2024	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.

ITEM	Tag	P-ETB-200N1-17-L1-03	: TRACE HEATING - PROCESS LINES - 4 (WW LINES) Hot JB/TRACE HEATING - PROCESS LINE			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	UD
TASK	code	C10002443	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

CABLE DATA

Type Cu Cl.2/EPR/LSZH Cores/Size mm² 3G6 mm2 Color GREY

From ETB-200N1-17-L1-02 To ETB-200N1-17-L1-03

1	Confirm cable is as specified in project cable schedule	OK
2	Visual Check cable physical integrity.	OK
3	Check is installed in accordance with layout drawing (segregation, distance…).	OK
4	Check cable is supported and fixed to rack according to project specification.	Note
5	Check bending radius is within the specified limits.	OK
6	Confirm cable glands suit for cable type, correctly mounted and tightened.	OK
7	Check gland plate for single core cables is non ferrous (non -magnetic).	NA
8	Confirm cable labelling is in accordance with specifications.	PL
9	Check cable is correctly loomed and segregated in accordance with specification.	OK
10	Check cable earthing against lastest drawings.	OK
11	Check cores marking are in accordance with termination diagram	OK
12	Check terminations are in accordance with latest termination diagram	OK
13	If required produce Red Line Mark Up for "AS BUILT"	

REFER TO FINAL SHEET FOR ACCEPTANCE

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	P-ETB-200N1-17-L1-03	: TRACE HEATING - PROCESS LINES - 4 (WW LINES) Hot JB/TRACE HEATING - PROCESS LINE			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	UD
TASK	code	C10002443		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0.1	
6		PH 2	0.1	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		0.1	
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	>999	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

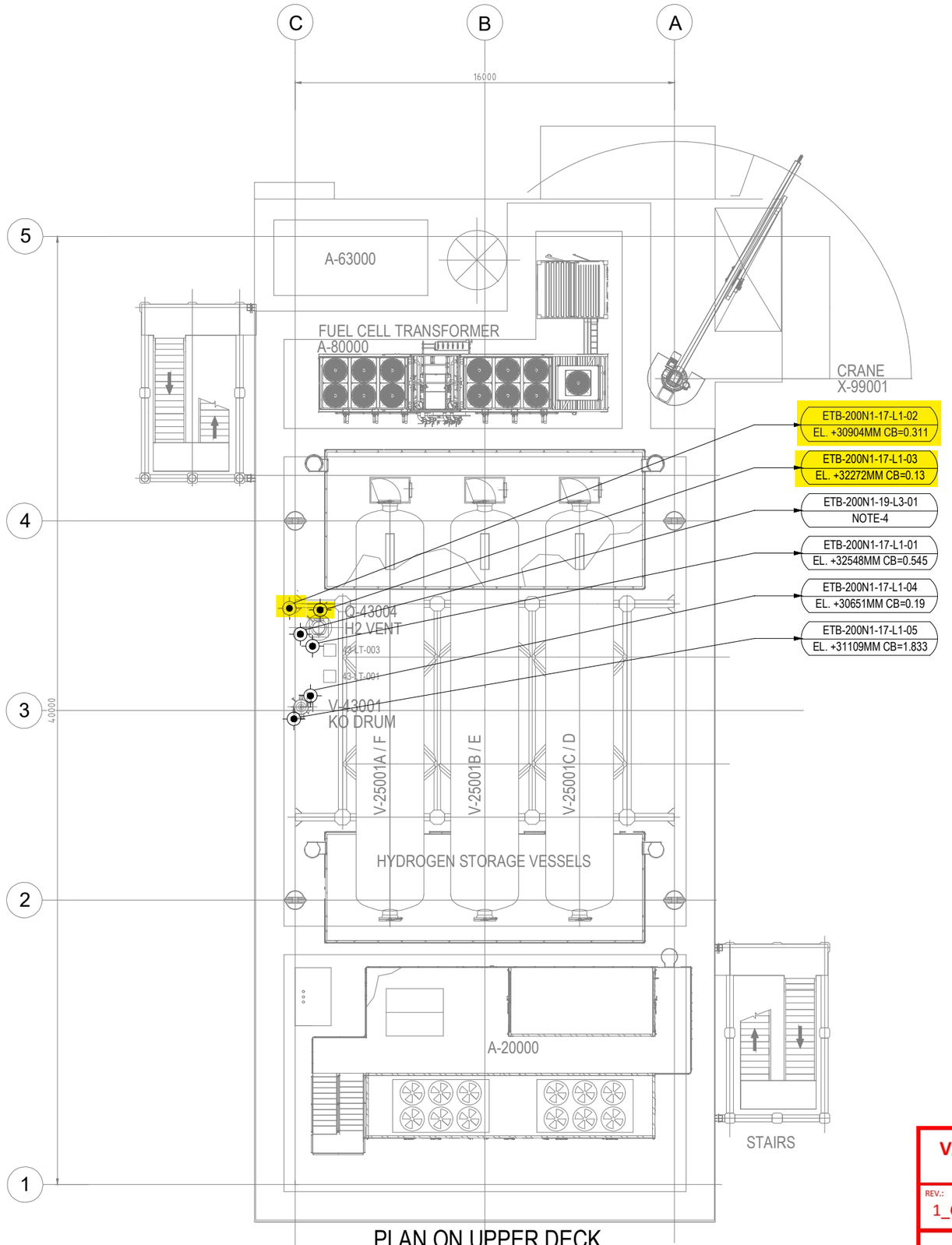
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	VOLCRAFT 1000V - ET-200 S/N:H240103023	TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207
Calibration certificate N° and date:	N°LAT 042 00768/24 _ 12/10/2024	Calibration certificate N° and date:	N°7722/24 _ 10/07/2024

Comments:

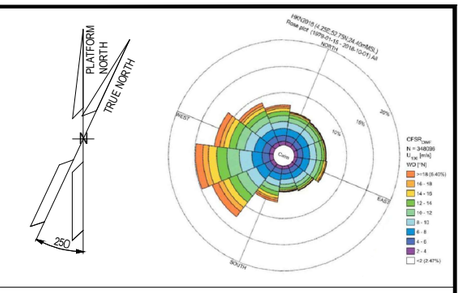
	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-19	2025-02-20	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-19T13:45:43.973Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-20T15:08:55.403Z	

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

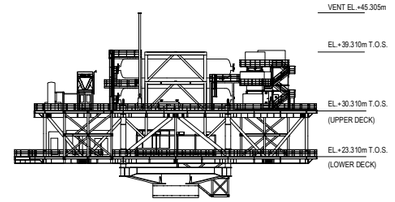
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_C	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 2of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

FROM	TO

DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1

CUBICLE/CB: +03/Q17

-X1

L1/17 56 BN
N/17 57 BU
Y/G
PE
P.E. BUS BAR

P-EJB-200N1-17-L1-01
3G6 mm²

DESCRIPTION: TRACE HEATING - PROCESS LINES - FEEDER 4 (WW LINES & LT)
TAG NUMBER: EJB-200N1-17-L1-01

COLD JB

BN L BN L BN L BN L
BU N BU N BU N BU N
Y/G PE Y/G PE Y/G PE Y/G PE

P-ETB-200N1-17-L1-01
3G6 mm²

DESCRIPTION: TRACE HEATING INSTRUMENT - 43-LT-003
TAG NUMBER: ETB-200N1-17-L1-01

HOT JB
BN L L BN
BU N N BU
Y/G PE PE Y/G

P-ETB-200N1-17-L1-02
3G6 mm²

DESCRIPTION: TRACE HEATING PROCESS LINE (WW 202)##
TAG NUMBER: ETB-200N1-17-L1-02

HOT JB
BN L L BN
BU N N BU
Y/G PE PE Y/G

P-ETB-200N1-17-L1-03
3G6 mm²

DESCRIPTION: TRACE HEATING PROCESS LINE (WW 260)
TAG NUMBER: ETB-200N1-17-L1-03

HOT JB
BN L L
BU N N
Y/G PE PE

DESCRIPTION: TRACE HEATING PROCESS LINE (WW 259) (V-43001 / 43-LT-001)
TAG NUMBER: ETB-200N1-17-L1-04

HOT JB
BN L L BN
BU N N BU
Y/G PE PE Y/G

P-ETB-200N1-17-L1-04
3G6 mm²

- PIPE LINE WW-202 TRACED FROM NOZZLE N3 UPTO SWAN NECK

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_K	12/02/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
TRACE HEATING PROCESS LINES

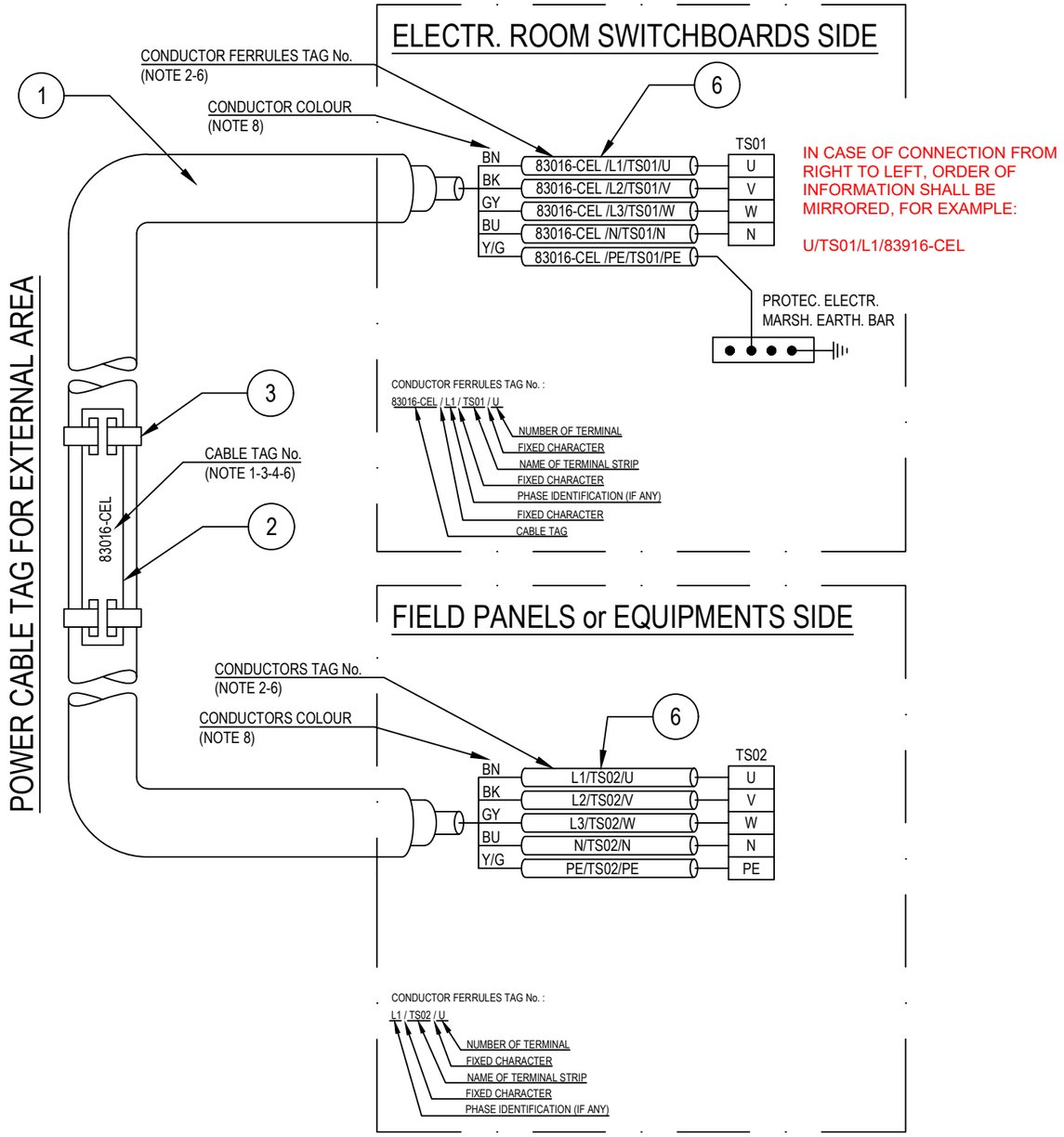
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 050 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

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.

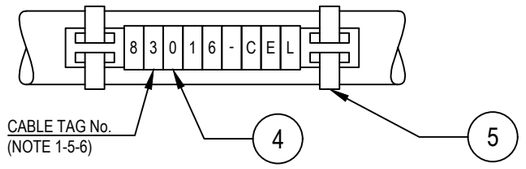
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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_D	20/12/24	V.Ramponi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

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. 123A90-DDL-EL-DD-20092 | SHEET 007 | REV. 02

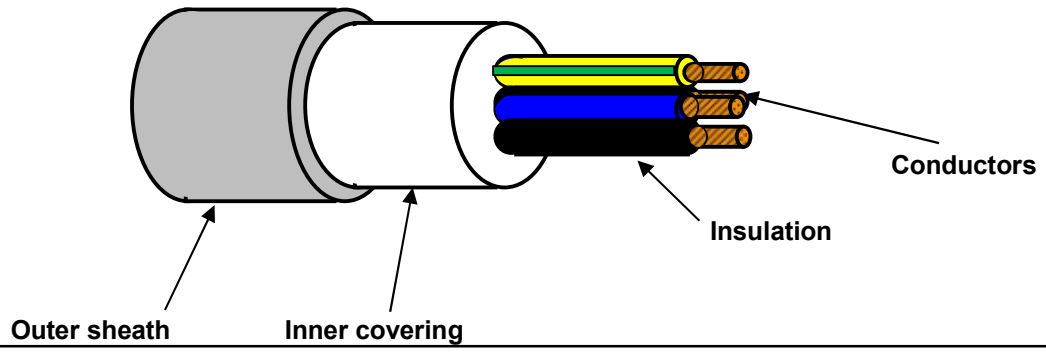
F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Info	Category	Discipl	Eng Status	NativeDoc	Service	Entity Type	Main Function	Module	Area	From Tag	From Main Fun	From Area	From Tag Section	To Tag	To Main Funct	To Area	To Tag Sectio	Material ID	Material Desc.	Gland St	From Gland	From Entry	From Fitti	To Gland	To Entry	To Fitting	Routing	Routing Manual
P-ETB-200N1-17-L1-03		Cable	EL	VFC	20148						02	- PROCESS	Upper Deck	JB	03	TRACING -	Upper Deck	Hot JB	ELECV05-3G6	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 3G6mm^2 - Grey	M25	T1_M25_Single			ngle					

Cu Cl.2/EPR/LSZH 0,6/1 KV

3G6 - L.V. POWER CABLE - Flame Retardant



TECHNICAL FEATURES

Conductors :	**STRANDED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	EPR compound, quality to IEC 60092.360, Nominal Thickness 1,0 mm	
Cores colour code :	**Brown - Blue - Yellow/Green**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not Required	
Total Assembling :	Cores layed up with optimal lay length	
Overall Wrapping:	Not required	
Drain wire :	Not required	
Overall Shield:	Not required	
Inner covering :	Extruded LSZH compound, Average Thickness 1,0 mm	
Inner covering color code:	**Black or Natural**	
Armour :	Not required	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60092.360, Average Thickness 1,2 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 3G6 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 - Year of Manufacture - CE + Meter Marking**	
Outer diameter :	(15,6 ± 10%) mm	
Bending radius :	cable outer diameter x 10	(in fixed installation)
Voltage test :	3,5 kV a.c. for 5' (Between Cores)	
Conductors DC Resistance :		IEC 60228 Class 2
Insulation Resistance :	≥ 770 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.353**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Hazardous Areas :	IEC 60079.14:2013 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 covering together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	29/03/2024	Messa			
Checked :	29/03/2024	Spaccasassi			
Approved :	29/03/2024	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	EAT-200N1-01	: Trace Heating Remote Ambient Thermostat			Dwg	123A90-DDL-EL-DL-20140
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10004598		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX31 Junction and Marshalling Box

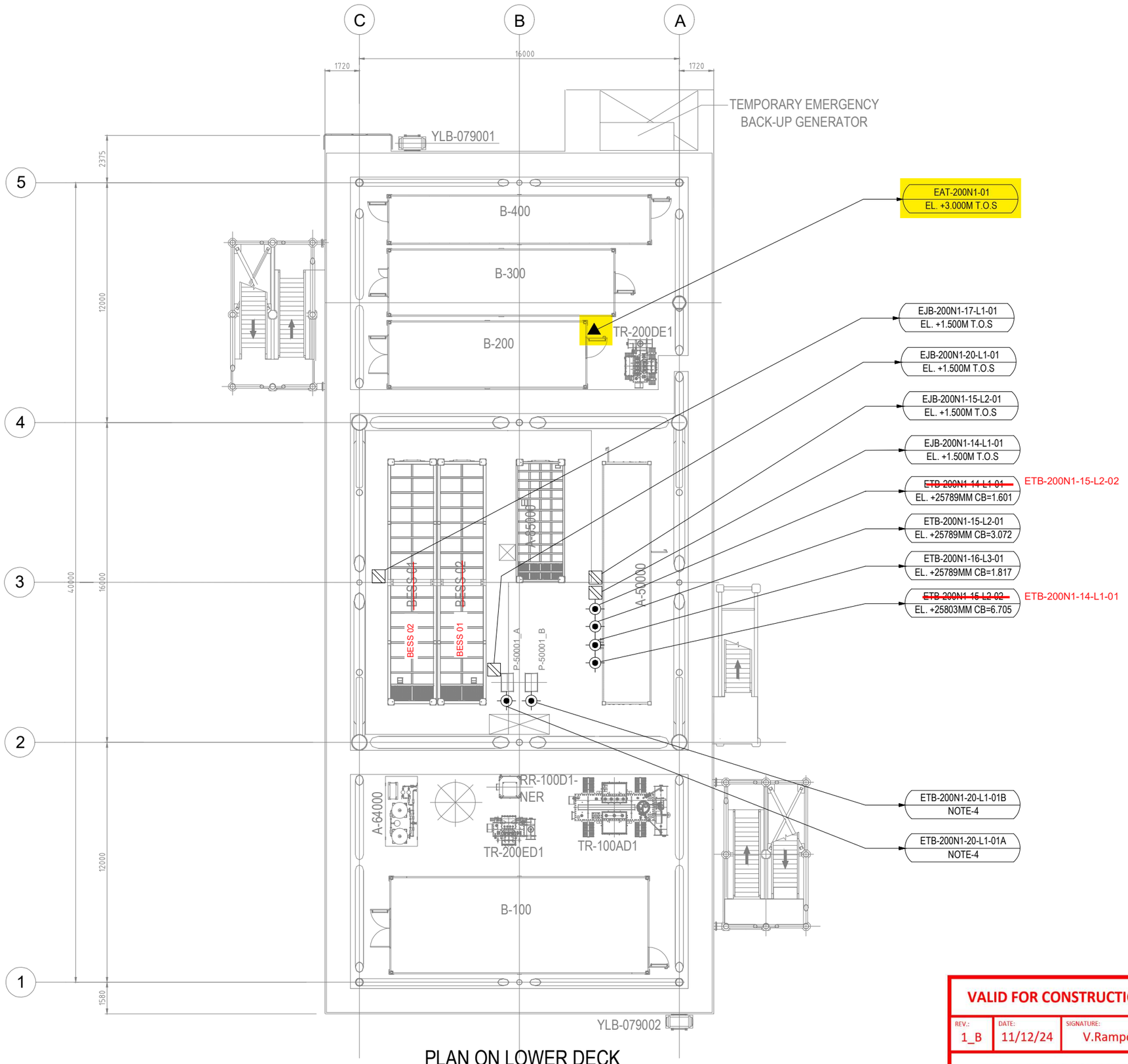
1	Check box is de-energized and safe.	OK
2	Check box is correctly mounted and easily accessible.	OK
3	Check box tagging against drawing.	OK
4	Check nameplate data is correct.	OK
5	Check flameproof joints are clean and greased with approved lubricants (if required).	NA
6	Check for damaging gaskets.	OK
7	Check all bolts are fitted and correcly tighted .	OK
8	Check all unused entries are suitably plugged.	PL
9	Check earthing and bonding against drawings.	OK
10	Check terminal blocks segregation barriers are fitted where necessary.	NA
11	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

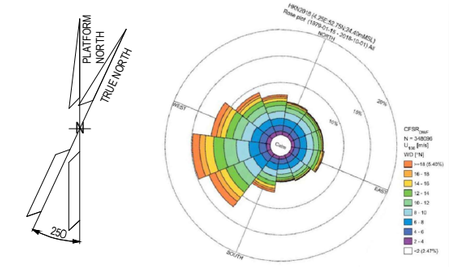
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Paolo Schintu	
Date	2025-01-23	2025-01-24	
Signature	Digitaly signed by Michele Tartaglia 2025-01-23T15:41:47.193Z	Digitaly signed by Paolo Schintu 2025-01-24T17:32:11.287Z	

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

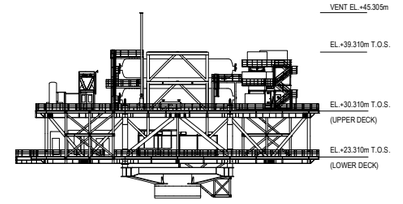
LEGEND

- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

REV.:	DATE:	SIGNATURE:
1_B	11/12/24	V.Ramponi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

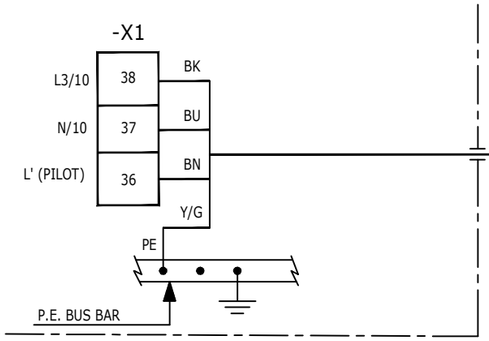
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140		SHEET 1of2 / REV. 01

File Name : 123A90-DDL-EL-DL-20140

FROM	TO

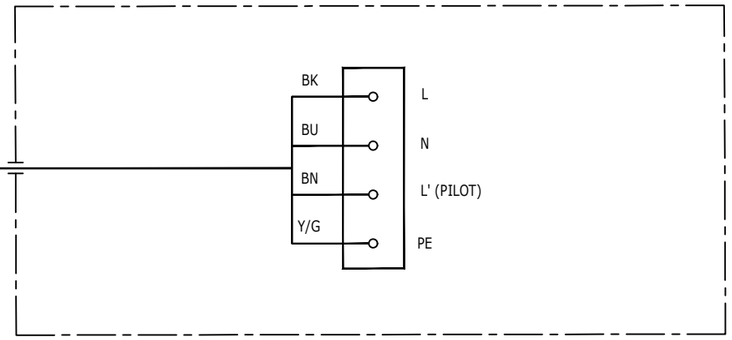
DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1

CUBICLE/CB: +01/Q10



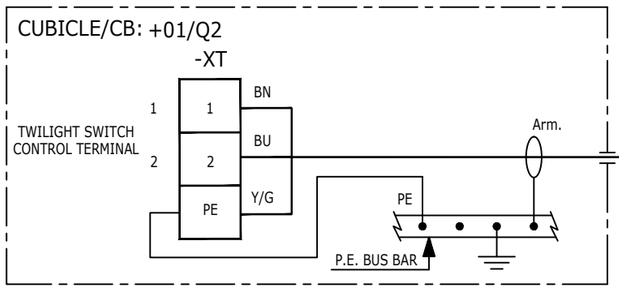
P-EJB-200N1-10-L3-01
4G4_E mm²

DESCRIPTION: EMERGENCY LIGHTING STAIRS
TAG NUMBER: EJB-200N1-10-L3-01



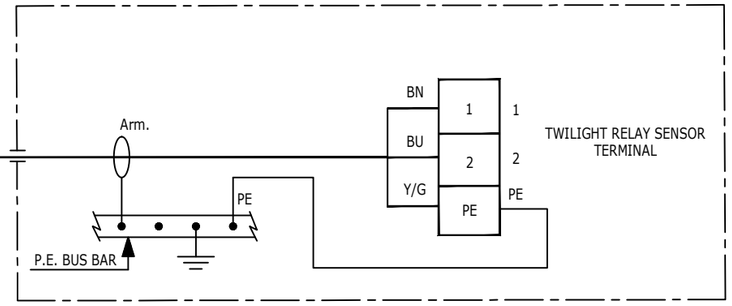
DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1

CUBICLE/CB: +01/Q2



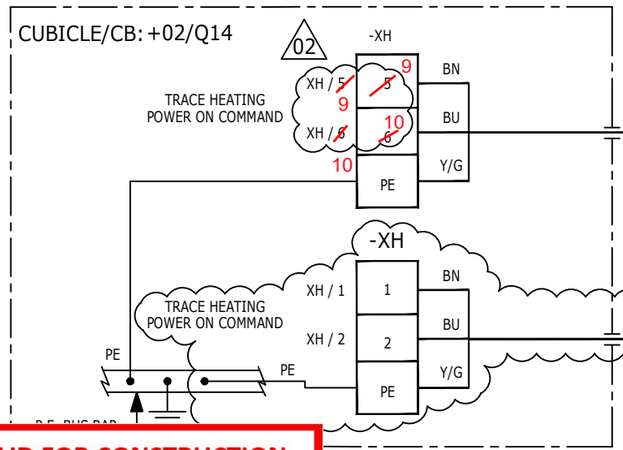
P-EPH-200N1-01
3G4 mm²

DESCRIPTION: TWILIGHT RELAY SENSOR
TAG NUMBER: EPH-200N1-01



DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1

CUBICLE/CB: +02/Q14

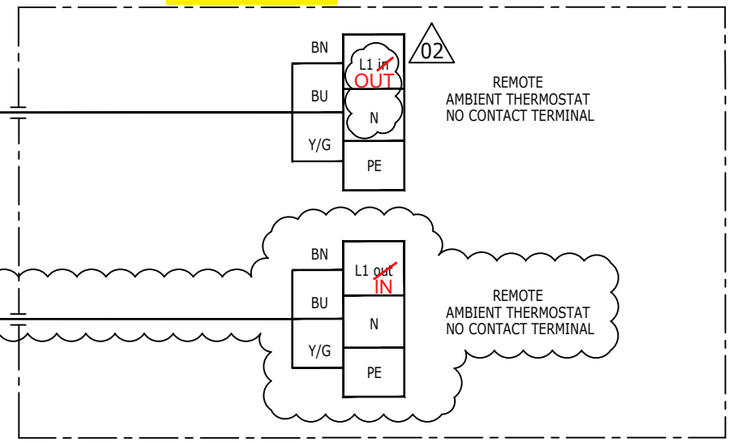


P-EAT-200N1-01
3G2.5 mm²

02

P-EAT-200N1-02
3G2.5 mm²

DESCRIPTION: REMOTE AMBIENT THERMOSTAT
TAG NUMBER: EAT-200N1-01



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_I	20/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
LIGHTING & SMALL POWER DB BOP

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

SCALE : 1:X

A3

DRAWING NO. 123A90-DDL-EL-DG-20149

SHEET 047

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

PIT240024_ED02-1001_03

EHT BILL OF MATERIALS

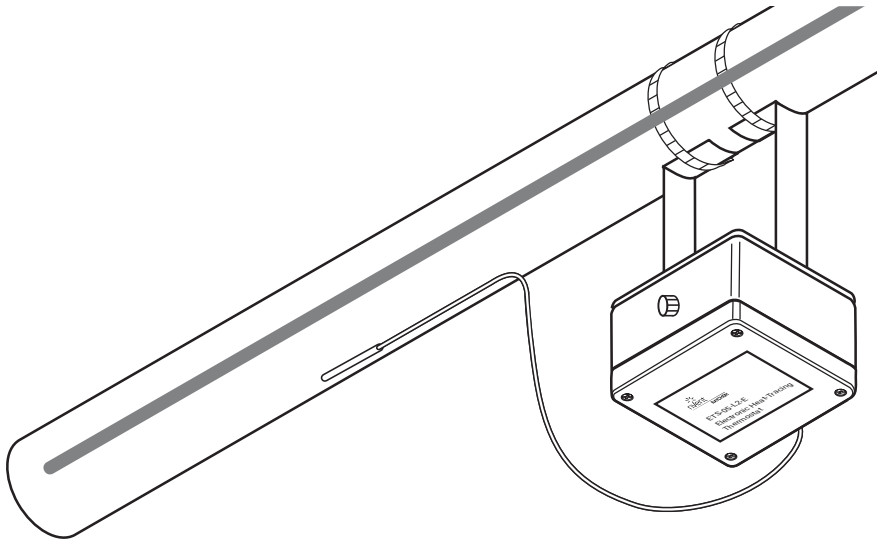
Item Code	Unit	Description	DESIGN Q.TY	CONTINGENCY
3BTV2-CT	m	Self-Regulating Heating Cable, 230V, 9 W/m at 10°C	199	11
E-20	pc	End Seal, BTV/QTVR, Heat Shrink, ATEX	8	1
JBM-100-E	pc	Integrated Junction Box, Multiple-Entry, Cold-Applied, Cold-Applied, ATEX	3	1
JBM-SPA	pack	Small Pipe Adaptor for JBM-, T-100 (5 pieces/ pack)	1	
JBS-100-E	pc	Integrated Junction Box, Single-Entry, Cold-Applied, ATEX	6	1
JBS-SPA	pack	Small Pipe Adaptor for JBS-, E-100 (5 pieces/ pack)	1	
ATE-180	roll	Aluminium Tape for Fixing Heating Cables, Suitable for Stainless Steel, 55 m/roll	4	1
GS-54	roll	Glass Cloth Tape for Fixing Heating Cables, Suitable for Stainless Steel, 16 m/roll	9	1
LAB-I-01	pc	Warning Label, English	39	6
PSE-090	pc	Pipe Strap, SS, Ø 1.25"-3"	12	2
ETS-05-A2-E-A	pc	Electronic Ambient Sensing Thermostat with Alarm Relay, ATEX	1	

ETS-05

CONNECT AND PROTECT

Surface and ambient sensing electronic thermostat

PRODUCT OVERVIEW



nVent RAYCHEM ETS-05 electronic surface and ambient sensing thermostat provides accurate temperature control for heating cables.

The ETS-05 is available in many versions. The ETS-05-L2-E is for temperatures up to 199°C, while the ETS-05-H2-E can be used for temperatures up to 499°C. The ETS-05-A2-E is an ambient sensing thermostat with a temperature setpoint in the range of 0°C to +49°C.

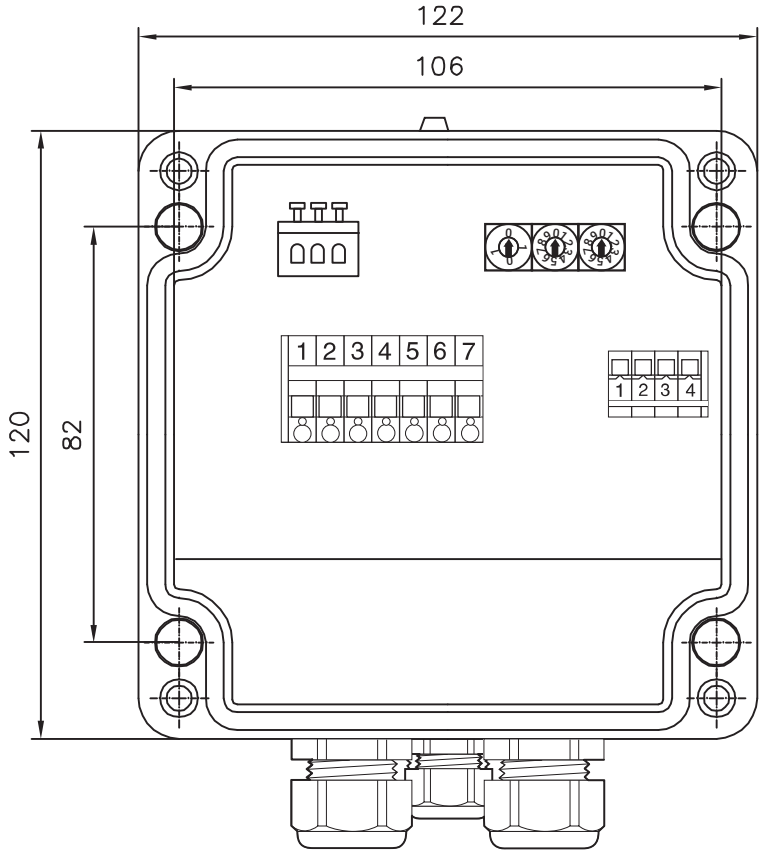
The maximum nominal load is 32 A for the thermostats. Temperature setting is accurate via digital rotary switches inside the enclosure.

The ETS-05 is available with an alarm relay for remote monitoring.

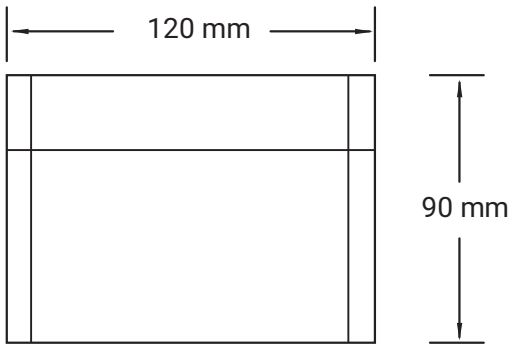
The ETS-05 has a LED indicator which indicates the status of the thermostat (powered on/off), the status of the heat-tracing cable (powered on/off) and the status of the sensor. In case of sensor failure, the thermostat can switch to an on or off state, depending upon the user's requirement.

Dimensions (in mm)

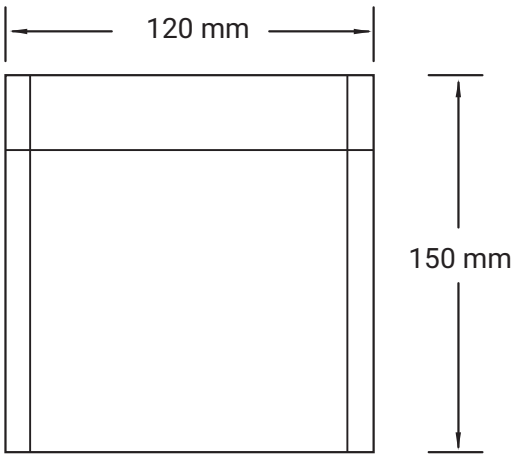
Top view



Side view



ETS-05 versions without alarming, without extended voltage range



ETS-05 versions with extended voltage range and/or alarm relay

PRODUCT SPECIFICATIONS

The following table shows the general information applicable for all versions of the ETS-05.

Maximum sensor lead resistance	20 Ohm
Ingress protection	IP66
Switching accuracy	±1 K at 5°C, 2 K at 499°C
Switching differential (Hysteresis)	≈ 3°C
Output relay	Single pole change over type (SPST)
Switching capacity	32 A resistive load
Ambient temperature range	–40°C to +60°C (ATEX / IECEx) –60°C to +60°C (EAC Ex)
Internal power consumption	3 VA
Terminal size	max. 6 mm^2
Cable gland entries	2 x M25: 1 x M25 gland for power cable in 1 x M25 rain plug for heating cable out 1 x M20 gland for alarm wire (when alarm relay is available in unit)
Sensor	The ETS-05 for ATEX/IECEx countries includes a sensor. The ETS-05 for EAC countries does not include a sensor. The sensor needs to be ordered separately.
Alarm light	Green: ETS-05 powered on, heat-tracing cable off Yellow: ETS-05 powered on, heat-tracing cable on Red flashing: Sensor failure, controller in fail-safe mode
Fail safe	Fail safe “On” and Fail Safe “Off” configurable
Weight	ETS-05 with Alarm Relay 2.38 kg Other versions: 1.64 kg

Versions

The ETS-05 is available in different versions. These are:

ETS-05-AB-CD-E
Letters ABCDE described in table below

Type description ETS-05		
“A”:	Setpoint range	Temperature measurement range
A: Ambient Sensing	0°C to +49°C	–65°C to +260°C
L: Line Sensing, Low Temp.	0°C to +199°C	–65°C to +260°C
H: Line Sensing, High Temp.	0°C to +499°C	–65°C to +585°C
“B”	Voltage range	
1: 110 Vac	99-121 Vac	
1R: 110 Vac	99-132 Vac	
2: 230 Vac	195-230 Vac +10%	
2R: 277 Vac	195-277 Vac +3%	
“C”		
E: ATEX / IECEx approved (IEC countries)		
J: ATEX / IECEx approved (for Japan)		
“D”		
P: Earth Plate		
“E”		
A: Alarm Relay	NO and NC contacts	275 Vac, 3 A resistive load max
(EAC) in the product name indicates that the product has a Russian language label on it for Eurasian Customs Union countries.		
Examples: ETS-05-L2-EP: ETS-05 thermostat, setpoint range 0-199°C, 195-230 Vac, ATEX/IECEx approved, Earth Plate ETS-05-H2R-EP-A: ETS-05 thermostat, setpoint range 0-499°C, 195-277 Vac, ATEX/IECEx, Earth Plate, Alarm Relay		

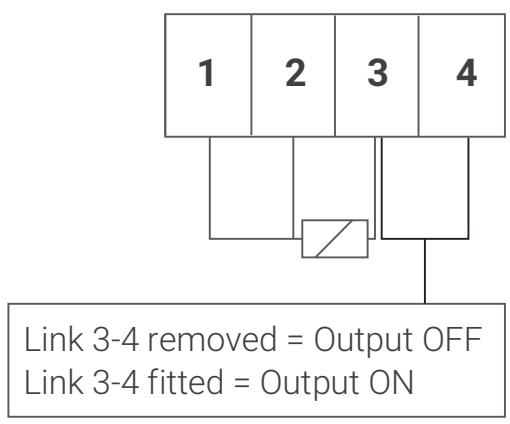
Terminals

Power terminals

1	2	3	4	5	6	7
Line Out	Neutral Out	Neutral Supply	230 V Supply	Earth	Earth	Earth

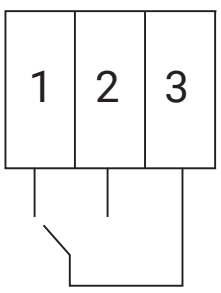
Terminals 2 and 3 are joined electrically
Terminals 5, 6 and 7 are joined electrically

Sensor/Failure mode select terminals



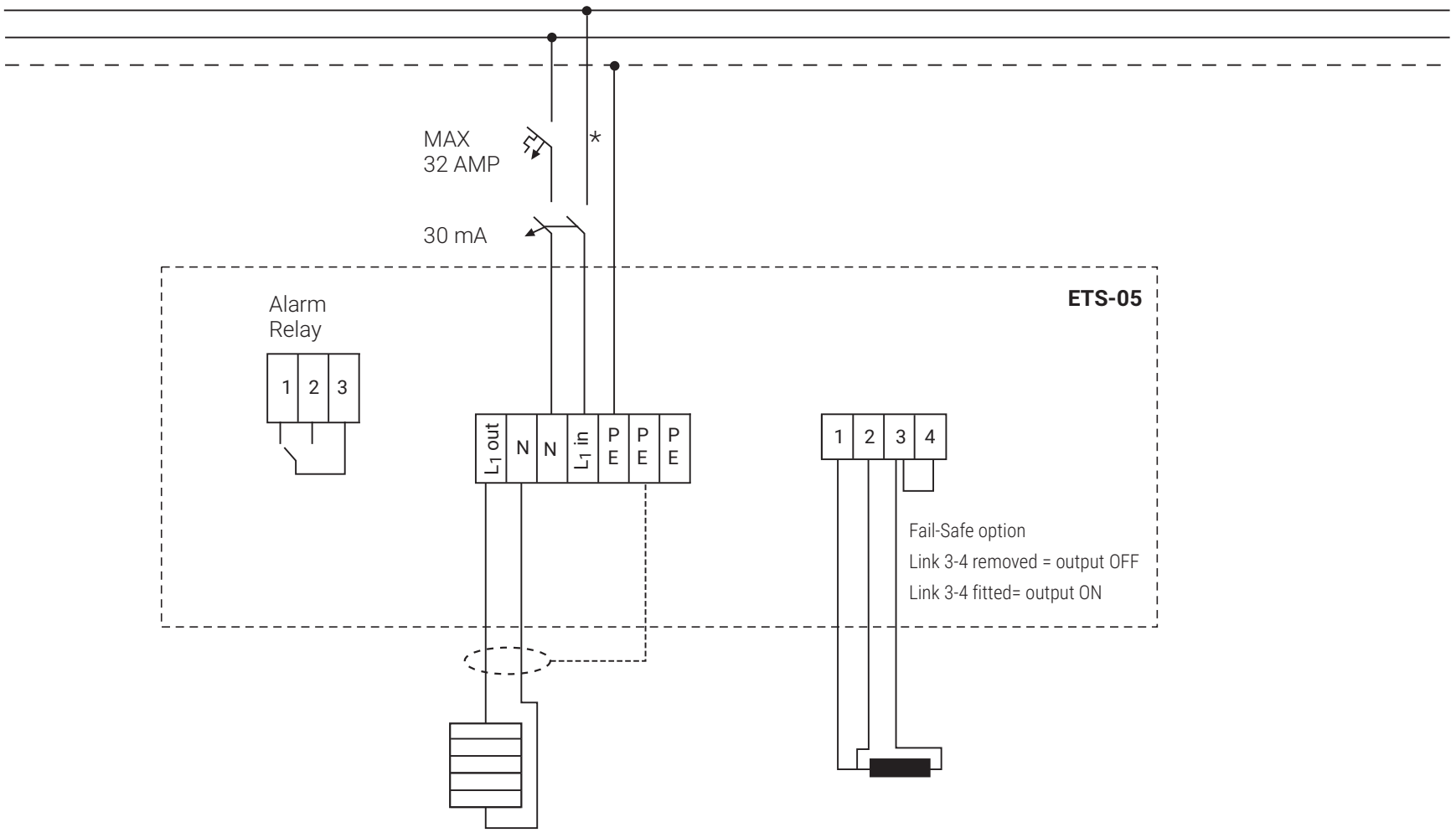
Terminals 1 to 3 allow for the connection of a three wire PT100 sensor.
Terminals 3 to 4 allow the user to select the default heating status on sensor error. Without a link fitted the heating will turn OFF if a sensor error is detected (default). With a link fitted the heating will turn ON if a sensor error is detected

Alarm relay



Healthy situation: 1-3 is closed, 2-3 is open
Alarm situation: 1-3 is open, 2-3 is closed

Typical wiring diagram for direct switching



* Circuit breaker configuration may vary according to local standards / requirements

Mounting method

Support bracket SB-100, SB-101, SB-110, SB-111, SB-130 or surface mounting with 4 fixing holes on 106 x 82 mm centers

APPROVALS

For use in ordinary and hazardous area Zone 1 and Zone 2 (Gas), Zone 21 and Zone 22 (Dust)

Temperature classification

T5

Product certification

More details about product certification, approvals and conditions of safe use are available in the installation manual at www.nVent.com/RAYCHEM.

ORDERING DETAILS

Product Name	Part Number
ETS-05-L2-E	1244-014367
ETS-05-H2-E	1244-014368
ETS-05-A2-E	1244-022311
ETS-05-L2-EP	1244-017508
ETS-05-H2-EP	1244-017509
ETS-05-A2-E-A	1244-022663
ETS-05-L2-EP-A	1244-022669
ETS-05-H2-EP-A	1244-022670
ETS-05-H2R-EP-A	1244-022680

Product Name	Part Number
ETS-05-L2-E (EAC)	1244-022701
ETS-05-H2-E (EAC)	1244-022702
ETS-05-A2-E (EAC)	1244-022700
ETS-05-L2-EP (EAC)	1244-022703
ETS-05-H2-EP (EAC)	1244-022704
ETS-05-A2-E-A (EAC)	1244-022710
ETS-05-L2-EP-A (EAC)	1244-022713
ETS-05-H2-EP-A (EAC)	1244-022714
ETS-05-H2R-EP-A (EAC)	1244-022719

(EAC) in the product name indicates that the product has a Russian language label on it for Eurasian Customs Union countries.

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

Europe, Middle East, Africa
Tel +32.16.213.511
Fax +32.16.213.604
thermal.info@nVent.com

Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com

Our powerful portfolio of brands:
CADDY ERICO HOFFMAN RAYCHEM SCHROFF TRACER

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nVent reserves the right to change specifications without notice.

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	EJB-200N1-20-L1-01	: HEAT TRACING - PROCESS LINES - FEEDER 7 (SEA WATER PUMPS) Cold JB			Dwg	123A90-DDL-EL-DL-20140
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10004599		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX31 Junction and Marshalling Box

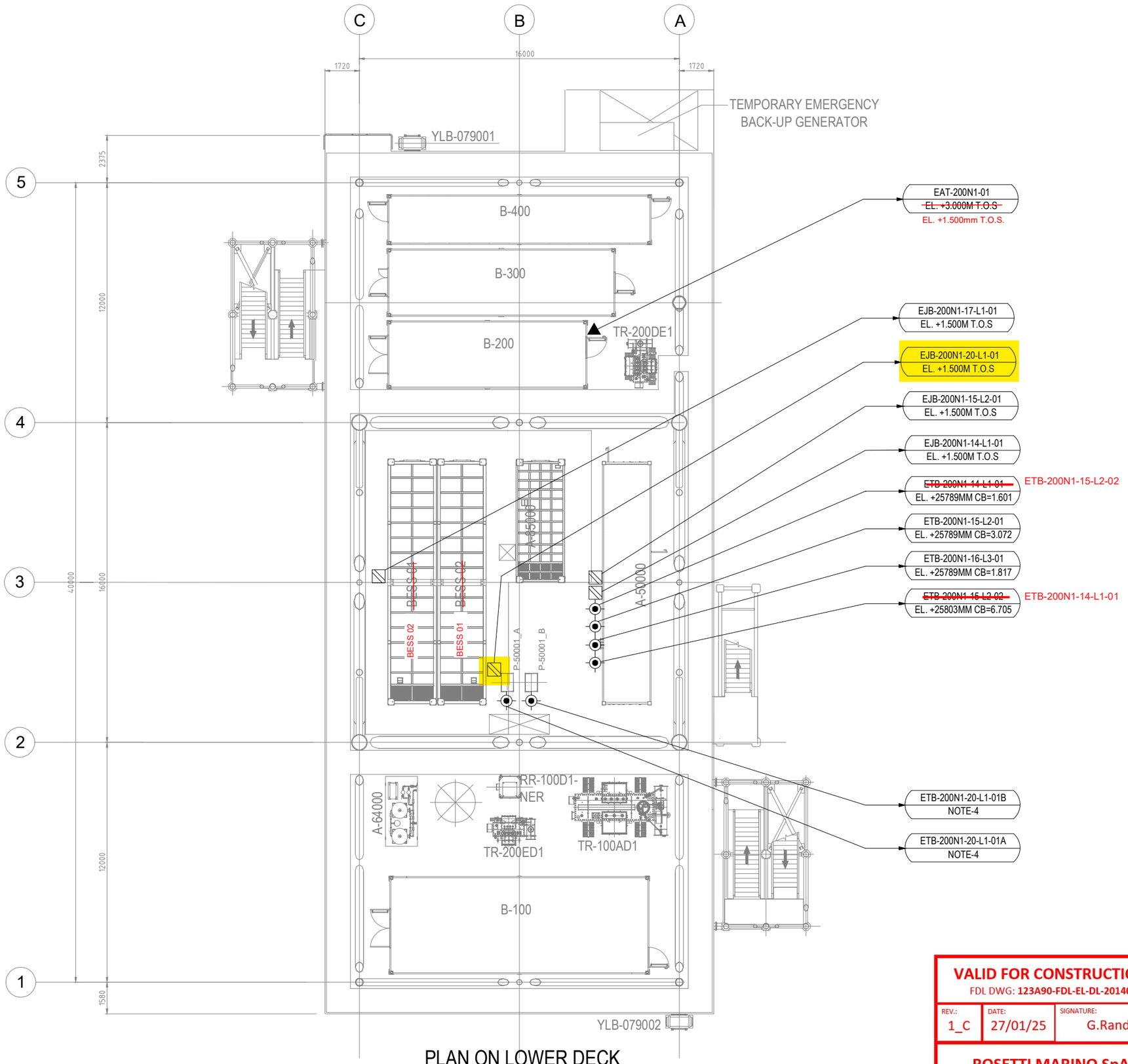
1	Check box is de-energized and safe.	OK
2	Check box is correctly mounted and easily accessible.	OK
3	Check box tagging against drawing.	OK
4	Check nameplate data is correct.	PL
5	Check flameproof joints are clean and greased with approved lubricants (if required).	NA
6	Check for damaging gaskets.	OK
7	Check all bolts are fitted and correcly tighted .	OK
8	Check all unused entries are suitably plugged.	OK
9	Check earthing and bonding against drawings.	OK
10	Check terminal blocks segregation barriers are fitted where necessary.	NA
11	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

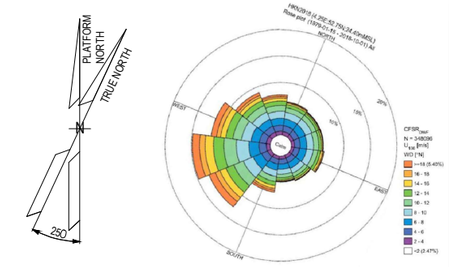
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-08	2025-02-24	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-08T09:42:46.335Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-24T15:46:49.836Z	

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

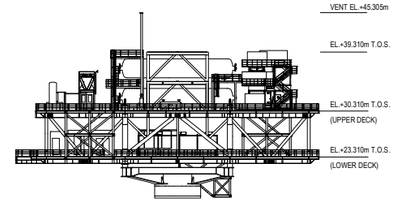
LEGEND

- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-EL-DL-20140
REV.: 1_C | DATE: 27/01/25 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

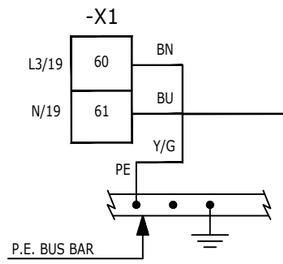
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 1of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

FROM	TO

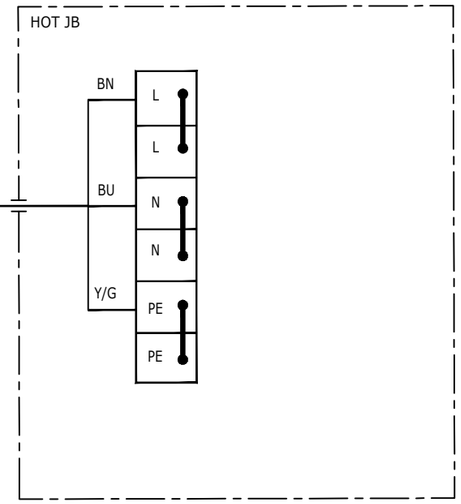
DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1

CUBICLE/CB: +03/Q19



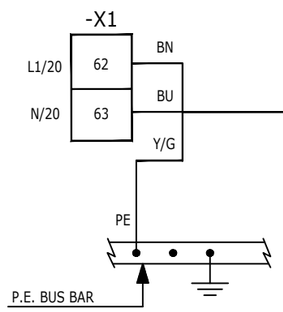
P-ETB-200N1-19-L3-01
3G6 mm²

DESCRIPTION: TRACE HEATING - PROCESS LINES - FEEDER 6 (H2 VENT)
TAG NUMBER: ETB-200N1-19-L3-01



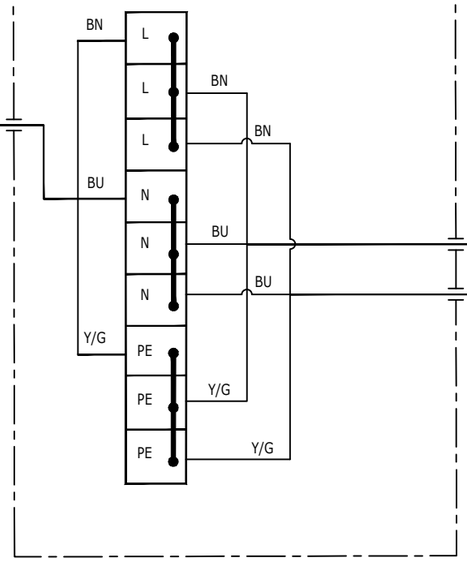
NOTE:
JB SUPPLIED BY
VENDOR OF PACKAGE

CUBICLE/CB: +03/Q20



P-EJB-200N1-20-L1-01
3G6 mm²

DESCRIPTION: TRACE HEATING - PROCESS LINES
- FEEDER 7 (SEA WATER PUMPS)
TAG NUMBER: EJB-200N1-20-L1-01

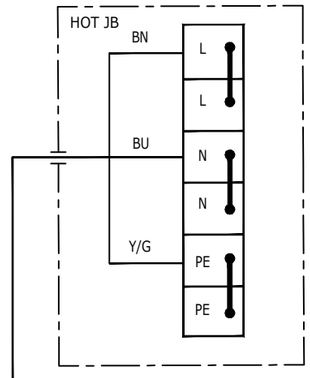


P-ETB-200N1-20-L1-02
~~P-ETB-200N1-20-L1-01A~~
3G6 mm²

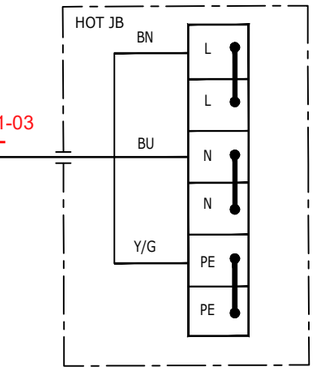
P-ETB-200N1-20-L1-03
~~P-ETB-200N1-20-L1-01B~~
3G6 mm²

NOTE:
HOT JB SUPPLIED BY
VENDOR OF PACKAGE

TAG NUMBER: ETB-200N1-20-L1-01A



TAG NUMBER: ETB-200N1-20-L1-01B



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_K	12/02/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
TRACE HEATING PROCESS LINES

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

SCALE : 1:X

A3

DRAWING NO. 123A90-DDL-EL-DG-20149

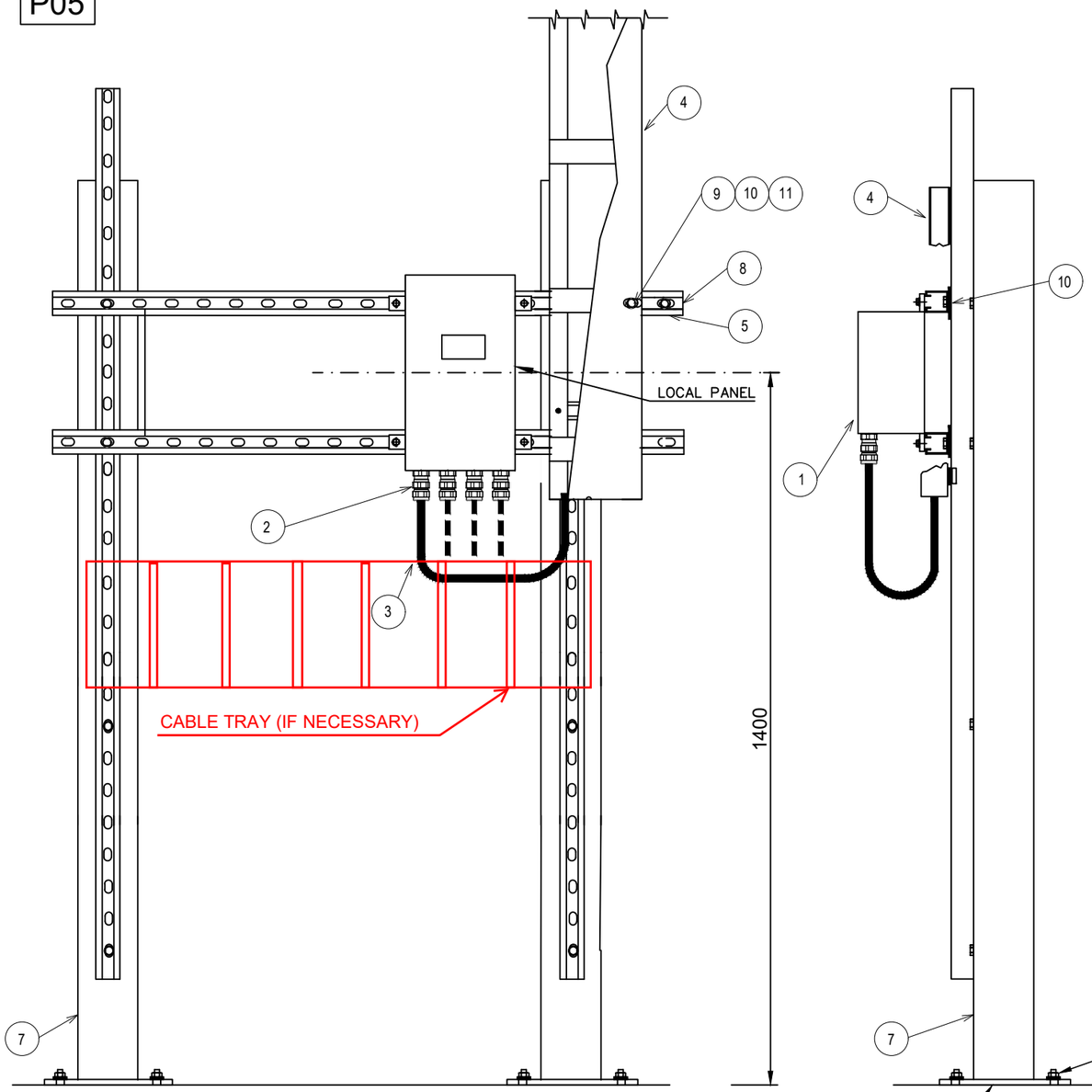
SHEET 051

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

P05



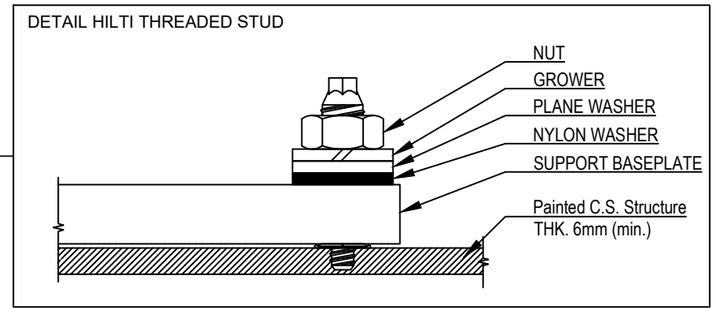
POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	LOCAL PANEL / JB	316 STAINLESS STEEL OR GRP		1	
2	SINGLE SEAL CABLE GLAND FOR UNARMOURED CABLE				
3	UNARMOURED CABLE				
4	CABLE LADDER WITH COVER	AISI 316L			
5	SINGLE U-CHANNEL PERFORATED ON NO.3 SIDE	AISI 316L			
7	PROFILE SUPPORT	PAINTED C.S.		2	
8	PLUG FOR U-CHANNEL	LPDE			
9	BOLT, LARGE PLANE WASHER, PLANE WASHER AND NUT.	AISI 316L			
10	ROUND HEAD SCREW WITH SQUARE NECK COMPLETE WITH PLANE WASHER AND NUT	AISI 316L			
11	BOLT, LARGE FLATE WASHER AND NUT FOR U-CHANNEL WITH SPRING	AISI 316L	M12x30		

02

02

SUPPORT BOLTED ON HILTI S-BT INSTALLED ON WELDED BEAM:

DETAIL HILTI THREADED STUD



02

SUPPORT BOLTED ON HILTI S-BT INSTALLED ON BEAM OR DECK

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-EL-DD-20092**

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

TITLE : BASE LOAD POWER HUB (BLPH)

ELECTRICAL TYPICAL INSTALLATION DETAILS-POWER SYSTEM & CABLE INSTALLATION

POWER TYPICAL DETAILS LOCAL PANEL/JB FLOOR MOUNTED

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

SCALE : NTS

A3

DRAWING NO. 123A90-DDL-EL-DD-20092

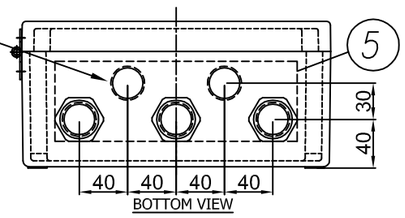
SHEET 005

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

8 3 N°5 PASSING HOLES Ø25.2
C/W N°3 BNK PLUG M25 +
N°2 DUSTPROOF PVC PLUG



BOTTOM VIEW

4 I2400722-B015I00029813

TECHNOR ITALSMEA
A COMPANY OF MARECHAL ELECTRIC
Via Italia 33 - 20060 Gessate (MI) ITALY

MADE IN ITALY

Serial Nr.:
Year of construction:

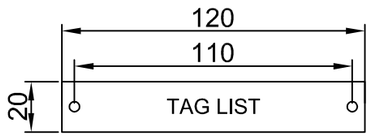
Type: AQ-252612P

230VAC 50Hz 20A

T.amb -20/+50°C

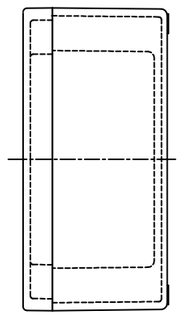
IP66

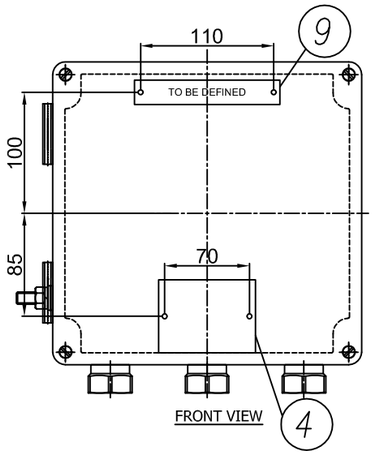
9 PLATE DETAIL



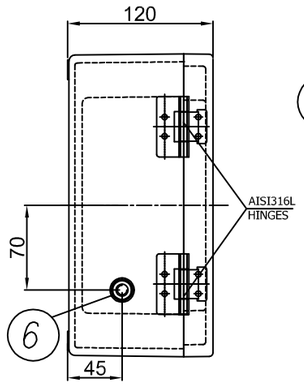
MATERIAL: LAMINATED PLASTIC
BACKGROUND: WHITE
LETTERS: BLACK

7 TERMINALS NUMBERED
L-L-L-L-L,N-N-N-N-N,PE-PE-PE-PE-PE
BRIDGED

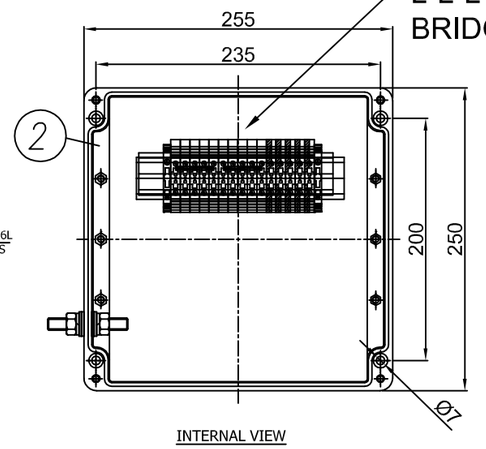

RIGHT VIEW



FRONT VIEW

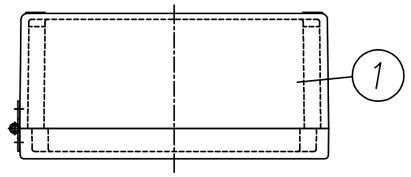


LEFT VIEW



INTERNAL VIEW

ENCLOSURE N°	TAG LIST
1	EJB-200N1-17-L1-01
2	EJB-200N1-14-L1-01
3	EJB-200N1-15-L2-01
4	EJB-200N1-20-L1-01
5	SPARE (TO BE PROVIDED BLANK)



TOP VIEW

ITEM	DESCRIPTION	Pcs Q.TY	NOTE/MAT.	CODE	MANUFACTURER
9	LAMINATED PLASTIC TAG 120X20	1	–	.	TECHNOR ITALSMEA
8	DUSTPROOF PVC PLUG Ø25	2	–	.	TECHNOR ITALSMEA
7	BEIGE TERMINAL BLOCK SIZE 6 SQMM EARTH TERMINAL BLOCK SIZE 6 SQMM	10 5	WDU–6 WPE–6	.	WEIDMULLER
6	AISI316L INT/EXT EARTH BOLT M10	1	BTP–10	.	TECHNOR ITALSMEA
5	BRASS CONTINUITY PLATE THK. 0.8 MM	1	–	.	TECHNOR ITALSMEA
4	AISI316L CERTIFICATE PLATE 80X60	1	–	.	TECHNOR ITALSMEA
3	NICKEL PLATED BRASS PLUG M25	3	T25	.	TECHNOR ITALSMEA
2	INTERNAL MOUNTING PLATE	1	PS–2526	.	TECHNOR ITALSMEA
1	GRP ENCLOSURE	1	AQ–252612P	.	TECHNOR ITALSMEA

-UNPAINTED (BLACK NATURAL)
Q.TY 5, ITEM 30: 2JBXXGPSA,
ELEJB03

Explosion Proof
Electrical Equipment
Materiali Elettrici Antideflagranti
TECHNOR ITALSMEA
A COMPANY OF MARECHAL ELECTRIC

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
05	20/12/24	FB	OB	OB	ACCEPTED FOR CONSTRUCTION (AFC)
04	26/11/24	FB	OB	OB	ACCEPTED FOR CONSTRUCTION (AFC)
03	25/10/24	FB	OB	OB	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/09/24	FB	OB	OB	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	FB	OB	OB	ACCEPTED FOR CONSTRUCTION (AFC)
00	30/07/24	FB	OB	OB	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)

Junction Box for Heat Tracing

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

SCALE : NTS

A3

DRAWING NO. 1724001481–EL–DA–00003

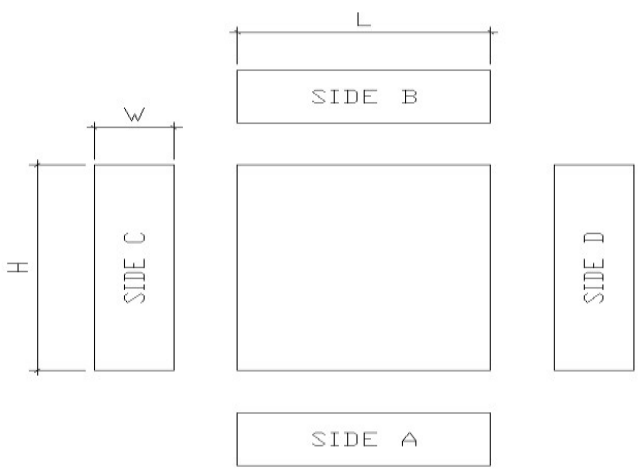
SHEET 006

REV. 05

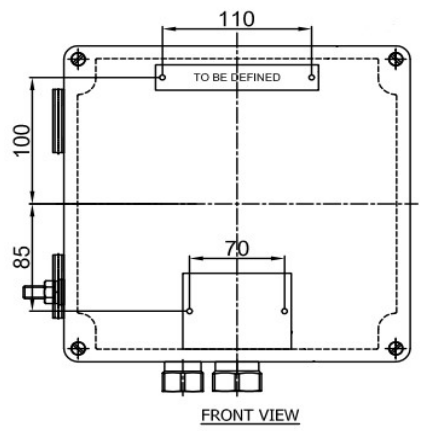
F.to UNI A3: 420mmx297mm

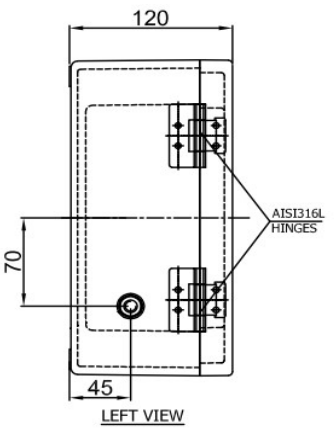
File Name : 1724001481–EL–DA–00003 Rev. 01

Row	Data Sheet for Control Stations, Junction Boxes and Sockets				Rev.
1	Junction Box for Heat Tracing				
2	Item	Required	Manufacturer Proposal	Comments	
3	Model Number	by Vendor	AQ-252612P		01
4	Serial Number	by Vendor	B011041010004		01
5	Quantity	4+1(Spare)		(3+2 Spare)	01
6	Application	Heat Tracing			00
7	**Installation area**				
8	Indoor/Outdoor	Outdoor			00
9	Safe Area/Hazardous Area	Safe area			00
10	Zone 1/Zone 2	NA			00
11	Temp. Class	NA			00
12	**Electrical input data**				
13	Voltage	230 V ac	230 V ac		01
14	Number of Phases	1ph + N + PE			00
15	**Material**				
16	Body	GRP	GRP		01
17	Execution	Normal			00
18	Protection Degree	IP56	IP 66		01
19	**Accessories**				
20	Hinged Cover	Required	AISI316L Hinges		01
21	Gasket	Required			00
22	Removable Gland Plates	Required	Brass Continuity plate 0.8mm thick		01
23	Internal Mounting Plate	Thickness 3mm threaded		connected to Internal ground bar	00
24	Internal Ground Bar	Required		connected to earth stud	00
25	Earth Stud	Required			00
26	Drainage Valve	Required			00
27	Pad lockable Cover	Required			00
28	Identification Label	Trafolite/ Stainless Steel	Laminated Plastic	for all label	01
29	**Side 'A'**				
30	Hubs Qty.	5	5		01
31	Size	No.5 M25	No.5 Ø 25.2 mm		01
32	Thread	ISO-M			00
33	Plug	No. 3 M25	No.3 M25	nickel-plated brass	01
34	**Side 'B'**				
35	Hubs Qty.	Not Required			00
36	Size	NA			00
37	Thread	NA			00
38	**Side 'C'**				
39	Hubs Qty.	Not Required			00
40	Size	NA			00
41	Thread	NA			00
42	**Side 'D'**				
43	Hubs Qty.	Not Required			00
44	Size	NA			00
45	Thread	NA			00
46	**Terminals**				
47	Size [mm^2]	Suitable for 6 Sq.mm Cable	M25	suitable with wire-end ferrules DIN 46228	01
48	Qty.	n°5 for Ph // n°5 for N // n°5 for PE	n°5 for Ph // n°5 for N // n°5 for PE	jumpered	01
49	**Bonding Cable (yellow/Green)**				
50	Size [mm^2]	by vendor		6 mm^2	01
51	Qty.	Min. 0.15m			00
52	**Dimension**				
53	Height 'H' [mm]	by vendor	120 mm		01
54	Width 'W' [mm]	by vendor	250 mm		01
55	Length 'L' [mm]	by vendor	255 mm		01
56	Weight [Kg]	by vendor	2.65 Kg		01
57	JB Code (*)	Remarks			
58					



NOTES:
(*) Filled by Vendor





ROSETTI MARINO

CROSSWIND

ITEM	Tag	ETB-200N1-14-L1-01	: HEAT TRACING - PROCESS LINES - FEEDER 1 (Pipe Line)			Dwg	123A90-DDL-EL-DL-20140
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10004600		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX31 Junction and Marshalling Box

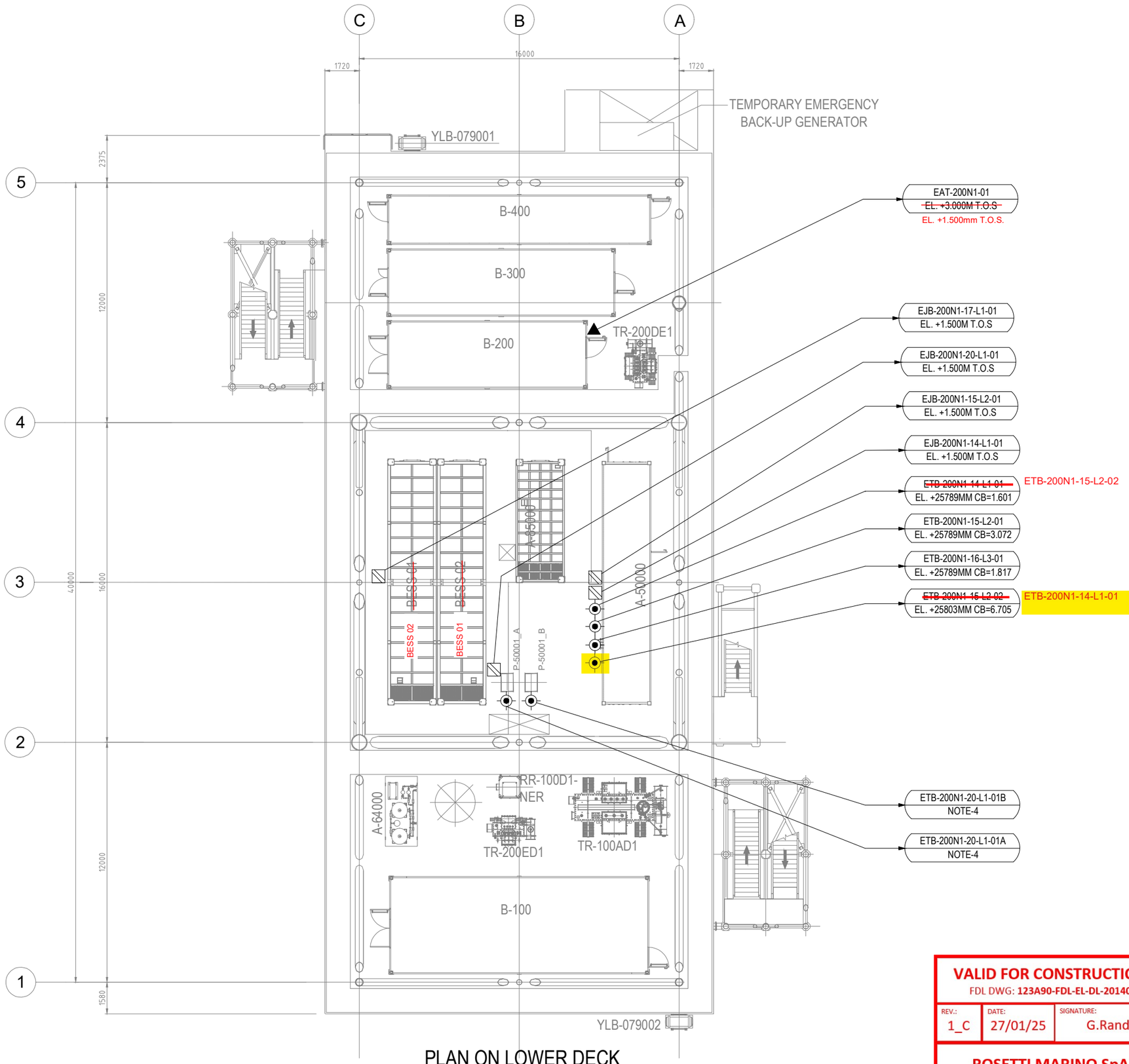
1	Check box is de-energized and safe.	OK
2	Check box is correctly mounted and easily accessible.	OK
3	Check box tagging against drawing.	OK
4	Check nameplate data is correct.	OK
5	Check flameproof joints are clean and greased with approved lubricants (if required).	NA
6	Check for damaging gaskets.	OK
7	Check all bolts are fitted and correcly tighted .	OK
8	Check all unused entries are suitably plugged.	OK
9	Check earthing and bonding against drawings.	OK
10	Check terminal blocks segregation barriers are fitted where necessary.	NA
11	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

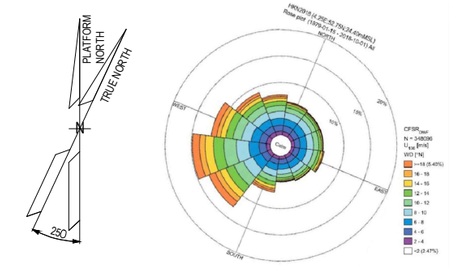
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-08	2025-03-12	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-08T09:42:55.539Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-03-12T12:53:10.990Z	

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

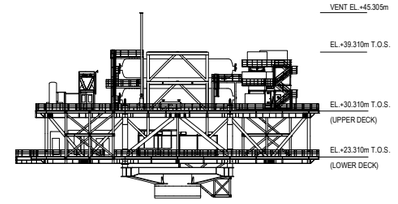
LEGEND

- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-EL-DL-20140
REV.: 1_C | DATE: 27/01/25 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

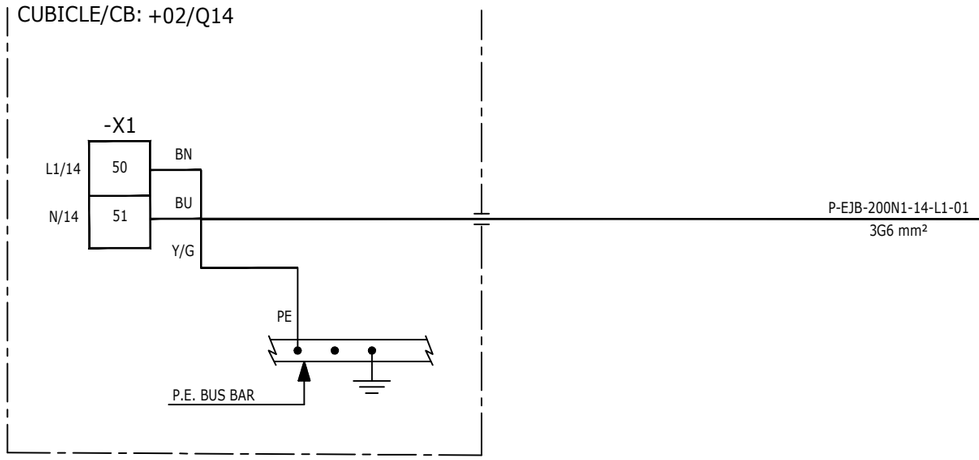
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 1of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

FROM	TO

DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1

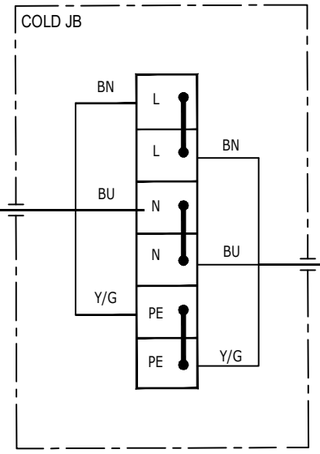
CUBICLE/CB: +02/Q14



P-EJB-200N1-14-L1-01
3G6 mm²

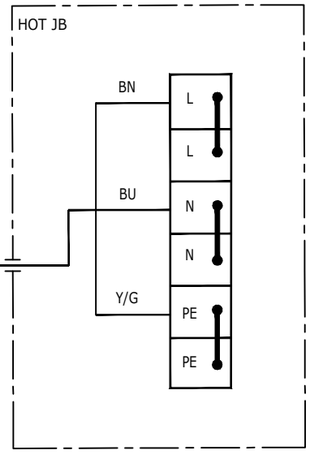
DESCRIPTION: TRACE HEATING - PROCESS LINES
- FEEDER 1 (SWS LINES)

TAG NUMBER: EJB-200N1-14-L1-01



P-ETB-200N1-14-L1-01
3G6 mm²

TAG NUMBER: ETB-200N1-14-L1-01
FOR PIPE LINE: SWS-35



VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-EL-DG-20149

REV.:	DATE:	SIGNATURE:
2_K	12/02/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
TRACE HEATING PROCESS LINES

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 048 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

CAD FILENAME: PIT240024_DD01_1003_001_02.dwg

HEAT TRACING DATA

HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	PIPE LENGTH (m)	HEATER LENGTH (m)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W/m)	POWER OUTPUT (W/m)	SHEATH TEMP. (°C)
EHT-1003-A	PIPING	3BTV2-CT	26.1	78.5	6.7	1002	230	10.2	10.7	85
		TOTALS	26.1	78.5	6.7	1001				

HEATER ADDER TABLE

PIPE SIZE (Ins)	TYPE	QTY	ALLOWANCE PER ITEM (m)	TOTAL ALLOWANCE (m)
1	Typical Flange (fixed adder)	2	0.46	0.92
1	Typical Pipe Support	1	0.31	0.31
1	Typical Metal Valve	8	1.64	13.12
1.5	Typical Pipe Support	8	0.18	1.44
1.5	Typical Flange (fixed adder)	5	0.46	2.3
1.5	Typical Metal Valve	6	1.77	10.62
N/A	VENT	3	0.7	2.1
N/A	DRAIN	5	0.7	3.4

DESIGN PARAMETERS

CIRCUIT NUMBER	1003	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	25°C	INSULATION TYPE	RW/MF 1.2015
MAX. EXPOSURE TEMP.	25°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	100°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

COMPONENT BILL OF MATERIALS

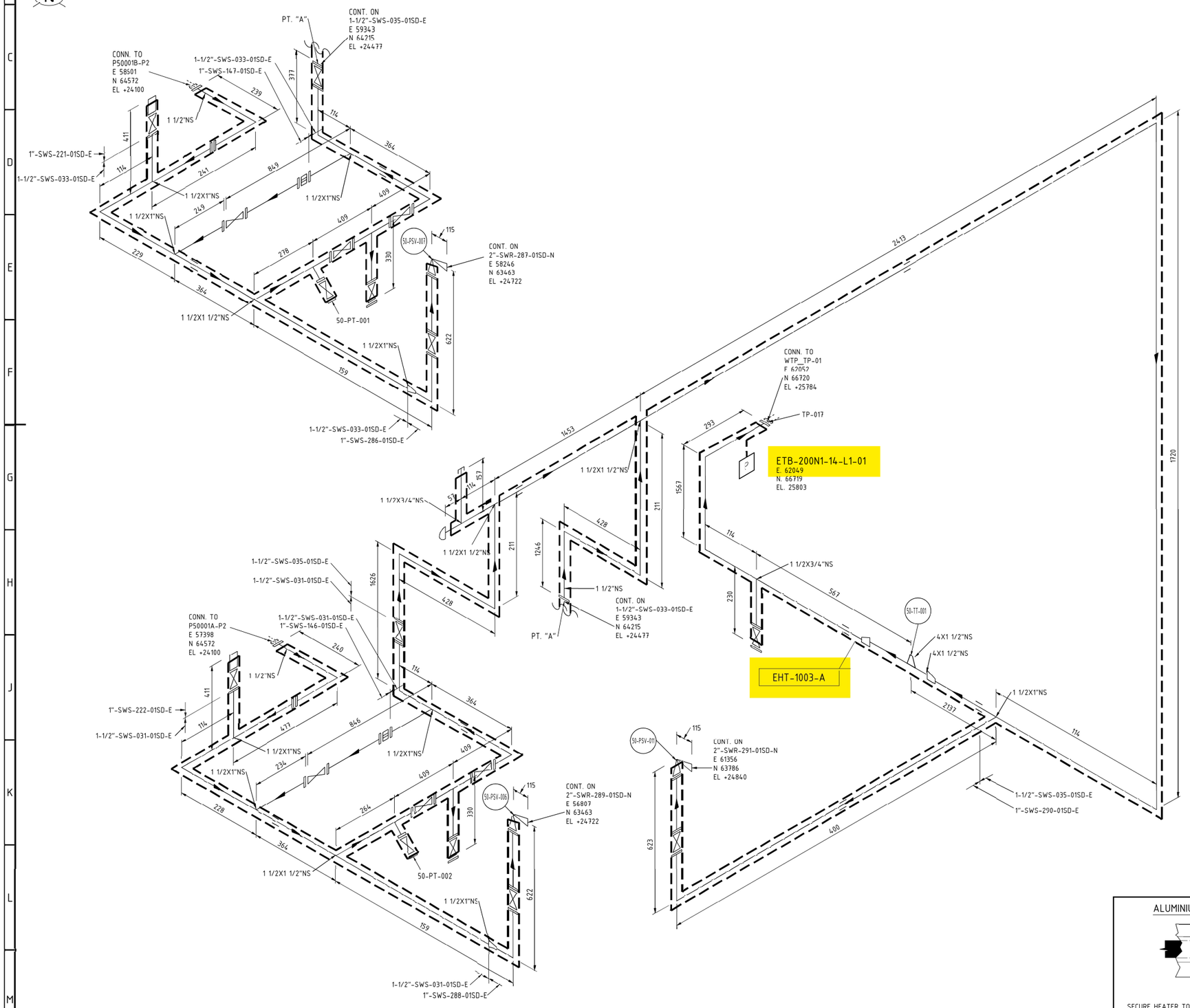
CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	78.5	m	Raychem Self-Regulating Heating Cable
JBS-100-E	1	each	Integrated Junction Box, Multiple-Entry, Cold-Applied, ATEX
PSE-090	1	each	Pipe Strap for 1.1/4" to 3" (40-90mm)
GS-54	4.4	each	Glass Tape (16m/roll), suited for SS pipes
LAB-I-01	11	each	Warning Label - English
E-20	1	each	Heat shrink end seal, ATEX (BTV, QTVR)

LINE NUMBERS

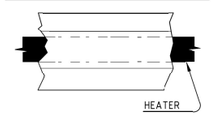
1"-SWS-146-01SD-E
1"-SWS-147-01SD-E
1"-SWS-221-01SD-E
1"-SWS-222-01SD-E
1"-SWS-286-01SD-E
1"-SWS-288-01SD-E
1"-SWS-290-01SD-E
1-1/2"-SWS-031-01SD-E
1-1/2"-SWS-033-01SD-E
1-1/2"-SWS-035-01SD-E

REFERENCE DRAWINGS / DOCUMENTS

123A90-DDL-PP-DI-71000_023
123A90-DDL-PP-DI-71000_025
123A90-DDL-PP-DI-71000_026
123A90-DDL-PP-DI-71000_059
123A90-DDL-PP-DI-71000_060
123A90-DDL-PP-DI-71000_117
123A90-DDL-PP-DI-71000_118
123A90-DDL-PP-DI-71000_150
123A90-DDL-PP-DI-71000_152
123A90-DDL-PP-DI-71000_154



ALUMINIUM TAPE (REF: ATE180)



SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.
4. HEATING CABLE ALLOWANCES PROVIDED IN THE 'EHT ADDER TABLE' FOR FLANGES AND VALVES ARE IN ADDITION TO THEIR LINEAR LENGTHS.

CROSSWIND

ROSETTI MARINO

nVent RAYCHEM TRACER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
02	20/01/2025	ISSUED FOR REVIEW	ADU	AMI	GPI
01	25/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.

DOC CODE

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru
LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING ISOMETRIC

SCALE: N/A
DRAWING NO.: 1724001647-EL-DD-00004
SHEET NO.: 5/10
REVISION: 02

A1

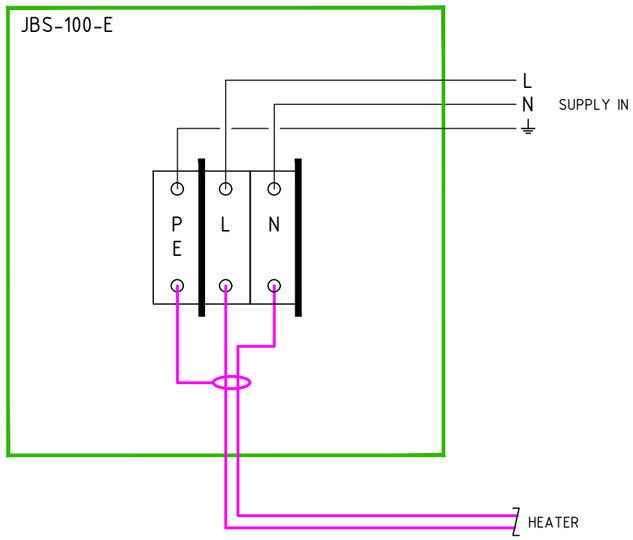
CAD FILENAME: 1724001647-EL-DG-00005 Rev.02.dwg

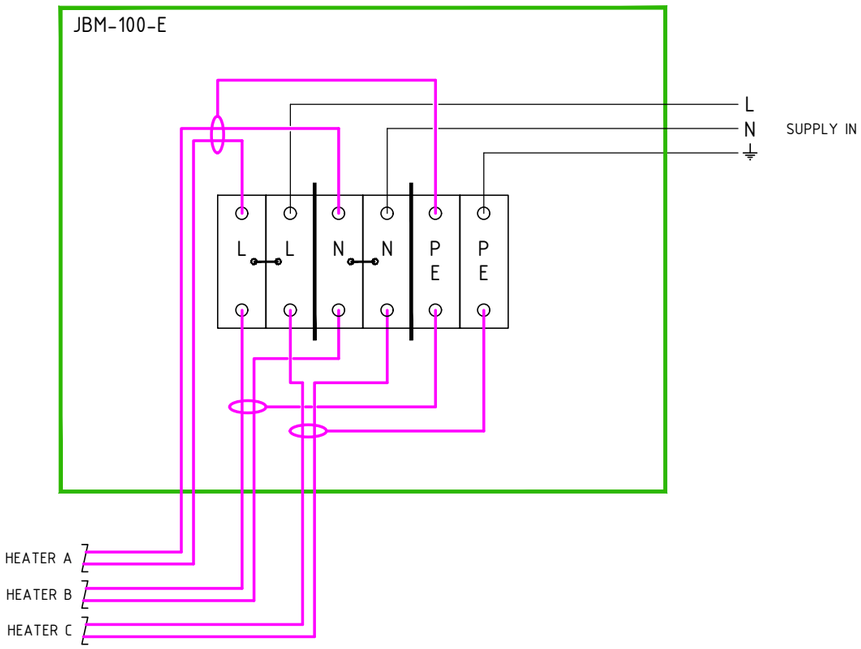
GENERAL INFORMATION:

1. JBS-100-E IS DESIGNED TO CONNECT POWER TO ONE BTV, QTVR, XTV, KTV, HTV OR VPL EHT CABLE.
2. THIS KIT INTEGRATES THE FUNCTIONS OF BOTH CONNECTION KITS AND INSULATION ENTRIES.
3. THE STAND CONNECTED TO THE BOTTOM OF THE BOX PROTECTS THE HEATING CABLE AND ALLOWS FOR UP TO 100mm (4") THERMAL INSULATION.

TECHNICAL BRIEF:

- 2 x M25 THREADED ENTRIES
- 1 x M25 STOPPING PLUGS
- 1 x M25 POWER CABLE GLAND





REV.	DATE	DESCRIPTION	BY	CHK	APP
--	--	--	--	--	--
--	--	--	--	--	--
02	20/01/2025	APPROVED FOR CONSTRUCTION	ADU	AMI	GPI
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	08/03/2024	ISSUED FOR INFORMATION	LJB	E-C	ZS

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TITLE
TYPICAL CONNECTION OF A JBS-100-EP
SINGLE ENTRY JUNCTION BOX

PREPARED BY	-.---	LANG.	SCALE
LEAD ENGINEER	-.---	en	N/A
PROJECT NO.	DRAWING NO.	SHEET	REVISION
PIT240024	1724001647-EL-DG-00005	3/3	02

A3

CAD FILENAME: 1724001647-EL-DG-00006 Rev 03.dwg

CONTROL PANEL REF.:

DP-200N1

MARSHALLING BOX

DM LINES
Q16

ETB-200N1-16-L3-01
P
EHT-1001-A

CL LINES
Q15

EJB-200N1-15-L2-01

ETB-200N1-15-L2-01
P
EHT-1002-A

SPARE

SPARE

ETB-200N1-15-L2-02
P
EHT-1007-A

SWS LINES
Q14

EJB-200N1-14-L1-01

SPARE

ETB-200N1-14-L1-01
P
EHT-1003-A

SPARE

SPARE

CONT. ON
SHEET 003

CIRCUIT NO.	1001	1002, 1007	1003	
C.B. RATING (A)	32	32	32	
START-UP I (A)	1.8	4.7	6.7	
LOAD (W)	271	698	1002	
SERVICE	WINTERIZING	WINTERIZING	WINTERIZING	
NOTES FOR THE CIRCUIT	--	--	--	

GENERAL NOTES

CROSSWIND

ROSETTI MARINO

nVent
RAYCHEM TRACER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
03	20/01/2025	ACCEPTED FOR CONSTRUCTION	ADU	AMI	GPI
02	29/11/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	02/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING
ELECTRICAL BLOCK DIAGRAM

SCALE: N/A

DRAWING NO.: 1724001647-EL-DG-00006

SHEET NO.: 3/4

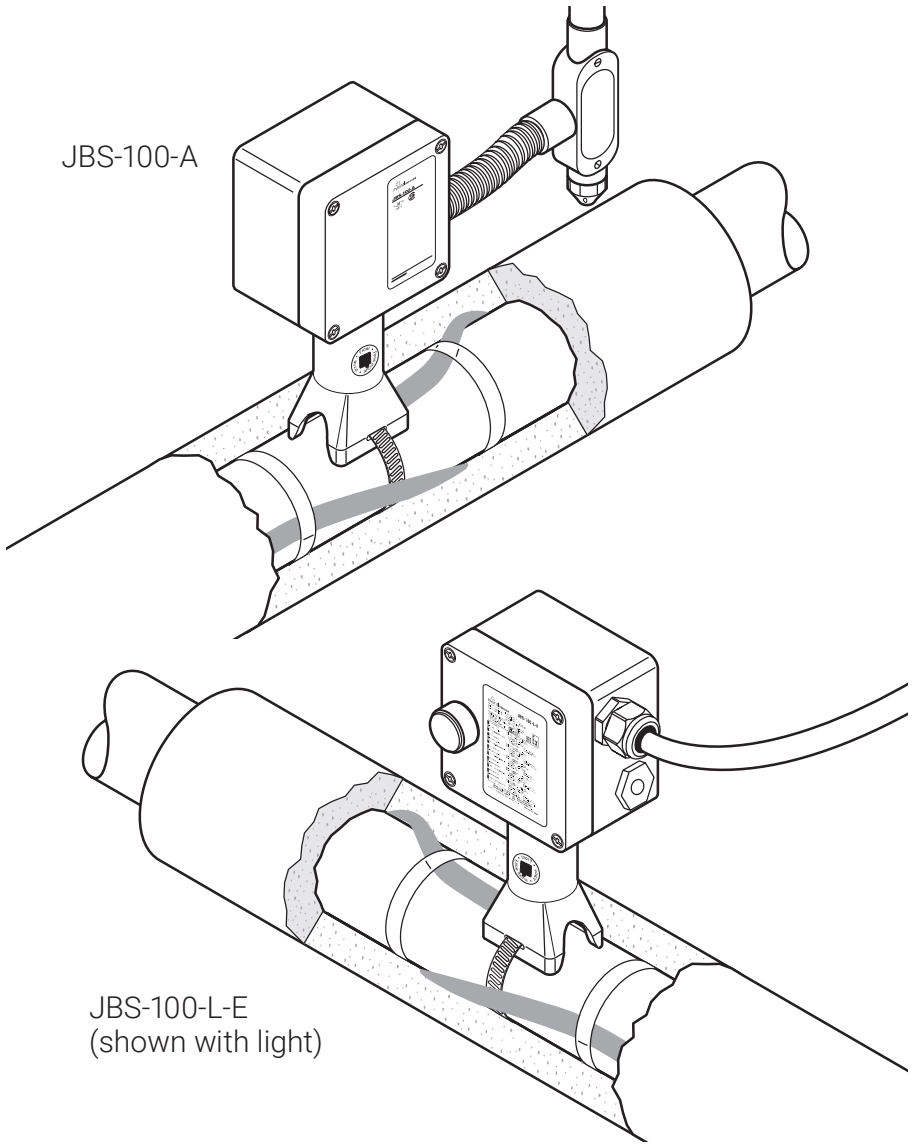
REVISION: 03

JBS-100

CONNECT AND PROTECT

Single-Entry power connection with junction box

PRODUCT OVERVIEW



The nVent RAYCHEM JBS-100 kit is designed to connect power to a single nVent RAYCHEM BTV, QTVR, XTVR, HTV or VPL industrial parallel heating cable.

The JBS-100 integrates the functions of both connection kits and insulation entries. The rugged stand protects the heating cable and allows for up to 100 mm (4") of thermal insulation.

The core sealing boot does not require a heat gun or torch for the installation (no hot work permit necessary). The non-curing sealant (silicone free) in the boot allows easy installation and facilitates maintenance.

Spring-type terminals provide fast installation and safe, reliable, maintenance-free operation. This connection kit significantly reduces installation time. The kit is offered in three basic versions, customised for local installation practices. All kits are also available as a lighted version. These include a unique light module with a superbright LED that simply plugs into the terminals, and a lens in the lid. This provides indication that power is available in the box. There is also a connection kit with drain plug available.

Description

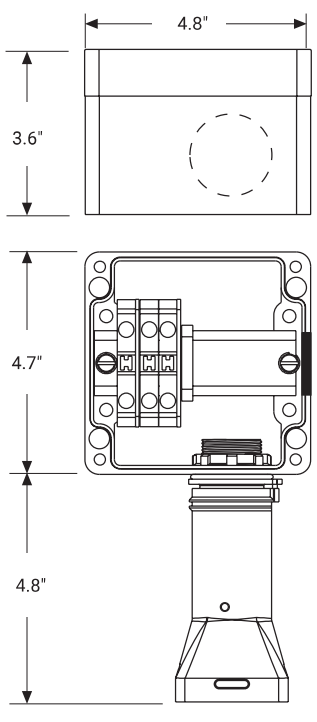
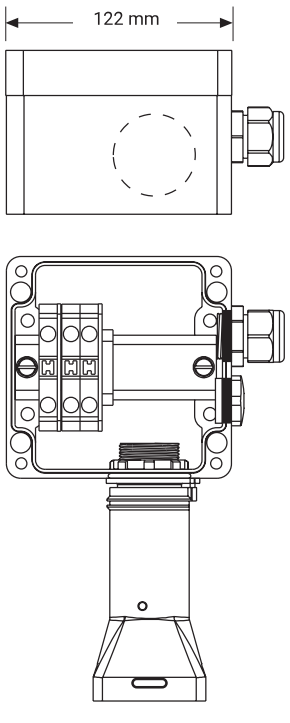
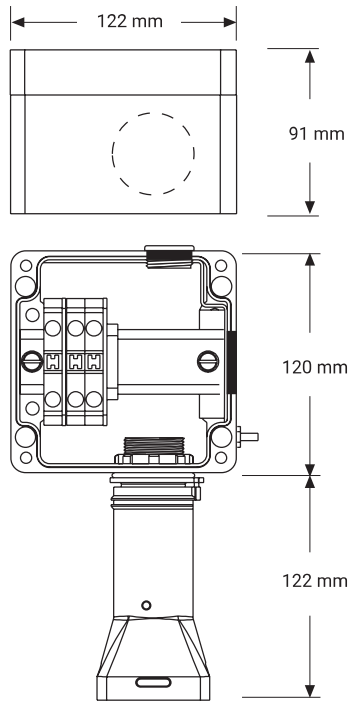
JBS-100-A JBS-100-L-A	JBS-100-E JBS-100-L-E JBS-100-D-E	JBS-100-EP JBS-100-L-EP
This connection system is certified for use in North America and has one through-hole for use with ¾" conduit.	This connection system is certified for use in IEC regions and provides two M25 threaded entries, one stopping plug, and one plastic power cable gland.	This connection system is certified for use in IEC regions and provides two M25 threaded entries, an earthing plate, and an external earthing stud. It is designed for use with armoured cables.

Kit contents

JBS-100-A JBS-100-L-A	JBS-100-E JBS-100-L-E JBS-100-D-E	JBS-100-EP JBS-100-L-EP
1 junction box with terminals	1 junction box with terminals	1 junction box with terminals, earth plate, and stud
1 light module (for -L only)	1 light module (for -L only)	1 light module (for -L only)
1 stand	1 stand	1 stand
1 core sealer	1 core sealer	1 core sealer
1 green/yellow earthing sleeve	1 green/yellow earthing sleeve	1 green/yellow earthing sleeve
1 polywater sachet	1 M25 gland for power cable 8-15 mm in diameter (temperature range –55°C / 70°C)	1 M25 stopping plug
1 cable tie	1 M25 stopping plug	1 polywater sachet
	1 polywater sachet	1 cable tie
	1 cable tie	
	1 ATEX/IECEx Certified drainplug (for JBS-100-D-E only)	

PRODUCT SPECIFICATIONS

Dimensions (nominal)

	JBS-100-A JBS-100-L-A	JBS-100-E JBS-100-L-E JBS-100-D-E	JBS-100-EP JBS-100-L-EP
			

Technical details

	JBS-100-A JBS-100-L-A	JBS-100-E JBS-100-L-E JBS-100-D-E	JBS-100-EP JBS-100-L-EP
Heating cable capability	BTV-CR, BTV-CT, QTVR-CT, XTVR-CT, HTV-CT, VPL-CT		
Ingress protection	IP66	IP66	IP66
Entries	1 x ¾"	2 x M25	2 x M25
Ambient temperature range	–55°C to +56°C (JBS-100-A) –40°C to +40°C (JBS-100-L-A)	–55°C to +56°C* (JBS-100-E and JBS-100-D-E) –40°C to +40°C (JBS-100-L-E)	–55°C to +56°C* (JBS-100-EP) –40°C to +40°C (JBS-100-L-EP)
	* Extra conditions for safe use apply at ambient temperatures >40°C. Temperature resistant power cable and metal glands must be used. Please refer to the certificate or installation instructions for full details.		
Max. pipe temperature	Refer to heating cable specification		
Terminals	Spring-type terminals 2 line, 1 ground	Spring-type terminals 1 phase, 1 neutral, 1 earth	Spring-type terminals 1 phase, 1 neutral, 1 earth
Max. conductor size	8 AWG stranded	10 mm^2 stranded, 10 mm^2 solid	10 mm^2 stranded, 10 mm^2 solid
Max. operating voltage	480 Vac*	480 Vac*	480 Vac*
	* JBS-100-L-E, JBS-100-L-EP and JBS-100-L-A are limited to 277 Vac. Extra conditions for safe use apply for voltages higher than 277 Vac. Please refer to the certificate or installation instructions for full details.		
Max. continuous operating current (***)	53 A	53 A	53 A

(***) For pipe temperature >150°C and <260°C and XTVR or HTV heating cables, the maximum operating current shall be reduced to maximum 20 A.

Materials of construction

Enclosure, lid, and stand	Electrostatic charge-resistant glass-filled engineered polymer, black	Electrostatic charge-resistant glass-filled engineered polymer, black	Electrostatic charge-resistant glass-filled engineered polymer, black
Lid screws	Stainless steel	Stainless steel	Stainless steel
Lid gasket	Silicone rubber	Silicone rubber	Silicone rubber
Earth continuity plate	N/A	N/A	Steel, zinc plated, and blue chromated

Optional LED indicator light

Colour	Red	Green	Green
Voltage rating	100-277 Vac	100-277 Vac	100-277 Vac
Power consumption	< 1 W	< 1 W	< 1 W

APPROVALS

For use in ordinary and hazardous area Zone 1 and Zone 2 (Gas), Zone 21 and Zone 22 (Dust) (and Class I Div 2).

Temperature classification

Temperature classification is defined by the complete system.

Product certification

For certifications in other regions (FM, CSA, IEx etc.), please refer to the installation manual.

More details about product certification, approvals and conditions of safe use are available in the installation manual at www.nVent.com/RAYCHEM.

ORDERING INFORMATION**

Power connection

Part Description	JBS-100-A	JBS-100-E	JBS-100-EP
PN (Weight)	085947-000 (2.5 lb)	829939-000 (1.2 kg)	158251-000 (1.3 kg)

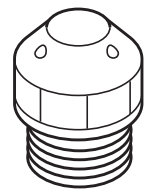
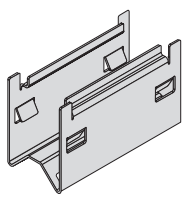
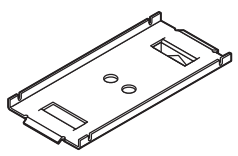
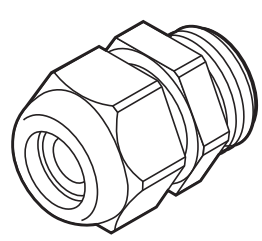
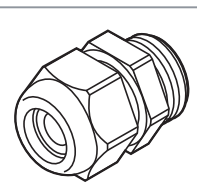
Power connection with light

Part Description	JBS-100-L-A	JBS-100-L-E	JBS-100-L-EP
PN (Weight)	944699-000 (3.5 lb)	054363-000 (1.6 kg)	075249-000 (1.7 kg)

Power connection with drain plug

Part Description		JBS-100-D-E	
PN (Weight)		1244-021057 (1.4 kg)	

Accessories

Conduit Drain ¾"	Prevents condensate from collecting in the box	
Catalog number	JB-DRAIN-PLUG-3/4IN	
Part Number	278621-000	
Weight	0.074 lb / 36 g	
Junction box standoff	For insulation thickness >100 mm & ≤150 mm *	
Catalog number	JBM-100-STANDOFF	
Part Number	P000003408	
Weight	0.279 lb / 135 g	
* Consider extra pipe strap length 6-9" (150-225 mm) for attachment		
Small pipe adapter	Required for stand on pipes ≤ 1"	
Catalog number	JBM-SPA	
Part Number	E90515-000	
Weight	0.408 lb / 185 g (Bag of 5 adaptors)	
Glands for power cables	Hazardous area approved gland for cables 8-15 mm (temperature range –55°C/70°C)	
Catalog number	GL-55-M25	
Part Number	1244-019083	
Weight	0.016 kg	
Glands for power cables	Hazardous area approved gland for cables 8-17.5 mm (temperature range –20°C/70°C)	
Catalog number	GL-36-M25	
Part Number	1244-019082	
Weight	0.016 kg	

(**) Localized versions may exist with limited approvals and different part numbers. Contact your local sales representative.

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

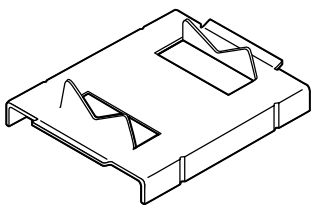
Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com

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SMALL PIPE ADAPTORS



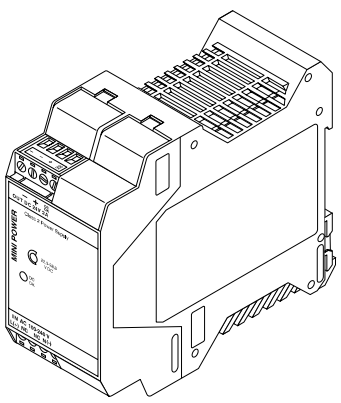
JBS-SPA

Small pipe adaptor required for pipes ≤ 1" (DN25), applicable for JBS-100, E-100, E-100-L
E90515-000 (bag of 5 adaptors) Weight: 0.14 kg

JBM-SPA

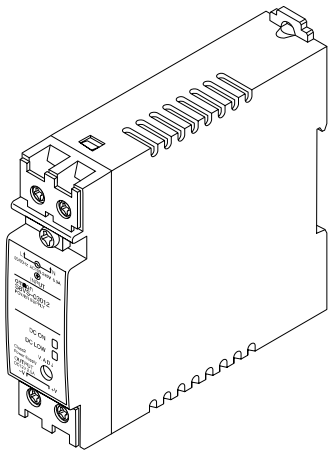
Small pipe adaptor required for pipes ≤ 1" (DN25), applicable for JBM-100, T-100
D55673-000 (bag of 5 adaptors) Weight: 0.40 kg

POWER SUPPLY



MONI-RMC-PS24

24 Vdc stabilized power supply
Wide range input (100 - 240 Vac) power supply to provide
24 Vdc input for MONI- RMC-BASE.
Surface or DIN 35 rail mounted.
PN: 972049-000 Weight: 0.28 kg



MONI-PS12

12 Vdc stabilized power supply
Wide range input (100 - 240 Vac) power supply to provide 12 Vdc input for the
nVent RAYCHEM NGC-30-CRM-E and nVent RAYCHEM NGC-30-CRMS-E cards.
DIN 35 rail mountable.
PN: 1244-001505 Weight: 0.18 kg

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com

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LABELS AND TAGS

Warning labels indicate the presence of electrical heat-tracing under the insulation of the pipe or other equipment. (min. of 1 label per 5 m of heat-tracing line). Also suitable for stainless steel pipes.



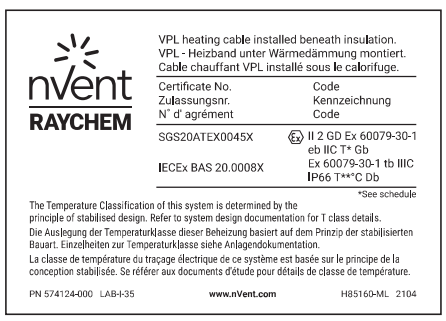
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Arabian	LAB-ETL-AR	036236-000
Bulgarian	LAB-ETL-BG	1244-002183
Czech	LAB-ETL-CZ	731605-000
Danish	LAB-ETL-DK	C97690-000
Dutch	LAB-ETL-NL	749153-000
English	LAB-I-01	938947-000
Estonian/English	LAB-ETL-EN/EE	1244-001415
Finnish/Swedisch	LAB-ETL-SE/FI	756479-000
French	LAB-I-05	883061-000
German/French/Italian (230V)	LAB-ETL-DE/FR/IT	148648-000
German	LAB-ETL-DE	597779-000
Hungarian	LAB-ETL-HU	623725-000
Italian	LAB-ETL-IT	C97688-000
Kazakh/Russian/English	LAB-ETL-KZ/RU/EN	1244-017393
Latvian	LAB-ETL-LV	841822-000
Lithuanian	LAB-ETL-LT	105300-000
Norwegian	LAB-ETL-NO	C97689-000
Norwegian/English	LAB-ETL-EN/NO	165899-000
Polish	LAB-ETL-PL	258203-000
Portugese	LAB-ETL-PT	945960-000
Romanian	LAB-ETL-RO	902104-000
Russian	LAB-ETL-RU	574738-000
Russian/English	LAB-ETL-EN/RU	1244-001060
Russian/English/Azeri	LAB-ETL-AZ/RU/EN	1244-012283
Russian/English/Uzbek	LAB-ETL-UZ/RU/EN	1244-022143
Spanish	LAB-ETL-ES	C97686-000
Swedish	LAB-ETL-SE	691703-000
Turkish/English	LAB-ETL-EN/TR	1244-014860



Language	Component label reference	Product number
English	LAB-I-02	774499-000
Russian/English	LAB-I-02/E/R LAB-ENDSEAL	1244-001059 146909-000
English	ETL-END-SEAL LAB-SPLICE	103405-000 007063-000

STABILIZED DESIGN LABELS

If compliance to the T-class or A.I.T. cannot be achieved by the unconditional T-rating of the heating cable, the hazardous area regulations require that cable sheath temperature is determined by the rules of stabilized design as per EN 60079-30 and the heating circuit is marked accordingly. The following labels are available for this purpose (min.1 label per heating circuit)



LAB-I-35

Stabilized design sticker. To be installed when power-limiting VPL heating cables are used in hazardous areas.

PN: 574124-000 Weight: 0,0015 kg

LAB-EX-XTV-KTV

Aluminum tag plate for XTV and KTV self-regulating heating cables. To be installed if T-class compliance was proven by stabilized design and not by unconditional T-rating.

PN: 1244-011961 Weight: 0.04 kg

LAB-EX-FxT

Aluminum tag plate. To be installed when parallel constant wattage FMT or FHT heating cables are used in hazardous areas.

PN: 1244-006953 Weight: 0.04 kg

PI-LABEL-EX

Aluminum tag plate. To be installed when series polymer insulated XPI & XPI-S heating cables are used in hazardous areas.

PN: 1244-006940 Weight: 0.04 kg

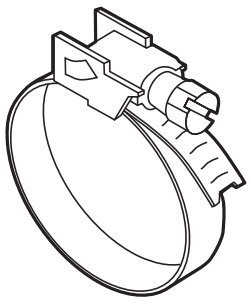
PI-LABEL-NH

Aluminum tag plate. To be installed when series polymer insulated XPI & XPI-S heating cables are used non hazardous areas.
This label is not mandatory but highly recommended for future reference.

PN: 1244-006941 Weight: 0.04 kg

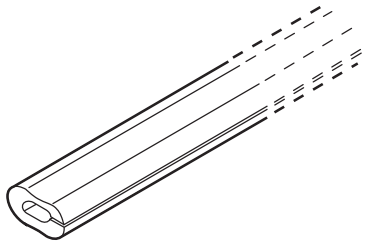
PIPE STRAPS

Metal straps for pipe mounting of integrated power connections, above the insulation tees and end seals as well as support brackets and the tubular insulation entry. Banding: stainless steel



Pipe outer diameter in mm	(inches)	Pipe strap	PN (Weight)
20 - 47	(1/2" - 11/4")	PSE-047	700333-000 (0.017 kg)
40 - 90	(11/4" - 3")	PSE-090	976935-000 (0.024 kg)
60 - 288	(2" - 10")	PSE-280	664775-000 (0.052 kg)
60 - 540	(2" - 20")	PSE-540	364489-000 (0.052 kg)

PIPE STRAPS



G-02

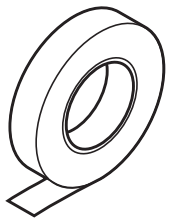
Silicone grommet that protects the heating cable at sharp edges such as endplates of insulation cladding, flanges etc. It can be cut-to-length and resists temperatures up to 215°C.

Sold in pieces of 1 m.

PN: 412549-000 Weight: 0.37 kg/m)

FIXING MATERIALS

Self-adhesive tape for fixing the heating cables on pipes or other equipment.



GT-66

Glass cloth tape for attaching heating cable to pipe.
Not for stainless steel pipes or for installation temperatures below 5°C.

20 m per roll, 12 mm width.

PN: C77220-000 Weight: 0.053 kg

GS-54

Glass cloth tape for attaching heating cable to pipe.

For stainless steel pipes or for any installation below 5°C.

16.5 m per roll, 12 mm width.

PN: C77221-000 Weight: 0.048 kg

ROSETTI MARINO

CROSSWIND

ITEM	Tag	ETB-200N1-15-L2-01	: HEAT TRACING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB			Dwg	123A90-DDL-EL-DL-20140
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10004601		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX31 Junction and Marshalling Box

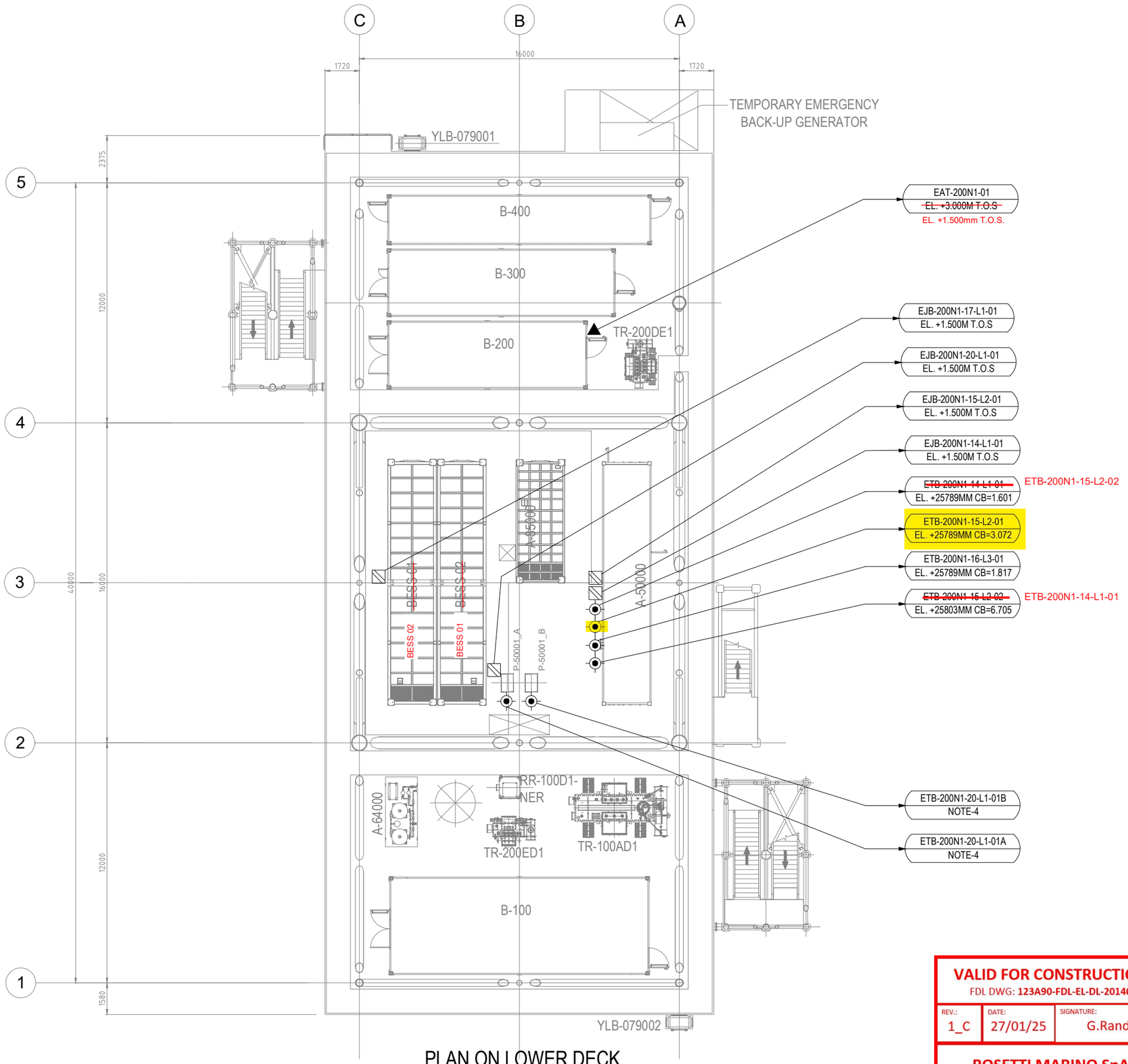
1	Check box is de-energized and safe.	OK
2	Check box is correctly mounted and easily accessible.	OK
3	Check box tagging against drawing.	PL
4	Check nameplate data is correct.	OK
5	Check flameproof joints are clean and greased with approved lubricants (if required).	NA
6	Check for damaging gaskets.	OK
7	Check all bolts are fitted and correcly tighted .	OK
8	Check all unused entries are suitably plugged.	OK
9	Check earthing and bonding against drawings.	OK
10	Check terminal blocks segregation barriers are fitted where necessary.	NA
11	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

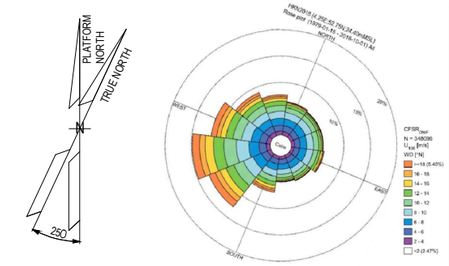
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-08	2025-02-28	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-08T09:43:06.713Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-28T14:20:03.469Z	

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

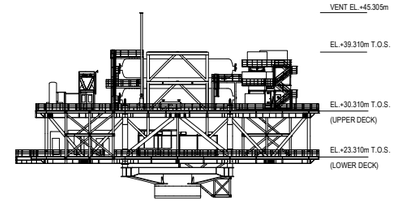
LEGEND

- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_C	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND — ROSETTI MARINO

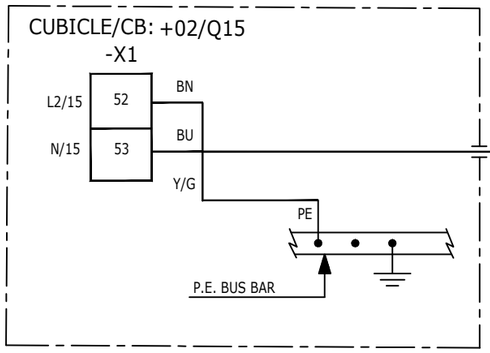
TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 1of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

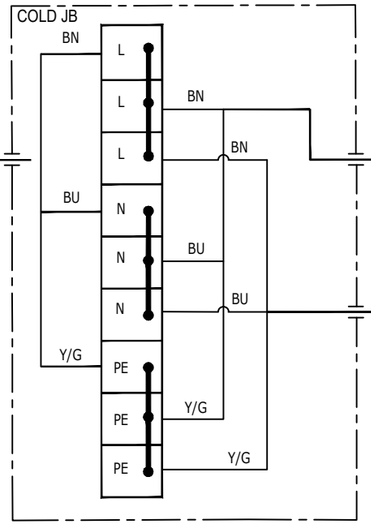
FROM	TO

DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1



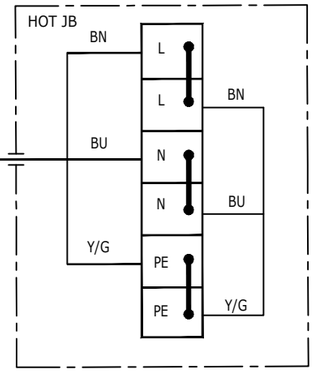
P-EJB-200N1-15-L2-01
3G6 mm²

DESCRIPTION: TRACE HEATING - PROCESS LINES
- FEEDER 2 (CI LINES)
TAG NUMBER: EJB-200N1-15-L2-01



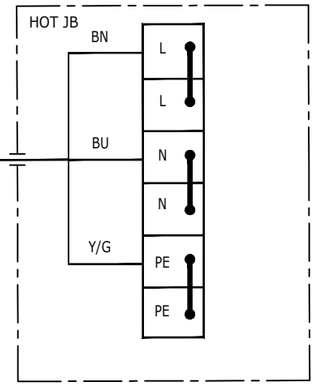
P-ETB-200N1-15-L2-01
3G6 mm²

TAG NUMBER: ETB-200N1-15-L2-01
FOR PIPE LINE: CI-029

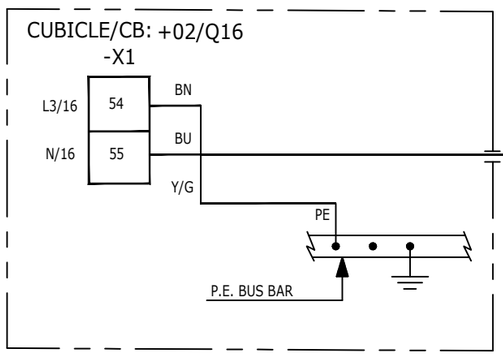


P-ETB-200N1-15-L2-02
3G6 mm²

TAG NUMBER: ETB-200N1-15-L2-02
FOR PIPE LINE: CI-043

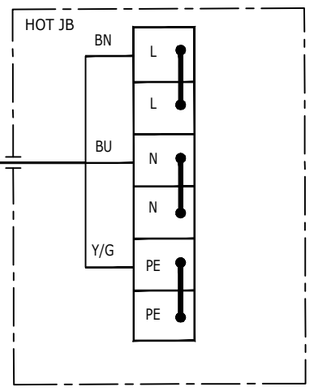


DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1



P-ETB-200N1-16-L3-01
3G6 mm²

DESCRIPTION: TRACE HEATING
PROCESS LINES - FEEDER 3 (DM 001)
TAG NUMBER: ETB-200N1-16-L3-01



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_K	12/02/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
TRACE HEATING PROCESS LINES

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 049 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

CAD FILENAME: PIT240024_DD01_1002_001_02.dwg

HEAT TRACING DATA

HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	PIPE LENGTH (m)	HEATER LENGTH (m)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W/m)	POWER OUTPUT (W/m)	SHEATH TEMP. (°C)
EHT-1002-A	PIPING	3BTV2-CT	18.0	36.5	3.1	459	230	3.9	10.7	85
		TOTALS	18.0	36.5	3.1	458				

HEATER ADDER TABLE

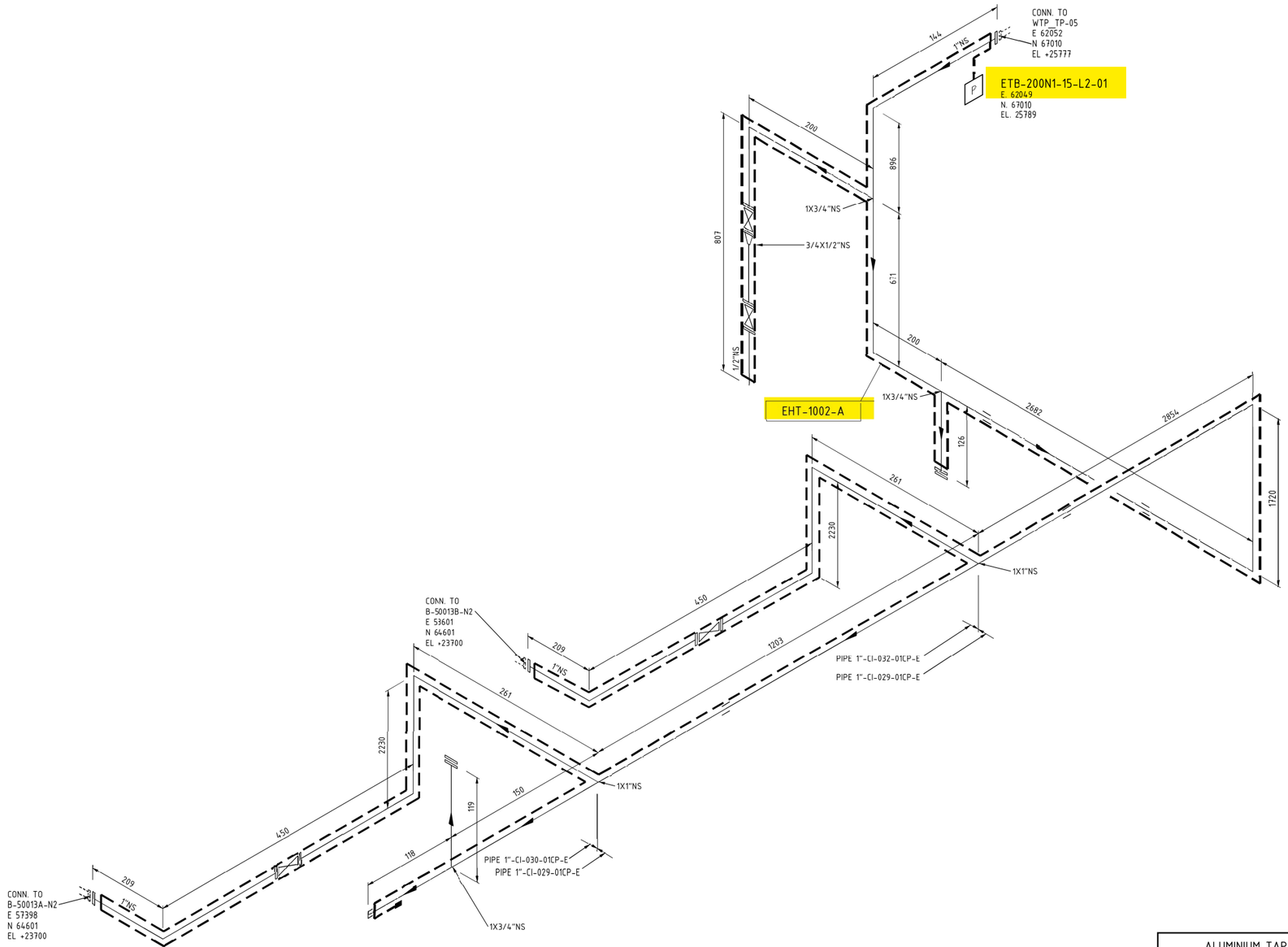
PIPE SIZE (Ins)	TYPE	QTY	ALLOWANCE PER ITEM (m)	TOTAL ALLOWANCE (m)
0.5	Typical Metal Valve	1	1.44	1.44
0.75	Typical Metal Valve	1	1.54	1.54
1	Typical Pipe Support	4	0.15	0.6
1	Typical Flange (fixed adder)	3	0.46	1.38
1	Typical Metal Valve	2	1.64	3.28
N/A	DRAIN	2	0.3	0.6

DESIGN PARAMETERS

CIRCUIT NUMBER	1002	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	25°C	INSULATION TYPE	RW/MF 1.2015
MAX. EXPOSURE TEMP.	25°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	50°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

COMPONENT BILL OF MATERIALS

CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	36.5	m	Raychem Self-Regulating Heating Cable
JBS-100-E	1	each	Integrated Junction Box, Multiple-Entry, Cold-Applied, ATEX
PSE-090	1	each	Pipe Strap for 1.1/4" to 3" (40-90mm)
GS-54	1.5	each	Glass Tape (16m/roll), suited for SS pipes
LAB-I-01	7	each	Warning Label - English
E-20	1	each	Heat shrink end seal, ATEX (BTV, QTVR)
JBS-SPA	0.2	bag	Small Pipe Adapter for E-100, JBS-100, and JS-100



LINE NUMBERS

1"-CI-029-01CP-E
1"-CI-030-01CP-E
1"-CI-032-01CP-E

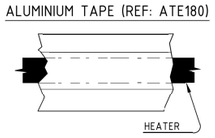
REFERENCE DRAWINGS / DOCUMENTS

123A90-DDL-PP-DI-71000_021
123A90-DDL-PP-DI-71000_022
123A90-DDL-PP-DI-71000_024

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.
4. HEATING CABLE ALLOWANCES PROVIDED IN THE 'EHT ADDER TABLE' FOR FLANGES AND VALVES ARE IN ADDITION TO THEIR LINEAR LENGTHS.

ALUMINIUM TAPE (REF: ATE180)



SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

CROSSWIND

ROSETTI MARINO

nVent RAYCHEM TRACER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
02	20/01/2025	ISSUED FOR REVIEW	ADU	AMI	GPI
01	25/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING ISOMETRIC

SCALE: N/A

DRAWING NO.: 1724001647-EL-DD-00004

SHEET NO.: 4/10

REVISION: 02

A1

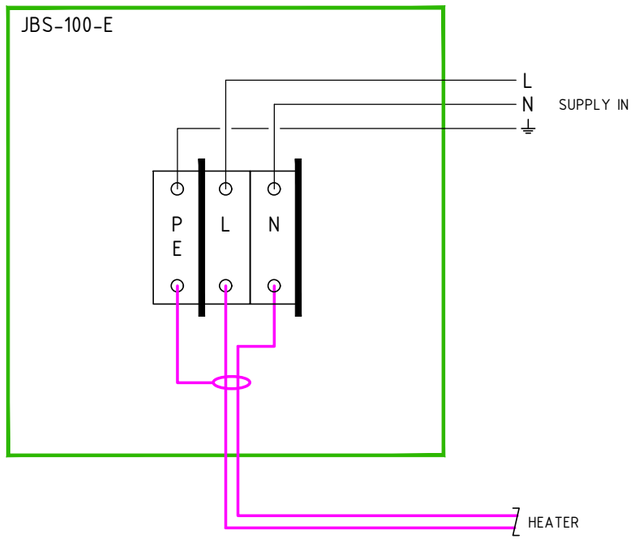
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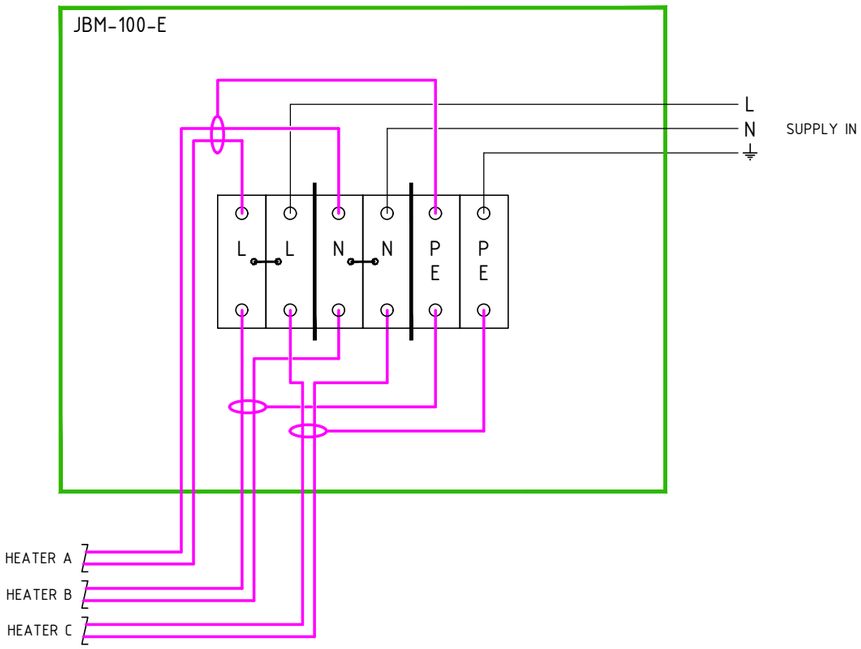
GENERAL INFORMATION:

1. JBS-100-E IS DESIGNED TO CONNECT POWER TO ONE BTV, QTVR, XTV, KTV, HTV OR VPL EHT CABLE.
2. THIS KIT INTEGRATES THE FUNCTIONS OF BOTH CONNECTION KITS AND INSULATION ENTRIES.
3. THE STAND CONNECTED TO THE BOTTOM OF THE BOX PROTECTS THE HEATING CABLE AND ALLOWS FOR UP TO 100mm (4") THERMAL INSULATION.

TECHNICAL BRIEF:

- 2 x M25 THREADED ENTRIES
- 1 x M25 STOPPING PLUGS
- 1 x M25 POWER CABLE GLAND





REV.	DATE	DESCRIPTION	BY	CHK	APP
--	--	--	--	--	--
--	--	--	--	--	--
02	20/01/2025	APPROVED FOR CONSTRUCTION	ADU	AMI	GPI
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	08/03/2024	ISSUED FOR INFORMATION	LJB	E-C	ZS

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TITLE
TYPICAL CONNECTION OF A JBS-100-EP
SINGLE ENTRY JUNCTION BOX

PREPARED BY	-.---	LANG.	SCALE
LEAD ENGINEER	-.---	en	N/A
PROJECT NO.	DRAWING NO.	SHEET	REVISION
PIT240024	1724001647-EL-DG-00005	3/3	02

A3

CAD FILENAME: 1724001647-EL-DG-00006 Rev 03.dwg

CONTROL PANEL REF.:

DP-200N1

MARSHALLING BOX

DM LINES
Q16

ETB-200N1-16-L3-01

P

EHT-1001-A

CL LINES
Q15

EJB-200N1-15-L2-01

ETB-200N1-15-L2-01

P

EHT-1002-A

SPARE

SPARE

ETB-200N1-15-L2-02

P

EHT-1007-A

SWS LINES
Q14

EJB-200N1-14-L1-01

SPARE

ETB-200N1-14-L1-01

P

EHT-1003-A

SPARE

SPARE

CONT. ON
SHEET 003

CIRCUIT NO.	1001	1002, 1007	1003	
C.B. RATING (A)	32	32	32	
START-UP I (A)	1.8	4.7	6.7	
LOAD (W)	271	698	1002	
SERVICE	WINTERIZING	WINTERIZING	WINTERIZING	
NOTES FOR THE CIRCUIT	--	--	--	

GENERAL NOTES

CROSSWIND

ROSETTI MARINO

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
03	20/01/2025	ACCEPTED FOR CONSTRUCTION	ADU	AMI	GPI
02	29/11/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	02/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING
ELECTRICAL BLOCK DIAGRAM

SCALE: N/A

DRAWING NO.: 1724001647-EL-DG-00006

SHEET NO.: 3/4

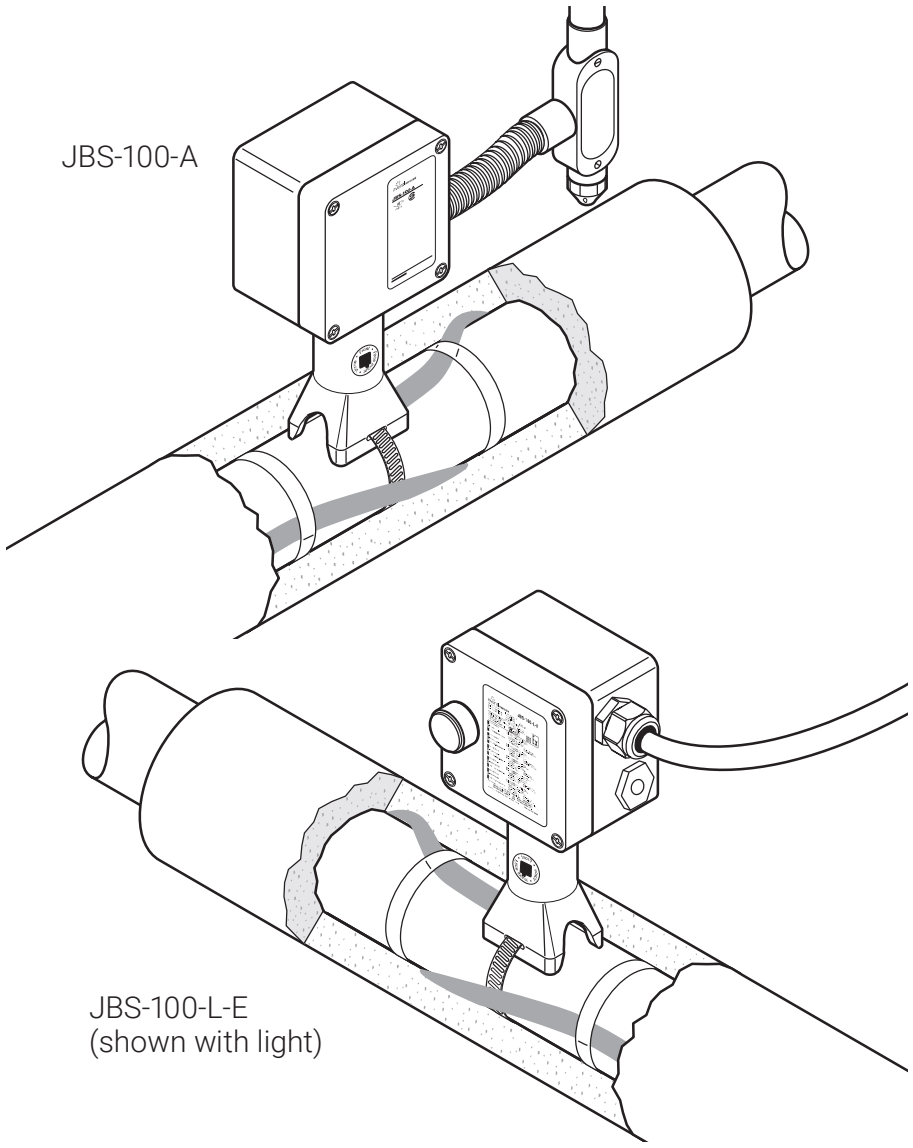
REVISION: 03

JBS-100

CONNECT AND PROTECT

Single-Entry power connection with junction box

PRODUCT OVERVIEW



The nVent RAYCHEM JBS-100 kit is designed to connect power to a single nVent RAYCHEM BTV, QTVR, XTVR, HTV or VPL industrial parallel heating cable.

The JBS-100 integrates the functions of both connection kits and insulation entries. The rugged stand protects the heating cable and allows for up to 100 mm (4") of thermal insulation.

The core sealing boot does not require a heat gun or torch for the installation (no hot work permit necessary). The non-curing sealant (silicone free) in the boot allows easy installation and facilitates maintenance.

Spring-type terminals provide fast installation and safe, reliable, maintenance-free operation. This connection kit significantly reduces installation time. The kit is offered in three basic versions, customised for local installation practices. All kits are also available as a lighted version. These include a unique light module with a superbright LED that simply plugs into the terminals, and a lens in the lid. This provides indication that power is available in the box. There is also a connection kit with drain plug available.

Description

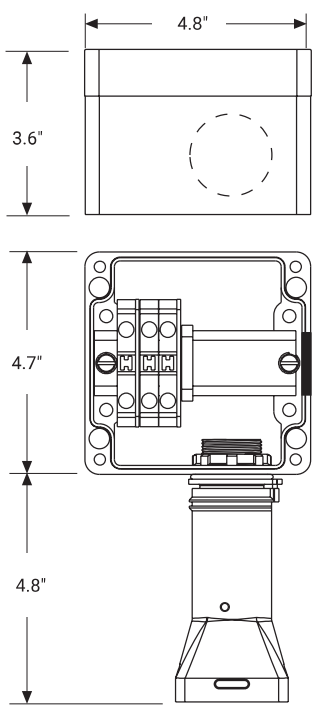
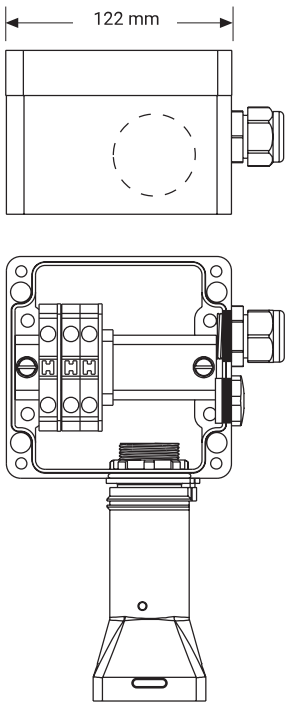
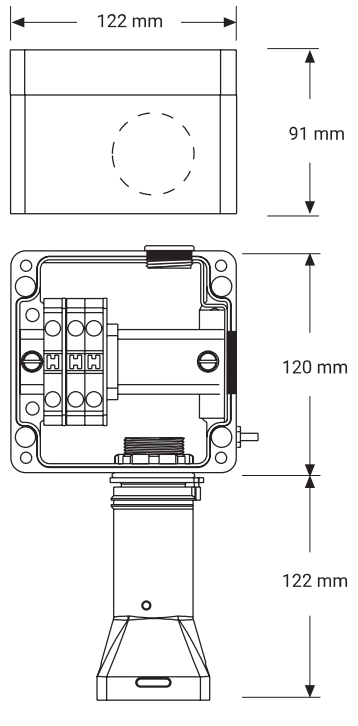
JBS-100-A JBS-100-L-A	JBS-100-E JBS-100-L-E JBS-100-D-E	JBS-100-EP JBS-100-L-EP
This connection system is certified for use in North America and has one through-hole for use with ¾" conduit.	This connection system is certified for use in IEC regions and provides two M25 threaded entries, one stopping plug, and one plastic power cable gland.	This connection system is certified for use in IEC regions and provides two M25 threaded entries, an earthing plate, and an external earthing stud. It is designed for use with armoured cables.

Kit contents

JBS-100-A JBS-100-L-A	JBS-100-E JBS-100-L-E JBS-100-D-E	JBS-100-EP JBS-100-L-EP
1 junction box with terminals	1 junction box with terminals	1 junction box with terminals, earth plate, and stud
1 light module (for -L only)	1 light module (for -L only)	1 light module (for -L only)
1 stand	1 stand	1 stand
1 core sealer	1 core sealer	1 core sealer
1 green/yellow earthing sleeve	1 green/yellow earthing sleeve	1 green/yellow earthing sleeve
1 polywater sachet	1 M25 gland for power cable 8-15 mm in diameter (temperature range –55°C / 70°C)	1 M25 stopping plug
1 cable tie	1 M25 stopping plug	1 polywater sachet
	1 polywater sachet	1 cable tie
	1 cable tie	
	1 ATEX/IECEx Certified drainplug (for JBS-100-D-E only)	

PRODUCT SPECIFICATIONS

Dimensions (nominal)

	JBS-100-A JBS-100-L-A	JBS-100-E JBS-100-L-E JBS-100-D-E	JBS-100-EP JBS-100-L-EP
			

Technical details

	JBS-100-A JBS-100-L-A	JBS-100-E JBS-100-L-E JBS-100-D-E	JBS-100-EP JBS-100-L-EP
Heating cable capability	BTV-CR, BTV-CT, QTVR-CT, XTVR-CT, HTV-CT, VPL-CT		
Ingress protection	IP66	IP66	IP66
Entries	1 x ¾"	2 x M25	2 x M25
Ambient temperature range	–55°C to +56°C (JBS-100-A) –40°C to +40°C (JBS-100-L-A)	–55°C to +56°C* (JBS-100-E and JBS-100-D-E) –40°C to +40°C (JBS-100-L-E)	–55°C to +56°C* (JBS-100-EP) –40°C to +40°C (JBS-100-L-EP)
	* Extra conditions for safe use apply at ambient temperatures >40°C. Temperature resistant power cable and metal glands must be used. Please refer to the certificate or installation instructions for full details.		
Max. pipe temperature	Refer to heating cable specification		
Terminals	Spring-type terminals 2 line, 1 ground	Spring-type terminals 1 phase, 1 neutral, 1 earth	Spring-type terminals 1 phase, 1 neutral, 1 earth
Max. conductor size	8 AWG stranded	10 mm^2 stranded, 10 mm^2 solid	10 mm^2 stranded, 10 mm^2 solid
Max. operating voltage	480 Vac*	480 Vac*	480 Vac*
	* JBS-100-L-E, JBS-100-L-EP and JBS-100-L-A are limited to 277 Vac. Extra conditions for safe use apply for voltages higher than 277 Vac. Please refer to the certificate or installation instructions for full details.		
Max. continuous operating current (***)	53 A	53 A	53 A

(***) For pipe temperature >150°C and <260°C and XTVR or HTV heating cables, the maximum operating current shall be reduced to maximum 20 A.

Materials of construction

Enclosure, lid, and stand	Electrostatic charge-resistant glass-filled engineered polymer, black	Electrostatic charge-resistant glass-filled engineered polymer, black	Electrostatic charge-resistant glass-filled engineered polymer, black
Lid screws	Stainless steel	Stainless steel	Stainless steel
Lid gasket	Silicone rubber	Silicone rubber	Silicone rubber
Earth continuity plate	N/A	N/A	Steel, zinc plated, and blue chromated

Optional LED indicator light

Colour	Red	Green	Green
Voltage rating	100-277 Vac	100-277 Vac	100-277 Vac
Power consumption	< 1 W	< 1 W	< 1 W

APPROVALS

For use in ordinary and hazardous area Zone 1 and Zone 2 (Gas), Zone 21 and Zone 22 (Dust) (and Class I Div 2).

Temperature classification

Temperature classification is defined by the complete system.

Product certification

For certifications in other regions (FM, CSA, IEx etc.), please refer to the installation manual.

More details about product certification, approvals and conditions of safe use are available in the installation manual at www.nVent.com/RAYCHEM.

ORDERING INFORMATION**

Power connection

Part Description	JBS-100-A	JBS-100-E	JBS-100-EP
PN (Weight)	085947-000 (2.5 lb)	829939-000 (1.2 kg)	158251-000 (1.3 kg)

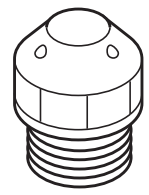
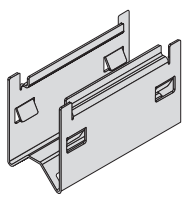
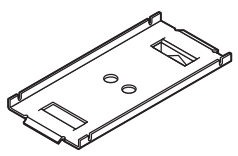
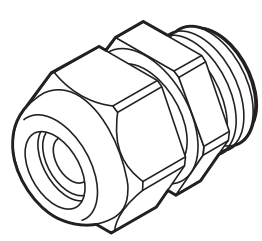
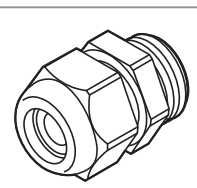
Power connection with light

Part Description	JBS-100-L-A	JBS-100-L-E	JBS-100-L-EP
PN (Weight)	944699-000 (3.5 lb)	054363-000 (1.6 kg)	075249-000 (1.7 kg)

Power connection with drain plug

Part Description		JBS-100-D-E	
PN (Weight)		1244-021057 (1.4 kg)	

Accessories

Conduit Drain ¾"	Prevents condensate from collecting in the box	
Catalog number	JB-DRAIN-PLUG-3/4IN	
Part Number	278621-000	
Weight	0.074 lb / 36 g	
Junction box standoff	For insulation thickness >100 mm & ≤150 mm *	
Catalog number	JBM-100-STANDOFF	
Part Number	P000003408	
Weight	0.279 lb / 135 g	
* Consider extra pipe strap length 6-9" (150-225 mm) for attachment		
Small pipe adapter	Required for stand on pipes ≤ 1"	
Catalog number	JBM-SPA	
Part Number	E90515-000	
Weight	0.408 lb / 185 g (Bag of 5 adaptors)	
Glands for power cables	Hazardous area approved gland for cables 8-15 mm (temperature range –55°C/70°C)	
Catalog number	GL-55-M25	
Part Number	1244-019083	
Weight	0.016 kg	
Glands for power cables	Hazardous area approved gland for cables 8-17.5 mm (temperature range –20°C/70°C)	
Catalog number	GL-36-M25	
Part Number	1244-019082	
Weight	0.016 kg	

(**) Localized versions may exist with limited approvals and different part numbers. Contact your local sales representative.

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

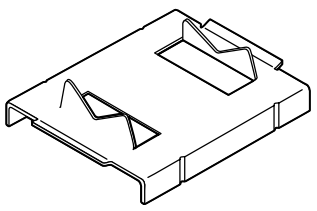
Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com

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SMALL PIPE ADAPTORS



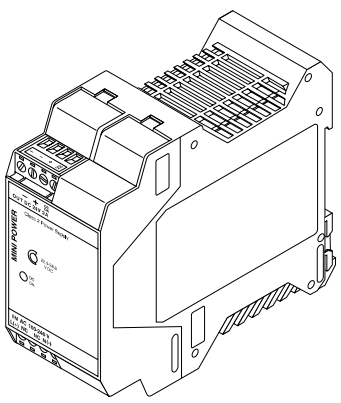
JBS-SPA

Small pipe adaptor required for pipes ≤ 1" (DN25), applicable for JBS-100, E-100, E-100-L
E90515-000 (bag of 5 adaptors) Weight: 0.14 kg

JBM-SPA

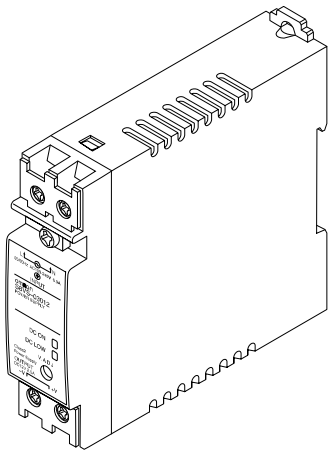
Small pipe adaptor required for pipes ≤ 1" (DN25), applicable for JBM-100, T-100
D55673-000 (bag of 5 adaptors) Weight: 0.40 kg

POWER SUPPLY



MONI-RMC-PS24

24 Vdc stabilized power supply
Wide range input (100 - 240 Vac) power supply to provide
24 Vdc input for MONI- RMC-BASE.
Surface or DIN 35 rail mounted.
PN: 972049-000 Weight: 0.28 kg



MONI-PS12

12 Vdc stabilized power supply
Wide range input (100 - 240 Vac) power supply to provide 12 Vdc input for the
nVent RAYCHEM NGC-30-CRM-E and nVent RAYCHEM NGC-30-CRMS-E cards.
DIN 35 rail mountable.
PN: 1244-001505 Weight: 0.18 kg

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com

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LABELS AND TAGS

Warning labels indicate the presence of electrical heat-tracing under the insulation of the pipe or other equipment. (min. of 1 label per 5 m of heat-tracing line). Also suitable for stainless steel pipes.



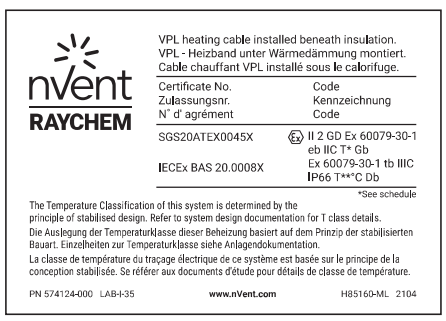
Language	EHT label reference	Product number
Arabian	LAB-ETL-AR	036236-000
Bulgarian	LAB-ETL-BG	1244-002183
Czech	LAB-ETL-CZ	731605-000
Danish	LAB-ETL-DK	C97690-000
Dutch	LAB-ETL-NL	749153-000
English	LAB-I-01	938947-000
Estonian/English	LAB-ETL-EN/EE	1244-001415
Finnish/Swedisch	LAB-ETL-SE/FI	756479-000
French	LAB-I-05	883061-000
German/French/Italian (230V)	LAB-ETL-DE/FR/IT	148648-000
German	LAB-ETL-DE	597779-000
Hungarian	LAB-ETL-HU	623725-000
Italian	LAB-ETL-IT	C97688-000
Kazakh/Russian/English	LAB-ETL-KZ/RU/EN	1244-017393
Latvian	LAB-ETL-LV	841822-000
Lithuanian	LAB-ETL-LT	105300-000
Norwegian	LAB-ETL-NO	C97689-000
Norwegian/English	LAB-ETL-EN/NO	165899-000
Polish	LAB-ETL-PL	258203-000
Portugese	LAB-ETL-PT	945960-000
Romanian	LAB-ETL-RO	902104-000
Russian	LAB-ETL-RU	574738-000
Russian/English	LAB-ETL-EN/RU	1244-001060
Russian/English/Azeri	LAB-ETL-AZ/RU/EN	1244-012283
Russian/English/Uzbek	LAB-ETL-UZ/RU/EN	1244-022143
Spanish	LAB-ETL-ES	C97686-000
Swedish	LAB-ETL-SE	691703-000
Turkish/English	LAB-ETL-EN/TR	1244-014860



Language	Component label reference	Product number
English	LAB-I-02	774499-000
Russian/English	LAB-I-02/E/R LAB-ENDSEAL	1244-001059 146909-000
English	ETL-END-SEAL LAB-SPLICE	103405-000 007063-000

STABILIZED DESIGN LABELS

If compliance to the T-class or A.I.T. cannot be achieved by the unconditional T-rating of the heating cable, the hazardous area regulations require that cable sheath temperature is determined by the rules of stabilized design as per EN 60079-30 and the heating circuit is marked accordingly. The following labels are available for this purpose (min.1 label per heating circuit)



LAB-I-35

Stabilized design sticker. To be installed when power-limiting VPL heating cables are used in hazardous areas.

PN: 574124-000 Weight: 0,0015 kg

LAB-EX-XTV-KTV

Aluminum tag plate for XTV and KTV self-regulating heating cables. To be installed if T-class compliance was proven by stabilized design and not by unconditional T-rating.

PN: 1244-011961 Weight: 0.04 kg

LAB-EX-FxT

Aluminum tag plate. To be installed when parallel constant wattage FMT or FHT heating cables are used in hazardous areas.

PN: 1244-006953 Weight: 0.04 kg

PI-LABEL-EX

Aluminum tag plate. To be installed when series polymer insulated XPI & XPI-S heating cables are used in hazardous areas.

PN: 1244-006940 Weight: 0.04 kg

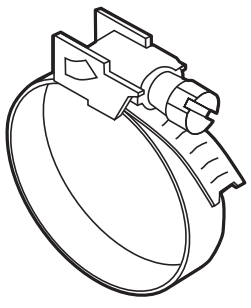
PI-LABEL-NH

Aluminum tag plate. To be installed when series polymer insulated XPI & XPI-S heating cables are used non hazardous areas.
This label is not mandatory but highly recommended for future reference.

PN: 1244-006941 Weight: 0.04 kg

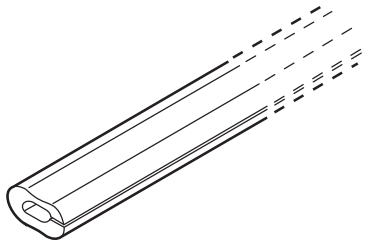
PIPE STRAPS

Metal straps for pipe mounting of integrated power connections, above the insulation tees and end seals as well as support brackets and the tubular insulation entry. Banding: stainless steel



Pipe outer diameter in mm	(inches)	Pipe strap	PN (Weight)
20 - 47	(1/2" - 11/4")	PSE-047	700333-000 (0.017 kg)
40 - 90	(11/4" - 3")	PSE-090	976935-000 (0.024 kg)
60 - 288	(2" - 10")	PSE-280	664775-000 (0.052 kg)
60 - 540	(2" - 20")	PSE-540	364489-000 (0.052 kg)

PIPE STRAPS



G-02

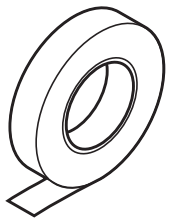
Silicone grommet that protects the heating cable at sharp edges such as endplates of insulation cladding, flanges etc. It can be cut-to-length and resists temperatures up to 215°C.

Sold in pieces of 1 m.

PN: 412549-000 Weight: 0.37 kg/m)

FIXING MATERIALS

Self-adhesive tape for fixing the heating cables on pipes or other equipment.



GT-66

Glass cloth tape for attaching heating cable to pipe.
Not for stainless steel pipes or for installation temperatures below 5°C.

20 m per roll, 12 mm width.

PN: C77220-000 Weight: 0.053 kg

GS-54

Glass cloth tape for attaching heating cable to pipe.

For stainless steel pipes or for any installation below 5°C.

16.5 m per roll, 12 mm width.

PN: C77221-000 Weight: 0.048 kg

ITEM	Tag	ETB-200N1-15-L2-02	: TRACE HEATING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB			Dwg	123A90-DDL-EL-DL-20140
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10004602		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX31 Junction and Marshalling Box

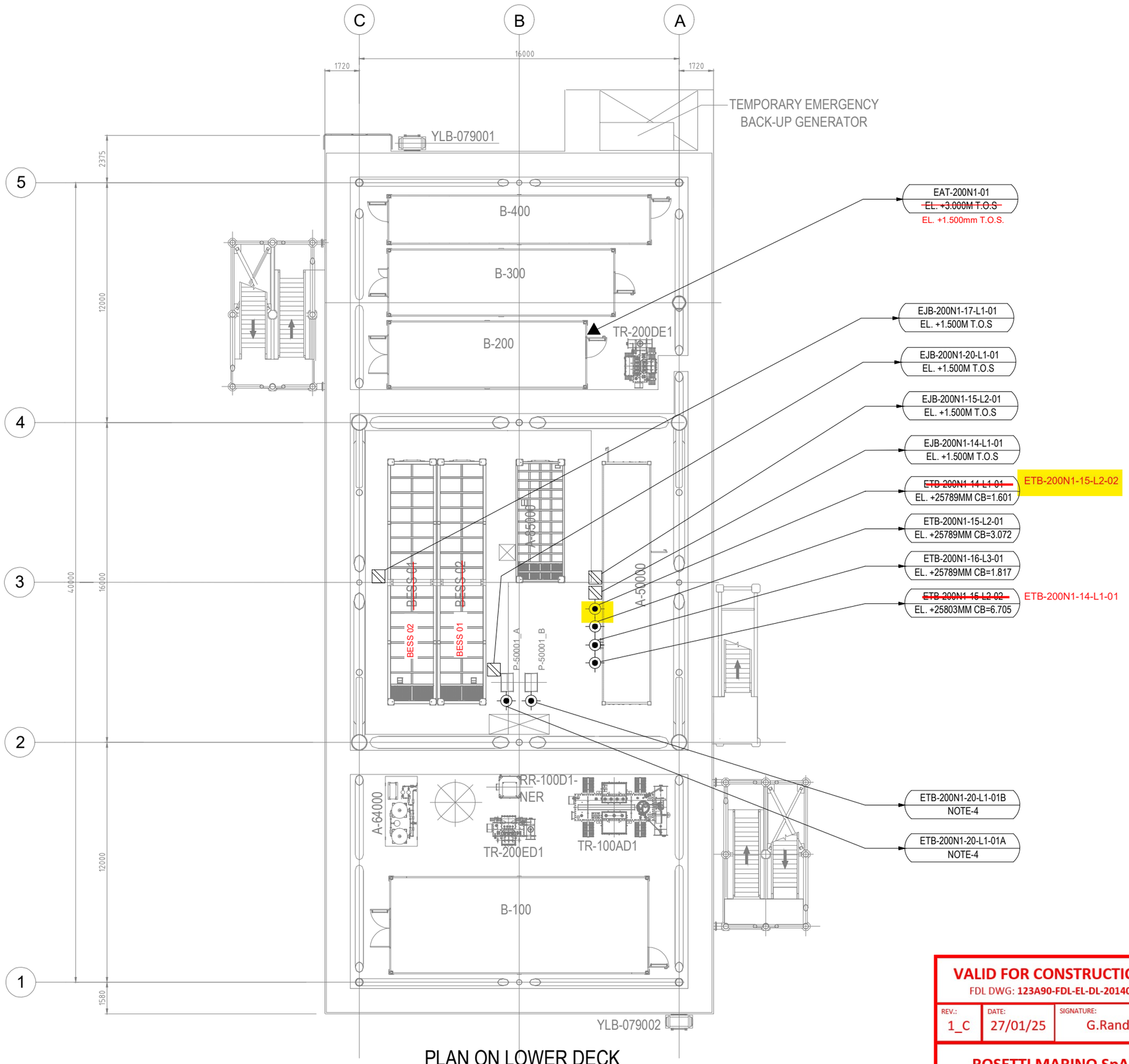
1	Check box is de-energized and safe.	OK
2	Check box is correctly mounted and easily accessible.	OK
3	Check box tagging against drawing.	OK
4	Check nameplate data is correct.	PL
5	Check flameproof joints are clean and greased with approved lubricants (if required).	NA
6	Check for damaging gaskets.	OK
7	Check all bolts are fitted and correcly tighted .	OK
8	Check all unused entries are suitably plugged.	OK
9	Check earthing and bonding against drawings.	OK
10	Check terminal blocks segregation barriers are fitted where necessary.	NA
11	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

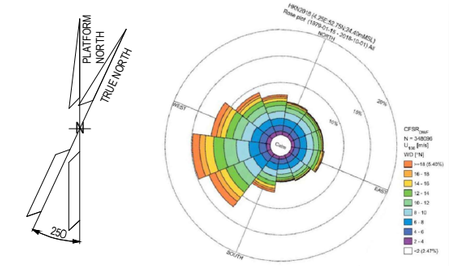
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-08	2025-03-06	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-08T09:43:16.956Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-03-06T15:25:43.696Z	

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

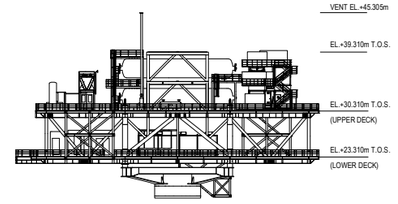
LEGEND

- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-EL-DL-20140
REV.: 1_C | DATE: 27/01/25 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

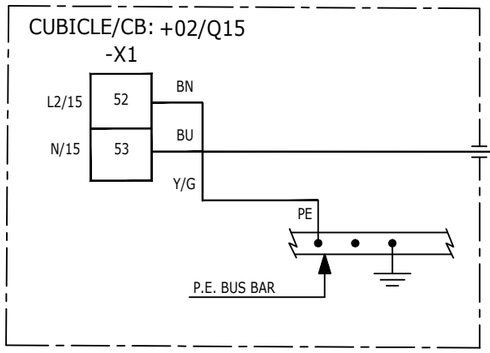
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 1of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

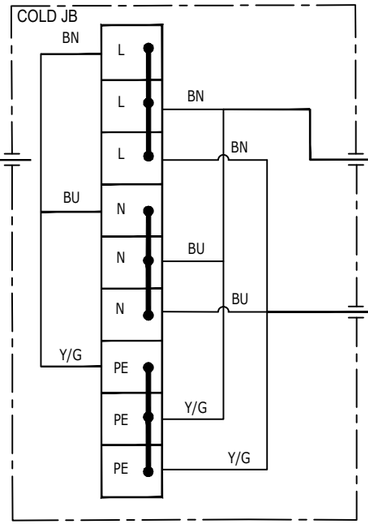
FROM	TO

DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1



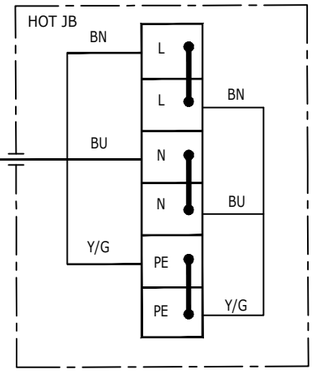
P-EJB-200N1-15-L2-01
3G6 mm²

DESCRIPTION: TRACE HEATING - PROCESS LINES
- FEEDER 2 (CI LINES)
TAG NUMBER: EJB-200N1-15-L2-01

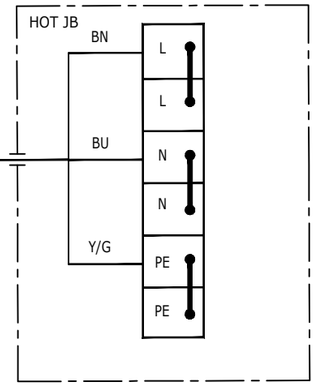


P-ETB-200N1-15-L2-01
3G6 mm²

TAG NUMBER: ETB-200N1-15-L2-01
FOR PIPE LINE: CI-029

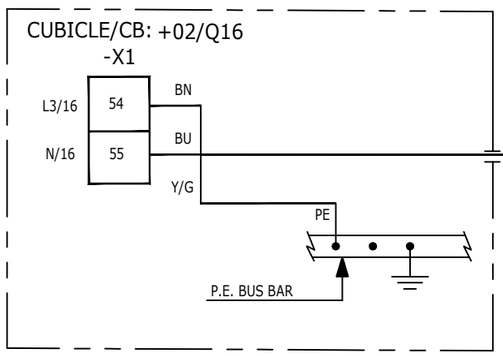


TAG NUMBER: ETB-200N1-15-L2-02
FOR PIPE LINE: CI-043



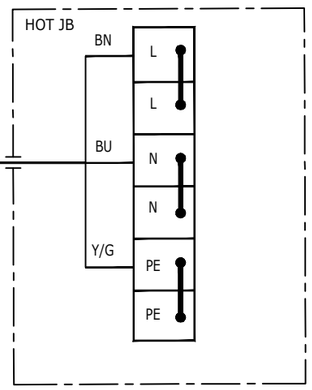
P-ETB-200N1-15-L2-02
3G6 mm²

DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1



P-ETB-200N1-16-L3-01
3G6 mm²

DESCRIPTION: TRACE HEATING
PROCESS LINES - FEEDER 3 (DM 001)
TAG NUMBER: ETB-200N1-16-L3-01



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_K	12/02/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
TRACE HEATING PROCESS LINES

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 049 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

CAD FILENAME: PIT240024_DD01_1007_001_02.dwg

HEAT TRACING DATA

HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	PIPE LENGTH (m)	HEATER LENGTH (m)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W/m)	POWER OUTPUT (W/m)	SHEATH TEMP. (°C)
EHT-1007-A	PIPING	3BTV2-CT	15.0	19.5	1.6	239	230	3.9	10.7	85
		TOTALS	15.0	19.5	1.6	239				

HEATER ADDER TABLE

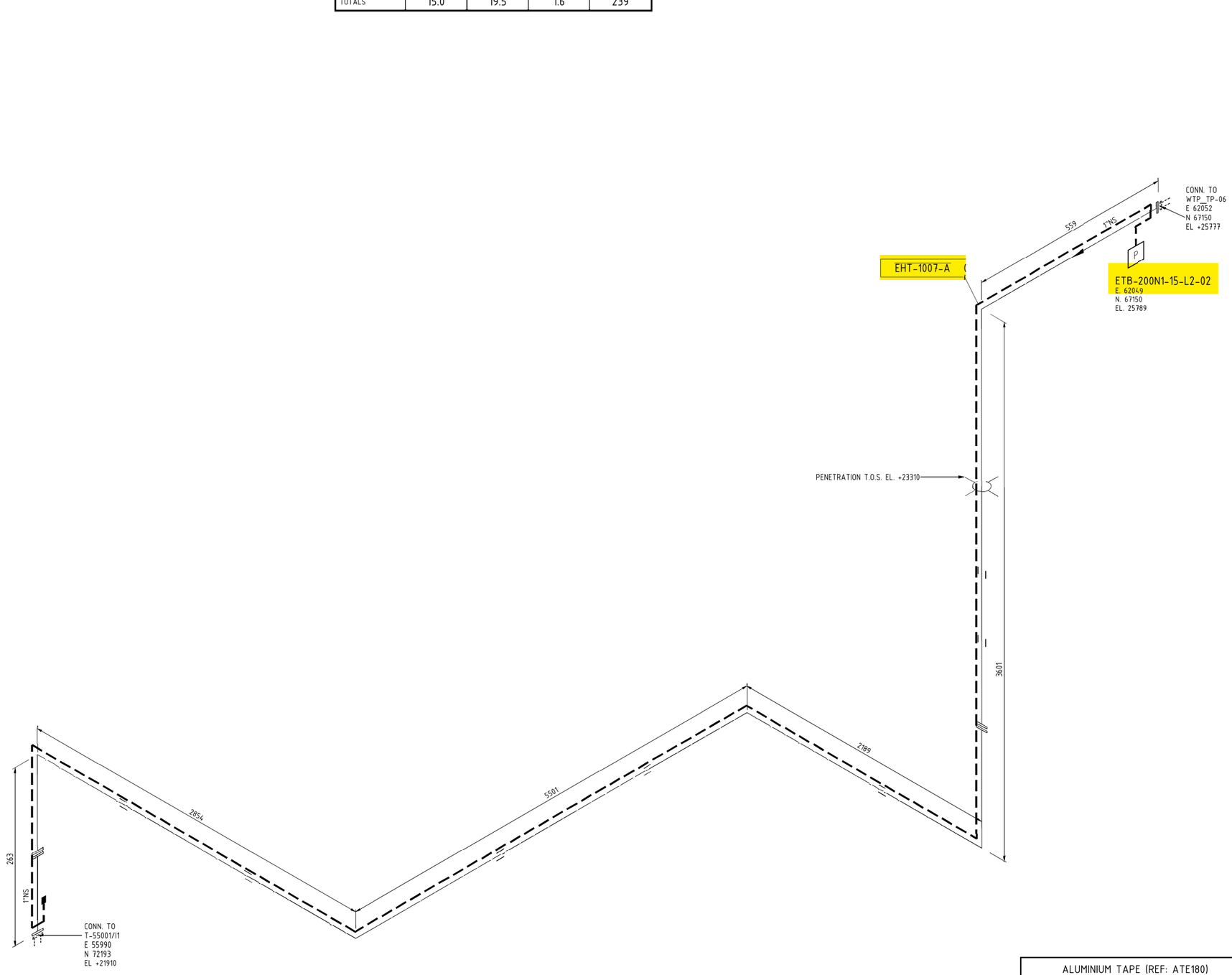
PIPE SIZE (Ins)	TYPE	QTY	ALLOWANCE PER ITEM (m)	TOTAL ALLOWANCE (m)
1	Typical Pipe Support	7	0.15	1.05
1	Typical Flange (fixed adder)	4	0.46	1.84

DESIGN PARAMETERS

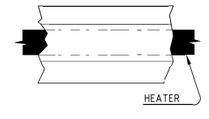
CIRCUIT NUMBER	1007	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	25°C	INSULATION TYPE	RW/MF 1.2015
MAX. EXPOSURE TEMP.	25°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	50°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

COMPONENT BILL OF MATERIALS

CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	19.5	m	Raychem Self-Regulating Heating Cable
JBS-100-E	1	each	Single entry power connection, EP, ATEX
PSE-090	1	each	Pipe Strap for 1.1/4" to 3" (40-90mm)
GS-54	0.8	each	Glass Tape (16m/roll), suited for SS pipes
LAB-I-01	6	each	Warning Label - English
E-20	1	each	Heat shrink end seal, ATEX (BTV, QTVR)
JBS-SPA	0.2	bag	Small Pipe Adapter for E-100, JBS-100, and JS-100



ALUMINIUM TAPE (REF: ATE180)



SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

LINE NUMBERS	REFERENCE DRAWINGS / DOCUMENTS
1"-CI-043-01CP-E	123A90-DDL-PP-DI-71000_028

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.
4. HEATING CABLE ALLOWANCES PROVIDED IN THE 'EHT ADDER TABLE' FOR FLANGES AND VALVES ARE IN ADDITION TO THEIR LINEAR LENGTHS.

CROSSWIND

ROSETTI MARINO

nVent RAYCHEM TRACER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
02	20/01/2025	ISSUED FOR REVIEW	ADU	AMI	GPI
01	25/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.

DOC CODE

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING ISOMETRIC

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-EL-DD-00004	9/10	02

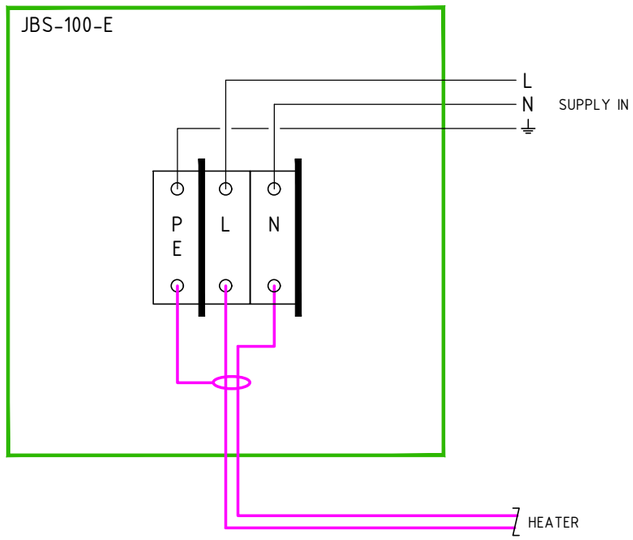
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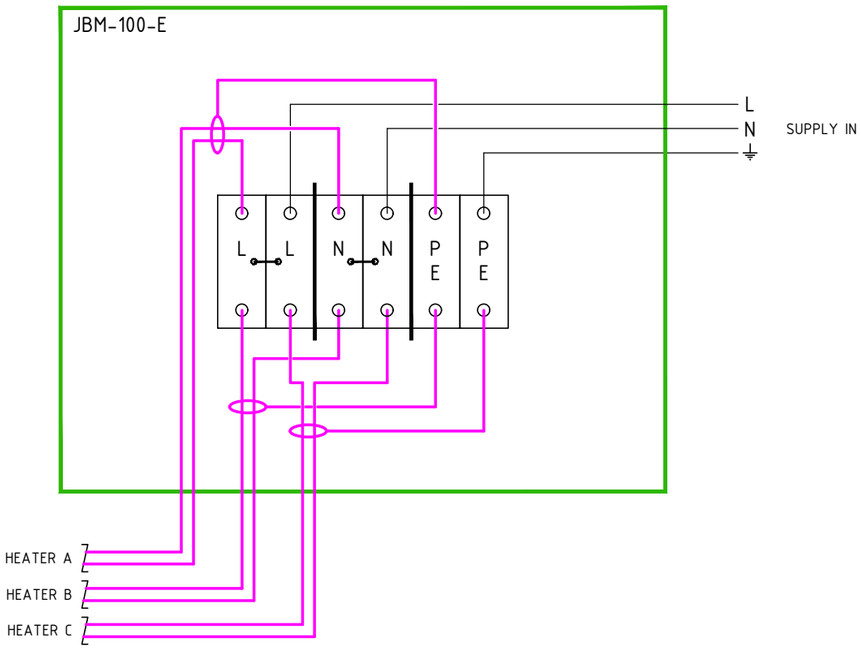
GENERAL INFORMATION:

1. JBS-100-E IS DESIGNED TO CONNECT POWER TO ONE BTV, QTVR, XTV, KTV, HTV OR VPL EHT CABLE.
2. THIS KIT INTEGRATES THE FUNCTIONS OF BOTH CONNECTION KITS AND INSULATION ENTRIES.
3. THE STAND CONNECTED TO THE BOTTOM OF THE BOX PROTECTS THE HEATING CABLE AND ALLOWS FOR UP TO 100mm (4") THERMAL INSULATION.

TECHNICAL BRIEF:

- 2 x M25 THREADED ENTRIES
- 1 x M25 STOPPING PLUGS
- 1 x M25 POWER CABLE GLAND





REV.	DATE	DESCRIPTION	BY	CHK	APP
--	--	--	--	--	--
--	--	--	--	--	--
02	20/01/2025	APPROVED FOR CONSTRUCTION	ADU	AMI	GPI
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	08/03/2024	ISSUED FOR INFORMATION	LJB	E-C	ZS

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TITLE
TYPICAL CONNECTION OF A JBS-100-EP
SINGLE ENTRY JUNCTION BOX

PREPARED BY	-.---	LANG.	SCALE
LEAD ENGINEER	-.---	en	N/A
PROJECT NO.	DRAWING NO.	SHEET	REVISION
PIT240024	1724001647-EL-DG-00005	3/3	02

A3

CAD FILENAME: 1724001647-EL-DG-00006 Rev 03.dwg

CONTROL PANEL REF.:

DP-200N1

MARSHALLING BOX

DM LINES
Q16

ETB-200N1-16-L3-01

P

EHT-1001-A

CL LINES
Q15

EJB-200N1-15-L2-01

ETB-200N1-15-L2-01

P

EHT-1002-A

SPARE

SPARE

ETB-200N1-15-L2-02

P

EHT-1007-A

SWS LINES
Q14

EJB-200N1-14-L1-01

SPARE

ETB-200N1-14-L1-01

P

EHT-1003-A

SPARE

SPARE

CONT. ON
SHEET 003

CIRCUIT NO.	1001	1002, 1007	1003	
C.B. RATING (A)	32	32	32	
START-UP I (A)	1.8	4.7	6.7	
LOAD (W)	271	698	1002	
SERVICE	WINTERIZING	WINTERIZING	WINTERIZING	
NOTES FOR THE CIRCUIT	--	--	--	

GENERAL NOTES

CROSSWIND

ROSETTI MARINO

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
03	20/01/2025	ACCEPTED FOR CONSTRUCTION	ADU	AMI	GPI
02	29/11/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	02/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING
ELECTRICAL BLOCK DIAGRAM

SCALE: N/A

DRAWING NO.: 1724001647-EL-DG-00006

SHEET NO.: 3/4

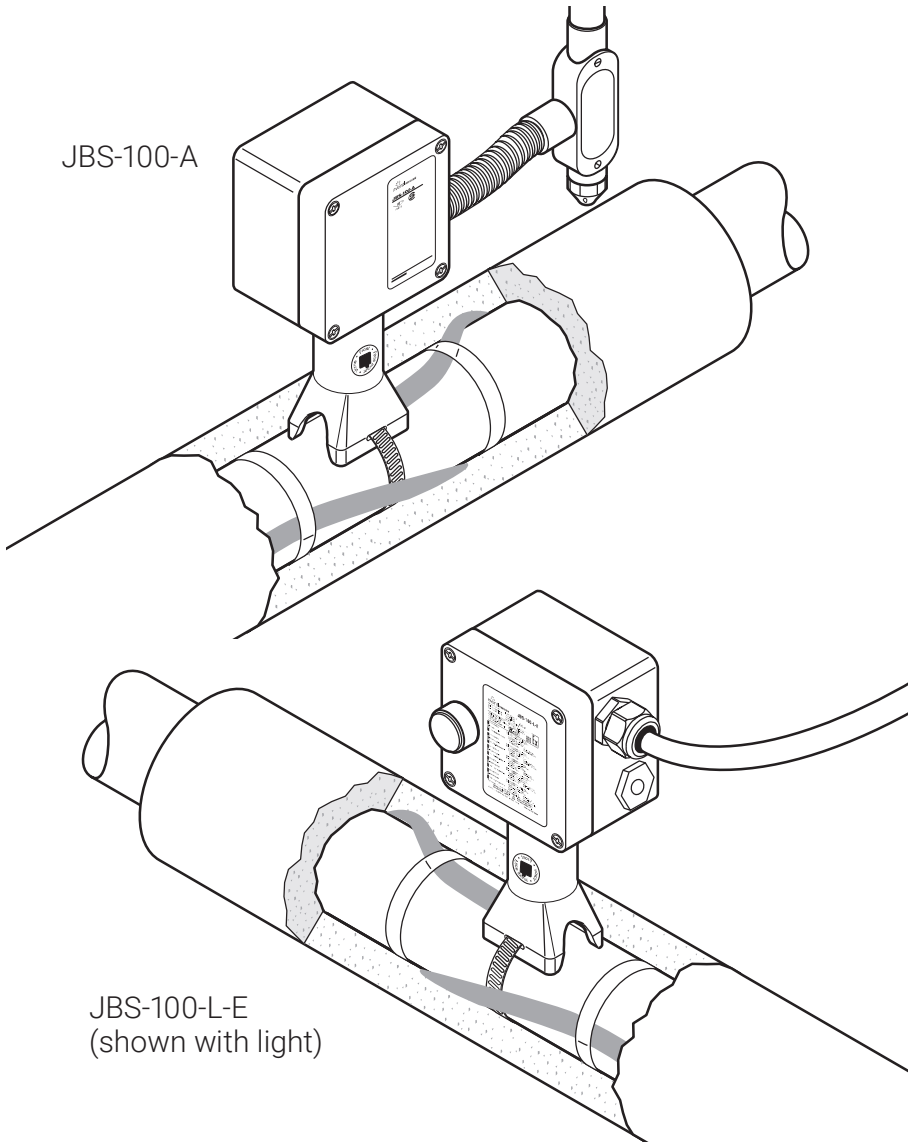
REVISION: 03

JBS-100

CONNECT AND PROTECT

Single-Entry power connection with junction box

PRODUCT OVERVIEW



The nVent RAYCHEM JBS-100 kit is designed to connect power to a single nVent RAYCHEM BTV, QTVR, XTVR, HTV or VPL industrial parallel heating cable.

The JBS-100 integrates the functions of both connection kits and insulation entries. The rugged stand protects the heating cable and allows for up to 100 mm (4") of thermal insulation.

The core sealing boot does not require a heat gun or torch for the installation (no hot work permit necessary). The non-curing sealant (silicone free) in the boot allows easy installation and facilitates maintenance.

Spring-type terminals provide fast installation and safe, reliable, maintenance-free operation. This connection kit significantly reduces installation time. The kit is offered in three basic versions, customised for local installation practices. All kits are also available as a lighted version. These include a unique light module with a superbright LED that simply plugs into the terminals, and a lens in the lid. This provides indication that power is available in the box. There is also a connection kit with drain plug available.

Description

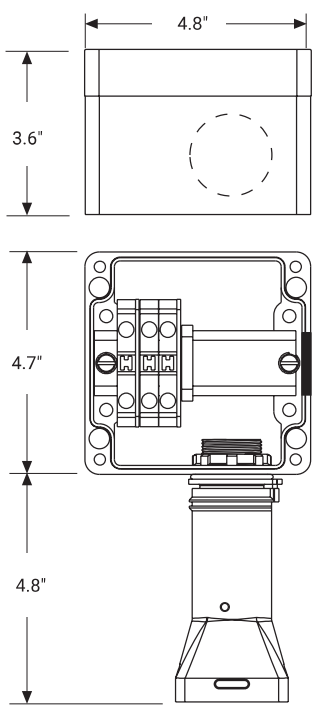
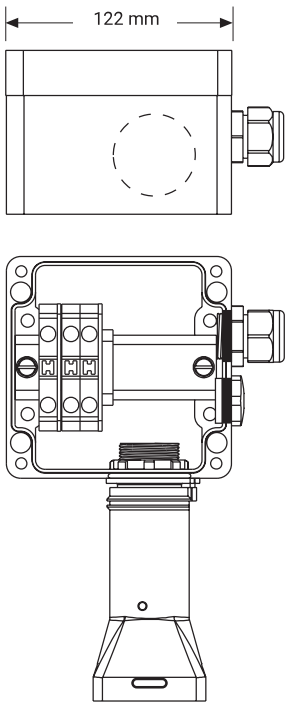
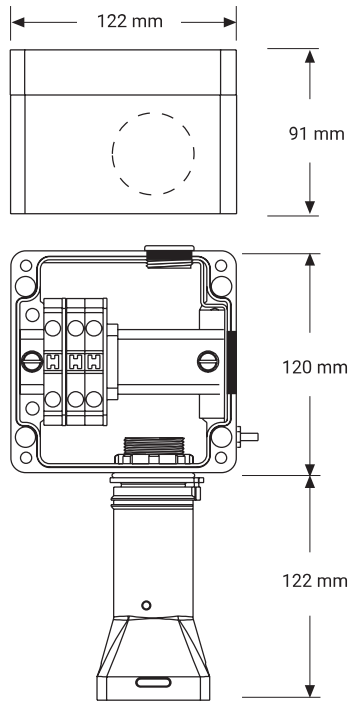
JBS-100-A JBS-100-L-A	JBS-100-E JBS-100-L-E JBS-100-D-E	JBS-100-EP JBS-100-L-EP
This connection system is certified for use in North America and has one through-hole for use with ¾" conduit.	This connection system is certified for use in IEC regions and provides two M25 threaded entries, one stopping plug, and one plastic power cable gland.	This connection system is certified for use in IEC regions and provides two M25 threaded entries, an earthing plate, and an external earthing stud. It is designed for use with armoured cables.

Kit contents

JBS-100-A JBS-100-L-A	JBS-100-E JBS-100-L-E JBS-100-D-E	JBS-100-EP JBS-100-L-EP
1 junction box with terminals	1 junction box with terminals	1 junction box with terminals, earth plate, and stud
1 light module (for -L only)	1 light module (for -L only)	1 light module (for -L only)
1 stand	1 stand	1 stand
1 core sealer	1 core sealer	1 core sealer
1 green/yellow earthing sleeve	1 green/yellow earthing sleeve	1 green/yellow earthing sleeve
1 polywater sachet	1 M25 gland for power cable 8-15 mm in diameter (temperature range –55°C / 70°C)	1 M25 stopping plug
1 cable tie	1 M25 stopping plug	1 polywater sachet
	1 polywater sachet	1 cable tie
	1 cable tie	
	1 ATEX/IECEx Certified drainplug (for JBS-100-D-E only)	

PRODUCT SPECIFICATIONS

Dimensions (nominal)

	JBS-100-A JBS-100-L-A	JBS-100-E JBS-100-L-E JBS-100-D-E	JBS-100-EP JBS-100-L-EP
			

Technical details

	JBS-100-A JBS-100-L-A	JBS-100-E JBS-100-L-E JBS-100-D-E	JBS-100-EP JBS-100-L-EP
Heating cable capability	BTV-CR, BTV-CT, QTVR-CT, XTVR-CT, HTV-CT, VPL-CT		
Ingress protection	IP66	IP66	IP66
Entries	1 x ¾"	2 x M25	2 x M25
Ambient temperature range	–55°C to +56°C (JBS-100-A) –40°C to +40°C (JBS-100-L-A)	–55°C to +56°C* (JBS-100-E and JBS-100-D-E) –40°C to +40°C (JBS-100-L-E)	–55°C to +56°C* (JBS-100-EP) –40°C to +40°C (JBS-100-L-EP)
	* Extra conditions for safe use apply at ambient temperatures >40°C. Temperature resistant power cable and metal glands must be used. Please refer to the certificate or installation instructions for full details.		
Max. pipe temperature	Refer to heating cable specification		
Terminals	Spring-type terminals 2 line, 1 ground	Spring-type terminals 1 phase, 1 neutral, 1 earth	Spring-type terminals 1 phase, 1 neutral, 1 earth
Max. conductor size	8 AWG stranded	10 mm^2 stranded, 10 mm^2 solid	10 mm^2 stranded, 10 mm^2 solid
Max. operating voltage	480 Vac*	480 Vac*	480 Vac*
	* JBS-100-L-E, JBS-100-L-EP and JBS-100-L-A are limited to 277 Vac. Extra conditions for safe use apply for voltages higher than 277 Vac. Please refer to the certificate or installation instructions for full details.		
Max. continuous operating current (***)	53 A	53 A	53 A

(***) For pipe temperature >150°C and <260°C and XTVR or HTV heating cables, the maximum operating current shall be reduced to maximum 20 A.

Materials of construction

Enclosure, lid, and stand	Electrostatic charge-resistant glass-filled engineered polymer, black	Electrostatic charge-resistant glass-filled engineered polymer, black	Electrostatic charge-resistant glass-filled engineered polymer, black
Lid screws	Stainless steel	Stainless steel	Stainless steel
Lid gasket	Silicone rubber	Silicone rubber	Silicone rubber
Earth continuity plate	N/A	N/A	Steel, zinc plated, and blue chromated

Optional LED indicator light

Colour	Red	Green	Green
Voltage rating	100-277 Vac	100-277 Vac	100-277 Vac
Power consumption	< 1 W	< 1 W	< 1 W

APPROVALS

For use in ordinary and hazardous area Zone 1 and Zone 2 (Gas), Zone 21 and Zone 22 (Dust) (and Class I Div 2).

Temperature classification

Temperature classification is defined by the complete system.

Product certification

For certifications in other regions (FM, CSA, IEx etc.), please refer to the installation manual.

More details about product certification, approvals and conditions of safe use are available in the installation manual at www.nVent.com/RAYCHEM.

ORDERING INFORMATION**

Power connection

Part Description	JBS-100-A	JBS-100-E	JBS-100-EP
PN (Weight)	085947-000 (2.5 lb)	829939-000 (1.2 kg)	158251-000 (1.3 kg)

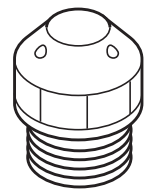
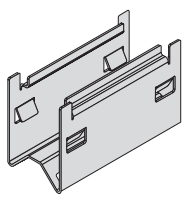
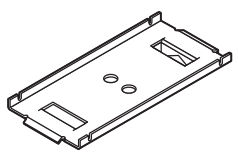
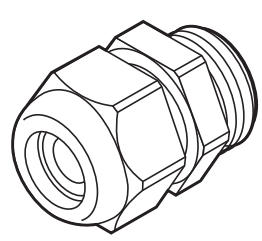
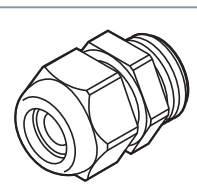
Power connection with light

Part Description	JBS-100-L-A	JBS-100-L-E	JBS-100-L-EP
PN (Weight)	944699-000 (3.5 lb)	054363-000 (1.6 kg)	075249-000 (1.7 kg)

Power connection with drain plug

Part Description		JBS-100-D-E	
PN (Weight)		1244-021057 (1.4 kg)	

Accessories

Conduit Drain ¾"	Prevents condensate from collecting in the box	
Catalog number	JB-DRAIN-PLUG-3/4IN	
Part Number	278621-000	
Weight	0.074 lb / 36 g	
Junction box standoff	For insulation thickness >100 mm & ≤150 mm *	
Catalog number	JBM-100-STANDOFF	
Part Number	P000003408	
Weight	0.279 lb / 135 g	
* Consider extra pipe strap length 6-9" (150-225 mm) for attachment		
Small pipe adapter	Required for stand on pipes ≤ 1"	
Catalog number	JBM-SPA	
Part Number	E90515-000	
Weight	0.408 lb / 185 g (Bag of 5 adaptors)	
Glands for power cables	Hazardous area approved gland for cables 8-15 mm (temperature range –55°C/70°C)	
Catalog number	GL-55-M25	
Part Number	1244-019083	
Weight	0.016 kg	
Glands for power cables	Hazardous area approved gland for cables 8-17.5 mm (temperature range –20°C/70°C)	
Catalog number	GL-36-M25	
Part Number	1244-019082	
Weight	0.016 kg	

(**) Localized versions may exist with limited approvals and different part numbers. Contact your local sales representative.

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

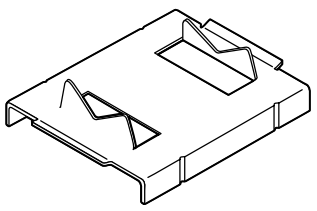
Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
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Our powerful portfolio of brands:
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SMALL PIPE ADAPTORS



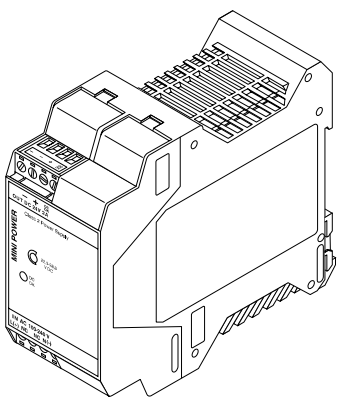
JBS-SPA

Small pipe adaptor required for pipes ≤ 1" (DN25), applicable for JBS-100, E-100, E-100-L
E90515-000 (bag of 5 adaptors) Weight: 0.14 kg

JBM-SPA

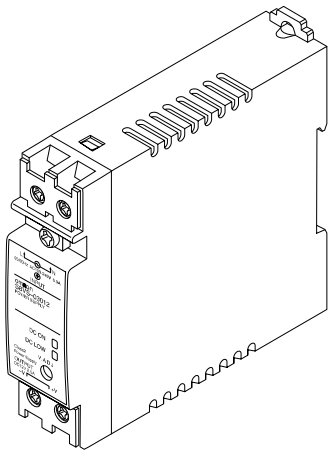
Small pipe adaptor required for pipes ≤ 1" (DN25), applicable for JBM-100, T-100
D55673-000 (bag of 5 adaptors) Weight: 0.40 kg

POWER SUPPLY



MONI-RMC-PS24

24 Vdc stabilized power supply
Wide range input (100 - 240 Vac) power supply to provide
24 Vdc input for MONI- RMC-BASE.
Surface or DIN 35 rail mounted.
PN: 972049-000 Weight: 0.28 kg



MONI-PS12

12 Vdc stabilized power supply
Wide range input (100 - 240 Vac) power supply to provide 12 Vdc input for the
nVent RAYCHEM NGC-30-CRM-E and nVent RAYCHEM NGC-30-CRMS-E cards.
DIN 35 rail mountable.
PN: 1244-001505 Weight: 0.18 kg

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

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Fax +1.713.868.2333
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nVent reserves the right to change specifications without notice.

LABELS AND TAGS

Warning labels indicate the presence of electrical heat-tracing under the insulation of the pipe or other equipment. (min. of 1 label per 5 m of heat-tracing line). Also suitable for stainless steel pipes.



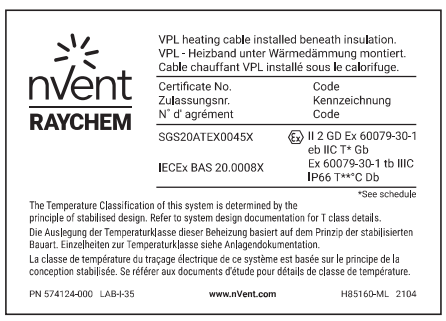
Language	EHT label reference	Product number
Arabian	LAB-ETL-AR	036236-000
Bulgarian	LAB-ETL-BG	1244-002183
Czech	LAB-ETL-CZ	731605-000
Danish	LAB-ETL-DK	C97690-000
Dutch	LAB-ETL-NL	749153-000
English	LAB-I-01	938947-000
Estonian/English	LAB-ETL-EN/EE	1244-001415
Finnish/Swedisch	LAB-ETL-SE/FI	756479-000
French	LAB-I-05	883061-000
German/French/Italian (230V)	LAB-ETL-DE/FR/IT	148648-000
German	LAB-ETL-DE	597779-000
Hungarian	LAB-ETL-HU	623725-000
Italian	LAB-ETL-IT	C97688-000
Kazakh/Russian/English	LAB-ETL-KZ/RU/EN	1244-017393
Latvian	LAB-ETL-LV	841822-000
Lithuanian	LAB-ETL-LT	105300-000
Norwegian	LAB-ETL-NO	C97689-000
Norwegian/English	LAB-ETL-EN/NO	165899-000
Polish	LAB-ETL-PL	258203-000
Portugese	LAB-ETL-PT	945960-000
Romanian	LAB-ETL-RO	902104-000
Russian	LAB-ETL-RU	574738-000
Russian/English	LAB-ETL-EN/RU	1244-001060
Russian/English/Azeri	LAB-ETL-AZ/RU/EN	1244-012283
Russian/English/Uzbek	LAB-ETL-UZ/RU/EN	1244-022143
Spanish	LAB-ETL-ES	C97686-000
Swedish	LAB-ETL-SE	691703-000
Turkish/English	LAB-ETL-EN/TR	1244-014860



Language	Component label reference	Product number
English	LAB-I-02	774499-000
Russian/English	LAB-I-02/E/R LAB-ENDSEAL	1244-001059 146909-000
English	ETL-END-SEAL LAB-SPLICE	103405-000 007063-000

STABILIZED DESIGN LABELS

If compliance to the T-class or A.I.T. cannot be achieved by the unconditional T-rating of the heating cable, the hazardous area regulations require that cable sheath temperature is determined by the rules of stabilized design as per EN 60079-30 and the heating circuit is marked accordingly. The following labels are available for this purpose (min.1 label per heating circuit)



LAB-I-35

Stabilized design sticker. To be installed when power-limiting VPL heating cables are used in hazardous areas.

PN: 574124-000 Weight: 0,0015 kg

LAB-EX-XTV-KTV

Aluminum tag plate for XTV and KTV self-regulating heating cables. To be installed if T-class compliance was proven by stabilized design and not by unconditional T-rating.

PN: 1244-011961 Weight: 0.04 kg

LAB-EX-FxT

Aluminum tag plate. To be installed when parallel constant wattage FMT or FHT heating cables are used in hazardous areas.

PN: 1244-006953 Weight: 0.04 kg

PI-LABEL-EX

Aluminum tag plate. To be installed when series polymer insulated XPI & XPI-S heating cables are used in hazardous areas.

PN: 1244-006940 Weight: 0.04 kg

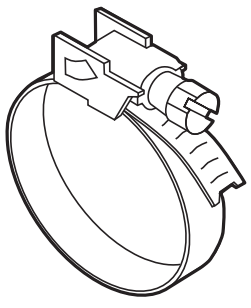
PI-LABEL-NH

Aluminum tag plate. To be installed when series polymer insulated XPI & XPI-S heating cables are used non hazardous areas.
This label is not mandatory but highly recommended for future reference.

PN: 1244-006941 Weight: 0.04 kg

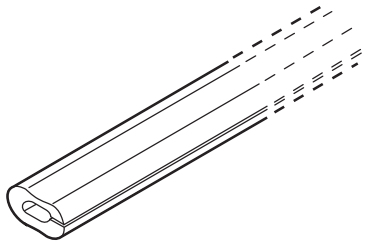
PIPE STRAPS

Metal straps for pipe mounting of integrated power connections, above the insulation tees and end seals as well as support brackets and the tubular insulation entry. Banding: stainless steel



Pipe outer diameter in mm	(inches)	Pipe strap	PN (Weight)
20 - 47	(1/2" - 11/4")	PSE-047	700333-000 (0.017 kg)
40 - 90	(11/4" - 3")	PSE-090	976935-000 (0.024 kg)
60 - 288	(2" - 10")	PSE-280	664775-000 (0.052 kg)
60 - 540	(2" - 20")	PSE-540	364489-000 (0.052 kg)

PIPE STRAPS



G-02

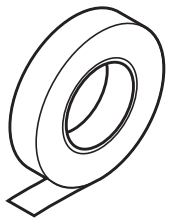
Silicone grommet that protects the heating cable at sharp edges such as endplates of insulation cladding, flanges etc. It can be cut-to-length and resists temperatures up to 215°C.

Sold in pieces of 1 m.

PN: 412549-000 Weight: 0.37 kg/m)

FIXING MATERIALS

Self-adhesive tape for fixing the heating cables on pipes or other equipment.



GT-66

Glass cloth tape for attaching heating cable to pipe.
Not for stainless steel pipes or for installation temperatures below 5°C.

20 m per roll, 12 mm width.

PN: C77220-000 Weight: 0.053 kg

GS-54

Glass cloth tape for attaching heating cable to pipe.

For stainless steel pipes or for any installation below 5°C.

16.5 m per roll, 12 mm width.

PN: C77221-000 Weight: 0.048 kg

ITEM	Tag	ETB-200N1-16-L3-01	: HEAT TRACING - PROCESS LINES - FEEDER 3 (DM-001)			Dwg	123A90-DDL-EL-DL-20140
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10004603		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX31 Junction and Marshalling Box

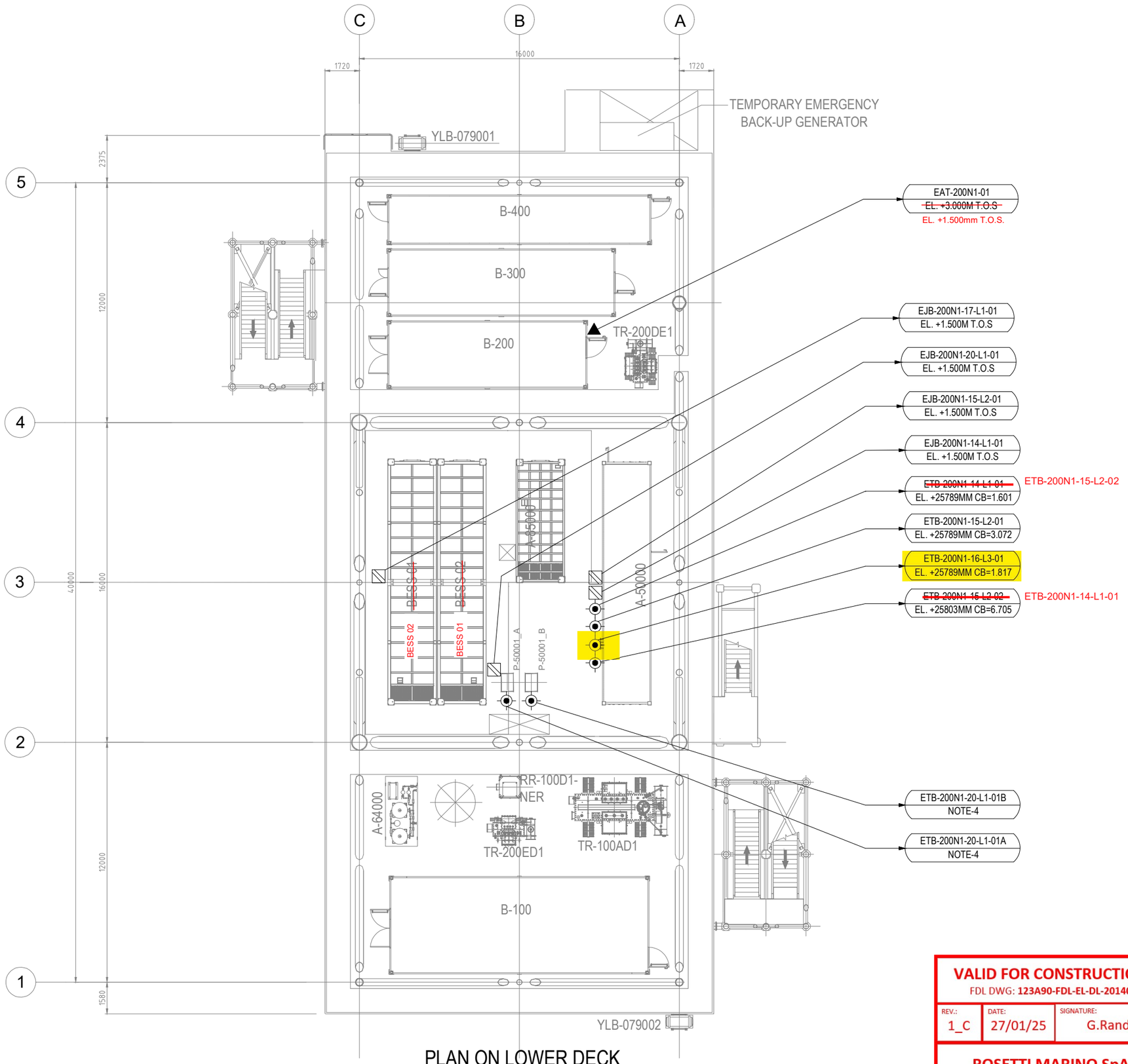
1	Check box is de-energized and safe.	OK
2	Check box is correctly mounted and easily accessible.	OK
3	Check box tagging against drawing.	OK
4	Check nameplate data is correct.	PL
5	Check flameproof joints are clean and greased with approved lubricants (if required).	NA
6	Check for damaging gaskets.	OK
7	Check all bolts are fitted and correcly tighted .	OK
8	Check all unused entries are suitably plugged.	OK
9	Check earthing and bonding against drawings.	PL
10	Check terminal blocks segregation barriers are fitted where necessary.	NA
11	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

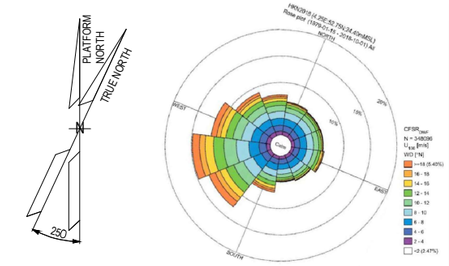
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-08	2025-02-25	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-08T09:43:33.393Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-25T12:35:36.811Z	

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

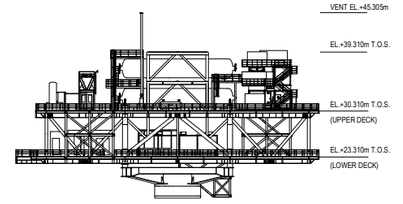
LEGEND

- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-EL-DL-20140
REV.: 1_C | DATE: 27/01/25 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

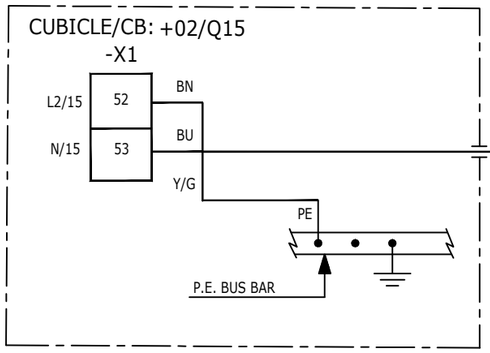
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 1of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

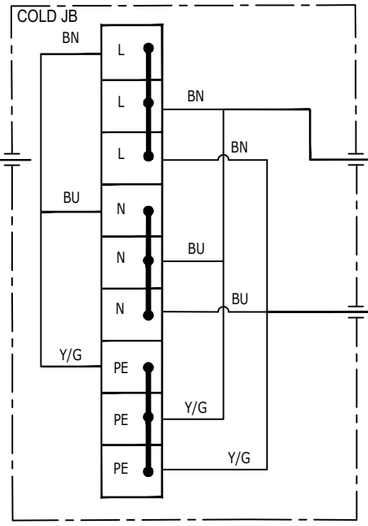
FROM	TO

DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1



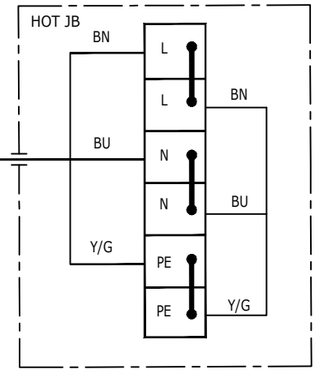
P-EJB-200N1-15-L2-01
3G6 mm²

DESCRIPTION: TRACE HEATING - PROCESS LINES
- FEEDER 2 (CI LINES)
TAG NUMBER: EJB-200N1-15-L2-01



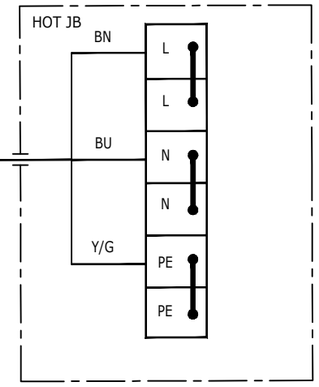
P-ETB-200N1-15-L2-01
3G6 mm²

TAG NUMBER: ETB-200N1-15-L2-01
FOR PIPE LINE: CI-029

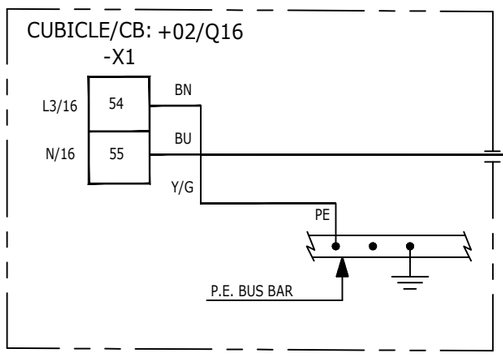


P-ETB-200N1-15-L2-02
3G6 mm²

TAG NUMBER: ETB-200N1-15-L2-02
FOR PIPE LINE: CI-043

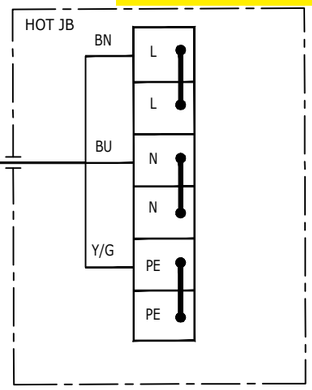


DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1



P-ETB-200N1-16-L3-01
3G6 mm²

DESCRIPTION: TRACE HEATING
PROCESS LINES - FEEDER 3 (DM 001)
TAG NUMBER: ETB-200N1-16-L3-01



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_K	12/02/25	G.Randi

ROSETTI MARINO SpA

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ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
TRACE HEATING PROCESS LINES

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

SCALE : 1:X

A3

DRAWING NO. 123A90-DDL-EL-DG-20149

SHEET 049

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

CAD FILENAME: PIT240024_DD01_1001_001_02.dwg

HEAT TRACING DATA

HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	PIPE LENGTH (m)	HEATER LENGTH (m)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W/m)	POWER OUTPUT (W/m)	SHEATH TEMP. (°C)
EHT-1001-A	PIPING	3BTV2-CT	17.6	22.0	1.8	271	230	3.9	10.7	85
		TOTALS	17.6	22.0	1.8	271				

HEATER ADDER TABLE

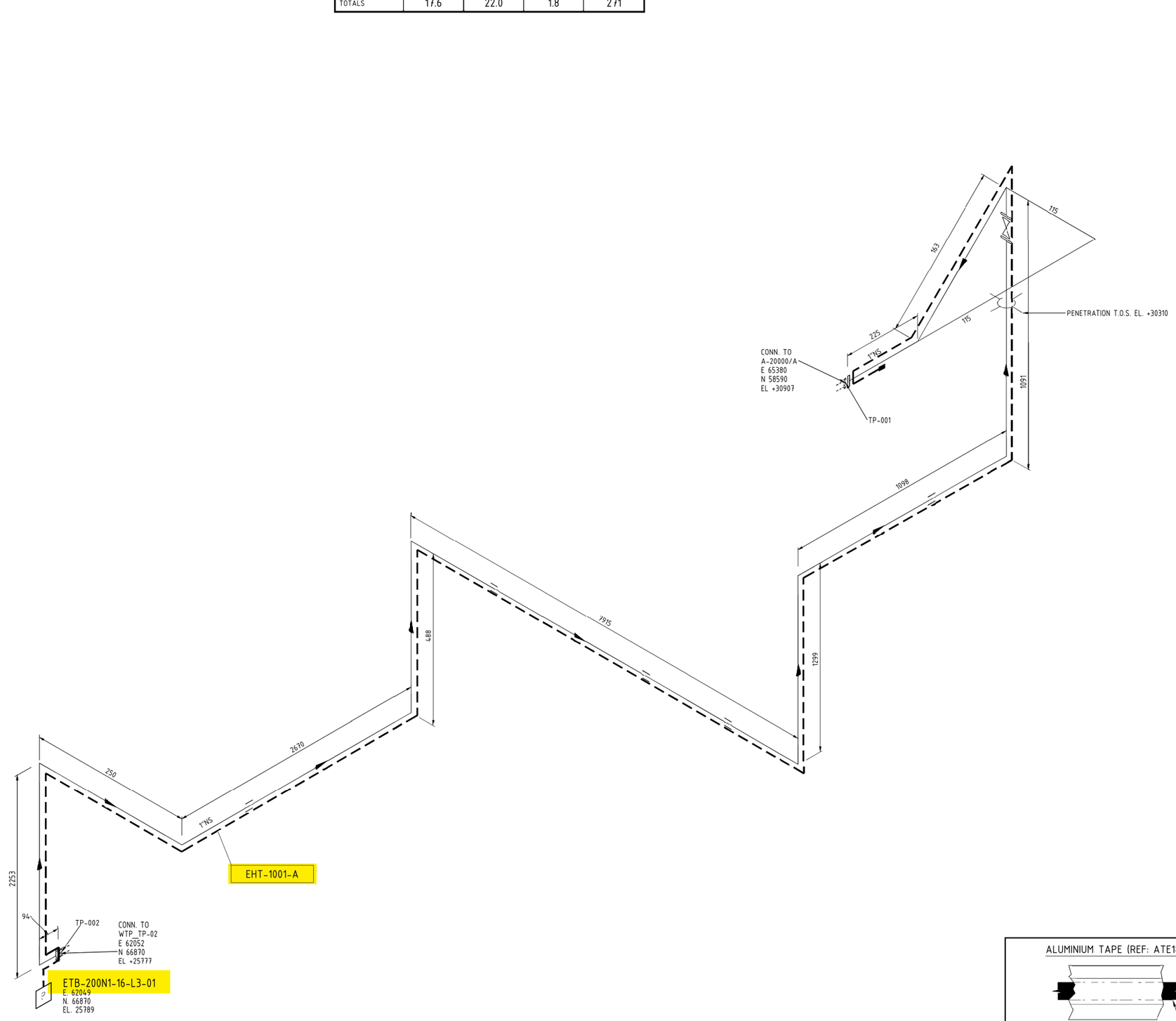
PIPE SIZE (Ins)	TYPE	QTY	ALLOWANCE PER ITEM (m)	TOTAL ALLOWANCE (m)
1	Typical Flange (fixed adder)	2	0.46	0.92
1	Typical Metal Valve	1	0.82	0.82
1	Typical Pipe Support	5	0.15	0.75

DESIGN PARAMETERS

CIRCUIT NUMBER	1001	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	22°C	INSULATION TYPE	RW/MF 1.2015
MAX. EXPOSURE TEMP.	22°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	100°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

COMPONENT BILL OF MATERIALS

CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	22	m	Raychem Self-Regulating Heating Cable
JBS-100-E	1	each	Single entry power connection, EP, ATEX
PSE-090	1	each	Pipe Strap for 1.1/4" to 3" (40-90mm)
GS-54	0.9	each	Glass Tape (16m/roll), suited for SS pipes
LAB-I-01	7	each	Warning Label - English
E-20	1	each	Heat shrink end seal, ATEX (BTV, QTVR)
JBS-SPA	0.2	bag	Small Pipe Adapter for E-100, JBS-100, and JS-100



ALUMINIUM TAPE (REF: ATE180)

SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

LINE NUMBERS	REFERENCE DRAWINGS / DOCUMENTS
1"-DM-001-01SS-E	123A90-DDL-PP-DI-71000_001

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.
4. HEATING CABLE ALLOWANCES PROVIDED IN THE 'EHT ADDER TABLE' FOR FLANGES AND VALVES ARE IN ADDITION TO THEIR LINEAR LENGTHS.

CROSSWIND

ROSETTI MARINO

nVent RAYCHEM TRACER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
02	20/01/2025	ISSUED FOR REVIEW	ADU	AMI	GPI
01	25/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.

DOC CODE

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING ISOMETRIC

SCALE: N/A

DRAWING NO.: 1724001647-EL-DD-00004

SHEET NO.: 3/10

REVISION: 02

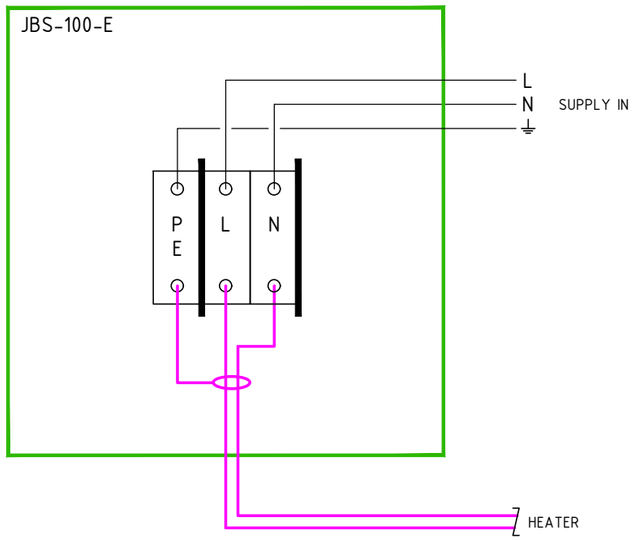
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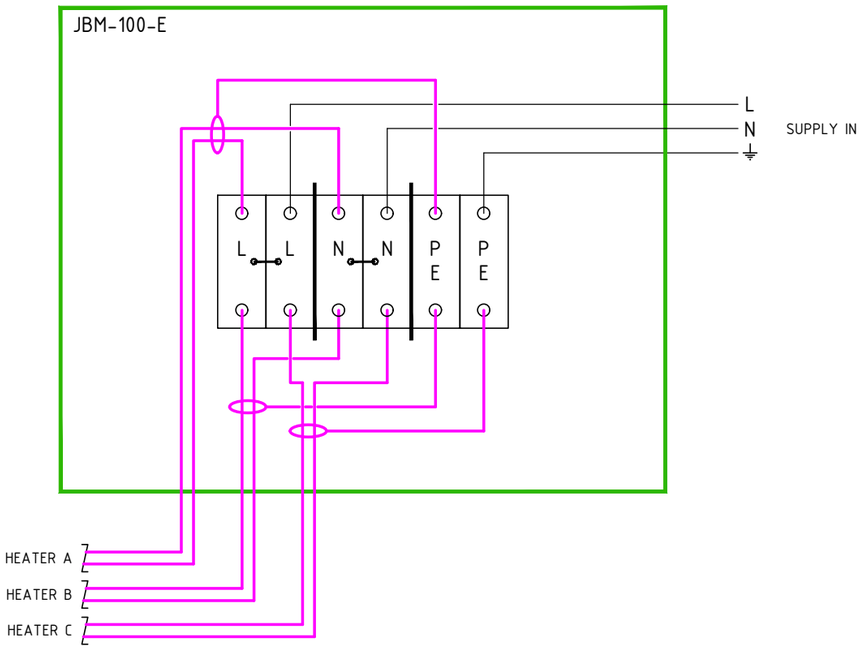
GENERAL INFORMATION:

1. JBS-100-E IS DESIGNED TO CONNECT POWER TO ONE BTV, QTVR, XTV, KTV, HTV OR VPL EHT CABLE.
2. THIS KIT INTEGRATES THE FUNCTIONS OF BOTH CONNECTION KITS AND INSULATION ENTRIES.
3. THE STAND CONNECTED TO THE BOTTOM OF THE BOX PROTECTS THE HEATING CABLE AND ALLOWS FOR UP TO 100mm (4") THERMAL INSULATION.

TECHNICAL BRIEF:

- 2 x M25 THREADED ENTRIES
- 1 x M25 STOPPING PLUGS
- 1 x M25 POWER CABLE GLAND





REV.	DATE	DESCRIPTION	BY	CHK	APP
--	--	--	--	--	--
--	--	--	--	--	--
02	20/01/2025	APPROVED FOR CONSTRUCTION	ADU	AMI	GPI
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	08/03/2024	ISSUED FOR INFORMATION	LJB	E-C	ZS

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nVent.com

TITLE
TYPICAL CONNECTION OF A JBS-100-EP
SINGLE ENTRY JUNCTION BOX

PREPARED BY	-.---	LANG.	SCALE
LEAD ENGINEER	-.---	en	N/A
PROJECT NO.	DRAWING NO.	SHEET	REVISION
PIT240024	1724001647-EL-DG-00005	3/3	02

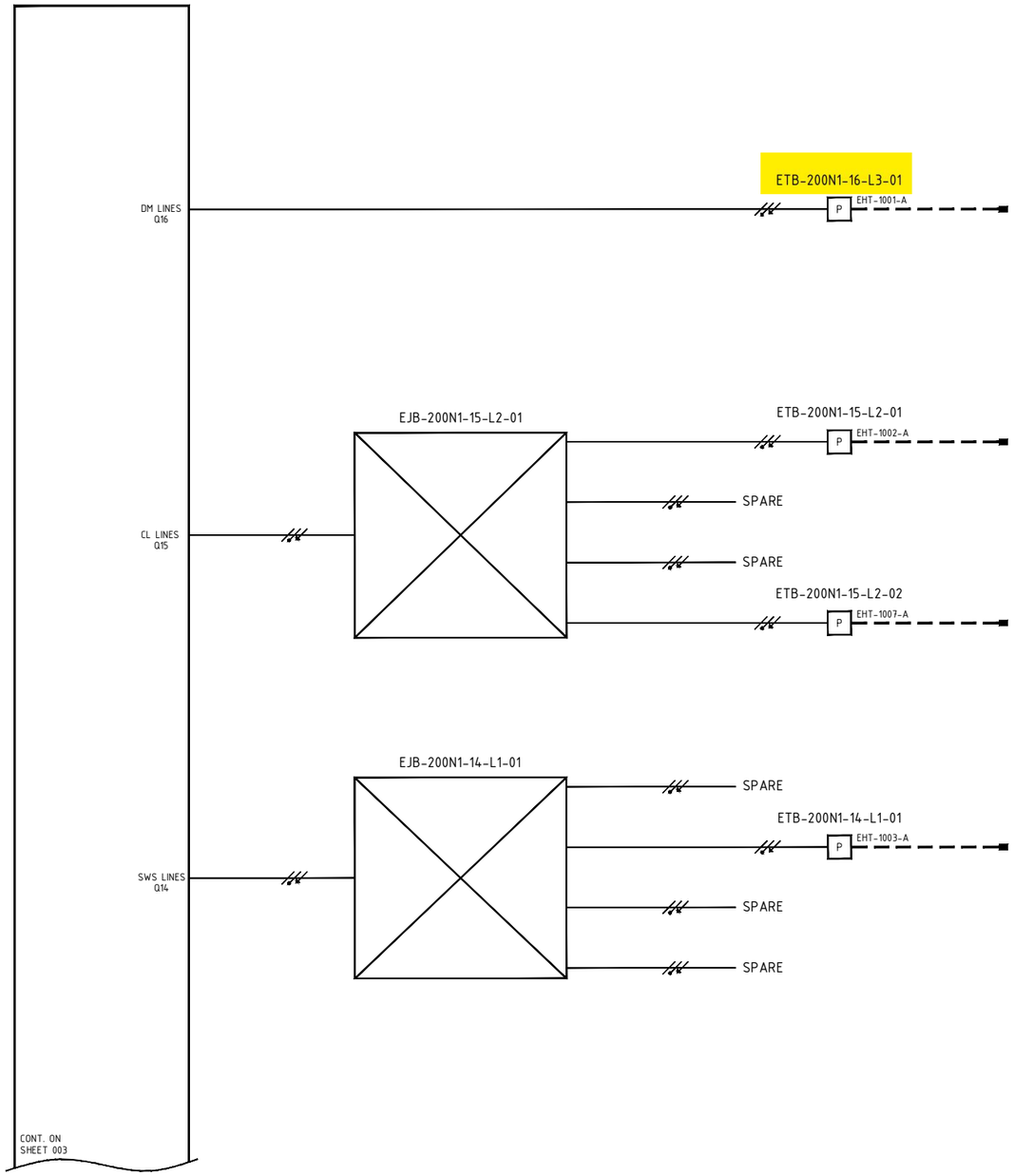
A3

CAD FILENAME: 1724001647-EL-DG-00006 Rev 03.dwg

CONTROL PANEL REF.:

DP-200N1

MARSHALLING BOX



CIRCUIT NO.	1001	1002, 1007	1003	
C.B. RATING (A)	32	32	32	
START-UP I (A)	1.8	4.7	6.7	
LOAD (W)	271	698	1002	
SERVICE	WINTERIZING	WINTERIZING	WINTERIZING	
NOTES FOR THE CIRCUIT	--	--	--	

GENERAL NOTES

CROSSWIND

ROSETTI MARINO

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
03	20/01/2025	ACCEPTED FOR CONSTRUCTION	ADU	AMI	GPI
02	29/11/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	02/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING
ELECTRICAL BLOCK DIAGRAM

SCALE: N/A

DRAWING NO.: 1724001647-EL-DG-00006

SHEET NO.: 3/4

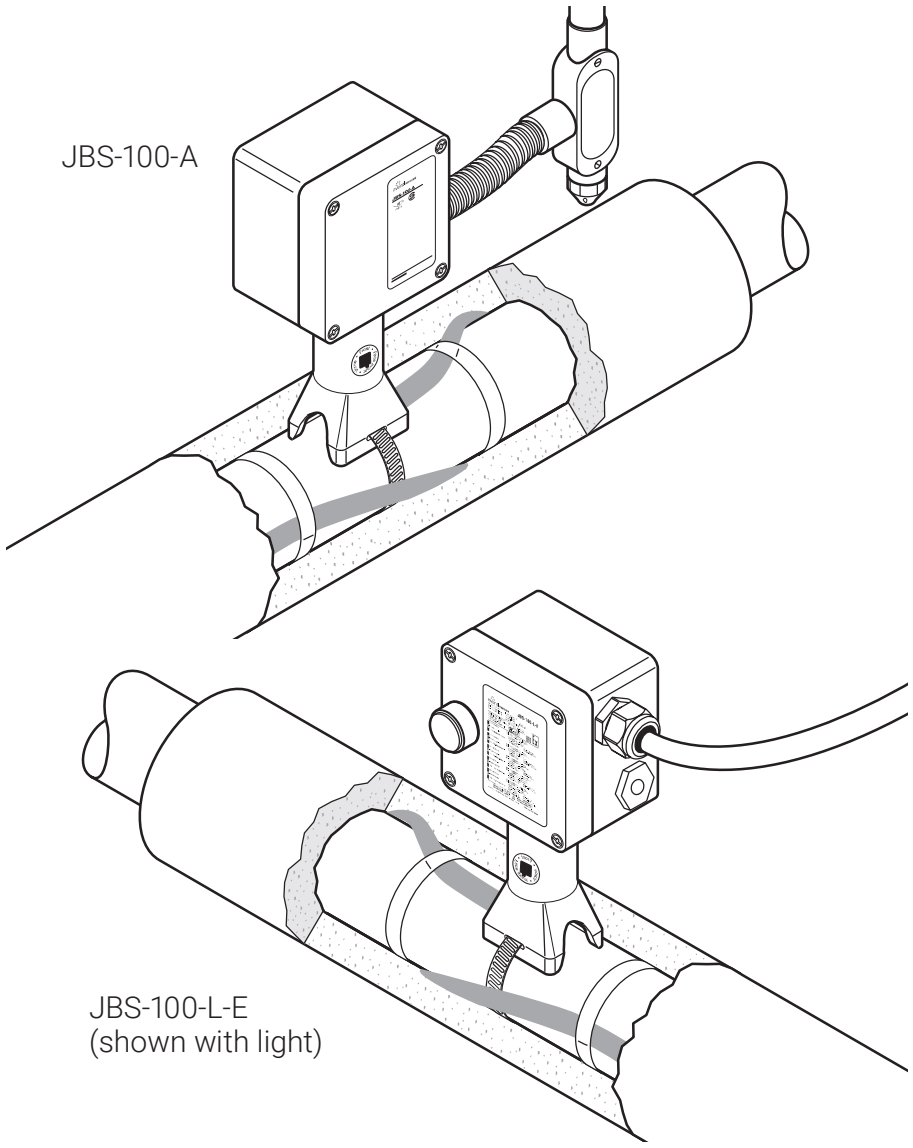
REVISION: 03

JBS-100

CONNECT AND PROTECT

Single-Entry power connection with junction box

PRODUCT OVERVIEW



The nVent RAYCHEM JBS-100 kit is designed to connect power to a single nVent RAYCHEM BTV, QTVR, XTVR, HTV or VPL industrial parallel heating cable.

