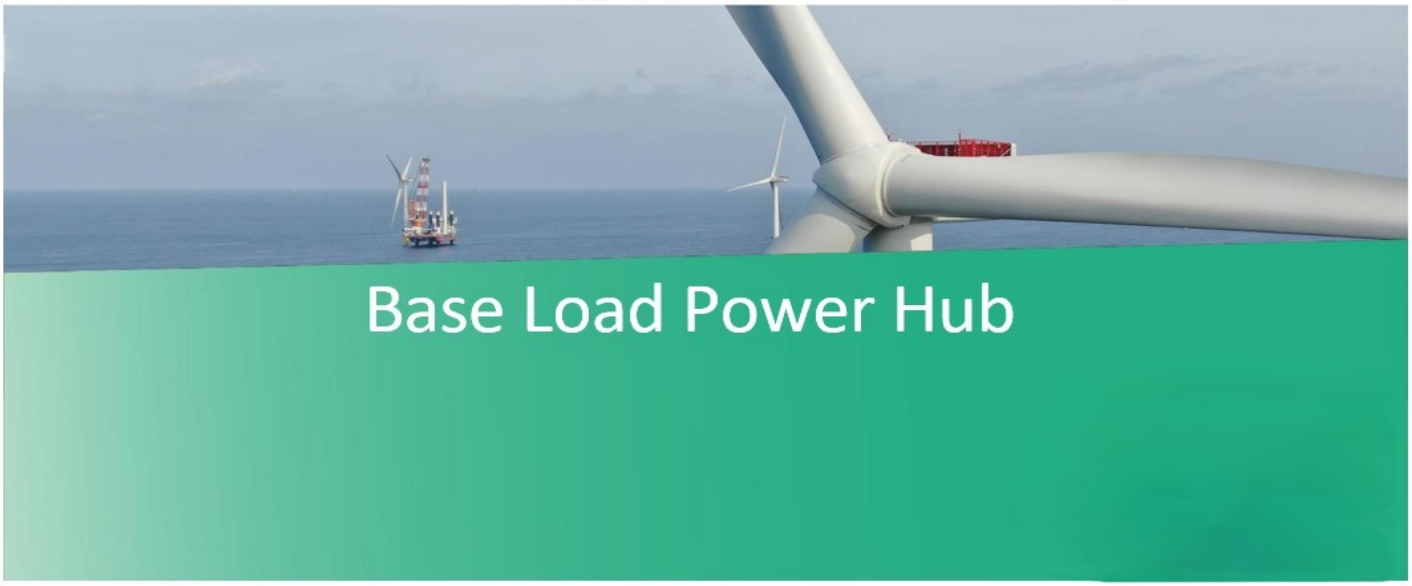
CROSSWIND

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	83-10 400 V Switchboard Solar (SG-200D2)

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

Sub System N°:	83-10	Tick as appropriate	ONSHORE	O
Description:	400 V Switchboard Solar (SG-200D2)		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*	NA
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**

ROSETTI MARINO

123A90 - HOLLANDSE KUST NOORD WIND PARK
BLPH Project

CROSSWIND

Ready For Commissioning (RFC) Certificate

COMPLETE	●	PARTIAL	

Revision:	2		Issued on:	2025-02-28	
System:	83	/	Main Power Distribution Low Voltage 440 V		
SubSystem:	83-10	/	400 V Switchboard Solar (SG-200D2)		

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 '0	B 4

REMARKS: ONSHORE SOW completed, n. 4 outstanding tasks to be cleared in OFFSHORE phase.

	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	2025-02-28	2025-02-28	2025-02-28	2025-02-28
Signature	PROVERLIS Digitaly signed by Wolmer Borghi 2025-02-28T15:28:31.207Z	PROVERLIS Digitaly signed by Anthony Iveson 2025-02-28T15:52:52.317Z	PROVERLIS Digitaly signed by CPY NOT PRESEN 2025-02-28T16:21:50.662Z	PROVERLIS Digitaly signed by CPY NOT PRESEN 2025-02-28T16:22:00.285Z

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on system: 83 & subsystem: 83-10 & process: MC

