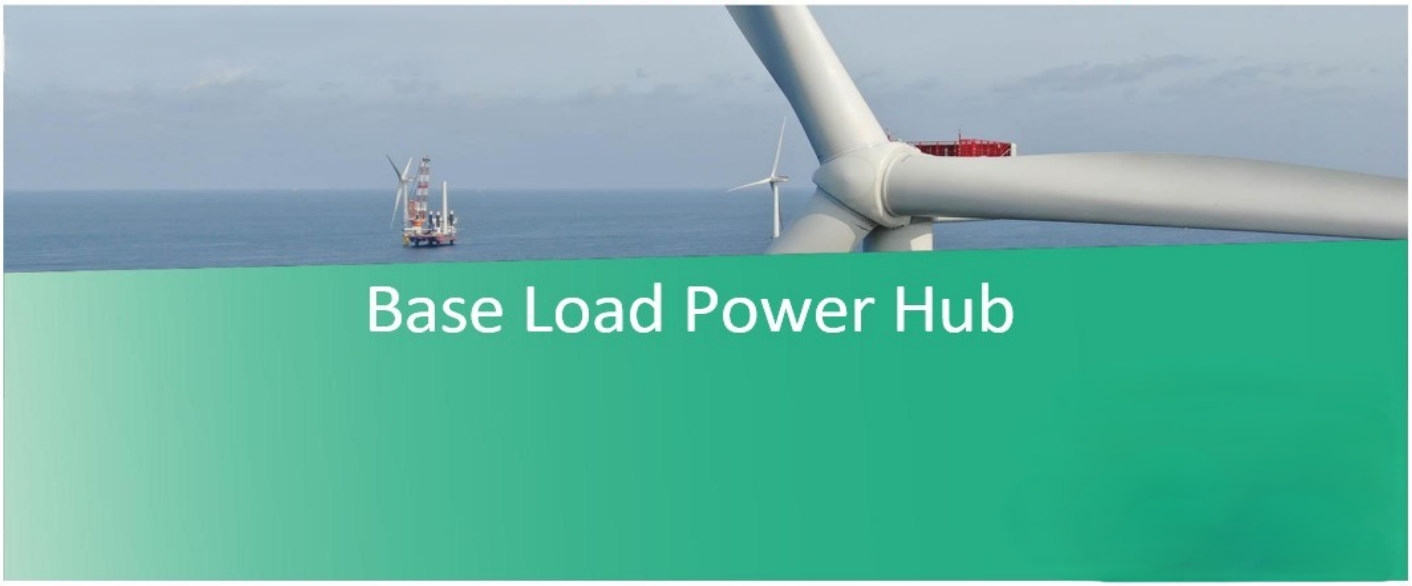
CROSSWIND

ROSETTI MARINO

PROVERLIS

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



MECHANICAL COMPLETION DOSSIER (ONSHORE)

SYSTEM

70
Safety and Facility Systems

SUBSYSTEM

70-00-32

Junction Box 950-JE-05104 and Multi-core cable (FGS System)

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

Sub System N°:	70-00-32	Tick as appropriate	ONSHORE	O
Description:	Junction Box 950-JE-05104 and Multi-core cable (FGS System)		OFFSHORE	NA

1.	***READY FOR COMMISSIONING CERTIFICATE*** *Ready For Commissioning Certificate (RFC)*	O
2.	***CONSOLIDATED PUNCH LISTS*** *Cleared and Residual Items*	O
3.	***SYSTEM/SUB-SYSTEM LIMIT DRAWINGS*** *Mark-up drawings showing the limits of the relevant System/Sub-System*	NA
4.	***MECHANICAL COMPLETION STATUS INDEX – BUILDING DISCIPLINE*** *Building Sub-System Status Index (Print out) and Check/Test sheets*	NA
5.	***MECHANICAL COMPLETION STATUS INDEX – ELECTRICAL DISCIPLINE*** *Electrical Sub-System Status Index (Print out) and Check/Test Sheets* *Hazardous Area Equipment Detailed Inspection*	NA
6.	***MECHANICAL COMPLETION STATUS INDEX - INSTRUMENTAL DISCIPLINE*** *Instrumental Sub-System Status Index (Print out) and Check/Test Sheets*	O
7.	***MECHANICAL COMPLETION STATUS INDEX - MECHANICAL DISCIPLINE*** *Mechanical SubSystem Status Index (Print out) and Check/Test Sheets*	NA
8.	***MECHANICAL COMPLETION STATUS INDEX - TELECOMMUNICATION DISCIPLINE*** *Telecommunication Sub-System Status Index (Print out) and Check/Test Sheets*	NA
9.	***MECHANICAL COMPLETION STATUS INDEX - HVAC DISCIPLINE*** *HVAC Sub-System Status Index (Print out) and Check/Test Sheets*	NA
10.	***MECHANICAL COMPLETION STATUS INDEX - PIPING DISCIPLINE*** *Piping Sub-System Status Index and Check/Test Sheets*	NA
11.	***MECHANICAL COMPLETION INDEX - SAFETY DISCIPLINE*** *Safety Sub-System Status Index (Print out) and Check/Test Sheets*	NA
12.	***FAT / VENDOR REPORTS*** *Fat reports issued by vendors and/or vendor reports*	NA
13.	***MECHANICAL COMPLETION CHANGES / MARK-UPS*** *A copy of the changes initiated during the Mechanical Completion process pertaining to the relevant Sub-System will be incorporated in this section*	NA

Note: Under the generic terminology “Building” are also covered the following disciplines: **Structural, Painting**

Under the generic terminology “Instrumental” is also covered the following discipline: **Fire & Gas**

ROSETTI MARINO

123A90 - HOLLANDSE KUST NOORD WIND PARK
BLPH Project

CROSSWIND

Ready For Commissioning (RFC) Certificate

COMPLETE	●	PARTIAL	

Revision:	1		Issued on:	2024-12-02	
System:	70	/	Safety and Facility Systems		
SubSystem:	70-00-32	/	Junction Box 950-JE-05104 and Multi-core cable (FGS System)		

