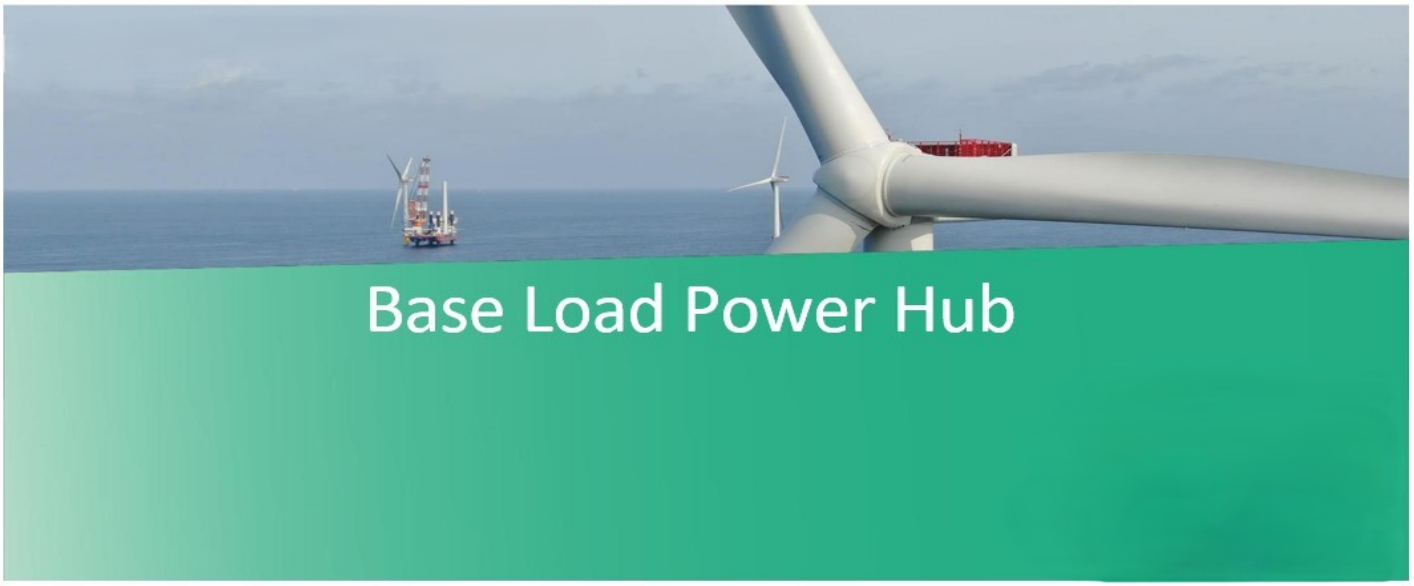
CROSSWIND

ROSETTI MARINO

PROVERLIS

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



COMMISSIONING DOSSIER (ONSHORE)

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

CROSSWIND

123A90 - HOLLANDSE KUST NOORD WIND PARK
BLPH Project

COMMISSIONING DOSSIER INDEX

ROSETTI MARINO

Sub System N°:	70-12	**Tick as appropriate**	ONSHORE	OK
Description:	F&G Devices FZ-03 (Electrolyser Area)		OFFSHORE	

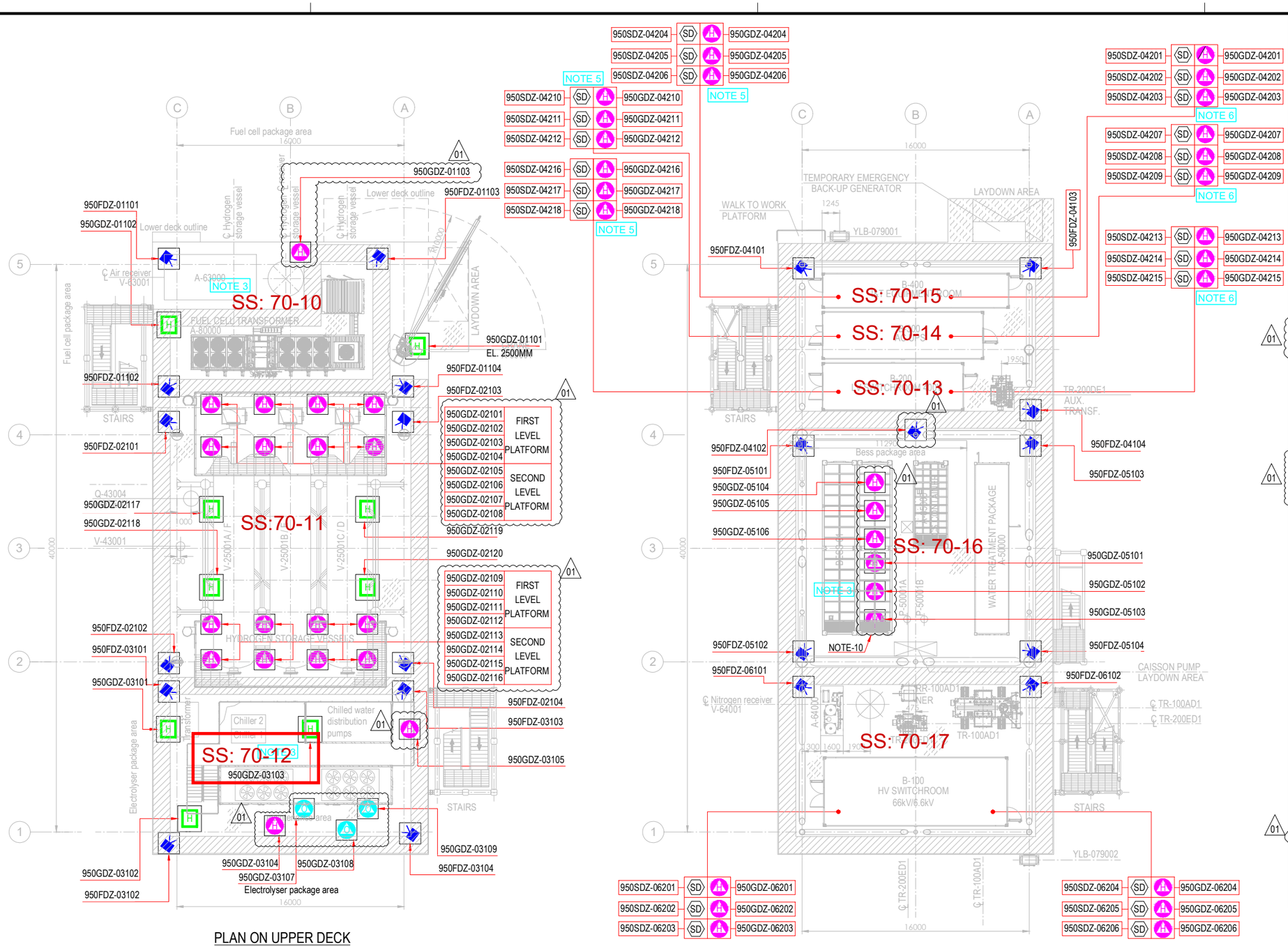
1. *SUB-SYSTEM DEFINITION*	OK
1.1 Sub-System Description / Boundary Limit Drawings	
2. *READY FOR OPERATION CERTIFICATE*	OK
2.1 Achievement Of Ready for Operation Certificate (RFO)	
2.2 Exception Punch Lists (per discipline)	
2.3 “As-Commissioned” P&ID’s / SLD’s / D&ID’s / C&E’s	
3. *CONSOLIDATED PUNCH LISTS*	OK
3.1 Cleared and Residual Items (sorted by discipline)	
4. *FUNCTIONAL TESTS SHEETS*	OK
4.1 Electrical functional test sheets index	
4.2 Electrical “As-Commissioned” interconnection diagrams	
4.3 Instrumentation Functional Test Sheets Index	
4.4 Instrumentation “As-Commissioned” interconnection diagrams	
4.5 Telecommunication Functional Test Sheets Index	
4.6 Telecommunication “As-Commissioned” I.C.D. / TSLD’s	
5. *SITE / OPERATIONAL:*	OK
5.1 Operational Test Procedure	
5.2 Operational Test Certificates	
6. *PIPING AND VESSEL PREPARATION*	NA
6.1 Final Mechanical / Vessel Inspection Checks Index	
6.2 Leak Test / Drying / Inerting Test Sheets Index	
6.3 Chemical Loading & First Fill records Index	
6.4 Chemical Cleaning Reports and Records Index	
6.5 Lubrication Schedule	
7. *VENDORS*	OK
7.1 Vendor Package Summary Index	
7.2 SAT Procedure with associated punch list and reference (Front Page)	
7.3 Vendor Spares & Special Tools lists references	
7.4 Vendor Data / Operations / Maintenance Manuals References	
8. *LIST OF MODIFICATIONS*	NA
8.1 List of changes initiated during the WORKSITE Commissioning phase pertaining to the relevant Sub-System will be incorporated in this section with relevant references (with location and position of blinds/spades, isolation LO & LC valves, list of electrical isolation status, and remaining inhibits and overrides)	
9. *SUPPORTING DOCUMENTS*	NA
9.1 Other supporting documents (as applicable)	

	Contractor Commissioning Site Leader	Company Commissioning Site Leader
Name	Anthony Iveson	Martin Taylor
Date	2025-04-25	2025-04-25
Signature	PROVERLIS Digitaly signed by Anthony Iveson 2025-04-25T10:45:45.297Z	PROVERLIS Digitaly signed by Martin Taylor 2025-04-25T11:01:51.528Z

Section 1 SUB-SYSTEM DEFINITION

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

REV. 00



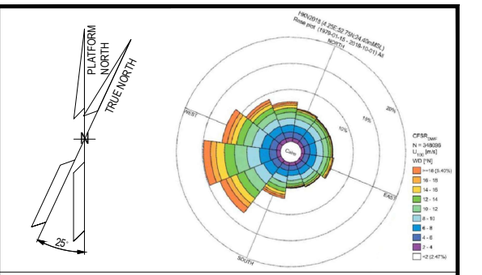
PLAN ON UPPER DECK
EL+30.310 T.O.S.

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

EQUIPMENT LIST

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

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



NOTES

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

ELEVATION

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

HOLDS

REFERENCE DOCUMENTS

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

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

CROSSWIND

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TITLE :

F & G DETECTORS LAYOUT - LOWER & UPPER DECK

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

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

Section 2 READY FOR OPERATION

Section 2.1 Achievement Of Ready for Operation Certificate (RFO)

ROSETTI MARINO

123A90 - HOLLANDSE KUST NOORD WIND PARK
BLPH Project

CROSSWIND

Ready For Operation (RFO) Certificate

COMPLETE	●	PARTIAL	

Revision:	1		Issued on:	2025-04-09	

System:	70	/	Safety and Facility Systems
SubSystem:	70-12	/	F&G Devices FZ-03 (Electrolyser Area)

We hereby confirm that all Mechanical Completion (MC) and Pre-Commissioning/Commissioning (Pre-Comm./Comm.) activities for the above-mentioned System/Sub-System have been successfully completed in accordance with project specifications, relevant standards and contractual requirements. The System/Sub-System has been tested and verified to ensure readiness for operation. Issuance of this Certificate shall not release CONTRACTOR from any of his obligations, responsibilities or liabilities under the CONTRACT.

	Mechanical Completion: All required MC activities have been completed and approved
	Pre-Commissioning & Commissioning: All required Pre-Comm. and Comm. activities and OTPs have been completed and approved (Status Index attached)
	Punch List: All Punch items categorized as A and B have been cleared (PL report attached)
	Documentation: As-built documentation and Commissioning dossier has been completed, reviewed and approved

PUNCH LIST	PENDING POINTS
Note: All Category "A" and "B" Items must be cleared prior to issuance of the Ready For Operation (RFO) Certificate	B: 3

REMARKS:

	CONTRACTOR Commissioning Manager	**COMPANY** Commissioning Lead
Name	Anthony Iveson	Martin Taylor
Date	2025-04-12	2025-04-24
Signature	PROVERLIS Digitaly signed by Anthony Iveson 2025-04-12T12:33:45.917Z	PROVERLIS Digitaly signed by Martin Taylor 2025-04-24T11:39:29.766Z

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 70-12 & process: COMM

Instrumental	70-12 F&G Devices FZ-03 (Electrolyser Area)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
950-FDZ-03101	Flame Detector - FZ-03 Electrolyzer PK Area	ONSHORE	C10003146	FJ04F	100	2025-01-30	RFO 1
950-FDZ-03102	Flame Detector - FZ-03 Electrolyzer PK Area	ONSHORE	C10003145	FJ04F	100	2025-01-30	RFO 1
950-FDZ-03103	Flame Detector - FZ-03 Electrolyzer PK Area	ONSHORE	C10003144	FJ04F	100	2025-01-30	RFO 1
950-FDZ-03104	Flame Detector - FZ-03 Electrolyzer PK Area	ONSHORE	C10003143	FJ04F	100	2025-03-11	RFO 1
950-GDZ-03101	H2 GD FZ-03 Electrolyzer PK Area	ONSHORE	C10003110	FJ04L	100	2025-02-11	RFO 1
950-GDZ-03102	H2 GD FZ-03 Electrolyzer PK Area	ONSHORE	C10003109	FJ04L	100	2025-02-11	RFO 1
950-GDZ-03103	H2 GD FZ-03 Electrolyzer PK Area	ONSHORE	C10003108	FJ04L	100	2025-02-11	RFO 1
950-GDZ-03104	H2 GD FZ-03 Electrolyzer PK Area	ONSHORE	C10003107	FJ04G	100	2025-02-11	RFO 1
950-GDZ-03105	H2 GD FZ-03 Electrolyzer PK Area	ONSHORE	C10003106	FJ04G	100	2025-02-11	RFO 1
950-GDZ-03107	O2 DET. FZ-03 Electrolyzer PK Area	ONSHORE	C10003105	FJ04G	100	2025-04-03	RFO 1
950-GDZ-03108	O2 DET. FZ-03 Electrolyzer PK Area	ONSHORE	C10003104	FJ04G	100	2025-04-03	RFO 1
950-GDZ-03109	O2 DET. FZ-03 Electrolyzer PK Area	ONSHORE	C10003103	FJ04G	100	2025-03-26	RFO 1
950-MFA-03101	FZ-03 MFA Activation	ONSHORE	C10004415	FJ04PB_FGS	100	2025-02-11	RFO 1
950-MFA-03102	FZ-03 MFA Activation	ONSHORE	C10004416	FJ04PB_FGS	100	2025-02-11	RFO 1
950-MFA-03103	FZ-03 MFA Activation	ONSHORE	C10004417	FJ04PB_FGS	100	2025-02-11	RFO 1
950-MFA-03104	FZ-03 MFA Activation	ONSHORE	C10004418	FJ04PB_FGS	100	2025-02-11	RFO 1
950-XL-03101	FZ-03 Gas Beacon Activation	ONSHORE	C10004440	FJ04FB	100	2025-01-30	RFO 1
950-XL-03102	FZ-03 Fire Beacon Activation	ONSHORE	C10004441	FJ04FB	100	2025-01-30	RFO 1
950-XL-03103	FZ-03 Gas Beacon Activation	ONSHORE	C10004442	FJ04FB	100	2025-01-30	RFO 1
950-XL-03104	FZ-03 Fire Beacon Activation	ONSHORE	C10004443	FJ04FB	100	2025-01-30	RFO 1
950-XZ-03101	FZ-03 Sounder Activation	ONSHORE	C10004463	FJ04MS	100	2025-02-11	RFO 1
950-XZ-03102	FZ-03 Sounder Activation	ONSHORE	C10004464	FJ04MS	100	2025-02-11	RFO 1

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

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

Instrumental

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

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 70 Safety and Facility Systems

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

Instrumental

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

Project CROSSWIND

PUNCH LIST REPORT

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

Instrumental

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

Project CROSSWIND

PUNCH LIST REPORT

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

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001656	B	C-950-MFA-031 04/950-JE-0310 3	Cable needs to be fixed in the secondary cable tray near instrument rack	.		Pschintu 2024-12-11	2025-01-02	Ecarotenuto 2025-01-02	2025-01-02
C30001659	B	C-950-MFA-031 02/950-JE-0310 3	Cable needs to be fixed in the secondary cable tray near and under instrument rack	.		Pschintu 2024-12-11	2025-01-02	Ecarotenuto 2025-01-02	2025-01-02
C30001677	B	C-950-FDZ-031 03/950-JE-0310 2	Core tag is missing for cable on instrument side and are wrong on JB side	.		AAndreani 2024-12-11	2025-04-08	Gtangianu 2025-04-08	2025-04-08
C30001678	B	C-950-FDZ-031 03/950-JE-0310 2	missing cable labelling on both JB and instrument side	.		AAndreani 2024-12-11	2025-02-26	AAndreani 2025-02-26	2025-02-26
C30001679	B	950-FDZ-03103 C10001510	missing tag	.		AAndreani 2024-12-11	2024-12-27	Ecarotenuto 2024-12-27	2024-12-27
C30001812	B	950-XL-03101 C10001552	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-13	2025-03-07	Gtangianu 2025-03-07	2025-03-07
C30001813	B	950-XL-03101 C10001552	Missing the separation system between different materials. (between steel "support" and carbon steel "structure).	.		APolo 2024-12-13	2025-01-21	AAndreani 2025-01-21	2025-01-21
C30001814	B	950-XL-03101 C10001552	Missing traffolyte tag side instrument	.		APolo 2024-12-13	2025-01-29	AAndreani 2025-01-29	2025-01-29
C30001815	B	950-XL-03102 C10001553	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-13	2025-03-07	Gtangianu 2025-03-07	2025-03-07

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 70 Safety and Facility Systems

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

Instrumental

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

Project CROSSWIND

PUNCH LIST REPORT

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

Instrumental

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

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 70 Safety and Facility Systems

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

Instrumental

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

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 70 Safety and Facility Systems

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

Instrumental

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

Project CROSSWIND

PUNCH LIST REPORT

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

Instrumental

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

Project CROSSWIND

PUNCH LIST REPORT

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

ATEX

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

Project CROSSWIND

PUNCH LIST REPORT

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

ATEX

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

Project CROSSWIND

PUNCH LIST REPORT

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

ATEX

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001797	B	950-XL-03103 C10001554	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-13	2025-03-07	Gtangianu 2025-03-07	2025-03-07
C30001927	B	950-XL-03104 C10001555	Missing traffolyte tag side instrument	.		APolo 2024-12-16	2025-01-29	AAndreani 2025-01-29	2025-01-29
C30001929	B	950-XL-03104 C10001555	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-16	2025-03-07	Gtangianu 2025-03-07	2025-03-07
C30002391	B	950-GDZ-03107 C10001540	Plug is not ATEX-certified	.		Lmussi 2025-01-07	2025-01-31	AAndreani 2025-01-31	2025-01-31
C30002393	B	950-GDZ-03107 C10001540	Hanging tag has not been installed	.		Lmussi 2025-01-07	2025-01-29	AAndreani 2025-01-29	2025-01-29
C30002411	B	950-GDZ-03108 C10001541	Hanging tag of the instrument has not been installed.	.		Lmussi 2025-01-07	2025-01-29	AAndreani 2025-01-29	2025-01-29
C30002412	B	950-GDZ-03108 C10001541	Instrument has not been installed at 2250 mm as per 123A90-DDL-IN-DD-40017 rev. 01 sheet 33.	.		Lmussi 2025-01-07	2025-04-07	Gtangianu 2025-04-07	2025-04-07
C30002553	B	950-GDZ-03109 C10001542	The plug is not installed according to the specifications. To be replaced with plug Ex-d/e IIC , (see 123A90-DDL-IN-HD-40079_Rev.02 sh.	.		APolo 2025-01-09	2025-01-29	AAndreani 2025-01-29	2025-01-29
C30002554	B	950-GDZ-03109 C10001542	The support is not well secured against vibration. another bracket needs to be added.	.		APolo 2025-01-09	2025-03-07	Gtangianu 2025-03-07	2025-03-07

Project CROSSWIND

PUNCH LIST REPORT

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

ATEX

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

Section 2.2 Exception Punch Lists (per discipline)

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 70 Safety and Facility Systems

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

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30002326	B	C-950-GDZ-03108/950-JE-03101	On both instrument and JB sides, core tags are missing for all wires	.		Lmussi 2025-01-03			
C30002329	B	C-950-GDZ-03107/950-JE-03101	On both JB and instrument side, core identification tags are missing for all wires.	.		Lmussi 2025-01-03			
C30004249	B	950-GDZ-03103 C10003108	CALIBRATION AND TEST CRITERIA TO BE DEFINED, THIS PUNCH ITEM WILL BE VALID FOR ALL H2 GAS LEAK DETECTORS.	BACKGROUND NOISE SOUND MEASUREMENT CAMPAIGN TO BE PERFORMED IN ALL INSTRUMENT		Alveson 2025-03-19			

Section 2.3 “As-Commissioned” P&ID's / SLD's / D&ID's / C&E's

Section 3 CONSOLIDATED PUNCH LISTS

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 70 Safety and Facility Systems

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

Instrumental

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

Project CROSSWIND

PUNCH LIST REPORT

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

Instrumental

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

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 70 Safety and Facility Systems

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

Instrumental

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

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C30001656	B	C-950-MFA-031 04/950-JE-0310 3	Cable needs to be fixed in the secondary cable tray near instrument rack	.		Pschintu 2024-12-11	2025-01-02	Ecarotenuto 2025-01-02	2025-01-02
C30001659	B	C-950-MFA-031 02/950-JE-0310 3	Cable needs to be fixed in the secondary cable tray near and under instrument rack	.		Pschintu 2024-12-11	2025-01-02	Ecarotenuto 2025-01-02	2025-01-02
C30001677	B	C-950-FDZ-031 03/950-JE-0310 2	Core tag is missing for cable on instrument side and are wrong on JB side	.		AAndreani 2024-12-11	2025-04-08	Gtangianu 2025-04-08	2025-04-08
C30001678	B	C-950-FDZ-031 03/950-JE-0310 2	missing cable labelling on both JB and instrument side	.		AAndreani 2024-12-11	2025-02-26	AAndreani 2025-02-26	2025-02-26
C30001679	B	950-FDZ-03103 C10001510	missing tag	.		AAndreani 2024-12-11	2024-12-27	Ecarotenuto 2024-12-27	2024-12-27
C30001812	B	950-XL-03101 C10001552	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-13	2025-03-07	Gtangianu 2025-03-07	2025-03-07
C30001813	B	950-XL-03101 C10001552	Missing the separation system between different materials. (between steel "support" and carbon steel "structure).	.		APolo 2024-12-13	2025-01-21	AAndreani 2025-01-21	2025-01-21
C30001814	B	950-XL-03101 C10001552	Missing traffolyte tag side instrument	.		APolo 2024-12-13	2025-01-29	AAndreani 2025-01-29	2025-01-29
C30001815	B	950-XL-03102 C10001553	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-13	2025-03-07	Gtangianu 2025-03-07	2025-03-07

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

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

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

Instrumental

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

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Instrumental

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

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

Instrumental

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

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ATEX

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

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

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C30001797	B	950-XL-03103 C10001554	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-13	2025-03-07	Gtangianu 2025-03-07	2025-03-07
C30001927	B	950-XL-03104 C10001555	Missing traffolyte tag side instrument	.		APolo 2024-12-16	2025-01-29	AAndreani 2025-01-29	2025-01-29
C30001929	B	950-XL-03104 C10001555	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-16	2025-03-07	Gtangianu 2025-03-07	2025-03-07
C30002391	B	950-GDZ-03107 C10001540	Plug is not ATEX-certified	.		Lmussi 2025-01-07	2025-01-31	AAndreani 2025-01-31	2025-01-31
C30002393	B	950-GDZ-03107 C10001540	Hanging tag has not been installed	.		Lmussi 2025-01-07	2025-01-29	AAndreani 2025-01-29	2025-01-29
C30002411	B	950-GDZ-03108 C10001541	Hanging tag of the instrument has not been installed.	.		Lmussi 2025-01-07	2025-01-29	AAndreani 2025-01-29	2025-01-29
C30002412	B	950-GDZ-03108 C10001541	Instrument has not been installed at 2250 mm as per 123A90-DDL-IN-DD-40017 rev. 01 sheet 33.	.		Lmussi 2025-01-07	2025-04-07	Gtangianu 2025-04-07	2025-04-07
C30002553	B	950-GDZ-03109 C10001542	The plug is not installed according to the specifications. To be replaced with plug Ex-d/e IIC , (see 123A90-DDL-IN-HD-40079_Rev.02 sh.	.		APolo 2025-01-09	2025-01-29	AAndreani 2025-01-29	2025-01-29
C30002554	B	950-GDZ-03109 C10001542	The support is not well secured against vibration. another bracket needs to be added.	.		APolo 2025-01-09	2025-03-07	Gtangianu 2025-03-07	2025-03-07

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

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002818

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Not installed trafolite tag below the instrument.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

INSTALLED

Name: Eleonora Carotenuto

Date: 2025-02-24

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002819

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Not installed steel plate . See attached photo.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli

Date: 2025-01-29

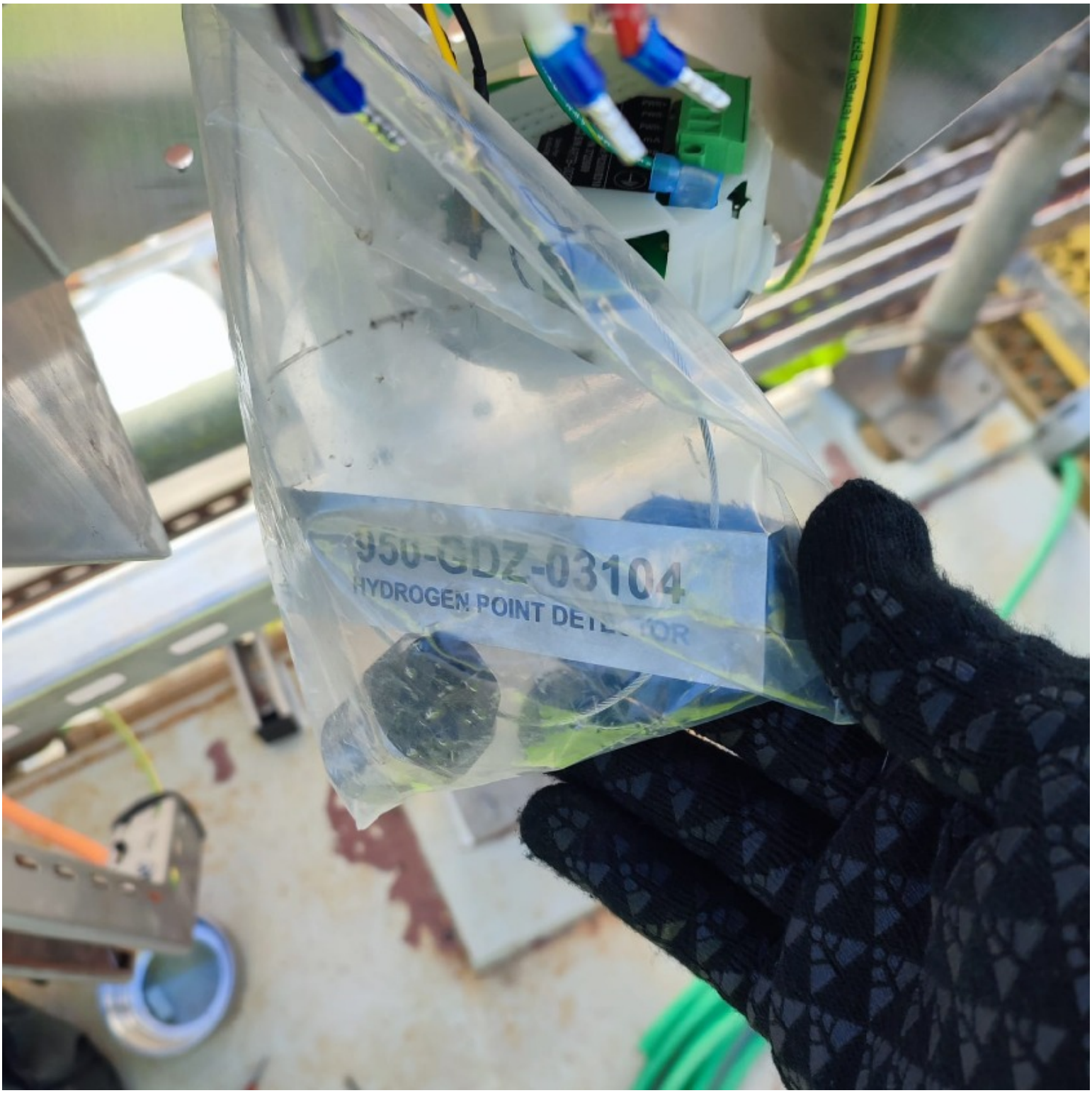
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


950-GDZ-03104
HYDROGEN POINT DETE

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002821

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Not installed steel plate . See attached photo.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli

Date: 2025-01-29

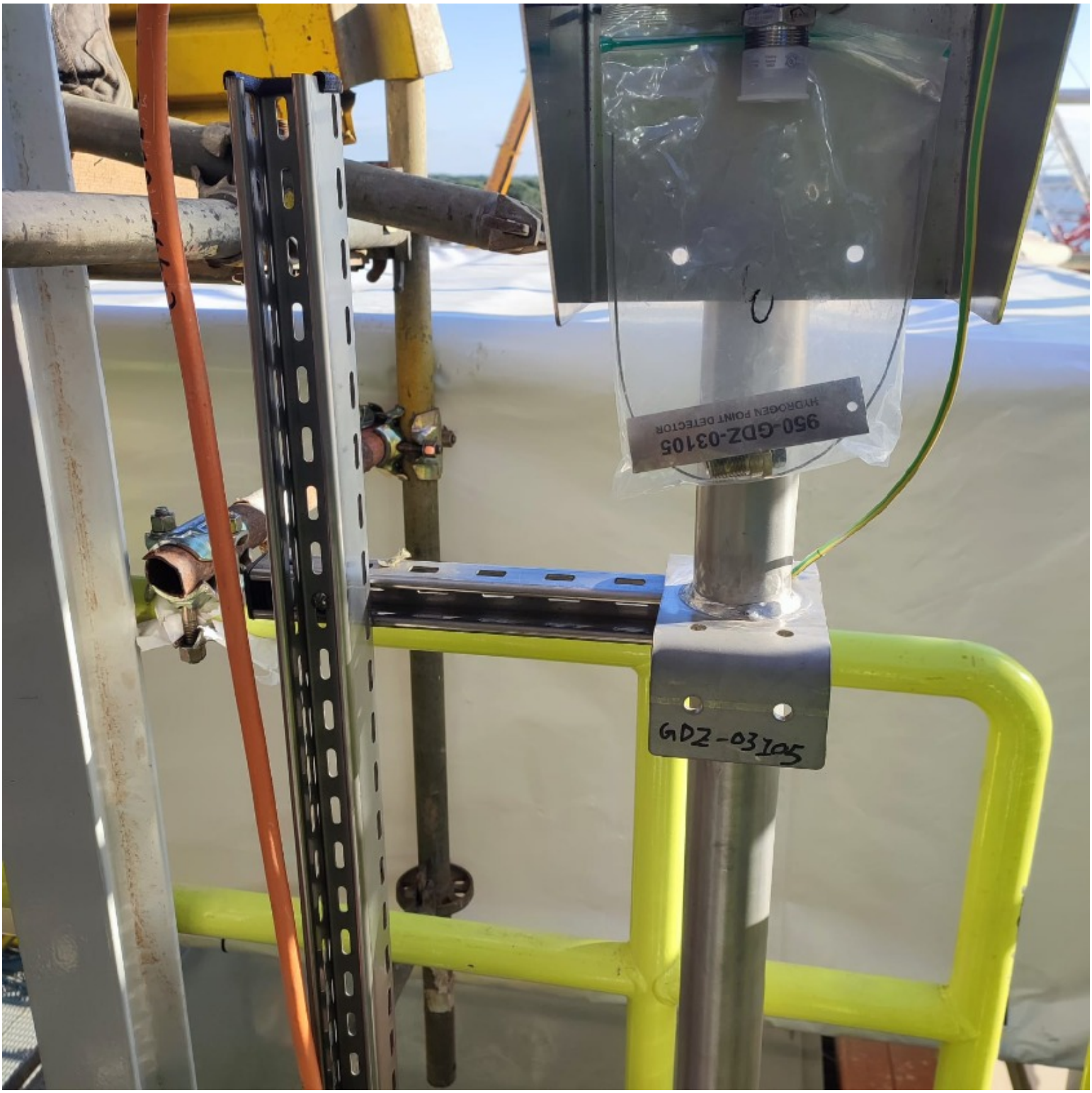
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


HYDROGEN POINT DETECTOR
950-GDZ-03105
GDZ-03105

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002822

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

ATEX certified plug is missing - See attached photo.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli

Date: 2025-01-29

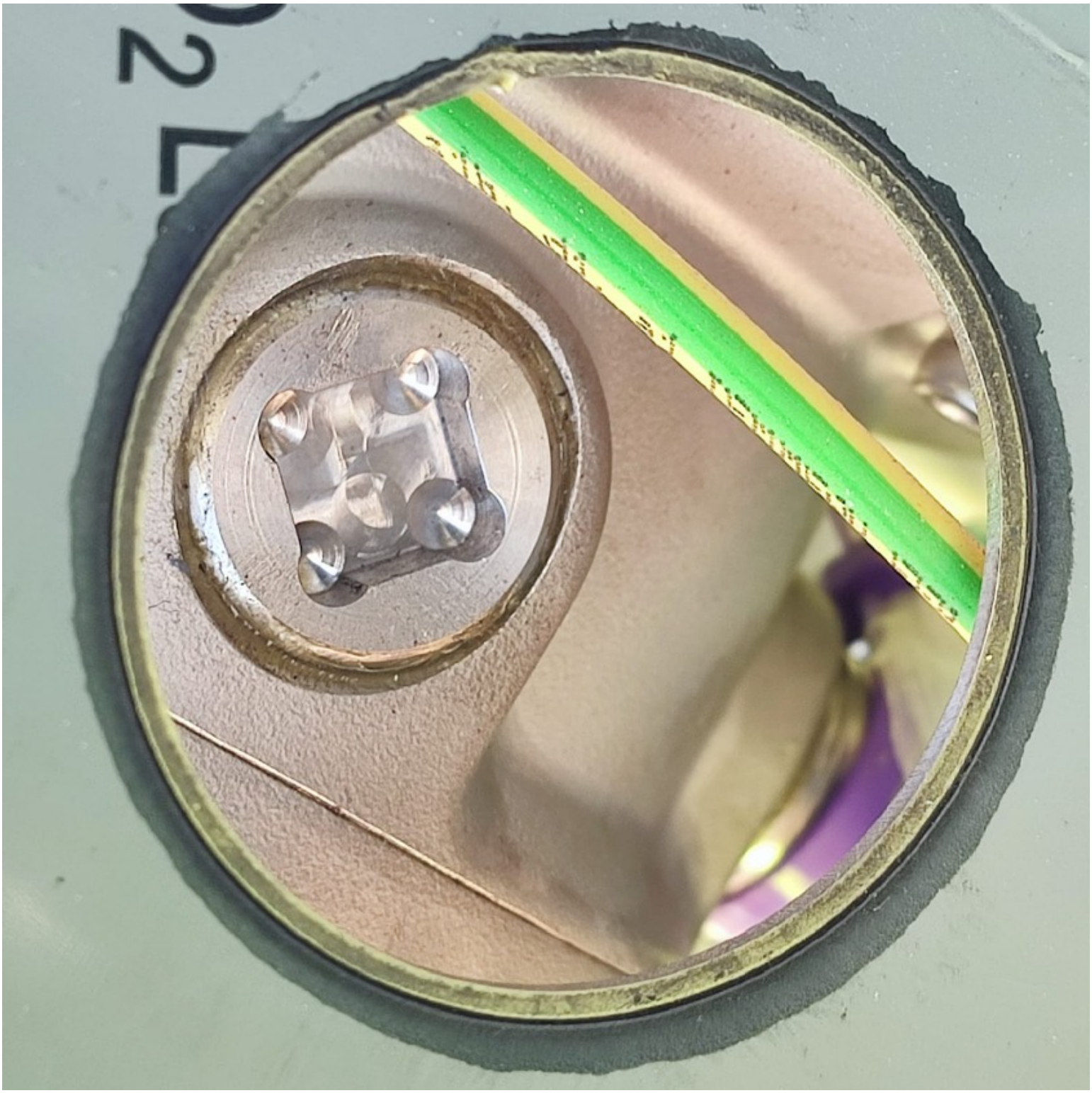
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002824

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

,

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-04-08

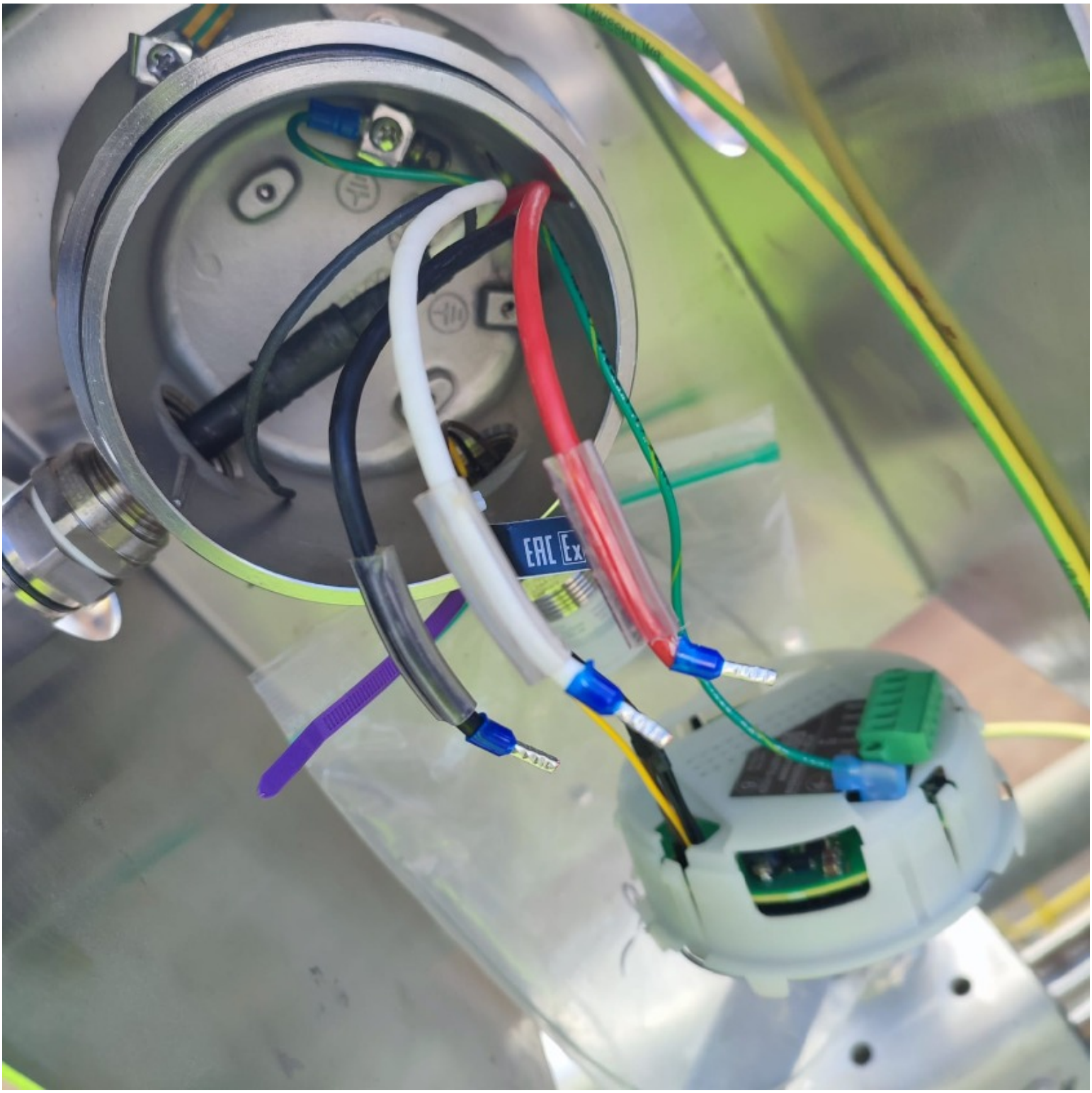
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


EAC Ex

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002825

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic

Date: 2025-02-20

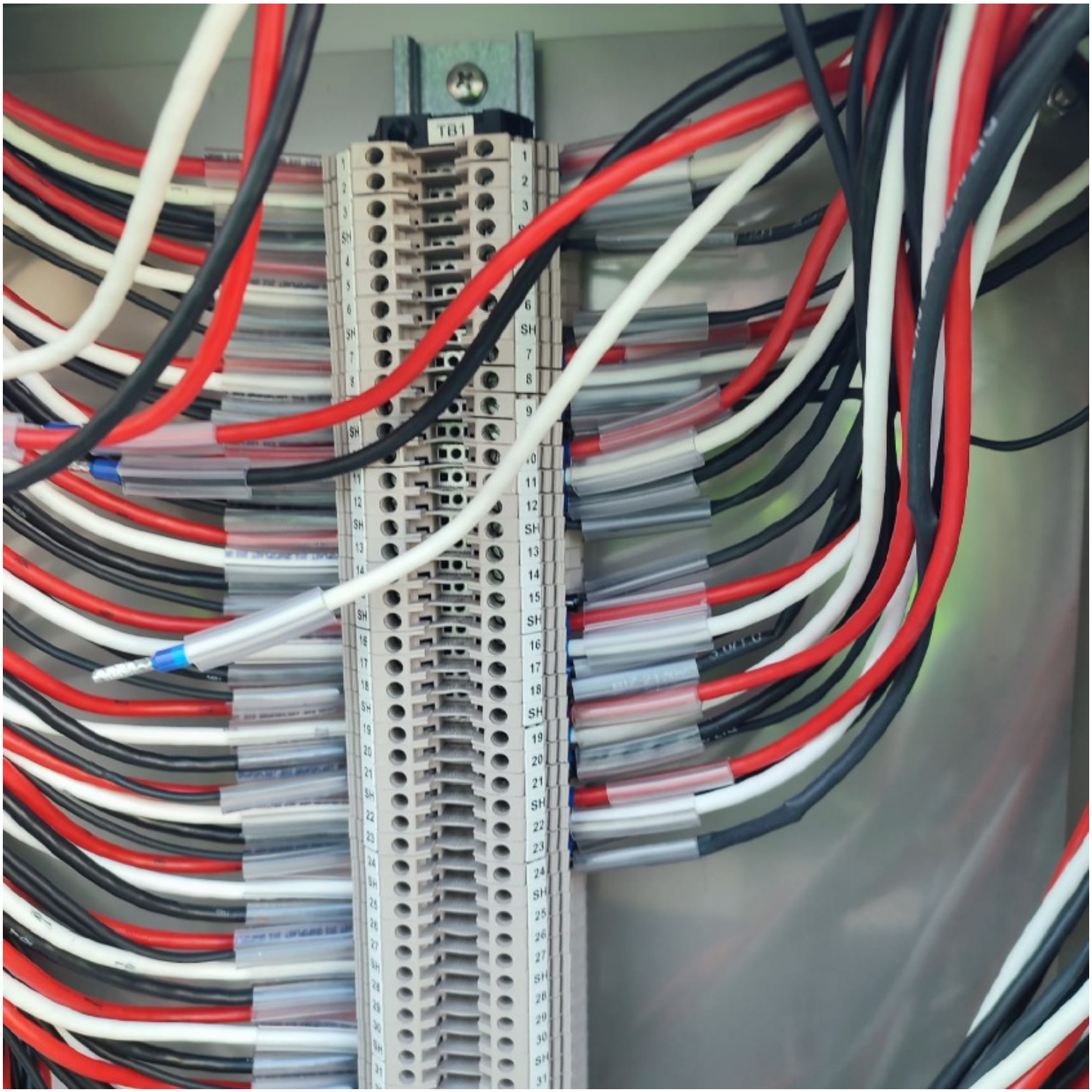
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


TB1

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002826

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli

Date: 2025-02-03

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002827

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-02-04

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002828

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-04-08

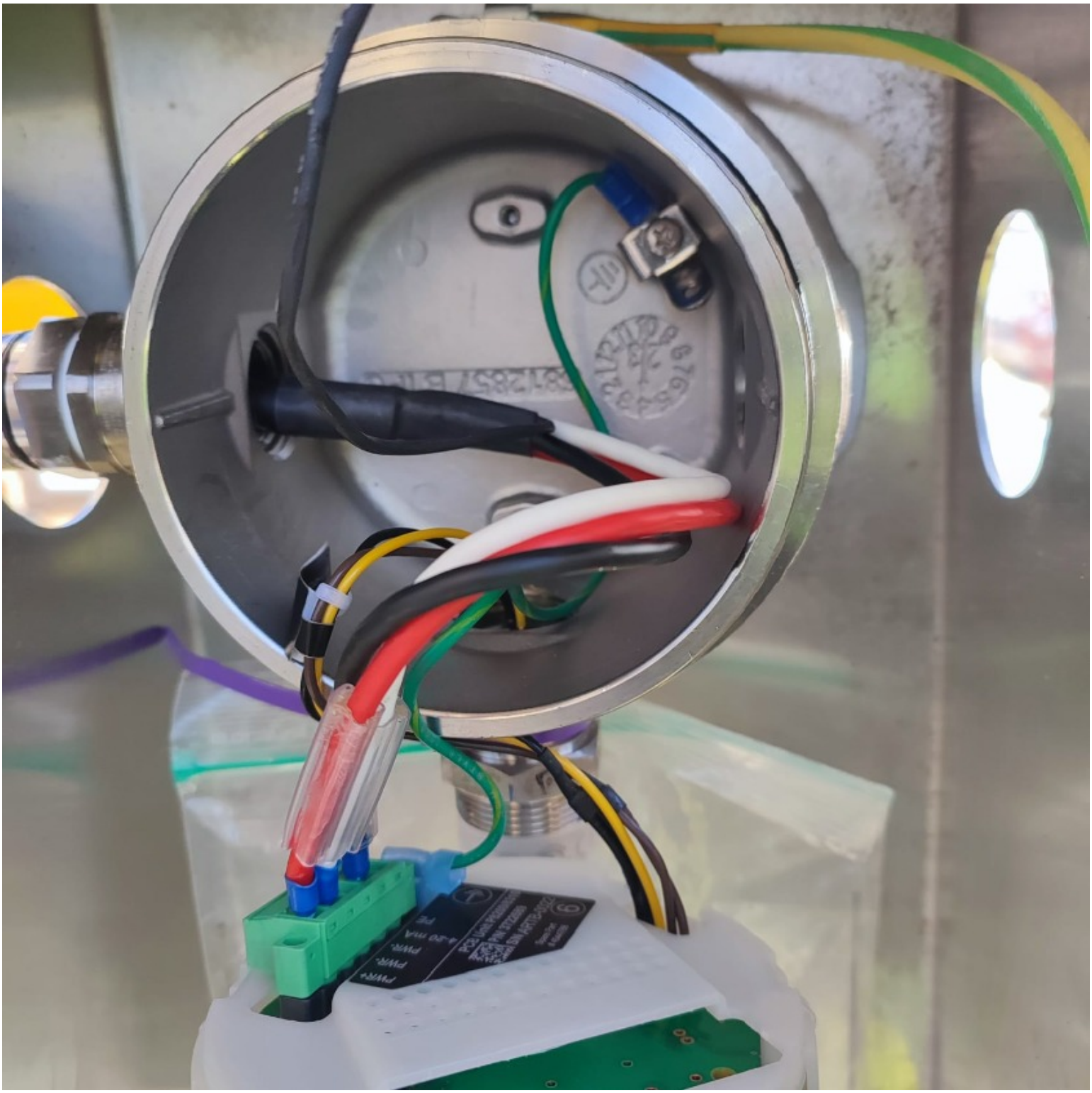
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002829

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-01-15

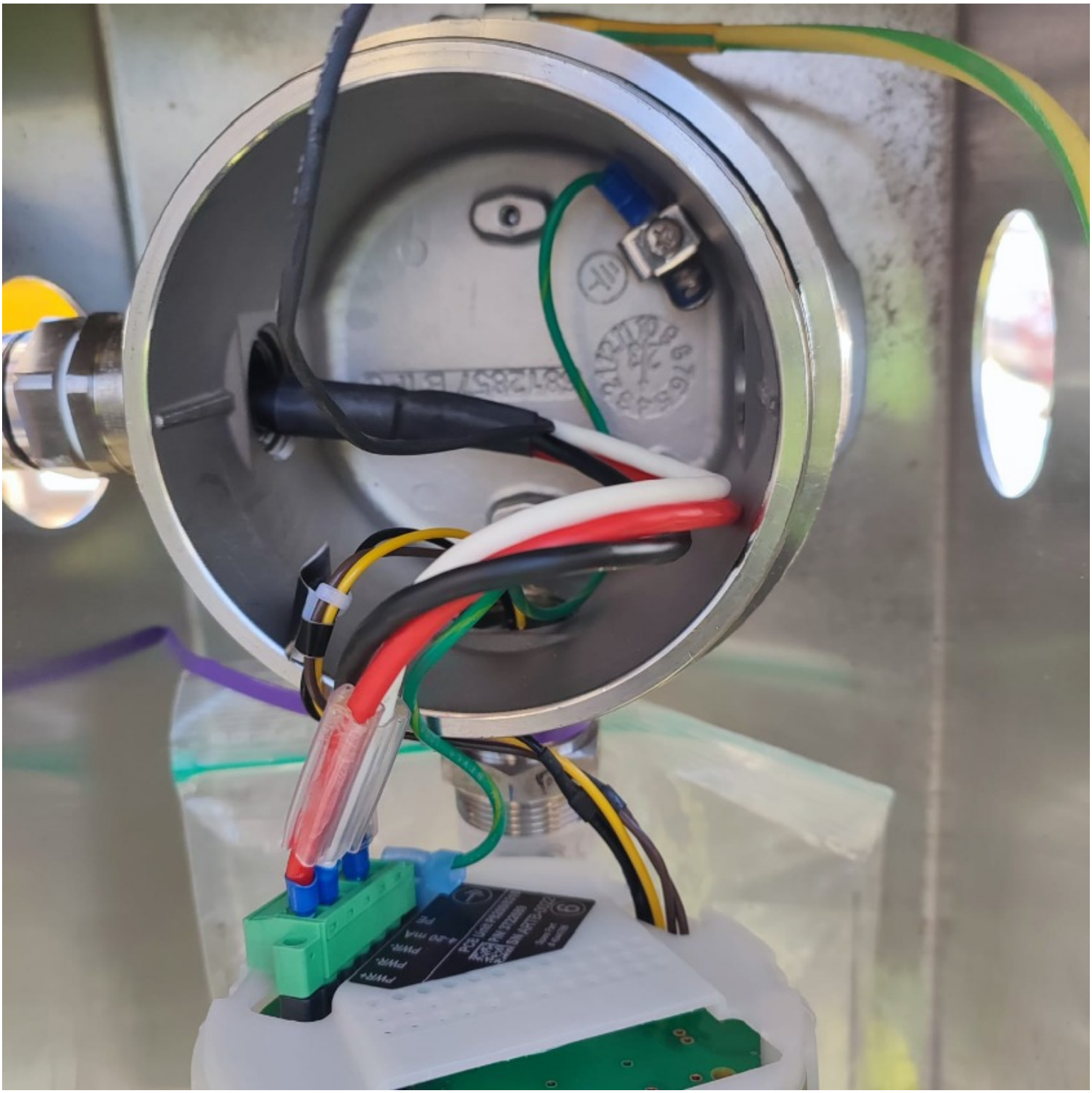
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002830

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-04-08

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002831

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

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

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:
Date:
Signature:

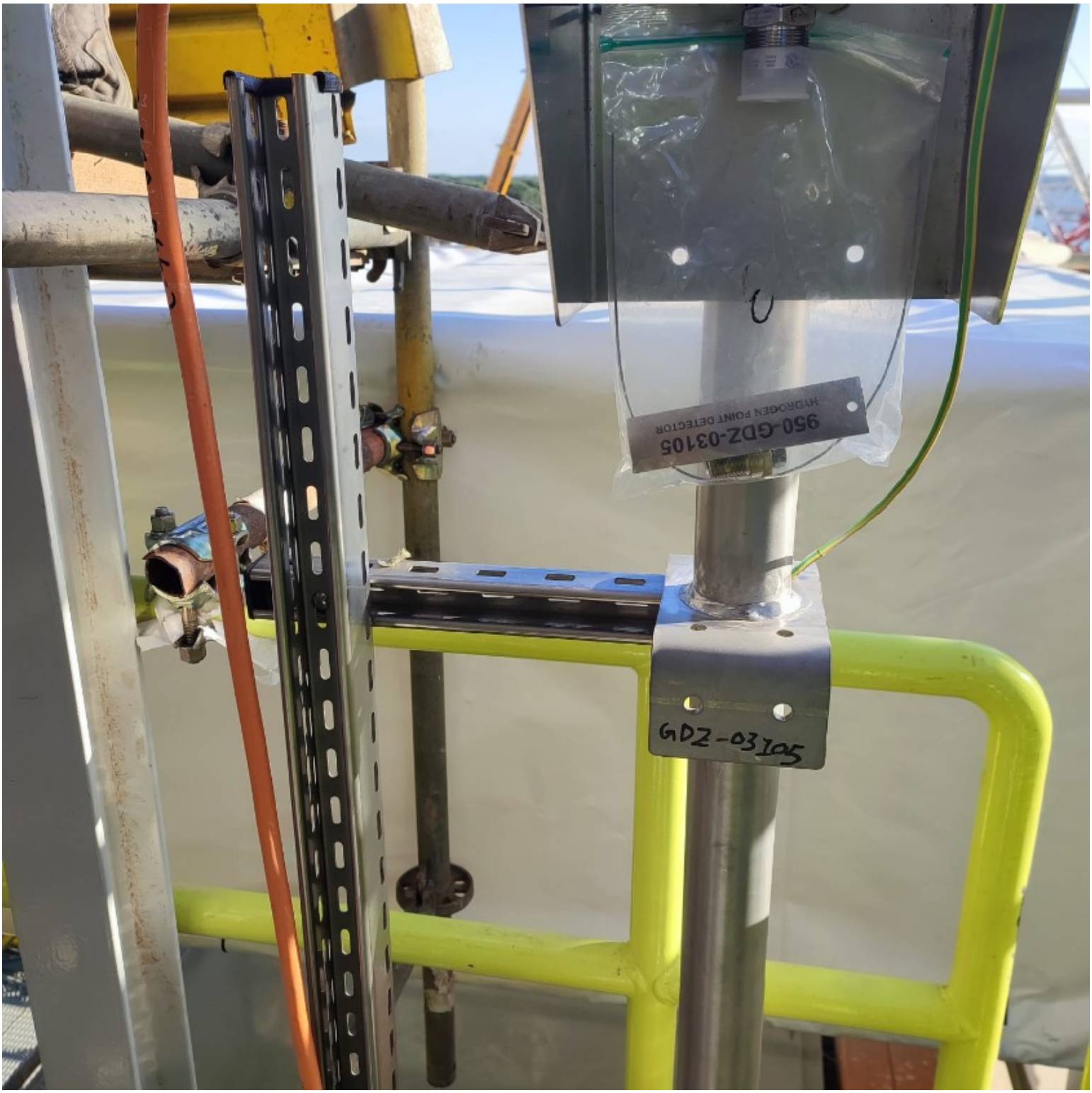
5 - CLEARANCE CHECK

Installed.

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

6- CLEARANCE APPROVAL

Name:
Date:
Signature:


HYDROGEN POINT DETECTOR
950-GDZ-03105
GDZ-03105

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004249

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

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

3 - DEFECT ASSESSMENT

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

4 - PERFORMED ACTION

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

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

5 - CLEARANCE CHECK

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

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

6- CLEARANCE APPROVAL

Name:
Date: 2025-07-17
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002555

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Missing traffolyte tag side instrument

Name: Alessio Polo

Date: 2025-01-09

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-09
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

INSTALLED

Name: Eleonora Carotenuto

Date: 2025-02-24

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002556

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Fix the instrument tag with AISI wire.

Name: Alessio Polo

Date: 2025-01-09

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-09
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-01-29

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


950-GDZ-03109
OXYGEN POINT DETECTOR

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002563

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Missing cable tag SS , near the instrument and JB

Name: Alessio Polo

Date: 2025-01-09

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-09
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Alessio Polo

Date: 2025-01-29

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002564

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

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

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-09
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Installed.

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

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002572

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Alessio Polo

Date: 2025-01-09

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-09
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

the cone is properly installed.

Name: Giovanni Tangianu

Date: 2025-01-16

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002574

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

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

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-09
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Done.

