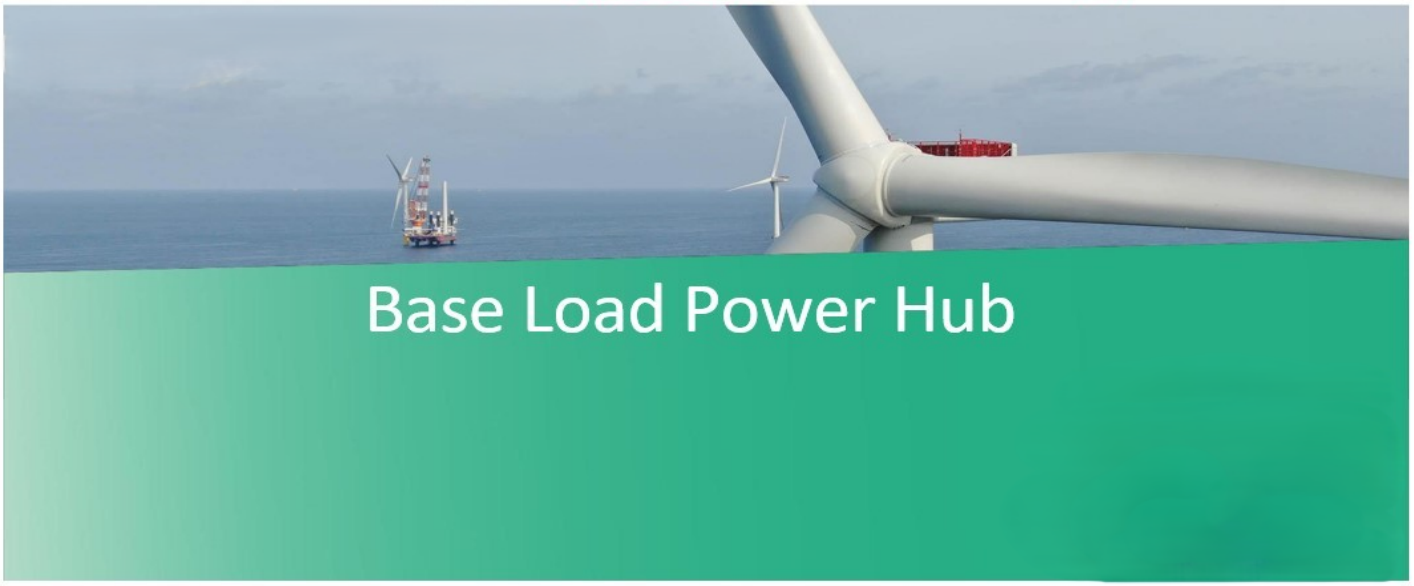
CROSSWIND

ROSETTI MARINO

PROVERUS

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



COMMISSIONING DOSSIER (ONSHORE)

SYSTEM	70 Safety and Facility Systems
SUBSYSTEM	70-16 F&G Devices FZ-05 (Bess Area)

CROSSWIND

123A90 - HOLLANDSE KUST NOORD WIND PARK
BLPH Project

COMMISSIONING DOSSIER INDEX

ROSETTI MARINO

Sub System N°:	70-16	**Tick as appropriate**	ONSHORE	OK
Description:	F&G Devices FZ-05 (Bess Area)		OFFSHORE	

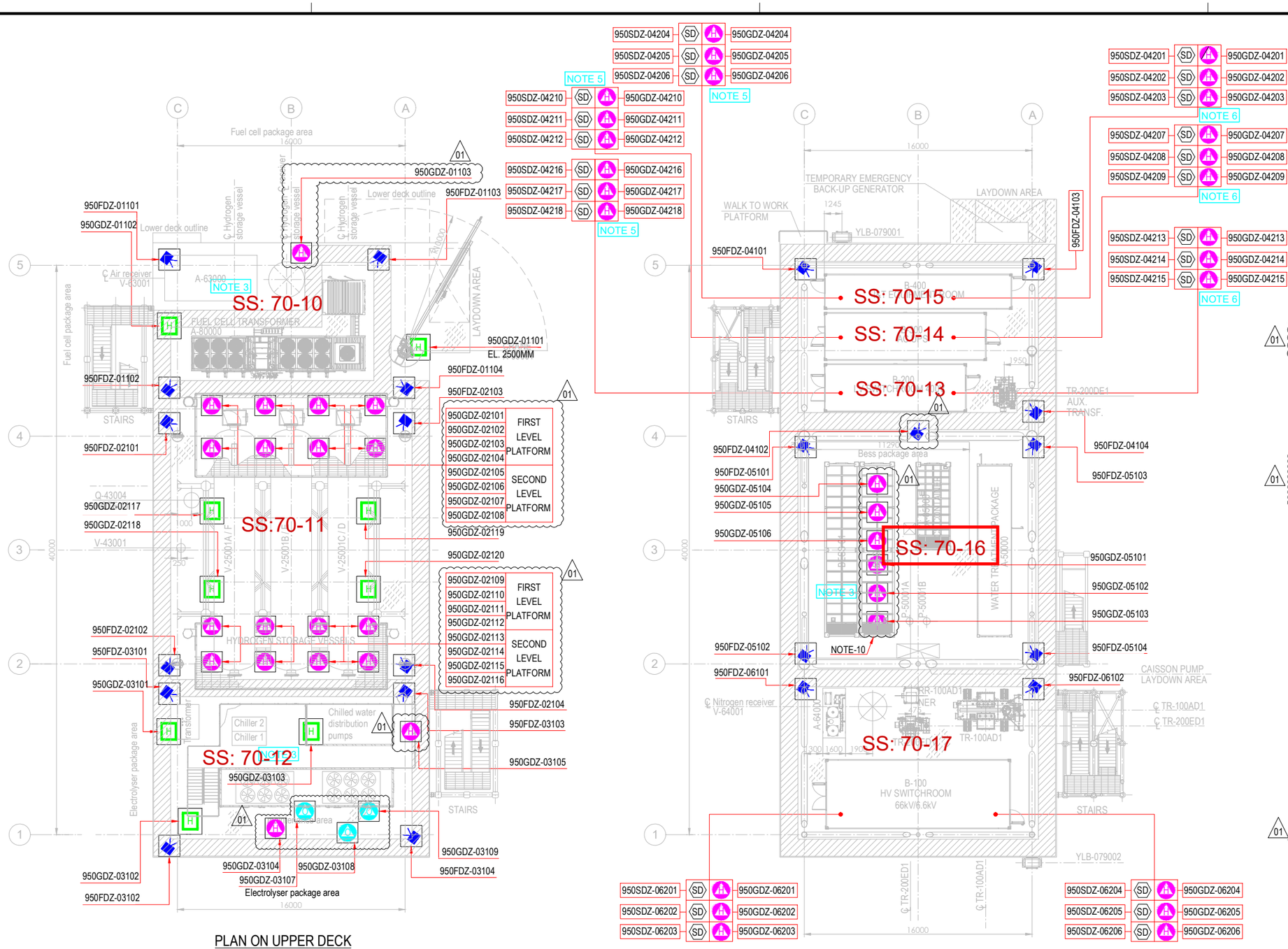
1. *SUB-SYSTEM DEFINITION*	OK
1.1 Sub-System Description / Boundary Limit Drawings	
2. *READY FOR OPERATION CERTIFICATE*	OK
2.1 Achievement Of Ready for Operation Certificate (RFO)	
2.2 Exception Punch Lists (per discipline)	
2.3 “As-Commissioned” P&ID’s / SLD’s / D&ID’s / C&E’s	
3. *CONSOLIDATED PUNCH 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 2025-04-25T10:52:44.661Z	PROVERLIS Digitaly signed by Martin Taylor 2025-04-25T13:32:16.587Z

Section 1 SUB-SYSTEM DEFINITION

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

REV. 00



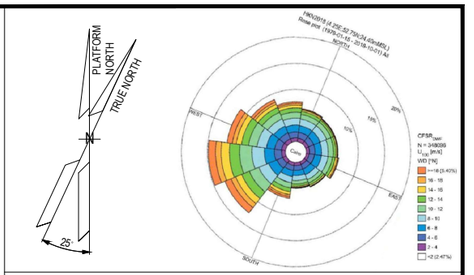
PLAN ON UPPER DECK
EL+30.310 T.O.S.

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
	POINT SOURCE HYDROGEN DETECTOR (GDZ)	46
SD	SMOKE DETECTOR (SDZ)	24
	POINT SOURCE OXYGEN DETECTOR (GDZ)	3
H	ULTRA SONIC HYDROGEN DETECTOR (GDZ)	9



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. VENDOR TO DEFINE AND SUPPLY ALL FIRE & GAS DETECTORS TO BE USED IN FUEL CELL, ELECTROLYSER AND BESS. TO BE IN COMPLIANCE WITH PROJECT REQUIREMENTS. THESE WILL BE SHOWN IN THE NEXT REVISON OF THE DOCUMENT.
4. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.
5. 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.
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
123A90-DDL-SAF-RE-30020	FERA REPORT

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

CROSSWIND

ROSETTI MARINO

TITLE :

F & G DETECTORS LAYOUT - LOWER & UPPER DECK

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

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

Section 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:	2025-04-05	
System:	70	/	Safety and Facility Systems		
SubSystem:	70-16	/	F&G Devices FZ-05 (Bess 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	2025-04-08	2025-04-24
Signature	PROVERLIS Digitaly signed by Anthony Iveson 2025-04-08T11:58:39.717Z	PROVERLIS Digitaly signed by Martin Taylor 2025-04-24T11:41:46.750Z

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 70-16 & process: COMM

Instrumental	70-16 F&G Devices FZ-05 (Bess Area)

ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
950-FDZ-05101	Flame Detector - FZ-05 BESS Area	ONSHORE	C10003138	FJ04F	100	2025-01-13	RFO 1
950-FDZ-05102	Flame Detector - FZ-05 BESS Area	ONSHORE	C10003137	FJ04F	100	2025-01-13	RFO 1
950-FDZ-05103	Flame Detector - FZ-05 BESS Area	ONSHORE	C10003136	FJ04F	100	2025-01-13	RFO 1
950-FDZ-05104	Flame Detector - FZ-05 BESS Area	ONSHORE	C10003135	FJ04F	100	2025-01-13	RFO 1
950-GDZ-05101	H2 GD FZ-05 BESS Area	ONSHORE	C10003084	FJ04G	100	2025-01-13	RFO 1
950-GDZ-05102	H2 GD FZ-05 BESS Area	ONSHORE	C10003083	FJ04G	100	2025-01-13	RFO 1
950-GDZ-05103	H2 GD FZ-05 BESS Area	ONSHORE	C10003082	FJ04G	100	2025-01-13	RFO 1
950-GDZ-05104	H2 GD FZ-05 BESS Area	ONSHORE	C10003081	FJ04G	100	2025-01-13	RFO 1
950-GDZ-05105	H2 GD FZ-05 BESS Area	ONSHORE	C10003080	FJ04G	100	2025-01-13	RFO 1
950-GDZ-05106	H2 GD FZ-05 BESS Area	ONSHORE	C10003079	FJ04G	100	2025-01-13	RFO 1
950-MFA-05101	FZ-05 MFA Activation	ONSHORE	C10004428	FJ04PB_FGS	100	2025-01-28	RFO 1
950-MFA-05102	FZ-05 MFA Activation	ONSHORE	C10004429	FJ04PB_FGS	100	2025-01-28	RFO 1
950-MFA-05103	FZ-05 MFA Activation	ONSHORE	C10004430	FJ04PB_FGS	100	2025-01-13	RFO 1
950-MFA-05104	FZ-05 MFA Activation	ONSHORE	C10004431	FJ04PB_FGS	100	2025-01-14	RFO 1
950-MFA-05201	FZ-05 Manual fire alarm (MFA) water treat. pkg	ONSHORE	C10004476	FJ04PB_FGS	100	2025-01-28	RFO 1
950-XL-05201	FZ-05 Optical exp gas alarm water treat. pkg	ONSHORE	C10004477	FJ04FB	100	2025-02-24	RFO 1
950-XL-05202	FZ-05 Optical fire alarm water treat. pkg	ONSHORE	C10004478	FJ04FB	100	2025-02-24	RFO 1
950-XZ-05101	FZ-05 Sounder Activation	ONSHORE	C10004469	FJ04MS	100	2025-02-11	RFO 1
950-XZ-05102	FZ-05 Sounder Activation	ONSHORE	C10004470	FJ04MS	100	2025-02-11	RFO 1
950-XZ-05103	FZ-05 Sounder Activation	ONSHORE	C10004471	FJ04MS	100	2025-02-11	RFO 1
950-XZ-05104	FZ-05 Sounder Activation	ONSHORE	C10004472	FJ04MS	100	2025-02-11	RFO 1
950-XZ-05201	FZ-05 Acoustic fire&gas alarm water treat. pkg	ONSHORE	C10004479	FJ04MS	100	2025-02-24	RFO 1

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	70	Safety and Facility Systems
SUBSYSTEM	70-16	F&G Devices FZ-05 (Bess Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001001	A	950-MFA-05201 C10001475	Missing earthing cable on the instrument (950-MFA-05201).	.		Gtangianu 2024-11-28	2024-12-12	Ecarotenuto 2024-12-12	2024-12-12
C30000950	B	C-950-MFA-052 01/B400-FGS-0 03	Missing cable tag all along the route.	.		Gtangianu 2024-11-26	2025-02-26	Pschintu 2025-02-26	2025-02-26
C30000951	B	C-950-MFA-052 01/B400-FGS-0 03	Identification tag wires missing both side the C-950-MFA-05201/B400-FGS-003 connection.	.		Gtangianu 2024-11-26	2025-03-03	Gtangianu 2025-03-03	2025-03-03
C30000952	B	C-950-MFA-052 01/B400-FGS-0 03	-Bending radius is not within the specified limits. (stress on the input cable instrument MFA-05201).	.		Gtangianu 2024-11-26	2025-02-04	Gtangianu 2025-02-04	2025-02-04
C30001000	B	950-MFA-05201 C10001475	Missing tag plate on the instrument.	.		Gtangianu 2024-11-28	2025-01-22	Ecarotenuto 2025-01-22	2025-01-22
C30001002	B	950-MFA-05201 C10001475	The emergency glass is broken .. need too be change. (950-MFA-05201).	.		Gtangianu 2024-11-28	2024-12-12	Ecarotenuto 2024-12-12	2024-12-12
C30001089	B	950-FDZ-05102 C10000986	Missing the cross-ferruling (Cores) .inside instrument . (see document 123A90-DDL-IN-DG-40016 sh.3)	.		APolo 2024-11-30	2025-02-24	JKrizanic 2025-02-24	2025-02-24
C30001092	B	950-FDZ-05102 C10000986	The tag tie is made of plastic. To be replaced in AISI	.		APolo 2024-11-30	2025-02-25	AAndreani 2025-02-25	2025-02-25
C30001093	B	950-FDZ-05102 C10000986	Missing the separation system between different materials. (between steel and carbon steel). side 950-FDZ-05102	x.		APolo 2024-11-30	2025-01-21	AAndreani 2025-01-21	2025-01-21

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 70 Safety and Facility Systems

SUBSYSTEM 70-16 F&G Devices FZ-05 (Bess Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001094	B	C-950-FDZ-05102/950-JE-05101	the philosophy of cross-ferruling are wrong J.B. side 950-JE-05101 . (see document 123A90-DDL-IN-DG-40016 sh.3)	.		APolo 2024-11-30	2025-02-20	JKrizanic 2025-02-20	2025-02-20
C30001095	B	C-950-FDZ-05102/950-JE-05101	Missing cable tag SS , SIDE 950-JE-05101	.		APolo 2024-11-30	2025-02-04	APolo 2025-02-04	2025-02-04
C30001367	B	950-MFA-05104 C10001068	Missing the separation system between different materials. (between steel "support" and carbon steel "structure).	.		APolo 2024-12-05	2025-01-21	AAndreani 2025-01-21	2025-01-21
C30001368	B	950-MFA-05104 C10001068	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-05	2025-03-07	Gtangianu 2025-03-07	2025-03-07
C30001369	B	950-XZ-05101 C10001138	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-05	2025-03-07	Gtangianu 2025-03-07	2025-03-07
C30001370	B	950-XZ-05101 C10001138	Missing the separation system between different materials. (between steel "support" and carbon steel "structure).	.		APolo 2024-12-05	2025-01-21	AAndreani 2025-01-21	2025-01-21
C30001371	B	950-MFA-05101 C10001065	Missing the separation system between different materials. (between steel "support" and carbon steel "structure).	.		APolo 2024-12-05	2025-01-21	AAndreani 2025-01-21	2025-01-21
C30001372	B	950-MFA-05101 C10001065	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-05	2025-03-07	Gtangianu 2025-03-07	2025-03-07
C30001374	B	950-MFA-05101 C10001065	installation is not conforms to instrument installation details. (see 123A90-DDL-IN-DD-40017_ sh. 27) .	.		APolo 2024-12-05	2024-12-27	Ecarotenuto 2024-12-27	2024-12-27

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 70 Safety and Facility Systems
SUBSYSTEM 70-16 F&G Devices FZ-05 (Bess Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001376	B	950-MFA-05104 C10001068	installation is not conforms to instrument installation details. (see 123A90-DDL-IN-DD-40017_ sh. 27) .	.		APolo 2024-12-05	2024-12-27	Ecarotenuto 2024-12-27	2024-12-27
C30001614	B	C-950-FDZ-051 01/950-JE-0510 1	Identification tag wire missing side (950-FDZ-05101)connection.	.		Gtangianu 2024-12-10			
C30001615	B	C-950-FDZ-051 01/950-JE-0510 1	Missing cable tag side the (950-JE-05101).	.		Gtangianu 2024-12-10	2025-01-02	Ecarotenuto 2025-01-02	2025-01-02
C30001616	B	C-950-FDZ-051 04/950-JE-0510 1	Identification tag wire missing side (950-FDZ-05104)connection.See attached photo.	.		Gtangianu 2024-12-10	2025-02-24	JKrizanic 2025-02-24	2025-02-24
C30001617	B	C-950-FDZ-051 04/950-JE-0510 1	Missing cable tag side the (950-JE-05101).See attached photo.	.		Gtangianu 2024-12-10	2025-01-02	Ecarotenuto 2025-01-02	2025-01-02
C30001680	B	C-950-GDZ-051 03/950-JE-0510 1	The cable need to be fix. See attached photo.	.		Gtangianu 2024-12-11	2025-01-23	Gtangianu 2025-01-23	2025-01-23
C30001681	B	C-950-GDZ-051 03/950-JE-0510 1	The cabletray are not properly support near the instrument (950-GDZ-05103). See attached photo.	.		Gtangianu 2024-12-11	2025-02-13	AAndreani 2025-02-13	2025-02-13
C30001682	B	C-950-GDZ-051 03/950-JE-0510 1	Missing grafoplast and tag wire on the shield, inside the instrument (-950-GDZ-05103).See attached photo.	.		Gtangianu 2024-12-11	2025-02-26	JKrizanic 2025-02-26	2025-02-26
C30001683	B	C-950-GDZ-051 03/950-JE-0510 1	Missing cable tag side the (950-JE-05101).	.		Gtangianu 2024-12-11	2025-01-02	Ecarotenuto 2025-01-02	2025-01-02

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 70 Safety and Facility Systems
SUBSYSTEM 70-16 F&G Devices FZ-05 (Bess Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001684	B	950-GDZ-05103 C10001042	DETAIL EARTHING THREADED STUD IS WRONG IN ASSEMBLY (see doc 123A90-FDL-EL-DD-20090 typical E-11). See	.		Gtangianu 2024-12-11	2025-01-22	Ecarotenuto 2025-01-22	2025-01-22
C30001685	B	C-950-FDZ-05103/950-JE-05101	Missing cable tag side the (950-JE-05103).	.		Gtangianu 2024-12-11	2025-01-29	APolo 2025-01-29	2025-01-29
C30001686	B	C-950-FDZ-05103/950-JE-05101	Missing grafoplast and tag wire on the shield, inside the instrument (-950-FDZ-05103).	.		Gtangianu 2024-12-11			
C30001687	B	950-GDZ-05101 C10001040	DETAIL EARTHING THREADED STUD IS WRONG IN ASSEMBLY (see doc 123A90-FDL-EL-DD-20090 typical E-11). See	.		Gtangianu 2024-12-11	2025-01-22	Ecarotenuto 2025-01-22	2025-01-22
C30001688	B	C-950-GDZ-05101/950-JE-05101	The cable need to be fix.See attached photo.	.		Gtangianu 2024-12-11	2025-01-23	Gtangianu 2025-01-23	2025-01-23
C30001689	B	C-950-GDZ-05101/950-JE-05101	Missing plug on the unistrut . Below the instrument. See attached photo.	.		Gtangianu 2024-12-11	2025-01-23	Gtangianu 2025-01-23	2025-01-23
C30001690	B	C-950-GDZ-05101/950-JE-05101	The cabletray are not properly fix . the support is not tight near the instrument (950-GDZ-05101). See attached photo.	.		Gtangianu 2024-12-11	2025-01-23	Gtangianu 2025-01-23	2025-01-23
C30001691	B	950-GDZ-05102 C10001041	earthing cable need to be fix. See attached photo.	.		Gtangianu 2024-12-11	2025-02-03	APolo 2025-02-03	2025-02-03
C30001692	B	C-950-GDZ-05102/950-JE-05101	Missing grafoplast and tag wire on the shield, inside the instrument (-950-GDZ-05102).See attached photo.	.		Gtangianu 2024-12-11	2025-02-26	JKrizanic 2025-02-26	2025-02-26

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 70 Safety and Facility Systems
SUBSYSTEM 70-16 F&G Devices FZ-05 (Bess Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001693	B	C-950-GDZ-05102/950-JE-05101	Missing cable tag side the (950-JE-05101).	.		Gtangianu 2024-12-11	2025-01-02	Ecarotenuto 2025-01-02	2025-01-02
C30001694	B	950-GDZ-05104 C10001043	earthing cable need to be fix. See attached photo.	.		Gtangianu 2024-12-11	2025-02-03	APolo 2025-02-03	2025-02-03
C30001695	B	950-GDZ-05104 C10001043	DETAIL EARTHING THREADED STUD IS WRONG IN ASSEMBLY (see doc 123A90-FDL-EL-DD-20090 typical E-11). See	.		Gtangianu 2024-12-11	2025-01-23	Gtangianu 2025-01-23	2025-01-23
C30001696	B	C-950-GDZ-05104/950-JE-05101	Missing cable tag side the (950-JE-05101).	.		Gtangianu 2024-12-11	2025-01-02	Ecarotenuto 2025-01-02	2025-01-02
C30001698	B	C-950-GDZ-05104/950-JE-05101	Missing grafoplast and tag wire on the shield, inside the instrument (-950-GDZ-05104).	.		Gtangianu 2024-12-11			
C30001700	B	C-950-GDZ-05105/950-JE-05101	The cabletray are not properly support near the instrument (950-GDZ-05105).	.		Gtangianu 2024-12-11	2025-02-13	AAndreani 2025-02-13	2025-02-13
C30001701	B	C-950-GDZ-05105/950-JE-05101	Missing grafoplast and tag wire on the shield, inside the instrument (-950-GDZ-05105).	.		Gtangianu 2024-12-11	2025-02-26	JKrizanic 2025-02-26	2025-02-26
C30001702	B	C-950-GDZ-05105/950-JE-05101	Missing cable tag side the (950-JE-05101).	.		Gtangianu 2024-12-11	2025-01-02	Ecarotenuto 2025-01-02	2025-01-02
C30001703	B	950-GDZ-05105 C10001044	DETAIL EARTHING THREADED STUD IS WRONG IN ASSEMBLY (see doc 123A90-FDL-EL-DD-20090 typical E-11). See	.		Gtangianu 2024-12-11	2025-01-23	Gtangianu 2025-01-23	2025-01-23

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 70 Safety and Facility Systems

SUBSYSTEM 70-16 F&G Devices FZ-05 (Bess Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001704	B	950-GDZ-05105 C10001044	earthing cable need to be fix. See attached photo.	.		Gtangianu 2024-12-11	2025-02-03	APolo 2025-02-03	2025-02-03
C30001705	B	950-GDZ-05106 C10001045	Earthing cable need to be fix. See attached photo.	.		Gtangianu 2024-12-12	2025-02-03	APolo 2025-02-03	2025-02-03
C30001706	B	C-950-GDZ-051 06/950-JE-0510 1	Missing cable tag side the (950-JE-05101).	.		Gtangianu 2024-12-12	2025-01-02	Ecarotenuto 2025-01-02	2025-01-02
C30001707	B	C-950-GDZ-051 06/950-JE-0510 1	Missing grafoplast and tag wire on the shield, inside the instrument (-950-GDZ-05106).	.		Gtangianu 2024-12-12	2025-02-26	JKrizanic 2025-02-26	2025-02-26
C30001725	B	C-950-XZ-05103 /950-JE-05103 C10000341	The installation cabletray as not completed below the (950-JE-05103).See attached photo.	.		Gtangianu 2024-12-12	2025-01-29	APolo 2025-01-29	2025-01-29
C30001727	B	950-MFA-05103 C10001067	The support is not well secured against vibration. another support needs to be added.	.		Gtangianu 2024-12-12	2025-03-07	Gtangianu 2025-03-07	2025-03-07
C30001729	B	950-XZ-05104 C10001141	The support is not well secured against vibration. another support needs to be added.	.		Gtangianu 2024-12-12	2025-03-07	Gtangianu 2025-03-07	2025-03-07
C30001731	B	C-950-XZ-05104 /950-JE-05103 C10000342	The installation cabletray as not completed below the (950-JE-05103).See attached photo.	.		Gtangianu 2024-12-12	2025-01-29	APolo 2025-01-29	2025-01-29
C30001733	B	950-XZ-05103 C10001140	The support is not well secured against vibration. another support needs to be added.	.		Gtangianu 2024-12-12	2025-03-07	Gtangianu 2025-03-07	2025-03-07

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 70 Safety and Facility Systems

SUBSYSTEM 70-16 F&G Devices FZ-05 (Bess Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30002735	B	C-950-MFA-05102/950-JE-05102	Missing cable tag SS , near the JB 950-JE-05102.	.		APolo 2025-01-13	2025-02-21	JKrizanic 2025-02-21	2025-02-21
C30002736	B	950-MFA-05102 C10001066	Missing n°1 fixing bolt	.		APolo 2025-01-13	2025-02-04	APolo 2025-02-04	2025-02-04
C30002737	B	950-MFA-05102 C10001066	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
C30002738	B	C-950-XZ-05101 /950-JE-05103 C10000339	Missing cable tag SS , near the JB 950-JE-05103.	.		APolo 2025-01-13	2025-02-21	APolo 2025-02-21	2025-02-21
C30002739	B	C-950-XZ-05102 /950-JE-05103 C10000340	Missing cable tag SS , near the JB 950-JE-05103.	.		APolo 2025-01-13	2025-02-21	APolo 2025-02-21	2025-02-21
C30002768	B	C-950-MFA-05101/950-JE-05102	Missing identification tag side the 950-JE-05102. See attached photo.	.		Gtangianu 2025-01-14	2025-03-07	JKrizanic 2025-03-07	2025-03-07

Section 2.2 Exception Punch Lists (per discipline)

Project CROSSWIND

PUNCH LIST REPORT

NO DATA AVAILABLE

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	70-16	F&G Devices FZ-05 (Bess Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001001	A	950-MFA-05201 C10001475	Missing earthing cable on the instrument (950-MFA-05201).	.		Gtangianu 2024-11-28	2024-12-12	Ecarotenuto 2024-12-12	2024-12-12
C30000950	B	C-950-MFA-052 01/B400-FGS-0 03	Missing cable tag all along the route.	.		Gtangianu 2024-11-26	2025-02-26	Pschintu 2025-02-26	2025-02-26
C30000951	B	C-950-MFA-052 01/B400-FGS-0 03	Identification tag wires missing both side the C-950-MFA-05201/B400-FGS-003 connection.	.		Gtangianu 2024-11-26	2025-03-03	Gtangianu 2025-03-03	2025-03-03
C30000952	B	C-950-MFA-052 01/B400-FGS-0 03	-Bending radius is not within the specified limits. (stress on the input cable instrument MFA-05201).	.		Gtangianu 2024-11-26	2025-02-04	Gtangianu 2025-02-04	2025-02-04
C30001000	B	950-MFA-05201 C10001475	Missing tag plate on the instrument.	.		Gtangianu 2024-11-28	2025-01-22	Ecarotenuto 2025-01-22	2025-01-22
C30001002	B	950-MFA-05201 C10001475	The emergency glass is broken .. need too be change. (950-MFA-05201).	.		Gtangianu 2024-11-28	2024-12-12	Ecarotenuto 2024-12-12	2024-12-12
C30001089	B	950-FDZ-05102 C10000986	Missing the cross-ferruling (Cores) .inside instrument . (see document 123A90-DDL-IN-DG-40016 sh.3)	.		APolo 2024-11-30	2025-02-24	JKrizanic 2025-02-24	2025-02-24
C30001092	B	950-FDZ-05102 C10000986	The tag tie is made of plastic. To be replaced in AISI	.		APolo 2024-11-30	2025-02-25	AAndreani 2025-02-25	2025-02-25
C30001093	B	950-FDZ-05102 C10000986	Missing the separation system between different materials. (between steel and carbon steel). side 950-FDZ-05102	x.		APolo 2024-11-30	2025-01-21	AAndreani 2025-01-21	2025-01-21

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 70 Safety and Facility Systems

SUBSYSTEM 70-16 F&G Devices FZ-05 (Bess Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001094	B	C-950-FDZ-05102/950-JE-05101	the philosophy of cross-ferruling are wrong J.B. side 950-JE-05101 . (see document 123A90-DDL-IN-DG-40016 sh.3)	.		APolo 2024-11-30	2025-02-20	JKrizanic 2025-02-20	2025-02-20
C30001095	B	C-950-FDZ-05102/950-JE-05101	Missing cable tag SS , SIDE 950-JE-05101	.		APolo 2024-11-30	2025-02-04	APolo 2025-02-04	2025-02-04
C30001367	B	950-MFA-05104 C10001068	Missing the separation system between different materials. (between steel "support" and carbon steel "structure).	.		APolo 2024-12-05	2025-01-21	AAndreani 2025-01-21	2025-01-21
C30001368	B	950-MFA-05104 C10001068	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-05	2025-03-07	Gtangianu 2025-03-07	2025-03-07
C30001369	B	950-XZ-05101 C10001138	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-05	2025-03-07	Gtangianu 2025-03-07	2025-03-07
C30001370	B	950-XZ-05101 C10001138	Missing the separation system between different materials. (between steel "support" and carbon steel "structure).	.		APolo 2024-12-05	2025-01-21	AAndreani 2025-01-21	2025-01-21
C30001371	B	950-MFA-05101 C10001065	Missing the separation system between different materials. (between steel "support" and carbon steel "structure).	.		APolo 2024-12-05	2025-01-21	AAndreani 2025-01-21	2025-01-21
C30001372	B	950-MFA-05101 C10001065	the support is not well secured against vibration. another bracket needs to be added.	.		APolo 2024-12-05	2025-03-07	Gtangianu 2025-03-07	2025-03-07
C30001374	B	950-MFA-05101 C10001065	installation is not conforms to instrument installation details. (see 123A90-DDL-IN-DD-40017_ sh. 27) .	.		APolo 2024-12-05	2024-12-27	Ecarotenuto 2024-12-27	2024-12-27

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 70 Safety and Facility Systems
SUBSYSTEM 70-16 F&G Devices FZ-05 (Bess Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001376	B	950-MFA-05104 C10001068	installation is not conforms to instrument installation details. (see 123A90-DDL-IN-DD-40017_ sh. 27) .	.		APolo 2024-12-05	2024-12-27	Ecarotenuto 2024-12-27	2024-12-27
C30001614	B	C-950-FDZ-051 01/950-JE-0510 1	Identification tag wire missing side (950-FDZ-05101)connection.	.		Gtangianu 2024-12-10	2025-04-08	Gtangianu 2025-04-08	2025-04-08
C30001615	B	C-950-FDZ-051 01/950-JE-0510 1	Missing cable tag side the (950-JE-05101).	.		Gtangianu 2024-12-10	2025-01-02	Ecarotenuto 2025-01-02	2025-01-02
C30001616	B	C-950-FDZ-051 04/950-JE-0510 1	Identification tag wire missing side (950-FDZ-05104)connection.See attached photo.	.		Gtangianu 2024-12-10	2025-02-24	JKrizanic 2025-02-24	2025-02-24
C30001617	B	C-950-FDZ-051 04/950-JE-0510 1	Missing cable tag side the (950-JE-05101).See attached photo.	.		Gtangianu 2024-12-10	2025-01-02	Ecarotenuto 2025-01-02	2025-01-02
C30001680	B	C-950-GDZ-051 03/950-JE-0510 1	The cable need to be fix. See attached photo.	.		Gtangianu 2024-12-11	2025-01-23	Gtangianu 2025-01-23	2025-01-23
C30001681	B	C-950-GDZ-051 03/950-JE-0510 1	The cabletray are not properly support near the instrument (950-GDZ-05103). See attached photo.	.		Gtangianu 2024-12-11	2025-02-13	AAndreani 2025-02-13	2025-02-13
C30001682	B	C-950-GDZ-051 03/950-JE-0510 1	Missing grafoplast and tag wire on the shield, inside the instrument (-950-GDZ-05103).See attached photo.	.		Gtangianu 2024-12-11	2025-02-26	JKrizanic 2025-02-26	2025-02-26
C30001683	B	C-950-GDZ-051 03/950-JE-0510 1	Missing cable tag side the (950-JE-05101).	.		Gtangianu 2024-12-11	2025-01-02	Ecarotenuto 2025-01-02	2025-01-02

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	70	Safety and Facility Systems
SUBSYSTEM	70-16	F&G Devices FZ-05 (Bess Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001684	B	950-GDZ-05103 C10001042	DETAIL EARTHING THREADED STUD IS WRONG IN ASSEMBLY (see doc 123A90-FDL-EL-DD-20090 typical E-11). See	.		Gtangianu 2024-12-11	2025-01-22	Ecarotenuto 2025-01-22	2025-01-22
C30001685	B	C-950-FDZ-05103/950-JE-05101	Missing cable tag side the (950-JE-05103).	.		Gtangianu 2024-12-11	2025-01-29	APolo 2025-01-29	2025-01-29
C30001686	B	C-950-FDZ-05103/950-JE-05101	Missing grafoplast and tag wire on the shield, inside the instrument (-950-FDZ-05103).	.		Gtangianu 2024-12-11	2025-04-08	Gtangianu 2025-04-08	2025-04-08
C30001687	B	950-GDZ-05101 C10001040	DETAIL EARTHING THREADED STUD IS WRONG IN ASSEMBLY (see doc 123A90-FDL-EL-DD-20090 typical E-11). See	.		Gtangianu 2024-12-11	2025-01-22	Ecarotenuto 2025-01-22	2025-01-22
C30001688	B	C-950-GDZ-05101/950-JE-05101	The cable need to be fix.See attached photo.	.		Gtangianu 2024-12-11	2025-01-23	Gtangianu 2025-01-23	2025-01-23
C30001689	B	C-950-GDZ-05101/950-JE-05101	Missing plug on the unistrut . Below the instrument. See attached photo.	.		Gtangianu 2024-12-11	2025-01-23	Gtangianu 2025-01-23	2025-01-23
C30001690	B	C-950-GDZ-05101/950-JE-05101	The cabletray are not properly fix . the support is not tight near the instrument (950-GDZ-05101). See attached photo.	.		Gtangianu 2024-12-11	2025-01-23	Gtangianu 2025-01-23	2025-01-23
C30001691	B	950-GDZ-05102 C10001041	earthing cable need to be fix. See attached photo.	.		Gtangianu 2024-12-11	2025-02-03	APolo 2025-02-03	2025-02-03
C30001692	B	C-950-GDZ-05102/950-JE-05101	Missing grafoplast and tag wire on the shield, inside the instrument (-950-GDZ-05102).See attached photo.	.		Gtangianu 2024-12-11	2025-02-26	JKrizanic 2025-02-26	2025-02-26

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 70 Safety and Facility Systems
SUBSYSTEM 70-16 F&G Devices FZ-05 (Bess Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001693	B	C-950-GDZ-05102/950-JE-05101	Missing cable tag side the (950-JE-05101).	.		Gtangianu 2024-12-11	2025-01-02	Ecarotenuto 2025-01-02	2025-01-02
C30001694	B	950-GDZ-05104 C10001043	earthing cable need to be fix. See attached photo.	.		Gtangianu 2024-12-11	2025-02-03	APolo 2025-02-03	2025-02-03
C30001695	B	950-GDZ-05104 C10001043	DETAIL EARTHING THREADED STUD IS WRONG IN ASSEMBLY (see doc 123A90-FDL-EL-DD-20090 typical E-11). See	.		Gtangianu 2024-12-11	2025-01-23	Gtangianu 2025-01-23	2025-01-23
C30001696	B	C-950-GDZ-05104/950-JE-05101	Missing cable tag side the (950-JE-05101).	.		Gtangianu 2024-12-11	2025-01-02	Ecarotenuto 2025-01-02	2025-01-02
C30001698	B	C-950-GDZ-05104/950-JE-05101	Missing grafoplast and tag wire on the shield, inside the instrument (-950-GDZ-05104).	.		Gtangianu 2024-12-11	2025-04-08	Gtangianu 2025-04-08	2025-04-08
C30001700	B	C-950-GDZ-05105/950-JE-05101	The cabletray are not properly support near the instrument (950-GDZ-05105).	.		Gtangianu 2024-12-11	2025-02-13	AAndreani 2025-02-13	2025-02-13
C30001701	B	C-950-GDZ-05105/950-JE-05101	Missing grafoplast and tag wire on the shield, inside the instrument (-950-GDZ-05105).	.		Gtangianu 2024-12-11	2025-02-26	JKrizanic 2025-02-26	2025-02-26
C30001702	B	C-950-GDZ-05105/950-JE-05101	Missing cable tag side the (950-JE-05101).	.		Gtangianu 2024-12-11	2025-01-02	Ecarotenuto 2025-01-02	2025-01-02
C30001703	B	950-GDZ-05105 C10001044	DETAIL EARTHING THREADED STUD IS WRONG IN ASSEMBLY (see doc 123A90-FDL-EL-DD-20090 typical E-11). See	.		Gtangianu 2024-12-11	2025-01-23	Gtangianu 2025-01-23	2025-01-23

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 70 Safety and Facility Systems
SUBSYSTEM 70-16 F&G Devices FZ-05 (Bess Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001704	B	950-GDZ-05105 C10001044	earthing cable need to be fix. See attached photo.	.		Gtangianu 2024-12-11	2025-02-03	APolo 2025-02-03	2025-02-03
C30001705	B	950-GDZ-05106 C10001045	Earthing cable need to be fix. See attached photo.	.		Gtangianu 2024-12-12	2025-02-03	APolo 2025-02-03	2025-02-03
C30001706	B	C-950-GDZ-05106/950-JE-05101	Missing cable tag side the (950-JE-05101).	.		Gtangianu 2024-12-12	2025-01-02	Ecarotenuto 2025-01-02	2025-01-02
C30001707	B	C-950-GDZ-05106/950-JE-05101	Missing grafoplast and tag wire on the shield, inside the instrument (-950-GDZ-05106).	.		Gtangianu 2024-12-12	2025-02-26	JKrizanic 2025-02-26	2025-02-26
C30001725	B	C-950-XZ-05103/950-JE-05103 C10000341	The installation cabletray as not completed below the (950-JE-05103).See attached photo.	.		Gtangianu 2024-12-12	2025-01-29	APolo 2025-01-29	2025-01-29
C30001727	B	950-MFA-05103 C10001067	The support is not well secured against vibration. another support needs to be added.	.		Gtangianu 2024-12-12	2025-03-07	Gtangianu 2025-03-07	2025-03-07
C30001729	B	950-XZ-05104 C10001141	The support is not well secured against vibration. another support needs to be added.	.		Gtangianu 2024-12-12	2025-03-07	Gtangianu 2025-03-07	2025-03-07
C30001731	B	C-950-XZ-05104/950-JE-05103 C10000342	The installation cabletray as not completed below the (950-JE-05103).See attached photo.	.		Gtangianu 2024-12-12	2025-01-29	APolo 2025-01-29	2025-01-29
C30001733	B	950-XZ-05103 C10001140	The support is not well secured against vibration. another support needs to be added.	.		Gtangianu 2024-12-12	2025-03-07	Gtangianu 2025-03-07	2025-03-07

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	70	Safety and Facility Systems
SUBSYSTEM	70-16	F&G Devices FZ-05 (Bess Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30002735	B	C-950-MFA-05102/950-JE-05102	Missing cable tag SS , near the JB 950-JE-05102.	.		APolo 2025-01-13	2025-02-21	JKrizanic 2025-02-21	2025-02-21
C30002736	B	950-MFA-05102 C10001066	Missing n°1 fixing bolt	.		APolo 2025-01-13	2025-02-04	APolo 2025-02-04	2025-02-04
C30002737	B	950-MFA-05102 C10001066	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
C30002738	B	C-950-XZ-05101 /950-JE-05103 C10000339	Missing cable tag SS , near the JB 950-JE-05103.	.		APolo 2025-01-13	2025-02-21	APolo 2025-02-21	2025-02-21
C30002739	B	C-950-XZ-05102 /950-JE-05103 C10000340	Missing cable tag SS , near the JB 950-JE-05103.	.		APolo 2025-01-13	2025-02-21	APolo 2025-02-21	2025-02-21
C30002768	B	C-950-MFA-05101/950-JE-05102	Missing identification tag side the 950-JE-05102. See attached photo.	.		Gtangianu 2025-01-14	2025-03-07	JKrizanic 2025-03-07	2025-03-07

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001698

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001461	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-05104/950-JE-05101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

Missing grafoplast and tag wire on the shield, inside the instrument (-950-GDZ-05104).

Name: Giovanni Tangianu
Date: 2024-12-11
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	2024-12-11
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

C30001700

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001462	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-05105/950-JE-05101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

The cabletray are not properly support near the instrument (950-GDZ-05105).

Name: Giovanni Tangianu

Date: 2024-12-11

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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-02-13

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001701

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001462	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-05105/950-JE-05101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

Missing grafoplast and tag wire on the shield, inside the instrument (-950-GDZ-05105).

Name: Giovanni Tangianu
Date: 2024-12-11
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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic
Date: 2025-02-26
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001702

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001462	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-05105/950-JE-05101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

Missing cable tag side the (950-JE-05101).

Name: Giovanni Tangianu

Date: 2024-12-11

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	2024-12-11
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

C30001703

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001044	1.4 Discipline	Instrumental
1.2 Item	950-GDZ-05105	H2 GD FZ-05 BESS Area	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

DETAIL EARTHING THREADED STUD IS WRONG IN ASSEMBLY (see doc 123A90-FDL-EL-DD-20090 typical E-11).
See attached photo.

Name: Giovanni Tangianu
Date: 2024-12-11
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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Done.

Name: Giovanni Tangianu
Date: 2025-01-23
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001704

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001044	1.4 Discipline	Instrumental
1.2 Item	950-GDZ-05105	H2 GD FZ-05 BESS Area	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

earthing cable need to be fix. See attached photo.

Name: Giovanni Tangianu

Date: 2024-12-11

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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Alessio Polo

Date: 2025-02-03

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


5
5Iq2

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001705

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001045	1.4 Discipline	Instrumental
1.2 Item	950-GDZ-05106	H2 GD FZ-05 BESS Area	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

Earthing cable need to be fix. See attached photo.

Name: Giovanni Tangianu

Date: 2024-12-12

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	2024-12-12
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Alessio Polo

Date: 2025-02-03

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


5
5Iq2

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001706

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001463	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-05106/950-JE-05101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

Missing cable tag side the (950-JE-05101).

Name: Giovanni Tangianu

Date: 2024-12-12

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	2024-12-12
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

C30001707

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001463	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-05106/950-JE-05101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

Missing grafoplast and tag wire on the shield, inside the instrument (-950-GDZ-05106).

Name: Giovanni Tangianu
Date: 2024-12-12
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	2024-12-12
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic
Date: 2025-02-26
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001725

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000341	1.4 Discipline	Instrumental
1.2 Item	C-950-XZ-05103/950-JE-05103	SOUNDER / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

The installation cabletray as not completed below the (950-JE-05103).See attached photo.

