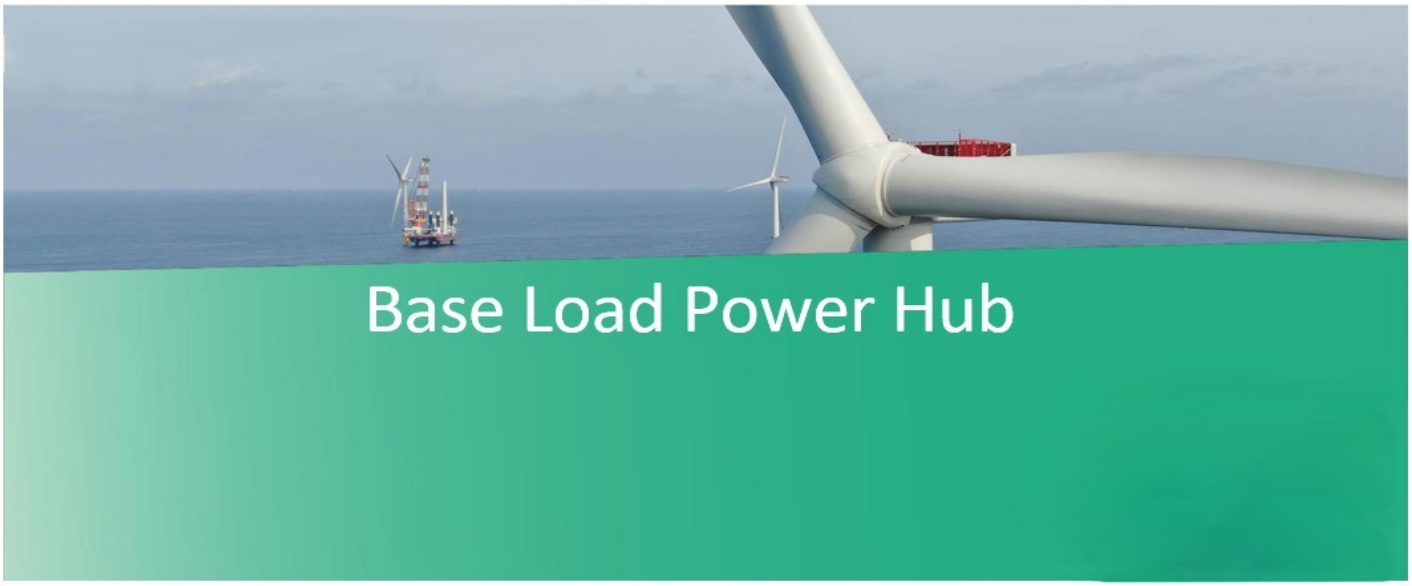
CROSSWIND

ROSETTI MARINO

PROVERLIS

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



MECHANICAL COMPLETION DOSSIER (ONSHORE)

SYSTEM	83 Main Power Distribution Low Voltage 440 V
SUBSYSTEM	83-00 400 V Switchboard & Connection Box (SG-200N1)

CROSSWIND

123A90 - HOLLANDSE KUST NOORD WIND PARK
BLPH Project

MECHANICAL COMPLETION DOSSIER INDEX

ROSETTI MARINO

Sub System N°:	83-00	**Tick as appropriate**	ONSHORE	O
Description:	400 V Switchboard & Connection Box (SG-200N1)		OFFSHORE	NA

1.	***READY FOR COMMISSIONING CERTIFICATE*** *Ready For Commissioning Certificate (RFC)*	O
2.	***CONSOLIDATED PUNCH LISTS*** *Cleared and Residual Items*	O
3.	***SYSTEM/SUB-SYSTEM LIMIT DRAWINGS*** *Mark-up drawings showing the limits of the relevant System/Sub-System*	O
4.	***MECHANICAL COMPLETION STATUS INDEX – BUILDING DISCIPLINE*** *Building Sub-System Status Index (Print out) and Check/Test sheets*	NA
5.	***MECHANICAL COMPLETION STATUS INDEX – ELECTRICAL DISCIPLINE*** *Electrical Sub-System Status Index (Print out) and Check/Test Sheets* *Hazardous Area Equipment Detailed Inspection*	O
6.	***MECHANICAL COMPLETION STATUS INDEX - INSTRUMENTAL DISCIPLINE*** *Instrumental Sub-System Status Index (Print out) and Check/Test Sheets*	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*	O
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*	OK
13.	***MECHANICAL COMPLETION CHANGES / MARK-UPS*** *A copy of the changes initiated during the Mechanical Completion process pertaining to the relevant Sub-System will be incorporated in this section*	NA

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

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

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123A90 - HOLLANDSE KUST NOORD WIND PARK
BLPH Project

CROSSWIND

Ready For Commissioning (RFC) Certificate

COMPLETE	●	PARTIAL	

Revision:	2		Issued on:	2024-12-02	
System:	83	/	Main Power Distribution Low Voltage 440 V		
SubSystem:	83-00	/	400 V Switchboard & Connection Box (SG-200N1)		

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	17

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	2024-12-03	2024-12-03	2024-12-03
Signature	PROVERLIS Digitaly signed by Wolmer Borghi 2024-12-02T18:07:38.757Z	PROVERLIS Digitaly signed by Anthony Iveson 2024-12-03T10:47:19.163Z	PROVERLIS Digitaly signed by CPY NOT PRESEN 2024-12-03T12:07:48.182Z	PROVERLIS Digitaly signed by CPY NOT PRESEN 2024-12-03T12:07:58.955Z

CROSSWIND

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Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 83-00 & process: MC

Electrical	83-00 400 V Switchboard & Connection Box (SG-200N1)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
83010-CEL-E	LV Switchgear / Temporary Generator / Mobile Battery Pack	ONSHORE	C10002416	CPX09	100	2024-12-02	RFC 2
83010-CEL-L1	LV Switchgear / Temporary Generator / Mobile Battery Pack	ONSHORE	C10000517	CPX09	100	2024-12-02	RFC 2
83010-CEL-L2	LV Switchgear / Temporary Generator / Mobile Battery Pack	ONSHORE	C10000518	CPX09	100	2024-12-02	RFC 2
83010-CEL-L3	LV Switchgear / Temporary Generator / Mobile Battery Pack	ONSHORE	C10000519	CPX09	100	2024-12-02	RFC 2
83010-CEL-N	LV Switchgear / Temporary Generator / Mobile Battery Pack	ONSHORE	C10000520	CPX09	100	2024-12-02	RFC 2
83120-CEL	Lighting & Small Power DB BoP / Auxiliary LV	ONSHORE	C10000639	CPX09	100	2024-11-23	RFC 2
84318-CEL	AC UPS - PAS DB / LV Switchboard Auxiliary	ONSHORE	C10002114	CPX09	100	2024-11-26	RFC 2
JB-200E2	Temporary Generator / Mobile Battery Pack	ONSHORE	C10001223	CPX31	100	2024-12-02	RFC 2
SG-200N1	LV 0,4 kV MCC Switchgear	ONSHORE	C10000866	CPX05	100	2024-09-12	RFC 1

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 83-00 & process: MC

Instrumental	83-00 400 V Switchboard & Connection Box (SG-200N1)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
C-SG-200N1-001/B400-SIS-001	TRIP SIGNAL / MARSHALLING PCS	ONSHORE	C10000194	CJX10	100	2024-12-02	RFC 2
C-SG-200N1-002/B400-SIS-001	TRIP SIGNAL / MARSHALLING PCS	ONSHORE	C10000195	CJX10	100	2024-12-02	RFC 2

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 83-00 & process: MC

Telecom	83-00 400 V Switchboard & Connection Box (SG-200N1)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
SG-200N1/B400-NET-001.01	LV 0,4 kV MCC Switchgear / Network Cabinet / EMCS System	ONSHORE	C10004365	CIX09	100	2024-11-23	RFC 2
SG-200N1/B400-NET-001.02	LV 0,4 kV MCC Switchgear / Network Cabinet / EMCS System	ONSHORE	C10004366	CIX09	100	2024-11-23	RFC 2
SG-200N1/B400-NET-001.03	LV 0,4 kV MCC Switchgear / Network Cabinet / EMCS System	ONSHORE	C10004367	CIX09	100	2024-11-23	RFC 2

CROSSWIND

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Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	83	Main Power Distribution Low Voltage 440 V
SUBSYSTEM	83-00	400 V Switchboard & Connection Box (SG-200N1)

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000100	B	SG-200N1	Missing n.15 drawers (highlighted in the GA) and all accessories. The missing drawers wil be tested during FAT, mid-september			SLinari 2024-08-02			
C30000101	B	SG-200N1	Missing PLC wago cubicle A2/02 - signals in the I/O list from row 2 to 16 cannot be tested		PLC wago installed.	SLinari 2024-08-02	Vendor 2024-10-02	SLinari 2024-10-02	2024-10-02
C30000102	B	SG-200N1	Missing relè K86 incoming		Installed.	SLinari 2024-08-02	Vendor 2024-10-02	SLinari 2024-10-02	2024-10-02
C30000103	B	SG-200N1	All documentation shall be re-issued and approval in final revision after mark-up during FAT			SLinari 2024-08-02			
C30000115	B	A2/+08-QF1 C10002760	The Protection Study must be update with the correctly one.	Update the Protection Study on the DRAWER.	The definitive setting has been updated.	MGirotti 2024-09-26	MGirotti 2024-11-21	MGirotti 2024-11-21	
C30000116	B	SG-200N1 C10002991	Partial test is ok. To be completed when incoming from power transformer will be available.	Complete this steps on the Switchboard: 1) Phase out switchboard across bus section; 2) Carry out all manual changeover sequences.		MGirotti 2024-09-26			
C30000237	B	A3/+05-QF1 C10002764	The EKIP HI-TOUCH LSIG doesn't work.			MGirotti 2024-10-21			
C30000853	B	83120-CEL C10000639	Missing core identification tag inside SG-200N1	.		Pschintu 2024-11-23			
C30000921	B	84318-CEL C10002114	The philosophy of cross-ferruling are wrong cabinet side DP-200F3 / SG-200N1. (see document 123A90-DDL-EL-DD-20092 sh.7-8)	.		APolo 2024-11-26			

CROSSWIND

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Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	83	Main Power Distribution Low Voltage 440 V
SUBSYSTEM	83-00	400 V Switchboard & Connection Box (SG-200N1)

Electrical									
CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000922	B	84318-CEL C10002114	cable tag is wrong, cabinet input SG-200N1. to be replace	.		APolo 2024-11-26			

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	83	Main Power Distribution Low Voltage 440 V
SUBSYSTEM	83-00	400 V Switchboard & Connection Box (SG-200N1)

Telecom

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000829	B	SG-200N1/B400-NET-001.01 C10004365	Missing cable tags on routing, inside and outside the panels.	.		Gtangianu 2024-11-23			
C30000830	B	SG-200N1/B400-NET-001.03 C10004367	Missing cable tags on routing, inside and outside the panels.	.		Gtangianu 2024-11-23			
C30000832	B	SG-200N1/B400-NET-001.02 C10004366	Missing cable tags on routing, inside and outside the panels.	.		Gtangianu 2024-11-23			

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	83	Main Power Distribution Low Voltage 440 V
SUBSYSTEM	83-00	400 V Switchboard & Connection Box (SG-200N1)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001121	B	C-SG-200N1-002/B400-SIS-001 C10000195	Missing terminal identification (TB-X1). See attached photo.	.		Gtangianu 2024-12-02			
C30001122	B	C-SG-200N1-001/B400-SIS-001 C10000194	missing terminal identification (TB-X1). See attached photo.	.		Gtangianu 2024-12-02			
C30001123	B	C-SG-200N1-002/B400-SIS-001 C10000195	Missing Identification tag wires on both side the (C-SG-200N1-002/B400-SIS-001) connection.See attached photo. "	.		Gtangianu 2024-12-02			
C30001124	B	C-SG-200N1-001/B400-SIS-001 C10000194	Missing Identification tag wires on both side connection (C-SG-200N1-001/B400-SIS-001). See attached photo.	.		Gtangianu 2024-12-02			
C30001125	B	C-SG-200N1-002/B400-SIS-001 C10000195	"Missing cable tags inside and outside both panels (C-SG-200N1-002/B400-SIS-001) "	.		Gtangianu 2024-12-02			
C30001126	B	C-SG-200N1-001/B400-SIS-001 C10000194	"Missing cable tags inside and outside both panels (C-SG-200N1-001/B400-SIS-001).	.		Gtangianu 2024-12-02			

Section 2 CONSOLIDATED PUNCH LISTS

CROSSWIND

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Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	83	Main Power Distribution Low Voltage 440 V
SUBSYSTEM	83-00	400 V Switchboard & Connection Box (SG-200N1)

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000100	B	SG-200N1	Missing n.15 drawers (highlighted in the GA) and all accessories. The missing drawers wil be tested during FAT, mid-september		tested on 17/09 at Imesa with positive results - only communication test will	SLinari 2024-08-02	SLinari 2024-12-05	SLinari 2024-12-05	2024-12-05
C30000101	B	SG-200N1	Missing PLC wago cubicle A2/02 - signals in the I/O list from row 2 to 16 cannot be tested		PLC wago installed.	SLinari 2024-08-02	Vendor 2024-10-02	SLinari 2024-10-02	2024-10-02
C30000102	B	SG-200N1	Missing relè K86 incoming		Installed.	SLinari 2024-08-02	Vendor 2024-10-02	SLinari 2024-10-02	2024-10-02
C30000103	B	SG-200N1	All documentation shall be re-issued and approval in final revision after mark-up during FAT		ALL DOCUMENTS MARKED UP DURING FAT HAS BEEN RE ISSUED - REV. AS	SLinari 2024-08-02	SLinari 2024-12-05	SLinari 2024-12-05	2024-12-05
C30000115	B	A2/+08-QF1 C10002760	The Protection Study must be update with the correctly one.	Update the Protection Study on the DRAWER.	The definitive setting has been updated.	MGirotti 2024-09-26	MGirotti 2024-11-21	MGirotti 2024-11-21	2024-11-21
C30000116	B	SG-200N1 C10002991	Partial test is ok. To be completed when incoming from power transformer will be available.	Complete this steps on the Switchboard: 1) Phase out switchboard across bus section; 2) Carry out all manual changeover sequences.		MGirotti 2024-09-26	2025-02-17	MGirotti 2025-02-17	2025-02-17
C30000237	B	A3/+05-QF1 C10002764	The EKIP HI-TOUCH LSIG doesn't work.		The EKIP has been fixed and reinstalled.	MGirotti 2024-10-21	MGirotti 2025-03-19	MGirotti 2025-03-19	2025-03-19
C30000853	B	83120-CEL C10000639	Missing core identification tag inside SG-200N1	.		Pschintu 2024-11-23	2025-02-19	AAndreani 2025-02-19	2025-02-19
C30000921	B	84318-CEL C10002114	The philosophy of cross-ferruling are wrong cabinet side DP-200F3 / SG-200N1. (see document 123A90-DDL-EL-DD-20092 sh.7-8)	.		APolo 2024-11-26	2025-02-15	AAndreani 2025-02-15	2025-02-15

CROSSWIND

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Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	83	Main Power Distribution Low Voltage 440 V
SUBSYSTEM	83-00	400 V Switchboard & Connection Box (SG-200N1)

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000922	B	84318-CEL C10002114	cable tag is wrong, cabinet input SG-200N1. to be replace	.		APolo 2024-11-26	2025-02-26	APolo 2025-02-26	2025-02-26

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	83	Main Power Distribution Low Voltage 440 V
SUBSYSTEM	83-00	400 V Switchboard & Connection Box (SG-200N1)

Telecom

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000829	B	SG-200N1/B400 -NET-001.01 C10004365	Missing cable tags on routing, inside and outside the panels.	.		Gtangianu 2024-11-23	2025-01-31	APolo 2025-01-31	2025-01-31
C30000830	B	SG-200N1/B400 -NET-001.03 C10004367	Missing cable tags on routing, inside and outside the panels.	.		Gtangianu 2024-11-23	2025-01-31	APolo 2025-01-31	2025-01-31
C30000832	B	SG-200N1/B400 -NET-001.02 C10004366	Missing cable tags on routing, inside and outside the panels.	.		Gtangianu 2024-11-23	2025-01-31	APolo 2025-01-31	2025-01-31

CROSSWIND

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Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	83	Main Power Distribution Low Voltage 440 V
SUBSYSTEM	83-00	400 V Switchboard & Connection Box (SG-200N1)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30001121	B	C-SG-200N1-002/B400-SIS-001 C10000195	Missing terminal identification (TB-X1). See attached photo.	.		Gtangianu 2024-12-02	2025-05-22	Gtangianu 2025-05-22	2025-05-22
C30001122	B	C-SG-200N1-001/B400-SIS-001 C10000194	missing terminal identification (TB-X1). See attached photo.	.		Gtangianu 2024-12-02	2025-05-22	Gtangianu 2025-05-22	2025-05-22
C30001123	B	C-SG-200N1-002/B400-SIS-001 C10000195	Missing Identification tag wires on both side the (C-SG-200N1-002/B400-SIS-001) connection.See attached photo. "	.		Gtangianu 2024-12-02	2025-02-21	Gtangianu 2025-02-21	2025-02-21
C30001124	B	C-SG-200N1-001/B400-SIS-001 C10000194	Missing Identification tag wires on both side connection (C-SG-200N1-001/B400-SIS-001). See attached photo.	.		Gtangianu 2024-12-02	2025-02-21	Gtangianu 2025-02-21	2025-02-21
C30001125	B	C-SG-200N1-002/B400-SIS-001 C10000195	"Missing cable tags inside and outside both panels (C-SG-200N1-002/B400-SIS-001) "	.		Gtangianu 2024-12-02	2025-02-21	Gtangianu 2025-02-21	2025-02-21
C30001126	B	C-SG-200N1-001/B400-SIS-001 C10000194	"Missing cable tags inside and outside both panels (C-SG-200N1-001/B400-SIS-001).	.		Gtangianu 2024-12-02	2025-02-21	Gtangianu 2025-02-21	2025-02-21

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CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000116

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002991	1.4 Discipline	Electrical
1.2 Item	SG-200N1	LV 0,4 kV MCC Switchgear	
1.3 Subsystem	83-00	400 V Switchboard & Connection Box (SG-200N1)	

2 - OBSERVATION

Partial test is ok. To be completed when incoming from power transformer will be available.

Name: Mattia Girotti

Date: 2024-09-26

Signature:

3 - DEFECT ASSESSMENT

3.1 Corrective action proposal	Complete this steps on the Switchboard: 1) Phase out switchboard across bus section; 2) Carry out all manual changeover sequences.		
3.2 Material required			
3.3 Priority	B PL B	Name	Mattia Girotti
3.4 Activity code	COMM Commissioning	Date	2024-09-26
3.5 Action by	PRE-COMM	Signature	

4 - PERFORMED ACTION

The definitive setting has been updated.

Name:

Date:

Signature:

5 - CLEARANCE CHECK

The remaining Steps is already tested

Name: Mattia Girotti

Date: 2025-02-17

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000237

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002764	1.4 Discipline	Electrical
1.2 Item	A3/+05-QF1	DRAWER SPARE - A3/+05-QF1	
1.3 Subsystem	83-00	400 V Switchboard & Connection Box (SG-200N1)	

2 - OBSERVATION

The EKIP HI-TOUCH LSIG doesn't work.

Name: Mattia Girotti
Date: 2024-10-21
Signature:

3 - DEFECT ASSESSMENT

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Mattia Girotti
3.4 Activity code	COMM Commissioning	Date	2024-10-21
3.5 Action by	PRE-COMM	Signature	

4 - PERFORMED ACTION

The EKIP has been fixed and reinstalled.

Name: Mattia Girotti
Date: 2025-03-19
Signature:

5 - CLEARANCE CHECK

Done.

Name: Mattia Girotti
Date: 2025-03-19
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000829

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004365	1.4 Discipline	Telecom
1.2 Item	SG-200N1/B400-NET-001.01		LV 0,4 kV MCC Switchgear / Network Cabinet / EMCS System
1.3 Subsystem	83-00		400 V Switchboard & Connection Box (SG-200N1)

2 - OBSERVATION

Missing cable tags on routing, inside and outside the panels.

Name: Giovanni Tangianu
Date: 2024-11-23
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	2024-11-23
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

The definitive setting has been updated.

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

Name: Alessio Polo
Date: 2025-01-31
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000830

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004367	1.4 Discipline	Telecom
1.2 Item	SG-200N1/B400-NET-001.03		LV 0,4 kV MCC Switchgear / Network Cabinet / EMCS System
1.3 Subsystem	83-00		400 V Switchboard & Connection Box (SG-200N1)

2 - OBSERVATION

Missing cable tags on routing, inside and outside the panels.

Name: Giovanni Tangianu
Date: 2024-11-23
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	2024-11-23
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

The definitive setting has been updated.

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

Name: Alessio Polo
Date: 2025-01-31
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000832

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004366	1.4 Discipline	Telecom
1.2 Item	SG-200N1/B400-NET-001.02	LV 0,4 kV MCC Switchgear / Network Cabinet / EMCS System	
1.3 Subsystem	83-00	400 V Switchboard & Connection Box (SG-200N1)	

2 - OBSERVATION

Missing cable tags on routing, inside and outside the panels.

Name: Giovanni Tangianu

Date: 2024-11-23

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	2024-11-23
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

The definitive setting has been updated.

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Alessio Polo

Date: 2025-01-31

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000853

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000639	1.4 Discipline	Electrical
1.2 Item	83120-CEL		Lighting & Small Power DB BoP / Auxiliary LV
1.3 Subsystem	83-00		400 V Switchboard & Connection Box (SG-200N1)

2 - OBSERVATION

Missing core identification tag inside SG-200N1

Name: Paolo Schintu

Date: 2024-11-23

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Paolo Schintu
3.4 Activity code	MC Mechanical Completion	Date	2024-11-23
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

The definitive setting has been updated.

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-02-19

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000921

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002114	1.4 Discipline	Electrical
1.2 Item	84318-CEL	AC UPS - PAS DB / LV Switchboard Auxiliary	
1.3 Subsystem	83-00	400 V Switchboard & Connection Box (SG-200N1)	

2 - OBSERVATION

The philosophy of cross-ferruling are wrong cabinet side DP-200F3 / SG-200N1. (see document 123A90-DDL-EL-DD-20092 sh.7-8)

Name: Alessio Polo
Date: 2024-11-26
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2024-11-26
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

The definitive setting has been updated.

Name:
Date:
Signature:

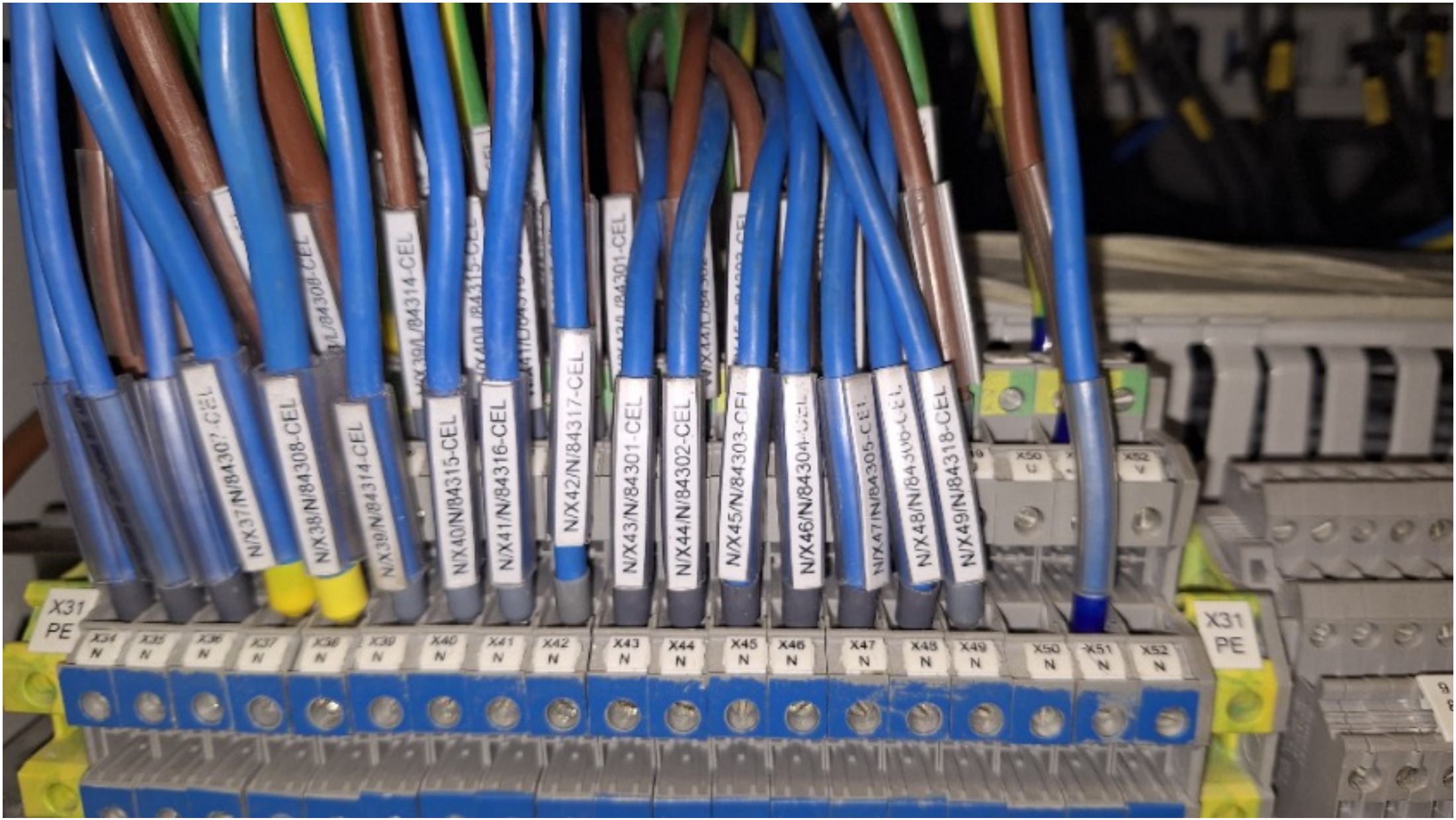
5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani
Date: 2025-02-15
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:


X31
PE
X34 N
X35 N
X36 N
X37 N
X38 N
X39 N
X40 N
X41 N
X42 N
X43 N
X44 N
X45 N
X46 N
X47 N
X48 N
X49 N
X50 N
X51 N
X52 N
N/X37/N/84307-CEL
N/X38/N/84308-CEL
N/X39/N/84314-CEL
N/X40/N/84315-CEL
N/X41/N/84316-CEL
N/X42/N/84317-CEL
N/X43/N/84301-CEL
N/X44/N/84302-CEL
N/X45/N/84303-CEL
N/X46/N/84304-CEL
N/X47/N/84305-CEL
N/X48/N/84306-CEL
N/X49/N/84318-CEL
X31
PE


57/X2/N/8431B-CEC
56/X2/L/8431B-CEC

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000922

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002114	1.4 Discipline	Electrical
1.2 Item	84318-CEL		AC UPS - PAS DB / LV Switchboard Auxiliary
1.3 Subsystem	83-00		400 V Switchboard & Connection Box (SG-200N1)

2 - OBSERVATION

cable tag is wrong, cabinet input SG-200N1. to be replace

Name: Alessio Polo
Date: 2024-11-26
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2024-11-26
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

The definitive setting has been updated.

Name:
Date:
Signature:

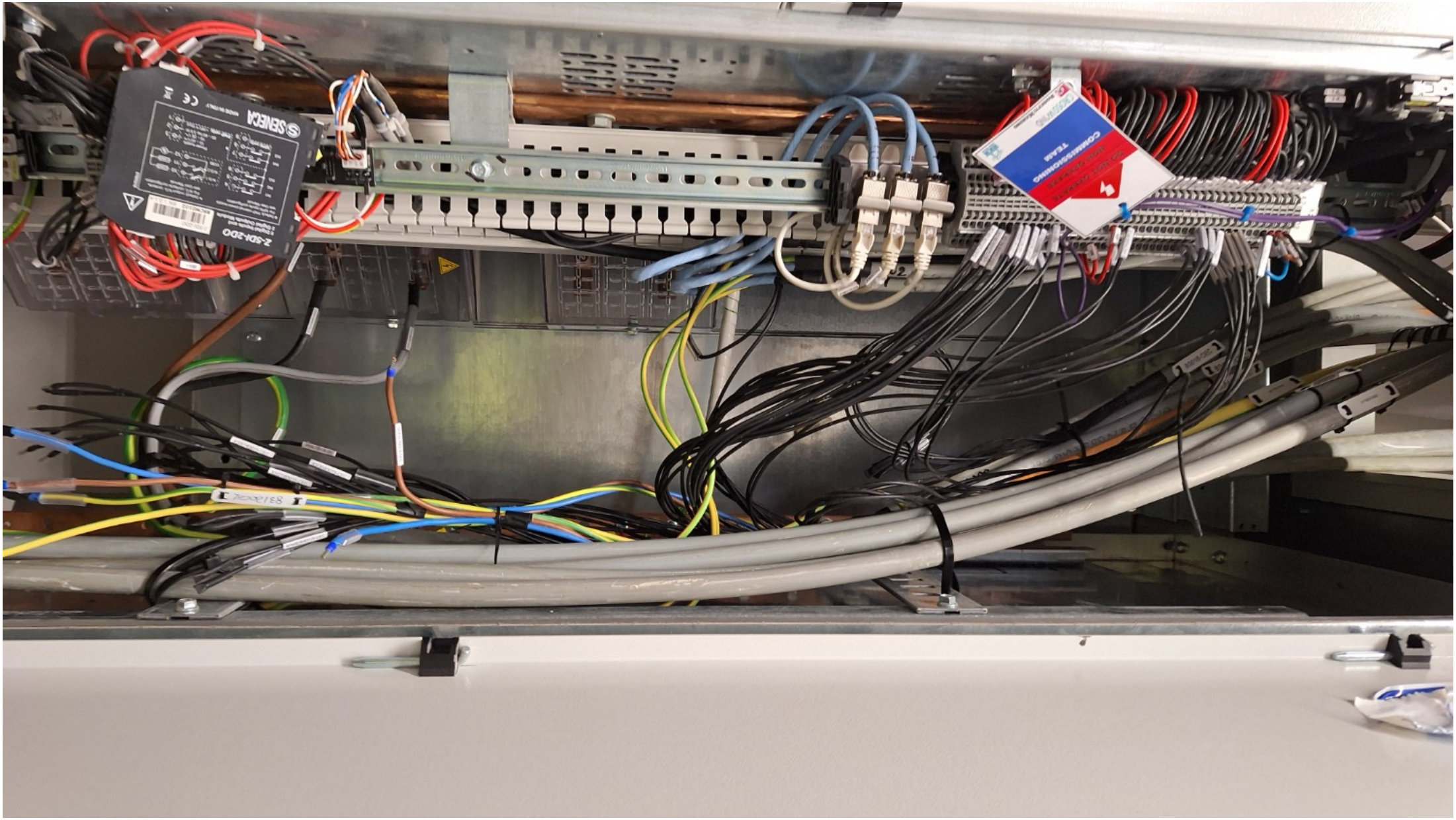
5 - CLEARANCE CHECK

DONE

Name: Alessio Polo
Date: 2025-02-26
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:


SENECA
Z-SDI-2DO

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001121

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000195	1.4 Discipline	Instrumental
1.2 Item	C-SG-200N1-002/B400-SIS-001	TRIP SIGNAL / MARSHALLING PCS	
1.3 Subsystem	83-00	400 V Switchboard & Connection Box (SG-200N1)	

2 - OBSERVATION

Missing terminal identification (TB-X1). See attached photo.

Name: Giovanni Tangianu
Date: 2024-12-02
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2024-12-02
3.5 Action by	PRE-COMM	Signature	

4 - PERFORMED ACTION

The definitive setting has been updated.

Name:
Date:
Signature:

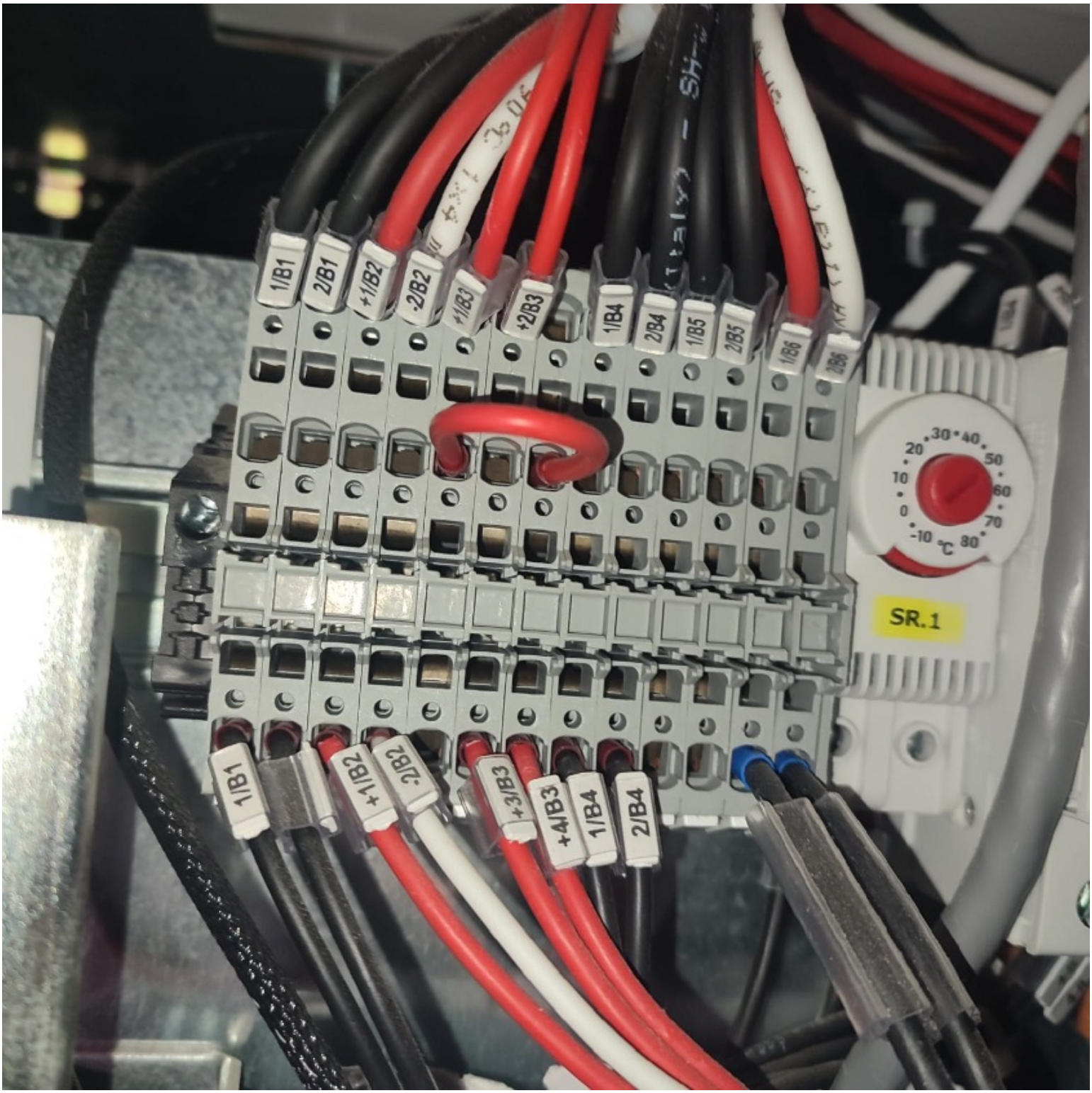
5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu
Date: 2025-05-22
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:


1/B1
2/B1
+1/B2
-2/B2
+1/B3
+2/B3
1/B4
2/B4
1/B5
2/B5
1/B6
2/B6
30
40
20
50
10
60
0
70
-10
°C
80
SR.1
1/B1
+1/B2
-2/B2
+3/B3
+4/B3
1/B4
2/B4

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001122

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000194	1.4 Discipline	Instrumental
1.2 Item	C-SG-200N1-001/B400-SIS-001	TRIP SIGNAL / MARSHALLING PCS	
1.3 Subsystem	83-00	400 V Switchboard & Connection Box (SG-200N1)	

2 - OBSERVATION

missing terminal identification (TB-X1). See attached photo.

Name: Giovanni Tangianu

Date: 2024-12-02

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2024-12-02
3.5 Action by	PRE-COMM	Signature	

4 - PERFORMED ACTION

The definitive setting has been updated.

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-05-22

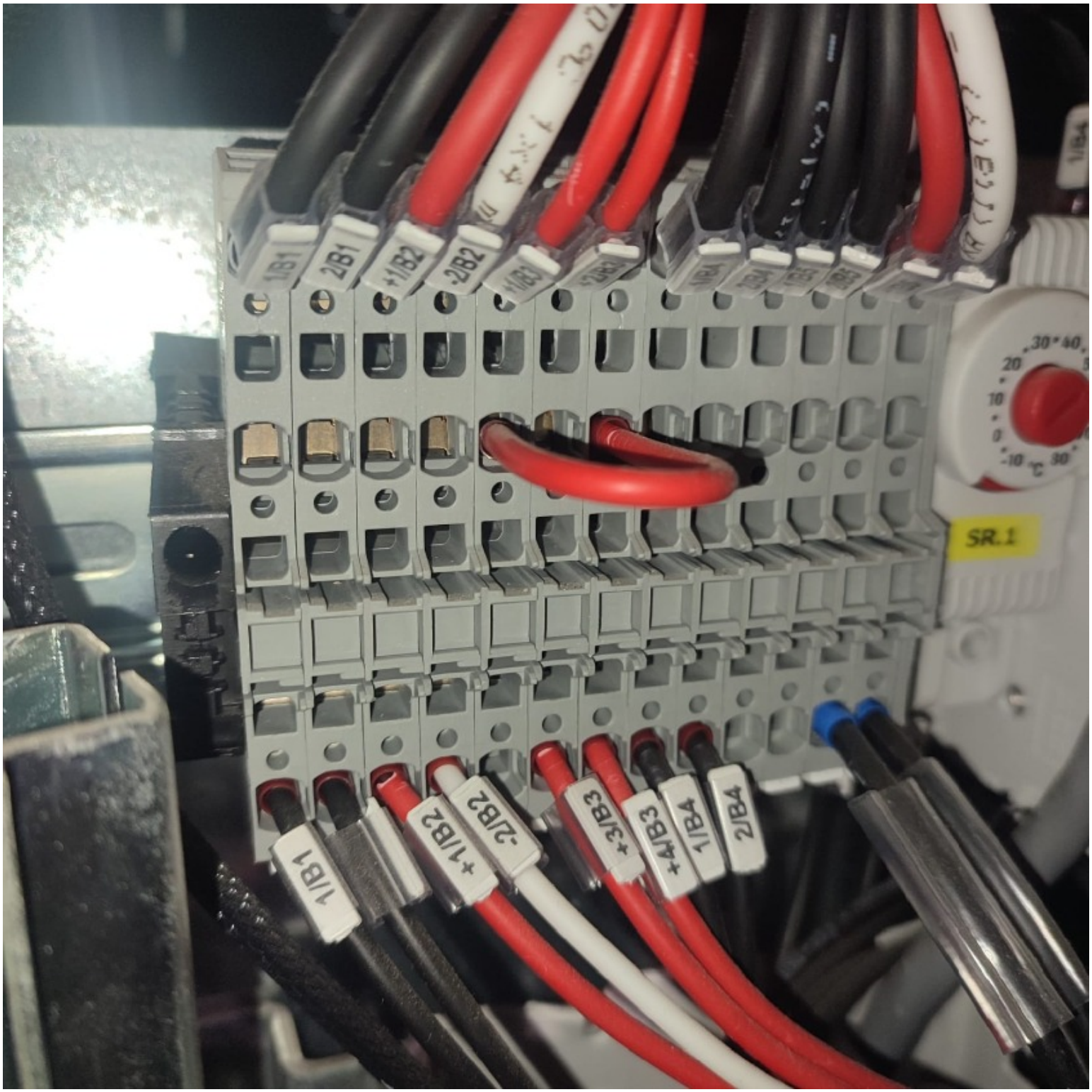
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


1B1
2B1
+1B2
-2B2
+1B3
-2B3
1B4
2B4
SR.1
1/B1
+1/B2
-2/B2
+3/B3
+4/B3
1/B4
2/B4

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001123

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000195	1.4 Discipline	Instrumental
1.2 Item	C-SG-200N1-002/B400-SIS-001	TRIP SIGNAL / MARSHALLING PCS	
1.3 Subsystem	83-00	400 V Switchboard & Connection Box (SG-200N1)	

2 - OBSERVATION

Missing Identification tag wires on both side the (C-SG-200N1-002/B400-SIS-001) connection.See attached photo.
"

Name: Giovanni Tangianu
Date: 2024-12-02
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2024-12-02
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

The definitive setting has been updated.

Name:
Date:
Signature:

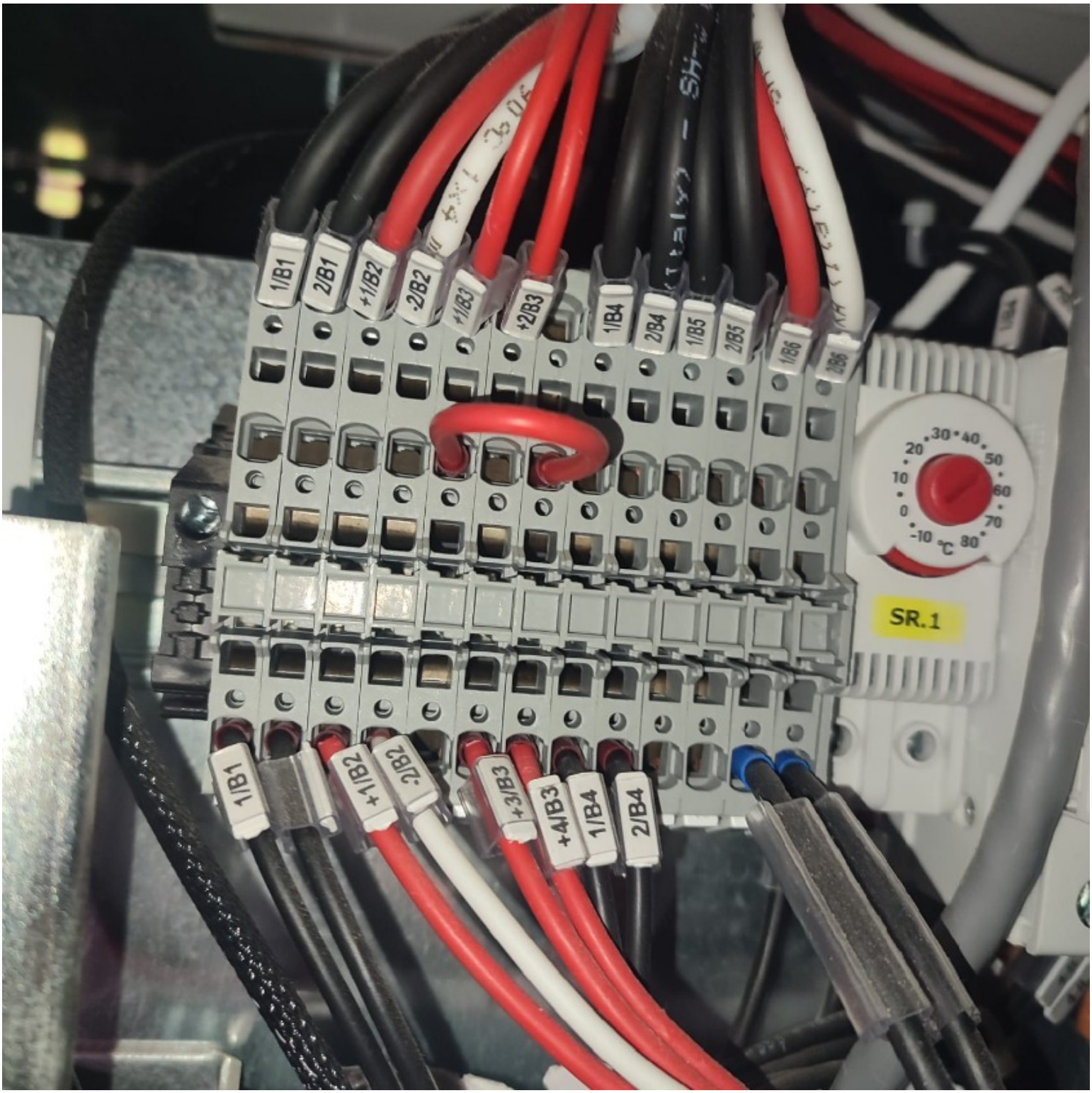
5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu
Date: 2025-02-21
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:


1/B1
2/B1
+1/B2
-2/B2
+1/B3
+2/B3
1/B4
2/B4
1/B5
2/B5
1/B6
2/B6
30
40
20
50
10
60
0
70
-10
°C
80
SR.1
1/B1
+1/B2
-2/B2
+3/B3
+4/B3
1/B4
2/B4

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001124

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000194	1.4 Discipline	Instrumental
1.2 Item	C-SG-200N1-001/B400-SIS-001	TRIP SIGNAL / MARSHALLING PCS	
1.3 Subsystem	83-00	400 V Switchboard & Connection Box (SG-200N1)	

2 - OBSERVATION

Missing Identification tag wires on both side connection (C-SG-200N1-001/B400-SIS-001). See attached photo.

Name: Giovanni Tangianu
Date: 2024-12-02
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2024-12-02
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

The definitive setting has been updated.

Name:
Date:
Signature:

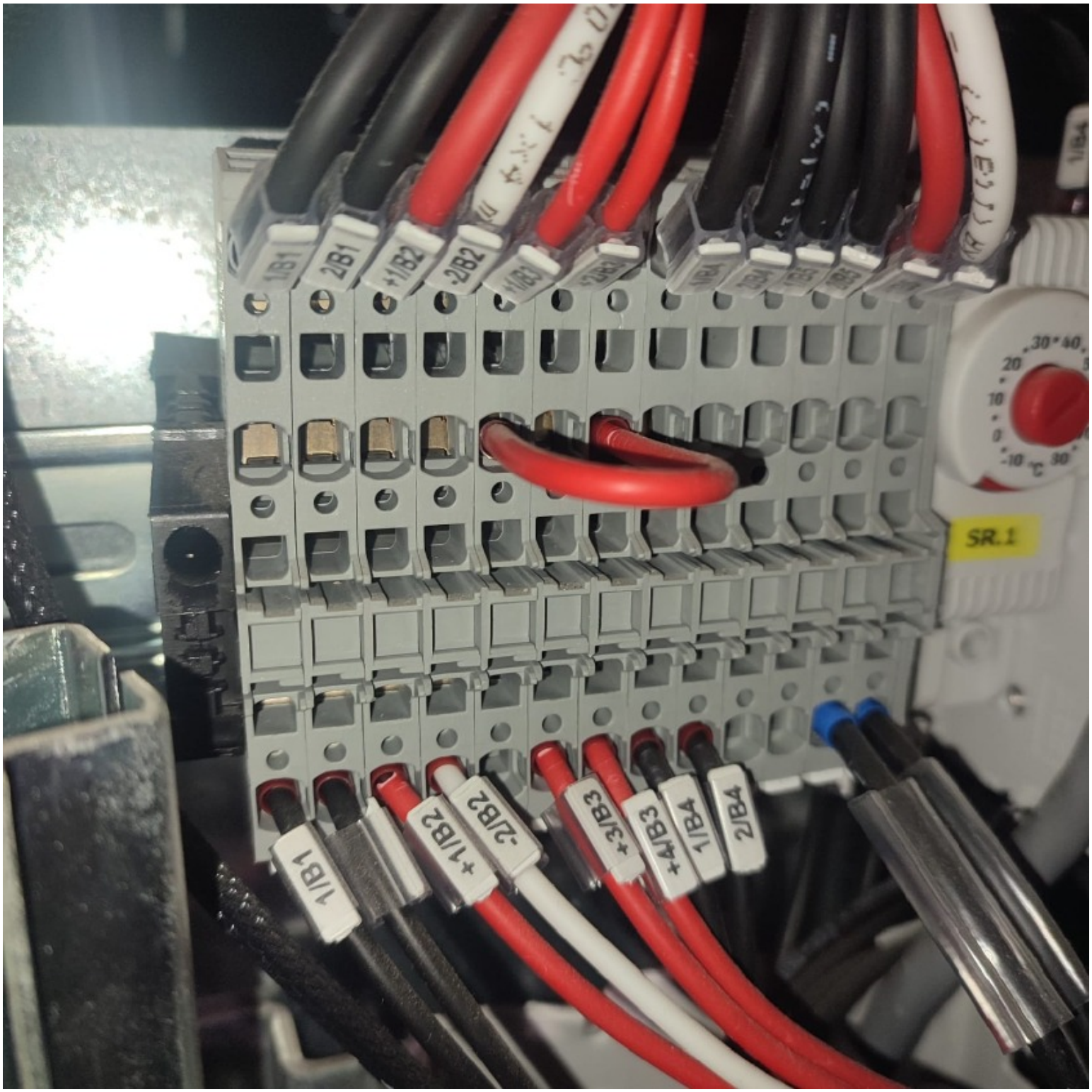
5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu
Date: 2025-02-21
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:


1B1
2B1
+1B2
-2B2
+1B3
-2B3
1B4
2B4
SR.1
1/B1
+1/B2
-2/B2
+3/B3
+4/B3
1/B4
2/B4

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001125

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000195	1.4 Discipline	Instrumental
1.2 Item	C-SG-200N1-002/B400-SIS-001	TRIP SIGNAL / MARSHALLING PCS	
1.3 Subsystem	83-00	400 V Switchboard & Connection Box (SG-200N1)	

2 - OBSERVATION

"Missing cable tags inside and outside both panels (C-SG-200N1-002/B400-SIS-001)
"

Name: Giovanni Tangianu
Date: 2024-12-02
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2024-12-02
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

The definitive setting has been updated.

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu
Date: 2025-02-21
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001126

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000194	1.4 Discipline	Instrumental
1.2 Item	C-SG-200N1-001/B400-SIS-001	TRIP SIGNAL / MARSHALLING PCS	
1.3 Subsystem	83-00	400 V Switchboard & Connection Box (SG-200N1)	

2 - OBSERVATION

"Missing cable tags inside and outside both panels (C-SG-200N1-001/B400-SIS-001).

Name: Giovanni Tangianu
Date: 2024-12-02
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2024-12-02
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

The definitive setting has been updated.

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu
Date: 2025-02-21
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000100

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task		1.4 Discipline	Electrical
1.2 Item	SG-200N1		LV 0,4 kV MCC Switchgear
1.3 Subsystem	83-00		400 V Switchboard & Connection Box (SG-200N1)

2 - OBSERVATION

Missing n.15 drawers (highlighted in the GA) and all accessories.
The missing drawers wil be tested during FAT, mid-september

Name

Date

Signature

3 - DEFECT ASSESSMENT

Update the Protection Study on the DRAWER.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Stefano Linari
3.4 Activity code	MC Mechanical Completion	Date	2024-08-02
3.5 Action by		Signature	--- Proverlis --- Duplicata issued from database information Signature is on original form

4 - PERFORMED ACTION

tested on 17/09 at Imesa with positive results - only communication test will performed during commissioning activities

Name Stefano Linari

Date 2024-12-05

Signature

5 - CLEARANCE CHECK

tested on 17/09 at Imesa with positive results - only communication test will performed during commissioning activities

Name Stefano Linari

Date 2024-12-05

Signature

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000101

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task		1.4 Discipline	Electrical
1.2 Item	SG-200N1		LV 0,4 kV MCC Switchgear
1.3 Subsystem	83-00		400 V Switchboard & Connection Box (SG-200N1)

2 - OBSERVATION

Missing PLC wago cubicle A2/02 - signals in the I/O list from row 2 to 16 cannot be tested

Name: Stefano Linari
Date: 2024-10-10
Signature:

3 - DEFECT ASSESSMENT

Update the Protection Study on the DRAWER.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority: B PL B

3.4 Activity code: MC Mechanical Completion

3.5 Action by

Name: Stefano Linari
Date: 2024-08-02
Signature: --- Proverlis ---
Duplicata issued from database information
Signature is on original form

4 - PERFORMED ACTION

PLC wago installed.

Name: Vendor Crosswind
Date: 2024-10-02
Signature:

5 - CLEARANCE CHECK

installed (see below)

Name: Stefano Linari
Date: 2024-10-10
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000101

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task

1.4 Discipline Electrical

1.2 Item SG-200N1 — LV 0,4 kV MCC Switchgear

1.3 Subsystem 83-00 — 400 V Switchboard & Connection Box (SG-200N1)

2 - OBSERVATION

Missing PLC wago cubicle A2/02 - signals in the I/O list from row 2 to 16 cannot be tested

Name

Date

Signature

3 - DEFECT ASSESSMENT

3.1 Corrective action proposal

3.2 Material required

3.3 Priority B PL B

3.4 Activity code MC Mechanical Completion

3.5 Action by

Name Stefano Linari

Date 2024-08-02

Signature

— Proverlis —
Duplicata issued from database information
Signature is on original form

4 - PERFORMED ACTION

Name SIMONE VERDOLINI

Date 29/08/2024

IMESA S.p.A.
Via [illegible], 14 - 60035 JESI
[illegible] - Fax 0731/21105
Cod. Fisc. e P.IVA 00155630420

Signature

5 - CLEARANCE CHECK

PLC wago installed in cubicle A2/02 (see pictures)

Name ROSETTI MARINO SpA
Stefano Linari
Quality Control Dept.

Date 29/08/2024

Signature

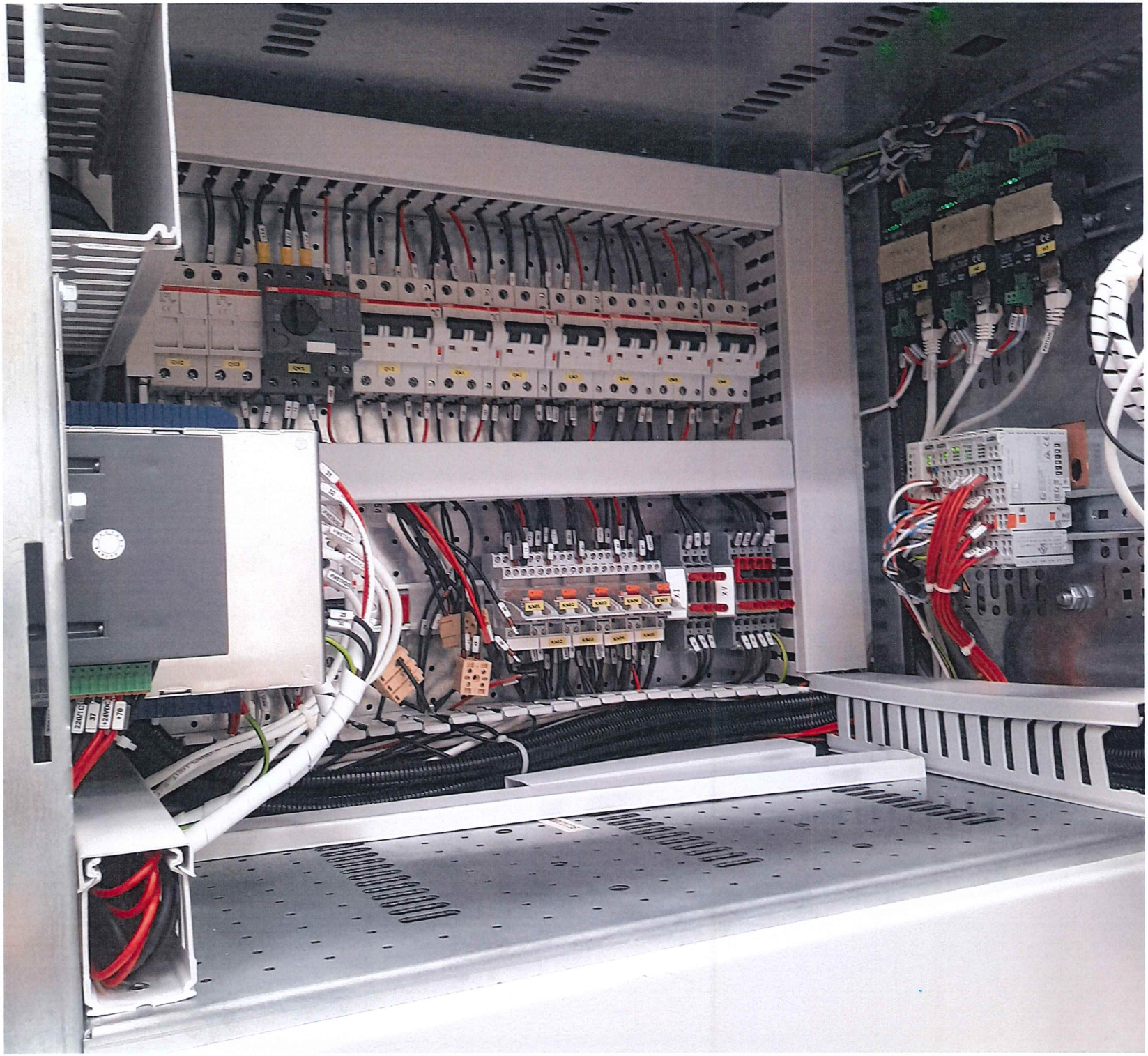
6- CLEARANCE APPROVAL

Name

Date

Signature

Anlage 1



Sztuka

E0.4
E0.0
0V
24V
+24VDC
ON
TxD
RxD
CRC
I/O
WAGO
750-315/300-000
1004808612
1424
020201

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000102

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task		1.4 Discipline	Electrical
1.2 Item	SG-200N1		LV 0,4 kV MCC Switchgear
1.3 Subsystem	83-00		400 V Switchboard & Connection Box (SG-200N1)

2 - OBSERVATION

Missing relè K86 incoming

Name: Stefano Linari

Date: 2024-10-10

Signature:

3 - DEFECT ASSESSMENT

Update the Protection Study on the DRAWER.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority: B PL B

3.4 Activity code: MC Mechanical Completion

3.5 Action by

Name: Stefano Linari

Date: 2024-08-02

Signature: --- Proverlis ---
Duplicata issued from database information
Signature is on original form

4 - PERFORMED ACTION

Installed.

Name: Vendor Crosswind

Date: 2024-10-02

Signature:

5 - CLEARANCE CHECK

installed

Name: Stefano Linari

Date: 2024-10-10

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000102

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task

1.4 Discipline Electrical

1.2 Item SG-200N1

LV 0,4 kV MCC Switchgear

1.3 Subsystem 83-00

400 V Switchboard & Connection Box (SG-200N1)

2 - OBSERVATION

Missing relè K86 incoming

Name

Date

Signature

3 - DEFECT ASSESSMENT

3.1 Corrective action proposal

3.2 Material required

3.3 Priority B PL B

Name Stefano Linari

3.4 Activity code MC Mechanical Completion

Date 2024-08-02

3.5 Action by

Signature

— Proverlis —
Duplicata issued from database information
Signature is on original form

4 - PERFORMED ACTION

Name SIMONE VERDOLINI

Date 29/08/24

Signature

5 - CLEARANCE CHECK

Installed (see pictures)

Name ROSETTI MARINO SpA
Stefano Linari
Quality Control Dept.

Date 29/08/24

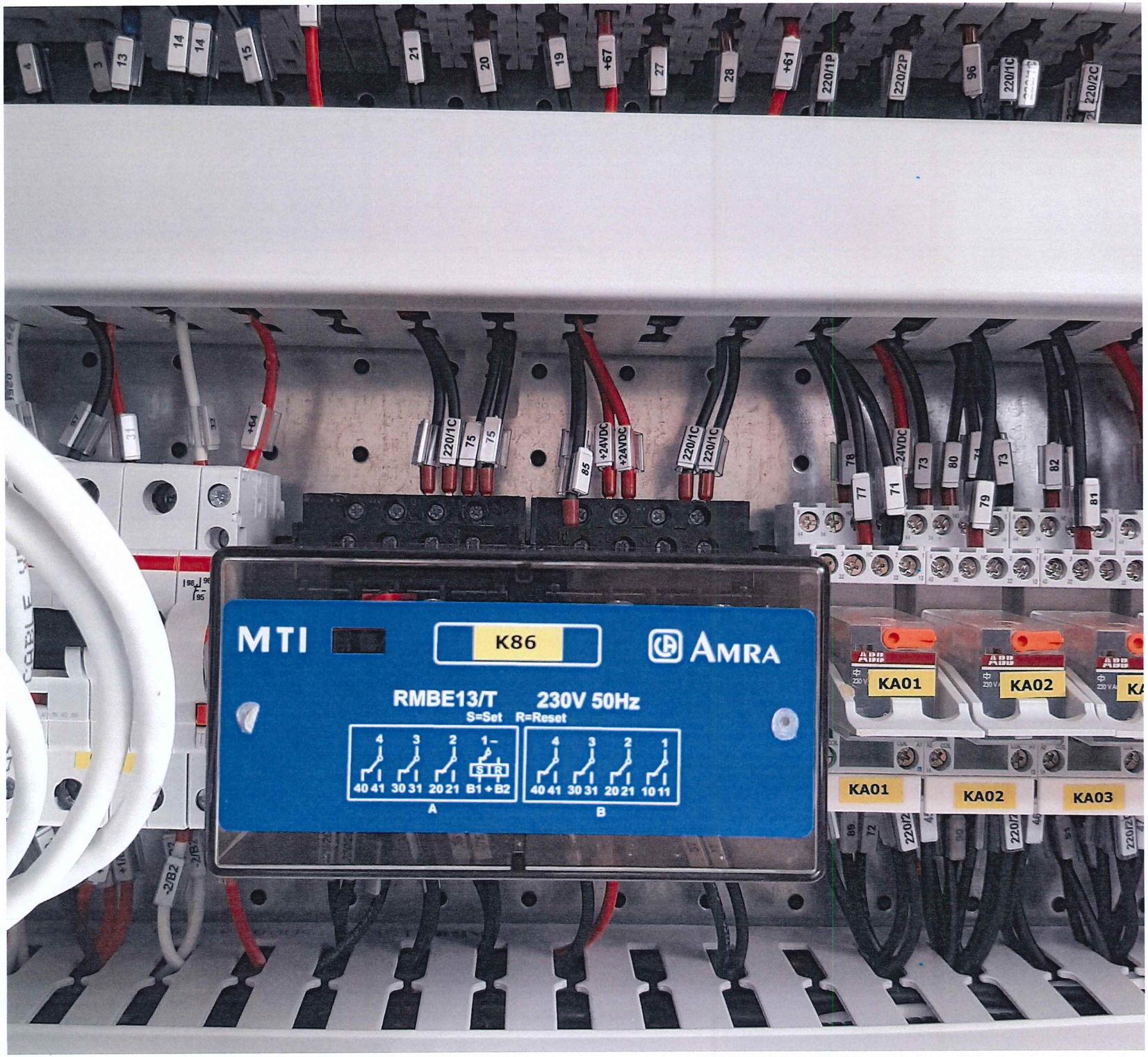
Signature

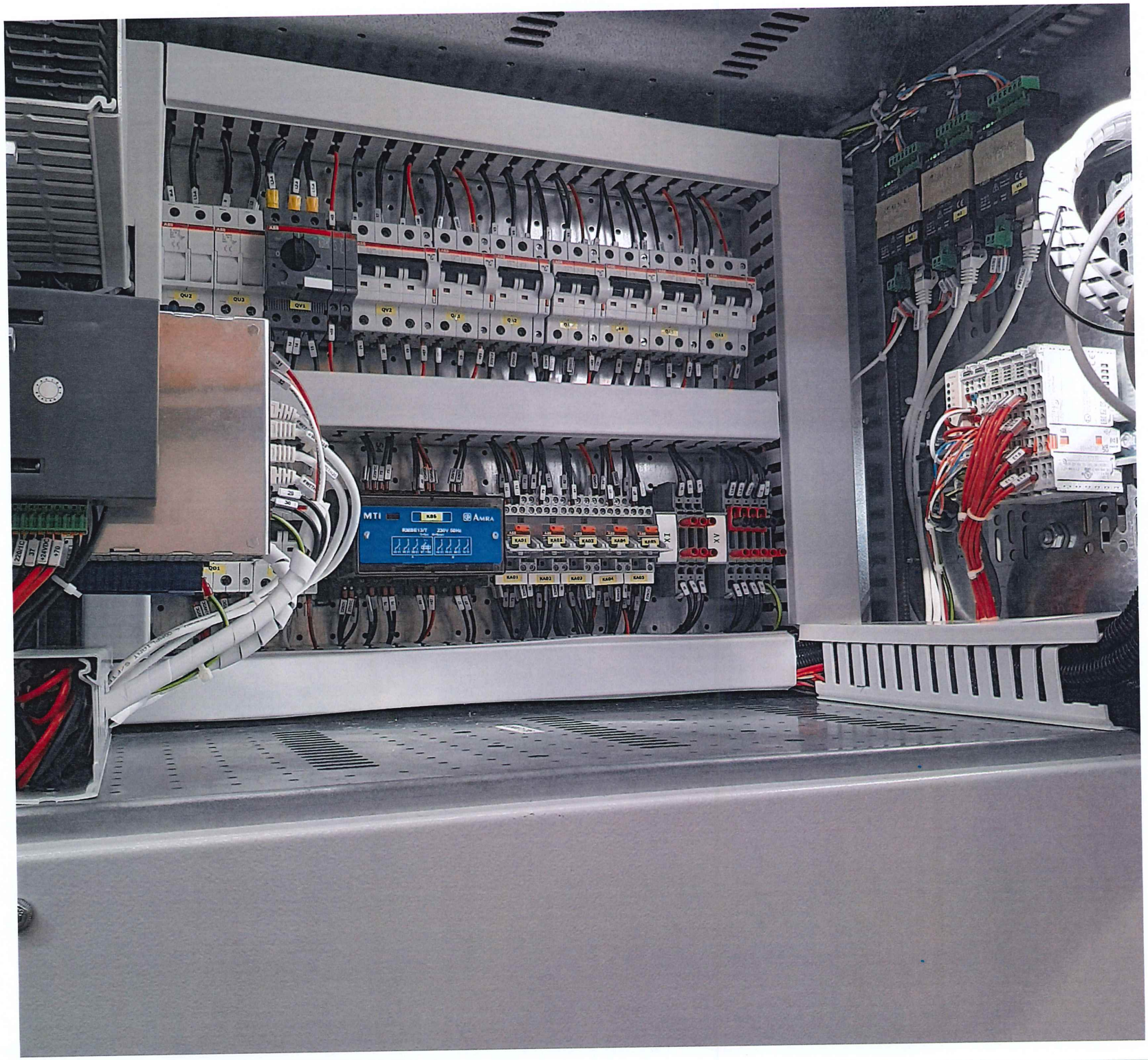
6- CLEARANCE APPROVAL

Name

Date

Signature


MTI
K86
AMRA
RMBE13/T
230V 50Hz
S=Set
R=Reset
4 3 2 1
S R
40 41 30 31 20 21 B1 + B2
A
4 3 2 1
40 41 30 31 20 21 10 11
B
KA01
KA02
KA03
220/1C
220/2C
+24VDC
+67
+61
+64


MTI
AMRA
KA5
RMBE13/T 230V 50Hz

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000103

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task		1.4 Discipline	Electrical
1.2 Item	SG-200N1		LV 0,4 kV MCC Switchgear
1.3 Subsystem	83-00		400 V Switchboard & Connection Box (SG-200N1)

2 - OBSERVATION

All documentation shall be re-issued and approval in final revision after mark-up during FAT

Name

Date

Signature

3 - DEFECT ASSESSMENT

Update the Protection Study on the DRAWER.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Stefano Linari
3.4 Activity code	MC Mechanical Completion	Date	2024-08-02
3.5 Action by		Signature	--- Proverlis --- Duplicata issued from database information Signature is on original form

4 - PERFORMED ACTION

ALL DOCUMENTS MARKED UP DURING FAT HAS BEEN RE ISSUED - REV. AS BUILT

Name VENDOR IMESA

Date 2024-12-05

Signature

5 - CLEARANCE CHECK

ALL DOCUMENTS MARKED UP DURING FAT HAS BEEN RE ISSUED - REV. AS BUILT

Name Stefano Linari

Date 2024-12-05

Signature

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000115

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002760	1.4 Discipline	Electrical
1.2 Item	A2/+08-QF1		DRAWER TEMPORARY GENERATOR - A2/+08-QF1
1.3 Subsystem	83-00		400 V Switchboard & Connection Box (SG-200N1)

2 - OBSERVATION

The Protection Study must be update with the correctly one.

Name: Mattia Girotti
Date: 2024-09-26
Signature:

3 - DEFECT ASSESSMENT

Update the Protection Study on the DRAWER.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Mattia Girotti
3.4 Activity code	COMM Commissioning	Date	2024-09-26
3.5 Action by	PRE-COMM	Signature	

4 - PERFORMED ACTION

The definitive setting has been updated.

Name: Mattia Girotti
Date: 2024-11-21
Signature:

5 - CLEARANCE CHECK

Done.

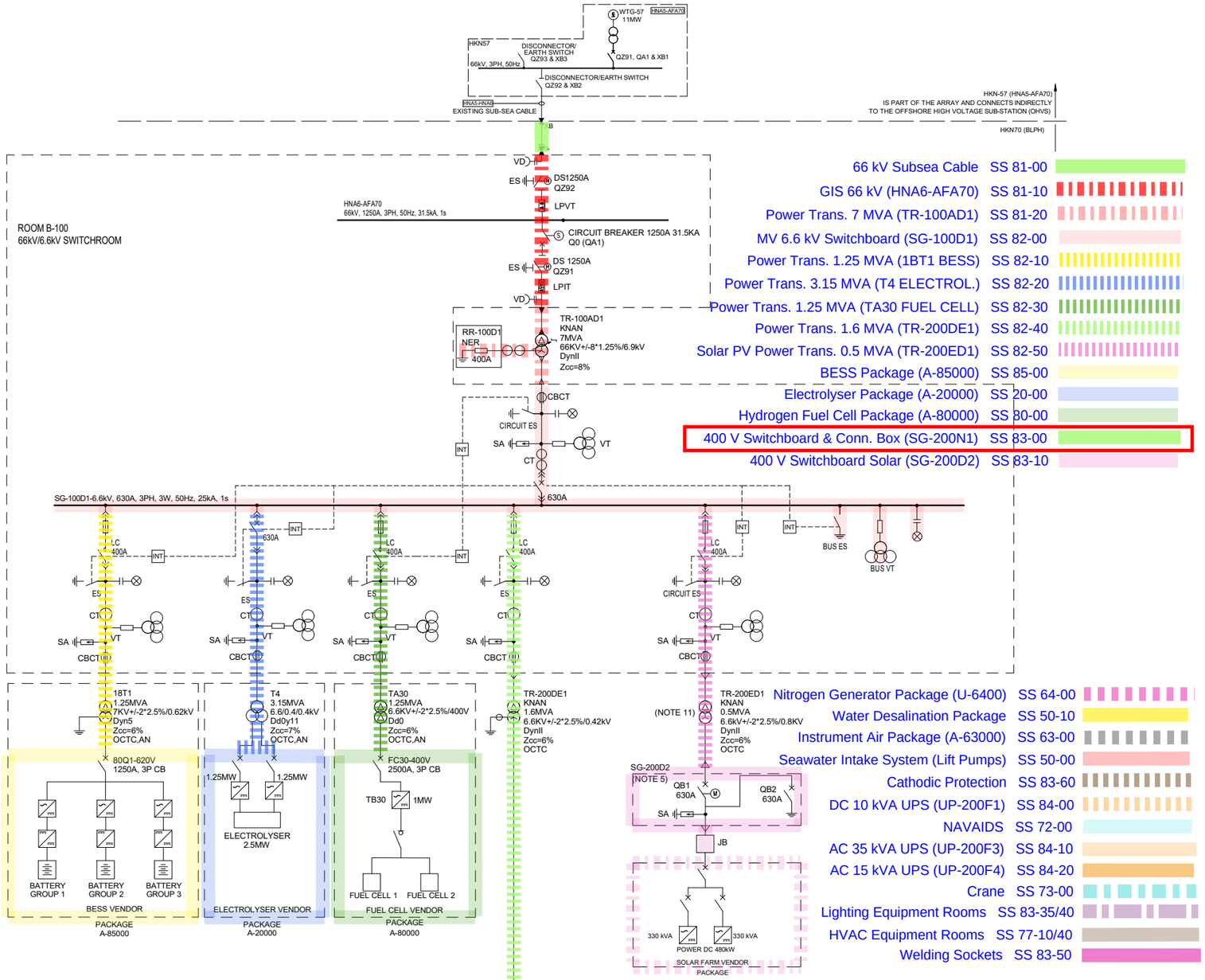
Name: Mattia Girotti
Date: 2024-11-21
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

Section 3 SYSTEM,SUB-SYSTEM LIMIT DRAWINGS

DRAWING NO. 123A90-DDL-EL-DG-20158 REV. 01



66 kV Subsea Cable	SS 81-00	
GIS 66 kV (HNA6-AFA70)	SS 81-10	
Power Trans. 7 MVA (TR-100AD1)	SS 81-20	
MV 6.6 kV Switchboard (SG-100D1)	SS 82-00	
Power Trans. 1.25 MVA (1BT1 BESS)	SS 82-10	
Power Trans. 3.15 MVA (T4 ELECTROL.)	SS 82-20	
Power Trans. 1.25 MVA (TA30 FUEL CELL)	SS 82-30	
Power Trans. 1.6 MVA (TR-200DE1)	SS 82-40	
Solar PV Power Trans. 0.5 MVA (TR-200ED1)	SS 82-50	
BESS Package (A-85000)	SS 85-00	
Electrolyser Package (A-20000)	SS 20-00	
Hydrogen Fuel Cell Package (A-80000)	SS 80-00	
400 V Switchboard & Conn. Box (SG-200N1)	SS 83-00	
400 V Switchboard Solar (SG-200D2)	SS 83-10	
Nitrogen Generator Package (U-6400)	SS 64-00	
Water Desalination Package	SS 50-10	
Instrument Air Package (A-63000)	SS 63-00	
Seawater Intake System (Lift Pumps)	SS 50-00	
Cathodic Protection	SS 83-60	
DC 10 kVA UPS (UP-200F1)	SS 84-00	
NAVAIDS	SS 72-00	
AC 35 kVA UPS (UP-200F3)	SS 84-10	
AC 15 kVA UPS (UP-200F4)	SS 84-20	
Crane	SS 73-00	
Lighting Equipment Rooms	SS 83-35/40	
HVAC Equipment Rooms	SS 77-10/40	
Welding Sockets	SS 83-50	

SYMBOL LEGEND:

- VOLTAGE DETECTOR
- EARTHING SWITCH DISCONNECTOR
- MOTORIZED EARTHING SWITCH
- CIRCUIT BREAKER
- FUSE
- CONTACTOR
- THREE-PHASE TRANSFORMER WITH TAP CHANGER
- THREE-PHASE TRANSFORMER
- CURRENT TRANSFORMER
- THREE-PHASE TRANSFORMER, WITH THREE WINDINGS
- NEUTRAL EARTHING RESISTOR
- SURGE ARRESTER
- CORE BALANCE CURRENT TRANSFORMER
- SURGE ARRESTOR FOR T-CONNECTOR (N.1 FOR EACH PHASE)
- VOLTAGE & CURRENT TRANSFORMER (3Ø X 2) (LPIT TYPE)
- VOLTAGE TRANSFORMER (3Ø X 2) (LPVT TYPE)
- VOLTAGE TRANSFORMER
- CABLE BOX
- T-CONNECTOR CABLE TERMINATION
- CABLE AIR TERMINATION

OLTC	= ON LOAD TAP CHANGER
OCTC	= OPEN CIRCUIT TAP CHANGER
KNAN	= NON-MINERAL OIL NATURAL AIR COOLED
AN	= AIR NATURAL
XB	= CABLE BOX
QZ	= DISCONNECT SWITCH & EARTH SWITCH
QA	= CIRCUIT BREAKER
LC	= LATCHED FUSED CONTACTOR (400A)
INT	= INTERLOCK SYSTEM
SA	= SURGE ARRESTER
CBCT	= CORE BALANCE CURRENT TRANSFORMER
ES	=EARTHING SWITCH
VD	=VOLTAGE DETECTOR
LCP	=LOCAL CONTROL PANEL
LPVT	=LOW POWER VOLTAGE TRANSFORMER
LPCT	=LOW POWER CURRENT TRANSFORMER
LPIT	=LOW POWER INSTRUMENT TRANSFORMER
JB	=JUNCTION BOX

NOTES:

1. TEMPORARY POWER SUPPLY CONNECTION BOX LOCATED ON OUTSIDE WALL OF LV SWITCHROOM / CONTAINER.
2. LOAD DEFINITION 'ESSENTIAL' / 'NON-ESSENTIAL' IS SHOWN IN THE LOAD LIST. THE CCS, EMCS AND 'SMART' SWITCHGEAR WILL OPEN / CLOSE CIRCUIT BREAKERS AS REQUIRED.
3. A COMBINED CCS/EMCS SYSTEM COMPRISES A MICROPROCESSOR BASED SYSTEM, ASSOCIATED SOFTWARE AND REQUIRED PERIPHERALS FOR MONITORING AND CONTROLLING OF ELECTRICAL POWER NETWORK. ALL ELECTRICAL EQUIPMENT AND PACKAGE UNITS SHALL BE CONNECTED TO THE CENTRAL CONTROL SYSTEM .
4. IMPRESSED CURRENT CATHODIC PROTECTION SYSTEM SUPPLIED BY COMPANY.
5. THE SOLAR FARM IN-FEED POWER CIRCUIT BREAKERS PANEL IS LOCATED INSIDE THE LV SWITCHGEAR ROOM B-200.
6. DELETED.
7. DELETED.
8. DELETED.
9. CROSSWIND SHALL BE ABLE TO CONTROL THE BLPH 66KV MOTORISED CIRCUIT BREAKER Q0 (QA1) & MOTORISED ELECTRICAL DISCONNECTOR / EARTH SWITCH (QZ92, TYPE B) USING THEIR 'HV-SCADA' SYSTEM. THIS BACK-UP / REDUNDANT CONTROL SHALL BE ADDITIONAL TO THAT PROVIDED BY THE CCS AND BE OF HIGHER PRIORITY OVER A SEPARATE FIBRE OPTIC CABLE (FOC). THE CCS OPERATOR AND 'HV-SCADA' SHALL BOTH BE KEPT FULLY AWARE OF EQUIPMENT STATUS AT ALL TIMES. INTERTRIPPING, INHIBITS & INTERLOCKING FOR BLPH 66KV EQUIPMENT SHALL BE AS PER THE WIND FARM.
10. THE LOADS IN THE LOW VOLTAGE SWITCHGEAR AND THE CURRENT VALUES OF THE CIRCUIT BREAKERS ARE ONLY INDICATIVE.
11. NEUTRAL POINT OF TR-200ED1 SHALL NOT BE GROUNDED AS REQUIRED BY SOLAR FARM SUPPLIER IN 123A90-PML-PM-TQ-00040.