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

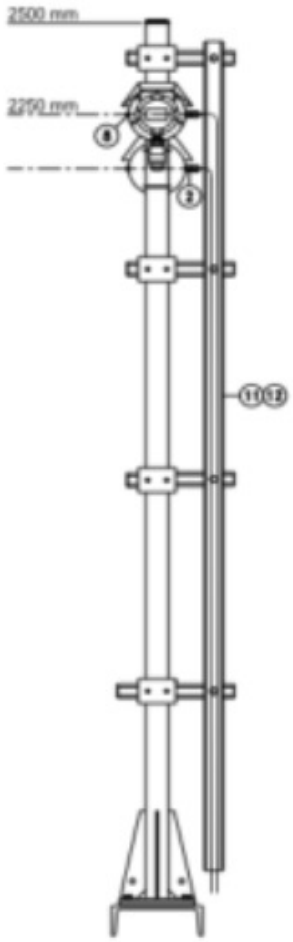
6- CLEARANCE APPROVAL

Name:
Date:
Signature:



Rev. 02

ELECTRICAL HOOK-UP FOR FIRE & GAS DEVICES



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

NOTE:

VALID FOR CONSTRUCTION

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

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

ROSETTI MARINO SpA

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

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

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

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002577

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

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

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-10
3.5 Action by	ENG Engineering	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Point not applicable

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

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002740

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Alessio Polo

Date: 2025-01-13

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Alessio Polo

Date: 2025-02-26

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002741

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

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

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

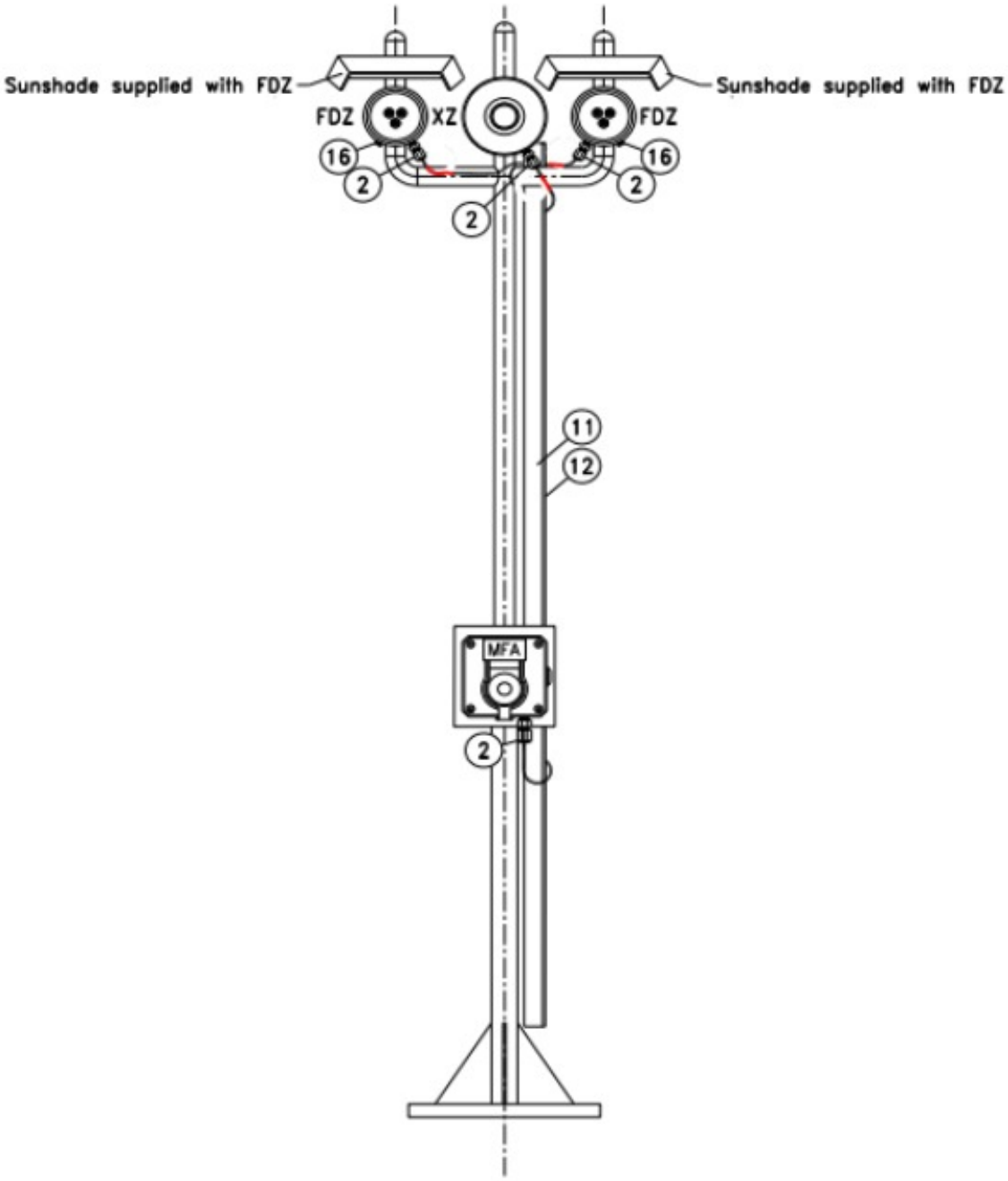
Name: Andrea Andreani
Date: 2025-01-21
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:


950-MFA-03102

ELECTRICAL HOOK-UP FOR FIRE & GAS DEVICES



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

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002742

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Missing Weather Shield

Name: Alessio Polo

Date: 2025-01-13

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-01-21

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

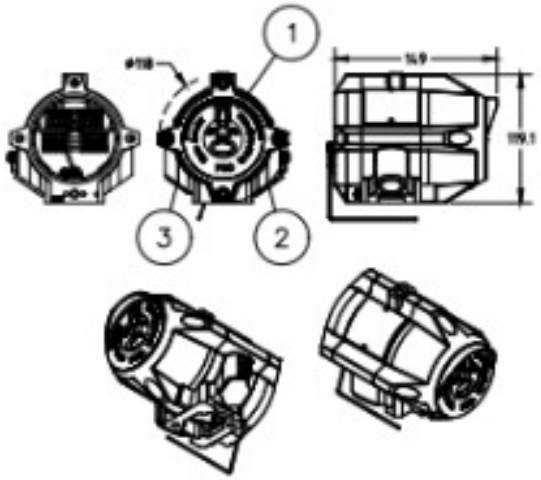

950-MFA-03102
VERNAZZA

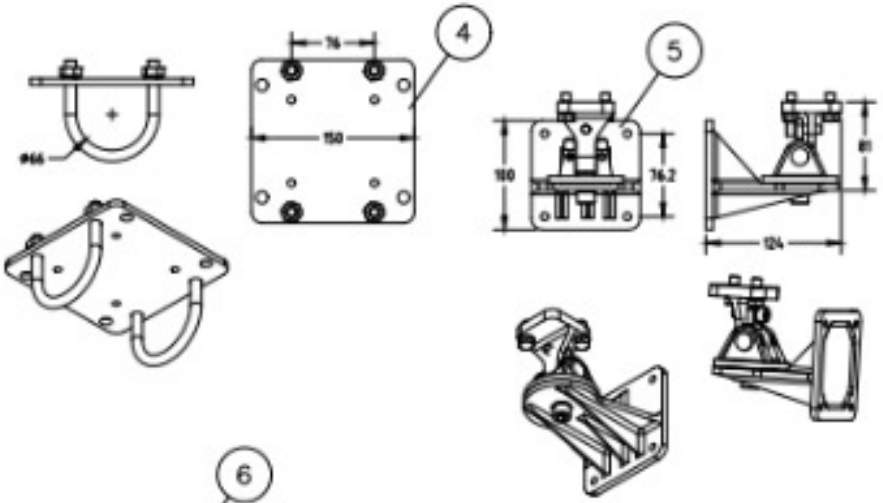
FLAME DETECTOR / 2" PIPE MOUNTING

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

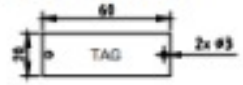
INSTALLATION QUANTITY

22



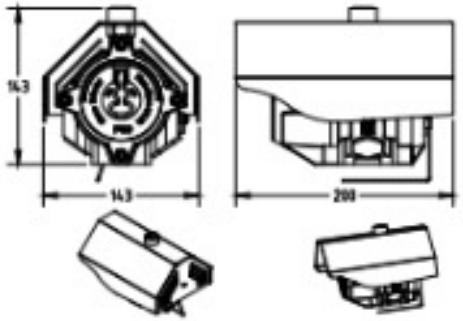


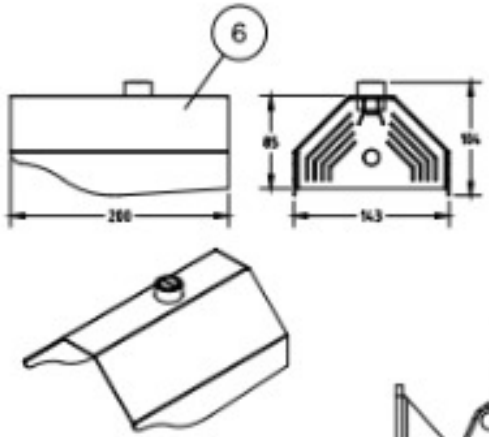
7 STAINLESS STEEL NAME PLATE DETAILS



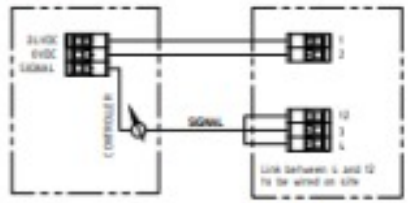
NOTE 5

GA WEATHER SHIELD AND DETECTOR

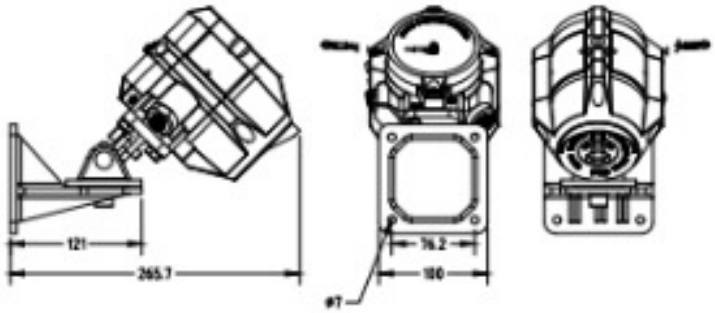




CONTROL CABINET DETECTOR



INSTALLATION SCHEME



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

FORES ENGINEERING

CROSSWIND

ROSETTI MARINO

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

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

SCALE : NTS

A3

DRAWING NO. 1724000821-IN-DA-00003

SHEET 013

REV. 02

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002743

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Missing traffolyte tag side instrument

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

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Done

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

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002744

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

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

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

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

6- CLEARANCE APPROVAL

Name:
Date:
Signature:


950-MFA-03102
950-FDZ-03101

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002745

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

The external earth locking pin is broken

Name: Alessio Polo

Date: 2025-01-13

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

The activity is done , the screw is replace.

Name: Giovanni Tangianu

Date: 2025-01-17

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


BHL
REDMI 13C
13/01/2025 10:55

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002746

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

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

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Done

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

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002747

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

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

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

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

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002748

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

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

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-13
3.5 Action by	ENG Engineering	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Point not applicable

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

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002749

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

the earth cable is not fixed to the instrument pole

Name: Alessio Polo

Date: 2025-01-13

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

earthing cable is installed.

Name: Giovanni Tangianu

Date: 2025-01-16

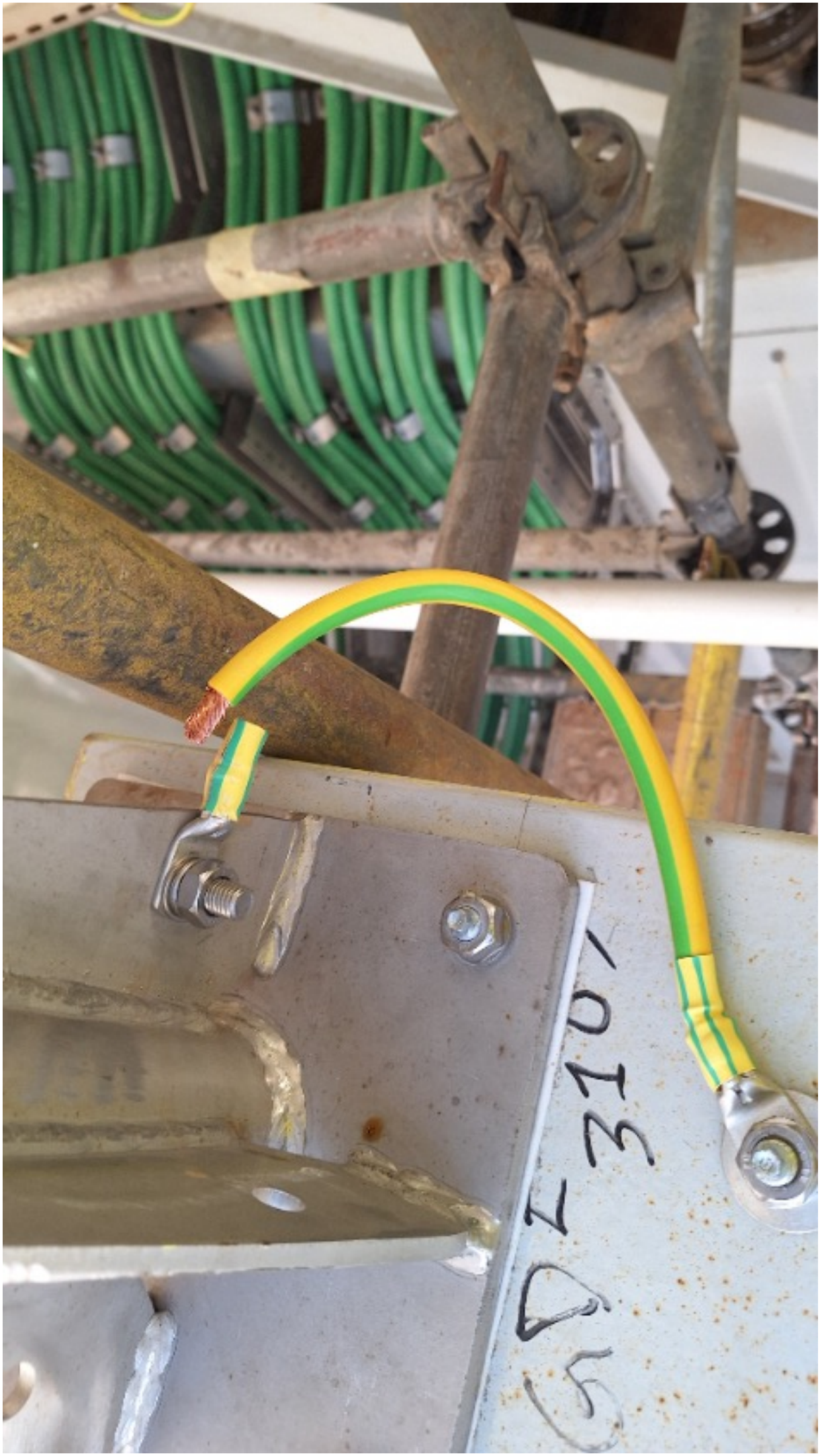
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


DI 3101

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002750

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Missing traffolyte tag side instrument

Name: Alessio Polo

Date: 2025-01-13

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli

Date: 2025-01-29

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002751

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Alessio Polo

Date: 2025-01-13

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

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

Name: Giovanni Tangianu

Date: 2025-03-07

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002752

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Fix the instrument tag with AISI wire.

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

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

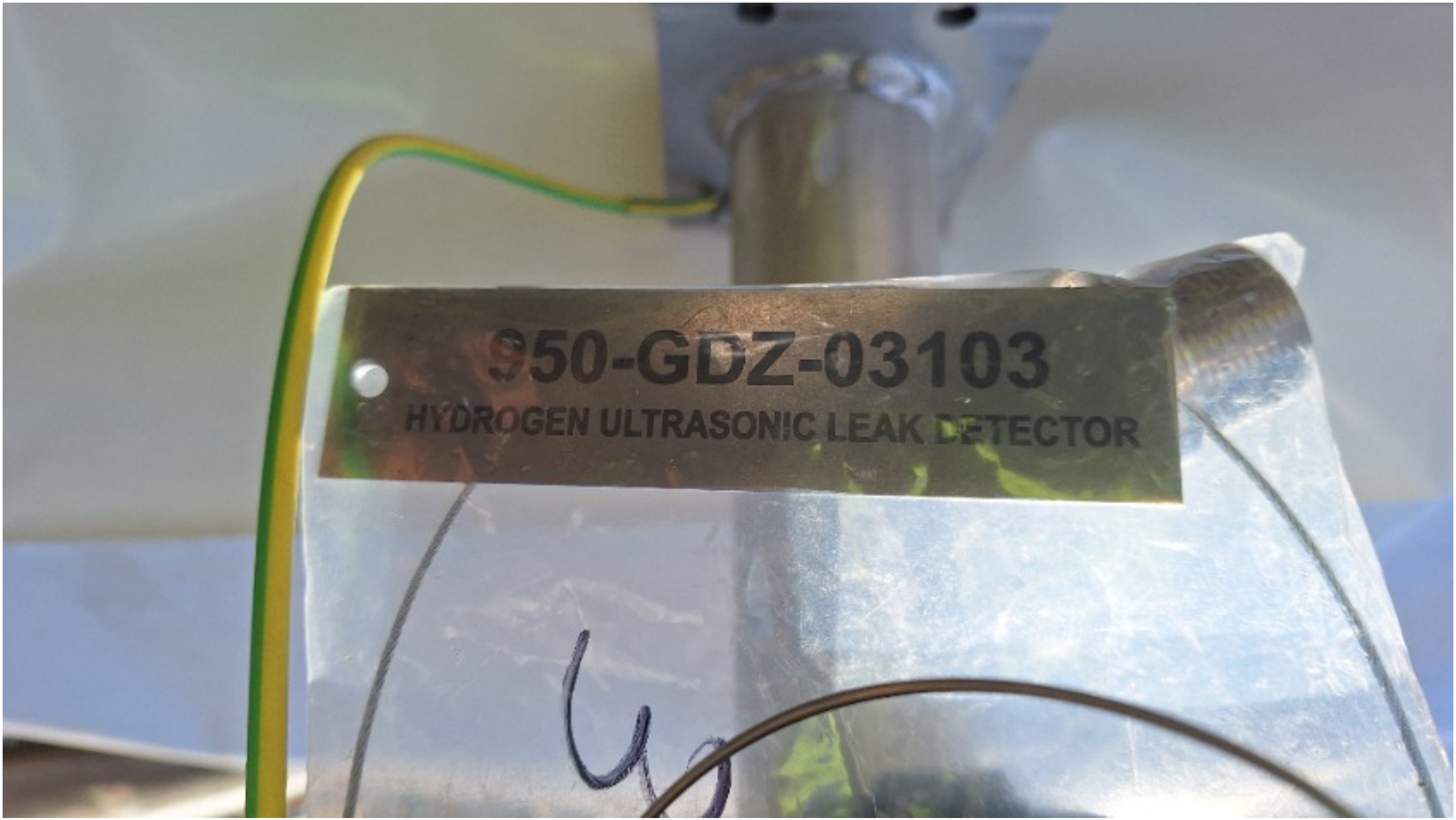
5 - CLEARANCE CHECK

Done

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

6- CLEARANCE APPROVAL

Name:
Date:
Signature:


950-GDZ-03103
HYDROGEN ULTRASONIC LEAK DETECTOR

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002753

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

The internal PVC fixing system are damaged. see photo

Name: Alessio Polo

Date: 2025-01-13

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

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

Name: Giovanni Tangianu

Date: 2025-01-15

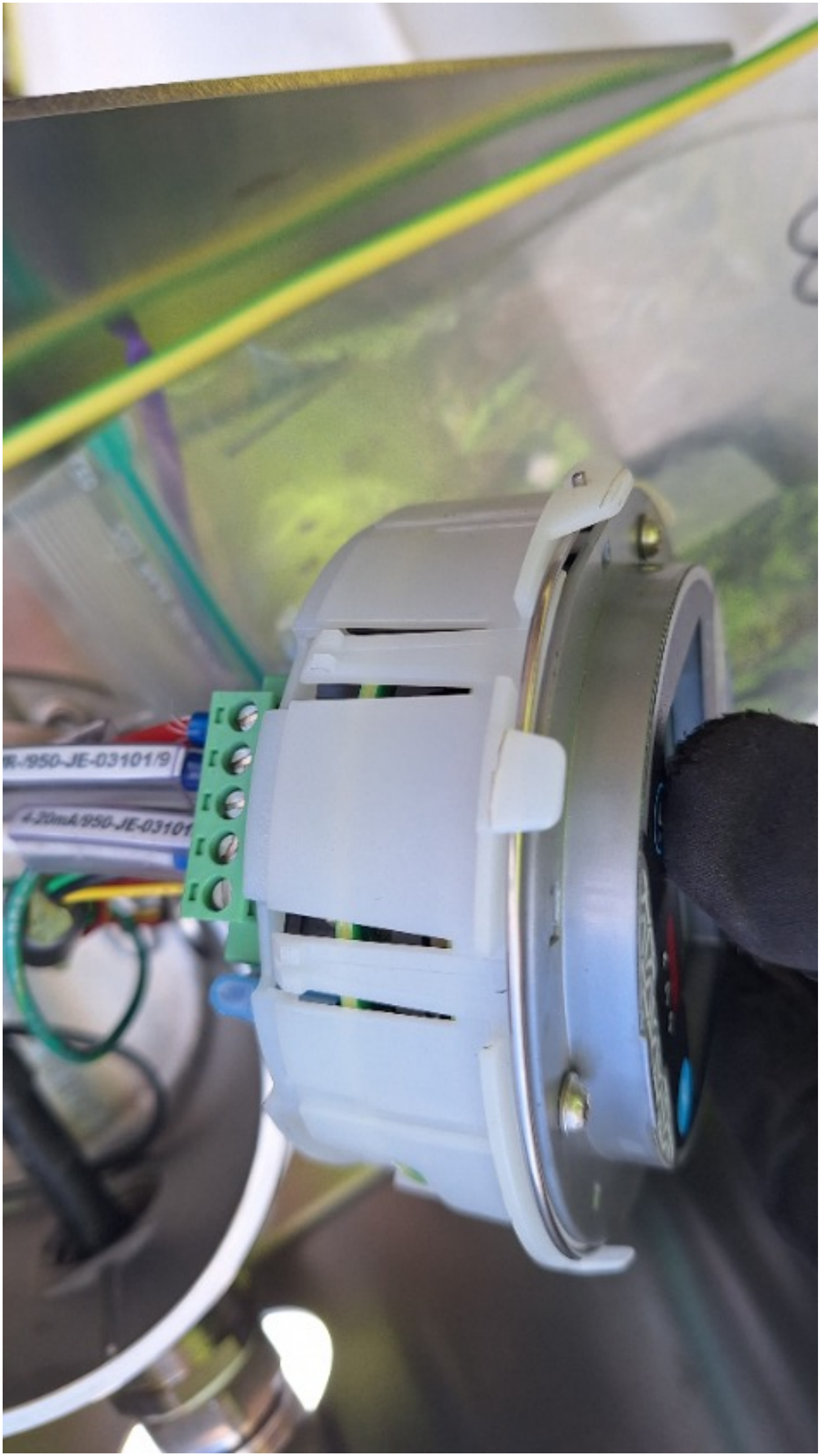
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


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


OK

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002798

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Not installed steel plate . See attached photo.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli

Date: 2025-01-29

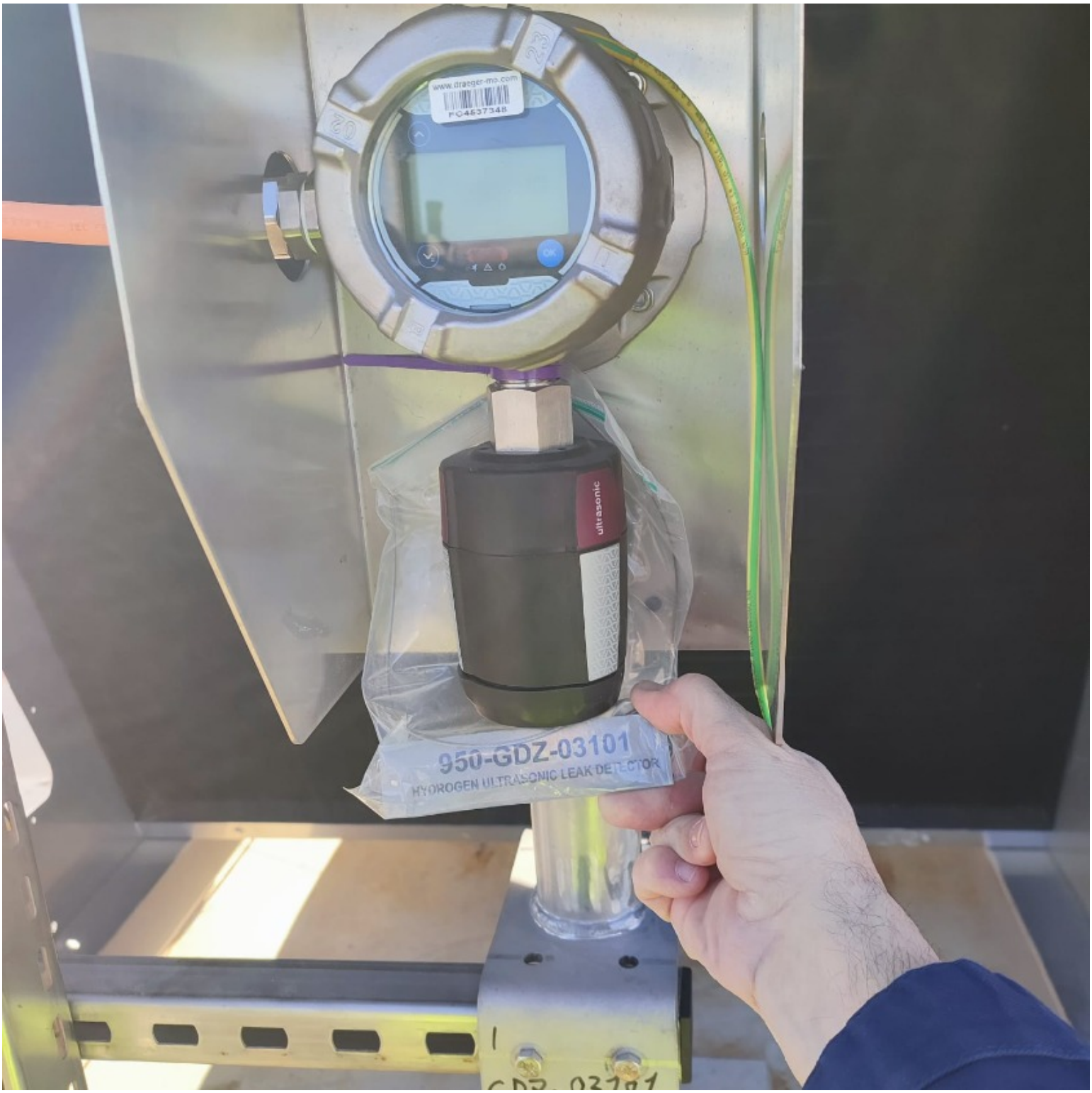
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


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

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002799

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

ATEX certified plug is missing - See attached photo.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli

Date: 2025-01-29

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002800

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Not installed trafolite tag below the instrument.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli

Date: 2025-01-29

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002803

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

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

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:
Date:
Signature:

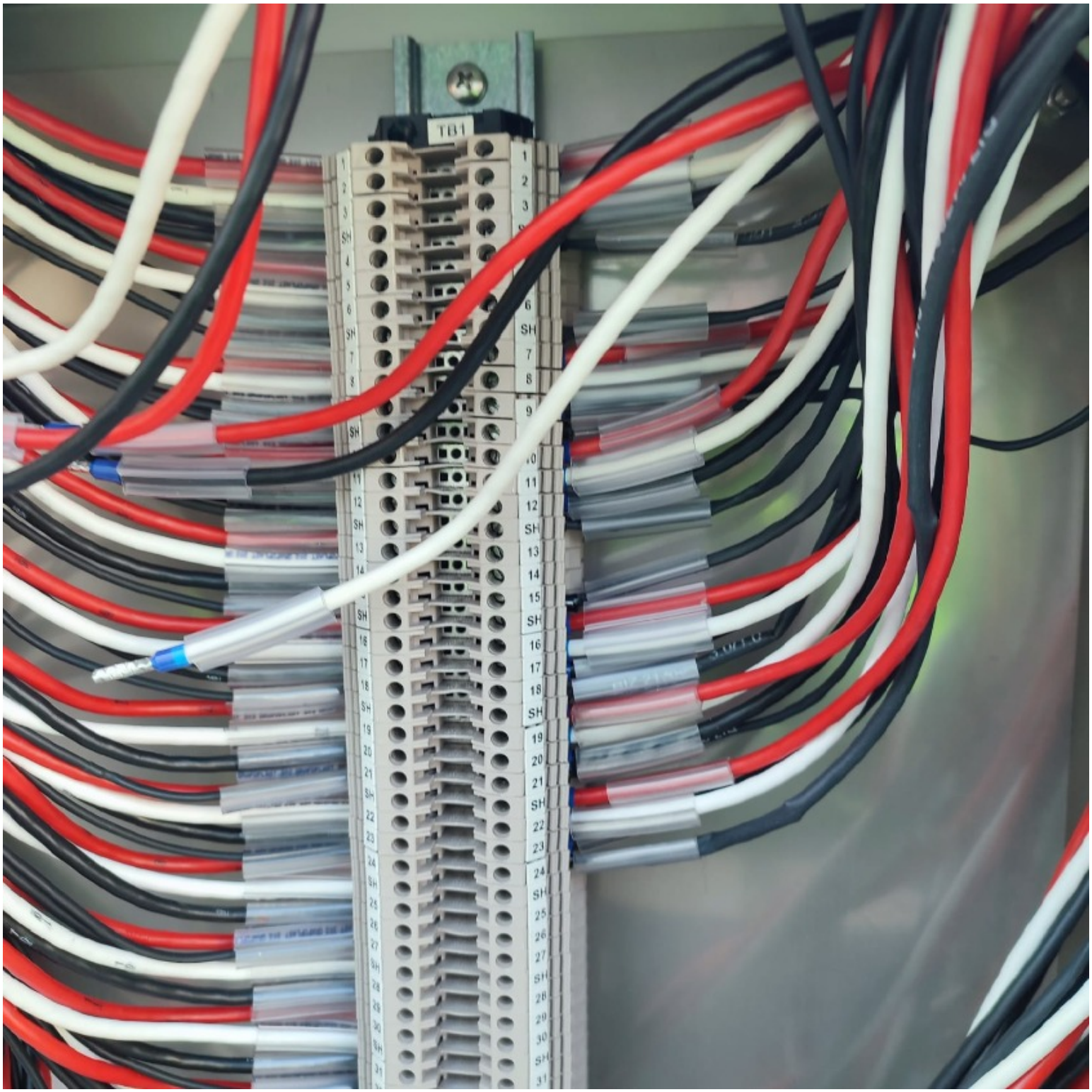
5 - CLEARANCE CHECK

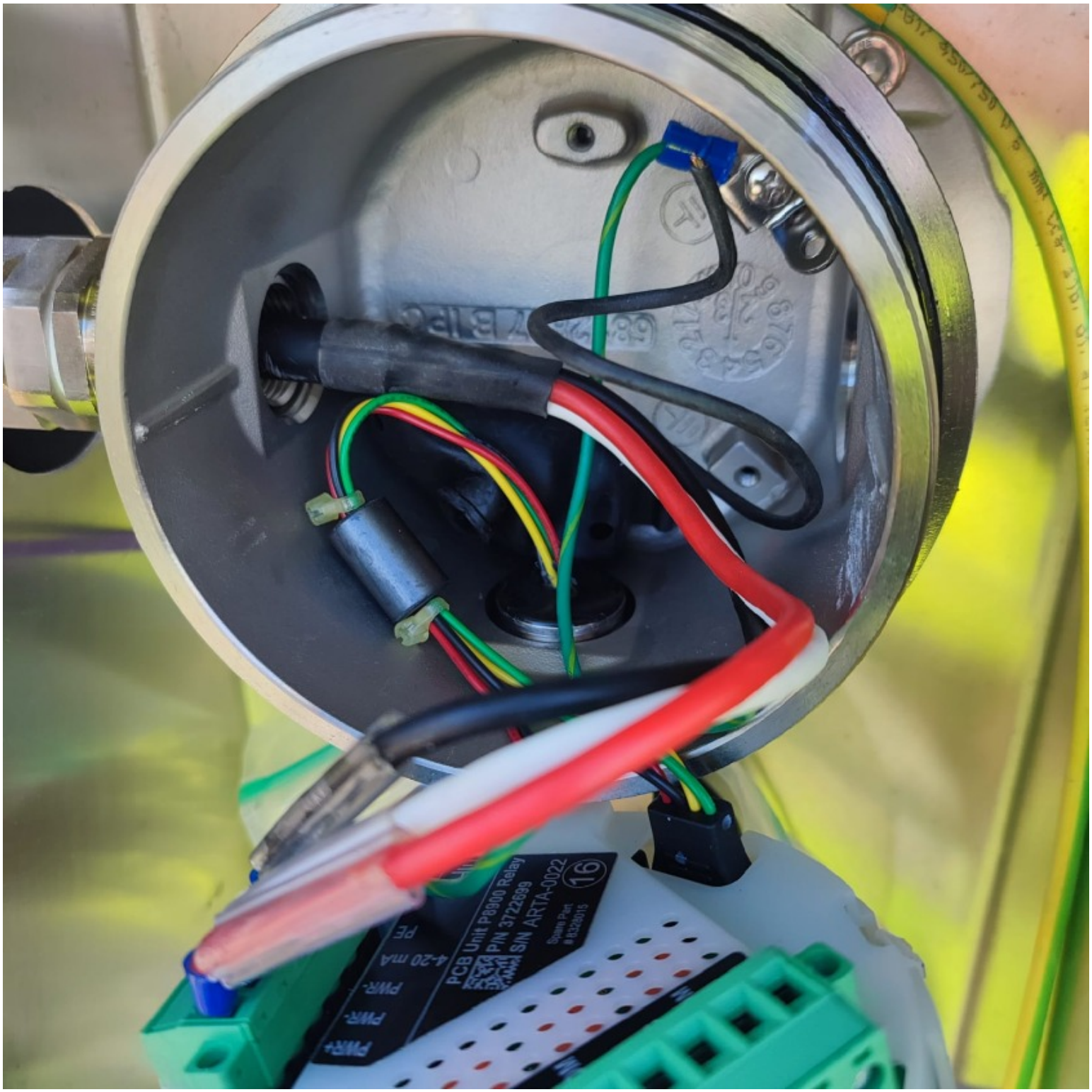
Installed.

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

6- CLEARANCE APPROVAL

Name:
Date:
Signature:


TB1


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

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002806

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Inside the instrument missing the termoshrink on the sheild .

See attached photo.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-01-15

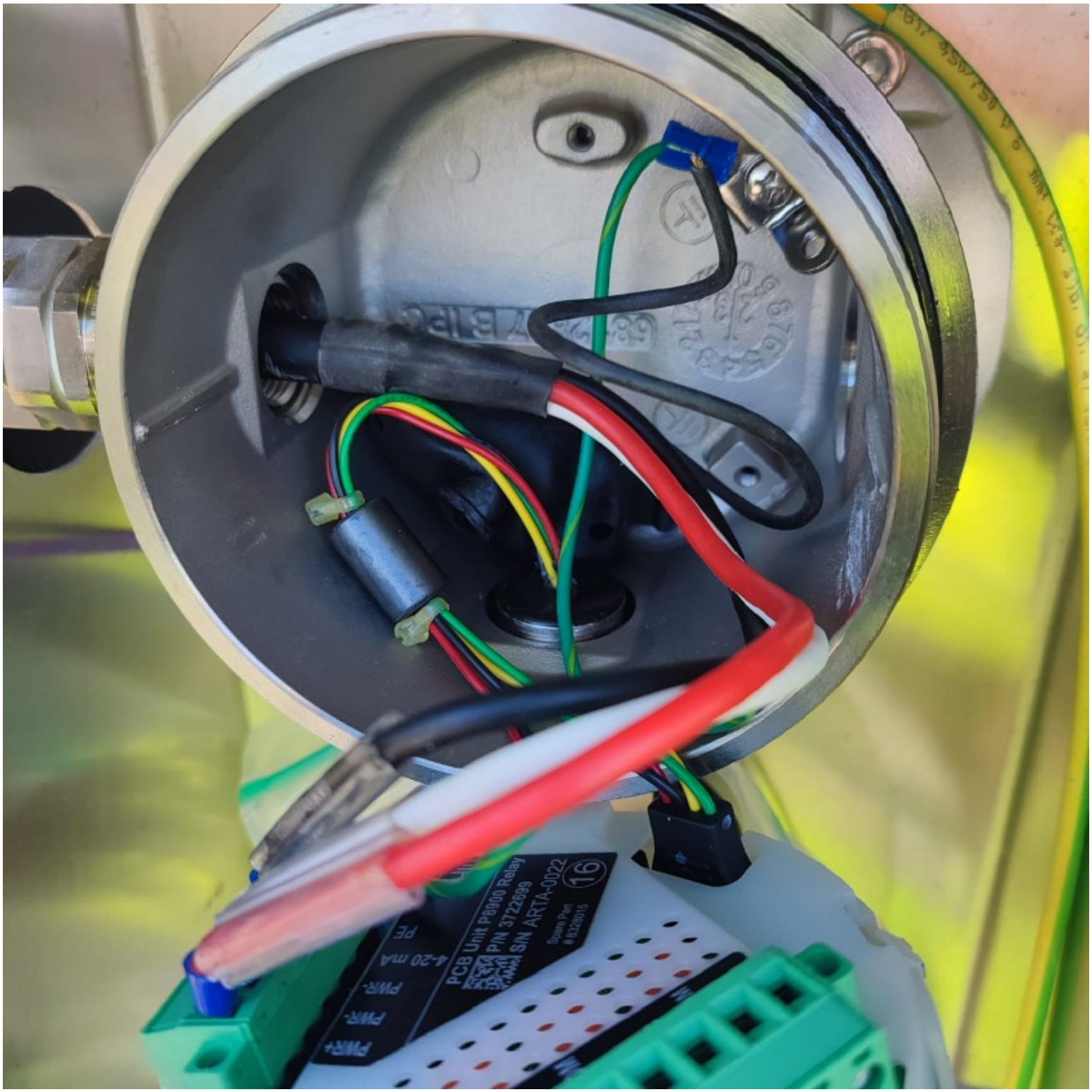
Signature

6- CLEARANCE APPROVAL

Name

Date

Signature


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

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002807

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-04-08

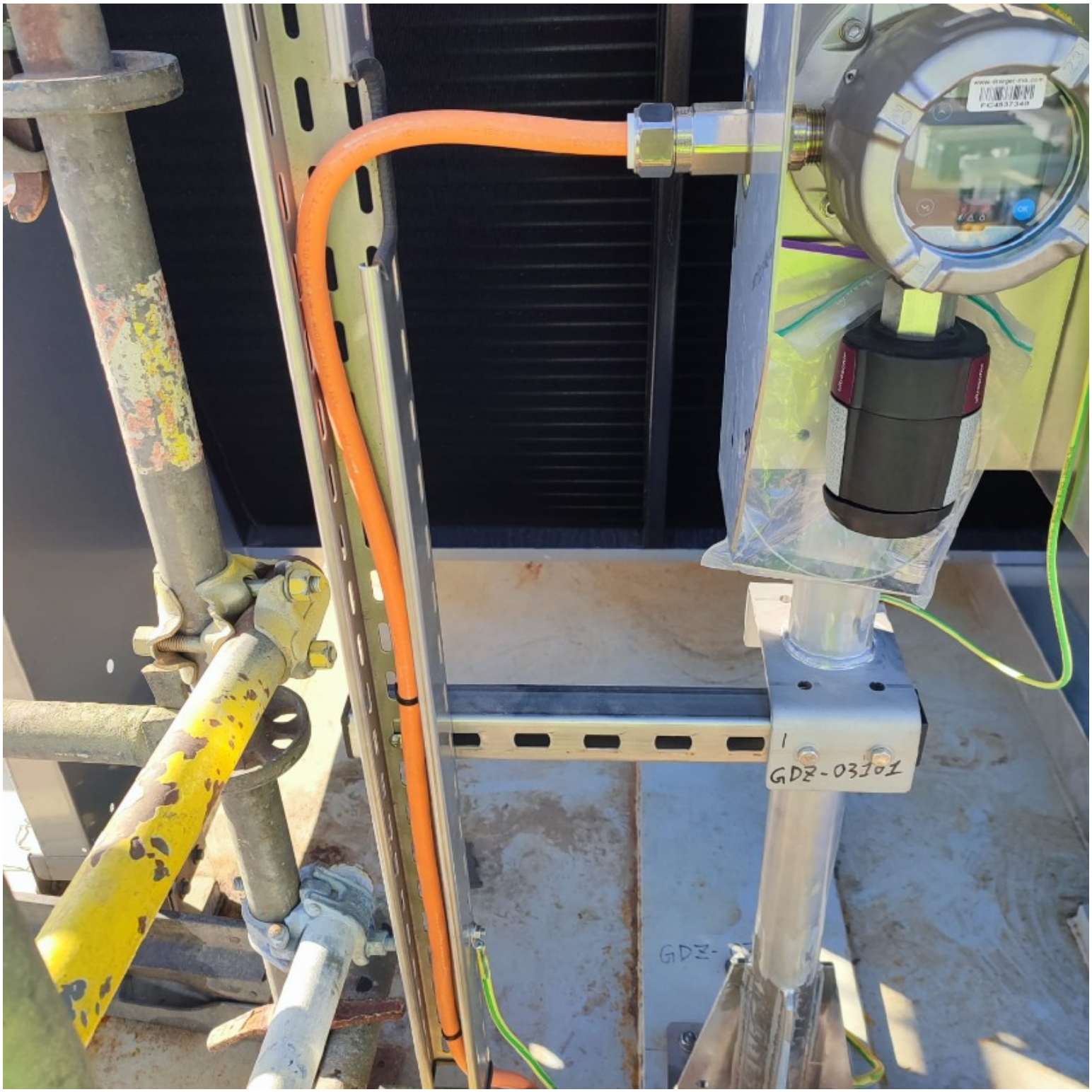
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


GDZ-03101

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002808

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Not installed steel plate . See attached photo.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli

Date: 2025-01-29

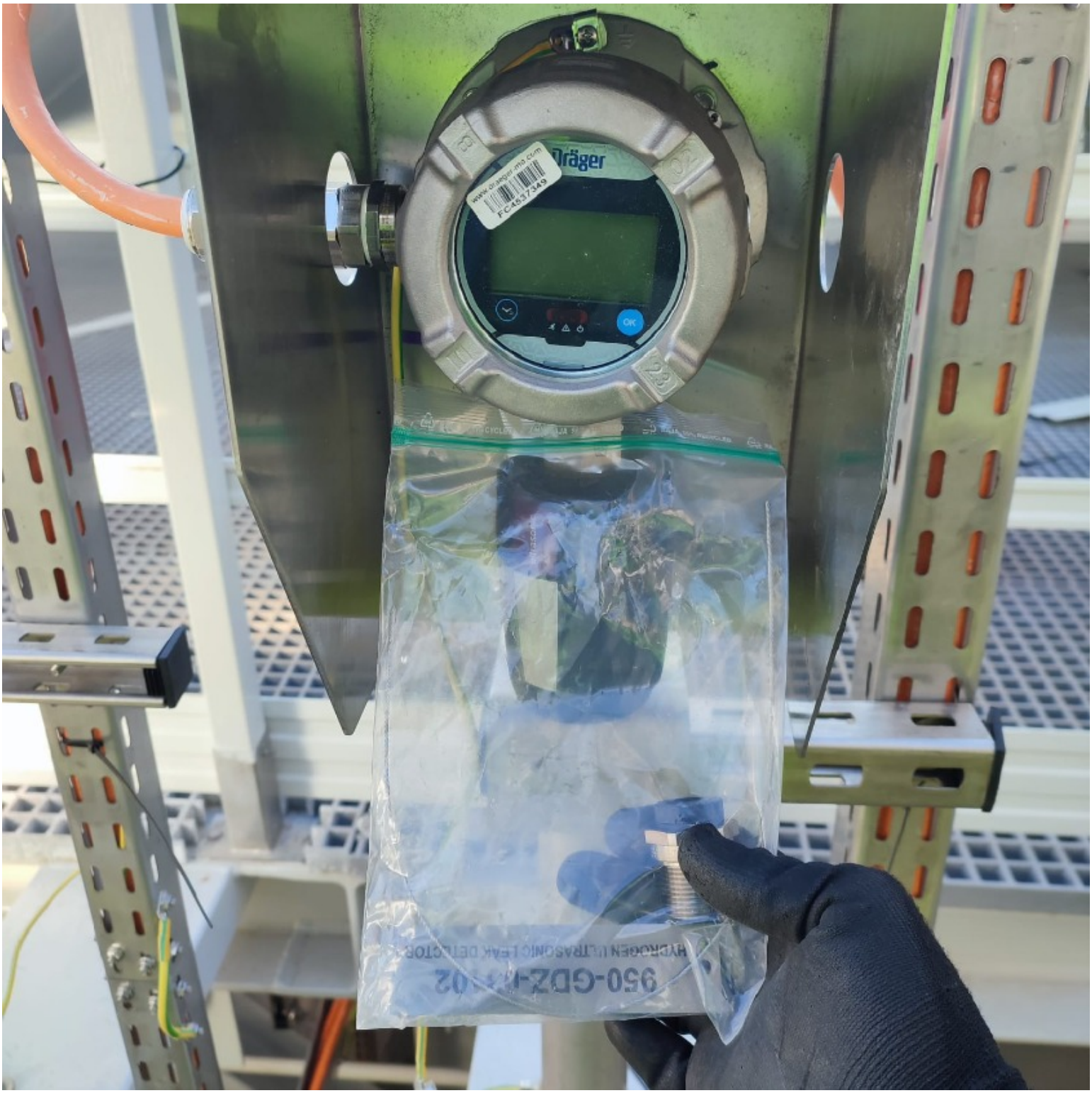
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


Dräger
OK

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002809

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

ATEX certified plug is missing - See attached photo.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli

Date: 2025-01-29

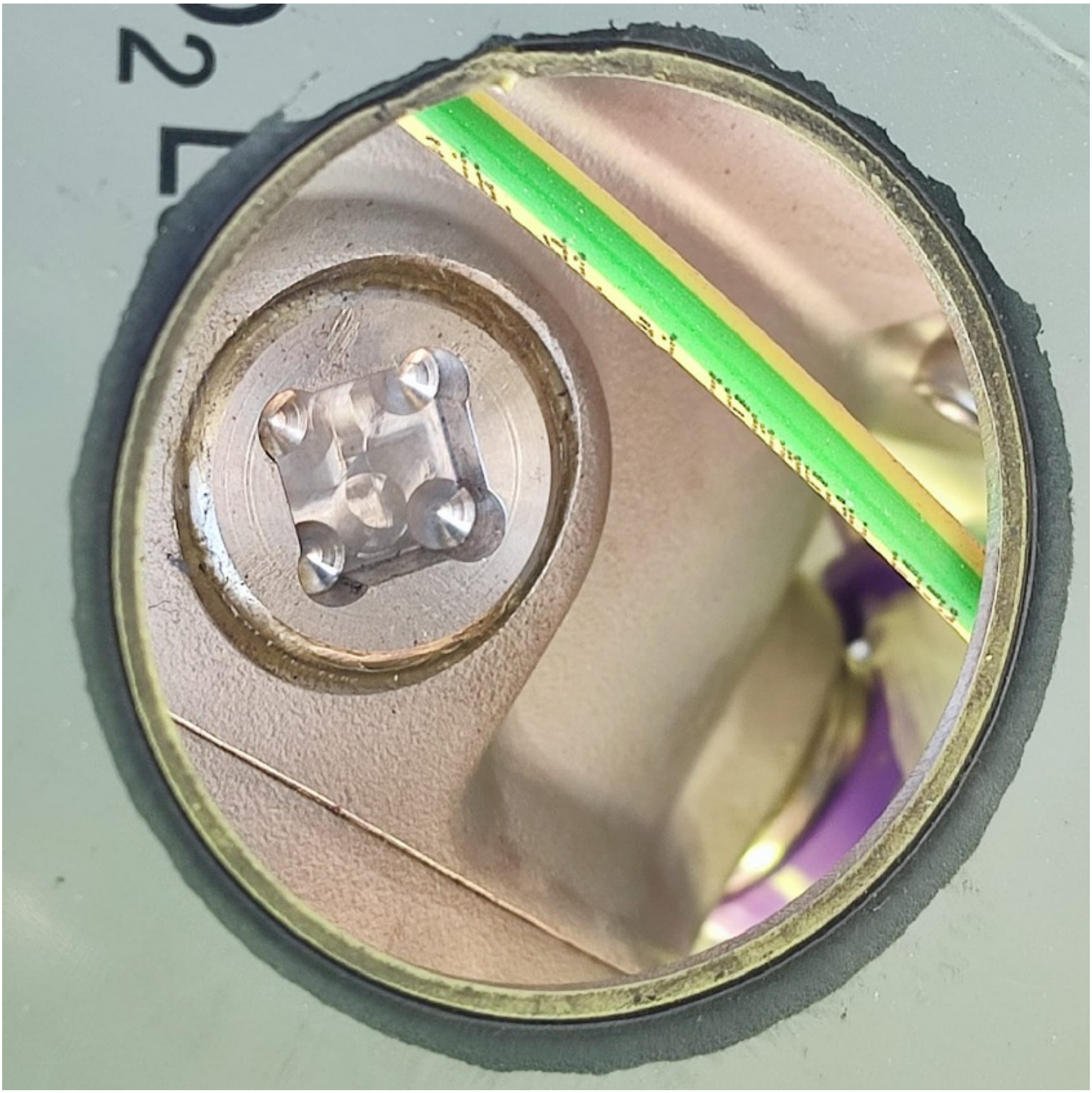
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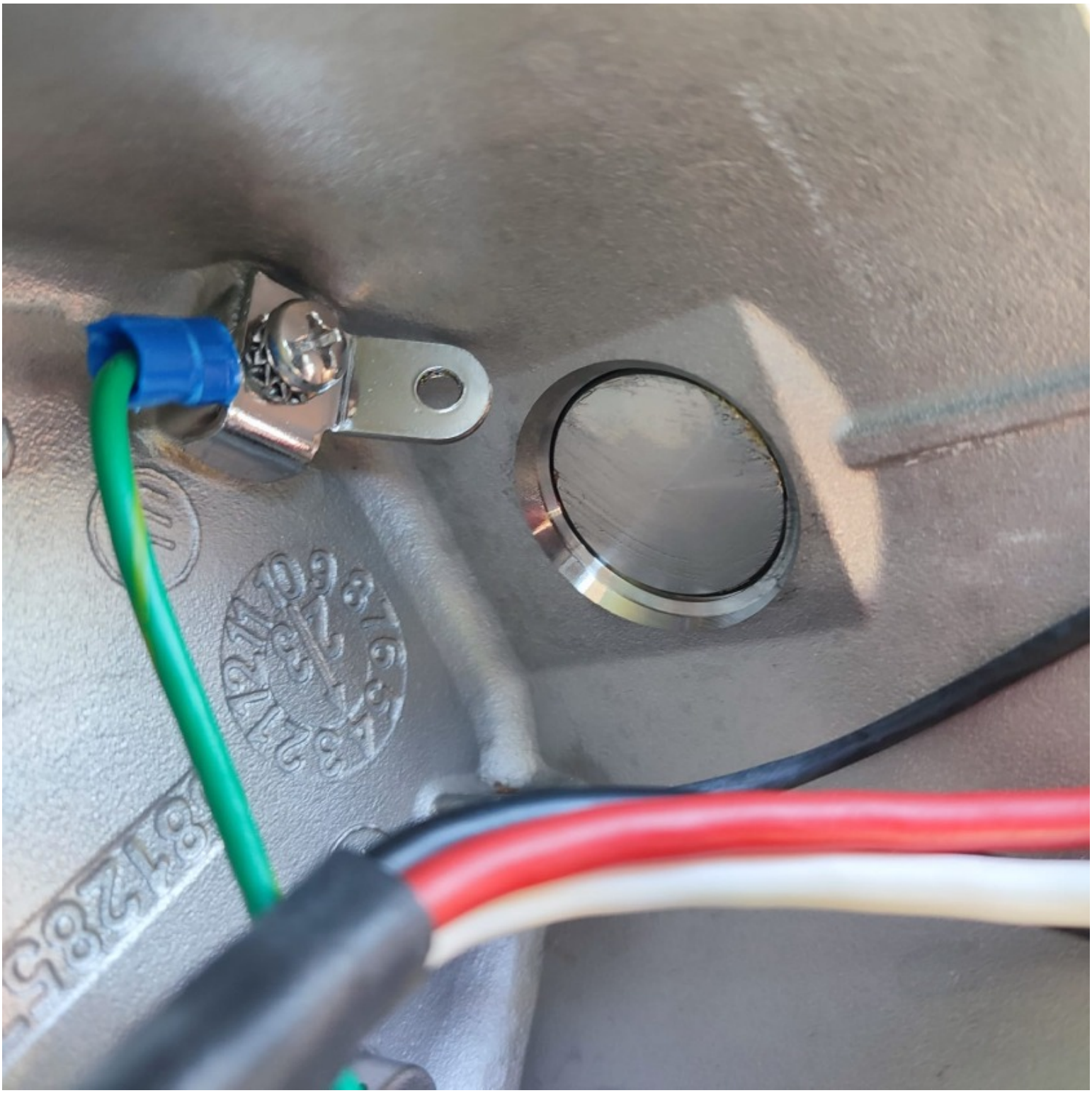
6- CLEARANCE APPROVAL

Name:

Date:

Signature:





ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002810

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Not installed trafolite tag below the instrument.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

INSTALLED

Name: Eleonora Carotenuto

Date: 2025-02-24

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002811

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-04-08

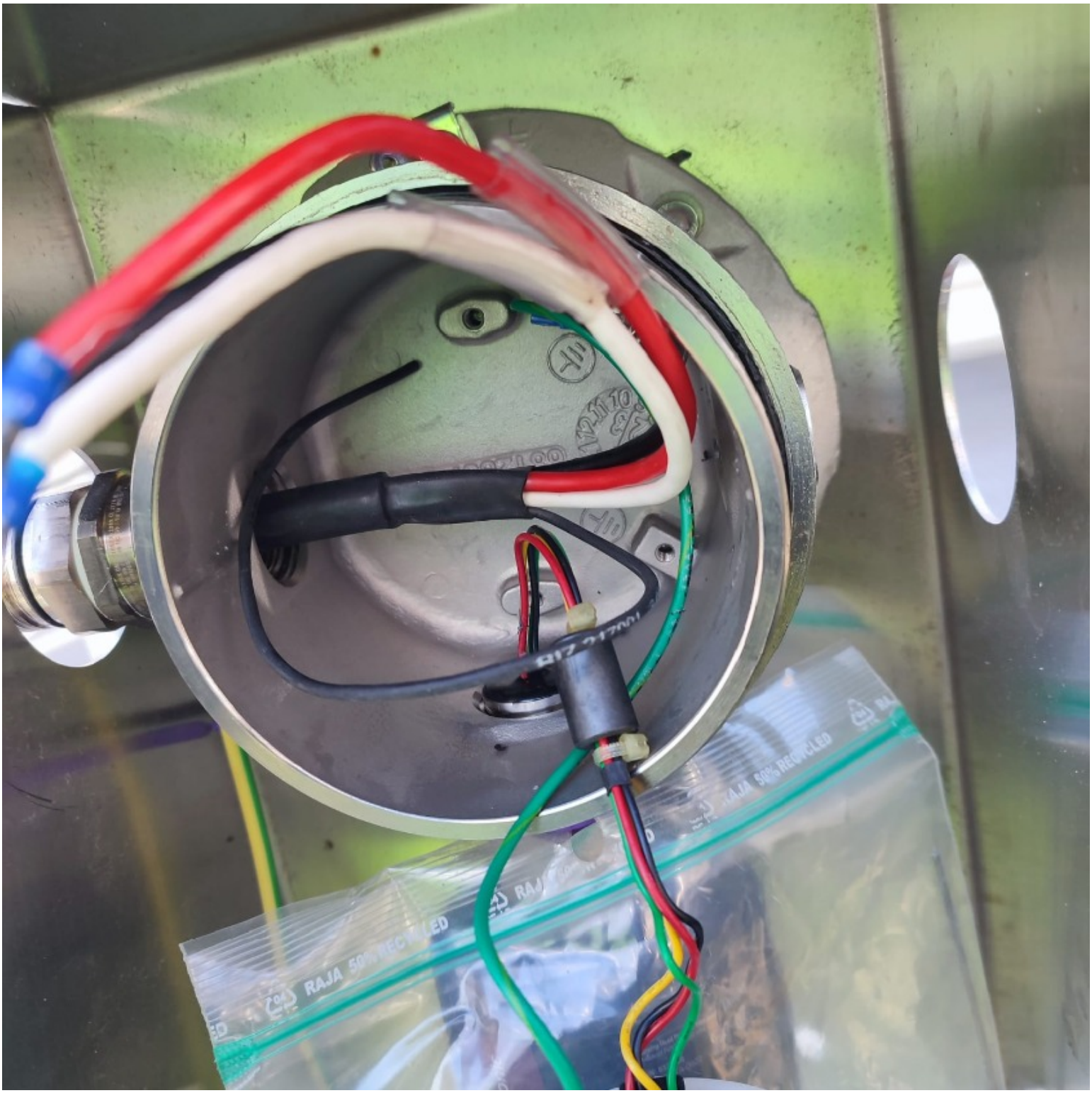
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