The JBS-100 integrates the functions of both connection kits and insulation entries. The rugged stand protects the heating cable and allows for up to 100 mm (4") of thermal insulation.

The core sealing boot does not require a heat gun or torch for the installation (no hot work permit necessary). The non-curing sealant (silicone free) in the boot allows easy installation and facilitates maintenance.

Spring-type terminals provide fast installation and safe, reliable, maintenance-free operation. This connection kit significantly reduces installation time. The kit is offered in three basic versions, customised for local installation practices. All kits are also available as a lighted version. These include a unique light module with a superbright LED that simply plugs into the terminals, and a lens in the lid. This provides indication that power is available in the box. There is also a connection kit with drain plug available.

Description

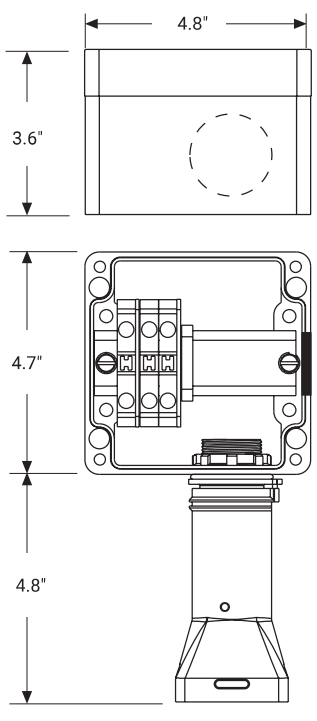
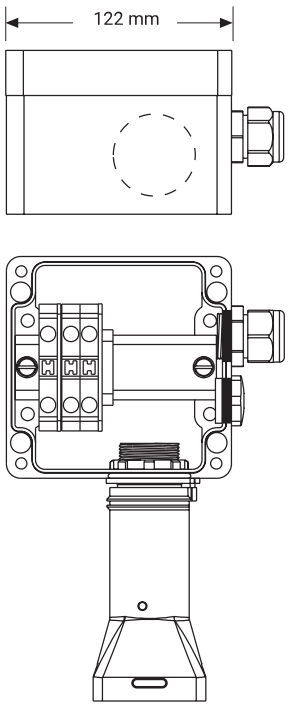
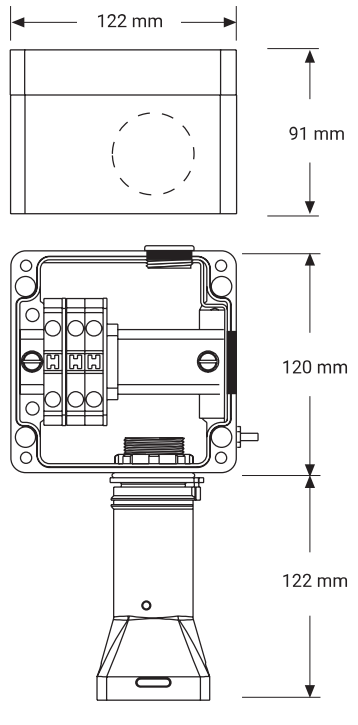
JBS-100-A JBS-100-L-A	JBS-100-E JBS-100-L-E JBS-100-D-E	JBS-100-EP JBS-100-L-EP
This connection system is certified for use in North America and has one through-hole for use with ¾" conduit.	This connection system is certified for use in IEC regions and provides two M25 threaded entries, one stopping plug, and one plastic power cable gland.	This connection system is certified for use in IEC regions and provides two M25 threaded entries, an earthing plate, and an external earthing stud. It is designed for use with armoured cables.

Kit contents

JBS-100-A JBS-100-L-A	JBS-100-E JBS-100-L-E JBS-100-D-E	JBS-100-EP JBS-100-L-EP
1 junction box with terminals	1 junction box with terminals	1 junction box with terminals, earth plate, and stud
1 light module (for -L only)	1 light module (for -L only)	1 light module (for -L only)
1 stand	1 stand	1 stand
1 core sealer	1 core sealer	1 core sealer
1 green/yellow earthing sleeve	1 green/yellow earthing sleeve	1 green/yellow earthing sleeve
1 polywater sachet	1 M25 gland for power cable 8-15 mm in diameter (temperature range –55°C / 70°C)	1 M25 stopping plug
1 cable tie	1 M25 stopping plug	1 polywater sachet
	1 polywater sachet	1 cable tie
	1 cable tie	
	1 ATEX/IECEx Certified drainplug (for JBS-100-D-E only)	

PRODUCT SPECIFICATIONS

Dimensions (nominal)

	JBS-100-A JBS-100-L-A	JBS-100-E JBS-100-L-E JBS-100-D-E	JBS-100-EP JBS-100-L-EP
			

Technical details

	JBS-100-A JBS-100-L-A	JBS-100-E JBS-100-L-E JBS-100-D-E	JBS-100-EP JBS-100-L-EP
Heating cable capability	BTV-CR, BTV-CT, QTVR-CT, XTVR-CT, HTV-CT, VPL-CT		
Ingress protection	IP66	IP66	IP66
Entries	1 x ¾"	2 x M25	2 x M25
Ambient temperature range	–55°C to +56°C (JBS-100-A) –40°C to +40°C (JBS-100-L-A)	–55°C to +56°C* (JBS-100-E and JBS-100-D-E) –40°C to +40°C (JBS-100-L-E)	–55°C to +56°C* (JBS-100-EP) –40°C to +40°C (JBS-100-L-EP)
	* Extra conditions for safe use apply at ambient temperatures >40°C. Temperature resistant power cable and metal glands must be used. Please refer to the certificate or installation instructions for full details.		
Max. pipe temperature	Refer to heating cable specification		
Terminals	Spring-type terminals 2 line, 1 ground	Spring-type terminals 1 phase, 1 neutral, 1 earth	Spring-type terminals 1 phase, 1 neutral, 1 earth
Max. conductor size	8 AWG stranded	10 mm^2 stranded, 10 mm^2 solid	10 mm^2 stranded, 10 mm^2 solid
Max. operating voltage	480 Vac*	480 Vac*	480 Vac*
	* JBS-100-L-E, JBS-100-L-EP and JBS-100-L-A are limited to 277 Vac. Extra conditions for safe use apply for voltages higher than 277 Vac. Please refer to the certificate or installation instructions for full details.		
Max. continuous operating current (***)	53 A	53 A	53 A

(***) For pipe temperature >150°C and <260°C and XTVR or HTV heating cables, the maximum operating current shall be reduced to maximum 20 A.

Materials of construction

Enclosure, lid, and stand	Electrostatic charge-resistant glass-filled engineered polymer, black	Electrostatic charge-resistant glass-filled engineered polymer, black	Electrostatic charge-resistant glass-filled engineered polymer, black
Lid screws	Stainless steel	Stainless steel	Stainless steel
Lid gasket	Silicone rubber	Silicone rubber	Silicone rubber
Earth continuity plate	N/A	N/A	Steel, zinc plated, and blue chromated

Optional LED indicator light

Colour	Red	Green	Green
Voltage rating	100-277 Vac	100-277 Vac	100-277 Vac
Power consumption	< 1 W	< 1 W	< 1 W

APPROVALS

For use in ordinary and hazardous area Zone 1 and Zone 2 (Gas), Zone 21 and Zone 22 (Dust) (and Class I Div 2).

Temperature classification

Temperature classification is defined by the complete system.

Product certification

For certifications in other regions (FM, CSA, IEx etc.), please refer to the installation manual.

More details about product certification, approvals and conditions of safe use are available in the installation manual at www.nVent.com/RAYCHEM.

ORDERING INFORMATION**

Power connection

Part Description	JBS-100-A	JBS-100-E	JBS-100-EP
PN (Weight)	085947-000 (2.5 lb)	829939-000 (1.2 kg)	158251-000 (1.3 kg)

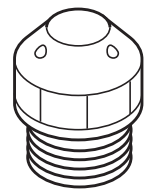
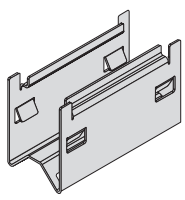
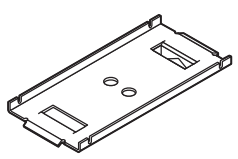
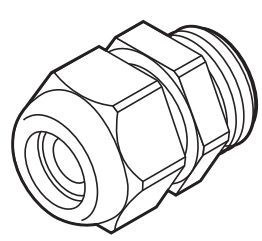
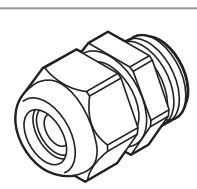
Power connection with light

Part Description	JBS-100-L-A	JBS-100-L-E	JBS-100-L-EP
PN (Weight)	944699-000 (3.5 lb)	054363-000 (1.6 kg)	075249-000 (1.7 kg)

Power connection with drain plug

Part Description		JBS-100-D-E	
PN (Weight)		1244-021057 (1.4 kg)	

Accessories

Conduit Drain ¾"	Prevents condensate from collecting in the box	
Catalog number	JB-DRAIN-PLUG-3/4IN	
Part Number	278621-000	
Weight	0.074 lb / 36 g	
Junction box standoff	For insulation thickness >100 mm & ≤150 mm *	
Catalog number	JBM-100-STANDOFF	
Part Number	P000003408	
Weight	0.279 lb / 135 g	
* Consider extra pipe strap length 6-9" (150-225 mm) for attachment		
Small pipe adapter	Required for stand on pipes ≤ 1"	
Catalog number	JBM-SPA	
Part Number	E90515-000	
Weight	0.408 lb / 185 g (Bag of 5 adaptors)	
Glands for power cables	Hazardous area approved gland for cables 8-15 mm (temperature range –55°C/70°C)	
Catalog number	GL-55-M25	
Part Number	1244-019083	
Weight	0.016 kg	
Glands for power cables	Hazardous area approved gland for cables 8-17.5 mm (temperature range –20°C/70°C)	
Catalog number	GL-36-M25	
Part Number	1244-019082	
Weight	0.016 kg	

(**) Localized versions may exist with limited approvals and different part numbers. Contact your local sales representative.

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

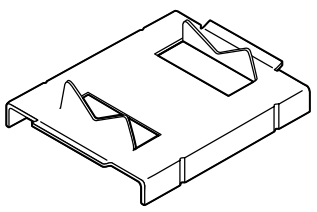
Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com

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CADDY ERICO HOFFMAN RAYCHEM SCHROFF TRACER

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SMALL PIPE ADAPTORS



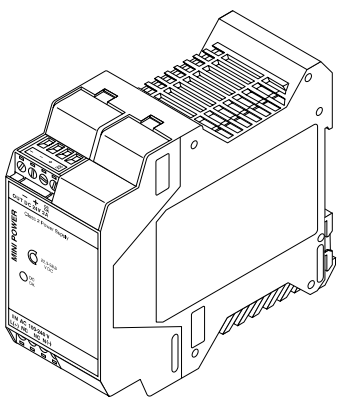
JBS-SPA

Small pipe adaptor required for pipes ≤ 1" (DN25), applicable for JBS-100, E-100, E-100-L
E90515-000 (bag of 5 adaptors) Weight: 0.14 kg

JBM-SPA

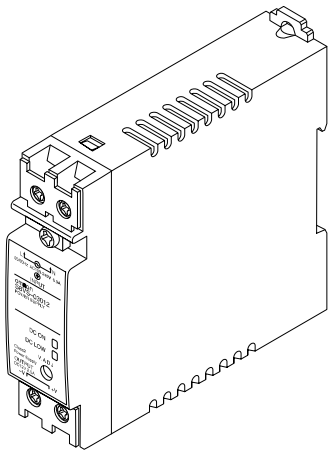
Small pipe adaptor required for pipes ≤ 1" (DN25), applicable for JBM-100, T-100
D55673-000 (bag of 5 adaptors) Weight: 0.40 kg

POWER SUPPLY



MONI-RMC-PS24

24 Vdc stabilized power supply
Wide range input (100 - 240 Vac) power supply to provide
24 Vdc input for MONI- RMC-BASE.
Surface or DIN 35 rail mounted.
PN: 972049-000 Weight: 0.28 kg



MONI-PS12

12 Vdc stabilized power supply
Wide range input (100 - 240 Vac) power supply to provide 12 Vdc input for the nVent RAYCHEM NGC-30-CRM-E and nVent RAYCHEM NGC-30-CRMS-E cards.
DIN 35 rail mountable.
PN: 1244-001505 Weight: 0.18 kg

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

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Fax +1.713.868.2333
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LABELS AND TAGS

Warning labels indicate the presence of electrical heat-tracing under the insulation of the pipe or other equipment. (min. of 1 label per 5 m of heat-tracing line). Also suitable for stainless steel pipes.



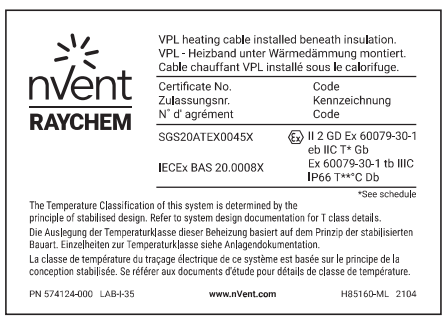
Language	EHT label reference	Product number
Arabian	LAB-ETL-AR	036236-000
Bulgarian	LAB-ETL-BG	1244-002183
Czech	LAB-ETL-CZ	731605-000
Danish	LAB-ETL-DK	C97690-000
Dutch	LAB-ETL-NL	749153-000
English	LAB-I-01	938947-000
Estonian/English	LAB-ETL-EN/EE	1244-001415
Finnish/Swedisch	LAB-ETL-SE/FI	756479-000
French	LAB-I-05	883061-000
German/French/Italian (230V)	LAB-ETL-DE/FR/IT	148648-000
German	LAB-ETL-DE	597779-000
Hungarian	LAB-ETL-HU	623725-000
Italian	LAB-ETL-IT	C97688-000
Kazakh/Russian/English	LAB-ETL-KZ/RU/EN	1244-017393
Latvian	LAB-ETL-LV	841822-000
Lithuanian	LAB-ETL-LT	105300-000
Norwegian	LAB-ETL-NO	C97689-000
Norwegian/English	LAB-ETL-EN/NO	165899-000
Polish	LAB-ETL-PL	258203-000
Portugese	LAB-ETL-PT	945960-000
Romanian	LAB-ETL-RO	902104-000
Russian	LAB-ETL-RU	574738-000
Russian/English	LAB-ETL-EN/RU	1244-001060
Russian/English/Azeri	LAB-ETL-AZ/RU/EN	1244-012283
Russian/English/Uzbek	LAB-ETL-UZ/RU/EN	1244-022143
Spanish	LAB-ETL-ES	C97686-000
Swedish	LAB-ETL-SE	691703-000
Turkish/English	LAB-ETL-EN/TR	1244-014860



Language	Component label reference	Product number
English	LAB-I-02	774499-000
Russian/English	LAB-I-02/E/R LAB-ENDSEAL	1244-001059 146909-000
English	ETL-END-SEAL LAB-SPLICE	103405-000 007063-000

STABILIZED DESIGN LABELS

If compliance to the T-class or A.I.T. cannot be achieved by the unconditional T-rating of the heating cable, the hazardous area regulations require that cable sheath temperature is determined by the rules of stabilized design as per EN 60079-30 and the heating circuit is marked accordingly. The following labels are available for this purpose (min.1 label per heating circuit)



LAB-I-35

Stabilized design sticker. To be installed when power-limiting VPL heating cables are used in hazardous areas.

PN: 574124-000 Weight: 0,0015 kg

LAB-EX-XTV-KTV

Aluminum tag plate for XTV and KTV self-regulating heating cables. To be installed if T-class compliance was proven by stabilized design and not by unconditional T-rating.

PN: 1244-011961 Weight: 0.04 kg

LAB-EX-FxT

Aluminum tag plate. To be installed when parallel constant wattage FMT or FHT heating cables are used in hazardous areas.

PN: 1244-006953 Weight: 0.04 kg

PI-LABEL-EX

Aluminum tag plate. To be installed when series polymer insulated XPI & XPI-S heating cables are used in hazardous areas.

PN: 1244-006940 Weight: 0.04 kg

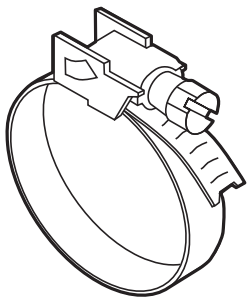
PI-LABEL-NH

Aluminum tag plate. To be installed when series polymer insulated XPI & XPI-S heating cables are used non hazardous areas.
This label is not mandatory but highly recommended for future reference.

PN: 1244-006941 Weight: 0.04 kg

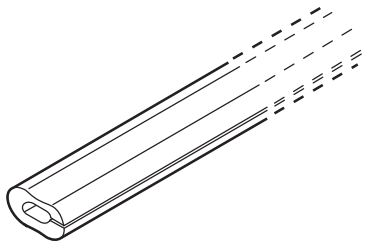
PIPE STRAPS

Metal straps for pipe mounting of integrated power connections, above the insulation tees and end seals as well as support brackets and the tubular insulation entry. Banding: stainless steel



Pipe outer diameter in mm	(inches)	Pipe strap	PN (Weight)
20 - 47	(1/2" - 11/4")	PSE-047	700333-000 (0.017 kg)
40 - 90	(11/4" - 3")	PSE-090	976935-000 (0.024 kg)
60 - 288	(2" - 10")	PSE-280	664775-000 (0.052 kg)
60 - 540	(2" - 20")	PSE-540	364489-000 (0.052 kg)

PIPE STRAPS



G-02

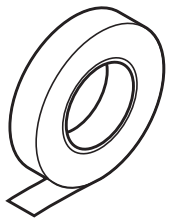
Silicone grommet that protects the heating cable at sharp edges such as endplates of insulation cladding, flanges etc. It can be cut-to-length and resists temperatures up to 215°C.

Sold in pieces of 1 m.

PN: 412549-000 Weight: 0.37 kg/m)

FIXING MATERIALS

Self-adhesive tape for fixing the heating cables on pipes or other equipment.



GT-66

Glass cloth tape for attaching heating cable to pipe.
Not for stainless steel pipes or for installation temperatures below 5°C.

20 m per roll, 12 mm width.

PN: C77220-000 Weight: 0.053 kg

GS-54

Glass cloth tape for attaching heating cable to pipe.

For stainless steel pipes or for any installation below 5°C.

16.5 m per roll, 12 mm width.

PN: C77221-000 Weight: 0.048 kg

ITEM	Tag	ETB-200N1-17-L1-01	: HEAT TRACING - INSTRUMENT - 43-LT-003 Hot JB			Dwg	123A90-DDL-EL-DL-20140
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10004604		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX31 Junction and Marshalling Box

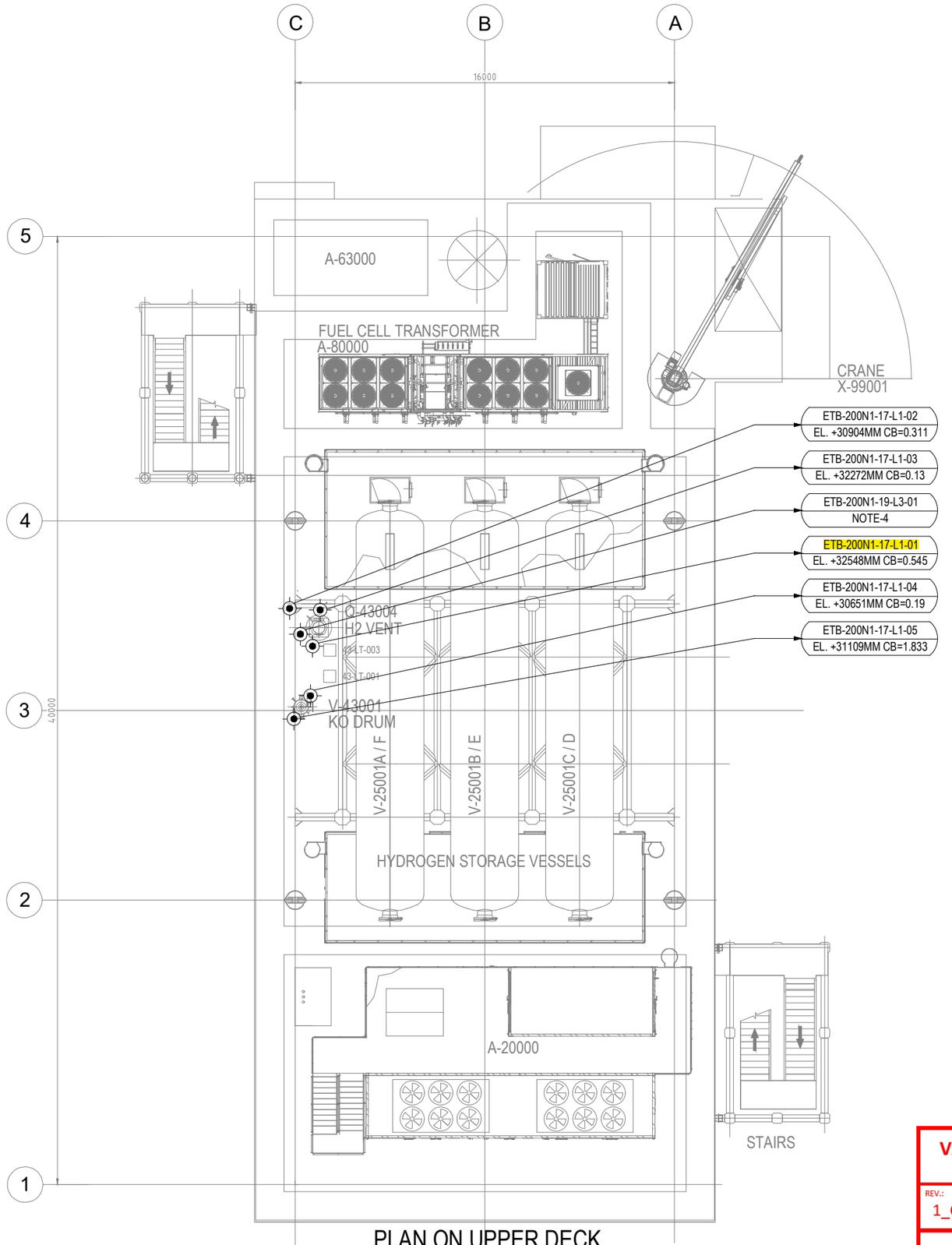
1	Check box is de-energized and safe.	OK
2	Check box is correctly mounted and easily accessible.	OK
3	Check box tagging against drawing.	OK
4	Check nameplate data is correct.	OK
5	Check flameproof joints are clean and greased with approved lubricants (if required).	NA
6	Check for damaging gaskets.	OK
7	Check all bolts are fitted and correcly tighted .	OK
8	Check all unused entries are suitably plugged.	OK
9	Check earthing and bonding against drawings.	OK
10	Check terminal blocks segregation barriers are fitted where necessary.	NA
11	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

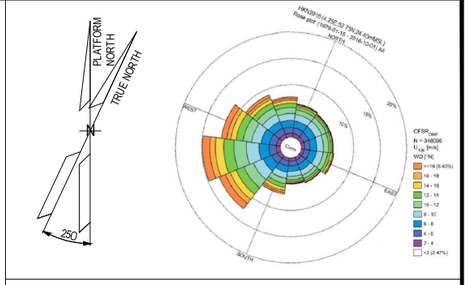
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-08	2025-02-20	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-08T09:43:49.655Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-20T13:53:21.559Z	

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

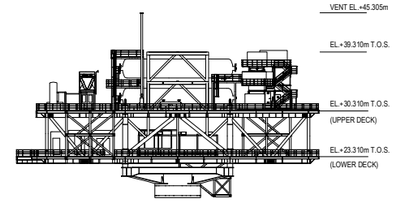
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_C	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 2of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

FROM	TO

DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1

CUBICLE/CB: +03/Q17

-X1

L1/17 56 BN
N/17 57 BU
Y/G
PE
P.E. BUS BAR

P-EJB-200N1-17-L1-01
3G6 mm²

DESCRIPTION: TRACE HEATING - PROCESS LINES - FEEDER 4 (WW LINES & LT)
TAG NUMBER: EJB-200N1-17-L1-01

COLD JB

BN L BN L BN L BN L
BU N BU N BU N BU N
Y/G PE Y/G PE Y/G PE Y/G PE

P-ETB-200N1-17-L1-01
3G6 mm²

DESCRIPTION: TRACE HEATING INSTRUMENT - 43-LT-003
TAG NUMBER: ETB-200N1-17-L1-01

HOT JB
BN L L BN
BU N N BU
Y/G PE PE Y/G

P-ETB-200N1-17-L1-02
3G6 mm²

DESCRIPTION: TRACE HEATING PROCESS LINE (WW 202)##
TAG NUMBER: ETB-200N1-17-L1-02

HOT JB
BN L L BN
BU N N BU
Y/G PE PE Y/G

P-ETB-200N1-17-L1-03
3G6 mm²

DESCRIPTION: TRACE HEATING PROCESS LINE (WW 260)
TAG NUMBER: ETB-200N1-17-L1-03

HOT JB
BN L L
BU N N
Y/G PE PE

DESCRIPTION: TRACE HEATING PROCESS LINE (WW 259) (V-43001 / 43-LT-001)
TAG NUMBER: ETB-200N1-17-L1-04

HOT JB
BN L L BN
BU N N BU
Y/G PE PE Y/G

P-ETB-200N1-17-L1-04
3G6 mm²

- PIPE LINE WW-202 TRACED FROM NOZZLE N3 UPTO SWAN NECK

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_K	12/02/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
TRACE HEATING PROCESS LINES

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 050 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

CAD FILENAME: PIT240024_D003_2002_001_03.dwg

HEAT TRACING DATA

HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	PIPE LENGTH (m)	HEATER LENGTH (m)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W/m)	POWER OUTPUT (W/m)	SHEATH TEMP. (°C)
EHT-2002-A	INSTRUMENT	3BTV2-CT	3.0	7.3	0.5	81	230	3.9	10.7	85
TOTALS			3.0	7.3	0.5	81				

HEATER ADDER TABLE

PIPE SIZE (Ins)	TYPE	QTY	ALLOWANCE PER ITEM (m)	TOTAL ALLOWANCE (m)

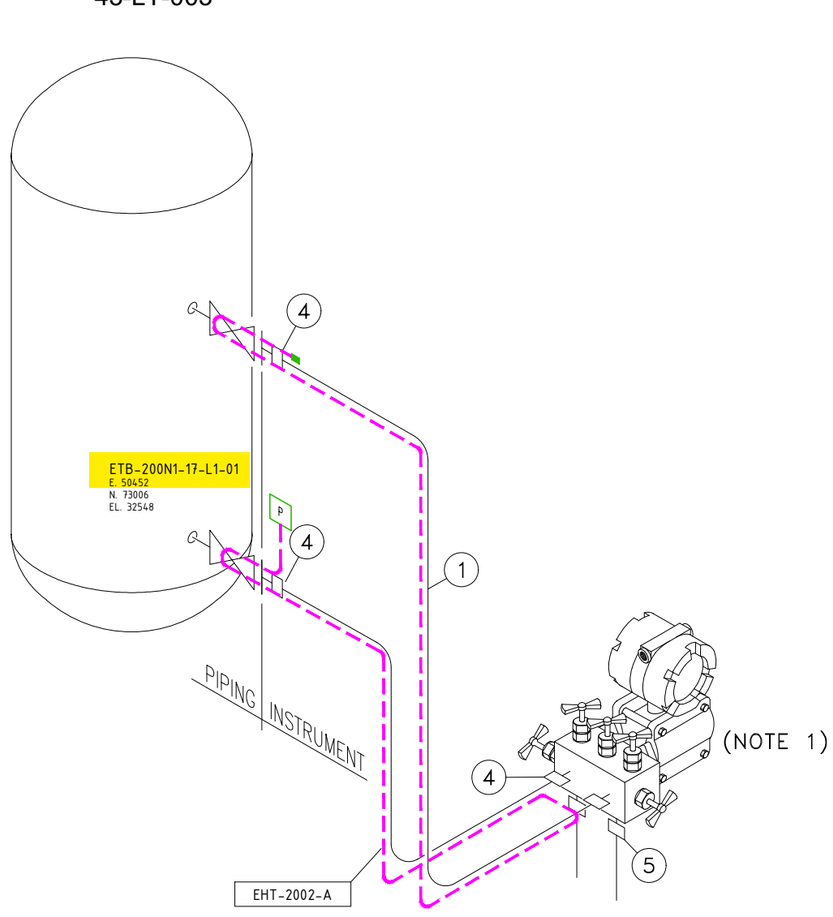
DESIGN PARAMETERS

CIRCUIT NUMBER	2002	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	11°C	INSULATION TYPE	RW/MF 1.2015
MAX. EXPOSURE TEMP.	11°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	100°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

COMPONENT BILL OF MATERIALS

CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	7.3	m	Raychem Self-Regulating Heating Cable
JBS-100-EP	1	each	Single entry power connection, EP, ATEX
PSE-090	1	each	Pipe Strap for 1.1/4" to 3" (40-90mm)
GS-54	0.3	each	Glass Tape (16m/roll), suited for SS pipes
LAB-I-01	2	each	Warning Label - English
E-20	1	each	Heat shrink end seal, ATEX (BTV, QTVR)
JBS-SPA	0.2	bag	Small Pipe Adapter for E-100, JBS-100, and JS-100

ELECTRICAL HOOK-UP FOR LEVEL TRANSMITTERS (DP CELL TYPE)



LINE NUMBERS

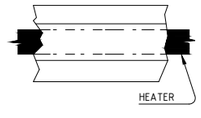
43-LT-003

REFERENCE DRAWINGS / DOCUMENTS

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.
4. HEATING CABLE ALLOWANCES PROVIDED IN THE 'EHT ADDER TABLE' FOR FLANGES AND VALVES ARE IN ADDITION TO THEIR LINEAR LENGTHS.

ALUMINIUM TAPE (REF: ATE180)



SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

CROSSWIND

ROSETTI MARINO

nVent RAYCHEM TRACER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
03	13/01/2025	ACCEPTED FOR CONSTRUCTION	ADU	AMI	GPI
02	29/11/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.

DOC CODE

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING
INSTRUMENT HOOK-UP

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-IN-HD-00010	4/4	03

A1

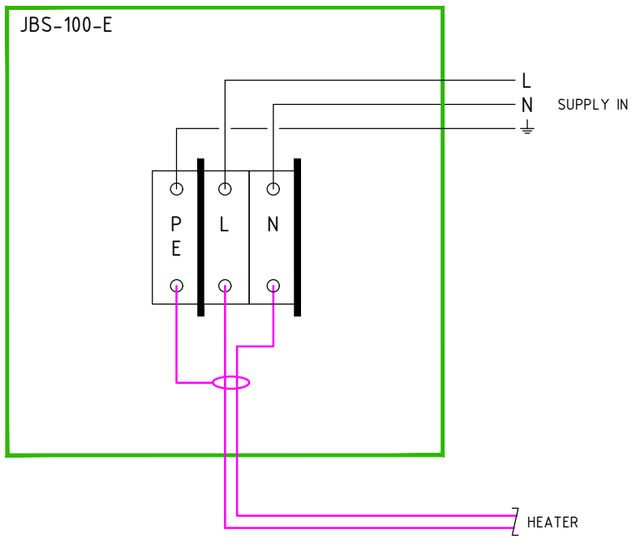
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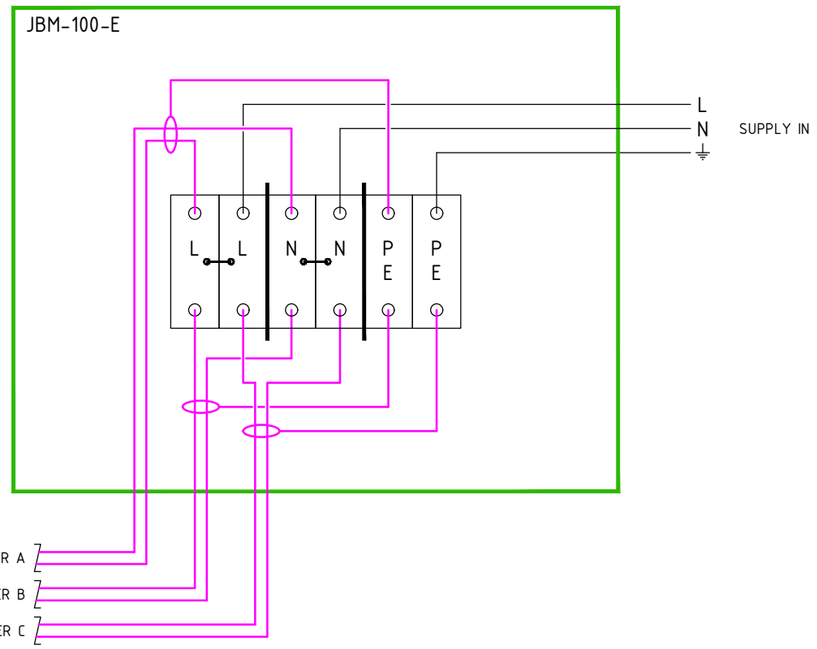
GENERAL INFORMATION:

1. JBS-100-E IS DESIGNED TO CONNECT POWER TO ONE BTV, QTVR, XTV, KTV, HTV OR VPL EHT CABLE.
2. THIS KIT INTEGRATES THE FUNCTIONS OF BOTH CONNECTION KITS AND INSULATION ENTRIES.
3. THE STAND CONNECTED TO THE BOTTOM OF THE BOX PROTECTS THE HEATING CABLE AND ALLOWS FOR UP TO 100mm (4") THERMAL INSULATION.

TECHNICAL BRIEF:

- 2 x M25 THREADED ENTRIES
- 1 x M25 STOPPING PLUGS
- 1 x M25 POWER CABLE GLAND





REV.	DATE	DESCRIPTION	BY	CHK	APP
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--	--	--	--	--	--
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	08/03/2024	ISSUED FOR INFORMATION	LJB	E-C	ZS

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TITLE
TYPICAL CONNECTION OF A JBS-100-EP
SINGLE ENTRY JUNCTION BOX

PREPARED BY	-.---	LANG.	SCALE
LEAD ENGINEER	-.---	en	N/A
PROJECT NO.	DRAWING NO.	SHEET	REVISION
PIT240024	1724001647-EL-DG-00005	2/3	01

A3

CAD FILENAME: 1724001647-EL-DG-00006 Rev.01.dwg

CONTROL PANEL REF.:

MARSHALLING BOX

EJB-200N1-17-L1-01

Q17

ETB-200N1-17-L1-04 — P — EHT-1004-A — ETB-200N1-17-L1-05 — P — EHT-1004-B

ETB-200N1-17-L1-02 — P — EHT-1005-A

ETB-200N1-17-L1-03 — P — EHT-1006-A

ETB-200N1-17-L1-01 — P — EHT-2002-A

SPARE

CIRCUIT NO.	1004	1005, 1006	2002	
C.B. RATING (A)	32	32	32	
START-UP I (A)	2.6	0.4	0.6	
LOAD (W)	383	65	81	
SERVICE	WINTERIZING	WINTERIZING	WINTERIZING	
NOTES FOR THE CIRCUIT	--	--	--	

GENERAL NOTES

CROSSWIND

ROSETTI MARINO

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	02/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING
SINGLE LINE DIAGRAM (SLD)

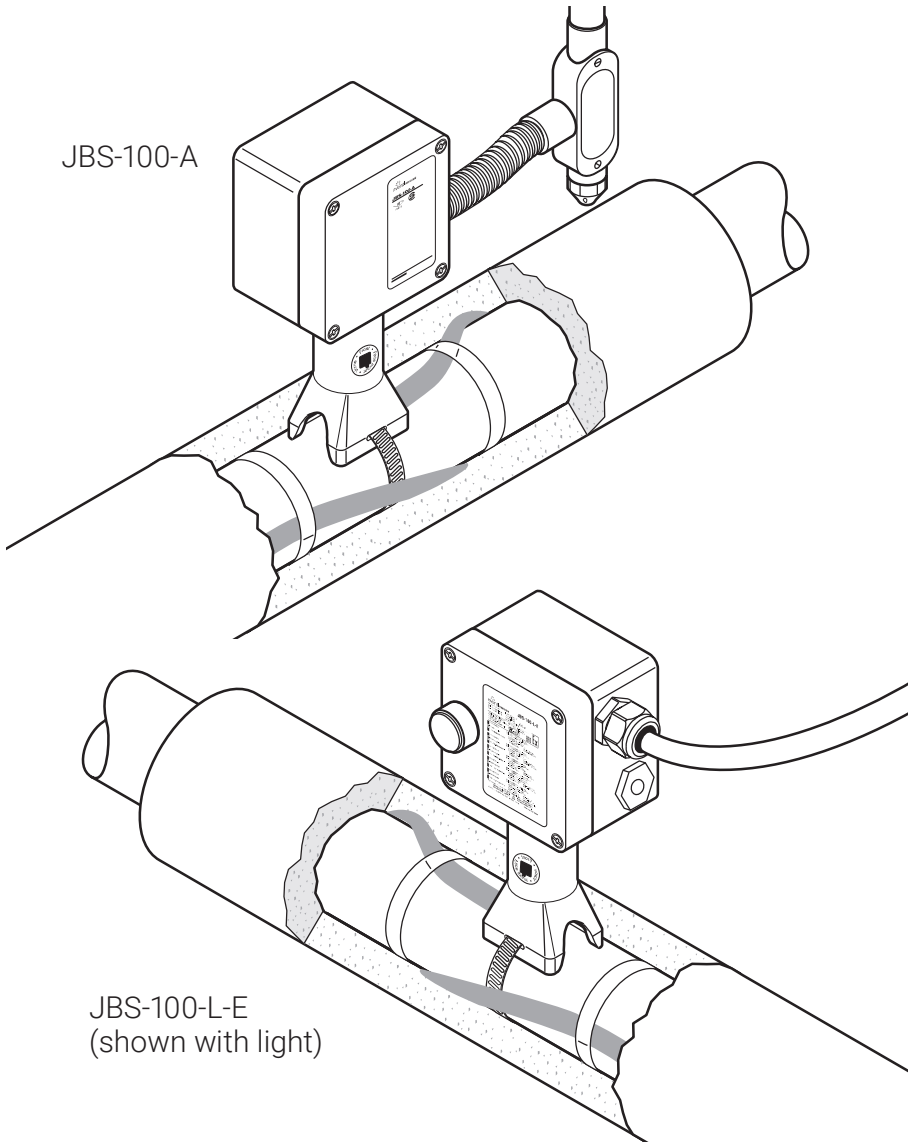
SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-EL-DG-00006	4/4	01

JBS-100

CONNECT AND PROTECT

Single-Entry power connection with junction box

PRODUCT OVERVIEW



The nVent RAYCHEM JBS-100 kit is designed to connect power to a single nVent RAYCHEM BTV, QTVR, XTVR, HTV or VPL industrial parallel heating cable.

The JBS-100 integrates the functions of both connection kits and insulation entries. The rugged stand protects the heating cable and allows for up to 100 mm (4") of thermal insulation.

The core sealing boot does not require a heat gun or torch for the installation (no hot work permit necessary). The non-curing sealant (silicone free) in the boot allows easy installation and facilitates maintenance.

Spring-type terminals provide fast installation and safe, reliable, maintenance-free operation. This connection kit significantly reduces installation time. The kit is offered in three basic versions, customised for local installation practices. All kits are also available as a lighted version. These include a unique light module with a superbright LED that simply plugs into the terminals, and a lens in the lid. This provides indication that power is available in the box. There is also a connection kit with drain plug available.

Description

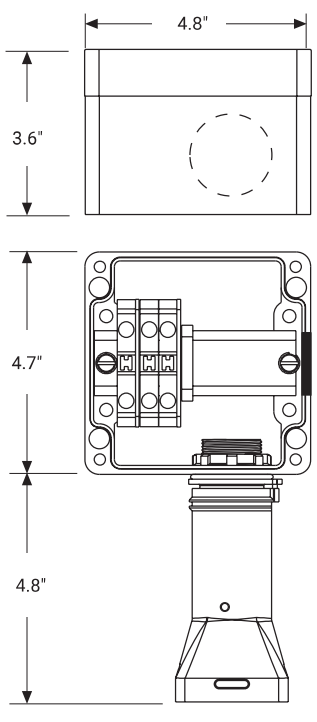
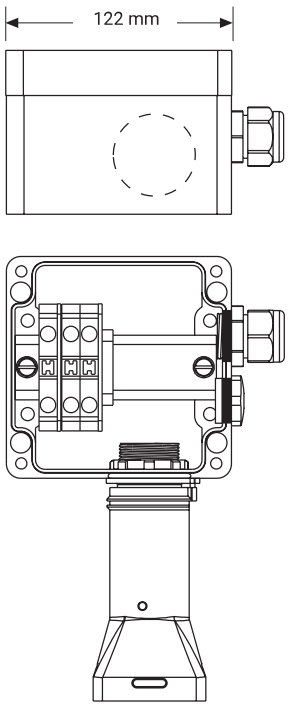
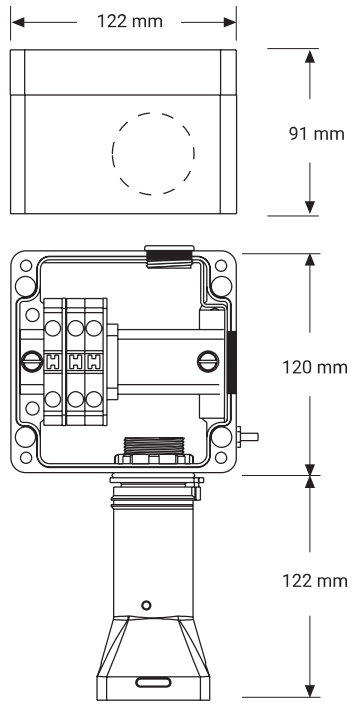
JBS-100-A JBS-100-L-A	JBS-100-E JBS-100-L-E JBS-100-D-E	JBS-100-EP JBS-100-L-EP
This connection system is certified for use in North America and has one through-hole for use with ¾" conduit.	This connection system is certified for use in IEC regions and provides two M25 threaded entries, one stopping plug, and one plastic power cable gland.	This connection system is certified for use in IEC regions and provides two M25 threaded entries, an earthing plate, and an external earthing stud. It is designed for use with armoured cables.

Kit contents

JBS-100-A JBS-100-L-A	JBS-100-E JBS-100-L-E JBS-100-D-E	JBS-100-EP JBS-100-L-EP
1 junction box with terminals	1 junction box with terminals	1 junction box with terminals, earth plate, and stud
1 light module (for -L only)	1 light module (for -L only)	1 light module (for -L only)
1 stand	1 stand	1 stand
1 core sealer	1 core sealer	1 core sealer
1 green/yellow earthing sleeve	1 green/yellow earthing sleeve	1 green/yellow earthing sleeve
1 polywater sachet	1 M25 gland for power cable 8-15 mm in diameter (temperature range –55°C / 70°C)	1 M25 stopping plug
1 cable tie	1 M25 stopping plug	1 polywater sachet
	1 polywater sachet	1 cable tie
	1 cable tie	
	1 ATEX/IECEx Certified drainplug (for JBS-100-D-E only)	

PRODUCT SPECIFICATIONS

Dimensions (nominal)

	JBS-100-A JBS-100-L-A	JBS-100-E JBS-100-L-E JBS-100-D-E	JBS-100-EP JBS-100-L-EP
			

Technical details

	JBS-100-A JBS-100-L-A	JBS-100-E JBS-100-L-E JBS-100-D-E	JBS-100-EP JBS-100-L-EP
Heating cable capability	BTV-CR, BTV-CT, QTVR-CT, XTVR-CT, HTV-CT, VPL-CT		
Ingress protection	IP66	IP66	IP66
Entries	1 x ¾"	2 x M25	2 x M25
Ambient temperature range	–55°C to +56°C (JBS-100-A) –40°C to +40°C (JBS-100-L-A)	–55°C to +56°C* (JBS-100-E and JBS-100-D-E) –40°C to +40°C (JBS-100-L-E)	–55°C to +56°C* (JBS-100-EP) –40°C to +40°C (JBS-100-L-EP)
	* Extra conditions for safe use apply at ambient temperatures >40°C. Temperature resistant power cable and metal glands must be used. Please refer to the certificate or installation instructions for full details.		
Max. pipe temperature	Refer to heating cable specification		
Terminals	Spring-type terminals 2 line, 1 ground	Spring-type terminals 1 phase, 1 neutral, 1 earth	Spring-type terminals 1 phase, 1 neutral, 1 earth
Max. conductor size	8 AWG stranded	10 mm^2 stranded, 10 mm^2 solid	10 mm^2 stranded, 10 mm^2 solid
Max. operating voltage	480 Vac*	480 Vac*	480 Vac*
	* JBS-100-L-E, JBS-100-L-EP and JBS-100-L-A are limited to 277 Vac. Extra conditions for safe use apply for voltages higher than 277 Vac. Please refer to the certificate or installation instructions for full details.		
Max. continuous operating current (***)	53 A	53 A	53 A

(***) For pipe temperature >150°C and <260°C and XTVR or HTV heating cables, the maximum operating current shall be reduced to maximum 20 A.

Materials of construction

Enclosure, lid, and stand	Electrostatic charge-resistant glass-filled engineered polymer, black	Electrostatic charge-resistant glass-filled engineered polymer, black	Electrostatic charge-resistant glass-filled engineered polymer, black
Lid screws	Stainless steel	Stainless steel	Stainless steel
Lid gasket	Silicone rubber	Silicone rubber	Silicone rubber
Earth continuity plate	N/A	N/A	Steel, zinc plated, and blue chromated

Optional LED indicator light

Colour	Red	Green	Green
Voltage rating	100-277 Vac	100-277 Vac	100-277 Vac
Power consumption	< 1 W	< 1 W	< 1 W

APPROVALS

For use in ordinary and hazardous area Zone 1 and Zone 2 (Gas), Zone 21 and Zone 22 (Dust) (and Class I Div 2).

Temperature classification

Temperature classification is defined by the complete system.

Product certification

For certifications in other regions (FM, CSA, IEx etc.), please refer to the installation manual.

More details about product certification, approvals and conditions of safe use are available in the installation manual at www.nVent.com/RAYCHEM.

ORDERING INFORMATION**

Power connection

Part Description	JBS-100-A	JBS-100-E	JBS-100-EP
PN (Weight)	085947-000 (2.5 lb)	829939-000 (1.2 kg)	158251-000 (1.3 kg)

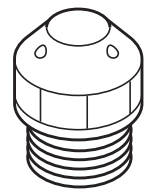
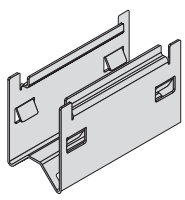
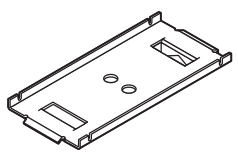
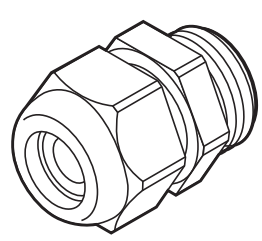
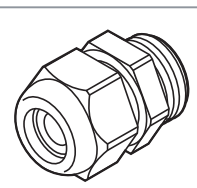
Power connection with light

Part Description	JBS-100-L-A	JBS-100-L-E	JBS-100-L-EP
PN (Weight)	944699-000 (3.5 lb)	054363-000 (1.6 kg)	075249-000 (1.7 kg)

Power connection with drain plug

Part Description		JBS-100-D-E	
PN (Weight)		1244-021057 (1.4 kg)	

Accessories

Conduit Drain ¾"	Prevents condensate from collecting in the box	
Catalog number	JB-DRAIN-PLUG-3/4IN	
Part Number	278621-000	
Weight	0.074 lb / 36 g	
Junction box standoff	For insulation thickness >100 mm & ≤150 mm *	
Catalog number	JBM-100-STANDOFF	
Part Number	P000003408	
Weight	0.279 lb / 135 g	
* Consider extra pipe strap length 6-9" (150-225 mm) for attachment		
Small pipe adapter	Required for stand on pipes ≤ 1"	
Catalog number	JBM-SPA	
Part Number	E90515-000	
Weight	0.408 lb / 185 g (Bag of 5 adaptors)	
Glands for power cables	Hazardous area approved gland for cables 8-15 mm (temperature range –55°C/70°C)	
Catalog number	GL-55-M25	
Part Number	1244-019083	
Weight	0.016 kg	
Glands for power cables	Hazardous area approved gland for cables 8-17.5 mm (temperature range –20°C/70°C)	
Catalog number	GL-36-M25	
Part Number	1244-019082	
Weight	0.016 kg	

(**) Localized versions may exist with limited approvals and different part numbers. Contact your local sales representative.

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

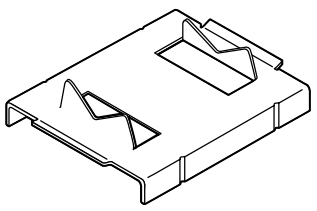
Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com

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SMALL PIPE ADAPTORS



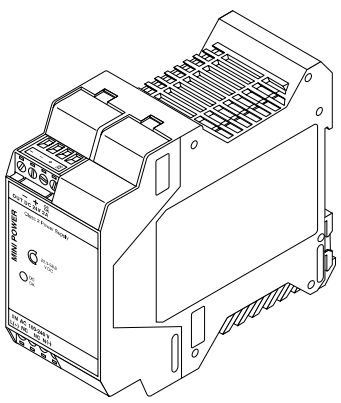
JBS-SPA

Small pipe adaptor required for pipes ≤ 1" (DN25), applicable for JBS-100, E-100, E-100-L
E90515-000 (bag of 5 adaptors) Weight: 0.14 kg

JBM-SPA

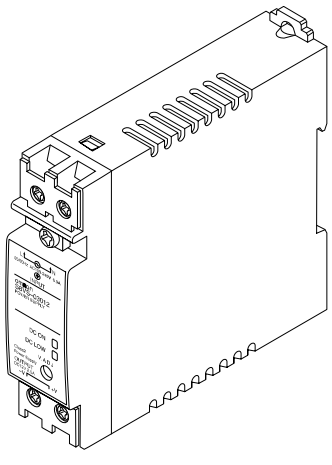
Small pipe adaptor required for pipes ≤ 1" (DN25), applicable for JBM-100, T-100
D55673-000 (bag of 5 adaptors) Weight: 0.40 kg

POWER SUPPLY



MONI-RMC-PS24

24 Vdc stabilized power supply
Wide range input (100 - 240 Vac) power supply to provide
24 Vdc input for MONI- RMC-BASE.
Surface or DIN 35 rail mounted.
PN: 972049-000 Weight: 0.28 kg



MONI-PS12

12 Vdc stabilized power supply
Wide range input (100 - 240 Vac) power supply to provide 12 Vdc input for the
nVent RAYCHEM NGC-30-CRM-E and nVent RAYCHEM NGC-30-CRMS-E cards.
DIN 35 rail mountable.
PN: 1244-001505 Weight: 0.18 kg

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com

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LABELS AND TAGS

Warning labels indicate the presence of electrical heat-tracing under the insulation of the pipe or other equipment. (min. of 1 label per 5 m of heat-tracing line). Also suitable for stainless steel pipes.



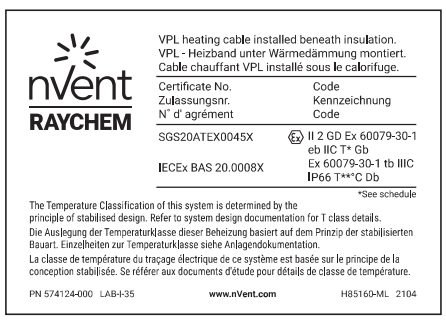
Language	EHT label reference	Product number
Arabian	LAB-ETL-AR	036236-000
Bulgarian	LAB-ETL-BG	1244-002183
Czech	LAB-ETL-CZ	731605-000
Danish	LAB-ETL-DK	C97690-000
Dutch	LAB-ETL-NL	749153-000
English	LAB-I-01	938947-000
Estonian/English	LAB-ETL-EN/EE	1244-001415
Finnish/Swedisch	LAB-ETL-SE/FI	756479-000
French	LAB-I-05	883061-000
German/French/Italian (230V)	LAB-ETL-DE/FR/IT	148648-000
German	LAB-ETL-DE	597779-000
Hungarian	LAB-ETL-HU	623725-000
Italian	LAB-ETL-IT	C97688-000
Kazakh/Russian/English	LAB-ETL-KZ/RU/EN	1244-017393
Latvian	LAB-ETL-LV	841822-000
Lithuanian	LAB-ETL-LT	105300-000
Norwegian	LAB-ETL-NO	C97689-000
Norwegian/English	LAB-ETL-EN/NO	165899-000
Polish	LAB-ETL-PL	258203-000
Portugese	LAB-ETL-PT	945960-000
Romanian	LAB-ETL-RO	902104-000
Russian	LAB-ETL-RU	574738-000
Russian/English	LAB-ETL-EN/RU	1244-001060
Russian/English/Azeri	LAB-ETL-AZ/RU/EN	1244-012283
Russian/English/Uzbek	LAB-ETL-UZ/RU/EN	1244-022143
Spanish	LAB-ETL-ES	C97686-000
Swedish	LAB-ETL-SE	691703-000
Turkish/English	LAB-ETL-EN/TR	1244-014860



Language	Component label reference	Product number
English	LAB-I-02	774499-000
Russian/English	LAB-I-02/E/R LAB-ENDSEAL	1244-001059 146909-000
English	ETL-END-SEAL LAB-SPLICE	103405-000 007063-000

STABILIZED DESIGN LABELS

If compliance to the T-class or A.I.T. cannot be achieved by the unconditional T-rating of the heating cable, the hazardous area regulations require that cable sheath temperature is determined by the rules of stabilized design as per EN 60079-30 and the heating circuit is marked accordingly. The following labels are available for this purpose (min.1 label per heating circuit)



LAB-I-35

Stabilized design sticker. To be installed when power-limiting VPL heating cables are used in hazardous areas.

PN: 574124-000 Weight: 0,0015 kg

LAB-EX-XTV-KTV

Aluminum tag plate for XTV and KTV self-regulating heating cables. To be installed if T-class compliance was proven by stabilized design and not by unconditional T-rating.

PN: 1244-011961 Weight: 0.04 kg

LAB-EX-FxT

Aluminum tag plate. To be installed when parallel constant wattage FMT or FHT heating cables are used in hazardous areas.

PN: 1244-006953 Weight: 0.04 kg

PI-LABEL-EX

Aluminum tag plate. To be installed when series polymer insulated XPI & XPI-S heating cables are used in hazardous areas.

PN: 1244-006940 Weight: 0.04 kg

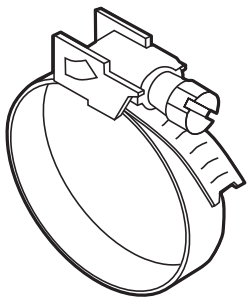
PI-LABEL-NH

Aluminum tag plate. To be installed when series polymer insulated XPI & XPI-S heating cables are used non hazardous areas.
This label is not mandatory but highly recommended for future reference.

PN: 1244-006941 Weight: 0.04 kg

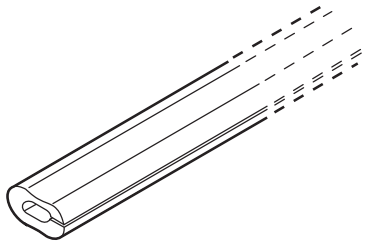
PIPE STRAPS

Metal straps for pipe mounting of integrated power connections, above the insulation tees and end seals as well as support brackets and the tubular insulation entry. Banding: stainless steel



Pipe outer diameter in mm	(inches)	Pipe strap	PN (Weight)
20 - 47	(1/2" - 11/4")	PSE-047	700333-000 (0.017 kg)
40 - 90	(11/4" - 3")	PSE-090	976935-000 (0.024 kg)
60 - 288	(2" - 10")	PSE-280	664775-000 (0.052 kg)
60 - 540	(2" - 20")	PSE-540	364489-000 (0.052 kg)

PIPE STRAPS



G-02

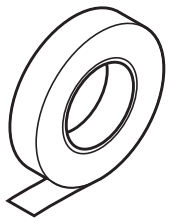
Silicone grommet that protects the heating cable at sharp edges such as endplates of insulation cladding, flanges etc. It can be cut-to-length and resists temperatures up to 215°C.

Sold in pieces of 1 m.

PN: 412549-000 Weight: 0.37 kg/m)

FIXING MATERIALS

Self-adhesive tape for fixing the heating cables on pipes or other equipment.



GT-66

Glass cloth tape for attaching heating cable to pipe.
Not for stainless steel pipes or for installation temperatures below 5°C.

20 m per roll, 12 mm width.

PN: C77220-000 Weight: 0.053 kg

GS-54

Glass cloth tape for attaching heating cable to pipe.

For stainless steel pipes or for any installation below 5°C.

16.5 m per roll, 12 mm width.

PN: C77221-000 Weight: 0.048 kg

ROSETTI MARINO | CROSSWIND

ITEM	Tag	EHT-1001-A	: Heat Tracing Tape			Dwg	1724001647-EL-LIS-00003
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD/UD
TASK	code	C10004632		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX22A — Tape Trace Heating Before Insulation

1	Check that the circuit is de-energized and safe.	OK
2	Check all tapes and junction boxes are undamaged.	OK
3	Check all tapes and junction boxes are installed according to drawings.	OK
4	Check all tapes characteristics against project data (type, rated power).	OK
5	Check rating of circuit breaker against drawings.	OK
6	Check tapes, junction boxes, cables and accessories tagging.	OK
7	After test re-connecting cable as per typical installation.	OK
8	If required produce Red Line Mark Up for "AS BUILT"	

CIRCUIT DATA

List Associated Heat tracing Isometric	1724001647-EL-DD-00004
Tape Type	3BTV2-CT
Circuit Installed Length	21m
Wiring Diagram	WD_1724001647-EL-DG-00006/Single line Diagram (1724001647-EL-DG-00005).

Testing & measurement instruments used

Type	Serial n°	Calibration certificate	Validity
MEGGER : KEW3125A	SERIAL: W8330207	N°7722/24	09/07/2025
VOLCRAFT 1000V	ET-200 S/N:H240103023	N°LAT 042 00768/24	11/10/2025

FIRST TEST

Continuity and insulation resistance tests to earth for each conductor core are carried out after the tape is installed on pipework **before any insulation and cladding is fitted.**

Test voltage (V):	2500	Tape Lengh	21m	Thermostats :	N/A
Continuity	55,5	Insulation Resistance	>1999 M	Result	OK

AFTER THIS TEST IS DONE, LINE CAN BE RELEASED TO INSULATION TEAM

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-08	2025-02-24	
Signature	Digitaly signed by Michele Tartaglia 2025-02-08T09:48:04.563Z	Digitaly signed by Giovanni Tangianu 2025-02-24T15:58:00.340Z	

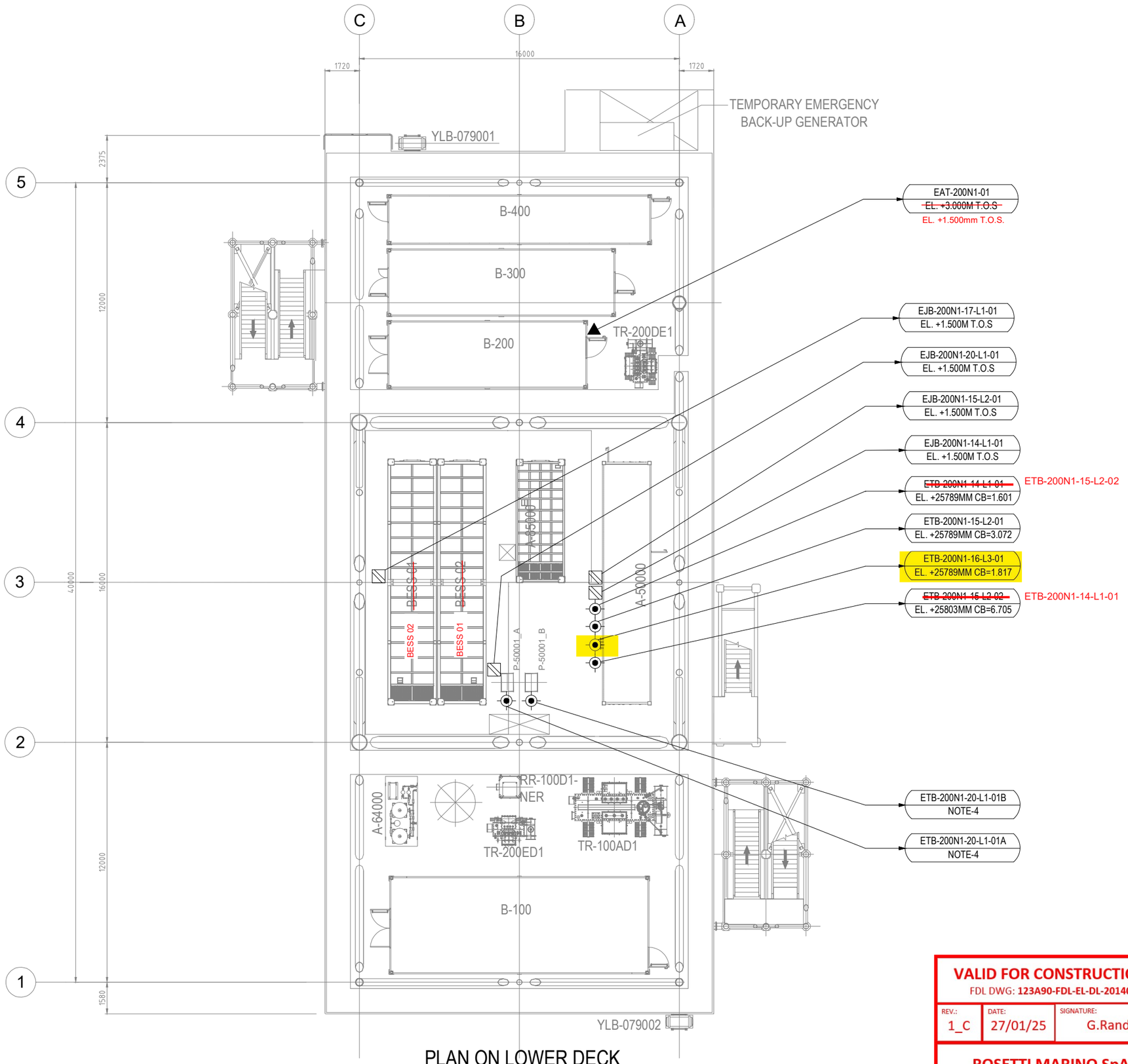
EHT CALCULATION LIST

PIT240024_ED01-1001

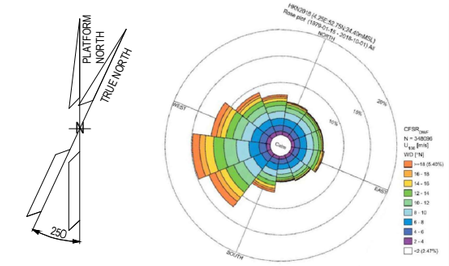
		ENGINEERING DATA				MECHANICAL & INSULATION DATA							PROCESS DATA				EHT BASIC DESIGN								EHT DETAILED DESIGN						EHT TEMP. CONTROL DATA							
Main EHT Box Number	Item Number	Heater Number	Line, Equipment or Instrument ID	nVent Circuit Number	Plant Area	Pipe Size [DN / IN]	Pipe Length [m]	Support Quantity [pc]	Valve Quantity [pc]	Other Heat Sink Quantity [pc]	Insulation Type	Insulation Thickness [mm]	Maintain Temperature [°C]	Maximum Allow. Process Temperature [°C]	Maximum Operating Temperature [°C]	Maximum Exposure Temperature [°C]	Heatloss [W/m]	Heating Cable Selection	Trace Ratio	Heating Cable Output [W/m]	EHT Cable per Support [m]	EHT Cable per Valve [m]	EHT Cable per Other Heatsink [m]	Total EHT Cable [m]	Max. Allow. EHT Circuit Length [m]	Connection Type	Voltage [V]	Operating Current [A]	Total Operating Load [W]	Start-Up Current [A]	Temp. Control Method	Controller Set Point [°C]	Mimimum Controlled Temperature [°C]	Maximum Controlled Temperature [°C]	Maximum Uncontrolled Temperature [°C]	Revision	Remark
																		GRAND TOTAL						**181.4**				**9.69**	**2226**	**14.91**							
ETB-200N1-16-L3-01	1	EHT-1001-A	1"-DM-001-01SS-E	1001	PIPING	1	17.6	5	1	2	RW/MF 1:2015	20	5	100	22	22	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	22.0	199	Single L-N	230	1.18	271	1.8	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**22.0**			**230**	**1.18**	**271**	**1.8**							
ETB-200N1-15-L2-01	1	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	11.0	4		1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	13.9	199	Single L-N	230	0.73	167	1.1	Ambient sensing, standard	5	18	29	50	00	
	2	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	3	EHT-1002-A	1"-CI-032-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	4	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	5	EHT-1002-A	1"-CI-030-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	6	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.75	0.5		1		RW/MF 1:2015	20	5	50	25	25	3.4	3BTV2-CT	2.0	10.7		1.5		2.6	199	Single L-N	230	0.15	34	0.2	Ambient sensing, standard	5	30	38	55	00	
	7	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.5	0.5		1		RW/MF 1:2015	20	5	50	25	25	2.9	3BTV2-CT	2.0	10.7		1.4		2.5	199	Single L-N	230	0.14	32	0.2	Ambient sensing, standard	5	32	40	56	00	
																		TOTAL						**36.4**			**230**	**2.00**	**459**	**3.1**							
ETB-200N1-14-L1-01	1	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	4	0.5				RW/MF 1:2015	20	5	100	25	25	10.2	3BTV2-CT	1.0	10.7				0.6	199	Single L-N	230	0.03	7	0.1	Ambient sensing, standard	5	5	20	46	00	
	2	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	4.7	1		1	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1		0.5	9.3	199	Single L-N	230	0.47	107	0.7	Ambient sensing, standard	5	14	27	49	00	
	3	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	4	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	7.8	3			RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1			8.6	199	Single L-N	230	0.48	111	0.7	Ambient sensing, standard	5	14	27	49	00	
	5	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	6	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.8	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	7	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	1.4	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	4.2	199	Single L-N	230	0.23	54	0.4	Ambient sensing, standard	5	24	34	53	00	
	8	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	9	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	10	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.7	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	11	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	1.2	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	3.7	199	Single L-N	230	0.20	47	0.3	Ambient sensing, standard	5	24	34	53	00	
	12	EHT-1003-A	1"-SWS-147-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	13	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	14	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	15	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1	0.1				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	28	37	54	00	
	16	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
	17	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	18	EHT-1003-A	1"-SWS-146-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	19	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	20	EHT-1003-A	1"-SWS-290-01SD-E	1003	PIPING	1	1.1	1	2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7	0.3	1.6		5.8	199	Single L-N	230	0.33	76	0.5	Ambient sensing, standard	5	28	37	54	00	
	21	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**78.6**			**230**	**4.37**	**1002**	**6.7**							
ETB-200N1-17-L1-04	1	EHT-1004-A	1"-WW-259-01CS-E / V-43001	1004	PIPING	1	0.9		1	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7		0.8	0.5	3.2	199	Single L-N	230	0.12	28	0.2	Ambient sensing, standard	5	18	29	50	00	Combined with EHT-1004-B
																		TOTAL						**3.2**			**230**	**0.12**	**28**	**0.2**							
ETB-200N1-17-L1-02	1	EHT-1005-A	1"-WW-260-01CS-E	1005	PIPING	1	1.2	1	2	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	4.6	199	Single L-N	230	0.20	46	0.3	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1006-A
																		TOTAL						**4.6**			**230**	**0.20**	**46**	**0.3**							
ETB-200N1-17-L1-03	1	EHT-1006-A	1"-WW-202-01CS-H	1006	PIPING	1	1.0			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	1.0	10.7			0.5	2.5	199	Single L-N	230	0.08	19	0.1	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1005-A
																		TOTAL						**2.5**			**230**	**0.08**	**19**	**0.1**							
ETB-200N1-15-L2-02	1	EHT-1007-A	1"-CI-043-01CP-E	1007	PIPING	1	15.0	6		4	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	19.5	199	Single L-N	230	1.04	239	1.6	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**19.5**			**230**	**1.04**	**239**	**1.6**							
ETB-200N1-17-L1-05	1	EHT-1004-B	43-LT-001	2001	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	Combined with EHT-1004-A
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							
ETB-200N1-17-L1-01	1	EHT-2002-A	43-LT-003	2002	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

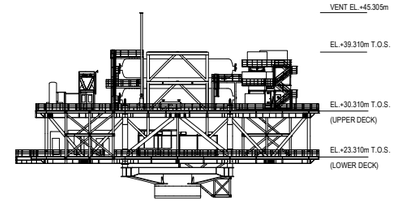
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_C	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 1of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

CAD FILENAME: PIT240024_DD01_1001_001_02.dwg

HEAT TRACING DATA

HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	PIPE LENGTH (m)	HEATER LENGTH (m)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W/m)	POWER OUTPUT (W/m)	SHEATH TEMP. (°C)
EHT-1001-A	PIPING	3BTV2-CT	17.6	22.0	1.8	271	230	3.9	10.7	85
		TOTALS	17.6	22.0	1.8	271				

HEATER ADDER TABLE

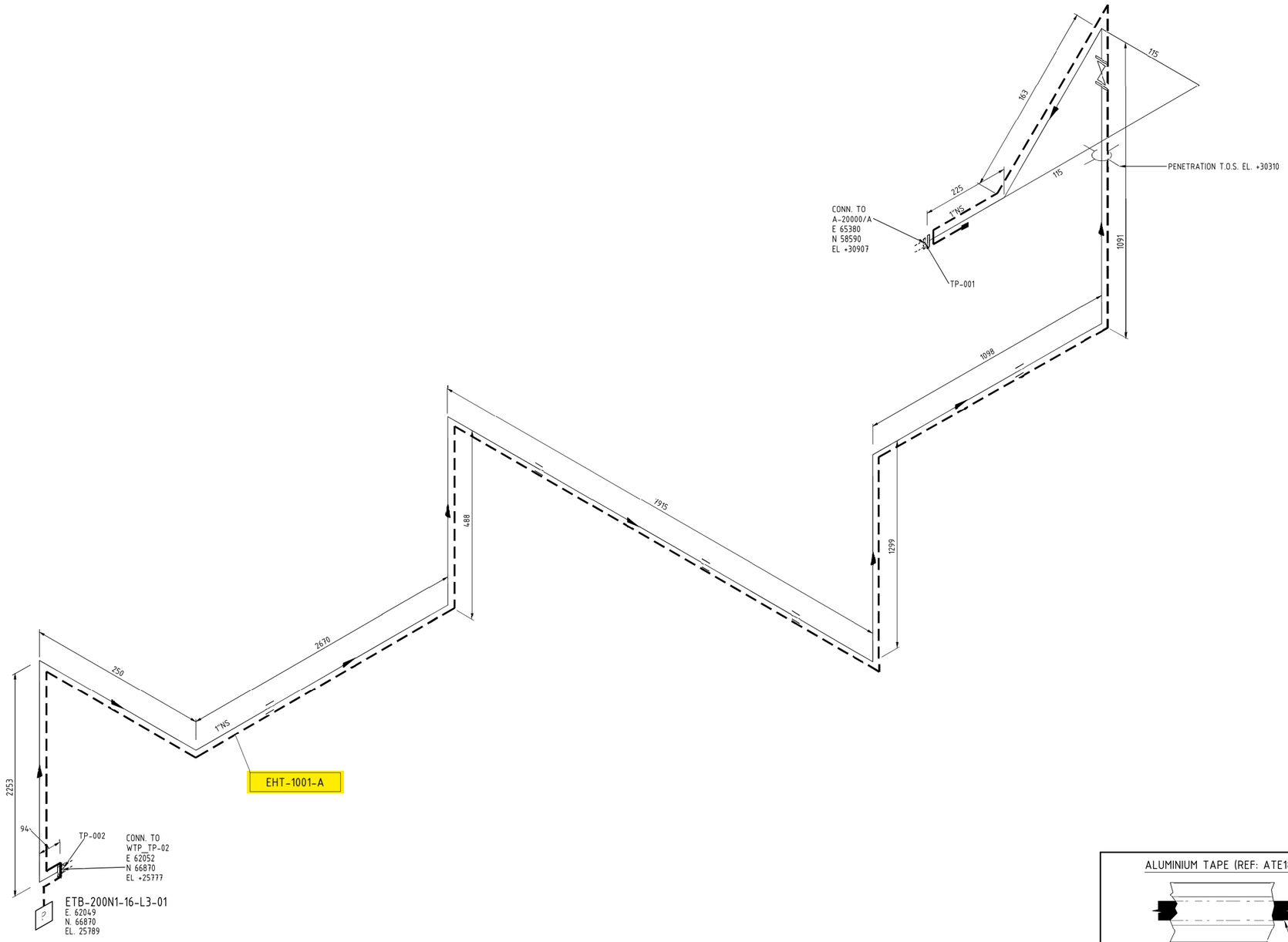
PIPE SIZE (Ins)	TYPE	QTY	ALLOWANCE PER ITEM (m)	TOTAL ALLOWANCE (m)
1	Typical Flange (fixed adder)	2	0.46	0.92
1	Typical Metal Valve	1	0.82	0.82
1	Typical Pipe Support	5	0.15	0.75

DESIGN PARAMETERS

CIRCUIT NUMBER	1001	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	22°C	INSULATION TYPE	RW/MF 1.2015
MAX. EXPOSURE TEMP.	22°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	100°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

COMPONENT BILL OF MATERIALS

CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	22	m	Raychem Self-Regulating Heating Cable
JBS-100-E	1	each	Single entry power connection, EP, ATEX
PSE-090	1	each	Pipe Strap for 1.1/4" to 3" (40-90mm)
GS-54	0.9	each	Glass Tape (16m/roll), suited for SS pipes
LAB-I-01	7	each	Warning Label - English
E-20	1	each	Heat shrink end seal, ATEX (BTV, QTVR)
JBS-SPA	0.2	bag	Small Pipe Adapter for E-100, JBS-100, and JS-100



LINE NUMBERS

1"-DM-001-01SS-E

REFERENCE DRAWINGS / DOCUMENTS

123A90-DDL-PP-DI-71000_001

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.
4. HEATING CABLE ALLOWANCES PROVIDED IN THE 'EHT ADDER TABLE' FOR FLANGES AND VALVES ARE IN ADDITION TO THEIR LINEAR LENGTHS.

ALUMINIUM TAPE (REF: ATE180)

SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

CROSSWIND

ROSETTI MARINO

nVent RAYCHEM TRACER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
02	20/01/2025	ISSUED FOR REVIEW	ADU	AMI	GPI
01	25/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.

DOC CODE

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING ISOMETRIC

SCALE: N/A

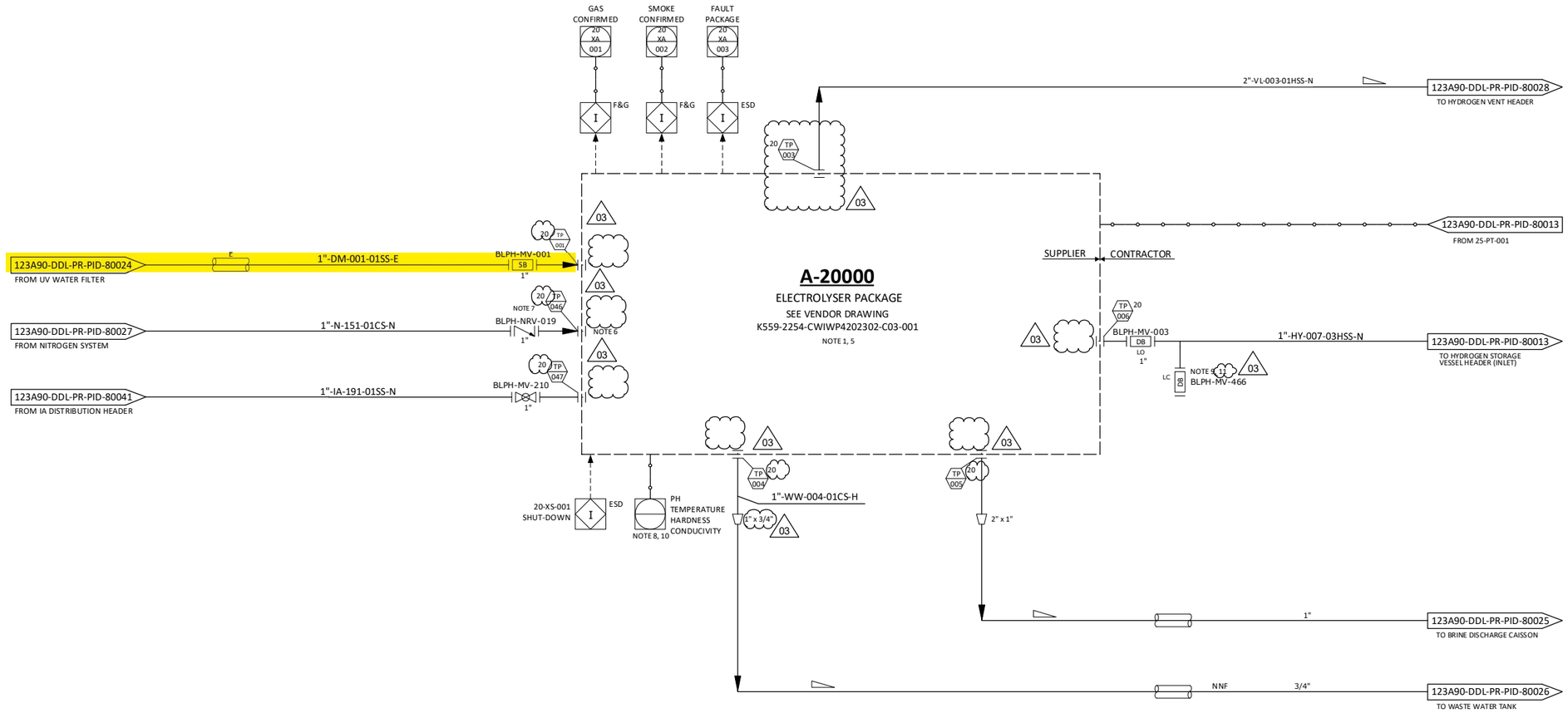
DRAWING NO.: 1724001647-EL-DD-00004

SHEET NO.: 3/10

REVISION: 02

DRAWING NO. DRAWING_NO.

REV. REV



NOTES

1. PACKAGE SUPPLIED WITH POWER FROM THE BLPH ELECTRICAL SYSTEM.
2. DELETED.
3. DELETED.
4. DELETED.
5. ELECTROLYSER PACKAGE INCLUDES AN OXYGEN VENT LINE WHICH IS IN THE SCOPE OF SUPPLY OF THE ELECTROLYSER PACKAGE UP TO THE ATMOSPHERE. NO PHYSICAL INTERFACE IS PRESENT BETWEEN ELECTROLYSER PACKAGE AND CONTRACTOR ON THIS LINE.
6. AN ISOLATION VALVE DOWNSTREAM THE CHECK VALVE NRV-019 IS PROVIDED WITHIN THE PACKAGE A-20000.
7. CHECK VALVE NRV-019 TO BE INSTALLED AS CLOSE AS POSSIBLE TO THE ELECTROLYSER PACKAGE A-20000.
8. SERIAL COMMUNICATION WITH CONTROL SYSTEM.
9. NITROGEN PURGING CONNECTION TO BE LOCATED AS CLOSE AS POSSIBLE TO MANUAL VALVE BLPH-MV-003.
10. PH, TEMPERATURE, HARDNESS AND CONDUCTIVITY SHALL BE SENT FROM CONTROL SYSTEM TO ELECTROLISER UCP IN ADDITION TO THE OTHER SOFTWARE SIGNALS. 03
11. MANUAL VALVE BLPH-MV-466 TO BE CONNECTED WITH MANUAL VALVE BLPH-MV-275 (INSTALLED ON NITROGEN GENERATION PACKAGE EXIT LINE) BY MEAN ON A FLEXIBLE HOSE DURING COMMISSIONING PHASE FOR PURGING OPERATION.

HOLDS

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

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
ELECTROLYSER PACKAGE

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80011	SHEET 001	REV. 03

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV

FOR CONTINUATION SEE DOC N.
123A90-DDL-PR-PID-80023

A-50000
WATER TREATMENT PACKAGE
CAPACITY : 2.5 m³/hr

SUPPLIER | CONTRACTOR

A-50000
WATER TREATMENT PACKAGE
SEE VENDOR DRAWING
DOC. N. 1724000448-PR-PID-00013

1"-DM-001-01SS-E-1 → 123A90-DDL-PR-PID-80011
TO ELECTROLYSER PACKAGE

TP 002 — 50 — 03

PH
TEMPERATURE
HARDNESS
CONDUCIVITY
NOTE 8

FOR CONTINUATION SEE DOC N.
123A90-DDL-PR-PID-80023

NOTES

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.
6. DELETED.
7. DELETED.
8. PH, TEMPERATURE, HARDNESS AND CONDUCTIVITY SHALL BE SENT FROM WATER TREATMENT UCP TO CONTROL SYSTEM IN ADDITION TO THE OTHER SOFTWARE SIGNALS.

HOLDS

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

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

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
WATER TREATMENT PLANT SHEET 2

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE

A1	DRAWING NO.	SHEET	REV.
	123A90-DDL-PR-PID-80024	001	03

File Name : FILE_NAME

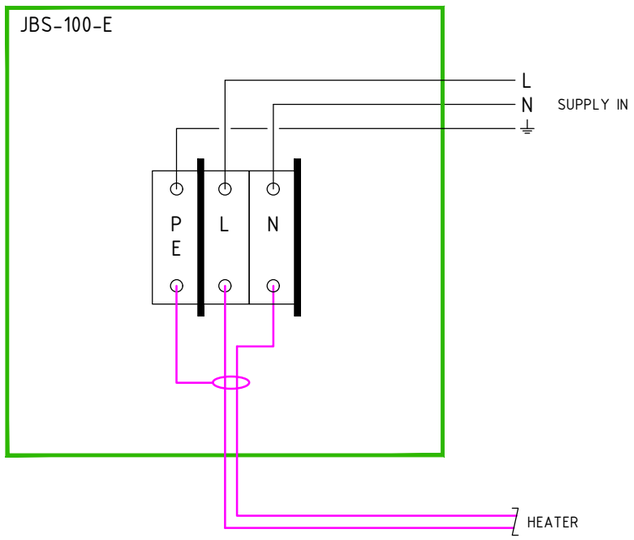
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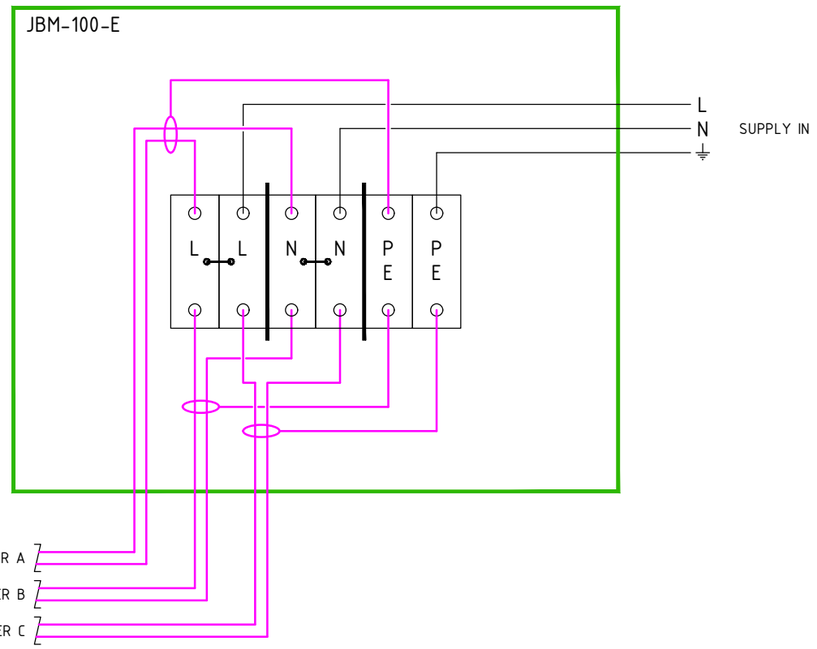
GENERAL INFORMATION:

1. JBS-100-E IS DESIGNED TO CONNECT POWER TO ONE BTV, QTVR, XTV, KTV, HTV OR VPL EHT CABLE.
2. THIS KIT INTEGRATES THE FUNCTIONS OF BOTH CONNECTION KITS AND INSULATION ENTRIES.
3. THE STAND CONNECTED TO THE BOTTOM OF THE BOX PROTECTS THE HEATING CABLE AND ALLOWS FOR UP TO 100mm (4") THERMAL INSULATION.

TECHNICAL BRIEF:

- 2 x M25 THREADED ENTRIES
- 1 x M25 STOPPING PLUGS
- 1 x M25 POWER CABLE GLAND





REV.	DATE	DESCRIPTION	BY	CHK	APP
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--	--	--	--	--	--
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	08/03/2024	ISSUED FOR INFORMATION	LJB	E-C	ZS

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TITLE
TYPICAL CONNECTION OF A JBS-100-EP
SINGLE ENTRY JUNCTION BOX

PREPARED BY	-.---	LANG.	SCALE
LEAD ENGINEER	-.---	en	N/A
PROJECT NO.	DRAWING NO.	SHEET	REVISION
PIT240024	1724001647-EL-DG-00005	2/3	01

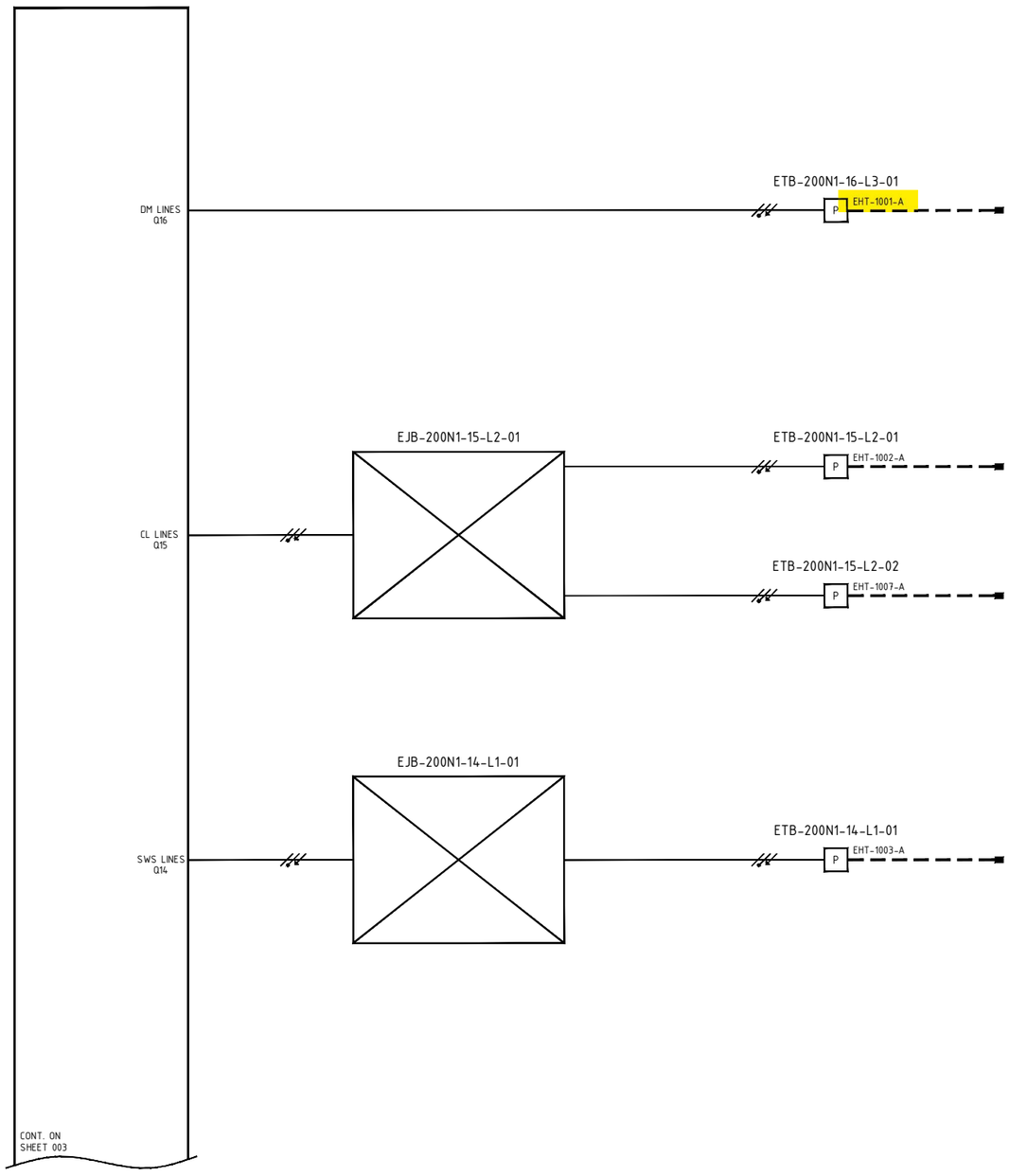
A3

CAD FILENAME: 1724001647-EL-DG-00006 Rev.01.dwg

CONTROL PANEL REF.:

DP-200N1

MARSHALLING BOX



CIRCUIT NO.	1001	1002, 1007	1003	
C.B. RATING (A)	32	32	32	
START-UP I (A)	1.8	4.7	6.7	
LOAD (W)	271	698	1002	
SERVICE	WINTERIZING	WINTERIZING	WINTERIZING	
NOTES FOR THE CIRCUIT	--	--	--	

GENERAL NOTES

CROSSWIND

ROSETTI MARINO

nVent RAYCHEM TRACER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	02/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING
SINGLE LINE DIAGRAM (SLD)

SCALE: N/A

DRAWING NO.: 1724001647-EL-DG-00006

SHEET NO.: 3/4

REVISION: 01

BTV

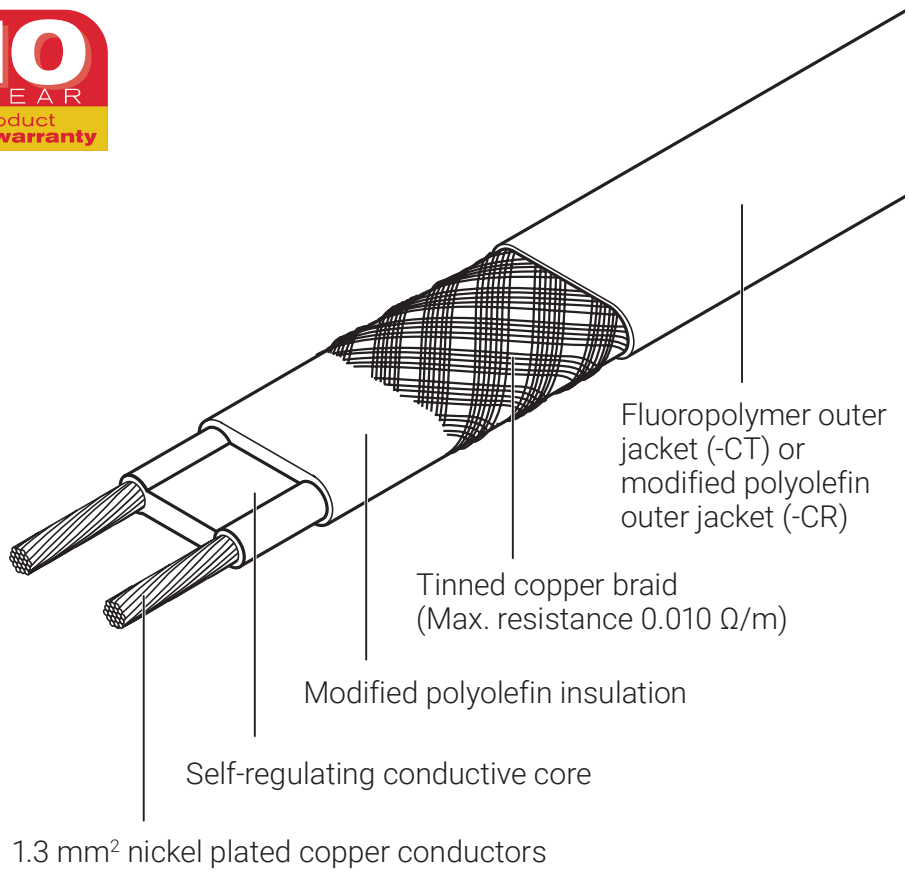
nVent RAYCHEM

CONNECT AND PROTECT

Self-regulating Heating Cable (Ex)

PRODUCT OVERVIEW

10 YEAR Product warranty



Electrical heat-tracing for frost protection without steam cleaning.
The nVent RAYCHEM BTV-family of self-regulating, parallel circuit heating cables is used for frost protection of pipes and vessels. It can also be used for process temperature maintenance up to 65°C.

Application

Traced surface type	Carbon steel Stainless steel Plastic Painted or unpainted metal
Chemical resistance	For organic corrosives: use -CT (fluoropolymer outer jacket) For mild inorganic solutions: use -CR (modified polyolefin outer jacket) For aggressive organics and corrosives consult your local nVent representative

Supply voltage

230 Vac (Contact your local nVent representative for data on other voltages)

PRODUCT SPECIFICATIONS

Product dimensions and weight

	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Width x Thickness (nominal) mm	10.5 x 5.5		13.2 x 5.5	
Weight (g/m)	110		150	

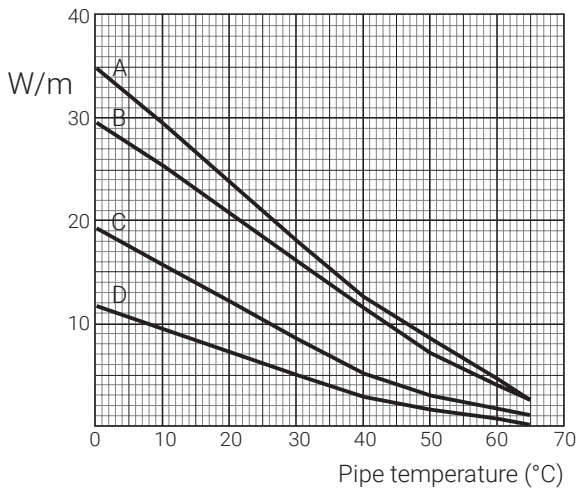
Technical details

Maximum maintain or continuous exposure temperature (power on/off)	65°C
Maximum intermittent exposure temperature (power on/off)	85°C Maximum cumulative exposure 1000 hours
Minimum installation temperature	–60°C
Minimum bend radius	–60°C ≤ T<–20°C: 35 mm –20°C ≤ T<–10°C: 30 mm –10°C ≤ T< 0°C: 25 mm 0°C ≤ T <+10°C: 20 mm T≥ +10°C: 12 mm

Thermal output rating

Nominal power output at 230 Vac on insulated steel pipes

A 10BTV2-CT
10BTV2-CR
B 8BTV-2-CT
8BTV-2-CR
C 5BTV2-CT
5BTV2-CR
D 3BTV2-CT
3BTV2-CR



	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Nominal power output (W/m at 10°C)	9	16	25	29

Maximum circuit length based on type ‘C’ circuit breakers according to EN 60898

Electrical protection sizing	Start-up temperature	Maximum heating cable length per circuit (m)			
16 A	–20°C	155	110	70	45
	+10°C	200	160	110	65
20 A	–20°C	195	140	90	55
	+10°C	200	160	125	85
25 A	–20°C	200	160	110	70
	+10°C	200	160	125	105
32 A	–20°C	200	160	125	90
	+10°C	200	160	125	110

The above numbers are for circuit length estimation only. For more detailed information please use the nVent RAYCHEM TraceCalc software or Contact your local nVent representative. nVent requires the use of a 30 mA residual current device to provide maximum safety and protection from fire. Where design results in higher leakage current, the preferred trip level for adjustable devices is 30 mA above any inherent capacitive leakage characteristic of the heater as specified by the trace heater supplier or alternatively, the next common available trip level for non adjustable devices, with a maximum of 300 mA. All safety aspects need to be proven.

APPROVALS

For use ordinary area and hazardous area Zone 1 and Zone 2 (Gas), Zone 21 and Zone 22 (Dust).

Temperature classification
T6

Product certification

More details about product certification, approvals and conditions of safe use are available in the installation manual for Self-regulating and Power limiting heating cable systems at www.nVent.com/RAYCHEM

ORDERING INFORMATION

Part description	3BTV2-CR	5BTV2-CR	8BTV-2-CR	10BTV2-CR
Part No. (*)	914279-000	414809-000	479821-000	677245-000
Part description	3BTV2-CT	5BTV2-CT	8BTV-2-CT	10BTV2-CT
Part No. (*)	469145-000	487509-000	008633-000	567513-000

Components

nVent offers a full range of components for power connections, splices and end seals. These components must be used to ensure proper functioning of the product and compliance with electrical requirements.

(*) Localized versions may exist with limited approvals and different part numbers. Contact your local sales representative

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

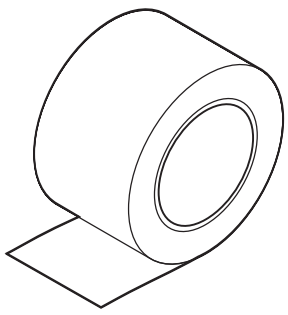
Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com

Our powerful portfolio of brands:
CADDY ERICO HOFFMAN RAYCHEM SCHROFF TRACER

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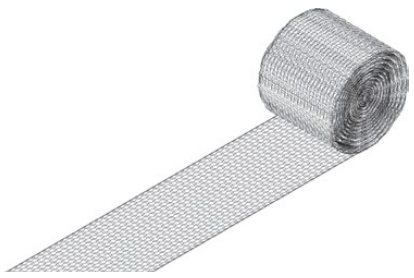
ATE-180

Aluminium tape* for attaching heating cables and thermostat sensors to pipes and tanks. Minimum installation temperature: 0°C. Also suitable for stainless steel pipes.

55 m per roll, 63.5 mm width.

PN: 846243-000 Weight: 0.84 kg

*Power output of selfregulating heating cables might increase when installed with aluminium tape or other heat transfer aids. Please use TraceCalc or contact nVent representative for further details.

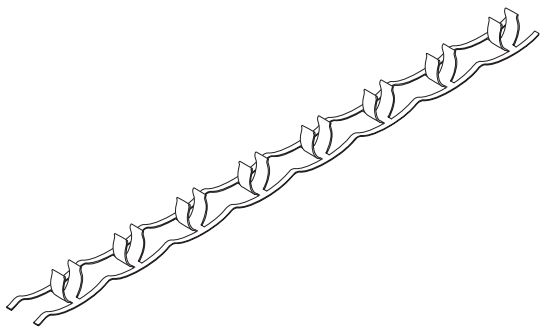


HWA-METAL-MESH-SS-50MM-10M

Stainless steel mesh for fixation of heating cables on valves, pumps or other odd-shaped surfaces. This mesh provides optimum contact and heat transfer between heating cables and heated equipment and can be used for exposure temperatures up to 400°C.

10 m per roll, 50 mm width.

PN: 1244-005772 Weight: 0.36 kg



HWA-PI-FIX- SS-xMM-10M

Stainless steel clip band to attach Polymer Insulated series heating cables to pipes. Clips at regular distances to allow for even heater spacing. Band available in two sizes for different diameter ranges.

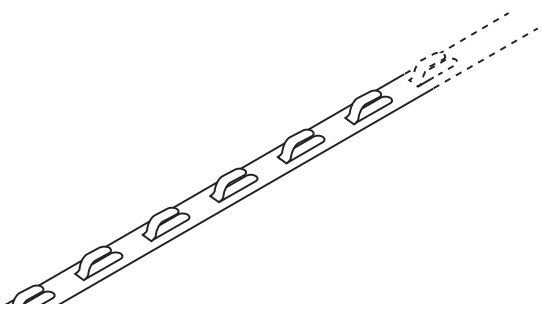
10 m per roll.

For diameters up to 5 mm, HWA-PI-FIX-SS-5MM-10M

PN: 1244-007768 Weight: 0.32 kg

For diameters up to 8 mm, HWA-PI-FIX-SS-8MM-10M

PN: 1244-007769 Weight: 0.52 kg



HARD-SPACER-SS-25MM-25M

Stainless steel spacer for fixing the heating cable on walls, tanks and vessels, etc.

Width spacer: 12.5 mm.

Fixing distance for cables: each 25 mm.

25 m per roll.

PN: 107826-000 Weight: 1.10 kg

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
CB-200F4B	AC UPS F&G - Battery Isolator-B	CONTAINER B-300 (LOWER DECK)	1724000372	3W Power	Cortem Spa		EJBC	Zone 1	EPT 20 ATEX 4075X	1724000372-EL-DG-00011	II 2GDEx db IIC T6 Gb Ex tb IIIC T 85°C Db	-	N/A	True	N/A	False	
EAT-200N1-01	Trace Heating - Remote Ambient Thermostat	LOWER DECK	1724001647	nVent	nVent	1244-022663	ETS-05-A2-E-A	Zone 1	Baseefa 13ATEX0137	1724001647-EL-DD-00004	II 2(1)G Ex eb ia mb [ia Ga] IIC T5 Gb - 40ºC ≤ Ta ≤ +60ºC II 2D Ex tb IIIC T100ºC Db	-	N/A	True	N/A	False	
EHT-1001-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1002-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1003-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1004-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1004-B	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1005-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1006-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1007-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-2002-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EJB-200F2-01	Top Obstruction Lights Junction Box	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990082	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
EJB-200F2-02	Intermediate obstruction lights junction box	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990083	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_4
EJB-200N1-02-L1-01	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990045	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-02	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990044	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-03	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990043	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
EJB-200N1-02-L1-05	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990058	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-06	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990057	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-07	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990059	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-08	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990060	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-09	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990061	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-10	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990047	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-11	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990056	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-12	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990055	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-13	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990054	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-14	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990053	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-15	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990052	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-16	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990051	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-17	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990050	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-18	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990049	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-19	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990048	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-20	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990072	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-01	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990003	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
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EJB-200N1-03-L2-03	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990002	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-04	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990001	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-05	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990012	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-06	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990011	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-07	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990010	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-08	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990009	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-09	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990008	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-10	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990007	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-11	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990006	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-12	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990005	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-13	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990014	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-14	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990013	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-04-L3-01	Stair Normal Lighting JB	LOWER DECK STAIRS	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990032	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-04-L3-02	Stair Normal Lighting JB	LOWER DECK STAIRS	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990033	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-01	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990064	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-03	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990062	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
EJB-200N1-08-L1-04	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990065	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-05	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990077	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-06	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990078	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	

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:	**SGS20ATEX0048X – Issue 3**
4	Product:	**BTV Range of Self-Regulating Trace Heating Systems**
5	Manufacturer:	**nVent Thermal LLC**
6	Address:	**899 Broadway Street, CA, 94063-3104, United States of America**

7 This re-issued certificate extends EU Type Examination Certificate No. **SGS20ATEX0048X** 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.

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 IEC 60079-7:2015+A1:2018 EN 60079-18:2015+A1:2017
EN 60079-30-1:2017 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 60079-30-1 eb IIC T6 Gb or Ex 60079-30-1 eb mb IIC T6 Gb T_{min} -60°C**
Ex 60079-30-1 tb IIIC T80°C Db or Ex 60079-30-1 mb tb IIIC T80°C Db

SGS Fimko Oy Customer Reference No. **865** Project File No. **21/0455**

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SGS Fimko Oy
Takomotie 8
FI-00380 Helsinki, Finland
Telephone +358 (0)9 696 361
e-mail **sgs.fimko@sgs.com**
web site **www.sgs.fi**
Business ID 0978538-5 Member of the SGS Group (SGA SA)

Tuomas Hänninen
SGS Fimko Oy

13 # Schedule

14 ## Certificate Number SGS20ATEX0048X – Issue 3

15 Description of Product

The BTV Range of Self-Regulating Trace Heating Systems is of the parallel circuit self-regulating type, rated at up to 277V, with power output up to 33W/m (10W/ft). The units have a maximum self-limiting temperature of 80°C.

Each trace heating system comprises:
- the active heating cable.
- an end seal for terminating the remote end of the unit.
- a cable gland for connecting the powered end of the unit to a suitable terminal enclosure, or alternative integrated power connection systems.

The active heating cable comprises two stranded copper conductors around which is extruded a semi-conductive core material. This core material increases in resistance with increasing temperature and gives the cable its self-limiting property. This semi conductive core with embedded conductors forms the active part of the heating cable. An extruded layer of fluoropolymer serves to insulate the semi conductive core from the conductive covering, covering the active heater. A protective anti-corrosion fluoropolymer sheath may be extruded over the conductive covering.

The declared maximum withstand temperature for the range is 85°C and the minimum installation temperature is -60°C.

CABLE ACCESSORIES

END SEALS

The end seals for terminating the remote end of the unit may be the following types:

Types E-100-L or E-100, which are mechanical end seals incorporating an end cap which is filled with silicone grease sealant covered by certificates Sira14ATEX3015X and PTB09ATEX1060U.

Types E-100-L-A or E-100-A, which are mechanical end seals incorporating an end cap which is filled with silicone grease sealant.

A Raychem Type E-20 heat shrink end seal kit.

Type E-150 mechanical end seals, covered by certificate DEKRA20ATEX0011U.

SPLICES AND JOINTS

The following splicing and jointing arrangements are provided:

A Raychem Type S-20 heat shrink splice kit for connecting lengths of active heating cable.

A Raychem T-100 tee connection system, certificate PTB20ATEX1008U, for connecting up to three heater cables.

Type S-150 mechanical splice kit, covered by certificate DEKRA20ATEX0011U.

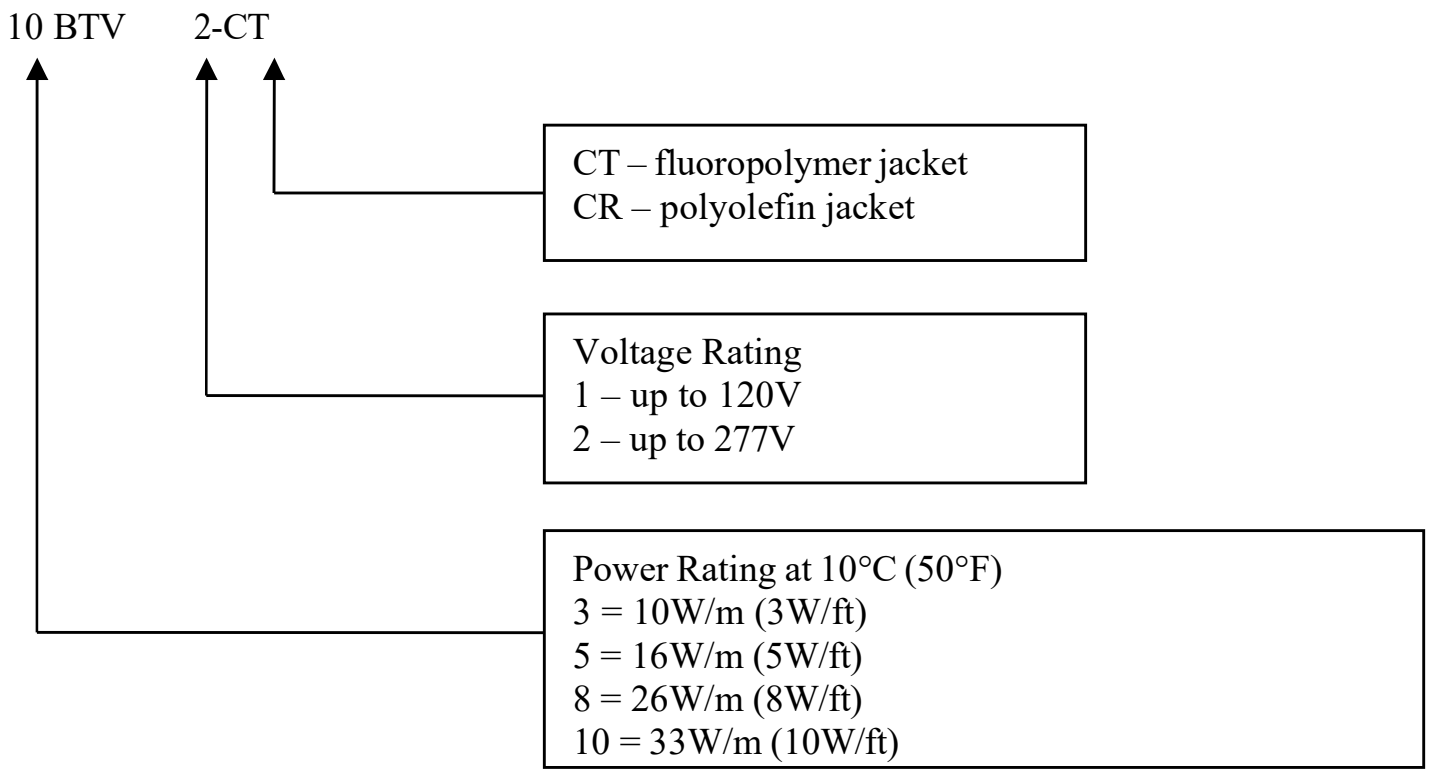
POWER CONNECTIONS

Power connection may be achieved by the following means:

Connection Type	ATEX Certificate
JBM-100	PTB20ATEX1008U
JBS-100	PTB20ATEX1008U
JBU-100	PTB20ATEX1008U
C-150-E	DEKRA20ATEX0011U
C25-21 Connection Kit	Baseefa16ATEX0037U
C25-100 Connection Kit	Baseefa16ATEX0038U
C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS Kits	Baseefa16ATEX0039U

The C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS Kits include M25 or ¾ NPT gland to Sira01ATEX1270X and core sealer to Baseefa15ATEX0194U.

A number of power levels and voltages, up to the maximum specified, are included in the range. They are identified in the following manner:



Any of the products in the range may be considered as part of a stabilised design system. In such a system the design is based upon the use of nVent proprietary software Trace calc Pro. The algorithm defined in this software may be used in additional design software.

The minimum bending radii for BTV trace heating cable at specific temperatures are shown in the table below:

Temperature, T (°C)	**Minimum Bending Radius (mm)**
$-60 \leq T < -20$	35
$-20 \leq T < -10$	30
$-10 \leq T < 0$	25
$0 \leq T < +10$	20
$T \geq +10$	12

16 Report Number

See Certificate History.

17 Specific Conditions of Use

1. The following limiting temperatures for the heat shrink end seals and splices shall not be exceeded:

   +110°C for the S-20 and E-20
   +150°C for the C-150-E, S-150 and E-150

2. The end seals, splices and power connections have the following associated ambient temperatures:

   -60°C to +56°C for the E-20 and S-20
   -55°C to +56°C for the T-100, JBM-100, JBS-100, JBU-100, and E-100
   -40°C to +56°C for the JBS-100-L, JBM-100-L, and JBU-100-L
   -55°C to +55°C for the C-150-E, S-150 and E-150
   -40°C to +40°C for the E-100-L
   -55°C to +110°C for the C25-21 and C25-100
   -60°C to +180°C for the C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS

3. The assembly of glands, splices and end terminations shall be carried out in accordance with the manufacturing instructions

4. The heating element supply circuit must include an electrical protection device in conformity with Clause 4.4 of EN 60079-30-1.

5. The minimum installation temperature is -60°C. The minimum bending radii at specific temperatures for the Type BTV units are shown in the table in the equipment description.

6. The supply to the heating unit must be terminated in a suitably certified terminal enclosure.

7. The minimum installation temperature for E-20 and S-20, end seal and splice is -20°C.

8. The installer is to carry out a dielectric strength test on Ex equipment in which the C25-21, C25-100 and C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS connection kit is fitted. No dielectric breakdown shall occur. (Alternatively, an insulation resistance test may be undertaken in accordance with EN 60079-30-2).

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
205308-A[i]	1 of 1	Q	05/27/2021	BTV-8BTV-CR & BTV-10BTV-CR
205310-A[i]	1 of 1	R	05/27/2021	BTV-8BTV-CT & BTV-10BTV-CT

Current drawings which remain unaffected by this issue:

Number	Sheet	Issue	Date	Description
906567[ii]	1 of 1	P	05/21/21	C25-21, C25-100 and C25-100-METAL-XX, C3/4-100-METAL-XX Connection Kits
906579-A[i]	1 of 1	N	01/15/2021	BTV Heater Units (European System)
205350-A[i]	1 of 1	P	03/31/20	BTV-3BTV-CT & BTV-5BTV-CT
205349-A[i]	1 of 1	J	03/26/20	BTV-3BTV-CR & BTV-5BTV-CR
906794-A[iii]	1 of 1	AA	03/30/20	Generic ATEX and IECEx Print Dwg for BTV-CT, QTVR-CT, XTV-CT, KTV-CT Heating Cables
9242869[iv]	1 & 2	O	12/09/19	LABL JBM-100-L-E
9532687[iv]	1 & 2	Q	12/09/19	LABL JBM-100-L-EP
9621473[iv]	1 & 2	O	12/09/19	LABL JBS-100-L-E
9777523[iv]	1 & 2	P	12/09/19	LABL JBS-100-L-EP
9319676[iv]	1 & 2	O	12/09/19	LABL JBU-100-L-E
9735898[iv]	1 & 2	O	12/09/19	LABL JBU-100-L-EP
908742-A[v]	1 of 1	A	2/19/20	E-20 Heat Shrinkable End Seal Kit Cut Back Dimensions
908743-A[vi]	1 of 1	A	2/19/20	S-20 Heat Shrinkable Splice Joint Kit Cut Back Dimensions

i) These drawings are common to IECEx BAS 20.0011X, SGS20ATEX0048X and are held with IECEx BAS 20.0011X.

ii) This drawing is common to IECEx BAS 16.0040U, IECEx BAS 16.0041U, IECEx 16.0042U, IECEx BAS 20.0008X, IECEx BAS 20.0009X, IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, Baseefa16ATEX0037U, Baseefa16ATEX0038U, Baseefa16ATEX0039U, SGS20ATEX0045X, SGS20ATEX0046X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and is held with IECEx BAS 16.0040U.

iii) These drawings are common to IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and are held with IECEx BAS 20.0011X.

iv) These drawings are common to IECEx BAS 20.0008X, IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, SGS20ATEX0045X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and are held with IECEx BAS 20.0008X.

v) These drawings are common to IECEx BAS 20.0010X, IECEx BAS 20.0011X, IECEx BAS 20.0013X, SGS20ATEX0047X, SGS20ATEX0048X, SGS20ATEX0050X and are held with IECEx BAS 20.0010X.

vi) These drawings are common to IECEx BAS 20.0011X, IECEx BAS 20.0013X, SGS20ATEX0048X, SGS20ATEX0050X and are held with IECEx BAS 20.0011X.

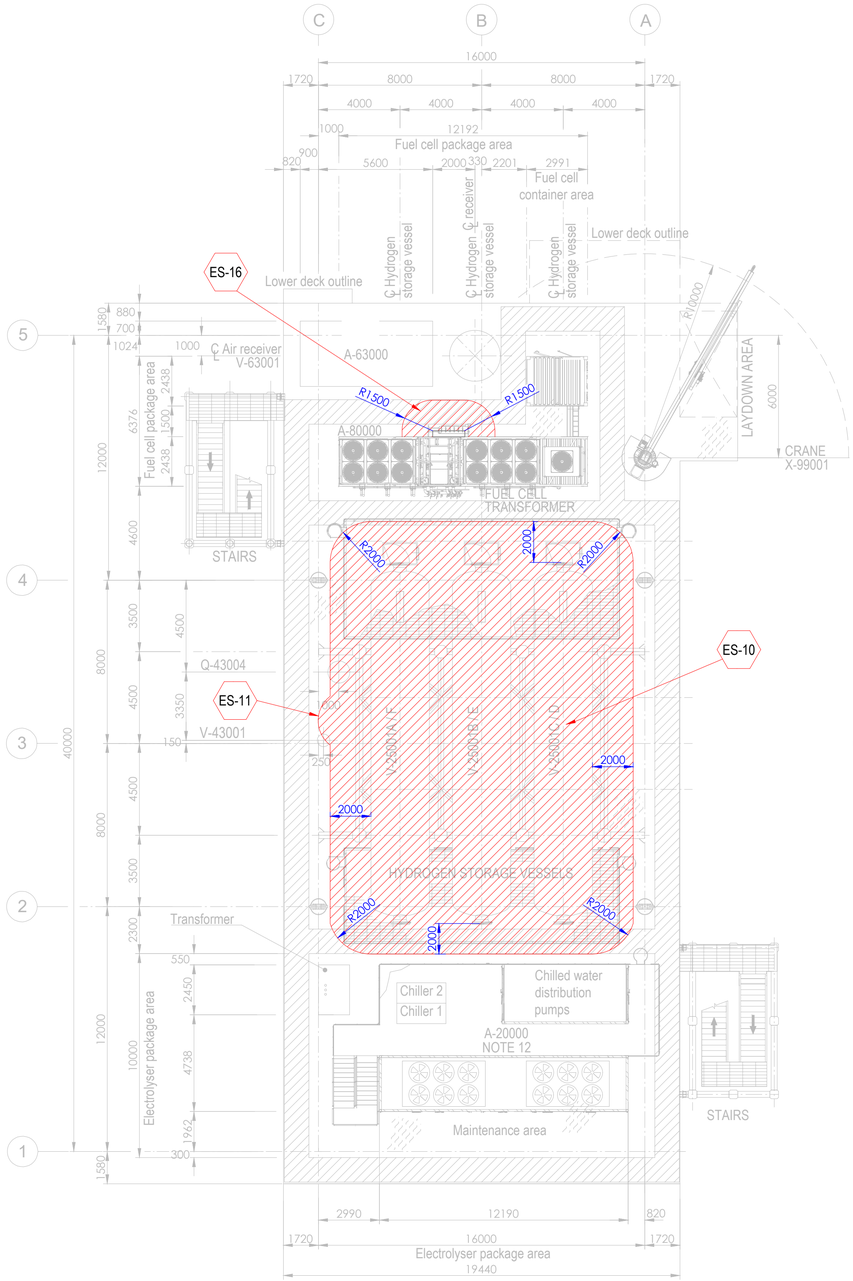
20 Certificate History

Certificate No.	Date	Comments
SGS20ATEX0048X	23 October 2020	The release of the prime certificate. The associated test and assessment against the requirements of EN 60079-0:2012+A11:2013, EN IEC 60079-7:2015+A1:2018, EN 60079-18:2015+A1:2017, EN 60079-30-1:2017 and EN 60079-31:2014 is documented in Test Report No. GB/BAS/ExTR20.0030/00.

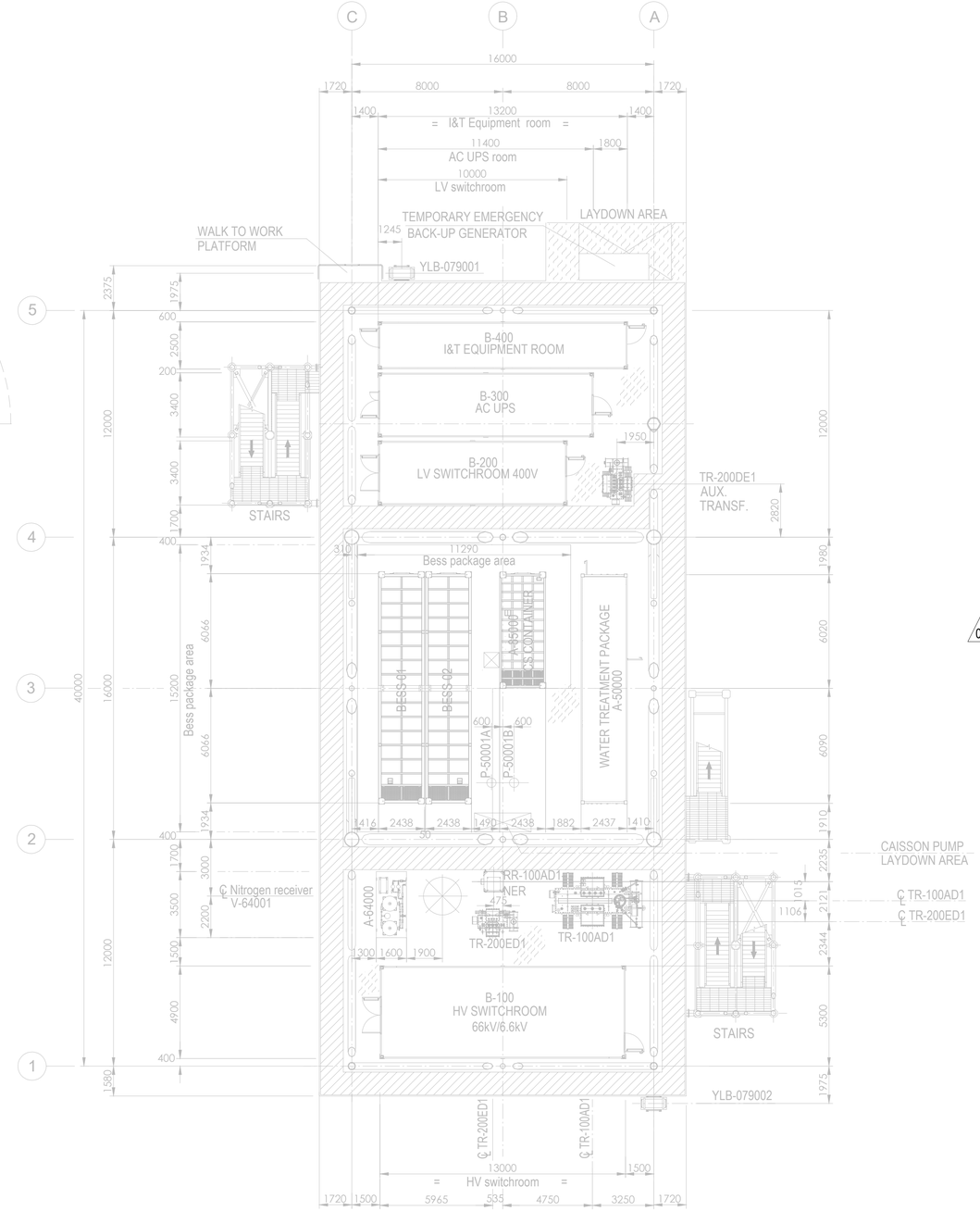
Certificate No.	Date	Comments
SGS20ATEX0048X Issue 1	11 February 2021	To assess the BTV range of self-regulating trace heating systems against EN IEC 60079-0:2018, introduce the low profile power connection, splice and end seal kits, types C-150-E, S-150 and E-150 afforded DEKRA20ATEX0011U, minor amendments to the product description, to change the product name to "BTV Range of Self-Regulating Trace Heating Systems" and to amend the Specific Conditions of Use. The associated test and assessment is documented in Test Report No. GB/BAS/ExTR21.0005/00.
SGS20ATEX0048X Issue 2	7 July 2021	Minor drawing updates not affecting certification. Baseefa Certification Report GB/BAS/ExTR21.0060/00 refers.
SGS20ATEX0048X Issue 3	3 September 2021	Minor change to the BTV-8BTV-CR, BTV-8BTV-CT, BTV-10BTV-CR and BTV-10BTV-CT heating cable dimensions. Baseefa Certification Report GB/BAS/ExTR21.0104/00 refers.
For drawings applicable to each issue, see original of that issue.		

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

REV. 02



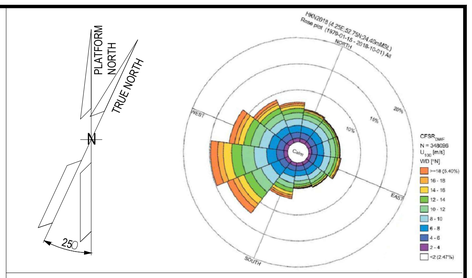
PLAN ON UPPER DECK
EL+30.310 T.O.S.



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

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

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



NOTES

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

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

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

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

CROSSWIND

ROSETTI MARINO

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

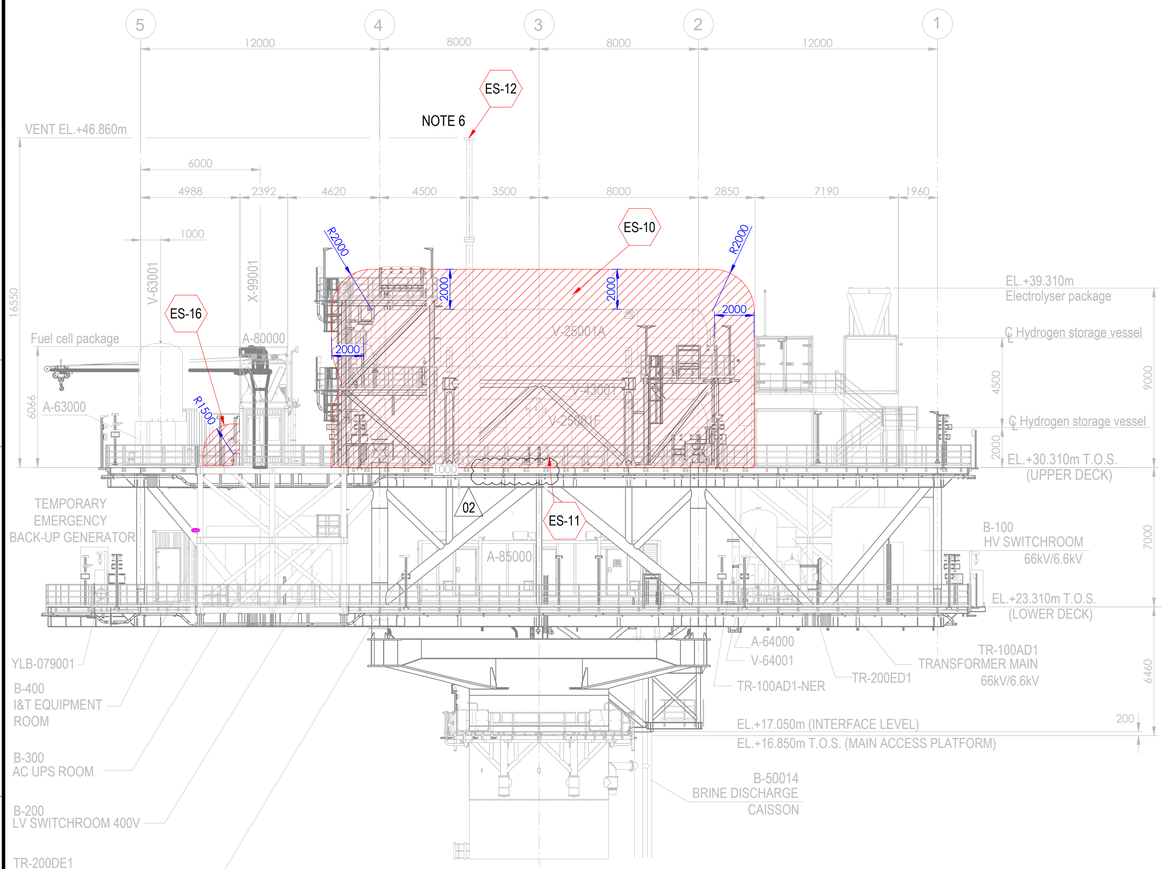
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

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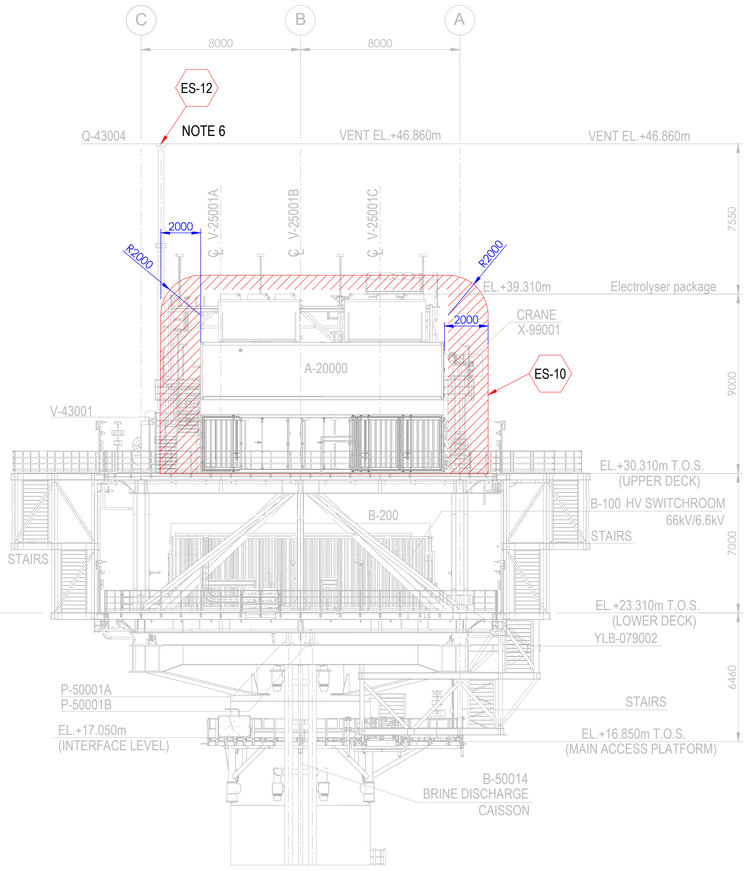
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

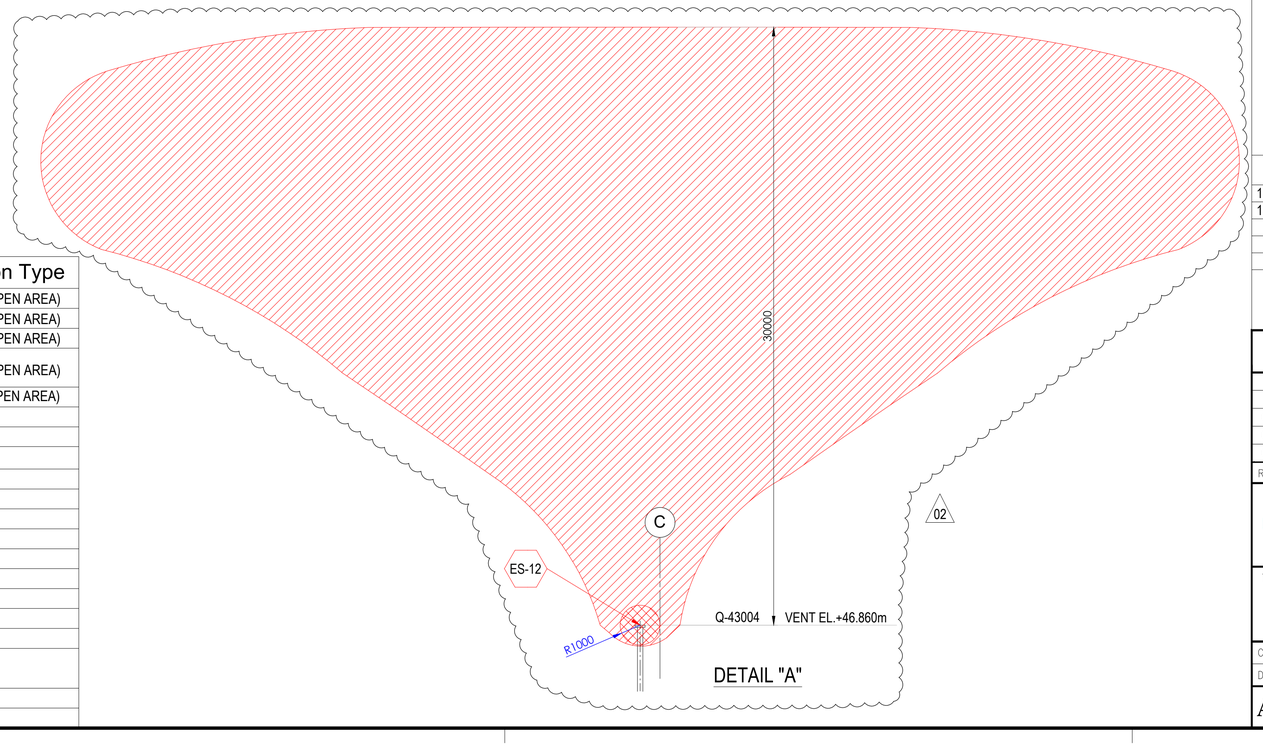


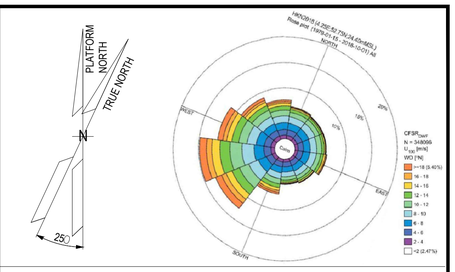
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

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





NOTES

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

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

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

CROSSWIND

ROSETTI MARINO

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

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

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

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

ITEM	Tag	EHT-1002-A	: Heat Tracing Tape		Dwg	1724001647-EL-LIS-00003	
	S/Sys	83-65	: Electrical Heat Tracing		Module	LD	
TASK	code	C10004633	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Electrical	Form	CPX22A	Tape Trace Heating Before Insulation

1	Check that the circuit is de-energized and safe.	OK
2	Check all tapes and junction boxes are undamaged.	OK
3	Check all tapes and junction boxes are installed according to drawings.	OK
4	Check all tapes characteristics against project data (type, rated power).	OK
5	Check rating of circuit breaker against drawings.	OK
6	Check tapes, junction boxes, cables and accessories tagging.	OK
7	After test re-connecting cable as per typical installation.	OK
8	If required produce Red Line Mark Up for "AS BUILT"	

CIRCUIT DATA

List Associated Heat tracing Isometric	1724001647-EL-DD-00004
Tape Type	3BTV2-CT
Circuit Installed Length	30m
Wiring Diagram	WD_1724001647-EL-DG-00006/Single line Diagram (1724001647-EL-DG-00005).

Testing & measurement instruments used

Type	Serial n°	Calibration certificate	Validity
MEGGER : KEW3125A	SERIAL: W8330207	N°7722/24	09/07/2025
VOLCRAFT 1000V	ET-200 S/N:H240103023	N°LAT 042 00768/24	11/10/2025

FIRST TEST

Continuity and insulation resistance tests to earth for each conductor core are carried out after the tape is installed on pipework **before any insulation and cladding is fitted.**

Test voltage (V):	2500	Tape Lengh	30m	Thermostats :	N/A
Continuity	37,4	Insulation Resistance	>1999 M	Result	OK

AFTER THIS TEST IS DONE, LINE CAN BE RELEASED TO INSULATION TEAM

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-08	2025-02-28	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-08T09:48:14.449Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-28T14:14:15.837Z	

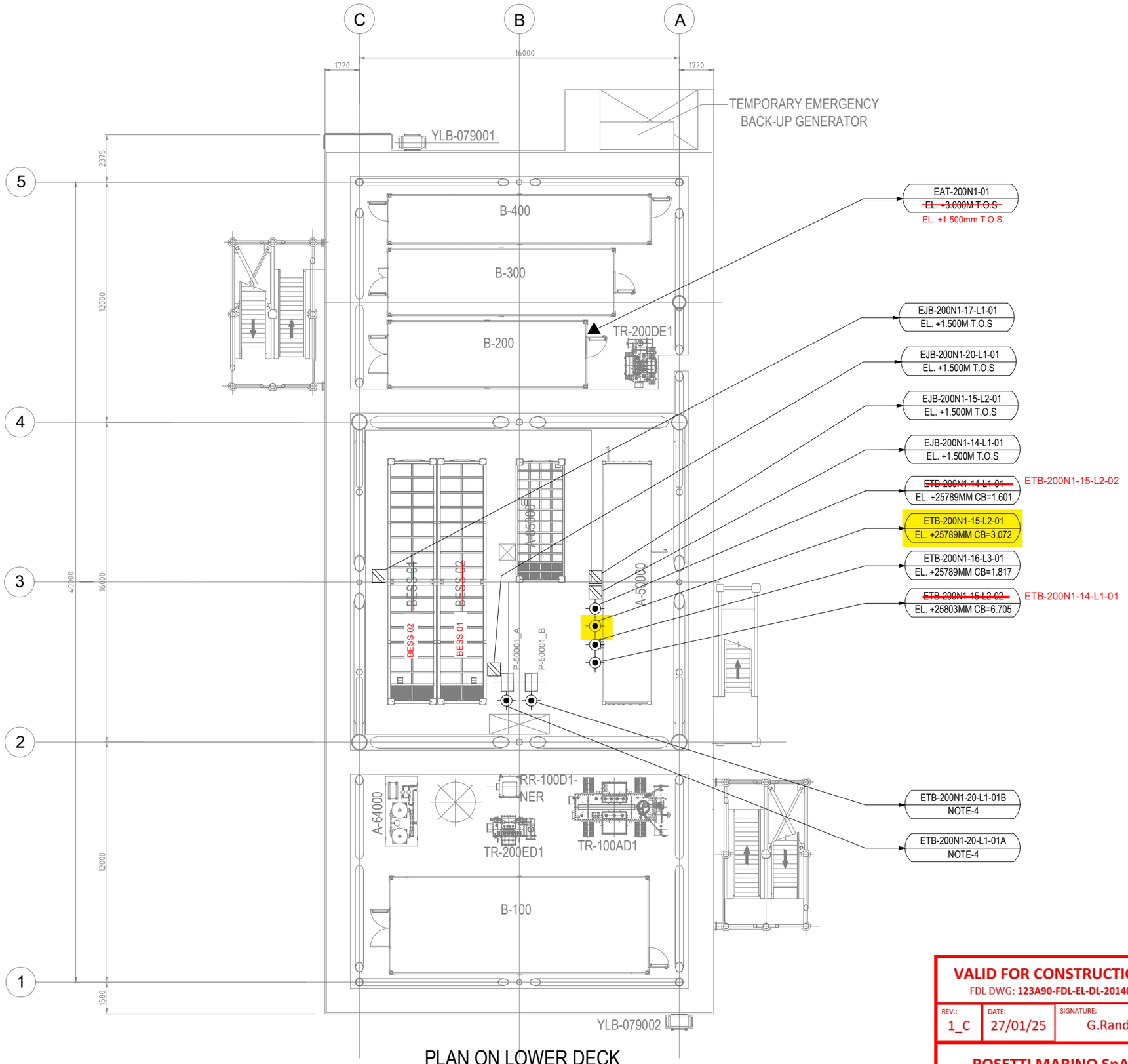
EHT CALCULATION LIST

PIT240024_ED01-1001

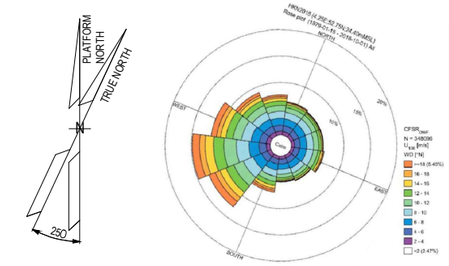
		ENGINEERING DATA				MECHANICAL & INSULATION DATA							PROCESS DATA				EHT BASIC DESIGN								EHT DETAILED DESIGN						EHT TEMP. CONTROL DATA							
Main EHT Box Number	Item Number	Heater Number	Line, Equipment or Instrument ID	nVent Circuit Number	Plant Area	Pipe Size [DN / IN]	Pipe Length [m]	Support Quantity [pc]	Valve Quantity [pc]	Other Heat Sink Quantity [pc]	Insulation Type	Insulation Thickness [mm]	Maintain Temperature [°C]	Maximum Allow. Process Temperature [°C]	Maximum Operating Temperature [°C]	Maximum Exposure Temperature [°C]	Heatloss [W/m]	Heating Cable Selection	Trace Ratio	Heating Cable Output [W/m]	EHT Cable per Support [m]	EHT Cable per Valve [m]	EHT Cable per Other Heatsink [m]	Total EHT Cable [m]	Max. Allow. EHT Circuit Length [m]	Connection Type	Voltage [V]	Operating Current [A]	Total Operating Load [W]	Start-Up Current [A]	Temp. Control Method	Controller Set Point [°C]	Minimum Controlled Temperature [°C]	Maximum Controlled Temperature [°C]	Maximum Uncontrolled Temperature [°C]	Revision	Remark
																		GRAND TOTAL						**181.4**				**9.69**	**2226**	**14.91**							
ETB-200N1-16-L3-01	1	EHT-1001-A	1"-DM-001-01SS-E	1001	PIPING	1	17.6	5	1	2	RW/MF 1:2015	20	5	100	22	22	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	22.0	199	Single L-N	230	1.18	271	1.8	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**22.0**			**230**	**1.18**	**271**	**1.8**							
ETB-200N1-15-L2-01	1	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	11.0	4		1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	13.9	199	Single L-N	230	0.73	167	1.1	Ambient sensing, standard	5	18	29	50	00	
	2	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	3	EHT-1002-A	1"-CI-032-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	4	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	5	EHT-1002-A	1"-CI-030-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	6	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.75	0.5		1		RW/MF 1:2015	20	5	50	25	25	3.4	3BTV2-CT	2.0	10.7		1.5		2.6	199	Single L-N	230	0.15	34	0.2	Ambient sensing, standard	5	30	38	55	00	
	7	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.5	0.5		1		RW/MF 1:2015	20	5	50	25	25	2.9	3BTV2-CT	2.0	10.7		1.4		2.5	199	Single L-N	230	0.14	32	0.2	Ambient sensing, standard	5	32	40	56	00	
																		TOTAL						**36.4**			**230**	**2.00**	**459**	**3.1**							
	1	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	4	0.5				RW/MF 1:2015	20	5	100	25	25	10.2	3BTV2-CT	1.0	10.7				0.6	199	Single L-N	230	0.03	7	0.1	Ambient sensing, standard	5	5	20	46	00	
	2	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	4.7	1		1	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1		0.5	9.3	199	Single L-N	230	0.47	107	0.7	Ambient sensing, standard	5	14	27	49	00	
	3	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	4	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	7.8	3			RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1			8.6	199	Single L-N	230	0.48	111	0.7	Ambient sensing, standard	5	14	27	49	00	
	5	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	6	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.8	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	7	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	1.4	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	4.2	199	Single L-N	230	0.23	54	0.4	Ambient sensing, standard	5	24	34	53	00	
	8	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	9	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	10	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.7	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
ETB-200N1-14-L1-01	11	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	1.2	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	3.7	199	Single L-N	230	0.20	47	0.3	Ambient sensing, standard	5	24	34	53	00	
	12	EHT-1003-A	1"-SWS-147-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	13	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	14	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	15	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1	0.1				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	28	37	54	00	
	16	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
	17	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	18	EHT-1003-A	1"-SWS-146-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	19	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	20	EHT-1003-A	1"-SWS-290-01SD-E	1003	PIPING	1	1.1	1	2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7	0.3	1.6		5.8	199	Single L-N	230	0.33	76	0.5	Ambient sensing, standard	5	28	37	54	00	
	21	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**78.6**			**230**	**4.37**	**1002**	**6.7**							
ETB-200N1-17-L1-04	1	EHT-1004-A	1"-WW-259-01CS-E / V-43001	1004	PIPING	1	0.9		1	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7		0.8	0.5	3.2	199	Single L-N	230	0.12	28	0.2	Ambient sensing, standard	5	18	29	50	00	Combined with EHT-1004-B
																		TOTAL						**3.2**			**230**	**0.12**	**28**	**0.2**							
ETB-200N1-17-L1-02	1	EHT-1005-A	1"-WW-260-01CS-E	1005	PIPING	1	1.2	1	2	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	4.6	199	Single L-N	230	0.20	46	0.3	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1006-A
																		TOTAL						**4.6**			**230**	**0.20**	**46**	**0.3**							
ETB-200N1-17-L1-03	1	EHT-1006-A	1"-WW-202-01CS-H	1006	PIPING	1	1.0			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	1.0	10.7			0.5	2.5	199	Single L-N	230	0.08	19	0.1	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1005-A
																		TOTAL						**2.5**			**230**	**0.08**	**19**	**0.1**							
ETB-200N1-15-L2-02	1	EHT-1007-A	1"-CI-043-01CP-E	1007	PIPING	1	15.0	6		4	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	19.5	199	Single L-N	230	1.04	239	1.6	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**19.5**			**230**	**1.04**	**239**	**1.6**							
ETB-200N1-17-L1-05	1	EHT-1004-B	43-LT-001	2001	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	Combined with EHT-1004-A
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							
ETB-200N1-17-L1-01	1	EHT-2002-A	43-LT-003	2002	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

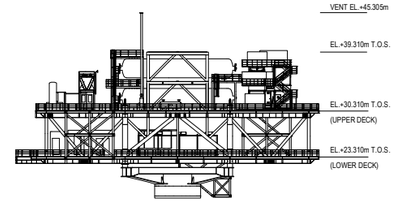
LEGEND

- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_C	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 1of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

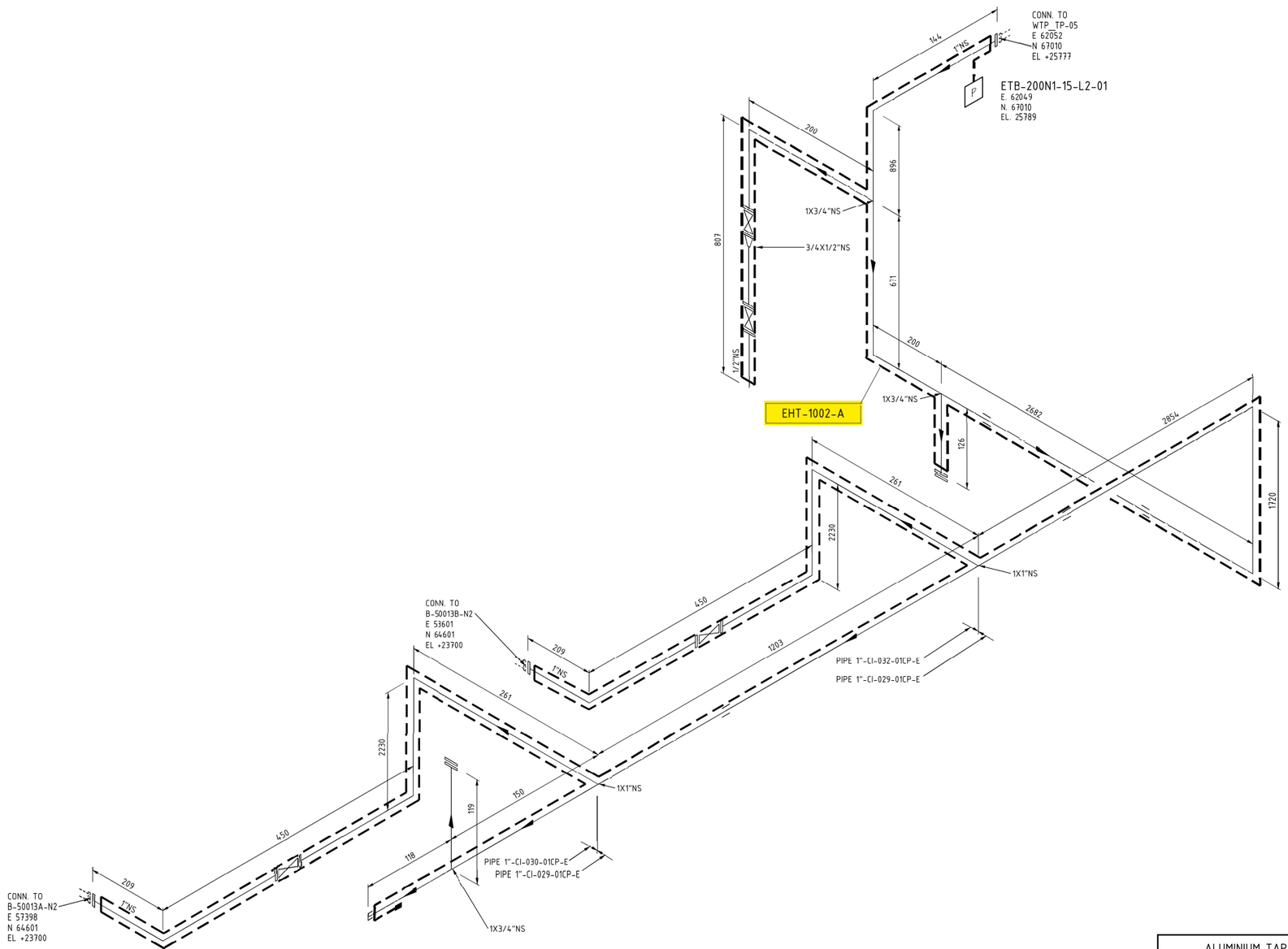
CAD FILENAME: PIT240024_DD01_1002_001_02.dwg

HEAT TRACING DATA

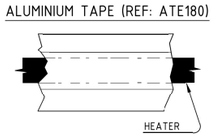
HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	PIPE LENGTH (m)	HEATER LENGTH (m)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W/m)	POWER OUTPUT (W/m)	SHEATH TEMP. (°C)
EHT-1002-A	PIPING	3BTV2-CT	18.0	36.5	3.1	459	230	3.9	10.7	85
		TOTALS	18.0	36.5	3.1	458				

HEATER ADDER TABLE

PIPE SIZE (Ins)	TYPE	QTY	ALLOWANCE PER ITEM (m)	TOTAL ALLOWANCE (m)
0.5	Typical Metal Valve	1	1.44	1.44
0.75	Typical Metal Valve	1	1.54	1.54
1	Typical Pipe Support	4	0.15	0.6
1	Typical Flange (fixed adder)	3	0.46	1.38
1	Typical Metal Valve	2	1.64	3.28
N/A	DRAIN	2	0.3	0.6



ALUMINIUM TAPE (REF: ATE180)



SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

DESIGN PARAMETERS

CIRCUIT NUMBER	1002	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	25°C	INSULATION TYPE	RW/MF 1.2015
MAX. EXPOSURE TEMP.	25°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	50°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

COMPONENT BILL OF MATERIALS

CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	36.5	m	Raychem Self-Regulating Heating Cable
JBS-100-E	1	each	Integrated Junction Box, Multiple-Entry, Cold-Applied, ATEX
PSE-090	1	each	Pipe Strap for 1.1/4" to 3" (40-90mm)
GS-54	1.5	each	Glass Tape (16m/roll), suited for SS pipes
LAB-I-01	7	each	Warning Label - English
E-20	1	each	Heat shrink end seal, ATEX (BTV, QTVR)
JBS-SPA	0.2	bag	Small Pipe Adapter for E-100, JBS-100, and JS-100

LINE NUMBERS

1"-CI-029-01CP-E
1"-CI-030-01CP-E
1"-CI-032-01CP-E

REFERENCE DRAWINGS / DOCUMENTS

123A90-DDL-PP-DI-71000_021
123A90-DDL-PP-DI-71000_022
123A90-DDL-PP-DI-71000_024

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.
4. HEATING CABLE ALLOWANCES PROVIDED IN THE 'EHT ADDER TABLE' FOR FLANGES AND VALVES ARE IN ADDITION TO THEIR LINEAR LENGTHS.

CROSSWIND

ROSETTI MARINO

nVent RAYCHEM TRACER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
02	20/01/2025	ISSUED FOR REVIEW	ADU	AMI	GPI
01	25/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING ISOMETRIC

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-EL-DD-00004	4/10	02

A1

DRAWING NO. DRAWING_NO.

REV. REV

P-50001 A/B

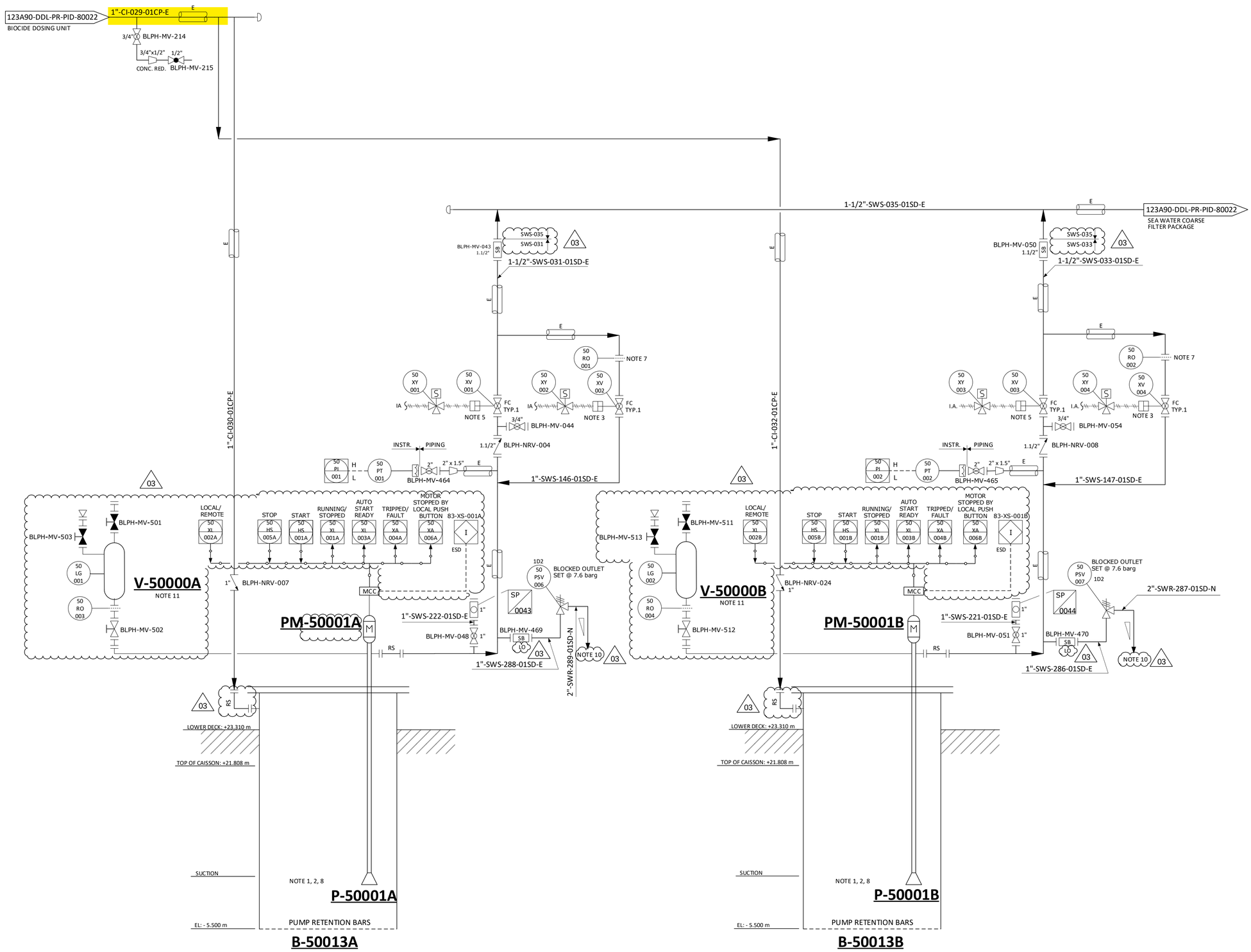
SEA WATER LIFT PUMPS

POWER : 1.6 KW
FLOW : 2.5 m³/h
DESIGN P/T : 7.6 barg / 80°C
DISCHARGE PRESSURE : 5.6 barg (NOTE 9)
MATERIAL : SDSS

B-50013 A/B

SEA WATER LIFT PUMPS
CAISSONS

SIZE : 343 mm (ID) x 27308 mm (H)
MATERIAL : CS + CA



NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED.
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING IN CASE THE RELEVANT XV VALVE IS FULLY CLOSED. 03
6. DELETED.
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.
10. ROUTED TO THE SEA.
11. VESSELS V-50000A/B ARE INSULATED AND HEAT TRACED. 03

HOLDS

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

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

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80021	SHEET 001	REV. 03

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV

A-50000
WATER TREATMENT PACKAGE
CAPACITY : 2.5 m³/hr

GAS CONFIRMED 50 XA 001 — F&G
SMOKE CONFIRMED 50 XA 002 — F&G
FAULT PACKAGE 50 XA 003 — ESD
50-XS-001 SHUT-DOWN — ESD
NOTE 6

CONTRACTOR | SUPPLIER

123A90-DDL-PR-PID-80025
TO 50-TDI-002
50 TI 001
BLOCKED OUTLET SET @ 6 barg
50 PSV 011 1D2
2"-SWR-291-01SD-N
BLPH-MV-471 SD LO
03
NOTE 7
1"-SWS-290-01SD-E
50 TT 001
50 TE 001
03
1.1/2"
TP 017 50
E
4"x1.1/2"
4"x1.1/2"
ECC. RED.
ECC. RED.
123A90-DDL-PR-PID-80021
FROM SEA WATER LIFT PUMP
1-1/2"-SWS-035-01SD-E
BLPH-MV-241 3/4"

FOR CONTINUATION SEE DOC N. 123A90-DDL-PR-PID-80023

A-50000
WATER TREATMENT PACKAGE
SEE VENDOR DRAWING
DOC. N. 1724000448-PR-PID-00013

FOR CONTINUATION SEE DOC N. 123A90-DDL-PR-PID-80023

E
TP 005 50
03
123A90-DDL-PR-PID-80021
TO SEA WATER LIFT PUMP AND LIFT PUMP CAISSONS
1"-CI-029-01CP-E

1"-CI-043-01CP-E
TP 006 50
03
DECK
HOOK-UP 003
123A90-DDL-PR-PID-80026
TO WASTE WATER TANK

SUPPLIER | CONTRACTOR

TP 003 50
03
1.1/2"x1"
3"x1.1/2"
1"-SWR-045-01CS-H
123A90-DDL-PR-PID-80025
TO BRINE DISCHARGE CAISSON

TP 007 50
03
1.1/2"x1"
1"-WW-038-01CS-H
123A90-DDL-PR-PID-80026
TO WASTE WATER TANK

NOTES

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.
6. SERIAL COMMUNICATION WITH CONTROL SYSTEM.
7. ROUTED TO THE SEA. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.
6. DELETED.

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

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 2

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE

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	123A90-DDL-PR-PID-80022	001	03

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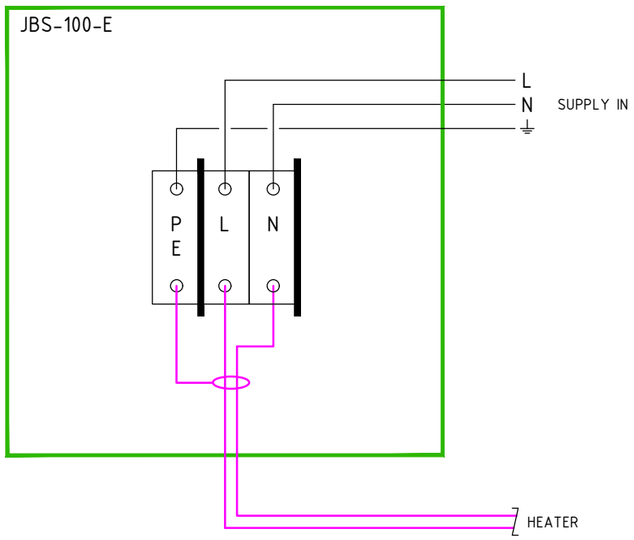
CAD FILENAME: 1724001647-EL-DG-00005 Rev.01.dwg

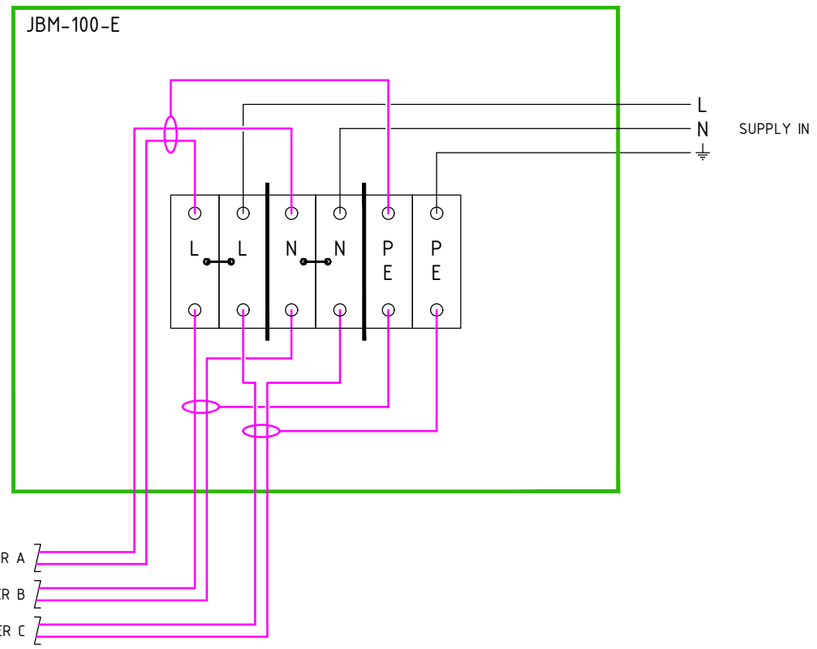
GENERAL INFORMATION:

1. JBS-100-E IS DESIGNED TO CONNECT POWER TO ONE BTV, QTVR, XTV, KTV, HTV OR VPL EHT CABLE.
2. THIS KIT INTEGRATES THE FUNCTIONS OF BOTH CONNECTION KITS AND INSULATION ENTRIES.
3. THE STAND CONNECTED TO THE BOTTOM OF THE BOX PROTECTS THE HEATING CABLE AND ALLOWS FOR UP TO 100mm (4") THERMAL INSULATION.

TECHNICAL BRIEF:

- 2 x M25 THREADED ENTRIES
- 1 x M25 STOPPING PLUGS
- 1 x M25 POWER CABLE GLAND





REV.	DATE	DESCRIPTION	BY	CHK	APP
--	--	--	--	--	--
--	--	--	--	--	--
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	08/03/2024	ISSUED FOR INFORMATION	LJB	E-C	ZS

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TITLE
TYPICAL CONNECTION OF A JBS-100-EP
SINGLE ENTRY JUNCTION BOX

PREPARED BY	-.---	LANG.	SCALE
LEAD ENGINEER	-.---	en	N/A
PROJECT NO.	DRAWING NO.	SHEET	REVISION
PIT240024	1724001647-EL-DG-00005	2/3	01

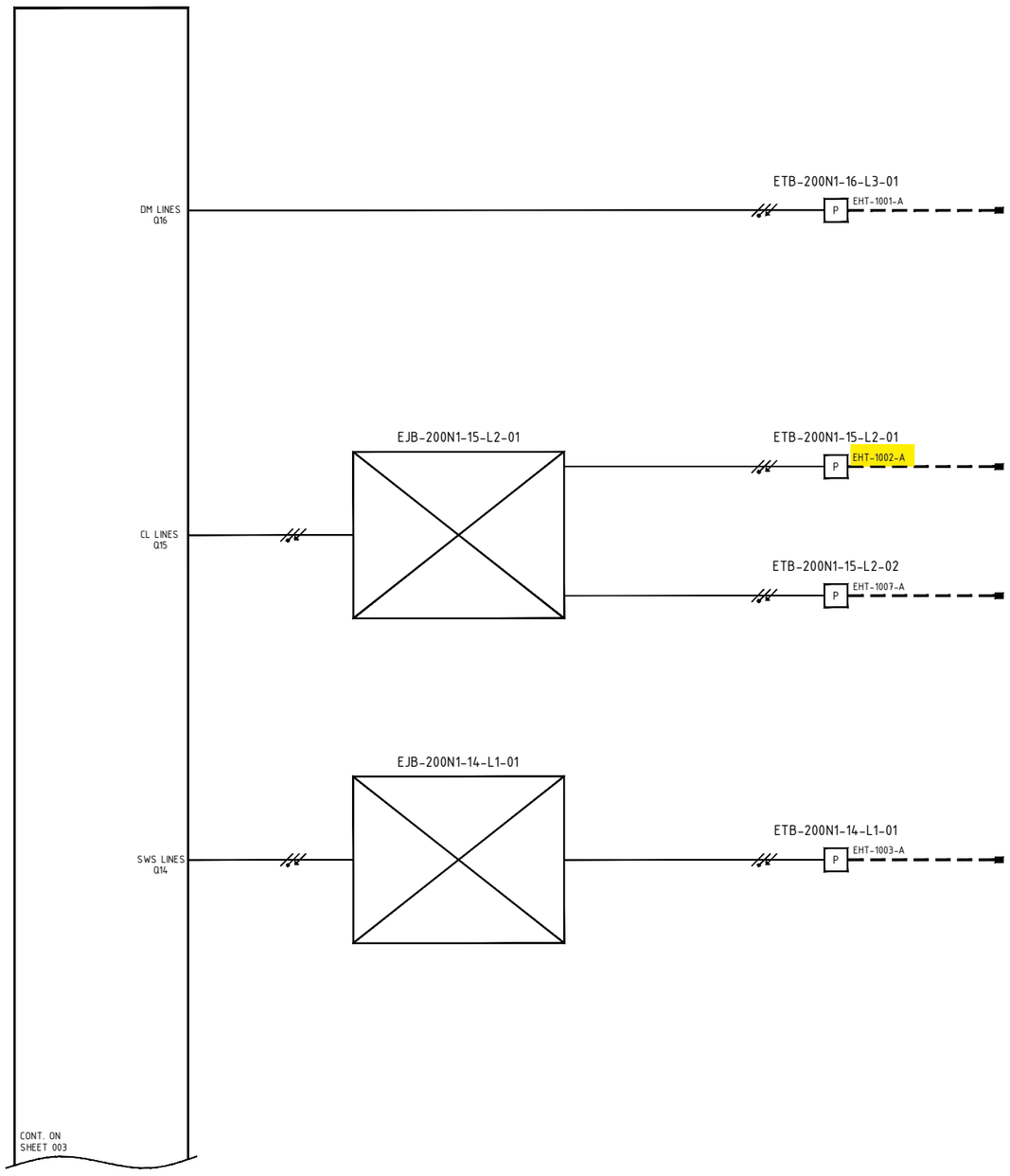
A3

CAD FILENAME: 1724001647-EL-DG-00006 Rev.01.dwg

CONTROL PANEL REF.:

DP-200N1

MARSHALLING BOX



CIRCUIT NO.	1001	1002, 1007	1003	
C.B. RATING (A)	32	32	32	
START-UP I (A)	1.8	4.7	6.7	
LOAD (W)	271	698	1002	
SERVICE	WINTERIZING	WINTERIZING	WINTERIZING	
NOTES FOR THE CIRCUIT	--	--	--	

GENERAL NOTES

CROSSWIND

ROSETTI MARINO

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	02/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING
SINGLE LINE DIAGRAM (SLD)

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-EL-DG-00006	3/4	01

BTV

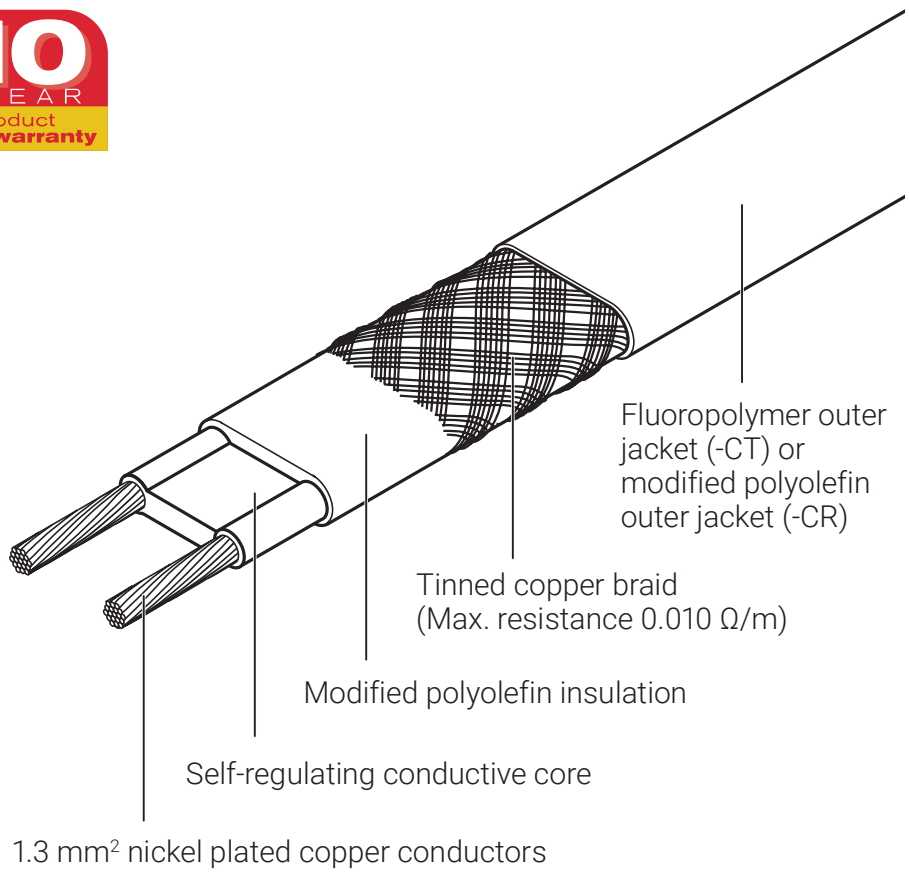
nVent RAYCHEM

CONNECT AND PROTECT

Self-regulating Heating Cable (Ex)

PRODUCT OVERVIEW

10 YEAR Product warranty



Electrical heat-tracing for frost protection without steam cleaning.
The nVent RAYCHEM BTV-family of self-regulating, parallel circuit heating cables is used for frost protection of pipes and vessels. It can also be used for process temperature maintenance up to 65°C.

Application

Traced surface type	Carbon steel Stainless steel Plastic Painted or unpainted metal
Chemical resistance	For organic corrosives: use -CT (fluoropolymer outer jacket) For mild inorganic solutions: use -CR (modified polyolefin outer jacket) For aggressive organics and corrosives consult your local nVent representative

Supply voltage

230 Vac (Contact your local nVent representative for data on other voltages)

PRODUCT SPECIFICATIONS

Product dimensions and weight

	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Width x Thickness (nominal) mm	10.5 x 5.5		13.2 x 5.5	
Weight (g/m)	110		150	

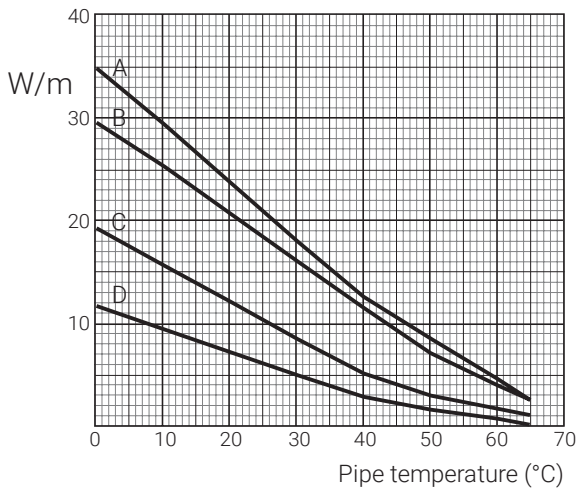
Technical details

Maximum maintain or continuous exposure temperature (power on/off)	65°C
Maximum intermittent exposure temperature (power on/off)	85°C Maximum cumulative exposure 1000 hours
Minimum installation temperature	–60°C
Minimum bend radius	–60°C ≤ T<–20°C: 35 mm –20°C ≤ T<–10°C: 30 mm –10°C ≤ T< 0°C: 25 mm 0°C ≤ T <+10°C: 20 mm T≥ +10°C: 12 mm

Thermal output rating

Nominal power output at 230 Vac on insulated steel pipes

A 10BTV2-CT
10BTV2-CR
B 8BTV-2-CT
8BTV-2-CR
C 5BTV2-CT
5BTV2-CR
D 3BTV2-CT
3BTV2-CR



	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Nominal power output (W/m at 10°C)	9	16	25	29

Maximum circuit length based on type ‘C’ circuit breakers according to EN 60898

Electrical protection sizing	Start-up temperature	Maximum heating cable length per circuit (m)			
16 A	–20°C	155	110	70	45
	+10°C	200	160	110	65
20 A	–20°C	195	140	90	55
	+10°C	200	160	125	85
25 A	–20°C	200	160	110	70
	+10°C	200	160	125	105
32 A	–20°C	200	160	125	90
	+10°C	200	160	125	110

The above numbers are for circuit length estimation only. For more detailed information please use the nVent RAYCHEM TraceCalc software or Contact your local nVent representative. nVent requires the use of a 30 mA residual current device to provide maximum safety and protection from fire. Where design results in higher leakage current, the preferred trip level for adjustable devices is 30 mA above any inherent capacitive leakage characteristic of the heater as specified by the trace heater supplier or alternatively, the next common available trip level for non adjustable devices, with a maximum of 300 mA. All safety aspects need to be proven.

APPROVALS

For use ordinary area and hazardous area Zone 1 and Zone 2 (Gas), Zone 21 and Zone 22 (Dust).

Temperature classification
T6

Product certification

More details about product certification, approvals and conditions of safe use are available in the installation manual for Self-regulating and Power limiting heating cable systems at www.nVent.com/RAYCHEM

ORDERING INFORMATION

Part description	3BTV2-CR	5BTV2-CR	8BTV-2-CR	10BTV2-CR
Part No. (*)	914279-000	414809-000	479821-000	677245-000
Part description	3BTV2-CT	5BTV2-CT	8BTV-2-CT	10BTV2-CT
Part No. (*)	469145-000	487509-000	008633-000	567513-000

Components

nVent offers a full range of components for power connections, splices and end seals. These components must be used to ensure proper functioning of the product and compliance with electrical requirements.

(*) Localized versions may exist with limited approvals and different part numbers. Contact your local sales representative

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

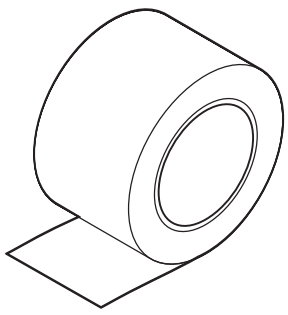
Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com

Our powerful portfolio of brands:
CADDY ERICO HOFFMAN RAYCHEM SCHROFF TRACER

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nVent reserves the right to change specifications without notice.



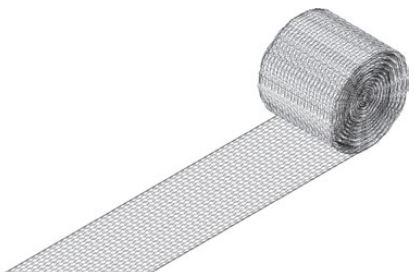
ATE-180

Aluminium tape* for attaching heating cables and thermostat sensors to pipes and tanks. Minimum installation temperature: 0°C. Also suitable for stainless steel pipes.

55 m per roll, 63.5 mm width.

PN: 846243-000 Weight: 0.84 kg

*Power output of selfregulating heating cables might increase when installed with aluminium tape or other heat transfer aids. Please use TraceCalc or contact nVent representative for further details.

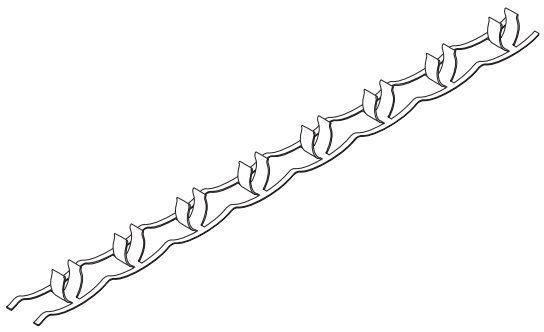


HWA-METAL-MESH-SS-50MM-10M

Stainless steel mesh for fixation of heating cables on valves, pumps or other odd-shaped surfaces. This mesh provides optimum contact and heat transfer between heating cables and heated equipment and can be used for exposure temperatures up to 400°C.

10 m per roll, 50 mm width.

PN: 1244-005772 Weight: 0.36 kg



HWA-PI-FIX- SS-xMM-10M

Stainless steel clip band to attach Polymer Insulated series heating cables to pipes. Clips at regular distances to allow for even heater spacing. Band available in two sizes for different diameter ranges.

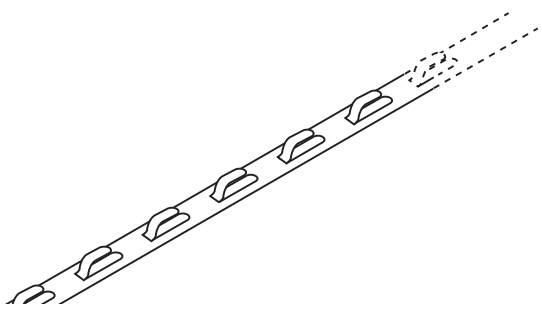
10 m per roll.

For diameters up to 5 mm, HWA-PI-FIX-SS-5MM-10M

PN: 1244-007768 Weight: 0.32 kg

For diameters up to 8 mm, HWA-PI-FIX-SS-8MM-10M

PN: 1244-007769 Weight: 0.52 kg



HARD-SPACER-SS-25MM-25M

Stainless steel spacer for fixing the heating cable on walls, tanks and vessels, etc.

Width spacer: 12.5 mm.

Fixing distance for cables: each 25 mm.

25 m per roll.

PN: 107826-000 Weight: 1.10 kg

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	EHT-1003-A	: Heat Tracing Tape		Dwg	1724001647-EL-LIS-00003	
	S/Sys	83-65	: Electrical Heat Tracing		Module	LD	
TASK	code	C10004634	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Electrical	Form	CPX22A	Tape Trace Heating Before Insulation

1	Check that the circuit is de-energized and safe.	OK
2	Check all tapes and junction boxes are undamaged.	OK
3	Check all tapes and junction boxes are installed according to drawings.	OK
4	Check all tapes characteristics against project data (type, rated power).	OK
5	Check rating of circuit breaker against drawings.	OK
6	Check tapes, junction boxes, cables and accessories tagging.	OK
7	After test re-connecting cable as per typical installation.	OK
8	If required produce Red Line Mark Up for "AS BUILT"	

CIRCUIT DATA

List Associated Heat tracing Isometric	1724001647-EL-DD-00004
Tape Type	3BTV2-CT
Circuit Installed Length	78m
Wiring Diagram	WD_1724001647-EL-DG-00006/Single line Diagram (1724001647-EL-DG-00005)

Testing & measurement instruments used

Type	Serial n°	Calibration certificate	Validity
MEGGER : KEW3125A	SERIAL: W8330207	N°7722/24	09/07/2025
VOLCRAFT 1000V	ET-200 S/N:H240103023	N°LAT 042 00768/24	11/10/2025

FIRST TEST

Continuity and insulation resistance tests to earth for each conductor core are carried out after the tape is installed on pipework **before any insulation and cladding is fitted.**

Test voltage (V):	2500	Tape Lengh	78m	Thermostats :	N/A
Continuity	20,6	Insulation Resistance	>1999 M	Result	OK

AFTER THIS TEST IS DONE, LINE CAN BE RELEASED TO INSULATION TEAM

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	VIP	RM(ROSETTI MARINO)	
Name	Madhankumar Arunagiri	Giovanni Tangianu	
Date	2025-03-12	2025-03-12	
Signature	PROVERLIS Digitaly signed by Madhankumar Arunagiri 2025-03-12T06:50:03.076Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-03-12T12:52:08.322Z	

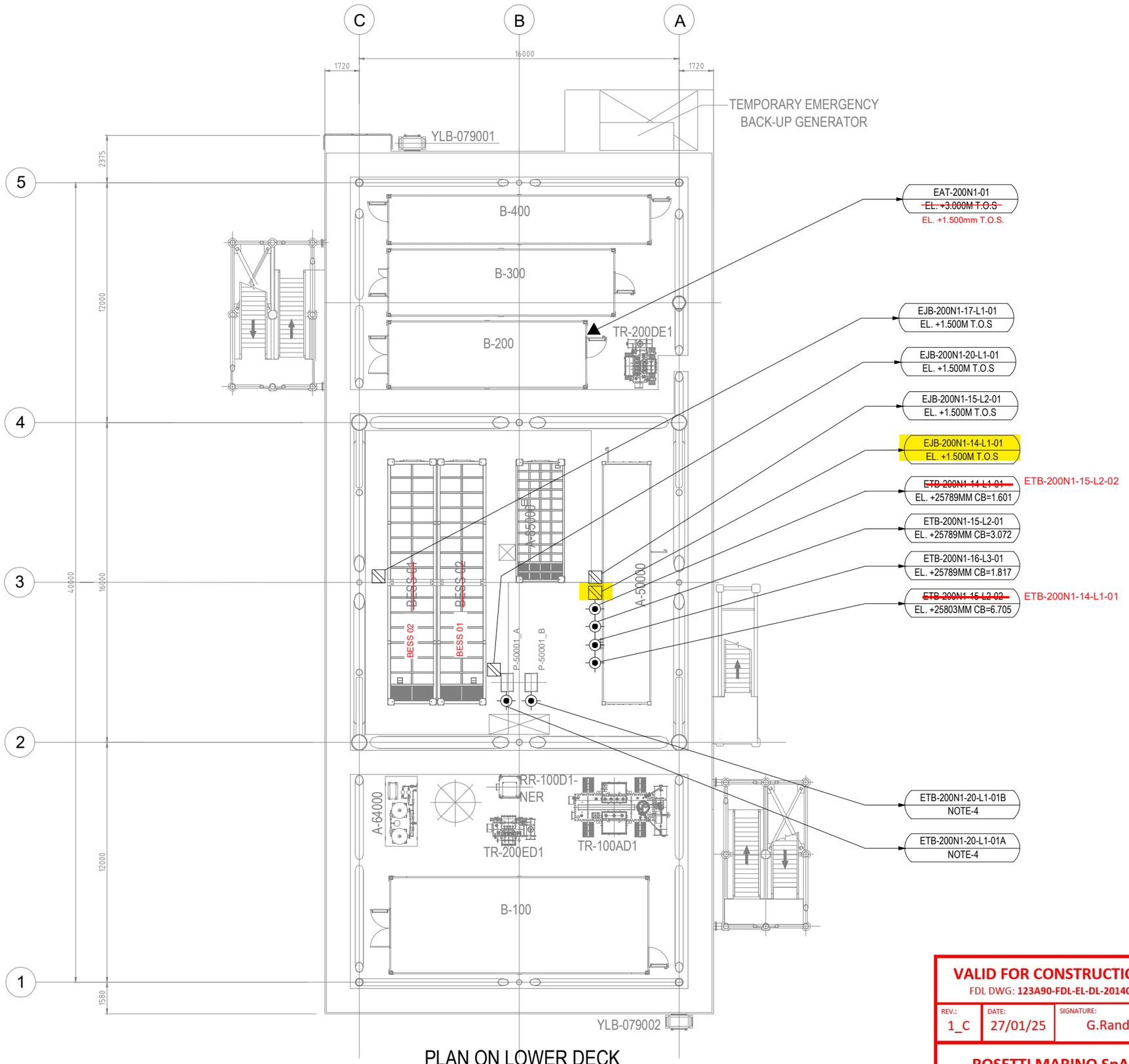
EHT CALCULATION LIST

PIT240024_ED01-1001

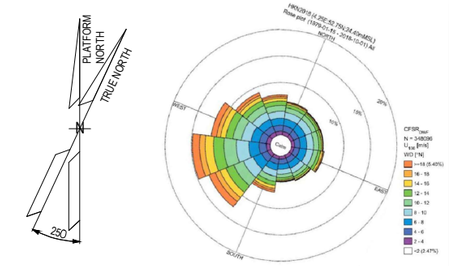
		ENGINEERING DATA				MECHANICAL & INSULATION DATA							PROCESS DATA				EHT BASIC DESIGN								EHT DETAILED DESIGN						EHT TEMP. CONTROL DATA							
Main EHT Box Number	Item Number	Heater Number	Line, Equipment or Instrument ID	nVent Circuit Number	Plant Area	Pipe Size [DN / IN]	Pipe Length [m]	Support Quantity [pc]	Valve Quantity [pc]	Other Heat Sink Quantity [pc]	Insulation Type	Insulation Thickness [mm]	Maintain Temperature [°C]	Maximum Allow. Process Temperature [°C]	Maximum Operating Temperature [°C]	Maximum Exposure Temperature [°C]	Heatloss [W/m]	Heating Cable Selection	Trace Ratio	Heating Cable Output [W/m]	EHT Cable per Support [m]	EHT Cable per Valve [m]	EHT Cable per Other Heatsink [m]	Total EHT Cable [m]	Max. Allow. EHT Circuit Length [m]	Connection Type	Voltage [V]	Operating Current [A]	Total Operating Load [W]	Start-Up Current [A]	Temp. Control Method	Controller Set Point [°C]	Minimum Controlled Temperature [°C]	Maximum Controlled Temperature [°C]	Maximum Uncontrolled Temperature [°C]	Revision	Remark
																		GRAND TOTAL						**181.4**				**9.69**	**2226**	**14.91**							
ETB-200N1-16-L3-01	1	EHT-1001-A	1"-DM-001-01SS-E	1001	PIPING	1	17.6	5	1	2	RW/MF 1:2015	20	5	100	22	22	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	22.0	199	Single L-N	230	1.18	271	1.8	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**22.0**			**230**	**1.18**	**271**	**1.8**							
ETB-200N1-15-L2-01	1	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	11.0	4		1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	13.9	199	Single L-N	230	0.73	167	1.1	Ambient sensing, standard	5	18	29	50	00	
	2	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	3	EHT-1002-A	1"-CI-032-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	4	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	5	EHT-1002-A	1"-CI-030-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	6	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.75	0.5		1		RW/MF 1:2015	20	5	50	25	25	3.4	3BTV2-CT	2.0	10.7		1.5		2.6	199	Single L-N	230	0.15	34	0.2	Ambient sensing, standard	5	30	38	55	00	
	7	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.5	0.5		1		RW/MF 1:2015	20	5	50	25	25	2.9	3BTV2-CT	2.0	10.7		1.4		2.5	199	Single L-N	230	0.14	32	0.2	Ambient sensing, standard	5	32	40	56	00	
																		TOTAL						**36.4**			**230**	**2.00**	**459**	**3.1**							
ETB-200N1-14-L1-01	1	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	4	0.5				RW/MF 1:2015	20	5	100	25	25	10.2	3BTV2-CT	1.0	10.7				0.6	199	Single L-N	230	0.03	7	0.1	Ambient sensing, standard	5	5	20	46	00	
	2	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	4.7	1		1	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1		0.5	9.3	199	Single L-N	230	0.47	107	0.7	Ambient sensing, standard	5	14	27	49	00	
	3	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	4	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	7.8	3			RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1			8.6	199	Single L-N	230	0.48	111	0.7	Ambient sensing, standard	5	14	27	49	00	
	5	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	6	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.8	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	7	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	1.4	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	4.2	199	Single L-N	230	0.23	54	0.4	Ambient sensing, standard	5	24	34	53	00	
	8	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	9	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	10	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.7	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	11	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	1.2	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	3.7	199	Single L-N	230	0.20	47	0.3	Ambient sensing, standard	5	24	34	53	00	
	12	EHT-1003-A	1"-SWS-147-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	13	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	14	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	15	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1	0.1				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	28	37	54	00	
	16	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
	17	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	18	EHT-1003-A	1"-SWS-146-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	19	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	20	EHT-1003-A	1"-SWS-290-01SD-E	1003	PIPING	1	1.1	1	2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7	0.3	1.6		5.8	199	Single L-N	230	0.33	76	0.5	Ambient sensing, standard	5	28	37	54	00	
	21	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**78.6**			**230**	**4.37**	**1002**	**6.7**							
ETB-200N1-17-L1-04	1	EHT-1004-A	1"-WW-259-01CS-E / V-43001	1004	PIPING	1	0.9		1	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7		0.8	0.5	3.2	199	Single L-N	230	0.12	28	0.2	Ambient sensing, standard	5	18	29	50	00	Combined with EHT-1004-B
																		TOTAL						**3.2**			**230**	**0.12**	**28**	**0.2**							
ETB-200N1-17-L1-02	1	EHT-1005-A	1"-WW-260-01CS-E	1005	PIPING	1	1.2	1	2	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	4.6	199	Single L-N	230	0.20	46	0.3	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1006-A
																		TOTAL						**4.6**			**230**	**0.20**	**46**	**0.3**							
ETB-200N1-17-L1-03	1	EHT-1006-A	1"-WW-202-01CS-H	1006	PIPING	1	1.0			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	1.0	10.7			0.5	2.5	199	Single L-N	230	0.08	19	0.1	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1005-A
																		TOTAL						**2.5**			**230**	**0.08**	**19**	**0.1**							
ETB-200N1-15-L2-02	1	EHT-1007-A	1"-CI-043-01CP-E	1007	PIPING	1	15.0	6		4	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	19.5	199	Single L-N	230	1.04	239	1.6	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**19.5**			**230**	**1.04**	**239**	**1.6**							
ETB-200N1-17-L1-05	1	EHT-1004-B	43-LT-001	2001	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	Combined with EHT-1004-A
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							
ETB-200N1-17-L1-01	1	EHT-2002-A	43-LT-003	2002	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

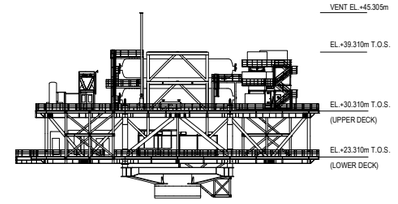
LEGEND

- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-EL-DL-20140
REV.: 1_C | DATE: 27/01/25 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 1of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

CAD FILENAME: PIT240024_DD01_1003_001_02.dwg

HEAT TRACING DATA

HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	PIPE LENGTH (m)	HEATER LENGTH (m)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W/m)	POWER OUTPUT (W/m)	SHEATH TEMP. (°C)
EHT-1003-A	PIPING	3BTV2-CT	26.1	78.5	6.7	1002	230	10.2	10.7	85
TOTALS			26.1	78.5	6.7	1001				

HEATER ADDER TABLE

PIPE SIZE (Ins)	TYPE	QTY	ALLOWANCE PER ITEM (m)	TOTAL ALLOWANCE (m)
1	Typical Flange (fixed adder)	2	0.46	0.92
1	Typical Pipe Support	1	0.31	0.31
1	Typical Metal Valve	8	1.64	13.12
1.5	Typical Pipe Support	8	0.18	1.44
1.5	Typical Flange (fixed adder)	5	0.46	2.3
1.5	Typical Metal Valve	6	1.77	10.62
N/A	VENT	3	0.7	2.1
N/A	DRAIN	5	0.7	3.4

DESIGN PARAMETERS

CIRCUIT NUMBER	1003	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	25°C	INSULATION TYPE	RW/MF 1.2015
MAX. EXPOSURE TEMP.	25°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	100°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

COMPONENT BILL OF MATERIALS

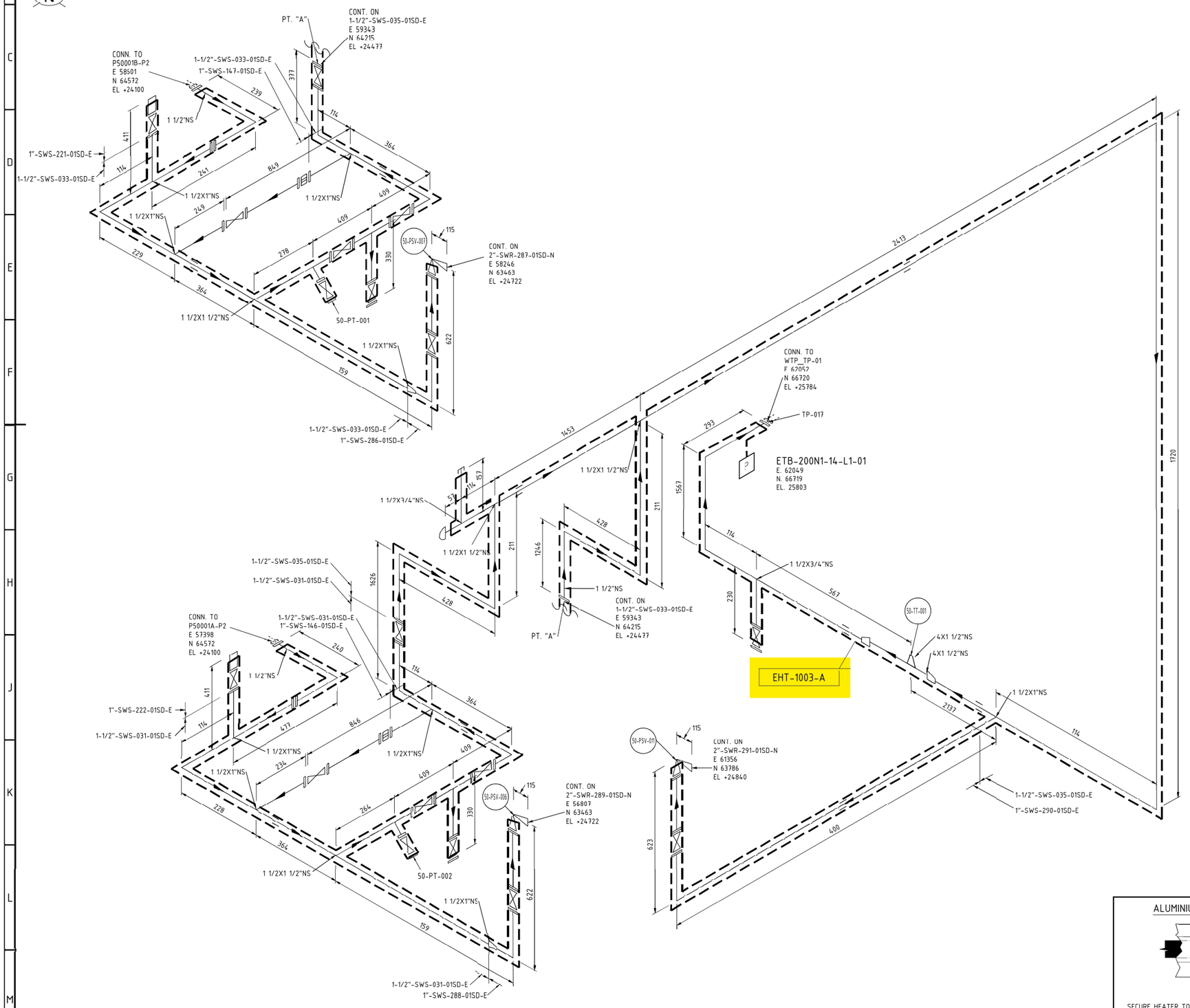
CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	78.5	m	Raychem Self-Regulating Heating Cable
JBS-100-E	1	each	Integrated Junction Box, Multiple-Entry, Cold-Applied, ATEX
PSE-090	1	each	Pipe Strap for 1.1/4' to 3' (40-90mm)
GS-54	4.4	each	Glass Tape (16m/roll), suited for SS pipes
LAB-I-01	11	each	Warning Label - English
E-20	1	each	Heat shrink end seal, ATEX (BTV, QTVR)

LINE NUMBERS

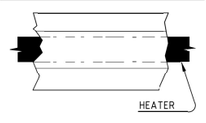
1"-SWS-146-01SD-E
1"-SWS-147-01SD-E
1"-SWS-221-01SD-E
1"-SWS-222-01SD-E
1"-SWS-286-01SD-E
1"-SWS-288-01SD-E
1"-SWS-290-01SD-E
1-1/2"-SWS-031-01SD-E
1-1/2"-SWS-033-01SD-E
1-1/2"-SWS-035-01SD-E

REFERENCE DRAWINGS / DOCUMENTS

123A90-DDL-PP-DI-71000_023
123A90-DDL-PP-DI-71000_025
123A90-DDL-PP-DI-71000_026
123A90-DDL-PP-DI-71000_059
123A90-DDL-PP-DI-71000_060
123A90-DDL-PP-DI-71000_117
123A90-DDL-PP-DI-71000_118
123A90-DDL-PP-DI-71000_150
123A90-DDL-PP-DI-71000_152
123A90-DDL-PP-DI-71000_154



ALUMINIUM TAPE (REF: ATE180)



SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.
4. HEATING CABLE ALLOWANCES PROVIDED IN THE 'EHT ADDER TABLE' FOR FLANGES AND VALVES ARE IN ADDITION TO THEIR LINEAR LENGTHS.

CROSSWIND

ROSETTI MARINO

nVent RAYCHEM TRACER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
02	20/01/2025	ISSUED FOR REVIEW	ADU	AMI	GPI
01	25/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.

DOC CODE

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru
LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING ISOMETRIC

SCALE: N/A
DRAWING NO.: 1724001647-EL-DD-00004
SHEET NO.: 5/10
REVISION: 02

A1

DRAWING NO. DRAWING_NO.

REV. REV

P-50001 A/B

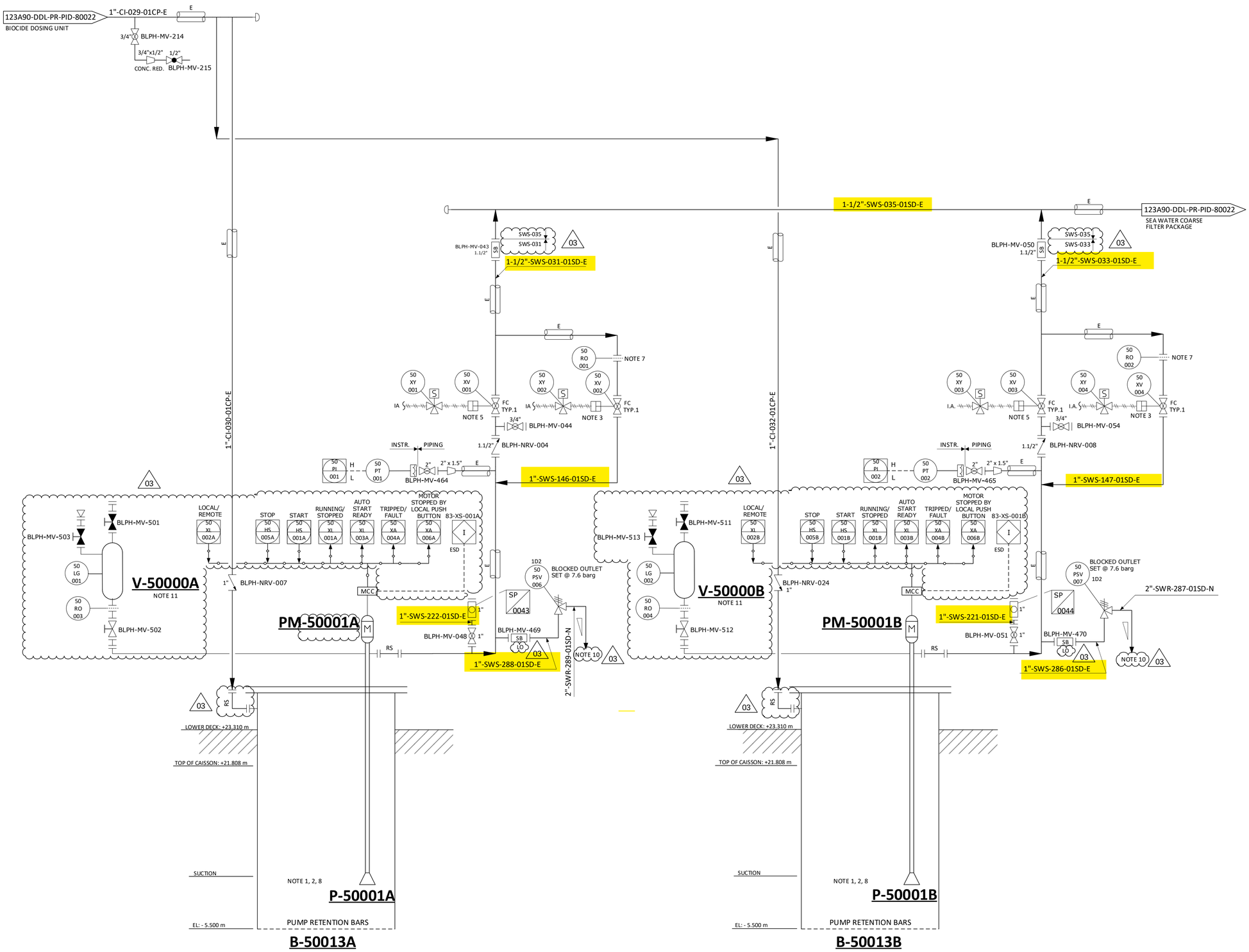
SEA WATER LIFT PUMPS

POWER : 1.6 KW
FLOW : 2.5 m³/h
DESIGN P/T : 7.6 barg / 80°C
DISCHARGE PRESSURE : 5.6 barg (NOTE 9)
MATERIAL : SDSS

B-50013 A/B

SEA WATER LIFT PUMPS
CAISSONS

SIZE : 343 mm (ID) x 27308 mm (H)
MATERIAL : CS + CA



NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED.
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING IN CASE THE RELEVANT XV VALVE IS FULLY CLOSED. 03
6. DELETED.
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.
10. ROUTED TO THE SEA.
11. VESSELS V-50000A/B ARE INSULATED AND HEAT TRACED. 03

HOLDS

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

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

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80021	SHEET 001	REV. 03

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV

A-50000
WATER TREATMENT PACKAGE
CAPACITY : 2.5 m³/hr

GAS CONFIRMED 50 XA 001 — F&G
SMOKE CONFIRMED 50 XA 002 — F&G
FAULT PACKAGE 50 XA 003 — ESD
50-XS-001 SHUT-DOWN — ESD
NOTE 6

CONTRACTOR | SUPPLIER

123A90-DDL-PR-PID-80025
TO 50-TDI-002
50 TI 001
BLOCKED OUTLET SET @ 6 barg
50 PSV 011 1D2
2"-SWR-291-01SD-N
BLPH-MV-471 SB LO
03
NOTE 7
1"-SWS-290-01SD-E
50 TT 001
50 TE 001
03
TP 50 017
1.1/2"
E
4"x1.1/2"
4"x1.1/2"
ECC. RED.
ECC. RED.
123A90-DDL-PR-PID-80021
FROM SEA WATER LIFT PUMP
1-1/2"-SWS-035-01SD-E
BLPH-MV-241 3/4"

FOR CONTINUATION SEE DOC N. 123A90-DDL-PR-PID-80023

A-50000
WATER TREATMENT PACKAGE
SEE VENDOR DRAWING
DOC. N. 1724000448-PR-PID-00013

FOR CONTINUATION SEE DOC N. 123A90-DDL-PR-PID-80023

E
TP 50 005 03
123A90-DDL-PR-PID-80021
TO SEA WATER LIFT PUMP AND LIFT PUMP CAISSONS
1"-CI-029-01CP-E

1"-CI-043-01CP-E
TP 50 006 03
DECK
HOOK-UP 003
123A90-DDL-PR-PID-80026
TO WASTE WATER TANK

SUPPLIER | CONTRACTOR

TP 50 003 03
1.1/2"x1"
3"x1.1/2"
1"-SWR-045-01CS-H
123A90-DDL-PR-PID-80025
TO BRINE DISCHARGE CAISSON

TP 50 007 03
1.1/2"x1"
1"-WW-038-01CS-H
123A90-DDL-PR-PID-80026
TO WASTE WATER TANK

NOTES

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.
6. SERIAL COMMUNICATION WITH CONTROL SYSTEM.
7. ROUTED TO THE SEA 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.
6. DELETED.

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

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 2

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80022	SHEET 001	REV. 03

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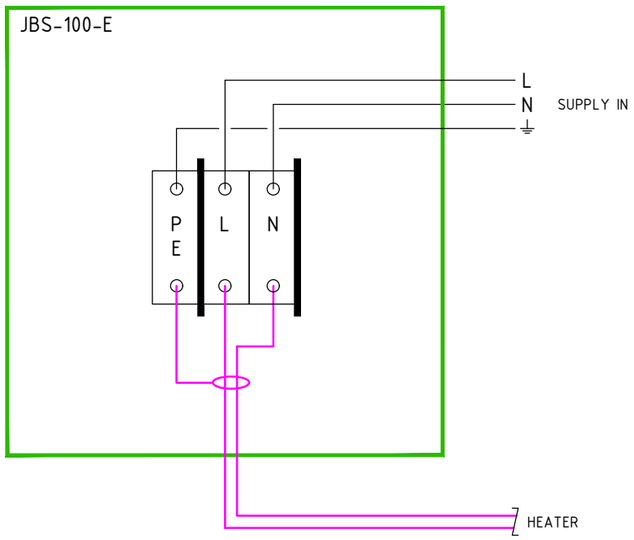
CAD FILENAME: 1724001647-EL-DG-00005 Rev.01.dwg

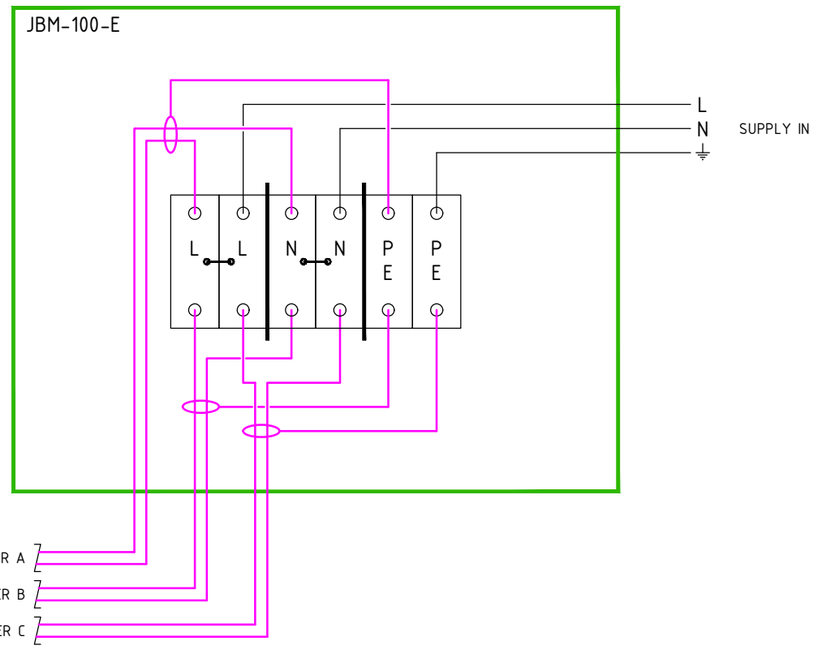
GENERAL INFORMATION:

1. JBS-100-E IS DESIGNED TO CONNECT POWER TO ONE BTV, QTVR, XTV, KTV, HTV OR VPL EHT CABLE.
2. THIS KIT INTEGRATES THE FUNCTIONS OF BOTH CONNECTION KITS AND INSULATION ENTRIES.
3. THE STAND CONNECTED TO THE BOTTOM OF THE BOX PROTECTS THE HEATING CABLE AND ALLOWS FOR UP TO 100mm (4") THERMAL INSULATION.

TECHNICAL BRIEF:

- 2 x M25 THREADED ENTRIES
- 1 x M25 STOPPING PLUGS
- 1 x M25 POWER CABLE GLAND





REV.	DATE	DESCRIPTION	BY	CHK	APP
--	--	--	--	--	--
--	--	--	--	--	--
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	08/03/2024	ISSUED FOR INFORMATION	LJB	E-C	ZS

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TITLE
TYPICAL CONNECTION OF A JBS-100-EP
SINGLE ENTRY JUNCTION BOX

PREPARED BY	-.---	LANG.	SCALE
LEAD ENGINEER	-.---	en	N/A
PROJECT NO.	DRAWING NO.	SHEET	REVISION
PIT240024	1724001647-EL-DG-00005	2/3	01

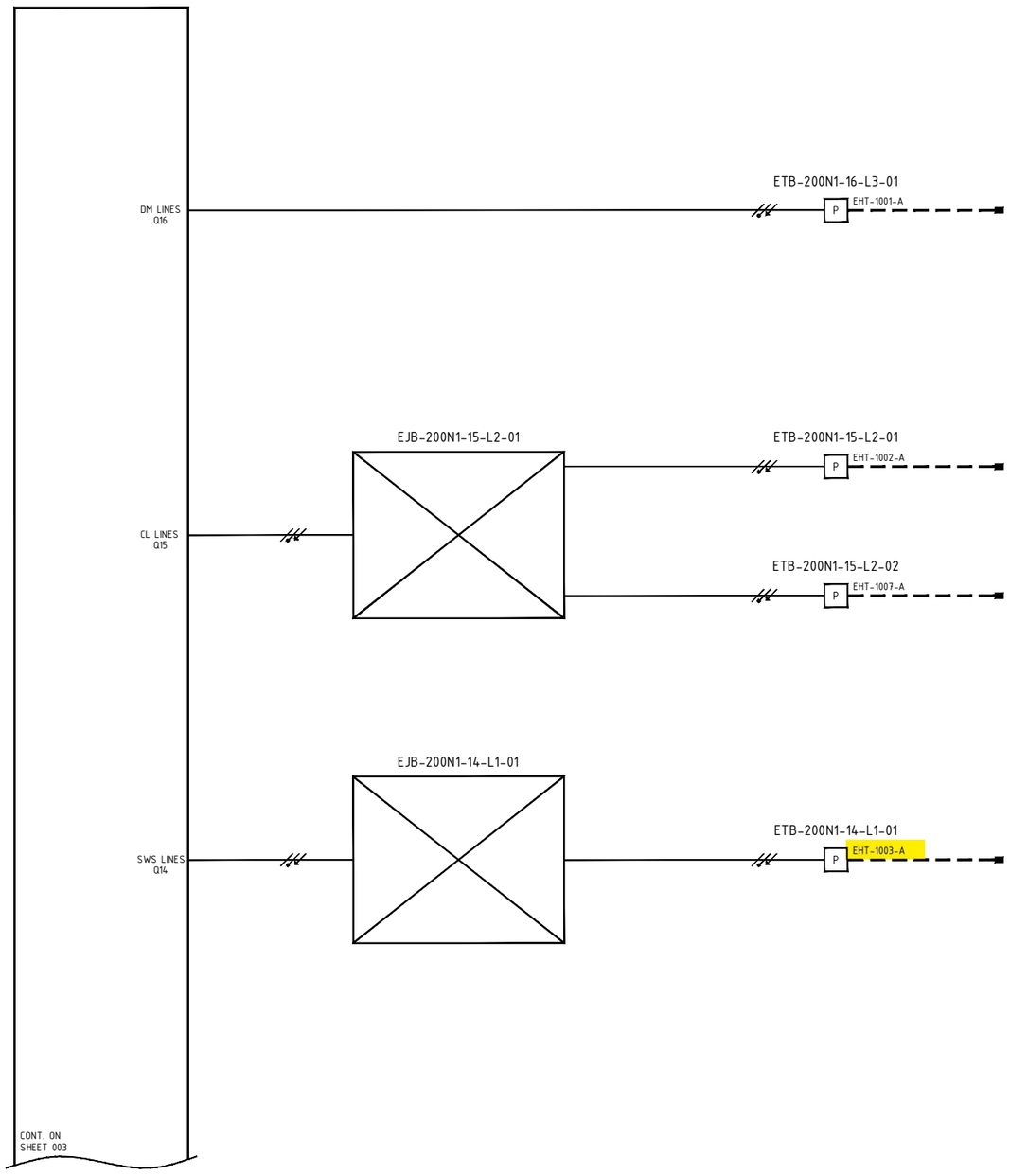
A3

CAD FILENAME: 1724001647-EL-DG-00006 Rev.01.dwg

CONTROL PANEL REF.:

DP-200N1

MARSHALLING BOX



CIRCUIT NO.	1001	1002, 1007	1003	
C.B. RATING (A)	32	32	32	
START-UP I (A)	1.8	4.7	6.7	
LOAD (W)	271	698	1002	
SERVICE	WINTERIZING	WINTERIZING	WINTERIZING	
NOTES FOR THE CIRCUIT	--	--	--	

GENERAL NOTES

CROSSWIND

ROSETTI MARINO

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	02/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING
SINGLE LINE DIAGRAM (SLD)

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-EL-DG-00006	3/4	01

BTV

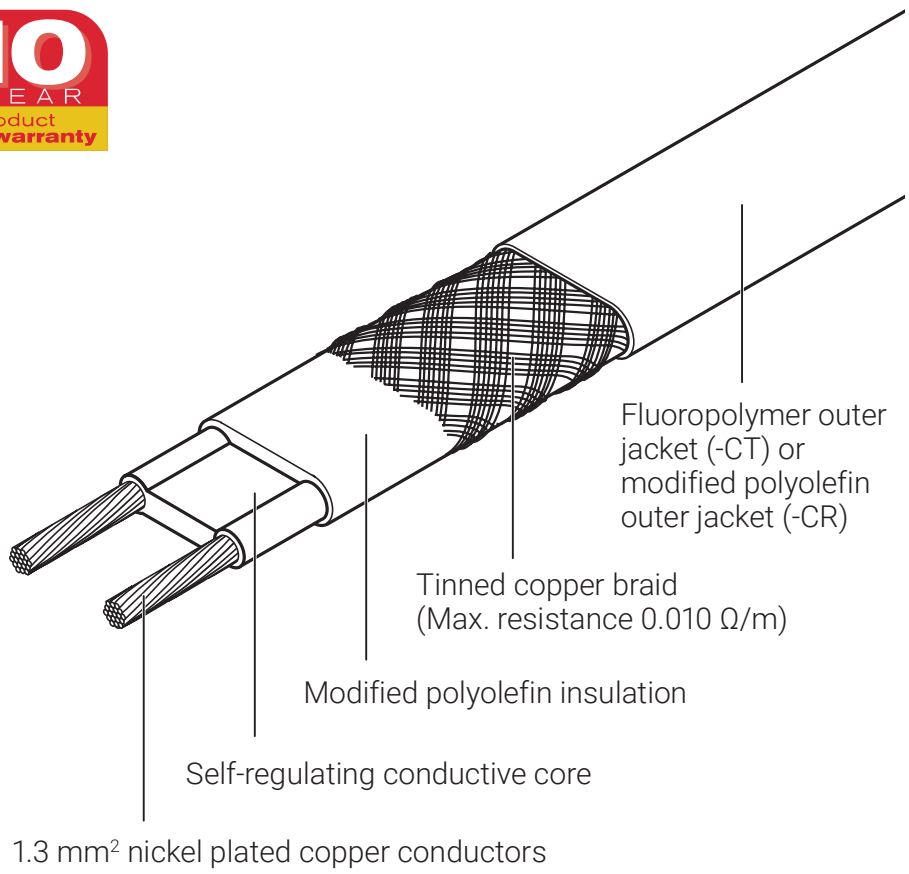
nVent RAYCHEM

CONNECT AND PROTECT

Self-regulating Heating Cable (Ex)

PRODUCT OVERVIEW

10 YEAR Product warranty



Electrical heat-tracing for frost protection without steam cleaning.
The nVent RAYCHEM BTV-family of self-regulating, parallel circuit heating cables is used for frost protection of pipes and vessels. It can also be used for process temperature maintenance up to 65°C.

Application

Traced surface type	Carbon steel Stainless steel Plastic Painted or unpainted metal
Chemical resistance	For organic corrosives: use -CT (fluoropolymer outer jacket) For mild inorganic solutions: use -CR (modified polyolefin outer jacket) For aggressive organics and corrosives consult your local nVent representative

Supply voltage

230 Vac (Contact your local nVent representative for data on other voltages)

PRODUCT SPECIFICATIONS

Product dimensions and weight

	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Width x Thickness (nominal) mm	10.5 x 5.5		13.2 x 5.5	
Weight (g/m)	110		150	

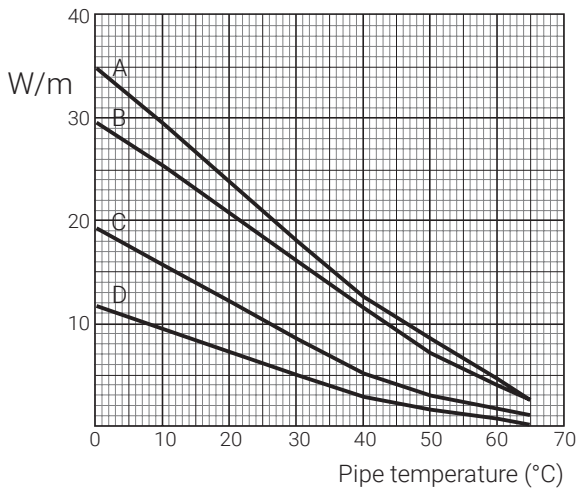
Technical details

Maximum maintain or continuous exposure temperature (power on/off)	65°C
Maximum intermittent exposure temperature (power on/off)	85°C Maximum cumulative exposure 1000 hours
Minimum installation temperature	–60°C
Minimum bend radius	–60°C ≤ T<–20°C: 35 mm –20°C ≤ T<–10°C: 30 mm –10°C ≤ T< 0°C: 25 mm 0°C ≤ T <+10°C: 20 mm T≥ +10°C: 12 mm

Thermal output rating

Nominal power output at 230 Vac on insulated steel pipes

A 10BTV2-CT
10BTV2-CR
B 8BTV-2-CT
8BTV-2-CR
C 5BTV2-CT
5BTV2-CR
D 3BTV2-CT
3BTV2-CR



	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Nominal power output (W/m at 10°C)	9	16	25	29

Maximum circuit length based on type ‘C’ circuit breakers according to EN 60898

Electrical protection sizing	Start-up temperature	Maximum heating cable length per circuit (m)			
16 A	–20°C	155	110	70	45
	+10°C	200	160	110	65
20 A	–20°C	195	140	90	55
	+10°C	200	160	125	85
25 A	–20°C	200	160	110	70
	+10°C	200	160	125	105
32 A	–20°C	200	160	125	90
	+10°C	200	160	125	110

The above numbers are for circuit length estimation only. For more detailed information please use the nVent RAYCHEM TraceCalc software or Contact your local nVent representative. nVent requires the use of a 30 mA residual current device to provide maximum safety and protection from fire. Where design results in higher leakage current, the preferred trip level for adjustable devices is 30 mA above any inherent capacitive leakage characteristic of the heater as specified by the trace heater supplier or alternatively, the next common available trip level for non adjustable devices, with a maximum of 300 mA. All safety aspects need to be proven.

APPROVALS

For use ordinary area and hazardous area Zone 1 and Zone 2 (Gas), Zone 21 and Zone 22 (Dust).

Temperature classification
T6

Product certification

More details about product certification, approvals and conditions of safe use are available in the installation manual for Self-regulating and Power limiting heating cable systems at www.nVent.com/RAYCHEM

ORDERING INFORMATION

Part description	3BTV2-CR	5BTV2-CR	8BTV-2-CR	10BTV2-CR
Part No. (*)	914279-000	414809-000	479821-000	677245-000
Part description	3BTV2-CT	5BTV2-CT	8BTV-2-CT	10BTV2-CT
Part No. (*)	469145-000	487509-000	008633-000	567513-000

Components

nVent offers a full range of components for power connections, splices and end seals. These components must be used to ensure proper functioning of the product and compliance with electrical requirements.

(*) Localized versions may exist with limited approvals and different part numbers. Contact your local sales representative

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

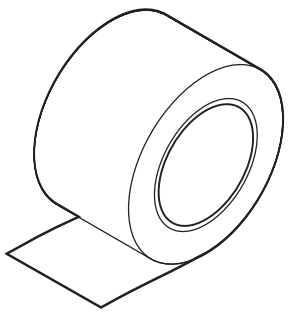
Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com

Our powerful portfolio of brands:
CADDY ERICO HOFFMAN RAYCHEM SCHROFF TRACER

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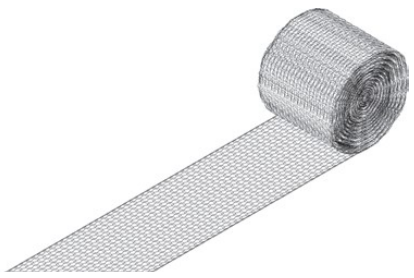
ATE-180

Aluminium tape* for attaching heating cables and thermostat sensors to pipes and tanks. Minimum installation temperature: 0°C. Also suitable for stainless steel pipes.

55 m per roll, 63.5 mm width.

PN: 846243-000 Weight: 0.84 kg

*Power output of selfregulating heating cables might increase when installed with aluminium tape or other heat transfer aids. Please use TraceCalc or contact nVent representative for further details.

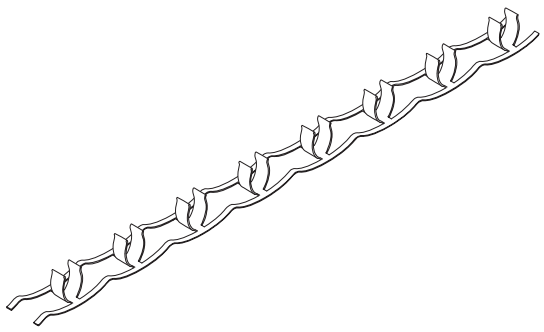


HWA-METAL-MESH-SS-50MM-10M

Stainless steel mesh for fixation of heating cables on valves, pumps or other odd-shaped surfaces. This mesh provides optimum contact and heat transfer between heating cables and heated equipment and can be used for exposure temperatures up to 400°C.

10 m per roll, 50 mm width.

PN: 1244-005772 Weight: 0.36 kg



HWA-PI-FIX- SS-xMM-10M

Stainless steel clip band to attach Polymer Insulated series heating cables to pipes. Clips at regular distances to allow for even heater spacing. Band available in two sizes for different diameter ranges.

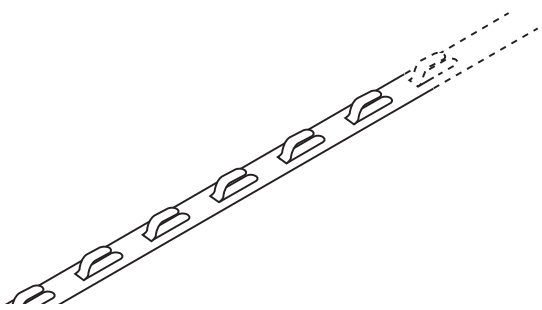
10 m per roll.

For diameters up to 5 mm, HWA-PI-FIX-SS-5MM-10M

PN: 1244-007768 Weight: 0.32 kg

For diameters up to 8 mm, HWA-PI-FIX-SS-8MM-10M

PN: 1244-007769 Weight: 0.52 kg



HARD-SPACER-SS-25MM-25M

Stainless steel spacer for fixing the heating cable on walls, tanks and vessels, etc.

Width spacer: 12.5 mm.

Fixing distance for cables: each 25 mm.

25 m per roll.

PN: 107826-000 Weight: 1.10 kg

ITEM	Tag	EHT-1004-A	: Heat Tracing Tape		Dwg	1724001647-EL-LIS-00003	
	S/Sys	83-65	: Electrical Heat Tracing		Module	UD/LD	
TASK	code	C10004635	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Electrical	Form	CPX22A	Tape Trace Heating Before Insulation

1	Check that the circuit is de-energized and safe.	OK
2	Check all tapes and junction boxes are undamaged.	OK
3	Check all tapes and junction boxes are installed according to drawings.	Note
4	Check all tapes characteristics against project data (type, rated power).	OK
5	Check rating of circuit breaker against drawings.	OK
6	Check tapes, junction boxes, cables and accessories tagging.	OK
7	After test re-connecting cable as per typical installation.	OK
8	If required produce Red Line Mark Up for "AS BUILT"	

CIRCUIT DATA

List Associated Heat tracing Isometric	1724001647-EL-DD-00004
Tape Type	3BTV2-CT
Circuit Installed Length	21m
Wiring Diagram	WD_1724001647-EL-DG-00006/Single line Diagram (1724001647-EL-DG-00005).

Testing & measurement instruments used

Type	Serial n°	Calibration certificate	Validity
MEGGER : KEW3125A	SERIAL: W8330207	N°7722/24	09/07/2025
VOLCRAFT 1000V	ET-200 S/N:H240103023	N°LAT 042 00768/24	11/10/2025

FIRST TEST

Continuity and insulation resistance tests to earth for each conductor core are carried out after the tape is installed on pipework **before any insulation and cladding is fitted.**

Test voltage (V):	2500	Tape Lengh	21m	Thermostats :	N/A
Continuity	56,7	Insulation Resistance	>1999 M	Result	OK

AFTER THIS TEST IS DONE, LINE CAN BE RELEASED TO INSULATION TEAM

Comments: Note 3: See attached mark-up issued by ingegnering.