REFERENCES:

1. 123A90-DDL-EL-DG-20014 ELECTRICAL CONTROL, PROTECTION AND METERING DIAGRAMS
2. 123A90-DDL-EL-DG-20015 ELECTRICAL SINGLE LINE DIAGRAM 6.6kV SYSTEMS
3. 123A90-DDL-EL-DG-20159 ELECTRICAL SINGLE LINE DIAGRAMS LV SYSTEM
4. 123A90-DDL-EL-DG-20160 ELECTRICAL SINGLE LINE DIAGRAMS AC UPS SYSTEMS
5. 123A90-DDL-EL-DG-20161 ELECTRICAL SINGLE LINE DIAGRAMS DC UPS SYSTEMS
6. 123A90-DDL-EL-DG-20185 ELECTRICAL SINGLE LINE DIAGRAM HV SYSTEMS
7. 123A90-DDL-EL-DL-20104 ELECTRICAL EQUIPMENT LAYOUT - HV SWITCHROOM
8. 123A90-DDL-EL-DL-20105 ELECTRICAL EQUIPMENT LAYOUT - LV SWITCHROOM
9. 123A90-DDL-EL-LIS-20016 ELECTRICAL LOAD LIST and BALANCE -CCS MODE CHARGING-
10. 123A90-DDL-EL-RE-20152 ELECTRICAL EQUIPMENT SIZING CCALCULATION REPORT
11. 123A90-DDL-EL-RE-20170 ELECTRICAL SYSTEM STUDY REPORT - LOAD FLOW
12. 123A90-DDL-EL-RE-20171 ELECTRICAL SYSTEM STUDY REPORT - SHORT CIRCUIT
13. 123A90-DDL-EL-RE-20172 ELECTRICAL SYSTEM STUDY REPORT - ARC FLASH ENERGY CALCULATION
14. 123A90-DDL-EL-RE-20173 ELECTRICAL SYSTEM STUDY REPORT - HARMONICS

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

CROSSWIND

ROSETTI MARINO

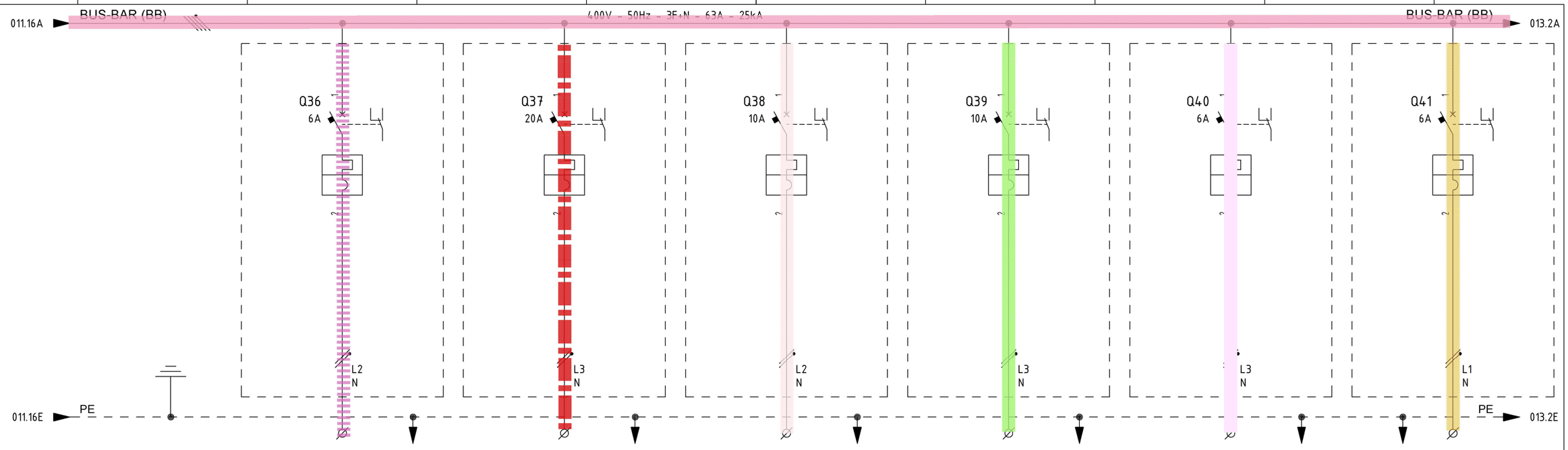
TITLE :

OVERALL/KEY SINGLE LINE DIAGRAM

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE N/A
DRAWN GPA	CHECKED LMA/AMA	APPROVED LMA/MDO	DATE 26/03/2023
A1	DRAWING NO. 123A90-DDL-EL-DG-20158	SHEET 001	REV. 01

01

File Name : 123A90-DDL-EL-DG-20158_REV01.dwg



ITEM			1	CP-200E2		CP-100E1		SG-100D1		SG-200N1		SG-200D2		UP-200F3	
UTILITY			2	AUXILIARY TRAFO SOLARE 0.5MVA		AUXILIARY GIS		AUXILIARY 6.6KV SWITCHBOARD		AUXILIARY LV SWITCHBOARD		AUXILIARY LV SWITCHBOARD 800/460V		AC UPS PAS AUXILIARY	
CUBICLE			3	+03		+03		+03		+03		+03		+03	
RATED POWER	RATED CURRENT		4/5	0.5 KW	2.72 A	3 KW	16.3 A	1 KW	5.43 A	1 KW	5.43 A	0.5 KW	2.72 A	0.2 KW	0.82 A
TYPICAL FUNCTIONAL			6	-		-		-		-		-		-	
CIRCUIT BREAKER (ABB)	TYPE		7	S302P-C6		S302P-C20		S302P-C10		S302P-C10		S302P-C6		S302P-C6	
	VERSION		8	2P / MINIATURE		2P / MINIATURE		2P / MINIATURE		2P / MINIATURE		2P / MINIATURE		2P / MINIATURE	
	TRIP UNITS		9	In=6A - Curve C		In=20A - Curve C		In=10A - Curve C		In=10A - Curve C		In=6A - Curve C		In=6A - Curve C	
	Icu	KA	10	25kA		25kA		25kA		25kA		25kA		25kA	
OVERLOAD	L	Range A	11	-		-		-		-		-		-	
		Range t	12	-		-		-		-		-		-	
SEL. SHORT-CIRCUIT	S	Range A	13	-		-		-		-		-		-	
		Range t	14	-		-		-		-		-		-	
INST. SHORT-CIRCUIT	I	Range A	15	-		-		-		-		-		-	
		Range t	16	-		-		-		-		-		-	
EARTH FAULT PROTECTION	G	Range A	17	-		-		-		-		-		-	
		Range t	18	-		-		-		-		-		-	
CONTACTOR (ABB)			19	-		-		-		-		-		-	
THERMAL OVERLOAD RELAY (ABB)			20	-		-		-		-		-		-	
SURGE ARRESTERS (DHENN)			21	-		-		-		-		-		-	
TOROIDAL CURRENT TRANSFORMER (FRER)			22	-		-		-		-		-		-	
FUSE HOLDER (ABB)			23	-		-		-		-		-		-	
TWILIGHT SWITCH (ABB)			24	-		-		-		-		-		-	
VOLTMETER (FRER)			25	-		-		-		-		-		-	
CURRENT TRANSFORMER FOR MEASURE (FRER)	TYPE		26	-		-		-		-		-		-	
	PERFORMANCE/CLASS		27	-		-		-		-		-		-	
VOLTAGE TRANSFORMER FOR MEASURE (FRER)	TYPE		28	-		-		-		-		-		-	
	PERFORMANCE/CLASS		29	-		-		-		-		-		-	
POWER TERM. BLOCK (CABUR)		Type/mm²	30	SCREW / 4		SCREW / 6		SCREW / 4		SCREW / 4		SCREW / 4		SCREW / 4	
POWER CONDUCTOR		mm²	31	3G2.5		3G6		3G2.5		3G2.5		3G2.5		3G2.5	

SUBSYSTEM 82-50

SUBSYSTEM 81-10

SUBSYSTEM 82-00

SUBSYSTEM 83-00

SUBSYSTEM 83-10

SUBSYSTEM 84-10

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

DWG n° : 231298/SD/13

Item n° : PF1002888/101

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

TITLE : "DP-200N1"

SINGLE LINE DIAGRAM

Single Line Drawing

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00013

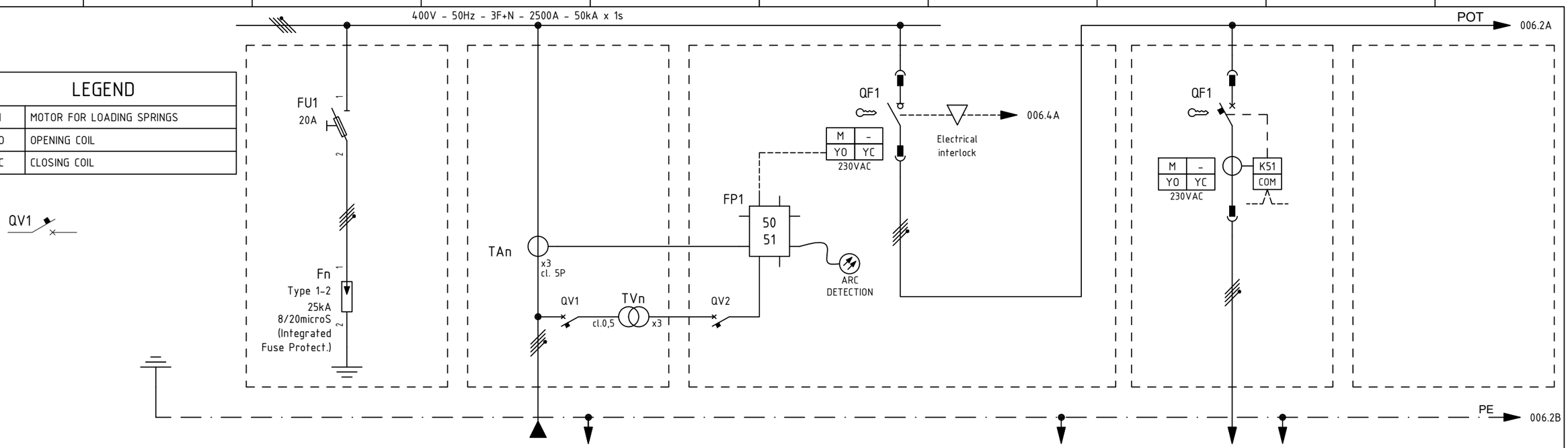
SHEET 012

REV. 03

F.to UNI A3: 420mmx297mm

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

LEGEND	
M	MOTOR FOR LOADING SPRINGS
YO	OPENING COIL
YC	CLOSING COIL



ITEM			1	-	-	-	A-20000	
UTILITY			2	SURGE ARRESTER	-	INCOMING TRASFORMER	ELECTROLYSER AUXILIARY LOAD	
COLUMN/CUBICLE			3	-	A1 / +02	A1 / +05	A1 / +08	
RATED POWER | RATED CURRENT			4/5	- | -	- | -	- | -	293 kW | 497 A	
TYPICAL FUNCTIONAL			6	-	-	-	L3-630	
CIRCUIT BREAKER (ABB)	TYPE		7	-	-	E4.2N/MS-3200 4P	E1.2C-1250 4P	
	VERSION		8	-	-	WITHDRAWABLE	WITHDRAWABLE	
	TRIP UNITS		9	-	-	-	EKIP HI TOUCH LSIG = 630	
	Icu	KA	10	-	-	66 kA (1s)	50 kA	
OVERLOAD	L	Range A	11	-	-	-	(0.4 ÷ 1) x In	
		Range t	12	-	-	-	t=k/I^2	
SEL. SHORT-CIRCUIT	S	Range A	13	-	-	-	(0.6 ÷ 10) x In [EXCLUDABLE]	
		Range t	14	-	-	-	t=k / t=k/I²	
INST. SHORT-CIRCUIT	I	Range A	15	-	-	-	(1.5 ÷ 15) x In	
		Range t	16	-	-	-	instantaneous	
EARTH FAULT PROTECTION	G	Range A	17	-	-	-	(0.1 ÷ 1) x In (EXCLUDABLE)	
		Range t	18	-	-	-	t=k / t=k/I^2	
CONTACTOR (ABB)			19	-	-	-	-	
THERMAL OVERLOAD RELAY (ABB)			20	-	-	-	-	
SURGE ARRESTER (DEHN)			21	DVCI 1 255 FM (961205)	-	-	-	
TOROIDAL CURRENT TRANSFORMER (FRER)			22	-	-	-	-	
FUSE HOLDER (ITALWEBER)			23	Fuses 20A gG	FROM SUBSISTEM 82.40	-	SUBSISTEM 20.00	
INDIRECT PROTECTION (ABB)			24	-		REF615K-(version F) HBFFAEAGNDCABNA11G		
VOLTMETER			25	-		-	-	
CURRENT TRANSFORMER FOR MEASURE (FRER)	TYPE		26	-	TAR1052K5N01V_18 - 2500/1A	-	-	
	PERFORMANCE/CLASS		27	SUBSISTEM 82.40	5VA / 5P20	SUBSISTEM 82.40	-	
VOLTAGE TRANSFORMER FOR MEASURE (FRER)	TYPE		28		TTV020400VC1 - 400r3/110r3V		-	
	PERFORMANCE/CLASS		29		20VA / 0.5		-	
LOCK-OUT RELAY (-)			30	-	-	-	-	
POWER CONDUCTOR		mmq	31	-	-	-	1 x 150 + [4 x (1 x 300)]	

QV1

QV1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
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+					
3	08/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
2	03/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
1	28/03/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
0	15/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

DWG n° : 231298/SD/11

Item n° : PF1002983/26

IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200N1"

SINGLE LINE DIAGRAM

Single Line Drawing

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

SCALE : NTS

A3

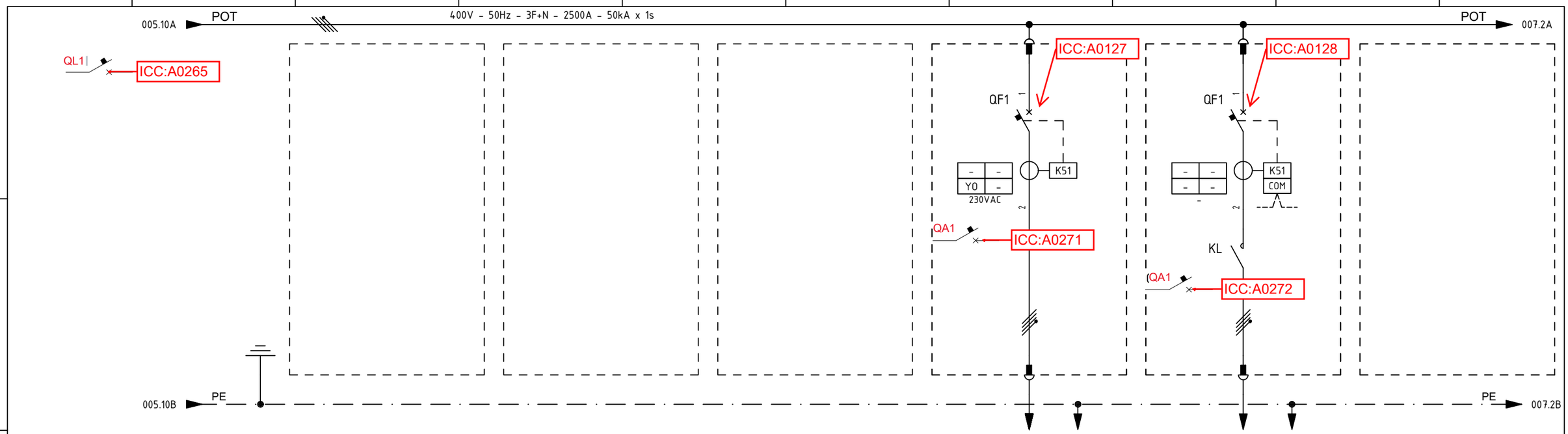
DRAWING NO. 1723002197-EL-DG-00011

SHEET 005

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00011 Rev. 03



ITEM			1			-	UP-200F4	SPARE	
UTILITY			2	INCOMING TRANSFORMER AUXILIARY CONTROL		FUTURE	AC UPS F&G - 8 H UP-200F4 - BYPASS	SPARE	
COLUMN/CUBICLE			3	A2 / +01	A2 / +02	A2 / +03	A2 / +04	A2 / +05	
RATED POWER | RATED CURRENT			4/5			- | -	18 kW | 28.9 A	- kW | - A	
TYPICAL FUNCTIONAL			6				L1-63	LK1-40	
CIRCUIT BREAKER (ABB)	TYPE		7	QV1			XT2S - 160	XT2S - 160	
	VERSION		8	QV1			4P - FIXED	4P - FIXED	
	TRIP UNITS		9	QV1			EKIP DIP LSIG (In = 63A)	EKIP HI TOUCH LSIG (In = 40A)	
	Icu	KA	10	QV1			50 kA	50 kA	
OVERLOAD	L	Range A	11	QV1			(0.4 - 1) x In	(0.4 - 1) x In	
		Range t	12	QV1			k/I^2	k/I^2	
SEL. SHORT-CIRCUIT	S	Range A	13	QV1			(1 - 10) x In	(0.6 - 10) x In	
		Range t	14	QV1			0.05 - 0.4 sec / k/I^2	0.05 - 0,4 sec / k/I^2	
INST. SHORT-CIRCUIT	I	Range A	15	QV1			(1 - 10) x In	(1.5 - 10) x In	
		Range t	16	QV1			<= 0.02 sec	instantaneous	
EARTH FAULT PROTECTION	G	Range A	17	QV1			(0.2 - 1) x In	(0.1 - 1) x In	
		Range t	18	QV1			0.1 - 0.8 sec	t=k / t=k/I^2	
CONTACTOR (ABB)			19	QV1			-	AF40-40-00-13 (70A-AC1); 100-250VAC/DC	
THERMAL OVERLOAD RELAY (ABB)			20	QV1			-	-	
SURGE ARRESTER (DEHN)			21				-	-	
TOROIDAL CURRENT TRANSFORMER (FRER)			22				-	-	
FUSE HOLDER (ITALWEBER)			23						
INDIRECT PROTECTION (ABB)			24	QV1			SUBSISTEM 84.20	SUBSISTEM 83.00	
VOLTMETER			25	QV1					
CURRENT TRANSFORMER FOR MEASURE (FRER)	TYPE		26	QV1			-	-	
	PERFORMANCE/CLASS		27	QV1			-	-	
VOLTAGE TRANSFORMER FOR MEASURE (FRER)	TYPE		28				-	-	
	PERFORMANCE/CLASS		29				-	-	
LOCK-OUT RELAY (-)			30		83005-CEL		-	-	
POWER CONDUCTOR		mmq	31		83006-CEL		4G35	5G4	

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DWG n° : 231298/SD/11

Item n° : PF1002983/26

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
3	08/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
2	03/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
1	28/03/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
0	15/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200N1"

SINGLE LINE DIAGRAM

Single Line Drawing

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

SCALE : NTS

A3

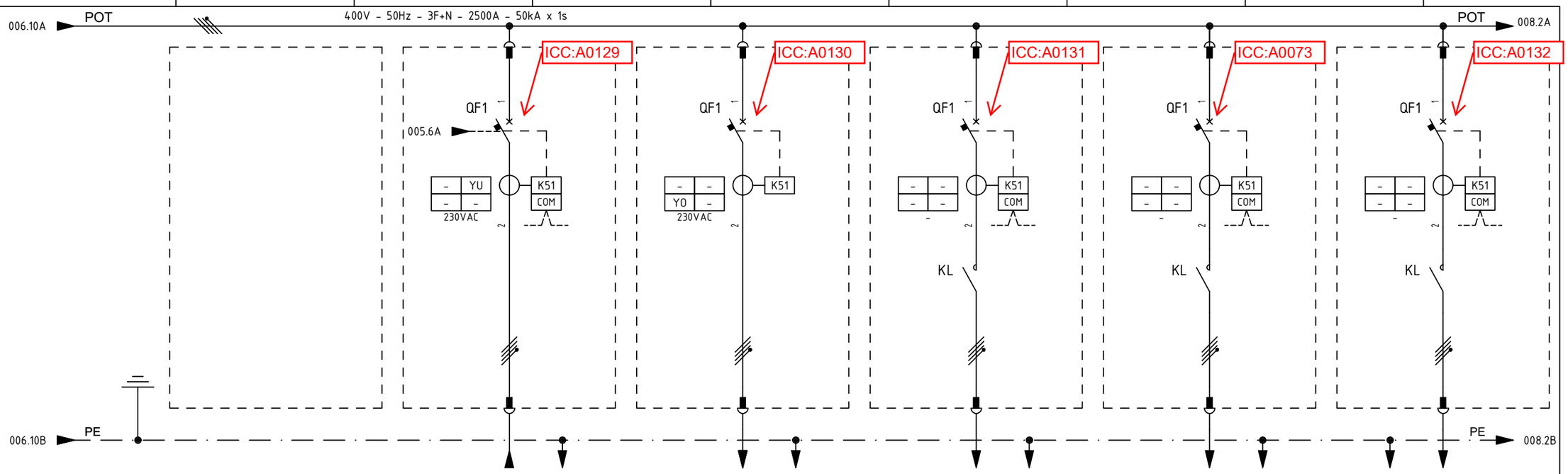
DRAWING NO. 1723002197-EL-DG-00011

SHEET 006

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00011 Rev. 03



ITEM				JB-200E2	UP-200F3	SPARE	DP-200N1	JB-200E3
UTILITY			2	TEMPORARY GENERATOR / MOBILE BATTERY PACK	AC UPS PAS - 30 MIN UP-200F3 - LINE A	SPARE	DB - LIGHTING & SMALL POWER - BoP	CRANE
COLUMN/CUBICLE			3	A2 / +08	A3 / +01	A3 / +02	A3 / +03	A3 / +04
RATED POWER | RATED CURRENT			4/5	138 kW | 210 A	36.0 kW | 57.8 A	- kW | - A	15.35 kW | 23.7 A	25 kW | 37.8 A
TYPICAL FUNCTIONAL			6	LE2-320	L1-100	LK1-40	LK1-100	LK1-63
CIRCUIT BREAKER (ABB)	TYPE		7	XT5S - 400	XT2S - 160	XT2S - 160	XT2S - 160	XT2S - 160
	VERSION		8	4P - FIXED	4P - FIXED	4P - FIXED	4P - FIXED	4P - FIXED
	TRIP UNITS		9	EKIP HI TOUCH LSIG (In = 320A)	EKIP DIP LSIG (In = 100A)	EKIP HI TOUCH LSIG (In = 40A)	EKIP HI TOUCH LSIG (In = 100A)	EKIP HI TOUCH LSIG (In = 63A)
	Icu	KA	10	50 kA	50 kA	50 kA	50 kA	50 kA
OVERLOAD	L	Range A	11	(0.4 - 1) x In	(0.4 - 1) x In	(0.4 - 1) x In	(0.4 - 1) x In	(0.4 - 1) x In
		Range t	12	k/I^2	k/I^2	k/I^2	k/I^2	k/I^2
SEL. SHORT-CIRCUIT	S	Range A	13	(0.6 - 10) x In	(1 - 10) x In	(0.6 - 10) x In	(0.6 - 10) x In	(0.6 - 10) x In
		Range t	14	0.05 - 0.4 sec / k/I^2	0.05 - 0.4 sec / k/I^2	0.05 - 0,4 sec / k/I^2	0.05 - 0,4 sec / k/I^2	0.05 - 0,4 sec / k/I^2
INST. SHORT-CIRCUIT	I	Range A	15	(1.5 - 15) x In	(1 - 10) x In	(1.5 - 15) x In	(1.5 - 15) x In	(1.5 - 15) x In
		Range t	16	instantaneous	<= 0.02 sec	instantaneous	instantaneous	instantaneous
EARTH FAULT PROTECTION	G	Range A	17	(0.1 - 1) x In	(0.2 - 1) x In	(0.1 - 1) x In	(0.1 - 1) x In	(0.1 - 1) x In
		Range t	18	t=k / t=k/I^2	0.1 - 0.8 sec	t=k / t=k/I^2	t=k / t=k/I^2	t=k / t=k/I^2
CONTACTOR (ABB)			19	-	-	AF40-40-00-13 (70A-AC1); 100-250VAC/DC	AF80-40-00-13 (70A-AC1); 100-250VAC/DC	AF52-40-00-13 (100A-AC1); 100-250VAC/DC
THERMAL OVERLOAD RELAY (ABB)			20	-	-	-	-	-
SURGE ARRESTER (DEHN)			21	-	-	-	-	-
TOROIDAL CURRENT TRANSFORMER (FRER)			22	-	-	-	-	-
FUSE HOLDER (ITALWEBER)			23	SUBSISTEM 83.00	SUBSISTEM 84.10	SUBSISTEM 83.00	SUBSISTEM 83.20	SUBSISTEM 99.00
INDIRECT PROTECTION (ABB)			24					
VOLTMETER			25					
CURRENT TRANSFORMER FOR MEASURE (FRER)	TYPE		26	-	-	-	-	-
	PERFORMANCE/CLASS		27	-	-	-	-	-
VOLTAGE TRANSFORMER FOR MEASURE (FRER)	TYPE		28	-	-	-	-	-
	PERFORMANCE/CLASS		29	-	-	-	-	-
LOCK-OUT RELAY (-)			30	-	-	-	-	-
POWER CONDUCTOR		mmq	31	5 x (1 x 95)	4G35	-	5G50	5G16

/ SYSTEM

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
3	08/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
2	03/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
1	28/03/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
0	15/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

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DWG n° : 231298/SD/11

Item n° : PF1002983/26

IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200N1"

SINGLE LINE DIAGRAM

Single Line Drawing

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

SCALE : NTS

A3

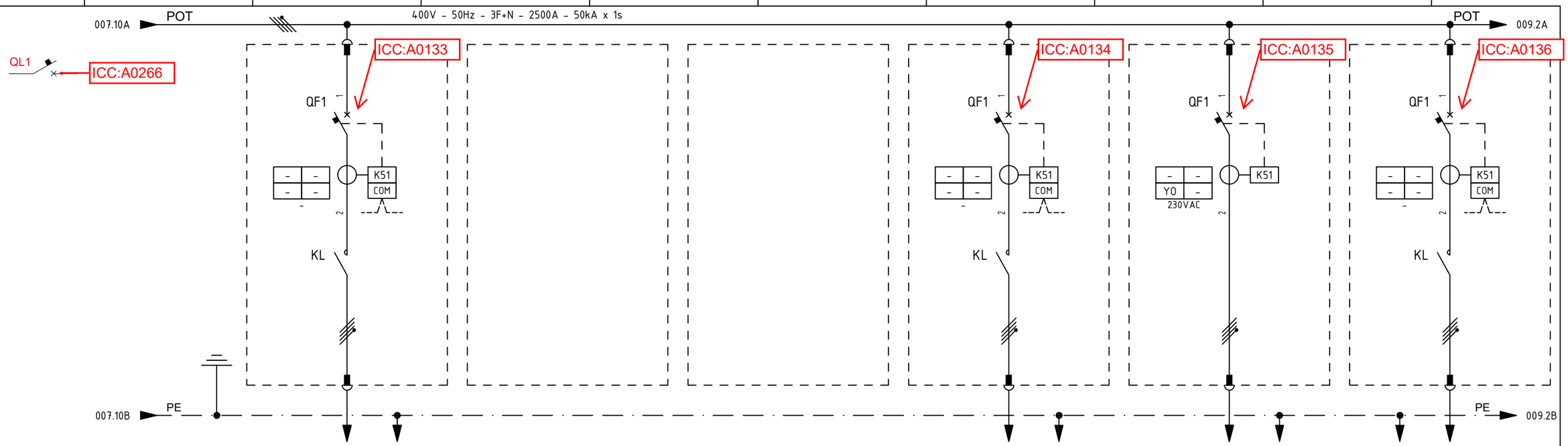
DRAWING NO. 1723002197-EL-DG-00011

SHEET 007

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00011 Rev. 03



ITEM			1	SPARE		-			JB-500E8		UP-200F3		B100-HSB-001	
UTILITY			2	SPARE		FUTURE			WATER PACKAGE		AC UPS PAS - 30 MIN UP-200F3 - LINE B		HVAC PANELS HV ROOM	
COLUMN/CUBICLE			3	A3 / +05		A3 / +06			A3 / +08		A4 / +01		A4 / +02	
RATED POWER | RATED CURRENT			4/5	5.5 kW	9.93 A	-	-		67 kW	107.00 A	36.0 kW	57.8 A	18 kW	34.1 A
TYPICAL FUNCTIONAL			6	LK1-40					LK2-160		L1-100		LK1-40	
CIRCUIT BREAKER (ABB)	TYPE		7	XT2S - 160					XT4S - 250		XT2S - 160		XT2S - 160	
	VERSION		8	4P - FIXED					4P - FIXED		4P - FIXED		4P - FIXED	
	TRIP UNITS		9	EKIP HI TOUCH LSIG (In = 40A)					EKIP HI TOUCH LSIG (In = 160A)		EKIP DIP LSIG (In = 100A)		EKIP HI TOUCH LSIG (In = 40A)	
	Icu	KA	10	50 kA					50 kA		50 kA		50 kA	
OVERLOAD	L	Range A	11	(0.4 - 1) x In					(0.4 - 1) x In		(0.4 - 1) x In		(0.4 - 1) x In	
		Range t	12	k/I^2					k/I^2		k/I^2		k/I^2	
SEL. SHORT-CIRCUIT	S	Range A	13	(0.6 - 10) x In					(0.6 - 10) x In		(1 - 10) x In		(0.6 - 10) x In	
		Range t	14	0.05 - 0,4 sec / k/I^2					0.05 - 0.4 sec / k/I^2		0.05 - 0.4 sec / k/I^2		0.05 - 0,4 sec / k/I^2	
INST. SHORT-CIRCUIT	I	Range A	15	(1.5 - 15) x In					(1.5 - 15) x In		(1 - 10) x In		(1.5 - 15) x In	
		Range t	16	instantaneous					instantaneous		<= 0.02 sec		instantaneous	
EARTH FAULT PROTECTION	G	Range A	17	(0.1 - 1) x In					(0.1 - 1) x In		(0.2 - 1) x In		(0.1 - 1) x In	
		Range t	18	t=k / t=k/I^2					t=k / t=k/I^2		0.1 - 0.8 sec		t=k / t=k/I^2	
CONTACTOR (ABB)			19	AF40-40-00-13 (70A-AC1); 100-250VAC/DC					AF190-40-11-13 (275A-AC1); 100-250 VAC/DC		-		AF40-40-00-13 (70A-AC1); 100-250VAC/DC	
THERMAL OVERLOAD RELAY (ABB)			20	-					-		-		-	
SURGE ARRESTER (DEHN)			21	-					-		-		-	
TOROIDAL CURRENT TRANSFORMER (FRER)			22	-					-		-		-	
FUSE HOLDER (ITALWEBER)			23	SUBSISTEM 83.00					SUBSISTEM 50.10		SUBSISTEM 84.10		SUBSISTEM 77.10	
INDIRECT PROTECTION (ABB)			24											
VOLTMETER			25											
CURRENT TRANSFORMER FOR MEASURE (FRER)	TYPE		26	-					-		-		-	
	PERFORMANCE/CLASS		27	-					-		-		-	
VOLTAGE TRANSFORMER FOR MEASURE (FRER)	TYPE		28	-					-		-		-	
	PERFORMANCE/CLASS		29	-					-		-		-	
LOCK-OUT RELAY (-)			30	-					-		-		-	
POWER CONDUCTOR		mmq	31	-					5G70		4G35		5G16	

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DWG n° : 231298/SD/11
Item n° : PF1002983/26

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
3	08/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
2	03/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
1	28/03/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
0	15/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200N1"

SINGLE LINE DIAGRAM

Single Line Drawing

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

SCALE : NTS

A3

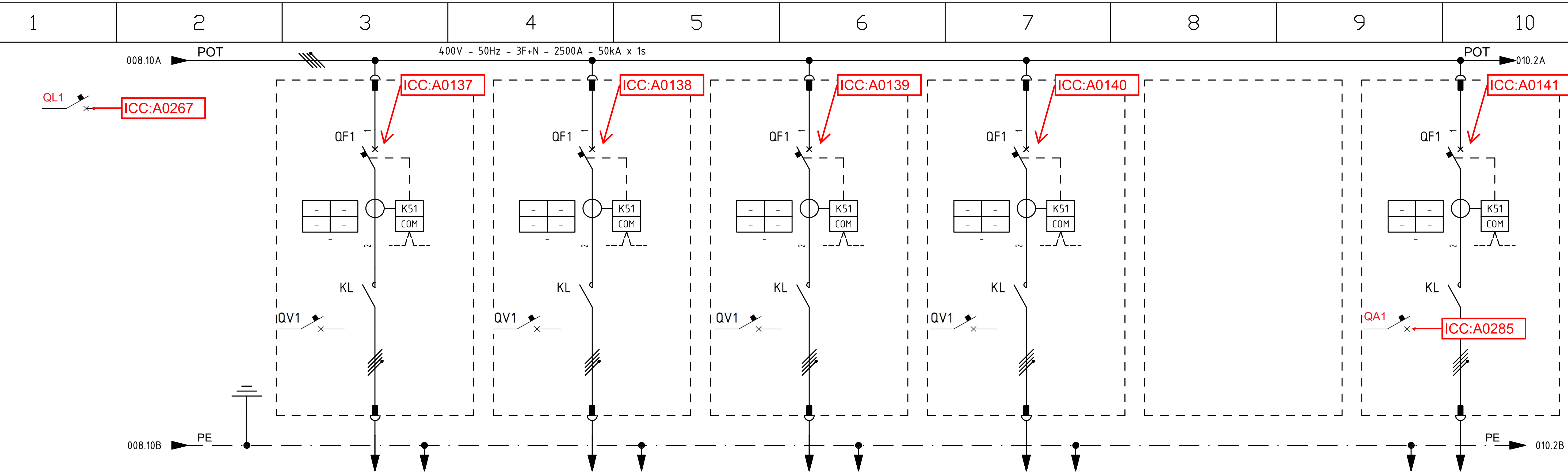
DRAWING NO. 1723002197-EL-DG-00011

SHEET 008

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00011 Rev. 03



ITEM			1	A-80000	CP-850F03	SPARE	SPARE		K-63001-A
UTILITY			2	FUEL CELL AUXILIARY LOAD	BESS PCS CABINET	SPARE	SPARE		INSTRUMENTS AIR PACKAGE 01A
COLUMN/CUBICLE			3	A4 / +03	A4 / +04	A4 / +05	A4 / +06		A4 / +08
RATED POWER | RATED CURRENT			4/5	20 kW | 32.84 A	11,09 kW | 17.42 A	- kW | - A	20.0 kW | 32.1 A		68.75 kW | 111.24 A
TYPICAL FUNCTIONAL			6	LK1-63	LK1-40	LK1-40	LK1-40		LK2-160
CIRCUIT BREAKER (ABB)	TYPE		7	XT2S - 160	XT2S - 160	XT2S - 160	XT2S - 160		XT4S - 250
	VERSION		8	4P - FIXED	4P - FIXED	4P - FIXED	4P - FIXED		4P - FIXED
	TRIP UNITS		9	EKIP HI TOUCH LSIG (In = 63A)	EKIP HI TOUCH LSIG (In = 40A)	EKIP HI TOUCH LSIG (In = 40A)	EKIP HI TOUCH LSIG (In = 40A)		EKIP HI TOUCH LSIG (In = 160A)
	Icu	KA	10	50 kA	50 kA	50 kA	50 kA		50 kA
OVERLOAD	L	Range A	11	(0.4 - 1) x In	(0.4 - 1) x In	(0.4 - 1) x In	(0.4 - 1) x In		(0.4 - 1) x In
		Range t	12	k/I^2	k/I^2	k/I^2	k/I^2		k/I^2
SEL. SHORT-CIRCUIT	S	Range A	13	(0.6 - 10) x In	(0.6 - 10) x In	(0.6 - 10) x In	(0.6 - 10) x In		(0.6 - 10) x In
		Range t	14	0.05 - 0,4 sec / k/I^2	0.05 - 0,4 sec / k/I^2	0.05 - 0,4 sec / k/I^2	0.05 - 0,4 sec / k/I^2		0.05 - 0.4 sec / k/I^2
INST. SHORT-CIRCUIT	I	Range A	15	(1.5 - 15) x In	(1.5 - 15) x In	(1.5 - 15) x In	(1.5 - 15) x In		(1.5 - 15) x In
		Range t	16	instantaneous	instantaneous	instantaneous	instantaneous		instantaneous
EARTH FAULT PROTECTION	G	Range A	17	(0.1 - 1) x In	(0.1 - 1) x In	(0.1 - 1) x In	(0.1 - 1) x In		(0.1 - 1) x In
		Range t	18	t=k / t=k/I^2	t=k / t=k/I^2	t=k / t=k/I^2	t=k / t=k/I^2		t=k / t=k/I^2
CONTACTOR (ABB)			19	AF52-40-00-13 (100A-AC1); 100-250VAC/DC	AF40-40-00-13 (70A-AC1); 100-250VAC/DC	AF40-40-00-13 (70A-AC1); 100-250VAC/DC	AF40-40-00-13 (70A-AC1); 100-250VAC/DC		AF190-40-11-13 (275A-AC1); 100-250 VAC/DC
THERMAL OVERLOAD RELAY (ABB)			20	-	-	-	-		-
SURGE ARRESTER (DEHN)			21	-	-	-	-		-
TOROIDAL CURRENT TRANSFORMER (FRER)			22	-	-	-	-		-
FUSE HOLDER (ITALWEBER)			23	SUBSISTEM 80.00	SUBSISTEM 85.00	SUBSISTEM 83.00	SUBSISTEM 83.00		SUBSISTEM 63.00
INDIRECT PROTECTION (ABB)			24						
VOLTMETER			25						
CURRENT TRANSFORMER FOR MEASURE (FRER)	TYPE		26	-	-	-	-		-
	PERFORMANCE/CLASS		27	-	-	-	-		-
VOLTAGE TRANSFORMER FOR MEASURE (FRER)	TYPE		28	-	-	-	-		-
	PERFORMANCE/CLASS		29	-	-	-	-		-
LOCK-OUT RELAY (-)			30	-	-	-	-		-
POWER CONDUCTOR		mmq	31	83012-CEL 5G16	83011-CEL 4 x 10	-	-		5G70

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DWG n° :	231298/SD/11
Item n° :	PF1002983/26

IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
3	08/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
2	03/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
1	28/03/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
0	15/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

TITLE : "SG-200N1"

SINGLE LINE DIAGRAM

Single Line Drawing

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

SCALE : NTS

A3

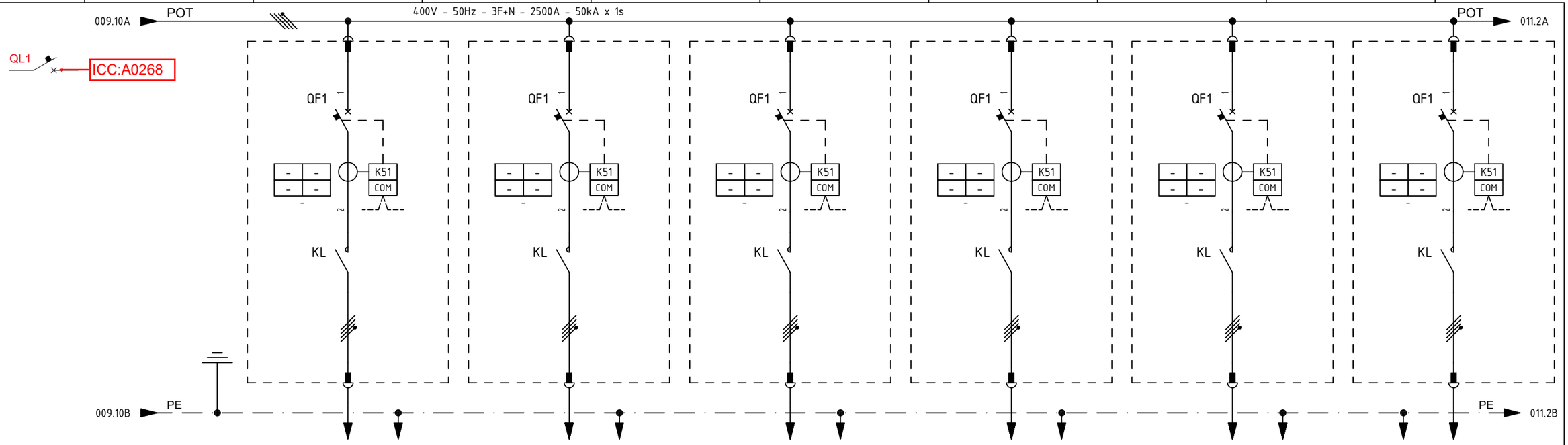
DRAWING NO. 1723002197-EL-DG-00011

SHEET 009

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00011 Rev. 03



ITEM			1	SPARE		B200-HSB-001		B300-HSB-001		B400-HSB-001		CN-200N1		SPARE	
UTILITY			2	SPARE		HVAC PANELS - LV ROOM		HVAC PANELS - UPS ROOM		HVAC PANELS - ITER		IMPRESSED CURR. CATHODIC PROTECTION (ICCP) SYSTEM		SPARE	
COLUMN/CUBICLE			3	A5 / +01		A5 / +02		A5 / +03		A5 / +04		A5 / +05		A5 / +06	
RATED POWER | RATED CURRENT			4/5	15 kW	24.0 A	18 kW	34.1 A	35,75 kW	61 A	35,75 kW	61 A	14 kVA	23.8 A	- kW	- A
TYPICAL FUNCTIONAL			6	LK1-40		LK1-40		LK1-63		LK1-63		LK1-40		LK1-40	
CIRCUIT BREAKER (ABB)	TYPE		7	XT2S - 160		XT2S - 160		XT2S - 160		XT2S - 160		XT2S - 160		XT2S - 160	
	VERSION		8	4P - FIXED		4P - FIXED		4P - FIXED		4P - FIXED		4P - FIXED		4P - FIXED	
	TRIP UNITS		9	EKIP HI TOUCH LSIG (In = 40A)		EKIP HI TOUCH LSIG (In = 40A)		EKIP HI TOUCH LSIG (In = 63A)		EKIP HI TOUCH LSIG (In = 63A)		EKIP HI TOUCH LSIG (In = 40A)		EKIP HI TOUCH LSIG (In = 40A)	
	Icu	KA	10	50 kA		50 kA		50 kA		50 kA		50 kA		50 kA	
OVERLOAD	L	Range A	11	(0.4 - 1) x In		(0.4 - 1) x In		(0.4 - 1) x In		(0.4 - 1) x In		(0.4 - 1) x In		(0.4 - 1) x In	
		Range t	12	k/I^2		k/I^2		k/I^2		k/I^2		k/I^2		k/I^2	
SEL. SHORT-CIRCUIT	S	Range A	13	(0.6 - 10) x In		(0.6 - 10) x In		(0.6 - 10) x In		(0.6 - 10) x In		(0.6 - 10) x In		(0.6 - 10) x In	
		Range t	14	0.05 - 0,4 sec / k/I^2		0.05 - 0,4 sec / k/I^2		0.05 - 0,4 sec / k/I^2		0.05 - 0,4 sec / k/I^2		0.05 - 0,4 sec / k/I^2		0.05 - 0,4 sec / k/I^2	
INST. SHORT-CIRCUIT	I	Range A	15	(1.5 - 15) x In		(1.5 - 15) x In		(1.5 - 15) x In		(1.5 - 15) x In		(1.5 - 15) x In		(1.5 - 15) x In	
		Range t	16	instantaneous		instantaneous		instantaneous		instantaneous		instantaneous		instantaneous	
EARTH FAULT PROTECTION	G	Range A	17	(0.1 - 1) x In		(0.1 - 1) x In		(0.1 - 1) x In		(0.1 - 1) x In		(0.1 - 1) x In		(0.1 - 1) x In	
		Range t	18	t=k / t=k/I^2		t=k / t=k/I^2		t=k / t=k/I^2		t=k / t=k/I^2		t=k / t=k/I^2		t=k / t=k/I^2	
CONTACTOR (ABB)			19	AF40-40-00-13 (70A-AC1); 100-250VAC/DC		AF40-40-00-13 (70A-AC1); 100-250VAC/DC		AF52-40-00-13 (100A-AC1); 100-250VAC/DC		AF52-40-00-13 (100A-AC1); 100-250VAC/DC		AF40-40-00-13 (70A-AC1); 100-250VAC/DC		AF40-40-00-13 (70A-AC1); 100-250VAC/DC	
THERMAL OVERLOAD RELAY (ABB)			20	-		-		-		-		-		-	
SURGE ARRESTER (DEHN)			21	-		-		-		-		-		-	
TOROIDAL CURRENT TRANSFORMER (FRER)			22	-		-		-		-		-		-	
FUSE HOLDER (ITALWEBER)			23	SUBSISTEM 83.00		SUBSISTEM 77.20		SUBSISTEM 77.30		SUBSISTEM 77.40		SUBSISTEM 83.60		SUBSISTEM 83.00	
INDIRECT PROTECTION (ABB)			24												
VOLTMETER			25												
CURRENT TRANSFORMER FOR MEASURE (FRER)	TYPE		26	-		-		-		-		-		-	
	PERFORMANCE/CLASS		27	-		-		-		-		-		-	
VOLTAGE TRANSFORMER FOR MEASURE (FRER)	TYPE		28	-		-		-		-		-		-	
	PERFORMANCE/CLASS		29	-		-		-		-		-		-	
LOCK-OUT RELAY (-)			30	-		-		-		-		-		-	
POWER CONDUCTOR		mmq	31	-		5G16		5G16		5G16		5G16		-	

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
3	08/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
2	03/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
1	28/03/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
0	15/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

DWG n° : 231298/SD/11
Item n° : PF1002983/26

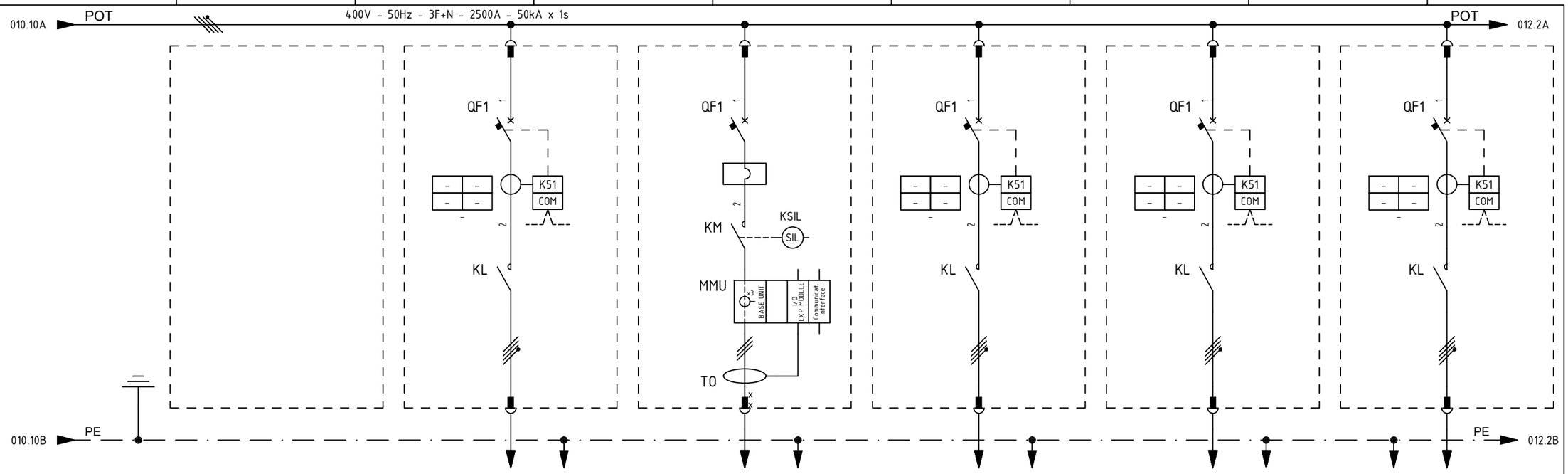
TITLE : "SG-200N1"
SINGLE LINE DIAGRAM
Single Line Drawing

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

A3 | DRAWING NO. 1723002197-EL-DG-00011 | SHEET 010 | REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00011 Rev. 03



ITEM				K-63001-B		PM-50001 B		CP-850E1		CP-850E2		-	
UTILITY			2	INSTRUMENTS AIR PACKAGE 01B		SEA WATER PUMP B		BESS LV1 CABINET (+DISTR 1)		BESS LV2 CABINET (+DISTR 2)		SPARE	
COLUMN/CUBICLE			3	A5 / +08		A6 / +01		A6 / +02		A6 / +03		A6 / +04	
RATED POWER | RATED CURRENT			4/5	68.75 kW	111.24 A	6.1 kW	11.0 A	11.28 kW	18.09 A	11.28 kW	18.09 A	- kW	- A
TYPICAL FUNCTIONAL			6	LK2-160		M1-6		LK1-40		LK1-40		LK1-40	
CIRCUIT BREAKER (ABB)	TYPE		7	XT4S - 250		XT2S - 160		XT2S - 160		XT2S - 160		XT2S - 160	
	VERSION		8	4P - FIXED		3P - FIXED		4P - FIXED		4P - FIXED		4P - FIXED	
	TRIP UNITS		9	EKIP HI TOUCH LSIG (In = 160A)		MA (In = 20A)		EKIP HI TOUCH LSIG (In = 40A)		EKIP HI TOUCH LSIG (In = 40A)		EKIP HI TOUCH LSIG (In = 40A)	
	Icu	KA	10	50 kA		-		50 kA		50 kA		50 kA	
OVERLOAD	L	Range A	11	(0.4 - 1) x In		-		(0.4 - 1) x In		(0.4 - 1) x In		(0.4 - 1) x In	
		Range t	12	k/I^2		-		k/I^2		k/I^2		k/I^2	
SEL. SHORT-CIRCUIT	S	Range A	13	(0.6 - 10) x In		-		(0.6 - 10) x In		(0.6 - 10) x In		(0.6 - 10) x In	
		Range t	14	0.05 - 0.4 sec / k/I^2		-		0.05 - 0,4 sec / k/I^2		0.05 - 0,4 sec / k/I^2		0.05 - 0,4 sec / k/I^2	
INST. SHORT-CIRCUIT	I	Range A	15	(1.5 - 15) x In		(6 - 14) x I		(1.5 - 15) x In		(1.5 - 15) x In		(1.5 - 15) x In	
		Range t	16	instantaneous		<= 0.02 sec		instantaneous		instantaneous		instantaneous	
EARTH FAULT PROTECTION	G	Range A	17	(0.1 - 1) x In		-		(0.1 - 1) x In		(0.1 - 1) x In		(0.1 - 1) x In	
		Range t	18	t=k / t=k/I^2		-		t=k / t=k/I^2		t=k / t=k/I^2		t=k / t=k/I^2	
CONTACTOR (ABB)			19	AF190-40-11-13 (275A-AC1); 100-250 VAC/DC		AF38-30-00-13 (18.5 kW - AC3) - 100-250Vac/dc		AF40-40-00-13 (70A-AC1); 100-250VAC/DC		AF40-40-00-13 (70A-AC1); 100-250VAC/DC		AF40-40-00-13 (70A-AC1); 100-250VAC/DC	
THERMAL OVERLOAD RELAY (ABB)			20	-		UMC100.3 UC (0.24 - 63A)		-		-		-	
SURGE ARRESTER (DEHN)			21	-		-		-		-		-	
TOROIDAL CURRENT TRANSFORMER (FRER)			22	-		-		-		-		-	
FUSE HOLDER (ITALWEBER)			23	SUBSISTEM 63.00		SUBSISTEM 50.00		SUBSISTEM 85.00		SUBSISTEM 85.00		SUBSISTEM 83.00	
INDIRECT PROTECTION (ABB)			24										
VOLTMETER			25										
CURRENT TRANSFORMER FOR MEASURE (FRER)	TYPE		26	-		-		-		-		-	
	PERFORMANCE/CLASS		27	-		-		-		-		-	
VOLTAGE TRANSFORMER FOR MEASURE (FRER)	TYPE		28	-		-		-		-		-	
	PERFORMANCE/CLASS		29	-		-		-		-		-	
LOCK-OUT RELAY (-)			30	-		-		-		-		-	
POWER CONDUCTOR		mmq	31	5G70		4G4		4 x (1 x 10)		4 x (1 x 10)		-	

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
3	08/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
2	03/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
1	28/03/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
0	15/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

DWG n° : 231298/SD/11
Item n° : PF1002983/26

IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200N1"

SINGLE LINE DIAGRAM

Single Line Drawing

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

SCALE : NTS

A3

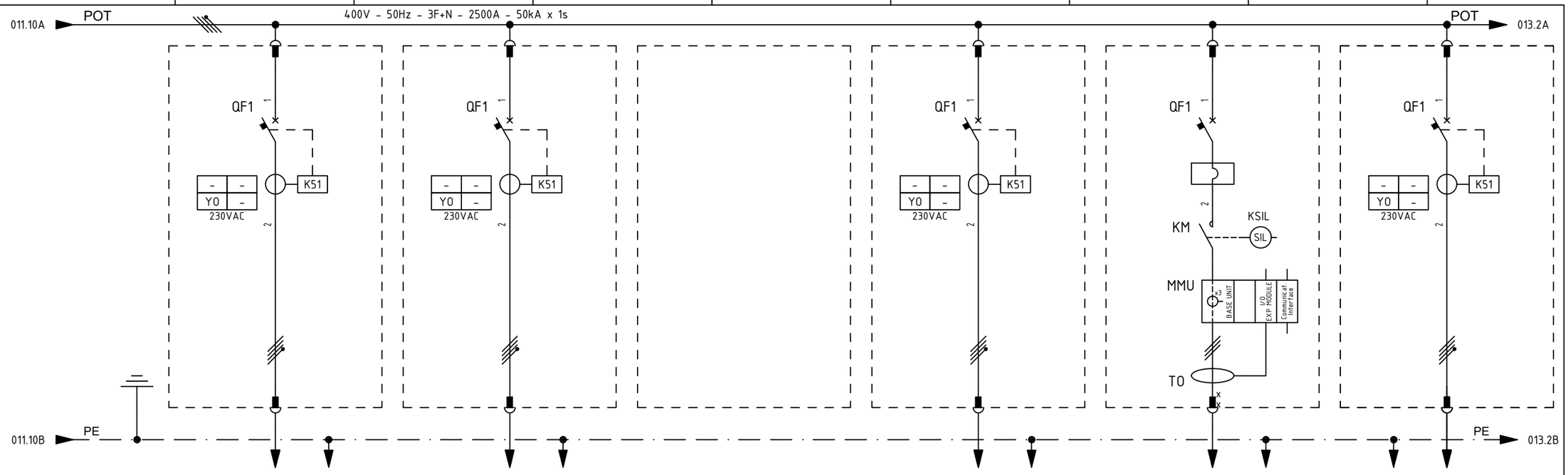
DRAWING NO. 1723002197-EL-DG-00011

SHEET 011

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00011 Rev. 03



ITEM			1	UP-200F4	UP-200F4		ESW-200N1	PM-50001 A	UP-200F3
UTILITY			2	AC UPS F&G - 8 H UP-200F4 - LINE A	AC UPS F&G - 8h UP-200F4 - LINE B		WELDING SOCKETS (TOP DECK)	SEA WATER PUMP A	AC UPS PAS - 30 min. UP-200F3 - BYPASS
COLUMN/CUBICLE			3	A6 / +05	A6 / +06		A6 / +08	A7 / +01	A7 / +02
RATED POWER | RATED CURRENT			4/5	18 kW | 28.9 A	18 kW | 28.9 A		69.84 kW | 126.15 A	6.1 kW | 11.0 A	36 kW | 57.8 A
TYPICAL FUNCTIONAL			6	L1-63	L1-63		L2-160	M1-6	L1-100
CIRCUIT BREAKER (ABB)	TYPE		7	XT2S - 160	XT2S - 160		XT4S - 250	XT2S - 160	XT2S - 160
	VERSION		8	4P - FIXED	4P - FIXED		4P - FIXED	3P - FIXED	4P - FIXED
	TRIP UNITS		9	EKIP DIP LSIG (In = 63A)	EKIP DIP LSIG (In = 63A)		EKIP DIP LSIG (In = 160A)	MA (In = 20A)	EKIP DIP LSIG (In = 100A)
	Icu	KA	10	50 kA	50kA		50kA	-	50 kA
OVERLOAD	L	Range A	11	(0.4 - 1) x In	(0.4 - 1) x In		(0.4 - 1) x In	-	(0.4 - 1) x In
		Range t	12	k/I^2	k/I^2		k/I^2	-	k/I^2
SEL. SHORT-CIRCUIT	S	Range A	13	(1 - 10) x In	(1 - 10) x In		(1 - 10) x In	-	(1 - 10) x In
		Range t	14	0.05 - 0.4 sec / k/I^2	0.05 - 0.4 sec / k/I^2		0.05 - 0.4 sec / k/I^2	-	0.05 - 0.4 sec / k/I^2
INST. SHORT-CIRCUIT	I	Range A	15	(1 - 10) x In	(1 - 10) x In		(1 - 10) x In	(6 - 14) x I	(1 - 10) x In
		Range t	16	<= 0.02 sec	<= 0.02 sec		<= 0.02 sec	<= 0.02 sec	<= 0.02 sec
EARTH FAULT PROTECTION	G	Range A	17	(0.2 - 1) x In	(0.2 - 1) x In		(0.2 - 1) x In	-	(0.2 - 1) x In
		Range t	18	0.1 - 0.8 sec	0.1 - 0.8 sec		0.1 - 0.8 sec	-	0.1 - 0.8 sec
CONTACTOR (ABB)			19	-	-		-	AF38-30-00-13 (18.5 kW - AC3) - 100-250Vac/dc	-
THERMAL OVERLOAD RELAY (ABB)			20	-	-		-	UMC100.3 UC (0.24 - 63A)	-
SURGE ARRESTER (DEHN)			21	-	-		-	-	-
TOROIDAL CURRENT TRANSFORMER (FRER)			22	-	-		-	-	-
FUSE HOLDER (ITALWEBER)			23	SUBSISTEM 84.20	SUBSISTEM 84.20		SUBSISTEM 83.50	SUBSISTEM 50.00	SUBSISTEM 84.10
INDIRECT PROTECTION (ABB)			24						
VOLTMETER			25						
CURRENT TRANSFORMER FOR MEASURE (FRER)	TYPE		26	-	-		-	-	-
	PERFORMANCE/CLASS		27	-	-		-	-	-
VOLTAGE TRANSFORMER FOR MEASURE (FRER)	TYPE		28	-	-		-	-	-
	PERFORMANCE/CLASS		29	-	-		-	-	-
LOCK-OUT RELAY (-)			30	-	-		-	-	-
POWER CONDUCTOR		mmq	31	4G35	4G35		5G50	4G4	4G35

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DWG n° : 231298/SD/11
Item n° : PF1002983/26

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
3	08/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
2	03/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
1	28/03/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
0	15/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200N1"

SINGLE LINE DIAGRAM

Single Line Drawing

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

SCALE : NTS

A3

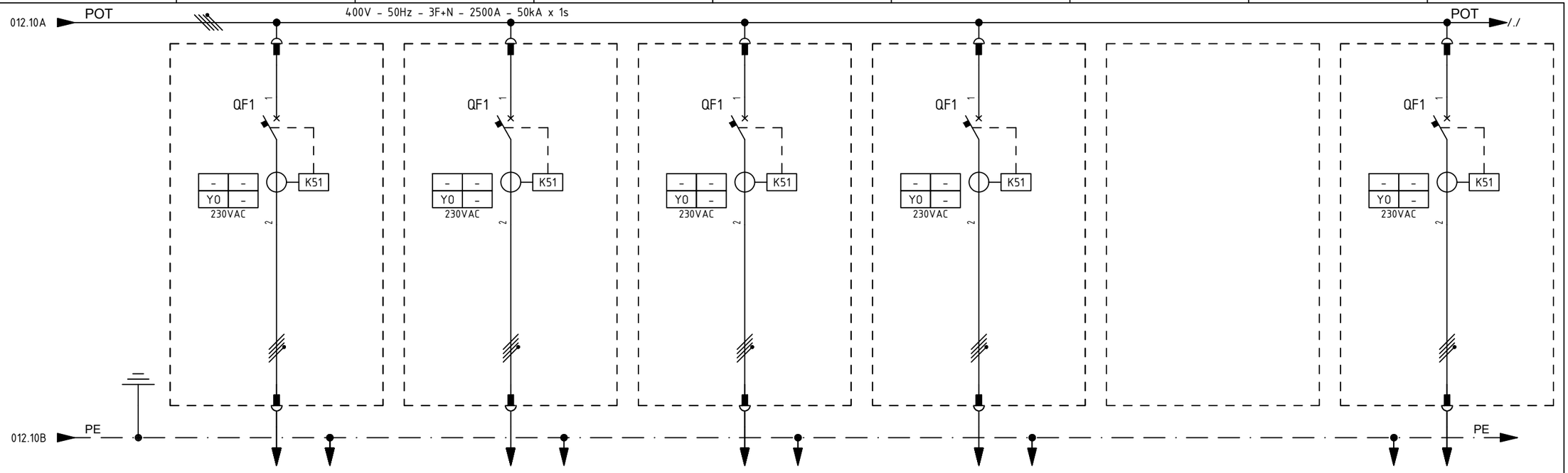
DRAWING NO. 1723002197-EL-DG-00011

SHEET 012

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00011 Rev. 03



ITEM			1	UP-200F1	UP-200F1	UP-200F2	UP-200F2		ESW-200N2
UTILITY			2	DC BATTERY SYSTEM SWTG CONTROL - FEEDER A	DC BATTERY SYSTEM SWTG CONTROL - FEEDER B	NAVAID SYSTEM FEEDER A	NAVAID SYSTEM FEEDER B		WELDING SOCKETS (LOWER DECK)
COLUMN/CUBICLE			3	A7 / +03	A7 / +04	A7 / +05	A7 / +06		A7 / +08
RATED POWER | RATED CURRENT			4/5	10 kW | 16 A	10 kW | 16 A	1.6 kVA | 7 A	1.6 kVA | 7 A		69.84 kW | 126.15 A
TYPICAL FUNCTIONAL			6	L1-63	L1-63	L1-10	L1-10		L2-160
CIRCUIT BREAKER (ABB)	TYPE		7	XT2S - 160	XT2S - 160	XT2S - 160	XT2S - 160		XT4S - 250
	VERSION		8	4P - FIXED	4P - FIXED	4P - FIXED	4P - FIXED		4P - FIXED
	TRIP UNITS		9	EKIP DIP LSIG (In = 63A)	EKIP DIP LSIG (In = 63A)	EKIP DIP LSIG (In = 63A)	EKIP DIP LSIG (In = 63A)		EKIP DIP LSIG (In = 160A)
	Icu KA		10	50kA	50kA	50kA	50kA		50kA
OVERLOAD	L	Range A	11	(0.4 - 1) x In	(0.4 - 1) x In	(0.4 - 1) x In	(0.4 - 1) x In		(0.4 - 1) x In
		Range t	12	k/I^2	k/I^2	k/I^2	k/I^2		k/I^2
SEL. SHORT-CIRCUIT	S	Range A	13	(1 - 10) x In	(1 - 10) x In	(1 - 10) x In	(1 - 10) x In		(1 - 10) x In
		Range t	14	0.05 - 0.4 sec / k/I^2	0.05 - 0.4 sec / k/I^2	0.05 - 0.4 sec / k/I^2	0.05 - 0.4 sec / k/I^2		0.05 - 0.4 sec / k/I^2
INST. SHORT-CIRCUIT	I	Range A	15	(1 - 10) x In	(1 - 10) x In	(1 - 10) x In	(1 - 10) x In		(1 - 10) x In
		Range t	16	<= 0.02 sec	<= 0.02 sec	<= 0.02 sec	<= 0.02 sec		<= 0.02 sec
EARTH FAULT PROTECTION	G	Range A	17	(0.2 - 1) x In	(0.2 - 1) x In	(0.2 - 1) x In	(0.2 - 1) x In		(0.2 - 1) x In
		Range t	18	0.1 - 0.8 sec	0.1 - 0.8 sec	0.1 - 0.8 sec	0.1 - 0.8 sec		0.1 - 0.8 sec
CONTACTOR (ABB)			19	-	-	-	-		-
THERMAL OVERLOAD RELAY (ABB)			20	-	-	-	-		-
SURGE ARRESTER (DEHN)			21	-	-	-	-		-
TOROIDAL CURRENT TRANSFORMER (FRER)			22	-	-	-	-		-
FUSE HOLDER (ITALWEBER)			23	SUBSISTEM 84.00	SUBSISTEM 84.00	SUBSISTEM 72.00	SUBSISTEM 72.00		SUBSISTEM 83.50
INDIRECT PROTECTION (ABB)			24						
VOLTMETER			25						
CURRENT TRANSFORMER FOR MEASURE (FRER)	TYPE		26	-	-	-	-		-
	PERFORMANCE/CLASS		27	-	-	-	-		-
VOLTAGE TRANSFORMER FOR MEASURE (FRER)	TYPE		28	-	-	-	-		-
	PERFORMANCE/CLASS		29	-	-	-	-		-
LOCK-OUT RELAY (-)			30	-	-	-	-		-
POWER CONDUCTOR mmq			31	4G16	4G16	3G16	3G16		5G50

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DWG n° : 231298/SD/11

Item n° : PF1002983/26

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
3	08/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
2	03/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
1	28/03/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
0	15/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200N1"

SINGLE LINE DIAGRAM

Single Line Drawing

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

SCALE : NTS

A3

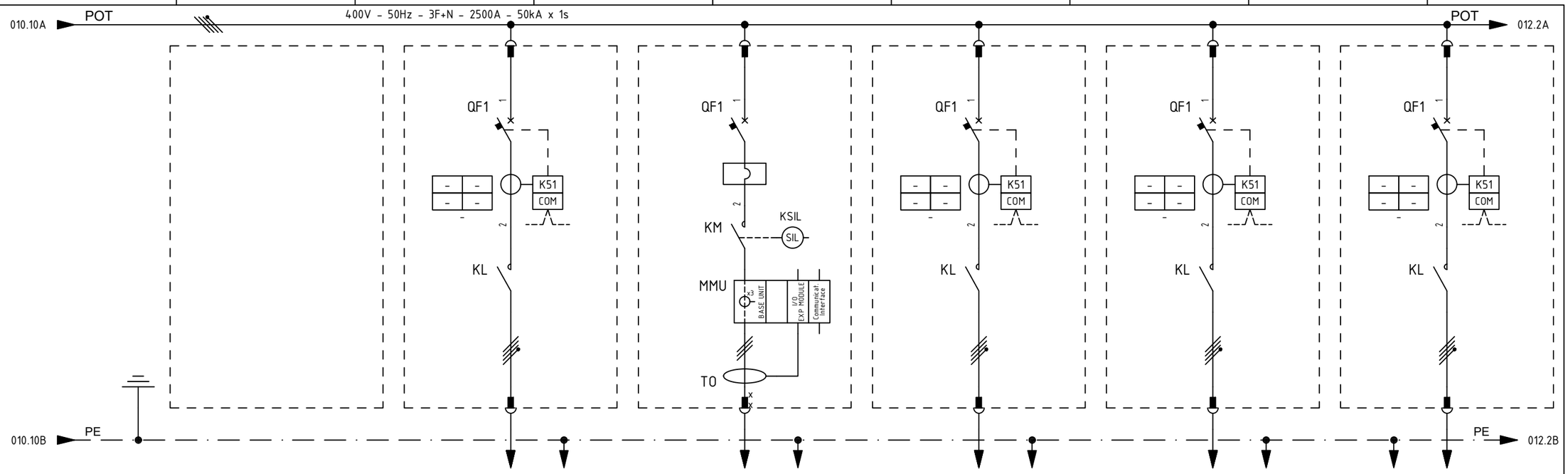
DRAWING NO. 1723002197-EL-DG-00011

SHEET 013

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00011 Rev. 03



ITEM				K-63001-B		PM-50001 B		CP-850E1		CP-850E2		-	
UTILITY			2	INSTRUMENTS AIR PACKAGE 01B		SEA WATER PUMP B		BESS LV1 CABINET (+DISTR 1)		BESS LV2 CABINET (+DISTR 2)		SPARE	
COLUMN/CUBICLE			3	A5 / +08		A6 / +01		A6 / +02		A6 / +03		A6 / +04	
RATED POWER | RATED CURRENT			4/5	68.75 kW	111.24 A	6.1 kW	11.0 A	11.28 kW	18.09 A	11.28 kW	18.09 A	- kW	- A
TYPICAL FUNCTIONAL			6	LK2-160		M1-6		LK1-40		LK1-40		LK1-40	
CIRCUIT BREAKER (ABB)	TYPE		7	XT4S - 250		XT2S - 160		XT2S - 160		XT2S - 160		XT2S - 160	
	VERSION		8	4P - FIXED		3P - FIXED		4P - FIXED		4P - FIXED		4P - FIXED	
	TRIP UNITS		9	EKIP HI TOUCH LSIG (In = 160A)		MA (In = 20A)		EKIP HI TOUCH LSIG (In = 40A)		EKIP HI TOUCH LSIG (In = 40A)		EKIP HI TOUCH LSIG (In = 40A)	
	Icu	KA	10	50 kA		-		50 kA		50 kA		50 kA	
OVERLOAD	L	Range A	11	(0.4 - 1) x In		-		(0.4 - 1) x In		(0.4 - 1) x In		(0.4 - 1) x In	
		Range t	12	k/I^2		-		k/I^2		k/I^2		k/I^2	
SEL. SHORT-CIRCUIT	S	Range A	13	(0.6 - 10) x In		-		(0.6 - 10) x In		(0.6 - 10) x In		(0.6 - 10) x In	
		Range t	14	0.05 - 0.4 sec / k/I^2		-		0.05 - 0,4 sec / k/I^2		0.05 - 0,4 sec / k/I^2		0.05 - 0,4 sec / k/I^2	
INST. SHORT-CIRCUIT	I	Range A	15	(1.5 - 15) x In		(6 - 14) x I		(1.5 - 15) x In		(1.5 - 15) x In		(1.5 - 15) x In	
		Range t	16	instantaneous		<= 0.02 sec		instantaneous		instantaneous		instantaneous	
EARTH FAULT PROTECTION	G	Range A	17	(0.1 - 1) x In		-		(0.1 - 1) x In		(0.1 - 1) x In		(0.1 - 1) x In	
		Range t	18	t=k / t=k/I^2		-		t=k / t=k/I^2		t=k / t=k/I^2		t=k / t=k/I^2	
CONTACTOR (ABB)			19	AF190-40-11-13 (275A-AC1); 100-250 VAC/DC		AF38-30-00-13 (18.5 kW - AC3) - 100-250Vac/dc		AF40-40-00-13 (70A-AC1); 100-250VAC/DC		AF40-40-00-13 (70A-AC1); 100-250VAC/DC		AF40-40-00-13 (70A-AC1); 100-250VAC/DC	
THERMAL OVERLOAD RELAY (ABB)			20	-		UMC100.3 UC (0.24 - 63A)		-		-		-	
SURGE ARRESTER (DEHN)			21	-		-		-		-		-	
TOROIDAL CURRENT TRANSFORMER (FRER)			22	-		-		-		-		-	
FUSE HOLDER (ITALWEBER)			23	SUBSISTEM 63.00		SUBSISTEM 50.00		SUBSISTEM 85.00		SUBSISTEM 85.00		SUBSISTEM 83.00	
INDIRECT PROTECTION (ABB)			24										
VOLTMETER			25										
CURRENT TRANSFORMER FOR MEASURE (FRER)	TYPE		26	-		-		-		-		-	
	PERFORMANCE/CLASS		27	-		-		-		-		-	
VOLTAGE TRANSFORMER FOR MEASURE (FRER)	TYPE		28	-		-		-		-		-	
	PERFORMANCE/CLASS		29	-		-		-		-		-	
LOCK-OUT RELAY (-)			30	-		-		-		-		-	
POWER CONDUCTOR		mmq	31	5G70		4G4		4 x (1 x 10)		4 x (1 x 10)		-	

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
3	08/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
2	03/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
1	28/03/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
0	15/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

DWG n° : 231298/SD/11
Item n° : PF1002983/26

IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200N1"

SINGLE LINE DIAGRAM

Single Line Drawing

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00011

SHEET 011

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00011 Rev. 03

Section 4 MECHANICAL COMPLETION STATUS INDEX - BUILDING DISCIPLINE

NOT APPLICABLE

Section 5 MECHANICAL COMPLETION STATUS INDEX - ELECTRICAL DISCIPLINE

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 83-00 & process: MC & discipline : E

Electrical	83-00 400 V Switchboard & Connection Box (SG-200N1)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
83010-CEL-E	LV Switchgear / Temporary Generator / Mobile Battery Pack	ONSHORE	C10002416	CPX09	100	2024-12-02	RFC 2
83010-CEL-L1	LV Switchgear / Temporary Generator / Mobile Battery Pack	ONSHORE	C10000517	CPX09	100	2024-12-02	RFC 2
83010-CEL-L2	LV Switchgear / Temporary Generator / Mobile Battery Pack	ONSHORE	C10000518	CPX09	100	2024-12-02	RFC 2
83010-CEL-L3	LV Switchgear / Temporary Generator / Mobile Battery Pack	ONSHORE	C10000519	CPX09	100	2024-12-02	RFC 2
83010-CEL-N	LV Switchgear / Temporary Generator / Mobile Battery Pack	ONSHORE	C10000520	CPX09	100	2024-12-02	RFC 2
83120-CEL	Lighting & Small Power DB BoP / Auxiliary LV	ONSHORE	C10000639	CPX09	100	2024-11-23	RFC 2
84318-CEL	AC UPS - PAS DB / LV Switchboard Auxiliary	ONSHORE	C10002114	CPX09	100	2024-11-26	RFC 2
JB-200E2	Temporary Generator / Mobile Battery Pack	ONSHORE	C10001223	CPX31	100	2024-12-02	RFC 2
SG-200N1	LV 0,4 kV MCC Switchgear	ONSHORE	C10000866	CPX05	100	2024-09-12	RFC 1

ITEM	Tag	83010-CEL-L1	: LV Switchgear / Temporary Generator / Mobile Battery Pack			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-00	: 400 V Switchboard & Connection Box (SG-200N1)			Module	LD_B-200/LD_B-200_Ext
TASK	code	C10000517		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

CABLE DATA

Type	Cu Cl.2/EPR/LSZH	Cores/Size mm²	1X95 mm2	Color	GREY
From	SG-200N1	To	JB-200E2		

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

ITEM	Tag	83010-CEL-L1	: LV Switchgear / Temporary Generator / Mobile Battery Pack			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-00	: 400 V Switchboard & Connection Box (SG-200N1)			Module	LD_B-200/LD_B-200_Ext
TASK	code	C10000517		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

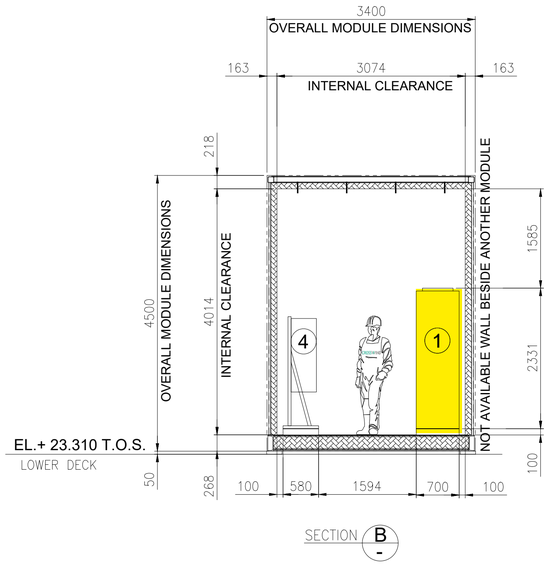
CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0,2	
6		PH 2	NA	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		NA	
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	NA	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

