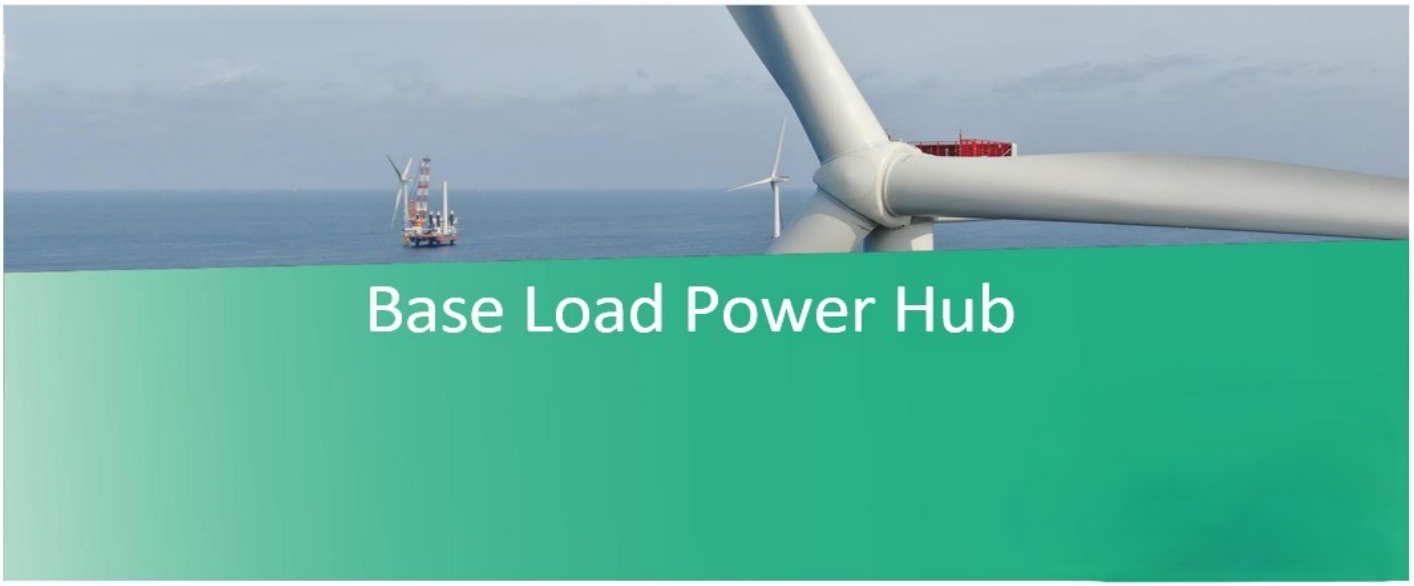
CROSSWIND

ROSETTI MARINO

PROVERLIS

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



COMMISSIONING DOSSIER (ONSHORE)

SYSTEM	70 Safety and Facility Systems
SUBSYSTEM	70-18 F&G Devices FZ-07 (Transition Piece Area)

CROSSWIND

123A90 - HOLLANDSE KUST NOORD WIND PARK
BLPH Project

COMMISSIONING DOSSIER INDEX

ROSETTI MARINO

Sub System N°:	70-18	**Tick as appropriate**	ONSHORE	OK
Description:	F&G Devices FZ-07 (Transition Piece Area)		OFFSHORE	

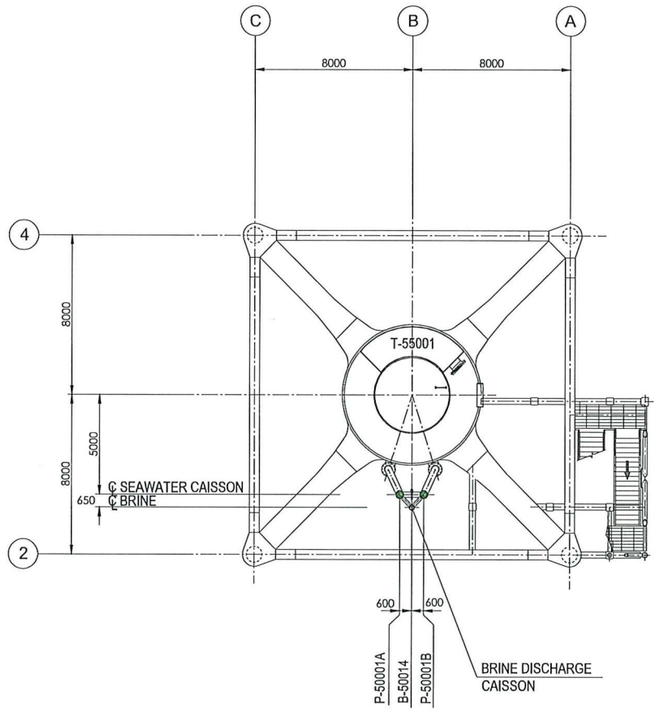
1. *SUB-SYSTEM DEFINITION*	OK
1.1 Sub-System Description / Boundary Limit Drawings	
2. *READY FOR OPERATION CERTIFICATE*	OK
2.1 Achievement Of Ready for Operation Certificate (RFO)	
2.2 Exception Punch Lists (per discipline)	
2.3 “As-Commissioned” P&ID’s / SLD’s / D&ID’s / C&E’s	
3. *CONSOLIDATED PUNCH 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	2025-06-13	2025-06-18
Signature	PROVERLIS Digitaly signed by Anthony Iveson 2025-06-13T07:07:39.967Z	PROVERLIS Digitaly signed by Martin Taylor 2025-06-18T11:12:18.119Z

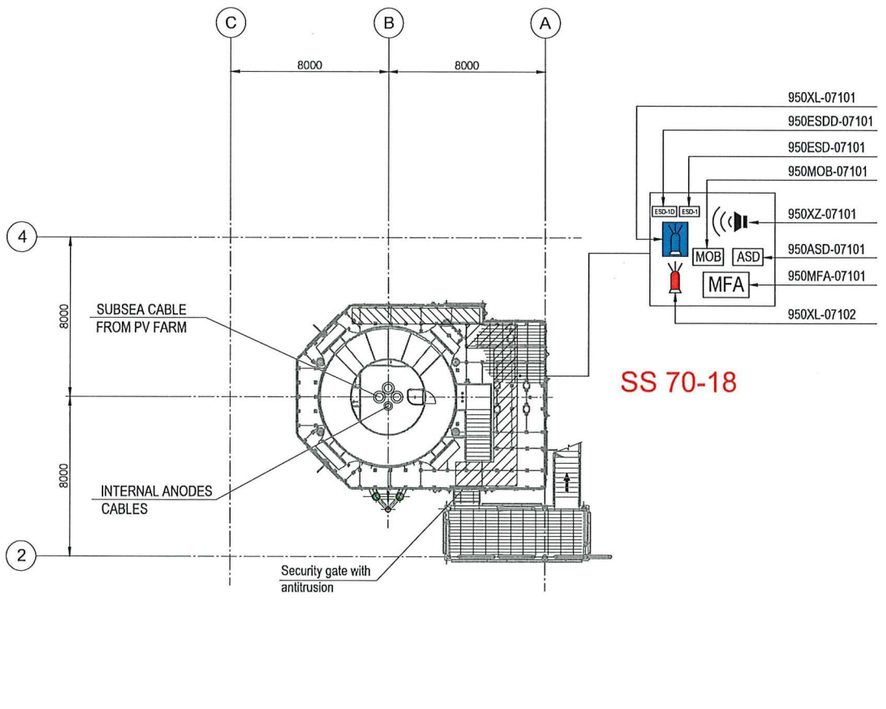
Section 1 SUB-SYSTEM DEFINITION

DRAWING NO. 123A90-DDL-SAF-DL-30028

REV. 00



PLAN ON TRANSITION PIECE
EL+21.710 T.O.S.



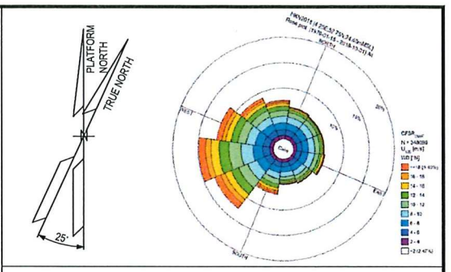
SS 70-18

PLAN ON EXISTING
PLATFORM AT
EL+16.860 T.O.S.

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION
P-50001A/B	SEAWATER LIFT PUMPS
T-55001	WASTE WATER TANK

SYMBOL	DESCRIPTION	QTY.	SYMBOL	DESCRIPTION	QTY.
	SOUNDER (XZ)	1		FIRE BEACON (XL)	1
MOB	MAN OVER BOARD (MOB)	1		FLAMMABLE GAS RELEASE BEACON (XL)	1
ASD	ABANDON SHUTDOWN (ASD)	1	ESD-1	ESD-1 PUSH BUTTON (ESD)	1
MFA	MANUAL FIRE ALARM (MFA)	1	ESD-1D	ESD-1D PUSH BUTTON (ESDD)	1



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.

01 4. DETAIL LOCATION IS SHOWN IN THE 3D MODEL.

01 ELEVATION
1. ALL BUTTONS ARE 1.5M TOP
2. SOUNDERS AND BEACONS ARE 2.4/2.5M

LEGEND

HOLDS

REFERENCE DOCUMENTS

01	123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
01	123A90-DDL-SAP-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 - BELOW LOWER 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-30028	SHEET 001	REV. 01

File Name : 123A90-DDL-SAF-DL-30028 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:	2025-05-27	
System:	70	/	Safety and Facility Systems		
SubSystem:	70-18	/	F&G Devices FZ-07 (Transition Piece 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: 1

REMARKS:

	CONTRACTOR Commissioning Manager	**COMPANY** Commissioning Lead
Name	Anthony Iveson	Gerry McCann
Date	2025-05-28	2025-06-12
Signature	PROVERLIS Digitaly signed by Anthony Iveson 2025-05-28T06:39:57.109Z	PROVERLIS Digitaly signed by Gerry McCann 2025-06-12T10:33:24.261Z

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 70-18 & process: COMM

Instrumental	70-18 F&G Devices FZ-07 (Transition Piece Area)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
950-MFA-07101	FZ-07 MFA Activation	ONSHORE	C10004435	FJ04PB_FGS	100	2025-02-11	RFO 1
950-XL-07101	FZ-07 Gas Beacon Activation	ONSHORE	C10004458	FJ04FB	100	2025-01-30	RFO 1
950-XL-07102	FZ-07 Fire Beacon Activation	ONSHORE	C10004459	FJ04FB	100	2025-01-30	RFO 1
950-XZ-07101	FZ-07 Sounder Activation	ONSHORE	C10004475	FJ04MS	100	2025-02-11	RFO 1