Name: Giovanni Tangianu

Date: 2024-12-12

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	2024-12-12
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

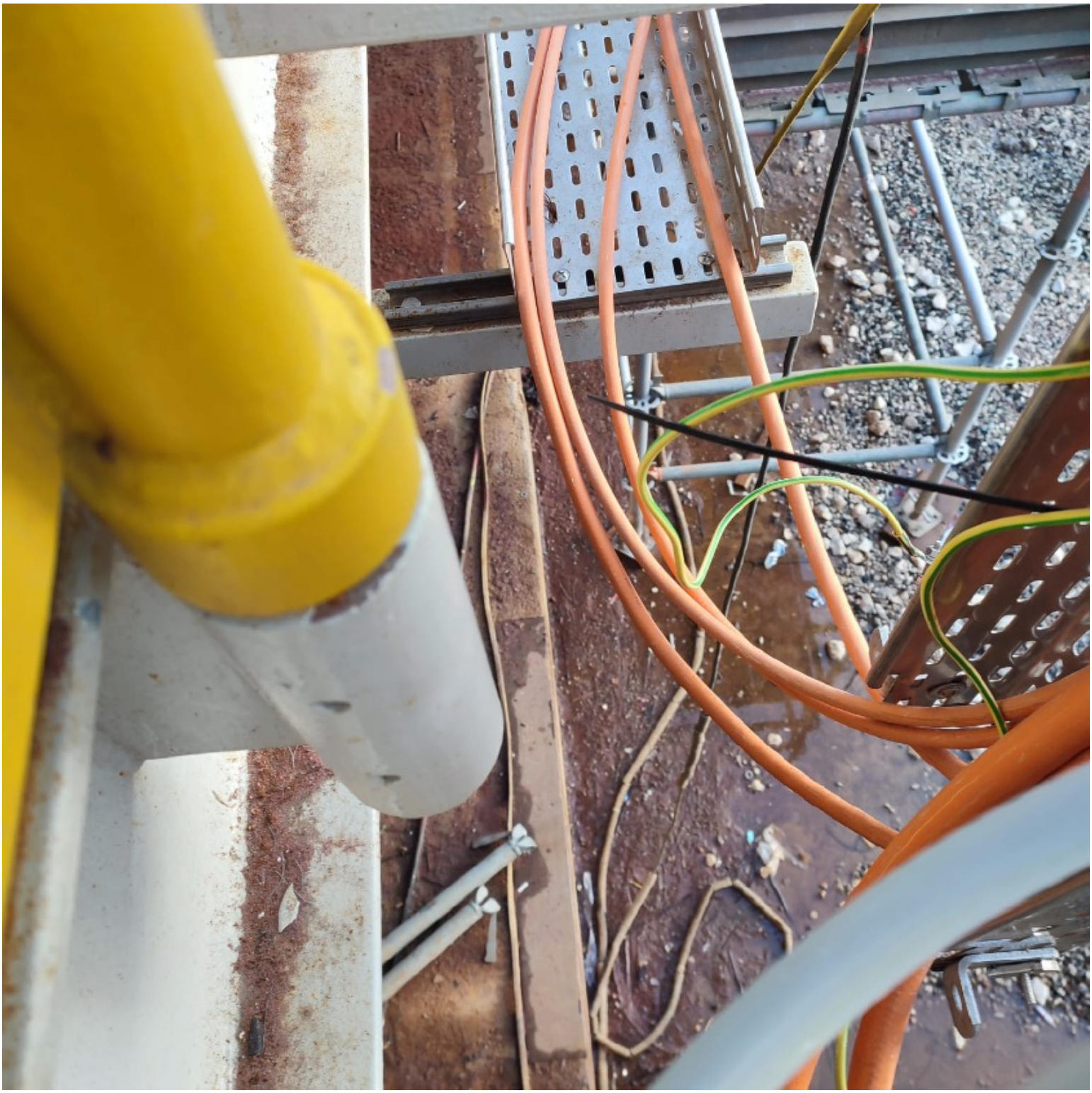
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001727

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001067	1.4 Discipline	Instrumental
1.2 Item	950-MFA-05103	FZ-05 MFA Activation	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

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

Name: Giovanni Tangianu

Date: 2024-12-12

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	2024-12-12
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

C30001729

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001141	1.4 Discipline	Instrumental
1.2 Item	950-XZ-05104	FZ-05 Sounder Activation	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

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

Name: Giovanni Tangianu

Date: 2024-12-12

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	2024-12-12
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

C30001731

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000342	1.4 Discipline	Instrumental
1.2 Item	C-950-XZ-05104/950-JE-05103	SOUNDER / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

The installation cabletray as not completed below the (950-JE-05103).See attached photo.

Name: Giovanni Tangianu

Date: 2024-12-12

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	2024-12-12
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

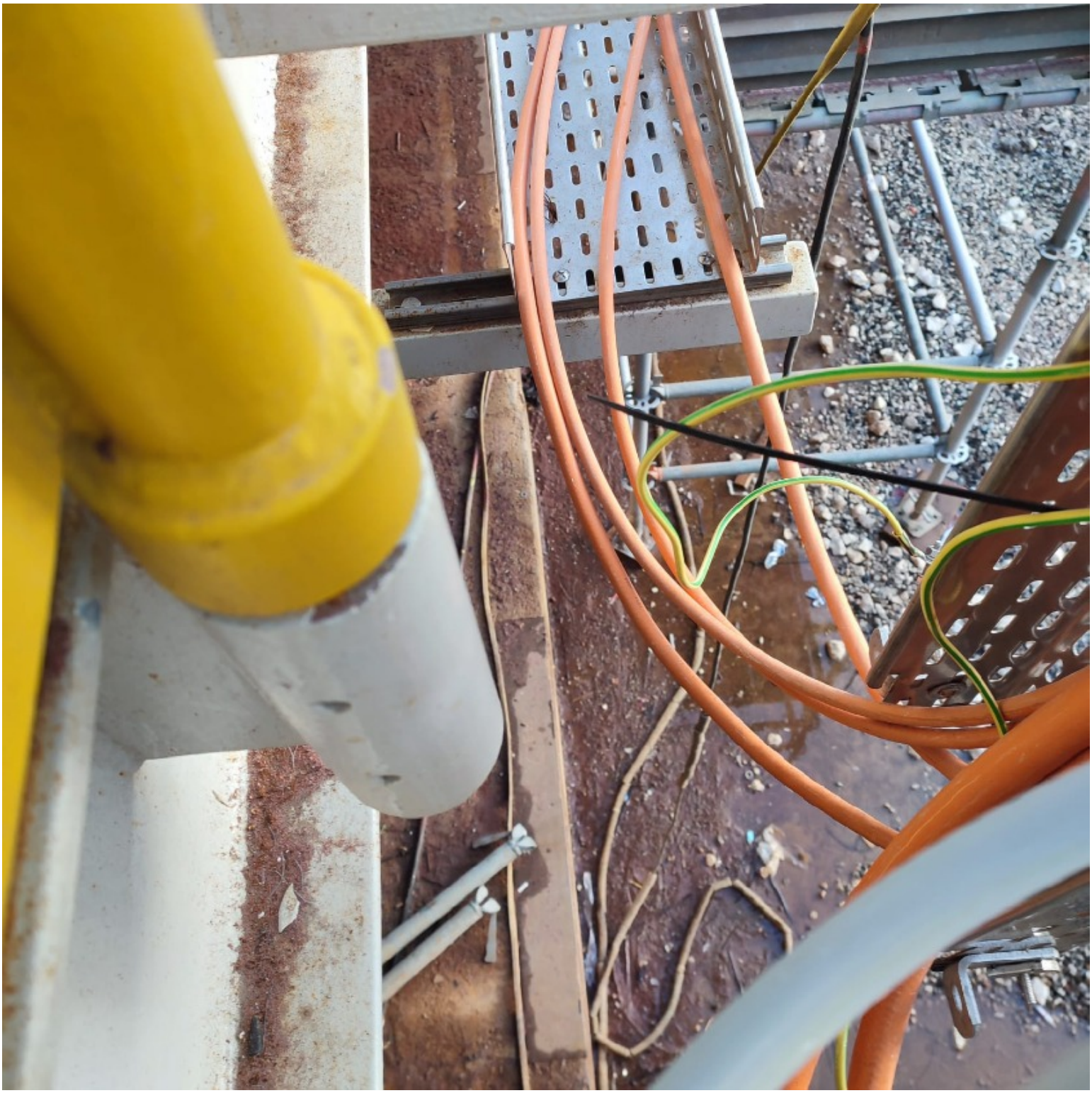
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001733

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001140	1.4 Discipline	Instrumental
1.2 Item	950-XZ-05103	FZ-05 Sounder Activation	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

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

Name: Giovanni Tangianu

Date: 2024-12-12

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	2024-12-12
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

C30002735

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000304	1.4 Discipline	Instrumental
1.2 Item	C-950-MFA-05102/950-JE-05102	MANUAL FIRE ALARM / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

Missing cable tag SS , near the JB 950-JE-05102.

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: 2025-02-21

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002736

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001066	1.4 Discipline	Instrumental
1.2 Item	950-MFA-05102	FZ-05 MFA Activation	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

Missing n°1 fixing bolt

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:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002737

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001066	1.4 Discipline	Instrumental
1.2 Item	950-MFA-05102	FZ-05 MFA Activation	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess 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

C30002738

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000339	1.4 Discipline	Instrumental
1.2 Item	C-950-XZ-05101/950-JE-05103	SOUNDER / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

Missing cable tag SS , near the JB 950-JE-05103.

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: 2025-02-21

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002739

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000340	1.4 Discipline	Instrumental
1.2 Item	C-950-XZ-05102/950-JE-05103	SOUNDER / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

Missing cable tag SS , near the JB 950-JE-05103.

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: 2025-02-21

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002768

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000303	1.4 Discipline	Instrumental
1.2 Item	C-950-MFA-05101/950-JE-05102	MANUAL FIRE ALARM / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

Missing identification tag side the 950-JE-05102.

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: 2025-03-07

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


C-950-MFA-05103/950-JE-05102

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001092

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000986	1.4 Discipline	Instrumental
1.2 Item	950-FDZ-05102	Flame Detector - FZ-05 BESS Area	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

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

Name: Alessio Polo

Date: 2024-11-30

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	2024-11-30
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-05102

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001093

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000986	1.4 Discipline	Instrumental
1.2 Item	950-FDZ-05102	Flame Detector - FZ-05 BESS Area	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

Missing the separation system between different materials. (between steel and carbon steel). side 950-FDZ-05102

Name: Alessio Polo
Date: 2024-11-30
Signature:

3 - DEFECT ASSESSMENT

x.

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	2024-11-30
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:


UV-IR Detector
FlameSpec-UV-IR

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001094

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000238	1.4 Discipline	Instrumental
1.2 Item	C-950-FDZ-05102/950-JE-05101	FLAME DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

the philosophy of cross-ferruling are wrong J.B. side 950-JE-05101 . (see document 123A90-DDL-IN-DG-40016 sh.3)

Name: Alessio Polo
Date: 2024-11-30
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	2024-11-30
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

C30001095

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000238	1.4 Discipline	Instrumental
1.2 Item	C-950-FDZ-05102/950-JE-05101	FLAME DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

Missing cable tag SS , SIDE 950-JE-05101

Name: Alessio Polo

Date: 2024-11-30

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	2024-11-30
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:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001367

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001068	1.4 Discipline	Instrumental
1.2 Item	950-MFA-05104	FZ-05 MFA Activation	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

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

Name: Alessio Polo
Date: 2024-12-05
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	2024-12-05
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

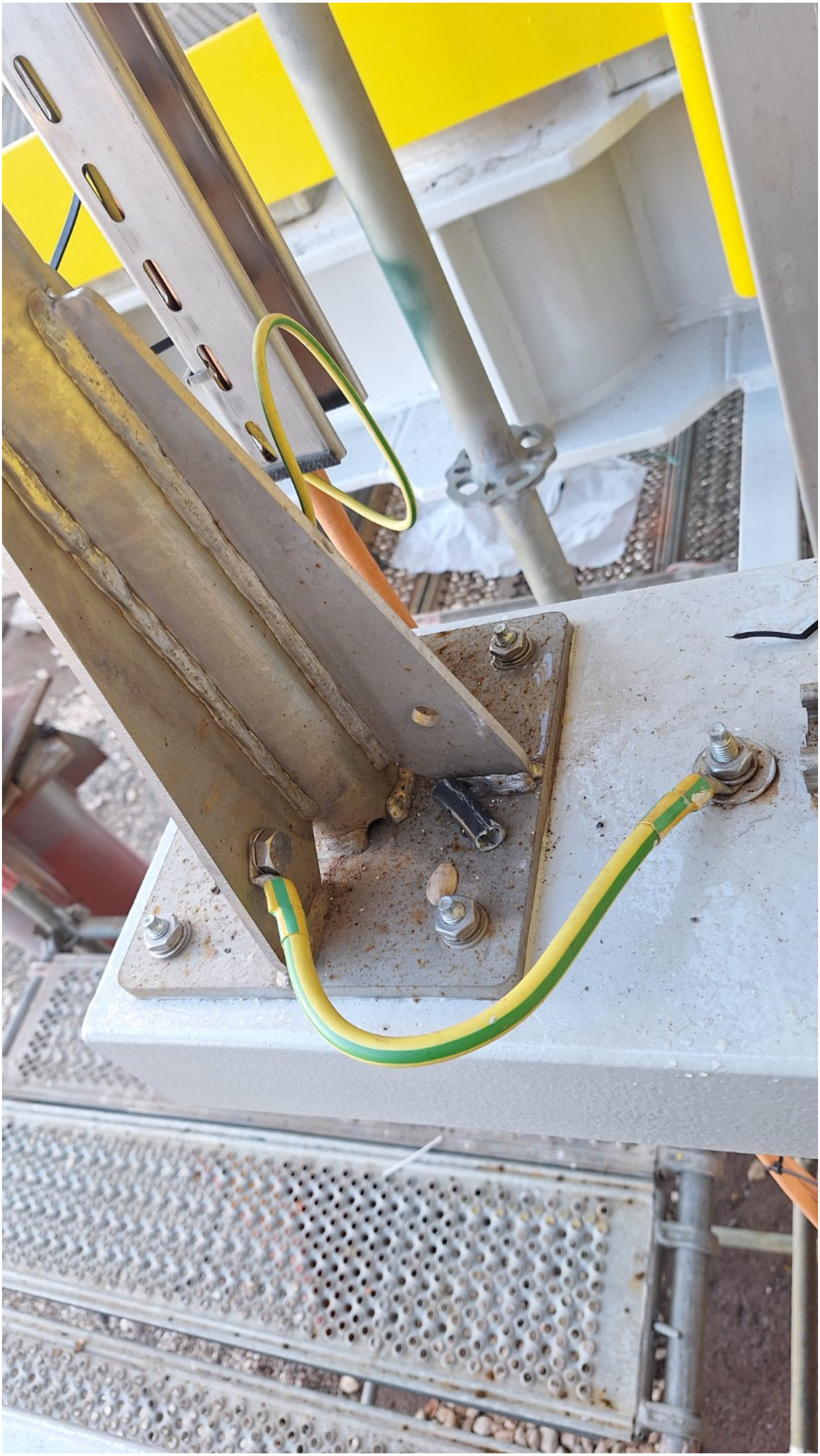
5 - CLEARANCE CHECK

DONE

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

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001368

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001068	1.4 Discipline	Instrumental
1.2 Item	950-MFA-05104	FZ-05 MFA Activation	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

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

Name: Alessio Polo

Date: 2024-12-05

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	2024-12-05
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:


PASSED
INSPECTION

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001369

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001138	1.4 Discipline	Instrumental
1.2 Item	950-XZ-05101	FZ-05 Sounder Activation	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

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

Name: Alessio Polo

Date: 2024-12-05

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	2024-12-05
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:


PASSED
INSPECTION

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001370

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001138	1.4 Discipline	Instrumental
1.2 Item	950-XZ-05101	FZ-05 Sounder Activation	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

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

Name: Alessio Polo
Date: 2024-12-05
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	2024-12-05
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

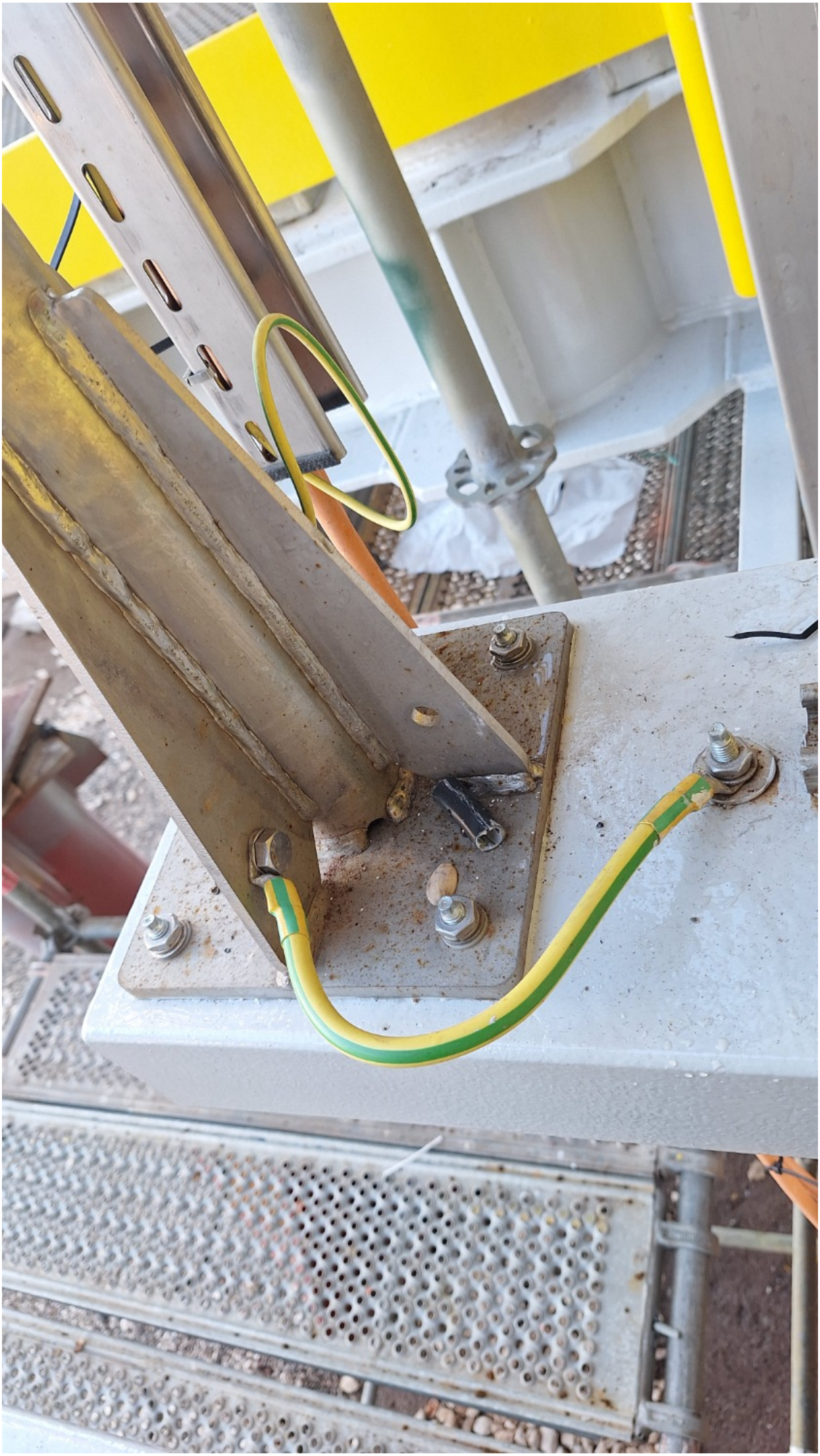
5 - CLEARANCE CHECK

DONE

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

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001371

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001065	1.4 Discipline	Instrumental
1.2 Item	950-MFA-05101	FZ-05 MFA Activation	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

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

Name: Alessio Polo

Date: 2024-12-05

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	2024-12-05
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

C30001372

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001065	1.4 Discipline	Instrumental
1.2 Item	950-MFA-05101	FZ-05 MFA Activation	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

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

Name: Alessio Polo

Date: 2024-12-05

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	2024-12-05
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:


PASSED
INSPECTION

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001374

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001065	1.4 Discipline	Instrumental
1.2 Item	950-MFA-05101	FZ-05 MFA Activation	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

installation is not conforms to instrument installation details. (see 123A90-DDL-IN-DD-40017_ sh. 27) .

Name: Alessio Polo
Date: 2024-12-05
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	2024-12-05
3.5 Action by	ENG Engineering	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

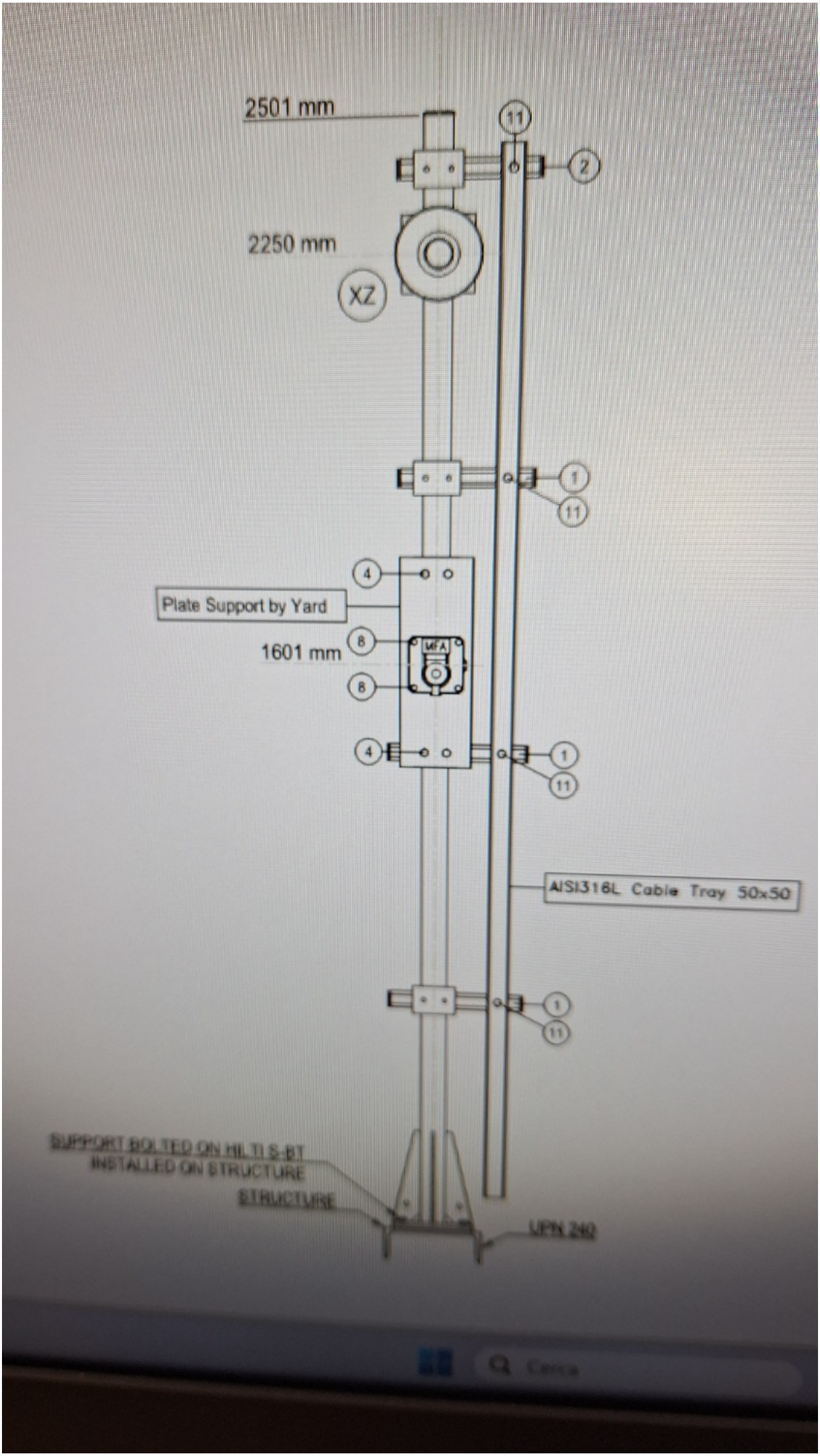
5 - CLEARANCE CHECK

RLMU DONE

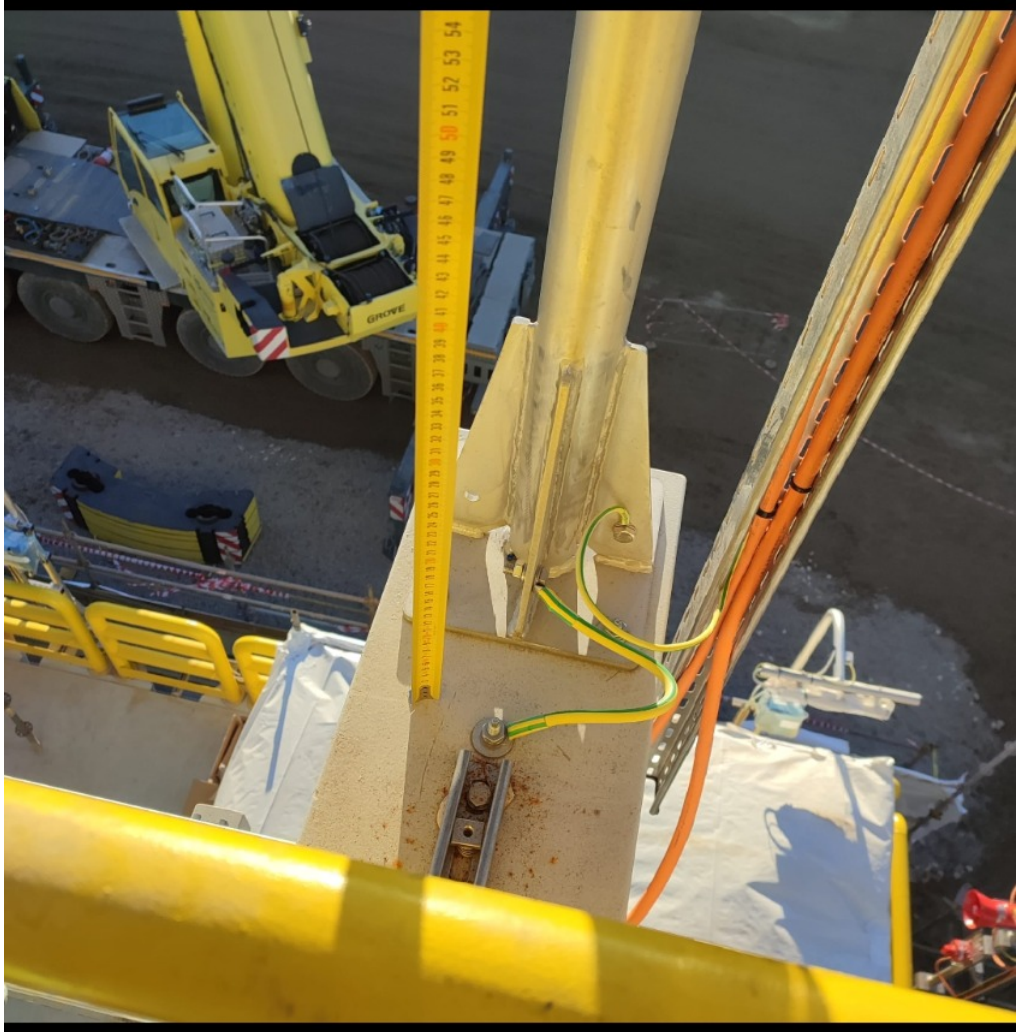
Name: Eleonora Carotenuto
Date: 2024-12-27
Signature:

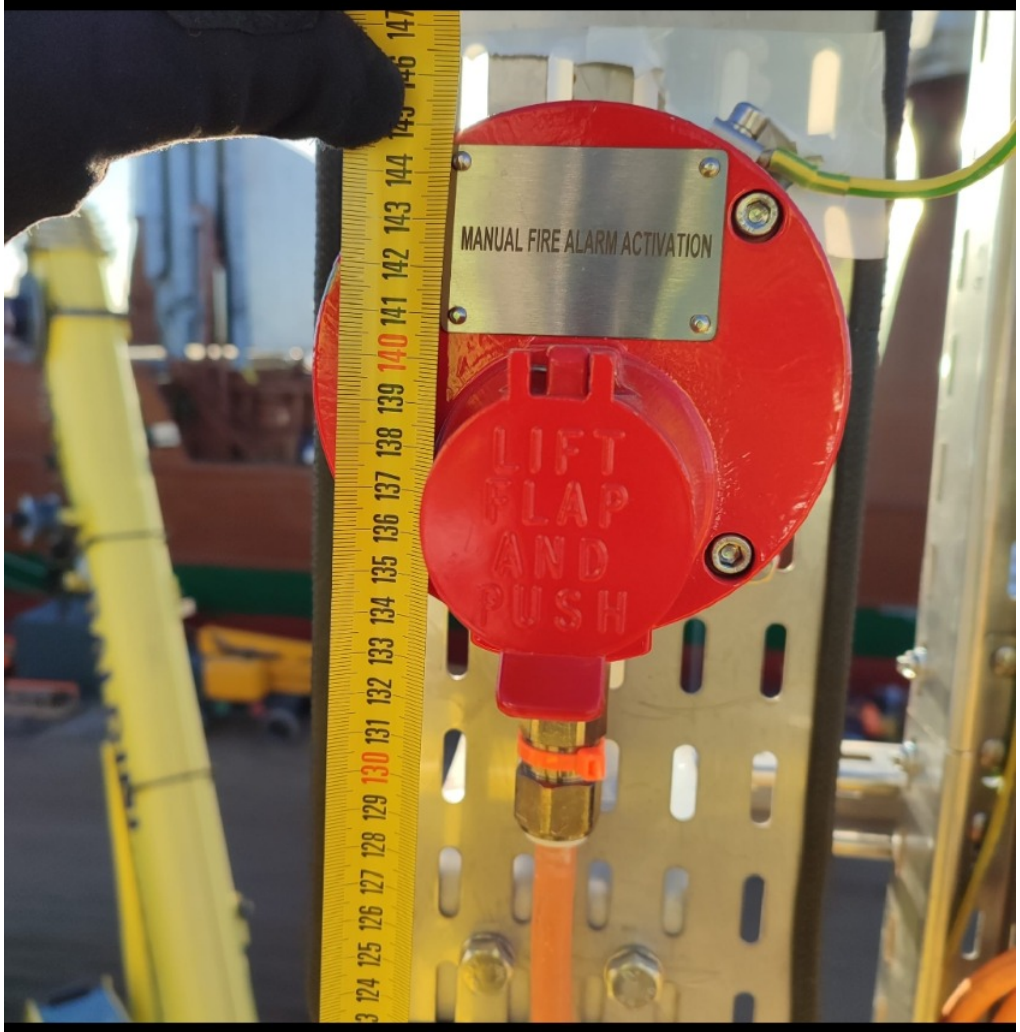
6- CLEARANCE APPROVAL

Name:
Date:
Signature:


2501 mm
11
2
2250 mm
XZ
1
11
4
Plate Support by Yard
8
1601 mm
MFA
8
4
1
11
AISI316L Cable Tray 50x50
1
11
SUPPORT BOLTED ON HILTI S-BT
INSTALLED ON STRUCTURE
STRUCTURE
UPN 240




GROVE


MANUAL FIRE ALARM ACTIVATION
LIFT FLAP AND PUSH

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001376

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001068	1.4 Discipline	Instrumental
1.2 Item	950-MFA-05104	FZ-05 MFA Activation	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

installation is not conforms to instrument installation details. (see 123A90-DDL-IN-DD-40017_ sh. 27) .

Name: Alessio Polo
Date: 2024-12-05
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	2024-12-05
3.5 Action by	ENG Engineering	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

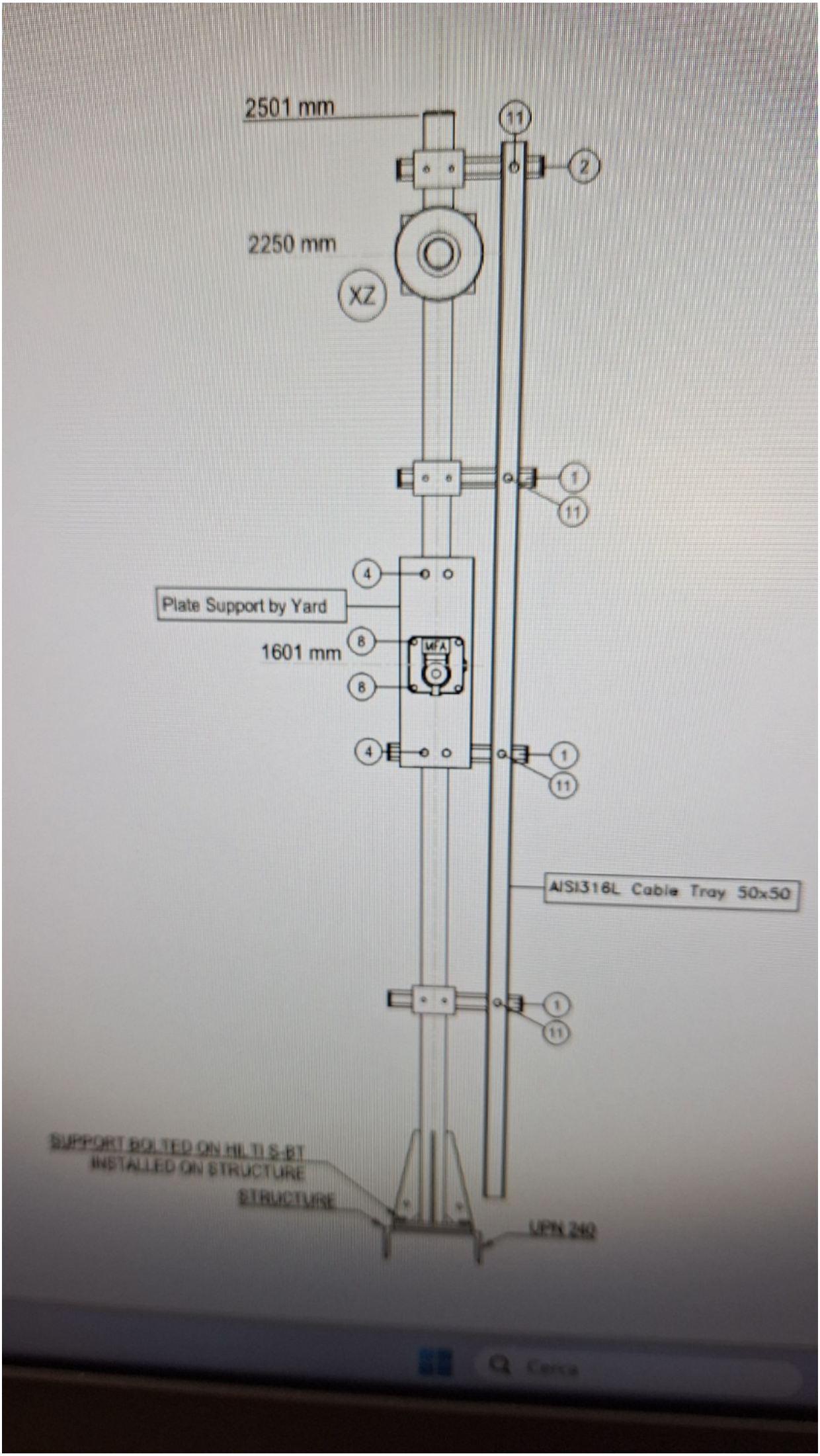
5 - CLEARANCE CHECK

RLMU DONE

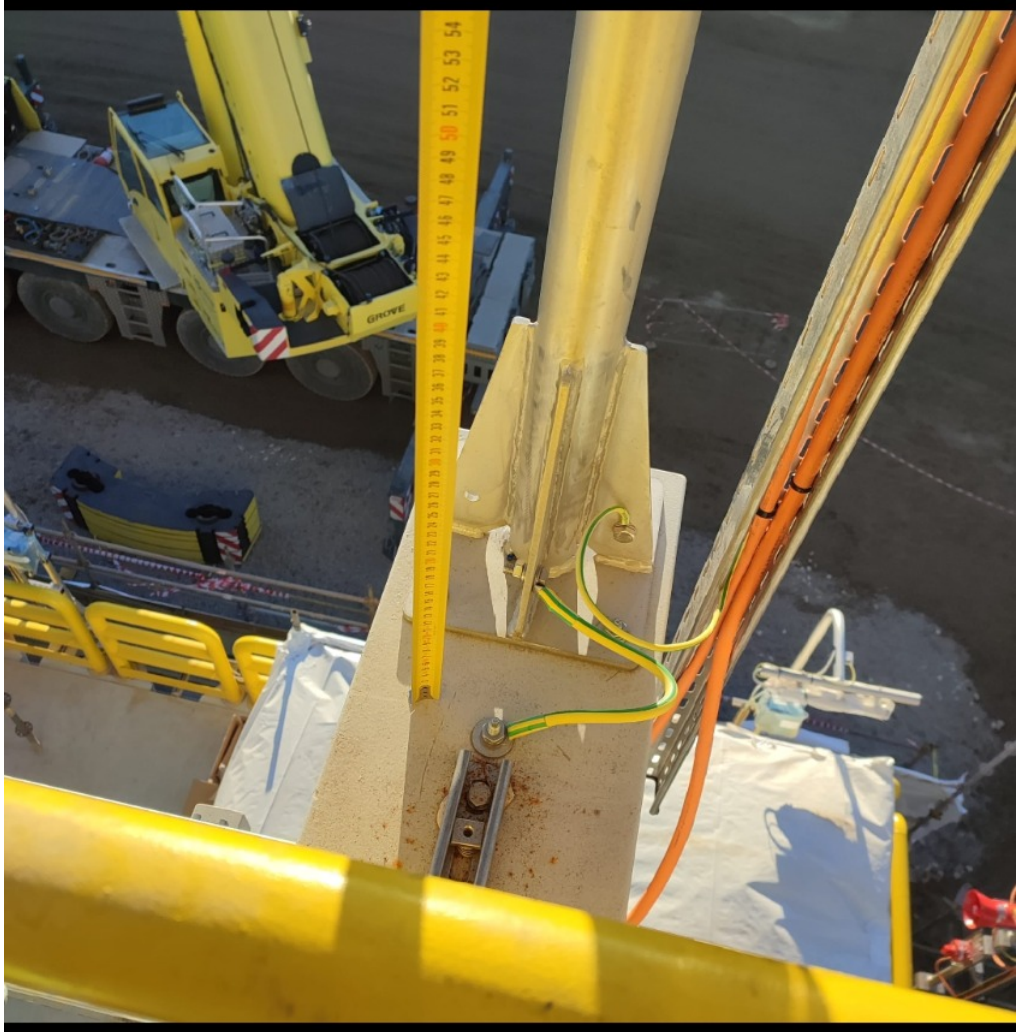
Name: Eleonora Carotenuto
Date: 2024-12-27
Signature:

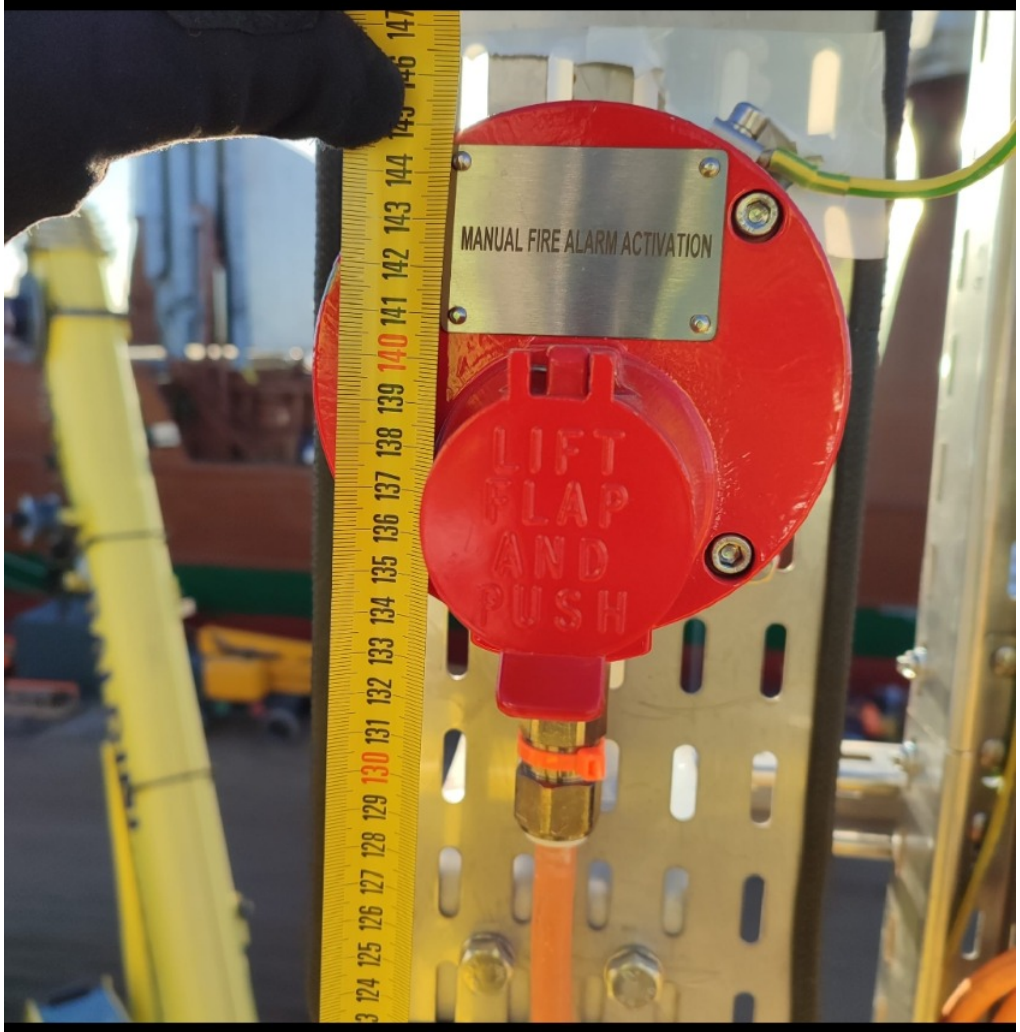
6- CLEARANCE APPROVAL

Name:
Date:
Signature:


2501 mm
11
2
2250 mm
XZ
1
11
4
Plate Support by Yard
8
1601 mm
MFA
8
4
1
11
AISI316L Cable Tray 50x50
1
11
SUPPORT BOLTED ON HILTI S-BT
INSTALLED ON STRUCTURE
STRUCTURE
UPN 240




GROVE


MANUAL FIRE ALARM ACTIVATION
LIFT FLAP AND PUSH

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001614

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000237	1.4 Discipline	Instrumental
1.2 Item	C-950-FDZ-05101/950-JE-05101	FLAME DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

Identification tag wire missing side (950-FDZ-05101)connection.

Name: Giovanni Tangianu

Date: 2024-12-10

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	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

C30001615

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000237	1.4 Discipline	Instrumental
1.2 Item	C-950-FDZ-05101/950-JE-05101	FLAME DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

Missing cable tag side the (950-JE-05101).

Name: Giovanni Tangianu

Date: 2024-12-10

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	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: 2025-01-02

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001616

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000240	1.4 Discipline	Instrumental
1.2 Item	C-950-FDZ-05104/950-JE-05101	FLAME DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

Identification tag wire missing side (950-FDZ-05104)connection.See attached photo.