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-05	2025-02-13	
Signature	Digitaly signed by Michele Tartaglia 2025-02-05T10:20:07.790Z	Digitaly signed by Giovanni Tangianu 2025-02-13T12:29:10.606Z	

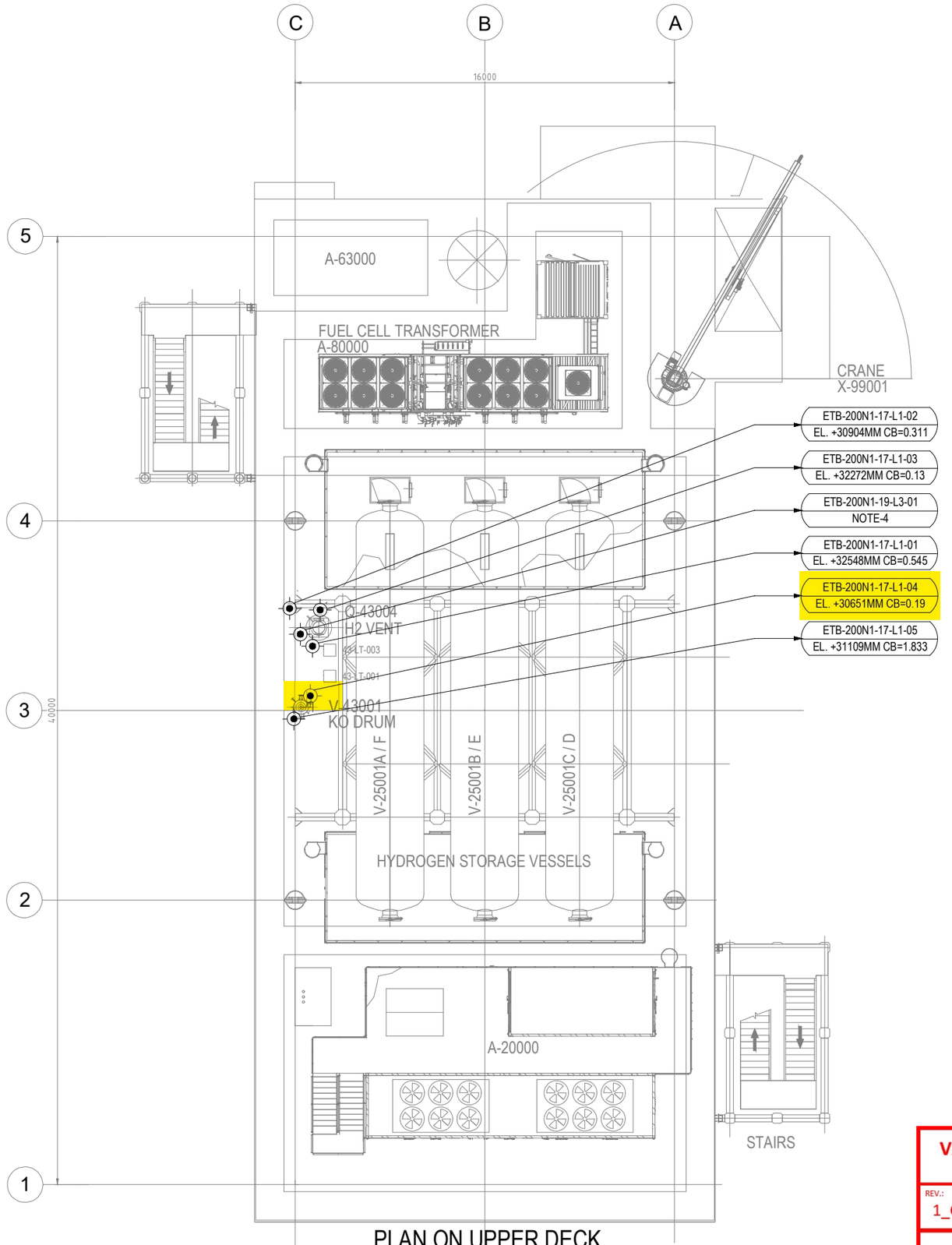
EHT CALCULATION LIST

PIT240024_ED01-1001

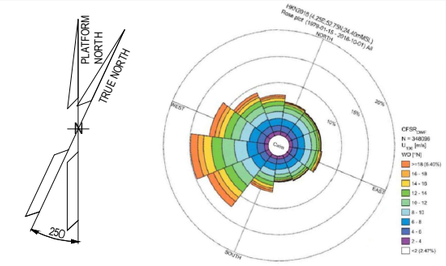
		ENGINEERING DATA				MECHANICAL & INSULATION DATA							PROCESS DATA				EHT BASIC DESIGN								EHT DETAILED DESIGN						EHT TEMP. CONTROL DATA							
Main EHT Box Number	Item Number	Heater Number	Line, Equipment or Instrument ID	nVent Circuit Number	Plant Area	Pipe Size [DN / IN]	Pipe Length [m]	Support Quantity [pc]	Valve Quantity [pc]	Other Heat Sink Quantity [pc]	Insulation Type	Insulation Thickness [mm]	Maintain Temperature [°C]	Maximum Allow. Process Temperature [°C]	Maximum Operating Temperature [°C]	Maximum Exposure Temperature [°C]	Heatloss [W/m]	Heating Cable Selection	Trace Ratio	Heating Cable Output [W/m]	EHT Cable per Support [m]	EHT Cable per Valve [m]	EHT Cable per Other Heatsink [m]	Total EHT Cable [m]	Max. Allow. EHT Circuit Length [m]	Connection Type	Voltage [V]	Operating Current [A]	Total Operating Load [W]	Start-Up Current [A]	Temp. Control Method	Controller Set Point [°C]	Minimum Controlled Temperature [°C]	Maximum Controlled Temperature [°C]	Maximum Uncontrolled Temperature [°C]	Revision	Remark
																		GRAND TOTAL						**181.4**				**9.69**	**2226**	**14.91**							
ETB-200N1-16-L3-01	1	EHT-1001-A	1"-DM-001-01SS-E	1001	PIPING	1	17.6	5	1	2	RW/MF 1:2015	20	5	100	22	22	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	22.0	199	Single L-N	230	1.18	271	1.8	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**22.0**			**230**	**1.18**	**271**	**1.8**							
ETB-200N1-15-L2-01	1	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	11.0	4		1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	13.9	199	Single L-N	230	0.73	167	1.1	Ambient sensing, standard	5	18	29	50	00	
	2	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	3	EHT-1002-A	1"-CI-032-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	4	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	5	EHT-1002-A	1"-CI-030-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	6	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.75	0.5		1		RW/MF 1:2015	20	5	50	25	25	3.4	3BTV2-CT	2.0	10.7		1.5		2.6	199	Single L-N	230	0.15	34	0.2	Ambient sensing, standard	5	30	38	55	00	
	7	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.5	0.5		1		RW/MF 1:2015	20	5	50	25	25	2.9	3BTV2-CT	2.0	10.7		1.4		2.5	199	Single L-N	230	0.14	32	0.2	Ambient sensing, standard	5	32	40	56	00	
																		TOTAL						**36.4**			**230**	**2.00**	**459**	**3.1**							
ETB-200N1-14-L1-01	1	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	4	0.5				RW/MF 1:2015	20	5	100	25	25	10.2	3BTV2-CT	1.0	10.7				0.6	199	Single L-N	230	0.03	7	0.1	Ambient sensing, standard	5	5	20	46	00	
	2	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	4.7	1		1	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1		0.5	9.3	199	Single L-N	230	0.47	107	0.7	Ambient sensing, standard	5	14	27	49	00	
	3	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	4	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	7.8	3			RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1			8.6	199	Single L-N	230	0.48	111	0.7	Ambient sensing, standard	5	14	27	49	00	
	5	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	6	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.8	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	7	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	1.4	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	4.2	199	Single L-N	230	0.23	54	0.4	Ambient sensing, standard	5	24	34	53	00	
	8	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	9	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	10	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.7	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	11	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	1.2	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	3.7	199	Single L-N	230	0.20	47	0.3	Ambient sensing, standard	5	24	34	53	00	
	12	EHT-1003-A	1"-SWS-147-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	13	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	14	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	15	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1	0.1				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	28	37	54	00	
	16	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
	17	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	18	EHT-1003-A	1"-SWS-146-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	19	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	20	EHT-1003-A	1"-SWS-290-01SD-E	1003	PIPING	1	1.1	1	2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7	0.3	1.6		5.8	199	Single L-N	230	0.33	76	0.5	Ambient sensing, standard	5	28	37	54	00	
	21	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**78.6**			**230**	**4.37**	**1002**	**6.7**							
ETB-200N1-17-L1-04	1	EHT-1004-A	1"-WW-259-01CS-E / V-43001	1004	PIPING	1	0.9		1	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7		0.8	0.5	3.2	199	Single L-N	230	0.12	28	0.2	Ambient sensing, standard	5	18	29	50	00	Combined with EHT-1004-B
																		TOTAL						**3.2**			**230**	**0.12**	**28**	**0.2**							
ETB-200N1-17-L1-02	1	EHT-1005-A	1"-WW-260-01CS-E	1005	PIPING	1	1.2	1	2	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	4.6	199	Single L-N	230	0.20	46	0.3	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1006-A
																		TOTAL						**4.6**			**230**	**0.20**	**46**	**0.3**							
ETB-200N1-17-L1-03	1	EHT-1006-A	1"-WW-202-01CS-H	1006	PIPING	1	1.0			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	1.0	10.7			0.5	2.5	199	Single L-N	230	0.08	19	0.1	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1005-A
																		TOTAL						**2.5**			**230**	**0.08**	**19**	**0.1**							
ETB-200N1-15-L2-02	1	EHT-1007-A	1"-CI-043-01CP-E	1007	PIPING	1	15.0	6		4	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	19.5	199	Single L-N	230	1.04	239	1.6	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**19.5**			**230**	**1.04**	**239**	**1.6**							
ETB-200N1-17-L1-05	1	EHT-1004-B	43-LT-001	2001	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	Combined with EHT-1004-A
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							
ETB-200N1-17-L1-01	1	EHT-2002-A	43-LT-003	2002	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

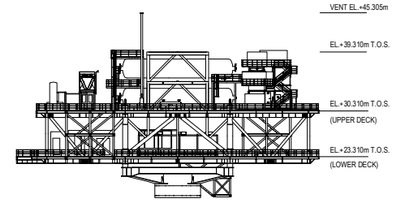
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_C	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 2of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

CAD FILENAME: PIT240024_DD01_1004_001_02.dwg

HEAT TRACING DATA

HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	PIPE LENGTH (m)	HEATER LENGTH (m)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W/m)	POWER OUTPUT (W/m)	SHEATH TEMP. (°C)
EHT-1004-A	PIPING	3BTV2-CT	0.9	3.2	0.2	28	230	3.9	10.7	85
		TOTALS	0.9	3.2	0.2	28				

HEATER ADDER TABLE

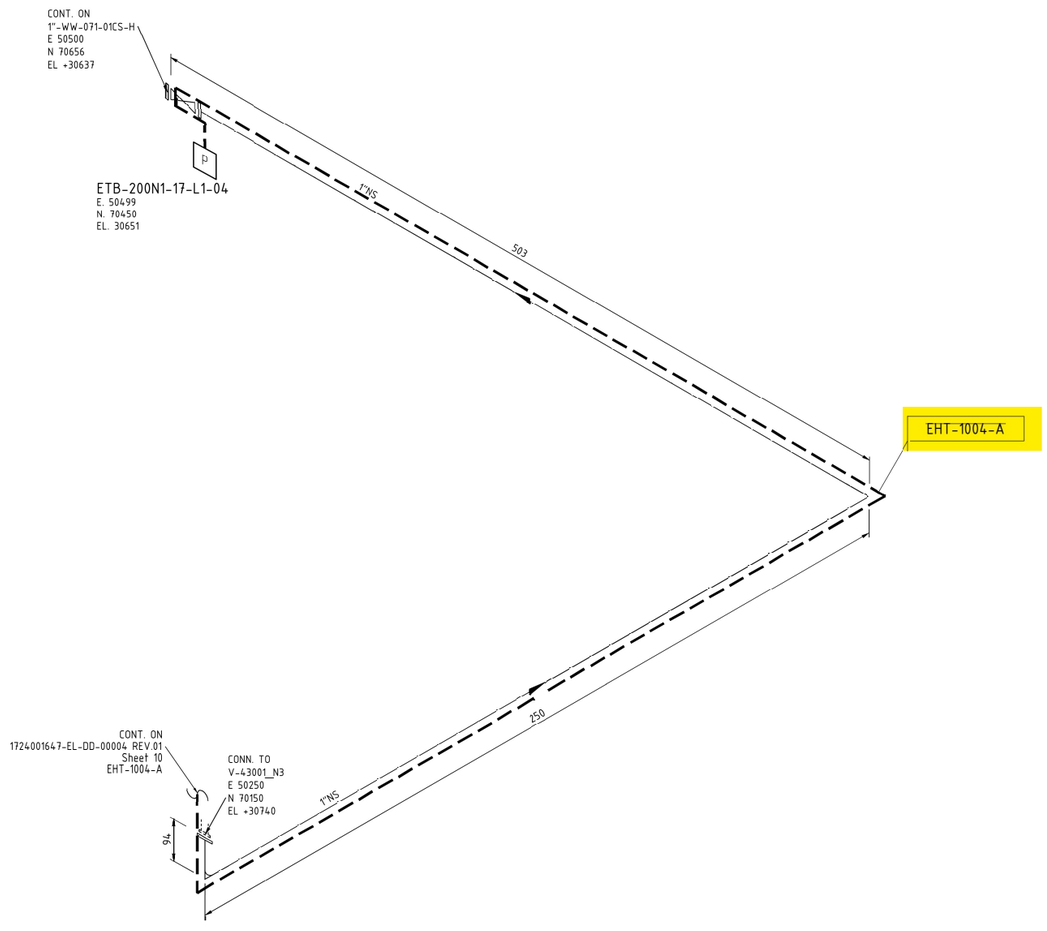
PIPE SIZE (Ins)	TYPE	QTY	ALLOWANCE PER ITEM (m)	TOTAL ALLOWANCE (m)
1	Typical Metal Valve	1	0.82	0.82
1	Typical Flange (fixed adder)	1	0.46	0.46

DESIGN PARAMETERS

CIRCUIT NUMBER	1004	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	11°C	INSULATION TYPE	RW/MF 1.2015
MAX. EXPOSURE TEMP.	11°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	100°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

COMPONENT BILL OF MATERIALS

CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	3.2	m	Raychem Self-Regulating Heating Cable
JBM-100-E	1	each	Integrated Junction Box, Multiple-Entry, Cold-Applied, ATEX
PSE-090	2	each	Pipe Strap for 1.1/4" to 3" (40-90mm)
GS-54	0.1	each	Glass Tape (16m/roll), suited for SS pipes
LAB-I-01	1	each	Warning Label - English
JBM-SPA	0.2	bag	Small Pipe Adapter for JBM-100-E



LINE NUMBERS

1"-WW-259-01CS-E

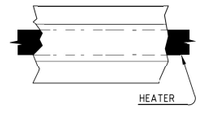
REFERENCE DRAWINGS / DOCUMENTS

123A90-DDL-PP-DI-71000_123

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.
4. HEATING CABLE ALLOWANCES PROVIDED IN THE 'EHT ADDER TABLE' FOR FLANGES AND VALVES ARE IN ADDITION TO THEIR LINEAR LENGTHS.

ALUMINIUM TAPE (REF: ATE180)



SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

CROSSWIND

ROSETTI MARINO

nVent RAYCHEM TRACER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
02	20/01/2025	ISSUED FOR REVIEW	ADU	AMI	GPI
01	25/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.

DOC CODE

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING ISOMETRIC

SCALE: N/A

DRAWING NO.: 1724001647-EL-DD-00004

SHEET NO.: 6/10

REVISION: 02

A1

DRAWING NO. DRAWING_NO.

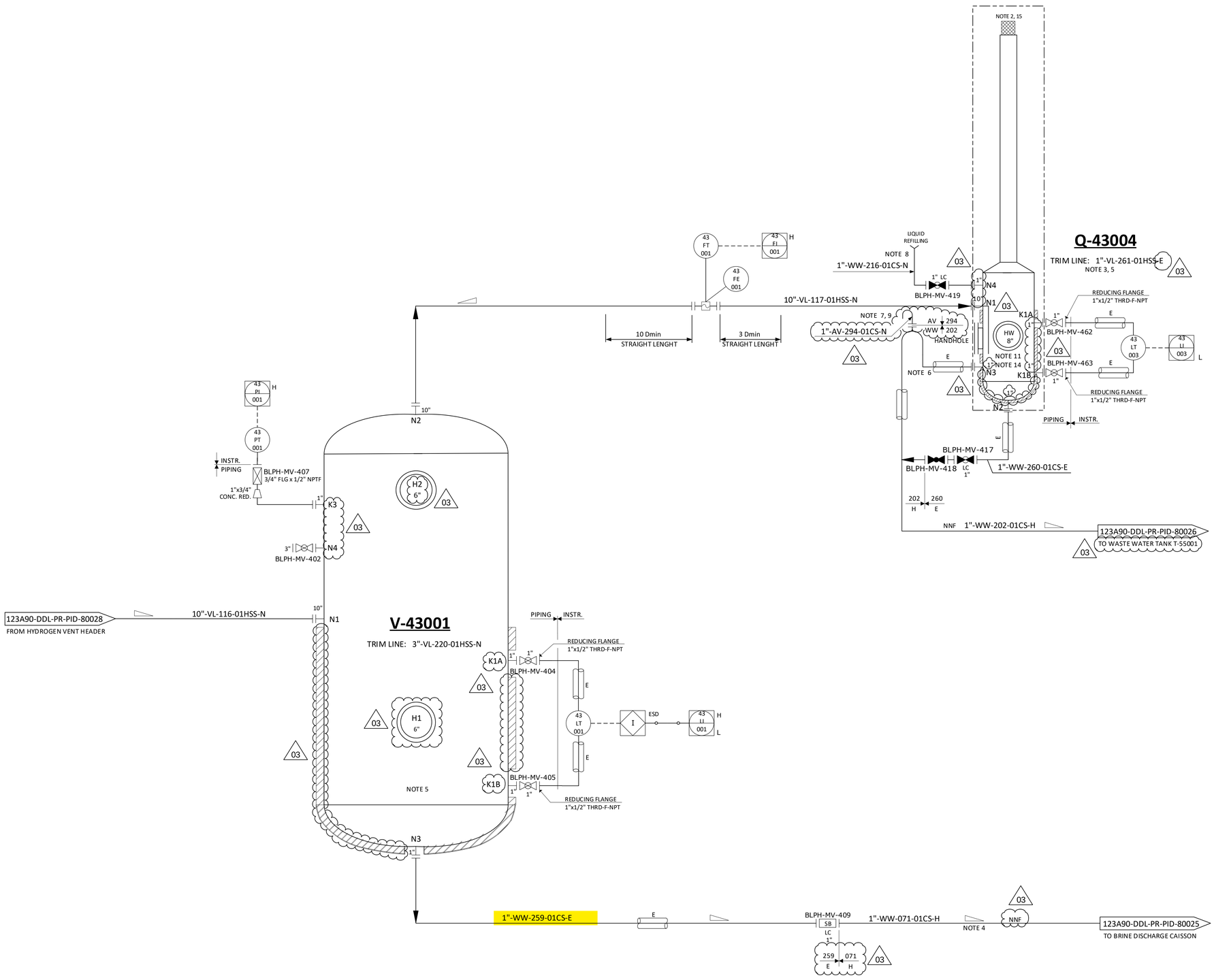
REV. REV

V-43001

HYDROGEN VENT KO DRUM
SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1
SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. (03)
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

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

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

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80029	SHEET 001	REV. 03

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV

B-50014

BRINE DISCHARGE CAISSON
SIZE : 323 mm (ID) x 21808 mm (H)
MATERIAL : CARBON STEEL)

123A90-DDL-PR-PID-80022
FROM 50-TI-001

123A90-DDL-PR-PID-80027
FROM INSTRUMENT AIR PACKAGE
1"-WW-079-01CS-H

123A90-DDL-PR-PID-80012
FROM FUEL CELL PACKAGE
1"-DI-012-01CS-H

DM 005 | WW 073

123A90-DDL-PR-PID-80011
FROM ELECTROLYSER PACKAGE
1"-DM-005-01CS-H

123A90-DDL-PR-PID-80022
FROM WATER TREATMENT PACKAGE
1"-SWR-045-01CS-H

1-1/2"-WW-073-01CS-H

50 PI 014 H
50 PT 014
50 TDI 002 H
50 TI 002
50 TT 002
50 TE 002
3/4" FLG x 1/2" NPTF BLPH-MV-411
INSTR. PIPING
E
3/4"
4"x1.1/2" ECC. RED.
1.1/2"
4"x1.1/2" ECC. RED.
50 XY 005
S
IA
04
50 XV 005
FO TYP.1
BLPH-NRV-028
DECK HOOK-UP 005
LC BLPH-MV-412

123A90-DDL-PR-PID-80029
FROM HYDROGEN VENT KO DRUM
1"-WW-071-01CS-H NNF
1"-WW-071-01CS-H
DECK HOOK-UP 004

NOTE 2

B-50014
NOTE 1

EL. +21.8 m
ELEVATION 0.00m (L.A.T.)

NOTES

1. CAISSON IS OPEN TOPPED.
2. ALL LINES TO TERMINATE APPROXIMATLEY 21000 mm ABOVE SEAWATER LEVEL (LAT).

HOLDS

1. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
04	11/10/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
WATER DISPOSAL SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80025	SHEET 001	REV. 04

File Name : FILE_NAME

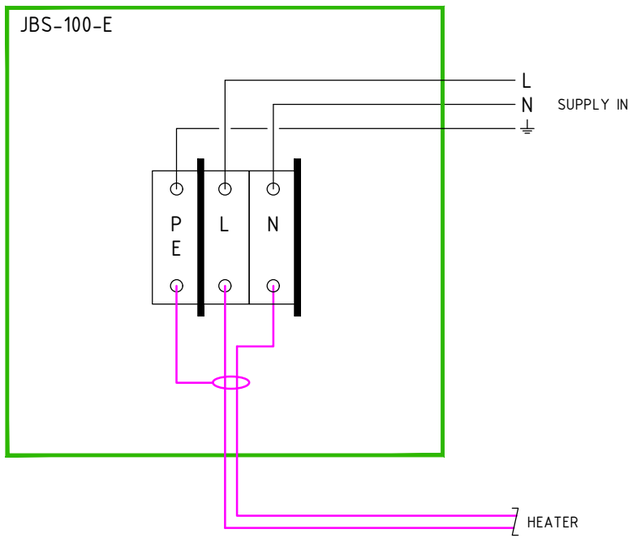
CAD FILENAME: 1724001647-EL-DG-00005 Rev.01.dwg

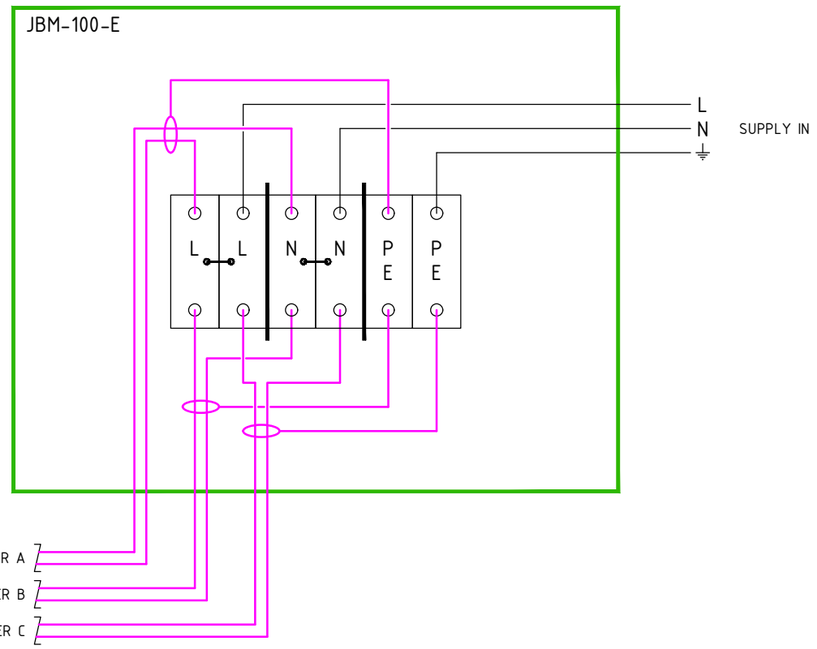
GENERAL INFORMATION:

1. JBS-100-E IS DESIGNED TO CONNECT POWER TO ONE BTV, QTVR, XTV, KTV, HTV OR VPL EHT CABLE.
2. THIS KIT INTEGRATES THE FUNCTIONS OF BOTH CONNECTION KITS AND INSULATION ENTRIES.
3. THE STAND CONNECTED TO THE BOTTOM OF THE BOX PROTECTS THE HEATING CABLE AND ALLOWS FOR UP TO 100mm (4") THERMAL INSULATION.

TECHNICAL BRIEF:

- 2 x M25 THREADED ENTRIES
- 1 x M25 STOPPING PLUGS
- 1 x M25 POWER CABLE GLAND





REV.	DATE	DESCRIPTION	BY	CHK	APP
--	--	--	--	--	--
--	--	--	--	--	--
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	08/03/2024	ISSUED FOR INFORMATION	LJB	E-C	ZS

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TITLE
TYPICAL CONNECTION OF A JBS-100-EP
SINGLE ENTRY JUNCTION BOX

PREPARED BY	-.---	LANG.	SCALE
LEAD ENGINEER	-.---	en	N/A
PROJECT NO.	DRAWING NO.	SHEET	REVISION
PIT240024	1724001647-EL-DG-00005	2/3	01

A3

CAD FILENAME: 1724001647-EL-DG-00006 Rev.01.dwg

CONTROL PANEL REF.:

Q17

MARSHALLING BOX

EJB-200N1-17-L1-01

ETB-200N1-17-L1-04 — P — EHT-1004-A

ETB-200N1-17-L1-05 — P — EHT-1004-B

ETB-200N1-17-L1-02 — P — EHT-1005-A

ETB-200N1-17-L1-03 — P — EHT-1006-A

ETB-200N1-17-L1-01 — P — EHT-2002-A

SPARE

CIRCUIT NO.	1004	1005, 1006	2002	
C.B. RATING (A)	32	32	32	
START-UP I (A)	2.6	0.4	0.6	
LOAD (W)	383	65	81	
SERVICE	WINTERIZING	WINTERIZING	WINTERIZING	
NOTES FOR THE CIRCUIT	--	--	--	

GENERAL NOTES

CROSSWIND

ROSETTI MARINO

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	02/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING
SINGLE LINE DIAGRAM (SLD)

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-EL-DG-00006	4/4	01

BTV

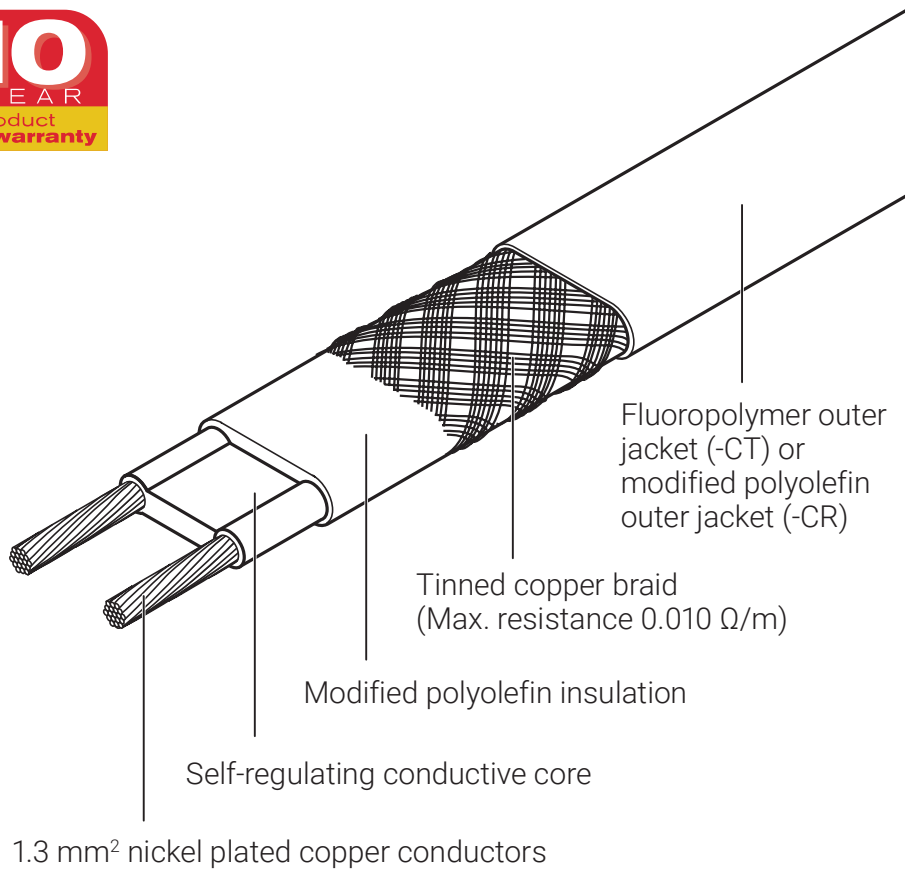
nVent RAYCHEM

CONNECT AND PROTECT

Self-regulating Heating Cable

PRODUCT OVERVIEW

10 YEAR Product warranty



Electrical heat-tracing for frost protection without steam cleaning.
The nVent RAYCHEM BTV-family of self-regulating, parallel circuit heating cables is used for frost protection of pipes and vessels. It can also be used for process temperature maintenance up to 65°C.

Application

Traced surface type	Carbon steel Stainless steel Plastic Painted or unpainted metal
Chemical resistance	For organic corrosives: use -CT (fluoropolymer outer jacket) For mild inorganic solutions: use -CR (modified polyolefin outer jacket) For aggressive organics and corrosives consult your local nVent representative

Supply voltage

230 Vac (Contact your local nVent representative for data on other voltages)

PRODUCT SPECIFICATIONS

Product dimensions and weight

	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Width x Thickness (nominal) mm	10.5 x 5.5		13.2 x 5.5	
Weight (g/m)	110		150	

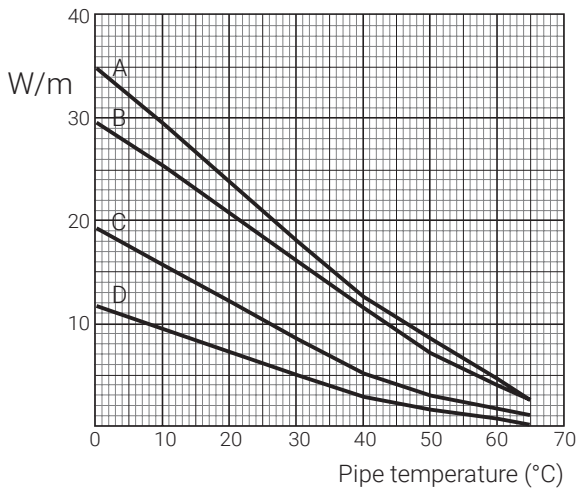
Technical details

Maximum maintain or continuous exposure temperature (power on/off)	65°C
Maximum intermittent exposure temperature (power on/off)	85°C Maximum cumulative exposure 1000 hours
Minimum installation temperature	–60°C
Minimum bend radius	–60°C ≤ T<–20°C: 35 mm –20°C ≤ T<–10°C: 30 mm –10°C ≤ T< 0°C: 25 mm 0°C ≤ T <+10°C: 20 mm T≥ +10°C: 12 mm

Thermal output rating

Nominal power output at 230 Vac on insulated steel pipes

A 10BTV2-CT
10BTV2-CR
B 8BTV-2-CT
8BTV-2-CR
C 5BTV2-CT
5BTV2-CR
D 3BTV2-CT
3BTV2-CR



	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Nominal power output (W/m at 10°C)	9	16	25	29

Maximum circuit length based on type ‘C’ circuit breakers according to EN 60898

Electrical protection sizing	Start-up temperature	Maximum heating cable length per circuit (m)			
16 A	–20°C	155	110	70	45
	+10°C	200	160	110	65
20 A	–20°C	195	140	90	55
	+10°C	200	160	125	85
25 A	–20°C	200	160	110	70
	+10°C	200	160	125	105
32 A	–20°C	200	160	125	90
	+10°C	200	160	125	110

The above numbers are for circuit length estimation only. For more detailed information please use the nVent RAYCHEM TraceCalc software or Contact your local nVent representative. nVent requires the use of a 30 mA residual current device to provide maximum safety and protection from fire. Where design results in higher leakage current, the preferred trip level for adjustable devices is 30 mA above any inherent capacitive leakage characteristic of the heater as specified by the trace heater supplier or alternatively, the next common available trip level for non adjustable devices, with a maximum of 300 mA. All safety aspects need to be proven.

APPROVALS

For use ordinary area and hazardous area Zone 1 and Zone 2 (Gas), Zone 21 and Zone 22 (Dust).

Temperature classification
T6

Product certification

More details about product certification, approvals and conditions of safe use are available in the installation manual for Self-regulating and Power limiting heating cable systems at www.nVent.com/RAYCHEM

ORDERING INFORMATION

Part description	3BTV2-CR	5BTV2-CR	8BTV-2-CR	10BTV2-CR
Part No. (*)	914279-000	414809-000	479821-000	677245-000
Part description	3BTV2-CT	5BTV2-CT	8BTV-2-CT	10BTV2-CT
Part No. (*)	469145-000	487509-000	008633-000	567513-000

Components

nVent offers a full range of components for power connections, splices and end seals. These components must be used to ensure proper functioning of the product and compliance with electrical requirements.

(*) Localized versions may exist with limited approvals and different part numbers. Contact your local sales representative

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

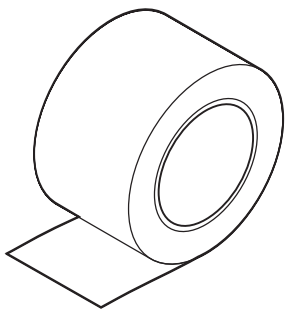
Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com

Our powerful portfolio of brands:
CADDY ERICO HOFFMAN RAYCHEM SCHROFF TRACER

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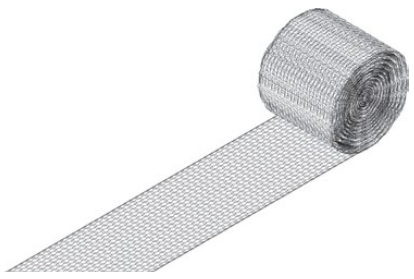
ATE-180

Aluminium tape* for attaching heating cables and thermostat sensors to pipes and tanks. Minimum installation temperature: 0°C. Also suitable for stainless steel pipes.

55 m per roll, 63.5 mm width.

PN: 846243-000 Weight: 0.84 kg

*Power output of selfregulating heating cables might increase when installed with aluminium tape or other heat transfer aids. Please use TraceCalc or contact nVent representative for further details.

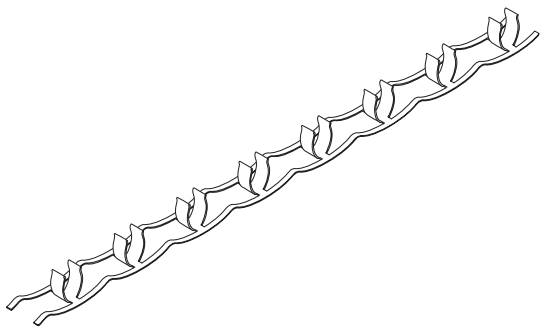


HWA-METAL-MESH-SS-50MM-10M

Stainless steel mesh for fixation of heating cables on valves, pumps or other odd-shaped surfaces. This mesh provides optimum contact and heat transfer between heating cables and heated equipment and can be used for exposure temperatures up to 400°C.

10 m per roll, 50 mm width.

PN: 1244-005772 Weight: 0.36 kg



HWA-PI-FIX- SS-xMM-10M

Stainless steel clip band to attach Polymer Insulated series heating cables to pipes. Clips at regular distances to allow for even heater spacing. Band available in two sizes for different diameter ranges.

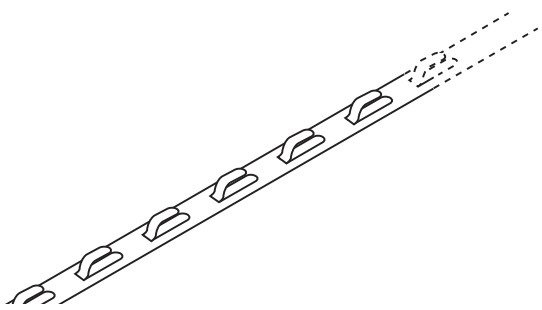
10 m per roll.

For diameters up to 5 mm, HWA-PI-FIX-SS-5MM-10M

PN: 1244-007768 Weight: 0.32 kg

For diameters up to 8 mm, HWA-PI-FIX-SS-8MM-10M

PN: 1244-007769 Weight: 0.52 kg



HARD-SPACER-SS-25MM-25M

Stainless steel spacer for fixing the heating cable on walls, tanks and vessels, etc.

Width spacer: 12.5 mm.

Fixing distance for cables: each 25 mm.

25 m per roll.

PN: 107826-000 Weight: 1.10 kg

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
CB-200F4B	AC UPS F&G - Battery Isolator-B	CONTAINER B-300 (LOWER DECK)	1724000372	3W Power	Cortem Spa		EJBC	Zone 1	EPT 20 ATEX 4075X	1724000372-EL-DG-00011	II 2GDEx db IIC T6 Gb Ex tb IIIC T 85°C Db	-	N/A	True	N/A	False	
EAT-200N1-01	Trace Heating - Remote Ambient Thermostat	LOWER DECK	1724001647	nVent	nVent	1244-022663	ETS-05-A2-E-A	Zone 1	Baseefa 13ATEX0137	1724001647-EL-DD-00004	II 2(1)G Ex eb ia mb [ia Ga] IIC T5 Gb - 40ºC ≤ Ta ≤ +60ºC II 2D Ex tb IIIC T100ºC Db	-	N/A	True	N/A	False	
EHT-1001-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1002-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1003-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1004-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1004-B	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1005-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1006-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1007-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-2002-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EJB-200F2-01	Top Obstruction Lights Junction Box	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990082	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
EJB-200F2-02	Intermediate obstruction lights junction box	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990083	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_4
EJB-200N1-02-L1-01	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990045	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-02	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990044	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-03	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990043	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
EJB-200N1-02-L1-05	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990058	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-06	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990057	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-07	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990059	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-08	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990060	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-09	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990061	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-10	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990047	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-11	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990056	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-12	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990055	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-13	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990054	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-14	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990053	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-15	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990052	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-16	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990051	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-17	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990050	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-18	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990049	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-19	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990048	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-20	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990072	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-01	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990003	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-02	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990004	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-03	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990002	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-04	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990001	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-05	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990012	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-06	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990011	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-07	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990010	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-08	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990009	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-09	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990008	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-10	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990007	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-11	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990006	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-12	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990005	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-13	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990014	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-14	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990013	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-04-L3-01	Stair Normal Lighting JB	LOWER DECK STAIRS	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990032	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-04-L3-02	Stair Normal Lighting JB	LOWER DECK STAIRS	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990033	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-01	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990064	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-03	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990062	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
EJB-200N1-08-L1-04	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990065	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-05	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990077	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-06	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990078	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	

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:	**SGS20ATEX0048X – Issue 3**
4	Product:	**BTV Range of Self-Regulating Trace Heating Systems**
5	Manufacturer:	**nVent Thermal LLC**
6	Address:	**899 Broadway Street, CA, 94063-3104, United States of America**

7 This re-issued certificate extends EU Type Examination Certificate No. **SGS20ATEX0048X** 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.

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 IEC 60079-7:2015+A1:2018 EN 60079-18:2015+A1:2017
EN 60079-30-1:2017 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 60079-30-1 eb IIC T6 Gb or Ex 60079-30-1 eb mb IIC T6 Gb T_{min} -60°C**
Ex 60079-30-1 tb IIIC T80°C Db or Ex 60079-30-1 mb tb IIIC T80°C Db

SGS Fimko Oy Customer Reference No. **865** Project File No. **21/0455**

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SGS Fimko Oy
Takomotie 8
FI-00380 Helsinki, Finland
Telephone +358 (0)9 696 361
e-mail **sgs.fimko@sgs.com**
web site **www.sgs.fi**
Business ID 0978538-5 Member of the SGS Group (SGA SA)

Tuomas Hänninen
SGS Fimko Oy

13 # Schedule

14 ## Certificate Number SGS20ATEX0048X – Issue 3

15 Description of Product

The BTV Range of Self-Regulating Trace Heating Systems is of the parallel circuit self-regulating type, rated at up to 277V, with power output up to 33W/m (10W/ft). The units have a maximum self-limiting temperature of 80°C.

Each trace heating system comprises:
- the active heating cable.
- an end seal for terminating the remote end of the unit.
- a cable gland for connecting the powered end of the unit to a suitable terminal enclosure, or alternative integrated power connection systems.

The active heating cable comprises two stranded copper conductors around which is extruded a semi-conductive core material. This core material increases in resistance with increasing temperature and gives the cable its self-limiting property. This semi conductive core with embedded conductors forms the active part of the heating cable. An extruded layer of fluoropolymer serves to insulate the semi conductive core from the conductive covering, covering the active heater. A protective anti-corrosion fluoropolymer sheath may be extruded over the conductive covering.

The declared maximum withstand temperature for the range is 85°C and the minimum installation temperature is -60°C.

CABLE ACCESSORIES

END SEALS

The end seals for terminating the remote end of the unit may be the following types:

Types E-100-L or E-100, which are mechanical end seals incorporating an end cap which is filled with silicone grease sealant covered by certificates Sira14ATEX3015X and PTB09ATEX1060U.

Types E-100-L-A or E-100-A, which are mechanical end seals incorporating an end cap which is filled with silicone grease sealant.

A Raychem Type E-20 heat shrink end seal kit.

Type E-150 mechanical end seals, covered by certificate DEKRA20ATEX0011U.

SPLICES AND JOINTS

The following splicing and jointing arrangements are provided:

A Raychem Type S-20 heat shrink splice kit for connecting lengths of active heating cable.

A Raychem T-100 tee connection system, certificate PTB20ATEX1008U, for connecting up to three heater cables.

Type S-150 mechanical splice kit, covered by certificate DEKRA20ATEX0011U.

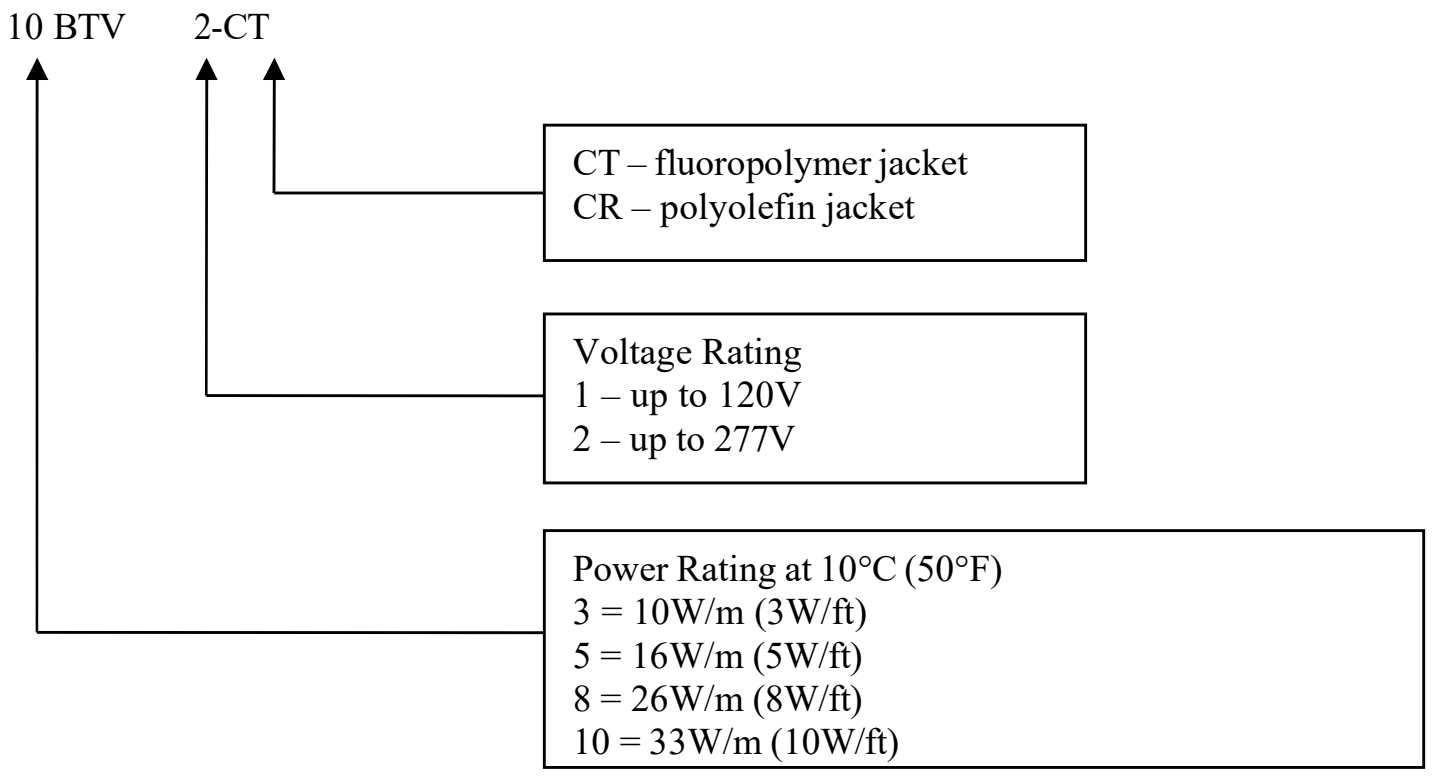
POWER CONNECTIONS

Power connection may be achieved by the following means:

Connection Type	ATEX Certificate
JBM-100	PTB20ATEX1008U
JBS-100	PTB20ATEX1008U
JBU-100	PTB20ATEX1008U
C-150-E	DEKRA20ATEX0011U
C25-21 Connection Kit	Baseefa16ATEX0037U
C25-100 Connection Kit	Baseefa16ATEX0038U
C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS Kits	Baseefa16ATEX0039U

The C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS Kits include M25 or ¾ NPT gland to Sira01ATEX1270X and core sealer to Baseefa15ATEX0194U.

A number of power levels and voltages, up to the maximum specified, are included in the range. They are identified in the following manner:



Any of the products in the range may be considered as part of a stabilised design system. In such a system the design is based upon the use of nVent proprietary software Trace calc Pro. The algorithm defined in this software may be used in additional design software.

The minimum bending radii for BTV trace heating cable at specific temperatures are shown in the table below:

Temperature, T (°C)	**Minimum Bending Radius (mm)**
$-60 \leq T < -20$	35
$-20 \leq T < -10$	30
$-10 \leq T < 0$	25
$0 \leq T < +10$	20
$T \geq +10$	12

16 Report Number

See Certificate History.

17 Specific Conditions of Use

1. The following limiting temperatures for the heat shrink end seals and splices shall not be exceeded:

   +110°C for the S-20 and E-20
   +150°C for the C-150-E, S-150 and E-150

2. The end seals, splices and power connections have the following associated ambient temperatures:

   -60°C to +56°C for the E-20 and S-20
   -55°C to +56°C for the T-100, JBM-100, JBS-100, JBU-100, and E-100
   -40°C to +56°C for the JBS-100-L, JBM-100-L, and JBU-100-L
   -55°C to +55°C for the C-150-E, S-150 and E-150
   -40°C to +40°C for the E-100-L
   -55°C to +110°C for the C25-21 and C25-100
   -60°C to +180°C for the C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS

3. The assembly of glands, splices and end terminations shall be carried out in accordance with the manufacturing instructions

4. The heating element supply circuit must include an electrical protection device in conformity with Clause 4.4 of EN 60079-30-1.

5. The minimum installation temperature is -60°C. The minimum bending radii at specific temperatures for the Type BTV units are shown in the table in the equipment description.

6. The supply to the heating unit must be terminated in a suitably certified terminal enclosure.

7. The minimum installation temperature for E-20 and S-20, end seal and splice is -20°C.

8. The installer is to carry out a dielectric strength test on Ex equipment in which the C25-21, C25-100 and C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS connection kit is fitted. No dielectric breakdown shall occur. (Alternatively, an insulation resistance test may be undertaken in accordance with EN 60079-30-2).

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
205308-A[i]	1 of 1	Q	05/27/2021	BTV-8BTV-CR & BTV-10BTV-CR
205310-A[i]	1 of 1	R	05/27/2021	BTV-8BTV-CT & BTV-10BTV-CT

Current drawings which remain unaffected by this issue:

Number	Sheet	Issue	Date	Description
906567[ii]	1 of 1	P	05/21/21	C25-21, C25-100 and C25-100-METAL-XX, C3/4-100-METAL-XX Connection Kits
906579-A[i]	1 of 1	N	01/15/2021	BTV Heater Units (European System)
205350-A[i]	1 of 1	P	03/31/20	BTV-3BTV-CT & BTV-5BTV-CT
205349-A[i]	1 of 1	J	03/26/20	BTV-3BTV-CR & BTV-5BTV-CR
906794-A[iii]	1 of 1	AA	03/30/20	Generic ATEX and IECEx Print Dwg for BTV-CT, QTVR-CT, XTV-CT, KTV-CT Heating Cables
9242869[iv]	1 & 2	O	12/09/19	LABL JBM-100-L-E
9532687[iv]	1 & 2	Q	12/09/19	LABL JBM-100-L-EP
9621473[iv]	1 & 2	O	12/09/19	LABL JBS-100-L-E
9777523[iv]	1 & 2	P	12/09/19	LABL JBS-100-L-EP
9319676[iv]	1 & 2	O	12/09/19	LABL JBU-100-L-E
9735898[iv]	1 & 2	O	12/09/19	LABL JBU-100-L-EP
908742-A[v]	1 of 1	A	2/19/20	E-20 Heat Shrinkable End Seal Kit Cut Back Dimensions
908743-A[vi]	1 of 1	A	2/19/20	S-20 Heat Shrinkable Splice Joint Kit Cut Back Dimensions

i) These drawings are common to IECEx BAS 20.0011X, SGS20ATEX0048X and are held with IECEx BAS 20.0011X.

ii) This drawing is common to IECEx BAS 16.0040U, IECEx BAS 16.0041U, IECEx 16.0042U, IECEx BAS 20.0008X, IECEx BAS 20.0009X, IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, Baseefa16ATEX0037U, Baseefa16ATEX0038U, Baseefa16ATEX0039U, SGS20ATEX0045X, SGS20ATEX0046X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and is held with IECEx BAS 16.0040U.

iii) These drawings are common to IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and are held with IECEx BAS 20.0011X.

iv) These drawings are common to IECEx BAS 20.0008X, IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, SGS20ATEX0045X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and are held with IECEx BAS 20.0008X.

v) These drawings are common to IECEx BAS 20.0010X, IECEx BAS 20.0011X, IECEx BAS 20.0013X, SGS20ATEX0047X, SGS20ATEX0048X, SGS20ATEX0050X and are held with IECEx BAS 20.0010X.

vi) These drawings are common to IECEx BAS 20.0011X, IECEx BAS 20.0013X, SGS20ATEX0048X, SGS20ATEX0050X and are held with IECEx BAS 20.0011X.

20 Certificate History

Certificate No.	Date	Comments
SGS20ATEX0048X	23 October 2020	The release of the prime certificate. The associated test and assessment against the requirements of EN 60079-0:2012+A11:2013, EN IEC 60079-7:2015+A1:2018, EN 60079-18:2015+A1:2017, EN 60079-30-1:2017 and EN 60079-31:2014 is documented in Test Report No. GB/BAS/ExTR20.0030/00.

Certificate No.	Date	Comments
SGS20ATEX0048X Issue 1	11 February 2021	To assess the BTV range of self-regulating trace heating systems against EN IEC 60079-0:2018, introduce the low profile power connection, splice and end seal kits, types C-150-E, S-150 and E-150 afforded DEKRA20ATEX0011U, minor amendments to the product description, to change the product name to "BTV Range of Self-Regulating Trace Heating Systems" and to amend the Specific Conditions of Use. The associated test and assessment is documented in Test Report No. GB/BAS/ExTR21.0005/00.
SGS20ATEX0048X Issue 2	7 July 2021	Minor drawing updates not affecting certification. Baseefa Certification Report GB/BAS/ExTR21.0060/00 refers.
SGS20ATEX0048X Issue 3	3 September 2021	Minor change to the BTV-8BTV-CR, BTV-8BTV-CT, BTV-10BTV-CR and BTV-10BTV-CT heating cable dimensions. Baseefa Certification Report GB/BAS/ExTR21.0104/00 refers.
For drawings applicable to each issue, see original of that issue.		

CAD FILENAME: PIT24.0024_DD02_3001_001_02.dwg

HEAT TRACING DATA

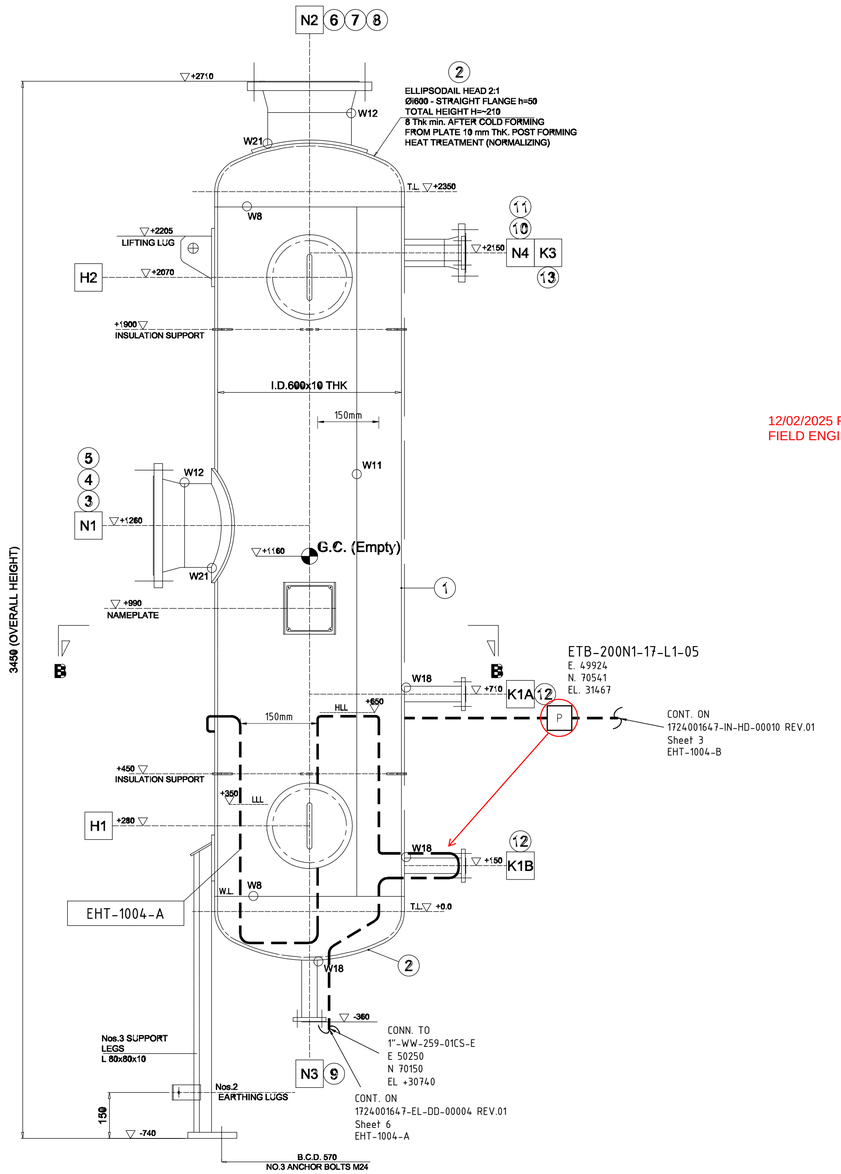
HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	HEATER LENGTH (m)	HEATED AREA (m^2)	HEATER SPACING (mm)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W)	POWER OUTPUT (W/m)	SHEATH TEMPERATURE (°C)
EHT-3001-A	EQUIPMENT	3BTV2-CT	~~1x5.8~~ 21	0.72	150	0.5	80	80	66	13.9	85
					TOTALS	0.5	80				

DESIGN PARAMETERS

CIRCUIT NUMBER	3001	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	11°C	INSULATION TYPE	RW/MF 1:2015
MAX. EXPOSURE TEMP.	11°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	100°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

COMPONENT BILL OF MATERIALS

CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	~~5.8~~ 21	m	Raychem Self-Regulating Heating Cable
JBM-100-E	1	each	Integrated Junction Box, Multiple-Entry, Cold-Applied, ATEX
ATE-180	0.32	roll	Fixing tape (aluminium, 55m/roll)
LAB-I-01	1	each	Warning Label - English
PSE-090	2	each	Pipe Strap for 1.1/4" to 3" (40-90mm)



12/02/2025 RLMU by E&I
FIELD ENGINEER (G.Randi)

EQUIPMENT NUMBERS

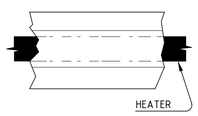
V-43001

REFERENCE DRAWINGS / DOCUMENTS

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.

ALUMINIUM TAPE (REF: ATE180)



SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

CROSSWIND

ROSETTI MARINO

nVent RAYCHEM TRACER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
02	20/01/2025	ISSUED FOR REVIEW	ADU	AMI	GPI
01	25/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.

DOC CODE

PROJECT TITLE
HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

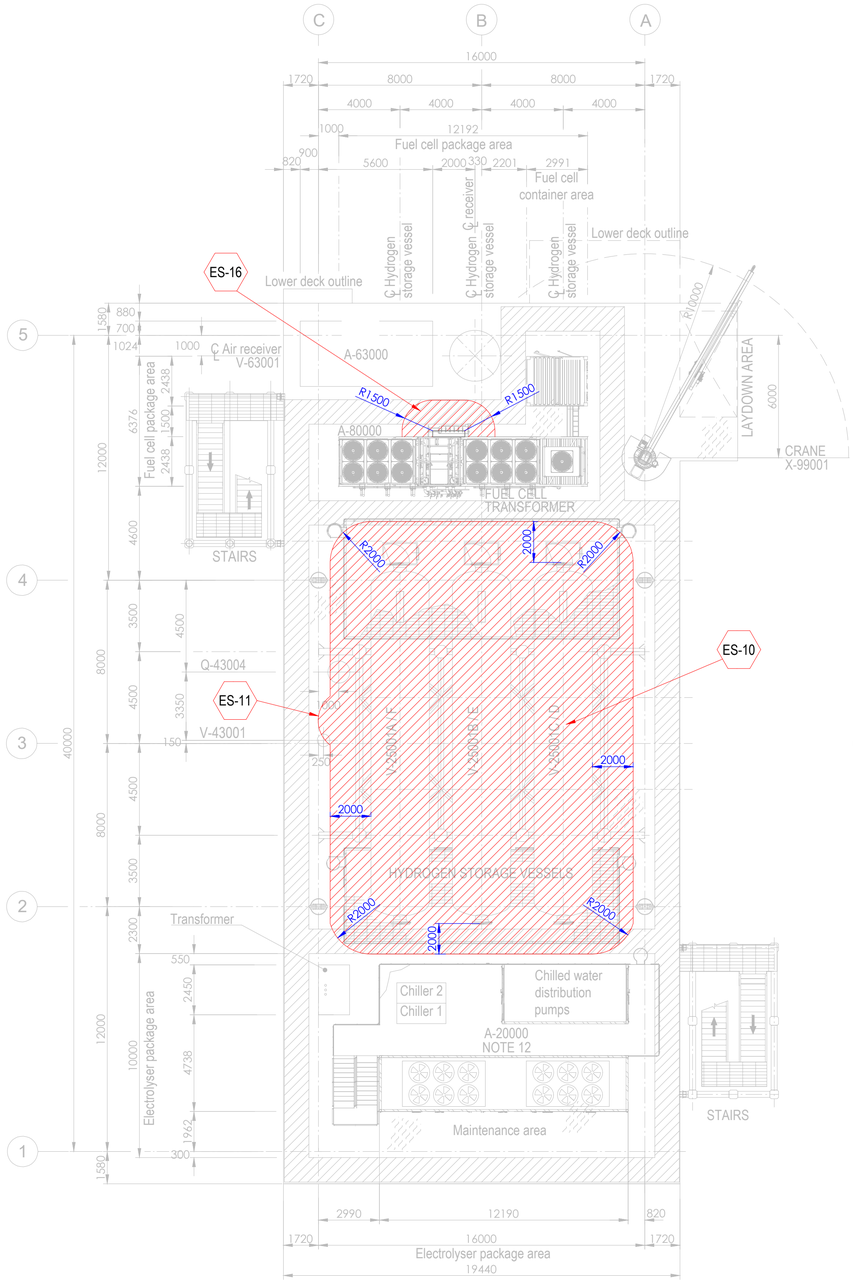
LEAD ENG.: A. Martelli

DRAWING TITLE
ELECTRICAL HEAT TRACING EQUIPMENT

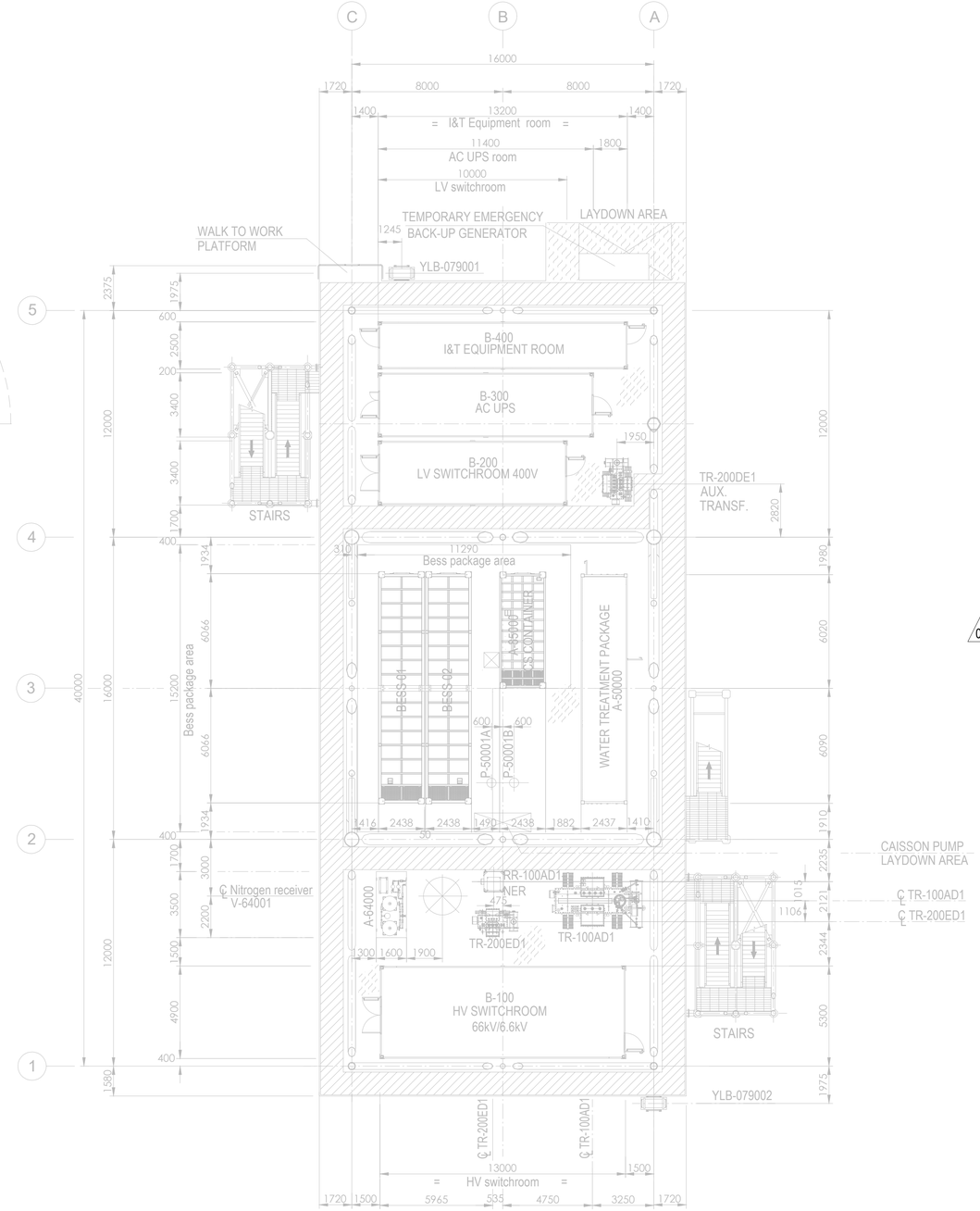
SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-EL-DD-00004	10/10	02

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

REV. 02



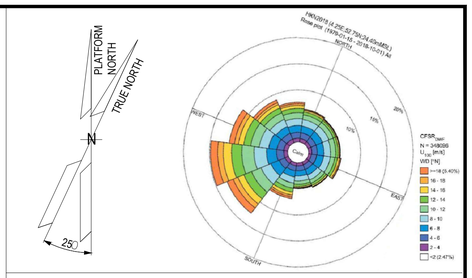
PLAN ON UPPER DECK
EL+30.310 T.O.S.



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

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

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



NOTES

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

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

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

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

CROSSWIND

ROSETTI MARINO

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

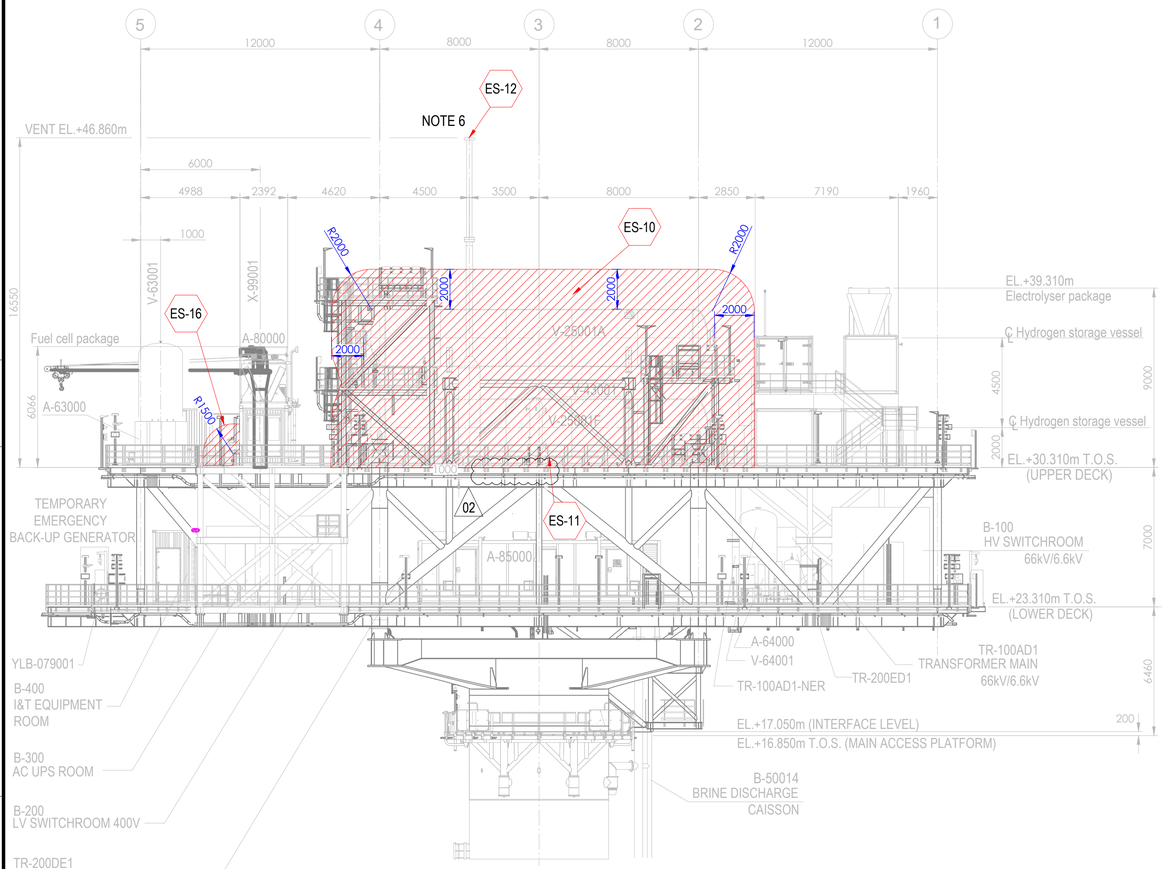
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

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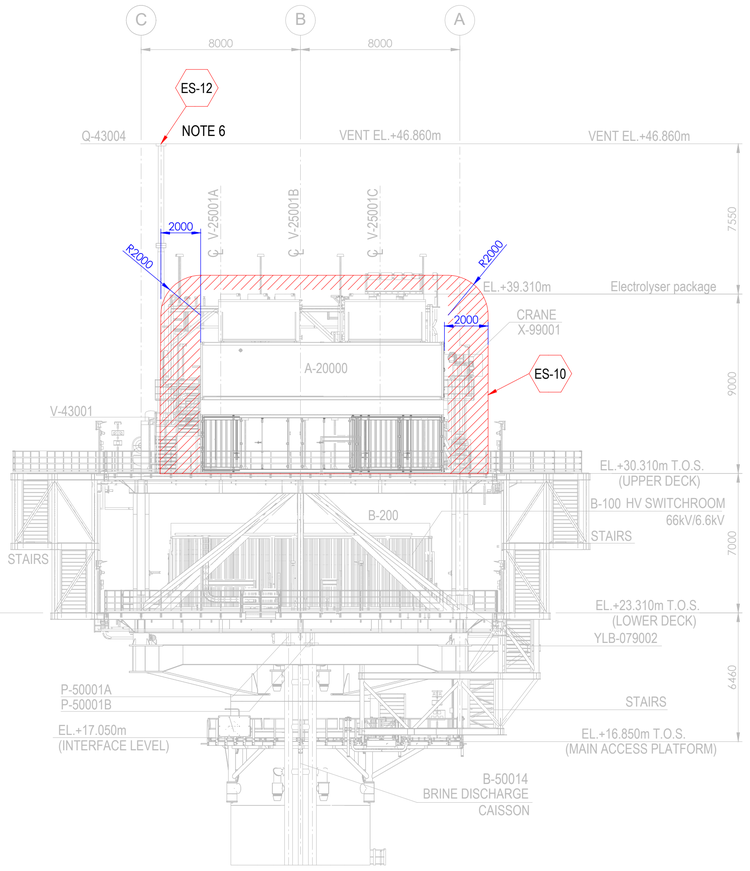
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

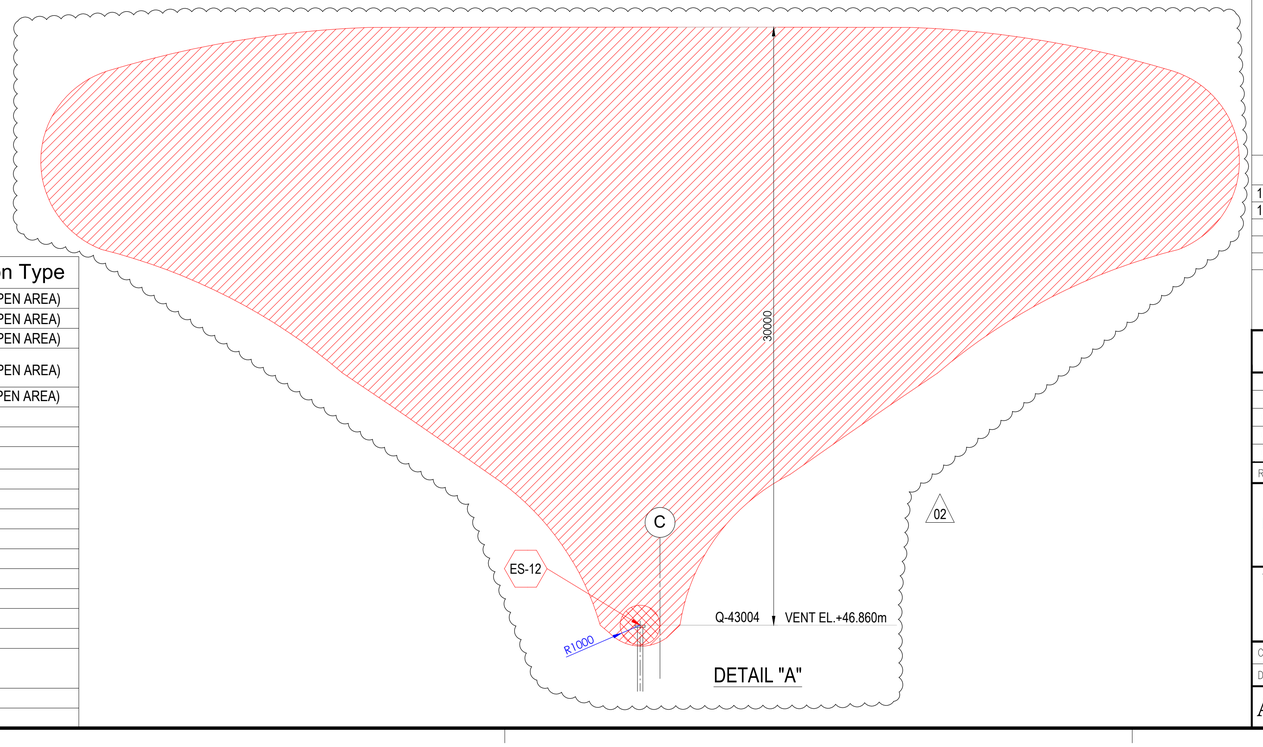


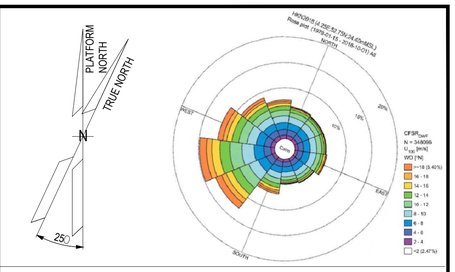
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

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





NOTES

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

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

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

CROSSWIND

ROSETTI MARINO

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

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

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

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

ITEM	Tag	EHT-1004-B	: Heat Tracing Tape		Dwg	1724001647-EL-LIS-00003	
	S/Sys	83-65	: Electrical Heat Tracing		Module	UD	
TASK	code	C10004636	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Electrical	Form	CPX22A	Tape Trace Heating Before Insulation

1	Check that the circuit is de-energized and safe.	OK
2	Check all tapes and junction boxes are undamaged.	OK
3	Check all tapes and junction boxes are installed according to drawings.	OK
4	Check all tapes characteristics against project data (type, rated power).	OK
5	Check rating of circuit breaker against drawings.	OK
6	Check tapes, junction boxes, cables and accessories tagging.	OK
7	After test re-connecting cable as per typical installation.	OK
8	If required produce Red Line Mark Up for "AS BUILT"	

CIRCUIT DATA

List Associated Heat tracing Isometric	1724001647-EL-DD-00004/1724001647-IN-HD-00010
Tape Type	3BTV2-CT
Circuit Installed Length	3m
Wiring Diagram	WD_1724001647-EL-DG-00006/Single line Diagram (1724001647-EL-DG-00005).

Testing & measurement instruments used

Type	Serial n°	Calibration certificate	Validity
MEGGER : KEW3125A	SERIAL: W8330207	N°7722/24	09/07/2025
VOLCRAFT 1000V	ET-200 S/N:H240103023	N°LAT 042 00768/24	11/10/2025

FIRST TEST

Continuity and insulation resistance tests to earth for each conductor core are carried out after the tape is installed on pipework **before any insulation and cladding is fitted.**

Test voltage (V):	2500	Tape Lengh	3m	Thermostats :	N/A
Continuity	199,3	Insulation Resistance	>1999 M	Result	OK

AFTER THIS TEST IS DONE, LINE CAN BE RELEASED TO INSULATION TEAM

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-05	2025-02-13	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-05T10:20:25.927Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-13T12:29:40.643Z	

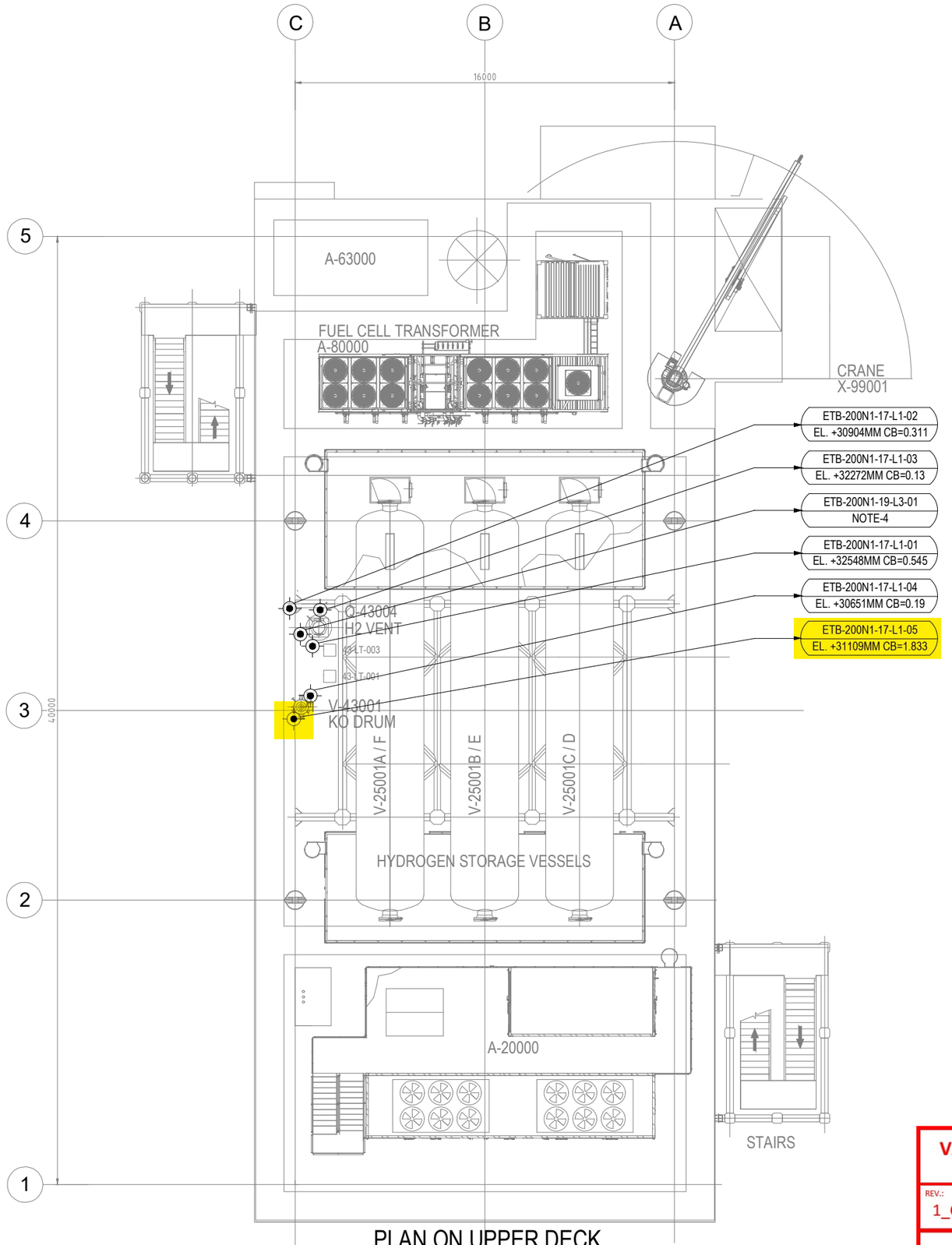
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PIT240024_ED01-1001

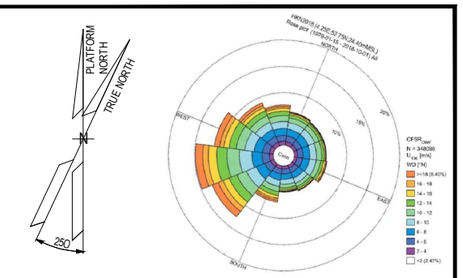
		ENGINEERING DATA				MECHANICAL & INSULATION DATA							PROCESS DATA				EHT BASIC DESIGN								EHT DETAILED DESIGN							EHT TEMP. CONTROL DATA							
Main EHT Box Number	Item Number	Heater Number	Line, Equipment or Instrument ID	nVent Circuit Number	Plant Area	Pipe Size [DN / IN]	Pipe Length [m]	Support Quantity [pc]	Valve Quantity [pc]	Other Heat Sink Quantity [pc]	Insulation Type	Insulation Thickness [mm]	Maintain Temperature [°C]	Maximum Allow. Process Temperature [°C]	Maximum Operating Temperature [°C]	Maximum Exposure Temperature [°C]	Heatloss [W/m]	Heating Cable Selection	Trace Ratio	Heating Cable Output [W/m]	EHT Cable per Support [m]	EHT Cable per Valve [m]	EHT Cable per Other Heatsink [m]	Total EHT Cable [m]	Max. Allow. EHT Circuit Length [m]	Connection Type	Voltage [V]	Operating Current [A]	Total Operating Load [W]	Start-Up Current [A]	Temp. Control Method	Controller Set Point [°C]	Minimum Controlled Temperature [°C]	Maximum Controlled Temperature [°C]	Maximum Uncontrolled Temperature [°C]	Revision	Remark
																		GRAND TOTAL						**181.4**				**9.69**	**2226**	**14.91**							
ETB-200N1-16-L3-01	1	EHT-1001-A	1"-DM-001-01SS-E	1001	PIPING	1	17.6	5	1	2	RW/MF 1:2015	20	5	100	22	22	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	22.0	199	Single L-N	230	1.18	271	1.8	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**22.0**			**230**	**1.18**	**271**	**1.8**							
ETB-200N1-15-L2-01	1	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	11.0	4		1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	13.9	199	Single L-N	230	0.73	167	1.1	Ambient sensing, standard	5	18	29	50	00	
	2	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	3	EHT-1002-A	1"-CI-032-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	4	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	5	EHT-1002-A	1"-CI-030-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	6	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.75	0.5		1		RW/MF 1:2015	20	5	50	25	25	3.4	3BTV2-CT	2.0	10.7		1.5		2.6	199	Single L-N	230	0.15	34	0.2	Ambient sensing, standard	5	30	38	55	00	
	7	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.5	0.5		1		RW/MF 1:2015	20	5	50	25	25	2.9	3BTV2-CT	2.0	10.7		1.4		2.5	199	Single L-N	230	0.14	32	0.2	Ambient sensing, standard	5	32	40	56	00	
																		TOTAL					0.5	**36.4**			**230**	**2.00**	**459**	**3.1**							
ETB-200N1-14-L1-01	1	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	4	0.5				RW/MF 1:2015	20	5	100	25	25	10.2	3BTV2-CT	1.0	10.7				0.6	199	Single L-N	230	0.03	7	0.1	Ambient sensing, standard	5	5	20	46	00	
	2	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	4.7	1		1	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1		0.5	9.3	199	Single L-N	230	0.47	107	0.7	Ambient sensing, standard	5	14	27	49	00	
	3	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	4	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	7.8	3			RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1			8.6	199	Single L-N	230	0.48	111	0.7	Ambient sensing, standard	5	14	27	49	00	
	5	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	6	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.8	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	7	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	1.4	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	4.2	199	Single L-N	230	0.23	54	0.4	Ambient sensing, standard	5	24	34	53	00	
	8	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	9	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	10	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.7	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	11	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	1.2	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	3.7	199	Single L-N	230	0.20	47	0.3	Ambient sensing, standard	5	24	34	53	00	
	12	EHT-1003-A	1"-SWS-147-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	13	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	14	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	15	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1	0.1				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	28	37	54	00	
	16	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
	17	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	18	EHT-1003-A	1"-SWS-146-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	19	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	20	EHT-1003-A	1"-SWS-290-01SD-E	1003	PIPING	1	1.1	1	2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7	0.3	1.6		5.8	199	Single L-N	230	0.33	76	0.5	Ambient sensing, standard	5	28	37	54	00	
	21	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**78.6**			**230**	**4.37**	**1002**	**6.7**							
ETB-200N1-17-L1-04	1	EHT-1004-A	1"-WW-259-01CS-E / V-43001	1004	PIPING	1	0.9		1	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7		0.8	0.5	3.2	199	Single L-N	230	0.12	28	0.2	Ambient sensing, standard	5	18	29	50	00	Combined with EHT-1004-B
																		TOTAL						**3.2**			**230**	**0.12**	**28**	**0.2**							
ETB-200N1-17-L1-02	1	EHT-1005-A	1"-WW-260-01CS-E	1005	PIPING	1	1.2	1	2	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	4.6	199	Single L-N	230	0.20	46	0.3	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1006-A
																		TOTAL						**4.6**			**230**	**0.20**	**46**	**0.3**							
ETB-200N1-17-L1-03	1	EHT-1006-A	1"-WW-202-01CS-H	1006	PIPING	1	1.0			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	1.0	10.7			0.5	2.5	199	Single L-N	230	0.08	19	0.1	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1005-A
																		TOTAL						**2.5**			**230**	**0.08**	**19**	**0.1**							
ETB-200N1-15-L2-02	1	EHT-1007-A	1"-CI-043-01CP-E	1007	PIPING	1	15.0	6		4	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	19.5	199	Single L-N	230	1.04	239	1.6	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**19.5**			**230**	**1.04**	**239**	**1.6**							
ETB-200N1-17-L1-05	1	EHT-1004-B	43-LT-001	2001	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	Combined with EHT-1004-A
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							
ETB-200N1-17-L1-01	1	EHT-2002-A	43-LT-003	2002	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

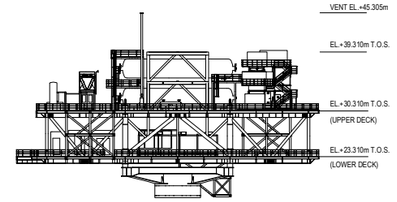
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_C	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 2of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

CAD FILENAME: PIT240024_0002_3001_001_02.dwg

HEAT TRACING DATA

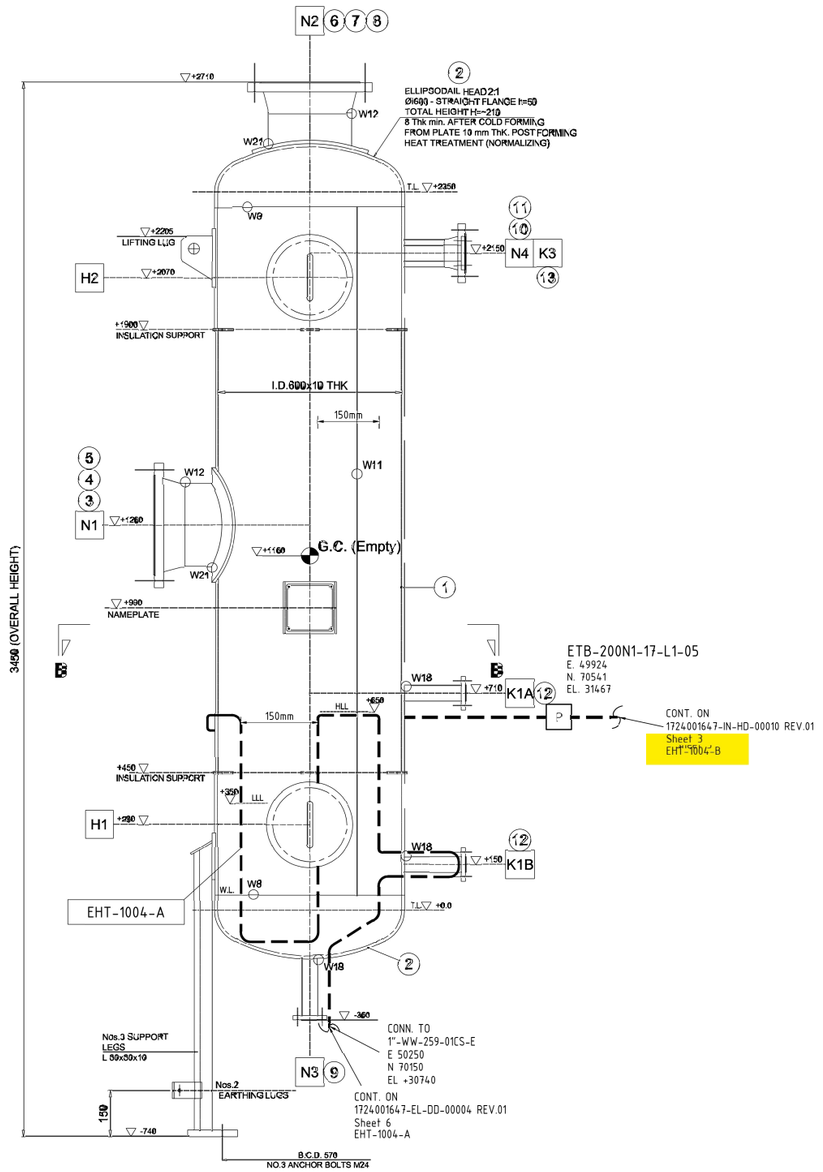
HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	HEATER LENGTH (m)	HEATED AREA (m^2)	HEATER SPACING (mm)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W)	POWER OUTPUT (W/m)	SHEATH TEMPERATURE (°C)
EHT-3001-A	EQUIPMENT	3BTV2-CT	1x5.8	0.72	150	0.5	80	80	66	13.9	85
					TOTALS	0.5	80				

DESIGN PARAMETERS

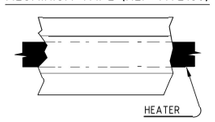
CIRCUIT NUMBER	3001	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	11°C	INSULATION TYPE	RW/MF 1:2015
MAX. EXPOSURE TEMP.	11°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	100°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

COMPONENT BILL OF MATERIALS

CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	5.8	m	Raychem Self-Regulating Heating Cable
JBM-100-E	1	each	Integrated Junction Box, Multiple-Entry, Cold-Applied, ATEX
ATE-180	0.32	roll	Fixing tape (aluminium, 55m/roll)
LAB-I-01	1	each	Warning Label - English
PSE-090	2	each	Pipe Strap for 1.1/4" to 3" (40-90mm)



ALUMINIUM TAPE (REF: ATE180)



SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

EQUIPMENT NUMBERS	REFERENCE DRAWINGS / DOCUMENTS
V-43001	

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.

CROSSWIND

ROSETTI MARINO

nVent RAYCHEM TRACER

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nVent.com

NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
02	20/01/2025	ISSUED FOR REVIEW	ADU	AMI	GPI
01	25/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING EQUIPMENT

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-EL-DD-00004	10/10	02

A1

DRAWING NO. DRAWING_NO.

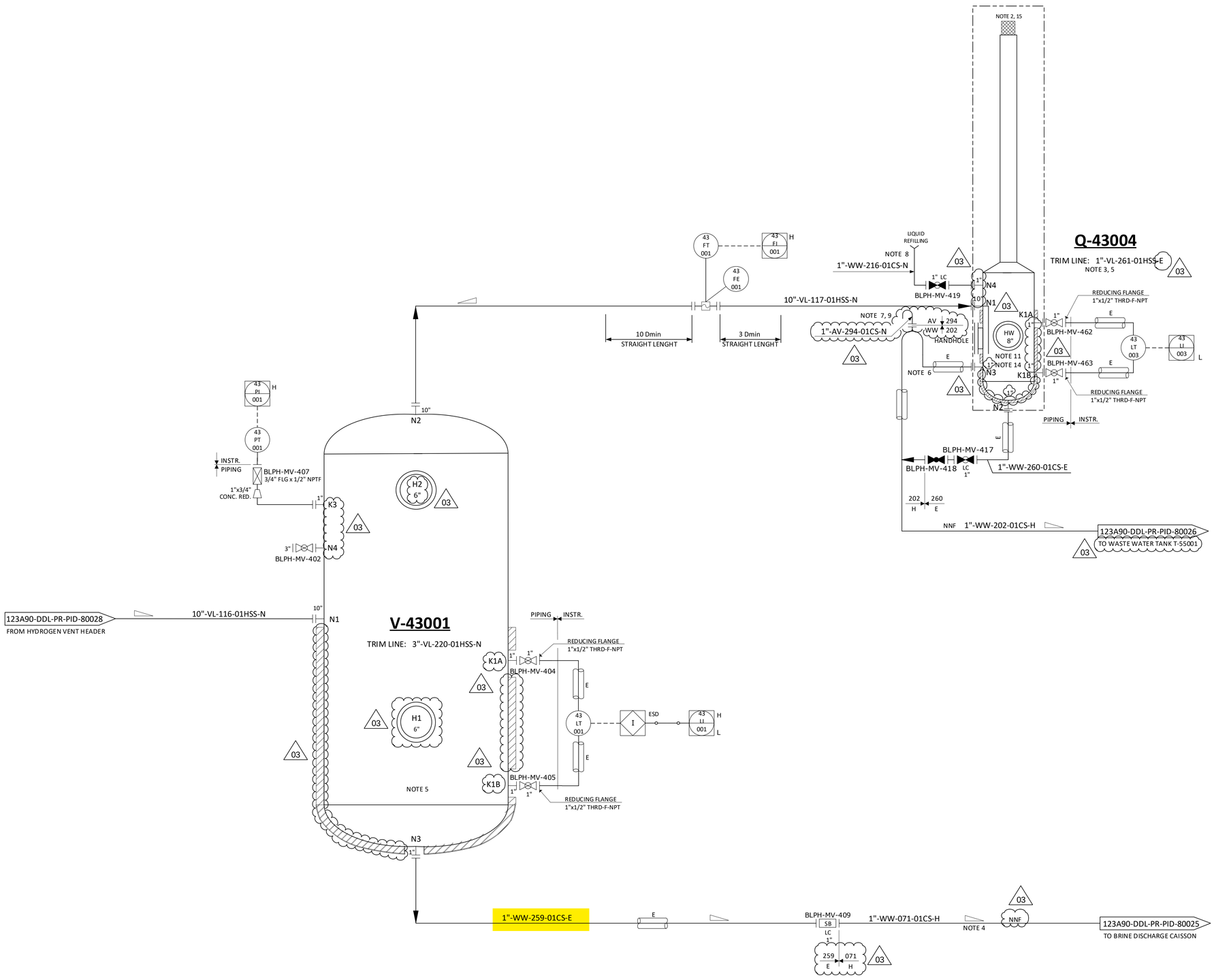
REV. REV

V-43001

HYDROGEN VENT KO DRUM
SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1
SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. (03)
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

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

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

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80029	SHEET 001	REV. 03

File Name : FILE_NAME

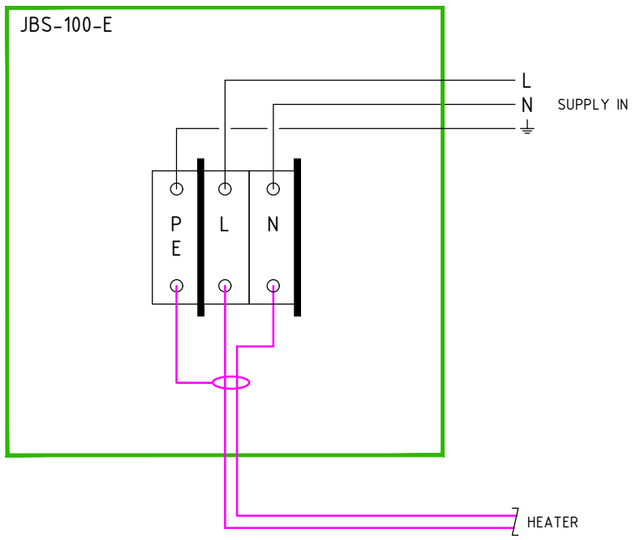
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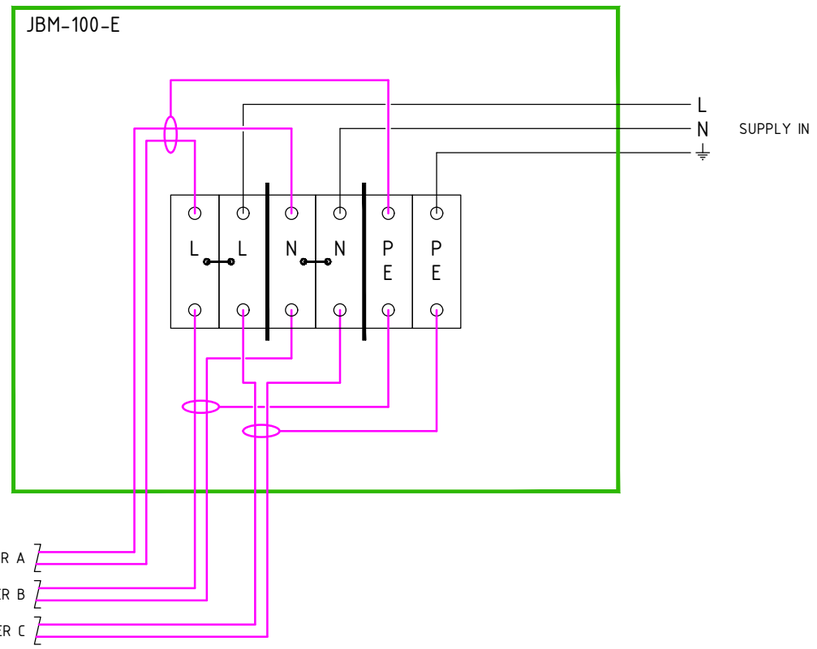
GENERAL INFORMATION:

1. JBS-100-E IS DESIGNED TO CONNECT POWER TO ONE BTV, QTVR, XTV, KTV, HTV OR VPL EHT CABLE.
2. THIS KIT INTEGRATES THE FUNCTIONS OF BOTH CONNECTION KITS AND INSULATION ENTRIES.
3. THE STAND CONNECTED TO THE BOTTOM OF THE BOX PROTECTS THE HEATING CABLE AND ALLOWS FOR UP TO 100mm (4") THERMAL INSULATION.

TECHNICAL BRIEF:

- 2 x M25 THREADED ENTRIES
- 1 x M25 STOPPING PLUGS
- 1 x M25 POWER CABLE GLAND





REV.	DATE	DESCRIPTION	BY	CHK	APP
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--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	08/03/2024	ISSUED FOR INFORMATION	LJB	E-C	ZS

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TITLE

TYPICAL CONNECTION OF A JBS-100-EP
SINGLE ENTRY JUNCTION BOX

PREPARED BY	-.---	LANG.	SCALE
LEAD ENGINEER	-.---	en	N/A
PROJECT NO.	DRAWING NO.	SHEET	REVISION
PIT240024	1724001647-EL-DG-00005	2/3	01

A3

CAD FILENAME: 1724001647-EL-DG-00006 Rev.01.dwg

CONTROL PANEL REF.:

Q17

MARSHALLING BOX

EJB-200N1-17-L1-01

ETB-200N1-17-L1-04 — P — EHT-1004-A — ETB-200N1-17-L1-05 — P — EHT-1004-B

ETB-200N1-17-L1-02 — P — EHT-1005-A

ETB-200N1-17-L1-03 — P — EHT-1006-A

ETB-200N1-17-L1-01 — P — EHT-2002-A

SPARE

CIRCUIT NO.	1004	1005, 1006	2002	
C.B. RATING (A)	32	32	32	
START-UP I (A)	2.6	0.4	0.6	
LOAD (W)	383	65	81	
SERVICE	WINTERIZING	WINTERIZING	WINTERIZING	
NOTES FOR THE CIRCUIT	--	--	--	

GENERAL NOTES

CROSSWIND

ROSETTI MARINO

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
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01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	02/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING
SINGLE LINE DIAGRAM (SLD)

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-EL-DG-00006	4/4	01

CAD FILENAME: PIT240024_0003_2001_001_03.dwg

HEAT TRACING DATA

HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	PIPE LENGTH (m)	HEATER LENGTH (m)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W/m)	POWER OUTPUT (W/m)	SHEATH TEMP. (°C)
EHT-2001-A	INSTRUMENT	3BTV2-CT	3.0	7.3	0.5	81	230	3.9	10.7	85
TOTALS			3.0	7.3	0.5	81				

HEATER ADDER TABLE

PIPE SIZE (Ins)	TYPE	QTY	ALLOWANCE PER ITEM (m)	TOTAL ALLOWANCE (m)

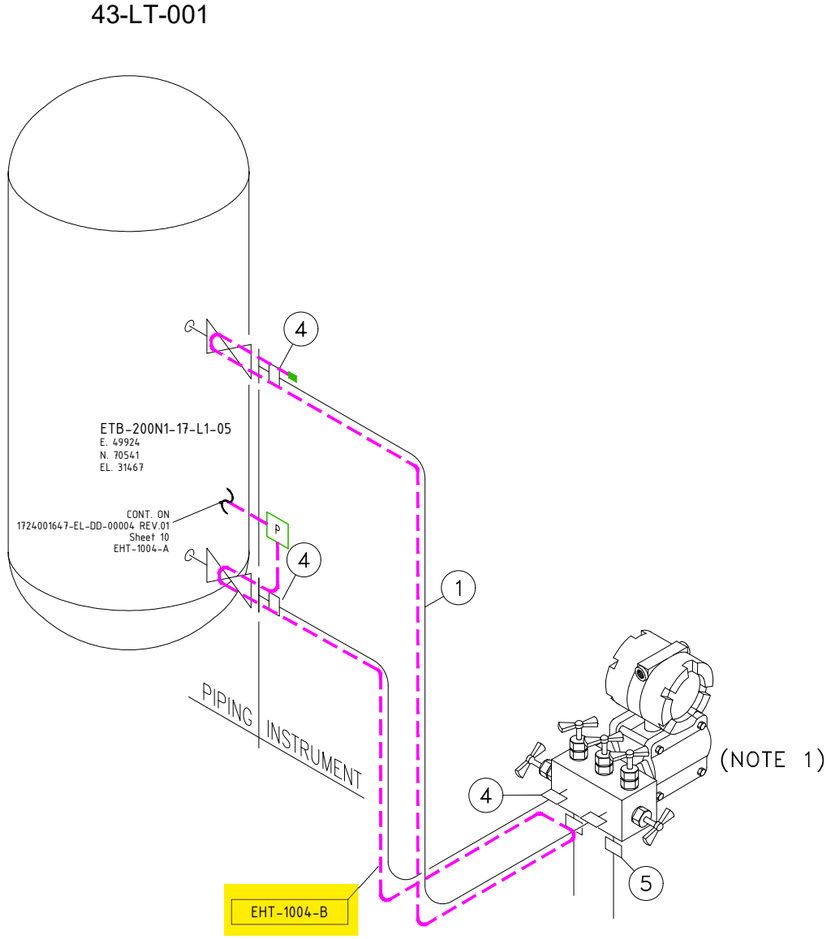
DESIGN PARAMETERS

CIRCUIT NUMBER	2001	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	11°C	INSULATION TYPE	RW/MF 1.2015
MAX. EXPOSURE TEMP.	11°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	100°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

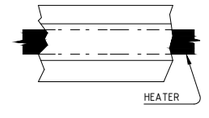
COMPONENT BILL OF MATERIALS

CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	7.3	m	Raychem Self-Regulating Heating Cable
GS-54	0.3	each	Glass Tape (16m/roll), suited for SS pipes
LAB-I-01	2	each	Warning Label - English
E-20	1	each	Heat shrink end seal, ATEX (BTV, QTVR)

ELECTRICAL HOOK-UP FOR LEVEL TRANSMITTERS (DP CELL TYPE)



ALUMINIUM TAPE (REF: ATE180)



SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

LINE NUMBERS	REFERENCE DRAWINGS / DOCUMENTS
43-LT-001	

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.
4. HEATING CABLE ALLOWANCES PROVIDED IN THE 'EHT ADDER TABLE' FOR FLANGES AND VALVES ARE IN ADDITION TO THEIR LINEAR LENGTHS.

CROSSWIND

ROSETTI MARINO

nVent RAYCHEM TRACER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
03	13/01/2025	ACCEPTED FOR CONSTRUCTION	ADU	AMI	GPI
02	29/11/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.

DOC CODE

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING
INSTRUMENT HOOK-UP

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-IN-HD-00010	3/4	03

A1

BTV

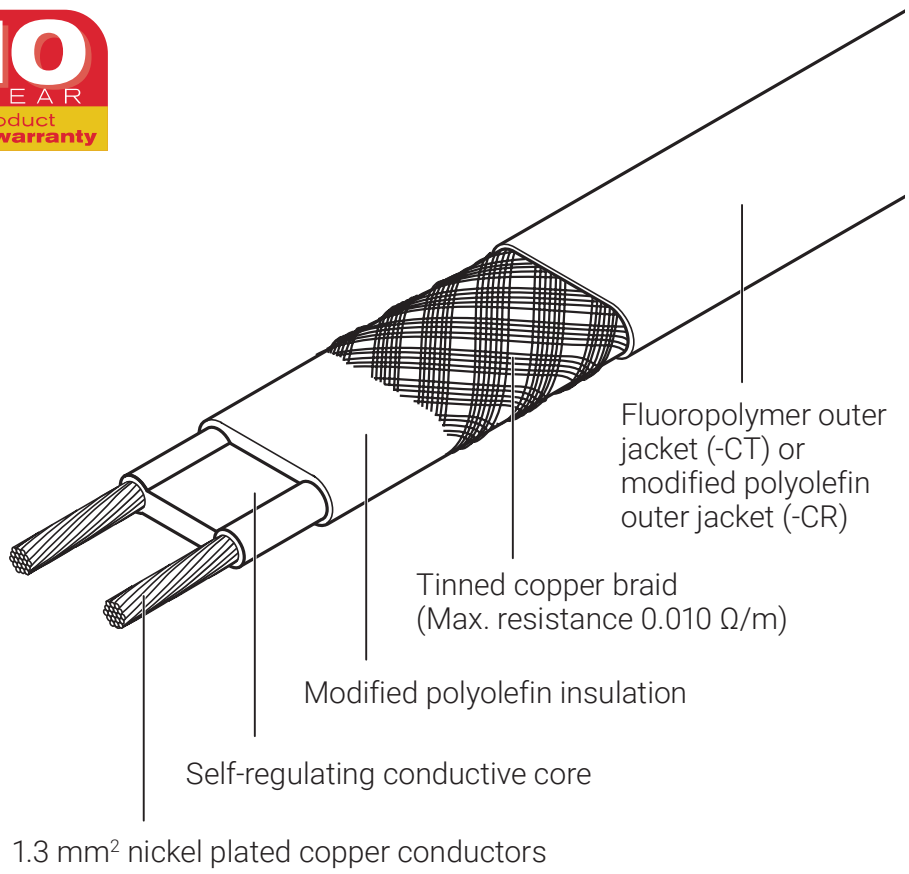
nVent RAYCHEM

CONNECT AND PROTECT

Self-regulating Heating Cable

PRODUCT OVERVIEW

10 YEAR Product warranty



Electrical heat-tracing for frost protection without steam cleaning.
The nVent RAYCHEM BTV-family of self-regulating, parallel circuit heating cables is used for frost protection of pipes and vessels. It can also be used for process temperature maintenance up to 65°C.

Application

Traced surface type	Carbon steel Stainless steel Plastic Painted or unpainted metal
Chemical resistance	For organic corrosives: use -CT (fluoropolymer outer jacket) For mild inorganic solutions: use -CR (modified polyolefin outer jacket) For aggressive organics and corrosives consult your local nVent representative

Supply voltage

230 Vac (Contact your local nVent representative for data on other voltages)

PRODUCT SPECIFICATIONS

Product dimensions and weight

	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Width x Thickness (nominal) mm	10.5 x 5.5		13.2 x 5.5	
Weight (g/m)	110		150	

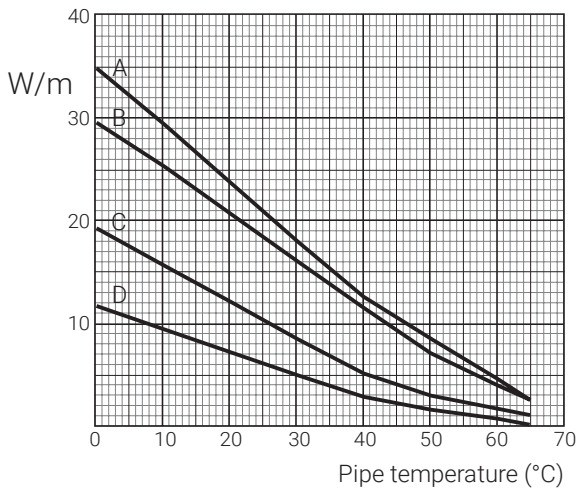
Technical details

Maximum maintain or continuous exposure temperature (power on/off)	65°C
Maximum intermittent exposure temperature (power on/off)	85°C Maximum cumulative exposure 1000 hours
Minimum installation temperature	–60°C
Minimum bend radius	–60°C ≤ T<–20°C: 35 mm –20°C ≤ T<–10°C: 30 mm –10°C ≤ T< 0°C: 25 mm 0°C ≤ T <+10°C: 20 mm T≥ +10°C: 12 mm

Thermal output rating

Nominal power output at 230 Vac on insulated steel pipes

A 10BTV2-CT
10BTV2-CR
B 8BTV-2-CT
8BTV-2-CR
C 5BTV2-CT
5BTV2-CR
D 3BTV2-CT
3BTV2-CR



	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Nominal power output (W/m at 10°C)	9	16	25	29

Maximum circuit length based on type ‘C’ circuit breakers according to EN 60898

Electrical protection sizing	Start-up temperature	Maximum heating cable length per circuit (m)			
16 A	–20°C	155	110	70	45
	+10°C	200	160	110	65
20 A	–20°C	195	140	90	55
	+10°C	200	160	125	85
25 A	–20°C	200	160	110	70
	+10°C	200	160	125	105
32 A	–20°C	200	160	125	90
	+10°C	200	160	125	110

The above numbers are for circuit length estimation only. For more detailed information please use the nVent RAYCHEM TraceCalc software or Contact your local nVent representative. nVent requires the use of a 30 mA residual current device to provide maximum safety and protection from fire. Where design results in higher leakage current, the preferred trip level for adjustable devices is 30 mA above any inherent capacitive leakage characteristic of the heater as specified by the trace heater supplier or alternatively, the next common available trip level for non adjustable devices, with a maximum of 300 mA. All safety aspects need to be proven.

APPROVALS

For use ordinary area and hazardous area Zone 1 and Zone 2 (Gas), Zone 21 and Zone 22 (Dust).

Temperature classification
T6

Product certification

More details about product certification, approvals and conditions of safe use are available in the installation manual for Self-regulating and Power limiting heating cable systems at www.nVent.com/RAYCHEM

ORDERING INFORMATION

Part description	3BTV2-CR	5BTV2-CR	8BTV-2-CR	10BTV2-CR
Part No. (*)	914279-000	414809-000	479821-000	677245-000
Part description	3BTV2-CT	5BTV2-CT	8BTV-2-CT	10BTV2-CT
Part No. (*)	469145-000	487509-000	008633-000	567513-000

Components

nVent offers a full range of components for power connections, splices and end seals. These components must be used to ensure proper functioning of the product and compliance with electrical requirements.

(*) Localized versions may exist with limited approvals and different part numbers. Contact your local sales representative

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

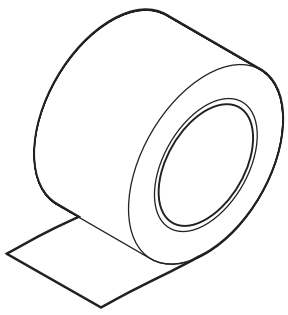
Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com

Our powerful portfolio of brands:
CADDY ERICO HOFFMAN RAYCHEM SCHROFF TRACER

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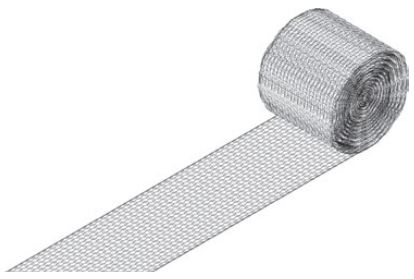
ATE-180

Aluminium tape* for attaching heating cables and thermostat sensors to pipes and tanks. Minimum installation temperature: 0°C. Also suitable for stainless steel pipes.

55 m per roll, 63.5 mm width.

PN: 846243-000 Weight: 0.84 kg

*Power output of selfregulating heating cables might increase when installed with aluminium tape or other heat transfer aids. Please use TraceCalc or contact nVent representative for further details.

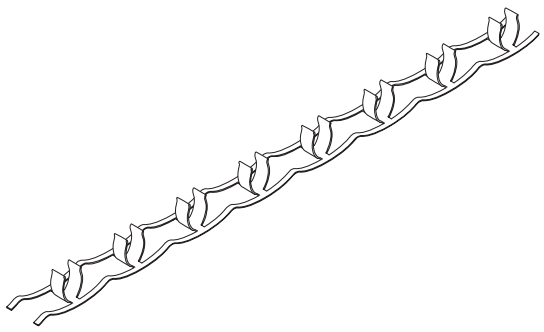


HWA-METAL-MESH-SS-50MM-10M

Stainless steel mesh for fixation of heating cables on valves, pumps or other odd-shaped surfaces. This mesh provides optimum contact and heat transfer between heating cables and heated equipment and can be used for exposure temperatures up to 400°C.

10 m per roll, 50 mm width.

PN: 1244-005772 Weight: 0.36 kg



HWA-PI-FIX- SS-xMM-10M

Stainless steel clip band to attach Polymer Insulated series heating cables to pipes. Clips at regular distances to allow for even heater spacing. Band available in two sizes for different diameter ranges.

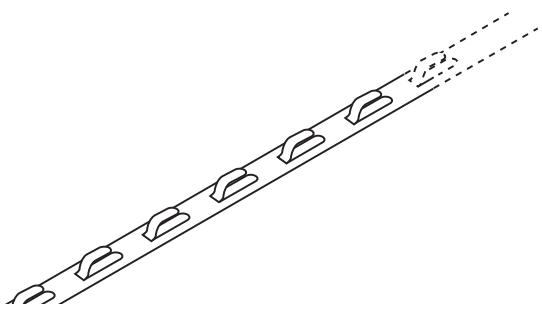
10 m per roll.

For diameters up to 5 mm, HWA-PI-FIX-SS-5MM-10M

PN: 1244-007768 Weight: 0.32 kg

For diameters up to 8 mm, HWA-PI-FIX-SS-8MM-10M

PN: 1244-007769 Weight: 0.52 kg



HARD-SPACER-SS-25MM-25M

Stainless steel spacer for fixing the heating cable on walls, tanks and vessels, etc.

Width spacer: 12.5 mm.

Fixing distance for cables: each 25 mm.

25 m per roll.

PN: 107826-000 Weight: 1.10 kg

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
CB-200F4B	AC UPS F&G - Battery Isolator-B	CONTAINER B-300 (LOWER DECK)	1724000372	3W Power	Cortem Spa		EJBC	Zone 1	EPT 20 ATEX 4075X	1724000372-EL-DG-00011	II 2GDEx db IIC T6 Gb Ex tb IIIC T 85°C Db	-	N/A	True	N/A	False	
EAT-200N1-01	Trace Heating - Remote Ambient Thermostat	LOWER DECK	1724001647	nVent	nVent	1244-022663	ETS-05-A2-E-A	Zone 1	Baseefa 13ATEX0137	1724001647-EL-DD-00004	II 2(1)G Ex eb ia mb [ia Ga] IIC T5 Gb - 40ºC ≤ Ta ≤ +60ºC II 2D Ex tb IIIC T100ºC Db	-	N/A	True	N/A	False	
EHT-1001-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1002-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1003-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1004-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1004-B	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1005-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1006-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1007-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-2002-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EJB-200F2-01	Top Obstruction Lights Junction Box	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990082	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
EJB-200F2-02	Intermediate obstruction lights junction box	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990083	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_4
EJB-200N1-02-L1-01	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990045	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-02	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990044	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-03	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990043	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
EJB-200N1-02-L1-05	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990058	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-06	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990057	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-07	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990059	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-08	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990060	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-09	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990061	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-10	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990047	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-11	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990056	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-12	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990055	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-13	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990054	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-14	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990053	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-15	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990052	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-16	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990051	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-17	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990050	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-18	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990049	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-19	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990048	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-20	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990072	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-01	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990003	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-02	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990004	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-03	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990002	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-04	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990001	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-05	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990012	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-06	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990011	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-07	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990010	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-08	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990009	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-09	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990008	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-10	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990007	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-11	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990006	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-12	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990005	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-13	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990014	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-14	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990013	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-04-L3-01	Stair Normal Lighting JB	LOWER DECK STAIRS	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990032	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-04-L3-02	Stair Normal Lighting JB	LOWER DECK STAIRS	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990033	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-01	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990064	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-03	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990062	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
EJB-200N1-08-L1-04	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990065	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-05	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990077	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-06	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990078	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	

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:	**SGS20ATEX0048X – Issue 3**
4	Product:	**BTV Range of Self-Regulating Trace Heating Systems**
5	Manufacturer:	**nVent Thermal LLC**
6	Address:	**899 Broadway Street, CA, 94063-3104, United States of America**

7 This re-issued certificate extends EU Type Examination Certificate No. **SGS20ATEX0048X** 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.

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 IEC 60079-7:2015+A1:2018 EN 60079-18:2015+A1:2017
EN 60079-30-1:2017 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 60079-30-1 eb IIC T6 Gb or Ex 60079-30-1 eb mb IIC T6 Gb T_{min} -60°C**
Ex 60079-30-1 tb IIIC T80°C Db or Ex 60079-30-1 mb tb IIIC T80°C Db

SGS Fimko Oy Customer Reference No. **865** Project File No. **21/0455**

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SGS Fimko Oy
Takomotie 8
FI-00380 Helsinki, Finland
Telephone +358 (0)9 696 361
e-mail **sgs.fimko@sgs.com**
web site **www.sgs.fi**
Business ID 0978538-5 Member of the SGS Group (SGA SA)

Tuomas Hänninen
SGS Fimko Oy

13 # Schedule

14 ## Certificate Number SGS20ATEX0048X – Issue 3

15 Description of Product

The BTV Range of Self-Regulating Trace Heating Systems is of the parallel circuit self-regulating type, rated at up to 277V, with power output up to 33W/m (10W/ft). The units have a maximum self-limiting temperature of 80°C.

Each trace heating system comprises:
- the active heating cable.
- an end seal for terminating the remote end of the unit.
- a cable gland for connecting the powered end of the unit to a suitable terminal enclosure, or alternative integrated power connection systems.

The active heating cable comprises two stranded copper conductors around which is extruded a semi-conductive core material. This core material increases in resistance with increasing temperature and gives the cable its self-limiting property. This semi conductive core with embedded conductors forms the active part of the heating cable. An extruded layer of fluoropolymer serves to insulate the semi conductive core from the conductive covering, covering the active heater. A protective anti-corrosion fluoropolymer sheath may be extruded over the conductive covering.

The declared maximum withstand temperature for the range is 85°C and the minimum installation temperature is -60°C.

CABLE ACCESSORIES

END SEALS

The end seals for terminating the remote end of the unit may be the following types:

Types E-100-L or E-100, which are mechanical end seals incorporating an end cap which is filled with silicone grease sealant covered by certificates Sira14ATEX3015X and PTB09ATEX1060U.

Types E-100-L-A or E-100-A, which are mechanical end seals incorporating an end cap which is filled with silicone grease sealant.

A Raychem Type E-20 heat shrink end seal kit.

Type E-150 mechanical end seals, covered by certificate DEKRA20ATEX0011U.

SPLICES AND JOINTS

The following splicing and jointing arrangements are provided:

A Raychem Type S-20 heat shrink splice kit for connecting lengths of active heating cable.

A Raychem T-100 tee connection system, certificate PTB20ATEX1008U, for connecting up to three heater cables.

Type S-150 mechanical splice kit, covered by certificate DEKRA20ATEX0011U.

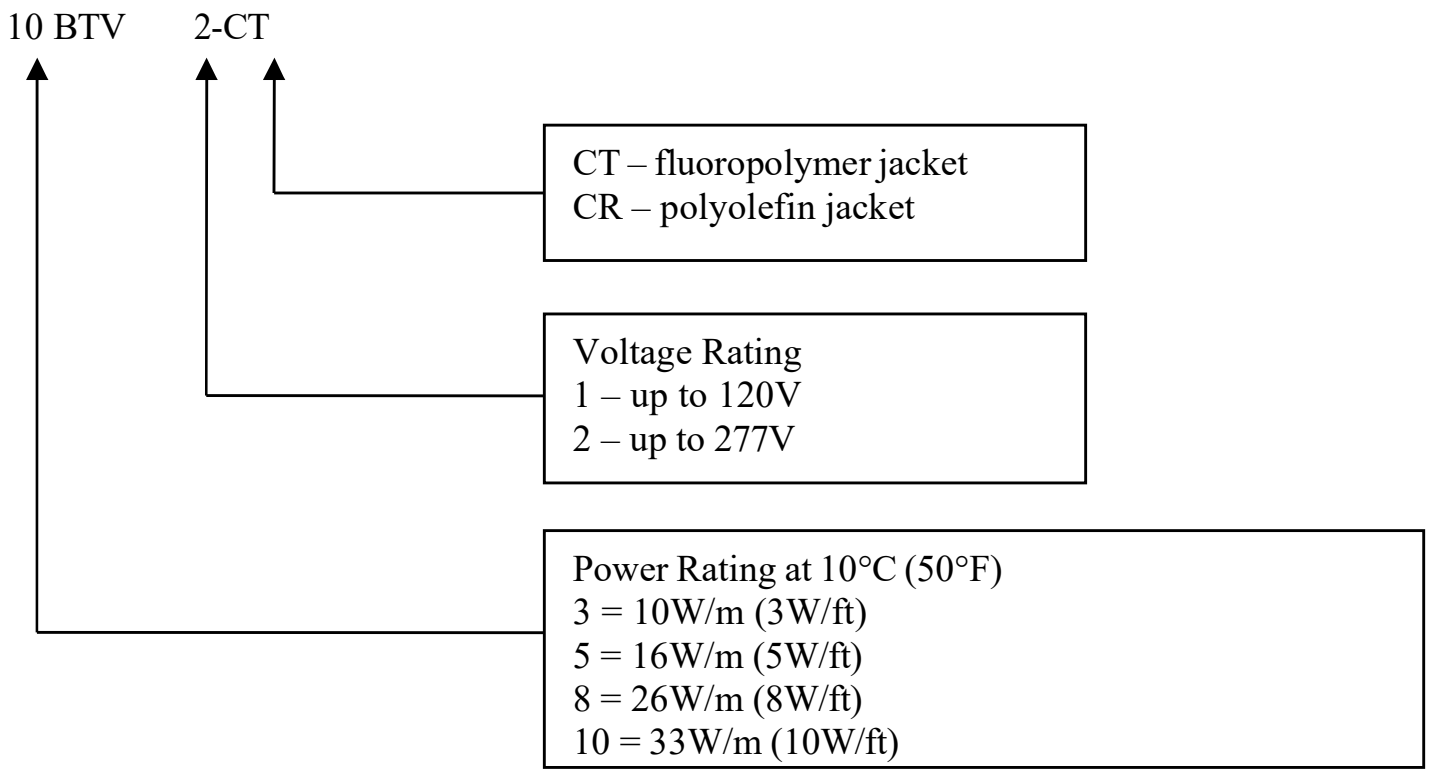
POWER CONNECTIONS

Power connection may be achieved by the following means:

Connection Type	ATEX Certificate
JBM-100	PTB20ATEX1008U
JBS-100	PTB20ATEX1008U
JBU-100	PTB20ATEX1008U
C-150-E	DEKRA20ATEX0011U
C25-21 Connection Kit	Baseefa16ATEX0037U
C25-100 Connection Kit	Baseefa16ATEX0038U
C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS Kits	Baseefa16ATEX0039U

The C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS Kits include M25 or ¾ NPT gland to Sira01ATEX1270X and core sealer to Baseefa15ATEX0194U.

A number of power levels and voltages, up to the maximum specified, are included in the range. They are identified in the following manner:



Any of the products in the range may be considered as part of a stabilised design system. In such a system the design is based upon the use of nVent proprietary software Trace calc Pro. The algorithm defined in this software may be used in additional design software.

The minimum bending radii for BTV trace heating cable at specific temperatures are shown in the table below:

Temperature, T (°C)	**Minimum Bending Radius (mm)**
$-60 \leq T < -20$	35
$-20 \leq T < -10$	30
$-10 \leq T < 0$	25
$0 \leq T < +10$	20
$T \geq +10$	12

16 Report Number

See Certificate History.

17 Specific Conditions of Use

1. The following limiting temperatures for the heat shrink end seals and splices shall not be exceeded:

   +110°C for the S-20 and E-20
   +150°C for the C-150-E, S-150 and E-150

2. The end seals, splices and power connections have the following associated ambient temperatures:

   -60°C to +56°C for the E-20 and S-20
   -55°C to +56°C for the T-100, JBM-100, JBS-100, JBU-100, and E-100
   -40°C to +56°C for the JBS-100-L, JBM-100-L, and JBU-100-L
   -55°C to +55°C for the C-150-E, S-150 and E-150
   -40°C to +40°C for the E-100-L
   -55°C to +110°C for the C25-21 and C25-100
   -60°C to +180°C for the C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS

3. The assembly of glands, splices and end terminations shall be carried out in accordance with the manufacturing instructions

4. The heating element supply circuit must include an electrical protection device in conformity with Clause 4.4 of EN 60079-30-1.

5. The minimum installation temperature is -60°C. The minimum bending radii at specific temperatures for the Type BTV units are shown in the table in the equipment description.

6. The supply to the heating unit must be terminated in a suitably certified terminal enclosure.

7. The minimum installation temperature for E-20 and S-20, end seal and splice is -20°C.

8. The installer is to carry out a dielectric strength test on Ex equipment in which the C25-21, C25-100 and C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS connection kit is fitted. No dielectric breakdown shall occur. (Alternatively, an insulation resistance test may be undertaken in accordance with EN 60079-30-2).

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
205308-A[i]	1 of 1	Q	05/27/2021	BTV-8BTV-CR & BTV-10BTV-CR
205310-A[i]	1 of 1	R	05/27/2021	BTV-8BTV-CT & BTV-10BTV-CT

Current drawings which remain unaffected by this issue:

Number	Sheet	Issue	Date	Description
906567[ii]	1 of 1	P	05/21/21	C25-21, C25-100 and C25-100-METAL-XX, C3/4-100-METAL-XX Connection Kits
906579-A[i]	1 of 1	N	01/15/2021	BTV Heater Units (European System)
205350-A[i]	1 of 1	P	03/31/20	BTV-3BTV-CT & BTV-5BTV-CT
205349-A[i]	1 of 1	J	03/26/20	BTV-3BTV-CR & BTV-5BTV-CR
906794-A[iii]	1 of 1	AA	03/30/20	Generic ATEX and IECEx Print Dwg for BTV-CT, QTVR-CT, XTV-CT, KTV-CT Heating Cables
9242869[iv]	1 & 2	O	12/09/19	LABL JBM-100-L-E
9532687[iv]	1 & 2	Q	12/09/19	LABL JBM-100-L-EP
9621473[iv]	1 & 2	O	12/09/19	LABL JBS-100-L-E
9777523[iv]	1 & 2	P	12/09/19	LABL JBS-100-L-EP
9319676[iv]	1 & 2	O	12/09/19	LABL JBU-100-L-E
9735898[iv]	1 & 2	O	12/09/19	LABL JBU-100-L-EP
908742-A[v]	1 of 1	A	2/19/20	E-20 Heat Shrinkable End Seal Kit Cut Back Dimensions
908743-A[vi]	1 of 1	A	2/19/20	S-20 Heat Shrinkable Splice Joint Kit Cut Back Dimensions

i) These drawings are common to IECEx BAS 20.0011X, SGS20ATEX0048X and are held with IECEx BAS 20.0011X.

ii) This drawing is common to IECEx BAS 16.0040U, IECEx BAS 16.0041U, IECEx 16.0042U, IECEx BAS 20.0008X, IECEx BAS 20.0009X, IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, Baseefa16ATEX0037U, Baseefa16ATEX0038U, Baseefa16ATEX0039U, SGS20ATEX0045X, SGS20ATEX0046X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and is held with IECEx BAS 16.0040U.

iii) These drawings are common to IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and are held with IECEx BAS 20.0011X.

iv) These drawings are common to IECEx BAS 20.0008X, IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, SGS20ATEX0045X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and are held with IECEx BAS 20.0008X.

v) These drawings are common to IECEx BAS 20.0010X, IECEx BAS 20.0011X, IECEx BAS 20.0013X, SGS20ATEX0047X, SGS20ATEX0048X, SGS20ATEX0050X and are held with IECEx BAS 20.0010X.

vi) These drawings are common to IECEx BAS 20.0011X, IECEx BAS 20.0013X, SGS20ATEX0048X, SGS20ATEX0050X and are held with IECEx BAS 20.0011X.

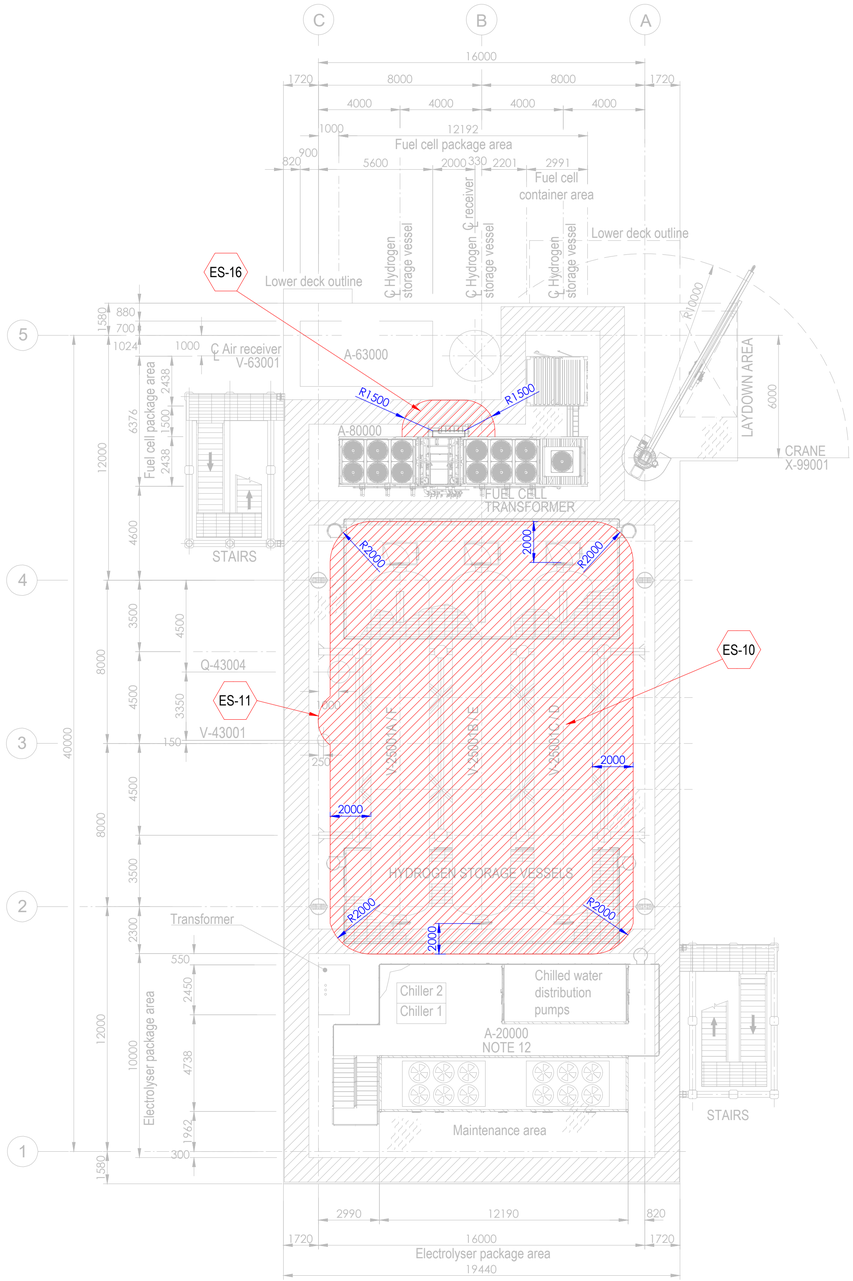
20 Certificate History

Certificate No.	Date	Comments
SGS20ATEX0048X	23 October 2020	The release of the prime certificate. The associated test and assessment against the requirements of EN 60079-0:2012+A11:2013, EN IEC 60079-7:2015+A1:2018, EN 60079-18:2015+A1:2017, EN 60079-30-1:2017 and EN 60079-31:2014 is documented in Test Report No. GB/BAS/ExTR20.0030/00.

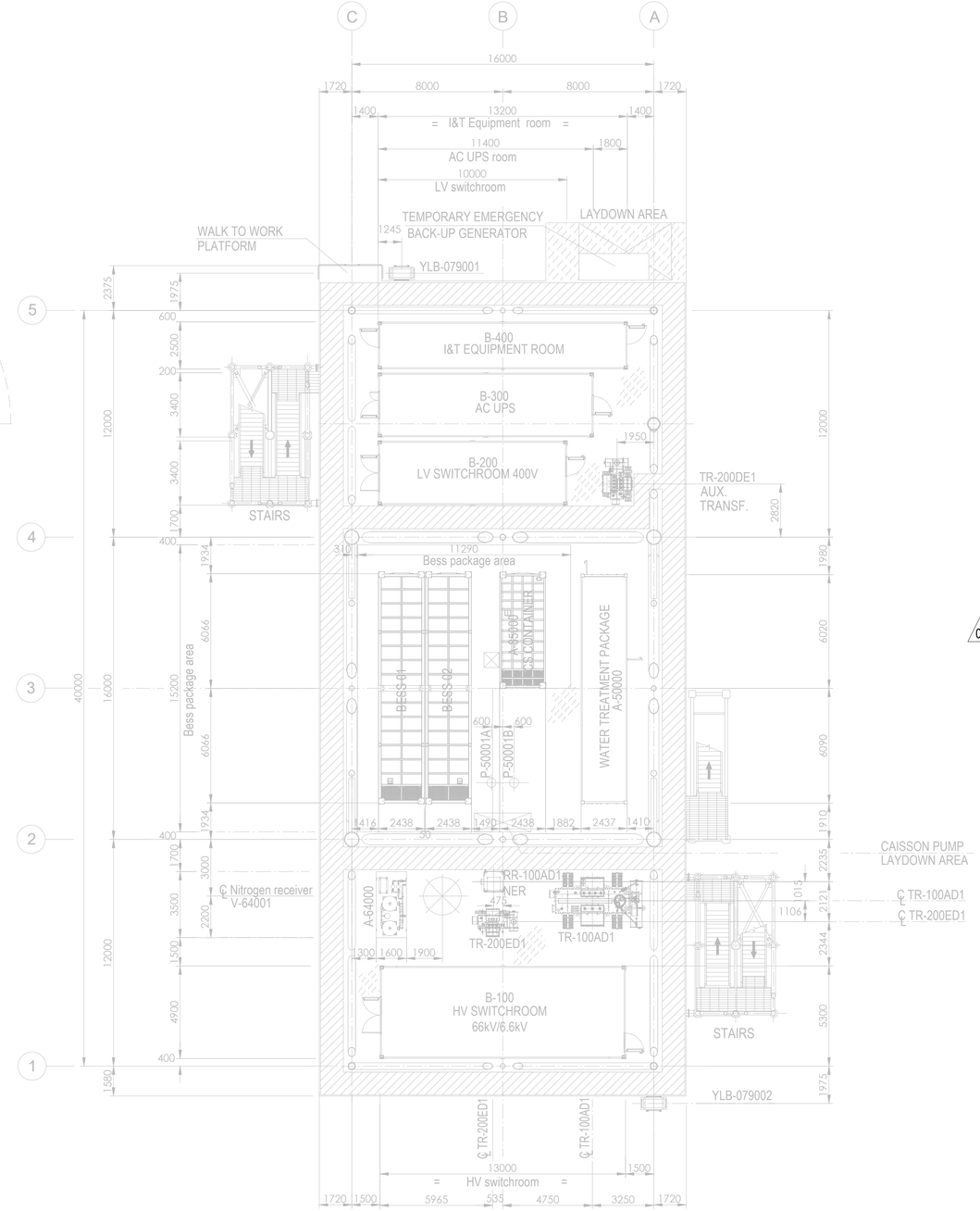
Certificate No.	Date	Comments
SGS20ATEX0048X Issue 1	11 February 2021	To assess the BTV range of self-regulating trace heating systems against EN IEC 60079-0:2018, introduce the low profile power connection, splice and end seal kits, types C-150-E, S-150 and E-150 afforded DEKRA20ATEX0011U, minor amendments to the product description, to change the product name to "BTV Range of Self-Regulating Trace Heating Systems" and to amend the Specific Conditions of Use. The associated test and assessment is documented in Test Report No. GB/BAS/ExTR21.0005/00.
SGS20ATEX0048X Issue 2	7 July 2021	Minor drawing updates not affecting certification. Baseefa Certification Report GB/BAS/ExTR21.0060/00 refers.
SGS20ATEX0048X Issue 3	3 September 2021	Minor change to the BTV-8BTV-CR, BTV-8BTV-CT, BTV-10BTV-CR and BTV-10BTV-CT heating cable dimensions. Baseefa Certification Report GB/BAS/ExTR21.0104/00 refers.
For drawings applicable to each issue, see original of that issue.		

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

REV. 02



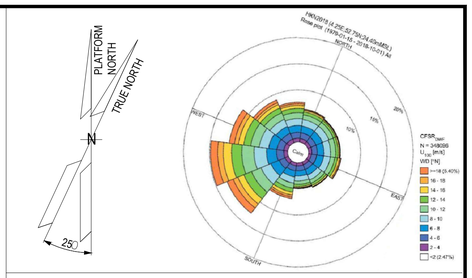
PLAN ON UPPER DECK
EL+30.310 T.O.S.



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

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

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



NOTES

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

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

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

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

CROSSWIND

ROSETTI MARINO

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

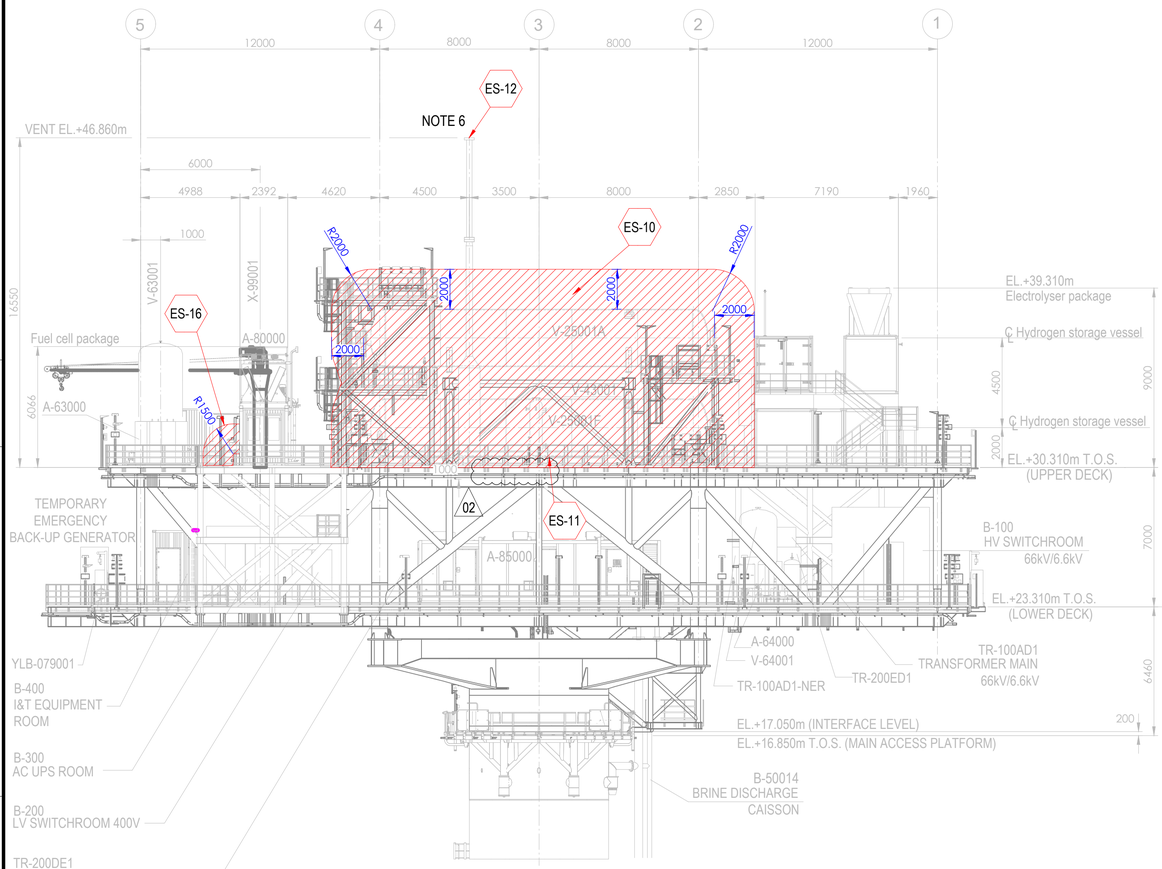
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

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

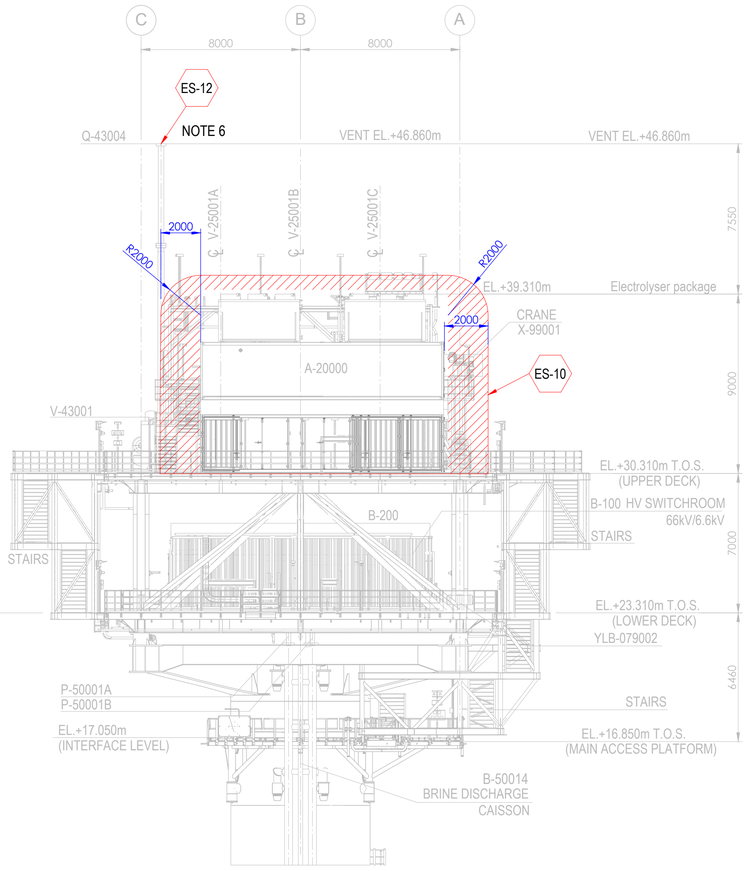
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

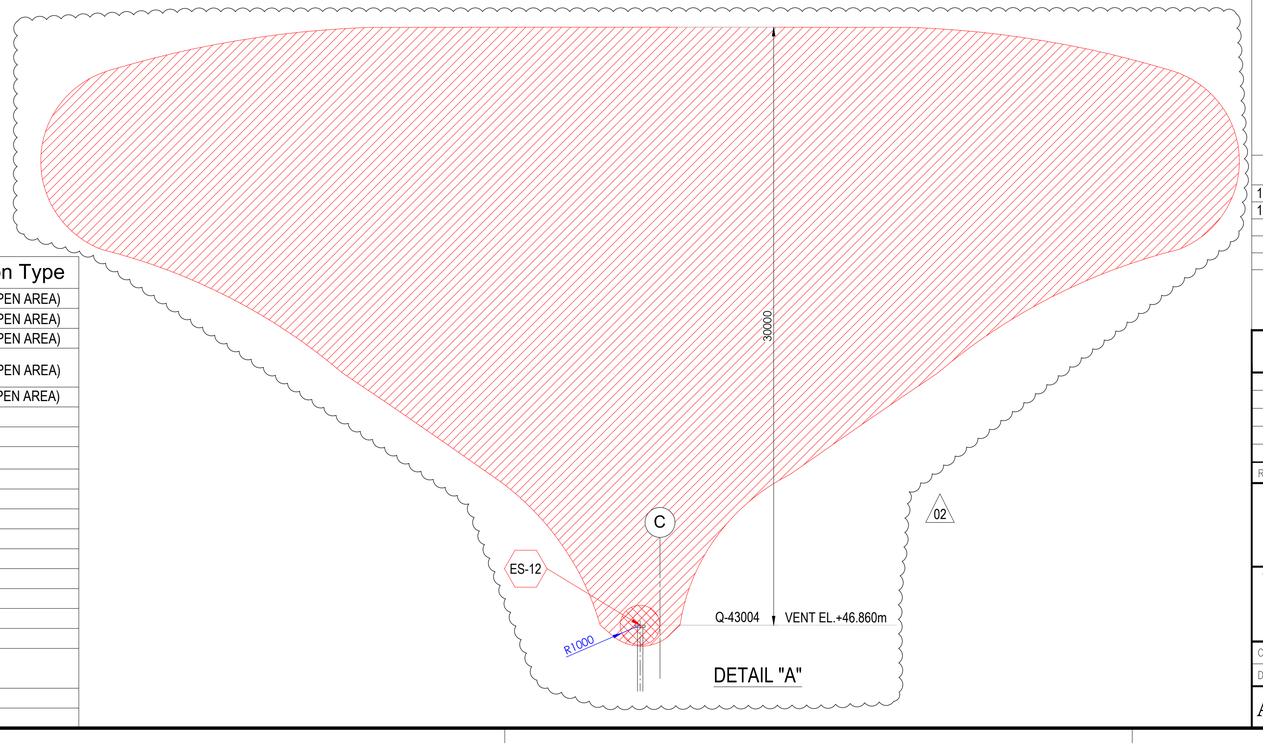


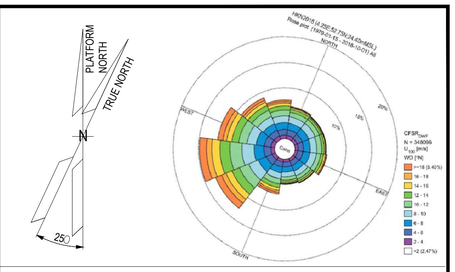
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

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





NOTES

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

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

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

CROSSWIND

ROSETTI MARINO

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

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

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

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

ROSETTI MARINO | CROSSWIND

ITEM	Tag	EHT-1005-A	: Heat Tracing Tape			Dwg	1724001647-EL-LIS-00003
	S/Sys	83-65	: Electrical Heat Tracing			Module	UD
TASK	code	C10004637		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX22A — Tape Trace Heating Before Insulation

1	Check that the circuit is de-energized and safe.	OK
2	Check all tapes and junction boxes are undamaged.	OK
3	Check all tapes and junction boxes are installed according to drawings.	OK
4	Check all tapes characteristics against project data (type, rated power).	OK
5	Check rating of circuit breaker against drawings.	OK
6	Check tapes, junction boxes, cables and accessories tagging.	OK
7	After test re-connecting cable as per typical installation.	OK
8	If required produce Red Line Mark Up for "AS BUILT"	

CIRCUIT DATA

List Associated Heat tracing Isometric	1724001647-EL-DD-00004
Tape Type	3BTV2-CT
Circuit Installed Length	3m
Wiring Diagram	WD_1724001647-EL-DG-00006/Single line Diagram (1724001647-EL-DG-00005)

Testing & measurement instruments used

Type	Serial n°	Calibration certificate	Validity
MEGGER : KEW3125A	SERIAL: W8330207	N°7722/24	09/07/2025
VOLCRAFT 1000V	ET-200 S/N:H240103023	N°LAT 042 00768/24	11/10/2025

FIRST TEST

Continuity and insulation resistance tests to earth for each conductor core are carried out after the tape is installed on pipework **before any insulation and cladding is fitted.**

Test voltage (V):	2500	Tape Lengh	3m	Thermostats :	N/A
Continuity	383,4	Insulation Resistance	>1999 M	Result	OK

AFTER THIS TEST IS DONE, LINE CAN BE RELEASED TO INSULATION TEAM

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-05	2025-02-13	
Signature	Digitaly signed by Michele Tartaglia 2025-02-05T10:20:42.176Z	Digitaly signed by Giovanni Tangianu 2025-02-13T12:29:54.324Z	

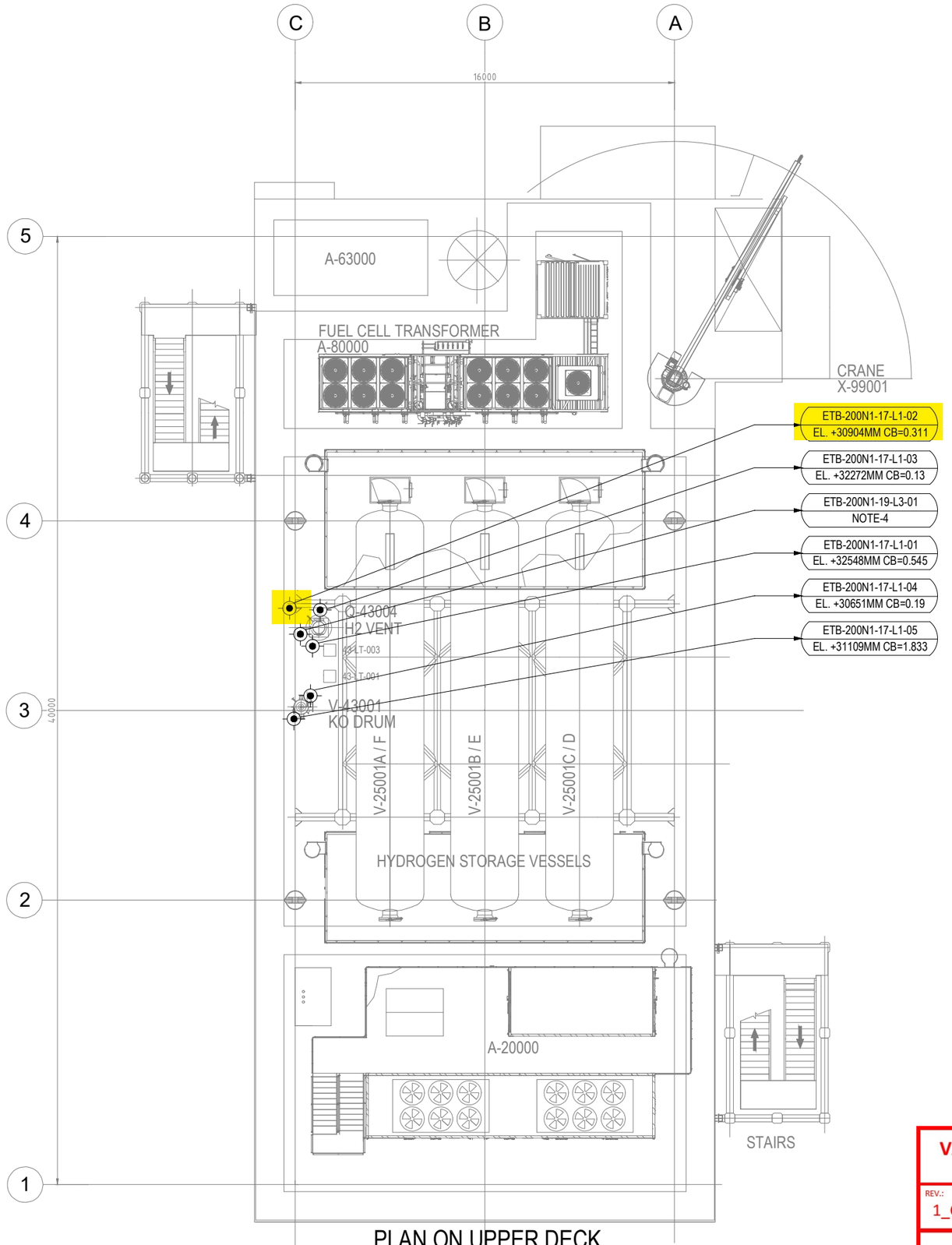
EHT CALCULATION LIST

PIT240024_ED01-1001

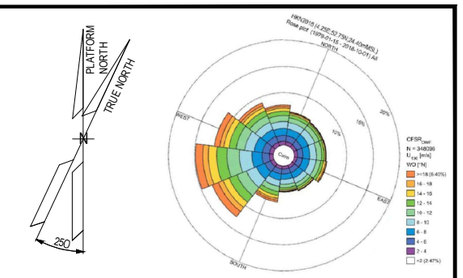
		ENGINEERING DATA				MECHANICAL & INSULATION DATA							PROCESS DATA				EHT BASIC DESIGN								EHT DETAILED DESIGN						EHT TEMP. CONTROL DATA							
Main EHT Box Number	Item Number	Heater Number	Line, Equipment or Instrument ID	nVent Circuit Number	Plant Area	Pipe Size [DN / IN]	Pipe Length [m]	Support Quantity [pc]	Valve Quantity [pc]	Other Heat Sink Quantity [pc]	Insulation Type	Insulation Thickness [mm]	Maintain Temperature [°C]	Maximum Allow. Process Temperature [°C]	Maximum Operating Temperature [°C]	Maximum Exposure Temperature [°C]	Heatloss [W/m]	Heating Cable Selection	Trace Ratio	Heating Cable Output [W/m]	EHT Cable per Support [m]	EHT Cable per Valve [m]	EHT Cable per Other Heatsink [m]	Total EHT Cable [m]	Max. Allow. EHT Circuit Length [m]	Connection Type	Voltage [V]	Operating Current [A]	Total Operating Load [W]	Start-Up Current [A]	Temp. Control Method	Controller Set Point [°C]	Minimum Controlled Temperature [°C]	Maximum Controlled Temperature [°C]	Maximum Uncontrolled Temperature [°C]	Revision	Remark
																		GRAND TOTAL						**181.4**				**9.69**	**2226**	**14.91**							
ETB-200N1-16-L3-01	1	EHT-1001-A	1"-DM-001-01SS-E	1001	PIPING	1	17.6	5	1	2	RW/MF 1:2015	20	5	100	22	22	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	22.0	199	Single L-N	230	1.18	271	1.8	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**22.0**			**230**	**1.18**	**271**	**1.8**							
ETB-200N1-15-L2-01	1	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	11.0	4		1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	13.9	199	Single L-N	230	0.73	167	1.1	Ambient sensing, standard	5	18	29	50	00	
	2	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	3	EHT-1002-A	1"-CI-032-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	4	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	5	EHT-1002-A	1"-CI-030-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	6	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.75	0.5		1		RW/MF 1:2015	20	5	50	25	25	3.4	3BTV2-CT	2.0	10.7		1.5		2.6	199	Single L-N	230	0.15	34	0.2	Ambient sensing, standard	5	30	38	55	00	
	7	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.5	0.5		1		RW/MF 1:2015	20	5	50	25	25	2.9	3BTV2-CT	2.0	10.7		1.4		2.5	199	Single L-N	230	0.14	32	0.2	Ambient sensing, standard	5	32	40	56	00	
																		TOTAL						**36.4**			**230**	**2.00**	**459**	**3.1**							
ETB-200N1-14-L1-01	1	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	4	0.5				RW/MF 1:2015	20	5	100	25	25	10.2	3BTV2-CT	1.0	10.7				0.6	199	Single L-N	230	0.03	7	0.1	Ambient sensing, standard	5	5	20	46	00	
	2	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	4.7	1		1	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1		0.5	9.3	199	Single L-N	230	0.47	107	0.7	Ambient sensing, standard	5	14	27	49	00	
	3	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	4	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	7.8	3			RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1			8.6	199	Single L-N	230	0.48	111	0.7	Ambient sensing, standard	5	14	27	49	00	
	5	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	6	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.8	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	7	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	1.4	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	4.2	199	Single L-N	230	0.23	54	0.4	Ambient sensing, standard	5	24	34	53	00	
	8	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	9	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	10	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.7	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	11	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	1.2	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	3.7	199	Single L-N	230	0.20	47	0.3	Ambient sensing, standard	5	24	34	53	00	
	12	EHT-1003-A	1"-SWS-147-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	13	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	14	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	15	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1	0.1				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	28	37	54	00	
	16	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
	17	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	18	EHT-1003-A	1"-SWS-146-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	19	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	20	EHT-1003-A	1"-SWS-290-01SD-E	1003	PIPING	1	1.1	1	2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7	0.3	1.6		5.8	199	Single L-N	230	0.33	76	0.5	Ambient sensing, standard	5	28	37	54	00	
	21	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**78.6**			**230**	**4.37**	**1002**	**6.7**							
ETB-200N1-17-L1-04	1	EHT-1004-A	1"-WW-259-01CS-E / V-43001	1004	PIPING	1	0.9		1	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7		0.8	0.5	3.2	199	Single L-N	230	0.12	28	0.2	Ambient sensing, standard	5	18	29	50	00	Combined with EHT-1004-B
																		TOTAL						**3.2**			**230**	**0.12**	**28**	**0.2**							
ETB-200N1-17-L1-02	1	EHT-1005-A	1"-WW-260-01CS-E	1005	PIPING	1	1.2	1	2	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	4.6	199	Single L-N	230	0.20	46	0.3	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1006-A
																		TOTAL						**4.6**			**230**	**0.20**	**46**	**0.3**							
ETB-200N1-17-L1-03	1	EHT-1006-A	1"-WW-202-01CS-H	1006	PIPING	1	1.0			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	1.0	10.7			0.5	2.5	199	Single L-N	230	0.08	19	0.1	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1005-A
																		TOTAL						**2.5**			**230**	**0.08**	**19**	**0.1**							
ETB-200N1-15-L2-02	1	EHT-1007-A	1"-CI-043-01CP-E	1007	PIPING	1	15.0	6		4	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	19.5	199	Single L-N	230	1.04	239	1.6	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**19.5**			**230**	**1.04**	**239**	**1.6**							
ETB-200N1-17-L1-05	1	EHT-1004-B	43-LT-001	2001	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	Combined with EHT-1004-A
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							
ETB-200N1-17-L1-01	1	EHT-2002-A	43-LT-003	2002	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

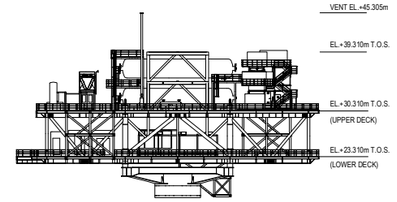
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_C	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 2of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

CAD FILENAME: PIT240024_DD01_1005_001_02.dwg

HEAT TRACING DATA

HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	PIPE LENGTH (m)	HEATER LENGTH (m)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W/m)	POWER OUTPUT (W/m)	SHEATH TEMP. (°C)
EHT-1005-A	PIPING	3BTV2-CT	1.2	4.6	0.3	46	230	3.9	10.7	85
		TOTALS	1.2	4.6	0.3	46				

HEATER ADDER TABLE

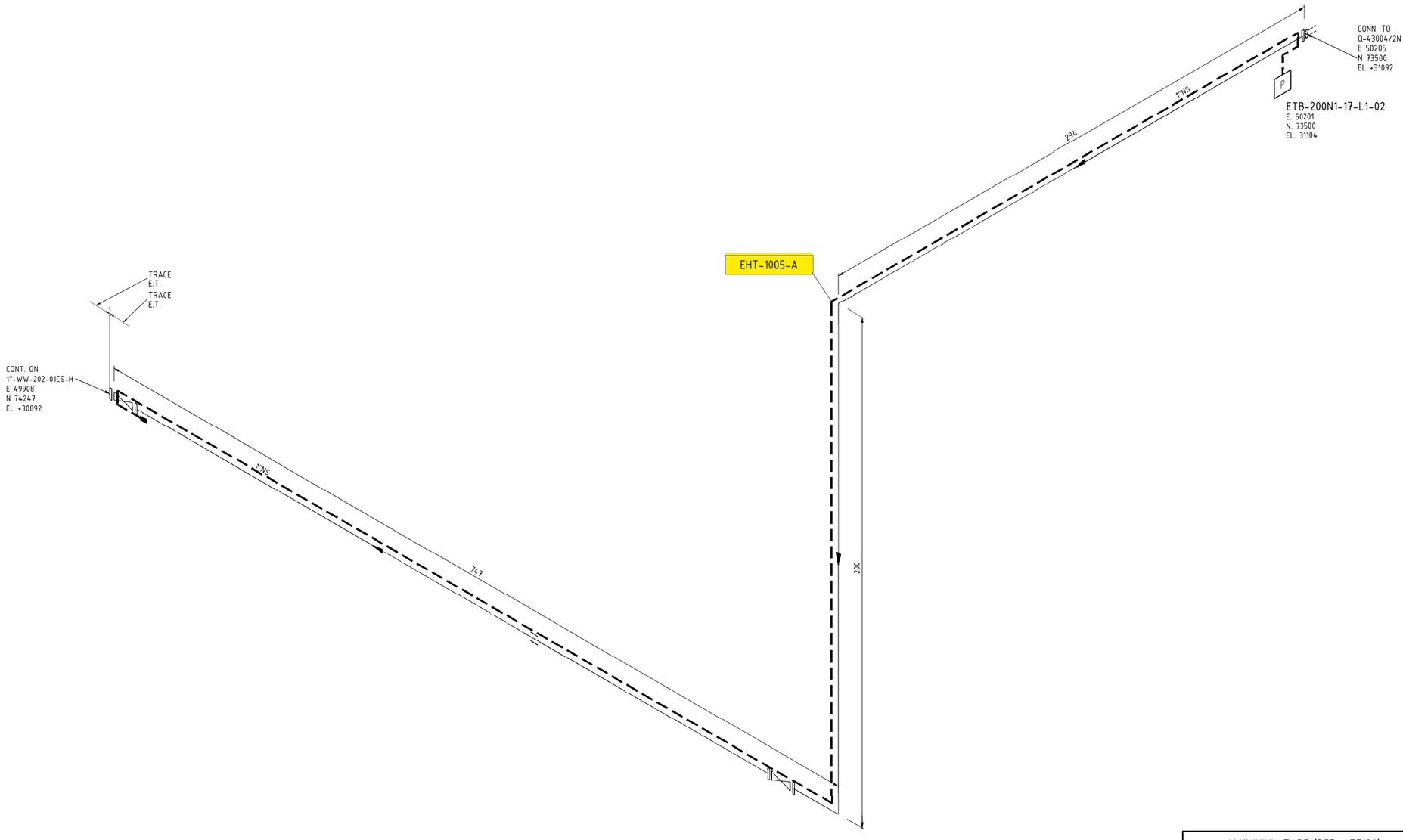
PIPE SIZE (Ins)	TYPE	QTY	ALLOWANCE PER ITEM (m)	TOTAL ALLOWANCE (m)
1	Typical Flange (fixed adder)	1	0.46	0.46
1	Typical Metal Valve	2	0.82	1.64
1	Typical Pipe Support	1	0.15	0.15

DESIGN PARAMETERS

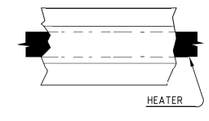
CIRCUIT NUMBER	1005	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	11°C	INSULATION TYPE	RW/MF 1.2015
MAX. EXPOSURE TEMP.	11°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	100°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

COMPONENT BILL OF MATERIALS

CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	4.6	m	Raychem Self-Regulating Heating Cable
JBM-100-E	1	each	Integrated Junction Box, Multiple-Entry, Cold-Applied, ATEX
PSE-090	1	each	Pipe Strap for 1.1/4" to 3" (40-90mm)
GS-54	0.2	each	Glass Tape (16m/roll), suited for SS pipes
LAB-I-01	1	each	Warning Label - English
E-20	1	each	Heat shrink end seal, ATEX (BTV, QTVR)
JBM-SPA	0.2	bag	Small Pipe Adapter for JBM-100-E



ALUMINIUM TAPE (REF: ATE180)



SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

LINE NUMBERS	REFERENCE DRAWINGS / DOCUMENTS
1"-WW-260-01CS-E	123A90-DDL-PP-DI-71000_124

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.
4. HEATING CABLE ALLOWANCES PROVIDED IN THE 'EHT ADDER TABLE' FOR FLANGES AND VALVES ARE IN ADDITION TO THEIR LINEAR LENGTHS.

CROSSWIND

ROSETTI MARINO

nVent RAYCHEM TRACER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
02	20/01/2025	ISSUED FOR REVIEW	ADU	AMI	GPI
01	25/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.

DOC CODE

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING ISOMETRIC

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-EL-DD-00004	7/10	02

DRAWING NO. DRAWING_NO.

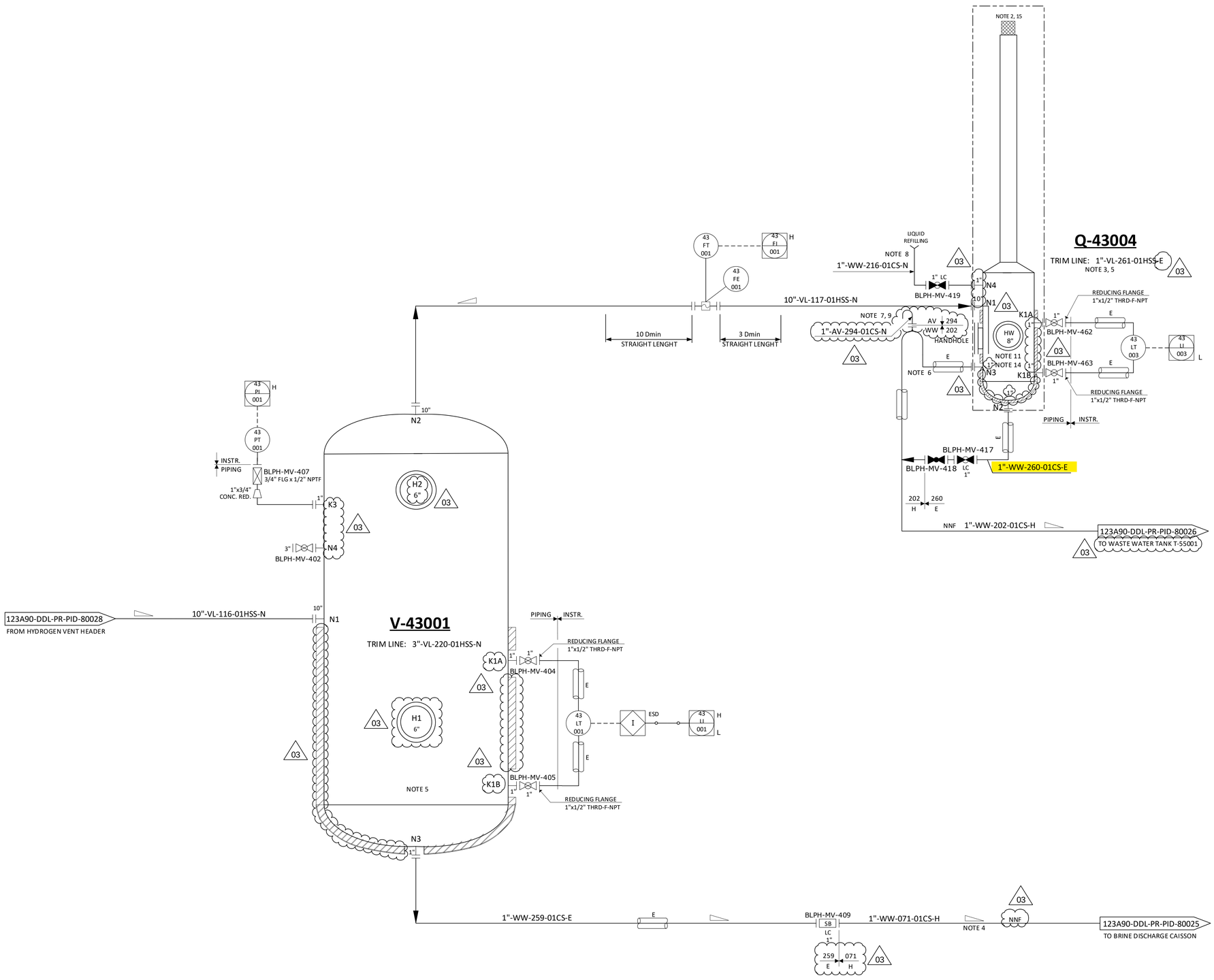
REV. REV

V-43001

HYDROGEN VENT KO DRUM
SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1
SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. (03)
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

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

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

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80029	SHEET 001	REV. 03

File Name : FILE_NAME

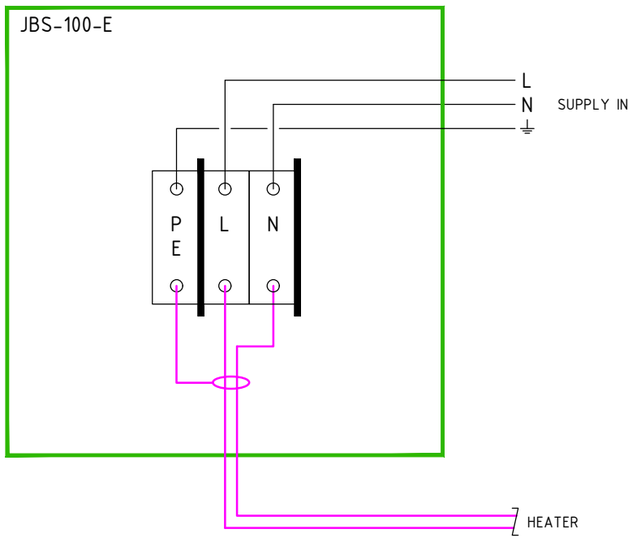
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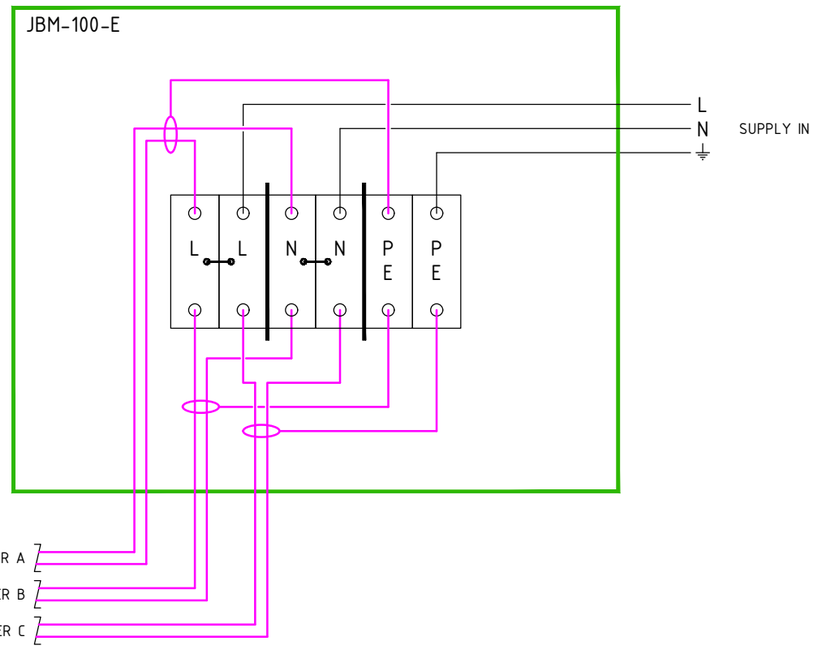
GENERAL INFORMATION:

1. JBS-100-E IS DESIGNED TO CONNECT POWER TO ONE BTV, QTVR, XTV, KTV, HTV OR VPL EHT CABLE.
2. THIS KIT INTEGRATES THE FUNCTIONS OF BOTH CONNECTION KITS AND INSULATION ENTRIES.
3. THE STAND CONNECTED TO THE BOTTOM OF THE BOX PROTECTS THE HEATING CABLE AND ALLOWS FOR UP TO 100mm (4") THERMAL INSULATION.

TECHNICAL BRIEF:

- 2 x M25 THREADED ENTRIES
- 1 x M25 STOPPING PLUGS
- 1 x M25 POWER CABLE GLAND





REV.	DATE	DESCRIPTION	BY	CHK	APP
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--	--	--	--	--	--
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	08/03/2024	ISSUED FOR INFORMATION	LJB	E-C	ZS

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TITLE
TYPICAL CONNECTION OF A JBS-100-EP
SINGLE ENTRY JUNCTION BOX

PREPARED BY	-.---	LANG.	SCALE
LEAD ENGINEER	-.---	en	N/A
PROJECT NO.	DRAWING NO.	SHEET	REVISION
PIT240024	1724001647-EL-DG-00005	2/3	01

A3

CAD FILENAME: 1724001647-EL-DG-00006 Rev.01.dwg

CONTROL PANEL REF.:

Q17

MARSHALLING BOX

EJB-200N1-17-L1-01

ETB-200N1-17-L1-04 — P — EHT-1004-A

ETB-200N1-17-L1-05 — P — EHT-1004-B

ETB-200N1-17-L1-02 — P — EHT-1005-A

ETB-200N1-17-L1-03 — P — EHT-1006-A

ETB-200N1-17-L1-01 — P — EHT-2002-A

SPARE

CIRCUIT NO.	1004	1005, 1006	2002	
C.B. RATING (A)	32	32	32	
START-UP I (A)	2.6	0.4	0.6	
LOAD (W)	383	65	81	
SERVICE	WINTERIZING	WINTERIZING	WINTERIZING	
NOTES FOR THE CIRCUIT	--	--	--	

GENERAL NOTES

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	02/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING
SINGLE LINE DIAGRAM (SLD)

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-EL-DG-00006	4/4	01

BTV

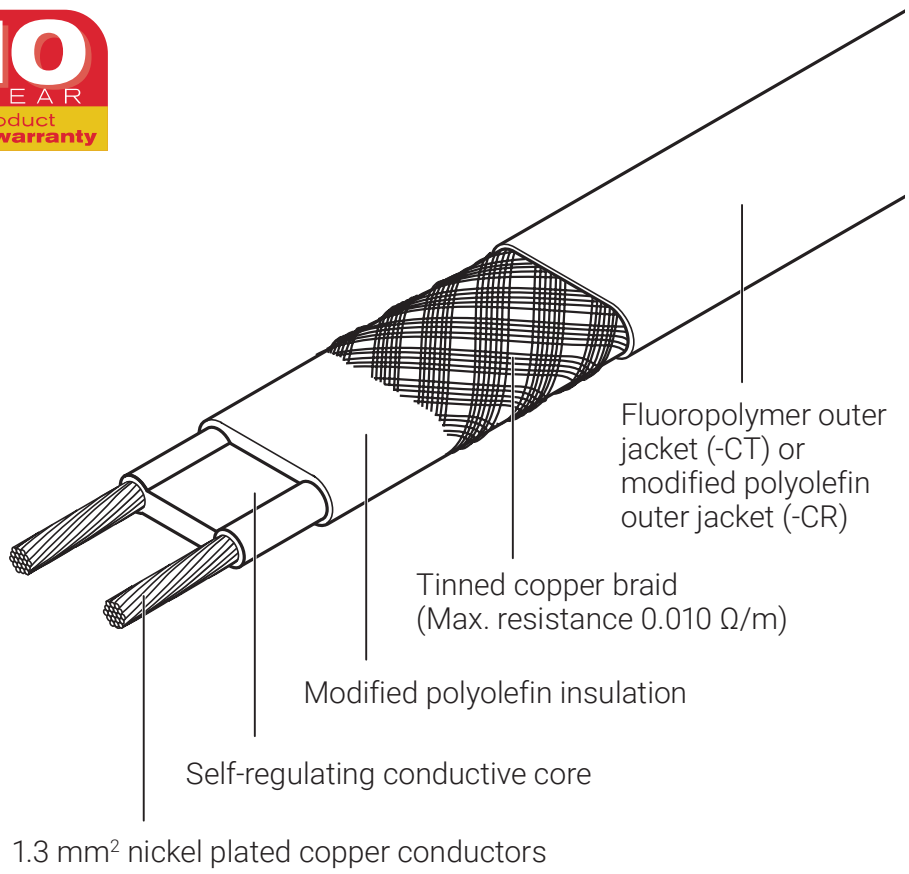
nVent RAYCHEM

CONNECT AND PROTECT

Self-regulating Heating Cable (Ex)

PRODUCT OVERVIEW

10 YEAR Product warranty



Electrical heat-tracing for frost protection without steam cleaning.
The nVent RAYCHEM BTV-family of self-regulating, parallel circuit heating cables is used for frost protection of pipes and vessels. It can also be used for process temperature maintenance up to 65°C.

Application

Traced surface type	Carbon steel Stainless steel Plastic Painted or unpainted metal
Chemical resistance	For organic corrosives: use -CT (fluoropolymer outer jacket) For mild inorganic solutions: use -CR (modified polyolefin outer jacket) For aggressive organics and corrosives consult your local nVent representative

Supply voltage

230 Vac (Contact your local nVent representative for data on other voltages)

PRODUCT SPECIFICATIONS

Product dimensions and weight

	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Width x Thickness (nominal) mm	10.5 x 5.5		13.2 x 5.5	
Weight (g/m)	110		150	

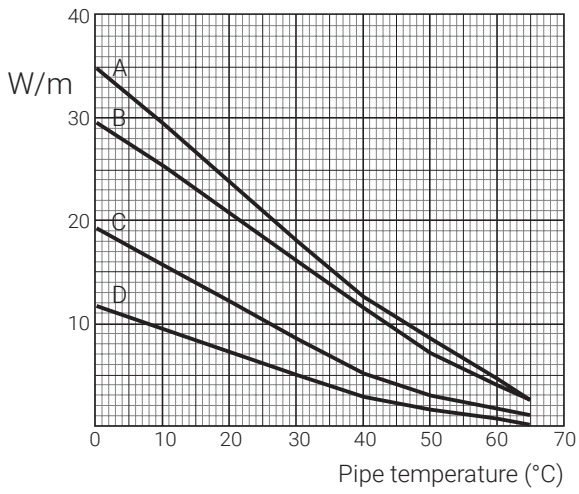
Technical details

Maximum maintain or continuous exposure temperature (power on/off)	65°C
Maximum intermittent exposure temperature (power on/off)	85°C Maximum cumulative exposure 1000 hours
Minimum installation temperature	–60°C
Minimum bend radius	–60°C ≤ T<–20°C: 35 mm –20°C ≤ T<–10°C: 30 mm –10°C ≤ T< 0°C: 25 mm 0°C ≤ T <+10°C: 20 mm T≥ +10°C: 12 mm

Thermal output rating

Nominal power output at 230 Vac on insulated steel pipes

A 10BTV2-CT
10BTV2-CR
B 8BTV-2-CT
8BTV-2-CR
C 5BTV2-CT
5BTV2-CR
D 3BTV2-CT
3BTV2-CR



	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Nominal power output (W/m at 10°C)	9	16	25	29

Maximum circuit length based on type ‘C’ circuit breakers according to EN 60898

Electrical protection sizing	Start-up temperature	Maximum heating cable length per circuit (m)			
16 A	–20°C	155	110	70	45
	+10°C	200	160	110	65
20 A	–20°C	195	140	90	55
	+10°C	200	160	125	85
25 A	–20°C	200	160	110	70
	+10°C	200	160	125	105
32 A	–20°C	200	160	125	90
	+10°C	200	160	125	110

The above numbers are for circuit length estimation only. For more detailed information please use the nVent RAYCHEM TraceCalc software or Contact your local nVent representative. nVent requires the use of a 30 mA residual current device to provide maximum safety and protection from fire. Where design results in higher leakage current, the preferred trip level for adjustable devices is 30 mA above any inherent capacitive leakage characteristic of the heater as specified by the trace heater supplier or alternatively, the next common available trip level for non adjustable devices, with a maximum of 300 mA. All safety aspects need to be proven.

APPROVALS

For use ordinary area and hazardous area Zone 1 and Zone 2 (Gas), Zone 21 and Zone 22 (Dust).

Temperature classification
T6

Product certification

More details about product certification, approvals and conditions of safe use are available in the installation manual for Self-regulating and Power limiting heating cable systems at www.nVent.com/RAYCHEM

ORDERING INFORMATION

Part description	3BTV2-CR	5BTV2-CR	8BTV-2-CR	10BTV2-CR
Part No. (*)	914279-000	414809-000	479821-000	677245-000
Part description	3BTV2-CT	5BTV2-CT	8BTV-2-CT	10BTV2-CT
Part No. (*)	469145-000	487509-000	008633-000	567513-000

Components

nVent offers a full range of components for power connections, splices and end seals. These components must be used to ensure proper functioning of the product and compliance with electrical requirements.

(*) Localized versions may exist with limited approvals and different part numbers. Contact your local sales representative

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

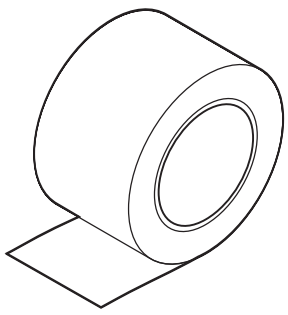
Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com

Our powerful portfolio of brands:
CADDY ERICO HOFFMAN RAYCHEM SCHROFF TRACER

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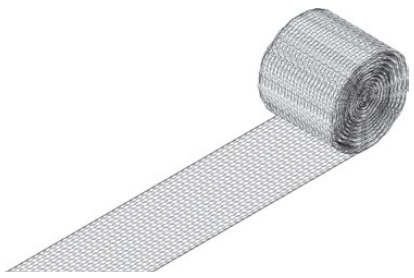
ATE-180

Aluminium tape* for attaching heating cables and thermostat sensors to pipes and tanks. Minimum installation temperature: 0°C. Also suitable for stainless steel pipes.

55 m per roll, 63.5 mm width.

PN: 846243-000 Weight: 0.84 kg

*Power output of selfregulating heating cables might increase when installed with aluminium tape or other heat transfer aids. Please use TraceCalc or contact nVent representative for further details.

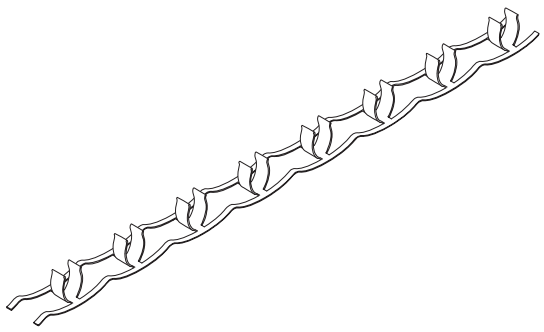


HWA-METAL-MESH-SS-50MM-10M

Stainless steel mesh for fixation of heating cables on valves, pumps or other odd-shaped surfaces. This mesh provides optimum contact and heat transfer between heating cables and heated equipment and can be used for exposure temperatures up to 400°C.

10 m per roll, 50 mm width.

PN: 1244-005772 Weight: 0.36 kg



HWA-PI-FIX- SS-xMM-10M

Stainless steel clip band to attach Polymer Insulated series heating cables to pipes. Clips at regular distances to allow for even heater spacing. Band available in two sizes for different diameter ranges.

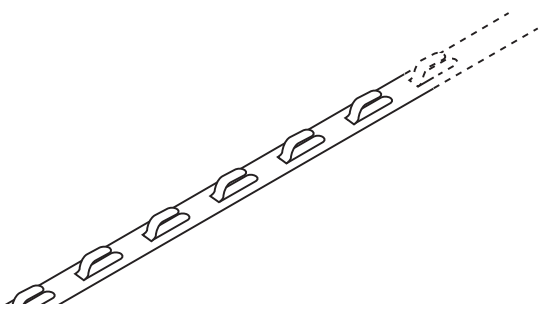
10 m per roll.

For diameters up to 5 mm, HWA-PI-FIX-SS-5MM-10M

PN: 1244-007768 Weight: 0.32 kg

For diameters up to 8 mm, HWA-PI-FIX-SS-8MM-10M

PN: 1244-007769 Weight: 0.52 kg



HARD-SPACER-SS-25MM-25M

Stainless steel spacer for fixing the heating cable on walls, tanks and vessels, etc.

Width spacer: 12.5 mm.

Fixing distance for cables: each 25 mm.

25 m per roll.

PN: 107826-000 Weight: 1.10 kg

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
CB-200F4B	AC UPS F&G - Battery Isolator-B	CONTAINER B-300 (LOWER DECK)	1724000372	3W Power	Cortem Spa		EJBC	Zone 1	EPT 20 ATEX 4075X	1724000372-EL-DG-00011	II 2GDEx db IIC T6 Gb Ex tb IIIC T 85°C Db	-	N/A	True	N/A	False	
EAT-200N1-01	Trace Heating - Remote Ambient Thermostat	LOWER DECK	1724001647	nVent	nVent	1244-022663	ETS-05-A2-E-A	Zone 1	Baseefa 13ATEX0137	1724001647-EL-DD-00004	II 2(1)G Ex eb ia mb [ia Ga] IIC T5 Gb - 40ºC ≤ Ta ≤ +60ºC II 2D Ex tb IIIC T100ºC Db	-	N/A	True	N/A	False	
EHT-1001-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1002-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1003-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1004-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1004-B	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1005-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1006-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1007-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-2002-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EJB-200F2-01	Top Obstruction Lights Junction Box	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990082	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
EJB-200F2-02	Intermediate obstruction lights junction box	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990083	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_4
EJB-200N1-02-L1-01	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990045	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-02	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990044	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-03	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990043	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
EJB-200N1-02-L1-05	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990058	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-06	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990057	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-07	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990059	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-08	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990060	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-09	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990061	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-10	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990047	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-11	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990056	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-12	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990055	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-13	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990054	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-14	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990053	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-15	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990052	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-16	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990051	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-17	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990050	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-18	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990049	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-19	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990048	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-20	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990072	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-01	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990003	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
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EJB-200N1-03-L2-03	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990002	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-04	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990001	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-05	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990012	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-06	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990011	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-07	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990010	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-08	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990009	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-09	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990008	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-10	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990007	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-11	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990006	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-12	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990005	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-13	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990014	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-14	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990013	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-04-L3-01	Stair Normal Lighting JB	LOWER DECK STAIRS	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990032	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-04-L3-02	Stair Normal Lighting JB	LOWER DECK STAIRS	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990033	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-01	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990064	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-03	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990062	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
EJB-200N1-08-L1-04	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990065	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-05	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990077	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-06	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990078	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	

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:	**SGS20ATEX0048X – Issue 3**
4	Product:	**BTV Range of Self-Regulating Trace Heating Systems**
5	Manufacturer:	**nVent Thermal LLC**
6	Address:	**899 Broadway Street, CA, 94063-3104, United States of America**

7 This re-issued certificate extends EU Type Examination Certificate No. **SGS20ATEX0048X** 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.

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 IEC 60079-7:2015+A1:2018 EN 60079-18:2015+A1:2017
EN 60079-30-1:2017 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 60079-30-1 eb IIC T6 Gb or Ex 60079-30-1 eb mb IIC T6 Gb T_{min} -60°C**
Ex 60079-30-1 tb IIIC T80°C Db or Ex 60079-30-1 mb tb IIIC T80°C Db

SGS Fimko Oy Customer Reference No. **865** Project File No. **21/0455**

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SGS Fimko Oy
Takomotie 8
FI-00380 Helsinki, Finland
Telephone +358 (0)9 696 361
e-mail **sgs.fimko@sgs.com**
web site **www.sgs.fi**
Business ID 0978538-5 Member of the SGS Group (SGA SA)

Tuomas Hänninen
SGS Fimko Oy

13 # Schedule

14 ## Certificate Number SGS20ATEX0048X – Issue 3

15 Description of Product

The BTV Range of Self-Regulating Trace Heating Systems is of the parallel circuit self-regulating type, rated at up to 277V, with power output up to 33W/m (10W/ft). The units have a maximum self-limiting temperature of 80°C.

Each trace heating system comprises:
- the active heating cable.
- an end seal for terminating the remote end of the unit.
- a cable gland for connecting the powered end of the unit to a suitable terminal enclosure, or alternative integrated power connection systems.

The active heating cable comprises two stranded copper conductors around which is extruded a semi-conductive core material. This core material increases in resistance with increasing temperature and gives the cable its self-limiting property. This semi conductive core with embedded conductors forms the active part of the heating cable. An extruded layer of fluoropolymer serves to insulate the semi conductive core from the conductive covering, covering the active heater. A protective anti-corrosion fluoropolymer sheath may be extruded over the conductive covering.

The declared maximum withstand temperature for the range is 85°C and the minimum installation temperature is -60°C.

CABLE ACCESSORIES

END SEALS

The end seals for terminating the remote end of the unit may be the following types:

Types E-100-L or E-100, which are mechanical end seals incorporating an end cap which is filled with silicone grease sealant covered by certificates Sira14ATEX3015X and PTB09ATEX1060U.

Types E-100-L-A or E-100-A, which are mechanical end seals incorporating an end cap which is filled with silicone grease sealant.

A Raychem Type E-20 heat shrink end seal kit.

Type E-150 mechanical end seals, covered by certificate DEKRA20ATEX0011U.

SPLICES AND JOINTS

The following splicing and jointing arrangements are provided:

A Raychem Type S-20 heat shrink splice kit for connecting lengths of active heating cable.

A Raychem T-100 tee connection system, certificate PTB20ATEX1008U, for connecting up to three heater cables.

Type S-150 mechanical splice kit, covered by certificate DEKRA20ATEX0011U.

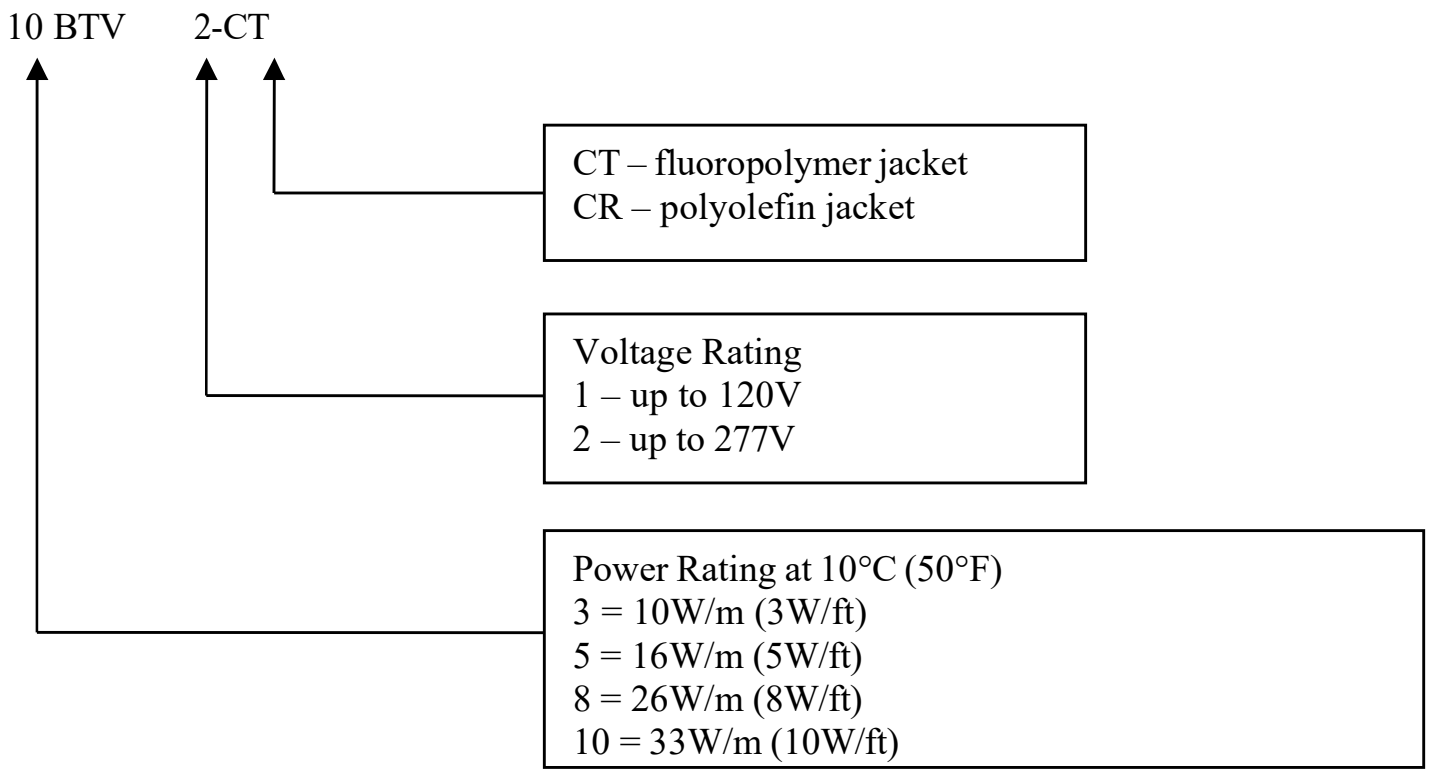
POWER CONNECTIONS

Power connection may be achieved by the following means:

Connection Type	ATEX Certificate
JBM-100	PTB20ATEX1008U
JBS-100	PTB20ATEX1008U
JBU-100	PTB20ATEX1008U
C-150-E	DEKRA20ATEX0011U
C25-21 Connection Kit	Baseefa16ATEX0037U
C25-100 Connection Kit	Baseefa16ATEX0038U
C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS Kits	Baseefa16ATEX0039U

The C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS Kits include M25 or ¾ NPT gland to Sira01ATEX1270X and core sealer to Baseefa15ATEX0194U.

A number of power levels and voltages, up to the maximum specified, are included in the range. They are identified in the following manner:



Any of the products in the range may be considered as part of a stabilised design system. In such a system the design is based upon the use of nVent proprietary software Trace calc Pro. The algorithm defined in this software may be used in additional design software.

The minimum bending radii for BTV trace heating cable at specific temperatures are shown in the table below:

Temperature, T (°C)	**Minimum Bending Radius (mm)**
$-60 \leq T < -20$	35
$-20 \leq T < -10$	30
$-10 \leq T < 0$	25
$0 \leq T < +10$	20
$T \geq +10$	12

16 Report Number

See Certificate History.

17 Specific Conditions of Use

1. The following limiting temperatures for the heat shrink end seals and splices shall not be exceeded:

   +110°C for the S-20 and E-20
   +150°C for the C-150-E, S-150 and E-150

2. The end seals, splices and power connections have the following associated ambient temperatures:

   -60°C to +56°C for the E-20 and S-20
   -55°C to +56°C for the T-100, JBM-100, JBS-100, JBU-100, and E-100
   -40°C to +56°C for the JBS-100-L, JBM-100-L, and JBU-100-L
   -55°C to +55°C for the C-150-E, S-150 and E-150
   -40°C to +40°C for the E-100-L
   -55°C to +110°C for the C25-21 and C25-100
   -60°C to +180°C for the C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS

3. The assembly of glands, splices and end terminations shall be carried out in accordance with the manufacturing instructions

4. The heating element supply circuit must include an electrical protection device in conformity with Clause 4.4 of EN 60079-30-1.

5. The minimum installation temperature is -60°C. The minimum bending radii at specific temperatures for the Type BTV units are shown in the table in the equipment description.

6. The supply to the heating unit must be terminated in a suitably certified terminal enclosure.

7. The minimum installation temperature for E-20 and S-20, end seal and splice is -20°C.

8. The installer is to carry out a dielectric strength test on Ex equipment in which the C25-21, C25-100 and C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS connection kit is fitted. No dielectric breakdown shall occur. (Alternatively, an insulation resistance test may be undertaken in accordance with EN 60079-30-2).

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
205308-A[i]	1 of 1	Q	05/27/2021	BTV-8BTV-CR & BTV-10BTV-CR
205310-A[i]	1 of 1	R	05/27/2021	BTV-8BTV-CT & BTV-10BTV-CT

Current drawings which remain unaffected by this issue:

Number	Sheet	Issue	Date	Description
906567[ii]	1 of 1	P	05/21/21	C25-21, C25-100 and C25-100-METAL-XX, C3/4-100-METAL-XX Connection Kits
906579-A[i]	1 of 1	N	01/15/2021	BTV Heater Units (European System)
205350-A[i]	1 of 1	P	03/31/20	BTV-3BTV-CT & BTV-5BTV-CT
205349-A[i]	1 of 1	J	03/26/20	BTV-3BTV-CR & BTV-5BTV-CR
906794-A[iii]	1 of 1	AA	03/30/20	Generic ATEX and IECEx Print Dwg for BTV-CT, QTVR-CT, XTV-CT, KTV-CT Heating Cables
9242869[iv]	1 & 2	O	12/09/19	LABL JBM-100-L-E
9532687[iv]	1 & 2	Q	12/09/19	LABL JBM-100-L-EP
9621473[iv]	1 & 2	O	12/09/19	LABL JBS-100-L-E
9777523[iv]	1 & 2	P	12/09/19	LABL JBS-100-L-EP
9319676[iv]	1 & 2	O	12/09/19	LABL JBU-100-L-E
9735898[iv]	1 & 2	O	12/09/19	LABL JBU-100-L-EP
908742-A[v]	1 of 1	A	2/19/20	E-20 Heat Shrinkable End Seal Kit Cut Back Dimensions
908743-A[vi]	1 of 1	A	2/19/20	S-20 Heat Shrinkable Splice Joint Kit Cut Back Dimensions

i) These drawings are common to IECEx BAS 20.0011X, SGS20ATEX0048X and are held with IECEx BAS 20.0011X.

ii) This drawing is common to IECEx BAS 16.0040U, IECEx BAS 16.0041U, IECEx 16.0042U, IECEx BAS 20.0008X, IECEx BAS 20.0009X, IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, Baseefa16ATEX0037U, Baseefa16ATEX0038U, Baseefa16ATEX0039U, SGS20ATEX0045X, SGS20ATEX0046X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and is held with IECEx BAS 16.0040U.

iii) These drawings are common to IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and are held with IECEx BAS 20.0011X.

iv) These drawings are common to IECEx BAS 20.0008X, IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, SGS20ATEX0045X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and are held with IECEx BAS 20.0008X.

v) These drawings are common to IECEx BAS 20.0010X, IECEx BAS 20.0011X, IECEx BAS 20.0013X, SGS20ATEX0047X, SGS20ATEX0048X, SGS20ATEX0050X and are held with IECEx BAS 20.0010X.

vi) These drawings are common to IECEx BAS 20.0011X, IECEx BAS 20.0013X, SGS20ATEX0048X, SGS20ATEX0050X and are held with IECEx BAS 20.0011X.

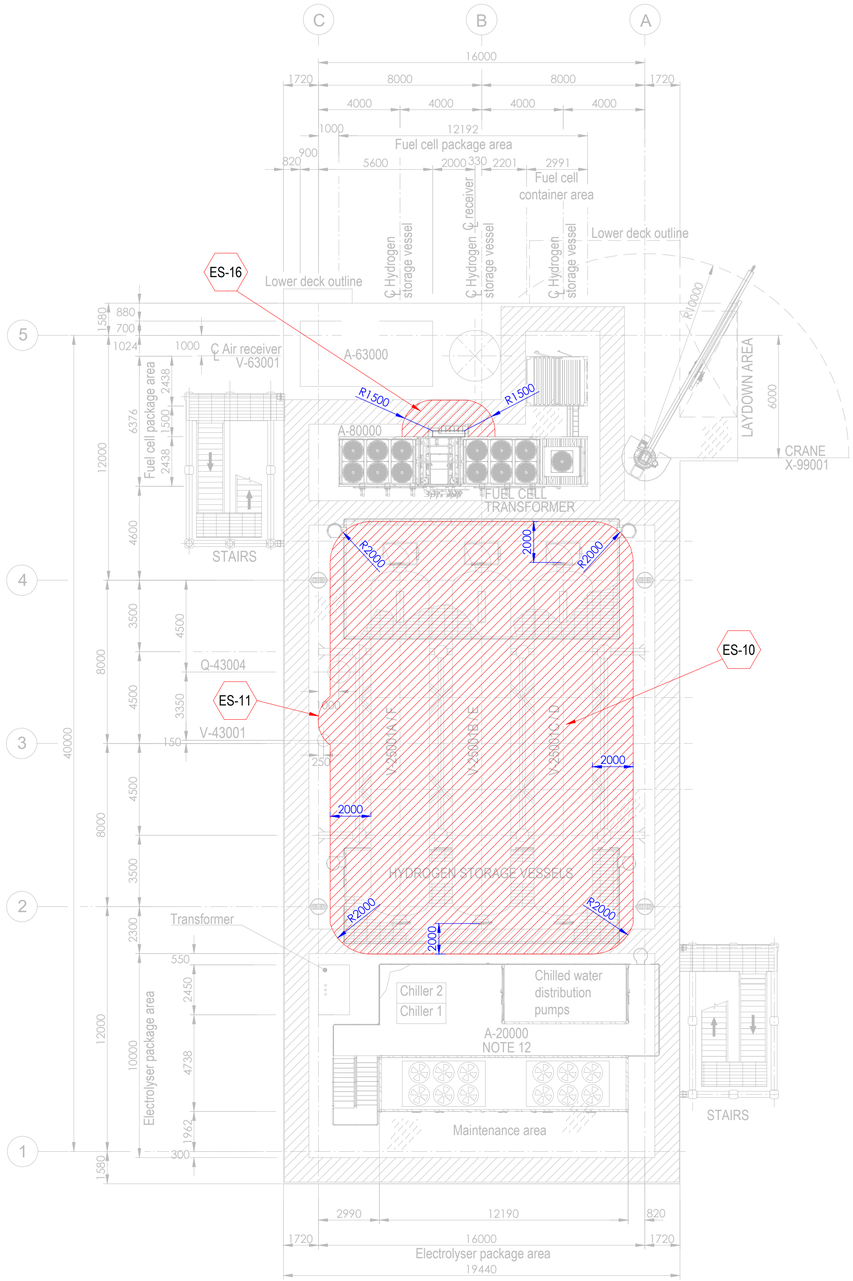
20 Certificate History

Certificate No.	Date	Comments
SGS20ATEX0048X	23 October 2020	The release of the prime certificate. The associated test and assessment against the requirements of EN 60079-0:2012+A11:2013, EN IEC 60079-7:2015+A1:2018, EN 60079-18:2015+A1:2017, EN 60079-30-1:2017 and EN 60079-31:2014 is documented in Test Report No. GB/BAS/ExTR20.0030/00.

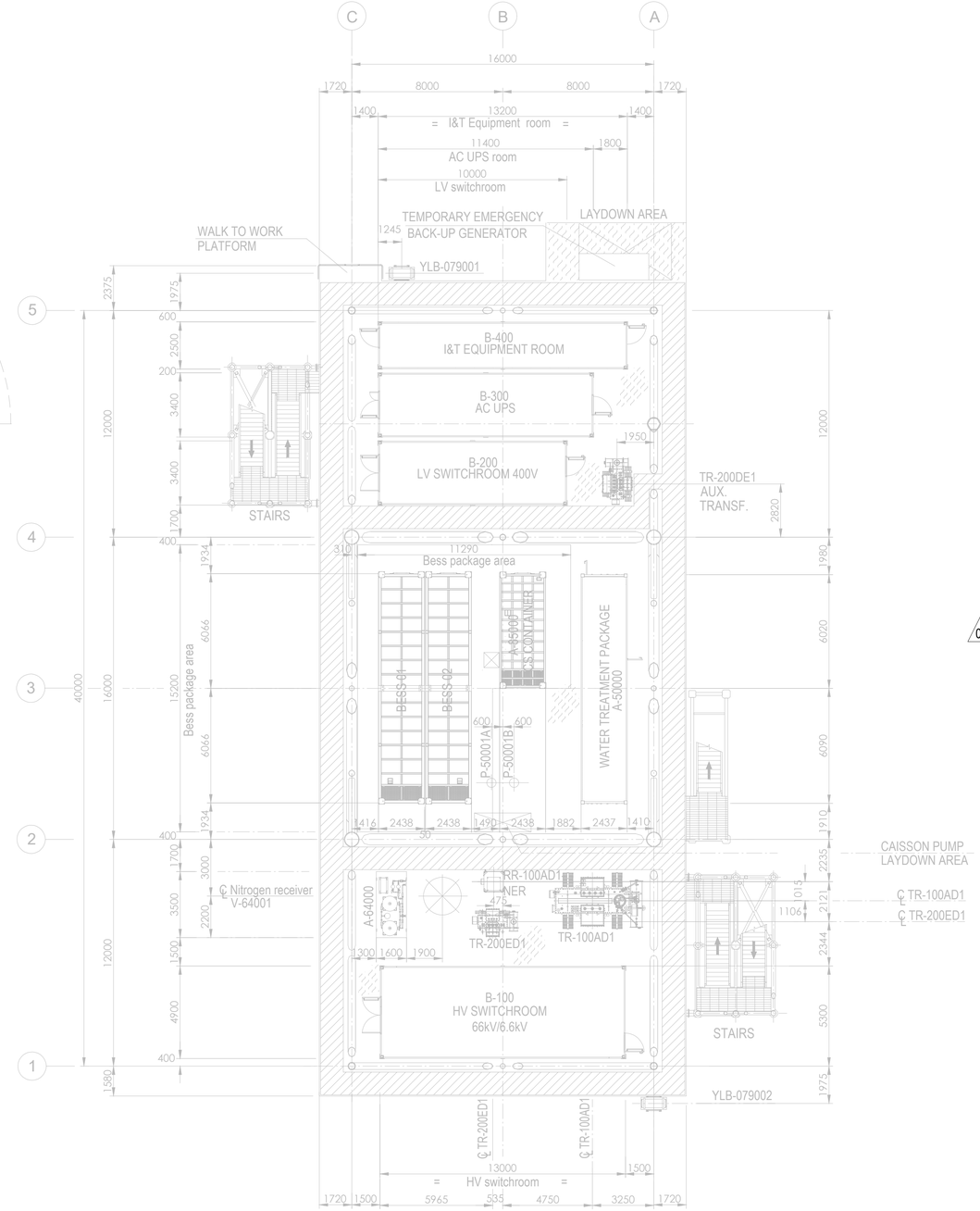
Certificate No.	Date	Comments
SGS20ATEX0048X Issue 1	11 February 2021	To assess the BTV range of self-regulating trace heating systems against EN IEC 60079-0:2018, introduce the low profile power connection, splice and end seal kits, types C-150-E, S-150 and E-150 afforded DEKRA20ATEX0011U, minor amendments to the product description, to change the product name to "BTV Range of Self-Regulating Trace Heating Systems" and to amend the Specific Conditions of Use. The associated test and assessment is documented in Test Report No. GB/BAS/ExTR21.0005/00.
SGS20ATEX0048X Issue 2	7 July 2021	Minor drawing updates not affecting certification. Baseefa Certification Report GB/BAS/ExTR21.0060/00 refers.
SGS20ATEX0048X Issue 3	3 September 2021	Minor change to the BTV-8BTV-CR, BTV-8BTV-CT, BTV-10BTV-CR and BTV-10BTV-CT heating cable dimensions. Baseefa Certification Report GB/BAS/ExTR21.0104/00 refers.
For drawings applicable to each issue, see original of that issue.		

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

REV. 02



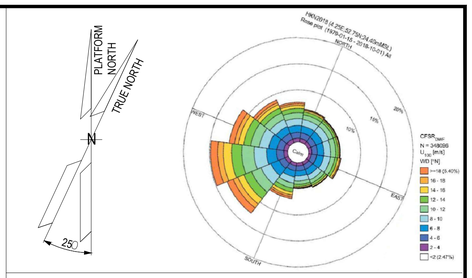
PLAN ON UPPER DECK
EL+30.310 T.O.S.



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

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

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



NOTES

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

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

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

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

CROSSWIND

ROSETTI MARINO

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

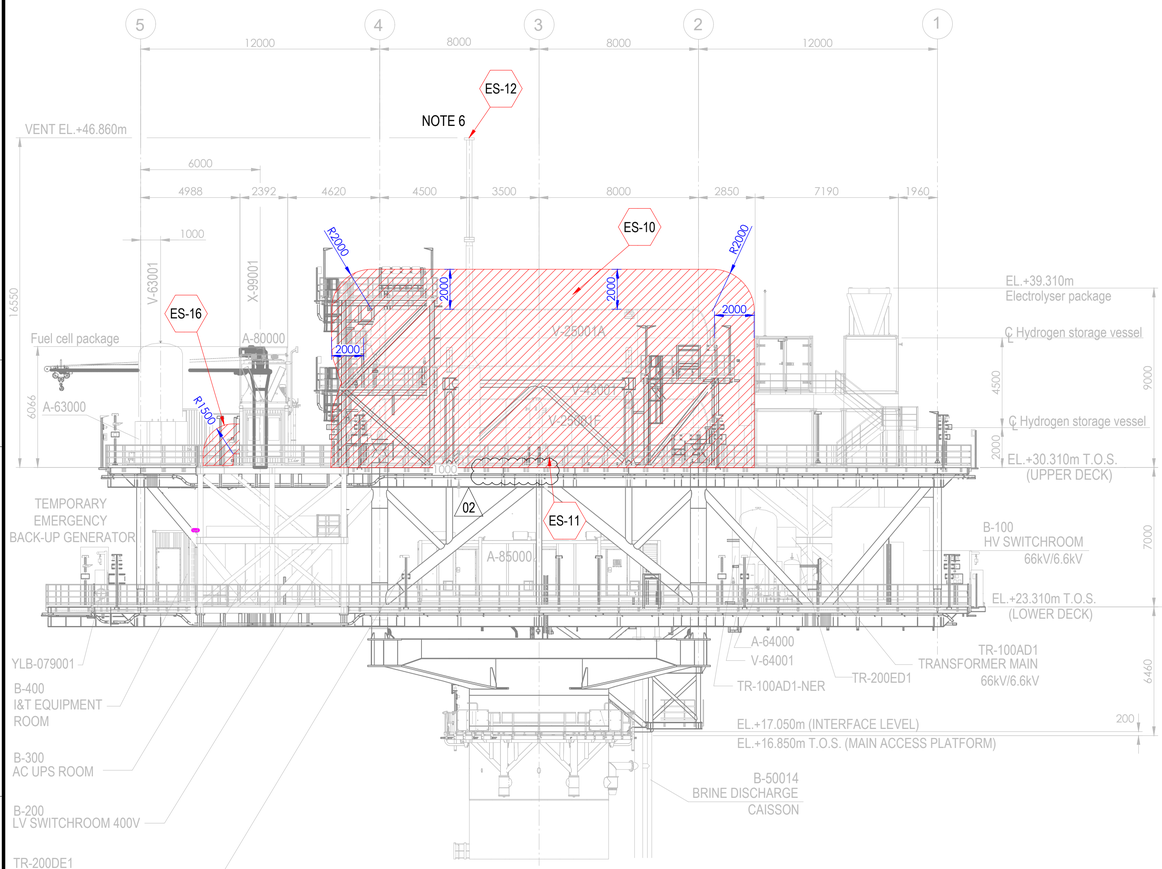
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

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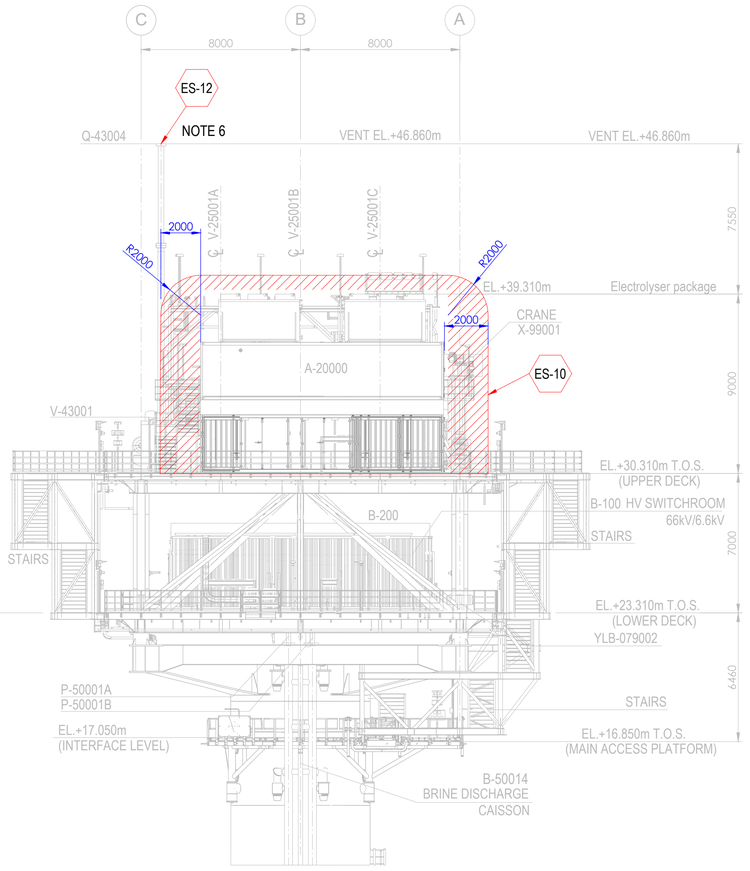
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

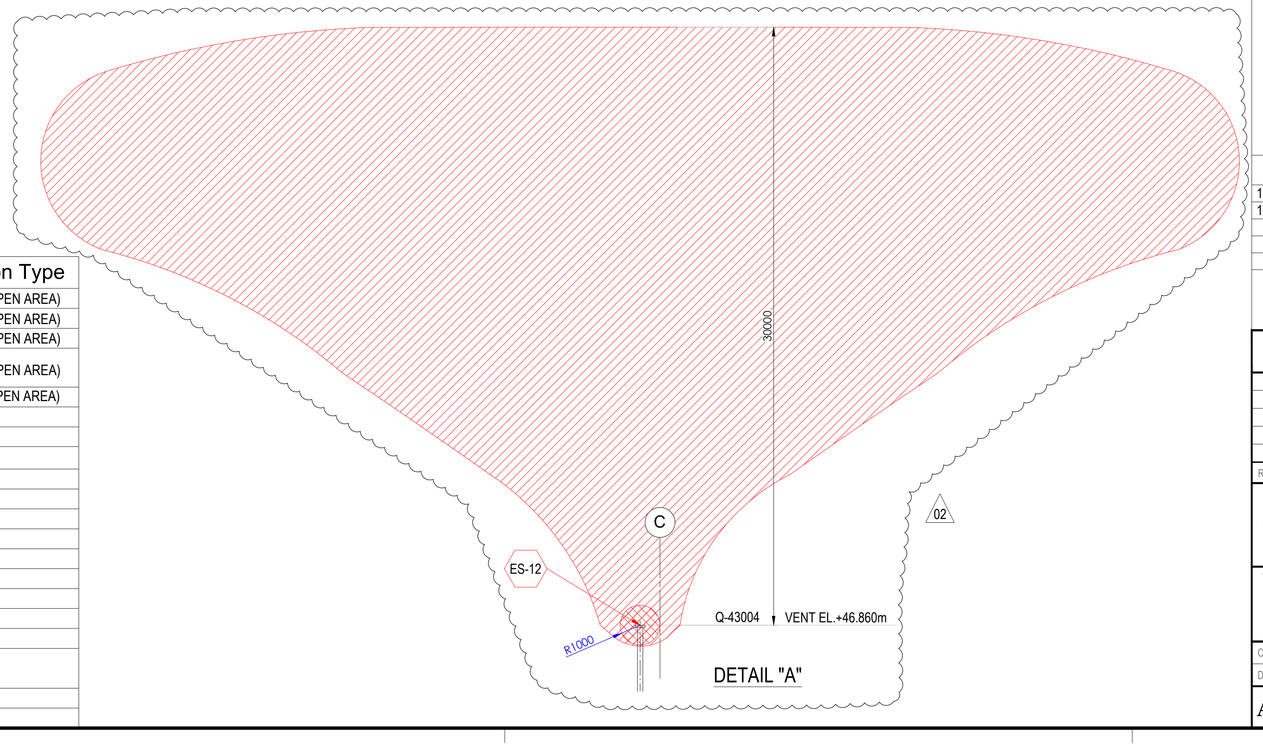


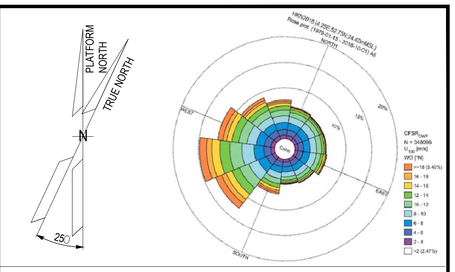
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

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





NOTES

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

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

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

CROSSWIND

ROSETTI MARINO

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

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

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

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

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	EHT-1006-A	: Heat Tracing Tape			Dwg	1724001647-EL-LIS-00003
	S/Sys	83-65	: Electrical Heat Tracing			Module	UD
TASK	code	C10004638		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX22A — Tape Trace Heating Before Insulation

1	Check that the circuit is de-energized and safe.	OK
2	Check all tapes and junction boxes are undamaged.	OK
3	Check all tapes and junction boxes are installed according to drawings.	OK
4	Check all tapes characteristics against project data (type, rated power).	OK
5	Check rating of circuit breaker against drawings.	OK
6	Check tapes, junction boxes, cables and accessories tagging.	OK
7	After test re-connecting cable as per typical installation.	OK
8	If required produce Red Line Mark Up for "AS BUILT"	

CIRCUIT DATA

List Associated Heat tracing Isometric	1724001647-EL-DD-00004
Tape Type	3BTV2-CT
Circuit Installed Length	2m
Wiring Diagram	WD_1724001647-EL-DG-00006/Single line Diagram (1724001647-EL-DG-00005).

Testing & measurement instruments used

Type	Serial n°	Calibration certificate	Validity
MEGGER : KEW3125A	SERIAL: W8330207	N°7722/24	09/07/2025
VOLCRAFT 1000V	ET-200 S/N:H240103023	N°LAT 042 00768/24	11/10/2025

FIRST TEST

Continuity and insulation resistance tests to earth for each conductor core are carried out after the tape is installed on pipework **before any insulation and cladding is fitted.**

Test voltage (V):	2500	Tape Lengh	2m	Thermostats :	N/A
Continuity	394	Insulation Resistance	>1999M	Result	OK

AFTER THIS TEST IS DONE, LINE CAN BE RELEASED TO INSULATION TEAM

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-05	2025-02-13	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-05T10:21:23.334Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-13T12:30:09.649Z	

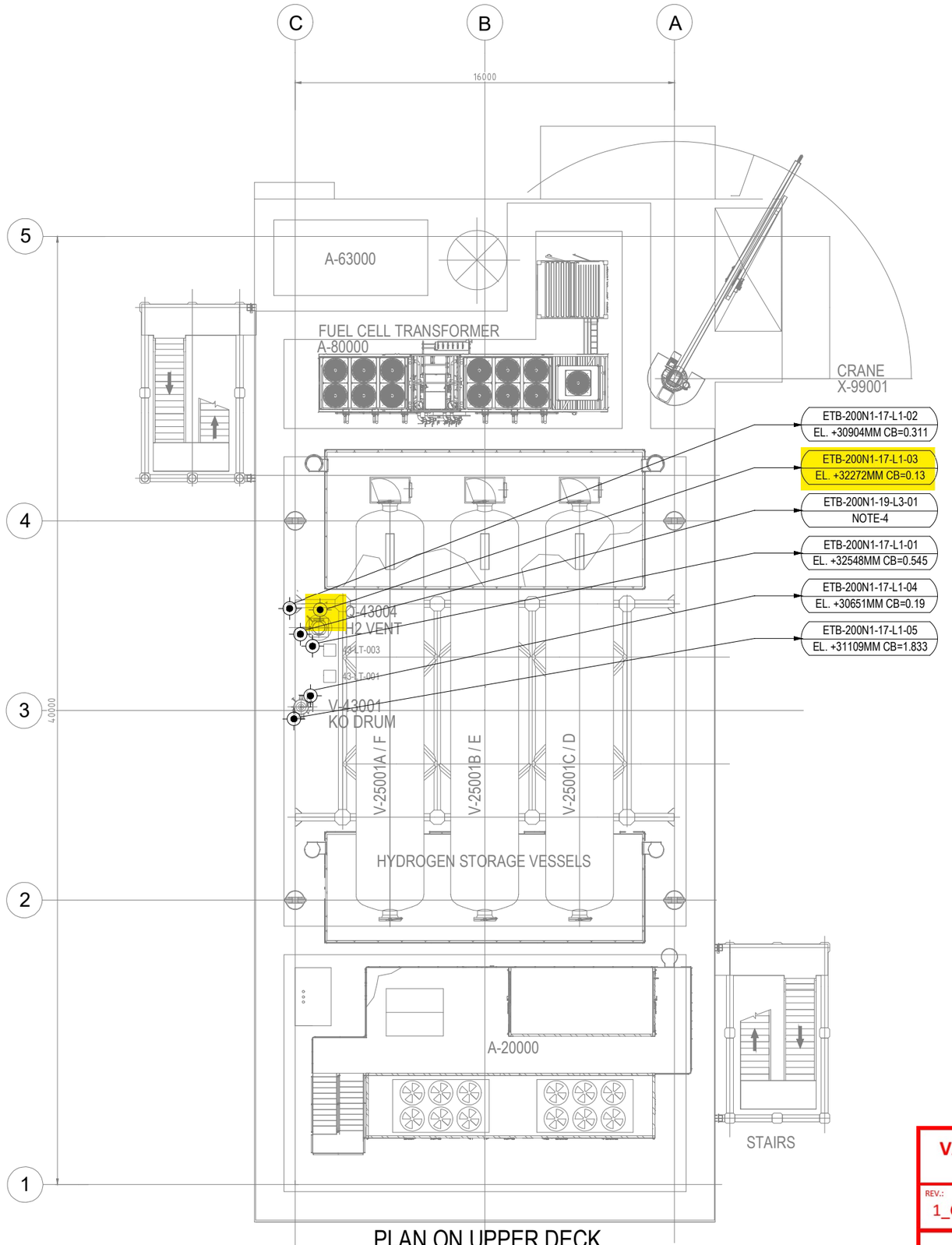
EHT CALCULATION LIST

PIT240024_ED01-1001

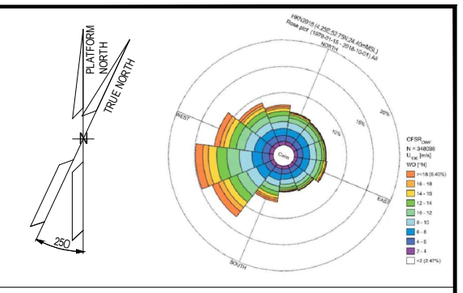
		ENGINEERING DATA				MECHANICAL & INSULATION DATA							PROCESS DATA				EHT BASIC DESIGN								EHT DETAILED DESIGN						EHT TEMP. CONTROL DATA							
Main EHT Box Number	Item Number	Heater Number	Line, Equipment or Instrument ID	nVent Circuit Number	Plant Area	Pipe Size [DN / IN]	Pipe Length [m]	Support Quantity [pc]	Valve Quantity [pc]	Other Heat Sink Quantity [pc]	Insulation Type	Insulation Thickness [mm]	Maintain Temperature [°C]	Maximum Allow. Process Temperature [°C]	Maximum Operating Temperature [°C]	Maximum Exposure Temperature [°C]	Heatloss [W/m]	Heating Cable Selection	Trace Ratio	Heating Cable Output [W/m]	EHT Cable per Support [m]	EHT Cable per Valve [m]	EHT Cable per Other Heatsink [m]	Total EHT Cable [m]	Max. Allow. EHT Circuit Length [m]	Connection Type	Voltage [V]	Operating Current [A]	Total Operating Load [W]	Start-Up Current [A]	Temp. Control Method	Controller Set Point [°C]	Minimum Controlled Temperature [°C]	Maximum Controlled Temperature [°C]	Maximum Uncontrolled Temperature [°C]	Revision	Remark
																		GRAND TOTAL						**181.4**				**9.69**	**2226**	**14.91**							
ETB-200N1-16-L3-01	1	EHT-1001-A	1"-DM-001-01SS-E	1001	PIPING	1	17.6	5	1	2	RW/MF 1:2015	20	5	100	22	22	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	22.0	199	Single L-N	230	1.18	271	1.8	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**22.0**			**230**	**1.18**	**271**	**1.8**							
ETB-200N1-15-L2-01	1	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	11.0	4		1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	13.9	199	Single L-N	230	0.73	167	1.1	Ambient sensing, standard	5	18	29	50	00	
	2	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	3	EHT-1002-A	1"-CI-032-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	4	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	5	EHT-1002-A	1"-CI-030-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	6	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.75	0.5		1		RW/MF 1:2015	20	5	50	25	25	3.4	3BTV2-CT	2.0	10.7		1.5		2.6	199	Single L-N	230	0.15	34	0.2	Ambient sensing, standard	5	30	38	55	00	
	7	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.5	0.5		1		RW/MF 1:2015	20	5	50	25	25	2.9	3BTV2-CT	2.0	10.7		1.4		2.5	199	Single L-N	230	0.14	32	0.2	Ambient sensing, standard	5	32	40	56	00	
																		TOTAL						**36.4**			**230**	**2.00**	**459**	**3.1**							
ETB-200N1-14-L1-01	1	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	4	0.5				RW/MF 1:2015	20	5	100	25	25	10.2	3BTV2-CT	1.0	10.7				0.6	199	Single L-N	230	0.03	7	0.1	Ambient sensing, standard	5	5	20	46	00	
	2	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	4.7	1		1	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1		0.5	9.3	199	Single L-N	230	0.47	107	0.7	Ambient sensing, standard	5	14	27	49	00	
	3	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	4	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	7.8	3			RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1			8.6	199	Single L-N	230	0.48	111	0.7	Ambient sensing, standard	5	14	27	49	00	
	5	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	6	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.8	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	7	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	1.4	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	4.2	199	Single L-N	230	0.23	54	0.4	Ambient sensing, standard	5	24	34	53	00	
	8	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	9	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	10	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.7	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	11	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	1.2	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	3.7	199	Single L-N	230	0.20	47	0.3	Ambient sensing, standard	5	24	34	53	00	
	12	EHT-1003-A	1"-SWS-147-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	13	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	14	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	15	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1	0.1				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	28	37	54	00	
	16	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
	17	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	18	EHT-1003-A	1"-SWS-146-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	19	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	20	EHT-1003-A	1"-SWS-290-01SD-E	1003	PIPING	1	1.1	1	2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7	0.3	1.6		5.8	199	Single L-N	230	0.33	76	0.5	Ambient sensing, standard	5	28	37	54	00	
	21	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**78.6**			**230**	**4.37**	**1002**	**6.7**							
ETB-200N1-17-L1-04	1	EHT-1004-A	1"-WW-259-01CS-E / V-43001	1004	PIPING	1	0.9		1	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7		0.8	0.5	3.2	199	Single L-N	230	0.12	28	0.2	Ambient sensing, standard	5	18	29	50	00	Combined with EHT-1004-B
																		TOTAL						**3.2**			**230**	**0.12**	**28**	**0.2**							
ETB-200N1-17-L1-02	1	EHT-1005-A	1"-WW-260-01CS-E	1005	PIPING	1	1.2	1	2	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	4.6	199	Single L-N	230	0.20	46	0.3	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1006-A
																		TOTAL						**4.6**			**230**	**0.20**	**46**	**0.3**							
ETB-200N1-17-L1-03	1	EHT-1006-A	1"-WW-202-01CS-H	1006	PIPING	1	1.0			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	1.0	10.7			0.5	2.5	199	Single L-N	230	0.08	19	0.1	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1005-A
																		TOTAL						**2.5**			**230**	**0.08**	**19**	**0.1**							
ETB-200N1-15-L2-02	1	EHT-1007-A	1"-CI-043-01CP-E	1007	PIPING	1	15.0	6		4	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	19.5	199	Single L-N	230	1.04	239	1.6	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**19.5**			**230**	**1.04**	**239**	**1.6**							
ETB-200N1-17-L1-05	1	EHT-1004-B	43-LT-001	2001	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	Combined with EHT-1004-A
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							
ETB-200N1-17-L1-01	1	EHT-2002-A	43-LT-003	2002	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

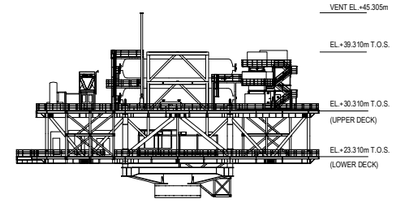
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_C	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 2of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

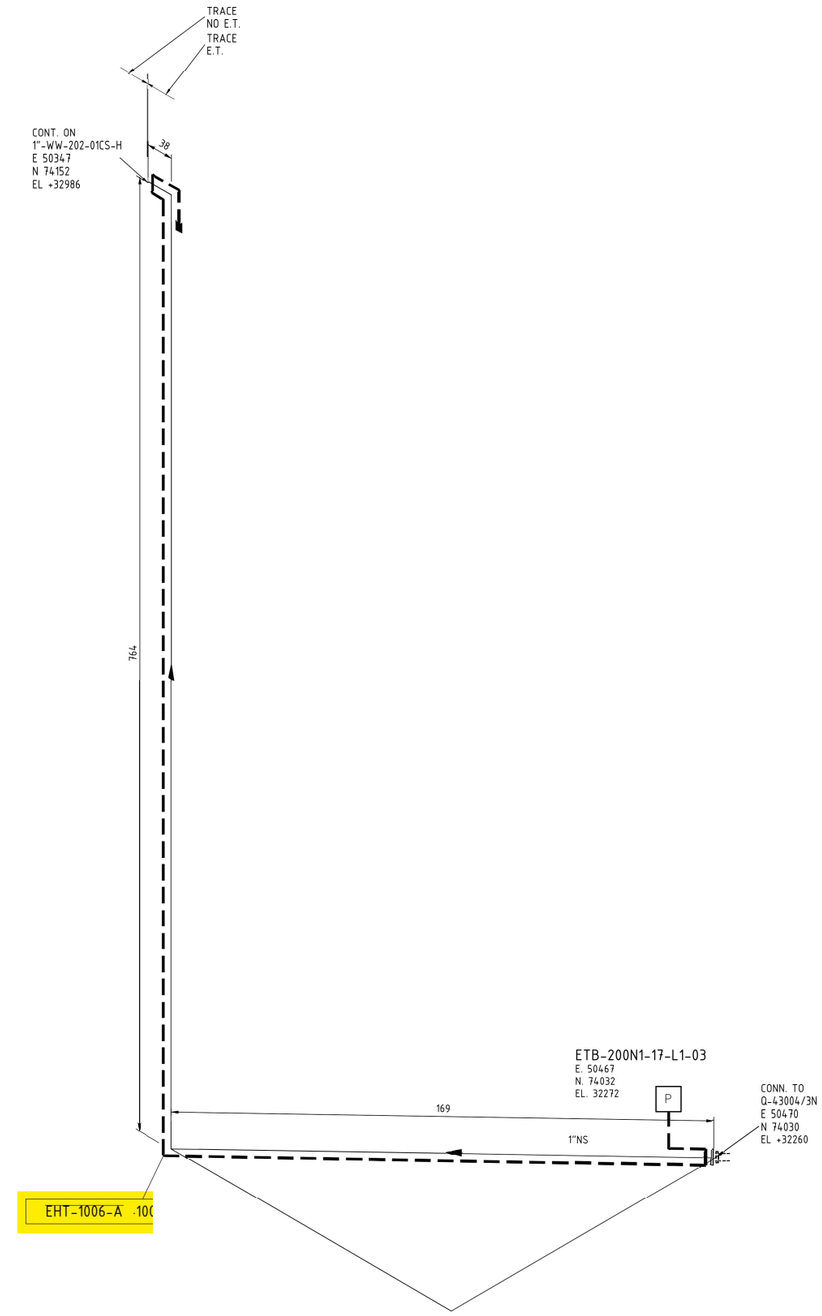
CAD FILENAME: PIT240024_DD01_1006_001_02.dwg

HEAT TRACING DATA

HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	PIPE LENGTH (m)	HEATER LENGTH (m)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W/m)	POWER OUTPUT (W/m)	SHEATH TEMP. (°C)
EHT-1006-A	PIPING	3BTV2-CT	1.0	2.5	0.1	19	230	3.9	10.7	85
TOTALS			1.0	2.5	0.1	19				

HEATER ADDER TABLE

PIPE SIZE (Ins)	TYPE	QTY	ALLOWANCE PER ITEM (m)	TOTAL ALLOWANCE (m)
1	Typical Flange (fixed adder)	1	0.46	0.46



DESIGN PARAMETERS

CIRCUIT NUMBER	1006	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	25°C	INSULATION TYPE	RW/MF 1.2015
MAX. EXPOSURE TEMP.	25°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	100°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

COMPONENT BILL OF MATERIALS

CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	2.5	m	Raychem Self-Regulating Heating Cable
JBS-100-E	1	each	Single entry power connection, EP, ATEX
PSE-090	1	each	Pipe Strap for 1.1/4" to 3" (40-90mm)
GS-54	0.1	each	Glass Tape (16m/roll), suited for SS pipes
LAB-I-01	1	each	Warning Label - English
E-20	1	each	Heat shrink end seal, ATEX (BTV, QTVR)
JBS-SPA	0.2	bag	Small Pipe Adapter for E-100, JBS-100, and JS-100

LINE NUMBERS

1"-WW-202-01CS-H

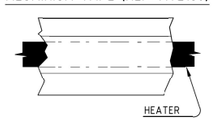
REFERENCE DRAWINGS / DOCUMENTS

123A90-DDL-PP-DI-71000_100

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.
4. HEATING CABLE ALLOWANCES PROVIDED IN THE 'EHT ADDER TABLE' FOR FLANGES AND VALVES ARE IN ADDITION TO THEIR LINEAR LENGTHS.