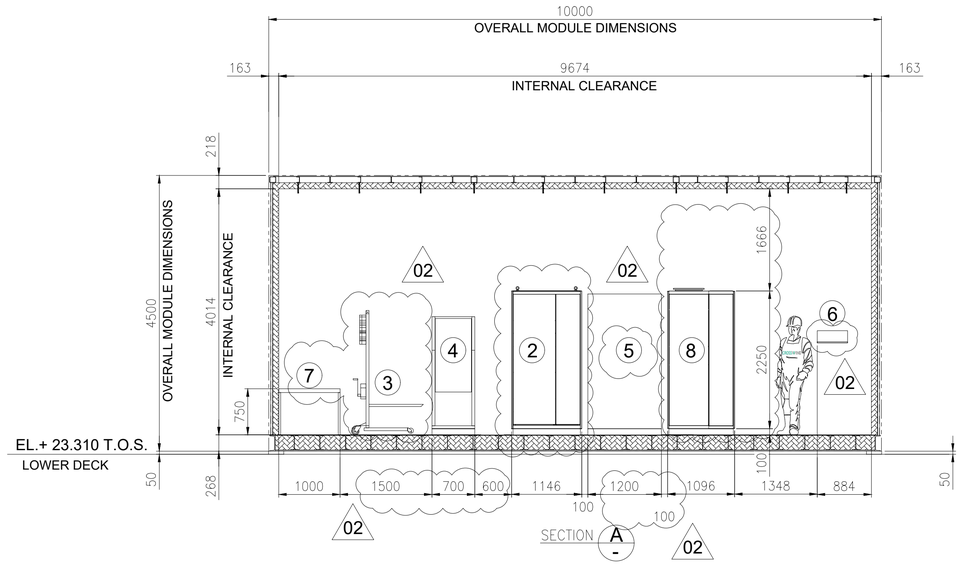
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	KEW3125A/ Serial:W8330207	TYPE / SERIAL N° :	Fluke/Serial:AW1/08(17140769)
Calibration certificate N° and date:	7722/24Date:10/07/24	Calibration certificate N° and date:	7715/24 date:10/07/24

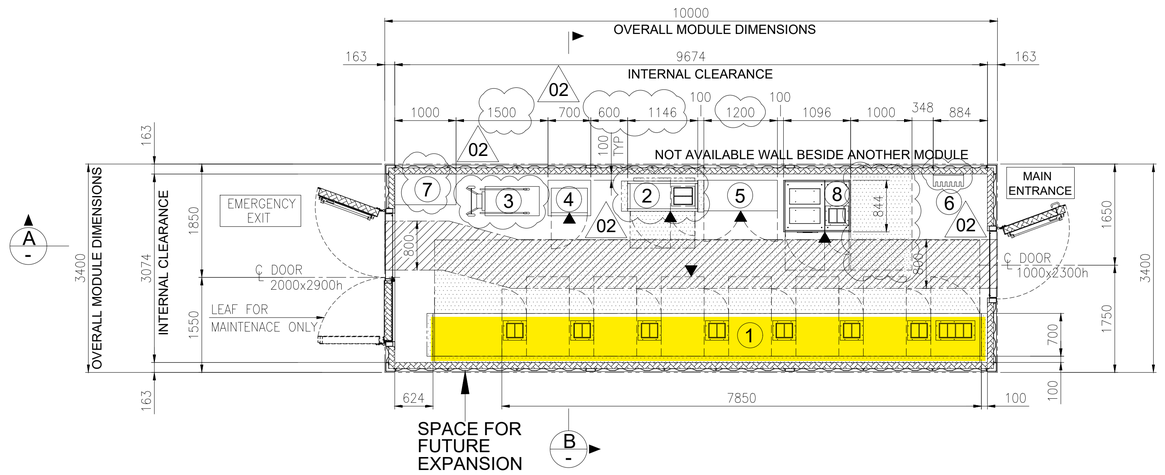
Comments: Nota 4: refer to PL C30000679

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Giovanni Tangianu	
Date	2024-12-02	2024-12-02	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-02T12:58:57.839Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-12-02T16:32:37.646Z	

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





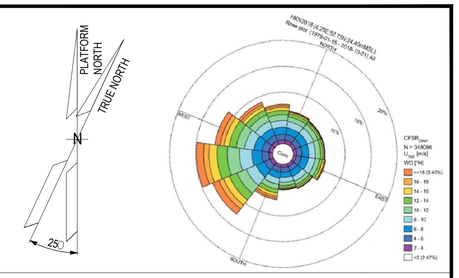


EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

1

EQUIPMENT LIST

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



NOTES

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

02

LEGEND

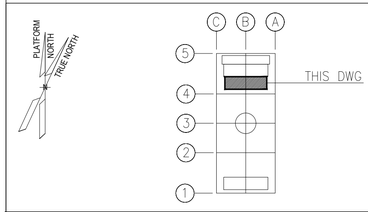
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

REFERENCES

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

02

KEY PLAN



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

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

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

ROSETTI MARINO SpA

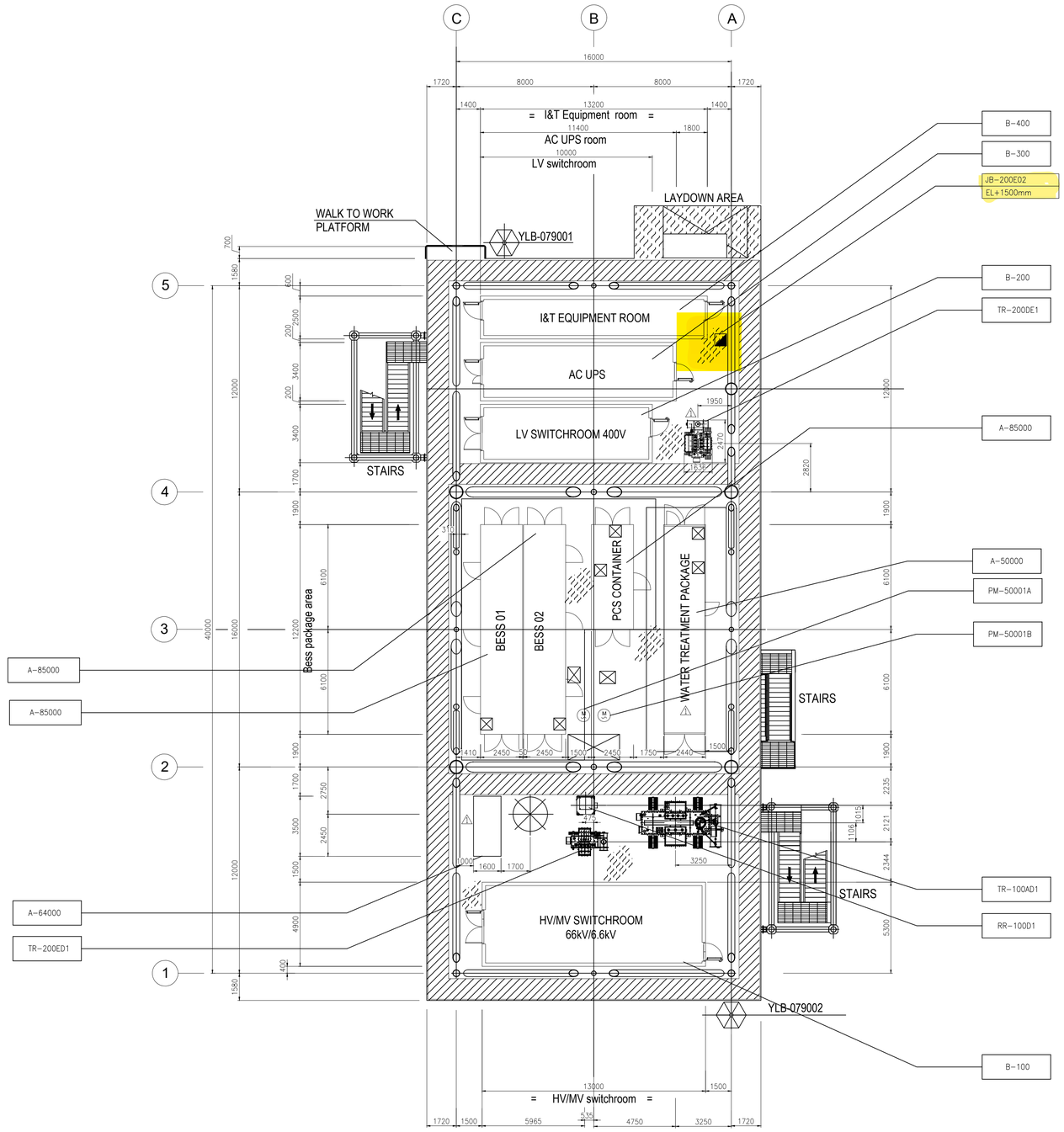
CROSSWIND

ROSETTI MARINO

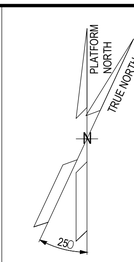
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LV SWITCHROOM

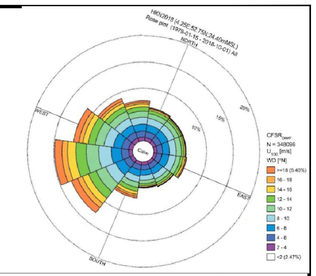
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN FMO	CHECKED LMA/AMA	APPROVED LMA/MDO	DATE 27/05/2024
A1	DRAWING NO. 123A90-DDL-EL-DL-20105	SHEET 001	REV. 02

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



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

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)

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

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

ROSETTI MARINO SpA

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

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

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

FROM	TO

DESCRIPTION: LV Switchgear
TAG NUMBER: SG-200N1

COLUMN/CUBIC.: A2/~~+08~~ +02

L1	BK	83010-CEL-L1	1C X 95 mm²
L2	BK	83010-CEL-L2	1C X 95 mm²
L3	BK	83010-CEL-L3	1C X 95 mm²
N	BK	83010-CEL-N	1C X 95 mm²
PE	Y/G	83010-CEL-E	1C X 95 mm²

P.E. BUS BAR

DESCRIPTION: TEMPORARY GENERATOR / MOBILE BATTERY PACK
TAG NUMBER: JB-200E2

BK	L1	
BK	L2	
BK	L3	INCOMING FROM LV SWITCHGEAR SG-200N1
BK	N	
Y/G	PE	

P.E. BUS BAR

COLUMN/CUBIC.: A1/+08

L1	BK	83013-CEL-L1	1C X 300 mm²
L2	BK	83013-CEL-L2	1C X 300 mm²
L3	BK	83013-CEL-L3	1C X 300 mm²
N	BK	83013-CEL-N	1C X 300 mm²
PE	Y/G	83013-CEL-E	1C X 150 mm²

P.E. BUS BAR

DESCRIPTION: ELECTROLYSER AUXILIARY LOAD
TAG NUMBER: A-20000

BK	L1	
BK	L2	
BK	L3	
BK	N	
Y/G	PE	

P.E. BUS BAR

COLUMN/CUBIC.: A4/+03

L1	BN	83012-CEL	5G16 mm²
L2	BK		
L3	GY		
N	BU		
	Y/G		
	PE		

P.E. BUS BAR

DESCRIPTION: FUEL CELL AUXILIARY LOAD
TAG NUMBER: A-80000

-XB01

BN	1	L1	
BK	2	L2	
GY	3	L3	
BU	4	N	
Y/G	5	PE	Y/G

PE

P.E. BUS BAR

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

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

ROSETTI MARINO SpA

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

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
LV SWITCHGEAR SG-200N1

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

SCALE : 1:X

A3

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

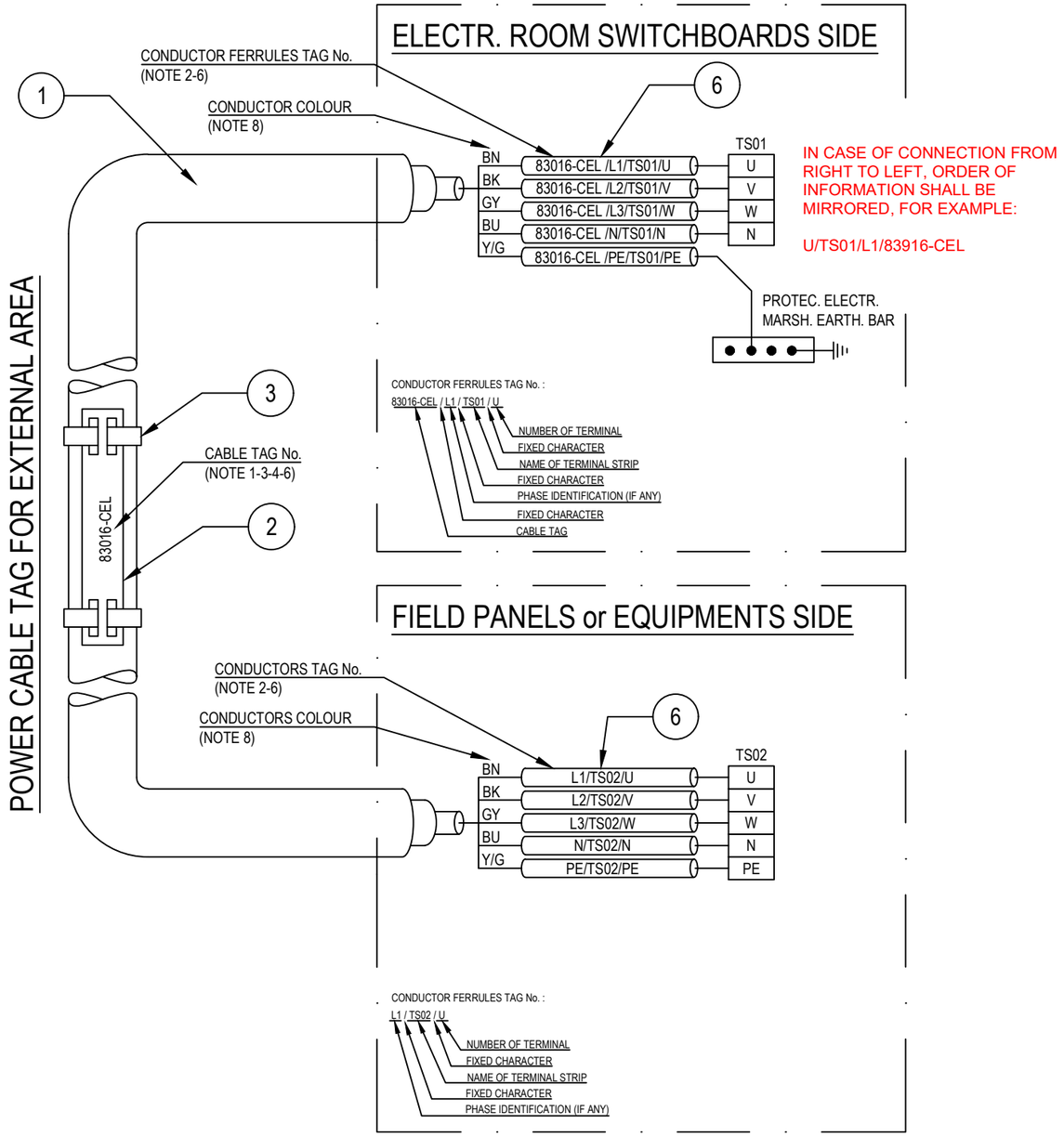
SHEET 021

REV. 02

F.to UNI A3: 420mmx297mm

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

C02



POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	UNARMOURED CABLE				
2	CABLE TAG FOR EXTERNAL AREA	HDG/SS			NOTE 1 NOTE 4
3	TIE FOR CABLE TAG IN EXTERNAL AREA	HDG/SS			
4	CABLE TAG FOR INTERNAL AREA	PVC			NOTE 1 NOTE 5
5	TIE FOR CABLE TAG IN INTERNAL AREA	NYLON 6.6			
6	CORE FERRULES	PVC			

NOTES:

1) ALL CABLES SHALL BE IDENTIFIED AT EACH TERMINATION AND EACH SIDE OF ANY OBSTACLE (E.G. CABLE TRANSIT ON WALLS INSIDE SHELTER AND FLOOR DECK CROSSING, BY THEIR RESPECTIVE TAGS/NUMBERS, AS INDICATED ON THE CABLE SCHEDULE.
CABLE IDENTIFICATION SHALL BE ALSO DONE BELOW AND IN THE SWITCHBOARD CABLE COMPARTMENT.

2) CABLE CORE FERRULES SHALL BE FITTED AT EVERY TERMINATION. THESE FERRULES SHALL BE OF ENGRAVED PLASTIC SLIP ON, INTERLOCKED AND SELF GRIP TYPE.

3) ON CABLE TRAYS OR LADDERS, CABLES SHALL BE IDENTIFIED AT EACH END, AND EVERY 25 METERS.

4) THE CABLE TAG FOR EXTERNAL AREA SHALL DONE BY 316L STAINLESS STEEL LABELS, TAG (H=5mm) SHALL BE LASER PRINTED PREFERABLY OR EMBOSSED, LABEL HELD BY TWO 316L STAINLESS STEEL TIES.

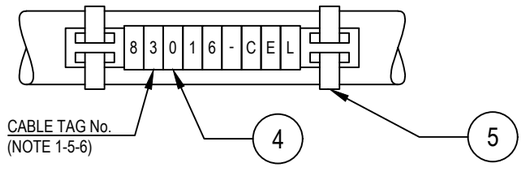
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

6) CABLE AND CONDUCTOR TAG ARE INDICATIVE ONLY.

7) WITHIN TECHNICAL BUILDING, PROTECTIVE CONDUCTOR SHALL BE TAGGED BETWEEN FOLLOWING ITEMS:
- PANEL (SWITCHBOARD, SWITCHGEAR, DISTRIBUTION BOARD, ETC) AND EARTH BAR
- EARTH BAR AND EARTH BOSS

8) ONLY IF NECESSARY, SHRINK TUBES OF THE APPROPRIATE COLOR WILL BE INSTALLED TO COVER THE WRONG CONDUCTOR COLOR, THIS WILL BE PERFORMED IN EACH SIDE OF THE CABLES WHERE NECESSARY.

POWER CABLE TAG FOR INTERNAL AREA



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

REV.:	DATE:	SIGNATURE:
2_B	28/11/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	28/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	04/07/24	NLK	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-POWER SYSTEM & CABLE INSTALLATION
CABLES INSTALLATION SYSTEM IDENTIFICATION FOR POWER CABLES

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

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-EL-DD-20092	007	02

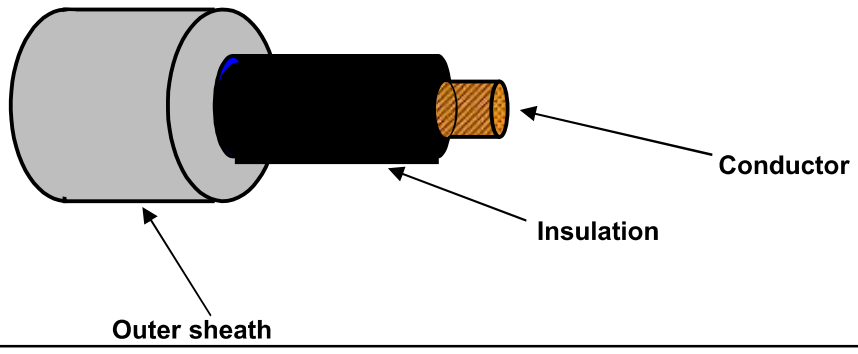
F.to UNI A3: 420mmx297mm

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

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	To Tag	To Main Function	To Area	Material ID	Material Desc.	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
83010-CEL-L1	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						SG-200N1	LV 0,4 kV MCC Switchgear	Lower Deck (B-200)	JB-200E2	Temporary Generator / Mobile Battery Pack JB	Lower Deck (B-200) Ext.	ELECV02-1X95	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 1Cx95mm² - Grey	n.a.			T1_M25_Single				L-450-101-LVT-023 / L-600-101-LVT-017 / L-600-101-LVT-019 / L-600-101-LVT-020 / E-MCT-204 / L-600-101-LVT-010 / L-750-101-LVT-015 / L-300-101-LVT-096

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

1CX95 - L.V. POWER CABLE - Flame Retardant



TECHNICAL FEATURES

Conductor :	**STRANDED COMPACTED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	EPR compound, quality to IEC 60092.360, Nominal Thickness 1,6 mm	
Core colour code :	**Black**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not Required	
Total Assembling :	Not Required	
Overall Wrapping:	Not required	
Drain wire :	Not required	
Overall Shield:	Not required	
Inner covering :	Not required	
Inner covering color code:	Not required	
Armour :	Not required	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,3 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 1CX95 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 - Year of Manufacture - CE + Meter Marking**	
Outer diameter :	(17,3 ± 10%) mm	
Bending radius :	cable outer diameter x 10	(in fixed installation)
Spark test :	12 kV a.c.	(on insulation)
	10 kV a.c.	(on outer sheath)
Conductors DC Resistance :		IEC 60228 Class 2
Insulation Resistance :	≥ 400 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.353**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance	IEC 61034.2 (LT ≥ 60%)	
Temperature Range :		
ON INSULATION	(max +90°C)	(max continuous operation temperature of conductors)
	(max +250°C)	(max conductors temperature during short-circuit for 5 seconds)
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C)	(in fixed installation)
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Outer sheath together with correct ATEX approved equipment or accessories.**	

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

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

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

ITEM	Tag	83010-CEL-L2	: LV Switchgear / Temporary Generator / Mobile Battery Pack			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-00	: 400 V Switchboard & Connection Box (SG-200N1)			Module	LD_B-200/LD_B-200_Ext
TASK	code	C10000518		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

CABLE DATA

Type: Cu Cl.2/EPR/LSZH | Cores/Size mm²: 1X95 mm2 | Color: GREY

From: SG-200N1 | To: JB-200E2

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

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	83010-CEL-L2	: LV Switchgear / Temporary Generator / Mobile Battery Pack			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-00	: 400 V Switchboard & Connection Box (SG-200N1)			Module	LD_B-200/LD_B-200_Ext
TASK	code	C10000518		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

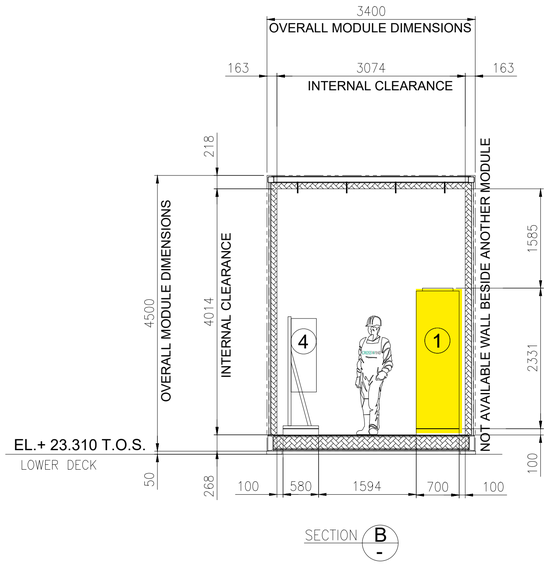
CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0,3	
6		PH 2	NA	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		NA	
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	NA	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

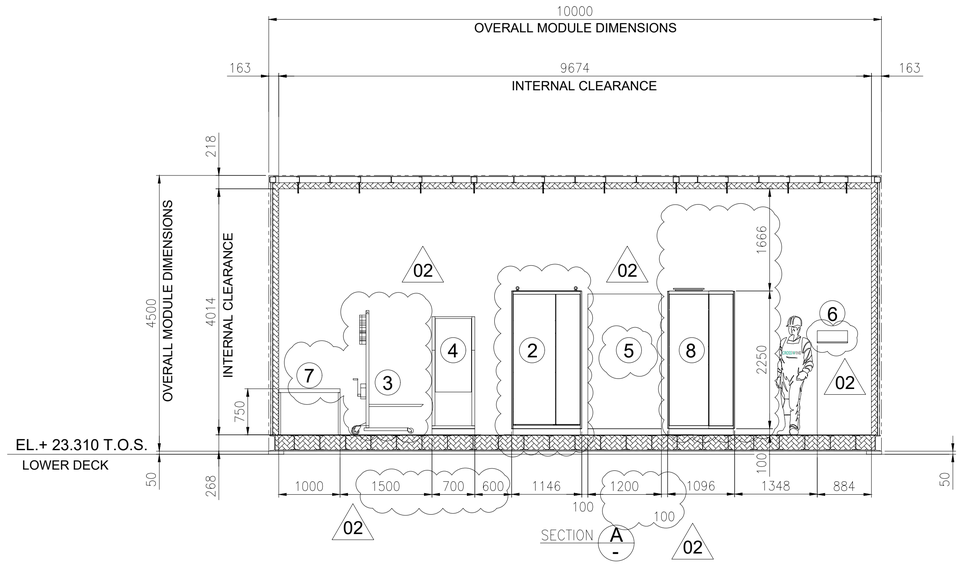
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	KEW3125A/ Serial:W8330207	TYPE / SERIAL N° :	Fluke/Serial:AW1/08(17140769)
Calibration certificate N° and date:	7722/24Date:10/07/24	Calibration certificate N° and date:	7715/24 date:10/07/24

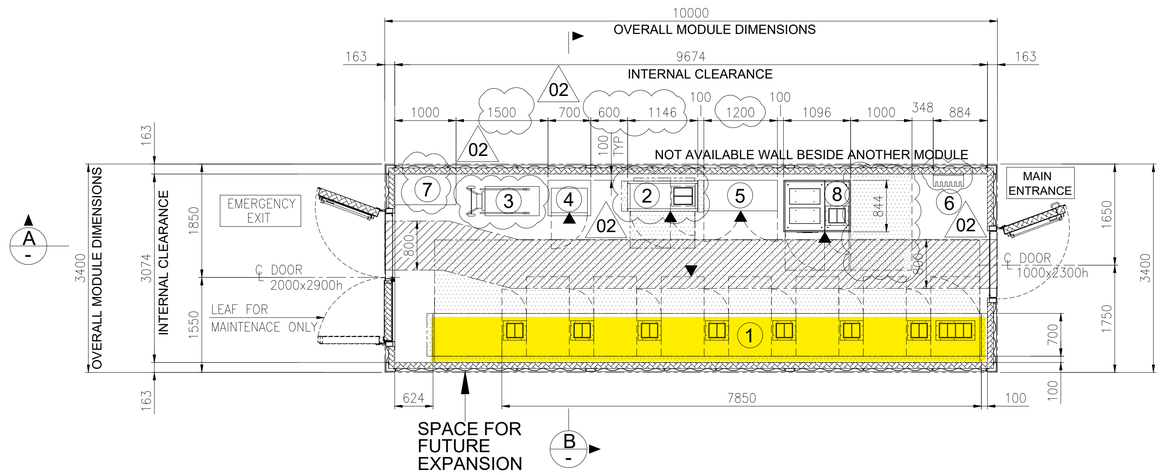
Comments: Nota 4: refer to PL C30000679

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Giovanni Tangianu	
Date	2024-12-02	2024-12-02	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-02T12:59:15.984Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-12-02T16:33:23.744Z	

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





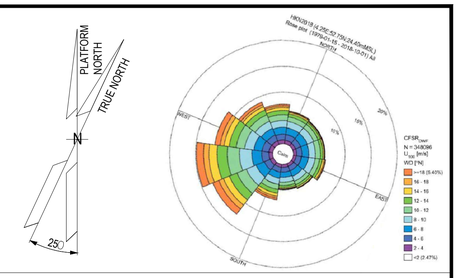


EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

1

EQUIPMENT LIST

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



NOTES

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

02

LEGEND

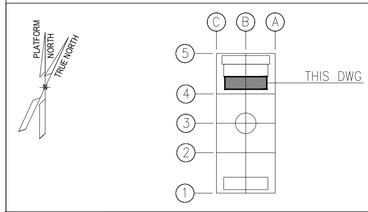
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

REFERENCES

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

02

KEY PLAN



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

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

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

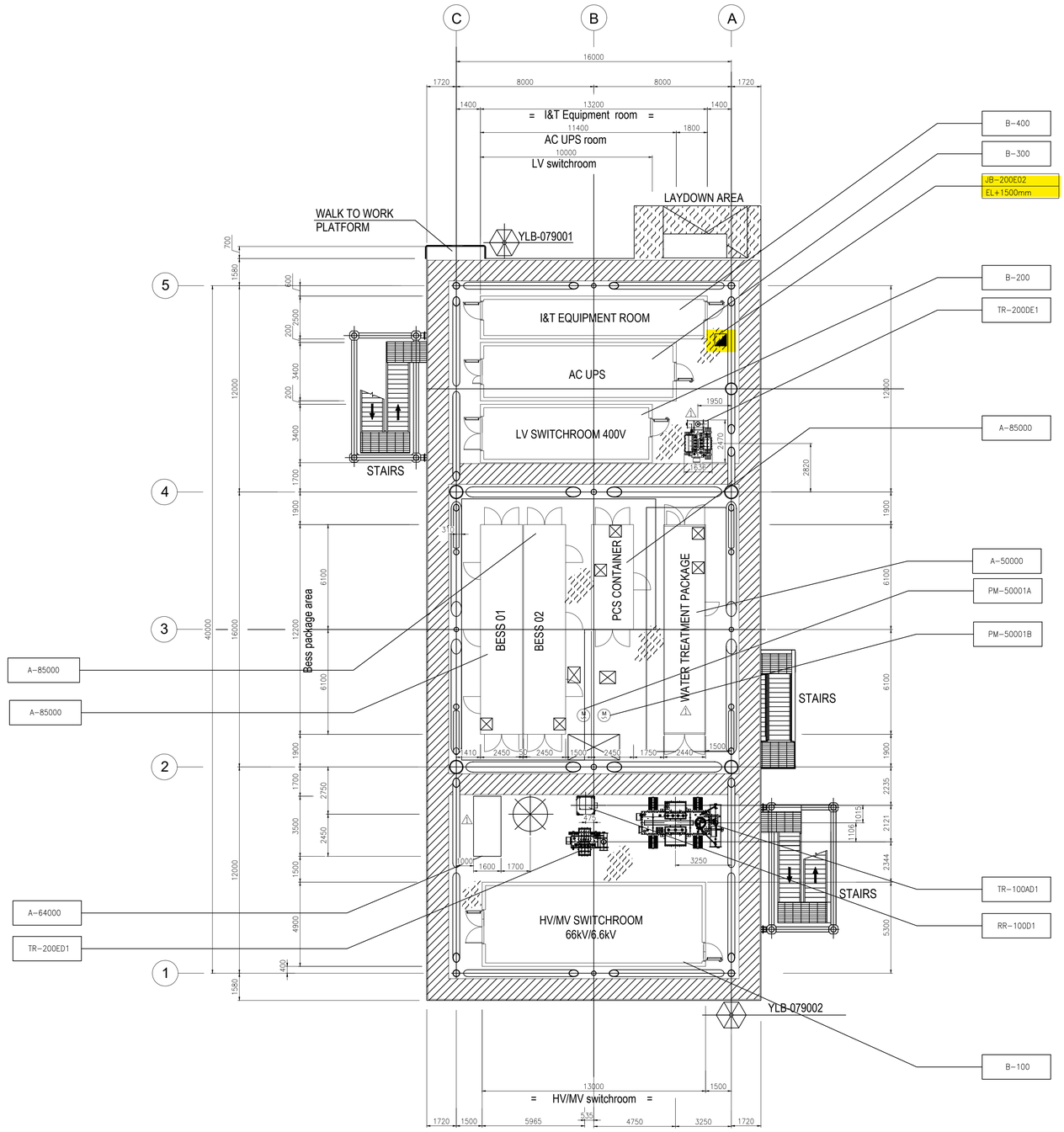
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LV SWITCHROOM

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

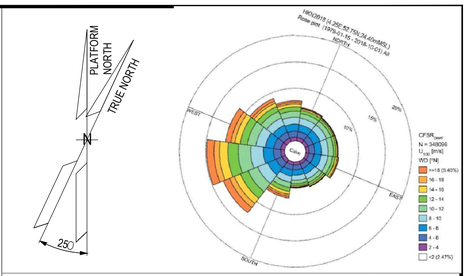
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DRAWING NO. 123A90-DDL-EL-DL-20101

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

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)

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

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

ROSETTI MARINO SpA

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

FROM	TO

DESCRIPTION: LV Switchgear
TAG NUMBER: SG-200N1

COLUMN/CUBIC.: A2/~~+08~~ +02

L1	BK	83010-CEL-L1 1C X 95 mm²	BK	L1
L2	BK	83010-CEL-L2 1C X 95 mm²	BK	L2
L3	BK	83010-CEL-L3 1C X 95 mm²	BK	L3
N	BK	83010-CEL-N 1C X 95 mm²	BK	N
PE	Y/G	83010-CEL-E 1C X 95 mm²	Y/G	PE

P.E. BUS BAR

DESCRIPTION: TEMPORARY GENERATOR / MOBILE BATTERY PACK
TAG NUMBER: JB-200E2

INCOMING FROM LV SWITCHGEAR SG-200N1

P.E. BUS BAR

COLUMN/CUBIC.: A1/+08

L1	BK	83013-CEL-L1 1C X 300 mm²	BK	L1
L2	BK	83013-CEL-L2 1C X 300 mm²	BK	L2
L3	BK	83013-CEL-L3 1C X 300 mm²	BK	L3
N	BK	83013-CEL-N 1C X 300 mm²	BK	N
PE	Y/G	83013-CEL-E 1C X 150 mm²	Y/G	PE

P.E. BUS BAR

DESCRIPTION: ELECTROLYSER AUXILIARY LOAD
TAG NUMBER: A-20000

P.E. BUS BAR

COLUMN/CUBIC.: A4/+03

L1	BN	83012-CEL 5G16 mm²	GY	L3
L2	BK		BU	N
			Y/G	PE

P.E. BUS BAR

DESCRIPTION: FUEL CELL AUXILIARY LOAD
TAG NUMBER: A-80000

-XB01

BN	1	L1		
BK	2	L2		
GY	3	L3		
BU	4	N		
Y/G	5	PE	Y/G	PE

P.E. BUS BAR

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

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

ROSETTI MARINO SpA

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

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
LV SWITCHGEAR SG-200N1

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

SCALE : 1:X

A3

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

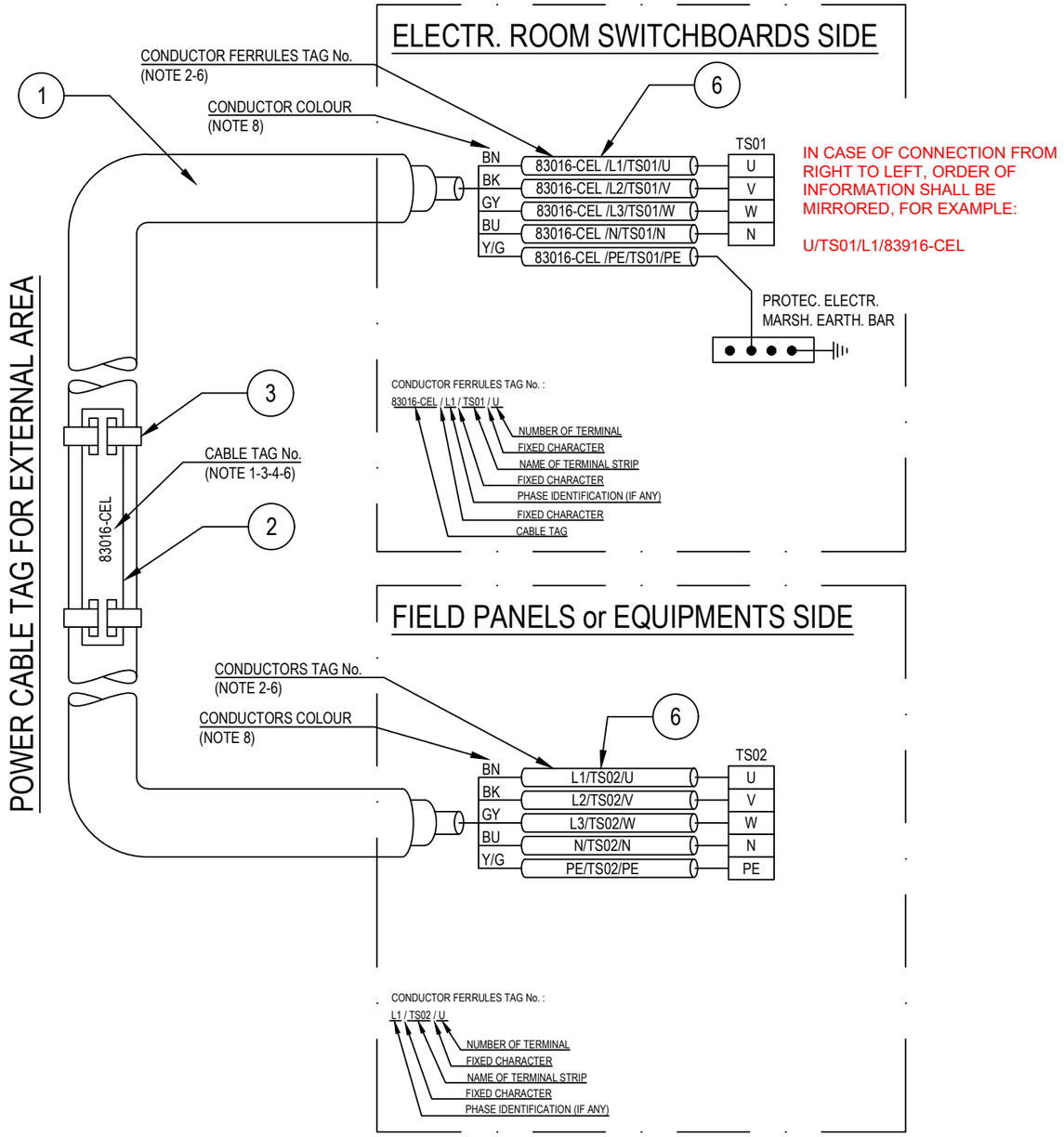
SHEET 021

REV. 02

F.to UNI A3: 420mmx297mm

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

C02



POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	UNARMOURED CABLE				
2	CABLE TAG FOR EXTERNAL AREA	HDG/SS			NOTE 1 NOTE 4
3	TIE FOR CABLE TAG IN EXTERNAL AREA	HDG/SS			
4	CABLE TAG FOR INTERNAL AREA	PVC			NOTE 1 NOTE 5
5	TIE FOR CABLE TAG IN INTERNAL AREA	NYLON 6.6			
6	CORE FERRULES	PVC			

NOTES:

1) ALL CABLES SHALL BE IDENTIFIED AT EACH TERMINATION AND EACH SIDE OF ANY OBSTACLE (E.G. CABLE TRANSIT ON WALLS INSIDE SHELTER AND FLOOR DECK CROSSING, BY THEIR RESPECTIVE TAGS/NUMBERS, AS INDICATED ON THE CABLE SCHEDULE.
CABLE IDENTIFICATION SHALL BE ALSO DONE BELOW AND IN THE SWITCHBOARD CABLE COMPARTMENT.

2) CABLE CORE FERRULES SHALL BE FITTED AT EVERY TERMINATION. THESE FERRULES SHALL BE OF ENGRAVED PLASTIC SLIP ON, INTERLOCKED AND SELF GRIP TYPE.

3) ON CABLE TRAYS OR LADDERS, CABLES SHALL BE IDENTIFIED AT EACH END, AND EVERY 25 METERS.

4) THE CABLE TAG FOR EXTERNAL AREA SHALL DONE BY 316L STAINLESS STEEL LABELS, TAG (H=5mm) SHALL BE LASER PRINTED PREFERABLY OR EMBOSSED, LABEL HELD BY TWO 316L STAINLESS STEEL TIES.

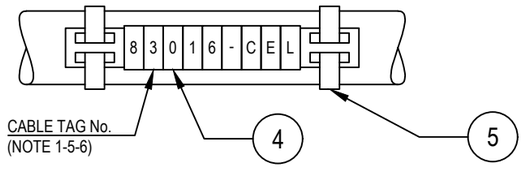
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

6) CABLE AND CONDUCTOR TAG ARE INDICATIVE ONLY.

7) WITHIN TECHNICAL BUILDING, PROTECTIVE CONDUCTOR SHALL BE TAGGED BETWEEN FOLLOWING ITEMS:
- PANEL (SWITCHBOARD, SWITCHGEAR, DISTRIBUTION BOARD, ETC) AND EARTH BAR
- EARTH BAR AND EARTH BOSS

8) ONLY IF NECESSARY, SHRINK TUBES OF THE APPROPRIATE COLOR WILL BE INSTALLED TO COVER THE WRONG CONDUCTOR COLOR, THIS WILL BE PERFORMED IN EACH SIDE OF THE CABLES WHERE NECESSARY.

POWER CABLE TAG FOR INTERNAL AREA



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

REV.:	DATE:	SIGNATURE:
2_B	28/11/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	28/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	04/07/24	NLK	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-POWER SYSTEM & CABLE INSTALLATION
CABLES INSTALLATION SYSTEM IDENTIFICATION FOR POWER CABLES

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

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-EL-DD-20092	007	02

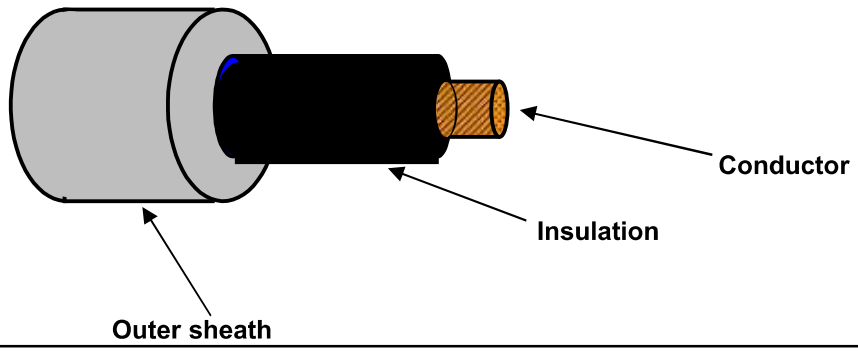
F.to UNI A3: 420mmx297mm

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

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	To Tag	To Main Function	To Area	Material ID	Material Desc.	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
83010-CEL-L2	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						SG-200N1	LV 0,4 kV MCC Switchgear	Lower Deck (B-200)	JB-200E2	Temporary Generator / Mobile Battery Pack JB	Lower Deck (B-200) Ext.	ELECV02-1X95	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 1Cx95mm² - Grey	n.a.			T1_M25_Single				L-450-101-LVT-023 / L-600-101-LVT-017 / L-600-101-LVT-019 / L-600-101-LVT-020 / E-MCT-204 / L-600-101-LVT-010 / L-750-101-LVT-015 / L-300-101-LVT-096

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

1CX95 - L.V. POWER CABLE - Flame Retardant



TECHNICAL FEATURES

Conductor :	**STRANDED COMPACTED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	EPR compound, quality to IEC 60092.360, Nominal Thickness 1,6 mm	
Core colour code :	**Black**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not Required	
Total Assembling :	Not Required	
Overall Wrapping:	Not required	
Drain wire :	Not required	
Overall Shield:	Not required	
Inner covering :	Not required	
Inner covering color code:	Not required	
Armour :	Not required	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,3 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 1CX95 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 - Year of Manufacture - CE + Meter Marking**	
Outer diameter :	(17,3 ± 10%) mm	
Bending radius :	cable outer diameter x 10	(in fixed installation)
Spark test :	12 kV a.c.	(on insulation)
	10 kV a.c.	(on outer sheath)
Conductors DC Resistance :		IEC 60228 Class 2
Insulation Resistance :	≥ 400 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.353**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance	IEC 61034.2 (LT ≥ 60%)	
Temperature Range :		
ON INSULATION	(max +90°C)	(max continuous operation temperature of conductors)
	(max +250°C)	(max conductors temperature during short-circuit for 5 seconds)
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C)	(in fixed installation)
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Outer sheath together with correct ATEX approved equipment or accessories.**	

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

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

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

ITEM	Tag	83010-CEL-L3	:	LV Switchgear / Temporary Generator / Mobile Battery Pack	Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-00	:	400 V Switchboard & Connection Box (SG-200N1)	Module	LD_B-200/LD_B-200_Ext
TASK	code	C10000519	Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity	CCK	Discipline	Electrical	Form	CPX09		LV Power Cable

CABLE DATA

Type: Cu Cl.2/EPR/LSZH | Cores/Size mm²: 1X95 mm2 | Color: GREY

From: SG-200N1 | To: JB-200E2

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

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	83010-CEL-L3	: LV Switchgear / Temporary Generator / Mobile Battery Pack			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-00	: 400 V Switchboard & Connection Box (SG-200N1)			Module	LD_B-200/LD_B-200_Ext
TASK	code	C10000519		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

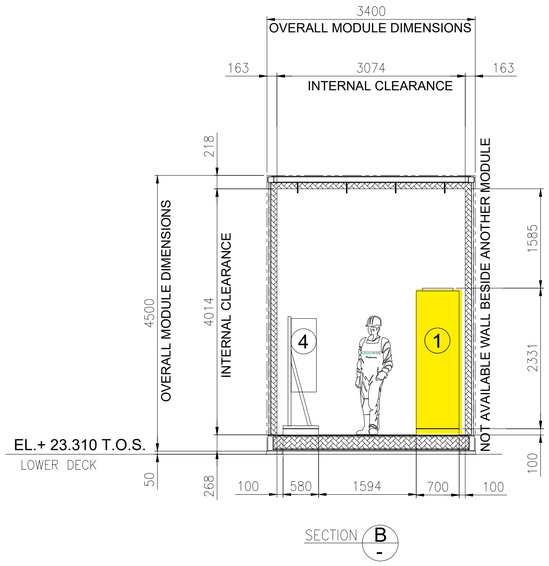
CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0,3	
6		PH 2	NA	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		NA	
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	NA	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

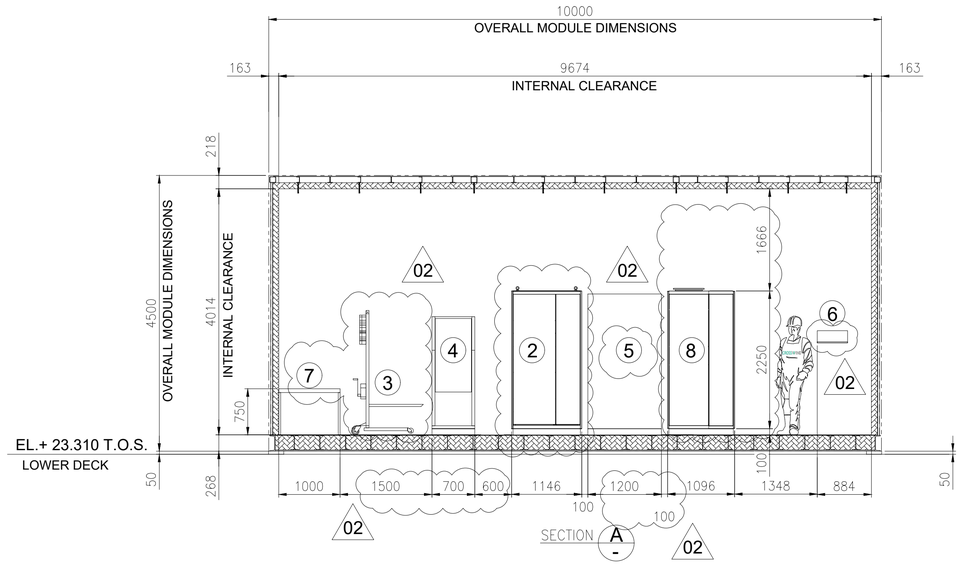
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	KEW3125A/ Serial:W8330207	TYPE / SERIAL N° :	Fluke/Serial:AW1/08(17140769)
Calibration certificate N° and date:	7722/24Date:10/07/24	Calibration certificate N° and date:	7715/24 date:10/07/24

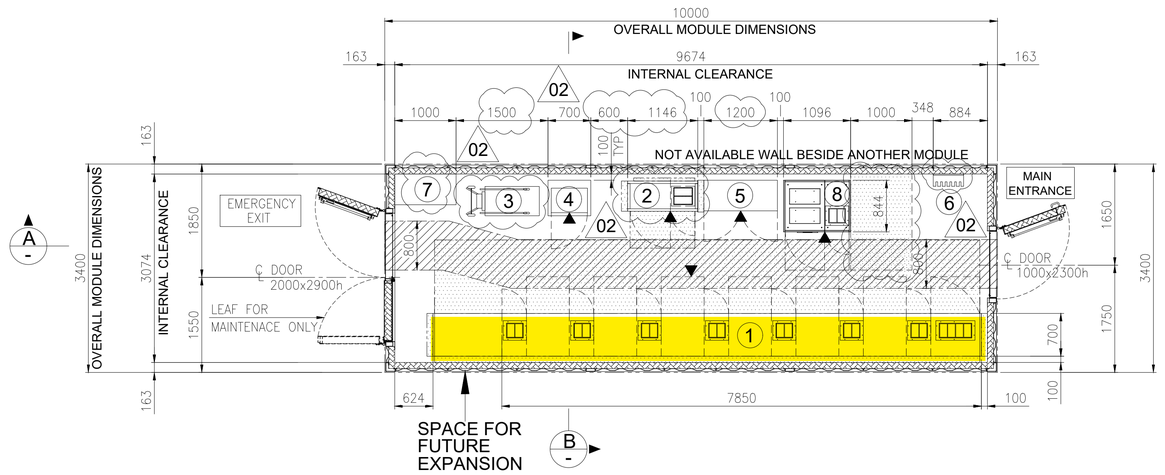
Comments: Nota 4: refer to PL C30000679

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Giovanni Tangianu	
Date	2024-12-02	2024-12-02	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-02T12:59:32.845Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-12-02T16:34:04.363Z	

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





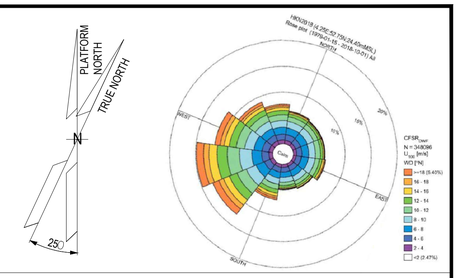


EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

1

EQUIPMENT LIST

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



NOTES

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

02

LEGEND

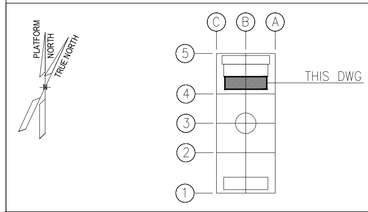
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

REFERENCES

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

02

KEY PLAN



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

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

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

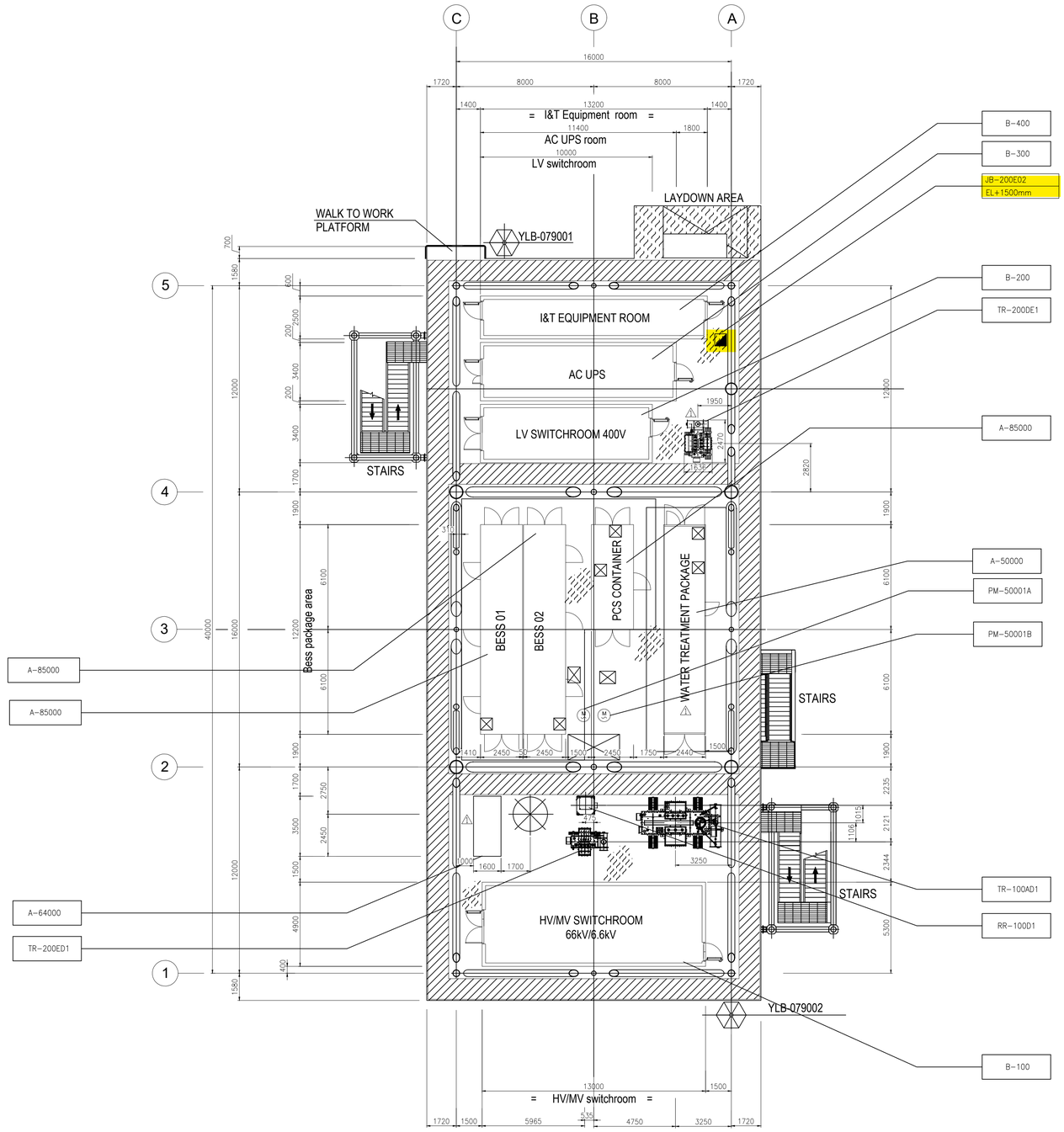
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LV SWITCHROOM

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

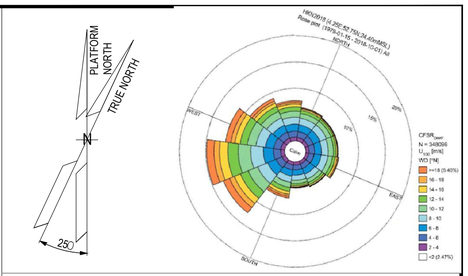
File Name : 123A90-DDL-EL-DL-20105_REV02.dwg

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

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)

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

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

ROSETTI MARINO SpA

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

FROM	TO

DESCRIPTION: LV Switchgear
TAG NUMBER: SG-200N1

COLUMN/CUBIC.: A2/~~+08~~ +02

L1	BK	83010-CEL-L1	1C X 95 mm²	BK L1
L2	BK	83010-CEL-L2	1C X 95 mm²	BK L2
L3	BK	83010-CEL-L3	1C X 95 mm²	BK L3
N	BK	83010-CEL-N	1C X 95 mm²	BK N
PE	Y/G	83010-CEL-E	1C X 95 mm²	Y/G PE

P.E. BUS BAR

DESCRIPTION: TEMPORARY GENERATOR / MOBILE BATTERY PACK
TAG NUMBER: JB-200E2

INCOMING FROM LV SWITCHGEAR
SG-200N1

P.E. BUS BAR

COLUMN/CUBIC.: A1/+08

L1	BK	83013-CEL-L1	1C X 300 mm²	BK L1
L2	BK	83013-CEL-L2	1C X 300 mm²	BK L2
L3	BK	83013-CEL-L3	1C X 300 mm²	BK L3
N	BK	83013-CEL-N	1C X 300 mm²	BK N
PE	Y/G	83013-CEL-E	1C X 150 mm²	Y/G PE

P.E. BUS BAR

DESCRIPTION: ELECTROLYSER AUXILIARY LOAD
TAG NUMBER: A-20000

P.E. BUS BAR

COLUMN/CUBIC.: A4/+03

L1	BN	83012-CEL	5G16 mm²
L2	BK		
L3	GY		
N	BU		
	Y/G		
	PE		

P.E. BUS BAR

DESCRIPTION: FUEL CELL AUXILIARY LOAD
TAG NUMBER: A-80000

-XB01

BN	1	L1
BK	2	L2
GY	3	L3
BU	4	N
Y/G	5	PE

Y/G PE

P.E. BUS BAR

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

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

ROSETTI MARINO SpA

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

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
LV SWITCHGEAR SG-200N1

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

SCALE : 1:X

A3

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

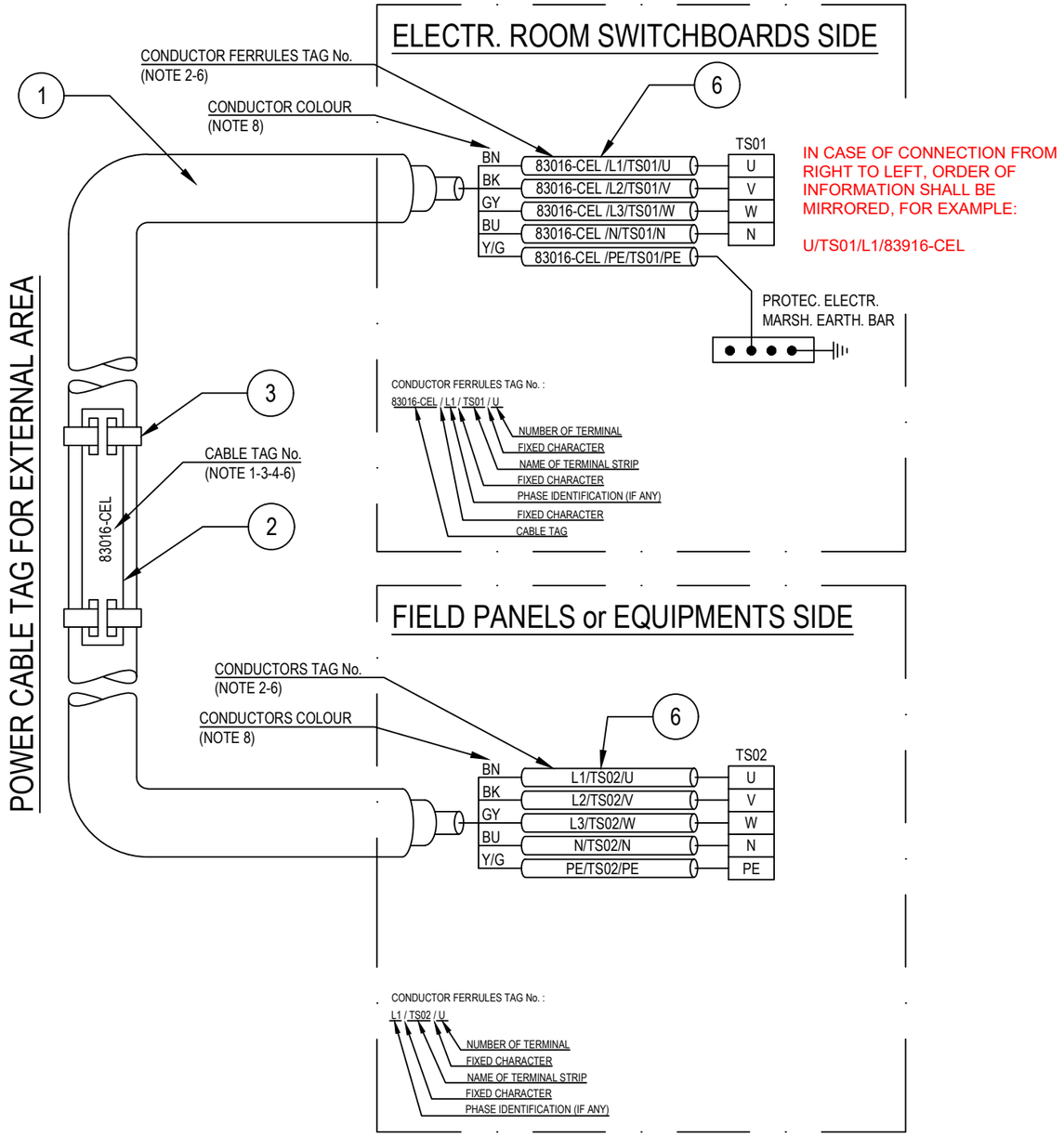
SHEET 021

REV. 02

F.to UNI A3: 420mmx297mm

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

C02



POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	UNARMOURED CABLE				
2	CABLE TAG FOR EXTERNAL AREA	HDG/SS			NOTE 1 NOTE 4
3	TIE FOR CABLE TAG IN EXTERNAL AREA	HDG/SS			
4	CABLE TAG FOR INTERNAL AREA	PVC			NOTE 1 NOTE 5
5	TIE FOR CABLE TAG IN INTERNAL AREA	NYLON 6.6			
6	CORE FERRULES	PVC			

NOTES:

1) ALL CABLES SHALL BE IDENTIFIED AT EACH TERMINATION AND EACH SIDE OF ANY OBSTACLE (E.G. CABLE TRANSIT ON WALLS INSIDE SHELTER AND FLOOR DECK CROSSING, BY THEIR RESPECTIVE TAGS/NUMBERS, AS INDICATED ON THE CABLE SCHEDULE.
CABLE IDENTIFICATION SHALL BE ALSO DONE BELOW AND IN THE SWITCHBOARD CABLE COMPARTMENT.

2) CABLE CORE FERRULES SHALL BE FITTED AT EVERY TERMINATION. THESE FERRULES SHALL BE OF ENGRAVED PLASTIC SLIP ON, INTERLOCKED AND SELF GRIP TYPE.

3) ON CABLE TRAYS OR LADDERS, CABLES SHALL BE IDENTIFIED AT EACH END, AND EVERY 25 METERS.

4) THE CABLE TAG FOR EXTERNAL AREA SHALL DONE BY 316L STAINLESS STEEL LABELS, TAG (H=5mm) SHALL BE LASER PRINTED PREFERABLY OR EMBOSSED, LABEL HELD BY TWO 316L STAINLESS STEEL TIES.

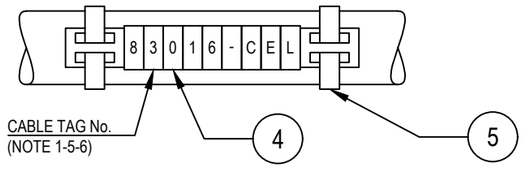
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

6) CABLE AND CONDUCTOR TAG ARE INDICATIVE ONLY.

7) WITHIN TECHNICAL BUILDING, PROTECTIVE CONDUCTOR SHALL BE TAGGED BETWEEN FOLLOWING ITEMS:
- PANEL (SWITCHBOARD, SWITCHGEAR, DISTRIBUTION BOARD, ETC) AND EARTH BAR
- EARTH BAR AND EARTH BOSS

8) ONLY IF NECESSARY, SHRINK TUBES OF THE APPROPRIATE COLOR WILL BE INSTALLED TO COVER THE WRONG CONDUCTOR COLOR, THIS WILL BE PERFORMED IN EACH SIDE OF THE CABLES WHERE NECESSARY.

POWER CABLE TAG FOR INTERNAL AREA



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

REV.:	DATE:	SIGNATURE:
2_B	28/11/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	28/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	04/07/24	NLK	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-POWER SYSTEM & CABLE INSTALLATION
CABLES INSTALLATION SYSTEM IDENTIFICATION FOR POWER CABLES

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

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-EL-DD-20092	007	02

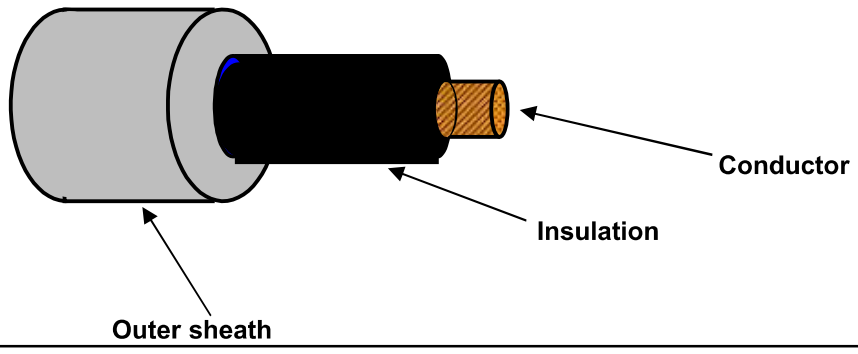
F.to UNI A3: 420mmx297mm

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

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	To Tag	To Main Function	To Area	Material ID	Material Desc.	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
83010-CEL-L3	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						SG-200N1	LV 0,4 kV MCC Switchgear	Lower Deck (B-200)	JB-200E2	Temporary Generator / Mobile Battery Pack JB	Lower Deck (B-200) Ext.	ELECV02-1X95	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 1Cx95mm² - Grey	n.a.			T1_M25_Single				L-450-101-LVT-023 / L-600-101-LVT-017 / L-600-101-LVT-019 / L-600-101-LVT-020 / E-MCT-204 / L-600-101-LVT-010 / L-750-101-LVT-015 / L-300-101-LVT-096

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

1CX95 - L.V. POWER CABLE - Flame Retardant



TECHNICAL FEATURES

Conductor :	**STRANDED COMPACTED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	EPR compound, quality to IEC 60092.360, Nominal Thickness 1,6 mm	
Core colour code :	**Black**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not Required	
Total Assembling :	Not Required	
Overall Wrapping:	Not required	
Drain wire :	Not required	
Overall Shield:	Not required	
Inner covering :	Not required	
Inner covering color code:	Not required	
Armour :	Not required	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,3 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 1CX95 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 - Year of Manufacture - CE + Meter Marking**	
Outer diameter :	(17,3 ± 10%) mm	
Bending radius :	cable outer diameter x 10	(in fixed installation)
Spark test :	12 kV a.c.	(on insulation)
	10 kV a.c.	(on outer sheath)
Conductors DC Resistance :		IEC 60228 Class 2
Insulation Resistance :	≥ 400 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.353**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance	IEC 61034.2 (LT ≥ 60%)	
Temperature Range :		
ON INSULATION	(max +90°C)	(max continuous operation temperature of conductors)
	(max +250°C)	(max conductors temperature during short-circuit for 5 seconds)
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C)	(in fixed installation)
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Outer sheath together with correct ATEX approved equipment or accessories.**	

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

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

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

ITEM	Tag	83010-CEL-N	:	LV Switchgear / Temporary Generator / Mobile Battery Pack	Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-00	:	400 V Switchboard & Connection Box (SG-200N1)	Module	LD_B-200/LD_B-200_Ext
TASK	code	C10000520	Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity	CCK	Discipline	Electrical	Form	CPX09		LV Power Cable

CABLE DATA

Type: Cu Cl.2/EPR/LSZH | Cores/Size mm²: 1X95 mm2 | Color: GREY

From: SG-200N1 | To: JB-200E2

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

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	83010-CEL-N	: LV Switchgear / Temporary Generator / Mobile Battery Pack			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-00	: 400 V Switchboard & Connection Box (SG-200N1)			Module	LD_B-200/LD_B-200_Ext
TASK	code	C10000520		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

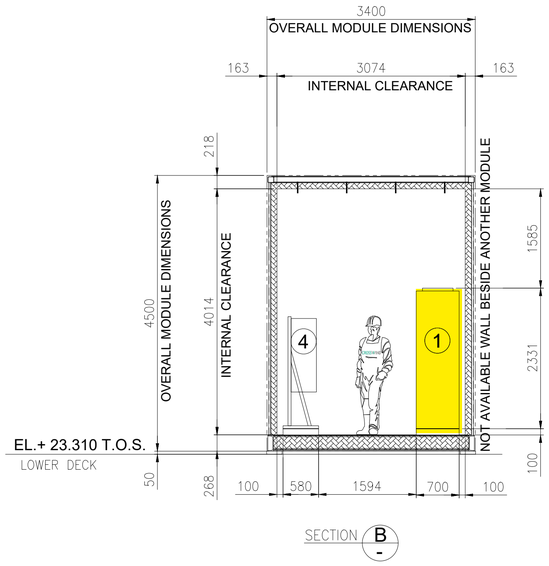
CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0,2	
6		PH 2	NA	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		NA	
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	NA	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

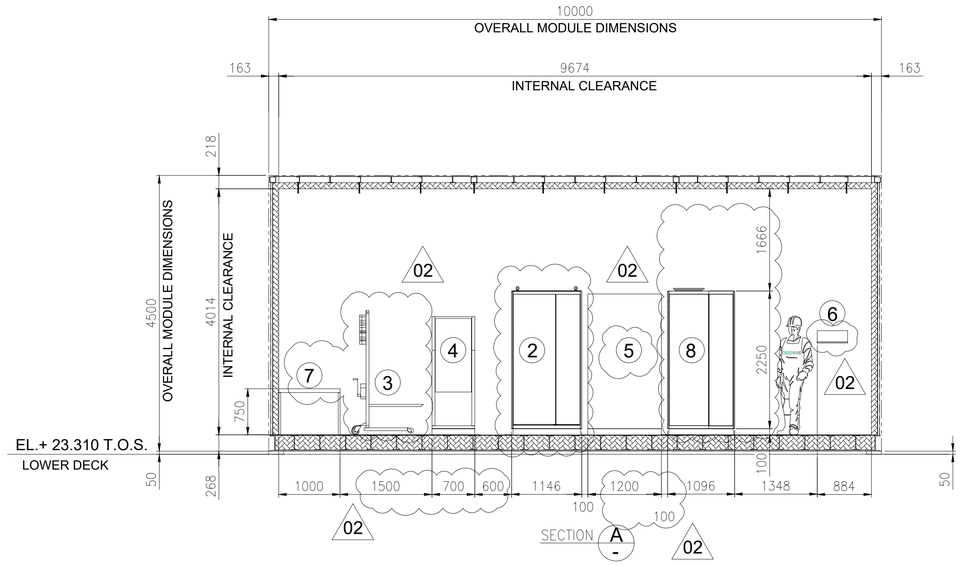
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	KEW3125A/ Serial:W8330207	TYPE / SERIAL N° :	Fluke/Serial:AW1/08(17140769)
Calibration certificate N° and date:	7722/24Date:10/07/24	Calibration certificate N° and date:	7715/24 date:10/07/24

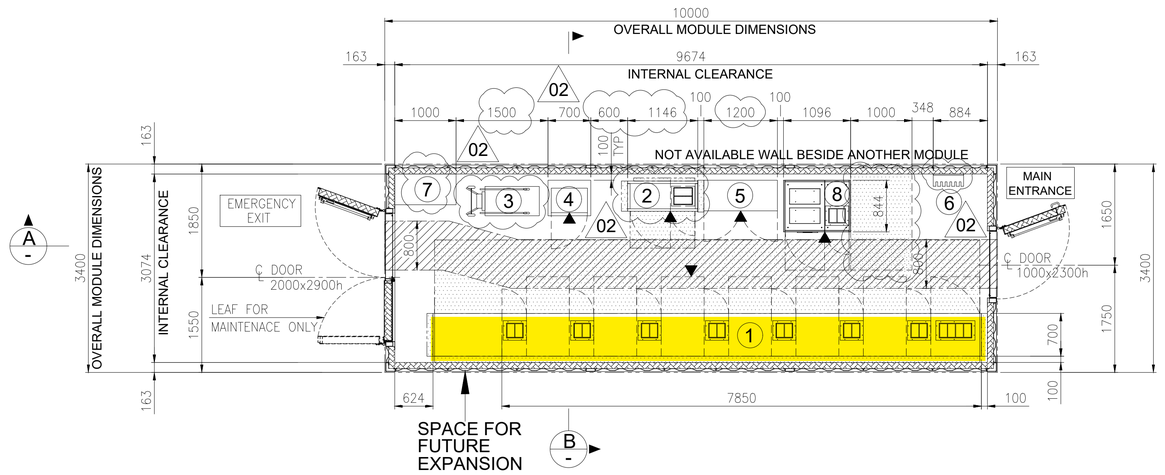
Comments: Nota 4: refer to PL C30000679

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Giovanni Tangianu	
Date	2024-12-02	2024-12-02	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-02T12:59:48.616Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-12-02T16:34:33.919Z	

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





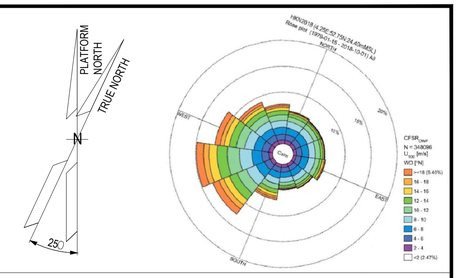


EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

1

EQUIPMENT LIST

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



NOTES

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

02

LEGEND

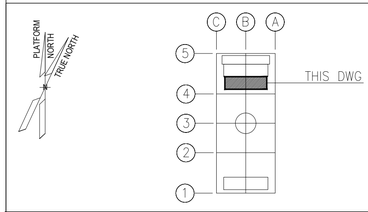
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

REFERENCES

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

02

KEY PLAN



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

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

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

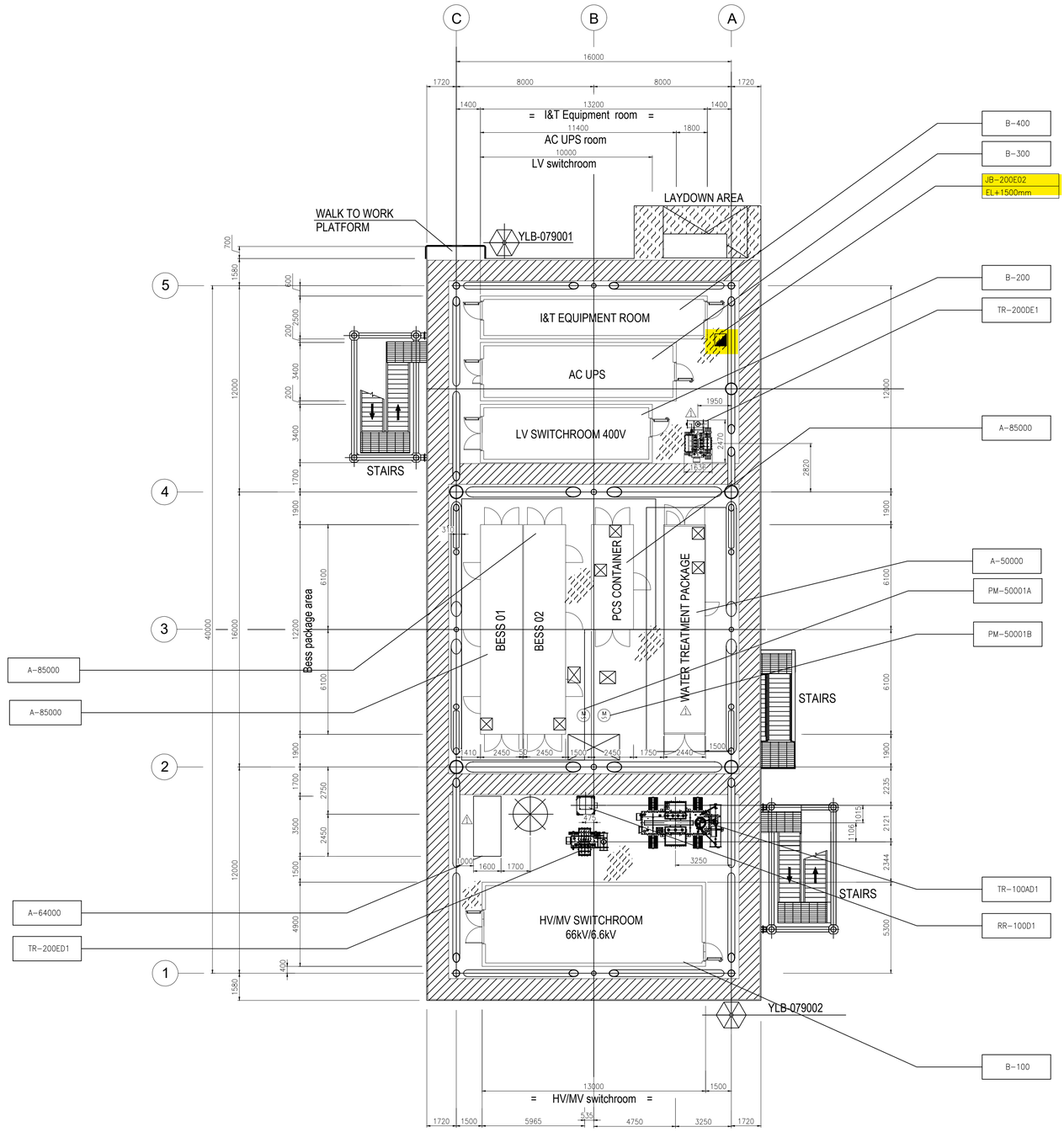
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LV SWITCHROOM

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

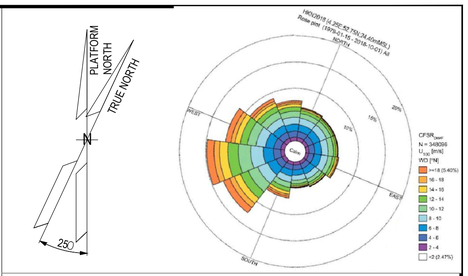
File Name : 123A90-DDL-EL-DL-20105_REV02.dwg

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

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)

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

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

ROSETTI MARINO SpA

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

FROM	TO

DESCRIPTION: LV Switchgear
TAG NUMBER: SG-200N1

COLUMN/CUBIC.: A2/~~+08~~ +02

L1	BK	83010-CEL-L1 1C X 95 mm²	BK L1
L2	BK	83010-CEL-L2 1C X 95 mm²	BK L2
L3	BK	83010-CEL-L3 1C X 95 mm²	BK L3
N	BK	83010-CEL-N 1C X 95 mm²	BK N
PE	Y/G	83010-CEL-E 1C X 95 mm²	Y/G PE

P.E. BUS BAR

DESCRIPTION: TEMPORARY GENERATOR / MOBILE BATTERY PACK
TAG NUMBER: JB-200E2

INCOMING FROM LV SWITCHGEAR
SG-200N1

P.E. BUS BAR

COLUMN/CUBIC.: A1/+08

L1	BK	83013-CEL-L1 1C X 300 mm²	BK L1
L2	BK	83013-CEL-L2 1C X 300 mm²	BK L2
L3	BK	83013-CEL-L3 1C X 300 mm²	BK L3
N	BK	83013-CEL-N 1C X 300 mm²	BK N
PE	Y/G	83013-CEL-E 1C X 150 mm²	Y/G PE

P.E. BUS BAR

DESCRIPTION: ELECTROLYSER AUXILIARY LOAD
TAG NUMBER: A-20000

P.E. BUS BAR

COLUMN/CUBIC.: A4/+03

L1	BN	83012-CEL 5G16 mm²	-XB01 1 L1
L2	BK		2 L2
L3	GY		3 L3
N	BU		4 N
PE	Y/G		5 PE

P.E. BUS BAR

DESCRIPTION: FUEL CELL AUXILIARY LOAD
TAG NUMBER: A-80000

P.E. BUS BAR

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

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

ROSETTI MARINO SpA

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

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
LV SWITCHGEAR SG-200N1

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

SCALE : 1:X

A3

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

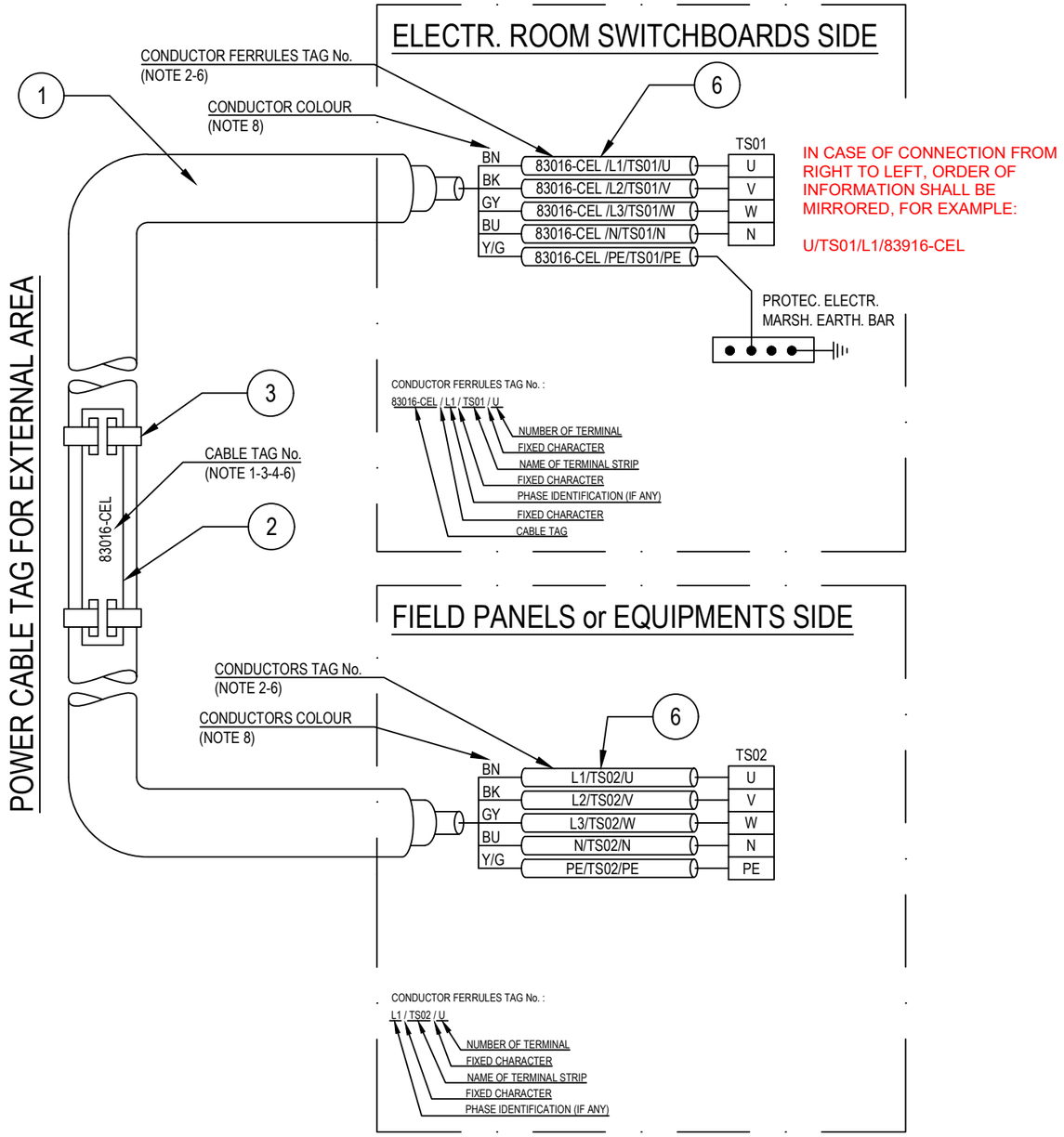
SHEET 021

REV. 02

F.to UNI A3: 420mmx297mm

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

C02



POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	UNARMOURED CABLE				
2	CABLE TAG FOR EXTERNAL AREA	HDG/SS			NOTE 1 NOTE 4
3	TIE FOR CABLE TAG IN EXTERNAL AREA	HDG/SS			
4	CABLE TAG FOR INTERNAL AREA	PVC			NOTE 1 NOTE 5
5	TIE FOR CABLE TAG IN INTERNAL AREA	NYLON 6.6			
6	CORE FERRULES	PVC			

NOTES:

1) ALL CABLES SHALL BE IDENTIFIED AT EACH TERMINATION AND EACH SIDE OF ANY OBSTACLE (E.G. CABLE TRANSIT ON WALLS INSIDE SHELTER AND FLOOR DECK CROSSING, BY THEIR RESPECTIVE TAGS/NUMBERS, AS INDICATED ON THE CABLE SCHEDULE.
CABLE IDENTIFICATION SHALL BE ALSO DONE BELOW AND IN THE SWITCHBOARD CABLE COMPARTMENT.