Name: Giovanni Tangianu

Date: 2024-12-10

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	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: 2025-02-24

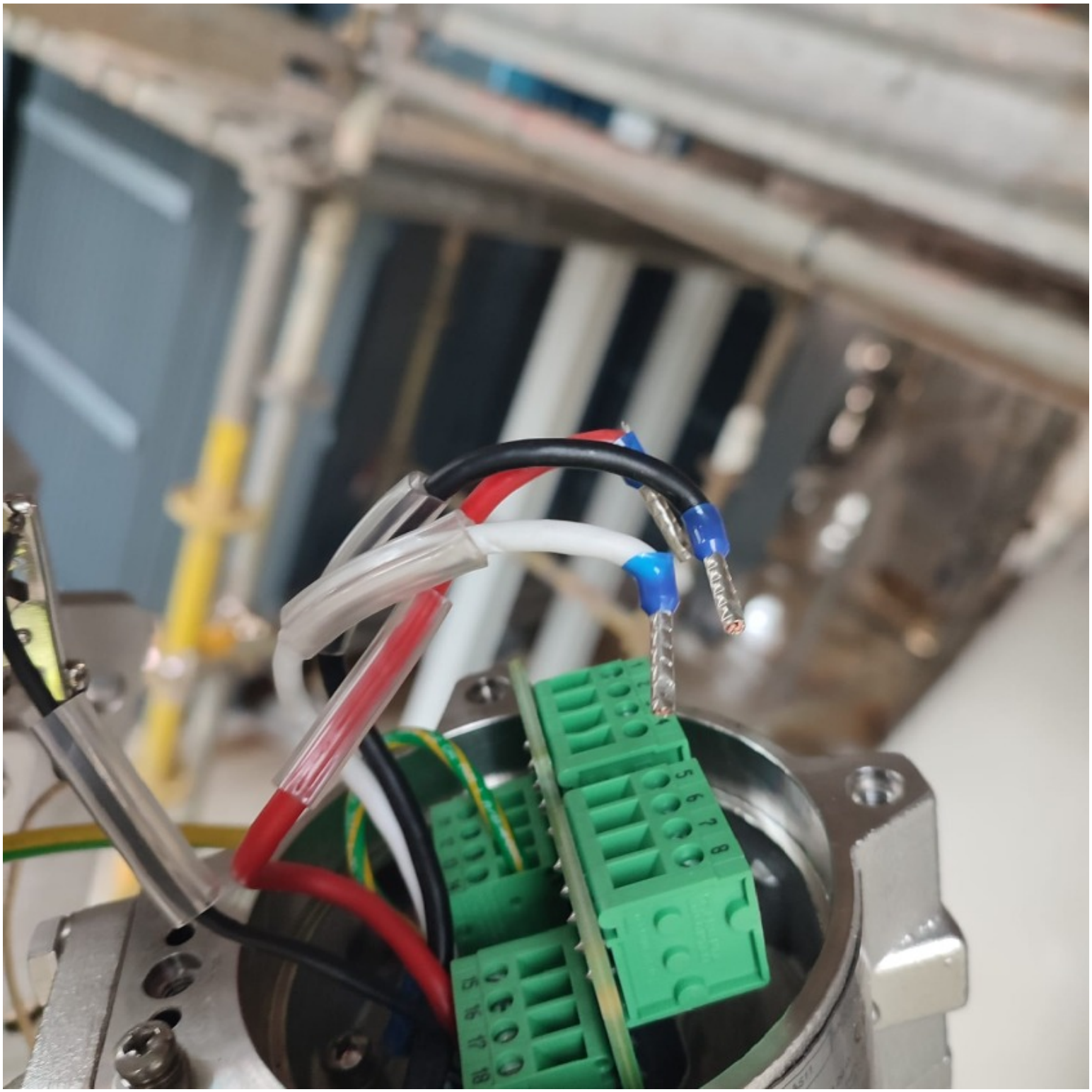
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001617

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000240	1.4 Discipline	Instrumental
1.2 Item	C-950-FDZ-05104/950-JE-05101	FLAME DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

Missing cable tag side the (950-JE-05101).See attached photo.

Name: Giovanni Tangianu

Date: 2024-12-10

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	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: 2025-01-02

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001680

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000243	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-05103/950-JE-05101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

The cable need to be fix. See attached photo.

Name: Giovanni Tangianu

Date: 2024-12-11

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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

The cable is fix.

Name: Giovanni Tangianu

Date: 2025-01-23

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001681

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000243	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-05103/950-JE-05101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

The cabletray are not properly support near the instrument (950-GDZ-05103). See attached photo.

Name: Giovanni Tangianu

Date: 2024-12-11

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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-02-13

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001682

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000243	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-05103/950-JE-05101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

Missing grafoplast and tag wire on the shield, inside the instrument (-950-GDZ-05103).See attached photo.

Name: Giovanni Tangianu

Date: 2024-12-11

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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic

Date: 2025-02-26

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001683

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000243	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-05103/950-JE-05101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

Missing cable tag side the (950-JE-05101).

Name: Giovanni Tangianu

Date: 2024-12-11

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	2024-12-11
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

C30001684

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001042	1.4 Discipline	Instrumental
1.2 Item	950-GDZ-05103	H2 GD FZ-05 BESS Area	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

DETAIL EARTHING THREADED STUD IS WRONG IN ASSEMBLY (see doc 123A90-FDL-EL-DD-20090 typical E-11).
See attached photo.

Name: Giovanni Tangianu
Date: 2024-12-11
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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Done

Name: Eleonora Carotenuto
Date: 2025-01-22
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001685

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000239	1.4 Discipline	Instrumental
1.2 Item	C-950-FDZ-05103/950-JE-05101	FLAME DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

Missing cable tag side the (950-JE-05103).

Name: Giovanni Tangianu

Date: 2024-12-11

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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Alessio Polo

Date: 2025-01-29

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001686

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000239	1.4 Discipline	Instrumental
1.2 Item	C-950-FDZ-05103/950-JE-05101	FLAME DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

Missing grafoplast and tag wire on the shield, inside the instrument (-950-FDZ-05103).

Name: Giovanni Tangianu

Date: 2024-12-11

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	2024-12-11
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

C30001687

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001040	1.4 Discipline	Instrumental
1.2 Item	950-GDZ-05101	H2 GD FZ-05 BESS Area	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

DETAIL EARTHING THREADED STUD IS WRONG IN ASSEMBLY (see doc 123A90-FDL-EL-DD-20090 typical E-11).
See attached photo.

Name: Giovanni Tangianu
Date: 2024-12-11
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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

Name: Eleonora Carotenuto
Date: 2025-01-22
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001688

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000241	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-05101/950-JE-05101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

The cable need to be fix.See attached photo.

Name: Giovanni Tangianu

Date: 2024-12-11

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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Giovanni Tangianu

Date: 2025-01-23

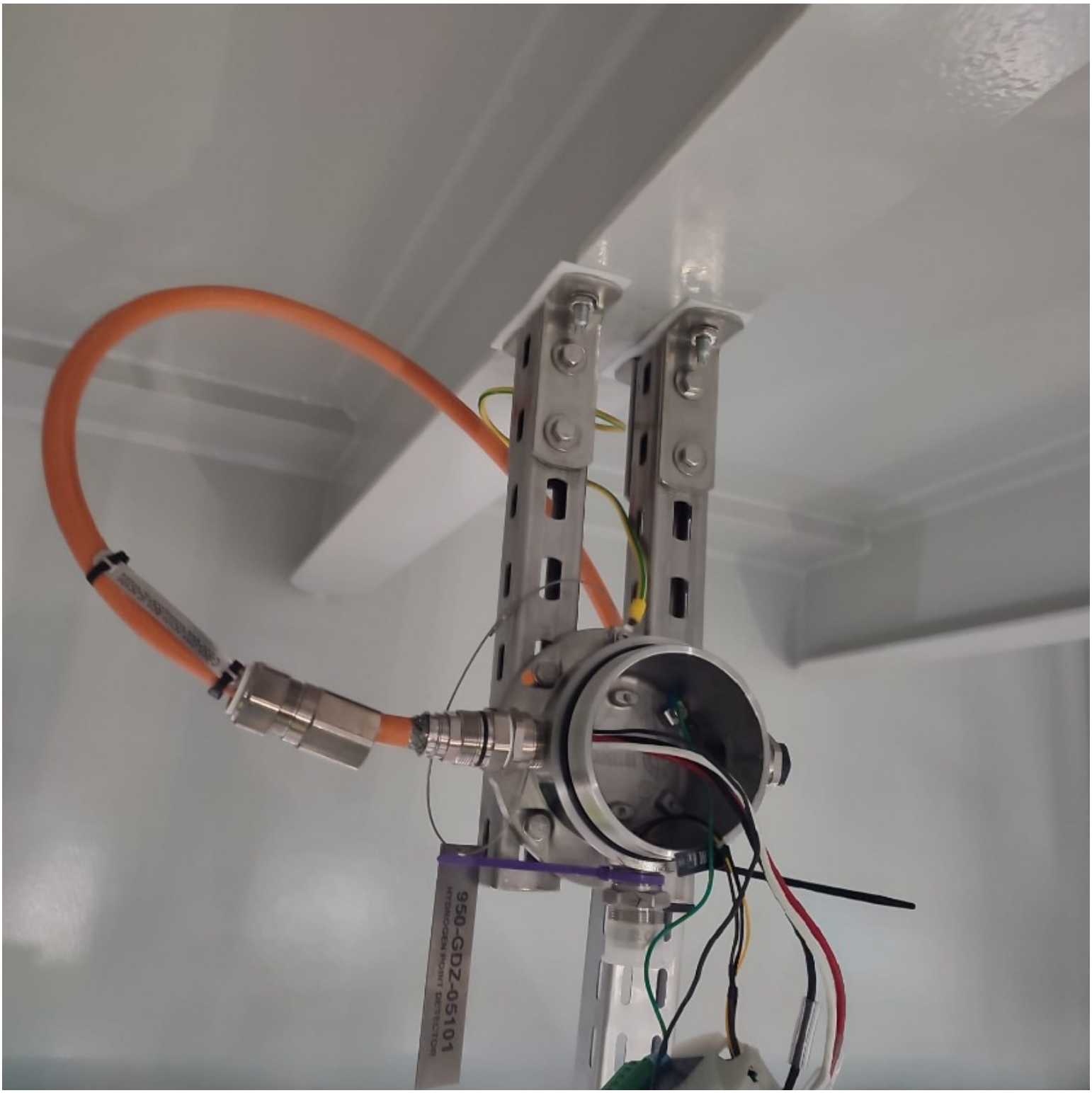
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


950-GDZ-05101

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001689

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000241	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-05101/950-JE-05101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

Missing plug on the unistrut . Below the instrument. See attached photo.

Name: Giovanni Tangianu

Date: 2024-12-11

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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-01-23

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001690

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000241	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-05101/950-JE-05101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

The cabletray are not properly fix . the support is not tight near the instrument (950-GDZ-05101). See attached photo.

Name: Giovanni Tangianu

Date: 2024-12-11

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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

FIXED.

Name: Giovanni Tangianu

Date: 2025-01-23

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001691

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001041	1.4 Discipline	Instrumental
1.2 Item	950-GDZ-05102	H2 GD FZ-05 BESS Area	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

earthing cable need to be fix. See attached photo.

Name: Giovanni Tangianu

Date: 2024-12-11

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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Alessio Polo

Date: 2025-02-03

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


5
5Iq2

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001692

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000242	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-05102/950-JE-05101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

Missing grafoplast and tag wire on the shield, inside the instrument (-950-GDZ-05102).See attached photo.

Name: Giovanni Tangianu
Date: 2024-12-11
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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

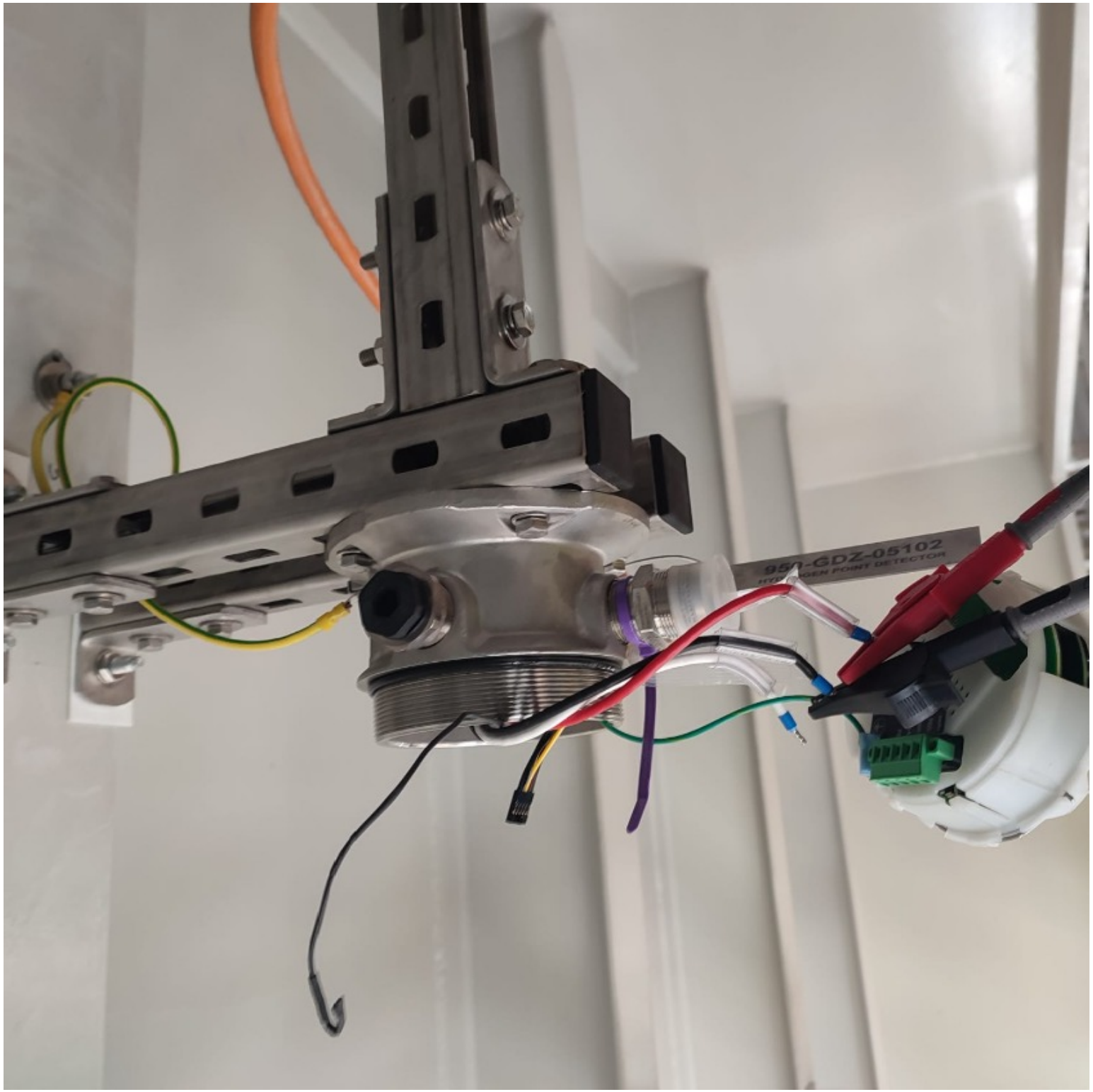
5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic
Date: 2025-02-26
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:


950-GDZ-05102

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001693

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000242	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-05102/950-JE-05101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

Missing cable tag side the (950-JE-05101).

Name: Giovanni Tangianu

Date: 2024-12-11

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	2024-12-11
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

C30001694

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001043	1.4 Discipline	Instrumental
1.2 Item	950-GDZ-05104	H2 GD FZ-05 BESS Area	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

earthing cable need to be fix. See attached photo.

Name: Giovanni Tangianu

Date: 2024-12-11

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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Alessio Polo

Date: 2025-02-03

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


5
5Iq2

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001695

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001043	1.4 Discipline	Instrumental
1.2 Item	950-GDZ-05104	H2 GD FZ-05 BESS Area	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

DETAIL EARTHING THREADED STUD IS WRONG IN ASSEMBLY (see doc 123A90-FDL-EL-DD-20090 typical E-11).
See attached photo.

Name: Giovanni Tangianu
Date: 2024-12-11
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	2024-12-11
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Done.

Name: Giovanni Tangianu
Date: 2025-01-23
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001696

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001461	1.4 Discipline	Instrumental
1.2 Item	C-950-GDZ-05104/950-JE-05101	GAS DETECTOR / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

Missing cable tag side the (950-JE-05101).

Name: Giovanni Tangianu

Date: 2024-12-11

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	2024-12-11
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

C30000950

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000401	1.4 Discipline	Instrumental
1.2 Item	C-950-MFA-05201/B400-FGS-003	MANUAL FIRE ALARM / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

Missing cable tag all along the route.

Name: Giovanni Tangianu

Date: 2024-11-26

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	2024-11-26
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Paolo Schintu

Date: 2025-02-26

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000951

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000401	1.4 Discipline	Instrumental
1.2 Item	C-950-MFA-05201/B400-FGS-003	MANUAL FIRE ALARM / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

Identification tag wires missing both side the C-950-MFA-05201/B400-FGS-003 connection.

Name: Giovanni Tangianu

Date: 2024-11-26

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	2024-11-26
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-03-03

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000952

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000401	1.4 Discipline	Instrumental
1.2 Item	C-950-MFA-05201/B400-FGS-003	MANUAL FIRE ALARM / MARSHALLING PCS	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

-Bending radius is not within the specified limits. (stress on the input cable instrument MFA-05201).

Name: Giovanni Tangianu

Date: 2024-11-26

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	2024-11-26
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Bending radius is properly fix.

Name: Giovanni Tangianu

Date: 2025-02-04

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001000

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001475	1.4 Discipline	Instrumental
1.2 Item	950-MFA-05201	FZ-05 Manual fire alarm (MFA) water treat. pkg	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

Missing tag plate on the instrument.

Name: Giovanni Tangianu
Date: 2024-11-28
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2024-11-28
3.5 Action by	VND Vendor	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DUPLICATE POINT, REFER TO PL N° C30001221

Name: Eleonora Carotenuto
Date: 2025-01-22
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001001

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001475	1.4 Discipline	Instrumental
1.2 Item	950-MFA-05201		FZ-05 Manual fire alarm (MFA) water treat. pkg
1.3 Subsystem	70-16		F&G Devices FZ-05 (Bess Area)

2 - OBSERVATION

Missing earthing cable on the instrument (950-MFA-05201).

Name: Giovanni Tangianu

Date: 2024-11-28

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	2024-11-28
3.5 Action by	VND Vendor	Signature	

4 - PERFORMED ACTION

.

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name:

Date:

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001002

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001475	1.4 Discipline	Instrumental
1.2 Item	950-MFA-05201	FZ-05 Manual fire alarm (MFA) water treat. pkg	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

The emergency glass is broken .. need too be change. (950-MFA-05201).

Name: Giovanni Tangianu
Date: 2024-11-28
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2024-11-28
3.5 Action by	VND Vendor	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

changed

Name: Eleonora Carotenuto
Date: 2024-12-12
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001089

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000986	1.4 Discipline	Instrumental
1.2 Item	950-FDZ-05102	Flame Detector - FZ-05 BESS Area	
1.3 Subsystem	70-16	F&G Devices FZ-05 (Bess Area)	

2 - OBSERVATION

Missing the cross-ferruling (Cores) .inside instrument . (see document 123A90-DDL-IN-DG-40016 sh.3)

Name: Alessio Polo
Date: 2024-11-30
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	2024-11-30
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

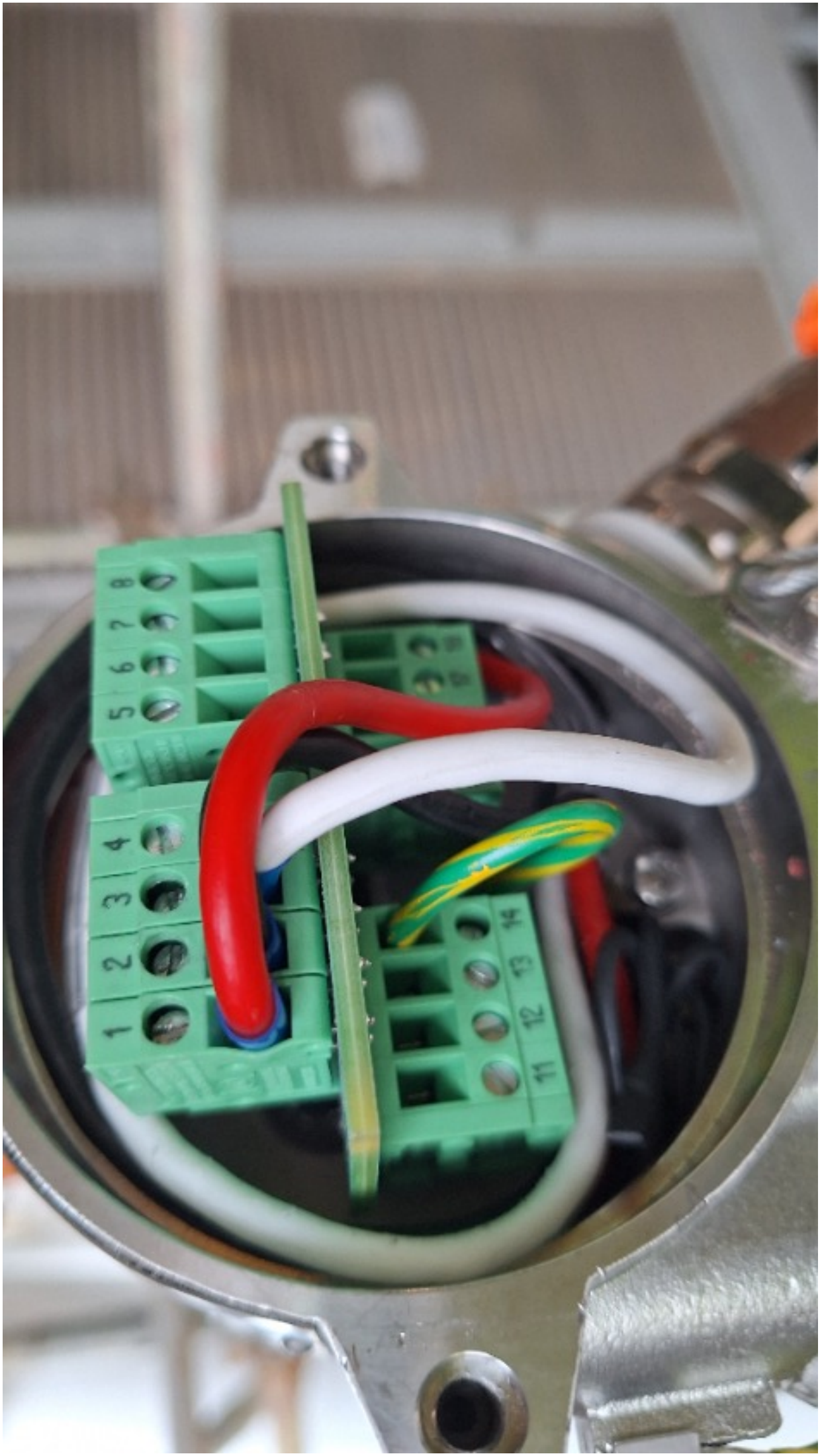
5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic
Date: 2025-02-24
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:


8
7
6
5
4
3
2
1
14
13
12
11

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: 70-16 & discipline : I

Instrumental	70-16 F&G Devices FZ-05 (Bess Area)

ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
950-FDZ-05101	Flame Detector - FZ-05 BESS Area	ONSHORE	C10003138	FJ04F	100	2025-01-13	RFO 1
950-FDZ-05102	Flame Detector - FZ-05 BESS Area	ONSHORE	C10003137	FJ04F	100	2025-01-13	RFO 1
950-FDZ-05103	Flame Detector - FZ-05 BESS Area	ONSHORE	C10003136	FJ04F	100	2025-01-13	RFO 1
950-FDZ-05104	Flame Detector - FZ-05 BESS Area	ONSHORE	C10003135	FJ04F	100	2025-01-13	RFO 1
950-GDZ-05101	H2 GD FZ-05 BESS Area	ONSHORE	C10003084	FJ04G	100	2025-01-13	RFO 1
950-GDZ-05102	H2 GD FZ-05 BESS Area	ONSHORE	C10003083	FJ04G	100	2025-01-13	RFO 1
950-GDZ-05103	H2 GD FZ-05 BESS Area	ONSHORE	C10003082	FJ04G	100	2025-01-13	RFO 1
950-GDZ-05104	H2 GD FZ-05 BESS Area	ONSHORE	C10003081	FJ04G	100	2025-01-13	RFO 1
950-GDZ-05105	H2 GD FZ-05 BESS Area	ONSHORE	C10003080	FJ04G	100	2025-01-13	RFO 1
950-GDZ-05106	H2 GD FZ-05 BESS Area	ONSHORE	C10003079	FJ04G	100	2025-01-13	RFO 1
950-MFA-05101	FZ-05 MFA Activation	ONSHORE	C10004428	FJ04PB_FGS	100	2025-01-28	RFO 1
950-MFA-05102	FZ-05 MFA Activation	ONSHORE	C10004429	FJ04PB_FGS	100	2025-01-28	RFO 1
950-MFA-05103	FZ-05 MFA Activation	ONSHORE	C10004430	FJ04PB_FGS	100	2025-01-13	RFO 1
950-MFA-05104	FZ-05 MFA Activation	ONSHORE	C10004431	FJ04PB_FGS	100	2025-01-14	RFO 1
950-MFA-05201	FZ-05 Manual fire alarm (MFA) water treat. pkg	ONSHORE	C10004476	FJ04PB_FGS	100	2025-01-28	RFO 1
950-XL-05201	FZ-05 Optical exp gas alarm water treat. pkg	ONSHORE	C10004477	FJ04FB	100	2025-02-24	RFO 1
950-XL-05202	FZ-05 Optical fire alarm water treat. pkg	ONSHORE	C10004478	FJ04FB	100	2025-02-24	RFO 1
950-XZ-05101	FZ-05 Sounder Activation	ONSHORE	C10004469	FJ04MS	100	2025-02-11	RFO 1
950-XZ-05102	FZ-05 Sounder Activation	ONSHORE	C10004470	FJ04MS	100	2025-02-11	RFO 1
950-XZ-05103	FZ-05 Sounder Activation	ONSHORE	C10004471	FJ04MS	100	2025-02-11	RFO 1
950-XZ-05104	FZ-05 Sounder Activation	ONSHORE	C10004472	FJ04MS	100	2025-02-11	RFO 1
950-XZ-05201	FZ-05 Acoustic fire&gas alarm water treat. pkg	ONSHORE	C10004479	FJ04MS	100	2025-02-24	RFO 1

ITEM	Tag	950-GDZ-05106	: H2 GD FZ-05 BESS Area		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-16	: F&G Devices FZ-05 (Bess Area)		Module	LD	
TASK	code	C10003079	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	PRE-COMM	Activity	FTS	Discipline	Instrumental	Form	FJ04G	Gas Detection

Loop Tag: 950-GDZ-05106 TDSL rev.: 123A90-FDL-IN-DG-40014 rev.0_A

Cabinet: B400-FGS-001 Rack: 05 Slot: 01 Channel: 09

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

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

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	C W
Name	Laurentiu Grozavu	Giandonato Delmissier	John Mackillop
Date	2025-01-13	2025-01-13	2025-01-13
Signature	Digitaly signed by Laurentiu Grozavu 2025-01-13T10:33:08.622Z	Digitaly signed by Giandonato Delmissier 2025-01-13T10:41:26.864Z	Digitaly signed by John Mackillop 2025-01-13T15:13:51.927Z

Dräger Polytron® 8200 CAT
Detection of flammable gases and vapors

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



Dräger. Technology for Life®

Benefits

Fast and stable – the DrägerSensor® Ex

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

Easy device management via digital communication

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

Same design, same operating principle

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

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

Three relays for controlling external equipment

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

Safe, robust housing for every application

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

Make the impossible possible with the remote sensor

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

Technical Data

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

Technical Data

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

* All docking station versions are only ATEX/IECEx approved

Ordering Information

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

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

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

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-04216	Dräger	Dräger: Polytron 8200	ARTB-1614	FC4576982	N/A	N/A	New Delivery
950-GDZ-04217	Dräger	Dräger: Polytron 8200	ARTB-1610	FC4576983	N/A	N/A	New Delivery
950-GDZ-04218	Dräger	Dräger: Polytron 8200	ARTC-2199	FC4576984	N/A	N/A	New Delivery
950-GDZ-05101	Dräger	Dräger: Polytron 8200	ARTB-1626	FC4576985	N/A	N/A	New Delivery
950-GDZ-05102	Dräger	Dräger: Polytron 8200	ARTB-1623	FC4576986	N/A	N/A	New Delivery
950-GDZ-05103	Dräger	Dräger: Polytron 8200	ARTB-1622	FC4576987	N/A	N/A	New Delivery
950-GDZ-05104	Dräger	Dräger: Polytron 8200	ARSD-0457	FC4576988	N/A	N/A	New Delivery
950-GDZ-05105	Dräger	Dräger: Polytron 8200	ARTB-1612	FC4576989	N/A	N/A	New Delivery
950-GDZ-05106	Dräger	Dräger: Polytron 8200	ARTB-1617	FC4576990	N/A	N/A	New Delivery
950-GDZ-06201	Dräger	Dräger: Polytron 8200	ARTB-1634	FC4576991	N/A	N/A	New Delivery
950-GDZ-06202	Dräger	Dräger: Polytron 8200	ARTB-1629	FC4576992	N/A	N/A	New Delivery

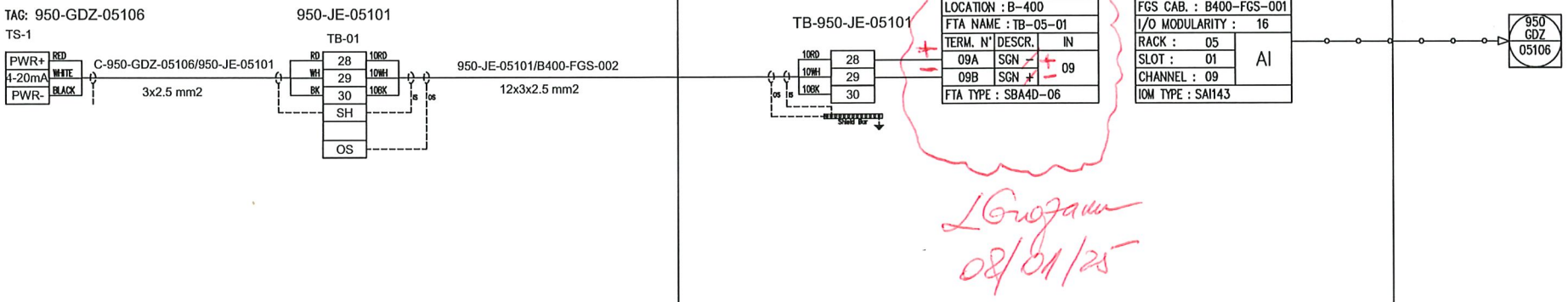
DRÄGER MARINE & OFFSHORE
SIGNED BY: K. VAN UDISSEL

PO# : 123A90

Signed by: .....

DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 00

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



LGuojian
08/01/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV.: 0_A | DATE: 23/10/24 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSRUMENT LOOP DIAGRAM
950-GDZ-05106
FZ-05 H2 DETECT. IN BESS 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 259	REV. 00

File Name : 123A90-DDL-IN-DG-40014_REV.00

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	950-GDZ-05105	: H2 GD FZ-05 BESS Area		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-16	: F&G Devices FZ-05 (Bess Area)		Module	LD	
TASK	code	C10003080	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	PRE-COMM	Activity	FTS	Discipline	Instrumental	Form	FJ04G	Gas Detection

Loop Tag: 950-GDZ-05105 TDSL rev.: 123A90-FDL-IN-DG-40014 rev.0_A

Cabinet: B400-FGS-001 Rack: 04 Slot: 03 Channel: 09

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

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

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	2025-01-13	2025-01-13	2025-01-13
Signature	PROVERLIS Digitaly signed by Laurentiu Grozavu 2025-01-13T10:33:51.269Z	PROVERLIS Digitaly signed by Giandonato Delmissier 2025-01-13T10:41:51.380Z	PROVERLIS Digitaly signed by John Mackillop 2025-01-13T15:14:07.559Z

Dräger Polytron® 8200 CAT
Detection of flammable gases and vapors

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



Dräger. Technology for Life®

Benefits

Fast and stable – the DrägerSensor® Ex

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

Easy device management via digital communication

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

Same design, same operating principle

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

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

Three relays for controlling external equipment

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

Safe, robust housing for every application

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

Make the impossible possible with the remote sensor

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

Technical Data

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

Technical Data

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

* All docking station versions are only ATEX/IECEx approved

Ordering Information

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

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

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

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-04216	Dräger	Dräger: Polytron 8200	ARTB-1614	FC4576982	N/A	N/A	New Delivery
950-GDZ-04217	Dräger	Dräger: Polytron 8200	ARTB-1610	FC4576983	N/A	N/A	New Delivery
950-GDZ-04218	Dräger	Dräger: Polytron 8200	ARTC-2199	FC4576984	N/A	N/A	New Delivery
950-GDZ-05101	Dräger	Dräger: Polytron 8200	ARTB-1626	FC4576985	N/A	N/A	New Delivery
950-GDZ-05102	Dräger	Dräger: Polytron 8200	ARTB-1623	FC4576986	N/A	N/A	New Delivery
950-GDZ-05103	Dräger	Dräger: Polytron 8200	ARTB-1622	FC4576987	N/A	N/A	New Delivery
950-GDZ-05104	Dräger	Dräger: Polytron 8200	ARSD-0457	FC4576988	N/A	N/A	New Delivery
950-GDZ-05105	Dräger	Dräger: Polytron 8200	ARTB-1612	FC4576989	N/A	N/A	New Delivery
950-GDZ-05106	Dräger	Dräger: Polytron 8200	ARTB-1617	FC4576990	N/A	N/A	New Delivery
950-GDZ-06201	Dräger	Dräger: Polytron 8200	ARTB-1634	FC4576991	N/A	N/A	New Delivery
950-GDZ-06202	Dräger	Dräger: Polytron 8200	ARTB-1629	FC4576992	N/A	N/A	New Delivery

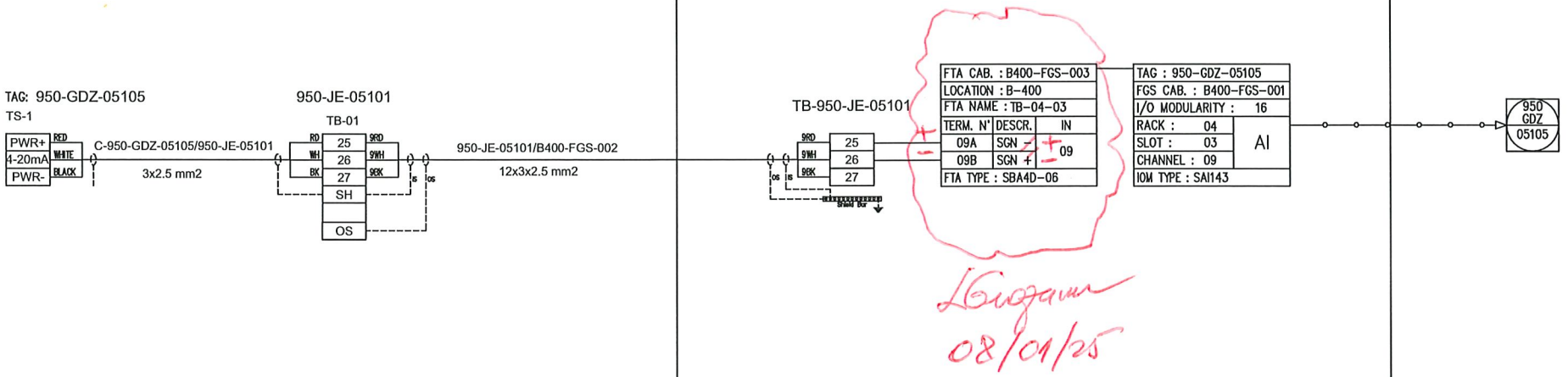
DRÄGER MARINE & OFFSHORE
SIGNED BY: K. VAN DISSEL

PO# : 123A90

Signed by: .....

DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 00

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



G.Grugnan
08/01/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV.: 0_A | DATE: 23/10/24 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSRUMENT LOOP DIAGRAM
950-GDZ-05105
FZ-05 H2 DETECT. IN BESS 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 258	REV. 00

File Name : 123A90-DDL-IN-DG-40014_REV.00

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	950-GDZ-05104	: H2 GD FZ-05 BESS Area		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-16	: F&G Devices FZ-05 (Bess Area)		Module	LD	
TASK	code	C10003081	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	PRE-COMM	Activity	FTS	Discipline	Instrumental	Form	FJ04G	Gas Detection

Loop Tag: 950-GDZ-05104 TDSL rev.: 123A90-FDL-IN-DG-40014 rev.0_A

Cabinet: B400-FGS-001 Rack: 04 Slot: 01 Channel: 09

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

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

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:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☑ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CW
Name	Laurentiu Grozavu	Giandonato Delmissier	John Mackillop
Date	2025-01-13	2025-01-13	2025-01-13
Signature	PROVERLIS Digitaly signed by Laurentiu Grozavu 2025-01-13T10:34:30.949Z	PROVERLIS Digitaly signed by Giandonato Delmissier 2025-01-13T10:42:07.410Z	PROVERLIS Digitaly signed by John Mackillop 2025-01-13T15:14:20.616Z

Dräger Polytron® 8200 CAT
Detection of flammable gases and vapors

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



Dräger. Technology for Life®

Benefits

Fast and stable – the DrägerSensor® Ex

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

Easy device management via digital communication

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

Same design, same operating principle

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

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

Three relays for controlling external equipment

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

Safe, robust housing for every application

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

Make the impossible possible with the remote sensor

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

Technical Data

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

Technical Data

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

* All docking station versions are only ATEX/IECEx approved

Ordering Information

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

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

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

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-04216	Dräger	Dräger: Polytron 8200	ARTB-1614	FC4576982	N/A	N/A	New Delivery
950-GDZ-04217	Dräger	Dräger: Polytron 8200	ARTB-1610	FC4576983	N/A	N/A	New Delivery
950-GDZ-04218	Dräger	Dräger: Polytron 8200	ARTC-2199	FC4576984	N/A	N/A	New Delivery
950-GDZ-05101	Dräger	Dräger: Polytron 8200	ARTB-1626	FC4576985	N/A	N/A	New Delivery
950-GDZ-05102	Dräger	Dräger: Polytron 8200	ARTB-1623	FC4576986	N/A	N/A	New Delivery
950-GDZ-05103	Dräger	Dräger: Polytron 8200	ARTB-1622	FC4576987	N/A	N/A	New Delivery
950-GDZ-05104	Dräger	Dräger: Polytron 8200	ARSD-0457	FC4576988	N/A	N/A	New Delivery
950-GDZ-05105	Dräger	Dräger: Polytron 8200	ARTB-1612	FC4576989	N/A	N/A	New Delivery
950-GDZ-05106	Dräger	Dräger: Polytron 8200	ARTB-1617	FC4576990	N/A	N/A	New Delivery
950-GDZ-06201	Dräger	Dräger: Polytron 8200	ARTB-1634	FC4576991	N/A	N/A	New Delivery
950-GDZ-06202	Dräger	Dräger: Polytron 8200	ARTB-1629	FC4576992	N/A	N/A	New Delivery

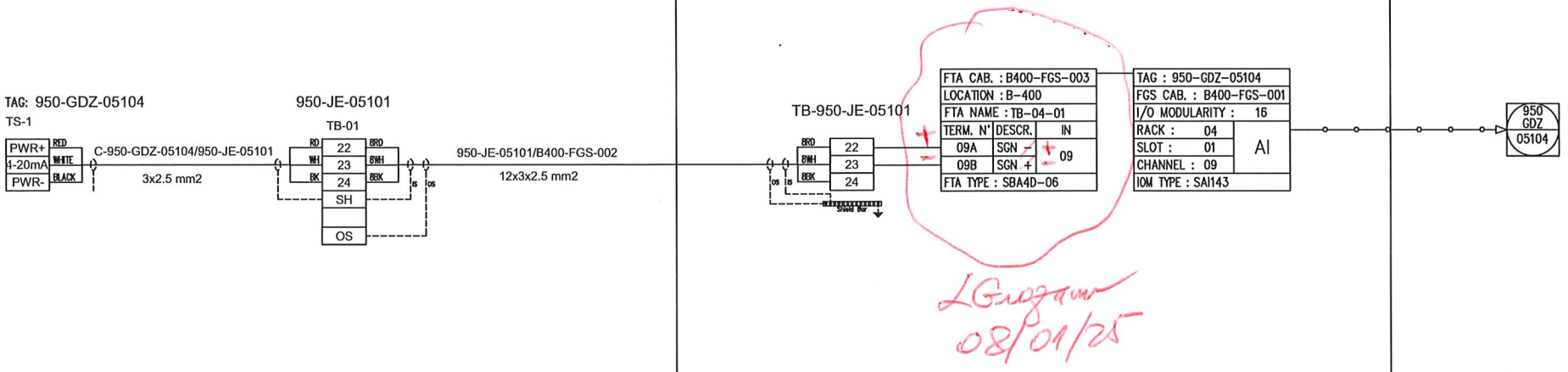
DRÄGER MARINE & OFFSHORE
SIGNED BY: K. VAN DISSEL

PO# : 123A90

Signed by: .....

DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 00

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



LGadget
08/01/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV.: 0_A | DATE: 23/10/24 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSRUMENT LOOP DIAGRAM
950-GDZ-05104
FZ-05 H2 DETECT. IN BESS 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 257	REV. 00

File Name : 123A90-DDL-IN-DG-40014_REV.00

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	950-GDZ-05103	: H2 GD FZ-05 BESS Area		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-16	: F&G Devices FZ-05 (Bess Area)		Module	LD	
TASK	code	C10003082	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	PRE-COMM	Activity FTS	Discipline Instrumental	Form	FJ04G	Gas Detection

Loop Tag: 950-GDZ-05103 TDSL rev.: 123A90-FDL-IN-DG-40014 rev 1_A

Cabinet: B400-FGS-001 Rack: 03 Slot: 03 Channel: 09

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

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	RM COMM	CW
Name	Alejandro Sasia	Giandonato Delmissier	John Mackillop
Date	2025-01-13	2025-01-13	2025-01-13
Signature	PROVERLIS Digitaly signed by Alejandro Sasia 2025-01-13T09:45:46.972Z	PROVERLIS Digitaly signed by Giandonato Delmissier 2025-01-13T10:34:45.311Z	PROVERLIS Digitaly signed by John Mackillop 2025-01-13T15:13:34.815Z

Dräger Polytron® 8200 CAT
Detection of flammable gases and vapors

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



Dräger. Technology for Life®

Benefits

Fast and stable – the DrägerSensor® Ex

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

Easy device management via digital communication

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

Same design, same operating principle

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

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

Three relays for controlling external equipment

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

Safe, robust housing for every application

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

Make the impossible possible with the remote sensor

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

Technical Data

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

Technical Data

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

* All docking station versions are only ATEX/IECEx approved

Ordering Information

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

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

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

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-04216	Dräger	Dräger: Polytron 8200	ARTB-1614	FC4576982	N/A	N/A	New Delivery
950-GDZ-04217	Dräger	Dräger: Polytron 8200	ARTB-1610	FC4576983	N/A	N/A	New Delivery
950-GDZ-04218	Dräger	Dräger: Polytron 8200	ARTC-2199	FC4576984	N/A	N/A	New Delivery
950-GDZ-05101	Dräger	Dräger: Polytron 8200	ARTB-1626	FC4576985	N/A	N/A	New Delivery
950-GDZ-05102	Dräger	Dräger: Polytron 8200	ARTB-1623	FC4576986	N/A	N/A	New Delivery
950-GDZ-05103	Dräger	Dräger: Polytron 8200	ARTB-1622	FC4576987	N/A	N/A	New Delivery
950-GDZ-05104	Dräger	Dräger: Polytron 8200	ARSD-0457	FC4576988	N/A	N/A	New Delivery
950-GDZ-05105	Dräger	Dräger: Polytron 8200	ARTB-1612	FC4576989	N/A	N/A	New Delivery
950-GDZ-05106	Dräger	Dräger: Polytron 8200	ARTB-1617	FC4576990	N/A	N/A	New Delivery
950-GDZ-06201	Dräger	Dräger: Polytron 8200	ARTB-1634	FC4576991	N/A	N/A	New Delivery
950-GDZ-06202	Dräger	Dräger: Polytron 8200	ARTB-1629	FC4576992	N/A	N/A	New Delivery

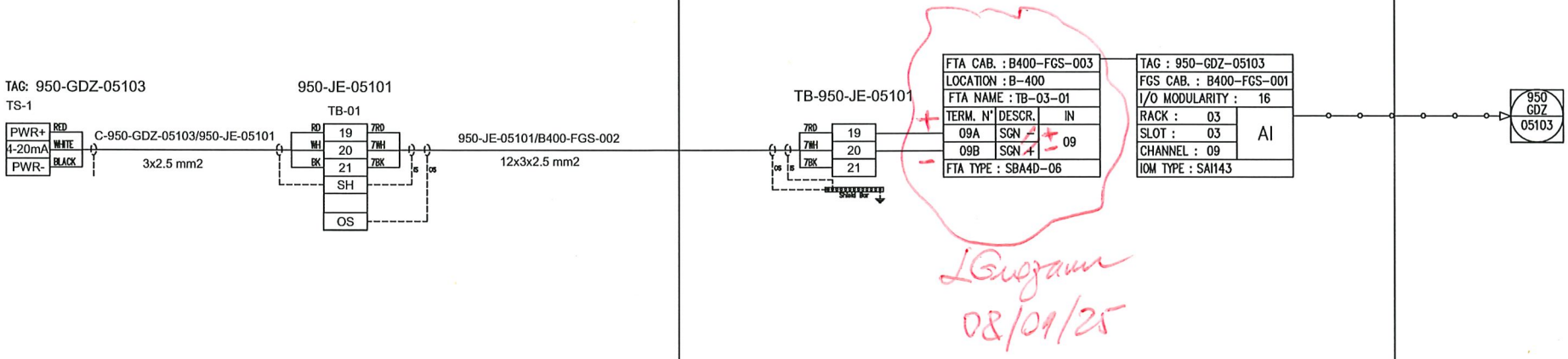
DRÄGER MARINE & OFFSHORE
SIGNED BY: K. VAN UDISSEL

PO# : 123A90

Signed by: .....

DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 00

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



LGuzzanti
08/01/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV.: 0_A | DATE: 23/10/24 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSRUMENT LOOP DIAGRAM
950-GDZ-05103
FZ-05 H2 DETECT. IN BESS 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 256	REV. 00

File Name : 123A90-DDL-IN-DG-40014_REV.00

ITEM	Tag	950-GDZ-05102	: H2 GD FZ-05 BESS Area			Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-16	: F&G Devices FZ-05 (Bess Area)			Module	LD
TASK	code	C10003083		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	PRE-COMM	Activity FTS	Discipline	Instrumental	Form	FJ04G Gas Detection

Loop Tag: 950-GDZ-05102 TDSL rev.: 123A90-FDL-IN-DG-40014 rev 1_A

Cabinet: B400-FGS-001 Rack: 03 Slot: 01 Channel: 09

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

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:

Page 1/1	Performed by	● WITNESS ☐ REVIEW	● WITNESS ☐ REVIEW
Company	RM	RM COMM	CW
Name	Alejandro Sasia	Giandonato Delmissier	John Mackillop
Date	2025-01-13	2025-01-13	2025-01-13
Signature	Digitaly signed by Alejandro Sasia 2025-01-13T09:53:48.872Z	Digitaly signed by Giandonato Delmissier 2025-01-13T10:35:08.148Z	Digitaly signed by John Mackillop 2025-01-13T15:14:45.828Z

Dräger Polytron® 8200 CAT
Detection of flammable gases and vapors

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



Dräger. Technology for Life®

Benefits

Fast and stable – the DrägerSensor® Ex

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

Easy device management via digital communication

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

Same design, same operating principle

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

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

Three relays for controlling external equipment

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

Safe, robust housing for every application

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

Make the impossible possible with the remote sensor

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

Technical Data

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

Technical Data

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

* All docking station versions are only ATEX/IECEx approved

Ordering Information

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

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

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

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-04216	Dräger	Dräger: Polytron 8200	ARTB-1614	FC4576982	N/A	N/A	New Delivery
950-GDZ-04217	Dräger	Dräger: Polytron 8200	ARTB-1610	FC4576983	N/A	N/A	New Delivery
950-GDZ-04218	Dräger	Dräger: Polytron 8200	ARTC-2199	FC4576984	N/A	N/A	New Delivery
950-GDZ-05101	Dräger	Dräger: Polytron 8200	ARTB-1626	FC4576985	N/A	N/A	New Delivery
950-GDZ-05102	Dräger	Dräger: Polytron 8200	ARTB-1623	FC4576986	N/A	N/A	New Delivery
950-GDZ-05103	Dräger	Dräger: Polytron 8200	ARTB-1622	FC4576987	N/A	N/A	New Delivery
950-GDZ-05104	Dräger	Dräger: Polytron 8200	ARSD-0457	FC4576988	N/A	N/A	New Delivery
950-GDZ-05105	Dräger	Dräger: Polytron 8200	ARTB-1612	FC4576989	N/A	N/A	New Delivery
950-GDZ-05106	Dräger	Dräger: Polytron 8200	ARTB-1617	FC4576990	N/A	N/A	New Delivery
950-GDZ-06201	Dräger	Dräger: Polytron 8200	ARTB-1634	FC4576991	N/A	N/A	New Delivery
950-GDZ-06202	Dräger	Dräger: Polytron 8200	ARTB-1629	FC4576992	N/A	N/A	New Delivery

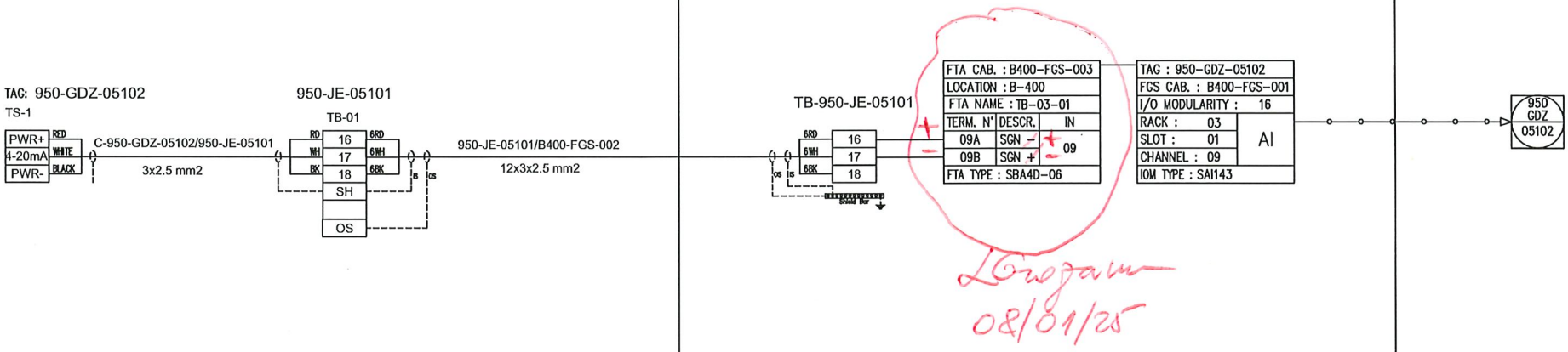
DRÄGER MARINE & OFFSHORE
SIGNED BY: K. VAN UDISSEL

PO# : 123A90

Signed by: .....

DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 00

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



LDuggan
08/01/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV.: 0_A | DATE: 23/10/24 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSRUMENT LOOP DIAGRAM
950-GDZ-05102
FZ-05 H2 DETECT. IN BESS 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 255	REV. 00

File Name : 123A90-DDL-IN-DG-40014_REV.00

ITEM	Tag	950-GDZ-05101	: H2 GD FZ-05 BESS Area		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-16	: F&G Devices FZ-05 (Bess Area)		Module	LD	
TASK	code	C10003084	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	PRE-COMM	Activity	FTS	Discipline	Instrumental	Form	FJ04G	Gas Detection

Loop Tag: 950-GDZ-05101 TDSL rev.: 123A90-FDL-IN-DG-40014 rev 1_A

Cabinet: B400-FGS-001 Rack: 02 Slot: 03 Channel: 09

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

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:

Page 1/1	Performed by	● WITNESS ☐ REVIEW	● WITNESS ☐ REVIEW
Company	RM	RM COMM	CW
Name	Alejandro Sasia	Giandonato Delmissier	John Mackillop
Date	2025-01-13	2025-01-13	2025-01-13
Signature	PROVERLIS Digitaly signed by Alejandro Sasia 2025-01-13T10:35:38.725Z	PROVERLIS Digitaly signed by Giandonato Delmissier 2025-01-13T10:42:32.232Z	PROVERLIS Digitaly signed by John Mackillop 2025-01-13T15:14:56.323Z

Dräger Polytron® 8200 CAT
Detection of flammable gases and vapors

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



Dräger. Technology for Life®

Benefits

Fast and stable – the DrägerSensor® Ex

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

Easy device management via digital communication

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

Same design, same operating principle

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

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

Three relays for controlling external equipment

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

Safe, robust housing for every application

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

Make the impossible possible with the remote sensor

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

Technical Data

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

Technical Data

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

* All docking station versions are only ATEX/IECEx approved

Ordering Information

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

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

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

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-04216	Dräger	Dräger: Polytron 8200	ARTB-1614	FC4576982	N/A	N/A	New Delivery
950-GDZ-04217	Dräger	Dräger: Polytron 8200	ARTB-1610	FC4576983	N/A	N/A	New Delivery
950-GDZ-04218	Dräger	Dräger: Polytron 8200	ARTC-2199	FC4576984	N/A	N/A	New Delivery
950-GDZ-05101	Dräger	Dräger: Polytron 8200	ARTB-1626	FC4576985	N/A	N/A	New Delivery
950-GDZ-05102	Dräger	Dräger: Polytron 8200	ARTB-1623	FC4576986	N/A	N/A	New Delivery
950-GDZ-05103	Dräger	Dräger: Polytron 8200	ARTB-1622	FC4576987	N/A	N/A	New Delivery
950-GDZ-05104	Dräger	Dräger: Polytron 8200	ARSD-0457	FC4576988	N/A	N/A	New Delivery
950-GDZ-05105	Dräger	Dräger: Polytron 8200	ARTB-1612	FC4576989	N/A	N/A	New Delivery
950-GDZ-05106	Dräger	Dräger: Polytron 8200	ARTB-1617	FC4576990	N/A	N/A	New Delivery
950-GDZ-06201	Dräger	Dräger: Polytron 8200	ARTB-1634	FC4576991	N/A	N/A	New Delivery
950-GDZ-06202	Dräger	Dräger: Polytron 8200	ARTB-1629	FC4576992	N/A	N/A	New Delivery

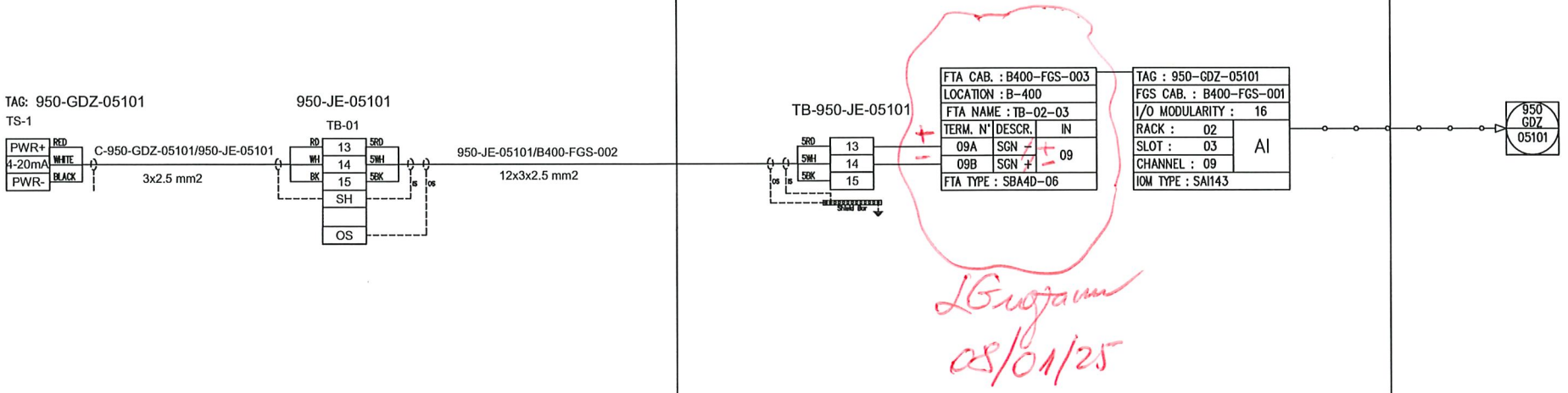
DRÄGER MARINE & OFFSHORE
SIGNED BY: K. VAN DISSEL

PO# : 123A90

Signed by: .....

DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 00

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



LGuglielmi
08/01/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV.: 0_A | DATE: 23/10/24 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSRUMENT LOOP DIAGRAM
950-GDZ-05101
FZ-05 H2 DETECT. IN BESS 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 254	REV. 00

File Name : 123A90-DDL-IN-DG-40014_REV.00

ITEM	Tag	950-FDZ-05104	: Flame Detector - FZ-05 BESS Area		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-16	: F&G Devices FZ-05 (Bess Area)		Module	LD	
TASK	code	C10003135	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	PRE-COMM	Activity	FTS	Discipline	Instrumental	Form	FJ04F	Fire Detection

Loop Tag:	950-FDZ-05104			TDSL rev.:	123A90-FDL-IN-DG-40014 rev. 0_A		
Cabinet:	B400-FGS-001	Rack:	04	Slot:	01	Channel:	10
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
Name	Laurentiu Grozavu	Giandonato Delmissier	John Mackillop
Date	2025-01-13	2025-01-13	2025-01-13
Signature	Digitaly signed by Laurentiu Grozavu 2025-01-13T10:36:01.829Z	Digitaly signed by Giandonato Delmissier 2025-01-13T12:22:44.055Z	Digitaly signed by John Mackillop 2025-01-13T15:48:08.335Z

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

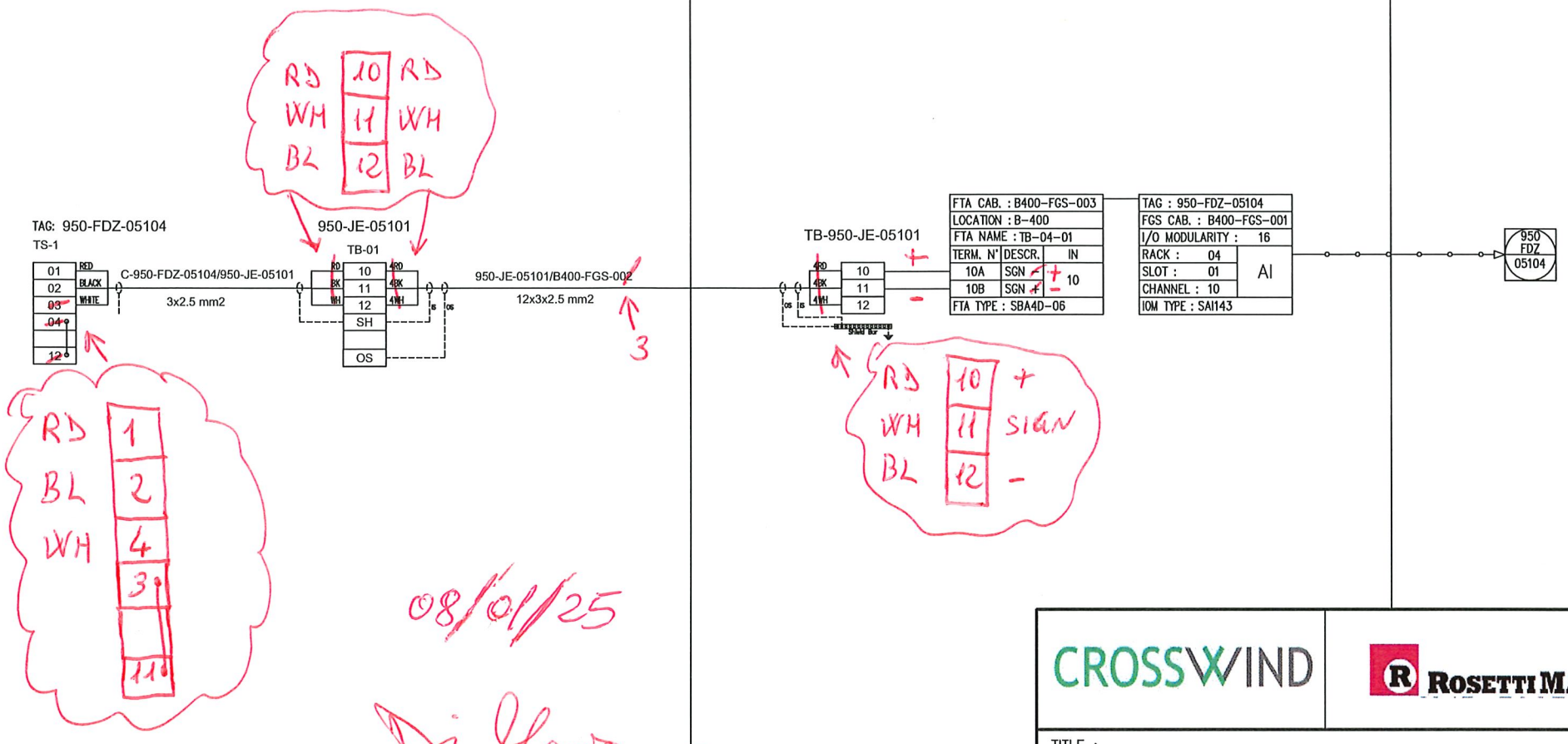
Flame Simulator Family

	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. 00

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



CROSSWIND

ROSETTI MARINO

TITLE :

INSRUMENT LOOP DIAGRAM

950-FDZ-05104

FZ-05 FLAME DETECT. IN BESS AREA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV.: 0_A | DATE: 23/10/24 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

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

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-IN-DG-40014	196	00

File Name : 123A90-DDL-IN-DG-40014_REV.00

ROSETTI MARINO — CROSSWIND

ITEM	Tag	950-FDZ-05103	: Flame Detector - FZ-05 BESS Area	Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-16	: F&G Devices FZ-05 (Bess Area)	Module	LD
TASK	code	C10003136	Location: Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	PRE-COMM	Activity: FTS / Discipline: Instrumental / Form: FJ04F		Fire Detection

Loop Tag:	950-FDZ-05103			TDSL rev.:	123A90-FDL-IN-DG-40014 rev. 0_A		
Cabinet:	B400-FGS-001	Rack:	03	Slot:	03	Channel:	10
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
Name	Laurentiu Grozavu	Giandonato Delmissier	John Mackillop
Date	2025-01-13	2025-01-13	2025-01-13
Signature	Digitaly signed by Laurentiu Grozavu 2025-01-13T10:36:37.597Z	Digitaly signed by Giandonato Delmissier 2025-01-13T12:23:22.434Z	Digitaly signed by John Mackillop 2025-01-13T15:48:20.954Z

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

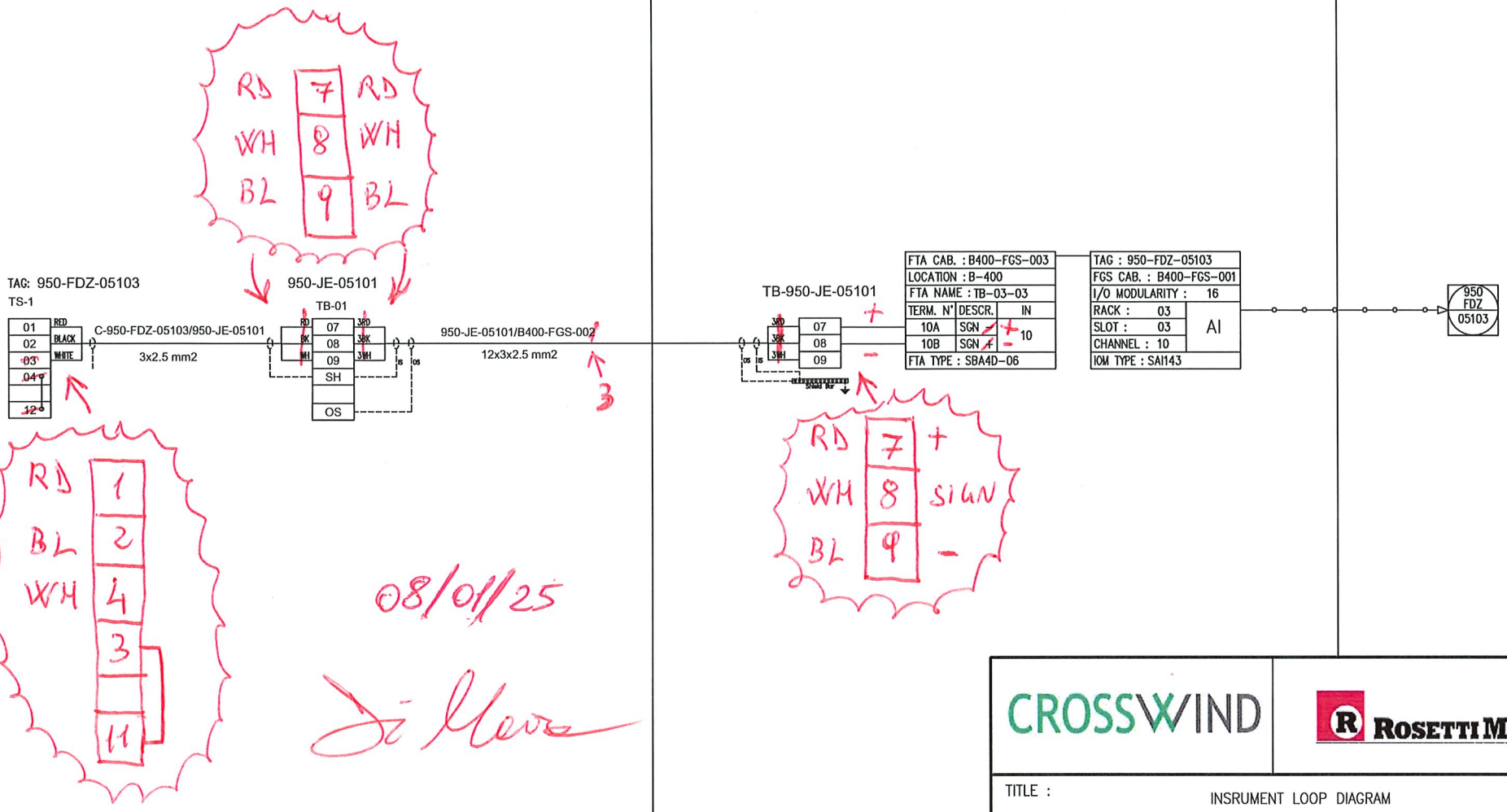
Flame Simulator Family

	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. 00

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



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV.: 0_A | DATE: 23/10/24 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSRUMENT LOOP DIAGRAM
950-FDZ-05103
FZ-05 FLAME DETECT. IN BESS 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 195	REV. 00

File Name : 123A90-DDL-IN-DG-40014_REV.00

ROSETTI MARINO — CROSSWIND

ITEM	Tag	950-FDZ-05102	: Flame Detector - FZ-05 BESS Area	Dwg	123A90-DDL-SAF-DL-30027		
	S/Sys	70-16	: F&G Devices FZ-05 (Bess Area)	Module	LD		
TASK	code	C10003137	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	PRE-COMM	Activity	FTS	Discipline	Instrumental	Form	FJ04F	Fire Detection

Loop Tag:	950-FDZ-05102			TDSL rev.:	123A90-FDL-IN-DG-40014 rev. 0_A		
Cabinet:	B400-FGS-001	Rack:	03	Slot:	01	Channel:	10
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
Name	Laurentiu Grozavu	Giandonato Delmissier	John Mackillop
Date	2025-01-13	2025-01-13	2025-01-13
Signature	Digitaly signed by Laurentiu Grozavu 2025-01-13T10:39:34.477Z	Digitaly signed by Giandonato Delmissier 2025-01-13T12:23:47.049Z	Digitaly signed by John Mackillop 2025-01-13T15:48:35.499Z

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

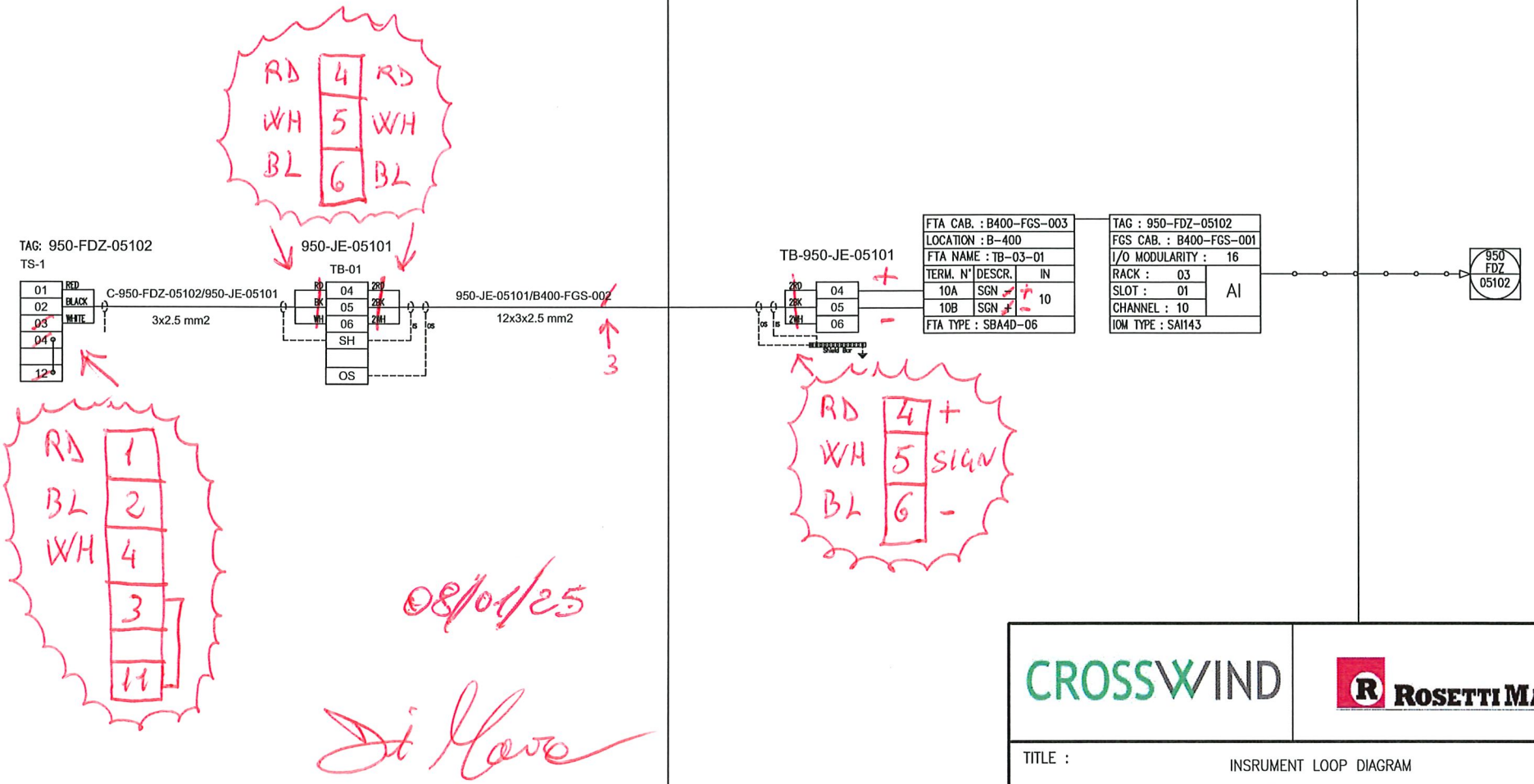
Flame Simulator Family

	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. 00

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



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV.: 0_A | DATE: 23/10/24 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSRUMENT LOOP DIAGRAM
950-FDZ-05102
FZ-05 FLAME DETECT. IN BESS 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 194	REV. 00

File Name : 123A90-DDL-IN-DG-40014_REV.00

ITEM	Tag	950-FDZ-05101	: Flame Detector - FZ-05 BESS Area	Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-16	: F&G Devices FZ-05 (Bess Area)	Module	LD
TASK	code	C10003138	Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	PRE-COMM	Activity	FTS	Discipline	Instrumental	Form	FJ04F		Fire Detection

Loop Tag:	950-FDZ-05101			TDSL rev.:	123A90-FDL-IN-DG-40014 rev. 0_A		
Cabinet:	B400-FGS-001	Rack:	02	Slot:	03	Channel:	10
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
Name	Laurentiu Grozavu	Giandonato Delmissier	John Mackillop
Date	2025-01-13	2025-01-13	2025-01-13
Signature	Digitaly signed by Laurentiu Grozavu 2025-01-13T10:59:38.518Z	Digitaly signed by Giandonato Delmissier 2025-01-13T12:24:20.139Z	Digitaly signed by John Mackillop 2025-01-13T15:49:33.734Z

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

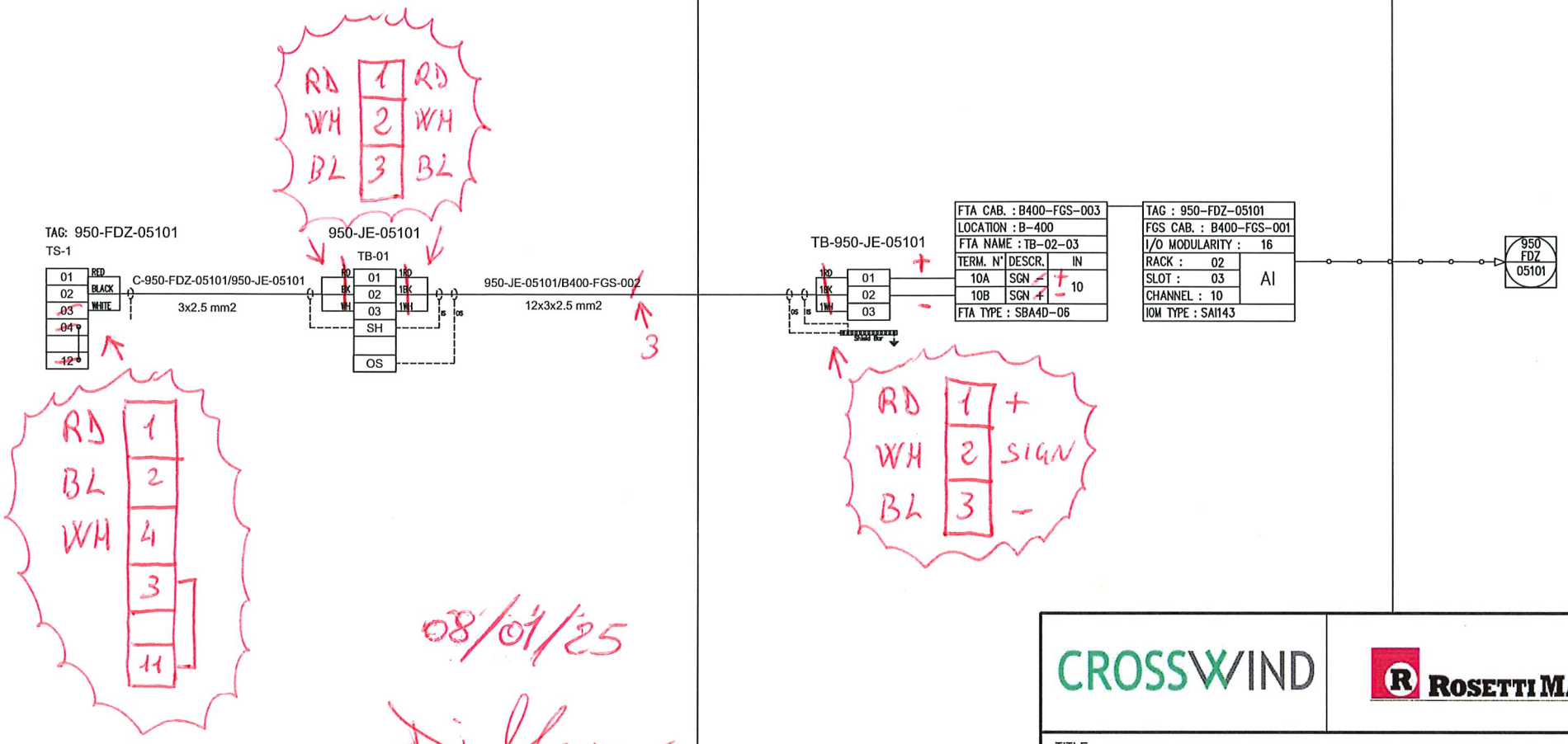
Flame Simulator Family

	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. 00

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



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV.: 0_A | DATE: 23/10/24 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSRUMENT LOOP DIAGRAM
950-FDZ-05101
FZ-05 FLAME DETECT. IN BESS 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 193	REV. 00

File Name : 123A90-DDL-IN-DG-40014_REV.00

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	950-MFA-05101	: FZ-05 MFA Activation		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-16	: F&G Devices FZ-05 (Bess Area)		Module	LD	
TASK	code	C10004428	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-05101			TSLD	123A90-FDL-IN-DG-40014 rev. o_A		
IO Type	Input Yes	Output No		Energy by transmitter	No	Energy by system	Yes
Marshalling	B400-FGS-001	Terminal 03A/03B		Slot 05	Rack 03	Chanel 03	

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	Yes	Alarm/trip	Yes	OK
4	De-Energise Loop (open loop) and record status	Normal	NA	Alarm/trip	NA	NA
5	Record Fail Safe position	Open	Yes	Closed	NA	OK

LOOP SERVICE

		Action Fire alarm		**Alarm / Control** FGS		**Display** PCS	
6	Loop energized	Yes		Yes		OK	OK
7	Loop not energized	NA		NA		NA	NA
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	2025-01-20	2025-01-22	2025-01-28
Signature	PROVERLIS Digitaly signed by Marco Di Maria 2025-01-20T13:52:13.823Z	PROVERLIS Digitaly signed by Giandonato Delmissier 2025-01-22T07:32:57.724Z	PROVERLIS Digitaly signed by John Mackillop 2025-01-28T19:48:05.711Z

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

Eaton
Unit B, Sutton Parkway
Oddicroft Lane
Sutton in Ashfield
United Kingdom
NG17 5FB

T: +44 (0) 1623 444 400
www.crouse-hinds.com/hac
MEDCSales@Eaton.com

© 2024 Eaton
All Rights Reserved
Printed in UK
Publication
No.DSMC0005/H
March 2024

Eaton is a registered trademark.

All other trademarks are property of their respective owners.

Powering Business Worldwide

All specifications, dimensions, weights and tolerances are nominal (typical) and Eaton reserve the right to vary all data without prior notice.
No liability is accepted for any consequence of use.

Certifications

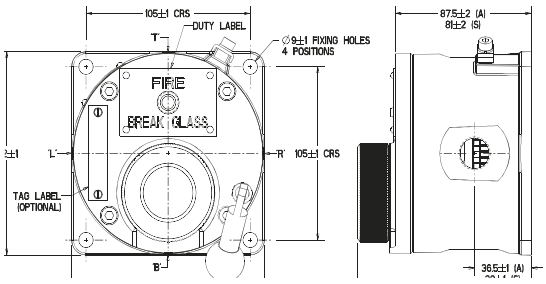
ATEX Ex d	Cert. no. Baseefa03ATEX0075. ATEX Approved Ex II 2GD Certified to: EN60079-0, EN60079-1, EN60079-31 Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db. IP66/IP67
ATEX Ex ia	Cert no. Baseefa 02ATEX0152X. ATEX Approved Ex II 1GD Certified to: EN60079-0, EN60079-11 Ex ia IIC T4 Ga, Ex ia IIIC T135°C Da
IECEx Ex d	Cert. no. IECEx BAS 09.0060 Certified to: EN60079-0, EN60079-1, EN60079-31 Ex d IIC T5/T6 Gb, Ex tb IIIC T85°/T100°C Db. IP66/IP67
IECEx Ex ia	Cert. no. IECEx BAS 10.0033X Certified to: IEC60079-0, IEC60079-11, Ex ia IIC T4 Ga, Ex ia IIIC T135°C Da
UL	Listing no. E186629 UL listed to Class 1, Div 1. Groups C & D. (SM87PBL)
ULC	Cert. no. 20091023-E320282 ULC certified for Class I, Zone 1 Groups C & D (SM87PBL)
CSA Explosion proof	Class 1, Div 1 & 2. Group D Ex d IIC T5/T6 Gb
CSA Intrinsically safe	Class 1, Div 1 & 2. Groups A-D
INMETRO Ex d	Ex db IIC T5/T6 Gb
Type Approvals	DNV (IEC 60945) (Stainless Steel SM87PB only)
SIL	SM87PB only - SIL2 Certification to IEC61508. Cert no. 20151118-4786827453
CCC	Ex d IIC T5/T6 Gb, Ex tD A21 IP66/IP67 T85°C/T100°C

Specifications

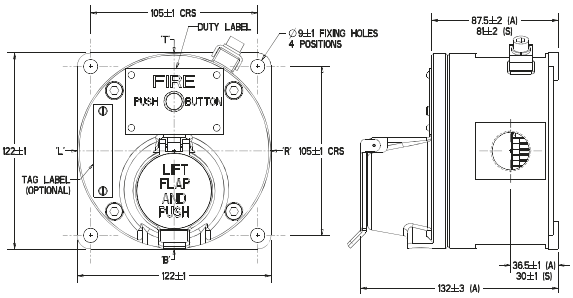
Material	Grade 316 ANC4B stainless steel or LM 25 TF marine grade alloy
Finish	Paint finish as standard or to customer specification
Voltage	Ex d 24V a.c./d.c. Ex ia 28V
Rating	2A
Switches	2 pole c/o, wired to terminals Optional up to 4 pole (UL version 2 pole only)
Optional indicator	A red high intensity LED can be fitted for alarm indication As standard the LED is not provided with over current protection. The forward current (If) should be limited to 20mA
Certified temp	Ex d* –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

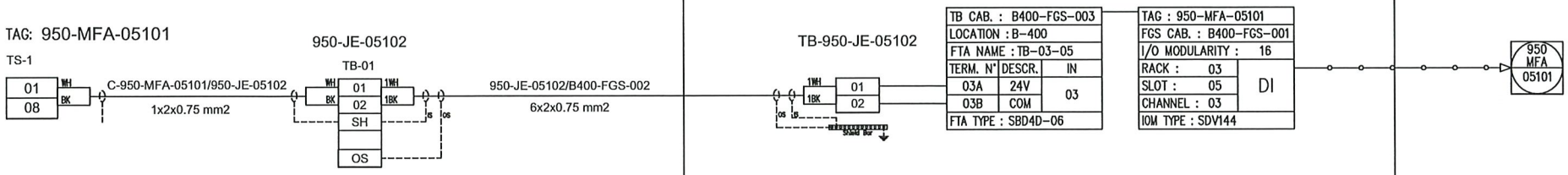
*Please specify

Finish	Code
Red	R
Blue	B
Yellow	Y
Yellow/black stripes	X
Special	S*

*Please specify

DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 00

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



NO MARK UP
Logram
15/01/25
/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV.: 0_A | DATE: 23/10/24 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
INSRUMENT LOOP DIAGRAM
950-MFA-05101
FZ-05 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 339	REV. 00

File Name : 123A90-DDL-IN-DG-40014_REV.00

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	950-MFA-05102	: FZ-05 MFA Activation		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-16	: F&G Devices FZ-05 (Bess Area)		Module	LD	
TASK	code	C10004429	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-05102				TSLD	123A90-FDL-IN-DG-40014 rev. o_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	03	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	Yes	Alarm/trip	Yes	OK
4	De-Energise Loop (open loop) and record status	Normal	NA	Alarm/trip	NA	NA
5	Record Fail Safe position	Open	Yes	Closed	NA	OK

LOOP SERVICE

		Action Fire alarm		Alarm / Control FGS		Display PCS	
6	Loop energized	Yes		Yes		OK	OK
7	Loop not energized	NA		NA		NA	NA
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	2025-01-20	2025-01-22	2025-01-28
Signature	PROVERLIS Digitaly signed by Marco Di Maria 2025-01-20T13:51:37.790Z	PROVERLIS Digitaly signed by Giandonato Delmissier 2025-01-22T07:33:24.694Z	PROVERLIS Digitaly signed by John Mackillop 2025-01-28T19:48:24.734Z

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

Eaton
Unit B, Sutton Parkway
Oddicroft Lane
Sutton in Ashfield
United Kingdom
NG17 5FB

T: +44 (0) 1623 444 400
www.crouse-hinds.com/hac
MEDCSales@Eaton.com

© 2024 Eaton
All Rights Reserved
Printed in UK
Publication
No.DSMC0005/H
March 2024

Eaton is a registered trademark.

All other trademarks are property of their respective owners.

Powering Business Worldwide

All specifications, dimensions, weights and tolerances are nominal (typical) and Eaton reserve the right to vary all data without prior notice.
No liability is accepted for any consequence of use.

Certifications

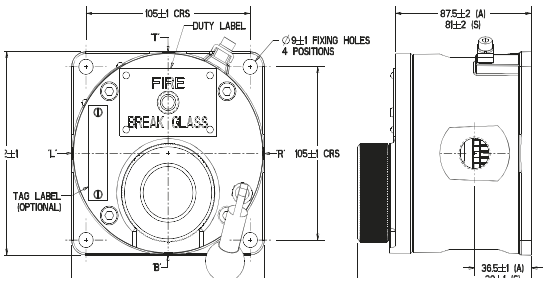
ATEX Ex d	Cert. no. Baseefa03ATEX0075. ATEX Approved Ex II 2GD Certified to: EN60079-0, EN60079-1, EN60079-31 Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db. IP66/IP67
ATEX Ex ia	Cert no. Baseefa 02ATEX0152X. ATEX Approved Ex II 1GD Certified to: EN60079-0, EN60079-11 Ex ia IIC T4 Ga, Ex ia IIIC T135°C Da
IECEx Ex d	Cert. no. IECEx BAS 09.0060 Certified to: EN60079-0, EN60079-1, EN60079-31 Ex d IIC T5/T6 Gb, Ex tb IIIC T85°/T100°C Db. IP66/IP67
IECEx Ex ia	Cert. no. IECEx BAS 10.0033X Certified to: IEC60079-0, IEC60079-11, Ex ia IIC T4 Ga, Ex ia IIIC T135°C Da
UL	Listing no. E186629 UL listed to Class 1, Div 1. Groups C & D. (SM87PBL)
ULC	Cert. no. 20091023-E320282 ULC certified for Class I, Zone 1 Groups C & D (SM87PBL)
CSA Explosion proof	Class 1, Div 1 & 2. Group D Ex d IIC T5/T6 Gb
CSA Intrinsically safe	Class 1, Div 1 & 2. Groups A-D
INMETRO Ex d	Ex db IIC T5/T6 Gb
Type Approvals	DNV (IEC 60945) (Stainless Steel SM87PB only)
SIL	SM87PB only - SIL2 Certification to IEC61508. Cert no. 20151118-4786827453
CCC	Ex d IIC T5/T6 Gb, Ex tD A21 IP66/IP67 T85°C/T100°C

Specifications

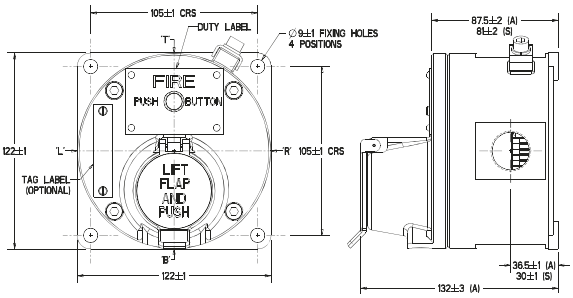
Material	Grade 316 ANC4B stainless steel or LM 25 TF marine grade alloy
Finish	Paint finish as standard or to customer specification
Voltage	Ex d 24V a.c./d.c. Ex ia 28V
Rating	2A
Switches	2 pole c/o, wired to terminals Optional up to 4 pole (UL version 2 pole only)
Optional indicator	A red high intensity LED can be fitted for alarm indication As standard the LED is not provided with over current protection. The forward current (If) should be limited to 20mA
Certified temp	Ex d* –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

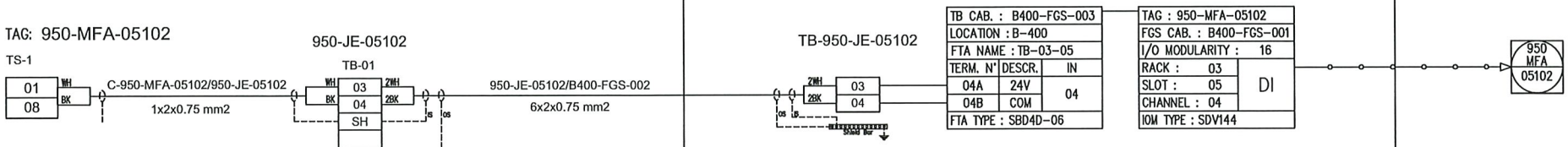
*Please specify

Finish	Code
Red	R
Blue	B
Yellow	Y
Yellow/black stripes	X
Special	S*

*Please specify

DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 00

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



NO MARK UP
Logtainer 15/01/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV.: 0_A | DATE: 23/10/24 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSRUMENT LOOP DIAGRAM
950-MFA-05102
FZ-05 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 340	REV. 00

File Name : 123A90-DDL-IN-DG-40014_REV.00

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	950-MFA-05103	: FZ-05 MFA Activation		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-16	: F&G Devices FZ-05 (Bess Area)		Module	LD	
TASK	code	C10004430	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-05103			TSLD	123A90-FDL-IN-DG-40014 rev- 0_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	03	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	Yes	Alarm/trip	Yes	OK
4	De-Energise Loop (open loop) and record status	Normal	NA	Alarm/trip	NA	NA
5	Record Fail Safe position	Open	Yes	Closed	NA	OK

LOOP SERVICE

		Action Fire alarm		**Alarm / Control** FGS		**Display** PCS	
6	Loop energized	Yes		Yes		OK	OK
7	Loop not energized	NA		NA		NA	NA
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	Laurentiu Grozavu	Giandonato Delmissier	John Mackillop
Date	2025-01-13	2025-01-13	2025-01-13
Signature	PROVERLIS Digitaly signed by Laurentiu Grozavu 2025-01-13T10:30:03.572Z	PROVERLIS Digitaly signed by Giandonato Delmissier 2025-01-13T10:39:05.353Z	PROVERLIS Digitaly signed by John Mackillop 2025-01-13T15:53:19.295Z

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

Eaton
Unit B, Sutton Parkway
Oddicroft Lane
Sutton in Ashfield
United Kingdom
NG17 5FB

T: +44 (0) 1623 444 400
www.crouse-hinds.com/hac
MEDCSales@Eaton.com

© 2024 Eaton
All Rights Reserved
Printed in UK
Publication
No.DSMC0005/H
March 2024

Eaton is a registered trademark.