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	70	Safety and Facility Systems
SUBSYSTEM	70-18	F&G Devices FZ-07 (Transition Piece Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30004026	B	C-950-MFA-07101/B400-FGS-003	Missing cable tag SS , near the instrument.	.		APolo 2025-02-19	2025-03-03	JKrizanic 2025-03-03	2025-03-03
C30004027	B	C-950-MFA-07101/B400-FGS-003	Missing core identification tag. side B400-FGS-003 . (see document 123A90-DDL-IN-DG-40016 sh.3)	.		APolo 2025-02-19	2025-02-26	APolo 2025-02-26	2025-02-26
C30004028	B	C-950-MFA-07101/B400-FGS-003	Missing cables tag , Panel side B400-FGS-003	.		APolo 2025-02-19	2025-02-27	AAndreani 2025-02-27	2025-02-27
C30004341	B	950-MFA-07101 C10001072	Painting is damage on the instrument. (See attached photo)	.		Gtangianu 2025-04-29	2025-05-21	Gtangianu 2025-05-21	2025-05-21
C30004342	B	950-MFA-07101 C10001072	Missing trafolite tag. (950-MFA-07101).	.		Gtangianu 2025-04-29			
C30004346	B	950-XL-07101 C10001126	The painting is damage.See attached photo	.		Gtangianu 2025-04-30	2025-05-21	Gtangianu 2025-05-21	2025-05-21
C30004347	B	950-XL-07101 C10001126	Missing protect cage on top lamp.See attached photo.	.		Gtangianu 2025-04-30	2025-05-14	Gtangianu 2025-05-14	2025-05-14
C30004348	B	950-XZ-07101 C10001144	Painting is damage. See attached photo.	.		Gtangianu 2025-04-30	2025-05-21	Gtangianu 2025-05-21	2025-05-21

Section 2.2 Exception Punch Lists (per discipline)

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	70	Safety and Facility Systems
SUBSYSTEM	70-18	F&G Devices FZ-07 (Transition Piece Area)

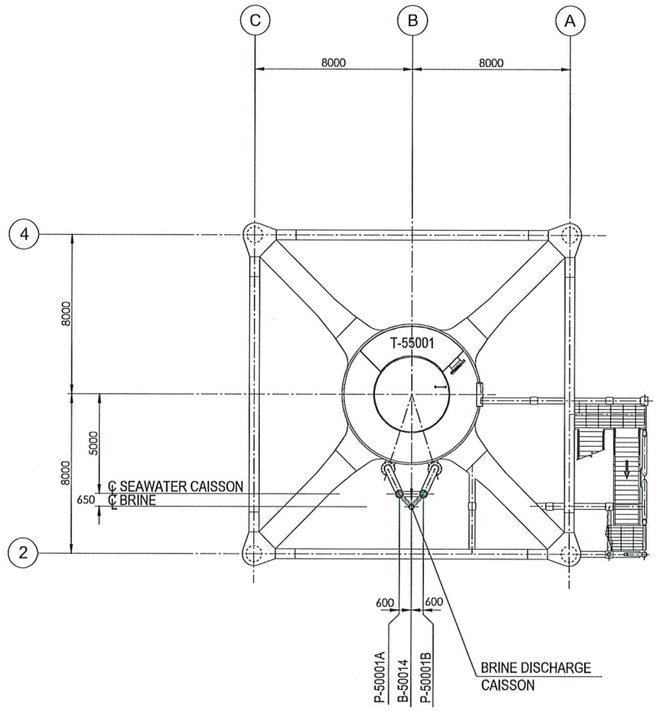
Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30004342	B	950-MFA-07101 C10001072	Missing trafolite tag. (950-MFA-07101).	.		Gtangianu 2025-04-29			

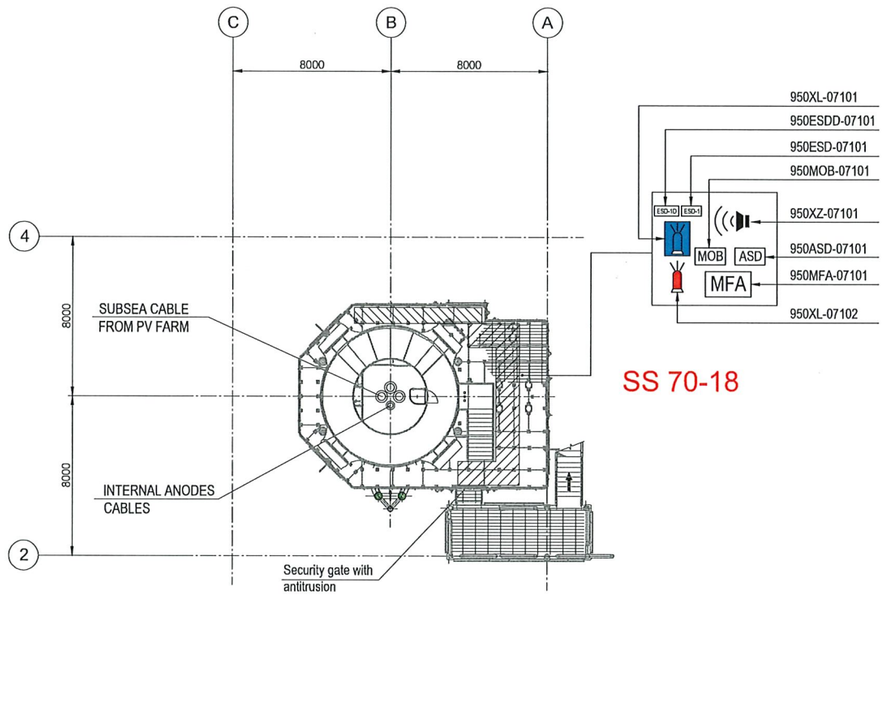
Section 2.3 “As-Commissioned” P&ID's / SLD's / D&ID's / C&E's

DRAWING NO. 123A90-DDL-SAF-DL-30028

REV. 00



PLAN ON TRANSITION PIECE
EL+21.710 T.O.S.



SS 70-18

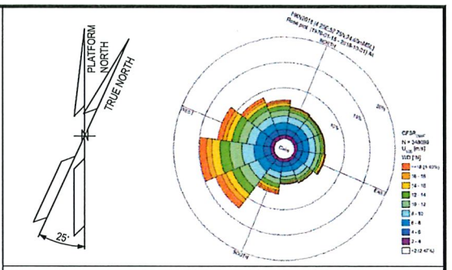
PLAN ON EXISTING
PLATFORM AT
EL+16.860 T.O.S.

AS COMMISSIONING
12-05-2025
GIANDONATO Joe Mission

EQUIPMENT LIST

TAG NUMBER	DESCRIPTION
P-50001A/B	SEAWATER LIFT PUMPS
T-55001	WASTE WATER TANK

SYMBOL	DESCRIPTION	QTY.	SYMBOL	DESCRIPTION	QTY.
	SOUNDER (XZ)	1		FIRE BEACON (XL)	1
MOB	MAN OVER BOARD (MOB)	1		FLAMMABLE GAS RELEASE BEACON (XL)	1
ASD	ABANDON SHUTDOWN (ASD)	1	ESD-1	ESD-1 PUSH BUTTON (ESD)	1
MFA	MANUAL FIRE ALARM (MFA)	1	ESD-1D	ESD-1D PUSH BUTTON (ESDD)	1



NOTES

1. ALL DIMENSIONS IN mm U.N.O
2. ALL ELEVATIONS IN METERS.
3. PERSONNEL EXPECTED TO USE HANDHELD HYDROGEN AND LOW OXYGEN DETECTORS WHEN WORKING IN CONFINED SPACES ENTRY.

01 4. DETAIL LOCATION IS SHOWN IN THE 3D MODEL.

01 ELEVATION
1. ALL BUTTONS ARE 1.5M TOP
2. SOUNDERS AND BEACONS ARE 2.4/2.5M

LEGEND

HOLDS

REFERENCE DOCUMENTS

01	123A90-DDL-PP-DS-70071	PLOT PLAN - BELOW LOWER DECK
01	123A90-DDL-SAP-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 - BELOW LOWER 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-30028	SHEET 001	REV. 01

File Name : 123A90-DDL-SAF-DL-30028 Rev.01

Section 3 CONSOLIDATED PUNCH LISTS

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	70	Safety and Facility Systems
SUBSYSTEM	70-18	F&G Devices FZ-07 (Transition Piece Area)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30004026	B	C-950-MFA-07101/B400-FGS-003	Missing cable tag SS , near the instrument.	.		APolo 2025-02-19	2025-03-03	JKrizanic 2025-03-03	2025-03-03
C30004027	B	C-950-MFA-07101/B400-FGS-003	Missing core identification tag. side B400-FGS-003 . (see document 123A90-DDL-IN-DG-40016 sh.3)	.		APolo 2025-02-19	2025-02-26	APolo 2025-02-26	2025-02-26
C30004028	B	C-950-MFA-07101/B400-FGS-003	Missing cables tag , Panel side B400-FGS-003	.		APolo 2025-02-19	2025-02-27	AAndreani 2025-02-27	2025-02-27
C30004341	B	950-MFA-07101 C10001072	Painting is damage on the instrument. (See attached photo)	.		Gtangianu 2025-04-29	2025-05-21	Gtangianu 2025-05-21	2025-05-21
C30004342	B	950-MFA-07101 C10001072	Missing trafolite tag. (950-MFA-07101).	.	Trafolyte tag installed.	Gtangianu 2025-04-29	RDegliEsposti 2025-07-10	RDegliEsposti 2025-07-10	2025-07-10
C30004346	B	950-XL-07101 C10001126	The painting is damage.See attached photo	.		Gtangianu 2025-04-30	2025-05-21	Gtangianu 2025-05-21	2025-05-21
C30004347	B	950-XL-07101 C10001126	Missing protect cage on top lamp.See attached photo.	.		Gtangianu 2025-04-30	2025-05-14	Gtangianu 2025-05-14	2025-05-14
C30004348	B	950-XZ-07101 C10001144	Painting is damage. See attached photo.	.		Gtangianu 2025-04-30	2025-05-21	Gtangianu 2025-05-21	2025-05-21

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004026

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000397	1.4 Discipline	Instrumental
1.2 Item	C-950-MFA-07101/B400-FGS-003	MANUAL FIRE ALARM / MARSHALLING PCS	
1.3 Subsystem	70-18	F&G Devices FZ-07 (Transition Piece Area)	

2 - OBSERVATION

Missing cable tag SS , near the instrument.