1	COMPANY has, at its option and if required, reviewed the mechanical completion associated with the above-named system/sub-system of the SCOPE and observed that such functional sub-system has been brought into readiness for commencement of the associated pre-commissioning and commissioning activities, but for the outstanding punch list items, if any, attached and referred in this Certificate.
2	Issuance of this Certificate shall not release CONTRACTOR from any of his obligations, responsibilities or liabilities under the CONTRACT.
3	Mechanical Completion Status Index attached (per Discipline)
	Punch List report attached (Outstanding and Cleared)

PUNCH LIST	PENDING POINTS	
Note: All Category "A" Items must be cleared prior to issue a Ready For Commissioning (RFC) Certificate	A	B
	'0	3

REMARKS:

	CONTRACTOR Construction Manager	**CONTRACTOR** Commissioning Manager	**COMPANY** Construction Lead (if required)	**COMPANY** Commissioning Lead (if required)
Name	Wolmer Borghi	Anthony Iveson	CPY NOT PRESENT	CPY NOT PRESENT
Date	2024-12-02	2024-12-02	2024-12-03	2024-12-03
Signature	PROVERLIS Digitaly signed by Wolmer Borghi 2024-12-02T18:06:19.155Z	PROVERLIS Digitaly signed by Anthony Iveson 2024-12-02T17:46:14.171Z	PROVERLIS Digitaly signed by CPY NOT PRESEN 2024-12-03T10:54:27.211Z	PROVERLIS Digitaly signed by CPY NOT PRESEN 2024-12-03T10:54:32.666Z

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 70-00-32 & process: MC

Instrumental	70-00-32 Junction Box 950-JE-05104 and Multi-core cable (FGS System)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
950-JE-05104	DO JB TO FGS	ONSHORE	C10002191	CJX31	100	2024-11-29	RFC 1
950-JE-05104/B400-FGS-002	DO JB TO FGS / MARSHALLING PCS	ONSHORE	C10002192	CJX10	100	2024-11-28	RFC 1

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	70	Safety and Facility Systems
SUBSYSTEM	70-00-32	Junction Box 950-JE-05104 and Multi-core cable (FGS System)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000953	B	950-JE-05104/B 400-FGS-002 C10002192	Missing cable tag all along the route.	.		Gtangianu 2024-11-26			
C30000954	B	950-JE-05104/B 400-FGS-002 C10002192	Identification tag wires missing both side the 950-JE-05104/B400-FGS-002 connection.	.		Gtangianu 2024-11-26			
C30000955	B	950-JE-05104/B 400-FGS-002 C10002192	Bending radius is not within the specified limits. (stress on the input cable panel 950-JE-05104).	.		Gtangianu 2024-11-26			

Section 2 CONSOLIDATED PUNCH LISTS

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	70	Safety and Facility Systems
SUBSYSTEM	70-00-32	Junction Box 950-JE-05104 and Multi-core cable (FGS System)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000953	B	950-JE-05104/B400-FGS-002 C10002192	Missing cable tag all along the route.	.		Gtangianu 2024-11-26	2025-02-04	Gtangianu 2025-02-04	2025-02-04
C30000954	B	950-JE-05104/B400-FGS-002 C10002192	Identification tag wires missing both side the 950-JE-05104/B400-FGS-002 connection.	.		Gtangianu 2024-11-26	2025-03-03	Gtangianu 2025-03-03	2025-03-03
C30000955	B	950-JE-05104/B400-FGS-002 C10002192	Bending radius is not within the specified limits. (stress on the input cable panel 950-JE-05104).	.		Gtangianu 2024-11-26	2025-02-04	Gtangianu 2025-02-04	2025-02-04

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000955

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002192	1.4 Discipline	Instrumental
1.2 Item	950-JE-05104/B400-FGS-002	DO JB TO FGS / MARSHALLING PCS	
1.3 Subsystem	70-00-32	Junction Box 950-JE-05104 and Multi-core cable (FGS System)	

2 - OBSERVATION

Bending radius is not within the specified limits. (stress on the input cable panel 950-JE-05104).

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

C30000953

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002192	1.4 Discipline	Instrumental
1.2 Item	950-JE-05104/B400-FGS-002	DO JB TO FGS / MARSHALLING PCS	
1.3 Subsystem	70-00-32	Junction Box 950-JE-05104 and Multi-core cable (FGS System)	

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

Installed.

Name: Giovanni Tangianu

Date: 2025-02-04

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000954

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002192	1.4 Discipline	Instrumental
1.2 Item	950-JE-05104/B400-FGS-002	DO JB TO FGS / MARSHALLING PCS	
1.3 Subsystem	70-00-32	Junction Box 950-JE-05104 and Multi-core cable (FGS System)	

2 - OBSERVATION

Identification tag wires missing both side the 950-JE-05104/B400-FGS-002 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:

Section 3 SYSTEM,SUB-SYSTEM LIMIT DRAWINGS

NOT APPLICABLE

Section 4 MECHANICAL COMPLETION STATUS INDEX - BUILDING DISCIPLINE

NOT APPLICABLE

Section 5 MECHANICAL COMPLETION STATUS INDEX - ELECTRICAL DISCIPLINE

NOT APPLICABLE

Section 6 MECHANICAL COMPLETION STATUS INDEX - INSTRUMENTAL DISCIPLINE

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 70-00-32 & process: MC & discipline : I