All other trademarks are property of their respective owners.

Powering Business Worldwide

All specifications, dimensions, weights and tolerances are nominal (typical) and Eaton reserve the right to vary all data without prior notice.
No liability is accepted for any consequence of use.

Certifications

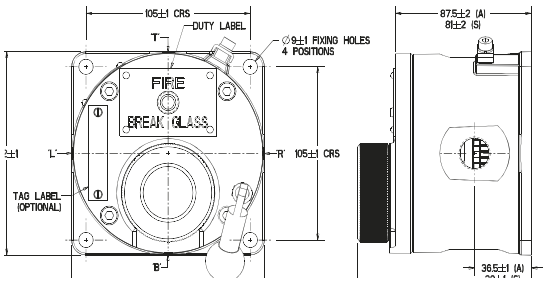
ATEX Ex d	Cert. no. Baseefa03ATEX0075. ATEX Approved Ex II 2GD Certified to: EN60079-0, EN60079-1, EN60079-31 Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db. IP66/IP67
ATEX Ex ia	Cert no. Baseefa 02ATEX0152X. ATEX Approved Ex II 1GD Certified to: EN60079-0, EN60079-11 Ex ia IIC T4 Ga, Ex ia IIIC T135°C Da
IECEx Ex d	Cert. no. IECEx BAS 09.0060 Certified to: EN60079-0, EN60079-1, EN60079-31 Ex d IIC T5/T6 Gb, Ex tb IIIC T85°/T100°C Db. IP66/IP67
IECEx Ex ia	Cert. no. IECEx BAS 10.0033X Certified to: IEC60079-0, IEC60079-11, Ex ia IIC T4 Ga, Ex ia IIIC T135°C Da
UL	Listing no. E186629 UL listed to Class 1, Div 1. Groups C & D. (SM87PBL)
ULC	Cert. no. 20091023-E320282 ULC certified for Class I, Zone 1 Groups C & D (SM87PBL)
CSA Explosion proof	Class 1, Div 1 & 2. Group D Ex d IIC T5/T6 Gb
CSA Intrinsically safe	Class 1, Div 1 & 2. Groups A-D
INMETRO Ex d	Ex db IIC T5/T6 Gb
Type Approvals	DNV (IEC 60945) (Stainless Steel SM87PB only)
SIL	SM87PB only - SIL2 Certification to IEC61508. Cert no. 20151118-4786827453
CCC	Ex d IIC T5/T6 Gb, Ex tD A21 IP66/IP67 T85°C/T100°C

Specifications

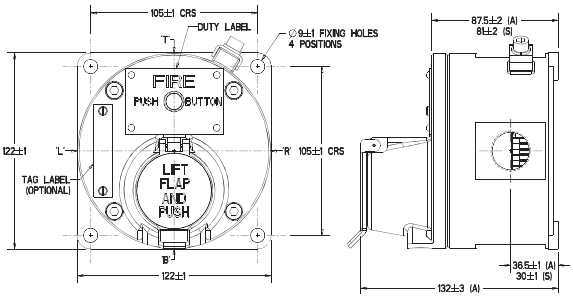
Material	Grade 316 ANC4B stainless steel or LM 25 TF marine grade alloy
Finish	Paint finish as standard or to customer specification
Voltage	Ex d 24V a.c./d.c. Ex ia 28V
Rating	2A
Switches	2 pole c/o, wired to terminals Optional up to 4 pole (UL version 2 pole only)
Optional indicator	A red high intensity LED can be fitted for alarm indication As standard the LED is not provided with over current protection. The forward current (If) should be limited to 20mA
Certified temp	Ex d* –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

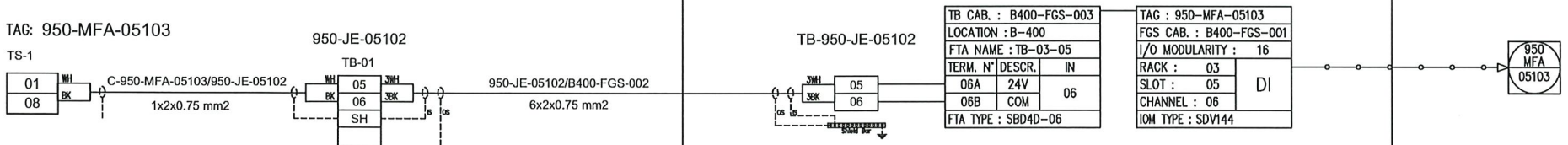
*Please specify

Finish	Code
Red	R
Blue	B
Yellow	Y
Yellow/black stripes	X
Special	S*

*Please specify

DRAWING No. 123A90-DDL-IN-DG-40014 REV. 00

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



NO MARK UP
L Giugiaro
08/01/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV.: 0_A | DATE: 23/10/24 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSRUMENT LOOP DIAGRAM
950-MFA-05103
FZ-05 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 341 | REV. 00

File Name : 123A90-DDL-IN-DG-40014_REV.00

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	950-MFA-05104	: FZ-05 MFA Activation		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-16	: F&G Devices FZ-05 (Bess Area)		Module	LD	
TASK	code	C10004431	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-05104			TSLD	123A90-FDL-IN-DG-40014 rev- 0_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 03	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	Yes	Alarm/trip	Yes	OK
4	De-Energise Loop (open loop) and record status	Normal	NA	Alarm/trip	NA	NA
5	Record Fail Safe position	Open	Yes	Closed	NA	OK

LOOP SERVICE

		Action Fire alarm		**Alarm / Control** FGS		**Display** PCS	
6	Loop energized	Yes		Yes		OK	OK
7	Loop not energized	NA		NA		NA	NA
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	Laurentiu Grozavu	Giandonato Delmissier	John Mackillop
Date	2025-01-13	2025-01-13	2025-01-14
Signature	PROVERLIS Digitaly signed by Laurentiu Grozavu 2025-01-13T10:28:19.765Z	PROVERLIS Digitaly signed by Giandonato Delmissier 2025-01-13T10:39:24.395Z	PROVERLIS Digitaly signed by John Mackillop 2025-01-14T07:19:23.762Z

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

Eaton
Unit B, Sutton Parkway
Oddicroft Lane
Sutton in Ashfield
United Kingdom
NG17 5FB

T: +44 (0) 1623 444 400
www.crouse-hinds.com/hac
MEDCSales@Eaton.com

© 2024 Eaton
All Rights Reserved
Printed in UK
Publication
No.DSMC0005/H
March 2024

Eaton is a registered trademark.

All other trademarks are property of their respective owners.

Powering Business Worldwide

All specifications, dimensions, weights and tolerances are nominal (typical) and Eaton reserve the right to vary all data without prior notice.
No liability is accepted for any consequence of use.

Certifications

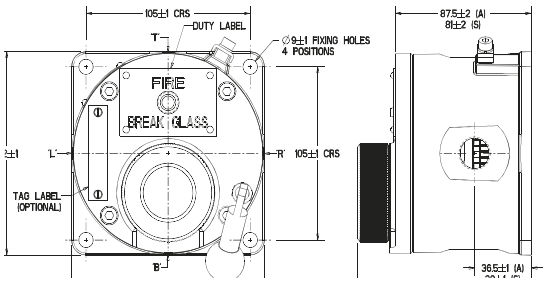
ATEX Ex d	Cert. no. Baseefa03ATEX0075. ATEX Approved Ex II 2GD Certified to: EN60079-0, EN60079-1, EN60079-31 Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db. IP66/IP67
ATEX Ex ia	Cert no. Baseefa 02ATEX0152X. ATEX Approved Ex II 1GD Certified to: EN60079-0, EN60079-11 Ex ia IIC T4 Ga, Ex ia IIIC T135°C Da
IECEx Ex d	Cert. no. IECEx BAS 09.0060 Certified to: EN60079-0, EN60079-1, EN60079-31 Ex d IIC T5/T6 Gb, Ex tb IIIC T85°/T100°C Db. IP66/IP67
IECEx Ex ia	Cert. no. IECEx BAS 10.0033X Certified to: IEC60079-0, IEC60079-11, Ex ia IIC T4 Ga, Ex ia IIIC T135°C Da
UL	Listing no. E186629 UL listed to Class 1, Div 1. Groups C & D. (SM87PBL)
ULC	Cert. no. 20091023-E320282 ULC certified for Class I, Zone 1 Groups C & D (SM87PBL)
CSA Explosion proof	Class 1, Div 1 & 2. Group D Ex d IIC T5/T6 Gb
CSA Intrinsically safe	Class 1, Div 1 & 2. Groups A-D
INMETRO Ex d	Ex db IIC T5/T6 Gb
Type Approvals	DNV (IEC 60945) (Stainless Steel SM87PB only)
SIL	SM87PB only - SIL2 Certification to IEC61508. Cert no. 20151118-4786827453
CCC	Ex d IIC T5/T6 Gb, Ex tD A21 IP66/IP67 T85°C/T100°C

Specifications

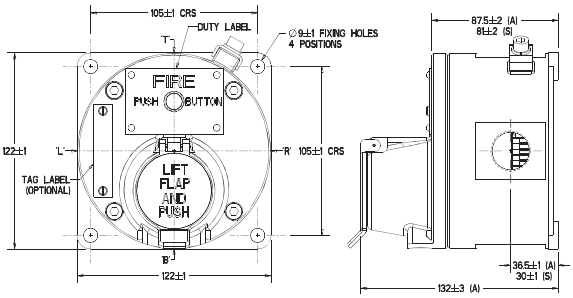
Material	Grade 316 ANC4B stainless steel or LM 25 TF marine grade alloy
Finish	Paint finish as standard or to customer specification
Voltage	Ex d 24V a.c./d.c. Ex ia 28V
Rating	2A
Switches	2 pole c/o, wired to terminals Optional up to 4 pole (UL version 2 pole only)
Optional indicator	A red high intensity LED can be fitted for alarm indication As standard the LED is not provided with over current protection. The forward current (If) should be limited to 20mA
Certified temp	Ex d* –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

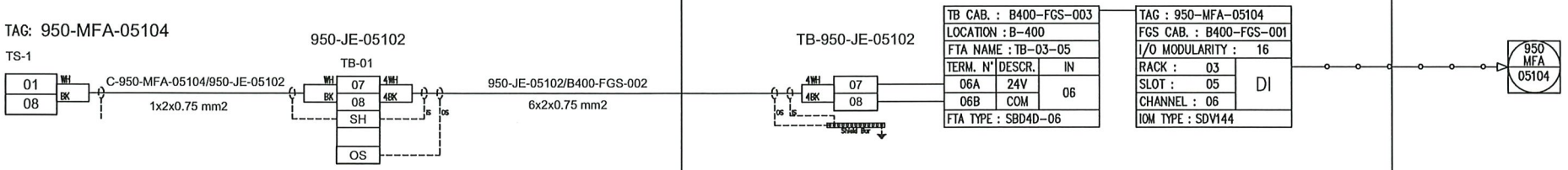
*Please specify

Finish	Code
Red	R
Blue	B
Yellow	Y
Yellow/black stripes	X
Special	S*

*Please specify

DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 00

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



NO MARK UP
Lourjam
08/01/25

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR CLIENT REVIEW (ICR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014
REV.: 0_A | DATE: 23/10/24 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSRUMENT LOOP DIAGRAM
950-MFA-05104
FZ-05 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 342	REV. 00

File Name : 123A90-DDL-IN-DG-40014_REV.00

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	950-XZ-05101	: FZ-05 Sounder Activation		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-16	: F&G Devices FZ-05 (Bess Area)		Module	LD	
TASK	code	C10004469	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-05101			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	06A/06B	Slot	07	Rack	04	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&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 2025-02-08T11:17:26.112Z	PROVERLIS Digitaly signed by Giandonato Delmissier 2025-02-08T22:29:48.842Z	PROVERLIS Digitaly signed by John Mackillop 2025-02-11T05:38:29.472Z

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

T: +44 (0) 1623 444 400
www.crouse-hinds.com/hac
MEDCSales@Eaton.com

Powering Business Worldwide

© 2022 Eaton
All Rights Reserved
Printed in UK
Publication
No.DSMC0032/B
March 2022

Eaton is a registered trademark.

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

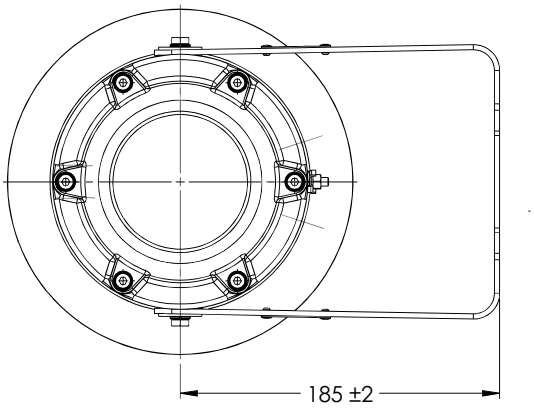
	Ex d/UL min	Max
Certified temperature	-60°C	+85°C

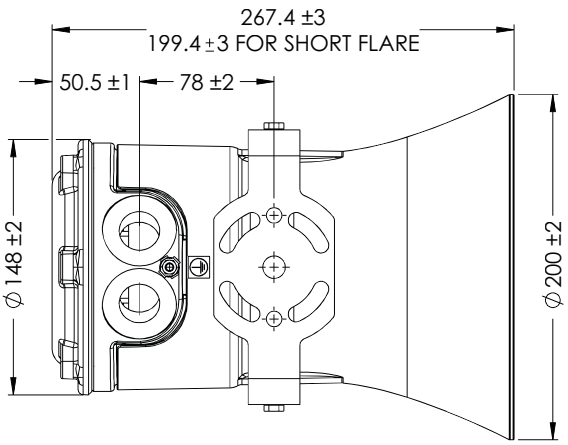
Operating temperature at launch (DC Only): -40 °C min +85 °C max
-55 °C as standard to follow. Please contact MEDC for low temperature options

	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)

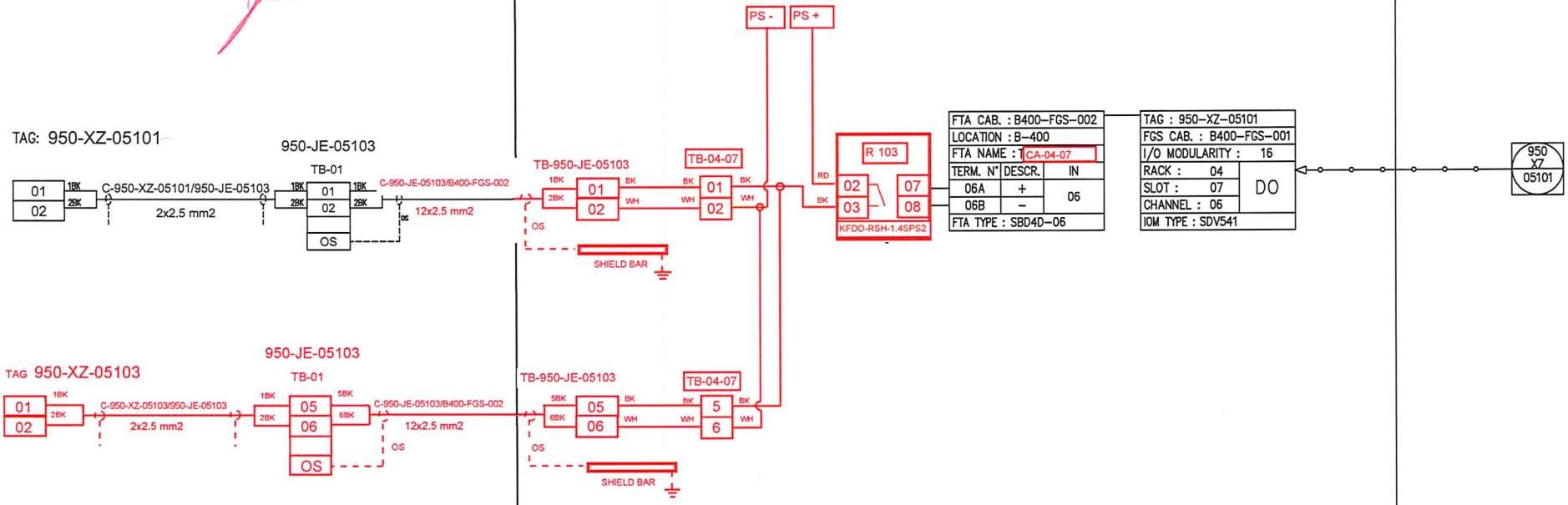
Finish	Code
Natural black	N
Natural red	R
Yellow	Y
Grey	G
Blue	B
Special	S*

*Please specify

DRAWING NR. 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–05101
FZ–05 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 416	REV. 01

File Name : 123A90-DDL-IN-DG-40014_REV01

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	950-XZ-05102	: FZ-05 Sounder Activation		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-16	: F&G Devices FZ-05 (Bess Area)		Module	LD	
TASK	code	C10004470	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-05102			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	07A/07B	Slot	07	Rack	04	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&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 2025-02-08T11:18:23.239Z	PROVERLIS Digitaly signed by Giandonato Delmissier 2025-02-08T22:30:21.659Z	PROVERLIS Digitaly signed by John Mackillop 2025-02-11T05:38:47.760Z

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

T: +44 (0) 1623 444 400
www.crouse-hinds.com/hac
MEDCSales@Eaton.com

Powering Business Worldwide

© 2022 Eaton
All Rights Reserved
Printed in UK
Publication
No.DSMC0032/B
March 2022

Eaton is a registered trademark.

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

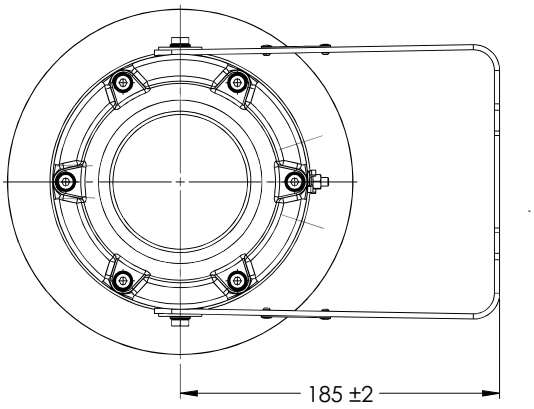
	Ex d/UL min	Max
Certified temperature	-60°C	+85°C

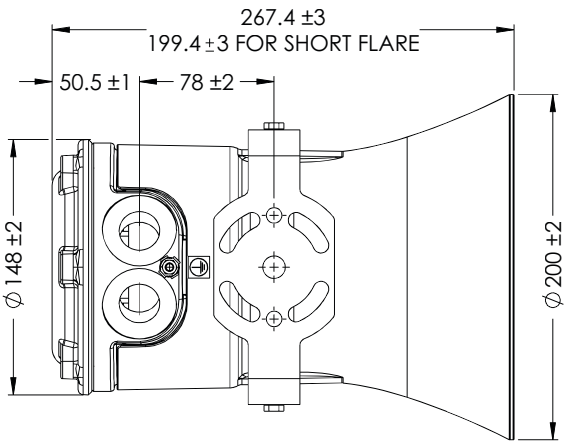
Operating temperature at launch (DC Only): -40 °C min +85 °C max
-55 °C as standard to follow. Please contact MEDC for low temperature options

	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)

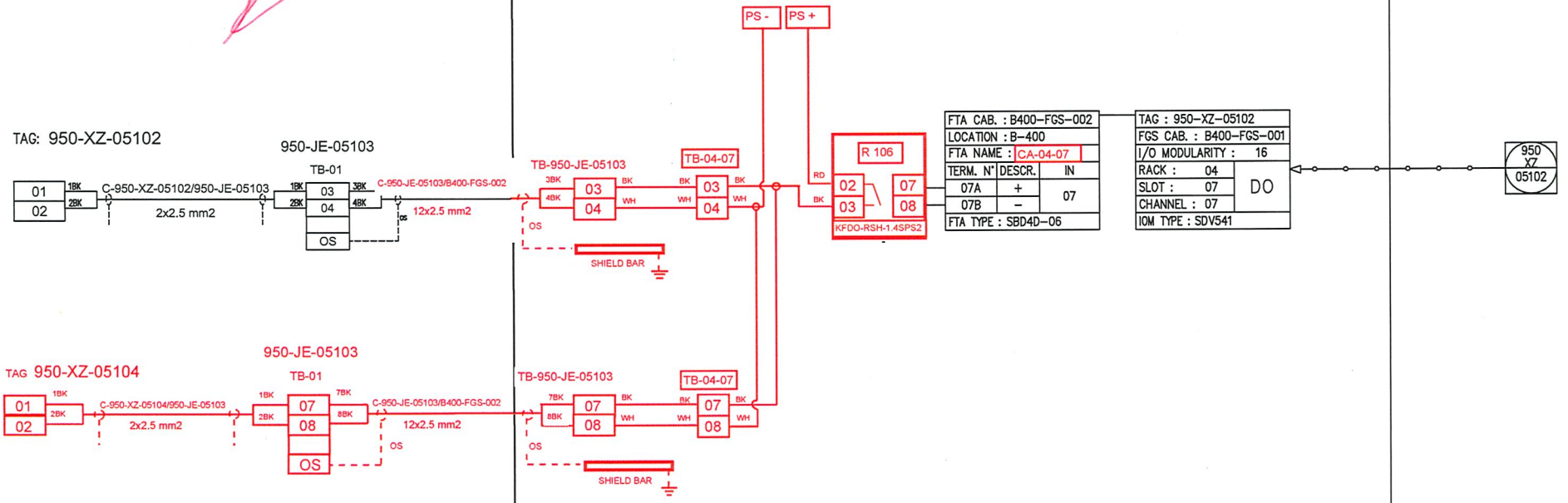
Finish	Code
Natural black	N
Natural red	R
Yellow	Y
Grey	G
Blue	B
Special	S*

*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-05102
FZ-05 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 417	REV. 01

File Name : 123A90-DDL-IN-DG-40014_REV01

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	950-XZ-05103	: FZ-05 Sounder Activation		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-16	: F&G Devices FZ-05 (Bess Area)		Module	LD	
TASK	code	C10004471	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-05103			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	06A/06B	Slot	07	Rack	04	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&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 2025-02-08T11:19:33.256Z	PROVERLIS Digitaly signed by Giandonato Delmissier 2025-02-08T22:30:47.713Z	PROVERLIS Digitaly signed by John Mackillop 2025-02-11T05:39:16.659Z

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

T: +44 (0) 1623 444 400
www.crouse-hinds.com/hac
MEDCSales@Eaton.com

Powering Business Worldwide

© 2022 Eaton
All Rights Reserved
Printed in UK
Publication
No.DSMC0032/B
March 2022

Eaton is a registered trademark.

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

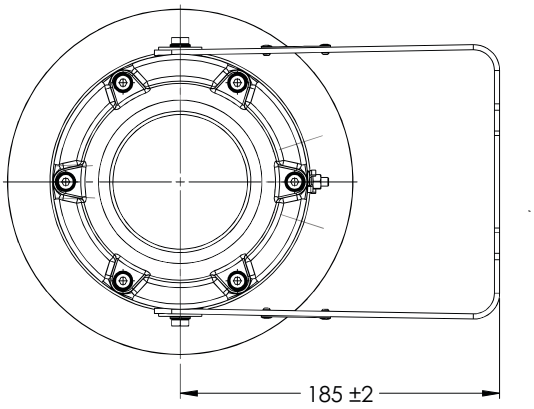
	Ex d/UL min	Max
Certified temperature	-60°C	+85°C

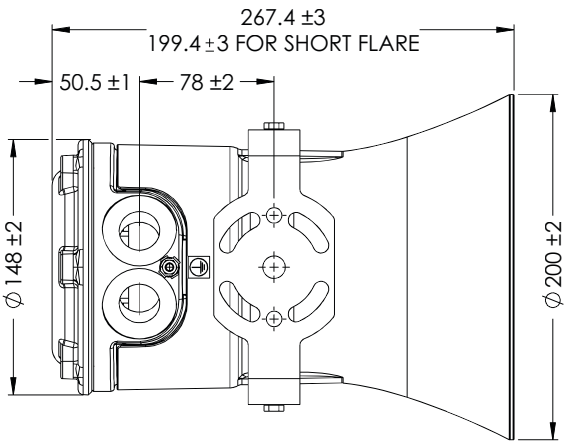
Operating temperature at launch (DC Only): -40 °C min +85 °C max
-55 °C as standard to follow. Please contact MEDC for low temperature options

	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)

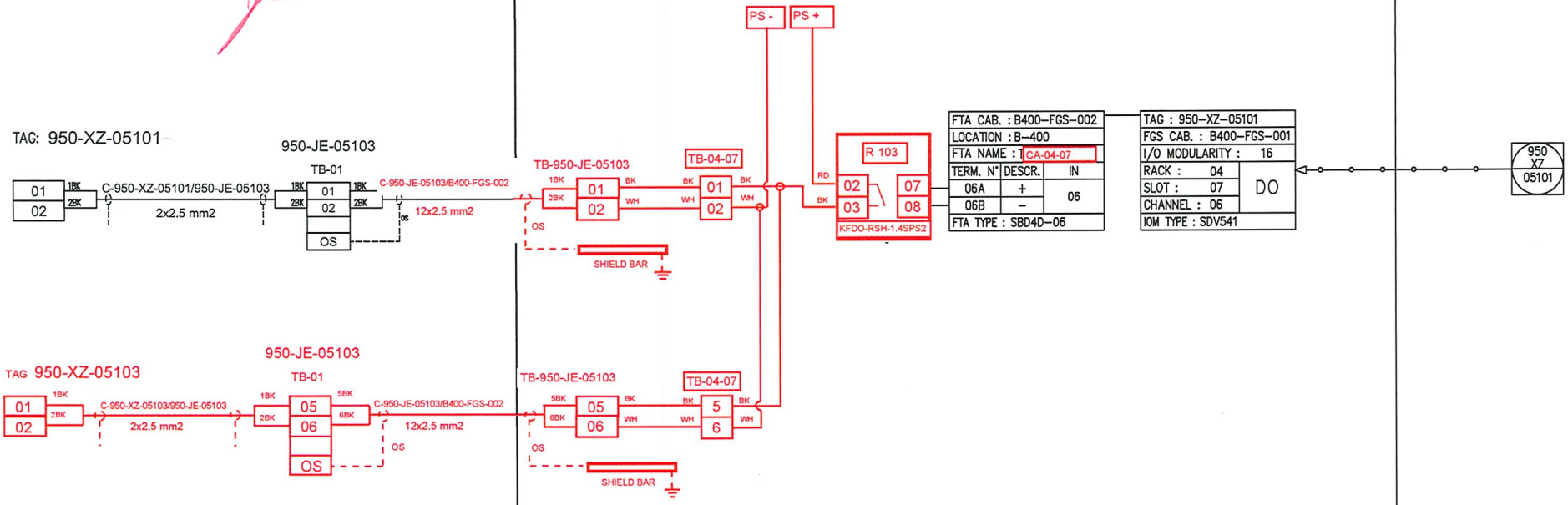
Finish	Code
Natural black	N
Natural red	R
Yellow	Y
Grey	G
Blue	B
Special	S*

*Please specify

DRAWING NR. 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–05101
FZ–05 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 416	REV. 01

File Name : 123A90-DDL-IN-DG-40014_REV01

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	950-XZ-05104	: FZ-05 Sounder Activation			Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-16	: F&G Devices FZ-05 (Bess Area)			Module	LD
TASK	code	C10004472		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-05104				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	07A/07B		Slot	07	Rack	04	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&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 2025-02-08T11:21:21.006Z	PROVERLIS Digitaly signed by Giandonato Delmissier 2025-02-08T22:31:12.258Z	PROVERLIS Digitaly signed by John Mackillop 2025-02-11T05:39:29.626Z

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

T: +44 (0) 1623 444 400
www.crouse-hinds.com/hac
MEDCSales@Eaton.com

Powering Business Worldwide

© 2022 Eaton
All Rights Reserved
Printed in UK
Publication
No.DSMC0032/B
March 2022

Eaton is a registered trademark.

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

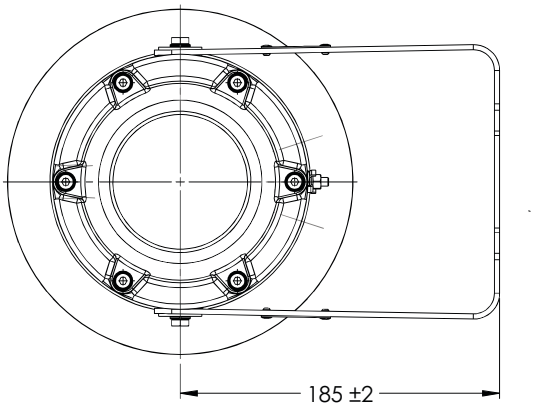
	Ex d/UL min	Max
Certified temperature	-60°C	+85°C

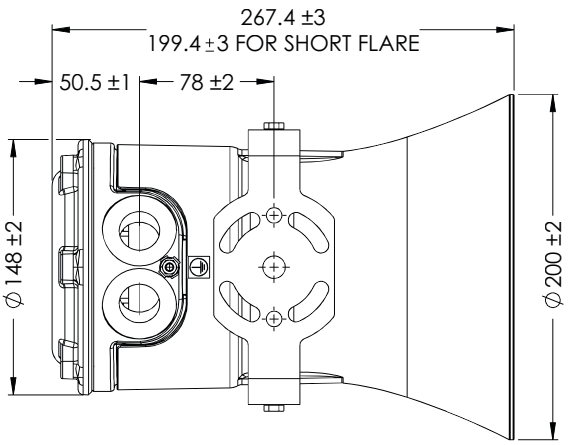
Operating temperature at launch (DC Only): -40 °C min +85 °C max
-55 °C as standard to follow. Please contact MEDC for low temperature options

	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)

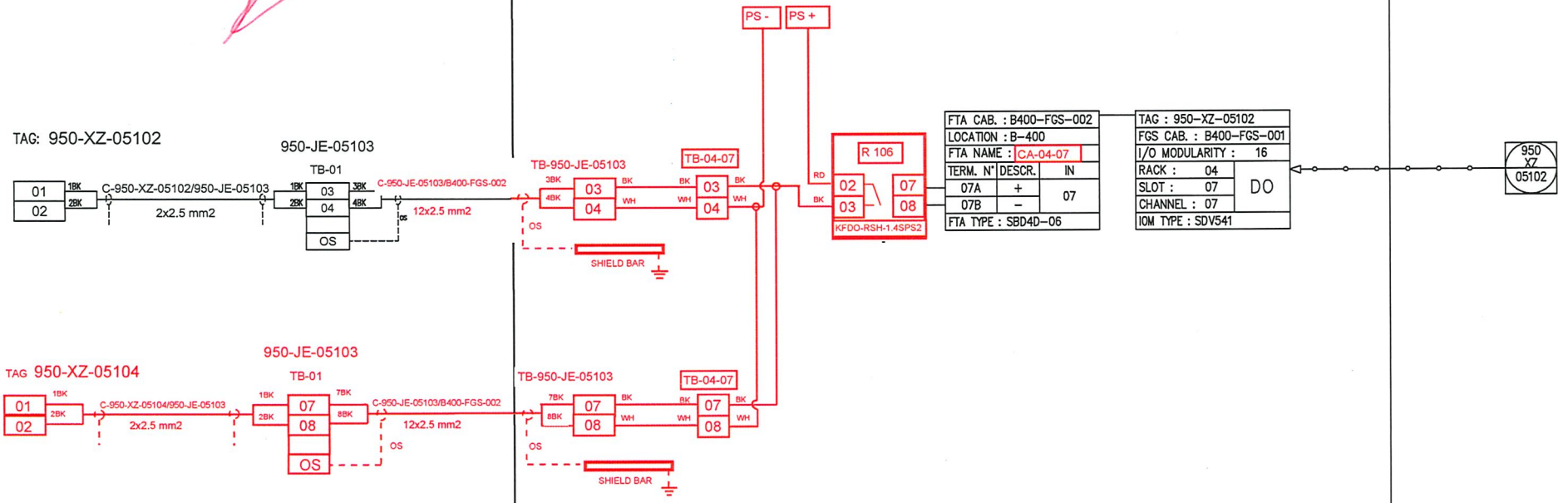
Finish	Code
Natural black	N
Natural red	R
Yellow	Y
Grey	G
Blue	B
Special	S*

*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-05102
FZ-05 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 417	REV. 01

File Name : 123A90-DDL-IN-DG-40014_REV01

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	950-MFA-05201	: FZ-05 Manual fire alarm (MFA) water treat. pkg			Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-16	: F&G Devices FZ-05 (Bess Area)			Module	LD_B-400_Ext
TASK	code	C10004476		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-05201				TSLD	123A90-FDL-IN-DG-40014 rev. o_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 04	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	Yes	Alarm/trip	Yes	OK
4	De-Energise Loop (open loop) and record status	Normal	NA	Alarm/trip	NA	NA
5	Record Fail Safe position	Open	Yes	Closed	NA	OK

LOOP SERVICE

		Action Fire alarm		**Alarm / Control** FGS		**Display** PCS	
6	Loop energized	Yes		Yes		OK	OK
7	Loop not energized	NA		NA		NA	NA
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	
Name	Marco Di Maria	Giandonato Delmissier	John Mackillop
Date	2025-01-20	2025-01-22	2025-01-28
Signature	PROVERLIS Digitaly signed by Marco Di Maria 2025-01-20T13:50:59.291Z	PROVERLIS Digitaly signed by Giandonato Delmissier 2025-01-22T07:33:47.704Z	PROVERLIS Digitaly signed by John Mackillop 2025-01-28T19:48:45.677Z

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

Eaton
Unit B, Sutton Parkway
Oddicroft Lane
Sutton in Ashfield
United Kingdom
NG17 5FB

T: +44 (0) 1623 444 400
www.crouse-hinds.com/hac
MEDCSales@Eaton.com

© 2024 Eaton
All Rights Reserved
Printed in UK
Publication
No.DSMC0005/H
March 2024

Eaton is a registered trademark.

All other trademarks are property of their respective owners.

Powering Business Worldwide

All specifications, dimensions, weights and tolerances are nominal (typical) and Eaton reserve the right to vary all data without prior notice.
No liability is accepted for any consequence of use.

Certifications

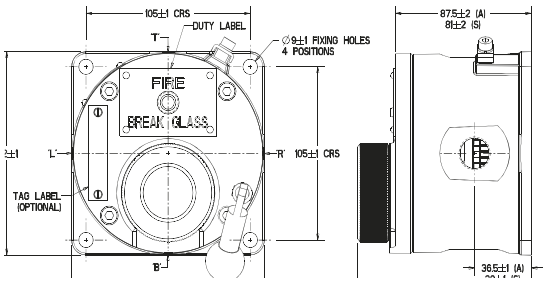
ATEX Ex d	Cert. no. Baseefa03ATEX0075. ATEX Approved Ex II 2GD Certified to: EN60079-0, EN60079-1, EN60079-31 Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db. IP66/IP67
ATEX Ex ia	Cert no. Baseefa 02ATEX0152X. ATEX Approved Ex II 1GD Certified to: EN60079-0, EN60079-11 Ex ia IIC T4 Ga, Ex ia IIIC T135°C Da
IECEx Ex d	Cert. no. IECEx BAS 09.0060 Certified to: EN60079-0, EN60079-1, EN60079-31 Ex d IIC T5/T6 Gb, Ex tb IIIC T85°/T100°C Db. IP66/IP67
IECEx Ex ia	Cert. no. IECEx BAS 10.0033X Certified to: IEC60079-0, IEC60079-11, Ex ia IIC T4 Ga, Ex ia IIIC T135°C Da
UL	Listing no. E186629 UL listed to Class 1, Div 1. Groups C & D. (SM87PBL)
ULC	Cert. no. 20091023-E320282 ULC certified for Class I, Zone 1 Groups C & D (SM87PBL)
CSA Explosion proof	Class 1, Div 1 & 2. Group D Ex d IIC T5/T6 Gb
CSA Intrinsically safe	Class 1, Div 1 & 2. Groups A-D
INMETRO Ex d	Ex db IIC T5/T6 Gb
Type Approvals	DNV (IEC 60945) (Stainless Steel SM87PB only)
SIL	SM87PB only - SIL2 Certification to IEC61508. Cert no. 20151118-4786827453
CCC	Ex d IIC T5/T6 Gb, Ex tD A21 IP66/IP67 T85°C/T100°C

Specifications

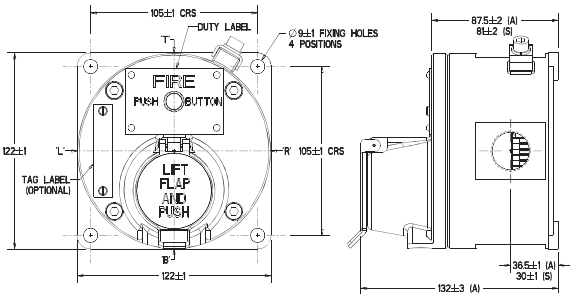
Material	Grade 316 ANC4B stainless steel or LM 25 TF marine grade alloy
Finish	Paint finish as standard or to customer specification
Voltage	Ex d 24V a.c./d.c. Ex ia 28V
Rating	2A
Switches	2 pole c/o, wired to terminals Optional up to 4 pole (UL version 2 pole only)
Optional indicator	A red high intensity LED can be fitted for alarm indication As standard the LED is not provided with over current protection. The forward current (If) should be limited to 20mA
Certified temp	Ex d* –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

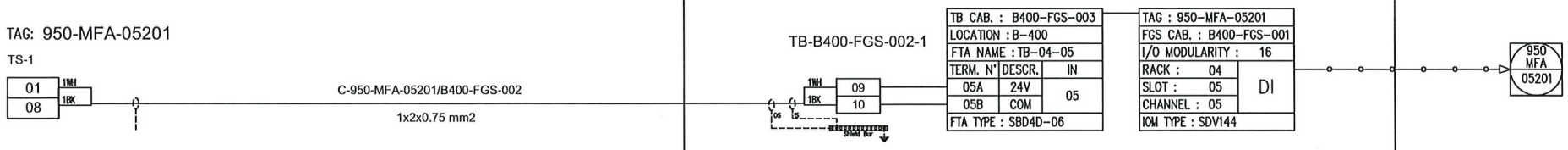
*Please specify

Finish	Code
Red	R
Blue	B
Yellow	Y
Yellow/black stripes	X
Special	S*

*Please specify

DRAWING NO. 123A90-DDL-IN-DG-40014 REV. 00

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



No MARK UP

15/01/25

Di Meo

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	23/10/2024	VBA	LCA	DLO	ISSUE FOR CLIENT REVIEW (ICR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40014

REV.:	DATE:	SIGNATURE:
0_A	23/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : INSRUMENT LOOP DIAGRAM
950-MFA-05201
FZ-05 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 343	REV. 00

File Name : 123A90-DDL-IN-DG-40014_REV.00

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	950-XL-05201	: FZ-05 Optical exp gas alarm water treat. pkg		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-16	: F&G Devices FZ-05 (Bess Area)		Module		
TASK	code	C10004477	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-05201			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	11A/11B	Slot	07	Rack 04	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	NA	Yes	Yes		NA	OK
7	Loop not energized	NA	No	Yes		NA	OK
8	Checking of line monitoring	NA	Yes	Yes		OK	OK
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	●		

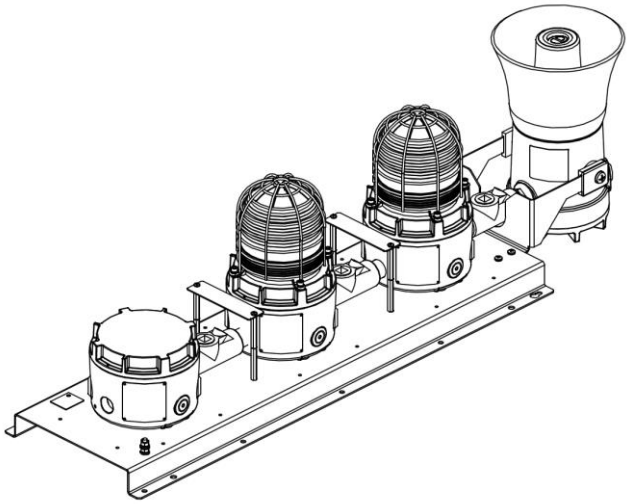
LOOP DOCUMENTATION

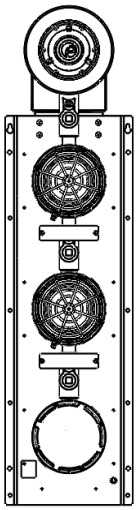
13	Loop diagram is marked up and attached to this test sheet	OK
14	Cause and effect chart is highlighted accordingly	OK
15	Any defect is recorded for punch list issuance	NA

Comments:

	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CW OPS
Name	Marco Di Maria	Giandonato Delmissier	Jamie McAllister
Date	2025-02-21	2025-02-24	2025-02-24
Signature	Digitaly signed by Marco Di Maria 2025-02-21T17:19:48.201Z	Digitaly signed by Giandonato Delmissier 2025-02-24T13:42:27.590Z	Digitaly signed by Jamie McAllister 2025-02-24T15:55:07.422Z

INSTRUCTION MANUAL
D1xC3 Alarm Bar
2 Beacons & Alarm Horn with Junction Box





1) Warnings

Please see individual product instruction manual. See Table 1 for Instruction Manual Document Number.

2) Rating & Marking Information

Please see individual product instruction manual. See Table 1 for Instruction Manual Document Number.

All individual unit ratings must be suitable for the installation.

3) Type Approval Standards

Please see individual product instruction manual. See Table 1 for Instruction Manual Document Number.

4) Installation Requirements

Please see individual product instruction manual. See Table 1 for Instruction Manual Document Number.

5) Special Conditions of Use

Please see individual product instruction manual. See Table 1 for Instruction Manual Document Number.

Component Part Code Reference	Component Description	Document Number
D1XJ2	Junction Box	D191-00-501-IS
D1XB2X05	5J Xenon Strobe Beacon	D191-00-201-IS
D1XB2X10	10J Xenon Strobe Beacon	
D1XB2X15	15J Xenon Strobe Beacon	
D1XB2X21	21J Xenon Strobe Beacon	
D1XB2LD2	LED Beacon	D191-00-401-IS
D1XS1	Alarm Horn Sounder	D190-00-001-IS
D1XS2	Alarm Horn Sounder	D190-00-101-IS

Table 1: Product Instruction Manual Reference

6) Part Coding

Part Code:	Identifier - Description
Product Type	D1xC3
Junction Box	J2 = Junction Box
Beacon Type (Add Code for each Beacon in Alarm Bar)	1Y = D1xB2X05 2Y = D1xB2X10 3Y = D1xB2X15 4Y = D1xB2X21 5Y = D1xB2LD2 Where Y = Lens Colour, choose from: A = Amber, B = Blue, C = Clear, G = Green, M = Magenta, R = Red, Y = Yellow
Sounder Type	S1F = D1xS1 Flare Sounder S1R = D1xS1 Radial Sounder S2F = D1xS2 Flare Sounder S2H = D1xS2 Large Flare Sounder
Voltage	DC024 = 24Vdc AC115 = 115-120Vac 50/60Hz AC230 = 220-230Vac 50/60Hz
Cable Entries [e]	A = 1 x M20x1.5mm + 1 x M20 (Adaptor) B = 2 x 1/2" NPT (Adaptors) C = 1 x 3/4" NPT + 1 x 3/4" NPT (Adaptor) D = 2 x M25x1.5mm (Adaptors) E = 1 x 1/2" NPT (Adaptor) + 1 x M20x1.5mm F = 1 x 1/2" NPT (Adaptor) + 1 x 3/4" NPT G = 1 x M25x1.5mm (Adaptor) + 1 x M20 M = 1 x 3/4" NPT + 1 x M20x1.5mm - Default All Junction Boxes have additional 2 x 3/4" NPT Side Entries
Stopping Plug / Adaptor Material [m]	B = Brass N = Nickel Plated S = Stainless Steel
Guard / Tag Material [s]	1 = 316 St.Steel Guard & 316 Tag 2 = As (1) with Traffic Light Cowl 3 = 316 St.Steel Guard, 316 Tag & Duty Labels 4 = As (5) with Traffic Light Cowl 5 = 316 St.Steel Guard, 316 Tag & Duty Labels attached by steel wire
Product Version [v]	A = IECEx/ATEX/UL/cUL Class I Zone 1 B = IECEx/ATEX C = UL/cUL Class Div 1
Product Option [o]	1 = Standard Wiring (Positive Switching) 2 = Independent Wiring (Positive Switching) 3 = Alt. Standard Wiring (Negative Switching) 4 = Independent Wiring (Negative Switching) 5 = Beacons & Sounder Linked w/ Line Monitoring 6 = Independent Wiring w/ Line Monitoring 7 = Beacons & Sounder Linked W = Special Wiring X = Special Configuration
Assembly Colour [x]	R = Red, G = Grey Other colours also possible, contact E2S sales

7) Location and Mounting

The location of the Alarm Bar should be made with due regard to the area over which the warning signal must be visible/audible. They should only be fixed to surfaces that can carry the weight of the unit.