ALUMINIUM TAPE (REF: ATE180)



SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

CROSSWIND

ROSETTI MARINO

nVent RAYCHEM TRACER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
02	20/01/2025	ISSUED FOR REVIEW	ADU	AMI	GPI
01	25/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.

DOC CODE

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING ISOMETRIC

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-EL-DD-00004	8/10	02

A1

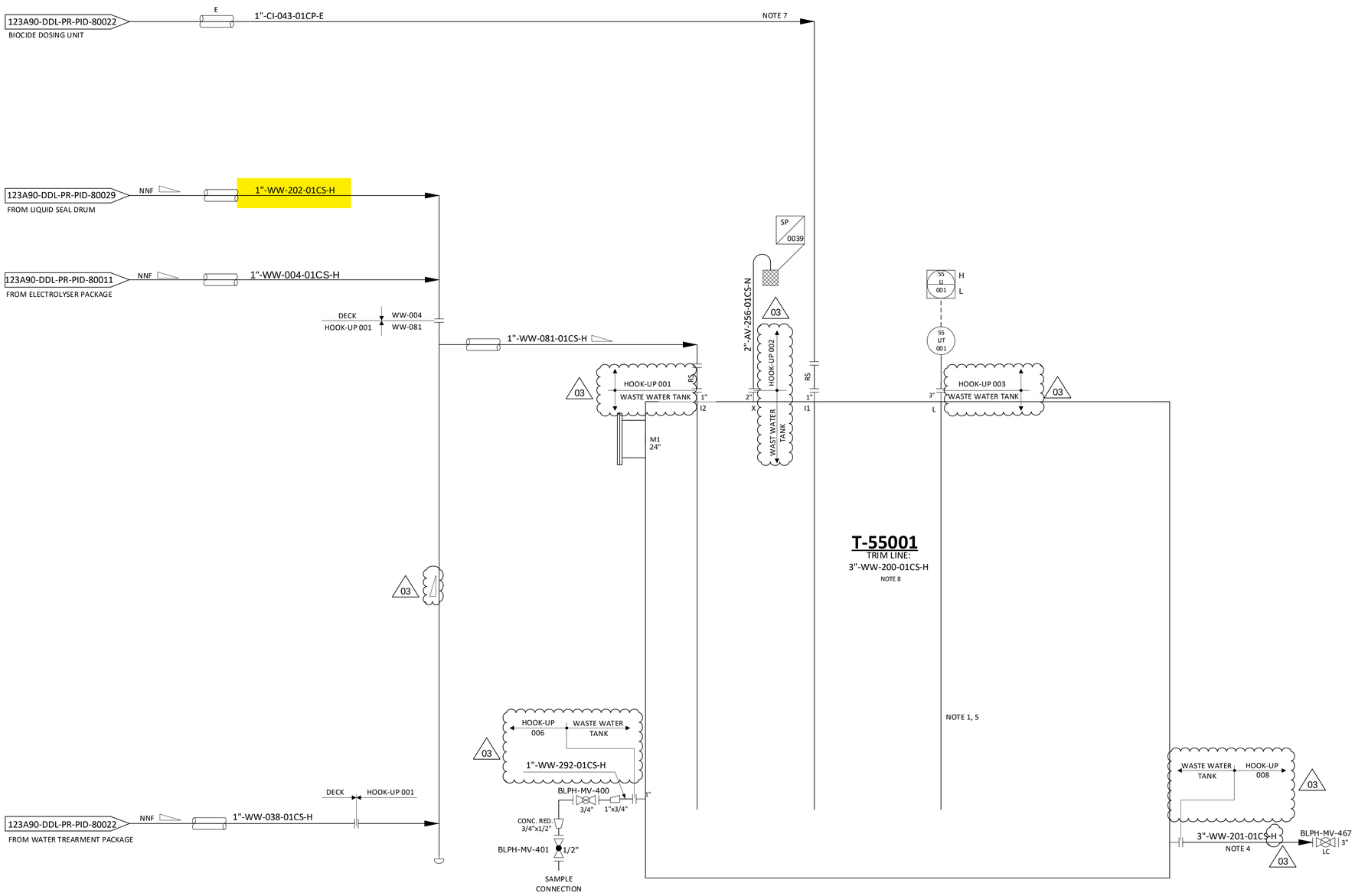
DRAWING NO. DRAWING_NO.

REV. REV

T-55001

WASTE WATER TANK

CAPACITY : 16 m³
DESIGN P/T : 0.005 barg / 80°C
MATERIAL : CARBON STEEL



NOTES

1. DELETED. 03
2. DELETED.
3. DELETED.
4. DRAIN LINE TO SHIP DISPOSAL.
5. PERFORATED STILLING TUBE.
6. DELETED.
7. FOR PERIODIC DOSING OF THE WASTE WATER TANK.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR WASTE WATER TANK - T-55001, DOC. N. "123A90-DDL-MAC-DS-50008"

HOLDS

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

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

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
WATER DISPOSAL SHEET 2

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE

A1	DRAWING NO. 123A90-DDL-PR-PID-80026	SHEET 001	REV. 03

File Name : FILE_NAME

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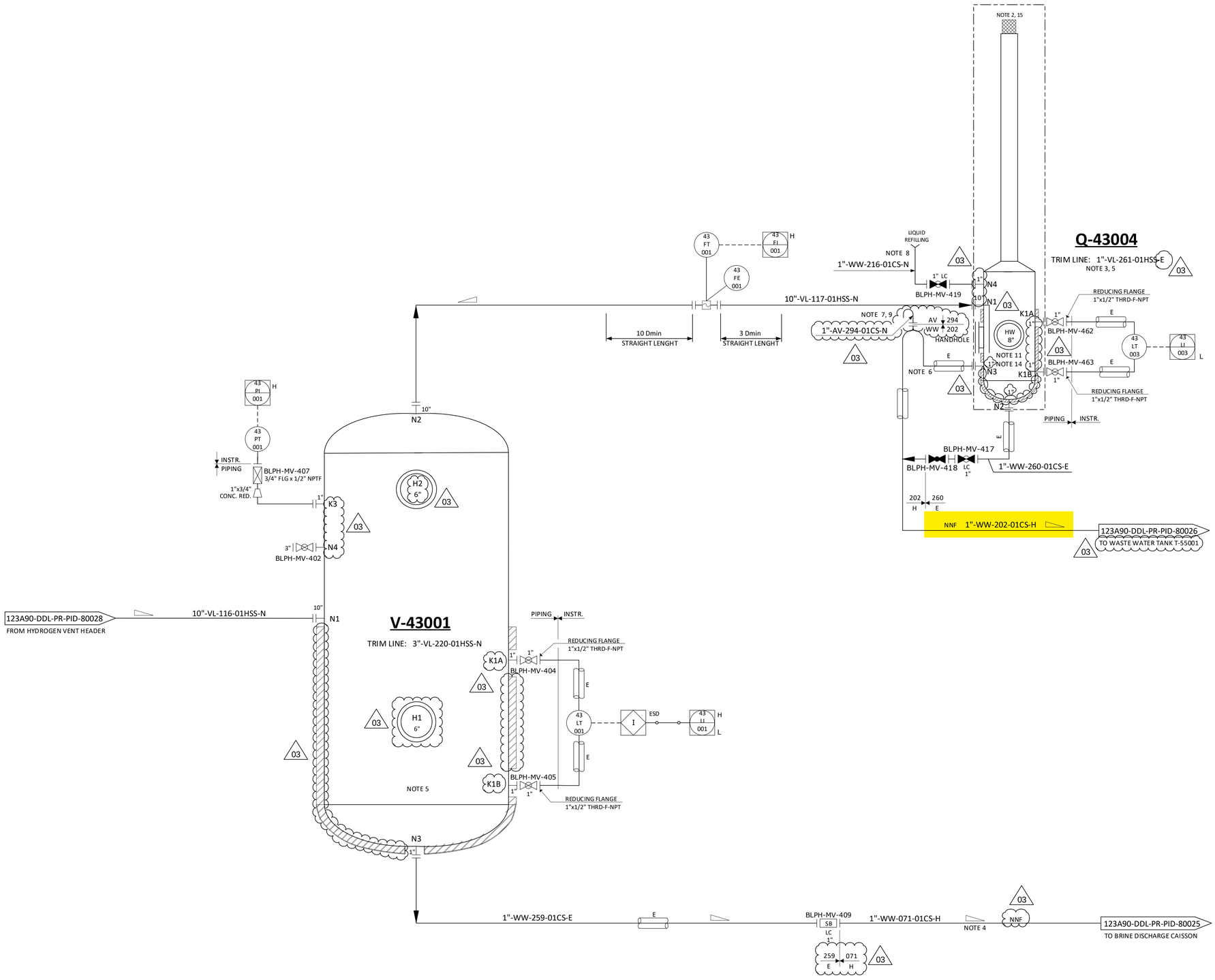
REV. REV

V-43001

HYDROGEN VENT KO DRUM
SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1
SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. 03
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

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

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

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80029	SHEET 001	REV. 03

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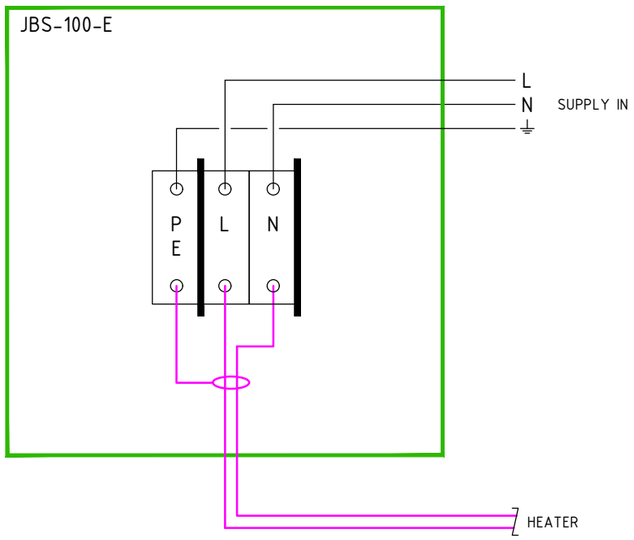
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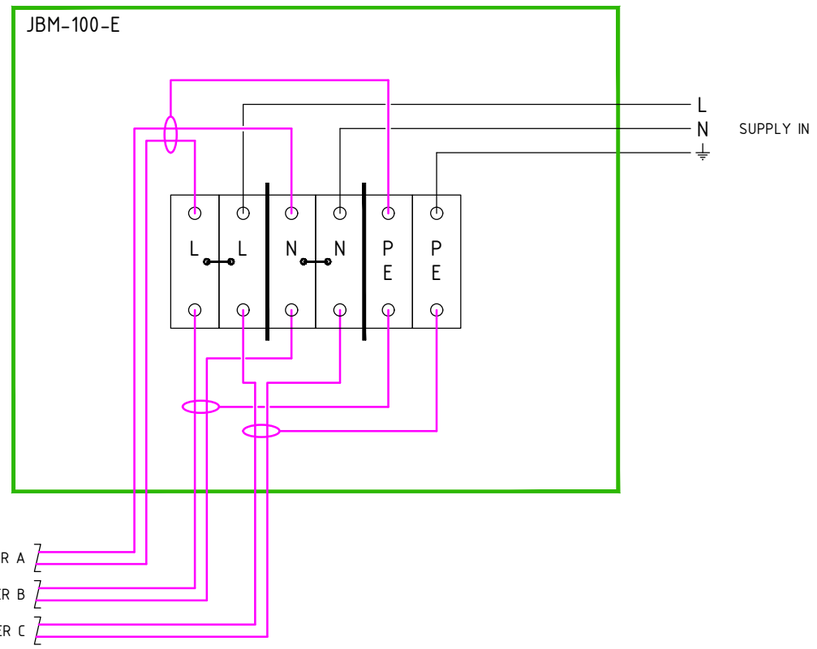
GENERAL INFORMATION:

1. JBS-100-E IS DESIGNED TO CONNECT POWER TO ONE BTV, QTVR, XTV, KTV, HTV OR VPL EHT CABLE.
2. THIS KIT INTEGRATES THE FUNCTIONS OF BOTH CONNECTION KITS AND INSULATION ENTRIES.
3. THE STAND CONNECTED TO THE BOTTOM OF THE BOX PROTECTS THE HEATING CABLE AND ALLOWS FOR UP TO 100mm (4") THERMAL INSULATION.

TECHNICAL BRIEF:

- 2 x M25 THREADED ENTRIES
- 1 x M25 STOPPING PLUGS
- 1 x M25 POWER CABLE GLAND





REV.	DATE	DESCRIPTION	BY	CHK	APP
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--	--	--	--	--	--
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	08/03/2024	ISSUED FOR INFORMATION	LJB	E-C	ZS

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TITLE
TYPICAL CONNECTION OF A JBS-100-EP
SINGLE ENTRY JUNCTION BOX

PREPARED BY	-.---	LANG.	SCALE
LEAD ENGINEER	-.---	en	N/A
PROJECT NO.	DRAWING NO.	SHEET	REVISION
PIT240024	1724001647-EL-DG-00005	2/3	01

A3

CAD FILENAME: 1724001647-EL-DG-00006 Rev.01.dwg

CONTROL PANEL REF.:

Q17

MARSHALLING BOX

EJB-200N1-17-L1-01

ETB-200N1-17-L1-04 — P — EHT-1004-A — ETB-200N1-17-L1-05 — P — EHT-1004-B

ETB-200N1-17-L1-02 — P — EHT-1005-A

ETB-200N1-17-L1-03 — P — EHT-1006-A

ETB-200N1-17-L1-01 — P — EHT-2002-A

SPARE

CIRCUIT NO.	1004	1005, 1006	2002	
C.B. RATING (A)	32	32	32	
START-UP I (A)	2.6	0.4	0.6	
LOAD (W)	383	65	81	
SERVICE	WINTERIZING	WINTERIZING	WINTERIZING	
NOTES FOR THE CIRCUIT	--	--	--	

GENERAL NOTES

CROSSWIND

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	02/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING
SINGLE LINE DIAGRAM (SLD)

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-EL-DG-00006	4/4	01

BTV

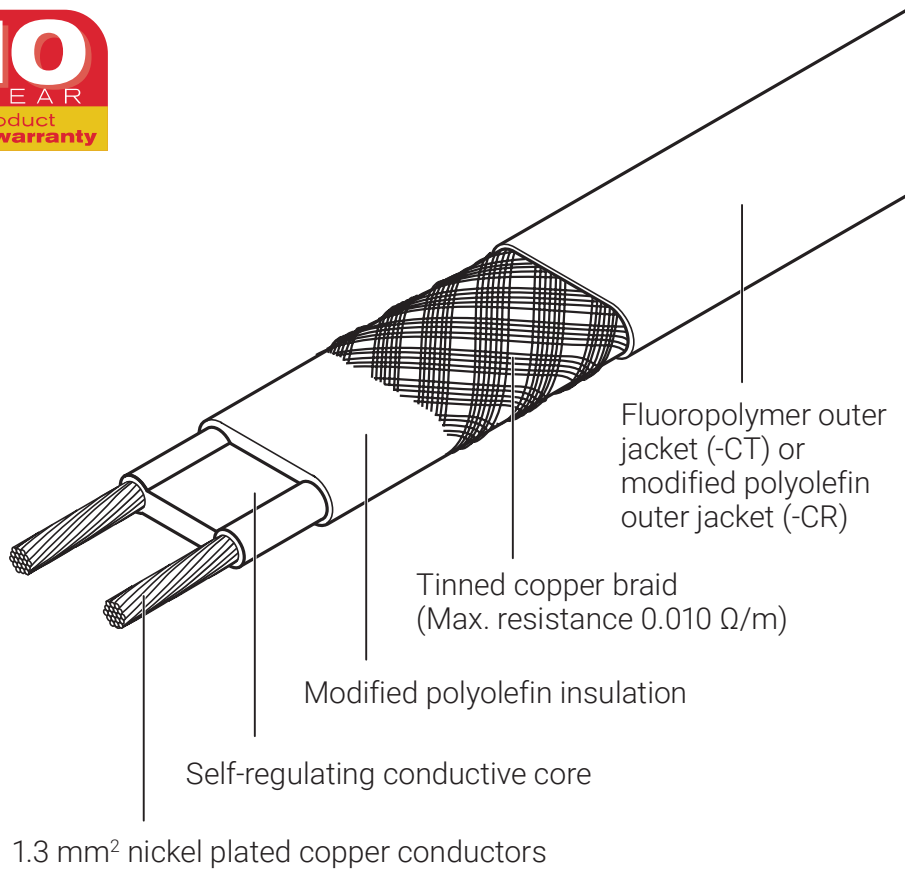
nVent RAYCHEM

CONNECT AND PROTECT

Self-regulating Heating Cable (Ex)

PRODUCT OVERVIEW

10 YEAR Product warranty



Electrical heat-tracing for frost protection without steam cleaning.
The nVent RAYCHEM BTV-family of self-regulating, parallel circuit heating cables is used for frost protection of pipes and vessels. It can also be used for process temperature maintenance up to 65°C.

Application

Traced surface type	Carbon steel Stainless steel Plastic Painted or unpainted metal
Chemical resistance	For organic corrosives: use -CT (fluoropolymer outer jacket) For mild inorganic solutions: use -CR (modified polyolefin outer jacket) For aggressive organics and corrosives consult your local nVent representative

Supply voltage

230 Vac (Contact your local nVent representative for data on other voltages)

PRODUCT SPECIFICATIONS

Product dimensions and weight

	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Width x Thickness (nominal) mm	10.5 x 5.5		13.2 x 5.5	
Weight (g/m)	110		150	

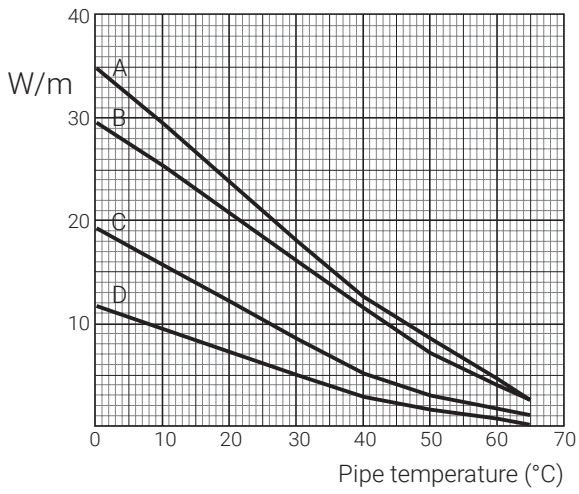
Technical details

Maximum maintain or continuous exposure temperature (power on/off)	65°C
Maximum intermittent exposure temperature (power on/off)	85°C Maximum cumulative exposure 1000 hours
Minimum installation temperature	–60°C
Minimum bend radius	–60°C ≤ T<–20°C: 35 mm –20°C ≤ T<–10°C: 30 mm –10°C ≤ T< 0°C: 25 mm 0°C ≤ T <+10°C: 20 mm T≥ +10°C: 12 mm

Thermal output rating

Nominal power output at 230 Vac on insulated steel pipes

A 10BTV2-CT
10BTV2-CR
B 8BTV-2-CT
8BTV-2-CR
C 5BTV2-CT
5BTV2-CR
D 3BTV2-CT
3BTV2-CR



	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Nominal power output (W/m at 10°C)	9	16	25	29

Maximum circuit length based on type ‘C’ circuit breakers according to EN 60898

Electrical protection sizing	Start-up temperature	Maximum heating cable length per circuit (m)			
16 A	–20°C	155	110	70	45
	+10°C	200	160	110	65
20 A	–20°C	195	140	90	55
	+10°C	200	160	125	85
25 A	–20°C	200	160	110	70
	+10°C	200	160	125	105
32 A	–20°C	200	160	125	90
	+10°C	200	160	125	110

The above numbers are for circuit length estimation only. For more detailed information please use the nVent RAYCHEM TraceCalc software or Contact your local nVent representative. nVent requires the use of a 30 mA residual current device to provide maximum safety and protection from fire. Where design results in higher leakage current, the preferred trip level for adjustable devices is 30 mA above any inherent capacitive leakage characteristic of the heater as specified by the trace heater supplier or alternatively, the next common available trip level for non adjustable devices, with a maximum of 300 mA. All safety aspects need to be proven.

APPROVALS

For use ordinary area and hazardous area Zone 1 and Zone 2 (Gas), Zone 21 and Zone 22 (Dust).

Temperature classification
T6

Product certification

More details about product certification, approvals and conditions of safe use are available in the installation manual for Self-regulating and Power limiting heating cable systems at www.nVent.com/RAYCHEM

ORDERING INFORMATION

Part description	3BTV2-CR	5BTV2-CR	8BTV-2-CR	10BTV2-CR
Part No. (*)	914279-000	414809-000	479821-000	677245-000
Part description	3BTV2-CT	5BTV2-CT	8BTV-2-CT	10BTV2-CT
Part No. (*)	469145-000	487509-000	008633-000	567513-000

Components

nVent offers a full range of components for power connections, splices and end seals. These components must be used to ensure proper functioning of the product and compliance with electrical requirements.

(*) Localized versions may exist with limited approvals and different part numbers. Contact your local sales representative

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

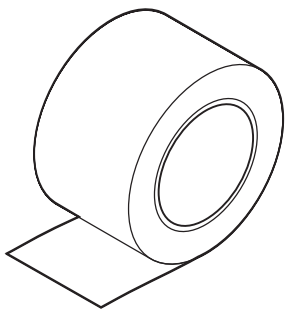
Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com

Our powerful portfolio of brands:
CADDY ERICO HOFFMAN RAYCHEM SCHROFF TRACER

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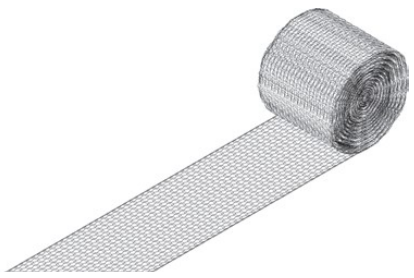
ATE-180

Aluminium tape* for attaching heating cables and thermostat sensors to pipes and tanks. Minimum installation temperature: 0°C. Also suitable for stainless steel pipes.

55 m per roll, 63.5 mm width.

PN: 846243-000 Weight: 0.84 kg

*Power output of selfregulating heating cables might increase when installed with aluminium tape or other heat transfer aids. Please use TraceCalc or contact nVent representative for further details.

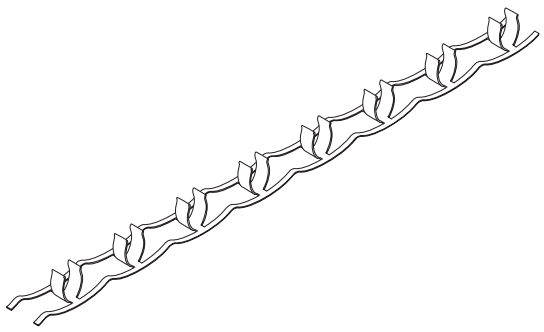


HWA-METAL-MESH-SS-50MM-10M

Stainless steel mesh for fixation of heating cables on valves, pumps or other odd-shaped surfaces. This mesh provides optimum contact and heat transfer between heating cables and heated equipment and can be used for exposure temperatures up to 400°C.

10 m per roll, 50 mm width.

PN: 1244-005772 Weight: 0.36 kg



HWA-PI-FIX- SS-xMM-10M

Stainless steel clip band to attach Polymer Insulated series heating cables to pipes. Clips at regular distances to allow for even heater spacing. Band available in two sizes for different diameter ranges.

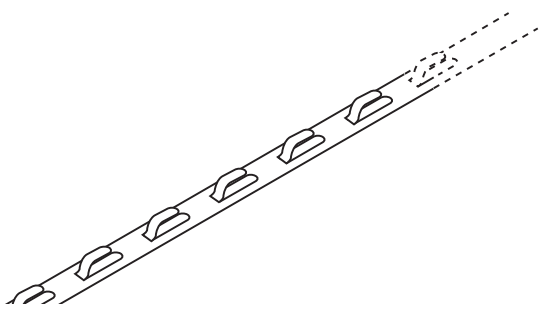
10 m per roll.

For diameters up to 5 mm, HWA-PI-FIX-SS-5MM-10M

PN: 1244-007768 Weight: 0.32 kg

For diameters up to 8 mm, HWA-PI-FIX-SS-8MM-10M

PN: 1244-007769 Weight: 0.52 kg



HARD-SPACER-SS-25MM-25M

Stainless steel spacer for fixing the heating cable on walls, tanks and vessels, etc.

Width spacer: 12.5 mm.

Fixing distance for cables: each 25 mm.

25 m per roll.

PN: 107826-000 Weight: 1.10 kg

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
CB-200F4B	AC UPS F&G - Battery Isolator-B	CONTAINER B-300 (LOWER DECK)	1724000372	3W Power	Cortem Spa		EJBC	Zone 1	EPT 20 ATEX 4075X	1724000372-EL-DG-00011	II 2GDEx db IIC T6 Gb Ex tb IIIC T 85°C Db	-	N/A	True	N/A	False	
EAT-200N1-01	Trace Heating - Remote Ambient Thermostat	LOWER DECK	1724001647	nVent	nVent	1244-022663	ETS-05-A2-E-A	Zone 1	Baseefa 13ATEX0137	1724001647-EL-DD-00004	II 2(1)G Ex eb ia mb [ia Ga] IIC T5 Gb - 40ºC ≤ Ta ≤ +60ºC II 2D Ex tb IIIC T100ºC Db	-	N/A	True	N/A	False	
EHT-1001-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1002-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1003-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1004-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1004-B	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1005-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1006-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1007-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-2002-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EJB-200F2-01	Top Obstruction Lights Junction Box	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990082	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
EJB-200F2-02	Intermediate obstruction lights junction box	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990083	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_4
EJB-200N1-02-L1-01	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990045	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-02	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990044	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-03	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990043	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
EJB-200N1-02-L1-05	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990058	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-06	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990057	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-07	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990059	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-08	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990060	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-09	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990061	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-10	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990047	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-11	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990056	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-12	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990055	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-13	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990054	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-14	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990053	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-15	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990052	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-16	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990051	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-17	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990050	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-18	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990049	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-19	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990048	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-20	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990072	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-01	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990003	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-02	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990004	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-03	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990002	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-04	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990001	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-05	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990012	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-06	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990011	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-07	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990010	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-08	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990009	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-09	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990008	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-10	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990007	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-11	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990006	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-12	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990005	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-13	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990014	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-14	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990013	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-04-L3-01	Stair Normal Lighting JB	LOWER DECK STAIRS	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990032	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-04-L3-02	Stair Normal Lighting JB	LOWER DECK STAIRS	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990033	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-01	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990064	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-03	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990062	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
EJB-200N1-08-L1-04	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990065	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-05	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990077	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-06	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990078	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	

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:	**SGS20ATEX0048X – Issue 3**
4	Product:	**BTV Range of Self-Regulating Trace Heating Systems**
5	Manufacturer:	**nVent Thermal LLC**
6	Address:	**899 Broadway Street, CA, 94063-3104, United States of America**

7 This re-issued certificate extends EU Type Examination Certificate No. **SGS20ATEX0048X** 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.

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 IEC 60079-7:2015+A1:2018 EN 60079-18:2015+A1:2017
EN 60079-30-1:2017 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 60079-30-1 eb IIC T6 Gb or Ex 60079-30-1 eb mb IIC T6 Gb T_{min} -60°C**
Ex 60079-30-1 tb IIIC T80°C Db or Ex 60079-30-1 mb tb IIIC T80°C Db

SGS Fimko Oy Customer Reference No. **865** Project File No. **21/0455**

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SGS Fimko Oy
Takomotie 8
FI-00380 Helsinki, Finland
Telephone +358 (0)9 696 361
e-mail **sgs.fimko@sgs.com**
web site **www.sgs.fi**
Business ID 0978538-5 Member of the SGS Group (SGA SA)

Tuomas Hänninen
SGS Fimko Oy

13 # Schedule

14 ## Certificate Number SGS20ATEX0048X – Issue 3

15 Description of Product

The BTV Range of Self-Regulating Trace Heating Systems is of the parallel circuit self-regulating type, rated at up to 277V, with power output up to 33W/m (10W/ft). The units have a maximum self-limiting temperature of 80°C.

Each trace heating system comprises:
- the active heating cable.
- an end seal for terminating the remote end of the unit.
- a cable gland for connecting the powered end of the unit to a suitable terminal enclosure, or alternative integrated power connection systems.

The active heating cable comprises two stranded copper conductors around which is extruded a semi-conductive core material. This core material increases in resistance with increasing temperature and gives the cable its self-limiting property. This semi conductive core with embedded conductors forms the active part of the heating cable. An extruded layer of fluoropolymer serves to insulate the semi conductive core from the conductive covering, covering the active heater. A protective anti-corrosion fluoropolymer sheath may be extruded over the conductive covering.

The declared maximum withstand temperature for the range is 85°C and the minimum installation temperature is -60°C.

CABLE ACCESSORIES

END SEALS

The end seals for terminating the remote end of the unit may be the following types:

Types E-100-L or E-100, which are mechanical end seals incorporating an end cap which is filled with silicone grease sealant covered by certificates Sira14ATEX3015X and PTB09ATEX1060U.

Types E-100-L-A or E-100-A, which are mechanical end seals incorporating an end cap which is filled with silicone grease sealant.

A Raychem Type E-20 heat shrink end seal kit.

Type E-150 mechanical end seals, covered by certificate DEKRA20ATEX0011U.

SPLICES AND JOINTS

The following splicing and jointing arrangements are provided:

A Raychem Type S-20 heat shrink splice kit for connecting lengths of active heating cable.

A Raychem T-100 tee connection system, certificate PTB20ATEX1008U, for connecting up to three heater cables.

Type S-150 mechanical splice kit, covered by certificate DEKRA20ATEX0011U.

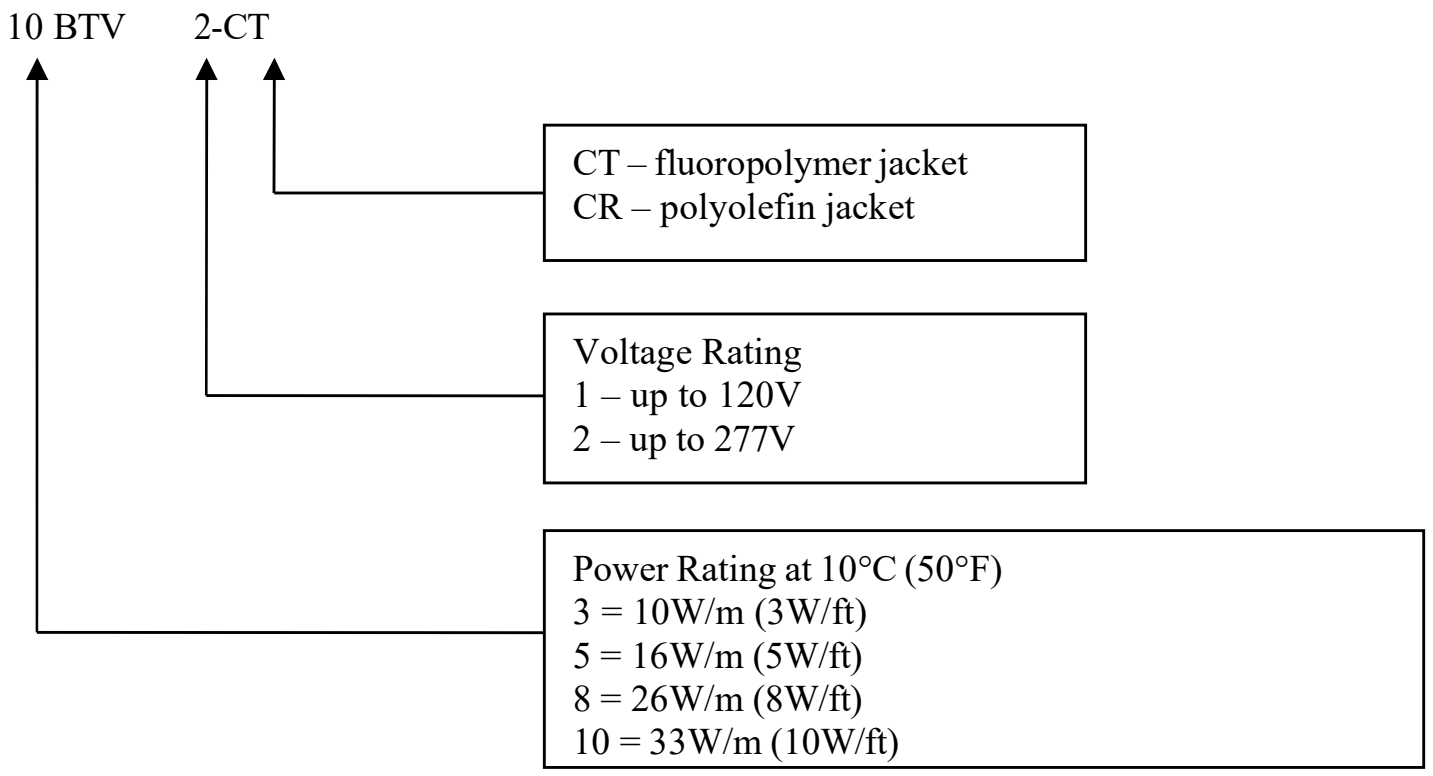
POWER CONNECTIONS

Power connection may be achieved by the following means:

Connection Type	ATEX Certificate
JBM-100	PTB20ATEX1008U
JBS-100	PTB20ATEX1008U
JBU-100	PTB20ATEX1008U
C-150-E	DEKRA20ATEX0011U
C25-21 Connection Kit	Baseefa16ATEX0037U
C25-100 Connection Kit	Baseefa16ATEX0038U
C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS Kits	Baseefa16ATEX0039U

The C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS Kits include M25 or ¾ NPT gland to Sira01ATEX1270X and core sealer to Baseefa15ATEX0194U.

A number of power levels and voltages, up to the maximum specified, are included in the range. They are identified in the following manner:



Any of the products in the range may be considered as part of a stabilised design system. In such a system the design is based upon the use of nVent proprietary software Trace calc Pro. The algorithm defined in this software may be used in additional design software.

The minimum bending radii for BTV trace heating cable at specific temperatures are shown in the table below:

Temperature, T (°C)	**Minimum Bending Radius (mm)**
$-60 \leq T < -20$	35
$-20 \leq T < -10$	30
$-10 \leq T < 0$	25
$0 \leq T < +10$	20
$T \geq +10$	12

16 Report Number

See Certificate History.

17 Specific Conditions of Use

1. The following limiting temperatures for the heat shrink end seals and splices shall not be exceeded:

   +110°C for the S-20 and E-20
   +150°C for the C-150-E, S-150 and E-150

2. The end seals, splices and power connections have the following associated ambient temperatures:

   -60°C to +56°C for the E-20 and S-20
   -55°C to +56°C for the T-100, JBM-100, JBS-100, JBU-100, and E-100
   -40°C to +56°C for the JBS-100-L, JBM-100-L, and JBU-100-L
   -55°C to +55°C for the C-150-E, S-150 and E-150
   -40°C to +40°C for the E-100-L
   -55°C to +110°C for the C25-21 and C25-100
   -60°C to +180°C for the C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS

3. The assembly of glands, splices and end terminations shall be carried out in accordance with the manufacturing instructions

4. The heating element supply circuit must include an electrical protection device in conformity with Clause 4.4 of EN 60079-30-1.

5. The minimum installation temperature is -60°C. The minimum bending radii at specific temperatures for the Type BTV units are shown in the table in the equipment description.

6. The supply to the heating unit must be terminated in a suitably certified terminal enclosure.

7. The minimum installation temperature for E-20 and S-20, end seal and splice is -20°C.

8. The installer is to carry out a dielectric strength test on Ex equipment in which the C25-21, C25-100 and C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS connection kit is fitted. No dielectric breakdown shall occur. (Alternatively, an insulation resistance test may be undertaken in accordance with EN 60079-30-2).

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
205308-A[i]	1 of 1	Q	05/27/2021	BTV-8BTV-CR & BTV-10BTV-CR
205310-A[i]	1 of 1	R	05/27/2021	BTV-8BTV-CT & BTV-10BTV-CT

Current drawings which remain unaffected by this issue:

Number	Sheet	Issue	Date	Description
906567[ii]	1 of 1	P	05/21/21	C25-21, C25-100 and C25-100-METAL-XX, C3/4-100-METAL-XX Connection Kits
906579-A[i]	1 of 1	N	01/15/2021	BTV Heater Units (European System)
205350-A[i]	1 of 1	P	03/31/20	BTV-3BTV-CT & BTV-5BTV-CT
205349-A[i]	1 of 1	J	03/26/20	BTV-3BTV-CR & BTV-5BTV-CR
906794-A[iii]	1 of 1	AA	03/30/20	Generic ATEX and IECEx Print Dwg for BTV-CT, QTVR-CT, XTV-CT, KTV-CT Heating Cables
9242869[iv]	1 & 2	O	12/09/19	LABL JBM-100-L-E
9532687[iv]	1 & 2	Q	12/09/19	LABL JBM-100-L-EP
9621473[iv]	1 & 2	O	12/09/19	LABL JBS-100-L-E
9777523[iv]	1 & 2	P	12/09/19	LABL JBS-100-L-EP
9319676[iv]	1 & 2	O	12/09/19	LABL JBU-100-L-E
9735898[iv]	1 & 2	O	12/09/19	LABL JBU-100-L-EP
908742-A[v]	1 of 1	A	2/19/20	E-20 Heat Shrinkable End Seal Kit Cut Back Dimensions
908743-A[vi]	1 of 1	A	2/19/20	S-20 Heat Shrinkable Splice Joint Kit Cut Back Dimensions

i) These drawings are common to IECEx BAS 20.0011X, SGS20ATEX0048X and are held with IECEx BAS 20.0011X.

ii) This drawing is common to IECEx BAS 16.0040U, IECEx BAS 16.0041U, IECEx 16.0042U, IECEx BAS 20.0008X, IECEx BAS 20.0009X, IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, Baseefa16ATEX0037U, Baseefa16ATEX0038U, Baseefa16ATEX0039U, SGS20ATEX0045X, SGS20ATEX0046X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and is held with IECEx BAS 16.0040U.

iii) These drawings are common to IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and are held with IECEx BAS 20.0011X.

iv) These drawings are common to IECEx BAS 20.0008X, IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, SGS20ATEX0045X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and are held with IECEx BAS 20.0008X.

v) These drawings are common to IECEx BAS 20.0010X, IECEx BAS 20.0011X, IECEx BAS 20.0013X, SGS20ATEX0047X, SGS20ATEX0048X, SGS20ATEX0050X and are held with IECEx BAS 20.0010X.

vi) These drawings are common to IECEx BAS 20.0011X, IECEx BAS 20.0013X, SGS20ATEX0048X, SGS20ATEX0050X and are held with IECEx BAS 20.0011X.

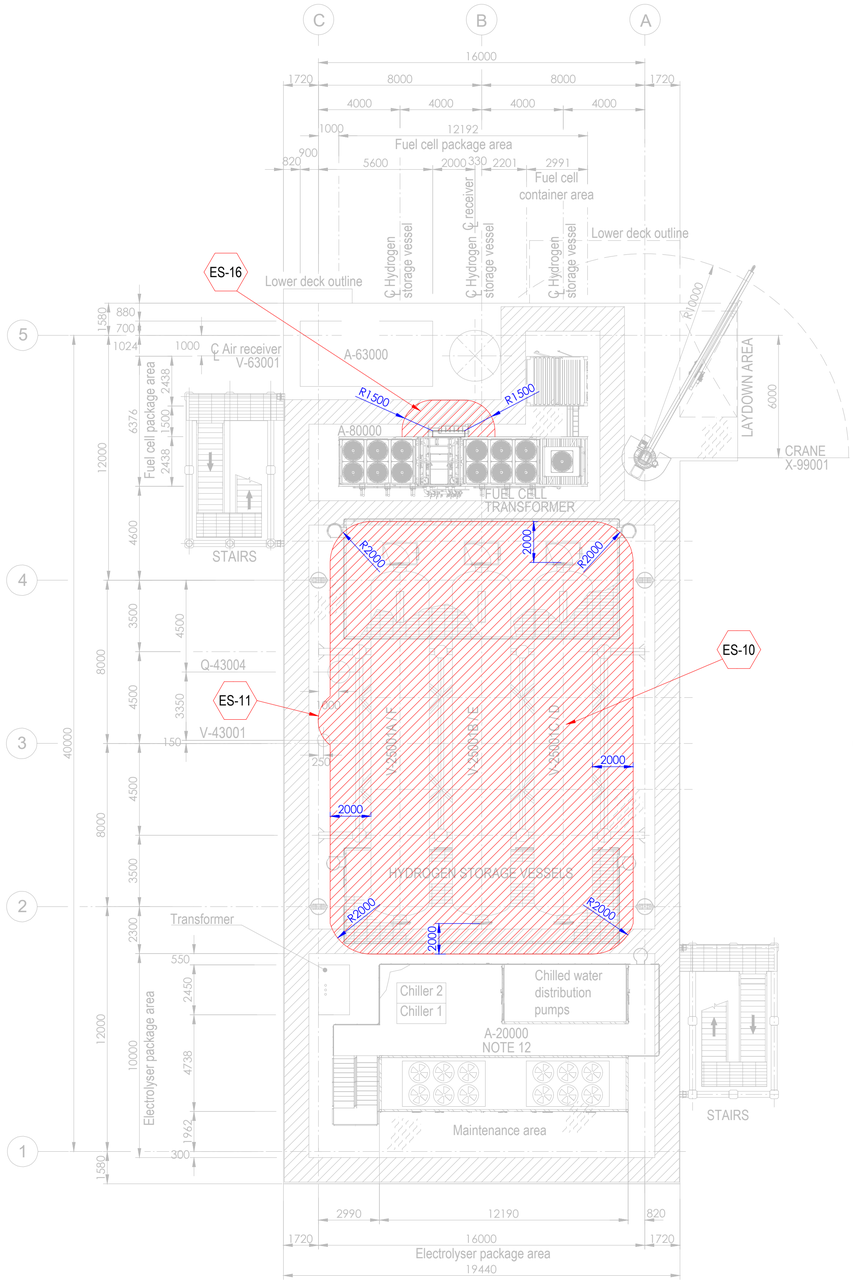
20 Certificate History

Certificate No.	Date	Comments
SGS20ATEX0048X	23 October 2020	The release of the prime certificate. The associated test and assessment against the requirements of EN 60079-0:2012+A11:2013, EN IEC 60079-7:2015+A1:2018, EN 60079-18:2015+A1:2017, EN 60079-30-1:2017 and EN 60079-31:2014 is documented in Test Report No. GB/BAS/ExTR20.0030/00.

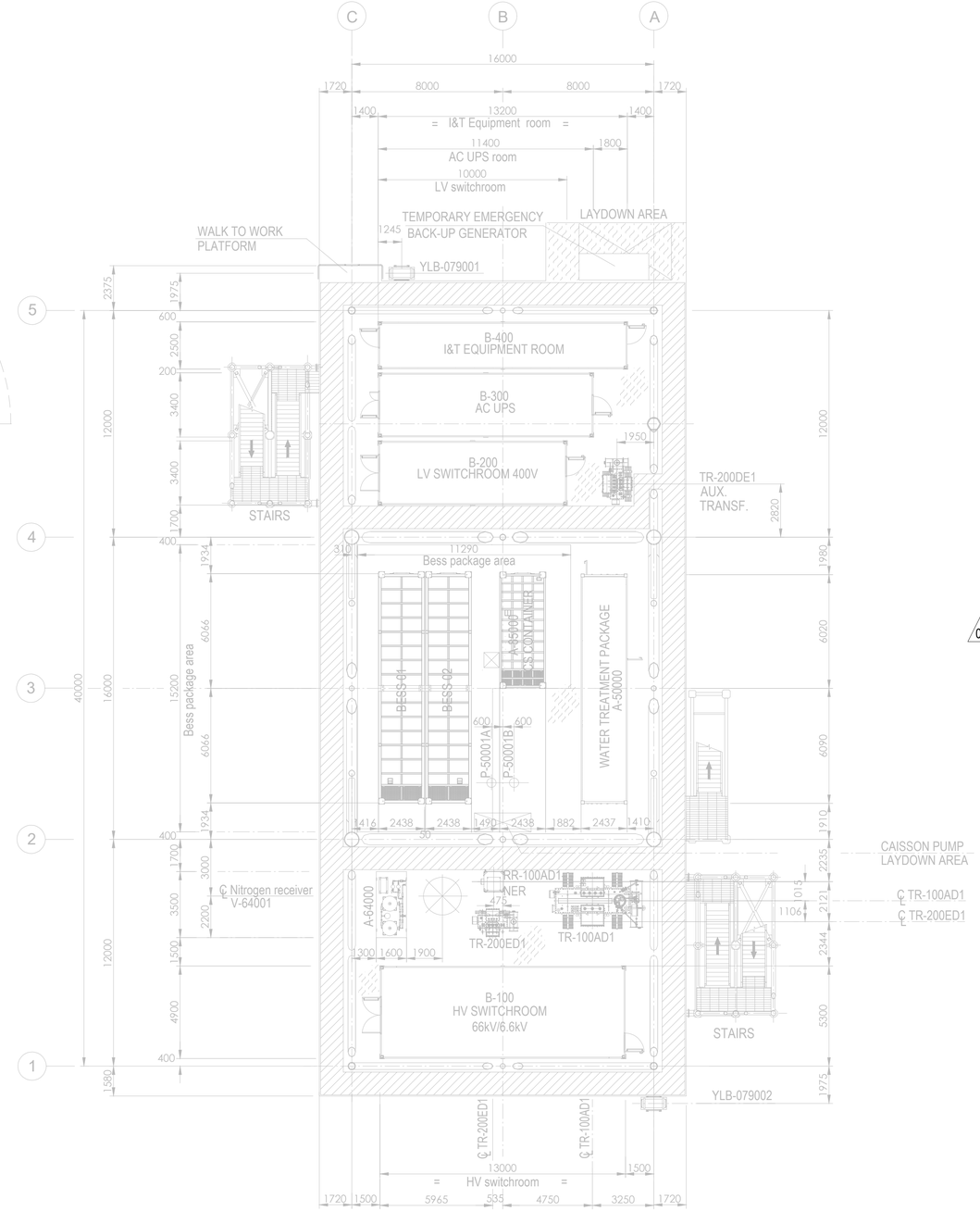
Certificate No.	Date	Comments
SGS20ATEX0048X Issue 1	11 February 2021	To assess the BTV range of self-regulating trace heating systems against EN IEC 60079-0:2018, introduce the low profile power connection, splice and end seal kits, types C-150-E, S-150 and E-150 afforded DEKRA20ATEX0011U, minor amendments to the product description, to change the product name to "BTV Range of Self-Regulating Trace Heating Systems" and to amend the Specific Conditions of Use. The associated test and assessment is documented in Test Report No. GB/BAS/ExTR21.0005/00.
SGS20ATEX0048X Issue 2	7 July 2021	Minor drawing updates not affecting certification. Baseefa Certification Report GB/BAS/ExTR21.0060/00 refers.
SGS20ATEX0048X Issue 3	3 September 2021	Minor change to the BTV-8BTV-CR, BTV-8BTV-CT, BTV-10BTV-CR and BTV-10BTV-CT heating cable dimensions. Baseefa Certification Report GB/BAS/ExTR21.0104/00 refers.
For drawings applicable to each issue, see original of that issue.		

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

REV. 02



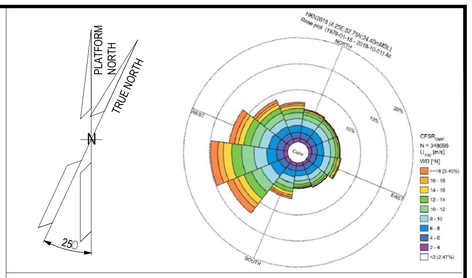
PLAN ON UPPER DECK
EL+30.310 T.O.S.



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

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

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



NOTES

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

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

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

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

CROSSWIND

ROSETTI MARINO

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

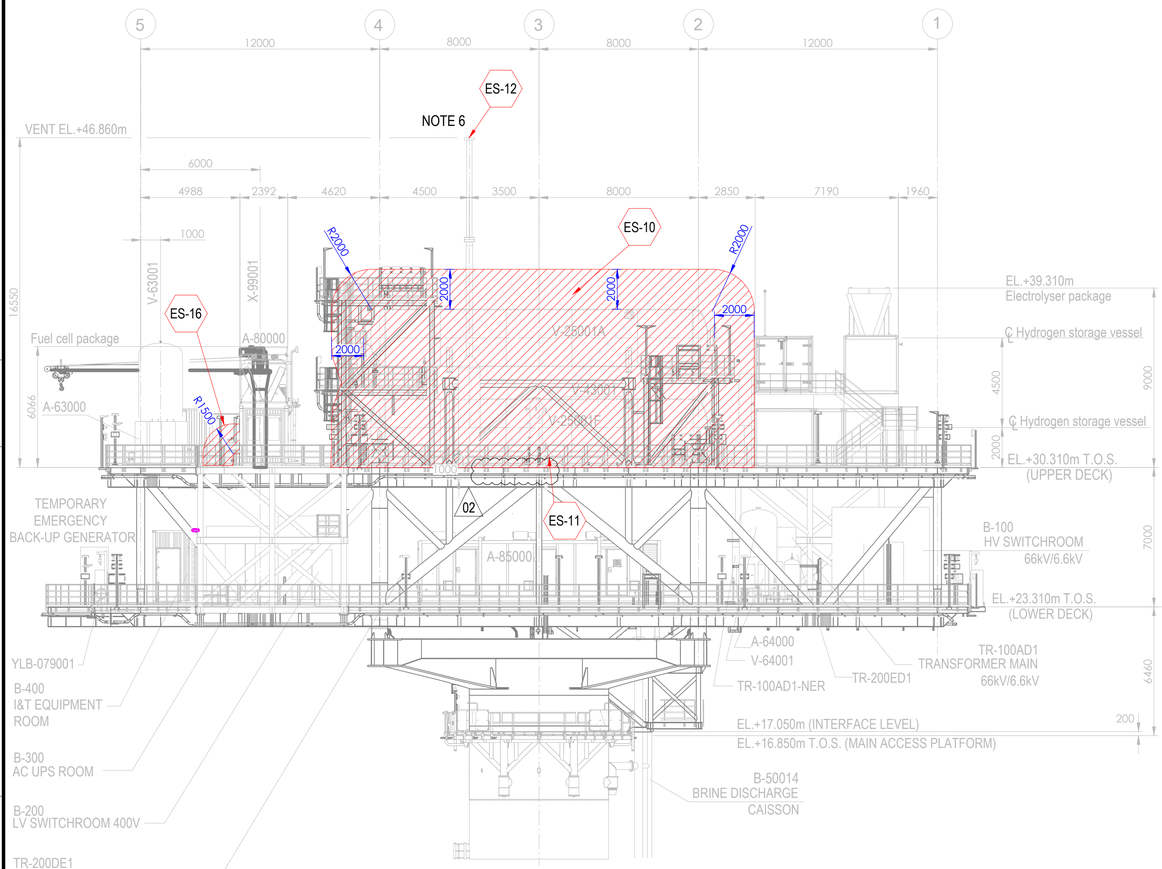
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

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

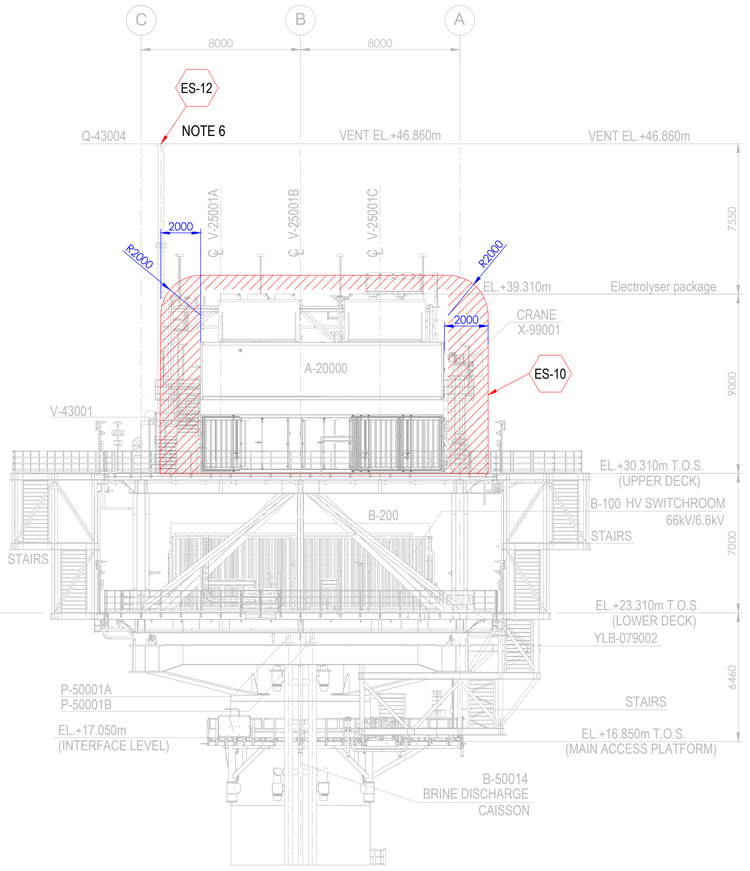
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

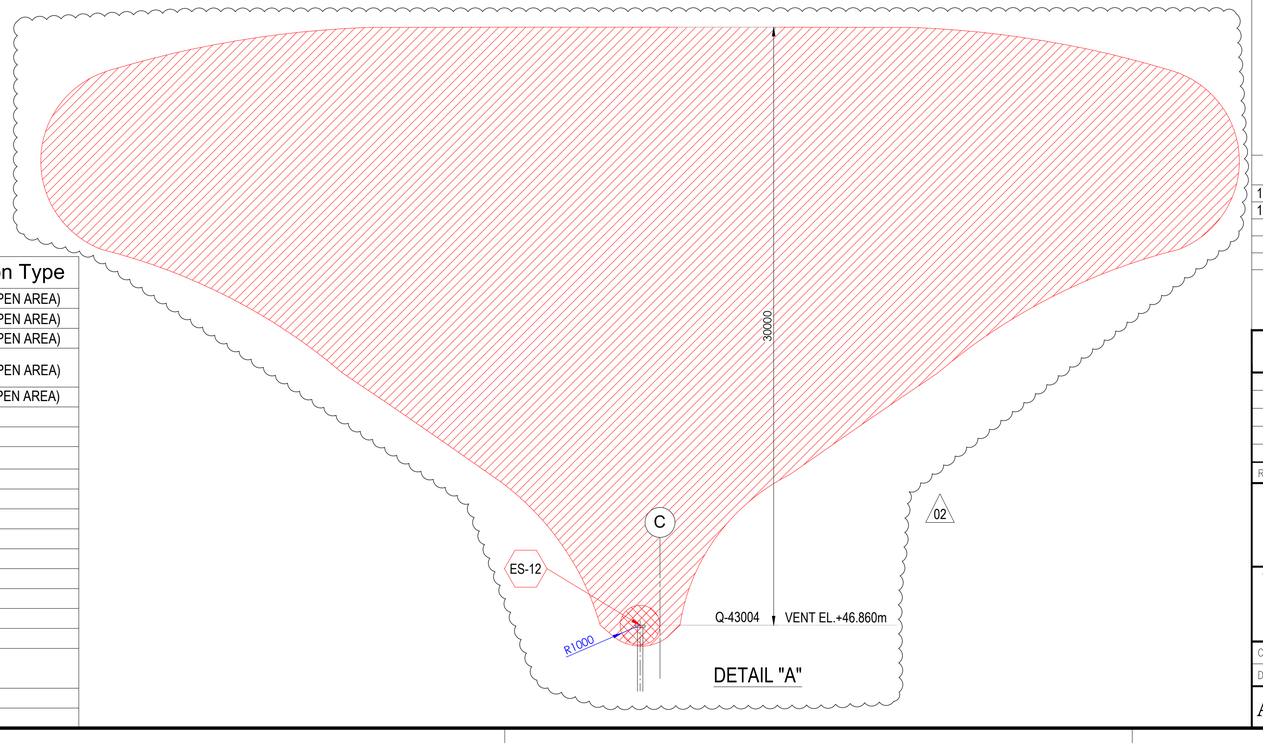


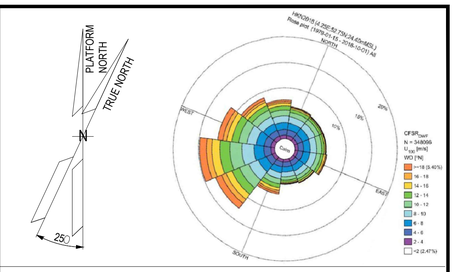
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

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





NOTES

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

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

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

CROSSWIND

ROSETTI MARINO

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

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

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

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

ITEM	Tag	EHT-1007-A	: Heat Tracing Tape		Dwg	1724001647-EL-LIS-00003	
	S/Sys	83-65	: Electrical Heat Tracing		Module	LD	
TASK	code	C10004639	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Electrical	Form	CPX22A	Tape Trace Heating Before Insulation

1	Check that the circuit is de-energized and safe.	OK
2	Check all tapes and junction boxes are undamaged.	OK
3	Check all tapes and junction boxes are installed according to drawings.	Note
4	Check all tapes characteristics against project data (type, rated power).	OK
5	Check rating of circuit breaker against drawings.	OK
6	Check tapes, junction boxes, cables and accessories tagging.	OK
7	After test re-connecting cable as per typical installation.	OK
8	If required produce Red Line Mark Up for "AS BUILT"	

CIRCUIT DATA

List Associated Heat tracing Isometric	1724001647-EL-DD-00004
Tape Type	3BTV2-CT
Circuit Installed Length	19,5m
Wiring Diagram	WD_1724001647-EL-DG-00006/Single line Diagram (1724001647-EL-DG-00005)

Testing & measurement instruments used

Type	Serial n°	Calibration certificate	Validity
MEGGER : KEW3125A	SERIAL: W8330207	N°7722/24	09/07/2025
VOLCRAFT 1000V	ET-200 S/N:H240103023	N°LAT 042 00768/24	11/10/2025

FIRST TEST

Continuity and insulation resistance tests to earth for each conductor core are carried out after the tape is installed on pipework **before any insulation and cladding is fitted.**

Test voltage (V):	2500	Tape Lengh	19m	Thermostats :	N/A
Continuity	58,4	Insulation Resistance	>1999 M	Result	OK

AFTER THIS TEST IS DONE, LINE CAN BE RELEASED TO INSULATION TEAM

Comments: Note 03: Cable installation and connection will be completed during OFFSHORE phase. (See Ref. task C10004934)

Page 1/1	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-03-06	2025-03-07	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-03-06T15:29:49.571Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-03-07T12:26:04.218Z	

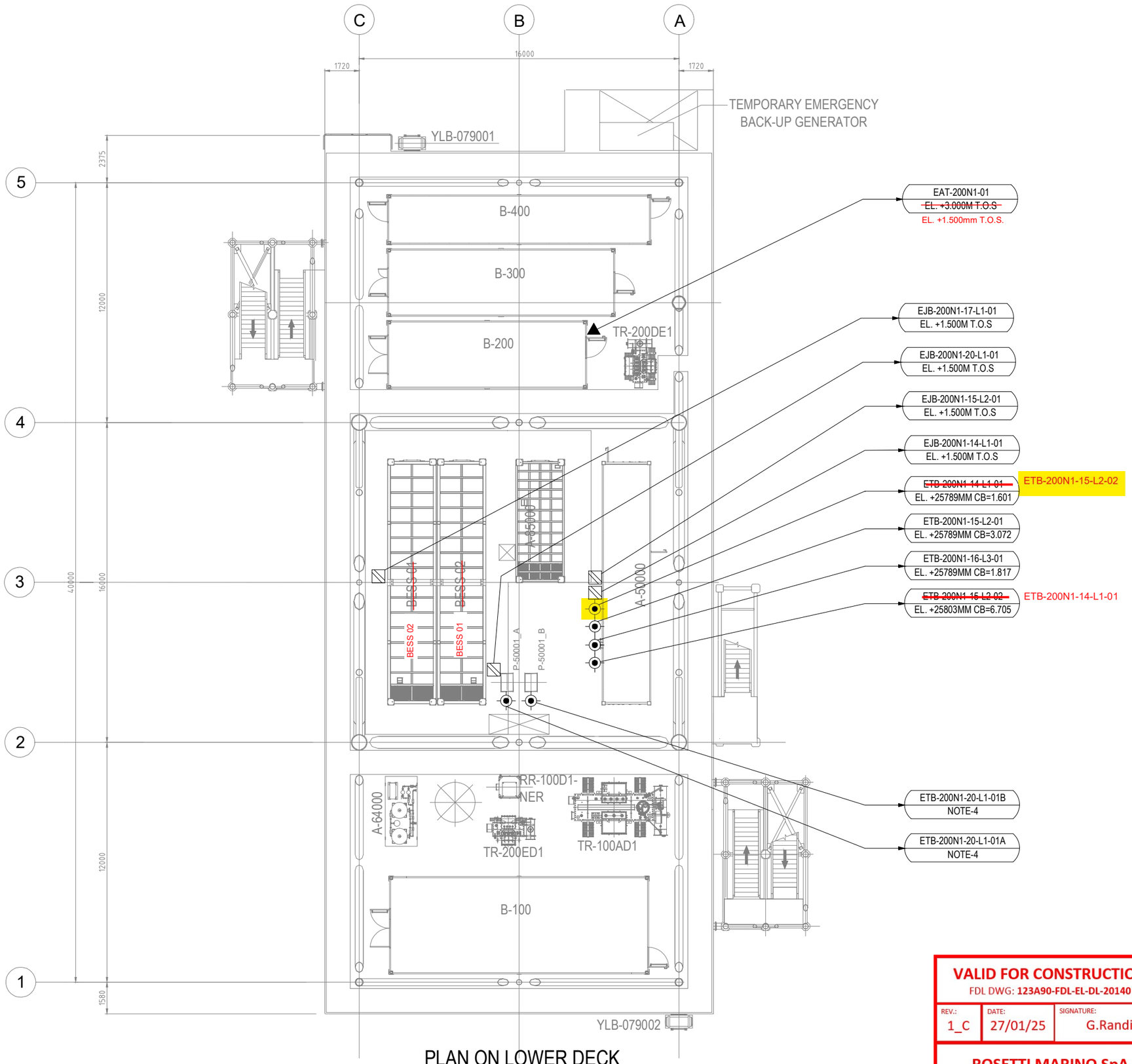
EHT CALCULATION LIST

PIT240024_ED01-1001

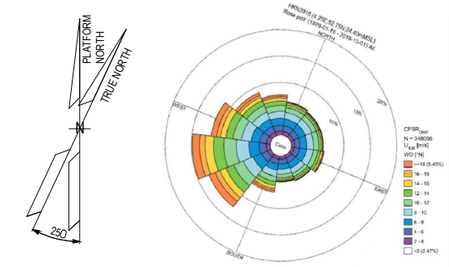
		ENGINEERING DATA				MECHANICAL & INSULATION DATA							PROCESS DATA				EHT BASIC DESIGN								EHT DETAILED DESIGN						EHT TEMP. CONTROL DATA							
Main EHT Box Number	Item Number	Heater Number	Line, Equipment or Instrument ID	nVent Circuit Number	Plant Area	Pipe Size [DN / IN]	Pipe Length [m]	Support Quantity [pc]	Valve Quantity [pc]	Other Heat Sink Quantity [pc]	Insulation Type	Insulation Thickness [mm]	Maintain Temperature [°C]	Maximum Allow. Process Temperature [°C]	Maximum Operating Temperature [°C]	Maximum Exposure Temperature [°C]	Heatloss [W/m]	Heating Cable Selection	Trace Ratio	Heating Cable Output [W/m]	EHT Cable per Support [m]	EHT Cable per Valve [m]	EHT Cable per Other Heatsink [m]	Total EHT Cable [m]	Max. Allow. EHT Circuit Length [m]	Connection Type	Voltage [V]	Operating Current [A]	Total Operating Load [W]	Start-Up Current [A]	Temp. Control Method	Controller Set Point [°C]	Minimum Controlled Temperature [°C]	Maximum Controlled Temperature [°C]	Maximum Uncontrolled Temperature [°C]	Revision	Remark
																		GRAND TOTAL						**181.4**				**9.69**	**2226**	**14.91**							
ETB-200N1-16-L3-01	1	EHT-1001-A	1"-DM-001-01SS-E	1001	PIPING	1	17.6	5	1	2	RW/MF 1:2015	20	5	100	22	22	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	22.0	199	Single L-N	230	1.18	271	1.8	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**22.0**			**230**	**1.18**	**271**	**1.8**							
ETB-200N1-15-L2-01	1	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	11.0	4		1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	13.9	199	Single L-N	230	0.73	167	1.1	Ambient sensing, standard	5	18	29	50	00	
	2	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	3	EHT-1002-A	1"-CI-032-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	4	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	5	EHT-1002-A	1"-CI-030-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	6	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.75	0.5		1		RW/MF 1:2015	20	5	50	25	25	3.4	3BTV2-CT	2.0	10.7		1.5		2.6	199	Single L-N	230	0.15	34	0.2	Ambient sensing, standard	5	30	38	55	00	
	7	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.5	0.5		1		RW/MF 1:2015	20	5	50	25	25	2.9	3BTV2-CT	2.0	10.7		1.4		2.5	199	Single L-N	230	0.14	32	0.2	Ambient sensing, standard	5	32	40	56	00	
																		TOTAL						**36.4**			**230**	**2.00**	**459**	**3.1**							
ETB-200N1-14-L1-01	1	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	4	0.5				RW/MF 1:2015	20	5	100	25	25	10.2	3BTV2-CT	1.0	10.7				0.6	199	Single L-N	230	0.03	7	0.1	Ambient sensing, standard	5	5	20	46	00	
	2	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	4.7	1		1	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1		0.5	9.3	199	Single L-N	230	0.47	107	0.7	Ambient sensing, standard	5	14	27	49	00	
	3	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	4	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	7.8	3			RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1			8.6	199	Single L-N	230	0.48	111	0.7	Ambient sensing, standard	5	14	27	49	00	
	5	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	6	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.8	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	7	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	1.4	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	4.2	199	Single L-N	230	0.23	54	0.4	Ambient sensing, standard	5	24	34	53	00	
	8	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	9	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	10	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.7	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	11	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	1.2	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	3.7	199	Single L-N	230	0.20	47	0.3	Ambient sensing, standard	5	24	34	53	00	
	12	EHT-1003-A	1"-SWS-147-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	13	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	14	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	15	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1	0.1				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	28	37	54	00	
	16	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
	17	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	18	EHT-1003-A	1"-SWS-146-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	19	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	20	EHT-1003-A	1"-SWS-290-01SD-E	1003	PIPING	1	1.1	1	2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7	0.3	1.6		5.8	199	Single L-N	230	0.33	76	0.5	Ambient sensing, standard	5	28	37	54	00	
	21	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**78.6**			**230**	**4.37**	**1002**	**6.7**							
ETB-200N1-17-L1-04	1	EHT-1004-A	1"-WW-259-01CS-E / V-43001	1004	PIPING	1	0.9		1	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7		0.8	0.5	3.2	199	Single L-N	230	0.12	28	0.2	Ambient sensing, standard	5	18	29	50	00	Combined with EHT-1004-B
																		TOTAL						**3.2**			**230**	**0.12**	**28**	**0.2**							
ETB-200N1-17-L1-02	1	EHT-1005-A	1"-WW-260-01CS-E	1005	PIPING	1	1.2	1	2	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	4.6	199	Single L-N	230	0.20	46	0.3	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1006-A
																		TOTAL						**4.6**			**230**	**0.20**	**46**	**0.3**							
ETB-200N1-17-L1-03	1	EHT-1006-A	1"-WW-202-01CS-H	1006	PIPING	1	1.0			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	1.0	10.7			0.5	2.5	199	Single L-N	230	0.08	19	0.1	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1005-A
																		TOTAL						**2.5**			**230**	**0.08**	**19**	**0.1**							
ETB-200N1-15-L2-02	1	EHT-1007-A	1"-CI-043-01CP-E	1007	PIPING	1	15.0	6		4	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	19.5	199	Single L-N	230	1.04	239	1.6	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**19.5**			**230**	**1.04**	**239**	**1.6**							
ETB-200N1-17-L1-05	1	EHT-1004-B	43-LT-001	2001	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	Combined with EHT-1004-A
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							
ETB-200N1-17-L1-01	1	EHT-2002-A	43-LT-003	2002	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

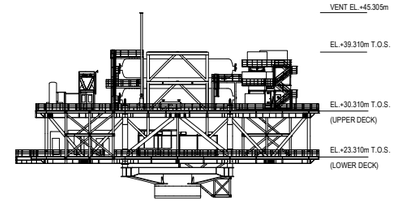
LEGEND

- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-EL-DL-20140
REV.: 1_C | DATE: 27/01/25 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 1of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

CAD FILENAME: PIT240024_DD01_1007_001_02.dwg

HEAT TRACING DATA

HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	PIPE LENGTH (m)	HEATER LENGTH (m)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W/m)	POWER OUTPUT (W/m)	SHEATH TEMP. (°C)
EHT-1007-A	PIPING	3BTV2-CT	15.0	19.5	1.6	239	230	3.9	10.7	85
		TOTALS	15.0	19.5	1.6	239				

HEATER ADDER TABLE

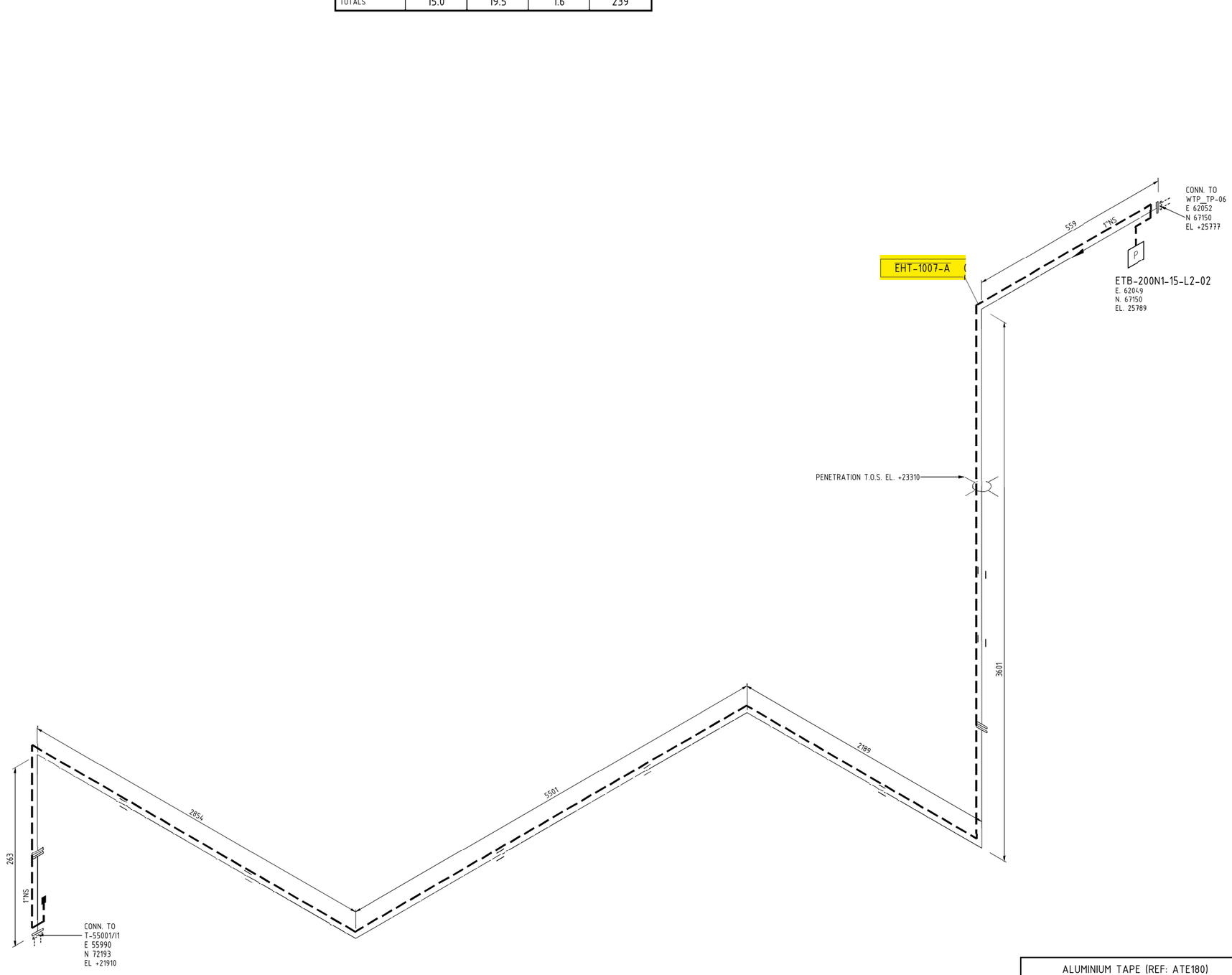
PIPE SIZE (Ins)	TYPE	QTY	ALLOWANCE PER ITEM (m)	TOTAL ALLOWANCE (m)
1	Typical Pipe Support	7	0.15	1.05
1	Typical Flange (fixed adder)	4	0.46	1.84

DESIGN PARAMETERS

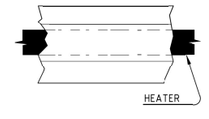
CIRCUIT NUMBER	1007	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	25°C	INSULATION TYPE	RW/MF 1.2015
MAX. EXPOSURE TEMP.	25°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	50°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

COMPONENT BILL OF MATERIALS

CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	19.5	m	Raychem Self-Regulating Heating Cable
JBS-100-E	1	each	Single entry power connection, EP, ATEX
PSE-090	1	each	Pipe Strap for 1.1/4" to 3" (40-90mm)
GS-54	0.8	each	Glass Tape (16m/roll), suited for SS pipes
LAB-I-01	6	each	Warning Label - English
E-20	1	each	Heat shrink end seal, ATEX (BTV, QTVR)
JBS-SPA	0.2	bag	Small Pipe Adapter for E-100, JBS-100, and JS-100



ALUMINIUM TAPE (REF: ATE180)



SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

LINE NUMBERS	REFERENCE DRAWINGS / DOCUMENTS
1"-CI-043-01CP-E	123A90-DDL-PP-DI-71000_028

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.
4. HEATING CABLE ALLOWANCES PROVIDED IN THE 'EHT ADDER TABLE' FOR FLANGES AND VALVES ARE IN ADDITION TO THEIR LINEAR LENGTHS.

CROSSWIND

ROSETTI MARINO

nVent RAYCHEM TRACER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
02	20/01/2025	ISSUED FOR REVIEW	ADU	AMI	GPI
01	25/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.

DOC CODE

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING ISOMETRIC

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-EL-DD-00004	9/10	02

DRAWING NO. DRAWING_NO.

REV. REV

A-50000
WATER TREATMENT PACKAGE
CAPACITY : 2.5 m³/hr

GAS CONFIRMED 50 XA 001 — F&G
SMOKE CONFIRMED 50 XA 002 — F&G
FAULT PACKAGE 50 XA 003 — ESD
50-XS-001 SHUT-DOWN — ESD
NOTE 6

CONTRACTOR | SUPPLIER

FOR CONTINUATION SEE DOC N. 123A90-DDL-PR-PID-80023

123A90-DDL-PR-PID-80025
TO 50-TDI-002
50 TI 001
BLOCKED OUTLET SET @ 6 barg
50 PSV 011 1D2
2"-SWR-291-01SD-N
BLPH-MV-471 SD LO
03
NOTE 7
1"-SWS-290-01SD-E
50 TT 001
50 TE 001
03
1.1/2"
TP 017 50
E
4"x1.1/2"
4"x1.1/2"
ECC. RED.
ECC. RED.
123A90-DDL-PR-PID-80021
FROM SEA WATER LIFT PUMP
1-1/2"-SWS-035-01SD-E
BLPH-MV-241 3/4"

A-50000
WATER TREATMENT PACKAGE
SEE VENDOR DRAWING
DOC. N. 1724000448-PR-PID-00013

FOR CONTINUATION SEE DOC N. 123A90-DDL-PR-PID-80023

E
TP 005 50
03
123A90-DDL-PR-PID-80021
TO SEA WATER LIFT PUMP AND LIFT PUMP CAISSONS
1"-CI-029-01CP-E

1"-CI-043-01CP-E
123A90-DDL-PR-PID-80026
TO WASTE WATER TANK
TP 006 50
03
DECK
HOOK-UP 003

SUPPLIER | CONTRACTOR

TP 003 50
03
1"-SWR-045-01CS-H
1.1/2"x1"
3"x1.1/2"
123A90-DDL-PR-PID-80025
TO BRINE DISCHARGE CAISSON

TP 007 50
03
1"-WW-038-01CS-H
1.1/2"x1"
123A90-DDL-PR-PID-80026
TO WASTE WATER TANK

NOTES

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.
6. SERIAL COMMUNICATION WITH CONTROL SYSTEM.
7. ROUTED TO THE SEA 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.
6. DELETED.

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

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 2

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80022		SHEET 001	REV. 03

File Name : FILE_NAME

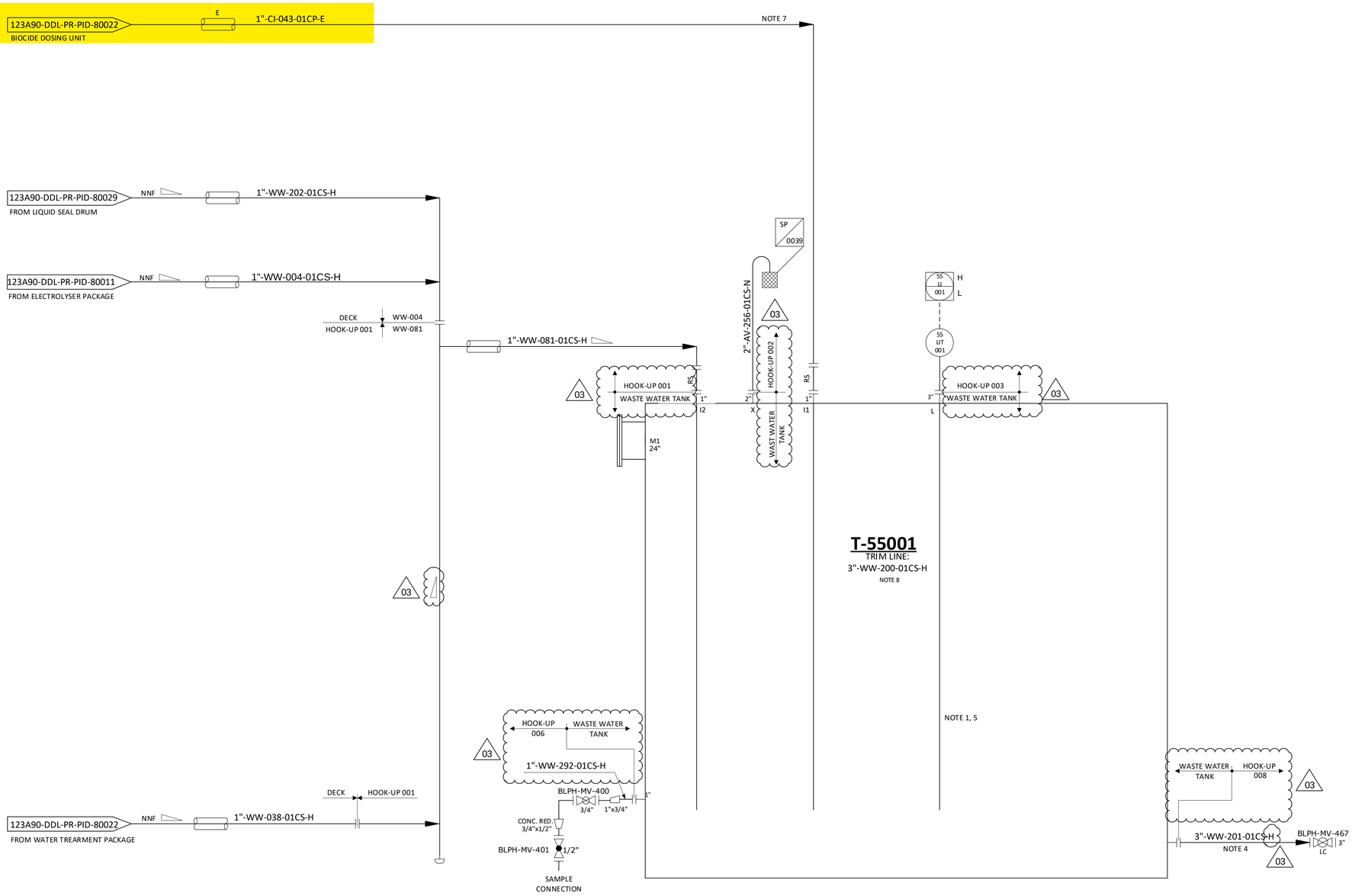
DRAWING NO. DRAWING_NO.

REV. REV

T-55001

WASTE WATER TANK

CAPACITY : 16 m³
DESIGN P/T : 0.005 barg / 80°C
MATERIAL : CARBON STEEL



NOTES

1. DELETED. 03
2. DELETED.
3. DELETED.
4. DRAIN LINE TO SHIP DISPOSAL.
5. PERFORATED STILLING TUBE.
6. DELETED.
7. FOR PERIODIC DOSING OF THE WASTE WATER TANK.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR WASTE WATER TANK - T-55001, DOC. N. "123A90-DDL-MAC-DS-50008"

HOLDS

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

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

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
WATER DISPOSAL SHEET 2

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE

A1	DRAWING NO.	SHEET	REV.
	123A90-DDL-PR-PID-80026	001	03

File Name : FILE_NAME

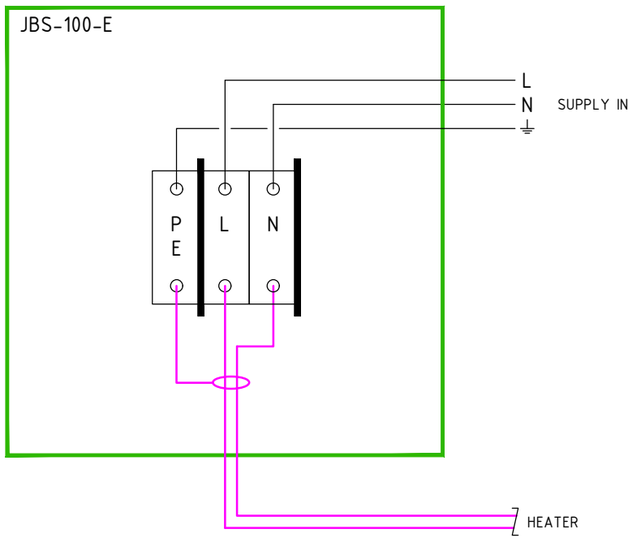
CAD FILENAME: 1724001647-EL-DG-00005 Rev.01.dwg

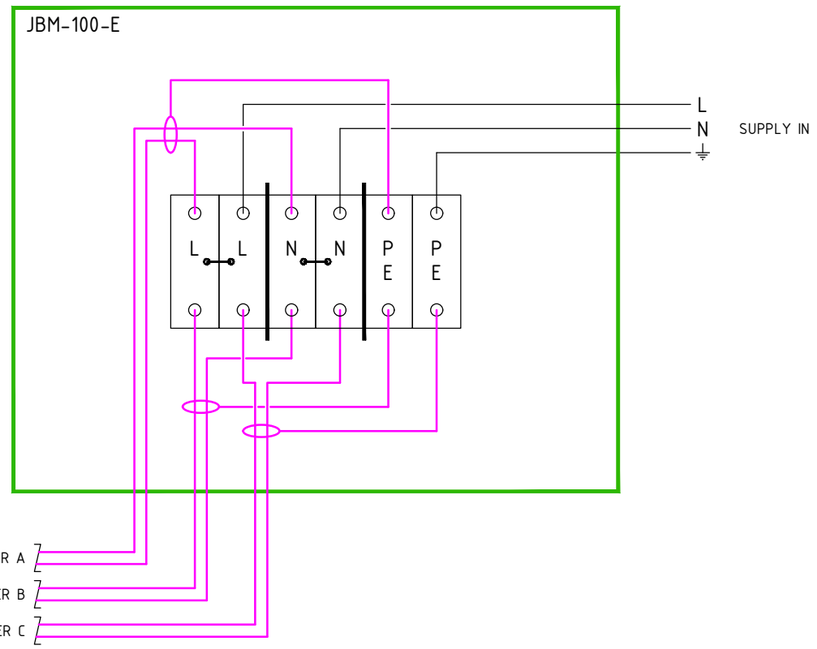
GENERAL INFORMATION:

1. JBS-100-E IS DESIGNED TO CONNECT POWER TO ONE BTV, QTVR, XTV, KTV, HTV OR VPL EHT CABLE.
2. THIS KIT INTEGRATES THE FUNCTIONS OF BOTH CONNECTION KITS AND INSULATION ENTRIES.
3. THE STAND CONNECTED TO THE BOTTOM OF THE BOX PROTECTS THE HEATING CABLE AND ALLOWS FOR UP TO 100mm (4") THERMAL INSULATION.

TECHNICAL BRIEF:

- 2 x M25 THREADED ENTRIES
- 1 x M25 STOPPING PLUGS
- 1 x M25 POWER CABLE GLAND





REV.	DATE	DESCRIPTION	BY	CHK	APP
--	--	--	--	--	--
--	--	--	--	--	--
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	08/03/2024	ISSUED FOR INFORMATION	LJB	E-C	ZS

nVent RAYCHEM TRACER

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nVent.com

TITLE
TYPICAL CONNECTION OF A JBS-100-EP
SINGLE ENTRY JUNCTION BOX

PREPARED BY	-.---	LANG.	SCALE
LEAD ENGINEER	-.---	en	N/A
PROJECT NO.	DRAWING NO.	SHEET	REVISION
PIT240024	1724001647-EL-DG-00005	2/3	01

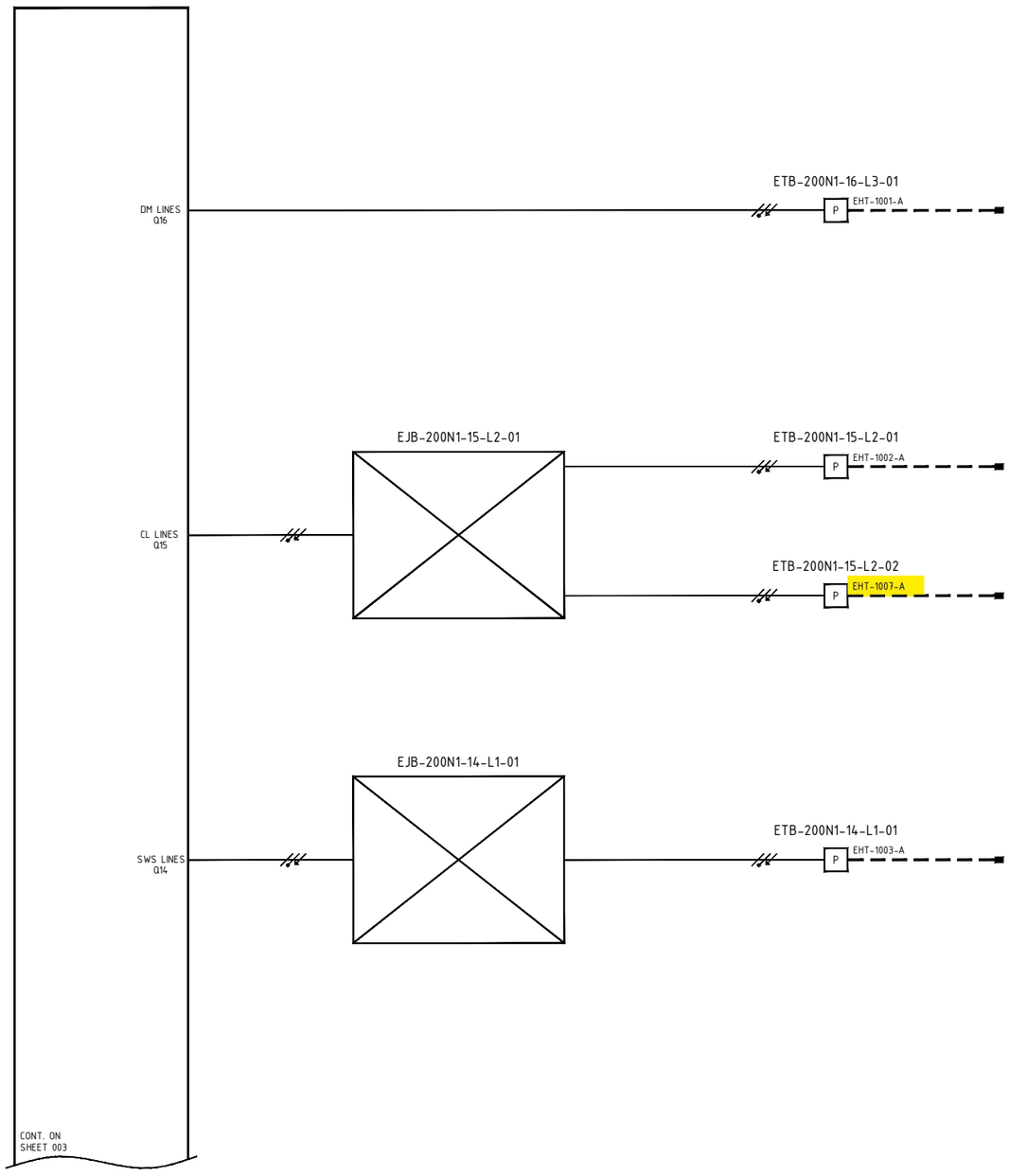
A3

CAD FILENAME: 1724001647-EL-DG-00006 Rev.01.dwg

CONTROL PANEL REF.:

DP-200N1

MARSHALLING BOX



CIRCUIT NO.	1001	1002, 1007	1003	
C.B. RATING (A)	32	32	32	
START-UP I (A)	1.8	4.7	6.7	
LOAD (W)	271	698	1002	
SERVICE	WINTERIZING	WINTERIZING	WINTERIZING	
NOTES FOR THE CIRCUIT	--	--	--	

GENERAL NOTES

CROSSWIND

ROSETTI MARINO

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nVent.com

NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	02/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING
SINGLE LINE DIAGRAM (SLD)

SCALE: N/A

DRAWING NO.: 1724001647-EL-DG-00006

SHEET NO.: 3/4

REVISION: 01

BTV

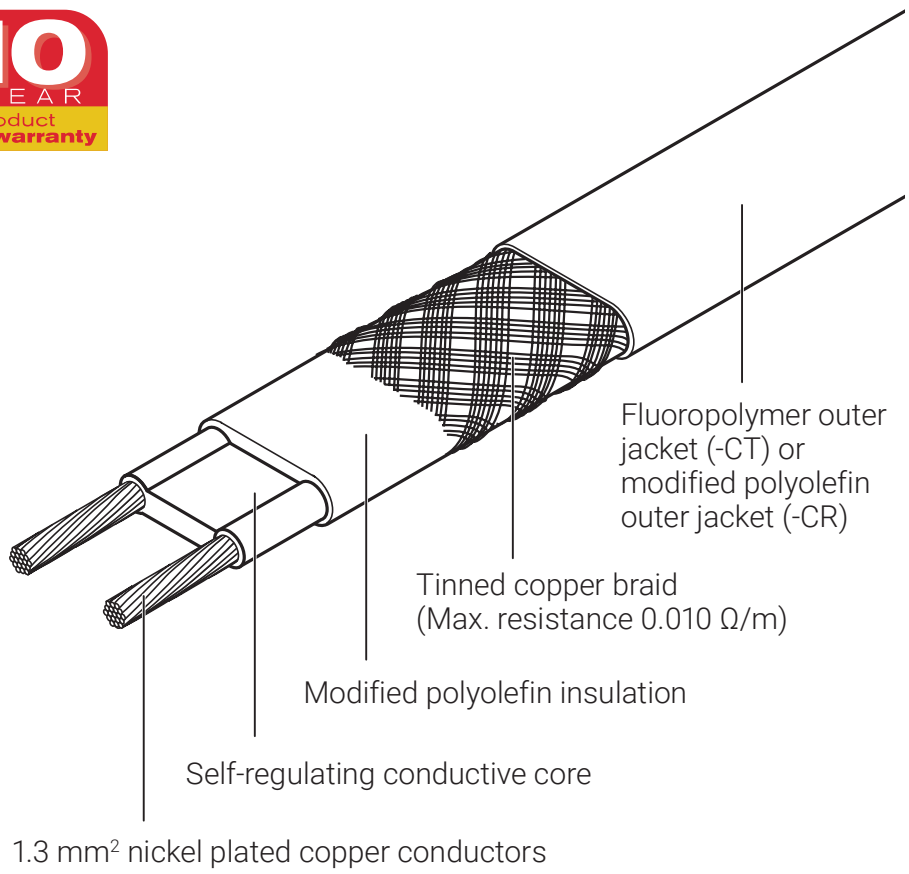
nVent RAYCHEM

CONNECT AND PROTECT

Self-regulating Heating Cable (Ex)

PRODUCT OVERVIEW

10 YEAR Product warranty



Electrical heat-tracing for frost protection without steam cleaning.
The nVent RAYCHEM BTV-family of self-regulating, parallel circuit heating cables is used for frost protection of pipes and vessels. It can also be used for process temperature maintenance up to 65°C.

Application

Traced surface type	Carbon steel Stainless steel Plastic Painted or unpainted metal
Chemical resistance	For organic corrosives: use -CT (fluoropolymer outer jacket) For mild inorganic solutions: use -CR (modified polyolefin outer jacket) For aggressive organics and corrosives consult your local nVent representative

Supply voltage

230 Vac (Contact your local nVent representative for data on other voltages)

PRODUCT SPECIFICATIONS

Product dimensions and weight

	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Width x Thickness (nominal) mm	10.5 x 5.5		13.2 x 5.5	
Weight (g/m)	110		150	

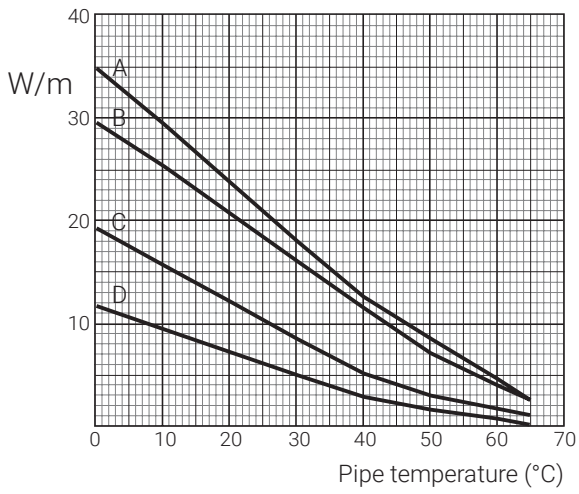
Technical details

Maximum maintain or continuous exposure temperature (power on/off)	65°C
Maximum intermittent exposure temperature (power on/off)	85°C Maximum cumulative exposure 1000 hours
Minimum installation temperature	–60°C
Minimum bend radius	–60°C ≤ T<–20°C: 35 mm –20°C ≤ T<–10°C: 30 mm –10°C ≤ T< 0°C: 25 mm 0°C ≤ T <+10°C: 20 mm T≥ +10°C: 12 mm

Thermal output rating

Nominal power output at 230 Vac on insulated steel pipes

A 10BTV2-CT
10BTV2-CR
B 8BTV-2-CT
8BTV-2-CR
C 5BTV2-CT
5BTV2-CR
D 3BTV2-CT
3BTV2-CR



	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Nominal power output (W/m at 10°C)	9	16	25	29

Maximum circuit length based on type ‘C’ circuit breakers according to EN 60898

Electrical protection sizing	Start-up temperature	Maximum heating cable length per circuit (m)			
16 A	–20°C	155	110	70	45
	+10°C	200	160	110	65
20 A	–20°C	195	140	90	55
	+10°C	200	160	125	85
25 A	–20°C	200	160	110	70
	+10°C	200	160	125	105
32 A	–20°C	200	160	125	90
	+10°C	200	160	125	110

The above numbers are for circuit length estimation only. For more detailed information please use the nVent RAYCHEM TraceCalc software or Contact your local nVent representative. nVent requires the use of a 30 mA residual current device to provide maximum safety and protection from fire. Where design results in higher leakage current, the preferred trip level for adjustable devices is 30 mA above any inherent capacitive leakage characteristic of the heater as specified by the trace heater supplier or alternatively, the next common available trip level for non adjustable devices, with a maximum of 300 mA. All safety aspects need to be proven.

APPROVALS

For use ordinary area and hazardous area Zone 1 and Zone 2 (Gas), Zone 21 and Zone 22 (Dust).

Temperature classification
T6

Product certification

More details about product certification, approvals and conditions of safe use are available in the installation manual for Self-regulating and Power limiting heating cable systems at www.nVent.com/RAYCHEM

ORDERING INFORMATION

Part description	3BTV2-CR	5BTV2-CR	8BTV-2-CR	10BTV2-CR
Part No. (*)	914279-000	414809-000	479821-000	677245-000
Part description	3BTV2-CT	5BTV2-CT	8BTV-2-CT	10BTV2-CT
Part No. (*)	469145-000	487509-000	008633-000	567513-000

Components

nVent offers a full range of components for power connections, splices and end seals. These components must be used to ensure proper functioning of the product and compliance with electrical requirements.

(*) Localized versions may exist with limited approvals and different part numbers. Contact your local sales representative

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

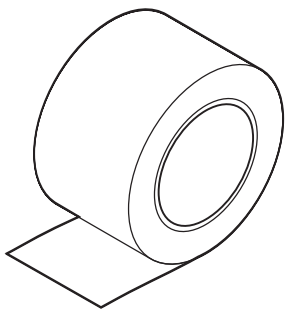
Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com

Our powerful portfolio of brands:
CADDY ERICO HOFFMAN RAYCHEM SCHROFF TRACER

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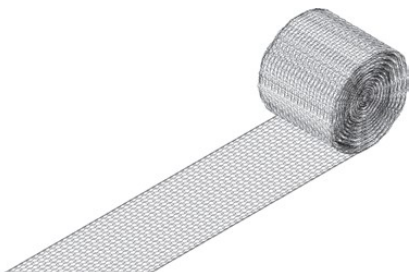
ATE-180

Aluminium tape* for attaching heating cables and thermostat sensors to pipes and tanks. Minimum installation temperature: 0°C. Also suitable for stainless steel pipes.

55 m per roll, 63.5 mm width.

PN: 846243-000 Weight: 0.84 kg

*Power output of selfregulating heating cables might increase when installed with aluminium tape or other heat transfer aids. Please use TraceCalc or contact nVent representative for further details.

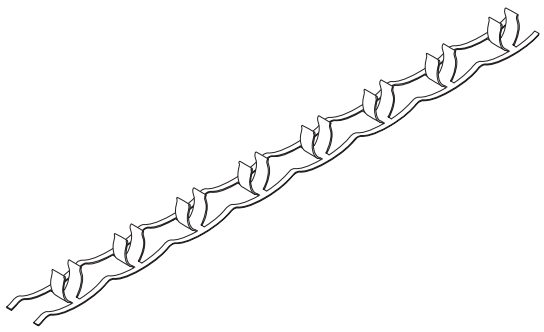


HWA-METAL-MESH-SS-50MM-10M

Stainless steel mesh for fixation of heating cables on valves, pumps or other odd-shaped surfaces. This mesh provides optimum contact and heat transfer between heating cables and heated equipment and can be used for exposure temperatures up to 400°C.

10 m per roll, 50 mm width.

PN: 1244-005772 Weight: 0.36 kg



HWA-PI-FIX- SS-xMM-10M

Stainless steel clip band to attach Polymer Insulated series heating cables to pipes. Clips at regular distances to allow for even heater spacing. Band available in two sizes for different diameter ranges.

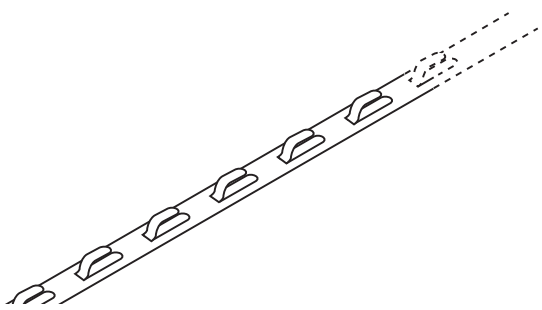
10 m per roll.

For diameters up to 5 mm, HWA-PI-FIX-SS-5MM-10M

PN: 1244-007768 Weight: 0.32 kg

For diameters up to 8 mm, HWA-PI-FIX-SS-8MM-10M

PN: 1244-007769 Weight: 0.52 kg



HARD-SPACER-SS-25MM-25M

Stainless steel spacer for fixing the heating cable on walls, tanks and vessels, etc.

Width spacer: 12.5 mm.

Fixing distance for cables: each 25 mm.

25 m per roll.

PN: 107826-000 Weight: 1.10 kg

ROSETTI MARINO | CROSSWIND

ITEM	Tag	EHT-2002-A	: Heat Tracing Tape			Dwg	1724001647-EL-LIS-00003
	S/Sys	83-65	: Electrical Heat Tracing			Module	UD
TASK	code	C10004640		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX22A — Tape Trace Heating Before Insulation

1	Check that the circuit is de-energized and safe.	OK
2	Check all tapes and junction boxes are undamaged.	OK
3	Check all tapes and junction boxes are installed according to drawings.	OK
4	Check all tapes characteristics against project data (type, rated power).	OK
5	Check rating of circuit breaker against drawings.	OK
6	Check tapes, junction boxes, cables and accessories tagging.	OK
7	After test re-connecting cable as per typical installation.	OK
8	If required produce Red Line Mark Up for "AS BUILT"	

CIRCUIT DATA

List Associated Heat tracing Isometric	1724001647-EL-DD-00004
Tape Type	3BTV2-CT
Circuit Installed Length	5m
Wiring Diagram	WD_1724001647-EL-DG-00006/Single line Diagram (1724001647-EL-DG-00005)

Testing & measurement instruments used

Type	Serial n°	Calibration certificate	Validity
MEGGER : KEW3125A	SERIAL: W8330207	N°7722/24	09/07/2025
VOLCRAFT 1000V	ET-200 S/N:H240103023	N°LAT 042 00768/24	11/10/2025

FIRST TEST

Continuity and insulation resistance tests to earth for each conductor core are carried out after the tape is installed on pipework **before any insulation and cladding is fitted.**

Test voltage (V):	2500	Tape Lengh	5m	Thermostats :	N/A
Continuity	135	Insulation Resistance	>1999 M	Result	OK

AFTER THIS TEST IS DONE, LINE CAN BE RELEASED TO INSULATION TEAM

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-08	2025-02-13	
Signature	Digitaly signed by Michele Tartaglia 2025-02-08T09:48:46.099Z	Digitaly signed by Giovanni Tangianu 2025-02-13T12:27:43.739Z	

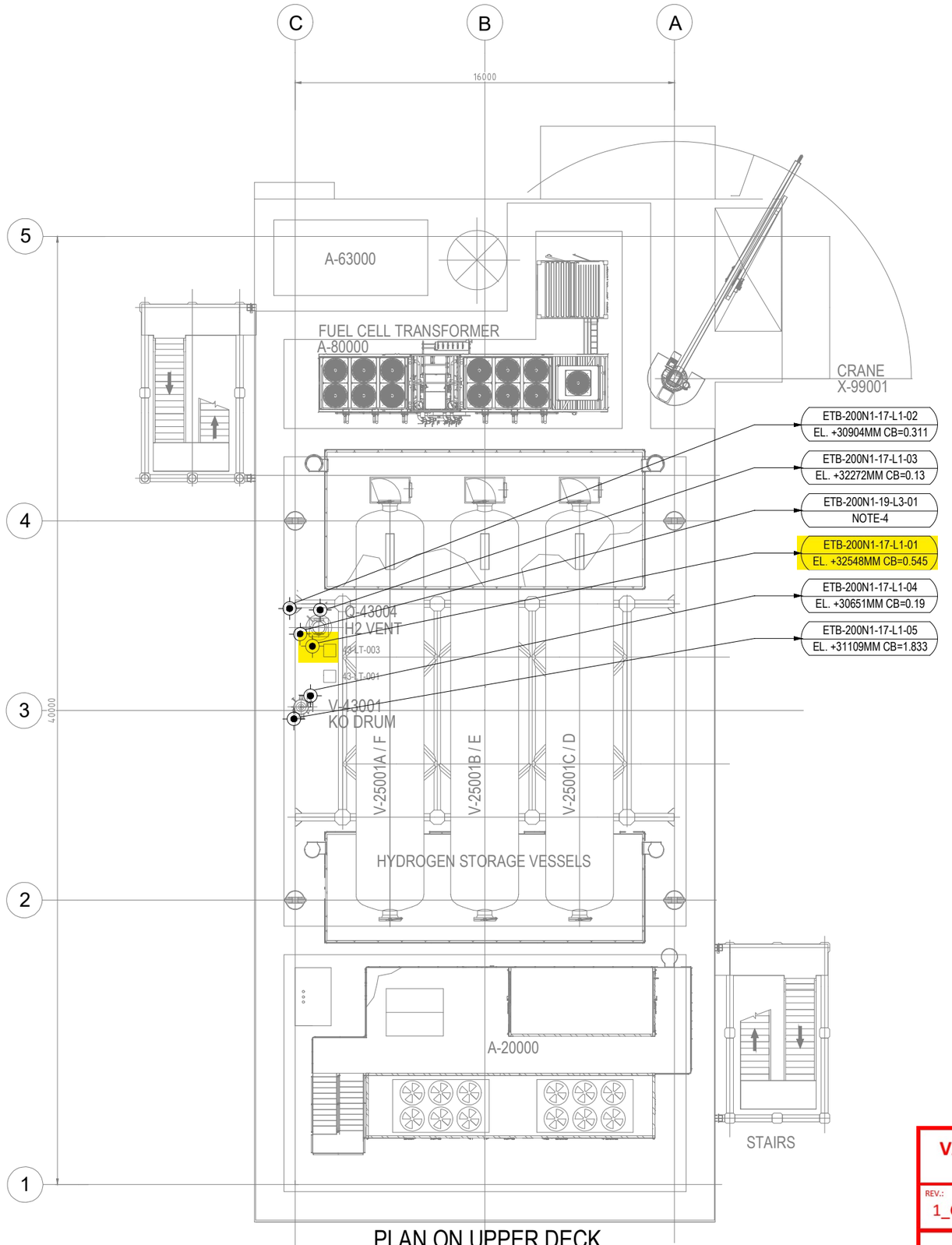
EHT CALCULATION LIST

PIT240024_ED01-1001

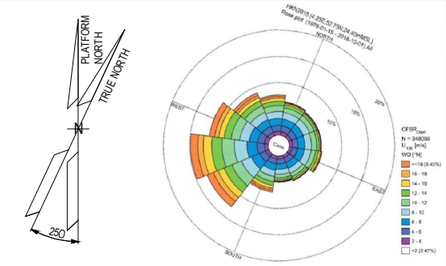
		ENGINEERING DATA				MECHANICAL & INSULATION DATA							PROCESS DATA				EHT BASIC DESIGN								EHT DETAILED DESIGN						EHT TEMP. CONTROL DATA							
Main EHT Box Number	Item Number	Heater Number	Line, Equipment or Instrument ID	nVent Circuit Number	Plant Area	Pipe Size [DN / IN]	Pipe Length [m]	Support Quantity [pc]	Valve Quantity [pc]	Other Heat Sink Quantity [pc]	Insulation Type	Insulation Thickness [mm]	Maintain Temperature [°C]	Maximum Allow. Process Temperature [°C]	Maximum Operating Temperature [°C]	Maximum Exposure Temperature [°C]	Heatloss [W/m]	Heating Cable Selection	Trace Ratio	Heating Cable Output [W/m]	EHT Cable per Support [m]	EHT Cable per Valve [m]	EHT Cable per Other Heatsink [m]	Total EHT Cable [m]	Max. Allow. EHT Circuit Length [m]	Connection Type	Voltage [V]	Operating Current [A]	Total Operating Load [W]	Start-Up Current [A]	Temp. Control Method	Controller Set Point [°C]	Mimimum Controlled Temperature [°C]	Maximum Controlled Temperature [°C]	Maximum Uncontrolled Temperature [°C]	Revision	Remark
																		GRAND TOTAL						**181.4**				**9.69**	**2226**	**14.91**							
ETB-200N1-16-L3-01	1	EHT-1001-A	1"-DM-001-01SS-E	1001	PIPING	1	17.6	5	1	2	RW/MF 1:2015	20	5	100	22	22	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	22.0	199	Single L-N	230	1.18	271	1.8	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**22.0**			**230**	**1.18**	**271**	**1.8**							
ETB-200N1-15-L2-01	1	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	11.0	4		1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	13.9	199	Single L-N	230	0.73	167	1.1	Ambient sensing, standard	5	18	29	50	00	
	2	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	3	EHT-1002-A	1"-CI-032-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	4	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	5	EHT-1002-A	1"-CI-030-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	6	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.75	0.5		1		RW/MF 1:2015	20	5	50	25	25	3.4	3BTV2-CT	2.0	10.7		1.5		2.6	199	Single L-N	230	0.15	34	0.2	Ambient sensing, standard	5	30	38	55	00	
	7	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.5	0.5		1		RW/MF 1:2015	20	5	50	25	25	2.9	3BTV2-CT	2.0	10.7		1.4		2.5	199	Single L-N	230	0.14	32	0.2	Ambient sensing, standard	5	32	40	56	00	
																		TOTAL						**36.4**			**230**	**2.00**	**459**	**3.1**							
ETB-200N1-14-L1-01	1	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	4	0.5				RW/MF 1:2015	20	5	100	25	25	10.2	3BTV2-CT	1.0	10.7				0.6	199	Single L-N	230	0.03	7	0.1	Ambient sensing, standard	5	5	20	46	00	
	2	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	4.7	1		1	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1		0.5	9.3	199	Single L-N	230	0.47	107	0.7	Ambient sensing, standard	5	14	27	49	00	
	3	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	4	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	7.8	3			RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1			8.6	199	Single L-N	230	0.48	111	0.7	Ambient sensing, standard	5	14	27	49	00	
	5	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	6	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.8	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	7	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	1.4	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	4.2	199	Single L-N	230	0.23	54	0.4	Ambient sensing, standard	5	24	34	53	00	
	8	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	9	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	10	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.7	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	11	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	1.2	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	3.7	199	Single L-N	230	0.20	47	0.3	Ambient sensing, standard	5	24	34	53	00	
	12	EHT-1003-A	1"-SWS-147-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	13	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	14	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	15	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1	0.1				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	28	37	54	00	
	16	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
	17	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	18	EHT-1003-A	1"-SWS-146-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	19	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	20	EHT-1003-A	1"-SWS-290-01SD-E	1003	PIPING	1	1.1	1	2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7	0.3	1.6		5.8	199	Single L-N	230	0.33	76	0.5	Ambient sensing, standard	5	28	37	54	00	
	21	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**78.6**			**230**	**4.37**	**1002**	**6.7**							
ETB-200N1-17-L1-04	1	EHT-1004-A	1"-WW-259-01CS-E / V-43001	1004	PIPING	1	0.9		1	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7		0.8	0.5	3.2	199	Single L-N	230	0.12	28	0.2	Ambient sensing, standard	5	18	29	50	00	Combined with EHT-1004-B
																		TOTAL						**3.2**			**230**	**0.12**	**28**	**0.2**							
ETB-200N1-17-L1-02	1	EHT-1005-A	1"-WW-260-01CS-E	1005	PIPING	1	1.2	1	2	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	4.6	199	Single L-N	230	0.20	46	0.3	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1006-A
																		TOTAL						**4.6**			**230**	**0.20**	**46**	**0.3**							
ETB-200N1-17-L1-03	1	EHT-1006-A	1"-WW-202-01CS-H	1006	PIPING	1	1.0			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	1.0	10.7			0.5	2.5	199	Single L-N	230	0.08	19	0.1	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1005-A
																		TOTAL						**2.5**			**230**	**0.08**	**19**	**0.1**							
ETB-200N1-15-L2-02	1	EHT-1007-A	1"-CI-043-01CP-E	1007	PIPING	1	15.0	6		4	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	19.5	199	Single L-N	230	1.04	239	1.6	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**19.5**			**230**	**1.04**	**239**	**1.6**							
ETB-200N1-17-L1-05	1	EHT-1004-B	43-LT-001	2001	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	Combined with EHT-1004-A
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							
ETB-200N1-17-L1-01	1	EHT-2002-A	43-LT-003	2002	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

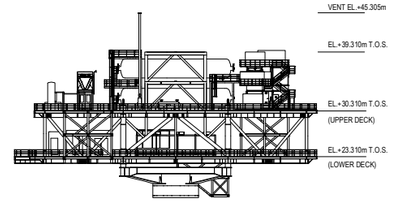
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_C	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 2of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

CAD FILENAME: PIT240024_D003_2002_001_03.dwg

HEAT TRACING DATA

HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	PIPE LENGTH (m)	HEATER LENGTH (m)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W/m)	POWER OUTPUT (W/m)	SHEATH TEMP. (°C)
EHT-2002-A	INSTRUMENT	3BTV2-CT	3.0	7.3	0.5	81	230	3.9	10.7	85
TOTALS			3.0	7.3	0.5	81				

HEATER ADDER TABLE

PIPE SIZE (Ins)	TYPE	QTY	ALLOWANCE PER ITEM (m)	TOTAL ALLOWANCE (m)

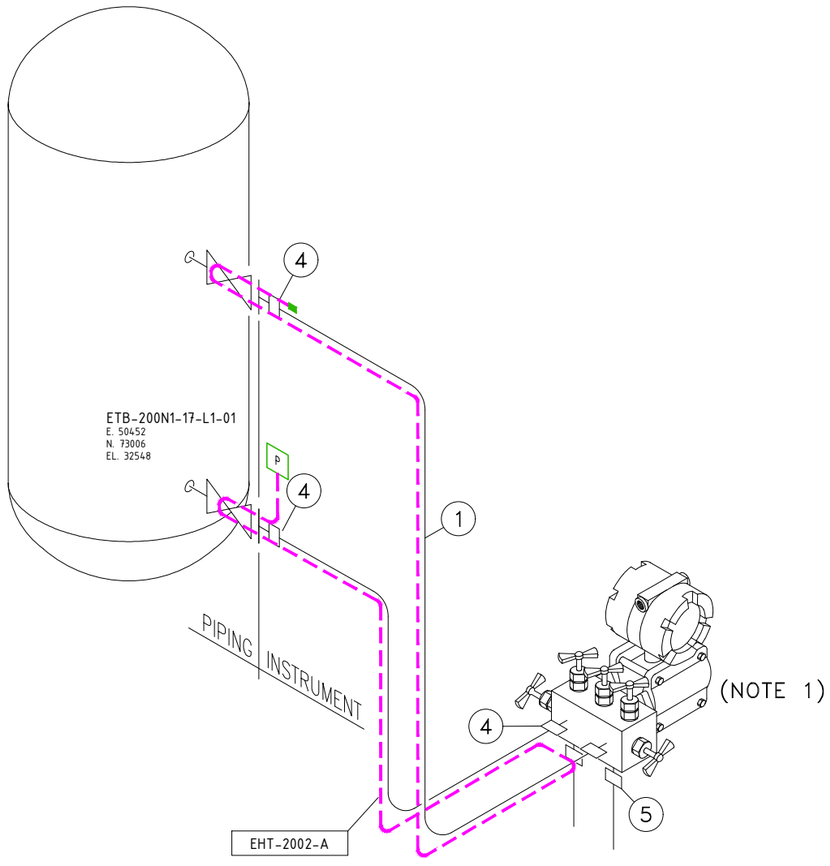
DESIGN PARAMETERS

CIRCUIT NUMBER	2002	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	11°C	INSULATION TYPE	RW/MF 1.2015
MAX. EXPOSURE TEMP.	11°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	100°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

COMPONENT BILL OF MATERIALS

CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	7.3	m	Raychem Self-Regulating Heating Cable
JBS-100-EP	1	each	Single entry power connection, EP, ATEX
PSE-090	1	each	Pipe Strap for 1.1/4" to 3" (40-90mm)
GS-54	0.3	each	Glass Tape (16m/roll), suited for SS pipes
LAB-I-01	2	each	Warning Label - English
E-20	1	each	Heat shrink end seal, ATEX (BTV, QTVR)
JBS-SPA	0.2	bag	Small Pipe Adapter for E-100, JBS-100, and JS-100

ELECTRICAL HOOK-UP FOR LEVEL TRANSMITTERS (DP CELL TYPE)



LINE NUMBERS

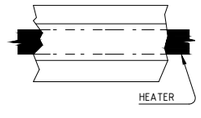
43-LT-003

REFERENCE DRAWINGS / DOCUMENTS

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.
4. HEATING CABLE ALLOWANCES PROVIDED IN THE 'EHT ADDER TABLE' FOR FLANGES AND VALVES ARE IN ADDITION TO THEIR LINEAR LENGTHS.

ALUMINIUM TAPE (REF: ATE180)



SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
03	13/01/2025	ACCEPTED FOR CONSTRUCTION	ADU	AMI	GPI
02	29/11/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.

DOC CODE

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING
INSTRUMENT HOOK-UP

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-IN-HD-00010	4/4	03

A1

DRAWING NO. DRAWING_NO.

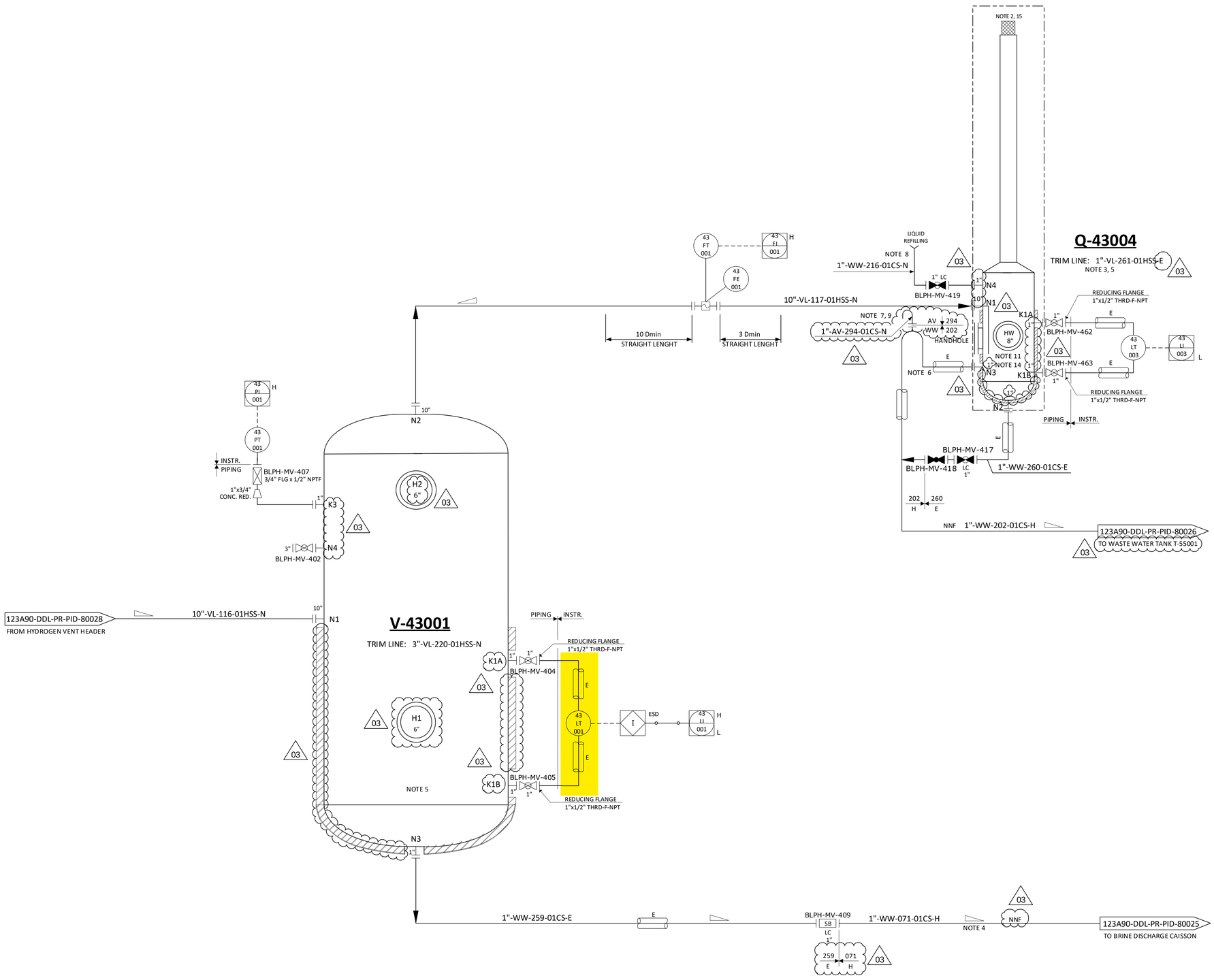
REV. REV

V-43001

HYDROGEN VENT KO DRUM
SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1
SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. (03)
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

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

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

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80029		SHEET 001 / REV. 03

File Name : FILE_NAME

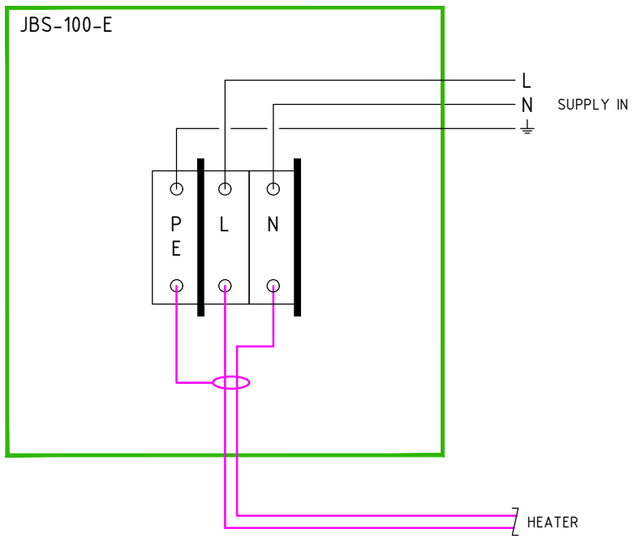
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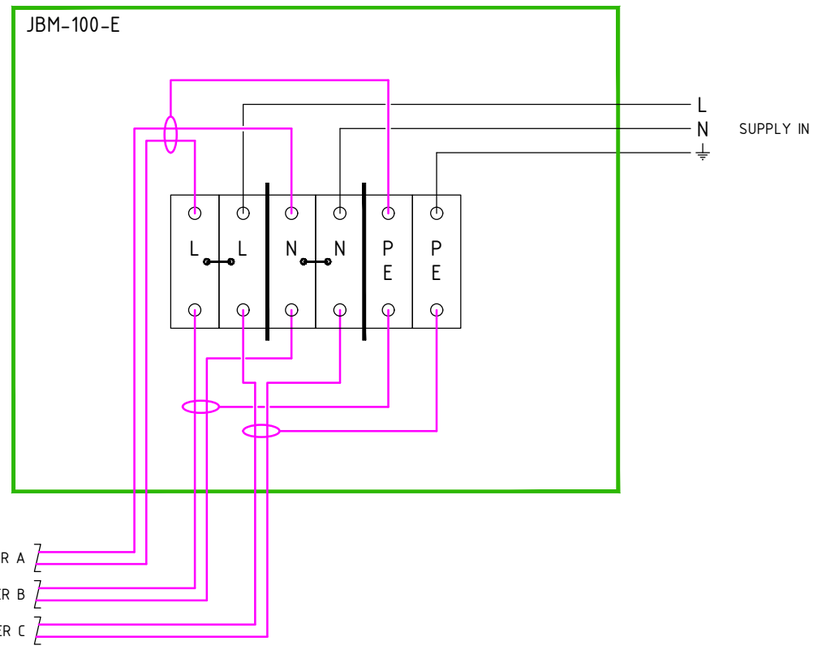
GENERAL INFORMATION:

1. JBS-100-E IS DESIGNED TO CONNECT POWER TO ONE BTV, QTVR, XTV, KTV, HTV OR VPL EHT CABLE.
2. THIS KIT INTEGRATES THE FUNCTIONS OF BOTH CONNECTION KITS AND INSULATION ENTRIES.
3. THE STAND CONNECTED TO THE BOTTOM OF THE BOX PROTECTS THE HEATING CABLE AND ALLOWS FOR UP TO 100mm (4") THERMAL INSULATION.

TECHNICAL BRIEF:

- 2 x M25 THREADED ENTRIES
- 1 x M25 STOPPING PLUGS
- 1 x M25 POWER CABLE GLAND





REV.	DATE	DESCRIPTION	BY	CHK	APP
--	--	--	--	--	--
--	--	--	--	--	--
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	08/03/2024	ISSUED FOR INFORMATION	LJB	E-C	ZS

nVent RAYCHEM TRACER

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TITLE
TYPICAL CONNECTION OF A JBS-100-EP
SINGLE ENTRY JUNCTION BOX

PREPARED BY	-.---	LANG.	SCALE
LEAD ENGINEER	-.---	en	N/A
PROJECT NO.	DRAWING NO.	SHEET	REVISION
PIT240024	1724001647-EL-DG-00005	2/3	01

A3

CAD FILENAME: 1724001647-EL-DG-00006 Rev.01.dwg

CONTROL PANEL REF.:

MARSHALLING BOX

EJB-200N1-17-L1-01

Q17

ETB-200N1-17-L1-04 — P — EHT-1004-A — ETB-200N1-17-L1-05 — P — EHT-1004-B

ETB-200N1-17-L1-02 — P — EHT-1005-A

ETB-200N1-17-L1-03 — P — EHT-1006-A

ETB-200N1-17-L1-01 — P — EHT-2002-A

SPARE

CIRCUIT NO.	1004	1005, 1006	2002	
C.B. RATING (A)	32	32	32	
START-UP I (A)	2.6	0.4	0.6	
LOAD (W)	383	65	81	
SERVICE	WINTERIZING	WINTERIZING	WINTERIZING	
NOTES FOR THE CIRCUIT	--	--	--	

GENERAL NOTES

CROSSWIND

ROSETTI MARINO

nVent RAYCHEM TRACER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
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01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	02/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING
SINGLE LINE DIAGRAM (SLD)

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-EL-DG-00006	4/4	01

BTV

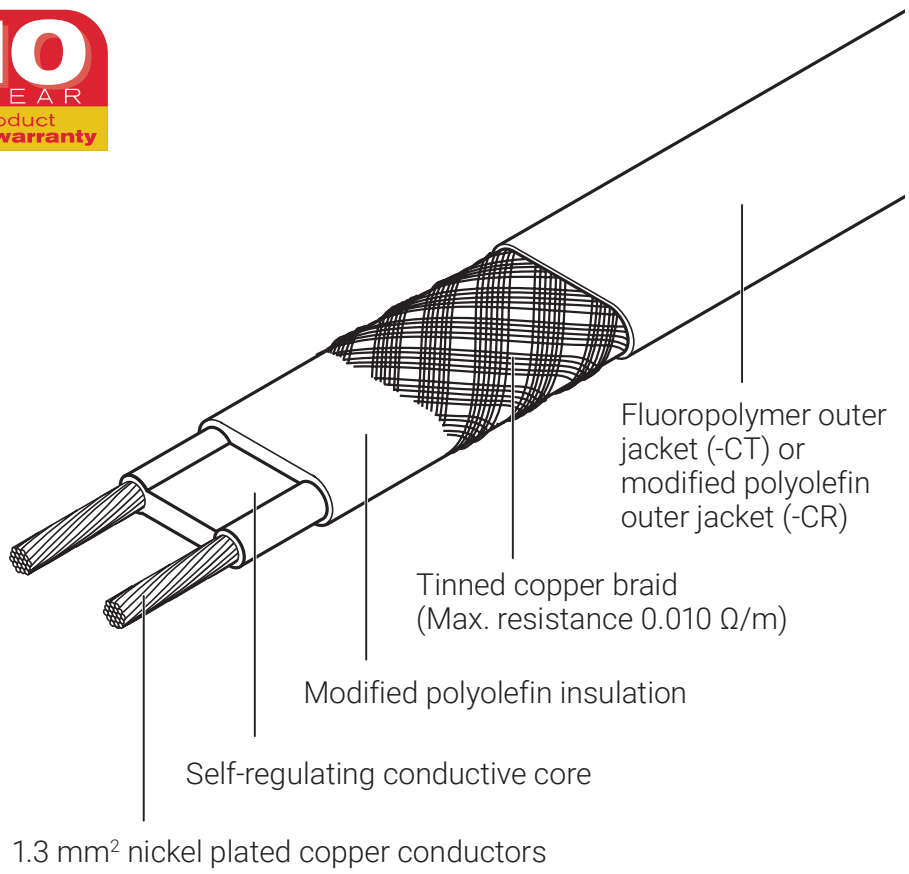
nVent RAYCHEM

CONNECT AND PROTECT

Self-regulating Heating Cable (Ex)

PRODUCT OVERVIEW

10 YEAR Product warranty



Electrical heat-tracing for frost protection without steam cleaning.
The nVent RAYCHEM BTV-family of self-regulating, parallel circuit heating cables is used for frost protection of pipes and vessels. It can also be used for process temperature maintenance up to 65°C.

Application

Traced surface type	Carbon steel Stainless steel Plastic Painted or unpainted metal
Chemical resistance	For organic corrosives: use -CT (fluoropolymer outer jacket) For mild inorganic solutions: use -CR (modified polyolefin outer jacket) For aggressive organics and corrosives consult your local nVent representative

Supply voltage

230 Vac (Contact your local nVent representative for data on other voltages)

PRODUCT SPECIFICATIONS

Product dimensions and weight

	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Width x Thickness (nominal) mm	10.5 x 5.5		13.2 x 5.5	
Weight (g/m)	110		150	

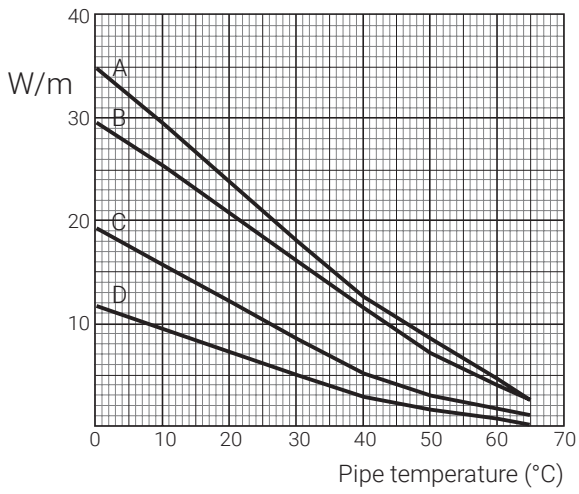
Technical details

Maximum maintain or continuous exposure temperature (power on/off)	65°C
Maximum intermittent exposure temperature (power on/off)	85°C Maximum cumulative exposure 1000 hours
Minimum installation temperature	–60°C
Minimum bend radius	–60°C ≤ T<–20°C: 35 mm –20°C ≤ T<–10°C: 30 mm –10°C ≤ T< 0°C: 25 mm 0°C ≤ T <+10°C: 20 mm T≥ +10°C: 12 mm

Thermal output rating

Nominal power output at 230 Vac on insulated steel pipes

A 10BTV2-CT
10BTV2-CR
B 8BTV-2-CT
8BTV-2-CR
C 5BTV2-CT
5BTV2-CR
D 3BTV2-CT
3BTV2-CR



	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Nominal power output (W/m at 10°C)	9	16	25	29

Maximum circuit length based on type ‘C’ circuit breakers according to EN 60898

Electrical protection sizing	Start-up temperature	Maximum heating cable length per circuit (m)			
16 A	–20°C	155	110	70	45
	+10°C	200	160	110	65
20 A	–20°C	195	140	90	55
	+10°C	200	160	125	85
25 A	–20°C	200	160	110	70
	+10°C	200	160	125	105
32 A	–20°C	200	160	125	90
	+10°C	200	160	125	110

The above numbers are for circuit length estimation only. For more detailed information please use the nVent RAYCHEM TraceCalc software or Contact your local nVent representative. nVent requires the use of a 30 mA residual current device to provide maximum safety and protection from fire. Where design results in higher leakage current, the preferred trip level for adjustable devices is 30 mA above any inherent capacitive leakage characteristic of the heater as specified by the trace heater supplier or alternatively, the next common available trip level for non adjustable devices, with a maximum of 300 mA. All safety aspects need to be proven.

APPROVALS

For use ordinary area and hazardous area Zone 1 and Zone 2 (Gas), Zone 21 and Zone 22 (Dust).

Temperature classification
T6

Product certification

More details about product certification, approvals and conditions of safe use are available in the installation manual for Self-regulating and Power limiting heating cable systems at www.nVent.com/RAYCHEM

ORDERING INFORMATION

Part description	3BTV2-CR	5BTV2-CR	8BTV-2-CR	10BTV2-CR
Part No. (*)	914279-000	414809-000	479821-000	677245-000
Part description	3BTV2-CT	5BTV2-CT	8BTV-2-CT	10BTV2-CT
Part No. (*)	469145-000	487509-000	008633-000	567513-000

Components

nVent offers a full range of components for power connections, splices and end seals. These components must be used to ensure proper functioning of the product and compliance with electrical requirements.

(*) Localized versions may exist with limited approvals and different part numbers. Contact your local sales representative

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

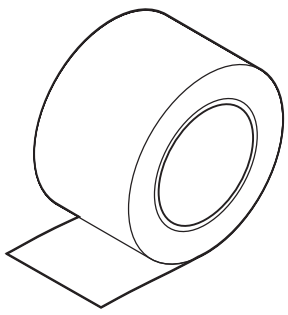
Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com

Our powerful portfolio of brands:
CADDY ERICO HOFFMAN RAYCHEM SCHROFF TRACER

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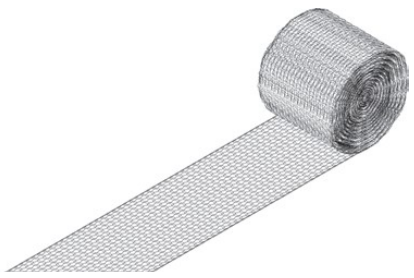
ATE-180

Aluminium tape* for attaching heating cables and thermostat sensors to pipes and tanks. Minimum installation temperature: 0°C. Also suitable for stainless steel pipes.

55 m per roll, 63.5 mm width.

PN: 846243-000 Weight: 0.84 kg

*Power output of selfregulating heating cables might increase when installed with aluminium tape or other heat transfer aids. Please use TraceCalc or contact nVent representative for further details.

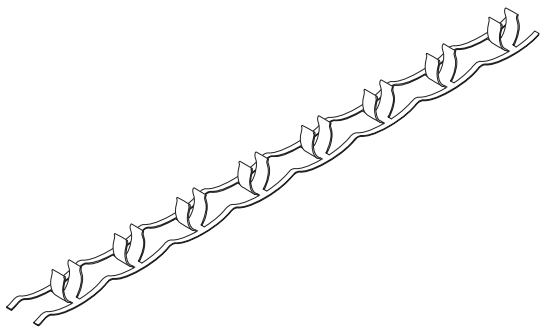


HWA-METAL-MESH-SS-50MM-10M

Stainless steel mesh for fixation of heating cables on valves, pumps or other odd-shaped surfaces. This mesh provides optimum contact and heat transfer between heating cables and heated equipment and can be used for exposure temperatures up to 400°C.

10 m per roll, 50 mm width.

PN: 1244-005772 Weight: 0.36 kg



HWA-PI-FIX- SS-xMM-10M

Stainless steel clip band to attach Polymer Insulated series heating cables to pipes. Clips at regular distances to allow for even heater spacing. Band available in two sizes for different diameter ranges.

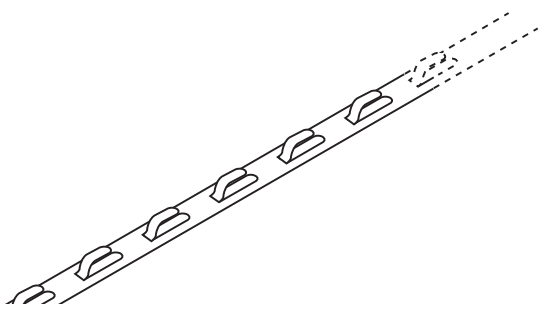
10 m per roll.

For diameters up to 5 mm, HWA-PI-FIX-SS-5MM-10M

PN: 1244-007768 Weight: 0.32 kg

For diameters up to 8 mm, HWA-PI-FIX-SS-8MM-10M

PN: 1244-007769 Weight: 0.52 kg



HARD-SPACER-SS-25MM-25M

Stainless steel spacer for fixing the heating cable on walls, tanks and vessels, etc.

Width spacer: 12.5 mm.

Fixing distance for cables: each 25 mm.

25 m per roll.

PN: 107826-000 Weight: 1.10 kg

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
CB-200F4B	AC UPS F&G - Battery Isolator-B	CONTAINER B-300 (LOWER DECK)	1724000372	3W Power	Cortem Spa		EJBC	Zone 1	EPT 20 ATEX 4075X	1724000372-EL-DG-00011	II 2GDEx db IIC T6 Gb Ex tb IIIC T 85°C Db	-	N/A	True	N/A	False	
EAT-200N1-01	Trace Heating - Remote Ambient Thermostat	LOWER DECK	1724001647	nVent	nVent	1244-022663	ETS-05-A2-E-A	Zone 1	Baseefa 13ATEX0137	1724001647-EL-DD-00004	II 2(1)G Ex eb ia mb [ia Ga] IIC T5 Gb - 40ºC ≤ Ta ≤ +60ºC II 2D Ex tb IIIC T100ºC Db	-	N/A	True	N/A	False	
EHT-1001-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1002-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1003-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1004-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1004-B	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1005-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1006-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1007-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-2002-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EJB-200F2-01	Top Obstruction Lights Junction Box	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990082	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
EJB-200F2-02	Intermediate obstruction lights junction box	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990083	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_4
EJB-200N1-02-L1-01	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990045	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-02	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990044	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-03	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990043	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
EJB-200N1-02-L1-05	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990058	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-06	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990057	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-07	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990059	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-08	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990060	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-09	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990061	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-10	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990047	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-11	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990056	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-12	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990055	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-13	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990054	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-14	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990053	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-15	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990052	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-16	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990051	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-17	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990050	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-18	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990049	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-19	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990048	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
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EJB-200N1-03-L2-01	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990003	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
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EJB-200N1-03-L2-03	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990002	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-04	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990001	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-05	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990012	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-06	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990011	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-07	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990010	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-08	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990009	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-09	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990008	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-10	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990007	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-11	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990006	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-12	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990005	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-13	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990014	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-14	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990013	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-04-L3-01	Stair Normal Lighting JB	LOWER DECK STAIRS	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990032	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-04-L3-02	Stair Normal Lighting JB	LOWER DECK STAIRS	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990033	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-01	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990064	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-03	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990062	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
EJB-200N1-08-L1-04	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990065	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-05	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990077	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-06	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990078	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	

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:	**SGS20ATEX0048X – Issue 3**
4	Product:	**BTV Range of Self-Regulating Trace Heating Systems**
5	Manufacturer:	**nVent Thermal LLC**
6	Address:	**899 Broadway Street, CA, 94063-3104, United States of America**

7 This re-issued certificate extends EU Type Examination Certificate No. **SGS20ATEX0048X** 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.

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 IEC 60079-7:2015+A1:2018 EN 60079-18:2015+A1:2017
EN 60079-30-1:2017 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 60079-30-1 eb IIC T6 Gb or Ex 60079-30-1 eb mb IIC T6 Gb T_{min} -60°C**
Ex 60079-30-1 tb IIIC T80°C Db or Ex 60079-30-1 mb tb IIIC T80°C Db

SGS Fimko Oy Customer Reference No. **865** Project File No. **21/0455**

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SGS Fimko Oy
Takomotie 8
FI-00380 Helsinki, Finland
Telephone +358 (0)9 696 361
e-mail **sgs.fimko@sgs.com**
web site **www.sgs.fi**
Business ID 0978538-5 Member of the SGS Group (SGA SA)

Tuomas Hänninen
SGS Fimko Oy

13 # Schedule

14 ## Certificate Number SGS20ATEX0048X – Issue 3

15 Description of Product

The BTV Range of Self-Regulating Trace Heating Systems is of the parallel circuit self-regulating type, rated at up to 277V, with power output up to 33W/m (10W/ft). The units have a maximum self-limiting temperature of 80°C.

Each trace heating system comprises:
- the active heating cable.
- an end seal for terminating the remote end of the unit.
- a cable gland for connecting the powered end of the unit to a suitable terminal enclosure, or alternative integrated power connection systems.

The active heating cable comprises two stranded copper conductors around which is extruded a semi-conductive core material. This core material increases in resistance with increasing temperature and gives the cable its self-limiting property. This semi conductive core with embedded conductors forms the active part of the heating cable. An extruded layer of fluoropolymer serves to insulate the semi conductive core from the conductive covering, covering the active heater. A protective anti-corrosion fluoropolymer sheath may be extruded over the conductive covering.

The declared maximum withstand temperature for the range is 85°C and the minimum installation temperature is -60°C.

CABLE ACCESSORIES

END SEALS

The end seals for terminating the remote end of the unit may be the following types:

Types E-100-L or E-100, which are mechanical end seals incorporating an end cap which is filled with silicone grease sealant covered by certificates Sira14ATEX3015X and PTB09ATEX1060U.

Types E-100-L-A or E-100-A, which are mechanical end seals incorporating an end cap which is filled with silicone grease sealant.

A Raychem Type E-20 heat shrink end seal kit.

Type E-150 mechanical end seals, covered by certificate DEKRA20ATEX0011U.

SPLICES AND JOINTS

The following splicing and jointing arrangements are provided:

A Raychem Type S-20 heat shrink splice kit for connecting lengths of active heating cable.

A Raychem T-100 tee connection system, certificate PTB20ATEX1008U, for connecting up to three heater cables.

Type S-150 mechanical splice kit, covered by certificate DEKRA20ATEX0011U.

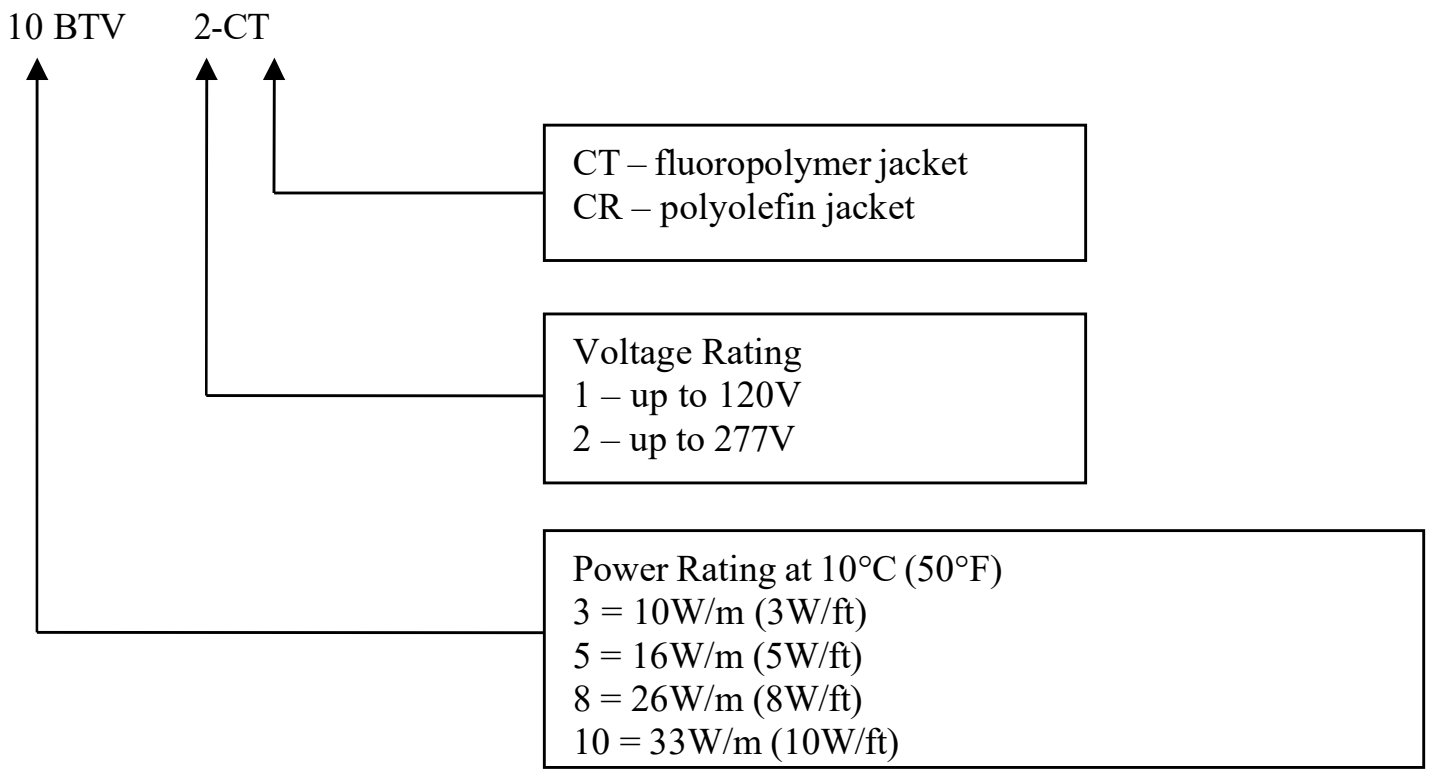
POWER CONNECTIONS

Power connection may be achieved by the following means:

Connection Type	ATEX Certificate
JBM-100	PTB20ATEX1008U
JBS-100	PTB20ATEX1008U
JBU-100	PTB20ATEX1008U
C-150-E	DEKRA20ATEX0011U
C25-21 Connection Kit	Baseefa16ATEX0037U
C25-100 Connection Kit	Baseefa16ATEX0038U
C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS Kits	Baseefa16ATEX0039U

The C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS Kits include M25 or ¾ NPT gland to Sira01ATEX1270X and core sealer to Baseefa15ATEX0194U.

A number of power levels and voltages, up to the maximum specified, are included in the range. They are identified in the following manner:



Any of the products in the range may be considered as part of a stabilised design system. In such a system the design is based upon the use of nVent proprietary software Trace calc Pro. The algorithm defined in this software may be used in additional design software.

The minimum bending radii for BTV trace heating cable at specific temperatures are shown in the table below:

Temperature, T (°C)	**Minimum Bending Radius (mm)**
$-60 \leq T < -20$	35
$-20 \leq T < -10$	30
$-10 \leq T < 0$	25
$0 \leq T < +10$	20
$T \geq +10$	12

16 Report Number

See Certificate History.

17 Specific Conditions of Use

1. The following limiting temperatures for the heat shrink end seals and splices shall not be exceeded:

   +110°C for the S-20 and E-20
   +150°C for the C-150-E, S-150 and E-150

2. The end seals, splices and power connections have the following associated ambient temperatures:

   -60°C to +56°C for the E-20 and S-20
   -55°C to +56°C for the T-100, JBM-100, JBS-100, JBU-100, and E-100
   -40°C to +56°C for the JBS-100-L, JBM-100-L, and JBU-100-L
   -55°C to +55°C for the C-150-E, S-150 and E-150
   -40°C to +40°C for the E-100-L
   -55°C to +110°C for the C25-21 and C25-100
   -60°C to +180°C for the C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS

3. The assembly of glands, splices and end terminations shall be carried out in accordance with the manufacturing instructions

4. The heating element supply circuit must include an electrical protection device in conformity with Clause 4.4 of EN 60079-30-1.

5. The minimum installation temperature is -60°C. The minimum bending radii at specific temperatures for the Type BTV units are shown in the table in the equipment description.

6. The supply to the heating unit must be terminated in a suitably certified terminal enclosure.

7. The minimum installation temperature for E-20 and S-20, end seal and splice is -20°C.

8. The installer is to carry out a dielectric strength test on Ex equipment in which the C25-21, C25-100 and C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS connection kit is fitted. No dielectric breakdown shall occur. (Alternatively, an insulation resistance test may be undertaken in accordance with EN 60079-30-2).

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
205308-A[i]	1 of 1	Q	05/27/2021	BTV-8BTV-CR & BTV-10BTV-CR
205310-A[i]	1 of 1	R	05/27/2021	BTV-8BTV-CT & BTV-10BTV-CT

Current drawings which remain unaffected by this issue:

Number	Sheet	Issue	Date	Description
906567[ii]	1 of 1	P	05/21/21	C25-21, C25-100 and C25-100-METAL-XX, C3/4-100-METAL-XX Connection Kits
906579-A[i]	1 of 1	N	01/15/2021	BTV Heater Units (European System)
205350-A[i]	1 of 1	P	03/31/20	BTV-3BTV-CT & BTV-5BTV-CT
205349-A[i]	1 of 1	J	03/26/20	BTV-3BTV-CR & BTV-5BTV-CR
906794-A[iii]	1 of 1	AA	03/30/20	Generic ATEX and IECEx Print Dwg for BTV-CT, QTVR-CT, XTV-CT, KTV-CT Heating Cables
9242869[iv]	1 & 2	O	12/09/19	LABL JBM-100-L-E
9532687[iv]	1 & 2	Q	12/09/19	LABL JBM-100-L-EP
9621473[iv]	1 & 2	O	12/09/19	LABL JBS-100-L-E
9777523[iv]	1 & 2	P	12/09/19	LABL JBS-100-L-EP
9319676[iv]	1 & 2	O	12/09/19	LABL JBU-100-L-E
9735898[iv]	1 & 2	O	12/09/19	LABL JBU-100-L-EP
908742-A[v]	1 of 1	A	2/19/20	E-20 Heat Shrinkable End Seal Kit Cut Back Dimensions
908743-A[vi]	1 of 1	A	2/19/20	S-20 Heat Shrinkable Splice Joint Kit Cut Back Dimensions

i) These drawings are common to IECEx BAS 20.0011X, SGS20ATEX0048X and are held with IECEx BAS 20.0011X.

ii) This drawing is common to IECEx BAS 16.0040U, IECEx BAS 16.0041U, IECEx 16.0042U, IECEx BAS 20.0008X, IECEx BAS 20.0009X, IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, Baseefa16ATEX0037U, Baseefa16ATEX0038U, Baseefa16ATEX0039U, SGS20ATEX0045X, SGS20ATEX0046X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and is held with IECEx BAS 16.0040U.

iii) These drawings are common to IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and are held with IECEx BAS 20.0011X.

iv) These drawings are common to IECEx BAS 20.0008X, IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, SGS20ATEX0045X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and are held with IECEx BAS 20.0008X.

v) These drawings are common to IECEx BAS 20.0010X, IECEx BAS 20.0011X, IECEx BAS 20.0013X, SGS20ATEX0047X, SGS20ATEX0048X, SGS20ATEX0050X and are held with IECEx BAS 20.0010X.

vi) These drawings are common to IECEx BAS 20.0011X, IECEx BAS 20.0013X, SGS20ATEX0048X, SGS20ATEX0050X and are held with IECEx BAS 20.0011X.

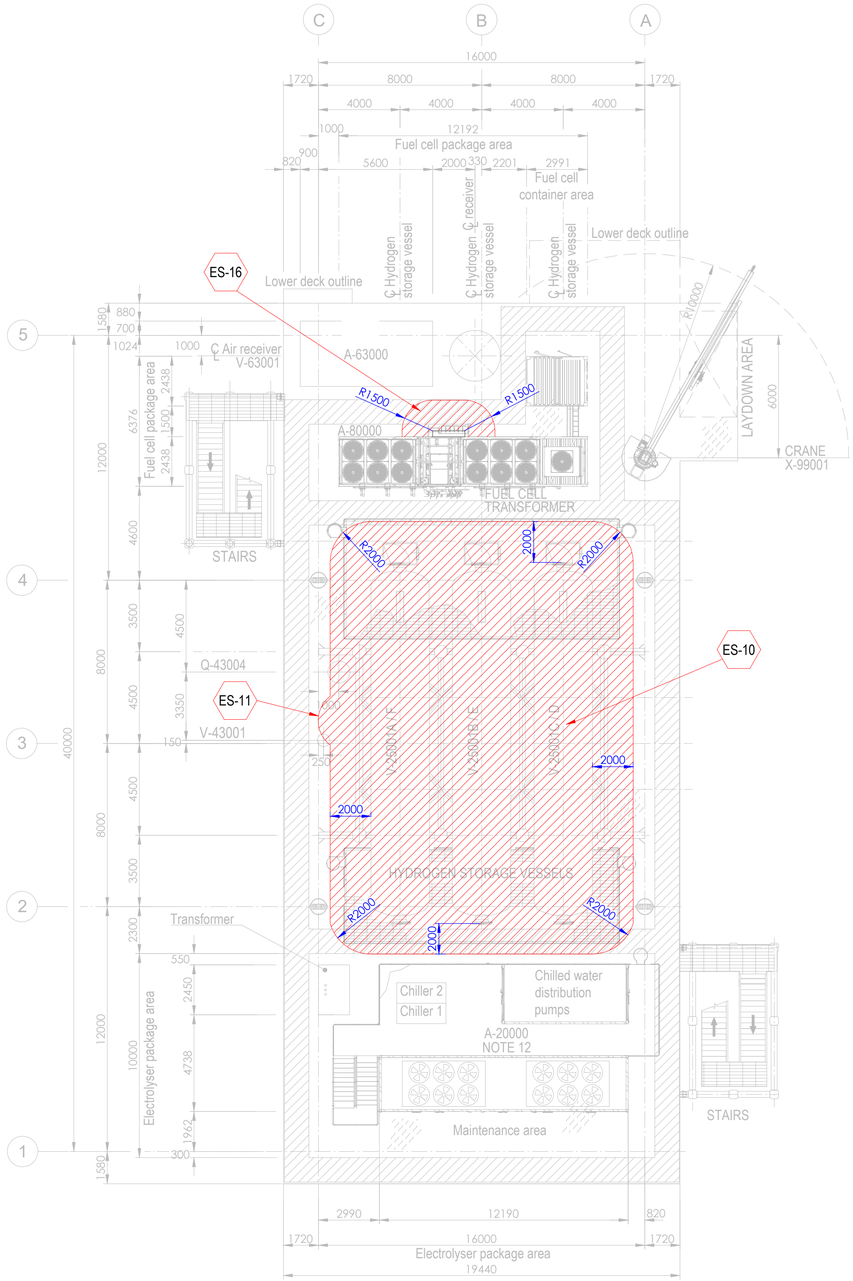
20 Certificate History

Certificate No.	Date	Comments
SGS20ATEX0048X	23 October 2020	The release of the prime certificate. The associated test and assessment against the requirements of EN 60079-0:2012+A11:2013, EN IEC 60079-7:2015+A1:2018, EN 60079-18:2015+A1:2017, EN 60079-30-1:2017 and EN 60079-31:2014 is documented in Test Report No. GB/BAS/ExTR20.0030/00.

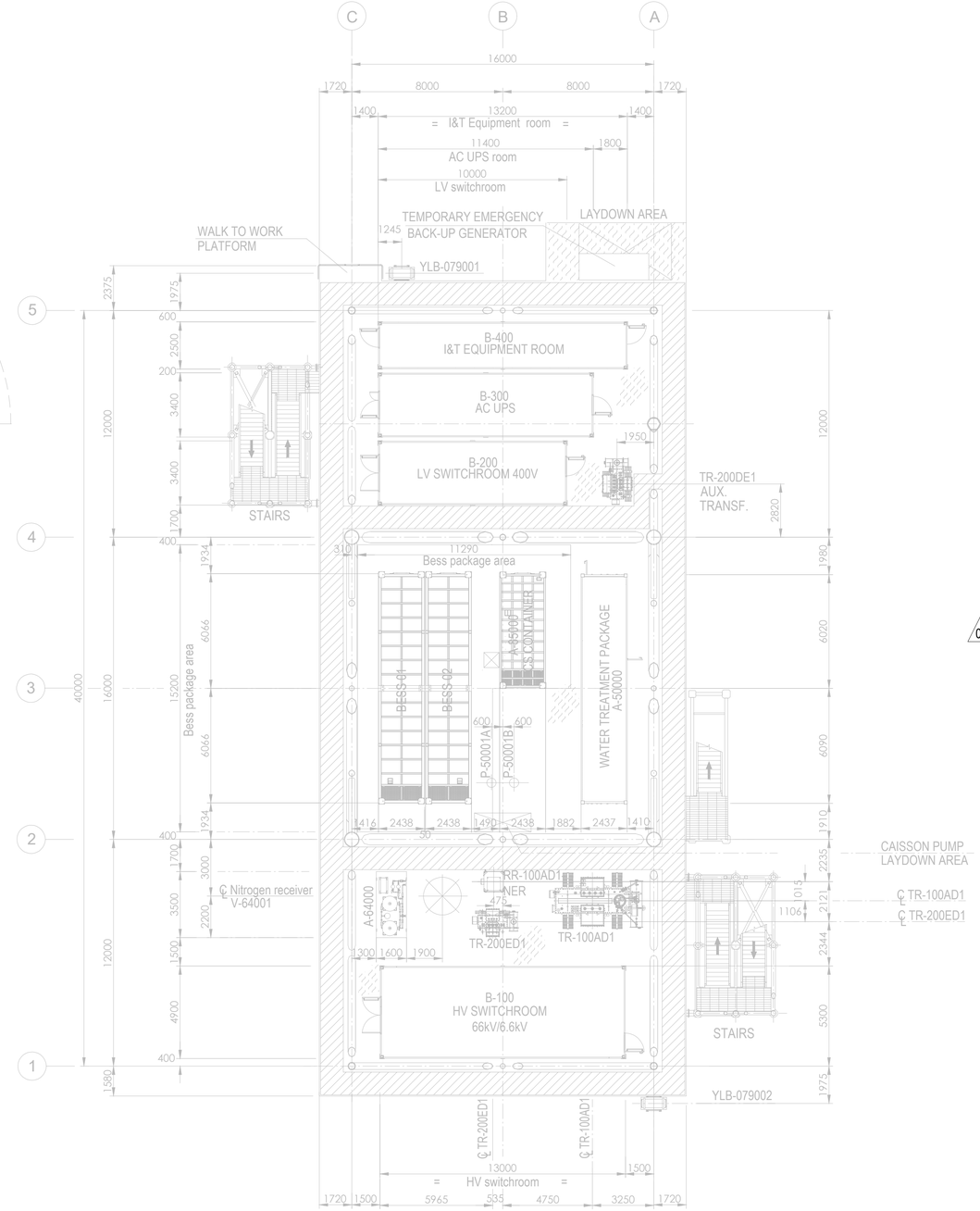
Certificate No.	Date	Comments
SGS20ATEX0048X Issue 1	11 February 2021	To assess the BTV range of self-regulating trace heating systems against EN IEC 60079-0:2018, introduce the low profile power connection, splice and end seal kits, types C-150-E, S-150 and E-150 afforded DEKRA20ATEX0011U, minor amendments to the product description, to change the product name to "BTV Range of Self-Regulating Trace Heating Systems" and to amend the Specific Conditions of Use. The associated test and assessment is documented in Test Report No. GB/BAS/ExTR21.0005/00.
SGS20ATEX0048X Issue 2	7 July 2021	Minor drawing updates not affecting certification. Baseefa Certification Report GB/BAS/ExTR21.0060/00 refers.
SGS20ATEX0048X Issue 3	3 September 2021	Minor change to the BTV-8BTV-CR, BTV-8BTV-CT, BTV-10BTV-CR and BTV-10BTV-CT heating cable dimensions. Baseefa Certification Report GB/BAS/ExTR21.0104/00 refers.
For drawings applicable to each issue, see original of that issue.		

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

REV. 02



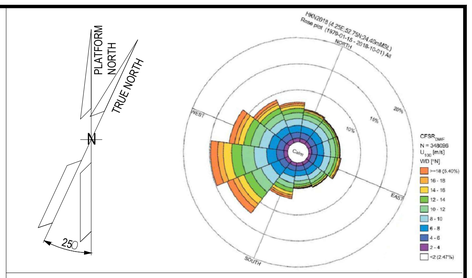
PLAN ON UPPER DECK
EL+30.310 T.O.S.



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

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

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



NOTES

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

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

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

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

CROSSWIND

ROSETTI MARINO

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

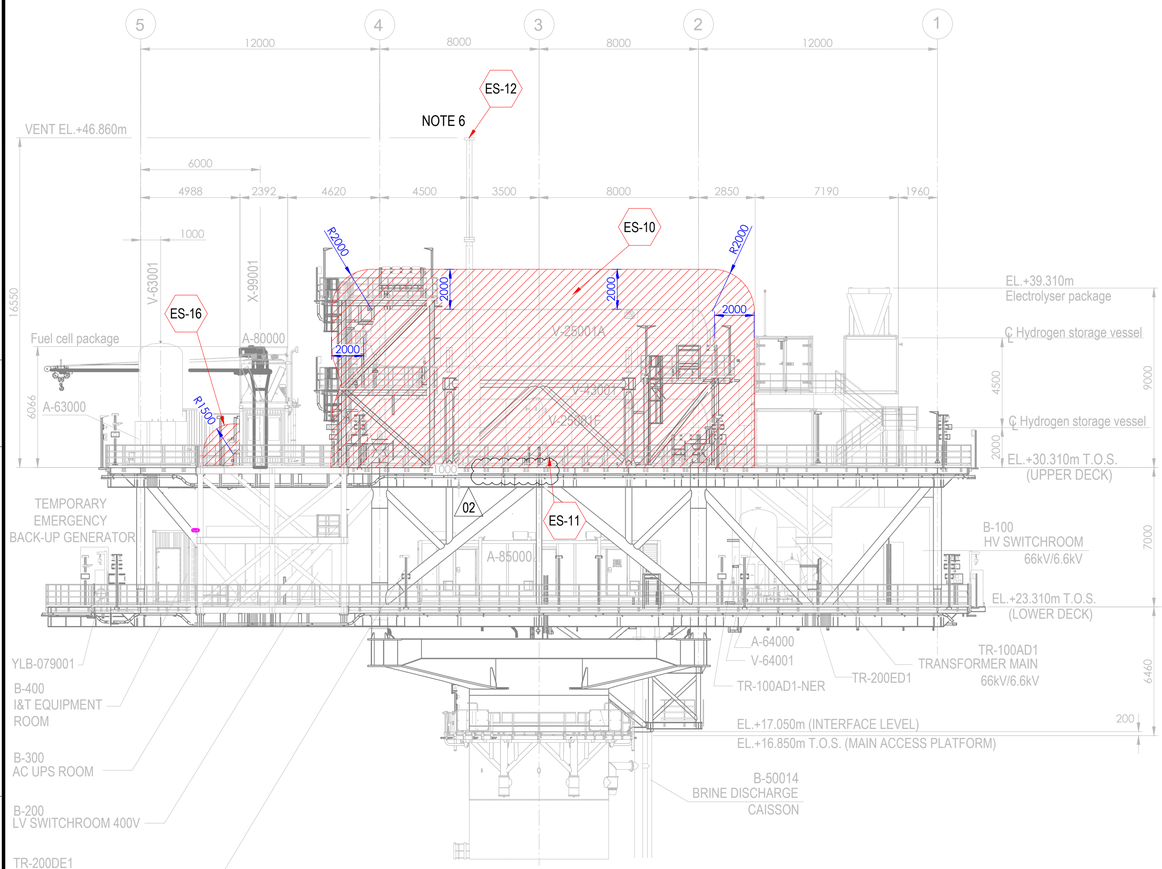
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

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

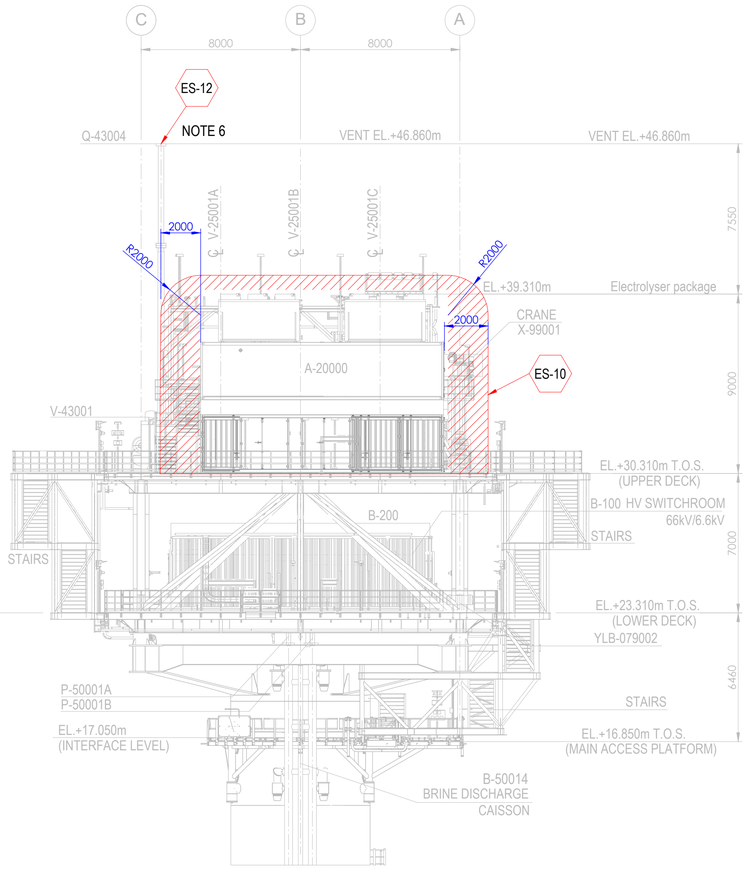
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

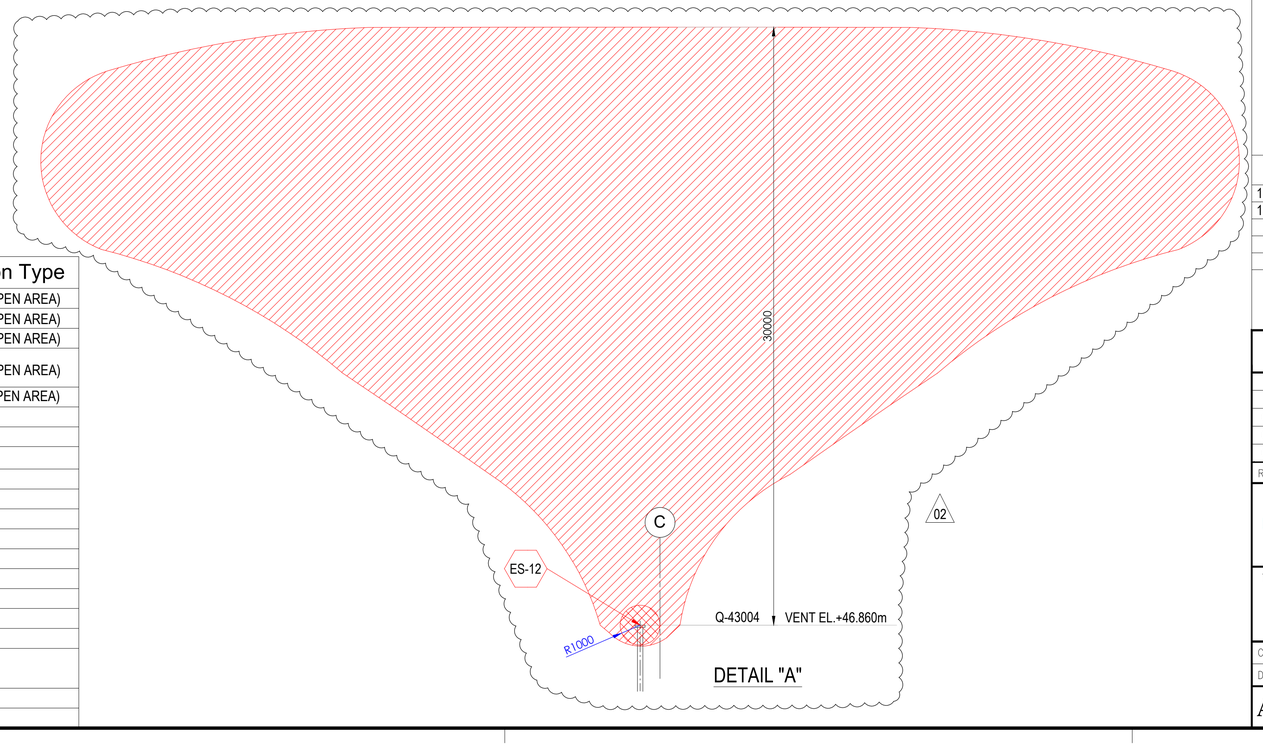


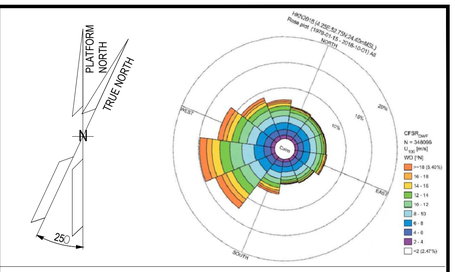
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

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





NOTES

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

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

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

CROSSWIND

ROSETTI MARINO

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

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

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

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

ITEM	Tag	EHT-1001-A	: Heat Tracing Tape			Dwg	1724001647-EL-LIS-00003
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD/UD
TASK	code	C10004647		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX22B — Tape Trace Heating After Insulation

1	Check that the circuit is de-energized and safe.	OK
2	Check all tapes and junction boxes are undamaged.	OK
3	Check circuit earthing and bonding against drawings.	OK
4	Check warning labels and safety instruction are installed.	OK
5	After test re-connecting cable as per typical installation.	OK
6	If required produce Red Line Mark Up for "AS BUILT"	

CIRCUIT DATA

List Associated Heat tracing Isometric	1724001647-EL-DD-00004
Tape Type	3BTV2-CT
Circuit Installed Length	21m
Wiring Diagram	WD_1724001647-EL-DG-00006/Single line Diagram (1724001647-EL-DG-00005).

Testing & measurement instruments used

Type	Serial n°	Calibration certificate	Validity
MEGGER : KEW3125A	SERIAL: W8330207	N°7722/24	09/07/2025
VOLCRAFT 1000V	ET-200 S/N:H240103023	N°LAT 042 00768/24	11/10/2025

FINAL TEST

Continuity and insulation resistance tests to earth for each conductor core are carried out after the tape is installed on pipework **after pipework has been fully insulated and cladded.**

Test voltage (V):	2500	Tape Length	21m	Thermostats:	N/A
Continuity	60,6	Insulation Resistance	>1999 M	Result	OK

Check on CPX22A Inulsation Resistance value measured prior insulation and cladding was fitted and confirm difference is acceptable **55,5** Note

Comments: Note : For the reference punch point see PL number: C30001590; C30004012; C30004015;C30004016;C30004295;C30004296;C30004297

Page 1/1	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	VIP	RM(ROSETTI MARINO)	
Name	Madhankumar Arunagiri	Giovanni Tangianu	
Date	2025-03-25	2025-03-28	
Signature	PROVERLIS Digitaly signed by Madhankumar Arunagiri 2025-03-25T13:13:48.543Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-03-28T13:59:48.158Z	

ITEM	Tag	EHT-1002-A	: Heat Tracing Tape			Dwg	1724001647-EL-LIS-00003
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10004648		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX22B — Tape Trace Heating After Insulation

1	Check that the circuit is de-energized and safe.	OK
2	Check all tapes and junction boxes are undamaged.	OK
3	Check circuit earthing and bonding against drawings.	OK
4	Check warning labels and safety instruction are installed.	OK
5	After test re-connecting cable as per typical installation.	OK
6	If required produce Red Line Mark Up for "AS BUILT"	

CIRCUIT DATA

List Associated Heat tracing Isometric	1724001647-EL-DD-00004
Tape Type	3BTV2-CT
Circuit Installed Length	30m
Wiring Diagram	WD_1724001647-EL-DG-00006/Single line Diagram (1724001647-EL-DG-00005).

Testing & measurement instruments used

Type	Serial n°	Calibration certificate	Validity
MEGGER : KEW3125A	SERIAL: W8330207	N°7722/24	09/07/2025
VOLCRAFT 1000V	ET-200 S/N:H240103023	N°LAT 042 00768/24	11/10/2025

FINAL TEST

Continuity and insulation resistance tests to earth for each conductor core are carried out after the tape is installed on pipework **after pipework has been fully insulated and cladded.**

Test voltage (V):	2500	Tape Length	30m	Thermostats:	N/A
Continuity	36,6	Insulation Resistance	>1999 M	Result	OK

Check on CPX22A Inulsation Resistance value measured prior insulation and cladding was fitted and confirm difference is acceptable **37,4** Note

Comments: Note : For the reference punch point see PL number: C30004303;C30004304;C30004305.

Page 1/1	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	VIP	RM(ROSETTI MARINO)	
Name	Madhankumar Arunagiri	Giovanni Tangianu	
Date	2025-03-25	2025-04-02	
Signature	PROVERLIS Digitaly signed by Madhankumar Arunagiri 2025-03-25T13:15:19.337Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-04-02T07:54:03.921Z	

ITEM	Tag	EHT-1003-A	: Heat Tracing Tape		Dwg	1724001647-EL-LIS-00003	
	S/Sys	83-65	: Electrical Heat Tracing		Module	LD	
TASK	code	C10004649	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Electrical	Form	CPX22B	Tape Trace Heating After Insulation

1	Check that the circuit is de-energized and safe.	OK
2	Check all tapes and junction boxes are undamaged.	OK
3	Check circuit earthing and bonding against drawings.	OK
4	Check warning labels and safety instruction are installed.	OK
5	After test re-connecting cable as per typical installation.	OK
6	If required produce Red Line Mark Up for "AS BUILT"	

CIRCUIT DATA

List Associated Heat tracing Isometric	1724001647-EL-DD-00004
Tape Type	3BTV2-CT
Circuit Installed Length	78m
Wiring Diagram	WD_1724001647-EL-DG-00006/Single line Diagram (1724001647-EL-DG-00005)

Testing & measurement instruments used

Type	Serial n°	Calibration certificate	Validity
MEGGER : KEW3125A	SERIAL: W8330207	N°7722/24	09/07/2025
VOLCRAFT 1000V	ET-200 S/N:H240103023	N°LAT 042 00768/24	11/10/2025

FINAL TEST

Continuity and insulation resistance tests to earth for each conductor core are carried out after the tape is installed on pipework **after pipework has been fully insulated and cladded.**

Test voltage (V):	2500	Tape Length	78m	Thermostats:	N/A
Continuity	17,6	Insulation Resistance	>1999 M	Result	OK

Check on CPX22A Inulsation Resistance value measured prior insulation and cladding was fitted and confirm difference is acceptable **20,6** Note

Comments: Note : For the reference punch point see PL number: C30004303; C30004304; C30004305.

Page 1/1	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	VIP	RM(ROSETTI MARINO)	
Name	Madhankumar Arunagiri	Giovanni Tangianu	
Date	2025-03-25	2025-04-02	
Signature	Digitaly signed by Madhankumar Arunagiri 2025-03-25T13:16:54.089Z	Digitaly signed by Giovanni Tangianu 2025-04-02T12:54:31.739Z	

ITEM	Tag	EHT-1004-A	: Heat Tracing Tape		Dwg	1724001647-EL-LIS-00003	
	S/Sys	83-65	: Electrical Heat Tracing		Module	UD/LD	
TASK	code	C10004650	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Electrical	Form	CPX22B	Tape Trace Heating After Insulation

1	Check that the circuit is de-energized and safe.	OK
2	Check all tapes and junction boxes are undamaged.	OK
3	Check circuit earthing and bonding against drawings.	OK
4	Check warning labels and safety instruction are installed.	PL
5	After test re-connecting cable as per typical installation.	OK
6	If required produce Red Line Mark Up for "AS BUILT"	

CIRCUIT DATA

List Associated Heat tracing Isometric	1724001647-EL-DD-00004
Tape Type	3BTV2-CT
Circuit Installed Length	21m
Wiring Diagram	WD_1724001647-EL-DG-00006/Single line Diagram (1724001647-EL-DG-00005).

Testing & measurement instruments used

Type	Serial n°	Calibration certificate	Validity
MEGGER : KEW3125A	SERIAL: W8330207	N°7722/24	09/07/2025
VOLCRAFT 1000V	ET-200 S/N:H240103023	N°LAT 042 00768/24	11/10/2025

FINAL TEST

Continuity and insulation resistance tests to earth for each conductor core are carried out after the tape is installed on pipework **after pipework has been fully insulated and cladded.**

Test voltage (V):	2500	Tape Length	21m	Thermostats:	N/A
Continuity	55	Insulation Resistance	>1999 M	Result	OK

Check on CPX22A Inulsation Resistance value measured prior insulation and cladding was fitted and confirm difference is acceptable **56,7** Note

Comments: Note : For the reference punch point see PL number: C30004273.

Page 1/1	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	VIP	RM(ROSETTI MARINO)	
Name	Madhankumar Arunagiri	Giovanni Tangianu	
Date	2025-03-25	2025-03-25	
Signature	PROVERLIS Digitaly signed by Madhankumar Arunagiri 2025-03-25T13:17:44.120Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-03-25T15:11:19.690Z	

CAD FILENAME: PIT240024_DD02_3001_001_03.dwg

HEAT TRACING DATA

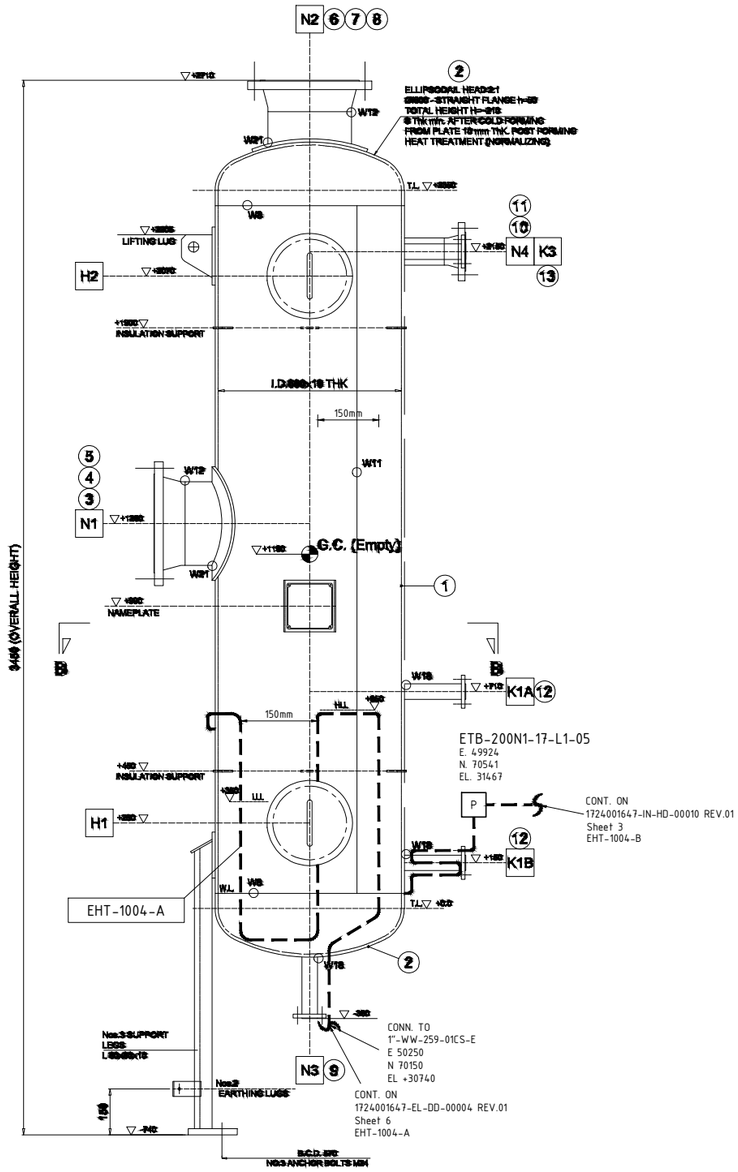
HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	HEATER LENGTH (m)	HEATED AREA (m^2)	HEATER SPACING (mm)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W)	POWER OUTPUT (W/m)	SHEATH TEMPERATURE (°C)
EHT-3001-A	EQUIPMENT	3BTV2-CT	1x17.3	2.43	150	1.8	274	230	198	13.9	
					TOTALS	1.8	274				

DESIGN PARAMETERS

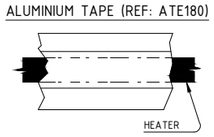
CIRCUIT NUMBER	3001	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	11°C	INSULATION TYPE	RW/MF 1.2015
MAX. EXPOSURE TEMP.	11°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	100°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

COMPONENT BILL OF MATERIALS

CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	17.3	m	Raychem Self-Regulating Heating Cable
PSE-090	2	each	Pipe Strap for 1.1/4' to 3' (40-90mm)
JBM-100-E	1	each	Integrated Junction Box, Multiple-Entry, Cold-Applied, ATEX
ATE-180	0.32	roll	Fixing tape (aluminium, 55m/roll)
LAB-I-01	1	each	Warning Label - English



ALUMINIUM TAPE (REF: ATE180)



SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

EQUIPMENT NUMBERS	REFERENCE DRAWINGS / DOCUMENTS
V-43001	

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.

CROSSWIND

ROSETTI MARINO

nVent RAYCHEM TRACER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
03	12/02/2025	ACCEPTED FOR CONSTRUCTION	ADU	AMI	GPI
02	20/01/2025	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING EQUIPMENT

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-EL-DD-00004	10/10	03

ITEM	Tag	EHT-1004-B	: Heat Tracing Tape		Dwg	1724001647-EL-LIS-00003	
	S/Sys	83-65	: Electrical Heat Tracing		Module	UD	
TASK	code	C10004651	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Electrical	Form	CPX22B	Tape Trace Heating After Insulation

1	Check that the circuit is de-energized and safe.	OK
2	Check all tapes and junction boxes are undamaged.	OK
3	Check circuit earthing and bonding against drawings.	OK
4	Check warning labels and safety instruction are installed.	PL
5	After test re-connecting cable as per typical installation.	OK
6	If required produce Red Line Mark Up for "AS BUILT"	

CIRCUIT DATA

List Associated Heat tracing Isometric	1724001647-EL-DD-00004/1724001647-IN-HD-00010
Tape Type	3BTV2-CT
Circuit Installed Length	3m
Wiring Diagram	WD_1724001647-EL-DG-00006/Single line Diagram (1724001647-EL-DG-00005).

Testing & measurement instruments used

Type	Serial n°	Calibration certificate	Validity
MEGGER : KEW3125A	SERIAL: W8330207	N°7722/24	09/07/2025
VOLCRAFT 1000V	ET-200 S/N:H240103023	N°LAT 042 00768/24	11/10/2025

FINAL TEST

Continuity and insulation resistance tests to earth for each conductor core are carried out after the tape is installed on pipework **after pipework has been fully insulated and cladded.**

Test voltage (V):	2500	Tape Length	3m	Thermostats:	N/A
Continuity	240	Insulation Resistance	>1999 M	Result	OK

Check on CPX22A Inulsation Resistance value measured prior insulation and cladding was fitted and confirm difference is acceptable **199,3** Note

Comments: Note : For the reference punch point see PL number: C30004273.

Page 1/1	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	VIP	RM(ROSETTI MARINO)	
Name	Madhankumar Arunagiri	Giovanni Tangianu	
Date	2025-03-25	2025-03-25	
Signature	PROVERLIS Digitaly signed by Madhankumar Arunagiri 2025-03-25T13:18:50.745Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-03-25T15:15:35.814Z	

ITEM	Tag	EHT-1005-A	: Heat Tracing Tape		Dwg	1724001647-EL-LIS-00003	
	S/Sys	83-65	: Electrical Heat Tracing		Module	UD	
TASK	code	C10004652	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Electrical	Form	CPX22B	Tape Trace Heating After Insulation

1	Check that the circuit is de-energized and safe.	OK
2	Check all tapes and junction boxes are undamaged.	OK
3	Check circuit earthing and bonding against drawings.	OK
4	Check warning labels and safety instruction are installed.	PL
5	After test re-connecting cable as per typical installation.	OK
6	If required produce Red Line Mark Up for "AS BUILT"	

CIRCUIT DATA

List Associated Heat tracing Isometric	1724001647-EL-DD-00004
Tape Type	3BTV2-CT
Circuit Installed Length	3m
Wiring Diagram	WD_1724001647-EL-DG-00006/Single line Diagram (1724001647-EL-DG-00005)

Testing & measurement instruments used

Type	Serial n°	Calibration certificate	Validity
MEGGER : KEW3125A	SERIAL: W8330207	N°7722/24	09/07/2025
VOLCRAFT 1000V	ET-200 S/N:H240103023	N°LAT 042 00768/24	11/10/2025

FINAL TEST

Continuity and insulation resistance tests to earth for each conductor core are carried out after the tape is installed on pipework **after pipework has been fully insulated and cladded.**

Test voltage (V):	2500	Tape Length	3m	Thermostats:	N/A
Continuity	470	Insulation Resistance	>1999 M	Result	OK

Check on CPX22A Inulsation Resistance value measured prior insulation and cladding was fitted and confirm difference is acceptable **383,4** Note

Comments: Note : For the reference punch point see PL number: C30004270.

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	VIP	RM(ROSETTI MARINO)	
Name	Madhankumar Arunagiri	Giovanni Tangianu	
Date	2025-03-25	2025-03-25	
Signature	PROVERLIS Digitaly signed by Madhankumar Arunagiri 2025-03-25T13:19:37.633Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-03-25T15:18:25.954Z	

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	EHT-1006-A	: Heat Tracing Tape			Dwg	1724001647-EL-LIS-00003
	S/Sys	83-65	: Electrical Heat Tracing			Module	UD
TASK	code	C10004653		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX22B — Tape Trace Heating After Insulation

1	Check that the circuit is de-energized and safe.	OK
2	Check all tapes and junction boxes are undamaged.	OK
3	Check circuit earthing and bonding against drawings.	OK
4	Check warning labels and safety instruction are installed.	OK
5	After test re-connecting cable as per typical installation.	OK
6	If required produce Red Line Mark Up for "AS BUILT"	

CIRCUIT DATA

List Associated Heat tracing Isometric	1724001647-EL-DD-00004
Tape Type	3BTV2-CT
Circuit Installed Length	2m
Wiring Diagram	WD_1724001647-EL-DG-00006/Single line Diagram (1724001647-EL-DG-00005).

Testing & measurement instruments used

Type	Serial n°	Calibration certificate	Validity
MEGGER : KEW3125A	SERIAL: W8330207	N°7722/24	09/07/2025
VOLCRAFT 1000V	ET-200 S/N:H240103023	N°LAT 042 00768/24	11/10/2025

FINAL TEST

Continuity and insulation resistance tests to earth for each conductor core are carried out after the tape is installed on pipework **after pipework has been fully insulated and cladded.**

Test voltage (V):	2500	Tape Length	2m	Thermostats:	N/A
Continuity	390	Insulation Resistance	>1999M	Result	OK

Check on CPX22A Inulsation Resistance value measured prior insulation and cladding was fitted and confirm difference is acceptable	394	OK

Comments:

Page 1/1	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	VIP	RM(ROSETTI MARINO)	
Name	Madhankumar Arunagiri	Giovanni Tangianu	
Date	2025-03-25	2025-04-02	
Signature	PROVERLIS Digitaly signed by Madhankumar Arunagiri 2025-03-25T13:20:24.956Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-04-02T07:48:46.765Z	

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	EHT-1007-A	: Heat Tracing Tape		Dwg	1724001647-EL-LIS-00003	
	S/Sys	83-65	: Electrical Heat Tracing		Module	LD	
TASK	code	C10004654	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Electrical	Form	CPX22B	Tape Trace Heating After Insulation

1	Check that the circuit is de-energized and safe.	OK
2	Check all tapes and junction boxes are undamaged.	OK
3	Check circuit earthing and bonding against drawings.	Note
4	Check warning labels and safety instruction are installed.	OK
5	After test re-connecting cable as per typical installation.	OK
6	If required produce Red Line Mark Up for "AS BUILT"	

CIRCUIT DATA

List Associated Heat tracing Isometric	1724001647-EL-DD-00004
Tape Type	3BTV2-CT
Circuit Installed Length	19,5m
Wiring Diagram	WD_1724001647-EL-DG-00006/Single line Diagram (1724001647-EL-DG-00005)

Testing & measurement instruments used

Type	Serial n°	Calibration certificate	Validity
MEGGER : KEW3125A	SERIAL: W8330207	N°7722/24	09/07/2025
VOLCRAFT 1000V	ET-200 S/N:H240103023	N°LAT 042 00768/24	11/10/2025

FINAL TEST

Continuity and insulation resistance tests to earth for each conductor core are carried out after the tape is installed on pipework **after pipework has been fully insulated and cladded.**

Test voltage (V):	2500	Tape Length	19m	Thermostats:	N/A
Continuity	54,2	Insulation Resistance	>1999 M	Result	OK

Check on CPX22A Inulsation Resistance value measured prior insulation and cladding was fitted and confirm difference is acceptable **58,4** Note

Comments: Note 03: Cable installation and connection will be completed during OFFSHORE phase. (See Ref. task C10004934)

Note : For the reference punch point see PL number: C30003916;C30004192;C30004292;C30004293;C30004294.

Page 1/1	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	VIP	RM(ROSETTI MARINO)	
Name	Madhankumar Arunagiri	Giovanni Tangianu	
Date	2025-03-25	2025-03-28	
Signature	PROVERLIS Digitaly signed by Madhankumar Arunagiri 2025-03-25T13:20:54.016Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-03-28T14:38:36.031Z	

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	EHT-2002-A	: Heat Tracing Tape			Dwg	1724001647-EL-LIS-00003
	S/Sys	83-65	: Electrical Heat Tracing			Module	UD
TASK	code	C10004655		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX22B — Tape Trace Heating After Insulation

1	Check that the circuit is de-energized and safe.	OK
2	Check all tapes and junction boxes are undamaged.	OK
3	Check circuit earthing and bonding against drawings.	OK
4	Check warning labels and safety instruction are installed.	PL
5	After test re-connecting cable as per typical installation.	OK
6	If required produce Red Line Mark Up for "AS BUILT"	

CIRCUIT DATA

List Associated Heat tracing Isometric	1724001647-EL-DD-00004
Tape Type	3BTV2-CT
Circuit Installed Length	5m
Wiring Diagram	WD_1724001647-EL-DG-00006/Single line Diagram (1724001647-EL-DG-00005)

Testing & measurement instruments used

Type	Serial n°	Calibration certificate	Validity
MEGGER : KEW3125A	SERIAL: W8330207	N°7722/24	09/07/2025
VOLCRAFT 1000V	ET-200 S/N:H240103023	N°LAT 042 00768/24	11/10/2025

FINAL TEST

Continuity and insulation resistance tests to earth for each conductor core are carried out after the tape is installed on pipework **after pipework has been fully insulated and cladded.**

Test voltage (V):	2500	Tape Length	5m	Thermostats:	N/A
Continuity	207	Insulation Resistance	>1999 M	Result	OK

Check on CPX22A Inulsation Resistance value measured prior insulation and cladding was fitted and confirm difference is acceptable: **135** Note

Comments: Note : For the reference punch point see PL number: C30004271.

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	VIP	RM(ROSETTI MARINO)	
Name	Madhankumar Arunagiri	Giovanni Tangianu	
Date	2025-03-25	2025-03-25	
Signature	PROVERLIS Digitaly signed by Madhankumar Arunagiri 2025-03-25T13:21:42.096Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-03-25T15:21:02.204Z	

ITEM	Tag	P-EAT-200N1-01	: LV 0,4 / 0,23 kV Distribution Switchgear/Trace Heating Remote Ambient Thermostat			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD_B-200/LD_B-200_Ext
TASK	code	C10004656		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

CABLE DATA

Type: Cu Cl.2/EPR/LSZH | Cores/Size mm²: 3G2,5 mm2 | Color: GREY

From: DP-200N1 | To: EAT-200N1-01

1	Confirm cable is as specified in project cable schedule	OK
2	Visual Check cable physical integrity.	OK
3	Check is installed in accordance with layout drawing (segregation, distance…).	OK
4	Check cable is supported and fixed to rack according to project specification.	Note
5	Check bending radius is within the specified limits.	OK
6	Confirm cable glands suit for cable type, correctly mounted and tightened.	OK
7	Check gland plate for single core cables is non ferrous (non -magnetic).	NA
8	Confirm cable labelling is in accordance with specifications.	PL
9	Check cable is correctly loomed and segregated in accordance with specification.	OK
10	Check cable earthing against lastest drawings.	OK
11	Check cores marking are in accordance with termination diagram	PL
12	Check terminations are in accordance with latest termination diagram	OK
13	If required produce Red Line Mark Up for "AS BUILT"	

ITEM	Tag	P-EAT-200N1-01	: LV 0,4 / 0,23 kV Distribution Switchgear/Trace Heating Remote Ambient Thermostat			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD_B-200/LD_B-200_Ext
TASK	code	C10004656		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

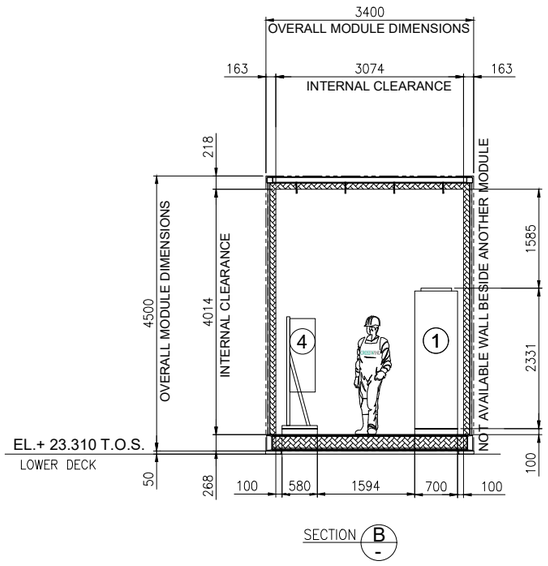
CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0,5	
6		PH 2	0,5	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		0,5	
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	>999	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207	TYPE / SERIAL N° :	MULTIMETER: FLUKE 175 SERIAL:AW1/018(17140769)
Calibration certificate N° and date:	N°7722/24 _ 10/07/2024	Calibration certificate N° and date:	N°7715/24 _ 10/07/2024

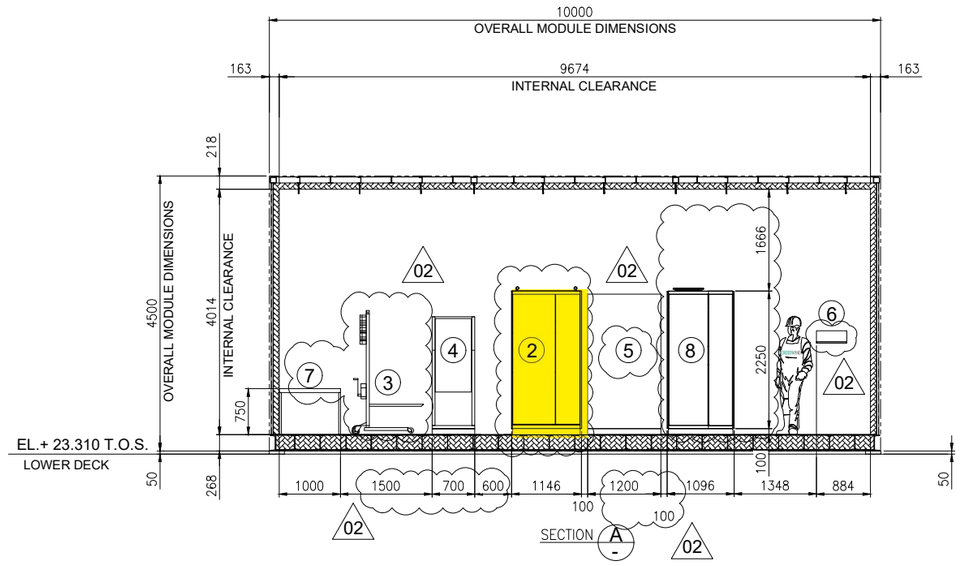
Comments: Nota 4: refer to PL C30000679

	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Paolo Schintu	
Date	2025-01-04	2025-01-21	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-04T11:01:43.277Z	PROVERLIS Digitaly signed by Paolo Schintu 2025-01-21T16:39:38.461Z	

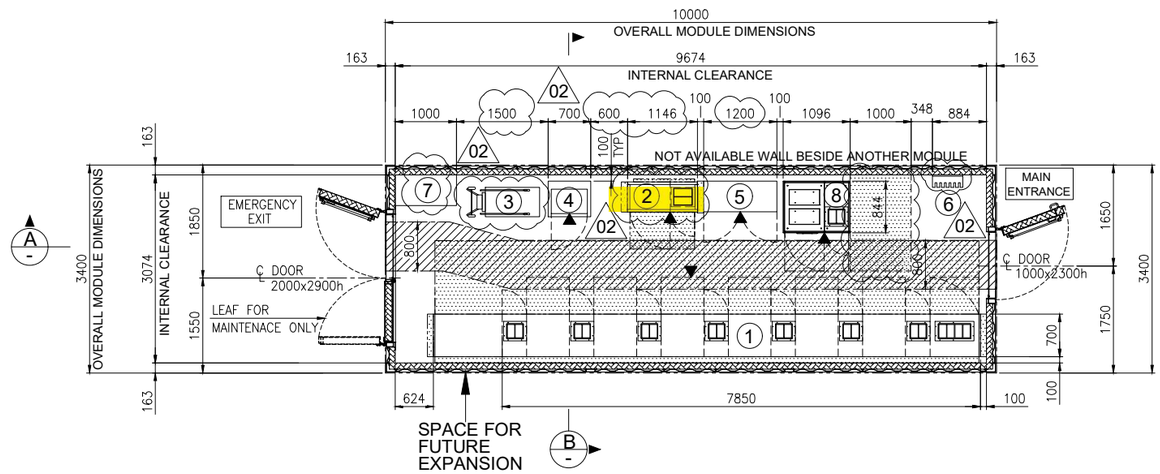
DRAWING NO. 123A90-DDL-EL-DL-20105 | REV. 02



SECTION B



SECTION A

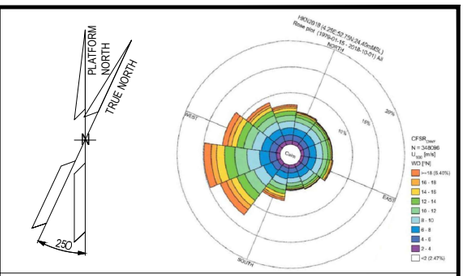


EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

1

EQUIPMENT LIST

REF.	TAG No.	DESCRIPTION	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)	NOTE
1	SG-200N1	400V SWITCHGEAR	7850	700	2331	
2	DP-200N1	DISTRIBUTION BOARD FOR LIGHTING AND SMALL POWER B.O.P.	1146	520	2250	
3	-	SERVICE TROLLEY FOR 400V SWITCHGEAR	1034	490	2030	
4	CN-200N1	ICCP PANEL	700	580	1830	
5	B200-HSB-001	DISTRIBUTION & HVAC PANEL - LV ROOM	1200	600	1900	02
6	-	TOOL BOX	495	200	200	
7	-	TABLE	1000	500	750	
8	SG-200D2	ACB PANEL FOR SOLAR PACKAGE	1096	844	2294	



NOTES

1. U.N.O. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DELETED.
3. DOCUMENT VALID ONLY FOR ELECTRICAL COMPONENT, FOR OTHER SCOPE LOCATION AND INFORMATION, PLEASE REFER TO VENDORS AND PROJECT DOCUMENTS.
4. FOR OTHER ITEMS, CORRECT LOCATION AND INFORMATION, PLEASE REFER TO VENDORS AND DEDICATED PROJECT DOCUMENTATION.
5. HEIGHT OF ALL PANELS IN THE EQUIPMENT LIST TABLE IS WITHOUT THE BASE FRAME (100mm)

02

LEGEND

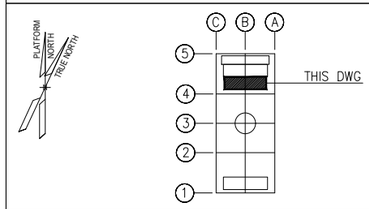
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

REFERENCES

DOCUMENT TITLE	DOCUMENT NUMBER
SG-200N1 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00007
SG-200D2 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00008
DP-200N1 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00009
AC UPS – GENERAL ARRANGEMENT AND DIMENSIONAL DRAWINGS	1724000372-EL-DA-00004
AC UPS – BATTERY LAYOUT INTERCONNECTING DIAGRAM	1724000372-EL-DG-00011
B-200 -GENERAL ARRANGEMENT DRAWINGS - E&I SHELTER	1724000049-AR-DA-00015
ICCC PANEL GENERAL ARRANGEMENT DRAWING	144671-CORR-TF-FAB-DWG-0003

02

KEY PLAN



VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-EL-DL-20105

REV.:	DATE:	SIGNATURE:
2_A	08/08/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	27/05/2024	FMO	LMA/AMA	LMA/MDO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/03/2024	GPA	LMA/AMA	LMA/MDO	ISSUE FOR REVIEW (IFR)
00	08/11/2023	DSF	CB/AMA	OYFO/MDO	ISSUE FOR REVIEW (IFR)

CROSSWIND | ROSETTI MARINO

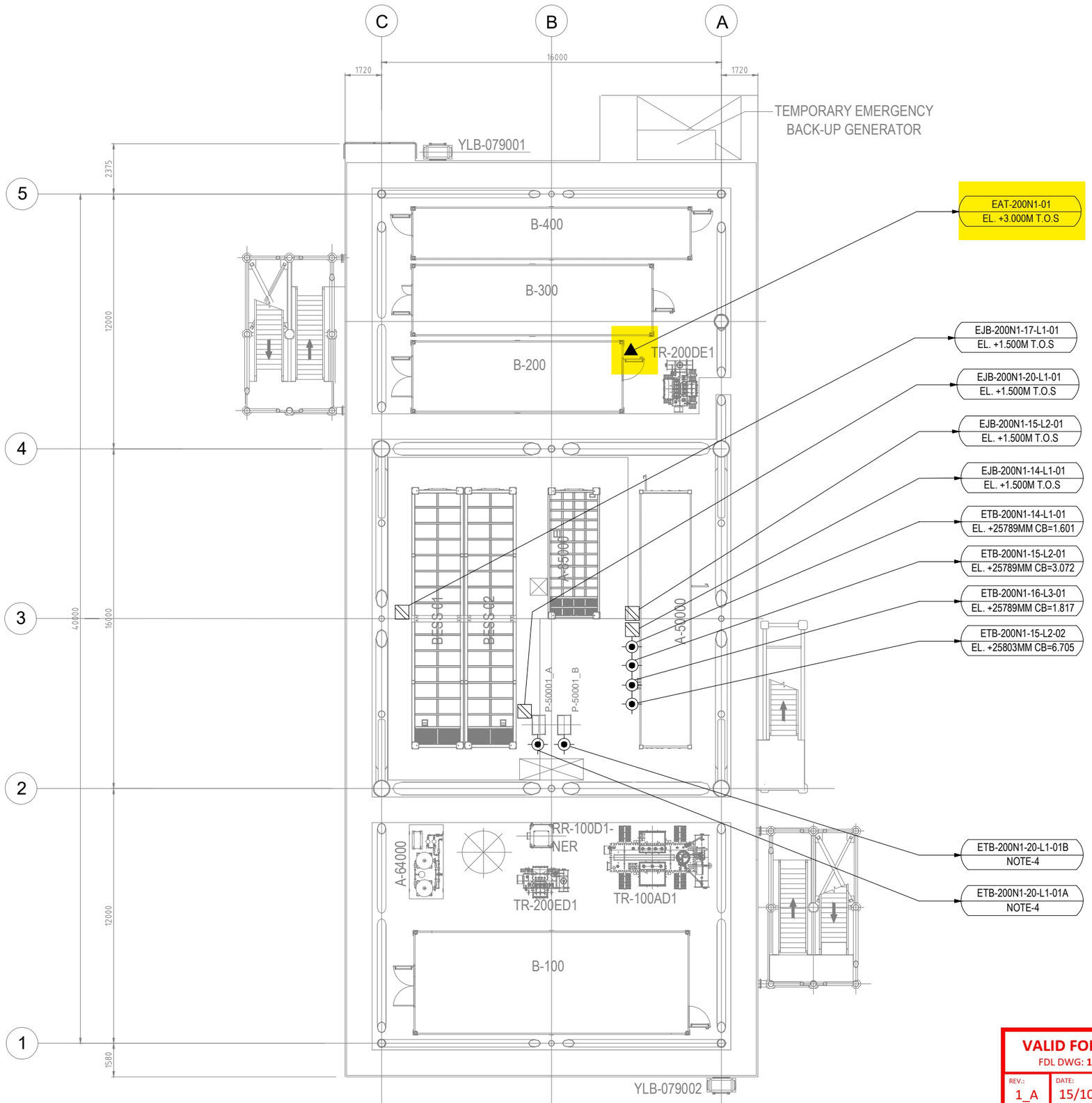
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LV SWITCHROOM

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN FMO	CHECKED LMA/AMA	APPROVED LMA/MDO	DATE 27/05/2024
A1	DRAWING NO. 123A90-DDL-EL-DL-20105	SHEET 001	REV. 02

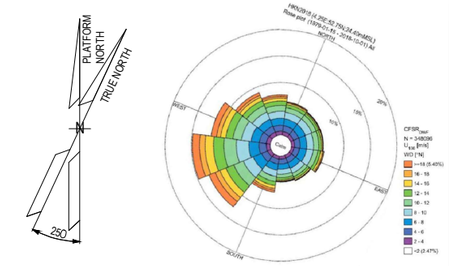
File Name : 123A90-DDL-EL-DL-20105_REV02.dwg

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

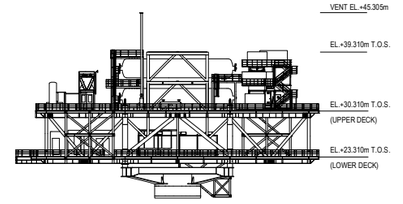
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 1of2	REV. 01

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

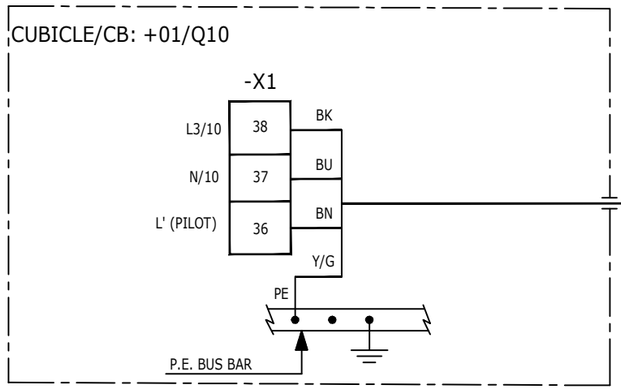
REV.:	DATE:	SIGNATURE:
1_A	15/10/24	G.Randi

ROSETTI MARINO SpA

File Name : 123A90-DDL-EL-DL-20140

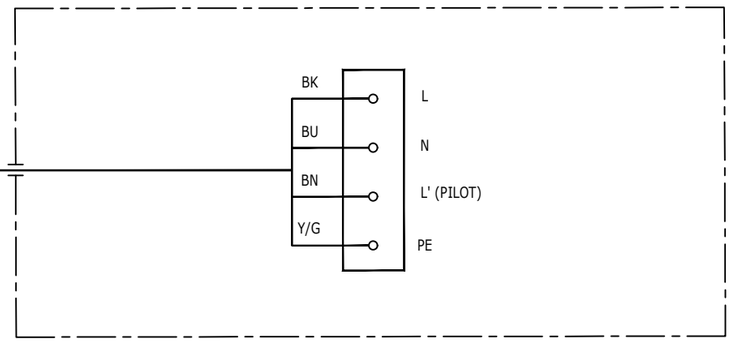
FROM	TO

DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1
CUBICLE/CB: +01/Q10

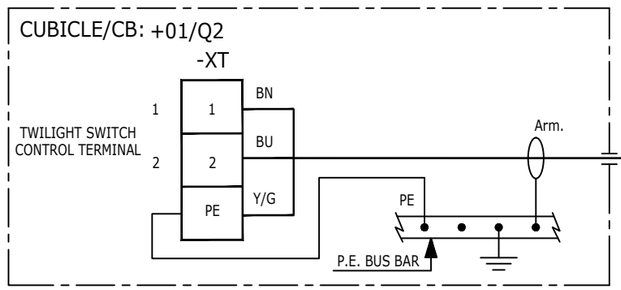


P-EJB-200N1-10-L3-01
4G4_E mm²

DESCRIPTION: EMERGENCY LIGHTING STAIRS
TAG NUMBER: EJB-200N1-10-L3-01

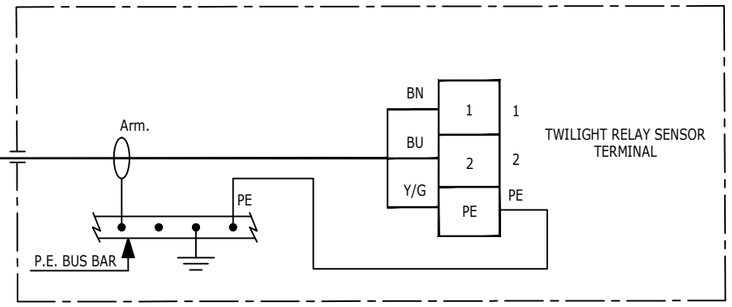


DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1
CUBICLE/CB: +01/Q2

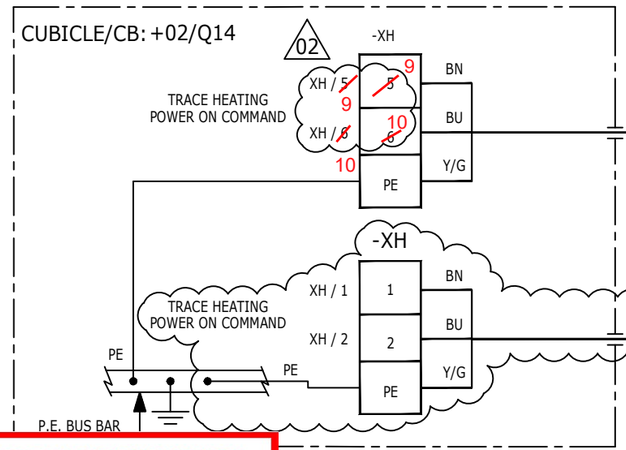


P-EPH-200N1-01
3G4 mm²

DESCRIPTION: TWILIGHT RELAY SENSOR
TAG NUMBER: EPH-200N1-01



DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1
CUBICLE/CB: +02/Q14

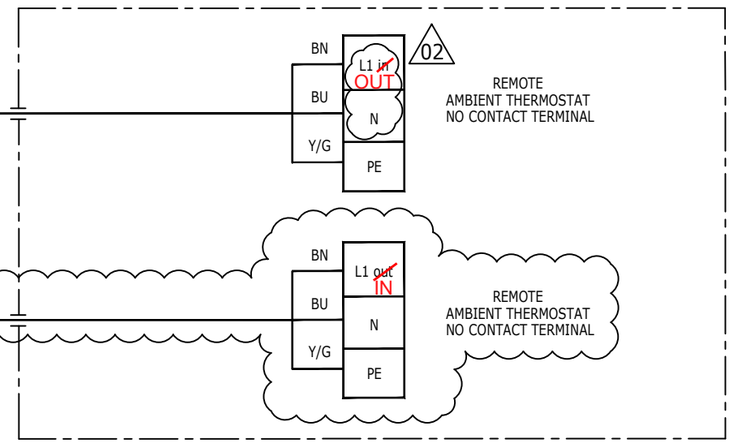


P-EAT-200N1-01
3G2.5 mm²

02

P-EAT-200N1-02
3G2.5 mm²

DESCRIPTION: REMOTE AMBIENT THERMOSTAT
TAG NUMBER: EAT-200N1-01



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_H	16/01/25	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
LIGHTING & SMALL POWER DB BOP

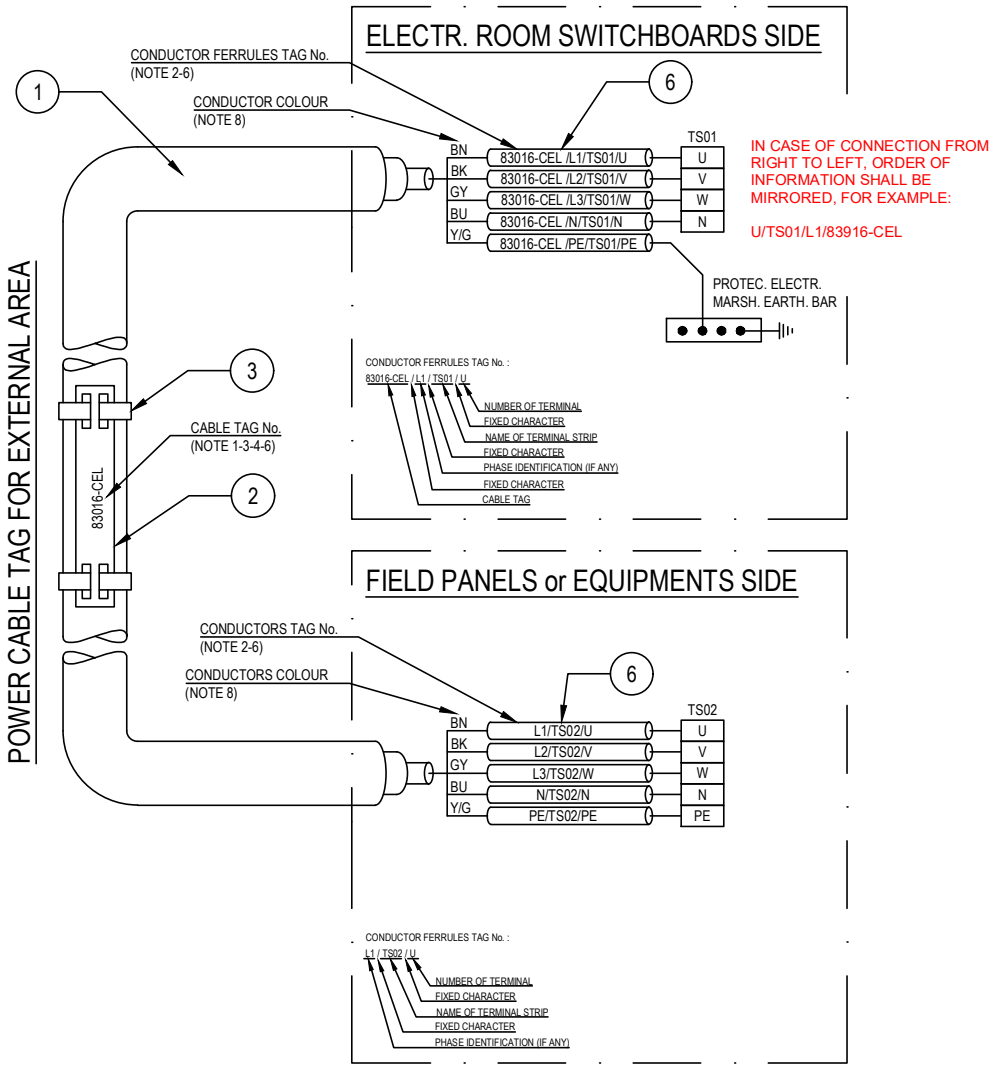
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-EL-DG-20149	047	02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

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.

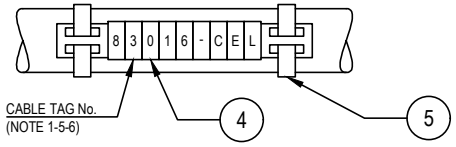
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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_D	20/12/24	V.Ramponi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

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. 123A90-DDL-EL-DD-20092 | SHEET 007 | REV. 02

F.to UNI A3: 420mmx297mm

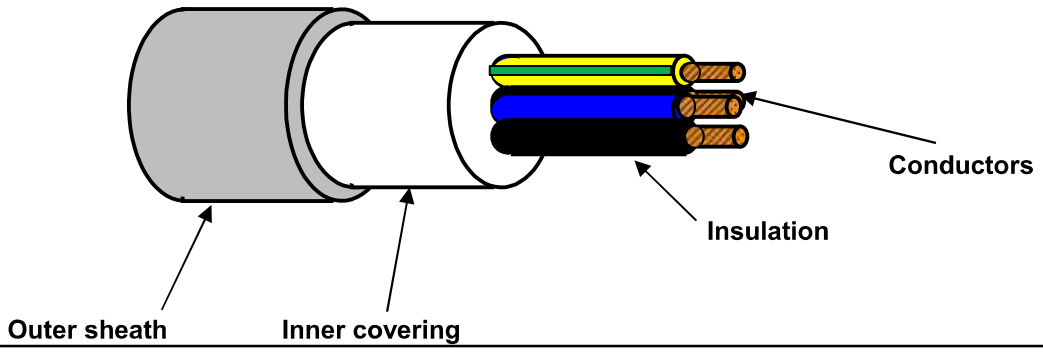
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Secti	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Stand	From Gland	From Entry	From Fitti	To Gland	To Entry	To Fitting	Routing	Routing Manual
P-EAT-200N1-01	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						DP-200N1	LV 0,4 / 0,23 kV Distribution Switchgear	Lower Deck (B-200)	02/Q14	EAT-200N1-01	Trace Heating Remote Ambient Thermostat	Lower Deck (B-200) Ext.	Thermostat Terminal	ELECV06-3G2,5	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 3G2,5mm² - Grey	M20	n.a.			T1_M20_Single				L-450-101-LVT-030 / L-600-101-LVT-020 / L-600-101-LVT-019 / L-600-101-LVT-017 / E-MCT-203 / L-750-101-LVT-013 / L-750-101-LVT-014 / L-150-101-LVT-087 / L-150-101-LVT-138 / L-150-101-LVT-139 / L-150-101-LVT-146

FLEI s.r.l.

Cu Cl.2/EPR/LSZH 0,6/1 KV

3G2,5 - L.V. POWER CABLE - Flame Retardant



TECHNICAL FEATURES

Conductors :	**STRANDED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	EPR compound, quality to IEC 60092.360, Nominal Thickness 1,0 mm	
Cores colour code :	**Brown - Blue - Yellow/Green**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not Required	
Total Assembling :	Cores layed up with optimal lay length	
Overall Wrapping:	Not required	
Drain wire :	Not required	
Overall Shield:	Not required	
Inner covering :	Extruded LSZH compound, Average Thickness 1,0 mm	
Inner covering color code:	**Black or Natural**	
Armour :	Not required	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,2 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 3G2,5 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 -**	
	Year of Manufacture - CE + Meter Marking	
Outer diameter :	(13,0 ± 10%) mm	
Bending radius :	cable outer diameter x 10	(in fixed installation)
Voltage test :	3,5 kV a.c. for 5' (Between Cores)	
Conductors DC Resistance :		IEC 60228 Class 2
Insulation Resistance :	≥ 1100 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.353**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance	IEC 61034.2 (LT ≥ 60%)	
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 covering together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	29/03/2024	Messa			
Checked :	29/03/2024	Spaccasassi			
Approved :	29/03/2024	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.