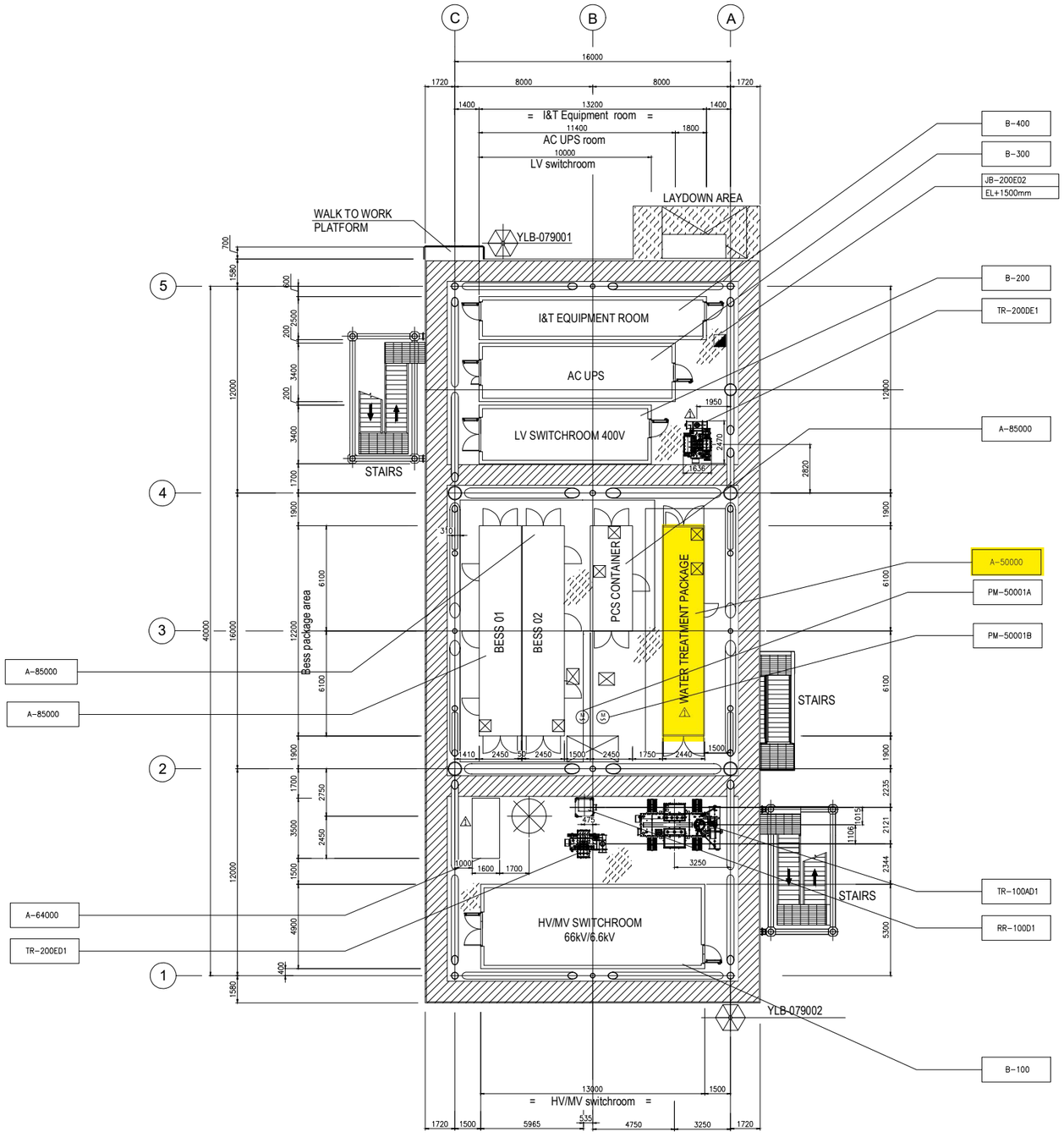
Instrumental	70-00-32 Junction Box 950-JE-05104 and Multi-core cable (FGS System)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
950-JE-05104	DO JB TO FGS	ONSHORE	C10002191	CJX31	100	2024-11-29	RFC 1
950-JE-05104/B400-FGS-002	DO JB TO FGS / MARSHALLING PCS	ONSHORE	C10002192	CJX10	100	2024-11-28	RFC 1

ITEM	Tag	950-JE-05104	: DO JB TO FGS			Dwg	1724000448-EL-DG-00015
	S/Sys	70-00-32	: Junction Box 950-JE-05104 and Multi-core cable (FGS System)			Module	LD
TASK	code	C10002191		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental Form CJX31		Junction and Marshalling Box

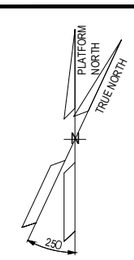
1	Check equipment is de-energized and safe.	OK
2	Check available documents are at the latest revision.	OK
3	Check nameplate data/certification is in accordance with project data.	OK
4	Check all flange faces are clean and greased with approved lubicants, and that all bolts are fitted and correctly tight (Exd only).	OK
5	Check all gaskets and bolts are fitted in covers and gland plates (where applicable).	OK
6	Check enclosure is correctly tagged as per drawing.	OK
7	Check enclosure is correctly earthed in accordance with project data.	OK
8	Check that all unused entries are plugged with approved blanks.	OK
9	Check that terminals are approved and that the correct numbers are fitted.	OK
10	Check segregation barriers are fitted where necessary.	NA
11	Check enclosure is correctly mounted and easily accessible.	OK
12	If required produce Red Line Mark Up for "AS BUILT"	

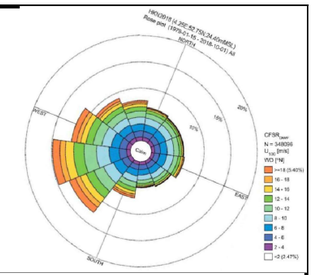
Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Giovanni Tangianu	
Date	2024-11-27	2024-11-29	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-11-27T14:27:30.216Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-11-29T13:30:32.648Z	



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





NOTES

1. ALL DIMENSIONS IN MM UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS IN METERS. UNLESS NOTED OTHERWISE.
3. ELEVATIONS REFER TO T.O.S.
4. FOR ELECTRICAL EQUIPMENT LAYOUT OF CONTAINERS B-100, B-200, B-300, B-400 REFER TO THE RESPECTIVE LAYOUTS.