Name: Alessio Polo

Date: 2025-02-19

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	2025-02-19
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic

Date: 2025-03-03

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

FG-22
-050-MFA-0710101-FGS-003

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004027

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000397	1.4 Discipline	Instrumental
1.2 Item	C-950-MFA-07101/B400-FGS-003	MANUAL FIRE ALARM / MARSHALLING PCS	
1.3 Subsystem	70-18	F&G Devices FZ-07 (Transition Piece Area)	

2 - OBSERVATION

Missing core identification tag. side B400-FGS-003 . (see document 123A90-DDL-IN-DG-40016 sh.3)

Name: Alessio Polo

Date: 2025-02-19

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	2025-02-19
3.5 Action by	PRE-COMM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Alessio Polo

Date: 2025-02-26

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

TB-B400-FGS-002-1
MFA-04202/TB-B400-FGS-002-1/6

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004028

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000397	1.4 Discipline	Instrumental
1.2 Item	C-950-MFA-07101/B400-FGS-003	MANUAL FIRE ALARM / MARSHALLING PCS	
1.3 Subsystem	70-18	F&G Devices FZ-07 (Transition Piece Area)	

2 - OBSERVATION

Missing cables tag , Panel side B400-FGS-003

Name: Alessio Polo

Date: 2025-02-19

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	2025-02-19
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-02-27

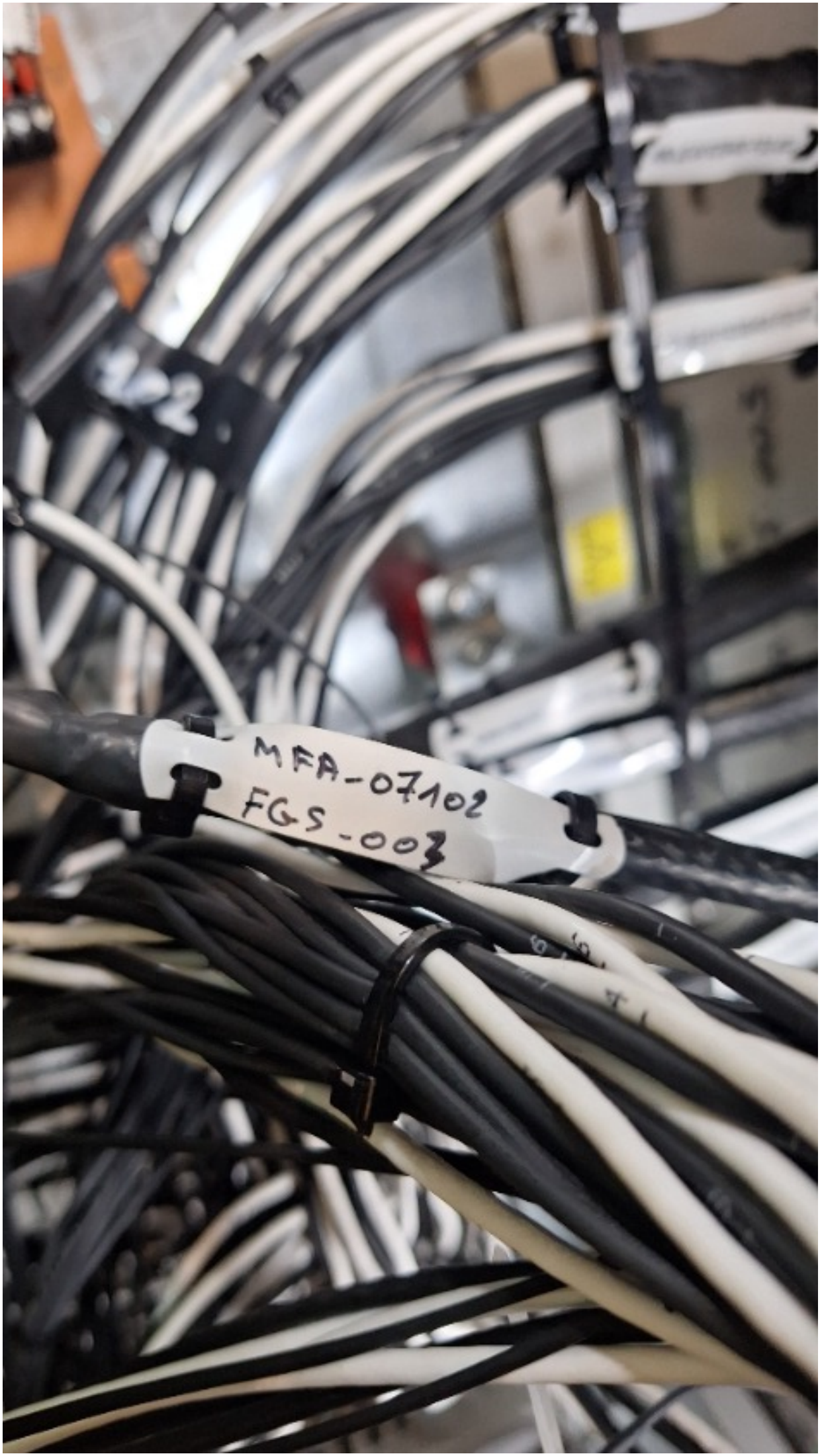
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


MFA-07102
FGS-003

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004341

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001072	1.4 Discipline	Instrumental
1.2 Item	950-MFA-07101	FZ-07 MFA Activation	
1.3 Subsystem	70-18	F&G Devices FZ-07 (Transition Piece Area)	

2 - OBSERVATION

Painting is damage on the instrument. (See attached photo)

Name: Giovanni Tangianu

Date: 2025-04-29

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	2025-04-29
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Paint has been restored

Name: Giovanni Tangianu

Date: 2025-05-21

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


MANUAL FIRE ALARM ACTIVATION
950-MFA-07101
LIFT
FLAP
AND
PUSH

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004342

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001072	1.4 Discipline	Instrumental
1.2 Item	950-MFA-07101	FZ-07 MFA Activation	
1.3 Subsystem	70-18	F&G Devices FZ-07 (Transition Piece Area)	

2 - OBSERVATION

Missing trafolite tag. (950-MFA-07101).

Name: Giovanni Tangianu

Date: 2025-04-29

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	2025-04-29
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Trafolyte tag installed.

Name: Raffaele Degli Esposti

Date: 2025-07-10

Signature:

5 - CLEARANCE CHECK

Paint has been restored

Name: Raffaele Degli Esposti

Date: 2025-07-10

Signature:

6- CLEARANCE APPROVAL

Name:

Date: 2025-07-10

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004346

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001126	1.4 Discipline	Instrumental
1.2 Item	950-XL-07101	FZ-07 Gas Beacon Activation	
1.3 Subsystem	70-18	F&G Devices FZ-07 (Transition Piece Area)	

2 - OBSERVATION

The painting is damage.See attached photo

Name: Giovanni Tangianu

Date: 2025-04-30

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	2025-04-30
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Paint has been restored

Name: Giovanni Tangianu

Date: 2025-05-21

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


CE
MEDCO
IP66/67
EXPLOSIVE
PASSED



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004347

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001126	1.4 Discipline	Instrumental
1.2 Item	950-XL-07101	FZ-07 Gas Beacon Activation	
1.3 Subsystem	70-18	F&G Devices FZ-07 (Transition Piece Area)	

2 - OBSERVATION

Missing protect cage on top lamp.See attached photo.

Name: Giovanni Tangianu

Date: 2025-04-30

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	2025-04-30
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date: 2025-05-14

Signature:

5 - CLEARANCE CHECK

The cage was installed. See attached photo.

Name: Giovanni Tangianu

Date: 2025-05-14

Signature:

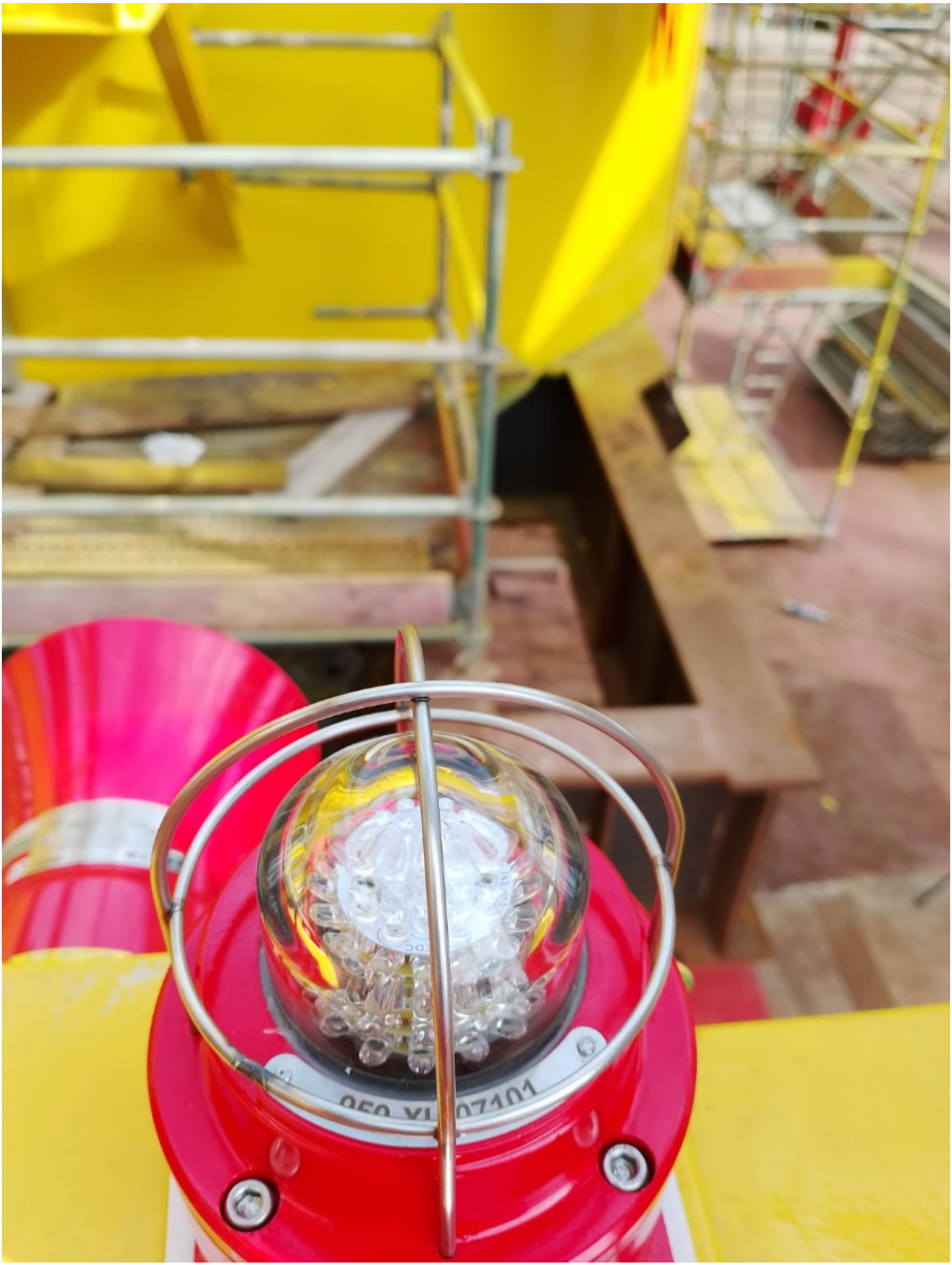
6- CLEARANCE APPROVAL

Name:

Date: 2025-05-14

Signature:


ISS. E
950-XL-07101



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004348

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001144	1.4 Discipline	Instrumental
1.2 Item	950-XZ-07101	FZ-07 Sounder Activation	
1.3 Subsystem	70-18	F&G Devices FZ-07 (Transition Piece Area)	

2 - OBSERVATION

Painting is damage. See attached photo.