The D1xC3 Alarm Bar should be secured to any flat surface using ten Ø7mm fixing holes in the mounting plate. See figure 1.

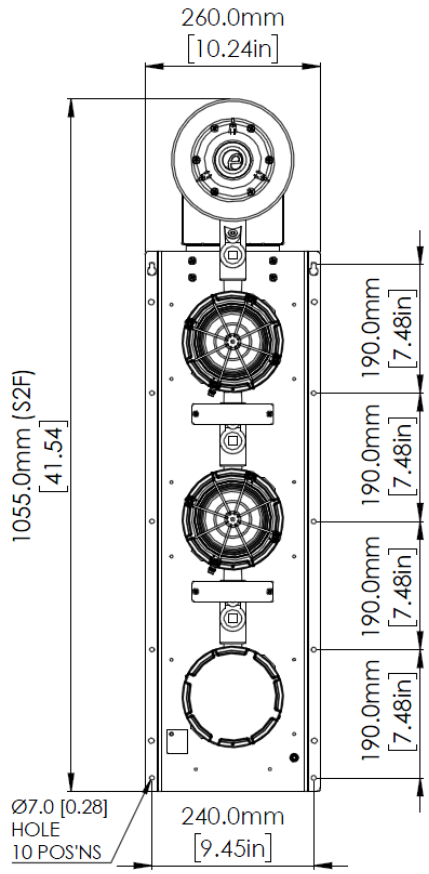


Fig.1: Mounting Detail and Dimensions for D1x Alarm Bar

Alternatively, the unit can be pole mounted. For pole mounting detailed instructions, see drawing D226-00-010

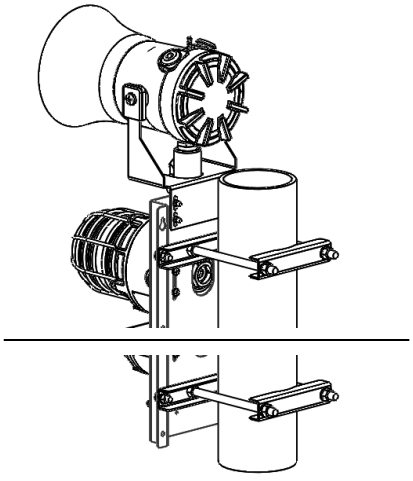


Fig. 2: Pole Mounted Alarm Bar Max. Pole size NPS 4" (OD: Ø114.3mm / 4.5in)

8) Access to the Enclosure



Warning – Hot surfaces. External surfaces and internal components may be hot after operation, take care when handling the equipment.

In order to connect the electrical supply cables to the beacon, it is necessary to open the explosion proof enclosure. Loosen the locking grub screw in the cover and then remove the glass dome cover assembly to gain access to the chamber. This can be achieved by unscrewing the glass dome cover, taking extreme care not to damage the threads when doing so.

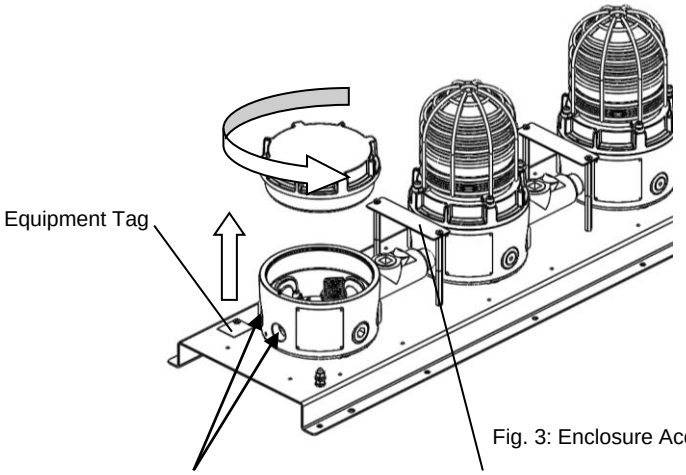


Fig. 3: Enclosure Access

9) Power Supply Selection

For Voltage ranges of complete units, take the highest Minimum value and lowest Maximum value in the ranges of the component units. For Current and Max Current ratings of complete units, add the ratings from the component units.

E.g. D1x C3 J2 2A 2B S1F AC115…:

Unit Type	D1xB2X10	D1xS1	**D1xC3 Total**
Voltage Range	110-**120**Vac 50/60Hz	**110** - 240Vac 50/60Hz	**110-120Vac 50/60Hz**
Current	220mA **x2**	77mA **x1**	**517mA**
Max Current	300mA **x2**	82mA **x1**	**682mA**

Please see individual product instruction manual for Voltage Range, Current and Max Current values.

10) Selection of Cable, Cable Glands, Blanking Elements & Adapters

Please see individual product instruction manual.

NOTE: Stopping plugs cannot be fitted into adaptors.

11) Earthing

The Alarm Bar is provided with an M6 earth screw on the mounting plate. Earthing connections should be made to the M6 earth screw, using a ring crimp terminal to secure the earth conductor.

Please see individual product instruction manual for details of earthing each beacon

12) Cable Connections

Electrical connections are to be made into the DIN terminals in the junction box. See section 8 of this manual for access to the enclosure.

Wires having a cross sectional area between 0.5 mm² to 2.5mm² can be connected to each terminal way. Strip wires to 8mm. Wires may also be fitted using ferrules. Terminal screws need to be tightened down with a tightening torque of 0.45 Nm / 5 Lb-in. When connecting wires to the terminals great care should be taken to dress the wires so that when the cover is inserted into the chamber the wires do not exert excess pressure on the terminal blocks. This is particularly important when using cables with large cross-sectional areas such as 2.5mm².

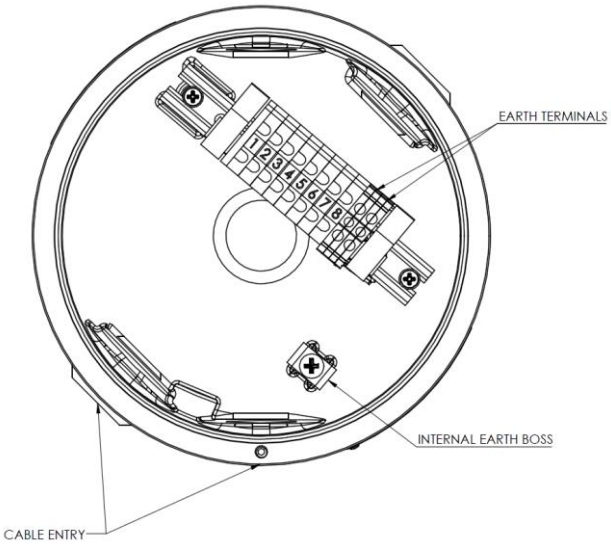


Fig. 4: Junction Box Internal Detail and DIN Terminals

13) Wiring

For wiring diagrams, see schematic document D226-06-138
See table 3 at the end of this manual for list of standard configurations.

Note:
For units with product codes where Product Option = X or W, please see special wiring schematic supplied with the unit documentation.

14) Interchangeable & Spare Parts

The Beacon lens cover is interchangeable, contact E2S Ltd for a replacement lens cover available in various colours.

To change the lens cover, unscrew the 4-off M5 socket head screws, spring and flat washers using a 4mm Hex key. Remove the wire guard and replace the old lens cover with the new lens cover.

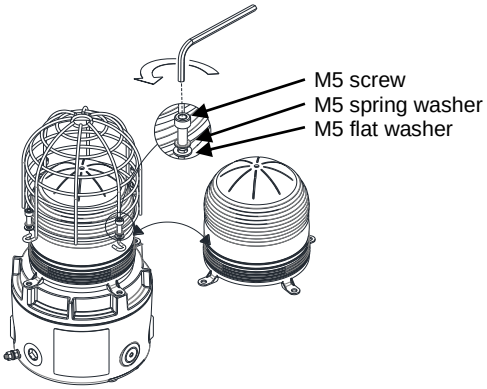
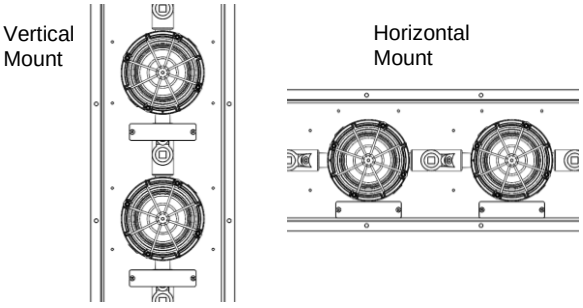


Fig. 5: Replacement of beacon lens cover

Fit the wire guard back onto the housing, over the new lens cover aligning the fixing holes of the guard, lens cover and housing. Refit the fixings to hold into place, the fixings MUST be fitted in the order shown above.

Optional Duty Labels can be placed to suit either the vertical mounting position (default) or a horizontal mounting position. See figure 6 for configuration details.



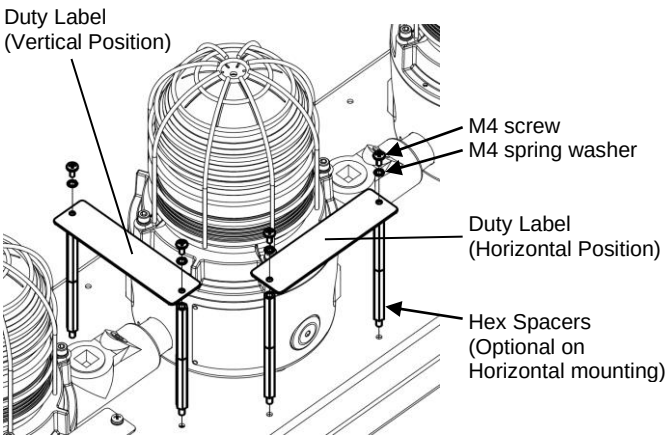


Fig. 6: Duty label assembly and configurations

To move the duty labels, use a spanner or equivalent tool to carefully remove the hex nuts and spring washers from the positions shown on the rear of the plate. Care should be taken not to drop them, especially if working from height.

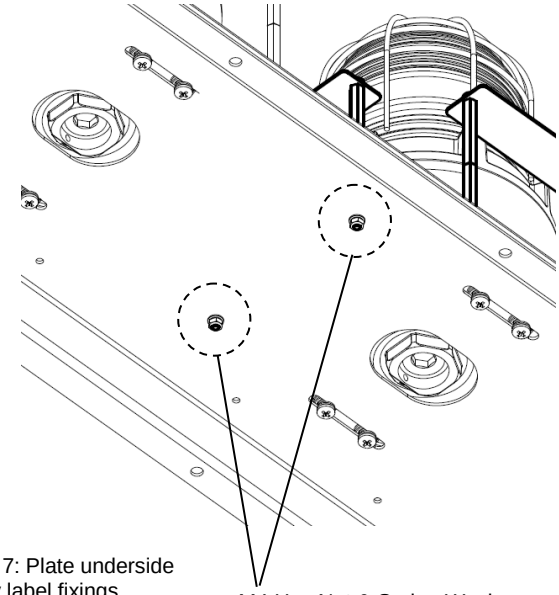


Fig. 7: Plate underside duty label fixings

For horizontal mounting, the hex spacers are optional.

If using the hex spacers:

Position the duty label assembly in the desired position (fig. 6). Place spring washers over the spacer threads on the underside of the plate and tighten M4 hex nuts fully.

If not using hex spacers:

Carefully remove the duty labels from spacers using a posi-drive screwdriver to loosen the M4 screws. Place duty label flush to plate with screws inserted into holes (fig. 6). Place spring washers over the spacer threads on the underside of the plate and tighten M4 hex nuts fully.

Beacons can be configured with a traffic light cowl to enhance visibility. Figure 8 shows the optional Traffic Light Cowl pre-assembled to the Beacon by E2S.

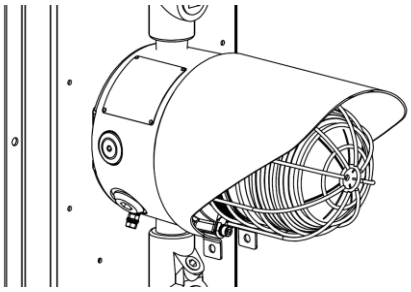


Fig. 8: Traffic Light Cowl

To disassemble the cowl, loosen the M6 Nut using a spanner or wrench and carefully remove from the beacon lid casting.

To re-assemble, manoeuvre the cowl back into position and tighten the M6 Screw and Nut until the cowl is fixed securely.

15) Maintenance, Overhaul and Repair

Please see individual product instruction manual. See Table 1 for Instruction Manual Document Number.

16) SIL Approvals

Beacons and Sounders have been assessed for Reliability and Functional safety under IEC/EN61508 and are considered suitable for use in low demand safety functions:

1. Random Hardware Failures and Architectural constraints (route 2_H).
2. As an unvoted item (i.e. hardware fault tolerance of 0) at SIL 2.

Please see individual product instruction manual in Table 1 for information on reliability data.

DC DIAGRAMS				
Config.	**Voltage**	**Configuration Description**	**Features**	**Product Option [o]**
1	DC	Standard wiring Positive switching (Default)	• Common negative connection to all signals • Positive stage switching on alarm horn sounder	1
2	DC	Independent wiring Positive switching	• Independent wiring to all signals • Positive stage switching on alarm horn sounder	2
3	DC	Alt. Standard wiring Negative switching	• Common negative connection all signals • Negative stage switching on alarm horn sounder	3
4	DC	Independent wiring Negative switching	• Independent wiring to all signals • Negative stage switching on alarm horn sounder	4
5	DC	Beacon and sounder stages linked with line monitoring	• Beacon 1 and 2 linked to sounder stages 1 and 2 • Positive stage switching on alarm horn sounder	5
6	DC	Independent wiring for all signals with line monitoring	• Independent wiring to all signals • Independent wiring to alarm horn sounder stages 1 and 2 • Positive stage switching on alarm horn sounder	6
7	DC	Beacon and sounder stages linked	• Beacon 1 and 2 linked to sounder stages 1 and 2 • Common negative connection to all signals	7
AC DIAGRAMS				
Config.	**Voltage**	**Configuration Description**	**Features**	**Product Option [o]**
1	AC	Standard wiring (Default)	• Common neutral connection to all signals	1
2	AC	Independent wiring	• Independent wiring to all signals	2

Table 3 – Summary of Wiring Options

NOTE: Please see schematic document D226-06-138 for line monitoring details.

DC CONFIGURATIONS

E2S PART NO
D1x[C3][J2][XX][XX][XXX]
Note: Alternative wiring configurations may be available on request - contact E2S sales

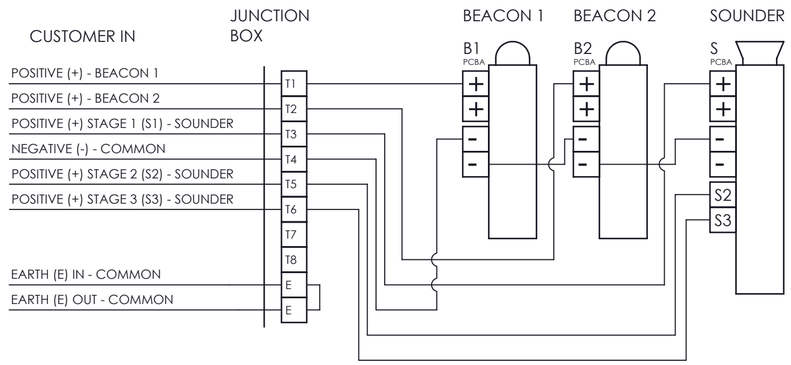
DESCRIPTION
D1xC3 STACK - 2 BEACONS & ALARM HORN WITH JUNCTION BOX

DATA REFERENCE
1-26-080

ISSUE	MOD No.	REASON - INITIAL - DATE
3		DC WAS -VE STAGE SWITCHING NOW +VE. SOUNDER T'NALS UPDATED TO NEW PCBA. DAH - 22-09-2021
4		CONFIG 1-6 CREATED DAH - 20-04-2023
5		CONFIG 7 ADDED. MA - 11-08-2023

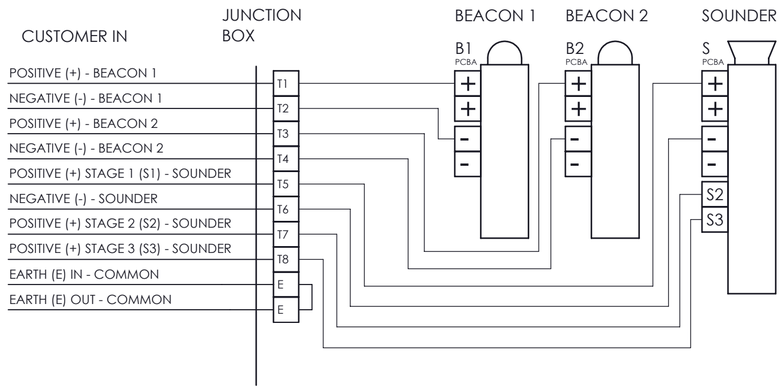
CONFIG. 1 (DEFAULT)

DC VOLTAGE SUPPLY
COMMON NEGATIVE CONNECTION TO ALL SIGNALS
POSITIVE STAGE SWITCHING FOR ALARM HORN SOUNDER



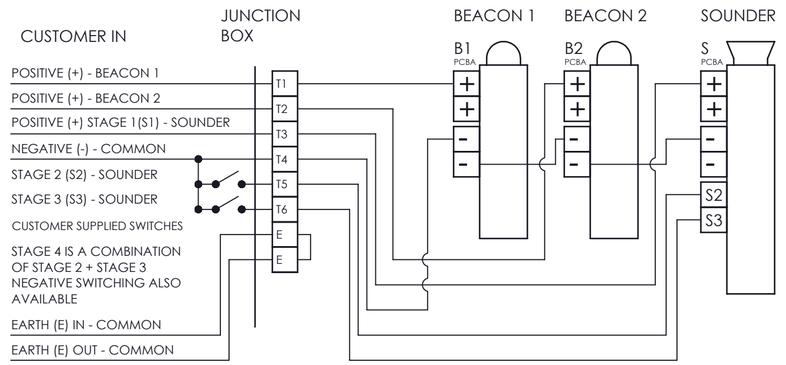
CONFIG. 2

DC VOLTAGE SUPPLY
INDEPENDENT CONNECTIONS TO ALL SIGNALS
POSITIVE STAGE SWITCHING FOR ALARM HORN SOUNDER



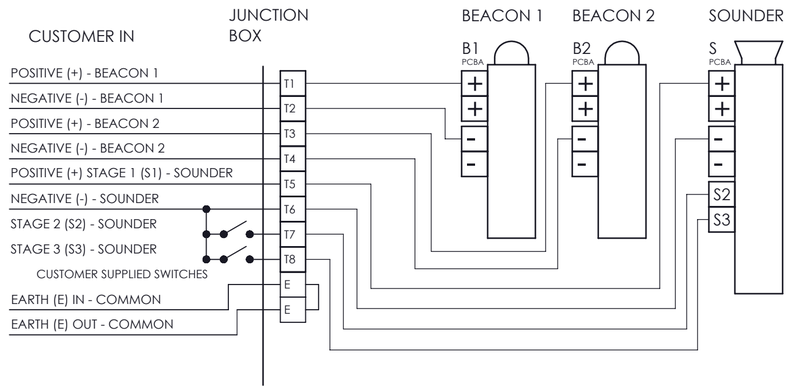
CONFIG. 3

DC VOLTAGE SUPPLY
COMMON NEGATIVE CONNECTION TO ALL SIGNALS
NEGATIVE STAGE SWITCHING FOR ALARM HORN SOUNDER



CONFIG. 4

DC VOLTAGE SUPPLY
INDEPENDENT CONNECTIONS TO ALL SIGNALS
NEGATIVE STAGE SWITCHING FOR ALARM HORN SOUNDER



DRAWING TO BS8888:2000
GEOMETRIC TOLERANCES TO ISO1101:1983
LINEAR DIMENSIONAL TOLS
ANGULAR DIMENSIONAL TOLS

STANDARDS

DRAWN D.HOWGILL DATE 15-08-2019
CHECKED R.N.POTTS DATE 15-08-2019
APPROVED R.N.POTTS DATE 15-08-2019

SURFACE FINISH FINISH
WEIGHT (Kg)
MATERIAL
ALTERNATIVE MATERIAL

THIS DRAWING AND ANY INFORMATION OR DESCRIPTIVE MATTER THEREIN IS COMMUNICATED IN CONFIDENCE AND IS THE COPYRIGHT PROPERTY OF EUROPEAN SAFETY SYSTEMS LTD. NEITHER THE WHOLE OR ANY EXTRACT MAY BE DISCLOSED, LOANED, COPIED OR USED FOR MANUFACTURING OR TENDERING PURPOSES WITHOUT THEIR WRITTEN CONSENT.

© EUROPEAN SAFETY SYSTEMS LTD. AS PER LATEST DATE OF ISSUE SHOWN ABOVE

2S warning signals
EUROPEAN SAFETY SYSTEMS LTD
IMPRESS HOUSE
MANSELL ROAD
ACTON
LONDON W3 7QH
WWW.E2S.COM

ALL DIMENSIONS IN MM
IF IN DOUBT, ASK - DO NOT SCALE

A2

TITLE D1xC3 STACK - 2 BEACONS & ALARM HORN WITH JUNCTION BOX WIRING SCHEMATIC

SCALE NTS
SHEET 1 OF 3
DRAWING NUMBER D226-06-138

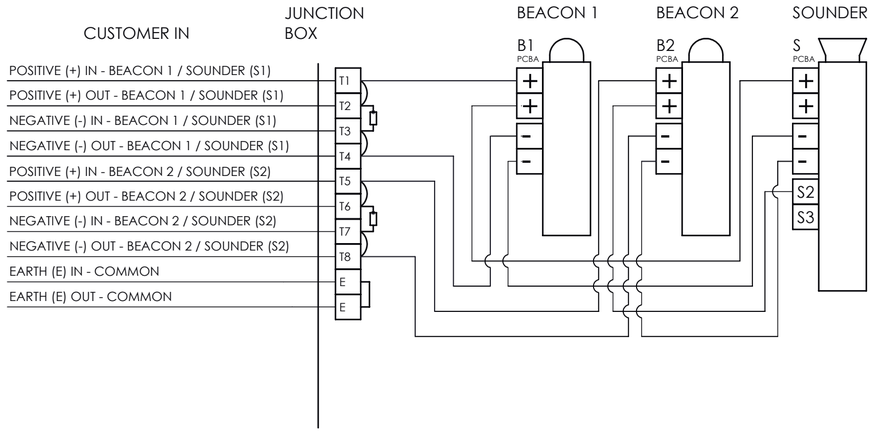
DC CONFIGURATIONS

ISSUE	MOD No.	REASON - INITIAL - DATE
3		SEE SH1
4		SEE SH1
5		SEE SH1

CONFIG. 5

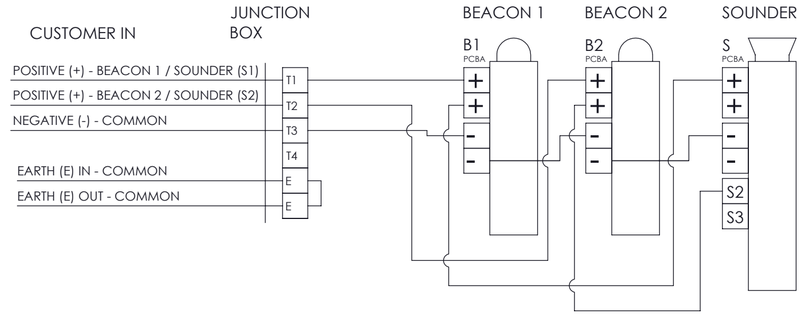
DC VOLTAGE SUPPLY
BEACON 1 AND SOUNDER STAGE 1 LINKED ; BEACON 2 AND SOUNDER STAGE 2 LINKED
INDEPENDENT STAGE WIRING FOR ALARM HORN SOUNDER WITH END OF LINE MONITORING (2 STAGES)

ALL EOL RESISTORS ARE TO BE INSTALLED IN THE PCBA TERMINALS OF THE UNIT/S BEING MONITORED.
EOL RESISTOR POSTION/S SHOWN FOR DIAGRAMMATIC REFERENCE ONLY.



CONFIG. 7

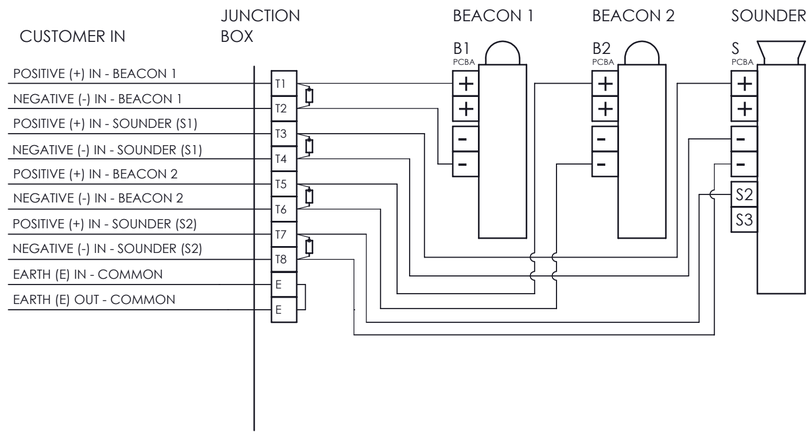
DC VOLTAGE SUPPLY
COMMON NEGATIVE CONNECTION TO ALL SIGNALS
BEACON 1 AND SOUNDER STAGE 1 LINKED; BEACON 2 AND SOUNDER STAGE 2 LINKED



CONFIG. 6

DC VOLTAGE SUPPLY
INDEPENDENT CONNECTIONS ON ALL SIGNALS
INDEPENDENT STAGE WIRING FOR ALARM HORN SOUNDER WITH END OF LINE MONITORING (2 STAGES)

ALL EOL RESISTORS ARE TO BE INSTALLED IN THE PCBA TERMINALS OF THE UNIT/S BEING MONITORED.
EOL RESISTOR POSTION/S SHOWN FOR DIAGRAMMATIC REFERENCE ONLY.



DRAWING TO BS8888:2000
GEOMETRIC TOLERANCES TO ISO1101:1983
LINEAR DIMENSIONAL TOLS
ANGULAR DIMENSIONAL TOLS

STANDARDS

DRAWN D.HOWGILL DATE 15-08-2019
CHECKED R.N.POTTS DATE 15-08-2019
APPROVED R.N.POTTS DATE 15-08-2019

SURFACE FINISH FINISH
WEIGHT (Kg)
MATERIAL
ALTERNATIVE MATERIAL

THIS DRAWING AND ANY INFORMATION OR DESCRIPTIVE MATTER THEREIN IS COMMUNICATED IN CONFIDENCE AND IS THE COPYRIGHT PROPERTY OF EUROPEAN SAFETY SYSTEMS LTD. NEITHER THE WHOLE OR ANY EXTRACT MAY BE DISCLOSED, LOANED, COPIED OR USED FOR MANUFACTURING OR TENDERING PURPOSES WITHOUT THEIR WRITTEN CONSENT.

(C) EUROPEAN SAFETY SYSTEMS LTD. AS PER LATEST DATE OF ISSUE SHOWN ABOVE

EUROPEAN SAFETY SYSTEMS LTD
IMPRESS HOUSE
MANSELL ROAD
ACTON
LONDON W3 7QH

WWW.E2S.COM

ALL DIMENSIONS IN MM
IF IN DOUBT, ASK - DO NOT SCALE

A2

TITLE D1xC3 STACK - 2 BEACONS & ALARM HORN WITH JUNCTION BOX WIRING SCHEMATIC

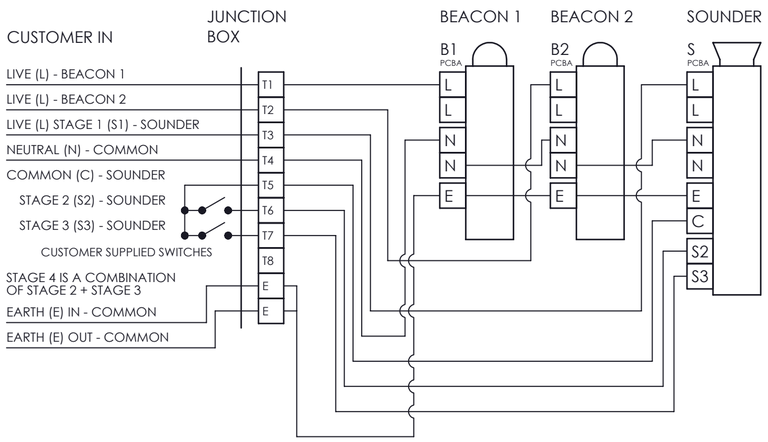
SCALE NTS
SHEET 2 OF 3
DRAWING NUMBER D226-06-138

AC CONFIGURATIONS

ISSUE	MOD No.	REASON - INITIAL - DATE
3		SEE SH1
4		SEE SH1
5		SEE SH1

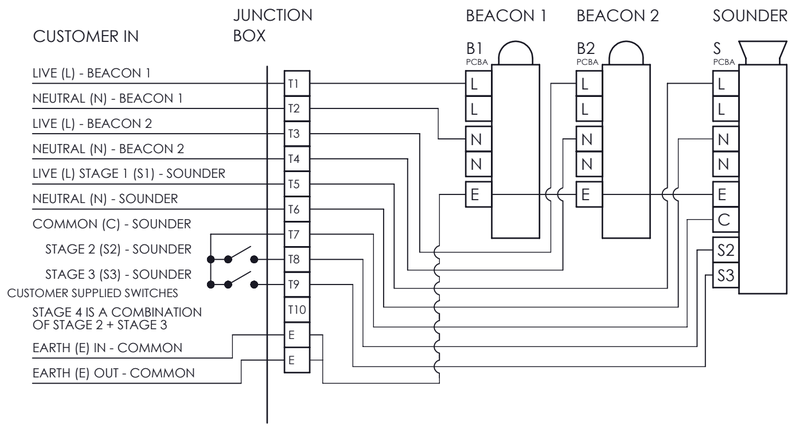
CONFIG. 1
(DEFAULT)

- AC VOLTAGE SUPPLY
- COMMON NEUTRAL CONNECTION TO ALL SIGNALS
- COMMON STAGE SWITCHING FOR ALARM HORN SOUNDER

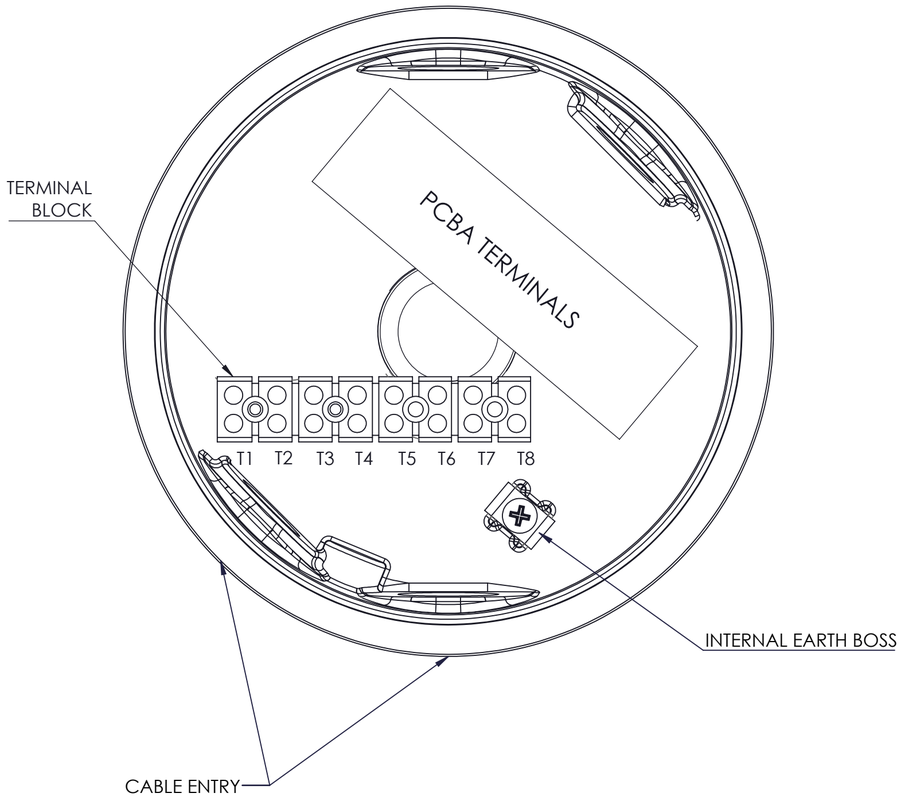


CONFIG. 2

- AC VOLTAGE SUPPLY
- INDEPENDENT CONNECTIONS TO ALL SIGNALS
- COMMON STAGE SWITCHING FOR ALARM HORN SOUNDER



ENTRY TERMINALS



DRAWING TO BS8888:2000 GEOMETRIC TOLERANCES TO ISO1101:1983 LINEAR DIMENSIONAL TOLS ANGULAR DIMENSIONAL TOLS	DRAWN D.HOWGILL DATE 15-08-2019	SURFACE FINISH FINISH	WEIGHT (Kg)
STANDARDS	CHECKED R.N.POTTS DATE 15-08-2019	MATERIAL	
	APPROVED R.N.POTTS DATE 15-08-2019	ALTERNATIVE MATERIAL	

THIS DRAWING AND ANY INFORMATION OR DESCRIPTIVE MATTER THEREIN IS COMMUNICATED IN CONFIDENCE AND IS THE COPYRIGHT PROPERTY OF EUROPEAN SAFETY SYSTEMS LTD. NEITHER THE WHOLE OR ANY EXTRACT MAY BE DISCLOSED, LOANED, COPIED OR USED FOR MANUFACTURING OR TENDERING PURPOSES WITHOUT THEIR WRITTEN CONSENT.

© EUROPEAN SAFETY SYSTEMS LTD. AS PER LATEST DATE OF ISSUE SHOWN ABOVE

EUROPEAN SAFETY SYSTEMS LTD
IMPRESS HOUSE
MANSELL ROAD
ACTON
LONDON W3 7QH
WWW.E2S.COM

ALL DIMENSIONS IN MM
IF IN DOUBT, ASK - DO NOT SCALE

A2

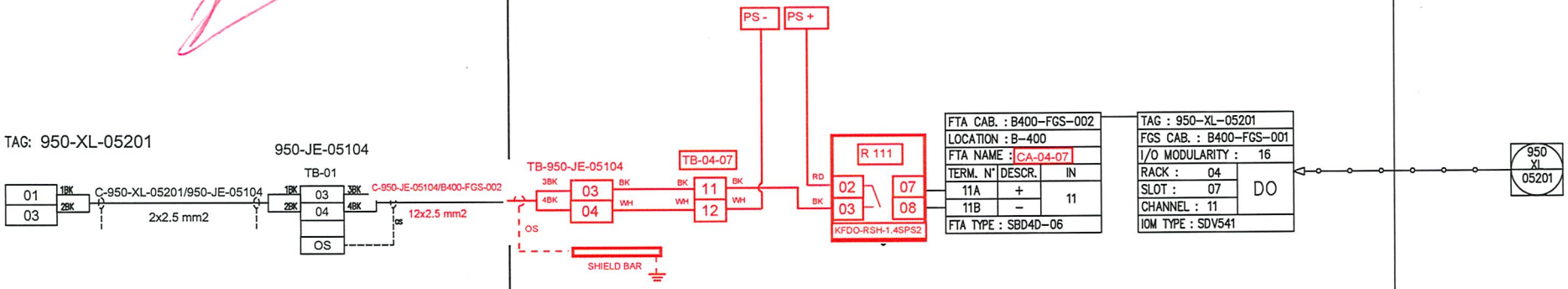
TITLE D1xC3 STACK - 2 BEACONS & ALARM HORN WITH JUNCTION BOX WIRING SCHEMATIC

SCALE	SHEET	DRAWING NUMBER
NTS	3 OF 3	D226-06-138

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-XL-05201
FZ-05 OPTICAL EXP GAS ALARM WATER TREAT. PKG

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 393 | REV. 01

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

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	950-XL-05202	: FZ-05 Optical fire alarm water treat. pkg	Dwg	123A90-DDL-SAF-DL-30027		
	S/Sys	70-16	: F&G Devices FZ-05 (Bess Area)	Module			
TASK	code	C10004478	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-05202			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	12A/12B	Slot	07	Rack	04	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	Yes	NA	Yes		NA	OK
7	Loop not energized	No	NA	Yes		NA	OK
8	Checking of line monitoring	Yes	NA	Yes		OK	OK
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		

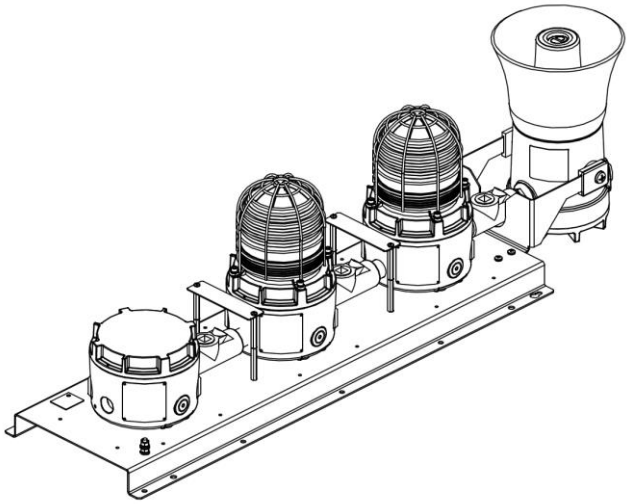
LOOP DOCUMENTATION

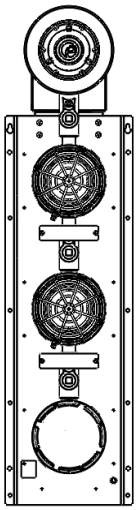
13	Loop diagram is marked up and attached to this test sheet	OK
14	Cause and effect chart is highlighted accordingly	OK
15	Any defect is recorded for punch list issuance	NA

Comments:

	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CW OPS
Name	Marco Di Maria	Giandonato Delmissier	Jamie McAllister
Date	2025-02-21	2025-02-24	2025-02-24
Signature	PROVERLIS Digitaly signed by Marco Di Maria 2025-02-21T17:21:25.695Z	PROVERLIS Digitaly signed by Giandonato Delmissier 2025-02-24T13:42:46.504Z	PROVERLIS Digitaly signed by Jamie McAllister 2025-02-24T15:56:24.005Z

INSTRUCTION MANUAL
D1xC3 Alarm Bar
2 Beacons & Alarm Horn with Junction Box





1) Warnings

Please see individual product instruction manual. See Table 1 for Instruction Manual Document Number.

2) Rating & Marking Information

Please see individual product instruction manual. See Table 1 for Instruction Manual Document Number.

All individual unit ratings must be suitable for the installation.

3) Type Approval Standards

Please see individual product instruction manual. See Table 1 for Instruction Manual Document Number.

4) Installation Requirements

Please see individual product instruction manual. See Table 1 for Instruction Manual Document Number.

5) Special Conditions of Use

Please see individual product instruction manual. See Table 1 for Instruction Manual Document Number.

Component Part Code Reference	Component Description	Document Number
D1XJ2	Junction Box	D191-00-501-IS
D1XB2X05	5J Xenon Strobe Beacon	D191-00-201-IS
D1XB2X10	10J Xenon Strobe Beacon	
D1XB2X15	15J Xenon Strobe Beacon	
D1XB2X21	21J Xenon Strobe Beacon	
D1XB2LD2	LED Beacon	D191-00-401-IS
D1XS1	Alarm Horn Sounder	D190-00-001-IS
D1XS2	Alarm Horn Sounder	D190-00-101-IS

Table 1: Product Instruction Manual Reference

6) Part Coding

Part Code:	Identifier - Description
Product Type	D1xC3
Junction Box	J2 = Junction Box
Beacon Type (Add Code for each Beacon in Alarm Bar)	1Y = D1xB2X05 2Y = D1xB2X10 3Y = D1xB2X15 4Y = D1xB2X21 5Y = D1xB2LD2 Where Y = Lens Colour, choose from: A = Amber, B = Blue, C = Clear, G = Green, M = Magenta, R = Red, Y = Yellow
Sounder Type	S1F = D1xS1 Flare Sounder S1R = D1xS1 Radial Sounder S2F = D1xS2 Flare Sounder S2H = D1xS2 Large Flare Sounder
Voltage	DC024 = 24Vdc AC115 = 115-120Vac 50/60Hz AC230 = 220-230Vac 50/60Hz
Cable Entries [e]	A = 1 x M20x1.5mm + 1 x M20 (Adaptor) B = 2 x 1/2" NPT (Adaptors) C = 1 x 3/4" NPT + 1 x 3/4" NPT (Adaptor) D = 2 x M25x1.5mm (Adaptors) E = 1 x 1/2" NPT (Adaptor) + 1 x M20x1.5mm F = 1 x 1/2" NPT (Adaptor) + 1 x 3/4" NPT G = 1 x M25x1.5mm (Adaptor) + 1 x M20 M = 1 x 3/4" NPT + 1 x M20x1.5mm - Default All Junction Boxes have additional 2 x 3/4" NPT Side Entries
Stopping Plug / Adaptor Material [m]	B = Brass N = Nickel Plated S = Stainless Steel
Guard / Tag Material [s]	1 = 316 St.Steel Guard & 316 Tag 2 = As (1) with Traffic Light Cowl 3 = 316 St.Steel Guard, 316 Tag & Duty Labels 4 = As (5) with Traffic Light Cowl 5 = 316 St.Steel Guard, 316 Tag & Duty Labels attached by steel wire
Product Version [v]	A = IECEx/ATEX/UL/cUL Class I Zone 1 B = IECEx/ATEX C = UL/cUL Class Div 1
Product Option [o]	1 = Standard Wiring (Positive Switching) 2 = Independent Wiring (Positive Switching) 3 = Alt. Standard Wiring (Negative Switching) 4 = Independent Wiring (Negative Switching) 5 = Beacons & Sounder Linked w/ Line Monitoring 6 = Independent Wiring w/ Line Monitoring 7 = Beacons & Sounder Linked W = Special Wiring X = Special Configuration
Assembly Colour [x]	R = Red, G = Grey Other colours also possible, contact E2S sales

7) Location and Mounting

The location of the Alarm Bar should be made with due regard to the area over which the warning signal must be visible/audible. They should only be fixed to surfaces that can carry the weight of the unit.

The D1xC3 Alarm Bar should be secured to any flat surface using ten Ø7mm fixing holes in the mounting plate. See figure 1.