LEGEND

(M)	ELECTRIC MOTOR – LOW VOLTAGE
⊠	INTERFACE PANEL
◪	JUNCTION BOX
JB-200E2 / EL+500mm	TAG ITEM / REFERED ELEVATION TO T.O.S. (TOP OF STEEL)

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-EL-DL-20106	ELECTRICAL EQUIPMENT LAYOUT UPSs & BATTERIES SWITCHROOM
⚠ 123A90-DDL-IN-DL-40012	ITER EQUIPMENT LAYOUT
123A90-DDL-EL-DL-20104	ELECTRICAL EQUIPMENT LAYOUT HV & MV SWITCHROOM
123A90-DDL-EL-DL-20105	LV SWITCHGEAR ROOM EQUIPMENT LAYOUT

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20101**

REV.:	DATE:	SIGNATURE:
1_A	08/08/24	G.Randi

ROSETTI MARINO SpA

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	06/05/24	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	04/03/24	SAM	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LOWER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN SAM	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 04/03/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-EL-DL-20101	001	01

DRAWING NO. 123A90-DDL-EL-DL-20101
REV. 01

File Name : 123A90-DDL-EL-DL-20101-Electrical Equipment Layout – Lower Deck

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

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-05104 (*)	No.	MARSHALLING CABINET B400-FGS-002

Water Treatment Package

<01>

CONNECTIONS BY VENDOR

(*) 950-XZ-05201 (+ 1BK, - 2BK) ~~C-950-XZ-05201/950-JE-05104 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS~~ NOTE 2

(*) 950-XL-05201 (+ 1BK, - 2BK) ~~C-950-XL-05201/950-JE-05104 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS~~ NOTE 2

(*) 950-XL-05202 (+ 1BK, - 2BK) ~~C-950-XL-05202/950-JE-05104 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS~~ NOTE 2

See also Vendor doc. 1724000448-EL-DG-00015

~~TB-1~~

1BK	1	1BK
2BK	2	2BK
	~~SH~~	
3BK	3	3BK
4BK	4	4BK
	~~SH~~	
5BK	5	5BK
6BK	6	6BK
	~~SH~~	
	7	7BK
~~SPARE~~	8	8BK
	~~SH~~	
~~SPARE~~	9	9BK
	10	10BK
	~~SH~~	
~~SPARE~~	11	11BK
	12	12BK
	~~SH~~	
	OS	

VENDOR ◇ ROS

950-JE-05104/B400-FGS-002

12x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS

TB-950-JE-05104

1BK	1	950-XZ-05201
2BK	2	
3BK	3	950-XL-05201
4BK	4	
5BK	5	950-XL-07102
6BK	6	
7BK	7	SPARE
8BK	8	
9BK	9	SPARE
10BK	10	
11BK	11	SPARE
12BK	12	

Shield Bar — I.E.

NOTE:
(*) ~~JB will be~~ provided by SWT Package Vendor

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

REV.:	DATE:	SIGNATURE:
1_L	26/11/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–05104

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

A3	DRAWING NO. 123A90–DDL–IN–DG–40016	SHEET 071	REV. 01

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

ROSETTI MARINO — CROSSWIND

ITEM	Tag	950-JE-05104/B400-FGS-002	:	DO JB TO FGS / MARSHALLING PCS	Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	70-00-32	:	Junction Box 950-JE-05104 and Multi-core cable (FGS System)	Module	LD/LD_B-400	
TASK	code	C10002192	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity	CCK	Discipline	Instrumental	Form	CJX10	Multi/Single-Core Instrument Control Cable

CABLE DATA

Type	Cu-MICA-XLPE-OS-LSZH-SWB-LSZH	Cores/Size mm²	12X2,5 mm2	Color	ORANGE
From	950-JE-05104	To	B400-FGS-002		

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	Note
6	Check bending radius is within the specified limits.	PL
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	PL
9	Check cable labelling is in accordance with specification.	PL
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	OK
12	Check gland plate for single core cables is non-ferrous.	OK
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH		>999	MΩ
	CORE to CORE		>999	MΩ
	CORE to SCREEN		>999	MΩ
	CORE to ARMr		>999	MΩ
	SCREEN to EARTH		>999	MΩ
	SCREEN to ARMr		>999	MΩ
CONTINUITY	CORES		0,6	Ω
	SCREEN		0,6	Ω
	EARTH		NA	Ω
	ARMr		0,6	Ω
	TEST VOLTS		500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