Electrical	83-10 400 V Switchboard Solar (SG-200D2)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
82008-CEC	6.6KV HV Switchgear / Solar Switchgear	ONSHORE	C10002323	CPX10	100	2025-01-07	RFC 1
83002-CEL-L1	Solar PV Power Cable JB / LV SWBD 800/460V	ONSHORE	C10001823	CPX09	100	2025-02-20	RFC 2
		OFFSHORE	C10004686	CPX09	0	-	-
83002-CEL-L2	Solar PV Power Cable JB / LV SWBD 800/460V	ONSHORE	C10001824	CPX09	100	2025-02-20	RFC 2
		OFFSHORE	C10004687	CPX09	0	-	-
83002-CEL-L3	Solar PV Power Cable JB / LV SWBD 800/460V	ONSHORE	C10001825	CPX09	100	2025-02-20	RFC 2
		OFFSHORE	C10004688	CPX09	0	-	-
83015-CEC	LV SWBD 800/460V / 6.6KV HV Switchgear	ONSHORE	C10002324	CPX10	100	2025-01-03	RFC 1
83016-CEC	LV SWBD 800/460V / LV Switchgear	ONSHORE	C10002116	CPX10	100	2024-11-22	RFC 1
83121-CEL	Lighting & Small Power DB BoP / Auxiliary SOLAR SWGR	ONSHORE	C10000640	CPX09	100	2024-12-03	RFC 1
84319-CEL	AC UPS - PAS DB / LV SWBD 800/460V Auxiliary	ONSHORE	C10002115	CPX09	100	2025-01-07	RFC 1
JB-200E1	Solar PV Power Cable JB	ONSHORE	C10001311	CPX31	100	2025-04-22	-
SG-200D2	LV 0,4 kV MCC Switchgear (Solar)	ONSHORE	C10000865	CPX05	100	2024-09-30	RFC 1

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on system: 83 & subsystem: 83-10 & process: MC

Telecom	83-10 400 V Switchboard Solar (SG-200D2)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
SG-200D2/B400-NET-001	LV 0,8/0,4 kV MCC Switchgear (Solar) / Network Cabinet / EMCS System	ONSHORE	C10004516	CIX09	100	2024-11-23	RFC 1

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	83	Main Power Distribution Low Voltage 440 V
SUBSYSTEM	83-10	400 V Switchboard Solar (SG-200D2)

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30002360	A	84319-CEL C10002115	Missing cable gland earthing tag inside DP-200F3	.		Pschintu 2025-01-07	2025-01-09	Pschintu 2025-01-09	2025-01-09
C30000123	B	SG-200D2	Missing Ethernet Switch RSPS25		Installed	SLinari 2024-09-17	Vendor 2025-02-25	SLinari 2025-02-25	2025-02-25
C30000124	B	SG-200D2	EMAX E1.2N 1250A broken (only a part of auxiliary contacts)v. To be replace		Replaced- see attached picture	SLinari 2024-09-17	Vendor 2025-02-25	SLinari 2025-02-25	2025-02-25
C30000767	B	83016-CEC C10002116	Missing cable tag on SG-200D2 side.	.		Pschintu 2024-11-22			
C30000768	B	83016-CEC C10002116	Missing core identification tags on SG-200D2 side.	.		Pschintu 2024-11-22	2025-02-04	Pschintu 2025-02-04	2025-02-04
C30001184	B	83121-CEL C10000640	Missing core identification tag both side	.		Pschintu 2024-12-03	2025-02-15	AAndreani 2025-02-15	2025-02-15
C30001185	B	83121-CEL C10000640	Missing SS cable tag	.		Pschintu 2024-12-03	2025-02-25	JKrizanic 2025-02-25	2025-02-25
C30002322	B	83015-CEC C10002324	Identification tag of wire are wrong side the SG-200D2 and side the SG-100D1 COLUMS:A2 is missing. See attached photo.	.		Gtangianu 2025-01-03	2025-02-21	Gtangianu 2025-02-21	2025-02-21
C30002323	B	83015-CEC C10002324	MCT is not closed side the SG-200D2.. See attached photo.	.		Gtangianu 2025-01-03	2025-02-21	Gtangianu 2025-02-21	2025-02-21

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 83 Main Power Distribution Low Voltage 440 V

SUBSYSTEM 83-10 400 V Switchboard Solar (SG-200D2)

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30002324	B	83015-CEC C10002324	Cable needs to be better dressed inside the panel SG.200D2. See attached photo.	.		Gtangianu 2025-01-03	2025-02-21	Gtangianu 2025-02-21	2025-02-21
C30002357	B	82008-CEC C10002323	Missing cable tags inside and outside MCT (B-100/B-200) and inside and outside the panel SG-200D2	.		Pschintu 2025-01-07	2025-02-04	Pschintu 2025-02-04	2025-02-04
C30002358	B	84319-CEL C10002115	Missing core identification tag side DP-200F3	.		Pschintu 2025-01-07	2025-02-12	APolo 2025-02-12	2025-02-12
C30002359	B	84319-CEL C10002115	Missing cable tags inside and outside MCT (B-300/B-200) and inside and outside the panels (DP-200F3 / SG-200D2)	.		Pschintu 2025-01-07	2025-02-04	Pschintu 2025-02-04	2025-02-04
C30004035	B	83002-CEL-L1 C10001823	What was installed in the field (busbar) does not report what is indicated in the project documentation (see picture)	.		APolo 2025-02-20			
C30004036	B	83002-CEL-L2 C10001824	What was installed in the field (busbar) does not report what is indicated in the project documentation (see picture)	.		APolo 2025-02-20			
C30004037	B	83002-CEL-L3 C10001825	What was installed in the field (busbar) does not report what is indicated in the project documentation (see picture)	.		APolo 2025-02-20			