2) CABLE CORE FERRULES SHALL BE FITTED AT EVERY TERMINATION. THESE FERRULES SHALL BE OF ENGRAVED PLASTIC SLIP ON, INTERLOCKED AND SELF GRIP TYPE.

3) ON CABLE TRAYS OR LADDERS, CABLES SHALL BE IDENTIFIED AT EACH END, AND EVERY 25 METERS.

4) THE CABLE TAG FOR EXTERNAL AREA SHALL DONE BY 316L STAINLESS STEEL LABELS, TAG (H=5mm) SHALL BE LASER PRINTED PREFERABLY OR EMBOSSED, LABEL HELD BY TWO 316L STAINLESS STEEL TIES.

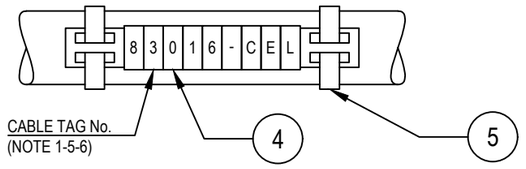
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

6) CABLE AND CONDUCTOR TAG ARE INDICATIVE ONLY.

7) WITHIN TECHNICAL BUILDING, PROTECTIVE CONDUCTOR SHALL BE TAGGED BETWEEN FOLLOWING ITEMS:
- PANEL (SWITCHBOARD, SWITCHGEAR, DISTRIBUTION BOARD, ETC) AND EARTH BAR
- EARTH BAR AND EARTH BOSS

8) ONLY IF NECESSARY, SHRINK TUBES OF THE APPROPRIATE COLOR WILL BE INSTALLED TO COVER THE WRONG CONDUCTOR COLOR, THIS WILL BE PERFORMED IN EACH SIDE OF THE CABLES WHERE NECESSARY.

POWER CABLE TAG FOR INTERNAL AREA



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

REV.:	DATE:	SIGNATURE:
2_B	28/11/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	28/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	04/07/24	NLK	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-POWER SYSTEM & CABLE INSTALLATION
CABLES INSTALLATION SYSTEM IDENTIFICATION FOR POWER CABLES

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

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-EL-DD-20092	007	02

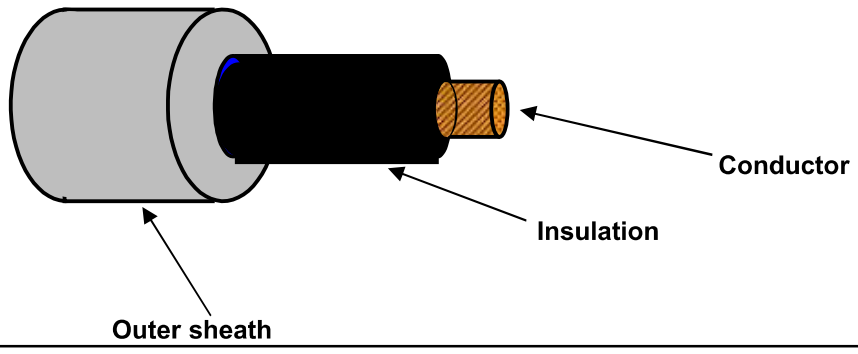
F.to UNI A3: 420mmx297mm

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

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	To Tag	To Main Function	To Area	Material ID	Material Desc.	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
83010-CEL-N	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						SG-200N1	LV 0,4 kV MCC Switchgear	Lower Deck (B-200)	JB-200E2	Temporary Generator / Mobile Battery Pack JB	Lower Deck (B-200) Ext.	ELECV02-1X95	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 1Cx95mm² - Grey	n.a.			T1_M25_Single				L-450-101-LVT-023 / L-600-101-LVT-017 / L-600-101-LVT-019 / L-600-101-LVT-020 / E-MCT-204 / L-600-101-LVT-010 / L-750-101-LVT-015 / L-300-101-LVT-096

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

1CX95 - L.V. POWER CABLE - Flame Retardant



TECHNICAL FEATURES

Conductor :	**STRANDED COMPACTED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	EPR compound, quality to IEC 60092.360, Nominal Thickness 1,6 mm	
Core colour code :	**Black**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not Required	
Total Assembling :	Not Required	
Overall Wrapping:	Not required	
Drain wire :	Not required	
Overall Shield:	Not required	
Inner covering :	Not required	
Inner covering color code:	Not required	
Armour :	Not required	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,3 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 1CX95 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 - Year of Manufacture - CE + Meter Marking**	
Outer diameter :	(17,3 ± 10%) mm	
Bending radius :	cable outer diameter x 10	(in fixed installation)
Spark test :	12 kV a.c.	(on insulation)
	10 kV a.c.	(on outer sheath)
Conductors DC Resistance :		IEC 60228 Class 2
Insulation Resistance :	≥ 400 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.353**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance	IEC 61034.2 (LT ≥ 60%)	
Temperature Range :		
ON INSULATION	(max +90°C)	(max continuous operation temperature of conductors)
	(max +250°C)	(max conductors temperature during short-circuit for 5 seconds)
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C)	(in fixed installation)
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Outer sheath together with correct ATEX approved equipment or accessories.**	

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

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

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

ITEM	Tag	83120-CEL	: Lighting & Small Power DB BoP / Auxiliary LV		Dwg	123A90-DDL-EL-LIS-20148	
	S/Sys	83-00	: 400 V Switchboard & Connection Box (SG-200N1)		Module	LD_B-200	
TASK	code	C10000639	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Electrical	Form	CPX09	LV Power Cable

CABLE DATA

Type: Cu Cl.2/EPR/LSZH | Cores/Size mm²: 3G2.5 | Color: Grey

From: DP-200N1 | To: SG-200N1

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

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	83120-CEL	: Lighting & Small Power DB BoP / Auxiliary LV			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-00	: 400 V Switchboard & Connection Box (SG-200N1)			Module	LD_B-200
TASK	code	C10000639		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0.4	
6		PH 2	0.4	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		0.3	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		0.4	
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>1999	
11		PH2 / PH1-PH3-A-E	>1999	
12		PH3 / PH1-PH2-A-E	>1999	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

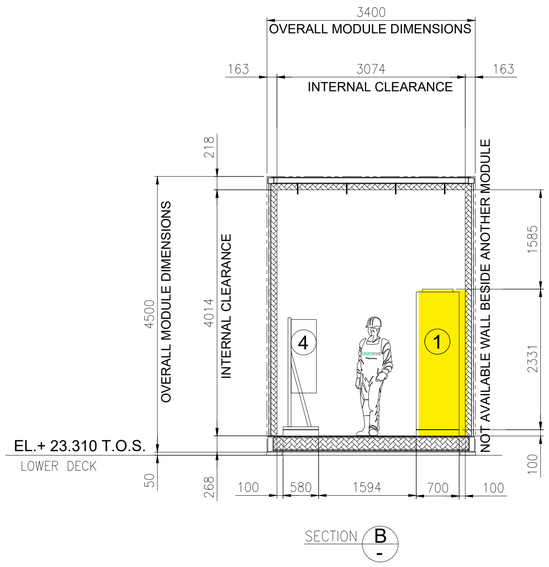
TESTING INSTRUMENTS USED

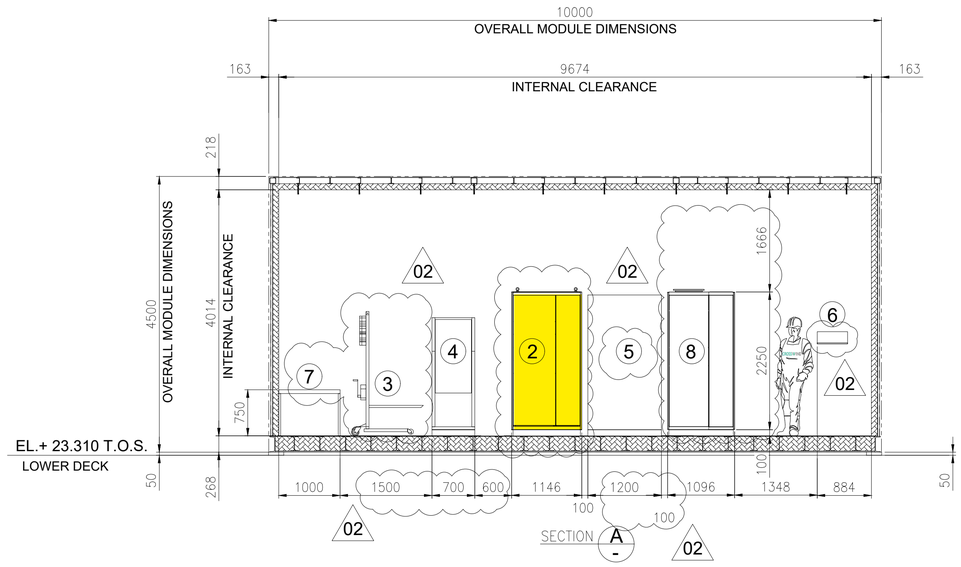
TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207	TYPE / SERIAL N° :	MULTIMETER: FLUKE 175 SERIAL:AW1/018(17140769)
Calibration certificate N° and date:	N°7722/24 _ 10/07/2024	Calibration certificate N° and date:	N°7715/24 _ 10/07/2024

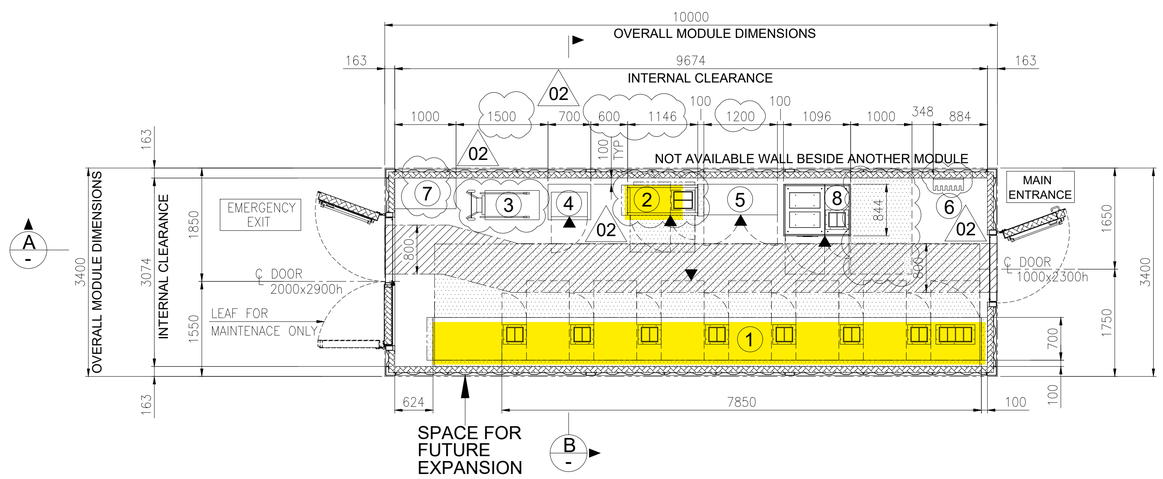
Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (Rosetti Marino)	
Name	Carmelo Bongiovanni	Paolo Schintu	
Date	2024-11-04	2024-11-23	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-11-04T17:06:47.743Z	PROVERLIS Digitaly signed by Paolo Schintu 2024-11-23T12:19:16.127Z	

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





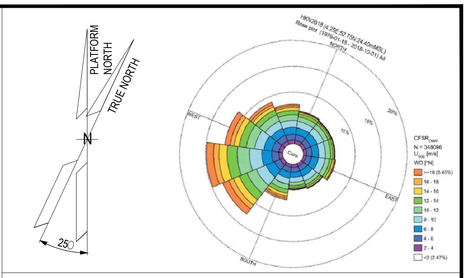


EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

1

EQUIPMENT LIST

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



NOTES

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

02

LEGEND

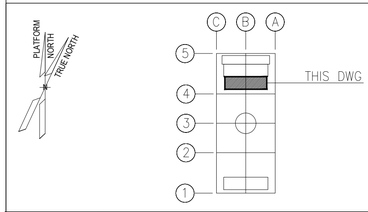
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

REFERENCES

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

02

KEY PLAN



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

CROSSWIND

ROSETTI MARINO

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

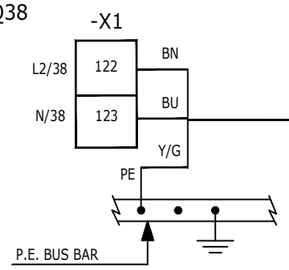
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE 1:50
DRAWN FMO | CHECKED LMA/AMA | APPROVED LMA/MDO | DATE 27/05/2024
A1 | DRAWING NO. 123A90-DDL-EL-DL-20105 | SHEET 001 | REV. 02

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

FROM	TO

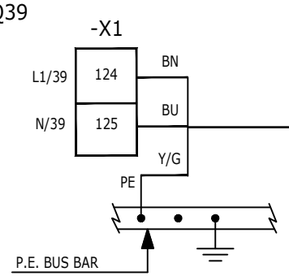
DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1

CUBICLE/CB: +03/Q38



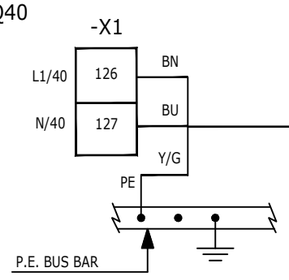
83119-CEL
3G2.5 mm²

CUBICLE/CB: +03/Q39



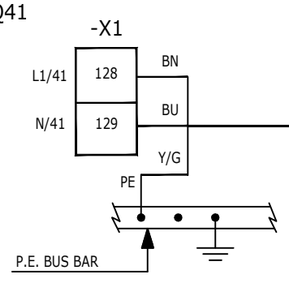
83120-CEL
3G2.5 mm²

CUBICLE/CB: +03/Q40



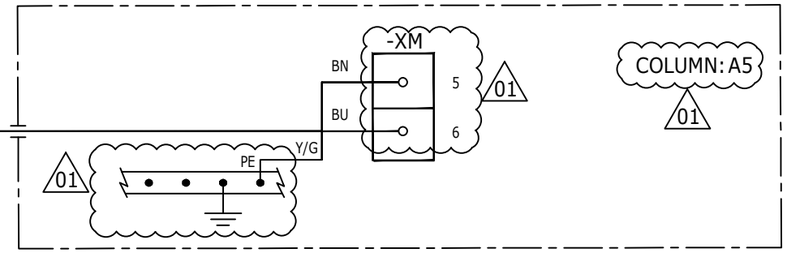
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CUBICLE/CB: +03/Q41

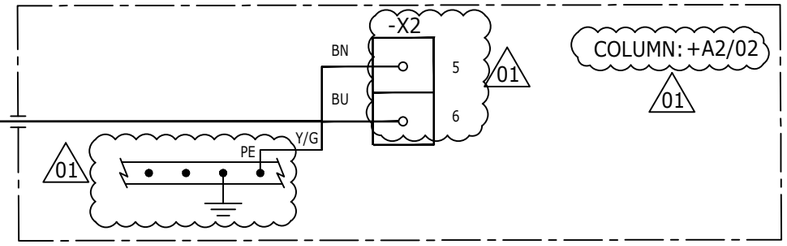


83122-CEL
3G2.5 mm²

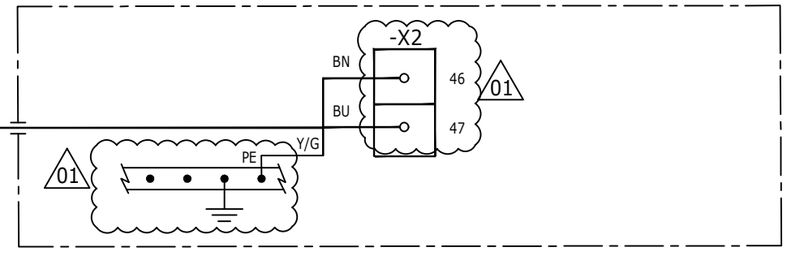
DESCRIPTION: AUXILIARY 6.6KV SWITCHBOARD
TAG NUMBER: SG-100D1



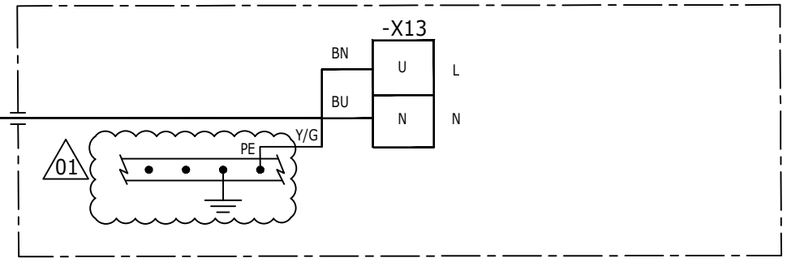
DESCRIPTION: AUXILIARY LV
TAG NUMBER: SG-200N1



DESCRIPTION: LV SWBD 800/460V AUXILIARY
TAG NUMBER: SG-200D2



DESCRIPTION: AC UPS PAS AUXILIARY
TAG NUMBER: UP-200F3



VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-EL-DL-20149

REV.:	DATE:	SIGNATURE:
1_A	17/10/24	G.Randi

ROSETTI MARINO SpA

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

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
LIGHTING & SMALL POWER DB BOP

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

SCALE : 1:X

A3

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

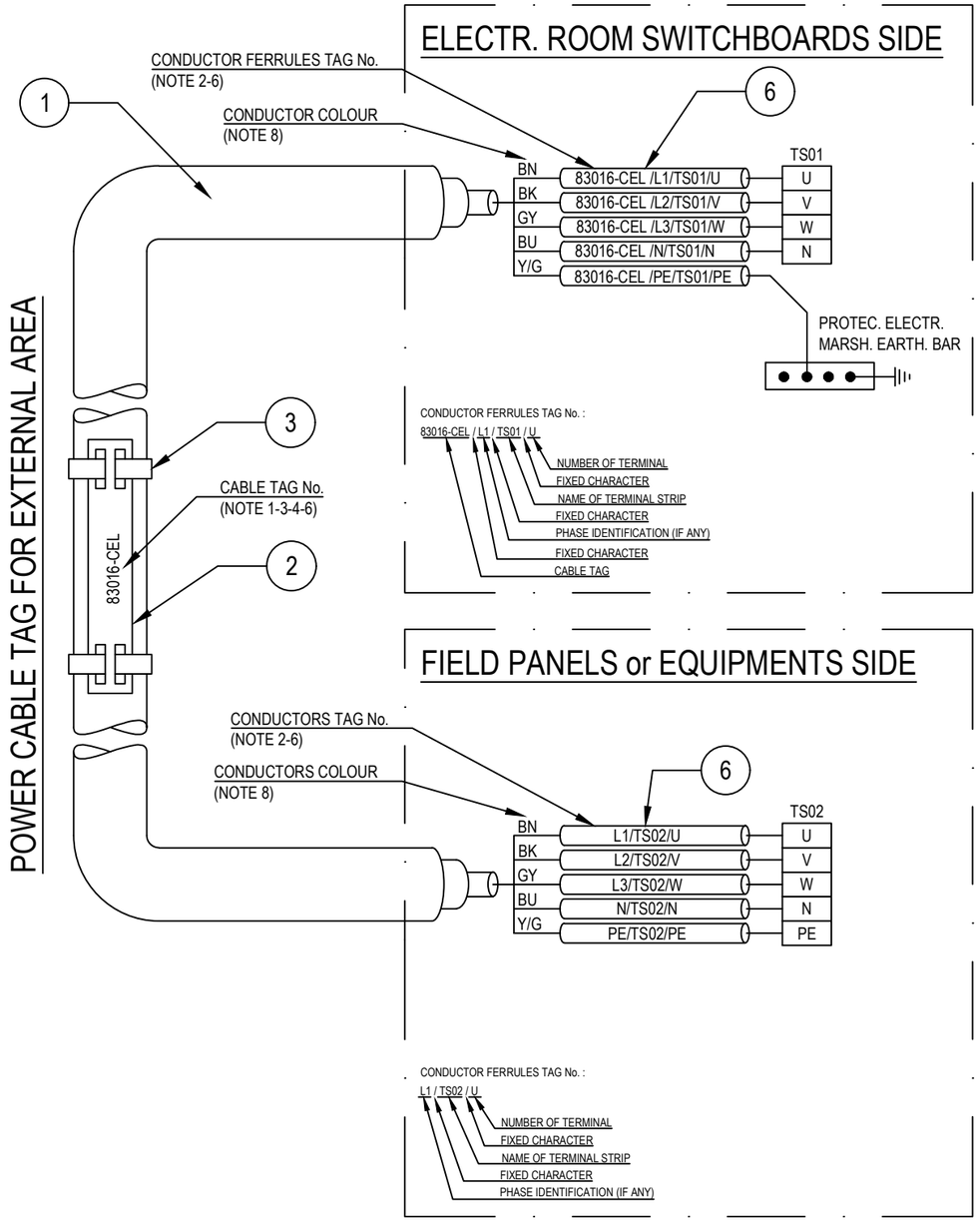
SHEET 056

REV. 01

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20162 Rev. 01

C02



POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	UNARMOURED CABLE				
2	CABLE TAG FOR EXTERNAL AREA	HDG/SS			NOTE 1 NOTE 4
3	TIE FOR CABLE TAG IN EXTERNAL AREA	HDG/SS			
4	CABLE TAG FOR INTERNAL AREA	PVC			NOTE 1 NOTE 5
5	TIE FOR CABLE TAG IN INTERNAL AREA	NYLON 6.6			
6	CORE FERRULES	PVC			

NOTES:

1) ALL CABLES SHALL BE IDENTIFIED AT EACH TERMINATION AND EACH SIDE OF ANY OBSTACLE (E.G. CABLE TRANSIT ON WALLS INSIDE SHELTER AND FLOOR DECK CROSSING, BY THEIR RESPECTIVE TAGS/NUMBERS, AS INDICATED ON THE CABLE SCHEDULE.
CABLE IDENTIFICATION SHALL BE ALSO DONE BELOW AND IN THE SWITCHBOARD CABLE COMPARTMENT.

2) CABLE CORE FERRULES SHALL BE FITTED AT EVERY TERMINATION. THESE FERRULES SHALL BE OF ENGRAVED PLASTIC SLIP ON, INTERLOCKED AND SELF GRIP TYPE.

3) ON CABLE TRAYS OR LADDERS, CABLES SHALL BE IDENTIFIED AT EACH END, AND EVERY 25 METERS.

4) THE CABLE TAG FOR EXTERNAL AREA SHALL DONE BY 316L STAINLESS STEEL LABELS, TAG (H=5mm) SHALL BE LASER PRINTED PREFERABLY OR EMBOSSED, LABEL HELD BY TWO 316L STAINLESS STEEL TIES.

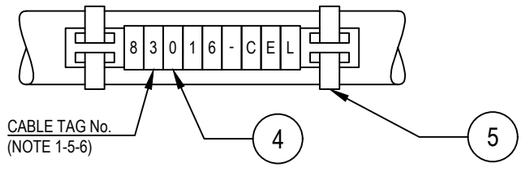
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

6) CABLE AND CONDUCTOR TAG ARE INDICATIVE ONLY.

7) WITHIN TECHNICAL BUILDING, PROTECTIVE CONDUCTOR SHALL BE TAGGED BETWEEN FOLLOWING ITEMS:
- PANEL (SWITCHBOARD, SWITCHGEAR, DISTRIBUTION BOARD, ETC) AND EARTH BAR
- EARTH BAR AND EARTH BOSS

8) ONLY IF NECESSARY, SHRINK TUBES OF THE APPROPRIATE COLOR WILL BE INSTALLED TO COVER THE WRONG CONDUCTOR COLOR, THIS WILL BE PERFORMED IN EACH SIDE OF THE CABLES WHERE NECESSARY.

POWER CABLE TAG FOR INTERNAL AREA



VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-EL-DD-20092
REV.: 2_A | DATE: 28/08/24 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	28/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	04/07/24	NLK	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-POWER SYSTEM & CABLE INSTALLATION
CABLES INSTALLATION SYSTEM IDENTIFICATION FOR POWER CABLES

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

A3 | DRAWING NO. 123A90-DDL-EL-DD-20092 | SHEET 007 | REV. 02

F.to UNI A3: 420mmx297mm

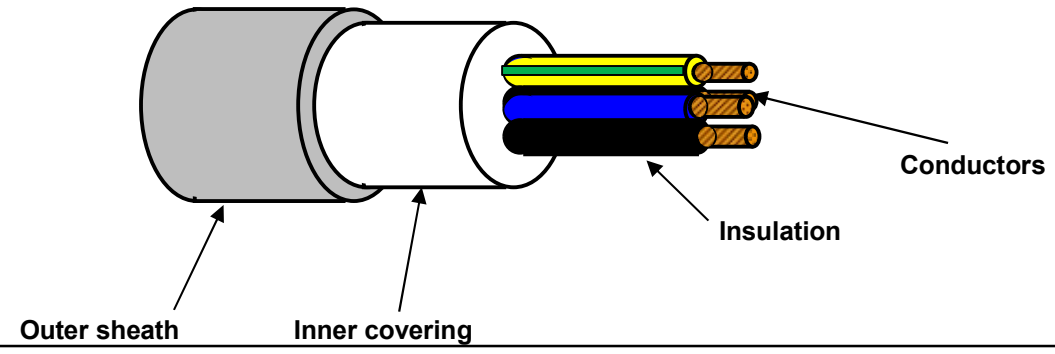
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	To Tag	To Main Function	To Area	Material ID	Material Desc.	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
83120-CEL	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						DP-200N1	LV 0,4 / 0,23 kV Distribution Switchgear	Lower Deck (B-200)	SG-200N1	LV 0,4 kV MCC Switchgear	Lower Deck (B-200)	ELECV06-3G2,5	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 3G2,5mm² - Grey	n.a.			n.a.				L-450-101-LVT-030 / L-600-101-LVT-020 / L-600-101-LVT-019 / L-600-101-LVT-017 / L-450-101-LVT-021

FLEI s.r.l.

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

3G2,5 - L.V. POWER CABLE - Flame Retardant



TECHNICAL FEATURES

Conductors :	**STRANDED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	EPR compound, quality to IEC 60092.360, Nominal Thickness 1,0 mm	
Cores colour code :	**Brown - Blue - Yellow/Green**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not Required	
Total Assembling :	Cores layed up with optimal lay length	
Overall Wrapping:	Not required	
Drain wire :	Not required	
Overall Shield:	Not required	
Inner covering :	Extruded LSZH compound, Average Thickness 1,0 mm	
Inner covering color code:	**Black or Natural**	
Armour :	Not required	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,2 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 3G2,5 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 -**	
	Year of Manufacture - CE + Meter Marking	
Outer diameter :	(13,0 ± 10%) mm	
Bending radius :	cable outer diameter x 10	(in fixed installation)
Voltage test :	3,5 kV a.c. for 5' (Between Cores)	
Conductors DC Resistance :		IEC 60228 Class 2
Insulation Resistance :	≥ 1100 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.353**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Temperature Range :		
ON INSULATION	(max +90°C)	(max continuous operation temperature of conductors)
	(max +250°C)	(max conductors temperature during short-circuit for 5 seconds)
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C)	(in fixed installation)
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner covering together with correct ATEX approved equipment or accessories.**	

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

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

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ITEM	Tag	SG-200N1	: LV 0,4 kV MCC Switchgear		Dwg	123A90-DDL-EL-DS-20024	
	S/Sys	83-00	: 400 V Switchboard & Connection Box (SG-200N1)		Module	LD_B-200	
TASK	code	C10000866	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Electrical	Form	CPX05	LV Switchboard

1	Check switchboard is de-energized and safe.	OK
2	Check identification (tag number, tag plate)	Note
3	Check conformity against latest data sheet and project specification.	Note
4	Check equipment is correctly aligned, leveled, rigid and secured with correct bolting.	OK
5	Check all panel mounted devices are undamaged.	OK
6	Check all panel mounted devices are tagged in accordance with data.	Note
7	Check if construction rating plate data is correct.	Note
8	Check bus bars and supports are clean and clear of debris, torque all bolts to specifications.	OK
9	Check earthing and bonding of all equipment against drawings.	OK
10	Check all switching devices are mechanically operational and undamaged.	OK
11	Check all circuit breakers and starter cubicles run freely in compartments.	OK
12	Check swithgear mechanical interlocks against interlock diagram.	OK
13	Check all C.T's &VT's are properly installed and match drawings and protection diagram.	OK
14	Check all equipment are identified against latest drawings (cubicles, relays ...etc).	Note
15	Check interconnection wiring against latest drawings.	Note
16	If required produce Red Line Mark Up for "AS BUILT"	●

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	SG-200N1	: LV 0,4 kV MCC Switchgear		Dwg	123A90-DDL-EL-DS-20024	
	S/Sys	83-00	: 400 V Switchboard & Connection Box (SG-200N1)		Module	LD_B-200	
TASK	code	C10000866	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Electrical	Form	CPX05	LV Switchboard

SWITCHBOARD DATA

Manufacturer:	IMESA	Serial N°:	231298/SD/040/2024	Voltage	400V
Current	2500A	IP Rating	30	Datasheet	123A90-DDL-20024
RATED SC CURRENT (RMS):	105	**kA:1s**		Specification	

Testing & measurement instruments used

Type	Serial n°	Calibration certificate	Validity

INSULATION RESISTANCE AND CONTINUITY TEST

				R-STE	S-RTE	T-RSE
BUS-BAR Insulation Resistance	Test Voltage	Min Required	MΩ			
				Control Wiring	Signaling wiring	Space heater circuit
Utility Insulation Resistance	Test Voltage	Min Required	MΩ			

See Attached

CONTINUITY	Bus bars			Polarity distribution			
	R	S	T	Control	Signalling	space heater circuit	Motor rearming wiring
Contiuity A							
Contiuity B							

VT IDENTITY	CONTINUITY									INSULATION								
	Primary			Secondary						Prim/secondary-Earth			Secondary/primary- Earth					
	U1	U2	U3	V1a	V2a	V3a	V1b	V2b	V3b	U1/E	U2/E	U3/E	V1a-E	V2a-E	V3a-E	V1b-E	V2b-E	V3b-E

Note: for VT tests neutral to be disconnected from Secondary

Comments: Note: For check task : 2,3,6,7,14, refer to FAT punch list N"C300000103.
Note: For check task:15, check on wiring will be done during lables inspection. Please refer to the relevant ITR.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS Impianti srl	RM (Rosetti Marino)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-09-11	2024-09-12	
Signature	Firma Digitale Sicura Carmelo Bongiovanni 2024-09-11T17:43:09+0200	Firma Digitale Sicura Giovanni Tangianu 2024-09-12T10:16:08+0200	

RAPPORTO DI PROVA
TEST REPORT

Fornitore/ Supplier: IMESA S.p.A. Via G. Di Vittorio, 14 JESI (Ancona) – ITALIA
Tel.+39 0731 211034 - Fax.+39 0731 211055 - imesa@imesaspa.com - www.imesaspa.com

P

N° Certificato/ Certificate N°:	**322**	**Data / Date:**	**30-31/08/24**
Commessa N° / Workorder N°:	**240875**		
Matricola N° / Serial N°:	**231298/SD/045**		
Ordine N° / Order N°:			
Cliente / Customer:	**ROSETTI MARINO**		

Collaudo eseguito alla presenza di:
Test surveyed by:

Sig. / Mr.	Ditta / Firm	Firma / Signature
VERDOLINI SIMONE	**IMESA**	

Materiale collaudato a Norme: **IEC 61439-2**
Material tested according to

Procedura collaudo Quadri BT : IMESA IL 01.CQ
Procedure test Switchboards LV

QUADRO ELETTRICO BT SWITCHBOARD LV	**Tipologia / Type:**	**PC/MCC**
Tensione Nominale di Isolamento (U_n): *Rated Insulation Voltage (U_n)*	**0,69KV**	

CARATTERISTICHE ELETTRICHE:
Ue=0,4/23kv Un=0,4/0,23kv F=50Hz In=2500A Ik=50Ka/1s

DISEGNI /DRAWINGS : LV SWITCHBOARD 400/230 QUADRO "SG-200N1"

RAPPORTO DI PROVA
TEST REPORT

N° Certificato / Certificate N°:		Data / Date:	30-31/08/24

PROVE INDIVIDUALI (secondo lo standard IEC 61439-1)**:**
ROUTINE TESTS (according to standard IEC 61439-1):

☐ **11.1 GENERALITA'**
GENERALITY

- ☐ CONTROLLO VISIVO E DIMENSIONALE
  VISUAL AND DIMENSIONAL CONTROL
- ☐ CONTROLLO OSSERVANZA ALLE SPECIFICHE ED ORDINE
  CHECK OF COMPLIANCE TO SPECS AND ORDER
- ■ CONTROLLO CARPENTERIA, SBARRE CONNESSIONI PRIMARIE
  STRUCTURAL WORKS, BUS-BAR CONTROL
- ☐ CONTROLLO VERNICIATURA (RAL μ)
  PAINTING CONTROL

☐ **11.2 GRADO DI PROTEZIONE DEGLI INVOLUCRI**
PROTECTION DEGREE

☐ **11.3 DISTANZE DI ISOLAMENTO IN ARIA E SUPERFICIALI**
CLEARENCE AND CREPAGE DISTANCES

☐ **11.4 PROTEZIONE CONTRO LA SCOSSA ELETTRICA ED INTEGRITA' DEI CIRCUITI DI PROTEZIONE**
PROTECTION AGAINST ELECTRIC SHOCK AND INTEGRITY OF PROTECTIVE CIRCUITS

☐ **11.5 INSTALLAZIONE DEI COMPONENTI**
INCORPORATION OF BUILT-IN COMPONENTS

- ☐ VERIFICA FONDO SCALA STRUMENTI
  VERIFY INSTRUMENTS SCALE BOTTOM
- ☐ CONTROLLO DATI NOMINALI APPARECCHIATURE
  EQUIPMENT RATED DATA CONTROL

☐ **11.6 CIRCUITI ELETTRICI INTERNI E COLLEGAMENTI**
INTERNAL ELECTRICAL CIRCUITS AND CONNECTIONS

☐ **11.7 CONTROLLO DEI TERMINALI PER I CONDUTTORI ESTERNI**
CHECK OF TERMINALS FOR EXTERNAL CONDUCTORS

☐ **11.8 CONTROLLO FUNZIONAMENTO MECCANICO**
MECHANICAL OPERATION TEST

■ **11.9 PROVE DI TENSIONE : f = 50 Hz e t = 1 min.**
VOLTAGE TEST : f = 50 Hz and t = 1 min.

- CIRCUITI DI POTENZA 1,89 kV
  LEAKAGE CURRENT
  L1 1mA
  L2 1mA
  L3 1mA
  N 1mA

■ ***Misura isolamento circuito principale***

BEFORE		*AFTER*	
☐ ***L1***	>500 MΩ	**L1**	>500 MΩ
L2	>500 MΩ	**L2**	>500 MΩ
L3	>500 MΩ	**L3**	>500 MΩ
☐ **N**	>500 MΩ	**N**	>500 MΩ

11.10 CONTROLLO CABLAGGIO
WIRING CHECK

- ☐ CONTROLLO DATI DI TARGA
  PLATE CHECK
- FUNZIONAMENTO CORRETTO DELLE LOGICHE DI CONTROLLO
  RIGHT WORKING OF THE LOGICAL CONTROLS

APPARECCHIATURE UTILIZZATE **STRUMENTO N°SP214 SCADENZA 07/2026**
GENERATORE 100A N°SP151 SCADENZA 07/2025
CHIAVE DINAMOMENTRICA N°SCD58 SCADENZA 01/2025
MULTIMETRO N°SP172 SCADENZA 08/2025

NOTE

I.M.E.S.A. S.p.A.
Via G. Di Vittorio, 14 - 60035 JESI
☎ 0731/211034 -
Cod. Fisc. e P. IVA 00155830429

IMESA

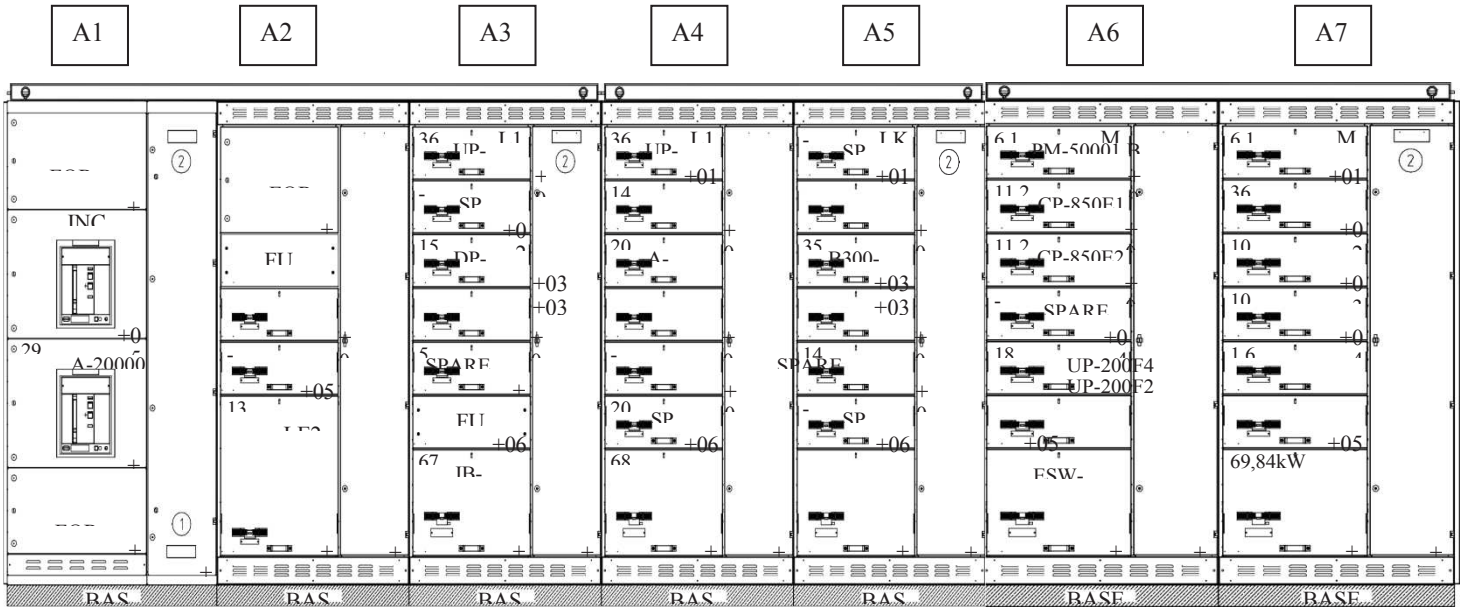
FIRMA
SIGNATURE

CLIENTE
CUSTOMER

MISURA RESISTENZA DEL CIRCUITO PRINCIPALE / *MAIN CIRCUIT RESISTANCE MEASUREMENT*

Foglio/*Sheet* n°_____ di_____

PROGETTO: *PROJECT* QUADRO: Tag: *SWITCHBOARD*	**Punti di misura Measurement points**	Fase **L1** / Phase Misura della resistenza/ *Resistence measured* **(μΩ)***	Fase **L2** / Phase Misura della resistenza/ *Resistence measured* **(μΩ)***	Fase **L3** / Phase Misura della resistenza/ *Resistence measured* **(μΩ)***	Fase **N/** Phase Misura della resistenza/ *Resistence measured* **(μΩ)***
	Dalla risalita A1 alla risalita A7	56,58	56,68	56,84	102,34



Nota I valori delle cadute di tensione di ciascuna fase di ogni singolo scomparto (allaccio/ uscita) non devono avere scostamenti reciproci superiori al 30%.

* *Per avere il valore della resistenza (μΩ) è sufficiente moltiplicare per 10 la c.d.t. (mV) misurata (esempio: c.d.t. di 1,4 mV = 14 μΩ).*

Note *The voltage drop values of each phase of any compartment (connection/ exit) must not have mutual deviations higher of 30% .*

* *To have the measure of resistance (μΩ) is sufficient to multiply for 10 the v.d. measured (mv) measured (ex: voltage drop of 1.4 mV = 14 μΩ)*

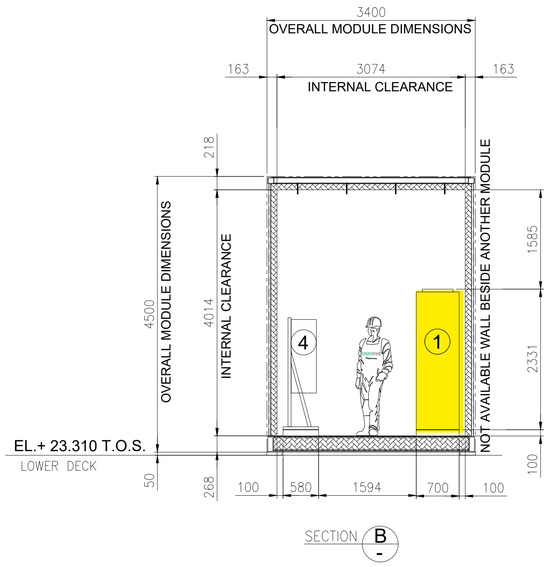
OPERATORE:VERDOLINI SIMONE

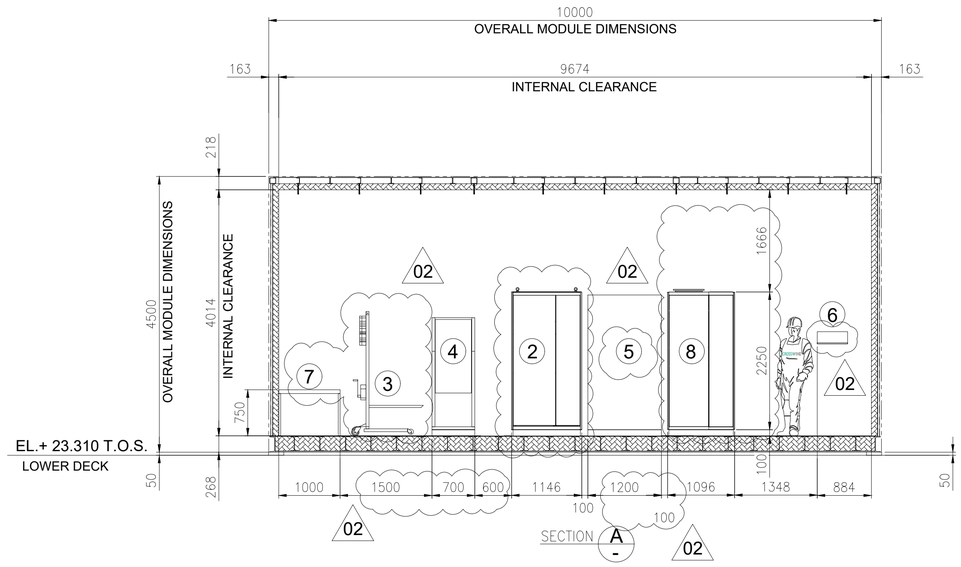
CODICE MULTIMETRO:
EMPLOYEE
MULTIMETER CODE

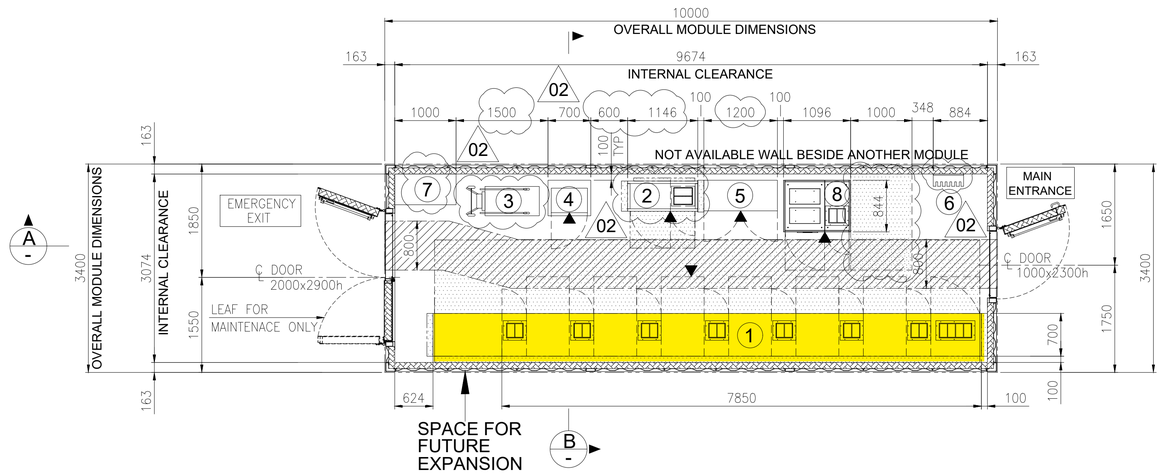
DATA:31/08/24
DATE

GENERATORE 100A C.C.: SP151
GENERATOR 100A D.C

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





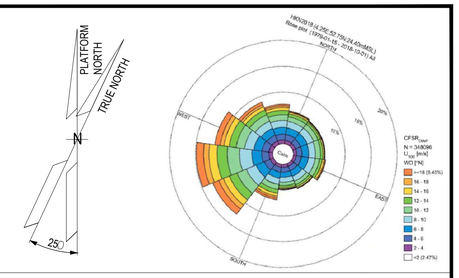


EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

1

EQUIPMENT LIST

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



NOTES

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

02

LEGEND

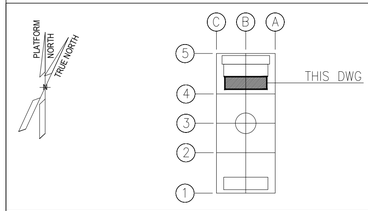
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

REFERENCES

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

02

KEY PLAN



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

CROSSWIND

ROSETTI MARINO

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

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

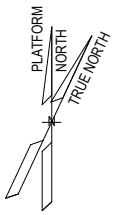
ROSETTI MARINO SpA

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

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN FMO	CHECKED LMA/AMA	APPROVED LMA/MDO	DATE 27/05/2024

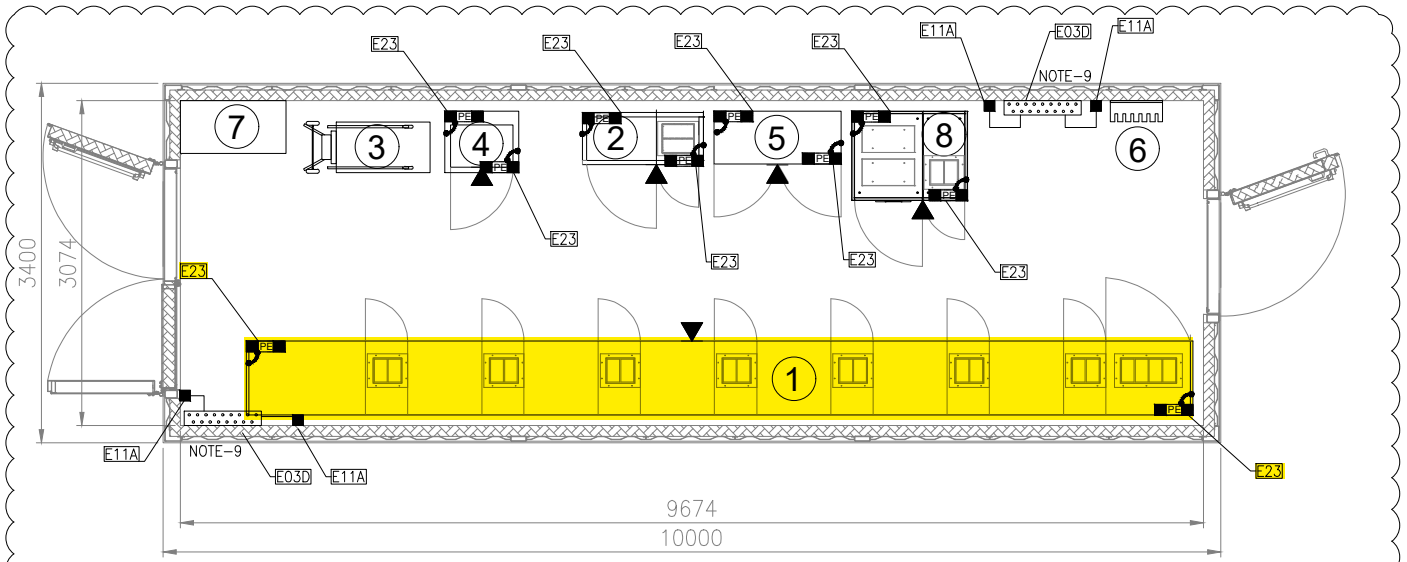
A1	DRAWING NO. 123A90-DDL-EL-DL-20105	SHEET 001	REV. 02

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



EQUIPMENT LIST		
REF.	TAG No.	DESCRIPTION
1	SG-200N1	400V SWITCHGEAR
2	DP-200N1	DISTRIBUTION BOARD FOR LIGHTING AND SMALL POWER B.O.P.
3		SERVICE TROLLEY FOR 400V SWITCHGEAR
4	CN-200N1	ICCP PANEL
5	B200-HSB-001	HVAC PANEL – LV ROOM
6		TOOL BOX
7		TABLE
8	SG-200D2	ACB PANEL FOR SOLAR PACKAGE

01



EARTHING LAYOUT
"B-200"LV SWITCHROOM
PLAN
EL.+ 23.310 T.O.S.

01

NOTES

1. THIS DOUCMENT IS VALID ONLY FOR EARTHING LAYOUT.
2. THE CABLE SIZE SHALL BE CONFIRMED.
3. THE EXACT POSITION OF EARTHING/MARSHALLING BUS BAR SHALL BE DEFINED BY VENDOR.
4. THE EARTHING BUS BAR INSTALLATION SHALL BE PREFERABLY IN VERTICAL MODE.
5. FOR TYPICAL DETAILS PLEASE REFER DOCUMENT "123A90-DDL-EL-DD-20090-ELECTRICAL TYPICAL INSTALLATION DETAILS- EARTHING SYSTEM".
6. DUE TO THE TOP CABLE ENTRIES THE EARTHING BUS BAR INSIDE THE CABINETS SHALL BE INSTALLED AT THE TOP OF THE CABINETS THEMSELVES.
7. FOR LIGHTNING PROTECTION SYSTEM SURGE PROTECTIVE DEVICES (SPD), REFER DOCUMENT 123A90-DDL-EL-RE-20154.
8. ALL NON WELDED OBJECTS SHALL BE EARTHED.
9. CONTAINER WILL HAVE A BTH (EARTHING BAR TINNED COPPER) WITH 2 EARTHING BOSS, INSTALLED IN THE SOUTH-WEST CORNER AT AN ELEVATION OF 2.5M FROM THE CONTAINER FLOOR. EARTHING BOSS SHALL BE INSTALLED AT SAME ELEVATION 2.5M.

SYMBOL	DESCRIPTION
PE	EARTHING BUS
	EARTHING BAR TINNED COPPER WITH no.18 HOLES
	35sq.mm Y/G INSULATED COPPER CONDUCTOR FOR PE
PE	PROTECTIVE EARTH
	EARTHING BOSS AISI316L
	JUMPER CONNECTION
	FRONT OF EQUIPMENT

01

REFERENCE

DOCUMENT NUMBER	DOCUMENT TITLE
123A90-DDL-EL-DD-20090	ELECTRICAL TYPICAL INSTALLATION DETAILS -EARTHING SYSTEM
123A90-DDL-EL-DL-20105	ELECTRICAL EQUIPMENT LAYOUT-LV SWITCHROOM
1724000049-AR-DD-00019	B-200 DETAILED DRAWINGS – E&I SHELTERS

01

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20137**

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

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	25/07/24	ASR	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/05/24	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
EARTHING & LIGHTNING LAYOUT – LV SWITCHROOM
"B-200"LV SWITCHROOM

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:50

A3 | DRAWING NO. 123A90-DDL-EL-DL-20137 | SHEET 003 | REV. 01

CROSSWIND

ROSETTI MARINO

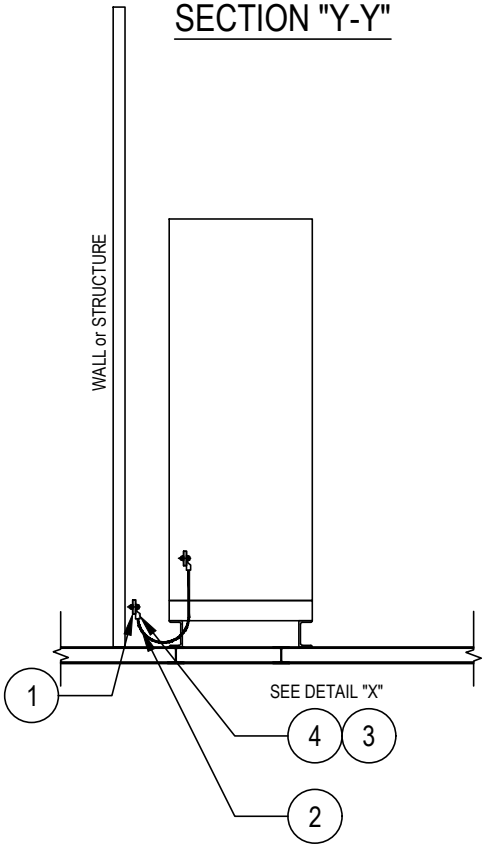
F.to UNI A3: 420mmx297mm

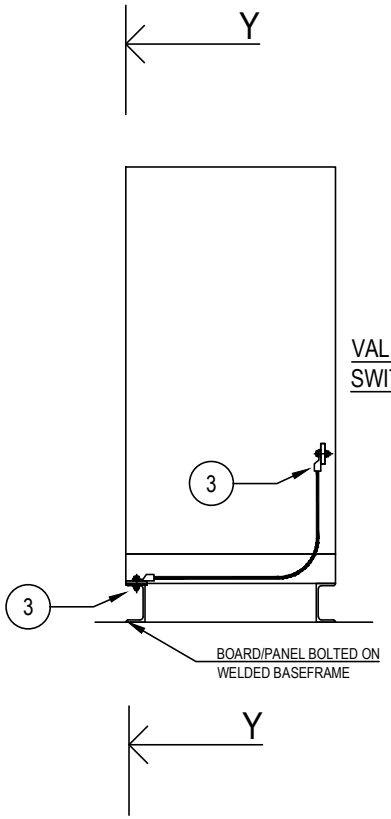
File Name : 123A90-DDL-EL-DL-20137 Rev. 01

E23

POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	MARSHALLING EARTHING BAR	TINNED COPPER	50X5		NOTE 1
2	Y/G INSULATING COPPER CONDUCTOR	COPPER			NOTE 1
3	COMPRESSION TYPE LUG FOR INSULATION COPPER CONDUCTOR	TINNED COPPER	35mm^2	4	NOTE 1
4	BOLT, PLANE WASHER, GROWER SPRING WASHER AND NUT	AISI 316L	M10X30	4	

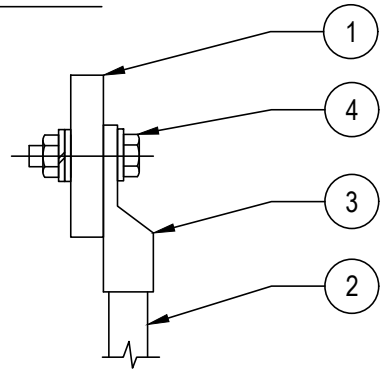
SECTION "Y-Y"





VALID FOR HV/LV SWITCHGEAR

DETAIL "X"



NOTES:

1) FOR SIZE OF THE EARTHING CABLE SEE EARTHING LAYOUT DRAWINGS OF RESPECTIVE AREAS

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DD-20090**

REV.:	DATE:	SIGNATURE:
2_A	26/08/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
EARTHING FOR PANELS/BOARDS IN TECHNICAL ROOM

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

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-EL-DD-20090	011	02

F.to UNI A3: 420mmx297mm

CROSSWIND

ROSETTI MARINO

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

Row	IOGP S-560D (3.0) Procurement Data Sheet for Low-voltage Switchgear and Controlgear (IEC)							Issue
2	Ref. Clause	Description	Purchaser requirement	Purchaser requirement UOM	Supplier offered value	Supplier offered UOM	Additional notes	
3		**Identifier**						
4		Tag number :	SG-200N1		SG-200N1			
5		Tag description :	input data		input data			
6		**General information**						
7		Conformity assessment system (CAS) level :	D		D			
8		Project country :	Netherlands		Netherlands			
9		Project region :	Netherlands		Netherlands			
10		**Electrical system**						
11	8.6.1	Earthing system :	TN-S		TN-S			
12		System configuration phases/wires :	3-phase 4-wire		3-phase 4-wire			
13		**Voltage ratings**						
14	5.2.1	Nominal voltage of supply system :	400	V	400	V		
15		Transient overvoltages :	category III		category III			
16		**Current ratings**						
17	5.3.1	Rated current of assembly busbars (I_{nA}) :	2500	A	2500	A	At ambient temp 35°C	
18	6.1	Rated peak withstand current (I_{pk}) :	105	kA	105	kA		
19	6.1,9.3.1	Rated short-time withstand current (I_{cw}) :	50	kA	50	kA		
20	6.1	Rated short-time withstand current (I_{cw}) time duration :	1	s	1	s		
21		Short-circuit current in neutral conductor and in protective circuit :	60	%	60	%		
22		**Rated diversity factor (RDF)**						
23		Assumed loading factor distribution - 1 circuit :	1,0		1,0			
24		Assumed loading factor distribution - 2 and 3 circuits :	0.9		0.9			
25		Assumed loading factor distribution - 4 and 5 circuits :	0.8		0.8			
26		Assumed loading factor distribution - 6 and 9 circuits :	0.6		0.6			
27		Assumed loading factor distribution - 10 or more circuits :	0.7		0.7			
28		Assumed loading factor electric actuator (MOV) :	0.2		0.2			
29		Assumed loading factor motors rated less than or equal to 100 kW :	0.8		0.8			
30		Assumed loading factor motors rated greater than 100 kW :	1		1			
31		**Rated frequency (f_n)**						
32	5.5	Rated frequency (f_n) :	50	Hz	50	Hz		
33		**Other characteristics**						
34	8.102.1	Mounting arrangement :	longitudinal channels flush with floor		manufacturer's standard		Switchboard base frame to be bolted or welded to yard foundation	
35		**Information relating to assembly**						
36		Language used for all provided information :	English		English			
37		**Instructions for handling, installation, operation and maintenance**						
38	6.2.2	Lifting device for withdrawable parts heavier than 25 kg :	not required		not required		Recommended	
39		**Device and/or component identification**						
40		Main component, primary identification language :	English		English			
41		Mimic (synoptic) diagrams :	required		required			
42		**Normal service conditions**						
43		Location type :	indoor climate controlled		indoor climate controlled			
44	8.102.3,8.102.4	Operating environment :	offshore – fixed		offshore – fixed			
45	7.1.1	Ambient air temperature - lower limit :	-8.4	°C	-8.4	°C		01
46		Ambient air temperature - upper limit :	40	°C	40	°C		
47		Ambient air temperature - daily average maximum :	35	°C	35	°C		
48		Humidity conditions - maximum relative humidity :	95 % at −5 °C to +30 °C	%	95 % at −5 °C to +30 °C	%		
49		Pollution degree of macro-environment (of installation environment) :	3		3			
50		Altitude :	≤ 2 000	m	≤ 2 000	m		
51		**Special service conditions**						
52		Seismic activity zone in accordance with IEC 60721-2-6 :	not applicable		not applicable			
53		EMC environment :	A		A			
54	8.102.3,8.102.4	Maximum rolling of vessel in dynamic conditions :	not applicable		not applicable			
55	8.102.3,8.102.4	Maximum pitching of vessel in dynamic conditions :	not applicable		not applicable			
56		**Storage and handling**						
57		Storage and handling environmental conditions :	within IEC default conditions		within IEC default conditions			
58		**Degree of protection provided by assembly enclosure**						
59		Minimum external mechanical impact protection :	IK08		IK08			
60	8.2.2	Protection against ingress of solid foreign bodies and ingress of water :	IP 2X		other		IP30	01
61		**Protection against electric shock**						
62		Type of protection against electric shock - basic protection :	constructional (manufacturer's standard)		constructional (manufacturer's standard)			
63		Type of protection against electric shock - fault protection :	automatic disconnection of supply		automatic disconnection of supply			
64		Access to manually operated devices :	authorized persons		authorized persons			
65	8.5.5.101.7	Closed compartment doors :	hasp and padlock		manufacturer's standard locking facility		Door with hinged with key lock.	01
66	8.2.3	Safety shutters, disconnectors and switches :	hasp and padlock		manufacturer's standard locking facility		Drawers position and circuit breaker open can be locked with padlock.	01
67	8.5.5.101.7	Padlock provider :	manufacturer supplied		user supplied			
68		**Withdrawable parts (IEC 61439-2)**						
69	8.5.101	Type of electrical connections for outgoing functional units rated up to and including 630 A :	withdrawable		withdrawable			
70	8.5.2.101	Facility to remotely test withdrawn functional units :	required		not required			
71		**Selection of switching devices and components**						
72	8.5.3.101.2	Incoming unit switching device requirement :	withdrawable ACB		withdrawable ACB			
73		Bus coupler switching device requirement :	withdrawable ACB		withdrawable ACB			
74	8.5.3,8.5.3.104.1	Main circuit protection for lighting and small power feeders :	MCCB/MCB		MCCB/MCB			
75	8.5.3.104.1,8.5.3.105.1	Main circuit protection for motor starters and contactor feeders :	MCCB/MCB		MCCB/MCB			
76		**Air circuit breakers**						
77	8.5.3.103.2.5	Spring charging motor voltage :	110 V DC		manufacturer's standard		230V AC	
78		Air circuit breaker control voltage :	110 V DC		manufacturer's standard		230V AC	
79	8.5.3.103.2.10	Air circuit breaker auxiliary contact provision :	2 NO and 2 NC		2 NO and 2 NC			
80		**Motor starters and contactor feeders**						
81	8.5.3.105.13,8.5.3.105.14,8.5.3.105.15	Contactor control circuit voltage :	110 V AC		230 V AC			
82	8.5.3.105.13,8.5.3.105.14,8.5.3.105.15	Contactor control power source :	internal within each functional unit		other		400V/230V transformer	
83	8.5.3.106.6	Earth fault front of compartment reset :	required		required			01
84		Minimum motor size for space heater :	not required	kW	not required	kW		
85		Motor space heater supply voltage :	230 V AC		230 V AC			
86		**Unearthed electrical supplies (IT)**						
87		Provision of portable insulation fault locator :	not required		not required			

88		**Accessibility**						
89	8.5.5.101.2	PSC-assembly physical configuration :	access front only		access front only			
90		**Auxiliary components**						
91	8.5.10.2.3.3,8.5.3.1 03.2.11	Test blocks for ACB protection relay injection testing :	required - manufacturer's standard		not required			
92	8.5.10.2.3.1	Energy and maximum demand metering accuracy :	class 0,5		class 1,5			
93		**Internal electrical circuits and connections**						
94	8.6.1	Main circuit busbar insulation :	required		required			
95		Main circuit earth-neutral link within incoming circuit units :	required		required			
96		Auxiliary circuit wiring insulation type :	low smoke zero halogen		low smoke zero halogen			
97	8.6.5	Supplementary conductor marking by colour :	not required		not required			
98		**Terminals for external conductors**						
99		Incoming (supply) unit direction of external conductors :	from above		from above			
100	8.8	Incoming (supply) unit external conductor type :	cable		cable			
101		Outgoing (load) unit direction of external conductors :	from above		from above			
102	8.8	Outgoing (load) unit external conductor type :	cable		cable			
103		Auxiliary cable direction of external conductors :	from above		from above			
104		Auxiliary cable external conductor type :	cable		cable			
105		External conductor material :	copper		copper			
106	8.8	Multicore cable entry method :	undrilled removable gland-plate		multi-cable transit			
107	8.8	Single core cable entry method (non-magnetic) :	undrilled removable gland-plate		multi-cable transit			
108		Special glanding requirement :	none		none			
109		**Terminals for control and auxiliaries**						
110		Minimum spare unwired terminal provision for future use :	10 % spare		10 % spare			
111		**Internal separation of PSC-assemblies (IEC 61439-2:2020)**						
112	8.101]	Internal separation for ACB functional units :	Form 4 type 5		Form 4b			01
113	8.101]	Internal separation for non-ACB functional units :	Form 4 type 5		Form 4b			01
114		**Enclosure space heaters**						
115	8.103.1.1	Assembly enclosure space heater requirement :	required		required			
116	8.103.1.1	Assembly enclosure space heater voltage :	230 V AC		230 V AC			
117		Assembly enclosure space heater control method :	thermostat		thermostat			01
118	8.103.3,8.103.2.1,8.103.2.2,8.103.3.1,8.103.3.2,8.103.3.3,8.103.3.4,8.103.3.5,8.103.3.6	Assembly enclosure space heater monitoring method :	not applicable		not applicable			
119		**Provision for future development**						
120		Provision of equipped spare functional outgoing units :	10%		one of each type			
121		Provision of space for future outgoing functional units :	10%		10%		Included in above point	01
122		**Condition monitoring**						
123	8.105.2.1	Thermal monitoring :	not required		not required			
124		Circuit breaker condition monitoring :	not required		not required			
125		Motor condition monitoring equipment :	not required		not required			
126		**Interface with control systems**						
127		IED brand :	manufacturer's standard		manufacturer's standard		N/A	
128		Process control interface (ICSS/DCS) media :	manufacturer's standard		manufacturer's standard			
129		Process control interface (ICSS/DCS) protocol :	IEC 61850		Modbus TCP/IP			01
130		Process control interface (ICSS/DCS) network redundancy :	not applicable		not applicable			
131		Electrical control interface (ECMS) media :	manufacturer's standard		manufacturer's standard			
132		Electrical control interface (ECMS) protocol :	IEC 61850		IEC 61850		Only for incoming protection relay	01
133		Electrical control interface (ECMS) network redundancy :	not applicable		not applicable			
134	8.5.3.106.10	IED remote configuration via ECMS :	not applicable		not applicable			
135		**Switchgear interlocking / intertripping interfaces**						
136		Interlocking / intertripping interface media :	hardwired discrete		hardwired discrete			
137		Interlocking / intertripping interface protocol :	hardwired		hardwired			
138		**Power management system (PMS) interfaces**						
139		IED to power management system interface media :	manufacturer's standard		manufacturer's standard			
140		IED to power management system interface protocol :	IEC 61850		other		Feeders with remote control are equipped with Ekip hi-Touche connected in Modbus TCP-IP woth control system to provide electrical measures.	01
141		IED to power management system network redundancy :	not applicable		not applicable			
142		**Generator control panel interfaces**						
143		IED to generator control panel interface media :	not required		not required			
144		IED to generator control panel interface protocol :	not required		not required			
145		**Cyber security**						
146		Security certification for industrial automation and control system components :	required		not required			
147		**Ratings of the internal arc classification (IAC)**						
148	6.1,9.3.1	IEC TR 61641:2014 arcing class :	arcing class C		arcing class C			
149	9.3.1	Permissible short-circuit current under arcing conditions ($I_{p\ arc}$) :	50	kA	50	kA		
150	9.3.1	Permissible arc duration (t_{arc}) :	0,3	s	0,3	s		
151	9.3.1	Integrated internal arc-fault mitigation system (IAMS) :	not required		not required			
152		Internal arc-fault control device (IACD) type :	not required		not required			
153		Internal arc-fault reduction device (IARD) type :	not required		not required			
154		**Routine verification**						
155	11.101.1	ECMS simulation test :	not applicable		not applicable			

MASTER
30/07/24

BASE LOAD POWER HUB (BLPH)

"SG-200N1" LV SWBD 400/230V

GENERAL ARRANGEMENTS DWG AND FOUNDATION LOAD CALCULATION INCLUDING COG

16/07/24

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
2	22/05/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)
1	28/03/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)
0	21/02/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

DWG n°: 231298/SD/7

Item n°: PF1002983/26

TITLE : "SG-200N1"

GENERAL ARRANGEMENTS
Cover

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DA-00007

SHEET 001

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DA-00007 Rev. 02

INDEX SHEETS

Sheet	Description	Revision 0	1	2	3	4	5	6	7	8	9
001	Cover / GENERAL ARRANGEMENTS	X	X	X							
002	Index / GENERAL ARRANGEMENTS	X	X	X							
003	Switchgear Characteristics / GENERAL ARRANGEMENTS	X	X	X							
004	Switchgear Characteristics / GENERAL ARRANGEMENTS	X	X	X							
005	Switchgear Name Plate / GENERAL ARRANGEMENTS	X	X	X							
006	Switchgear Lay-Out - Front View / GENERAL ARRANGEMENTS	X	X	X							
007	Switchgear Lay-Out - Front View / GENERAL ARRANGEMENTS	X	X	X							
008	Switchgear Lay-Out - Top View / GENERAL ARRANGEMENTS	X	X	X							
009	Switchgear Lay-Out - Bottom View / GENERAL ARRANGEMENTS	X	X	X							
010	Switchgear Lay-Out - Base Frame View / GENERAL ARRANGEMENTS	X	X	X							
011	Switchgear Lay-Out - Side View / GENERAL ARRANGEMENTS	X	X	X							
012	Base Frame Fixing System / GENERAL ARRANGEMENTS	X	X	X							
013	Center of Gravity Positioning / GENERAL ARRANGEMENTS	X	X	X							

Sheet	Description	Revision 0	1	2	3	4	5	6	7	8	9

IMESA ELECTRICAL ENGINEERING

DWG n°: 231298/SD/7

Item n°: PF1002983/26

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
2	22/05/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)
1	28/03/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)
0	21/02/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)

TITLE : "SG-200N1"

GENERAL ARRANGEMENTS

Index

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DA-00007

SHEET 002

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DA-00007 Rev. 02

A	ENVIRONMENTAL DATA	
1	AMBIENT	MARINE - OFFSHORE
2	INSTALLATION	INDOOR
3	AMBIENT AIR TEMPERATURE - DELAY AVERAGE MAXIMUM	35 °C
4	AMBIENT AIR MINIMUM/MAXIMUM TEMPERATURE	-8,4 ÷ +40 °C
5	RELATIVE HUMIDITY AVERAGE	95 %
6	RELATIVE HUMIDITY MAXIMUM	-
7	POLLUTION LEVEL DEGREE	VERY LIGHT