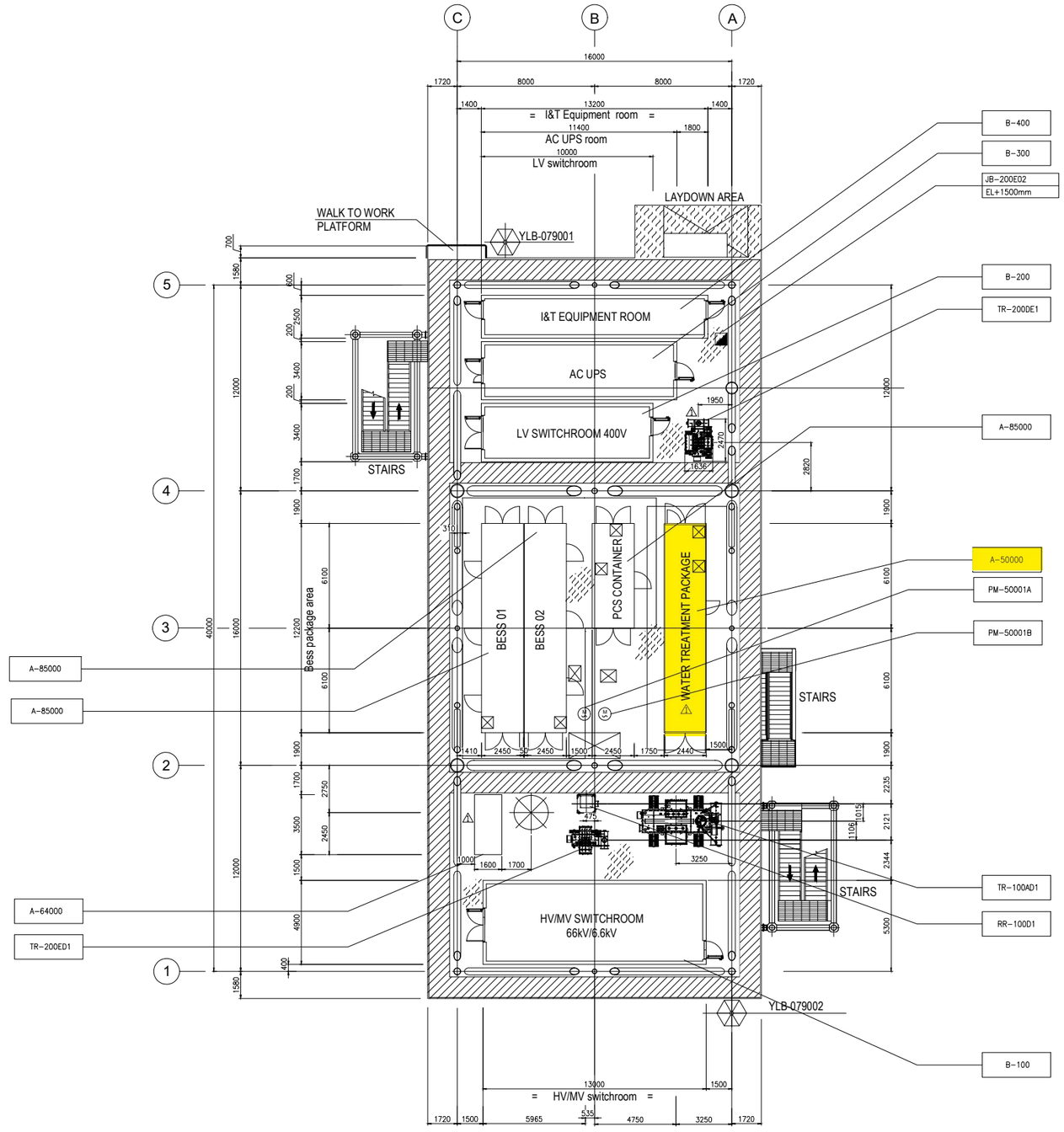
TYPE / SERIAL N°: MEGGER : KEW3125A SERIAL: W8330207 Calibration date: N° 7722/24 10/07/2024

Comments Nota 5: refer to PL C30000680

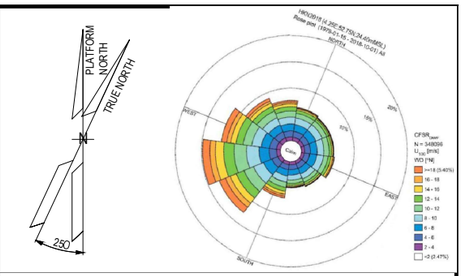
Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Giovanni Tangianu	
Date	2024-11-25	2024-11-28	
Signature	Digitaly signed by Francesco Zucca 2024-11-25T16:35:55.732Z	Digitaly signed by Giovanni Tangianu 2024-11-28T12:46:48.016Z	

DRAWING NO. 123A90-DDL-EL-DL-20101

REV. 01



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



NOTES

1. ALL DIMENSIONS IN MM UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS IN METERS. UNLESS NOTED OTHERWISE.
3. ELEVATIONS REFER TO T.O.S.
4. FOR ELECTRICAL EQUIPMENT LAYOUT OF CONTAINERS B-100, B-200, B-300, B-400 REFER TO THE RESPECTIVE LAYOUTS.

LEGEND

(M)	ELECTRIC MOTOR – LOW VOLTAGE
⊠	INTERFACE PANEL
◪	JUNCTION BOX
JB-200E2 / EL+500mm	TAG ITEM / REFERED ELEVATION TO T.O.S. (TOP OF STEEL)

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-EL-DL-20106	ELECTRICAL EQUIPMENT LAYOUT UPSs & BATTERIES SWITCHROOM
⚠ 123A90-DDL-IN-DL-40012	ITER EQUIPMENT LAYOUT
123A90-DDL-EL-DL-20104	ELECTRICAL EQUIPMENT LAYOUT HV & MV SWITCHROOM
123A90-DDL-EL-DL-20105	LV SWITCHGEAR ROOM EQUIPMENT LAYOUT

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20101**

REV.:	DATE:	SIGNATURE:
1_A	08/08/24	G.Randi

ROSETTI MARINO SpA

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	06/05/24	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	04/03/24	SAM	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND | ROSETTI MARINO