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	83	Main Power Distribution Low Voltage 440 V
SUBSYSTEM	83-10	400 V Switchboard Solar (SG-200D2)

Telecom									
CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000831	B	SG-200D2/B400 -NET-001 C10004516	Missing cable tags on routing, inside and outside the panels.	.		Gtangianu 2024-11-23	2025-02-27	JKrizanic 2025-02-27	2025-02-27

Section 2 CONSOLIDATED PUNCH LISTS

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	83	Main Power Distribution Low Voltage 440 V
SUBSYSTEM	83-10	400 V Switchboard Solar (SG-200D2)

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30002360	A	84319-CEL C10002115	Missing cable gland earthing tag inside DP-200F3	.		Pschintu 2025-01-07	2025-01-09	Pschintu 2025-01-09	2025-01-09
C30000123	B	SG-200D2	Missing Ethernet Switch RSPS25		Installed	SLinari 2024-09-17	Vendor 2025-02-25	SLinari 2025-02-25	2025-02-25
C30000124	B	SG-200D2	EMAX E1.2N 1250A broken (only a part of auxiliary contacts)v. To be replace		Replaced- see attached picture	SLinari 2024-09-17	Vendor 2025-02-25	SLinari 2025-02-25	2025-02-25
C30000767	B	83016-CEC C10002116	Missing cable tag on SG-200D2 side.	.		Pschintu 2024-11-22	2025-03-25	Gtangianu 2025-03-25	2025-03-25
C30000768	B	83016-CEC C10002116	Missing core identification tags on SG-200D2 side.	.		Pschintu 2024-11-22	2025-02-04	Pschintu 2025-02-04	2025-02-04
C30001184	B	83121-CEL C10000640	Missing core identification tag both side	.		Pschintu 2024-12-03	2025-02-15	AAndreani 2025-02-15	2025-02-15
C30001185	B	83121-CEL C10000640	Missing SS cable tag	.		Pschintu 2024-12-03	2025-02-25	JKrizanic 2025-02-25	2025-02-25
C30002322	B	83015-CEC C10002324	Identification tag of wire are wrong side the SG-200D2 and side the SG-100D1 COLUMS:A2 is missing. See attached photo.	.		Gtangianu 2025-01-03	2025-02-21	Gtangianu 2025-02-21	2025-02-21
C30002323	B	83015-CEC C10002324	MCT is not closed side the SG-200D2.. See attached photo.	.		Gtangianu 2025-01-03	2025-02-21	Gtangianu 2025-02-21	2025-02-21

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	83	Main Power Distribution Low Voltage 440 V
SUBSYSTEM	83-10	400 V Switchboard Solar (SG-200D2)

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30002324	B	83015-CEC C10002324	Cable needs to be better dressed inside the panel SG.200D2. See attached photo.	.		Gtangianu 2025-01-03	2025-02-21	Gtangianu 2025-02-21	2025-02-21
C30002357	B	82008-CEC C10002323	Missing cable tags inside and outside MCT (B-100/B-200) and inside and outside the panel SG-200D2	.		Pschintu 2025-01-07	2025-02-04	Pschintu 2025-02-04	2025-02-04
C30002358	B	84319-CEL C10002115	Missing core identification tag side DP-200F3	.		Pschintu 2025-01-07	2025-02-12	APolo 2025-02-12	2025-02-12
C30002359	B	84319-CEL C10002115	Missing cable tags inside and outside MCT (B-300/B-200) and inside and outside the panels (DP-200F3 / SG-200D2)	.		Pschintu 2025-01-07	2025-02-04	Pschintu 2025-02-04	2025-02-04
C30004035	B	83002-CEL-L1 C10001823	What was installed in the field (busbar) does not report what is indicated in the project documentation (see picture)	.		APolo 2025-02-20	2025-04-15	Gtangianu 2025-04-15	2025-04-15
C30004036	B	83002-CEL-L2 C10001824	What was installed in the field (busbar) does not report what is indicated in the project documentation (see picture)	.		APolo 2025-02-20	2025-04-15	Gtangianu 2025-04-15	2025-04-15
C30004037	B	83002-CEL-L3 C10001825	What was installed in the field (busbar) does not report what is indicated in the project documentation (see picture)	.		APolo 2025-02-20	2025-04-15	Gtangianu 2025-04-15	2025-04-15

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	83	Main Power Distribution Low Voltage 440 V
SUBSYSTEM	83-10	400 V Switchboard Solar (SG-200D2)

Telecom									
CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000831	B	SG-200D2/B400 -NET-001 C10004516	Missing cable tags on routing, inside and outside the panels.	.		Gtangianu 2024-11-23	2025-02-27	JKrizanic 2025-02-27	2025-02-27