B	SWITCHGEAR ELECTRICAL FEATURES	
1	RATED VOLTAGE (Ue)	0,4/0,23 kV
2	NOMINAL VOLTAGE (Un)	0,4/0,23 kV
3	RATED INSULATION VOLTAGE (Ui)	0,69 kV
4	RATED FREQUENCY (Fn)	50 Hz
5	RATED IMPULSE WITHSTAND (Uimp)	4 kV
6	RATED NORMAL CURRENT (In)	2500 A
7	RATED SHORT TIME WITHSTAND CURRENT (Ik)	50 kA
8	RATED DURATION OF SHORT CIRCUIT (tk)	1 s
9	RATED PEAK WITHSTAND CURRENT (Ipk)	105 kA
10	INTERNAL ARC CLASSIFICATION IAC	50 kA (NOTE 1)
11	ARCING CLASS	0,3 s (NOTE 1)
12	NUMBER OF PHASES	3+1
13	PHASES IDENTIFICATION	L1-L2-L3-N
14	EARTHING CIRCUITS MAIN BUSBAR SECTION	> 300mmq
15	REFERENCE STANDARDS	IEC 61439-2
16	EARTHING SYSTEM	TN-S
17	NEUTRAL BUSBARS SIZING	50% PHASE SECTION

C	SWITCHGEAR MECHANICAL FEATURES	
1	EXTERNAL DEGREE OF PROTECTION	IP30
2	INTERNAL DEGREE OF PROTECTION	IP20
3	EXTERNAL MECHANICAL IMPACT PROTECTION	IK10
4	ACCESSIBILITY	FRONT
5	TYPE DESIGNATION	FORM : 4B (INCOMING) FORM : 4B (OUTGOING)
6	POWER CABLES (INCOMING)	FROM THE TOP (by MCT)
7	POWER CABLES (OUTGOING)	FROM THE TOP (by MCT)
8	AUXILIARY CABLES	FROM THE TOP (by MCT)
9	BASE FRAMES	PROVIDED
10	MIMIC DIAGRAM (BLACK)	not applicable
11	BOTTOM CLOSING	UNDRILLED ALUMINIUM REMOVABLE PLATES
12	PAINTING COLOUR	RAL 7035
13	PAINTING SPECIFICATION CYCLE	C3-MEDIUM, > 60µ (IMESA CYCLE "A")
14	SURFACE NOT PAINTED	ZINC PLATED OR TROPICALIZED
15	FRONT DOORS (AUXILIARY COMPARTMENT)	HINGED WITH KEY LOCKS
16	FRONT DOOR (C.B. COMPARTMENT)	HINGED WITH KEY LOCKS
17	REAR PANELS	BOLTED
18	MINIMUM CLEARANCE	TO THE FRONT 1200 mm
19		TO THE REAR 100 mm
20		TO THE TOP 200 mm
21		TO THE SIDE 100 mm
22	WEIGHTS	4.900 kg ± 10% (ESTIMATED)

NOTE 1 = VALID ONLY FOR INCOMING COLUMN (A.1)

IMESA ELECTRICAL ENGINEERING

DWG n°: 231298/SD/7

Item n°: PF1002983/26

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
2	22/05/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)
1	28/03/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)
0	21/02/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)

TITLE : "SG-200N1"

GENERAL ARRANGEMENTS
Switchgear Characteristics

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DA-00007

SHEET 003

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DA-00007 Rev. 02

D	BUSBAR SYSTEM	
1	MATERIALS	ELECTROLYTIC COPPER
2	BUSBAR SURFACE TREATMENT	not applicable
3	INSULATION BUSBARS (if applicable)	SHEATHED
4	JOINT AND CONNECTIONS TREATMENT	not applicable
5	INSULATION JOINTS (if applicable)	REMOVABLE SOLID DIELECTRIC PROTECTIONS
6	BULKHEADS FOR POWER BARS (if applicable)	YES
7	PHASES IDENTIFICATION	L1 (BROWN)
8		L2 (BLACK)
9		L3 (GREY)
10		N (BLUE)
11		PE (YELLOW / GREEN)
12	MARKING OF PHASES	ADHESIVE LABELS PLACED ON BARS

E	POWER / AUXILIARY CIRCUITS CABLES		
1	LOW VOLTAGE CABLE TYPE		SH-W (MARINE APPROVAL)
2	INSULATION		HLPE (600/1000 V)
	SIZE / COLOUR CODE		
3	MEASURE & CONTROL & SIGNAL CIRCUITS	AC/DC CIRCUIT (Internal Heating / Motor Spring Charger / Internal Distribution)	≥ 2,5 mmq / BLACK
4		VT SECONDARY CIRCUIT	1,5 mmq / BLACK
5		CT SECONDARY CIRCUIT	2,5 mmq / BLACK
6		AC CIRCUIT	≥ 1,5 mmq / BLACK
7		DC CIRCUIT	≥ 1,5 mmq / RED(+) WHITE (-)
8		GROUND CIRCUIT	YELLOW / GREEN
9		PHASES IDENTIFICATION FOR AC POWER CIRCUIT TERMINATION WITH SHRINKABLE SHEATH (cable insulation BLACK)	L1 (BROWN)
10			L2 (BLACK)
11			L3 (GREY)

F	TERMINAL BLOCKS	
1	TERMINAL BLOCK TYPE	SPRING CLAMP (CABUR HMM grey)
2	DISCONNECT/TEST TERMINAL BLOCK TYPE	SPRING CLAMP (CABUR HMM grey)
3	MATERIAL	POLYAMIDE
4	SIZE	≥ 4mmq

G	AUXILIARY CIRCUIT VOLTAGE	
1	AUXILIARY COMMAND CIRCUITS	230 Vac (Internal Supply)
2	AUXILIARY SIGNALLING CIRCUITS	230 Vac (Internal Supply)
3	AUXILIARY PROTECTION CIRCUITS	110 Vdc (Internal Supply)
4	SPRING CHARGING MOTOR C.B.	230 Vac (Internal Supply)
5	INTERNAL LIGHTINGS	230 Vac (Internal Supply)
6	ANTICONDENSATION HEATER	230 Vac (Internal Supply)

H	LABELS	
1	MATERIAL	TRAFFOLYTE
2	BACKGROUND	WHITE
3	LETTERS	BLACK
4	LANGUAGE	ENGLISH
5	WARNING LABEL LANGUAGE	ENGLISH
6	FIXING	SCREWED
7	MARKING DEVICES / WIRES	INDIPENDENT
8	AC CIRCUIT	SEQUENTIAL
9	DC CIRCUIT	SEQUENTIAL

IMESA ELECTRICAL ENGINEERING

OWG n°: 231298/SD/7

Item n°: PF1002983/26

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
2	22/05/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)
1	28/03/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)
0	21/02/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)

TITLE : "SG-200N1"

GENERAL ARRANGEMENTS
Switchgear Characteristics

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DA-00007

SHEET 004

REV. 02

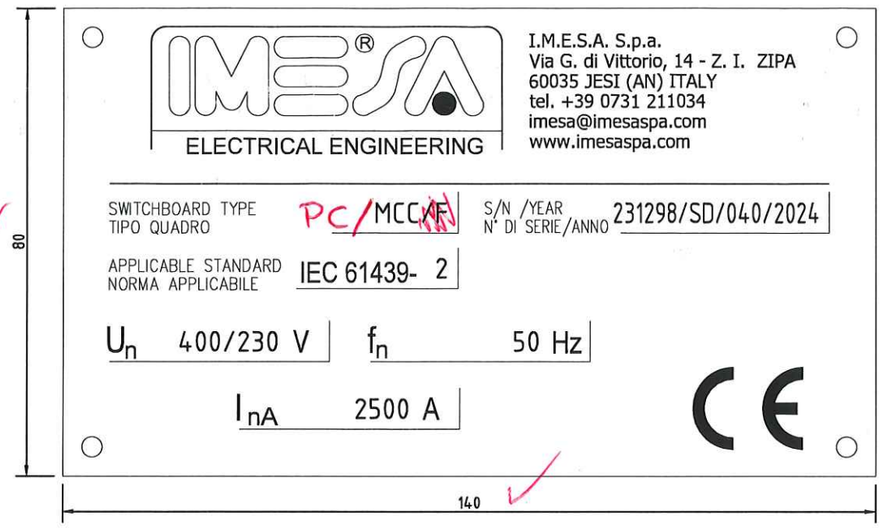
F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DA-00007 Rev. 02

NAMEPLATE DATES

OK DATA

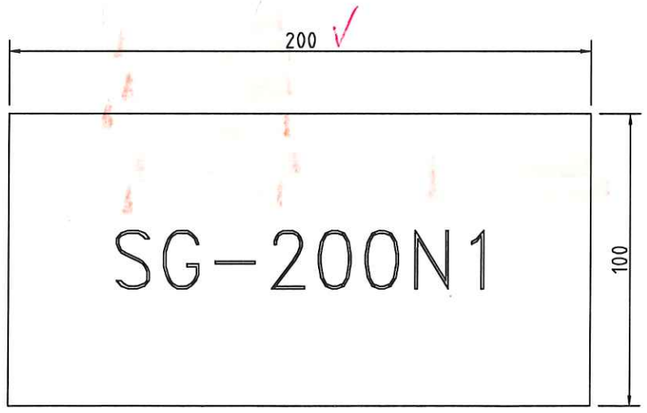
(1)



Material: Alloy

SWITCHGEAR TAG PLATE

(2)



OK DATA

Material: Traffolyte

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
2	22/05/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)
1	28/03/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)
0	21/02/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)

CROSSWIND

ROSETTI MARINO

IMESA ELECTRICAL ENGINEERING

DWG n°: 231298/SD/7

Item n°: PF1002983/26

TITLE : "SG-200N1"

GENERAL ARRANGEMENTS
Switchgear Name Plate

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DA-00007

SHEET 005

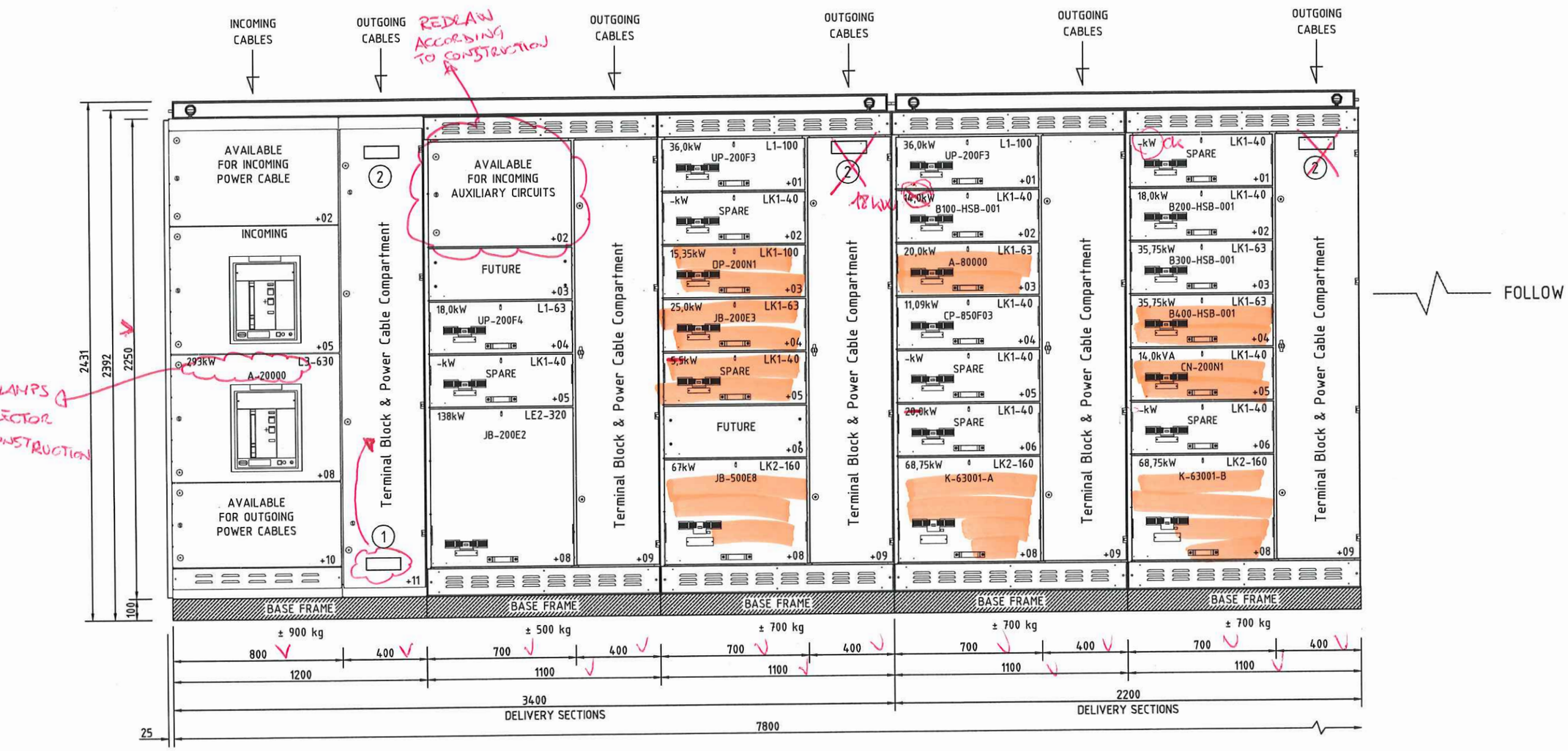
REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DA-00007 Rev. 02

FRONT VIEW

DRAWERS HIGHLIGTH WILL BE TESTED DURING NEXT FAT



NOTE :

1. Measurement Tollerance + 0,25%
2. Weight Tollerance ± 10%
3. Lifting Beam (Removable after Positioning)

scale 1/20

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
2	22/05/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)
1	28/03/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)
0	21/02/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)

IMESA ELECTRICAL ENGINEERING

DWG n° : 231298/SD/7

Item n° : PF1002983/26

CROSSWIND

ROSETTI MARINO

TITLE : "SC-200N1"

GENERAL ARRANGEMENTS
Switchgear Lay-Out - Front View

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DA-00007

SHEET 006

REV. 02

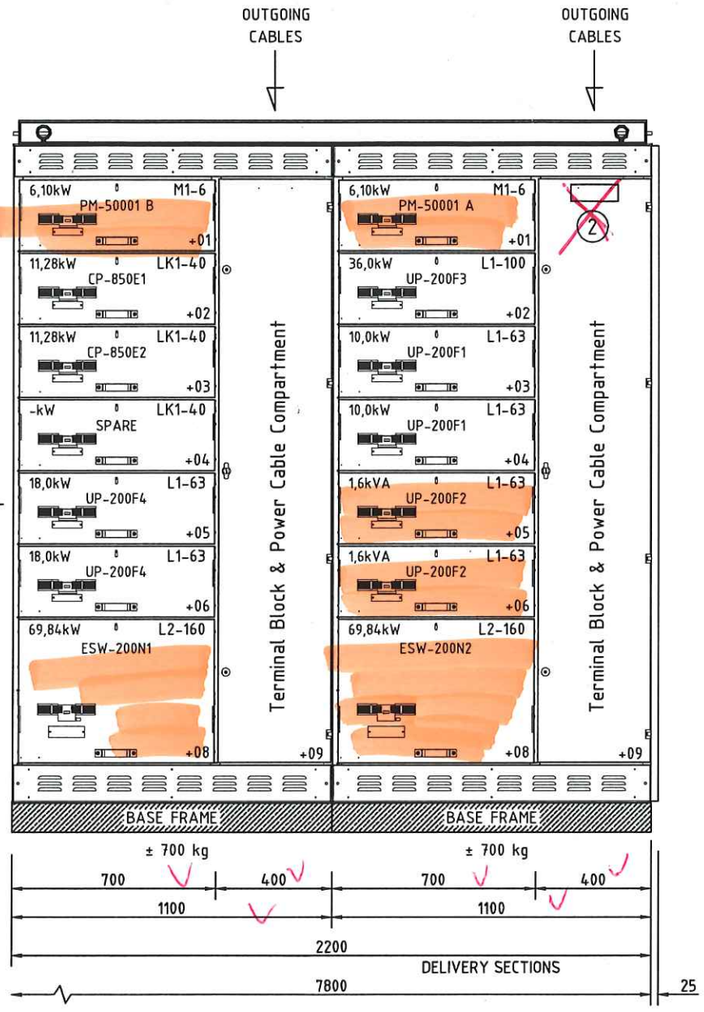
F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DA-00007 Rev. 02

FRONT VIEW

DRAWERS HIGHLIGTH WILL BE TESTED DURING NEXT FAT

A6 A7



FOLLOW

NOTE :

1. Measurement Tollerance + 0,25%
2. Weight Tollerance ± 10%
3. Lifting Beam (Removable after Positioning)

scale 1/20

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
2	22/05/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)
1	28/03/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)
0	21/02/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)

IMESA ELECTRICAL ENGINEERING

DWG n° : 231298/SD/7

Item n° : PF1002983/26

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200N1"

GENERAL ARRANGEMENTS
Switchgear Lay-Out - Front View

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DA-00007

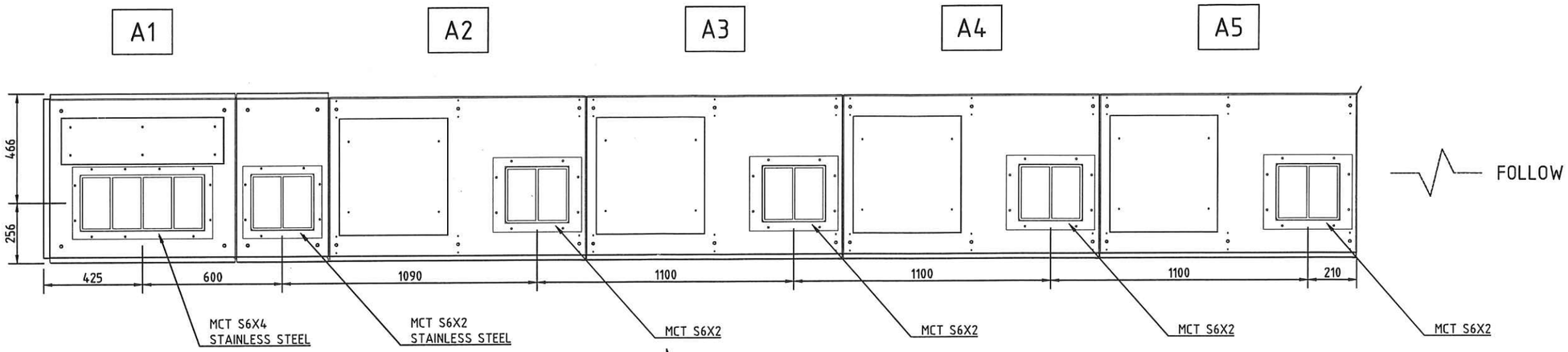
SHEET 007

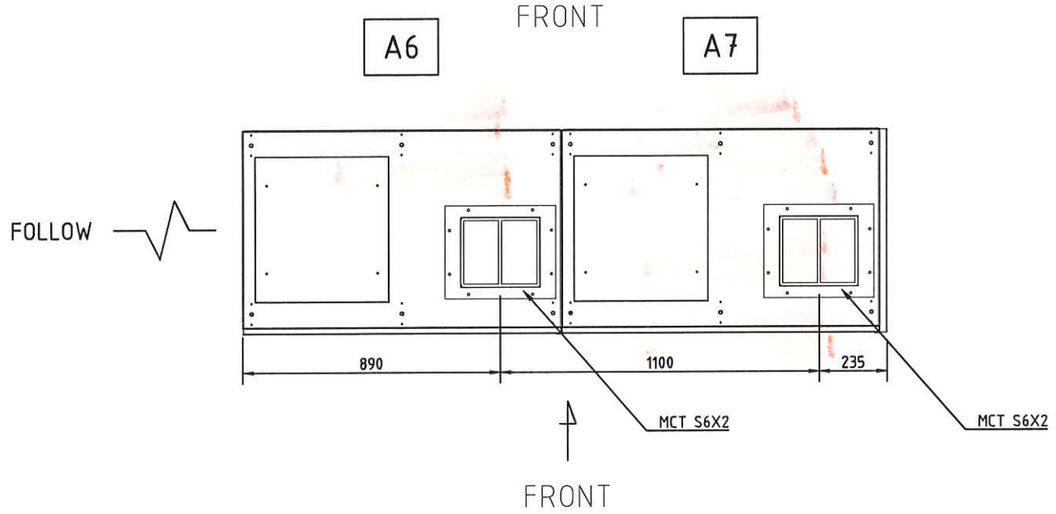
REV. 02

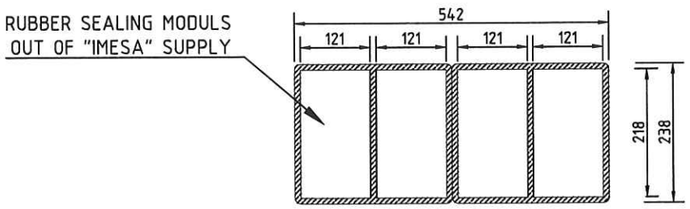
F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DA-00007 Rev. 02

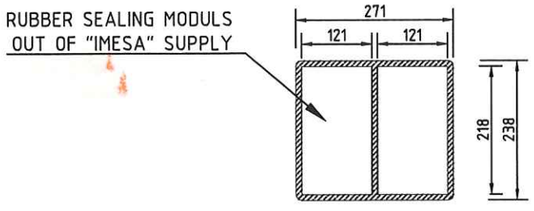
TOP VIEW







"S6X4" MCT DETAILS



"S6X2" MCT DETAILS

scale 1/20

NOTE :
1. Measurement Tollerance + 0,25%

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
2	22/05/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)
1	28/03/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)
0	21/02/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)

IMESA ELECTRICAL ENGINEERING
DWG n° : 231298/SD/7
Item n° : PF1002983/26

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200N1"
GENERAL ARRANGEMENTS
Switchgear Lay-Out - Top View

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DA-00007

SHEET 008

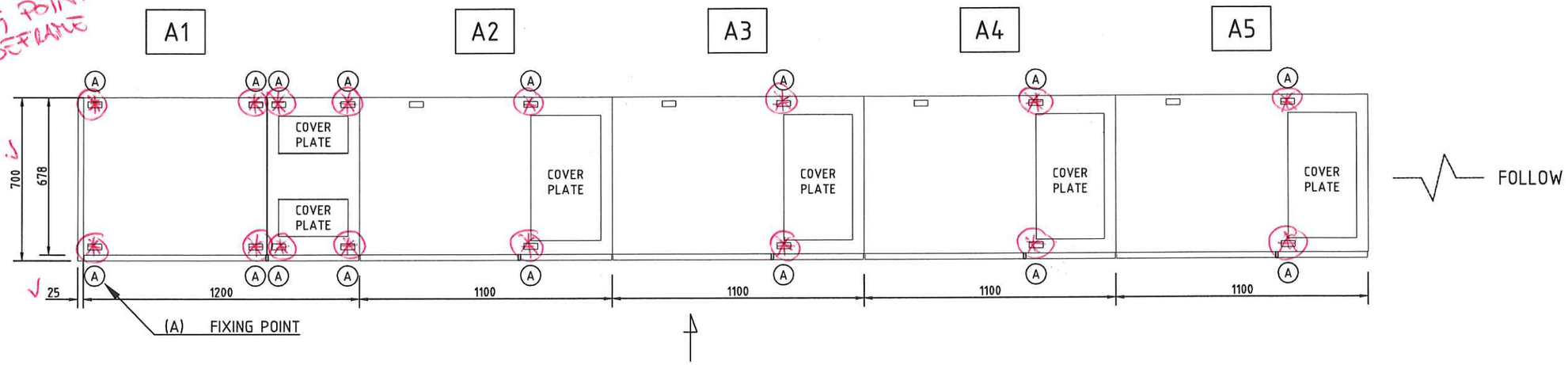
REV. 02

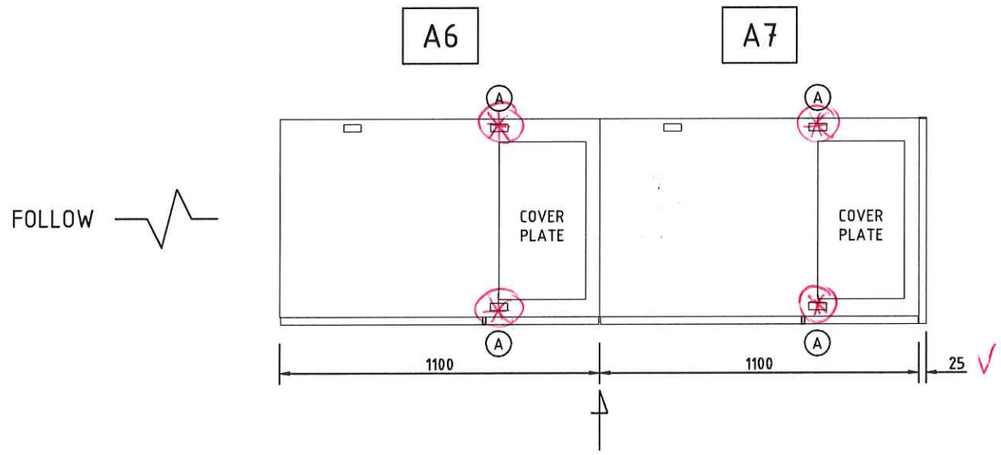
F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DA-00007 Rev. 02

BOTTOM VIEW

(*) FIXING POINT ON BASEFRAME





INSERT A NOTE OR DRAWING REFERRING (A) SYMBOL.

NOTE :
1. Measurement Tollerance + 0,25%

scale 1/20

=							
+							
	2	22/05/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)	
	1	28/03/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)	
	0	21/02/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)	
	REV.	DATE	DRN	CHKD	APPD	DESCRIPTION	

IMESA ELECTRICAL ENGINEERING

DWG n° : 231298/SD/7

Item n° : PF1002983/26

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200N1"

GENERAL ARRANGEMENTS
Switchgear Lay-Out - Bottom View

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DA-00007

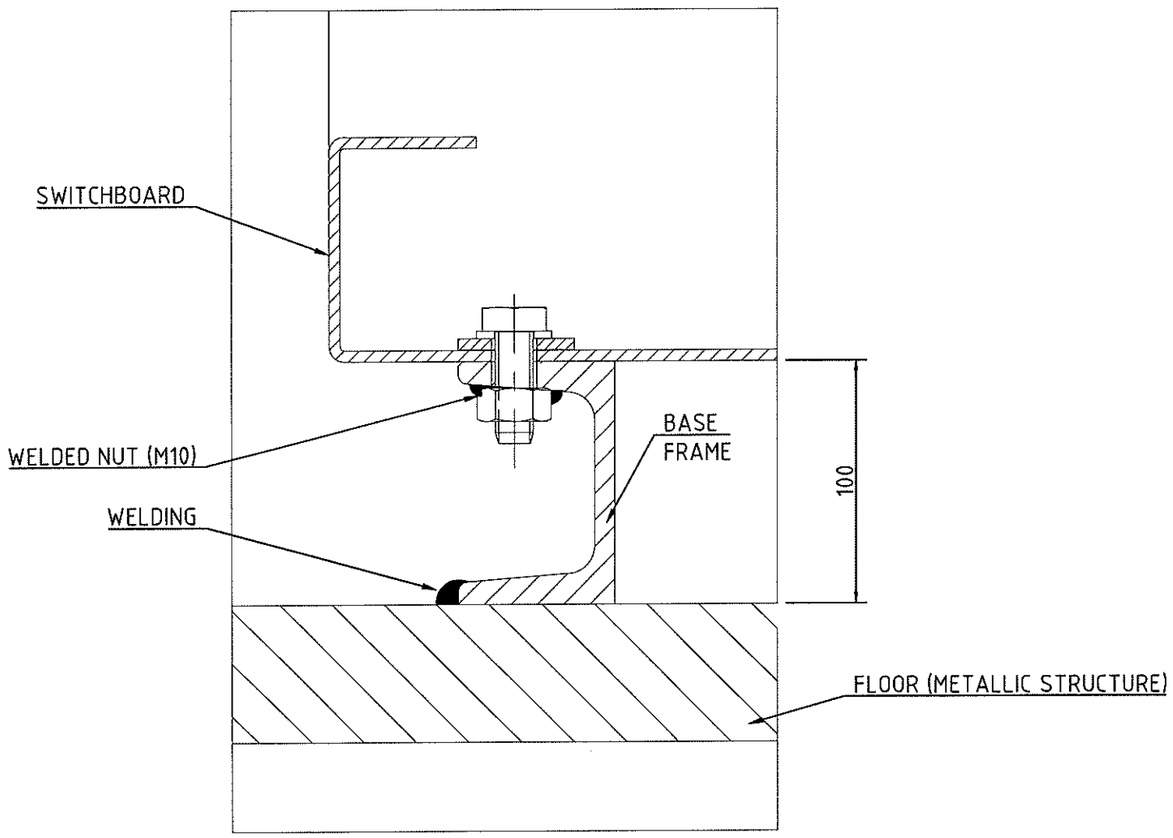
SHEET 009

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DA-00007 Rev. 02

BASE FRAME FIXING SYSTEM



NOTE :
1. Measurement Tollerance + 0,25%

scale 1/20

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
2	22/05/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)
1	28/03/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)
0	21/02/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)

CROSSWIND

ROSETTI MARINO

IMESA ELECTRICAL ENGINEERING

DWG n°: 231298/SD/7

Item n°: PF1002983/26

TITLE : "SG-200N1"

GENERAL ARRANGEMENTS
Base Frame Fixing System

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DA-00007

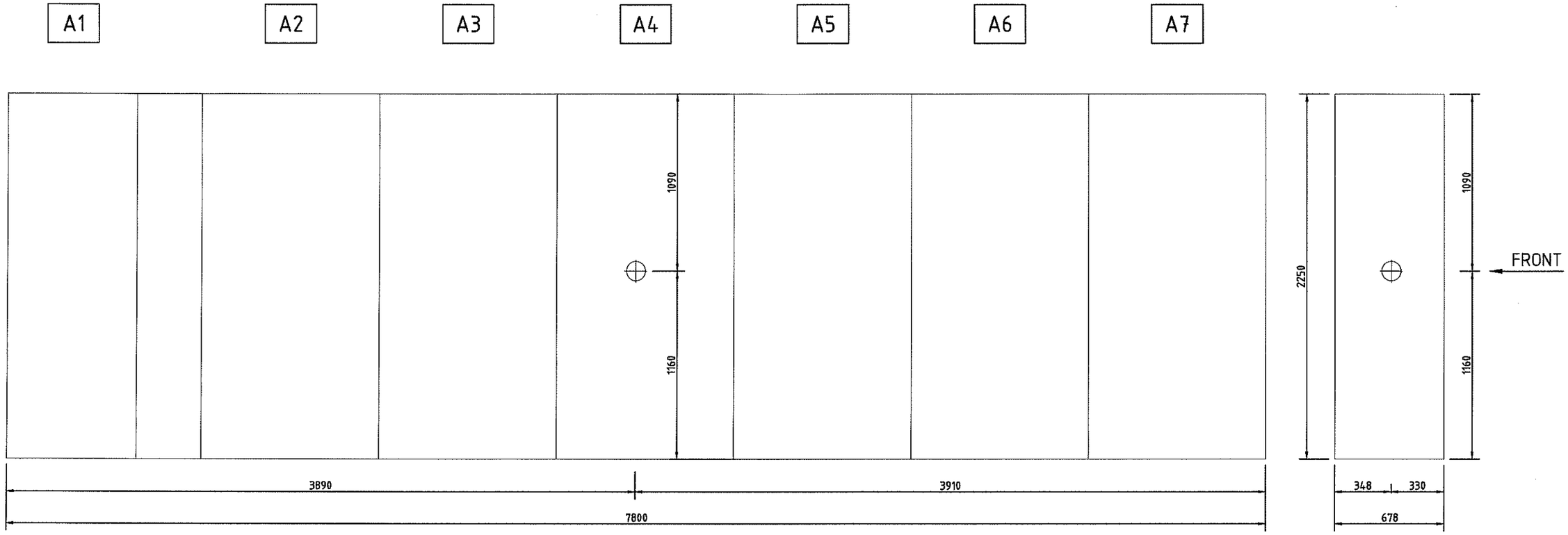
SHEET 012

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DA-00007 Rev. 02

CENTER OF GRAVITY POSITIONING



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
2	22/05/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)
1	28/03/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)
0	21/02/2024	Flamminio	Santinelli	Santinelli	Issued for review (IFR)

CROSSWIND

ROSETTI MARINO

IMESA ELECTRICAL ENGINEERING

DWG n° : 231298/SD/7

Item n° : PF1002983/26

TITLE : "SG-200N1"

GENERAL ARRANGEMENTS
Center of Gravity Positioning

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DA-00007

SHEET 013

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DA-00007 Rev. 02

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	JB-200E2	: Temporary Generator / Mobile Battery Pack			Dwg	123A90-DDL-EL-DL-20101
	S/Sys	83-00	: 400 V Switchboard & Connection Box (SG-200N1)			Module	LD_B-200_Ext
TASK	code	C10001223		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX31 Junction and Marshalling Box

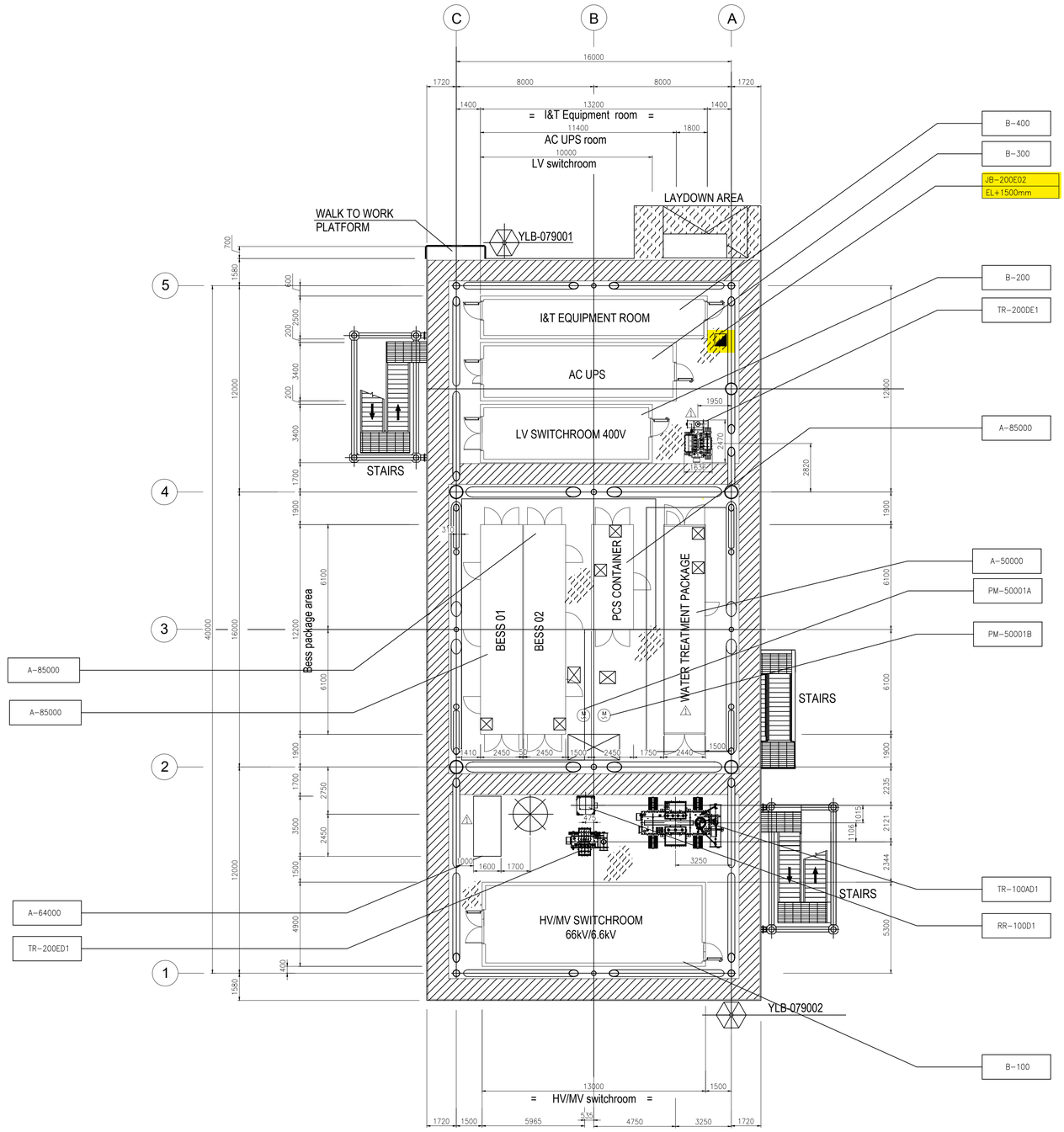
1	Check box is de-energized and safe.	OK
2	Check box is correctly mounted and easily accessible.	OK
3	Check box tagging against drawing.	OK
4	Check nameplate data is correct.	OK
5	Check flameproof joints are clean and greased with approved lubricants (if required).	NA
6	Check for damaging gaskets.	OK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

Comments:

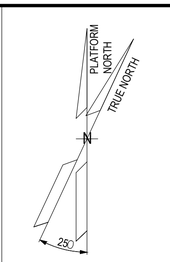
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Giovanni Tangianu	
Date	2024-12-02	2024-12-02	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-02T13:00:48.698Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-12-02T16:36:03.705Z	

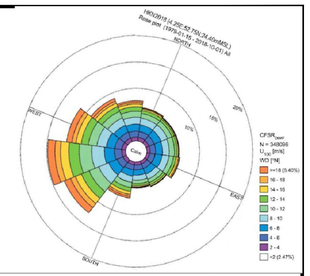
DRAWING NO. 123A90-DDL-EL-DL-20101

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

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)

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

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

ROSETTI MARINO SpA

CROSSWIND | ROSETTI MARINO

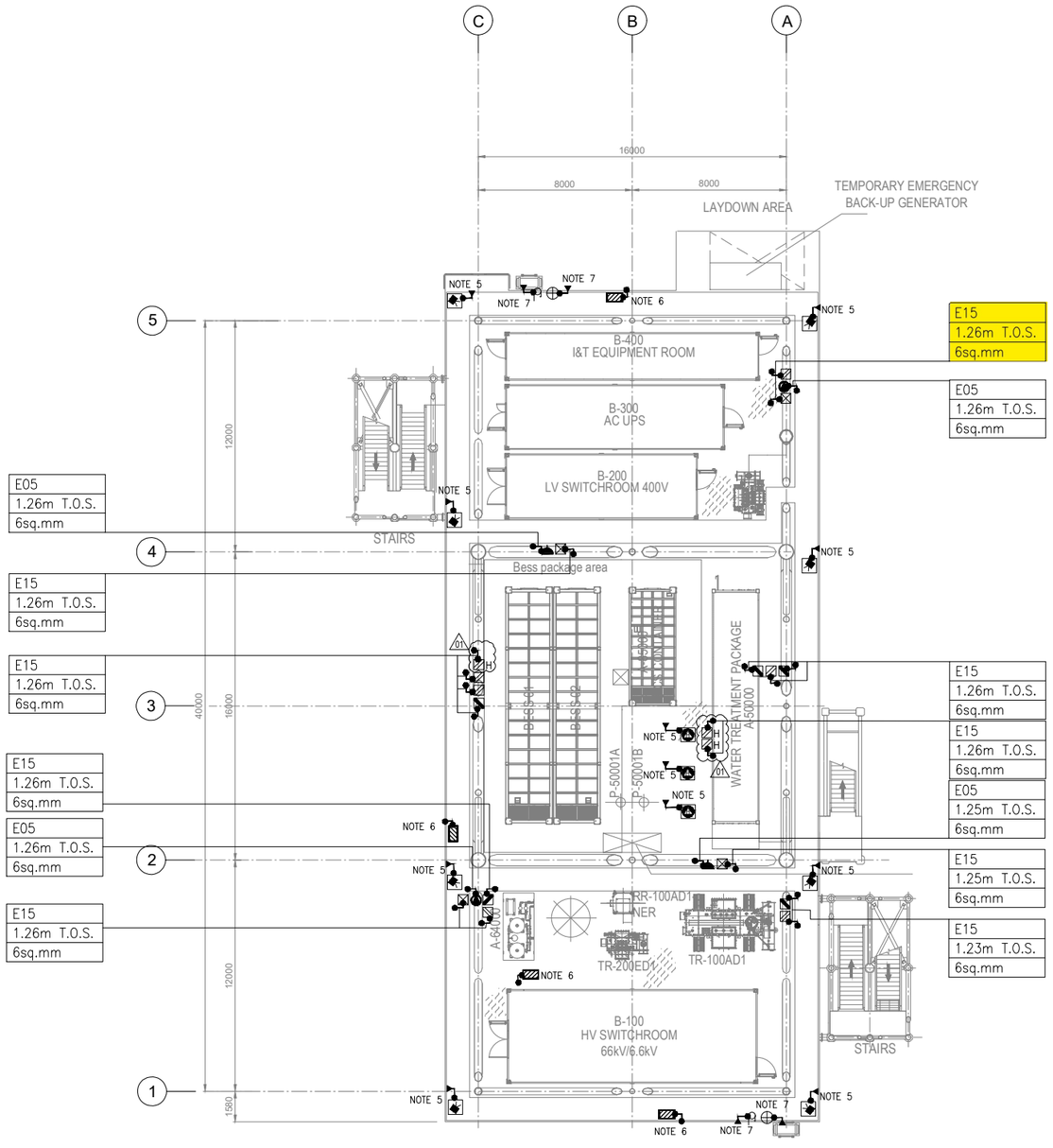
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LOWER DECK

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

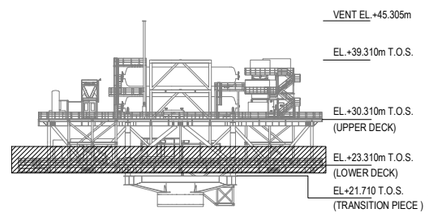
DRAWING NO. 123A90-DDL-EL-DL-20133

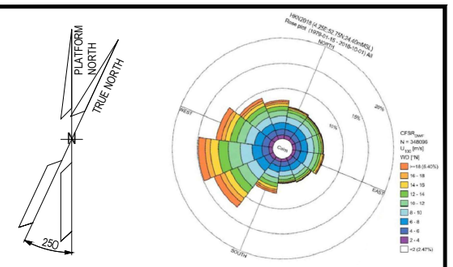
REV. 01



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

KEY PLAN





NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DOCUMENT IS ONLY VALID FOR EARTHING LAYOUT.
4. ALL ELECTRICAL EQUIPMENT NOT DIRECTLY WELDED TO SKID FRAME SHALL BE BONDED TO STEEL TO THE STRUCTURE OF SKID BASEFRAME.
5. ALL POLE MOUNTED INSTRUMENT DETECTORS WILL BE EARTHED AS PER TYPICAL E05 AND E24.
6. ALL INSTRUMENT RACK WILL BE EARTHED AS PER TYPICAL E15.
7. LIFE JACKET, MANUAL WINCH WILL BE EARTHED AS PER TYPICAL E11D.

LEGEND

- POINT SOURCE HYDROGEN DETECTOR
- EARTHING BOSS AISI316L
- COMPRESSION TYPE LUG TINNED COPPER
- THREADED STUD FOR EARTHING CONNECTION
- Exx EARTHING TYPICAL CODE
- EMERGENCY & NORMAL LIGHTING JB
- TRACE HEATING POWER SUPPLY JUNCTION BOX (COLD JB)
- WELDING SOCKET & JB
- SMALL POWER SOCKET & JB
- UV-IR FLAME DETECTOR
- INSTRUMENT RACK
- LIFE JACKET
- MANUAL WINCH
- TYP. — TYPICAL
- ELE — ELEVATION
- SIZE

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-EL-DD-20090	ELECTRICAL TYPICAL INSTALLATION DETAILS - EARTHING SYSTEM
123A90-DDL-EL-RE-20154	LIGHTNING PROTECTION SYSTEM CALCULATION REPORT
123A90-DDL-EL-DL-20119	LIGHTING & SOCKET LAYOUT - LOWER DECK
123A90-DDL-EL-DL-20101	ELECTRICAL EQUIPMENT LAYOUT - LOWER DECK
123A90-DDL-SAF-DL-30027	F & G DETECTORS LAYOUT - LOWER & UPPER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	25/07/24	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	29/05/24	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EARTHING & LIGHTNING LAYOUT
LOWER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 25/07/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20133	SHEET 002	REV. 01

SHEET 002 OF 002

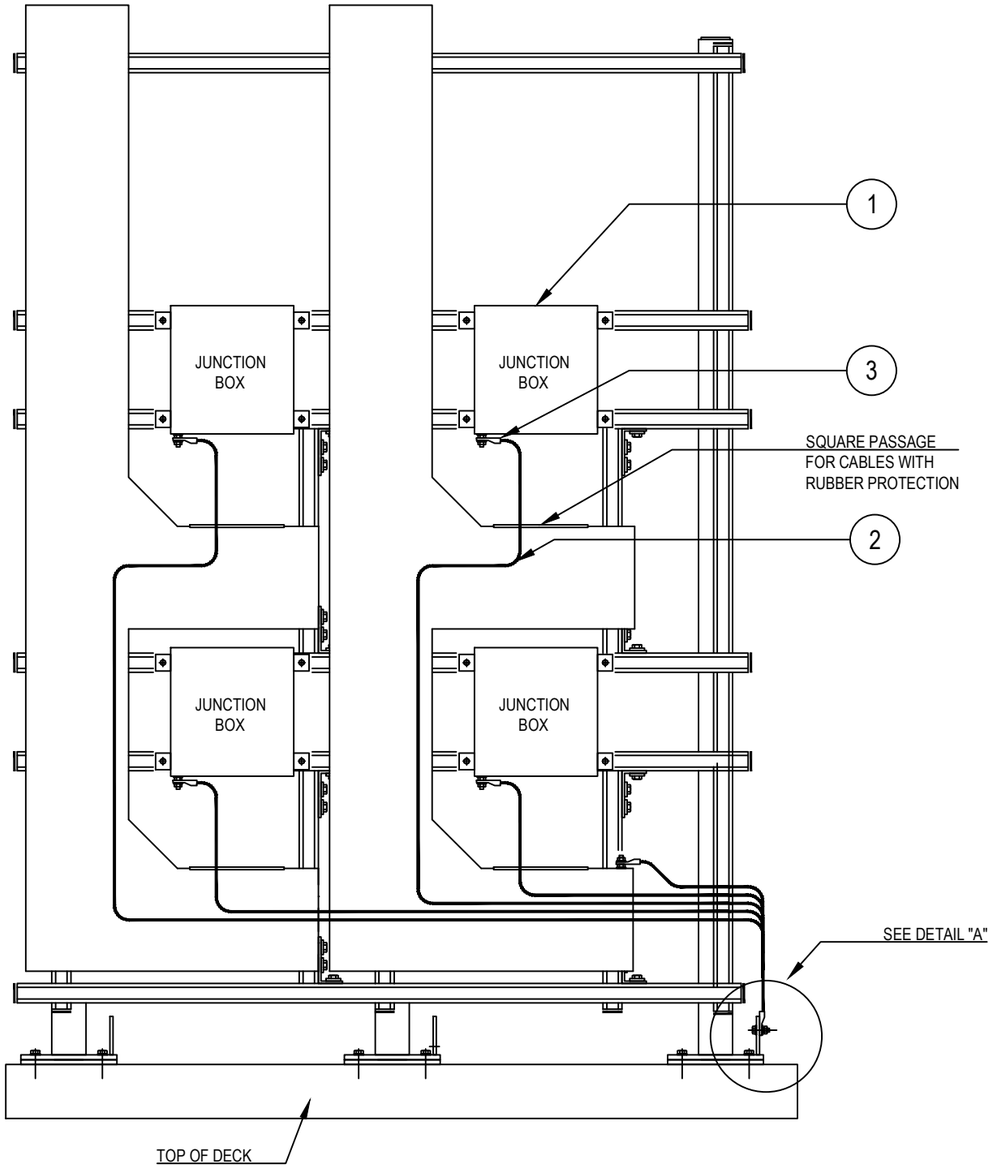
VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20133**

REV.:	DATE:	SIGNATURE:
1_B	11/09/24	G.Randi

ROSETTI MARINO SpA

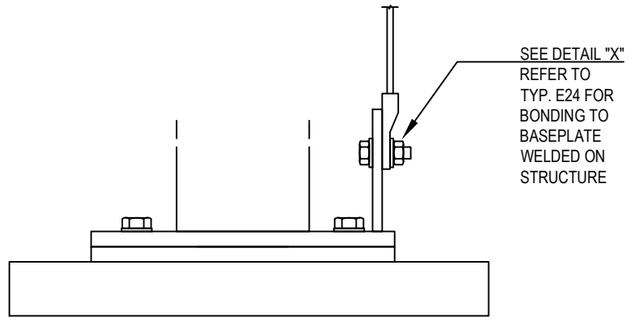
File Name : 123A90-DDL-EL-DL-20133

E15

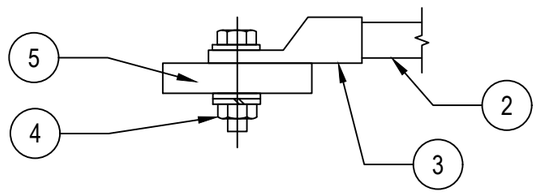


POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	JUNCTION BOX (Ex)	GRP			
2	Y / G INSULATING COPPER CONDUCTOR	COPPER	$6mm^2$		
3	COMPRESSION TYPE LUG FOR INSULATION COPPER CONDUCTOR	AISI 316L	$6mm^2$		~~NOTE 1~~
4	HEXAD BOLTS, PLANE WASHERS, GROWER SPRING WASHER AND NUT	AISI 316L	M8X30		
5	EARTHING PLATE	AISI 316L			NOTE 2

DETAIL "A"



DETAIL "X"



NOTES:

~~1) CABLE LUG CRIMPING METHOD SHALL BE HEXAGONAL COMPRESSION DIES ONLY.~~

2) EARTHING PLATE WELDED ON BASE PLATE OF THE COLUM SUPPORT. SEE TYPICAL DETAIL E24

2) EXTERNAL EARTHING CONNECTION ONLY SHALL BE PROTECTED AGAINST CORROSION USING OXIDE RESISTANT COMPOUND (E.G. COPPER GREASE)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DD-20090**

REV.:	DATE:	SIGNATURE:
2_I	07/11/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
EARTHING FOR ELECTRICAL AND INSTRUMENTALE JB MOUNTED ON RACK SUPPORT

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

A3 | DRAWING NO. 123A90–DDL–EL–DD–20090 | SHEET 007 | REV. 02

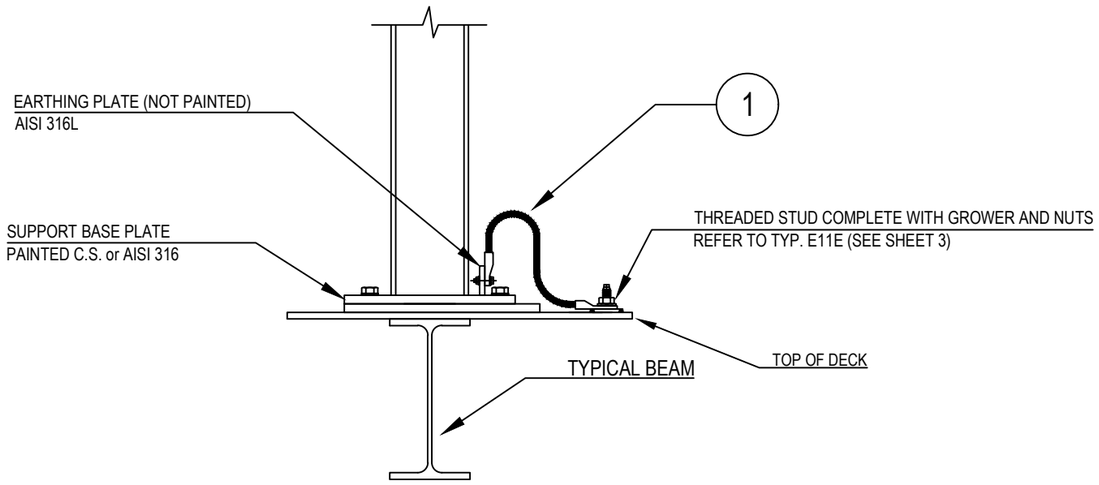
F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

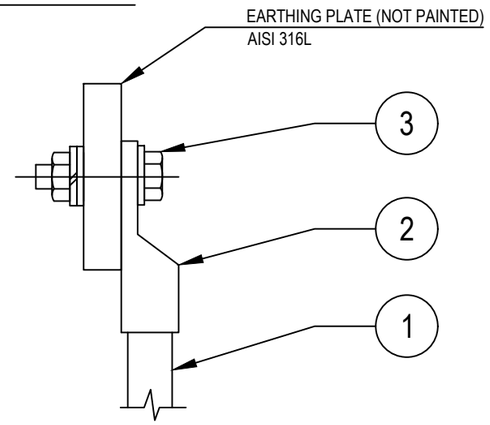
E24

POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	As. R. Y/G INSULATING COPPER CONDUCTOR	COPPER	$35mm^2$		
2	COMPRESSION TYPE LUG FOR INSULATION COPPER CONDUCTOR	TINNED COPPER	$35mm^2$	2	~~NOTE 1~~
3	HEXAG. BOLT M10X30 COMPLETE WITH PLANE WASHERS, SPRING WASHER AND NUT	AISI 316L	M10X30	2	

GENERIC SUPPORT BOLTED ON STRUCTURE



DETAIL "X"



NOTES:
1) ~~CABLE LUG CRIMPING METHOD SHALL BE HEXAGONAL COMPRESSION DIES ONLY.~~
2) EXTERNAL EARTHING CONNECTION ONLY SHALL BE PROTECTED AGAINST CORROSION USING OXIDE RESISTANT COMPOUND (E.G. COPPER GREASE)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DD-20090**

REV.:	DATE:	SIGNATURE:
2_I	07/11/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
EARTHING FOR POLE/SUPPORT OF GENERIC EQUIPMENTS

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

A3	DRAWING NO.	SHEET	REV.
	123A90–DDL–EL–DD–20090	012	02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

FROM	TO

DESCRIPTION: LV Switchgear
TAG NUMBER: SG-200N1

COLUMN/CUBIC.: A2/~~+08~~ +02

L1	BK	83010-CEL-L1	1C X 95 mm²	BK L1
L2	BK	83010-CEL-L2	1C X 95 mm²	BK L2
L3	BK	83010-CEL-L3	1C X 95 mm²	BK L3
N	BK	83010-CEL-N	1C X 95 mm²	BK N
PE	Y/G	83010-CEL-E	1C X 95 mm²	Y/G PE

P.E. BUS BAR

DESCRIPTION: TEMPORARY GENERATOR / MOBILE BATTERY PACK
TAG NUMBER: JB-200E2

INCOMING FROM LV SWITCHGEAR
SG-200N1

P.E. BUS BAR

COLUMN/CUBIC.: A1/+08

L1	BK	83013-CEL-L1	1C X 300 mm²	BK L1
L2	BK	83013-CEL-L2	1C X 300 mm²	BK L2
L3	BK	83013-CEL-L3	1C X 300 mm²	BK L3
N	BK	83013-CEL-N	1C X 300 mm²	BK N
PE	Y/G	83013-CEL-E	1C X 150 mm²	Y/G PE

P.E. BUS BAR

DESCRIPTION: ELECTROLYSER AUXILIARY LOAD
TAG NUMBER: A-20000

P.E. BUS BAR

COLUMN/CUBIC.: A4/+03

L1	BN	83012-CEL	5G16 mm²	BN 1 L1
L2	BK			BK 2 L2
L3	GY			GY 3 L3
N	BU			BU 4 N
PE	Y/G			Y/G 5 PE

P.E. BUS BAR

DESCRIPTION: FUEL CELL AUXILIARY LOAD
TAG NUMBER: A-80000

-XB01

P.E. BUS BAR

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

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

ROSETTI MARINO SpA

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

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
LV SWITCHGEAR SG-200N1

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

SCALE : 1:X

A3

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

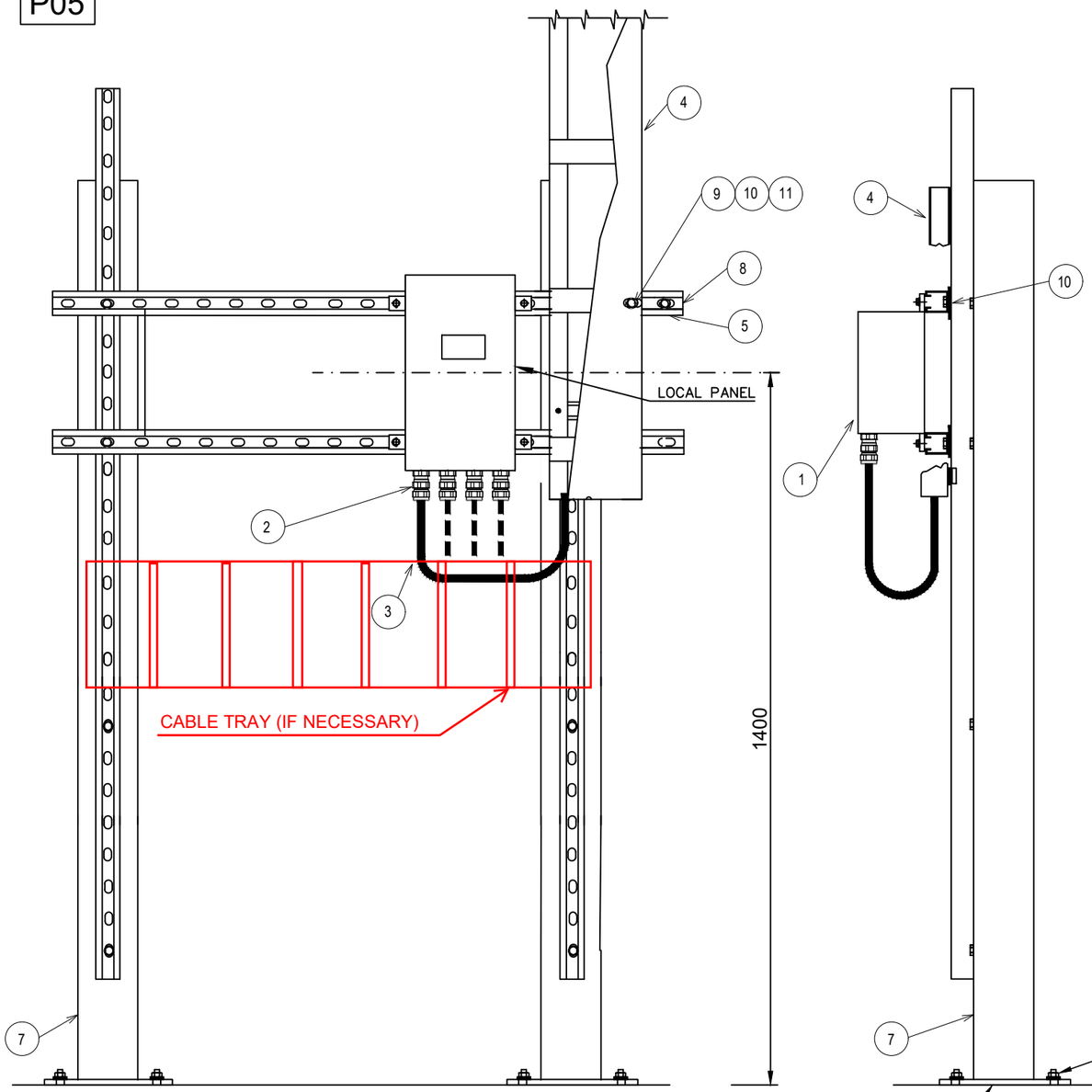
SHEET 021

REV. 02

F.to UNI A3: 420mmx297mm

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

P05



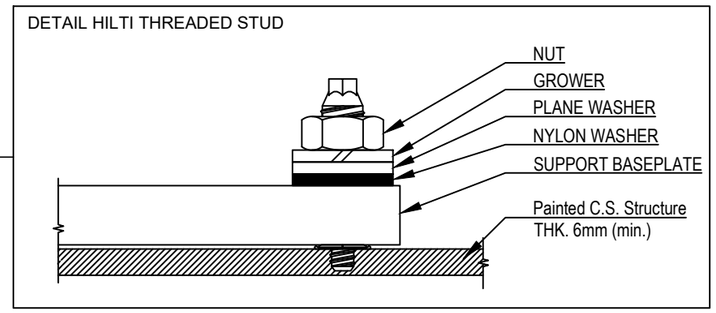
POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	LOCAL PANEL / JB	316 STAINLESS STEEL OR GRP		1	
2	SINGLE SEAL CABLE GLAND FOR UNARMOURED CABLE				
3	UNARMOURED CABLE				
4	CABLE LADDER WITH COVER	AISI 316L			
5	SINGLE U-CHANNEL PERFORATED ON NO.3 SIDE	AISI 316L			
7	PROFILE SUPPORT	PAINTED C.S.		2	
8	PLUG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

02

02

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

DETAIL HILTI THREADED STUD



02

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

VALID FOR CONSTRUCTION

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

REV.:	DATE:	SIGNATURE:
2_B	28/11/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	28/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	04/07/24	NLK	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)

ELECTRICAL TYPICAL INSTALLATION DETAILS-POWER SYSTEM & CABLE INSTALLATION

POWER TYPICAL DETAILS LOCAL PANEL/JB FLOOR MOUNTED

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

SCALE : NTS

A3

DRAWING NO. 123A90-DDL-EL-DD-20092

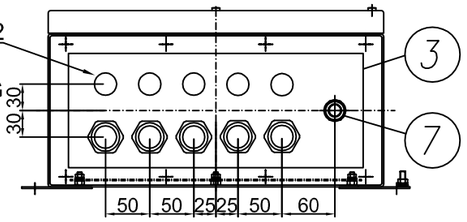
SHEET 005

REV. 02

F.to UNI A3: 420mmx297mm

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

(10) (6) N°10 PASSING HOLES Ø25.2
C/W N°5 BNK PLUG M25 +
N°5 DUSTPROOF PVC PLUG



BOTTOM VIEW

(5) I2400722-B016I00029818

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

MADE IN ITALY

Serial Nr.:
Year of construction:

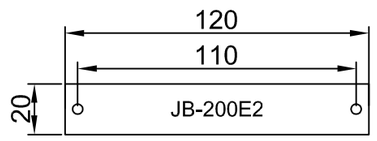
Type: SB-385720

400VAC 50Hz 160A

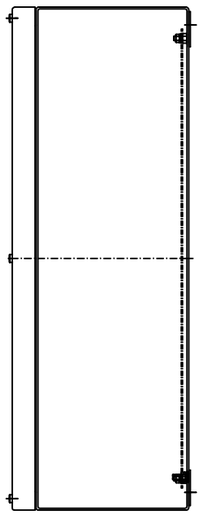
T.amb -20/+50°C

IP66

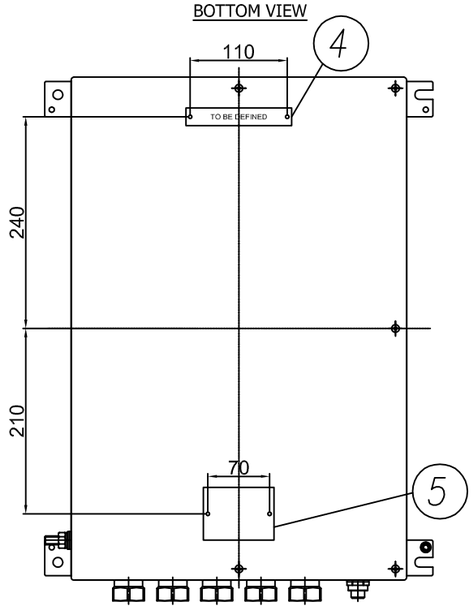
(4) PLATE DETAIL



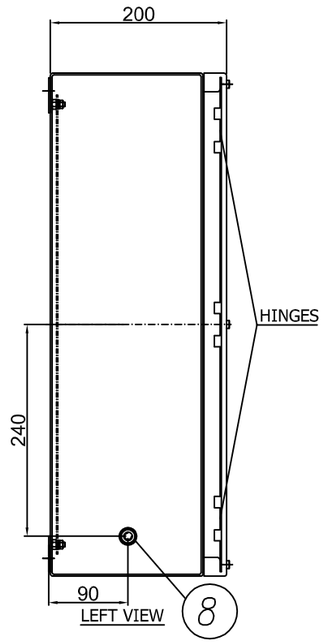
MATERIAL: LAMINATED PLASTIC
BACKGROUND: WHITE
LETTERS: BLACK



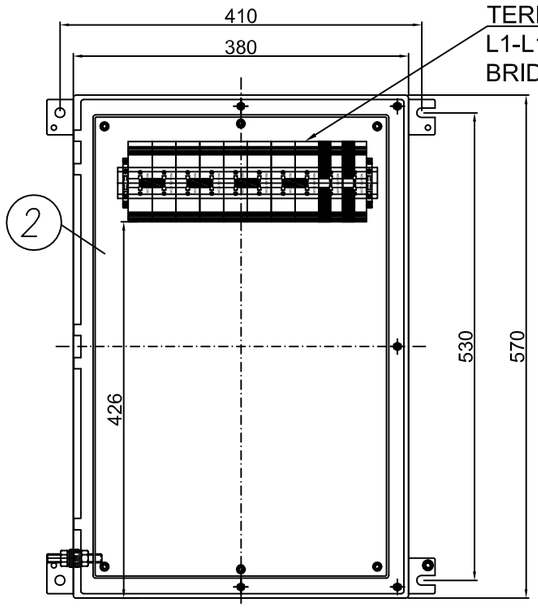
RIGHT VIEW



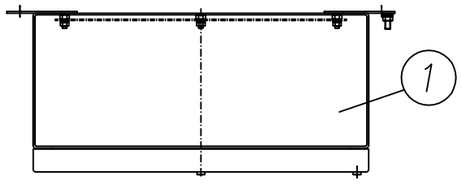
FRONT VIEW



LEFT VIEW



INTERNAL VIEW



TOP VIEW

ITEM	DESCRIPTION	Pcs Q.TY	NOTE/MAT.	CODE	MANUFACTURER
10	DUSTPROOF PVC PLUG Ø25	5	–	.	TECHNOR ITALSMEA
9	BEIGE TERMINAL BLOCK SIZE 95 SQMM EARTH TERMINAL BLOCK SIZE 95 SQMM	8 2	WDU-95/120N WPE-95/120N	.	WEIDMULLER
8	AISI316L INT/EXT EARTH BOLT M10	1	BTP-10	.	TECHNOR ITALSMEA
7	AISI316L DRAIN/BREATHER VALVE M16	1	ECR-3	.	TECHNOR ITALSMEA
6	NICKEL PLATED BRASS PLUG M25	5	T25	.	TECHNOR ITALSMEA
5	AISI316L CERTIFICATE PLATE 80X60	1	–	.	TECHNOR ITALSMEA
4	LAMINATED PLASTIC TAG 120X20	1	–	.	TECHNOR ITALSMEA
3	REMOVABLE GLAND PLATE THK. 3 MM	1	FL L38 H20	.	TECHNOR ITALSMEA
2	AISI316L INTERNAL MOUNTING PLATE	1	PS-3857	.	TECHNOR ITALSMEA
1	AISI316L ENCLOSURE THK. 1.5 MM	1	SB-385720	.	TECHNOR ITALSMEA

-ELECTROPOLISHED
Q.TY 1, ITEM 40: 2JBXXGPSA, ELEJB04

Explosion Proof
Electrical Equipment
Materiali Elettrici Antideflagranti

TECHNOR ITALSMEA
A COMPANY OF MARECHAL ELECTRIC

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	03/09/24	FB	OB	OB	ISSUE FOR CONSTRUCTION (IFC)
00	30/07/24	FB	OB	OB	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)

Junction Box for Temporary Generation

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

SCALE : NTS

A3

DRAWING NO. 1724001481-EL-DA-00003

SHEET 007

REV. 01

F.to UNI A3: 420mmx297mm

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

ENCLOSURES / JUNCTION BOXES WITH TERMINALS

SB../ST.. Series - AISI 316 L Stainless steel

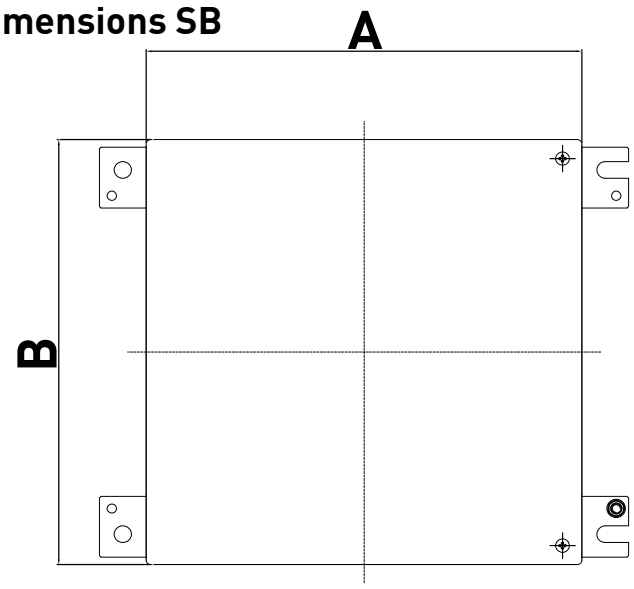


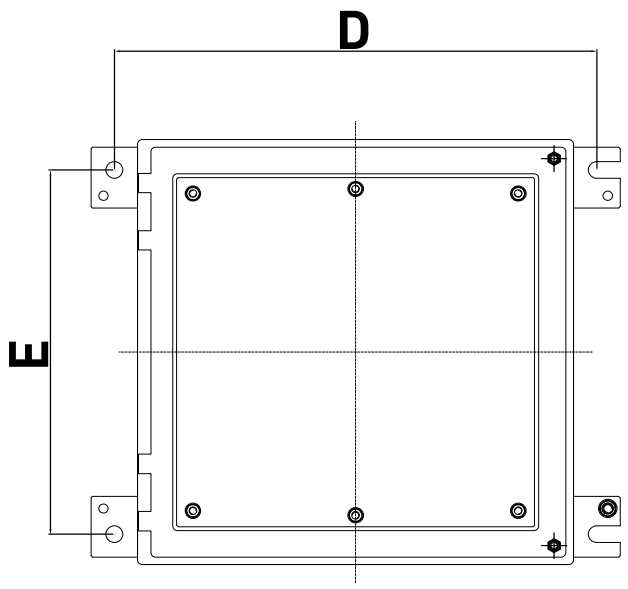
- SB../ST.. Series enclosures are suitable for housing Ex e/eb and Ex i terminals and can be provided with internal mounting plate to facilitate terminal board mounting.
- Maximum numbers of terminals varies according to: terminals section and current, enclosure size, operating temperature and required temperature class.
- Suitable for installation in ON/OFF-SHORE plants, in the presence of chemical agents and in any other highly corrosive environment.
- Full customization from 100x120x100 mm to 910x1140x500 mm: our technical department will support you in designing the best solution according to your needs and within the limits of the certificate.
- Full range of off-the-shelf solutions to ensure the best lead time on the market at a competitive pricing.

TECHNICAL FEATURES

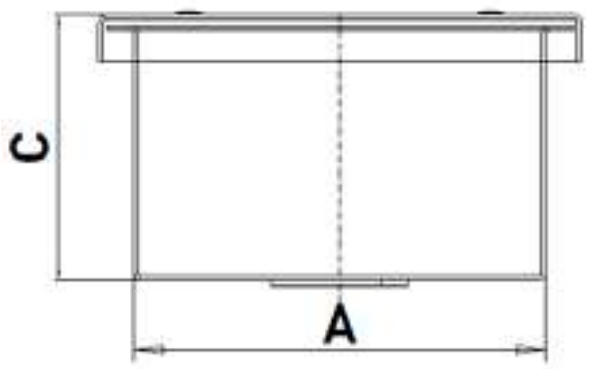
Material	AISI316L stainless steel - with thickness 1,5 mm - upon request other thickness available		
IP rating	IP66/IP67	IP66/IP67	IP55/IP66 (SBHT.. Series high temperature)
Shock resistance	IK 10	IK 10	IK 10
Ambient temperature range	Ambient From -50°C to +95°C	Service From -50°C to +105°C	SBHT.. Series: From -60°C to +150°C
Approvals	Full conformity Certificate: FIDI 21 ATEX 0090X IECEx FIDI 21.0015X EAC: RU C-IT.BH02.B.00593/20	Component Certificate: FIDI 21 ATEX 0075U IECEx FIDI 21.0012U EAC: RU C-IT.BH02.B.00593/20	SBHT.. - high temperature: TÜV CY 18 ATEX0206009 IECEx EXA 18.0001 EAC: RU C-IT. BH02.B.00593/20
Approvals	UL listed: NEMA TYPE 1, 4, 4X,12 UL 508A-CSAC22.2No.14-13 KC: from KA4BO-0382X to KA4BO-0387X ECAS-Ex		
Marking	Full conformity Certificate: II 1 G Ex ia IIC T6...T4 Ga II 2G Ex eb and/or ia/ib IIC T6 Gb II 2D Ex tb IIIC T85°C...T135°C Db	Component Certificate: II 2 GD Ex eb IIC Gb Ex tb IIIC Db	SBHT.. - high temperature: II 1 G Ex ia IIC T* Ga II 2 G Ex eb and/or ia ib IIC T* Gb* Gas: T6/T5/T4/T3
Surface treatment	Acid treatment (pickling) Electro-polishing treatment		
Standard certificate label	Made by self adhesive UV and corrosion resistant polyester approved by certified Laboratory		
Included accessories	Screws and accessories in AISI316L stainless steel		
Optional accessories	Side removable gland plate Without hinges Drain/Breather valve Laminated plastic/Stainless steel certificate label Internal mounting plate Locking facility Internal/external through earth bolt		
Available versions	ST Version (with only 1/4 turn key and hinges) without screw Standard version: up to internal temperature of 105°C HT version: up to internal temperature of 130°C		

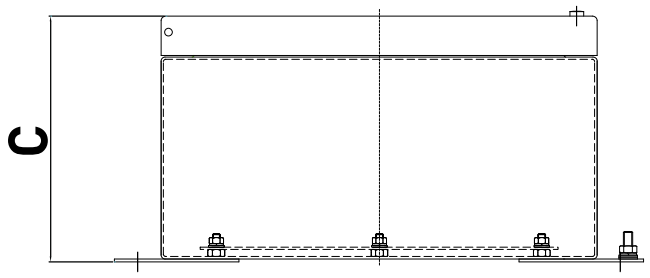
Dimensions SB





SHAPE FOR SB-101210 AND 151510





SB Series - AISI 316 L stainless steel

CODE	TYPE	DIMENSION [mm]					WEIGHT [kg]	MOUNTING PLATE
		A	B	C	FIXING D	FIXING E		
B016I00000136	SB-142013	140	200	130	170	-	5	90X150
B016I00000135	SB-151510***	150	150	100	180	-	4	-
B016I00000137	SB-202016	200	200	160	230	160	6	150X150
B016I00000138	SB-202713	200	270	130	230	230	7	150X220
B016I00000139	SB-202716	200	270	160	230	230	7,5	150X220
B016I00000140	SB-272713	270	270	130	300	230	8	220X220
B016C10142526	SB-273513	270	350	130	300	310	9,5	220X300
B016I00000141	SB-273516	270	350	160	300	310	11	220X300
B016I00000142	SB-282816	280	280	160	310	240	10	230X230
B016I00000143	SB-282827	280	280	270	310	240	12	230X230
B016C12244408	SB-353516	350	350	160	380	310	13	300X300
B016I00000144	SB-353520	350	350	200	380	310	13,5	300X300
B016I00000145	SB-355016	350	500	160	380	460	16	300X450
B016I00000146	SB-355020	350	500	200	380	460	17,5	300X450
B016C10142527	SB-383816	380	380	160	410	340	14	330X330
B016I00000147	SB-383820	380	380	200	410	340	15	330X330
B016I00000148	SB-383827	380	380	270	410	340	17	330X330
B016I00000149	SB-384516	380	450	160	410	410	16	330X400
B016I00000150	SB-384520	380	450	200	410	410	17	330X400
B016I00000151	SB-385716	380	570	160	410	530	20	330X520
B016C12244409	SB-505016	500	500	160	530	460	22	450X450
B016I00000152	SB-505020	500	500	200	530	460	23,5	450X450
B016I00000153	SB-575716	570	570	160	600	530	26	520X520
B016I00000154	SB-575720	570	570	200	600	530	28,5	520X520
B016I00000155	SB-575730	570	570	300	600	530	33	520X520
B016I00000156	SB-577620	570	760	200	600	720	35,5	520X710
B016I00000157	SB-769520	760	950	200	790	910	53	710X900
on request	SB-385720	380	570	200	410	530	25	330X520

***The enclosure is without hinges and complete with TS35x7,5 Omega rail welded on the back
Other sizes up to 1500 x 960 x 500 cm contact our Sales Dept.
These enclosures refer to the empty and undrilled enclosures, sold under component certificate.
For complete junction boxes is necessary to ask to the Sales Dept.