ITEM	Tag	P-ETB-200N1-20-L1-02	: HEAT TRACING - PROCESS LINES - FEEDER 7 (SEA WATER PUMPS) Cold JB/HEAT TRACING			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10004659		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

CABLE DATA

Type: Cu Cl.2/EPR/LSZH Cores/Size mm²: 3G6 mm2 Color: GREY

From: EJB-200N1-20-L1-01 To: ETB-200N1-20-L1-01A

1	Confirm cable is as specified in project cable schedule	OK
2	Visual Check cable physical integrity.	OK
3	Check is installed in accordance with layout drawing (segregation, distance…).	OK
4	Check cable is supported and fixed to rack according to project specification.	Note
5	Check bending radius is within the specified limits.	Note
6	Confirm cable glands suit for cable type, correctly mounted and tightened.	OK
7	Check gland plate for single core cables is non ferrous (non -magnetic).	NA
8	Confirm cable labelling is in accordance with specifications.	OK
9	Check cable is correctly loomed and segregated in accordance with specification.	OK
10	Check cable earthing against lastest drawings.	OK
11	Check cores marking are in accordance with termination diagram	OK
12	Check terminations are in accordance with latest termination diagram	OK
13	If required produce Red Line Mark Up for "AS BUILT"	

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	P-ETB-200N1-20-L1-02	: HEAT TRACING - PROCESS LINES - FEEDER 7 (SEA WATER PUMPS) Cold JB/HEAT TRACING			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10004659	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

	CONTINUITY			
5	CORE CONTINUITY Ω	PH 1	0.2	
6		PH 2	0.2	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		0.2	
	INSULATION			
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	>999	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	VOLCRAFT 1000V - ET-200 S/N:H240103023	TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207
Calibration certificate N° and date:	N°LAT 042 00768/24 _ 12/10/2024	Calibration certificate N° and date:	N°7722/24 _ 10/07/2024

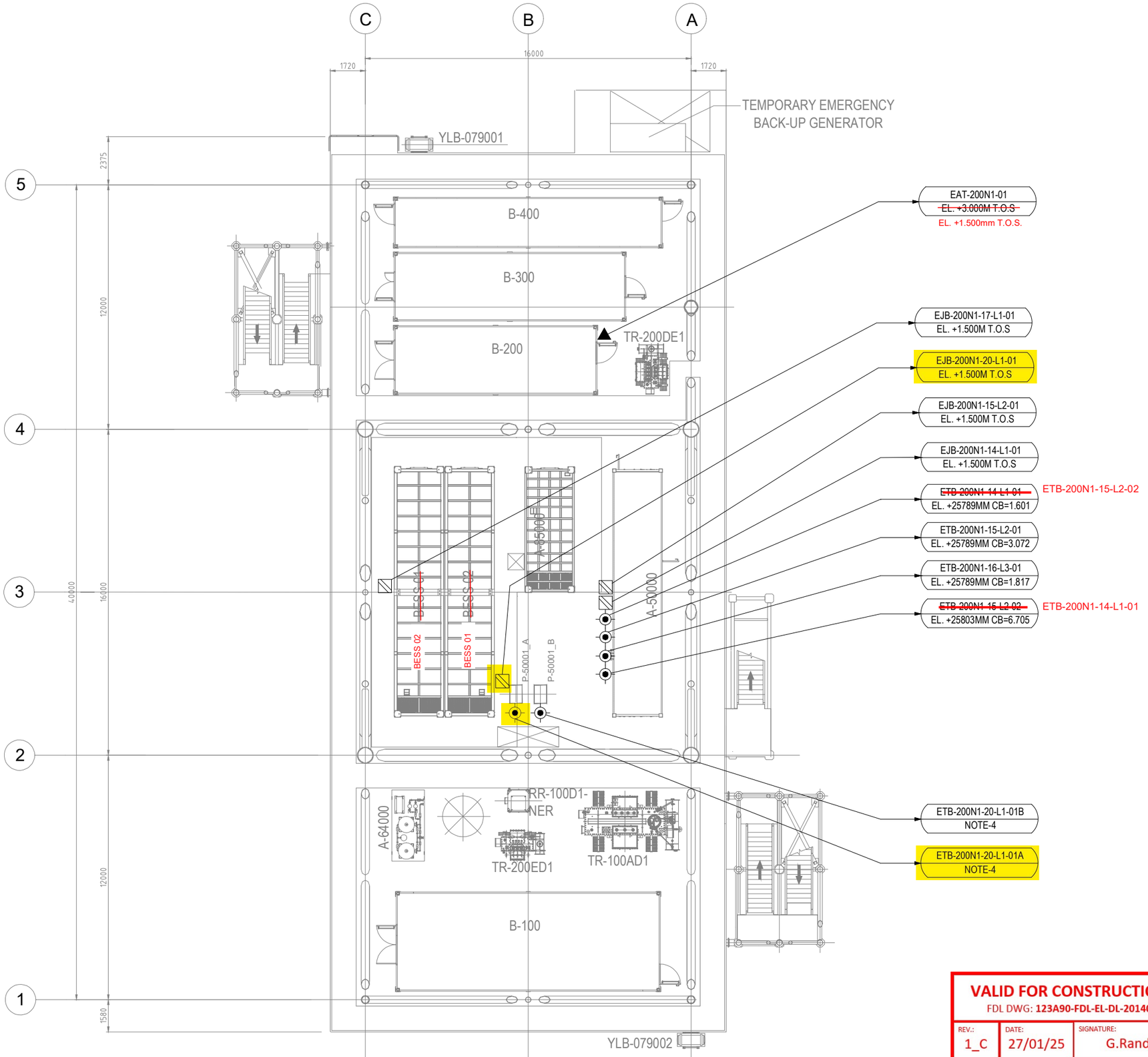
Comments: Nota 4: refer to PL C30000679

Note 05: Cable installation and connection will be completed during OFFSHORE phase. (See Ref. task C10004932)

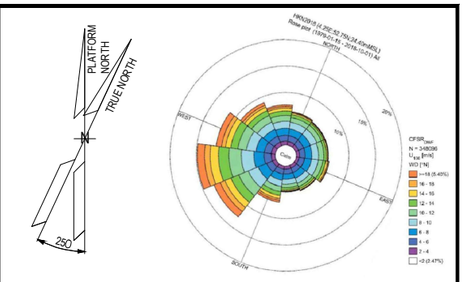
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (Rosetti Marino)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-08	2025-02-26	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-08T09:51:23.140Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-26T14:09:29.187Z	

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

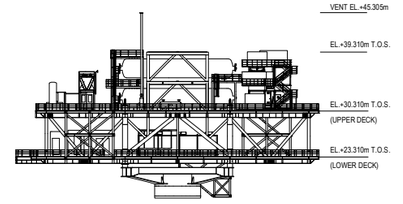
LEGEND

- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_C	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

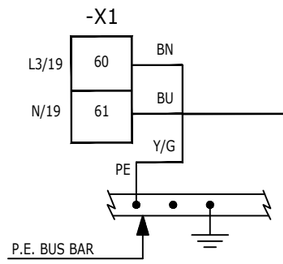
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 1of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

FROM	TO

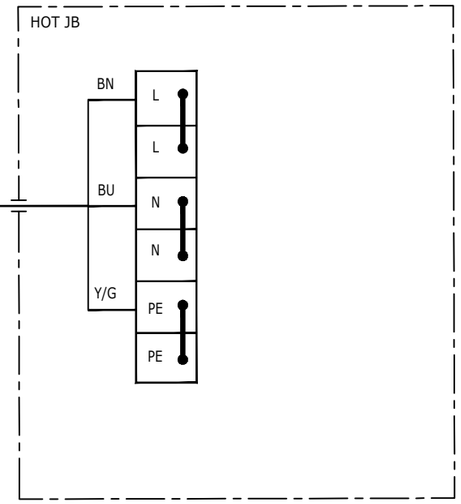
DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1

CUBICLE/CB: +03/Q19



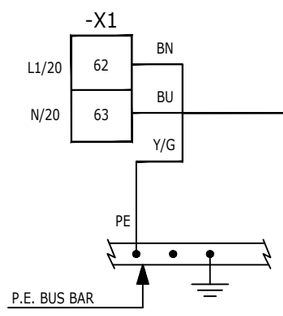
P-ETB-200N1-19-L3-01
3G6 mm²

DESCRIPTION: TRACE HEATING - PROCESS LINES - FEEDER 6 (H2 VENT)
TAG NUMBER: ETB-200N1-19-L3-01



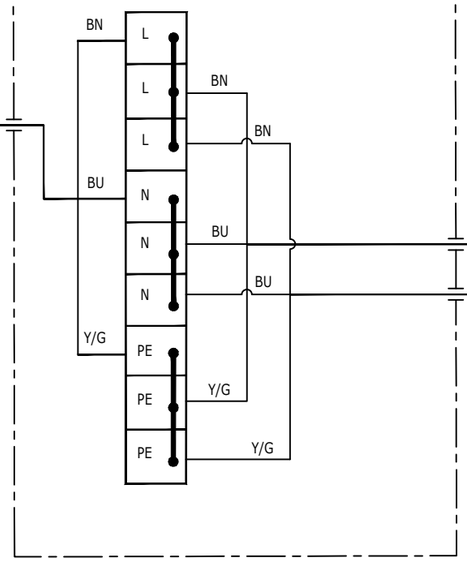
NOTE:
JB SUPPLIED BY
VENDOR OF PACKAGE

CUBICLE/CB: +03/Q20



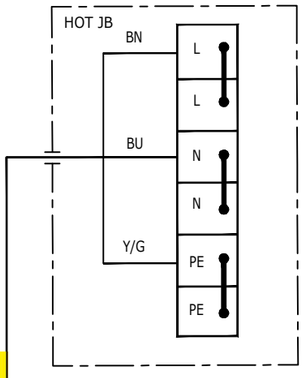
P-EJB-200N1-20-L1-01
3G6 mm²

DESCRIPTION: TRACE HEATING - PROCESS LINES
- FEEDER 7 (SEA WATER PUMPS)
TAG NUMBER: EJB-200N1-20-L1-01



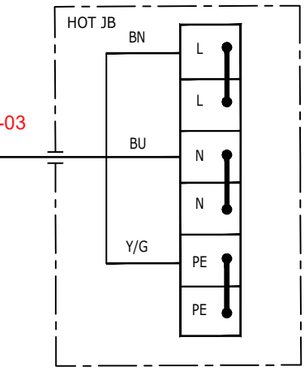
NOTE:
HOT JB SUPPLIED BY
VENDOR OF PACKAGE

TAG NUMBER: ETB-200N1-20-L1-01A



P-ETB-200N1-20-L1-02
~~P-ETB-200N1-20-L1-01A~~
3G6 mm²

TAG NUMBER: ETB-200N1-20-L1-01B



P-ETB-200N1-20-L1-03
~~P-ETB-200N1-20-L1-01B~~
3G6 mm²

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_K	12/02/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
TRACE HEATING PROCESS LINES

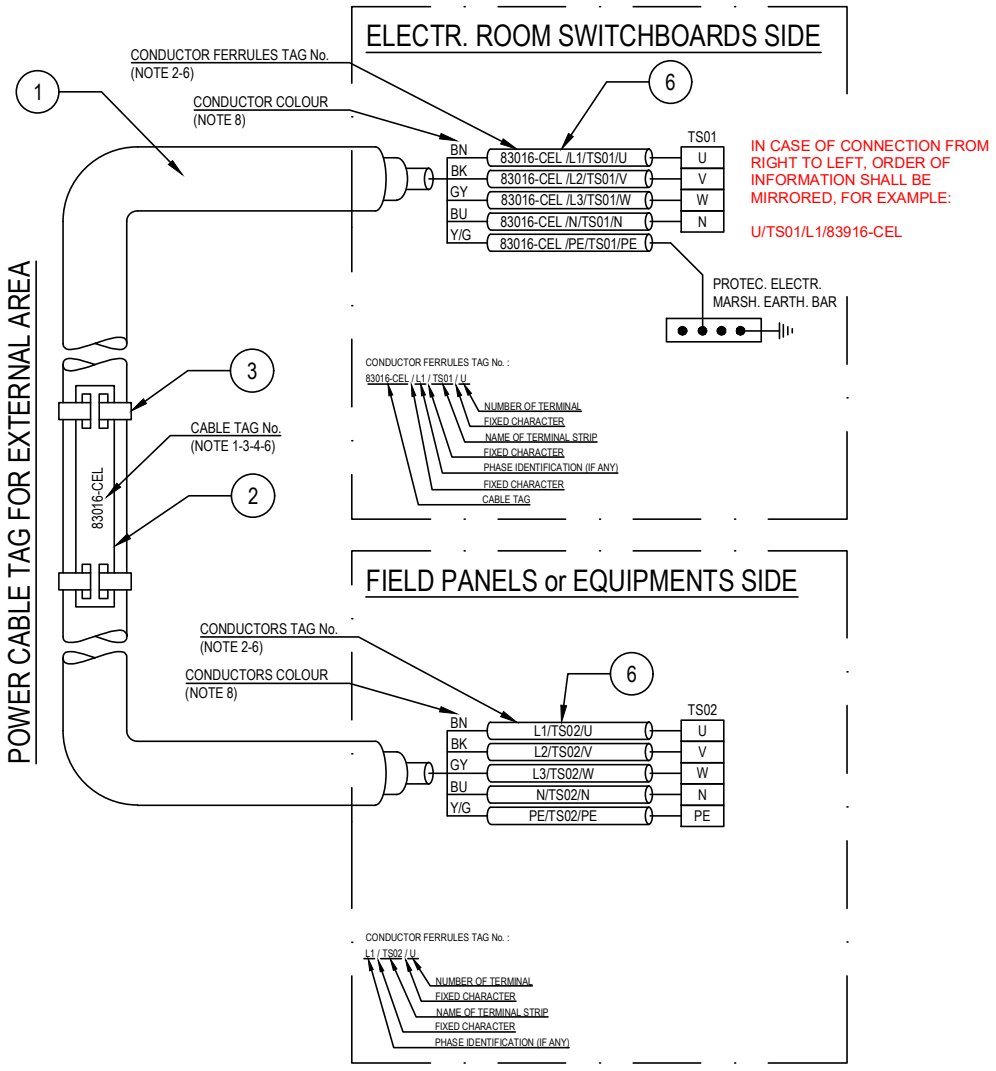
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 051 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

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.

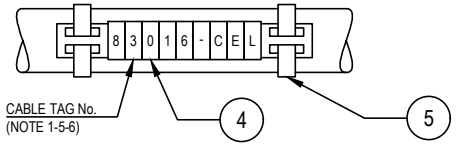
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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_D	20/12/24	V.Ramponi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

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. 123A90-DDL-EL-DD-20092 | SHEET 007 | REV. 02

F.to UNI A3: 420mmx297mm

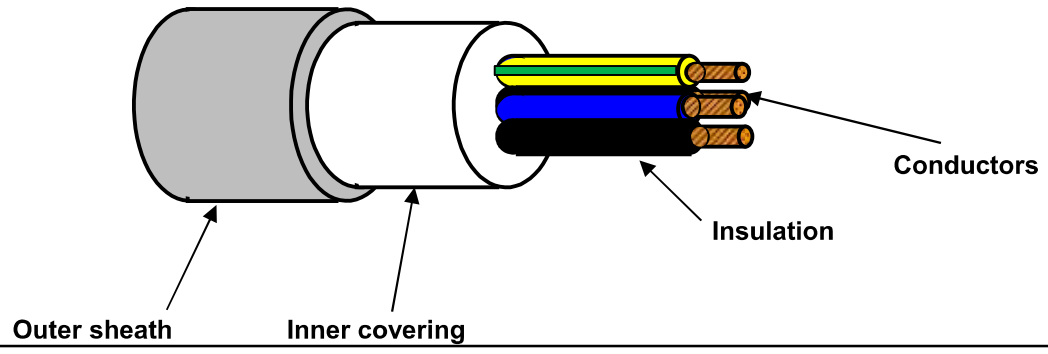
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Secti	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Stand	From Gland	From Entry	From Fitti	To Gland	To Entry	To Fitting	Routing	Routing Manual
P-ETB-200N1-20-L1-02	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						EJB-200N1-20-L1-01	HEAT TRACING - PROCESS LINES - FEEDER 7 (SEA WATER PUMPS) Cold JB	Lower Deck	Heat Tracing Cold JB	ETB-200N1-20-L1-01A	HEAT TRACING - PROCESS LINES - FEEDER 7 (SEA WATER PUMPS)	Lower Deck	Heat Tracing Hot JB	ELECV05-3G6	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 3G6mm² - Grey	M25	T1_M25_Single			T1_M25_Single				L-300-101-LVT-069 / L-300-101-LVT-109

FLEI s.r.l.

Cu Cl.2/EPR/LSZH 0,6/1 KV

3G6 - L.V. POWER CABLE - Flame Retardant



TECHNICAL FEATURES

Conductors :	**STRANDED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	EPR compound, quality to IEC 60092.360, Nominal Thickness 1,0 mm	
Cores colour code :	**Brown - Blue - Yellow/Green**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not Required	
Total Assembling :	Cores layed up with optimal lay length	
Overall Wrapping:	Not required	
Drain wire :	Not required	
Overall Shield:	Not required	
Inner covering :	Extruded LSZH compound, Average Thickness 1,0 mm	
Inner covering color code:	**Black or Natural**	
Armour :	Not required	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,2 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 3G6 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 -**	
	Year of Manufacture - CE + Meter Marking	
Outer diameter :	(15,6 ± 10%) mm	
Bending radius :	cable outer diameter x 10	(in fixed installation)
Voltage test :	3,5 kV a.c. for 5' (Between Cores)	
Conductors DC Resistance :		IEC 60228 Class 2
Insulation Resistance :	≥ 770 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.353**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance	IEC 61034.2 (LT ≥ 60%)	
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 covering together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	29/03/2024	Messa			
Checked :	29/03/2024	Spaccasassi			
Approved :	29/03/2024	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.

ITEM	Tag	P-ETB-200N1-20-L1-03	: HEAT TRACING - PROCESS LINES - FEEDER 7 (SEA WATER PUMPS) Cold JB/HEAT TRACING			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10004660		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

CABLE DATA

Type: Cu Cl.2/EPR/LSZH — Cores/Size mm²: 3G6 mm2 — Color: GREY

From: EJB-200N1-20-L1-01 — To: ETB-200N1-20-L1-01B

1	Confirm cable is as specified in project cable schedule	OK
2	Visual Check cable physical integrity.	OK
3	Check is installed in accordance with layout drawing (segregation, distance…).	OK
4	Check cable is supported and fixed to rack according to project specification.	Note
5	Check bending radius is within the specified limits.	Note
6	Confirm cable glands suit for cable type, correctly mounted and tightened.	OK
7	Check gland plate for single core cables is non ferrous (non -magnetic).	NA
8	Confirm cable labelling is in accordance with specifications.	OK
9	Check cable is correctly loomed and segregated in accordance with specification.	OK
10	Check cable earthing against lastest drawings.	OK
11	Check cores marking are in accordance with termination diagram	OK
12	Check terminations are in accordance with latest termination diagram	OK
13	If required produce Red Line Mark Up for "AS BUILT"	

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	P-ETB-200N1-20-L1-03	: HEAT TRACING - PROCESS LINES - FEEDER 7 (SEA WATER PUMPS) Cold JB/HEAT TRACING			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10004660	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

	CONTINUITY			
5	CORE CONTINUITY Ω	PH 1	0.2	
6		PH 2	0.2	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		0.2	
	INSULATION			
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	>999	
12		PH3 / PH1-PH2-A-E	>999	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	VOLCRAFT 1000V - ET-200 S/N:H240103023	TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207
Calibration certificate N° and date:	N°LAT 042 00768/24 _ 12/10/2024	Calibration certificate N° and date:	N°7722/24 _ 10/07/2024

Comments:

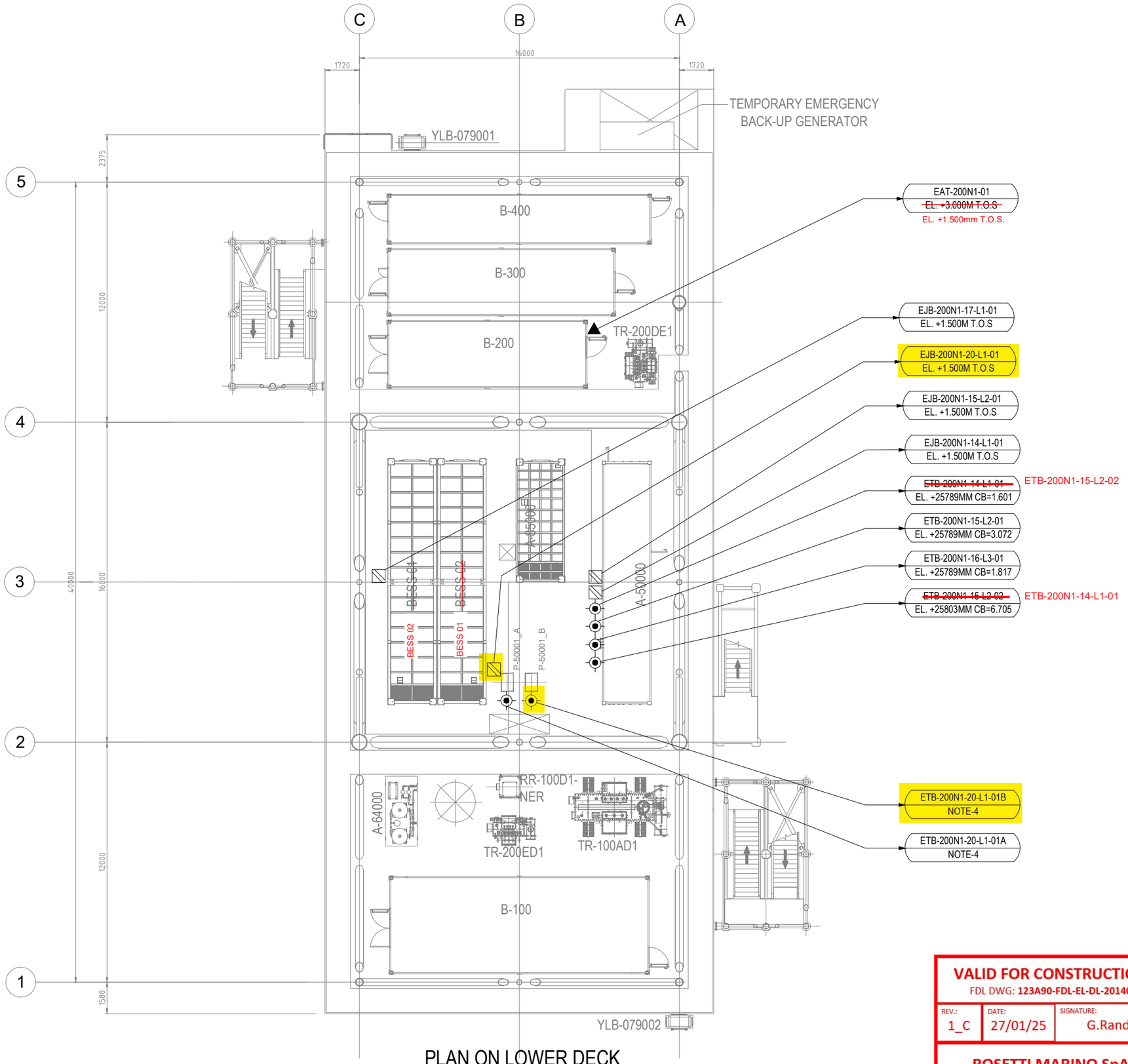
Nota 4: refer to PL C30000679

Note 05: Cable installation and connection will be completed during OFFSHORE phase. (See Ref. task C10004933)

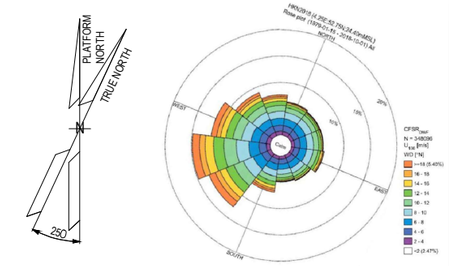
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-08	2025-02-26	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-08T09:51:33.300Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-26T14:09:22.362Z	

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

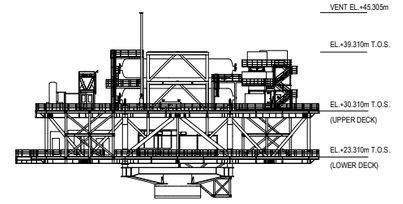
LEGEND

- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-EL-DL-20140
REV.: 1_C | DATE: 27/01/25 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

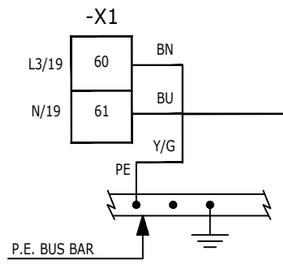
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 1of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

FROM	TO

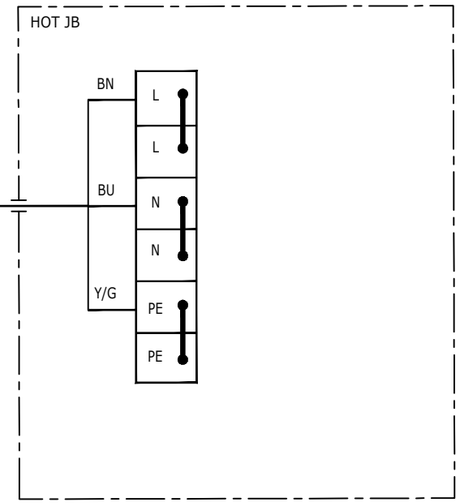
DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1

CUBICLE/CB: +03/Q19



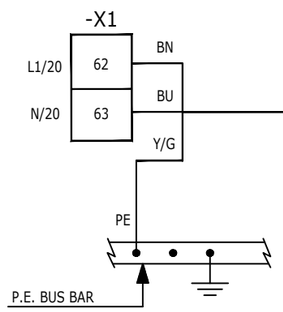
P-ETB-200N1-19-L3-01
3G6 mm²

DESCRIPTION: TRACE HEATING - PROCESS LINES - FEEDER 6 (H2 VENT)
TAG NUMBER: ETB-200N1-19-L3-01



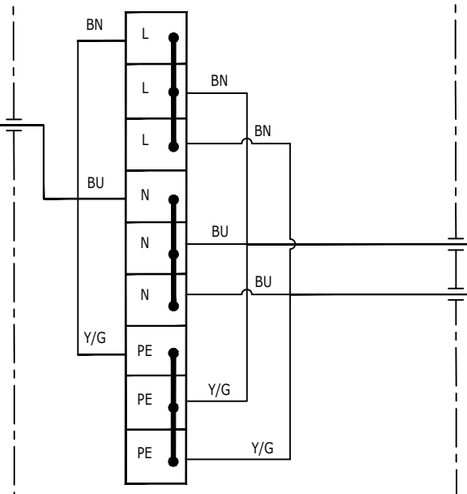
NOTE:
JB SUPPLIED BY
VENDOR OF PACKAGE

CUBICLE/CB: +03/Q20



P-EJB-200N1-20-L1-01
3G6 mm²

DESCRIPTION: TRACE HEATING - PROCESS LINES
- FEEDER 7 (SEA WATER PUMPS)
TAG NUMBER: EJB-200N1-20-L1-01

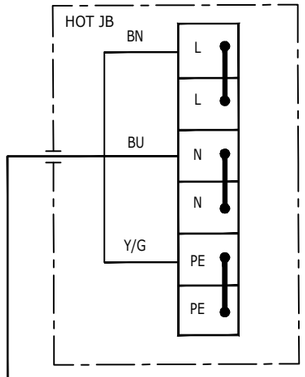


P-ETB-200N1-20-L1-02
~~P-ETB-200N1-20-L1-01A~~
3G6 mm²

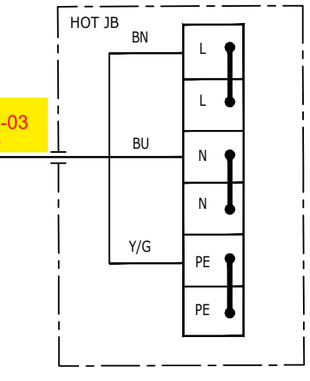
P-ETB-200N1-20-L1-03
~~P-ETB-200N1-20-L1-01B~~
3G6 mm²

NOTE:
HOT JB SUPPLIED BY
VENDOR OF PACKAGE

TAG NUMBER: ETB-200N1-20-L1-01A



TAG NUMBER: ETB-200N1-20-L1-01B



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_K	12/02/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
TRACE HEATING PROCESS LINES

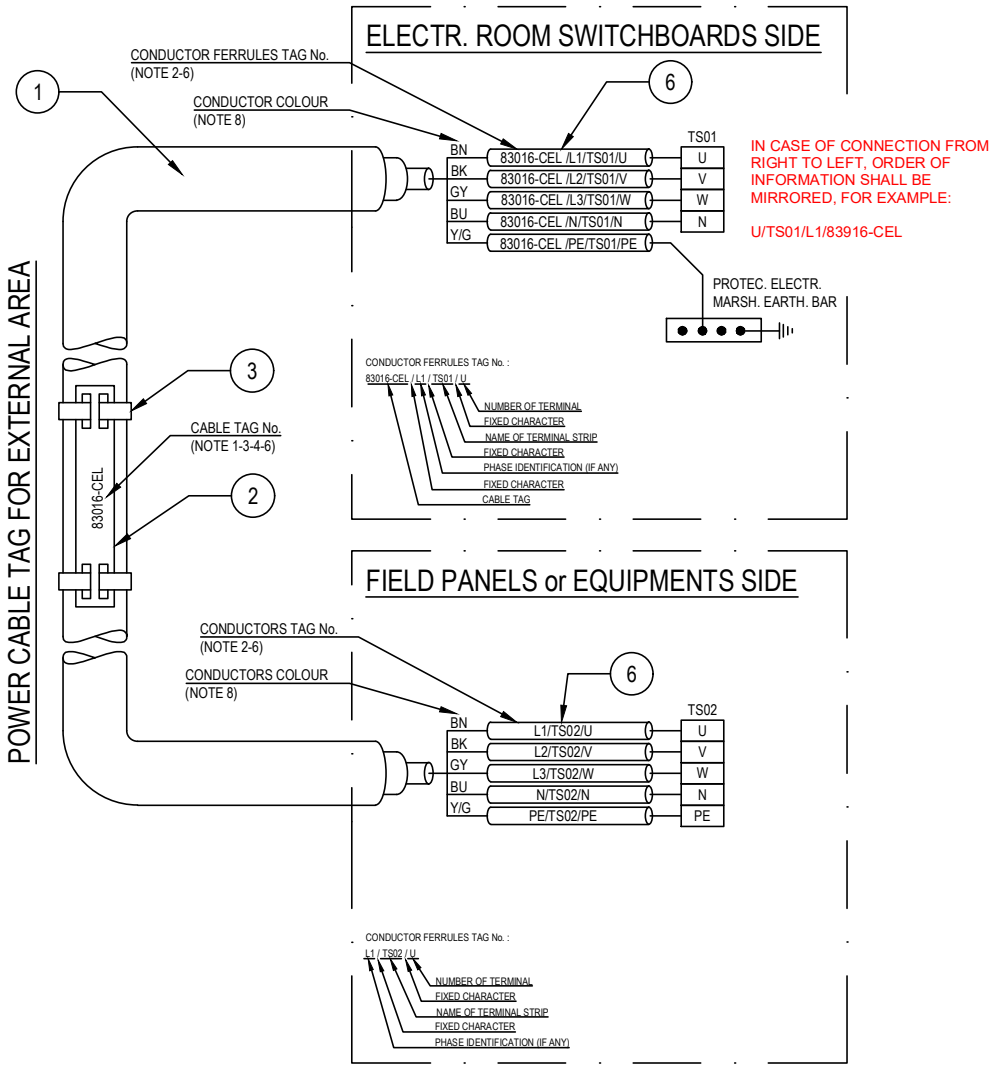
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 051 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

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.

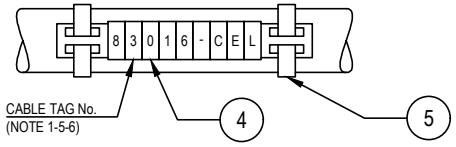
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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_D	20/12/24	V.Ramponi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

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. 123A90-DDL-EL-DD-20092 | SHEET 007 | REV. 02

F.to UNI A3: 420mmx297mm

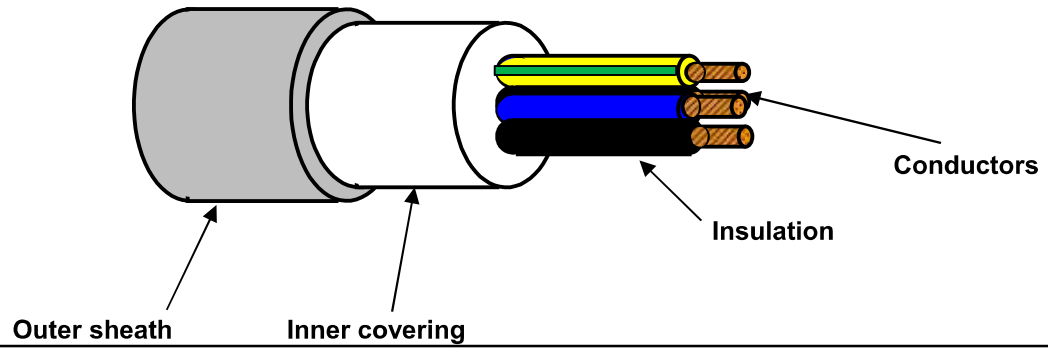
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Secti	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Stand	From Gland	From Entry	From Fitti	To Gland	To Entry	To Fitting	Routing	Routing Manual
P-ETB-200N1-20-L1-03	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						EJB-200N1-20-L1-01	HEAT TRACING - PROCESS LINES - FEEDER 7 (SEA WATER PUMPS) Cold JB	Lower Deck	Heat Tracing Cold JB	ETB-200N1-20-L1-01B	HEAT TRACING - PROCESS LINES - FEEDER 7 (SEA WATER PUMPS)	Lower Deck	Heat Tracing Hot JB	ELECV05-3G6	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 3G6mm² - Grey	M25	T1_M25_Single			T1_M25_Single				L-300-101-LVT-069 / L-300-101-LVT-109

FLEI s.r.l.

Cu Cl.2/EPR/LSZH 0,6/1 KV

3G6 - L.V. POWER CABLE - Flame Retardant



TECHNICAL FEATURES

Conductors :	**STRANDED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	EPR compound, quality to IEC 60092.360, Nominal Thickness 1,0 mm	
Cores colour code :	**Brown - Blue - Yellow/Green**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not Required	
Total Assembling :	Cores layed up with optimal lay length	
Overall Wrapping:	Not required	
Drain wire :	Not required	
Overall Shield:	Not required	
Inner covering :	Extruded LSZH compound, Average Thickness 1,0 mm	
Inner covering color code:	**Black or Natural**	
Armour :	Not required	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,2 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 3G6 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 -**	
	Year of Manufacture - CE + Meter Marking	
Outer diameter :	(15,6 ± 10%) mm	
Bending radius :	cable outer diameter x 10	(in fixed installation)
Voltage test :	3,5 kV a.c. for 5' (Between Cores)	
Conductors DC Resistance :		IEC 60228 Class 2
Insulation Resistance :	≥ 770 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.353**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance	IEC 61034.2 (LT ≥ 60%)	
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 covering together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	29/03/2024	Messa			
Checked :	29/03/2024	Spaccasassi			
Approved :	29/03/2024	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	P-EAT-200N1-02	: Trace Heating Remote Ambient Thermostat/LV 0,4 / 0,23 kV Distribution Switchgear			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD_B-200_Ext/LD_B-200
TASK	code	C10004666		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

CABLE DATA

Type Cu Cl.2/EPR/LSZH Cores/Size mm² 3G2,5 mm2 Color GREY

From DP-200N1 To EAT-200N1-01

1	Confirm cable is as specified in project cable schedule	OK
2	Visual Check cable physical integrity.	OK
3	Check is installed in accordance with layout drawing (segregation, distance…).	OK
4	Check cable is supported and fixed to rack according to project specification.	Note
5	Check bending radius is within the specified limits.	OK
6	Confirm cable glands suit for cable type, correctly mounted and tightened.	OK
7	Check gland plate for single core cables is non ferrous (non -magnetic).	NA
8	Confirm cable labelling is in accordance with specifications.	PL
9	Check cable is correctly loomed and segregated in accordance with specification.	OK
10	Check cable earthing against lastest drawings.	OK
11	Check cores marking are in accordance with termination diagram	PL
12	Check terminations are in accordance with latest termination diagram	OK
13	If required produce Red Line Mark Up for "AS BUILT"	

ITEM	Tag	P-EAT-200N1-02	: Trace Heating Remote Ambient Thermostat/LV 0,4 / 0,23 kV Distribution Switchgear			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD_B-200_Ext/LD_B-200
TASK	code	C10004666	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

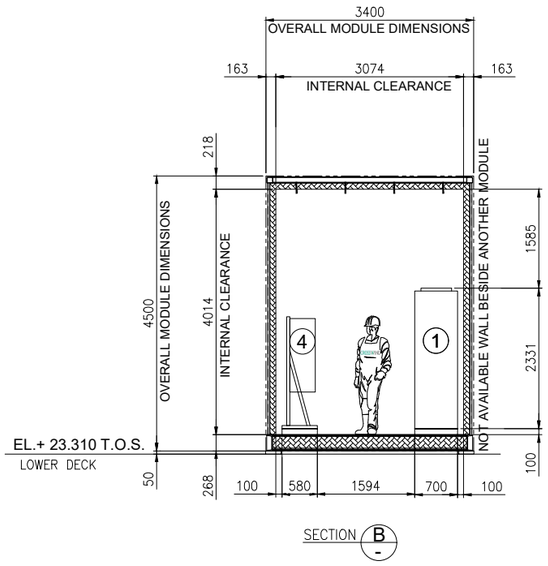
CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0,6	
6		PH 2	0,6	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		0,6	
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	>999	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207	TYPE / SERIAL N° :	MULTIMETER: FLUKE 175 SERIAL:AW1/018(17140769)
Calibration certificate N° and date:	N°7722/24 _ 10/07/2024	Calibration certificate N° and date:	N°7715/24 _ 10/07/2024

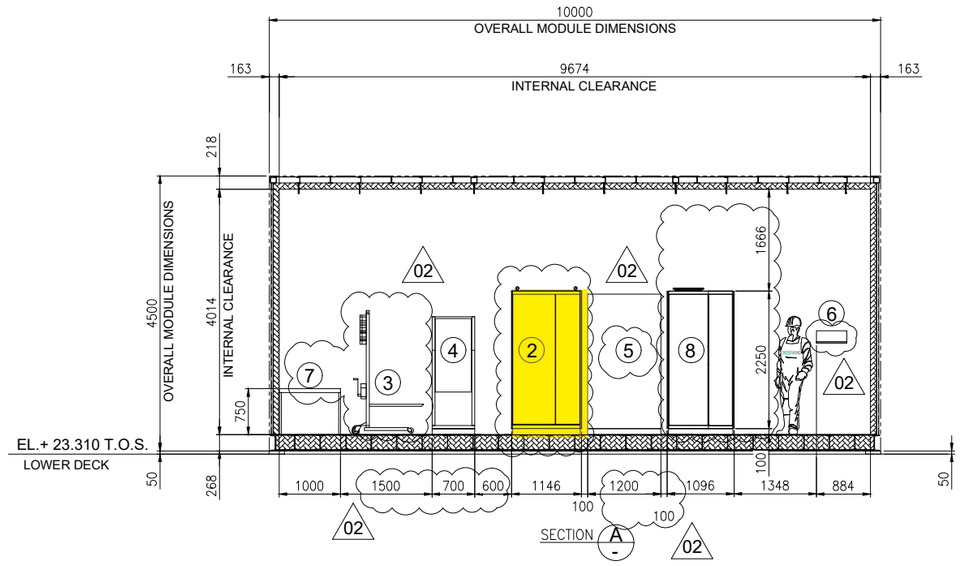
Comments: Nota 4: refer to PL C30000679

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Paolo Schintu	
Date	2025-01-13	2025-01-21	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-13T09:04:30.966Z	PROVERLIS Digitaly signed by Paolo Schintu 2025-01-21T16:42:51.448Z	

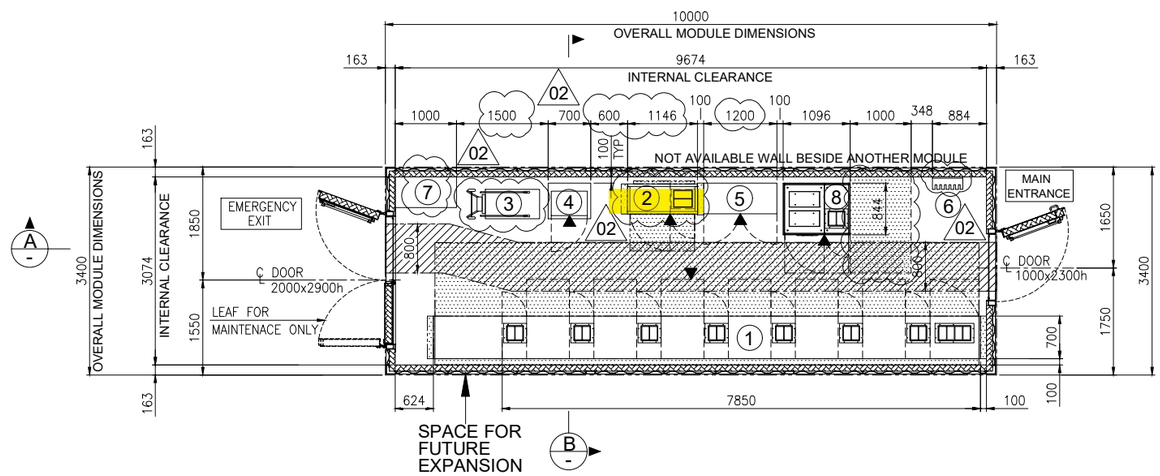
DRAWING NO. 123A90-DDL-EL-DL-20105 | REV. 02



SECTION B



SECTION A



A

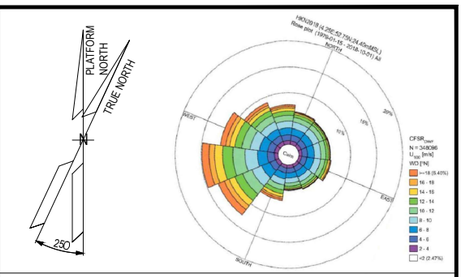
B

EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

1

EQUIPMENT LIST

REF.	TAG No.	DESCRIPTION	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)	NOTE
1	SG-200N1	400V SWITCHGEAR	7850	700	2331	
2	DP-200N1	DISTRIBUTION BOARD FOR LIGHTING AND SMALL POWER B.O.P.	1146	520	2250	
3	-	SERVICE TROLLEY FOR 400V SWITCHGEAR	1034	490	2030	
4	CN-200N1	ICCP PANEL	700	580	1830	
5	B200-HSB-001	DISTRIBUTION & HVAC PANEL - LV ROOM	1200	600	1900	02
6	-	TOOL BOX	495	200	200	
7	-	TABLE	1000	500	750	
8	SG-200D2	ACB PANEL FOR SOLAR PACKAGE	1096	844	2294	



NOTES

1. U.N.O. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DELETED.
3. DOCUMENT VALID ONLY FOR ELECTRICAL COMPONENT, FOR OTHER SCOPE LOCATION AND INFORMATION, PLEASE REFER TO VENDORS AND PROJECT DOCUMENTS.
4. FOR OTHER ITEMS, CORRECT LOCATION AND INFORMATION, PLEASE REFER TO VENDORS AND DEDICATED PROJECT DOCUMENTATION.
5. HEIGHT OF ALL PANELS IN THE EQUIPMENT LIST TABLE IS WITHOUT THE BASE FRAME (100mm)

02

LEGEND

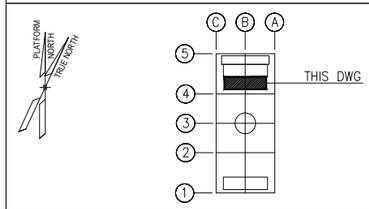
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

REFERENCES

DOCUMENT TITLE	DOCUMENT NUMBER
SG-200N1 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00007
SG-200D2 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00008
DP-200N1 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00009
AC UPS – GENERAL ARRANGEMENT AND DIMENSIONAL DRAWINGS	1724000372-EL-DA-00004
AC UPS – BATTERY LAYOUT INTERCONNECTING DIAGRAM	1724000372-EL-DG-00011
B-200 -GENERAL ARRANGEMENT DRAWINGS - E&I SHELTER	1724000049-AR-DA-00015
ICCC PANEL GENERAL ARRANGEMENT DRAWING	144671-CORR-TF-FAB-DWG-0003

02

KEY PLAN



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20105**

REV.:	DATE:	SIGNATURE:
2_A	08/08/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	27/05/2024	FMO	LMA/AMA	LMA/MDO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/03/2024	GPA	LMA/AMA	LMA/MDO	ISSUE FOR REVIEW (IFR)
00	08/11/2023	DSF	CB/AMA	OYFO/MDO	ISSUE FOR REVIEW (IFR)

CROSSWIND | ROSETTI MARINO

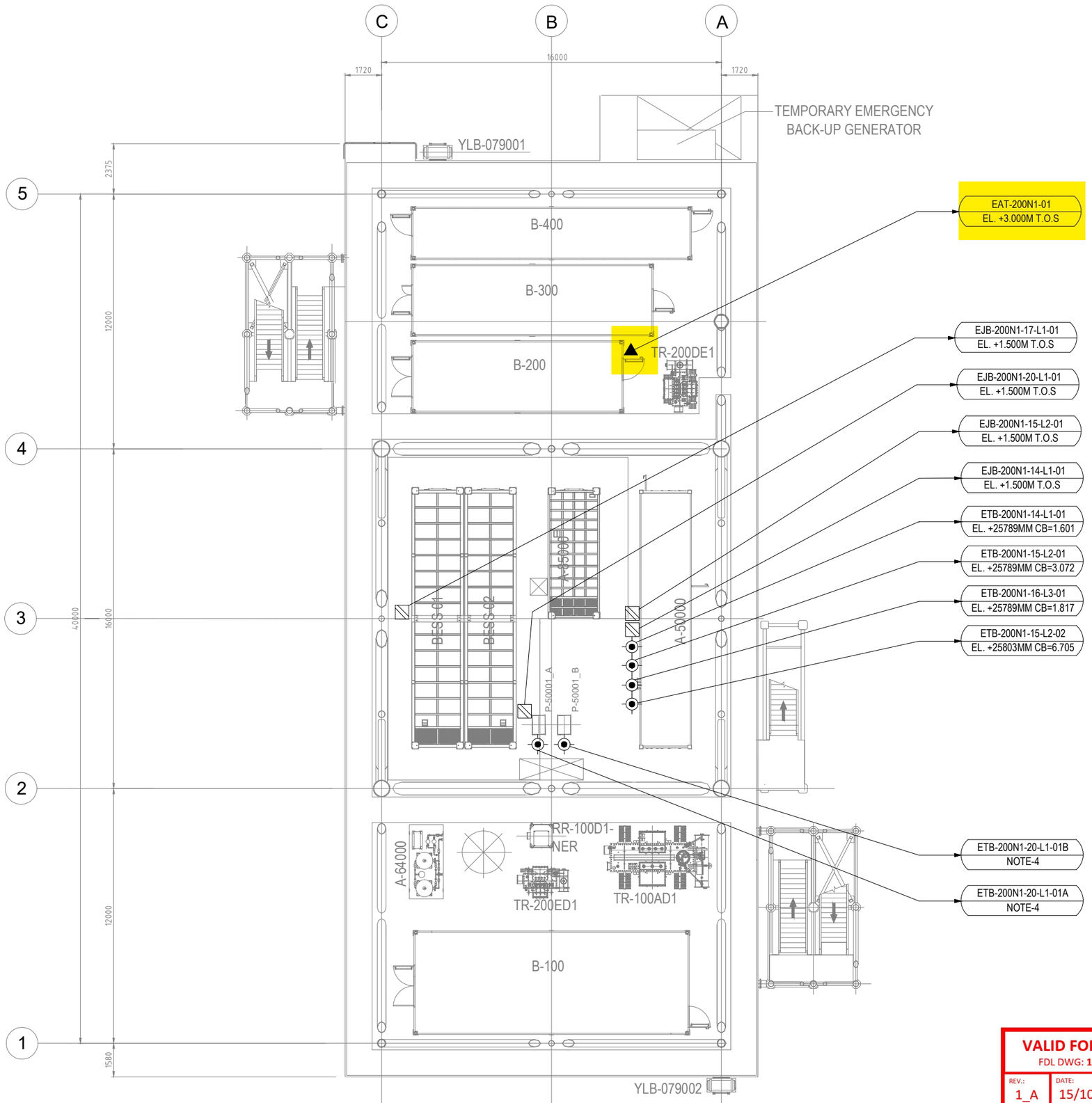
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LV SWITCHROOM

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN FMO	CHECKED LMA/AMA	APPROVED LMA/MDO	DATE 27/05/2024
A1	DRAWING NO. 123A90-DDL-EL-DL-20105	SHEET 001	REV. 02

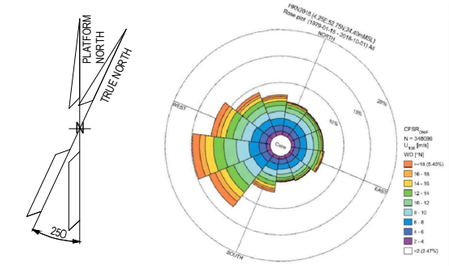
File Name : 123A90-DDL-EL-DL-20105_REV02.dwg

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

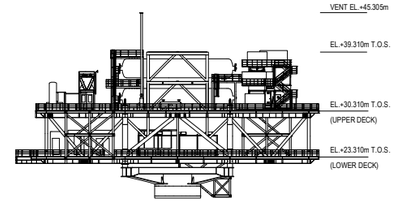
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 1of2	REV. 01

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_A	15/10/24	G.Randi

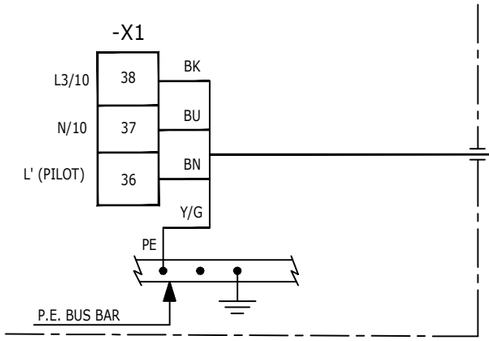
ROSETTI MARINO SpA

File Name : 123A90-DDL-EL-DL-20140

FROM	TO

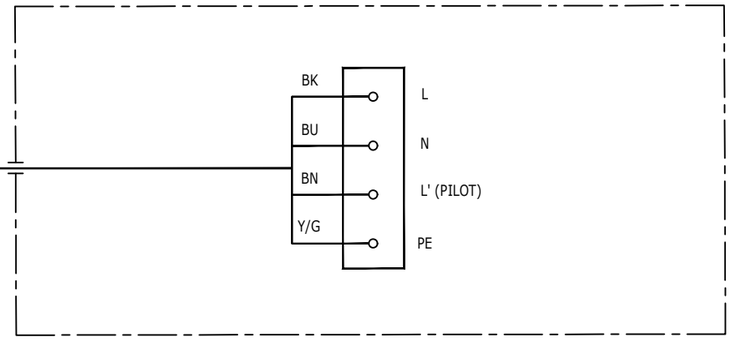
DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1

CUBICLE/CB: +01/Q10



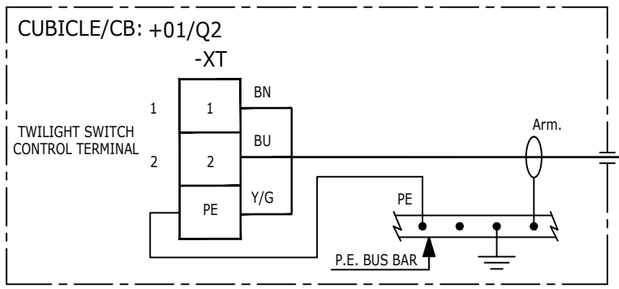
P-EJB-200N1-10-L3-01
4G4_E mm²

DESCRIPTION: EMERGENCY LIGHTING STAIRS
TAG NUMBER: EJB-200N1-10-L3-01



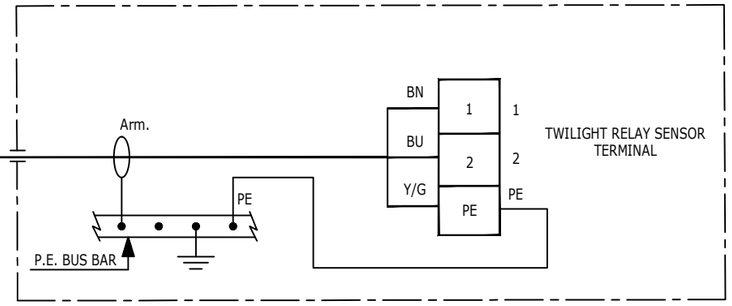
DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1

CUBICLE/CB: +01/Q2



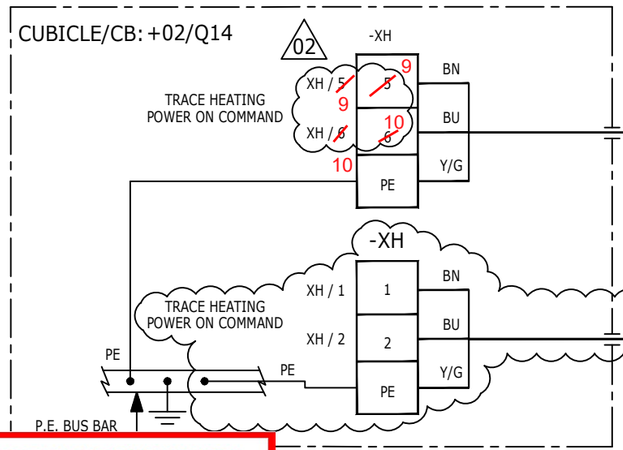
P-EPH-200N1-01
3G4 mm²

DESCRIPTION: TWILIGHT RELAY SENSOR
TAG NUMBER: EPH-200N1-01



DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1

CUBICLE/CB: +02/Q14

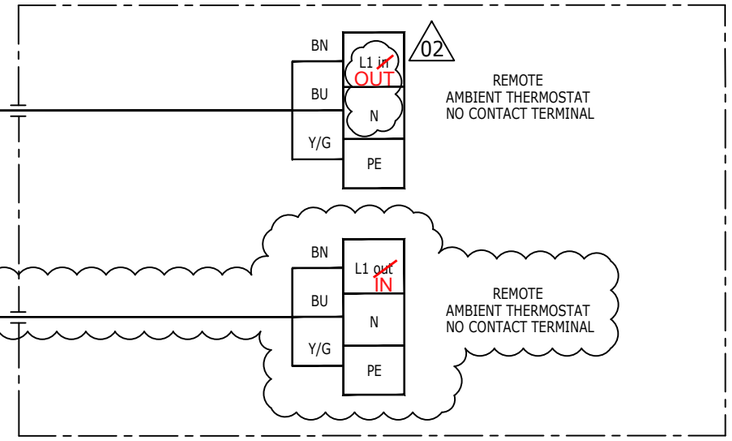


P-EAT-200N1-01
3G2.5 mm²

02

P-EAT-200N1-02
3G2.5 mm²

DESCRIPTION: REMOTE AMBIENT THERMOSTAT
TAG NUMBER: EAT-200N1-01



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_H	16/01/25	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
LIGHTING & SMALL POWER DB BOP

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

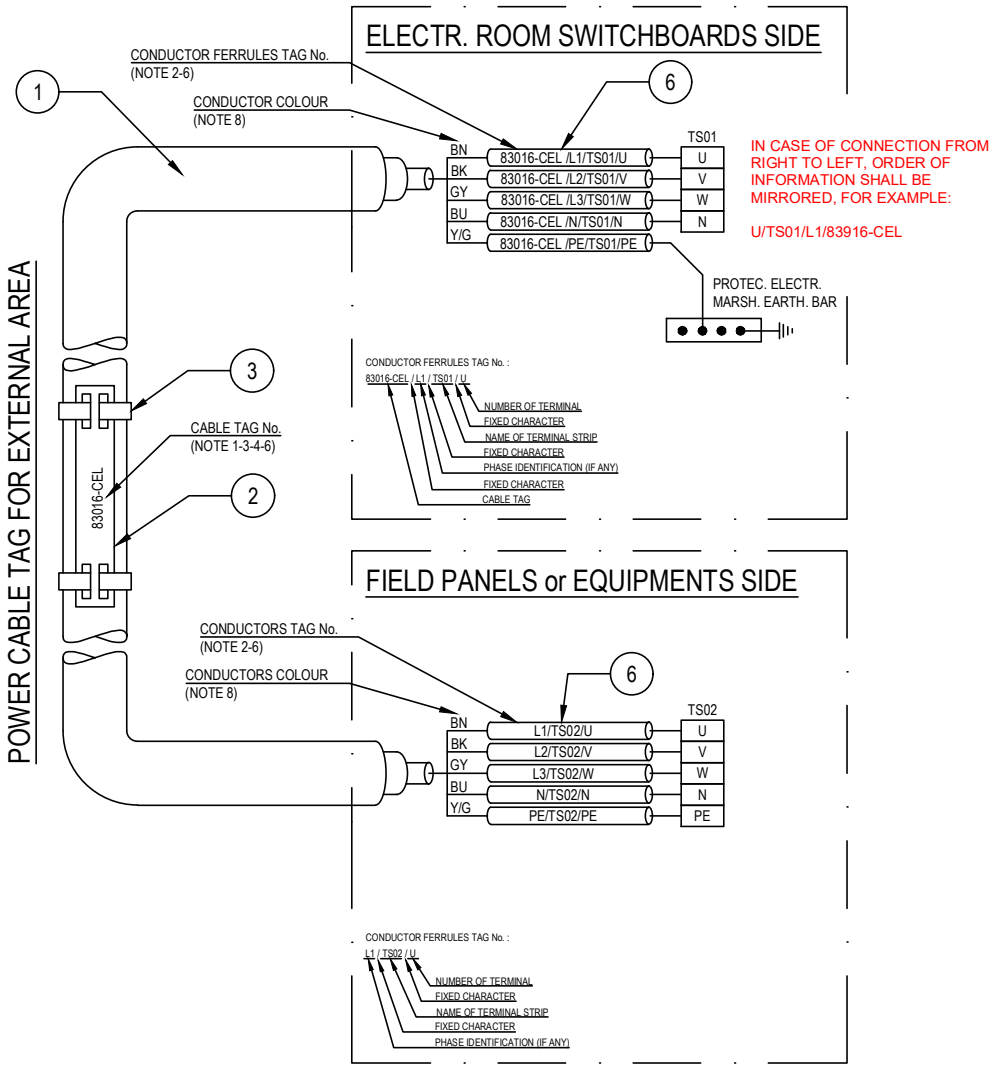
SCALE : 1:X

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-EL-DG-20149	047	02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

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.

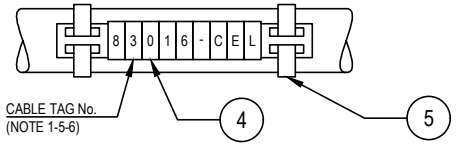
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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_D	20/12/24	V.Ramponi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

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. 123A90-DDL-EL-DD-20092 | SHEET 007 | REV. 02

F.to UNI A3: 420mmx297mm

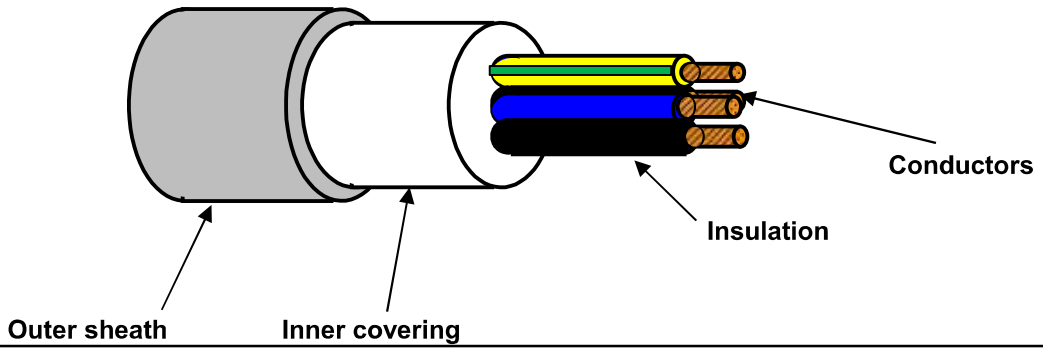
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Secti	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Stand	From Gland	From Entry	From Fitti	To Gland	To Entry	To Fitting	Routing	Routing Manual
P-EAT-200N1-02	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						EAT-200N1-01	Trace Heating Remote Ambient Thermostat	Lower Deck (B-200) Ext.	Thermostat Terminal	DP-200N1	LV 0,4 / 0,23 kV Distribution Switchgear	Lower Deck (B-200)	02/Q14	ELECV06-3G2,5	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 3G2,5mm² - Grey	M20	T1_M20_Single			n.a.				L-600-101-LVT-010 / E-MCT-203 / L-600-101-LVT-020 / L-450-101-LVT-030

FLEI s.r.l.

Cu Cl.2/EPR/LSZH 0,6/1 KV

3G2,5 - L.V. POWER CABLE - Flame Retardant



TECHNICAL FEATURES

Conductors :	**STRANDED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	EPR compound, quality to IEC 60092.360, Nominal Thickness 1,0 mm	
Cores colour code :	**Brown - Blue - Yellow/Green**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not Required	
Total Assembling :	Cores layed up with optimal lay length	
Overall Wrapping:	Not required	
Drain wire :	Not required	
Overall Shield:	Not required	
Inner covering :	Extruded LSZH compound, Average Thickness 1,0 mm	
Inner covering color code:	**Black or Natural**	
Armour :	Not required	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,2 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 3G2,5 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 -**	
	Year of Manufacture - CE + Meter Marking	
Outer diameter :	(13,0 ± 10%) mm	
Bending radius :	cable outer diameter x 10	(in fixed installation)
Voltage test :	3,5 kV a.c. for 5' (Between Cores)	
Conductors DC Resistance :		IEC 60228 Class 2
Insulation Resistance :	≥ 1100 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.353**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance	IEC 61034.2 (LT ≥ 60%)	
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 covering together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	29/03/2024	Messa			
Checked :	29/03/2024	Spaccasassi			
Approved :	29/03/2024	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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CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 83-65 & process: MC & discipline : Y

ATEX	83-65 Electrical Heat Tracing						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
EHT-1001-A	Heat Tracing Tape	ONSHORE	C10004645	CJX01	100	2025-02-24	RFC 1
EHT-1004-A	Heat Tracing Tape	ONSHORE	C10004646	CJX01	100	2025-02-13	RFC 1
EHT-1004-B	Heat Tracing Tape	ONSHORE	C10004641	CJX01	100	2025-02-13	RFC 1
EHT-1005-A	Heat Tracing Tape	ONSHORE	C10004642	CJX01	100	2025-02-13	RFC 1
EHT-1006-A	Heat Tracing Tape	ONSHORE	C10004643	CJX01	100	2025-02-20	RFC 1
EHT-2002-A	Heat Tracing Tape	ONSHORE	C10004644	CJX01	100	2025-02-13	RFC 1
ETB-200N1-17-L1-02	HEAT TRACING - PROCESS LINES - 4 (WW LINES) Hot JB	ONSHORE	C10004605	CJX01	100	2025-02-20	RFC 1
ETB-200N1-17-L1-03	HEAT TRACING - PROCESS LINES - (WW-202) Hot JB	ONSHORE	C10004606	CJX01	100	2025-02-20	RFC 1
ETB-200N1-17-L1-04	HEAT TRACING - PROCESS LINE (WW 259, V-43001, LT-001) Hot JB	ONSHORE	C10004607	CJX01	100	2025-02-20	RFC 1
ETB-200N1-17-L1-05	TRACE HEATING - PROCESS LINES - (WW LINES) 43-LT-001, Hot JB	ONSHORE	C10004608	CJX01	100	2025-02-20	RFC 1
ETB-200N1-19-L3-01	HEAT TRACING - PROCESS LINES - FEEDER 6 (H2 VENT)	ONSHORE	C10004609	CJX01	100	2025-03-06	RFC 1

ITEM	Tag	ETB-200N1-17-L1-02	: HEAT TRACING - PROCESS LINES - 4 (WW LINES) Hot JB	Dwg	123A90-DDL-EL-DL-20140		
	S/Sys	83-65	: Electrical Heat Tracing	Module	LD		
TASK	code	C10004605	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.**		829939-000			
Manufacturer	nVent			**Model**		JBM-100-E			
Cert No.	PTB20ATEX1008U			**Equipment Ambient Temp.**		-40°C to +56°C			
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex eb	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	

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	OK	
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	ETB-200N1-17-L1-02	: HEAT TRACING - PROCESS LINES - 4 (WW LINES) Hot JB			Dwg	123A90-DDL-EL-DL-20140
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10004605	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	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	NA	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	NA	
52	Flame path are clean and undamaged	x	NA	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	OK	
60	Power conductors are not bunched together causing possible hot spots	x	OK	
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	ETB-200N1-17-L1-02	: HEAT TRACING - PROCESS LINES - 4 (WW LINES) Hot JB			Dwg	123A90-DDL-EL-DL-20140
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10004605		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

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

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

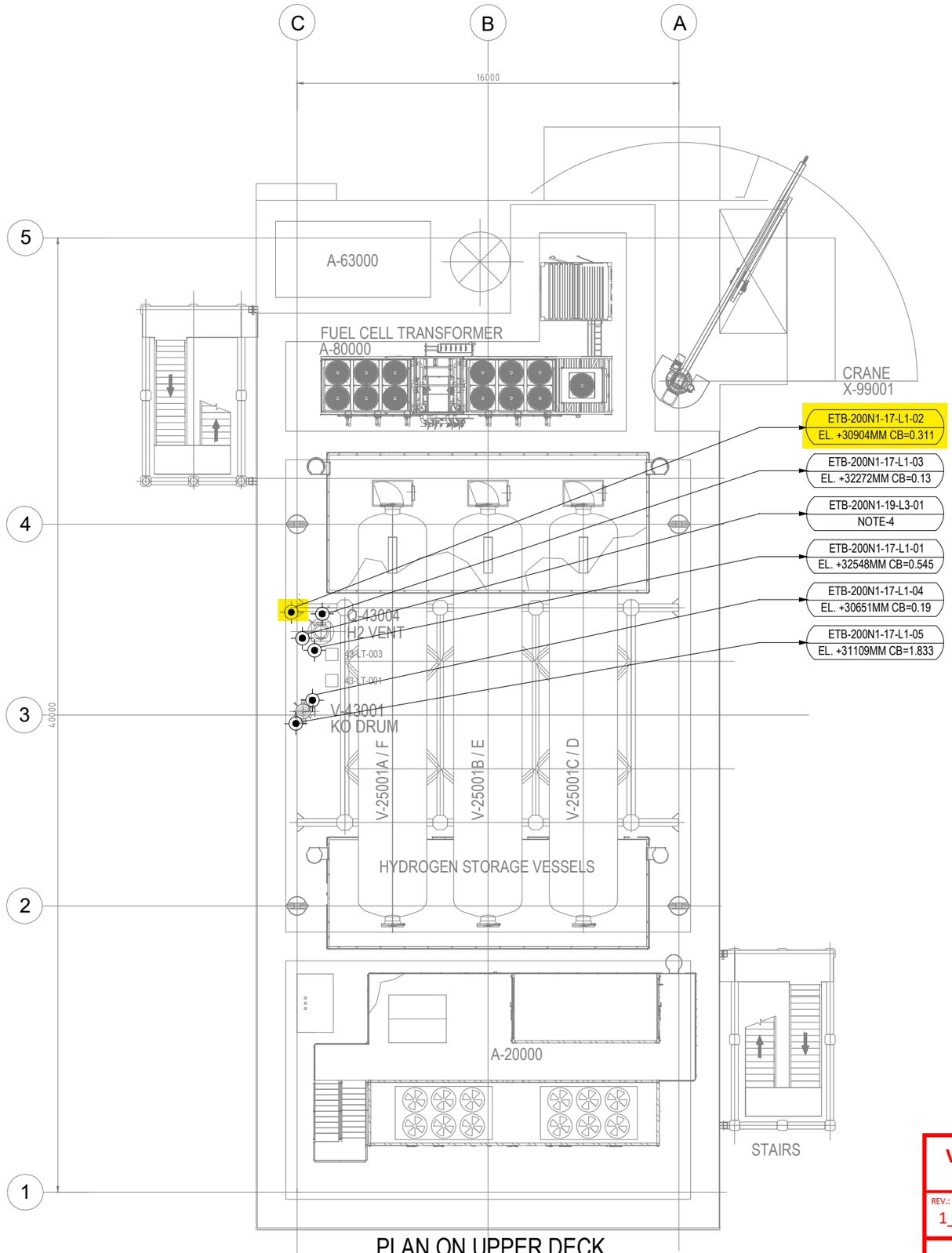
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

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

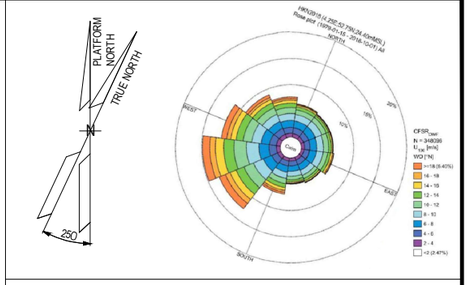
	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-08	2025-02-20	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-08T09:44:03.017Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-20T14:29:09.563Z	

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

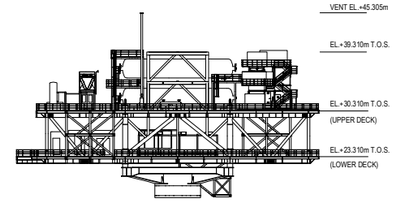
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_C	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 2of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

FROM	TO

DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1

CUBICLE/CB: +03/Q17

-X1

L1/17 56 BN
N/17 57 BU
Y/G
PE
P.E. BUS BAR

P-EJB-200N1-17-L1-01
3G6 mm²

DESCRIPTION: TRACE HEATING - PROCESS LINES - FEEDER 4 (WW LINES & LT)
TAG NUMBER: EJB-200N1-17-L1-01

COLD JB

BN L L L L BN BN BN
BU N N N N BU BU BU
Y/G PE PE PE PE Y/G Y/G Y/G

P-ETB-200N1-17-L1-01
3G6 mm²

DESCRIPTION: TRACE HEATING INSTRUMENT - 43-LT-003
TAG NUMBER: ETB-200N1-17-L1-01

HOT JB

BN L L BN
BU N N BU
Y/G PE PE Y/G

P-ETB-200N1-17-L1-02
3G6 mm²

DESCRIPTION: TRACE HEATING PROCESS LINE (WW 202)##
TAG NUMBER: ETB-200N1-17-L1-02

HOT JB

BN L L BN
BU N N BU
Y/G PE PE Y/G

P-ETB-200N1-17-L1-03
3G6 mm²

DESCRIPTION: TRACE HEATING PROCESS LINE (WW 260)
TAG NUMBER: ETB-200N1-17-L1-03

HOT JB

BN L L
BU N N
Y/G PE PE

DESCRIPTION: TRACE HEATING PROCESS LINE (WW 259) (V-43001 / 43-LT-001)
TAG NUMBER: ETB-200N1-17-L1-04

P-ETB-200N1-17-L1-04
3G6 mm²

HOT JB

BN L L BN
BU N N BU
Y/G PE PE Y/G

- PIPE LINE WW-202 TRACED FROM NOZZLE N3 UPTO SWAN NECK

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_K	12/02/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
TRACE HEATING PROCESS LINES

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 050 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

CAD FILENAME: PIT240024_DD01_1005_001_02.dwg

HEAT TRACING DATA

HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	PIPE LENGTH (m)	HEATER LENGTH (m)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W/m)	POWER OUTPUT (W/m)	SHEATH TEMP. (°C)
EHT-1005-A	PIPING	3BTV2-CT	1.2	4.6	0.3	46	230	3.9	10.7	85
		TOTALS	1.2	4.6	0.3	46				

HEATER ADDER TABLE

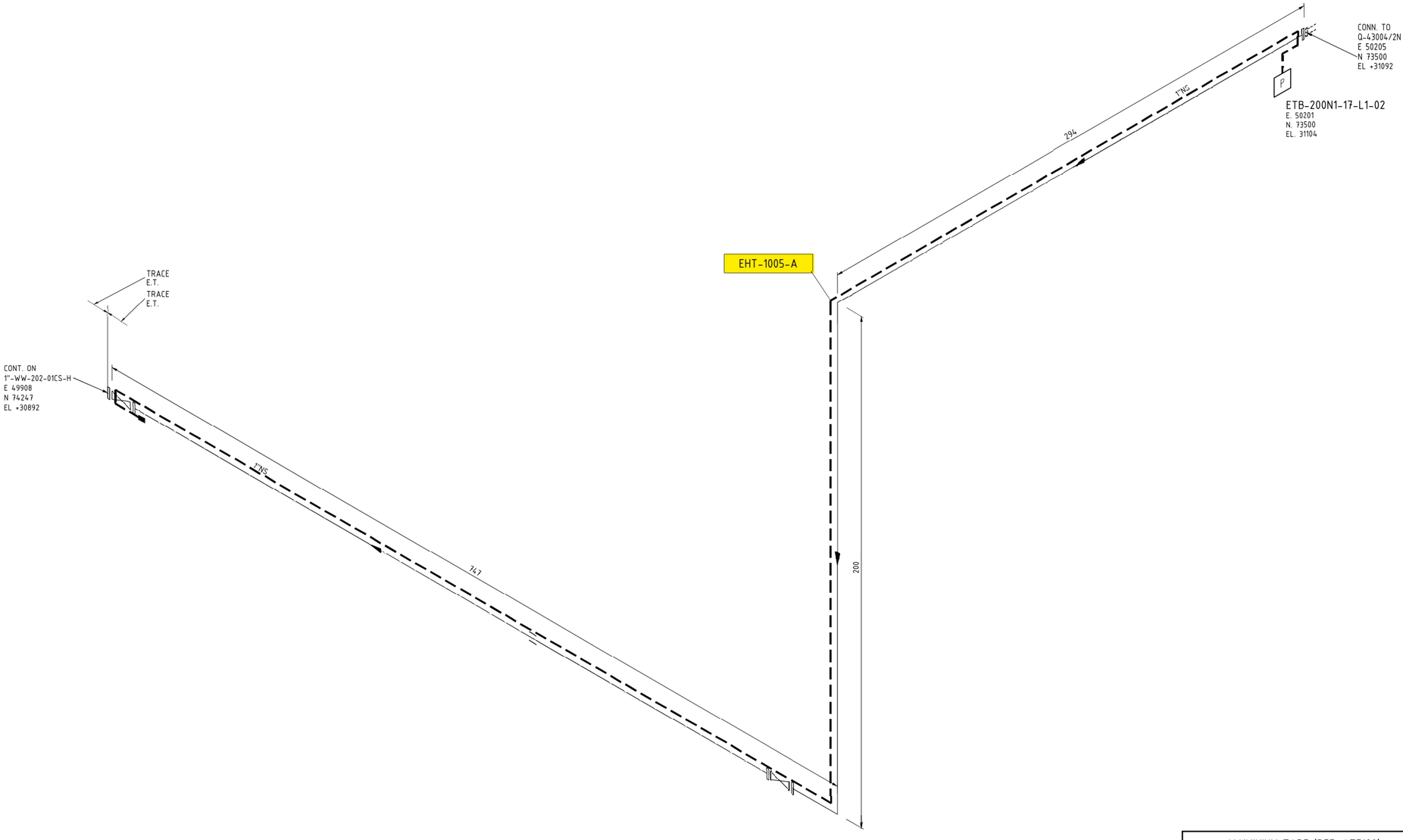
PIPE SIZE (Ins)	TYPE	QTY	ALLOWANCE PER ITEM (m)	TOTAL ALLOWANCE (m)
1	Typical Flange (fixed adder)	1	0.46	0.46
1	Typical Metal Valve	2	0.82	1.64
1	Typical Pipe Support	1	0.15	0.15

DESIGN PARAMETERS

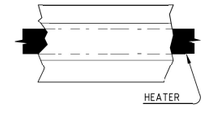
CIRCUIT NUMBER	1005	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	11°C	INSULATION TYPE	RW/MF 1.2015
MAX. EXPOSURE TEMP.	11°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	100°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

COMPONENT BILL OF MATERIALS

CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	4.6	m	Raychem Self-Regulating Heating Cable
JBM-100-E	1	each	Integrated Junction Box, Multiple-Entry, Cold-Applied, ATEX
PSE-090	1	each	Pipe Strap for 1.1/4" to 3" (40-90mm)
GS-54	0.2	each	Glass Tape (16m/roll), suited for SS pipes
LAB-I-01	1	each	Warning Label - English
E-20	1	each	Heat shrink end seal, ATEX (BTV, QTVR)
JBM-SPA	0.2	bag	Small Pipe Adapter for JBM-100-E



ALUMINIUM TAPE (REF: ATE180)



SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

LINE NUMBERS

1"-WW-260-01CS-E

REFERENCE DRAWINGS / DOCUMENTS

123A90-DDL-PP-DI-71000_124

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.
4. HEATING CABLE ALLOWANCES PROVIDED IN THE 'EHT ADDER TABLE' FOR FLANGES AND VALVES ARE IN ADDITION TO THEIR LINEAR LENGTHS.

CROSSWIND

ROSETTI MARINO

nVent RAYCHEM TRACER

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nVent.com

NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
02	20/01/2025	ISSUED FOR REVIEW	ADU	AMI	GPI
01	25/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.

DOC CODE

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING ISOMETRIC

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-EL-DD-00004	7/10	02

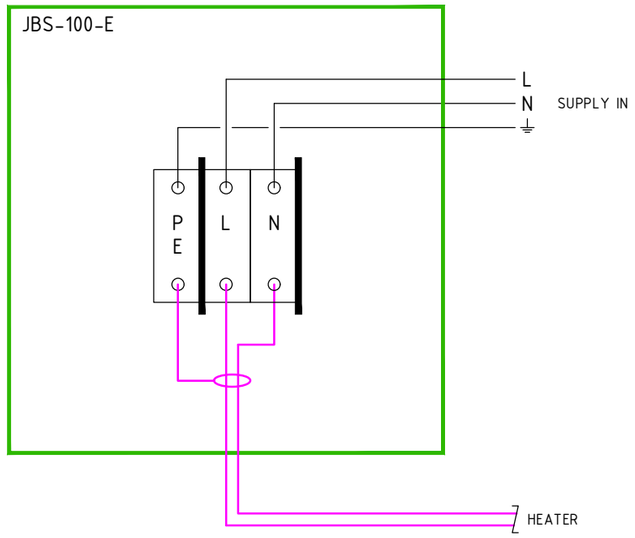
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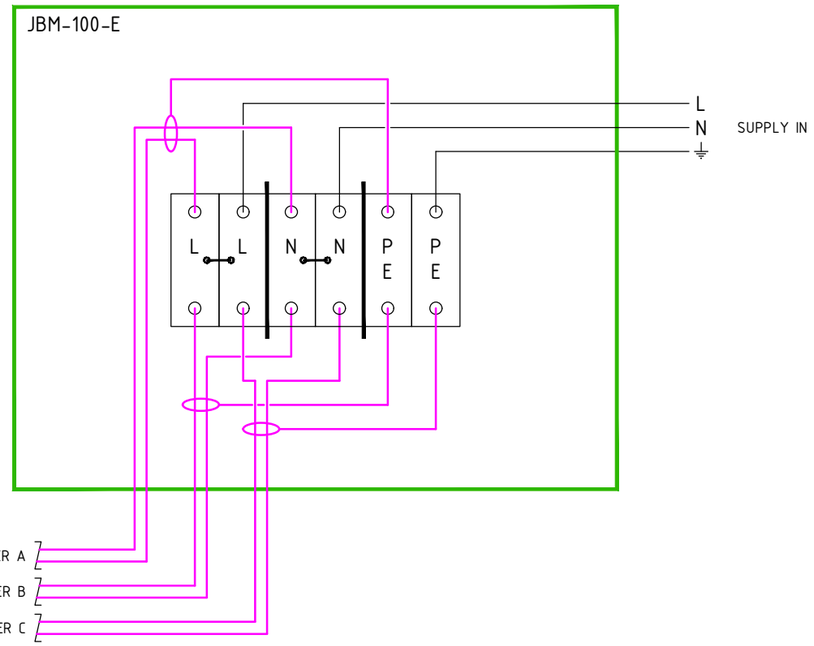
GENERAL INFORMATION:

1. JBS-100-E IS DESIGNED TO CONNECT POWER TO ONE BTV, QTVR, XTV, KTV, HTV OR VPL EHT CABLE.
2. THIS KIT INTEGRATES THE FUNCTIONS OF BOTH CONNECTION KITS AND INSULATION ENTRIES.
3. THE STAND CONNECTED TO THE BOTTOM OF THE BOX PROTECTS THE HEATING CABLE AND ALLOWS FOR UP TO 100mm (4") THERMAL INSULATION.

TECHNICAL BRIEF:

- 2 x M25 THREADED ENTRIES
- 1 x M25 STOPPING PLUGS
- 1 x M25 POWER CABLE GLAND





REV.	DATE	DESCRIPTION	BY	CHK	APP
--	--	--	--	--	--
--	--	--	--	--	--
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	08/03/2024	ISSUED FOR INFORMATION	LJB	E-C	ZS

nVent RAYCHEM TRACER

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nVent.com

TITLE: TYPICAL CONNECTION OF A JBS-100-EP SINGLE ENTRY JUNCTION BOX

PREPARED BY	-.---	LANG.	SCALE
LEAD ENGINEER	-.---	en	N/A

PROJECT NO.	DRAWING NO.	SHEET	REVISION
PIT240024	1724001647-EL-DG-00005	2/3	01

A3

CAD FILENAME: 1724001647-EL-DG-00006 Rev.03.dwg

CONTROL PANEL REF.:

Q17

MARSHALLING BOX

EJB-200N1-17-L1-01

ETB-200N1-17-L1-04 — P — EHT-1004-A — P — EHT-1004-B — ETB-200N1-17-L1-05

ETB-200N1-17-L1-02 — P — EHT-1005-A

ETB-200N1-17-L1-03 — P — EHT-1006-A

ETB-200N1-17-L1-01 — P — EHT-2002-A

SPARE

CIRCUIT NO.	1004	1005, 1006	2002		GENERAL NOTES
C.B. RATING (A)	32	32	32		
START-UP I (A)	2.6	0.4	0.6		
LOAD (W)	383	65	81		
SERVICE	WINTERIZING	WINTERIZING	WINTERIZING		
NOTES FOR THE CIRCUIT	--	--	--		

CROSSWIND

ROSETTI MARINO

nVent RAYCHEM TRACER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
03	20/01/2025	ACCEPTED FOR CONSTRUCTION	ADU	AMI	GPI
02	29/11/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	02/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING
ELECTRICAL BLOCK DIAGRAM

SCALE: N/A

DRAWING NO.: 1724001647-EL-DG-00006

SHEET NO.: 4 /4

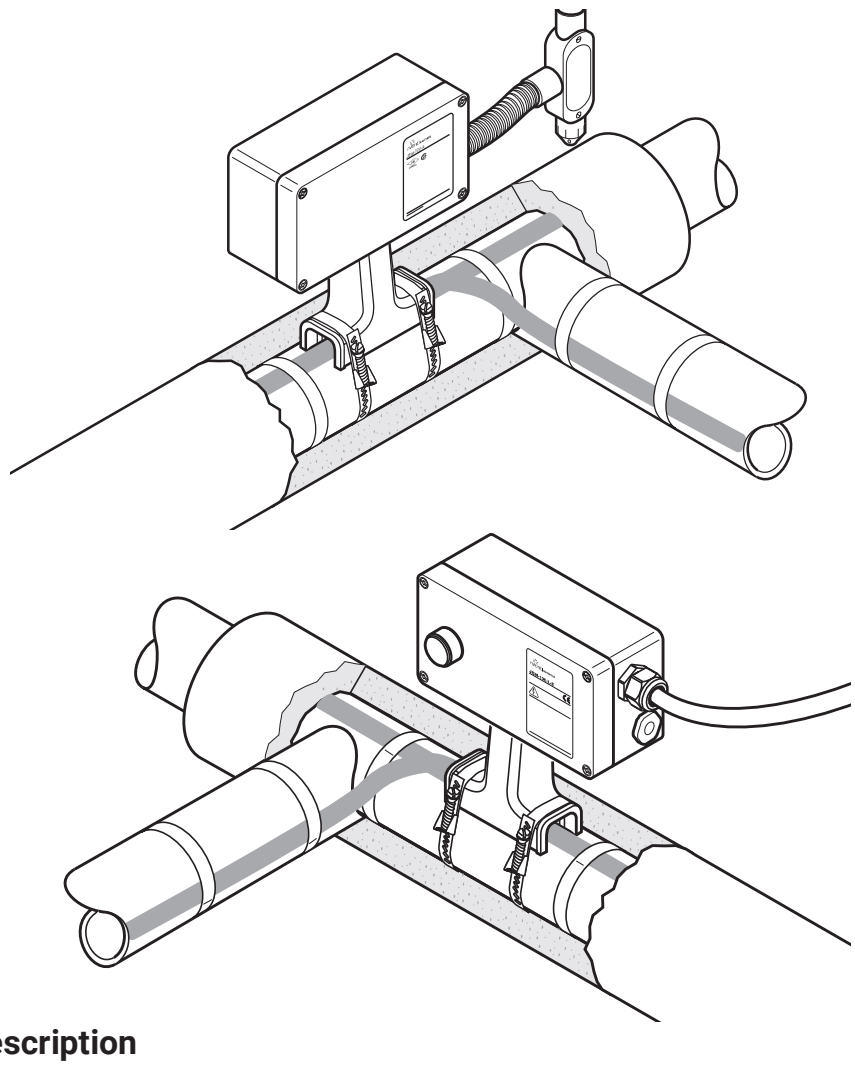
REVISION: 03

JBM-100

CONNECT AND PROTECT

Multiple-Entry Power/Tee Connection with Junction Box

PRODUCT OVERVIEW



The nVent RAYCHEM JBM-100 kit is designed to connect power to up to three nVent RAYCHEM BTV, QTVR, XTVR, HTV, or VPL industrial parallel heating cables.

The JBM-100 integrates the functions of both connection kits and insulation entries. The rugged stand protects the heating cable and allows for up to 100 mm (4") of thermal insulation.

The core sealing boot does not require a heat gun or torch for the installation (no hot work permit necessary). The non-curing sealant (silicone free) in the boot allows easy installation and facilitates maintenance.

Spring-type terminals provide fast installation and safe, reliable, maintenance-free operation. This connection kit significantly reduces installation time.

The kit is offered in three basic versions, customised for local installation practices. All kits are also available as a lighted version. These include a unique light module with a superbright LED that simply plugs into the terminals, and a lens in the lid. This provides indication that power is available in the box. There is also a connection kit with drain plug available.

Description

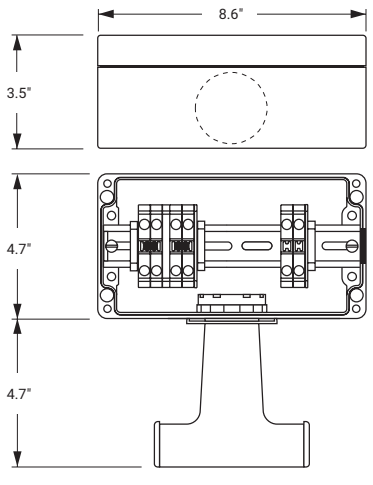
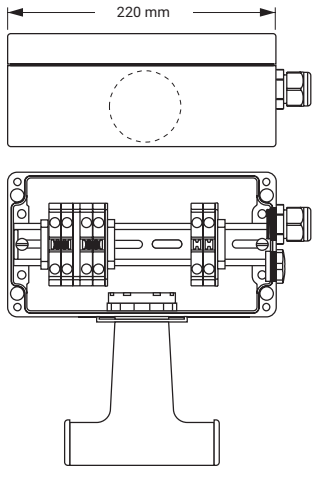
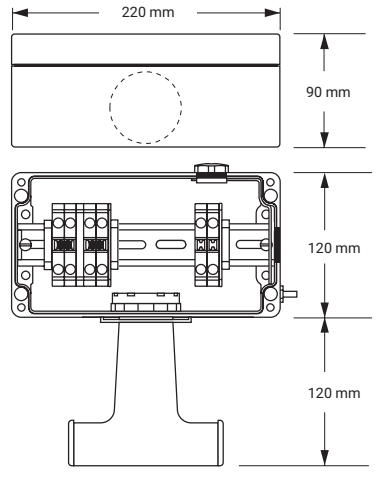
JBM-100-A JBM-100-L-A	JBM-100-E JBM-100-L-E JBM-100-D-E	JBM-100-EP JBM-100-L-EP
This connection system is certified for use in North America and has one ¾" through holes for use with ¾" conduit. One stopping plug is supplied in the kit.	This connection system is certified for use in IEC regions and provides two M25 threaded entries, one stopping plug, and one plastic power cable gland.	This connection system is certified for use in IEC regions and provides two M25 threaded entries, an earthing plate, and an external earthing stud. It is designed for use with armoured cables.

Kit contents

1 junction box with terminals 1 light module (for -L only) 1 stand 3 core sealers 3 green/yellow earthing sleeve 1 ¾" stopping plug 1 polywater sachet 1 spanner 1 strain relief assembly 2 grommet plugs	1 junction box with terminals 1 light module (for -L only) 1 stand 3 core sealers 3 green/yellow earthing sleeve 1 M25 gland for power cable 8-15 mm (temperature range –55°C to +70°C) in diameter 1 M25 stopping plug 1 polywater sachet 1 spanner 1 strain relief assembly 2 grommet plugs 1 ATEX/IECEx Certified drainplug (for JBM-100-D-E only)	1 junction box with terminals, earth continuity plate, and stud 1 light module (for -L only) 1 stand 3 core sealers 3 green/yellow earthing sleeve 2 M25 stopping plugs 1 polywater sachet 1 spanner 1 strain relief assembly 2 grommet plugs

PRODUCT SPECIFICATIONS

Dimensions (nominal)

	JBM-100-A JBM-100-L-A	JBM-100-E JBM-100-L-E JBM-100-D-E	JBM-100-EP JBM-100-L-EP
			

Technical details

Heating cable capability	BTV-CR, BTV-CT, QTVR-CT, XTVR-CT, HTV-CT, VPL-CT		
Ingress protection	IP66	IP66	IP66
Entries	1 x ¾"	2 x M25	2 x M25
Ambient temperature range	–55°C to +56°C (JBM-100-A) –40°C to +40°C (JBM-100-L-A)	–55°C to +56°C* (JBM-100-E and JBM-100-D-E) –40°C to +40°C (JBM-100-L-E)	–55°C to +56°C* (JBM-100-EP) –40°C to +40°C (JBM-100-L-EP)
	*Extra conditions for safe use apply at ambient temperatures >40°C. Temperature resistant power cable and metal glands must be used. Please refer to the certificate or installation instructions for full details.		
Max. pipe temperature	Refer to heating cable specification		
Terminals	Spring-type terminals 4 line, 2 ground	Spring-type terminals 2 phase, 2 neutral, 2 earth	Spring-type terminals 2 phase, 2 neutral, 2 earth
Max. conductor size	8 AWG stranded	10 mm^2 stranded, 10 mm^2 solid	10 mm^2 stranded, 10 mm^2 solid
Max. operating voltage	480 Vac*	480 Vac*	480 Vac*
	*JBM-100-L-E, JBM-100-L-EP and JBM-100-L-A are limited to 277 Vac. Extra conditions for safe use apply for voltages higher than 277 Vac. Please refer to the certificate or installation instructions for full details.		
Max. continuous operating current (***)	53 A	53 A	53 A

(***) For pipe temperature > 150°C and <260°C and XTVR or HTV heating cables, the maximum operating current shall be reduced to maximum 20 A.

Materials of construction

Enclosure, lid, and stand	Electrostatic charge-resistant glass-filled engineered polymer, black	Electrostatic charge-resistant glass-filled engineered polymer, black	Electrostatic charge-resistant glass-filled engineered polymer, black
Lid screws	Stainless steel	Stainless steel	Stainless steel
Lid gasket	Silicone rubber	Silicone rubber	Silicone rubber
Earth continuity plate	N/A	N/A	Steel, zinc plated, and blue chromated

Optional LED indicator light

	JBM-100-A JBM-100-L-A	JBM-100-E JBM-100-L-E JBM-100-D-E	JBM-100-EP JBM-100-L-EP
Colour	Red	Green	Green
Voltage rating	100-277 Vac	100-277 Vac	100-277 Vac
Power consumption	< 1 W	< 1 W	< 1 W

Ordering details (**)

APPROVALS (**)

For use in ordinary and hazardous area Zone 1 and Zone 2 (Gas), Zone 21 and Zone 22 (Dust) and Class I Div 1 & 2

Temperature classification

Temperature classification is defined by the complete system.

Product certification

For certifications in other regions (FM, CSA, IEx etc.), please refer to the installation manual. More details about product certification, approvals and conditions of safe use are available in the installation manual www.nVent.com/RAYCHEM.

ORDERING INFORMATION

Power connection

Part Description (**)	JBM-100-A	JBM-100-E	JBM-100-EP
PN (Weight)	179935-000 (4.3 lb)	831519-000 (1.9 kg)	986415-000 (2.1 kg)

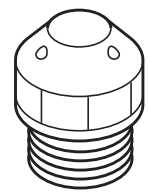
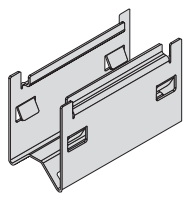
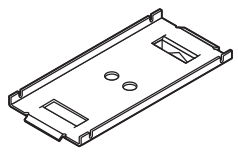
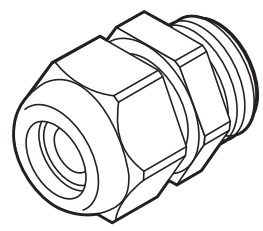
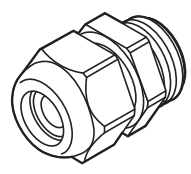
Power connection with light

Part Description	JBM-100-L-A	JBM-100-L-E	JBM-100-L-EP
PN (Weight)	656081-000 (5.3 lb)	395855-000 (2.3 kg)	300273-000 (2.5 kg)

Power connection with drain plug

Part Description		JBM-100-D-E	
PN (Weight)		1244-021056 (2.1 kg)	

Accessories

Conduit Drain ¾"	Prevents condensate from collecting in the box	
Catalog number	JB-DRAIN-PLUG-3/4IN	
Part Number	278621-000	
Weight	0.074 lb / 36 g	
Junction box standoff	For insulation thickness >120 mm & ≤180 mm *	
Catalog number	JBM-100-STANDOFF	
Part Number	P000003624	
Weight	0.599 lb / 272 g	
* Consider extra pipe strap length 6-9" (150-225 mm) for attachment		
Small pipe adapter	Required for stand on pipes ≤ 1"	
Catalog number	JBM-SPA	
Part Number	D55673-000	
Weight	0.930 lb / 422 g (Bag of 5 adaptors)	
Glands for power cables	Hazardous area approved gland for cables 8-15 mm (temperature range –55°C/70°C)	
Catalog number	GL-55-M25	
Part Number	1244-019083	
Weight	0.016 kg	
Glands for power cables	Hazardous area approved gland for cables 8-17.5 mm (temperature range –20°C/70°C)	
Catalog number	GL-36-M25	
Part Number	1244-019082	
Weight	0.016 kg	

(**) Localized versions may exist with limited approvals and different part numbers. Contact your local sales representative.

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com

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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
ELF-200N1-09-L2-25	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-01	Emergency Lighting Fixture	LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-02	Emergency Lighting Fixture	LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-03	Emergency Lighting Fixture	LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-04	Emergency Lighting Fixture	LOWER & UPPER DECK STAIRS	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-05	Emergency Lighting Fixture	LOWER & UPPER DECK STAIRS	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-06	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-07	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-08	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-09	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-10	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-11	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-12	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-13	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-14	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
EML-200-01	NAV AIDS Main Yellow Lanterns	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547/MNL02	SICE-LXS-YEL-05-1	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EML-200-02	NAV AIDS Main Yellow Lanterns	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547/MNL03	SICE-LXS-YEL-05-1	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EOL-200-01	Obstruction Red LED Lights	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547-MC01	L864-LXS-EX-CAP168-CS2LJS	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EOL-200-02	Obstruction Red LED Lights (MEDIUM INTENSITY)	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547-MC02	L864-LXS-EX-CAP168-CS2LJS	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EOL-200-03	Intermediate Obstruction Red Lights	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547-MC03	L864-LXS-EX-CAP168-CS2LJS	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EOL-200-04	Intermediate Obstruction Red Lights	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547-MC04	L864-LXS-EX-CAP168-CS2LJS	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EPH-200-01	NAV AIDS Photocell	UPPER DECK	1724000775	SICE	SICE	24-881	FTC	ZONE 2	INERIS 02ATEX9006U	1724000775-QC-DB-00017	Ex II 2G - Ex d IIB T4 IP66	-	NAVIGATION AIDS	True	N/A	False	
ESL-200-01	Wave Off Status Light	BELOW LOWER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547/MNL01	SICE-LXS-RED-03-1	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
ETB-200N1-14-L1-01	TRACE HEATING - PROCESS LINES - FEEDER 1 (SWS LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-15-L2-01	TRACE HEATING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-15-L2-02	TRACE HEATING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-16-L3-01	TRACE HEATING - PROCESS LINES - FEEDER 3 (DM LINE) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-17-L1-01	Trace Heating - Process Lines - Feeder 4 (WW LINES) Hot JB	UPPER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-17-L1-02	Trace Heating - Process Lines - Feeder 4 (WW LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBM-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-17-L1-03	Trace Heating - Process Lines - Feeder 4 (WW LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-17-L1-04	Trace Heating - Process Lines - Feeder 4 (WW LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBM-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	HAZARDOUS-AREA_7
ETB-200N1-17-L1-05	Trace Heating - Process Lines - Feeder 4 (WW LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBM-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	HAZARDOUS-AREA_7
ETB-200N1-19-L3-01	TRACE HEATING - FEEDER 6 (H2 VENT)	UPPER DECK	1724000887	Encore Thermoengineering	nVent	5020019	ETS-05	Zone 2	Baseefa13ATEX0137 Issue 6	1724000887-MAC-DG-00007	II 2(1)G Ex eb ia mb [ia Ga] IIC T5 Gb - 40ºC ≤ Ta ≤ +60ºC II 2D Ex tb IIIC T100ºC Db	N/A	Hydrogen Vent	True	N/A	False	HAZARDOUS-AREA_6
ETB-200N1-20-L1-01A	Trace Heating - Feeder 7 (SEA WATER PUMPS)	P-50001A (LOWER DECK)	1724000936	PCM Group	THERMON	N/A	HTSX 15-2 OJ	Zone 1 IIB T3	FM 12ATEX0014X	1724000936-MAC-DD-00011	II 2G Ex eb IIC T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	True	N/A	True	
ETB-200N1-20-L1-01B	Trace Heating - Feeder 7 (SEA WATER PUMPS)	P-50001B (LOWER DECK)	1724000936	PCM Group	THERMON	N/A	HTSX 15-2 OJ	Zone 1 IIB T3	FM 12ATEX0014X	1724000936-MAC-DD-00011	II 2G Ex eb IIC T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	True	N/A	True	
ETM-200-01	NAV AIDS Battery Bank Temperature Probe	CONTAINER B-300 (LOWER DECK)	1724000775	SICE	TERMICS	626624-010/01	TS-CTL	ZONE 2	TUV IT 13ATEX069X	1724000775-QC-DB-00017	Ex II 2GD - Ex d IIC T6 IP66	-	NAVIGATION AIDS	True	N/A	True	
EVM-200-01	NAV AIDS Visibility meter	UPPER DECK	1724000775	SICE	PHAROS MARINE	713542.24.01	FD-410EX-MINI-OC-M	ZONE 2	ITS 18ATEX103574X	1724000775-QC-DB-00017	Ex II 2G - Ex d IIB T6 IP66	-	NAVIGATION AIDS	True	N/A	True	
H-ETE-200N1-19-L3-01	Self-regulating heat cable	UPPER DECK	1724000887	Encore Thermoengineering	nVent	N/A	XTVR2-CT	Zone 2	XTVR_SGS20ATEX0049X_Iss. 4 1	1724000887-MAC-DG-00007	II 2 GD Ex 60079-30-1 eb IIC T* Gb / Ex 60079-30-1 tb IIIC T***C Db	N/A	Hydrogen Vent	True	N/A	True	
H-ETE-200N1-20-L1-01A	Self-regulating heat cable	P-50001A (LOWER DECK)	1724000936	PCM Group	THERMON	N/A	HTSX 15-2 OJ	Zone 1 IIB T3	FM 10ATEX0058X	1724000936-MAC-DD-00011	II 2G Ex db eb IIC T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	True	N/A	True	
H-ETE-200N1-20-L1-01B	Self-regulating heat cable	P-50001B (LOWER DECK)	1724000936	PCM Group	THERMON	N/A	HTSX 15-2 OJ	Zone 1 IIB T3	FM 10ATEX0058X	1724000936-MAC-DD-00011	II 2G Ex db eb IIC T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	True	N/A	True	
JB-500E8	Interface JB - Water Package	LOWER DECK	1724000448	PSC	STAHL	-	8146/1083	Safe Area	PTB 01 ATEX 1016	1724000448-MAC-DA-00005	II 2 G Ex eb IIC T6 Gb II 2 D Ex tb IIIC T80°C Db	-	A-50000	True	N/A	False	
JB-500F8	Interface JB - Water Package	LOWER DECK	1724000448	PSC	STAHL	-	8146/1051	Safe Area	PTB 01 ATEX 1016	1724000448-MAC-DA-00005	II 2 G Ex eb IIC T6 Gb II 2 D Ex tb IIIC T80°C Db	-	A-50000	True	N/A	False	
NC-200F2A	NAVAID System NCCP - ENCLOSURE A	CONTAINER B-300 (LOWER DECK)	1724000775	SICE	TECHNOR ITALSMEA	24-1141	SB477620	ZONE 13	FIDI 21ATEX 0090X	1724000775-EL-DG-00003	Ex II 2G - Ex e IIC T6 IP66	-	NAVIGATION AIDS	True	N/A	True	
NC-200F2B	NAVAID System NCCP - ENCLOSURE B	CONTAINER B-300 (LOWER DECK)	1724000775	SICE	TECHNOR ITALSMEA	24-1141	EJB-13	ZONE 12	INERIS 00ATEX 0021X	1724000775-EL-DG-00003	Ex II 2G - Ex db IIB+H2 T6 IP66	-	NAVIGATION AIDS	True	N/A	True	
NC-200F2C	NAVAID System NCCP - ENCLOSURE C	CONTAINER B-300 (LOWER DECK)	1724000775	SICE	TECHNOR ITALSMEA	24-1141	EJB-13A	ZONE 11	INERIS 00ATEX 0021X	1724000775-EL-DG-00003	Ex II 2G - Ex db IIB+H2 T6 IP66	-	NAVIGATION AIDS	True	N/A	True	
Y-89-06-THS-001	Twin cup headset for UHF DMR Portable Radio	CONTAINER B-400 (LOWER DECK)	1724000452	Fores	MOTOROLA	627TZD0512	PMLN6333	Zone 2	BS 12 ATEX E 117 X	1724000452-TL-DS-00005	Ex ib IIC T4 Gb	-	N/A	True	NO	True	

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin
Nationales Metrologieinstitut

(1) EU-Baumusterprüfbescheinigung

(2) Geräte oder Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen - **Richtlinie 2014/34/EU**

(3) EU-Baumusterprüfbescheinigungsnummer

PTB 20 ATEX 1008 U **Ausgabe: 1**

(4) Produkt: Integriertes Begleitheizungs-Anschlusssystem Typ JBx-100-xx-xx und T-100

(5) Hersteller: nVent Thermal Belgium LLC

(6) Anschrift: Romeinse straat 14, 3001 Leuven, Belgien

(7) Die Bauart dieses Produkts sowie die verschiedenen zulässigen Ausführungen sind in der Anlage und den darin aufgeführten Unterlagen zu dieser Baumusterprüfbescheinigung festgelegt.

(8) Die Physikalisch-Technische Bundesanstalt, notifizierte Stelle Nr. 0102 gemäß Artikel 17 der Richtlinie 2014/34/EU des Europäischen Parlaments und des Rates vom 26. Februar 2014, bescheinigt, dass dieses Produkt die grundlegenden Sicherheits- und Gesundheitsanforderungen für die Konzeption und den Bau von Produkten zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen gemäß Anhang II der Richtlinie erfüllt.

Die Ergebnisse der Prüfung sind in dem vertraulichen Prüfbericht PTB Ex 21-10134 festgehalten.

(9) Die grundlegenden Sicherheits- und Gesundheitsanforderungen werden erfüllt durch Übereinstimmung mit

EN IEC 60079-0:2018; EN IEC 60079-7:2015/A1:2018-01; EN 60079-18:2015; EN 60079-31:2014

(10) Falls das Zeichen „X" hinter der Bescheinigungsnummer steht, wird auf besondere Bedingungen für die sichere Anwendung des Produkts in der Anlage zu dieser Bescheinigung hingewiesen.

(11) Diese EU-Baumusterprüfbescheinigung bezieht sich nur auf Konzeption und Prüfung des festgelegten Produkts gemäß Richtlinie 2014/34/EU. Weitere Anforderungen dieser Richtlinie gelten für die Herstellung und das Bereitstellen auf dem Markt. Diese Anforderungen werden nicht durch diese Bescheinigung abgedeckt.

(12) Die Kennzeichnung des Produkts muss die folgenden Angaben enthalten:

II 2 G Ex eb mb IIC Gb

II 2 D Ex tb mb IIIC Db

Konformitätsbewertungsstelle, Sektor Explosionsschutz Braunschweig, 22. März 2021
Im Auftrag

Dr.-Ing. D. Markus
Direktor und Professor

PHYSIKALISCH-TECHNISCHE BUNDESANSTALT

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EU-Baumusterprüfbescheinigungen ohne Unterschrift und ohne Siegel haben keine Gültigkeit.
Diese EU-Baumusterprüfbescheinigung darf nur unverändert weiterverbreitet werden.
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(13) # Anlage

(14) **EU-Baumusterprüfbescheinigung PTB 20 ATEX 1008 U, Ausgabe: 1**

(15) Beschreibung des Produkts

Die JBx-100-xx-xx und T-100 Anschlusskasten-Serie ist ein Anschlusssystem für elektrische Begleitheizungssysteme. Die Anschlusskastenserie JBx-100-xx-xx ist in vier verschiedene Versionen unterteilt (JBS-100-xx-xx, JBM-100-xx-xx und T-100). Diese Anschlusskastenserie ist auf einem integrierten Rohrträger montiert, um elektrische Heizkabel an das Stromnetz anzuschließen oder um eine Verbindung zwischen 2 oder 3 Heizkabeln herzustellen. Die verschiedenen Modelle der Serie umfassen Optionen wie: Kästen mit einer Offshore-Platte (Erdungsplatte) und Kästen mit einem optionalen Lichtmodul. Die vierte Version der Anschlusskasten-Serie ist JBU-100-xx-xx. Diese Version hat die gleichen Eigenschaften, wird jedoch anstelle des Rohrträgers mit einer Halterung direkt an der Rohrleitung montiert.

Typ JBS-100-xx-xx
Der Anschlusskasten ist auf einem integrierten Rohrträger installiert. Im Inneren des Anschlusskastens JBS-100-xx-xx befindet sich eine DIN-Schiene auf der zertifizierte Klemmen installiert sind. Zusätzliche Klemmen können hinzugefügt werden, um den Anschluss eines externen Thermostaten zu ermöglichen. Der Anschlusskasten ist für den Anschluss eines Heizkabels an ein Stromkabel (mit oder ohne Thermostat) ausgelegt. Die Stromkabel werden im Anschlusskasten durch ein Loch in der Seitenwand des Kastens und eine zertifizierte Kabelverschraubung eingeführt.

Typ JBM-100-xx-xx
Der Anschlusskasten ist auf einem integrierten Rohrträger installiert. Der Anschlusskasten JBM-100-xx-xx ist für die Aufnahme von bis zu maximal drei Heizkabeln ausgelegt. Daher sind drei Paare von zertifizierten Klemmen vorgesehen. Gelegentlich können weitere Klemmen installiert werden, um die Verkettung der Stromversorgung zu unterstützen. Das Stromkabel wird über ein Loch in der Seitenwand des Kastens und eine zertifizierte Kabelverschraubung in den Kasten eingeführt. Für die Heizkabel ist eine zusätzliche Zugentlastung vorgesehen. Die Zugentlastung verhindert, dass die Heizkabel beim Ziehen verrutschen.

Typ JBU-100-xx-xx
Die JBU-100-xx-xx ist nicht auf einem integrierten Rohrträger installiert. Der Anschlusskasten kann auf einer stabilen Struktur wie z.B. einem Rohrgestell, einer Wand über die M6-Schrauben oder über eine optionale Halterung direkt auf dem Rohr installiert werden. Der Anschlusskasten ist so ausgelegt, dass bis zu maximal vier Heizkabel an das Stromnetz installiert werden können. Die elektrischen Verbindungen werden mit Hilfe von Klemmen hergestellt, die auf einer DIN-Schiene im Inneren des Anschlusskastens installiert sind.
Alternativ kann JBU-100-xx-xx als Verteilerkasten für Leistungs- und Steuerkabel verwendet werden. Es dürfen nur Leitungseinführungen verwendet werden, die für den Bereich entsprechend zertifiziert sind und die den Abmessungen des Kabels entsprechen.

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Anlage zur EU-Baumusterprüfbescheinigung PTB 20 ATEX 1008 U, Ausgabe: 1

Typ T-100
Der T-100 ist ein Kasten, der als Anschlusskasten (Verbindungskasten) für den Anschluss von bis zu maximal 3 Heizkabeln verwendet wird. Die Box wird auf einem Rohrständer installiert, der die Eingänge und den Schutz für die installierten Heizkabel bietet. Für die Heizkabel ist eine zusätzliche Zugentlastung vorgesehen. Die Zugentlastung verhindert, dass die Heizkabel beim Ziehen verrutschen. Die Verbindung zwischen den Leitern der Heizkabel wird über Aderendhülsen hergestellt. Nach der Installation werden die Leiter mit Schutzkappen aus temperaturbeständigem Silikon elektrisch isoliert.

Änderungen in Bezug auf vorherige Ausgaben

Aufnahme der Verwendung des selbstregulierenden Parallelheizkabels Typ HTV

Typschlüssel

JB	x	-	100	-	xx	-	xx
	1		2		3		4

1	S	JBS – zur Verbindung von einem Heizkabel
	M	JBM – zur Verbindung von bis zu max. drei Heizkabeln
	U	JBU – Universelle Verbindung
2	100	Aufrechte Installation
3	A	Version mit gewindelosen Bohrungen
	L	Version mit optionalem Lichtmodul
	E	Version mit metrischen Gewindebohrungen
	P	Version mit optionaler Offshore-Platte (Erdungsplatte)
	D	Version mit optionalem Belüftungsstopfen
4	E	Version mit metrischen Gewindebohrungen
	A	Version mit gewindelosen Bohrungen
	P	Version mit optionaler Offshore-Platte (Erdungsplatte)

Technische Daten

Umgebungstemperaturbereich	Standard Version	-55°C to +56°C
	Mit Lichtmodul	-40°C to +40°C
Max. Anzahl der Heizbänder	JBS-100-xx-xx	1
	JBM-100-xx-xx	3
	JBU-100-xx-xx	3 (4 ohne Stromkabel)
	T-100	3

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Anlage zur EU-Baumusterprüfbescheinigung PTB 20 ATEX 1008 U, Ausgabe: 1

Anzahl der Anschlussklemmen*	JBS-100-xx-xx	L+N+PE
	JBM-100-xx-xx	2xL + 2xN + 2xPE
	JBU-100-xx-xx	2xL + 2xN + 2xPE
	T-100	-
Max. Kabelquerschnitt	JBS-100-xx-xx	0.5 mm² bis 10 mm²
	JBM-100-xx-xx	0.5 mm² bis 10 mm²
	JBU-100-xx-xx	0.5 mm² bis 10 mm²
	T-100	max. 3,3 mm²
Bemessungsspannung**	Abhängig vom verwendeten Heizkabeltyp	
	BTV1, QTVR1, XTV1, KTV1, HTV1	max. 120 V
	BTV2, QTVR2, XTV2, KTV2, HTV2	max. 277 V
	VPL1	max. 120 V
	VPL2	max. 230 / 254 V
	VPL4 + FHPC	max. 480 V
Bemessungsstrom	JBS-100-xx-xx	Max. 53 A
	JBM-100-xx-xx	Max. 53 A
	JBU-100-xx-xx	Max. 53 A
	T-100	Max. 40 A

* Weitere Klemmen sind zulässig, solange der Gesamtstrom durch das Gehäuse 40 A nicht übersteigt.

** abhängig von Absicherung bzw. max. zulässigem Bemessungsstrom, max. zulässiger Temperatur der zu beheizenden Oberfläche; siehe hierzu Datenblätter bzw. Betriebsanleitung des Herstellers.

Hinweise zur Herstellung

1. Die maximal zulässige Temperatur für die zu beheizende Fläche (Rohrtemperatur) ist auf der Grundlage der spezifischen Leistungsklasse, der max. zulässigen Betriebstemperatur der Heizbänder, der Nennspannung und der max. zulässigen Strombelastbarkeit zu bestimmen.
2. Anwendungen, für die wärmebeständige Zuleitungen inkl. Kabelverschraubungen aus Metall verwendet werden müssen, sind vom Hersteller anzugeben und vom Errichter/Anwender zusammenzustellen.
3. Einschränkungen bezüglich der Verwendung der Typen JBS-100-L-x, JBM-100-L-x und JBU-100-L-x (mit Kontrollleuchte) sind vom Hersteller anzugeben und vom Installateur/Benutzer zu beachten.

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4. Die Parallelheizbänder vom Typ VPL und FHPC müssen so installiert werden, dass ihre kalten Enden außerhalb des Klemmenkastens beginnen.
5. Wenn JBU-100-xx-x mit Spannungseinspeisung installiert wird, müssen bei 40 °C < Ta < 56 °C eine ausreichende hitzebeständige Einspeisung und Metall-Verschraubungen, inkl. Dichtung, verwendet werden. Für die Metallverschraubungen inkl. Dichtung muss ein separates IECEx-Zertifikat ausgestellt und von nVent Thermal verifiziert worden sein.
6. Für Heizkabel müssen zertifizierte nVent Thermal Verschraubungen vom Typ C25-100-METAL bei 40 °C < Ta < 56 °C verwendet werden.
7. Die Ausführung des Anschlusskastens mit Belüftungsstopfen muss am Rohr aufgehängt werden, um eine einwandfreie Funktion zu gewährleisten.

(16) Prüfbericht PTB Ex 21-10134

(17) Besondere Bedingungen

Die Verwendung von alternativen Heizbändern ohne Freigabe durch den Hersteller ist nicht zulässig.

(18) Grundlegende Sicherheits- und Gesundheitsanforderungen

Erfüllt durch Übereinstimmung mit den vorgenannten Normen.

Konformitätsbewertungsstelle, Sektor Explosionsschutz
Im Auftrag

Braunschweig, 22. März 2021

Dr.-Ing. D. Markus
Direktor und Professor

PHYSIKALISCH-TECHNISCHE BUNDESANSTALT

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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 20 ATEX 1008 U **Issue: 1**

(4) Product: Integrated Heat Tracing Connection System
Type JBx-100-xx-xx and T-100

(5) Manufacturer: nVent Thermal Berlgium NV

(6) Address: Romeinse straat 14, 3001 Leuven, Belgium

(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 21-10134.

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

EN IEC 60079-0:2018; EN IEC 60079-7:2015/A1:2018-01; EN 60079-18:2015; 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 eb mb IIC Gb

II 2 D Ex tb mb IIIC Db

Konformitätsbewertungsstelle Sektor Explosionsschutz Braunschweig, March 22, 2021
On behalf of PTB:

Dr.-Ing. D. Markus
Direktor und Professor

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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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(13) # SCHEDULE

(14) **EU-Type Examination Certificate Number PTB 20 ATEX 1008 U, Issue: 1**

(15) Description of Product

The JBx-100-xx-xx and T-100 Connection box series is a connection system for electrical trace heating systems. The JBx-100-xx-xx Connection box series is subdivided in four different versions (JBS-100-xx-xx, JBM-100-xx-xx and T-100). This junction box series is mounted on an integrated pipe stand for the connection of electrical heating cables to the mains supply or to provide a splice between 2 or 3 heating cables. The different models of the series include options such as: boxes equipped with an offshore plate (earth plate) and boxes with an optional light module and lens. Another part of the Connection box series is JBU-100-xx-xx. This version has the same features, but is mounted directly on the pipeline with a support bracket instead of the pipe stand.

Product type JBS-100-xx-xx

The junction box is installed on an integral pipe support. Inside the JBS-100-xx-xx junction box there is installed one DIN rail on which are installed a number of certified terminals. Additional terminals can be added to allow an external thermostat to be connected. The junction box is designed to connect one heating cable to one power cable (with or without thermostat). Power cables are fed in the junction box by means of a hole in the sidewall of the box and a certified cable gland.

Product type JBM-100-xx-xx

The junction box is installed on an integral pipe support. The JBM-100-xx-xx junction box is designed to accommodate up to a maximum of three heating cables. Therefore, there are three pairs of certified terminals provided. Occasionally more terminals can be installed to support daisy chaining of the power supply. The power cable will be fed in the box via a hole in the sidewall of the box and a certified cable gland. Additional strain relief is provided for the heating cables. The strain relief is avoiding that the heating cables will slip when pulled.

Product type JBU-100-xx-xx

The JBU-100-xx-xx is not installed on an integral pipe support. The junction box can be installed on a stable structure such as a pipe rack; a wall via the M6 screws or can be installed via an optional support bracket directly on the pipe. The junction box is designed to accommodate up to a maximum of four heating cables to the mains supply. The electrical connections are established by means of terminals that are installed on a DIN rail inside the junction box.
Alternatively, the JBU type boxes can be used as a marshalling box for power and control cables. Use glands that are suitably certified for the area and that meet the dimensions of the cable.

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SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 20 ATEX 1008 U, Issue: 1

Product type T-100
The T-100 is a box used as a connection (Splice) box for connecting up to maximum 3 heating cables. The Box is installed on a pipe stand providing the entries and protection for the installed heating cables. Additional strain relief is provided for the heating cables. The strain relief is avoiding that the heating cables will slip when pulled. The connection between the conductors of the heating cables is established via ferrules. Once installed the conductors are electrically isolated using protective caps made out of temperature resistive silicone.

Nomenclature

JB	x	-	100		-	xx	-	xx
	1		2			3		4

1	S	JBS – for connection of one heating cable
	M	JBM – for connection of up to three heating cables.
	U	JBU – universal
2	100	Above installation
3	A	version with unthreaded holes
	L	model with optional Light module
	E	version with threaded metric holes
	P	model with optional off shore plate
	D	model with optional drain plug
4	E	version with threaded metric holes
	A	version with unthreaded holes
	P	model with optional off shore plate

Technical data

Ambient temperature range	Standard version	-55°C to +56°C
	With pilot lamp	-40°C to +40°C
Max. number of heating cables	JBS-100-xx-xx	1
	JBM-100-xx-xx	3
	JBU-100-xx-xx	3 (4 without power cable)
	T-100	3
Standard number of terminals*	JBS-100-xx-xx	L+N+PE
	JBM-100-xx-xx	2xL + 2xN + 2xPE
	JBU-100-xx-xx	2xL + 2xN + 2xPE

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 20 ATEX 1008 U, Issue: 1

	T-100	-
Max. wire cross section	JBS-100-xx-xx	0.5 mm² to 10 mm²
	JBM-100-xx-xx	0.5 mm² to 10 mm²
	JBU-100-xx-xx	0.5 mm² to 10 mm²
	T-100	max. 3.3 mm²
Rated voltage**	Depends on the heating cable type used	
	BTV1, QTVR1, XTV1, KTV1, HTV1	max. 120 V
	BTV2, QTVR2, XTV2, KTV2, HTV2	max. 277 V
	VPL1	max. 120 V
	VPL2	max. 230 / 254 V
	VPL4 + FHPC	max. 480 V
Rated current	JBS-100-xx-xx	max. 53 A
	JBM-100-xx-xx	max. 53 A
	JBU-100-xx-xx	max. 53 A
	T-100	max. 40 A

* More terminals are permitted as long as the total current trough the enclosure is not exceeding 40A

**subject to protection and max. permissible rated current, max. permissible temperature of the surface to be heated; see data sheets and operating instructions of the manufacturer.

Notes for manufacturing

1. The temperature accepted as a maximum for the surface to be heated (tube temperature) shall be determined on the basis of the specific performance category, the max. admissible operating temperature of the parallel strip heaters, the voltage rating and the max. admissible current carrying capacity.
2. Applications for which heat-resistant incoming cables incl. cable glands from metal have to be used, have to be specified by the manufacturer and must be compiled with the installer/user.
3. Restrictions regarding the use of type JBS-100-L-x, JBM-100-L-x and JBU-100-L-x (with pilot lamp) have to be specified by the manufacturer and must be complied with the installer/user.
4. The parallel strip heaters, type VPL and FHPC, have to be installed so that their cold ends start outside the terminal box.
5. If JBU-100-xx-xx with voltage infeed is installed, an adequate heat-resistant feeder and screwed metal glands, incl. gasket, must be used at 40 °C < Ta < 56 °C. For the screwed

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metal glands, incl. gasket a separate IECEx Certificate must have been issued and they must have been verified by nVent Thermal.

6. For heating cables, certified nVent Thermal glands of type C25-100-METAL must be used at 40 °C < Ta < 56 °C.
7. The version of the connection box with a drain plug must be suspended on the pipe to ensure proper function.

(16) Test Report PTB Ex 21-10134

(17) Specific conditions of use

Alternative strip heaters must not be used, unless the manufacturer's approval has been obtained.

(18) Essential health and safety requirements

Met by compliance with the aforementioned standards.

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB:

Braunschweig, March 22, 2021

Dr.-Ing. D. Markus
Direktor und Professo

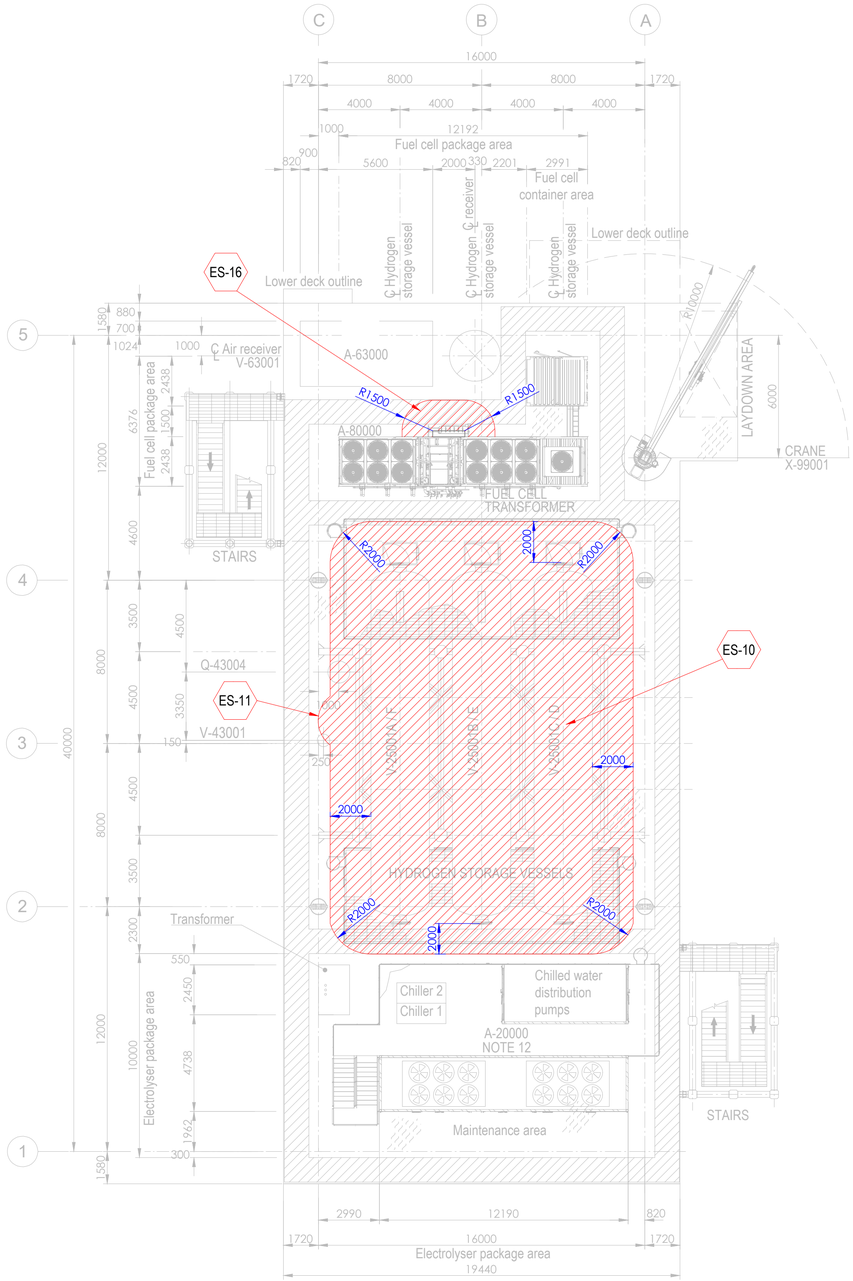
PHYSIKALISCH-TECHNISCHE BUNDESANSTALT

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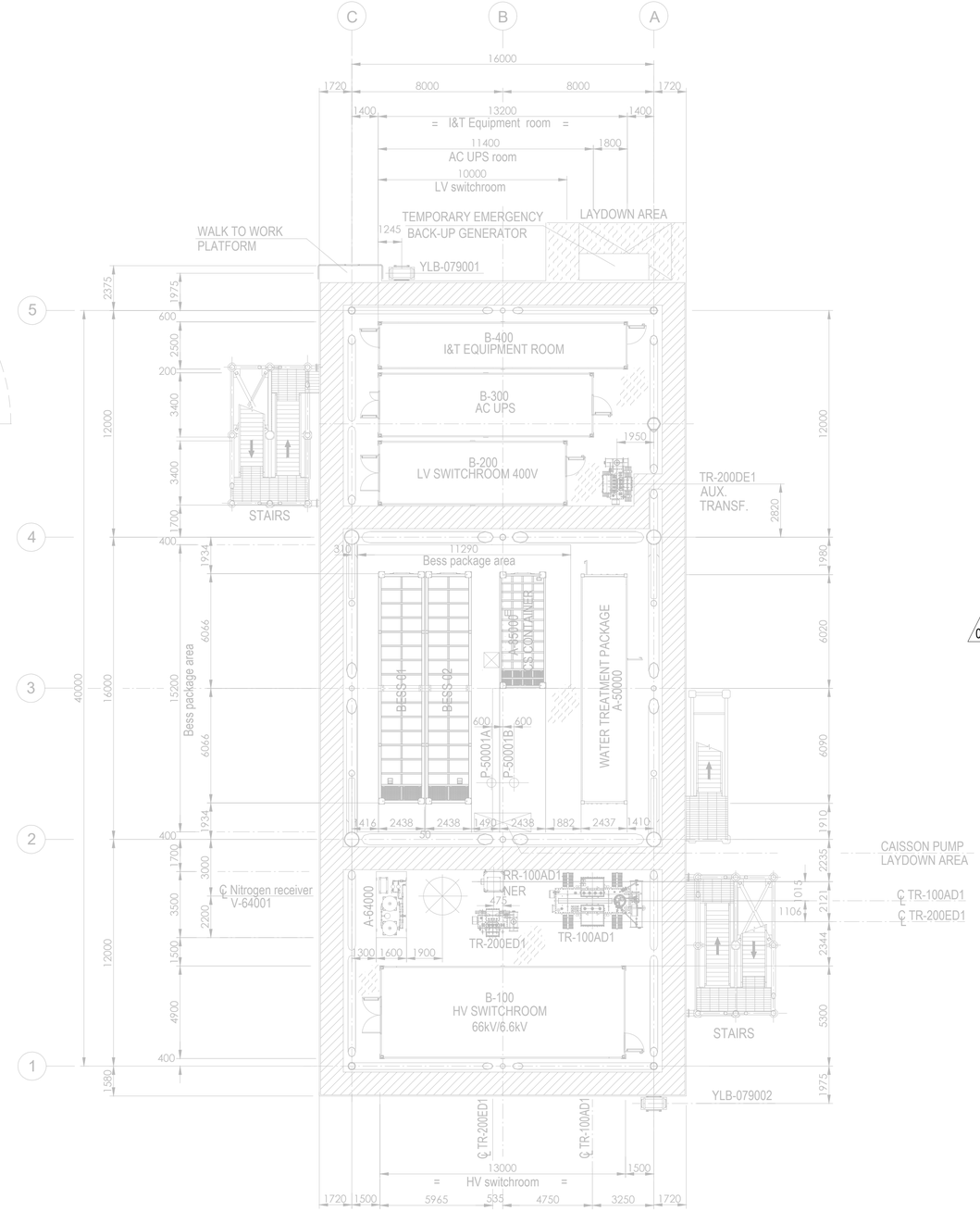
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DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



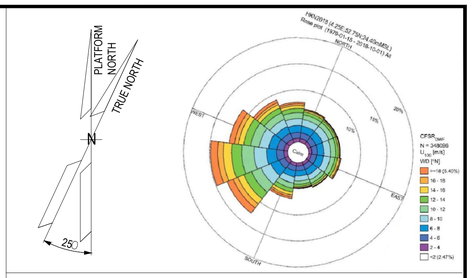
PLAN ON UPPER DECK
EL+30.310 T.O.S.



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

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

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



NOTES

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

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

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

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

CROSSWIND

ROSETTI MARINO

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

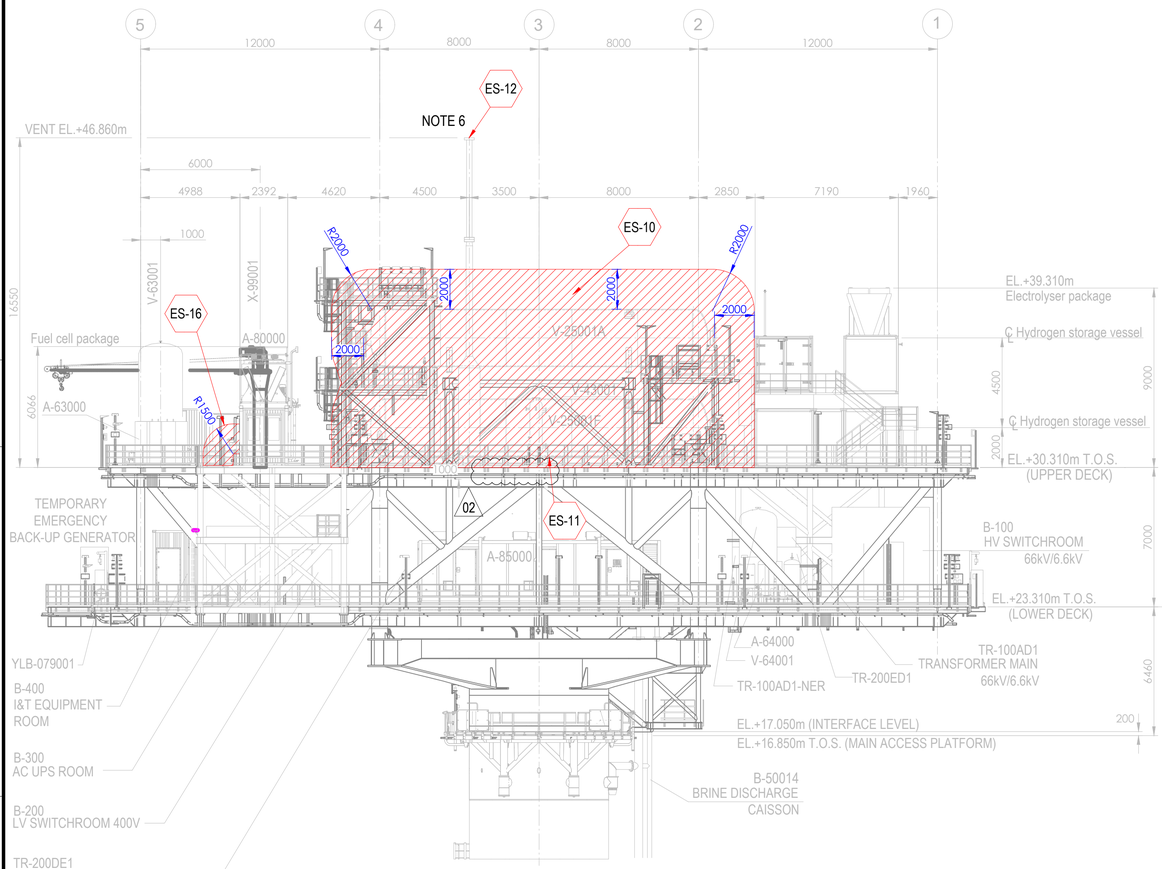
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

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

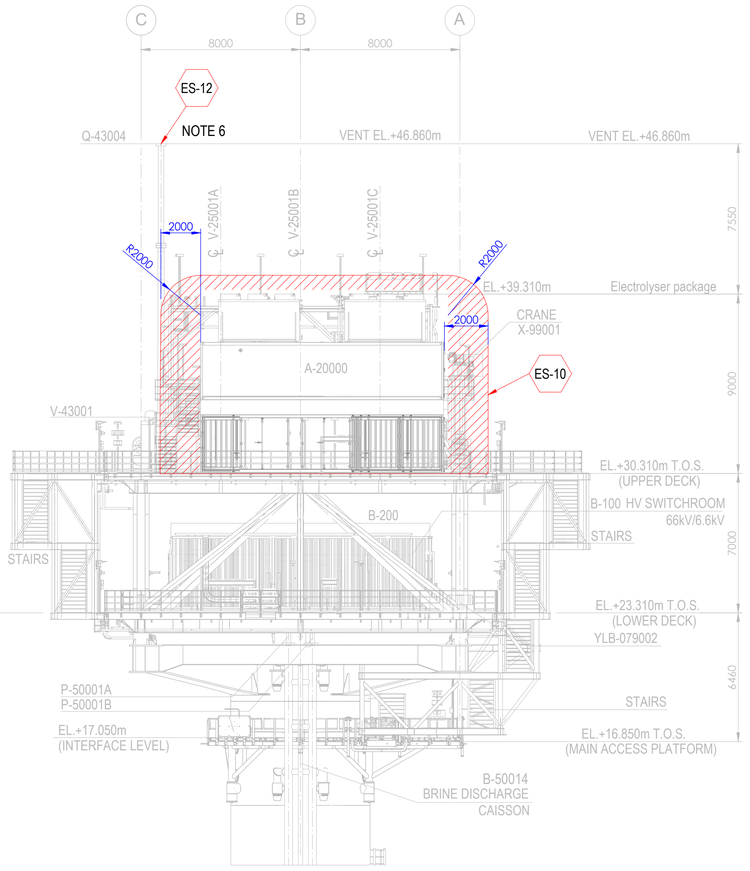
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

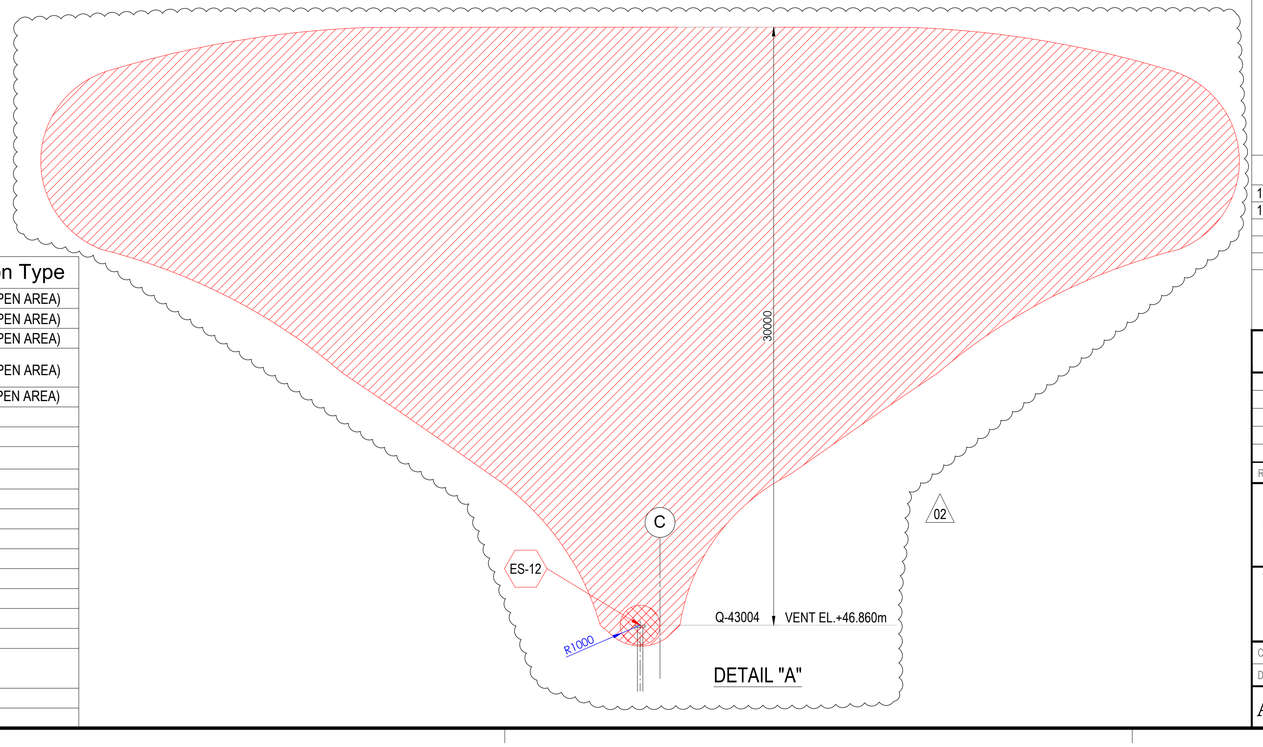


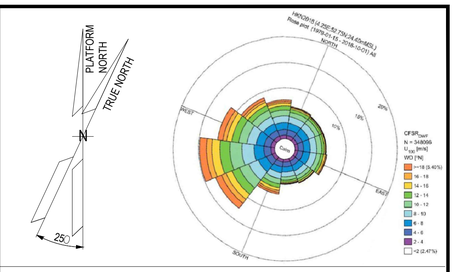
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
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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		
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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

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2. ALL ELEVATIONS IN METERS.
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5. THE BESS IS CONSIDERED SAFE AREA EXCEPT EXTRACTORES FROM BATTERIES , CURRENTLY NOT SHOWN IN DRAWINGS, SINCE INFORMATION FROM VENDOR IS NOT YET AVAILABLE.[ES17]
6. FOR ES12 PLUME, PLEASE REFER TO THE DETAIL "A" BELOW. (02)
7. THE LOCATION OF EMISSION SOURCES ON THE LAYOUT ARE ONLY INDICATIVE. EMISSION SOURCES CONSIDERED ARE PRESENT WITHIN THE EXTENSION OF HAZARDOUS CLASSIFIED AREAS SHOWN ON THE LAYOUT. THIS IS BECAUSE VALVES AND FLANGES,WHICH ARE CONSIDERED POTENTIAL SOURCES OF RELEASE POINTS FOR FLAMMABLE GAS ARE NOT SHOWN ON CURRENT LAYOUT PROVIDED. THE SAME APPLIES TO THE EMISSION SOURCES FOR CPI'S ITEM.
8. IDENTIFIED EMISSION SOURCES DETAIL

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

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

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

CROSSWIND

ROSETTI MARINO

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

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

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

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

ITEM	Tag	ETB-200N1-17-L1-03	: HEAT TRACING - PROCESS LINES - (WW-202) Hot JB			Dwg	123A90-DDL-EL-DL-20140
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10004606	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.**		829939-000			
Manufacturer	nVent			**Model**		JBM-100-E			
Cert No.	PTB20ATEX1008U			**Equipment Ambient Temp.**		-40°C to +56°C			
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex eb	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	

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	OK	
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	ETB-200N1-17-L1-03	: HEAT TRACING - PROCESS LINES - (WW-202) Hot JB			Dwg	123A90-DDL-EL-DL-20140
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10004606	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	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	NA	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	NA	
52	Flame path are clean and undamaged	x	NA	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	OK	
60	Power conductors are not bunched together causing possible hot spots	x	OK	
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	ETB-200N1-17-L1-03	: HEAT TRACING - PROCESS LINES - (WW-202) Hot JB		Dwg	123A90-DDL-EL-DL-20140	
	S/Sys	83-65	: Electrical Heat Tracing		Module	LD	
TASK	code	C10004606	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

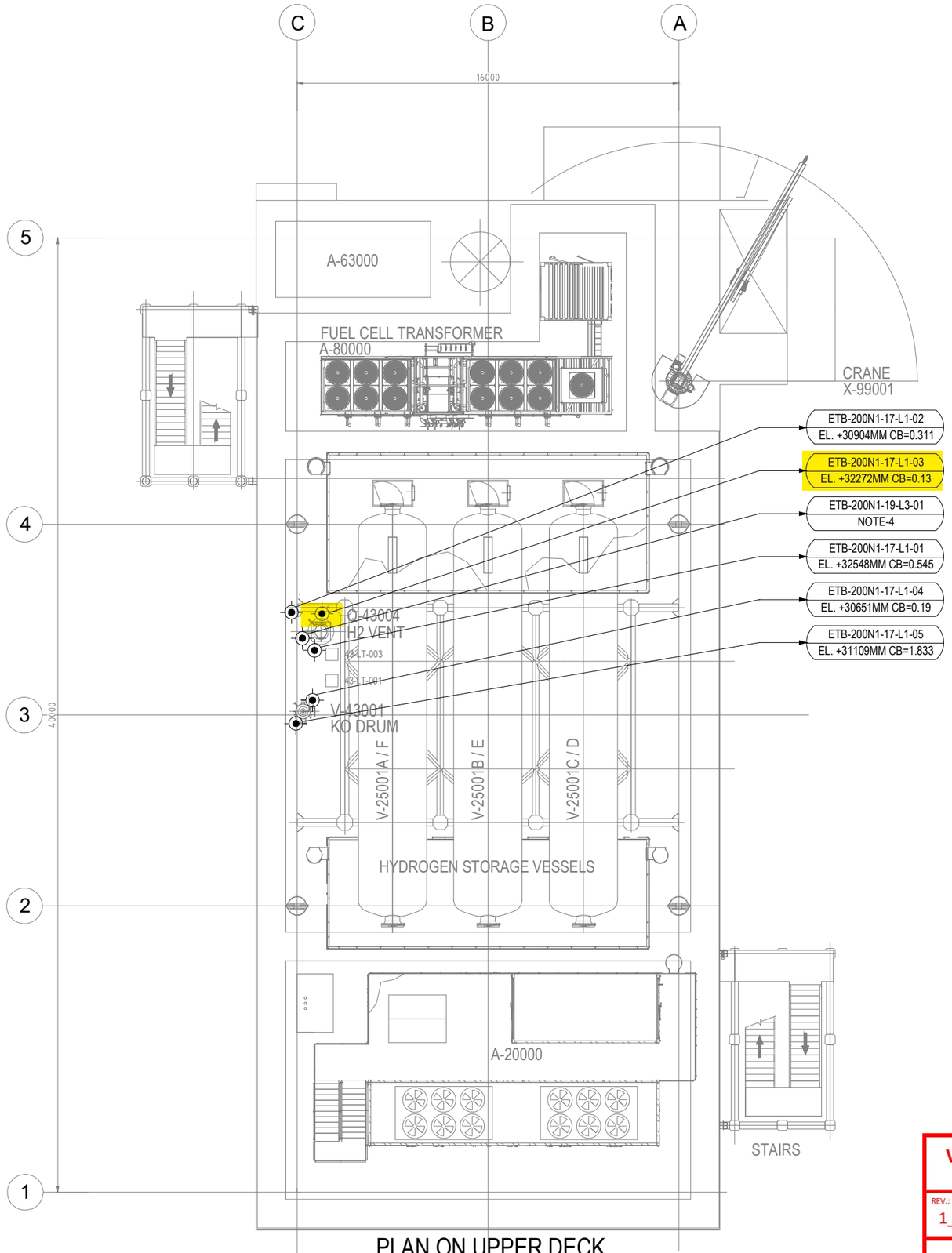
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

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

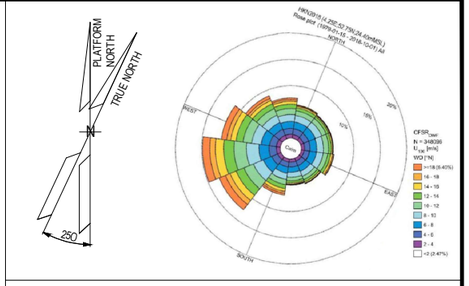
Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-08	2025-02-20	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-08T09:44:23.329Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-20T14:38:57.361Z	

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

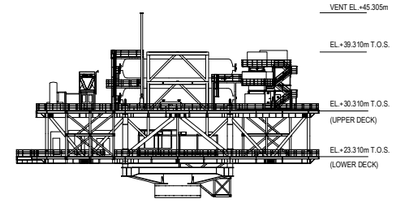
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_C	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

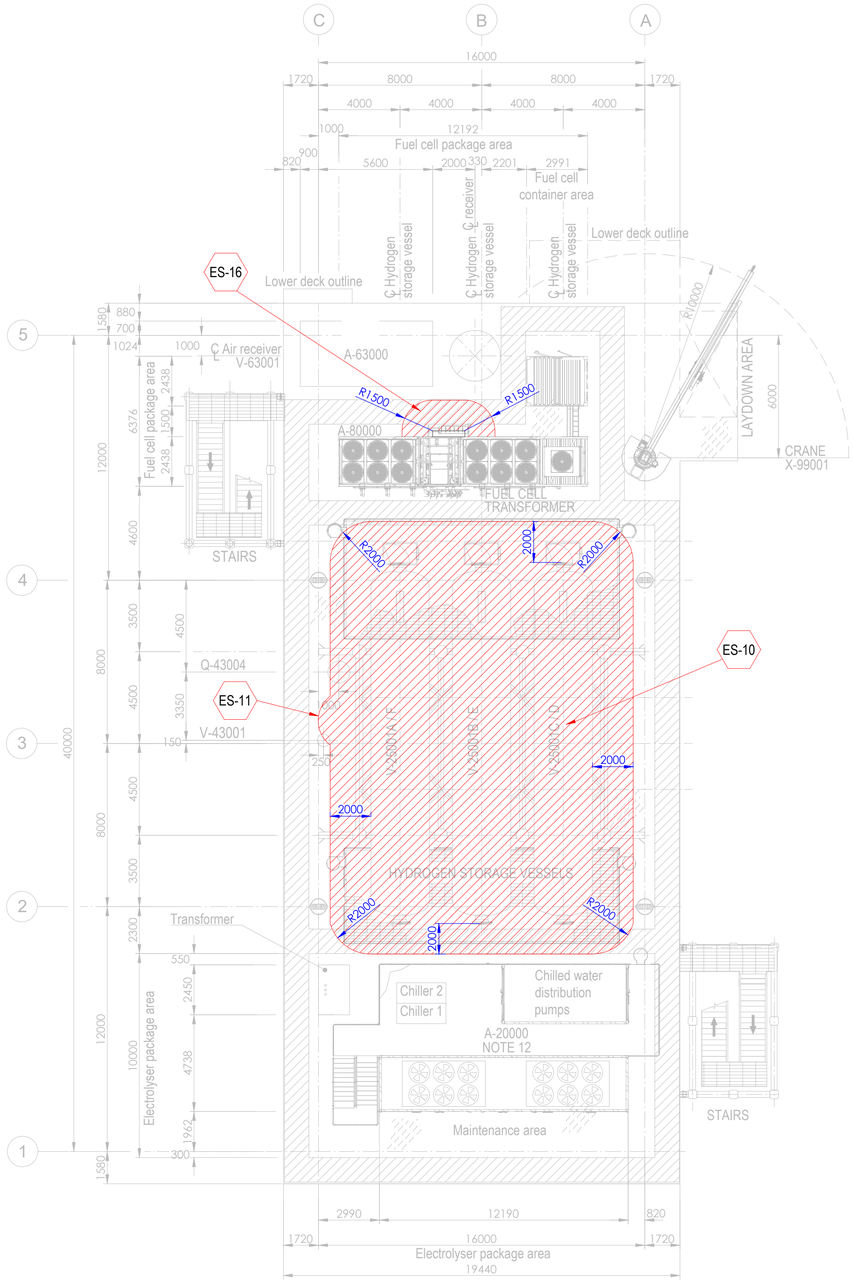
TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1:100	
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 2of2	REV. 01

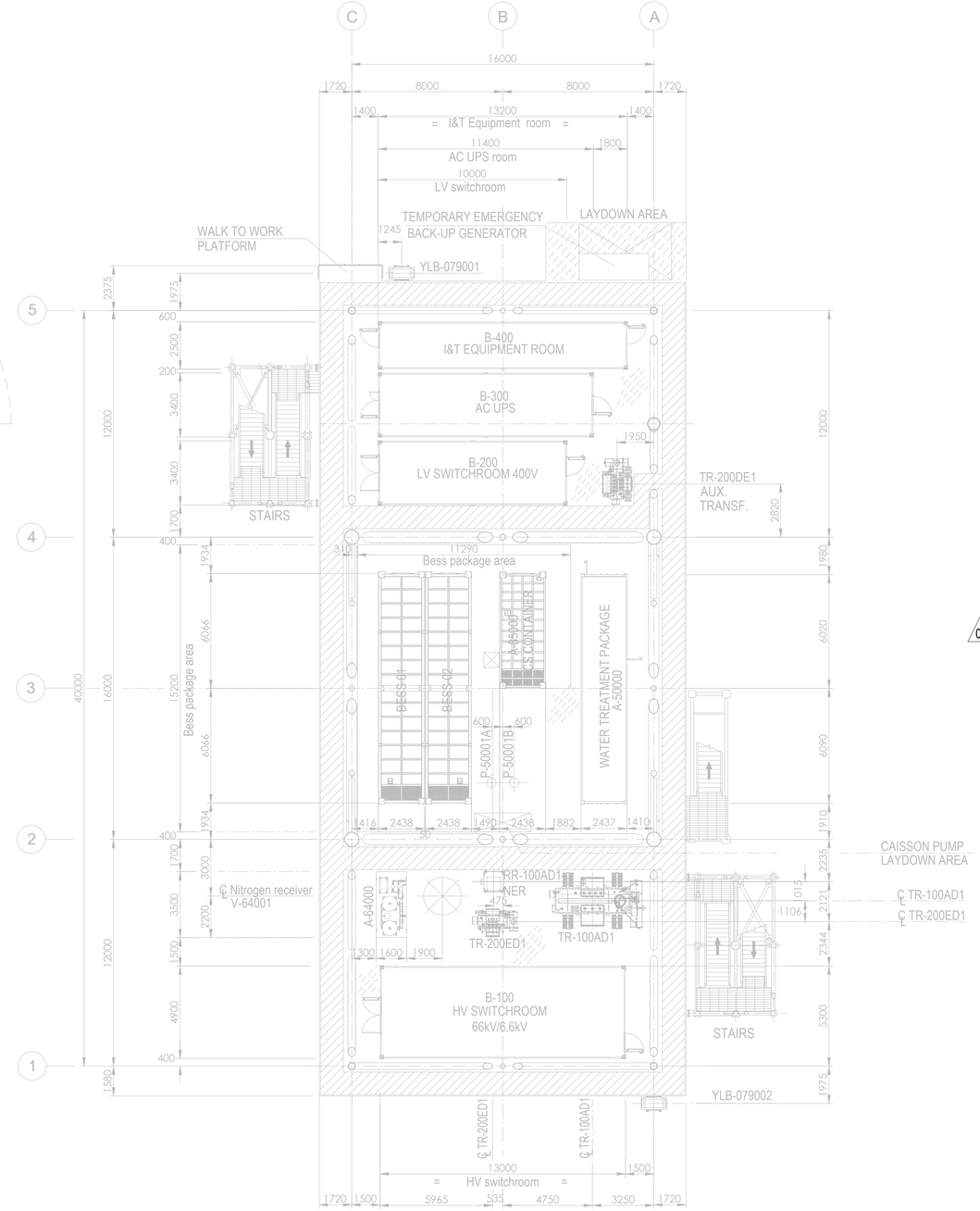
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DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



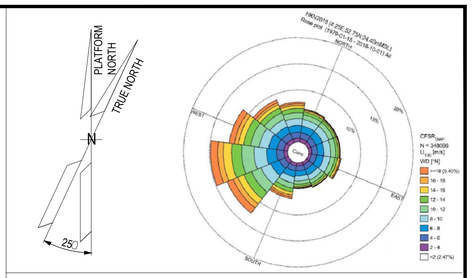
PLAN ON UPPER DECK
EL+30.310 T.O.S.



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

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

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



NOTES

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

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

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

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

CROSSWIND

ROSETTI MARINO

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

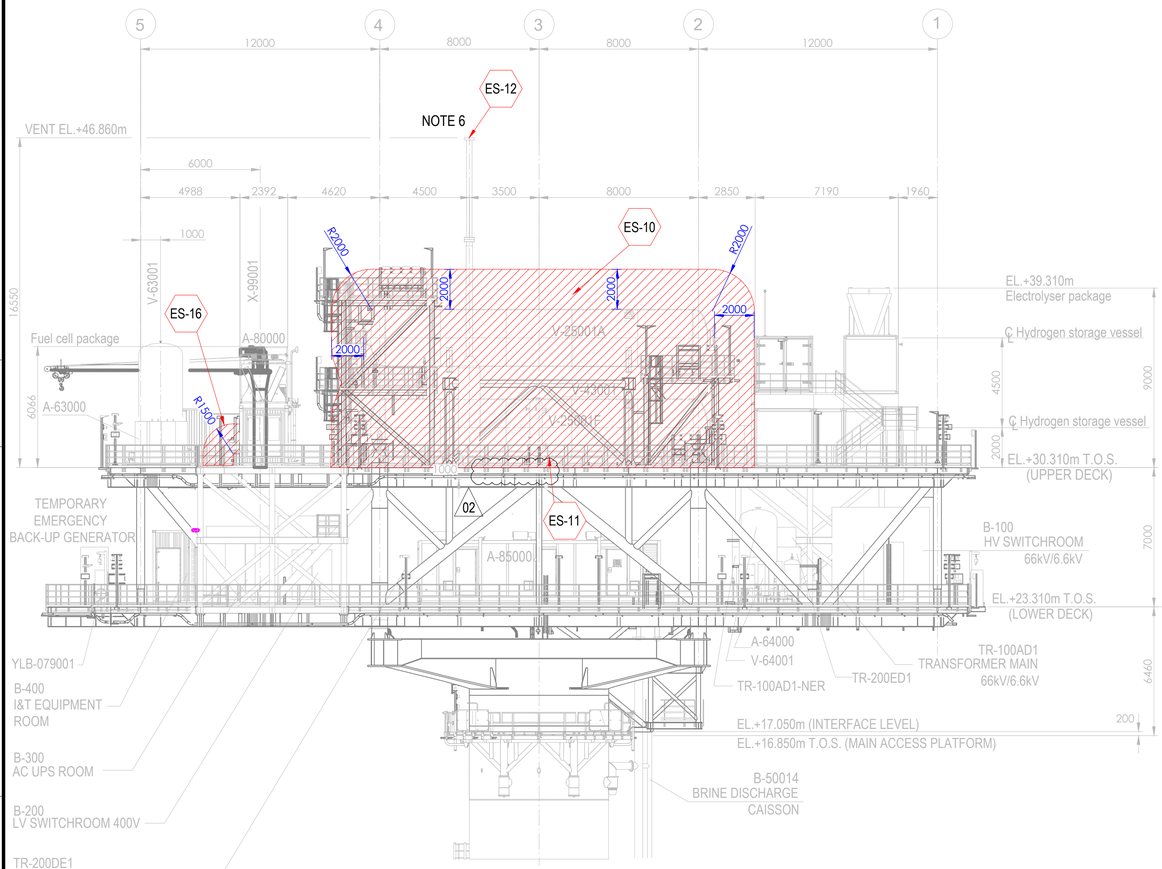
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

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

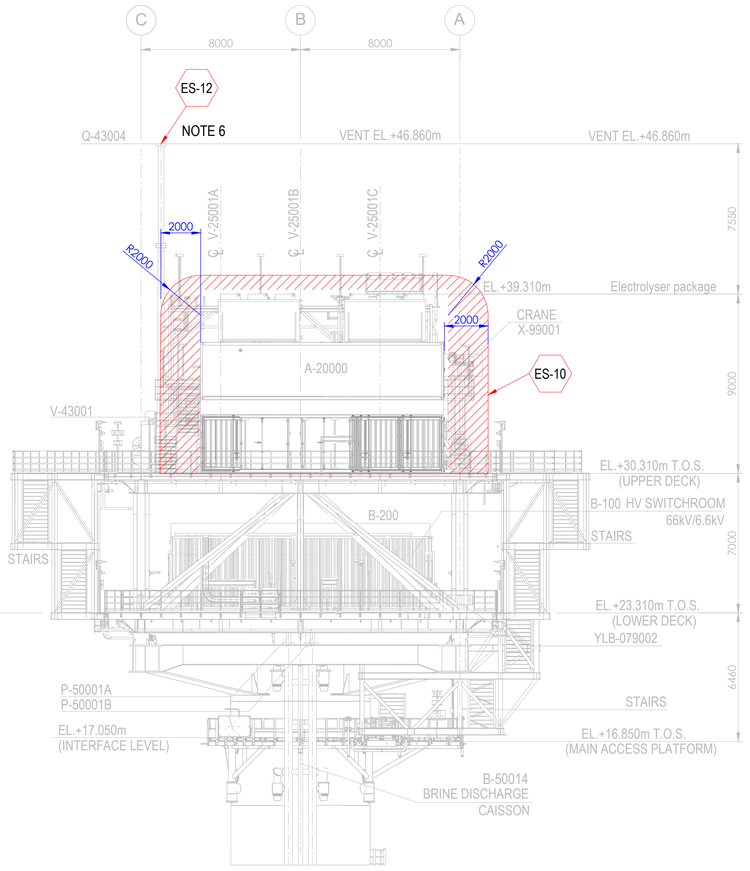
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

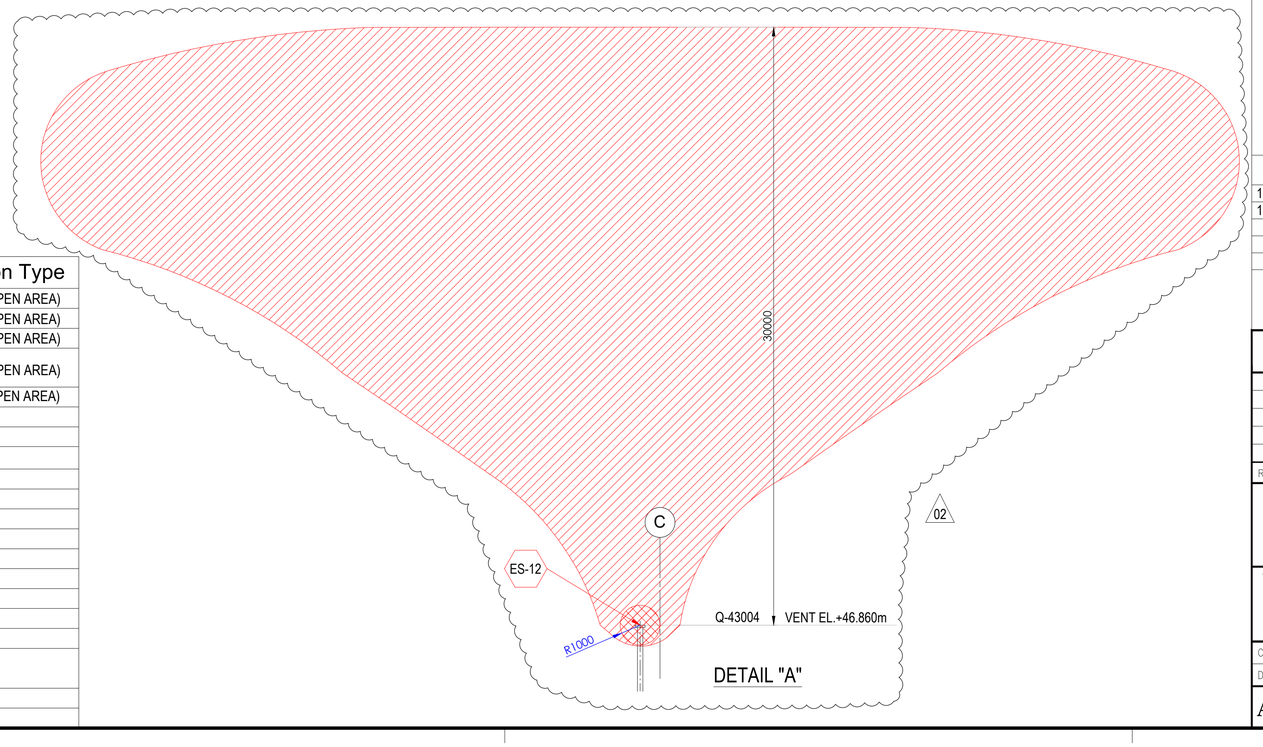


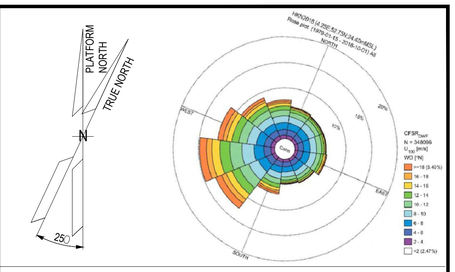
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

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





NOTES

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

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

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

CROSSWIND

ROSETTI MARINO

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

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

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

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

CAD FILENAME: 1724001647-EL-DG-00006 Rev 03.dwg

CONTROL PANEL REF.:

Q17

MARSHALLING BOX

EJB-200N1-17-L1-01

ETB-200N1-17-L1-04 — P — EHT-1004-A — P — EHT-1004-B — ETB-200N1-17-L1-05

ETB-200N1-17-L1-02 — P — EHT-1005-A

ETB-200N1-17-L1-03 — P — EHT-1006-A

ETB-200N1-17-L1-01 — P — EHT-2002-A

SPARE

CIRCUIT NO.	1004	1005, 1006	2002	
C.B. RATING (A)	32	32	32	
START-UP I (A)	2.6	0.4	0.6	
LOAD (W)	383	65	81	
SERVICE	WINTERIZING	WINTERIZING	WINTERIZING	
NOTES FOR THE CIRCUIT	--	--	--	

GENERAL NOTES

CROSSWIND

ROSETTI MARINO

nVent RAYCHEM TRACER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
03	20/01/2025	ACCEPTED FOR CONSTRUCTION	ADU	AMI	GPI
02	29/11/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	02/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING
ELECTRICAL BLOCK DIAGRAM

SCALE: N/A

DRAWING NO.: 1724001647-EL-DG-00006

SHEET NO.: 4 /4

REVISION: 03

FROM	TO

DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1

CUBICLE/CB: +03/Q17

-X1

L1/17 56 BN
N/17 57 BU
Y/G
PE
P.E. BUS BAR

P-EJB-200N1-17-L1-01
3G6 mm²

DESCRIPTION: TRACE HEATING - PROCESS LINES - FEEDER 4 (WW LINES & LT)
TAG NUMBER: EJB-200N1-17-L1-01

COLD JB

BN L L L L BN BN BN
BU N N N N BU BU BU
Y/G PE PE PE PE Y/G Y/G Y/G

P-ETB-200N1-17-L1-01
3G6 mm²

DESCRIPTION: TRACE HEATING INSTRUMENT - 43-LT-003
TAG NUMBER: ETB-200N1-17-L1-01

HOT JB

BN L L BN
BU N N BU
Y/G PE PE Y/G

P-ETB-200N1-17-L1-02
3G6 mm²

DESCRIPTION: TRACE HEATING PROCESS LINE (WW 202)##
TAG NUMBER: ETB-200N1-17-L1-02

HOT JB

BN L L BN
BU N N BU
Y/G PE PE Y/G

P-ETB-200N1-17-L1-03
3G6 mm²

DESCRIPTION: TRACE HEATING PROCESS LINE (WW 260)
TAG NUMBER: ETB-200N1-17-L1-03

HOT JB

BN L L
BU N N
Y/G PE PE

DESCRIPTION: TRACE HEATING PROCESS LINE (WW 259) (V-43001 / 43-LT-001)
TAG NUMBER: ETB-200N1-17-L1-04

HOT JB

BN L L BN
BU N N BU
Y/G PE PE Y/G

P-ETB-200N1-17-L1-04
3G6 mm²

- PIPE LINE WW-202 TRACED FROM NOZZLE N3 UPTO SWAN NECK

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_K	12/02/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
TRACE HEATING PROCESS LINES

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 050 | REV. 02

F.to UNI A3: 420mmx297mm

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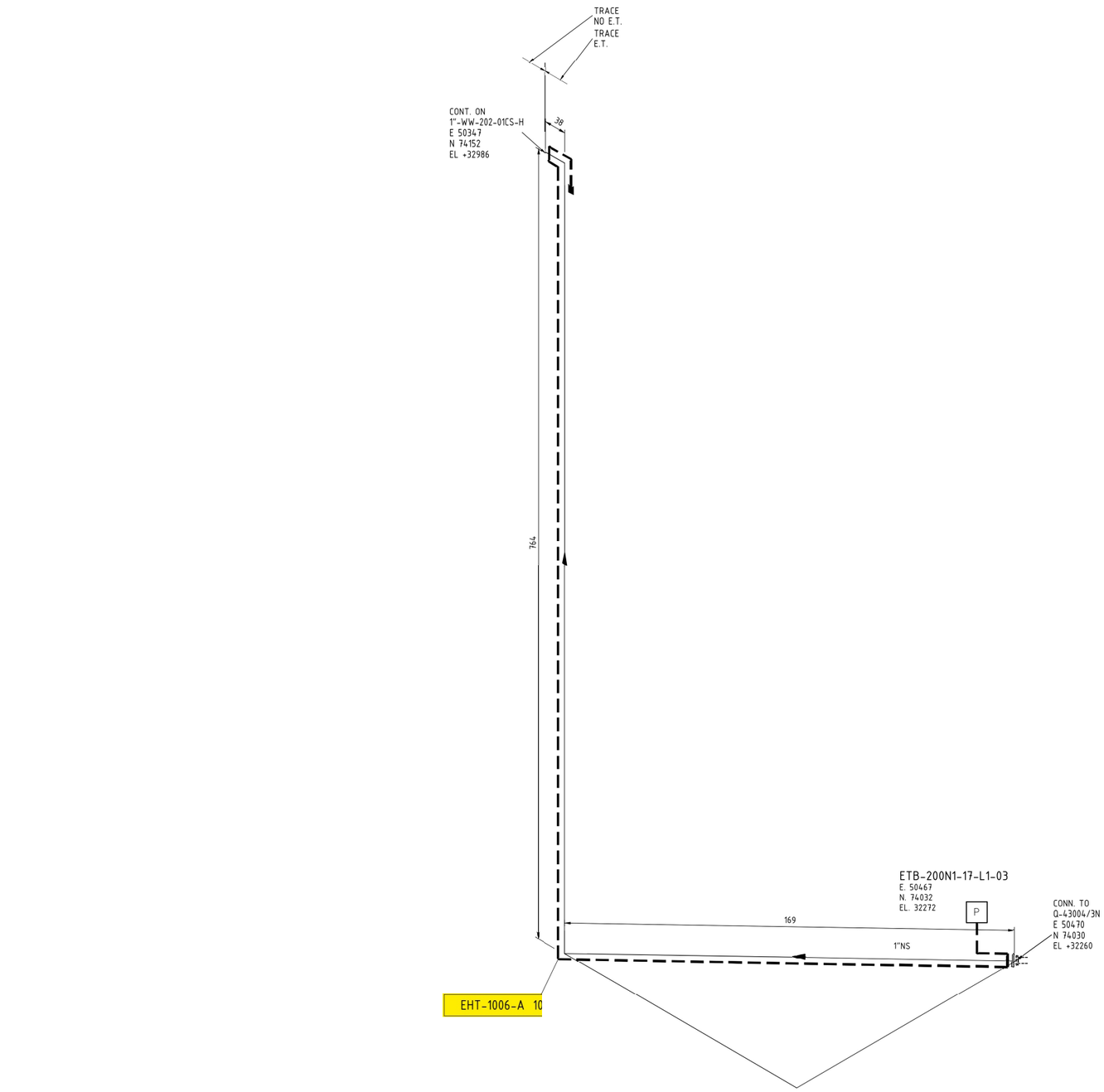
CAD FILENAME: PIT240024_DD01_1006_001_02.dwg

HEAT TRACING DATA

HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	PIPE LENGTH (m)	HEATER LENGTH (m)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W/m)	POWER OUTPUT (W/m)	SHEATH TEMP. (°C)
EHT-1006-A	PIPING	3BTV2-CT	1.0	2.5	0.1	19	230	3.9	10.7	85
TOTALS			1.0	2.5	0.1	19				

HEATER ADDER TABLE

PIPE SIZE (Ins)	TYPE	QTY	ALLOWANCE PER ITEM (m)	TOTAL ALLOWANCE (m)
1	Typical Flange (fixed adder)	1	0.46	0.46



DESIGN PARAMETERS

CIRCUIT NUMBER	1006	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	25°C	INSULATION TYPE	RW/MF 1.2015
MAX. EXPOSURE TEMP.	25°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	100°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

COMPONENT BILL OF MATERIALS

CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	2.5	m	Raychem Self-Regulating Heating Cable
JBS-100-E	1	each	Single entry power connection, EP, ATEX
PSE-090	1	each	Pipe Strap for 1.1/4" to 3" (40-90mm)
GS-54	0.1	each	Glass Tape (16m/roll), suited for SS pipes
LAB-I-01	1	each	Warning Label - English
E-20	1	each	Heat shrink end seal, ATEX (BTV, QTVR)
JBS-SPA	0.2	bag	Small Pipe Adapter for E-100, JBS-100, and JS-100

LINE NUMBERS

1"-WW-202-01CS-H

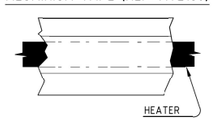
REFERENCE DRAWINGS / DOCUMENTS

123A90-DDL-PP-DI-71000_100

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.
4. HEATING CABLE ALLOWANCES PROVIDED IN THE 'EHT ADDER TABLE' FOR FLANGES AND VALVES ARE IN ADDITION TO THEIR LINEAR LENGTHS.

ALUMINIUM TAPE (REF: ATE180)



SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

CROSSWIND

ROSETTI MARINO

nVent RAYCHEM TRACER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
02	20/01/2025	ISSUED FOR REVIEW	ADU	AMI	GPI
01	25/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.

DOC CODE

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING ISOMETRIC

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-EL-DD-00004	8/10	02

A1

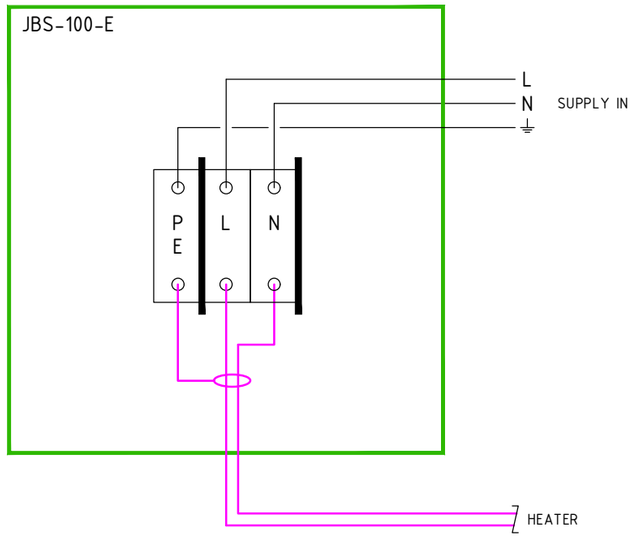
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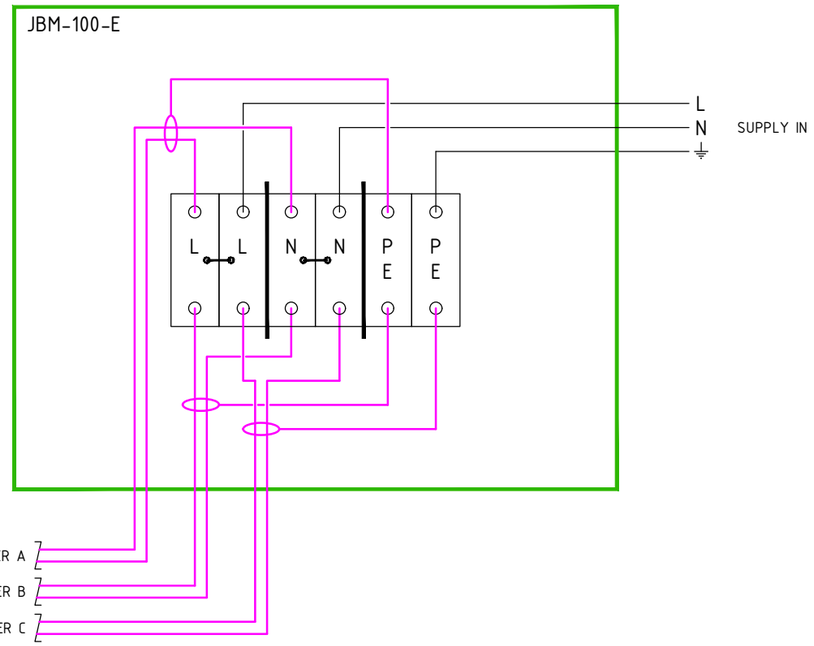
GENERAL INFORMATION:

1. JBS-100-E IS DESIGNED TO CONNECT POWER TO ONE BTV, QTVR, XTV, KTV, HTV OR VPL EHT CABLE.
2. THIS KIT INTEGRATES THE FUNCTIONS OF BOTH CONNECTION KITS AND INSULATION ENTRIES.
3. THE STAND CONNECTED TO THE BOTTOM OF THE BOX PROTECTS THE HEATING CABLE AND ALLOWS FOR UP TO 100mm (4") THERMAL INSULATION.

TECHNICAL BRIEF:

- 2 x M25 THREADED ENTRIES
- 1 x M25 STOPPING PLUGS
- 1 x M25 POWER CABLE GLAND





REV.	DATE	DESCRIPTION	BY	CHK	APP
--	--	--	--	--	--
--	--	--	--	--	--
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	08/03/2024	ISSUED FOR INFORMATION	LJB	E-C	ZS

nVent RAYCHEM TRACER

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nVent.com

TITLE: TYPICAL CONNECTION OF A JBS-100-EP SINGLE ENTRY JUNCTION BOX

PREPARED BY	-.---	LANG.	SCALE
LEAD ENGINEER	-.---	en	N/A
PROJECT NO.	DRAWING NO.	SHEET	REVISION
PIT240024	1724001647-EL-DG-00005	2/3	01

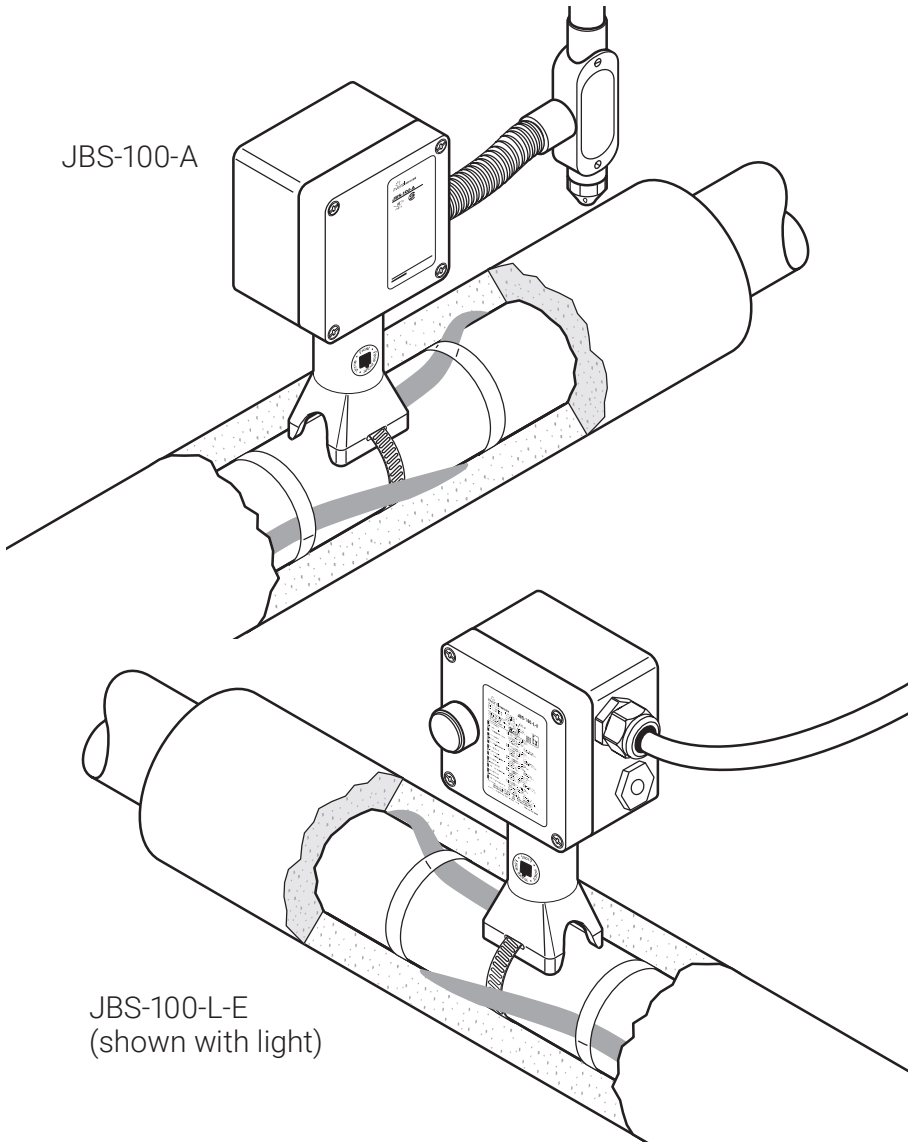
A3

JBS-100

CONNECT AND PROTECT

Single-Entry power connection with junction box

PRODUCT OVERVIEW



The nVent RAYCHEM JBS-100 kit is designed to connect power to a single nVent RAYCHEM BTV, QTVR, XTVR, HTV or VPL industrial parallel heating cable.

The JBS-100 integrates the functions of both connection kits and insulation entries. The rugged stand protects the heating cable and allows for up to 100 mm (4") of thermal insulation.

The core sealing boot does not require a heat gun or torch for the installation (no hot work permit necessary). The non-curing sealant (silicone free) in the boot allows easy installation and facilitates maintenance.

Spring-type terminals provide fast installation and safe, reliable, maintenance-free operation. This connection kit significantly reduces installation time. The kit is offered in three basic versions, customised for local installation practices. All kits are also available as a lighted version. These include a unique light module with a superbright LED that simply plugs into the terminals, and a lens in the lid. This provides indication that power is available in the box. There is also a connection kit with drain plug available.

Description

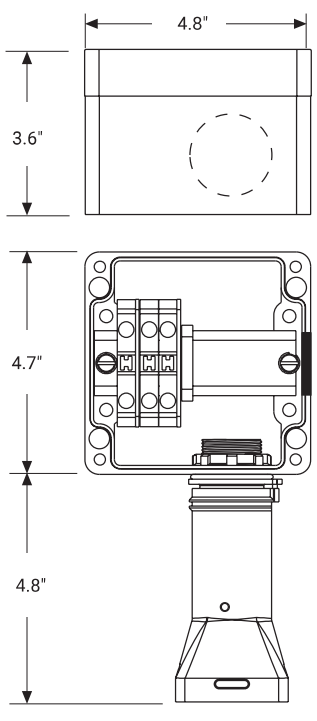
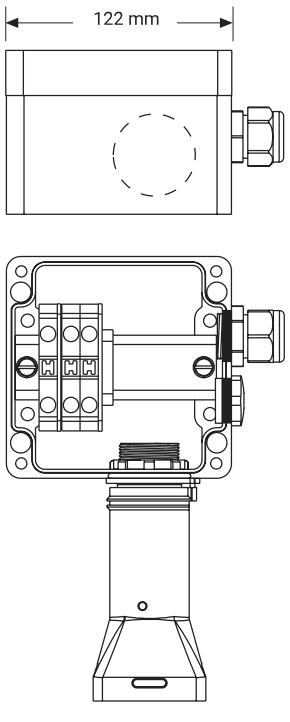
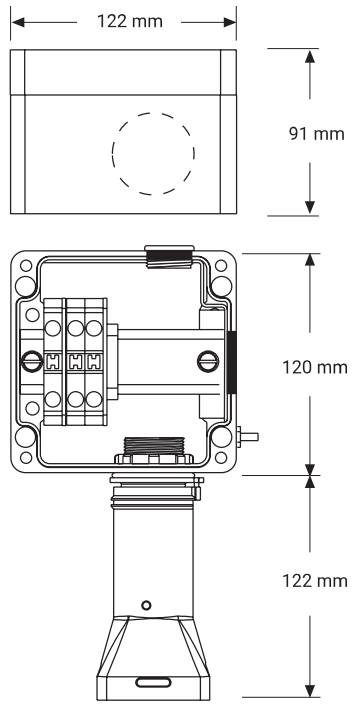
JBS-100-A JBS-100-L-A	JBS-100-E JBS-100-L-E JBS-100-D-E	JBS-100-EP JBS-100-L-EP
This connection system is certified for use in North America and has one through-hole for use with ¾" conduit.	This connection system is certified for use in IEC regions and provides two M25 threaded entries, one stopping plug, and one plastic power cable gland.	This connection system is certified for use in IEC regions and provides two M25 threaded entries, an earthing plate, and an external earthing stud. It is designed for use with armoured cables.

Kit contents

JBS-100-A JBS-100-L-A	JBS-100-E JBS-100-L-E JBS-100-D-E	JBS-100-EP JBS-100-L-EP
1 junction box with terminals	1 junction box with terminals	1 junction box with terminals, earth plate, and stud
1 light module (for -L only)	1 light module (for -L only)	1 light module (for -L only)
1 stand	1 stand	1 stand
1 core sealer	1 core sealer	1 core sealer
1 green/yellow earthing sleeve	1 green/yellow earthing sleeve	1 green/yellow earthing sleeve
1 polywater sachet	1 M25 gland for power cable 8-15 mm in diameter (temperature range –55°C / 70°C)	1 M25 stopping plug
1 cable tie	1 M25 stopping plug	1 polywater sachet
	1 polywater sachet	1 cable tie
	1 cable tie	
	1 ATEX/IECEx Certified drainplug (for JBS-100-D-E only)	

PRODUCT SPECIFICATIONS

Dimensions (nominal)

	JBS-100-A JBS-100-L-A	JBS-100-E JBS-100-L-E JBS-100-D-E	JBS-100-EP JBS-100-L-EP
			

Technical details

	JBS-100-A JBS-100-L-A	JBS-100-E JBS-100-L-E JBS-100-D-E	JBS-100-EP JBS-100-L-EP
Heating cable capability	BTV-CR, BTV-CT, QTVR-CT, XTVR-CT, HTV-CT, VPL-CT		
Ingress protection	IP66	IP66	IP66
Entries	1 x ¾"	2 x M25	2 x M25
Ambient temperature range	–55°C to +56°C (JBS-100-A) –40°C to +40°C (JBS-100-L-A)	–55°C to +56°C* (JBS-100-E and JBS-100-D-E) –40°C to +40°C (JBS-100-L-E)	–55°C to +56°C* (JBS-100-EP) –40°C to +40°C (JBS-100-L-EP)
	* Extra conditions for safe use apply at ambient temperatures >40°C. Temperature resistant power cable and metal glands must be used. Please refer to the certificate or installation instructions for full details.		
Max. pipe temperature	Refer to heating cable specification		
Terminals	Spring-type terminals 2 line, 1 ground	Spring-type terminals 1 phase, 1 neutral, 1 earth	Spring-type terminals 1 phase, 1 neutral, 1 earth
Max. conductor size	8 AWG stranded	10 mm^2 stranded, 10 mm^2 solid	10 mm^2 stranded, 10 mm^2 solid
Max. operating voltage	480 Vac*	480 Vac*	480 Vac*
	* JBS-100-L-E, JBS-100-L-EP and JBS-100-L-A are limited to 277 Vac. Extra conditions for safe use apply for voltages higher than 277 Vac. Please refer to the certificate or installation instructions for full details.		
Max. continuous operating current (***)	53 A	53 A	53 A

(***) For pipe temperature >150°C and <260°C and XTVR or HTV heating cables, the maximum operating current shall be reduced to maximum 20 A.

Materials of construction

Enclosure, lid, and stand	Electrostatic charge-resistant glass-filled engineered polymer, black	Electrostatic charge-resistant glass-filled engineered polymer, black	Electrostatic charge-resistant glass-filled engineered polymer, black
Lid screws	Stainless steel	Stainless steel	Stainless steel
Lid gasket	Silicone rubber	Silicone rubber	Silicone rubber
Earth continuity plate	N/A	N/A	Steel, zinc plated, and blue chromated

Optional LED indicator light

Colour	Red	Green	Green
Voltage rating	100-277 Vac	100-277 Vac	100-277 Vac
Power consumption	< 1 W	< 1 W	< 1 W

APPROVALS

For use in ordinary and hazardous area Zone 1 and Zone 2 (Gas), Zone 21 and Zone 22 (Dust) (and Class I Div 2).

Temperature classification

Temperature classification is defined by the complete system.

Product certification

For certifications in other regions (FM, CSA, IEx etc.), please refer to the installation manual.

More details about product certification, approvals and conditions of safe use are available in the installation manual at www.nVent.com/RAYCHEM.

ORDERING INFORMATION**

Power connection

Part Description	JBS-100-A	JBS-100-E	JBS-100-EP
PN (Weight)	085947-000 (2.5 lb)	829939-000 (1.2 kg)	158251-000 (1.3 kg)

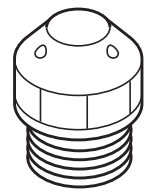
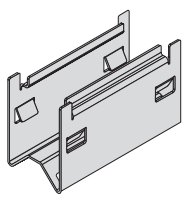
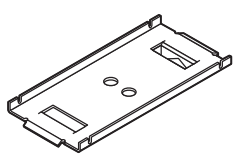
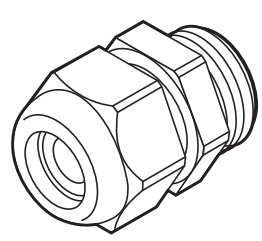
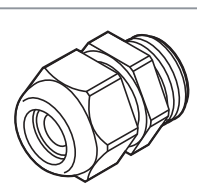
Power connection with light

Part Description	JBS-100-L-A	JBS-100-L-E	JBS-100-L-EP
PN (Weight)	944699-000 (3.5 lb)	054363-000 (1.6 kg)	075249-000 (1.7 kg)

Power connection with drain plug

Part Description		JBS-100-D-E	
PN (Weight)		1244-021057 (1.4 kg)	

Accessories

Conduit Drain ¾"	Prevents condensate from collecting in the box	
Catalog number	JB-DRAIN-PLUG-3/4IN	
Part Number	278621-000	
Weight	0.074 lb / 36 g	
Junction box standoff	For insulation thickness >100 mm & ≤150 mm *	
Catalog number	JBM-100-STANDOFF	
Part Number	P000003408	
Weight	0.279 lb / 135 g	
* Consider extra pipe strap length 6-9" (150-225 mm) for attachment		
Small pipe adapter	Required for stand on pipes ≤ 1"	
Catalog number	JBM-SPA	
Part Number	E90515-000	
Weight	0.408 lb / 185 g (Bag of 5 adaptors)	
Glands for power cables	Hazardous area approved gland for cables 8-15 mm (temperature range –55°C/70°C)	
Catalog number	GL-55-M25	
Part Number	1244-019083	
Weight	0.016 kg	
Glands for power cables	Hazardous area approved gland for cables 8-17.5 mm (temperature range –20°C/70°C)	
Catalog number	GL-36-M25	
Part Number	1244-019082	
Weight	0.016 kg	

(**) Localized versions may exist with limited approvals and different part numbers. Contact your local sales representative.

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

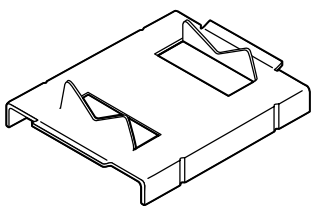
Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com

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SMALL PIPE ADAPTORS



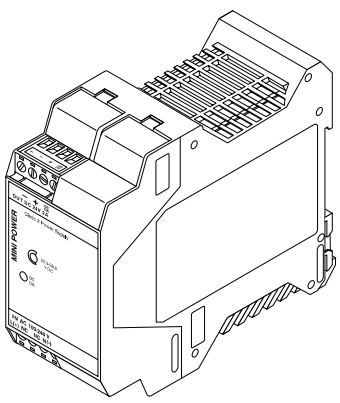
JBS-SPA

Small pipe adaptor required for pipes ≤ 1" (DN25), applicable for JBS-100, E-100, E-100-L
E90515-000 (bag of 5 adaptors) Weight: 0.14 kg

JBM-SPA

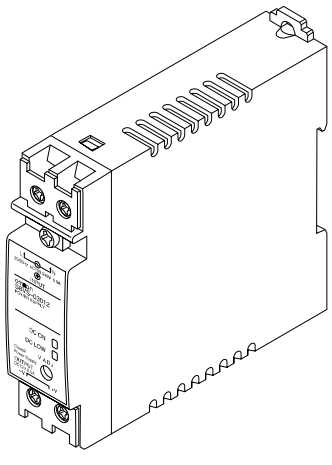
Small pipe adaptor required for pipes ≤ 1" (DN25), applicable for JBM-100, T-100
D55673-000 (bag of 5 adaptors) Weight: 0.40 kg

POWER SUPPLY



MONI-RMC-PS24

24 Vdc stabilized power supply
Wide range input (100 - 240 Vac) power supply to provide
24 Vdc input for MONI- RMC-BASE.
Surface or DIN 35 rail mounted.
PN: 972049-000 Weight: 0.28 kg



MONI-PS12

12 Vdc stabilized power supply
Wide range input (100 - 240 Vac) power supply to provide 12 Vdc input for the nVent RAYCHEM NGC-30-CRM-E and nVent RAYCHEM NGC-30-CRMS-E cards.
DIN 35 rail mountable.
PN: 1244-001505 Weight: 0.18 kg

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com

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LABELS AND TAGS

Warning labels indicate the presence of electrical heat-tracing under the insulation of the pipe or other equipment. (min. of 1 label per 5 m of heat-tracing line). Also suitable for stainless steel pipes.



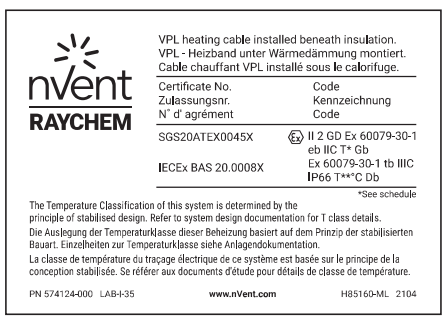
Language	EHT label reference	Product number
Arabian	LAB-ETL-AR	036236-000
Bulgarian	LAB-ETL-BG	1244-002183
Czech	LAB-ETL-CZ	731605-000
Danish	LAB-ETL-DK	C97690-000
Dutch	LAB-ETL-NL	749153-000
English	LAB-I-01	938947-000
Estonian/English	LAB-ETL-EN/EE	1244-001415
Finnish/Swedisch	LAB-ETL-SE/FI	756479-000
French	LAB-I-05	883061-000
German/French/Italian (230V)	LAB-ETL-DE/FR/IT	148648-000
German	LAB-ETL-DE	597779-000
Hungarian	LAB-ETL-HU	623725-000
Italian	LAB-ETL-IT	C97688-000
Kazakh/Russian/English	LAB-ETL-KZ/RU/EN	1244-017393
Latvian	LAB-ETL-LV	841822-000
Lithuanian	LAB-ETL-LT	105300-000
Norwegian	LAB-ETL-NO	C97689-000
Norwegian/English	LAB-ETL-EN/NO	165899-000
Polish	LAB-ETL-PL	258203-000
Portugese	LAB-ETL-PT	945960-000
Romanian	LAB-ETL-RO	902104-000
Russian	LAB-ETL-RU	574738-000
Russian/English	LAB-ETL-EN/RU	1244-001060
Russian/English/Azeri	LAB-ETL-AZ/RU/EN	1244-012283
Russian/English/Uzbek	LAB-ETL-UZ/RU/EN	1244-022143
Spanish	LAB-ETL-ES	C97686-000
Swedish	LAB-ETL-SE	691703-000
Turkish/English	LAB-ETL-EN/TR	1244-014860



Language	Component label reference	Product number
English	LAB-I-02	774499-000
Russian/English	LAB-I-02/E/R LAB-ENDSEAL	1244-001059 146909-000
English	ETL-END-SEAL LAB-SPLICE	103405-000 007063-000

STABILIZED DESIGN LABELS

If compliance to the T-class or A.I.T. cannot be achieved by the unconditional T-rating of the heating cable, the hazardous area regulations require that cable sheath temperature is determined by the rules of stabilized design as per EN 60079-30 and the heating circuit is marked accordingly. The following labels are available for this purpose (min.1 label per heating circuit)



LAB-I-35

Stabilized design sticker. To be installed when power-limiting VPL heating cables are used in hazardous areas.

PN: 574124-000 Weight: 0,0015 kg

LAB-EX-XTV-KTV

Aluminum tag plate for XTV and KTV self-regulating heating cables. To be installed if T-class compliance was proven by stabilized design and not by unconditional T-rating.

PN: 1244-011961 Weight: 0.04 kg

LAB-EX-FxT

Aluminum tag plate. To be installed when parallel constant wattage FMT or FHT heating cables are used in hazardous areas.

PN: 1244-006953 Weight: 0.04 kg

PI-LABEL-EX

Aluminum tag plate. To be installed when series polymer insulated XPI & XPI-S heating cables are used in hazardous areas.

PN: 1244-006940 Weight: 0.04 kg

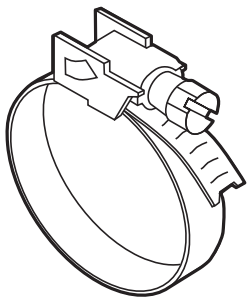
PI-LABEL-NH

Aluminum tag plate. To be installed when series polymer insulated XPI & XPI-S heating cables are used non hazardous areas.
This label is not mandatory but highly recommended for future reference.

PN: 1244-006941 Weight: 0.04 kg

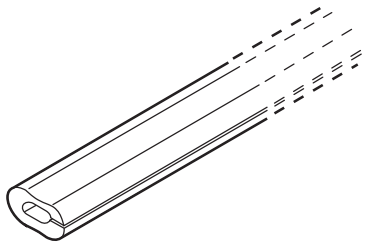
PIPE STRAPS

Metal straps for pipe mounting of integrated power connections, above the insulation tees and end seals as well as support brackets and the tubular insulation entry. Banding: stainless steel



Pipe outer diameter in mm	(inches)	Pipe strap	PN (Weight)
20 - 47	(1/2" - 11/4")	PSE-047	700333-000 (0.017 kg)
40 - 90	(11/4" - 3")	PSE-090	976935-000 (0.024 kg)
60 - 288	(2" - 10")	PSE-280	664775-000 (0.052 kg)
60 - 540	(2" - 20")	PSE-540	364489-000 (0.052 kg)

PIPE STRAPS



G-02

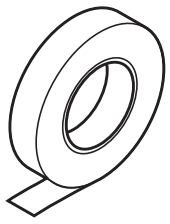
Silicone grommet that protects the heating cable at sharp edges such as endplates of insulation cladding, flanges etc. It can be cut-to-length and resists temperatures up to 215°C.

Sold in pieces of 1 m.

PN: 412549-000 Weight: 0.37 kg/m)

FIXING MATERIALS

Self-adhesive tape for fixing the heating cables on pipes or other equipment.



GT-66

Glass cloth tape for attaching heating cable to pipe.
Not for stainless steel pipes or for installation temperatures below 5°C.

20 m per roll, 12 mm width.

PN: C77220-000 Weight: 0.053 kg

GS-54

Glass cloth tape for attaching heating cable to pipe.

For stainless steel pipes or for any installation below 5°C.

16.5 m per roll, 12 mm width.

PN: C77221-000 Weight: 0.048 kg

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
ELF-200N1-09-L2-25	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-01	Emergency Lighting Fixture	LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-02	Emergency Lighting Fixture	LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-03	Emergency Lighting Fixture	LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-04	Emergency Lighting Fixture	LOWER & UPPER DECK STAIRS	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-05	Emergency Lighting Fixture	LOWER & UPPER DECK STAIRS	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-06	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-07	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-08	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-09	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-10	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-11	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-12	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-13	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-14	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
EML-200-01	NAV AIDS Main Yellow Lanterns	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547/MNL02	SICE-LXS-YEL-05-1	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EML-200-02	NAV AIDS Main Yellow Lanterns	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547/MNL03	SICE-LXS-YEL-05-1	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EOL-200-01	Obstruction Red LED Lights	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547-MC01	L864-LXS-EX-CAP168-CS2LJS	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EOL-200-02	Obstruction Red LED Lights (MEDIUM INTENSITY)	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547-MC02	L864-LXS-EX-CAP168-CS2LJS	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EOL-200-03	Intermediate Obstruction Red Lights	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547-MC03	L864-LXS-EX-CAP168-CS2LJS	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EOL-200-04	Intermediate Obstruction Red Lights	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547-MC04	L864-LXS-EX-CAP168-CS2LJS	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EPH-200-01	NAV AIDS Photocell	UPPER DECK	1724000775	SICE	SICE	24-881	FTC	ZONE 2	INERIS 02ATEX9006U	1724000775-QC-DB-00017	Ex II 2G - Ex d IIB T4 IP66	-	NAVIGATION AIDS	True	N/A	False	
ESL-200-01	Wave Off Status Light	BELOW LOWER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547/MNL01	SICE-LXS-RED-03-1	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
ETB-200N1-14-L1-01	TRACE HEATING - PROCESS LINES - FEEDER 1 (SWS LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-15-L2-01	TRACE HEATING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-15-L2-02	TRACE HEATING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-16-L3-01	TRACE HEATING - PROCESS LINES - FEEDER 3 (DM LINE) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-17-L1-01	Trace Heating - Process Lines - Feeder 4 (WW LINES) Hot JB	UPPER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-17-L1-02	Trace Heating - Process Lines - Feeder 4 (WW LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBM-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-17-L1-03	Trace Heating - Process Lines - Feeder 4 (WW LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-17-L1-04	Trace Heating - Process Lines - Feeder 4 (WW LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBM-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	HAZARDOUS-AREA_7
ETB-200N1-17-L1-05	Trace Heating - Process Lines - Feeder 4 (WW LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBM-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	HAZARDOUS-AREA_7
ETB-200N1-19-L3-01	TRACE HEATING - FEEDER 6 (H2 VENT)	UPPER DECK	1724000887	Encore Thermoengineering	nVent	5020019	ETS-05	Zone 2	Baseefa13ATEX0137 Issue 6	1724000887-MAC-DG-00007	II 2(1)G Ex eb ia mb [ia Ga] IIC T5 Gb - 40ºC ≤ Ta ≤ +60ºC II 2D Ex tb IIIC T100ºC Db	N/A	Hydrogen Vent	True	N/A	False	HAZARDOUS-AREA_6
ETB-200N1-20-L1-01A	Trace Heating - Feeder 7 (SEA WATER PUMPS)	P-50001A (LOWER DECK)	1724000936	PCM Group	THERMON	N/A	HTSX 15-2 OJ	Zone 1 IIB T3	FM 12ATEX0014X	1724000936-MAC-DD-00011	II 2G Ex eb IIC T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	True	N/A	True	
ETB-200N1-20-L1-01B	Trace Heating - Feeder 7 (SEA WATER PUMPS)	P-50001B (LOWER DECK)	1724000936	PCM Group	THERMON	N/A	HTSX 15-2 OJ	Zone 1 IIB T3	FM 12ATEX0014X	1724000936-MAC-DD-00011	II 2G Ex eb IIC T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	True	N/A	True	
ETM-200-01	NAV AIDS Battery Bank Temperature Probe	CONTAINER B-300 (LOWER DECK)	1724000775	SICE	TERMICS	626624-010/01	TS-CTL	ZONE 2	TUV IT 13ATEX069X	1724000775-QC-DB-00017	Ex II 2GD - Ex d IIC T6 IP66	-	NAVIGATION AIDS	True	N/A	True	
EVM-200-01	NAV AIDS Visibility meter	UPPER DECK	1724000775	SICE	PHAROS MARINE	713542.24.01	FD-410EX-MINI-OC-M	ZONE 2	ITS 18ATEX103574X	1724000775-QC-DB-00017	Ex II 2G - Ex d IIB T6 IP66	-	NAVIGATION AIDS	True	N/A	True	
H-ETE-200N1-19-L3-01	Self-regulating heat cable	UPPER DECK	1724000887	Encore Thermoengineering	nVent	N/A	XTVR2-CT	Zone 2	XTVR_SGS20ATEX0049X_Iss. 4 1	1724000887-MAC-DG-00007	II 2 GD Ex 60079-30-1 eb IIC T* Gb / Ex 60079-30-1 tb IIIC T***C Db	N/A	Hydrogen Vent	True	N/A	True	
H-ETE-200N1-20-L1-01A	Self-regulating heat cable	P-50001A (LOWER DECK)	1724000936	PCM Group	THERMON	N/A	HTSX 15-2 OJ	Zone 1 IIB T3	FM 10ATEX0058X	1724000936-MAC-DD-00011	II 2G Ex db eb IIC T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	True	N/A	True	
H-ETE-200N1-20-L1-01B	Self-regulating heat cable	P-50001B (LOWER DECK)	1724000936	PCM Group	THERMON	N/A	HTSX 15-2 OJ	Zone 1 IIB T3	FM 10ATEX0058X	1724000936-MAC-DD-00011	II 2G Ex db eb IIC T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	True	N/A	True	
JB-500E8	Interface JB - Water Package	LOWER DECK	1724000448	PSC	STAHL	-	8146/1083	Safe Area	PTB 01 ATEX 1016	1724000448-MAC-DA-00005	II 2 G Ex eb IIC T6 Gb II 2 D Ex tb IIIC T80°C Db	-	A-50000	True	N/A	False	
JB-500F8	Interface JB - Water Package	LOWER DECK	1724000448	PSC	STAHL	-	8146/1051	Safe Area	PTB 01 ATEX 1016	1724000448-MAC-DA-00005	II 2 G Ex eb IIC T6 Gb II 2 D Ex tb IIIC T80°C Db	-	A-50000	True	N/A	False	
NC-200F2A	NAVAID System NCCP - ENCLOSURE A	CONTAINER B-300 (LOWER DECK)	1724000775	SICE	TECHNOR ITALSMEA	24-1141	SB477620	ZONE 13	FIDI 21ATEX 0090X	1724000775-EL-DG-00003	Ex II 2G - Ex e IIC T6 IP66	-	NAVIGATION AIDS	True	N/A	True	
NC-200F2B	NAVAID System NCCP - ENCLOSURE B	CONTAINER B-300 (LOWER DECK)	1724000775	SICE	TECHNOR ITALSMEA	24-1141	EJB-13	ZONE 12	INERIS 00ATEX 0021X	1724000775-EL-DG-00003	Ex II 2G - Ex db IIB+H2 T6 IP66	-	NAVIGATION AIDS	True	N/A	True	
NC-200F2C	NAVAID System NCCP - ENCLOSURE C	CONTAINER B-300 (LOWER DECK)	1724000775	SICE	TECHNOR ITALSMEA	24-1141	EJB-13A	ZONE 11	INERIS 00ATEX 0021X	1724000775-EL-DG-00003	Ex II 2G - Ex db IIB+H2 T6 IP66	-	NAVIGATION AIDS	True	N/A	True	
Y-89-06-THS-001	Twin cup headset for UHF DMR Portable Radio	CONTAINER B-400 (LOWER DECK)	1724000452	Fores	MOTOROLA	627TZD0512	PMLN6333	Zone 2	BS 12 ATEX E 117 X	1724000452-TL-DS-00005	Ex ib IIC T4 Gb	-	N/A	True	NO	True	

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin
Nationales Metrologieinstitut

(1) EU-Baumusterprüfbescheinigung

(2) Geräte oder Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen - **Richtlinie 2014/34/EU**

(3) EU-Baumusterprüfbescheinigungsnummer

PTB 20 ATEX 1008 U **Ausgabe: 1**

(4) Produkt: Integriertes Begleitheizungs-Anschlusssystem Typ JBx-100-xx-xx und T-100

(5) Hersteller: nVent Thermal Belgium LLC

(6) Anschrift: Romeinse straat 14, 3001 Leuven, Belgien

(7) Die Bauart dieses Produkts sowie die verschiedenen zulässigen Ausführungen sind in der Anlage und den darin aufgeführten Unterlagen zu dieser Baumusterprüfbescheinigung festgelegt.

(8) Die Physikalisch-Technische Bundesanstalt, notifizierte Stelle Nr. 0102 gemäß Artikel 17 der Richtlinie 2014/34/EU des Europäischen Parlaments und des Rates vom 26. Februar 2014, bescheinigt, dass dieses Produkt die grundlegenden Sicherheits- und Gesundheitsanforderungen für die Konzeption und den Bau von Produkten zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen gemäß Anhang II der Richtlinie erfüllt.

Die Ergebnisse der Prüfung sind in dem vertraulichen Prüfbericht PTB Ex 21-10134 festgehalten.

(9) Die grundlegenden Sicherheits- und Gesundheitsanforderungen werden erfüllt durch Übereinstimmung mit

EN IEC 60079-0:2018; EN IEC 60079-7:2015/A1:2018-01; EN 60079-18:2015; EN 60079-31:2014

(10) Falls das Zeichen „X" hinter der Bescheinigungsnummer steht, wird auf besondere Bedingungen für die sichere Anwendung des Produkts in der Anlage zu dieser Bescheinigung hingewiesen.

(11) Diese EU-Baumusterprüfbescheinigung bezieht sich nur auf Konzeption und Prüfung des festgelegten Produkts gemäß Richtlinie 2014/34/EU. Weitere Anforderungen dieser Richtlinie gelten für die Herstellung und das Bereitstellen auf dem Markt. Diese Anforderungen werden nicht durch diese Bescheinigung abgedeckt.

(12) Die Kennzeichnung des Produkts muss die folgenden Angaben enthalten:

II 2 G Ex eb mb IIC Gb

II 2 D Ex tb mb IIIC Db

Konformitätsbewertungsstelle, Sektor Explosionsschutz Braunschweig, 22. März 2021
Im Auftrag

Dr.-Ing. D. Markus
Direktor und Professor

PHYSIKALISCH-TECHNISCHE BUNDESANSTALT

ZSEx10100d c

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(13) # Anlage

(14) **EU-Baumusterprüfbescheinigung PTB 20 ATEX 1008 U, Ausgabe: 1**

(15) Beschreibung des Produkts

Die JBx-100-xx-xx und T-100 Anschlusskasten-Serie ist ein Anschlusssystem für elektrische Begleitheizungssysteme. Die Anschlusskastenserie JBx-100-xx-xx ist in vier verschiedene Versionen unterteilt (JBS-100-xx-xx, JBM-100-xx-xx und T-100). Diese Anschlusskastenserie ist auf einem integrierten Rohrträger montiert, um elektrische Heizkabel an das Stromnetz anzuschließen oder um eine Verbindung zwischen 2 oder 3 Heizkabeln herzustellen. Die verschiedenen Modelle der Serie umfassen Optionen wie: Kästen mit einer Offshore-Platte (Erdungsplatte) und Kästen mit einem optionalen Lichtmodul. Die vierte Version der Anschlusskasten-Serie ist JBU-100-xx-xx. Diese Version hat die gleichen Eigenschaften, wird jedoch anstelle des Rohrträgers mit einer Halterung direkt an der Rohrleitung montiert.

Typ JBS-100-xx-xx
Der Anschlusskasten ist auf einem integrierten Rohrträger installiert. Im Inneren des Anschlusskastens JBS-100-xx-xx befindet sich eine DIN-Schiene auf der zertifizierte Klemmen installiert sind. Zusätzliche Klemmen können hinzugefügt werden, um den Anschluss eines externen Thermostaten zu ermöglichen. Der Anschlusskasten ist für den Anschluss eines Heizkabels an ein Stromkabel (mit oder ohne Thermostat) ausgelegt. Die Stromkabel werden im Anschlusskasten durch ein Loch in der Seitenwand des Kastens und eine zertifizierte Kabelverschraubung eingeführt.

Typ JBM-100-xx-xx
Der Anschlusskasten ist auf einem integrierten Rohrträger installiert. Der Anschlusskasten JBM-100-xx-xx ist für die Aufnahme von bis zu maximal drei Heizkabeln ausgelegt. Daher sind drei Paare von zertifizierten Klemmen vorgesehen. Gelegentlich können weitere Klemmen installiert werden, um die Verkettung der Stromversorgung zu unterstützen. Das Stromkabel wird über ein Loch in der Seitenwand des Kastens und eine zertifizierte Kabelverschraubung in den Kasten eingeführt. Für die Heizkabel ist eine zusätzliche Zugentlastung vorgesehen. Die Zugentlastung verhindert, dass die Heizkabel beim Ziehen verrutschen.

Typ JBU-100-xx-xx
Die JBU-100-xx-xx ist nicht auf einem integrierten Rohrträger installiert. Der Anschlusskasten kann auf einer stabilen Struktur wie z.B. einem Rohrgestell, einer Wand über die M6-Schrauben oder über eine optionale Halterung direkt auf dem Rohr installiert werden. Der Anschlusskasten ist so ausgelegt, dass bis zu maximal vier Heizkabel an das Stromnetz installiert werden können. Die elektrischen Verbindungen werden mit Hilfe von Klemmen hergestellt, die auf einer DIN-Schiene im Inneren des Anschlusskastens installiert sind.
Alternativ kann JBU-100-xx-xx als Verteilerkasten für Leistungs- und Steuerkabel verwendet werden. Es dürfen nur Leitungseinführungen verwendet werden, die für den Bereich entsprechend zertifiziert sind und die den Abmessungen des Kabels entsprechen.

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Anlage zur EU-Baumusterprüfbescheinigung PTB 20 ATEX 1008 U, Ausgabe: 1

Typ T-100
Der T-100 ist ein Kasten, der als Anschlusskasten (Verbindungskasten) für den Anschluss von bis zu maximal 3 Heizkabeln verwendet wird. Die Box wird auf einem Rohrständer installiert, der die Eingänge und den Schutz für die installierten Heizkabel bietet. Für die Heizkabel ist eine zusätzliche Zugentlastung vorgesehen. Die Zugentlastung verhindert, dass die Heizkabel beim Ziehen verrutschen. Die Verbindung zwischen den Leitern der Heizkabel wird über Aderendhülsen hergestellt. Nach der Installation werden die Leiter mit Schutzkappen aus temperaturbeständigem Silikon elektrisch isoliert.

Änderungen in Bezug auf vorherige Ausgaben

Aufnahme der Verwendung des selbstregulierenden Parallelheizkabels Typ HTV

Typschlüssel

JB	x	-	100	-	xx	-	xx
	1		2		3		4

1	S	JBS – zur Verbindung von einem Heizkabel
	M	JBM – zur Verbindung von bis zu max. drei Heizkabeln
	U	JBU – Universelle Verbindung
2	100	Aufrechte Installation
3	A	Version mit gewindelosen Bohrungen
	L	Version mit optionalem Lichtmodul
	E	Version mit metrischen Gewindebohrungen
	P	Version mit optionaler Offshore-Platte (Erdungsplatte)
	D	Version mit optionalem Belüftungsstopfen
4	E	Version mit metrischen Gewindebohrungen
	A	Version mit gewindelosen Bohrungen
	P	Version mit optionaler Offshore-Platte (Erdungsplatte)

Technische Daten

Umgebungstemperaturbereich	Standard Version	-55°C to +56°C
	Mit Lichtmodul	-40°C to +40°C
Max. Anzahl der Heizbänder	JBS-100-xx-xx	1
	JBM-100-xx-xx	3
	JBU-100-xx-xx	3 (4 ohne Stromkabel)
	T-100	3

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Anlage zur EU-Baumusterprüfbescheinigung PTB 20 ATEX 1008 U, Ausgabe: 1

Anzahl der Anschlussklemmen*	JBS-100-xx-xx	L+N+PE
	JBM-100-xx-xx	2xL + 2xN + 2xPE
	JBU-100-xx-xx	2xL + 2xN + 2xPE
	T-100	-
Max. Kabelquerschnitt	JBS-100-xx-xx	0.5 mm² bis 10 mm²
	JBM-100-xx-xx	0.5 mm² bis 10 mm²
	JBU-100-xx-xx	0.5 mm² bis 10 mm²
	T-100	max. 3,3 mm²
Bemessungsspannung**	Abhängig vom verwendeten Heizkabeltyp	
	BTV1, QTVR1, XTV1, KTV1, HTV1	max. 120 V
	BTV2, QTVR2, XTV2, KTV2, HTV2	max. 277 V
	VPL1	max. 120 V
	VPL2	max. 230 / 254 V
	VPL4 + FHPC	max. 480 V
Bemessungsstrom	JBS-100-xx-xx	Max. 53 A
	JBM-100-xx-xx	Max. 53 A
	JBU-100-xx-xx	Max. 53 A
	T-100	Max. 40 A

* Weitere Klemmen sind zulässig, solange der Gesamtstrom durch das Gehäuse 40 A nicht übersteigt.

** abhängig von Absicherung bzw. max. zulässigem Bemessungsstrom, max. zulässiger Temperatur der zu beheizenden Oberfläche; siehe hierzu Datenblätter bzw. Betriebsanleitung des Herstellers.

Hinweise zur Herstellung

1. Die maximal zulässige Temperatur für die zu beheizende Fläche (Rohrtemperatur) ist auf der Grundlage der spezifischen Leistungsklasse, der max. zulässigen Betriebstemperatur der Heizbänder, der Nennspannung und der max. zulässigen Strombelastbarkeit zu bestimmen.
2. Anwendungen, für die wärmebeständige Zuleitungen inkl. Kabelverschraubungen aus Metall verwendet werden müssen, sind vom Hersteller anzugeben und vom Errichter/Anwender zusammenzustellen.
3. Einschränkungen bezüglich der Verwendung der Typen JBS-100-L-x, JBM-100-L-x und JBU-100-L-x (mit Kontrollleuchte) sind vom Hersteller anzugeben und vom Installateur/Benutzer zu beachten.

EU-Baumusterprüfbescheinigungen ohne Unterschrift und ohne Siegel haben keine Gültigkeit.
Diese EU-Baumusterprüfbescheinigung darf nur unverändert weiterverbreitet werden.
Auszüge oder Änderungen bedürfen der Genehmigung der Physikalisch-Technischen Bundesanstalt.

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4. Die Parallelheizbänder vom Typ VPL und FHPC müssen so installiert werden, dass ihre kalten Enden außerhalb des Klemmenkastens beginnen.
5. Wenn JBU-100-xx-x mit Spannungseinspeisung installiert wird, müssen bei 40 °C < Ta < 56 °C eine ausreichende hitzebeständige Einspeisung und Metall-Verschraubungen, inkl. Dichtung, verwendet werden. Für die Metallverschraubungen inkl. Dichtung muss ein separates IECEx-Zertifikat ausgestellt und von nVent Thermal verifiziert worden sein.
6. Für Heizkabel müssen zertifizierte nVent Thermal Verschraubungen vom Typ C25-100-METAL bei 40 °C < Ta < 56 °C verwendet werden.
7. Die Ausführung des Anschlusskastens mit Belüftungsstopfen muss am Rohr aufgehängt werden, um eine einwandfreie Funktion zu gewährleisten.

(16) Prüfbericht PTB Ex 21-10134

(17) Besondere Bedingungen

Die Verwendung von alternativen Heizbändern ohne Freigabe durch den Hersteller ist nicht zulässig.

(18) Grundlegende Sicherheits- und Gesundheitsanforderungen

Erfüllt durch Übereinstimmung mit den vorgenannten Normen.

Konformitätsbewertungsstelle, Sektor Explosionsschutz
Im Auftrag

Braunschweig, 22. März 2021

Dr.-Ing. D. Markus
Direktor und Professor

PHYSIKALISCH-TECHNISCHE BUNDESANSTALT

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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 20 ATEX 1008 U **Issue: 1**

(4) Product: Integrated Heat Tracing Connection System
Type JBx-100-xx-xx and T-100

(5) Manufacturer: nVent Thermal Berlgium NV

(6) Address: Romeinse straat 14, 3001 Leuven, Belgium

(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 21-10134.

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

EN IEC 60079-0:2018; EN IEC 60079-7:2015/A1:2018-01; EN 60079-18:2015; 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 eb mb IIC Gb

II 2 D Ex tb mb IIIC Db

Konformitätsbewertungsstelle Sektor Explosionsschutz Braunschweig, March 22, 2021
On behalf of PTB:

Dr.-Ing. D. Markus
Direktor und Professor

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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(13) # SCHEDULE

(14) **EU-Type Examination Certificate Number PTB 20 ATEX 1008 U, Issue: 1**

(15) Description of Product

The JBx-100-xx-xx and T-100 Connection box series is a connection system for electrical trace heating systems. The JBx-100-xx-xx Connection box series is subdivided in four different versions (JBS-100-xx-xx, JBM-100-xx-xx and T-100). This junction box series is mounted on an integrated pipe stand for the connection of electrical heating cables to the mains supply or to provide a splice between 2 or 3 heating cables. The different models of the series include options such as: boxes equipped with an offshore plate (earth plate) and boxes with an optional light module and lens. Another part of the Connection box series is JBU-100-xx-xx. This version has the same features, but is mounted directly on the pipeline with a support bracket instead of the pipe stand.

Product type JBS-100-xx-xx

The junction box is installed on an integral pipe support. Inside the JBS-100-xx-xx junction box there is installed one DIN rail on which are installed a number of certified terminals. Additional terminals can be added to allow an external thermostat to be connected. The junction box is designed to connect one heating cable to one power cable (with or without thermostat). Power cables are fed in the junction box by means of a hole in the sidewall of the box and a certified cable gland.

Product type JBM-100-xx-xx

The junction box is installed on an integral pipe support. The JBM-100-xx-xx junction box is designed to accommodate up to a maximum of three heating cables. Therefore, there are three pairs of certified terminals provided. Occasionally more terminals can be installed to support daisy chaining of the power supply. The power cable will be fed in the box via a hole in the sidewall of the box and a certified cable gland. Additional strain relief is provided for the heating cables. The strain relief is avoiding that the heating cables will slip when pulled.

Product type JBU-100-xx-xx

The JBU-100-xx-xx is not installed on an integral pipe support. The junction box can be installed on a stable structure such as a pipe rack; a wall via the M6 screws or can be installed via an optional support bracket directly on the pipe. The junction box is designed to accommodate up to a maximum of four heating cables to the mains supply. The electrical connections are established by means of terminals that are installed on a DIN rail inside the junction box.
Alternatively, the JBU type boxes can be used as a marshalling box for power and control cables. Use glands that are suitably certified for the area and that meet the dimensions of the cable.

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SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 20 ATEX 1008 U, Issue: 1

Product type T-100
The T-100 is a box used as a connection (Splice) box for connecting up to maximum 3 heating cables. The Box is installed on a pipe stand providing the entries and protection for the installed heating cables. Additional strain relief is provided for the heating cables. The strain relief is avoiding that the heating cables will slip when pulled. The connection between the conductors of the heating cables is established via ferrules. Once installed the conductors are electrically isolated using protective caps made out of temperature resistive silicone.

Nomenclature

JB	x	-	100		-	xx	-	xx
	1		2			3		4

1	S	JBS – for connection of one heating cable
	M	JBM – for connection of up to three heating cables.
	U	JBU – universal
2	100	Above installation
3	A	version with unthreaded holes
	L	model with optional Light module
	E	version with threaded metric holes
	P	model with optional off shore plate
	D	model with optional drain plug
4	E	version with threaded metric holes
	A	version with unthreaded holes
	P	model with optional off shore plate

Technical data

Ambient temperature range	Standard version	-55°C to +56°C
	With pilot lamp	-40°C to +40°C
Max. number of heating cables	JBS-100-xx-xx	1
	JBM-100-xx-xx	3
	JBU-100-xx-xx	3 (4 without power cable)
	T-100	3
Standard number of terminals*	JBS-100-xx-xx	L+N+PE
	JBM-100-xx-xx	2xL + 2xN + 2xPE
	JBU-100-xx-xx	2xL + 2xN + 2xPE

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SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 20 ATEX 1008 U, Issue: 1

	T-100	-
Max. wire cross section	JBS-100-xx-xx	0.5 mm² to 10 mm²
	JBM-100-xx-xx	0.5 mm² to 10 mm²
	JBU-100-xx-xx	0.5 mm² to 10 mm²
	T-100	max. 3.3 mm²
Rated voltage**	Depends on the heating cable type used	
	BTV1, QTVR1, XTV1, KTV1, HTV1	max. 120 V
	BTV2, QTVR2, XTV2, KTV2, HTV2	max. 277 V
	VPL1	max. 120 V
	VPL2	max. 230 / 254 V
	VPL4 + FHPC	max. 480 V
Rated current	JBS-100-xx-xx	max. 53 A
	JBM-100-xx-xx	max. 53 A
	JBU-100-xx-xx	max. 53 A
	T-100	max. 40 A

* More terminals are permitted as long as the total current trough the enclosure is not exceeding 40A

**subject to protection and max. permissible rated current, max. permissible temperature of the surface to be heated; see data sheets and operating instructions of the manufacturer.

Notes for manufacturing

1. The temperature accepted as a maximum for the surface to be heated (tube temperature) shall be determined on the basis of the specific performance category, the max. admissible operating temperature of the parallel strip heaters, the voltage rating and the max. admissible current carrying capacity.
2. Applications for which heat-resistant incoming cables incl. cable glands from metal have to be used, have to be specified by the manufacturer and must be compiled with the installer/user.
3. Restrictions regarding the use of type JBS-100-L-x, JBM-100-L-x and JBU-100-L-x (with pilot lamp) have to be specified by the manufacturer and must be complied with the installer/user.
4. The parallel strip heaters, type VPL and FHPC, have to be installed so that their cold ends start outside the terminal box.
5. If JBU-100-xx-xx with voltage infeed is installed, an adequate heat-resistant feeder and screwed metal glands, incl. gasket, must be used at 40 °C < Ta < 56 °C. For the screwed

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metal glands, incl. gasket a separate IECEx Certificate must have been issued and they must have been verified by nVent Thermal.

6. For heating cables, certified nVent Thermal glands of type C25-100-METAL must be used at 40 °C < Ta < 56 °C.
7. The version of the connection box with a drain plug must be suspended on the pipe to ensure proper function.

(16) Test Report PTB Ex 21-10134

(17) Specific conditions of use

Alternative strip heaters must not be used, unless the manufacturer's approval has been obtained.

(18) Essential health and safety requirements

Met by compliance with the aforementioned standards.