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004037

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001825	1.4 Discipline	Electrical
1.2 Item	83002-CEL-L3		Solar PV Power Cable JB / LV SWBD 800/460V
1.3 Subsystem	83-10		400 V Switchboard Solar (SG-200D2)

2 - OBSERVATION

What was installed in the field (busbar) does not report what is indicated in the project documentation (see picture)

Name: Alessio Polo
Date: 2025-02-20
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-20
3.5 Action by	ENG Engineering	Signature	

4 - PERFORMED ACTION

Name:
Date: 2025-04-15
Signature:

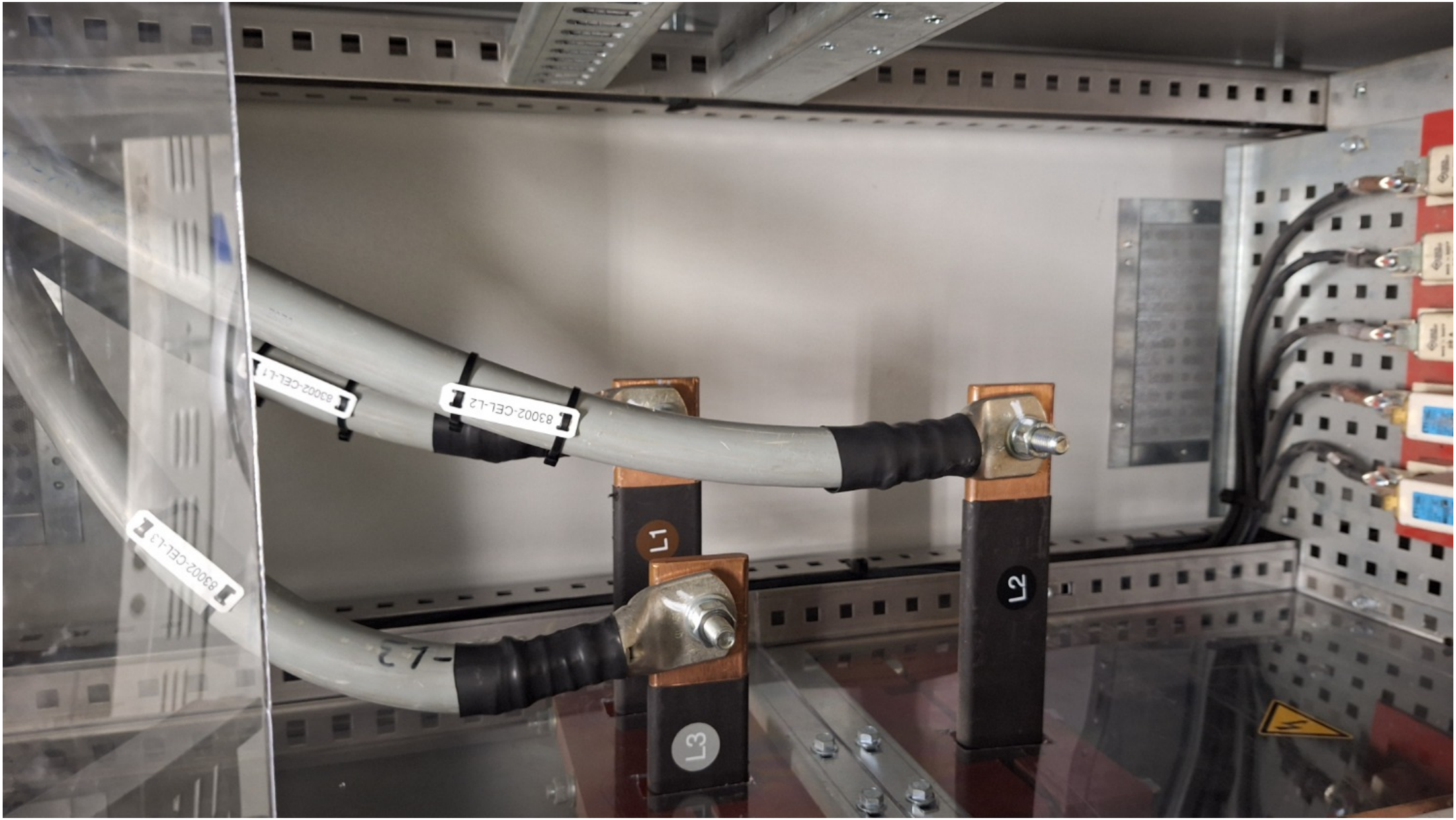
5 - CLEARANCE CHECK

The drawing was implemented.