FLAMEPROOF

ECR-3 - Drain valve

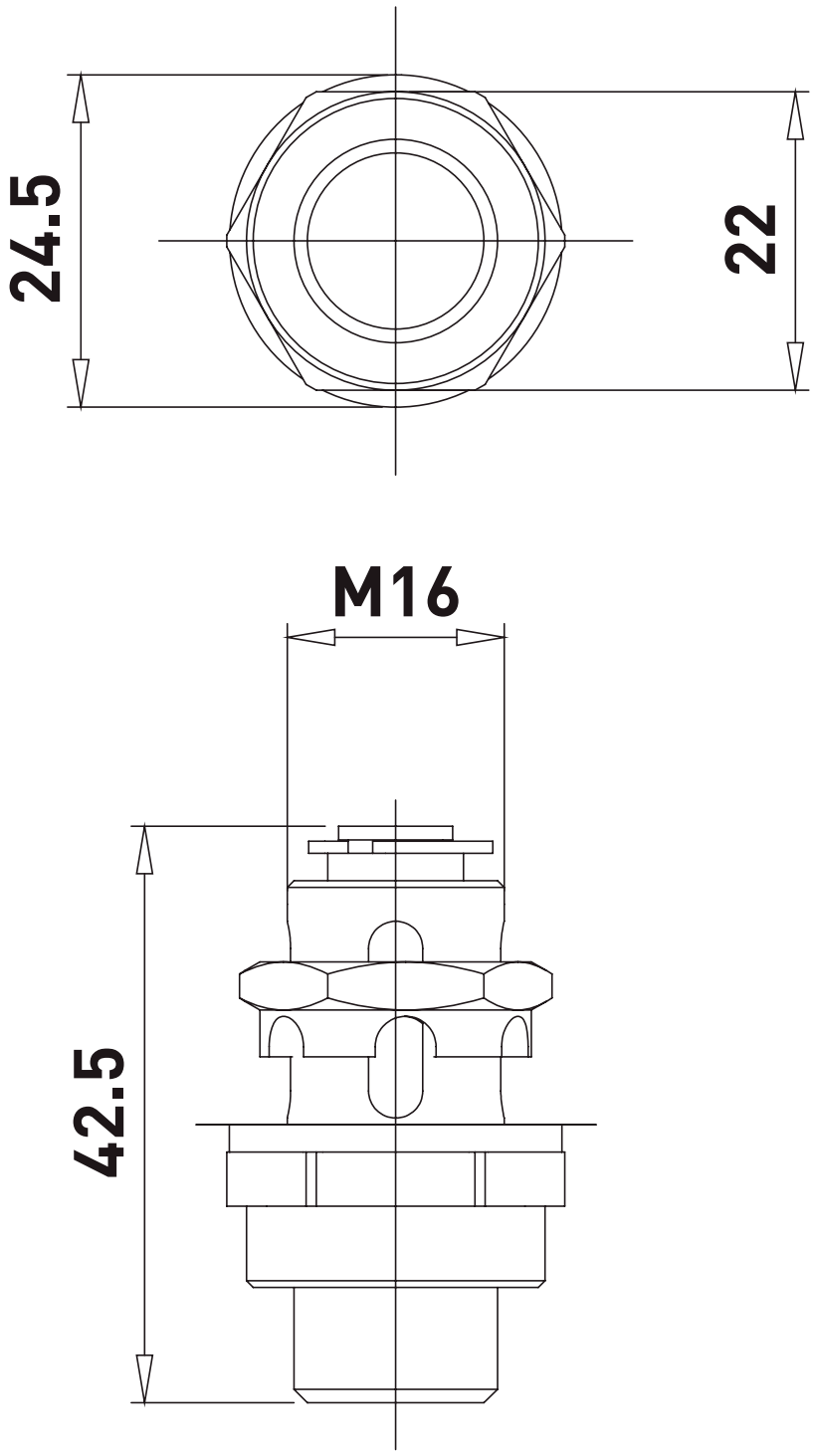


- Drain valve ECR3 is a device intended for use to evacuate the water generated due to condensation inside the enclosure.
- Drain valve is assembled in the lowest part or side part of the enclosure because the water is accumulated in bottom part of enclosure.
- Water will come out with the presence of drain valve device.
- Made of stainless steel or galvanized steel.
- Gasket is in aluminium.
- O-ring is in silicon rubber.
- IP66/IP67 in closed position (IP44 when installed on the bottom or on the side of enclosure*) *for detail see instruction note

TECHNICAL FEATURES

Material	Stainless steel AISI 316 L
IP rating	IP66/IP67 in closed position and IP44 in open position.
Ambient temperature range	-50°C +105°C
Approvals	ATEX: IMQ 14 ATEX 019U – IECEx: IMQ 14.0008U - EAC: RU C-IT.BH02.B.00593/20
Marking	Ex II 2GD – Ex e IIC Gb – Ex tb IIIC IP66/67
Standard compliance	EN60079-0:2012; EN60079-7:2007; EN60079-31:2009 IEC60079-0:2011; IEC60079-7:2006-07; IEC60079-31:2008
Zones	1; 21
Gaskets	Silicone gasket (continuous use temperature -60 ° C + 220 ° C)
Entries	Need to hole M16 x 1.5 6H or diameter from 16 mm to 16.5 mm and seal metal aluminum EN-AW 1050.

Dimensions ECR-3



Drain valve ECR-3

CODE	TYPE
B080909000006	ECR 3 DRAIN VALVE

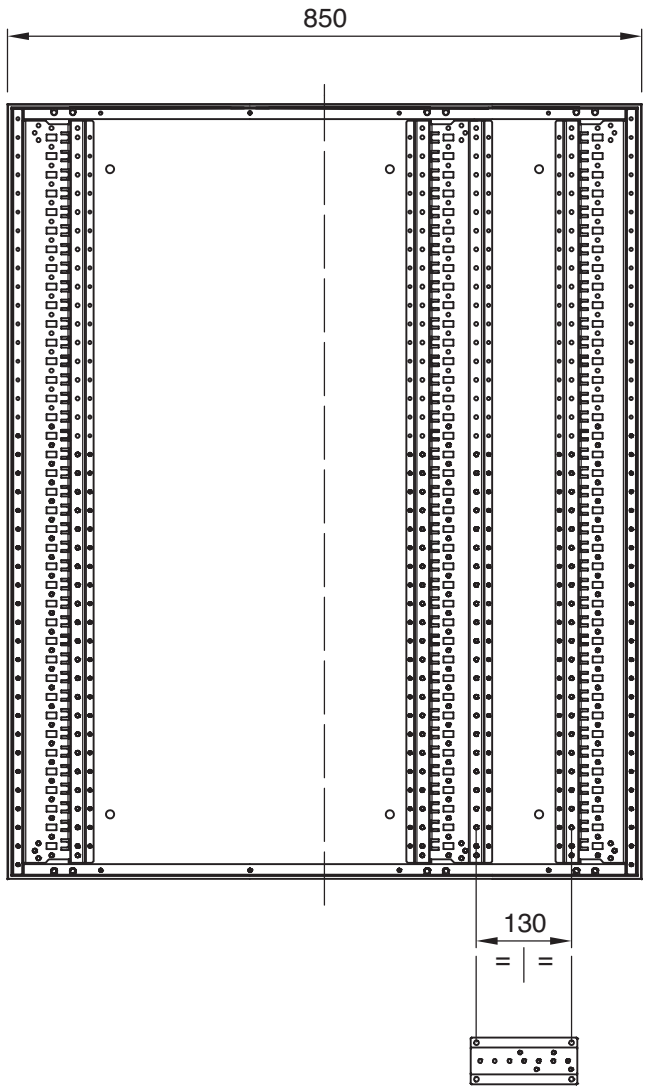
47 CVX 630K

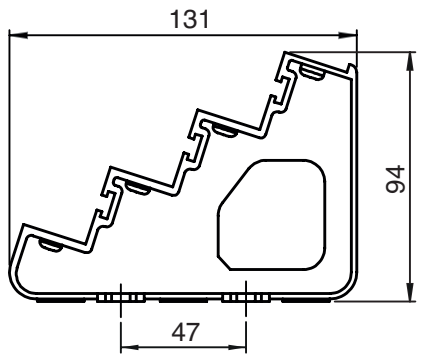
GEWISS

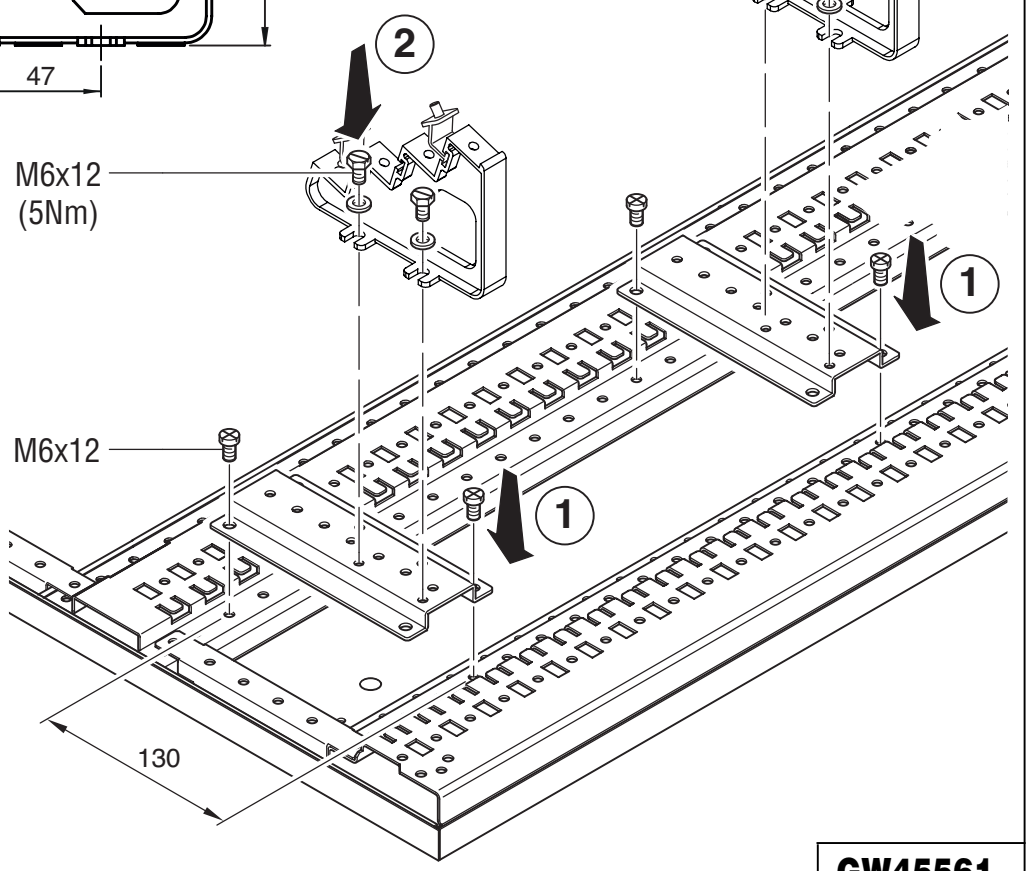
KIT PORTABARRE

BAR HOLDER KIT - KIT PORTE-BARRES - *KIT PORTABARRAS* - KIT STANGENHALTER

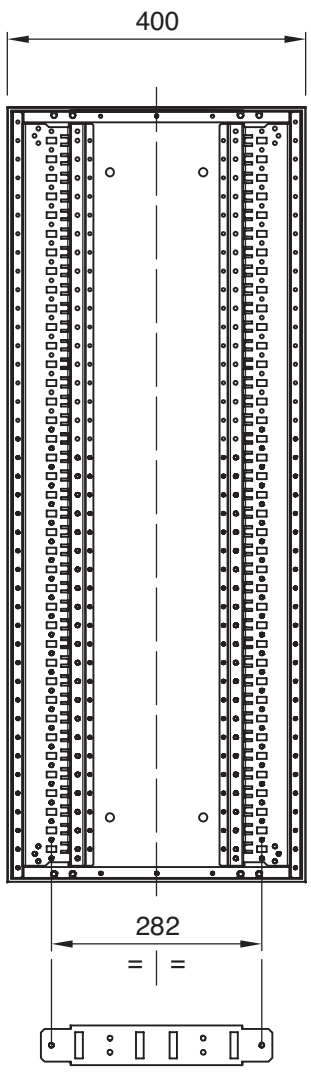
KIT PORTABARRE SCALARE BARRE PIATTE 250-400-630A - *SCALAR FLAT BAR HOLDER KIT 250-400-630A*
KIT PORTE-BARRES SCALAIRE BARRES PLATES 250-400-630A - *KIT PORTABARRAS ESCALAR BARRAS PLANAS 250-400-630A*
KIT SKALARE STANGENHALTER FLACHE STANGEN 250-400-630A

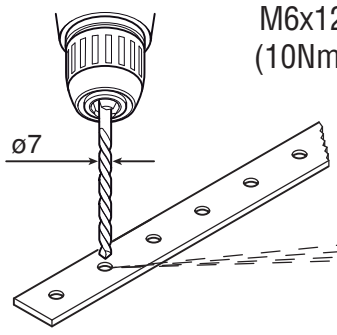


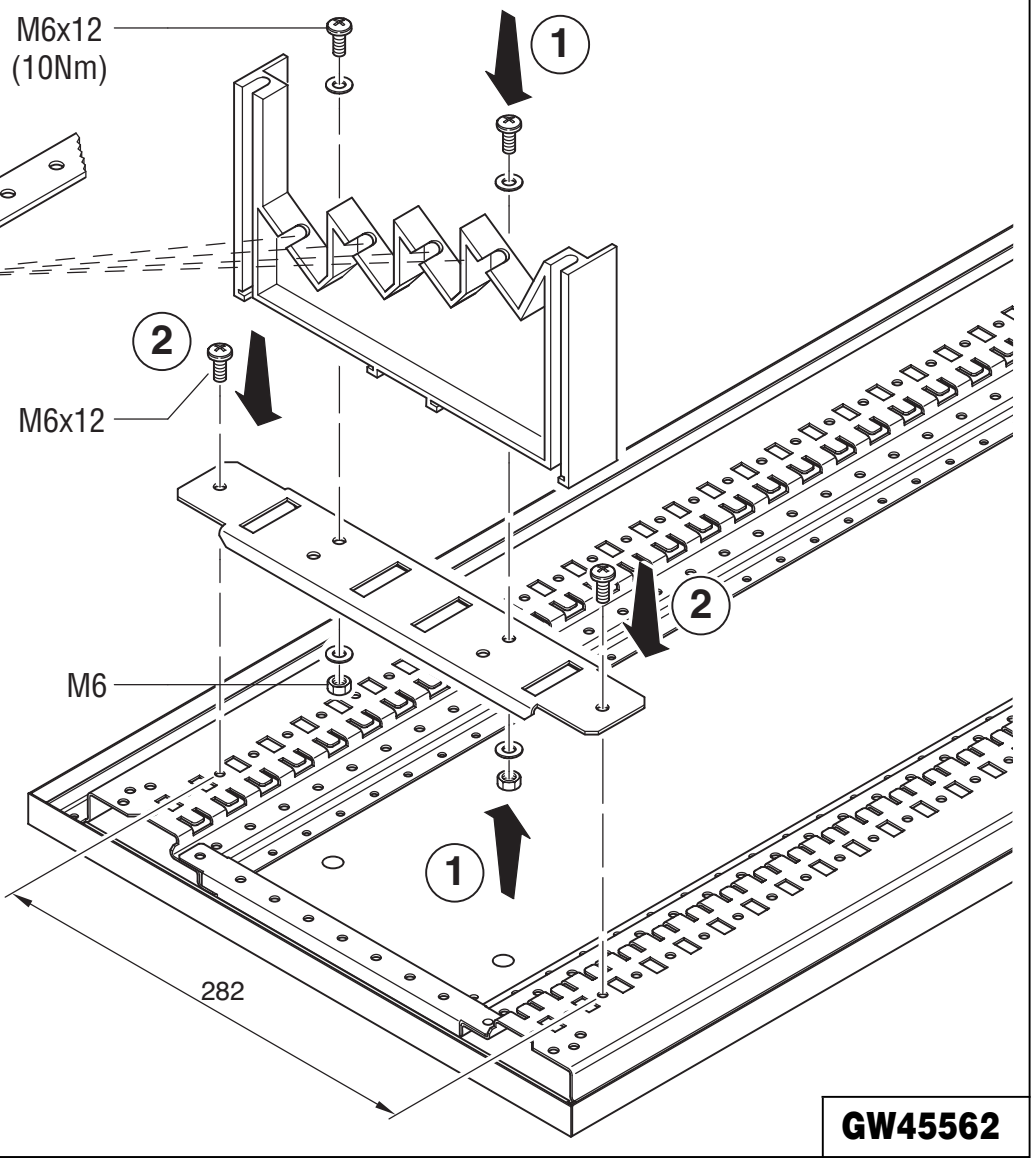


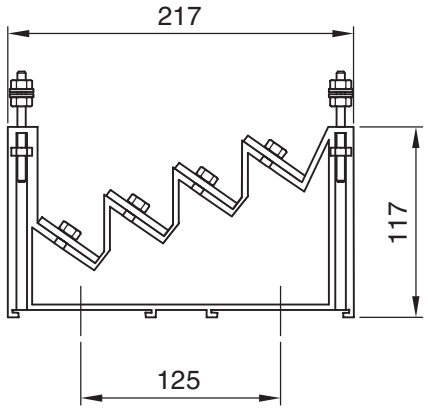


GW45561



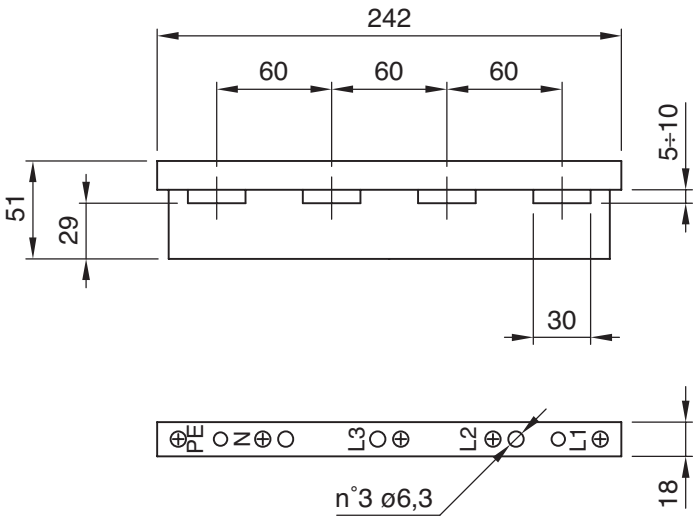


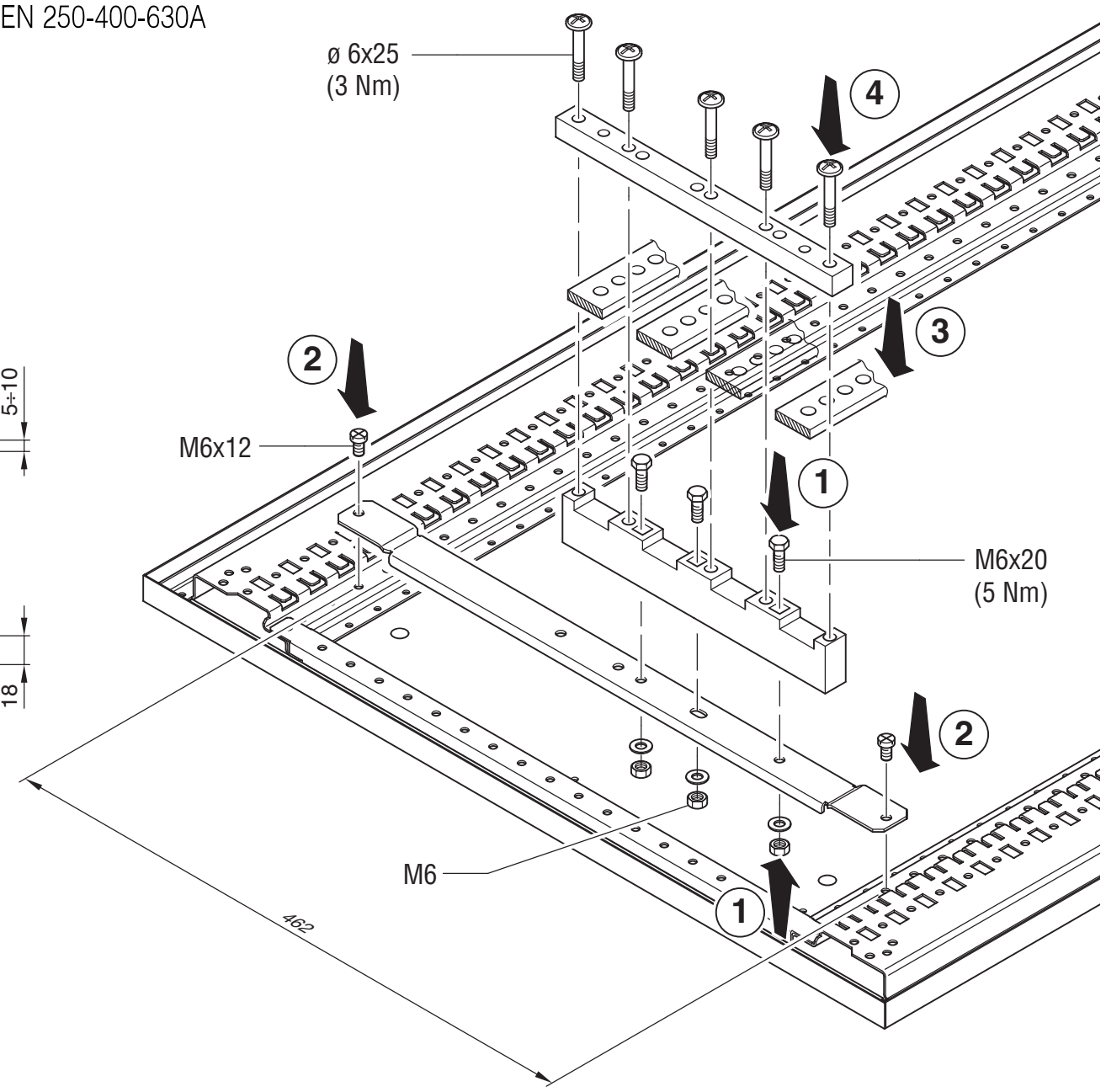


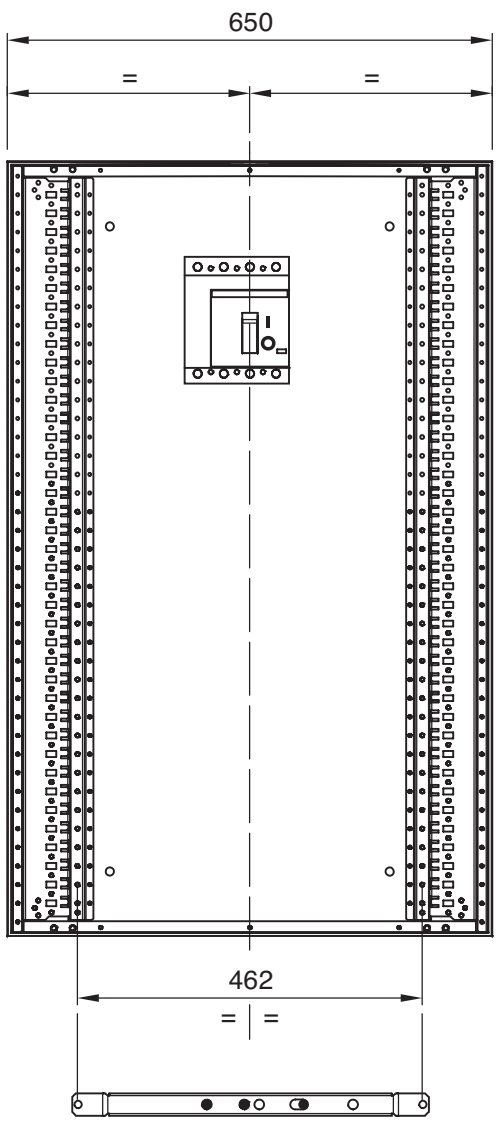


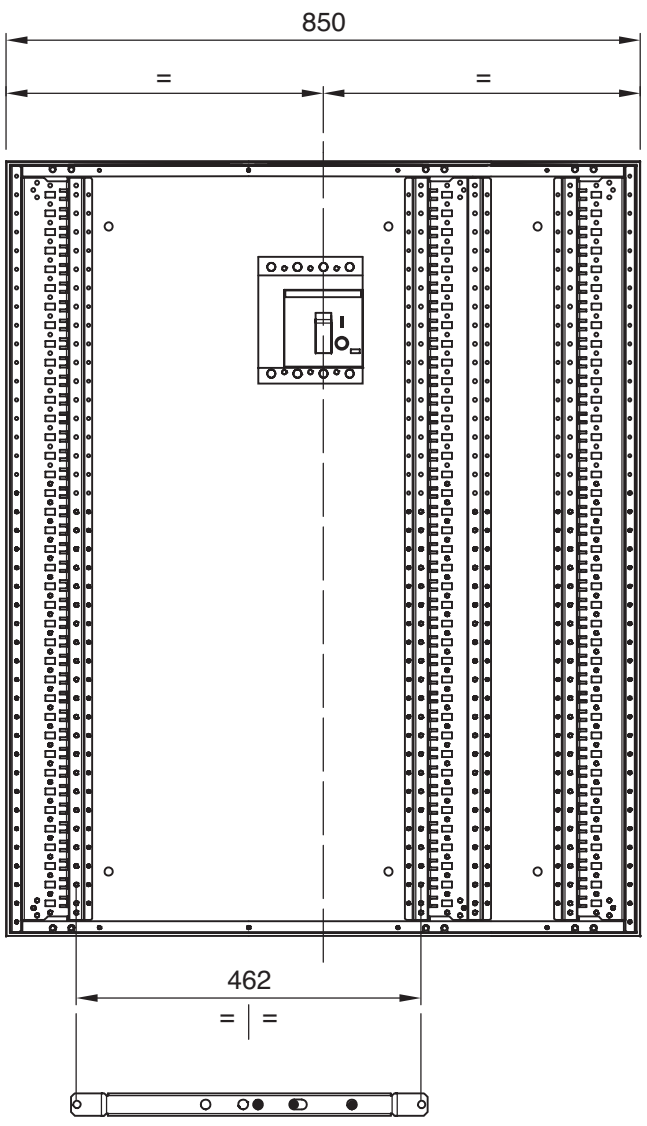
GW45562

KIT PORTABARRE LINEARE BARRE PIATTE 250-400-630A - *LINEAR FLAT BAR HOLDER KIT 250-400-630A*
KIT PORTE-BARRES LINÉAIRE BARRES PLATES 250-400-630A - *KIT PORTABARRAS LINEAL BARRAS PLANAS 250-400-630A*
KIT LINEARE STANGENHALTER FLACHE STANGEN 250-400-630A









GW45563

cod. 7.57.3.897.1

ULTIMA REVISIONE 10/2012

GEWISS - *MATERIALE ELETTRICO*

SAT

+39 035 946 111
8.30 - 12.30 / 14.00 - 18.00
lunedì ÷ venerdì - monday ÷ friday

24h **+39 035 946 260**

sat@gewiss.com
www.gewiss.com

ITEM	Tag	84318-CEL	: AC UPS - PAS DB / LV Switchboard Auxiliary		Dwg	123A90-DDL-EL-LIS-20148	
	S/Sys	83-00	: 400 V Switchboard & Connection Box (SG-200N1)		Module	LD_B-300/LD_B-200	
TASK	code	C10002114	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Electrical	Form	CPX09	LV Power Cable

CABLE DATA

Type Cu Cl.2/MGT/EPR/LSZH/GSWB/LSZH Cores/Size mm² 3G2,5 mm2 Color ORANGE

From DP-200F3 To SG-200N1

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

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	84318-CEL	: AC UPS - PAS DB / LV Switchboard Auxiliary		Dwg	123A90-DDL-EL-LIS-20148	
	S/Sys	83-00	: 400 V Switchboard & Connection Box (SG-200N1)		Module	LD_B-300/LD_B-200	
TASK	code	C10002114	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Electrical	Form	CPX09	LV Power Cable

CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0.3	
6		PH 2	0.3	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		0.3	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		0.3	
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>1999	
11		PH2 / PH1-PH3-A-E	>1999	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

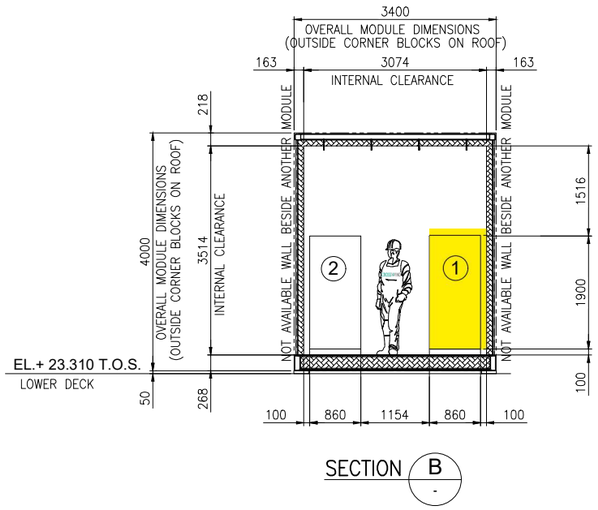
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207	TYPE / SERIAL N° :	MULTIMETER: FLUKE 175 SERIAL:AW1/018(17140769)
Calibration certificate N° and date:	N°7722/24 _ 10/07/2024	Calibration certificate N° and date:	N°7715/24 _ 10/07/2024

Comments: Note 4 : Refer to PL C30000679

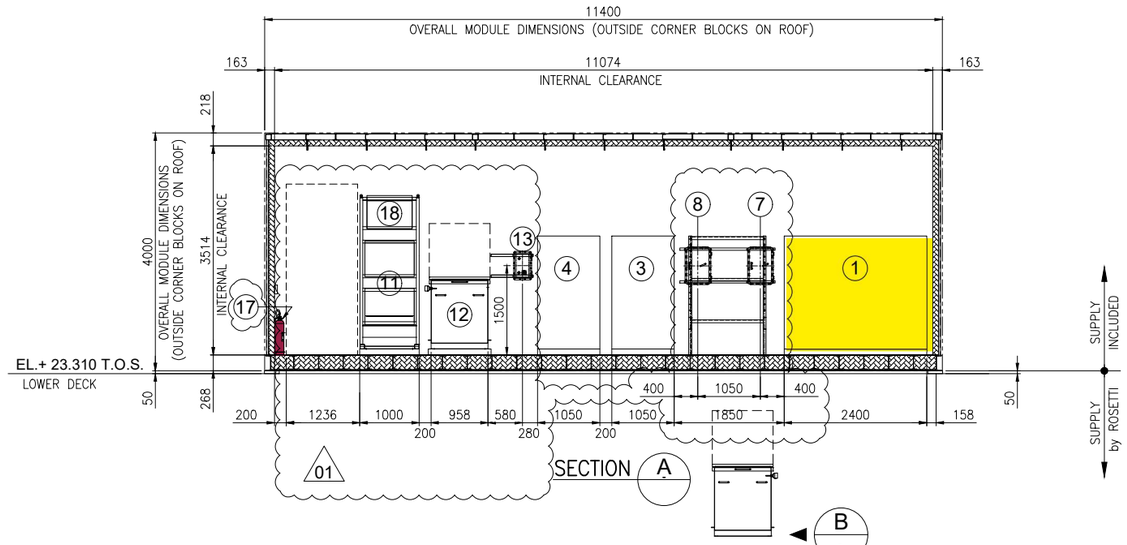
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Alessio Polo	
Date	2024-11-25	2024-11-26	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-11-25T16:35:40.765Z	PROVERLIS Digitaly signed by Alessio Polo 2024-11-26T10:52:17.481Z	

DRAWING NO. 123A90-DDL-EL-DL-20106

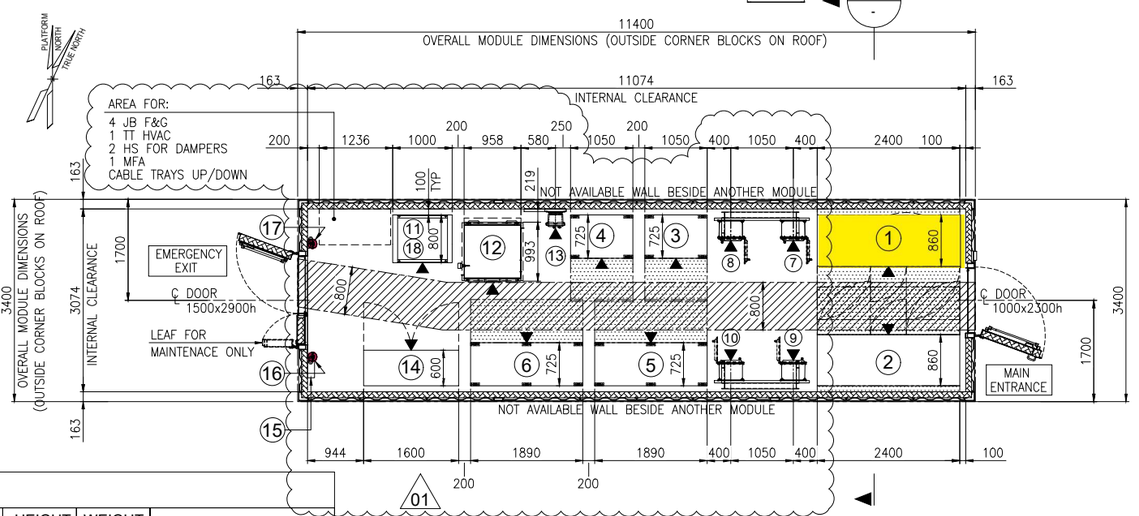
REV. 01



SECTION B -



SECTION A -



EQUIPMENT LAYOUT
"B-300" UPSs & BATTERIES SWITCHROOM
BOTTOM PLAN

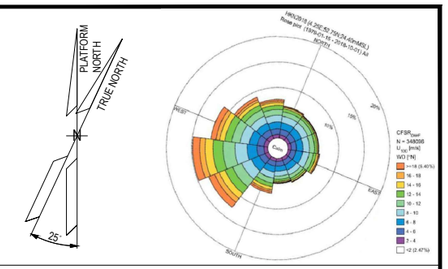
EQUIPMENT LIST

REF.	TAG No.	DESCRIPTION	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)	WEIGHT (Kg)	NOTES
1	UP-200F3	AC UPS 35kVA	2400	860	1915	2258	
2	UP-200F4	AC UPS 15kVA	2400	860	1915	2258	
3	BA-200F3A	BATTERY RACK GEL VRLA 7y AC UPS 35kVA	1050	725	1272	914	
4	BA-200F3B	BATTERY RACK GEL VRLA 7y AC UPS 35kVA	1050	725	1272	914	
5	BA-200F4A	BATTERY RACK GEL VRLA 7y AC UPS 15kVA	1890	725	1761	3429	
6	BA-200F4B	BATTERY RACK GEL VRLA 7y AC UPS 15kVA 01	1890	725	1761	3429	
7	CB-200F3A	ISOLATOR BOX AC UPS 35kVA	450	341	632	100	
8	CB-200F3B	ISOLATOR BOX AC UPS 35kVA	450	341	632	100	
9	CB-200F4A	ISOLATOR BOX AC UPS 15kVA	450	341	632	100	
10	CB-200F4B	ISOLATOR BOX AC UPS 15kVA	450	341	632	100	
11	NC-200F2	NAVAID PANEL 01	1000	800	2600	535	
12	BA-200F2	BATTERY BOX NAVAID	958	993	1210	1552	
13	CB-200F2	ISOLATOR BOX NAVAID	500	400	765	70	
14	B3000-HSB-001	DISTRIBUTION & HVAC PANEL - AC/UPS ROOM	1600	600	2300	1150	
15	-	EYE WASH STATION	228	80	290	5	
16	-	PORTABLE EXTINGUISHER (CO2) 5 Kg.	150	150	750	20	
17	-	PORTABLE EXTINGUISHER (CO2) 5 Kg.	150	150	750	20	
18	BC-200F2	BATTERY CHARGER NAVAID 01	-	-	-	-	INCLUDED IN THE RACK OF NC-200F2

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20106**

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

ROSETTI MARINO SpA



NOTES

01
1. U.N.O. ALL DIMENSIONS ARE IN MILLIMETERS.
2. EQUIPMENT DIMENSION ARE DEFINED ACCORDING TO THE LATEST DRAWING AND INFORMATION FROM THE VENDOR
3. DOCUMENT VALID ONLY FOR ELECTRICAL COMPONENT, FOR OTHER SCOPE LOCATION AND INFORMATION, PLEASE REFER TO VENDORS AND PROJECT DOCUMENTS.
   - "B-300" – GENERAL ARRANGEMENT DRAWING DOC. N. 1724000049-AR-DA-00016
   - "B-300" – DETAILED DRAWINGS DOC. N. 1724000049-AR-DD-00020

LEGEND

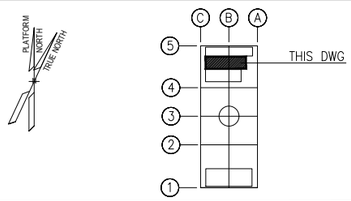
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR – WIDTH 800mm.
_____ MAINTENANCE AREA – VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

HOLDS

REFERENCE

DOCUMENT TITLE	DOCUMENT NUMBER
"B-300" GENERAL ARRANGEMENT DRAWING	1724000049-AR-DA-00016
"B-300" DETAILED DRAWINGS	1724000049-AR-DD-00020
"B-300" ARCHITECTURAL GENERAL LAYOUT PLAN, WIEW, SECTIONS & TYP. DETAILS	123A90-DDL-AR-DL-10022
PLOT PLAN – LOWER & UPPER DECK	123A90-DDL-PP-DL-70070

KEY PLAN



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	23/07/24	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	28/03/24	SAM	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

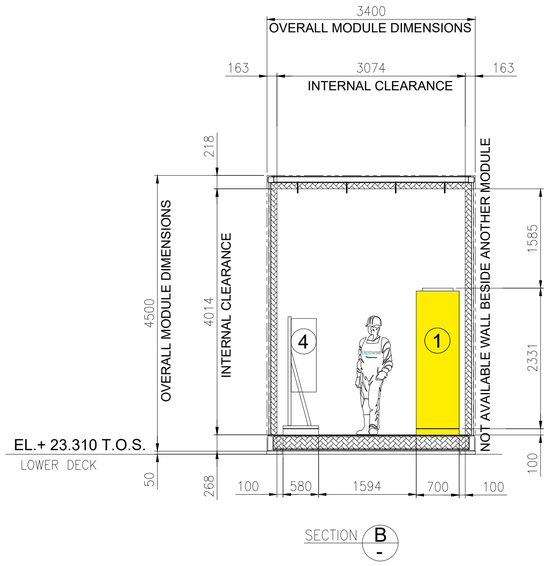
CROSSWIND | ROSETTI MARINO

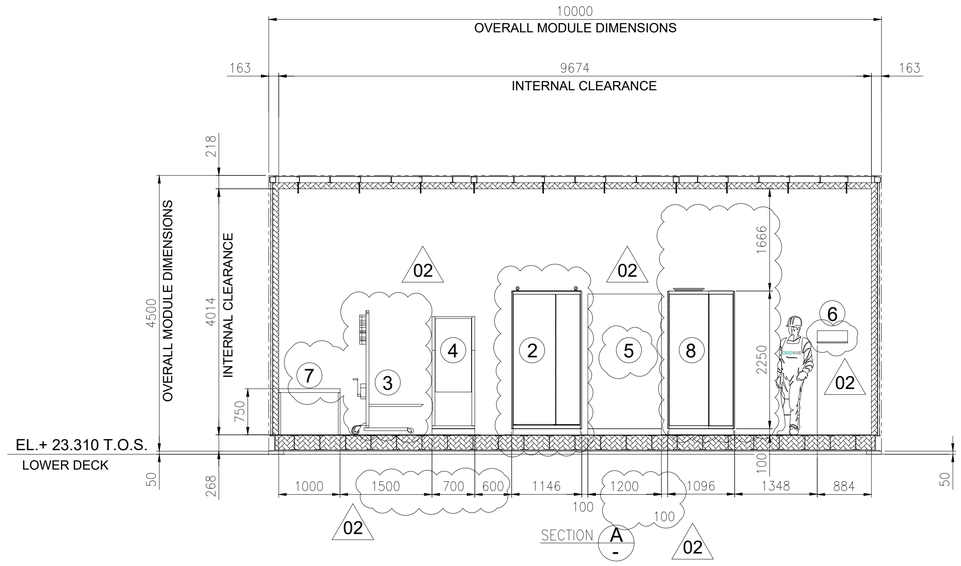
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
UPSs & BATTERIES SWITCHROOM

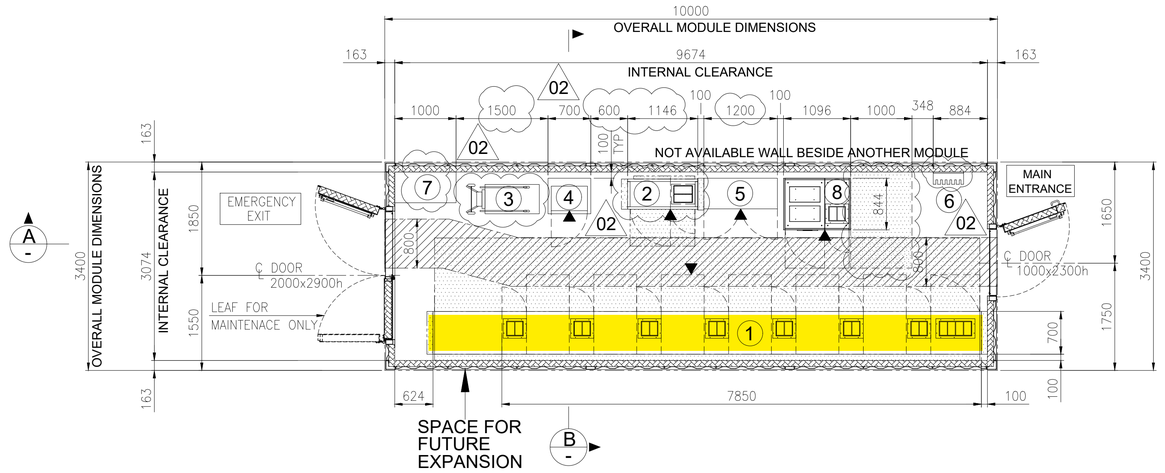
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN SAM	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 23/07/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20106	SHEET 001	REV. 01

File Name : 123A90-DDL-EL-DL-20106 Rev.00.dwg

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







EQUIPMENT LAYOUT

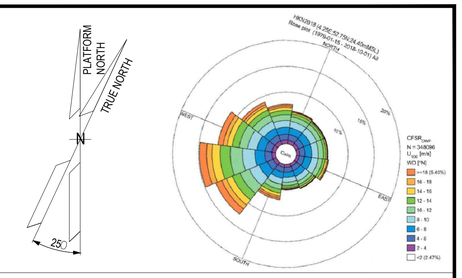
"B-200" LV (400V) SWITCHGEAR ROOM

BOTTOM PLAN

1

EQUIPMENT LIST

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



NOTES

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

02

LEGEND

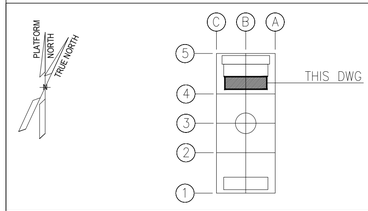
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

REFERENCES

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

02

KEY PLAN



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

CROSSWIND

ROSETTI MARINO

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

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE 1:50

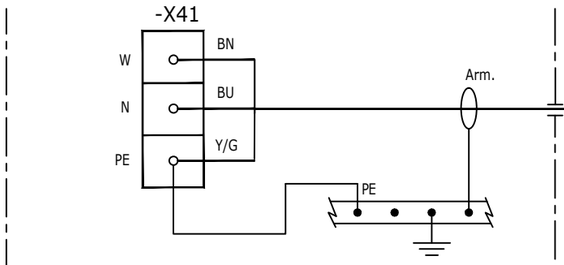
DRAWN FMO | CHECKED LMA/AMA | APPROVED LMA/MDO | DATE 27/05/2024

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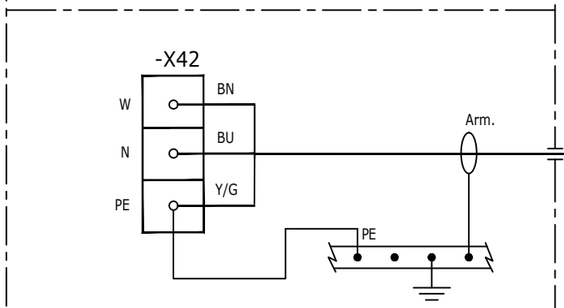
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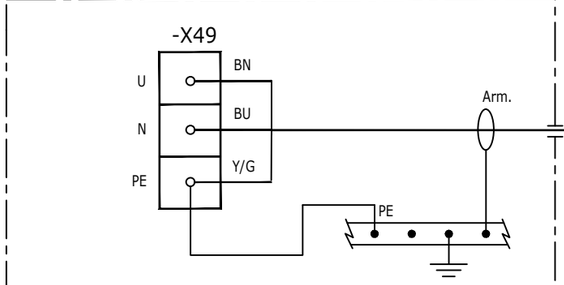
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TAG NUMBER: DP-200F3



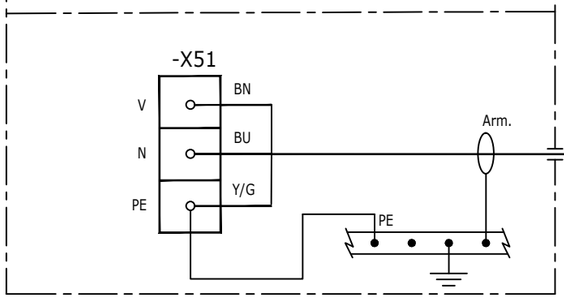
84316-CEL
3G2.5 mm²



84317-CEL
3G2.5 mm²

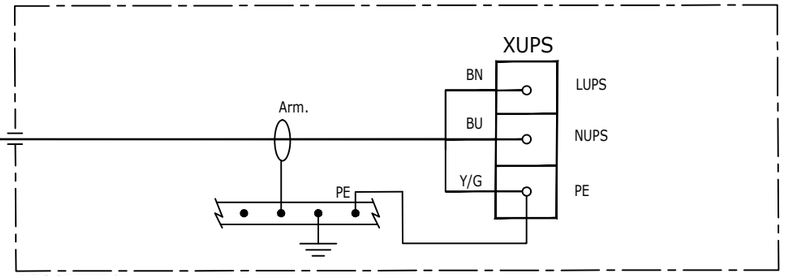


84318-CEL
3G2.5 mm²

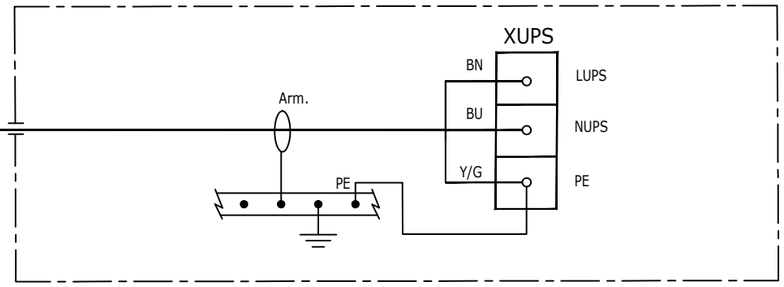


84319-CEL
3G2.5 mm²

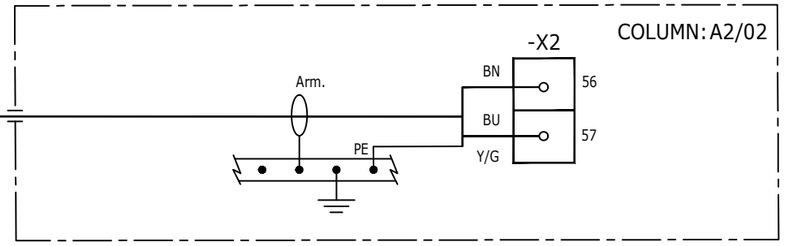
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TAG NUMBER: B300-HSB-001



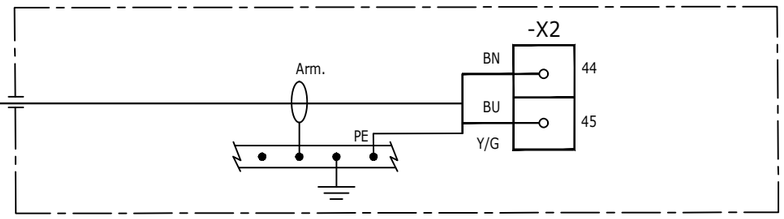
DESCRIPTION: UCP - HVAC ITER
TAG NUMBER: B400-HSB-001



DESCRIPTION: LV SWITCHBOARD AUXILIARY
TAG NUMBER: SG-200N1



DESCRIPTION: LV SWBD 800/460V AUXILIARY
TAG NUMBER: SG-200D2



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

REV.:	DATE:	SIGNATURE:
2_A	21/11/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
AC UPS – PAS DB DP-200F3

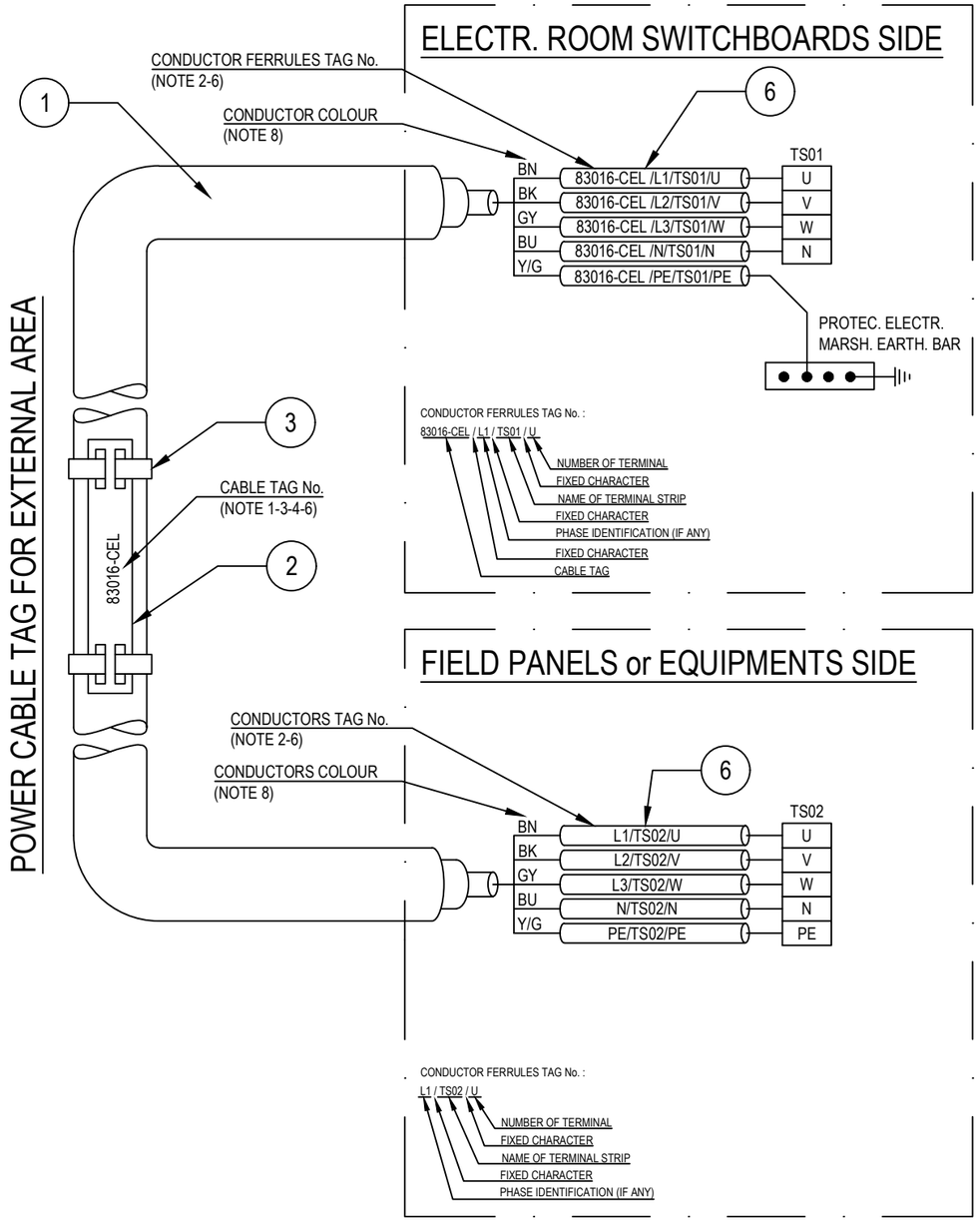
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 042 | REV. 02

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

F.to UNI A3: 420mmx297mm

C02



POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	UNARMOURED CABLE				
2	CABLE TAG FOR EXTERNAL AREA	HDG/SS			NOTE 1 NOTE 4
3	TIE FOR CABLE TAG IN EXTERNAL AREA	HDG/SS			
4	CABLE TAG FOR INTERNAL AREA	PVC			NOTE 1 NOTE 5
5	TIE FOR CABLE TAG IN INTERNAL AREA	NYLON 6.6			
6	CORE FERRULES	PVC			

NOTES:

1) ALL CABLES SHALL BE IDENTIFIED AT EACH TERMINATION AND EACH SIDE OF ANY OBSTACLE (E.G. CABLE TRANSIT ON WALLS INSIDE SHELTER AND FLOOR DECK CROSSING, BY THEIR RESPECTIVE TAGS/NUMBERS, AS INDICATED ON THE CABLE SCHEDULE.
CABLE IDENTIFICATION SHALL BE ALSO DONE BELOW AND IN THE SWITCHBOARD CABLE COMPARTMENT.

2) CABLE CORE FERRULES SHALL BE FITTED AT EVERY TERMINATION. THESE FERRULES SHALL BE OF ENGRAVED PLASTIC SLIP ON, INTERLOCKED AND SELF GRIP TYPE.

3) ON CABLE TRAYS OR LADDERS, CABLES SHALL BE IDENTIFIED AT EACH END, AND EVERY 25 METERS.

4) THE CABLE TAG FOR EXTERNAL AREA SHALL DONE BY 316L STAINLESS STEEL LABELS, TAG (H=5mm) SHALL BE LASER PRINTED PREFERABLY OR EMBOSSED, LABEL HELD BY TWO 316L STAINLESS STEEL TIES.

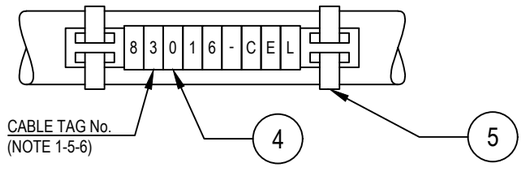
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

6) CABLE AND CONDUCTOR TAG ARE INDICATIVE ONLY.

7) WITHIN TECHNICAL BUILDING, PROTECTIVE CONDUCTOR SHALL BE TAGGED BETWEEN FOLLOWING ITEMS:
- PANEL (SWITCHBOARD, SWITCHGEAR, DISTRIBUTION BOARD, ETC) AND EARTH BAR
- EARTH BAR AND EARTH BOSS

8) ONLY IF NECESSARY, SHRINK TUBES OF THE APPROPRIATE COLOR WILL BE INSTALLED TO COVER THE WRONG CONDUCTOR COLOR, THIS WILL BE PERFORMED IN EACH SIDE OF THE CABLES WHERE NECESSARY.

POWER CABLE TAG FOR INTERNAL AREA



VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-EL-DD-20092
REV.: 2_A | DATE: 28/08/24 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	28/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	04/07/24	NLK	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-POWER SYSTEM & CABLE INSTALLATION
CABLES INSTALLATION SYSTEM IDENTIFICATION FOR POWER CABLES

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

A3 | DRAWING NO. 123A90-DDL-EL-DD-20092 | SHEET 007 | REV. 02

F.to UNI A3: 420mmx297mm

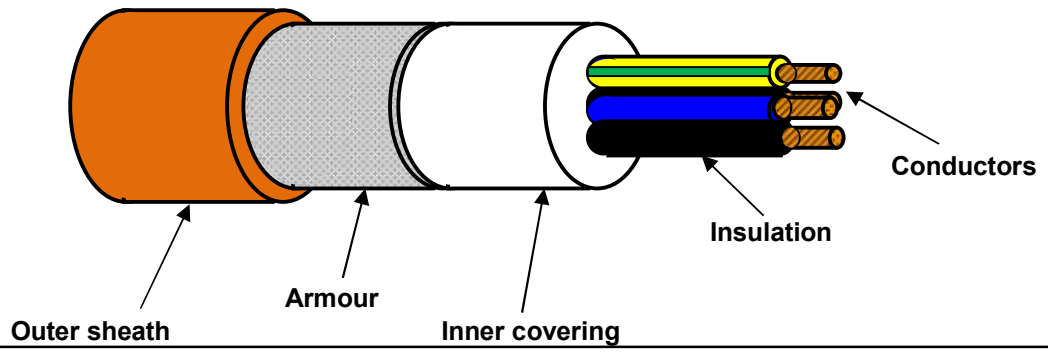
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	To Tag	To Main Function	To Area	Material ID	Material Desc.	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
84318-CEL	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						DP-200F3	AC UPS 35 kVA Distribution Board	Lower Deck (B-300)	SG-200N1	LV 0,4 kV MCC Switchgear	Lower Deck (B-200)	ELECV19-3G2,5	Cable Cu Cl.2/MGT/EPR/LSZH/GSWB/LSZH 0,6/1kV 3G2,5mm² - Orange	T2_M20_Double			n.a.				L-450-101-LVT-040 / L-600-101-LVT-036 / L-600-101-LVT-038 / L-600-101-LVT-035 / E-MCT-302 / L-450-101-LVT-005 / L-600-101-LVT-010 / E-MCT-204 / L-600-101-LVT-020 / L-600-101-LVT-019 / L-600-101-LVT-017 / L-450-101-LVT-022

FLEI s.r.l.

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

3G2,5 - L.V. POWER CABLE - Fire Resistant & Flame Retardant - ARMOURED



TECHNICAL FEATURES

Conductors :	**STRANDED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	Mica/Glass Tape (MGT) plus EPR compound, quality to IEC 60092.360, Nominal Thickness 1,0 mm	
Cores colour code :	**Brown - Blue - Yellow/Green**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not Required	
Total Assembling :	Cores layed up with optimal lay length	
Overall Wrapping:	Not required	
Drain wire :	Not required	
Overall Shield:	Not required	
Inner covering :	Extruded LSZH compound, Average Thickness 1,0 mm	
Inner covering color code:	**Black or Natural**	
Armour :	**Galvanized Steel Wire Braid Armour (coverage ≥ 90%)**	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,3 mm	
Outer sheath color code:	**Orange**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 3G2,5 SQMM - MGT/EPR/LSZH/GSWB/LSZH - 0,6/1 KV - IEC 60331.21 - IEC 60332.1.2 - IEC 60332.3.22 - Year of Manufacture - CE + Meter Marking**	
Under Armour diameter :	(11,7 ± 10%) mm	
Over Armour diameter :	(12,9 ± 10%) mm	
Outer diameter :	(15,5 ± 10%) mm	
Bending radius :	cable outer diameter x 10	(in fixed installation)
Voltage test :	3,5 kV a.c. for 5' (Between Cores - Armour)	
Conductors DC Resistance :		IEC 60228 Class 2
Insulation Resistance :	≥ 940 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.353**	
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%)	
Temperature Range :		
ON INSULATION	(max +90°C)	(max continuous operation temperature of conductors)
	(max +250°C)	(max conductors temperature during short-circuit for 5 seconds)
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C)	(in fixed installation)
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner covering together with correct ATEX approved equipment or accessories.**	

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

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

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ITEM	Tag	83010-CEL-E	: LV Switchgear / Temporary Generator / Mobile Battery Pack			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-00	: 400 V Switchboard & Connection Box (SG-200N1)			Module	LD
TASK	code	C10002416	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

CABLE DATA

Type: Cu Cl.2/LSZH TI7 450/750V | Cores/Size mm²: 1G95 mm2 | Color: Y/G

From: SG-200N1 | To: JB-200E2

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

REFER TO FINAL SHEET FOR ACCEPTANCE

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	83010-CEL-E	: LV Switchgear / Temporary Generator / Mobile Battery Pack			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-00	: 400 V Switchboard & Connection Box (SG-200N1)			Module	LD
TASK	code	C10002416	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

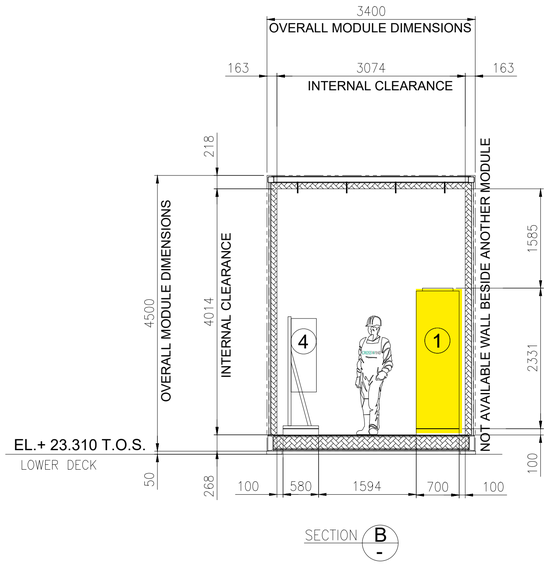
CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0,3	
6		PH 2	NA	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		NA	
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	NA	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

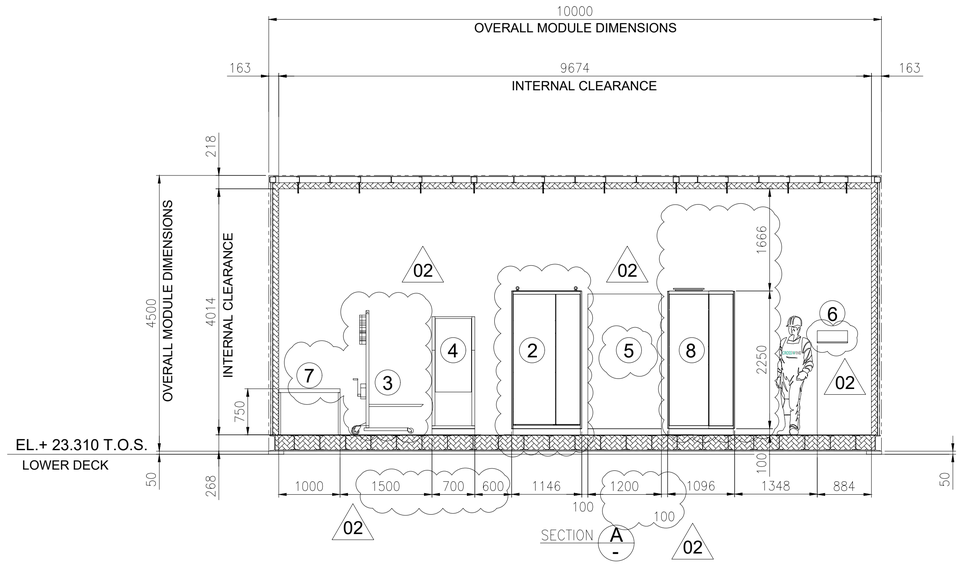
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	KEW3125A/ Serial:W8330207	TYPE / SERIAL N° :	Fluke/Serial:AW1/08(17140769)
Calibration certificate N° and date:	7722/24Date:10/07/24	Calibration certificate N° and date:	7715/24 date:10/07/24

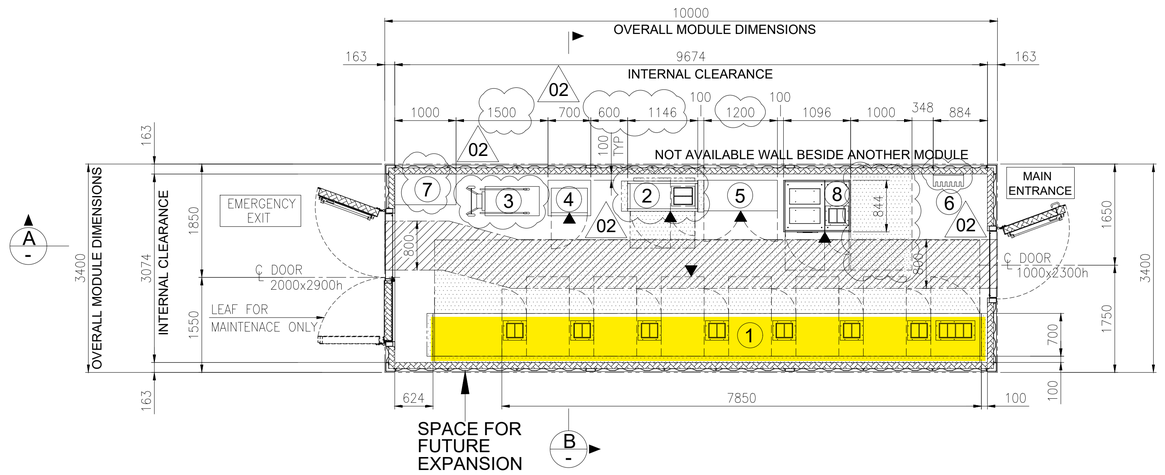
Comments: Nota 4: refer to PL C30000679

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Giovanni Tangianu	
Date	2024-12-02	2024-12-02	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-02T13:01:17.297Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-12-02T16:34:58.983Z	

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





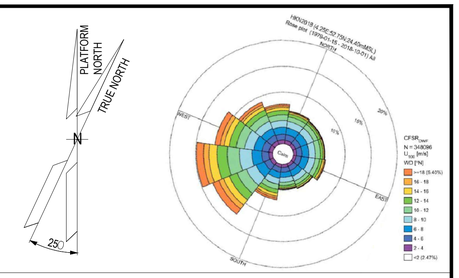


EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

1

EQUIPMENT LIST

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



NOTES

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

02

LEGEND

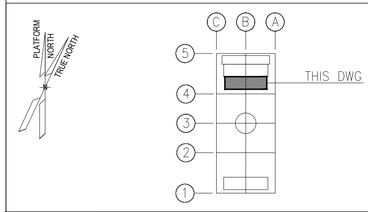
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

REFERENCES

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

02

KEY PLAN



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

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

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

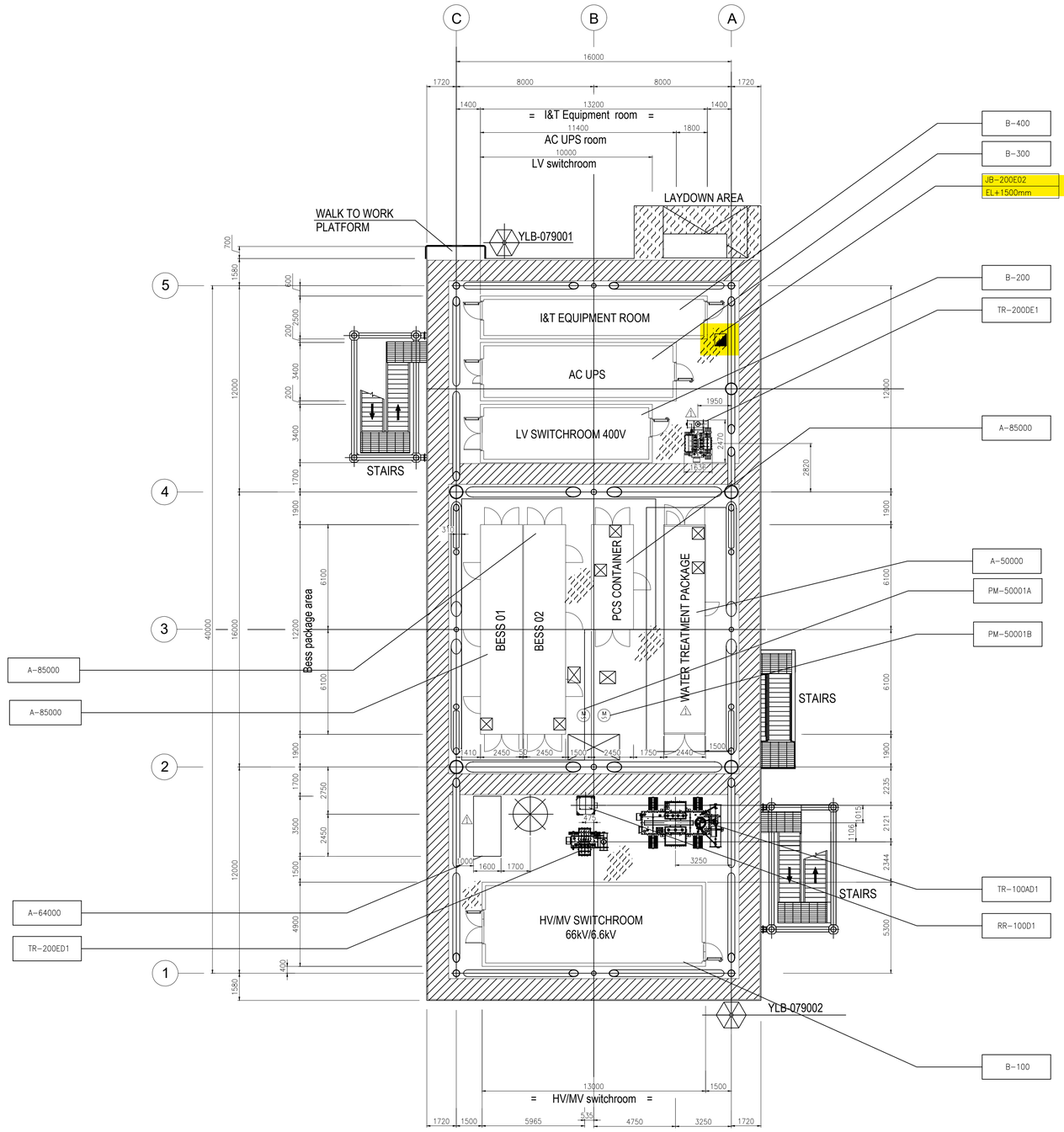
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LV SWITCHROOM

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

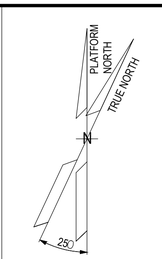
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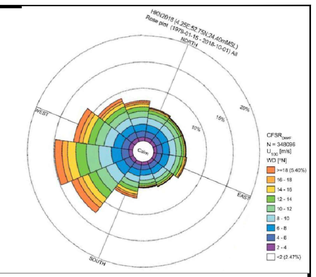
DRAWING NO. 123A90-DDL-EL-DL-20101

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

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)

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

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

ROSETTI MARINO SpA

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

FROM	TO

DESCRIPTION: LV Switchgear
TAG NUMBER: SG-200N1

COLUMN/CUBIC.: A2/~~+08~~ +02

L1	BK	83010-CEL-L1	1C X 95 mm²
L2	BK	83010-CEL-L2	1C X 95 mm²
L3	BK	83010-CEL-L3	1C X 95 mm²
N	BK	83010-CEL-N	1C X 95 mm²
PE	Y/G	83010-CEL-E	1C X 95 mm²

P.E. BUS BAR

DESCRIPTION: TEMPORARY GENERATOR / MOBILE BATTERY PACK
TAG NUMBER: JB-200E2

BK	L1	INCOMING FROM LV SWITCHGEAR SG-200N1
BK	L2	
BK	L3	
BK	N	
Y/G	PE	

P.E. BUS BAR

COLUMN/CUBIC.: A1/+08

L1	BK	83013-CEL-L1	1C X 300 mm²
L2	BK	83013-CEL-L2	1C X 300 mm²
L3	BK	83013-CEL-L3	1C X 300 mm²
N	BK	83013-CEL-N	1C X 300 mm²
PE	Y/G	83013-CEL-E	1C X 150 mm²

P.E. BUS BAR

DESCRIPTION: ELECTROLYSER AUXILIARY LOAD
TAG NUMBER: A-20000

BK	L1	
BK	L2	
BK	L3	
BK	N	
Y/G	PE	

P.E. BUS BAR

DESCRIPTION: FUEL CELL AUXILIARY LOAD
TAG NUMBER: A-80000

COLUMN/CUBIC.: A4/+03

L1	BN	83012-CEL	5G16 mm²
L2	BK		
L3	GY		
N	BU		
	Y/G		
	PE		

P.E. BUS BAR

-XB01

BN	1	L1
BK	2	L2
GY	3	L3
BU	4	N
Y/G	5	PE

Y/G
PE
P.E. BUS BAR

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

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

ROSETTI MARINO SpA

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

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
LV SWITCHGEAR SG-200N1

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

SCALE : 1:X

A3

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

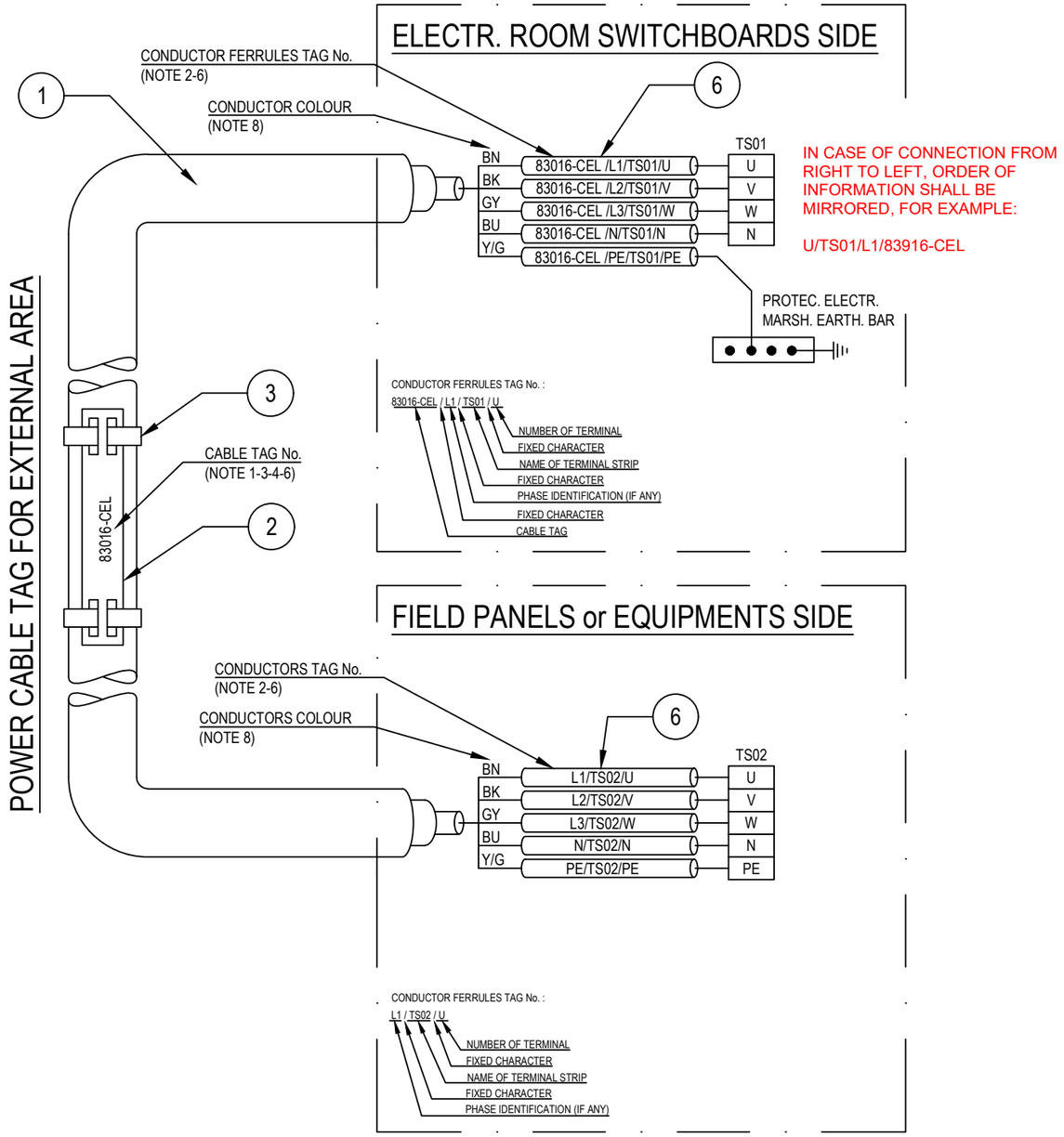
SHEET 021

REV. 02

F.to UNI A3: 420mmx297mm

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

C02



POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	UNARMOURED CABLE				
2	CABLE TAG FOR EXTERNAL AREA	HDG/SS			NOTE 1 NOTE 4
3	TIE FOR CABLE TAG IN EXTERNAL AREA	HDG/SS			
4	CABLE TAG FOR INTERNAL AREA	PVC			NOTE 1 NOTE 5
5	TIE FOR CABLE TAG IN INTERNAL AREA	NYLON 6.6			
6	CORE FERRULES	PVC			

NOTES:

1) ALL CABLES SHALL BE IDENTIFIED AT EACH TERMINATION AND EACH SIDE OF ANY OBSTACLE (E.G. CABLE TRANSIT ON WALLS INSIDE SHELTER AND FLOOR DECK CROSSING, BY THEIR RESPECTIVE TAGS/NUMBERS, AS INDICATED ON THE CABLE SCHEDULE.
CABLE IDENTIFICATION SHALL BE ALSO DONE BELOW AND IN THE SWITCHBOARD CABLE COMPARTMENT.