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB:

Braunschweig, March 22, 2021

Dr.-Ing. D. Markus
Direktor und Professo

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ITEM	Tag	ETB-200N1-17-L1-04	: HEAT TRACING - PROCESS LINE (WW 259, V-43001, LT-001) Hot JB			Dwg	123A90-DDL-EL-DL-20140
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10004607		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.**		829939-000			
Manufacturer	nVent			**Model**		JBM-100-E			
Cert No.	PTB20ATEX1008U			**Equipment Ambient Temp.**		-40°C to +56°C			
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex eb	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	T6

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	OK	
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	ETB-200N1-17-L1-04	: HEAT TRACING - PROCESS LINE (WW 259, V-43001, LT-001) Hot JB			Dwg	123A90-DDL-EL-DL-20140
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10004607		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	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	NA	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	NA	
52	Flame path are clean and undamaged	x	NA	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	OK	
60	Power conductors are not bunched together causing possible hot spots	x	OK	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	ETB-200N1-17-L1-04	: HEAT TRACING - PROCESS LINE (WW 259, V-43001, LT-001) Hot JB			Dwg	123A90-DDL-EL-DL-20140
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10004607		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

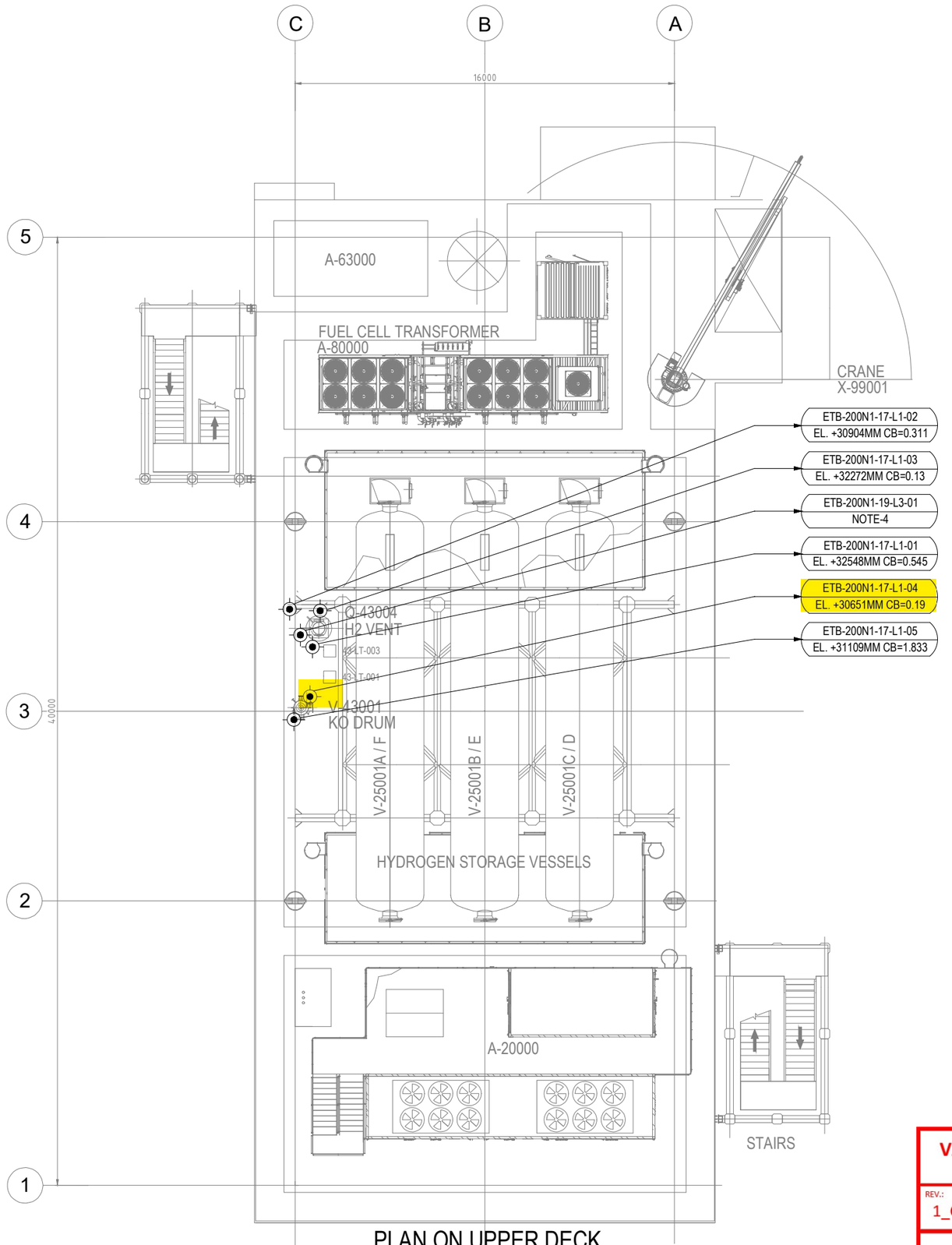
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

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

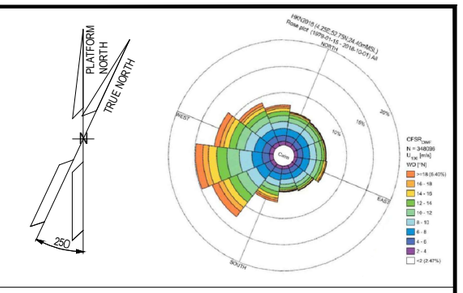
Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-05	2025-02-20	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-05T10:19:42.500Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-20T15:17:17.265Z	

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

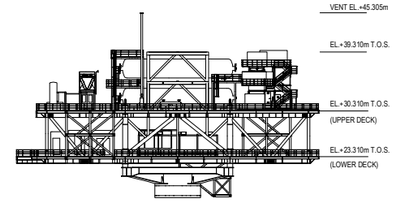
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_C	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

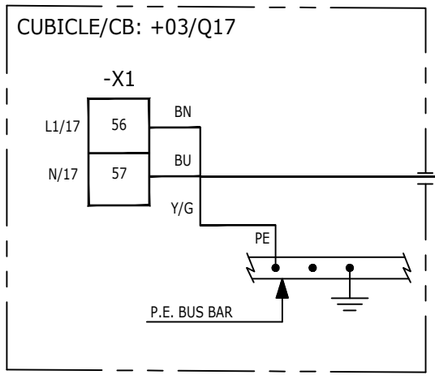
TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 2of2	REV. 01

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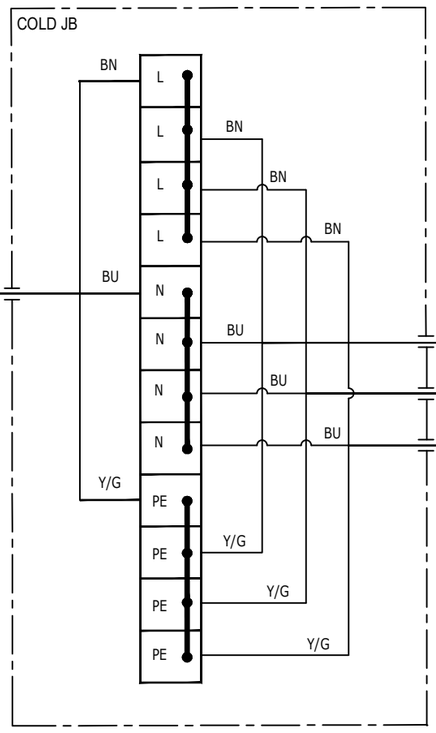
FROM	TO

DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1



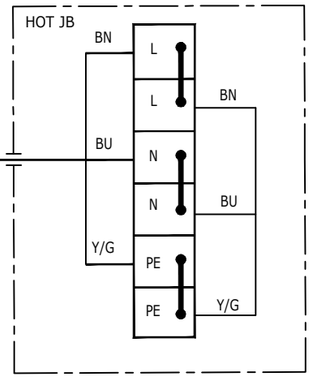
P-EJB-200N1-17-L1-01
3G6 mm²

DESCRIPTION: TRACE HEATING - PROCESS LINES - FEEDER 4 (WW LINES & LT)
TAG NUMBER: EJB-200N1-17-L1-01



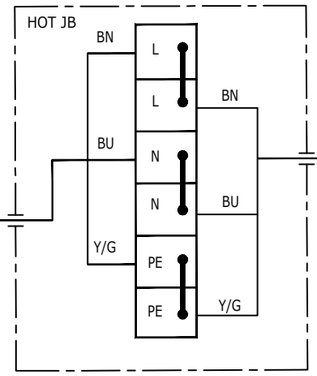
P-ETB-200N1-17-L1-01
3G6 mm²

DESCRIPTION: TRACE HEATING INSTRUMENT - 43-LT-003
TAG NUMBER: ETB-200N1-17-L1-01



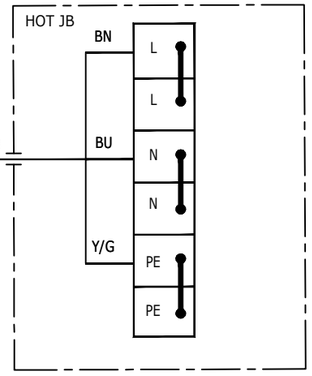
P-ETB-200N1-17-L1-02
3G6 mm²

DESCRIPTION: TRACE HEATING PROCESS LINE (WW 202)##
TAG NUMBER: ETB-200N1-17-L1-02



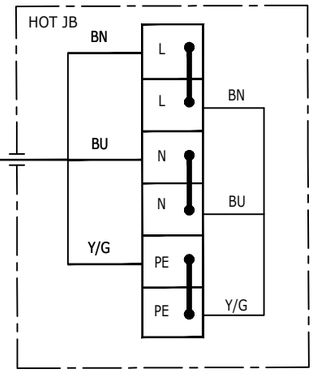
P-ETB-200N1-17-L1-03
3G6 mm²

DESCRIPTION: TRACE HEATING PROCESS LINE (WW 260)
TAG NUMBER: ETB-200N1-17-L1-03



DESCRIPTION: TRACE HEATING PROCESS LINE (WW 259) (V-43001 / 43-LT-001)
TAG NUMBER: ETB-200N1-17-L1-04

P-ETB-200N1-17-L1-04
3G6 mm²



- PIPE LINE WW-202 TRACED FROM NOZZLE N3 UPTO SWAN NECK

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_K	12/02/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
TRACE HEATING PROCESS LINES

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 050 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

CAD FILENAME: PIT240024_DD01_1004_001_02.dwg

HEAT TRACING DATA

HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	PIPE LENGTH (m)	HEATER LENGTH (m)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W/m)	POWER OUTPUT (W/m)	SHEATH TEMP. (°C)
EHT-1004-A	PIPING	3BTV2-CT	0.9	3.2	0.2	28	230	3.9	10.7	85
		TOTALS	0.9	3.2	0.2	28				

HEATER ADDER TABLE

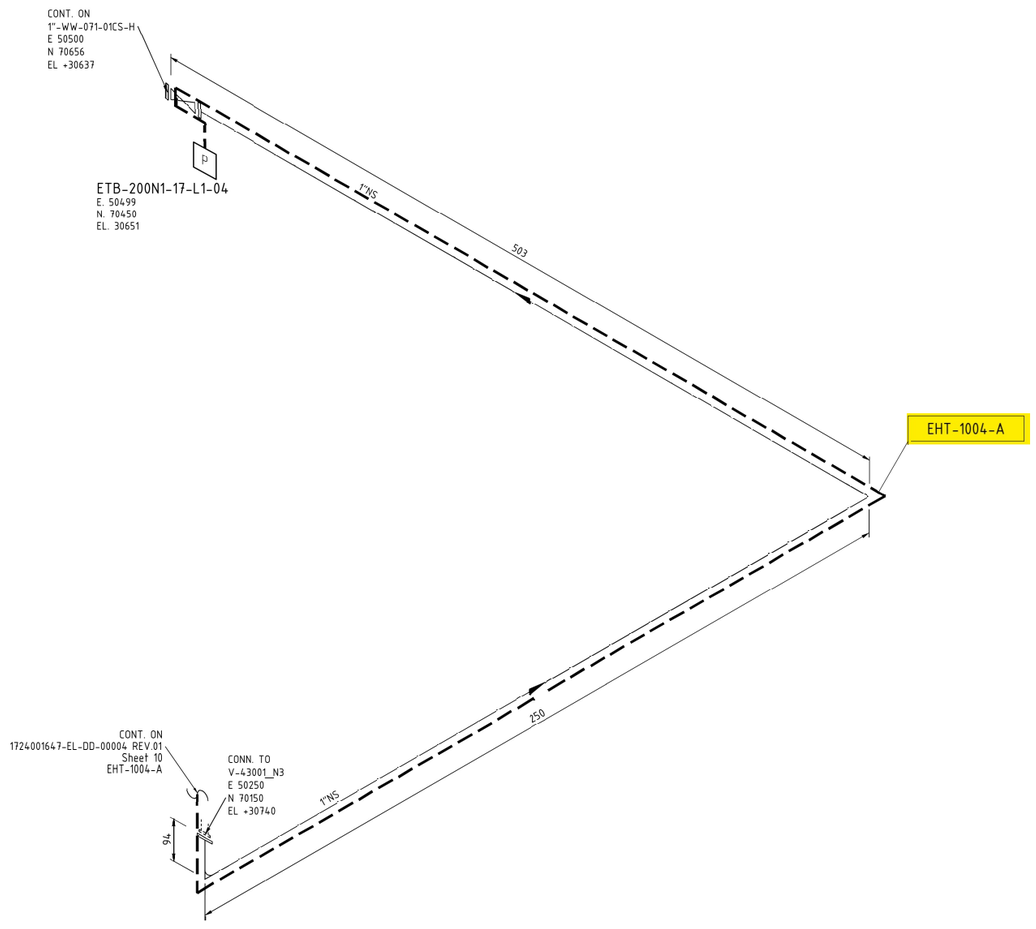
PIPE SIZE (Ins)	TYPE	QTY	ALLOWANCE PER ITEM (m)	TOTAL ALLOWANCE (m)
1	Typical Metal Valve	1	0.82	0.82
1	Typical Flange (fixed adder)	1	0.46	0.46

DESIGN PARAMETERS

CIRCUIT NUMBER	1004	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	11°C	INSULATION TYPE	RW/MF 1.2015
MAX. EXPOSURE TEMP.	11°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	100°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

COMPONENT BILL OF MATERIALS

CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	3.2	m	Raychem Self-Regulating Heating Cable
JBM-100-E	1	each	Integrated Junction Box, Multiple-Entry, Cold-Applied, ATEX
PSE-090	2	each	Pipe Strap for 1.1/4" to 3" (40-90mm)
GS-54	0.1	each	Glass Tape (16m/roll), suited for SS pipes
LAB-I-01	1	each	Warning Label - English
JBM-SPA	0.2	bag	Small Pipe Adapter for JBM-100-E



LINE NUMBERS

1"-WW-259-01CS-E

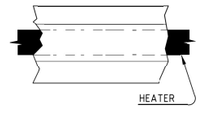
REFERENCE DRAWINGS / DOCUMENTS

123A90-DDL-PP-DI-71000_123

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.
4. HEATING CABLE ALLOWANCES PROVIDED IN THE 'EHT ADDER TABLE' FOR FLANGES AND VALVES ARE IN ADDITION TO THEIR LINEAR LENGTHS.

ALUMINIUM TAPE (REF: ATE180)



SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

CROSSWIND

ROSETTI MARINO

nVent RAYCHEM TRACER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
02	20/01/2025	ISSUED FOR REVIEW	ADU	AMI	GPI
01	25/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.

DOC CODE

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING ISOMETRIC

SCALE: N/A

DRAWING NO.: 1724001647-EL-DD-00004

SHEET NO.: 6/10

REVISION: 02

CAD FILENAME: PIT240024_DD02_3001_001_02.dwg

HEAT TRACING DATA

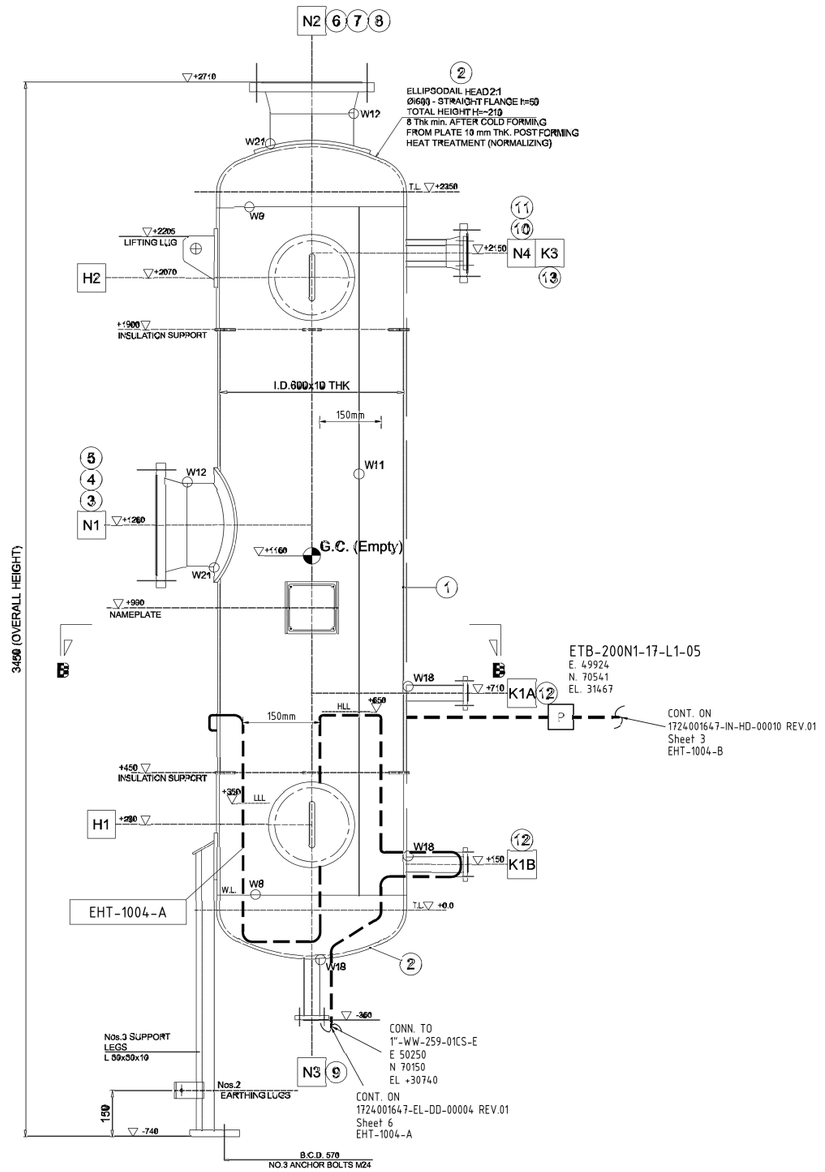
HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	HEATER LENGTH (m)	HEATED AREA (m^2)	HEATER SPACING (mm)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W)	POWER OUTPUT (W/m)	SHEATH TEMPERATURE (°C)
EHT-3001-A	EQUIPMENT	3BTV2-CT	1x5.8	0.72	150	0.5	80	80	66	13.9	85
					TOTALS	0.5	80				

DESIGN PARAMETERS

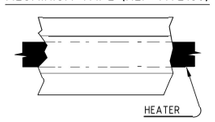
CIRCUIT NUMBER	3001	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	11°C	INSULATION TYPE	RW/MF 1.2015
MAX. EXPOSURE TEMP.	11°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	100°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

COMPONENT BILL OF MATERIALS

CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	5.8	m	Raychem Self-Regulating Heating Cable
JBM-100-E	1	each	Integrated Junction Box, Multiple-Entry, Cold-Applied, ATEX
ATE-180	0.32	roll	Fixing tape (aluminium, 55m/roll)
LAB-I-01	1	each	Warning Label - English
PSE-090	2	each	Pipe Strap for 1.1/4" to 3" (40-90mm)



ALUMINIUM TAPE (REF: ATE180)



SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

EQUIPMENT NUMBERS	REFERENCE DRAWINGS / DOCUMENTS
V-43001	

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.

CROSSWIND

ROSETTI MARINO

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
02	20/01/2025	ISSUED FOR REVIEW	ADU	AMI	GPI
01	25/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING EQUIPMENT

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-EL-DD-00004	10/10	02

A1

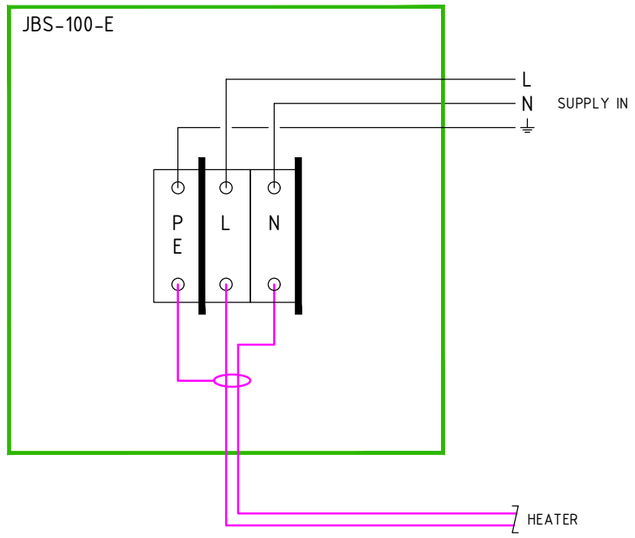
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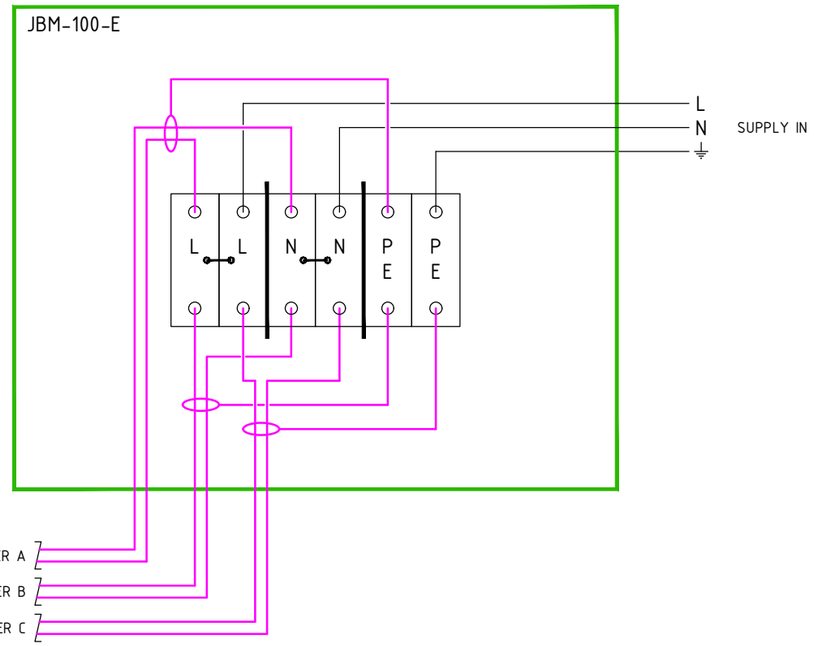
GENERAL INFORMATION:

1. JBS-100-E IS DESIGNED TO CONNECT POWER TO ONE BTV, QTVR, XTV, KTV, HTV OR VPL EHT CABLE.
2. THIS KIT INTEGRATES THE FUNCTIONS OF BOTH CONNECTION KITS AND INSULATION ENTRIES.
3. THE STAND CONNECTED TO THE BOTTOM OF THE BOX PROTECTS THE HEATING CABLE AND ALLOWS FOR UP TO 100mm (4") THERMAL INSULATION.

TECHNICAL BRIEF:

- 2 x M25 THREADED ENTRIES
- 1 x M25 STOPPING PLUGS
- 1 x M25 POWER CABLE GLAND





REV.	DATE	DESCRIPTION	BY	CHK	APP
--	--	--	--	--	--
--	--	--	--	--	--
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	08/03/2024	ISSUED FOR INFORMATION	LJB	E-C	ZS

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TITLE: TYPICAL CONNECTION OF A JBS-100-EP SINGLE ENTRY JUNCTION BOX

PREPARED BY	-.---	LANG.	SCALE
LEAD ENGINEER	-.---	en	N/A

PROJECT NO.	DRAWING NO.	SHEET	REVISION
PIT240024	1724001647-EL-DG-00005	2/3	01

A3

CAD FILENAME: 1724001647-EL-DG-00006 Rev.03.dwg

CONTROL PANEL REF.:

Q17

MARSHALLING BOX

EJB-200N1-17-L1-01

ETB-200N1-17-L1-04

EHT-1004-A

ETB-200N1-17-L1-05

EHT-1004-B

ETB-200N1-17-L1-02

EHT-1005-A

ETB-200N1-17-L1-03

EHT-1006-A

ETB-200N1-17-L1-01

EHT-2002-A

SPARE

CIRCUIT NO.	1004	1005, 1006	2002		GENERAL NOTES
C.B. RATING (A)	32	32	32		
START-UP I (A)	2.6	0.4	0.6		
LOAD (W)	383	65	81		
SERVICE	WINTERIZING	WINTERIZING	WINTERIZING		
NOTES FOR THE CIRCUIT	--	--	--		

CROSSWIND

ROSETTI MARINO

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
03	20/01/2025	ACCEPTED FOR CONSTRUCTION	ADU	AMI	GPI
02	29/11/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	02/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING
ELECTRICAL BLOCK DIAGRAM

SCALE: N/A

DRAWING NO.: 1724001647-EL-DG-00006

SHEET NO.: 4 /4

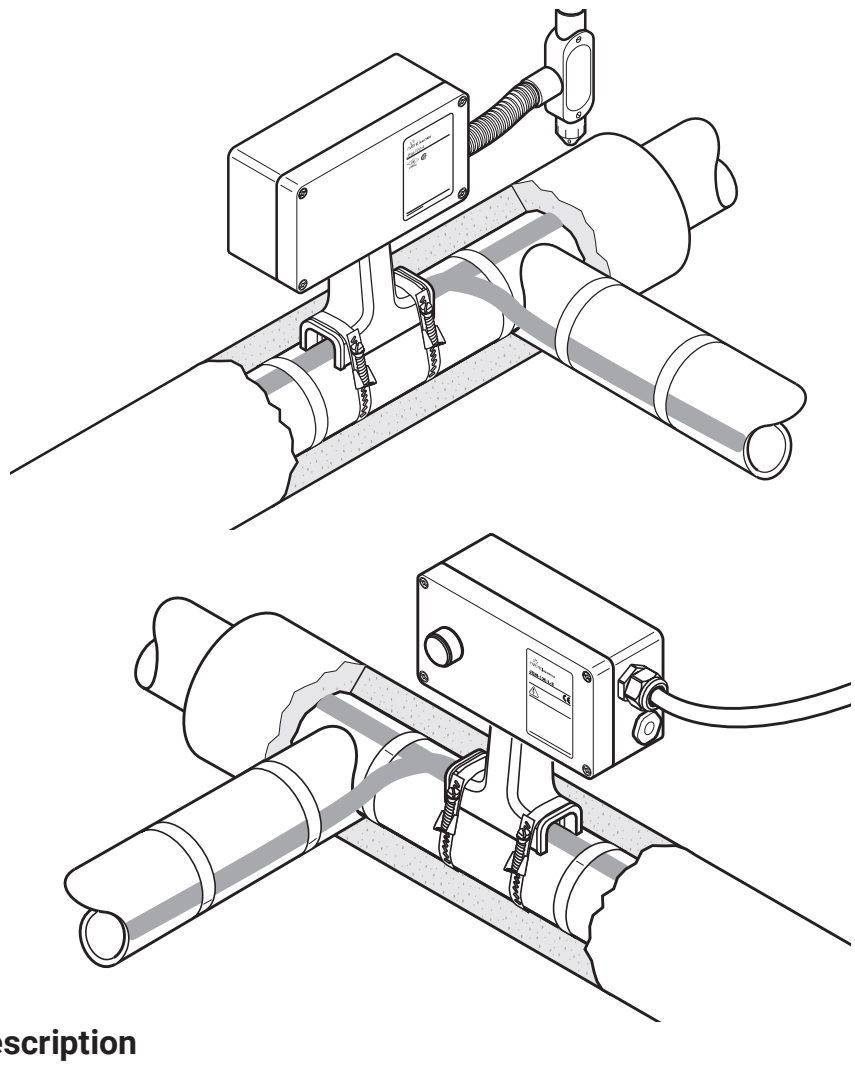
REVISION: 03

JBM-100

CONNECT AND PROTECT

Multiple-Entry Power/Tee Connection with Junction Box

PRODUCT OVERVIEW



The nVent RAYCHEM JBM-100 kit is designed to connect power to up to three nVent RAYCHEM BTV, QTVR, XTVR, HTV, or VPL industrial parallel heating cables.

The JBM-100 integrates the functions of both connection kits and insulation entries. The rugged stand protects the heating cable and allows for up to 100 mm (4") of thermal insulation.

The core sealing boot does not require a heat gun or torch for the installation (no hot work permit necessary). The non-curing sealant (silicone free) in the boot allows easy installation and facilitates maintenance.

Spring-type terminals provide fast installation and safe, reliable, maintenance-free operation. This connection kit significantly reduces installation time.

The kit is offered in three basic versions, customised for local installation practices. All kits are also available as a lighted version. These include a unique light module with a superbright LED that simply plugs into the terminals, and a lens in the lid. This provides indication that power is available in the box. There is also a connection kit with drain plug available.

Description

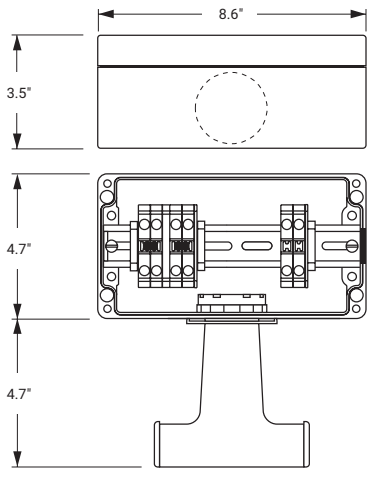
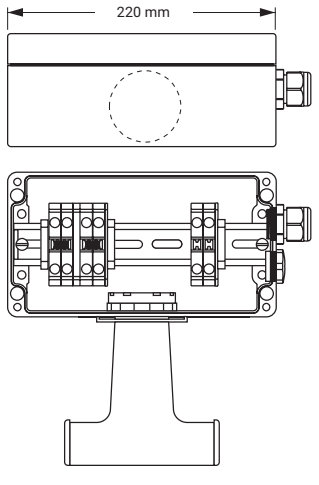
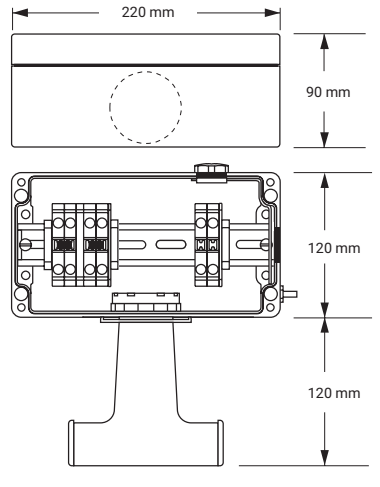
JBM-100-A JBM-100-L-A	JBM-100-E JBM-100-L-E JBM-100-D-E	JBM-100-EP JBM-100-L-EP
This connection system is certified for use in North America and has one ¾" through holes for use with ¾" conduit. One stopping plug is supplied in the kit.	This connection system is certified for use in IEC regions and provides two M25 threaded entries, one stopping plug, and one plastic power cable gland.	This connection system is certified for use in IEC regions and provides two M25 threaded entries, an earthing plate, and an external earthing stud. It is designed for use with armoured cables.

Kit contents

1 junction box with terminals 1 light module (for -L only) 1 stand 3 core sealers 3 green/yellow earthing sleeve 1 ¾" stopping plug 1 polywater sachet 1 spanner 1 strain relief assembly 2 grommet plugs	1 junction box with terminals 1 light module (for -L only) 1 stand 3 core sealers 3 green/yellow earthing sleeve 1 M25 gland for power cable 8-15 mm (temperature range –55°C to +70°C) in diameter 1 M25 stopping plug 1 polywater sachet 1 spanner 1 strain relief assembly 2 grommet plugs 1 ATEX/IECEx Certified drainplug (for JBM-100-D-E only)	1 junction box with terminals, earth continuity plate, and stud 1 light module (for -L only) 1 stand 3 core sealers 3 green/yellow earthing sleeve 2 M25 stopping plugs 1 polywater sachet 1 spanner 1 strain relief assembly 2 grommet plugs

PRODUCT SPECIFICATIONS

Dimensions (nominal)

	JBM-100-A JBM-100-L-A	JBM-100-E JBM-100-L-E JBM-100-D-E	JBM-100-EP JBM-100-L-EP
			

Technical details

Heating cable capability	BTV-CR, BTV-CT, QTVR-CT, XTVR-CT, HTV-CT, VPL-CT		
Ingress protection	IP66	IP66	IP66
Entries	1 x ¾"	2 x M25	2 x M25
Ambient temperature range	–55°C to +56°C (JBM-100-A) –40°C to +40°C (JBM-100-L-A)	–55°C to +56°C* (JBM-100-E and JBM-100-D-E) –40°C to +40°C (JBM-100-L-E)	–55°C to +56°C* (JBM-100-EP) –40°C to +40°C (JBM-100-L-EP)
	*Extra conditions for safe use apply at ambient temperatures >40°C. Temperature resistant power cable and metal glands must be used. Please refer to the certificate or installation instructions for full details.		
Max. pipe temperature	Refer to heating cable specification		
Terminals	Spring-type terminals 4 line, 2 ground	Spring-type terminals 2 phase, 2 neutral, 2 earth	Spring-type terminals 2 phase, 2 neutral, 2 earth
Max. conductor size	8 AWG stranded	10 mm^2 stranded, 10 mm^2 solid	10 mm^2 stranded, 10 mm^2 solid
Max. operating voltage	480 Vac*	480 Vac*	480 Vac*
	*JBM-100-L-E, JBM-100-L-EP and JBM-100-L-A are limited to 277 Vac. Extra conditions for safe use apply for voltages higher than 277 Vac. Please refer to the certificate or installation instructions for full details.		
Max. continuous operating current (***)	53 A	53 A	53 A

(***) For pipe temperature > 150°C and <260°C and XTVR or HTV heating cables, the maximum operating current shall be reduced to maximum 20 A.

Materials of construction

Enclosure, lid, and stand	Electrostatic charge-resistant glass-filled engineered polymer, black	Electrostatic charge-resistant glass-filled engineered polymer, black	Electrostatic charge-resistant glass-filled engineered polymer, black
Lid screws	Stainless steel	Stainless steel	Stainless steel
Lid gasket	Silicone rubber	Silicone rubber	Silicone rubber
Earth continuity plate	N/A	N/A	Steel, zinc plated, and blue chromated

Optional LED indicator light

	JBM-100-A JBM-100-L-A	JBM-100-E JBM-100-L-E JBM-100-D-E	JBM-100-EP JBM-100-L-EP
Colour	Red	Green	Green
Voltage rating	100-277 Vac	100-277 Vac	100-277 Vac
Power consumption	< 1 W	< 1 W	< 1 W

Ordering details (**)

APPROVALS (**)

For use in ordinary and hazardous area Zone 1 and Zone 2 (Gas), Zone 21 and Zone 22 (Dust) and Class I Div 1 & 2

Temperature classification

Temperature classification is defined by the complete system.

Product certification

For certifications in other regions (FM, CSA, IEx etc.), please refer to the installation manual. More details about product certification, approvals and conditions of safe use are available in the installation manual www.nVent.com/RAYCHEM.

ORDERING INFORMATION

Power connection

Part Description (**)	JBM-100-A	JBM-100-E	JBM-100-EP
PN (Weight)	179935-000 (4.3 lb)	831519-000 (1.9 kg)	986415-000 (2.1 kg)

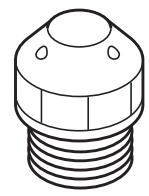
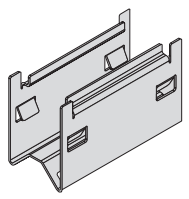
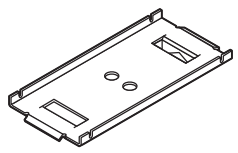
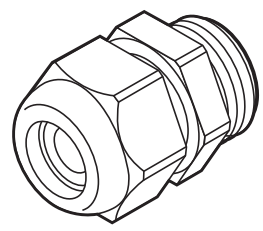
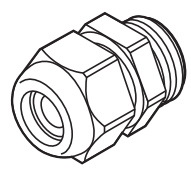
Power connection with light

Part Description	JBM-100-L-A	JBM-100-L-E	JBM-100-L-EP
PN (Weight)	656081-000 (5.3 lb)	395855-000 (2.3 kg)	300273-000 (2.5 kg)

Power connection with drain plug

Part Description		JBM-100-D-E	
PN (Weight)		1244-021056 (2.1 kg)	

Accessories

Conduit Drain ¾"	Prevents condensate from collecting in the box	
Catalog number	JB-DRAIN-PLUG-3/4IN	
Part Number	278621-000	
Weight	0.074 lb / 36 g	
Junction box standoff	For insulation thickness >120 mm & ≤180 mm *	
Catalog number	JBM-100-STANDOFF	
Part Number	P000003624	
Weight	0.599 lb / 272 g	
* Consider extra pipe strap length 6-9" (150-225 mm) for attachment		
Small pipe adapter	Required for stand on pipes ≤ 1"	
Catalog number	JBM-SPA	
Part Number	D55673-000	
Weight	0.930 lb / 422 g (Bag of 5 adaptors)	
Glands for power cables	Hazardous area approved gland for cables 8-15 mm (temperature range –55°C/70°C)	
Catalog number	GL-55-M25	
Part Number	1244-019083	
Weight	0.016 kg	
Glands for power cables	Hazardous area approved gland for cables 8-17.5 mm (temperature range –20°C/70°C)	
Catalog number	GL-36-M25	
Part Number	1244-019082	
Weight	0.016 kg	

(**) Localized versions may exist with limited approvals and different part numbers. Contact your local sales representative.

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com

Our powerful portfolio of brands:
CADDY ERICO HOFFMAN ILSCO RAYCHEM SCHROFF

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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
ELF-200N1-09-L2-25	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-01	Emergency Lighting Fixture	LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-02	Emergency Lighting Fixture	LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-03	Emergency Lighting Fixture	LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-04	Emergency Lighting Fixture	LOWER & UPPER DECK STAIRS	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-05	Emergency Lighting Fixture	LOWER & UPPER DECK STAIRS	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-06	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-07	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-08	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-09	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-10	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-11	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-12	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-13	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-14	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
EML-200-01	NAV AIDS Main Yellow Lanterns	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547/MNL02	SICE-LXS-YEL-05-1	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EML-200-02	NAV AIDS Main Yellow Lanterns	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547/MNL03	SICE-LXS-YEL-05-1	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EOL-200-01	Obstruction Red LED Lights	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547-MC01	L864-LXS-EX-CAP168-CS2LJS	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EOL-200-02	Obstruction Red LED Lights (MEDIUM INTENSITY)	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547-MC02	L864-LXS-EX-CAP168-CS2LJS	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EOL-200-03	Intermediate Obstruction Red Lights	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547-MC03	L864-LXS-EX-CAP168-CS2LJS	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EOL-200-04	Intermediate Obstruction Red Lights	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547-MC04	L864-LXS-EX-CAP168-CS2LJS	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EPH-200-01	NAV AIDS Photocell	UPPER DECK	1724000775	SICE	SICE	24-881	FTC	ZONE 2	INERIS 02ATEX9006U	1724000775-QC-DB-00017	Ex II 2G - Ex d IIB T4 IP66	-	NAVIGATION AIDS	True	N/A	False	
ESL-200-01	Wave Off Status Light	BELOW LOWER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547/MNL01	SICE-LXS-RED-03-1	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
ETB-200N1-14-L1-01	TRACE HEATING - PROCESS LINES - FEEDER 1 (SWS LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-15-L2-01	TRACE HEATING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-15-L2-02	TRACE HEATING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-16-L3-01	TRACE HEATING - PROCESS LINES - FEEDER 3 (DM LINE) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-17-L1-01	Trace Heating - Process Lines - Feeder 4 (WW LINES) Hot JB	UPPER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-17-L1-02	Trace Heating - Process Lines - Feeder 4 (WW LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBM-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-17-L1-03	Trace Heating - Process Lines - Feeder 4 (WW LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-17-L1-04	Trace Heating - Process Lines - Feeder 4 (WW LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBM-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	HAZARDOUS-AREA_7
ETB-200N1-17-L1-05	Trace Heating - Process Lines - Feeder 4 (WW LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBM-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	HAZARDOUS-AREA_7
ETB-200N1-19-L3-01	TRACE HEATING - FEEDER 6 (H2 VENT)	UPPER DECK	1724000887	Encore Thermoengineering	nVent	5020019	ETS-05	Zone 2	Baseefa13ATEX0137 Issue 6	1724000887-MAC-DG-00007	II 2(1)G Ex eb ia mb [ia Ga] IIC T5 Gb - 40ºC ≤ Ta ≤ +60ºC II 2D Ex tb IIIC T100ºC Db	N/A	Hydrogen Vent	True	N/A	False	HAZARDOUS-AREA_6
ETB-200N1-20-L1-01A	Trace Heating - Feeder 7 (SEA WATER PUMPS)	P-50001A (LOWER DECK)	1724000936	PCM Group	THERMON	N/A	HTSX 15-2 OJ	Zone 1 IIB T3	FM 12ATEX0014X	1724000936-MAC-DD-00011	II 2G Ex eb IIC T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	True	N/A	True	
ETB-200N1-20-L1-01B	Trace Heating - Feeder 7 (SEA WATER PUMPS)	P-50001B (LOWER DECK)	1724000936	PCM Group	THERMON	N/A	HTSX 15-2 OJ	Zone 1 IIB T3	FM 12ATEX0014X	1724000936-MAC-DD-00011	II 2G Ex eb IIC T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	True	N/A	True	
ETM-200-01	NAV AIDS Battery Bank Temperature Probe	CONTAINER B-300 (LOWER DECK)	1724000775	SICE	TERMICS	626624-010/01	TS-CTL	ZONE 2	TUV IT 13ATEX069X	1724000775-QC-DB-00017	Ex II 2GD - Ex d IIC T6 IP66	-	NAVIGATION AIDS	True	N/A	True	
EVM-200-01	NAV AIDS Visibility meter	UPPER DECK	1724000775	SICE	PHAROS MARINE	713542.24.01	FD-410EX-MINI-OC-M	ZONE 2	ITS 18ATEX103574X	1724000775-QC-DB-00017	Ex II 2G - Ex d IIB T6 IP66	-	NAVIGATION AIDS	True	N/A	True	
H-ETE-200N1-19-L3-01	Self-regulating heat cable	UPPER DECK	1724000887	Encore Thermoengineering	nVent	N/A	XTVR2-CT	Zone 2	XTVR_SGS20ATEX0049X_Iss. 4 1	1724000887-MAC-DG-00007	II 2 GD Ex 60079-30-1 eb IIC T* Gb / Ex 60079-30-1 tb IIIC T***C Db	N/A	Hydrogen Vent	True	N/A	True	
H-ETE-200N1-20-L1-01A	Self-regulating heat cable	P-50001A (LOWER DECK)	1724000936	PCM Group	THERMON	N/A	HTSX 15-2 OJ	Zone 1 IIB T3	FM 10ATEX0058X	1724000936-MAC-DD-00011	II 2G Ex db eb IIC T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	True	N/A	True	
H-ETE-200N1-20-L1-01B	Self-regulating heat cable	P-50001B (LOWER DECK)	1724000936	PCM Group	THERMON	N/A	HTSX 15-2 OJ	Zone 1 IIB T3	FM 10ATEX0058X	1724000936-MAC-DD-00011	II 2G Ex db eb IIC T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	True	N/A	True	
JB-500E8	Interface JB - Water Package	LOWER DECK	1724000448	PSC	STAHL	-	8146/1083	Safe Area	PTB 01 ATEX 1016	1724000448-MAC-DA-00005	II 2 G Ex eb IIC T6 Gb II 2 D Ex tb IIIC T80°C Db	-	A-50000	True	N/A	False	
JB-500F8	Interface JB - Water Package	LOWER DECK	1724000448	PSC	STAHL	-	8146/1051	Safe Area	PTB 01 ATEX 1016	1724000448-MAC-DA-00005	II 2 G Ex eb IIC T6 Gb II 2 D Ex tb IIIC T80°C Db	-	A-50000	True	N/A	False	
NC-200F2A	NAVAID System NCCP - ENCLOSURE A	CONTAINER B-300 (LOWER DECK)	1724000775	SICE	TECHNOR ITALSMEA	24-1141	SB477620	ZONE 13	FIDI 21ATEX 0090X	1724000775-EL-DG-00003	Ex II 2G - Ex e IIC T6 IP66	-	NAVIGATION AIDS	True	N/A	True	
NC-200F2B	NAVAID System NCCP - ENCLOSURE B	CONTAINER B-300 (LOWER DECK)	1724000775	SICE	TECHNOR ITALSMEA	24-1141	EJB-13	ZONE 12	INERIS 00ATEX 0021X	1724000775-EL-DG-00003	Ex II 2G - Ex db IIB+H2 T6 IP66	-	NAVIGATION AIDS	True	N/A	True	
NC-200F2C	NAVAID System NCCP - ENCLOSURE C	CONTAINER B-300 (LOWER DECK)	1724000775	SICE	TECHNOR ITALSMEA	24-1141	EJB-13A	ZONE 11	INERIS 00ATEX 0021X	1724000775-EL-DG-00003	Ex II 2G - Ex db IIB+H2 T6 IP66	-	NAVIGATION AIDS	True	N/A	True	
Y-89-06-THS-001	Twin cup headset for UHF DMR Portable Radio	CONTAINER B-400 (LOWER DECK)	1724000452	Fores	MOTOROLA	627TZD0512	PMLN6333	Zone 2	BS 12 ATEX E 117 X	1724000452-TL-DS-00005	Ex ib IIC T4 Gb	-	N/A	True	NO	True	

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin
Nationales Metrologieinstitut

(1) # EU-Baumusterprüfbescheinigung

(2) Geräte oder Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen - **Richtlinie 2014/34/EU**

(3) EU-Baumusterprüfbescheinigungsnummer

PTB 20 ATEX 1008 U **Ausgabe: 1**

(4) Produkt: Integriertes Begleitheizungs-Anschlusssystem Typ JBx-100-xx-xx und T-100

(5) Hersteller: nVent Thermal Belgium LLC

(6) Anschrift: Romeinse straat 14, 3001 Leuven, Belgien

(7) Die Bauart dieses Produkts sowie die verschiedenen zulässigen Ausführungen sind in der Anlage und den darin aufgeführten Unterlagen zu dieser Baumusterprüfbescheinigung festgelegt.

(8) Die Physikalisch-Technische Bundesanstalt, notifizierte Stelle Nr. 0102 gemäß Artikel 17 der Richtlinie 2014/34/EU des Europäischen Parlaments und des Rates vom 26. Februar 2014, bescheinigt, dass dieses Produkt die grundlegenden Sicherheits- und Gesundheitsanforderungen für die Konzeption und den Bau von Produkten zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen gemäß Anhang II der Richtlinie erfüllt.

Die Ergebnisse der Prüfung sind in dem vertraulichen Prüfbericht PTB Ex 21-10134 festgehalten.

(9) Die grundlegenden Sicherheits- und Gesundheitsanforderungen werden erfüllt durch Übereinstimmung mit

EN IEC 60079-0:2018; EN IEC 60079-7:2015/A1:2018-01; EN 60079-18:2015; EN 60079-31:2014

(10) Falls das Zeichen „X" hinter der Bescheinigungsnummer steht, wird auf besondere Bedingungen für die sichere Anwendung des Produkts in der Anlage zu dieser Bescheinigung hingewiesen.

(11) Diese EU-Baumusterprüfbescheinigung bezieht sich nur auf Konzeption und Prüfung des festgelegten Produkts gemäß Richtlinie 2014/34/EU. Weitere Anforderungen dieser Richtlinie gelten für die Herstellung und das Bereitstellen auf dem Markt. Diese Anforderungen werden nicht durch diese Bescheinigung abgedeckt.

(12) Die Kennzeichnung des Produkts muss die folgenden Angaben enthalten:

II 2 G Ex eb mb IIC Gb

II 2 D Ex tb mb IIIC Db

Konformitätsbewertungsstelle, Sektor Explosionsschutz Braunschweig, 22. März 2021
Im Auftrag

Dr.-Ing. D. Markus
Direktor und Professor

ZSEx10100d c

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(13) # Anlage

(14) **EU-Baumusterprüfbescheinigung PTB 20 ATEX 1008 U, Ausgabe: 1**

(15) Beschreibung des Produkts

Die JBx-100-xx-xx und T-100 Anschlusskasten-Serie ist ein Anschlusssystem für elektrische Begleitheizungssysteme. Die Anschlusskastenserie JBx-100-xx-xx ist in vier verschiedene Versionen unterteilt (JBS-100-xx-xx, JBM-100-xx-xx und T-100). Diese Anschlusskastenserie ist auf einem integrierten Rohrträger montiert, um elektrische Heizkabel an das Stromnetz anzuschließen oder um eine Verbindung zwischen 2 oder 3 Heizkabeln herzustellen. Die verschiedenen Modelle der Serie umfassen Optionen wie: Kästen mit einer Offshore-Platte (Erdungsplatte) und Kästen mit einem optionalen Lichtmodul. Die vierte Version der Anschlusskasten-Serie ist JBU-100-xx-xx. Diese Version hat die gleichen Eigenschaften, wird jedoch anstelle des Rohrträgers mit einer Halterung direkt an der Rohrleitung montiert.

Typ JBS-100-xx-xx
Der Anschlusskasten ist auf einem integrierten Rohrträger installiert. Im Inneren des Anschlusskastens JBS-100-xx-xx befindet sich eine DIN-Schiene auf der zertifizierte Klemmen installiert sind. Zusätzliche Klemmen können hinzugefügt werden, um den Anschluss eines externen Thermostaten zu ermöglichen. Der Anschlusskasten ist für den Anschluss eines Heizkabels an ein Stromkabel (mit oder ohne Thermostat) ausgelegt. Die Stromkabel werden im Anschlusskasten durch ein Loch in der Seitenwand des Kastens und eine zertifizierte Kabelverschraubung eingeführt.

Typ JBM-100-xx-xx
Der Anschlusskasten ist auf einem integrierten Rohrträger installiert. Der Anschlusskasten JBM-100-xx-xx ist für die Aufnahme von bis zu maximal drei Heizkabeln ausgelegt. Daher sind drei Paare von zertifizierten Klemmen vorgesehen. Gelegentlich können weitere Klemmen installiert werden, um die Verkettung der Stromversorgung zu unterstützen. Das Stromkabel wird über ein Loch in der Seitenwand des Kastens und eine zertifizierte Kabelverschraubung in den Kasten eingeführt. Für die Heizkabel ist eine zusätzliche Zugentlastung vorgesehen. Die Zugentlastung verhindert, dass die Heizkabel beim Ziehen verrutschen.

Typ JBU-100-xx-xx
Die JBU-100-xx-xx ist nicht auf einem integrierten Rohrträger installiert. Der Anschlusskasten kann auf einer stabilen Struktur wie z.B. einem Rohrgestell, einer Wand über die M6-Schrauben oder über eine optionale Halterung direkt auf dem Rohr installiert werden. Der Anschlusskasten ist so ausgelegt, dass bis zu maximal vier Heizkabel an das Stromnetz installiert werden können. Die elektrischen Verbindungen werden mit Hilfe von Klemmen hergestellt, die auf einer DIN-Schiene im Inneren des Anschlusskastens installiert sind.
Alternativ kann JBU-100-xx-xx als Verteilerkasten für Leistungs- und Steuerkabel verwendet werden. Es dürfen nur Leitungseinführungen verwendet werden, die für den Bereich entsprechend zertifiziert sind und die den Abmessungen des Kabels entsprechen.

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Anlage zur EU-Baumusterprüfbescheinigung PTB 20 ATEX 1008 U, Ausgabe: 1

Typ T-100
Der T-100 ist ein Kasten, der als Anschlusskasten (Verbindungskasten) für den Anschluss von bis zu maximal 3 Heizkabeln verwendet wird. Die Box wird auf einem Rohrständer installiert, der die Eingänge und den Schutz für die installierten Heizkabel bietet. Für die Heizkabel ist eine zusätzliche Zugentlastung vorgesehen. Die Zugentlastung verhindert, dass die Heizkabel beim Ziehen verrutschen. Die Verbindung zwischen den Leitern der Heizkabel wird über Aderendhülsen hergestellt. Nach der Installation werden die Leiter mit Schutzkappen aus temperaturbeständigem Silikon elektrisch isoliert.

Änderungen in Bezug auf vorherige Ausgaben

Aufnahme der Verwendung des selbstregulierenden Parallelheizkabels Typ HTV

Typschlüssel

JB	x	-	100	-	xx	-	xx
	1		2		3		4

1	S	JBS – zur Verbindung von einem Heizkabel
	M	JBM – zur Verbindung von bis zu max. drei Heizkabeln
	U	JBU – Universelle Verbindung
2	100	Aufrechte Installation
3	A	Version mit gewindelosen Bohrungen
	L	Version mit optionalem Lichtmodul
	E	Version mit metrischen Gewindebohrungen
	P	Version mit optionaler Offshore-Platte (Erdungsplatte)
	D	Version mit optionalem Belüftungsstopfen
4	E	Version mit metrischen Gewindebohrungen
	A	Version mit gewindelosen Bohrungen
	P	Version mit optionaler Offshore-Platte (Erdungsplatte)

Technische Daten

Umgebungstemperaturbereich	Standard Version	-55°C to +56°C
	Mit Lichtmodul	-40°C to +40°C
Max. Anzahl der Heizbänder	JBS-100-xx-xx	1
	JBM-100-xx-xx	3
	JBU-100-xx-xx	3 (4 ohne Stromkabel)
	T-100	3

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Anlage zur EU-Baumusterprüfbescheinigung PTB 20 ATEX 1008 U, Ausgabe: 1

Anzahl der Anschlussklemmen*	JBS-100-xx-xx	L+N+PE
	JBM-100-xx-xx	2xL + 2xN + 2xPE
	JBU-100-xx-xx	2xL + 2xN + 2xPE
	T-100	-
Max. Kabelquerschnitt	JBS-100-xx-xx	0.5 mm² bis 10 mm²
	JBM-100-xx-xx	0.5 mm² bis 10 mm²
	JBU-100-xx-xx	0.5 mm² bis 10 mm²
	T-100	max. 3,3 mm²
Bemessungsspannung**	Abhängig vom verwendeten Heizkabeltyp	
	BTV1, QTVR1, XTV1, KTV1, HTV1	max. 120 V
	BTV2, QTVR2, XTV2, KTV2, HTV2	max. 277 V
	VPL1	max. 120 V
	VPL2	max. 230 / 254 V
	VPL4 + FHPC	max. 480 V
Bemessungsstrom	JBS-100-xx-xx	Max. 53 A
	JBM-100-xx-xx	Max. 53 A
	JBU-100-xx-xx	Max. 53 A
	T-100	Max. 40 A

* Weitere Klemmen sind zulässig, solange der Gesamtstrom durch das Gehäuse 40 A nicht übersteigt.

** abhängig von Absicherung bzw. max. zulässigem Bemessungsstrom, max. zulässiger Temperatur der zu beheizenden Oberfläche; siehe hierzu Datenblätter bzw. Betriebsanleitung des Herstellers.

Hinweise zur Herstellung

1. Die maximal zulässige Temperatur für die zu beheizende Fläche (Rohrtemperatur) ist auf der Grundlage der spezifischen Leistungsklasse, der max. zulässigen Betriebstemperatur der Heizbänder, der Nennspannung und der max. zulässigen Strombelastbarkeit zu bestimmen.
2. Anwendungen, für die wärmebeständige Zuleitungen inkl. Kabelverschraubungen aus Metall verwendet werden müssen, sind vom Hersteller anzugeben und vom Errichter/Anwender zusammenzustellen.
3. Einschränkungen bezüglich der Verwendung der Typen JBS-100-L-x, JBM-100-L-x und JBU-100-L-x (mit Kontrollleuchte) sind vom Hersteller anzugeben und vom Installateur/Benutzer zu beachten.

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4. Die Parallelheizbänder vom Typ VPL und FHPC müssen so installiert werden, dass ihre kalten Enden außerhalb des Klemmenkastens beginnen.
5. Wenn JBU-100-xx-x mit Spannungseinspeisung installiert wird, müssen bei 40 °C < Ta < 56 °C eine ausreichende hitzebeständige Einspeisung und Metall-Verschraubungen, inkl. Dichtung, verwendet werden. Für die Metallverschraubungen inkl. Dichtung muss ein separates IECEx-Zertifikat ausgestellt und von nVent Thermal verifiziert worden sein.
6. Für Heizkabel müssen zertifizierte nVent Thermal Verschraubungen vom Typ C25-100-METAL bei 40 °C < Ta < 56 °C verwendet werden.
7. Die Ausführung des Anschlusskastens mit Belüftungsstopfen muss am Rohr aufgehängt werden, um eine einwandfreie Funktion zu gewährleisten.

(16) Prüfbericht PTB Ex 21-10134

(17) Besondere Bedingungen

Die Verwendung von alternativen Heizbändern ohne Freigabe durch den Hersteller ist nicht zulässig.

(18) Grundlegende Sicherheits- und Gesundheitsanforderungen

Erfüllt durch Übereinstimmung mit den vorgenannten Normen.

Konformitätsbewertungsstelle, Sektor Explosionsschutz — Braunschweig, 22. März 2021
Im Auftrag

Dr.-Ing. D. Markus
Direktor und Professor

PHYSIKALISCH-TECHNISCHE BUNDESANSTALT

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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 20 ATEX 1008 U **Issue: 1**

(4) Product: Integrated Heat Tracing Connection System
Type JBx-100-xx-xx and T-100

(5) Manufacturer: nVent Thermal Berlgium NV

(6) Address: Romeinse straat 14, 3001 Leuven, Belgium

(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 21-10134.

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

EN IEC 60079-0:2018; EN IEC 60079-7:2015/A1:2018-01; EN 60079-18:2015; 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 eb mb IIC Gb

II 2 D Ex tb mb IIIC Db

ZSEx001e c

Konformitätsbewertungsstelle Sektor Explosionsschutz Braunschweig, March 22, 2021
On behalf of PTB:

Dr.-Ing. D. Markus
Direktor und Professor

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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(13) # SCHEDULE

(14) **EU-Type Examination Certificate Number PTB 20 ATEX 1008 U, Issue: 1**

(15) Description of Product

The JBx-100-xx-xx and T-100 Connection box series is a connection system for electrical trace heating systems. The JBx-100-xx-xx Connection box series is subdivided in four different versions (JBS-100-xx-xx, JBM-100-xx-xx and T-100). This junction box series is mounted on an integrated pipe stand for the connection of electrical heating cables to the mains supply or to provide a splice between 2 or 3 heating cables. The different models of the series include options such as: boxes equipped with an offshore plate (earth plate) and boxes with an optional light module and lens. Another part of the Connection box series is JBU-100-xx-xx. This version has the same features, but is mounted directly on the pipeline with a support bracket instead of the pipe stand.

Product type JBS-100-xx-xx

The junction box is installed on an integral pipe support. Inside the JBS-100-xx-xx junction box there is installed one DIN rail on which are installed a number of certified terminals. Additional terminals can be added to allow an external thermostat to be connected. The junction box is designed to connect one heating cable to one power cable (with or without thermostat). Power cables are fed in the junction box by means of a hole in the sidewall of the box and a certified cable gland.

Product type JBM-100-xx-xx

The junction box is installed on an integral pipe support. The JBM-100-xx-xx junction box is designed to accommodate up to a maximum of three heating cables. Therefore, there are three pairs of certified terminals provided. Occasionally more terminals can be installed to support daisy chaining of the power supply. The power cable will be fed in the box via a hole in the sidewall of the box and a certified cable gland. Additional strain relief is provided for the heating cables. The strain relief is avoiding that the heating cables will slip when pulled.

Product type JBU-100-xx-xx

The JBU-100-xx-xx is not installed on an integral pipe support. The junction box can be installed on a stable structure such as a pipe rack; a wall via the M6 screws or can be installed via an optional support bracket directly on the pipe. The junction box is designed to accommodate up to a maximum of four heating cables to the mains supply. The electrical connections are established by means of terminals that are installed on a DIN rail inside the junction box.
Alternatively, the JBU type boxes can be used as a marshalling box for power and control cables. Use glands that are suitably certified for the area and that meet the dimensions of the cable.

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SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 20 ATEX 1008 U, Issue: 1

Product type T-100
The T-100 is a box used as a connection (Splice) box for connecting up to maximum 3 heating cables. The Box is installed on a pipe stand providing the entries and protection for the installed heating cables. Additional strain relief is provided for the heating cables. The strain relief is avoiding that the heating cables will slip when pulled. The connection between the conductors of the heating cables is established via ferrules. Once installed the conductors are electrically isolated using protective caps made out of temperature resistive silicone.

Nomenclature

JB	x	-	100		-	xx	-	xx
	1		2			3		4

1	S	JBS – for connection of one heating cable
	M	JBM – for connection of up to three heating cables.
	U	JBU – universal
2	100	Above installation
3	A	version with unthreaded holes
	L	model with optional Light module
	E	version with threaded metric holes
	P	model with optional off shore plate
	D	model with optional drain plug
4	E	version with threaded metric holes
	A	version with unthreaded holes
	P	model with optional off shore plate

Technical data

Ambient temperature range	Standard version	-55°C to +56°C
	With pilot lamp	-40°C to +40°C
Max. number of heating cables	JBS-100-xx-xx	1
	JBM-100-xx-xx	3
	JBU-100-xx-xx	3 (4 without power cable)
	T-100	3
Standard number of terminals*	JBS-100-xx-xx	L+N+PE
	JBM-100-xx-xx	2xL + 2xN + 2xPE
	JBU-100-xx-xx	2xL + 2xN + 2xPE

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SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 20 ATEX 1008 U, Issue: 1

	T-100	-
Max. wire cross section	JBS-100-xx-xx	0.5 mm² to 10 mm²
	JBM-100-xx-xx	0.5 mm² to 10 mm²
	JBU-100-xx-xx	0.5 mm² to 10 mm²
	T-100	max. 3.3 mm²
Rated voltage**	Depends on the heating cable type used	
	BTV1, QTVR1, XTV1, KTV1, HTV1	max. 120 V
	BTV2, QTVR2, XTV2, KTV2, HTV2	max. 277 V
	VPL1	max. 120 V
	VPL2	max. 230 / 254 V
	VPL4 + FHPC	max. 480 V
Rated current	JBS-100-xx-xx	max. 53 A
	JBM-100-xx-xx	max. 53 A
	JBU-100-xx-xx	max. 53 A
	T-100	max. 40 A

* More terminals are permitted as long as the total current trough the enclosure is not exceeding 40A

**subject to protection and max. permissible rated current, max. permissible temperature of the surface to be heated; see data sheets and operating instructions of the manufacturer.

Notes for manufacturing

1. The temperature accepted as a maximum for the surface to be heated (tube temperature) shall be determined on the basis of the specific performance category, the max. admissible operating temperature of the parallel strip heaters, the voltage rating and the max. admissible current carrying capacity.
2. Applications for which heat-resistant incoming cables incl. cable glands from metal have to be used, have to be specified by the manufacturer and must be compiled with the installer/user.
3. Restrictions regarding the use of type JBS-100-L-x, JBM-100-L-x and JBU-100-L-x (with pilot lamp) have to be specified by the manufacturer and must be complied with the installer/user.
4. The parallel strip heaters, type VPL and FHPC, have to be installed so that their cold ends start outside the terminal box.
5. If JBU-100-xx-xx with voltage infeed is installed, an adequate heat-resistant feeder and screwed metal glands, incl. gasket, must be used at 40 °C < Ta < 56 °C. For the screwed

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metal glands, incl. gasket a separate IECEx Certificate must have been issued and they must have been verified by nVent Thermal.

6. For heating cables, certified nVent Thermal glands of type C25-100-METAL must be used at 40 °C < Ta < 56 °C.
7. The version of the connection box with a drain plug must be suspended on the pipe to ensure proper function.

(16) Test Report PTB Ex 21-10134

(17) Specific conditions of use

Alternative strip heaters must not be used, unless the manufacturer's approval has been obtained.

(18) Essential health and safety requirements

Met by compliance with the aforementioned standards.

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB:

Braunschweig, March 22, 2021

Dr.-Ing. D. Markus
Direktor und Professo

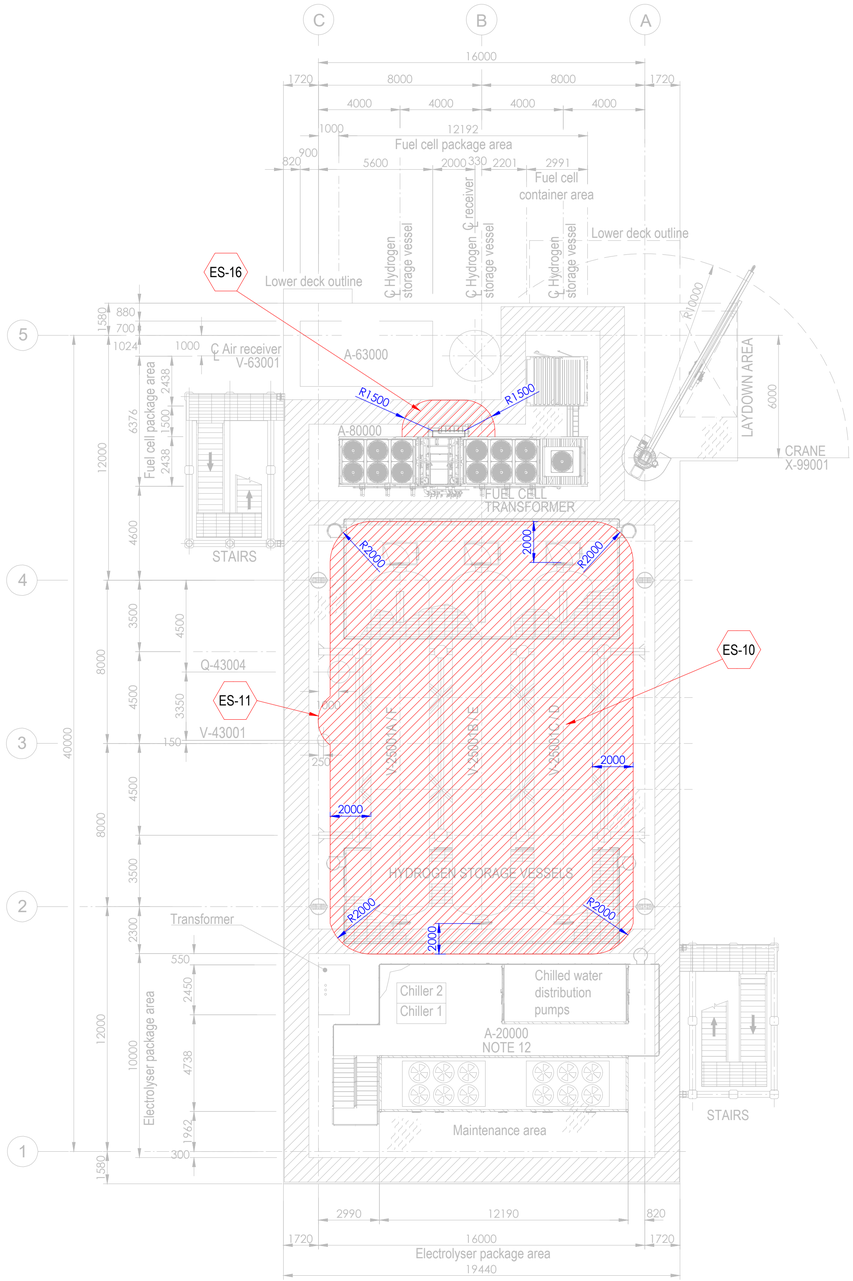
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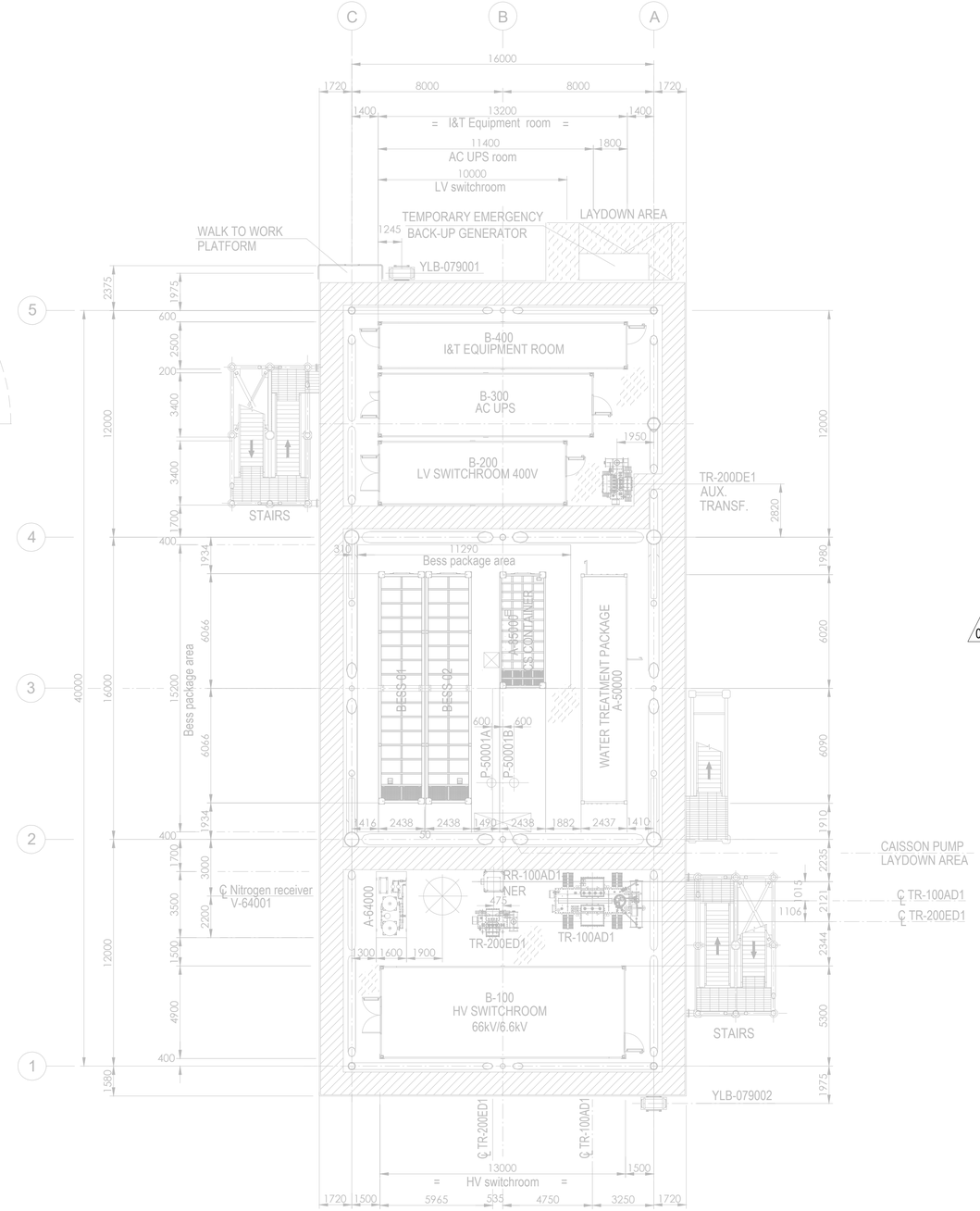
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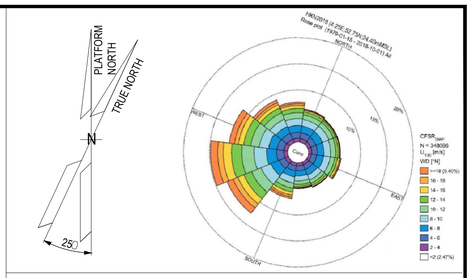
PLAN ON UPPER DECK
EL+30.310 T.O.S.



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

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

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



NOTES

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

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

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

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

CROSSWIND

ROSETTI MARINO

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

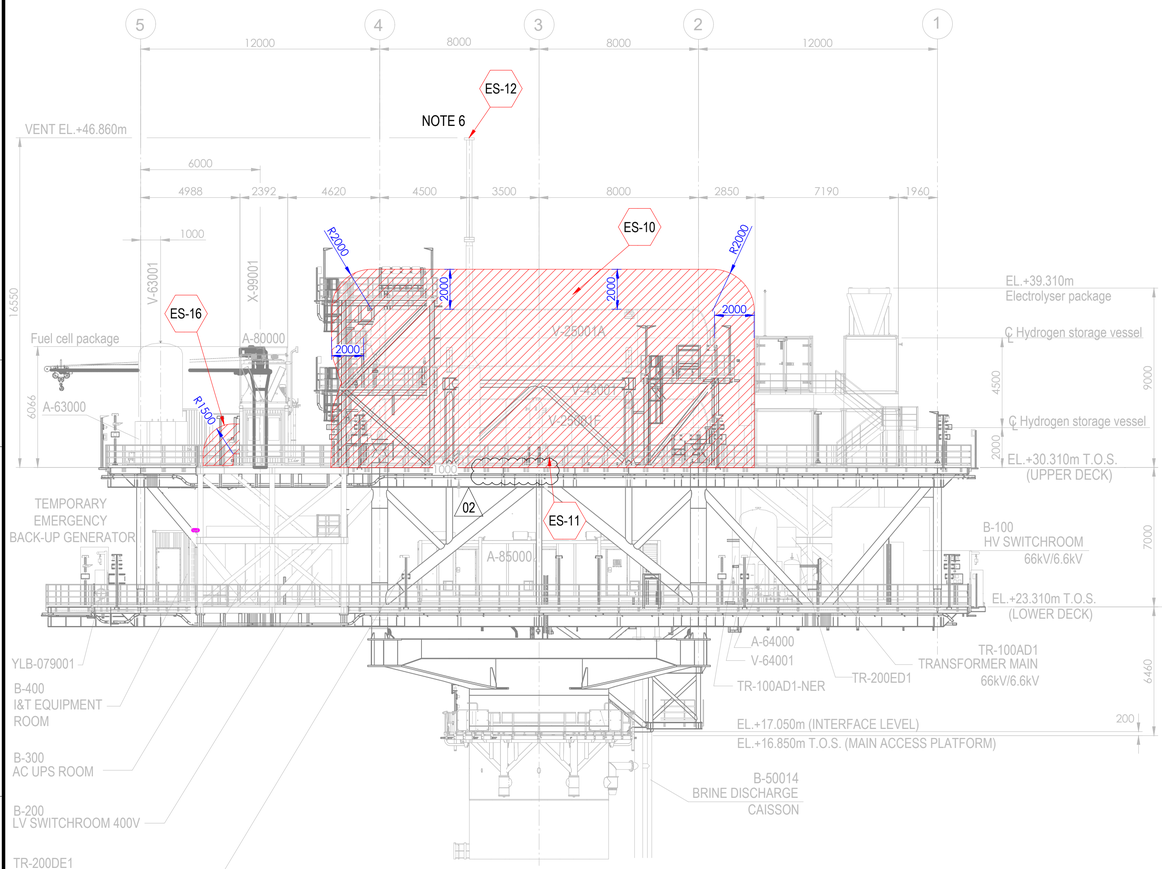
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

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

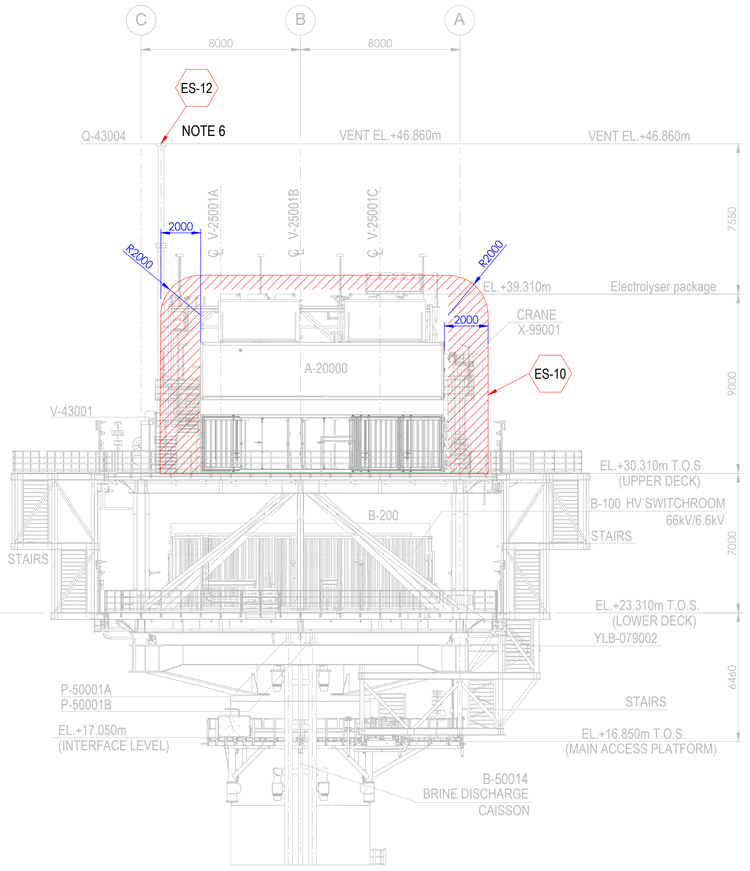
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

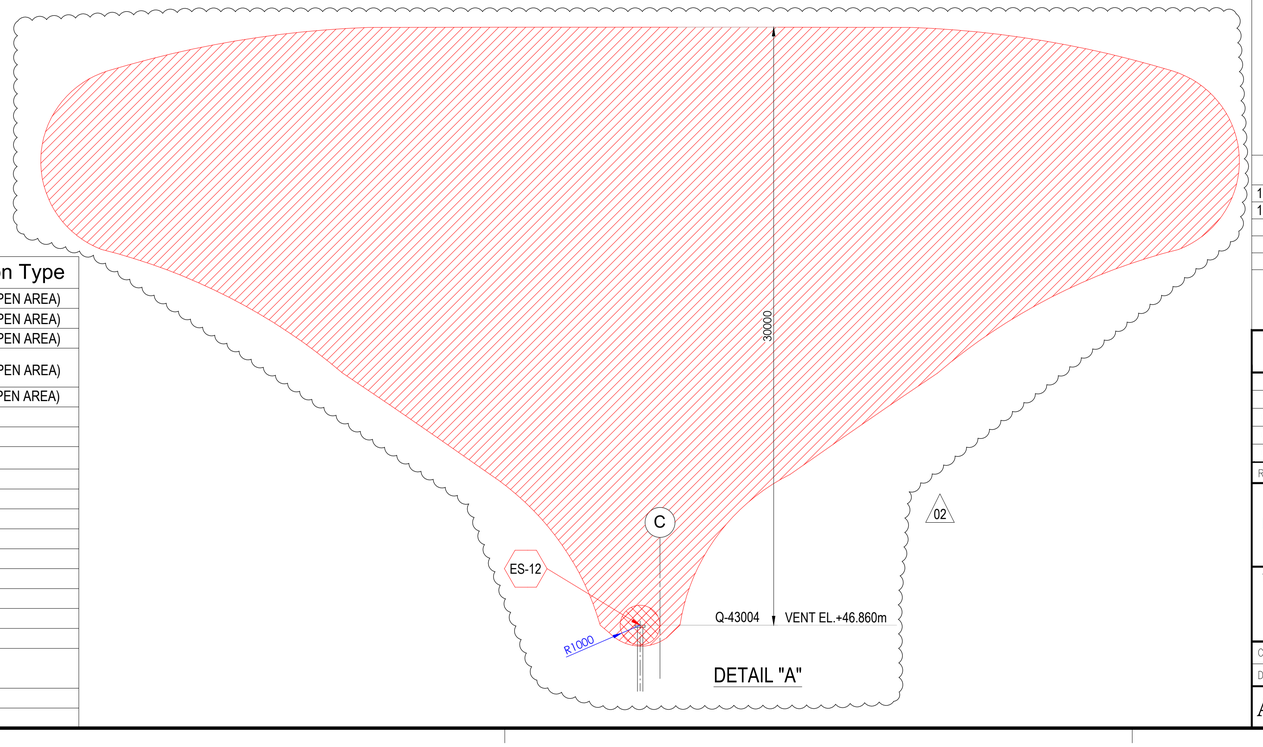


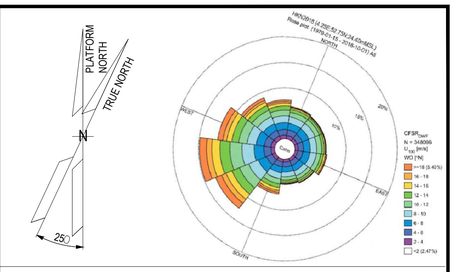
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

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





NOTES

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

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

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

CROSSWIND

ROSETTI MARINO

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

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

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

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

ITEM	Tag	ETB-200N1-17-L1-05	: TRACE HEATING - PROCESS LINES - (WW LINES) 43-LT-001, Hot JB			Dwg	123A90-DDL-EL-DL-20140
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10004608	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.**		829939-000			
Manufacturer	nVent			**Model**		JBM-100-E			
Cert No.	PTB20ATEX1008U			**Equipment Ambient Temp.**		-40°C to +56°C			
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex eb	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	T6

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	OK	
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	ETB-200N1-17-L1-05	: TRACE HEATING - PROCESS LINES - (WW LINES) 43-LT-001, Hot JB			Dwg	123A90-DDL-EL-DL-20140
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10004608		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	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	NA	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	NA	
52	Flame path are clean and undamaged	x	NA	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	OK	
60	Power conductors are not bunched together causing possible hot spots	x	OK	
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	ETB-200N1-17-L1-05	: TRACE HEATING - PROCESS LINES - (WW LINES) 43-LT-001, Hot JB			Dwg	123A90-DDL-EL-DL-20140
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10004608		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

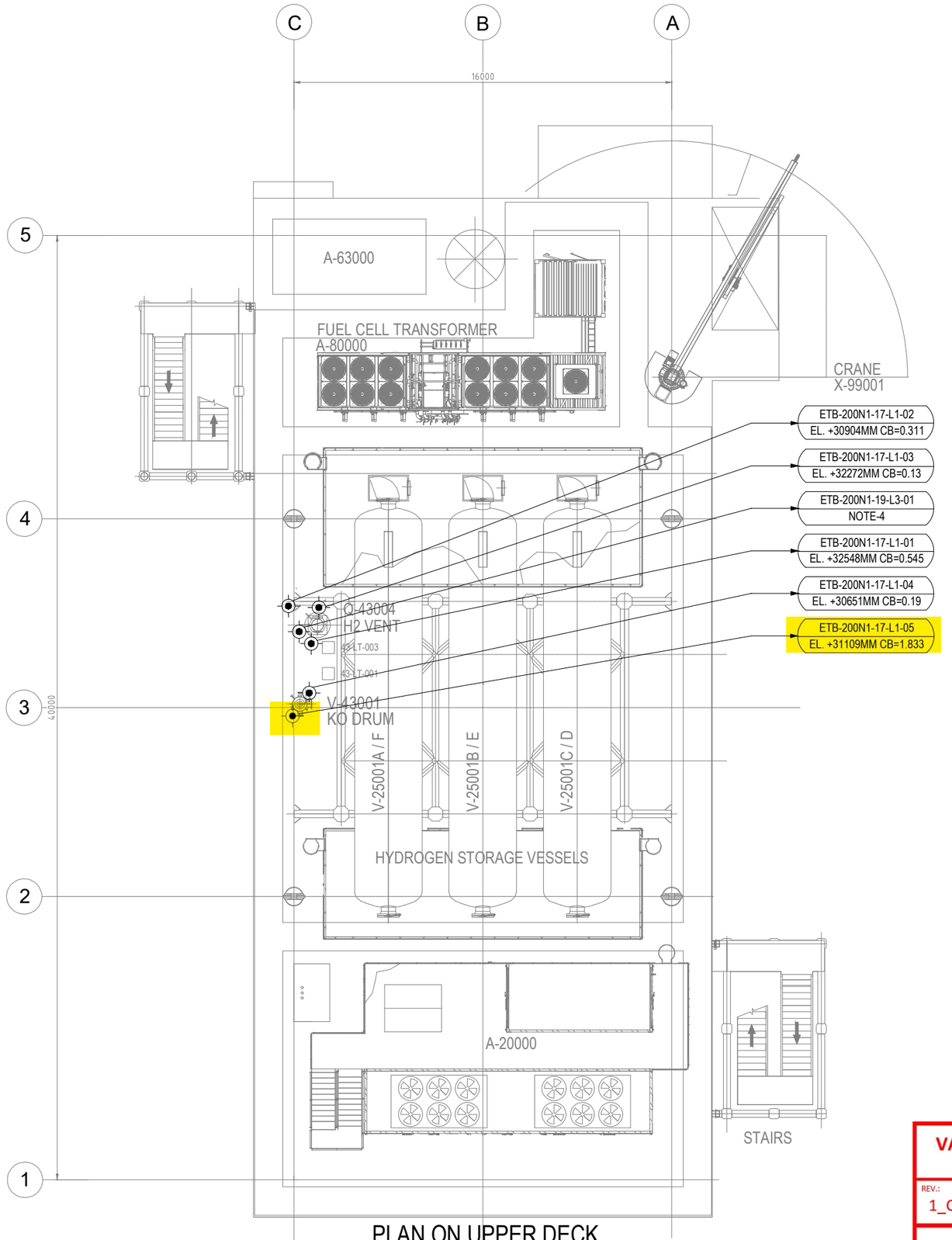
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

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

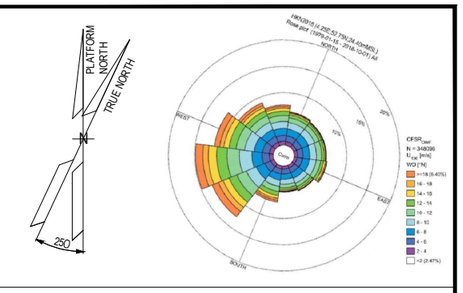
Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-05	2025-02-20	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-05T10:19:53.971Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-20T15:20:57.577Z	

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

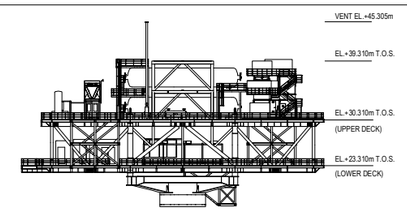
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_C	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 2of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

CAD FILENAME: PIT240024_DD02_3001_001_02.dwg

HEAT TRACING DATA

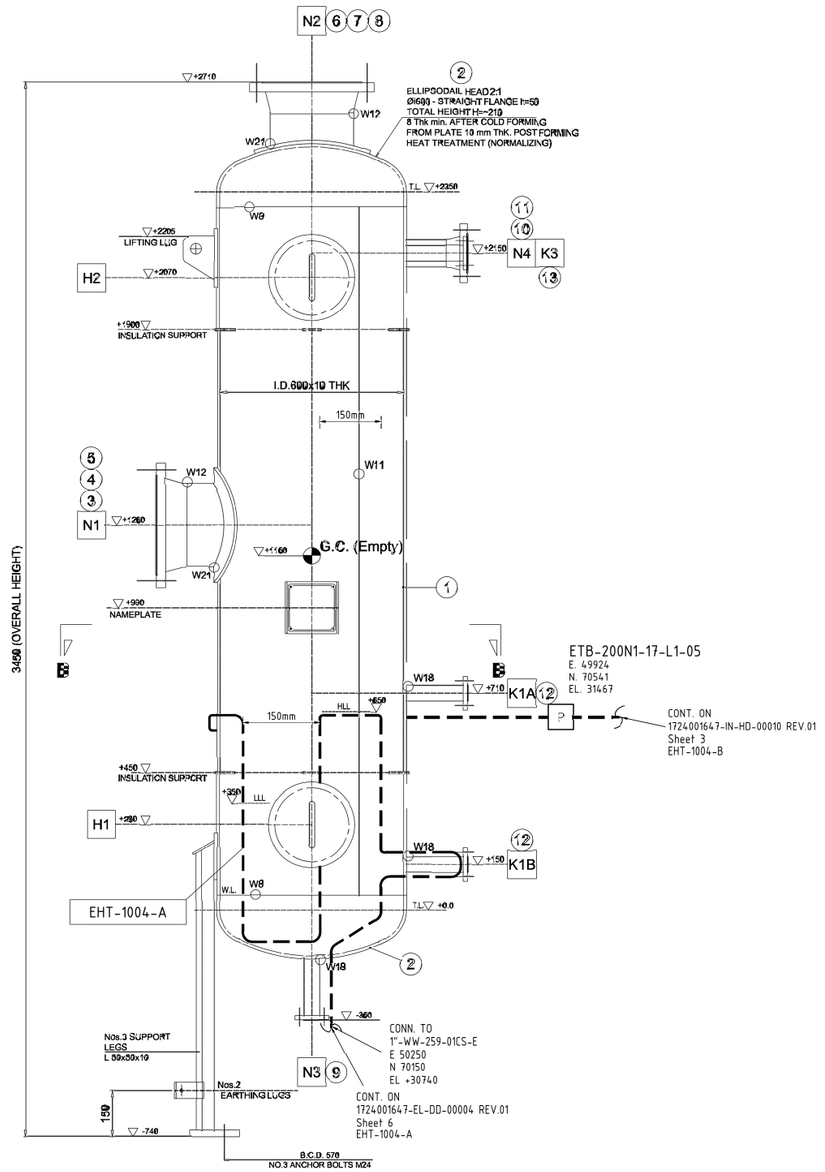
HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	HEATER LENGTH (m)	HEATED AREA (m^2)	HEATER SPACING (mm)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W)	POWER OUTPUT (W/m)	SHEATH TEMPERATURE (°C)
EHT-3001-A	EQUIPMENT	3BTV2-CT	1x5.8	0.72	150	0.5	80	80	66	13.9	85
					TOTALS	0.5	80				

DESIGN PARAMETERS

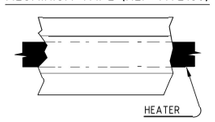
CIRCUIT NUMBER	3001	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	11°C	INSULATION TYPE	RW/MF 1.2015
MAX. EXPOSURE TEMP.	11°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	100°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

COMPONENT BILL OF MATERIALS

CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	5.8	m	Raychem Self-Regulating Heating Cable
JBM-100-E	1	each	Integrated Junction Box, Multiple-Entry, Cold-Applied, ATEX
ATE-180	0.32	roll	Fixing tape (aluminium, 55m/roll)
LAB-I-01	1	each	Warning Label - English
PSE-090	2	each	Pipe Strap for 1.1/4" to 3" (40-90mm)



ALUMINIUM TAPE (REF: ATE180)



SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

EQUIPMENT NUMBERS	REFERENCE DRAWINGS / DOCUMENTS
V-43001	

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.

CROSSWIND

ROSETTI MARINO

nVent RAYCHEM TRACER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
02	20/01/2025	ISSUED FOR REVIEW	ADU	AMI	GPI
01	25/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING EQUIPMENT

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-EL-DD-00004	10/10	02

A1

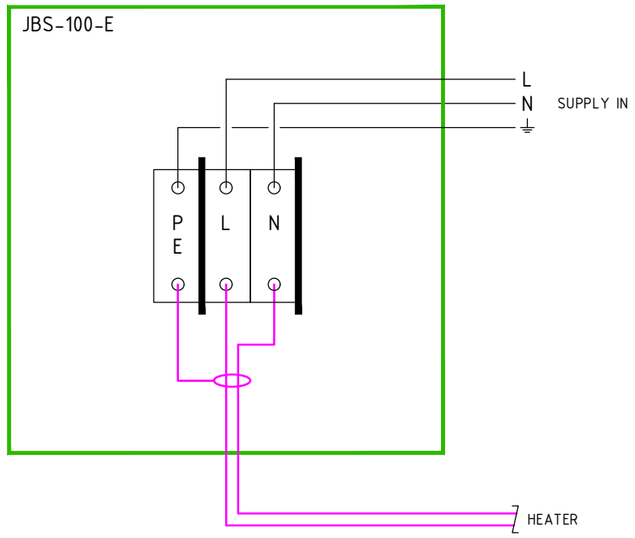
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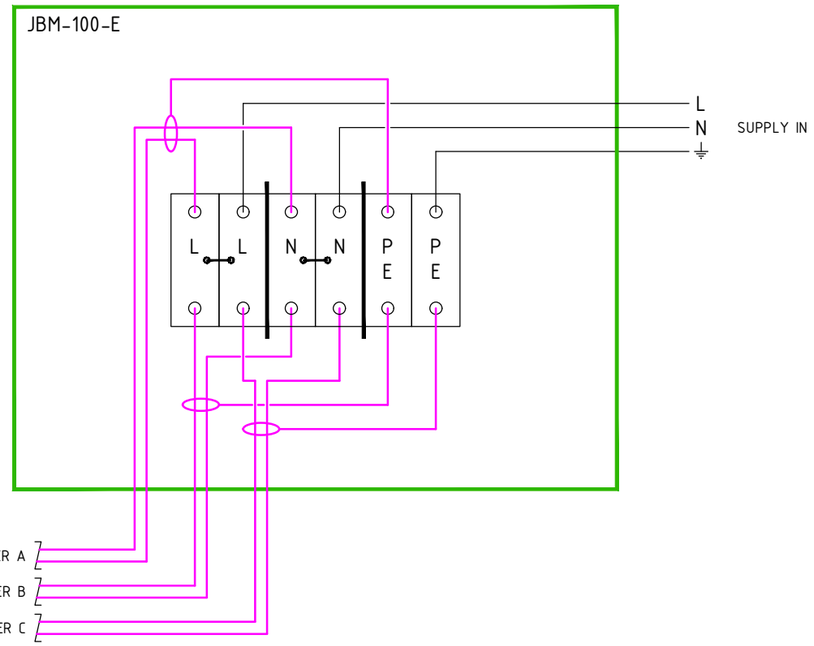
GENERAL INFORMATION:

1. JBS-100-E IS DESIGNED TO CONNECT POWER TO ONE BTV, QTVR, XTV, KTV, HTV OR VPL EHT CABLE.
2. THIS KIT INTEGRATES THE FUNCTIONS OF BOTH CONNECTION KITS AND INSULATION ENTRIES.
3. THE STAND CONNECTED TO THE BOTTOM OF THE BOX PROTECTS THE HEATING CABLE AND ALLOWS FOR UP TO 100mm (4") THERMAL INSULATION.

TECHNICAL BRIEF:

- 2 x M25 THREADED ENTRIES
- 1 x M25 STOPPING PLUGS
- 1 x M25 POWER CABLE GLAND





REV.	DATE	DESCRIPTION	BY	CHK	APP
--	--	--	--	--	--
--	--	--	--	--	--
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	08/03/2024	ISSUED FOR INFORMATION	LJB	E-C	ZS

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TITLE: TYPICAL CONNECTION OF A JBS-100-EP SINGLE ENTRY JUNCTION BOX

PREPARED BY	-.---	LANG.	SCALE
LEAD ENGINEER	-.---	en	N/A

PROJECT NO.	DRAWING NO.	SHEET	REVISION
PIT240024	1724001647-EL-DG-00005	2/3	01

A3

CAD FILENAME: 1724001647-EL-DG-00006 Rev.03.dwg

CONTROL PANEL REF.:

Q17

MARSHALLING BOX

EJB-200N1-17-L1-01

ETB-200N1-17-L1-04 — P — EHT-1004-A — P — EHT-1004-B — ETB-200N1-17-L1-05

ETB-200N1-17-L1-02 — P — EHT-1005-A

ETB-200N1-17-L1-03 — P — EHT-1006-A

ETB-200N1-17-L1-01 — P — EHT-2002-A

SPARE

CIRCUIT NO.	1004	1005, 1006	2002	
C.B. RATING (A)	32	32	32	
START-UP I (A)	2.6	0.4	0.6	
LOAD (W)	383	65	81	
SERVICE	WINTERIZING	WINTERIZING	WINTERIZING	
NOTES FOR THE CIRCUIT	--	--	--	

GENERAL NOTES

CROSSWIND

ROSETTI MARINO

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
03	20/01/2025	ACCEPTED FOR CONSTRUCTION	ADU	AMI	GPI
02	29/11/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	02/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING
ELECTRICAL BLOCK DIAGRAM

SCALE: N/A

DRAWING NO.: 1724001647-EL-DG-00006

SHEET NO.: 4 /4

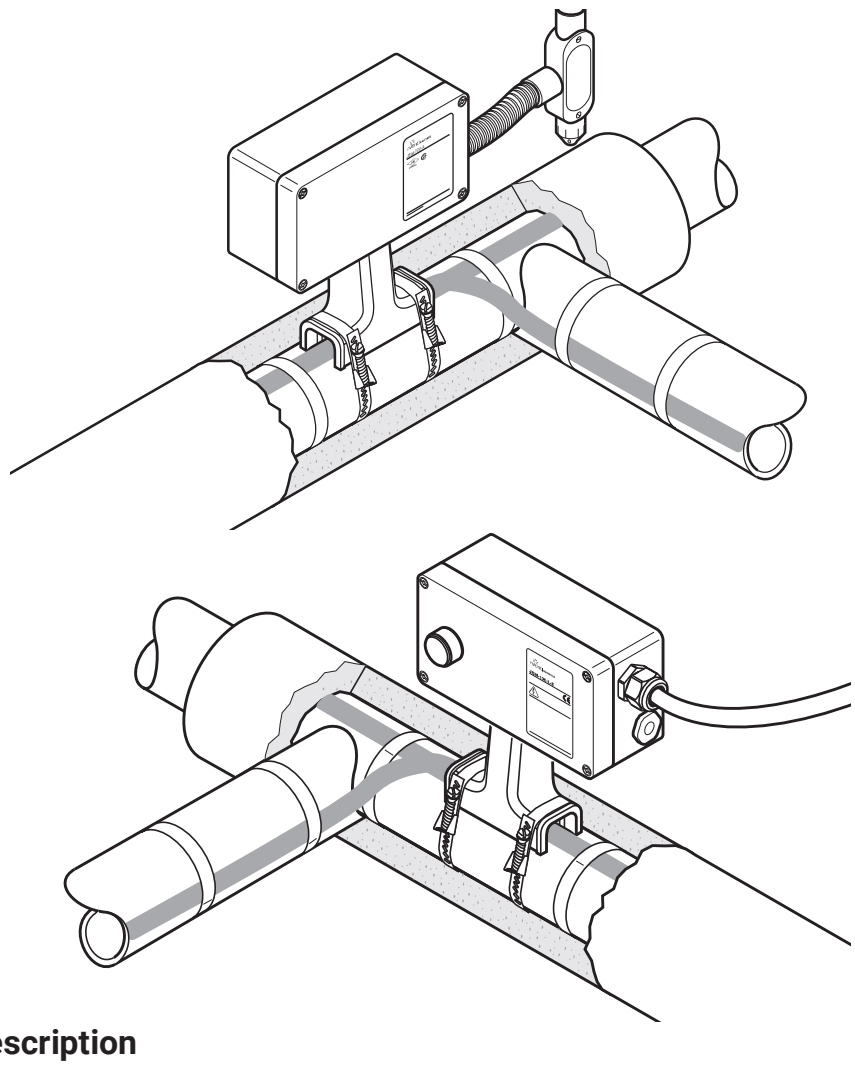
REVISION: 03

JBM-100

CONNECT AND PROTECT

Multiple-Entry Power/Tee Connection with Junction Box

PRODUCT OVERVIEW



The nVent RAYCHEM JBM-100 kit is designed to connect power to up to three nVent RAYCHEM BTV, QTVR, XTVR, HTV, or VPL industrial parallel heating cables.

The JBM-100 integrates the functions of both connection kits and insulation entries. The rugged stand protects the heating cable and allows for up to 100 mm (4") of thermal insulation.

The core sealing boot does not require a heat gun or torch for the installation (no hot work permit necessary). The non-curing sealant (silicone free) in the boot allows easy installation and facilitates maintenance.

Spring-type terminals provide fast installation and safe, reliable, maintenance-free operation. This connection kit significantly reduces installation time.

The kit is offered in three basic versions, customised for local installation practices. All kits are also available as a lighted version. These include a unique light module with a superbright LED that simply plugs into the terminals, and a lens in the lid. This provides indication that power is available in the box. There is also a connection kit with drain plug available.

Description

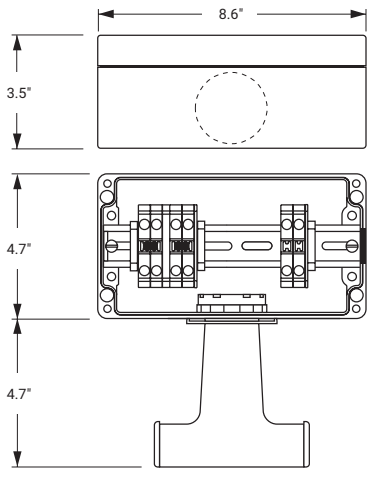
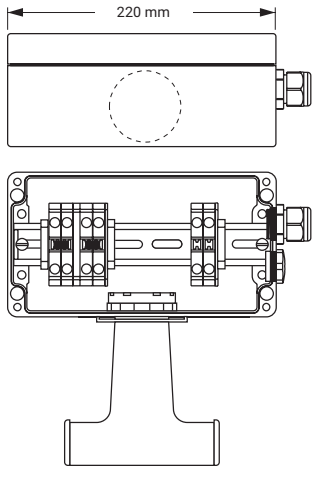
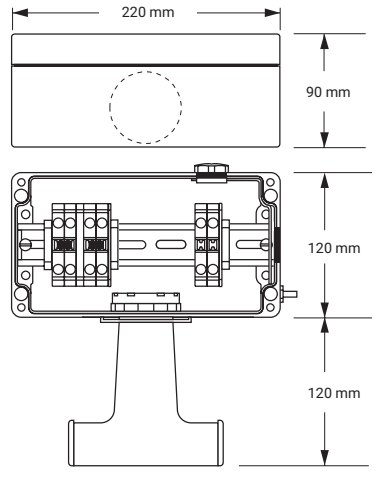
JBM-100-A JBM-100-L-A	JBM-100-E JBM-100-L-E JBM-100-D-E	JBM-100-EP JBM-100-L-EP
This connection system is certified for use in North America and has one ¾" through holes for use with ¾" conduit. One stopping plug is supplied in the kit.	This connection system is certified for use in IEC regions and provides two M25 threaded entries, one stopping plug, and one plastic power cable gland.	This connection system is certified for use in IEC regions and provides two M25 threaded entries, an earthing plate, and an external earthing stud. It is designed for use with armoured cables.

Kit contents

1 junction box with terminals 1 light module (for -L only) 1 stand 3 core sealers 3 green/yellow earthing sleeve 1 ¾" stopping plug 1 polywater sachet 1 spanner 1 strain relief assembly 2 grommet plugs	1 junction box with terminals 1 light module (for -L only) 1 stand 3 core sealers 3 green/yellow earthing sleeve 1 M25 gland for power cable 8-15 mm (temperature range –55°C to +70°C) in diameter 1 M25 stopping plug 1 polywater sachet 1 spanner 1 strain relief assembly 2 grommet plugs 1 ATEX/IECEx Certified drainplug (for JBM-100-D-E only)	1 junction box with terminals, earth continuity plate, and stud 1 light module (for -L only) 1 stand 3 core sealers 3 green/yellow earthing sleeve 2 M25 stopping plugs 1 polywater sachet 1 spanner 1 strain relief assembly 2 grommet plugs

PRODUCT SPECIFICATIONS

Dimensions (nominal)

	JBM-100-A JBM-100-L-A	JBM-100-E JBM-100-L-E JBM-100-D-E	JBM-100-EP JBM-100-L-EP
			

Technical details

Heating cable capability	BTV-CR, BTV-CT, QTVR-CT, XTVR-CT, HTV-CT, VPL-CT		
Ingress protection	IP66	IP66	IP66
Entries	1 x ¾"	2 x M25	2 x M25
Ambient temperature range	–55°C to +56°C (JBM-100-A) –40°C to +40°C (JBM-100-L-A)	–55°C to +56°C* (JBM-100-E and JBM-100-D-E) –40°C to +40°C (JBM-100-L-E)	–55°C to +56°C* (JBM-100-EP) –40°C to +40°C (JBM-100-L-EP)
	*Extra conditions for safe use apply at ambient temperatures >40°C. Temperature resistant power cable and metal glands must be used. Please refer to the certificate or installation instructions for full details.		
Max. pipe temperature	Refer to heating cable specification		
Terminals	Spring-type terminals 4 line, 2 ground	Spring-type terminals 2 phase, 2 neutral, 2 earth	Spring-type terminals 2 phase, 2 neutral, 2 earth
Max. conductor size	8 AWG stranded	10 mm^2 stranded, 10 mm^2 solid	10 mm^2 stranded, 10 mm^2 solid
Max. operating voltage	480 Vac*	480 Vac*	480 Vac*
	*JBM-100-L-E, JBM-100-L-EP and JBM-100-L-A are limited to 277 Vac. Extra conditions for safe use apply for voltages higher than 277 Vac. Please refer to the certificate or installation instructions for full details.		
Max. continuous operating current (***)	53 A	53 A	53 A

(***) For pipe temperature > 150°C and <260°C and XTVR or HTV heating cables, the maximum operating current shall be reduced to maximum 20 A.

Materials of construction

Enclosure, lid, and stand	Electrostatic charge-resistant glass-filled engineered polymer, black	Electrostatic charge-resistant glass-filled engineered polymer, black	Electrostatic charge-resistant glass-filled engineered polymer, black
Lid screws	Stainless steel	Stainless steel	Stainless steel
Lid gasket	Silicone rubber	Silicone rubber	Silicone rubber
Earth continuity plate	N/A	N/A	Steel, zinc plated, and blue chromated

Optional LED indicator light

	JBM-100-A JBM-100-L-A	JBM-100-E JBM-100-L-E JBM-100-D-E	JBM-100-EP JBM-100-L-EP
Colour	Red	Green	Green
Voltage rating	100-277 Vac	100-277 Vac	100-277 Vac
Power consumption	< 1 W	< 1 W	< 1 W

Ordering details (**)

APPROVALS (**)

For use in ordinary and hazardous area Zone 1 and Zone 2 (Gas), Zone 21 and Zone 22 (Dust) and Class I Div 1 & 2

Temperature classification

Temperature classification is defined by the complete system.

Product certification

For certifications in other regions (FM, CSA, IEx etc.), please refer to the installation manual. More details about product certification, approvals and conditions of safe use are available in the installation manual www.nVent.com/RAYCHEM.

ORDERING INFORMATION

Power connection

Part Description (**)	JBM-100-A	JBM-100-E	JBM-100-EP
PN (Weight)	179935-000 (4.3 lb)	831519-000 (1.9 kg)	986415-000 (2.1 kg)

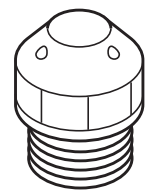
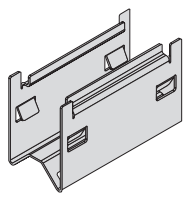
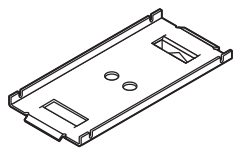
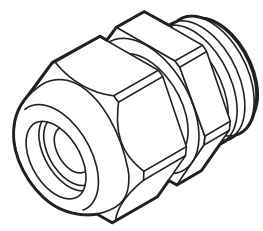
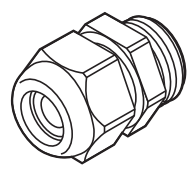
Power connection with light

Part Description	JBM-100-L-A	JBM-100-L-E	JBM-100-L-EP
PN (Weight)	656081-000 (5.3 lb)	395855-000 (2.3 kg)	300273-000 (2.5 kg)

Power connection with drain plug

Part Description		JBM-100-D-E	
PN (Weight)		1244-021056 (2.1 kg)	

Accessories

Conduit Drain ¾"	Prevents condensate from collecting in the box	
Catalog number	JB-DRAIN-PLUG-3/4IN	
Part Number	278621-000	
Weight	0.074 lb / 36 g	
Junction box standoff	For insulation thickness >120 mm & ≤180 mm *	
Catalog number	JBM-100-STANDOFF	
Part Number	P000003624	
Weight	0.599 lb / 272 g	
* Consider extra pipe strap length 6-9" (150-225 mm) for attachment		
Small pipe adapter	Required for stand on pipes ≤ 1"	
Catalog number	JBM-SPA	
Part Number	D55673-000	
Weight	0.930 lb / 422 g (Bag of 5 adaptors)	
Glands for power cables	Hazardous area approved gland for cables 8-15 mm (temperature range –55°C/70°C)	
Catalog number	GL-55-M25	
Part Number	1244-019083	
Weight	0.016 kg	
Glands for power cables	Hazardous area approved gland for cables 8-17.5 mm (temperature range –20°C/70°C)	
Catalog number	GL-36-M25	
Part Number	1244-019082	
Weight	0.016 kg	

(**) Localized versions may exist with limited approvals and different part numbers. Contact your local sales representative.

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com

Our powerful portfolio of brands:
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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
ELF-200N1-09-L2-25	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-01	Emergency Lighting Fixture	LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-02	Emergency Lighting Fixture	LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-03	Emergency Lighting Fixture	LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-04	Emergency Lighting Fixture	LOWER & UPPER DECK STAIRS	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-05	Emergency Lighting Fixture	LOWER & UPPER DECK STAIRS	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-06	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-07	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-08	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-09	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-10	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-11	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-12	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
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ELF-200N1-10-L3-14	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
EML-200-01	NAV AIDS Main Yellow Lanterns	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547/MNL02	SICE-LXS-YEL-05-1	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EML-200-02	NAV AIDS Main Yellow Lanterns	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547/MNL03	SICE-LXS-YEL-05-1	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EOL-200-01	Obstruction Red LED Lights	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547-MC01	L864-LXS-EX-CAP168-CS2LJS	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EOL-200-02	Obstruction Red LED Lights (MEDIUM INTENSITY)	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547-MC02	L864-LXS-EX-CAP168-CS2LJS	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EOL-200-03	Intermediate Obstruction Red Lights	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547-MC03	L864-LXS-EX-CAP168-CS2LJS	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EOL-200-04	Intermediate Obstruction Red Lights	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547-MC04	L864-LXS-EX-CAP168-CS2LJS	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EPH-200-01	NAV AIDS Photocell	UPPER DECK	1724000775	SICE	SICE	24-881	FTC	ZONE 2	INERIS 02ATEX9006U	1724000775-QC-DB-00017	Ex II 2G - Ex d IIB T4 IP66	-	NAVIGATION AIDS	True	N/A	False	
ESL-200-01	Wave Off Status Light	BELOW LOWER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547/MNL01	SICE-LXS-RED-03-1	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
ETB-200N1-14-L1-01	TRACE HEATING - PROCESS LINES - FEEDER 1 (SWS LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-15-L2-01	TRACE HEATING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-15-L2-02	TRACE HEATING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-16-L3-01	TRACE HEATING - PROCESS LINES - FEEDER 3 (DM LINE) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-17-L1-01	Trace Heating - Process Lines - Feeder 4 (WW LINES) Hot JB	UPPER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-17-L1-02	Trace Heating - Process Lines - Feeder 4 (WW LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBM-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-17-L1-03	Trace Heating - Process Lines - Feeder 4 (WW LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-17-L1-04	Trace Heating - Process Lines - Feeder 4 (WW LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBM-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	HAZARDOUS-AREA_7
ETB-200N1-17-L1-05	Trace Heating - Process Lines - Feeder 4 (WW LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBM-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	HAZARDOUS-AREA_7
ETB-200N1-19-L3-01	TRACE HEATING - FEEDER 6 (H2 VENT)	UPPER DECK	1724000887	Encore Thermoengineering	nVent	5020019	ETS-05	Zone 2	Baseefa13ATEX0137 Issue 6	1724000887-MAC-DG-00007	II 2(1)G Ex eb ia mb [ia Ga] IIC T5 Gb - 40ºC ≤ Ta ≤ +60ºC II 2D Ex tb IIIC T100ºC Db	N/A	Hydrogen Vent	True	N/A	False	HAZARDOUS-AREA_6
ETB-200N1-20-L1-01A	Trace Heating - Feeder 7 (SEA WATER PUMPS)	P-50001A (LOWER DECK)	1724000936	PCM Group	THERMON	N/A	HTSX 15-2 OJ	Zone 1 IIB T3	FM 12ATEX0014X	1724000936-MAC-DD-00011	II 2G Ex eb IIC T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	True	N/A	True	
ETB-200N1-20-L1-01B	Trace Heating - Feeder 7 (SEA WATER PUMPS)	P-50001B (LOWER DECK)	1724000936	PCM Group	THERMON	N/A	HTSX 15-2 OJ	Zone 1 IIB T3	FM 12ATEX0014X	1724000936-MAC-DD-00011	II 2G Ex eb IIC T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	True	N/A	True	
ETM-200-01	NAV AIDS Battery Bank Temperature Probe	CONTAINER B-300 (LOWER DECK)	1724000775	SICE	TERMICS	626624-010/01	TS-CTL	ZONE 2	TUV IT 13ATEX069X	1724000775-QC-DB-00017	Ex II 2GD - Ex d IIC T6 IP66	-	NAVIGATION AIDS	True	N/A	True	
EVM-200-01	NAV AIDS Visibility meter	UPPER DECK	1724000775	SICE	PHAROS MARINE	713542.24.01	FD-410EX-MINI-OC-M	ZONE 2	ITS 18ATEX103574X	1724000775-QC-DB-00017	Ex II 2G - Ex d IIB T6 IP66	-	NAVIGATION AIDS	True	N/A	True	
H-ETE-200N1-19-L3-01	Self-regulating heat cable	UPPER DECK	1724000887	Encore Thermoengineering	nVent	N/A	XTVR2-CT	Zone 2	XTVR_SGS20ATEX0049X_Iss. 4 1	1724000887-MAC-DG-00007	II 2 GD Ex 60079-30-1 eb IIC T* Gb / Ex 60079-30-1 tb IIIC T***C Db	N/A	Hydrogen Vent	True	N/A	True	
H-ETE-200N1-20-L1-01A	Self-regulating heat cable	P-50001A (LOWER DECK)	1724000936	PCM Group	THERMON	N/A	HTSX 15-2 OJ	Zone 1 IIB T3	FM 10ATEX0058X	1724000936-MAC-DD-00011	II 2G Ex db eb IIC T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	True	N/A	True	
H-ETE-200N1-20-L1-01B	Self-regulating heat cable	P-50001B (LOWER DECK)	1724000936	PCM Group	THERMON	N/A	HTSX 15-2 OJ	Zone 1 IIB T3	FM 10ATEX0058X	1724000936-MAC-DD-00011	II 2G Ex db eb IIC T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	True	N/A	True	
JB-500E8	Interface JB - Water Package	LOWER DECK	1724000448	PSC	STAHL	-	8146/1083	Safe Area	PTB 01 ATEX 1016	1724000448-MAC-DA-00005	II 2 G Ex eb IIC T6 Gb II 2 D Ex tb IIIC T80°C Db	-	A-50000	True	N/A	False	
JB-500F8	Interface JB - Water Package	LOWER DECK	1724000448	PSC	STAHL	-	8146/1051	Safe Area	PTB 01 ATEX 1016	1724000448-MAC-DA-00005	II 2 G Ex eb IIC T6 Gb II 2 D Ex tb IIIC T80°C Db	-	A-50000	True	N/A	False	
NC-200F2A	NAVAID System NCCP - ENCLOSURE A	CONTAINER B-300 (LOWER DECK)	1724000775	SICE	TECHNOR ITALSMEA	24-1141	SB477620	ZONE 13	FIDI 21ATEX 0090X	1724000775-EL-DG-00003	Ex II 2G - Ex e IIC T6 IP66	-	NAVIGATION AIDS	True	N/A	True	
NC-200F2B	NAVAID System NCCP - ENCLOSURE B	CONTAINER B-300 (LOWER DECK)	1724000775	SICE	TECHNOR ITALSMEA	24-1141	EJB-13	ZONE 12	INERIS 00ATEX 0021X	1724000775-EL-DG-00003	Ex II 2G - Ex db IIB+H2 T6 IP66	-	NAVIGATION AIDS	True	N/A	True	
NC-200F2C	NAVAID System NCCP - ENCLOSURE C	CONTAINER B-300 (LOWER DECK)	1724000775	SICE	TECHNOR ITALSMEA	24-1141	EJB-13A	ZONE 11	INERIS 00ATEX 0021X	1724000775-EL-DG-00003	Ex II 2G - Ex db IIB+H2 T6 IP66	-	NAVIGATION AIDS	True	N/A	True	
Y-89-06-THS-001	Twin cup headset for UHF DMR Portable Radio	CONTAINER B-400 (LOWER DECK)	1724000452	Fores	MOTOROLA	627TZD0512	PMLN6333	Zone 2	BS 12 ATEX E 117 X	1724000452-TL-DS-00005	Ex ib IIC T4 Gb	-	N/A	True	NO	True	

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin
Nationales Metrologieinstitut

(1) # EU-Baumusterprüfbescheinigung

(2) Geräte oder Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen - **Richtlinie 2014/34/EU**

(3) EU-Baumusterprüfbescheinigungsnummer

PTB 20 ATEX 1008 U **Ausgabe: 1**

(4) Produkt: Integriertes Begleitheizungs-Anschlusssystem Typ JBx-100-xx-xx und T-100

(5) Hersteller: nVent Thermal Belgium LLC

(6) Anschrift: Romeinse straat 14, 3001 Leuven, Belgien

(7) Die Bauart dieses Produkts sowie die verschiedenen zulässigen Ausführungen sind in der Anlage und den darin aufgeführten Unterlagen zu dieser Baumusterprüfbescheinigung festgelegt.

(8) Die Physikalisch-Technische Bundesanstalt, notifizierte Stelle Nr. 0102 gemäß Artikel 17 der Richtlinie 2014/34/EU des Europäischen Parlaments und des Rates vom 26. Februar 2014, bescheinigt, dass dieses Produkt die grundlegenden Sicherheits- und Gesundheitsanforderungen für die Konzeption und den Bau von Produkten zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen gemäß Anhang II der Richtlinie erfüllt.

Die Ergebnisse der Prüfung sind in dem vertraulichen Prüfbericht PTB Ex 21-10134 festgehalten.

(9) Die grundlegenden Sicherheits- und Gesundheitsanforderungen werden erfüllt durch Übereinstimmung mit

EN IEC 60079-0:2018; EN IEC 60079-7:2015/A1:2018-01; EN 60079-18:2015; EN 60079-31:2014

(10) Falls das Zeichen „X" hinter der Bescheinigungsnummer steht, wird auf besondere Bedingungen für die sichere Anwendung des Produkts in der Anlage zu dieser Bescheinigung hingewiesen.

(11) Diese EU-Baumusterprüfbescheinigung bezieht sich nur auf Konzeption und Prüfung des festgelegten Produkts gemäß Richtlinie 2014/34/EU. Weitere Anforderungen dieser Richtlinie gelten für die Herstellung und das Bereitstellen auf dem Markt. Diese Anforderungen werden nicht durch diese Bescheinigung abgedeckt.

(12) Die Kennzeichnung des Produkts muss die folgenden Angaben enthalten:

II 2 G Ex eb mb IIC Gb

II 2 D Ex tb mb IIIC Db

Konformitätsbewertungsstelle, Sektor Explosionsschutz Braunschweig, 22. März 2021
Im Auftrag

Dr.-Ing. D. Markus
Direktor und Professor

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(13) # Anlage

(14) **EU-Baumusterprüfbescheinigung PTB 20 ATEX 1008 U, Ausgabe: 1**

(15) Beschreibung des Produkts

Die JBx-100-xx-xx und T-100 Anschlusskasten-Serie ist ein Anschlusssystem für elektrische Begleitheizungssysteme. Die Anschlusskastenserie JBx-100-xx-xx ist in vier verschiedene Versionen unterteilt (JBS-100-xx-xx, JBM-100-xx-xx und T-100). Diese Anschlusskastenserie ist auf einem integrierten Rohrträger montiert, um elektrische Heizkabel an das Stromnetz anzuschließen oder um eine Verbindung zwischen 2 oder 3 Heizkabeln herzustellen. Die verschiedenen Modelle der Serie umfassen Optionen wie: Kästen mit einer Offshore-Platte (Erdungsplatte) und Kästen mit einem optionalen Lichtmodul. Die vierte Version der Anschlusskasten-Serie ist JBU-100-xx-xx. Diese Version hat die gleichen Eigenschaften, wird jedoch anstelle des Rohrträgers mit einer Halterung direkt an der Rohrleitung montiert.

Typ JBS-100-xx-xx
Der Anschlusskasten ist auf einem integrierten Rohrträger installiert. Im Inneren des Anschlusskastens JBS-100-xx-xx befindet sich eine DIN-Schiene auf der zertifizierte Klemmen installiert sind. Zusätzliche Klemmen können hinzugefügt werden, um den Anschluss eines externen Thermostaten zu ermöglichen. Der Anschlusskasten ist für den Anschluss eines Heizkabels an ein Stromkabel (mit oder ohne Thermostat) ausgelegt. Die Stromkabel werden im Anschlusskasten durch ein Loch in der Seitenwand des Kastens und eine zertifizierte Kabelverschraubung eingeführt.

Typ JBM-100-xx-xx
Der Anschlusskasten ist auf einem integrierten Rohrträger installiert. Der Anschlusskasten JBM-100-xx-xx ist für die Aufnahme von bis zu maximal drei Heizkabeln ausgelegt. Daher sind drei Paare von zertifizierten Klemmen vorgesehen. Gelegentlich können weitere Klemmen installiert werden, um die Verkettung der Stromversorgung zu unterstützen. Das Stromkabel wird über ein Loch in der Seitenwand des Kastens und eine zertifizierte Kabelverschraubung in den Kasten eingeführt. Für die Heizkabel ist eine zusätzliche Zugentlastung vorgesehen. Die Zugentlastung verhindert, dass die Heizkabel beim Ziehen verrutschen.

Typ JBU-100-xx-xx
Die JBU-100-xx-xx ist nicht auf einem integrierten Rohrträger installiert. Der Anschlusskasten kann auf einer stabilen Struktur wie z.B. einem Rohrgestell, einer Wand über die M6-Schrauben oder über eine optionale Halterung direkt auf dem Rohr installiert werden. Der Anschlusskasten ist so ausgelegt, dass bis zu maximal vier Heizkabel an das Stromnetz installiert werden können. Die elektrischen Verbindungen werden mit Hilfe von Klemmen hergestellt, die auf einer DIN-Schiene im Inneren des Anschlusskastens installiert sind.
Alternativ kann JBU-100-xx-xx als Verteilerkasten für Leistungs- und Steuerkabel verwendet werden. Es dürfen nur Leitungseinführungen verwendet werden, die für den Bereich entsprechend zertifiziert sind und die den Abmessungen des Kabels entsprechen.

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Anlage zur EU-Baumusterprüfbescheinigung PTB 20 ATEX 1008 U, Ausgabe: 1

Typ T-100
Der T-100 ist ein Kasten, der als Anschlusskasten (Verbindungskasten) für den Anschluss von bis zu maximal 3 Heizkabeln verwendet wird. Die Box wird auf einem Rohrständer installiert, der die Eingänge und den Schutz für die installierten Heizkabel bietet. Für die Heizkabel ist eine zusätzliche Zugentlastung vorgesehen. Die Zugentlastung verhindert, dass die Heizkabel beim Ziehen verrutschen. Die Verbindung zwischen den Leitern der Heizkabel wird über Aderendhülsen hergestellt. Nach der Installation werden die Leiter mit Schutzkappen aus temperaturbeständigem Silikon elektrisch isoliert.

Änderungen in Bezug auf vorherige Ausgaben

Aufnahme der Verwendung des selbstregulierenden Parallelheizkabels Typ HTV

Typschlüssel

JB	x	-	100	-	xx	-	xx
	1		2		3		4

1	S	JBS – zur Verbindung von einem Heizkabel
	M	JBM – zur Verbindung von bis zu max. drei Heizkabeln
	U	JBU – Universelle Verbindung
2	100	Aufrechte Installation
3	A	Version mit gewindelosen Bohrungen
	L	Version mit optionalem Lichtmodul
	E	Version mit metrischen Gewindebohrungen
	P	Version mit optionaler Offshore-Platte (Erdungsplatte)
	D	Version mit optionalem Belüftungsstopfen
4	E	Version mit metrischen Gewindebohrungen
	A	Version mit gewindelosen Bohrungen
	P	Version mit optionaler Offshore-Platte (Erdungsplatte)

Technische Daten

Umgebungstemperaturbereich	Standard Version	-55°C to +56°C
	Mit Lichtmodul	-40°C to +40°C
Max. Anzahl der Heizbänder	JBS-100-xx-xx	1
	JBM-100-xx-xx	3
	JBU-100-xx-xx	3 (4 ohne Stromkabel)
	T-100	3

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Anlage zur EU-Baumusterprüfbescheinigung PTB 20 ATEX 1008 U, Ausgabe: 1

Anzahl der Anschlussklemmen*	JBS-100-xx-xx	L+N+PE
	JBM-100-xx-xx	2xL + 2xN + 2xPE
	JBU-100-xx-xx	2xL + 2xN + 2xPE
	T-100	-
Max. Kabelquerschnitt	JBS-100-xx-xx	0.5 mm² bis 10 mm²
	JBM-100-xx-xx	0.5 mm² bis 10 mm²
	JBU-100-xx-xx	0.5 mm² bis 10 mm²
	T-100	max. 3,3 mm²
Bemessungsspannung**	Abhängig vom verwendeten Heizkabeltyp	
	BTV1, QTVR1, XTV1, KTV1, HTV1	max. 120 V
	BTV2, QTVR2, XTV2, KTV2, HTV2	max. 277 V
	VPL1	max. 120 V
	VPL2	max. 230 / 254 V
	VPL4 + FHPC	max. 480 V
Bemessungsstrom	JBS-100-xx-xx	Max. 53 A
	JBM-100-xx-xx	Max. 53 A
	JBU-100-xx-xx	Max. 53 A
	T-100	Max. 40 A

* Weitere Klemmen sind zulässig, solange der Gesamtstrom durch das Gehäuse 40 A nicht übersteigt.

** abhängig von Absicherung bzw. max. zulässigem Bemessungsstrom, max. zulässiger Temperatur der zu beheizenden Oberfläche; siehe hierzu Datenblätter bzw. Betriebsanleitung des Herstellers.

Hinweise zur Herstellung

1. Die maximal zulässige Temperatur für die zu beheizende Fläche (Rohrtemperatur) ist auf der Grundlage der spezifischen Leistungsklasse, der max. zulässigen Betriebstemperatur der Heizbänder, der Nennspannung und der max. zulässigen Strombelastbarkeit zu bestimmen.
2. Anwendungen, für die wärmebeständige Zuleitungen inkl. Kabelverschraubungen aus Metall verwendet werden müssen, sind vom Hersteller anzugeben und vom Errichter/Anwender zusammenzustellen.
3. Einschränkungen bezüglich der Verwendung der Typen JBS-100-L-x, JBM-100-L-x und JBU-100-L-x (mit Kontrollleuchte) sind vom Hersteller anzugeben und vom Installateur/Benutzer zu beachten.

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4. Die Parallelheizbänder vom Typ VPL und FHPC müssen so installiert werden, dass ihre kalten Enden außerhalb des Klemmenkastens beginnen.
5. Wenn JBU-100-xx-x mit Spannungseinspeisung installiert wird, müssen bei 40 °C < Ta < 56 °C eine ausreichende hitzebeständige Einspeisung und Metall-Verschraubungen, inkl. Dichtung, verwendet werden. Für die Metallverschraubungen inkl. Dichtung muss ein separates IECEx-Zertifikat ausgestellt und von nVent Thermal verifiziert worden sein.
6. Für Heizkabel müssen zertifizierte nVent Thermal Verschraubungen vom Typ C25-100-METAL bei 40 °C < Ta < 56 °C verwendet werden.
7. Die Ausführung des Anschlusskastens mit Belüftungsstopfen muss am Rohr aufgehängt werden, um eine einwandfreie Funktion zu gewährleisten.

(16) Prüfbericht PTB Ex 21-10134

(17) Besondere Bedingungen

Die Verwendung von alternativen Heizbändern ohne Freigabe durch den Hersteller ist nicht zulässig.

(18) Grundlegende Sicherheits- und Gesundheitsanforderungen

Erfüllt durch Übereinstimmung mit den vorgenannten Normen.

Konformitätsbewertungsstelle, Sektor Explosionsschutz — Braunschweig, 22. März 2021
Im Auftrag

Dr.-Ing. D. Markus
Direktor und Professor

PHYSIKALISCH-TECHNISCHE BUNDESANSTALT

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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 20 ATEX 1008 U **Issue: 1**

(4) Product: Integrated Heat Tracing Connection System
Type JBx-100-xx-xx and T-100

(5) Manufacturer: nVent Thermal Berlgium NV

(6) Address: Romeinse straat 14, 3001 Leuven, Belgium

(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 21-10134.

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

EN IEC 60079-0:2018; EN IEC 60079-7:2015/A1:2018-01; EN 60079-18:2015; 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 eb mb IIC Gb

II 2 D Ex tb mb IIIC Db

ZSEx001e c

Konformitätsbewertungsstelle Sektor Explosionsschutz Braunschweig, March 22, 2021
On behalf of PTB:

Dr.-Ing. D. Markus
Direktor und Professor

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In case of dispute, the German text shall prevail.

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(13) # SCHEDULE

(14) **EU-Type Examination Certificate Number PTB 20 ATEX 1008 U, Issue: 1**

(15) Description of Product

The JBx-100-xx-xx and T-100 Connection box series is a connection system for electrical trace heating systems. The JBx-100-xx-xx Connection box series is subdivided in four different versions (JBS-100-xx-xx, JBM-100-xx-xx and T-100). This junction box series is mounted on an integrated pipe stand for the connection of electrical heating cables to the mains supply or to provide a splice between 2 or 3 heating cables. The different models of the series include options such as: boxes equipped with an offshore plate (earth plate) and boxes with an optional light module and lens. Another part of the Connection box series is JBU-100-xx-xx. This version has the same features, but is mounted directly on the pipeline with a support bracket instead of the pipe stand.

Product type JBS-100-xx-xx

The junction box is installed on an integral pipe support. Inside the JBS-100-xx-xx junction box there is installed one DIN rail on which are installed a number of certified terminals. Additional terminals can be added to allow an external thermostat to be connected. The junction box is designed to connect one heating cable to one power cable (with or without thermostat). Power cables are fed in the junction box by means of a hole in the sidewall of the box and a certified cable gland.

Product type JBM-100-xx-xx

The junction box is installed on an integral pipe support. The JBM-100-xx-xx junction box is designed to accommodate up to a maximum of three heating cables. Therefore, there are three pairs of certified terminals provided. Occasionally more terminals can be installed to support daisy chaining of the power supply. The power cable will be fed in the box via a hole in the sidewall of the box and a certified cable gland. Additional strain relief is provided for the heating cables. The strain relief is avoiding that the heating cables will slip when pulled.

Product type JBU-100-xx-xx

The JBU-100-xx-xx is not installed on an integral pipe support. The junction box can be installed on a stable structure such as a pipe rack; a wall via the M6 screws or can be installed via an optional support bracket directly on the pipe. The junction box is designed to accommodate up to a maximum of four heating cables to the mains supply. The electrical connections are established by means of terminals that are installed on a DIN rail inside the junction box.
Alternatively, the JBU type boxes can be used as a marshalling box for power and control cables. Use glands that are suitably certified for the area and that meet the dimensions of the cable.

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SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 20 ATEX 1008 U, Issue: 1

Product type T-100
The T-100 is a box used as a connection (Splice) box for connecting up to maximum 3 heating cables. The Box is installed on a pipe stand providing the entries and protection for the installed heating cables. Additional strain relief is provided for the heating cables. The strain relief is avoiding that the heating cables will slip when pulled. The connection between the conductors of the heating cables is established via ferrules. Once installed the conductors are electrically isolated using protective caps made out of temperature resistive silicone.

Nomenclature

JB	x	-	100		-	xx	-	xx
	1		2			3		4

1	S	JBS – for connection of one heating cable
	M	JBM – for connection of up to three heating cables.
	U	JBU – universal
2	100	Above installation
3	A	version with unthreaded holes
	L	model with optional Light module
	E	version with threaded metric holes
	P	model with optional off shore plate
	D	model with optional drain plug
4	E	version with threaded metric holes
	A	version with unthreaded holes
	P	model with optional off shore plate

Technical data

Ambient temperature range	Standard version	-55°C to +56°C
	With pilot lamp	-40°C to +40°C
Max. number of heating cables	JBS-100-xx-xx	1
	JBM-100-xx-xx	3
	JBU-100-xx-xx	3 (4 without power cable)
	T-100	3
Standard number of terminals*	JBS-100-xx-xx	L+N+PE
	JBM-100-xx-xx	2xL + 2xN + 2xPE
	JBU-100-xx-xx	2xL + 2xN + 2xPE

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SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 20 ATEX 1008 U, Issue: 1

	T-100	-
Max. wire cross section	JBS-100-xx-xx	0.5 mm² to 10 mm²
	JBM-100-xx-xx	0.5 mm² to 10 mm²
	JBU-100-xx-xx	0.5 mm² to 10 mm²
	T-100	max. 3.3 mm²
Rated voltage**	Depends on the heating cable type used	
	BTV1, QTVR1, XTV1, KTV1, HTV1	max. 120 V
	BTV2, QTVR2, XTV2, KTV2, HTV2	max. 277 V
	VPL1	max. 120 V
	VPL2	max. 230 / 254 V
	VPL4 + FHPC	max. 480 V
Rated current	JBS-100-xx-xx	max. 53 A
	JBM-100-xx-xx	max. 53 A
	JBU-100-xx-xx	max. 53 A
	T-100	max. 40 A

* More terminals are permitted as long as the total current trough the enclosure is not exceeding 40A

**subject to protection and max. permissible rated current, max. permissible temperature of the surface to be heated; see data sheets and operating instructions of the manufacturer.

Notes for manufacturing

1. The temperature accepted as a maximum for the surface to be heated (tube temperature) shall be determined on the basis of the specific performance category, the max. admissible operating temperature of the parallel strip heaters, the voltage rating and the max. admissible current carrying capacity.
2. Applications for which heat-resistant incoming cables incl. cable glands from metal have to be used, have to be specified by the manufacturer and must be compiled with the installer/user.
3. Restrictions regarding the use of type JBS-100-L-x, JBM-100-L-x and JBU-100-L-x (with pilot lamp) have to be specified by the manufacturer and must be complied with the installer/user.
4. The parallel strip heaters, type VPL and FHPC, have to be installed so that their cold ends start outside the terminal box.
5. If JBU-100-xx-xx with voltage infeed is installed, an adequate heat-resistant feeder and screwed metal glands, incl. gasket, must be used at 40 °C < Ta < 56 °C. For the screwed

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metal glands, incl. gasket a separate IECEx Certificate must have been issued and they must have been verified by nVent Thermal.

6. For heating cables, certified nVent Thermal glands of type C25-100-METAL must be used at 40 °C < Ta < 56 °C.
7. The version of the connection box with a drain plug must be suspended on the pipe to ensure proper function.

(16) Test Report PTB Ex 21-10134

(17) Specific conditions of use

Alternative strip heaters must not be used, unless the manufacturer's approval has been obtained.

(18) Essential health and safety requirements

Met by compliance with the aforementioned standards.

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB:

Braunschweig, March 22, 2021

Dr.-Ing. D. Markus
Direktor und Professo

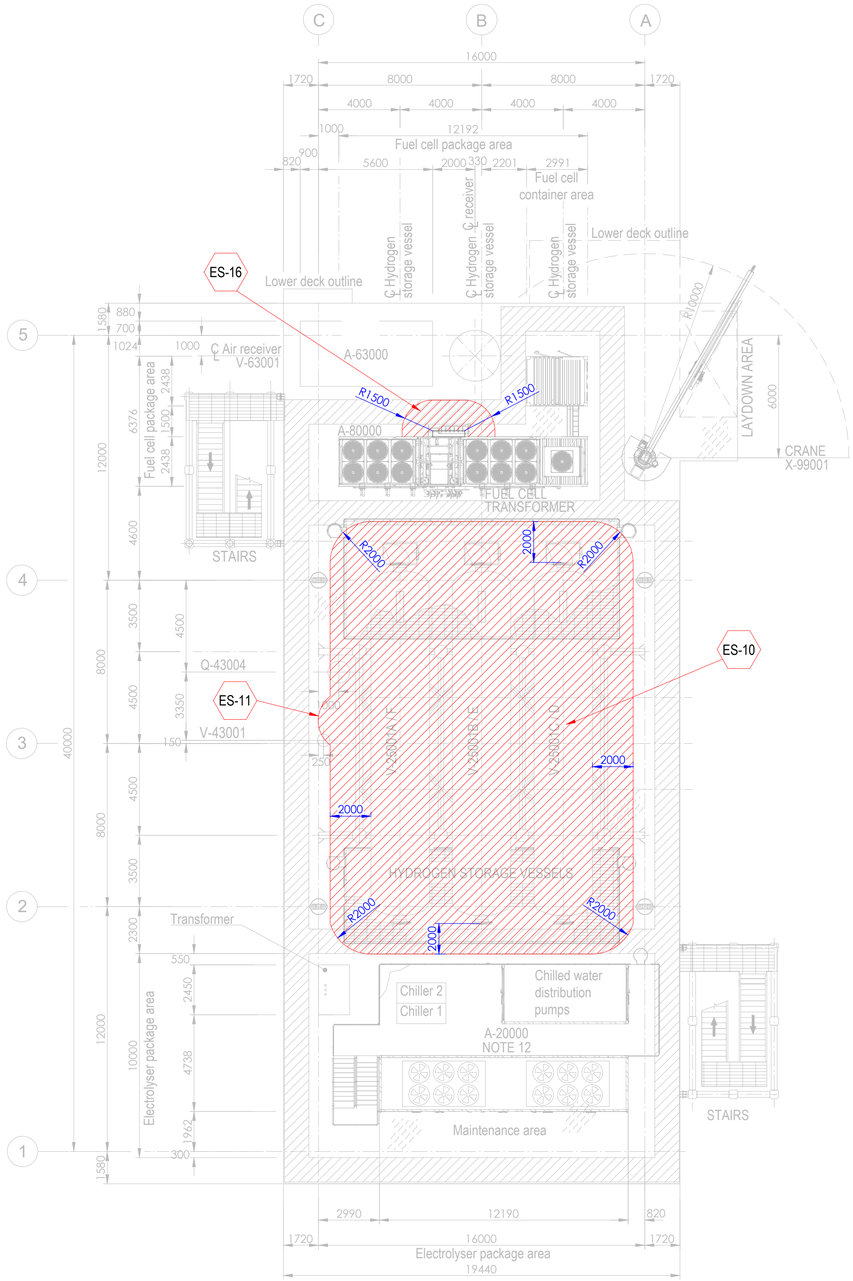
PHYSIKALISCH-TECHNISCHE BUNDESANSTALT

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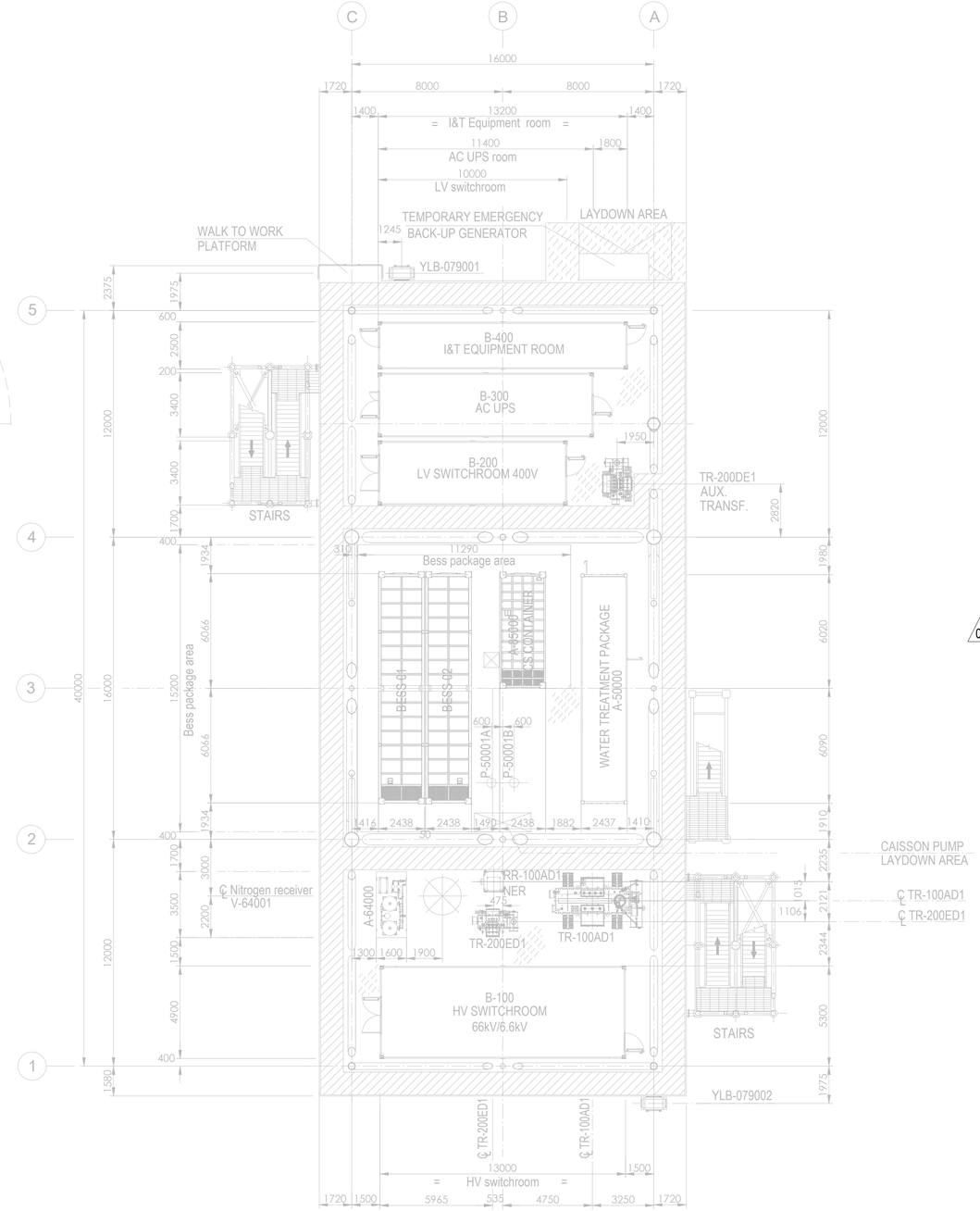
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DRAWING NO. 123A90-DDL-SAF-DL-30022

REV. 02



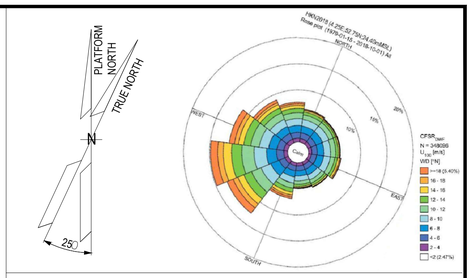
PLAN ON UPPER DECK
EL+30.310 T.O.S.



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

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

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



NOTES

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

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

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

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

CROSSWIND

ROSETTI MARINO

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

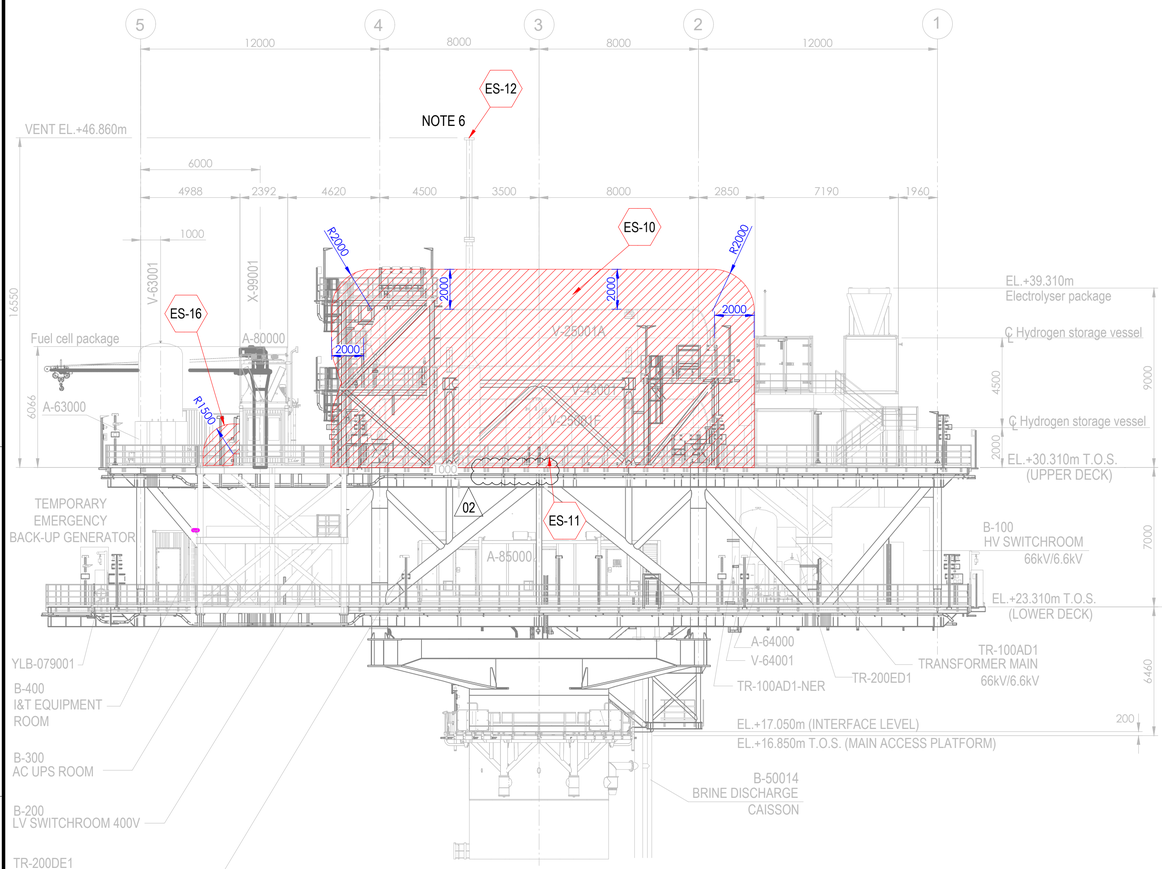
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

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

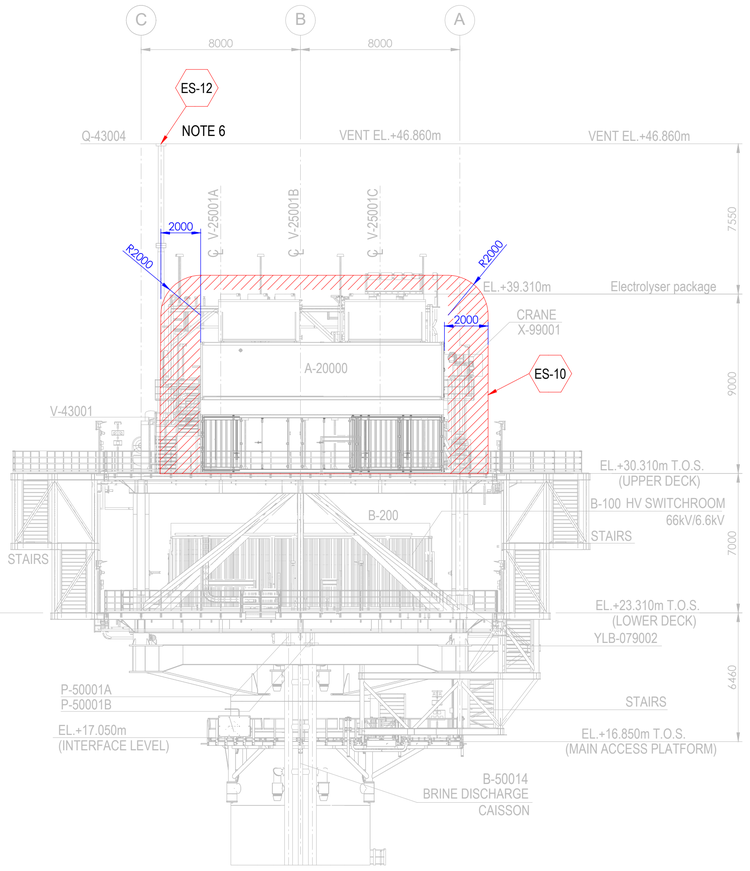
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

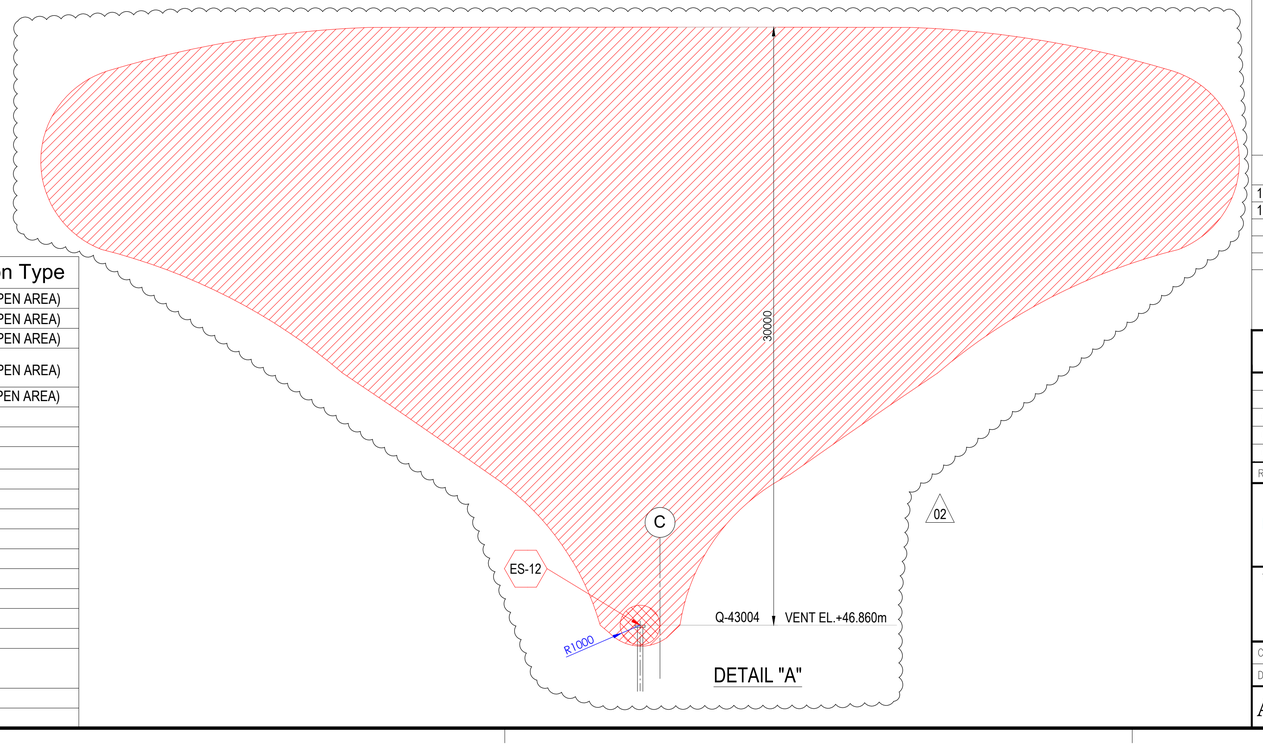


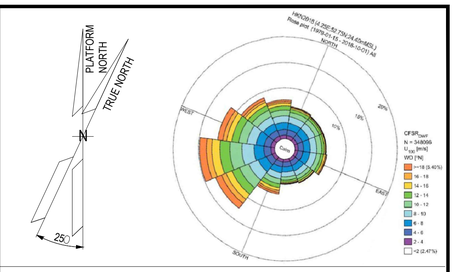
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

Tag No.	Equipment Tag	Description	Material	Ventilation Type
01	P-50001 A/B	SEA WATER LIFT PUMPS	SEA WATER	NATURAL (OPEN AREA)
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06	A-20000	ELECTROLYSER PACKAGE		
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12	B-200	LV SWITCHROOM 400V		
13	B-300	AC UPS EQUIPMENT ROOM		
14	B-400	I&T EQUIPMENT ROOM		
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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

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

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

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

CROSSWIND

ROSETTI MARINO

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

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

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

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

ITEM	Tag	ETB-200N1-19-L3-01	: HEAT TRACING - PROCESS LINES - FEEDER 6 (H2 VENT)	Dwg	123A90-DDL-EL-DL-20140		
	S/Sys	83-65	: Electrical Heat Tracing	Module	LD		
TASK	code	C10004609	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.**	5020019				
Manufacturer	Encore Thermoengineering			**Model**	ETS-05				
Cert No.	Baseefa13ATEX0137 Issue 6			**Equipment Ambient Temp.**	-40°C to +56°C				
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex eb	**EPL**	Gb	**Gas group**	IIC	**Temp class**	T6	**IP Rating**	IP-66

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	OK	
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	ETB-200N1-19-L3-01	: HEAT TRACING - PROCESS LINES - FEEDER 6 (H2 VENT)			Dwg	123A90-DDL-EL-DL-20140
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD
TASK	code	C10004609		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	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	NA	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	NA	
52	Flame path are clean and undamaged	x	NA	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	OK	
60	Power conductors are not bunched together causing possible hot spots	x	OK	
61	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
62	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
63	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
64	The ventilation airflow is not impeded	x	NA	
65	Motor protection devices operate within the permitted tE or tA time limits.	x	NA	
66	Variable voltage/frequency installation complies with documentation	x	NA	

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	ETB-200N1-19-L3-01	: HEAT TRACING - PROCESS LINES - FEEDER 6 (H2 VENT)		Dwg	123A90-DDL-EL-DL-20140	
	S/Sys	83-65	: Electrical Heat Tracing		Module	LD	
TASK	code	C10004609	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

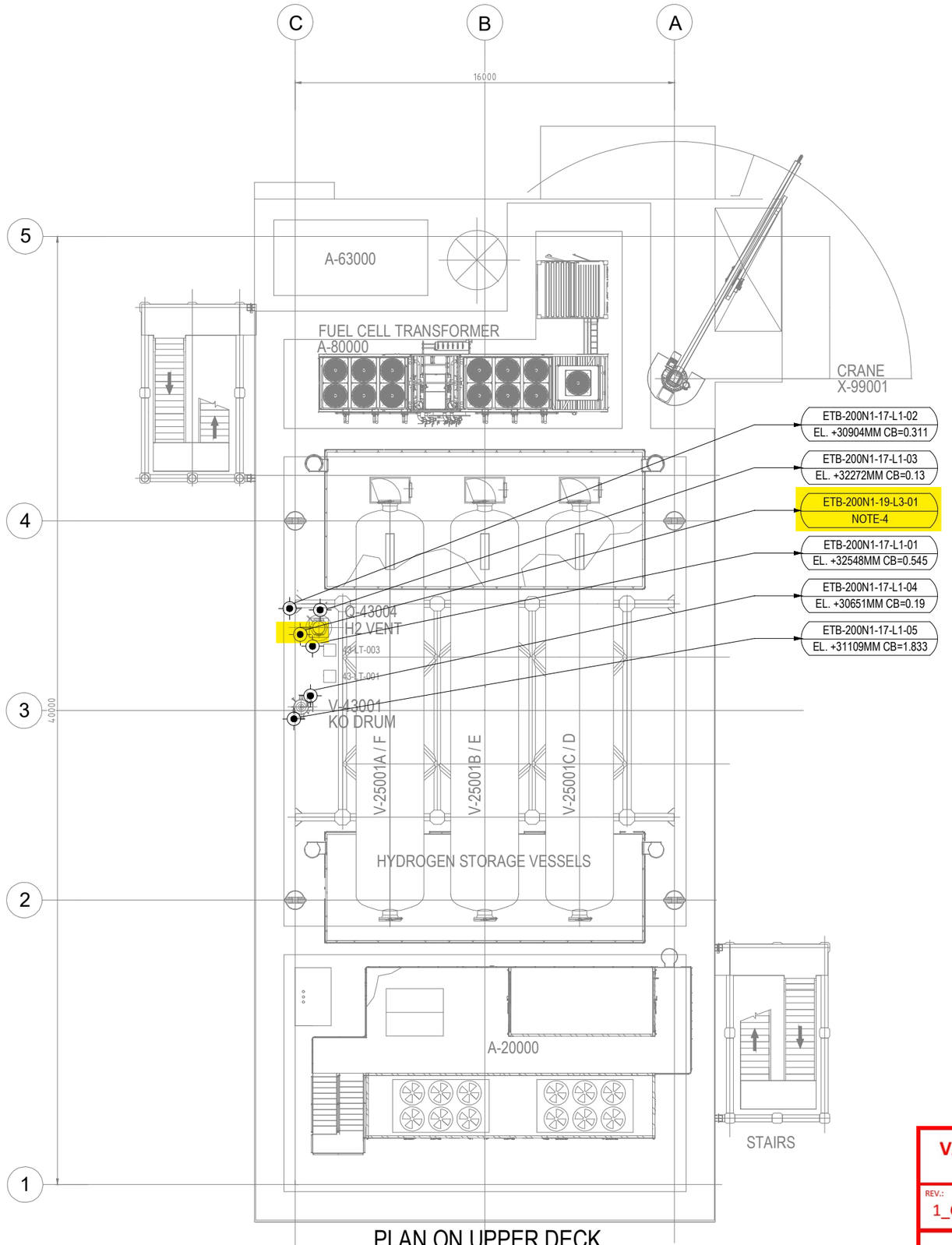
Remarks: Initial inspection should be detailed and carried out before equipment is brought into service as per IEC 60079-17

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

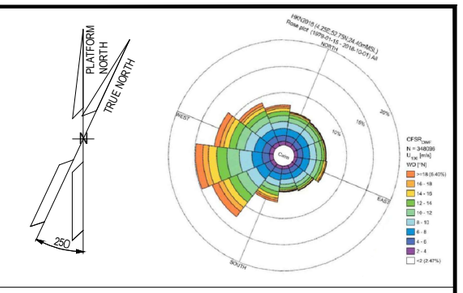
Page 3/3	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-08	2025-03-06	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-08T09:44:45.722Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-03-06T13:28:32.500Z	

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

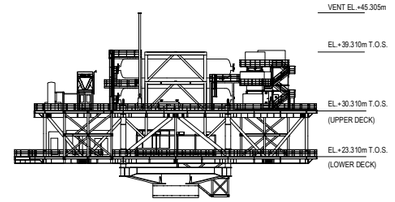
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_C	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 2of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

DRAWING NO. DRAWING_NO.

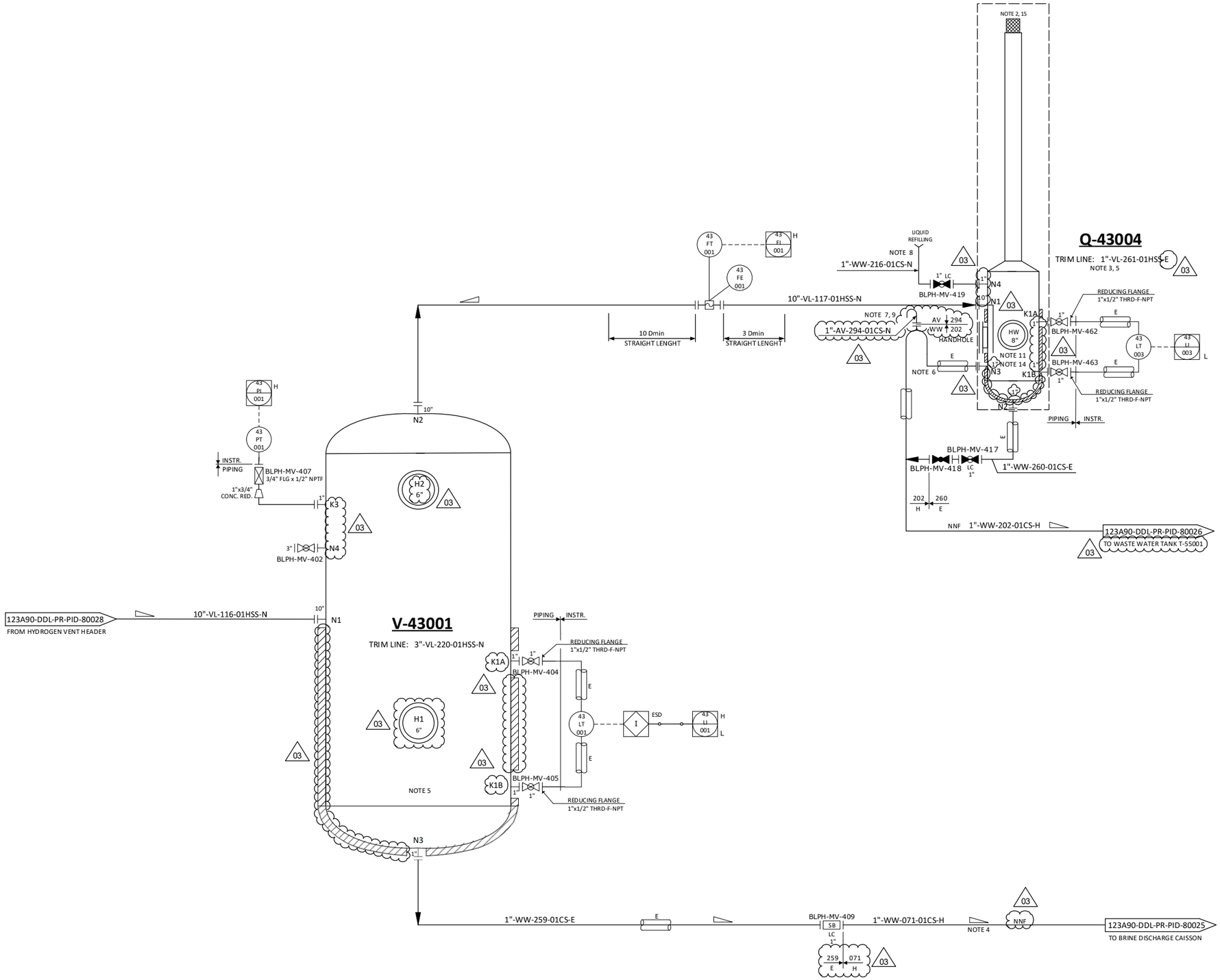
REV. REV

V-43001

HYDROGEN VENT KO DRUM
SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1
SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. (03)
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

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

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

CROSSWIND

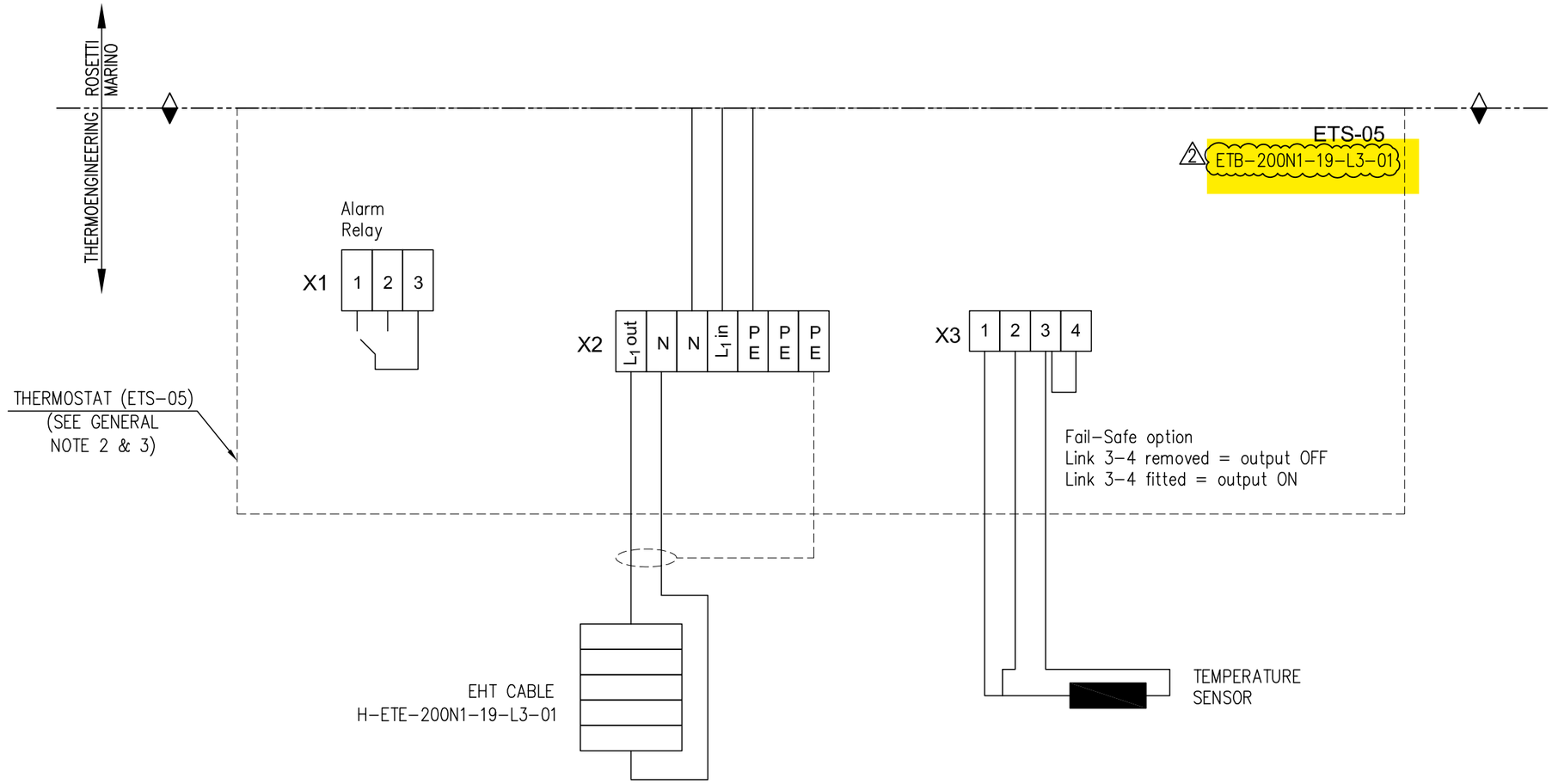
ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80029		SHEET 001 / REV. 03

File Name : FILE_NAME

230 VCA + PE : CUSTOMER POWER SUPPLY
POWER IN CABLE SECTION = 3G6mm²



NOTE:
1. THE SIZE OF THE DISCONNECTOR AND
   THE MTD IS RESPONSIBILITY OF THE CUSTOMER.
2. THE HEAT TRACING START UP CURRENT: 10.1 A

THERMO ENGINEERING — AN ENCORE COMBUSTION COMPANY
CROSSWIND
ROSETTI MARINO

ETE JOB	23-0193
ETE DWG NR.	23-0193-0170

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	13/11/2024	SCB	RV	AL	ISSUE FOR INFORMATION (IFI)
02	28/10/2024	SCB	RV	AL	ISSUE FOR INFORMATION (IFI)
01	10/09/2024	SCB	RV	AL	ISSUE FOR INFORMATION (IFI)
00	12/08/2024	SCB	RV	AL	ISSUE FOR INFORMATION

TITLE : BASE LOAD POWER HUB (BLPH)
WIRING DIAGRAM (JB AND HT)
WIRING DIAGRAM

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

SCALE : NTS

A3

DRAWING NO. 1724000887-MAC-DG-00007

SHEET 003

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1724000887-MAC-DG-00007 Rev. 03

CONNECTION TABLE			
TYPE	QTY	DIMENSION	USER
A	1	M25x1.5	POWER INPUT
B	1	M25x1.5	HEATING CABLE OUTPUT
C	1	M20x1.5	ALARM OUTPUT

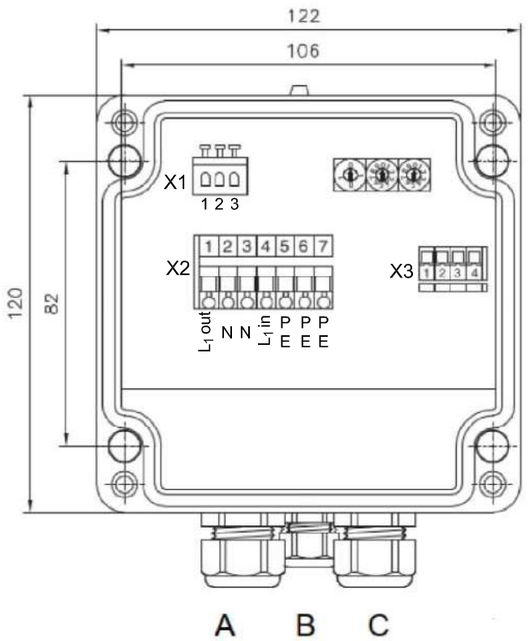
CABLE GLANDS SUPPLIED BY ENCORE

ATEX GRP BOX
IN PROTECTION RATING = 66
COLOR : STD MFR
ALL SIZES ARE IN MM

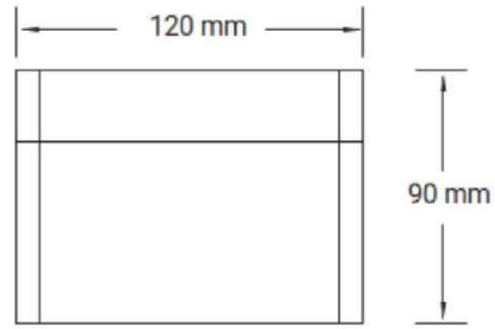
TYPE A:
CABLE GLAND SUITABLE FOR CABLE
POWER SUPPLY TYPE 3G6 mm^2
EXTERNAL DIAMETER 19.4 MM
INTERNAL DIAMETER 14.6 MM

FRONT VIEW

DIMENSIONS ARE IN MM.



SIDE VIEW



03	13/11/2024	SCB	RV	AL	ISSUE FOR INFORMATION (IFI)
02	28/10/2024	SCB	RV	AL	ISSUE FOR INFORMATION (IFI)
01	10/09/2024	SCB	RV	AL	ISSUE FOR INFORMATION (IFI)
00	12/08/2024	SCB	RV	AL	ISSUE FOR INFORMATION
REV.	DATE	DRN	CHKD	APPD	DESCRIPTION

THERMO ENGINEERING AN ENCORE COMBUSTION COMPANY

CROSSWIND

ROSETTI MARINO

ETE JOB	23-0193
ETE DWG NR.	23-0193-0170

TITLE : BASE LOAD POWER HUB (BLPH)
WIRING DIAGRAM (JB AND HT)
HEAT TRACING JB LAYOUT

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

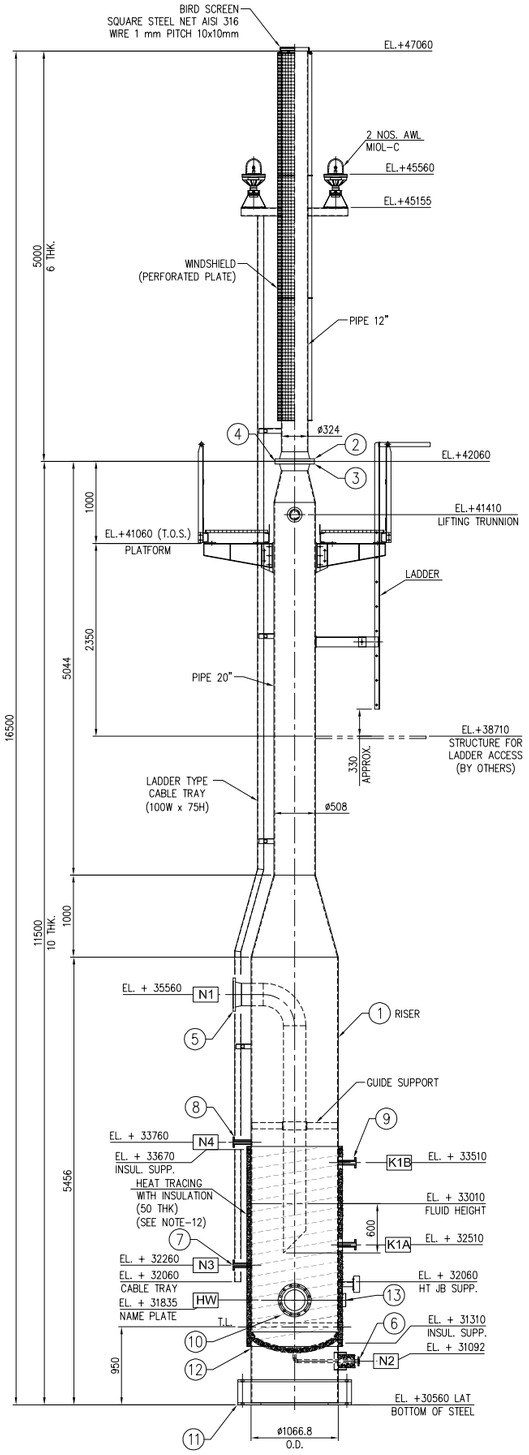
SCALE : NTS

A3	DRAWING NO.	SHEET	REV.
	1724000887-MAC-DG-00007	004	03

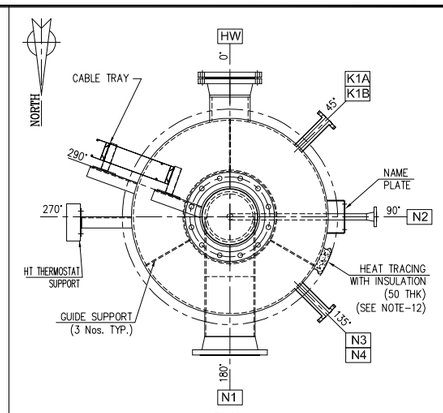
F.to UNI A3: 420mmx297mm

File Name : 1724000887-MAC-DG-00007 Rev. 03

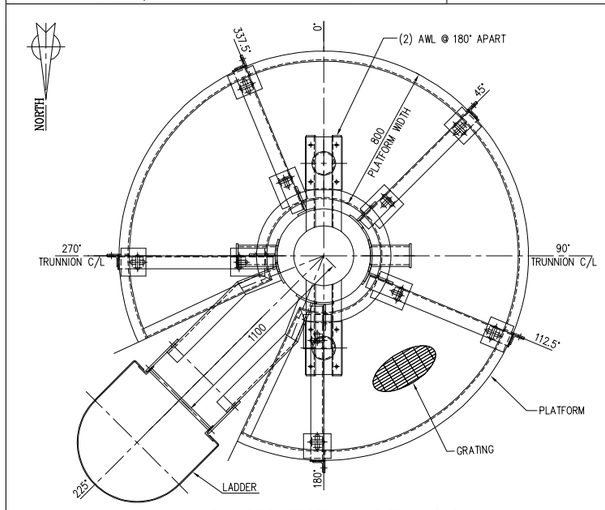
DRAWING NO. 1724000887-MAC-DA-00003_04 | REV. 04



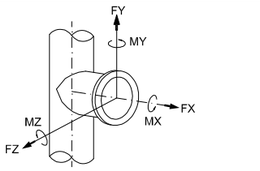
ELEVATION
SCALE 1:36
(FOR TRUE ORIENTATION REFER PLAN VIEWS)



PLAN
PLATFORM, AWL & TRUNNION NOT SHOWN FOR CLARITY



PLAN OF PLATFORM , AWL & TRUNNIONS



NOZZLE LOADS						
	LOADS [kN]			MOMENTS [kN x m]		
	FX	FY	FZ	MX	MY	MZ
INLET N1 (10")	7.78	14.45	14.45	6.31	4.74	4.74

MATERIAL LIST

ITEM	Q.TY	DESCRIPTION	DIMENSION	MATERIALS
1	1	RISER SHELL	42" (1066.8) OD. x 10 THK	A516 GR.60/EQUIV
	1	RISER SHELL	20" (508) OD. x 10 THK	A516 GR.60/EQUIV
		VENT TIP SHELL	12" (323.9) OD. x 6 THK	AISI 316
2	1	VENT TIP FLANGE	ø12" 150# WNRF ASME B16.5	AISI 316L
3	1	RISER OUTLET FLANGE	ø12" 150# WNRF ASME B16.5	A350 GR LF2
4	1	GASKET	ø12" 150#, SPIRAL WOUND	NOTE-10
5	1	VENT INLET FLANGE	ø10" 150# WNRF, SCH.40 ASME B16.5	A350 GR LF2
5A	1	VENT INLET PIPE (DIP PIPE)	ø10" SCH.40 (SMLS)	A333 GR.6
6	1	DRAIN CONNECTION FLANGE	ø1" 150# WNRF, SCH. 80 ASME B16.5	A350 GR LF2
7	1	SWAN NECK CONNECTION FLG.	ø1" 150# LWNRF ASME B16.5	A350 GR LF2
8	1	FILLING LINE FLANGE	ø1" 150# LWNRF ASME B16.5	A350 GR LF2
9	2	LEVEL TRANSMITTER CONNECTION	ø1" 150# LWNRF ASME B16.5	A350 GR LF2
10	1	HAND HOLE FLANGE	ø8" 150# WNRF, SCH.40 ASME B16.5	A350 GR LF2
11	1	ANCHOR CHAIR	–	S275J0 or EQUIV.
12	1	SKIRT SHELL	42" (1066.8) OD.	S275J0 or EQUIV.
13	1	NAMEPLATE	–	AISI 316L

NOZZLES LIST

POS.	QT'Y	SIZE	RATING	FLANGE	SERVICE	PROJECTION FROM RISER C/L
N1	1	10"	150#	WNRF	VENT INLET FROM V-43001 W/ DIP PIPE	750
N2	1	1"	150#	WNRF	DRAIN	800
N3	1	1"	150#	LWNRF	SWAN NECK CONNECTION	750
N4	1	1"	150#	LWNRF	FILLING LINE	750
K1A/B	2	1"	150#	LWNRF	LEVEL TRANSMITTER	750
HW	1	8"	150#	WNRF	HAND HOLE W/ BLIND	750

LOADS AT THE BASE

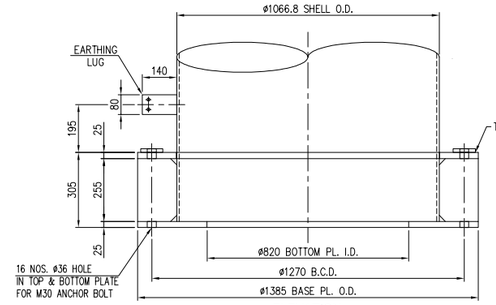
		Vertical [kN]	Shear [kN]	Moment [kN]
DEAD LOAD	DL	-27.66	0.00	0.00
DEAD LOAD CONTENT	DL_0	-17.06	0.00	0.00
LIVE LOAD ON PLATFORM	LL	-13.34	0.00	0.00
NOZZLE LOADS	NL	4.97	24.63	134.99
THERMAL	TL	0.00	0.00	0.00
WIND LOAD	WL	0.00	28.845	235.65
WAVE AND CURRENT LOADS	HL	0.00	-6.99	-55.95

THESE ARE THE RESULTANT FORCES AND THE SHEAR AND MOMENT CAN OCCUR IN ANY DIRECTION.

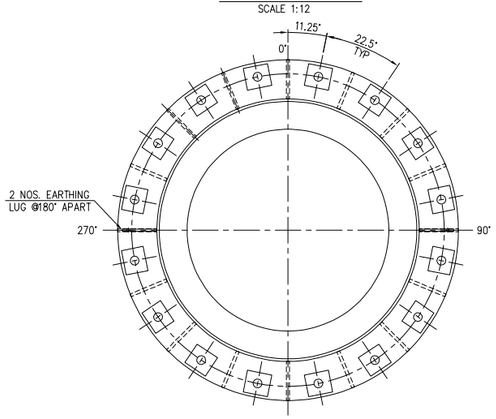
SHEAR = RESULTANT SHEAR: (FX^2 + FZ^2)^0.5

MOMENT = RESULTANT MOM: (MX^2 + MZ^2)^0.5

VERTICAL LOAD IS POSITIVE UPWARD



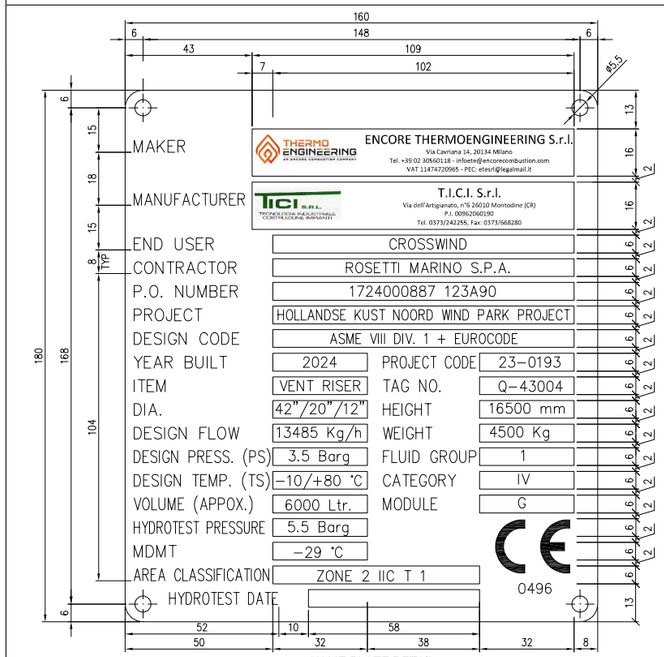
ELEVATION
ANCHOR CHAIR DETAIL
SCALE 1:12



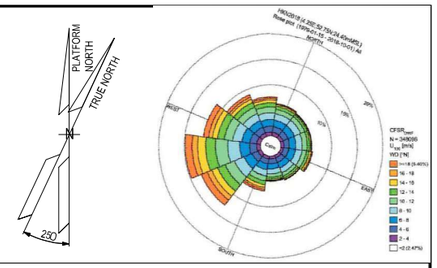
PLAN VIEW



WASHER DETAIL



NAME PLATE DETAIL



NOTES

GENERAL NOTES:

1. ALL DIMENSION ARE IN mm UNLESS OTHERWISE STATED.
2. ALL ELEVATIONS ARE IN mm UNLESS OTHERWISE STATED.
3. ALL WELDING SHALL BE CONTINUOUS WITH CATHETUS EQUAL TO MINIMUM THK. TO BE WELDED.
4. REFERRING TO MAJOR AXIS FLANGE HOLES SHALL BE SYMMETRICALLY DISPOSED WITH EXCEPTION OF PILOTS FLANGES.
5. ALL FLANGES <= 24" ARE ACCORDING TO ASME B16.5 WITH FINISHING 125 AARH.
6. FOR SURFACE TREATMENT PLEASE REFER TO THE DOCUMENT NO. 1724000887-MAT-PRO-00010 (23-0193-0030).
7. MAIN COMPONENT WEIGHTS (APPROX.):
   RISER WEIGHT :3950 kg (INCLUDING PLATFORM & LADDER)
   VENT TIP :450 kg
8. FOR WIRING DIAGRAM (JB AND HT) REFER DOCUMENT NO. 1724000887-MAC-DG-00007 (23-0193-0170)
9. DELETED.
10. GASKET SHALL BE STAINLESS STEEL, SPIRAL WOUND, GRAPHITE FILLED, EPOXY-COATED CARBON STEEL CENTERING RING AND STAINLESS STEEL INNER RING.
11. FOR RISER CONSTRUCTION DETAILS REFER DRAWING NO. 1724000887-MAC-DD-00005 (23-0193-131).
12. HEAT TRACING CABLES AND INSULATION SUPPORTS ARE IN ETE SCOPE OF WORK. INSULATION SUPPLY & INSTALLATION BY OTHERS.

NAME PLATE NOTES:

a. ALL DIMENSIONS ARE IN mm, UNLESS OTHERWISE STATED.
b. NAMEPLATE MATERIAL :AISI 316L
   NAMEPLATE THK. : 2 mm
   TEXT COLOR : BLACK
   TEXT ENGRAVED
C. NAMEPLATE WILL BE FIXED ON VENT RISER REFER TO DOC. 1724000887-MAC-DD-00005 (23-0193-0131).

DESIGN DATA

DESCRIPTION	VALUES
DESIGN CODE	ASME VIII DIV. 1 + EUROCODE
MAX. GAS FLOW	13485 kg/h
AMBIENT TEMPERATURE	-8.4 / +25 °C
OPERATING PRESSURE	ATM barg
DESIGN TEMPERATURE	-10 / +80 °C
DESIGN PRESSURE	3.5 barg
CORROSION ALLOWANCE	3 mm (FOR CARBON STEEL ONLY)
HYDROTEST PRESSURE	5.5 barg
AREA CLASIFICATION	ZONE 2 IIC T 1
MDMT	-29 °C
FLUID GROUP	1
CATEGORY	IV
MODULE	G
SEISMIC	N/A
WIND VELOCITY	28 m/s
TYPE OF FLUID	HYDROGEN GAS
WELDING EFFICIENCY	0.85
RADIOGRAPHY	SPOT RT

THERMO ENGINEERING — AN ENCORE COMBUSTION COMPANY

ETE JOB 23-0193
ETE DWG NR. 23-0193-0101

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
04	13-11-2024	SCB	VT	AL	ACCEPTANCE FOR CONSTRUCTION
03	10-10-2024	SCB	VT	AL	ACCEPTANCE FOR CONSTRUCTION
02	05-09-2024	SCB	VT	AL	ACCEPTANCE FOR CONSTRUCTION
01	30-07-2024	SCB	VT	AL	ISSUED FOR REVIEW
00	03-06-2024	RJS	SCB	AL	ISSUED FOR REVIEW

CROSSWIND — ROSETTI MARINO

REFERENCE DOCUMENT	No.
MECHANICAL CALCULATION - HYDROGEN VENT	1724000887-MAC-CA-00004
DETAILED DRAWING WITH PART LIST - HYDROGEN VENT	1724000887-MAC-DD-00005
LIFTING DRAWING - HYDROGEN VENT	1724000887-MAC-DD-00019
-	-

TITLE :
HYDROGEN VENT
GENERAL ARRANGEMENT
INCLUDING FOUNDATION LOADS

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE 1:36

DRAWN RJS | CHECKED SCB | APPROVED AL | DATE 03/06/24

A1 | DRAWING NO. 1724000887-MAC-DA-00003 | SHEET 001 | REV. 04

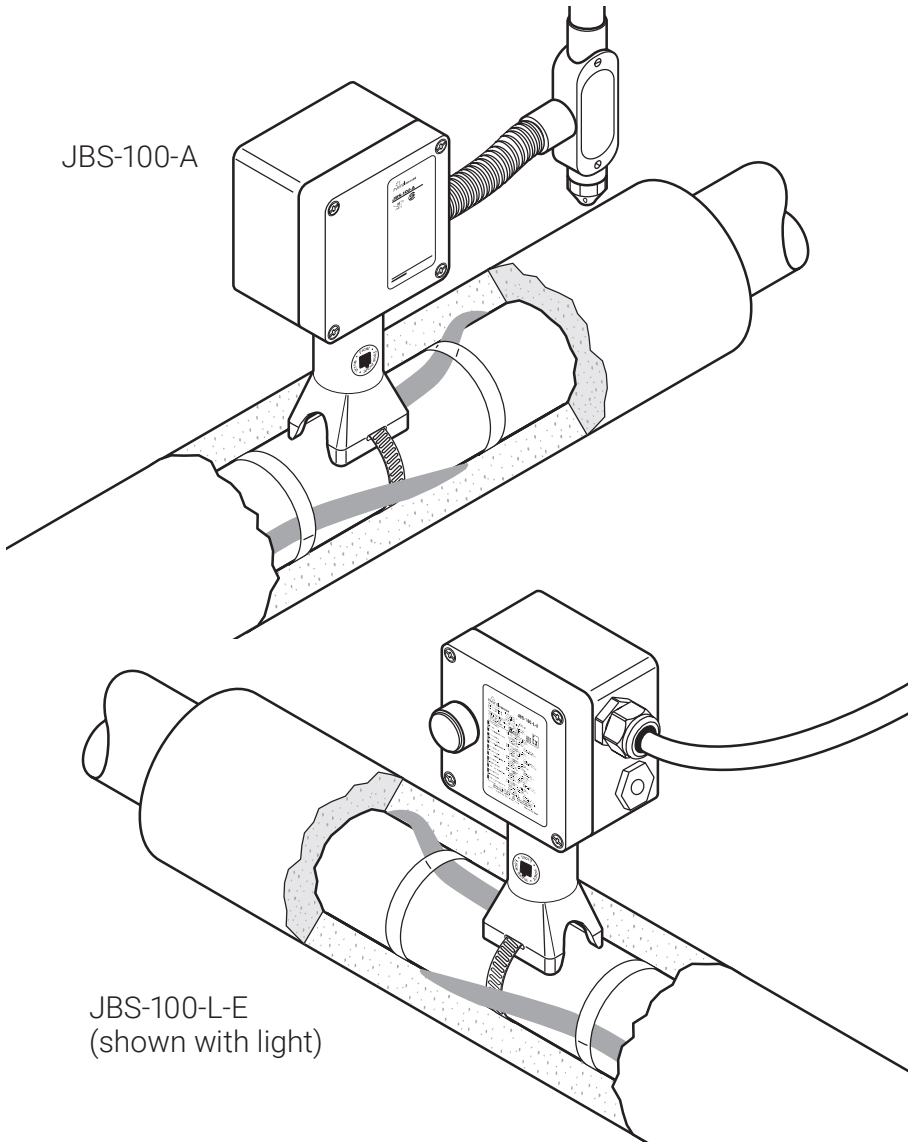
File Name : 1724000887-MAC-DA-00003_04

JBS-100

CONNECT AND PROTECT

Single-Entry power connection with junction box

PRODUCT OVERVIEW



The nVent RAYCHEM JBS-100 kit is designed to connect power to a single nVent RAYCHEM BTV, QTVR, XTVR, HTV or VPL industrial parallel heating cable.

The JBS-100 integrates the functions of both connection kits and insulation entries. The rugged stand protects the heating cable and allows for up to 100 mm (4") of thermal insulation.

The core sealing boot does not require a heat gun or torch for the installation (no hot work permit necessary). The non-curing sealant (silicone free) in the boot allows easy installation and facilitates maintenance.

Spring-type terminals provide fast installation and safe, reliable, maintenance-free operation. This connection kit significantly reduces installation time. The kit is offered in three basic versions, customised for local installation practices. All kits are also available as a lighted version. These include a unique light module with a superbright LED that simply plugs into the terminals, and a lens in the lid. This provides indication that power is available in the box. There is also a connection kit with drain plug available.

Description

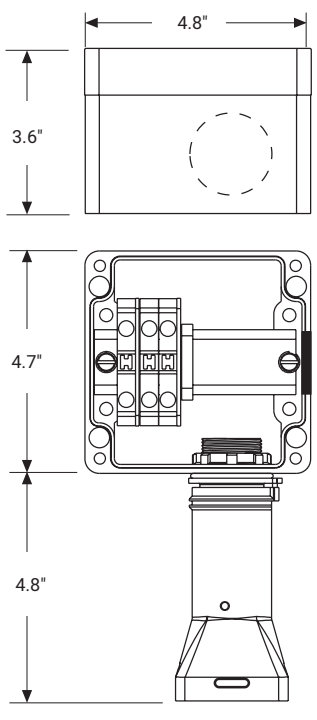
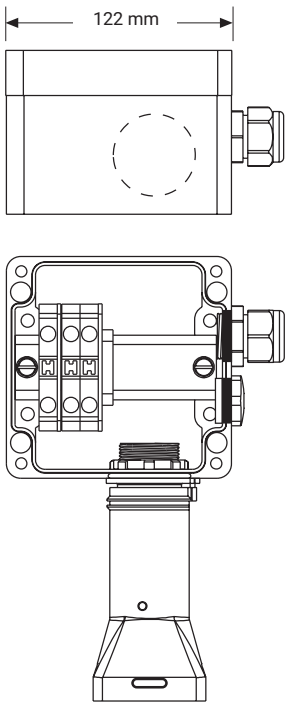
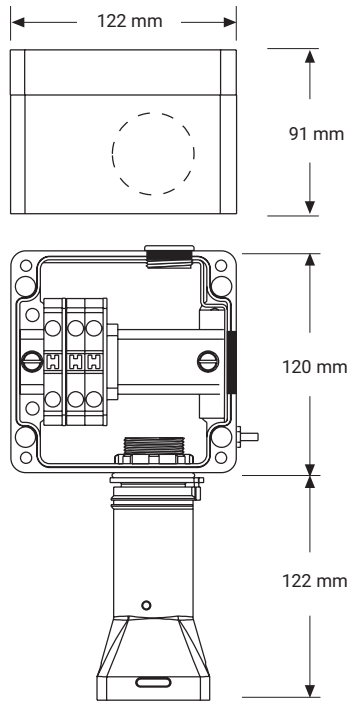
JBS-100-A JBS-100-L-A	JBS-100-E JBS-100-L-E JBS-100-D-E	JBS-100-EP JBS-100-L-EP
This connection system is certified for use in North America and has one through-hole for use with ¾" conduit.	This connection system is certified for use in IEC regions and provides two M25 threaded entries, one stopping plug, and one plastic power cable gland.	This connection system is certified for use in IEC regions and provides two M25 threaded entries, an earthing plate, and an external earthing stud. It is designed for use with armoured cables.

Kit contents

JBS-100-A JBS-100-L-A	JBS-100-E JBS-100-L-E JBS-100-D-E	JBS-100-EP JBS-100-L-EP
1 junction box with terminals	1 junction box with terminals	1 junction box with terminals, earth plate, and stud
1 light module (for -L only)	1 light module (for -L only)	1 light module (for -L only)
1 stand	1 stand	1 stand
1 core sealer	1 core sealer	1 core sealer
1 green/yellow earthing sleeve	1 green/yellow earthing sleeve	1 green/yellow earthing sleeve
1 polywater sachet	1 M25 gland for power cable 8-15 mm in diameter (temperature range –55°C / 70°C)	1 M25 stopping plug
1 cable tie	1 M25 stopping plug	1 polywater sachet
	1 polywater sachet	1 cable tie
	1 cable tie	
	1 ATEX/IECEx Certified drainplug (for JBS-100-D-E only)	

PRODUCT SPECIFICATIONS

Dimensions (nominal)

	JBS-100-A JBS-100-L-A	JBS-100-E JBS-100-L-E JBS-100-D-E	JBS-100-EP JBS-100-L-EP
			

Technical details

	JBS-100-A JBS-100-L-A	JBS-100-E JBS-100-L-E JBS-100-D-E	JBS-100-EP JBS-100-L-EP
Heating cable capability	BTV-CR, BTV-CT, QTVR-CT, XTVR-CT, HTV-CT, VPL-CT		
Ingress protection	IP66	IP66	IP66
Entries	1 x ¾"	2 x M25	2 x M25
Ambient temperature range	–55°C to +56°C (JBS-100-A) –40°C to +40°C (JBS-100-L-A)	–55°C to +56°C* (JBS-100-E and JBS-100-D-E) –40°C to +40°C (JBS-100-L-E)	–55°C to +56°C* (JBS-100-EP) –40°C to +40°C (JBS-100-L-EP)
	* Extra conditions for safe use apply at ambient temperatures >40°C. Temperature resistant power cable and metal glands must be used. Please refer to the certificate or installation instructions for full details.		
Max. pipe temperature	Refer to heating cable specification		
Terminals	Spring-type terminals 2 line, 1 ground	Spring-type terminals 1 phase, 1 neutral, 1 earth	Spring-type terminals 1 phase, 1 neutral, 1 earth
Max. conductor size	8 AWG stranded	10 mm^2 stranded, 10 mm^2 solid	10 mm^2 stranded, 10 mm^2 solid
Max. operating voltage	480 Vac*	480 Vac*	480 Vac*
	* JBS-100-L-E, JBS-100-L-EP and JBS-100-L-A are limited to 277 Vac. Extra conditions for safe use apply for voltages higher than 277 Vac. Please refer to the certificate or installation instructions for full details.		
Max. continuous operating current (***)	53 A	53 A	53 A

(***) For pipe temperature >150°C and <260°C and XTVR or HTV heating cables, the maximum operating current shall be reduced to maximum 20 A.

Materials of construction

Enclosure, lid, and stand	Electrostatic charge-resistant glass-filled engineered polymer, black	Electrostatic charge-resistant glass-filled engineered polymer, black	Electrostatic charge-resistant glass-filled engineered polymer, black
Lid screws	Stainless steel	Stainless steel	Stainless steel
Lid gasket	Silicone rubber	Silicone rubber	Silicone rubber
Earth continuity plate	N/A	N/A	Steel, zinc plated, and blue chromated

Optional LED indicator light

Colour	Red	Green	Green
Voltage rating	100-277 Vac	100-277 Vac	100-277 Vac
Power consumption	< 1 W	< 1 W	< 1 W

APPROVALS

For use in ordinary and hazardous area Zone 1 and Zone 2 (Gas), Zone 21 and Zone 22 (Dust) (and Class I Div 2).

Temperature classification

Temperature classification is defined by the complete system.

Product certification

For certifications in other regions (FM, CSA, IEx etc.), please refer to the installation manual.

More details about product certification, approvals and conditions of safe use are available in the installation manual at www.nVent.com/RAYCHEM.

ORDERING INFORMATION**

Power connection

Part Description	JBS-100-A	JBS-100-E	JBS-100-EP
PN (Weight)	085947-000 (2.5 lb)	829939-000 (1.2 kg)	158251-000 (1.3 kg)

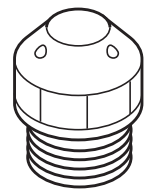
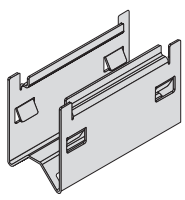
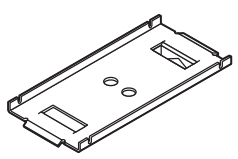
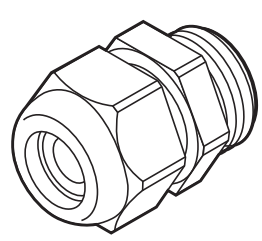
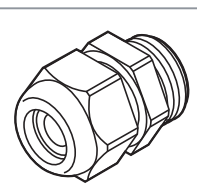
Power connection with light

Part Description	JBS-100-L-A	JBS-100-L-E	JBS-100-L-EP
PN (Weight)	944699-000 (3.5 lb)	054363-000 (1.6 kg)	075249-000 (1.7 kg)

Power connection with drain plug

Part Description		JBS-100-D-E	
PN (Weight)		1244-021057 (1.4 kg)	

Accessories

Conduit Drain ¾"	Prevents condensate from collecting in the box	
Catalog number	JB-DRAIN-PLUG-3/4IN	
Part Number	278621-000	
Weight	0.074 lb / 36 g	
Junction box standoff	For insulation thickness >100 mm & ≤150 mm *	
Catalog number	JBM-100-STANDOFF	
Part Number	P000003408	
Weight	0.279 lb / 135 g	
* Consider extra pipe strap length 6-9" (150-225 mm) for attachment		
Small pipe adapter	Required for stand on pipes ≤ 1"	
Catalog number	JBM-SPA	
Part Number	E90515-000	
Weight	0.408 lb / 185 g (Bag of 5 adaptors)	
Glands for power cables	Hazardous area approved gland for cables 8-15 mm (temperature range –55°C/70°C)	
Catalog number	GL-55-M25	
Part Number	1244-019083	
Weight	0.016 kg	
Glands for power cables	Hazardous area approved gland for cables 8-17.5 mm (temperature range –20°C/70°C)	
Catalog number	GL-36-M25	
Part Number	1244-019082	
Weight	0.016 kg	

(**) Localized versions may exist with limited approvals and different part numbers. Contact your local sales representative.

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com

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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
ELF-200N1-09-L2-25	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-01	Emergency Lighting Fixture	LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-02	Emergency Lighting Fixture	LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-03	Emergency Lighting Fixture	LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-04	Emergency Lighting Fixture	LOWER & UPPER DECK STAIRS	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-05	Emergency Lighting Fixture	LOWER & UPPER DECK STAIRS	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-06	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-07	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-08	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-09	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-10	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-11	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-12	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-13	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
ELF-200N1-10-L3-14	Emergency Lighting Fixture	BELOW LOWER DECK	1724001290	Cortem Spa	Cortem Spa	24/86773	LIFEX-ME-1260N-BB	Zone 1	CML 20 ATEX 3018X	1724001290-EL-LIS-00005	Ex db eb mb IIC T6 Gb	N/A	N/A	True	N/A	True	
EML-200-01	NAV AIDS Main Yellow Lanterns	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547/MNL02	SICE-LXS-YEL-05-1	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EML-200-02	NAV AIDS Main Yellow Lanterns	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547/MNL03	SICE-LXS-YEL-05-1	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EOL-200-01	Obstruction Red LED Lights	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547-MC01	L864-LXS-EX-CAP168-CS2LJS	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EOL-200-02	Obstruction Red LED Lights (MEDIUM INTENSITY)	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547-MC02	L864-LXS-EX-CAP168-CS2LJS	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EOL-200-03	Intermediate Obstruction Red Lights	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547-MC03	L864-LXS-EX-CAP168-CS2LJS	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EOL-200-04	Intermediate Obstruction Red Lights	UPPER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547-MC04	L864-LXS-EX-CAP168-CS2LJS	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
EPH-200-01	NAV AIDS Photocell	UPPER DECK	1724000775	SICE	SICE	24-881	FTC	ZONE 2	INERIS 02ATEX9006U	1724000775-QC-DB-00017	Ex II 2G - Ex d IIB T4 IP66	-	NAVIGATION AIDS	True	N/A	False	
ESL-200-01	Wave Off Status Light	BELOW LOWER DECK	1724000775	SICE	COMBUSTION/TECHNOR/SICE	240547/MNL01	SICE-LXS-RED-03-1	ZONE 2	INERIS 01ATEX 0019X	1724000775-QC-DB-00017	Ex II 2GD - Ex de IIC T4 IP66	-	NAVIGATION AIDS	True	N/A	True	
ETB-200N1-14-L1-01	TRACE HEATING - PROCESS LINES - FEEDER 1 (SWS LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-15-L2-01	TRACE HEATING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-15-L2-02	TRACE HEATING - PROCESS LINES - FEEDER 2 (CI LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-16-L3-01	TRACE HEATING - PROCESS LINES - FEEDER 3 (DM LINE) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-17-L1-01	Trace Heating - Process Lines - Feeder 4 (WW LINES) Hot JB	UPPER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-17-L1-02	Trace Heating - Process Lines - Feeder 4 (WW LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBM-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-17-L1-03	Trace Heating - Process Lines - Feeder 4 (WW LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBS-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	
ETB-200N1-17-L1-04	Trace Heating - Process Lines - Feeder 4 (WW LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBM-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	HAZARDOUS-AREA_7
ETB-200N1-17-L1-05	Trace Heating - Process Lines - Feeder 4 (WW LINES) Hot JB	LOWER DECK	1724001647	nVent	nVent		JBM-100-E	Zone 1	PTB20ATEX1008U	1724001647-EL-DD-00004	II2GExebmbIICGb II2DExtbmbMICDb	-	N/A	True	N/A	False	HAZARDOUS-AREA_7
ETB-200N1-19-L3-01	TRACE HEATING - FEEDER 6 (H2 VENT)	UPPER DECK	1724000887	Encore Thermoengineering	nVent	5020019	ETS-05	Zone 2	Baseefa13ATEX0137 Issue 6	1724000887-MAC-DG-00007	II 2(1)G Ex eb ia mb [ia Ga] IIC T5 Gb - 40ºC ≤ Ta ≤ +60ºC II 2D Ex tb IIIC T100ºC Db	N/A	Hydrogen Vent	True	N/A	False	HAZARDOUS-AREA_6
ETB-200N1-20-L1-01A	Trace Heating - Feeder 7 (SEA WATER PUMPS)	P-50001A (LOWER DECK)	1724000936	PCM Group	THERMON	N/A	HTSX 15-2 OJ	Zone 1 IIB T3	FM 12ATEX0014X	1724000936-MAC-DD-00011	II 2G Ex eb IIC T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	True	N/A	True	
ETB-200N1-20-L1-01B	Trace Heating - Feeder 7 (SEA WATER PUMPS)	P-50001B (LOWER DECK)	1724000936	PCM Group	THERMON	N/A	HTSX 15-2 OJ	Zone 1 IIB T3	FM 12ATEX0014X	1724000936-MAC-DD-00011	II 2G Ex eb IIC T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	True	N/A	True	
ETM-200-01	NAV AIDS Battery Bank Temperature Probe	CONTAINER B-300 (LOWER DECK)	1724000775	SICE	TERMICS	626624-010/01	TS-CTL	ZONE 2	TUV IT 13ATEX069X	1724000775-QC-DB-00017	Ex II 2GD - Ex d IIC T6 IP66	-	NAVIGATION AIDS	True	N/A	True	
EVM-200-01	NAV AIDS Visibility meter	UPPER DECK	1724000775	SICE	PHAROS MARINE	713542.24.01	FD-410EX-MINI-OC-M	ZONE 2	ITS 18ATEX103574X	1724000775-QC-DB-00017	Ex II 2G - Ex d IIB T6 IP66	-	NAVIGATION AIDS	True	N/A	True	
H-ETE-200N1-19-L3-01	Self-regulating heat cable	UPPER DECK	1724000887	Encore Thermoengineering	nVent	N/A	XTVR2-CT	Zone 2	XTVR_SGS20ATEX0049X_Iss. 4 1	1724000887-MAC-DG-00007	II 2 GD Ex 60079-30-1 eb IIC T* Gb / Ex 60079-30-1 tb IIIC T***C Db	N/A	Hydrogen Vent	True	N/A	True	
H-ETE-200N1-20-L1-01A	Self-regulating heat cable	P-50001A (LOWER DECK)	1724000936	PCM Group	THERMON	N/A	HTSX 15-2 OJ	Zone 1 IIB T3	FM 10ATEX0058X	1724000936-MAC-DD-00011	II 2G Ex db eb IIC T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	True	N/A	True	
H-ETE-200N1-20-L1-01B	Self-regulating heat cable	P-50001B (LOWER DECK)	1724000936	PCM Group	THERMON	N/A	HTSX 15-2 OJ	Zone 1 IIB T3	FM 10ATEX0058X	1724000936-MAC-DD-00011	II 2G Ex db eb IIC T3	N/A	Sea Water Lift Progressive Cavity Pumps (P-50001A/B)	True	N/A	True	
JB-500E8	Interface JB - Water Package	LOWER DECK	1724000448	PSC	STAHL	-	8146/1083	Safe Area	PTB 01 ATEX 1016	1724000448-MAC-DA-00005	II 2 G Ex eb IIC T6 Gb II 2 D Ex tb IIIC T80°C Db	-	A-50000	True	N/A	False	
JB-500F8	Interface JB - Water Package	LOWER DECK	1724000448	PSC	STAHL	-	8146/1051	Safe Area	PTB 01 ATEX 1016	1724000448-MAC-DA-00005	II 2 G Ex eb IIC T6 Gb II 2 D Ex tb IIIC T80°C Db	-	A-50000	True	N/A	False	
NC-200F2A	NAVAID System NCCP - ENCLOSURE A	CONTAINER B-300 (LOWER DECK)	1724000775	SICE	TECHNOR ITALSMEA	24-1141	SB477620	ZONE 13	FIDI 21ATEX 0090X	1724000775-EL-DG-00003	Ex II 2G - Ex e IIC T6 IP66	-	NAVIGATION AIDS	True	N/A	True	
NC-200F2B	NAVAID System NCCP - ENCLOSURE B	CONTAINER B-300 (LOWER DECK)	1724000775	SICE	TECHNOR ITALSMEA	24-1141	EJB-13	ZONE 12	INERIS 00ATEX 0021X	1724000775-EL-DG-00003	Ex II 2G - Ex db IIB+H2 T6 IP66	-	NAVIGATION AIDS	True	N/A	True	
NC-200F2C	NAVAID System NCCP - ENCLOSURE C	CONTAINER B-300 (LOWER DECK)	1724000775	SICE	TECHNOR ITALSMEA	24-1141	EJB-13A	ZONE 11	INERIS 00ATEX 0021X	1724000775-EL-DG-00003	Ex II 2G - Ex db IIB+H2 T6 IP66	-	NAVIGATION AIDS	True	N/A	True	
Y-89-06-THS-001	Twin cup headset for UHF DMR Portable Radio	CONTAINER B-400 (LOWER DECK)	1724000452	Fores	MOTOROLA	627TZD0512	PMLN6333	Zone 2	BS 12 ATEX E 117 X	1724000452-TL-DS-00005	Ex ib IIC T4 Gb	-	N/A	True	NO	True	

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: **Baseefa13ATEX0137 Issue 6**

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: **ETS-05 Electronic Thermostat**

5 Held by: **nVent Thermal Belgium NV**

6 Address: **Research Park Haasrode - Zone 2, Romeinse straat 14, B-3001 Leuven, Belgium**

7 This re-issued certificate extends EC Type Examination Certificate No. Baseefa13ATEX0137 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 IEC 60079-7:2015+A1:2018 EN 60079-11:2012 EN 60079-18: 2015 EN 60079-31:2013

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:

See schedule

SGS Fimko Oy Customer Reference No. **5034** Project File No. **20/0458**

This document is issued by the Company subject to their General Conditions for Certification Services accessible at hiip://www.sgs.com/en/Terms-and-Conditions.aspx . Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of their intervention only and within the limits of Client's instructions, if any. It does not necessarily indicate that the equipment may be used in particular industries or circumstances. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, schedule included, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Fimko Oy
Takomotie 8
FI-00380 Helsinki, Finland
Telephone +358 (0)9 696 361
e-mail sgs.fimko@sgs.com
web site www.sgs.fi
Business ID 0978538-5 Member of the SGS Group (SGA SA)

Tuomas Hänninen
SGS Fimko Oy

13 # Schedule

14 ## Certificate Number Baseefa13ATEX0137 – Issue 6

15 Description of Product

The nVent ETS-05 Electronic Thermostat provides accurate temperature control for heating cables.

It comprises a plastic box with terminals inside for connection to the sensor and to the incoming user connections. Relay contacts are present to allow resistive loads of up to 230V a.c. at 32A to be controlled.

ETS-05-a1-bb-c
The supply range for the equipment is 99 to 121V a.c.
Supply & relay terminal block TB1 U_m = 253V. Rated current = 32A.
Relay terminal block TB3 (if present) U_m = 253V.

ETS-05-a1R-bb-c
The supply range for the equipment is 99 to 132V a.c. U_m = 253V.
Supply & relay terminal block TB1 Um = 253V. Rated current = 32A.
Relay terminal block TB3 (if present) Um = 253V.

ETS-05-a2-bb-c
The supply range for the equipment is 195 to 230V a.c. U_m = 253V.
Supply & relay terminal block TB1 Um = 253V. Rated current = 32A.
Relay terminal block TB3 (if present) Um = 253V.

ETS-05-a2R-bb-c
The supply range for the equipment is 195 to 277V a.c. U_m = 277V.
Supply & relay terminal block TB1 Um = 277V. Rated current = 32A.
Relay terminal block TB3 (if present) Um = 253V.

The options a bb & c affect the operational non-safety aspects:-
a = A (0°C to 49°C model)
H (0°C to 499°C model)
L (0°C to 199°C model)
bb = A (American market version)
= E (European market version)
= J (Japanese market version)
c = A (Alarm output model) Rated alarm output = 275V, 3A resistive.
= not present (Alarm output not present)

Sensor Connections - Terminal Block TB2

U_o = 5.88V
I_o = 29mA
P_o = 43mW
C_i =26nF
L_i = 0
U_i = 0

The capacitance and either the inductance or inductance to resistance ratio (L/R) of the load connected to hazardous area terminals must not exceed the following values:

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR L/R RATIO (µH/ohm)
IIC	43	43	843
IIB	1000	172	3373
IIA	1000	345	6746

The above load parameters apply where:

1. The external circuit contains no combined lumped inductance L_i and capacitance C_i greater than 1% of the above values, or
2. The inductance and capacitance are distributed as in a cable, or
3. The external circuit contains either only lumped inductance or lumped capacitance in combination with a cable.

In all other situations e.g. the external circuit contains combined lumped inductance and lumped capacitance, up to 50% of each of the L and C values is allowed.

The equipment is marked:

Ⓔx II 2(1)G Ex eb ia mb [ia Ga] IIC T5 Gb -40ºC ≤ Ta ≤ +60ºC
Ⓔx II 2D Ex tb IIIC T100ºC Db

16 Report Number

See Certificate History.

17 Specific Conditions of Use

None

18 Essential Health and Safety Requirements

In addition to the Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9, the following are considered relevant to this product.

Clause	Subject	Compliance
1.2.7	LVD type requirements	Standards require manufacturer's declaration, supplied.
1.2.8	Overloading of equipment (protection relays, etc.)	Covered by installation rules and manufacturer's instructions
1.4.1	External effects	The Purchaser should make the manufacturer aware of such issues. Covered in Instructions
1.4.2	Aggressive substances, etc.	The Purchaser should make the manufacturer aware of such issues. Covered in Instructions

19 Drawings and Documents

New drawings submitted for this issue of certificate:

Number	Sheet	Issue	Date	Description
RGD 1102-107	1	6	01/05/2021	ETS-05 nVent Certification Label

This drawing is held with IECEx BAS 13.0071 Issue 6.
Other applicable drawings are listed on Baseefa13ATEX0126 Issue 5.

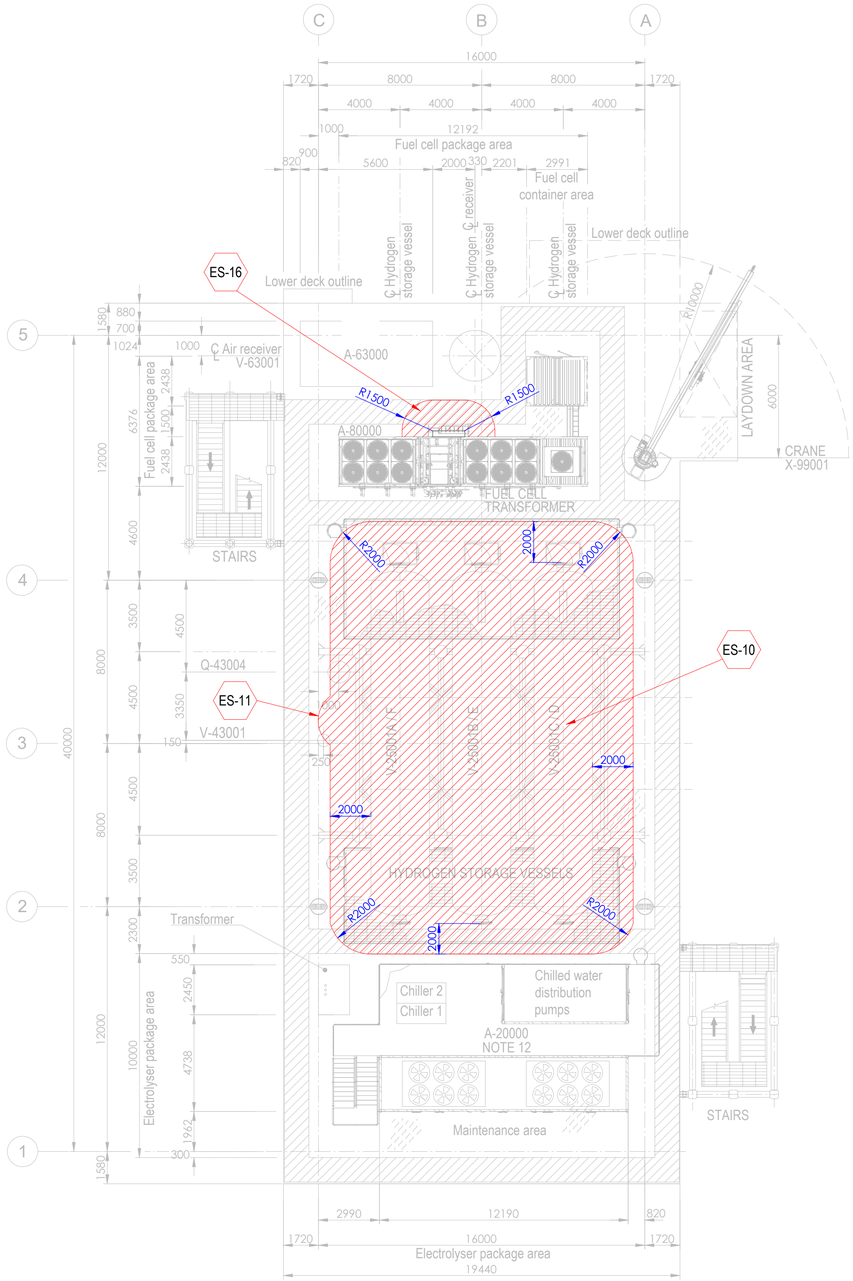
20 Certificate History

Certificate No.	Date	Comments
Baseefa13ATEX0137	26 August 2014	The release of the prime certificate. The associated test and assessment against the requirements of EN60079-0: 2012, EN60079-7: 2007, EN60079-11: 2012, EN60079-18: 2009 & EN60079-31: 2013 is recorded in Report GB/BAS/ExTR14.0185/00 for Project 12/0565
Baseefa13ATEX0137 Issue 1	21 December 2016	This issue reflects the issue of Baseefa13ATEX0126 Issue 1. Report GB/BAS/ExTR16.0395/00, Project 16/0987

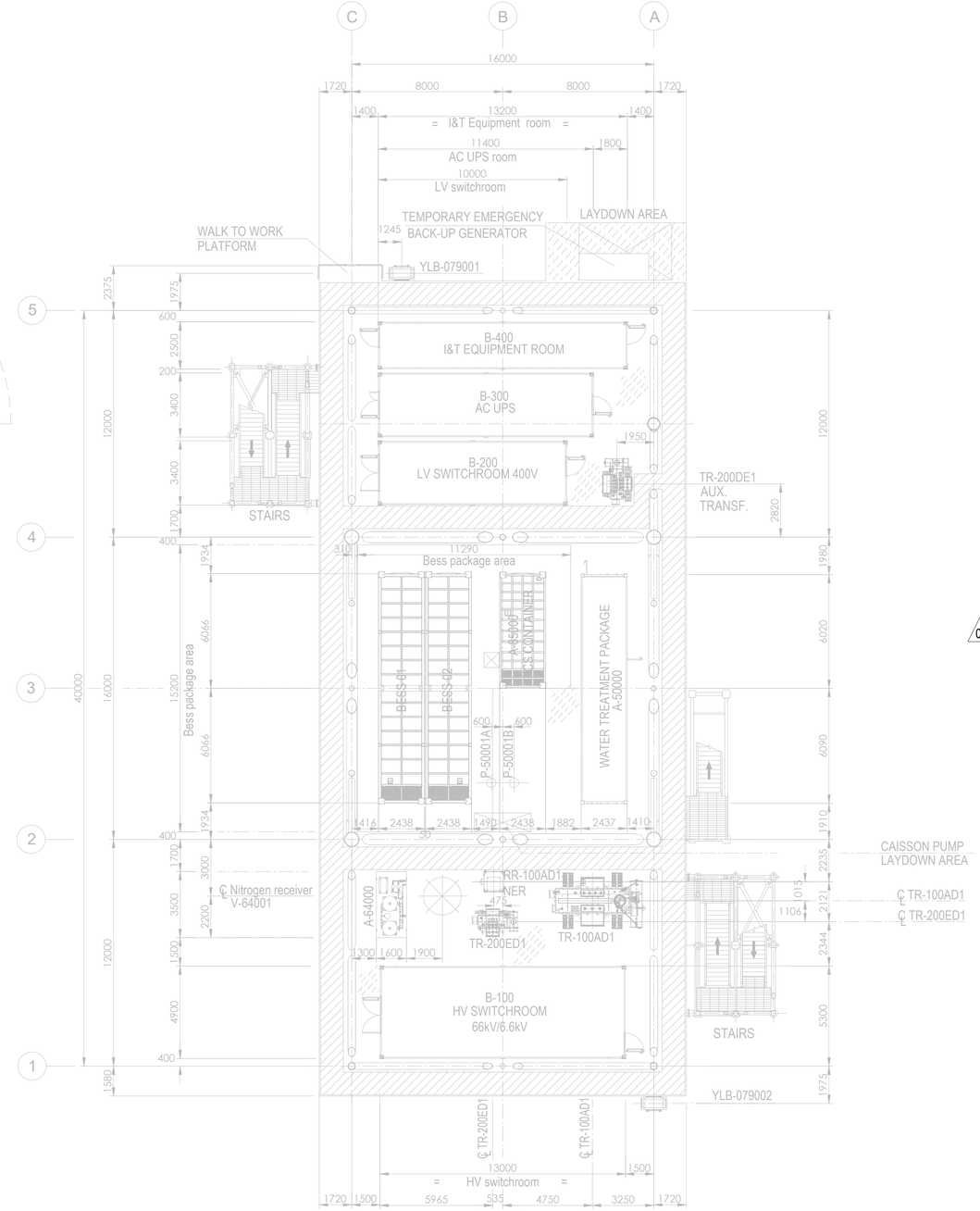
Certificate No.	Date	Comments
Baseefa13ATEX0137/2	28 February 2018	To permit the use of an alternative opto-coupler and the correction of the marking code. See report GB/BAS/ExTR18.0099/00 for project 17/0869.
Baseefa13ATEX0137/3	22 January 2019	To confirm the certificate is now held in the name of nVent Thermal Belgium BV, and to permit the label to show name of nVent Thermal Belgium BV. See GB/BAS/ExTR18.0125/00 for project 17/0864.
Baseefa13ATEX0137/4	8 April 2020	To permit the addition of a new variant model ETS-05-x3-x that has an increased voltage range of 195V to 277V, and an increased U_m of 277V. See report GB/BAS/ExTR20.0070/00 for project 20/0005.
Baseefa13ATEX0137 Issue 5	10 August 2020	This issue of the certificate incorporates previously issued primary & supplementary certificates into one certificate, permits the use of an alternative enclosure, and confirms the equipment meets the requirements of EN IEC 60079-0:2018, EN IEC 60079-7: 2015+A1:2018 and EN 60079-18: 2015. See report GB/BAS/ExTR20.0119/00 for project 20/0123.
Baseefa13ATEX0137 Issue 6	30 September 2021	This issue of the certificate permits the addition of models with alarm outputs and permits the introduction of a new model naming convention. See report GB/BAS/ExTR21.0172/00 for project 20/0458.
For drawings applicable to each issue, see original of that issue.		

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

REV. 02



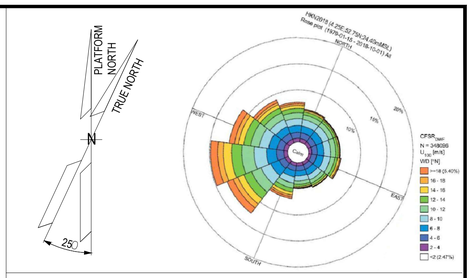
PLAN ON UPPER DECK
EL+30.310 T.O.S.