RAJA 50% RECYCLED

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002812

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-01-15

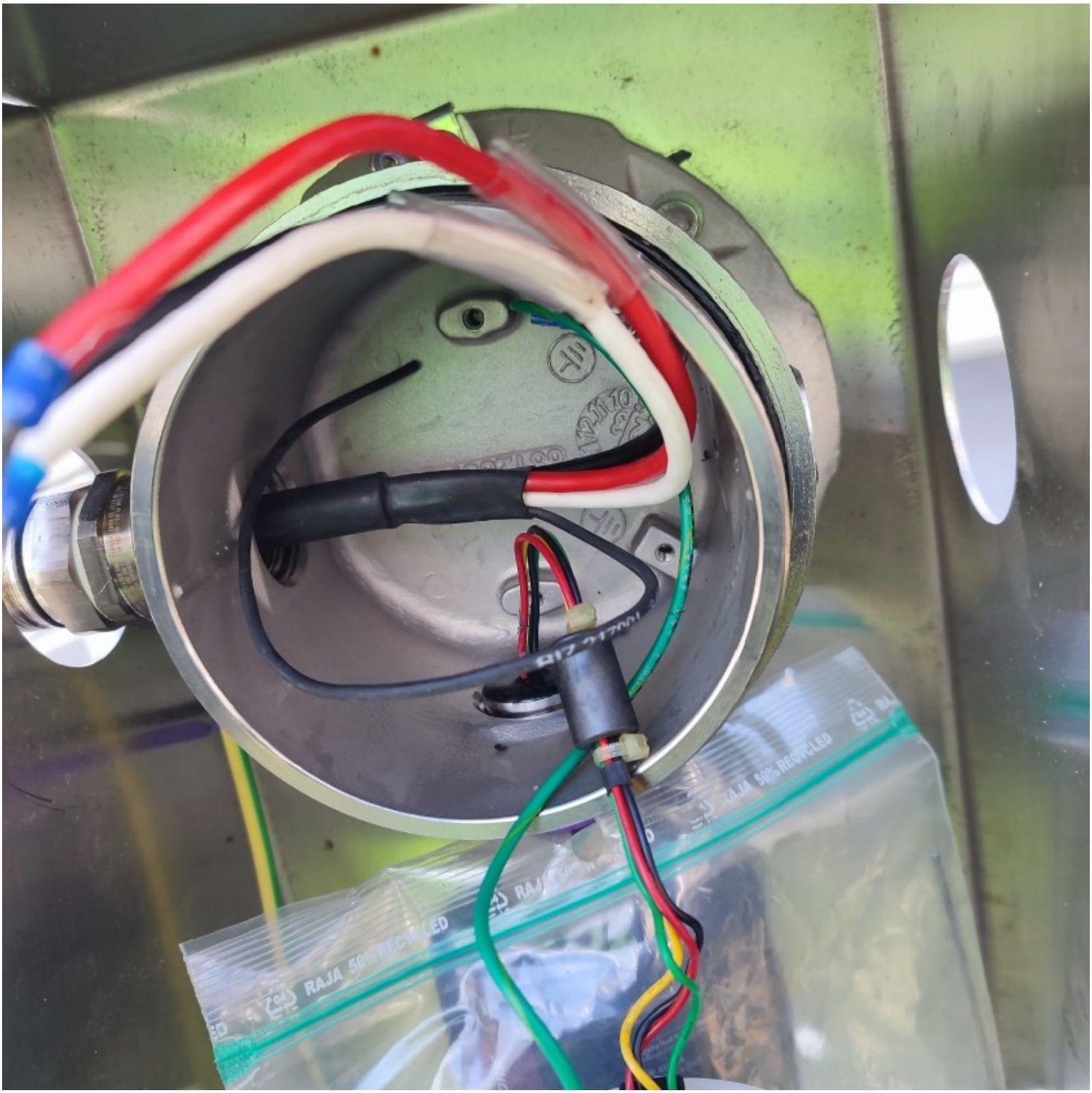
Signature

6- CLEARANCE APPROVAL

Name

Date

Signature


RAJA 50% RECYCLED

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002813

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli

Date: 2025-02-03

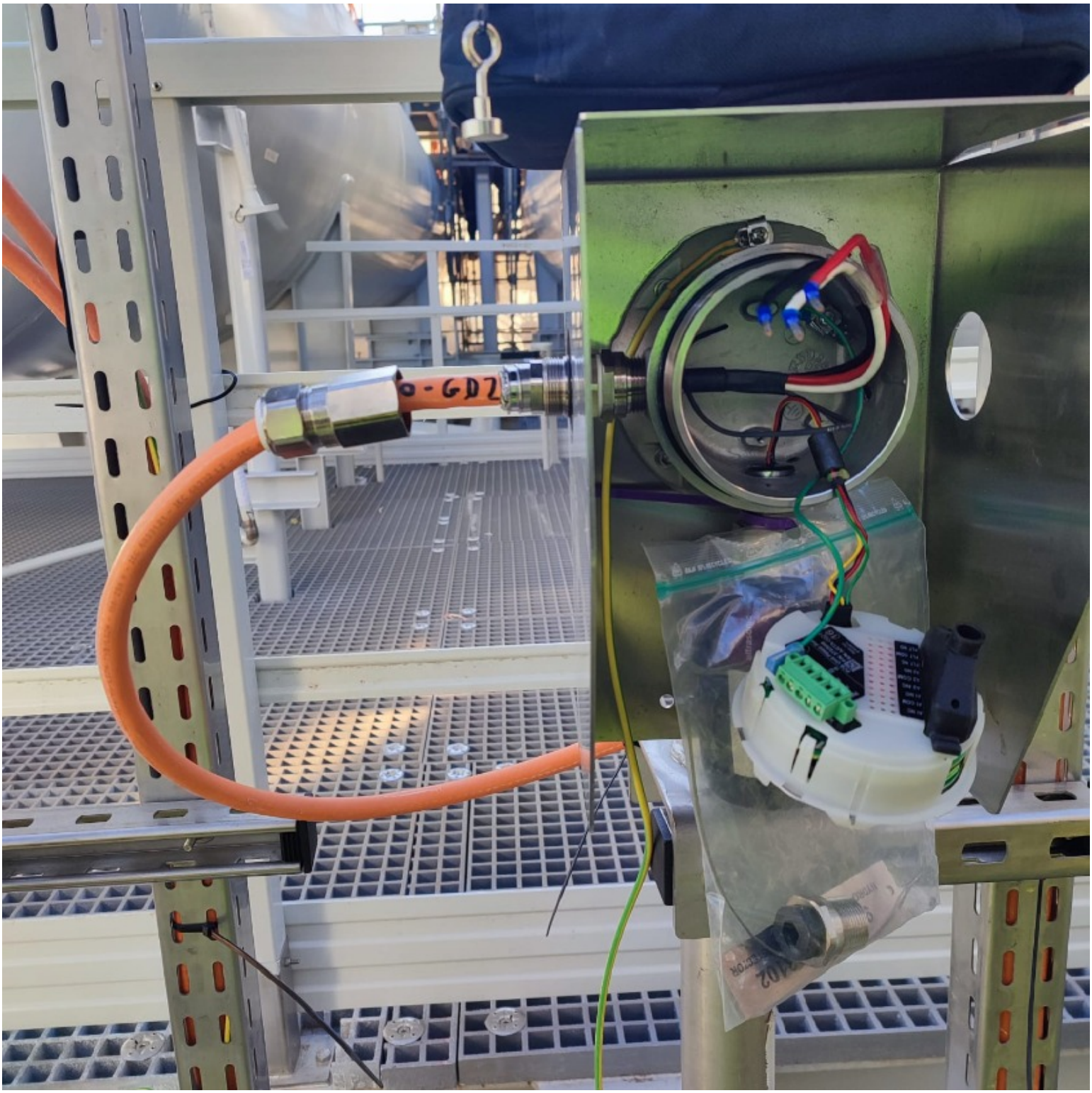
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002814

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

See attached photo.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-04-08

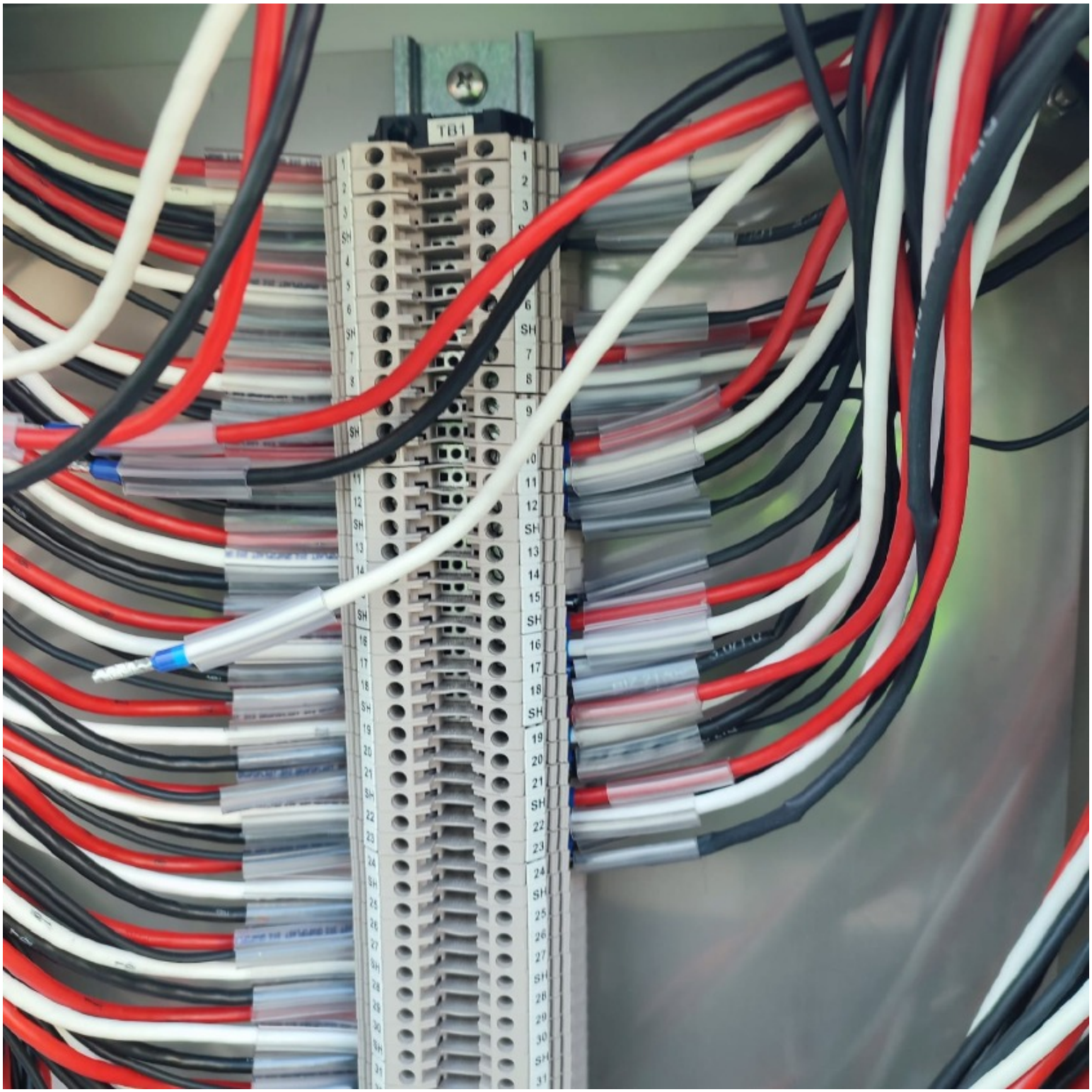
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


TB1

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002817

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

ATEX certified plug is missing - See attached photo.

Name: Giovanni Tangianu

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli

Date: 2025-01-29

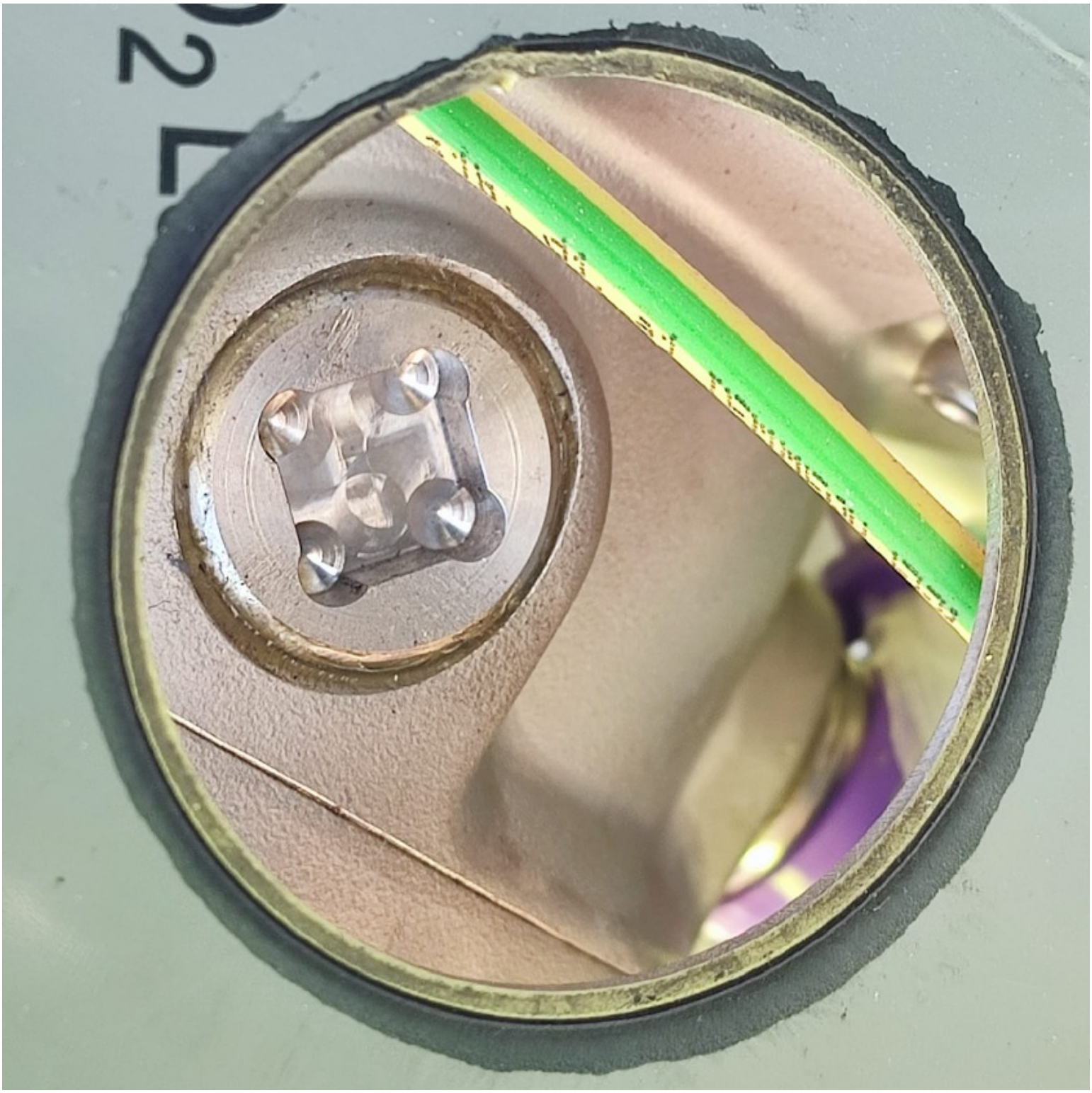
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001672

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Missing traffolyte tag side instrument

Name: Alessio Polo

Date: 2024-12-11

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Alessio Polo

Date: 2024-12-20

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


WARNING
TEREX

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001677

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Andrea Andreani

Date: 2024-12-11

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-04-08

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001678

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

missing cable labelling on both JB and instrument side

Name: Andrea Andreani

Date: 2024-12-11

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-02-26

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001679

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

missing tag

Name: Andrea Andreani

Date: 2024-12-11

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Eleonora Carotenuto

Date: 2024-12-27

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001720

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

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

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name
Date
Signature

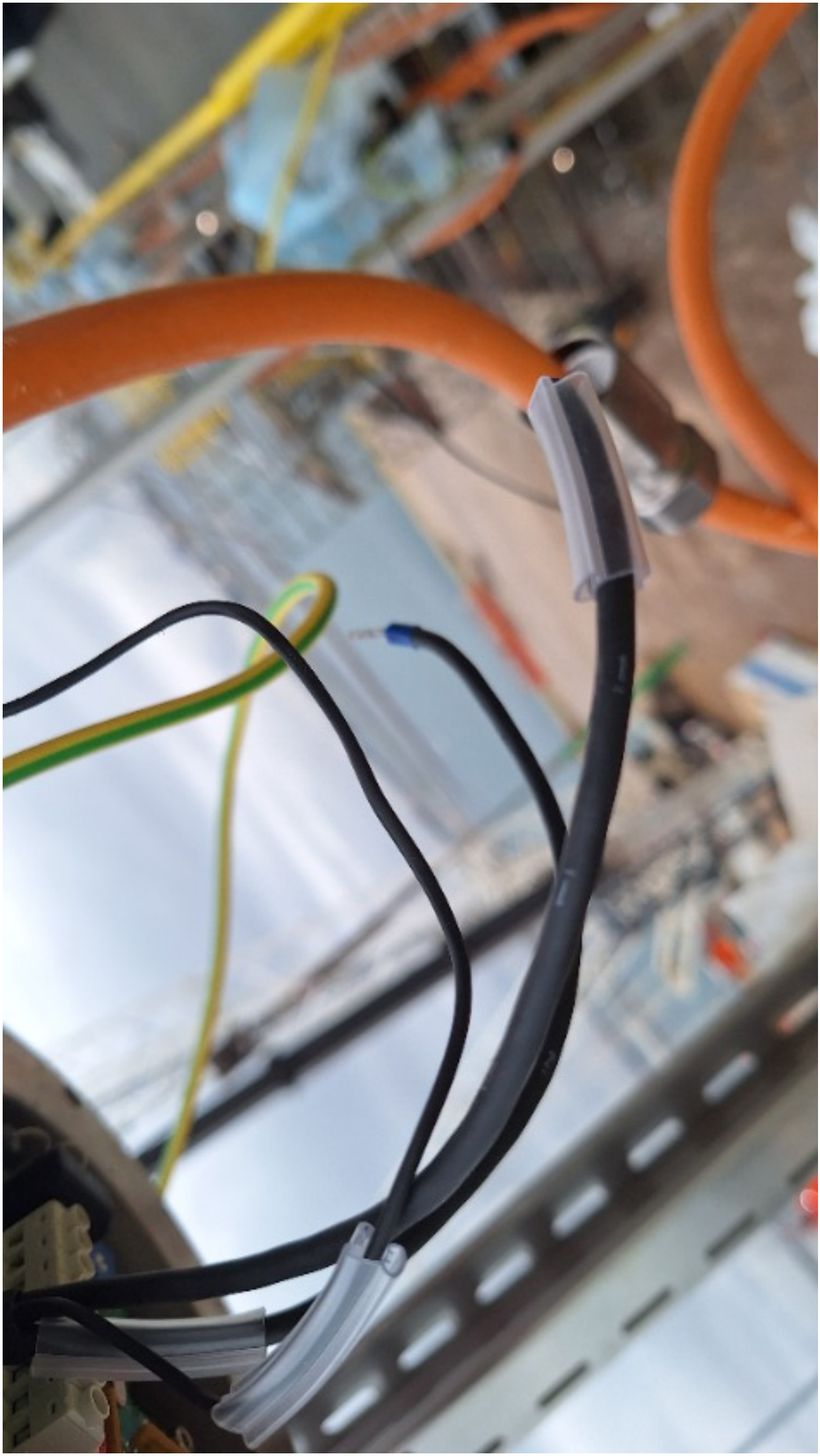
5 - CLEARANCE CHECK

Installed.

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

6- CLEARANCE APPROVAL

Name
Date
Signature



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001795

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Alessio Polo

Date: 2024-12-13

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2024-12-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic

Date: 2025-03-04

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


950-XL-03103

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001796

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Missing traffolyte tag side instrument

Name: Alessio Polo

Date: 2024-12-13

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2024-12-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-01-29

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001797

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Alessio Polo

Date: 2024-12-13

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2024-12-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

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

Name: Giovanni Tangianu

Date: 2025-03-07

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001812

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Alessio Polo

Date: 2024-12-13

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2024-12-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

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

Name: Giovanni Tangianu

Date: 2025-03-07

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


950-MFA-03103

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001813

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

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

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2024-12-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

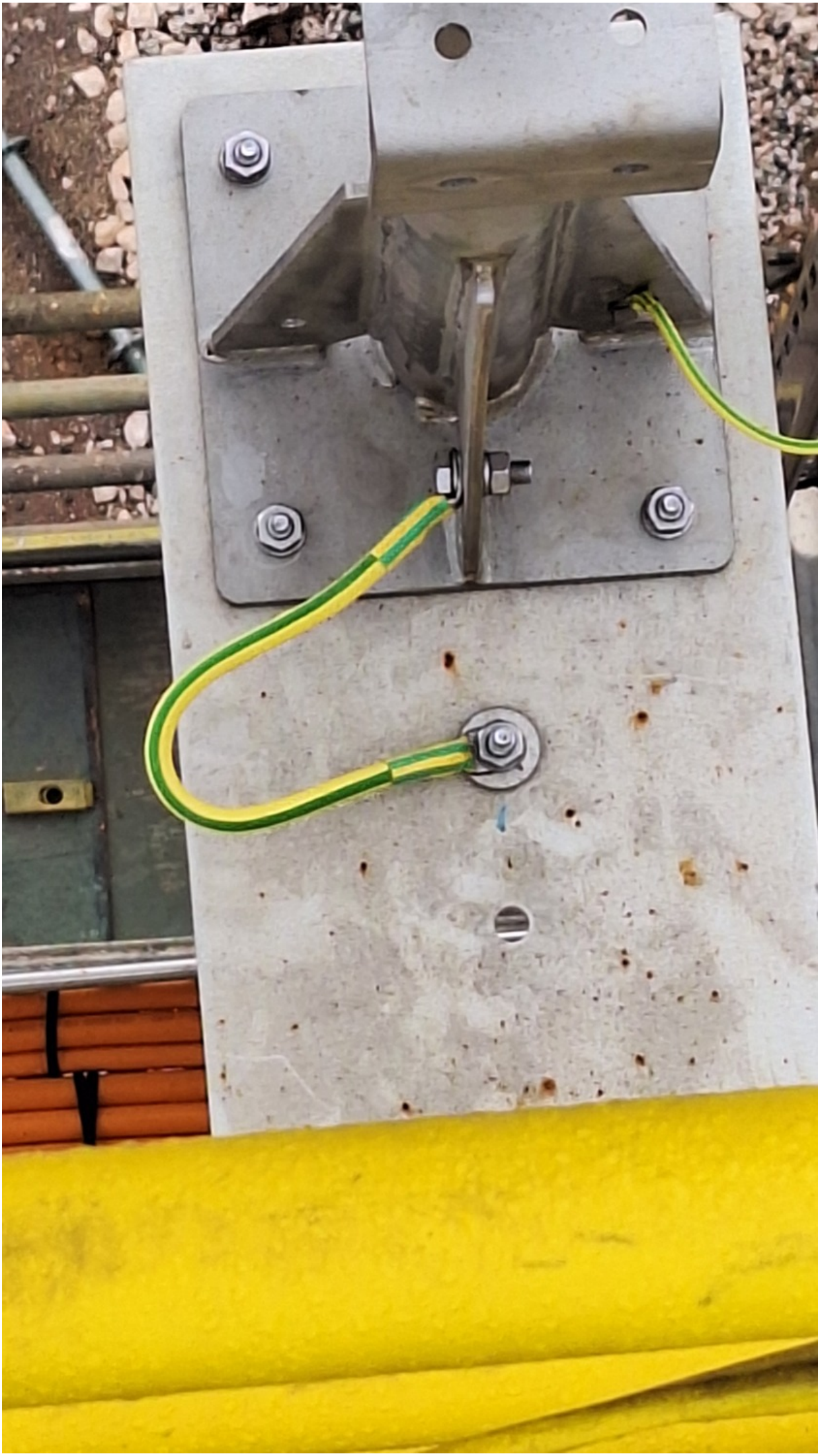
5 - CLEARANCE CHECK

DONE

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

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001814

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Missing traffolyte tag side instrument

Name: Alessio Polo

Date: 2024-12-13

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2024-12-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-01-29

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001815

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Alessio Polo

Date: 2024-12-13

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2024-12-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

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

Name: Giovanni Tangianu

Date: 2025-03-07

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

MEDC
SERIES RESISTOR
E.O.L. RESISTOR

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001816

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

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

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2024-12-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

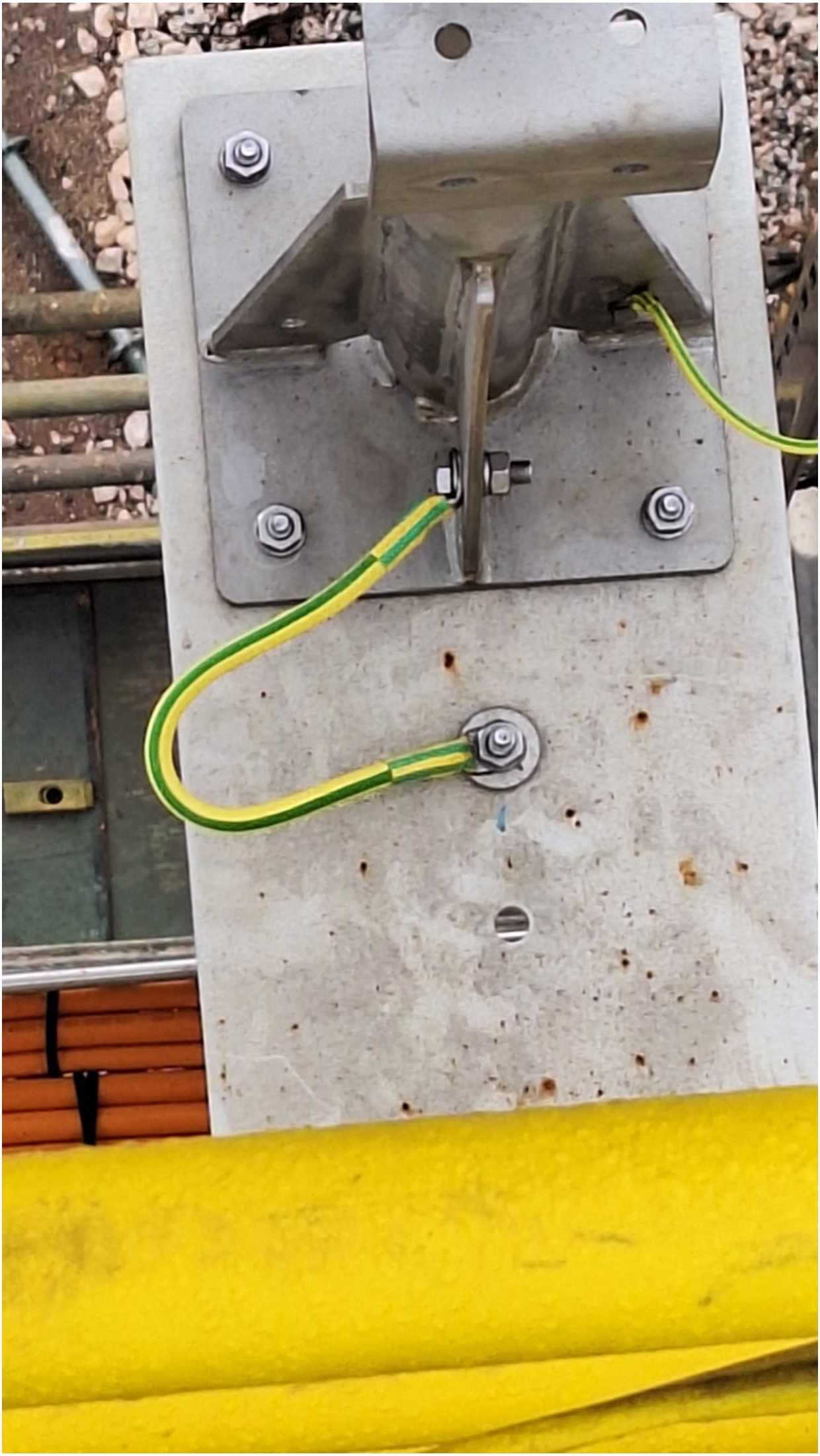
5 - CLEARANCE CHECK

DONE

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

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001817

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Missing traffolyte tag side instrument

Name: Alessio Polo

Date: 2024-12-13

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2024-12-13
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-01-29

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001911

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Alessio Polo

Date: 2024-12-16

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2024-12-16
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Alessio Polo

Date: 2025-02-22

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001915

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

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

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2024-12-16
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

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

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001927

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Missing traffolyte tag side instrument

Name: Alessio Polo

Date: 2024-12-16

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2024-12-16
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-01-29

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001929

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Alessio Polo

Date: 2024-12-16

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2024-12-16
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

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

Name: Giovanni Tangianu

Date: 2025-03-07

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002325

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

On both instrument and JB side SS cable tag is missing

Name: Luca Mussi

Date: 2025-01-03

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-04-02

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:





ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002326

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Luca Mussi

Date: 2025-01-03

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Luca Mussi
3.4 Activity code	MC Mechanical Completion	Date	2025-01-03
3.5 Action by	PRE-COMM	Signature	

4 - PERFORMED ACTION

Closed

Name: Raffaele Degli Esposti

Date: 2025-08-01

Signature:

5 - CLEARANCE CHECK

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

Name: Raffaele Degli Esposti

Date: 2025-08-01

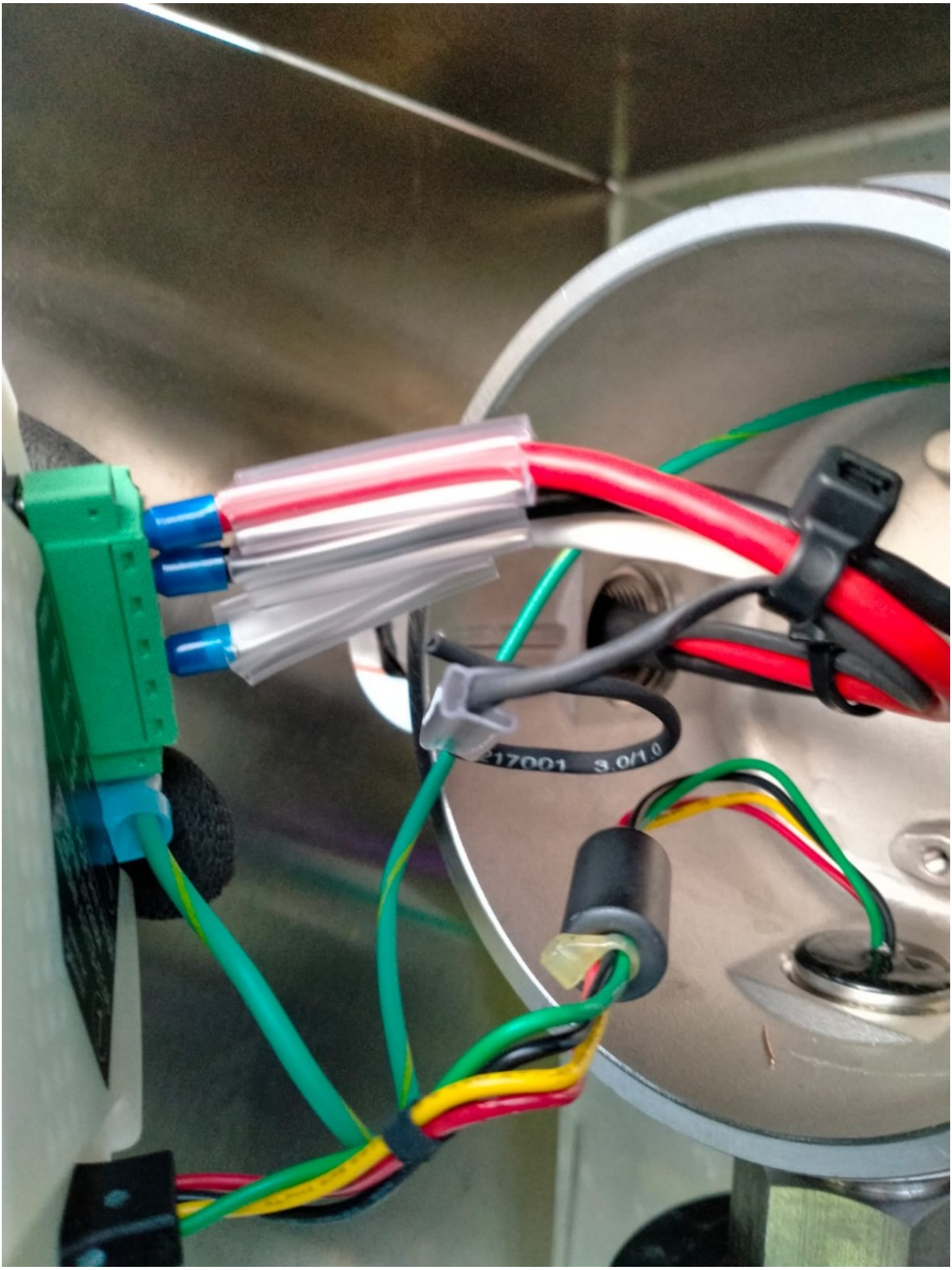
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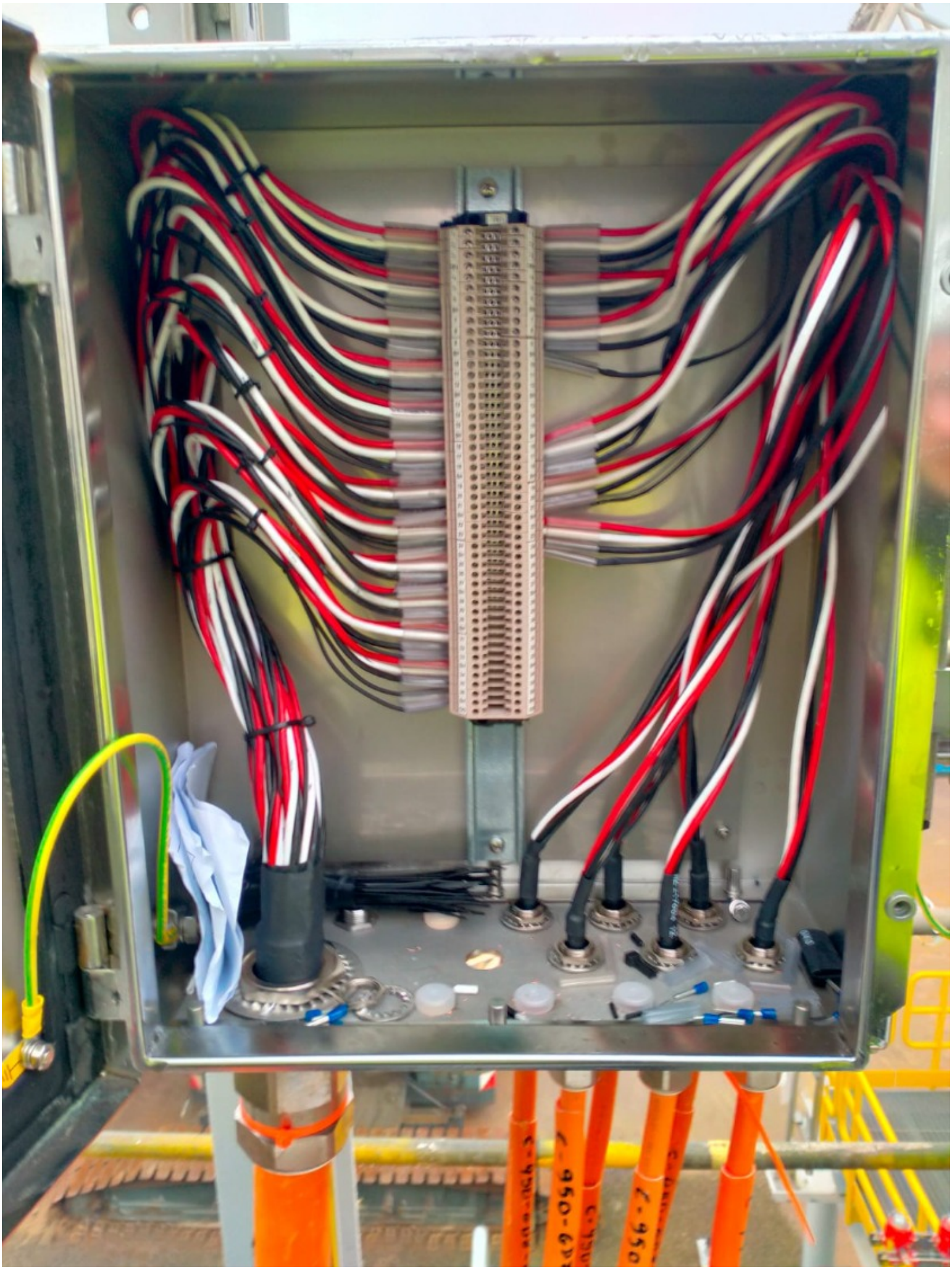
6- CLEARANCE APPROVAL

Name:

Date: 2025-08-01

Signature:





ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002327

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Luca Mussi

Date: 2025-01-03

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Alessio Polo

Date: 2025-02-11

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002328

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Luca Mussi

Date: 2025-01-03

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

the activity is concluded.

Name: Giovanni Tangianu

Date: 2025-01-16

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002329

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

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

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Luca Mussi
3.4 Activity code	MC Mechanical Completion	Date	2025-01-03
3.5 Action by	PRE-COMM	Signature	

4 - PERFORMED ACTION

Closed

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

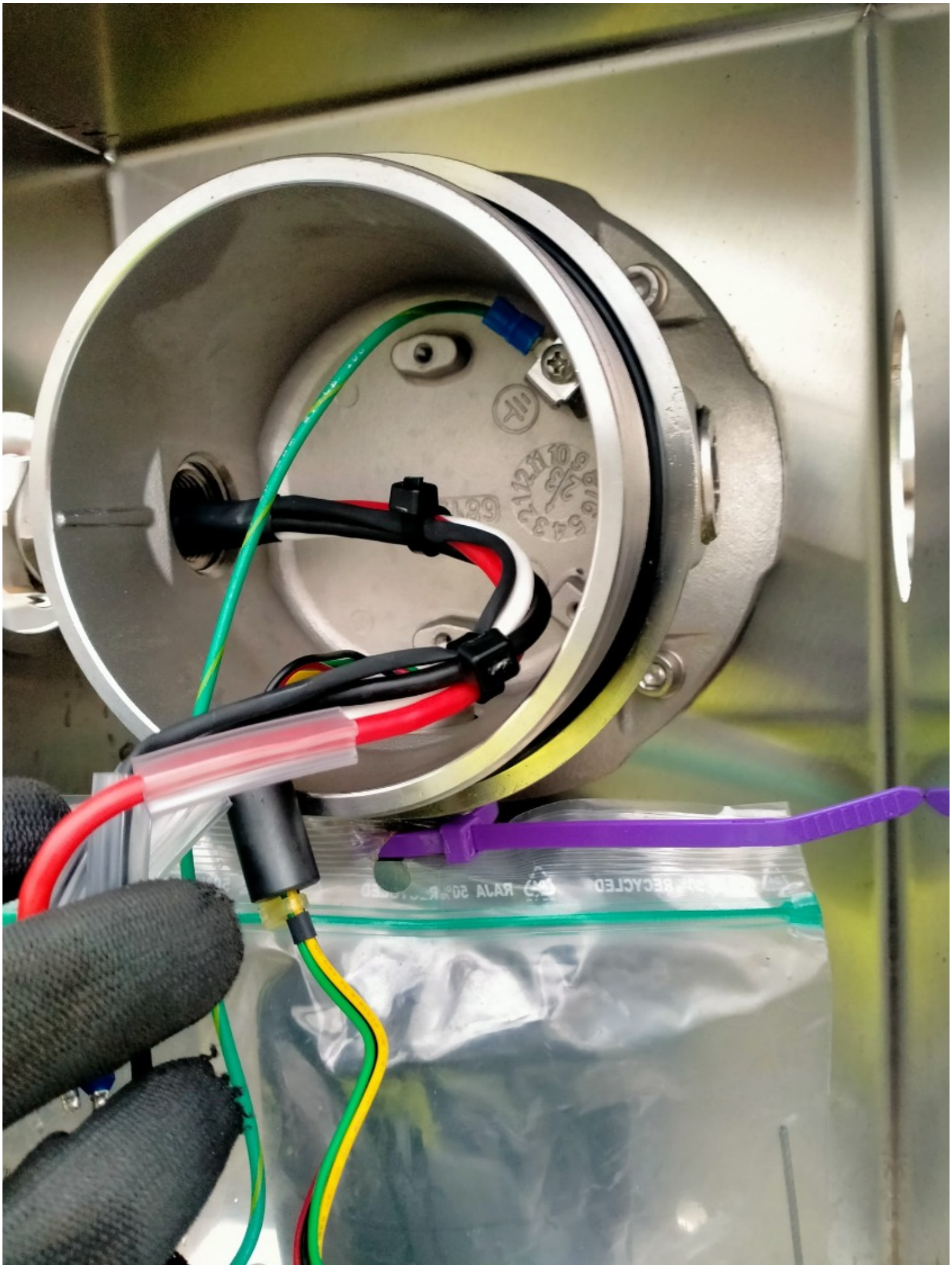
5 - CLEARANCE CHECK

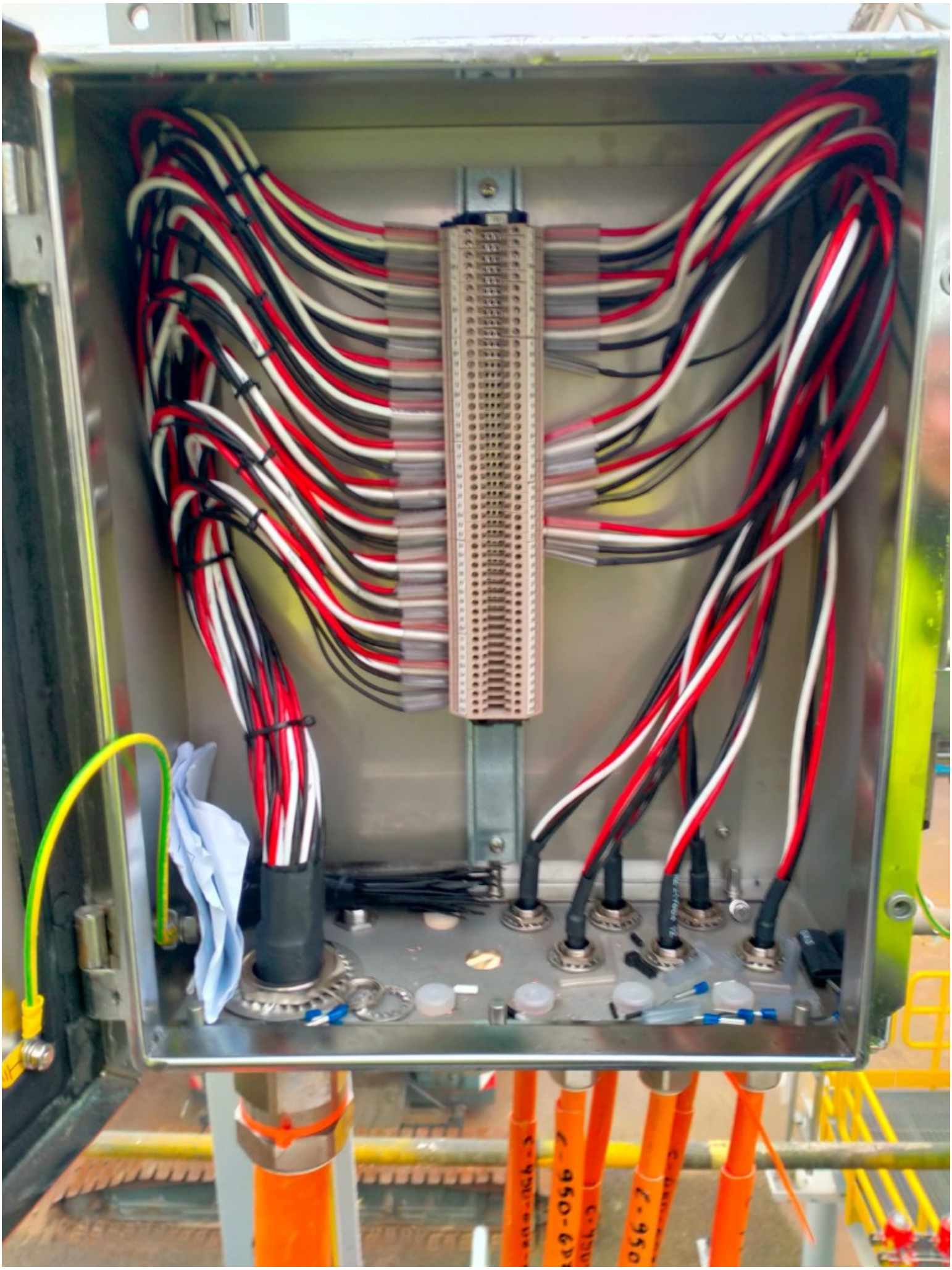
Installation carried out as per typical 123A90-DDL-EL-DD-20091 and 123A90-DDL-IN-DD-40017 drawing. Eng states that no additional support is needed.

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

6- CLEARANCE APPROVAL

Name:
Date: 2025-08-01
Signature:





ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002330

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Luca Mussi

Date: 2025-01-03

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli

Date: 2025-02-04

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:





ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002372

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Instrument earthing cable is missing.

Name: Luca Mussi

Date: 2025-01-07

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Connected.

Name: Giovanni Tangianu

Date: 2025-01-15

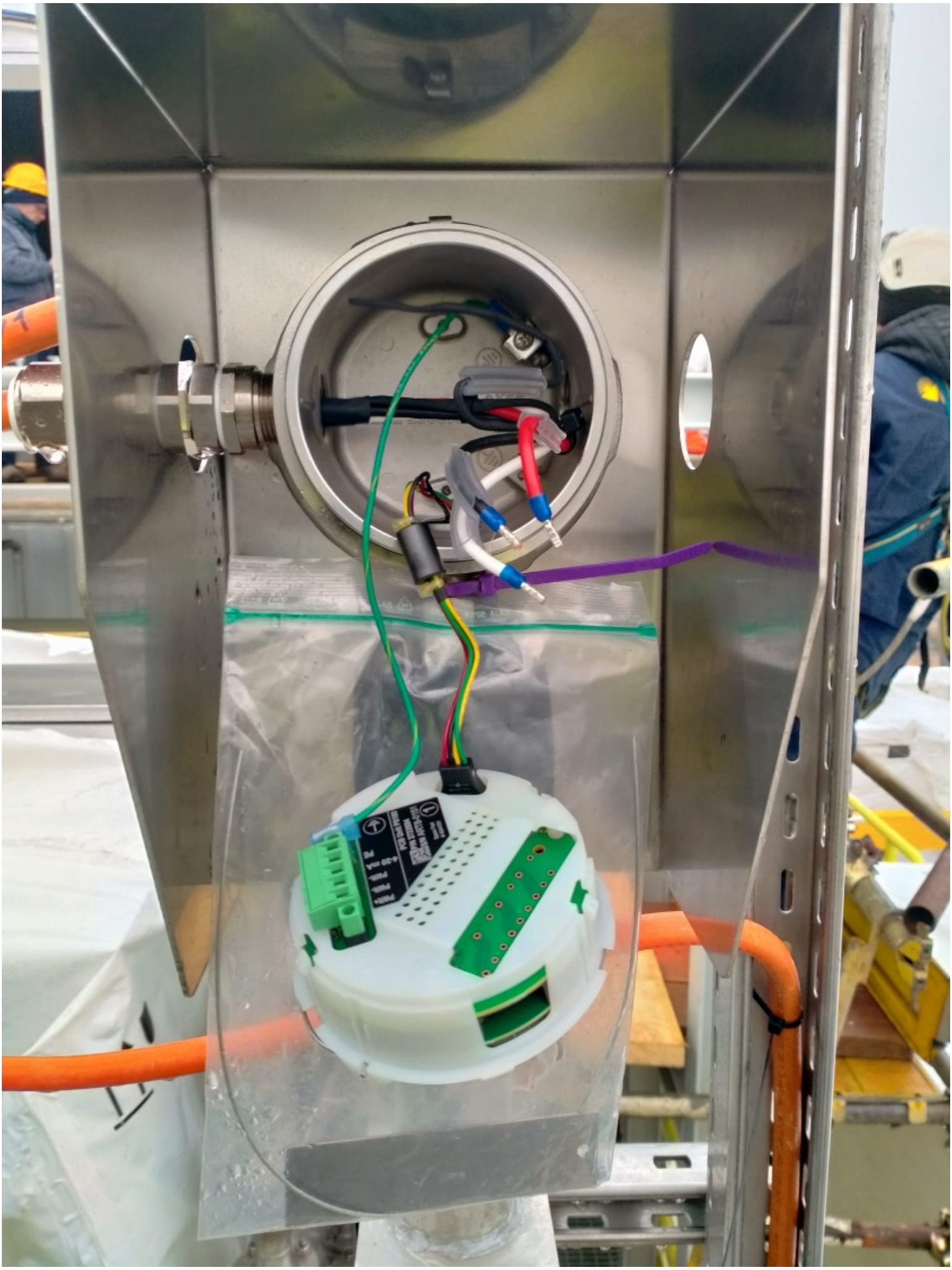
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002391

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Plug is not ATEX-certified

Name: Luca Mussi

Date: 2025-01-07

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-01-31

Signature

6- CLEARANCE APPROVAL

Name

Date

Signature

FIBERGUARD for Fi

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002393

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Hanging tag has not been installed

Name: Luca Mussi

Date: 2025-01-07

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-01-29

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


950-GDZ-03107

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002410

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Instrument earthing cable is missing.

Name: Luca Mussi

Date: 2025-01-07

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-01-16

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


950-TE-03101
950-GDZ-03108

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002411

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Hanging tag of the instrument has not been installed.

Name: Luca Mussi

Date: 2025-01-07

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-01-29

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


www.draeger-mo.com
FC4537339
Polytron 8000
OK

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002412

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

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

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Luca Mussi
3.4 Activity code	MC Mechanical Completion	Date	2025-01-07
3.5 Action by	ENG Engineering	Signature	

4 - PERFORMED ACTION

Name:
Date: 2025-04-07
Signature:

5 - CLEARANCE CHECK

The document has been updated.

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

6- CLEARANCE APPROVAL

Name:
Date: 2025-04-07
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002551

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

The internal PVC fixing system are damaged.

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

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-09
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

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

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

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002552

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Alessio Polo

Date: 2025-01-09

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-09
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-01-16

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002553

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

The plug is not installed according to the specifications. To be replaced with plug Ex-d/e IIC , (see 123A90-DDL-IN-HD-40079_Rev.02 sh. 29).

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

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-09
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

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

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002554

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

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

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-01-09
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

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

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

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001373

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Giovanni Tangianu

Date: 2024-12-05

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

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

Name: Giovanni Tangianu

Date: 2025-03-07

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001377

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Giovanni Tangianu

Date: 2024-12-05

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-01-21

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


950-XZ-03101



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001378

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

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

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Installed.

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

6- CLEARANCE APPROVAL

Name:
Date:
Signature:





ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001382

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

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

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:
Date:
Signature:

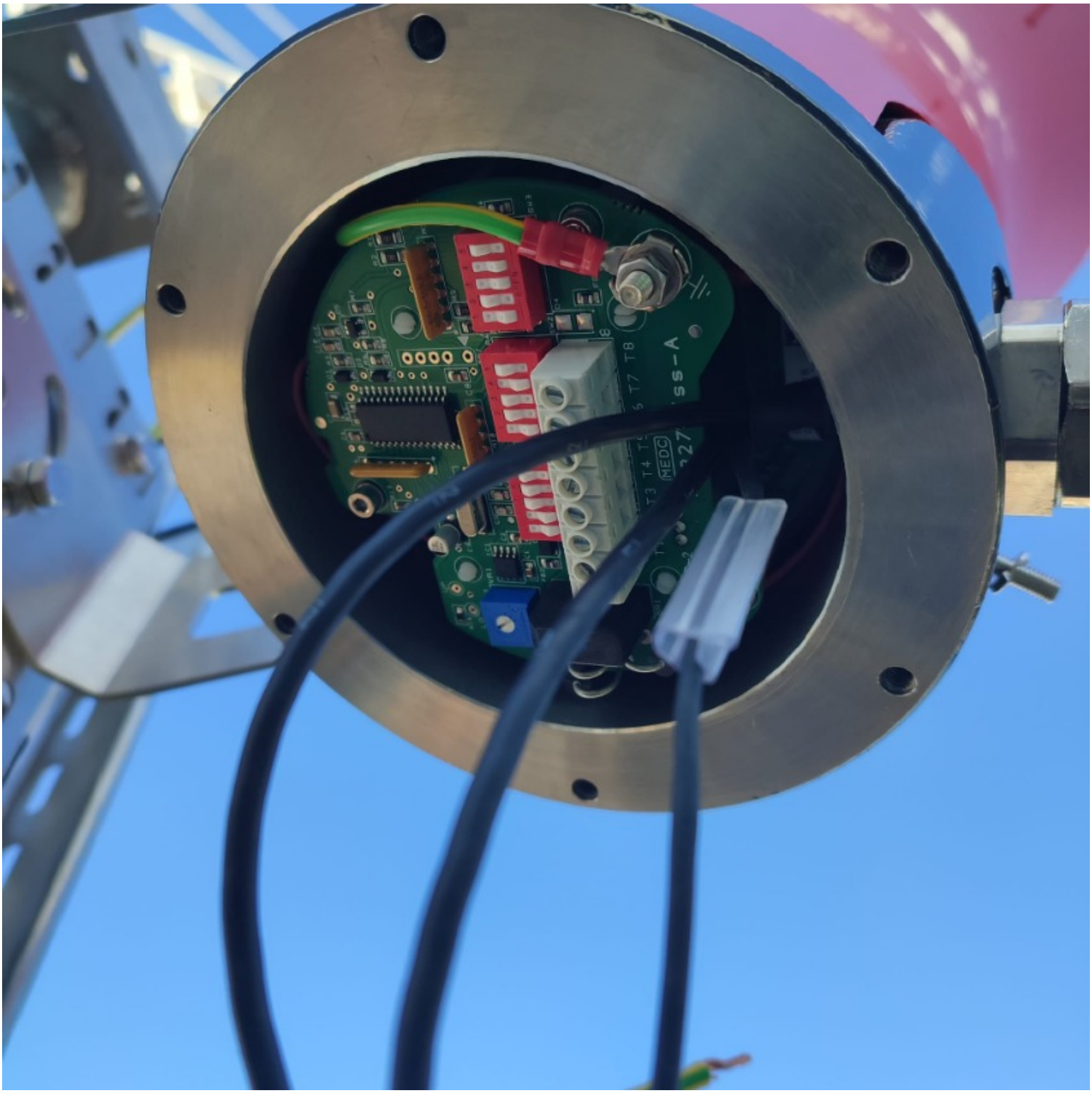
5 - CLEARANCE CHECK

Installed.

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

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001383

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

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

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Installed.