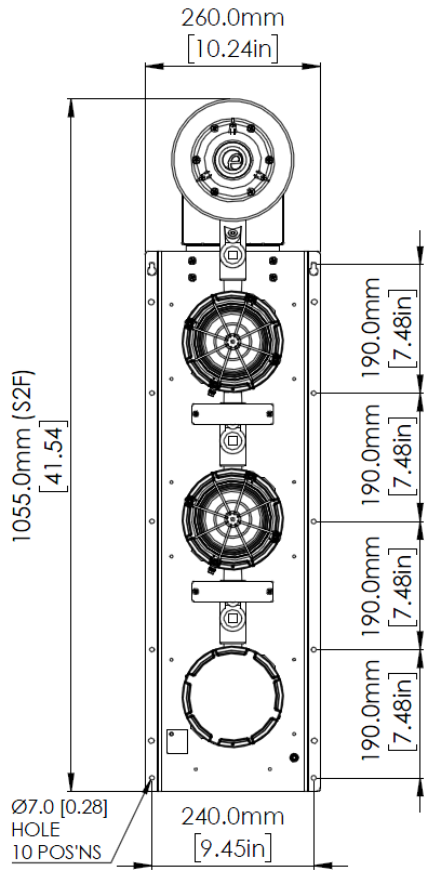


Fig.1: Mounting Detail and Dimensions for D1x Alarm Bar

Alternatively, the unit can be pole mounted. For pole mounting detailed instructions, see drawing D226-00-010

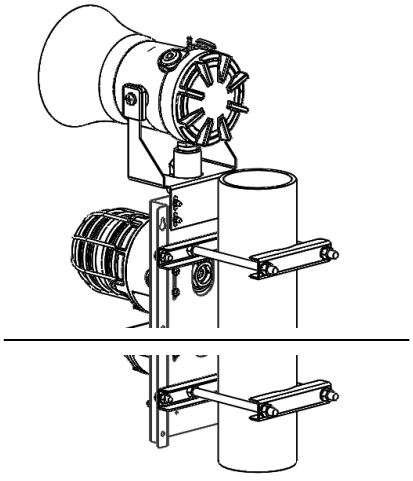


Fig. 2: Pole Mounted Alarm Bar Max. Pole size NPS 4" (OD: Ø114.3mm / 4.5in)

8) Access to the Enclosure



Warning – Hot surfaces. External surfaces and internal components may be hot after operation, take care when handling the equipment.

In order to connect the electrical supply cables to the beacon, it is necessary to open the explosion proof enclosure. Loosen the locking grub screw in the cover and then remove the glass dome cover assembly to gain access to the chamber. This can be achieved by unscrewing the glass dome cover, taking extreme care not to damage the threads when doing so.

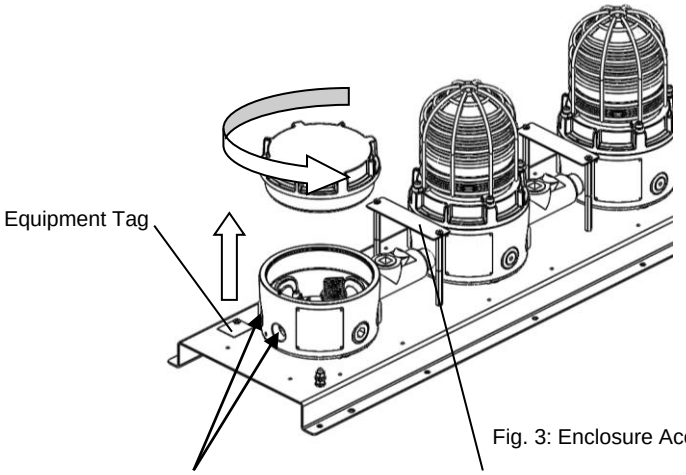


Fig. 3: Enclosure Access

9) Power Supply Selection

For Voltage ranges of complete units, take the highest Minimum value and lowest Maximum value in the ranges of the component units. For Current and Max Current ratings of complete units, add the ratings from the component units.

E.g. D1x C3 J2 2A 2B S1F AC115…:

Unit Type	D1xB2X10	D1xS1	**D1xC3 Total**
Voltage Range	110-**120**Vac 50/60Hz	**110** - 240Vac 50/60Hz	**110-120Vac 50/60Hz**
Current	220mA **x2**	77mA **x1**	**517mA**
Max Current	300mA **x2**	82mA **x1**	**682mA**

Please see individual product instruction manual for Voltage Range, Current and Max Current values.

10) Selection of Cable, Cable Glands, Blanking Elements & Adapters

Please see individual product instruction manual.

NOTE: Stopping plugs cannot be fitted into adaptors.

11) Earthing

The Alarm Bar is provided with an M6 earth screw on the mounting plate. Earthing connections should be made to the M6 earth screw, using a ring crimp terminal to secure the earth conductor.

Please see individual product instruction manual for details of earthing each beacon

12) Cable Connections

Electrical connections are to be made into the DIN terminals in the junction box. See section 8 of this manual for access to the enclosure.

Wires having a cross sectional area between 0.5 mm² to 2.5mm² can be connected to each terminal way. Strip wires to 8mm. Wires may also be fitted using ferrules. Terminal screws need to be tightened down with a tightening torque of 0.45 Nm / 5 Lb-in. When connecting wires to the terminals great care should be taken to dress the wires so that when the cover is inserted into the chamber the wires do not exert excess pressure on the terminal blocks. This is particularly important when using cables with large cross-sectional areas such as 2.5mm².

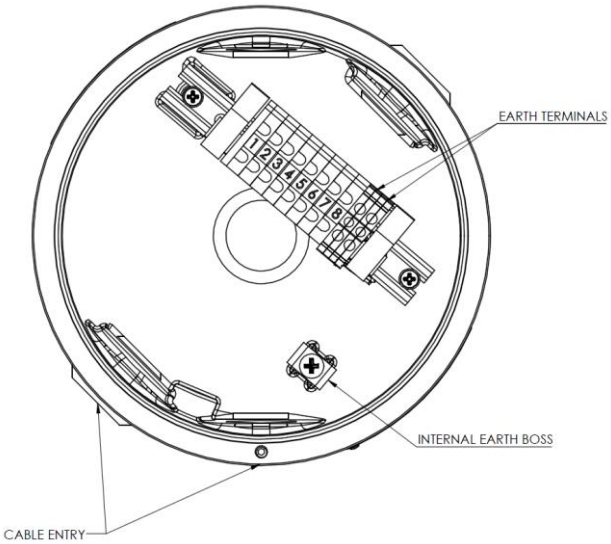


Fig. 4: Junction Box Internal Detail and DIN Terminals

13) Wiring

For wiring diagrams, see schematic document D226-06-138
See table 3 at the end of this manual for list of standard configurations.

Note:
For units with product codes where Product Option = X or W, please see special wiring schematic supplied with the unit documentation.

14) Interchangeable & Spare Parts

The Beacon lens cover is interchangeable, contact E2S Ltd for a replacement lens cover available in various colours.

To change the lens cover, unscrew the 4-off M5 socket head screws, spring and flat washers using a 4mm Hex key. Remove the wire guard and replace the old lens cover with the new lens cover.

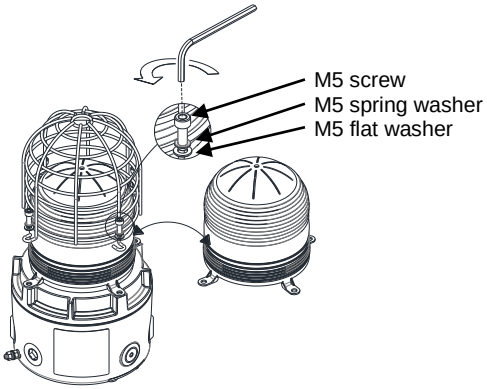
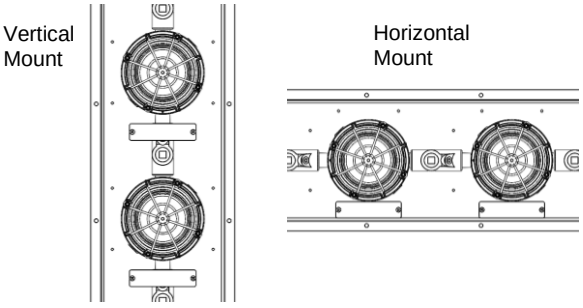


Fig. 5: Replacement of beacon lens cover

Fit the wire guard back onto the housing, over the new lens cover aligning the fixing holes of the guard, lens cover and housing. Refit the fixings to hold into place, the fixings MUST be fitted in the order shown above.

Optional Duty Labels can be placed to suit either the vertical mounting position (default) or a horizontal mounting position. See figure 6 for configuration details.



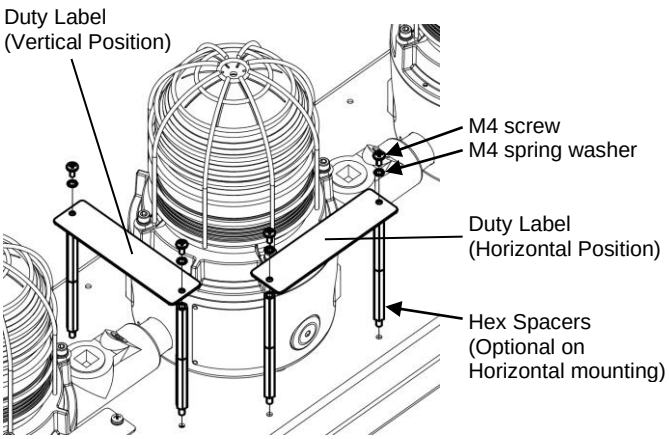


Fig. 6: Duty label assembly and configurations

To move the duty labels, use a spanner or equivalent tool to carefully remove the hex nuts and spring washers from the positions shown on the rear of the plate. Care should be taken not to drop them, especially if working from height.

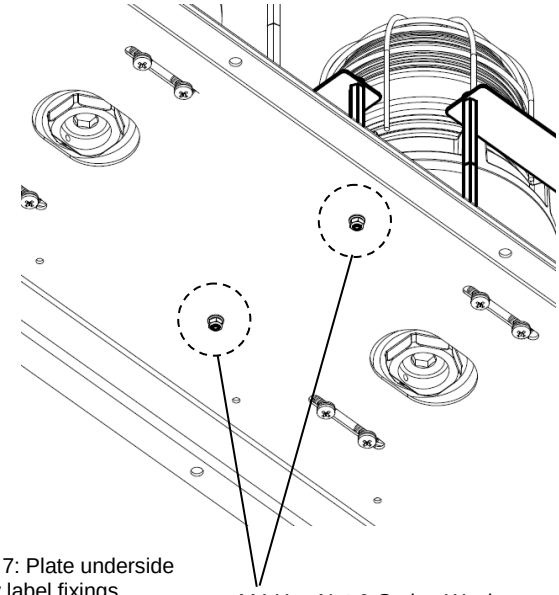


Fig. 7: Plate underside duty label fixings

For horizontal mounting, the hex spacers are optional.

If using the hex spacers:

Position the duty label assembly in the desired position (fig. 6). Place spring washers over the spacer threads on the underside of the plate and tighten M4 hex nuts fully.

If not using hex spacers:

Carefully remove the duty labels from spacers using a posi-drive screwdriver to loosen the M4 screws. Place duty label flush to plate with screws inserted into holes (fig. 6). Place spring washers over the spacer threads on the underside of the plate and tighten M4 hex nuts fully.

Beacons can be configured with a traffic light cowl to enhance visibility. Figure 8 shows the optional Traffic Light Cowl pre-assembled to the Beacon by E2S.

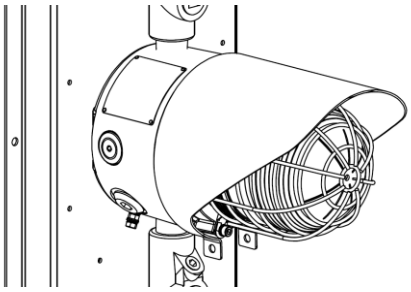


Fig. 8: Traffic Light Cowl

To disassemble the cowl, loosen the M6 Nut using a spanner or wrench and carefully remove from the beacon lid casting.

To re-assemble, manoeuvre the cowl back into position and tighten the M6 Screw and Nut until the cowl is fixed securely.

15) Maintenance, Overhaul and Repair

Please see individual product instruction manual. See Table 1 for Instruction Manual Document Number.

16) SIL Approvals

Beacons and Sounders have been assessed for Reliability and Functional safety under IEC/EN61508 and are considered suitable for use in low demand safety functions:

1. Random Hardware Failures and Architectural constraints (route 2_H).
2. As an unvoted item (i.e. hardware fault tolerance of 0) at SIL 2.

Please see individual product instruction manual in Table 1 for information on reliability data.

DC DIAGRAMS				
Config.	**Voltage**	**Configuration Description**	**Features**	**Product Option [o]**
1	DC	Standard wiring Positive switching (Default)	• Common negative connection to all signals • Positive stage switching on alarm horn sounder	1
2	DC	Independent wiring Positive switching	• Independent wiring to all signals • Positive stage switching on alarm horn sounder	2
3	DC	Alt. Standard wiring Negative switching	• Common negative connection all signals • Negative stage switching on alarm horn sounder	3
4	DC	Independent wiring Negative switching	• Independent wiring to all signals • Negative stage switching on alarm horn sounder	4
5	DC	Beacon and sounder stages linked with line monitoring	• Beacon 1 and 2 linked to sounder stages 1 and 2 • Positive stage switching on alarm horn sounder	5
6	DC	Independent wiring for all signals with line monitoring	• Independent wiring to all signals • Independent wiring to alarm horn sounder stages 1 and 2 • Positive stage switching on alarm horn sounder	6
7	DC	Beacon and sounder stages linked	• Beacon 1 and 2 linked to sounder stages 1 and 2 • Common negative connection to all signals	7
AC DIAGRAMS				
Config.	**Voltage**	**Configuration Description**	**Features**	**Product Option [o]**
1	AC	Standard wiring (Default)	• Common neutral connection to all signals	1
2	AC	Independent wiring	• Independent wiring to all signals	2

Table 3 – Summary of Wiring Options

NOTE: Please see schematic document D226-06-138 for line monitoring details.

DC CONFIGURATIONS

E2S PART NO
D1x[C3][J2][XX][XX][XXX]
Note: Alternative wiring configurations may be available on request - contact E2S sales

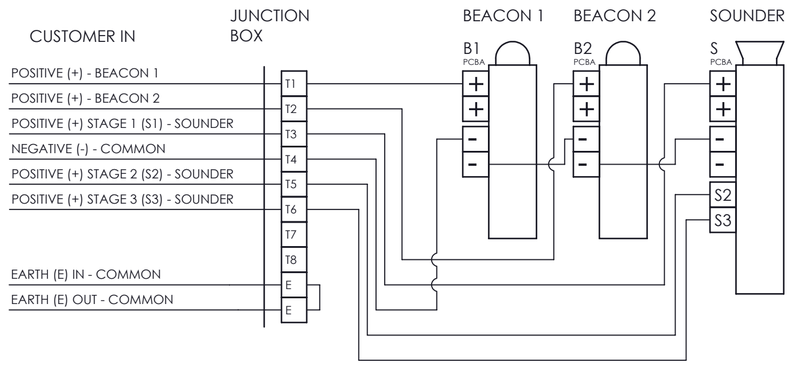
DESCRIPTION
D1xC3 STACK - 2 BEACONS & ALARM HORN WITH JUNCTION BOX

DATA REFERENCE
1-26-080

ISSUE	MOD No.	REASON - INITIAL - DATE
3		DC WAS -VE STAGE SWITCHING NOW +VE. SOUNDER T'NALS UPDATED TO NEW PCBA. DAH - 22-09-2021
4		CONFIG 1-6 CREATED DAH - 20-04-2023
5		CONFIG 7 ADDED. MA - 11-08-2023

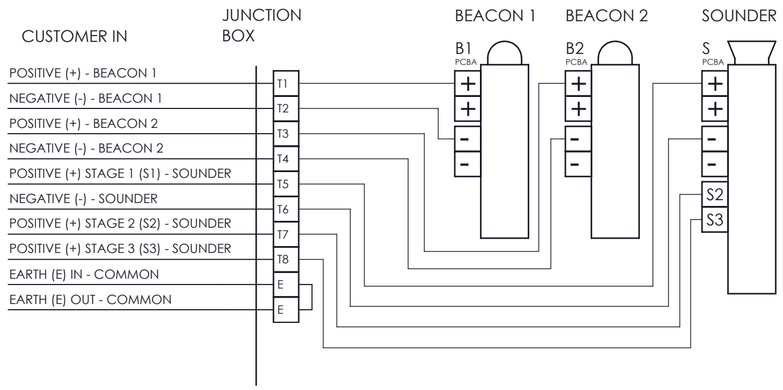
CONFIG. 1 (DEFAULT)

DC VOLTAGE SUPPLY
COMMON NEGATIVE CONNECTION TO ALL SIGNALS
POSITIVE STAGE SWITCHING FOR ALARM HORN SOUNDER



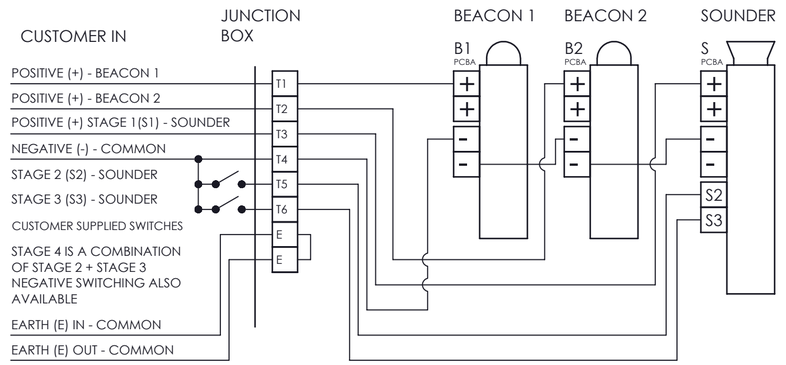
CONFIG. 2

DC VOLTAGE SUPPLY
INDEPENDENT CONNECTIONS TO ALL SIGNALS
POSITIVE STAGE SWITCHING FOR ALARM HORN SOUNDER



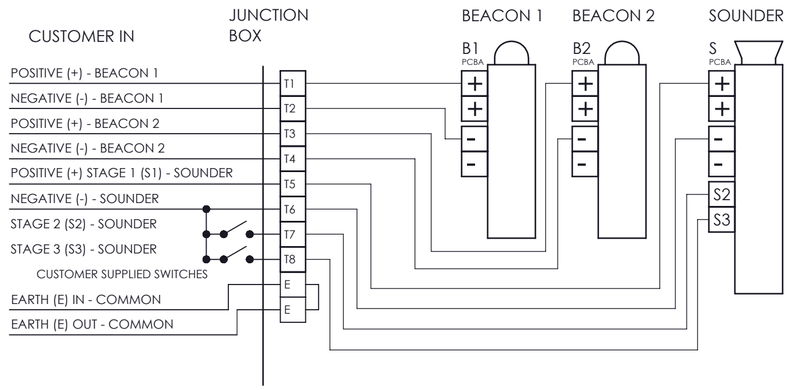
CONFIG. 3

DC VOLTAGE SUPPLY
COMMON NEGATIVE CONNECTION TO ALL SIGNALS
NEGATIVE STAGE SWITCHING FOR ALARM HORN SOUNDER



CONFIG. 4

DC VOLTAGE SUPPLY
INDEPENDENT CONNECTIONS TO ALL SIGNALS
NEGATIVE STAGE SWITCHING FOR ALARM HORN SOUNDER



DRAWING TO BS8888:2000
GEOMETRIC TOLERANCES TO ISO1101:1983
LINEAR DIMENSIONAL TOLS
ANGULAR DIMENSIONAL TOLS

STANDARDS

DRAWN D.HOWGILL DATE 15-08-2019
CHECKED R.N.POTTS DATE 15-08-2019
APPROVED R.N.POTTS DATE 15-08-2019

SURFACE FINISH FINISH
WEIGHT (Kg)
MATERIAL
ALTERNATIVE MATERIAL

THIS DRAWING AND ANY INFORMATION OR DESCRIPTIVE MATTER THEREIN IS COMMUNICATED IN CONFIDENCE AND IS THE COPYRIGHT PROPERTY OF EUROPEAN SAFETY SYSTEMS LTD. NEITHER THE WHOLE OR ANY EXTRACT MAY BE DISCLOSED, LOANED, COPIED OR USED FOR MANUFACTURING OR TENDERING PURPOSES WITHOUT THEIR WRITTEN CONSENT.

© EUROPEAN SAFETY SYSTEMS LTD. AS PER LATEST DATE OF ISSUE SHOWN ABOVE

2S warning signals
EUROPEAN SAFETY SYSTEMS LTD
IMPRESS HOUSE
MANSELL ROAD
ACTON
LONDON W3 7QH
WWW.E2S.COM

ALL DIMENSIONS IN MM
IF IN DOUBT, ASK - DO NOT SCALE

A2

TITLE D1xC3 STACK - 2 BEACONS & ALARM HORN WITH JUNCTION BOX WIRING SCHEMATIC

SCALE NTS
SHEET 1 OF 3
DRAWING NUMBER D226-06-138

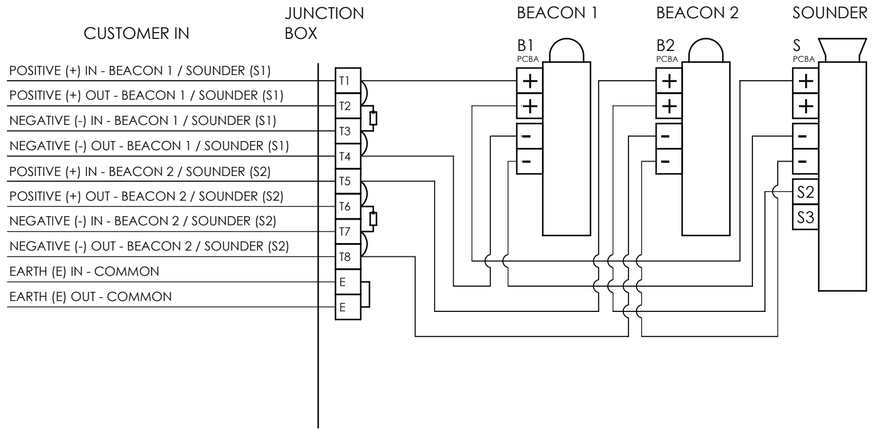
DC CONFIGURATIONS

ISSUE	MOD No.	REASON - INITIAL - DATE
3		SEE SH1
4		SEE SH1
5		SEE SH1

CONFIG. 5

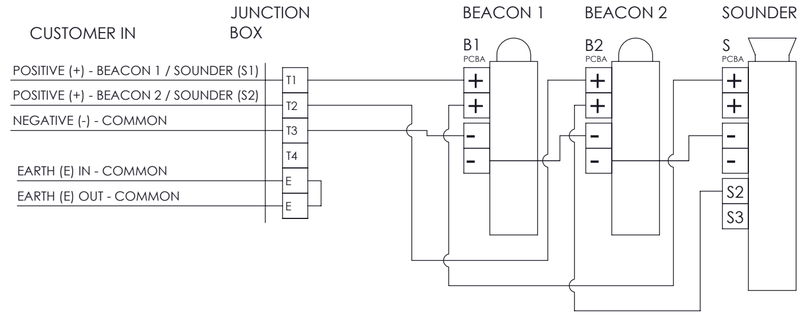
DC VOLTAGE SUPPLY
BEACON 1 AND SOUNDER STAGE 1 LINKED ; BEACON 2 AND SOUNDER STAGE 2 LINKED
INDEPENDENT STAGE WIRING FOR ALARM HORN SOUNDER WITH END OF LINE MONITORING (2 STAGES)

ALL EOL RESISTORS ARE TO BE INSTALLED IN THE PCBA TERMINALS OF THE UNIT/S BEING MONITORED.
EOL RESISTOR POSTION/S SHOWN FOR DIAGRAMMATIC REFERENCE ONLY.



CONFIG. 7

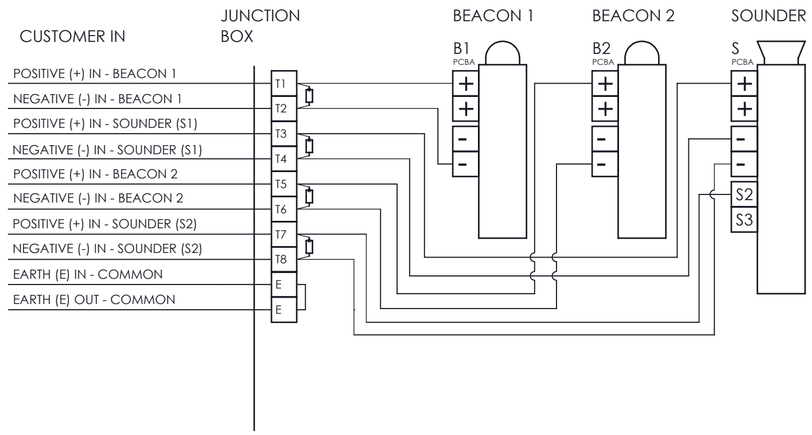
DC VOLTAGE SUPPLY
COMMON NEGATIVE CONNECTION TO ALL SIGNALS
BEACON 1 AND SOUNDER STAGE 1 LINKED; BEACON 2 AND SOUNDER STAGE 2 LINKED



CONFIG. 6

DC VOLTAGE SUPPLY
INDEPENDENT CONNECTIONS ON ALL SIGNALS
INDEPENDENT STAGE WIRING FOR ALARM HORN SOUNDER WITH END OF LINE MONITORING (2 STAGES)

ALL EOL RESISTORS ARE TO BE INSTALLED IN THE PCBA TERMINALS OF THE UNIT/S BEING MONITORED.
EOL RESISTOR POSTION/S SHOWN FOR DIAGRAMMATIC REFERENCE ONLY.



DRAWING TO BS8888:2000
GEOMETRIC TOLERANCES TO ISO1101:1983
LINEAR DIMENSIONAL TOLS
ANGULAR DIMENSIONAL TOLS

STANDARDS

DRAWN D.HOWGILL DATE 15-08-2019
CHECKED R.N.POTTS DATE 15-08-2019
APPROVED R.N.POTTS DATE 15-08-2019

SURFACE FINISH FINISH
WEIGHT (Kg)
MATERIAL
ALTERNATIVE MATERIAL

THIS DRAWING AND ANY INFORMATION OR DESCRIPTIVE MATTER THEREIN IS COMMUNICATED IN CONFIDENCE AND IS THE COPYRIGHT PROPERTY OF EUROPEAN SAFETY SYSTEMS LTD. NEITHER THE WHOLE OR ANY EXTRACT MAY BE DISCLOSED, LOANED, COPIED OR USED FOR MANUFACTURING OR TENDERING PURPOSES WITHOUT THEIR WRITTEN CONSENT.

(C) EUROPEAN SAFETY SYSTEMS LTD. AS PER LATEST DATE OF ISSUE SHOWN ABOVE

EUROPEAN SAFETY SYSTEMS LTD
IMPRESS HOUSE
MANSELL ROAD
ACTON
LONDON W3 7QH

WWW.E2S.COM

ALL DIMENSIONS IN MM
IF IN DOUBT, ASK - DO NOT SCALE

A2

TITLE D1xC3 STACK - 2 BEACONS & ALARM HORN WITH JUNCTION BOX WIRING SCHEMATIC

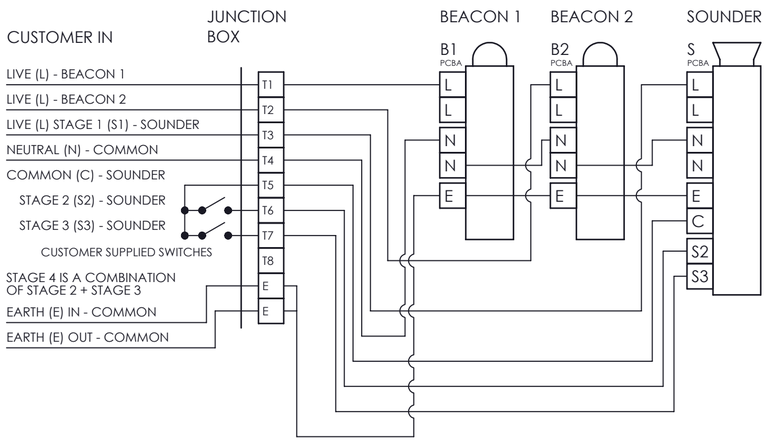
SCALE NTS
SHEET 2 OF 3
DRAWING NUMBER D226-06-138

AC CONFIGURATIONS

ISSUE	MOD No.	REASON - INITIAL - DATE
3		SEE SH1
4		SEE SH1
5		SEE SH1

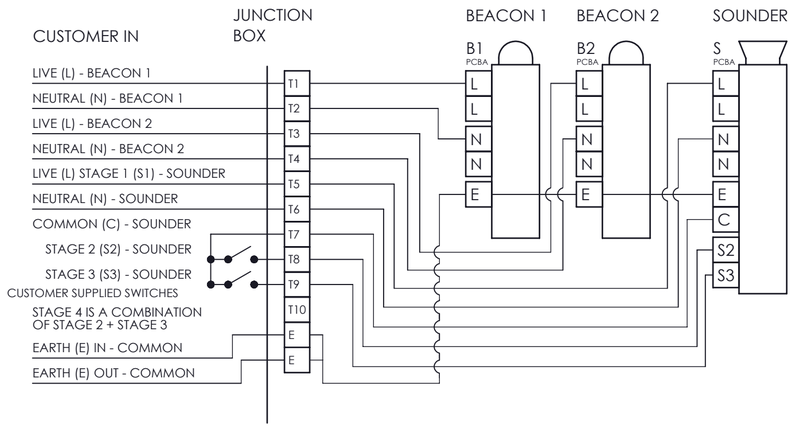
CONFIG. 1
(DEFAULT)

- AC VOLTAGE SUPPLY
- COMMON NEUTRAL CONNECTION TO ALL SIGNALS
- COMMON STAGE SWITCHING FOR ALARM HORN SOUNDER

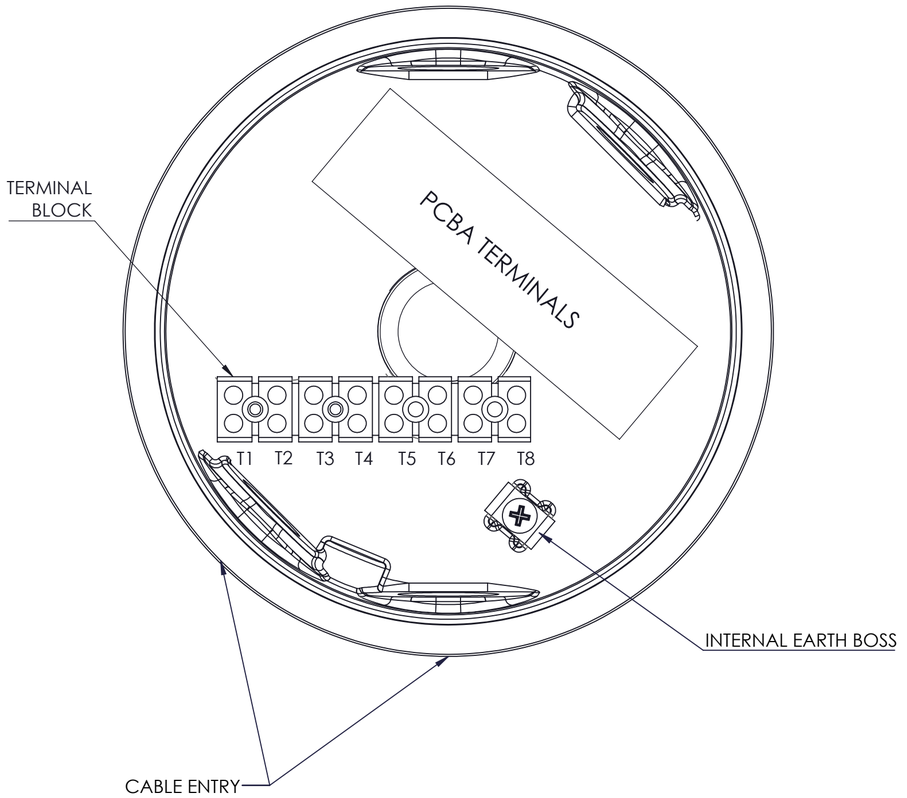


CONFIG. 2

- AC VOLTAGE SUPPLY
- INDEPENDENT CONNECTIONS TO ALL SIGNALS
- COMMON STAGE SWITCHING FOR ALARM HORN SOUNDER



ENTRY TERMINALS



DRAWING TO BS8888:2000 GEOMETRIC TOLERANCES TO ISO1101:1983 LINEAR DIMENSIONAL TOLS ANGULAR DIMENSIONAL TOLS	DRAWN D.HOWGILL DATE 15-08-2019	SURFACE FINISH FINISH	WEIGHT (Kg)
STANDARDS	CHECKED R.N.POTTS DATE 15-08-2019	MATERIAL	
	APPROVED R.N.POTTS DATE 15-08-2019	ALTERNATIVE MATERIAL	

THIS DRAWING AND ANY INFORMATION OR DESCRIPTIVE MATTER THEREIN IS COMMUNICATED IN CONFIDENCE AND IS THE COPYRIGHT PROPERTY OF EUROPEAN SAFETY SYSTEMS LTD. NEITHER THE WHOLE OR ANY EXTRACT MAY BE DISCLOSED, LOANED, COPIED OR USED FOR MANUFACTURING OR TENDERING PURPOSES WITHOUT THEIR WRITTEN CONSENT.

© EUROPEAN SAFETY SYSTEMS LTD. AS PER LATEST DATE OF ISSUE SHOWN ABOVE

EUROPEAN SAFETY SYSTEMS LTD
IMPRESS HOUSE
MANSELL ROAD
ACTON
LONDON W3 7QH
WWW.E2S.COM

ALL DIMENSIONS IN MM
IF IN DOUBT, ASK - DO NOT SCALE

A2

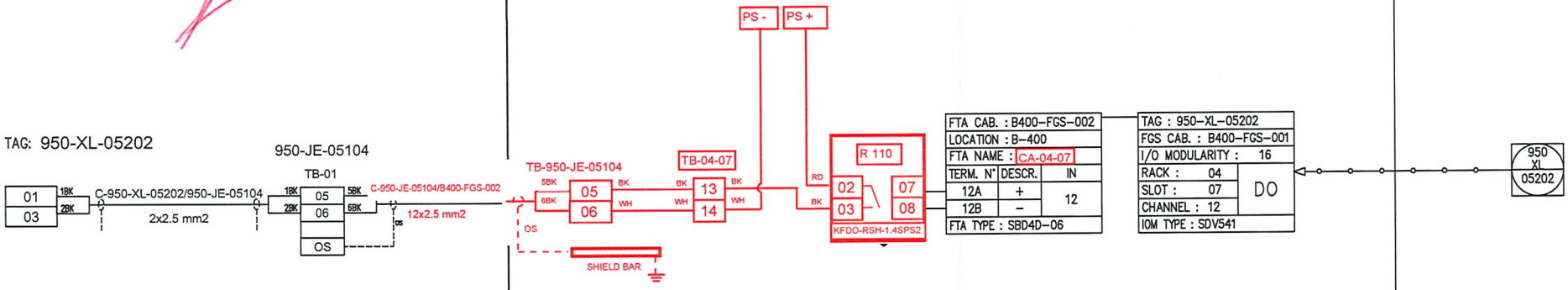
TITLE D1xC3 STACK - 2 BEACONS & ALARM HORN WITH JUNCTION BOX WIRING SCHEMATIC

SCALE	SHEET	DRAWING NUMBER
NTS	3 OF 3	D226-06-138

DWG 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–XL–05202
FZ–05 OPTICAL FIRE ALARM WATER TREAT. PKG

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 394	REV. 01

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

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	950-XZ-05201	: FZ-05 Acoustic fire&gas alarm water treat. pkg	Dwg	123A90-DDL-SAF-DL-30027		
	S/Sys	70-16	: F&G Devices FZ-05 (Bess Area)	Module			
TASK	code	C10004479	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-05201				TSLD	123A90-DDL-IN-DG-40014 rev 1A			
IO Type	Input	No	Output	Yes	Energy by transmitter	No	Energy by system	Yes	
Marshalling	B400-FGS-001	Terminal	02A/02B		Slot	07	Rack	03	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

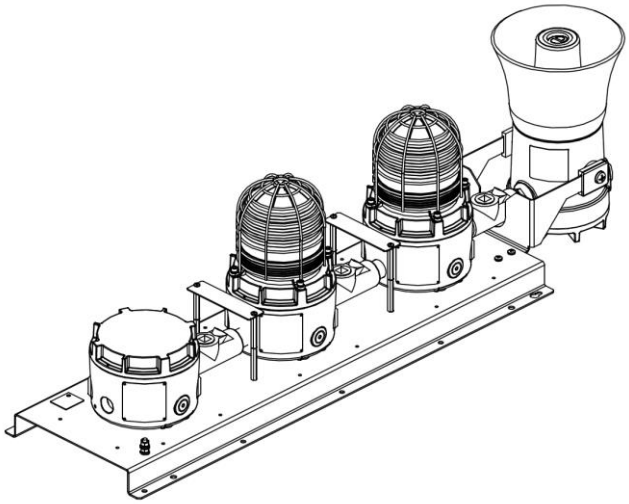
LOOP DOCUMENTATION

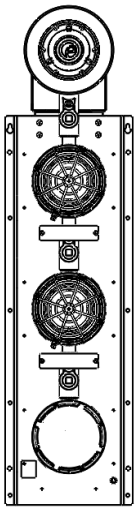
12	Loop diagram is marked up and attached to this test sheet	OK
13	Cause and effect chart is highlighted accordingly	OK
14	Any defect is recorded for punch list issuance	NA

Comments:

Page 1/1	Performed by	☒ WITNESS ☐ REVIEW	☒ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CW OPS
Name	Marco Di Maria	Giandonato Delmissier	Jamie McAllister
Date	2025-02-21	2025-02-24	2025-02-24
Signature	PROVERLIS Digitaly signed by Marco Di Maria 2025-02-21T17:23:38.897Z	PROVERLIS Digitaly signed by Giandonato Delmissier 2025-02-24T13:43:05.951Z	PROVERLIS Digitaly signed by Jamie McAllister 2025-02-24T15:58:16.212Z

INSTRUCTION MANUAL
D1xC3 Alarm Bar
2 Beacons & Alarm Horn with Junction Box





1) Warnings

Please see individual product instruction manual. See Table 1 for Instruction Manual Document Number.

2) Rating & Marking Information

Please see individual product instruction manual. See Table 1 for Instruction Manual Document Number.

All individual unit ratings must be suitable for the installation.

3) Type Approval Standards

Please see individual product instruction manual. See Table 1 for Instruction Manual Document Number.

4) Installation Requirements

Please see individual product instruction manual. See Table 1 for Instruction Manual Document Number.

5) Special Conditions of Use

Please see individual product instruction manual. See Table 1 for Instruction Manual Document Number.

Component Part Code Reference	Component Description	Document Number
D1XJ2	Junction Box	D191-00-501-IS
D1XB2X05	5J Xenon Strobe Beacon	D191-00-201-IS
D1XB2X10	10J Xenon Strobe Beacon	
D1XB2X15	15J Xenon Strobe Beacon	
D1XB2X21	21J Xenon Strobe Beacon	
D1XB2LD2	LED Beacon	D191-00-401-IS
D1XS1	Alarm Horn Sounder	D190-00-001-IS
D1XS2	Alarm Horn Sounder	D190-00-101-IS

Table 1: Product Instruction Manual Reference

6) Part Coding

Part Code:	Identifier - Description
Product Type	D1xC3
Junction Box	J2 = Junction Box
Beacon Type (Add Code for each Beacon in Alarm Bar)	1Y = D1xB2X05 2Y = D1xB2X10 3Y = D1xB2X15 4Y = D1xB2X21 5Y = D1xB2LD2 Where Y = Lens Colour, choose from: A = Amber, B = Blue, C = Clear, G = Green, M = Magenta, R = Red, Y = Yellow
Sounder Type	S1F = D1xS1 Flare Sounder S1R = D1xS1 Radial Sounder S2F = D1xS2 Flare Sounder S2H = D1xS2 Large Flare Sounder
Voltage	DC024 = 24Vdc AC115 = 115-120Vac 50/60Hz AC230 = 220-230Vac 50/60Hz
Cable Entries [e]	A = 1 x M20x1.5mm + 1 x M20 (Adaptor) B = 2 x 1/2" NPT (Adaptors) C = 1 x 3/4" NPT + 1 x 3/4" NPT (Adaptor) D = 2 x M25x1.5mm (Adaptors) E = 1 x 1/2" NPT (Adaptor) + 1 x M20x1.5mm F = 1 x 1/2" NPT (Adaptor) + 1 x 3/4" NPT G = 1 x M25x1.5mm (Adaptor) + 1 x M20 M = 1 x 3/4" NPT + 1 x M20x1.5mm - Default All Junction Boxes have additional 2 x 3/4" NPT Side Entries
Stopping Plug / Adaptor Material [m]	B = Brass N = Nickel Plated S = Stainless Steel
Guard / Tag Material [s]	1 = 316 St.Steel Guard & 316 Tag 2 = As (1) with Traffic Light Cowl 3 = 316 St.Steel Guard, 316 Tag & Duty Labels 4 = As (5) with Traffic Light Cowl 5 = 316 St.Steel Guard, 316 Tag & Duty Labels attached by steel wire
Product Version [v]	A = IECEx/ATEX/UL/cUL Class I Zone 1 B = IECEx/ATEX C = UL/cUL Class Div 1
Product Option [o]	1 = Standard Wiring (Positive Switching) 2 = Independent Wiring (Positive Switching) 3 = Alt. Standard Wiring (Negative Switching) 4 = Independent Wiring (Negative Switching) 5 = Beacons & Sounder Linked w/ Line Monitoring 6 = Independent Wiring w/ Line Monitoring 7 = Beacons & Sounder Linked W = Special Wiring X = Special Configuration
Assembly Colour [x]	R = Red, G = Grey Other colours also possible, contact E2S sales

7) Location and Mounting

The location of the Alarm Bar should be made with due regard to the area over which the warning signal must be visible/audible. They should only be fixed to surfaces that can carry the weight of the unit.

The D1xC3 Alarm Bar should be secured to any flat surface using ten Ø7mm fixing holes in the mounting plate. See figure 1.

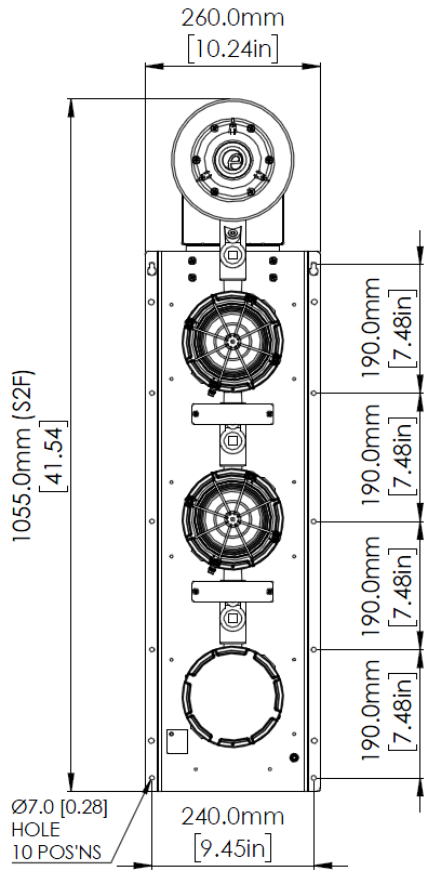


Fig.1: Mounting Detail and Dimensions for D1x Alarm Bar

Alternatively, the unit can be pole mounted. For pole mounting detailed instructions, see drawing D226-00-010

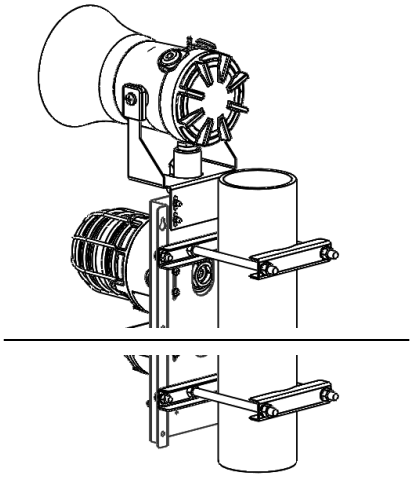


Fig. 2: Pole Mounted Alarm Bar Max. Pole size NPS 4" (OD: Ø114.3mm / 4.5in)

8) Access to the Enclosure



Warning – Hot surfaces. External surfaces and internal components may be hot after operation, take care when handling the equipment.

In order to connect the electrical supply cables to the beacon, it is necessary to open the explosion proof enclosure. Loosen the locking grub screw in the cover and then remove the glass dome cover assembly to gain access to the chamber. This can be achieved by unscrewing the glass dome cover, taking extreme care not to damage the threads when doing so.