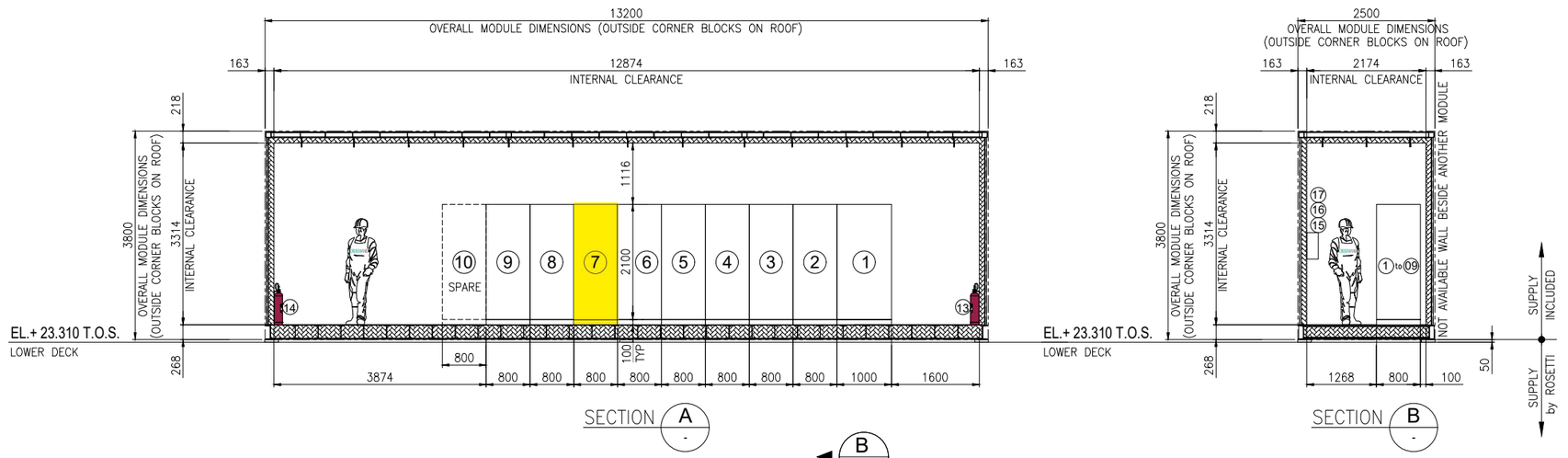
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LOWER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN SAM	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 04/03/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20101	SHEET 001	REV. 01

File Name : 123A90-DDL-EL-DL-20101-Electrical Equipment Layout - Lower Deck

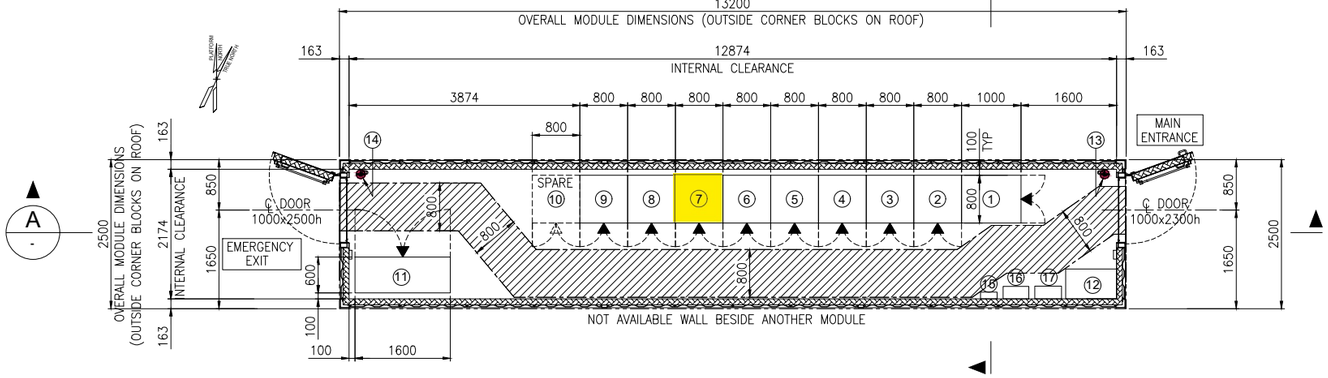
DRAWING NO. 123A90-DDL-IN-DL-40012

REV. 03



SECTION A -

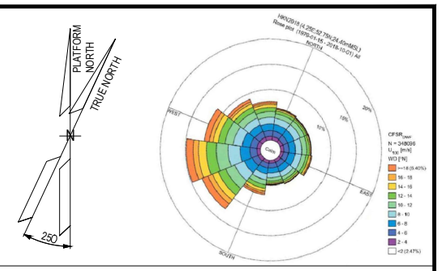
SECTION B -



EQUIPMENT LAYOUT
"B-400" I&T EQUIPMENT ROOM
BOTTOM PLAN

EQUIPMENT LIST

REF.	TAG No.	DESCRIPTION	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)	NOTE
1	B400-SRV-001	SERVER CABINET	1000	800	2100	
2	B400-NET-001	NETWORK CABINET	800	800	2100	
3	B400-EMCS-001	EMCS SYSTEM CABINET	800	800	2100	
4	B400-PCS-002	PCS MARSHALLING CABINET	800	800	2100	
5	B400-PCS-001	PCS SYSTEM CABINET 03	800	800	2100	
6	B400-FGS-003	FGS MARSHALLING CABINET 2	800	800	2100	
7	B400-FGS-002	FGS MARSHALLING CABINET 1	800	800	2100	
8	B400-FGS-001	FGS SYSTEM CABINET	800	800	2100	
9	B400-SIS-001	SIS SYSTEM/MARSHALLING CABINET	800	800	2100	
10	-	SPARE				
11	B400-HSB-001	DISTRIBUTION & HVAC PANEL - I&T ROOM	1600	600	2300	
12	-	TABLE	850	500	750	
13	-	PORTABLE EXTINGUISHER (CO2) 5 Kg.	150	150	750	
14	-	PORTABLE EXTINGUISHER (CO2) 5 Kg.	150	150	750	
15	-	FIRST AID KIT	280	115	200	
16	-	RESUSCITATION UNIT	430	210	480	
17	-	CABINET INCLUDED N.10 ESCAPE MASK	448	213	422	



NOTES

1. U.N.O. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DOCUMENT VALID ONLY FOR INSTRUMENT COMPONENT, FOR OTHER SCOPE LOCATION AND INFORMATION, PLEASE REFER TO VENDORS AND PROJECT DOCUMENTS.

LEGEND

U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR – WIDTH 800mm.
_____ EQUIPMENT ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

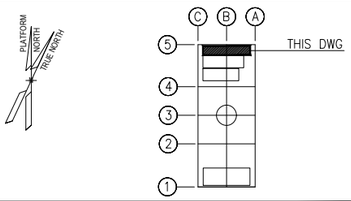
HOLDS

.