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

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001384

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Giovanni Tangianu

Date: 2024-12-05

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

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

Name: Giovanni Tangianu

Date: 2025-03-07

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001385

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Giovanni Tangianu

Date: 2024-12-05

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-01-21

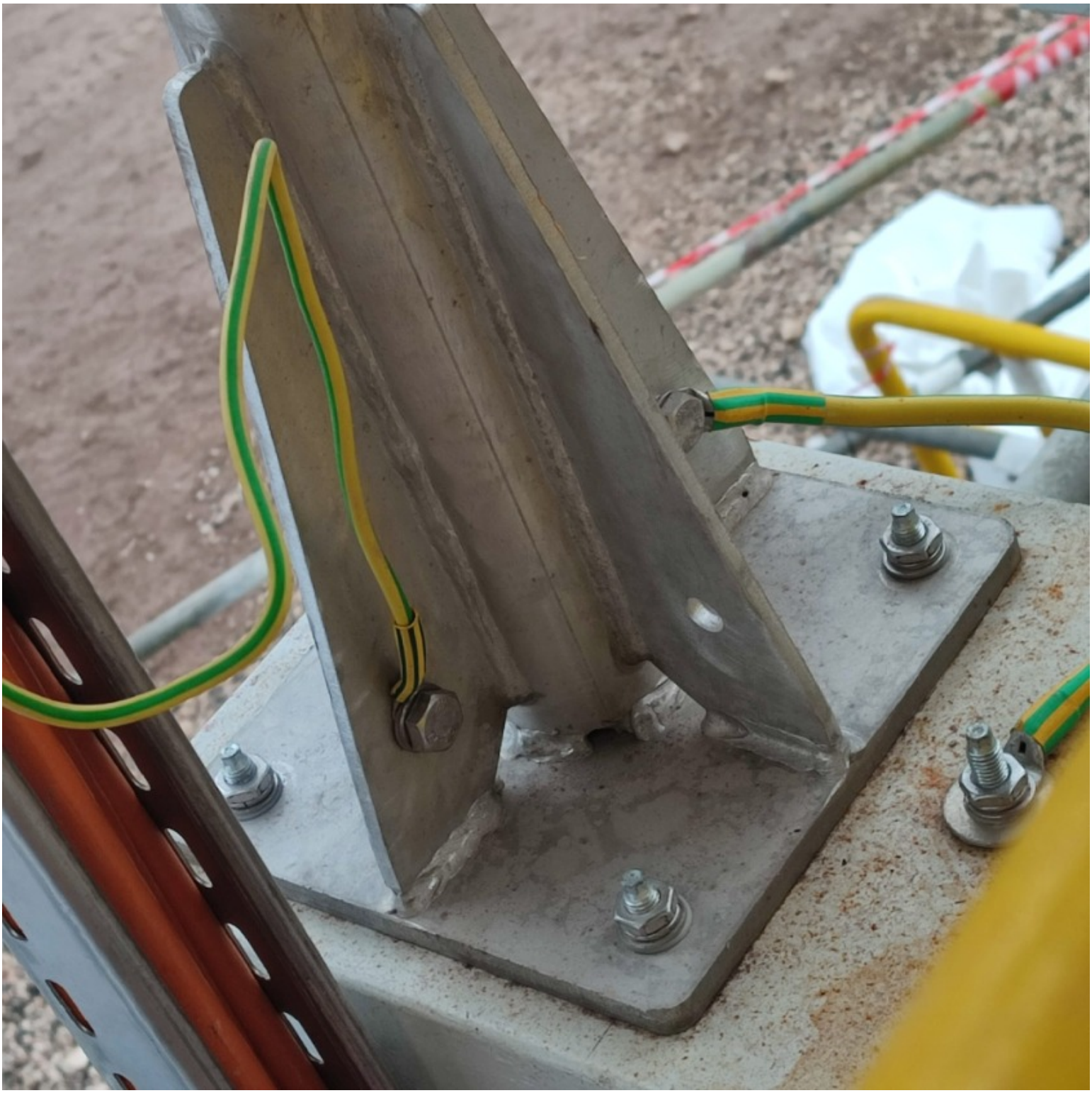
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001386

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

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

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name
Date
Signature

5 - CLEARANCE CHECK

DONE

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

6- CLEARANCE APPROVAL

Name
Date
Signature

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001387

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Giovanni Tangianu

Date: 2024-12-05

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

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

Name: Giovanni Tangianu

Date: 2025-03-07

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001388

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Giovanni Tangianu

Date: 2024-12-05

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Eleonora Carotenuto

Date: 2024-12-27

Signature

6- CLEARANCE APPROVAL

Name

Date

Signature


MANUAL FIRE ALARM ACTIVATION
LIFT
FLAP
AND
PUSH

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001389

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Giovanni Tangianu

Date: 2024-12-05

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-04-08

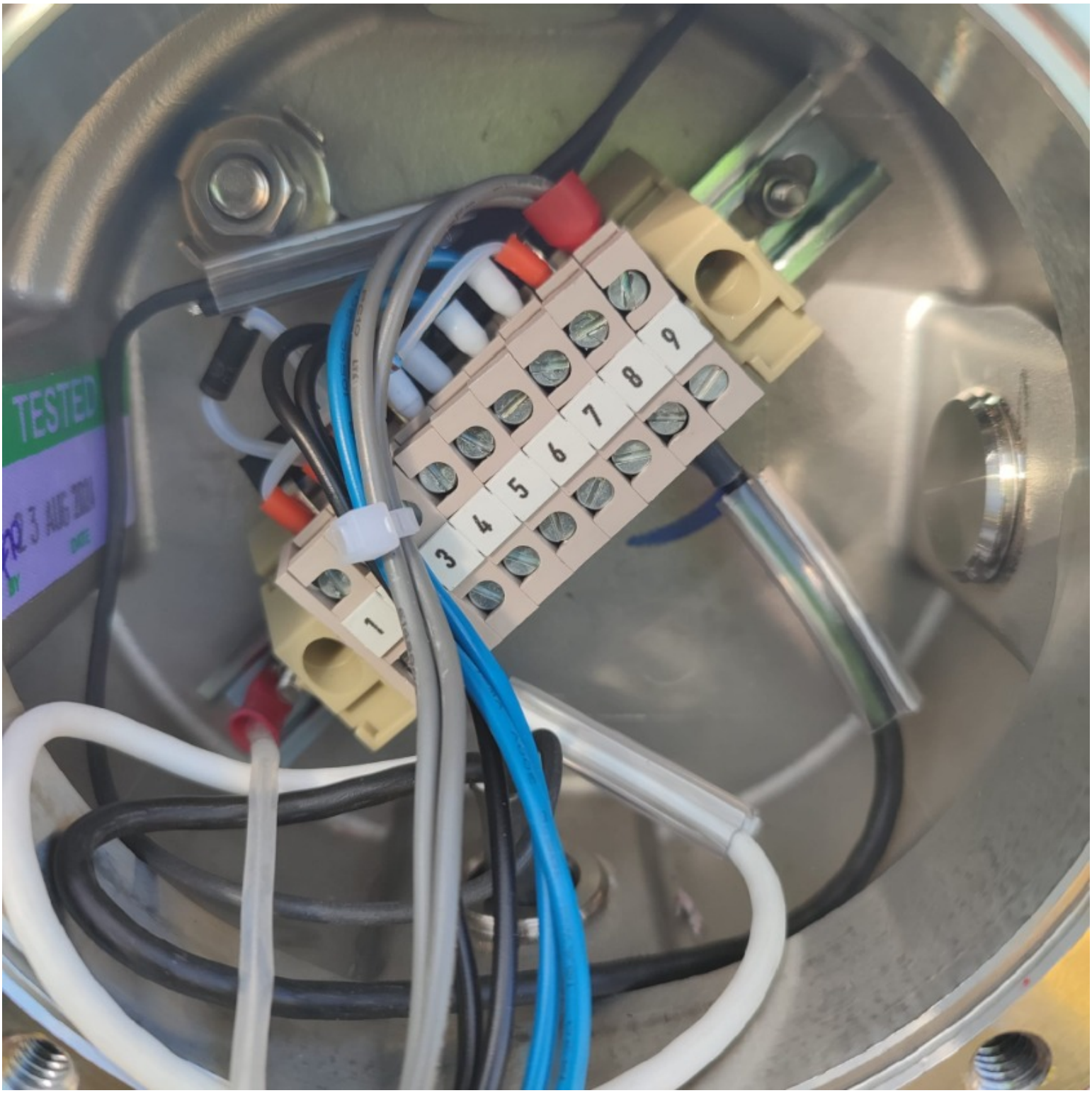
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


TESTED
1
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ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001411

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Instrument tag SS is not installed .

Name: Giovanni Tangianu

Date: 2024-12-05

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-01-21

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001639

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Missing SS cable tag

Name: Paolo Schintu

Date: 2024-12-10

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-02-26

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001640

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Missing core identification tag instrument side

Name: Paolo Schintu

Date: 2024-12-10

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-04-08

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001641

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Missing SS cable tag instrument side

Name: Paolo Schintu

Date: 2024-12-10

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Gabriele Bertuccelli

Date: 2025-02-03

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001642

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Missing core identification tag instrument side

Name: Paolo Schintu

Date: 2024-12-10

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic

Date: 2025-02-21

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001643

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Missing core identification tag instrument side

Name: Paolo Schintu

Date: 2024-12-10

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-04-08

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001644

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Missing SS cable tag instrument side

Name: Paolo Schintu

Date: 2024-12-10

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Eleonora Carotenuto

Date: 2024-12-28

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001648

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Missing traffolyte tag side instrument

Name: Alessio Polo

Date: 2024-12-11

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-01-29

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001649

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Alessio Polo

Date: 2024-12-11

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Alessio Polo

Date: 2024-12-17

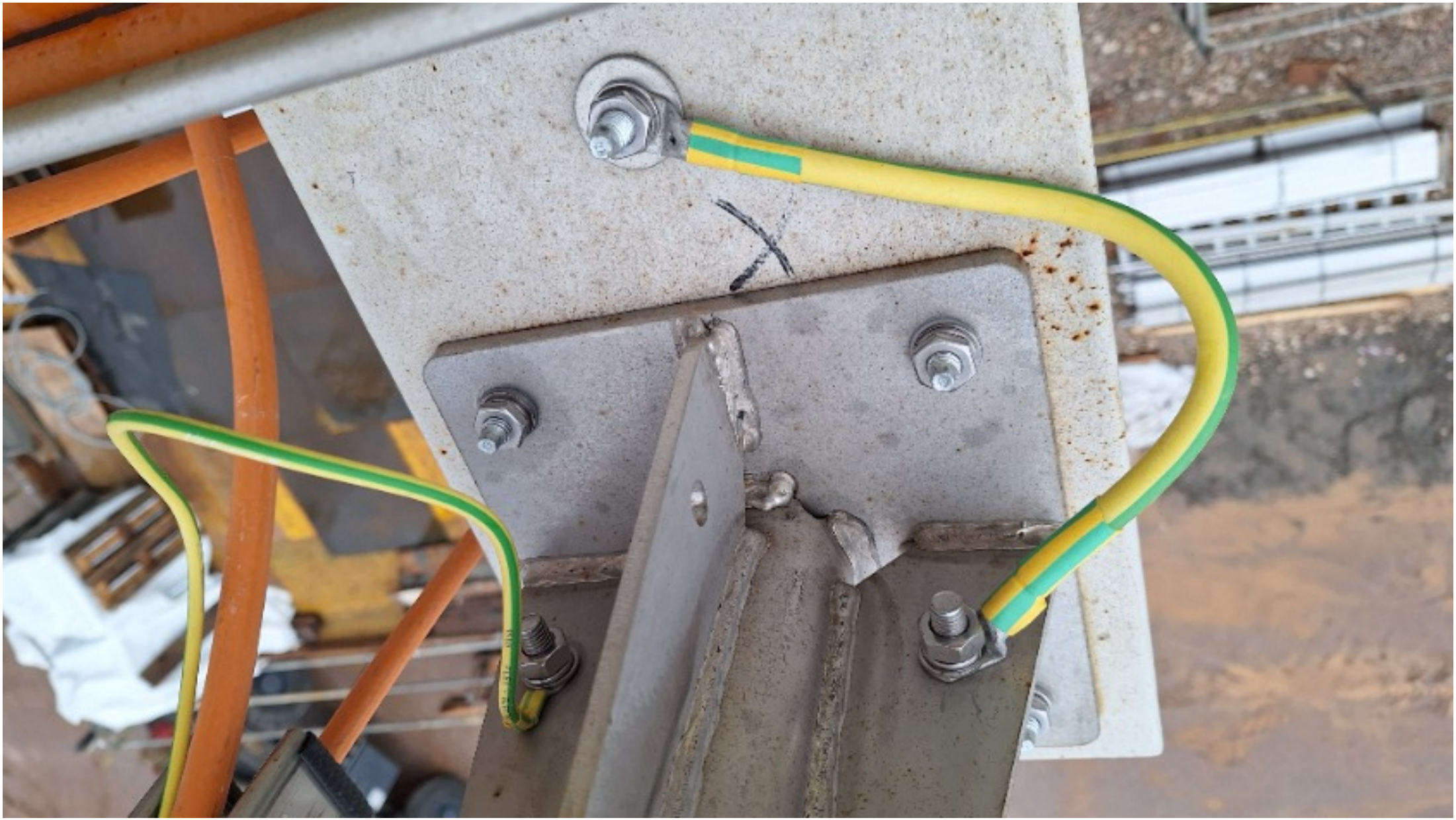
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



52

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001651

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Alessio Polo

Date: 2024-12-11

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

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

Name: Giovanni Tangianu

Date: 2025-03-07

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

52

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001652

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Alessio Polo

Date: 2024-12-11

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Alessio Polo

Date: 2025-01-22

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001653

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

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

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

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

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

950-FDZ-03104
FDZ-03104

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001654

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Alessio Polo

Date: 2024-12-11

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

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

Name: Giovanni Tangianu

Date: 2025-03-07

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


TEREX

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001655

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

Missing traffolyte tag side instrument

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

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Done

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

6- CLEARANCE APPROVAL

Name:
Date:
Signature:


HKN
TEREX

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001656

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Paolo Schintu

Date: 2024-12-11

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Eleonora Carotenuto

Date: 2025-01-02

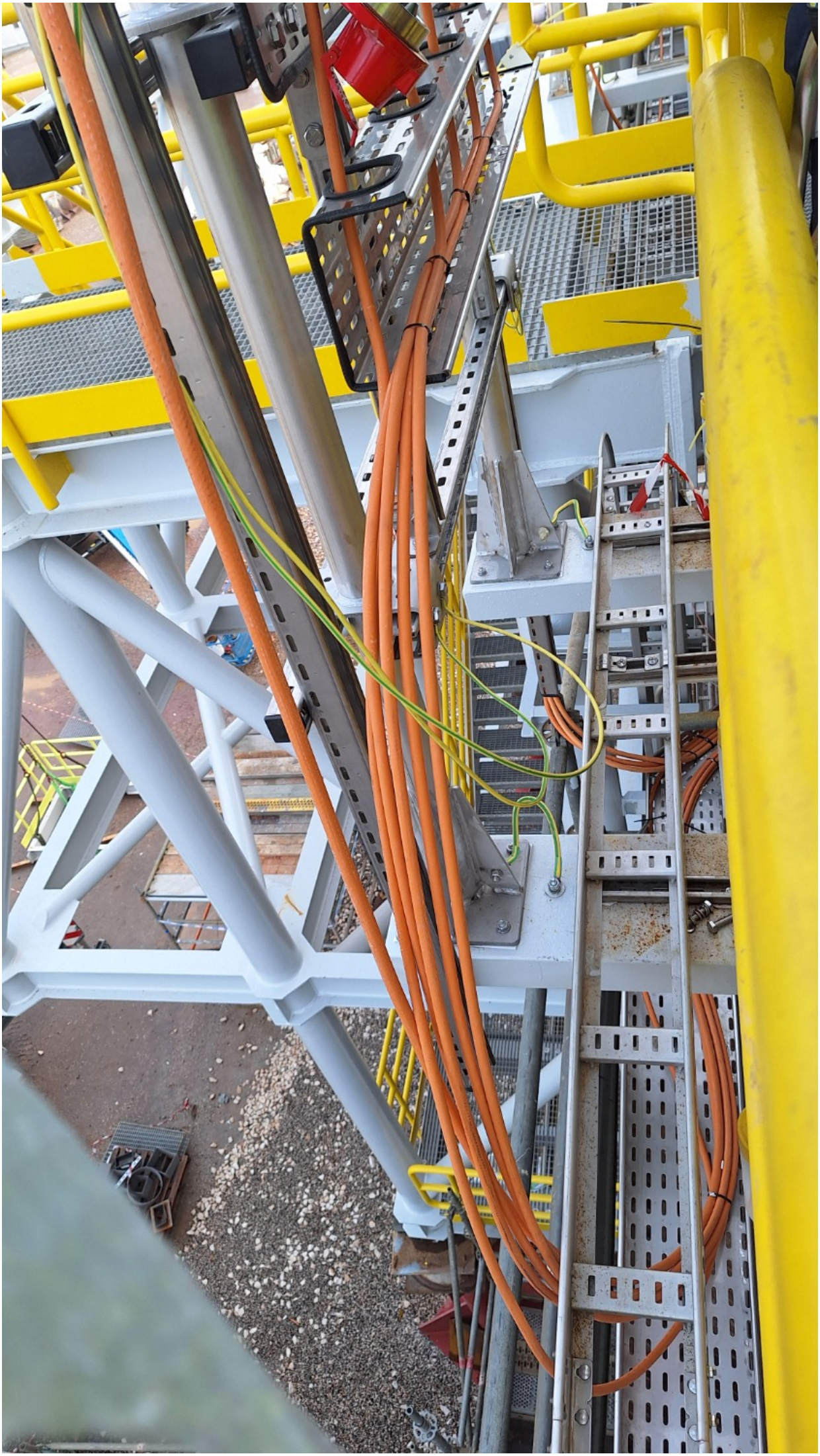
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001657

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Alessio Polo

Date: 2024-12-11

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

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

Name: Giovanni Tangianu

Date: 2025-03-07

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001658

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

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

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Done

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

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001659

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Paolo Schintu

Date: 2024-12-11

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Eleonora Carotenuto

Date: 2025-01-02

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001670

PROVERLIS

1 -ELEMENT IDENTIFICATION

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

2 - OBSERVATION

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

Name: Alessio Polo

Date: 2024-12-11

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

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

Name: Giovanni Tangianu

Date: 2025-03-07

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


TEREX

Section 4 FUNCTIONAL TESTS SHEETS

Section 4.1 Electrical functional test sheets index

NOT APPLICABLE

Section 4.2 Electrical
“As-Commissioned” interconnection diagrams

NOT APPLICABLE

Section 4.3 Instrumentation functional test sheets index

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 70-12 & discipline : I

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

ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
950-FDZ-03101	Flame Detector - FZ-03 Electrolyzer PK Area	ONSHORE	C10003146	FJ04F	100	2025-01-30	RFO 1
950-FDZ-03102	Flame Detector - FZ-03 Electrolyzer PK Area	ONSHORE	C10003145	FJ04F	100	2025-01-30	RFO 1
950-FDZ-03103	Flame Detector - FZ-03 Electrolyzer PK Area	ONSHORE	C10003144	FJ04F	100	2025-01-30	RFO 1
950-FDZ-03104	Flame Detector - FZ-03 Electrolyzer PK Area	ONSHORE	C10003143	FJ04F	100	2025-03-11	RFO 1
950-GDZ-03101	H2 GD FZ-03 Electrolyzer PK Area	ONSHORE	C10003110	FJ04L	100	2025-02-11	RFO 1
950-GDZ-03102	H2 GD FZ-03 Electrolyzer PK Area	ONSHORE	C10003109	FJ04L	100	2025-02-11	RFO 1
950-GDZ-03103	H2 GD FZ-03 Electrolyzer PK Area	ONSHORE	C10003108	FJ04L	100	2025-02-11	RFO 1
950-GDZ-03104	H2 GD FZ-03 Electrolyzer PK Area	ONSHORE	C10003107	FJ04G	100	2025-02-11	RFO 1
950-GDZ-03105	H2 GD FZ-03 Electrolyzer PK Area	ONSHORE	C10003106	FJ04G	100	2025-02-11	RFO 1
950-GDZ-03107	O2 DET. FZ-03 Electrolyzer PK Area	ONSHORE	C10003105	FJ04G	100	2025-04-03	RFO 1
950-GDZ-03108	O2 DET. FZ-03 Electrolyzer PK Area	ONSHORE	C10003104	FJ04G	100	2025-04-03	RFO 1
950-GDZ-03109	O2 DET. FZ-03 Electrolyzer PK Area	ONSHORE	C10003103	FJ04G	100	2025-03-26	RFO 1
950-MFA-03101	FZ-03 MFA Activation	ONSHORE	C10004415	FJ04PB_FGS	100	2025-02-11	RFO 1
950-MFA-03102	FZ-03 MFA Activation	ONSHORE	C10004416	FJ04PB_FGS	100	2025-02-11	RFO 1
950-MFA-03103	FZ-03 MFA Activation	ONSHORE	C10004417	FJ04PB_FGS	100	2025-02-11	RFO 1
950-MFA-03104	FZ-03 MFA Activation	ONSHORE	C10004418	FJ04PB_FGS	100	2025-02-11	RFO 1
950-XL-03101	FZ-03 Gas Beacon Activation	ONSHORE	C10004440	FJ04FB	100	2025-01-30	RFO 1
950-XL-03102	FZ-03 Fire Beacon Activation	ONSHORE	C10004441	FJ04FB	100	2025-01-30	RFO 1
950-XL-03103	FZ-03 Gas Beacon Activation	ONSHORE	C10004442	FJ04FB	100	2025-01-30	RFO 1
950-XL-03104	FZ-03 Fire Beacon Activation	ONSHORE	C10004443	FJ04FB	100	2025-01-30	RFO 1
950-XZ-03101	FZ-03 Sounder Activation	ONSHORE	C10004463	FJ04MS	100	2025-02-11	RFO 1
950-XZ-03102	FZ-03 Sounder Activation	ONSHORE	C10004464	FJ04MS	100	2025-02-11	RFO 1

ROSETTI MARINO — CROSSWIND

ITEM	Tag	950-GDZ-03109	: O2 DET. FZ-03 Electrolyzer PK Area	Dwg	123A90-DDL-SAF-DL-30027		
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)	Module	UD		
TASK	code	C10003103	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	PRE-COMM	Activity	FTS	Discipline	Instrumental	Form	FJ04G	Gas Detection

Loop Tag: 950-GDZ-03109 TDSL rev.: 123A90-DDL-IN-DG-40014 rev. 1_A

Cabinet: 08A/08B Rack: 03 Slot: 01 Channel: 08

Gas Detection Type: TEXS GTL (Infrared open path gas transmitter): n/a GT (gas transmitter): ETR 0500

Thresholds: Gas Alarm - LL 19% (LL) Gas Confirmed - HH 23%

Scale and Unit: 0-100% Vol. O2

Calibration checking (following bottle at disposal):

Physical value on transmitter:	0%	20.9%	
ICSS Display:	0%	20.9%	

Checking of Dirty Optical ●

Checking of Invalidity ●

Checking of Maintenance Inhibition ●

Comments:

	Performed by	● WITNESS ☐ REVIEW	● WITNESS ☐ REVIEW
Company	COMM	RM COMM	CROSSWIND
Name	Marco Di Maria	Giandonato Delmissier	Gerry McCann
Date	2025-03-24	2025-03-25	2025-03-26
Signature	Digitaly signed by Marco Di Maria 2025-03-24T12:07:50.599Z	Digitaly signed by Giandonato Delmissier 2025-03-25T08:02:30.421Z	Digitaly signed by Gerry McCann 2025-03-26T09:16:54.277Z

Dräger Polytron® 8100 EC
Detector for toxic gases and oxygen

The Polytron® 8100 EC is Dräger's top of the line explosion-proof transmitter for the detection of toxic gases or oxygen. It uses a high performance plug and play electrochemical DrägerSensor to detect a specific gas. Besides having a 3-wire 4 to 20 mA analog output with relays, it also offers HART®, Modbus and Fieldbus protocol, making it compatible with most control systems.



Dräger. Technology for Life®

Benefits

Durable, intelligent and sensitive – the DrägerSensor®

With unique electrochemical DrägerSensors, Polytron 8100 can detect over 100 toxic gases and oxygen. These long life sensors provide continuous detection even under the harshest conditions. DrägerSensors offer the industry's widest temperature and humidity range between -40 °C to +65 °C (-40 °F to +150 °F). The built-in memory contains all calibration and configuration information: therefore the sensor ships pre calibrated and is ready for immediate operation. An intelligent sensor self-test function allows for predictive maintenance. The intrinsically safe connection of the sensor eliminates the need for a flame arrestor, giving you faster response times and higher sensitivity.

Easy device management via digital communication

The Dräger Polytron 8100 is equipped with digital interfaces allowing for quick and easy remote interrogation of the transmitter's state. Integration with existing asset management systems such as PACTware™ is possible via DTM. In addition to the common HART® communication system, the fieldbus interfaces with PROFIBUS® PA, FOUNDATION fieldbus™ H1, and Modbus RTU are also available.

Same design, same operating principle

The Dräger Polytron 8100 belongs to the Polytron 8000 series. All transmitters in this series have the same design and user interface. This allows for uniform operation with reduced training and maintenance requirements. The large graphic backlit display shows status information clearly and in an easy to use format. The measured gas concentration, selected gas type, and measuring unit are displayed during normal operation. Colored LEDs (green, yellow and red) provide additional alarm and status information. The Polytron 8100 is operated by means of a magnetic wand over contact surfaces.

Three relays for controlling external equipment

Upon request, the Dräger Polytron 8100 can also be supplied with three integrated relays. This enables you to use it as an independent gas detection system with two arbitrarily adjustable concentration alarms and one fault alarm. Audible alarms, signal lights or similar devices can thus be controlled locally without an additional cable between the transmitter and central controller.

Safe, robust housing for every application

Polytron 8100 features a Class I, Div. 1 rated explosion proof enclosure made from epoxy coated aluminium or 316L stainless steel, making it suitable for a wide range of environmental conditions.

Remote sensor option does not require conduit

The remote sensor enclosure allows you to install the sensor separately from the transmitter. This 'external' installation makes it easier to use if the sensor has to be installed in a difficult to access or unfavorable position.

Technical Data

Dräger Polytron® 8100 EC

Type	Explosion proof / flameproof enclosed transmitter (“d”)		
Gases	Toxic gases and oxygen, dependent on the sensor used		
Measuring ranges	Customized adjustment, see sensor data sheet		
Display	Backlit graphic LCD; 3 Status LEDs (green/yellow/red)		
Performance Characteristics	see sensor datasheet		
Electrical data	Signal output analog	Normal operation	4 to 20 mA, 3- or 4-wire, sink or source
		Maintenance	Constant 3.4 mA (adjustable)
		Fault	< 1.2 mA
	Signal output digital	HART® w/ 3- or 4-wire, PROFIBUS® PA, FOUNDATION fieldbus™ H1 and Modbus RTU w/ 5-wires	
	Power supply	10 to 30 V DC	
	Power consumption (max.)	w/o relay, non-remote	80 mA at 24 V
		w/ relay, remote	100 mA at 24 V
	Relay specification (option)	2 alarm relays and 1 fault relay, SPDT 5 A @ 230 VAC, 5 A @ 30 VDC	
Environmental conditions (see sensor data sheet)	Temperature	-40 to 65 °C (-40 to 149 °F) without relay	
		-40 to 65 °C (-40 to 149 °F) with relay	
	Pressure	20.7 to 38.4 inch Hg / 700 to 1,300 mbar	
	Humidity	0 to 100 % r. h., non-condensing	
Housing	Transmitter housing	Epoxy coated copper-free aluminium or stainless steel SS316 L	
	Sensor housing	Polyamide	
	Enclosure protection type	NEMA 4X & 7, IP65/66/67	
	Cable entry point	3/4" NPT threaded holes or M20 cable gland	
	Dimensions (H x W x D), approx.		11.0" x 5.9" x 5.1" / 280 x 150 x 130 mm
	Weight, approx.	Aluminium	6.6 lbs / 3.0 kg
		SS316 L	11.0 lbs / 5.0 kg
Approvals	UL & CSA	Class I, Div 1, Groups A, B, C, D;	
		Class II, Div 1, Groups E, F, G;	
		Class I, Zone 1, Group IIC;	
		T-Code T6/T4	
	IECEx	Ex db [ia] IIC T6/T4 Gb,	
		-40 ≤ Ta ≤ +40/+70 °C;	
	ATEX	II 2G Ex db [ia] IIC T6/T4 Gb,	
		-40 ≤ Ta ≤ +40/+70 °C;	
	FM Performance (H_2S sensor)	Certificate No: FM16NUS0015	
		FM 6340:2014, FM Class 3810:2005,	
		ISA–92.00.01-2010	
	CE marking	ATEX (Directive 2014/34/EU)	
		Electromagnetic Compatibility (Directive 2014/30/EU)	
		Low Voltage (Directive 2014/35/EU)	
	Marine approvals	DNV GL, ABS, LR, CSS, RMRS	
	MED approval	Certificate no. MEDB0000411	
	DEKRA Performance approval (for O_2 sensors only)	Certificate no. BVS 13 ATEX G 001 X	
		EN 60079-29-16:2016	
	SIL 2 certified by TUEV Sued	Certificate no. Z10 053474 0023	

Ordering Information

Dräger Polytron® 8100 EC	Approval Code	Order Number
Dräger Polytron® 8100 EC d A 4-20/HART®	ETR 0400	83 44 403
Dräger Polytron® 8100 EC d A 4-20/HART® relay	ETR 0401	83 44 404
Dräger Polytron® 8100 EC d S 4-20/HART®	ETR 0500	83 44 412
Dräger Polytron® 8100 EC d S 4-20/HART® relay	ETR 0501	83 44 413
Dräger Polytron® 8xx0 Custom Configuration, e.g. Modbus – visit www.draeger.com/polytron to configure yours		83 44 800

Electrochemical DrägerSensors	Order Number
DrägerSensor® AC	68 10 595
Initial Operation Set for DrägerSensor AC	68 09 381
DrägerSensor® Cl_2	68 09 665
DrägerSensor® $COCl_2$	68 09 930
DrägerSensor® CO	68 09 605
DrägerSensor® CO LS	68 09 620
DrägerSensor® CO LH	68 12 570
DrägerSensor® H_2	68 09 685
DrägerSensor® H_2O_2 HC	68 09 675
DrägerSensor® H_2O_2 LC	68 09 705
DrägerSensor® H_2S LC	68 09 610
DrägerSensor® H_2S HC	68 09 710
DrägerSensor® H_2S	68 10 435
DrägerSensor® HCl	68 09 640
DrägerSensor® HCN	68 09 650
DrägerSensor® HCN LC	68 13 200
DrägerSensor® Hydrides	68 09 635
DrägerSensor® Hydrides SC	68 09 980
DrägerSensor® PH_3/AsH_3	68 09 695
DrägerSensor® Hydrazine	68 10 180
DrägerSensor® NH_3 LC	68 09 680
DrägerSensor® NH_3 HC	68 09 645
DrägerSensor® NH_3 TL	68 13 095
DrägerSensor® NH_3 FL	68 13 260
DrägerSensor® NO LC	68 09 625
DrägerSensor® NO_2	68 09 655
DrägerSensor® NO_2 LC	68 13 205
DrägerSensor® O_3	68 14 005
DrägerSensor® O_2 LS	68 09 630
DrägerSensor® OV1	68 10 740
DrägerSensor® OV2	68 10 745
DrägerSensor® SO_2	68 09 660

Accessories	Order Number
Magnetic wand	45 44 101
Sensor Test Dongle	83 17 619
Diagnostic Dongle	83 17 860
Pipe mount bracket	45 44 198
Duct mount kit	68 12 725
Duct mount adapter for remote EC sensing head	83 17 617
Remote adapter RS stainless steel	83 23 404

Ordering Information

IR Connection Kit Polytron® 5000/8000			45 44 197
PolySoft licence (1 year)			83 28 639
PolySoft licence (subscription)			83 28 640
EC Sensing Head Remote w/ mount kit			68 12 684
Connection cable w/ plug for		16 ft / 5 m	83 23 305
Remote EC Sensing Head		49 ft / 15 m	83 23 315
		98 ft / 30 m	83 23 330
Splash guard			68 12 510
Weather protection kit Dräger Polytron® 5/6/8xxx			37 02 198
Calibration adapter FKM Viton®			68 10 536
Gassing adapter		PE incl. tubing	45 09 314
Dust filter (not for Cl_2, HCl, H_2O_2, O_3, N_2H_4)			68 09 595
Dust filter (SO_2)			68 12 224
Selective filter A2F (CO, CO LS, H_2)			68 09 684
Selective filter K2F ($COCl_2$)			68 09 933
Selective filter NF (HCl)			68 09 643
Selective filter HSF (Hydrides)			68 09 862
Selective filter D3F (CO)			68 12 435
Selective filter MF (PH_3, AsH_3)			68 09 638
Selective filter K1F (SO_2)			68 09 663

HART® is a registered trademark of the HART Communication Foundation.
FOUNDATION fieldbus™ is a registered trademark of the Fieldbus Foundation™.
PROFIBUS® is a registered trademark of PROFIBUS and PROFINET International (PI).
PACTware™ is a registered trademark of Pepperl+Fuchs GmbH.
Viton® is a registered trademark of the DuPont company.
Windows® is a registered trademark of Microsoft Corporation.

GAS CALIBRATION KIT

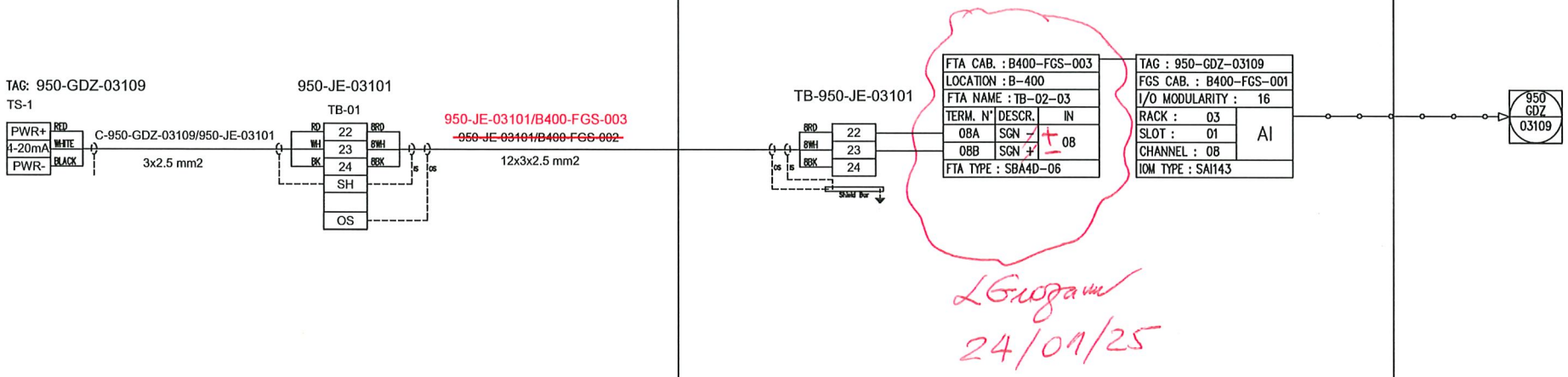
2x Calibration set Hydrogen Point Detector
1x Draeger: Carrying case for 2 test gas cylinders
1x Draeger: Calibration gas 99.999 Vol.% N2 in Air
1x Draeger: Calibration gas 2 Vol.% H2 in Air
1x Draeger: Regulator 0.5 L/min
2x Hose Isoversinic 1,5 m
2x Calibration adapter V
1x Magnetic wand

1x Calibration set Oxygen Point Detector
1x Draeger: Carrying case for 2 test gas cylinders
1x Draeger: Calibration gas 99.999 Vol.% N2 in Air
1x Draeger: Calibration gas 18 Vol.% O2 in N2
1x Draeger: Regulator 0.5 L/min
2x Hose Isoversinic 1,5 m
2x Calibration adapter V
1x Magnetic wand

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DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 01

FIELD	ITER – B400	CENTRAL CONTROL ROOM
	FIRE AND GAS SYSTEM	OPERATOR CONSOLE



LGiuga
24/01/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	06/12/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV: 1_A | DATE: 20/12/24 | SIGNATURE: C.Pilato
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSTRUMENT LOOP DIAGRAM
950-GDZ-03109
FZ-03 OXYGEN IN ELECTROLYZER PACKAGE AREA

CONTRACT NO./TITLE CONTRACT_NO.			SCALE 1:1
DRAWN: VBA	CHECKED: LCA	APPROVED: DLO	DATE 23/10/2024

A3	DRAWING NO. 123A90-DDL-IN-DG-40014	SHEET 232	REV. 01

File Name : 123A90-DDL-IN-DG-40014_REV.01

ROSETTI MARINO — CROSSWIND

ITEM	Tag	950-GDZ-03108	: O2 DET. FZ-03 Electrolyzer PK Area	Dwg	123A90-DDL-SAF-DL-30027		
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)	Module	UD		
TASK	code	C10003104	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	PRE-COMM	Activity	FTS	Discipline	Instrumental	Form	FJ04G	Gas Detection

Loop Tag: 950-GDZ-03108 TDSL rev.: 123A90-DDL-IN-DG-40014 rev. 1_A

Cabinet: 08A/08B Rack: 02 Slot: 03 Channel: 08

Gas Detection Type: TEXS GTL (Infrared open path gas transmitter): n/a GT (gas transmitter): ETR 0500

Thresholds: Gas Alarm - $_{LL}$ 19% (LL) Gas Confirmed - HH 23%

Scale and Unit: 0-100% Vol. O2

Calibration checking (following bottle at disposal):

Physical value on transmitter:	0%	20.9%	
ICSS Display:	0%	20.9%	

Checking of Dirty Optical ●

Checking of Invalidity ●

Checking of Maintenance Inhibition ●

Comments:

	Performed by	● WITNESS ☐ REVIEW	● WITNESS ☐ REVIEW
Company	COMM	RM COMM	CW
Name	Marco Di Maria	Giandonato Delmissier	John Mackillop
Date	2025-03-24	2025-03-25	2025-04-03
Signature	Digitaly signed by Marco Di Maria 2025-03-24T12:07:45.811Z	Digitaly signed by Giandonato Delmissier 2025-03-25T08:02:51.281Z	Digitaly signed by John Mackillop 2025-04-03T12:32:41.462Z

Dräger Polytron® 8100 EC
Detector for toxic gases and oxygen

The Polytron® 8100 EC is Dräger's top of the line explosion-proof transmitter for the detection of toxic gases or oxygen. It uses a high performance plug and play electrochemical DrägerSensor to detect a specific gas. Besides having a 3-wire 4 to 20 mA analog output with relays, it also offers HART®, Modbus and Fieldbus protocol, making it compatible with most control systems.



Dräger. Technology for Life®

Benefits

Durable, intelligent and sensitive – the DrägerSensor®

With unique electrochemical DrägerSensors, Polytron 8100 can detect over 100 toxic gases and oxygen. These long life sensors provide continuous detection even under the harshest conditions. DrägerSensors offer the industry's widest temperature and humidity range between -40 °C to +65 °C (-40 °F to +150 °F). The built-in memory contains all calibration and configuration information: therefore the sensor ships pre calibrated and is ready for immediate operation. An intelligent sensor self-test function allows for predictive maintenance. The intrinsically safe connection of the sensor eliminates the need for a flame arrestor, giving you faster response times and higher sensitivity.

Easy device management via digital communication

The Dräger Polytron 8100 is equipped with digital interfaces allowing for quick and easy remote interrogation of the transmitter's state. Integration with existing asset management systems such as PACTware™ is possible via DTM. In addition to the common HART® communication system, the fieldbus interfaces with PROFIBUS® PA, FOUNDATION fieldbus™ H1, and Modbus RTU are also available.

Same design, same operating principle

The Dräger Polytron 8100 belongs to the Polytron 8000 series. All transmitters in this series have the same design and user interface. This allows for uniform operation with reduced training and maintenance requirements. The large graphic backlit display shows status information clearly and in an easy to use format. The measured gas concentration, selected gas type, and measuring unit are displayed during normal operation. Colored LEDs (green, yellow and red) provide additional alarm and status information. The Polytron 8100 is operated by means of a magnetic wand over contact surfaces.

Three relays for controlling external equipment

Upon request, the Dräger Polytron 8100 can also be supplied with three integrated relays. This enables you to use it as an independent gas detection system with two arbitrarily adjustable concentration alarms and one fault alarm. Audible alarms, signal lights or similar devices can thus be controlled locally without an additional cable between the transmitter and central controller.

Safe, robust housing for every application

Polytron 8100 features a Class I, Div. 1 rated explosion proof enclosure made from epoxy coated aluminium or 316L stainless steel, making it suitable for a wide range of environmental conditions.

Remote sensor option does not require conduit

The remote sensor enclosure allows you to install the sensor separately from the transmitter. This 'external' installation makes it easier to use if the sensor has to be installed in a difficult to access or unfavorable position.

Technical Data

Dräger Polytron® 8100 EC

Type	Explosion proof / flameproof enclosed transmitter (“d”)		
Gases	Toxic gases and oxygen, dependent on the sensor used		
Measuring ranges	Customized adjustment, see sensor data sheet		
Display	Backlit graphic LCD; 3 Status LEDs (green/yellow/red)		
Performance Characteristics	see sensor datasheet		
Electrical data	Signal output analog	Normal operation	4 to 20 mA, 3- or 4-wire, sink or source
		Maintenance	Constant 3.4 mA (adjustable)
		Fault	< 1.2 mA
	Signal output digital	HART® w/ 3- or 4-wire, PROFIBUS® PA, FOUNDATION fieldbus™ H1 and Modbus RTU w/ 5-wires	
	Power supply	10 to 30 V DC	
	Power consumption (max.)	w/o relay, non-remote	80 mA at 24 V
		w/ relay, remote	100 mA at 24 V
	Relay specification (option)	2 alarm relays and 1 fault relay, SPDT 5 A @ 230 VAC, 5 A @ 30 VDC	
Environmental conditions (see sensor data sheet)	Temperature	-40 to 65 °C (-40 to 149 °F) without relay	
		-40 to 65 °C (-40 to 149 °F) with relay	
	Pressure	20.7 to 38.4 inch Hg / 700 to 1,300 mbar	
	Humidity	0 to 100 % r. h., non-condensing	
Housing	Transmitter housing	Epoxy coated copper-free aluminium or stainless steel SS316 L	
	Sensor housing	Polyamide	
	Enclosure protection type	NEMA 4X & 7, IP65/66/67	
	Cable entry point	3/4" NPT threaded holes or M20 cable gland	
	Dimensions (H x W x D), approx.		11.0" x 5.9" x 5.1" / 280 x 150 x 130 mm
	Weight, approx.	Aluminium	6.6 lbs / 3.0 kg
		SS316 L	11.0 lbs / 5.0 kg
Approvals	UL & CSA	Class I, Div 1, Groups A, B, C, D;	
		Class II, Div 1, Groups E, F, G;	
		Class I, Zone 1, Group IIC;	
		T-Code T6/T4	
	IECEx	Ex db [ia] IIC T6/T4 Gb,	
		-40 ≤ Ta ≤ +40/+70 °C;	
	ATEX	II 2G Ex db [ia] IIC T6/T4 Gb,	
		-40 ≤ Ta ≤ +40/+70 °C;	
	FM Performance (H_2S sensor)	Certificate No: FM16NUS0015	
		FM 6340:2014, FM Class 3810:2005,	
		ISA–92.00.01-2010	
	CE marking	ATEX (Directive 2014/34/EU)	
		Electromagnetic Compatibility (Directive 2014/30/EU)	
		Low Voltage (Directive 2014/35/EU)	
	Marine approvals	DNV GL, ABS, LR, CSS, RMRS	
	MED approval	Certificate no. MEDB0000411	
	DEKRA Performance approval (for O_2 sensors only)	Certificate no. BVS 13 ATEX G 001 X	
		EN 60079-29-16:2016	
	SIL 2 certified by TUEV Sued	Certificate no. Z10 053474 0023	

Ordering Information

Dräger Polytron® 8100 EC	Approval Code	Order Number
Dräger Polytron® 8100 EC d A 4-20/HART®	ETR 0400	83 44 403
Dräger Polytron® 8100 EC d A 4-20/HART® relay	ETR 0401	83 44 404
Dräger Polytron® 8100 EC d S 4-20/HART®	ETR 0500	83 44 412
Dräger Polytron® 8100 EC d S 4-20/HART® relay	ETR 0501	83 44 413
Dräger Polytron® 8xx0 Custom Configuration, e.g. Modbus – visit www.draeger.com/polytron to configure yours		83 44 800

Electrochemical DrägerSensors	Order Number
DrägerSensor® AC	68 10 595
Initial Operation Set for DrägerSensor AC	68 09 381
DrägerSensor® Cl_2	68 09 665
DrägerSensor® $COCl_2$	68 09 930
DrägerSensor® CO	68 09 605
DrägerSensor® CO LS	68 09 620
DrägerSensor® CO LH	68 12 570
DrägerSensor® H_2	68 09 685
DrägerSensor® H_2O_2 HC	68 09 675
DrägerSensor® H_2O_2 LC	68 09 705
DrägerSensor® H_2S LC	68 09 610
DrägerSensor® H_2S HC	68 09 710
DrägerSensor® H_2S	68 10 435
DrägerSensor® HCl	68 09 640
DrägerSensor® HCN	68 09 650
DrägerSensor® HCN LC	68 13 200
DrägerSensor® Hydrides	68 09 635
DrägerSensor® Hydrides SC	68 09 980
DrägerSensor® PH_3/AsH_3	68 09 695
DrägerSensor® Hydrazine	68 10 180
DrägerSensor® NH_3 LC	68 09 680
DrägerSensor® NH_3 HC	68 09 645
DrägerSensor® NH_3 TL	68 13 095
DrägerSensor® NH_3 FL	68 13 260
DrägerSensor® NO LC	68 09 625
DrägerSensor® NO_2	68 09 655
DrägerSensor® NO_2 LC	68 13 205
DrägerSensor® O_3	68 14 005
DrägerSensor® O_2 LS	68 09 630
DrägerSensor® OV1	68 10 740
DrägerSensor® OV2	68 10 745
DrägerSensor® SO_2	68 09 660

Accessories	Order Number
Magnetic wand	45 44 101
Sensor Test Dongle	83 17 619
Diagnostic Dongle	83 17 860
Pipe mount bracket	45 44 198
Duct mount kit	68 12 725
Duct mount adapter for remote EC sensing head	83 17 617
Remote adapter RS stainless steel	83 23 404

Ordering Information

IR Connection Kit Polytron® 5000/8000			45 44 197
PolySoft licence (1 year)			83 28 639
PolySoft licence (subscription)			83 28 640
EC Sensing Head Remote w/ mount kit			68 12 684
Connection cable w/ plug for		16 ft / 5 m	83 23 305
Remote EC Sensing Head		49 ft / 15 m	83 23 315
		98 ft / 30 m	83 23 330
Splash guard			68 12 510
Weather protection kit Dräger Polytron® 5/6/8xxx			37 02 198
Calibration adapter FKM Viton®			68 10 536
Gassing adapter		PE incl. tubing	45 09 314
Dust filter (not for Cl_2, HCl, H_2O_2, O_3, N_2H_4)			68 09 595
Dust filter (SO_2)			68 12 224
Selective filter A2F (CO, CO LS, H_2)			68 09 684
Selective filter K2F ($COCl_2$)			68 09 933
Selective filter NF (HCl)			68 09 643
Selective filter HSF (Hydrides)			68 09 862
Selective filter D3F (CO)			68 12 435
Selective filter MF (PH_3, AsH_3)			68 09 638
Selective filter K1F (SO_2)			68 09 663

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PACTware™ is a registered trademark of Pepperl+Fuchs GmbH.
Viton® is a registered trademark of the DuPont company.
Windows® is a registered trademark of Microsoft Corporation.

GAS CALIBRATION KIT

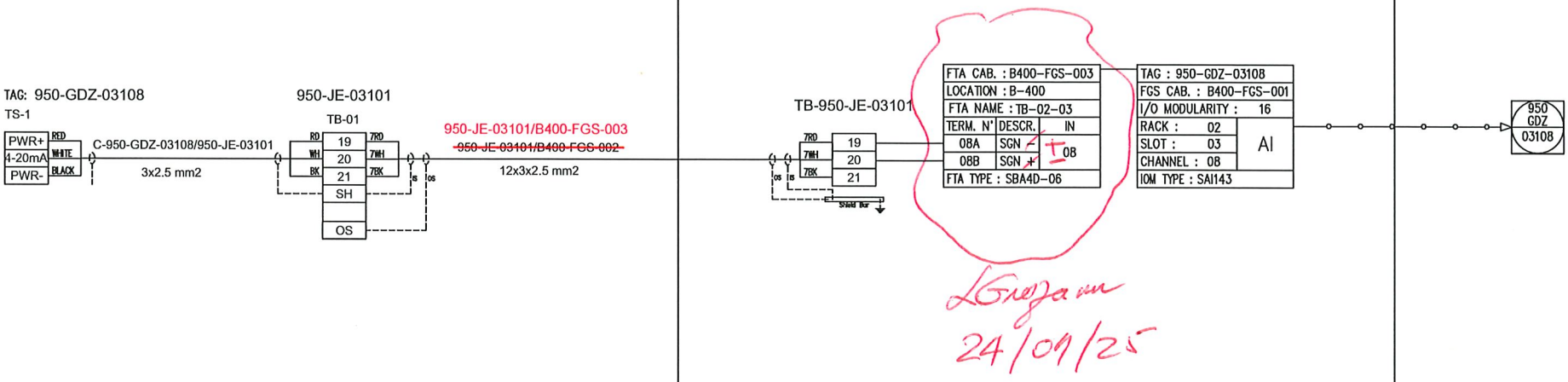
2x Calibration set Hydrogen Point Detector
1x Draeger: Carrying case for 2 test gas cylinders
1x Draeger: Calibration gas 99.999 Vol.% N2 in Air
1x Draeger: Calibration gas 2 Vol.% H2 in Air
1x Draeger: Regulator 0.5 L/min
2x Hose Isoversinic 1,5 m
2x Calibration adapter V
1x Magnetic wand

1x Calibration set Oxygen Point Detector
1x Draeger: Carrying case for 2 test gas cylinders
1x Draeger: Calibration gas 99.999 Vol.% N2 in Air
1x Draeger: Calibration gas 18 Vol.% O2 in N2
1x Draeger: Regulator 0.5 L/min
2x Hose Isoversinic 1,5 m
2x Calibration adapter V
1x Magnetic wand

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DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 01

FIELD	ITER – B400	CENTRAL CONTROL ROOM
	FIRE AND GAS SYSTEM	OPERATOR CONSOLE



L Grazian
24/09/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	06/12/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV: 1_A | DATE: 20/12/24 | SIGNATURE: C.Pilato
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSTRUMENT LOOP DIAGRAM
950-GDZ-03108
FZ-03 OXYGEN IN ELECTROLYZER PACKAGE AREA

CONTRACT NO./TITLE CONTRACT_NO. | SCALE 1:1
DRAWN: VBA | CHECKED: LCA | APPROVED: DLO | DATE 23/10/2024
A3 | DRAWING NO. 123A90-DDL-IN-DG-40014 | SHEET 231 | REV. 01

File Name : 123A90-DDL-IN-DG-40014_REV.01

ITEM	Tag	950-GDZ-03107	: O2 DET. FZ-03 Electrolyzer PK Area	Dwg	123A90-DDL-SAF-DL-30027		
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)	Module	UD		
TASK	code	C10003105	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	PRE-COMM	Activity	FTS	Discipline	Instrumental	Form	FJ04G	Gas Detection

Loop Tag: 950-GDZ-03107 TDSL rev.: 123A90-DDL-IN-DG-40014 rev. 1_A

Cabinet: 08A/08B Rack: 02 Slot: 01 Channel: 08

Gas Detection Type: TEXS GTL (Infrared open path gas transmitter): n/a GT (gas transmitter): ETR 0500

Thresholds: Gas Alarm - LL 19% (LL) Gas Confirmed - HH 23%

Scale and Unit: 0-100% Vol. O2

Calibration checking (following bottle at disposal):

Physical value on transmitter:	0%	20.9%	
ICSS Display:	0%	20.9%	

Checking of Dirty Optical ●

Checking of Invalidity ●

Checking of Maintenance Inhibition ●

Comments:

	Performed by	● WITNESS ☐ REVIEW	● WITNESS ☐ REVIEW
Page 1/1			
Company	COMM	RM COMM	CW
Name	Marco Di Maria	Giandonato Delmissier	John Mackillop
Date	2025-03-24	2025-03-25	2025-04-03
Signature	PROVERLIS Digitaly signed by Marco Di Maria 2025-03-24T12:07:30.332Z	PROVERLIS Digitaly signed by Giandonato Delmissier 2025-03-25T08:03:10.348Z	PROVERLIS Digitaly signed by John Mackillop 2025-04-03T12:32:50.274Z

Dräger Polytron® 8100 EC
Detector for toxic gases and oxygen

The Polytron® 8100 EC is Dräger's top of the line explosion-proof transmitter for the detection of toxic gases or oxygen. It uses a high performance plug and play electrochemical DrägerSensor to detect a specific gas. Besides having a 3-wire 4 to 20 mA analog output with relays, it also offers HART®, Modbus and Fieldbus protocol, making it compatible with most control systems.



Dräger. Technology for Life®

Benefits

Durable, intelligent and sensitive – the DrägerSensor®

With unique electrochemical DrägerSensors, Polytron 8100 can detect over 100 toxic gases and oxygen. These long life sensors provide continuous detection even under the harshest conditions. DrägerSensors offer the industry's widest temperature and humidity range between -40 °C to +65 °C (-40 °F to +150 °F). The built-in memory contains all calibration and configuration information: therefore the sensor ships pre calibrated and is ready for immediate operation. An intelligent sensor self-test function allows for predictive maintenance. The intrinsically safe connection of the sensor eliminates the need for a flame arrestor, giving you faster response times and higher sensitivity.

Easy device management via digital communication

The Dräger Polytron 8100 is equipped with digital interfaces allowing for quick and easy remote interrogation of the transmitter's state. Integration with existing asset management systems such as PACTware™ is possible via DTM. In addition to the common HART® communication system, the fieldbus interfaces with PROFIBUS® PA, FOUNDATION fieldbus™ H1, and Modbus RTU are also available.

Same design, same operating principle

The Dräger Polytron 8100 belongs to the Polytron 8000 series. All transmitters in this series have the same design and user interface. This allows for uniform operation with reduced training and maintenance requirements. The large graphic backlit display shows status information clearly and in an easy to use format. The measured gas concentration, selected gas type, and measuring unit are displayed during normal operation. Colored LEDs (green, yellow and red) provide additional alarm and status information. The Polytron 8100 is operated by means of a magnetic wand over contact surfaces.

Three relays for controlling external equipment

Upon request, the Dräger Polytron 8100 can also be supplied with three integrated relays. This enables you to use it as an independent gas detection system with two arbitrarily adjustable concentration alarms and one fault alarm. Audible alarms, signal lights or similar devices can thus be controlled locally without an additional cable between the transmitter and central controller.

Safe, robust housing for every application

Polytron 8100 features a Class I, Div. 1 rated explosion proof enclosure made from epoxy coated aluminium or 316L stainless steel, making it suitable for a wide range of environmental conditions.

Remote sensor option does not require conduit

The remote sensor enclosure allows you to install the sensor separately from the transmitter. This 'external' installation makes it easier to use if the sensor has to be installed in a difficult to access or unfavorable position.

Technical Data

Dräger Polytron® 8100 EC

Type	Explosion proof / flameproof enclosed transmitter (“d”)		
Gases	Toxic gases and oxygen, dependent on the sensor used		
Measuring ranges	Customized adjustment, see sensor data sheet		
Display	Backlit graphic LCD; 3 Status LEDs (green/yellow/red)		
Performance Characteristics	see sensor datasheet		
Electrical data	Signal output analog	Normal operation	4 to 20 mA, 3- or 4-wire, sink or source
		Maintenance	Constant 3.4 mA (adjustable)
		Fault	< 1.2 mA
	Signal output digital	HART® w/ 3- or 4-wire, PROFIBUS® PA, FOUNDATION fieldbus™ H1 and Modbus RTU w/ 5-wires	
	Power supply	10 to 30 V DC	
	Power consumption (max.)	w/o relay, non-remote	80 mA at 24 V
		w/ relay, remote	100 mA at 24 V
	Relay specification (option)	2 alarm relays and 1 fault relay, SPDT 5 A @ 230 VAC, 5 A @ 30 VDC	
Environmental conditions (see sensor data sheet)	Temperature	-40 to 65 °C (-40 to 149 °F) without relay	
		-40 to 65 °C (-40 to 149 °F) with relay	
	Pressure	20.7 to 38.4 inch Hg / 700 to 1,300 mbar	
	Humidity	0 to 100 % r. h., non-condensing	
Housing	Transmitter housing	Epoxy coated copper-free aluminium or stainless steel SS316 L	
	Sensor housing	Polyamide	
	Enclosure protection type	NEMA 4X & 7, IP65/66/67	
	Cable entry point	3/4" NPT threaded holes or M20 cable gland	
	Dimensions (H x W x D), approx.		11.0" x 5.9" x 5.1" / 280 x 150 x 130 mm
	Weight, approx.	Aluminium	6.6 lbs / 3.0 kg
		SS316 L	11.0 lbs / 5.0 kg
Approvals	UL & CSA	Class I, Div 1, Groups A, B, C, D;	
		Class II, Div 1, Groups E, F, G;	
		Class I, Zone 1, Group IIC;	
		T-Code T6/T4	
	IECEx	Ex db [ia] IIC T6/T4 Gb,	
		-40 ≤ Ta ≤ +40/+70 °C;	
	ATEX	II 2G Ex db [ia] IIC T6/T4 Gb,	
		-40 ≤ Ta ≤ +40/+70 °C;	
	FM Performance (H_2S sensor)	Certificate No: FM16NUS0015	
		FM 6340:2014, FM Class 3810:2005,	
		ISA–92.00.01-2010	
	CE marking	ATEX (Directive 2014/34/EU)	
		Electromagnetic Compatibility (Directive 2014/30/EU)	
		Low Voltage (Directive 2014/35/EU)	
	Marine approvals	DNV GL, ABS, LR, CSS, RMRS	
	MED approval	Certificate no. MEDB0000411	
	DEKRA Performance approval (for O_2 sensors only)	Certificate no. BVS 13 ATEX G 001 X	
		EN 60079-29-16:2016	
	SIL 2 certified by TUEV Sued	Certificate no. Z10 053474 0023	

Ordering Information

Dräger Polytron® 8100 EC	Approval Code	Order Number
Dräger Polytron® 8100 EC d A 4-20/HART®	ETR 0400	83 44 403
Dräger Polytron® 8100 EC d A 4-20/HART® relay	ETR 0401	83 44 404
Dräger Polytron® 8100 EC d S 4-20/HART®	ETR 0500	83 44 412
Dräger Polytron® 8100 EC d S 4-20/HART® relay	ETR 0501	83 44 413
Dräger Polytron® 8xx0 Custom Configuration, e.g. Modbus – visit www.draeger.com/polytron to configure yours		83 44 800

Electrochemical DrägerSensors	Order Number
DrägerSensor® AC	68 10 595
Initial Operation Set for DrägerSensor AC	68 09 381
DrägerSensor® Cl_2	68 09 665
DrägerSensor® $COCl_2$	68 09 930
DrägerSensor® CO	68 09 605
DrägerSensor® CO LS	68 09 620
DrägerSensor® CO LH	68 12 570
DrägerSensor® H_2	68 09 685
DrägerSensor® H_2O_2 HC	68 09 675
DrägerSensor® H_2O_2 LC	68 09 705
DrägerSensor® H_2S LC	68 09 610
DrägerSensor® H_2S HC	68 09 710
DrägerSensor® H_2S	68 10 435
DrägerSensor® HCl	68 09 640
DrägerSensor® HCN	68 09 650
DrägerSensor® HCN LC	68 13 200
DrägerSensor® Hydrides	68 09 635
DrägerSensor® Hydrides SC	68 09 980
DrägerSensor® PH_3/AsH_3	68 09 695
DrägerSensor® Hydrazine	68 10 180
DrägerSensor® NH_3 LC	68 09 680
DrägerSensor® NH_3 HC	68 09 645
DrägerSensor® NH_3 TL	68 13 095
DrägerSensor® NH_3 FL	68 13 260
DrägerSensor® NO LC	68 09 625
DrägerSensor® NO_2	68 09 655
DrägerSensor® NO_2 LC	68 13 205
DrägerSensor® O_3	68 14 005
DrägerSensor® O_2 LS	68 09 630
DrägerSensor® OV1	68 10 740
DrägerSensor® OV2	68 10 745
DrägerSensor® SO_2	68 09 660

Accessories	Order Number
Magnetic wand	45 44 101
Sensor Test Dongle	83 17 619
Diagnostic Dongle	83 17 860
Pipe mount bracket	45 44 198
Duct mount kit	68 12 725
Duct mount adapter for remote EC sensing head	83 17 617
Remote adapter RS stainless steel	83 23 404

Ordering Information

IR Connection Kit Polytron® 5000/8000			45 44 197
PolySoft licence (1 year)			83 28 639
PolySoft licence (subscription)			83 28 640
EC Sensing Head Remote w/ mount kit			68 12 684
Connection cable w/ plug for		16 ft / 5 m	83 23 305
Remote EC Sensing Head		49 ft / 15 m	83 23 315
		98 ft / 30 m	83 23 330
Splash guard			68 12 510
Weather protection kit Dräger Polytron® 5/6/8xxx			37 02 198
Calibration adapter FKM Viton®			68 10 536
Gassing adapter		PE incl. tubing	45 09 314
Dust filter (not for Cl_2, HCl, H_2O_2, O_3, N_2H_4)			68 09 595
Dust filter (SO_2)			68 12 224
Selective filter A2F (CO, CO LS, H_2)			68 09 684
Selective filter K2F ($COCl_2$)			68 09 933
Selective filter NF (HCl)			68 09 643
Selective filter HSF (Hydrides)			68 09 862
Selective filter D3F (CO)			68 12 435
Selective filter MF (PH_3, AsH_3)			68 09 638
Selective filter K1F (SO_2)			68 09 663

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FOUNDATION fieldbus™ is a registered trademark of the Fieldbus Foundation™.
PROFIBUS® is a registered trademark of PROFIBUS and PROFINET International (PI).
PACTware™ is a registered trademark of Pepperl+Fuchs GmbH.
Viton® is a registered trademark of the DuPont company.
Windows® is a registered trademark of Microsoft Corporation.