Name: Giovanni Tangianu

Date: 2025-04-30

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	2025-04-30
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Paint has been restored

Name: Giovanni Tangianu

Date: 2025-05-21

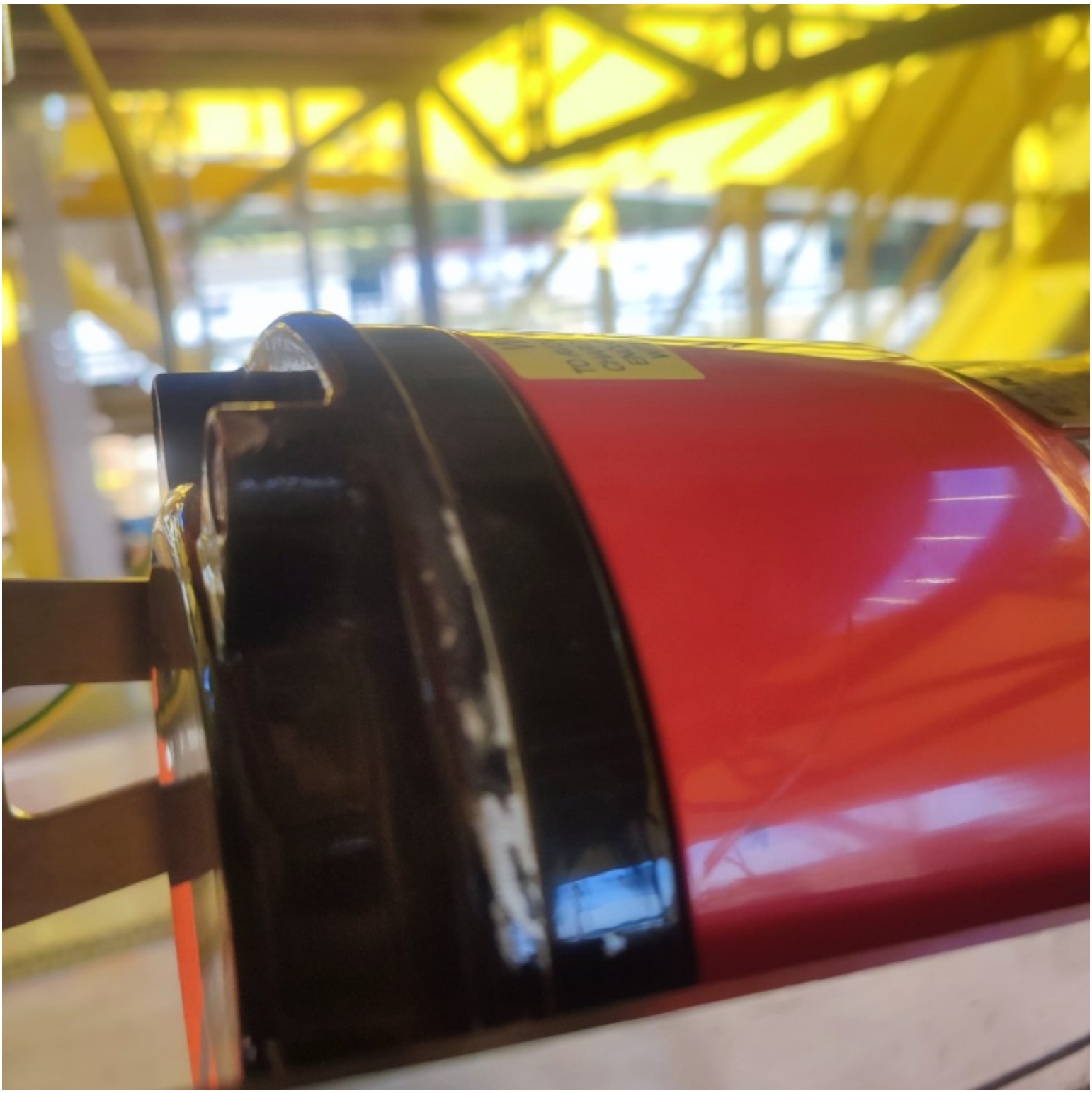
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:




950-XZ-07101


WARNING
TO AVOID ELECTRO-STATIC
CHARGE BUILD UP, CLEAN
ENCLOSURE EXTERIOR
WITH A DAMP CLOTH

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: 70-18 & discipline : I

Instrumental	70-18 F&G Devices FZ-07 (Transition Piece Area)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
950-MFA-07101	FZ-07 MFA Activation	ONSHORE	C10004435	FJ04PB_FGS	100	2025-02-11	RFO 1
950-XL-07101	FZ-07 Gas Beacon Activation	ONSHORE	C10004458	FJ04FB	100	2025-01-30	RFO 1
950-XL-07102	FZ-07 Fire Beacon Activation	ONSHORE	C10004459	FJ04FB	100	2025-01-30	RFO 1
950-XZ-07101	FZ-07 Sounder Activation	ONSHORE	C10004475	FJ04MS	100	2025-02-11	RFO 1

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	950-MFA-07101	: FZ-07 MFA Activation			Dwg	123A90-DDL-SAF-DL-30027
	S/Sys	70-18	: F&G Devices FZ-07 (Transition Piece Area)			Module	TP
TASK	code	C10004435		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-07101				TSLD	123A90-DDL-IN-DG-40014 rev. 1_A			
IO Type	Input	Yes	Output	No	Energy by transmitter	No	Energy by system	Yes	
Marshalling	B400-FGS-001	Terminal	07A/07B		Slot	05	Rack	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 alarm		Alarm / Control FGS		Display PCS	
6	Loop energized	Yes		Yes		OK	OK
7	Loop not energized	No		Yes		OK	OK
8	Checking of line monitoring	Yes		Yes		OK	OK
9	Checking of Maintenance Inhibition	NA		NA		NA	NA
10	Associated safety Level / bar						NA
11	Associated outputs						NA

LOOP DOCUMENTATION

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

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☑ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CW
Name	Marco Di Maria	Giandonato Delmissier	John Mackillop
Date	2025-02-07	2025-02-08	2025-02-11
Signature	PROVERLIS Digitaly signed by Marco Di Maria 2025-02-07T06:37:04.213Z	PROVERLIS Digitaly signed by Giandonato Delmissier 2025-02-08T10:08:01.491Z	PROVERLIS Digitaly signed by John Mackillop 2025-02-11T05:32:39.647Z

SM87BG & SM87PB manual call point range

Ex d, Ex ia, weatherproof



Overview

These manual fire alarm, emergency shutdown break-glass and pushbutton units have been designed for the most arduous environmental conditions.

The units are both easy to install and maintain. Intrinsically safe Ex ia and flameproof Ex d versions of each model are available.

A choice of either stainless steel or alloy makes the range suitable for either the offshore or onshore industries. Stainless steel, one of the most durable materials available on the market, is both hard wearing and corrosion resistant, increasing the life of products in harsh environments and therefore reducing maintenance costs.

Features

- Zone 0, Zone 1 and Zone 2 use*
- ATEX certified
- UL listed for USA and Canada (SM87PBL only). Class I, Div 1, Groups C & D
- ULC certified (SM87PBL only) for Class I, Zone 1 Groups C & D
- CSA certified
- IECEx certified
- Brazilian (INMETRO) certified
- Russian Fire certified
- PESO certified (Ex d only)
- SIL 2 certified (SM87PB only)
- IP66 and IP67
- DNV type approval (IEC 60945) (SM87PB only)
- Certified temperature: –55°C to +70°C*
- Stainless steel or marine grade alloy
- Robust yet lightweight
- Easy to maintain

*Model dependent

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Oddicroft Lane
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Powering Business Worldwide

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Certifications

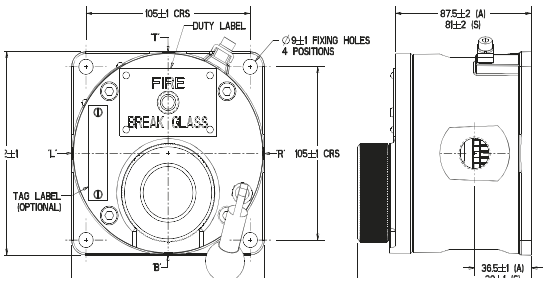
ATEX Ex d	Cert. no. Baseefa03ATEX0075. ATEX Approved Ex II 2GD Certified to: EN60079-0, EN60079-1, EN60079-31 Ex d IIC T5/T6 Gb, Ex tb IIIC T85°C/T100°C Db. IP66/IP67
ATEX Ex ia	Cert no. Baseefa 02ATEX0152X. ATEX Approved Ex II 1GD Certified to: EN60079-0, EN60079-11 Ex ia IIC T4 Ga, Ex ia IIIC T135°C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

Specifications

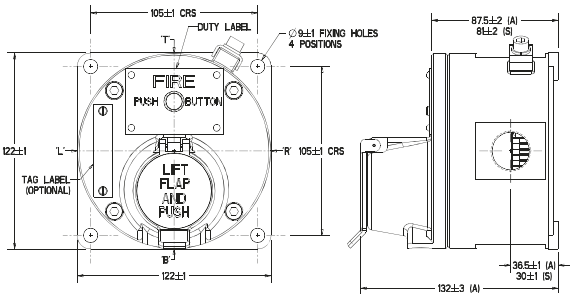
Material	Grade 316 ANC4B stainless steel or LM 25 TF marine grade alloy
Finish	Paint finish as standard or to customer specification
Voltage	Ex d 24V a.c./d.c. Ex ia 28V
Rating	2A
Switches	2 pole c/o, wired to terminals Optional up to 4 pole (UL version 2 pole only)
Optional indicator	A red high intensity LED can be fitted for alarm indication As standard the LED is not provided with over current protection. The forward current (If) should be limited to 20mA
Certified temp	Ex d* –55°C to +70°C. Ex ia* –55°C to +60°C –20°C to +55°C (LED version only) UL –40°C to +70°C, –20°C to +55°C (LED version only) CSA Explosion proof - Class 1, Div 1 & 2. –50°C to +55°C CSA - Ex d IIC –55°C to +70°C CSA Intrinsically safe - Class 1, Div 1 & 2 –50°C to +40°C *Note: includes ATEX, IECEx & INMETRO versions
Weight	3·8 kg. steel (approx.) or 2.5 kg. alloy (approx)
Ingress protection	IP66 & IP67. SM87PB IP68 (35m for 40 hours)
Entries	Up to 4 x M20 or M25 ISO Ex d/Ex ia Up to 4 x ½" or ¾" NPT UL Stainless steel version comes with two entries as standard. Units ordered with a single entry ordering code are supplied with 2x entries inc. plug on the opposite side
Terminals	Will accept up to 1·5mm² cable
Resistor values	470R minimum (d.c. & I.S. units only)

General arrangement drawing (all dimensions in mm)

Break glass



Push button



Both the Ex ia units and the Ex d units have the same external appearance. Also the internal components are identical throughout the range. Each unit can be wired for either NO, NC or CO contacts to customer specification

Ordering requirements

The following code is designed to help in selection of the correct unit. Build up the reference number by inserting the code for each component into the appropriate box

Unit	Model	Material	Certification	Entries	Duty label	Tag label	Options	Finish
SM87	PBL	S	D	1B1R	O	Y	HD	R

Material*	Code
Stainless steel	S
Alloy	A

*UL version only available in alloy

Model*	Code
Breakglass latching	BGL
Lift flap breakglass latching	LBGL
Push button latching key reset	PBL
Push button only momentary action	PBM

*UL and ULC versions only available in PBL model

Certification	Code
Ex ia	I
Ex d	D
IECEx - Ex ia	IJ
IECEx - Ex d	DJ
UL	UL
ULC	UC
CSA - Intrinsically Safe	IC
CSA - Ex proof	DC
INMETRO - Ex d	DM
CCC	DQ

Entries	Code
M20	1
M25	2
½" NPT	3
¾" NPT	4
Other	5
Position	
Top	*T
Bottom	*B
RHS	*R
LHS	*L

*Prefix position with size code i.e. 1T1B = M20 Top and Bottom

Duty label	Code
Fire breakglass	1
Push button	2
Fire push button	3
ESDO abandon	4
Burning house logo	5
Fire/FEU	6†
Other	O*
None	N

*Please specify
†This option must be used when ordering a red callpoint for ULC Fire Alarm applications