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

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

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



NOTES

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

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

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

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

CROSSWIND

ROSETTI MARINO

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

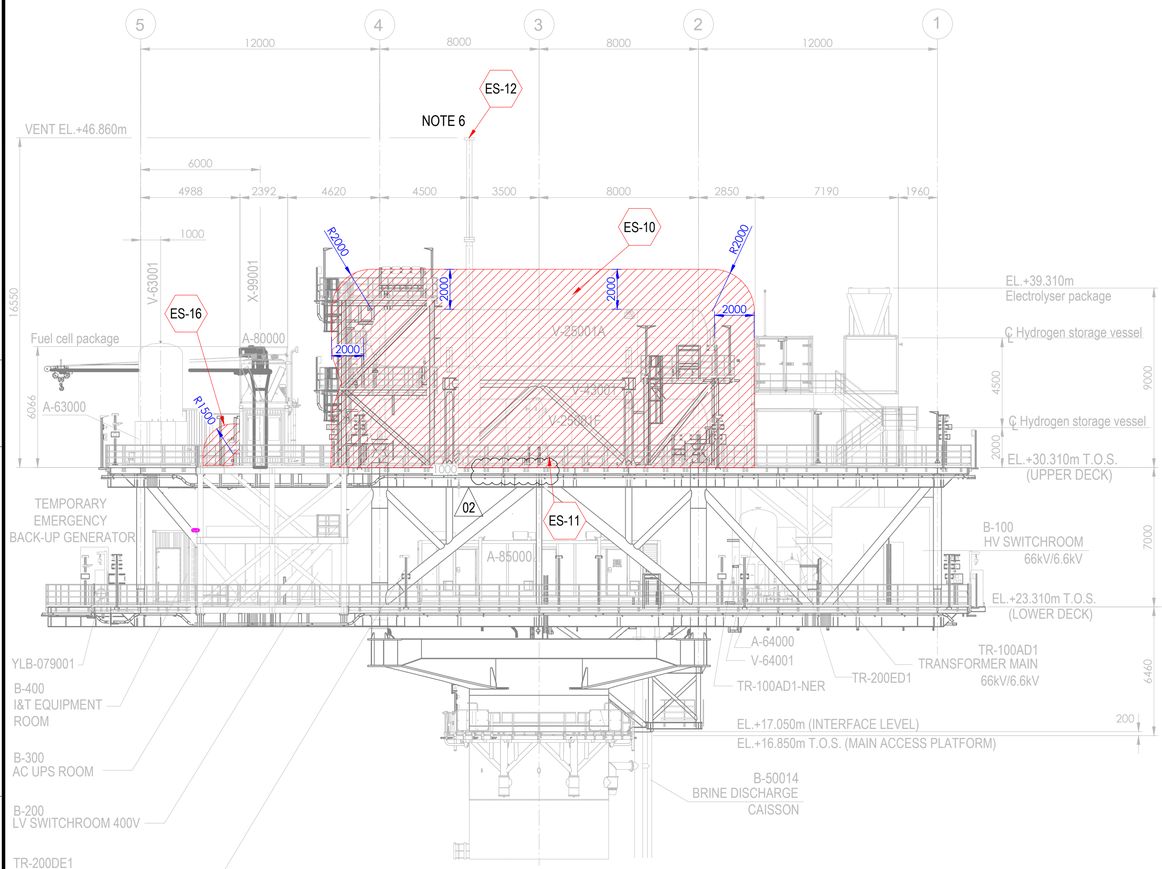
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

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

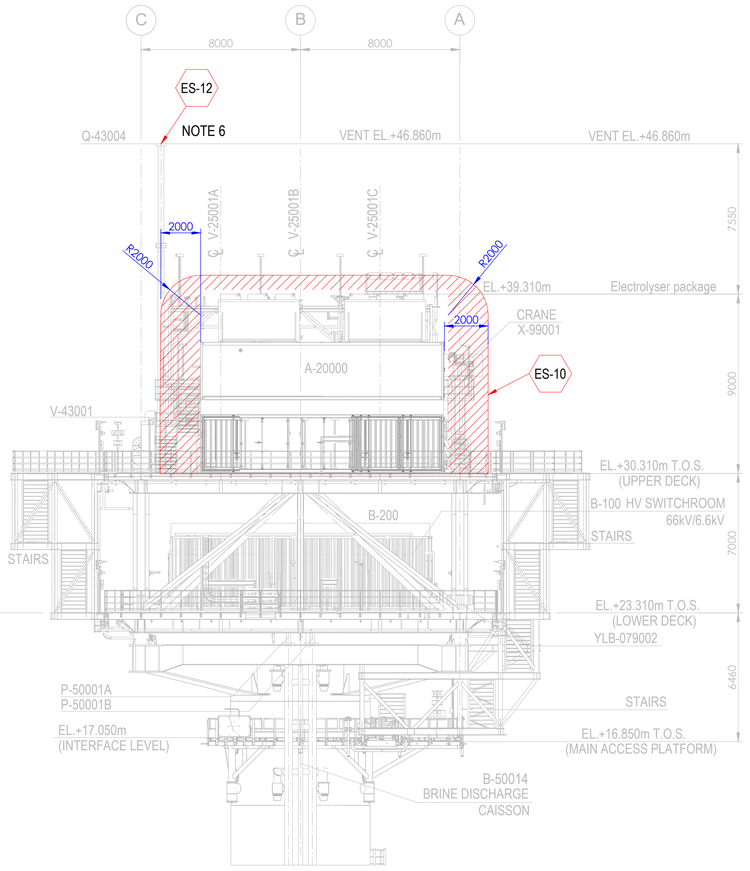
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

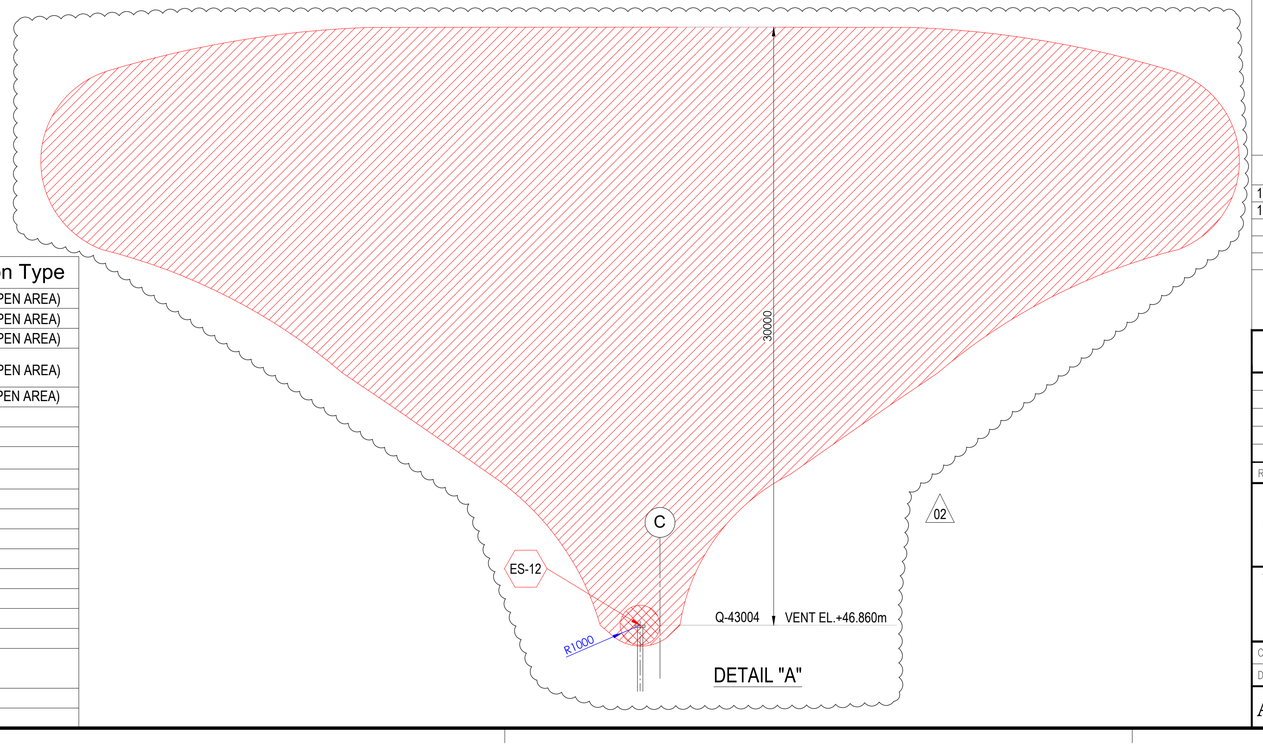


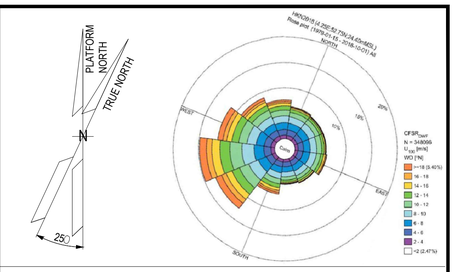
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

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





NOTES

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

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

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

CROSSWIND

ROSETTI MARINO

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

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

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

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

ITEM	Tag	EHT-1004-B	: Heat Tracing Tape	Dwg	1724001647-EL-LIS-00003
	S/Sys	83-65	: Electrical Heat Tracing	Module	UD
TASK	code	C10004641	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.**	P/N:469145-000				
Manufacturer	nVent			**Model**	3BTV2-CT				
Cert No.	SGS20ATEX0048X			**Equipment Ambient Temp.**	-60°C to +80°C				
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex eb	**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	NA	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	NA	
5	Equipment circuit identification is correct	x	OK	
6	Equipment circuit identification is available	x	OK	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	NA	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		NA	
	Physical check	x	NA	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	NA	
13	Condition of enclosure gaskets is satisfactory	x	NA	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	OK	
15	Electrical connections are tight	x	OK	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	NA	
18	Encapsulated components are undamaged	x	OK	
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	EHT-1004-B	: Heat Tracing Tape			Dwg	1724001647-EL-LIS-00003
	S/Sys	83-65	: Electrical Heat Tracing			Module	UD
TASK	code	C10004641		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		NA	
	Physical check	x	NA	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	NA	
33	All cable cores are uniquely labeled	x	NA	
34	Cable cores not in use are correctly terminated	x	OK	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	OK	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	OK	
38	All moving parts are free and have no mechanical damage	x	NA	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	NA	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	NA	
52	Flame path are clean and undamaged	x	NA	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	OK	
60	Power conductors are not bunched together causing possible hot spots	x	OK	
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	EHT-1004-B	: Heat Tracing Tape			Dwg	1724001647-EL-LIS-00003
	S/Sys	83-65	: Electrical Heat Tracing			Module	UD
TASK	code	C10004641		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	Giovanni Tangianu	
Date	2025-02-05	2025-02-13	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-05T10:21:42.336Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-13T12:30:46.372Z	

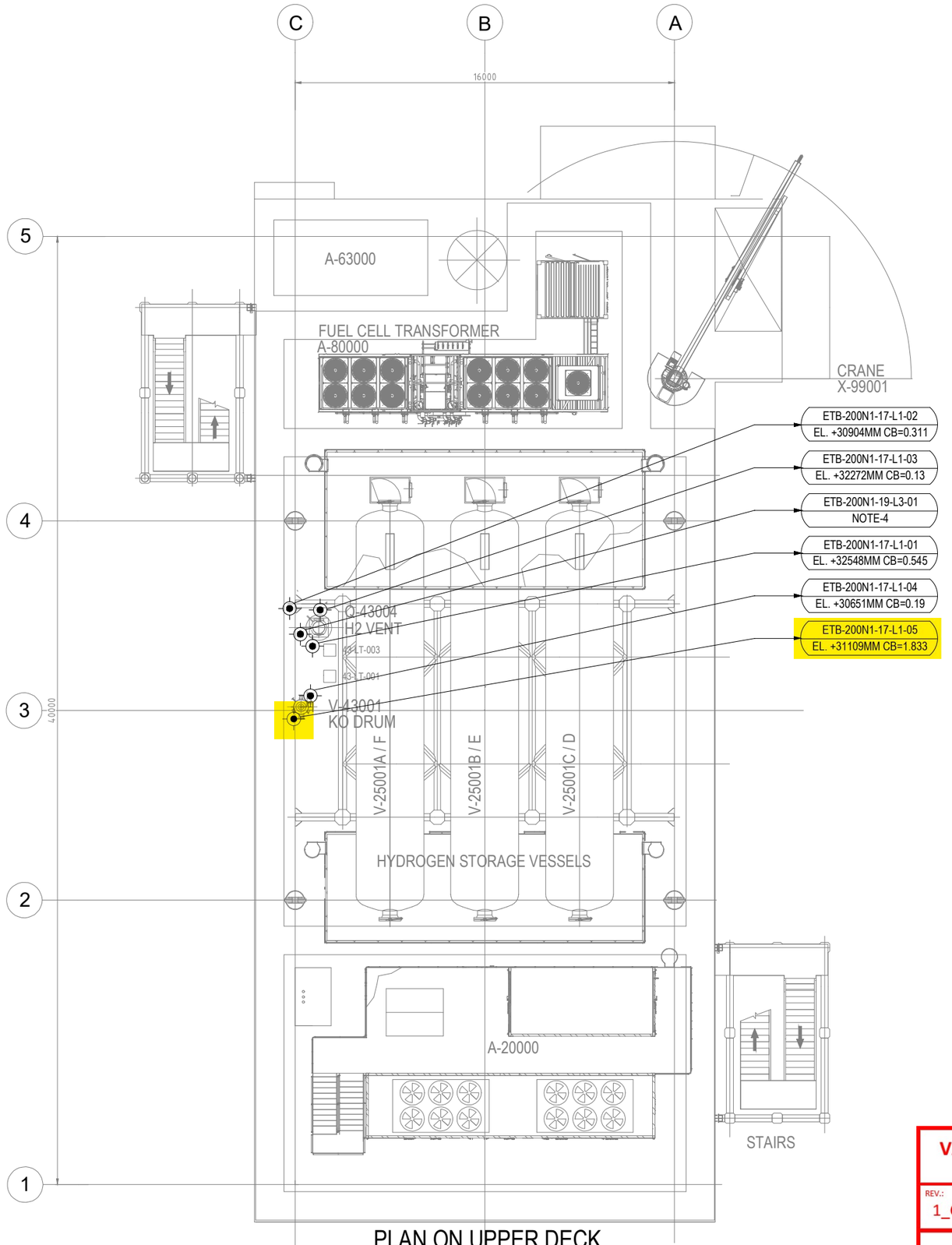
EHT CALCULATION LIST

PIT240024_ED01-1001

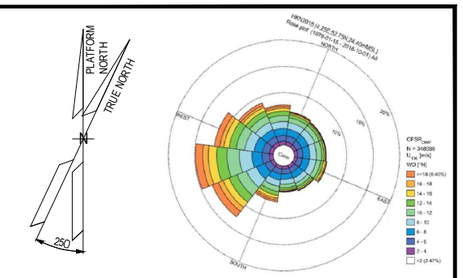
		ENGINEERING DATA				MECHANICAL & INSULATION DATA							PROCESS DATA				EHT BASIC DESIGN								EHT DETAILED DESIGN							EHT TEMP. CONTROL DATA							
Main EHT Box Number	Item Number	Heater Number	Line, Equipment or Instrument ID	nVent Circuit Number	Plant Area	Pipe Size [DN / IN]	Pipe Length [m]	Support Quantity [pc]	Valve Quantity [pc]	Other Heat Sink Quantity [pc]	Insulation Type	Insulation Thickness [mm]	Maintain Temperature [°C]	Maximum Allow. Process Temperature [°C]	Maximum Operating Temperature [°C]	Maximum Exposure Temperature [°C]	Heatloss [W/m]	Heating Cable Selection	Trace Ratio	Heating Cable Output [W/m]	EHT Cable per Support [m]	EHT Cable per Valve [m]	EHT Cable per Other Heatsink [m]	Total EHT Cable [m]	Max. Allow. EHT Circuit Length [m]	Connection Type	Voltage [V]	Operating Current [A]	Total Operating Load [W]	Start-Up Current [A]	Temp. Control Method	Controller Set Point [°C]	Minimum Controlled Temperature [°C]	Maximum Controlled Temperature [°C]	Maximum Uncontrolled Temperature [°C]	Revision	Remark
																		GRAND TOTAL						**181.4**				**9.69**	**2226**	**14.91**							
ETB-200N1-16-L3-01	1	EHT-1001-A	1"-DM-001-01SS-E	1001	PIPING	1	17.6	5	1	2	RW/MF 1:2015	20	5	100	22	22	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	22.0	199	Single L-N	230	1.18	271	1.8	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**22.0**			**230**	**1.18**	**271**	**1.8**							
ETB-200N1-15-L2-01	1	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	11.0	4		1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	13.9	199	Single L-N	230	0.73	167	1.1	Ambient sensing, standard	5	18	29	50	00	
	2	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	3	EHT-1002-A	1"-CI-032-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	4	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	5	EHT-1002-A	1"-CI-030-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	6	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.75	0.5		1		RW/MF 1:2015	20	5	50	25	25	3.4	3BTV2-CT	2.0	10.7		1.5		2.6	199	Single L-N	230	0.15	34	0.2	Ambient sensing, standard	5	30	38	55	00	
	7	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.5	0.5		1		RW/MF 1:2015	20	5	50	25	25	2.9	3BTV2-CT	2.0	10.7		1.4		2.5	199	Single L-N	230	0.14	32	0.2	Ambient sensing, standard	5	32	40	56	00	
																		TOTAL					0.5	**36.4**			**230**	**2.00**	**459**	**3.1**							
ETB-200N1-14-L1-01	1	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	4	0.5				RW/MF 1:2015	20	5	100	25	25	10.2	3BTV2-CT	1.0	10.7				0.6	199	Single L-N	230	0.03	7	0.1	Ambient sensing, standard	5	5	20	46	00	
	2	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	4.7	1		1	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1		0.5	9.3	199	Single L-N	230	0.47	107	0.7	Ambient sensing, standard	5	14	27	49	00	
	3	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	4	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	7.8	3			RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1			8.6	199	Single L-N	230	0.48	111	0.7	Ambient sensing, standard	5	14	27	49	00	
	5	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	6	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.8	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	7	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	1.4	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	4.2	199	Single L-N	230	0.23	54	0.4	Ambient sensing, standard	5	24	34	53	00	
	8	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	9	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	10	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.7	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	11	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	1.2	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	3.7	199	Single L-N	230	0.20	47	0.3	Ambient sensing, standard	5	24	34	53	00	
	12	EHT-1003-A	1"-SWS-147-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	13	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	14	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	15	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1	0.1				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	28	37	54	00	
	16	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
	17	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	18	EHT-1003-A	1"-SWS-146-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	19	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	20	EHT-1003-A	1"-SWS-290-01SD-E	1003	PIPING	1	1.1	1	2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7	0.3	1.6		5.8	199	Single L-N	230	0.33	76	0.5	Ambient sensing, standard	5	28	37	54	00	
	21	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**78.6**			**230**	**4.37**	**1002**	**6.7**							
ETB-200N1-17-L1-04	1	EHT-1004-A	1"-WW-259-01CS-E / V-43001	1004	PIPING	1	0.9		1	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7		0.8	0.5	3.2	199	Single L-N	230	0.12	28	0.2	Ambient sensing, standard	5	18	29	50	00	Combined with EHT-1004-B
																		TOTAL						**3.2**			**230**	**0.12**	**28**	**0.2**							
ETB-200N1-17-L1-02	1	EHT-1005-A	1"-WW-260-01CS-E	1005	PIPING	1	1.2	1	2	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	4.6	199	Single L-N	230	0.20	46	0.3	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1006-A
																		TOTAL						**4.6**			**230**	**0.20**	**46**	**0.3**							
ETB-200N1-17-L1-03	1	EHT-1006-A	1"-WW-202-01CS-H	1006	PIPING	1	1.0			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	1.0	10.7			0.5	2.5	199	Single L-N	230	0.08	19	0.1	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1005-A
																		TOTAL						**2.5**			**230**	**0.08**	**19**	**0.1**							
ETB-200N1-15-L2-02	1	EHT-1007-A	1"-CI-043-01CP-E	1007	PIPING	1	15.0	6		4	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	19.5	199	Single L-N	230	1.04	239	1.6	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**19.5**			**230**	**1.04**	**239**	**1.6**							
ETB-200N1-17-L1-05	1	EHT-1004-B	43-LT-001	2001	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	Combined with EHT-1004-A
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							
ETB-200N1-17-L1-01	1	EHT-2002-A	43-LT-003	2002	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

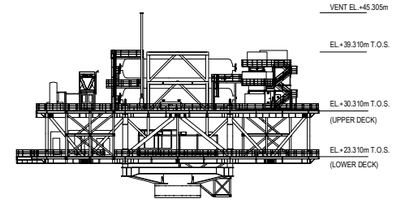
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_C	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 2of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

CAD FILENAME: PIT240024_0002_3001_001_02.dwg

HEAT TRACING DATA

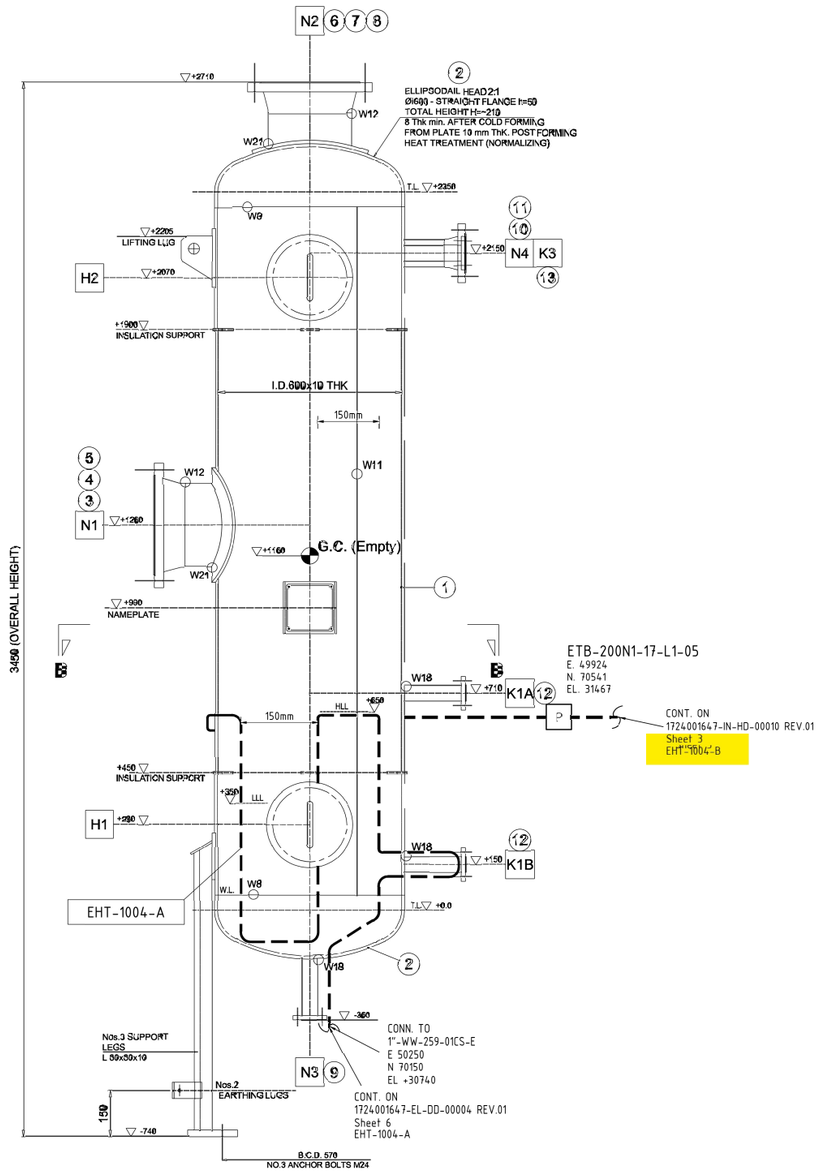
HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	HEATER LENGTH (m)	HEATED AREA (m^2)	HEATER SPACING (mm)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W)	POWER OUTPUT (W/m)	SHEATH TEMPERATURE (°C)
EHT-3001-A	EQUIPMENT	3BTV2-CT	1x5.8	0.72	150	0.5	80	80	66	13.9	85
					TOTALS	0.5	80				

DESIGN PARAMETERS

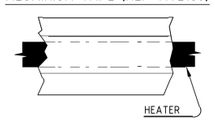
CIRCUIT NUMBER	3001	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	11°C	INSULATION TYPE	RW/MF 1:2015
MAX. EXPOSURE TEMP.	11°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	100°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

COMPONENT BILL OF MATERIALS

CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	5.8	m	Raychem Self-Regulating Heating Cable
JBM-100-E	1	each	Integrated Junction Box, Multiple-Entry, Cold-Applied, ATEX
ATE-180	0.32	roll	Fixing tape (aluminium, 55m/roll)
LAB-I-01	1	each	Warning Label - English
PSE-090	2	each	Pipe Strap for 1.1/4" to 3" (40-90mm)



ALUMINIUM TAPE (REF: ATE180)



SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

EQUIPMENT NUMBERS	REFERENCE DRAWINGS / DOCUMENTS
V-43001	

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.

CROSSWIND

ROSETTI MARINO

nVent RAYCHEM TRACER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
02	20/01/2025	ISSUED FOR REVIEW	ADU	AMI	GPI
01	25/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING EQUIPMENT

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-EL-DD-00004	10/10	02

A1

DRAWING NO. DRAWING_NO.

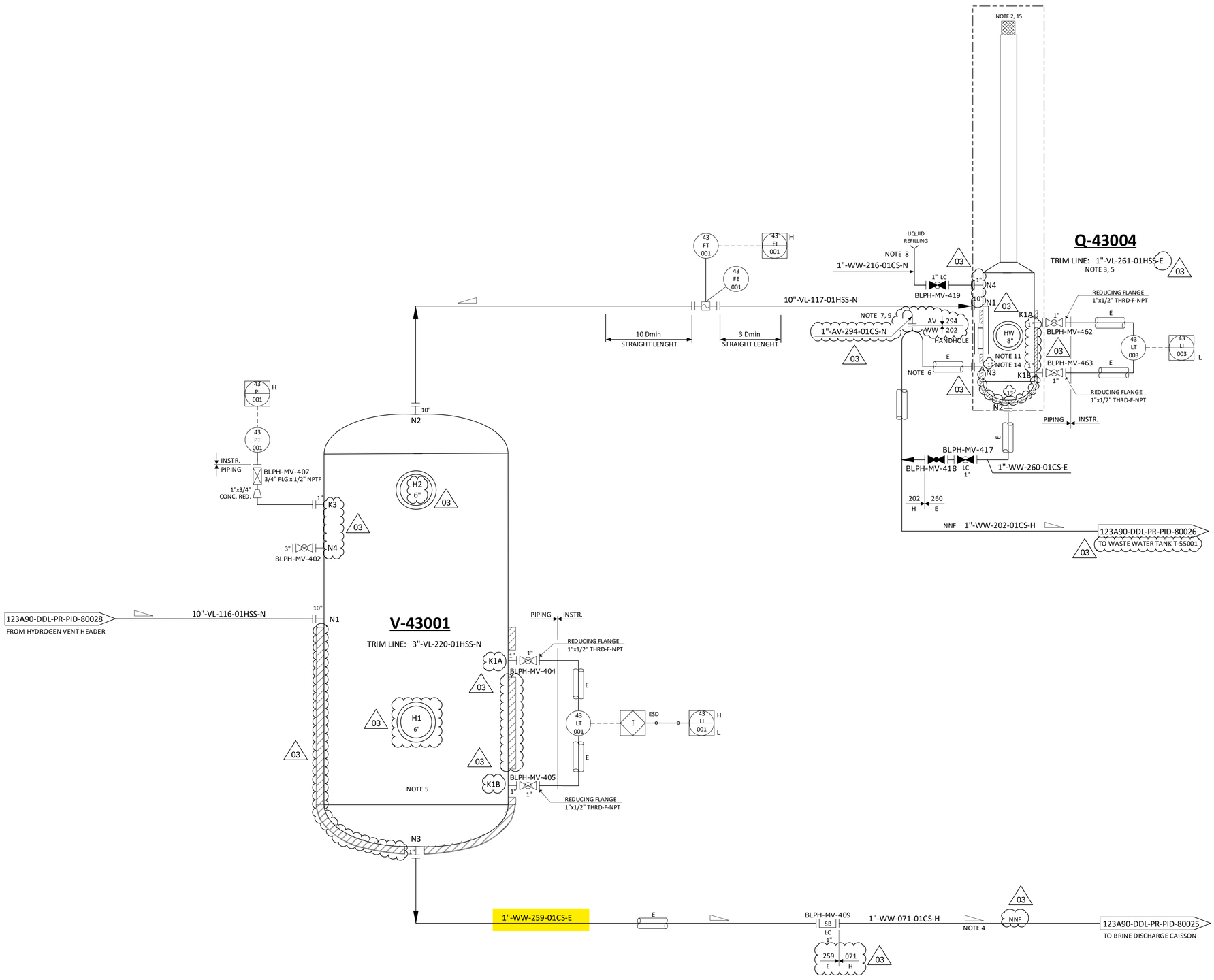
REV. REV

V-43001

HYDROGEN VENT KO DRUM
SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1
SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. (03)
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

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

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

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80029	SHEET 001	REV. 03

File Name : FILE_NAME

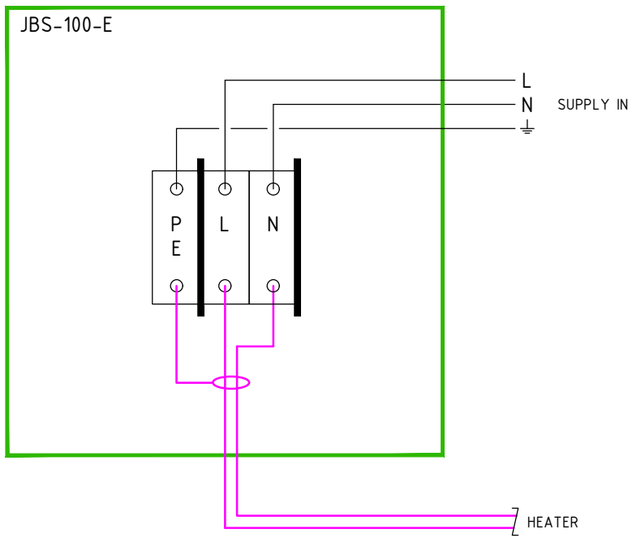
CAD FILENAME: 1724001647-EL-DG-00005 Rev.01.dwg

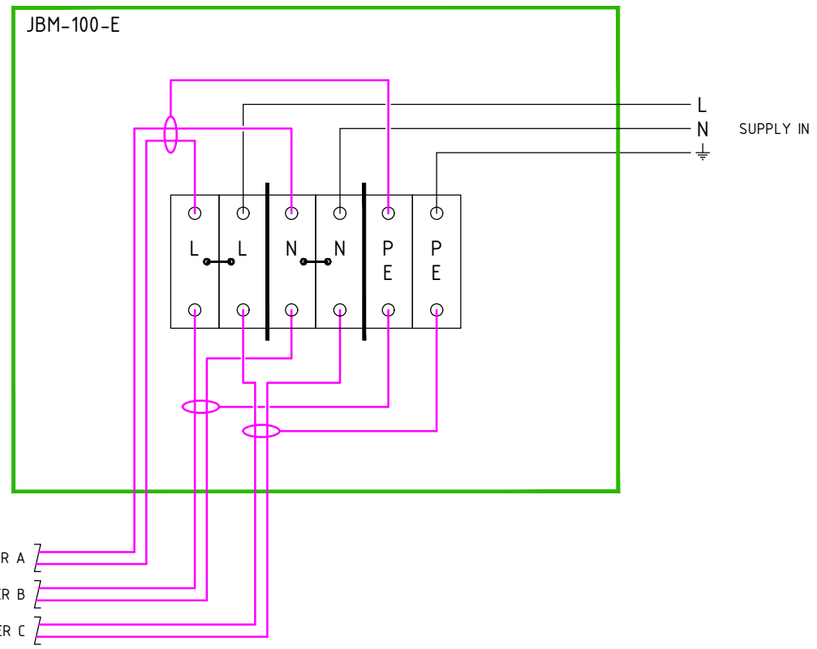
GENERAL INFORMATION:

1. JBS-100-E IS DESIGNED TO CONNECT POWER TO ONE BTV, QTVR, XTV, KTV, HTV OR VPL EHT CABLE.
2. THIS KIT INTEGRATES THE FUNCTIONS OF BOTH CONNECTION KITS AND INSULATION ENTRIES.
3. THE STAND CONNECTED TO THE BOTTOM OF THE BOX PROTECTS THE HEATING CABLE AND ALLOWS FOR UP TO 100mm (4") THERMAL INSULATION.

TECHNICAL BRIEF:

- 2 x M25 THREADED ENTRIES
- 1 x M25 STOPPING PLUGS
- 1 x M25 POWER CABLE GLAND





REV.	DATE	DESCRIPTION	BY	CHK	APP
--	--	--	--	--	--
--	--	--	--	--	--
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	08/03/2024	ISSUED FOR INFORMATION	LJB	E-C	ZS

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TITLE

TYPICAL CONNECTION OF A JBS-100-EP
SINGLE ENTRY JUNCTION BOX

PREPARED BY	-.---	LANG.	SCALE
LEAD ENGINEER	-.---	en	N/A
PROJECT NO.	DRAWING NO.	SHEET	REVISION
PIT240024	1724001647-EL-DG-00005	2/3	01

A3

CAD FILENAME: 1724001647-EL-DG-00006 Rev.01.dwg

CONTROL PANEL REF.:

Q17

MARSHALLING BOX

EJB-200N1-17-L1-01

ETB-200N1-17-L1-04 — P — EHT-1004-A — ETB-200N1-17-L1-05 — P — EHT-1004-B

ETB-200N1-17-L1-02 — P — EHT-1005-A

ETB-200N1-17-L1-03 — P — EHT-1006-A

ETB-200N1-17-L1-01 — P — EHT-2002-A

SPARE

CIRCUIT NO.	1004	1005, 1006	2002	
C.B. RATING (A)	32	32	32	
START-UP I (A)	2.6	0.4	0.6	
LOAD (W)	383	65	81	
SERVICE	WINTERIZING	WINTERIZING	WINTERIZING	
NOTES FOR THE CIRCUIT	--	--	--	

GENERAL NOTES

CROSSWIND

ROSETTI MARINO

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	02/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING
SINGLE LINE DIAGRAM (SLD)

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-EL-DG-00006	4/4	01

CAD FILENAME: PIT240024_0003_2001_001_03.dwg

HEAT TRACING DATA

HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	PIPE LENGTH (m)	HEATER LENGTH (m)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W/m)	POWER OUTPUT (W/m)	SHEATH TEMP. (°C)
EHT-2001-A	INSTRUMENT	3BTV2-CT	3.0	7.3	0.5	81	230	3.9	10.7	85
TOTALS			3.0	7.3	0.5	81				

HEATER ADDER TABLE

PIPE SIZE (Ins)	TYPE	QTY	ALLOWANCE PER ITEM (m)	TOTAL ALLOWANCE (m)

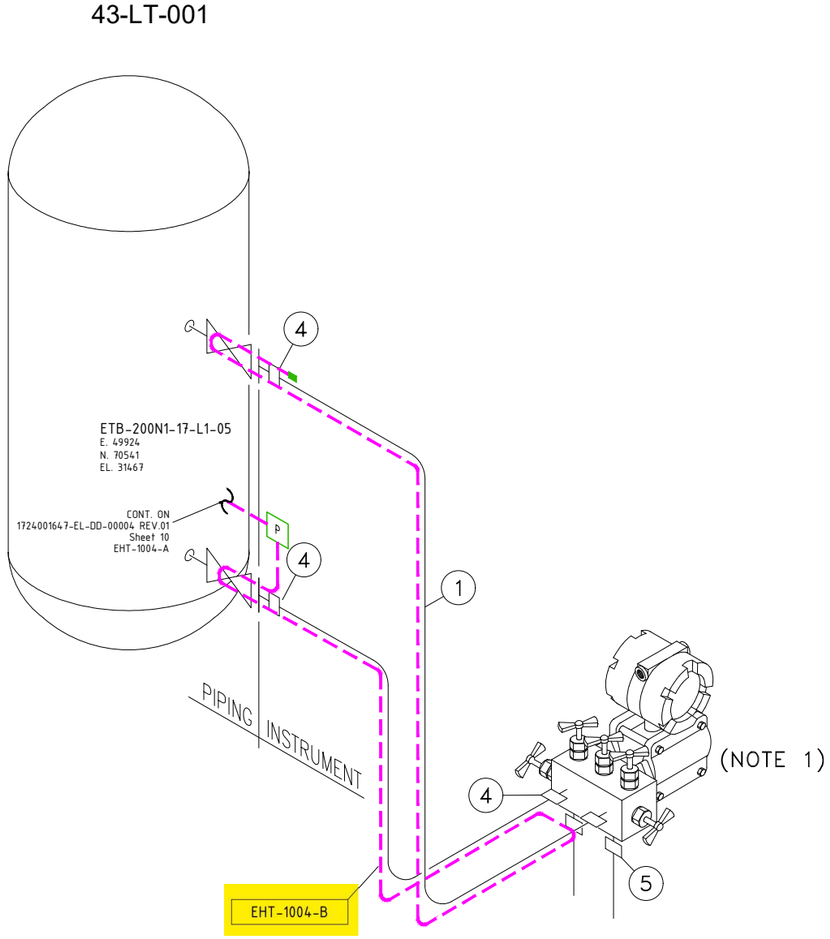
DESIGN PARAMETERS

CIRCUIT NUMBER	2001	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	11°C	INSULATION TYPE	RW/MF 1.2015
MAX. EXPOSURE TEMP.	11°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	100°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

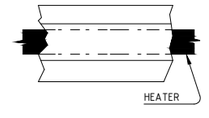
COMPONENT BILL OF MATERIALS

CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	7.3	m	Raychem Self-Regulating Heating Cable
GS-54	0.3	each	Glass Tape (16m/roll), suited for SS pipes
LAB-I-01	2	each	Warning Label - English
E-20	1	each	Heat shrink end seal, ATEX (BTV, QTVR)

ELECTRICAL HOOK-UP FOR LEVEL TRANSMITTERS (DP CELL TYPE)



ALUMINIUM TAPE (REF: ATE180)



SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

LINE NUMBERS	REFERENCE DRAWINGS / DOCUMENTS
43-LT-001	

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.
4. HEATING CABLE ALLOWANCES PROVIDED IN THE 'EHT ADDER TABLE' FOR FLANGES AND VALVES ARE IN ADDITION TO THEIR LINEAR LENGTHS.

CROSSWIND

ROSETTI MARINO

nVent RAYCHEM TRACER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
03	13/01/2025	ACCEPTED FOR CONSTRUCTION	ADU	AMI	GPI
02	29/11/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.

DOC CODE

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING
INSTRUMENT HOOK-UP

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-IN-HD-00010	3/4	03

A1

BTV

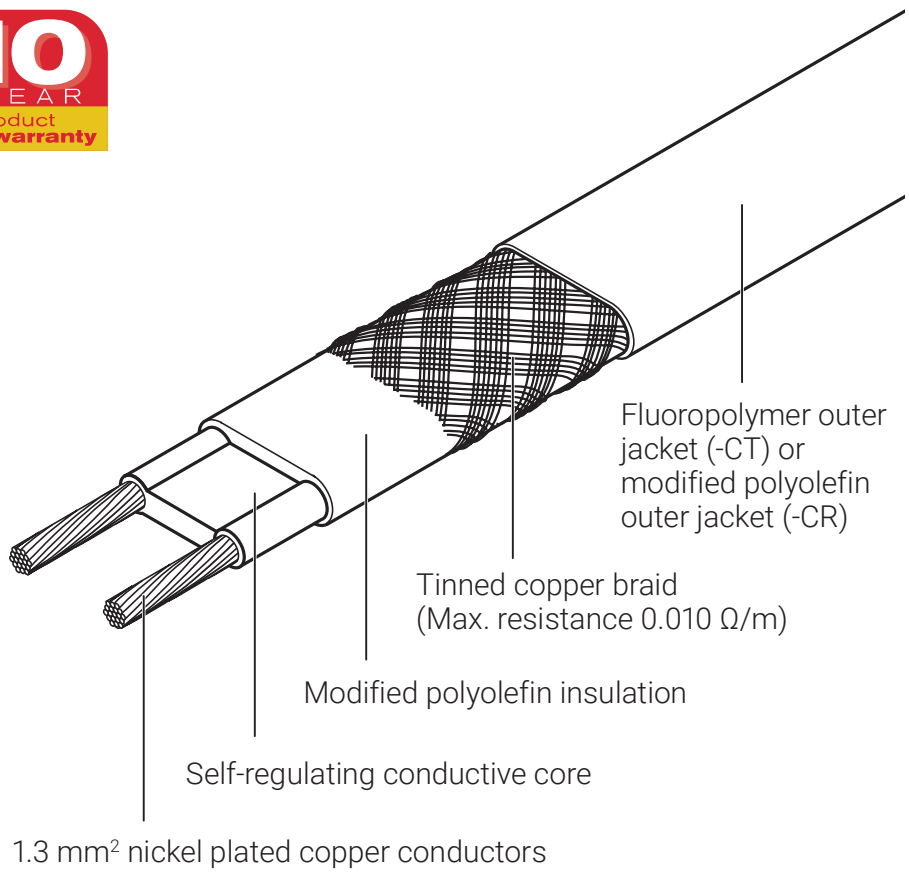
nVent RAYCHEM

CONNECT AND PROTECT

Self-regulating Heating Cable

PRODUCT OVERVIEW

10 YEAR Product warranty



Electrical heat-tracing for frost protection without steam cleaning.
The nVent RAYCHEM BTV-family of self-regulating, parallel circuit heating cables is used for frost protection of pipes and vessels. It can also be used for process temperature maintenance up to 65°C.

Application

Traced surface type	Carbon steel Stainless steel Plastic Painted or unpainted metal
Chemical resistance	For organic corrosives: use -CT (fluoropolymer outer jacket) For mild inorganic solutions: use -CR (modified polyolefin outer jacket) For aggressive organics and corrosives consult your local nVent representative

Supply voltage

230 Vac (Contact your local nVent representative for data on other voltages)

PRODUCT SPECIFICATIONS

Product dimensions and weight

	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Width x Thickness (nominal) mm	10.5 x 5.5		13.2 x 5.5	
Weight (g/m)	110		150	

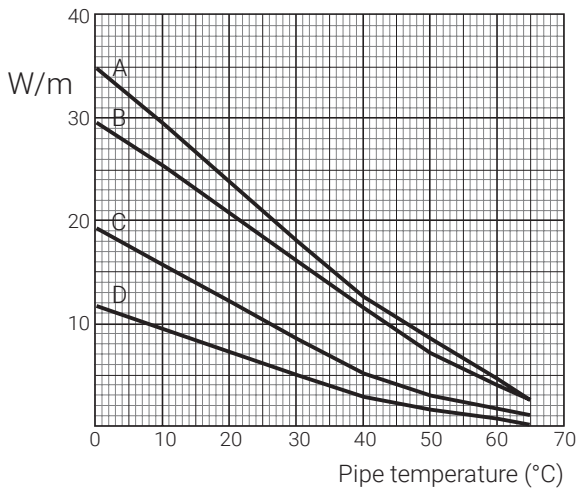
Technical details

Maximum maintain or continuous exposure temperature (power on/off)	65°C
Maximum intermittent exposure temperature (power on/off)	85°C Maximum cumulative exposure 1000 hours
Minimum installation temperature	–60°C
Minimum bend radius	–60°C ≤ T<–20°C: 35 mm –20°C ≤ T<–10°C: 30 mm –10°C ≤ T< 0°C: 25 mm 0°C ≤ T <+10°C: 20 mm T≥ +10°C: 12 mm

Thermal output rating

Nominal power output at 230 Vac on insulated steel pipes

A 10BTV2-CT
10BTV2-CR
B 8BTV-2-CT
8BTV-2-CR
C 5BTV2-CT
5BTV2-CR
D 3BTV2-CT
3BTV2-CR



	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Nominal power output (W/m at 10°C)	9	16	25	29

Maximum circuit length based on type ‘C’ circuit breakers according to EN 60898

Electrical protection sizing	Start-up temperature	Maximum heating cable length per circuit (m)			
16 A	–20°C	155	110	70	45
	+10°C	200	160	110	65
20 A	–20°C	195	140	90	55
	+10°C	200	160	125	85
25 A	–20°C	200	160	110	70
	+10°C	200	160	125	105
32 A	–20°C	200	160	125	90
	+10°C	200	160	125	110

The above numbers are for circuit length estimation only. For more detailed information please use the nVent RAYCHEM TraceCalc software or Contact your local nVent representative. nVent requires the use of a 30 mA residual current device to provide maximum safety and protection from fire. Where design results in higher leakage current, the preferred trip level for adjustable devices is 30 mA above any inherent capacitive leakage characteristic of the heater as specified by the trace heater supplier or alternatively, the next common available trip level for non adjustable devices, with a maximum of 300 mA. All safety aspects need to be proven.

APPROVALS

For use ordinary area and hazardous area Zone 1 and Zone 2 (Gas), Zone 21 and Zone 22 (Dust).

Temperature classification
T6

Product certification

More details about product certification, approvals and conditions of safe use are available in the installation manual for Self-regulating and Power limiting heating cable systems at www.nVent.com/RAYCHEM

ORDERING INFORMATION

Part description	3BTV2-CR	5BTV2-CR	8BTV-2-CR	10BTV2-CR
Part No. (*)	914279-000	414809-000	479821-000	677245-000
Part description	3BTV2-CT	5BTV2-CT	8BTV-2-CT	10BTV2-CT
Part No. (*)	469145-000	487509-000	008633-000	567513-000

Components

nVent offers a full range of components for power connections, splices and end seals. These components must be used to ensure proper functioning of the product and compliance with electrical requirements.

(*) Localized versions may exist with limited approvals and different part numbers. Contact your local sales representative

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

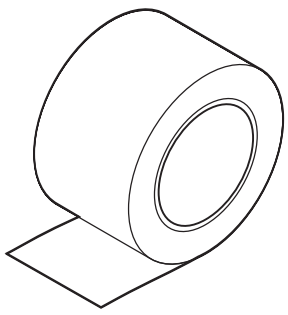
Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com

Our powerful portfolio of brands:
CADDY ERICO HOFFMAN RAYCHEM SCHROFF TRACER

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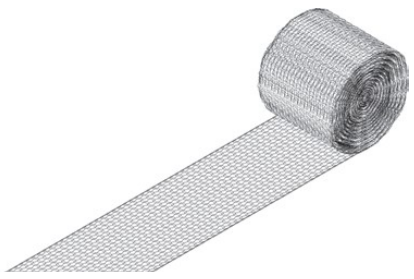
ATE-180

Aluminium tape* for attaching heating cables and thermostat sensors to pipes and tanks. Minimum installation temperature: 0°C. Also suitable for stainless steel pipes.

55 m per roll, 63.5 mm width.

PN: 846243-000 Weight: 0.84 kg

*Power output of selfregulating heating cables might increase when installed with aluminium tape or other heat transfer aids. Please use TraceCalc or contact nVent representative for further details.

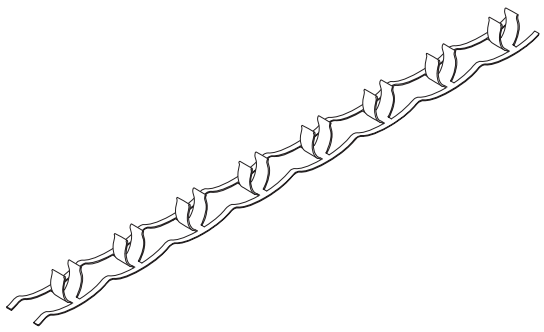


HWA-METAL-MESH-SS-50MM-10M

Stainless steel mesh for fixation of heating cables on valves, pumps or other odd-shaped surfaces. This mesh provides optimum contact and heat transfer between heating cables and heated equipment and can be used for exposure temperatures up to 400°C.

10 m per roll, 50 mm width.

PN: 1244-005772 Weight: 0.36 kg



HWA-PI-FIX- SS-xMM-10M

Stainless steel clip band to attach Polymer Insulated series heating cables to pipes. Clips at regular distances to allow for even heater spacing. Band available in two sizes for different diameter ranges.

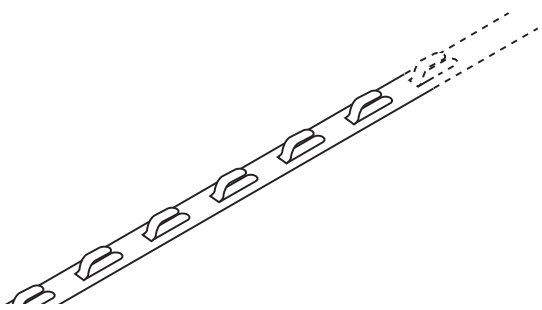
10 m per roll.

For diameters up to 5 mm, HWA-PI-FIX-SS-5MM-10M

PN: 1244-007768 Weight: 0.32 kg

For diameters up to 8 mm, HWA-PI-FIX-SS-8MM-10M

PN: 1244-007769 Weight: 0.52 kg



HARD-SPACER-SS-25MM-25M

Stainless steel spacer for fixing the heating cable on walls, tanks and vessels, etc.

Width spacer: 12.5 mm.

Fixing distance for cables: each 25 mm.

25 m per roll.

PN: 107826-000 Weight: 1.10 kg

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
CB-200F4B	AC UPS F&G - Battery Isolator-B	CONTAINER B-300 (LOWER DECK)	1724000372	3W Power	Cortem Spa		EJBC	Zone 1	EPT 20 ATEX 4075X	1724000372-EL-DG-00011	II 2GDEx db IIC T6 Gb Ex tb IIIC T 85°C Db	-	N/A	True	N/A	False	
EAT-200N1-01	Trace Heating - Remote Ambient Thermostat	LOWER DECK	1724001647	nVent	nVent	1244-022663	ETS-05-A2-E-A	Zone 1	Baseefa 13ATEX0137	1724001647-EL-DD-00004	II 2(1)G Ex eb ia mb [ia Ga] IIC T5 Gb - 40ºC ≤ Ta ≤ +60ºC II 2D Ex tb IIIC T100ºC Db	-	N/A	True	N/A	False	
EHT-1001-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1002-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1003-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1004-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1004-B	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1005-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1006-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1007-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-2002-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EJB-200F2-01	Top Obstruction Lights Junction Box	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990082	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
EJB-200F2-02	Intermediate obstruction lights junction box	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990083	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_4
EJB-200N1-02-L1-01	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990045	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-02	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990044	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-03	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990043	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
EJB-200N1-02-L1-05	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990058	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-06	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990057	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-07	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990059	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-08	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990060	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-09	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990061	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-10	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990047	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-11	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990056	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-12	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990055	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-13	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990054	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-14	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990053	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-15	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990052	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-16	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990051	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-17	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990050	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-18	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990049	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-19	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990048	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-20	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990072	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-01	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990003	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-02	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990004	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-03	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990002	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-04	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990001	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-05	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990012	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-06	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990011	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-07	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990010	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-08	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990009	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-09	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990008	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-10	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990007	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-11	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990006	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-12	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990005	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-13	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990014	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-14	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990013	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-04-L3-01	Stair Normal Lighting JB	LOWER DECK STAIRS	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990032	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-04-L3-02	Stair Normal Lighting JB	LOWER DECK STAIRS	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990033	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-01	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990064	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-03	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990062	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
EJB-200N1-08-L1-04	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990065	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-05	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990077	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-06	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990078	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	

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:	**SGS20ATEX0048X – Issue 3**
4	Product:	**BTV Range of Self-Regulating Trace Heating Systems**
5	Manufacturer:	**nVent Thermal LLC**
6	Address:	**899 Broadway Street, CA, 94063-3104, United States of America**

7 This re-issued certificate extends EU Type Examination Certificate No. **SGS20ATEX0048X** 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.

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 IEC 60079-7:2015+A1:2018 EN 60079-18:2015+A1:2017
EN 60079-30-1:2017 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 60079-30-1 eb IIC T6 Gb or Ex 60079-30-1 eb mb IIC T6 Gb T_{min} -60°C**
Ex 60079-30-1 tb IIIC T80°C Db or Ex 60079-30-1 mb tb IIIC T80°C Db

SGS Fimko Oy Customer Reference No. **865** Project File No. **21/0455**

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SGS Fimko Oy
Takomotie 8
FI-00380 Helsinki, Finland
Telephone +358 (0)9 696 361
e-mail **sgs.fimko@sgs.com**
web site **www.sgs.fi**
Business ID 0978538-5 Member of the SGS Group (SGA SA)

Tuomas Hänninen
SGS Fimko Oy

13 # Schedule

14 ## Certificate Number SGS20ATEX0048X – Issue 3

15 Description of Product

The BTV Range of Self-Regulating Trace Heating Systems is of the parallel circuit self-regulating type, rated at up to 277V, with power output up to 33W/m (10W/ft). The units have a maximum self-limiting temperature of 80°C.

Each trace heating system comprises:
- the active heating cable.
- an end seal for terminating the remote end of the unit.
- a cable gland for connecting the powered end of the unit to a suitable terminal enclosure, or alternative integrated power connection systems.

The active heating cable comprises two stranded copper conductors around which is extruded a semi-conductive core material. This core material increases in resistance with increasing temperature and gives the cable its self-limiting property. This semi conductive core with embedded conductors forms the active part of the heating cable. An extruded layer of fluoropolymer serves to insulate the semi conductive core from the conductive covering, covering the active heater. A protective anti-corrosion fluoropolymer sheath may be extruded over the conductive covering.

The declared maximum withstand temperature for the range is 85°C and the minimum installation temperature is -60°C.

CABLE ACCESSORIES

END SEALS

The end seals for terminating the remote end of the unit may be the following types:

Types E-100-L or E-100, which are mechanical end seals incorporating an end cap which is filled with silicone grease sealant covered by certificates Sira14ATEX3015X and PTB09ATEX1060U.

Types E-100-L-A or E-100-A, which are mechanical end seals incorporating an end cap which is filled with silicone grease sealant.

A Raychem Type E-20 heat shrink end seal kit.

Type E-150 mechanical end seals, covered by certificate DEKRA20ATEX0011U.

SPLICES AND JOINTS

The following splicing and jointing arrangements are provided:

A Raychem Type S-20 heat shrink splice kit for connecting lengths of active heating cable.

A Raychem T-100 tee connection system, certificate PTB20ATEX1008U, for connecting up to three heater cables.

Type S-150 mechanical splice kit, covered by certificate DEKRA20ATEX0011U.

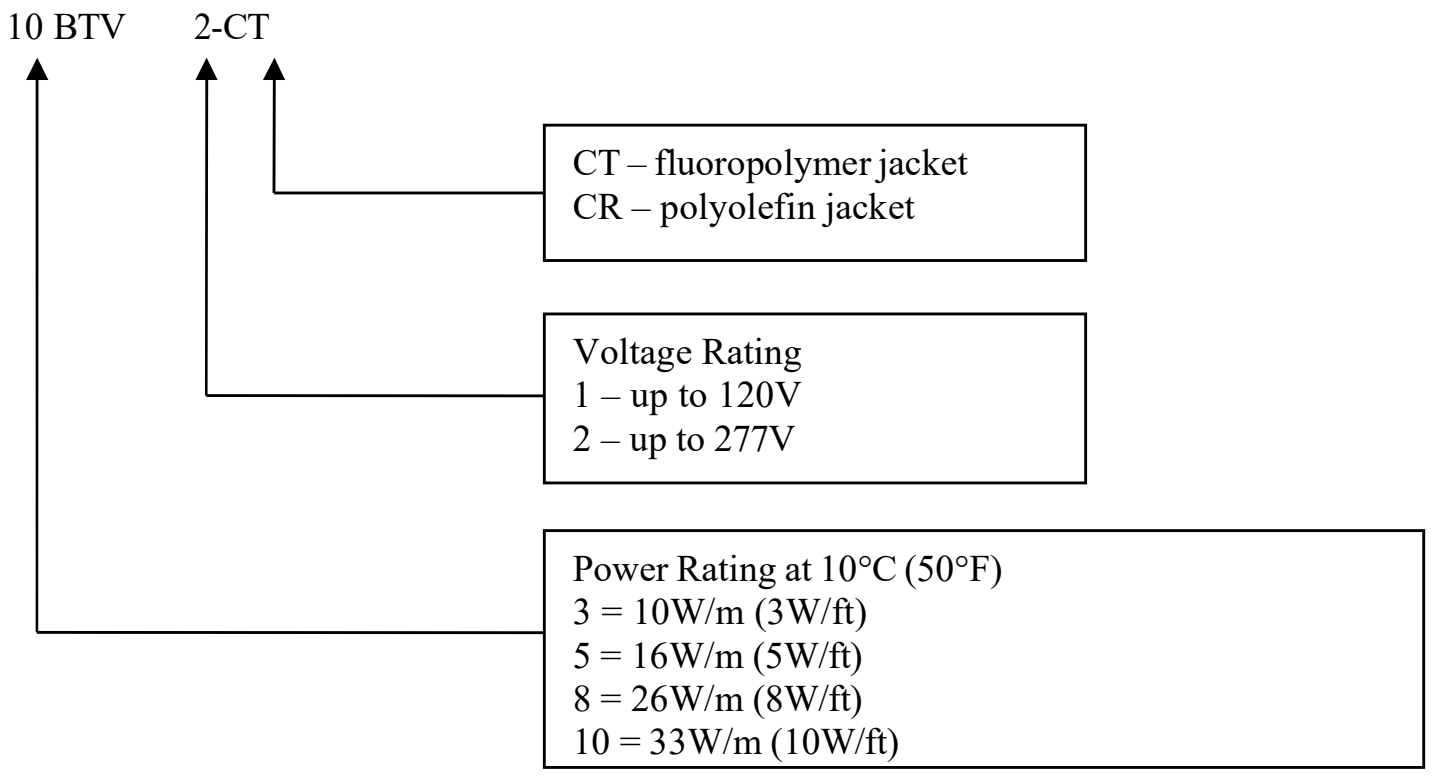
POWER CONNECTIONS

Power connection may be achieved by the following means:

Connection Type	ATEX Certificate
JBM-100	PTB20ATEX1008U
JBS-100	PTB20ATEX1008U
JBU-100	PTB20ATEX1008U
C-150-E	DEKRA20ATEX0011U
C25-21 Connection Kit	Baseefa16ATEX0037U
C25-100 Connection Kit	Baseefa16ATEX0038U
C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS Kits	Baseefa16ATEX0039U

The C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS Kits include M25 or ¾ NPT gland to Sira01ATEX1270X and core sealer to Baseefa15ATEX0194U.

A number of power levels and voltages, up to the maximum specified, are included in the range. They are identified in the following manner:



Any of the products in the range may be considered as part of a stabilised design system. In such a system the design is based upon the use of nVent proprietary software Trace calc Pro. The algorithm defined in this software may be used in additional design software.

The minimum bending radii for BTV trace heating cable at specific temperatures are shown in the table below:

Temperature, T (°C)	**Minimum Bending Radius (mm)**
$-60 \leq T < -20$	35
$-20 \leq T < -10$	30
$-10 \leq T < 0$	25
$0 \leq T < +10$	20
$T \geq +10$	12

16 Report Number

See Certificate History.

17 Specific Conditions of Use

1. The following limiting temperatures for the heat shrink end seals and splices shall not be exceeded:

   +110°C for the S-20 and E-20
   +150°C for the C-150-E, S-150 and E-150

2. The end seals, splices and power connections have the following associated ambient temperatures:

   -60°C to +56°C for the E-20 and S-20
   -55°C to +56°C for the T-100, JBM-100, JBS-100, JBU-100, and E-100
   -40°C to +56°C for the JBS-100-L, JBM-100-L, and JBU-100-L
   -55°C to +55°C for the C-150-E, S-150 and E-150
   -40°C to +40°C for the E-100-L
   -55°C to +110°C for the C25-21 and C25-100
   -60°C to +180°C for the C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS

3. The assembly of glands, splices and end terminations shall be carried out in accordance with the manufacturing instructions

4. The heating element supply circuit must include an electrical protection device in conformity with Clause 4.4 of EN 60079-30-1.

5. The minimum installation temperature is -60°C. The minimum bending radii at specific temperatures for the Type BTV units are shown in the table in the equipment description.

6. The supply to the heating unit must be terminated in a suitably certified terminal enclosure.

7. The minimum installation temperature for E-20 and S-20, end seal and splice is -20°C.

8. The installer is to carry out a dielectric strength test on Ex equipment in which the C25-21, C25-100 and C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS connection kit is fitted. No dielectric breakdown shall occur. (Alternatively, an insulation resistance test may be undertaken in accordance with EN 60079-30-2).

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
205308-A[i]	1 of 1	Q	05/27/2021	BTV-8BTV-CR & BTV-10BTV-CR
205310-A[i]	1 of 1	R	05/27/2021	BTV-8BTV-CT & BTV-10BTV-CT

Current drawings which remain unaffected by this issue:

Number	Sheet	Issue	Date	Description
906567[ii]	1 of 1	P	05/21/21	C25-21, C25-100 and C25-100-METAL-XX, C3/4-100-METAL-XX Connection Kits
906579-A[i]	1 of 1	N	01/15/2021	BTV Heater Units (European System)
205350-A[i]	1 of 1	P	03/31/20	BTV-3BTV-CT & BTV-5BTV-CT
205349-A[i]	1 of 1	J	03/26/20	BTV-3BTV-CR & BTV-5BTV-CR
906794-A[iii]	1 of 1	AA	03/30/20	Generic ATEX and IECEx Print Dwg for BTV-CT, QTVR-CT, XTV-CT, KTV-CT Heating Cables
9242869[iv]	1 & 2	O	12/09/19	LABL JBM-100-L-E
9532687[iv]	1 & 2	Q	12/09/19	LABL JBM-100-L-EP
9621473[iv]	1 & 2	O	12/09/19	LABL JBS-100-L-E
9777523[iv]	1 & 2	P	12/09/19	LABL JBS-100-L-EP
9319676[iv]	1 & 2	O	12/09/19	LABL JBU-100-L-E
9735898[iv]	1 & 2	O	12/09/19	LABL JBU-100-L-EP
908742-A[v]	1 of 1	A	2/19/20	E-20 Heat Shrinkable End Seal Kit Cut Back Dimensions
908743-A[vi]	1 of 1	A	2/19/20	S-20 Heat Shrinkable Splice Joint Kit Cut Back Dimensions

i) These drawings are common to IECEx BAS 20.0011X, SGS20ATEX0048X and are held with IECEx BAS 20.0011X.

ii) This drawing is common to IECEx BAS 16.0040U, IECEx BAS 16.0041U, IECEx 16.0042U, IECEx BAS 20.0008X, IECEx BAS 20.0009X, IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, Baseefa16ATEX0037U, Baseefa16ATEX0038U, Baseefa16ATEX0039U, SGS20ATEX0045X, SGS20ATEX0046X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and is held with IECEx BAS 16.0040U.

iii) These drawings are common to IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and are held with IECEx BAS 20.0011X.

iv) These drawings are common to IECEx BAS 20.0008X, IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, SGS20ATEX0045X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and are held with IECEx BAS 20.0008X.

v) These drawings are common to IECEx BAS 20.0010X, IECEx BAS 20.0011X, IECEx BAS 20.0013X, SGS20ATEX0047X, SGS20ATEX0048X, SGS20ATEX0050X and are held with IECEx BAS 20.0010X.

vi) These drawings are common to IECEx BAS 20.0011X, IECEx BAS 20.0013X, SGS20ATEX0048X, SGS20ATEX0050X and are held with IECEx BAS 20.0011X.

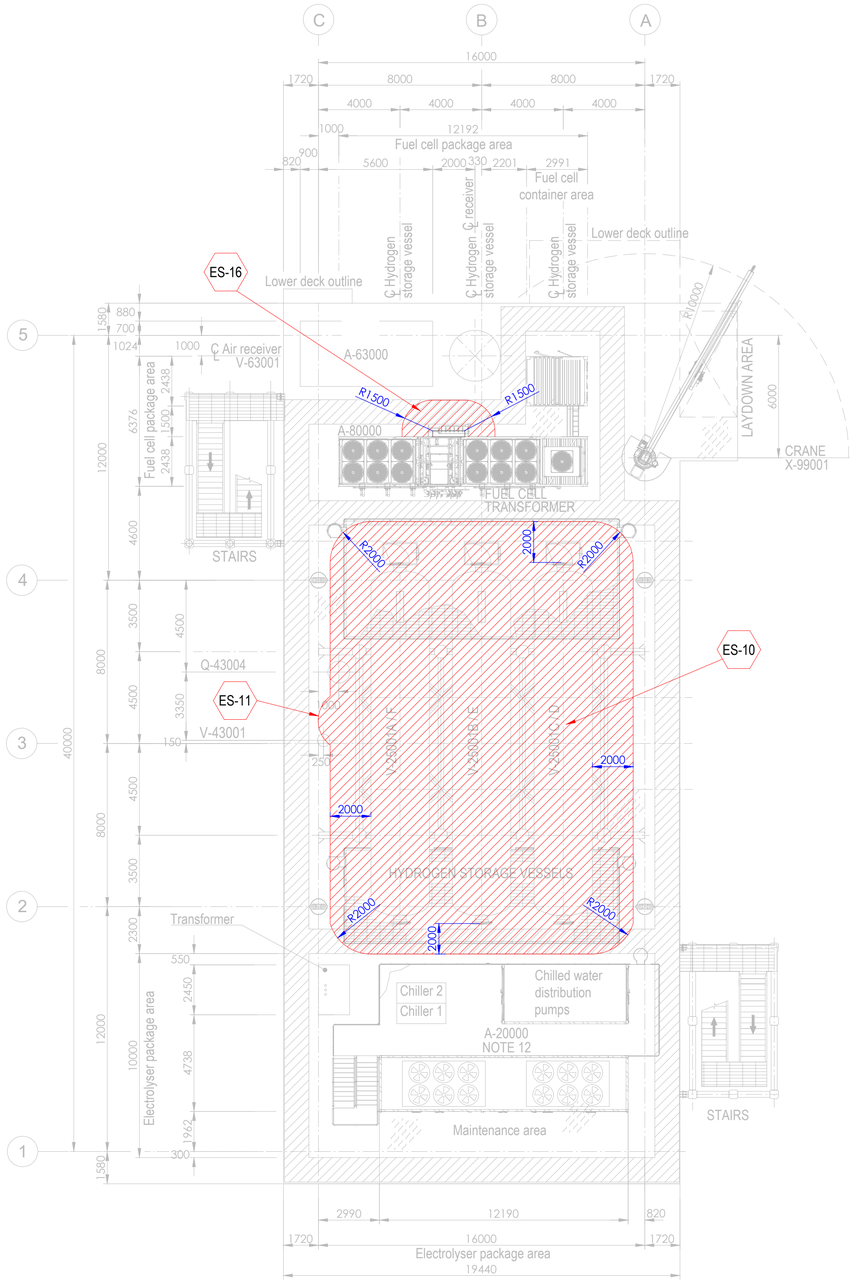
20 Certificate History

Certificate No.	Date	Comments
SGS20ATEX0048X	23 October 2020	The release of the prime certificate. The associated test and assessment against the requirements of EN 60079-0:2012+A11:2013, EN IEC 60079-7:2015+A1:2018, EN 60079-18:2015+A1:2017, EN 60079-30-1:2017 and EN 60079-31:2014 is documented in Test Report No. GB/BAS/ExTR20.0030/00.

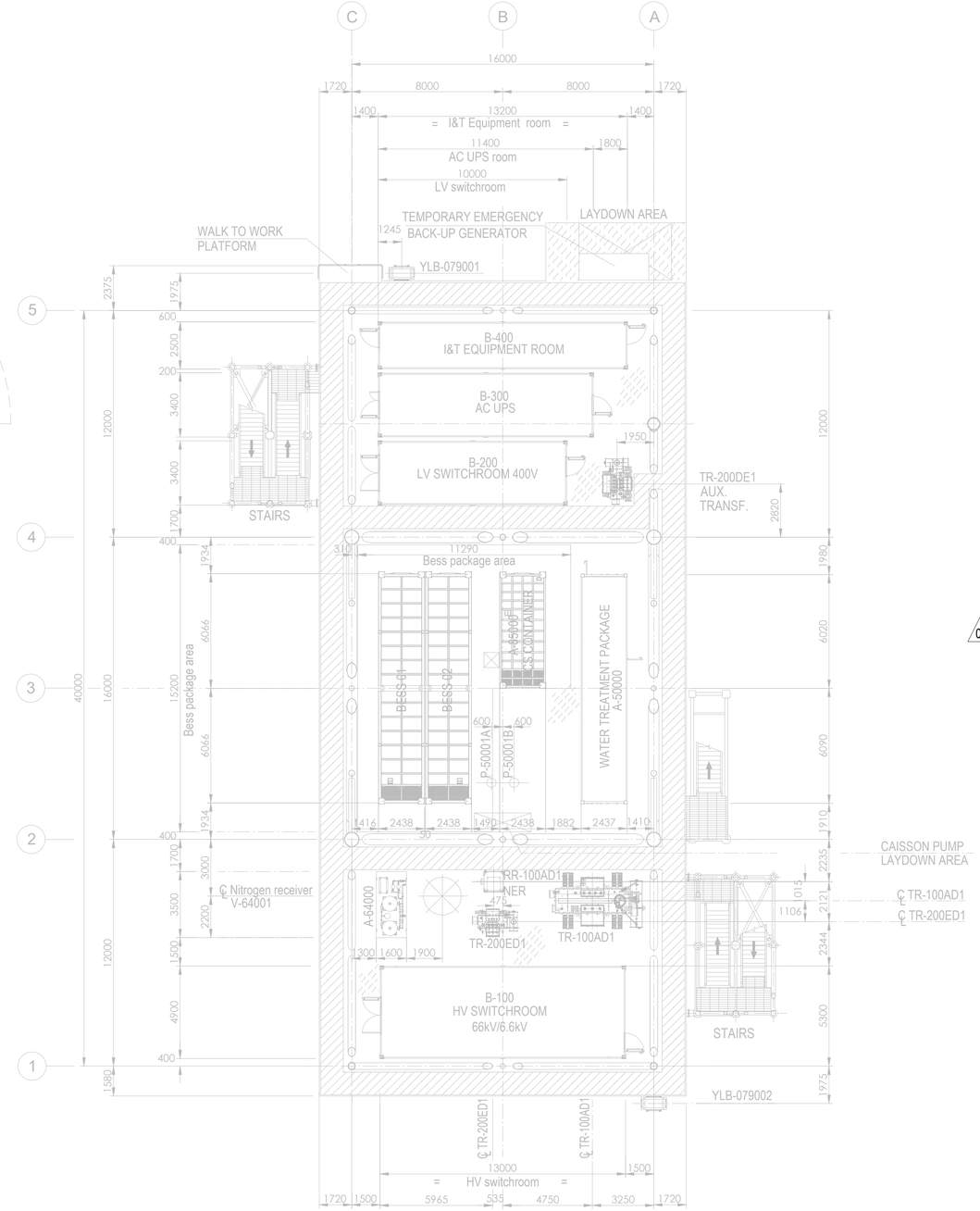
Certificate No.	Date	Comments
SGS20ATEX0048X Issue 1	11 February 2021	To assess the BTV range of self-regulating trace heating systems against EN IEC 60079-0:2018, introduce the low profile power connection, splice and end seal kits, types C-150-E, S-150 and E-150 afforded DEKRA20ATEX0011U, minor amendments to the product description, to change the product name to "BTV Range of Self-Regulating Trace Heating Systems" and to amend the Specific Conditions of Use. The associated test and assessment is documented in Test Report No. GB/BAS/ExTR21.0005/00.
SGS20ATEX0048X Issue 2	7 July 2021	Minor drawing updates not affecting certification. Baseefa Certification Report GB/BAS/ExTR21.0060/00 refers.
SGS20ATEX0048X Issue 3	3 September 2021	Minor change to the BTV-8BTV-CR, BTV-8BTV-CT, BTV-10BTV-CR and BTV-10BTV-CT heating cable dimensions. Baseefa Certification Report GB/BAS/ExTR21.0104/00 refers.
For drawings applicable to each issue, see original of that issue.		

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

REV. 02



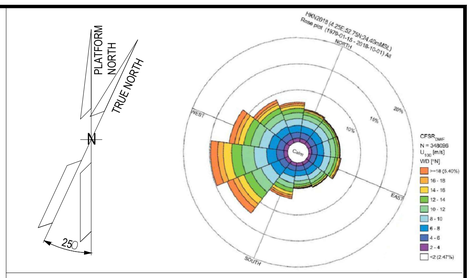
PLAN ON UPPER DECK
EL+30.310 T.O.S.



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

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

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



NOTES

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

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

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

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

CROSSWIND

ROSETTI MARINO

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

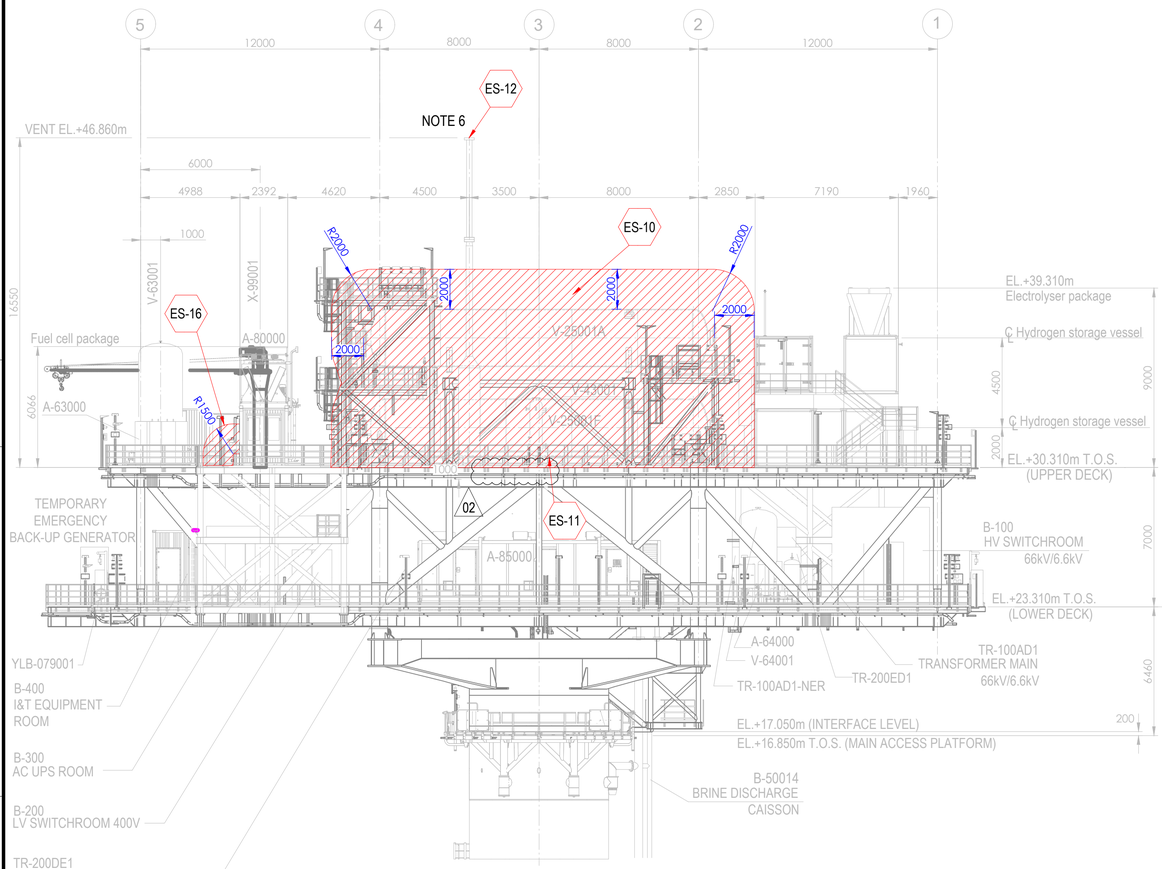
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

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

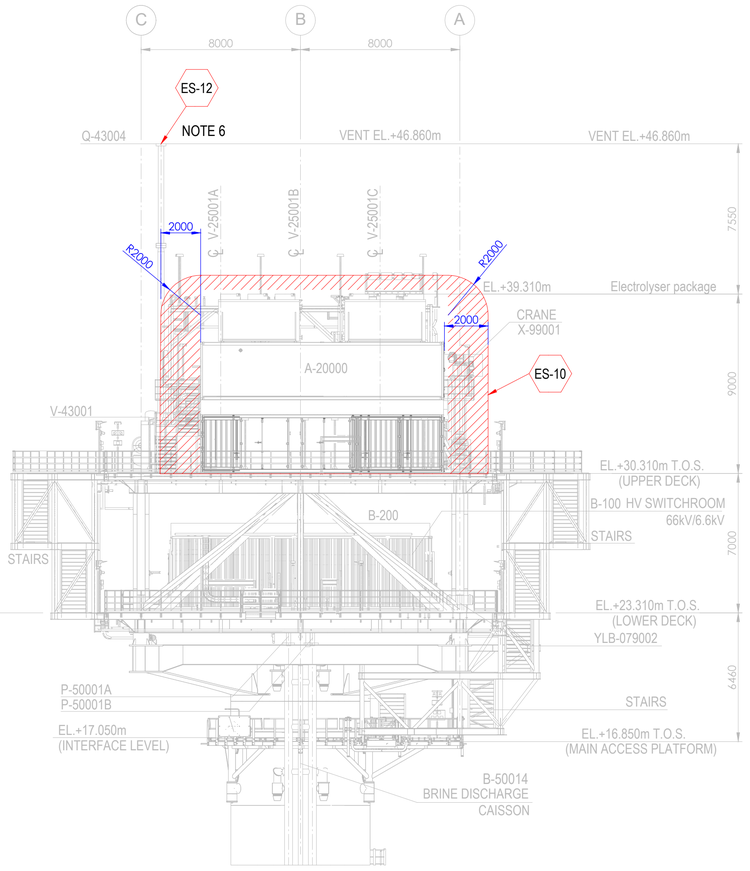
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

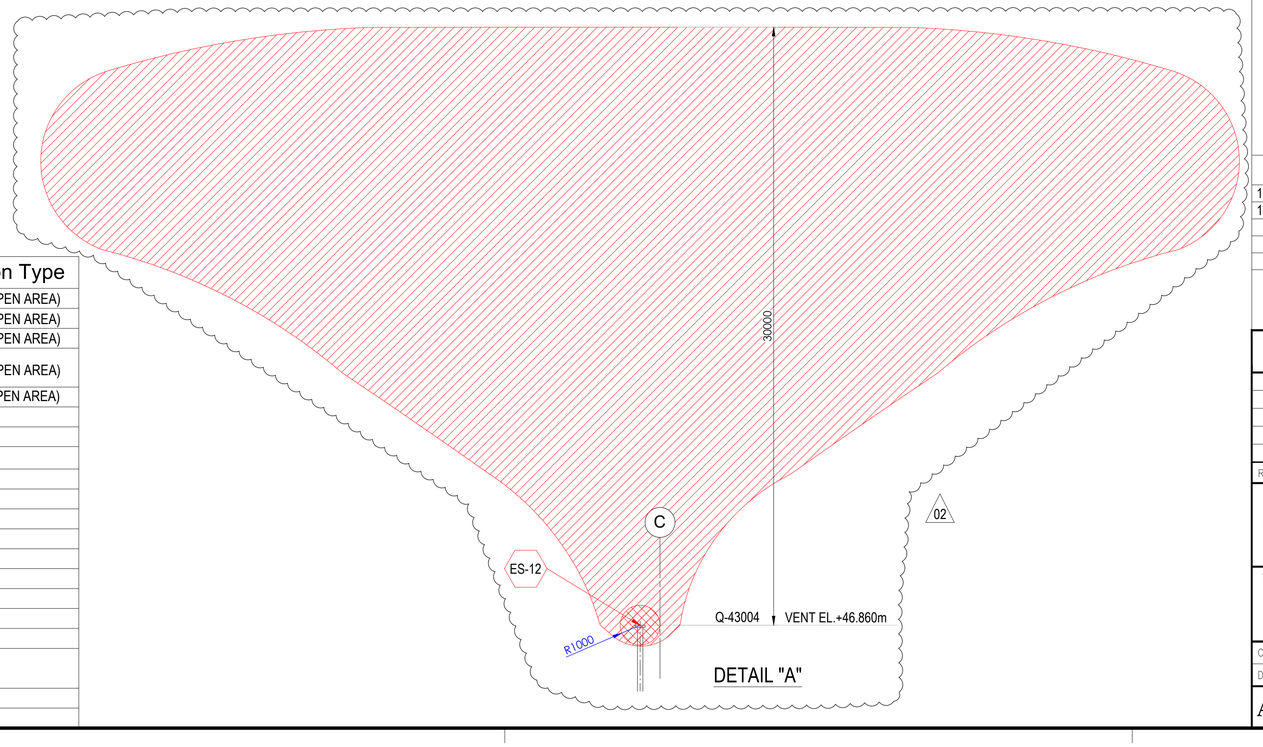


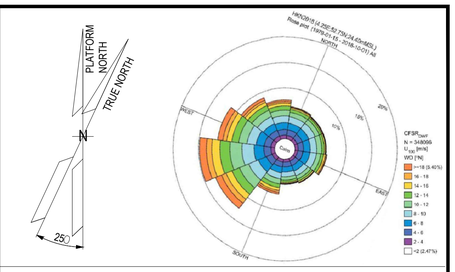
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

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





NOTES

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

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

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

CROSSWIND

ROSETTI MARINO

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

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

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

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

ITEM	Tag	EHT-1005-A	: Heat Tracing Tape	Dwg	1724001647-EL-LIS-00003
	S/Sys	83-65	: Electrical Heat Tracing	Module	UD
TASK	code	C10004642	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.**		P/N:469145-000			
Manufacturer	nVent			**Model**		3BTV2-CT			
Cert No.	SGS20ATEX0048X			**Equipment Ambient Temp.**		-60°C to +80°C			
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex eb	**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	NA	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	NA	
5	Equipment circuit identification is correct	x	OK	
6	Equipment circuit identification is available	x	OK	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	NA	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		NA	
	Physical check	x	NA	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	NA	
13	Condition of enclosure gaskets is satisfactory	x	NA	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	OK	
15	Electrical connections are tight	x	OK	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	NA	
18	Encapsulated components are undamaged	x	OK	
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	EHT-1005-A	: Heat Tracing Tape			Dwg	1724001647-EL-LIS-00003
	S/Sys	83-65	: Electrical Heat Tracing			Module	UD
TASK	code	C10004642		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01
							Hazardous Area Equipment Detailed Inspection

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

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	EHT-1005-A	: Heat Tracing Tape			Dwg	1724001647-EL-LIS-00003
	S/Sys	83-65	: Electrical Heat Tracing			Module	UD
TASK	code	C10004642		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	Giovanni Tangianu	
Date	2025-02-05	2025-02-13	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-05T10:22:14.702Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-13T12:31:28.771Z	

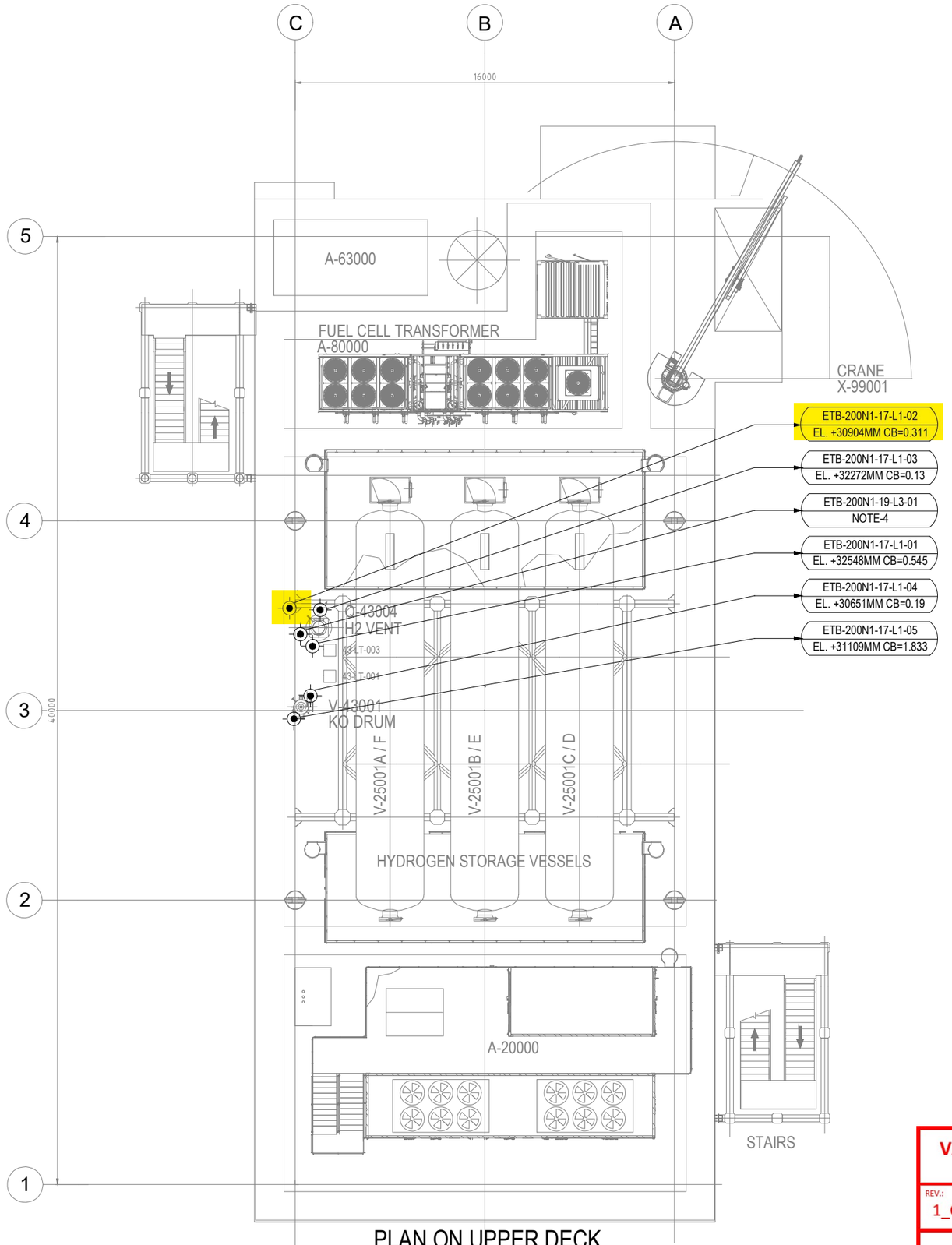
EHT CALCULATION LIST

PIT240024_ED01-1001

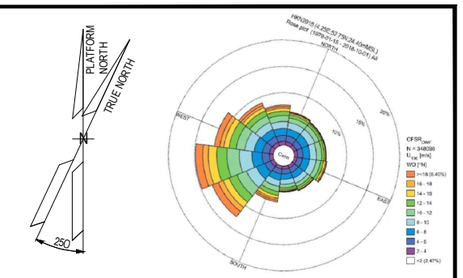
		ENGINEERING DATA				MECHANICAL & INSULATION DATA							PROCESS DATA				EHT BASIC DESIGN								EHT DETAILED DESIGN						EHT TEMP. CONTROL DATA							
Main EHT Box Number	Item Number	Heater Number	Line, Equipment or Instrument ID	nVent Circuit Number	Plant Area	Pipe Size [DN / IN]	Pipe Length [m]	Support Quantity [pc]	Valve Quantity [pc]	Other Heat Sink Quantity [pc]	Insulation Type	Insulation Thickness [mm]	Maintain Temperature [°C]	Maximum Allow. Process Temperature [°C]	Maximum Operating Temperature [°C]	Maximum Exposure Temperature [°C]	Heatloss [W/m]	Heating Cable Selection	Trace Ratio	Heating Cable Output [W/m]	EHT Cable per Support [m]	EHT Cable per Valve [m]	EHT Cable per Other Heatsink [m]	Total EHT Cable [m]	Max. Allow. EHT Circuit Length [m]	Connection Type	Voltage [V]	Operating Current [A]	Total Operating Load [W]	Start-Up Current [A]	Temp. Control Method	Controller Set Point [°C]	Minimum Controlled Temperature [°C]	Maximum Controlled Temperature [°C]	Maximum Uncontrolled Temperature [°C]	Revision	Remark
																		GRAND TOTAL						**181.4**				**9.69**	**2226**	**14.91**							
ETB-200N1-16-L3-01	1	EHT-1001-A	1"-DM-001-01SS-E	1001	PIPING	1	17.6	5	1	2	RW/MF 1:2015	20	5	100	22	22	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	22.0	199	Single L-N	230	1.18	271	1.8	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**22.0**			**230**	**1.18**	**271**	**1.8**							
ETB-200N1-15-L2-01	1	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	11.0	4		1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	13.9	199	Single L-N	230	0.73	167	1.1	Ambient sensing, standard	5	18	29	50	00	
	2	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	3	EHT-1002-A	1"-CI-032-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	4	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	5	EHT-1002-A	1"-CI-030-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	6	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.75	0.5		1		RW/MF 1:2015	20	5	50	25	25	3.4	3BTV2-CT	2.0	10.7		1.5		2.6	199	Single L-N	230	0.15	34	0.2	Ambient sensing, standard	5	30	38	55	00	
	7	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.5	0.5		1		RW/MF 1:2015	20	5	50	25	25	2.9	3BTV2-CT	2.0	10.7		1.4		2.5	199	Single L-N	230	0.14	32	0.2	Ambient sensing, standard	5	32	40	56	00	
																		TOTAL						**36.4**			**230**	**2.00**	**459**	**3.1**							
ETB-200N1-14-L1-01	1	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	4	0.5				RW/MF 1:2015	20	5	100	25	25	10.2	3BTV2-CT	1.0	10.7				0.6	199	Single L-N	230	0.03	7	0.1	Ambient sensing, standard	5	5	20	46	00	
	2	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	4.7	1		1	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1		0.5	9.3	199	Single L-N	230	0.47	107	0.7	Ambient sensing, standard	5	14	27	49	00	
	3	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	4	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	7.8	3			RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1			8.6	199	Single L-N	230	0.48	111	0.7	Ambient sensing, standard	5	14	27	49	00	
	5	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	6	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.8	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	7	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	1.4	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	4.2	199	Single L-N	230	0.23	54	0.4	Ambient sensing, standard	5	24	34	53	00	
	8	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	9	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	10	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.7	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	11	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	1.2	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	3.7	199	Single L-N	230	0.20	47	0.3	Ambient sensing, standard	5	24	34	53	00	
	12	EHT-1003-A	1"-SWS-147-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	13	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	14	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	15	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1	0.1				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	28	37	54	00	
	16	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
	17	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	18	EHT-1003-A	1"-SWS-146-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	19	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	20	EHT-1003-A	1"-SWS-290-01SD-E	1003	PIPING	1	1.1	1	2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7	0.3	1.6		5.8	199	Single L-N	230	0.33	76	0.5	Ambient sensing, standard	5	28	37	54	00	
	21	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**78.6**			**230**	**4.37**	**1002**	**6.7**							
ETB-200N1-17-L1-04	1	EHT-1004-A	1"-WW-259-01CS-E / V-43001	1004	PIPING	1	0.9		1	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7		0.8	0.5	3.2	199	Single L-N	230	0.12	28	0.2	Ambient sensing, standard	5	18	29	50	00	Combined with EHT-1004-B
																		TOTAL						**3.2**			**230**	**0.12**	**28**	**0.2**							
ETB-200N1-17-L1-02	1	EHT-1005-A	1"-WW-260-01CS-E	1005	PIPING	1	1.2	1	2	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	4.6	199	Single L-N	230	0.20	46	0.3	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1006-A
																		TOTAL						**4.6**			**230**	**0.20**	**46**	**0.3**							
ETB-200N1-17-L1-03	1	EHT-1006-A	1"-WW-202-01CS-H	1006	PIPING	1	1.0			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	1.0	10.7			0.5	2.5	199	Single L-N	230	0.08	19	0.1	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1005-A
																		TOTAL						**2.5**			**230**	**0.08**	**19**	**0.1**							
ETB-200N1-15-L2-02	1	EHT-1007-A	1"-CI-043-01CP-E	1007	PIPING	1	15.0	6		4	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	19.5	199	Single L-N	230	1.04	239	1.6	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**19.5**			**230**	**1.04**	**239**	**1.6**							
ETB-200N1-17-L1-05	1	EHT-1004-B	43-LT-001	2001	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	Combined with EHT-1004-A
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							
ETB-200N1-17-L1-01	1	EHT-2002-A	43-LT-003	2002	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

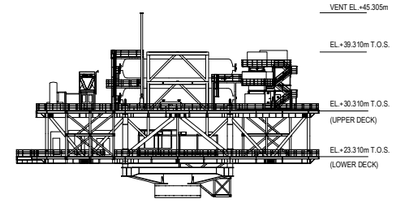
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_C	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 2of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

CAD FILENAME: PIT240024_DD01_1005_001_02.dwg

HEAT TRACING DATA

HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	PIPE LENGTH (m)	HEATER LENGTH (m)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W/m)	POWER OUTPUT (W/m)	SHEATH TEMP. (°C)
EHT-1005-A	PIPING	3BTV2-CT	1.2	4.6	0.3	46	230	3.9	10.7	85
		TOTALS	1.2	4.6	0.3	46				

HEATER ADDER TABLE

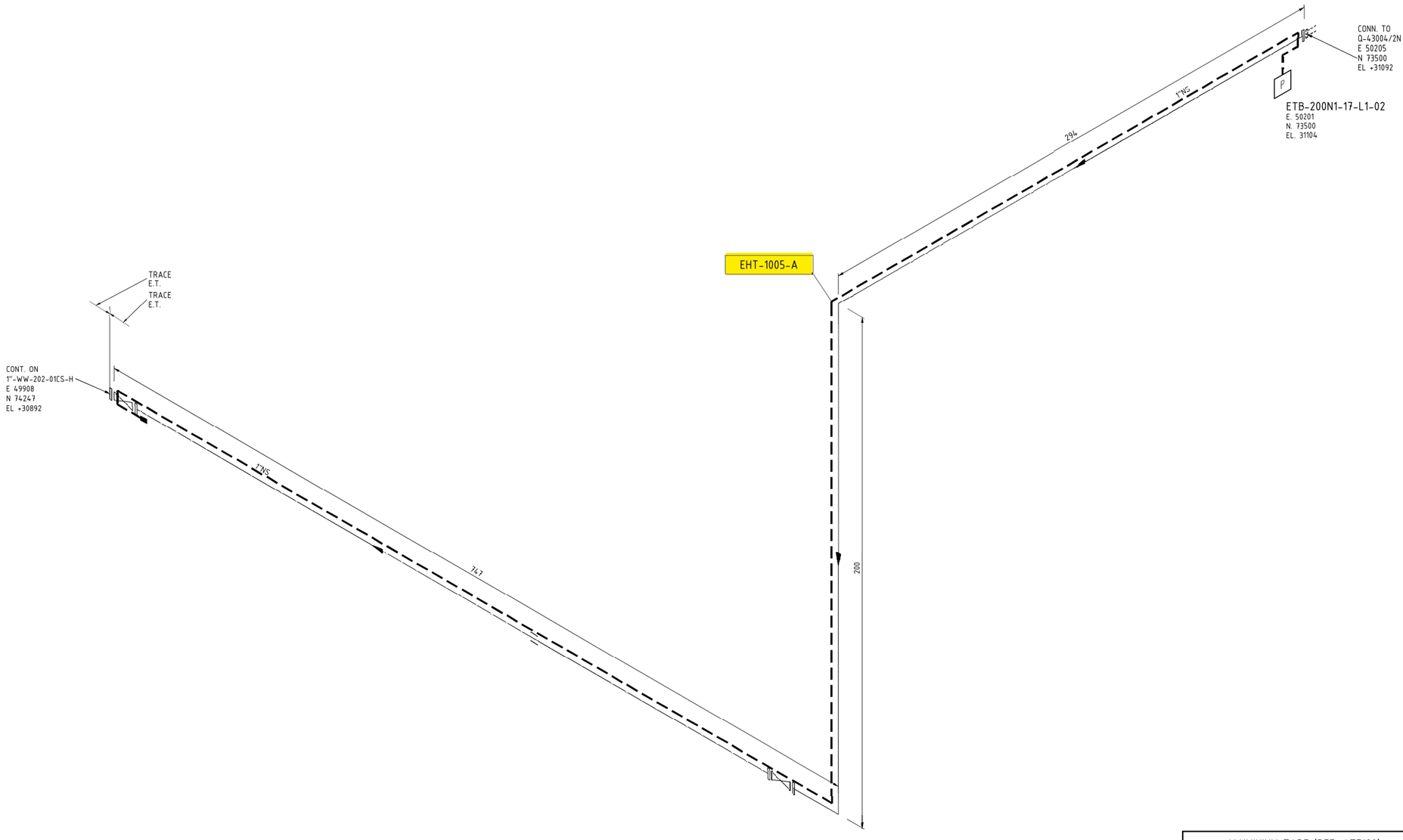
PIPE SIZE (Ins)	TYPE	QTY	ALLOWANCE PER ITEM (m)	TOTAL ALLOWANCE (m)
1	Typical Flange (fixed adder)	1	0.46	0.46
1	Typical Metal Valve	2	0.82	1.64
1	Typical Pipe Support	1	0.15	0.15

DESIGN PARAMETERS

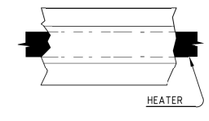
CIRCUIT NUMBER	1005	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	11°C	INSULATION TYPE	RW/MF 1.2015
MAX. EXPOSURE TEMP.	11°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	100°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

COMPONENT BILL OF MATERIALS

CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	4.6	m	Raychem Self-Regulating Heating Cable
JBM-100-E	1	each	Integrated Junction Box, Multiple-Entry, Cold-Applied, ATEX
PSE-090	1	each	Pipe Strap for 1.1/4" to 3" (40-90mm)
GS-54	0.2	each	Glass Tape (16m/roll), suited for SS pipes
LAB-I-01	1	each	Warning Label - English
E-20	1	each	Heat shrink end seal, ATEX (BTV, QTVR)
JBM-SPA	0.2	bag	Small Pipe Adapter for JBM-100-E



ALUMINIUM TAPE (REF: ATE180)



SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

LINE NUMBERS	REFERENCE DRAWINGS / DOCUMENTS
1"-WW-260-01CS-E	123A90-DDL-PP-DI-71000_124

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.
4. HEATING CABLE ALLOWANCES PROVIDED IN THE 'EHT ADDER TABLE' FOR FLANGES AND VALVES ARE IN ADDITION TO THEIR LINEAR LENGTHS.

CROSSWIND

ROSETTI MARINO

nVent RAYCHEM TRACER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
02	20/01/2025	ISSUED FOR REVIEW	ADU	AMI	GPI
01	25/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.

DOC CODE

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING ISOMETRIC

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-EL-DD-00004	7/10	02

DRAWING NO. DRAWING_NO.

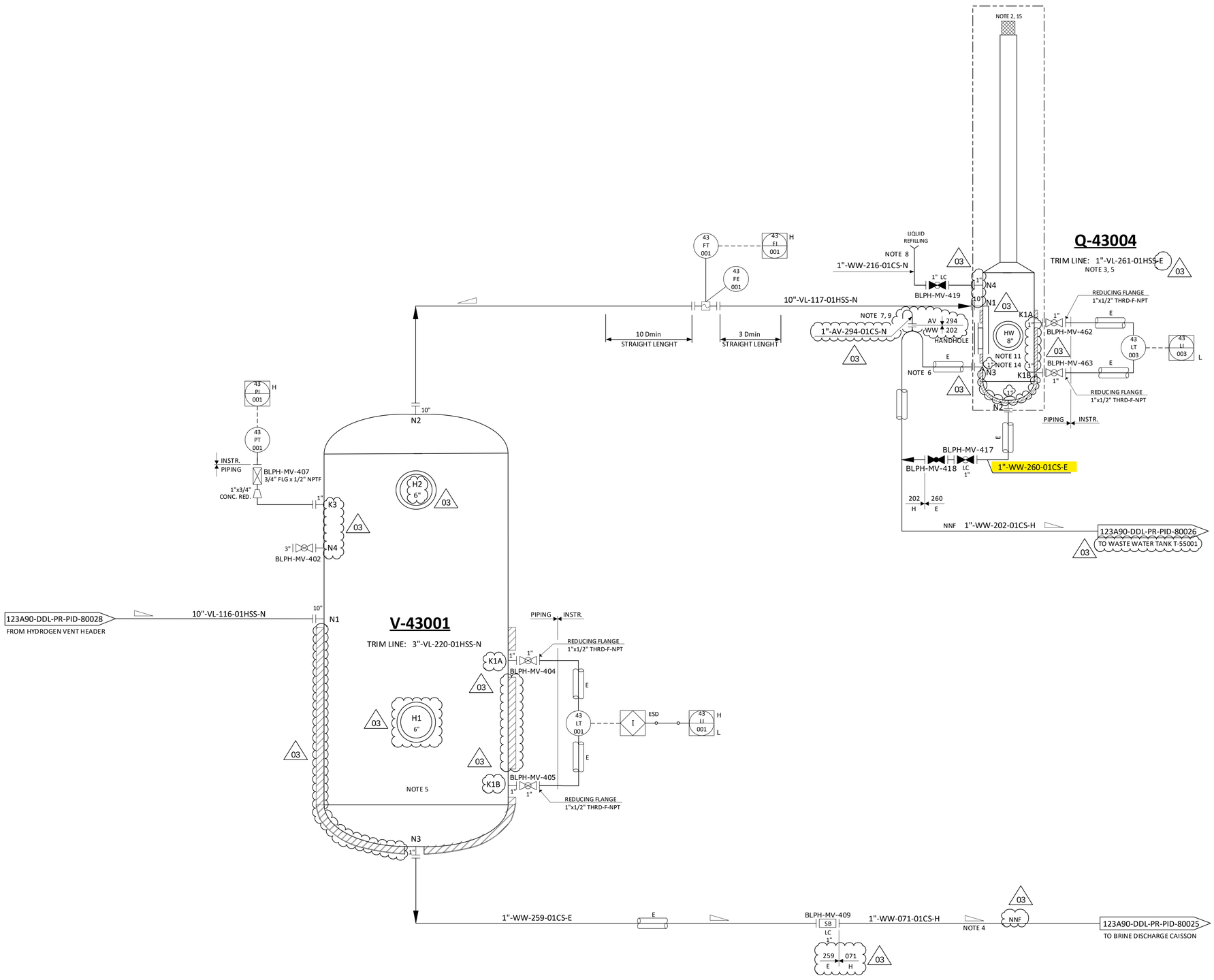
REV. REV

V-43001

HYDROGEN VENT KO DRUM
SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1
SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. (03)
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

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

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

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80029	SHEET 001	REV. 03

File Name : FILE_NAME

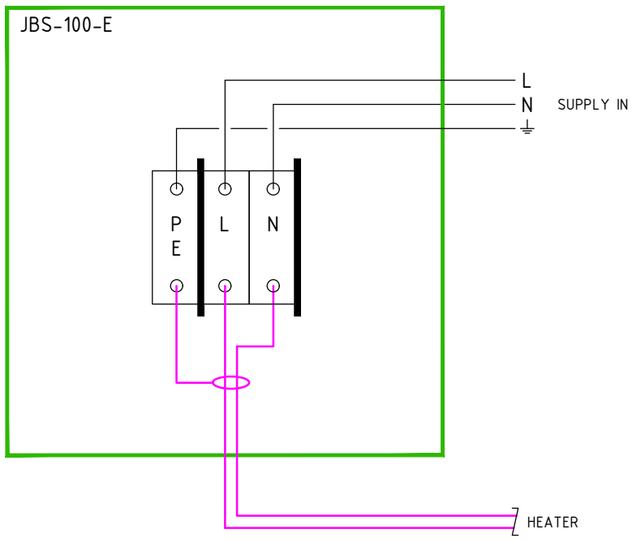
CAD FILENAME: 1724001647-EL-DG-00005 Rev.01.dwg

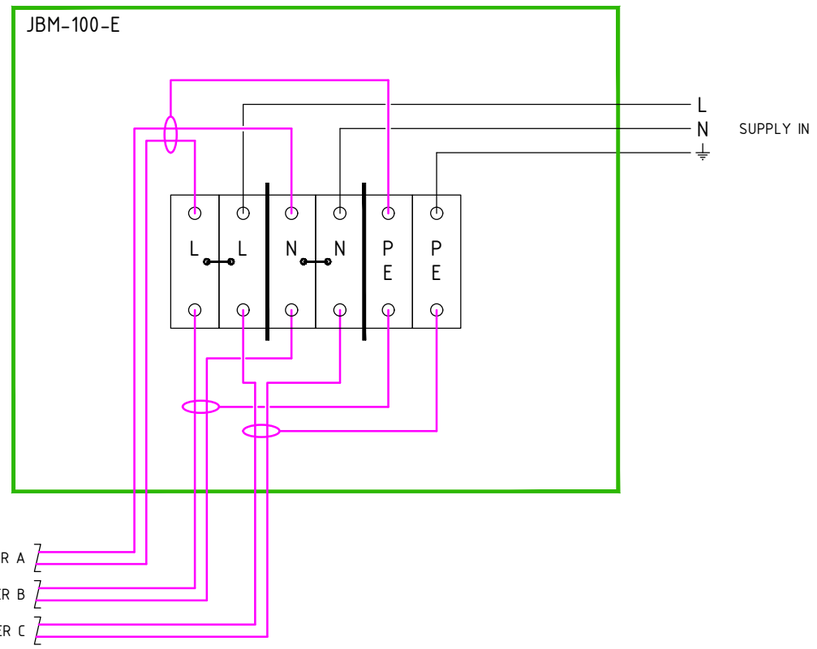
GENERAL INFORMATION:

1. JBS-100-E IS DESIGNED TO CONNECT POWER TO ONE BTV, QTVR, XTV, KTV, HTV OR VPL EHT CABLE.
2. THIS KIT INTEGRATES THE FUNCTIONS OF BOTH CONNECTION KITS AND INSULATION ENTRIES.
3. THE STAND CONNECTED TO THE BOTTOM OF THE BOX PROTECTS THE HEATING CABLE AND ALLOWS FOR UP TO 100mm (4") THERMAL INSULATION.

TECHNICAL BRIEF:

- 2 x M25 THREADED ENTRIES
- 1 x M25 STOPPING PLUGS
- 1 x M25 POWER CABLE GLAND





REV.	DATE	DESCRIPTION	BY	CHK	APP
--	--	--	--	--	--
--	--	--	--	--	--
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	08/03/2024	ISSUED FOR INFORMATION	LJB	E-C	ZS

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TITLE
TYPICAL CONNECTION OF A JBS-100-EP
SINGLE ENTRY JUNCTION BOX

PREPARED BY	-.---	LANG.	SCALE
LEAD ENGINEER	-.---	en	N/A
PROJECT NO.	DRAWING NO.	SHEET	REVISION
PIT240024	1724001647-EL-DG-00005	2/3	01

A3

CAD FILENAME: 1724001647-EL-DG-00006 Rev.01.dwg

CONTROL PANEL REF.:

Q17

MARSHALLING BOX

EJB-200N1-17-L1-01

ETB-200N1-17-L1-04 — P — EHT-1004-A

ETB-200N1-17-L1-05 — P — EHT-1004-B

ETB-200N1-17-L1-02 — P — EHT-1005-A

ETB-200N1-17-L1-03 — P — EHT-1006-A

ETB-200N1-17-L1-01 — P — EHT-2002-A

SPARE

CIRCUIT NO.	1004	1005, 1006	2002	
C.B. RATING (A)	32	32	32	
START-UP I (A)	2.6	0.4	0.6	
LOAD (W)	383	65	81	
SERVICE	WINTERIZING	WINTERIZING	WINTERIZING	
NOTES FOR THE CIRCUIT	--	--	--	

GENERAL NOTES

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	02/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING
SINGLE LINE DIAGRAM (SLD)

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-EL-DG-00006	4/4	01

BTV

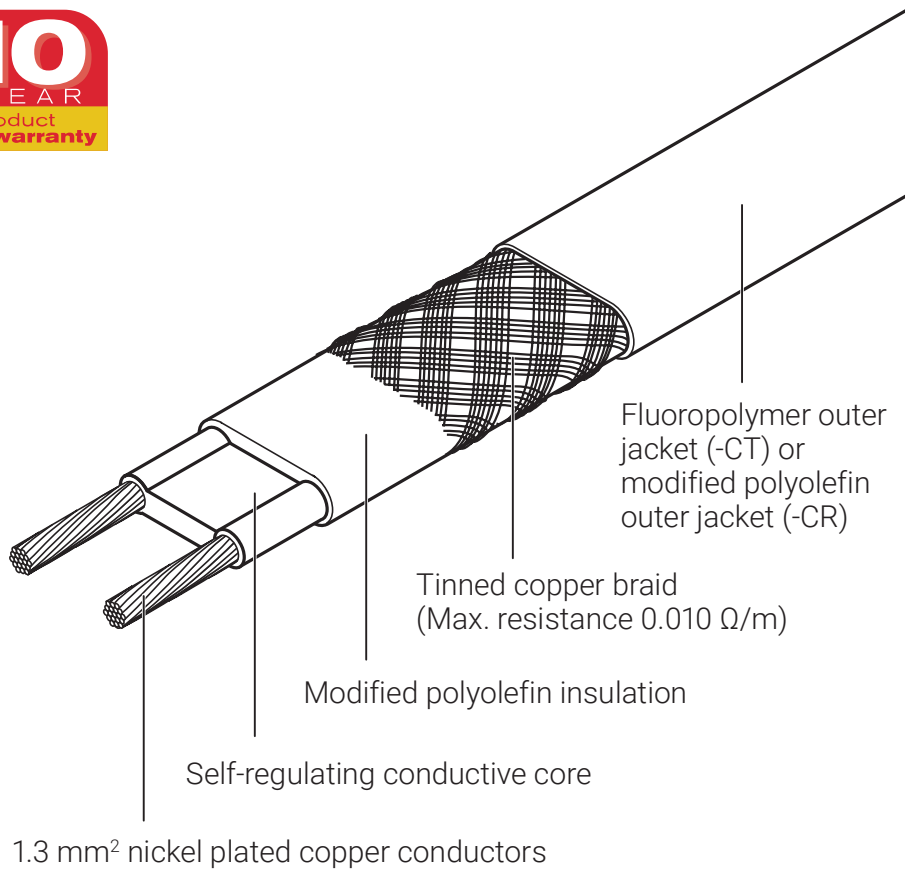
nVent RAYCHEM

CONNECT AND PROTECT

Self-regulating Heating Cable (Ex)

PRODUCT OVERVIEW

10 YEAR Product warranty



Electrical heat-tracing for frost protection without steam cleaning.
The nVent RAYCHEM BTV-family of self-regulating, parallel circuit heating cables is used for frost protection of pipes and vessels. It can also be used for process temperature maintenance up to 65°C.

Application

Traced surface type	Carbon steel Stainless steel Plastic Painted or unpainted metal
Chemical resistance	For organic corrosives: use -CT (fluoropolymer outer jacket) For mild inorganic solutions: use -CR (modified polyolefin outer jacket) For aggressive organics and corrosives consult your local nVent representative

Supply voltage

230 Vac (Contact your local nVent representative for data on other voltages)

PRODUCT SPECIFICATIONS

Product dimensions and weight

	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Width x Thickness (nominal) mm	10.5 x 5.5		13.2 x 5.5	
Weight (g/m)	110		150	

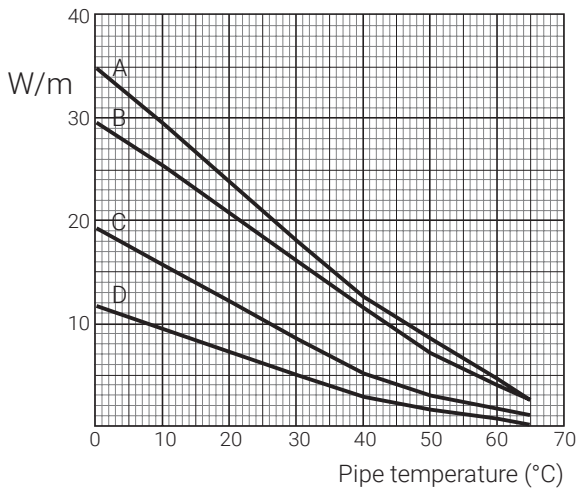
Technical details

Maximum maintain or continuous exposure temperature (power on/off)	65°C
Maximum intermittent exposure temperature (power on/off)	85°C Maximum cumulative exposure 1000 hours
Minimum installation temperature	–60°C
Minimum bend radius	–60°C ≤ T<–20°C: 35 mm –20°C ≤ T<–10°C: 30 mm –10°C ≤ T< 0°C: 25 mm 0°C ≤ T <+10°C: 20 mm T≥ +10°C: 12 mm

Thermal output rating

Nominal power output at 230 Vac on insulated steel pipes

A 10BTV2-CT
10BTV2-CR
B 8BTV-2-CT
8BTV-2-CR
C 5BTV2-CT
5BTV2-CR
D 3BTV2-CT
3BTV2-CR



	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Nominal power output (W/m at 10°C)	9	16	25	29

Maximum circuit length based on type ‘C’ circuit breakers according to EN 60898

Electrical protection sizing	Start-up temperature	Maximum heating cable length per circuit (m)			
16 A	–20°C	155	110	70	45
	+10°C	200	160	110	65
20 A	–20°C	195	140	90	55
	+10°C	200	160	125	85
25 A	–20°C	200	160	110	70
	+10°C	200	160	125	105
32 A	–20°C	200	160	125	90
	+10°C	200	160	125	110

The above numbers are for circuit length estimation only. For more detailed information please use the nVent RAYCHEM TraceCalc software or Contact your local nVent representative. nVent requires the use of a 30 mA residual current device to provide maximum safety and protection from fire. Where design results in higher leakage current, the preferred trip level for adjustable devices is 30 mA above any inherent capacitive leakage characteristic of the heater as specified by the trace heater supplier or alternatively, the next common available trip level for non adjustable devices, with a maximum of 300 mA. All safety aspects need to be proven.

APPROVALS

For use ordinary area and hazardous area Zone 1 and Zone 2 (Gas), Zone 21 and Zone 22 (Dust).

Temperature classification
T6

Product certification

More details about product certification, approvals and conditions of safe use are available in the installation manual for Self-regulating and Power limiting heating cable systems at www.nVent.com/RAYCHEM

ORDERING INFORMATION

Part description	3BTV2-CR	5BTV2-CR	8BTV-2-CR	10BTV2-CR
Part No. (*)	914279-000	414809-000	479821-000	677245-000
Part description	3BTV2-CT	5BTV2-CT	8BTV-2-CT	10BTV2-CT
Part No. (*)	469145-000	487509-000	008633-000	567513-000

Components

nVent offers a full range of components for power connections, splices and end seals. These components must be used to ensure proper functioning of the product and compliance with electrical requirements.

(*) Localized versions may exist with limited approvals and different part numbers. Contact your local sales representative

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

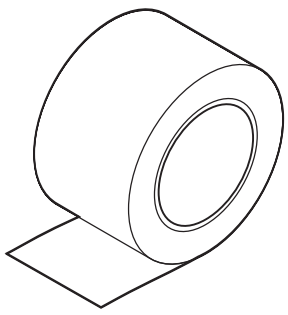
Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com

Our powerful portfolio of brands:
CADDY ERICO HOFFMAN RAYCHEM SCHROFF TRACER

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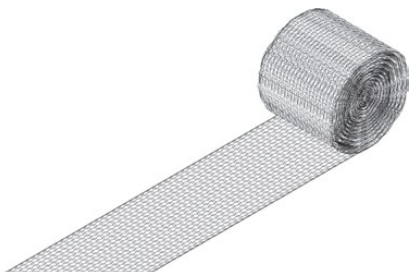
ATE-180

Aluminium tape* for attaching heating cables and thermostat sensors to pipes and tanks. Minimum installation temperature: 0°C. Also suitable for stainless steel pipes.

55 m per roll, 63.5 mm width.

PN: 846243-000 Weight: 0.84 kg

*Power output of selfregulating heating cables might increase when installed with aluminium tape or other heat transfer aids. Please use TraceCalc or contact nVent representative for further details.

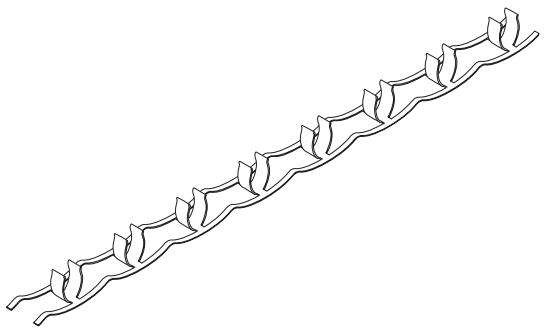


HWA-METAL-MESH-SS-50MM-10M

Stainless steel mesh for fixation of heating cables on valves, pumps or other odd-shaped surfaces. This mesh provides optimum contact and heat transfer between heating cables and heated equipment and can be used for exposure temperatures up to 400°C.

10 m per roll, 50 mm width.

PN: 1244-005772 Weight: 0.36 kg



HWA-PI-FIX- SS-xMM-10M

Stainless steel clip band to attach Polymer Insulated series heating cables to pipes. Clips at regular distances to allow for even heater spacing. Band available in two sizes for different diameter ranges.

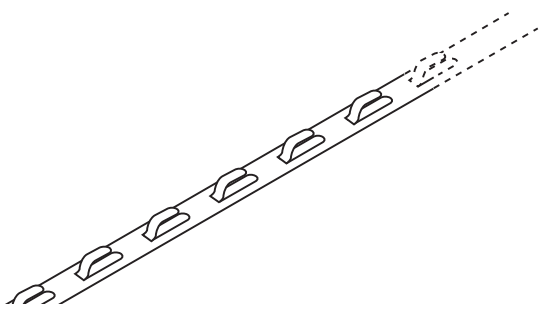
10 m per roll.

For diameters up to 5 mm, HWA-PI-FIX-SS-5MM-10M

PN: 1244-007768 Weight: 0.32 kg

For diameters up to 8 mm, HWA-PI-FIX-SS-8MM-10M

PN: 1244-007769 Weight: 0.52 kg



HARD-SPACER-SS-25MM-25M

Stainless steel spacer for fixing the heating cable on walls, tanks and vessels, etc.

Width spacer: 12.5 mm.

Fixing distance for cables: each 25 mm.

25 m per roll.

PN: 107826-000 Weight: 1.10 kg

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
CB-200F4B	AC UPS F&G - Battery Isolator-B	CONTAINER B-300 (LOWER DECK)	1724000372	3W Power	Cortem Spa		EJBC	Zone 1	EPT 20 ATEX 4075X	1724000372-EL-DG-00011	II 2GDEx db IIC T6 Gb Ex tb IIIC T 85°C Db	-	N/A	True	N/A	False	
EAT-200N1-01	Trace Heating - Remote Ambient Thermostat	LOWER DECK	1724001647	nVent	nVent	1244-022663	ETS-05-A2-E-A	Zone 1	Baseefa 13ATEX0137	1724001647-EL-DD-00004	II 2(1)G Ex eb ia mb [ia Ga] IIC T5 Gb - 40ºC ≤ Ta ≤ +60ºC II 2D Ex tb IIIC T100ºC Db	-	N/A	True	N/A	False	
EHT-1001-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1002-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1003-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1004-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1004-B	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1005-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1006-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1007-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-2002-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EJB-200F2-01	Top Obstruction Lights Junction Box	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990082	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
EJB-200F2-02	Intermediate obstruction lights junction box	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990083	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_4
EJB-200N1-02-L1-01	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990045	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-02	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990044	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-03	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990043	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
EJB-200N1-02-L1-05	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990058	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-06	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990057	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-07	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990059	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-08	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990060	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-09	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990061	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-10	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990047	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-11	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990056	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-12	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990055	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-13	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990054	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-14	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990053	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-15	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990052	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-16	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990051	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-17	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990050	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-18	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990049	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-19	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990048	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-20	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990072	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-01	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990003	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-02	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990004	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-03	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990002	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-04	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990001	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-05	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990012	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-06	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990011	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-07	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990010	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-08	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990009	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-09	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990008	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-10	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990007	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-11	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990006	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-12	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990005	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-13	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990014	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-14	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990013	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-04-L3-01	Stair Normal Lighting JB	LOWER DECK STAIRS	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990032	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-04-L3-02	Stair Normal Lighting JB	LOWER DECK STAIRS	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990033	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-01	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990064	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-03	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990062	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
EJB-200N1-08-L1-04	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990065	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-05	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990077	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-06	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990078	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	

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:	**SGS20ATEX0048X – Issue 3**
4	Product:	**BTV Range of Self-Regulating Trace Heating Systems**
5	Manufacturer:	**nVent Thermal LLC**
6	Address:	**899 Broadway Street, CA, 94063-3104, United States of America**

7 This re-issued certificate extends EU Type Examination Certificate No. **SGS20ATEX0048X** 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.

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 IEC 60079-7:2015+A1:2018 EN 60079-18:2015+A1:2017
EN 60079-30-1:2017 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 60079-30-1 eb IIC T6 Gb or Ex 60079-30-1 eb mb IIC T6 Gb T_{min} -60°C**
Ex 60079-30-1 tb IIIC T80°C Db or Ex 60079-30-1 mb tb IIIC T80°C Db

SGS Fimko Oy Customer Reference No. **865** Project File No. **21/0455**

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SGS Fimko Oy
Takomotie 8
FI-00380 Helsinki, Finland
Telephone +358 (0)9 696 361
e-mail **sgs.fimko@sgs.com**
web site **www.sgs.fi**
Business ID 0978538-5 Member of the SGS Group (SGA SA)

Tuomas Hänninen
SGS Fimko Oy

13 # Schedule

14 ## Certificate Number SGS20ATEX0048X – Issue 3

15 Description of Product

The BTV Range of Self-Regulating Trace Heating Systems is of the parallel circuit self-regulating type, rated at up to 277V, with power output up to 33W/m (10W/ft). The units have a maximum self-limiting temperature of 80°C.

Each trace heating system comprises:
- the active heating cable.
- an end seal for terminating the remote end of the unit.
- a cable gland for connecting the powered end of the unit to a suitable terminal enclosure, or alternative integrated power connection systems.

The active heating cable comprises two stranded copper conductors around which is extruded a semi-conductive core material. This core material increases in resistance with increasing temperature and gives the cable its self-limiting property. This semi conductive core with embedded conductors forms the active part of the heating cable. An extruded layer of fluoropolymer serves to insulate the semi conductive core from the conductive covering, covering the active heater. A protective anti-corrosion fluoropolymer sheath may be extruded over the conductive covering.

The declared maximum withstand temperature for the range is 85°C and the minimum installation temperature is -60°C.

CABLE ACCESSORIES

END SEALS

The end seals for terminating the remote end of the unit may be the following types:

Types E-100-L or E-100, which are mechanical end seals incorporating an end cap which is filled with silicone grease sealant covered by certificates Sira14ATEX3015X and PTB09ATEX1060U.

Types E-100-L-A or E-100-A, which are mechanical end seals incorporating an end cap which is filled with silicone grease sealant.

A Raychem Type E-20 heat shrink end seal kit.

Type E-150 mechanical end seals, covered by certificate DEKRA20ATEX0011U.

SPLICES AND JOINTS

The following splicing and jointing arrangements are provided:

A Raychem Type S-20 heat shrink splice kit for connecting lengths of active heating cable.

A Raychem T-100 tee connection system, certificate PTB20ATEX1008U, for connecting up to three heater cables.

Type S-150 mechanical splice kit, covered by certificate DEKRA20ATEX0011U.

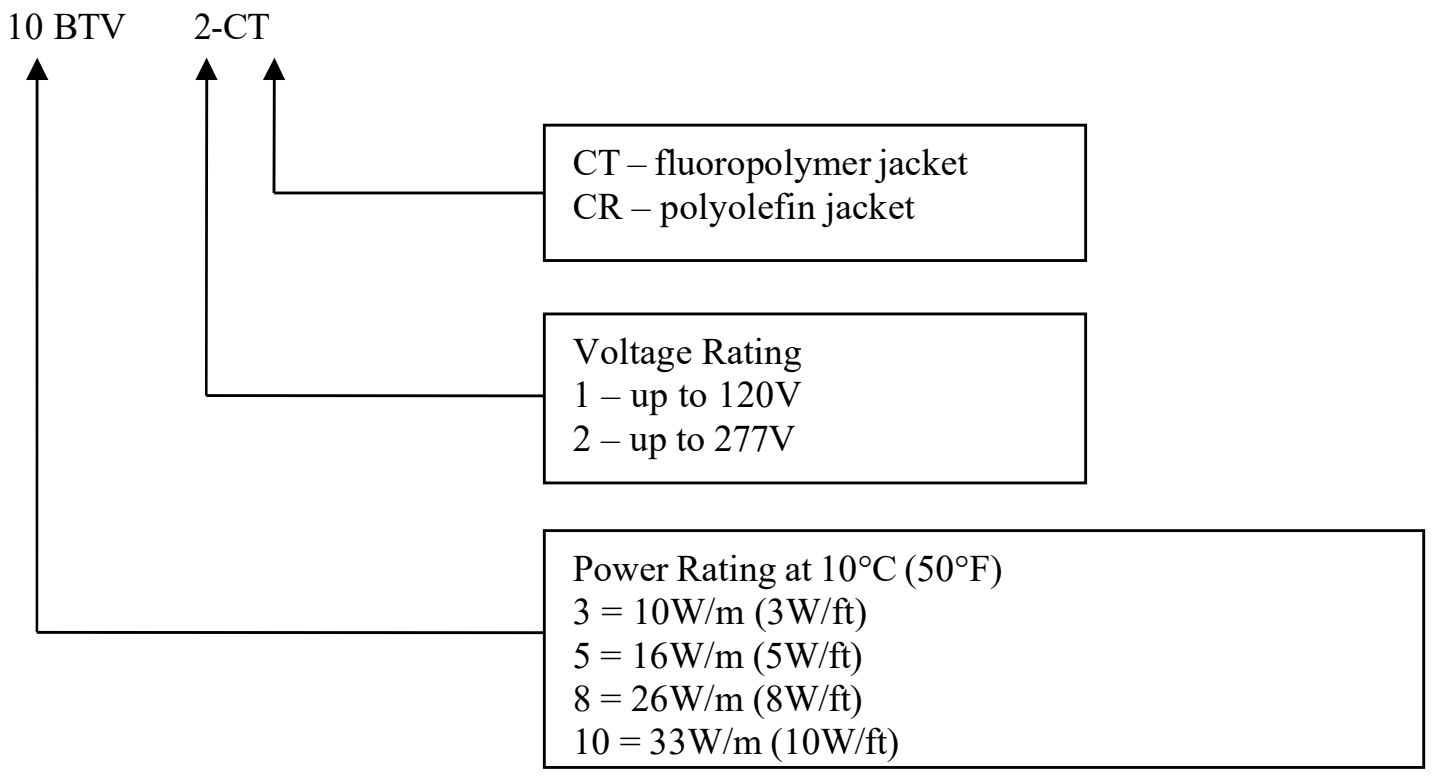
POWER CONNECTIONS

Power connection may be achieved by the following means:

Connection Type	ATEX Certificate
JBM-100	PTB20ATEX1008U
JBS-100	PTB20ATEX1008U
JBU-100	PTB20ATEX1008U
C-150-E	DEKRA20ATEX0011U
C25-21 Connection Kit	Baseefa16ATEX0037U
C25-100 Connection Kit	Baseefa16ATEX0038U
C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS Kits	Baseefa16ATEX0039U

The C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS Kits include M25 or ¾ NPT gland to Sira01ATEX1270X and core sealer to Baseefa15ATEX0194U.

A number of power levels and voltages, up to the maximum specified, are included in the range. They are identified in the following manner:



Any of the products in the range may be considered as part of a stabilised design system. In such a system the design is based upon the use of nVent proprietary software Trace calc Pro. The algorithm defined in this software may be used in additional design software.

The minimum bending radii for BTV trace heating cable at specific temperatures are shown in the table below:

Temperature, T (°C)	**Minimum Bending Radius (mm)**
$-60 \leq T < -20$	35
$-20 \leq T < -10$	30
$-10 \leq T < 0$	25
$0 \leq T < +10$	20
$T \geq +10$	12

16 Report Number

See Certificate History.

17 Specific Conditions of Use

1. The following limiting temperatures for the heat shrink end seals and splices shall not be exceeded:

   +110°C for the S-20 and E-20
   +150°C for the C-150-E, S-150 and E-150

2. The end seals, splices and power connections have the following associated ambient temperatures:

   -60°C to +56°C for the E-20 and S-20
   -55°C to +56°C for the T-100, JBM-100, JBS-100, JBU-100, and E-100
   -40°C to +56°C for the JBS-100-L, JBM-100-L, and JBU-100-L
   -55°C to +55°C for the C-150-E, S-150 and E-150
   -40°C to +40°C for the E-100-L
   -55°C to +110°C for the C25-21 and C25-100
   -60°C to +180°C for the C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS

3. The assembly of glands, splices and end terminations shall be carried out in accordance with the manufacturing instructions

4. The heating element supply circuit must include an electrical protection device in conformity with Clause 4.4 of EN 60079-30-1.

5. The minimum installation temperature is -60°C. The minimum bending radii at specific temperatures for the Type BTV units are shown in the table in the equipment description.

6. The supply to the heating unit must be terminated in a suitably certified terminal enclosure.

7. The minimum installation temperature for E-20 and S-20, end seal and splice is -20°C.

8. The installer is to carry out a dielectric strength test on Ex equipment in which the C25-21, C25-100 and C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS connection kit is fitted. No dielectric breakdown shall occur. (Alternatively, an insulation resistance test may be undertaken in accordance with EN 60079-30-2).

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
205308-A[i]	1 of 1	Q	05/27/2021	BTV-8BTV-CR & BTV-10BTV-CR
205310-A[i]	1 of 1	R	05/27/2021	BTV-8BTV-CT & BTV-10BTV-CT

Current drawings which remain unaffected by this issue:

Number	Sheet	Issue	Date	Description
906567[ii]	1 of 1	P	05/21/21	C25-21, C25-100 and C25-100-METAL-XX, C3/4-100-METAL-XX Connection Kits
906579-A[i]	1 of 1	N	01/15/2021	BTV Heater Units (European System)
205350-A[i]	1 of 1	P	03/31/20	BTV-3BTV-CT & BTV-5BTV-CT
205349-A[i]	1 of 1	J	03/26/20	BTV-3BTV-CR & BTV-5BTV-CR
906794-A[iii]	1 of 1	AA	03/30/20	Generic ATEX and IECEx Print Dwg for BTV-CT, QTVR-CT, XTV-CT, KTV-CT Heating Cables
9242869[iv]	1 & 2	O	12/09/19	LABL JBM-100-L-E
9532687[iv]	1 & 2	Q	12/09/19	LABL JBM-100-L-EP
9621473[iv]	1 & 2	O	12/09/19	LABL JBS-100-L-E
9777523[iv]	1 & 2	P	12/09/19	LABL JBS-100-L-EP
9319676[iv]	1 & 2	O	12/09/19	LABL JBU-100-L-E
9735898[iv]	1 & 2	O	12/09/19	LABL JBU-100-L-EP
908742-A[v]	1 of 1	A	2/19/20	E-20 Heat Shrinkable End Seal Kit Cut Back Dimensions
908743-A[vi]	1 of 1	A	2/19/20	S-20 Heat Shrinkable Splice Joint Kit Cut Back Dimensions

i) These drawings are common to IECEx BAS 20.0011X, SGS20ATEX0048X and are held with IECEx BAS 20.0011X.

ii) This drawing is common to IECEx BAS 16.0040U, IECEx BAS 16.0041U, IECEx 16.0042U, IECEx BAS 20.0008X, IECEx BAS 20.0009X, IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, Baseefa16ATEX0037U, Baseefa16ATEX0038U, Baseefa16ATEX0039U, SGS20ATEX0045X, SGS20ATEX0046X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and is held with IECEx BAS 16.0040U.

iii) These drawings are common to IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and are held with IECEx BAS 20.0011X.

iv) These drawings are common to IECEx BAS 20.0008X, IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, SGS20ATEX0045X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and are held with IECEx BAS 20.0008X.

v) These drawings are common to IECEx BAS 20.0010X, IECEx BAS 20.0011X, IECEx BAS 20.0013X, SGS20ATEX0047X, SGS20ATEX0048X, SGS20ATEX0050X and are held with IECEx BAS 20.0010X.

vi) These drawings are common to IECEx BAS 20.0011X, IECEx BAS 20.0013X, SGS20ATEX0048X, SGS20ATEX0050X and are held with IECEx BAS 20.0011X.

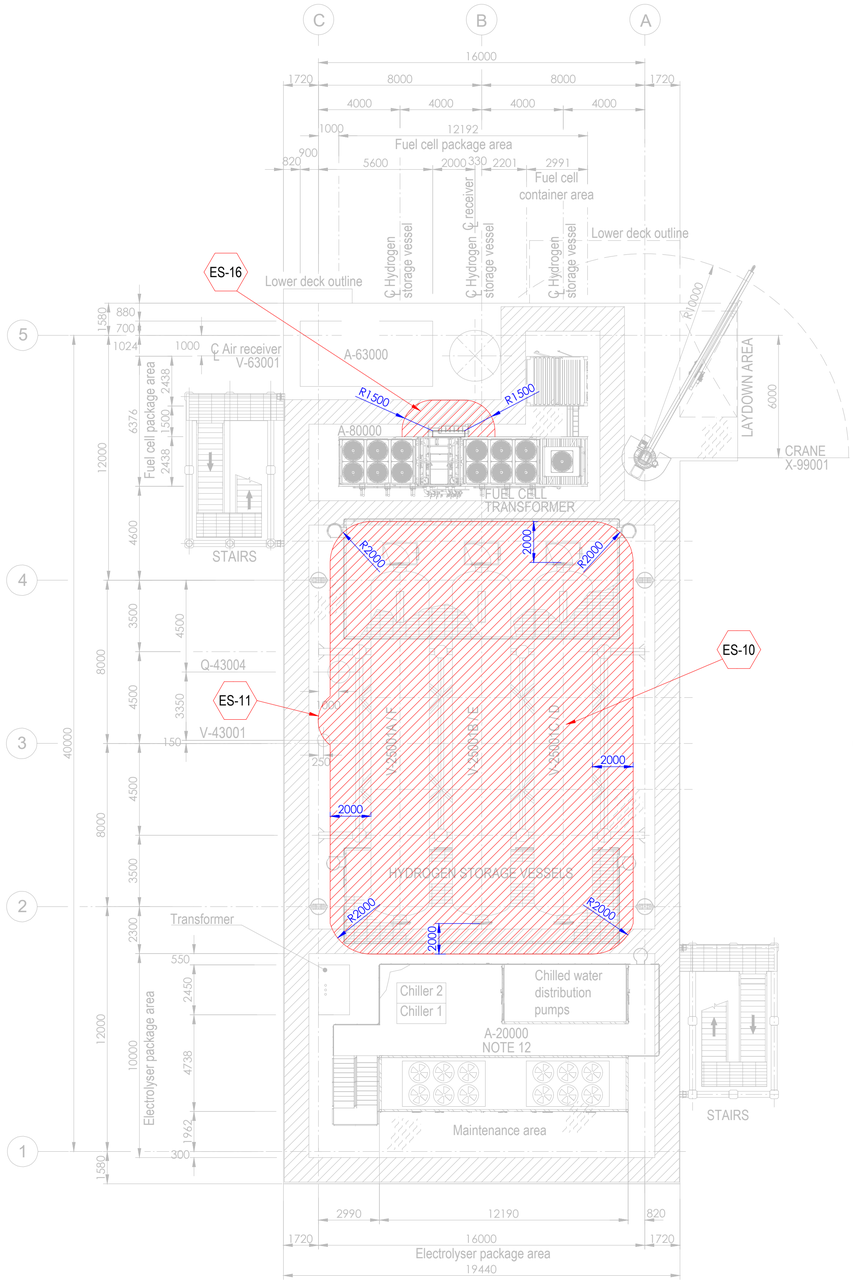
20 Certificate History

Certificate No.	Date	Comments
SGS20ATEX0048X	23 October 2020	The release of the prime certificate. The associated test and assessment against the requirements of EN 60079-0:2012+A11:2013, EN IEC 60079-7:2015+A1:2018, EN 60079-18:2015+A1:2017, EN 60079-30-1:2017 and EN 60079-31:2014 is documented in Test Report No. GB/BAS/ExTR20.0030/00.

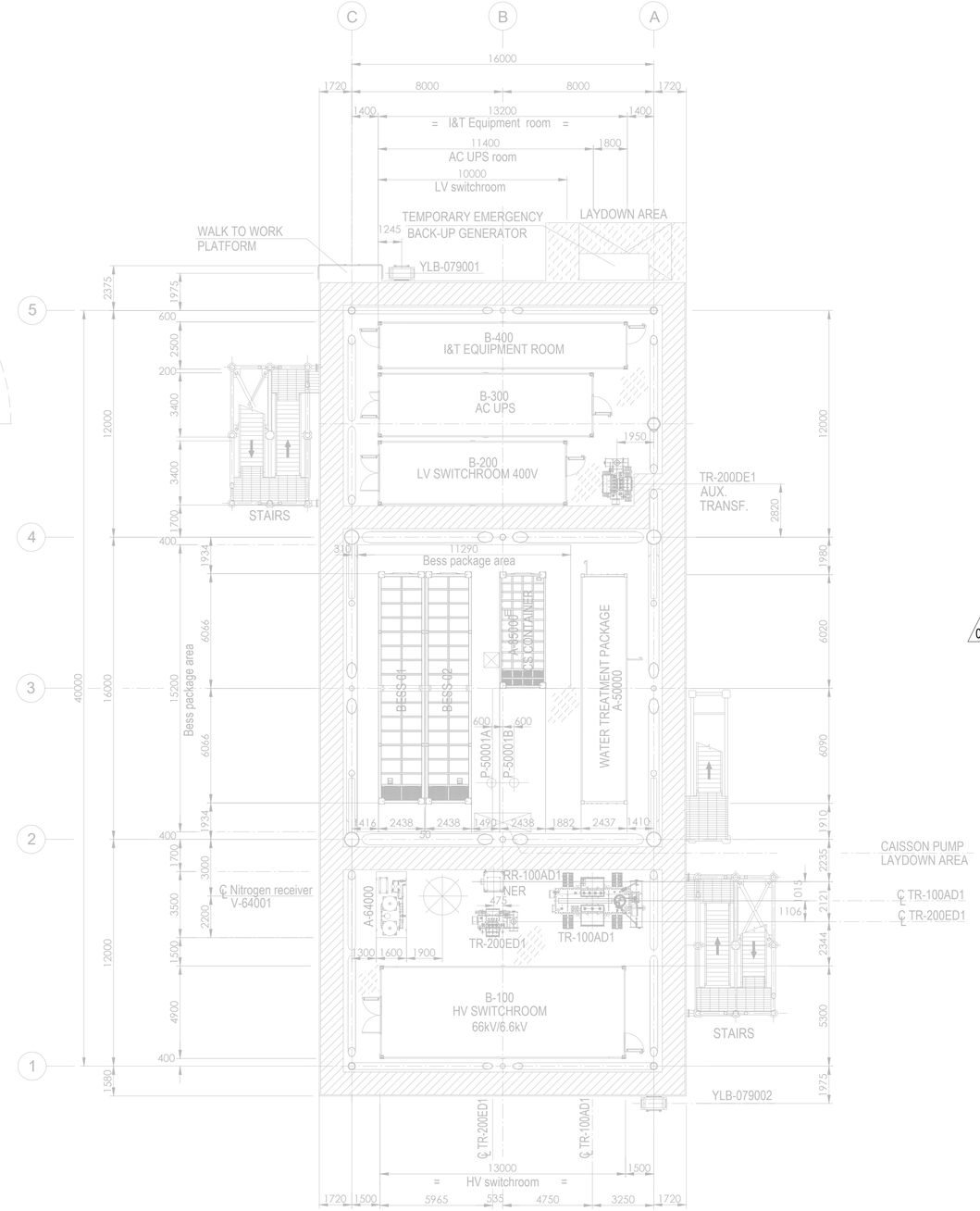
Certificate No.	Date	Comments
SGS20ATEX0048X Issue 1	11 February 2021	To assess the BTV range of self-regulating trace heating systems against EN IEC 60079-0:2018, introduce the low profile power connection, splice and end seal kits, types C-150-E, S-150 and E-150 afforded DEKRA20ATEX0011U, minor amendments to the product description, to change the product name to "BTV Range of Self-Regulating Trace Heating Systems" and to amend the Specific Conditions of Use. The associated test and assessment is documented in Test Report No. GB/BAS/ExTR21.0005/00.
SGS20ATEX0048X Issue 2	7 July 2021	Minor drawing updates not affecting certification. Baseefa Certification Report GB/BAS/ExTR21.0060/00 refers.
SGS20ATEX0048X Issue 3	3 September 2021	Minor change to the BTV-8BTV-CR, BTV-8BTV-CT, BTV-10BTV-CR and BTV-10BTV-CT heating cable dimensions. Baseefa Certification Report GB/BAS/ExTR21.0104/00 refers.
For drawings applicable to each issue, see original of that issue.		

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

REV. 02



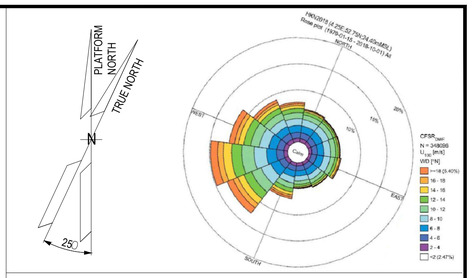
PLAN ON UPPER DECK
EL+30.310 T.O.S.



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

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

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



NOTES

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

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

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

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

CROSSWIND

ROSETTI MARINO

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

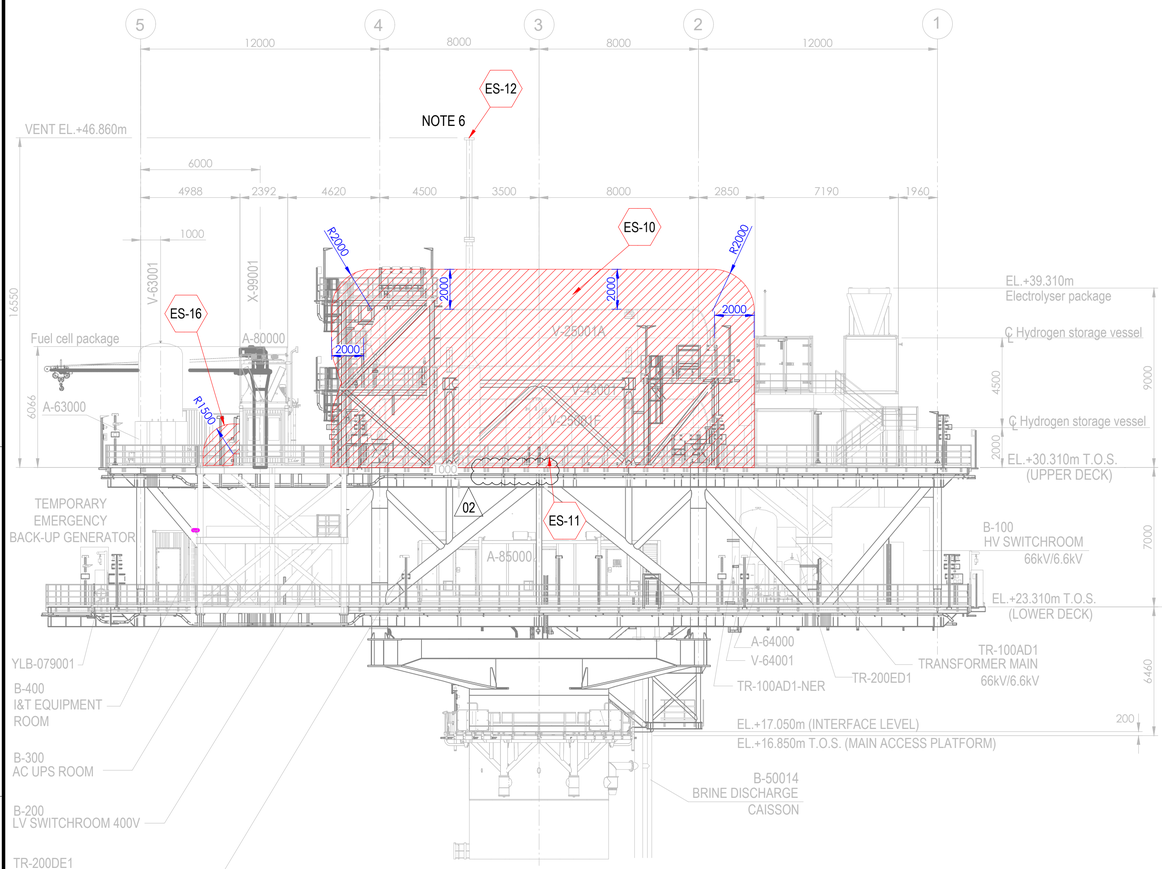
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

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

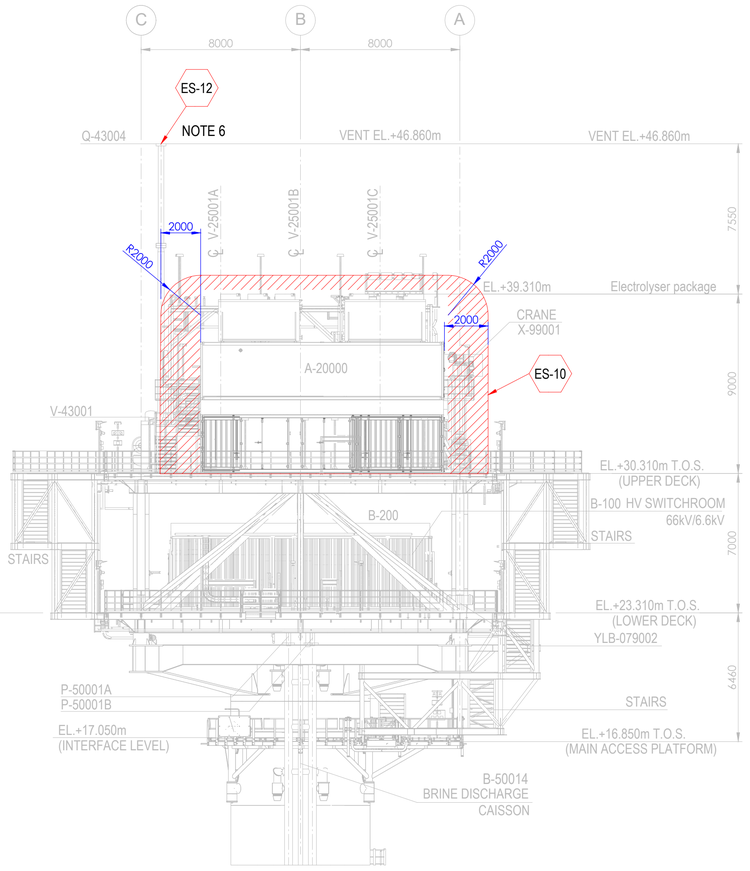
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

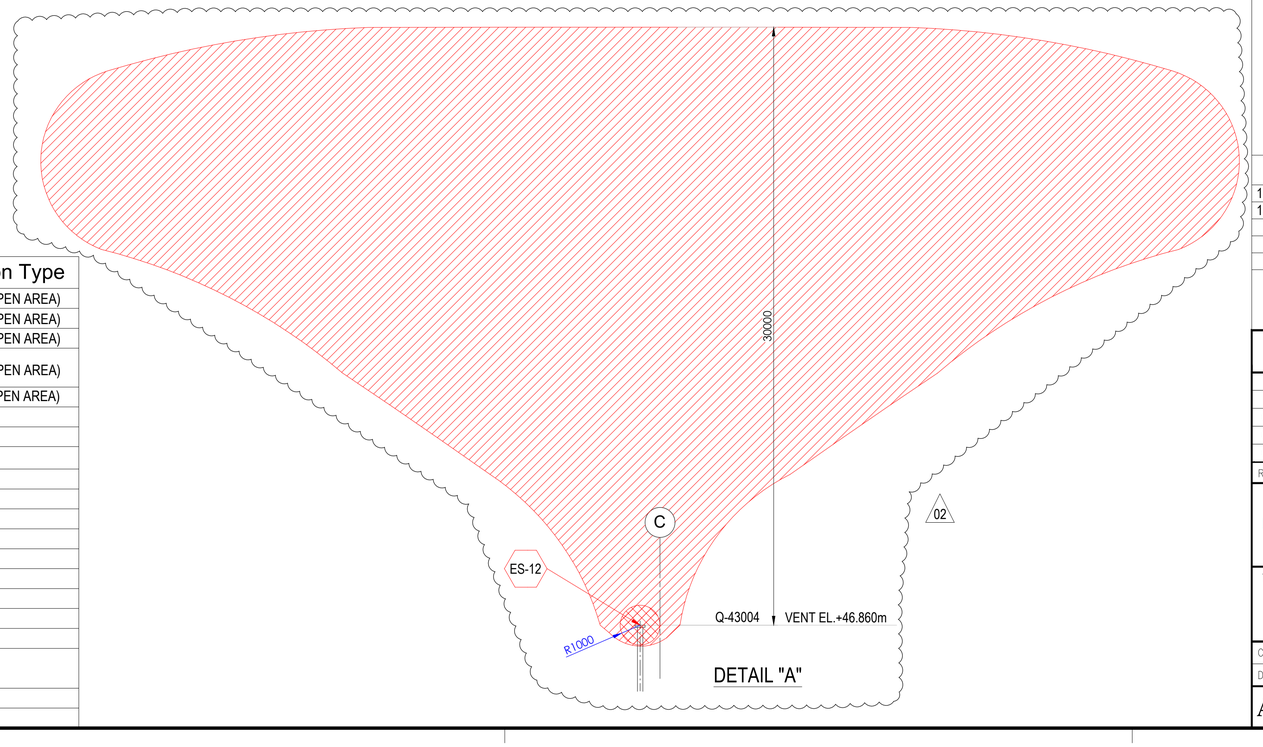


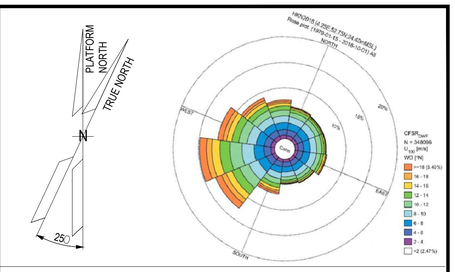
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

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





NOTES

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

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

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

CROSSWIND

ROSETTI MARINO

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

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

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

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

ITEM	Tag	EHT-1006-A : Heat Tracing Tape		Dwg	1724001647-EL-LIS-00003
	S/Sys	83-65 : Electrical Heat Tracing		Module	UD
TASK	code	C10004643	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.**	P/N:469145-000				
Manufacturer	nVent			**Model**	3BTV2-CT				
Cert No.	SGS20ATEX0048X			**Equipment Ambient Temp.**	-60°C to +80°C				
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex eb	**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	NA	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	NA	
5	Equipment circuit identification is correct	x	OK	
6	Equipment circuit identification is available	x	OK	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	NA	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		NA	
	Physical check	x	NA	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	NA	
13	Condition of enclosure gaskets is satisfactory	x	NA	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	OK	
15	Electrical connections are tight	x	OK	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	NA	
18	Encapsulated components are undamaged	x	OK	
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	

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FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

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

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TASK	code	C10004643		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	Giovanni Tangianu	
Date	2025-02-05	2025-02-20	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-05T10:22:35.786Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-20T12:08:17.190Z	

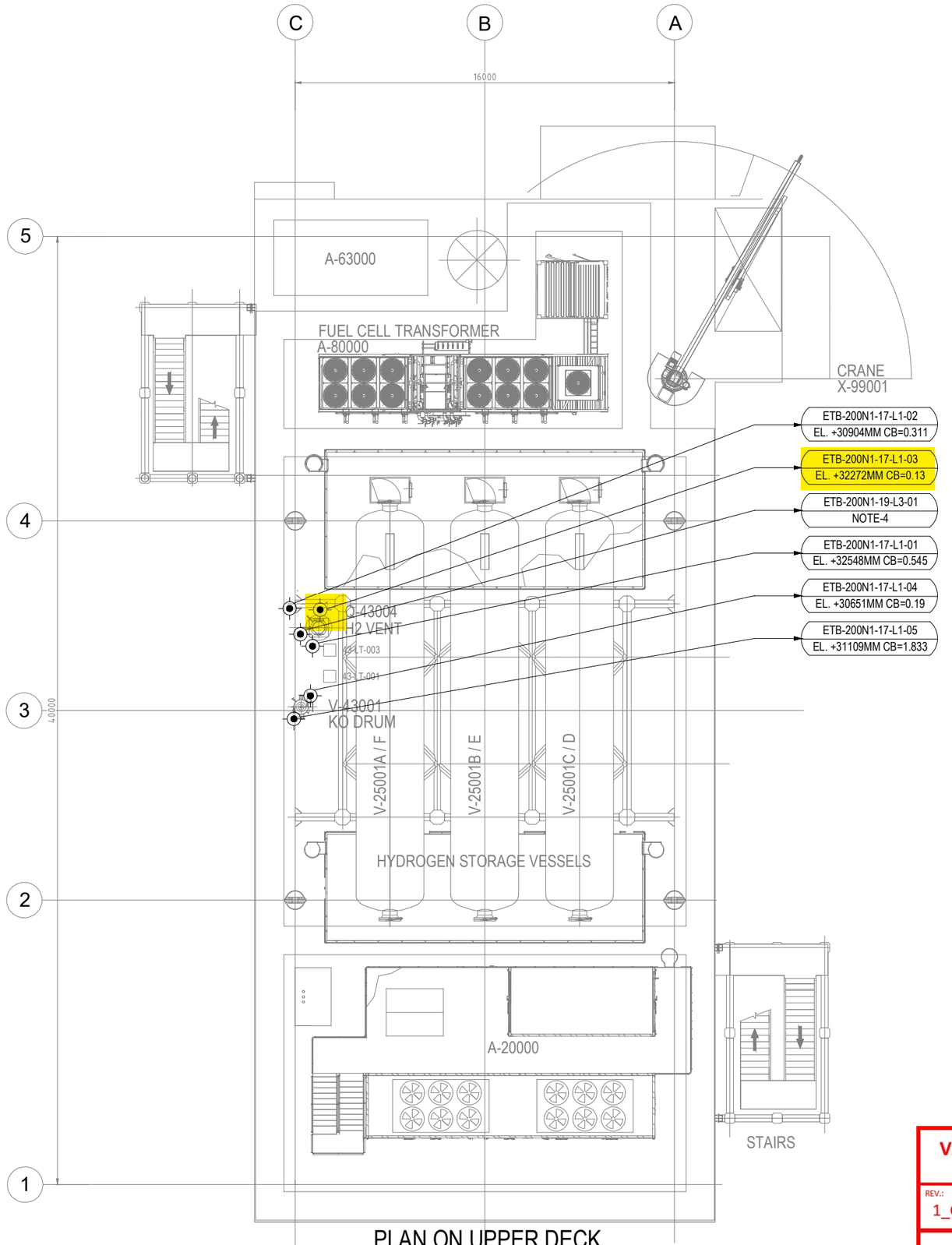
EHT CALCULATION LIST

PIT240024_ED01-1001

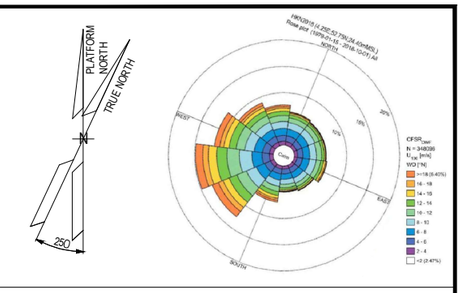
		ENGINEERING DATA				MECHANICAL & INSULATION DATA							PROCESS DATA				EHT BASIC DESIGN								EHT DETAILED DESIGN						EHT TEMP. CONTROL DATA							
Main EHT Box Number	Item Number	Heater Number	Line, Equipment or Instrument ID	nVent Circuit Number	Plant Area	Pipe Size [DN / IN]	Pipe Length [m]	Support Quantity [pc]	Valve Quantity [pc]	Other Heat Sink Quantity [pc]	Insulation Type	Insulation Thickness [mm]	Maintain Temperature [°C]	Maximum Allow. Process Temperature [°C]	Maximum Operating Temperature [°C]	Maximum Exposure Temperature [°C]	Heatloss [W/m]	Heating Cable Selection	Trace Ratio	Heating Cable Output [W/m]	EHT Cable per Support [m]	EHT Cable per Valve [m]	EHT Cable per Other Heatsink [m]	Total EHT Cable [m]	Max. Allow. EHT Circuit Length [m]	Connection Type	Voltage [V]	Operating Current [A]	Total Operating Load [W]	Start-Up Current [A]	Temp. Control Method	Controller Set Point [°C]	Minimum Controlled Temperature [°C]	Maximum Controlled Temperature [°C]	Maximum Uncontrolled Temperature [°C]	Revision	Remark
																		GRAND TOTAL						**181.4**				**9.69**	**2226**	**14.91**							
ETB-200N1-16-L3-01	1	EHT-1001-A	1"-DM-001-01SS-E	1001	PIPING	1	17.6	5	1	2	RW/MF 1:2015	20	5	100	22	22	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	22.0	199	Single L-N	230	1.18	271	1.8	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**22.0**			**230**	**1.18**	**271**	**1.8**							
ETB-200N1-15-L2-01	1	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	11.0	4		1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	13.9	199	Single L-N	230	0.73	167	1.1	Ambient sensing, standard	5	18	29	50	00	
	2	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	3	EHT-1002-A	1"-CI-032-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	4	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	5	EHT-1002-A	1"-CI-030-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	6	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.75	0.5		1		RW/MF 1:2015	20	5	50	25	25	3.4	3BTV2-CT	2.0	10.7		1.5		2.6	199	Single L-N	230	0.15	34	0.2	Ambient sensing, standard	5	30	38	55	00	
	7	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.5	0.5		1		RW/MF 1:2015	20	5	50	25	25	2.9	3BTV2-CT	2.0	10.7		1.4		2.5	199	Single L-N	230	0.14	32	0.2	Ambient sensing, standard	5	32	40	56	00	
																		TOTAL						**36.4**			**230**	**2.00**	**459**	**3.1**							
ETB-200N1-14-L1-01	1	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	4	0.5				RW/MF 1:2015	20	5	100	25	25	10.2	3BTV2-CT	1.0	10.7				0.6	199	Single L-N	230	0.03	7	0.1	Ambient sensing, standard	5	5	20	46	00	
	2	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	4.7	1		1	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1		0.5	9.3	199	Single L-N	230	0.47	107	0.7	Ambient sensing, standard	5	14	27	49	00	
	3	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	4	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	7.8	3			RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1			8.6	199	Single L-N	230	0.48	111	0.7	Ambient sensing, standard	5	14	27	49	00	
	5	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	6	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.8	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	7	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	1.4	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	4.2	199	Single L-N	230	0.23	54	0.4	Ambient sensing, standard	5	24	34	53	00	
	8	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	9	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	10	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.7	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	11	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	1.2	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	3.7	199	Single L-N	230	0.20	47	0.3	Ambient sensing, standard	5	24	34	53	00	
	12	EHT-1003-A	1"-SWS-147-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	13	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	14	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	15	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1	0.1				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	28	37	54	00	
	16	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
	17	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	18	EHT-1003-A	1"-SWS-146-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	19	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	20	EHT-1003-A	1"-SWS-290-01SD-E	1003	PIPING	1	1.1	1	2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7	0.3	1.6		5.8	199	Single L-N	230	0.33	76	0.5	Ambient sensing, standard	5	28	37	54	00	
	21	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**78.6**			**230**	**4.37**	**1002**	**6.7**							
ETB-200N1-17-L1-04	1	EHT-1004-A	1"-WW-259-01CS-E / V-43001	1004	PIPING	1	0.9		1	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7		0.8	0.5	3.2	199	Single L-N	230	0.12	28	0.2	Ambient sensing, standard	5	18	29	50	00	Combined with EHT-1004-B
																		TOTAL						**3.2**			**230**	**0.12**	**28**	**0.2**							
ETB-200N1-17-L1-02	1	EHT-1005-A	1"-WW-260-01CS-E	1005	PIPING	1	1.2	1	2	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	4.6	199	Single L-N	230	0.20	46	0.3	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1006-A
																		TOTAL						**4.6**			**230**	**0.20**	**46**	**0.3**							
ETB-200N1-17-L1-03	1	EHT-1006-A	1"-WW-202-01CS-H	1006	PIPING	1	1.0			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	1.0	10.7			0.5	2.5	199	Single L-N	230	0.08	19	0.1	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1005-A
																		TOTAL						**2.5**			**230**	**0.08**	**19**	**0.1**							
ETB-200N1-15-L2-02	1	EHT-1007-A	1"-CI-043-01CP-E	1007	PIPING	1	15.0	6		4	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	19.5	199	Single L-N	230	1.04	239	1.6	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**19.5**			**230**	**1.04**	**239**	**1.6**							
ETB-200N1-17-L1-05	1	EHT-1004-B	43-LT-001	2001	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	Combined with EHT-1004-A
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							
ETB-200N1-17-L1-01	1	EHT-2002-A	43-LT-003	2002	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

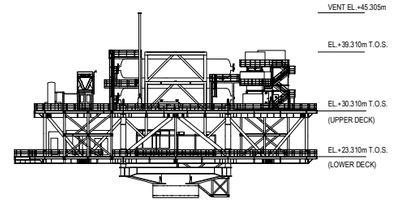
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_C	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 2of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

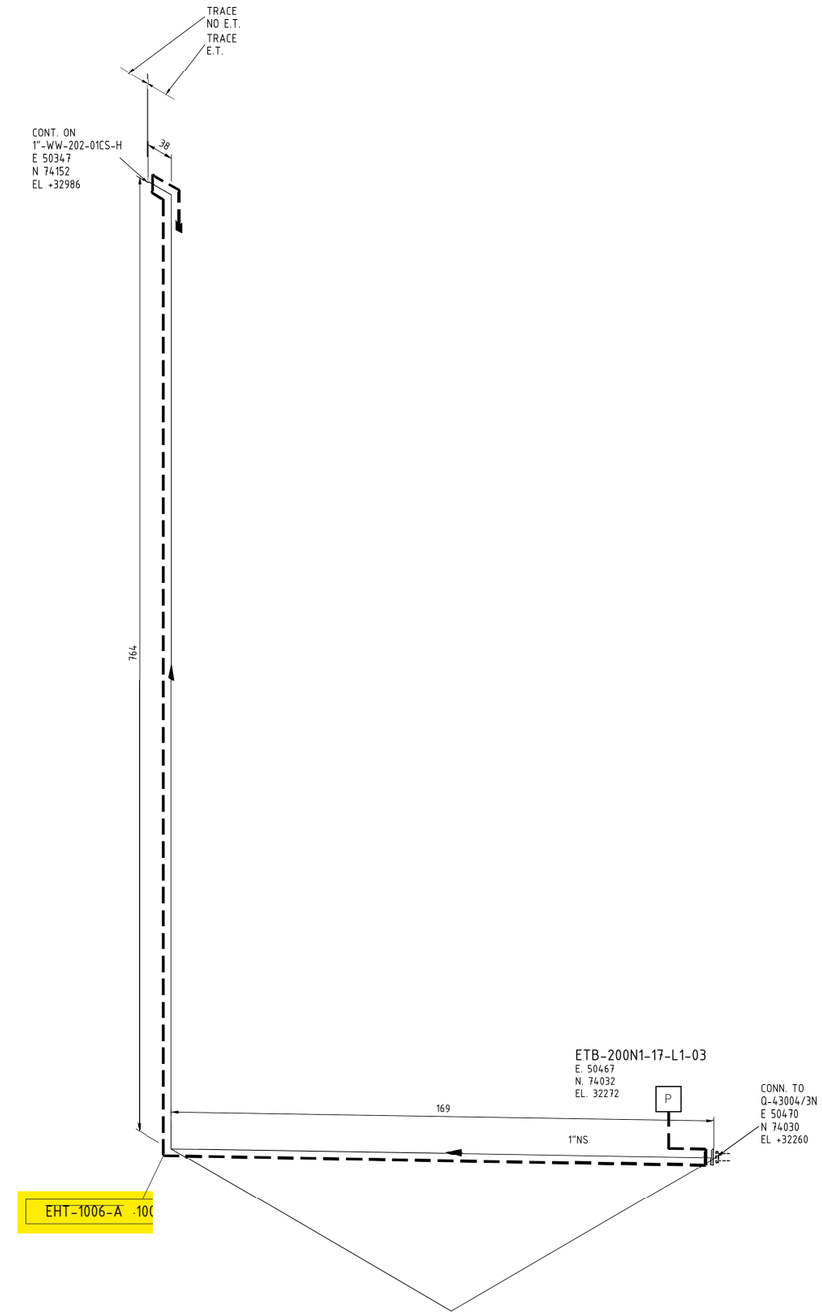
CAD FILENAME: PIT240024_DD01_1006_001_02.dwg

HEAT TRACING DATA

HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	PIPE LENGTH (m)	HEATER LENGTH (m)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W/m)	POWER OUTPUT (W/m)	SHEATH TEMP. (°C)
EHT-1006-A	PIPING	3BTV2-CT	1.0	2.5	0.1	19	230	3.9	10.7	85
TOTALS			1.0	2.5	0.1	19				

HEATER ADDER TABLE

PIPE SIZE (Ins)	TYPE	QTY	ALLOWANCE PER ITEM (m)	TOTAL ALLOWANCE (m)
1	Typical Flange (fixed adder)	1	0.46	0.46



DESIGN PARAMETERS

CIRCUIT NUMBER	1006	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	25°C	INSULATION TYPE	RW/MF 1.2015
MAX. EXPOSURE TEMP.	25°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	100°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

COMPONENT BILL OF MATERIALS

CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	2.5	m	Raychem Self-Regulating Heating Cable
JBS-100-E	1	each	Single entry power connection, EP, ATEX
PSE-090	1	each	Pipe Strap for 1.1/4" to 3" (40-90mm)
GS-54	0.1	each	Glass Tape (16m/roll), suited for SS pipes
LAB-I-01	1	each	Warning Label - English
E-20	1	each	Heat shrink end seal, ATEX (BTV, QTVR)
JBS-SPA	0.2	bag	Small Pipe Adapter for E-100, JBS-100, and JS-100

LINE NUMBERS

1"-WW-202-01CS-H

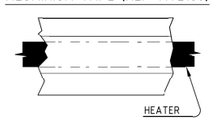
REFERENCE DRAWINGS / DOCUMENTS

123A90-DDL-PP-DI-71000_100

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.
4. HEATING CABLE ALLOWANCES PROVIDED IN THE 'EHT ADDER TABLE' FOR FLANGES AND VALVES ARE IN ADDITION TO THEIR LINEAR LENGTHS.

ALUMINIUM TAPE (REF: ATE180)



SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

CROSSWIND

ROSETTI MARINO

nVent RAYCHEM TRACER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
02	20/01/2025	ISSUED FOR REVIEW	ADU	AMI	GPI
01	25/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.

DOC CODE

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING ISOMETRIC

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-EL-DD-00004	8/10	02

A1

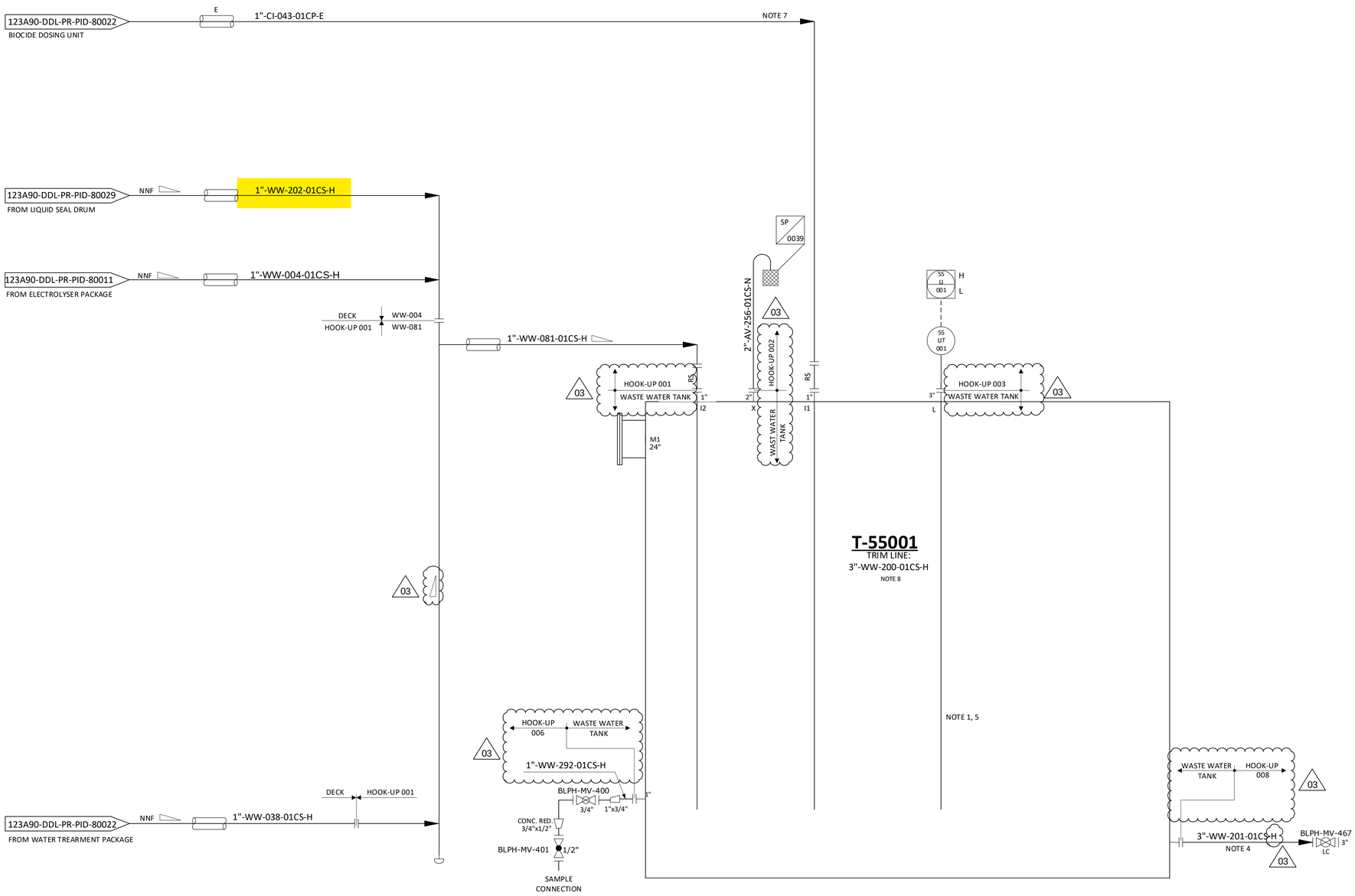
DRAWING NO. DRAWING_NO.

REV. REV

T-55001

WASTE WATER TANK

CAPACITY : 16 m³
DESIGN P/T : 0.005 barg / 80°C
MATERIAL : CARBON STEEL



NOTES

1. DELETED. 03
2. DELETED.
3. DELETED.
4. DRAIN LINE TO SHIP DISPOSAL.
5. PERFORATED STILLING TUBE.
6. DELETED.
7. FOR PERIODIC DOSING OF THE WASTE WATER TANK.
8. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR WASTE WATER TANK - T-55001, DOC. N. "123A90-DDL-MAC-DS-50008"

HOLDS

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

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

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
WATER DISPOSAL SHEET 2

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE

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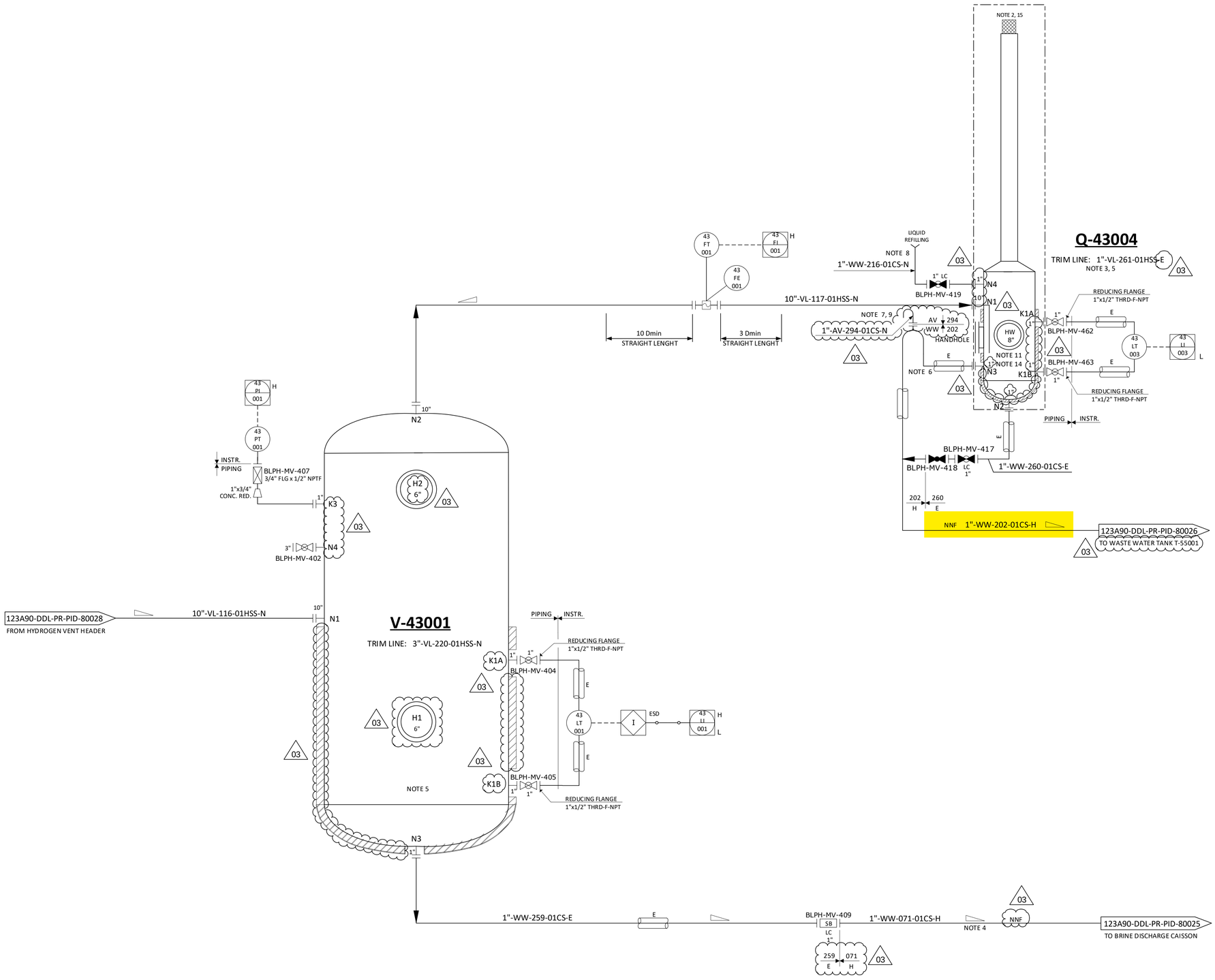
REV. REV

V-43001

HYDROGEN VENT KO DRUM
SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1
SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. 03
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

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

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

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80029	SHEET 001	REV. 03

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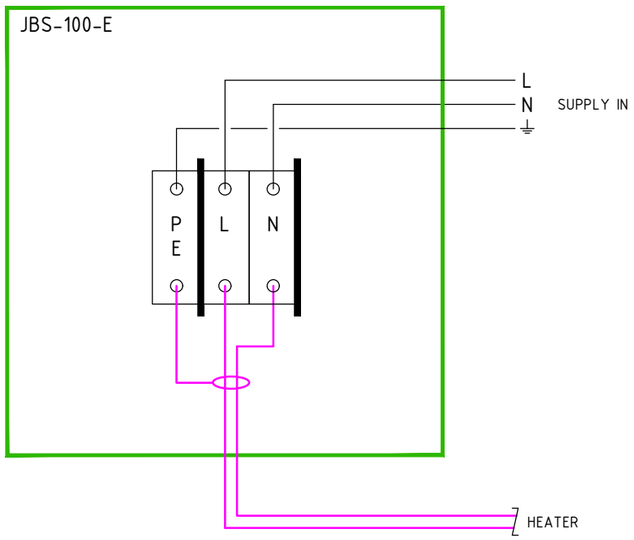
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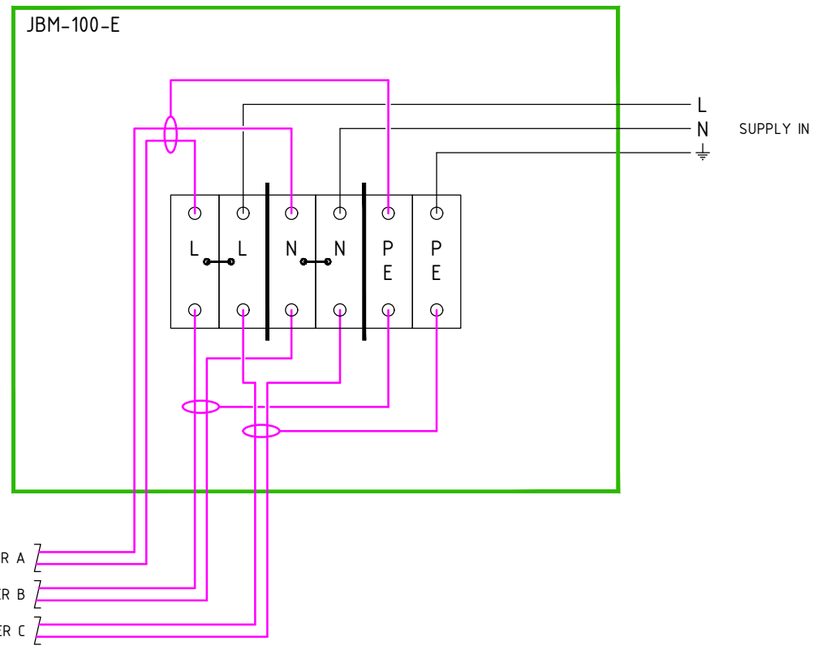
GENERAL INFORMATION:

1. JBS-100-E IS DESIGNED TO CONNECT POWER TO ONE BTV, QTVR, XTV, KTV, HTV OR VPL EHT CABLE.
2. THIS KIT INTEGRATES THE FUNCTIONS OF BOTH CONNECTION KITS AND INSULATION ENTRIES.
3. THE STAND CONNECTED TO THE BOTTOM OF THE BOX PROTECTS THE HEATING CABLE AND ALLOWS FOR UP TO 100mm (4") THERMAL INSULATION.

TECHNICAL BRIEF:

- 2 x M25 THREADED ENTRIES
- 1 x M25 STOPPING PLUGS
- 1 x M25 POWER CABLE GLAND





REV.	DATE	DESCRIPTION	BY	CHK	APP
--	--	--	--	--	--
--	--	--	--	--	--
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	08/03/2024	ISSUED FOR INFORMATION	LJB	E-C	ZS

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TITLE
TYPICAL CONNECTION OF A JBS-100-EP
SINGLE ENTRY JUNCTION BOX

PREPARED BY	-.---	LANG.	SCALE
LEAD ENGINEER	-.---	en	N/A
PROJECT NO.	DRAWING NO.	SHEET	REVISION
PIT240024	1724001647-EL-DG-00005	2/3	01

A3

CAD FILENAME: 1724001647-EL-DG-00006 Rev.01.dwg

CONTROL PANEL REF.:

Q17

MARSHALLING BOX

EJB-200N1-17-L1-01

ETB-200N1-17-L1-04 — P — EHT-1004-A — ETB-200N1-17-L1-05 — P — EHT-1004-B

ETB-200N1-17-L1-02 — P — EHT-1005-A

ETB-200N1-17-L1-03 — P — EHT-1006-A

ETB-200N1-17-L1-01 — P — EHT-2002-A

SPARE

CIRCUIT NO.	1004	1005, 1006	2002	
C.B. RATING (A)	32	32	32	
START-UP I (A)	2.6	0.4	0.6	
LOAD (W)	383	65	81	
SERVICE	WINTERIZING	WINTERIZING	WINTERIZING	
NOTES FOR THE CIRCUIT	--	--	--	

GENERAL NOTES

CROSSWIND

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
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01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	02/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING
SINGLE LINE DIAGRAM (SLD)

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-EL-DG-00006	4/4	01

BTV

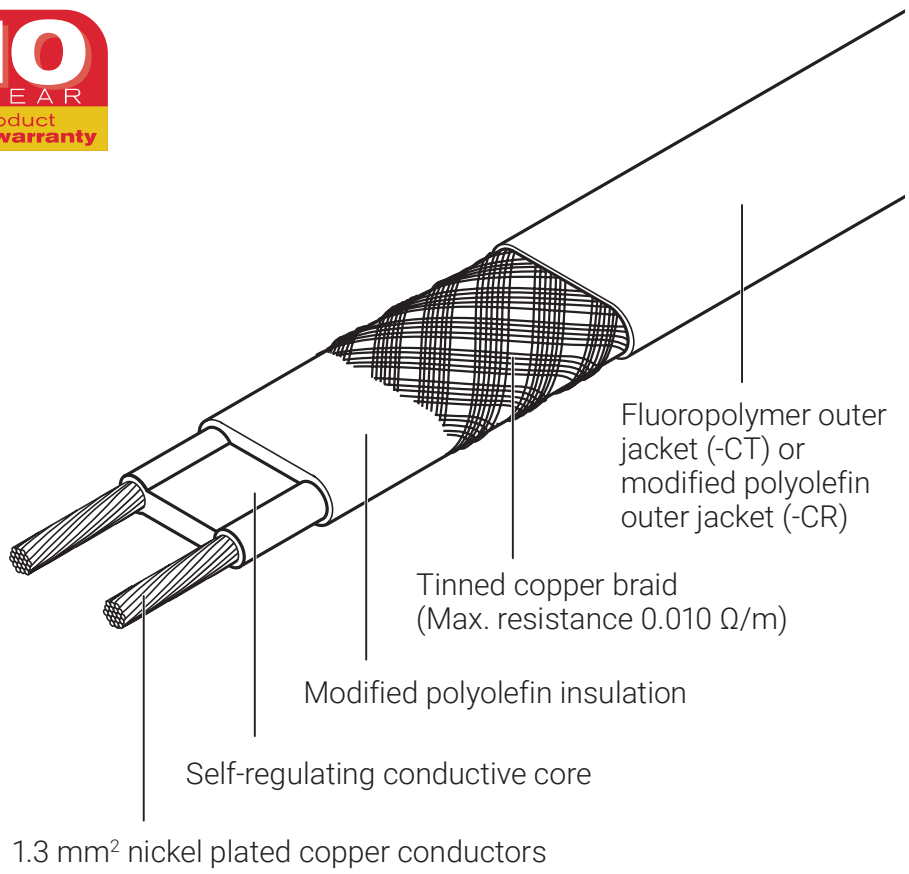
nVent RAYCHEM

CONNECT AND PROTECT

Self-regulating Heating Cable (Ex)

PRODUCT OVERVIEW

10 YEAR Product warranty



Electrical heat-tracing for frost protection without steam cleaning.
The nVent RAYCHEM BTV-family of self-regulating, parallel circuit heating cables is used for frost protection of pipes and vessels. It can also be used for process temperature maintenance up to 65°C.

Application

Traced surface type	Carbon steel Stainless steel Plastic Painted or unpainted metal
Chemical resistance	For organic corrosives: use -CT (fluoropolymer outer jacket) For mild inorganic solutions: use -CR (modified polyolefin outer jacket) For aggressive organics and corrosives consult your local nVent representative

Supply voltage

230 Vac (Contact your local nVent representative for data on other voltages)

PRODUCT SPECIFICATIONS

Product dimensions and weight

	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Width x Thickness (nominal) mm	10.5 x 5.5		13.2 x 5.5	
Weight (g/m)	110		150	

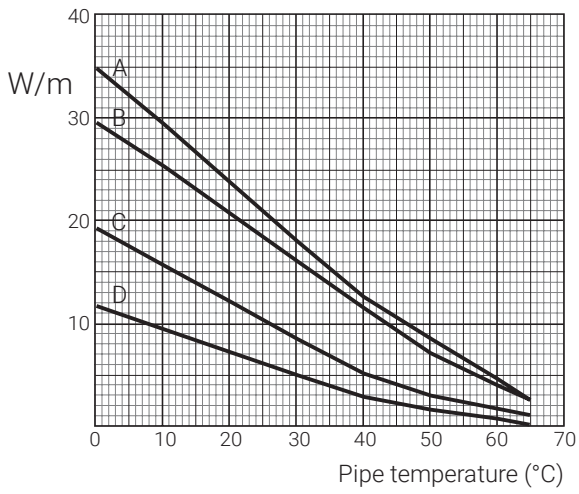
Technical details

Maximum maintain or continuous exposure temperature (power on/off)	65°C
Maximum intermittent exposure temperature (power on/off)	85°C Maximum cumulative exposure 1000 hours
Minimum installation temperature	–60°C
Minimum bend radius	–60°C ≤ T<–20°C: 35 mm –20°C ≤ T<–10°C: 30 mm –10°C ≤ T< 0°C: 25 mm 0°C ≤ T <+10°C: 20 mm T≥ +10°C: 12 mm

Thermal output rating

Nominal power output at 230 Vac on insulated steel pipes

A 10BTV2-CT
10BTV2-CR
B 8BTV-2-CT
8BTV-2-CR
C 5BTV2-CT
5BTV2-CR
D 3BTV2-CT
3BTV2-CR



	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Nominal power output (W/m at 10°C)	9	16	25	29

Maximum circuit length based on type ‘C’ circuit breakers according to EN 60898

Electrical protection sizing	Start-up temperature	Maximum heating cable length per circuit (m)			
16 A	–20°C	155	110	70	45
	+10°C	200	160	110	65
20 A	–20°C	195	140	90	55
	+10°C	200	160	125	85
25 A	–20°C	200	160	110	70
	+10°C	200	160	125	105
32 A	–20°C	200	160	125	90
	+10°C	200	160	125	110

The above numbers are for circuit length estimation only. For more detailed information please use the nVent RAYCHEM TraceCalc software or Contact your local nVent representative. nVent requires the use of a 30 mA residual current device to provide maximum safety and protection from fire. Where design results in higher leakage current, the preferred trip level for adjustable devices is 30 mA above any inherent capacitive leakage characteristic of the heater as specified by the trace heater supplier or alternatively, the next common available trip level for non adjustable devices, with a maximum of 300 mA. All safety aspects need to be proven.

APPROVALS

For use ordinary area and hazardous area Zone 1 and Zone 2 (Gas), Zone 21 and Zone 22 (Dust).

Temperature classification
T6

Product certification

More details about product certification, approvals and conditions of safe use are available in the installation manual for Self-regulating and Power limiting heating cable systems at www.nVent.com/RAYCHEM

ORDERING INFORMATION

Part description	3BTV2-CR	5BTV2-CR	8BTV-2-CR	10BTV2-CR
Part No. (*)	914279-000	414809-000	479821-000	677245-000
Part description	3BTV2-CT	5BTV2-CT	8BTV-2-CT	10BTV2-CT
Part No. (*)	469145-000	487509-000	008633-000	567513-000

Components

nVent offers a full range of components for power connections, splices and end seals. These components must be used to ensure proper functioning of the product and compliance with electrical requirements.

(*) Localized versions may exist with limited approvals and different part numbers. Contact your local sales representative

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

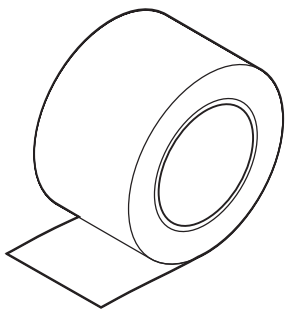
Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com

Our powerful portfolio of brands:
CADDY ERICO HOFFMAN RAYCHEM SCHROFF TRACER

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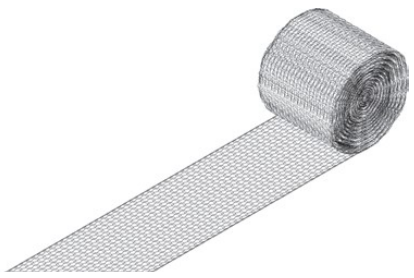
ATE-180

Aluminium tape* for attaching heating cables and thermostat sensors to pipes and tanks. Minimum installation temperature: 0°C. Also suitable for stainless steel pipes.

55 m per roll, 63.5 mm width.

PN: 846243-000 Weight: 0.84 kg

*Power output of selfregulating heating cables might increase when installed with aluminium tape or other heat transfer aids. Please use TraceCalc or contact nVent representative for further details.

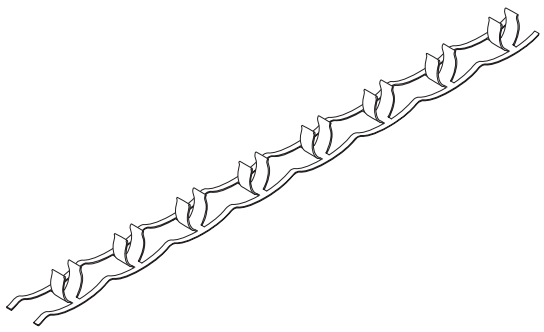


HWA-METAL-MESH-SS-50MM-10M

Stainless steel mesh for fixation of heating cables on valves, pumps or other odd-shaped surfaces. This mesh provides optimum contact and heat transfer between heating cables and heated equipment and can be used for exposure temperatures up to 400°C.

10 m per roll, 50 mm width.

PN: 1244-005772 Weight: 0.36 kg



HWA-PI-FIX- SS-xMM-10M

Stainless steel clip band to attach Polymer Insulated series heating cables to pipes. Clips at regular distances to allow for even heater spacing. Band available in two sizes for different diameter ranges.

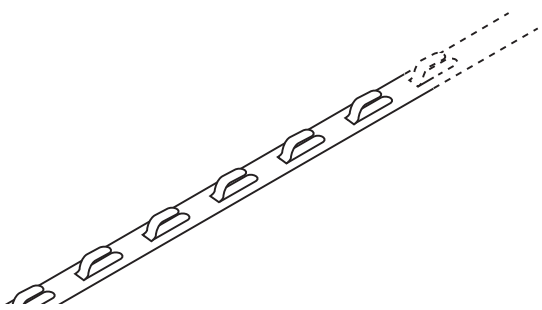
10 m per roll.

For diameters up to 5 mm, HWA-PI-FIX-SS-5MM-10M

PN: 1244-007768 Weight: 0.32 kg

For diameters up to 8 mm, HWA-PI-FIX-SS-8MM-10M

PN: 1244-007769 Weight: 0.52 kg



HARD-SPACER-SS-25MM-25M

Stainless steel spacer for fixing the heating cable on walls, tanks and vessels, etc.

Width spacer: 12.5 mm.

Fixing distance for cables: each 25 mm.

25 m per roll.

PN: 107826-000 Weight: 1.10 kg

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
CB-200F4B	AC UPS F&G - Battery Isolator-B	CONTAINER B-300 (LOWER DECK)	1724000372	3W Power	Cortem Spa		EJBC	Zone 1	EPT 20 ATEX 4075X	1724000372-EL-DG-00011	II 2GDEx db IIC T6 Gb Ex tb IIIC T 85°C Db	-	N/A	True	N/A	False	
EAT-200N1-01	Trace Heating - Remote Ambient Thermostat	LOWER DECK	1724001647	nVent	nVent	1244-022663	ETS-05-A2-E-A	Zone 1	Baseefa 13ATEX0137	1724001647-EL-DD-00004	II 2(1)G Ex eb ia mb [ia Ga] IIC T5 Gb - 40ºC ≤ Ta ≤ +60ºC II 2D Ex tb IIIC T100ºC Db	-	N/A	True	N/A	False	
EHT-1001-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1002-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1003-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1004-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1004-B	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1005-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1006-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1007-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-2002-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EJB-200F2-01	Top Obstruction Lights Junction Box	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990082	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
EJB-200F2-02	Intermediate obstruction lights junction box	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990083	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_4
EJB-200N1-02-L1-01	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990045	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-02	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990044	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-03	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990043	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
EJB-200N1-02-L1-05	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990058	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-06	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990057	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-07	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990059	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-08	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990060	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-09	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990061	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-10	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990047	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-11	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990056	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-12	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990055	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-13	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990054	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-14	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990053	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-15	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990052	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-16	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990051	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-17	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990050	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-18	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990049	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-19	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990048	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-20	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990072	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-01	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990003	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-02	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990004	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-03	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990002	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-04	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990001	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-05	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990012	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-06	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990011	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-07	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990010	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-08	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990009	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-09	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990008	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-10	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990007	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-11	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990006	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-12	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990005	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-13	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990014	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-14	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990013	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-04-L3-01	Stair Normal Lighting JB	LOWER DECK STAIRS	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990032	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-04-L3-02	Stair Normal Lighting JB	LOWER DECK STAIRS	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990033	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-01	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990064	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-03	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990062	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
EJB-200N1-08-L1-04	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990065	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-05	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990077	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-06	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990078	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	

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:	**SGS20ATEX0048X – Issue 3**
4	Product:	**BTV Range of Self-Regulating Trace Heating Systems**
5	Manufacturer:	**nVent Thermal LLC**
6	Address:	**899 Broadway Street, CA, 94063-3104, United States of America**

7 This re-issued certificate extends EU Type Examination Certificate No. **SGS20ATEX0048X** 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.

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 IEC 60079-7:2015+A1:2018 EN 60079-18:2015+A1:2017
EN 60079-30-1:2017 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 60079-30-1 eb IIC T6 Gb or Ex 60079-30-1 eb mb IIC T6 Gb T_{min} -60°C**
Ex 60079-30-1 tb IIIC T80°C Db or Ex 60079-30-1 mb tb IIIC T80°C Db

SGS Fimko Oy Customer Reference No. **865** Project File No. **21/0455**

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SGS Fimko Oy
Takomotie 8
FI-00380 Helsinki, Finland
Telephone +358 (0)9 696 361
e-mail **sgs.fimko@sgs.com**
web site **www.sgs.fi**
Business ID 0978538-5 Member of the SGS Group (SGA SA)

Tuomas Hänninen
SGS Fimko Oy

13 # Schedule

14 ## Certificate Number SGS20ATEX0048X – Issue 3

15 Description of Product

The BTV Range of Self-Regulating Trace Heating Systems is of the parallel circuit self-regulating type, rated at up to 277V, with power output up to 33W/m (10W/ft). The units have a maximum self-limiting temperature of 80°C.

Each trace heating system comprises:
- the active heating cable.
- an end seal for terminating the remote end of the unit.
- a cable gland for connecting the powered end of the unit to a suitable terminal enclosure, or alternative integrated power connection systems.

The active heating cable comprises two stranded copper conductors around which is extruded a semi-conductive core material. This core material increases in resistance with increasing temperature and gives the cable its self-limiting property. This semi conductive core with embedded conductors forms the active part of the heating cable. An extruded layer of fluoropolymer serves to insulate the semi conductive core from the conductive covering, covering the active heater. A protective anti-corrosion fluoropolymer sheath may be extruded over the conductive covering.

The declared maximum withstand temperature for the range is 85°C and the minimum installation temperature is -60°C.

CABLE ACCESSORIES

END SEALS

The end seals for terminating the remote end of the unit may be the following types:

Types E-100-L or E-100, which are mechanical end seals incorporating an end cap which is filled with silicone grease sealant covered by certificates Sira14ATEX3015X and PTB09ATEX1060U.

Types E-100-L-A or E-100-A, which are mechanical end seals incorporating an end cap which is filled with silicone grease sealant.

A Raychem Type E-20 heat shrink end seal kit.

Type E-150 mechanical end seals, covered by certificate DEKRA20ATEX0011U.

SPLICES AND JOINTS

The following splicing and jointing arrangements are provided:

A Raychem Type S-20 heat shrink splice kit for connecting lengths of active heating cable.

A Raychem T-100 tee connection system, certificate PTB20ATEX1008U, for connecting up to three heater cables.

Type S-150 mechanical splice kit, covered by certificate DEKRA20ATEX0011U.

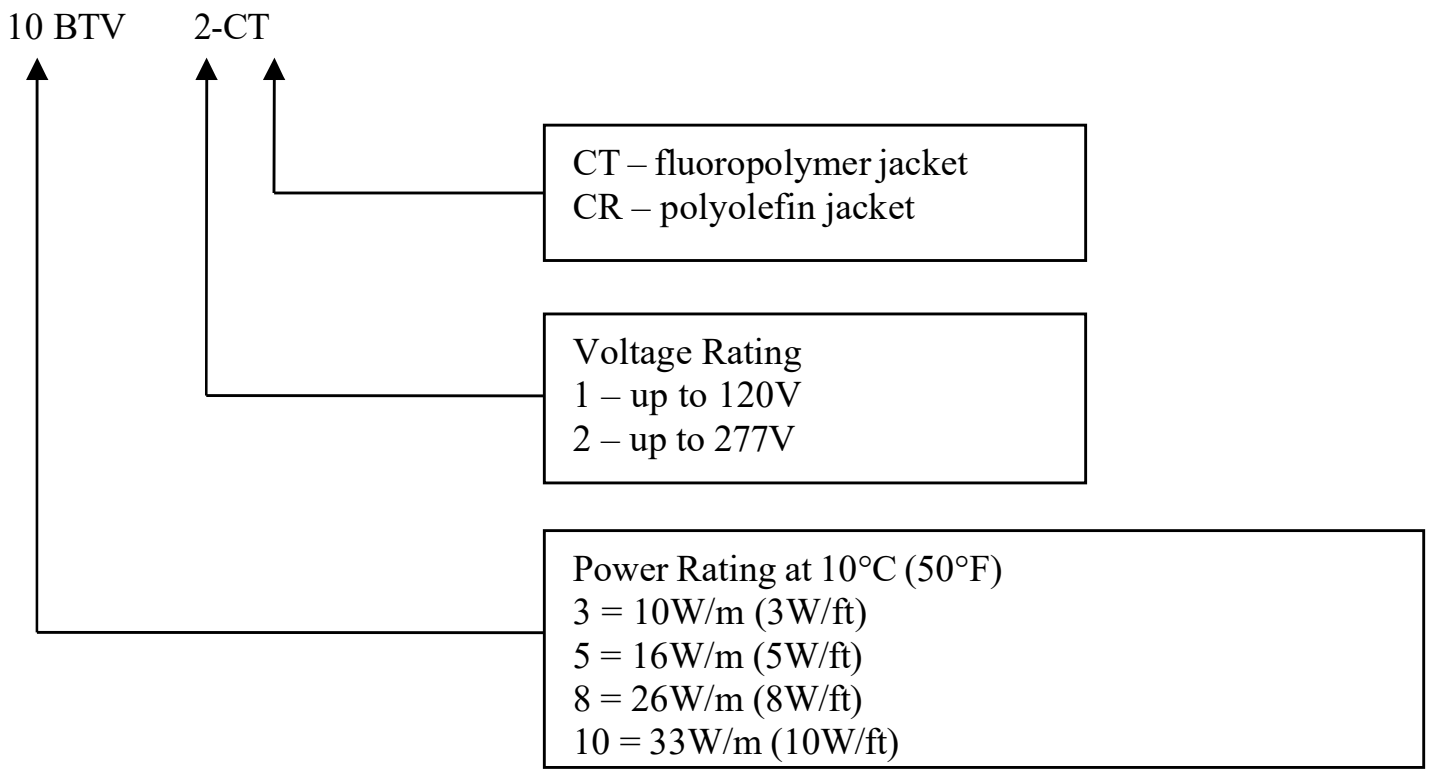
POWER CONNECTIONS

Power connection may be achieved by the following means:

Connection Type	ATEX Certificate
JBM-100	PTB20ATEX1008U
JBS-100	PTB20ATEX1008U
JBU-100	PTB20ATEX1008U
C-150-E	DEKRA20ATEX0011U
C25-21 Connection Kit	Baseefa16ATEX0037U
C25-100 Connection Kit	Baseefa16ATEX0038U
C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS Kits	Baseefa16ATEX0039U

The C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS Kits include M25 or ¾ NPT gland to Sira01ATEX1270X and core sealer to Baseefa15ATEX0194U.

A number of power levels and voltages, up to the maximum specified, are included in the range. They are identified in the following manner:



Any of the products in the range may be considered as part of a stabilised design system. In such a system the design is based upon the use of nVent proprietary software Trace calc Pro. The algorithm defined in this software may be used in additional design software.

The minimum bending radii for BTV trace heating cable at specific temperatures are shown in the table below:

Temperature, T (°C)	**Minimum Bending Radius (mm)**
$-60 \leq T < -20$	35
$-20 \leq T < -10$	30
$-10 \leq T < 0$	25
$0 \leq T < +10$	20
$T \geq +10$	12

16 Report Number

See Certificate History.

17 Specific Conditions of Use

1. The following limiting temperatures for the heat shrink end seals and splices shall not be exceeded:

   +110°C for the S-20 and E-20
   +150°C for the C-150-E, S-150 and E-150

2. The end seals, splices and power connections have the following associated ambient temperatures:

   -60°C to +56°C for the E-20 and S-20
   -55°C to +56°C for the T-100, JBM-100, JBS-100, JBU-100, and E-100
   -40°C to +56°C for the JBS-100-L, JBM-100-L, and JBU-100-L
   -55°C to +55°C for the C-150-E, S-150 and E-150
   -40°C to +40°C for the E-100-L
   -55°C to +110°C for the C25-21 and C25-100
   -60°C to +180°C for the C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS

3. The assembly of glands, splices and end terminations shall be carried out in accordance with the manufacturing instructions

4. The heating element supply circuit must include an electrical protection device in conformity with Clause 4.4 of EN 60079-30-1.

5. The minimum installation temperature is -60°C. The minimum bending radii at specific temperatures for the Type BTV units are shown in the table in the equipment description.

6. The supply to the heating unit must be terminated in a suitably certified terminal enclosure.

7. The minimum installation temperature for E-20 and S-20, end seal and splice is -20°C.

8. The installer is to carry out a dielectric strength test on Ex equipment in which the C25-21, C25-100 and C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS connection kit is fitted. No dielectric breakdown shall occur. (Alternatively, an insulation resistance test may be undertaken in accordance with EN 60079-30-2).

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
205308-A[i]	1 of 1	Q	05/27/2021	BTV-8BTV-CR & BTV-10BTV-CR
205310-A[i]	1 of 1	R	05/27/2021	BTV-8BTV-CT & BTV-10BTV-CT

Current drawings which remain unaffected by this issue:

Number	Sheet	Issue	Date	Description
906567[ii]	1 of 1	P	05/21/21	C25-21, C25-100 and C25-100-METAL-XX, C3/4-100-METAL-XX Connection Kits
906579-A[i]	1 of 1	N	01/15/2021	BTV Heater Units (European System)
205350-A[i]	1 of 1	P	03/31/20	BTV-3BTV-CT & BTV-5BTV-CT
205349-A[i]	1 of 1	J	03/26/20	BTV-3BTV-CR & BTV-5BTV-CR
906794-A[iii]	1 of 1	AA	03/30/20	Generic ATEX and IECEx Print Dwg for BTV-CT, QTVR-CT, XTV-CT, KTV-CT Heating Cables
9242869[iv]	1 & 2	O	12/09/19	LABL JBM-100-L-E
9532687[iv]	1 & 2	Q	12/09/19	LABL JBM-100-L-EP
9621473[iv]	1 & 2	O	12/09/19	LABL JBS-100-L-E
9777523[iv]	1 & 2	P	12/09/19	LABL JBS-100-L-EP
9319676[iv]	1 & 2	O	12/09/19	LABL JBU-100-L-E
9735898[iv]	1 & 2	O	12/09/19	LABL JBU-100-L-EP
908742-A[v]	1 of 1	A	2/19/20	E-20 Heat Shrinkable End Seal Kit Cut Back Dimensions
908743-A[vi]	1 of 1	A	2/19/20	S-20 Heat Shrinkable Splice Joint Kit Cut Back Dimensions

i) These drawings are common to IECEx BAS 20.0011X, SGS20ATEX0048X and are held with IECEx BAS 20.0011X.

ii) This drawing is common to IECEx BAS 16.0040U, IECEx BAS 16.0041U, IECEx 16.0042U, IECEx BAS 20.0008X, IECEx BAS 20.0009X, IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, Baseefa16ATEX0037U, Baseefa16ATEX0038U, Baseefa16ATEX0039U, SGS20ATEX0045X, SGS20ATEX0046X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and is held with IECEx BAS 16.0040U.

iii) These drawings are common to IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and are held with IECEx BAS 20.0011X.

iv) These drawings are common to IECEx BAS 20.0008X, IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, SGS20ATEX0045X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and are held with IECEx BAS 20.0008X.

v) These drawings are common to IECEx BAS 20.0010X, IECEx BAS 20.0011X, IECEx BAS 20.0013X, SGS20ATEX0047X, SGS20ATEX0048X, SGS20ATEX0050X and are held with IECEx BAS 20.0010X.

vi) These drawings are common to IECEx BAS 20.0011X, IECEx BAS 20.0013X, SGS20ATEX0048X, SGS20ATEX0050X and are held with IECEx BAS 20.0011X.

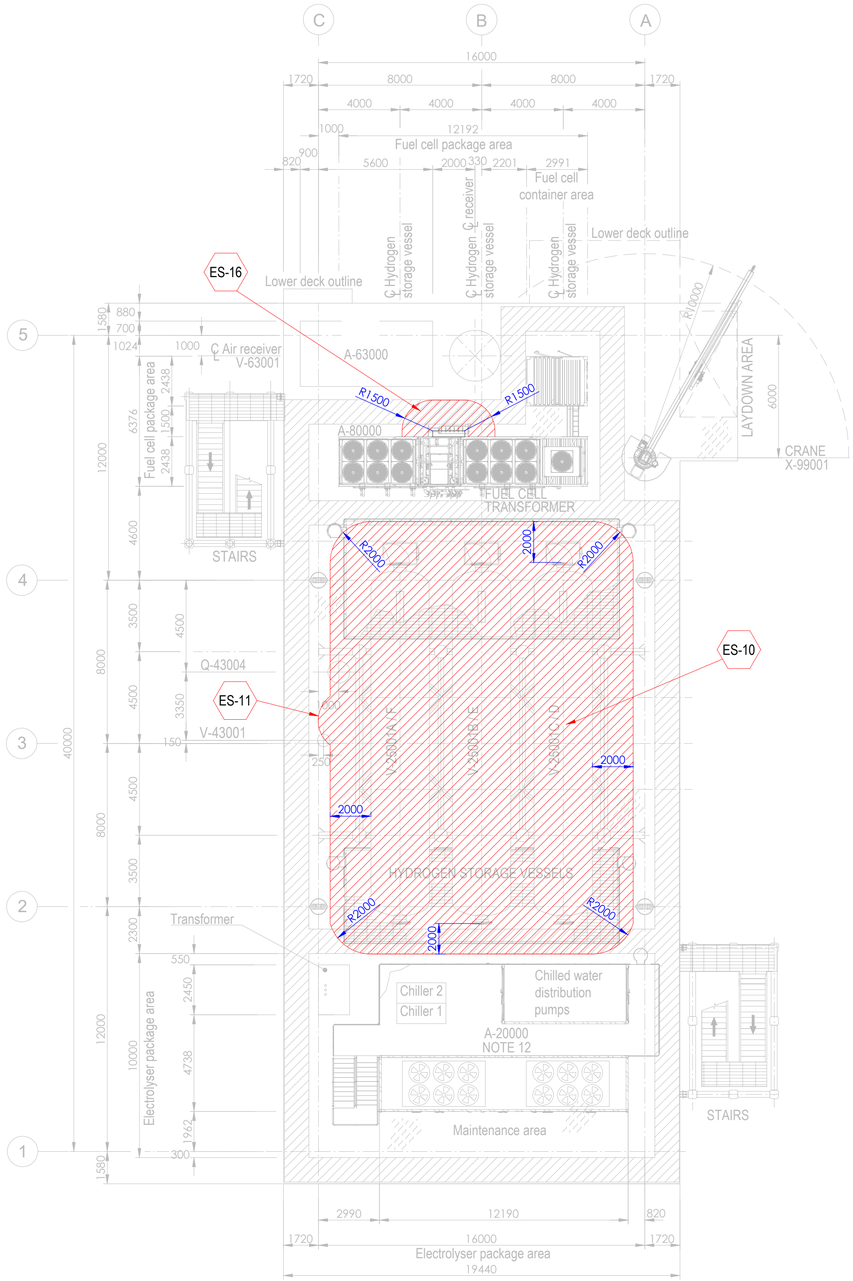
20 Certificate History

Certificate No.	Date	Comments
SGS20ATEX0048X	23 October 2020	The release of the prime certificate. The associated test and assessment against the requirements of EN 60079-0:2012+A11:2013, EN IEC 60079-7:2015+A1:2018, EN 60079-18:2015+A1:2017, EN 60079-30-1:2017 and EN 60079-31:2014 is documented in Test Report No. GB/BAS/ExTR20.0030/00.

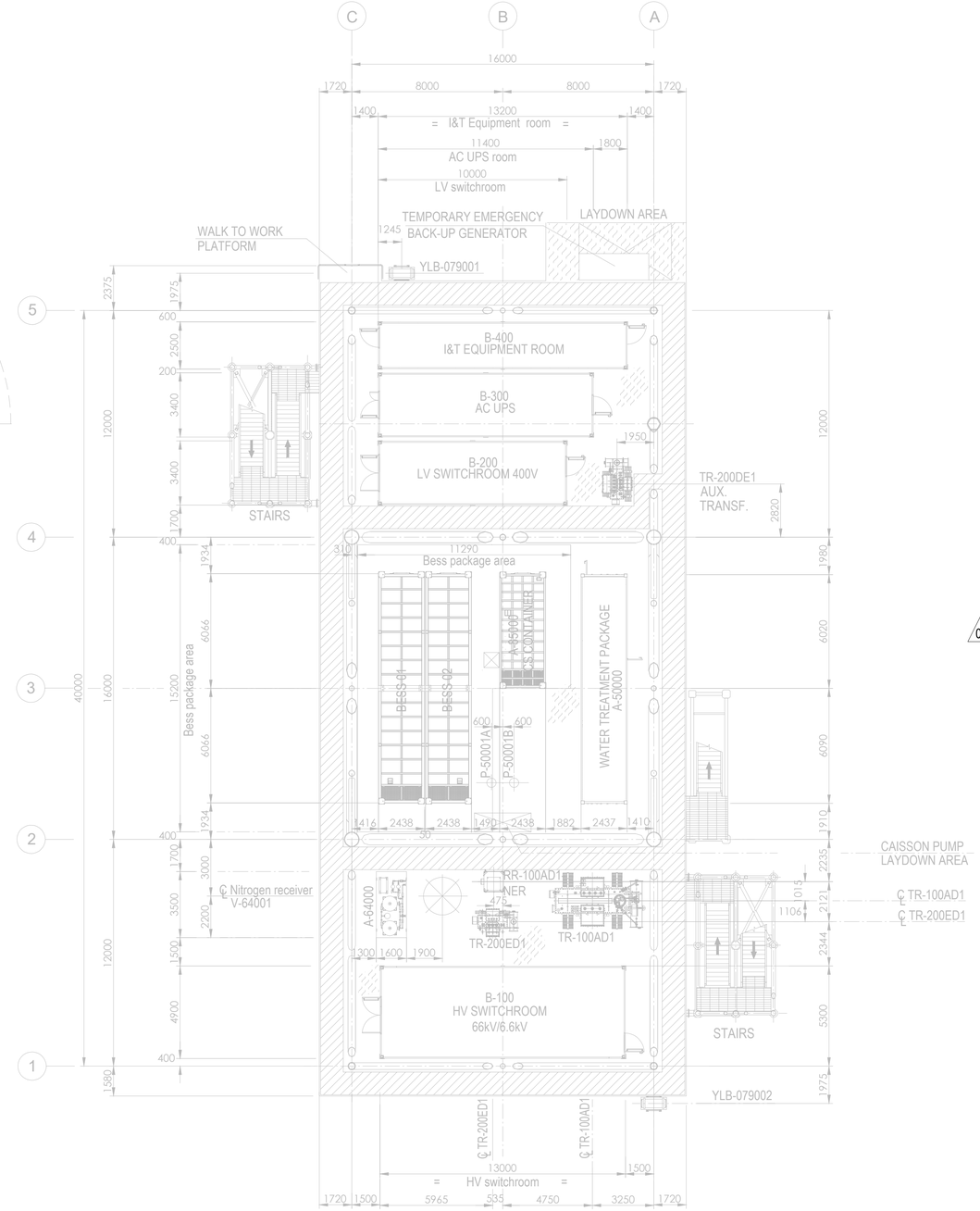
Certificate No.	Date	Comments
SGS20ATEX0048X Issue 1	11 February 2021	To assess the BTV range of self-regulating trace heating systems against EN IEC 60079-0:2018, introduce the low profile power connection, splice and end seal kits, types C-150-E, S-150 and E-150 afforded DEKRA20ATEX0011U, minor amendments to the product description, to change the product name to "BTV Range of Self-Regulating Trace Heating Systems" and to amend the Specific Conditions of Use. The associated test and assessment is documented in Test Report No. GB/BAS/ExTR21.0005/00.
SGS20ATEX0048X Issue 2	7 July 2021	Minor drawing updates not affecting certification. Baseefa Certification Report GB/BAS/ExTR21.0060/00 refers.
SGS20ATEX0048X Issue 3	3 September 2021	Minor change to the BTV-8BTV-CR, BTV-8BTV-CT, BTV-10BTV-CR and BTV-10BTV-CT heating cable dimensions. Baseefa Certification Report GB/BAS/ExTR21.0104/00 refers.
For drawings applicable to each issue, see original of that issue.		

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

REV. 02



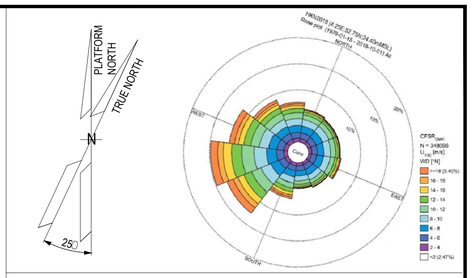
PLAN ON UPPER DECK
EL+30.310 T.O.S.



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

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

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



NOTES

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

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

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

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

CROSSWIND

ROSETTI MARINO

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

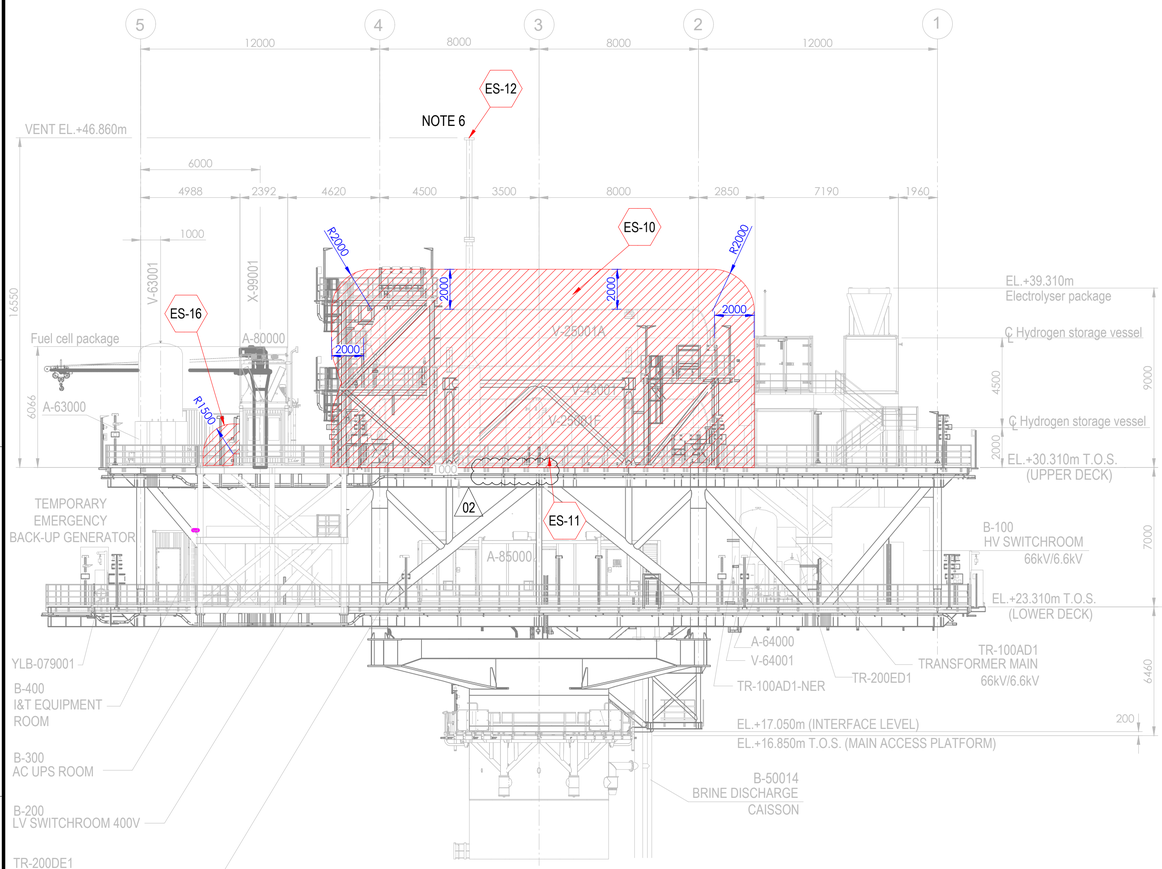
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

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

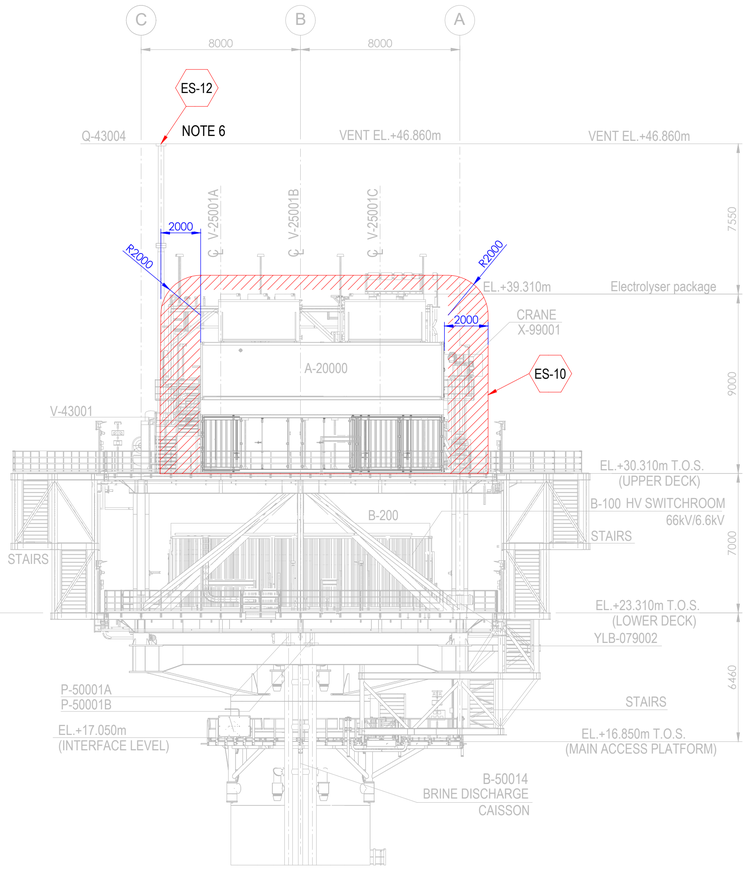
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

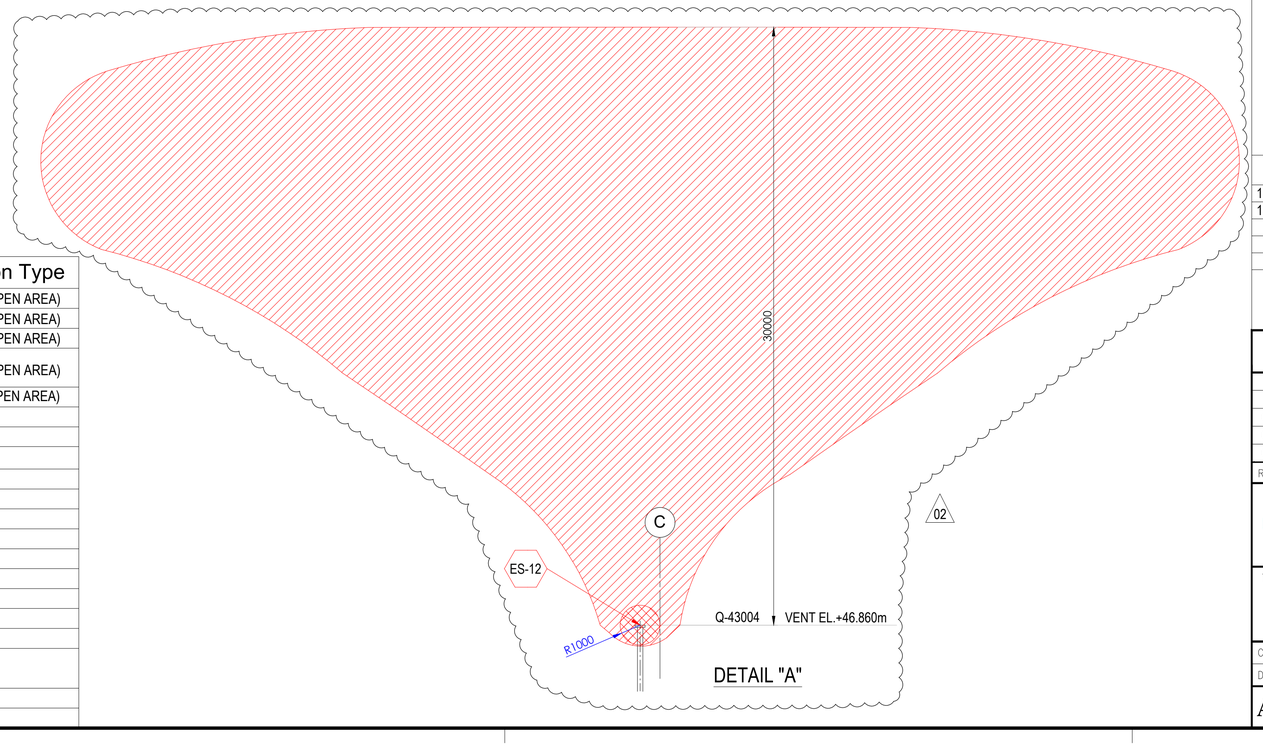


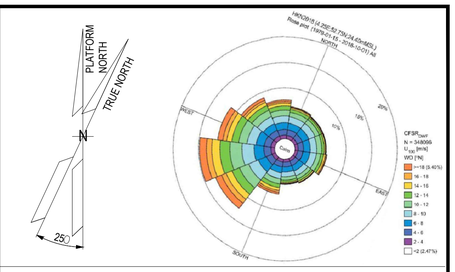
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

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





NOTES

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

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

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

CROSSWIND

ROSETTI MARINO

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

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

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

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

ITEM	Tag	EHT-2002-A	: Heat Tracing Tape			Dwg	1724001647-EL-LIS-00003
	S/Sys	83-65	: Electrical Heat Tracing			Module	UD
TASK	code	C10004644		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.**		P/N:469145-000			
Manufacturer	nVent			**Model**		3BTV2-CT			
Cert No.	SGS20ATEX0048X			**Equipment Ambient Temp.**		-60°C to +80°C			
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex eb	**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	NA	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	NA	
5	Equipment circuit identification is correct	x	OK	
6	Equipment circuit identification is available	x	OK	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	NA	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		NA	
	Physical check	x	NA	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	NA	
13	Condition of enclosure gaskets is satisfactory	x	NA	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	OK	
15	Electrical connections are tight	x	OK	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	NA	
18	Encapsulated components are undamaged	x	OK	
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	

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

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	EHT-2002-A	: Heat Tracing Tape			Dwg	1724001647-EL-LIS-00003
	S/Sys	83-65	: Electrical Heat Tracing			Module	UD
TASK	code	C10004644		Location	Onshore Activities	User	Rosetti Marino Quality Control
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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	Giovanni Tangianu	
Date	2025-02-08	2025-02-13	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-08T09:49:24.967Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-13T15:10:10.837Z	

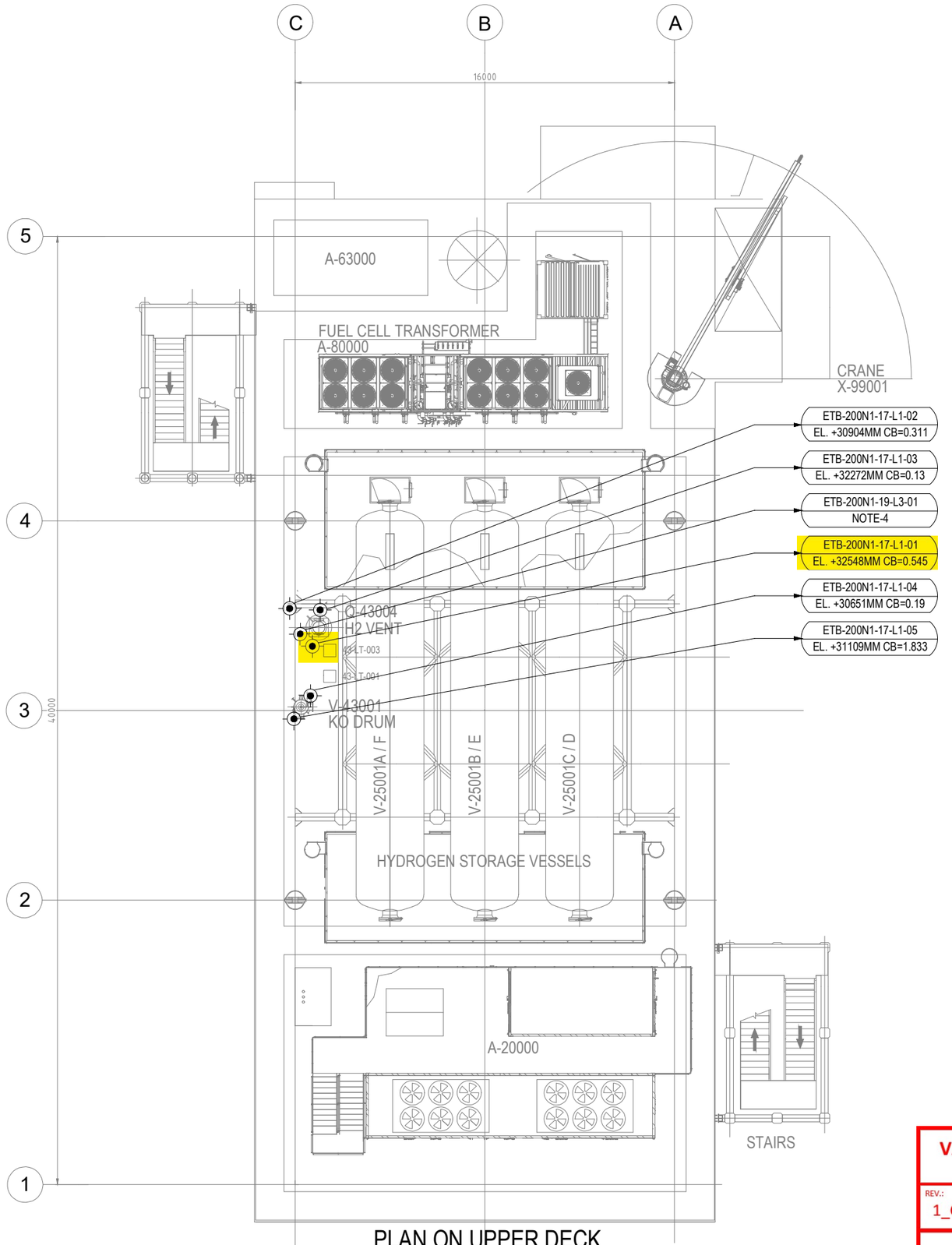
EHT CALCULATION LIST

PIT240024_ED01-1001

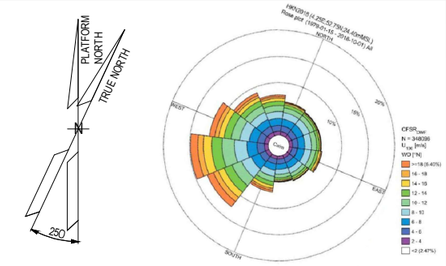
		ENGINEERING DATA				MECHANICAL & INSULATION DATA							PROCESS DATA				EHT BASIC DESIGN								EHT DETAILED DESIGN						EHT TEMP. CONTROL DATA							
Main EHT Box Number	Item Number	Heater Number	Line, Equipment or Instrument ID	nVent Circuit Number	Plant Area	Pipe Size [DN / IN]	Pipe Length [m]	Support Quantity [pc]	Valve Quantity [pc]	Other Heat Sink Quantity [pc]	Insulation Type	Insulation Thickness [mm]	Maintain Temperature [°C]	Maximum Allow. Process Temperature [°C]	Maximum Operating Temperature [°C]	Maximum Exposure Temperature [°C]	Heatloss [W/m]	Heating Cable Selection	Trace Ratio	Heating Cable Output [W/m]	EHT Cable per Support [m]	EHT Cable per Valve [m]	EHT Cable per Other Heatsink [m]	Total EHT Cable [m]	Max. Allow. EHT Circuit Length [m]	Connection Type	Voltage [V]	Operating Current [A]	Total Operating Load [W]	Start-Up Current [A]	Temp. Control Method	Controller Set Point [°C]	Mimimum Controlled Temperature [°C]	Maximum Controlled Temperature [°C]	Maximum Uncontrolled Temperature [°C]	Revision	Remark
																		GRAND TOTAL						**181.4**				**9.69**	**2226**	**14.91**							
ETB-200N1-16-L3-01	1	EHT-1001-A	1"-DM-001-01SS-E	1001	PIPING	1	17.6	5	1	2	RW/MF 1:2015	20	5	100	22	22	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	22.0	199	Single L-N	230	1.18	271	1.8	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**22.0**			**230**	**1.18**	**271**	**1.8**							
ETB-200N1-15-L2-01	1	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	11.0	4		1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	13.9	199	Single L-N	230	0.73	167	1.1	Ambient sensing, standard	5	18	29	50	00	
	2	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	3	EHT-1002-A	1"-CI-032-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	4	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	5	EHT-1002-A	1"-CI-030-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	6	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.75	0.5		1		RW/MF 1:2015	20	5	50	25	25	3.4	3BTV2-CT	2.0	10.7		1.5		2.6	199	Single L-N	230	0.15	34	0.2	Ambient sensing, standard	5	30	38	55	00	
	7	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.5	0.5		1		RW/MF 1:2015	20	5	50	25	25	2.9	3BTV2-CT	2.0	10.7		1.4		2.5	199	Single L-N	230	0.14	32	0.2	Ambient sensing, standard	5	32	40	56	00	
																		TOTAL						**36.4**			**230**	**2.00**	**459**	**3.1**							
ETB-200N1-14-L1-01	1	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	4	0.5				RW/MF 1:2015	20	5	100	25	25	10.2	3BTV2-CT	1.0	10.7				0.6	199	Single L-N	230	0.03	7	0.1	Ambient sensing, standard	5	5	20	46	00	
	2	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	4.7	1		1	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1		0.5	9.3	199	Single L-N	230	0.47	107	0.7	Ambient sensing, standard	5	14	27	49	00	
	3	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	4	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	7.8	3			RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1			8.6	199	Single L-N	230	0.48	111	0.7	Ambient sensing, standard	5	14	27	49	00	
	5	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	6	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.8	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	7	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	1.4	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	4.2	199	Single L-N	230	0.23	54	0.4	Ambient sensing, standard	5	24	34	53	00	
	8	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	9	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	10	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.7	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	11	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	1.2	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	3.7	199	Single L-N	230	0.20	47	0.3	Ambient sensing, standard	5	24	34	53	00	
	12	EHT-1003-A	1"-SWS-147-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	13	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	14	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	15	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1	0.1				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	28	37	54	00	
	16	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
	17	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	18	EHT-1003-A	1"-SWS-146-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	19	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	20	EHT-1003-A	1"-SWS-290-01SD-E	1003	PIPING	1	1.1	1	2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7	0.3	1.6		5.8	199	Single L-N	230	0.33	76	0.5	Ambient sensing, standard	5	28	37	54	00	
	21	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**78.6**			**230**	**4.37**	**1002**	**6.7**							
ETB-200N1-17-L1-04	1	EHT-1004-A	1"-WW-259-01CS-E / V-43001	1004	PIPING	1	0.9		1	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7		0.8	0.5	3.2	199	Single L-N	230	0.12	28	0.2	Ambient sensing, standard	5	18	29	50	00	Combined with EHT-1004-B
																		TOTAL						**3.2**			**230**	**0.12**	**28**	**0.2**							
ETB-200N1-17-L1-02	1	EHT-1005-A	1"-WW-260-01CS-E	1005	PIPING	1	1.2	1	2	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	4.6	199	Single L-N	230	0.20	46	0.3	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1006-A
																		TOTAL						**4.6**			**230**	**0.20**	**46**	**0.3**							
ETB-200N1-17-L1-03	1	EHT-1006-A	1"-WW-202-01CS-H	1006	PIPING	1	1.0			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	1.0	10.7			0.5	2.5	199	Single L-N	230	0.08	19	0.1	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1005-A
																		TOTAL						**2.5**			**230**	**0.08**	**19**	**0.1**							
ETB-200N1-15-L2-02	1	EHT-1007-A	1"-CI-043-01CP-E	1007	PIPING	1	15.0	6		4	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	19.5	199	Single L-N	230	1.04	239	1.6	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**19.5**			**230**	**1.04**	**239**	**1.6**							
ETB-200N1-17-L1-05	1	EHT-1004-B	43-LT-001	2001	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	Combined with EHT-1004-A
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							
ETB-200N1-17-L1-01	1	EHT-2002-A	43-LT-003	2002	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

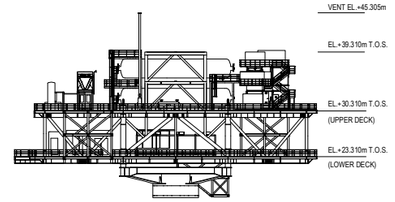
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_C	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 2of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

CAD FILENAME: PIT240024_D003_2002_001_03.dwg

HEAT TRACING DATA

HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	PIPE LENGTH (m)	HEATER LENGTH (m)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W/m)	POWER OUTPUT (W/m)	SHEATH TEMP. (°C)
EHT-2002-A	INSTRUMENT	3BTV2-CT	3.0	7.3	0.5	81	230	3.9	10.7	85
TOTALS			3.0	7.3	0.5	81				

HEATER ADDER TABLE

PIPE SIZE (Ins)	TYPE	QTY	ALLOWANCE PER ITEM (m)	TOTAL ALLOWANCE (m)

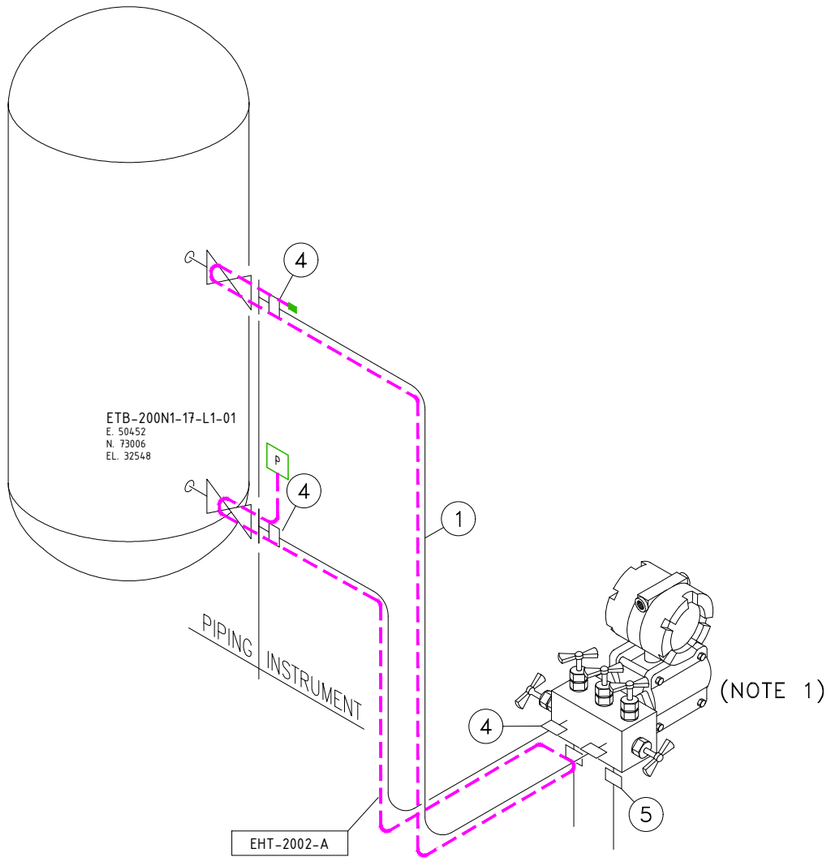
DESIGN PARAMETERS

CIRCUIT NUMBER	2002	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	11°C	INSULATION TYPE	RW/MF 1.2015
MAX. EXPOSURE TEMP.	11°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	100°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

COMPONENT BILL OF MATERIALS

CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	7.3	m	Raychem Self-Regulating Heating Cable
JBS-100-EP	1	each	Single entry power connection, EP, ATEX
PSE-090	1	each	Pipe Strap for 1.1/4" to 3" (40-90mm)
GS-54	0.3	each	Glass Tape (16m/roll), suited for SS pipes
LAB-I-01	2	each	Warning Label - English
E-20	1	each	Heat shrink end seal, ATEX (BTV, QTVR)
JBS-SPA	0.2	bag	Small Pipe Adapter for E-100, JBS-100, and JS-100

ELECTRICAL HOOK-UP FOR LEVEL TRANSMITTERS (DP CELL TYPE)



LINE NUMBERS

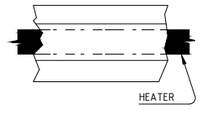
43-LT-003

REFERENCE DRAWINGS / DOCUMENTS

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.
4. HEATING CABLE ALLOWANCES PROVIDED IN THE 'EHT ADDER TABLE' FOR FLANGES AND VALVES ARE IN ADDITION TO THEIR LINEAR LENGTHS.