GAS CALIBRATION KIT

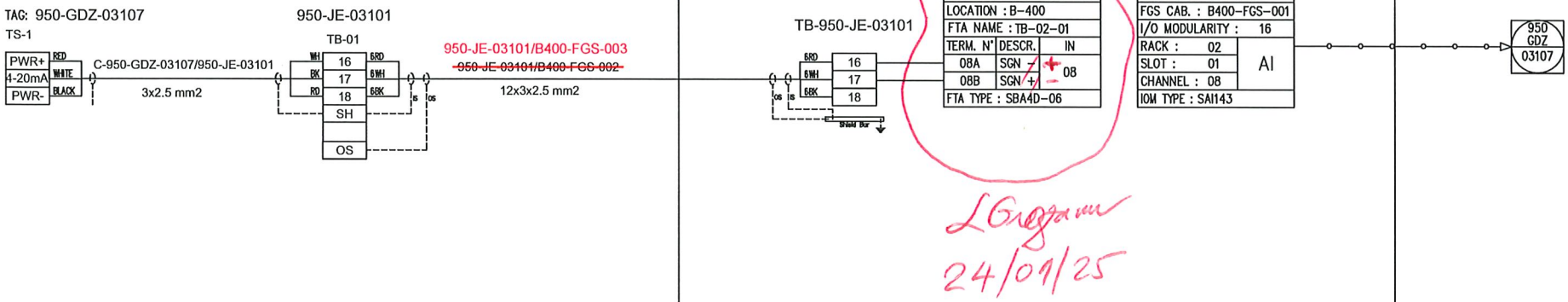
2x Calibration set Hydrogen Point Detector
1x Draeger: Carrying case for 2 test gas cylinders
1x Draeger: Calibration gas 99.999 Vol.% N2 in Air
1x Draeger: Calibration gas 2 Vol.% H2 in Air
1x Draeger: Regulator 0.5 L/min
2x Hose Isoversinic 1,5 m
2x Calibration adapter V
1x Magnetic wand

1x Calibration set Oxygen Point Detector
1x Draeger: Carrying case for 2 test gas cylinders
1x Draeger: Calibration gas 99.999 Vol.% N2 in Air
1x Draeger: Calibration gas 18 Vol.% O2 in N2
1x Draeger: Regulator 0.5 L/min
2x Hose Isoversinic 1,5 m
2x Calibration adapter V
1x Magnetic wand

File: 1724000821-IN-DS-00004-02.xlsx
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DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 01

FIELD	ITER – B400	CENTRAL CONTROL ROOM
	FIRE AND GAS SYSTEM	OPERATOR CONSOLE



L Grazzini
24/01/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	06/12/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV.: 1_A | DATE: 20/12/24 | SIGNATURE: C.Pilato
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSTRUMENT LOOP DIAGRAM
950-GDZ-03107
FZ-03 OXYGEN IN ELECTROLYZER PACKAGE AREA

CONTRACT NO./TITLE CONTRACT_NO.			SCALE 1:1
DRAWN: VBA	CHECKED: LCA	APPROVED: DLO	DATE 23/10/2024

A3	DRAWING NO. 123A90-DDL-IN-DG-40014	SHEET 230	REV. 01

File Name : 123A90-DDL-IN-DG-40014_REV.01

ITEM	Tag	950-GDZ-03105	: H2 GD FZ-03 Electrolyzer PK Area	Dwg	123A90-DDL-SAF-DL-30027		
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)	Module	UD		
TASK	code	C10003106	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	COMM	Activity	FTS	Discipline	Instrumental	Form	FJ04G	Gas Detection

Loop Tag: 950-GDZ-03105 TDSL rev.: 123A90-FDL-IN-DG-40014 rev 1_A

Cabinet: B400-FGS-001 Rack: 05 Slot: 01 Channel: 08

Gas Detection Type: TEXS GTL (Infrared open path gas transmitter): GT (gas transmitter): XTR 0510

Thresholds: Gas Alarm - H 5 % Gas Confirmed - HH 10 %

Scale and Unit: 0-100 % LEL H2

Calibration checking (following bottle at disposal):

Physical value on transmitter:	0 %	5 %	10 %
ICSS Display:	0 %	5 %	10 %

Checking of Dirty Optical ●

Checking of Invalidity ●

Checking of Maintenance Inhibition ●

Comments:

	Performed by	☑ WITNESS ☐ REVIEW	☑ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CW
Name	Laurentiu Grozavu	Giandonato Delmissier	John Mackillop
Date	2025-02-08	2025-02-08	2025-02-11
Signature	Digitaly signed by Laurentiu Grozavu 2025-02-08T10:11:00.011Z	Digitaly signed by Giandonato Delmissier 2025-02-08T10:46:21.511Z	Digitaly signed by John Mackillop 2025-02-11T05:22:01.257Z

Dräger Polytron® 8200 CAT
Detection of flammable gases and vapors

The Dräger Polytron® 8200 CAT is an advanced explosion-proof transmitter for the detection of combustible gases in the lower explosion limit (LEL). It uses a catalytic bead DrägerSensor® Ex that will detect most flammable gases and vapors. In addition to a 3-wire 4 to 20-mA analog output with relays it also offers HART®, Modbus and Fieldbus protocols, making it compatible with most control systems.



Dräger. Technology for Life®

Benefits

Fast and stable – the DrägerSensor® Ex

The built-in DrägerSensor® Ex is based on the proven catalytic bead measuring principle. It has excellent long-term stability with outstanding poison resistance. And this is the reason for its durability. Due to the novel gas inlet opening, the sensor responds to gas in only a few seconds. This allows you to react immediately with countermeasures and prevent the development of a flammable atmosphere.

Easy device management via digital communication

The Dräger Polytron 8200 is equipped with digital interfaces allowing for quick and easy remote interrogation of the transmitter's state. Integration with existing asset management systems such as PACTware™ is possible via DTM. In addition to the common HART® communication system, the fieldbus interfaces PROFIBUS® PA, FOUNDATION fieldbus™ H1, and Modbus RTU are also available.

Same design, same operating principle

The Dräger Polytron 8200 belongs to the Polytron 8000 series. All transmitters in this series have the same design and user interface. This allows for uniform operation with reduced training and maintenance requirements. The large graphic backlit display shows status information clearly and in an easy to use format. The measured gas concentration, selected gas type, and measuring unit are displayed during normal operation. Colored LEDs (green, yellow and red) provide additional alarm and status information.

The Polytron 8200 is operated by means of a magnetic wand over contact surfaces.

Three relays for controlling external equipment

Upon request, the Dräger Polytron 8200 can also be supplied with three integrated relays. This enables you to use it as an independent gas detection system with two arbitrarily adjustable concentration alarms and one fault alarm. Audible alarms, signal lights or similar devices can thus be controlled locally without an additional cable between the transmitter and central controller.

Safe, robust housing for every application

Polytron 8200 features a Class I, Div. 1 rated explosion proof enclosure made from aluminium or stainless steel, making it suitable for a wide range of environmental conditions.

Make the impossible possible with the remote sensor

A remote explosion proof junction allows installation of the sensor up to 350' away from the transmitter in difficult to access areas. A permanently attached remote calibration adapter allows for remote bump testing or calibration from the Polytron display by using permanently attached tubing that takes the calibration gas to the sensor.

Technical Data

Dräger Polytron® 8200 CAT			
Type	Explosion proof / flameproof enclosed transmitter (“d”)		
Gases	Flammable gases and vapors		
Measuring ranges	DQ	0 to 100 % LEL	
	LC	0 to 10 % LEL	
Display	Backlit graphic LCD; 3 Status LEDs (green/yellow/red)		
Performance Characteristics	Accuracy/repeatability	Zero	≤ 1 % LEL
		Span	≤ 1 % LEL
		Long-term drift	≤ 3 % LEL after 6 months
	Response time	T50	< 7 seconds (methane)
		T90	< 13 seconds (methane)
Electrical data	Signal output analog	Normal operation	4 to 20 mA, 3- or 4-wire, sink or source
		Maintenance	Constant 3.4 mA (adjustable)
		Fault	< 1.2 mA
	Signal output digital	HART® w/ 3- or 4-wire, PROFIBUS® PA, FOUNDATION fieldbus™ H1 and Modbus RTU w/ 5-wires	
	Power supply	10 to 30 V DC	
	Power consumption (max.)	DQ w/o relay, non-remote	105 mA at 24 V
		DQ w/ relay, remote	145 mA at 24 V
	Relay specification (option)	2 alarm relays and 1 fault relay, SPDT 5 A @ 230 VAC, 5 A @ 30 VDC	
Environmental conditions (see sensor data sheet)	Temperature	-40 to 80 °C (-40 to 176 °F) without relay -40 to 70 °C (-40 to 158 °F) with relay- -50 to 85 °C (-122 to 185 °F) remote sensor	
	Pressure	23.6 to 38.4 inch Hg / 800 to 1,200 mbar	
	Humidity	5 to 95% r. h., non-condensing	
Housing	Transmitter housing	Epoxy coated copper-free aluminium or stainless steel SS316 L	
	Sensor housing	Stainless steel 303	
	Enclosure protection type	NEMA 4X & 7, IP65/66/67	
	Cable entry point	3/4" NPT threaded holes or M20 cable gland	
	Dimensions (H x W x D)	11.0" x 5.9" x 5.1" / 280 x 150 x 130 mm	
	Weight, approx.	Aluminium	4.9 lbs / 2.2 kg
		SS316 L	8.8 lbs / 4.0 kg
Approvals*	UL & CSA	Class I, Div 1, Groups A, B, C, D;	
		Class II, Div 1, Groups E, F, G;	
		Class I, Zone 1, Group IIC;	
		T-Code T6/T4	
	IECEx	Ex db IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70 °C;	
	ATEX	II 2G Ex db IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70 °C;	
	CE markings	ATEX (Directive 2014/34/EU)	
		Electromagnetic Compatibility (Directive 2014/30/EU)	
		Low Voltage (Directive 2014/35/EU)	
	Shipping approvals (for DQ sensor only)	DNV GL, ABS, LR, CCS, RMRS	
	MED approval (for DQ sensor only)	Certificate No. MEDB0000411	

Technical Data

	DEKRA Performance approval (for DQ sensor only)	Certificate No. BVS 13 ATEX G 001 X
	SIL 2 certified by TUEV Sued	Certificate No. Z10 053474 0023

* All docking station versions are only ATEX/IECEx approved

Ordering Information

Dräger Polytron® 8200 CAT	Approval Code	Order Number
Dräger Polytron® 8200 CAT DQ d A 4-20/HART®	XTR 0410	83 44 439
Dräger Polytron® 8200 CAT DQ d A 4-20/HART® relay	XTR 0411	83 44 440
Dräger Polytron® 8200 CAT DQ d S 4-20/HART®	XTR 0510	83 44 448
Dräger Polytron® 8200 CAT DQ d S 4-20/HART® relay	XTR 0511	83 44 449
Dräger Polytron® 8xx0 Kit (Custom configuration e. g. LC sensor or bus communication)		83 44 800

Accessories		Order Number
Magnetic wand		45 44 101
Pipe mount bracket		45 44 198
Aluminum junction box for remote sensor ‘d’		45 44 099
Stainless steel junction box for remote sensor ‘d’		45 44 098
Duct mount kit		68 12 725
IR Connection Kit Polytron® 5000/8000		45 44 197
PolySoft licence (1 year)		83 28 600
PolySoft licence (subscription)		83 28 601
Splash guard		68 12 510
Weather protection kit Dräger Polytron® 5/6/8xxx		37 02 198
Gassing adapter	PE, w/o tubing	68 06 978
	PE incl. tubing	46 09 314
Calibration adapter Viton®		68 10 536
Process adapter (Stainless steel) for DQ		68 12 470
Process adapter (Stainless steel) for LC		68 12 465

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FOUNDATION fieldbus™ is a registered trademark of the Fieldbus Foundation™.
PROFIBUS® is a registered trademark of PROFIBUS and PROFINET International (PI).
PACTware™ is a registered trademark of Pepperl+Fuchs GmbH.
Viton® is a registered trademark of the DuPont company.
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Dräger Nederland B.V.
Marine & Offshore
Beurtschipperstraat 1
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Telephone :+31(0)10-2952710
Web: www.draeger-mo.nl
E-mail: service-mo.sd.nl@draeger.com

Calibration Certificate: Gas Detector Polytron 8200 H2

Certificaat: Gas Detector Polytron 8200 H2

Date *Datum*	Validity [months] *Geldigheid [maanden]*	Vessel / Installation *Scheepsnaam / Installatie*	Certificate No *Certificaat Nr*
28-06-2024	**12**	**Base Load Power Hub (BLPH)**	**PR.23.034.0 - CS-24002463**

The gas detectors are inspected and calibrated as described in this certificate. The used calibration gasses are traceable according to (inter)national standards.
De gasdetectoren zijn geïnspecteerd en gekalibreerd zoals beschreven in dit certificaat. De gebruikte kalibratiegassen zijn traceerbaar vorlgens de (inter)nationale standaards..

950-GDZ-06203	Dräger	Dräger: Polytron 8200	ARTB-1639	FC4576993	N/A	N/A	New Delivery
950-GDZ-06204	Dräger	Dräger: Polytron 8200	ARTB-1637	FC4576994	N/A	N/A	New Delivery
950-GDZ-06205	Dräger	Dräger: Polytron 8200	ARTB-0204	FC4576995	N/A	N/A	New Delivery
950-GDZ-06206	Dräger	Dräger: Polytron 8200	ARSD-0466	FC4576996	N/A	N/A	New Delivery
950-GDZ-03104	Dräger	Dräger: Polytron 8200	ARTB-1624	FC4576997	N/A	N/A	New Delivery
950-GDZ-03105	Dräger	Dräger: Polytron 8200	ARTB-1630	FC4576998	N/A	N/A	New Delivery
950-GDZ-01103	Dräger	Dräger: Polytron 8200	ARTB-0194	FC4576999	N/A	N/A	New Delivery
xxx-xxx-xxxxx	Dräger	Dräger: Polytron 8200	ARTB-0185	FC4577000	N/A	N/A	New Delivery

Sensor type	Zero gas	Calibration setting
EC	H2	Detection range 0-100% LEL H2

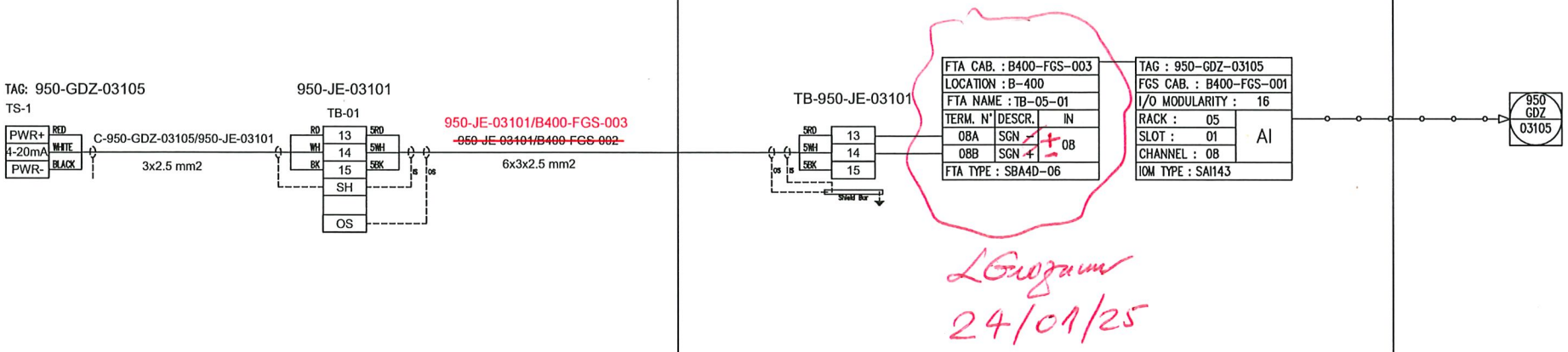
DRÄGER MARINE & OFFSHORE
SIGNED BY: K. VAN UDISSEL

PO# : 123A90

Signed by: .....

DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 01

FIELD	ITER – B400	CENTRAL CONTROL ROOM
	FIRE AND GAS SYSTEM	OPERATOR CONSOLE



L Grugnini
24/01/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	06/12/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV: 1_A | DATE: 20/12/24 | SIGNATURE: C.Pilato
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSTRUMENT LOOP DIAGRAM
950-GDZ-03105
FZ-03 H2 DETECT. IN ELECTROLYZER PACKAGE AREA

CONTRACT NO./TITLE CONTRACT_NO.			SCALE 1:1
DRAWN: VBA	CHECKED: LCA	APPROVED: DLO	DATE 23/10/2024
A3	DRAWING NO. 123A90-DDL-IN-DG-40014	SHEET 229	REV. 01

File Name : 123A90-DDL-IN-DG-40014_R01/01

ITEM	Tag	950-GDZ-03104	: H2 GD FZ-03 Electrolyzer PK Area		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10003107	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	COMM	Activity FTS	Discipline Instrumental	Form	FJ04G	Gas Detection

Loop Tag: 950-GDZ-03104 TDSL rev.: 123A90-FDL-IN-DG-40014 rev 1_A

Cabinet: B400-FGS-001 Rack: 04 Slot: 03 Channel: 08

Gas Detection Type: TEXS GTL (Infrared open path gas transmitter): GT (gas transmitter): XTR 0510

Thresholds: Gas Alarm - H 5 % Gas Confirmed - HH 10 %

Scale and Unit: 0-100 % LEL H2

Calibration checking (following bottle at disposal):

Physical value on transmitter:	0 %	5 %	10 %
ICSS Display:	0 %	5 %	10 %

Checking of Dirty Optical ●

Checking of Invalidity ●

Checking of Maintenance Inhibition ●

Comments:

	Performed by	☑ WITNESS ☐ REVIEW	☑ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CW
Name	Laurentiu Grozavu	Giandonato Delmissier	John Mackillop
Date	2025-02-08	2025-02-08	2025-02-11
Signature	Digitaly signed by Laurentiu Grozavu 2025-02-08T10:09:08.256Z	Digitaly signed by Giandonato Delmissier 2025-02-08T10:46:38.623Z	Digitaly signed by John Mackillop 2025-02-11T05:22:16.555Z

Dräger Polytron® 8200 CAT
Detection of flammable gases and vapors

The Dräger Polytron® 8200 CAT is an advanced explosion-proof transmitter for the detection of combustible gases in the lower explosion limit (LEL). It uses a catalytic bead DrägerSensor® Ex that will detect most flammable gases and vapors. In addition to a 3-wire 4 to 20-mA analog output with relays it also offers HART®, Modbus and Fieldbus protocols, making it compatible with most control systems.



Dräger. Technology for Life®

Benefits

Fast and stable – the DrägerSensor® Ex

The built-in DrägerSensor® Ex is based on the proven catalytic bead measuring principle. It has excellent long-term stability with outstanding poison resistance. And this is the reason for its durability. Due to the novel gas inlet opening, the sensor responds to gas in only a few seconds. This allows you to react immediately with countermeasures and prevent the development of a flammable atmosphere.

Easy device management via digital communication

The Dräger Polytron 8200 is equipped with digital interfaces allowing for quick and easy remote interrogation of the transmitter's state. Integration with existing asset management systems such as PACTware™ is possible via DTM. In addition to the common HART® communication system, the fieldbus interfaces PROFIBUS® PA, FOUNDATION fieldbus™ H1, and Modbus RTU are also available.

Same design, same operating principle

The Dräger Polytron 8200 belongs to the Polytron 8000 series. All transmitters in this series have the same design and user interface. This allows for uniform operation with reduced training and maintenance requirements. The large graphic backlit display shows status information clearly and in an easy to use format. The measured gas concentration, selected gas type, and measuring unit are displayed during normal operation. Colored LEDs (green, yellow and red) provide additional alarm and status information.

The Polytron 8200 is operated by means of a magnetic wand over contact surfaces.

Three relays for controlling external equipment

Upon request, the Dräger Polytron 8200 can also be supplied with three integrated relays. This enables you to use it as an independent gas detection system with two arbitrarily adjustable concentration alarms and one fault alarm. Audible alarms, signal lights or similar devices can thus be controlled locally without an additional cable between the transmitter and central controller.

Safe, robust housing for every application

Polytron 8200 features a Class I, Div. 1 rated explosion proof enclosure made from aluminium or stainless steel, making it suitable for a wide range of environmental conditions.

Make the impossible possible with the remote sensor

A remote explosion proof junction allows installation of the sensor up to 350' away from the transmitter in difficult to access areas. A permanently attached remote calibration adapter allows for remote bump testing or calibration from the Polytron display by using permanently attached tubing that takes the calibration gas to the sensor.

Technical Data

Dräger Polytron® 8200 CAT			
Type	Explosion proof / flameproof enclosed transmitter (“d”)		
Gases	Flammable gases and vapors		
Measuring ranges	DQ	0 to 100 % LEL	
	LC	0 to 10 % LEL	
Display	Backlit graphic LCD; 3 Status LEDs (green/yellow/red)		
Performance Characteristics	Accuracy/repeatability	Zero	≤ 1 % LEL
		Span	≤ 1 % LEL
		Long-term drift	≤ 3 % LEL after 6 months
	Response time	T50	< 7 seconds (methane)
		T90	< 13 seconds (methane)
Electrical data	Signal output analog	Normal operation	4 to 20 mA, 3- or 4-wire, sink or source
		Maintenance	Constant 3.4 mA (adjustable)
		Fault	< 1.2 mA
	Signal output digital	HART® w/ 3- or 4-wire, PROFIBUS® PA, FOUNDATION fieldbus™ H1 and Modbus RTU w/ 5-wires	
	Power supply	10 to 30 V DC	
	Power consumption (max.)	DQ w/o relay, non-remote	105 mA at 24 V
		DQ w/ relay, remote	145 mA at 24 V
	Relay specification (option)	2 alarm relays and 1 fault relay, SPDT 5 A @ 230 VAC, 5 A @ 30 VDC	
Environmental conditions (see sensor data sheet)	Temperature	-40 to 80 °C (-40 to 176 °F) without relay -40 to 70 °C (-40 to 158 °F) with relay- -50 to 85 °C (-122 to 185 °F) remote sensor	
	Pressure	23.6 to 38.4 inch Hg / 800 to 1,200 mbar	
	Humidity	5 to 95% r. h., non-condensing	
Housing	Transmitter housing	Epoxy coated copper-free aluminium or stainless steel SS316 L	
	Sensor housing	Stainless steel 303	
	Enclosure protection type	NEMA 4X & 7, IP65/66/67	
	Cable entry point	3/4" NPT threaded holes or M20 cable gland	
	Dimensions (H x W x D)	11.0" x 5.9" x 5.1" / 280 x 150 x 130 mm	
	Weight, approx.	Aluminium	4.9 lbs / 2.2 kg
		SS316 L	8.8 lbs / 4.0 kg
Approvals*	UL & CSA	Class I, Div 1, Groups A, B, C, D;	
		Class II, Div 1, Groups E, F, G;	
		Class I, Zone 1, Group IIC;	
		T-Code T6/T4	
	IECEx	Ex db IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70 °C;	
	ATEX	II 2G Ex db IIC T6/T4 Gb, -40 ≤ Ta ≤ +40/+70 °C;	
	CE markings	ATEX (Directive 2014/34/EU)	
		Electromagnetic Compatibility (Directive 2014/30/EU)	
		Low Voltage (Directive 2014/35/EU)	
	Shipping approvals (for DQ sensor only)	DNV GL, ABS, LR, CCS, RMRS	
	MED approval (for DQ sensor only)	Certificate No. MEDB0000411	

Technical Data

	DEKRA Performance approval (for DQ sensor only)	Certificate No. BVS 13 ATEX G 001 X
	SIL 2 certified by TUEV Sued	Certificate No. Z10 053474 0023

* All docking station versions are only ATEX/IECEx approved

Ordering Information

Dräger Polytron® 8200 CAT	Approval Code	Order Number
Dräger Polytron® 8200 CAT DQ d A 4-20/HART®	XTR 0410	83 44 439
Dräger Polytron® 8200 CAT DQ d A 4-20/HART® relay	XTR 0411	83 44 440
Dräger Polytron® 8200 CAT DQ d S 4-20/HART®	XTR 0510	83 44 448
Dräger Polytron® 8200 CAT DQ d S 4-20/HART® relay	XTR 0511	83 44 449
Dräger Polytron® 8xx0 Kit (Custom configuration e. g. LC sensor or bus communication)		83 44 800

Accessories		Order Number
Magnetic wand		45 44 101
Pipe mount bracket		45 44 198
Aluminum junction box for remote sensor ‘d’		45 44 099
Stainless steel junction box for remote sensor ‘d’		45 44 098
Duct mount kit		68 12 725
IR Connection Kit Polytron® 5000/8000		45 44 197
PolySoft licence (1 year)		83 28 600
PolySoft licence (subscription)		83 28 601
Splash guard		68 12 510
Weather protection kit Dräger Polytron® 5/6/8xxx		37 02 198
Gassing adapter	PE, w/o tubing	68 06 978
	PE incl. tubing	46 09 314
Calibration adapter Viton®		68 10 536
Process adapter (Stainless steel) for DQ		68 12 470
Process adapter (Stainless steel) for LC		68 12 465

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PACTware™ is a registered trademark of Pepperl+Fuchs GmbH.
Viton® is a registered trademark of the DuPont company.
Windows® is a registered trademark of Microsoft Corporation.

Dräger Nederland B.V.
Marine & Offshore
Beurtschipperstraat 1
NL-3194 DK Hoogvliet-RT
Telephone :+31(0)10-2952710
Web: www.draeger-mo.nl
E-mail: service-mo.sd.nl@draeger.com

Calibration Certificate: Gas Detector Polytron 8200 H2

Certificaat: Gas Detector Polytron 8200 H2

Date *Datum*	Validity [months] *Geldigheid [maanden]*	Vessel / Installation *Scheepsnaam / Installatie*	Certificate No *Certificaat Nr*
28-06-2024	**12**	**Base Load Power Hub (BLPH)**	**PR.23.034.0 - CS-24002463**

The gas detectors are inspected and calibrated as described in this certificate. The used calibration gasses are traceable according to (inter)national standards.
De gasdetectoren zijn geïnspecteerd en gekalibreerd zoals beschreven in dit certificaat. De gebruikte kalibratiegassen zijn traceerbaar vorlgens de (inter)nationale standaards..

950-GDZ-06203	Dräger	Dräger: Polytron 8200	ARTB-1639	FC4576993	N/A	N/A	New Delivery
950-GDZ-06204	Dräger	Dräger: Polytron 8200	ARTB-1637	FC4576994	N/A	N/A	New Delivery
950-GDZ-06205	Dräger	Dräger: Polytron 8200	ARTB-0204	FC4576995	N/A	N/A	New Delivery
950-GDZ-06206	Dräger	Dräger: Polytron 8200	ARSD-0466	FC4576996	N/A	N/A	New Delivery
950-GDZ-03104	Dräger	Dräger: Polytron 8200	ARTB-1624	FC4576997	N/A	N/A	New Delivery
950-GDZ-03105	Dräger	Dräger: Polytron 8200	ARTB-1630	FC4576998	N/A	N/A	New Delivery
950-GDZ-01103	Dräger	Dräger: Polytron 8200	ARTB-0194	FC4576999	N/A	N/A	New Delivery
xxx-xxx-xxxxx	Dräger	Dräger: Polytron 8200	ARTB-0185	FC4577000	N/A	N/A	New Delivery

Sensor type	Zero gas	Calibration setting
EC	H2	Detection range 0-100% LEL H2

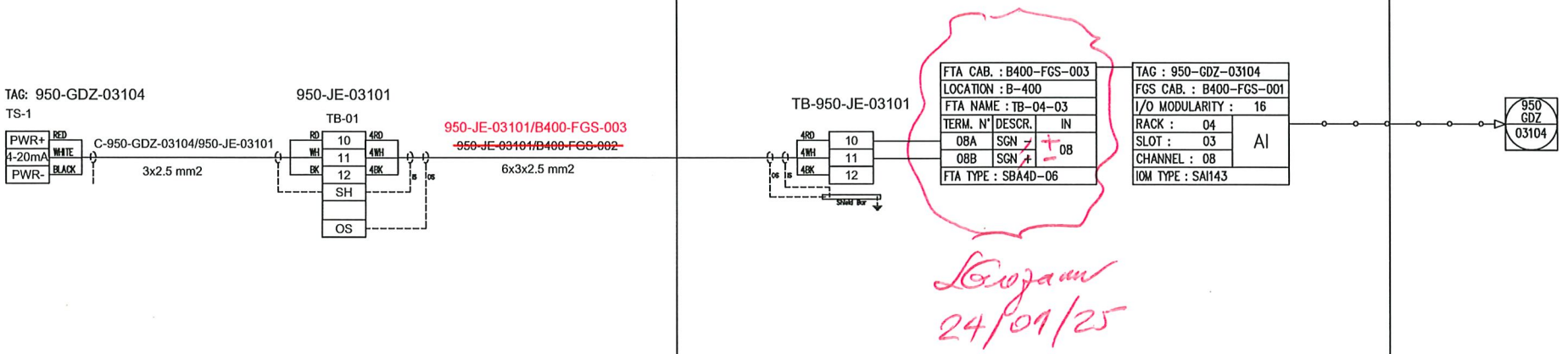
DRÄGER MARINE & OFFSHORE
SIGNED BY: K. VAN UDISSEL

PO# : 123A90

Signed by: .....

DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 01

FIELD	ITER – B400	CENTRAL CONTROL ROOM
	FIRE AND GAS SYSTEM	OPERATOR CONSOLE



Lorgana
24/09/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	06/12/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV: 1_A | DATE: 20/12/24 | SIGNATURE: C.Pilato
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSTRUMENT LOOP DIAGRAM
950-GDZ-03104
FZ-03 H2 DETECT. IN ELECTROLYZER PACKAGE AREA

CONTRACT NO./TITLE CONTRACT_NO.			SCALE 1:1
DRAWN: VBA	CHECKED: LCA	APPROVED: DLO	DATE 23/10/2024

A3	DRAWING NO. 123A90-DDL-IN-DG-40014	SHEET 228	REV. 01

File Name : 123A90-DDL-IN-DG-40014_REV.01

ROSETTI MARINO — PROVERLIS — CROSSWIND

ITEM	Tag	950-GDZ-03103	: H2 GD FZ-03 Electrolyzer PK Area	Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)	Module	UD
TASK	code	C10003108	Location: Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	PRE-COMM	Activity: FTS	Discipline: Instrumental	Form: FJ04L — Leak Detection

Loop Tag:	950-GDZ-03103			TDSL rev.:	123A90-FDL-IN-DG-40014 rev 1_A		
Cabinet:	B400-FGS-001	Rack:	04	Slot:	01	Channel:	08
Output Signal:	mA						
Calibration Range:	0-100%	Unit:	dB	Minimum:	55 dB	Maximum:	110 dB

Threshold: Fire Alarm - H: 57.75 dB — Fire Alarm - HH: 60.5 dB

Checking of location ●

Checking of invalidity

Checking of Maintenance inhibition ●

TESTING & MEASUREMENT INSTRUMENT USED

Type	Serial N.	Calibration Certificate	Validity
8900 UGLD Calibration and bump test kit	P.N. 8328042		

Comments: Instrument model : ETR 0521

	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CW
Name	Laurentiu Grozavu	Giandonato Delmissier	John Mackillop
Date	2025-02-08	2025-02-08	2025-02-11
Signature	PROVERLIS Digitaly signed by Laurentiu Grozavu 2025-02-08T10:09:54.856Z	PROVERLIS Digitaly signed by Giandonato Delmissier 2025-02-08T10:46:58.000Z	PROVERLIS Digitaly signed by John Mackillop 2025-02-11T05:23:22.297Z

Dräger Polytron® 8900 UGLD
Ultrasonic Gas Leak Detector

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



Dräger. Technology for Life®

Benefits

Ultrasonic sensor technology – the early warning system for gas leaks

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

A perfect complement to your gas detection system

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

Delivers results that are easy to understand

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

Can even detect gas leaks in loud industrial environments

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

Robust design and fully-sealed sensor

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

Technical Data

Dräger Polytron® 8900 UGLD

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

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

Technical Data

	SIL 2	Certificate TÜV Süd

* Pending

Ordering Information

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

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

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Dräger Safety AG & Co. KGaA
Revalstraße 1
D - 23560 Lübeck
Germany

Dräger

Factory Calibration Certificate

Kalibrierzertifikat

Product / Produkt:	Polytron 8900 UGLD d S 4-20/HART relay
Part Number / Sachnummer:	8328030
Serial Number / Seriennummer:	ARTA-1676

Sound Pressure Level / Schallpegel:	96,0 dB
Max. Deviation / max. Abweichung:	± 3 dB

The calibration was performed consistent with procedure described in instructions for use.
Die Kalibrierung erfolgte äquivalent zu dem in der Gebrauchsanweisung beschriebenen Verfahren.

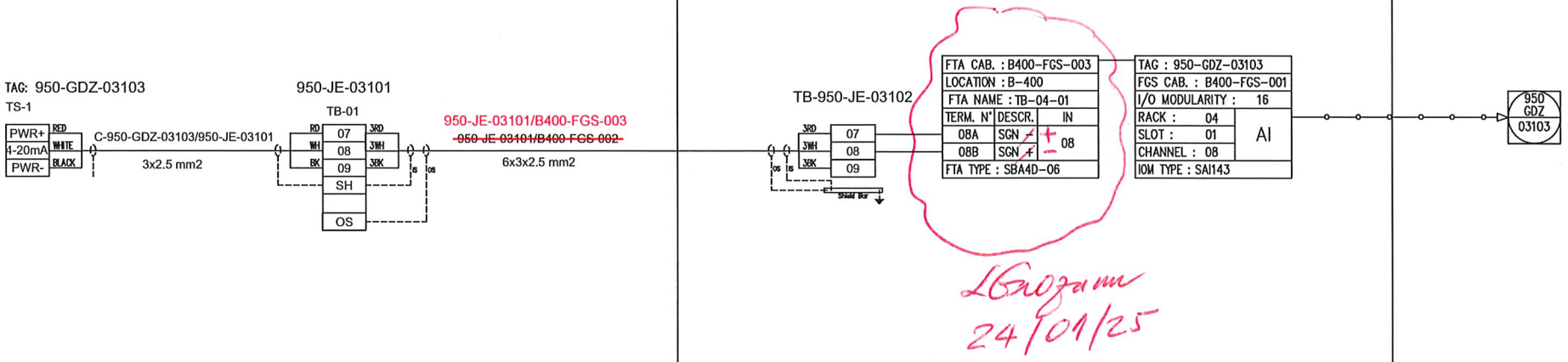
Date of Calibration / Datum der Kalibrierung: 31.01.2024

This Certificate was generated automatically and is valid without signature.
Dieses Zertifikat wurde automatisch generiert und ist ohne Unterschrift gültig.

The calibration was done in accordance to the Dräger Quality System, certified by the German TÜV to meet ISO 9001.
Die Durchführung der Kalibrierung erfolgt nach den Vorgaben des Dräger Qualitätssystems und entspricht den Anforderungen der ISO 9001 Zertifizierung.

DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 01

FIELD	ITER – B400	CENTRAL CONTROL ROOM
	FIRE AND GAS SYSTEM	OPERATOR CONSOLE



LGuozamm
24/01/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	06/12/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV: 1_A | DATE: 20/12/24 | SIGNATURE: C.Pilato
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSTRUMENT LOOP DIAGRAM
950-GDZ-03103
FZ-03 H2 DETECT. IN ELECTROLYZER PACKAGE AREA

CONTRACT NO./TITLE CONTRACT_NO.			SCALE 1:1
DRAWN: VBA	CHECKED: LCA	APPROVED: DLO	DATE 23/10/2024

A3	DRAWING NO. 123A90-DDL-IN-DG-40014	SHEET 227	REV. 01

File Name : 123A90-DDL-IN-DG-40014_REV.01

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	950-GDZ-03102	: H2 GD FZ-03 Electrolyzer PK Area	Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)	Module	UD
TASK	code	C10003109	Location: Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	PRE-COMM	Activity: FTS	Discipline: Instrumental	Form: FJ04L — Leak Detection

Loop Tag:	950-GDZ-03102			TDSL rev.:	123A90-FDL-IN-DG-40014 rev.1A		
Cabinet:	B400-FGS-001	Rack:	03	Slot:	03	Channel:	08
Output Signal:	mA						
Calibration Range:	0-100%	Unit:	dB	Minimum:	55 dB	Maximum:	110 dB

Threshold: Fire Alarm - H: 57,75 dB — Fire Alarm - HH: 60,5 dB

Checking of location ●

Checking of invalidity

Checking of Maintenance inhibition ●

TESTING & MEASUREMENT INSTRUMENT USED

Type	Serial N.	Calibration Certificate	Validity
8900 UGLD Calibration and bump test kit	P.N. 8328042		

Comments: Instrument model : ETR 0521

	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CW
Name	Laurentiu Grozavu	Giandonato Delmissier	John Mackillop
Date	2025-02-08	2025-02-08	2025-02-11
Signature	PROVERLIS Digitaly signed by Laurentiu Grozavu 2025-02-08T10:24:09.840Z	PROVERLIS Digitaly signed by Giandonato Delmissier 2025-02-08T10:47:17.134Z	PROVERLIS Digitaly signed by John Mackillop 2025-02-11T05:23:34.795Z

Dräger Polytron® 8900 UGLD
Ultrasonic Gas Leak Detector

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



Dräger. Technology for Life®

Benefits

Ultrasonic sensor technology – the early warning system for gas leaks

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

A perfect complement to your gas detection system

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

Delivers results that are easy to understand

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

Can even detect gas leaks in loud industrial environments

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

Robust design and fully-sealed sensor

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

Technical Data

Dräger Polytron® 8900 UGLD

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

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

Technical Data

	SIL 2	Certificate TÜV Süd

* Pending

Ordering Information

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

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

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Dräger Safety AG & Co. KGaA
Revalstraße 1
D - 23560 Lübeck
Germany

Factory Calibration Certificate

Kalibrierzertifikat

Product / Produkt:	Polytron 8900 UGLD d S 4-20/HART relay
Part Number / Sachnummer:	8328030
Serial Number / Seriennummer:	ARTA-1682

Sound Pressure Level / Schallpegel:	95,0 dB
Max. Deviation / max. Abweichung:	± 3 dB

The calibration was performed consistent with procedure described in instructions for use.
Die Kalibrierung erfolgte äquivalent zu dem in der Gebrauchsanweisung beschriebenen Verfahren.

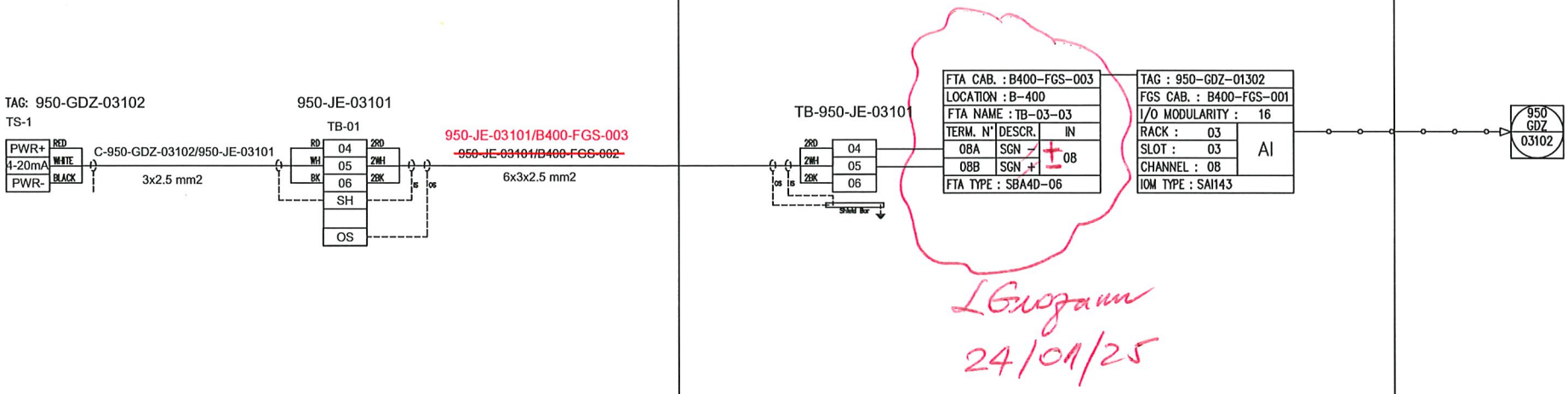
Date of Calibration / Datum der Kalibrierung: 31.01.2024

This Certificate was generated automatically and is valid without signature.
Dieses Zertifikat wurde automatisch generiert und ist ohne Unterschrift gültig.

The calibration was done in accordance to the Dräger Quality System, certified by the German TÜV to meet ISO 9001.
Die Durchführung der Kalibrierung erfolgt nach den Vorgaben des Dräger Qualitätssystems und entspricht den Anforderungen der ISO 9001 Zertifizierung.

DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 01

FIELD	ITER – B400	CENTRAL CONTROL ROOM
	FIRE AND GAS SYSTEM	OPERATOR CONSOLE



L.Giuggiano
24/01/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	06/12/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV: 1_A | DATE: 20/12/24 | SIGNATURE: C.Pilato
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSTRUMENT LOOP DIAGRAM
950-GDZ-03102
FZ-03 H2 DETECT. IN ELECTROLYZER PACKAGE AREA

CONTRACT NO./TITLE CONTRACT_NO.			SCALE 1:1
DRAWN: VBA	CHECKED: LCA	APPROVED: DLO	DATE 23/10/2024

A3	DRAWING NO. 123A90-DDL-IN-DG-40014	SHEET 226	REV. 01

File Name : 123A90-DDL-IN-DG-40014_REV.01

ITEM	Tag	950-GDZ-03101	: H2 GD FZ-03 Electrolyzer PK Area	Dwg	123A90-DDL-SAF-DL-30027		
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)	Module	UD		
TASK	code	C10003110	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	PRE-COMM	Activity	FTS	Discipline	Instrumental	Form	FJ04L	Leak Detection

Loop Tag:	950-GDZ-03101			TDSL rev.:	123A90-FDL-IN-DG-40014 rev.1A		
Cabinet:	B400-FGS-001	Rack:	03	Slot:	01	Channel:	13
Output Signal:	mA						
Calibration Range:	0-100%	Unit:	dB	Minimum:	55 dB	Maximum:	110 dB

Threshold: Fire Alarm - H: 57,75 dB — Fire Alarm - HH: 60,5 dB

Checking of location ●

Checking of invalidity

Checking of Maintenance inhibition ●

TESTING & MEASUREMENT INSTRUMENT USED

Type	Serial N.	Calibration Certificate	Validity
8900 UGLD Calibration and bump test kit	P.N. 8328042		

Comments: Instrument model : ETR 0521

	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CW
Name	Laurentiu Grozavu	Giandonato Delmissier	John Mackillop
Date	2025-02-08	2025-02-08	2025-02-11
Signature	Digitaly signed by Laurentiu Grozavu 2025-02-08T10:38:54.742Z	Digitaly signed by Giandonato Delmissier 2025-02-08T10:47:34.162Z	Digitaly signed by John Mackillop 2025-02-11T05:23:46.447Z

Dräger Polytron® 8900 UGLD
Ultrasonic Gas Leak Detector

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



Dräger. Technology for Life®

Benefits

Ultrasonic sensor technology – the early warning system for gas leaks

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

A perfect complement to your gas detection system

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

Delivers results that are easy to understand

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

Can even detect gas leaks in loud industrial environments

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

Robust design and fully-sealed sensor

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

Technical Data

Dräger Polytron® 8900 UGLD

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

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

Technical Data

	SIL 2	Certificate TÜV Süd

* Pending

Ordering Information

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

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

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

Dräger Safety AG & Co. KGaA
Revalstraße 1
D - 23560 Lübeck
Germany

Factory Calibration Certificate

Kalibrierzertifikat

Product / Produkt:	Polytron 8900 UGLD d S 4-20/HART relay
Part Number / Sachnummer:	8328030
Serial Number / Seriennummer:	ARTA-1681

Sound Pressure Level / Schallpegel:	95,0 dB
Max. Deviation / max. Abweichung:	± 3 dB

The calibration was performed consistent with procedure described in instructions for use.
Die Kalibrierung erfolgte äquivalent zu dem in der Gebrauchsanweisung beschriebenen Verfahren.

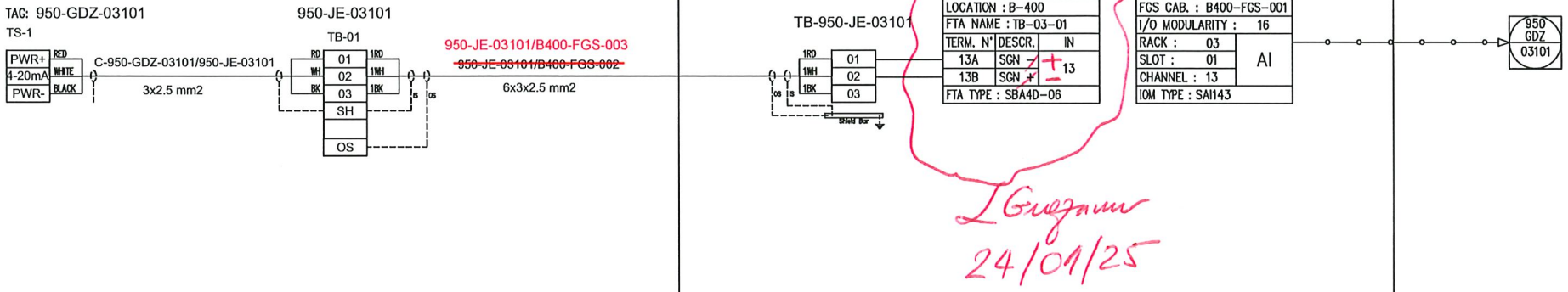
Date of Calibration / Datum der Kalibrierung: 31.01.2024

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Die Durchführung der Kalibrierung erfolgt nach den Vorgaben des Dräger Qualitätssystems und entspricht den Anforderungen der ISO 9001 Zertifizierung.

DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 01

FIELD	ITER – B400	CENTRAL CONTROL ROOM
	FIRE AND GAS SYSTEM	OPERATOR CONSOLE



I Guglielmi
24/01/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	06/12/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV: 1_A | DATE: 20/12/24 | SIGNATURE: C.Pilato
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSTRUMENT LOOP DIAGRAM
950-GDZ-03101
FZ-03 H2 DETECT. IN ELECTROLYZER PACKAGE AREA

CONTRACT NO./TITLE CONTRACT_NO.			SCALE 1:1
DRAWN: VBA	CHECKED: LCA	APPROVED: DLO	DATE 23/10/2024
A3	DRAWING NO. 123A90-DDL-IN-DG-40014	SHEET 225	REV. 01

File Name : 123A90-DDL-IN-DG-40014_REV.01

ITEM	Tag	950-FDZ-03104	: Flame Detector - FZ-03 Electrolyzer PK Area		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10003143	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	PRE-COMM	Activity	FTS	Discipline	Instrumental	Form	FJ04F	Fire Detection

Loop Tag:	950-FDZ-03104			TDSL rev.:	123A90-FDL-IN-DG-40014 rev.1A		
Cabinet:	B400-FGS-001	Rack:	03	Slot:	03	Channel:	07
Output Signal:	mA						

Threshold: Fire Alarm - H [ ] Fire Alarm - HH [20 mA]

Checking of Dirty optical [●]

Checking of invalidity [●]

Checking of Maintenance inhibition [ ]

TESTING & MEASUREMENT INSTRUMENT USED

Type	Serial N.	Calibration Certificate	Validity
FLS-FSIM-UV-IR	1544		

Comments:

	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CW COM
Name	Laurentiu Grozavu	Giandonato Delmissier	Jamie McAllister
Date	2025-02-28	2025-03-05	2025-03-11
Signature	Digitaly signed by Laurentiu Grozavu 2025-02-28T07:38:18.566Z	Digitaly signed by Giandonato Delmissier 2025-03-05T09:32:48.020Z	Digitaly signed by Jamie McAllister 2025-03-11T11:18:15.342Z

FlameSpec
UV-IR
UV-IR Flame Detector



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

Introduction

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

Key Benefits

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

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

FlameSpec UV-IR

UV-IR Flame Detector

Model: FLS-UV-IR

Response Characteristics

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

FlameSpec UV-IR

UV-IR Flame Detector

Model: FLS-UV-IR

Immunity to False Alarm

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

FlameSpec UV-IR

UV-IR Flame Detector

Model: FLS-UV-IR

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

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

FlameSpec
FLS-FSIM
Flame Simulator Family



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

Introduction

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

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

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

Key Benefits

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

Fire and Gas Detection Technologies Inc. | 4222 E. La Palma Ave., Anaheim, CA 92807
Tel: (+1) 714-671-8500 | support@fg-detection.com
Version: F300V0010.04 • Oct 2023

FlameSpec-FLS-FSIM

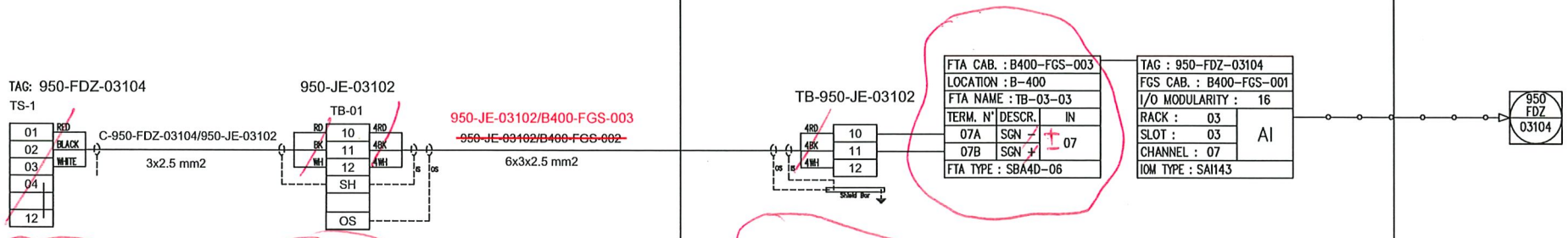
Flame Simulator Family

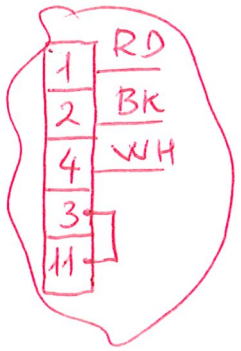
	Simulator Kits Part Nos	FLS-FSIM-IR3-KIT	FLS-FSIM-IR3-H2-KIT	FLS-FSIM-UV-IR-KIT
	Detector type	FLS-IR3[1] FLS-IR3-HD[1]	FLS-IR3-H2 FLS-IR3-H2-HD	FLS-UV-IR FLS-UV-IR-HD
OPERATION DISTANCES	**Detector Sensitivity**	ft. m	ft. m	ft. m
	Extreme	30 9.0	30 9.0	42.5 13.0
	High	20 6.0	20 6.0	26 8.0
	Medium	10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

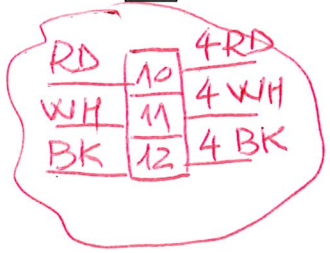
[1]not CO2L variant
[2]with collimator removed

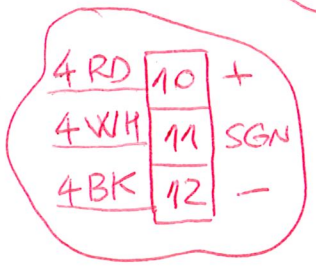
DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 01

FIELD	ITER – B400	CENTRAL CONTROL ROOM
	FIRE AND GAS SYSTEM	OPERATOR CONSOLE









L Grojean
23/01/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	06/12/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV: 1_A DATE: 20/12/24 SIGNATURE: C.Pilato
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSTRUMENT LOOP DIAGRAM
950-FDZ-03104
FZ-03 FLAME DETECT. IN ELECTROLYZER PACKAGE AREA

CONTRACT NO./TITLE CONTRACT_NO.			SCALE 1:1
DRAWN: VBA	CHECKED: LCA	APPROVED: DLO	DATE 23/10/2024

A3	DRAWING NO. 123A90-DDL-IN-DG-40014	SHEET 188	REV. 01

File Name : 123A90-DDL-IN-DG-40014_REV.01

ITEM	Tag	950-FDZ-03103	: Flame Detector - FZ-03 Electrolyzer PK Area	Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)	Module	UD
TASK	code	C10003144	Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	PRE-COMM	Activity	FTS	Discipline	Instrumental	Form	FJ04F		Fire Detection

Loop Tag:	950-FDZ-03103			TDSL rev.:	123A90-FDL-IN-DG-40014 rev.1A		
Cabinet:	B400-FGS-001	Rack:	03	Slot:	01	Channel:	07
Output Signal:	mA						

Threshold: Fire Alarm - H [ ] Fire Alarm - HH [20 mA]

Checking of Dirty optical [●]

Checking of invalidity [●]

Checking of Maintenance inhibition [ ]

TESTING & MEASUREMENT INSTRUMENT USED

Type	Serial N.	Calibration Certificate	Validity
FLS-FSIM-UV-IR	1544		

Comments:

	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CW OPS
Name	Laurentiu Grozavu	Giandonato Delmissier	Jamie McAllister
Date	2025-01-29	2025-01-29	2025-01-30
Signature	PROVERLIS Digitaly signed by Laurentiu Grozavu 2025-01-29T06:46:19.969Z	PROVERLIS Digitaly signed by Giandonato Delmissier 2025-01-29T08:44:04.253Z	PROVERLIS Digitaly signed by Jamie McAllister 2025-01-30T06:41:40.445Z

FlameSpec
UV-IR
UV-IR Flame Detector



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

Introduction

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

Key Benefits

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

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

FlameSpec UV-IR

UV-IR Flame Detector

Model: FLS-UV-IR

Response Characteristics

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

FlameSpec UV-IR

UV-IR Flame Detector

Model: FLS-UV-IR

Immunity to False Alarm

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

FlameSpec UV-IR

UV-IR Flame Detector

Model: FLS-UV-IR

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

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

FlameSpec
FLS-FSIM
Flame Simulator Family



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

Introduction

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

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

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

Key Benefits

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

Fire and Gas Detection Technologies Inc. | 4222 E. La Palma Ave., Anaheim, CA 92807
Tel: (+1) 714-671-8500 | support@fg-detection.com
Version: F300V0010.04 • Oct 2023