Tag label	Code
Required	Y*
Not required	N

*Please specify

Options	Code
Not required	N
LED	A
Resistor series	G*
Resistor EOL	H*
Diode	D*
3 pole c/o switch	T
4 pole c/o switch	F

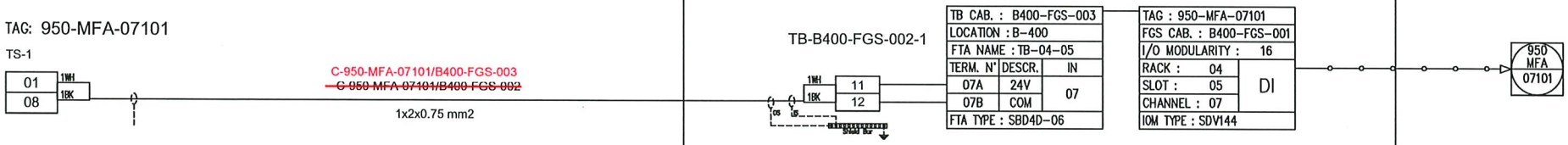
*Please specify

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

*Please specify

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

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



NO MARK UP

04/02/25

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

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

CROSSWIND

ROSETTI MARINO

TITLE : INSTRUMENT LOOP DIAGRAM
950-MFA-07101
FZ-07 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 347	REV. 01

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

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	950-XL-07101	: FZ-07 Gas Beacon Activation		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-18	: F&G Devices FZ-07 (Transition Piece Area)		Module		
TASK	code	C10004458	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-07101			TSLD	123A90-FDL-IN-DG-40014 rev. 1_A				
IO Type	Input	Yes	Output	No	Energy by transmitter	No	Energy by system	Yes	
Marshalling	B400-FGS-001	Terminal	02A/02B	Slot	03	Rack	06	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 alarm	Action Gas alarm	Alarm/Control FGS		Display PCS	
6	Loop energized	No	Yes	Yes		OK	OK
7	Loop not energized	No	No	No		OK	OK
8	Checking of line monitoring	NA	NA	NA		NA	NA
9	Checking of Maintenance Inhibition	NA	NA	NA		NA	NA
10	Associated safety Level / bar						NA
11	Associated outputs						NA
12	Flash beacon	RED		AMBER			

LOOP DOCUMENTATION

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

Comments:

	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CW OPS
Name	Marco Di Maria	Giandonato Delmissier	Jamie McAllister
Date	2025-01-29	2025-01-29	2025-01-30
Signature	Digitaly signed by Marco Di Maria 2025-01-29T06:26:52.927Z	Digitaly signed by Giandonato Delmissier 2025-01-29T09:05:41.482Z	Digitaly signed by Jamie McAllister 2025-01-30T07:55:53.768Z

SM87HXB 5 joule xenon and SM87LED high intensity LED beacon range

Ex d, weatherproof



Overview

These certified beacons have been designed for use in harsh environmental conditions. The stainless steel or marine grade alloy enclosures are suitable for use offshore or onshore, where lightweight combined with corrosion resistance and strength is required. Units can be painted to customer specification and fitted with identification labels.

LED version available, offering extended lifetimes.

Stainless steel, one of the most durable materials available on the market, is both hard wearing and corrosion resistant, increasing the life of products in harsh environments and therefore reducing maintenance costs.

Features

- Zone 1 and Zone 2 use
- Ex d IIC T4/T5/T6
- ATEX approved, Ex II 2GD
- IECEx certified Gb, Db
- UL listed for USA and Canada
  - Class I, Div 1, Groups C & D
  - Class I, Zone 1, AExd IIB
- CSA certified
- CQST certified*
- INMETRO certified*
- SIL 2 certified
- CCOE certified
- IP66 and IP67
- Certified temperature: –55°C to +70°C*
- Stainless steel or marine grade alloy
- Xenon or LED versions
- Various lens colours
- Optional lens guard
- Telephone or relay initiated

*Depending on version

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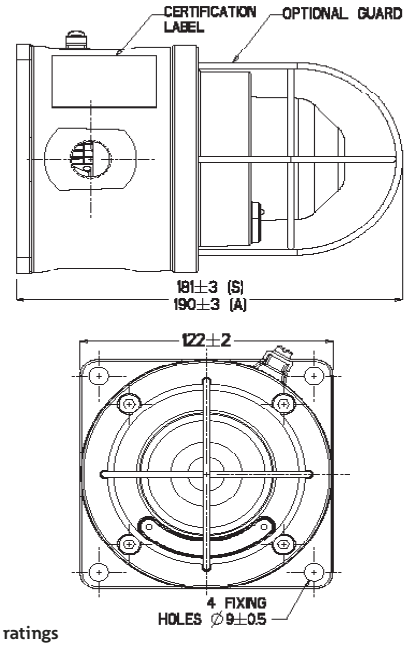
Certifications

ATEX Ex d	Cert. no. Baseefa 03ATEX0222 Certified to: EN60079-0, EN60079-1, EN60079-31 SM87HXB: Ex II 2GD, Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db SM87LED: Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55°C/ T70°C Db
IECEx Ex d	Cert. no. IECEx BAS 09.0059 Certified to: IEC60079-0, IEC60079-1, IEC60079-31 SM87HXB: Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db SM87LED: Ex d IIC T6 Gb, Ex tb IIIC T55°C/ T70°C Db
UL	Listing no. E187894 Class I, Div 1, Groups C & D Class I, Zones 1. (SM87HXB & SM87XBT only)
CSA	Cert no. 96406. (SM87HXB only) Certified to: C22.2 Nos 0, 0.4, 0.5, 9, 30-M1986, 94-M91, 137-M1981 Class I, Div 1. Group D
INMETRO Ex d	SM87HXB: Ex db IIC T5/T6 Gb, Ex tb IIIC T80°C/T95°C Db SM87LED: Ex db IIC T6 Gb, Ex tb IIIC T70°C Db
CQST Ex d	SM87HXB: Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db
SIL	SIL2 certification to IEC61508. Cert. No. 20151119-4786827453

Specifications

Material	SM87HXBS and SM87LEDS: Grade 316 ANC4B stainless steel SM87HXBA and SM87LEDA: LM25 TF marine grade alloy Lens: glass UL version available only in marine grade alloy
Finish	Epoxy paint finish as standard
Certified temp	SM87HXB: ATEX, IECEx, CQST, INMETRO -55°C to +70°C (T5) -55°C to +55°C (T6) UL -55°C to +70°C CSA -50°C to +40°C SM87LED: ATEX, IECEx, CQST, INMETRO -55°C to +55°C* (T6) * Operating temperature is -20°C to +55°C
Weight	SM87HXBS & SM87LEDS: 3.8kg each (approx) SM87HXBA & SM87LEDA: 2kg. each (approx)
Ingress protection	IP66 & IP67
Entries	Up to 4 x M20 / M25 ISO or 1/2" / 3/4" NPT
Terminals	SM87HXB SM87LED: Terminal suitable for 2.5mm2 cable
Relay initiate	Initiation by telephone ringing tone or low voltage control signals
Labels	Duty & tag labels optional

General arrangement drawing (all dimensions in mm)



Electrical ratings

	d.c.		a.c. 50/60Hz				
Voltage	24	48	110	120	220	240	254
Tube energy (Joules) SM87HXB	5	5	6	7	6	7	8
Current consumption SM87HXB	393	175	250	275	120	135	153
Current consumption SM87LED (mA)	165	85	N/A	N/A	N/A	N/A	N/A
Effective intensity (Cd)	29	29	32	39	32	39	44
Peak intensity (Cd)	22213	22213	25061	30187	25061	30187	34174

NOTE: The above figures (Cd) are for a clear lens @ 1Hz flash rate

Multiplying factor for coloured lenses

Red	Blue	Amber	Green	Yellow
0.15	0.12	0.51	0.49	0.36

The photometric data given above has been verified by BSI. Reports are available if required

LED light output - steady or flashing (customer selectable)

	Red	Blue	Amber	Green
Total LED output (candela)	192	64	64	17

LED/lens colour: red, blue, green, amber, yellow (not LED) or clear
Flash rate: 90fpm as standard, other flash rates available on request

Flash rate: 60fpm

Ordering requirements

The following code is designed to help in selection of the correct unit. Build up the reference number by inserting the code for each component into the appropriate box

Model	Certification	Voltage	Lens/LED colour	Guard	Entries	Tag/duty	Options	Finish
SM87LEDS	B	024	A	Y	1B1R	Y	N	R

Model

Voltage	Code
Xenon (stainless steel)	SM87HXBS
Xenon (alloy)	SM87HXBA
LED Exd (stainless steel)	SM87LEDS
LED Exd (alloy)	SM87LEDA

Certification

Certification	Code
ATEX	B
IECEx	J
UL	UL†
CSA	C‡
Chinese(CQST)	Q
INMETRO	DM

† Only SM87HXBA is available UL certified
‡ Only SM87HXB

Voltage

Voltage	Code
24 V d.c.	024
48 V d.c.	048
110 V a.c. not LED	110
120 V a.c. not LED	120
220 V a.c. not LED	220
240 V a.c. not LED	240
254 V a.c. not LED	254

Lens/LED colour

Colour	Code
Clear	C
Red	R
Blue	B
Green	G
Amber	A
Yellow (not LED)	Y

Guard

Guard	Code
None	N
Yes	Y

Entries

Entries	Code
M20	1
M25	2
1/2" NPT	3
3/4" NPT	4
Top	*T
Bottom	*B
RHS	*R
LHS	*L

* Prefix position with entry size code
e.g. 1T1B=M20 Top and Bottom entries

Tag/duty

Label	Code
None	N
Yes	Y*

* Please specify wording (Note: 15 characters maximum)

Options

Options	Code
Telephone	T*‡
Relay	R*‡
EOL resistor	E*†
None	N

* Not available on UL versions
† Please specify
‡ For SM87LED please specify if steady or flashing is required

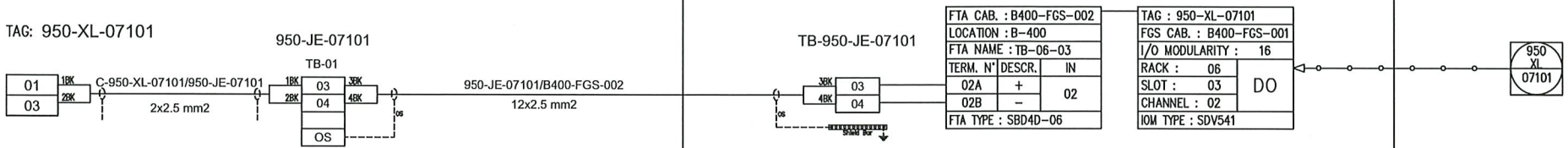
Finish

Colour	Code
Red	R
Blue	B
Yellow	Y
Yellow/ black stripe	X
Grey	G
White	W
Special	S*

*Please specify

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

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



NO MARK UP
LGuffanti
21/01/25

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

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

CROSSWIND

ROSETTI MARINO

TITLE : INSTRUMENT LOOP DIAGRAM
950-XL-07101
FZ-07 OPTICAL EXP GAS ALARM

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

A3	DRAWING NO. 123A90-DDL-IN-DG-40014	SHEET 401	REV. 01

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

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	950-XL-07102	: FZ-07 Fire Beacon Activation		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-18	: F&G Devices FZ-07 (Transition Piece Area)		Module		
TASK	code	C10004459	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-07102			TSLD	123A90-FDL-IN-DG-40014 rev. 1_A				
IO Type	Input	Yes	Output	No	Energy by transmitter	No	Energy by system	Yes	
Marshalling	B400-FGS-001	Terminal	03A/03B	Slot	03	Rack	06	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	No	Alarm/trip	Yes	OK
4	De-Energise Loop (open loop) and record status	Normal	Yes	Alarm/trip	No	OK
5	Record Fail Safe position	Open	NA	Closed	NA	NA