2) CABLE CORE FERRULES SHALL BE FITTED AT EVERY TERMINATION. THESE FERRULES SHALL BE OF ENGRAVED PLASTIC SLIP ON, INTERLOCKED AND SELF GRIP TYPE.

3) ON CABLE TRAYS OR LADDERS, CABLES SHALL BE IDENTIFIED AT EACH END, AND EVERY 25 METERS.

4) THE CABLE TAG FOR EXTERNAL AREA SHALL DONE BY 316L STAINLESS STEEL LABELS, TAG (H=5mm) SHALL BE LASER PRINTED PREFERABLY OR EMBOSSED, LABEL HELD BY TWO 316L STAINLESS STEEL TIES.

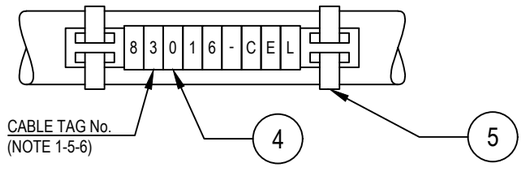
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

6) CABLE AND CONDUCTOR TAG ARE INDICATIVE ONLY.

7) WITHIN TECHNICAL BUILDING, PROTECTIVE CONDUCTOR SHALL BE TAGGED BETWEEN FOLLOWING ITEMS:
- PANEL (SWITCHBOARD, SWITCHGEAR, DISTRIBUTION BOARD, ETC) AND EARTH BAR
- EARTH BAR AND EARTH BOSS

8) ONLY IF NECESSARY, SHRINK TUBES OF THE APPROPRIATE COLOR WILL BE INSTALLED TO COVER THE WRONG CONDUCTOR COLOR, THIS WILL BE PERFORMED IN EACH SIDE OF THE CABLES WHERE NECESSARY.

POWER CABLE TAG FOR INTERNAL AREA



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

REV.:	DATE:	SIGNATURE:
2_B	28/11/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	28/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	04/07/24	NLK	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-POWER SYSTEM & CABLE INSTALLATION
CABLES INSTALLATION SYSTEM IDENTIFICATION FOR POWER CABLES

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

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-EL-DD-20092	007	02

F.to UNI A3: 420mmx297mm

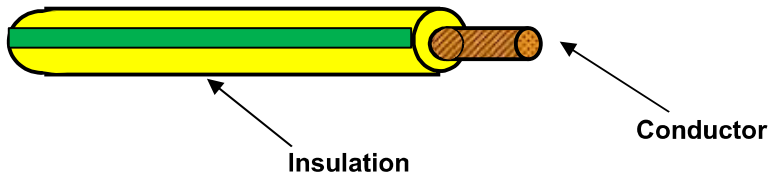
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	To Tag	To Main Function	To Area	Material ID	Material Desc.	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
83010-CEL-E	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						SG-200N1	LV 0,4 kV MCC Switchgear	Lower Deck (B-200)	JB-200E2	Temporary Generator / Mobile Battery Pack JB	Lower Deck (B-200) Ext.	ELECV29-1G95	Cable Cu Cl.2/LSZH TI7 450/750V 1G95mm² - Yellow with 2 Green Stripes	n.a.			T1_M25_Single				L-450-101-LVT-023 / L-600-101-LVT-017 / L-600-101-LVT-019 / L-600-101-LVT-020 / E-MCT-204 / L-600-101-LVT-010 / L-750-101-LVT-015 / L-300-101-LVT-096

FLEI s.r.l.

Cu Cl.2/LSZH 450/750 V

1G95 - PE CABLE - Flame Retardant



TECHNICAL FEATURES

Conductor :	**STRANDED COMPACTED** plain/bare annealed copper wires	EN/IEC 60228 Class 2
Insulation :	LSZH compound, TI7 quality, Nominal Thickness 1,6 mm	
Core colour code :	**Yellow with 2 Green stripes**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not Required	
Total Assembling :	Not Required	
Overall Wrapping:	Not required	
Drain wire :	Not required	
Overall Shield:	Not required	
Inner covering :	Not required	
Inner covering color code:	Not required	
Armour :	Not required	
Outer sheath :	Not required	
Outer sheath color code:	Not required	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 450/750 V - 1G95 SQMM - LSZH - IEC 60332.1.2 - IEC 60332.3.22 -**	
	Year of Manufacture - CE + Meter Marking	
Outer diameter :	(14,5 ± 10%) mm	
Bending radius :	cable outer diameter x 8 (in fixed installation)	
Spark test :	12 kV a.c. (on insulation)	
Conductors DC Resistance :	EN/IEC 60228 Class 2	
Insulation Resistance :	≥ 10 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**EN 50525.3.31**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance	IEC 61034.2 (LT ≥ 60%)	
Temperature Range :		
During Operation :	(-20°C up to +70°C) (in fixed installation)	
	(max +160°C) (max conductors temperature during short-circuit for 5 seconds)	
During Installation :	(-10°C up to +50°C)	
Note :	**The cable is suitable for installation and use in Zone 1 & Zone 2 (IEC 60079-14) using only correct ATEX approved equipment or accessories**	

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

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

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Section 6 MECHANICAL COMPLETION STATUS INDEX - INSTRUMENTAL DISCIPLINE

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 83-00 & process: MC & discipline : I

Instrumental	83-00 400 V Switchboard & Connection Box (SG-200N1)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
C-SG-200N1-001/B400-SIS-001	TRIP SIGNAL / MARSHALLING PCS	ONSHORE	C10000194	CJX10	100	2024-12-02	RFC 2
C-SG-200N1-002/B400-SIS-001	TRIP SIGNAL / MARSHALLING PCS	ONSHORE	C10000195	CJX10	100	2024-12-02	RFC 2

ROSETTI MARINO — CROSSWIND

ITEM	Tag	C-SG-200N1-001/B400-SIS-001	:	TRIP SIGNAL / MARSHALLING PCS	Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	83-00	:	400 V Switchboard & Connection Box (SG-200N1)	Module	LD_B-200/LD_B-400	
TASK	code	C10000194	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	2X2,5 mm2	Color	ORANGE
From	SG-200N1		To	B400-SIS-001	

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.	OK
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	PL
12	Check gland plate for single core cables is non-ferrous.	NA
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

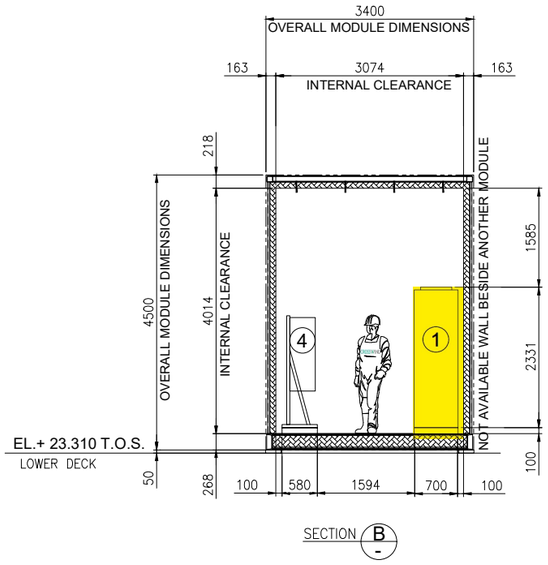
TYPE / SERIAL N°: MEGGER : KEW3125A SERIAL: W8330207 Calibration date: N°7722/24 10/07/2024

Comments Nota 5: refer to PL C30000680

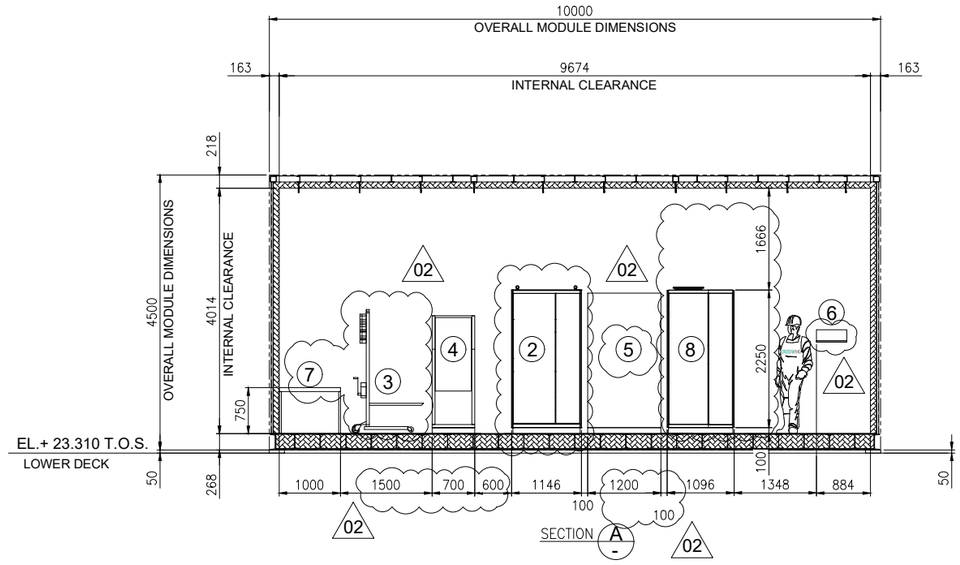
Page 1/1	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Giovanni Tangianu	
Date	2024-12-02	2024-12-02	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-02T12:58:29.890Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-12-02T16:27:21.243Z	

DRAWING NO. 123A90-DDL-EL-DL-20105

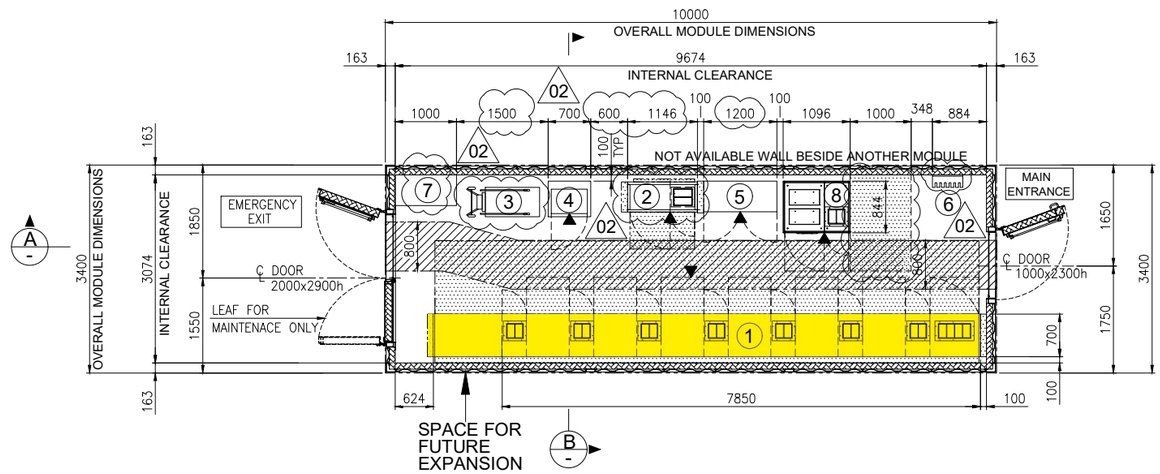
REV. 02



SECTION B



SECTION A



A

B

EQUIPMENT LAYOUT

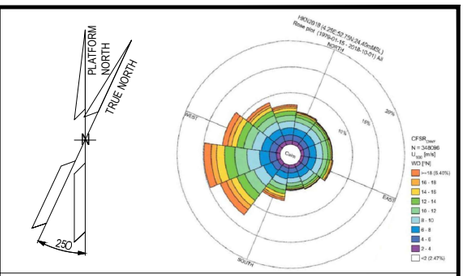
"B-200" LV (400V) SWITCHGEAR ROOM

BOTTOM PLAN

1

EQUIPMENT LIST

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



NOTES

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

02

LEGEND

U.N.O. _____ UNLESS NOTED OTHERWISE

T.O.S. _____ TOP OF STEEL

_____ ESCAPE CORRIDOR - WIDTH 800mm.

_____ MAINTENANCE AREA - VENDOR REQUIREMENT

_____ SWITCHGEAR ROOM ENCLOUSURE

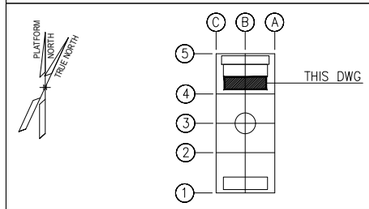
_____ FRONT OF EQUIPMENT

REFERENCES

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

02

KEY PLAN



VALID FOR CONSTRUCTION

FDL DWG: 123A90-FDL-EL-DL-20105

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

ROSETTI MARINO SpA

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

CROSSWIND

ROSETTI MARINO

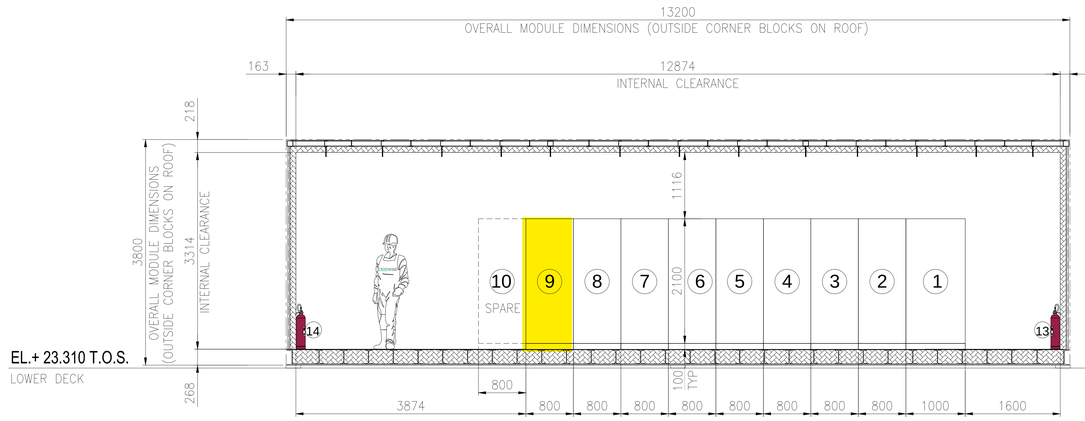
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LV SWITCHROOM

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

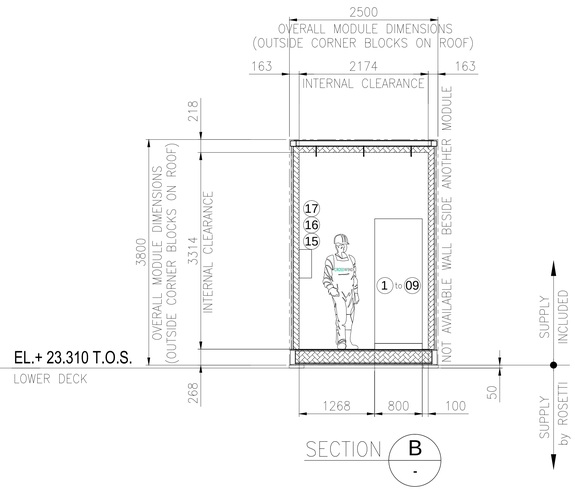
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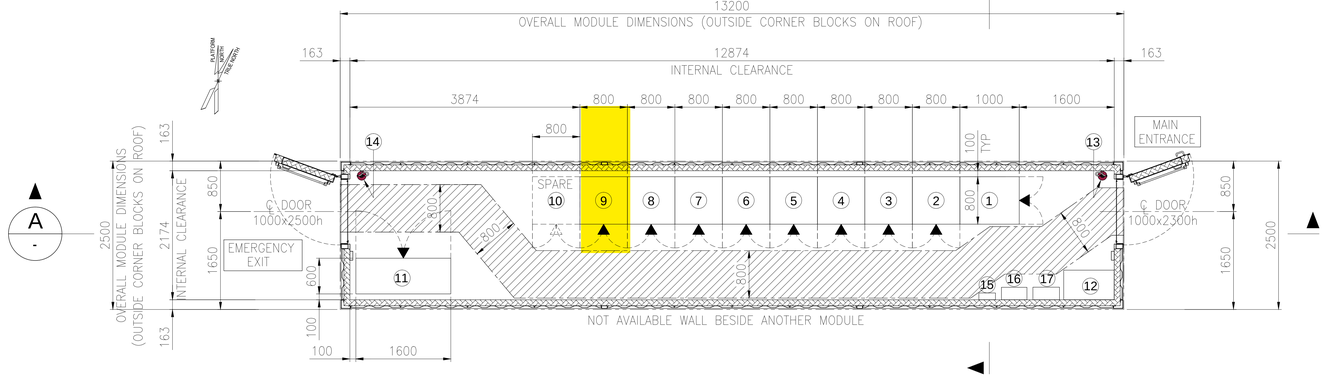
REV. 02



SECTION A -



SECTION B -

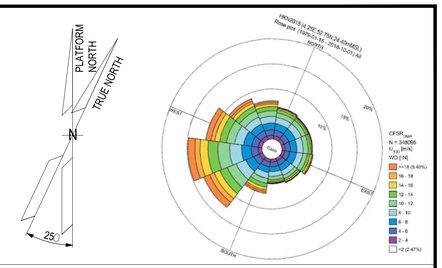


EQUIPMENT LAYOUT
"B-400" I&T EQUIPMENT ROOM
BOTTOM PLAN

02

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-001	PCS SYSTEM CABINET	800	800	2100	
5	B400-PCS-002	PCS MARSHALLING CABINET	800	800	2100	
6	B400-FGS-001	FGS SYSTEM CABINET	800	800	2100	
7	B400-FGS-002	FGS MARSHALLING CABINET 1	800	800	2100	
8	B400-FGS-003	FGS MARSHALLING CABINET 2	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

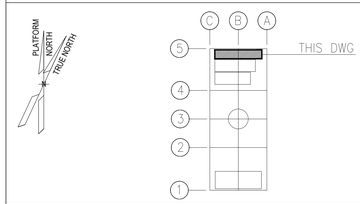
HOLDS

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

ROSETTI MARINO SpA

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

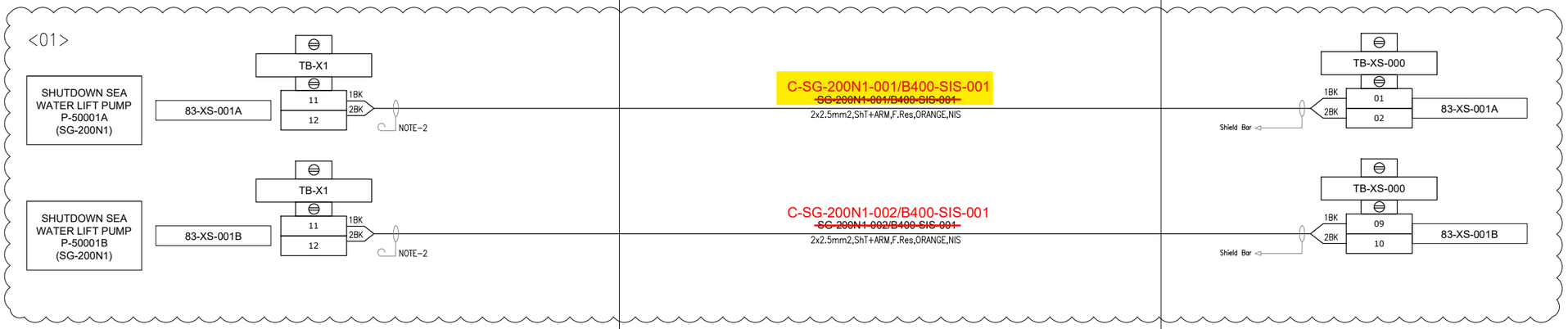
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:33,3
DRAWN MGA	CHECKED LCA	APPROVED DLO	DATE 27/05/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40012	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40012 Rev.02.dwg

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

REV. 01

FIELD		I&T EQUIPMENT ROOM (ITER)
B-200 - LV SWITCH GEAR ROOM	CABLE NO	MARSHALLING CABINET B400-SIS-001



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-SAFETY SYSTEM WIRING DIAGRAMS
ELECTRICAL EQUIPMENT - SHUTDOWN

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 023	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>

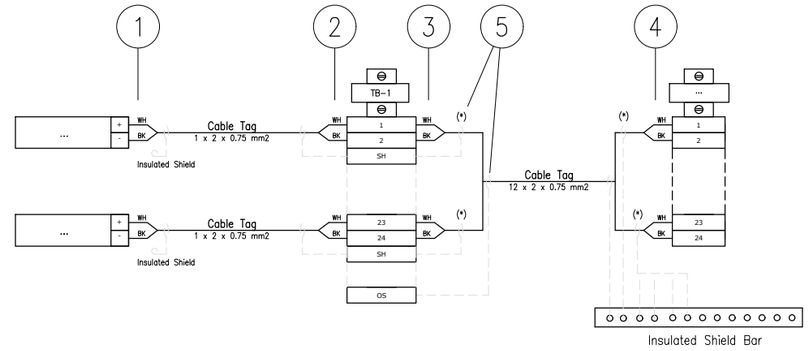
VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40016**

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

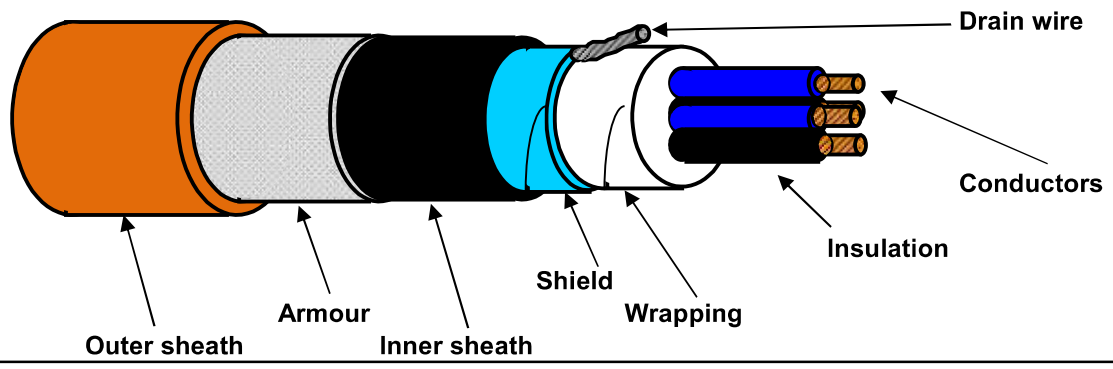
A3	DRAWING NO. 123A90-DDL-IN-DG-40016	SHEET 003	REV. 01

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.	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-SG-200N1-001/B400-SIS-001	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						SG-200N1	LV 0,4 kV MCC Switchgear	Lower Deck (B-200)	B400-SIS-001	Marshalling SIS	Lower Deck (B-400)	SMICV12-2X2,5	Cable Cu Cl.2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 2x2,5mm² - Orange	n.a.			n.a.				I-MCT-201 / B-200-SEC-2E / B-200-SEC-2C / B-200-SEC-2B / B-200-SEC-2A / L-SEC-5 / L-SEC-1C / L-SEC-1B / L-SEC-1A / B-400-SEC-1A / I-MCT-401

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

2X2,5 - 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 2)**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	8/1mt	
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 1,1 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 1,3 mm	
Outer sheath color code:	**Orange**	
Outer printing (INKJET) :	**FLEI - 2X2,5 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 :	(10,3 ± 10%) mm	
Over armour diameter :	(11,5 ± 10%) mm	
Outer diameter :	(14,1 ± 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.

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ITEM	Tag	C-SG-200N1-002/B400-SIS-001	:	TRIP SIGNAL / MARSHALLING PCS	Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	83-00	:	400 V Switchboard & Connection Box (SG-200N1)	Module	LD_B-200/LD_B-400	
TASK	code	C10000195	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	2X2,5 mm2	Color	ORANGE
From	SG-200N1		To	B400-SIS-001	

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.	OK
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	PL
12	Check gland plate for single core cables is non-ferrous.	NA
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	0,5	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

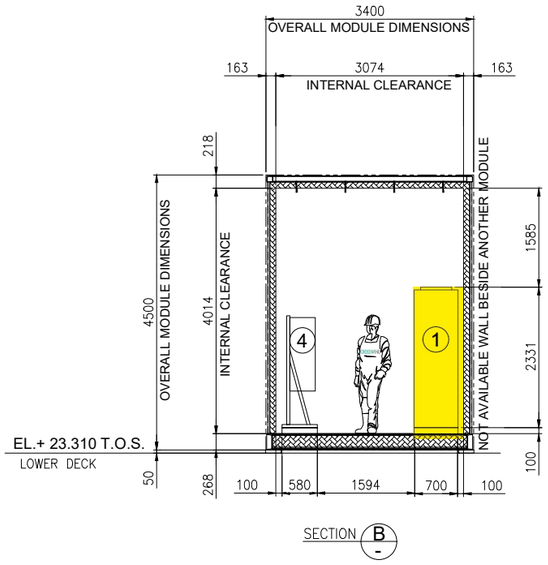
TYPE / SERIAL N°: MEGGER : KEW3125A SERIAL: W8330207 Calibration date: N°7722/24 10/07/2024

Comments Nota 5: refer to PL C30000680

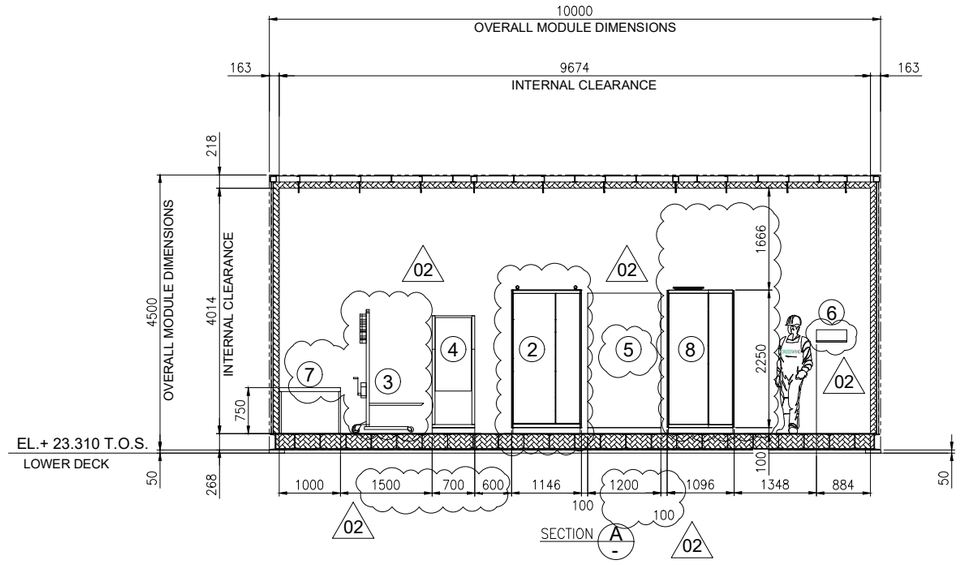
Page 1/1	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Giovanni Tangianu	
Date	2024-12-02	2024-12-02	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-12-02T12:58:43.127Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-12-02T16:27:07.162Z	

DRAWING NO. 123A90-DDL-EL-DL-20105

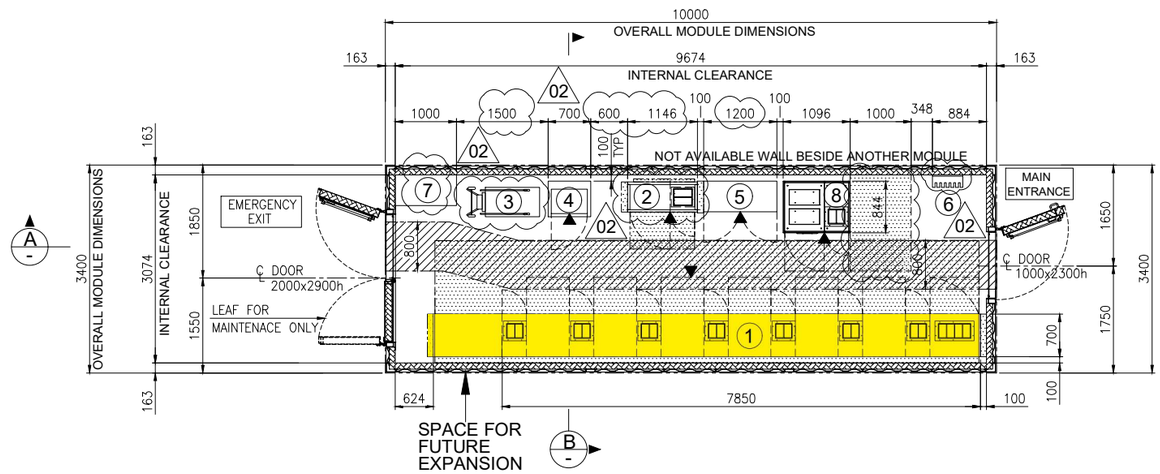
REV. 02



SECTION B



SECTION A



A

B

EQUIPMENT LAYOUT

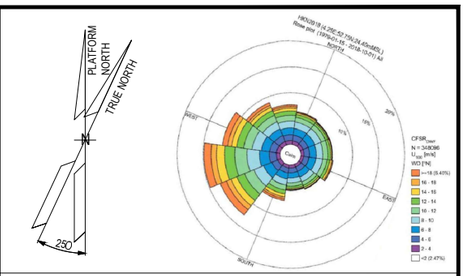
"B-200" LV (400V) SWITCHGEAR ROOM

BOTTOM PLAN

1

EQUIPMENT LIST

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



NOTES

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

02

LEGEND

U.N.O. _____ UNLESS NOTED OTHERWISE

T.O.S. _____ TOP OF STEEL

_____ ESCAPE CORRIDOR - WIDTH 800mm.

_____ MAINTENANCE AREA - VENDOR REQUIREMENT

_____ SWITCHGEAR ROOM ENCLOUSURE

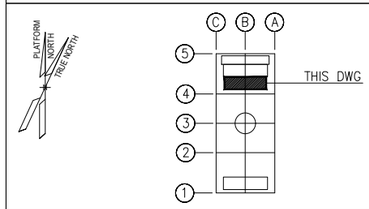
_____ FRONT OF EQUIPMENT

REFERENCES

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

02

KEY PLAN



VALID FOR CONSTRUCTION

FDL DWG: 123A90-FDL-EL-DL-20105

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

ROSETTI MARINO SpA

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

CROSSWIND

ROSETTI MARINO

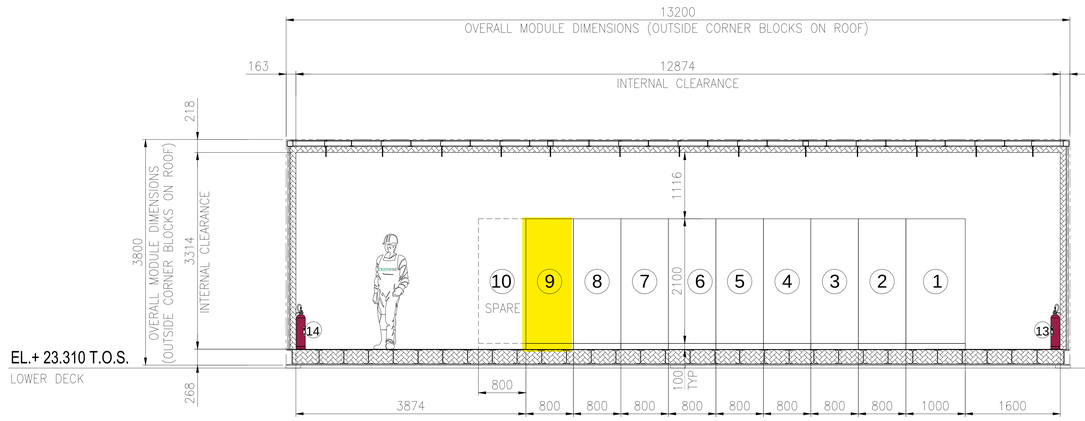
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LV SWITCHROOM

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

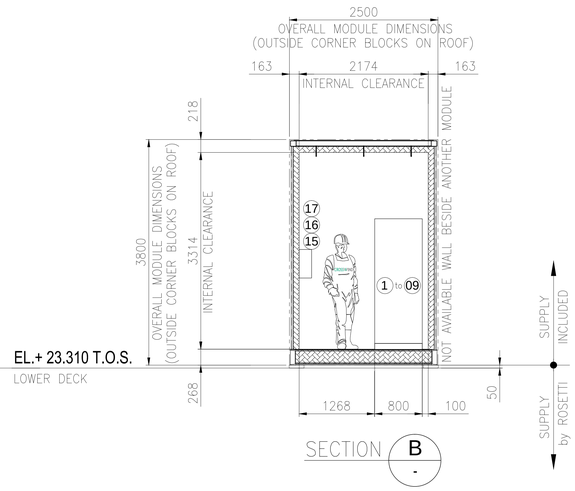
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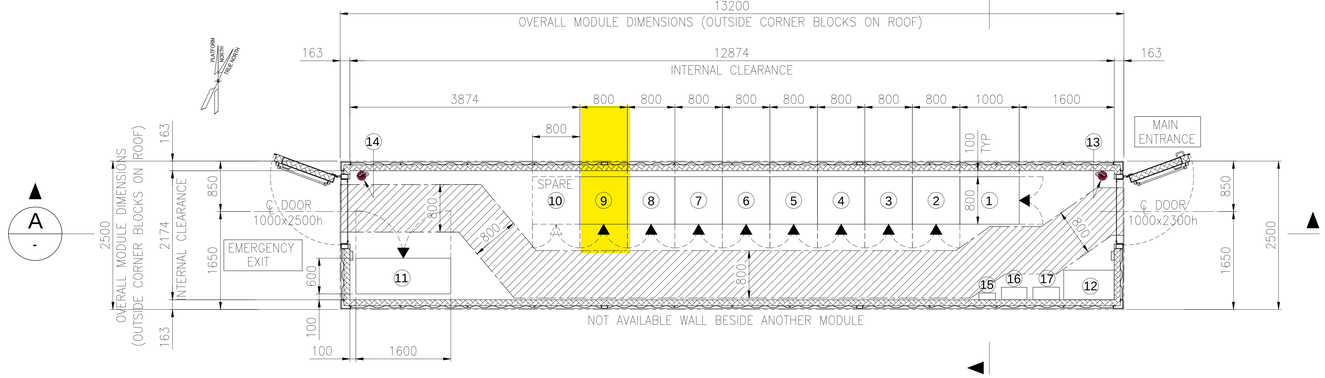
REV. 02



SECTION A -



SECTION B -

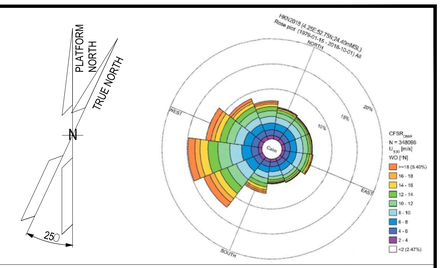


EQUIPMENT LAYOUT
"B-400" I&T EQUIPMENT ROOM
BOTTOM PLAN

02

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-001	PCS SYSTEM CABINET	800	800	2100	
5	B400-PCS-002	PCS MARSHALLING CABINET	800	800	2100	
6	B400-FGS-001	FGS SYSTEM CABINET	800	800	2100	
7	B400-FGS-002	FGS MARSHALLING CABINET 1	800	800	2100	
8	B400-FGS-003	FGS MARSHALLING CABINET 2	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

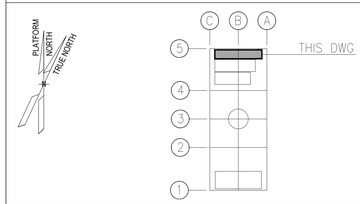
HOLDS

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

ROSETTI MARINO SpA

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

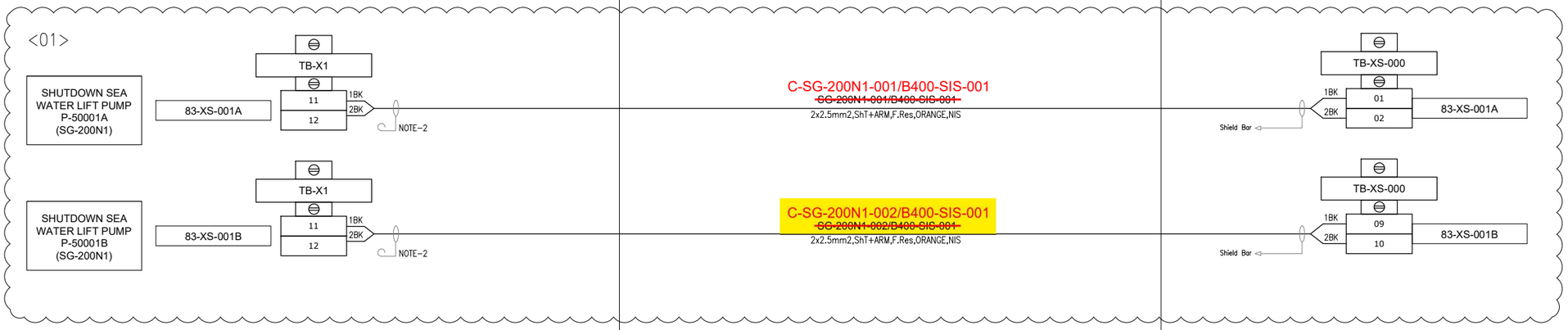
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:33,3
DRAWN MGA	CHECKED LCA	APPROVED DLO	DATE 27/05/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40012	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40012 Rev.02.dwg

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

REV. 01

FIELD		I&T EQUIPMENT ROOM (ITER)
B-200 - LV SWITCH GEAR ROOM	CABLE NO	MARSHALLING CABINET B400-SIS-001



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-SAFETY SYSTEM WIRING DIAGRAMS
ELECTRICAL EQUIPMENT - SHUTDOWN

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 023	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>

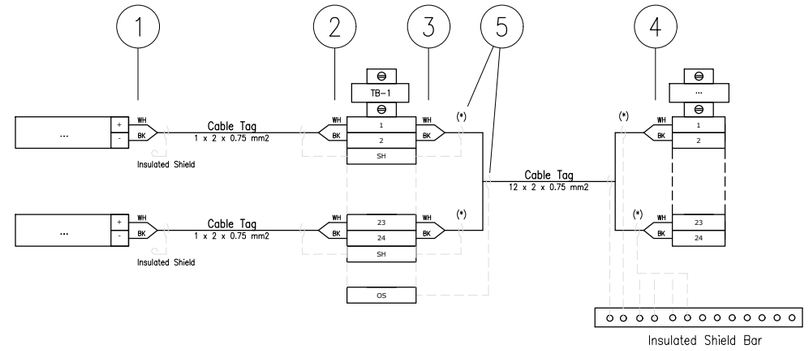
VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40016**

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

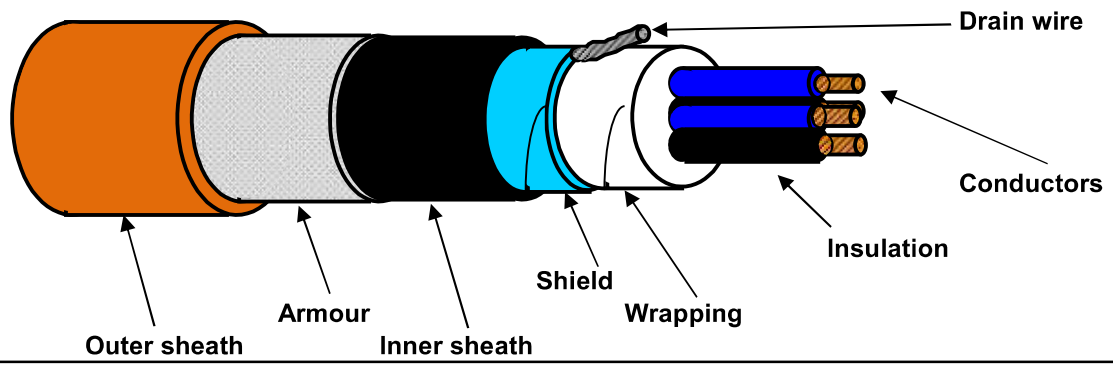
A3	DRAWING NO. 123A90-DDL-IN-DG-40016	SHEET 003	REV. 01

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.	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-SG-200N1-002/B400-SIS-001	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						SG-200N1	LV 0,4 kV MCC Switchgear	Lower Deck (B-200)	B400-SIS-001	Marshalling SIS	Lower Deck (B-400)	SMICV12-2X2,5	Cable Cu Cl.2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 2x2,5mm² - Orange	n.a.			n.a.				I-MCT-201 / B-200-SEC-2E / B-200-SEC-2C / B-200-SEC-2B / B-200-SEC-2A / L-SEC-5 / L-SEC-1C / L-SEC-1B / L-SEC-1A / B-400-SEC-1A / I-MCT-401

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

2X2,5 - 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 2)**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	8/1mt	
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 1,1 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 1,3 mm	
Outer sheath color code:	**Orange**	
Outer printing (INKJET) :	**FLEI - 2X2,5 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 :	(10,3 ± 10%) mm	
Over armour diameter :	(11,5 ± 10%) mm	
Outer diameter :	(14,1 ± 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.

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Section 7 MECHANICAL COMPLETION STATUS INDEX - MECHANICAL DISCIPLINE

NOT APPLICABLE

Section 8 MECHANICAL COMPLETION STATUS INDEX - TELECOMMUNICATION DISCIPLINE

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 83-00 & process: MC & discipline : T

Telecom	83-00 400 V Switchboard & Connection Box (SG-200N1)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
SG-200N1/B400-NET-001.01	LV 0,4 kV MCC Switchgear / Network Cabinet / EMCS System	ONSHORE	C10004365	CIX09	100	2024-11-23	RFC 2
SG-200N1/B400-NET-001.02	LV 0,4 kV MCC Switchgear / Network Cabinet / EMCS System	ONSHORE	C10004366	CIX09	100	2024-11-23	RFC 2
SG-200N1/B400-NET-001.03	LV 0,4 kV MCC Switchgear / Network Cabinet / EMCS System	ONSHORE	C10004367	CIX09	100	2024-11-23	RFC 2

ROSETTI MARINO | CROSSWIND

ITEM	Tag	SG-200N1/B400-NET-001.01 : LV 0,4 kV MCC Switchgear / Network Cabinet / EMCS System				Dwg	123A90-DDL-IN-LIS-40091
	S/Sys	83-00 : 400 V Switchboard & Connection Box (SG-200N1)				Module	LD_B-200/LD_B-400
TASK	code	C10004365		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Telecom	Form	CIX09 Telecom Cable RJ45

CABLE DATA

Type: FTP-LSZH-IS-OS-SWB-LSZH | Cores/Size mm²: 4X2X23AWG mm2 | Color: GREY

From: SG-200N1 | To: B400-NET-001

1	Confirm cable is as specified in project cable schedule	OK
2	Check cable physical integrity.	OK
3	Check is installed in accordance with layout drawing (segregation, distance…).	OK
4	Check cable is supported and fixed to rack according to project specification.	Note
5	Check bending radius is within the specified limits.	OK
6	Confirm cable glands suit for cable type, correctly mounted and tightened.	OK
7	Confirm cable labelling is in accordance with specifications.	PL
8	Check cable is correctly loomed and segregated in accordance with specification.	OK
9	Check proper fitting of heat shrink sleeves and cable glands (if applicable).	OK
10	Check cores marking are in accordance with termination diagram.	OK
11	Check terminations are in accordance with latest termination diagram.	OK
12	To roll up that measured lenght complies with pulled lenght.	OK
13	To roll up the cable complies with Cat. 5E performance requirements (250 Mhz).	OK
14	Attach LAN tester print out to this test sheet.	OK
15	if required produce Red Line Mark Up for "AS BUILT"	

Comments: Nota 4: refer to PL C30000680

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-11-22	2024-11-23	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-11-22T17:38:26.485Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-11-23T11:13:41.490Z	

ROSETTI MARINO

Cable ID: SG-200N1/B400-NET-001.01

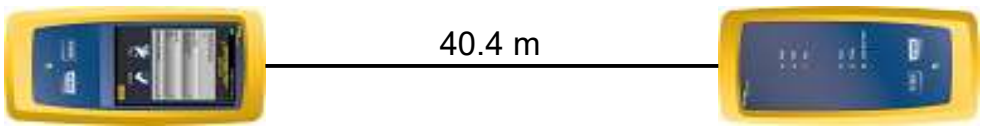
Test Summary: PASS

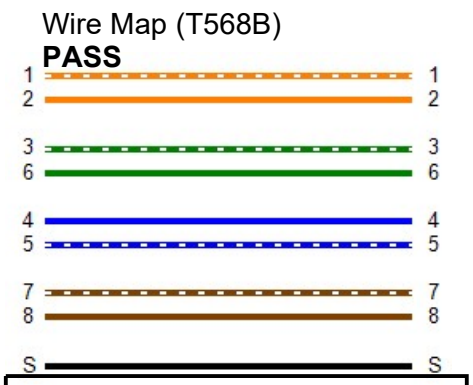
Test Limit: ISO11801 PL2 Class Ea
Limits Version: V7.6
Date / Time: 21-11-2024 16:31:47
Headroom 5.1 dB (NEXT 3,6-4,5)
Cable Type: Cat 6A S/FTP
NVP: 77.0%

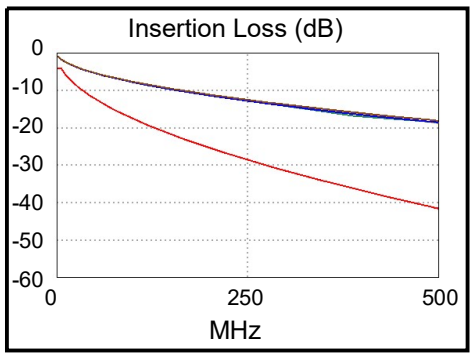
Main: Versiv
S/N: 2226344
Software Version: V6.7 Build 1
Calibration Date: 12-12-2022
Adapter: DSX-8000 (DSX-PLA804)
S/N: 22340270

Remote: Versiv
S/N: 2226336
Software Version: V6.7 Build 1
Calibration Date: 12-12-2022
Adapter: DSX-8000R (DSX-PLA804)
S/N: 22340257

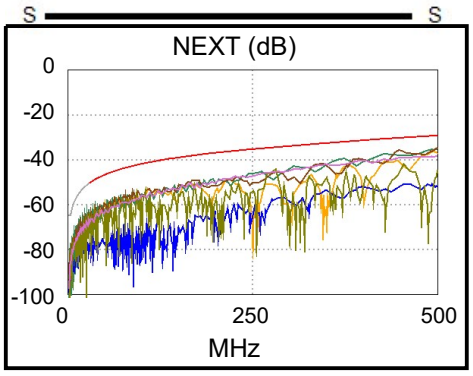
Length (m), Limit 90.0	[Pair 4,5]	40.4
Prop. Delay (ns), Limit 496	[Pair 1,2]	179
Delay Skew (ns), Limit 43	[Pair 1,2]	4
Resistance (ohms), Limit 20.60	[Pair 3,6]	5.74
Insertion Loss Margin (dB)	[Pair 1,2]	22.8
Frequency (MHz)	[Pair 1,2]	500.0
Limit (dB)	[Pair 1,2]	41.6

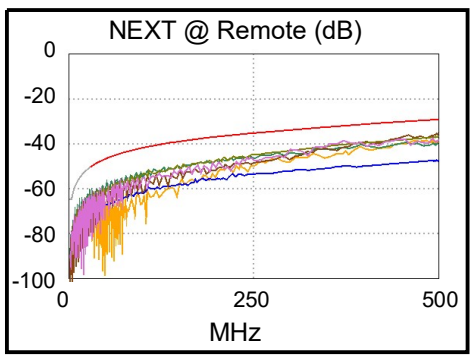




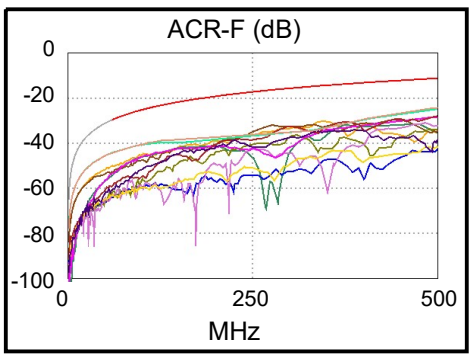


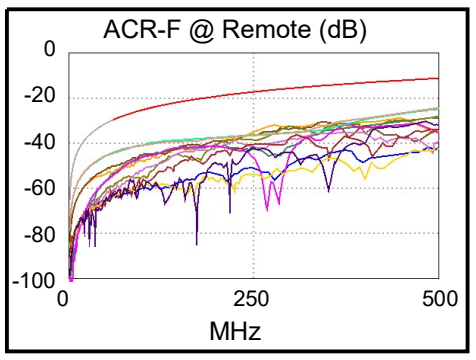
	Worst Case Margin		Worst Case Value	
PASS	MAIN	SR	MAIN	SR
Worst Pair	3,6-4,5	3,6-4,5	3,6-4,5	3,6-4,5
NEXT (dB)	5.1	6.1	5.1	6.2
Freq. (MHz)	500.0	456.0	500.0	499.0
Limit (dB)	29.2	30.1	29.2	29.3
Worst Pair	4,5	4,5	4,5	3,6
PS NEXT (dB)	4.4	5.5	4.4	5.8
Freq. (MHz)	500.0	450.0	500.0	499.0
Limit (dB)	26.4	27.4	26.4	26.4



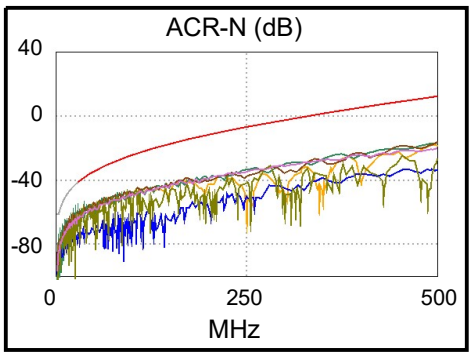


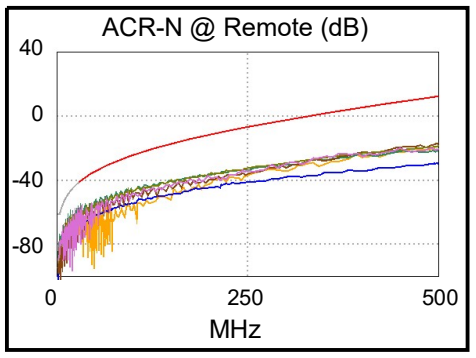
PASS	MAIN	SR	MAIN	SR
Worst Pair	7,8-4,5	7,8-4,5	7,8-4,5	7,8-4,5
ACR-F (dB)	12.9	13.0	13.0	13.1
Freq. (MHz)	486.0	3.5	500.0	500.0
Limit (dB)	11.5	54.4	11.3	11.3
Worst Pair	4,5	4,5	4,5	4,5
PS ACR-F (dB)	14.9	13.6	15.2	13.6
Freq. (MHz)	472.0	500.0	500.0	500.0
Limit (dB)	8.8	8.3	8.3	8.3



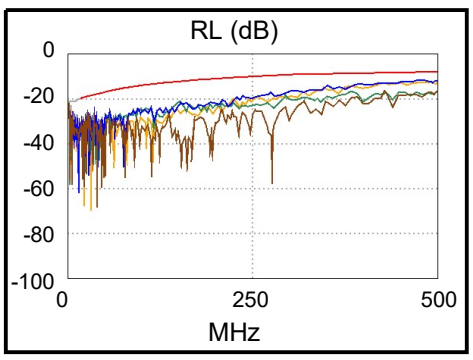


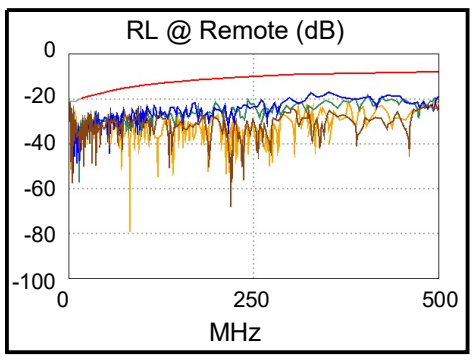
PASS	MAIN	SR	MAIN	SR
Worst Pair	1,2-4,5	1,2-4,5	3,6-4,5	3,6-4,5
ACR-N (dB)	17.6	16.7	28.1	29.3
Freq. (MHz)	28.5	28.5	500.0	499.0
Limit (dB)	41.4	41.4	-12.4	-12.3
Worst Pair	4,5	4,5	4,5	3,6
PS ACR-N (dB)	16.5	17.3	27.5	28.8
Freq. (MHz)	28.5	28.5	500.0	499.0
Limit (dB)	39.0	39.0	-15.3	-15.2





PASS	MAIN	SR	MAIN	SR
Worst Pair	4,5	7,8	4,5	4,5
RL (dB)	3.5	7.1	3.5	8.4
Freq. (MHz)	474.0	26.8	474.0	353.0
Limit (dB)	8.0	18.9	8.0	8.5





Compliant Network Standards:

10BASE-T	100BASE-TX	100BASE-T4
1000BASE-T	2.5GBASE-T	5GBASE-T
10GBASE-T	ATM-25	ATM-51
ATM-155	100VG-AnyLan	TR-4
TR-16 Active	TR-16 Passive	

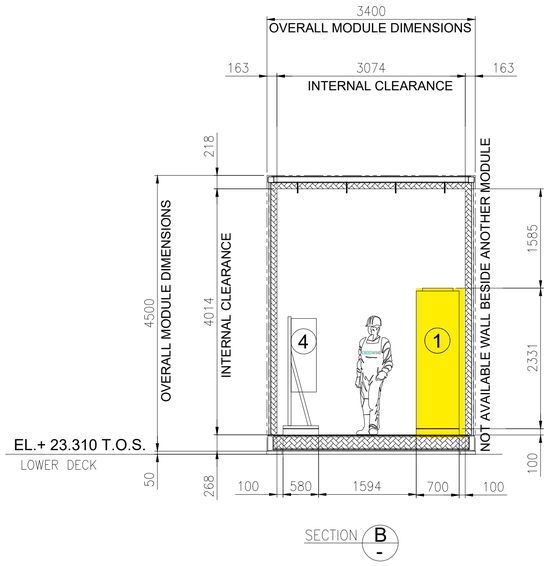
LinkWare™ PC Version 11.4

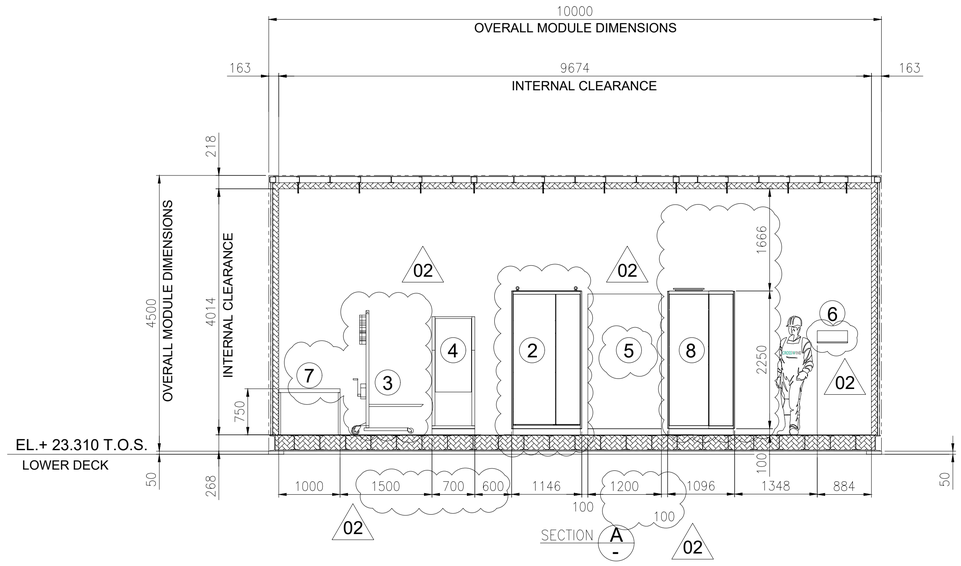
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Site: Not Set
Floor: Not Set
Rack: Not Set
ROSETTI - CROSSWIND RAME 21.11.2024.flw

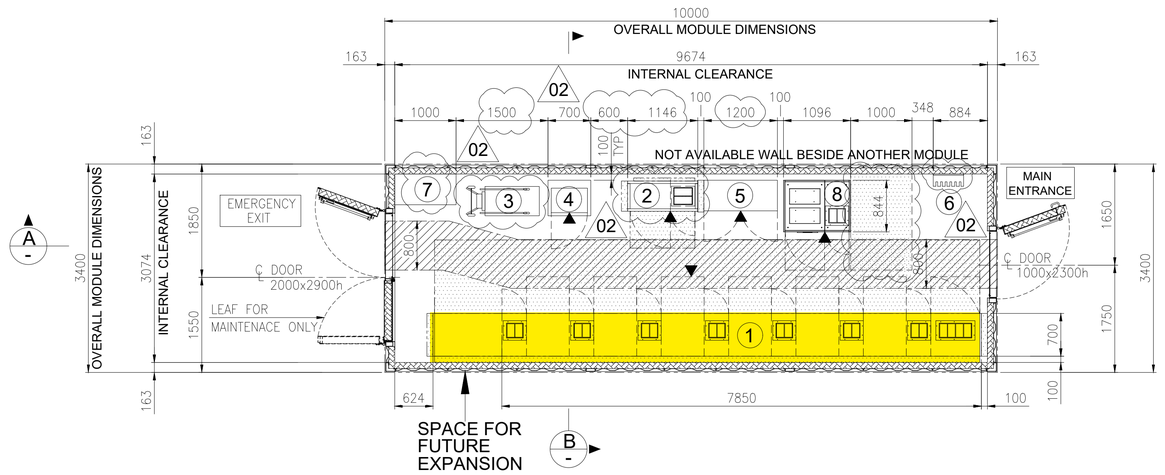
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Room: Not Set
Patch: Not Set

FLUKE networks

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





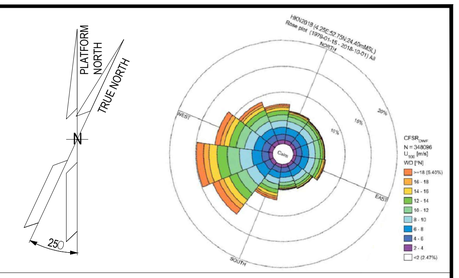


EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

1

EQUIPMENT LIST

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



NOTES

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

02

LEGEND

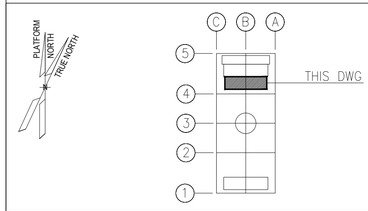
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

REFERENCES

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

02

KEY PLAN



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

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

ROSETTI MARINO SpA

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

CROSSWIND

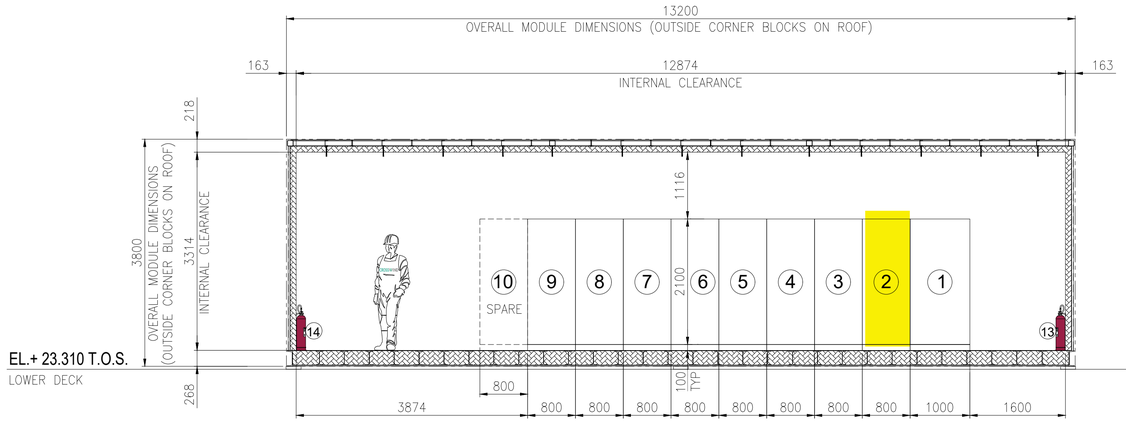
ROSETTI MARINO

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

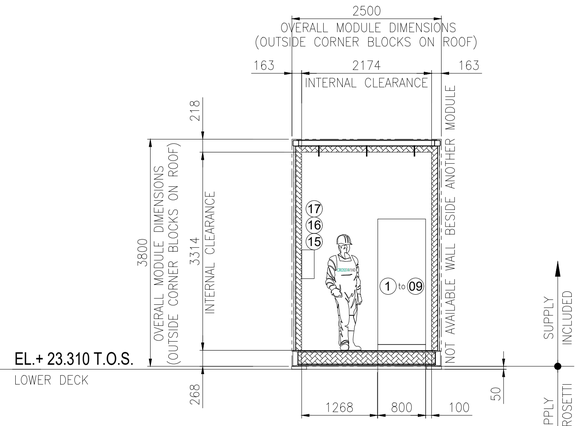
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN FMO	CHECKED LMA/AMA	APPROVED LMA/MDO	DATE 27/05/2024
A1	DRAWING NO. 123A90-DDL-EL-DL-20105	SHEET 001	REV. 02

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

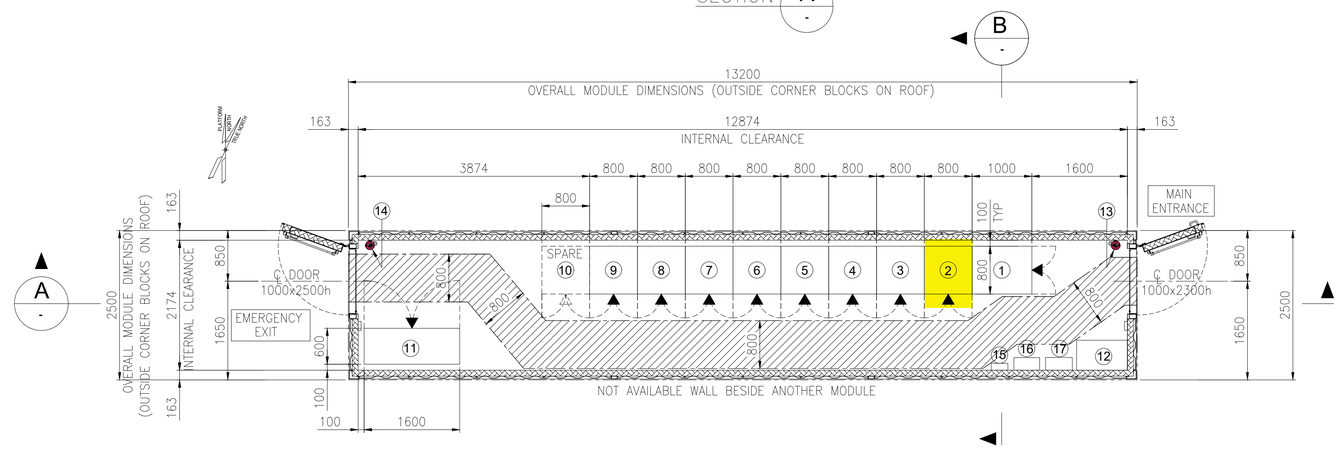
DRAWING NO. 123A90-DDL-IN-DL-40012 REV. 03



SECTION A -



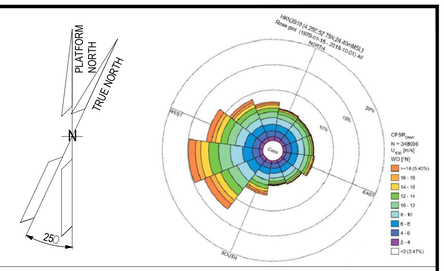
SECTION B -



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

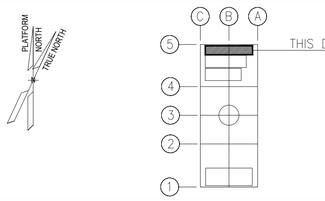
HOLDS

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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

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

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

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

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

LV SWITCHROOM (B-200)

I&T EQUIPMENT ROOM (ITER B400)

NETWORK CABINET - B400-NET-001

<01>

HVAC CABINET
B200-HSB-001

ITEM: SCALANCE XC208
PORT: P3 LAN

Ref. Vendor Doc.: 1724000049-HV-DA-00027

RJ45 — B200-HSB-001/B400-NET-001
CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS — RJ45

SWITCH: COOP-01
PORT: P12

~~EMCS SYSTEM - B400-EMCS-001~~

400V SWITCHGEAR
SG-200N1

ITEM: REF615 PROTECTION FUNCTION (ABB)
PORT: X1

Ref. Vendor Doc.: 1723002197-EL-DG-00030

RJ45 — SG-200N1/B400-NET-001.01
~~SG-200N1/B400-EMCS-001.01~~
CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS — RJ45

SWITCH: COOP-01
PORT: P15

400V SWITCHGEAR
SG-200N1

ITEM: REF615 PROTECTION FUNCTION (ABB)
PORT: X3

Ref. Vendor Doc.: 1723002197-EL-DG-00030

RJ45 — SG-200N1/B400-NET-001.02
~~SG-200N1/B400-EMCS-001.02~~
CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS — RJ45

SWITCH: COOP-01
PORT: P04

400V SWITCHGEAR
SG-200N1

ITEM: ETH. SWITCH RSP25 SW1
PORT: ETH/SFP - PORT 1

Ref. Vendor Doc.: 1723002197-EL-DG-00030

RJ45 — SG-200N1/B400-NET-001.03
~~SG-200N1/B400-EMCS-001.03~~
CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS — RJ45

SWITCH: COOP-01
PORT: P02

ACB PANEL
SG-200D2

ITEM: ETH. SWITCH RSP25 SW1
PORT: ETH/SFP - PORT 1

Ref. Vendor Doc.: 1723002197-EL-DG-00032

RJ45 — SG-200D2/B400-NET-001
~~SG-200D2/B400-EMCS-001~~
CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS — RJ45

SWITCH: COOP-01
PORT: P21

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_E	19/11/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
COMMUNICATION – CAT-6

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-IN-DG-40015	034	01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015

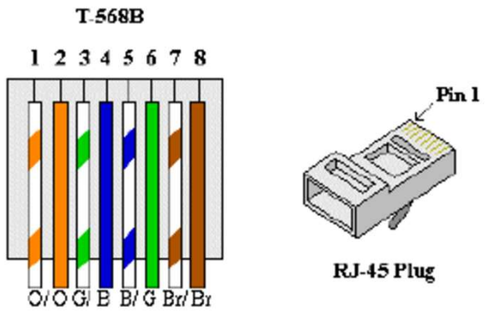
REV. 01

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. SWITCH TAG NAME AND PORT WILL BE DEFINED DURING THE CONSTRUCTION PHASE
6. FIBER OPTIC TAG NAME WILL BE DEFINED DURING THE CONSTRUCTION PHASE.

<01>

7. CAT. 6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:



RJ-45 Plug

8. FOR OPTICAL FIBERS, USE THE FOLLOWING COLOR CODING:
   01) RED
   02) GREEN
   03) BLUE
   04) YELLOW
   05) GREY
   06) PURPLE
   07) BROWN
   08) ORANGE
   09) WHITE
   10) PINK
   11) BLACK
   12) TURQUOISE

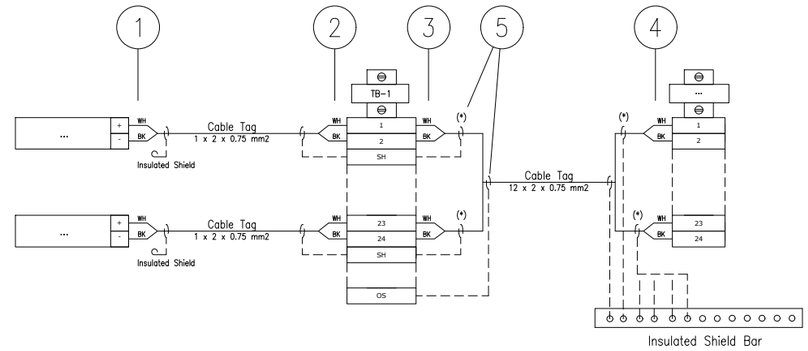
LEGENDS & SYMBOLS:

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
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT

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

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_E	19/11/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO. 123A90-DDL-IN-DG-40015	SHEET 003	REV. 01

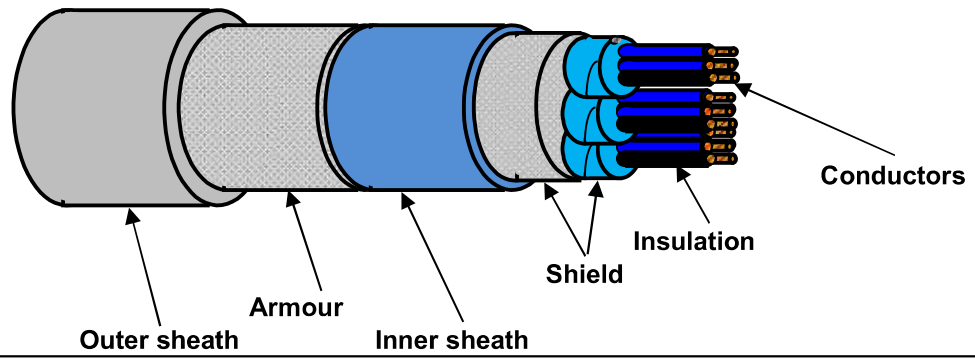
File Name : 123A90-DDL-IN-DG-40015_Rev.01

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 St	From Gland	From Entry	From Fittin	To Gland	To Entry	To Fitting	Routing	Routing Manual
SG-200N1/B400-NET-001.01	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						SG-200N1	LV 0,4 kV MCC Switchgear	Lower Deck (B-200)	B400-NET-001	Network Cabinet / EMCS System	Lower Deck (B-400)	TELCV03-4X2X23AWG	Cable CAT 6A S/FTP 4x2x23AWG Armoured LSZH - Grey	M20S	n.a.			n.a.				I-MCT-202 / B-200-SEC-1E / B-200-SEC-1C / B-200-SEC-1B / B-200-SEC-1A / L-SEC-5 / L-SEC-1C / L-SEC-1B / L-SEC-1A / B-400-SEC-3A / B-400-SEC-2I / B-400-SEC-2G / B-400-SEC-2E / B-400-SEC-2C / B-400-SEC-3B / I-MCT-402

FLEI s.r.l.