Name: Giovanni Tangianu
Date: 2025-04-15
Signature:

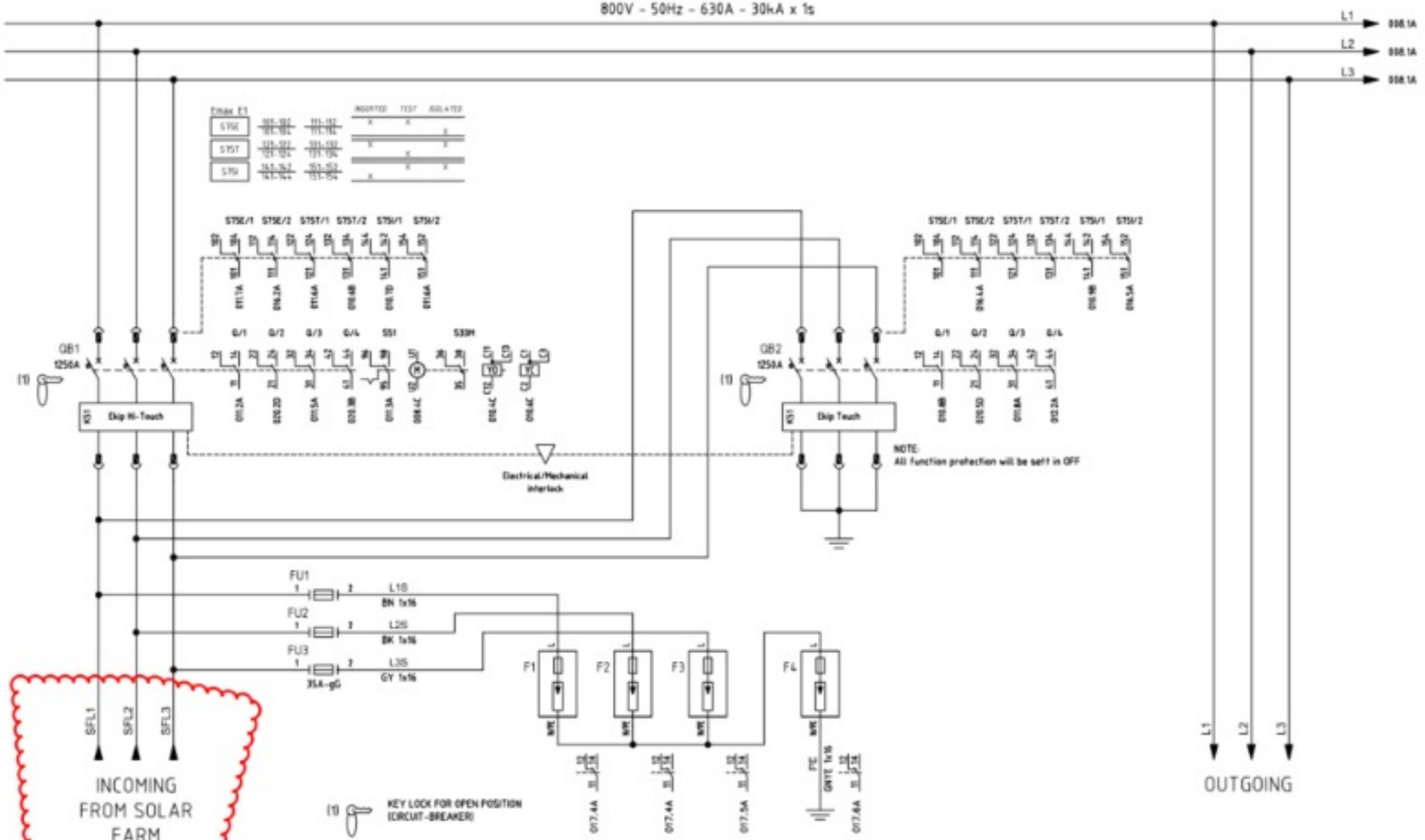
6- CLEARANCE APPROVAL

Name:
Date: 2025-04-15
Signature:


83002-CEL-L1
83002-CEL-L2
83002-CEL-L3
L1
L2
L3

POWER DISTRIBUTION

800V - 50Hz - 630A - 30kA x 1s



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
3	18/09/2024	Santinelli	Flaminio	Sigismondi	As Built (ASB)
2	10/07/2024	Santinelli	Flaminio	Sigismondi	Accepted for Construction (AFC)
1	22/05/2024	Santinelli	Flaminio	Sigismondi	Issued for review (IFR)
0	08/02/2024	Santinelli	Flaminio	Sigismondi	Issued for review (IFR)

DWG n°: 231298/SD/32

Rev.n°: PF1002669/3

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200D2"

FUNCTIONAL DIAGRAM

Functional Drawing

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00032

SHEET 007

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00032 Rev. 03

FROM

DESCRIPTION: SOLAR PV POWER CABLE JB
TAG NUMBER: JB-200E1

L1 — BK — 830E2-CEL-L1 1x300 mm² — BK — SPL1
L2 — BK — 830E2-CEL-L2 1x300 mm² — BK — SPL2
L3 — BK — 830E2-CEL-L3 1x300 mm² — BK — SPL3