LOOP SERVICE

		Action Fire alarm	Action Gas alarm	Alarm/Control FGS		Display PCS	
6	Loop energized	Yes	No	Yes		OK	OK
7	Loop not energized	No	No	No		OK	OK
8	Checking of line monitoring	NA	NA	NA		NA	NA
9	Checking of Maintenance Inhibition	NA	NA	NA		NA	NA
10	Associated safety Level / bar						NA
11	Associated outputs						NA
12	Flash beacon	RED	●	AMBER			

LOOP DOCUMENTATION

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

Comments:

	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CW OPS
Name	Marco Di Maria	Giandonato Delmissier	Jamie McAllister
Date	2025-01-29	2025-01-29	2025-01-30
Signature	Digitaly signed by Marco Di Maria 2025-01-29T06:36:20.632Z	Digitaly signed by Giandonato Delmissier 2025-01-29T09:06:04.250Z	Digitaly signed by Jamie McAllister 2025-01-30T07:57:25.791Z

SM87HXB 5 joule xenon and SM87LED high intensity LED beacon range

Ex d, weatherproof



Overview

These certified beacons have been designed for use in harsh environmental conditions. The stainless steel or marine grade alloy enclosures are suitable for use offshore or onshore, where lightweight combined with corrosion resistance and strength is required. Units can be painted to customer specification and fitted with identification labels.

LED version available, offering extended lifetimes.

Stainless steel, one of the most durable materials available on the market, is both hard wearing and corrosion resistant, increasing the life of products in harsh environments and therefore reducing maintenance costs.

Features

- Zone 1 and Zone 2 use
- Ex d IIC T4/T5/T6
- ATEX approved, Ex II 2GD
- IECEx certified Gb, Db
- UL listed for USA and Canada
  - Class I, Div 1, Groups C & D
  - Class I, Zone 1, AExd IIB
- CSA certified
- CQST certified*
- INMETRO certified*
- SIL 2 certified
- CCOE certified
- IP66 and IP67
- Certified temperature: –55°C to +70°C*
- Stainless steel or marine grade alloy
- Xenon or LED versions
- Various lens colours
- Optional lens guard
- Telephone or relay initiated

*Depending on version

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Powering Business Worldwide

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.

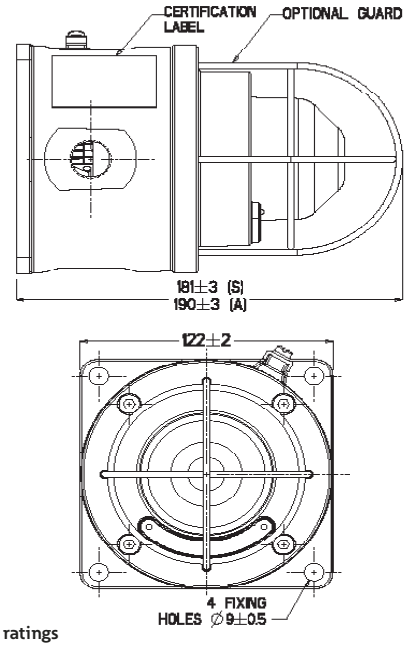
Certifications

ATEX Ex d	Cert. no. Baseefa 03ATEX0222 Certified to: EN60079-0, EN60079-1, EN60079-31 SM87HXB: Ex II 2GD, Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db SM87LED: Ex II 2GD, Ex d IIC T6 Gb, Ex tb IIIC T55°C/ T70°C Db
IECEx Ex d	Cert. no. IECEx BAS 09.0059 Certified to: IEC60079-0, IEC60079-1, IEC60079-31 SM87HXB: Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db SM87LED: Ex d IIC T6 Gb, Ex tb IIIC T55°C/ T70°C Db
UL	Listing no. E187894 Class I, Div 1, Groups C & D Class I, Zones 1. (SM87HXB & SM87XBT only)
CSA	Cert no. 96406. (SM87HXB only) Certified to: C22.2 Nos 0, 0.4, 0.5, 9, 30-M1986, 94-M91, 137-M1981 Class I, Div 1. Group D
INMETRO Ex d	SM87HXB: Ex db IIC T5/T6 Gb, Ex tb IIIC T80°C/T95°C Db SM87LED: Ex db IIC T6 Gb, Ex tb IIIC T70°C Db
CQST Ex d	SM87HXB: Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db
SIL	SIL2 certification to IEC61508. Cert. No. 20151119-4786827453

Specifications

Material	SM87HXBS and SM87LEDS: Grade 316 ANC4B stainless steel SM87HXBA and SM87LEDA: LM25 TF marine grade alloy Lens: glass UL version available only in marine grade alloy
Finish	Epoxy paint finish as standard
Certified temp	SM87HXB: ATEX, IECEx, CQST, INMETRO -55°C to +70°C (T5) -55°C to +55°C (T6) UL -55°C to +70°C CSA -50°C to +40°C SM87LED: ATEX, IECEx, CQST, INMETRO -55°C to +55°C* (T6) * Operating temperature is -20°C to +55°C
Weight	SM87HXBS & SM87LEDS: 3.8kg each (approx) SM87HXBA & SM87LEDA: 2kg. each (approx)
Ingress protection	IP66 & IP67
Entries	Up to 4 x M20 / M25 ISO or 1/2" / 3/4" NPT
Terminals	SM87HXB SM87LED: Terminal suitable for 2.5mm2 cable
Relay initiate	Initiation by telephone ringing tone or low voltage control signals
Labels	Duty & tag labels optional

General arrangement drawing (all dimensions in mm)



Electrical ratings

	d.c.		a.c. 50/60Hz				
Voltage	24	48	110	120	220	240	254
Tube energy (Joules) SM87HXB	5	5	6	7	6	7	8
Current consumption SM87HXB	393	175	250	275	120	135	153
Current consumption SM87LED (mA)	165	85	N/A	N/A	N/A	N/A	N/A
Effective intensity (Cd)	29	29	32	39	32	39	44
Peak intensity (Cd)	22213	22213	25061	30187	25061	30187	34174

NOTE: The above figures (Cd) are for a clear lens @ 1Hz flash rate

Multiplying factor for coloured lenses

Red	Blue	Amber	Green	Yellow
0.15	0.12	0.51	0.49	0.36

The photometric data given above has been verified by BSI. Reports are available if required

LED light output - steady or flashing (customer selectable)

	Red	Blue	Amber	Green
Total LED output (candela)	192	64	64	17

LED/lens colour: red, blue, green, amber, yellow (not LED) or clear
Flash rate: 90fpm as standard, other flash rates available on request

Flash rate: 60fpm

Ordering requirements

The following code is designed to help in selection of the correct unit. Build up the reference number by inserting the code for each component into the appropriate box

Model	Certification	Voltage	Lens/LED colour	Guard	Entries	Tag/duty	Options	Finish
SM87LEDS	B	024	R	Y	1B1R	Y	N	R

Voltage	Code
Xenon (stainless steel)	SM87HXBS
Xenon (alloy)	SM87HXBA
LED Exd (stainless steel)	SM87LEDS
LED Exd (alloy)	SM87LEDA

Voltage	Code
24 V d.c.	024
48 V d.c.	048
110 V a.c. not LED	110
120 V a.c. not LED	120
220 V a.c. not LED	220
240 V a.c. not LED	240
254 V a.c. not LED	254

Guard	Code
None	N
Yes	Y

Label	Code
None	N
Yes	Y*

* Please specify wording (Note: 15 characters maximum)

Colour	Code
Red	R
Blue	B
Yellow	Y
Yellow/ black stripe	X
Grey	G
White	W
Special	S*

*Please specify

Certification	Code
ATEX	B
IECEx	J
UL	UL†
CSA	C‡
Chinese(CQST)	Q
INMETRO	DM

† Only SM87HXBA is available UL certified
‡ Only SM87HXB

Colour	Code
Clear	C
Red	R
Blue	B
Green	G
Amber	A
Yellow (not LED)	Y

Entries	Code
M20	1
M25	2
1/2" NPT	3
3/4" NPT	4
Top	*T
Bottom	*B
RHS	*R
LHS	*L

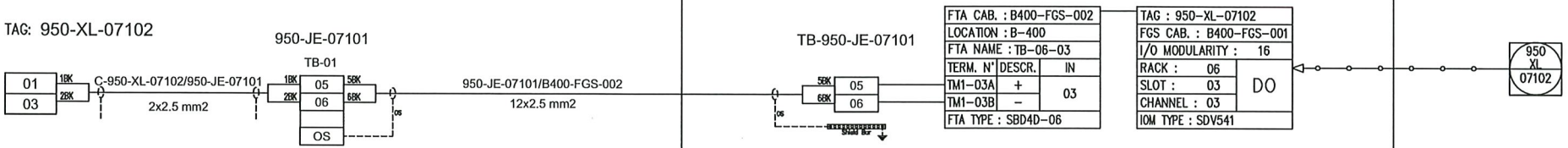
* Prefix position with entry size code
e.g. 1T1B=M20 Top and Bottom entries

Options	Code
Telephone	T*‡
Relay	R*‡
EOL resistor	E*†
None	N

* Not available on UL versions
† Please specify
‡ For SM87LED please specify if steady or flashing is required

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

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



NO MARK UP
20/09/25

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

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

CROSSWIND

ROSETTI MARINO

TITLE : INSTRUMENT LOOP DIAGRAM
950-XL-07102
FZ-07 OPTICAL FIRE ALARM

CONTRACT NO./TITLE CONTRACT_NO.			SCALE 1:1
DRAWN: VBA	CHECKED: LCA	APPROVED: DLO	DATE 23/10/2024
A3	DRAWING NO. 123A90-DDL-IN-DG-40014	SHEET 402	REV. 01

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

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	950-XZ-07101	: FZ-07 Sounder Activation		Dwg	123A90-DDL-SAF-DL-30027	
	S/Sys	70-18	: F&G Devices FZ-07 (Transition Piece Area)		Module		
TASK	code	C10004475	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-07101			TSLD	123A90-DDL-IN-DG-40014 rev. 1_A		
IO Type	Input	No	Output	Yes	Energy by transmitter	No	Energy by system	Yes
Marshalling	B400-FGS-001	Terminal	01A/01B	Slot	03	Rack	06	Chanel	01

LOOP TEST

1	Check earth isolation of the loop.					OK
2	Connect loop to terminal					OK
3	Energise Loop (close loop) and record status	Normal	No	Alarm/trip	Yes	OK
4	De-Energise Loop (open loop) and record status	Normal	Yes	Alarm/trip	No	OK
5	Record Fail Safe position	Open	NA	Closed	NA	NA

LOOP SERVICE

		Action Fire&Gas alarm		Alarm / Control FGS		Display PCS	
6	Loop energized	Yes		Yes		NA	OK
7	Loop not energized	No		Yes		NA	OK
8	Checking of line monitoring	Yes		Yes		OK	OK
9	Checking of Maintenance Inhibition	NA		NA		NA	NA
10	Associated safety Level / bar						NA
11	Associated outputs						NA

LOOP DOCUMENTATION

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

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☑ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	
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 2025-02-08T11:25:58.917Z	PROVERLIS Digitaly signed by Giandonato Delmissier 2025-02-08T22:32:31.407Z	PROVERLIS Digitaly signed by John Mackillop 2025-02-11T05:40:52.883Z

DB3BM sounders range up to 116dB

Ex d, weatherproof



Overview

The DB3BM is a high power explosion proof sounder, introduced as a replacement for the current DB1 / DB1H with improved functionality and performance. Certified for use in a wide range of temperatures from -60°C to +85°C the Ex enclosure is manufactured in either marine grade alloy or stainless steel with a rugged thermoplastic flare providing a corrosion free and aesthetically pleasing product.