CAT. 6A S/FTP ARMOURED LSZH

4X2X23AWG - Based on Draka UC500 HS23



TECHNICAL FEATURES

Conductors :	**SOLID** plain annealed copper wires (AWG23) **ø 0,56 mm**
Insulation :	Foamskin PE - **ø 1,38 mm**
Cores colour code :	**blue/white; orange/white; green/white; brown/white**
Pair Assembling :	Cores twisted in pairs
Pair Shield :	Al-laminated plastic foil
Overall Shield:	Tinned copper braid
Inner sheath :	Extruded LSZH Thermoplastic Compound
Inner sheath color code:	**Blue**
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 1,2 mm
Outer sheath color code:	**Grey**
Outer printing (INKJET) :	**FLEI - 4X2X23AWG - CAT.6A S/FTP ARMOURED LSZH - IEC 60332.1.2 - IEC 60332.3.22 -**
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**
Under armour diameter :	(7,5 ± 10%) mm
Over armour diameter :	(8,3 ± 10%) mm
Outer diameter :	(10,7 ± 10%) mm
Bending radius :	cable outer diameter x 8 (in fixed installation)
Test Voltage :	1000 V DC for 1' (Between Cores) / 1000 V DC for 1' (Between Cores - Shield)
Loop Resistance :	≤ 154 Ω/Km (@ 20°C)
Insulation Resistance :	≥ 2000 MΩ x km (@ 20°C)
Mutual Capacitance :	Nom. 43 nF/km
Characteristic Impedance :	(100 ± 5) Ω
Applicable Standards	
Design Guidelines :	**Generally to ISO/IEC 11801 / IEC 61156-5 / EN 50173-1 / EN 50288-10 / IEEE 802.3at / af / bt**
ON COMPLETE CABLE	
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22
Acid Gas generation :	IEC 60754.1/2
Smoke density/Light Transm	IEC 61034.2 (LT ≥ 60%)
Hazardous Areas :	IEC 60079.14 par.9.3.2a
Temperature Range :	
ON COMPLETE CABLE	
During Operation :	(-20°C up to +60°C) (in fixed installation)
During installation :	(0°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 :	29/05/2024	Messa			
Checked :	29/05/2024	Spaccasassi			
Approved :	29/05/2024	Cucinotta			

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

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ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	SG-200N1/B400-NET-001.02 : LV 0,4 kV MCC Switchgear / Network Cabinet / EMCS System				Dwg	123A90-DDL-IN-LIS-40091
	S/Sys	83-00 : 400 V Switchboard & Connection Box (SG-200N1)				Module	LD_B-200/LD_B-400
TASK	code	C10004366		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Telecom	Form	CIX09 Telecom Cable RJ45

CABLE DATA

Type: FTP-LSZH-IS-OS-SWB-LSZH | Cores/Size mm²: 4X2X23AWG mm2 | Color: GREY

From: SG-200N1 | To: B400-NET-001

1	Confirm cable is as specified in project cable schedule	OK
2	Check cable physical integrity.	OK
3	Check is installed in accordance with layout drawing (segregation, distance…).	OK
4	Check cable is supported and fixed to rack according to project specification.	Note
5	Check bending radius is within the specified limits.	OK
6	Confirm cable glands suit for cable type, correctly mounted and tightened.	OK
7	Confirm cable labelling is in accordance with specifications.	PL
8	Check cable is correctly loomed and segregated in accordance with specification.	OK
9	Check proper fitting of heat shrink sleeves and cable glands (if applicable).	OK
10	Check cores marking are in accordance with termination diagram.	OK
11	Check terminations are in accordance with latest termination diagram.	OK
12	To roll up that measured lenght complies with pulled lenght.	OK
13	To roll up the cable complies with Cat. 5E performance requirements (250 Mhz).	OK
14	Attach LAN tester print out to this test sheet.	OK
15	if required produce Red Line Mark Up for "AS BUILT"	

Comments: Nota 4: refer to PL C30000680

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-11-22	2024-11-23	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-11-22T17:38:35.591Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-11-23T11:14:11.511Z	

ROSETTI MARINO

Cable ID: SG-200N1/B400-NET-001.02

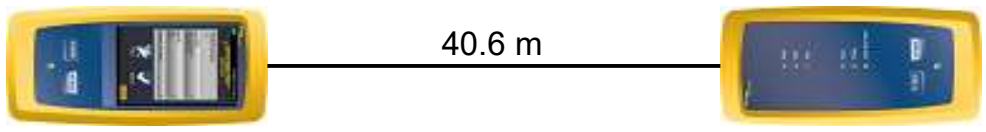
Test Summary: PASS

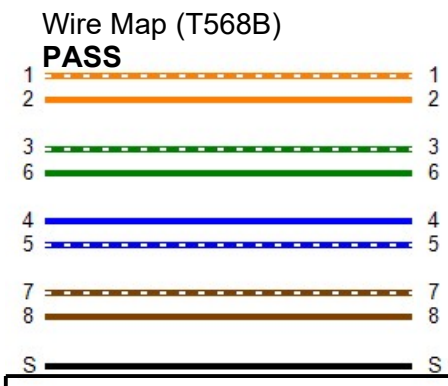
Test Limit: ISO11801 PL2 Class Ea
Limits Version: V7.6
Date / Time: 21-11-2024 16:19:50
Headroom 4.7 dB (NEXT 3,6-4,5)
Cable Type: Cat 6A S/FTP
NVP: 77.0%

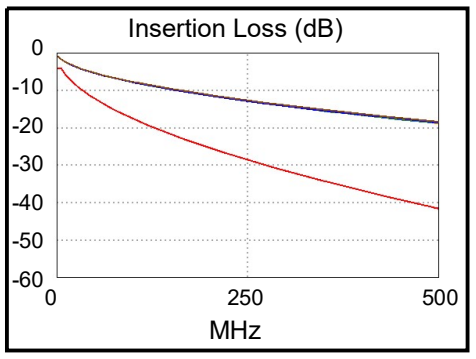
Main: Versiv
S/N: 2226344
Software Version: V6.7 Build 1
Calibration Date: 12-12-2022
Adapter: DSX-8000 (DSX-PLA804)
S/N: 22340270

Remote: Versiv
S/N: 2226336
Software Version: V6.7 Build 1
Calibration Date: 12-12-2022
Adapter: DSX-8000R (DSX-PLA804)
S/N: 22340257

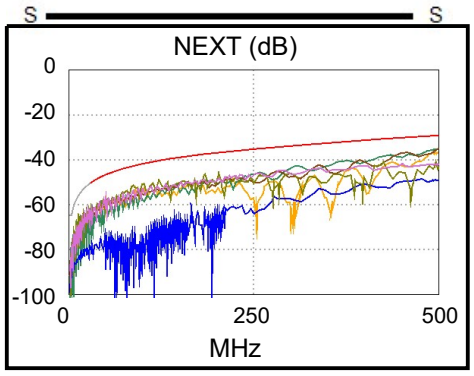
Length (m), Limit 90.0	[Pair 4,5]	40.6
Prop. Delay (ns), Limit 496	[Pair 1,2]	180
Delay Skew (ns), Limit 43	[Pair 1,2]	4
Resistance (ohms), Limit 20.60	[Pair 3,6]	5.78
Insertion Loss Margin (dB)	[Pair 1,2]	22.7
Frequency (MHz)	[Pair 1,2]	500.0
Limit (dB)	[Pair 1,2]	41.6

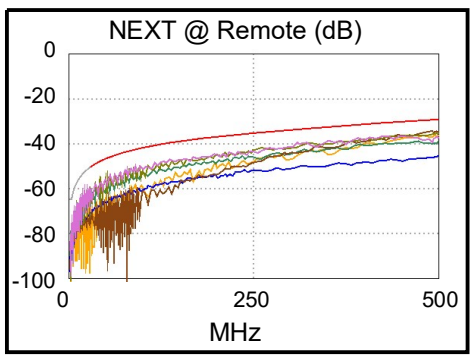




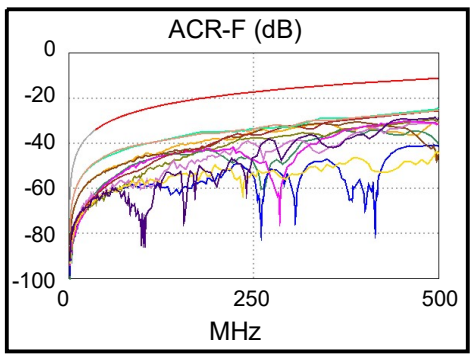


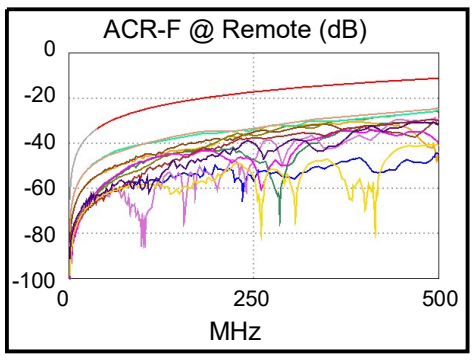
Worst Case Margin			Worst Case Value	
PASS	MAIN	SR	MAIN	SR
Worst Pair	3,6-4,5	3,6-4,5	3,6-4,5	3,6-4,5
NEXT (dB)	5.6	4.7	5.6	4.7
Freq. (MHz)	500.0	488.0	500.0	488.0
Limit (dB)	29.2	29.5	29.2	29.5
Worst Pair	4,5	3,6	4,5	3,6
PS NEXT (dB)	5.3	4.1	5.3	4.1
Freq. (MHz)	500.0	500.0	500.0	500.0
Limit (dB)	26.4	26.4	26.4	26.4



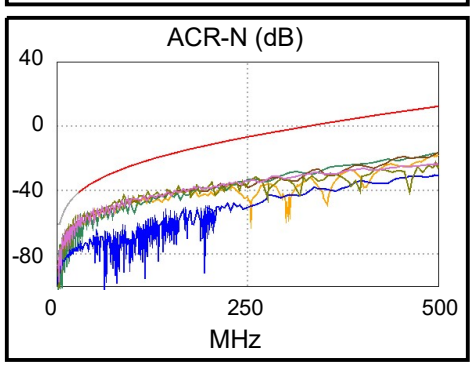


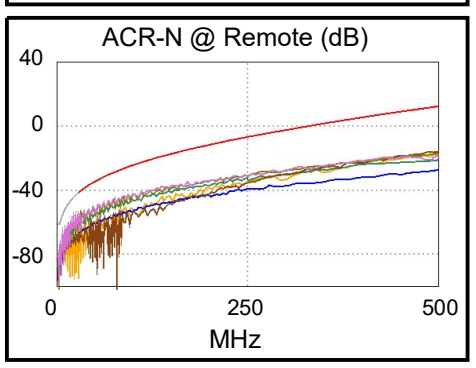
PASS	MAIN	SR	MAIN	SR
Worst Pair	4,5-7,8	7,8-4,5	4,5-7,8	7,8-4,5
ACR-F (dB)	13.3	13.2	13.3	13.2
Freq. (MHz)	500.0	500.0	500.0	500.0
Limit (dB)	11.3	11.3	11.3	11.3
Worst Pair	3,6	4,5	3,6	4,5
PS ACR-F (dB)	14.9	13.4	14.9	13.4
Freq. (MHz)	495.0	497.0	495.0	497.0
Limit (dB)	8.3	8.3	8.3	8.3



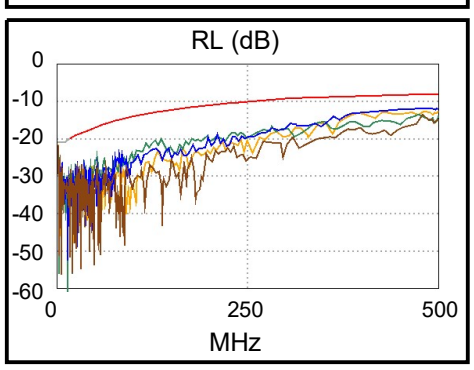


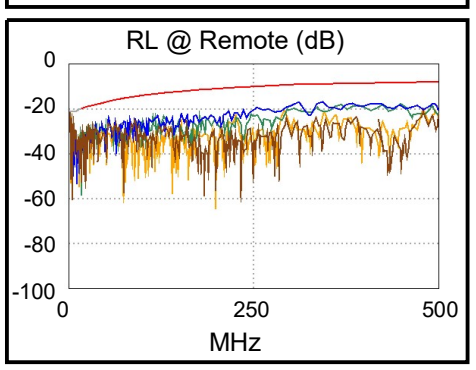
PASS	MAIN	SR	MAIN	SR
Worst Pair	3,6-7,8	3,6-7,8	3,6-4,5	3,6-4,5
ACR-N (dB)	15.8	14.3	28.6	28.2
Freq. (MHz)	35.5	29.8	500.0	500.0
Limit (dB)	38.8	40.9	-12.4	-12.4
Worst Pair	3,6	7,8	4,5	3,6
PS ACR-N (dB)	15.8	13.7	28.4	27.1
Freq. (MHz)	35.5	29.8	500.0	500.0
Limit (dB)	36.3	38.5	-15.3	-15.3





PASS	MAIN	SR	MAIN	SR
Worst Pair	4,5	4,5	4,5	4,5
RL (dB)	3.3	7.2	3.3	8.3
Freq. (MHz)	485.0	53.8	485.0	381.0
Limit (dB)	8.0	16.7	8.0	8.2





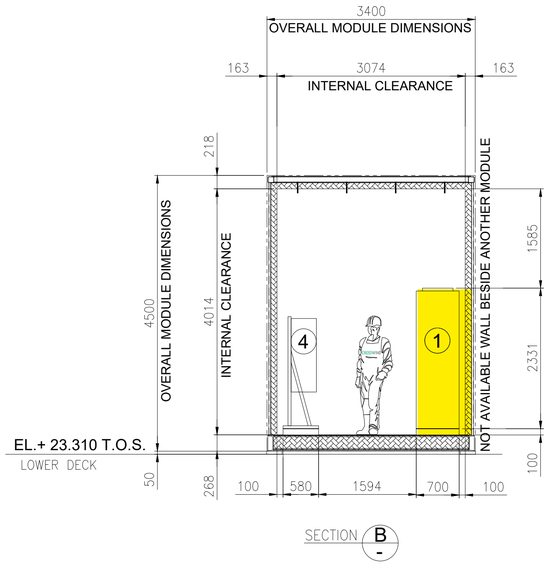
Compliant Network Standards:

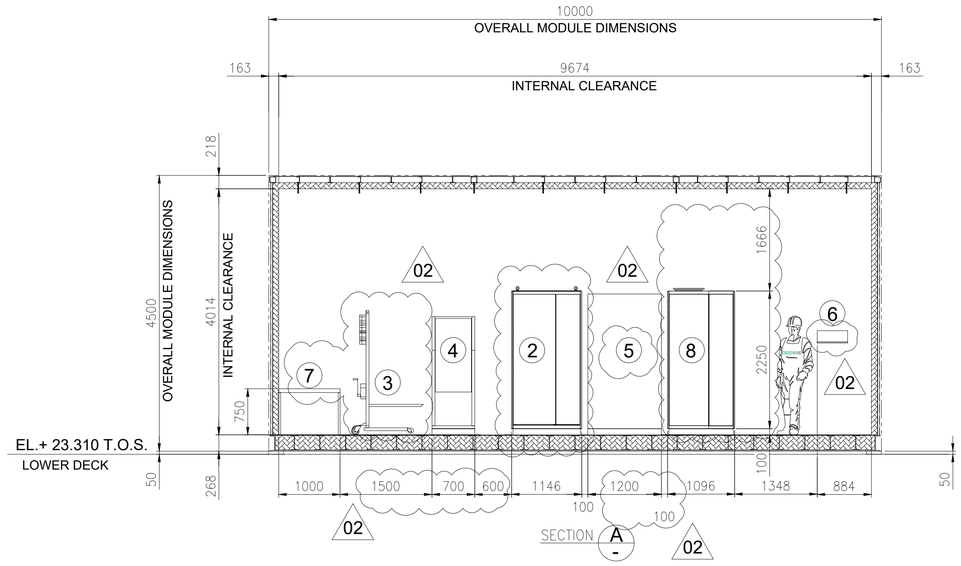
10BASE-T	100BASE-TX	100BASE-T4
1000BASE-T	2.5GBASE-T	5GBASE-T
10GBASE-T	ATM-25	ATM-51
ATM-155	100VG-AnyLan	TR-4
TR-16 Active	TR-16 Passive	

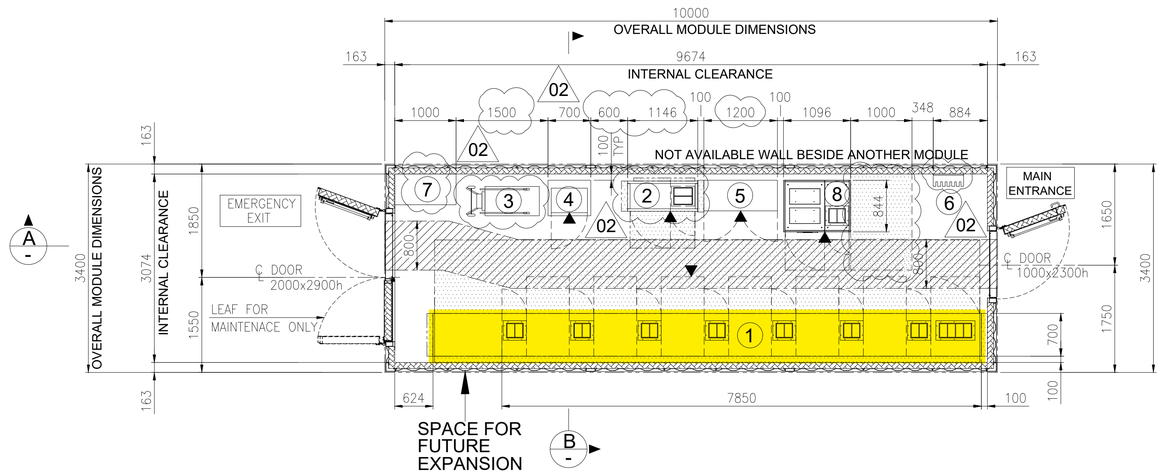
LinkWare™ PC Version 11.4

FLUKE networks

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







EQUIPMENT LAYOUT

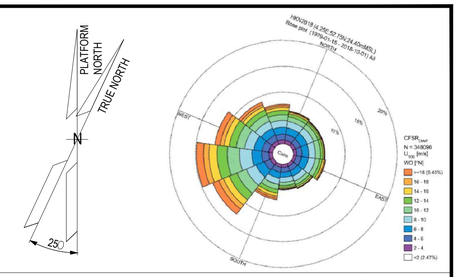
"B-200" LV (400V) SWITCHGEAR ROOM

BOTTOM PLAN

1

EQUIPMENT LIST

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



NOTES

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

02

LEGEND

U.N.O. _____ UNLESS NOTED OTHERWISE

T.O.S. _____ TOP OF STEEL

_____ ESCAPE CORRIDOR - WIDTH 800mm.

_____ MAINTENANCE AREA - VENDOR REQUIREMENT

_____ SWITCHGEAR ROOM ENCLOUSURE

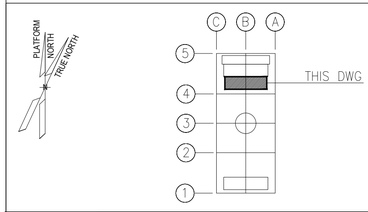
_____ FRONT OF EQUIPMENT

REFERENCES

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

02

KEY PLAN



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

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-EL-DL-20105**

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

ROSETTI MARINO SpA

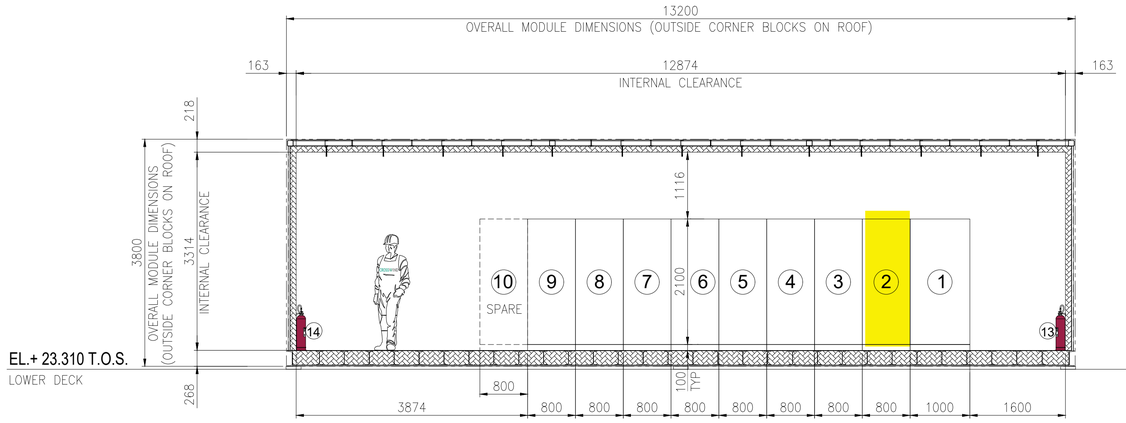
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LV SWITCHROOM

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN FMO	CHECKED LMA/AMA	APPROVED LMA/MDO	DATE 27/05/2024

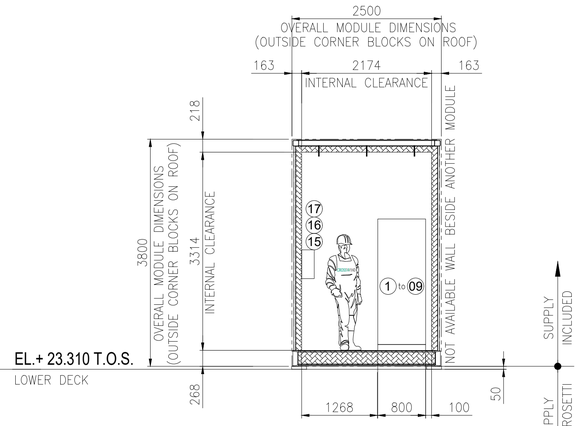
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File Name : 123A90-DDL-EL-DL-20105_REV02.dwg

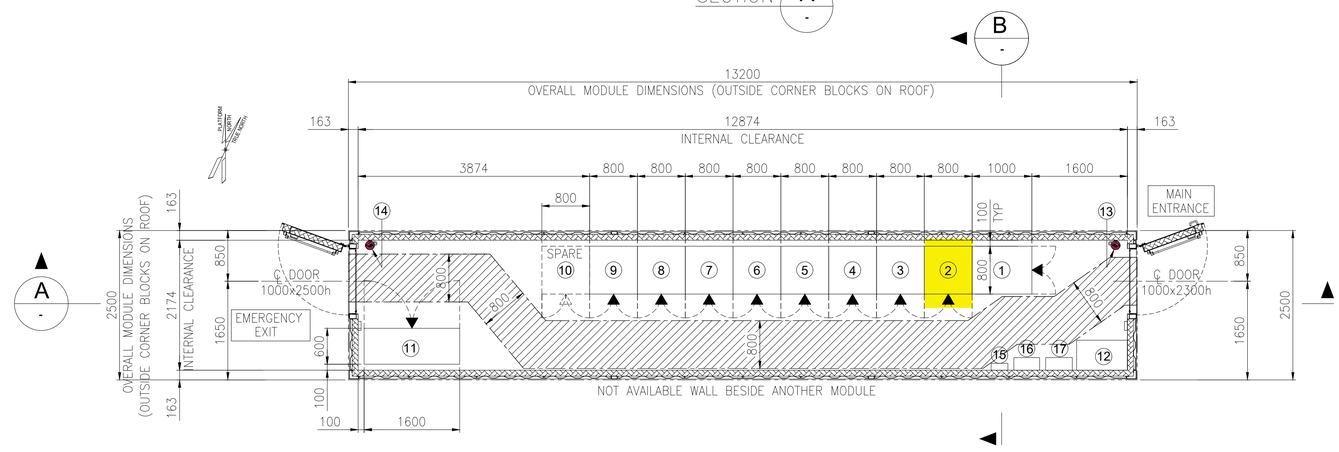
DRAWING NO. 123A90-DDL-IN-DL-40012 REV. 03



SECTION A -



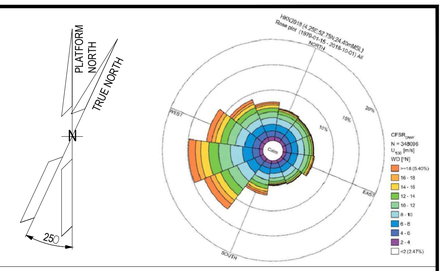
SECTION B -



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

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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

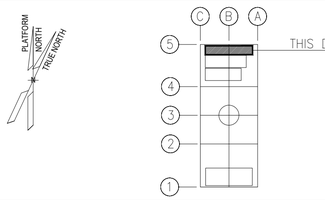
HOLDS

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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

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

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

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

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

LV SWITCHROOM (B-200)

I&T EQUIPMENT ROOM (ITER B400)

NETWORK CABINET - B400-NET-001

<01>

HVAC CABINET
B200-HSB-001

ITEM: SCALANCE XC208
PORT: P3 LAN

Ref. Vendor Doc.: 1724000049-HV-DA-00027

RJ45 — B200-HSB-001/B400-NET-001
CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS — RJ45

SWITCH: COOP-01
PORT: P12

~~EMCS SYSTEM - B400-EMCS-001~~

400V SWITCHGEAR
SG-200N1

ITEM: REF615 PROTECTION FUNCTION (ABB)
PORT: X1

Ref. Vendor Doc.: 1723002197-EL-DG-00030

RJ45 — SG-200N1/B400-NET-001.01
~~SG-200N1/B400-EMCS-001.01~~
CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS — RJ45

SWITCH: COOP-01
PORT: P15

400V SWITCHGEAR
SG-200N1

ITEM: REF615 PROTECTION FUNCTION (ABB)
PORT: X3

Ref. Vendor Doc.: 1723002197-EL-DG-00030

RJ45 — SG-200N1/B400-NET-001.02
~~SG-200N1/B400-EMCS-001.02~~
CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS — RJ45

SWITCH: COOP-01
PORT: P04

400V SWITCHGEAR
SG-200N1

ITEM: ETH. SWITCH RSP25 SW1
PORT: ETH/SFP - PORT 1

Ref. Vendor Doc.: 1723002197-EL-DG-00030

RJ45 — SG-200N1/B400-NET-001.03
~~SG-200N1/B400-EMCS-001.03~~
CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS — RJ45

SWITCH: COOP-01
PORT: P02

ACB PANEL
SG-200D2

ITEM: ETH. SWITCH RSP25 SW1
PORT: ETH/SFP - PORT 1

Ref. Vendor Doc.: 1723002197-EL-DG-00032

RJ45 — SG-200D2/B400-NET-001
~~SG-200D2/B400-EMCS-001~~
CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS — RJ45

SWITCH: COOP-01
PORT: P21

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_E	19/11/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
COMMUNICATION – CAT-6

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-IN-DG-40015	034	01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015

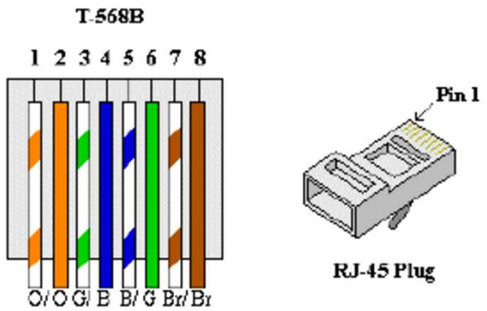
REV. 01

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. SWITCH TAG NAME AND PORT WILL BE DEFINED DURING THE CONSTRUCTION PHASE
6. FIBER OPTIC TAG NAME WILL BE DEFINED DURING THE CONSTRUCTION PHASE.

<01>

7. CAT. 6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:



RJ-45 Plug

8. FOR OPTICAL FIBERS, USE THE FOLLOWING COLOR CODING:
   01) RED
   02) GREEN
   03) BLUE
   04) YELLOW
   05) GREY
   06) PURPLE
   07) BROWN
   08) ORANGE
   09) WHITE
   10) PINK
   11) BLACK
   12) TURQUOISE

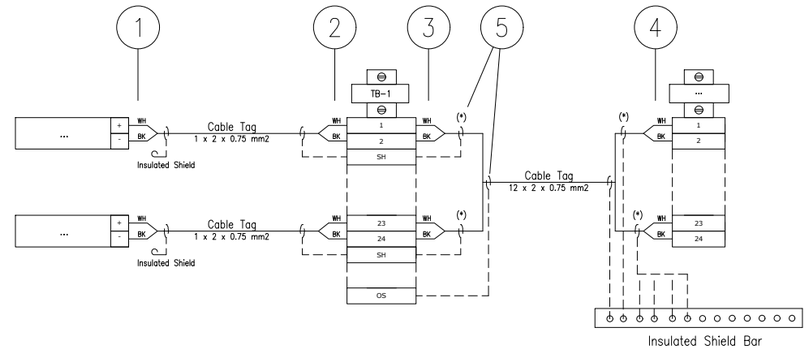
LEGENDS & SYMBOLS:

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
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT

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

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_E	19/11/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO. 123A90-DDL-IN-DG-40015	SHEET 003	REV. 01

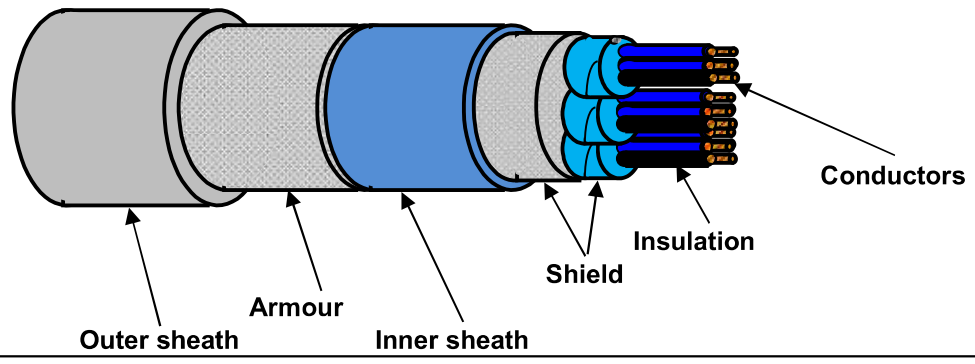
File Name : 123A90-DDL-IN-DG-40015_Rev.01

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 St	From Gland	From Entry	From Fittin	To Gland	To Entry	To Fitting	Routing	Routing Manual
SG-200N1/B400-NET-001.02	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						SG-200N1	LV 0,4 kV MCC Switchgear	Lower Deck (B-200)	B400-NET-001	Network Cabinet / EMCS System	Lower Deck (B-400)	TELCV03-4X2X23AWG	Cable CAT 6A S/FTP 4x2x23AWG Armoured LSZH - Grey	M20S	n.a.			n.a.				I-MCT-202 / B-200-SEC-1E / B-200-SEC-1C / B-200-SEC-1B / B-200-SEC-1A / L-SEC-5 / L-SEC-1C / L-SEC-1B / L-SEC-1A / B-400-SEC-3A / B-400-SEC-2I / B-400-SEC-2G / B-400-SEC-2E / B-400-SEC-2C / B-400-SEC-3B / I-MCT-402

FLEI s.r.l.

CAT. 6A S/FTP ARMOURED LSZH

4X2X23AWG - Based on Draka UC500 HS23



TECHNICAL FEATURES

Conductors :	**SOLID** plain annealed copper wires (AWG23) **ø 0,56 mm**
Insulation :	Foamskin PE - **ø 1,38 mm**
Cores colour code :	**blue/white; orange/white; green/white; brown/white**
Pair Assembling :	Cores twisted in pairs
Pair Shield :	Al-laminated plastic foil
Overall Shield:	Tinned copper braid
Inner sheath :	Extruded LSZH Thermoplastic Compound
Inner sheath color code:	**Blue**
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 1,2 mm
Outer sheath color code:	**Grey**
Outer printing (INKJET) :	**FLEI - 4X2X23AWG - CAT.6A S/FTP ARMOURED LSZH - IEC 60332.1.2 - IEC 60332.3.22 -**
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**
Under armour diameter :	(7,5 ± 10%) mm
Over armour diameter :	(8,3 ± 10%) mm
Outer diameter :	(10,7 ± 10%) mm
Bending radius :	cable outer diameter x 8 (in fixed installation)
Test Voltage :	1000 V DC for 1' (Between Cores) / 1000 V DC for 1' (Between Cores - Shield)
Loop Resistance :	≤ 154 Ω/Km (@ 20°C)
Insulation Resistance :	≥ 2000 MΩ x km (@ 20°C)
Mutual Capacitance :	Nom. 43 nF/km
Characteristic Impedance :	(100 ± 5) Ω
Applicable Standards	
Design Guidelines :	**Generally to ISO/IEC 11801 / IEC 61156-5 / EN 50173-1 / EN 50288-10 / IEEE 802.3at / af / bt**
ON COMPLETE CABLE	
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22
Acid Gas generation :	IEC 60754.1/2
Smoke density/Light Transm	IEC 61034.2 (LT ≥ 60%)
Hazardous Areas :	IEC 60079.14 par.9.3.2a
Temperature Range :	
ON COMPLETE CABLE	
During Operation :	(-20°C up to +60°C) (in fixed installation)
During installation :	(0°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 :	29/05/2024	Messa			
Checked :	29/05/2024	Spaccasassi			
Approved :	29/05/2024	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.

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	SG-200N1/B400-NET-001.03 : LV 0,4 kV MCC Switchgear / Network Cabinet / EMCS System				Dwg	123A90-DDL-IN-LIS-40091
	S/Sys	83-00 : 400 V Switchboard & Connection Box (SG-200N1)				Module	LD_B-200/LD_B-400
TASK	code	C10004367		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Telecom	Form	CIX09 Telecom Cable RJ45

CABLE DATA

Type	FTP-LSZH-IS-OS-SWB-LSZH	Cores/Size mm²	4X2X23AWG mm2	Color	GREY
From	SG-200N1		To	B400-NET-001	

1	Confirm cable is as specified in project cable schedule	OK
2	Check cable physical integrity.	OK
3	Check is installed in accordance with layout drawing (segregation, distance…).	OK
4	Check cable is supported and fixed to rack according to project specification.	Note
5	Check bending radius is within the specified limits.	OK
6	Confirm cable glands suit for cable type, correctly mounted and tightened.	OK
7	Confirm cable labelling is in accordance with specifications.	PL
8	Check cable is correctly loomed and segregated in accordance with specification.	OK
9	Check proper fitting of heat shrink sleeves and cable glands (if applicable).	OK
10	Check cores marking are in accordance with termination diagram.	OK
11	Check terminations are in accordance with latest termination diagram.	OK
12	To roll up that measured lenght complies with pulled lenght.	OK
13	To roll up the cable complies with Cat. 5E performance requirements (250 Mhz).	OK
14	Attach LAN tester print out to this test sheet.	OK
15	if required produce Red Line Mark Up for "AS BUILT"	

Comments

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-11-22	2024-11-23	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-11-22T17:38:44.289Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-11-23T11:14:24.050Z	

ROSETTI MARINO

Cable ID: SG-200N1/B400-NET-001.03

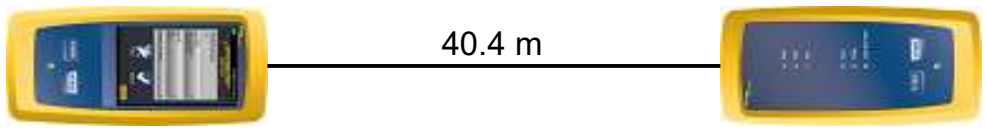
Test Summary: PASS

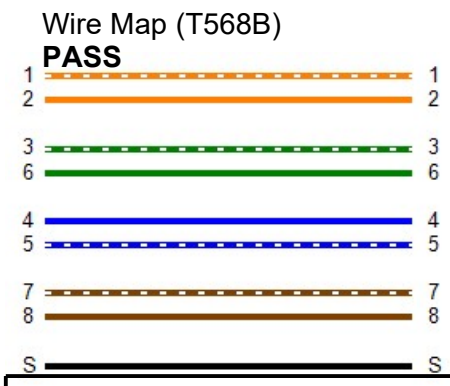
Test Limit: ISO11801 PL2 Class Ea
Limits Version: V7.6
Date / Time: 21-11-2024 16:21:58
Headroom 3.2 dB (NEXT 1,2-3,6)
Cable Type: Cat 6A S/FTP
NVP: 77.0%

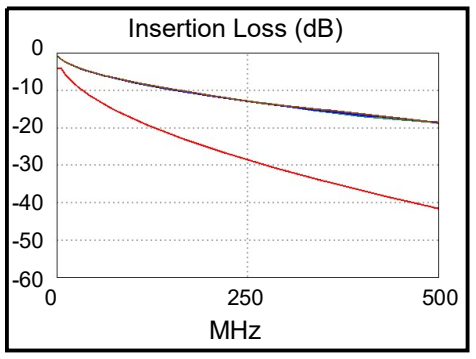
Main: Versiv
S/N: 2226344
Software Version: V6.7 Build 1
Calibration Date: 12-12-2022
Adapter: DSX-8000 (DSX-PLA804)
S/N: 22340270

Remote: Versiv
S/N: 2226336
Software Version: V6.7 Build 1
Calibration Date: 12-12-2022
Adapter: DSX-8000R (DSX-PLA804)
S/N: 22340257

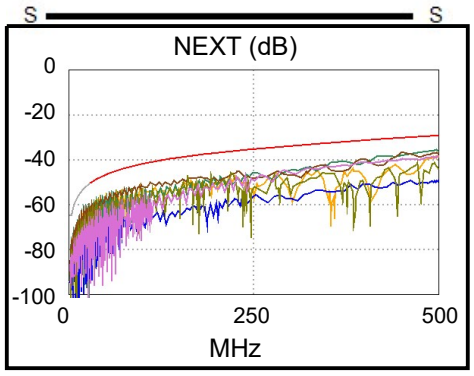
Length (m), Limit 90.0	[Pair 4,5]	40.4
Prop. Delay (ns), Limit 496	[Pair 1,2]	179
Delay Skew (ns), Limit 43	[Pair 1,2]	4
Resistance (ohms), Limit 20.60	[Pair 3,6]	5.74
Insertion Loss Margin (dB)	[Pair 1,2]	22.9
Frequency (MHz)	[Pair 1,2]	500.0
Limit (dB)	[Pair 1,2]	41.6

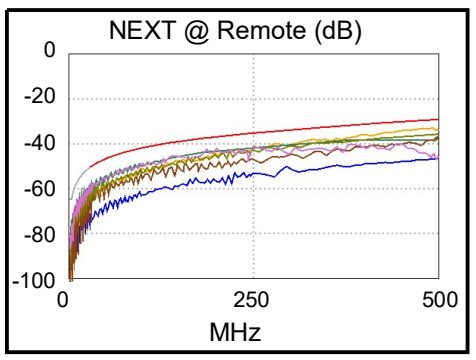




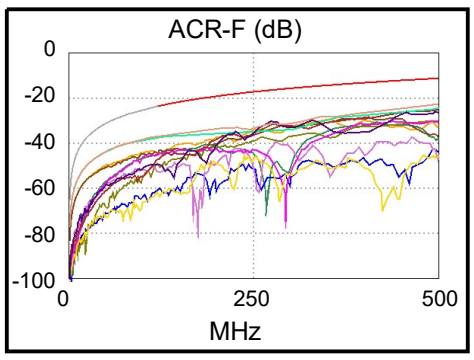


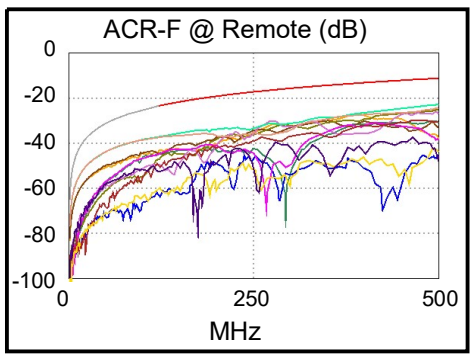
Worst Case Margin			Worst Case Value	
PASS	MAIN	SR	MAIN	SR
Worst Pair	1,2-4,5	1,2-3,6	1,2-4,5	1,2-3,6
NEXT (dB)	6.1	3.2	6.2	3.5
Freq. (MHz)	486.0	478.0	497.0	490.0
Limit (dB)	29.5	29.7	29.3	29.4
Worst Pair	4,5	3,6	4,5	3,6
PS NEXT (dB)	5.6	3.8	5.6	3.9
Freq. (MHz)	497.0	489.0	497.0	492.0
Limit (dB)	26.4	26.6	26.4	26.5



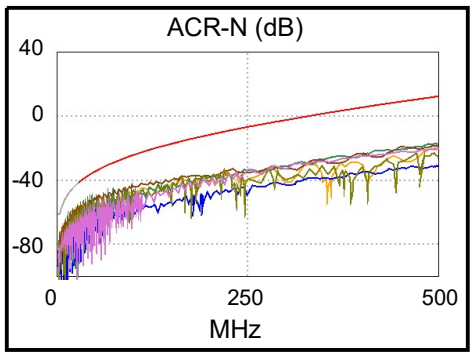


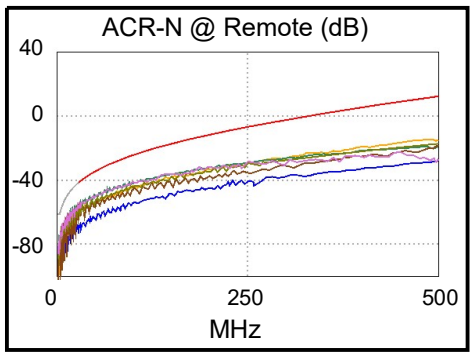
PASS	MAIN	SR	MAIN	SR
Worst Pair	7,8-4,5	4,5-7,8	7,8-4,5	4,5-7,8
ACR-F (dB)	11.4	11.5	11.4	11.5
Freq. (MHz)	500.0	500.0	500.0	500.0
Limit (dB)	11.3	11.3	11.3	11.3
Worst Pair	4,5	4,5	4,5	4,5
PS ACR-F (dB)	13.6	12.9	13.6	12.9
Freq. (MHz)	500.0	500.0	500.0	500.0
Limit (dB)	8.3	8.3	8.3	8.3



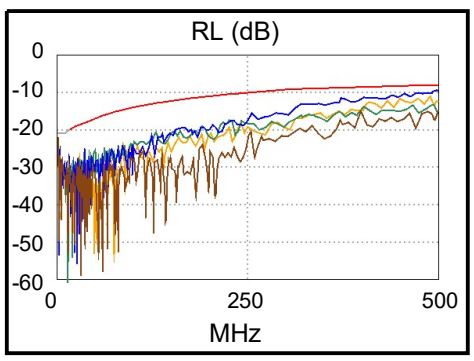


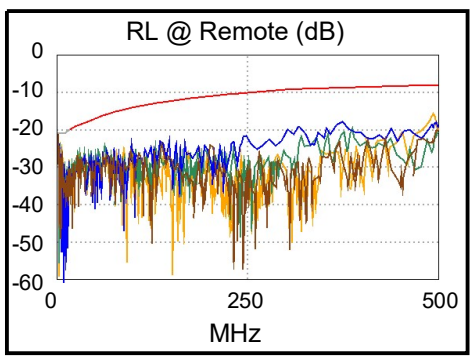
PASS	MAIN	SR	MAIN	SR
Worst Pair	3,6-4,5	1,2-4,5	1,2-4,5	1,2-3,6
ACR-N (dB)	15.2	13.2	29.1	26.1
Freq. (MHz)	28.8	31.3	497.0	490.0
Limit (dB)	41.3	40.3	-12.2	-11.7
Worst Pair	4,5	4,5	4,5	3,6
PS ACR-N (dB)	15.1	12.9	28.7	27.1
Freq. (MHz)	28.5	34.3	500.0	500.0
Limit (dB)	39.0	36.8	-15.3	-15.3





PASS	MAIN	SR	MAIN	SR
Worst Pair	4,5	1,2	4,5	1,2
RL (dB)	1.4	7.4	1.4	7.7
Freq. (MHz)	498.0	29.5	498.0	493.0
Limit (dB)	8.0	18.7	8.0	8.0





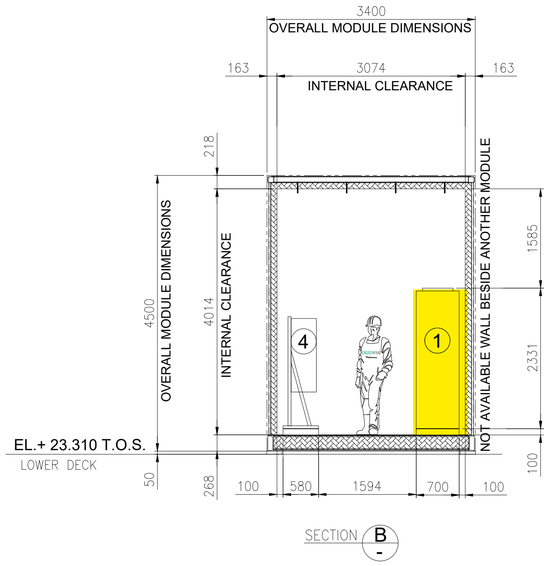
Compliant Network Standards:

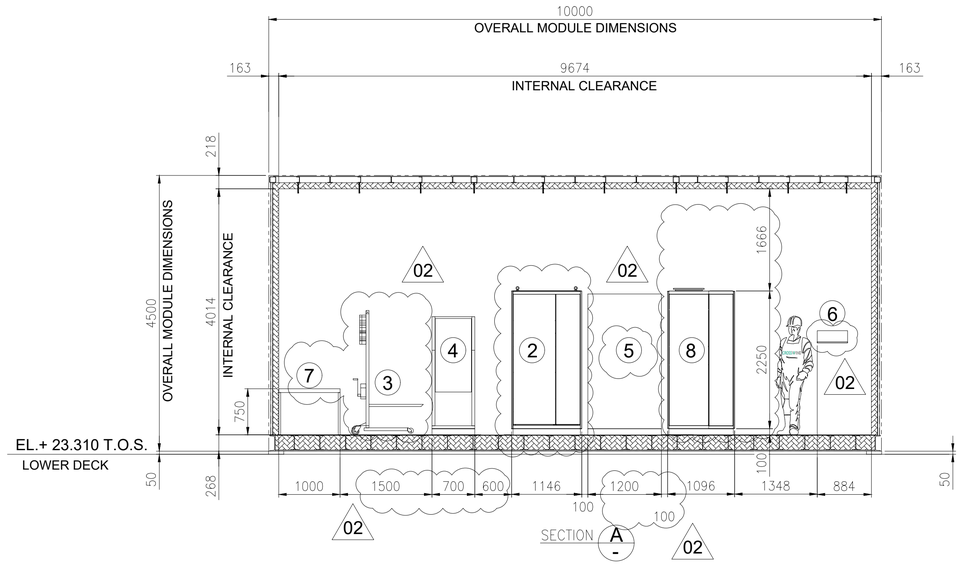
10BASE-T	100BASE-TX	100BASE-T4
1000BASE-T	2.5GBASE-T	5GBASE-T
10GBASE-T	ATM-25	ATM-51
ATM-155	100VG-AnyLan	TR-4
TR-16 Active	TR-16 Passive	

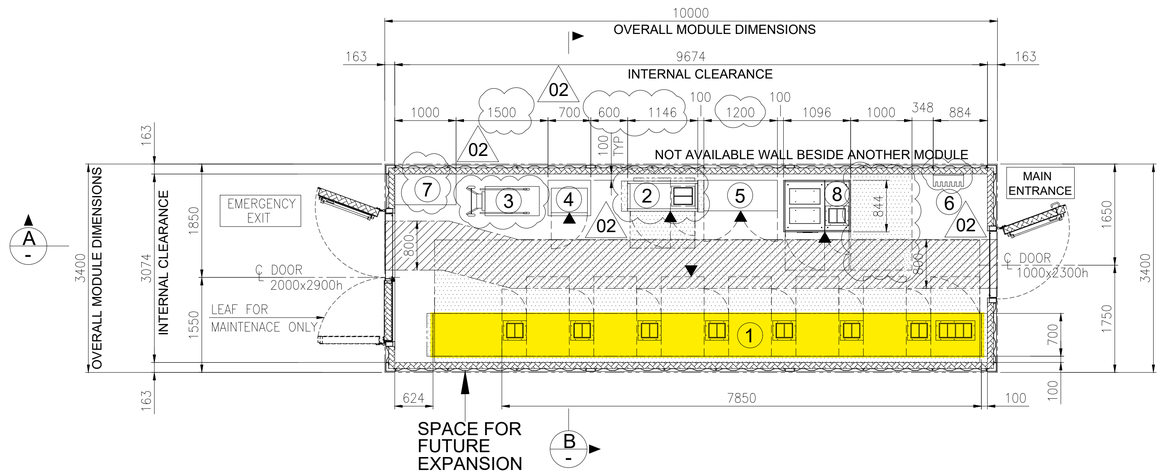
LinkWare™ PC Version 11.4

FLUKE networks

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





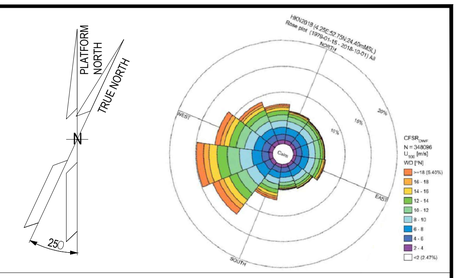


EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

1

EQUIPMENT LIST

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



NOTES

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

02

LEGEND

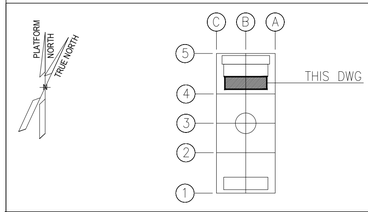
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

REFERENCES

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

02

KEY PLAN



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

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

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

ROSETTI MARINO SpA

CROSSWIND

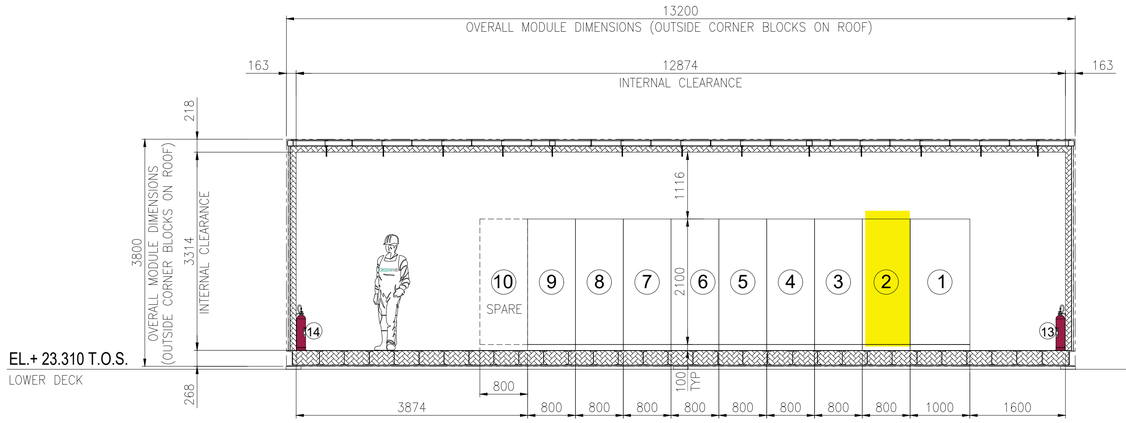
ROSETTI MARINO

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

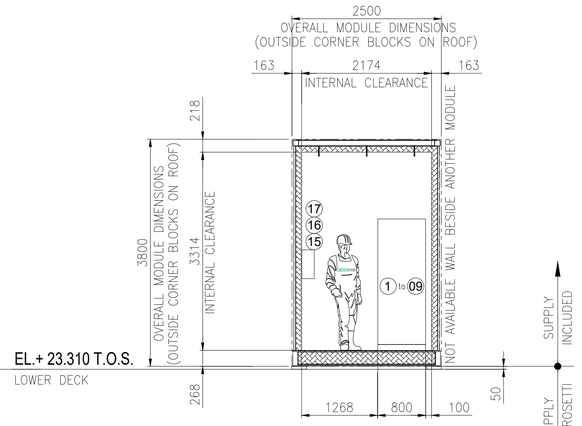
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN FMO	CHECKED LMA/AMA	APPROVED LMA/MDO	DATE 27/05/2024
A1	DRAWING NO. 123A90-DDL-EL-DL-20105	SHEET 001	REV. 02

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

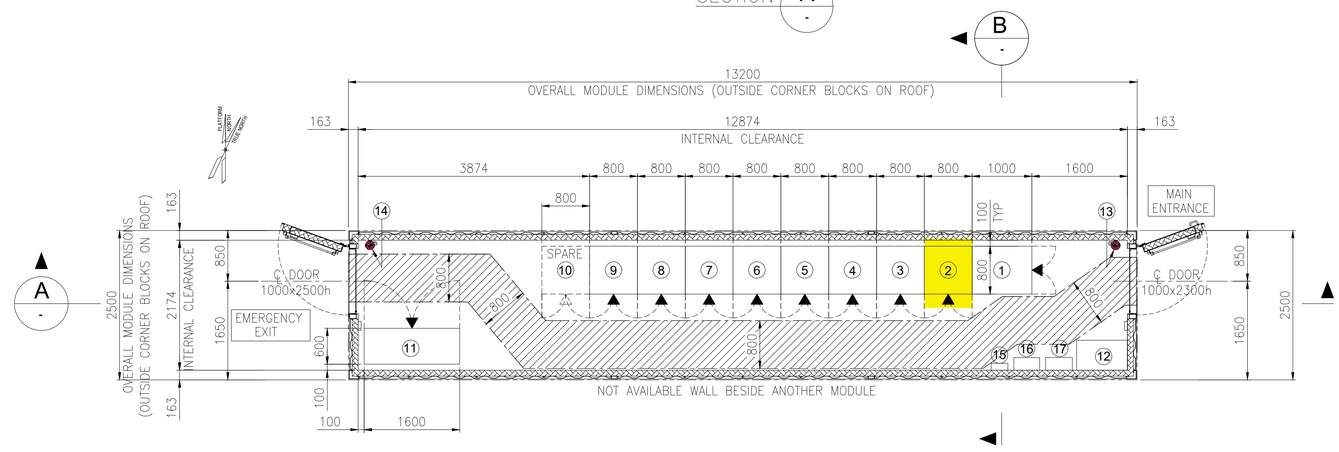
DRAWING NO. 123A90-DDL-IN-DL-40012 REV. 03



SECTION A -



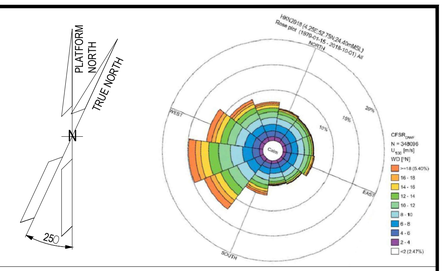
SECTION B -



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

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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

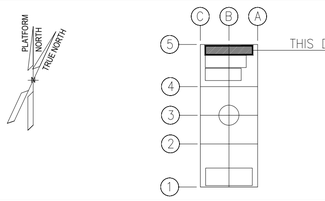
HOLDS

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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

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

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

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

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

LV SWITCHROOM (B-200)

I&T EQUIPMENT ROOM (ITER B400)

NETWORK CABINET - B400-NET-001

<01>

HVAC CABINET
B200-HSB-001

ITEM: SCALANCE XC208
PORT: P3 LAN

Ref. Vendor Doc.: 1724000049-HV-DA-00027

RJ45 — B200-HSB-001/B400-NET-001
CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS — RJ45

SWITCH: COOP-01
PORT: P12

~~EMCS SYSTEM - B400-EMCS-001~~

400V SWITCHGEAR
SG-200N1

ITEM: REF615 PROTECTION FUNCTION (ABB)
PORT: X1

Ref. Vendor Doc.: 1723002197-EL-DG-00030

RJ45 — SG-200N1/B400-NET-001.01
~~SG-200N1/B400-EMCS-001.01~~
CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS — RJ45

SWITCH: COOP-01
PORT: P15

400V SWITCHGEAR
SG-200N1

ITEM: REF615 PROTECTION FUNCTION (ABB)
PORT: X3

Ref. Vendor Doc.: 1723002197-EL-DG-00030

RJ45 — SG-200N1/B400-NET-001.02
~~SG-200N1/B400-EMCS-001.02~~
CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS — RJ45

SWITCH: COOP-01
PORT: P04

400V SWITCHGEAR
SG-200N1

ITEM: ETH. SWITCH RSP25 SW1
PORT: ETH/SFP - PORT 1

Ref. Vendor Doc.: 1723002197-EL-DG-00030

RJ45 — SG-200N1/B400-NET-001.03
~~SG-200N1/B400-EMCS-001.03~~
CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS — RJ45

SWITCH: COOP-01
PORT: P02

ACB PANEL
SG-200D2

ITEM: ETH. SWITCH RSP25 SW1
PORT: ETH/SFP - PORT 1

Ref. Vendor Doc.: 1723002197-EL-DG-00032

RJ45 — SG-200D2/B400-NET-001
~~SG-200D2/B400-EMCS-001~~
CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS — RJ45

SWITCH: COOP-01
PORT: P21

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_E	19/11/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
COMMUNICATION – CAT-6

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-IN-DG-40015	034	01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015

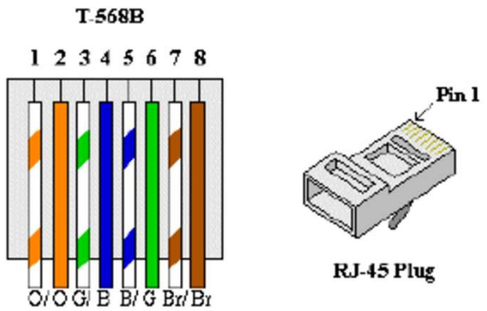
REV. 01

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. SWITCH TAG NAME AND PORT WILL BE DEFINED DURING THE CONSTRUCTION PHASE
6. FIBER OPTIC TAG NAME WILL BE DEFINED DURING THE CONSTRUCTION PHASE.

<01>

7. CAT. 6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:



RJ-45 Plug

8. FOR OPTICAL FIBERS, USE THE FOLLOWING COLOR CODING:
   01) RED
   02) GREEN
   03) BLUE
   04) YELLOW
   05) GREY
   06) PURPLE
   07) BROWN
   08) ORANGE
   09) WHITE
   10) PINK
   11) BLACK
   12) TURQUOISE

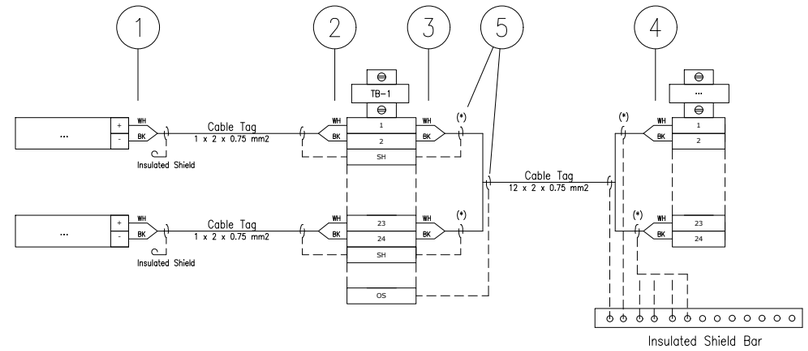
LEGENDS & SYMBOLS:

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
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT

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

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_E	19/11/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO. 123A90-DDL-IN-DG-40015	SHEET 003	REV. 01

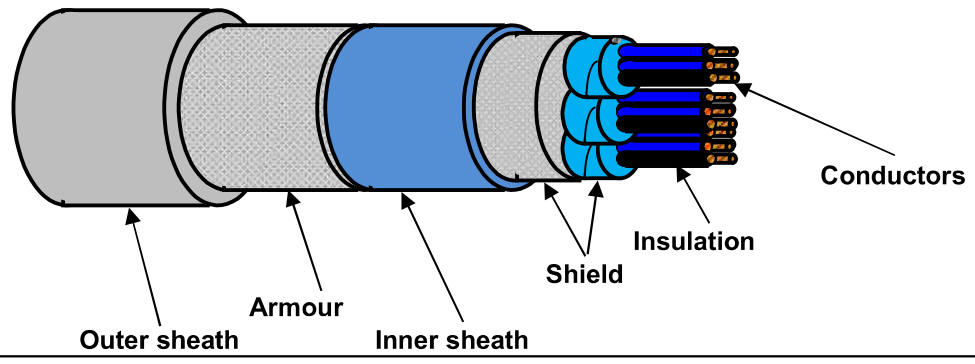
File Name : 123A90-DDL-IN-DG-40015_Rev.01

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 St	From Gland	From Entry	From Fittin	To Gland	To Entry	To Fitting	Routing	Routing Manual
SG-200N1/B400-NET-001.03	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						SG-200N1	LV 0,4 kV MCC Switchgear	Lower Deck (B-200)	B400-NET-001	Network Cabinet / EMCS System	Lower Deck (B-400)	TELCV03-4X2X23AWG	Cable CAT 6A S/FTP 4x2x23AWG Armoured LSZH - Grey	M20S	n.a.			n.a.				I-MCT-202 / B-200-SEC-1E / B-200-SEC-1C / B-200-SEC-1B / B-200-SEC-1A / L-SEC-5 / L-SEC-1C / L-SEC-1B / L-SEC-1A / B-400-SEC-3A / B-400-SEC-2I / B-400-SEC-2G / B-400-SEC-2E / B-400-SEC-2C / B-400-SEC-3B / I-MCT-402

FLEI s.r.l.

CAT. 6A S/FTP ARMOURED LSZH

4X2X23AWG - Based on Draka UC500 HS23



TECHNICAL FEATURES

Conductors :	**SOLID** plain annealed copper wires (AWG23) **ø 0,56 mm**
Insulation :	Foamskin PE - **ø 1,38 mm**
Cores colour code :	**blue/white; orange/white; green/white; brown/white**
Pair Assembling :	Cores twisted in pairs
Pair Shield :	Al-laminated plastic foil
Overall Shield:	Tinned copper braid
Inner sheath :	Extruded LSZH Thermoplastic Compound
Inner sheath color code:	**Blue**
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 1,2 mm
Outer sheath color code:	**Grey**
Outer printing (INKJET) :	**FLEI - 4X2X23AWG - CAT.6A S/FTP ARMOURED LSZH - IEC 60332.1.2 - IEC 60332.3.22 -**
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**
Under armour diameter :	(7,5 ± 10%) mm
Over armour diameter :	(8,3 ± 10%) mm
Outer diameter :	(10,7 ± 10%) mm
Bending radius :	cable outer diameter x 8 (in fixed installation)
Test Voltage :	1000 V DC for 1' (Between Cores) / 1000 V DC for 1' (Between Cores - Shield)
Loop Resistance :	≤ 154 Ω/Km (@ 20°C)
Insulation Resistance :	≥ 2000 MΩ x km (@ 20°C)
Mutual Capacitance :	Nom. 43 nF/km
Characteristic Impedance :	(100 ± 5) Ω
Applicable Standards	
Design Guidelines :	**Generally to ISO/IEC 11801 / IEC 61156-5 / EN 50173-1 / EN 50288-10 / IEEE 802.3at / af / bt**
ON COMPLETE CABLE	
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22
Acid Gas generation :	IEC 60754.1/2
Smoke density/Light Transm	IEC 61034.2 (LT ≥ 60%)
Hazardous Areas :	IEC 60079.14 par.9.3.2a
Temperature Range :	
ON COMPLETE CABLE	
During Operation :	(-20°C up to +60°C) (in fixed installation)
During installation :	(0°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 :	29/05/2024	Messa			
Checked :	29/05/2024	Spaccasassi			
Approved :	29/05/2024	Cucinotta			

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

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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

RAPPORTO DI PROVA
TEST REPORT

ISO 9001 ISO 14001 ISO 45001

Fornitore/ Supplier: IMESA S.p.A. Via G. Di Vittorio, 14 JESI (Ancona) – ITALIA
Tel.+39 0731 211034 - Fax.+39 0731 211055 - imesa@imesaspa.com - www.imesaspa.com

N° Certificato/ Certificate N°:	**304**	**Data / Date:**	**29/07 ÷ 01/08/2024**
Commessa N° / Workorder N°:	**231298/SD**		
Matricola N° / Serial N°:	**231298/SD/040**		
Ordine N° / Order N°:	**1723002197**		
Cliente / Customer:	**ROSETTI MARINO S.P.A.**		

Collaudo eseguito alla presenza di: / Test surveyed by:

Sig. / Mr.	Ditta / Firm	Firma / Signature
FAVA STEFANO	IMESA SPA	IMESA SPA TESTING OFFICE
MARTARELLI FERNANDO	IMESA SPA	
SANTINELLI DAMIANO	IMESA SPA	
TASSINARI GABRIELE	ROSETTI MARINO SPA	
CASTELLANI KRISTIAN	ROSETTI MARINO SPA	
MADASCHI ANDREA	ROSETTI MARINO SPA	
IVESON ANTHONY	ROSETTI MARINO SPA	
MACULAN LUCA	ROSETTI MARINO SPA	
LINARI STEFANO	ROSETTI MARINO SPA	
MARANGONI MASSIMILIANO	O.b.o. CROSSWIND	

RAPPORTO DI PROVA
TEST REPORT

ISO 9001 ISO 14001 ISO 45001

N° Certificato/ Certificate N°:	304	Data / Date:	29/07 ÷ 01/08/2024

Materiale collaudato a Norme: **IEC 61439-2**
Material tested according to
Procedura collaudo Quadri BT : **Document number *FAT procedure:***
Procedure test Switchboards LV customer **: 1723002197-QC-PRO-00045**; *owner:* **231298/SD/045**

QUADRO ELETTRICO BT SWITCHBOARD LV	Tipologia / Type:	PC/MCC
Tensione Nominale di Isolamento (Ui): ***Rated Insulation Voltage (Ui)***	**0,69 kV**	

CARATTERISTICHE ELETTRICHE/ELECTRICAL INFORMATION:

Ue= 0,4/0,23kV; Un= 0,4/0,23kV; F= 50 Hz; In= 2500A; Ik= 50kA/1s

DESCRIZIONE/DESCRIPTION:

LV SWITCHBOARD 400/230V - BASE LOAD POWER HUB (BLPH)

PROJECT: CROSSWIND HOLLANDSE KUST NOORD WIND PARK

TAG: "SG-200N1"

DISEGNI/DRAWINGS:

DOCUMENT ID	TITLE
1723002197-EL-DA-00007	SG-200N1 GENERAL ARRANGEMENTS DWG AND FOUNDATION LOAD CALCULATION INCLUDING COG
1723002197-EL-DG-00011	SG-200N1 ELECTRICAL SINGLE LINE DIAGRAM
1723002197-EL-DG-00030	SG-200N1 LV SWG FUNCTIONAL DIAGRAMS - INCOMINGS, INTERCONNECTING AND AUX DISTRIBUTION
1723002197-EL-DG-00031	SG-200N1 LV SWG FUNCTIONAL DIAGRAMS - TYPICAL FEEDERS

RAPPORTO DI PROVA
TEST REPORT

ISO 9001 ISO 14001 ISO 45001

N° Certificato/ Certificate N°:	304	Data / Date:	29/07 ÷ 01/08/2024

Materiale collaudato a Norme: **IEC 61439-2**
Material tested according to
Procedura collaudo Quadri BT : **Document number *FAT procedure:***
Procedure test Switchboards LV customer **: 1723002197-QC-PRO-00045**; *owner:* **231298/SD/045**

QUADRO ELETTRICO BT SWITCHBOARD LV	Tipologia / Type:	~~MCC/F~~ PC /MCC ~~INTERNAL ARC PROOF (50kA/0,3s)~~
Tensione Nominale di Isolamento (Ui): ***Rated Insulation Voltage (Ui)***	**0,69 kV**	

CARATTERISTICHE ELETTRICHE/ELECTRICAL INFORMATION:

Ue= 0,4/0,23kV; Un= 0,4/0,23kV; F= 50 Hz; In= 2500A; Ik= 50kA/1s

DESCRIZIONE/DESCRIPTION:

LV SWITCHBOARD 400/230V - BASE LOAD POWER HUB (BLPH)

PROJECT: CROSSWIND HOLLANDSE KUST NOORD WIND PARK

TAG: "SG-200N1"

DISEGNI/DRAWINGS:

DOCUMENT ID	TITLE
1723002197-EL-DA-00007	SG-200N1 GENERAL ARRANGEMENTS DWG AND FOUNDATION LOAD CALCULATION INCLUDING COG
1723002197-EL-DG-00011	SG-200N1 ELECTRICAL SINGLE LINE DIAGRAM
1723002197-EL-DG-00030	SG-200N1 LV SWG FUNCTIONAL DIAGRAMS - INCOMINGS, INTERCONNECTING AND AUX DISTRIBUTION
1723002197-EL-DG-00031	SG-200N1 LV SWG FUNCTIONAL DIAGRAMS - TYPICAL FEEDERS

RAPPORTO DI PROVA
TEST REPORT

N° Certificato/ Certificate N°:	304	Data / Date:	29/07 ÷ 01/08/2024

PROVE INDIVIDUALI (secondo lo standard IEC 61439-1)**:**
ROUTINE TESTS (according to standard IEC 61439-1):

■ = **TESTED**

■ **11.1 GENERALITA'**
GENERALITY

■ **CONTROLLO VISIVO E DIMENSIONALE**
VISUAL AND DIMENSIONAL CONTROL *Point 3.1 FAT proc.*

■ **CONTROLLO OSSERVANZA ALLE SPECIFICHE ED ORDINE**
CHECK OF COMPLIANCE TO SPECS AND ORDER *Point 3.1 FAT proc.*

■ **CONTROLLO CARPENTERIA, SBARRE,CONNESSIONI PRIMARIE**
STRUCTURAL WORKS, BUS-BAR CONTROL *Point 3.4 FAT proc.*

■ **CONTROLLO VERNICIATURA (RAL 7035 ≥ 60** µm)
PAINTING CONTROL *Point 3.1 FAT proc*

■ **11.2 GRADO DI PROTEZIONE DEGLI INVOLUCRI**
PROTECTION DEGREE *Point 3.3 FAT proc.*

■ **11.3 DISTANZE DI ISOLAMENTO IN ARIA E SUPERFICIALI**
CLEARENCE AND CREPAGE DISTANCES *Point 3.1 FAT proc.*

■ **11.4 PROTEZIONE CONTRO LA SCOSSA ELETTRICA ED INTEGRITA' DEI CIRCUITI DI PROTEZIONE**
PROTECTION AGAINST ELECTRIC SHOCK AND INTEGRITY OF PROTECTIVE CIRCUITS *Point 3.4 FAT proc.*

■ **11.5 INSTALLAZIONE DEI COMPONENTI,FISSAGGIO EVENTUALI DANNI IN ASSEMBLAGGIO E COLLEGAMENTI TERRE**
INCORPORATION OF BUILT-IN COMPONENTS , FIXED,EVENTUAL DAMAGE CAUSED BY ASSEMBLING, EARTHED *Point 3.1 FAT proc.*

■ **VERIFICA FONDO SCALA STRUMENTI E DATI NOMINALI APPARECCHIATURE**
CHECK FULL SCALE OF INSTRUMENTS & EQUIPMENT RATED DATA CONTROL *Point 3.1 FAT proc.*

■ **VERIFICA DEL SERRAGGIO E MARCATURA BULLONERIA**
CHECKING THE TIGHTENING AND MARKING OF BOLTS
Point 3.4 FAT proc.

■ **CONTROLLO CABLAGGIO & DATI DI TARGA**
WIRING CHECK & PLATE CHECK *Point 3.4 FAT proc.*

■ **MISURA RESISTENZA D'ISOLAMENTO**
MEASURE OF INSULATION RESISTANCE *Point 4.3-4.4 FAT proc.*

CIRCUITI DI POTENZA	**L1= >500 MΩ; L2= >500 MΩ**
POWER CIRCUIT	**L3= >500 MΩ; N = >500 MΩ**
CIRCUITI AUSILIARI	24 Vdc= **>500 MΩ**
AUXILIARY CIRCUITS	230 Vac = **>500 MΩ**

■ **11.6 CIRCUITI ELETTRICI INTERNI E COLLEGAMENTI**
INTERNAL ELECTRICAL CIRCUITS AND CONNECTIONS
Point 3.4 FAT proc.

■ **11.7 CONTROLLO DEI TERMINALI PER I CONDUTTORI ESTERNI**
CHECK OF TERMINALS FOR EXTERNAL CONDUCTORS
Point 3.4 FAT proc.

■ **11.8 CONTROLLO FUNZIONAMENTO MECCANICO**
MECHANICAL OPERATION TEST
VERIFICA DI FUNZIONAMENTO: FUNZIONAMENTO DEGLI INTERRUTTORI,PORTE,CHIAVI INTERBLOCCHI SEGNALI E LE PARTI MECCANICHE CHE FORMANO IL QUADRO
OPERATION TEST: CHECK OPERATION OF C.B. DOORS, SIGNALLING, EFFICIENCY OF KEY LOCKS AND THE MECHANICS PART THAT FORM THE PANEL,INTERLOCKS BETWEEN C.B, CARRY OUT A NUMBER OF STARTING UP AND STOPPING SEQUENCES *Point 3.2 FAT proc.*

■ **11.9 PROVE DI TENSIONE : f = 50 Hz e t = 1 sec.**
VOLTAGE TEST : f = 50 Hz and t = 1 sec. **(*60 sec)**

CIRCUITI DI POTENZA **1.89** kV
MAIN CIRCUITS *Point 4.3 FAT proc.*
***Leakage curr. L1= 2 mA L2= 2 mA L3= 2 mA* N= 2 mA**

CIRCUITI AUSILIARI 24Vdc= 0,5kV; **230Vac= 1,5** kV
AUXILIARY CIRCUITS *Point 4.4 FAT proc.*
Leakage current: 24Vdc= 1 mA; 230Vac= 2 mA

■ **PROVE DI FUNZIONAMENTO ELETTRICO E SEQUENZE, ARC FLASH TEST VANO CAVI, BUSBAR & C.B.**
ELECTRICAL OPERATION & SEQUENCE TESTS, ARC FLASH TEST ON CABLE COMP. BUSBAR & C.B. *Point 4.1FAT proc.*
CUBICLE TESTED: SEE ANNEX B"

■ ***FUNZIONAMENTO CORRETTO DELLE LOGICHE* DI CONTROLLO**
RIGHT WORKING OF THE LOGICAL CONTROLS
VERIFICA DI FUNZIONAMENTO: CIRCUITI AUSILIARI E DI COMANDO, POLARITA' CIRCUITI VOLTMETRICI/AMPEROM.
CHECKING OF OPERATIONS: AUXILIARY AND CONTROL CIRCUIT, CHECK VOLTMETRIC/AMPEROMETRIC CIRCUIT & POLARITY,INTERTRIP SIGNAL *Point 4.1 FAT proc.*

■ **PROVE SUI DISPOSITIVI AUSILIARI**
TEST OF AUXILIARY DEVICE *Point 4.2 FAT proc.*

■ **CONTROLLO DI CONTINUITA' DEL CIRCUITO DI TERRA**
CHECKING OF ELECTRICAL CONTINUITY EARTH CIRCUIT
Max = ≤0,1Ω (Max Value Measured: 0,011 Ω)
Point 4.5 FAT proc.

RAPPORTO DI PROVA
TEST REPORT

ISO 9001 ISO 14001 ISO 45001

N° Certificato/ Certificate N°:	304	Data / Date:	29/07 ÷ 01/08/2024

The Equipment is :

Compliant [X] **/ Non Compliant** [ ]

Referring to the FAT Procedure and relevant documents

Apparecchiature utilizzate/ Equipment used:	*Scadenza Taratura /Expiration date*
SP 186 MULTITEST FOR DIELECTRIC TEST	10/2024
PP 143 DIGITAL THICKNESS GAUGE	12/2024
SC 05 TEST FINGER IP2X	07/2025
SC 06 TEST FINGER IP3X	07/2025
SP 196 DIGITAL MULTIMETER	03/2025
SCD 61 TORQUE WRENCH (20-100 Nm)	01/2025

Note/ *Notes:*

See PUNCH List Report : PL-IME-2197-01

FIRMA/ *SIGNATURE*

IMESA SPA

IMESA SPA TESTING OFFICE

ROSETTI MARINO SPA

LINARI STEFANO 01/08/24

O.b.o. CROSSWIND

MARANGONI

Type of switchboard:	LV SWGR / MCC/32	Comm. :	231298/SD	ELE Resp. :	SD	Node:	40
Client:	ROSETTI MARINO			Annex B			

Ref.	ACTIVITY (DEPT.)		YES	NO	N/A	REMARK
OPERATING TESTS)			UNIT: "L1-n & L2-n Typical"			
	FUNCTION	DEVICE	*Tested Unit:*			
1	LOCAL OPENING CIRCUIT-BREAKER	QF1	✓			
2	LOCAL CLOSING CIRCUIT-BREAKER	QF1	✓			
3	TRIPPING CIRCUIT-BREAKER	QF1	✓			
4	OPENING CIRCUIT-BREAKER BY OPEN COIL	YO	✓			
5	TEST FOR SIGNALLING LAMPS / LED	HL1	✓			
6	MCB AUX. CONTACTS TEST	/			✓	
7	MECHANICAL TEST FOR INSERTION / DISCONNECTION DRAWER	/	✓			
8	AVAILABLE SIGNALS AND CONTACTS AT THE TERMINAL BOARD	X1			✓	
9	READING/WRITING SIGNALS IN ACCORDING TO I//O LIST	U2.A	✓ *			
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						

*-MODBUS TCP-IP COMMUNICATION SEE I/O LIST

NOTE: TESTED:
UP-200F4 POS.A2/4
UP-200F3 POS. A3/1 LINE A
UP-200F3 POS. A4/1 LINE B
A6/05 "AC UPS F&G LINE A
A6/06 "AC UPS F&G LINE B
A7/02 "UP-200F3-"BYPASS"
A7/03 "DC BATTERY SWTG CONTROL FEEDER A"
A7/04 "DC BATTERY SWTG CONTROL FEEDER B"

ROSETTI MARINO
LIGUORI STEFANO
01/08/24

d.o CROSSWIND
MARINGONI

Type of switchboard:	LV SWGR / MCC/32	Comm. :	231298/SD	ELE Resp. :	SD	Node:	40
Client:	ROSETTI MARINO			Annex B			

Ref.	ACTIVITY (DEPT.)		YES	NO	N/A	REMARK
OPERATING TESTS)			UNIT: "LK1-n & LK2-n Typical"			
	FUNCTION	DEVICE	*Tested Unit:*			
1	LOCAL OPENING CIRCUIT-BREAKER	QF1	✓			
2	LOCAL CLOSING CIRCUIT-BREAKER	QF1	✓			
3	TRIPPING CIRCUIT-BREAKER	QF1	✓			
4	LOCAL OPENING/CLOSING CONTACTOR IN INSERTED DRAWER POSITION	KM1	✓			
5	LOCAL OPENING/CLOSING CONTACTOR IN TESTED DRAWER POSITION	KM1	✓			
6	REMOTE OPENING/CLOSING CONTACTOR	KM1	✓			
7	TEST FOR SIGNALLING LAMPS / LED	HL1	✓			
8	MCB AUX. CONTACTS TEST	/	✓			
9	MECHANICAL TEST FOR INSERTION / DISCONNECTION DRAWER	/	✓			
10	AVAILABLE SIGNALS AND CONTACTS AT THE TERMINAL BOARD	X1			✓	
11	READING/WRITING SIGNALS IN ACCORDING TO I//O LIST	U2.A	✓ *			
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*- MODBUS TCP-IP COMMUNICATION SEE I/O LIST

NOTE: TESTED

POS. A2/05 "SPARE"

POS. A3/02 "SPARE"

POS. A4/02 "HVAC PANELS HV ROOM"

POS. A4/04 "BESS PCS CABINET"

POS. A4/05 "SPARE"

POS. A4/06 "SPARE"

POS. A5/01 "SPARE"

POS. A5/02 "HVAC PANELS LV ROOM"

POS.A5/03 "HVAC PANELS-UPS ROOM"

POS. A5/06 "SPARE"

POS. A6/02 "BESS LV1 CABINET CP-850E1"

POS. A6/03 "BESS LV2 CABINET CP-850E2"

POS. A6/04 "SPARE"

ROSETTI MARINO

ROSETTI MARINO

LUNANI STEFANO

01/08/24

obo CROSSWIND

Type of switchboard:	LV SWGR / MCC/32	Comm. :	231298/SD	ELE Resp. :	SD	Node:	40
Client:	ROSETTI MARINO			Annex B			

Ref.	ACTIVITY (DEPT.)		YES	NO	N/A	REMARK
OPERATING TESTS)			UNIT: "L3-630 Typical"			
	FUNCTION	DEVICE	*Tested Unit: ELECTROLYZER*			
1	LOCAL OPENING CIRCUIT-BREAKER	QF1	✓			
2	LOCAL CLOSING CIRCUIT-BREAKER	QF1	✓			
3	REMOTE OPENING CIRCUIT-BREAKER	QF1	✓			
4	REMOTE CLOSING CIRCUIT-BREAKER	QF1	✓			
5	TRIPPING CIRCUIT-BREAKER	QF1	✓			
6	TEST FOR SIGNALLING LAMPS / LED	HL1÷3	✓			
7	MCB AUX. CONTACTS TEST	/	✓			
8	MECHANICAL TEST FOR INSERTION / DISCONNECTION C.B.	QF1	✓			
9	AVAILABLE SIGNALS AND CONTACTS AT THE TERMINAL BOARD	X1	✓			
10	READING/WRITING SIGNALS IN ACCORDING TO I//O LIST	U1.A/QF1	✓ *			
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*- MODBUS TCP-IP ACCORDING TO I/O LIST

ROSETTI MARINO
LINARI STEFANO
01/08/24

obo CROSSWIND

Type of switchboard:	LV SWGR / MCC/32	Comm. :	231298/SD	ELE Resp. :	SD	Node:	40
Client:	ROSETTI MARINO			Annex B			

Ref.	ACTIVITY (DEPT.)		YES	NO	N/A	REMARK
OPERATING TESTS)			UNIT: "INCOMING"			
	FUNCTION	DEVICE	*Tested Unit:*			
1	LOCAL OPENING CIRCUIT-BREAKER	QF1	✓			
2	LOCAL CLOSING CIRCUIT-BREAKER	QF1	✓			
3	REMOTE OPENING CIRCUIT-BREAKER	QF1	✓			
4	REMOTE CLOSING CIRCUIT-BREAKER	QF1	✓			
5	TRIPPING CIRCUIT-BREAKER	QF1	✓			
6	LOCK-OUT TEST RELAY	K86	✓			
7	MCB AUX. CONTACTS TEST	/	✓			
8	MECHANICAL TEST FOR INSERTION / DISCONNECTION C.B.	QF1	✓			
9	AVAILABLE SIGNALS AND CONTACTS AT THE TERMINAL BOARD	X1	✓			
10	READING/WRITING SIGNALS IN ACCORDING TO I//O LIST	A1/FP1			✓	
11	AUXILIARY VOLTAGE SWITCHING	QU1	✓			
12	ARC SURVEY TRIPPING	FP1	✓			
13	INTERNAL SPACE HEATER / LIGHTING DISTRIBUTION	BUS-4	✓			
14	COMMAND CIRCUITS TO FEEDERS DISTRIBUTION	BUS-1	✓			
15	24VDC VOLTAGE DISTRIBUTION	BUS-2			✓	
16	INTERTRIPPING WITH HV SWBD UPSTREAM	FP1			✓	
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NOTE: ~~K86 RELAY MISSING~~

ROSETTI MARINO
LIMARI STEFANO
01/08/24

ABB CROSSWIND

ROSETTI MARINO
MAINTENANCE OFFICER

Section 13 MECHANICAL COMPLETION CHANGES / MARK-UPS

NOT APPLICABLE