ALUMINIUM TAPE (REF: ATE180)



SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
03	13/01/2025	ACCEPTED FOR CONSTRUCTION	ADU	AMI	GPI
02	29/11/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.

DOC CODE

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING
INSTRUMENT HOOK-UP

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-IN-HD-00010	4/4	03

A1

DRAWING NO. DRAWING_NO.

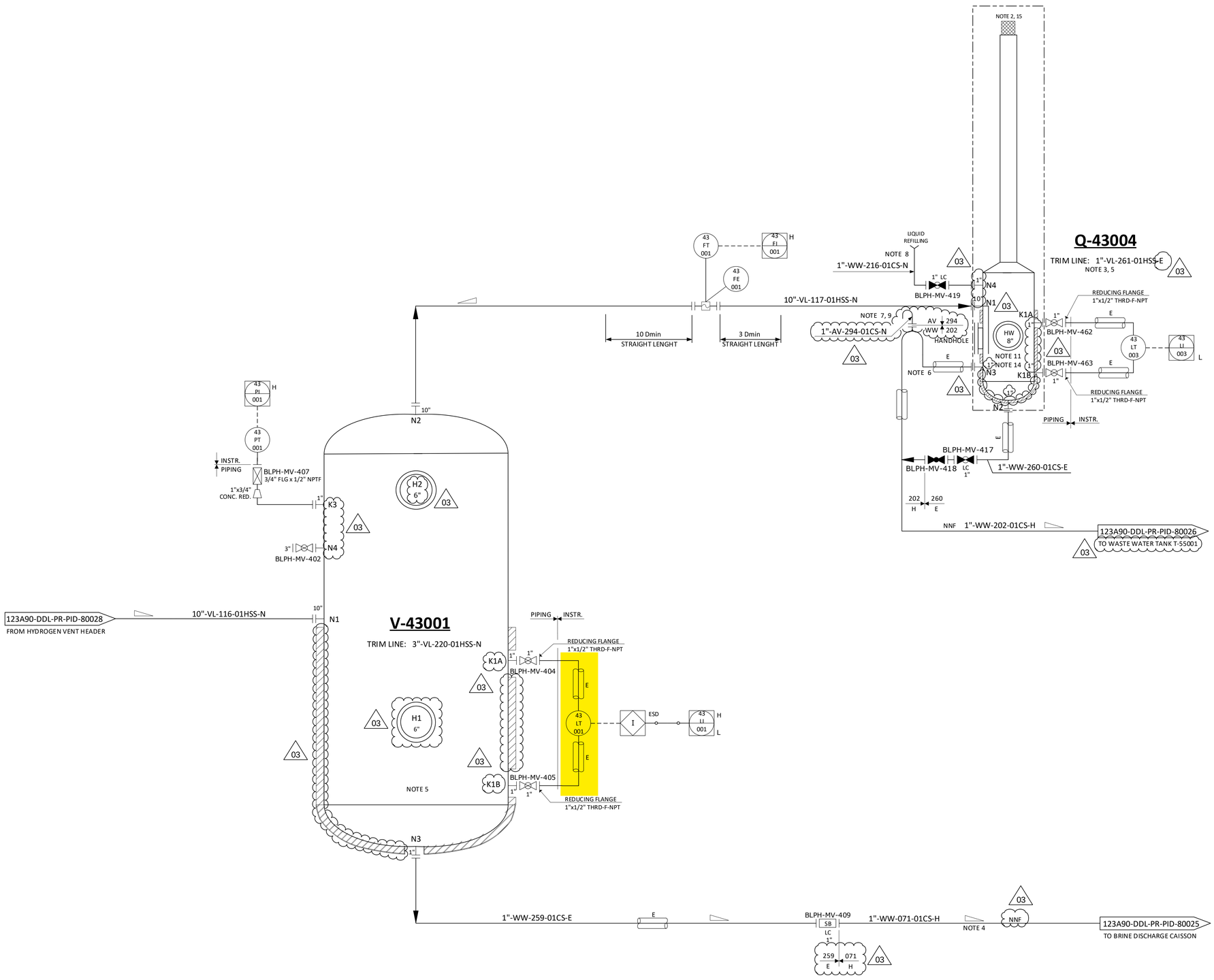
REV. REV

V-43001

HYDROGEN VENT KO DRUM
SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1
SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. (03)
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

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

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

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80029		SHEET 001 / REV. 03

File Name : FILE_NAME

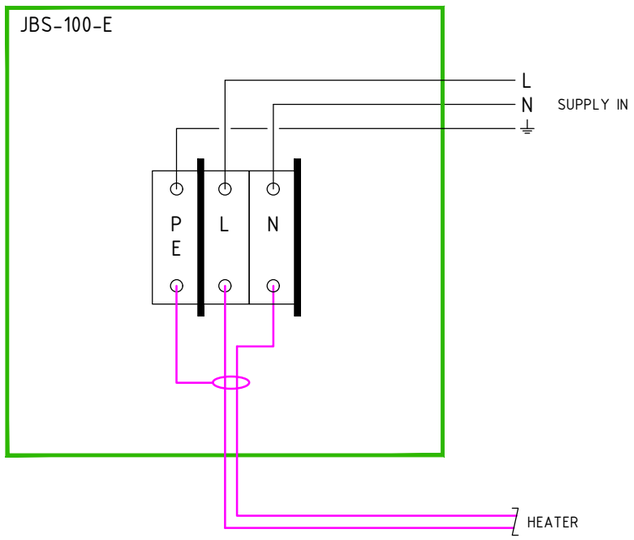
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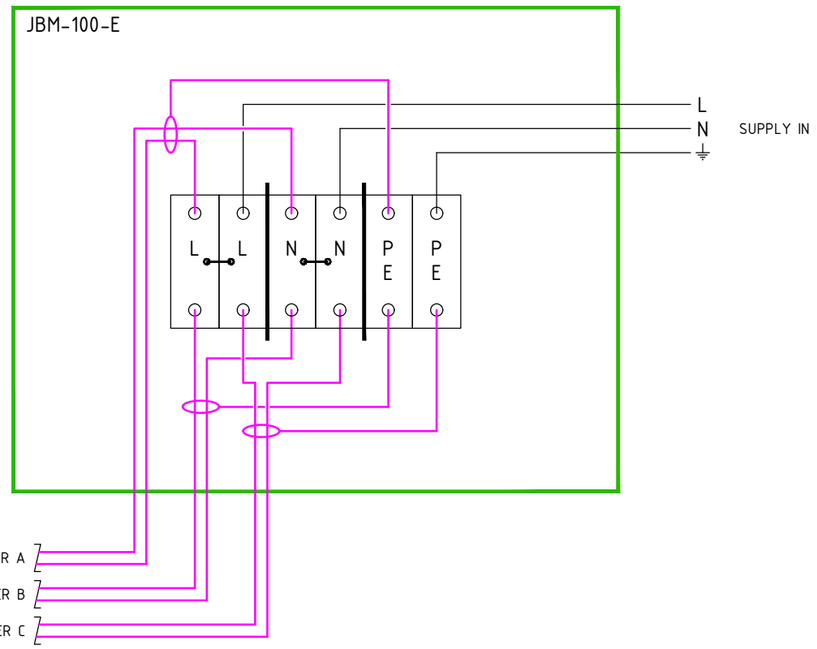
GENERAL INFORMATION:

1. JBS-100-E IS DESIGNED TO CONNECT POWER TO ONE BTV, QTVR, XTV, KTV, HTV OR VPL EHT CABLE.
2. THIS KIT INTEGRATES THE FUNCTIONS OF BOTH CONNECTION KITS AND INSULATION ENTRIES.
3. THE STAND CONNECTED TO THE BOTTOM OF THE BOX PROTECTS THE HEATING CABLE AND ALLOWS FOR UP TO 100mm (4") THERMAL INSULATION.

TECHNICAL BRIEF:

- 2 x M25 THREADED ENTRIES
- 1 x M25 STOPPING PLUGS
- 1 x M25 POWER CABLE GLAND





REV.	DATE	DESCRIPTION	BY	CHK	APP
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--	--	--	--	--	--
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	08/03/2024	ISSUED FOR INFORMATION	LJB	E-C	ZS

nVent RAYCHEM TRACER

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TITLE
TYPICAL CONNECTION OF A JBS-100-EP
SINGLE ENTRY JUNCTION BOX

PREPARED BY	-.---	LANG.	SCALE
LEAD ENGINEER	-.---	en	N/A
PROJECT NO.	DRAWING NO.	SHEET	REVISION
PIT240024	1724001647-EL-DG-00005	2/3	01

A3

CAD FILENAME: 1724001647-EL-DG-00006 Rev.01.dwg

CONTROL PANEL REF.:

MARSHALLING BOX

EJB-200N1-17-L1-01

Q17

ETB-200N1-17-L1-04 — P — EHT-1004-A — ETB-200N1-17-L1-05 — P — EHT-1004-B

ETB-200N1-17-L1-02 — P — EHT-1005-A

ETB-200N1-17-L1-03 — P — EHT-1006-A

ETB-200N1-17-L1-01 — P — EHT-2002-A

SPARE

CIRCUIT NO.	1004	1005, 1006	2002	
C.B. RATING (A)	32	32	32	
START-UP I (A)	2.6	0.4	0.6	
LOAD (W)	383	65	81	
SERVICE	WINTERIZING	WINTERIZING	WINTERIZING	
NOTES FOR THE CIRCUIT	--	--	--	

GENERAL NOTES

CROSSWIND

ROSETTI MARINO

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	02/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING
SINGLE LINE DIAGRAM (SLD)

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-EL-DG-00006	4/4	01

BTV

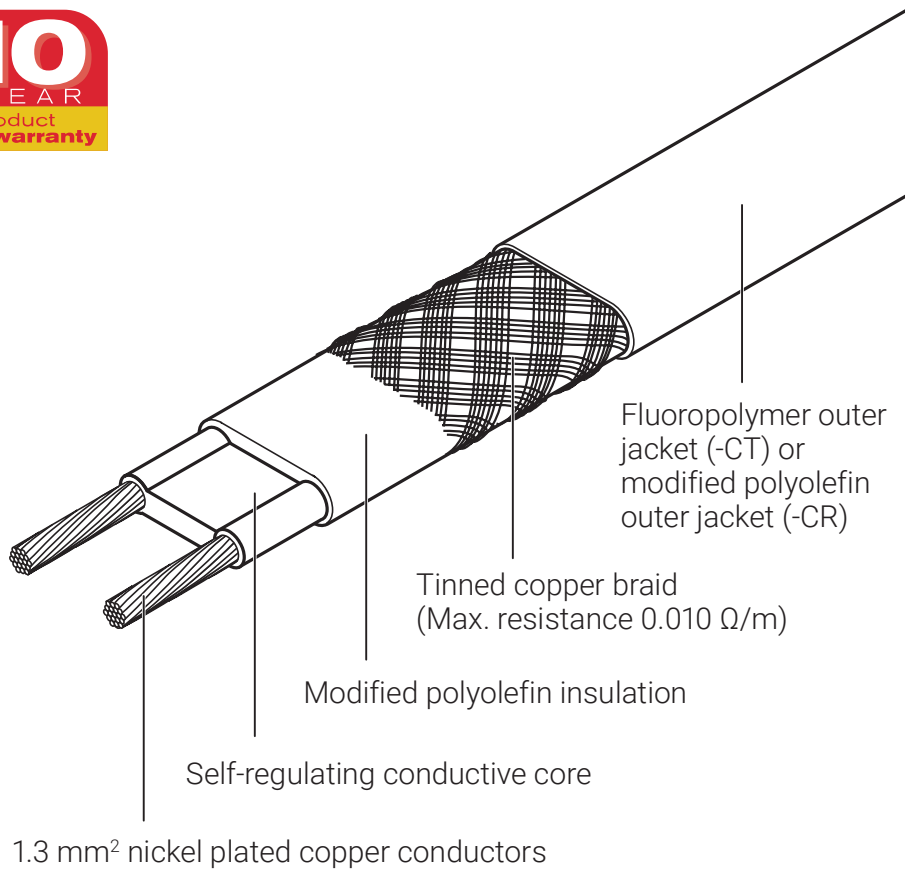
nVent RAYCHEM

CONNECT AND PROTECT

Self-regulating Heating Cable (Ex)

PRODUCT OVERVIEW

10 YEAR Product warranty



Electrical heat-tracing for frost protection without steam cleaning.
The nVent RAYCHEM BTV-family of self-regulating, parallel circuit heating cables is used for frost protection of pipes and vessels. It can also be used for process temperature maintenance up to 65°C.

Application

Traced surface type	Carbon steel Stainless steel Plastic Painted or unpainted metal
Chemical resistance	For organic corrosives: use -CT (fluoropolymer outer jacket) For mild inorganic solutions: use -CR (modified polyolefin outer jacket) For aggressive organics and corrosives consult your local nVent representative

Supply voltage

230 Vac (Contact your local nVent representative for data on other voltages)

PRODUCT SPECIFICATIONS

Product dimensions and weight

	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Width x Thickness (nominal) mm	10.5 x 5.5		13.2 x 5.5	
Weight (g/m)	110		150	

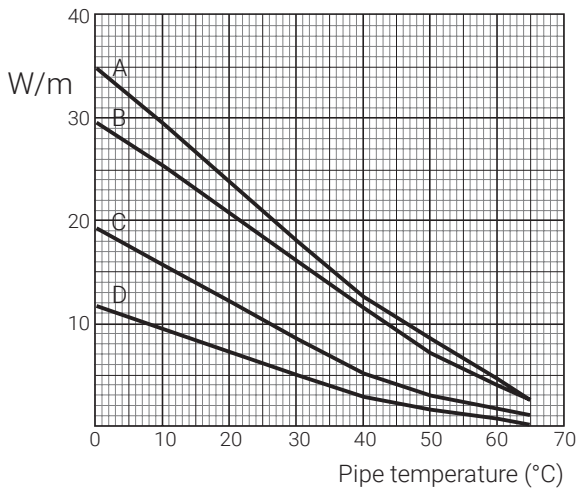
Technical details

Maximum maintain or continuous exposure temperature (power on/off)	65°C
Maximum intermittent exposure temperature (power on/off)	85°C Maximum cumulative exposure 1000 hours
Minimum installation temperature	–60°C
Minimum bend radius	–60°C ≤ T<–20°C: 35 mm –20°C ≤ T<–10°C: 30 mm –10°C ≤ T< 0°C: 25 mm 0°C ≤ T <+10°C: 20 mm T≥ +10°C: 12 mm

Thermal output rating

Nominal power output at 230 Vac on insulated steel pipes

A 10BTV2-CT
10BTV2-CR
B 8BTV-2-CT
8BTV-2-CR
C 5BTV2-CT
5BTV2-CR
D 3BTV2-CT
3BTV2-CR



	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Nominal power output (W/m at 10°C)	9	16	25	29

Maximum circuit length based on type ‘C’ circuit breakers according to EN 60898

Electrical protection sizing	Start-up temperature	Maximum heating cable length per circuit (m)			
16 A	–20°C	155	110	70	45
	+10°C	200	160	110	65
20 A	–20°C	195	140	90	55
	+10°C	200	160	125	85
25 A	–20°C	200	160	110	70
	+10°C	200	160	125	105
32 A	–20°C	200	160	125	90
	+10°C	200	160	125	110

The above numbers are for circuit length estimation only. For more detailed information please use the nVent RAYCHEM TraceCalc software or Contact your local nVent representative. nVent requires the use of a 30 mA residual current device to provide maximum safety and protection from fire. Where design results in higher leakage current, the preferred trip level for adjustable devices is 30 mA above any inherent capacitive leakage characteristic of the heater as specified by the trace heater supplier or alternatively, the next common available trip level for non adjustable devices, with a maximum of 300 mA. All safety aspects need to be proven.

APPROVALS

For use ordinary area and hazardous area Zone 1 and Zone 2 (Gas), Zone 21 and Zone 22 (Dust).

Temperature classification
T6

Product certification

More details about product certification, approvals and conditions of safe use are available in the installation manual for Self-regulating and Power limiting heating cable systems at www.nVent.com/RAYCHEM

ORDERING INFORMATION

Part description	3BTV2-CR	5BTV2-CR	8BTV-2-CR	10BTV2-CR
Part No. (*)	914279-000	414809-000	479821-000	677245-000
Part description	3BTV2-CT	5BTV2-CT	8BTV-2-CT	10BTV2-CT
Part No. (*)	469145-000	487509-000	008633-000	567513-000

Components

nVent offers a full range of components for power connections, splices and end seals. These components must be used to ensure proper functioning of the product and compliance with electrical requirements.

(*) Localized versions may exist with limited approvals and different part numbers. Contact your local sales representative

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

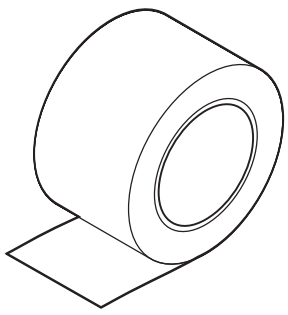
Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com

Our powerful portfolio of brands:
CADDY ERICO HOFFMAN RAYCHEM SCHROFF TRACER

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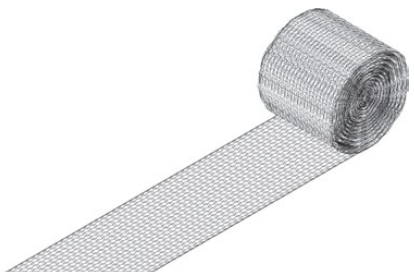
ATE-180

Aluminium tape* for attaching heating cables and thermostat sensors to pipes and tanks. Minimum installation temperature: 0°C. Also suitable for stainless steel pipes.

55 m per roll, 63.5 mm width.

PN: 846243-000 Weight: 0.84 kg

*Power output of selfregulating heating cables might increase when installed with aluminium tape or other heat transfer aids. Please use TraceCalc or contact nVent representative for further details.

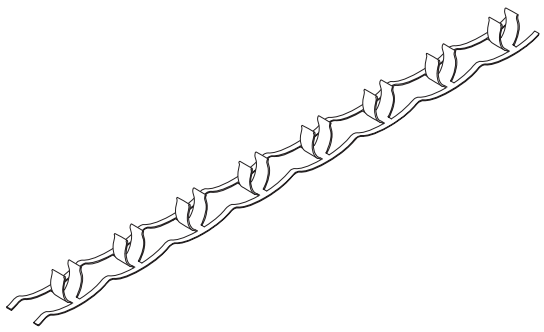


HWA-METAL-MESH-SS-50MM-10M

Stainless steel mesh for fixation of heating cables on valves, pumps or other odd-shaped surfaces. This mesh provides optimum contact and heat transfer between heating cables and heated equipment and can be used for exposure temperatures up to 400°C.

10 m per roll, 50 mm width.

PN: 1244-005772 Weight: 0.36 kg



HWA-PI-FIX- SS-xMM-10M

Stainless steel clip band to attach Polymer Insulated series heating cables to pipes. Clips at regular distances to allow for even heater spacing. Band available in two sizes for different diameter ranges.

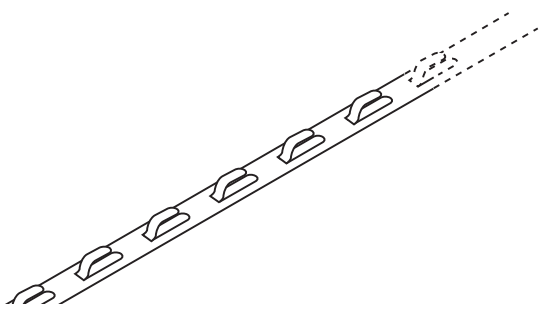
10 m per roll.

For diameters up to 5 mm, HWA-PI-FIX-SS-5MM-10M

PN: 1244-007768 Weight: 0.32 kg

For diameters up to 8 mm, HWA-PI-FIX-SS-8MM-10M

PN: 1244-007769 Weight: 0.52 kg



HARD-SPACER-SS-25MM-25M

Stainless steel spacer for fixing the heating cable on walls, tanks and vessels, etc.

Width spacer: 12.5 mm.

Fixing distance for cables: each 25 mm.

25 m per roll.

PN: 107826-000 Weight: 1.10 kg

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
CB-200F4B	AC UPS F&G - Battery Isolator-B	CONTAINER B-300 (LOWER DECK)	1724000372	3W Power	Cortem Spa		EJBC	Zone 1	EPT 20 ATEX 4075X	1724000372-EL-DG-00011	II 2GDEx db IIC T6 Gb Ex tb IIIC T 85°C Db	-	N/A	True	N/A	False	
EAT-200N1-01	Trace Heating - Remote Ambient Thermostat	LOWER DECK	1724001647	nVent	nVent	1244-022663	ETS-05-A2-E-A	Zone 1	Baseefa 13ATEX0137	1724001647-EL-DD-00004	II 2(1)G Ex eb ia mb [ia Ga] IIC T5 Gb - 40ºC ≤ Ta ≤ +60ºC II 2D Ex tb IIIC T100ºC Db	-	N/A	True	N/A	False	
EHT-1001-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1002-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1003-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1004-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1004-B	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1005-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1006-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1007-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-2002-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EJB-200F2-01	Top Obstruction Lights Junction Box	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990082	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
EJB-200F2-02	Intermediate obstruction lights junction box	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990083	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_4
EJB-200N1-02-L1-01	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990045	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-02	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990044	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-03	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990043	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
EJB-200N1-02-L1-05	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990058	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-06	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990057	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-07	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990059	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-08	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990060	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-09	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990061	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-10	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990047	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-11	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990056	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-12	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990055	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-13	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990054	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-14	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990053	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-15	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990052	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-16	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990051	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-17	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990050	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-18	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990049	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-19	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990048	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-20	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990072	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-01	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990003	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-02	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990004	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-03	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990002	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-04	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990001	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-05	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990012	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-06	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990011	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-07	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990010	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-08	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990009	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-09	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990008	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-10	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990007	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-11	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990006	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-12	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990005	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-13	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990014	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-14	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990013	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-04-L3-01	Stair Normal Lighting JB	LOWER DECK STAIRS	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990032	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-04-L3-02	Stair Normal Lighting JB	LOWER DECK STAIRS	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990033	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-01	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990064	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-03	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990062	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
EJB-200N1-08-L1-04	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990065	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-05	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990077	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-06	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990078	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	

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:	**SGS20ATEX0048X – Issue 3**
4	Product:	**BTV Range of Self-Regulating Trace Heating Systems**
5	Manufacturer:	**nVent Thermal LLC**
6	Address:	**899 Broadway Street, CA, 94063-3104, United States of America**

7 This re-issued certificate extends EU Type Examination Certificate No. **SGS20ATEX0048X** 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.

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 IEC 60079-7:2015+A1:2018 EN 60079-18:2015+A1:2017
EN 60079-30-1:2017 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 60079-30-1 eb IIC T6 Gb or Ex 60079-30-1 eb mb IIC T6 Gb T_{min} -60°C**
Ex 60079-30-1 tb IIIC T80°C Db or Ex 60079-30-1 mb tb IIIC T80°C Db

SGS Fimko Oy Customer Reference No. **865** Project File No. **21/0455**

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SGS Fimko Oy
Takomotie 8
FI-00380 Helsinki, Finland
Telephone +358 (0)9 696 361
e-mail **sgs.fimko@sgs.com**
web site **www.sgs.fi**
Business ID 0978538-5 Member of the SGS Group (SGA SA)

Tuomas Hänninen
SGS Fimko Oy

13 # Schedule

14 ## Certificate Number SGS20ATEX0048X – Issue 3

15 Description of Product

The BTV Range of Self-Regulating Trace Heating Systems is of the parallel circuit self-regulating type, rated at up to 277V, with power output up to 33W/m (10W/ft). The units have a maximum self-limiting temperature of 80°C.

Each trace heating system comprises:
- the active heating cable.
- an end seal for terminating the remote end of the unit.
- a cable gland for connecting the powered end of the unit to a suitable terminal enclosure, or alternative integrated power connection systems.

The active heating cable comprises two stranded copper conductors around which is extruded a semi-conductive core material. This core material increases in resistance with increasing temperature and gives the cable its self-limiting property. This semi conductive core with embedded conductors forms the active part of the heating cable. An extruded layer of fluoropolymer serves to insulate the semi conductive core from the conductive covering, covering the active heater. A protective anti-corrosion fluoropolymer sheath may be extruded over the conductive covering.

The declared maximum withstand temperature for the range is 85°C and the minimum installation temperature is -60°C.

CABLE ACCESSORIES

END SEALS

The end seals for terminating the remote end of the unit may be the following types:

Types E-100-L or E-100, which are mechanical end seals incorporating an end cap which is filled with silicone grease sealant covered by certificates Sira14ATEX3015X and PTB09ATEX1060U.

Types E-100-L-A or E-100-A, which are mechanical end seals incorporating an end cap which is filled with silicone grease sealant.

A Raychem Type E-20 heat shrink end seal kit.

Type E-150 mechanical end seals, covered by certificate DEKRA20ATEX0011U.

SPLICES AND JOINTS

The following splicing and jointing arrangements are provided:

A Raychem Type S-20 heat shrink splice kit for connecting lengths of active heating cable.

A Raychem T-100 tee connection system, certificate PTB20ATEX1008U, for connecting up to three heater cables.

Type S-150 mechanical splice kit, covered by certificate DEKRA20ATEX0011U.

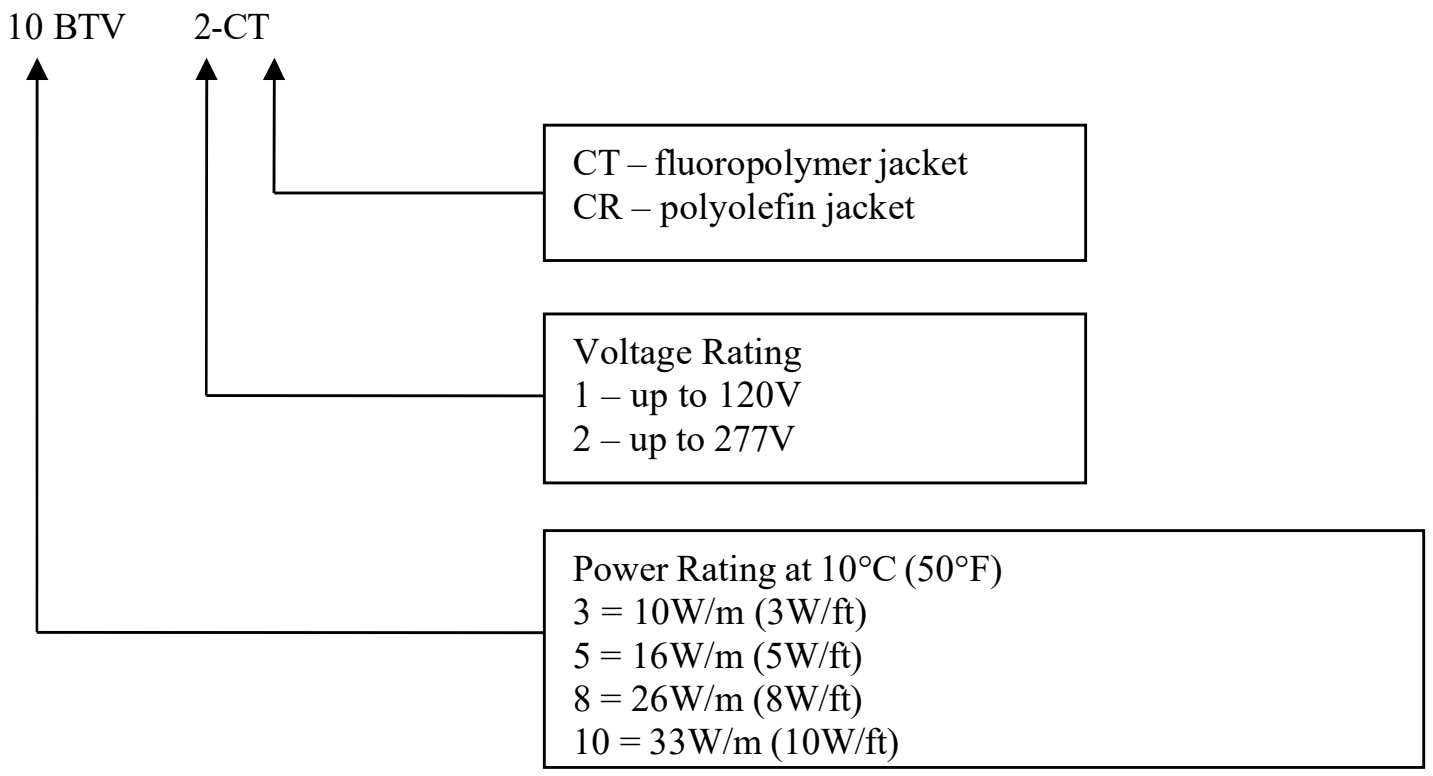
POWER CONNECTIONS

Power connection may be achieved by the following means:

Connection Type	ATEX Certificate
JBM-100	PTB20ATEX1008U
JBS-100	PTB20ATEX1008U
JBU-100	PTB20ATEX1008U
C-150-E	DEKRA20ATEX0011U
C25-21 Connection Kit	Baseefa16ATEX0037U
C25-100 Connection Kit	Baseefa16ATEX0038U
C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS Kits	Baseefa16ATEX0039U

The C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS Kits include M25 or ¾ NPT gland to Sira01ATEX1270X and core sealer to Baseefa15ATEX0194U.

A number of power levels and voltages, up to the maximum specified, are included in the range. They are identified in the following manner:



Any of the products in the range may be considered as part of a stabilised design system. In such a system the design is based upon the use of nVent proprietary software Trace calc Pro. The algorithm defined in this software may be used in additional design software.

The minimum bending radii for BTV trace heating cable at specific temperatures are shown in the table below:

Temperature, T (°C)	**Minimum Bending Radius (mm)**
$-60 \leq T < -20$	35
$-20 \leq T < -10$	30
$-10 \leq T < 0$	25
$0 \leq T < +10$	20
$T \geq +10$	12

16 Report Number

See Certificate History.

17 Specific Conditions of Use

1. The following limiting temperatures for the heat shrink end seals and splices shall not be exceeded:

   +110°C for the S-20 and E-20
   +150°C for the C-150-E, S-150 and E-150

2. The end seals, splices and power connections have the following associated ambient temperatures:

   -60°C to +56°C for the E-20 and S-20
   -55°C to +56°C for the T-100, JBM-100, JBS-100, JBU-100, and E-100
   -40°C to +56°C for the JBS-100-L, JBM-100-L, and JBU-100-L
   -55°C to +55°C for the C-150-E, S-150 and E-150
   -40°C to +40°C for the E-100-L
   -55°C to +110°C for the C25-21 and C25-100
   -60°C to +180°C for the C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS

3. The assembly of glands, splices and end terminations shall be carried out in accordance with the manufacturing instructions

4. The heating element supply circuit must include an electrical protection device in conformity with Clause 4.4 of EN 60079-30-1.

5. The minimum installation temperature is -60°C. The minimum bending radii at specific temperatures for the Type BTV units are shown in the table in the equipment description.

6. The supply to the heating unit must be terminated in a suitably certified terminal enclosure.

7. The minimum installation temperature for E-20 and S-20, end seal and splice is -20°C.

8. The installer is to carry out a dielectric strength test on Ex equipment in which the C25-21, C25-100 and C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS connection kit is fitted. No dielectric breakdown shall occur. (Alternatively, an insulation resistance test may be undertaken in accordance with EN 60079-30-2).

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
205308-A[i]	1 of 1	Q	05/27/2021	BTV-8BTV-CR & BTV-10BTV-CR
205310-A[i]	1 of 1	R	05/27/2021	BTV-8BTV-CT & BTV-10BTV-CT

Current drawings which remain unaffected by this issue:

Number	Sheet	Issue	Date	Description
906567[ii]	1 of 1	P	05/21/21	C25-21, C25-100 and C25-100-METAL-XX, C3/4-100-METAL-XX Connection Kits
906579-A[i]	1 of 1	N	01/15/2021	BTV Heater Units (European System)
205350-A[i]	1 of 1	P	03/31/20	BTV-3BTV-CT & BTV-5BTV-CT
205349-A[i]	1 of 1	J	03/26/20	BTV-3BTV-CR & BTV-5BTV-CR
906794-A[iii]	1 of 1	AA	03/30/20	Generic ATEX and IECEx Print Dwg for BTV-CT, QTVR-CT, XTV-CT, KTV-CT Heating Cables
9242869[iv]	1 & 2	O	12/09/19	LABL JBM-100-L-E
9532687[iv]	1 & 2	Q	12/09/19	LABL JBM-100-L-EP
9621473[iv]	1 & 2	O	12/09/19	LABL JBS-100-L-E
9777523[iv]	1 & 2	P	12/09/19	LABL JBS-100-L-EP
9319676[iv]	1 & 2	O	12/09/19	LABL JBU-100-L-E
9735898[iv]	1 & 2	O	12/09/19	LABL JBU-100-L-EP
908742-A[v]	1 of 1	A	2/19/20	E-20 Heat Shrinkable End Seal Kit Cut Back Dimensions
908743-A[vi]	1 of 1	A	2/19/20	S-20 Heat Shrinkable Splice Joint Kit Cut Back Dimensions

i) These drawings are common to IECEx BAS 20.0011X, SGS20ATEX0048X and are held with IECEx BAS 20.0011X.

ii) This drawing is common to IECEx BAS 16.0040U, IECEx BAS 16.0041U, IECEx 16.0042U, IECEx BAS 20.0008X, IECEx BAS 20.0009X, IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, Baseefa16ATEX0037U, Baseefa16ATEX0038U, Baseefa16ATEX0039U, SGS20ATEX0045X, SGS20ATEX0046X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and is held with IECEx BAS 16.0040U.

iii) These drawings are common to IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and are held with IECEx BAS 20.0011X.

iv) These drawings are common to IECEx BAS 20.0008X, IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, SGS20ATEX0045X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and are held with IECEx BAS 20.0008X.

v) These drawings are common to IECEx BAS 20.0010X, IECEx BAS 20.0011X, IECEx BAS 20.0013X, SGS20ATEX0047X, SGS20ATEX0048X, SGS20ATEX0050X and are held with IECEx BAS 20.0010X.

vi) These drawings are common to IECEx BAS 20.0011X, IECEx BAS 20.0013X, SGS20ATEX0048X, SGS20ATEX0050X and are held with IECEx BAS 20.0011X.

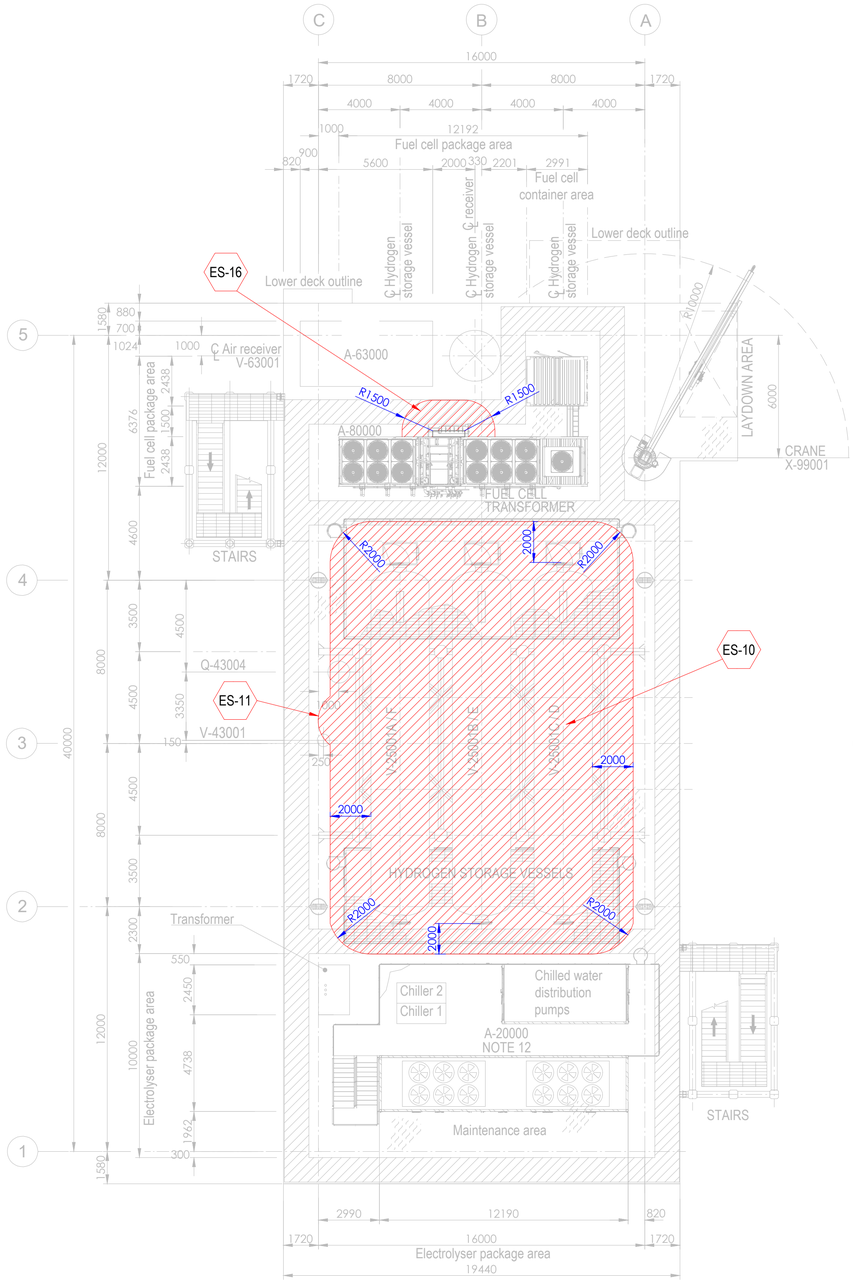
20 Certificate History

Certificate No.	Date	Comments
SGS20ATEX0048X	23 October 2020	The release of the prime certificate. The associated test and assessment against the requirements of EN 60079-0:2012+A11:2013, EN IEC 60079-7:2015+A1:2018, EN 60079-18:2015+A1:2017, EN 60079-30-1:2017 and EN 60079-31:2014 is documented in Test Report No. GB/BAS/ExTR20.0030/00.

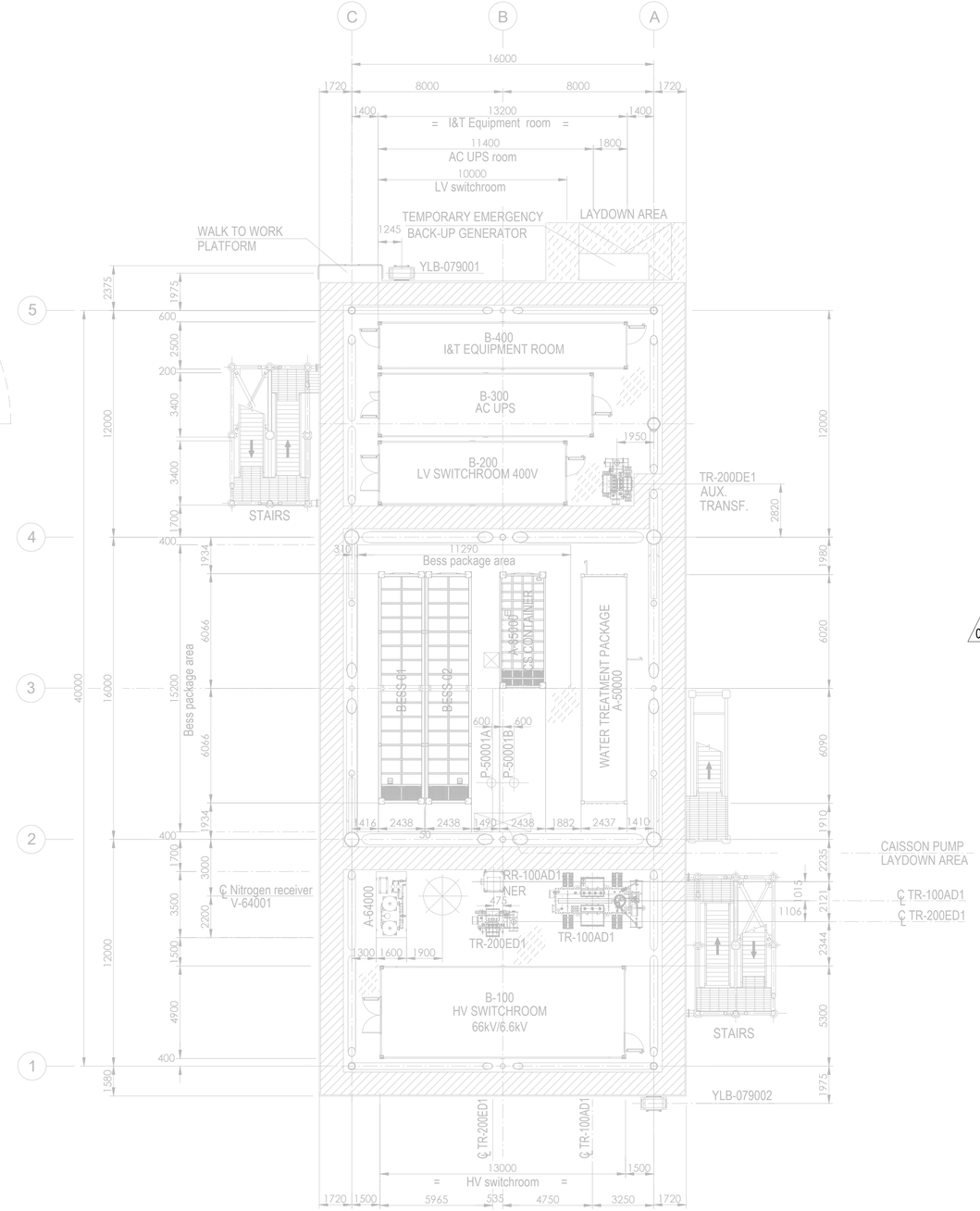
Certificate No.	Date	Comments
SGS20ATEX0048X Issue 1	11 February 2021	To assess the BTV range of self-regulating trace heating systems against EN IEC 60079-0:2018, introduce the low profile power connection, splice and end seal kits, types C-150-E, S-150 and E-150 afforded DEKRA20ATEX0011U, minor amendments to the product description, to change the product name to "BTV Range of Self-Regulating Trace Heating Systems" and to amend the Specific Conditions of Use. The associated test and assessment is documented in Test Report No. GB/BAS/ExTR21.0005/00.
SGS20ATEX0048X Issue 2	7 July 2021	Minor drawing updates not affecting certification. Baseefa Certification Report GB/BAS/ExTR21.0060/00 refers.
SGS20ATEX0048X Issue 3	3 September 2021	Minor change to the BTV-8BTV-CR, BTV-8BTV-CT, BTV-10BTV-CR and BTV-10BTV-CT heating cable dimensions. Baseefa Certification Report GB/BAS/ExTR21.0104/00 refers.
For drawings applicable to each issue, see original of that issue.		

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

REV. 02



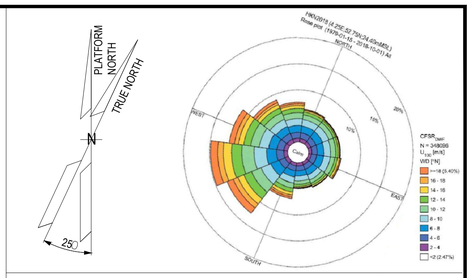
PLAN ON UPPER DECK
EL+30.310 T.O.S.



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

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

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



NOTES

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

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

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

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

CROSSWIND

ROSETTI MARINO

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

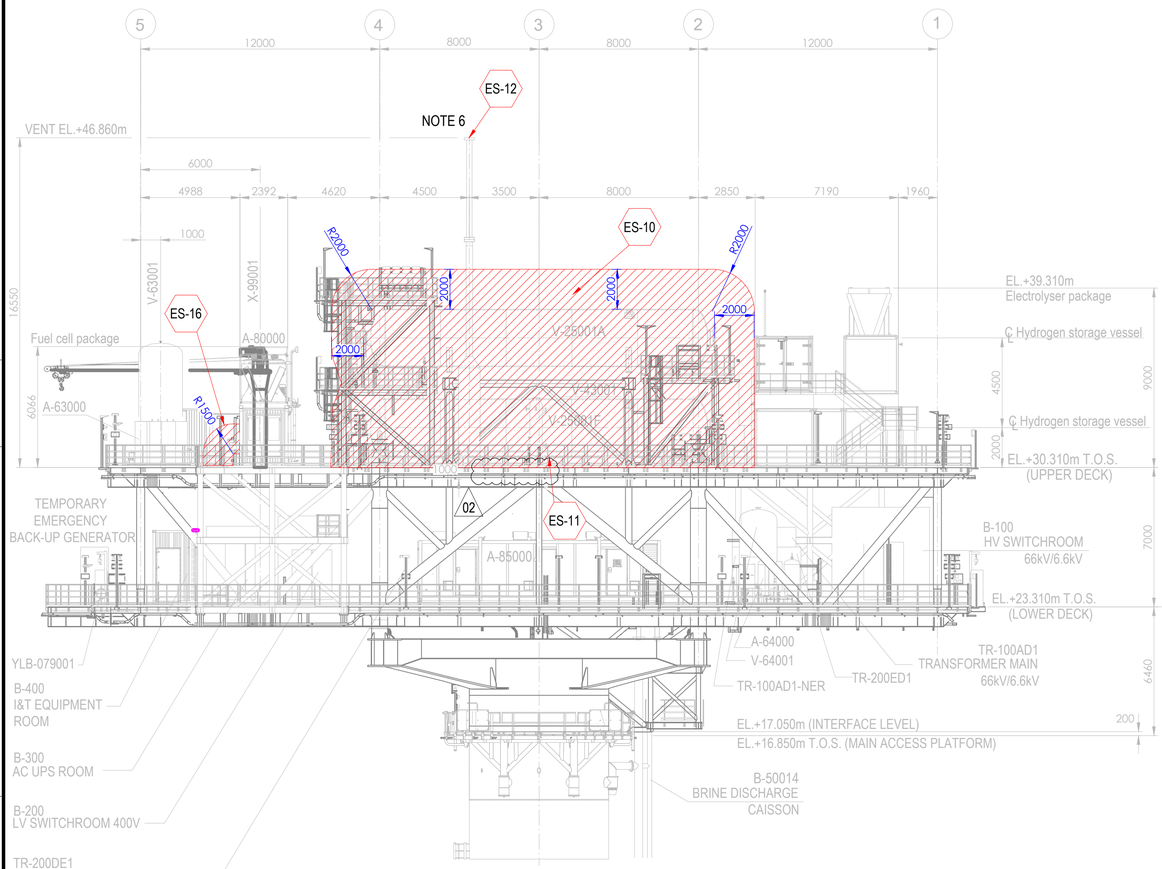
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

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

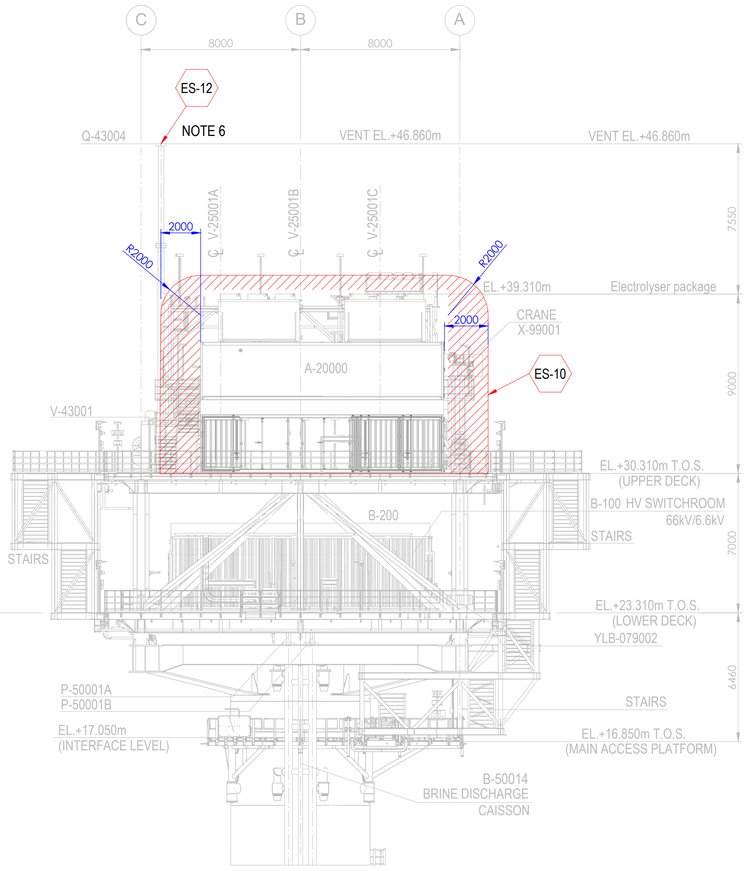
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

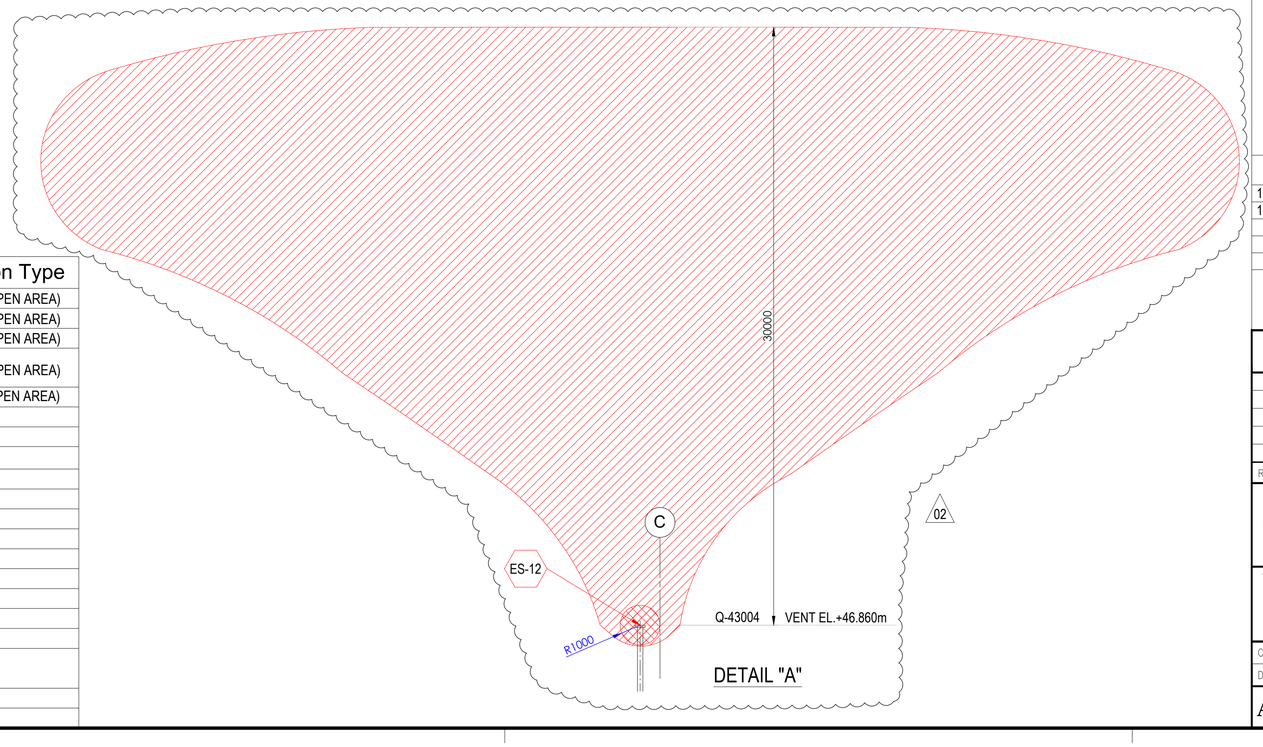


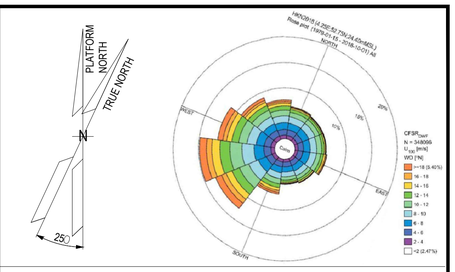
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

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





NOTES

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

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

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

CROSSWIND

ROSETTI MARINO

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

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

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

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

ITEM	Tag	EHT-1001-A	: Heat Tracing Tape	Dwg	1724001647-EL-LIS-00003
	S/Sys	83-65	: Electrical Heat Tracing	Module	LD/UD
TASK	code	C10004645	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.**	469145-000				
Manufacturer	nVent			**Model**	3BTV2-CT				
Cert No.	SGS20ATEX0048X			**Equipment Ambient Temp.**	-60°C to +80°C				
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex eb	**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	NA	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	NA	
5	Equipment circuit identification is correct	x	OK	
6	Equipment circuit identification is available	x	OK	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	NA	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		NA	
	Physical check	x	NA	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	NA	
13	Condition of enclosure gaskets is satisfactory	x	NA	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	OK	
15	Electrical connections are tight	x	OK	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	NA	
18	Encapsulated components are undamaged	x	OK	
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	EHT-1001-A	: Heat Tracing Tape		Dwg	1724001647-EL-LIS-00003	
	S/Sys	83-65	: Electrical Heat Tracing		Module	LD/UD	
TASK	code	C10004645	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline ATEX	Form	CJX01	Hazardous Area Equipment Detailed Inspection

29	Integrity of conduit system and interface with mixed system maintained	x	NA	
30	Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section		NA	
	Physical check	x	NA	
31	Automated electric protective devices operate within permitted limits	x	NA	
32	Special conditions (if applicable) have been complied with.	x	NA	
33	All cable cores are uniquely labeled	x	NA	
34	Cable cores not in use are correctly terminated	x	OK	
35	Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	x	OK	
36	No undue accumulation of dust and dirt	x	OK	
37	All equipment housings are clean and dry	x	OK	
38	All moving parts are free and have no mechanical damage	x	NA	
	Applicable for Installation of Heating Systems			
39	Temperature sensors function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
40	Safety cut off devices function according to manufacturer's documents (only applicable for Ex-d e Ex-e)	x	NA	
41	The setting of the safety cut off is sealed (only applicable for Ex-d e Ex-e)	x	NA	
42	Reset of a heating system safety cut off possible with tool only(only applicable for Ex-d e Ex-e)	x	NA	
43	Auto-reset is not possible (only applicable for Ex-d e Ex-e)	x	NA	
44	Reset of a safety cut off under fault conditions is prevented (only applicable for Ex-d e Ex-e)	x	NA	
45	Safety cut off independent from control system (only applicable for Ex-d e Ex-e)	x	NA	
46	Level switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
47	Flow switch is installed and correctly set, if required (only applicable for Ex-d e Ex-e)	x	NA	
	Extra Ex d checks			
48	Obstructions adjacent to flame proof flanged joints are in accordance with IEC 60079-14	x	NA	
49	Ex d conduits seals are fitted to all conduits and satisfactorily sealed	x	NA	
50	Cable glands are of the correct type and installed correctly	x	NA	
51	Adaptors, reducers, stop ends, etc. are all certified Ex d	x	NA	
52	Flame path are clean and undamaged	x	NA	
53	Flange gap dimensions are within tolerances	x	NA	
54	Motor fans have sufficient clearance to the enclosure and/or covers, cooling systems are undamaged, motor foundations have no indentations or cracks	x	NA	
55	The ventilation airflow is not impeded	x	NA	
56	Insulation resistance (IR) of the motor windings is satisfactory	x	NA	
57	Fault loop impedance (TN systems) or earthing resistance (IT systems) is satisfactory	x	NA	
58	Variable voltage/frequency installation complies with documentation	x	NA	
	Extra Ex e checks			
59	All Equipment is Ex e certified (including components within enclosure)	x	OK	
60	Power conductors are not bunched together causing possible hot spots	x	OK	
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	EHT-1001-A	: Heat Tracing Tape			Dwg	1724001647-EL-LIS-00003
	S/Sys	83-65	: Electrical Heat Tracing			Module	LD/UD
TASK	code	C10004645		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	Giovanni Tangianu	
Date	2025-02-08	2025-02-24	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-08T09:49:39.914Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-24T15:58:18.835Z	

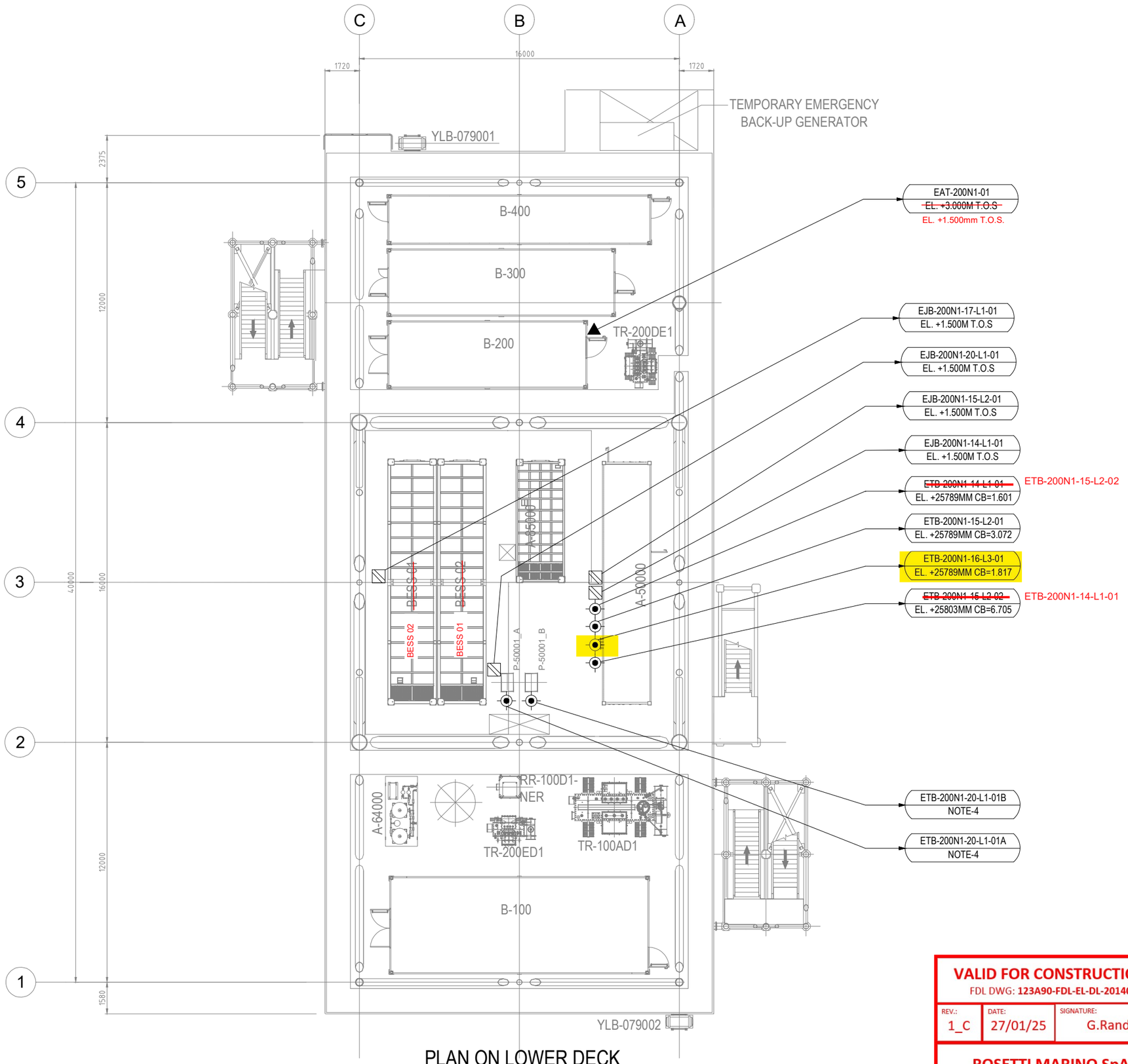
EHT CALCULATION LIST

PIT240024_ED01-1001

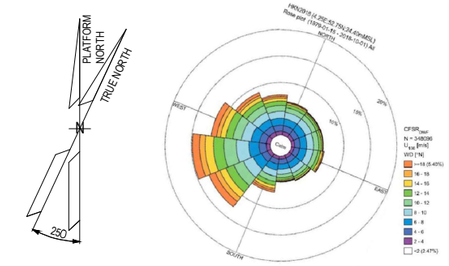
		ENGINEERING DATA				MECHANICAL & INSULATION DATA							PROCESS DATA				EHT BASIC DESIGN								EHT DETAILED DESIGN						EHT TEMP. CONTROL DATA							
Main EHT Box Number	Item Number	Heater Number	Line, Equipment or Instrument ID	nVent Circuit Number	Plant Area	Pipe Size [DN / IN]	Pipe Length [m]	Support Quantity [pc]	Valve Quantity [pc]	Other Heat Sink Quantity [pc]	Insulation Type	Insulation Thickness [mm]	Maintain Temperature [°C]	Maximum Allow. Process Temperature [°C]	Maximum Operating Temperature [°C]	Maximum Exposure Temperature [°C]	Heatloss [W/m]	Heating Cable Selection	Trace Ratio	Heating Cable Output [W/m]	EHT Cable per Support [m]	EHT Cable per Valve [m]	EHT Cable per Other Heatsink [m]	Total EHT Cable [m]	Max. Allow. EHT Circuit Length [m]	Connection Type	Voltage [V]	Operating Current [A]	Total Operating Load [W]	Start-Up Current [A]	Temp. Control Method	Controller Set Point [°C]	Mimimum Controlled Temperature [°C]	Maximum Controlled Temperature [°C]	Maximum Uncontrolled Temperature [°C]	Revision	Remark
																		GRAND TOTAL						**181.4**				**9.69**	**2226**	**14.91**							
ETB-200N1-16-L3-01	1	EHT-1001-A	1"-DM-001-01SS-E	1001	PIPING	1	17.6	5	1	2	RW/MF 1:2015	20	5	100	22	22	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	22.0	199	Single L-N	230	1.18	271	1.8	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**22.0**			**230**	**1.18**	**271**	**1.8**							
ETB-200N1-15-L2-01	1	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	11.0	4		1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	13.9	199	Single L-N	230	0.73	167	1.1	Ambient sensing, standard	5	18	29	50	00	
	2	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	3	EHT-1002-A	1"-CI-032-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	4	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	5	EHT-1002-A	1"-CI-030-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	6	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.75	0.5		1		RW/MF 1:2015	20	5	50	25	25	3.4	3BTV2-CT	2.0	10.7		1.5		2.6	199	Single L-N	230	0.15	34	0.2	Ambient sensing, standard	5	30	38	55	00	
	7	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.5	0.5		1		RW/MF 1:2015	20	5	50	25	25	2.9	3BTV2-CT	2.0	10.7		1.4		2.5	199	Single L-N	230	0.14	32	0.2	Ambient sensing, standard	5	32	40	56	00	
																		TOTAL						**36.4**			**230**	**2.00**	**459**	**3.1**							
ETB-200N1-14-L1-01	1	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	4	0.5				RW/MF 1:2015	20	5	100	25	25	10.2	3BTV2-CT	1.0	10.7				0.6	199	Single L-N	230	0.03	7	0.1	Ambient sensing, standard	5	5	20	46	00	
	2	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	4.7	1		1	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1		0.5	9.3	199	Single L-N	230	0.47	107	0.7	Ambient sensing, standard	5	14	27	49	00	
	3	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	4	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	7.8	3			RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1			8.6	199	Single L-N	230	0.48	111	0.7	Ambient sensing, standard	5	14	27	49	00	
	5	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	6	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.8	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	7	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	1.4	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	4.2	199	Single L-N	230	0.23	54	0.4	Ambient sensing, standard	5	24	34	53	00	
	8	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	9	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	10	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.7	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	11	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	1.2	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	3.7	199	Single L-N	230	0.20	47	0.3	Ambient sensing, standard	5	24	34	53	00	
	12	EHT-1003-A	1"-SWS-147-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	13	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	14	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	15	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1	0.1				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	28	37	54	00	
	16	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
	17	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	18	EHT-1003-A	1"-SWS-146-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	19	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	20	EHT-1003-A	1"-SWS-290-01SD-E	1003	PIPING	1	1.1	1	2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7	0.3	1.6		5.8	199	Single L-N	230	0.33	76	0.5	Ambient sensing, standard	5	28	37	54	00	
	21	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**78.6**			**230**	**4.37**	**1002**	**6.7**							
ETB-200N1-17-L1-04	1	EHT-1004-A	1"-WW-259-01CS-E / V-43001	1004	PIPING	1	0.9		1	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7		0.8	0.5	3.2	199	Single L-N	230	0.12	28	0.2	Ambient sensing, standard	5	18	29	50	00	Combined with EHT-1004-B
																		TOTAL						**3.2**			**230**	**0.12**	**28**	**0.2**							
ETB-200N1-17-L1-02	1	EHT-1005-A	1"-WW-260-01CS-E	1005	PIPING	1	1.2	1	2	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	4.6	199	Single L-N	230	0.20	46	0.3	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1006-A
																		TOTAL						**4.6**			**230**	**0.20**	**46**	**0.3**							
ETB-200N1-17-L1-03	1	EHT-1006-A	1"-WW-202-01CS-H	1006	PIPING	1	1.0			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	1.0	10.7			0.5	2.5	199	Single L-N	230	0.08	19	0.1	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1005-A
																		TOTAL						**2.5**			**230**	**0.08**	**19**	**0.1**							
ETB-200N1-15-L2-02	1	EHT-1007-A	1"-CI-043-01CP-E	1007	PIPING	1	15.0	6		4	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	19.5	199	Single L-N	230	1.04	239	1.6	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**19.5**			**230**	**1.04**	**239**	**1.6**							
ETB-200N1-17-L1-05	1	EHT-1004-B	43-LT-001	2001	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	Combined with EHT-1004-A
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							
ETB-200N1-17-L1-01	1	EHT-2002-A	43-LT-003	2002	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

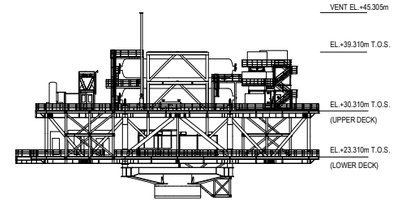
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_C	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 1of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

CAD FILENAME: PIT240024_DD01_1001_001_02.dwg

HEAT TRACING DATA

HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	PIPE LENGTH (m)	HEATER LENGTH (m)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W/m)	POWER OUTPUT (W/m)	SHEATH TEMP. (°C)
EHT-1001-A	PIPING	3BTV2-CT	17.6	22.0	1.8	271	230	3.9	10.7	85
		TOTALS	17.6	22.0	1.8	271				

HEATER ADDER TABLE

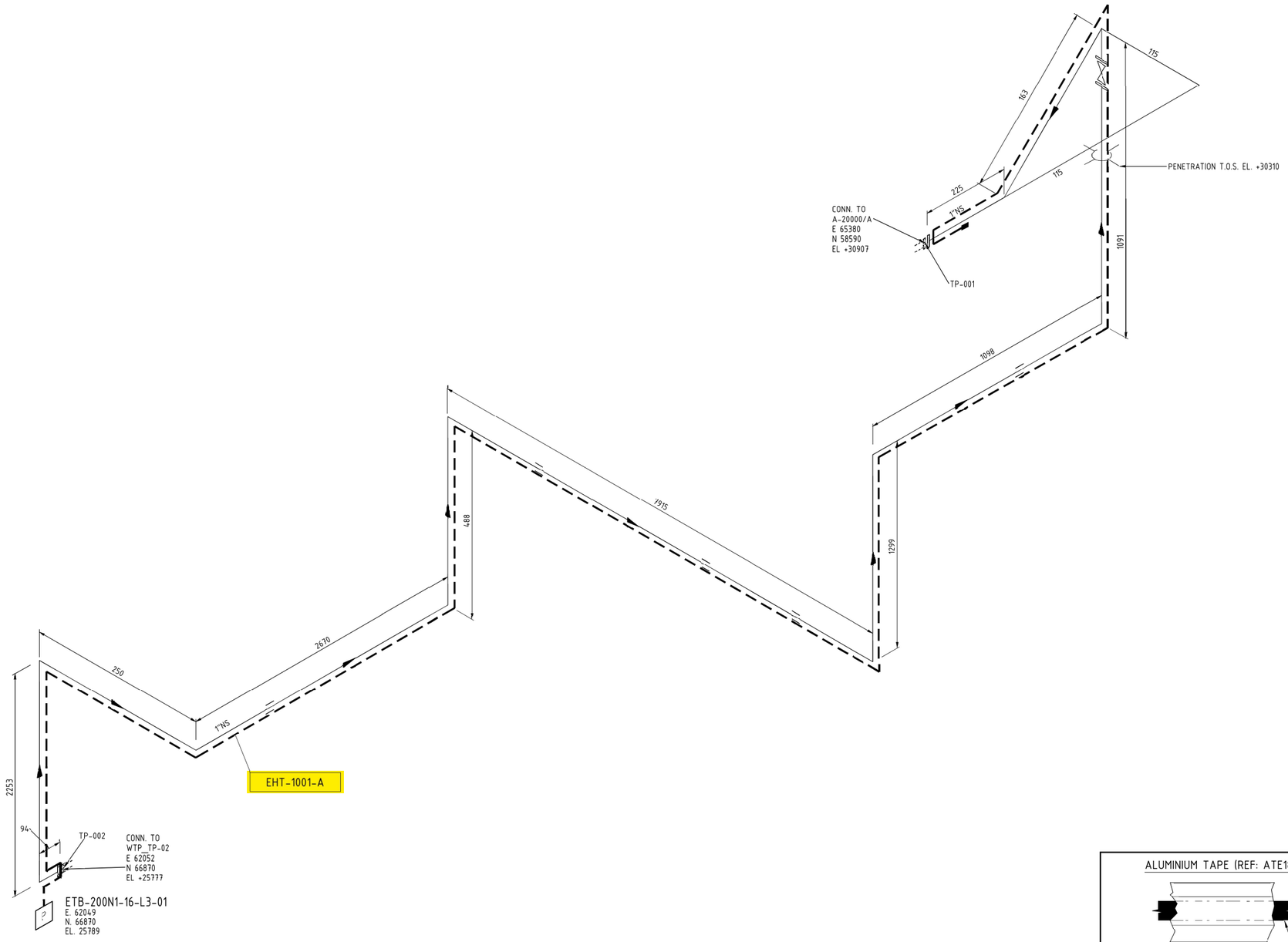
PIPE SIZE (Ins)	TYPE	QTY	ALLOWANCE PER ITEM (m)	TOTAL ALLOWANCE (m)
1	Typical Flange (fixed adder)	2	0.46	0.92
1	Typical Metal Valve	1	0.82	0.82
1	Typical Pipe Support	5	0.15	0.75

DESIGN PARAMETERS

CIRCUIT NUMBER	1001	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	22°C	INSULATION TYPE	RW/MF 1.2015
MAX. EXPOSURE TEMP.	22°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	100°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

COMPONENT BILL OF MATERIALS

CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	22	m	Raychem Self-Regulating Heating Cable
JBS-100-E	1	each	Single entry power connection, EP, ATEX
PSE-090	1	each	Pipe Strap for 1.1/4" to 3" (40-90mm)
GS-54	0.9	each	Glass Tape (16m/roll), suited for SS pipes
LAB-I-01	7	each	Warning Label - English
E-20	1	each	Heat shrink end seal, ATEX (BTV, QTVR)
JBS-SPA	0.2	bag	Small Pipe Adapter for E-100, JBS-100, and JS-100



LINE NUMBERS

1"-DM-001-01SS-E

REFERENCE DRAWINGS / DOCUMENTS

123A90-DDL-PP-DI-71000_001

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.
4. HEATING CABLE ALLOWANCES PROVIDED IN THE 'EHT ADDER TABLE' FOR FLANGES AND VALVES ARE IN ADDITION TO THEIR LINEAR LENGTHS.

ALUMINIUM TAPE (REF: ATE180)

SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

CROSSWIND

ROSETTI MARINO

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
02	20/01/2025	ISSUED FOR REVIEW	ADU	AMI	GPI
01	25/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.

DOC CODE

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING ISOMETRIC

SCALE: N/A

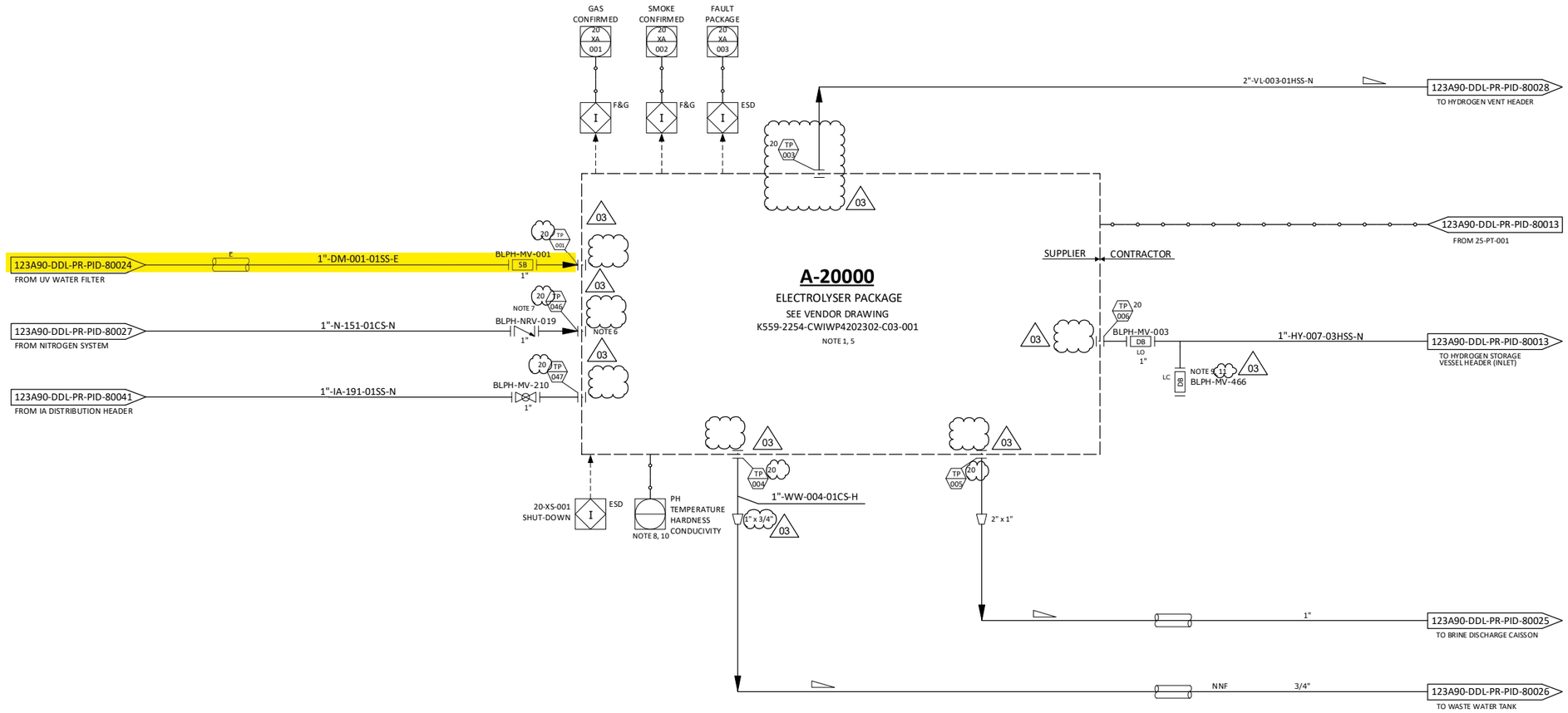
DRAWING NO.: 1724001647-EL-DD-00004

SHEET NO.: 3/10

REVISION: 02

DRAWING NO. DRAWING_NO.

REV. REV



NOTES

1. PACKAGE SUPPLIED WITH POWER FROM THE BLPH ELECTRICAL SYSTEM.
2. DELETED.
3. DELETED.
4. DELETED.
5. ELECTROLYSER PACKAGE INCLUDES AN OXYGEN VENT LINE WHICH IS IN THE SCOPE OF SUPPLY OF THE ELECTROLYSER PACKAGE UP TO THE ATMOSPHERE. NO PHYSICAL INTERFACE IS PRESENT BETWEEN ELECTROLYSER PACKAGE AND CONTRACTOR ON THIS LINE.
6. AN ISOLATION VALVE DOWNSTREAM THE CHECK VALVE NRV-019 IS PROVIDED WITHIN THE PACKAGE A-20000.
7. CHECK VALVE NRV-019 TO BE INSTALLED AS CLOSE AS POSSIBLE TO THE ELECTROLYSER PACKAGE A-20000.
8. SERIAL COMMUNICATION WITH CONTROL SYSTEM.
9. NITROGEN PURGING CONNECTION TO BE LOCATED AS CLOSE AS POSSIBLE TO MANUAL VALVE BLPH-MV-003.
10. PH, TEMPERATURE, HARDNESS AND CONDUCTIVITY SHALL BE SENT FROM CONTROL SYSTEM TO ELECTROLISER UCP IN ADDITION TO THE OTHER SOFTWARE SIGNALS. 03
11. MANUAL VALVE BLPH-MV-466 TO BE CONNECTED WITH MANUAL VALVE BLPH-MV-275 (INSTALLED ON NITROGEN GENERATION PACKAGE EXIT LINE) BY MEAN ON A FLEXIBLE HOSE DURING COMMISSIONING PHASE FOR PURGING OPERATION.

HOLDS

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

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
ELECTROLYSER PACKAGE

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80011	SHEET 001	REV. 03

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV

FOR CONTINUATION SEE DOC N.
123A90-DDL-PR-PID-80023

A-50000
WATER TREATMENT PACKAGE
CAPACITY : 2.5 m³/hr

SUPPLIER | CONTRACTOR

A-50000
WATER TREATMENT PACKAGE
SEE VENDOR DRAWING
DOC. N. 1724000448-PR-PID-00013

1"-DM-001-01SS-E-1 → 123A90-DDL-PR-PID-80011
TO ELECTROLYSER PACKAGE

TP 002 — 50 — 03

PH
TEMPERATURE
HARDNESS
CONDUCIVITY
NOTE 8

FOR CONTINUATION SEE DOC N.
123A90-DDL-PR-PID-80023

NOTES

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.
6. DELETED.
7. DELETED.
8. PH, TEMPERATURE, HARDNESS AND CONDUCTIVITY SHALL BE SENT FROM WATER TREATMENT UCP TO CONTROL SYSTEM IN ADDITION TO THE OTHER SOFTWARE SIGNALS.

HOLDS

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

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

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
WATER TREATMENT PLANT SHEET 2

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE

A1	DRAWING NO.	SHEET	REV.
	123A90-DDL-PR-PID-80024	001	03

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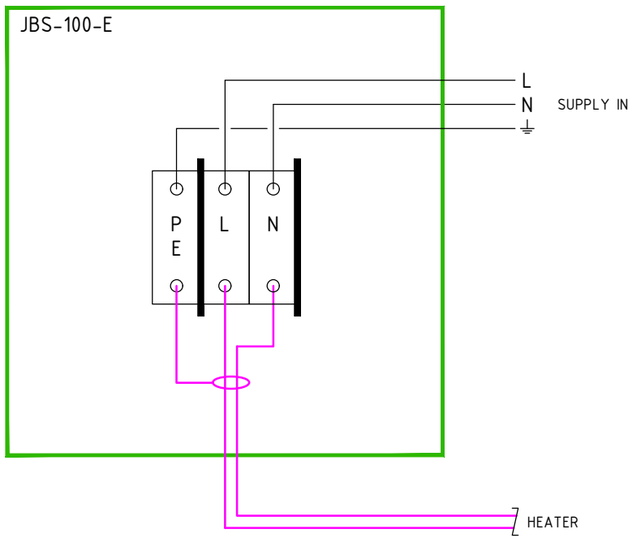
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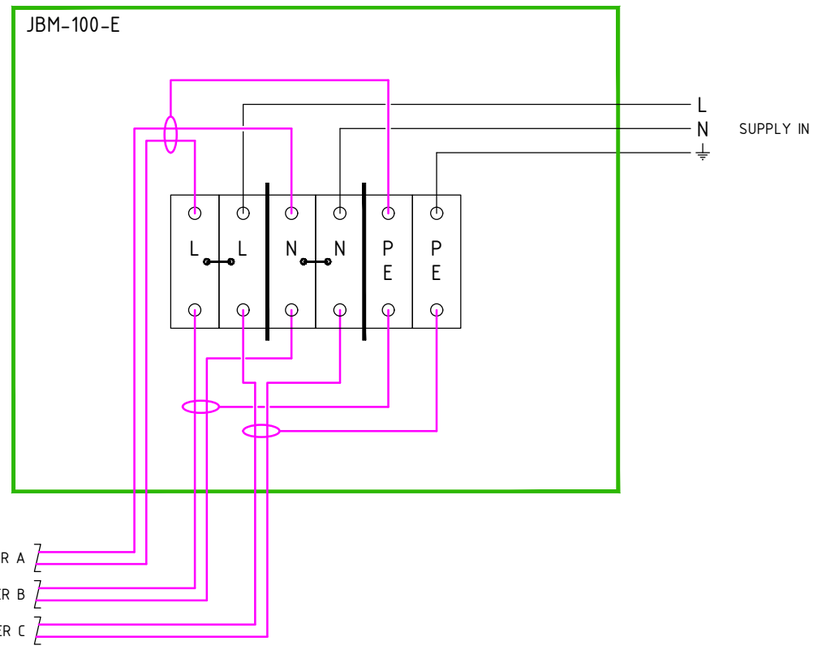
GENERAL INFORMATION:

1. JBS-100-E IS DESIGNED TO CONNECT POWER TO ONE BTV, QTVR, XTV, KTV, HTV OR VPL EHT CABLE.
2. THIS KIT INTEGRATES THE FUNCTIONS OF BOTH CONNECTION KITS AND INSULATION ENTRIES.
3. THE STAND CONNECTED TO THE BOTTOM OF THE BOX PROTECTS THE HEATING CABLE AND ALLOWS FOR UP TO 100mm (4") THERMAL INSULATION.

TECHNICAL BRIEF:

- 2 x M25 THREADED ENTRIES
- 1 x M25 STOPPING PLUGS
- 1 x M25 POWER CABLE GLAND





REV.	DATE	DESCRIPTION	BY	CHK	APP
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--	--	--	--	--	--
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	08/03/2024	ISSUED FOR INFORMATION	LJB	E-C	ZS

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TITLE
TYPICAL CONNECTION OF A JBS-100-EP
SINGLE ENTRY JUNCTION BOX

PREPARED BY	-.---	LANG.	SCALE
LEAD ENGINEER	-.---	en	N/A
PROJECT NO.	DRAWING NO.	SHEET	REVISION
PIT240024	1724001647-EL-DG-00005	2/3	01

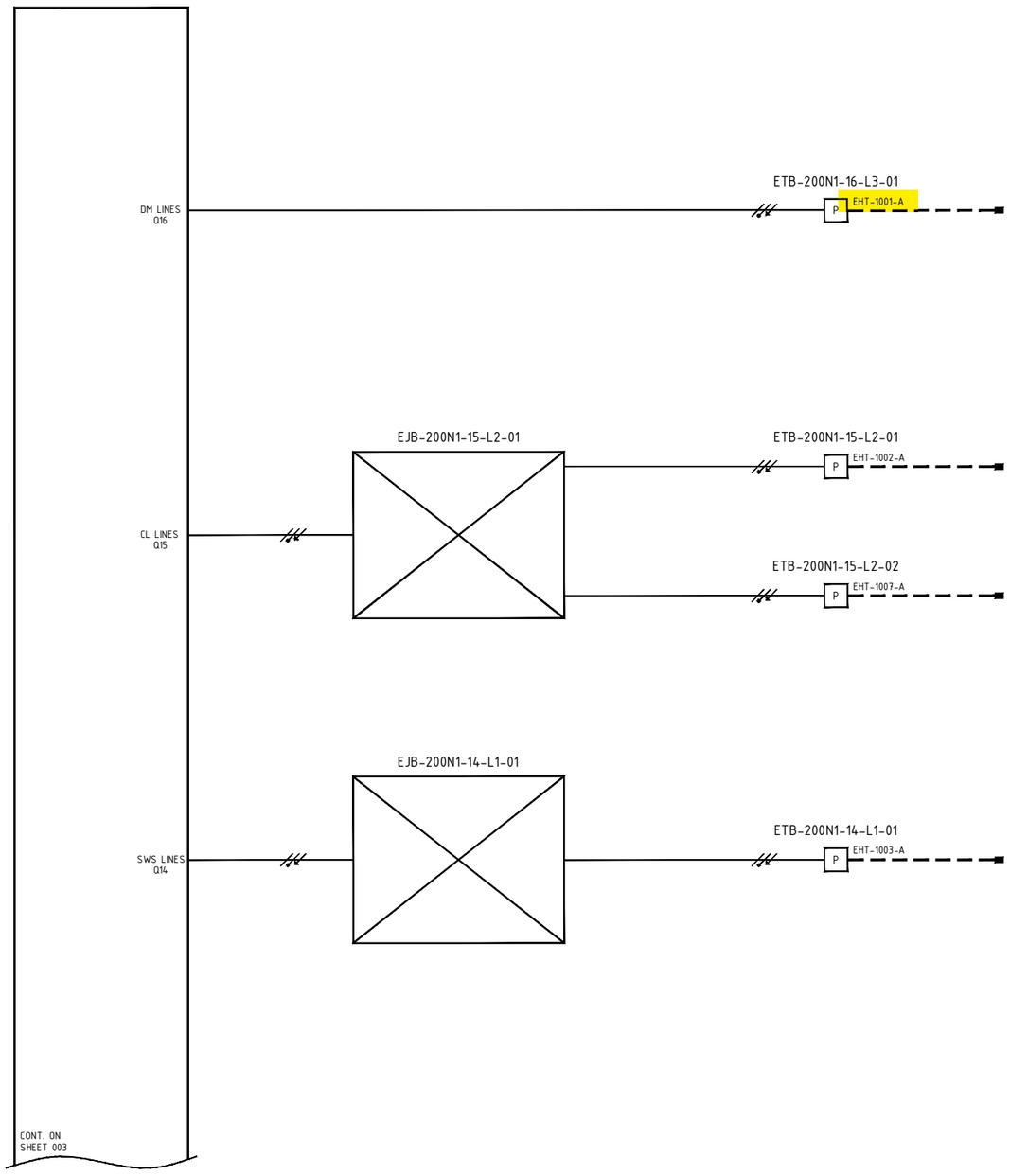
A3

CAD FILENAME: 1724001647-EL-DG-00006 Rev.01.dwg

CONTROL PANEL REF.:

DP-200N1

MARSHALLING BOX



CIRCUIT NO.	1001	1002, 1007	1003	
C.B. RATING (A)	32	32	32	
START-UP I (A)	1.8	4.7	6.7	
LOAD (W)	271	698	1002	
SERVICE	WINTERIZING	WINTERIZING	WINTERIZING	
NOTES FOR THE CIRCUIT	--	--	--	

GENERAL NOTES

CROSSWIND

ROSETTI MARINO

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
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01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	02/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING
SINGLE LINE DIAGRAM (SLD)

SCALE: N/A

DRAWING NO.: 1724001647-EL-DG-00006

SHEET NO.: 3/4

REVISION: 01

BTV

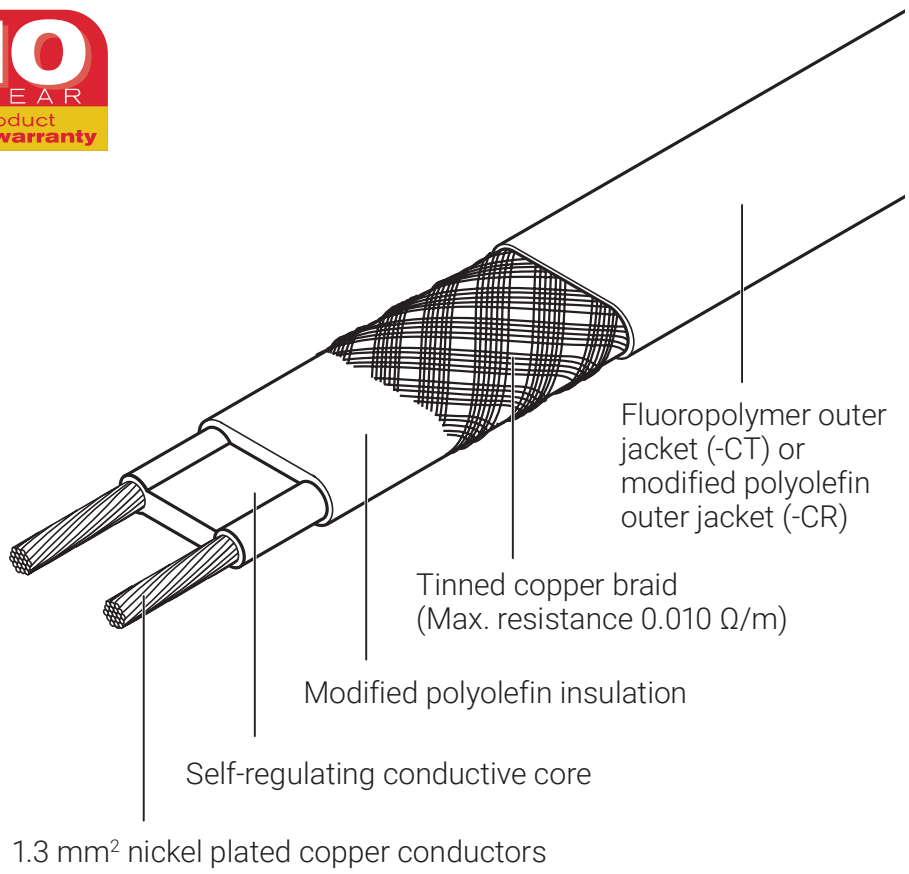
nVent RAYCHEM

CONNECT AND PROTECT

Self-regulating Heating Cable (Ex)

PRODUCT OVERVIEW

10 YEAR Product warranty



Electrical heat-tracing for frost protection without steam cleaning.
The nVent RAYCHEM BTV-family of self-regulating, parallel circuit heating cables is used for frost protection of pipes and vessels. It can also be used for process temperature maintenance up to 65°C.

Application

Traced surface type	Carbon steel Stainless steel Plastic Painted or unpainted metal
Chemical resistance	For organic corrosives: use -CT (fluoropolymer outer jacket) For mild inorganic solutions: use -CR (modified polyolefin outer jacket) For aggressive organics and corrosives consult your local nVent representative

Supply voltage

230 Vac (Contact your local nVent representative for data on other voltages)

PRODUCT SPECIFICATIONS

Product dimensions and weight

	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Width x Thickness (nominal) mm	10.5 x 5.5		13.2 x 5.5	
Weight (g/m)	110		150	

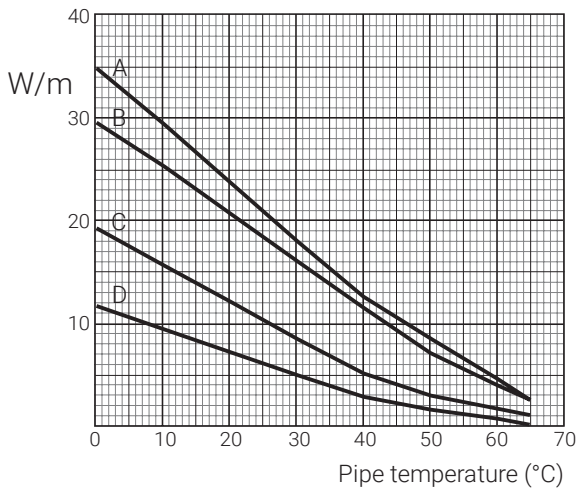
Technical details

Maximum maintain or continuous exposure temperature (power on/off)	65°C
Maximum intermittent exposure temperature (power on/off)	85°C Maximum cumulative exposure 1000 hours
Minimum installation temperature	–60°C
Minimum bend radius	–60°C ≤ T<–20°C: 35 mm –20°C ≤ T<–10°C: 30 mm –10°C ≤ T< 0°C: 25 mm 0°C ≤ T <+10°C: 20 mm T≥ +10°C: 12 mm

Thermal output rating

Nominal power output at 230 Vac on insulated steel pipes

A 10BTV2-CT
10BTV2-CR
B 8BTV-2-CT
8BTV-2-CR
C 5BTV2-CT
5BTV2-CR
D 3BTV2-CT
3BTV2-CR



	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Nominal power output (W/m at 10°C)	9	16	25	29

Maximum circuit length based on type ‘C’ circuit breakers according to EN 60898

Electrical protection sizing	Start-up temperature	Maximum heating cable length per circuit (m)			
16 A	–20°C	155	110	70	45
	+10°C	200	160	110	65
20 A	–20°C	195	140	90	55
	+10°C	200	160	125	85
25 A	–20°C	200	160	110	70
	+10°C	200	160	125	105
32 A	–20°C	200	160	125	90
	+10°C	200	160	125	110

The above numbers are for circuit length estimation only. For more detailed information please use the nVent RAYCHEM TraceCalc software or Contact your local nVent representative. nVent requires the use of a 30 mA residual current device to provide maximum safety and protection from fire. Where design results in higher leakage current, the preferred trip level for adjustable devices is 30 mA above any inherent capacitive leakage characteristic of the heater as specified by the trace heater supplier or alternatively, the next common available trip level for non adjustable devices, with a maximum of 300 mA. All safety aspects need to be proven.

APPROVALS

For use ordinary area and hazardous area Zone 1 and Zone 2 (Gas), Zone 21 and Zone 22 (Dust).

Temperature classification
T6

Product certification

More details about product certification, approvals and conditions of safe use are available in the installation manual for Self-regulating and Power limiting heating cable systems at www.nVent.com/RAYCHEM

ORDERING INFORMATION

Part description	3BTV2-CR	5BTV2-CR	8BTV-2-CR	10BTV2-CR
Part No. (*)	914279-000	414809-000	479821-000	677245-000
Part description	3BTV2-CT	5BTV2-CT	8BTV-2-CT	10BTV2-CT
Part No. (*)	469145-000	487509-000	008633-000	567513-000

Components

nVent offers a full range of components for power connections, splices and end seals. These components must be used to ensure proper functioning of the product and compliance with electrical requirements.

(*) Localized versions may exist with limited approvals and different part numbers. Contact your local sales representative

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

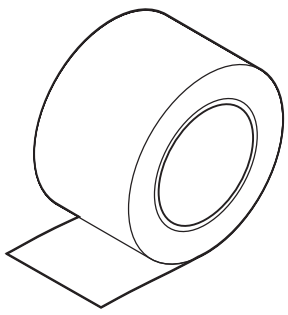
Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com

Our powerful portfolio of brands:
CADDY ERICO HOFFMAN RAYCHEM SCHROFF TRACER

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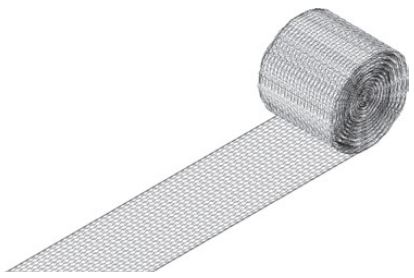
ATE-180

Aluminium tape* for attaching heating cables and thermostat sensors to pipes and tanks. Minimum installation temperature: 0°C. Also suitable for stainless steel pipes.

55 m per roll, 63.5 mm width.

PN: 846243-000 Weight: 0.84 kg

*Power output of selfregulating heating cables might increase when installed with aluminium tape or other heat transfer aids. Please use TraceCalc or contact nVent representative for further details.

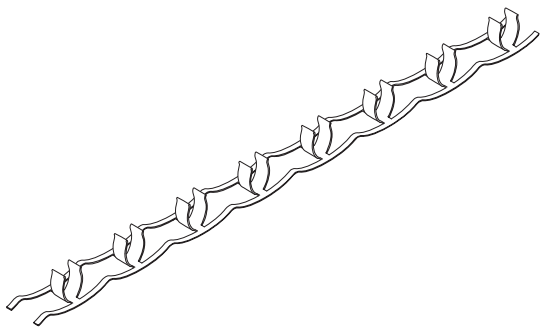


HWA-METAL-MESH-SS-50MM-10M

Stainless steel mesh for fixation of heating cables on valves, pumps or other odd-shaped surfaces. This mesh provides optimum contact and heat transfer between heating cables and heated equipment and can be used for exposure temperatures up to 400°C.

10 m per roll, 50 mm width.

PN: 1244-005772 Weight: 0.36 kg



HWA-PI-FIX- SS-xMM-10M

Stainless steel clip band to attach Polymer Insulated series heating cables to pipes. Clips at regular distances to allow for even heater spacing. Band available in two sizes for different diameter ranges.

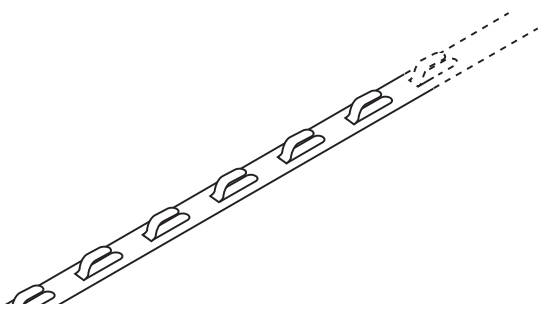
10 m per roll.

For diameters up to 5 mm, HWA-PI-FIX-SS-5MM-10M

PN: 1244-007768 Weight: 0.32 kg

For diameters up to 8 mm, HWA-PI-FIX-SS-8MM-10M

PN: 1244-007769 Weight: 0.52 kg



HARD-SPACER-SS-25MM-25M

Stainless steel spacer for fixing the heating cable on walls, tanks and vessels, etc.

Width spacer: 12.5 mm.

Fixing distance for cables: each 25 mm.

25 m per roll.

PN: 107826-000 Weight: 1.10 kg

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
CB-200F4B	AC UPS F&G - Battery Isolator-B	CONTAINER B-300 (LOWER DECK)	1724000372	3W Power	Cortem Spa		EJBC	Zone 1	EPT 20 ATEX 4075X	1724000372-EL-DG-00011	II 2GDEx db IIC T6 Gb Ex tb IIIC T 85°C Db	-	N/A	True	N/A	False	
EAT-200N1-01	Trace Heating - Remote Ambient Thermostat	LOWER DECK	1724001647	nVent	nVent	1244-022663	ETS-05-A2-E-A	Zone 1	Baseefa 13ATEX0137	1724001647-EL-DD-00004	II 2(1)G Ex eb ia mb [ia Ga] IIC T5 Gb - 40ºC ≤ Ta ≤ +60ºC II 2D Ex tb IIIC T100ºC Db	-	N/A	True	N/A	False	
EHT-1001-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1002-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1003-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1004-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1004-B	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1005-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1006-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1007-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-2002-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EJB-200F2-01	Top Obstruction Lights Junction Box	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990082	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
EJB-200F2-02	Intermediate obstruction lights junction box	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990083	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_4
EJB-200N1-02-L1-01	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990045	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-02	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990044	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-03	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990043	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
EJB-200N1-02-L1-05	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990058	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-06	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990057	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-07	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990059	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-08	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990060	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-09	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990061	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-10	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990047	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-11	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990056	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-12	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990055	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-13	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990054	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-14	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990053	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-15	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990052	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-16	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990051	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-17	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990050	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-18	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990049	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-19	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990048	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-20	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990072	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-01	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990003	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-02	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990004	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-03	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990002	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-04	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990001	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-05	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990012	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-06	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990011	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-07	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990010	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-08	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990009	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-09	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990008	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-10	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990007	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-11	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990006	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-12	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990005	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-13	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990014	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-14	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990013	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-04-L3-01	Stair Normal Lighting JB	LOWER DECK STAIRS	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990032	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-04-L3-02	Stair Normal Lighting JB	LOWER DECK STAIRS	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990033	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-01	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990064	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-03	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990062	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
EJB-200N1-08-L1-04	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990065	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-05	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990077	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-06	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990078	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	

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:	**SGS20ATEX0048X – Issue 3**
4	Product:	**BTV Range of Self-Regulating Trace Heating Systems**
5	Manufacturer:	**nVent Thermal LLC**
6	Address:	**899 Broadway Street, CA, 94063-3104, United States of America**

7 This re-issued certificate extends EU Type Examination Certificate No. **SGS20ATEX0048X** 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.

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 IEC 60079-7:2015+A1:2018 EN 60079-18:2015+A1:2017
EN 60079-30-1:2017 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 60079-30-1 eb IIC T6 Gb or Ex 60079-30-1 eb mb IIC T6 Gb T_{min} -60°C**
Ex 60079-30-1 tb IIIC T80°C Db or Ex 60079-30-1 mb tb IIIC T80°C Db

SGS Fimko Oy Customer Reference No. **865** Project File No. **21/0455**

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SGS Fimko Oy
Takomotie 8
FI-00380 Helsinki, Finland
Telephone +358 (0)9 696 361
e-mail **sgs.fimko@sgs.com**
web site **www.sgs.fi**
Business ID 0978538-5 Member of the SGS Group (SGA SA)

Tuomas Hänninen
SGS Fimko Oy

13 # Schedule

14 ## Certificate Number SGS20ATEX0048X – Issue 3

15 Description of Product

The BTV Range of Self-Regulating Trace Heating Systems is of the parallel circuit self-regulating type, rated at up to 277V, with power output up to 33W/m (10W/ft). The units have a maximum self-limiting temperature of 80°C.

Each trace heating system comprises:
- the active heating cable.
- an end seal for terminating the remote end of the unit.
- a cable gland for connecting the powered end of the unit to a suitable terminal enclosure, or alternative integrated power connection systems.

The active heating cable comprises two stranded copper conductors around which is extruded a semi-conductive core material. This core material increases in resistance with increasing temperature and gives the cable its self-limiting property. This semi conductive core with embedded conductors forms the active part of the heating cable. An extruded layer of fluoropolymer serves to insulate the semi conductive core from the conductive covering, covering the active heater. A protective anti-corrosion fluoropolymer sheath may be extruded over the conductive covering.

The declared maximum withstand temperature for the range is 85°C and the minimum installation temperature is -60°C.

CABLE ACCESSORIES

END SEALS

The end seals for terminating the remote end of the unit may be the following types:

Types E-100-L or E-100, which are mechanical end seals incorporating an end cap which is filled with silicone grease sealant covered by certificates Sira14ATEX3015X and PTB09ATEX1060U.

Types E-100-L-A or E-100-A, which are mechanical end seals incorporating an end cap which is filled with silicone grease sealant.

A Raychem Type E-20 heat shrink end seal kit.

Type E-150 mechanical end seals, covered by certificate DEKRA20ATEX0011U.

SPLICES AND JOINTS

The following splicing and jointing arrangements are provided:

A Raychem Type S-20 heat shrink splice kit for connecting lengths of active heating cable.

A Raychem T-100 tee connection system, certificate PTB20ATEX1008U, for connecting up to three heater cables.

Type S-150 mechanical splice kit, covered by certificate DEKRA20ATEX0011U.

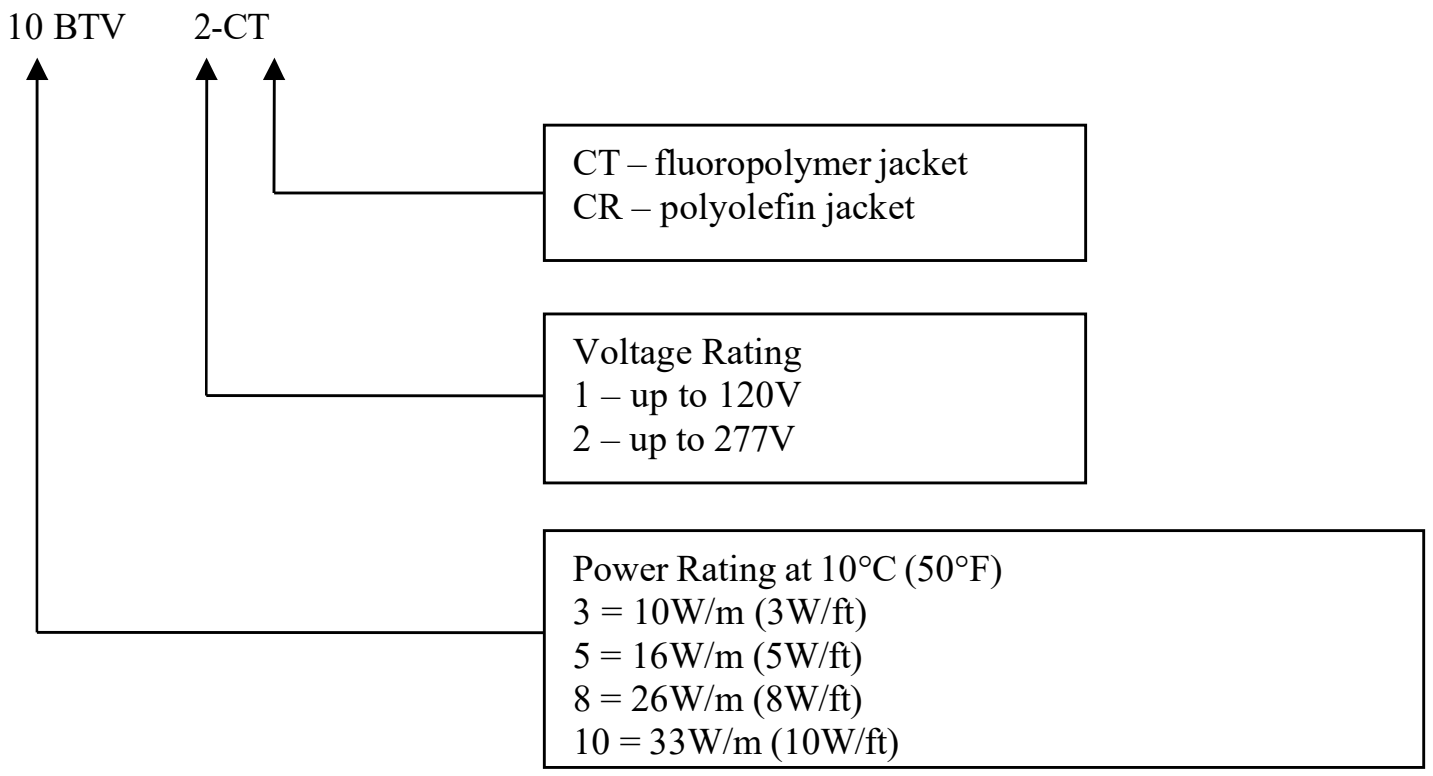
POWER CONNECTIONS

Power connection may be achieved by the following means:

Connection Type	ATEX Certificate
JBM-100	PTB20ATEX1008U
JBS-100	PTB20ATEX1008U
JBU-100	PTB20ATEX1008U
C-150-E	DEKRA20ATEX0011U
C25-21 Connection Kit	Baseefa16ATEX0037U
C25-100 Connection Kit	Baseefa16ATEX0038U
C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS Kits	Baseefa16ATEX0039U

The C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS Kits include M25 or ¾ NPT gland to Sira01ATEX1270X and core sealer to Baseefa15ATEX0194U.

A number of power levels and voltages, up to the maximum specified, are included in the range. They are identified in the following manner:



Any of the products in the range may be considered as part of a stabilised design system. In such a system the design is based upon the use of nVent proprietary software Trace calc Pro. The algorithm defined in this software may be used in additional design software.

The minimum bending radii for BTV trace heating cable at specific temperatures are shown in the table below:

Temperature, T (°C)	**Minimum Bending Radius (mm)**
$-60 \leq T < -20$	35
$-20 \leq T < -10$	30
$-10 \leq T < 0$	25
$0 \leq T < +10$	20
$T \geq +10$	12

16 Report Number

See Certificate History.

17 Specific Conditions of Use

1. The following limiting temperatures for the heat shrink end seals and splices shall not be exceeded:

   +110°C for the S-20 and E-20
   +150°C for the C-150-E, S-150 and E-150

2. The end seals, splices and power connections have the following associated ambient temperatures:

   -60°C to +56°C for the E-20 and S-20
   -55°C to +56°C for the T-100, JBM-100, JBS-100, JBU-100, and E-100
   -40°C to +56°C for the JBS-100-L, JBM-100-L, and JBU-100-L
   -55°C to +55°C for the C-150-E, S-150 and E-150
   -40°C to +40°C for the E-100-L
   -55°C to +110°C for the C25-21 and C25-100
   -60°C to +180°C for the C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS

3. The assembly of glands, splices and end terminations shall be carried out in accordance with the manufacturing instructions

4. The heating element supply circuit must include an electrical protection device in conformity with Clause 4.4 of EN 60079-30-1.

5. The minimum installation temperature is -60°C. The minimum bending radii at specific temperatures for the Type BTV units are shown in the table in the equipment description.

6. The supply to the heating unit must be terminated in a suitably certified terminal enclosure.

7. The minimum installation temperature for E-20 and S-20, end seal and splice is -20°C.

8. The installer is to carry out a dielectric strength test on Ex equipment in which the C25-21, C25-100 and C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS connection kit is fitted. No dielectric breakdown shall occur. (Alternatively, an insulation resistance test may be undertaken in accordance with EN 60079-30-2).

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
205308-A[i]	1 of 1	Q	05/27/2021	BTV-8BTV-CR & BTV-10BTV-CR
205310-A[i]	1 of 1	R	05/27/2021	BTV-8BTV-CT & BTV-10BTV-CT

Current drawings which remain unaffected by this issue:

Number	Sheet	Issue	Date	Description
906567[ii]	1 of 1	P	05/21/21	C25-21, C25-100 and C25-100-METAL-XX, C3/4-100-METAL-XX Connection Kits
906579-A[i]	1 of 1	N	01/15/2021	BTV Heater Units (European System)
205350-A[i]	1 of 1	P	03/31/20	BTV-3BTV-CT & BTV-5BTV-CT
205349-A[i]	1 of 1	J	03/26/20	BTV-3BTV-CR & BTV-5BTV-CR
906794-A[iii]	1 of 1	AA	03/30/20	Generic ATEX and IECEx Print Dwg for BTV-CT, QTVR-CT, XTV-CT, KTV-CT Heating Cables
9242869[iv]	1 & 2	O	12/09/19	LABL JBM-100-L-E
9532687[iv]	1 & 2	Q	12/09/19	LABL JBM-100-L-EP
9621473[iv]	1 & 2	O	12/09/19	LABL JBS-100-L-E
9777523[iv]	1 & 2	P	12/09/19	LABL JBS-100-L-EP
9319676[iv]	1 & 2	O	12/09/19	LABL JBU-100-L-E
9735898[iv]	1 & 2	O	12/09/19	LABL JBU-100-L-EP
908742-A[v]	1 of 1	A	2/19/20	E-20 Heat Shrinkable End Seal Kit Cut Back Dimensions
908743-A[vi]	1 of 1	A	2/19/20	S-20 Heat Shrinkable Splice Joint Kit Cut Back Dimensions

i) These drawings are common to IECEx BAS 20.0011X, SGS20ATEX0048X and are held with IECEx BAS 20.0011X.

ii) This drawing is common to IECEx BAS 16.0040U, IECEx BAS 16.0041U, IECEx 16.0042U, IECEx BAS 20.0008X, IECEx BAS 20.0009X, IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, Baseefa16ATEX0037U, Baseefa16ATEX0038U, Baseefa16ATEX0039U, SGS20ATEX0045X, SGS20ATEX0046X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and is held with IECEx BAS 16.0040U.

iii) These drawings are common to IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and are held with IECEx BAS 20.0011X.

iv) These drawings are common to IECEx BAS 20.0008X, IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, SGS20ATEX0045X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and are held with IECEx BAS 20.0008X.

v) These drawings are common to IECEx BAS 20.0010X, IECEx BAS 20.0011X, IECEx BAS 20.0013X, SGS20ATEX0047X, SGS20ATEX0048X, SGS20ATEX0050X and are held with IECEx BAS 20.0010X.

vi) These drawings are common to IECEx BAS 20.0011X, IECEx BAS 20.0013X, SGS20ATEX0048X, SGS20ATEX0050X and are held with IECEx BAS 20.0011X.

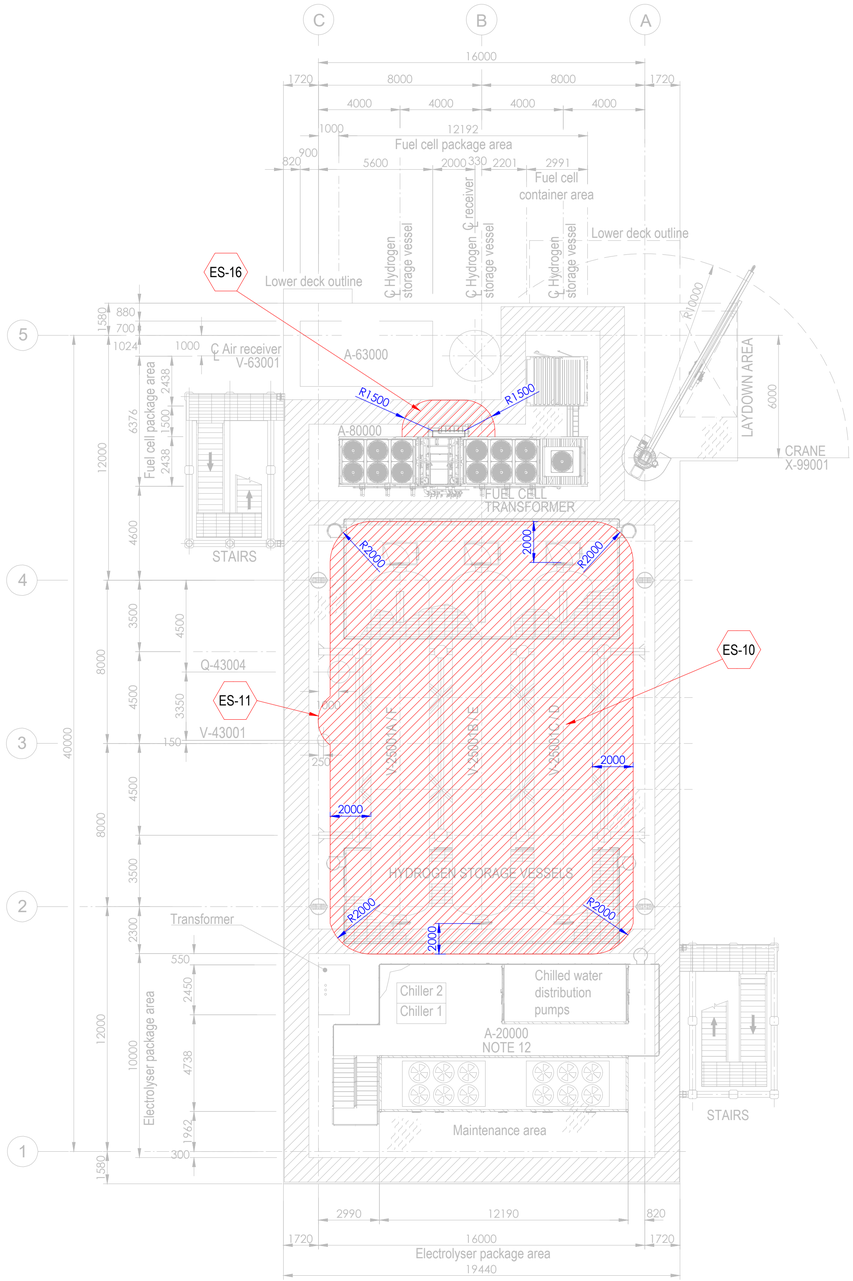
20 Certificate History

Certificate No.	Date	Comments
SGS20ATEX0048X	23 October 2020	The release of the prime certificate. The associated test and assessment against the requirements of EN 60079-0:2012+A11:2013, EN IEC 60079-7:2015+A1:2018, EN 60079-18:2015+A1:2017, EN 60079-30-1:2017 and EN 60079-31:2014 is documented in Test Report No. GB/BAS/ExTR20.0030/00.

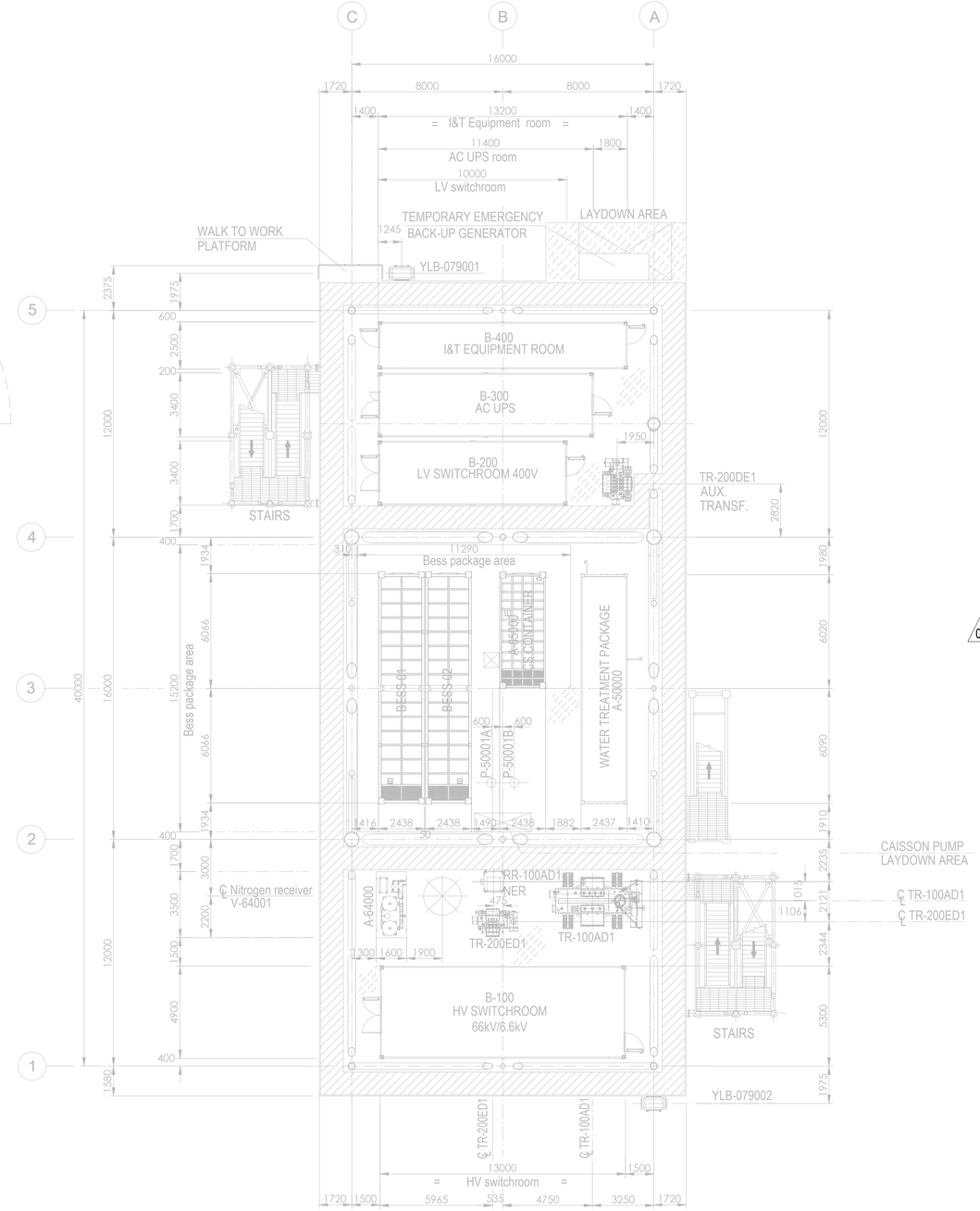
Certificate No.	Date	Comments
SGS20ATEX0048X Issue 1	11 February 2021	To assess the BTV range of self-regulating trace heating systems against EN IEC 60079-0:2018, introduce the low profile power connection, splice and end seal kits, types C-150-E, S-150 and E-150 afforded DEKRA20ATEX0011U, minor amendments to the product description, to change the product name to "BTV Range of Self-Regulating Trace Heating Systems" and to amend the Specific Conditions of Use. The associated test and assessment is documented in Test Report No. GB/BAS/ExTR21.0005/00.
SGS20ATEX0048X Issue 2	7 July 2021	Minor drawing updates not affecting certification. Baseefa Certification Report GB/BAS/ExTR21.0060/00 refers.
SGS20ATEX0048X Issue 3	3 September 2021	Minor change to the BTV-8BTV-CR, BTV-8BTV-CT, BTV-10BTV-CR and BTV-10BTV-CT heating cable dimensions. Baseefa Certification Report GB/BAS/ExTR21.0104/00 refers.
For drawings applicable to each issue, see original of that issue.		

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

REV. 02



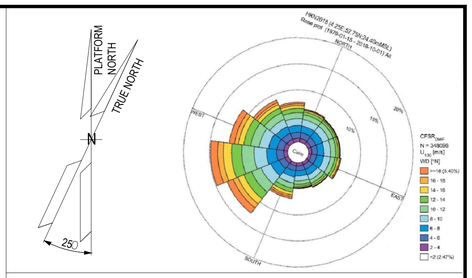
PLAN ON UPPER DECK
EL+30.310 T.O.S.



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

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

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



NOTES

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

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

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

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

CROSSWIND

ROSETTI MARINO

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

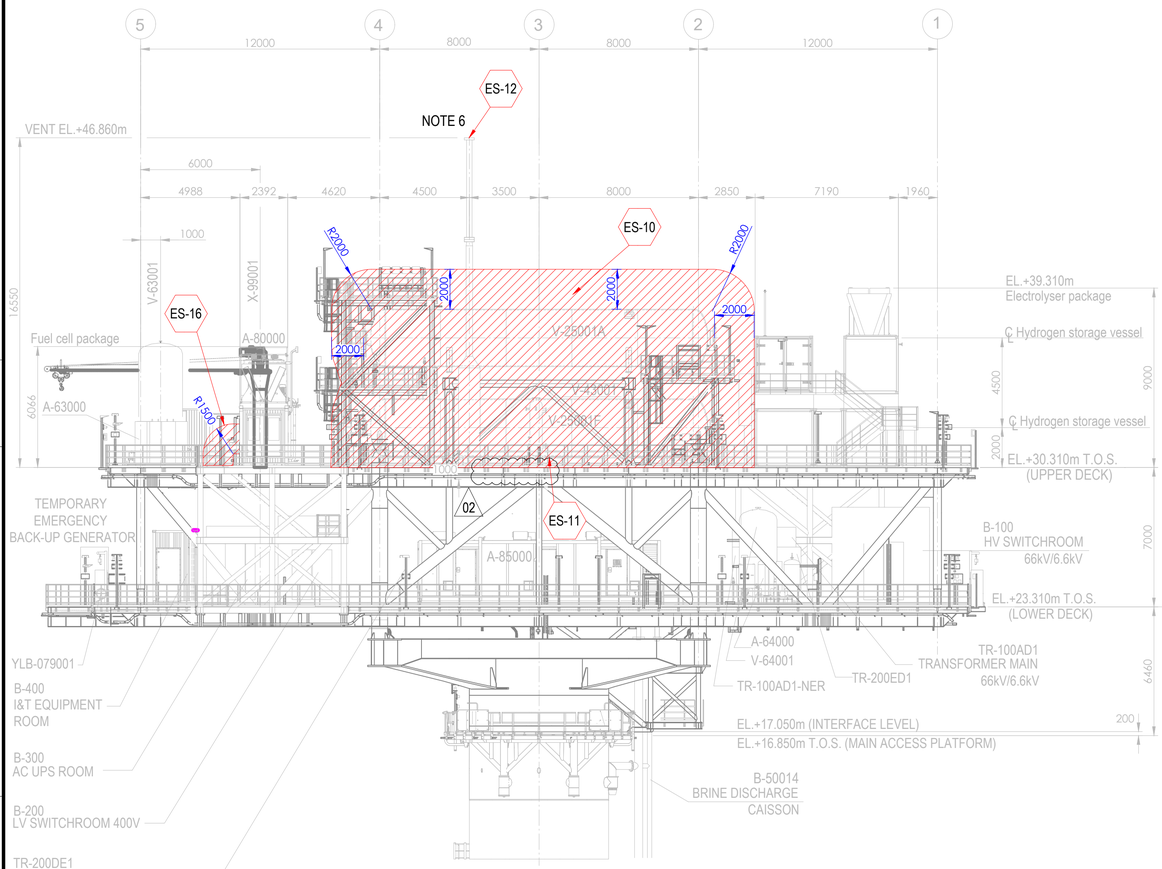
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

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

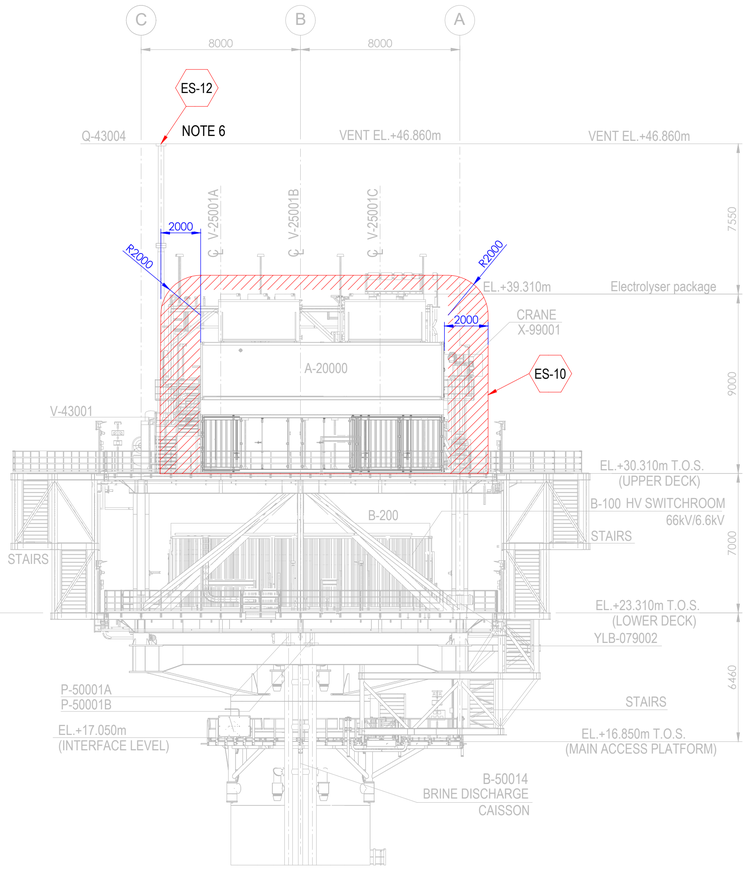
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

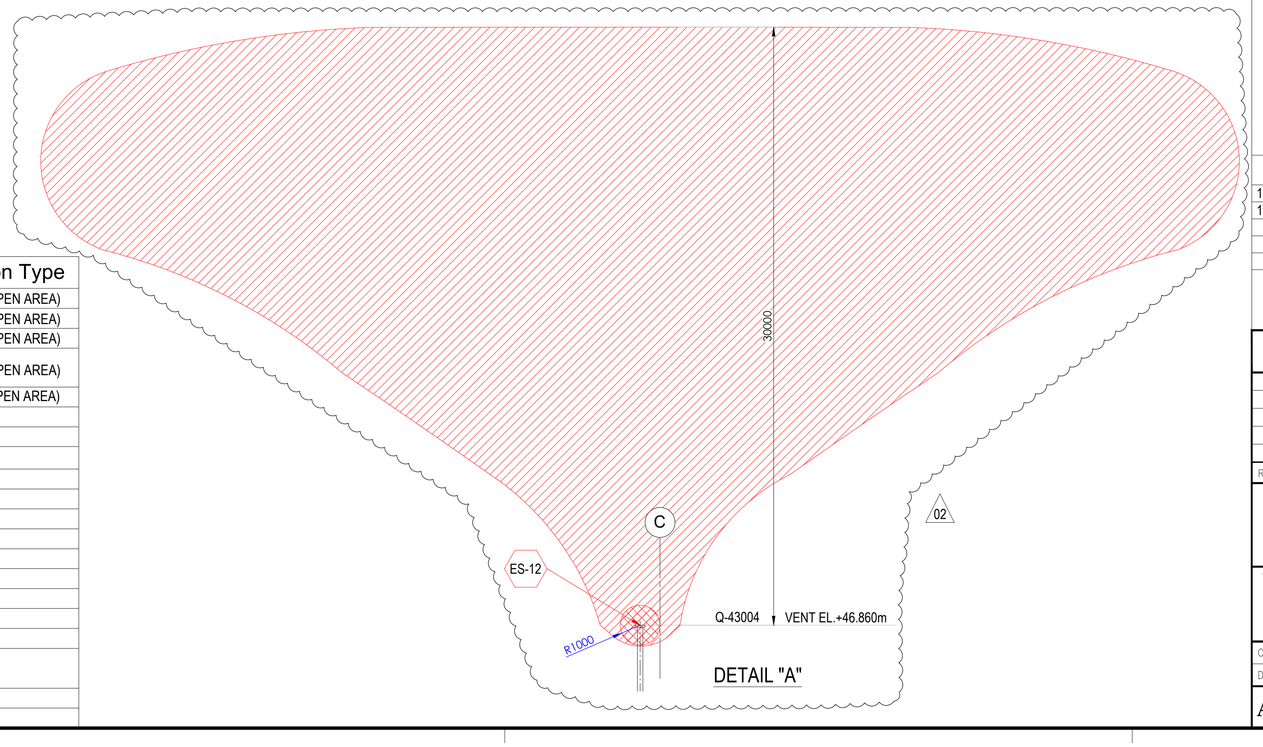


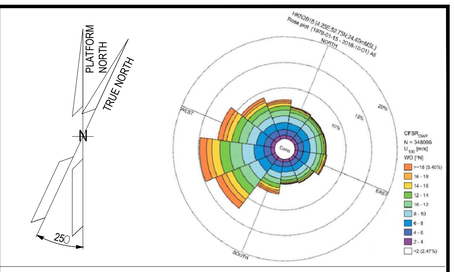
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

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





NOTES

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

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

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

CROSSWIND

ROSETTI MARINO

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

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

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

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

ITEM	Tag	EHT-1004-A	: Heat Tracing Tape	Dwg	1724001647-EL-LIS-00003
	S/Sys	83-65	: Electrical Heat Tracing	Module	UD/LD
TASK	code	C10004646	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.**		P/N:469145-000			
Manufacturer	nVent			**Model**		3BTV2-CT			
Cert No.	SGS20ATEX0048X			**Equipment Ambient Temp.**		-60°C to +80°C			
Area Classification	HAZARDOUS	**Zone**	2	**Gas group**	IIC	**Temp class**	T1		
Equipment Protection Type	Ex eb	**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	NA	
2	Equipment group is correct	x	OK	
3	Equipment temperature class is correct	x	OK	
4	Degree of IP protection of equipment is appropriate for the level of protection	x	NA	
5	Equipment circuit identification is correct	x	OK	
6	Equipment circuit identification is available	x	PL	
7	Enclosure glass parts and glass-to-metal sealing gaskets and / or compounds are satisfactory	x	NA	
8	There is no damage or unauthorized modifications	x	OK	
9	There is no evidence of unauthorized modifications	x	OK	
10	Bolts, cable entry devices (direct and indirect) & blanking elements are of the correct type, are complete & tight		NA	
	Physical check	x	NA	
11	Threaded covers on enclosures are of the correct type, are tight and secured		NA	
	Physical check	x	NA	
12	Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly	x	NA	
13	Condition of enclosure gaskets is satisfactory	x	NA	
14	There is no evidence or ingress of water or dust in the enclosure in accordance with the IP rating	x	NA	
15	Electrical connections are tight	x	NA	
16	Bridging links do not reduce creepage / clearance and are allowed	x	NA	
17	Unused terminals are tightened	x	NA	
18	Encapsulated components are undamaged	x	NA	
19	Flameproof components are undamaged	x	NA	
20	Fluorescent lamps are not indicating EOL effects (only for Ex “e” – Ex “n” – Ex “t”)	x	NA	
21	HID lamps are not indicating EOL effects	x	NA	
22	Lamp type, rating, pin configuration and position are correct	x	NA	
23	Breathing and drainage devices are satisfactory	x	NA	
24	Type of cable is appropriate	x	OK	
25	There is no obvious damage to the cables	x	OK	
26	Cable glands are the correct type and installed correctly	x	NA	
27	Sealing of trunking, ducts, pipes and or conduits is satisfactory	x	NA	
28	Stopping boxes and cable boxes are corrected filled	x	NA	

ITEM	Tag	EHT-1004-A	: Heat Tracing Tape			Dwg	1724001647-EL-LIS-00003
	S/Sys	83-65	: Electrical Heat Tracing			Module	UD/LD
TASK	code	C10004646		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	ATEX	Form	CJX01 Hazardous Area Equipment Detailed Inspection

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

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	EHT-1004-A	: Heat Tracing Tape			Dwg	1724001647-EL-LIS-00003
	S/Sys	83-65	: Electrical Heat Tracing			Module	UD/LD
TASK	code	C10004646		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	Giovanni Tangianu	
Date	2025-02-05	2025-02-13	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-05T10:23:00.968Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-13T12:37:08.273Z	

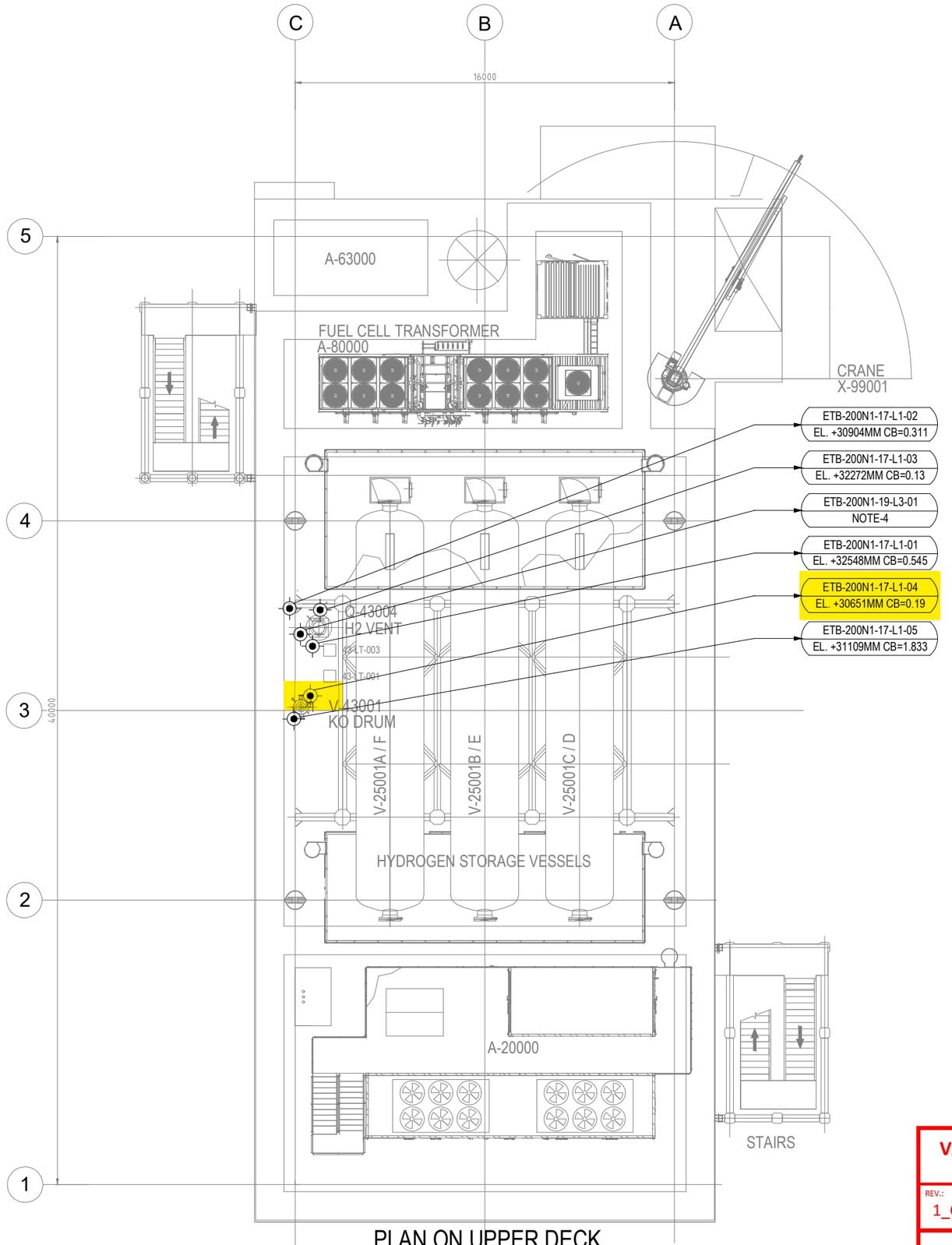
EHT CALCULATION LIST

PIT240024_ED01-1001

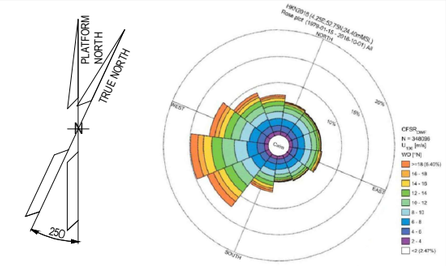
		ENGINEERING DATA				MECHANICAL & INSULATION DATA							PROCESS DATA				EHT BASIC DESIGN								EHT DETAILED DESIGN						EHT TEMP. CONTROL DATA							
Main EHT Box Number	Item Number	Heater Number	Line, Equipment or Instrument ID	nVent Circuit Number	Plant Area	Pipe Size [DN / IN]	Pipe Length [m]	Support Quantity [pc]	Valve Quantity [pc]	Other Heat Sink Quantity [pc]	Insulation Type	Insulation Thickness [mm]	Maintain Temperature [°C]	Maximum Allow. Process Temperature [°C]	Maximum Operating Temperature [°C]	Maximum Exposure Temperature [°C]	Heatloss [W/m]	Heating Cable Selection	Trace Ratio	Heating Cable Output [W/m]	EHT Cable per Support [m]	EHT Cable per Valve [m]	EHT Cable per Other Heatsink [m]	Total EHT Cable [m]	Max. Allow. EHT Circuit Length [m]	Connection Type	Voltage [V]	Operating Current [A]	Total Operating Load [W]	Start-Up Current [A]	Temp. Control Method	Controller Set Point [°C]	Minimum Controlled Temperature [°C]	Maximum Controlled Temperature [°C]	Maximum Uncontrolled Temperature [°C]	Revision	Remark
																		GRAND TOTAL						**181.4**				**9.69**	**2226**	**14.91**							
ETB-200N1-16-L3-01	1	EHT-1001-A	1"-DM-001-01SS-E	1001	PIPING	1	17.6	5	1	2	RW/MF 1:2015	20	5	100	22	22	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	22.0	199	Single L-N	230	1.18	271	1.8	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**22.0**			**230**	**1.18**	**271**	**1.8**							
ETB-200N1-15-L2-01	1	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	11.0	4		1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	13.9	199	Single L-N	230	0.73	167	1.1	Ambient sensing, standard	5	18	29	50	00	
	2	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	3	EHT-1002-A	1"-CI-032-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	4	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	1	0.0				RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7				0.0	199	Single L-N	230		1	0.0	Ambient sensing, standard	5	28	37	54	00	
	5	EHT-1002-A	1"-CI-030-01CP-E	1002	PIPING	1	3.1		1	1	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	2.0	10.7		1.6	0.5	8.7	199	Single L-N	230	0.49	112	0.8	Ambient sensing, standard	5	28	37	54	00	
	6	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.75	0.5		1		RW/MF 1:2015	20	5	50	25	25	3.4	3BTV2-CT	2.0	10.7		1.5		2.6	199	Single L-N	230	0.15	34	0.2	Ambient sensing, standard	5	30	38	55	00	
	7	EHT-1002-A	1"-CI-029-01CP-E	1002	PIPING	0.5	0.5		1		RW/MF 1:2015	20	5	50	25	25	2.9	3BTV2-CT	2.0	10.7		1.4		2.5	199	Single L-N	230	0.14	32	0.2	Ambient sensing, standard	5	32	40	56	00	
																		TOTAL						**36.4**			**230**	**2.00**	**459**	**3.1**							
ETB-200N1-14-L1-01	1	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	4	0.5				RW/MF 1:2015	20	5	100	25	25	10.2	3BTV2-CT	1.0	10.7				0.6	199	Single L-N	230	0.03	7	0.1	Ambient sensing, standard	5	5	20	46	00	
	2	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	4.7	1		1	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1		0.5	9.3	199	Single L-N	230	0.47	107	0.7	Ambient sensing, standard	5	14	27	49	00	
	3	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	4	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	7.8	3			RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	1.0	10.7	0.1			8.6	199	Single L-N	230	0.48	111	0.7	Ambient sensing, standard	5	14	27	49	00	
	5	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1.5	1.9				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				4.0	199	Single L-N	230	0.22	51	0.3	Ambient sensing, standard	5	24	34	53	00	
	6	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.8	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	7	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	1.4	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	4.2	199	Single L-N	230	0.23	54	0.4	Ambient sensing, standard	5	24	34	53	00	
	8	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	9	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1.5	0.1				RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	24	34	53	00	
	10	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1.5	2.0	1	3		RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2	1.8		9.7	199	Single L-N	230	0.55	126	0.8	Ambient sensing, standard	5	24	34	53	00	
	11	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1.5	1.2	1		2	RW/MF 1:2015	20	5	100	25	25	5.1	3BTV2-CT	2.0	10.7	0.2		0.5	3.7	199	Single L-N	230	0.20	47	0.3	Ambient sensing, standard	5	24	34	53	00	
	12	EHT-1003-A	1"-SWS-147-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	13	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	14	EHT-1003-A	1-1/2"-SWS-033-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	15	EHT-1003-A	1-1/2"-SWS-035-01SD-E	1003	PIPING	1	0.1				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.1	199	Single L-N	230	0.01	2	0.0	Ambient sensing, standard	5	28	37	54	00	
	16	EHT-1003-A	1"-SWS-288-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
	17	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.2				RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7				0.5	199	Single L-N	230	0.03	6	0.0	Ambient sensing, standard	5	28	37	54	00	
	18	EHT-1003-A	1"-SWS-146-01SD-E	1003	PIPING	1	0.7		1		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		3.2	199	Single L-N	230	0.18	41	0.3	Ambient sensing, standard	5	28	37	54	00	
	19	EHT-1003-A	1-1/2"-SWS-031-01SD-E	1003	PIPING	1	0.1			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7			0.5	0.7	199	Single L-N	230	0.04	9	0.1	Ambient sensing, standard	5	28	37	54	00	
	20	EHT-1003-A	1"-SWS-290-01SD-E	1003	PIPING	1	1.1	1	2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7	0.3	1.6		5.8	199	Single L-N	230	0.33	76	0.5	Ambient sensing, standard	5	28	37	54	00	
	21	EHT-1003-A	1"-SWS-286-01SD-E	1003	PIPING	1	0.8		2		RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	2.0	10.7		1.6		4.9	199	Single L-N	230	0.28	64	0.4	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**78.6**			**230**	**4.37**	**1002**	**6.7**							
ETB-200N1-17-L1-04	1	EHT-1004-A	1"-WW-259-01CS-E / V-43001	1004	PIPING	1	0.9		1	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7		0.8	0.5	3.2	199	Single L-N	230	0.12	28	0.2	Ambient sensing, standard	5	18	29	50	00	Combined with EHT-1004-B
																		TOTAL						**3.2**			**230**	**0.12**	**28**	**0.2**							
ETB-200N1-17-L1-02	1	EHT-1005-A	1"-WW-260-01CS-E	1005	PIPING	1	1.2	1	2	1	RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	1.0	10.7	0.1	0.8	0.5	4.6	199	Single L-N	230	0.20	46	0.3	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1006-A
																		TOTAL						**4.6**			**230**	**0.20**	**46**	**0.3**							
ETB-200N1-17-L1-03	1	EHT-1006-A	1"-WW-202-01CS-H	1006	PIPING	1	1.0			1	RW/MF 1:2015	20	5	100	25	25	3.9	3BTV2-CT	1.0	10.7			0.5	2.5	199	Single L-N	230	0.08	19	0.1	Ambient sensing, standard	5	18	29	50	00	Powered with EHT-1005-A
																		TOTAL						**2.5**			**230**	**0.08**	**19**	**0.1**							
ETB-200N1-15-L2-02	1	EHT-1007-A	1"-CI-043-01CP-E	1007	PIPING	1	15.0	6		4	RW/MF 1:2015	20	5	50	25	25	3.9	3BTV2-CT	1.0	10.7	0.1		0.5	19.5	199	Single L-N	230	1.04	239	1.6	Ambient sensing, standard	5	18	29	50	00	
																		TOTAL						**19.5**			**230**	**1.04**	**239**	**1.6**							
ETB-200N1-17-L1-05	1	EHT-1004-B	43-LT-001	2001	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	Combined with EHT-1004-A
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							
ETB-200N1-17-L1-01	1	EHT-2002-A	43-LT-003	2002	INSTRUMENT	1	3.0				RW/MF 1:2015	20	5	100	11	11	3.9	3BTV2-CT	2.0	10.7				7.3	199	Single L-N	230	0.35	81	0.6	Ambient sensing, standard	5	28	37	54	00	
																		TOTAL						**7.3**			**230**	**0.35**	**81**	**0.6**							

DRAWING NO. 123A90-DDL-EL-DL-20140

REV. 01



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



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR PROCESS LINE LIST REFER TO DOCUMENT 123A90-DDL-PR-LIS-80035
3. FOR THE ELECTRICAL HEAT TRACING OF THE PIPE LINES OF WATER TREATMENT PACKAGE ONLY BOTH FLANGES OF BATTERY LIMIT (INLET AND OUTLET) AND ONE METER OF PIPE INSIDE THE PACKAGE WILL BE ELECTRICAL HEAT TRACED
4. HOT JB ARE IN THE VENDOR EQUIPMENT SCOPE
5. THIS DOCUMENT IS ONLY VALID FOR POSITIONING OF HEAT TRACING SYSTEM COMPONENTS.

1

LEGEND

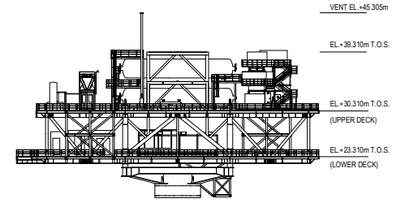
- TRACE HEATING JUNCTION BOX (HOT JB)
- POWER SUPPLY JUNCTION BOX (COLD JB)
- TEMPERATURE CONTROL UNIT

EJB-200N1-14-L1-01 / EL. +1.500M T.O.S — TAG NUMBER – POWER SUPPLY JUNCTION BOX

ETB-200N1-14-L1-01 / EL. +30904MM CB=0.311 — TAG NUMBER – TRACE HEATING JUNCTION BOX WITH ELEVATION AND ABSORBED CURRENT CIRCUIT

1

KEY PLAN



REFERENCE DOCUMENTS

123A90-DDL-PR-PID-80021	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80022	P&ID SEA WATER INTAKE SYSTEM
123A90-DDL-PR-PID-80024	P&ID WATER TREATMENT PLANT
123A90-DDL-PR-PID-80029	P&ID HYDROGEN VENT DRUM
123A90-DDL-PR-LIS-80035	PROCESS LINE LIST
123A90-DDL-EL-DG-20162	ELECTRICAL SINGLE LINE DIAGRAMS (BoP)
1724001647-EL-DD-00004	ISOMETRICS EHT
1724001647-EL-DG-00006	EHT SINGLE LINE DIAGRAM
1724001647-EL-PL-00009	EHT PLOT PLAN

1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	14/10/2024	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	25/06/2024	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20140**

REV.:	DATE:	SIGNATURE:
1_C	27/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL HEAT TRACING (EHT)
JUNCTION BOX LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 14/10/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20140	SHEET 2of2	REV. 01

File Name : 123A90-DDL-EL-DL-20140

CAD FILENAME: PIT240024_DD01_1004_001_02.dwg

HEAT TRACING DATA

HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	PIPE LENGTH (m)	HEATER LENGTH (m)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W/m)	POWER OUTPUT (W/m)	SHEATH TEMP. (°C)
EHT-1004-A	PIPING	3BTV2-CT	0.9	3.2	0.2	28	230	3.9	10.7	85
		TOTALS	0.9	3.2	0.2	28				

HEATER ADDER TABLE

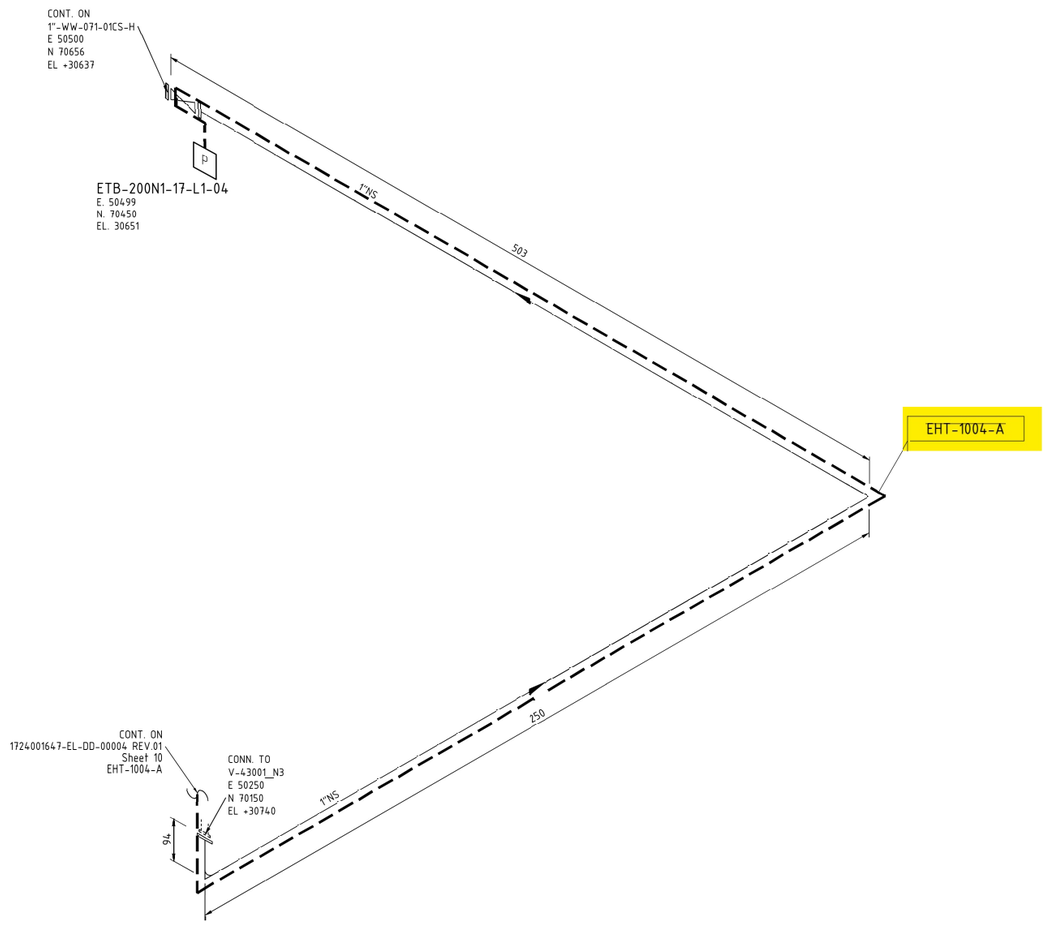
PIPE SIZE (Ins)	TYPE	QTY	ALLOWANCE PER ITEM (m)	TOTAL ALLOWANCE (m)
1	Typical Metal Valve	1	0.82	0.82
1	Typical Flange (fixed adder)	1	0.46	0.46

DESIGN PARAMETERS

CIRCUIT NUMBER	1004	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	11°C	INSULATION TYPE	RW/MF 1.2015
MAX. EXPOSURE TEMP.	11°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	100°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

COMPONENT BILL OF MATERIALS

CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	3.2	m	Raychem Self-Regulating Heating Cable
JBM-100-E	1	each	Integrated Junction Box, Multiple-Entry, Cold-Applied, ATEX
PSE-090	2	each	Pipe Strap for 1.1/4" to 3" (40-90mm)
GS-54	0.1	each	Glass Tape (16m/roll), suited for SS pipes
LAB-I-01	1	each	Warning Label - English
JBM-SPA	0.2	bag	Small Pipe Adapter for JBM-100-E



LINE NUMBERS

1"-WW-259-01CS-E

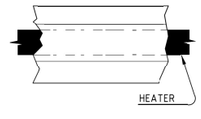
REFERENCE DRAWINGS / DOCUMENTS

123A90-DDL-PP-DI-71000_123

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.
4. HEATING CABLE ALLOWANCES PROVIDED IN THE 'EHT ADDER TABLE' FOR FLANGES AND VALVES ARE IN ADDITION TO THEIR LINEAR LENGTHS.

ALUMINIUM TAPE (REF: ATE180)



SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

CROSSWIND

ROSETTI MARINO

nVent RAYCHEM TRACER

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
02	20/01/2025	ISSUED FOR REVIEW	ADU	AMI	GPI
01	25/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.

DOC CODE

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING ISOMETRIC

SCALE: N/A

DRAWING NO.: 1724001647-EL-DD-00004

SHEET NO.: 6/10

REVISION: 02

A1

DRAWING NO. DRAWING_NO.

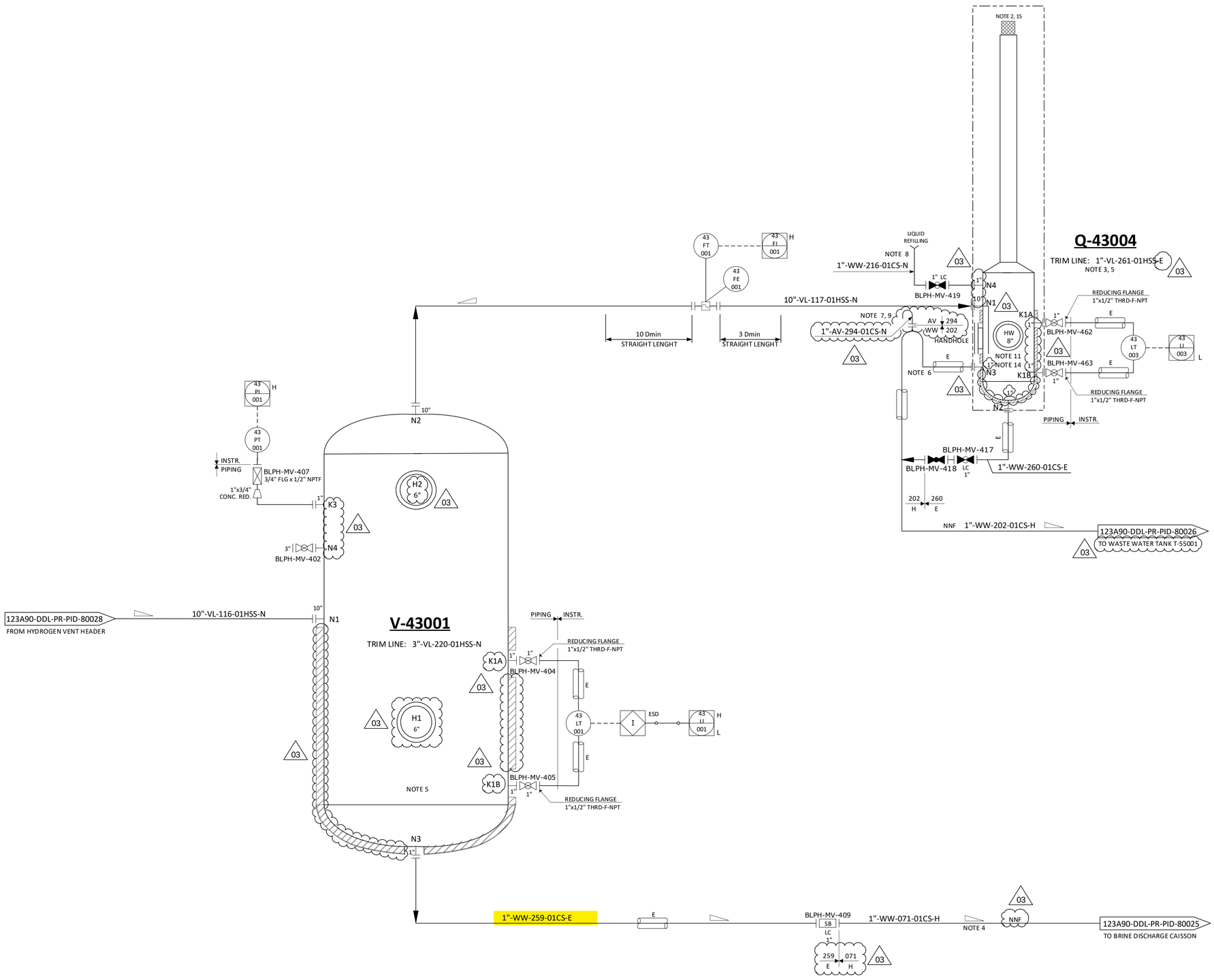
REV. REV

V-43001

HYDROGEN VENT KO DRUM
SIZE : 600 mm (ID) x 2350 mm (H)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 1 mm CA

Q-43004

HYDROGEN VENT NOTE 1
SIZE : 254 mm (ID)
DESIGN P/T : 3.5 barg / -10 / 80°C
MATERIAL : LTCS + 3 mm CA



NOTES

1. VENT TO SAFE LOCATION SEGREGATED FROM OTHER VENTS.
2. VENT TO BE EQUIPPED WITH BIRD SCREEN.
3. LIQUID SEAL DRUM IS PART OF THE VENT SYSTEM.
4. LIQUID DRAIN LINES TO BE ROUTED TO ENSURE GRAVITY DRAIN.
5. HYDROGEN VENT KO DRUM AND LIQUID SEAL DRUM TO BE HEAT TRACING.
   - V-43001 HEAT TRACED FROM B.T.L. UP TO 600 mm, BOTTOM HEAD ALSO TO BE HEAT TRACED.
6. SEAL LEG WILL BE DETERMINATED ON THE MAXIMUM BACK PRESSURE IN THE VENT.
7. SEAL VENT TO BE PLACED INTO A SAFE POSITION.
8. FILLING LINE TO BE PLACED IN AN ACCESSIBLE POSITION.
9. TRACED FROM NOZZLE N3 UP TO SWAN NECK.
10. DELETED.
11. INLET DIP LEG SUBMERSION HEIGHT OF 0.6 m.
12. DELETED.
13. FOR DESCRIPTION AND SPECIFICATION OF VESSEL NOZZLE, REFERENCE SHALL BE MADE TO THE TECHNICAL DATA SHEET FOR H2 VENT KOD.
14. LIQUID INSIDE SEAL DRUM IS A WATER - GLYCOL MIXTURE WITH 50% VOLUME OF GLYCOL. (03)
15. TOP OF TIP OF H2 VENT SHALL BE AT AS MINIMUM 6.2 m FROM HIGHEST REACHABLE PLATFORM.

HOLDS

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

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

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
HYDROGEN VENT DRUM

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80029	SHEET 001	REV. 03

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV

B-50014

BRINE DISCHARGE CAISSON
SIZE : 323 mm (ID) x 21808 mm (H)
MATERIAL : CARBON STEEL)

123A90-DDL-PR-PID-80022
FROM 50-TI-001

123A90-DDL-PR-PID-80027
FROM INSTRUMENT AIR PACKAGE
1"-WW-079-01CS-H

123A90-DDL-PR-PID-80012
FROM FUEL CELL PACKAGE
1"-DI-012-01CS-H

DM 005 | WW 073

123A90-DDL-PR-PID-80011
FROM ELECTROLYSER PACKAGE
1"-DM-005-01CS-H

123A90-DDL-PR-PID-80022
FROM WATER TREATMENT PACKAGE
1"-SWR-045-01CS-H

1-1/2"-WW-073-01CS-H

50 PI 014 H
50 PT 014
50 TDI 002 H
50 TI 002
50 TT 002
50 TE 002
3/4" FLG x 1/2" NPTF BLPH-MV-411
INSTR. PIPING
E
3/4"
4"x1.1/2" ECC. RED.
1.1/2"
4"x1.1/2" ECC. RED.
50 XY 005
S
IA
04
50 XV 005
FO TYP.1
BLPH-NRV-028
DECK HOOK-UP 005
LC BLPH-MV-412

123A90-DDL-PR-PID-80029
FROM HYDROGEN VENT KO DRUM
1"-WW-071-01CS-H NNF
1"-WW-071-01CS-H
DECK HOOK-UP 004

NOTE 2

B-50014
NOTE 1

EL. +21.8 m
ELEVATION 0.00m (L.A.T.)

NOTES

1. CAISSON IS OPEN TOPPED.
2. ALL LINES TO TERMINATE APPROXIMATLEY 21000 mm ABOVE SEAWATER LEVEL (LAT).

HOLDS

1. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
04	11/10/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
WATER DISPOSAL SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80025	SHEET 001	REV. 04

File Name : FILE_NAME

CAD FILENAME: PIT240024_0002_3001_001_02.dwg

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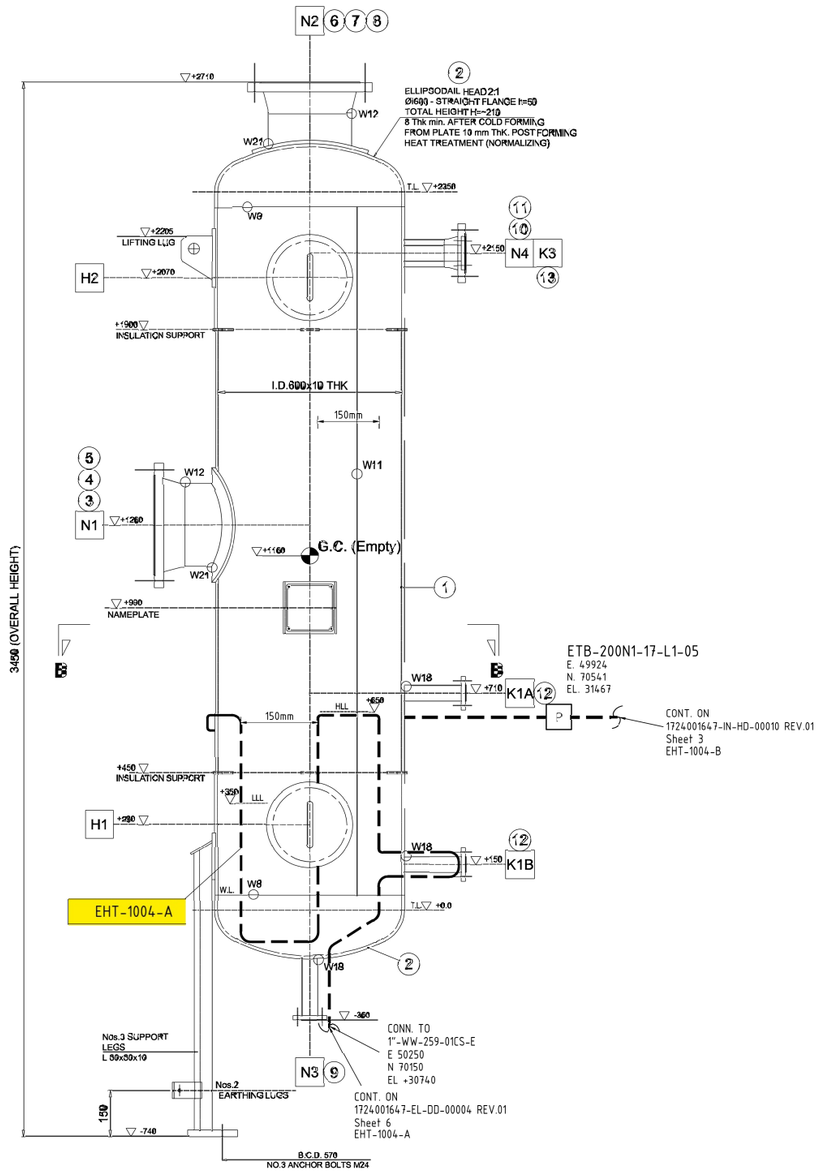
HEATER REFERENCE	DESIGN AREA	HEATER CAT. NUMBER	HEATER LENGTH (m)	HEATED AREA (m^2)	HEATER SPACING (mm)	CIRCUIT BREAKER CURRENT (A)	OPERATING LOAD (W)	HEATER VOLTAGE (V)	HEAT LOSS (W)	POWER OUTPUT (W/m)	SHEATH TEMPERATURE (°C)
EHT-3001-A	EQUIPMENT	3BTV2-CT	1x5.8	0.72	150	0.5	80	80	66	13.9	85
					TOTALS	0.5	80				

DESIGN PARAMETERS

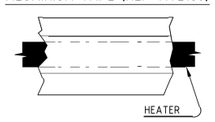
CIRCUIT NUMBER	3001	AREA CLASSIFICATION	HAZARDOUS/ZN.1
		T-RATING	T3
MAINTAIN TEMP.	5°C		
OPERATING TEMP.	11°C	INSULATION TYPE	RW/MF 1:2015
MAX. EXPOSURE TEMP.	11°C	INSULATION THICKNESS	20mm
MAX. ALLOWABLE TEMP.	100°C		
MAX. AMBIENT TEMP.	40°C		
MIN. AMBIENT TEMP.	-9°C		

COMPONENT BILL OF MATERIALS

CAT. NUMBER	QTY	UNIT	PRODUCT DESCRIPTION
3BTV2-CT	5.8	m	Raychem Self-Regulating Heating Cable
JBM-100-E	1	each	Integrated Junction Box, Multiple-Entry, Cold-Applied, ATEX
ATE-180	0.32	roll	Fixing tape (aluminium, 55m/roll)
LAB-I-01	1	each	Warning Label - English
PSE-090	2	each	Pipe Strap for 1.1/4" to 3" (40-90mm)



ALUMINIUM TAPE (REF: ATE180)



SECURE HEATER TO PIPE / VESSEL / EQUIPMENT BODY BY APPLYING ALUMINIUM TAPE ALONG THE FULL LENGTH OF HEATER

EQUIPMENT NUMBERS

V-43001

REFERENCE DRAWINGS / DOCUMENTS

GENERAL NOTES

1. TRACE HEATING PRODUCTS ARE TO BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE PRECISE LOCATION OF EACH TRACE HEATING COMPONENT TO BE DETERMINED AT SITE.
3. ELEXANT 5010i WILL BE INSTALLED ON RACKS.

CROSSWIND

ROSETTI MARINO

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
02	20/01/2025	ISSUED FOR REVIEW	ADU	AMI	GPI
01	25/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI
00	23/09/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING EQUIPMENT

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-EL-DD-00004	10/10	02

A1

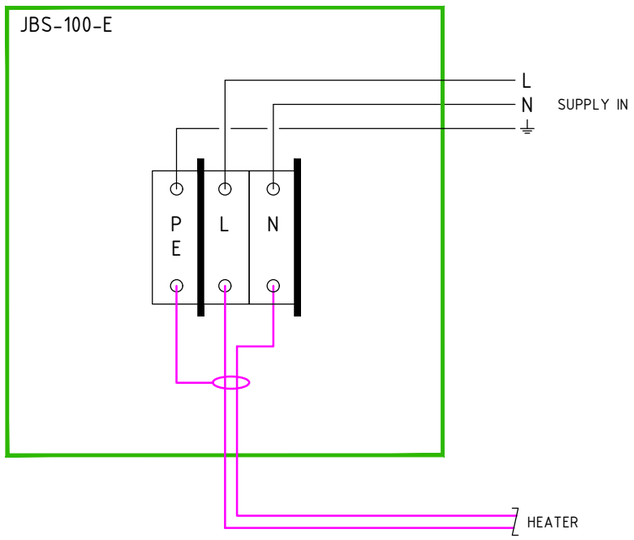
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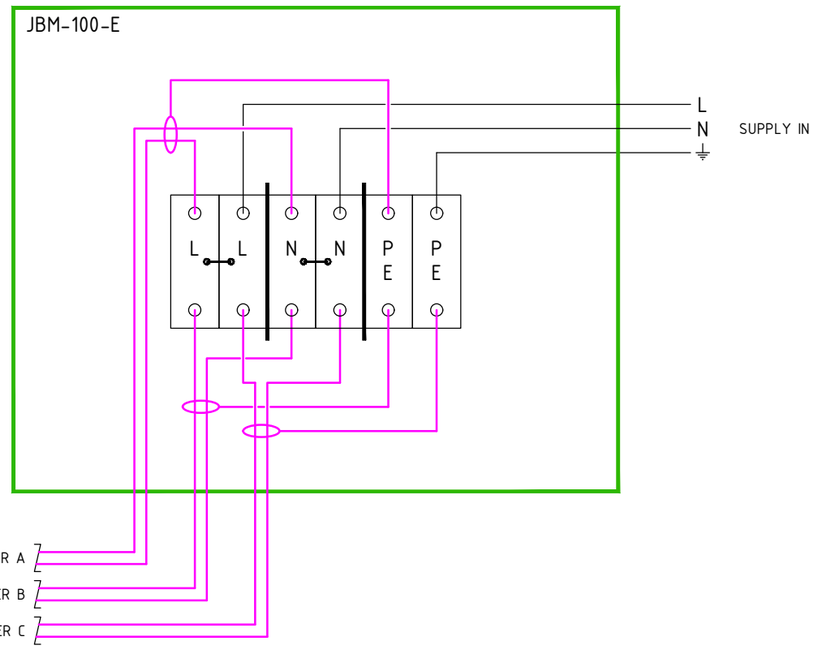
GENERAL INFORMATION:

1. JBS-100-E IS DESIGNED TO CONNECT POWER TO ONE BTV, QTVR, XTV, KTV, HTV OR VPL EHT CABLE.
2. THIS KIT INTEGRATES THE FUNCTIONS OF BOTH CONNECTION KITS AND INSULATION ENTRIES.
3. THE STAND CONNECTED TO THE BOTTOM OF THE BOX PROTECTS THE HEATING CABLE AND ALLOWS FOR UP TO 100mm (4") THERMAL INSULATION.

TECHNICAL BRIEF:

- 2 x M25 THREADED ENTRIES
- 1 x M25 STOPPING PLUGS
- 1 x M25 POWER CABLE GLAND





REV.	DATE	DESCRIPTION	BY	CHK	APP
--	--	--	--	--	--
--	--	--	--	--	--
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	08/03/2024	ISSUED FOR INFORMATION	LJB	E-C	ZS

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TITLE
TYPICAL CONNECTION OF A JBS-100-EP
SINGLE ENTRY JUNCTION BOX

PREPARED BY	-.---	LANG.	SCALE
LEAD ENGINEER	-.---	en	N/A
PROJECT NO.	DRAWING NO.	SHEET	REVISION
PIT240024	1724001647-EL-DG-00005	2/3	01

A3

CAD FILENAME: 1724001647-EL-DG-00006 Rev.01.dwg

CONTROL PANEL REF.:

Q17

MARSHALLING BOX

EJB-200N1-17-L1-01

ETB-200N1-17-L1-04 — P — EHT-1004-A

ETB-200N1-17-L1-05 — P — EHT-1004-B

ETB-200N1-17-L1-02 — P — EHT-1005-A

ETB-200N1-17-L1-03 — P — EHT-1006-A

ETB-200N1-17-L1-01 — P — EHT-2002-A

SPARE

CIRCUIT NO.	1004	1005, 1006	2002	
C.B. RATING (A)	32	32	32	
START-UP I (A)	2.6	0.4	0.6	
LOAD (W)	383	65	81	
SERVICE	WINTERIZING	WINTERIZING	WINTERIZING	
NOTES FOR THE CIRCUIT	--	--	--	

GENERAL NOTES

CROSSWIND

ROSETTI MARINO

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NVENT PROJECT NO.: PIT240024

REV.	DATE	DESCRIPTION	BY	CHK	APP
--	--	--	--	--	--
01	25/10/2024	ISSUED FOR CONSTRUCTION	ADU	AMI	GPI
00	02/10/2024	ISSUED FOR REVIEW	ADU	AMI	GPI

CLIENT PROJECT NO.:

DOC CODE:

PROJECT TITLE: HOLLANDSE KUST NOORD WIND PARK Project
ELECTRICAL HEAT TRACING SYSTEM

DESIGNER: A. Dumitru

LEAD ENG.: A. Martelli

DRAWING TITLE: ELECTRICAL HEAT TRACING
SINGLE LINE DIAGRAM (SLD)

SCALE	DRAWING NO.	SHEET NO.	REVISION
N/A	1724001647-EL-DG-00006	4/4	01

BTV

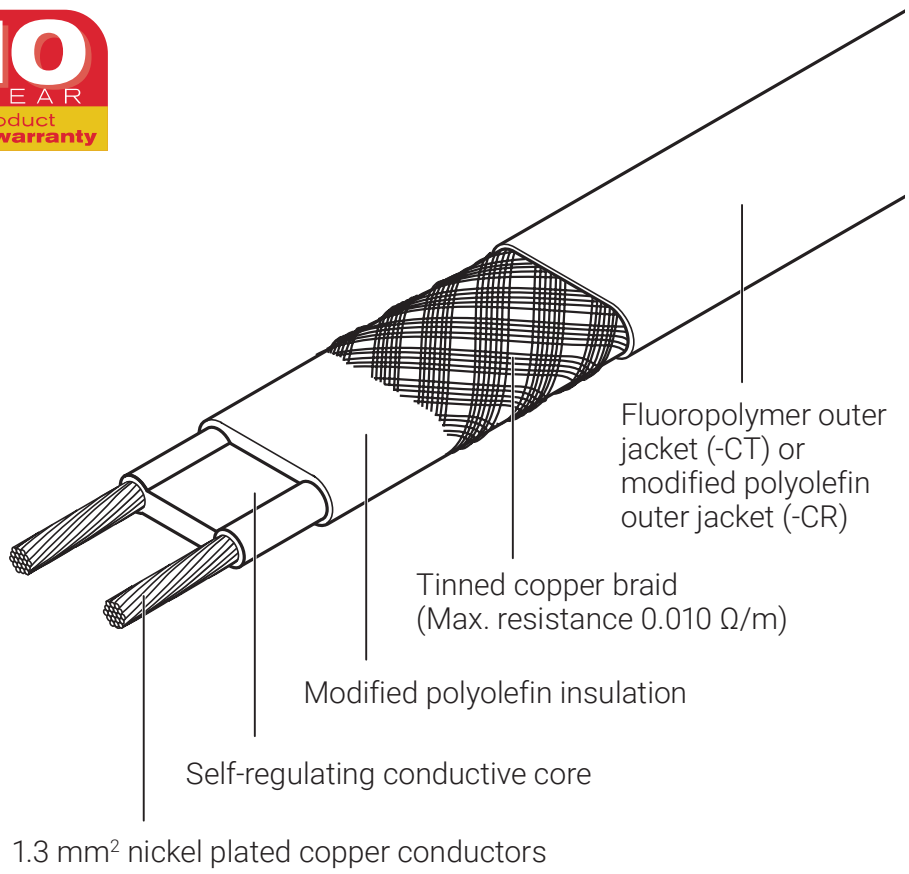
nVent RAYCHEM

CONNECT AND PROTECT

Self-regulating Heating Cable (Ex)

PRODUCT OVERVIEW

10 YEAR Product warranty



Electrical heat-tracing for frost protection without steam cleaning.
The nVent RAYCHEM BTV-family of self-regulating, parallel circuit heating cables is used for frost protection of pipes and vessels. It can also be used for process temperature maintenance up to 65°C.

Application

Traced surface type	Carbon steel Stainless steel Plastic Painted or unpainted metal
Chemical resistance	For organic corrosives: use -CT (fluoropolymer outer jacket) For mild inorganic solutions: use -CR (modified polyolefin outer jacket) For aggressive organics and corrosives consult your local nVent representative

Supply voltage

230 Vac (Contact your local nVent representative for data on other voltages)

PRODUCT SPECIFICATIONS

Product dimensions and weight

	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Width x Thickness (nominal) mm	10.5 x 5.5		13.2 x 5.5	
Weight (g/m)	110		150	

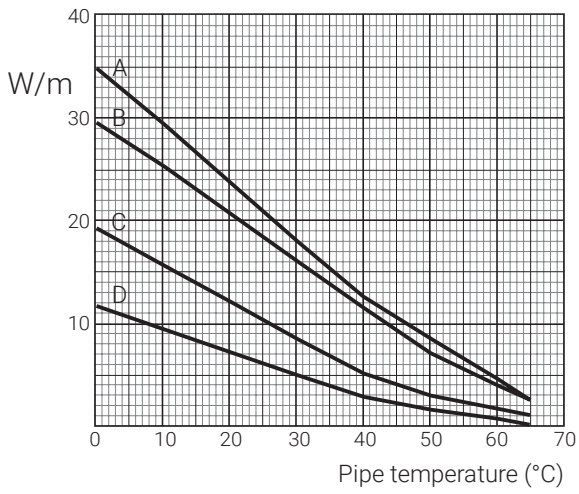
Technical details

Maximum maintain or continuous exposure temperature (power on/off)	65°C
Maximum intermittent exposure temperature (power on/off)	85°C Maximum cumulative exposure 1000 hours
Minimum installation temperature	–60°C
Minimum bend radius	–60°C ≤ T<–20°C: 35 mm –20°C ≤ T<–10°C: 30 mm –10°C ≤ T< 0°C: 25 mm 0°C ≤ T <+10°C: 20 mm T≥ +10°C: 12 mm

Thermal output rating

Nominal power output at 230 Vac on insulated steel pipes

A 10BTV2-CT
10BTV2-CR
B 8BTV-2-CT
8BTV-2-CR
C 5BTV2-CT
5BTV2-CR
D 3BTV2-CT
3BTV2-CR



	3BTV2-CR 3BTV2-CT	5BTV2-CR 5BTV2-CT	8BTV-2-CR 8BTV-2-CT	10BTV2-CR 10BTV2-CT
Nominal power output (W/m at 10°C)	9	16	25	29

Maximum circuit length based on type ‘C’ circuit breakers according to EN 60898

Electrical protection sizing	Start-up temperature	Maximum heating cable length per circuit (m)			
16 A	–20°C	155	110	70	45
	+10°C	200	160	110	65
20 A	–20°C	195	140	90	55
	+10°C	200	160	125	85
25 A	–20°C	200	160	110	70
	+10°C	200	160	125	105
32 A	–20°C	200	160	125	90
	+10°C	200	160	125	110

The above numbers are for circuit length estimation only. For more detailed information please use the nVent RAYCHEM TraceCalc software or Contact your local nVent representative. nVent requires the use of a 30 mA residual current device to provide maximum safety and protection from fire. Where design results in higher leakage current, the preferred trip level for adjustable devices is 30 mA above any inherent capacitive leakage characteristic of the heater as specified by the trace heater supplier or alternatively, the next common available trip level for non adjustable devices, with a maximum of 300 mA. All safety aspects need to be proven.

APPROVALS

For use ordinary area and hazardous area Zone 1 and Zone 2 (Gas), Zone 21 and Zone 22 (Dust).

Temperature classification
T6

Product certification

More details about product certification, approvals and conditions of safe use are available in the installation manual for Self-regulating and Power limiting heating cable systems at www.nVent.com/RAYCHEM

ORDERING INFORMATION

Part description	3BTV2-CR	5BTV2-CR	8BTV-2-CR	10BTV2-CR
Part No. (*)	914279-000	414809-000	479821-000	677245-000
Part description	3BTV2-CT	5BTV2-CT	8BTV-2-CT	10BTV2-CT
Part No. (*)	469145-000	487509-000	008633-000	567513-000

Components

nVent offers a full range of components for power connections, splices and end seals. These components must be used to ensure proper functioning of the product and compliance with electrical requirements.

(*) Localized versions may exist with limited approvals and different part numbers. Contact your local sales representative

North America
Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

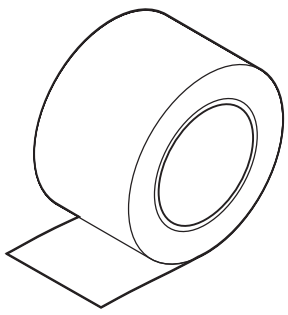
Europe, Middle East, Africa
Tel +32.16.213.502
Fax +32.16.213.604
thermal.info@nVent.com

Asia Pacific
Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America
Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com

Our powerful portfolio of brands:
CADDY ERICO HOFFMAN RAYCHEM SCHROFF TRACER

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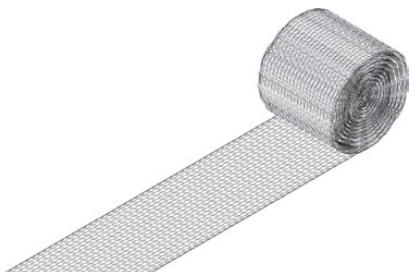
ATE-180

Aluminium tape* for attaching heating cables and thermostat sensors to pipes and tanks. Minimum installation temperature: 0°C. Also suitable for stainless steel pipes.

55 m per roll, 63.5 mm width.

PN: 846243-000 Weight: 0.84 kg

*Power output of selfregulating heating cables might increase when installed with aluminium tape or other heat transfer aids. Please use TraceCalc or contact nVent representative for further details.

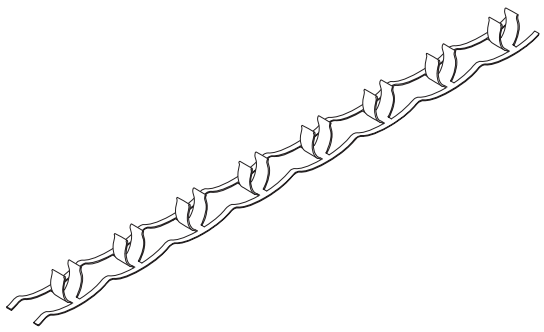


HWA-METAL-MESH-SS-50MM-10M

Stainless steel mesh for fixation of heating cables on valves, pumps or other odd-shaped surfaces. This mesh provides optimum contact and heat transfer between heating cables and heated equipment and can be used for exposure temperatures up to 400°C.

10 m per roll, 50 mm width.

PN: 1244-005772 Weight: 0.36 kg



HWA-PI-FIX- SS-xMM-10M

Stainless steel clip band to attach Polymer Insulated series heating cables to pipes. Clips at regular distances to allow for even heater spacing. Band available in two sizes for different diameter ranges.

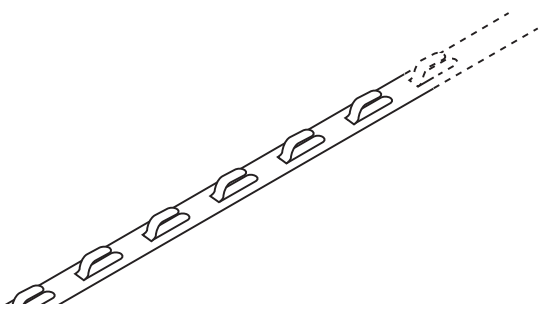
10 m per roll.

For diameters up to 5 mm, HWA-PI-FIX-SS-5MM-10M

PN: 1244-007768 Weight: 0.32 kg

For diameters up to 8 mm, HWA-PI-FIX-SS-8MM-10M

PN: 1244-007769 Weight: 0.52 kg



HARD-SPACER-SS-25MM-25M

Stainless steel spacer for fixing the heating cable on walls, tanks and vessels, etc.

Width spacer: 12.5 mm.

Fixing distance for cables: each 25 mm.

25 m per roll.

PN: 107826-000 Weight: 1.10 kg

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
CB-200F4B	AC UPS F&G - Battery Isolator-B	CONTAINER B-300 (LOWER DECK)	1724000372	3W Power	Cortem Spa		EJBC	Zone 1	EPT 20 ATEX 4075X	1724000372-EL-DG-00011	II 2GDEx db IIC T6 Gb Ex tb IIIC T 85°C Db	-	N/A	True	N/A	False	
EAT-200N1-01	Trace Heating - Remote Ambient Thermostat	LOWER DECK	1724001647	nVent	nVent	1244-022663	ETS-05-A2-E-A	Zone 1	Baseefa 13ATEX0137	1724001647-EL-DD-00004	II 2(1)G Ex eb ia mb [ia Ga] IIC T5 Gb - 40ºC ≤ Ta ≤ +60ºC II 2D Ex tb IIIC T100ºC Db	-	N/A	True	N/A	False	
EHT-1001-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1002-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1003-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1004-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1004-B	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1005-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1006-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-1007-A	Self-regulating heat cable	LOWER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EHT-2002-A	Self-regulating heat cable	UPPER DECK	1724001647	nVent	nVent	469145-000	3BTV2-CT	Zone 1	SGS20ATEX0048X	1724001647-EL-DD-00004	II 2 GD Ex 60079-30-1 eb IIC T6 Gb	-	N/A	True	N/A	True	
EJB-200F2-01	Top Obstruction Lights Junction Box	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990082	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_8 HAZARDOUS-AREA_3
EJB-200F2-02	Intermediate obstruction lights junction box	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990083	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_4
EJB-200N1-02-L1-01	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990045	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-02	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990044	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-03	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990043	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
EJB-200N1-02-L1-05	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990058	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-06	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990057	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-07	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990059	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-08	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990060	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-09	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990061	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-10	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990047	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-11	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990056	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-12	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990055	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-13	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990054	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-14	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990053	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-15	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990052	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-16	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990051	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-17	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990050	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-18	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990049	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-19	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990048	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-02-L1-20	Normal Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990072	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-01	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990003	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-02	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990004	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-03	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990002	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-04	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990001	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-05	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990012	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-06	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990011	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-07	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990010	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-08	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990009	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-09	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990008	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-10	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990007	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-11	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990006	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-12	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990005	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-13	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990014	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-03-L2-14	Normal Lighting JB	LOWER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990013	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-04-L3-01	Stair Normal Lighting JB	LOWER DECK STAIRS	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990032	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-04-L3-02	Stair Normal Lighting JB	LOWER DECK STAIRS	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990033	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-01	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990064	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-03	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990062	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	HAZARDOUS-AREA_3
EJB-200N1-08-L1-04	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990065	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-05	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990077	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	
EJB-200N1-08-L1-06	Emergency Lighting JB	UPPER DECK	1724001481	Italsmea	TECHNOR ITALSMEA	24P00297990078	AQ-252612P	ZONE1/21	FIDI 21ATEX 0090X IECEx FIDI 21.0015X	1724001481-EL-DA-00003	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db IP66	N/A	N/A	True	N/A	False	

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:	**SGS20ATEX0048X – Issue 3**
4	Product:	**BTV Range of Self-Regulating Trace Heating Systems**
5	Manufacturer:	**nVent Thermal LLC**
6	Address:	**899 Broadway Street, CA, 94063-3104, United States of America**

7 This re-issued certificate extends EU Type Examination Certificate No. **SGS20ATEX0048X** 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.

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 IEC 60079-7:2015+A1:2018 EN 60079-18:2015+A1:2017
EN 60079-30-1:2017 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 60079-30-1 eb IIC T6 Gb or Ex 60079-30-1 eb mb IIC T6 Gb T_{min} -60°C**
Ex 60079-30-1 tb IIIC T80°C Db or Ex 60079-30-1 mb tb IIIC T80°C Db

SGS Fimko Oy Customer Reference No. **865** Project File No. **21/0455**

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SGS Fimko Oy
Takomotie 8
FI-00380 Helsinki, Finland
Telephone +358 (0)9 696 361
e-mail **sgs.fimko@sgs.com**
web site **www.sgs.fi**
Business ID 0978538-5 Member of the SGS Group (SGA SA)

Tuomas Hänninen
SGS Fimko Oy

13 # Schedule

14 ## Certificate Number SGS20ATEX0048X – Issue 3

15 Description of Product

The BTV Range of Self-Regulating Trace Heating Systems is of the parallel circuit self-regulating type, rated at up to 277V, with power output up to 33W/m (10W/ft). The units have a maximum self-limiting temperature of 80°C.

Each trace heating system comprises:
- the active heating cable.
- an end seal for terminating the remote end of the unit.
- a cable gland for connecting the powered end of the unit to a suitable terminal enclosure, or alternative integrated power connection systems.

The active heating cable comprises two stranded copper conductors around which is extruded a semi-conductive core material. This core material increases in resistance with increasing temperature and gives the cable its self-limiting property. This semi conductive core with embedded conductors forms the active part of the heating cable. An extruded layer of fluoropolymer serves to insulate the semi conductive core from the conductive covering, covering the active heater. A protective anti-corrosion fluoropolymer sheath may be extruded over the conductive covering.

The declared maximum withstand temperature for the range is 85°C and the minimum installation temperature is -60°C.

CABLE ACCESSORIES

END SEALS

The end seals for terminating the remote end of the unit may be the following types:

Types E-100-L or E-100, which are mechanical end seals incorporating an end cap which is filled with silicone grease sealant covered by certificates Sira14ATEX3015X and PTB09ATEX1060U.

Types E-100-L-A or E-100-A, which are mechanical end seals incorporating an end cap which is filled with silicone grease sealant.

A Raychem Type E-20 heat shrink end seal kit.

Type E-150 mechanical end seals, covered by certificate DEKRA20ATEX0011U.

SPLICES AND JOINTS

The following splicing and jointing arrangements are provided:

A Raychem Type S-20 heat shrink splice kit for connecting lengths of active heating cable.

A Raychem T-100 tee connection system, certificate PTB20ATEX1008U, for connecting up to three heater cables.

Type S-150 mechanical splice kit, covered by certificate DEKRA20ATEX0011U.

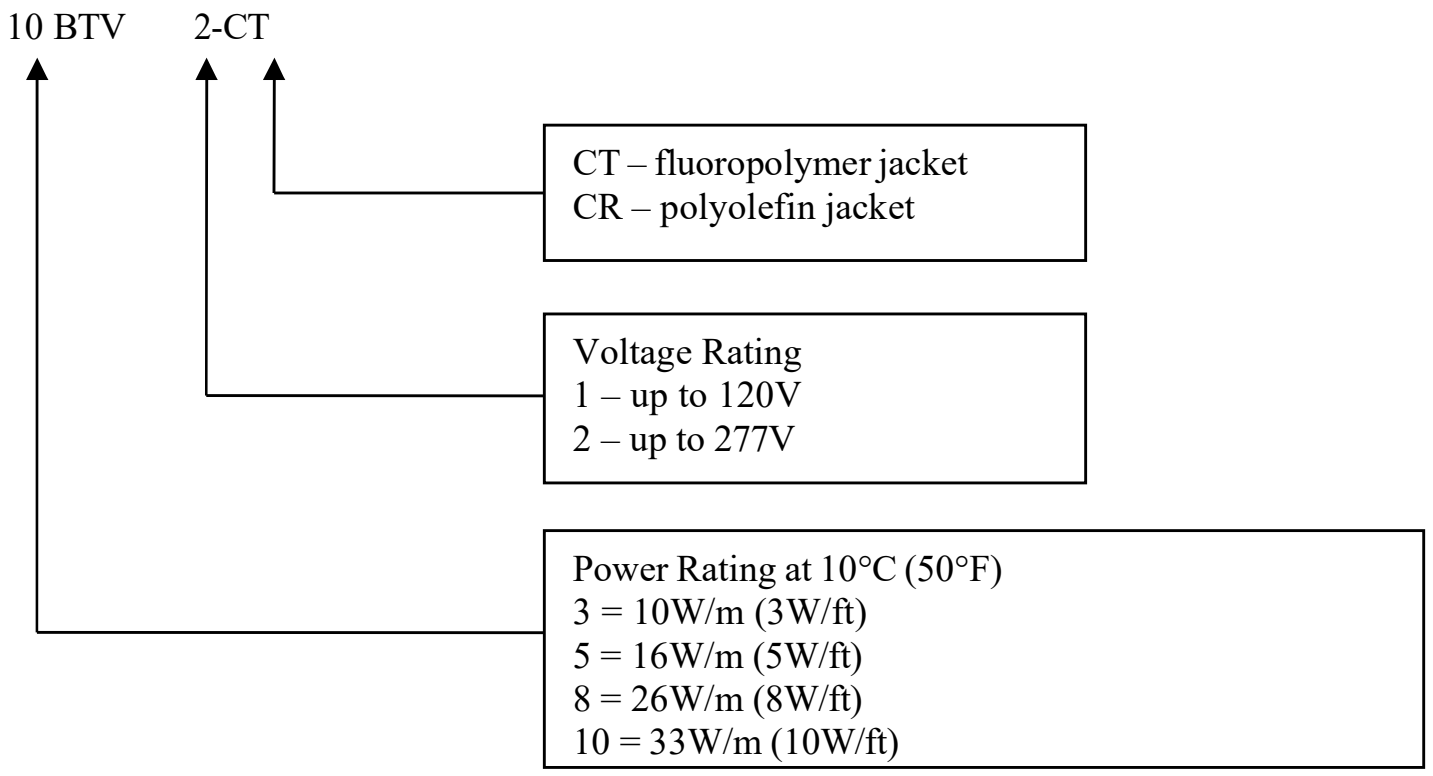
POWER CONNECTIONS

Power connection may be achieved by the following means:

Connection Type	ATEX Certificate
JBM-100	PTB20ATEX1008U
JBS-100	PTB20ATEX1008U
JBU-100	PTB20ATEX1008U
C-150-E	DEKRA20ATEX0011U
C25-21 Connection Kit	Baseefa16ATEX0037U
C25-100 Connection Kit	Baseefa16ATEX0038U
C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS Kits	Baseefa16ATEX0039U

The C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS Kits include M25 or ¾ NPT gland to Sira01ATEX1270X and core sealer to Baseefa15ATEX0194U.

A number of power levels and voltages, up to the maximum specified, are included in the range. They are identified in the following manner:



Any of the products in the range may be considered as part of a stabilised design system. In such a system the design is based upon the use of nVent proprietary software Trace calc Pro. The algorithm defined in this software may be used in additional design software.

The minimum bending radii for BTV trace heating cable at specific temperatures are shown in the table below:

Temperature, T (°C)	**Minimum Bending Radius (mm)**
$-60 \leq T < -20$	35
$-20 \leq T < -10$	30
$-10 \leq T < 0$	25
$0 \leq T < +10$	20
$T \geq +10$	12

16 Report Number

See Certificate History.

17 Specific Conditions of Use

1. The following limiting temperatures for the heat shrink end seals and splices shall not be exceeded:

   +110°C for the S-20 and E-20
   +150°C for the C-150-E, S-150 and E-150

2. The end seals, splices and power connections have the following associated ambient temperatures:

   -60°C to +56°C for the E-20 and S-20
   -55°C to +56°C for the T-100, JBM-100, JBS-100, JBU-100, and E-100
   -40°C to +56°C for the JBS-100-L, JBM-100-L, and JBU-100-L
   -55°C to +55°C for the C-150-E, S-150 and E-150
   -40°C to +40°C for the E-100-L
   -55°C to +110°C for the C25-21 and C25-100
   -60°C to +180°C for the C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS

3. The assembly of glands, splices and end terminations shall be carried out in accordance with the manufacturing instructions

4. The heating element supply circuit must include an electrical protection device in conformity with Clause 4.4 of EN 60079-30-1.

5. The minimum installation temperature is -60°C. The minimum bending radii at specific temperatures for the Type BTV units are shown in the table in the equipment description.

6. The supply to the heating unit must be terminated in a suitably certified terminal enclosure.

7. The minimum installation temperature for E-20 and S-20, end seal and splice is -20°C.

8. The installer is to carry out a dielectric strength test on Ex equipment in which the C25-21, C25-100 and C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS connection kit is fitted. No dielectric breakdown shall occur. (Alternatively, an insulation resistance test may be undertaken in accordance with EN 60079-30-2).

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
205308-A[i]	1 of 1	Q	05/27/2021	BTV-8BTV-CR & BTV-10BTV-CR
205310-A[i]	1 of 1	R	05/27/2021	BTV-8BTV-CT & BTV-10BTV-CT

Current drawings which remain unaffected by this issue:

Number	Sheet	Issue	Date	Description
906567[ii]	1 of 1	P	05/21/21	C25-21, C25-100 and C25-100-METAL-XX, C3/4-100-METAL-XX Connection Kits
906579-A[i]	1 of 1	N	01/15/2021	BTV Heater Units (European System)
205350-A[i]	1 of 1	P	03/31/20	BTV-3BTV-CT & BTV-5BTV-CT
205349-A[i]	1 of 1	J	03/26/20	BTV-3BTV-CR & BTV-5BTV-CR
906794-A[iii]	1 of 1	AA	03/30/20	Generic ATEX and IECEx Print Dwg for BTV-CT, QTVR-CT, XTV-CT, KTV-CT Heating Cables
9242869[iv]	1 & 2	O	12/09/19	LABL JBM-100-L-E
9532687[iv]	1 & 2	Q	12/09/19	LABL JBM-100-L-EP
9621473[iv]	1 & 2	O	12/09/19	LABL JBS-100-L-E
9777523[iv]	1 & 2	P	12/09/19	LABL JBS-100-L-EP
9319676[iv]	1 & 2	O	12/09/19	LABL JBU-100-L-E
9735898[iv]	1 & 2	O	12/09/19	LABL JBU-100-L-EP
908742-A[v]	1 of 1	A	2/19/20	E-20 Heat Shrinkable End Seal Kit Cut Back Dimensions
908743-A[vi]	1 of 1	A	2/19/20	S-20 Heat Shrinkable Splice Joint Kit Cut Back Dimensions

i) These drawings are common to IECEx BAS 20.0011X, SGS20ATEX0048X and are held with IECEx BAS 20.0011X.

ii) This drawing is common to IECEx BAS 16.0040U, IECEx BAS 16.0041U, IECEx 16.0042U, IECEx BAS 20.0008X, IECEx BAS 20.0009X, IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, Baseefa16ATEX0037U, Baseefa16ATEX0038U, Baseefa16ATEX0039U, SGS20ATEX0045X, SGS20ATEX0046X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and is held with IECEx BAS 16.0040U.

iii) These drawings are common to IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and are held with IECEx BAS 20.0011X.

iv) These drawings are common to IECEx BAS 20.0008X, IECEx BAS 20.0011X, IECEx BAS 20.0012X, IECEx BAS 20.0013X, IECEx BAS 20.0014X, SGS20ATEX0045X, SGS20ATEX0048X, SGS20ATEX0049X, SGS20ATEX0050X, SGS20ATEX0051X and are held with IECEx BAS 20.0008X.

v) These drawings are common to IECEx BAS 20.0010X, IECEx BAS 20.0011X, IECEx BAS 20.0013X, SGS20ATEX0047X, SGS20ATEX0048X, SGS20ATEX0050X and are held with IECEx BAS 20.0010X.

vi) These drawings are common to IECEx BAS 20.0011X, IECEx BAS 20.0013X, SGS20ATEX0048X, SGS20ATEX0050X and are held with IECEx BAS 20.0011X.

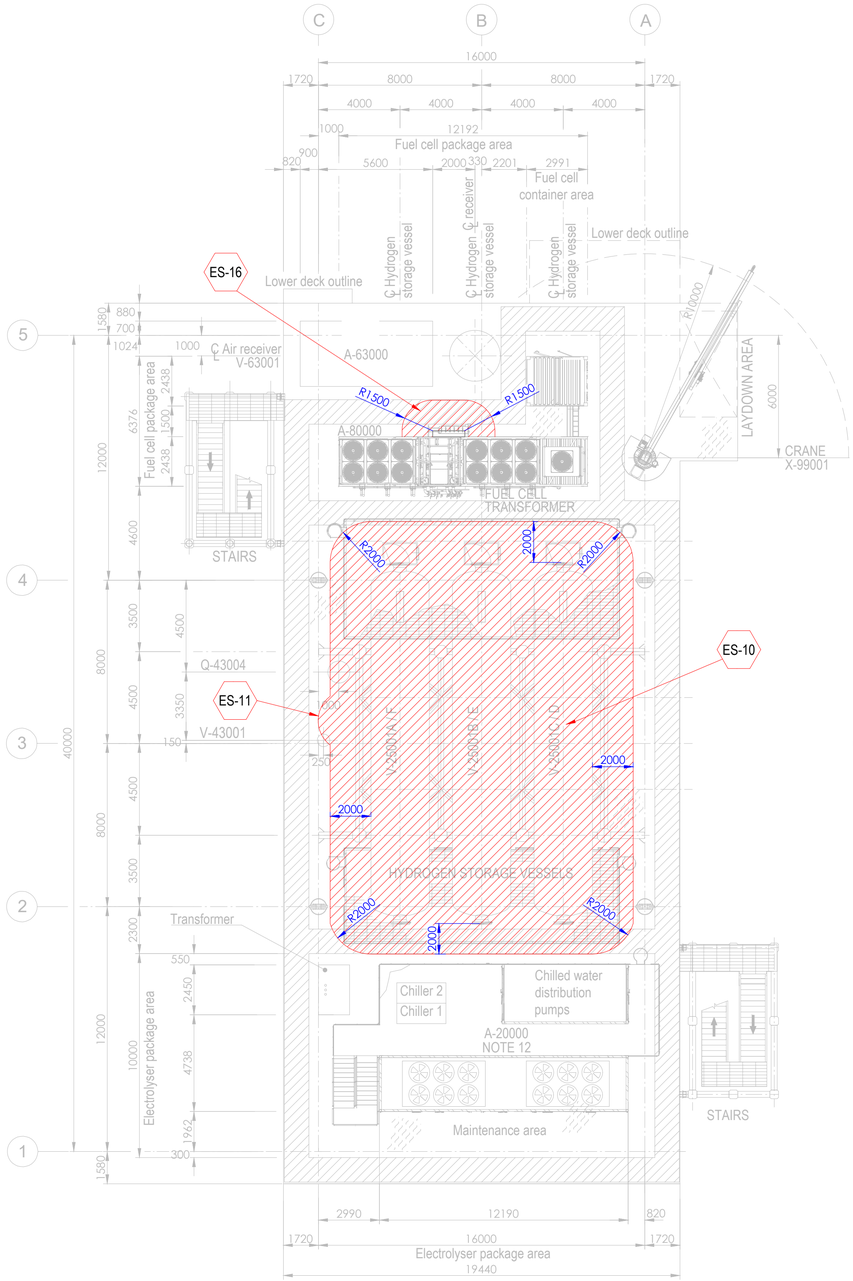
20 Certificate History

Certificate No.	Date	Comments
SGS20ATEX0048X	23 October 2020	The release of the prime certificate. The associated test and assessment against the requirements of EN 60079-0:2012+A11:2013, EN IEC 60079-7:2015+A1:2018, EN 60079-18:2015+A1:2017, EN 60079-30-1:2017 and EN 60079-31:2014 is documented in Test Report No. GB/BAS/ExTR20.0030/00.

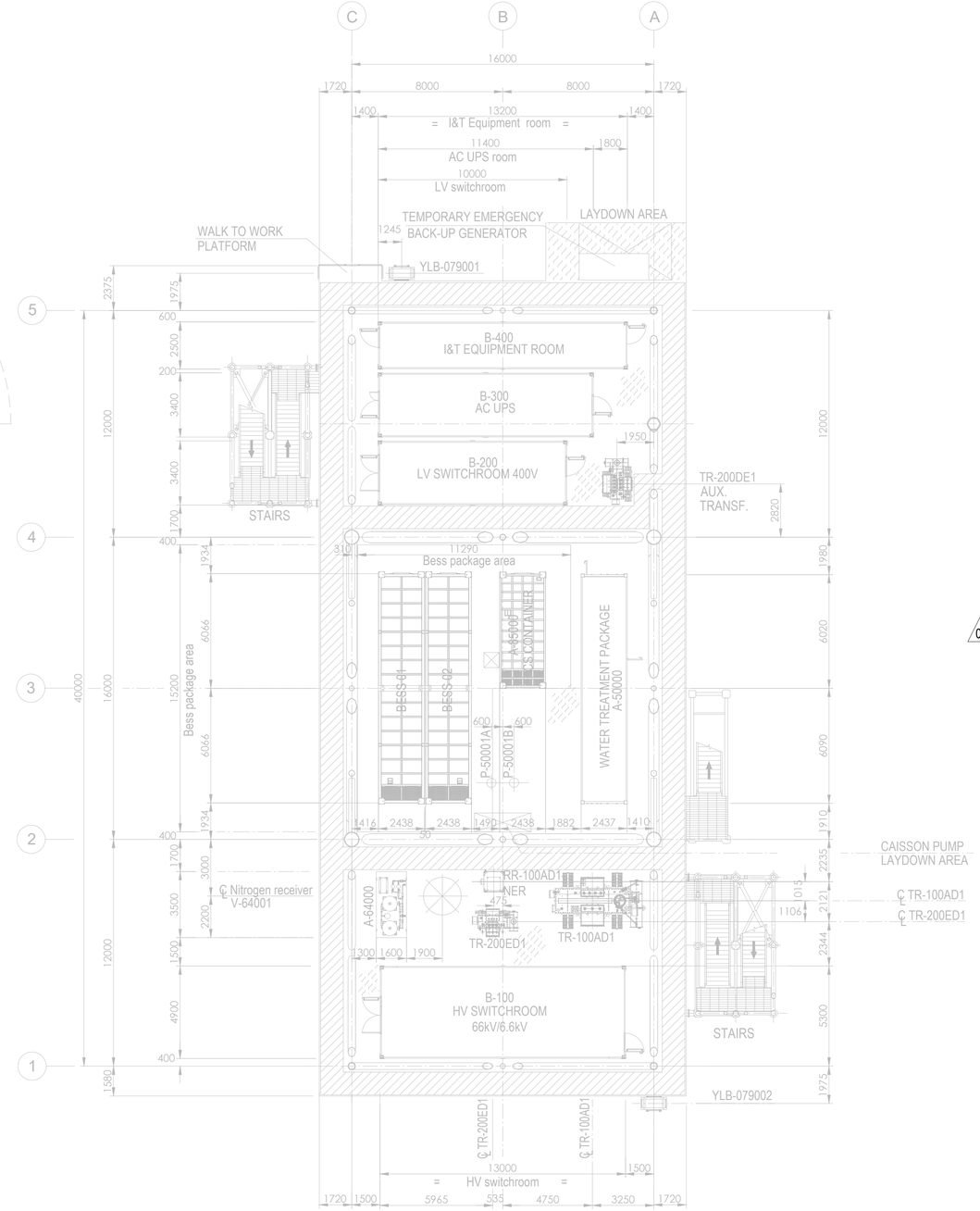
Certificate No.	Date	Comments
SGS20ATEX0048X Issue 1	11 February 2021	To assess the BTV range of self-regulating trace heating systems against EN IEC 60079-0:2018, introduce the low profile power connection, splice and end seal kits, types C-150-E, S-150 and E-150 afforded DEKRA20ATEX0011U, minor amendments to the product description, to change the product name to "BTV Range of Self-Regulating Trace Heating Systems" and to amend the Specific Conditions of Use. The associated test and assessment is documented in Test Report No. GB/BAS/ExTR21.0005/00.
SGS20ATEX0048X Issue 2	7 July 2021	Minor drawing updates not affecting certification. Baseefa Certification Report GB/BAS/ExTR21.0060/00 refers.
SGS20ATEX0048X Issue 3	3 September 2021	Minor change to the BTV-8BTV-CR, BTV-8BTV-CT, BTV-10BTV-CR and BTV-10BTV-CT heating cable dimensions. Baseefa Certification Report GB/BAS/ExTR21.0104/00 refers.
For drawings applicable to each issue, see original of that issue.		

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

REV. 02



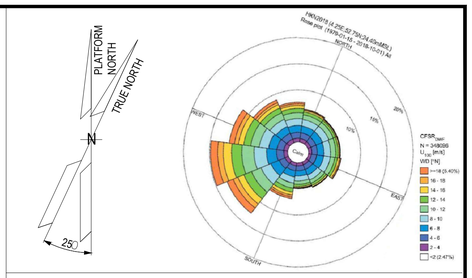
PLAN ON UPPER DECK
EL+30.310 T.O.S.



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

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

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



NOTES

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

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

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

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

CROSSWIND

ROSETTI MARINO

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

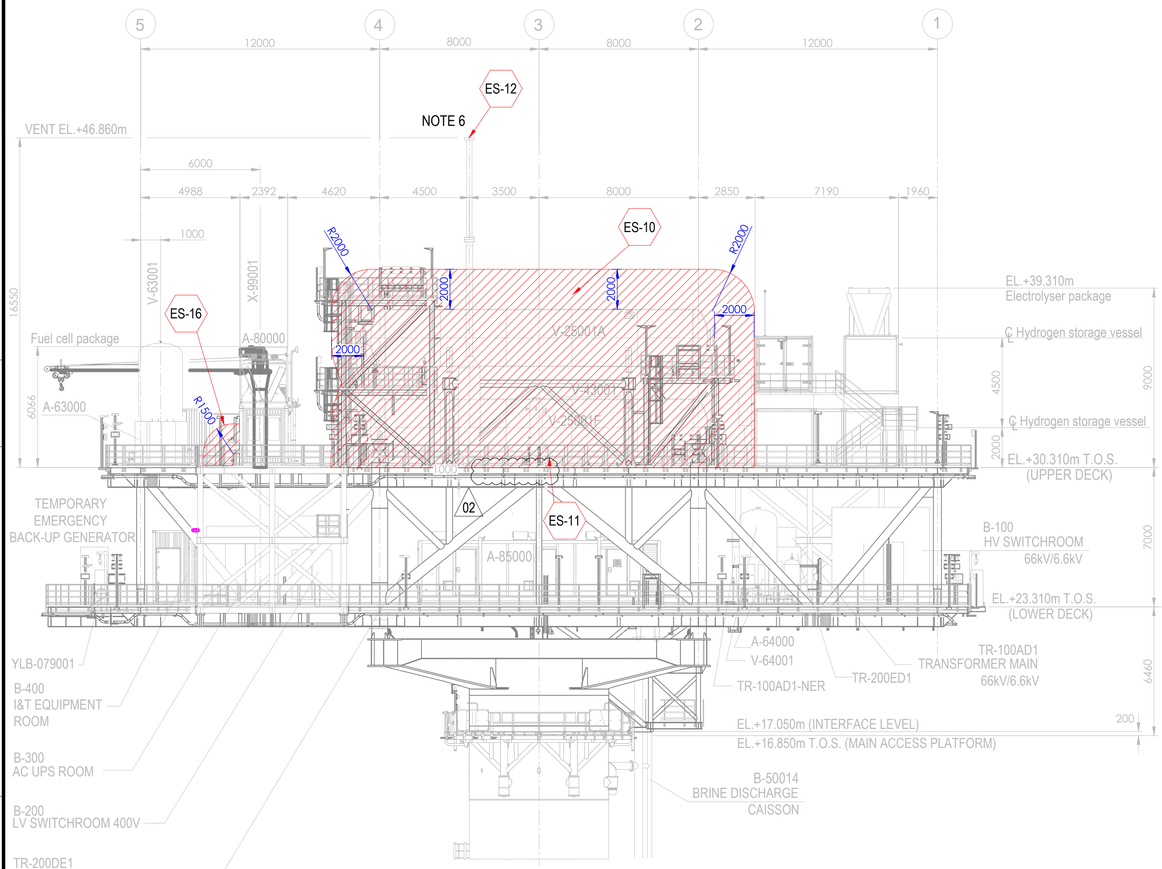
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN M. MAGNI	CHECKED C. CARACCIOLO	APPROVED D. LO STERZO	DATE 03/07/24

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

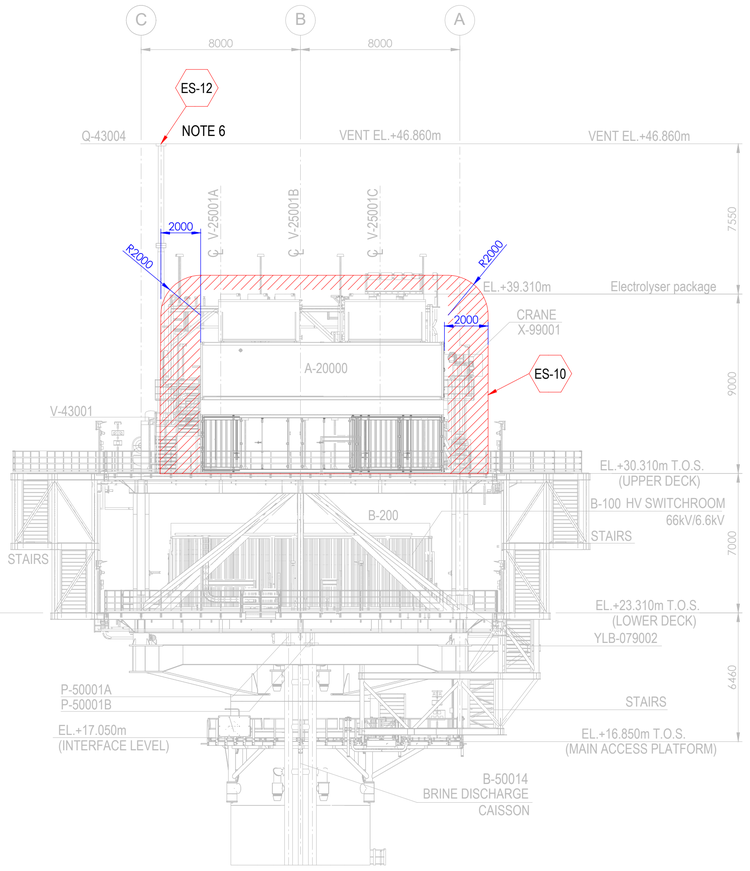
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DRAWING NO. 123A90-DDL-SAF-DL-30024

REV. 02

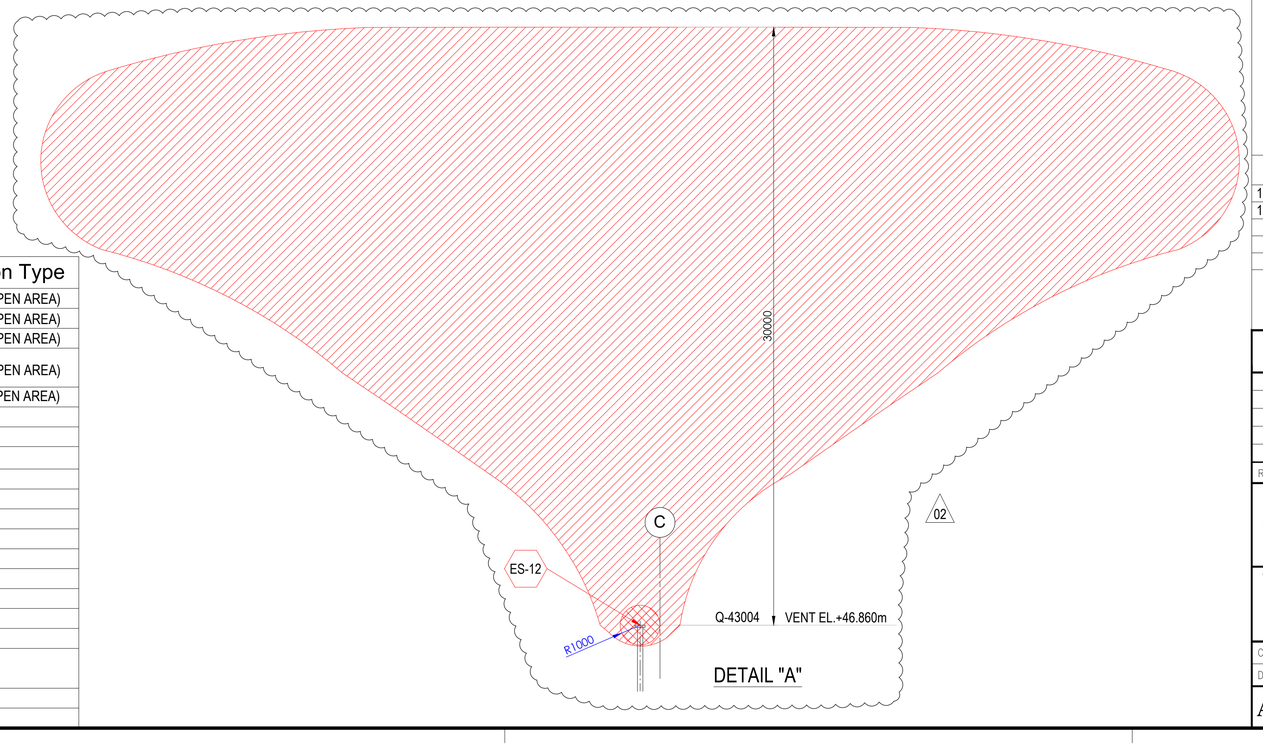


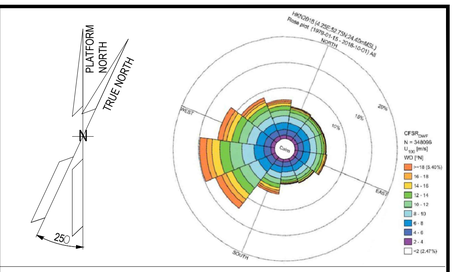
ELEVATION LOOKING EAST



ELEVATION LOOKING NORTH

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





NOTES

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

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

LEGEND

ZONE 0 — ZONE 1

ZONE 2 — ES EMISSION SOURCES

REFERENCE DOCUMENTS

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

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

CROSSWIND

ROSETTI MARINO

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

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

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

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

Section 6 MECHANICAL COMPLETION STATUS INDEX - INSTRUMENTAL DISCIPLINE

NOT APPLICABLE

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