TO

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

COLUMN: C1 (INCOMING)
CL01 A2/+03

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

COLUMN: C1 (OUTGOING)
CL01 A2/+01

L1 — BK — 830E3-CEL-L1 1x300 mm² — BK — IU
L2 — BK — 830E3-CEL-L2 1x300 mm² — BK — IV
L3 — BK — 830E3-CEL-L3 1x300 mm² — BK — IW

DESCRIPTION: 6.6/0.8 KV TRANSFORMER
TAG NUMBER: TR-200ED1

LV SIDE TERMINAL BOX

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

REV.	DATE	SIGNATURE
2_K	12/02/25	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
SOLAR PV POWER CABLE JB & LV SWBD 800/460V

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

SCALE : 1:X

A3

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

SHEET 018

REV. 02

F.to UNI A3: 420mmx297mm

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

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000123

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task		1.4 Discipline	Electrical
1.2 Item	SG-200D2		LV 0,4 kV MCC Switchgear (Solar)
1.3 Subsystem	83-10		400 V Switchboard Solar (SG-200D2)

2 - OBSERVATION

Missing Ethernet Switch RSPS25

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	FAT factory acceptance test	Date	2024-09-17
3.5 Action by	VND Vendor	Signature	--- Proverlis --- Duplicata issued from database information Signature is on original form

4 - PERFORMED ACTION

Installed

Name Vendor Crosswind

Date 2025-02-25

Signature

5 - CLEARANCE CHECK

The drawing was implemented.

Name Stefano Linari

Date 2025-02-25

Signature

6- CLEARANCE APPROVAL

Name

Date 2025-02-25

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000124

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task		1.4 Discipline	Electrical
1.2 Item	SG-200D2		LV 0,4 kV MCC Switchgear (Solar)
1.3 Subsystem	83-10		400 V Switchboard Solar (SG-200D2)

2 - OBSERVATION

EMAX E1.2N 1250A broken (only a part of auxiliary contacts)v. To be replace

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	FAT factory acceptance test	Date	2024-09-17
3.5 Action by	VND Vendor	Signature	--- Proverlis --- Duplicata issued from database information Signature is on original form

4 - PERFORMED ACTION

Replaced- see attached picture

Name Vendor Crosswind

Date 2025-02-25

Signature

5 - CLEARANCE CHECK

The drawing was implemented.

Name Stefano Linari

Date 2025-02-25

Signature

6- CLEARANCE APPROVAL

Name

Date 2025-02-25

Signature


QB2
Ekip Touch LSIG
ABB
SACE Emax 2
SACE E1.2N/E9
Iu 1250
MADE IN ITALY
IEC 60947-2
Cat.B
50-60 Hz
Trip Unit I/O
Module
Module
EKIP Supply Module
W3
K1
W4
K2
24Vac ONLY

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000767

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002116	1.4 Discipline	Electrical
1.2 Item	83016-CEC		LV SWBD 800/460V / LV Switchgear
1.3 Subsystem	83-10		400 V Switchboard Solar (SG-200D2)

2 - OBSERVATION

Missing cable tag on SG-200D2 side.

Name: Paolo Schintu

Date: 2024-11-22

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	2024-11-22
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-03-25

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000768

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002116	1.4 Discipline	Electrical
1.2 Item	83016-CEC	LV SWBD 800/460V / LV Switchgear	
1.3 Subsystem	83-10	400 V Switchboard Solar (SG-200D2)	

2 - OBSERVATION

Missing core identification tags on SG-200D2 side.

Name: Paolo Schintu

Date: 2024-11-22

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	2024-11-22
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Paolo Schintu

Date: 2025-02-04

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000831

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004516	1.4 Discipline	Telecom
1.2 Item	SG-200D2/B400-NET-001		LV 0,8/0,4 kV MCC Switchgear (Solar) / Network Cabinet / EMCS System
1.3 Subsystem	83-10		400 V Switchboard Solar (SG-200D2)

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

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic

Date: 2025-02-27

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001184

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000640	1.4 Discipline	Electrical
1.2 Item	83121-CEL		Lighting & Small Power DB BoP / Auxiliary SOLAR SWGR
1.3 Subsystem	83-10		400 V Switchboard Solar (SG-200D2)

2 - OBSERVATION

Missing core identification tag both side

Name: Paolo Schintu

Date: 2024-12-03

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Paolo Schintu
3.4 Activity code	MC Mechanical Completion	Date	2024-12-03
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-02-15

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001185

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000640	1.4 Discipline	Electrical
1.2 Item	83121-CEL		Lighting & Small Power DB BoP / Auxiliary SOLAR SWGR
1.3 Subsystem	83-10		400 V Switchboard Solar (SG-200D2)

2 - OBSERVATION

Missing SS cable tag

Name: Paolo Schintu

Date: 2024-12-03

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Paolo Schintu
3.4 Activity code	MC Mechanical Completion	Date	2024-12-03
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic

Date: 2025-02-25

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002322

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002324	1.4 Discipline	Electrical
1.2 Item	83015-CEC		LV SWBD 800/460V / 6.6KV HV Switchgear
1.3 Subsystem	83-10		400 V Switchboard Solar (SG-200D2)

2 - OBSERVATION

Identification tag of wire are wrong side the SG-200D2 and side the SG-100D1 COLUMS:A2 is missing.
See attached photo.