Capable of producing 116 dB @ 1m and with a range of pre-recorded tones, the DB3BM includes an integral volume control which is ideal when a lower output is required.

The unit is provided with versatile control options allowing compatibility with a wide range of control methods and PLCs.

The standard DC unit provides 3 tone stages, each stage has 28 tones available which can be independently selected. The unit can be controlled by reversing the polarity of the power supply (2 stage) or providing a common negative and switching between multiple positive supplies.

The DB3BM proves its versatility by additionally being able to work with a common positive supply and switching the negatives. The tone stages of the DB3BM can also be controlled via voltage free contacts provided by a control panel.

The flexibility of the range continues with a wide range of supply voltages. The short flare option is a worthy addition to the range offering a high SPL in a compact unit.

Features

- UKEX / ATEX / IECEx
  Ex db IIC T4/T5/T6 Gb
  Ex tb IIIC T4/T5/T6 Db
- Certified temperature: –60°C to +85°C
- IP66 & IP67 (terminal only)
- Up to 116 dB output @ 1 m
- Integral volume control
- 28 tones, user selectable
- 3 stage unit remotely switchable
- Tones can be programmed to customer's specification
- DC supply voltage between 12 V and 48 V
- End of line resistor option
- Sounder & beacon combination units available, for further details contact MEDC
- Ex enclosure – marine grade alloy or stainless steel
- Flare - high impact thermoplastic polyester
- Stainless steel mounting bracket and cover screws
- Mounting bracket has ratchet facility as standard
- Swivel bracket standard on Stainless steel unit, optional on Alloy units



Stainless steel body, short flare version

ATEX IECEx UKCA

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Powering Business Worldwide

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All specifications, dimensions, weights and tolerances are nominal (typical) and Eaton reserve the right to vary all data without prior notice.
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

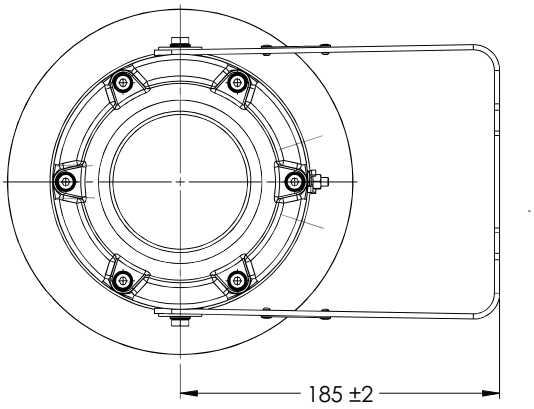
	Ex d/UL min	Max
Certified temperature	-60°C	+85°C

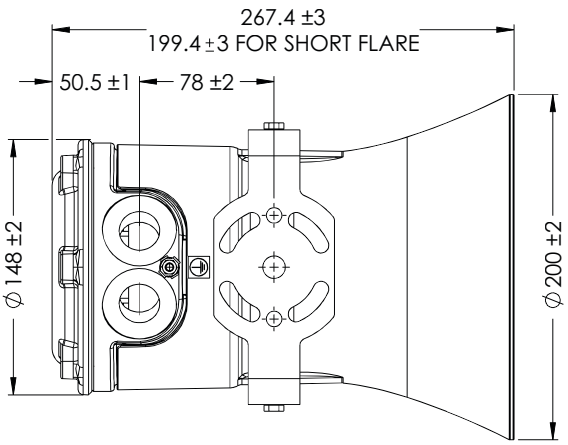
Operating temperature at launch (DC Only): -40 °C min +85 °C max
-55 °C as standard to follow. Please contact MEDC for low temperature options

	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)

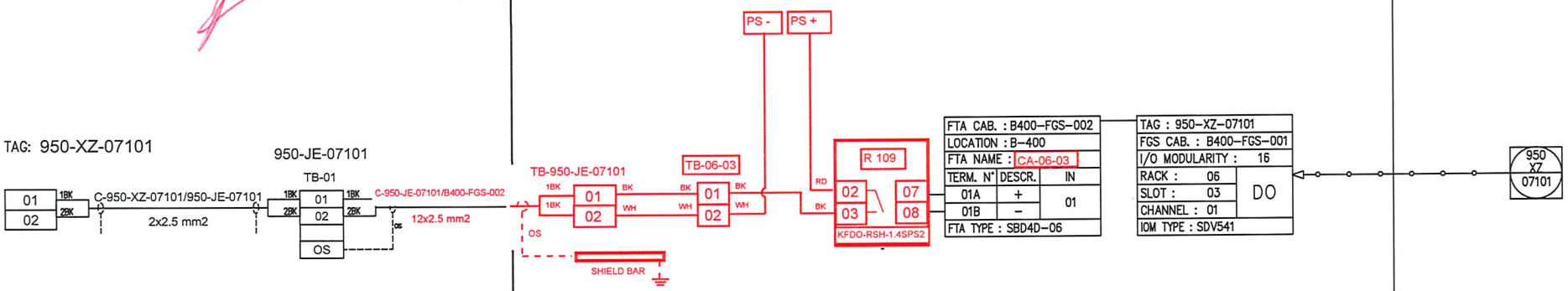
Finish	Code
Natural black	N
Natural red	R
Yellow	Y
Grey	G
Blue	B
Special	S*

*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-07101
FZ-07 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 423 | REV. 01

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

Section 4.4 Instrumentation “As-Commissioned” interconnection diagrams

NOT APPLICABLE

Section 4.5 Telecommunication functional test sheets index

NOT APPLICABLE

Section 4.6 Telecommunication
“As-Commissioned” I.C.D. / TSLD's

NOT APPLICABLE

Section 5 SITE / OPERATIONAL

Section 5.1 Operational Test Procedure

CROSSWIND	**123A90 - HOLLANDSE KUST NOORD WIND PARK BLPH Project** **COMMISSIONING DOSSIER INDEX**	ROSETTI MARINO

Main reference document **123A90-PML-COM-PRO-03054 _ OTP – F&G and ESD C&E Logics** has been uploaded in the Subsystem 70-00 Commissioning Dossier Sect. 5.1

FIRE ZONE 01/02/03/04/05/06/7
MFA PUSH BUTTONS

FZ-01= FUEL CELL AREA
FZ-02= H2 STORAGE VESSELS AREA
FZ-03= ELECTROLYZER AREA
FZ-04= B-200/B-300/B-400 CONTAINERS AREA
FZ-05= BESS AREA
FZ-06= B-100 CONTAINER AREA
FZ-07= MASTER POINT AREA
FZ-08= TRANSITION PIECE AREA

EFFECT

TAG Nos	CAUSE				SYS	AUDIO / VISUAL ALERT																SIS SYSTEM										ELECTRIC ISOLATION						OTHER																			
					NOTES					TO SHEET 17		TO SHEET 17		TO SHEET 17																																												
					DESCRIPTION	OPERATOR WORKSTATION DISPLAY - EVENT/ALARM		F&G ALARM ON CAP ONSHORE		GAS BEACON ACTIVATION - AMBER		FIRE BEACON ACTIVATION - RED		SOUNDER ACTIVATION																																												
					TAG No.																																																									
	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-MFA-01101	FZ-01 MFA ACTIVATION		X	1	2	X		F				X		X																																										
950-MFA-01102	FZ-01 MFA ACTIVATION		X	1	3	X		F				X		X																																										
950-MFA-01103	FZ-01 MFA ACTIVATION		X	1	4	X		F				X		X																																										
					5																																																				
950-MFA-02101	FZ-02 MFA ACTIVATION		X	1	6	X		F				X		X																																										
					7																																																				
950-MFA-03101	FZ-03 MFA ACTIVATION		X	1	8	X		F				X		X																																										
950-MFA-03102	FZ-03 MFA ACTIVATION		X	1	9	X		F				X		X																																										
950-MFA-03103	FZ-03 MFA ACTIVATION		X	1	10	X		F				X		X																																										
950-MFA-03104	FZ-03 MFA ACTIVATION		X	1	11	X		F				X		X																																										
					12																																																				
950-MFA-04101	FZ-04 MFA ACTIVATION		X	1	13	X		F				X		X																																										
950-MFA-04102	FZ-04 MFA ACTIVATION		X	1	14	X		F				X		X																																										
					15																																																				
950-MFA-04201	FZ-04 MFA ACTIVATION - B-400 INDOOR		X	1	16	X		F				X		X																																										
950-MFA-04202	FZ-04 MFA ACTIVATION - B-400 INDOOR		X	1	17	X		F				X		X																																										
950-MFA-04203	FZ-04 MFA ACTIVATION - B-400 INDOOR		X	1	18	X		F				X		X																																										
					19																																																				
950-MFA-05101	FZ-05 MFA ACTIVATION		X	1	20	X		F				X		X																																										
950-MFA-05102	FZ-05 MFA ACTIVATION		X	1	21	X		F				X		X																																										
950-MFA-05103	FZ-05 MFA ACTIVATION		X	1	22	X		F				X		X																																										
950-MFA-05104	FZ-05 MFA ACTIVATION		X	1	23	X		F				X		X																																										
					24																																																				
950-MFA-05201	FZ-05 MFA ACT. - WATER TREAT. PK INDOOR		X	1	25	X		F				X		X																																										
					26																																																				
950-MFA-06101	FZ-06 MFA ACTIVATION		X	1	27	X		F				X		X																																										
950-MFA-06102	FZ-06 MFA ACTIVATION		X	1	28	X		F				X		X																																										
					29																																																				
950-MFA-06201	FZ-06 MFA ACTIVATION - B-100 INDOOR		X	1	30	X		F				X		X																																										
					31																																																				
950-MFA-07101	FZ-07 MFA ACTIVATION		X	1	32	X		F				X		X																																										
					33																																																				
					34																																																				
					35																																																				
					36																																																				
					37																																																				
					38																																																				
					39																																																				
					40																																																				
					41																																																				

NOTES:
1. THE FLASHING ALARM ON CAP ONSHORE IS A CUMULATIVE OF ALL ASD PUSH BUTTONS ACTIVATION.

LEGEND

GERRY MCCANN
CROSSWIND
12/3/2025

TEST COMPLETED
12-03-2025
GIANDONATO R.M.