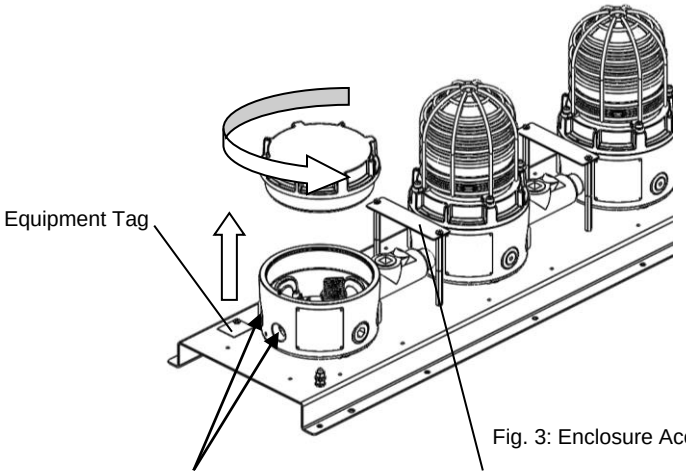


Fig. 3: Enclosure Access

9) Power Supply Selection

For Voltage ranges of complete units, take the highest Minimum value and lowest Maximum value in the ranges of the component units. For Current and Max Current ratings of complete units, add the ratings from the component units.

E.g. D1x C3 J2 2A 2B S1F AC115…:

Unit Type	D1xB2X10	D1xS1	**D1xC3 Total**
Voltage Range	110-**120**Vac 50/60Hz	**110** - 240Vac 50/60Hz	**110-120Vac 50/60Hz**
Current	220mA **x2**	77mA **x1**	**517mA**
Max Current	300mA **x2**	82mA **x1**	**682mA**

Please see individual product instruction manual for Voltage Range, Current and Max Current values.

10) Selection of Cable, Cable Glands, Blanking Elements & Adapters

Please see individual product instruction manual.

NOTE: Stopping plugs cannot be fitted into adaptors.

11) Earthing

The Alarm Bar is provided with an M6 earth screw on the mounting plate. Earthing connections should be made to the M6 earth screw, using a ring crimp terminal to secure the earth conductor.

Please see individual product instruction manual for details of earthing each beacon

12) Cable Connections

Electrical connections are to be made into the DIN terminals in the junction box. See section 8 of this manual for access to the enclosure.

Wires having a cross sectional area between 0.5 mm² to 2.5mm² can be connected to each terminal way. Strip wires to 8mm. Wires may also be fitted using ferrules. Terminal screws need to be tightened down with a tightening torque of 0.45 Nm / 5 Lb-in. When connecting wires to the terminals great care should be taken to dress the wires so that when the cover is inserted into the chamber the wires do not exert excess pressure on the terminal blocks. This is particularly important when using cables with large cross-sectional areas such as 2.5mm².

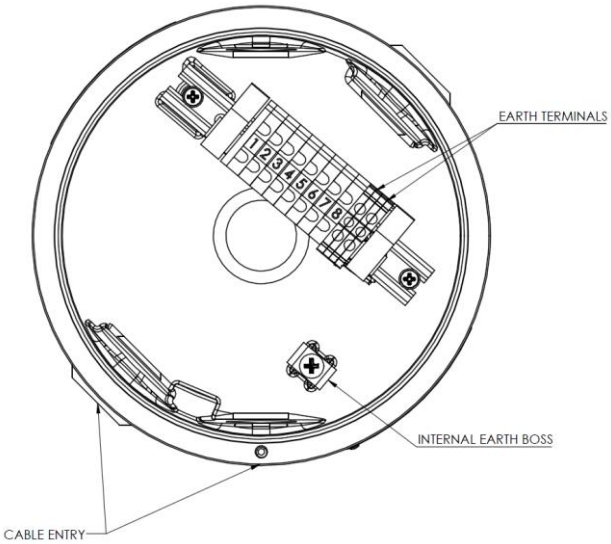


Fig. 4: Junction Box Internal Detail and DIN Terminals

13) Wiring

For wiring diagrams, see schematic document D226-06-138
See table 3 at the end of this manual for list of standard configurations.

Note:
For units with product codes where Product Option = X or W, please see special wiring schematic supplied with the unit documentation.

14) Interchangeable & Spare Parts

The Beacon lens cover is interchangeable, contact E2S Ltd for a replacement lens cover available in various colours.

To change the lens cover, unscrew the 4-off M5 socket head screws, spring and flat washers using a 4mm Hex key. Remove the wire guard and replace the old lens cover with the new lens cover.

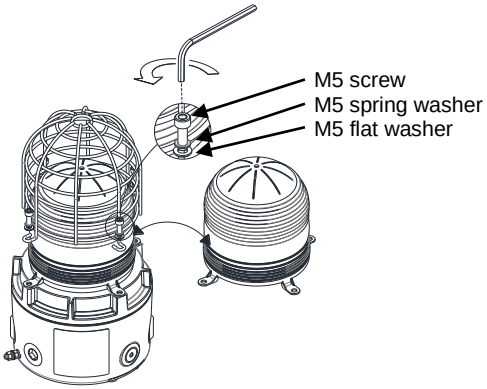
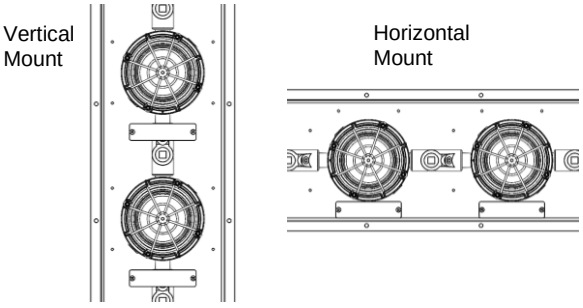


Fig. 5: Replacement of beacon lens cover

Fit the wire guard back onto the housing, over the new lens cover aligning the fixing holes of the guard, lens cover and housing. Refit the fixings to hold into place, the fixings MUST be fitted in the order shown above.

Optional Duty Labels can be placed to suit either the vertical mounting position (default) or a horizontal mounting position. See figure 6 for configuration details.



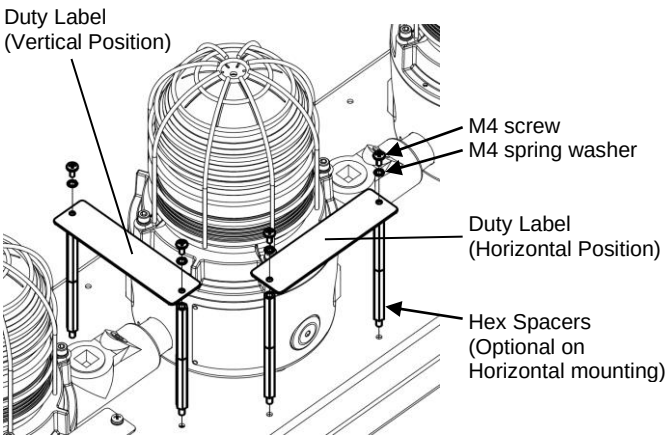


Fig. 6: Duty label assembly and configurations

To move the duty labels, use a spanner or equivalent tool to carefully remove the hex nuts and spring washers from the positions shown on the rear of the plate. Care should be taken not to drop them, especially if working from height.

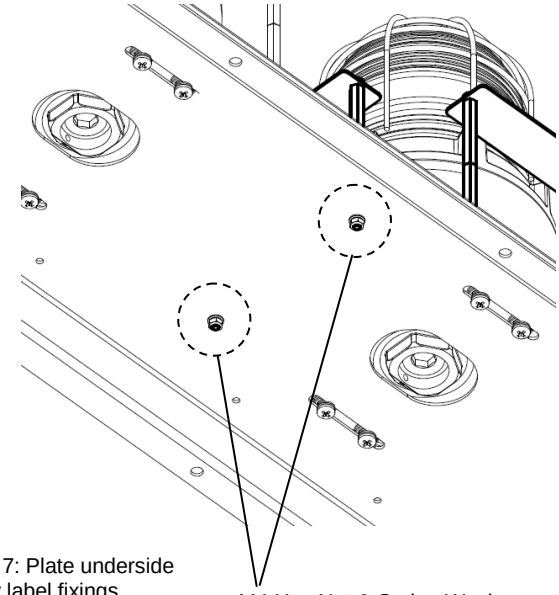


Fig. 7: Plate underside duty label fixings

For horizontal mounting, the hex spacers are optional.

If using the hex spacers:

Position the duty label assembly in the desired position (fig. 6). Place spring washers over the spacer threads on the underside of the plate and tighten M4 hex nuts fully.

If not using hex spacers:

Carefully remove the duty labels from spacers using a posi-drive screwdriver to loosen the M4 screws. Place duty label flush to plate with screws inserted into holes (fig. 6). Place spring washers over the spacer threads on the underside of the plate and tighten M4 hex nuts fully.

Beacons can be configured with a traffic light cowl to enhance visibility. Figure 8 shows the optional Traffic Light Cowl pre-assembled to the Beacon by E2S.

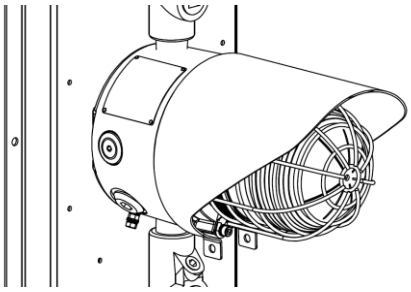


Fig. 8: Traffic Light Cowl

To disassemble the cowl, loosen the M6 Nut using a spanner or wrench and carefully remove from the beacon lid casting.

To re-assemble, manoeuvre the cowl back into position and tighten the M6 Screw and Nut until the cowl is fixed securely.

15) Maintenance, Overhaul and Repair

Please see individual product instruction manual. See Table 1 for Instruction Manual Document Number.

16) SIL Approvals

Beacons and Sounders have been assessed for Reliability and Functional safety under IEC/EN61508 and are considered suitable for use in low demand safety functions:

1. Random Hardware Failures and Architectural constraints (route 2_H).
2. As an unvoted item (i.e. hardware fault tolerance of 0) at SIL 2.

Please see individual product instruction manual in Table 1 for information on reliability data.

DC DIAGRAMS				
Config.	**Voltage**	**Configuration Description**	**Features**	**Product Option [o]**
1	DC	Standard wiring Positive switching (Default)	• Common negative connection to all signals • Positive stage switching on alarm horn sounder	1
2	DC	Independent wiring Positive switching	• Independent wiring to all signals • Positive stage switching on alarm horn sounder	2
3	DC	Alt. Standard wiring Negative switching	• Common negative connection all signals • Negative stage switching on alarm horn sounder	3
4	DC	Independent wiring Negative switching	• Independent wiring to all signals • Negative stage switching on alarm horn sounder	4
5	DC	Beacon and sounder stages linked with line monitoring	• Beacon 1 and 2 linked to sounder stages 1 and 2 • Positive stage switching on alarm horn sounder	5
6	DC	Independent wiring for all signals with line monitoring	• Independent wiring to all signals • Independent wiring to alarm horn sounder stages 1 and 2 • Positive stage switching on alarm horn sounder	6
7	DC	Beacon and sounder stages linked	• Beacon 1 and 2 linked to sounder stages 1 and 2 • Common negative connection to all signals	7
AC DIAGRAMS				
Config.	**Voltage**	**Configuration Description**	**Features**	**Product Option [o]**
1	AC	Standard wiring (Default)	• Common neutral connection to all signals	1
2	AC	Independent wiring	• Independent wiring to all signals	2

Table 3 – Summary of Wiring Options

NOTE: Please see schematic document D226-06-138 for line monitoring details.

DC CONFIGURATIONS

E2S PART NO
D1x[C3][J2][XX][XX][XXX]
Note: Alternative wiring configurations may be available on request - contact E2S sales

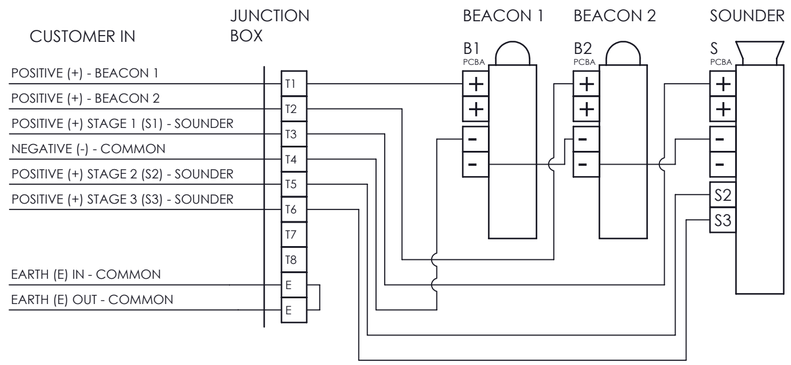
DESCRIPTION
D1xC3 STACK - 2 BEACONS & ALARM HORN WITH JUNCTION BOX

DATA REFERENCE
1-26-080

ISSUE	MOD No.	REASON - INITIAL - DATE
3		DC WAS -VE STAGE SWITCHING NOW +VE. SOUNDER T'NALS UPDATED TO NEW PCBA. DAH - 22-09-2021
4		CONFIG 1-6 CREATED DAH - 20-04-2023
5		CONFIG 7 ADDED. MA - 11-08-2023

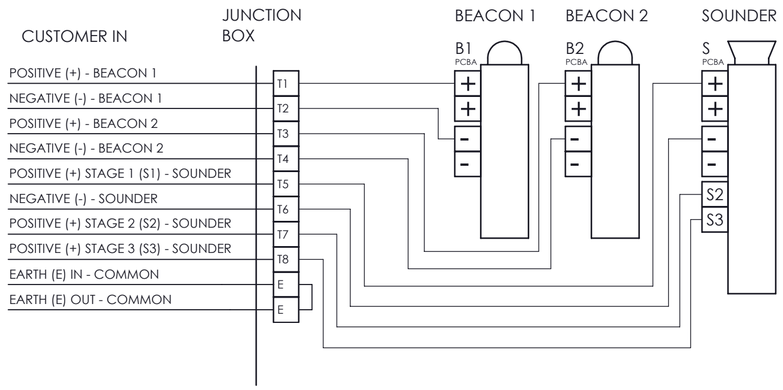
CONFIG. 1 (DEFAULT)

DC VOLTAGE SUPPLY
COMMON NEGATIVE CONNECTION TO ALL SIGNALS
POSITIVE STAGE SWITCHING FOR ALARM HORN SOUNDER



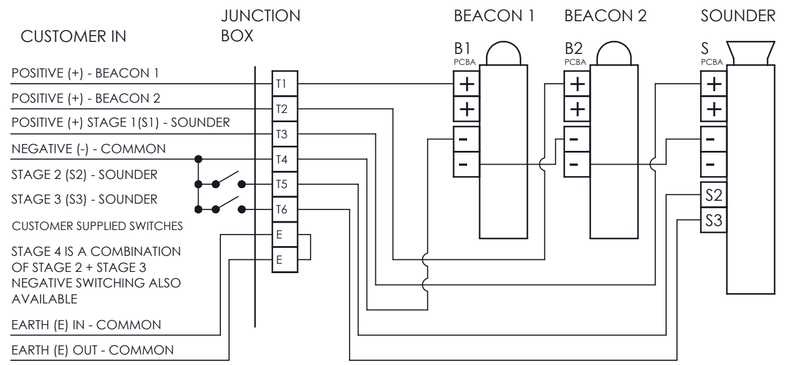
CONFIG. 2

DC VOLTAGE SUPPLY
INDEPENDENT CONNECTIONS TO ALL SIGNALS
POSITIVE STAGE SWITCHING FOR ALARM HORN SOUNDER



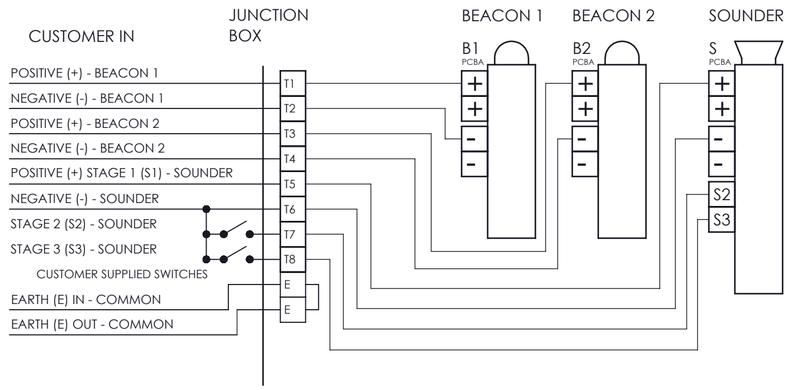
CONFIG. 3

DC VOLTAGE SUPPLY
COMMON NEGATIVE CONNECTION TO ALL SIGNALS
NEGATIVE STAGE SWITCHING FOR ALARM HORN SOUNDER



CONFIG. 4

DC VOLTAGE SUPPLY
INDEPENDENT CONNECTIONS TO ALL SIGNALS
NEGATIVE STAGE SWITCHING FOR ALARM HORN SOUNDER



DRAWING TO BS8888:2000
GEOMETRIC TOLERANCES TO ISO1101:1983
LINEAR DIMENSIONAL TOLS
ANGULAR DIMENSIONAL TOLS

STANDARDS

DRAWN D.HOWGILL DATE 15-08-2019
CHECKED R.N.POTTS DATE 15-08-2019
APPROVED R.N.POTTS DATE 15-08-2019

SURFACE FINISH FINISH
WEIGHT (Kg)
MATERIAL
ALTERNATIVE MATERIAL

THIS DRAWING AND ANY INFORMATION OR DESCRIPTIVE MATTER THEREIN IS COMMUNICATED IN CONFIDENCE AND IS THE COPYRIGHT PROPERTY OF EUROPEAN SAFETY SYSTEMS LTD. NEITHER THE WHOLE OR ANY EXTRACT MAY BE DISCLOSED, LOANED, COPIED OR USED FOR MANUFACTURING OR TENDERING PURPOSES WITHOUT THEIR WRITTEN CONSENT.

© EUROPEAN SAFETY SYSTEMS LTD. AS PER LATEST DATE OF ISSUE SHOWN ABOVE

2S warning signals
EUROPEAN SAFETY SYSTEMS LTD
IMPRESS HOUSE
MANSELL ROAD
ACTON
LONDON W3 7QH
WWW.E2S.COM

ALL DIMENSIONS IN MM
IF IN DOUBT, ASK - DO NOT SCALE

A2

TITLE D1xC3 STACK - 2 BEACONS & ALARM HORN WITH JUNCTION BOX WIRING SCHEMATIC

SCALE NTS
SHEET 1 OF 3
DRAWING NUMBER D226-06-138

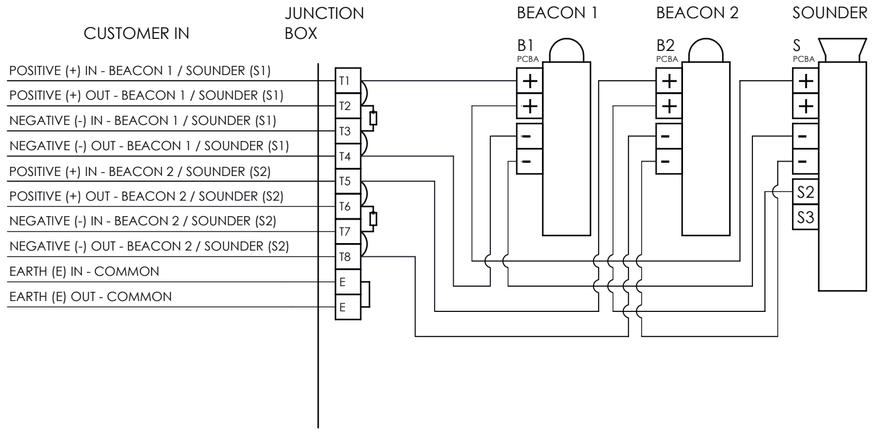
DC CONFIGURATIONS

ISSUE	MOD No.	REASON - INITIAL - DATE
3		SEE SH1
4		SEE SH1
5		SEE SH1

CONFIG. 5

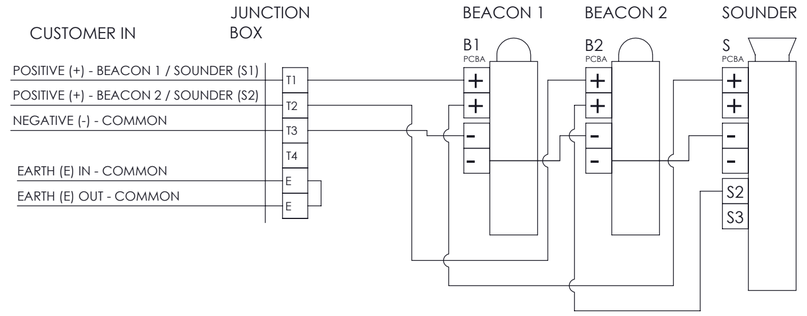
DC VOLTAGE SUPPLY
BEACON 1 AND SOUNDER STAGE 1 LINKED ; BEACON 2 AND SOUNDER STAGE 2 LINKED
INDEPENDENT STAGE WIRING FOR ALARM HORN SOUNDER WITH END OF LINE MONITORING (2 STAGES)

ALL EOL RESISTORS ARE TO BE INSTALLED IN THE PCBA TERMINALS OF THE UNIT/S BEING MONITORED.
EOL RESISTOR POSTION/S SHOWN FOR DIAGRAMMATIC REFERENCE ONLY.



CONFIG. 7

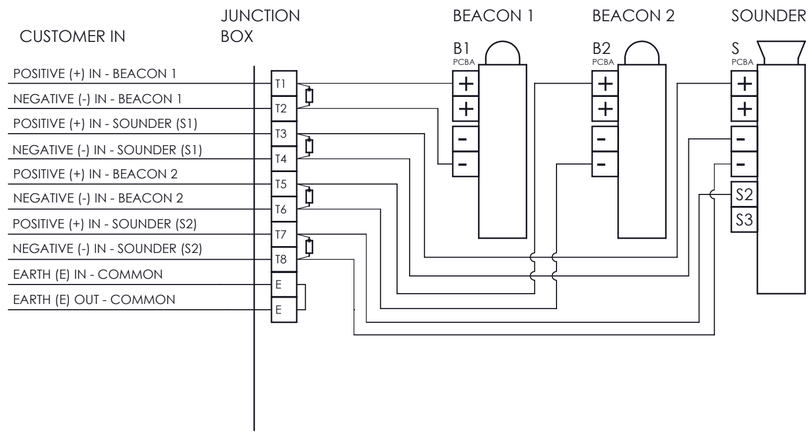
DC VOLTAGE SUPPLY
COMMON NEGATIVE CONNECTION TO ALL SIGNALS
BEACON 1 AND SOUNDER STAGE 1 LINKED; BEACON 2 AND SOUNDER STAGE 2 LINKED



CONFIG. 6

DC VOLTAGE SUPPLY
INDEPENDENT CONNECTIONS ON ALL SIGNALS
INDEPENDENT STAGE WIRING FOR ALARM HORN SOUNDER WITH END OF LINE MONITORING (2 STAGES)

ALL EOL RESISTORS ARE TO BE INSTALLED IN THE PCBA TERMINALS OF THE UNIT/S BEING MONITORED.
EOL RESISTOR POSTION/S SHOWN FOR DIAGRAMMATIC REFERENCE ONLY.



DRAWING TO BS8888:2000
GEOMETRIC TOLERANCES TO ISO1101:1983
LINEAR DIMENSIONAL TOLS
ANGULAR DIMENSIONAL TOLS

STANDARDS

DRAWN D.HOWGILL DATE 15-08-2019
CHECKED R.N.POTTS DATE 15-08-2019
APPROVED R.N.POTTS DATE 15-08-2019

SURFACE FINISH FINISH
WEIGHT (Kg)
MATERIAL
ALTERNATIVE MATERIAL

THIS DRAWING AND ANY INFORMATION OR DESCRIPTIVE MATTER THEREIN IS COMMUNICATED IN CONFIDENCE AND IS THE COPYRIGHT PROPERTY OF EUROPEAN SAFETY SYSTEMS LTD. NEITHER THE WHOLE OR ANY EXTRACT MAY BE DISCLOSED, LOANED, COPIED OR USED FOR MANUFACTURING OR TENDERING PURPOSES WITHOUT THEIR WRITTEN CONSENT.

(C) EUROPEAN SAFETY SYSTEMS LTD. AS PER LATEST DATE OF ISSUE SHOWN ABOVE

EUROPEAN SAFETY SYSTEMS LTD
IMPRESS HOUSE
MANSELL ROAD
ACTON
LONDON W3 7QH

WWW.E2S.COM

ALL DIMENSIONS IN MM
IF IN DOUBT, ASK - DO NOT SCALE

A2

TITLE D1xC3 STACK - 2 BEACONS & ALARM HORN WITH JUNCTION BOX WIRING SCHEMATIC

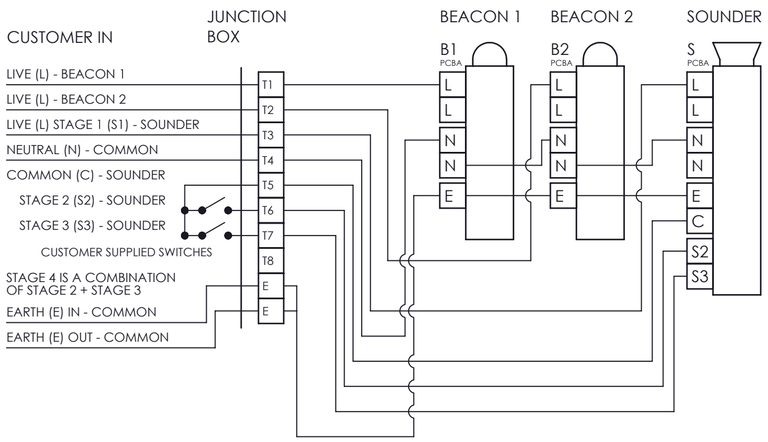
SCALE NTS
SHEET 2 OF 3
DRAWING NUMBER D226-06-138

AC CONFIGURATIONS

ISSUE	MOD No.	REASON - INITIAL - DATE
3		SEE SH1
4		SEE SH1
5		SEE SH1

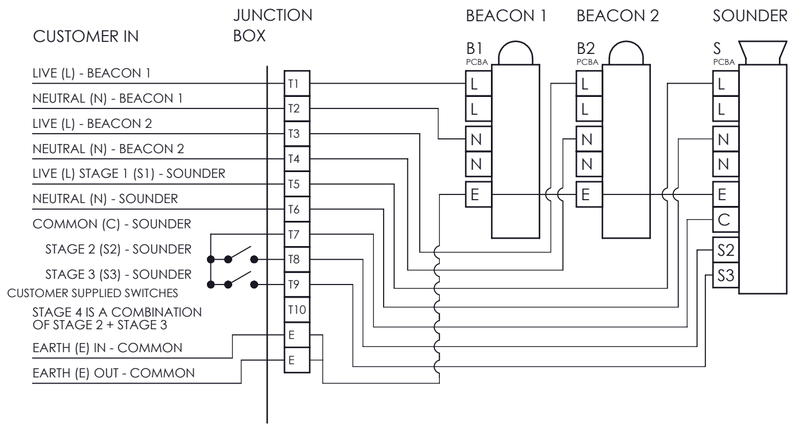
CONFIG. 1
(DEFAULT)

- AC VOLTAGE SUPPLY
- COMMON NEUTRAL CONNECTION TO ALL SIGNALS
- COMMON STAGE SWITCHING FOR ALARM HORN SOUNDER

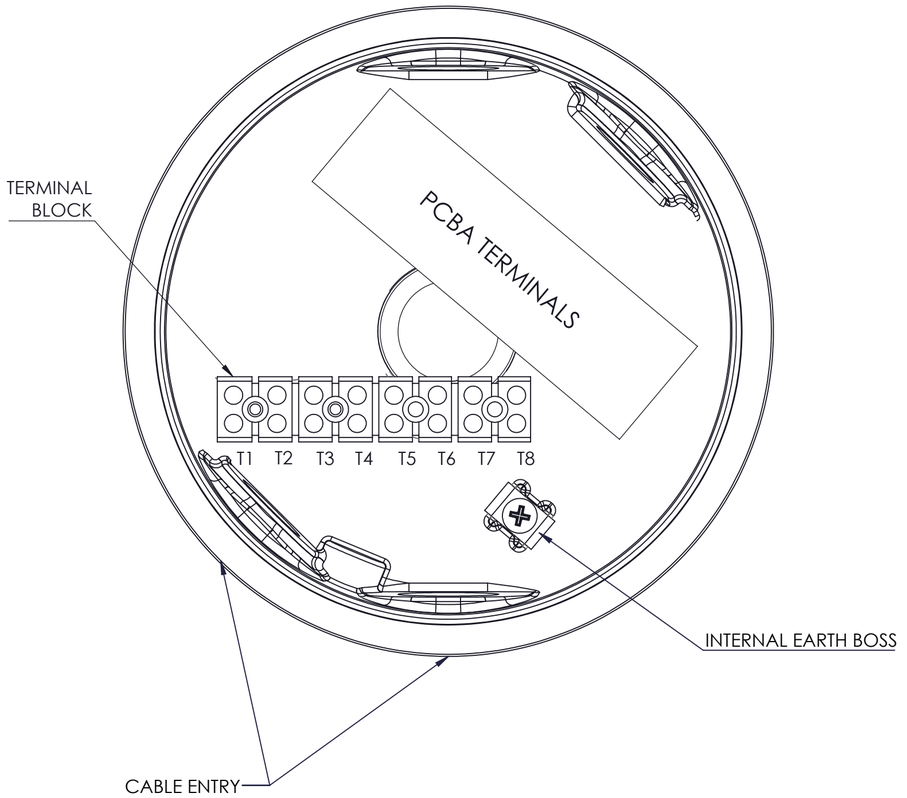


CONFIG. 2

- AC VOLTAGE SUPPLY
- INDEPENDENT CONNECTIONS TO ALL SIGNALS
- COMMON STAGE SWITCHING FOR ALARM HORN SOUNDER



ENTRY TERMINALS



DRAWING TO BS8888:2000 GEOMETRIC TOLERANCES TO ISO1101:1983 LINEAR DIMENSIONAL TOLS ANGULAR DIMENSIONAL TOLS	DRAWN D.HOWGILL DATE 15-08-2019	SURFACE FINISH FINISH	WEIGHT (Kg)
STANDARDS	CHECKED R.N.POTTS DATE 15-08-2019	MATERIAL	
	APPROVED R.N.POTTS DATE 15-08-2019	ALTERNATIVE MATERIAL	

THIS DRAWING AND ANY INFORMATION OR DESCRIPTIVE MATTER THEREIN IS COMMUNICATED IN CONFIDENCE AND IS THE COPYRIGHT PROPERTY OF EUROPEAN SAFETY SYSTEMS LTD. NEITHER THE WHOLE OR ANY EXTRACT MAY BE DISCLOSED, LOANED, COPIED OR USED FOR MANUFACTURING OR TENDERING PURPOSES WITHOUT THEIR WRITTEN CONSENT.

© EUROPEAN SAFETY SYSTEMS LTD. AS PER LATEST DATE OF ISSUE SHOWN ABOVE

EUROPEAN SAFETY SYSTEMS LTD
IMPRESS HOUSE
MANSELL ROAD
ACTON
LONDON W3 7QH
WWW.E2S.COM

ALL DIMENSIONS IN MM
IF IN DOUBT, ASK - DO NOT SCALE

A2

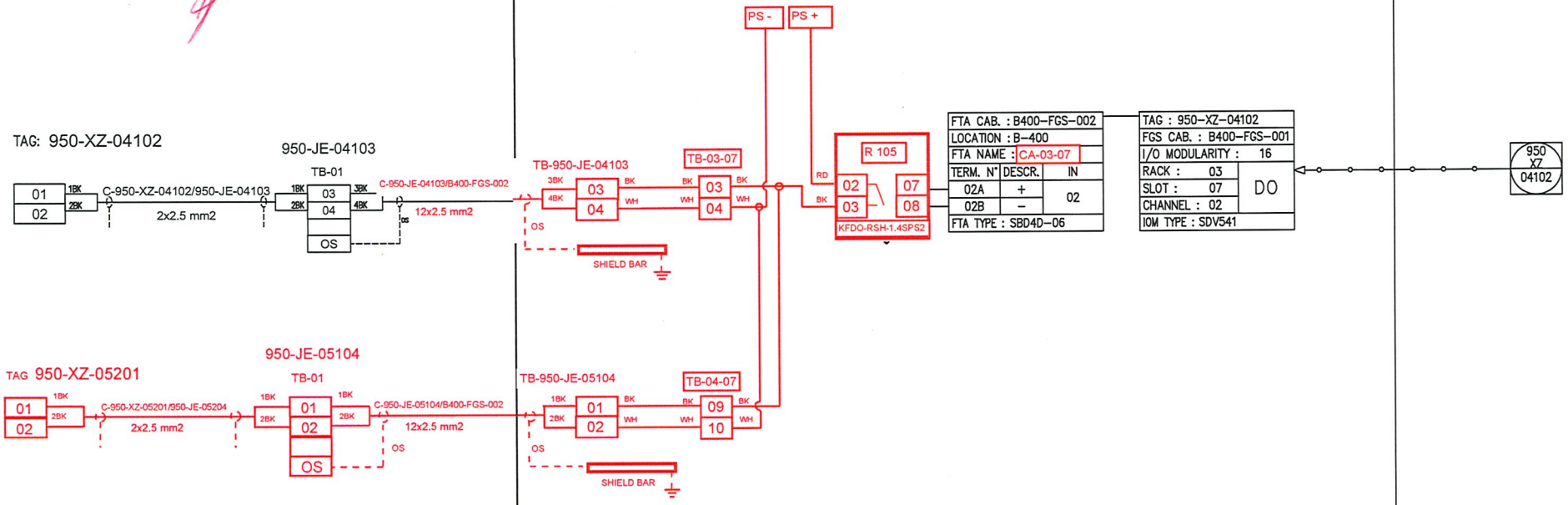
TITLE D1xC3 STACK - 2 BEACONS & ALARM HORN WITH JUNCTION BOX WIRING SCHEMATIC

SCALE	SHEET	DRAWING NUMBER
NTS	3 OF 3	D226-06-138

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-04102
FZ-04 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 412	REV. 01

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

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 05
BESS

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

NOTES:
1. FGS AND SIS SYSTEM EXCHANGE DATA BETWEEN THEM BY USING THE VnetIP NETWORK. THIS IS IMPLEMENTED AS REDUNDANT SAFETY COMMUNICATION, APPROVED FOR SIL 3 LOOP.

TAG Nos	CAUSE DESCRIPTION	VOTING	INHIBITION	REMARK	
85-XA-001	GAS CONFIRMED IN BESS				1
					2
85-XA-002	SMOKE CONFIRMED IN BESS				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

EFFECT

SYS	AUDIO / VISUAL ALERT																SIS SYSTEM										ELECTRIC ISOLATION						OTHER																				
NOTES					TO SHEET 17		TO SHEET 17		TO SHEET 17								1																																				
DESCRIPTION	OPERATOR WORKSTATION DISPLAY - EVENT/ALARM		F&G ALARM ON CAP ONSHORE		GAS BEACON ACTIVATION - AMBER		FIRE BEACON ACTIVATION - RED		SOUNDER ACTIVATION		WAVE-OFF LIGHT ACTIVATION TO NAVAIDS						ESD-1D TO SIS SYTEM																																				
TAG No.											72-XS-001						70-XS-002																																				
	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	X		F		X				X		X						X																																				
2																																																					
3	X		F				X		X		X						X																																				
4																																																				

LEGEND

TEST COMPLETED
GIANDONATO R.M.
13-03-2025
[signature]

PUNCH LIST HAS BEEN RAISED TO REFLECT REMOTE ACCESS RESET ISSUE STILL TO BE RESOLVED. ALL OTHER TESTING IS ACKNOWLEDGED BY CROSSWIND
[signature] MARTIN TAYLOR
CROSSWIND

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: BESS

DATE 11/02/2025

HOLLANDSE KUST NOORD WIND PARK Project
Contract No. CW-I-WP4-2023-05

Sheet 10 of 17 | 03

FIRE ZONE 05
WATER TREATMENT

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
12–16	AUDIO / VISUAL ALERT			
17	SIS SYSTEM	1	H2/SMOKE IN WATER TREAT. (ELECT. ISOLATION) TO SIS SYTEM	70-XS-010
18–26	SIS SYSTEM			
27–32	ELECTRIC ISOLATION			
33–53	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
50-XA-001	GAS CONFIRMED IN WATER TREATMENT PKG				1	X		F		X				X		X						X																																			
					2																																																						
50-XA-002	SMOKE CONFIRMED IN WATER TREATMENT PKG				3	X		F				X		X		X						X																																			
					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																																																						

NOTES:
1. FGS AND SIS SYSTEM EXCHANGE DATA BETWEEN THEM BY USING THE VnetIP NETWORK. THIS IS IMPLEMENTED AS REDUNDANT SAFETY COMMUNICATION, APPROVED FOR SIL 3 LOOP.

LEGEND

TEST COMPLETED
GIANDONATO R.M.
13-03-2025
[signature]
PUNCH LIST HAS BEEN RAISED TO REFLECT REMOTE RESET ISSUE STILL TO RESOLVE. ALL OTHER TESTING 15/04/25 ACKNOWLEDGED BY CWD
[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: WATER TREATMENT

DATE 11/02/2025

HOLLANDSE KUST NOORD WIND PARK Project
Contract No. CW-I-WP4-2023-05

Sheet 12 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

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
12–16	AUDIO / VISUAL ALERT			
17	SIS SYSTEM	1	H2 IN OPEN AREA TO SIS SYST. (TRIP EQ. NOT FOR ZONE 1 IN OPEN AREA)	70-XS-005
18–26	SIS SYSTEM			
27	ELECTRIC ISOLATION		ELECTRICAL ISOLATION VISIBILITY METER NOT SUITABLE FOR ZONE IIC or (IIB+H2)	72-XS-002
28–32	ELECTRIC ISOLATION			
33–53	OTHER			

CAUSE

TAG Nos	DESCRIPTION	VOTING	INHIBITION	REMARK	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
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		1	X		F																																																
	FZ-02 - H2 GAS HIGH (ELECT./ ULTRAS. POINT 10% LFL)	1oo20	X		2	X		F																																																
	FZ-02 - H2 GAS HIGH CONFIRMED (ELECT./ ULTRAS. POINT 10% L	2oo20			3	X		F		X				X		X						X										X																										
					4																																																				
					5																																																				
					6																																																				
					7																																																				
					8																																																				
					9																																																				
					10																																																				
					11																																																				
					12																																																				
950-GDZ-01101 (ULTRAS.) 950-GDZ-01102 (ULTRAS.) 950-GDZ-01103 (POINT)	FZ-01 - H2 GAS LOW (ULTRAS. POINT 5% LFL)	1oo3	X		13	X		F																																														
	FZ-01 - H2 GAS HIGH (ULTRAS. POINT 10% LFL)	1oo3	X		14	X		F																																														
	FZ-01 - H2 GAS HIGH CONFIRMED (ULTRAS. POINT 10% LFL)	2oo3			15	X		F		X				X		X						X										X																										
					16																																																				
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		17	X		F																																														
	FZ-03 - H2 GAS HIGH (ULTRAS POINT 10% LFL)	1oo5	X		18	X		F																																														
	FZ-03 - H2 GAS HIGH CONFIRMED (ULTRAS POINT 10% LFL)	2oo5			20	X		F		X				X		X						X										X																										
					21																																																				
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		22	X		F																																														
	FZ-05 - H2 GAS HIGH (ELECTROCHEM. POINT 10% LFL)	1oo6	X		23	X		F																																														
	FZ-05 - H2 GAS HIGH CONFIRMED (ELECTROCHEM. POINT 10% LFL)	2oo6			24	X		F		X				X		X						X										X																										
					25																																																				
					26																																																				
					27																																																				
					28																																																				
					29																																																				
					30																																																				
					31																																																				
					32																																																				
					33																																																				
					34																																																				
					35																																																				
					36																																																				
					37																																																				
					38																																																				
					39																																																				
					40																																																				
					41																																																				

NOTES:
1. FGS AND SIS SYSTEM EXCHANGE DATA BETWEEN THEM BY USING THE VnetIP 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

HOLLANDSE KUST NOORD WIND PARK Project
Contract No. CW-I-WP4-2023-05

DATE 11/02/2025

Sheet. 13 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

EFFECT

SYS	Col.	NOTES	DESCRIPTION	TAG No.
AUDIO / VISUAL ALERT (1–16)	1		OPERATOR WORKSTATION DISPLAY - EVENT/ALARM	
	3		F&G ALARM ON CAP ONSHORE	
	5	TO SHEET 17	GAS BEACON ACTIVATION - AMBER	
	7	TO SHEET 17	FIRE BEACON ACTIVATION - RED	
	9	TO SHEET 17	SOUNDER ACTIVATION	
	11		WAVE-OFF LIGHT ACTIVATION TO NAVAIDS	72-XS-001
SIS SYSTEM (17–26)	17	1	ESD-1D TO SIS SYTEM	70-XS-002
ELECTRIC ISOLATION (27–32)				
OTHER (33–53)				

CAUSE

No.	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-FDZ-01101 950-FDZ-01102 950-FDZ-01103 950-FDZ-01104	FZ-01 - FLAME (UV/IR)	1oo4	X		X		F																																																		
2		FZ-01 - FLAME CONFIRMED (UV/IR)	2oo4			X		F				X		X		X						X																																		
3																																																										
4	950-FDZ-02101 950-FDZ-02102 950-FDZ-02103 950-FDZ-02104	FZ-02 - FLAME (UV/IR)	1oo4	X		X		F																																																		
5		FZ-02 - FLAME CONFIRMED (UV/IR)	2oo4			X		F				X		X		X						X																																		
6																																																										
7	950-FDZ-03101 950-FDZ-03102 950-FDZ-03103 950-FDZ-03104	FZ-03 (ELECTROLYZER AREA) - FLAME (UV/IR)	1oo4	X		X		F																																																		
8		FZ-03 (ELECTROLYZER AREA) - FLAME CONFIRMED (UV/IR)	2oo4			X		F				X		X		X						X																																		
9																																																										
10	950-FDZ-04101 950-FDZ-04102 950-FDZ-04103 950-FDZ-04104	FZ-04 - FLAME (UV/IR)	1oo4	X		X		F																																																		
11		FZ-04 - FLAME CONFIRMED (UV/IR)	2oo4			X		F				X		X		X						X																																		
12																																																										
13	950-FDZ-05101 950-FDZ-05102 950-FDZ-05103 950-FDZ-05104	FZ-05 - FLAME (UV/IR)	1oo4	X		X		F																																																		
14		FZ-05 - FLAME CONFIRMED (UV/IR)	2oo4			X		F				X		X		X						X																																		
15																																																										
16	950-FDZ-06101 950-FDZ-06102	FZ-06 - FLAME (UV/IR)	1oo2			X		F																																																		
17		FZ-06 - FLAME CONFIRMED (UV/IR)	2oo2			X		F				X		X		X						X																																		
18																																																										
19																																																										
20																																																										
21																																																										
22																																																										
23																																																										
24																																																										
25																																																										
26																																																										
27																																																										
28																																																										
29																																																										
30																																																										
31																																																										
32																																																										
33																																																										
34																																																										
35																																																										
36																																																										
37																																																										
38																																																										
39																																																										
40																																																										
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
GIANDONATO R.M.
14.03-2025

GERRY 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

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: FIRE OPEN AREA

DATE 11/02/2025

HOLLANDSE KUST NOORD WIND PARK Project
Contract No. CW-I-WP4-2023-05

Sheet. 15 of 17 — 03

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

SYS	Columns
AUDIO / VISUAL ALERT	1–16
SIS SYSTEM	17–26
ELECTRIC ISOLATION	27–32
OTHER	33–53

Column	NOTES	DESCRIPTION	TAG No.
1		OPERATOR WORKSTATION DISPLAY - EVENT/ALARM	
2			
3		F&G ALARM ON CAP ONSHORE	
4			
5	TO SHEET 17	GAS BEACON ACTIVATION - AMBER	
6			
7	TO SHEET 17	FIRE BEACON ACTIVATION - RED	
8			
9	TO SHEET 17	SOUNDER ACTIVATION	
10–53			

CAUSE

TAG Nos	DESCRIPTION	VOTING	INHIBITION	REMARK		1	2	3	4	5	6	7	8	9
					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.U.

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: 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

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.

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																
35																
36																
37																
38																
39																
40																
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	
30																
31																
32																
33																
34																
35																
36																
37																
38																
39																
40																
41																

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		
30																					
31																					
32																					
33																					
34																					
35																					
36																					
37																					
38																					
39																					
40																					
41																					

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	
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																						

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