FlameSpec-FLS-FSIM

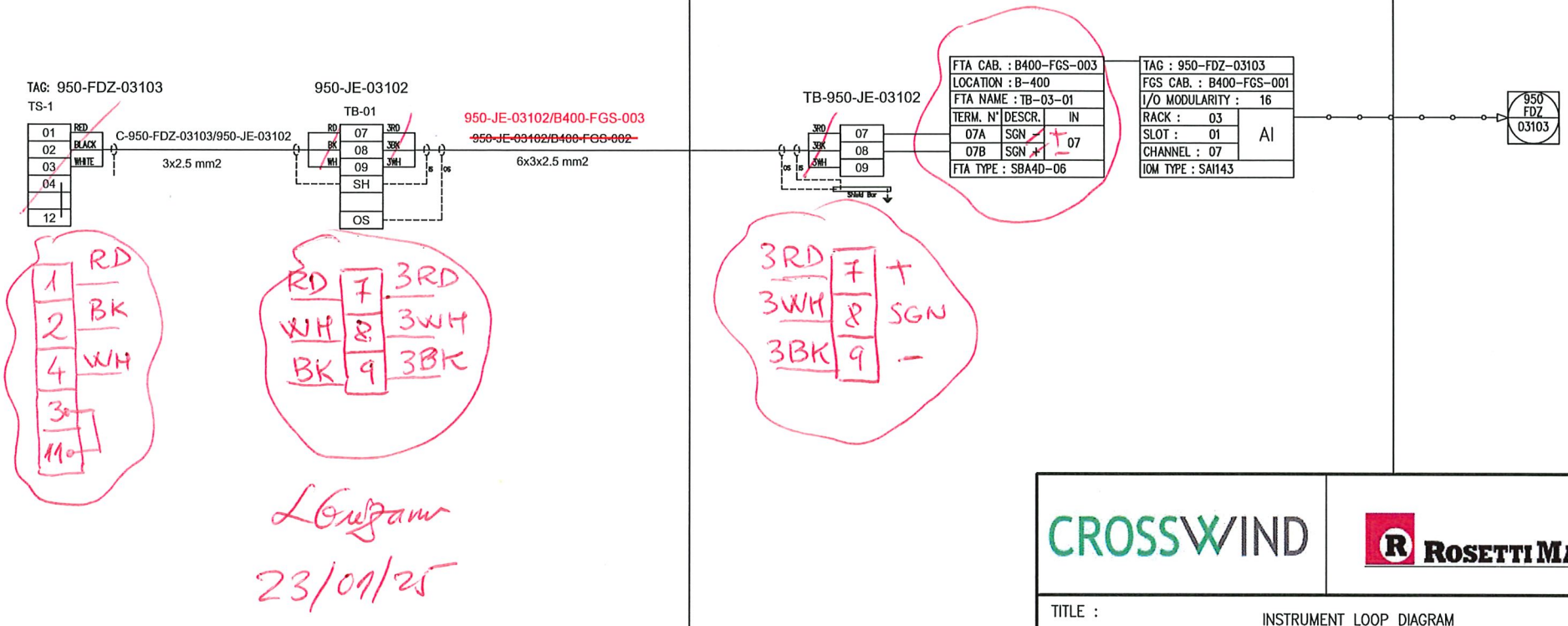
Flame Simulator Family

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

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

DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 01

FIELD	ITER – B400	CENTRAL CONTROL ROOM
	FIRE AND GAS SYSTEM	OPERATOR CONSOLE



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	06/12/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV: 1_A | DATE: 20/12/24 | SIGNATURE: C.Pilato
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSTRUMENT LOOP DIAGRAM
950-FDZ-03103
FZ-03 FLAME DETECT. IN ELECTROLYZER PACKAGE AREA

CONTRACT NO./TITLE CONTRACT_NO.			SCALE 1:1
DRAWN: VBA	CHECKED: LCA	APPROVED: DLO	DATE 23/10/2024

A3	DRAWING NO. 123A90-DDL-IN-DG-40014	SHEET 187	REV. 01

File Name : 123A90-FDL-IN-DG-40014_REV.01

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	950-FDZ-03102	: Flame Detector - FZ-03 Electrolyzer PK Area		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10003145	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	PRE-COMM	Activity	FTS	Discipline	Instrumental	Form	FJ04F	Fire Detection

Loop Tag:	950-FDZ-03102			TDSL rev.:	123A90-FDL-IN-DG-40014 rev.1A		
Cabinet:	B400-FGS-001	Rack:	02	Slot:	03	Channel:	07
Output Signal:	mA						

Threshold: Fire Alarm - H [ ] Fire Alarm - HH [20 mA]

Checking of Dirty optical [●]

Checking of invalidity [●]

Checking of Maintenance inhibition [ ]

TESTING & MEASUREMENT INSTRUMENT USED

Type	Serial N.	Calibration Certificate	Validity
FLS-FSIM-UV-IR	1544		

Comments:

	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CW OPS
Name	Laurentiu Grozavu	Giandonato Delmissier	Jamie McAllister
Date	2025-01-29	2025-01-29	2025-01-30
Signature	PROVERLIS Digitaly signed by Laurentiu Grozavu 2025-01-29T06:46:45.342Z	PROVERLIS Digitaly signed by Giandonato Delmissier 2025-01-29T08:44:27.498Z	PROVERLIS Digitaly signed by Jamie McAllister 2025-01-30T05:47:48.994Z

FlameSpec
UV-IR
UV-IR Flame Detector



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

Introduction

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

Key Benefits

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

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Version: F110V0010.08 • May 2023

FlameSpec UV-IR

UV-IR Flame Detector

Model: FLS-UV-IR

Response Characteristics

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

FlameSpec UV-IR

UV-IR Flame Detector

Model: FLS-UV-IR

Immunity to False Alarm

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

FlameSpec UV-IR

UV-IR Flame Detector

Model: FLS-UV-IR

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

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

FlameSpec
FLS-FSIM
Flame Simulator Family



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

Introduction

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

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

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

Key Benefits

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

Fire and Gas Detection Technologies Inc. | 4222 E. La Palma Ave., Anaheim, CA 92807
Tel: (+1) 714-671-8500 | support@fg-detection.com
Version: F300V0010.04 • Oct 2023

FlameSpec-FLS-FSIM

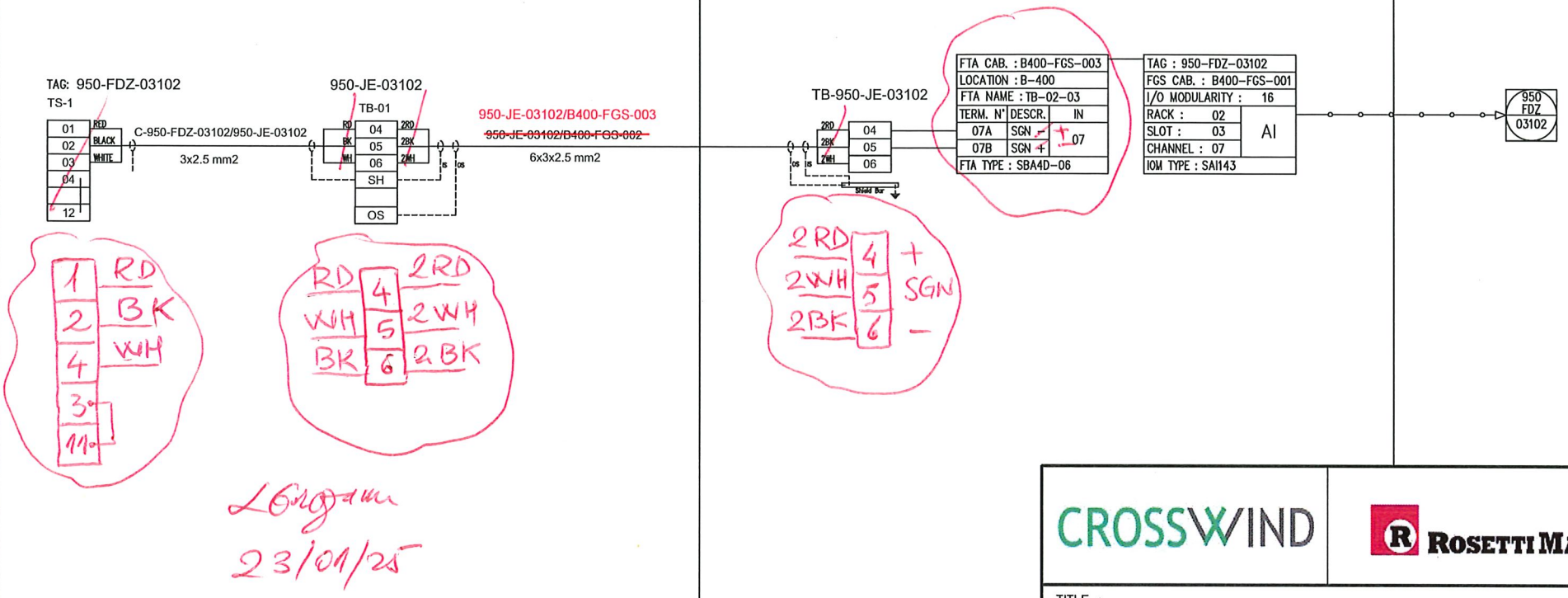
Flame Simulator Family

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

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

DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 01

FIELD	ITER – B400	CENTRAL CONTROL ROOM
	FIRE AND GAS SYSTEM	OPERATOR CONSOLE



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	06/12/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV: 1_A DATE: 20/12/24 SIGNATURE: C.Pilato
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSTRUMENT LOOP DIAGRAM
950-FDZ-03102
FZ-03 FLAME DETECT. IN ELECTROLYZER PACKAGE AREA

CONTRACT NO./TITLE CONTRACT_NO. | SCALE 1:1

DRAWN: VBA | CHECKED: LCA | APPROVED: DLO | DATE 23/10/2024

A3 | DRAWING NO. 123A90-DDL-IN-DG-40014 | SHEET 186 | REV. 01

File Name : 123A90-DDL-IN-DG-40014_REV.01

ITEM	Tag	950-FDZ-03101	: Flame Detector - FZ-03 Electrolyzer PK Area		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10003146	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	PRE-COMM	Activity	FTS	Discipline	Instrumental	Form	FJ04F	Fire Detection

Loop Tag:	950-FDZ-03101			TDSL rev.:	123A90-FDL-IN-DG-40014 rev.1A		
Cabinet:	B400-FGS-001	Rack:	02	Slot:	01	Channel:	07
Output Signal:	mA						

Threshold: Fire Alarm - H [ ] Fire Alarm - HH [20 mA]

Checking of Dirty optical [●]

Checking of invalidity [●]

Checking of Maintenance inhibition [ ]

TESTING & MEASUREMENT INSTRUMENT USED

Type	Serial N.	Calibration Certificate	Validity
FLS-FSIM-UV-IR	1544		

Comments:

	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CW OPS
Name	Laurentiu Grozavu	Giandonato Delmissier	Jamie McAllister
Date	2025-01-29	2025-01-29	2025-01-30
Signature	Digitaly signed by Laurentiu Grozavu 2025-01-29T06:47:11.654Z	Digitaly signed by Giandonato Delmissier 2025-01-29T08:44:54.554Z	Digitaly signed by Jamie McAllister 2025-01-30T06:42:23.023Z

FlameSpec
UV-IR
UV-IR Flame Detector



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

Introduction

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

Key Benefits

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

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Tel: (+1) 714-671-8500 | support@fg-detection.com
Version: F110V0010.08 • May 2023

FlameSpec UV-IR

UV-IR Flame Detector

Model: FLS-UV-IR

Response Characteristics

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

FlameSpec UV-IR

UV-IR Flame Detector

Model: FLS-UV-IR

Immunity to False Alarm

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

FlameSpec UV-IR

UV-IR Flame Detector

Model: FLS-UV-IR

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

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

FlameSpec
FLS-FSIM
Flame Simulator Family



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

Introduction

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

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

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

Key Benefits

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

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Version: F300V0010.04 • Oct 2023

FlameSpec-FLS-FSIM

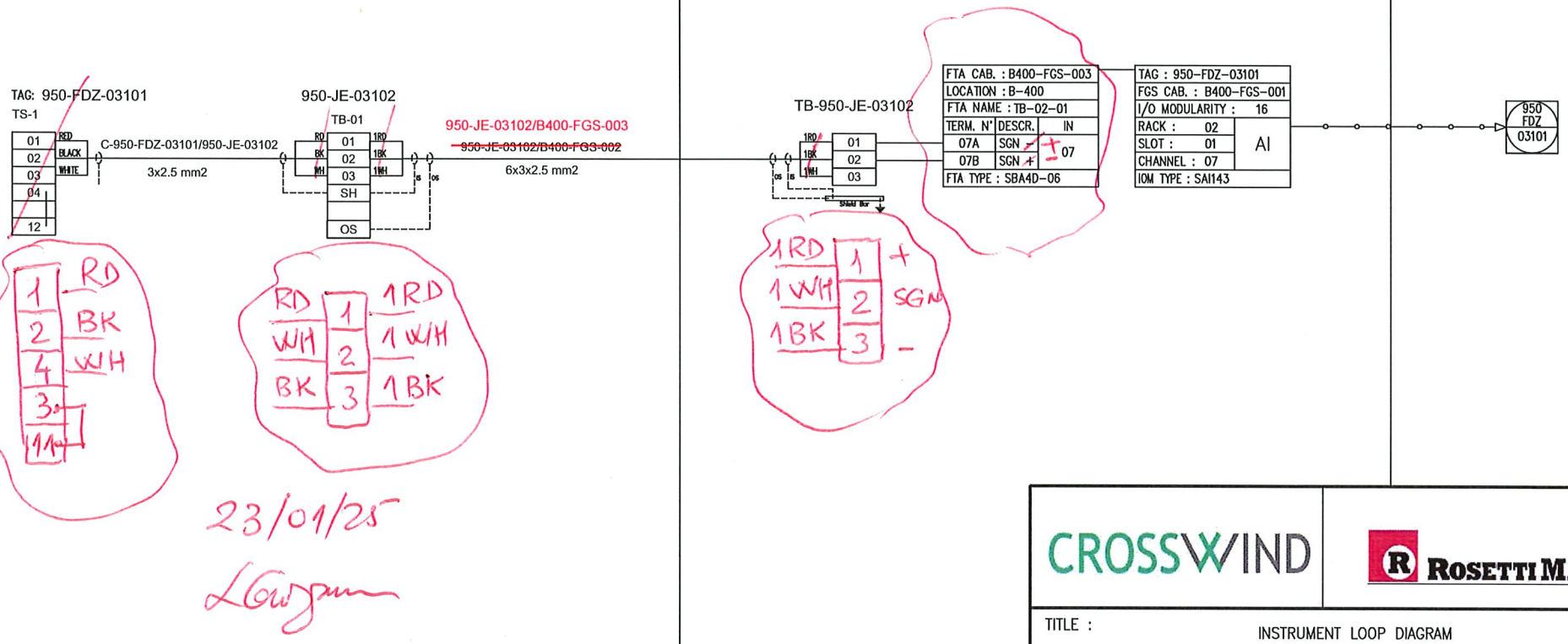
Flame Simulator Family

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

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

DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 01

FIELD	ITER – B400	CENTRAL CONTROL ROOM
	FIRE AND GAS SYSTEM	OPERATOR CONSOLE



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	06/12/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV: 1_A | DATE: 20/12/24 | SIGNATURE: C.Pilato
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSTRUMENT LOOP DIAGRAM
950-FDZ-03101
FZ-03 FLAME DETECT. IN ELECTROLYZER PACKAGE AREA

CONTRACT NO./TITLE CONTRACT_NO.			SCALE 1:1
DRAWN: VBA	CHECKED: LCA	APPROVED: DLO	DATE 23/10/2024
A3	DRAWING NO. 123A90-DDL-IN-DG-40014	SHEET 185	REV. 01

File Name : 123A90-DDL-IN-DG-40014_REV.01

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	950-MFA-03101	: FZ-03 MFA Activation		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10004415	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	COMM	Activity FTS	Discipline Instrumental	Form	FJ04PB_FGS	Push Button Fire&Gas

LOOP DATA

Loop TAG	950-MFA-03101			TSLD	123A90-DDL-IN-DG-40014 rev. 1_A				
IO Type	Input	Yes	Output	No	Energy by transmitter	No	Energy by system	Yes	
Marshalling	B400-FGS-001	Terminal	04A/04B	Slot	05	Rack	02	Chanel	04

LOOP TEST

1	Check earth isolation of the loop.					OK
2	Connect loop to terminal					OK
3	Energise Loop (close loop) and record status	Normal	No	Alarm/trip	Yes	OK
4	De-Energise Loop (open loop) and record status	Normal	Yes	Alarm/trip	No	OK
5	Record Fail Safe position	Open	NA	Closed	NA	NA

LOOP SERVICE

		Action Fire alarm		**Alarm / Control** FGS		**Display** PCS	
6	Loop energized	Yes		Yes		OK	OK
7	Loop not energized	No		Yes		OK	OK
8	Checking of line monitoring	Yes		Yes		OK	OK
9	Checking of Maintenance Inhibition	NA		NA		NA	NA
10	Associated safety Level / bar						NA
11	Associated outputs						NA

LOOP DOCUMENTATION

12	Loop diagram is marked up and attached to this test sheet	OK
13	Cause and effect chart is highlighted accordingly	OK
14	Any defect is recorded for punch list issuance	OK

Comments:

	Performed by	☉ WITNESS ☐ REVIEW	☉ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CW
Name	Marco Di Maria	Giandonato Delmissier	John Mackillop
Date	2025-02-07	2025-02-08	2025-02-11
Signature	PROVERLIS Digitaly signed by Marco Di Maria 2025-02-07T06:32:17.870Z	PROVERLIS Digitaly signed by Giandonato Delmissier 2025-02-08T10:06:21.831Z	PROVERLIS Digitaly signed by John Mackillop 2025-02-11T05:31:15.568Z

SM87BG & SM87PB manual call point range

Ex d, Ex ia, weatherproof



Overview

These manual fire alarm, emergency shutdown break-glass and pushbutton units have been designed for the most arduous environmental conditions.

The units are both easy to install and maintain. Intrinsically safe Ex ia and flameproof Ex d versions of each model are available.

A choice of either stainless steel or alloy makes the range suitable for either the offshore or onshore industries. Stainless steel, one of the most durable materials available on the market, is both hard wearing and corrosion resistant, increasing the life of products in harsh environments and therefore reducing maintenance costs.

Features

- Zone 0, Zone 1 and Zone 2 use*
- ATEX certified
- UL listed for USA and Canada (SM87PBL only). Class I, Div 1, Groups C & D
- ULC certified (SM87PBL only) for Class I, Zone 1 Groups C & D
- CSA certified
- IECEx certified
- Brazilian (INMETRO) certified
- Russian Fire certified
- PESO certified (Ex d only)
- SIL 2 certified (SM87PB only)
- IP66 and IP67
- DNV type approval (IEC 60945) (SM87PB only)
- Certified temperature: –55°C to +70°C*
- Stainless steel or marine grade alloy
- Robust yet lightweight
- Easy to maintain

*Model dependent

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March 2024

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Powering Business Worldwide

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No liability is accepted for any consequence of use.

Certifications

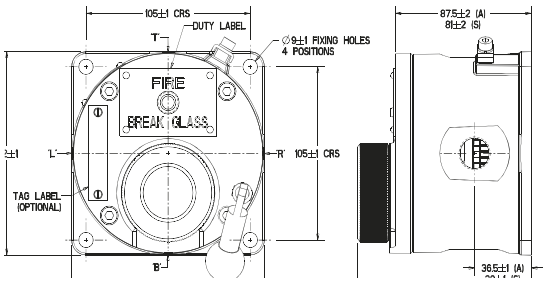
ATEX Ex d	Cert. no. Baseefa03ATEX0075. ATEX Approved Ex II 2GD Certified to: EN60079-0, EN60079-1, EN60079-31 Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db. IP66/IP67
ATEX Ex ia	Cert no. Baseefa 02ATEX0152X. ATEX Approved Ex II 1GD Certified to: EN60079-0, EN60079-11 Ex ia IIC T4 Ga, Ex ia IIIC T135°C Da
IECEx Ex d	Cert. no. IECEx BAS 09.0060 Certified to: EN60079-0, EN60079-1, EN60079-31 Ex d IIC T5/T6 Gb, Ex tb IIIC T85°/T100°C Db. IP66/IP67
IECEx Ex ia	Cert. no. IECEx BAS 10.0033X Certified to: IEC60079-0, IEC60079-11, Ex ia IIC T4 Ga, Ex ia IIIC T135°C Da
UL	Listing no. E186629 UL listed to Class 1, Div 1. Groups C & D. (SM87PBL)
ULC	Cert. no. 20091023-E320282 ULC certified for Class I, Zone 1 Groups C & D (SM87PBL)
CSA Explosion proof	Class 1, Div 1 & 2. Group D Ex d IIC T5/T6 Gb
CSA Intrinsically safe	Class 1, Div 1 & 2. Groups A-D
INMETRO Ex d	Ex db IIC T5/T6 Gb
Type Approvals	DNV (IEC 60945) (Stainless Steel SM87PB only)
SIL	SM87PB only - SIL2 Certification to IEC61508. Cert no. 20151118-4786827453
CCC	Ex d IIC T5/T6 Gb, Ex tD A21 IP66/IP67 T85°C/T100°C

Specifications

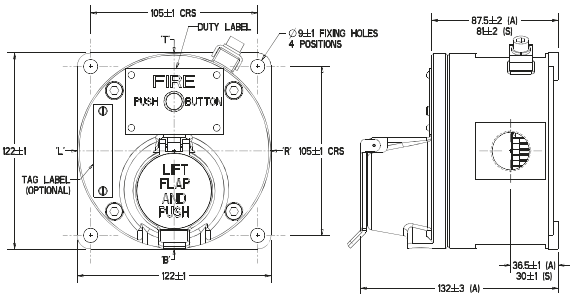
Material	Grade 316 ANC4B stainless steel or LM 25 TF marine grade alloy
Finish	Paint finish as standard or to customer specification
Voltage	Ex d 24V a.c./d.c. Ex ia 28V
Rating	2A
Switches	2 pole c/o, wired to terminals Optional up to 4 pole (UL version 2 pole only)
Optional indicator	A red high intensity LED can be fitted for alarm indication As standard the LED is not provided with over current protection. The forward current (If) should be limited to 20mA
Certified temp	Ex d* –55°C to +70°C. Ex ia* –55°C to +60°C –20°C to +55°C (LED version only) UL –40°C to +70°C, –20°C to +55°C (LED version only) CSA Explosion proof - Class 1, Div 1 & 2. –50°C to +55°C CSA - Ex d IIC –55°C to +70°C CSA Intrinsically safe - Class 1, Div 1 & 2 –50°C to +40°C *Note: includes ATEX, IECEx & INMETRO versions
Weight	3·8 kg. steel (approx.) or 2.5 kg. alloy (approx)
Ingress protection	IP66 & IP67. SM87PB IP68 (35m for 40 hours)
Entries	Up to 4 x M20 or M25 ISO Ex d/Ex ia Up to 4 x ½" or ¾" NPT UL Stainless steel version comes with two entries as standard. Units ordered with a single entry ordering code are supplied with 2x entries inc. plug on the opposite side
Terminals	Will accept up to 1·5mm² cable
Resistor values	470R minimum (d.c. & I.S. units only)

General arrangement drawing (all dimensions in mm)

Break glass



Push button



Both the Ex ia units and the Ex d units have the same external appearance. Also the internal components are identical throughout the range. Each unit can be wired for either NO, NC or CO contacts to customer specification

Ordering requirements

The following code is designed to help in selection of the correct unit. Build up the reference number by inserting the code for each component into the appropriate box

Unit	Model	Material	Certification	Entries	Duty label	Tag label	Options	Finish
SM87	PBL	S	D	1B1R	O	Y	HD	R

Material*	Code
Stainless steel	S
Alloy	A

*UL version only available in alloy

Model*	Code
Breakglass latching	BGL
Lift flap breakglass latching	LBGL
Push button latching key reset	PBL
Push button only momentary action	PBM

*UL and ULC versions only available in PBL model

Certification	Code
Ex ia	I
Ex d	D
IECEx - Ex ia	IJ
IECEx - Ex d	DJ
UL	UL
ULC	UC
CSA - Intrinsically Safe	IC
CSA - Ex proof	DC
INMETRO - Ex d	DM
CCC	DQ

Entries	Code
M20	1
M25	2
½" NPT	3
¾" NPT	4
Other	5
Position	
Top	*T
Bottom	*B
RHS	*R
LHS	*L

*Prefix position with size code i.e. 1T1B = M20 Top and Bottom

Duty label	Code
Fire breakglass	1
Push button	2
Fire push button	3
ESDO abandon	4
Burning house logo	5
Fire/FEU	6†
Other	O*
None	N

*Please specify
†This option must be used when ordering a red callpoint for ULC Fire Alarm applications

Tag label	Code
Required	Y*
Not required	N

*Please specify

Options	Code
Not required	N
LED	A
Resistor series	G*
Resistor EOL	H*
Diode	D*
3 pole c/o switch	T
4 pole c/o switch	F

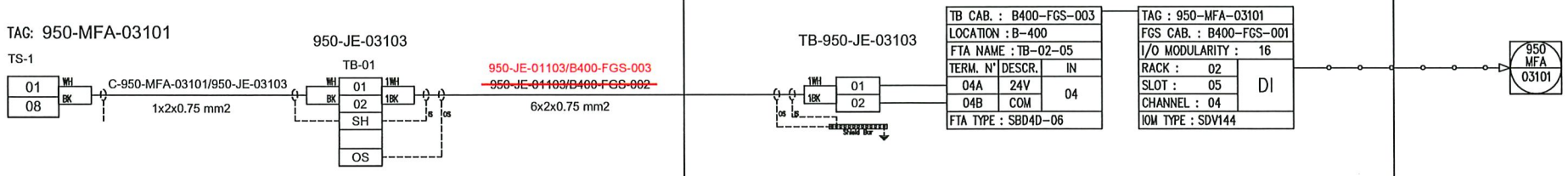
*Please specify

Finish	Code
Red	R
Blue	B
Yellow	Y
Yellow/black stripes	X
Special	S*

*Please specify

DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 01

FIELD	ITER – B400	CENTRAL CONTROL ROOM
	FIRE AND GAS SYSTEM	OPERATOR CONSOLE



NO MARK UP
04/02/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	06/12/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV: 1_A | DATE: 20/12/24 | SIGNATURE: C.Pilato
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSTRUMENT LOOP DIAGRAM
950-MFA-03101
FZ-03 MANUAL FIRE ALARM (MFA)

CONTRACT NO./TITLE CONTRACT_NO.			SCALE 1:1
DRAWN: VBA	CHECKED: LCA	APPROVED: DLO	DATE 23/10/202
A3	DRAWING NO. 123A90-DDL-IN-DG-40014	SHEET 330	REV. 01

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	950-MFA-03102	: FZ-03 MFA Activation		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10004416	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	COMM	Activity FTS	Discipline Instrumental	Form	FJ04PB_FGS	Push Button Fire&Gas

LOOP DATA

Loop TAG	950-MFA-03102				TSLD	123A90-DDL-IN-DG-40014 rev. 1_A			
IO Type	Input	Yes	Output	No	Energy by transmitter	No	Energy by system	Yes	
Marshalling	B400-FGS-001	Terminal	05A/05B	Slot 05	Rack 02	Chanel 05			

LOOP TEST

1	Check earth isolation of the loop.					OK
2	Connect loop to terminal					OK
3	Energise Loop (close loop) and record status	Normal	No	Alarm/trip	Yes	OK
4	De-Energise Loop (open loop) and record status	Normal	Yes	Alarm/trip	No	OK
5	Record Fail Safe position	Open	NA	Closed	NA	NA

LOOP SERVICE

		Action Fire alarm		Alarm / Control FGS		Display PCS	
6	Loop energized	Yes		Yes		OK	OK
7	Loop not energized	No		Yes		OK	OK
8	Checking of line monitoring	Yes		Yes		OK	OK
9	Checking of Maintenance Inhibition	NA		NA		NA	NA
10	Associated safety Level / bar						NA
11	Associated outputs						NA

LOOP DOCUMENTATION

12	Loop diagram is marked up and attached to this test sheet	OK
13	Cause and effect chart is highlighted accordingly	OK
14	Any defect is recorded for punch list issuance	OK

Comments:

	Performed by	☒ WITNESS ☐ REVIEW	☒ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CW
Name	Marco Di Maria	Giandonato Delmissier	John Mackillop
Date	2025-02-07	2025-02-08	2025-02-11
Signature	Digitaly signed by Marco Di Maria 2025-02-07T06:34:29.141Z	Digitaly signed by Giandonato Delmissier 2025-02-08T10:07:07.298Z	Digitaly signed by John Mackillop 2025-02-11T05:32:09.375Z

SM87BG & SM87PB manual call point range

Ex d, Ex ia, weatherproof



Overview

These manual fire alarm, emergency shutdown break-glass and pushbutton units have been designed for the most arduous environmental conditions.

The units are both easy to install and maintain. Intrinsically safe Ex ia and flameproof Ex d versions of each model are available.

A choice of either stainless steel or alloy makes the range suitable for either the offshore or onshore industries. Stainless steel, one of the most durable materials available on the market, is both hard wearing and corrosion resistant, increasing the life of products in harsh environments and therefore reducing maintenance costs.

Features

- Zone 0, Zone 1 and Zone 2 use*
- ATEX certified
- UL listed for USA and Canada (SM87PBL only). Class I, Div 1, Groups C & D
- ULC certified (SM87PBL only) for Class I, Zone 1 Groups C & D
- CSA certified
- IECEx certified
- Brazilian (INMETRO) certified
- Russian Fire certified
- PESO certified (Ex d only)
- SIL 2 certified (SM87PB only)
- IP66 and IP67
- DNV type approval (IEC 60945) (SM87PB only)
- Certified temperature: –55°C to +70°C*
- Stainless steel or marine grade alloy
- Robust yet lightweight
- Easy to maintain

*Model dependent

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Powering Business Worldwide

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No liability is accepted for any consequence of use.

Certifications

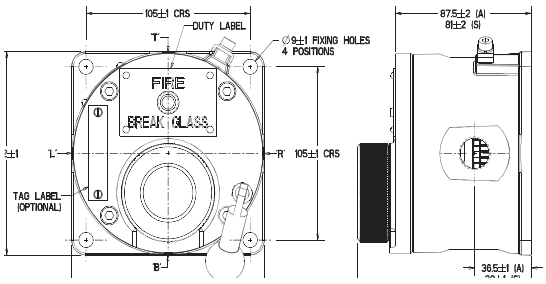
ATEX Ex d	Cert. no. Baseefa03ATEX0075. ATEX Approved Ex II 2GD Certified to: EN60079-0, EN60079-1, EN60079-31 Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db. IP66/IP67
ATEX Ex ia	Cert no. Baseefa 02ATEX0152X. ATEX Approved Ex II 1GD Certified to: EN60079-0, EN60079-11 Ex ia IIC T4 Ga, Ex ia IIIC T135°C Da
IECEx Ex d	Cert. no. IECEx BAS 09.0060 Certified to: EN60079-0, EN60079-1, EN60079-31 Ex d IIC T5/T6 Gb, Ex tb IIIC T85°/T100°C Db. IP66/IP67
IECEx Ex ia	Cert. no. IECEx BAS 10.0033X Certified to: IEC60079-0, IEC60079-11, Ex ia IIC T4 Ga, Ex ia IIIC T135°C Da
UL	Listing no. E186629 UL listed to Class 1, Div 1. Groups C & D. (SM87PBL)
ULC	Cert. no. 20091023-E320282 ULC certified for Class I, Zone 1 Groups C & D (SM87PBL)
CSA Explosion proof	Class 1, Div 1 & 2. Group D Ex d IIC T5/T6 Gb
CSA Intrinsically safe	Class 1, Div 1 & 2. Groups A-D
INMETRO Ex d	Ex db IIC T5/T6 Gb
Type Approvals	DNV (IEC 60945) (Stainless Steel SM87PB only)
SIL	SM87PB only - SIL2 Certification to IEC61508. Cert no. 20151118-4786827453
CCC	Ex d IIC T5/T6 Gb, Ex tD A21 IP66/IP67 T85°C/T100°C

Specifications

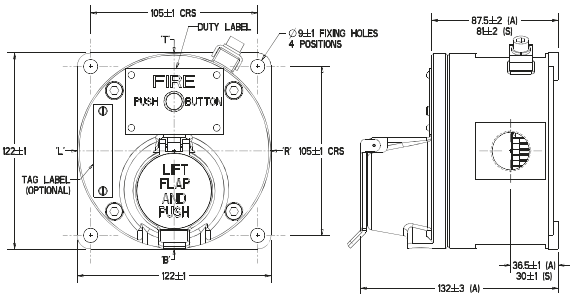
Material	Grade 316 ANC4B stainless steel or LM 25 TF marine grade alloy
Finish	Paint finish as standard or to customer specification
Voltage	Ex d 24V a.c./d.c. Ex ia 28V
Rating	2A
Switches	2 pole c/o, wired to terminals Optional up to 4 pole (UL version 2 pole only)
Optional indicator	A red high intensity LED can be fitted for alarm indication As standard the LED is not provided with over current protection. The forward current (If) should be limited to 20mA
Certified temp	Ex d* –55°C to +70°C. Ex ia* –55°C to +60°C –20°C to +55°C (LED version only) UL –40°C to +70°C, –20°C to +55°C (LED version only) CSA Explosion proof - Class 1, Div 1 & 2. –50°C to +55°C CSA - Ex d IIC –55°C to +70°C CSA Intrinsically safe - Class 1, Div 1 & 2 –50°C to +40°C *Note: includes ATEX, IECEx & INMETRO versions
Weight	3·8 kg. steel (approx.) or 2.5 kg. alloy (approx)
Ingress protection	IP66 & IP67. SM87PB IP68 (35m for 40 hours)
Entries	Up to 4 x M20 or M25 ISO Ex d/Ex ia Up to 4 x ½" or ¾" NPT UL Stainless steel version comes with two entries as standard. Units ordered with a single entry ordering code are supplied with 2x entries inc. plug on the opposite side
Terminals	Will accept up to 1·5mm² cable
Resistor values	470R minimum (d.c. & I.S. units only)

General arrangement drawing (all dimensions in mm)

Break glass



Push button



Both the Ex ia units and the Ex d units have the same external appearance. Also the internal components are identical throughout the range. Each unit can be wired for either NO, NC or CO contacts to customer specification

Ordering requirements

The following code is designed to help in selection of the correct unit. Build up the reference number by inserting the code for each component into the appropriate box

Unit	Model	Material	Certification	Entries	Duty label	Tag label	Options	Finish
SM87	PBL	S	D	1B1R	O	Y	HD	R

Material*	Code
Stainless steel	S
Alloy	A

*UL version only available in alloy

Model*	Code
Breakglass latching	BGL
Lift flap breakglass latching	LBGL
Push button latching key reset	PBL
Push button only momentary action	PBM

*UL and ULC versions only available in PBL model

Certification	Code
Ex ia	I
Ex d	D
IECEx - Ex ia	IJ
IECEx - Ex d	DJ
UL	UL
ULC	UC
CSA - Intrinsically Safe	IC
CSA - Ex proof	DC
INMETRO - Ex d	DM
CCC	DQ

Entries	Code
M20	1
M25	2
½" NPT	3
¾" NPT	4
Other	5
Position	
Top	*T
Bottom	*B
RHS	*R
LHS	*L

*Prefix position with size code i.e. 1T1B = M20 Top and Bottom

Duty label	Code
Fire breakglass	1
Push button	2
Fire push button	3
ESDO abandon	4
Burning house logo	5
Fire/FEU	6†
Other	O*
None	N

*Please specify
†This option must be used when ordering a red callpoint for ULC Fire Alarm applications

Tag label	Code
Required	Y*
Not required	N

*Please specify

Options	Code
Not required	N
LED	A
Resistor series	G*
Resistor EOL	H*
Diode	D*
3 pole c/o switch	T
4 pole c/o switch	F

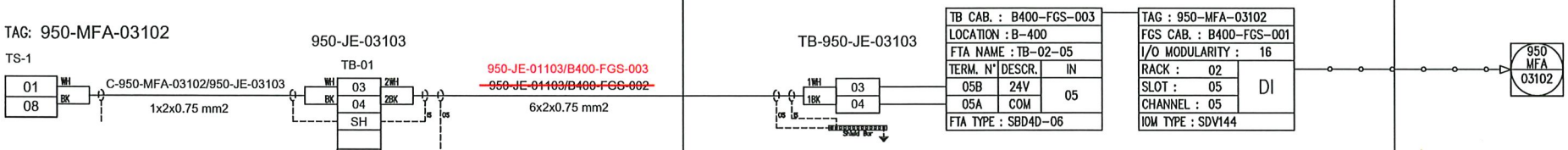
*Please specify

Finish	Code
Red	R
Blue	B
Yellow	Y
Yellow/black stripes	X
Special	S*

*Please specify

DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 01

FIELD	ITER – B400	CENTRAL CONTROL ROOM
	FIRE AND GAS SYSTEM	OPERATOR CONSOLE



NO MARK UP

04/02/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	06/12/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV: 1_A | DATE: 20/12/24 | SIGNATURE: C.Pilato
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSTRUMENT LOOP DIAGRAM
950-MFA-03102
FZ-03 MANUAL FIRE ALARM (MFA)

CONTRACT NO./TITLE CONTRACT_NO.			SCALE 1:1
DRAWN: VBA	CHECKED: LCA	APPROVED: DLO	DATE 23/10/202
A3	DRAWING NO. 123A90-DDL-IN-DG-40014	SHEET 331	REV. 01

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	950-MFA-03103	: FZ-03 MFA Activation		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10004417	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	COMM	Activity FTS	Discipline Instrumental	Form	FJ04PB_FGS	Push Button Fire&Gas

LOOP DATA

Loop TAG	950-MFA-03103			TSLD	123A90-DDL-IN-DG-40014 rev. 1_A				
IO Type	Input	Yes	Output	No	Energy by transmitter	No	Energy by system	Yes	
Marshalling	B400-FGS-001	Terminal	06A/06B	Slot	05	Rack	02	Chanel	06

LOOP TEST

1	Check earth isolation of the loop.					OK
2	Connect loop to terminal					OK
3	Energise Loop (close loop) and record status	Normal	No	Alarm/trip	Yes	OK
4	De-Energise Loop (open loop) and record status	Normal	Yes	Alarm/trip	No	OK
5	Record Fail Safe position	Open	NA	Closed	NA	NA

LOOP SERVICE

		Action Fire alarm		**Alarm / Control** FGS		**Display** PCS	
6	Loop energized	Yes		Yes		OK	OK
7	Loop not energized	No		Yes		OK	OK
8	Checking of line monitoring	Yes		Yes		OK	OK
9	Checking of Maintenance Inhibition	NA		NA		NA	NA
10	Associated safety Level / bar						NA
11	Associated outputs						NA

LOOP DOCUMENTATION

12	Loop diagram is marked up and attached to this test sheet	OK
13	Cause and effect chart is highlighted accordingly	OK
14	Any defect is recorded for punch list issuance	OK

Comments:

Page 1/1	Performed by	☒ WITNESS ☐ REVIEW	☒ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CW
Name	Marco Di Maria	Giandonato Delmissier	John Mackillop
Date	2025-02-07	2025-02-08	2025-02-11
Signature	PROVERLIS Digitaly signed by Marco Di Maria 2025-02-07T06:35:31.157Z	PROVERLIS Digitaly signed by Giandonato Delmissier 2025-02-08T10:07:24.488Z	PROVERLIS Digitaly signed by John Mackillop 2025-02-11T05:32:18.906Z

SM87BG & SM87PB manual call point range

Ex d, Ex ia, weatherproof



Overview

These manual fire alarm, emergency shutdown break-glass and pushbutton units have been designed for the most arduous environmental conditions.

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Features

- Zone 0, Zone 1 and Zone 2 use*
- ATEX certified
- UL listed for USA and Canada (SM87PBL only). Class I, Div 1, Groups C & D
- ULC certified (SM87PBL only) for Class I, Zone 1 Groups C & D
- CSA certified
- IECEx certified
- Brazilian (INMETRO) certified
- Russian Fire certified
- PESO certified (Ex d only)
- SIL 2 certified (SM87PB only)
- IP66 and IP67
- DNV type approval (IEC 60945) (SM87PB only)
- Certified temperature: –55°C to +70°C*
- Stainless steel or marine grade alloy
- Robust yet lightweight
- Easy to maintain

*Model dependent

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March 2024

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Powering Business Worldwide

All specifications, dimensions, weights and tolerances are nominal (typical) and Eaton reserve the right to vary all data without prior notice.
No liability is accepted for any consequence of use.

Certifications

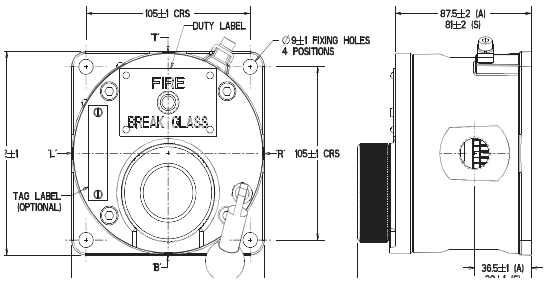
ATEX Ex d	Cert. no. Baseefa03ATEX0075. ATEX Approved Ex II 2GD Certified to: EN60079-0, EN60079-1, EN60079-31 Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db. IP66/IP67
ATEX Ex ia	Cert no. Baseefa 02ATEX0152X. ATEX Approved Ex II 1GD Certified to: EN60079-0, EN60079-11 Ex ia IIC T4 Ga, Ex ia IIIC T135°C Da
IECEx Ex d	Cert. no. IECEx BAS 09.0060 Certified to: EN60079-0, EN60079-1, EN60079-31 Ex d IIC T5/T6 Gb, Ex tb IIIC T85°/T100°C Db. IP66/IP67
IECEx Ex ia	Cert. no. IECEx BAS 10.0033X Certified to: IEC60079-0, IEC60079-11, Ex ia IIC T4 Ga, Ex ia IIIC T135°C Da
UL	Listing no. E186629 UL listed to Class 1, Div 1. Groups C & D. (SM87PBL)
ULC	Cert. no. 20091023-E320282 ULC certified for Class I, Zone 1 Groups C & D (SM87PBL)
CSA Explosion proof	Class 1, Div 1 & 2. Group D Ex d IIC T5/T6 Gb
CSA Intrinsically safe	Class 1, Div 1 & 2. Groups A-D
INMETRO Ex d	Ex db IIC T5/T6 Gb
Type Approvals	DNV (IEC 60945) (Stainless Steel SM87PB only)
SIL	SM87PB only - SIL2 Certification to IEC61508. Cert no. 20151118-4786827453
CCC	Ex d IIC T5/T6 Gb, Ex tD A21 IP66/IP67 T85°C/T100°C

Specifications

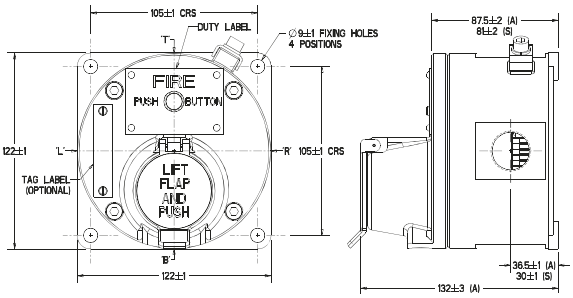
Material	Grade 316 ANC4B stainless steel or LM 25 TF marine grade alloy
Finish	Paint finish as standard or to customer specification
Voltage	Ex d 24V a.c./d.c. Ex ia 28V
Rating	2A
Switches	2 pole c/o, wired to terminals Optional up to 4 pole (UL version 2 pole only)
Optional indicator	A red high intensity LED can be fitted for alarm indication As standard the LED is not provided with over current protection. The forward current (If) should be limited to 20mA
Certified temp	Ex d* –55°C to +70°C. Ex ia* –55°C to +60°C –20°C to +55°C (LED version only) UL –40°C to +70°C, –20°C to +55°C (LED version only) CSA Explosion proof - Class 1, Div 1 & 2. –50°C to +55°C CSA - Ex d IIC –55°C to +70°C CSA Intrinsically safe - Class 1, Div 1 & 2 –50°C to +40°C *Note: includes ATEX, IECEx & INMETRO versions
Weight	3·8 kg. steel (approx.) or 2.5 kg. alloy (approx)
Ingress protection	IP66 & IP67. SM87PB IP68 (35m for 40 hours)
Entries	Up to 4 x M20 or M25 ISO Ex d/Ex ia Up to 4 x ½" or ¾" NPT UL Stainless steel version comes with two entries as standard. Units ordered with a single entry ordering code are supplied with 2x entries inc. plug on the opposite side
Terminals	Will accept up to 1·5mm² cable
Resistor values	470R minimum (d.c. & I.S. units only)

General arrangement drawing (all dimensions in mm)

Break glass



Push button



Both the Ex ia units and the Ex d units have the same external appearance. Also the internal components are identical throughout the range. Each unit can be wired for either NO, NC or CO contacts to customer specification

Ordering requirements

The following code is designed to help in selection of the correct unit. Build up the reference number by inserting the code for each component into the appropriate box

Unit	Model	Material	Certification	Entries	Duty label	Tag label	Options	Finish
SM87	PBL	S	D	1B1R	O	Y	HD	R

Material*	Code
Stainless steel	S
Alloy	A

*UL version only available in alloy

Model*	Code
Breakglass latching	BGL
Lift flap breakglass latching	LBGL
Push button latching key reset	PBL
Push button only momentary action	PBM

*UL and ULC versions only available in PBL model

Certification	Code
Ex ia	I
Ex d	D
IECEx - Ex ia	IJ
IECEx - Ex d	DJ
UL	UL
ULC	UC
CSA - Intrinsically Safe	IC
CSA - Ex proof	DC
INMETRO - Ex d	DM
CCC	DQ

Entries	Code
M20	1
M25	2
½" NPT	3
¾" NPT	4
Other	5
Position	
Top	*T
Bottom	*B
RHS	*R
LHS	*L

*Prefix position with size code i.e. 1T1B = M20 Top and Bottom

Duty label	Code
Fire breakglass	1
Push button	2
Fire push button	3
ESDO abandon	4
Burning house logo	5
Fire/FEU	6†
Other	O*
None	N

*Please specify
†This option must be used when ordering a red callpoint for ULC Fire Alarm applications

Tag label	Code
Required	Y*
Not required	N

*Please specify

Options	Code
Not required	N
LED	A
Resistor series	G*
Resistor EOL	H*
Diode	D*
3 pole c/o switch	T
4 pole c/o switch	F

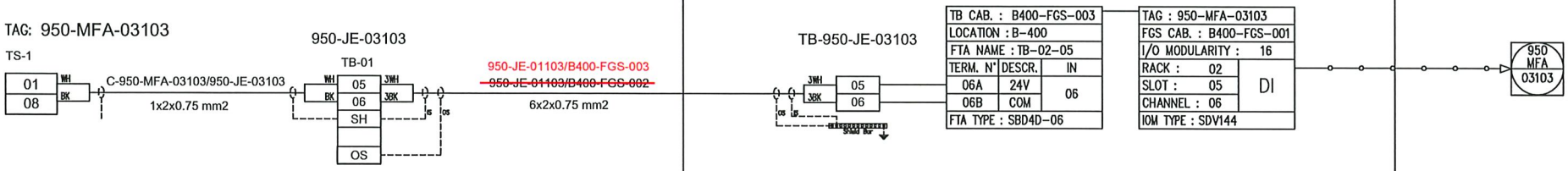
*Please specify

Finish	Code
Red	R
Blue	B
Yellow	Y
Yellow/black stripes	X
Special	S*

*Please specify

DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 01

FIELD	ITER – B400	CENTRAL CONTROL ROOM
	FIRE AND GAS SYSTEM	OPERATOR CONSOLE



NO MARK UP
04/02/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	06/12/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV: 1_A | DATE: 20/12/24 | SIGNATURE: C.Pilato
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSTRUMENT LOOP DIAGRAM
950-MFA-03103
FZ-03 MANUAL FIRE ALARM (MFA)

CONTRACT NO./TITLE CONTRACT_NO.			SCALE 1:1
DRAWN: VBA	CHECKED: LCA	APPROVED: DLO	DATE 23/10/2024
A3	DRAWING NO. 123A90-DDL-IN-DG-40014	SHEET 332	REV. 01

ROSETTI MARINO | CROSSWIND

ITEM	Tag	950-MFA-03104	: FZ-03 MFA Activation		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10004418	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	COMM	Activity FTS	Discipline Instrumental	Form	FJ04PB_FGS	Push Button Fire&Gas

LOOP DATA

Loop TAG	950-MFA-03104			TSLD	123A90-DDL-IN-DG-40014 rev. 1_A				
IO Type	Input	Yes	Output	No	Energy by transmitter	No	Energy by system	Yes	
Marshalling	B400-FGS-001	Terminal	07A/07B	Slot	05	Rack	02	Chanel	07

LOOP TEST

1	Check earth isolation of the loop.					OK
2	Connect loop to terminal					OK
3	Energise Loop (close loop) and record status	Normal	No	Alarm/trip	Yes	OK
4	De-Energise Loop (open loop) and record status	Normal	Yes	Alarm/trip	No	OK
5	Record Fail Safe position	Open	NA	Closed	NA	NA

LOOP SERVICE

		Action Fire alarm		Alarm / Control FGS		Display PCS	
6	Loop energized	Yes		Yes		OK	OK
7	Loop not energized	No		Yes		OK	OK
8	Checking of line monitoring	Yes		Yes		OK	OK
9	Checking of Maintenance Inhibition	NA		NA		NA	NA
10	Associated safety Level / bar						NA
11	Associated outputs						NA

LOOP DOCUMENTATION

12	Loop diagram is marked up and attached to this test sheet	OK
13	Cause and effect chart is highlighted accordingly	OK
14	Any defect is recorded for punch list issuance	OK

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☑ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CW
Name	Marco Di Maria	Giandonato Delmissier	John Mackillop
Date	2025-02-07	2025-02-08	2025-02-11
Signature	Digitaly signed by Marco Di Maria 2025-02-07T06:36:19.814Z	Digitaly signed by Giandonato Delmissier 2025-02-08T10:07:42.751Z	Digitaly signed by John Mackillop 2025-02-11T05:32:29.213Z

SM87BG & SM87PB manual call point range

Ex d, Ex ia, weatherproof



Overview

These manual fire alarm, emergency shutdown break-glass and pushbutton units have been designed for the most arduous environmental conditions.

The units are both easy to install and maintain. Intrinsically safe Ex ia and flameproof Ex d versions of each model are available.

A choice of either stainless steel or alloy makes the range suitable for either the offshore or onshore industries. Stainless steel, one of the most durable materials available on the market, is both hard wearing and corrosion resistant, increasing the life of products in harsh environments and therefore reducing maintenance costs.

Features

- Zone 0, Zone 1 and Zone 2 use*
- ATEX certified
- UL listed for USA and Canada (SM87PBL only). Class I, Div 1, Groups C & D
- ULC certified (SM87PBL only) for Class I, Zone 1 Groups C & D
- CSA certified
- IECEx certified
- Brazilian (INMETRO) certified
- Russian Fire certified
- PESO certified (Ex d only)
- SIL 2 certified (SM87PB only)
- IP66 and IP67
- DNV type approval (IEC 60945) (SM87PB only)
- Certified temperature: –55°C to +70°C*
- Stainless steel or marine grade alloy
- Robust yet lightweight
- Easy to maintain

*Model dependent

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March 2024

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Certifications

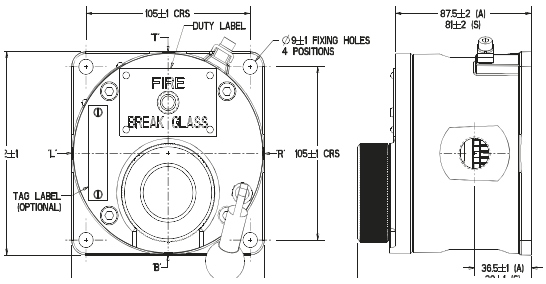
ATEX Ex d	Cert. no. Baseefa03ATEX0075. ATEX Approved Ex II 2GD Certified to: EN60079-0, EN60079-1, EN60079-31 Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db. IP66/IP67
ATEX Ex ia	Cert no. Baseefa 02ATEX0152X. ATEX Approved Ex II 1GD Certified to: EN60079-0, EN60079-11 Ex ia IIC T4 Ga, Ex ia IIIC T135°C Da
IECEx Ex d	Cert. no. IECEx BAS 09.0060 Certified to: EN60079-0, EN60079-1, EN60079-31 Ex d IIC T5/T6 Gb, Ex tb IIIC T85°/T100°C Db. IP66/IP67
IECEx Ex ia	Cert. no. IECEx BAS 10.0033X Certified to: IEC60079-0, IEC60079-11, Ex ia IIC T4 Ga, Ex ia IIIC T135°C Da
UL	Listing no. E186629 UL listed to Class 1, Div 1. Groups C & D. (SM87PBL)
ULC	Cert. no. 20091023-E320282 ULC certified for Class I, Zone 1 Groups C & D (SM87PBL)
CSA Explosion proof	Class 1, Div 1 & 2. Group D Ex d IIC T5/T6 Gb
CSA Intrinsically safe	Class 1, Div 1 & 2. Groups A-D
INMETRO Ex d	Ex db IIC T5/T6 Gb
Type Approvals	DNV (IEC 60945) (Stainless Steel SM87PB only)
SIL	SM87PB only - SIL2 Certification to IEC61508. Cert no. 20151118-4786827453
CCC	Ex d IIC T5/T6 Gb, Ex tD A21 IP66/IP67 T85°C/T100°C

Specifications

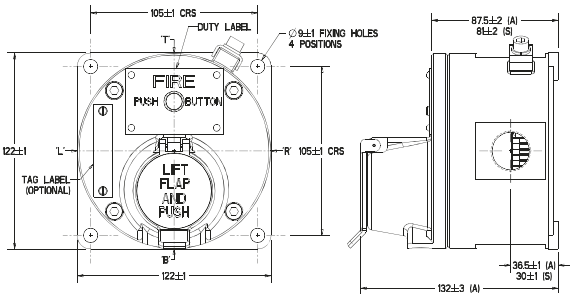
Material	Grade 316 ANC4B stainless steel or LM 25 TF marine grade alloy
Finish	Paint finish as standard or to customer specification
Voltage	Ex d 24V a.c./d.c. Ex ia 28V
Rating	2A
Switches	2 pole c/o, wired to terminals Optional up to 4 pole (UL version 2 pole only)
Optional indicator	A red high intensity LED can be fitted for alarm indication As standard the LED is not provided with over current protection. The forward current (If) should be limited to 20mA
Certified temp	Ex d* –55°C to +70°C. Ex ia* –55°C to +60°C –20°C to +55°C (LED version only) UL –40°C to +70°C, –20°C to +55°C (LED version only) CSA Explosion proof - Class 1, Div 1 & 2. –50°C to +55°C CSA - Ex d IIC –55°C to +70°C CSA Intrinsically safe - Class 1, Div 1 & 2 –50°C to +40°C *Note: includes ATEX, IECEx & INMETRO versions
Weight	3·8 kg. steel (approx.) or 2.5 kg. alloy (approx)
Ingress protection	IP66 & IP67. SM87PB IP68 (35m for 40 hours)
Entries	Up to 4 x M20 or M25 ISO Ex d/Ex ia Up to 4 x ½" or ¾" NPT UL Stainless steel version comes with two entries as standard. Units ordered with a single entry ordering code are supplied with 2x entries inc. plug on the opposite side
Terminals	Will accept up to 1·5mm² cable
Resistor values	470R minimum (d.c. & I.S. units only)

General arrangement drawing (all dimensions in mm)

Break glass



Push button



Both the Ex ia units and the Ex d units have the same external appearance. Also the internal components are identical throughout the range. Each unit can be wired for either NO, NC or CO contacts to customer specification

Ordering requirements

The following code is designed to help in selection of the correct unit. Build up the reference number by inserting the code for each component into the appropriate box

Unit	Model	Material	Certification	Entries	Duty label	Tag label	Options	Finish
SM87	PBL	S	D	1B1R	O	Y	HD	R

Material*	Code
Stainless steel	S
Alloy	A

*UL version only available in alloy

Model*	Code
Breakglass latching	BGL
Lift flap breakglass latching	LBGL
Push button latching key reset	PBL
Push button only momentary action	PBM

*UL and ULC versions only available in PBL model

Certification	Code
Ex ia	I
Ex d	D
IECEx - Ex ia	IJ
IECEx - Ex d	DJ
UL	UL
ULC	UC
CSA - Intrinsically Safe	IC
CSA - Ex proof	DC
INMETRO - Ex d	DM
CCC	DQ

Entries	Code
M20	1
M25	2
½" NPT	3
¾" NPT	4
Other	5
Position	
Top	*T
Bottom	*B
RHS	*R
LHS	*L

*Prefix position with size code i.e. 1T1B = M20 Top and Bottom

Duty label	Code
Fire breakglass	1
Push button	2
Fire push button	3
ESDO abandon	4
Burning house logo	5
Fire/FEU	6†
Other	O*
None	N

*Please specify
†This option must be used when ordering a red callpoint for ULC Fire Alarm applications

Tag label	Code
Required	Y*
Not required	N

*Please specify

Options	Code
Not required	N
LED	A
Resistor series	G*
Resistor EOL	H*
Diode	D*
3 pole c/o switch	T
4 pole c/o switch	F

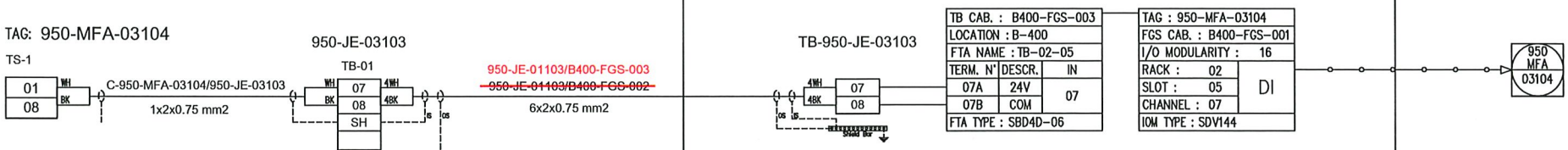
*Please specify

Finish	Code
Red	R
Blue	B
Yellow	Y
Yellow/black stripes	X
Special	S*

*Please specify

DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 01

FIELD	ITER – B400	CENTRAL CONTROL ROOM
	FIRE AND GAS SYSTEM	OPERATOR CONSOLE



NO MARK UP

04/02/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	06/12/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV: 1_A | DATE: 20/12/24 | SIGNATURE: C.Pilato
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSTRUMENT LOOP DIAGRAM
950-MFA-03104
FZ-03 MANUAL FIRE ALARM (MFA)

CONTRACT NO./TITLE CONTRACT_NO. | SCALE 1:1

DRAWN: VBA | CHECKED: LCA | APPROVED: DLO | DATE 23/10/202

A3 | DRAWING NO. 123A90-DDL-IN-DG-40014 | SHEET 333 | REV. 01

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	950-XL-03101	: FZ-03 Gas Beacon Activation		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10004440	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	PRE-COMM	Activity FTS	Discipline Instrumental	Form FJ04FB		Flashing Beacon

LOOP DATA

Loop TAG	950-XL-03101			TSLD	123A90-FDL-IN-DG-40014 rev. 1_A				
IO Type	Input	Yes	Output	No	Energy by transmitter	No	Energy by system	Yes	
Marshalling	B400-FGS-001	Terminal	10A/10B	Slot	07	Rack	02	Chanel	10

LOOP TEST

1	Check earth isolation of the loop.					OK
2	Connect loop to terminal					OK
3	Energise Loop (close loop) and record status	Normal	No	Alarm/trip	Yes	OK
4	De-Energise Loop (open loop) and record status	Normal	Yes	Alarm/trip	No	OK
5	Record Fail Safe position	Open	NA	Closed	NA	NA

LOOP SERVICE

		Action Fire alarm	Action Gas alarm	Alarm/Control FGS		Display PCS	
6	Loop energized	No	Yes	Yes		OK	OK
7	Loop not energized	No	No	No		OK	OK
8	Checking of line monitoring	NA	NA	NA		NA	NA
9	Checking of Maintenance Inhibition	NA	NA	NA		NA	NA
10	Associated safety Level / bar						NA
11	Associated outputs						NA
12	Flash beacon	RED		AMBER			

LOOP DOCUMENTATION

13	Loop diagram is marked up and attached to this test sheet	OK
14	Cause and effect chart is highlighted accordingly	OK
15	Any defect is recorded for punch list issuance	OK

Comments:

	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CW OPS
Name	Marco Di Maria	Giandonato Delmissier	Jamie McAllister
Date	2025-01-29	2025-01-29	2025-01-30
Signature	Digitaly signed by Marco Di Maria 2025-01-29T06:30:31.078Z	Digitaly signed by Giandonato Delmissier 2025-01-29T09:03:42.985Z	Digitaly signed by Jamie McAllister 2025-01-30T07:34:41.373Z

SM87HXB 5 joule xenon and SM87LED high intensity LED beacon range

Ex d, weatherproof



Overview

These certified beacons have been designed for use in harsh environmental conditions. The stainless steel or marine grade alloy enclosures are suitable for use offshore or onshore, where lightweight combined with corrosion resistance and strength is required. Units can be painted to customer specification and fitted with identification labels.