REFERENCE

DOCUMENT TITLE	DOCUMENT NUMBER
Control System Architecture Detailed Drawings	123A90-DDL-IN-DD-40096
Data Network Architecture Drawings	123A90-DDL-IN-DD-40019
Earthing layouts drawings (CCR, ITER)	123A90-DDL-IN-DL-40013
Instrument and Telecom MCT Layout – Lower Deck	123A90-DDL-IN-DL-40086
"B-400" I&T Equipment Room – Architectural Layout	123A90-DDL-AR-DL-10015
"B-400" ARCHITECTURAL GENERAL LAYOUT PLAN, WIEW, SECTIONS & TYP. DETAILS	123A90-DDL-AR-DL-10015
"B-400" GENERAL ARRANGEMENT DRAWING	1724000049-AR-DA-00017
"B-400" GENERAL ARRANGEMENT DRAWING	1724000049-AR-DD-00021
"B-400" HVAC SYSTEM G.A. and DETAILS	1724000049-HV-DA-00067

KEY PLAN



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	27/05/24	MGA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	22/01/24	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)
00	07/11/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DL-40012
REV.: 3_A | DATE: 07/10/24 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

TITLE : BASE LOAD POWER HUB (BLPH) OFF-SHORE ITER EQUIPMENT LAYOUT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:33,3
DRAWN MGA	CHECKED LCA	APPROVED DLO	DATE 27/05/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40012	SHEET 001	REV. 03

File Name : 123A90-DDL-IN-DL-40012 Rev.03.dwg

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

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 950-JE-05104 (*)	No.	MARSHALLING CABINET B400-FGS-002

Water Treatment Package

<01>

CONNECTIONS BY VENDOR

(*) 950-XZ-05201 (+ 1BK, - 2BK) ~~C-950-XZ-05201/950-JE-05104 2x2.5mm2,SHT+ARM,F.Res,ORANGE,NIS~~ NOTE 2

(*) 950-XL-05201 (+ 1BK, - 2BK) ~~C-950-XL-05201/950-JE-05104 2x2.5mm2,SHT+ARM,F.Res,ORANGE,NIS~~ NOTE 2

(*) 950-XL-05202 (+ 1BK, - 2BK) ~~C-950-XL-05202/950-JE-05104 2x2.5mm2,SHT+ARM,F.Res,ORANGE,NIS~~ NOTE 2

See also Vendor doc. 1724000448-EL-DG-00015

~~TB-1~~

1BK	1	1BK
2BK	2	2BK
	~~SH~~	
3BK	3	3BK
4BK	4	4BK
	~~SH~~	
5BK	5	5BK
6BK	6	6BK
	~~SH~~	
	7	7BK
~~SPARE~~	8	8BK
	~~SH~~	
~~SPARE~~	9	9BK
	10	10BK
	~~SH~~	
~~SPARE~~	11	11BK
	12	12BK
	~~SH~~	
	OS	

VENDOR ◆ ROS

950-JE-05104/B400-FGS-002

12x2.5mm2,SHT+ARM,F.Res,ORANGE,NIS

TB-950-JE-05104

1BK	1	950-XZ-05201
2BK	2	
3BK	3	950-XL-05201
4BK	4	
5BK	5	950-XL-07102
6BK	6	
7BK	7	SPARE
8BK	8	
9BK	9	SPARE
10BK	10	
11BK	11	SPARE
12BK	12	

Shield Bar — I.E.

NOTE:
(*) ~~JB will be~~ provided by SWT Package Vendor

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

REV.:	DATE:	SIGNATURE:
1_L	26/11/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT–FGS WIRING DIAGRAMS
950–JE–05104

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

A3	DRAWING NO. 123A90–DDL–IN–DG–40016	SHEET 071	REV. 01

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

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

REV. 01

NOTES:

1. ALL SPARE ENTRIES SHALL BE PROVIDED WITH CERTIFIED EX PROOF PLUGS.
2. CABLE SCREENS / DRAIN WIRE SHALL BE SECURELY INSULATED AND TIED BACK IN THE INSTRUMENT SIDE AND SHAL BE TERMINATED IN THE MARSHALLING SIDE OF THE PANEL.
3. SPARE PAIRS / TRIADS SHALL BE CONNECTED TO TERMINALS IN JUNCTION BOX AND PANEL / MARSHALLING CABINETS.
4. ALL CABLE SCREENS TO BE TERMINATED AT THE INSTRUMENT EARTH BAR IN THE RESPECTIVE EARTH BARS (IS OR NIS) AS APPLICABLE IN THE MARSHALLING CABINET.
5. CONNECTION TERMINAL BLOCK SHALL BE DEFINED DURING CONSTRUCTION PHASE.

<01>

LEGENDS & SYMBOLS:

LEGEND:

I.E.	- GREEN ——— INSTRUMENT SIGNAL EARTH
P.E.	- GREEN/YELLOW —— P.E. EARTH/BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY SAFE
P.E.	- PLANT EARTH
PCS	- PROCESS CONTROL SYSTEM <01>
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM <01>
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS <01>

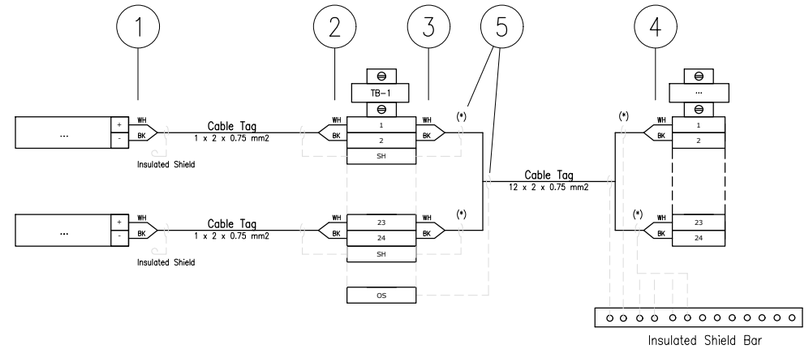
VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40016**

REV.:	DATE:	SIGNATURE:
1_L	26/11/24	G.Randi

ROSETTI MARINO SpA

TYPICAL WIRE CROSS-FERRULING:

PHILOSOPHY OF CROSS-FERRULING: <01>



(*) Single shield is foreseen only for AI/AO signals.