REFERENCE DOCUMENTS	
TITLE	NUMBER
Process Safety Cause and Effect Matrix	123A90-DDL-IN-CE-40000
Process Safety Cause and Effect Block Diagram	123A90-DDL-PR-DG-80000
F&G detectors Layout - Lower deck and Upper deck	123A90-DDL-SAF-DL-30027
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

EFFECT

TAG Nos	CAUSE DESCRIPTION	VOTING	INHIBITION	REMARK	No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
					SYS		GAS VISUAL ALERT BEACONS (AMBER)															
					NOTES																	
					DESCRIPTION		FZ-01 GAS BEACON ACTIVATION	FZ-02 GAS BEACON ACTIVATION	FZ-03 GAS BEACON ACTIVATION	FZ-03 GAS BEACON ACTIVATION	FZ-04 GAS BEACON ACTIVATION	FZ-04 GAS BEACON ACTIVATION	FZ-04 GAS BEACON ACT. - B-400 INDOOR	FZ-04 GAS BEACON ACT. - B-300 INDOOR	FZ-04 GAS BEACON ACT. - B-200 INDOOR	FZ-05 GAS BEACON ACT. - WATER T. INDOOR	FZ-06 GAS BEACON ACTIVATION	FZ-06 GAS BEACON ACTIVATION	FZ-06 GAS BEACON ACT. - B-100 INDOOR	FZ-07 GAS BEACON ACTIVATION		
					TAG No.		950-XL-01101	950-XL-02101	950-XL-03101	950-XL-03103	950-XL-04101	950-XL-04103	950-XL-04201	950-XL-04203	950-XL-04205	950-XL-05201	950-XL-06101	950-XL-06103	950-XL-06201	950-XL-07101		
	GAS CONFIRMED IN B-100 (HV CONTAINER)			From sheet 5	1		X	X	X	X	X	X	X	X	X	X	X	X	X	X		
	GAS CONFIRMED B-200 IN (LV CONTAINER)			From sheet 6	2		X	X	X	X	X	X	X	X	X	X	X	X	X	X		
	GAS CONFIRMED IN B-300 (UPS CONTAINER)			From sheet 7	3		X	X	X	X	X	X	X	X	X	X	X	X	X	X		
	GAS CONFIRMED IN B-400 (ITER CONTAINER)			From sheet 8	4		X	X	X	X	X	X	X	X	X	X	X	X	X	X		
	GAS CONFIRMED IN FUEL CELL			From sheet 9	5		X	X	X	X	X	X	X	X	X	X	X	X	X	X		
	GAS CONFIRMED IN BESS			From sheet 10	6		X	X	X	X	X	X	X	X	X	X	X	X	X	X		
	GAS CONFIRMED IN ELECTROLYZER			From sheet 11	7		X	X	X	X	X	X	X	X	X	X	X	X	X	X		
	GAS CONFIRMED IN WATER TREAT. PKG			From sheet 12	8		X	X	X	X	X	X	X	X	X	X	X	X	X	X		
	HYDROGEN OPEN AREA			From sheet 13	9		X	X	X	X	X	X	X	X	X	X	X	X	X	X		
					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		X	X	X	X	X	X	X	X	X	X	X	X	X	X		
					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		X	X	X	X	X	X	X	X	X	X	X	X	X	X		
79-XA-002	ESD-1D ACTIVATION FROM SIS SYSTEM			NOTE 1	26		X	X	X	X	X	X	X	X	X	X	X	X	X	X		
79-XA-003	ESD-1 ACTIVATION FROM SIS SYSTEM			NOTE 1	27		X	X	X	X	X	X	X	X	X	X	X	X	X	X		
					28																	
79-XA-004	MOB PUSH BUTTONS ACTIVATION FROM SIS SYSTEM			NOTE 1	29		X	X	X	X	X	X	X	X	X	X	X	X	X	X		
					30																	
					31																	
					32																	
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					39																	
					40																	
					41																	

No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
SYS	FIRE VISUAL ALERT BEACONS (RED)															
DESCRIPTION	FZ-01 FIRE BEACON ACTIVATION	FZ-02 FIRE BEACON ACTIVATION	FZ-03 FIRE BEACON ACTIVATION	FZ-03 FIRE BEACON ACTIVATION	FZ-04 FIRE BEACON ACTIVATION	FZ-04 FIRE BEACON ACTIVATION	FZ-04 FIRE BEACON ACT.- B-400 INDOOR	FZ-04 FIRE BEACON ACT. - B-300 INDOOR	FZ-04 FIRE BEACON ACT. - B-200 INDOOR	FZ-05 FIRE BEACON ACT. - WATER T. INDOOR	FZ-06 FIRE BEACON ACTIVATION	FZ-06 FIRE BEACON ACTIVATION	FZ-06 FIRE BEACON ACT. - B-100 INDOOR	FZ-07 FIRE BEACON ACTIVATION		
TAG No.	950-XL-01102	950-XL-02102	950-XL-03102	950-XL-03104	950-XL-04102	950-XL-04104	950-XL-04202	950-XL-04204	950-XL-04206	950-XL-05202	950-XL-06102	950-XL-06104	950-XL-06202	950-XL-07102		
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
12	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
13	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
14	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
15	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
16	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
17	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
18	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
19	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
20																
21																
22																
23	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
24																
25	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
26	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
27	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
28																
29	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
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36																
37																
38																
39																
40																
41																

No.	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
SYS	AUDIO ALERT SOUNDERS																			
NOTES																	2			
DESCRIPTION	FZ-01 SOUNDER ACTIVATION	FZ-01 SOUNDER ACTIVATION	FZ-02 SOUNDER ACTIVATION	FZ-03 SOUNDER ACTIVATION	FZ-03 SOUNDER ACTIVATION	FZ-04 SOUNDER ACTIVATION	FZ-04 SOUNDER ACTIVATION	FZ-04 SOUNDER ACT. - B-400 INDOOR	FZ-04 SOUNDER ACT. - B-300 INDOOR	FZ-04 SOUNDER ACT. - B-200 INDOOR	FZ-05 SOUNDER ACTIVATION	FZ-05 SOUNDER ACTIVATION	FZ-05 SOUNDER ACTIVATION	FZ-05 SOUNDER ACTIVATION	FZ-05 SOUNDER ACTIVATION - WTER T. INDOOR	FZ-06 SOUNDER ACTIVATION	FZ-06 SOUNDER ACT. - B-100 INDOOR	FZ-07 SOUNDER ACTIVATION		WAVE-OFF LIGHT ACTIVATION TO NAVAIDS
TAG No.	950-XZ-01101	950-XZ-01102	950-XZ-02101	950-XZ-03101	950-XZ-03102	950-XZ-04101	950-XZ-04102	950-XZ-04201	950-XZ-04202	950-XZ-04203	950-XZ-05101	950-XZ-05102	950-XZ-05103	950-XZ-05104	950-XZ-05201	950-XZ-06101	950-XZ-06201	950-XZ-07101		72-XS-001
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																				
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NOTES:
1. FGS AND SIS SYSTEM EXCHANGE DATA BETWEEN THEM BY USING THE Vnet/IP NETWORK. THIS IS IMPLEMENTED AS REDUNDANT SAFETY COMMUNICATION, APPROVED FOR SIL 3 LOOP
2. It will be possible to deactivate the sounder 950-XZ-07101 (installed in Master Area) from CAP onshore.

LEGEND

TEST COMPLETED
GIANDONATO R.M.
19-03-2025

WITNESSED

PAUL WILLIAMSON
CROSSWIND
19-MAR-2025

REFERENCE DOCUMENTS	
TITLE	NUMBER
Process Safety Cause and Effect Matrix	123A90-DDL-IN-CE-40000
Process Safety Cause and Effect Block Diagram	123A90-DDL-PR-DG-80000
F&G detectors Layout - Lower deck and Upper deck	123A90-DDL-SAF-DL-30027
F&G detectors Layout - Below Lower deck	123A90-DDL-SAF-DL-30028

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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

 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	Doc. n°	Rev.	Rev. Date	Status	Class
123A90	**1724000821-COM-LIS-00011**	**Issued for review**	**22-Oct-24**	**IFR**	**2**

The equipment consists of the following units/components

1 Tag no.

2 Tag description

Supplier: FORES ENGINEERING srl	PO Number: 1721002632	PO description: FIRE AND GAS FIELD EQUIPMENT	Contact name: MRS MATTEO OSSANI
Address: VIA SECONDO CASADEI 12 47122 Forli ITALY		Supplier telephone no: +39.0543.813811	Contact mobile no:
		E-mail: Fores@fores.it	WEBSITE http://www.fores.it/

General Information:

3 Manufacturer model/type no.

4 Manufacturer serial no.

5 No. of units

6 Quantity of parts FITTED / INSTALLED per unit/component

Item Number	Total number of identical spares installed	MATERIALS DATA																		Commissioning spares	2 Years spares	Remarks
		Description of recommended spare parts	Parts/drawing 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.	Manufacturername	Quantity ordered	Quantity ordered	
			Project Datasheet no.	Project Detail dwg. no.	Item ref.																	
7	8	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1	24	SMOKE DETECTOR ZETTLER MR601TEx	1724000821-IN-DS-00004	1724000821-IN-DA-00003		FR110 "Bayblend" fire resistant												MR601TEx	ZETTLER	0	1	
2	49	GAS DETECTOR HYDROGEN Dräger Polytron® 8200 CAT DQ	1724000821-IN-DS-00004	1724000821-IN-DA-00003		AISI 316												Polytron® 8200 CAT DQ d S	Dräger	0	1	
3	9	GAS DETECTOR ULTRASONIC Dräger Polytron® 8900 UGLD	1724000821-IN-DS-00004	1724000821-IN-DA-00003		AISI 316												Polytron® 8900 UGLD d S 4-	Dräger	0	1	
4	3	GAS DETECTOR OXYGEN Dräger Polytron 8100 EC d S 4-	1724000821-IN-DS-00004	1724000821-IN-DA-00003		AISI 316												Polytron 8100 EC d S 4-	Dräger	0	1	
5	22	FLAME DETECTOR FGD FlameSpec FLS-UV-IR-AS11	1724000821-IN-DS-00004	1724000821-IN-DA-00003		AISI 316												FlameSpec FLS-UV-IR-AS11	FGD	0	1	
6	21	PUSH BUTTON MEDC SM87PBL MANUAL FIRE ALARM	1724000821-IN-DS-00004	1724000821-IN-DA-00003		AISI 316												SM87PB	MEDC	0	1	
7	20	PUSH BUTTON MEDC SM87PBL PUSH BUTTON TO SIS	1724000821-IN-DS-00004	1724000821-IN-DA-00003		AISI 316												SM87PB	MEDC	0	1	
8	13	GAS FLASH BEACON (AMBER) MEDC SM87LEDS	1724000821-IN-DS-00004	1724000821-IN-DA-00003		AISI 316												SM87LEDS	MEDC	0	1	
9	13	FIRE FLASH BEACON (RED) MEDC SM87LEDS	1724000821-IN-DS-00004	1724000821-IN-DA-00003		AISI 316												SM87LEDS	MEDC	0	1	
10	17	SOUNDER MEDC DB3B	1724000821-IN-DS-00004	1724000821-IN-DA-00003		AISI 316												DB3B	MEDC	0	1	
11	32	PUSH BUTTON DPDT CONTACT EATON GHG 432	1724000821-IN-DS-00004	1724000821-IN-DA-00003		Polyamide												GHG 432	EATON	0	0	
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Section 7.4 Vendor Data / Operations / Maintenance Manuals References

NOT APPLICABLE

Section 8 LIST OF MODIFICATIONS

NOT APPLICABLE

Section 8.1 List of changes

NOT APPLICABLE

Section 9 SUPPORTING DOCUMENTS

NOT APPLICABLE