LED version available, offering extended lifetimes.

Stainless steel, one of the most durable materials available on the market, is both hard wearing and corrosion resistant, increasing the life of products in harsh environments and therefore reducing maintenance costs.

Features

- Zone 1 and Zone 2 use
- Ex d IIC T4/T5/T6
- ATEX approved, Ex II 2GD
- IECEx certified Gb, Db
- UL listed for USA and Canada
  - Class I, Div 1, Groups C & D
  - Class I, Zone 1, AExd IIB
- CSA certified
- CQST certified*
- INMETRO certified*
- SIL 2 certified
- CCOE certified
- IP66 and IP67
- Certified temperature: –55°C to +70°C*
- Stainless steel or marine grade alloy
- Xenon or LED versions
- Various lens colours
- Optional lens guard
- Telephone or relay initiated

*Depending on version

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March 2024

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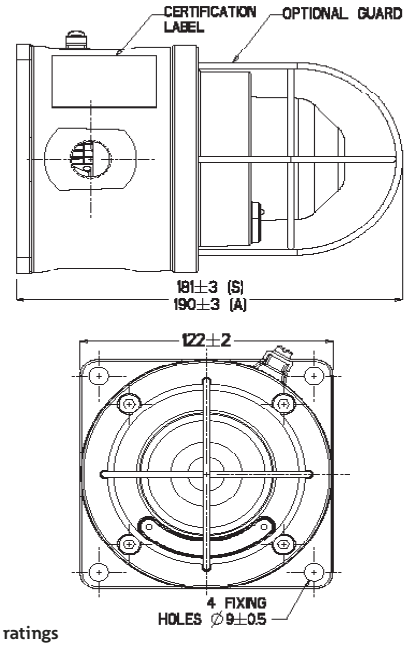
Certifications

ATEX Ex d	Cert. no. Baseefa 03ATEX0222 Certified to: EN60079-0, EN60079-1, EN60079-31 SM87HXB: Ex II 2GD, Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db SM87LED: Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55°C/ T70°C Db
IECEx Ex d	Cert. no. IECEx BAS 09.0059 Certified to: IEC60079-0, IEC60079-1, IEC60079-31 SM87HXB: Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db SM87LED: Ex d IIC T6 Gb, Ex tb IIIC T55°C/ T70°C Db
UL	Listing no. E187894 Class I, Div 1, Groups C & D Class I, Zones 1. (SM87HXB & SM87XBT only)
CSA	Cert no. 96406. (SM87HXB only) Certified to: C22.2 Nos 0, 0.4, 0.5, 9, 30-M1986, 94-M91, 137-M1981 Class I, Div 1. Group D
INMETRO Ex d	SM87HXB: Ex db IIC T5/T6 Gb, Ex tb IIIC T80°C/T95°C Db SM87LED: Ex db IIC T6 Gb, Ex tb IIIC T70°C Db
CQST Ex d	SM87HXB: Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db
SIL	SIL2 certification to IEC61508. Cert. No. 20151119-4786827453

Specifications

Material	SM87HXBS and SM87LEDS: Grade 316 ANC4B stainless steel SM87HXBA and SM87LEDA: LM25 TF marine grade alloy Lens: glass UL version available only in marine grade alloy
Finish	Epoxy paint finish as standard
Certified temp	SM87HXB: ATEX, IECEx, CQST, INMETRO -55°C to +70°C (T5) -55°C to +55°C (T6) UL -55°C to +70°C CSA -50°C to +40°C SM87LED: ATEX, IECEx, CQST, INMETRO -55°C to +55°C* (T6) * Operating temperature is -20°C to +55°C
Weight	SM87HXBS & SM87LEDS: 3.8kg each (approx) SM87HXBA & SM87LEDA: 2kg. each (approx)
Ingress protection	IP66 & IP67
Entries	Up to 4 x M20 / M25 ISO or 1/2" / 3/4" NPT
Terminals	SM87HXB SM87LED: Terminal suitable for 2.5mm2 cable
Relay initiate	Initiation by telephone ringing tone or low voltage control signals
Labels	Duty & tag labels optional

General arrangement drawing (all dimensions in mm)



Electrical ratings

	d.c.		a.c. 50/60Hz				
Voltage	24	48	110	120	220	240	254
Tube energy (Joules) SM87HXB	5	5	6	7	6	7	8
Current consumption SM87HXB	393	175	250	275	120	135	153
Current consumption SM87LED (mA)	165	85	N/A	N/A	N/A	N/A	N/A
Effective intensity (Cd)	29	29	32	39	32	39	44
Peak intensity (Cd)	22213	22213	25061	30187	25061	30187	34174

NOTE: The above figures (Cd) are for a clear lens @ 1Hz flash rate

Multiplying factor for coloured lenses

Red	Blue	Amber	Green	Yellow
0.15	0.12	0.51	0.49	0.36

The photometric data given above has been verified by BSI. Reports are available if required

LED light output - steady or flashing (customer selectable)

	Red	Blue	Amber	Green
Total LED output (candela)	192	64	64	17

LED/lens colour: red, blue, green, amber, yellow (not LED) or clear
Flash rate: 90fpm as standard, other flash rates available on request

Flash rate: 60fpm

Ordering requirements

The following code is designed to help in selection of the correct unit. Build up the reference number by inserting the code for each component into the appropriate box

Model	Certification	Voltage	Lens/LED colour	Guard	Entries	Tag/duty	Options	Finish
SM87LEDS	B	024	A	Y	1B1R	Y	N	R

Model

Voltage	Code
Xenon (stainless steel)	SM87HXBS
Xenon (alloy)	SM87HXBA
LED Exd (stainless steel)	SM87LEDS
LED Exd (alloy)	SM87LEDA

Certification

Certification	Code
ATEX	B
IECEx	J
UL	UL†
CSA	C‡
Chinese(CQST)	Q
INMETRO	DM

† Only SM87HXBA is available UL certified
‡ Only SM87HXB

Voltage

Voltage	Code
24 V d.c.	024
48 V d.c.	048
110 V a.c. not LED	110
120 V a.c. not LED	120
220 V a.c. not LED	220
240 V a.c. not LED	240
254 V a.c. not LED	254

Lens/LED colour

Colour	Code
Clear	C
Red	R
Blue	B
Green	G
Amber	A
Yellow (not LED)	Y

Guard

Guard	Code
None	N
Yes	Y

Entries

Entries	Code
M20	1
M25	2
1/2" NPT	3
3/4" NPT	4
Top	*T
Bottom	*B
RHS	*R
LHS	*L

* Prefix position with entry size code
e.g. 1T1B=M20 Top and Bottom entries

Tag/duty

Label	Code
None	N
Yes	Y*

* Please specify wording (Note: 15 characters maximum)

Options

Options	Code
Telephone	T*‡
Relay	R*‡
EOL resistor	E*†
None	N

* Not available on UL versions
† Please specify
‡ For SM87LED please specify if steady or flashing is required

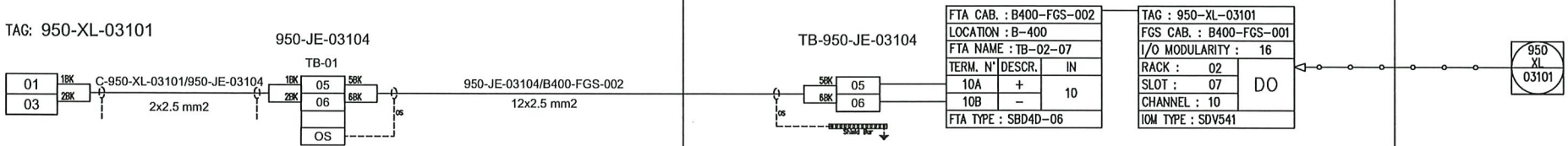
Finish

Colour	Code
Red	R
Blue	B
Yellow	Y
Yellow/ black stripe	X
Grey	G
White	W
Special	S*

*Please specify

DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 01

FIELD	ITER – B400	CENTRAL CONTROL ROOM
	FIRE AND GAS SYSTEM	OPERATOR CONSOLE



NO MARK UP
29/01/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	06/12/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV: 1_A | DATE: 20/12/24 | SIGNATURE: C.Pilato
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSTRUMENT LOOP DIAGRAM
950-XL-03101
FZ-03 OPTICAL EXP GAS ALARM

CONTRACT NO./TITLE CONTRACT_NO.			SCALE 1:1
DRAWN: VBA	CHECKED: LCA	APPROVED: DLO	DATE 23/10/2024

A3	DRAWING NO. 123A90-DDL-IN-DG-40014	SHEET 379	REV. 01

File Name : 123A90-DDL-IN-DG-40014_REV.01

ROSETTI MARINO — CROSSWIND

ITEM	Tag	950-XL-03102	: FZ-03 Fire Beacon Activation		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10004441	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	PRE-COMM	Activity FTS	Discipline Instrumental	Form	FJ04FB	Flashing Beacon

LOOP DATA

Loop TAG	950-XL-03102			TSLD	123A90-FDL-IN-DG-40014 rev. 1_A				
IO Type	Input	Yes	Output	No	Energy by transmitter	No	Energy by system	Yes	
Marshalling	B400-FGS-001	Terminal	11A/11B	Slot	07	Rack	02	Chanel	11

LOOP TEST

1	Check earth isolation of the loop.					OK
2	Connect loop to terminal					OK
3	Energise Loop (close loop) and record status	Normal	No	Alarm/trip	Yes	OK
4	De-Energise Loop (open loop) and record status	Normal	Yes	Alarm/trip	No	OK
5	Record Fail Safe position	Open	NA	Closed	NA	NA

LOOP SERVICE

		Action Fire alarm	Action Gas alarm	Alarm/Control FGS		Display PCS	
6	Loop energized	Yes	No	Yes		OK	OK
7	Loop not energized	No	No	No		OK	OK
8	Checking of line monitoring	NA	NA	NA		NA	NA
9	Checking of Maintenance Inhibition	NA	NA	NA		NA	NA
10	Associated safety Level / bar						NA
11	Associated outputs						NA
12	Flash beacon	RED	●		AMBER		

LOOP DOCUMENTATION

13	Loop diagram is marked up and attached to this test sheet	OK
14	Cause and effect chart is highlighted accordingly	OK
15	Any defect is recorded for punch list issuance	OK

Comments:

	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CW OPS
Name	Marco Di Maria	Giandonato Delmissier	Jamie McAllister
Date	2025-01-29	2025-01-29	2025-01-30
Signature	Digitaly signed by Marco Di Maria 2025-01-29T06:29:05.599Z	Digitaly signed by Giandonato Delmissier 2025-01-29T09:04:05.824Z	Digitaly signed by Jamie McAllister 2025-01-30T07:35:36.940Z

SM87HXB 5 joule xenon and SM87LED high intensity LED beacon range

Ex d, weatherproof



Overview

These certified beacons have been designed for use in harsh environmental conditions. The stainless steel or marine grade alloy enclosures are suitable for use offshore or onshore, where lightweight combined with corrosion resistance and strength is required. Units can be painted to customer specification and fitted with identification labels.

LED version available, offering extended lifetimes.

Stainless steel, one of the most durable materials available on the market, is both hard wearing and corrosion resistant, increasing the life of products in harsh environments and therefore reducing maintenance costs.

Features

- Zone 1 and Zone 2 use
- Ex d IIC T4/T5/T6
- ATEX approved, Ex II 2GD
- IECEx certified Gb, Db
- UL listed for USA and Canada
  - Class I, Div 1, Groups C & D
  - Class I, Zone 1, AExd IIB
- CSA certified
- CQST certified*
- INMETRO certified*
- SIL 2 certified
- CCOE certified
- IP66 and IP67
- Certified temperature: –55°C to +70°C*
- Stainless steel or marine grade alloy
- Xenon or LED versions
- Various lens colours
- Optional lens guard
- Telephone or relay initiated

*Depending on version

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Powering Business Worldwide

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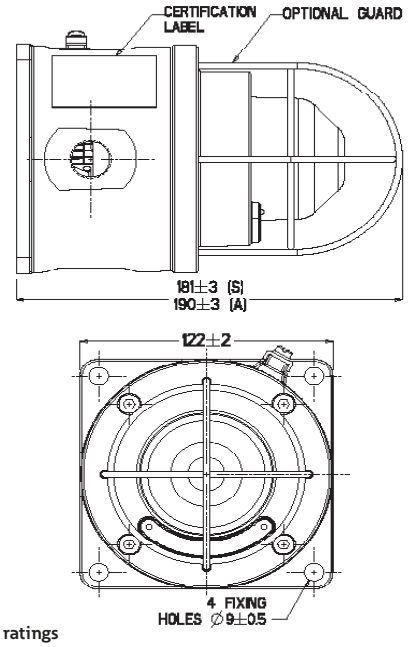
Certifications

ATEX Ex d	Cert. no. Baseefa 03ATEX0222 Certified to: EN60079-0, EN60079-1, EN60079-31 SM87HXB: Ex II 2GD, Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db SM87LED: Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55°C/ T70°C Db
IECEx Ex d	Cert. no. IECEx BAS 09.0059 Certified to: IEC60079-0, IEC60079-1, IEC60079-31 SM87HXB: Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db SM87LED: Ex d IIC T6 Gb, Ex tb IIIC T55°C/ T70°C Db
UL	Listing no. E187894 Class I, Div 1, Groups C & D Class I, Zones 1. (SM87HXB & SM87XBT only)
CSA	Cert no. 96406. (SM87HXB only) Certified to: C22.2 Nos 0, 0.4, 0.5, 9, 30-M1986, 94-M91, 137-M1981 Class I, Div 1. Group D
INMETRO Ex d	SM87HXB: Ex db IIC T5/T6 Gb, Ex tb IIIC T80°C/T95°C Db SM87LED: Ex db IIC T6 Gb, Ex tb IIIC T70°C Db
CQST Ex d	SM87HXB: Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db
SIL	SIL2 certification to IEC61508. Cert. No. 20151119-4786827453

Specifications

Material	SM87HXBS and SM87LEDS: Grade 316 ANC4B stainless steel SM87HXBA and SM87LEDA: LM25 TF marine grade alloy Lens: glass UL version available only in marine grade alloy
Finish	Epoxy paint finish as standard
Certified temp	SM87HXB: ATEX, IECEx, CQST, INMETRO -55°C to +70°C (T5) -55°C to +55°C (T6) UL -55°C to +70°C CSA -50°C to +40°C SM87LED: ATEX, IECEx, CQST, INMETRO -55°C to +55°C* (T6) * Operating temperature is -20°C to +55°C
Weight	SM87HXBS & SM87LEDS: 3.8kg each (approx) SM87HXBA & SM87LEDA: 2kg. each (approx)
Ingress protection	IP66 & IP67
Entries	Up to 4 x M20 / M25 ISO or 1/2" / 3/4" NPT
Terminals	SM87HXB SM87LED: Terminal suitable for 2.5mm2 cable
Relay initiate	Initiation by telephone ringing tone or low voltage control signals
Labels	Duty & tag labels optional

General arrangement drawing (all dimensions in mm)



Electrical ratings

	d.c.		a.c. 50/60Hz				
Voltage	24	48	110	120	220	240	254
Tube energy (Joules) SM87HXB	5	5	6	7	6	7	8
Current consumption SM87HXB	393	175	250	275	120	135	153
Current consumption SM87LED (mA)	165	85	N/A	N/A	N/A	N/A	N/A
Effective intensity (Cd)	29	29	32	39	32	39	44
Peak intensity (Cd)	22213	22213	25061	30187	25061	30187	34174

NOTE: The above figures (Cd) are for a clear lens @ 1Hz flash rate

Multiplying factor for coloured lenses

Red	Blue	Amber	Green	Yellow
0.15	0.12	0.51	0.49	0.36

The photometric data given above has been verified by BSI. Reports are available if required

LED light output - steady or flashing (customer selectable)

	Red	Blue	Amber	Green
Total LED output (candela)	192	64	64	17

LED/lens colour: red, blue, green, amber, yellow (not LED) or clear
Flash rate: 90fpm as standard, other flash rates available on request

Flash rate: 60fpm

Ordering requirements

The following code is designed to help in selection of the correct unit. Build up the reference number by inserting the code for each component into the appropriate box

Model	Certification	Voltage	Lens/LED colour	Guard	Entries	Tag/duty	Options	Finish
SM87LEDS	B	024	R	Y	1B1R	Y	N	R

Voltage	Code
Xenon (stainless steel)	SM87HXBS
Xenon (alloy)	SM87HXBA
LED Exd (stainless steel)	SM87LEDS
LED Exd (alloy)	SM87LEDA

Voltage	Code
24 V d.c.	024
48 V d.c.	048
110 V a.c. not LED	110
120 V a.c. not LED	120
220 V a.c. not LED	220
240 V a.c. not LED	240
254 V a.c. not LED	254

Guard	Code
None	N
Yes	Y

Label	Code
None	N
Yes	Y*

* Please specify wording (Note: 15 characters maximum)

Colour	Code
Red	R
Blue	B
Yellow	Y
Yellow/ black stripe	X
Grey	G
White	W
Special	S*

*Please specify

Certification	Code
ATEX	B
IECEx	J
UL	UL†
CSA	C‡
Chinese(CQST)	Q
INMETRO	DM

† Only SM87HXBA is available UL certified
‡ Only SM87HXB

Colour	Code
Clear	C
Red	R
Blue	B
Green	G
Amber	A
Yellow (not LED)	Y

Entries	Code
M20	1
M25	2
1/2" NPT	3
3/4" NPT	4
Top	*T
Bottom	*B
RHS	*R
LHS	*L

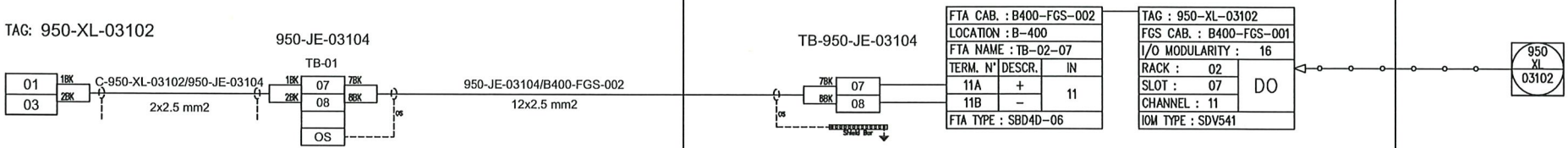
* Prefix position with entry size code
e.g. 1T1B=M20 Top and Bottom entries

Options	Code
Telephone	T*‡
Relay	R*‡
EOL resistor	E*†
None	N

* Not available on UL versions
† Please specify
‡ For SM87LED please specify if steady or flashing is required

DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 01

FIELD	ITER – B400	CENTRAL CONTROL ROOM
	FIRE AND GAS SYSTEM	OPERATOR CONSOLE



NO MARK UP

L Bujam

21/09/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	06/12/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV: 1_A | DATE: 20/12/24 | SIGNATURE: C.Pilato
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSTRUMENT LOOP DIAGRAM
950-XL-03102
FZ-03 OPTICAL FIRE ALARM

CONTRACT NO./TITLE CONTRACT_NO.			SCALE 1:1
DRAWN: VBA	CHECKED: LCA	APPROVED: DLO	DATE 23/10/2024
A3	DRAWING NO. 123A90-DDL-IN-DG-40014	SHEET 380	REV. 01

File Name : 123A90-DDL-IN-DG-40014_REV.01

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	950-XL-03103	: FZ-03 Gas Beacon Activation		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10004442	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	PRE-COMM	Activity FTS	Discipline Instrumental	Form FJ04FB		Flashing Beacon

LOOP DATA

Loop TAG	950-XL-03103			TSLD	123A90-FDL-IN-DG-40014 rev. 1_A				
IO Type	Input	Yes	Output	No	Energy by transmitter	No	Energy by system	Yes	
Marshalling	B400-FGS-001	Terminal	12A/12B	Slot	07	Rack	02	Chanel	12

LOOP TEST

1	Check earth isolation of the loop.					OK
2	Connect loop to terminal					OK
3	Energise Loop (close loop) and record status	Normal	No	Alarm/trip	Yes	OK
4	De-Energise Loop (open loop) and record status	Normal	Yes	Alarm/trip	No	OK
5	Record Fail Safe position	Open	NA	Closed	NA	NA

LOOP SERVICE

		Action Fire alarm	Action Gas alarm	Alarm/Control FGS		Display PCS	
6	Loop energized	No	Yes	Yes		OK	OK
7	Loop not energized	No	No	No		OK	OK
8	Checking of line monitoring	NA	NA	NA		NA	NA
9	Checking of Maintenance Inhibition	NA	NA	NA		NA	NA
10	Associated safety Level / bar						NA
11	Associated outputs						NA
12	Flash beacon	RED		AMBER			

LOOP DOCUMENTATION

13	Loop diagram is marked up and attached to this test sheet	OK
14	Cause and effect chart is highlighted accordingly	OK
15	Any defect is recorded for punch list issuance	OK

Comments:

	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CW OPS
Name	Marco Di Maria	Giandonato Delmissier	Jamie McAllister
Date	2025-01-29	2025-01-29	2025-01-30
Signature	Digitaly signed by Marco Di Maria 2025-01-29T06:28:12.216Z	Digitaly signed by Giandonato Delmissier 2025-01-29T09:04:41.266Z	Digitaly signed by Jamie McAllister 2025-01-30T07:54:24.352Z

SM87HXB 5 joule xenon and SM87LED high intensity LED beacon range

Ex d, weatherproof



Overview

These certified beacons have been designed for use in harsh environmental conditions. The stainless steel or marine grade alloy enclosures are suitable for use offshore or onshore, where lightweight combined with corrosion resistance and strength is required. Units can be painted to customer specification and fitted with identification labels.

LED version available, offering extended lifetimes.

Stainless steel, one of the most durable materials available on the market, is both hard wearing and corrosion resistant, increasing the life of products in harsh environments and therefore reducing maintenance costs.

Features

- Zone 1 and Zone 2 use
- Ex d IIC T4/T5/T6
- ATEX approved, Ex II 2GD
- IECEx certified Gb, Db
- UL listed for USA and Canada
  - Class I, Div 1, Groups C & D
  - Class I, Zone 1, AExd IIB
- CSA certified
- CQST certified*
- INMETRO certified*
- SIL 2 certified
- CCOE certified
- IP66 and IP67
- Certified temperature: –55°C to +70°C*
- Stainless steel or marine grade alloy
- Xenon or LED versions
- Various lens colours
- Optional lens guard
- Telephone or relay initiated

*Depending on version

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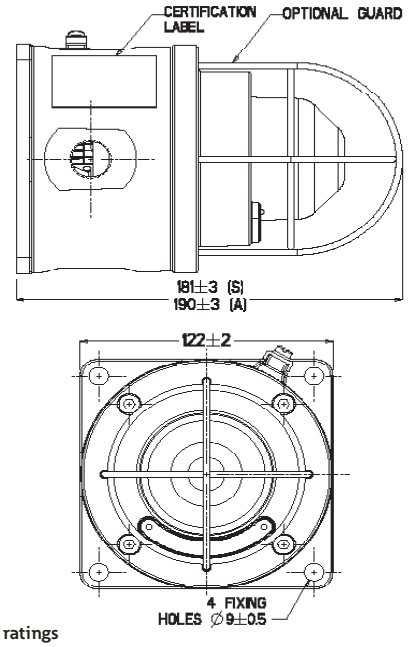
Certifications

ATEX Ex d	Cert. no. Baseefa 03ATEX0222 Certified to: EN60079-0, EN60079-1, EN60079-31 SM87HXB: Ex II 2GD, Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db SM87LED: Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55°C/ T70°C Db
IECEx Ex d	Cert. no. IECEx BAS 09.0059 Certified to: IEC60079-0, IEC60079-1, IEC60079-31 SM87HXB: Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db SM87LED: Ex d IIC T6 Gb, Ex tb IIIC T55°C/ T70°C Db
UL	Listing no. E187894 Class I, Div 1, Groups C & D Class I, Zones 1. (SM87HXB & SM87XBT only)
CSA	Cert no. 96406. (SM87HXB only) Certified to: C22.2 Nos 0, 0.4, 0.5, 9, 30-M1986, 94-M91, 137-M1981 Class I, Div 1. Group D
INMETRO Ex d	SM87HXB: Ex db IIC T5/T6 Gb, Ex tb IIIC T80°C/T95°C Db SM87LED: Ex db IIC T6 Gb, Ex tb IIIC T70°C Db
CQST Ex d	SM87HXB: Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db
SIL	SIL2 certification to IEC61508. Cert. No. 20151119-4786827453

Specifications

Material	SM87HXBS and SM87LEDS: Grade 316 ANC4B stainless steel SM87HXBA and SM87LEDA: LM25 TF marine grade alloy Lens: glass UL version available only in marine grade alloy
Finish	Epoxy paint finish as standard
Certified temp	SM87HXB: ATEX, IECEx, CQST, INMETRO -55°C to +70°C (T5) -55°C to +55°C (T6) UL -55°C to +70°C CSA -50°C to +40°C SM87LED: ATEX, IECEx, CQST, INMETRO -55°C to +55°C* (T6) * Operating temperature is -20°C to +55°C
Weight	SM87HXBS & SM87LEDS: 3.8kg each (approx) SM87HXBA & SM87LEDA: 2kg. each (approx)
Ingress protection	IP66 & IP67
Entries	Up to 4 x M20 / M25 ISO or 1/2" / 3/4" NPT
Terminals	SM87HXB SM87LED: Terminal suitable for 2.5mm2 cable
Relay initiate	Initiation by telephone ringing tone or low voltage control signals
Labels	Duty & tag labels optional

General arrangement drawing (all dimensions in mm)



Electrical ratings

	d.c.		a.c. 50/60Hz				
Voltage	24	48	110	120	220	240	254
Tube energy (Joules) SM87HXB	5	5	6	7	6	7	8
Current consumption SM87HXB	393	175	250	275	120	135	153
Current consumption SM87LED (mA)	165	85	N/A	N/A	N/A	N/A	N/A
Effective intensity (Cd)	29	29	32	39	32	39	44
Peak intensity (Cd)	22213	22213	25061	30187	25061	30187	34174

NOTE: The above figures (Cd) are for a clear lens @ 1Hz flash rate

Multiplying factor for coloured lenses

Red	Blue	Amber	Green	Yellow
0.15	0.12	0.51	0.49	0.36

The photometric data given above has been verified by BSI. Reports are available if required

LED light output - steady or flashing (customer selectable)

	Red	Blue	Amber	Green
Total LED output (candela)	192	64	64	17

LED/lens colour: red, blue, green, amber, yellow (not LED) or clear
Flash rate: 90fpm as standard, other flash rates available on request

Flash rate: 60fpm

Ordering requirements

The following code is designed to help in selection of the correct unit. Build up the reference number by inserting the code for each component into the appropriate box

Model	Certification	Voltage	Lens/LED colour	Guard	Entries	Tag/duty	Options	Finish
SM87LEDS	B	024	A	Y	1B1R	Y	N	R

Model

Voltage	Code
Xenon (stainless steel)	SM87HXBS
Xenon (alloy)	SM87HXBA
LED Exd (stainless steel)	SM87LEDS
LED Exd (alloy)	SM87LEDA

Certification

Certification	Code
ATEX	B
IECEx	J
UL	UL†
CSA	C‡
Chinese(CQST)	Q
INMETRO	DM

† Only SM87HXBA is available UL certified
‡ Only SM87HXB

Voltage

Voltage	Code
24 V d.c.	024
48 V d.c.	048
110 V a.c. not LED	110
120 V a.c. not LED	120
220 V a.c. not LED	220
240 V a.c. not LED	240
254 V a.c. not LED	254

Lens/LED colour

Colour	Code
Clear	C
Red	R
Blue	B
Green	G
Amber	A
Yellow (not LED)	Y

Guard

Guard	Code
None	N
Yes	Y

Entries

Entries	Code
M20	1
M25	2
1/2" NPT	3
3/4" NPT	4
Top	*T
Bottom	*B
RHS	*R
LHS	*L

* Prefix position with entry size code
e.g. 1T1B=M20 Top and Bottom entries

Tag/duty

Label	Code
None	N
Yes	Y*

* Please specify wording (Note: 15 characters maximum)

Options

Options	Code
Telephone	T*‡
Relay	R*‡
EOL resistor	E*†
None	N

* Not available on UL versions
† Please specify
‡ For SM87LED please specify if steady or flashing is required

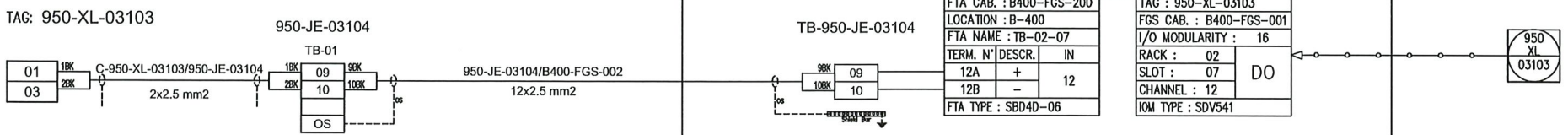
Finish

Colour	Code
Red	R
Blue	B
Yellow	Y
Yellow/ black stripe	X
Grey	G
White	W
Special	S*

*Please specify

DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 01

FIELD	ITER – B400	CENTRAL CONTROL ROOM
	FIRE AND GAS SYSTEM	OPERATOR CONSOLE



NO MARK UP
L.Eugam
29/09/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	06/12/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV: 1_A | DATE: 20/12/24 | SIGNATURE: C.Pilato
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSTRUMENT LOOP DIAGRAM
950-XL-03103
FZ-03 OPTICAL EXP GAS ALARM

CONTRACT NO./TITLE CONTRACT_NO. | SCALE 1:1
DRAWN: VBA | CHECKED: LCA | APPROVED: DLO | DATE 23/10/2024
A3 | DRAWING NO. 123A90-DDL-IN-DG-40014 | SHEET 381 | REV. 01

File Name : 123A90-DDL-IN-DG-40014_REV.01

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	950-XL-03104	: FZ-03 Fire Beacon Activation		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10004443	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	PRE-COMM	Activity FTS	Discipline Instrumental	Form	FJ04FB	Flashing Beacon

LOOP DATA

Loop TAG	950-XL-03104			TSLD	123A90-FDL-IN-DG-40014 rev. 1_A				
IO Type	Input	Yes	Output	No	Energy by transmitter	No	Energy by system	Yes	
Marshalling	B400-FGS-001	Terminal	13A/13B	Slot	07	Rack	02	Chanel	13

LOOP TEST

1	Check earth isolation of the loop.					OK
2	Connect loop to terminal					OK
3	Energise Loop (close loop) and record status	Normal	No	Alarm/trip	Yes	OK
4	De-Energise Loop (open loop) and record status	Normal	Yes	Alarm/trip	No	OK
5	Record Fail Safe position	Open	NA	Closed	NA	NA

LOOP SERVICE

		Action Fire alarm	Action Gas alarm	Alarm/Control FGS		Display PCS	
6	Loop energized	Yes	No	Yes		OK	OK
7	Loop not energized	No	No	No		OK	OK
8	Checking of line monitoring	NA	NA	NA		NA	NA
9	Checking of Maintenance Inhibition	NA	NA	NA		NA	NA
10	Associated safety Level / bar						NA
11	Associated outputs						NA
12	Flash beacon	RED	●	AMBER			

LOOP DOCUMENTATION

13	Loop diagram is marked up and attached to this test sheet	OK
14	Cause and effect chart is highlighted accordingly	OK
15	Any defect is recorded for punch list issuance	OK

Comments:

	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CW OPS
Name	Marco Di Maria	Giandonato Delmissier	Jamie McAllister
Date	2025-01-29	2025-01-29	2025-01-30
Signature	Digitaly signed by Marco Di Maria 2025-01-29T06:27:31.503Z	Digitaly signed by Giandonato Delmissier 2025-01-29T09:05:09.986Z	Digitaly signed by Jamie McAllister 2025-01-30T07:55:07.787Z

SM87HXB 5 joule xenon and SM87LED high intensity LED beacon range

Ex d, weatherproof



Overview

These certified beacons have been designed for use in harsh environmental conditions. The stainless steel or marine grade alloy enclosures are suitable for use offshore or onshore, where lightweight combined with corrosion resistance and strength is required. Units can be painted to customer specification and fitted with identification labels.

LED version available, offering extended lifetimes.

Stainless steel, one of the most durable materials available on the market, is both hard wearing and corrosion resistant, increasing the life of products in harsh environments and therefore reducing maintenance costs.

Features

- Zone 1 and Zone 2 use
- Ex d IIC T4/T5/T6
- ATEX approved, Ex II 2GD
- IECEx certified Gb, Db
- UL listed for USA and Canada
  - Class I, Div 1, Groups C & D
  - Class I, Zone 1, AExd IIB
- CSA certified
- CQST certified*
- INMETRO certified*
- SIL 2 certified
- CCOE certified
- IP66 and IP67
- Certified temperature: –55°C to +70°C*
- Stainless steel or marine grade alloy
- Xenon or LED versions
- Various lens colours
- Optional lens guard
- Telephone or relay initiated

*Depending on version

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Powering Business Worldwide

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No liability is accepted for any consequence of use.

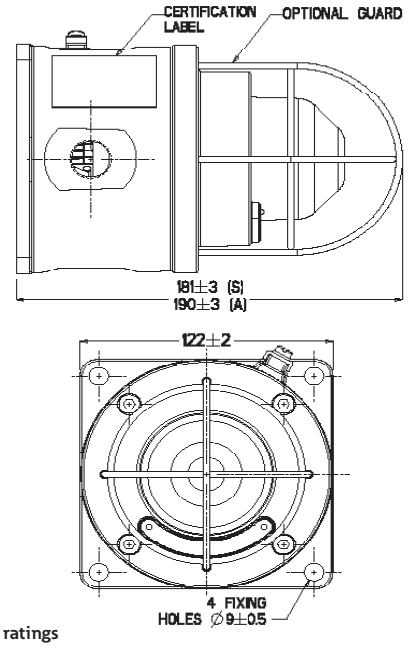
Certifications

ATEX Ex d	Cert. no. Baseefa 03ATEX0222 Certified to: EN60079-0, EN60079-1, EN60079-31 SM87HXB: Ex II 2GD, Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db SM87LED: Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55°C/ T70°C Db
IECEx Ex d	Cert. no. IECEx BAS 09.0059 Certified to: IEC60079-0, IEC60079-1, IEC60079-31 SM87HXB: Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db SM87LED: Ex d IIC T6 Gb, Ex tb IIIC T55°C/ T70°C Db
UL	Listing no. E187894 Class I, Div 1, Groups C & D Class I, Zones 1. (SM87HXB & SM87XBT only)
CSA	Cert no. 96406. (SM87HXB only) Certified to: C22.2 Nos 0, 0.4, 0.5, 9, 30-M1986, 94-M91, 137-M1981 Class I, Div 1. Group D
INMETRO Ex d	SM87HXB: Ex db IIC T5/T6 Gb, Ex tb IIIC T80°C/T95°C Db SM87LED: Ex db IIC T6 Gb, Ex tb IIIC T70°C Db
CQST Ex d	SM87HXB: Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db
SIL	SIL2 certification to IEC61508. Cert. No. 20151119-4786827453

Specifications

Material	SM87HXBS and SM87LEDS: Grade 316 ANC4B stainless steel SM87HXBA and SM87LEDA: LM25 TF marine grade alloy Lens: glass UL version available only in marine grade alloy
Finish	Epoxy paint finish as standard
Certified temp	SM87HXB: ATEX, IECEx, CQST, INMETRO -55°C to +70°C (T5) -55°C to +55°C (T6) UL -55°C to +70°C CSA -50°C to +40°C SM87LED: ATEX, IECEx, CQST, INMETRO -55°C to +55°C* (T6) * Operating temperature is -20°C to +55°C
Weight	SM87HXBS & SM87LEDS: 3.8kg each (approx) SM87HXBA & SM87LEDA: 2kg. each (approx)
Ingress protection	IP66 & IP67
Entries	Up to 4 x M20 / M25 ISO or 1/2" / 3/4" NPT
Terminals	SM87HXB SM87LED: Terminal suitable for 2.5mm2 cable
Relay initiate	Initiation by telephone ringing tone or low voltage control signals
Labels	Duty & tag labels optional

General arrangement drawing (all dimensions in mm)



Electrical ratings

	d.c.		a.c. 50/60Hz				
Voltage	24	48	110	120	220	240	254
Tube energy (Joules) SM87HXB	5	5	6	7	6	7	8
Current consumption SM87HXB	393	175	250	275	120	135	153
Current consumption SM87LED (mA)	165	85	N/A	N/A	N/A	N/A	N/A
Effective intensity (Cd)	29	29	32	39	32	39	44
Peak intensity (Cd)	22213	22213	25061	30187	25061	30187	34174

NOTE: The above figures (Cd) are for a clear lens @ 1Hz flash rate

Multiplying factor for coloured lenses

Red	Blue	Amber	Green	Yellow
0.15	0.12	0.51	0.49	0.36

The photometric data given above has been verified by BSI. Reports are available if required

LED light output - steady or flashing (customer selectable)

	Red	Blue	Amber	Green
Total LED output (candela)	192	64	64	17

LED/lens colour: red, blue, green, amber, yellow (not LED) or clear
Flash rate: 90fpm as standard, other flash rates available on request

Flash rate: 60fpm

Ordering requirements

The following code is designed to help in selection of the correct unit. Build up the reference number by inserting the code for each component into the appropriate box

Model	Certification	Voltage	Lens/LED colour	Guard	Entries	Tag/duty	Options	Finish
SM87LEDS	B	024	R	Y	1B1R	Y	N	R

Voltage	Code
Xenon (stainless steel)	SM87HXBS
Xenon (alloy)	SM87HXBA
LED Exd (stainless steel)	SM87LEDS
LED Exd (alloy)	SM87LEDA

Voltage	Code
24 V d.c.	024
48 V d.c.	048
110 V a.c. not LED	110
120 V a.c. not LED	120
220 V a.c. not LED	220
240 V a.c. not LED	240
254 V a.c. not LED	254

Guard	Code
None	N
Yes	Y

Label	Code
None	N
Yes	Y*

* Please specify wording (Note: 15 characters maximum)

Colour	Code
Red	R
Blue	B
Yellow	Y
Yellow/ black stripe	X
Grey	G
White	W
Special	S*

*Please specify

Certification	Code
ATEX	B
IECEx	J
UL	UL†
CSA	C‡
Chinese(CQST)	Q
INMETRO	DM

† Only SM87HXBA is available UL certified
‡ Only SM87HXB

Colour	Code
Clear	C
Red	R
Blue	B
Green	G
Amber	A
Yellow (not LED)	Y

Entries	Code
M20	1
M25	2
1/2" NPT	3
3/4" NPT	4
Top	*T
Bottom	*B
RHS	*R
LHS	*L

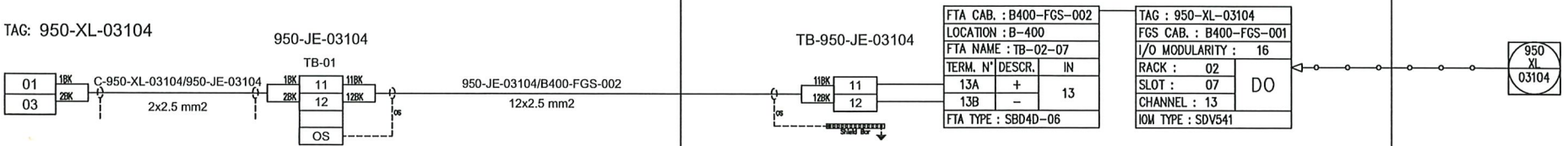
* Prefix position with entry size code
e.g. 1T1B=M20 Top and Bottom entries

Options	Code
Telephone	T*‡
Relay	R*‡
EOL resistor	E*†
None	N

* Not available on UL versions
† Please specify
‡ For SM87LED please specify if steady or flashing is required

DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 01

FIELD	ITER – B400	CENTRAL CONTROL ROOM
	FIRE AND GAS SYSTEM	OPERATOR CONSOLE



NO MARK UP
Lourjam
29/01/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	06/12/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV: 1_A | DATE: 20/12/24 | SIGNATURE: C.Pilato
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSTRUMENT LOOP DIAGRAM
950-XL-03104
FZ-03 OPTICAL FIRE ALARM

CONTRACT NO./TITLE CONTRACT_NO. | SCALE 1:1
DRAWN: VBA | CHECKED: LCA | APPROVED: DLO | DATE 23/10/2024

A3 | DRAWING NO. 123A90-DDL-IN-DG-40014 | SHEET 382 | REV. 01

File Name : 123A90-DDL-IN-DG-40014_REV.01

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	950-XZ-03101	: FZ-03 Sounder Activation		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)		Module	UD	
TASK	code	C10004463	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	PRE-COMM	Activity	FTS	Discipline	Instrumental	Form	FJ04MS	Monotone Sounder

LOOP DATA

Loop TAG	950-XZ-03101			TSLD	123A90-DDL-IN-DG-40014 rev. 1_A				
IO Type	Input	No	Output	Yes	Energy by transmitter	No	Energy by system	Yes	
Marshalling	B400-FGS-001	Terminal	01A/01B	Slot	07	Rack	02	Chanel	01

LOOP TEST

1	Check earth isolation of the loop.					OK
2	Connect loop to terminal					OK
3	Energise Loop (close loop) and record status	Normal	No	Alarm/trip	Yes	OK
4	De-Energise Loop (open loop) and record status	Normal	Yes	Alarm/trip	No	OK
5	Record Fail Safe position	Open	NA	Closed	NA	NA

LOOP SERVICE

		Action Fire&Gas alarm		Alarm / Control FGS		Display PCS	
6	Loop energized	Yes		Yes		NA	OK
7	Loop not energized	No		Yes		NA	OK
8	Checking of line monitoring	Yes		Yes		OK	OK
9	Checking of Maintenance Inhibition	NA		NA		NA	NA
10	Associated safety Level / bar						NA
11	Associated outputs						NA

LOOP DOCUMENTATION

12	Loop diagram is marked up and attached to this test sheet	OK
13	Cause and effect chart is highlighted accordingly	OK
14	Any defect is recorded for punch list issuance	NA

Comments:

Page 1/1	Performed by	☒ WITNESS ☐ REVIEW	☒ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CW
Name	Marco Di Maria	Giandonato Delmissier	John Mackillop
Date	2025-02-08	2025-02-08	2025-02-11
Signature	PROVERLIS Digitaly signed by Marco Di Maria 2025-02-08T11:11:19.976Z	PROVERLIS Digitaly signed by Giandonato Delmissier 2025-02-08T22:27:17.734Z	PROVERLIS Digitaly signed by John Mackillop 2025-02-11T05:33:22.991Z

DB3BM sounders range up to 116dB

Ex d, weatherproof



Overview

The DB3BM is a high power explosion proof sounder, introduced as a replacement for the current DB1 / DB1H with improved functionality and performance. Certified for use in a wide range of temperatures from -60°C to +85°C the Ex enclosure is manufactured in either marine grade alloy or stainless steel with a rugged thermoplastic flare providing a corrosion free and aesthetically pleasing product.

Capable of producing 116 dB @ 1m and with a range of pre-recorded tones, the DB3BM includes an integral volume control which is ideal when a lower output is required.

The unit is provided with versatile control options allowing compatibility with a wide range of control methods and PLCs.

The standard DC unit provides 3 tone stages, each stage has 28 tones available which can be independently selected. The unit can be controlled by reversing the polarity of the power supply (2 stage) or providing a common negative and switching between multiple positive supplies.

The DB3BM proves its versatility by additionally being able to work with a common positive supply and switching the negatives. The tone stages of the DB3BM can also be controlled via voltage free contacts provided by a control panel.

The flexibility of the range continues with a wide range of supply voltages. The short flare option is a worthy addition to the range offering a high SPL in a compact unit.

Features

- UKEX / ATEX / IECEx
  Ex db IIC T4/T5/T6 Gb
  Ex tb IIIC T4/T5/T6 Db
- Certified temperature: –60°C to +85°C
- IP66 & IP67 (terminal only)
- Up to 116 dB output @ 1 m
- Integral volume control
- 28 tones, user selectable
- 3 stage unit remotely switchable
- Tones can be programmed to customer's specification
- DC supply voltage between 12 V and 48 V
- End of line resistor option
- Sounder & beacon combination units available, for further details contact MEDC
- Ex enclosure – marine grade alloy or stainless steel
- Flare - high impact thermoplastic polyester
- Stainless steel mounting bracket and cover screws
- Mounting bracket has ratchet facility as standard
- Swivel bracket standard on Stainless steel unit, optional on Alloy units



Stainless steel body, short flare version

ATEX IECEx UKCA

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Powering Business Worldwide

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All specifications, dimensions, weights and tolerances are nominal (typical) and Eaton reserve the right to vary all data without prior notice.
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Certifications

ATEX Ex db	Cert. no. UL 21 ATEX02559X. Certified to: EN IEC 60079-0, EN 60079-1, 31 Ex II 2GD, Ex db IIC T3/T4/T5/T6 Gb, Ex tb IIIC T200°C/T135°C/T100°C/T85°C Db, IP66 (IP65 short flare)
IECEx Ex db	Cert. no. IECEx ULD 21.0017X. Certified to: IEC60079-0,1,31 Ex db IIC T3/T4/T5/T6 Gb, Ex tb IIIC T200°C/T135°C/T100°C/T85°C Db, IP66 (IP65 short flare)
UKEX Ex db	Cert. no. UL21UKEX2209X. Certified to: EN IEC 60079-0, EN 60079-1, 31 Ex II 2GD, Ex db IIC T3/T4/T5/T6 Gb, Ex tb IIIC T200°C/T135°C/T100°C/T85°C Db IP66 (IP65 short flare)
Safe Area	EN 61010-1, EN 60529, EN61000-6

Specifications

Material	Ex enclosure – marine grade alloy or stainless steel Flare - flame retardant, high impact, UV stable, thermoplastic polyester (UV stability tested to ISO 4892 part 3) Hardware - bracket, fixings and captive cover screws in 316 stainless steel
Fire retardancy	Outer flare - thermoplastic polyester. V0 flammability rating
Finish	Body – alloy: painted black. Stainless steel: painted black. Flare - natural black, natural red or painted as specified
Voltage	DC: 12 - 48 V. AC: Up to 254 V. if using EOL resistor/s the maximum power dissipation must be limited to 3 W.
Weight	Alloy - 4.4 kg, stainless steel 8.35 kg based on long flare DC unit
Ingress protection	IP66 & IP67 (terminal only). IP65 short flare
Entries	Up to 2 x M20 or M25 or ½"or ¾" NPT. Blanking plug available
Terminals	AC: 4 x 1.5mm² (loop in / out power), 3 x 2.5mm² (tone selection) (standard unit only) DC: 8 x 2.5mm² (8 for loop in / out power and tone selection) (standard unit only)
Mounting arrangement	Stainless steel bracket with ratchet facility, optional swivel bracket available. Swivel standard on stainless steel unit
Labels	Optional duty and tag labels available
Tone information	28 tones per stage. Additional custom tones available (contact MEDC) Suitable for use with 200 Hz tones
Relative Humidity	99% Non-condensing

Tone activation and selection

Voltage	Unit	No.of stages	Tone activation	Tone selection
DC	Standard	1	Apply power	1 x DIP switch
		2	Reverse polarity	2 x DIP switches
			Common -ve with 2 +ve supplies	2 x DIP switches
			*Common +ve with 2 -ve supplies	2 x DIP switches
		3	Common -ve with 3 +ve supplies	3 x DIP switches
	Alternative tone activation (Option M)	2	*Common -ve with 2 +ve supplies	2 x DIP switches
		3	Common +ve with 3 -ve supplies	3 x DIP switches
	Alternative tone activation (remote) (Option R)	1-5	Volt free activation (remote switching)	1 x DIP switch for stage 1. Tone pre-selected for subsequent stages
AC	Standard	1	Apply power	1 x DIP switch
	Alternative tone activation (remote) (Option R)	1-2	Volt free activation (remote switching)	1 x DIP switch for stage 1. Tone preselected for the 2nd stage

*Reverse polarity line monitoring can be used with common positive or negative switching to give up to 2 operational stages and a 3rd monitoring connection. An EOL resistor can be fitted as shown in the technical manual. All connection details are shown in the technical manual.

Current consumption: Based on a continuous 970Hz tone

Voltage	Current for IIC unit	Current for IIIC unit
12 Vdc	700 mA	716 mA
24 Vdc	329 mA	339 mA
48 Vdc	171 mA	173 mA
110 Vac	115 mA	122 mA
120 Vac	106 mA	113 mA
220 Vac	59 mA	63 mA
230 Vac	52 mA	55 mA
240 Vac	55 mA	58 mA
254 Vac	59 mA	63 mA

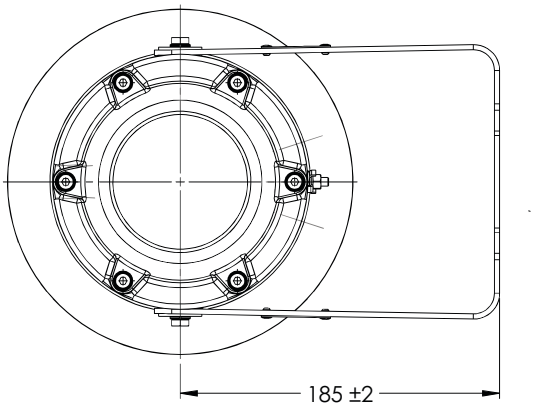
	Ex d/UL min	Max
Certified temperature	-60°C	+85°C

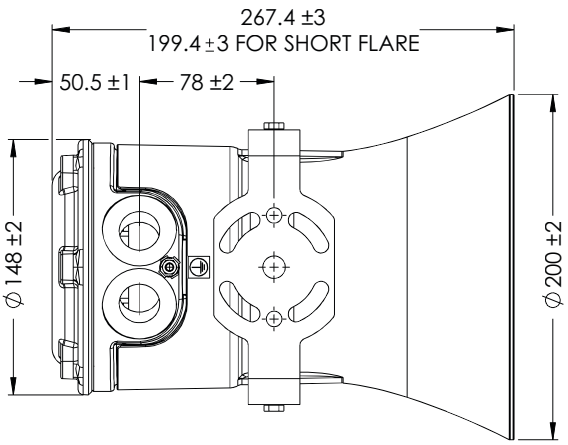
Operating temperature at launch (DC Only): -40 °C min +85 °C max
-55 °C as standard to follow. Please contact MEDC for low temperature options

	Short Flare	Long Flare
Max output (dB) 1400Hz @ 1m	113 dB	116 dB

For Labels and Entries select any option as required. For Options select either (N) None or (E) EOL as required
Tolerance +/-3dB. Please see the technical manual for tone specific SPL values

General arrangement drawing (all dimensions in mm)





Ordering requirements

The following code is designed to help in selection of the correct unit. Build up the reference number by inserting the code for each component into the appropriate box

Model: DB3BM

Material: S

Finish	Code
Alloy	A
Stainless Steel	S

Ex Certification: D

Ex Certification	Code
UKEX/ATEX Ex d	D
IECEx Ex d	J
Weatherproof	W

Voltage: 048

Voltage	Code
12-48 Vdc	048‡
110 Vac	110
120 Vac	120*
220 Vac	220
230 Vac	230
240 Vac	240*
254 Vac	254

*Complies with UL regulated power supply requirements

Labels: DT

Labels	Code
None	N
Duty	D*
Tag	T*

*Please specify

Entries: 1B

Entries	Code
1 x M20	1B
2 x M20	2B
2 x M20 inc 1 x plug	2BP
1 x ½" NPT	1C
2 x ½" NPT	2C
2 x ½" NPT inc 1 x plug	2CP
1 x M25	1D
2 x M25	2D
2 x M25 inc 1x plug	2DP
1 x ¾" NPT	1E
2 x ¾" NPT	2E
2 x ¾" NPT inc 1x plug	2EP

Options: N

Options	Code
None	N
Swivel bracket	B‡
EOL	E*
Alternative tone activation	M**
Volt free activation (remote)	R**
Short flare	S
Custom tones (not std 27)	TΔ

‡ Alloy only - stainless steel has swivel as standard
*Specify value max power dissipation is 3W
**These options cannot be selected together
ΔSpecify details

Finish: R (RAL 3020)

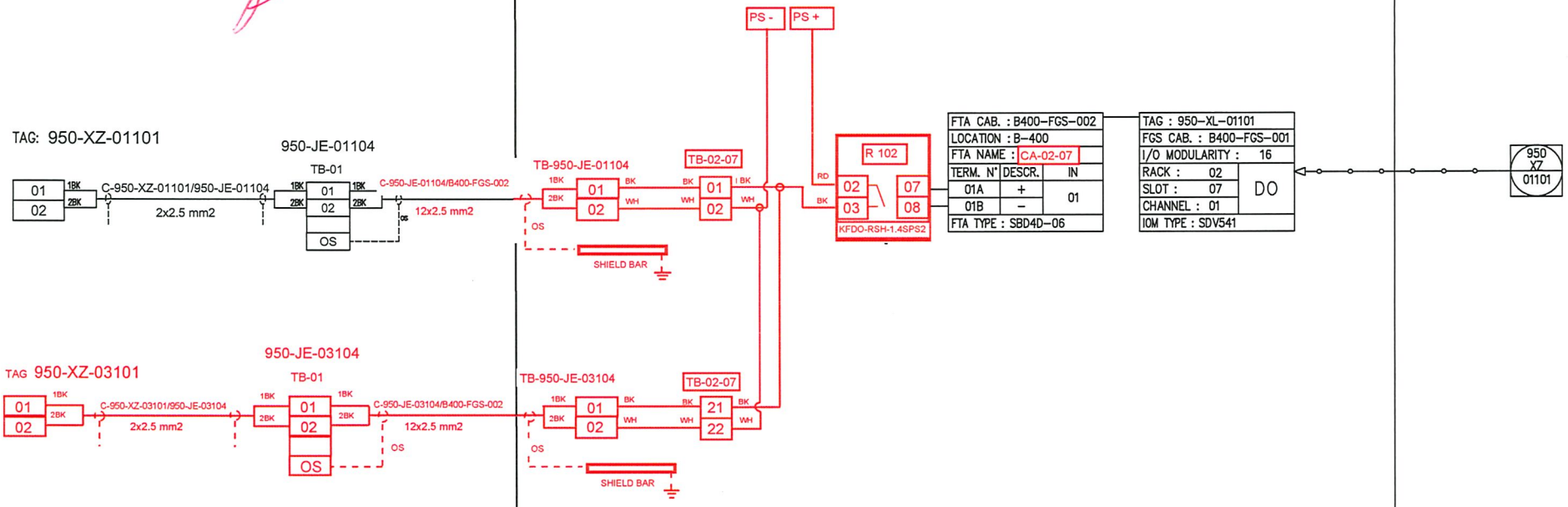
Finish	Code
Natural black	N
Natural red	R
Yellow	Y
Grey	G
Blue	B
Special	S*

*Please specify

DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 01

FIELD	ITER – B400	CENTRAL CONTROL ROOM
	FIRE AND GAS SYSTEM	OPERATOR CONSOLE

AS BUILT
05/02/25



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	06/12/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV: 1_A | DATE: 20/12/24 | SIGNATURE: C.Pilato
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSTRUMENT LOOP DIAGRAM
950-XZ-01101
FZ-01 ACOUSTIC FIRE&GAS ALARM

CONTRACT NO./TITLE CONTRACT_NO.		SCALE 1:1
DRAWN: VBA	CHECKED: LCA	APPROVED: DLO	DATE 23/10/2024

A3	DRAWING NO. 123A90-DDL-IN-DG-40014	SHEET 406	REV. 01

File Name : 123A90-DDL-IN-DG-40014_REV01

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	950-XZ-03102	: FZ-03 Sounder Activation			Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-12	: F&G Devices FZ-03 (Electrolyser Area)			Module	UD
TASK	code	C10004464		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	PRE-COMM	Activity FTS	Discipline	Instrumental	Form	FJ04MS Monotone Sounder

LOOP DATA

Loop TAG	950-XZ-03102				TSLD	123A90-DDL-IN-DG-40014 rev. 1_A			
IO Type	Input	No	Output	Yes	Energy by transmitter	No	Energy by system	Yes	
Marshalling	B400-FGS-001	Terminal	02A/02B		Slot	07	Rack	02	Chanel 02

LOOP TEST

1	Check earth isolation of the loop.					OK
2	Connect loop to terminal					OK
3	Energise Loop (close loop) and record status	Normal	No	Alarm/trip	Yes	OK
4	De-Energise Loop (open loop) and record status	Normal	Yes	Alarm/trip	No	OK
5	Record Fail Safe position	Open	NA	Closed	NA	NA

LOOP SERVICE

		Action Fire&Gas alarm		Alarm / Control FGS		Display PCS	
6	Loop energized	Yes		Yes		NA	OK
7	Loop not energized	No		Yes		NA	OK
8	Checking of line monitoring	Yes		Yes		OK	OK
9	Checking of Maintenance Inhibition	NA		NA		NA	NA
10	Associated safety Level / bar						NA
11	Associated outputs						NA

LOOP DOCUMENTATION

12	Loop diagram is marked up and attached to this test sheet	OK
13	Cause and effect chart is highlighted accordingly	OK
14	Any defect is recorded for punch list issuance	NA

Comments:

Page 1/1	Performed by	☒ WITNESS ☐ REVIEW	☒ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CW
Name	Marco Di Maria	Giandonato Delmissier	John Mackillop
Date	2025-02-08	2025-02-08	2025-02-11
Signature	PROVERLIS Digitaly signed by Marco Di Maria 2025-02-08T11:12:32.273Z	PROVERLIS Digitaly signed by Giandonato Delmissier 2025-02-08T22:27:47.099Z	PROVERLIS Digitaly signed by John Mackillop 2025-02-11T05:34:19.891Z

DB3BM sounders range up to 116dB

Ex d, weatherproof



Overview

The DB3BM is a high power explosion proof sounder, introduced as a replacement for the current DB1 / DB1H with improved functionality and performance. Certified for use in a wide range of temperatures from -60°C to +85°C the Ex enclosure is manufactured in either marine grade alloy or stainless steel with a rugged thermoplastic flare providing a corrosion free and aesthetically pleasing product.