Name: Giovanni Tangianu
Date: 2025-01-03
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:
Date:
Signature:

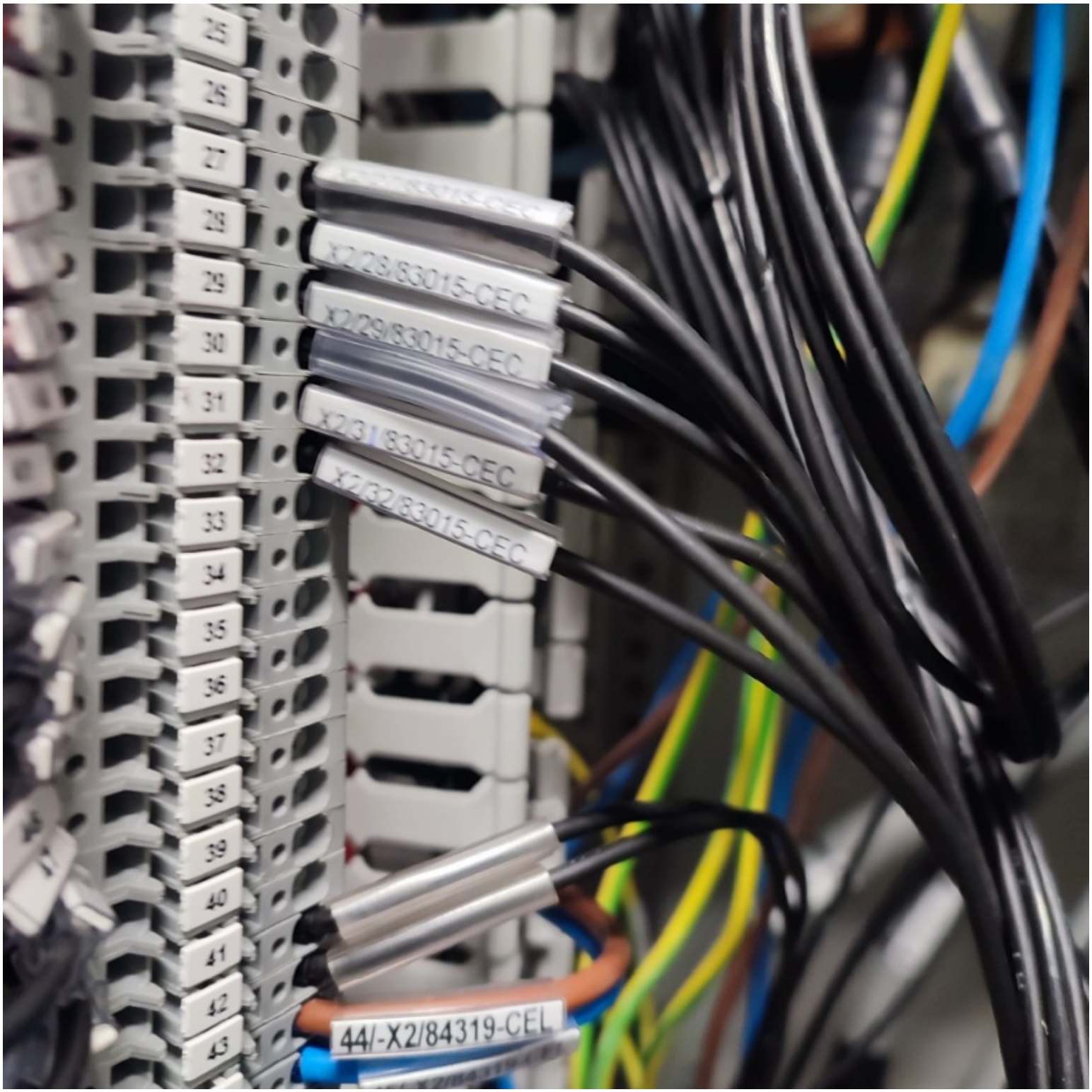
5 - CLEARANCE CHECK

Installed.

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

6- CLEARANCE APPROVAL

Name:
Date:
Signature:


X2/28/83015-CEC
X2/29/83015-CEC
X2/31/83015-CEC
X2/32/83015-CEC
44/-X2/84319-CEL


83011-CEC/3/XM/39
83012-CEC/4/XM/40
43
44
45
46
47
52

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002323

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002324	1.4 Discipline	Electrical
1.2 Item	83015-CEC		LV SWBD 800/460V / 6.6KV HV Switchgear
1.3 Subsystem	83-10		400 V Switchboard Solar (SG-200D2)

2 - OBSERVATION

MCT is not closed side the SG-200D2.. See attached photo.