1 - INSTRUMENT TERMINAL NO. OR POLARITY/JB NO./JB TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

2 - INSTRUMENT TERMINAL NO. OR POLARITY/INSTRUMENT TAG NO./JB TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

3 - PAIR OR CORE NO./MARSHALLING CABINET NO./TB NO./TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

4 - PAIR OR CORE NO./JB NO./JB TERMINAL NO./TB NO./TERMINAL NO.
(SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO THE SHIELD)

5 - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
(HEAT SHRINKABLE BLUE FOR SHIELD OF NIS INSTRUMENT CABLE)

6 - IN CASE OF CONNECTION FROM RIGHT TO LEFT, ORDER OF INFORMATION SHALL BE MIRRORED

REFERENCE DRAWINGS

PIPING AND INSTRUMENT DIAGRAM	123A90-DDL-PR-PID-80009
INSTRUMENT INDEX	123A90-DDL-IN-LIS-40088 Rev.01
F&G DETECTORS LAYOUT	123A90-DDL-SAF-DL-30027

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – SAFETY SYSTEM WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

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

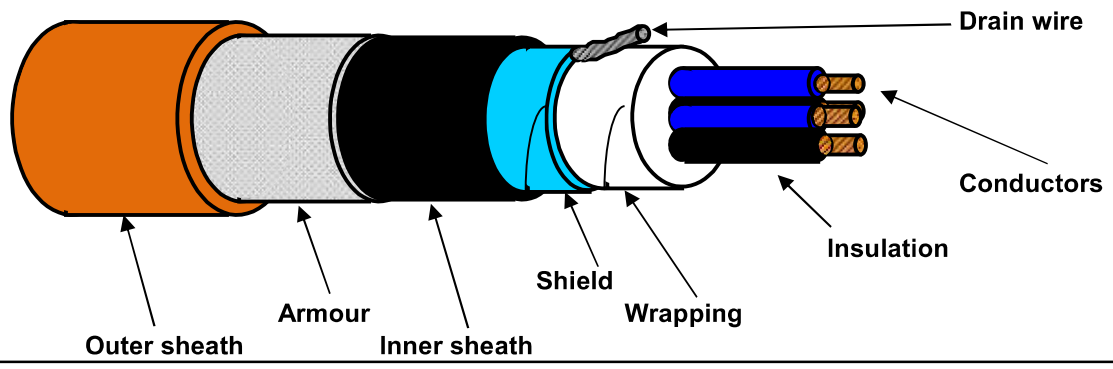
A3	DRAWING NO. 123A90-DDL-IN-DG-40016	SHEET 003	REV. 01

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

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	To Tag	To Main Function	To Area	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
950-JE-05104/B400-FGS-002	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						950-JE-05104	DO JB to FGS	Lower Deck	B400-FGS-002	Marshalling FGS	Lower Deck (B-400)	SMICV13-12X2,5	Cable Cu Cl.2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 12x2,5mm² - Orange	M25	T2_M25_Double			n.a.				L-SEC-21 / L-SEC-18C / L-SEC-18B / L-SEC-18A / B-400-SEC-2A / B-400-SEC-2B / B-400-SEC-2C / B-400-SEC-2E / B-400-SEC-2F / I-MCT-403

Cu Cl.2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

12X2,5 - INSTRUMENT CABLE - Fire Resistant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires	**IEC 60228 Class 2**
Insulation :	Mica/Glass Tape (MGT) plus XLPE, Nominal Thickness 0,6 mm	
Cores colour code :	**Black NUMBERED (from 1 to 12)**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	3/1mt	
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 1,0 sqmm**, in continuous contact with the shield	
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,5 mm	
Inner sheath color code:	**Black**	
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant, Average Thickness 1,6 mm	
Outer sheath color code:	**Orange**	
Outer printing (INKJET) :	**FLEI - 12X2,5 SQMM - MGT/XLPE/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60331.21 -**	
(every 1000 mm)	**IEC 60332.1.2 - IEC 60332.3.22 - Year of Manufacture - CE + Meter Marking**	
Under armour diameter :	(19,8 ± 10%) mm	
Over armour diameter :	(21,0 ± 10%) mm	
Outer diameter :	(24,2 ± 10%) mm	
Bending radius :	cable outer diameter x 10 (in fixed installation)	
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)	
Conductors DC Resistance :	≤ 7,86 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.376**	
ON COMPLETE CABLE		
Fire Resistant test :	**IEC 60331.21**	
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Hazardous Areas :	IEC 60079.14 par.9.3.2a	
Temperature Range :		
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)	
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)	
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C) (in fixed installation)	
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

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

All proprietary rights reserved according to law. This document shall be not reproduced without written permission. FLEI reserves the right to change characteristics and technical data of product shown at any time.

Section 7 MECHANICAL COMPLETION STATUS INDEX - MECHANICAL DISCIPLINE

NOT APPLICABLE

Section 8 MECHANICAL COMPLETION STATUS INDEX - TELECOMMUNICATION DISCIPLINE

NOT APPLICABLE

Section 9 MECHANICAL COMPLETION STATUS INDEX - HVAC DISCIPLINE

NOT APPLICABLE

Section 10 MECHANICAL COMPLETION STATUS INDEX - PIPING DISCIPLINE

NOT APPLICABLE

Section 11 MECHANICAL COMPLETION INDEX - SAFETY DISCIPLINE

NOT APPLICABLE

Section 12 FAT / VENDOR REPORTS

NOT APPLICABLE

Section 13 MECHANICAL COMPLETION CHANGES / MARK-UPS

NOT APPLICABLE