Capable of producing 116 dB @ 1m and with a range of pre-recorded tones, the DB3BM includes an integral volume control which is ideal when a lower output is required.

The unit is provided with versatile control options allowing compatibility with a wide range of control methods and PLCs.

The standard DC unit provides 3 tone stages, each stage has 28 tones available which can be independently selected. The unit can be controlled by reversing the polarity of the power supply (2 stage) or providing a common negative and switching between multiple positive supplies.

The DB3BM proves its versatility by additionally being able to work with a common positive supply and switching the negatives. The tone stages of the DB3BM can also be controlled via voltage free contacts provided by a control panel.

The flexibility of the range continues with a wide range of supply voltages. The short flare option is a worthy addition to the range offering a high SPL in a compact unit.

Features

- UKEX / ATEX / IECEx
  Ex db IIC T4/T5/T6 Gb
  Ex tb IIIC T4/T5/T6 Db
- Certified temperature: –60°C to +85°C
- IP66 & IP67 (terminal only)
- Up to 116 dB output @ 1 m
- Integral volume control
- 28 tones, user selectable
- 3 stage unit remotely switchable
- Tones can be programmed to customer's specification
- DC supply voltage between 12 V and 48 V
- End of line resistor option
- Sounder & beacon combination units available, for further details contact MEDC
- Ex enclosure – marine grade alloy or stainless steel
- Flare - high impact thermoplastic polyester
- Stainless steel mounting bracket and cover screws
- Mounting bracket has ratchet facility as standard
- Swivel bracket standard on Stainless steel unit, optional on Alloy units



Stainless steel body, short flare version

ATEX IECEx UKCA

Eaton
Unit B, Sutton Parkway
Oddicroft Lane
Sutton in Ashfield
United Kingdom
NG17 5FB

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Powering Business Worldwide

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All other trademarks are property of their respective owners.

All specifications, dimensions, weights and tolerances are nominal (typical) and Eaton reserve the right to vary all data without prior notice.
No liability is accepted for any consequence of use.

Certifications

ATEX Ex db	Cert. no. UL 21 ATEX02559X. Certified to: EN IEC 60079-0, EN 60079-1, 31 Ex II 2GD, Ex db IIC T3/T4/T5/T6 Gb, Ex tb IIIC T200°C/T135°C/T100°C/T85°C Db, IP66 (IP65 short flare)
IECEx Ex db	Cert. no. IECEx ULD 21.0017X. Certified to: IEC60079-0,1,31 Ex db IIC T3/T4/T5/T6 Gb, Ex tb IIIC T200°C/T135°C/T100°C/T85°C Db, IP66 (IP65 short flare)
UKEX Ex db	Cert. no. UL21UKEX2209X. Certified to: EN IEC 60079-0, EN 60079-1, 31 Ex II 2GD, Ex db IIC T3/T4/T5/T6 Gb, Ex tb IIIC T200°C/T135°C/T100°C/T85°C Db IP66 (IP65 short flare)
Safe Area	EN 61010-1, EN 60529, EN61000-6

Specifications

Material	Ex enclosure – marine grade alloy or stainless steel Flare - flame retardant, high impact, UV stable, thermoplastic polyester (UV stability tested to ISO 4892 part 3) Hardware - bracket, fixings and captive cover screws in 316 stainless steel
Fire retardancy	Outer flare - thermoplastic polyester. V0 flammability rating
Finish	Body – alloy: painted black. Stainless steel: painted black. Flare - natural black, natural red or painted as specified
Voltage	DC: 12 - 48 V. AC: Up to 254 V. if using EOL resistor/s the maximum power dissipation must be limited to 3 W.
Weight	Alloy - 4.4 kg, stainless steel 8.35 kg based on long flare DC unit
Ingress protection	IP66 & IP67 (terminal only). IP65 short flare
Entries	Up to 2 x M20 or M25 or ½"or ¾" NPT. Blanking plug available
Terminals	AC: 4 x 1.5mm² (loop in / out power), 3 x 2.5mm² (tone selection) (standard unit only) DC: 8 x 2.5mm² (8 for loop in / out power and tone selection) (standard unit only)
Mounting arrangement	Stainless steel bracket with ratchet facility, optional swivel bracket available. Swivel standard on stainless steel unit
Labels	Optional duty and tag labels available
Tone information	28 tones per stage. Additional custom tones available (contact MEDC) Suitable for use with 200 Hz tones
Relative Humidity	99% Non-condensing

Tone activation and selection

Voltage	Unit	No.of stages	Tone activation	Tone selection
DC	Standard	1	Apply power	1 x DIP switch
		2	Reverse polarity	2 x DIP switches
			Common -ve with 2 +ve supplies	2 x DIP switches
			*Common +ve with 2 -ve supplies	2 x DIP switches
		3	Common -ve with 3 +ve supplies	3 x DIP switches
	Alternative tone activation (Option M)	2	*Common -ve with 2 +ve supplies	2 x DIP switches
		3	Common +ve with 3 -ve supplies	3 x DIP switches
	Alternative tone activation (remote) (Option R)	1-5	Volt free activation (remote switching)	1 x DIP switch for stage 1. Tone pre-selected for subsequent stages
AC	Standard	1	Apply power	1 x DIP switch
	Alternative tone activation (remote) (Option R)	1-2	Volt free activation (remote switching)	1 x DIP switch for stage 1. Tone preselected for the 2nd stage

*Reverse polarity line monitoring can be used with common positive or negative switching to give up to 2 operational stages and a 3rd monitoring connection. An EOL resistor can be fitted as shown in the technical manual. All connection details are shown in the technical manual.

Current consumption: Based on a continuous 970Hz tone

Voltage	Current for IIC unit	Current for IIIC unit
12 Vdc	700 mA	716 mA
24 Vdc	329 mA	339 mA
48 Vdc	171 mA	173 mA
110 Vac	115 mA	122 mA
120 Vac	106 mA	113 mA
220 Vac	59 mA	63 mA
230 Vac	52 mA	55 mA
240 Vac	55 mA	58 mA
254 Vac	59 mA	63 mA

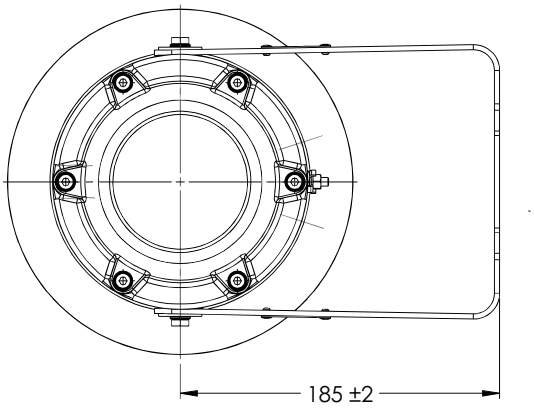
	Ex d/UL min	Max
Certified temperature	-60°C	+85°C

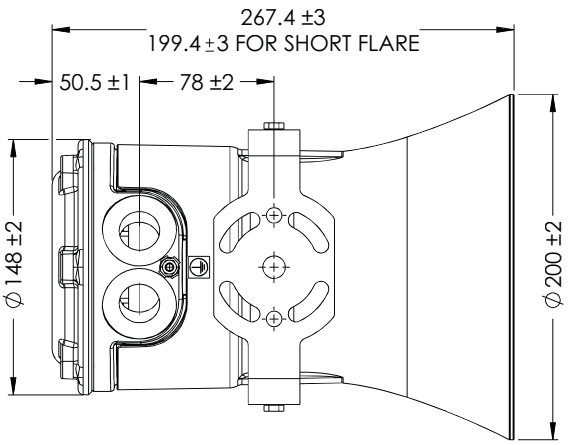
Operating temperature at launch (DC Only): -40 °C min +85 °C max
-55 °C as standard to follow. Please contact MEDC for low temperature options

	Short Flare	Long Flare
Max output (dB) 1400Hz @ 1m	113 dB	116 dB

For Labels and Entries select any option as required. For Options select either (N) None or (E) EOL as required
Tolerance +/-3dB. Please see the technical manual for tone specific SPL values

General arrangement drawing (all dimensions in mm)





Ordering requirements

The following code is designed to help in selection of the correct unit. Build up the reference number by inserting the code for each component into the appropriate box

Model: DB3BM

Material: S

Finish	Code
Alloy	A
Stainless Steel	S

Ex Certification: D

Ex Certification	Code
UKEX/ATEX Ex d	D
IECEx Ex d	J
Weatherproof	W

Voltage: 048

Voltage	Code
12-48 Vdc	048‡
110 Vac	110
120 Vac	120*
220 Vac	220
230 Vac	230
240 Vac	240*
254 Vac	254

*Complies with UL regulated power supply requirements

Labels: DT

Labels	Code
None	N
Duty	D*
Tag	T*

*Please specify

Entries: 1B

Entries	Code
1 x M20	1B
2 x M20	2B
2 x M20 inc 1 x plug	2BP
1 x ½" NPT	1C
2 x ½" NPT	2C
2 x ½" NPT inc 1 x plug	2CP
1 x M25	1D
2 x M25	2D
2 x M25 inc 1x plug	2DP
1 x ¾" NPT	1E
2 x ¾" NPT	2E
2 x ¾" NPT inc 1x plug	2EP

Options: N

Options	Code
None	N
Swivel bracket	B‡
EOL	E*
Alternative tone activation	M**
Volt free activation (remote)	R**
Short flare	S
Custom tones (not std 27)	TΔ

‡ Alloy only - stainless steel has swivel as standard
*Specify value max power dissipation is 3W
**These options cannot be selected together
ΔSpecify details

Finish: R (RAL 3020)

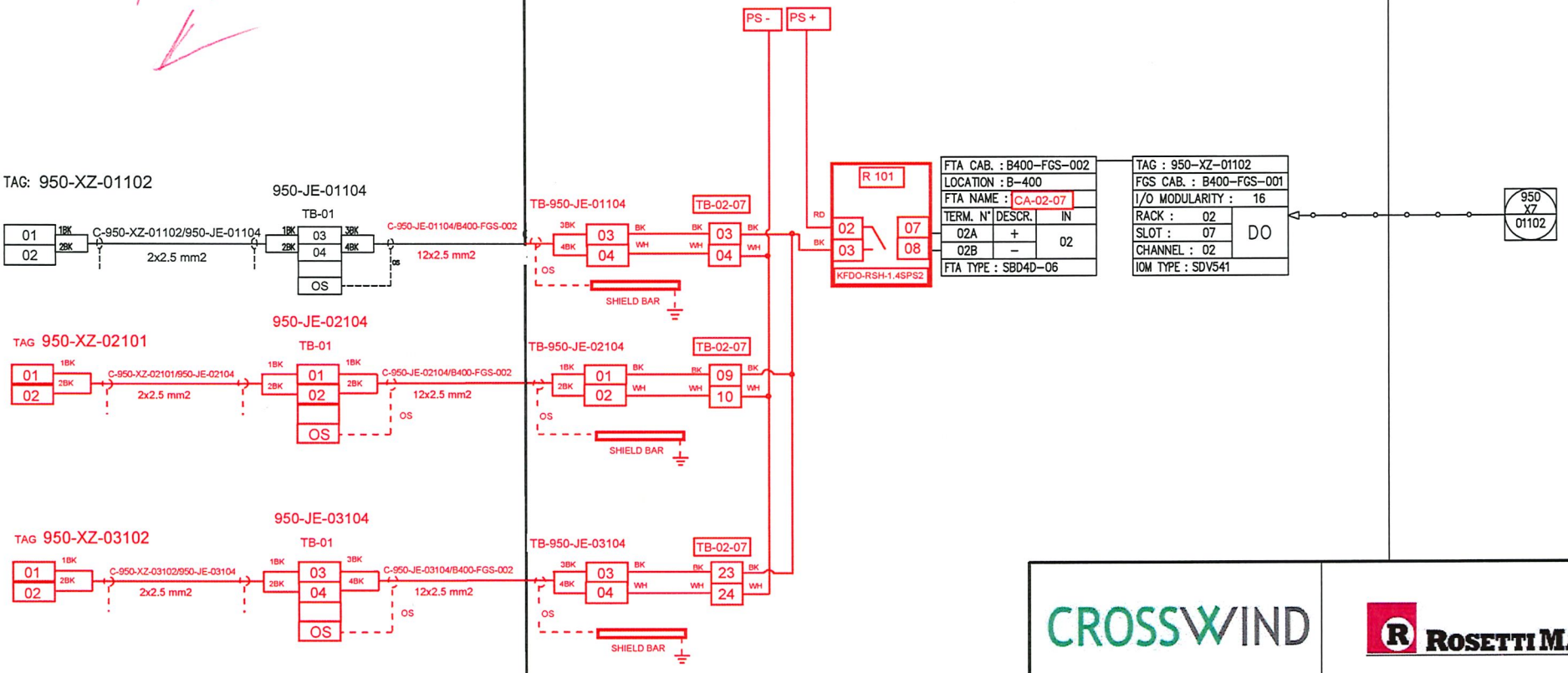
Finish	Code
Natural black	N
Natural red	R
Yellow	Y
Grey	G
Blue	B
Special	S*

*Please specify

DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 01

FIELD	ITER – B400	CENTRAL CONTROL ROOM
	FIRE AND GAS SYSTEM	OPERATOR CONSOLE

AS BUILT
05/02/25



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	06/12/2024	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV.: 1_A | DATE: 20/12/24 | SIGNATURE: C.Pilato
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSTRUMENT LOOP DIAGRAM
950-XZ-01102
FZ-01 ACOUSTIC FIRE&GAS ALARM

CONTRACT NO./TITLE CONTRACT_NO.			SCALE 1:1
DRAWN: VBA	CHECKED: LCA	APPROVED: DLO	DATE 23/10/2024

A3	DRAWING NO. 123A90-DDL-IN-DG-40014	SHEET 407	REV. 01

File Name : 123A90-DDL-IN-DG-40014_REV01

Section 4.4 Instrumentation “As-Commissioned” interconnection diagrams

NOT APPLICABLE

Section 4.5 Telecommunication functional test sheets index

NOT APPLICABLE

Section 4.6 Telecommunication
“As-Commissioned” I.C.D. / TSLD's

NOT APPLICABLE

Section 5 SITE / OPERATIONAL

Section 5.1 Operational Test Procedure

CROSSWIND	**123A90 - HOLLANDSE KUST NOORD WIND PARK BLPH Project** **COMMISSIONING DOSSIER INDEX**	ROSETTI MARINO

Main reference document **123A90-PML-COM-PRO-03054 _ OTP – F&G and ESD C&E Logics** has been uploaded in the Subsystem 70-00 Commissioning Dossier Sect. 5.1

FIRE ZONE 03
ELECTROLYZER

FZ-01= FUEL CELL AREA
FZ-02= H2 STORAGE VESSELS AREA
FZ-03= ELECTROLYZER AREA
FZ-04= B-200/B-300/B-400 CONTAINERS AREA
FZ-05= BESS AREA
FZ-06= B-100 CONTAINER AREA
FZ-07= MASTER POINT AREA
FZ-08= TRANSITION PIECE AREA

EFFECT

No.	SYS	NOTES	DESCRIPTION	TAG No.
1	AUDIO / VISUAL ALERT		OPERATOR WORKSTATION DISPLAY - EVENT/ALARM	
3	AUDIO / VISUAL ALERT		F&G ALARM ON CAP ONSHORE	
5	AUDIO / VISUAL ALERT	TO SHEET 17	GAS BEACON ACTIVATION - AMBER	
7	AUDIO / VISUAL ALERT	TO SHEET 17	FIRE BEACON ACTIVATION - RED	
9	AUDIO / VISUAL ALERT	TO SHEET 17	SOUNDER ACTIVATION	
11	AUDIO / VISUAL ALERT		WAVE-OFF LIGHT ACTIVATION TO NAVAIDS	72-XS-001
17	SIS SYSTEM	1	ESD-1D TO SIS SYTEM	70-XS-002

Column groups: AUDIO / VISUAL ALERT (1–16), SIS SYSTEM (17–26), ELECTRIC ISOLATION (27–32), OTHER (33–53)

CAUSE

TAG Nos	DESCRIPTION	VOTING	INHIBITION	REMARK	Row	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
20-XA-001	GAS CONFIRMED IN ELECTROLYZER				1	X		F		X				X		X						X
					2																	
20-XA-002	SMOKE CONFIRMED IN ELECTROLYZER				3	X		F				X		X		X						X
					4																	
					5																	
					6																	
					7																	
					8																	
					9																	
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					38																	
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					41																	

NOTES:

1. FGS AND SIS SYSTEM EXCHANGE DATA BETWEEN THEM BY USING THE Vnet/IP NETWORK. THIS IS IMPLEMENTED AS REDUNDANT SAFETY COMMUNICATION, APPROVED FOR SIL 3 LOOP.

LEGEND

TEST COMPLETED
GANDONATO R.H.
13-03-2025
[signature]

PUNCH LIST HAS BEEN RAISED TO REFLECT REMOTE RESET ISSUE NOT RESOLVED. ALL OTHER TESTING ACKNOWLEDGED BY CROSSWIND 15/04/25
[signature] MARTIN TAYLOR

REFERENCE DOCUMENTS

TITLE	NUMBER
Process Safety Cause and Effect Matrix	123A90-DDL-IN-CE-40000
Process Safety Cause and Effect Block Diagram	123A90-DDL-PR-DG-80000
F&G detectors Layout - Lower deck and Upper deck	123A90-DDL-SAF-DL-30027
F&G detectors Layout - Below Lower deck	123A90-DDL-SAF-DL-30028

Rev.	Date	Status	Description	DRN	CHKD	APPD
00	08/03/2024	IFA	Issue for Acceptance (IFA)	LCA	MGA	DLO
01	12/06/2024	AFC	Accepted for Construction (AFC)	LCA	MGA	DLO
02	08/10/2024	AFC	Accepted for Construction (AFC)	LCA	MGA	DLO
03	11/02/2025	AFC	Accepted for Construction (AFC)	LCA	MGA	DLO

CROSSWIND — ROSETTI MARINO

Fire & Gas Cause & Effect Matrix: ELECTROLYZER

DATE 11/02/2025

HOLLANDSE KUST NOORD WIND PARK Project
Contract No. CW4-WP4-2023-05

Sheet 11 of 17 — 03

FIRE ZONE 01/02/03/05
HYDROGEN OPEN AREA

FZ-01= FUEL CELL AREA
FZ-02= H2 STORAGE VESSELS AREA
FZ-03= ELECTROLYZER AREA
FZ-04= B-200/B-300/B-400 CONTAINERS AREA
FZ-05= BESS AREA
FZ-06= B-100 CONTAINER AREA
FZ-07= MASTER POINT AREA
FZ-08= TRANSITION PIECE AREA

EFFECT

SYS	No.	NOTES	DESCRIPTION	TAG No.
AUDIO / VISUAL ALERT	1		OPERATOR WORKSTATION DISPLAY - EVENT/ALARM	
AUDIO / VISUAL ALERT	3		F&G ALARM ON CAP ONSHORE	
AUDIO / VISUAL ALERT	5	TO SHEET 17	GAS BEACON ACTIVATION - AMBER	
AUDIO / VISUAL ALERT	7	TO SHEET 17	FIRE BEACON ACTIVATION - RED	
AUDIO / VISUAL ALERT	9	TO SHEET 17	SOUNDER ACTIVATION	
AUDIO / VISUAL ALERT	11		WAVE-OFF LIGHT ACTIVATION TO NAVAIDS	72-XS-001
SIS SYSTEM	17	1	H2 IN OPEN AREA TO SIS SYST. (TRIP EQ. NOT FOR ZONE 1 IN OPEN AREA)	70-XS-005
ELECTRIC ISOLATION	27		ELECTRICAL ISOLATION VISIBILITY METER NOT SUITABLE FOR ZONE IIC or (IIB+H2)	72-XS-002

(AUDIO / VISUAL ALERT: columns 1–16; SIS SYSTEM: columns 17–26; ELECTRIC ISOLATION: columns 27–32; OTHER: columns 33–53)

CAUSE

Row	TAG Nos	DESCRIPTION	VOTING	INHIBITION	REMARK	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
1	950-GDZ-02101 950-GDZ-02102 950-GDZ-02103 950-GDZ-02104 950-GDZ-02105 950-GDZ-02106 950-GDZ-02107 950-GDZ-02108 950-GDZ-02109 950-GDZ-02110 950-GDZ-02111 950-GDZ-02112 950-GDZ-02113 950-GDZ-02114 950-GDZ-02115 950-GDZ-02116 950-GDZ-02117 (ULTRAS.) 950-GDZ-02118 (ULTRAS.) 950-GDZ-02119 (ULTRAS.) 950-GDZ-02120 (ULTRAS.)	FZ-02 - H2 GAS LOW (ELECT./ ULTRAS. POINT 5% LFL)	1oo20	X		X		F																																																
2		FZ-02 - H2 GAS HIGH (ELECT./ ULTRAS. POINT 10% LFL)	1oo20	X		X		F																																																
3		FZ-02 - H2 GAS HIGH CONFIRMED (ELECT./ ULTRAS. POINT 10% L	2oo20			X		F		X				X		X						X										X																										
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13	950-GDZ-01101 (ULTRAS.) 950-GDZ-01102 (ULTRAS.) 950-GDZ-01103 (POINT)	FZ-01 - H2 GAS LOW (ULTRAS. POINT 5% LFL)	1oo3	X		X		F																																																
14		FZ-01 - H2 GAS HIGH (ULTRAS. POINT 10% LFL)	1oo3	X		X		F																																																
15		FZ-01 - H2 GAS HIGH CONFIRMED (ULTRAS. POINT 10% LFL)	2oo3			X		F		X				X		X						X										X																										
16																																																										
17	950-GDZ-03101 (ULTRAS.) 950-GDZ-03102 (ULTRAS.) 950-GDZ-03103 (ULTRAS.) 950-GDZ-03104 (POINT) 950-GDZ-03105 (POINT)	FZ-03 - H2 GAS LOW (ULTRAS. POINT 5% LFL)	1oo5	X		X		F																																															
18		FZ-03 - H2 GAS HIGH (ULTRAS POINT 10% LFL)	1oo5	X		X		F																																																
20		FZ-03 - H2 GAS HIGH CONFIRMED (ULTRAS POINT 10% LFL)	2oo5			X		F		X				X		X						X										X																										
21																																																										
22	950-GDZ-05101 950-GDZ-05102 950-GDZ-05103 950-GDZ-05104 950-GDZ-05105 950-GDZ-05106	FZ-05 - H2 GAS LOW (ELECTROCHEM. POINT 5% LFL)	1oo6	X		X		F																																																
23		FZ-05 - H2 GAS HIGH (ELECTROCHEM. POINT 10% LFL)	1oo6	X		X		F																																																
24		FZ-05 - H2 GAS HIGH CONFIRMED (ELECTROCHEM. POINT 10% LFL)	2oo6			X		F		X				X		X						X										X																										
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NOTES:
1. FGS AND SIS SYSTEM EXCHANGE DATA BETWEEN THEM BY USING THE Vnet/IP NETWORK. THIS IS IMPLEMENTED AS REDUNDANT SAFETY COMMUNICATION, APPROVED FOR SIL 3 LOOP.

LEGEND

TEST COMPLETED
GIANDONATO R.M.
14.03.2025
[signature]
PUNCH LIST HAS BEEN RAISED TO REFLECT REMOTE RESET ISSUE STILL TO RESOLVE. ALL OTHER TESTING ACKNOWLEDGED BY CROSSWIND. 15/04/25
[signature] MARTIN TAYLOR
CROSSWIND

TITLE	NUMBER

REFERENCE DOCUMENTS	
TITLE	**NUMBER**
Process Safety Cause and Effect Matrix	123A90-DDL-IN-CE-40000
Process Safety Cause and Effect Block Diagram	123A90-DDL-PR-DG-80000
F&G detectors Layout - Lower deck and Upper deck	123A90-DDL-SAF-DL-30027
F&G detectors Layout - Below Lower deck	123A90-DDL-SAF-DL-30028

Rev.	Date	Status	Description	DRN	CHKD	APPD
00	08/03/2024	IFA	Issue for Acceptance (IFA)	LCA	MGA	DLO
01	12/06/2024	AFC	Accepted for Construction (AFC)	LCA	MGA	DLO
02	08/10/2024	AFC	Accepted for Construction (AFC)	LCA	MGA	DLO
03	11/02/2025	AFC	Accepted for Construction (AFC)	LCA	MGA	DLO

CROSSWIND — ROSETTI MARINO

Fire & Gas Cause & Effect Matrix: HYDROGEN OPEN AREA

DATE 11/02/2025

HOLLANDSE KUST NOORD WIND PARK Project
Contract No. CW-I-WP4-2023-05

Sheet. 13 of 17 | 03

FIRE ZONE 03
OXYGEN OPEN AREA

FZ-01= FUEL CELL AREA
FZ-02= H2 STORAGE VESSELS AREA
FZ-03= ELECTROLYZER AREA
FZ-04= B-200/B-300/B-400 CONTAINERS AREA
FZ-05= BESS AREA
FZ-06= B-100 CONTAINER AREA
FZ-07= MASTER POINT AREA
FZ-08= TRANSITION PIECE AREA

EFFECT

No.	SYS	NOTES	DESCRIPTION	TAG No.
1	AUDIO / VISUAL ALERT		OPERATOR WORKSTATION DISPLAY - EVENT/ALARM	
2	AUDIO / VISUAL ALERT			
3	AUDIO / VISUAL ALERT		F&G ALARM ON CAP ONSHORE	
4	AUDIO / VISUAL ALERT			
5	AUDIO / VISUAL ALERT	TO SHEET 17	GAS BEACON ACTIVATION - AMBER	
6	AUDIO / VISUAL ALERT			
7	AUDIO / VISUAL ALERT	TO SHEET 17	FIRE BEACON ACTIVATION - RED	
8	AUDIO / VISUAL ALERT			
9	AUDIO / VISUAL ALERT	TO SHEET 17	SOUNDER ACTIVATION	
10	AUDIO / VISUAL ALERT			
11	AUDIO / VISUAL ALERT		WAVE-OFF LIGHT ACTIVATION TO NAVAIDS	72-XS-001
12	AUDIO / VISUAL ALERT			
13	AUDIO / VISUAL ALERT			
14	AUDIO / VISUAL ALERT			
15	AUDIO / VISUAL ALERT			
16	AUDIO / VISUAL ALERT			
17	SIS SYSTEM	1	SHUT-DOWN ELECTROLYZER TO SIS SYSTEM	70-XS-003
18	SIS SYSTEM			
19	SIS SYSTEM			
20	SIS SYSTEM			
21	SIS SYSTEM			
22	SIS SYSTEM			
23	SIS SYSTEM			
24	SIS SYSTEM			
25	SIS SYSTEM			
26	SIS SYSTEM			
27	ELECTRIC ISOLATION			
28	ELECTRIC ISOLATION			
29	ELECTRIC ISOLATION			
30	ELECTRIC ISOLATION			
31	ELECTRIC ISOLATION			
32	ELECTRIC ISOLATION			
33	OTHER			
34	OTHER			
35	OTHER			
36	OTHER			
37	OTHER			
38	OTHER			
39	OTHER			
40	OTHER			
41	OTHER			
42	OTHER			
43	OTHER			
44	OTHER			
45	OTHER			
46	OTHER			
47	OTHER			
48	OTHER			
49	OTHER			
50	OTHER			
51	OTHER			
52	OTHER			
53	OTHER			

CAUSE

	TAG Nos	DESCRIPTION	VOTING	INHIBITION	REMARK	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
1																																																										
2	950-GDZ-03107 950-GDZ-03108 950-GDZ-03109	O2 GAS HIGH (ELECTROCHEM. POINT 23 % VOL)	1oo3	X		X		F																																																		
3		O2 GAS HIGH CONFIRMED (ELECTROCHEM. POINT 23% VOL)	2oo3			X		F		X				X		X						X																																				
4																																																										
5																																																										
6																																																										
7																																																										
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NOTES:
1. FGS AND SIS SYSTEM EXCHANGE DATA BETWEEN THEM BY USING THE Vnet/IP NETWORK. THIS IS IMPLEMENTED AS REDUNDANT SAFETY COMMUNICATION, APPROVED FOR SIL 3 LOOP.

LEGEND

TEST COMPLETED
GIANDONATO R.M.
12-03-2025
[signature]

PUNCH LIST HAS BEEN RAISED TO REFLECT REMOTE RESET ISSUE STILL TO RESOLVE. ALL OTHER TESTING ACKNOWLEDGED BY CROSSWIND 15/04/25
[signature] MARTIN TAYLOR

REFERENCE DOCUMENTS	
TITLE	NUMBER
Process Safety Cause and Effect Matrix	123A90-DDL-IN-CE-40000
Process Safety Cause and Effect Block Diagram	123A90-DDL-PR-DG-80000
F&G detectors Layout - Lower deck and Upper deck	123A90-DDL-SAF-DL-30027
F&G detectors Layout - Below Lower deck	123A90-DDL-SAF-DL-30028

Rev.	Date	Status	Description	DRN	CHKD	APPD
00	08/03/2024	IFA	Issue for Acceptance (IFA)	LCA	MGA	DLO
01	12/06/2024	AFC	Accepted for Construction (AFC)	LCA	MGA	DLO
02	08/10/2024	AFC	Accepted for Construction (AFC)	LCA	MGA	DLO
03	11/02/2025	AFC	Accepted for Construction (AFC)	LCA	MGA	DLO

CROSSWIND | ROSETTI MARINO

Fire & Gas Cause & Effect Matrix: OXYGEN OPEN AREA

DATE 11/02/2025

HOLLANDSE KUST NOORD WIND PARK Project
Contract No. CW-I-WP4-2023-05

Sheet. 14 of 17 | 03

FIRE ZONE 01/02/03/04/05/06
FIRE OPEN AREA

FZ-01= FUEL CELL AREA
FZ-02= H2 STORAGE VESSELS AREA
FZ-03= ELECTROLYZER AREA
FZ-04= B-200/B-300/B-400 CONTAINERS AREA
FZ-05= BESS AREA
FZ-06= B-100 CONTAINER AREA
FZ-07= MASTER POINT AREA
FZ-08= TRANSITION PIECE AREA

TAG Nos	CAUSE DESCRIPTION	VOTING	INHIBITION	REMARK	EFFECT	1 OPERATOR WORKSTATION DISPLAY - EVENT/ALARM	2	3 F&G ALARM ON CAP ONSHORE	4	5 GAS BEACON ACTIVATION - AMBER (TO SHEET 17)	6	7 FIRE BEACON ACTIVATION - RED (TO SHEET 17)	8	9 SOUNDER ACTIVATION (TO SHEET 17)	10	11 WAVE-OFF LIGHT ACTIVATION TO NAVAIDS (72-XS-001)	12	13	14	15	16	17 ESD-1D TO SIS SYTEM (NOTE 1) (70-XS-002)
SYS						AUDIO / VISUAL ALERT																SIS SYSTEM
950-FDZ-01101 950-FDZ-01102 950-FDZ-01103 950-FDZ-01104	FZ-01 - FLAME (UV/IR)	1oo4	X		1	X		F														
	FZ-01 - FLAME CONFIRMED (UV/IR)	2oo4			2	X		F				X		X		X						X
					3																	
950-FDZ-02101 950-FDZ-02102 950-FDZ-02103 950-FDZ-02104	FZ-02 - FLAME (UV/IR)	1oo4	X		4	X		F														
	FZ-02 - FLAME CONFIRMED (UV/IR)	2oo4			5	X		F				X		X		X						X
					6																	
950-FDZ-03101 950-FDZ-03102 950-FDZ-03103 950-FDZ-03104	FZ-03 (ELECTROLYZER AREA) - FLAME (UV/IR)	1oo4	X		7	X		F														
	FZ-03 (ELECTROLYZER AREA) - FLAME CONFIRMED (UV/IR)	2oo4			8	X		F				X		X		X						X
					9																	
950-FDZ-04101 950-FDZ-04102 950-FDZ-04103 950-FDZ-04104	FZ-04 - FLAME (UV/IR)	1oo4	X		10	X		F														
	FZ-04 - FLAME CONFIRMED (UV/IR)	2oo4			11	X		F				X		X		X						X
					12																	
950-FDZ-05101 950-FDZ-05102 950-FDZ-05103 950-FDZ-05104	FZ-05 - FLAME (UV/IR)	1oo4	X		13	X		F														
	FZ-05 - FLAME CONFIRMED (UV/IR)	2oo4			14	X		F				X		X		X						X
					15																	
950-FDZ-06101 950-FDZ-06102	FZ-06 - FLAME (UV/IR)	1oo2			16	X		F														
	FZ-06 - FLAME CONFIRMED (UV/IR)	2oo2			17	X		F				X		X		X						X
					18																	
					19																	
					20																	
					21																	
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					23																	
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					39																	
					40																	
					41																	

SIS SYSTEM									ELECTRIC ISOLATION						OTHER																				
18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53

NOTES:
1. FGS AND SIS SYSTEM EXCHANGE DATA BETWEEN THEM BY USING THE Vnet/IP NETWORK. THIS IS IMPLEMENTED AS REDUNDANT SAFETY COMMUNICATION, APPROVED FOR SIL 3 LOOP.

LEGEND

TEST COMPLETED
GIANDONATO R.M.
14-03-2025

GERRM MCCANN
CROSSWIND
14/3/25

REFERENCE DOCUMENTS	
TITLE	NUMBER
Process Safety Cause and Effect Matrix	123A90-DDL-IN-CE-40000
Process Safety Cause and Effect Block Diagram	123A90-DDL-PR-DG-80000
F&G detectors Layout - Lower deck and Upper deck	123A90-DDL-SAF-DL-30027
F&G detectors Layout - Below Lower deck	123A90-DDL-SAF-DL-30028

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03	11/02/2025	AFC	Accepted for Construction (AFC)	LCA	MGA	DLO

CROSSWIND | ROSETTI MARINO

Fire & Gas Cause & Effect Matrix: FIRE OPEN AREA

DATE 11/02/2025

HOLLANDSE KUST NOORD WIND PARK Project
Contract No. CW-I-WP4-2023-05

FIRE ZONE 01/02/03/04/05/06/7
MFA PUSH BUTTONS

FZ-01= FUEL CELL AREA
FZ-02= H2 STORAGE VESSELS AREA
FZ-03= ELECTROLYZER AREA
FZ-04= B-200/B-300/B-400 CONTAINERS AREA
FZ-05= BESS AREA
FZ-06= B-100 CONTAINER AREA
FZ-07= MASTER POINT AREA
FZ-08= TRANSITION PIECE AREA

EFFECT

TAG Nos	CAUSE DESCRIPTION	VOTING	INHIBITION	REMARK	TAG No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
					SYS	AUDIO / VISUAL ALERT																SIS SYSTEM										ELECTRIC ISOLATION						OTHER																				
					NOTES					TO SHEET 17		TO SHEET 17		TO SHEET 17																																												
					DESCRIPTION	OPERATOR WORKSTATION DISPLAY - EVENT/ALARM		F&G ALARM ON CAP ONSHORE		GAS BEACON ACTIVATION - AMBER		FIRE BEACON ACTIVATION - RED		SOUNDER ACTIVATION																																												
					1																																																					
950-MFA-01101	FZ-01 MFA ACTIVATION		X	1	2	X		F				X		X																																										
950-MFA-01102	FZ-01 MFA ACTIVATION		X	1	3	X		F				X		X																																										
950-MFA-01103	FZ-01 MFA ACTIVATION		X	1	4	X		F				X		X																																										
					5																																																				
950-MFA-02101	FZ-02 MFA ACTIVATION		X	1	6	X		F				X		X																																										
					7																																																				
950-MFA-03101	FZ-03 MFA ACTIVATION		X	1	8	X		F				X		X																																										
950-MFA-03102	FZ-03 MFA ACTIVATION		X	1	9	X		F				X		X																																										
950-MFA-03103	FZ-03 MFA ACTIVATION		X	1	10	X		F				X		X																																										
950-MFA-03104	FZ-03 MFA ACTIVATION		X	1	11	X		F				X		X																																										
					12																																																				
950-MFA-04101	FZ-04 MFA ACTIVATION		X	1	13	X		F				X		X																																										
950-MFA-04102	FZ-04 MFA ACTIVATION		X	1	14	X		F				X		X																																										
					15																																																				
950-MFA-04201	FZ-04 MFA ACTIVATION - B-400 INDOOR		X	1	16	X		F				X		X																																										
950-MFA-04202	FZ-04 MFA ACTIVATION - B-400 INDOOR		X	1	17	X		F				X		X																																										
950-MFA-04203	FZ-04 MFA ACTIVATION - B-400 INDOOR		X	1	18	X		F				X		X																																										
					19																																																				
950-MFA-05101	FZ-05 MFA ACTIVATION		X	1	20	X		F				X		X																																										
950-MFA-05102	FZ-05 MFA ACTIVATION		X	1	21	X		F				X		X																																										
950-MFA-05103	FZ-05 MFA ACTIVATION		X	1	22	X		F				X		X																																										
950-MFA-05104	FZ-05 MFA ACTIVATION		X	1	23	X		F				X		X																																										
					24																																																				
950-MFA-05201	FZ-05 MFA ACT. - WATER TREAT. PK INDOOR		X	1	25	X		F				X		X																																										
					26																																																				
950-MFA-06101	FZ-06 MFA ACTIVATION		X	1	27	X		F				X		X																																										
950-MFA-06102	FZ-06 MFA ACTIVATION		X	1	28	X		F				X		X																																										
					29																																																				
950-MFA-06201	FZ-06 MFA ACTIVATION - B-100 INDOOR		X	1	30	X		F				X		X																																										
					31																																																				
950-MFA-07101	FZ-07 MFA ACTIVATION		X	1	32	X		F				X		X																																										
					33																																																				
					34																																																				
					35																																																				
					36																																																				
					37																																																				
					38																																																				
					39																																																				
					40																																																				
					41																																																				

NOTES:
1. THE FLASHING ALARM ON CAP ONSHORE IS A CUMULATIVE OF ALL ASD PUSH BUTTONS ACTIVATION.

LEGEND

GERRY MCCANN
CROSSWIND
12/3/2025

TEST COMPLETED
12-03-2025
GIANDONATO R.M.

REFERENCE DOCUMENTS	
TITLE	NUMBER
Process Safety Cause and Effect Matrix	123A90-DDL-IN-CE-40000
Process Safety Cause and Effect Block Diagram	123A90-DDL-PR-DG-80000
F&G detectors Layout - Lower deck and Upper deck	123A90-DDL-SAF-DL-30027
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03	11/02/2025	AFC	Accepted for Construction (AFC)	LCA	MGA	DLO

CROSSWIND ROSETTI MARINO

Fire & Gas Cause & Effect Matrix: MFA PUSH BUTTONS

DATE 11/02/2025

HOLLANDSE KUST NOORD WIND PARK Project
Contract No. CW-I-WP4-2023-05

Sheet. 16 of 17 | 03

FIRE ZONE 01/02/03/04/05/06/7
SOUNDERS AND BEACONS

FZ-01= FUEL CELL AREA
FZ-02= H2 STORAGE VESSELS AREA
FZ-03= ELECTROLYZER AREA
FZ-04= B-200/B-300/B-400 CONTAINERS AREA
FZ-05= BESS AREA
FZ-06= B-100 CONTAINER AREA
FZ-07= MASTER POINT AREA
FZ-08= TRANSITION PIECE AREA

CAUSE

TAG Nos	DESCRIPTION	VOTING	INHIBITION	REMARK	No.
	GAS CONFIRMED IN B-100 (HV CONTAINER)			From sheet 5	1
	GAS CONFIRMED B-200 IN (LV CONTAINER)			From sheet 6	2
	GAS CONFIRMED IN B-300 (UPS CONTAINER)			From sheet 7	3
	GAS CONFIRMED IN B-400 (ITER CONTAINER)			From sheet 8	4
	GAS CONFIRMED IN FUEL CELL			From sheet 9	5
	GAS CONFIRMED IN BESS			From sheet 10	6
	GAS CONFIRMED IN ELECTROLYZER			From sheet 11	7
	GAS CONFIRMED IN WATER TREAT. PKG			From sheet 12	8
	HYDROGEN OPEN AREA			From sheet 13	9
					10
	SMOKE CONFIRMED IN B-100 (HV CONTAINER)			From sheet 5	11
	SMOKE CONFIRMED B-200 IN (LV CONTAINER)			From sheet 6	12
	SMOKE CONF. IN B-300 (UPS CONTAINER)			From sheet 7	13
	SMOKE CONF. IN B-400 (ITER CONTAINER)			From sheet 8	14
	SMOKE CONFIRMED IN FUEL CELL			From sheet 9	15
	SMOKE CONFIRMED IN BESS			From sheet 10	16
	SMOKE CONFIRMED IN ELECTROLYZER			From sheet 11	17
	SMOKE CONFIRMED IN WATER TREAT. PKG			From sheet 12	18
	FIRE OPEN AREA			From sheet 15	19
					20
	O2 GAS HIGH CONFIRMED			From sheet 14	21
					22
	MFA PUSH BUTTONS ACTIVATION FZ 01/02/03/04/05/06/7			From sheet 16	23
					24
79-XA-001	ASD ACTIVATION FROM SIS SYSTEM			NOTE 1	25
79-XA-002	ESD-1D ACTIVATION FROM SIS SYSTEM			NOTE 1	26
79-XA-003	ESD-1 ACTIVATION FROM SIS SYSTEM			NOTE 1	27
					28
79-XA-004	MOB PUSH BUTTONS ACTIVATION FROM SIS SYSTEM			NOTE 1	29
					30
					31
					32
					33
					34
					35
					36
					37
					38
					39
					40
					41

EFFECT — GAS VISUAL ALERT BEACONS (AMBER)

No.	1	2 950-XL-01101 FZ-01 GAS BEACON ACTIVATION	3 950-XL-02101 FZ-02 GAS BEACON ACTIVATION	4 950-XL-03101 FZ-03 GAS BEACON ACTIVATION	5 950-XL-03103 FZ-03 GAS BEACON ACTIVATION	6 950-XL-04101 FZ-04 GAS BEACON ACTIVATION	7 950-XL-04103 FZ-04 GAS BEACON ACTIVATION	8 950-XL-04201 FZ-04 GAS BEACON ACT. - B-400 INDOOR	9 950-XL-04203 FZ-04 GAS BEACON ACT. - B-300 INDOOR	10 950-XL-04205 FZ-04 GAS BEACON ACT. - B-200 INDOOR	11 950-XL-05201 FZ-05 GAS BEACON ACT. - WATER T. INDOOR	12 950-XL-06101 FZ-06 GAS BEACON ACTIVATION	13 950-XL-06103 FZ-06 GAS BEACON ACTIVATION	14 950-XL-06201 FZ-06 GAS BEACON ACT. - B-100 INDOOR	15 950-XL-07101 FZ-07 GAS BEACON ACTIVATION	16
1		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
2		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
3		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
4		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
5		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
6		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
7		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
8		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
9		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
10																
11																
12																
13																
14																
15																
16																
17																
18																
19																
20																
21		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
22																
23																
24																
25		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
26		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
27		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
28																
29		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
30																
31																
32																
33																
34																
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36																
37																
38																
39																
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41																

EFFECT — FIRE VISUAL ALERT BEACONS (RED)

No.	17	18 950-XL-01102 FZ-01 FIRE BEACON ACTIVATION	19 950-XL-02102 FZ-02 FIRE BEACON ACTIVATION	20 950-XL-03102 FZ-03 FIRE BEACON ACTIVATION	21 950-XL-03104 FZ-03 FIRE BEACON ACTIVATION	22 950-XL-04102 FZ-04 FIRE BEACON ACTIVATION	23 950-XL-04104 FZ-04 FIRE BEACON ACTIVATION	24 950-XL-04202 FZ-04 FIRE BEACON ACT. - B-400 INDOOR	25 950-XL-04204 FZ-04 FIRE BEACON ACT. - B-300 INDOOR	26 950-XL-04206 FZ-04 FIRE BEACON ACT. - B-200 INDOOR	27 950-XL-05202 FZ-05 FIRE BEACON ACT. - WATER T. INDOOR	28 950-XL-06102 FZ-06 FIRE BEACON ACTIVATION	29 950-XL-06104 FZ-06 FIRE BEACON ACTIVATION	30 950-XL-06202 FZ-06 FIRE BEACON ACT. - B-100 INDOOR	31 950-XL-07102 FZ-07 FIRE BEACON ACTIVATION	32
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
12		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
13		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
14		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
15		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
16		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
17		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
18		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
19		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
20																
21																
22																
23		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
24																
25		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
26		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
27		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
28																
29		X	X	X	X	X	X	X	X	X	X	X	X	X	X	
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EFFECT — AUDIO ALERT SOUNDERS

No.	33	34 950-XZ-01101 FZ-01 SOUNDER ACTIVATION	35 950-XZ-01102 FZ-01 SOUNDER ACTIVATION	36 950-XZ-02101 FZ-02 SOUNDER ACTIVATION	37 950-XZ-03101 FZ-03 SOUNDER ACTIVATION	38 950-XZ-03102 FZ-03 SOUNDER ACTIVATION	39 950-XZ-04101 FZ-04 SOUNDER ACTIVATION	40 950-XZ-04102 FZ-04 SOUNDER ACTIVATION	41 950-XZ-04201 FZ-04 SOUNDER ACT. - B-400 INDOOR	42 950-XZ-04202 FZ-04 SOUNDER ACT. - B-300 INDOOR	43 950-XZ-04203 FZ-04 SOUNDER ACT. - B-200 INDOOR	44 950-XZ-05101 FZ-05 SOUNDER ACTIVATION	45 950-XZ-05102 FZ-05 SOUNDER ACTIVATION	46 950-XZ-05103 FZ-05 SOUNDER ACTIVATION	47 950-XZ-05104 FZ-05 SOUNDER ACTIVATION	48 950-XZ-05201 FZ-05 SOUNDER ACTIVATION - WTER T. INDOOR	49 950-XZ-06101 FZ-06 SOUNDER ACTIVATION	50 950-XZ-06201 FZ-06 SOUNDER ACT. - B-100 INDOOR (NOTES: 2)	51 950-XZ-07101 FZ-07 SOUNDER ACTIVATION	52	53 72-XS-001 WAVE-OFF LIGHT ACTIVATION TO NAVAIDS
1		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
2		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
3		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
4		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
5		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
6		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
7		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
8		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
9		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
10																					
11		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
12		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
13		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
14		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
15		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
16		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
17		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
18		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
19		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
20																					
21		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
22																					
23		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
24																					
25		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
26		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
27		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
28																					
29		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
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NOTES:
1. FGS AND SIS SYSTEM EXCHANGE DATA BETWEEN THEM BY USING THE Vnet/IP NETWORK. THIS IS IMPLEMENTED AS REDUNDANT SAFETY COMMUNICATION, APPROVED FOR SIL 3 LOOP
2. It will be possible to deactivate the sounder 950-XZ-07101 (installed in Master Area) from CAP onshore.

LEGEND

TEST COMPLETED
GIANDONATO R.M.
19-03-2025

WITNESSED

PAUL WILLIAMSON
CROSSWIND
19-MAR-2025

REFERENCE DOCUMENTS	
TITLE	NUMBER
Process Safety Cause and Effect Matrix	123A90-DDL-IN-CE-40000
Process Safety Cause and Effect Block Diagram	123A90-DDL-PR-DG-80000
F&G detectors Layout - Lower deck and Upper deck	123A90-DDL-SAF-DL-30027
F&G detectors Layout - Below Lower deck	123A90-DDL-SAF-DL-30028

Rev.	Date	Status	Description	DRN	CHKD	APPD
00	08/03/2024	IFA	Issue for Acceptance (IFA)	LCA	MGA	DLO
01	12/06/2024	AFC	Accepted for Construction (AFC)	LCA	MGA	DLO
02	08/10/2024	AFC	Accepted for Construction (AFC)	LCA	MGA	DLO
03	11/02/2025	AFC	Accepted for Construction (AFC)	LCA	MGA	DLO

CROSSWIND — ROSETTI MARINO

Fire & Gas Cause & Effect Matrix: SOUNDERS AND BEACONS

DATE 11/02/2025

HOLLANDSE KUST NOORD WIND PARK Project
Contract No. CW-I-WP4-2023-05

Sheet 17 of 17 — 03

Section 5.2 Operational Test Certificates

NOT APPLICABLE

Section 6 PIPING AND VESSEL PREPARATION

Section 6.1 Final Mechanical / Vessel Inspection Checks Index

NOT APPLICABLE

Section 6.2 Leak Test / Drying / Inerting Test Sheets Index

NOT APPLICABLE

Section 6.3 Chemical Loading & First Fill records Index

NOT APPLICABLE

Section 6.4 Chemical Cleaning Reports and Records Index

NOT APPLICABLE

Section 6.5 Lubrication Schedule

NOT APPLICABLE

Section 7 VENDOR

Section 7.1 Vendor Package Summary Index

NOT APPLICABLE

Section 7.2 SAT Procedure with associated punch list and reference (Front Page)

NOT APPLICABLE

Section 7.3 Vendor Spares & Special Tools lists references

ROSETTI MARINO

SPARE PARTS LIST

CROSSWIND

Document Title	SPARE PART INDEX REGISTER (COMMISSIONING, 2-YEAR's) - FIRE AND GAS FIELD EQUIPMENT				
The document relates to	HOLLANDSE KUST NOORD WIND PARK Project - Base Load Power Hub (BLPH)			Contract	CW-I-WP4-2023-05
Project ID	123A90	Doc. n°	1724000821-COM-LIS-00011	Rev. Issued for review	Rev. Date 22-Oct-24 / Status IFR / Class 2

The equipment consists of the following units/components

1 Tag no.

2 Tag description

3 Manufacturer model/type no.

4 Manufacturer serial no.

5 No. of units

6 Quantity of parts FITTED / INSTALLED per unit/component

Supplier: FORES ENGINEERING srl
Address: VIA SECONDO CASADEI 12
47122 Forlì
ITALY

PO Number: 1721002632

PO description: FIRE AND GAS FIELD EQUIPMENT
Supplier telephone no: +39.0543.813811
E-mail: Fores@fores.it

Contact name: MRS MATTEO OSSANI
Contact mobile no:
WEBSITE http://www.fores.it/

General Information:

Item Number	Total number of identical spares installed	MATERIALS DATA: Description of recommended spare parts	Parts/drawing ref.: Project Datasheet no.	Parts/drawing ref.: Project Detail dwg. no.	Parts/drawing ref.: Item ref.	Material	Certicate Type (if applicable)	Certicate Reference (if applicable)	Shelf life (years)	Weight (net)	Weight (gross)	Volume	HS Code	ECCN Code	% US Content	Country of origin	Supplier part no.	Manufacturer part no.	Manufacturename	Commissioning spares: Quantity ordered	2 Years spares: Quantity ordered	Remarks
7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
1	24	SMOKE DETECTOR ZETTLER MR601TEx	1724000821-IN-DS-00004	1724000821-IN-DA-00003		FR110 "Bayblend" fire resistant												MR601TEx	ZETTLER	0	1	
2	49	GAS DETECTOR HYDROGEN Dräger Polytron® 8200 CAT DQ	1724000821-IN-DS-00004	1724000821-IN-DA-00003		AISI 316												Polytron® 8200 CAT DQ d S	Dräger	0	1	
3	9	GAS DETECTOR ULTRASONIC Dräger Polytron® 8900 UGLD	1724000821-IN-DS-00004	1724000821-IN-DA-00003		AISI 316												Polytron® 8900 UGLD d S 4-	Dräger	0	1	
4	3	GAS DETECTOR OXYGEN Dräger Polytron 8100 EC d S 4-	1724000821-IN-DS-00004	1724000821-IN-DA-00003		AISI 316												Polytron 8100 EC d S 4-	Dräger	0	1	
5	22	FLAME DETECTOR FGD FlameSpec FLS-UV-IR-AS11	1724000821-IN-DS-00004	1724000821-IN-DA-00003		AISI 316												FlameSpec FLS-UV-IR-AS11	FGD	0	1	
6	21	PUSH BUTTON MEDC SM87PBL MANUAL FIRE ALARM	1724000821-IN-DS-00004	1724000821-IN-DA-00003		AISI 316												SM87PB	MEDC	0	1	
7	20	PUSH BUTTON MEDC SM87PBL PUSH BUTTON TO SIS	1724000821-IN-DS-00004	1724000821-IN-DA-00003		AISI 316												SM87PB	MEDC	0	1	
8	13	GAS FLASH BEACON (AMBER) MEDC SM87LEDS	1724000821-IN-DS-00004	1724000821-IN-DA-00003		AISI 316												SM87LEDS	MEDC	0	1	
9	13	FIRE FLASH BEACON (RED) MEDC SM87LEDS	1724000821-IN-DS-00004	1724000821-IN-DA-00003		AISI 316												SM87LEDS	MEDC	0	1	
10	17	SOUNDER MEDC DB3B	1724000821-IN-DS-00004	1724000821-IN-DA-00003		AISI 316												DB3B	MEDC	0	1	
11	32	PUSH BUTTON DPDT CONTACT EATON GHG 432	1724000821-IN-DS-00004	1724000821-IN-DA-00003		Polyamide												GHG 432	EATON	0	0	
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Section 7.4 Vendor Data / Operations / Maintenance Manuals References

NOT APPLICABLE

Section 8 LIST OF MODIFICATIONS

NOT APPLICABLE

Section 8.1 List of changes

NOT APPLICABLE

Section 9 SUPPORTING DOCUMENTS

NOT APPLICABLE