Name: Giovanni Tangianu

Date: 2025-01-03

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

MCT is closed.

Name: Giovanni Tangianu

Date: 2025-02-21

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


83003-CEL-L1

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002324

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002324	1.4 Discipline	Electrical
1.2 Item	83015-CEC		LV SWBD 800/460V / 6.6KV HV Switchgear
1.3 Subsystem	83-10		400 V Switchboard Solar (SG-200D2)

2 - OBSERVATION

Cable needs to be better dressed inside the panel SG.200D2. See attached photo.

Name: Giovanni Tangianu

Date: 2025-01-03

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Giovanni Tangianu

Date: 2025-02-21

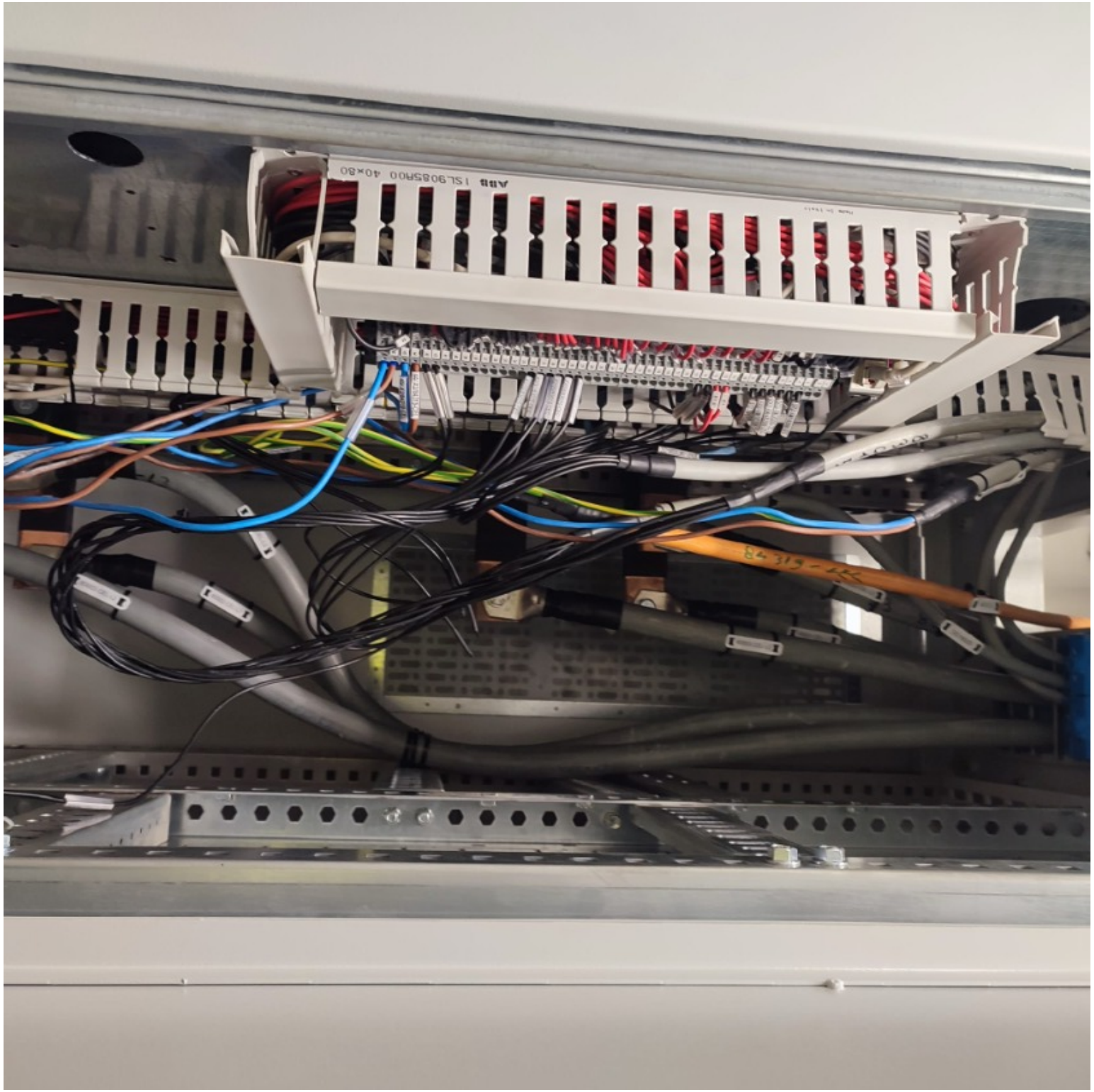
Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


ABB 1SL9085R00 40×80

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002357

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002323	1.4 Discipline	Electrical
1.2 Item	82008-CEC		6.6KV HV Switchgear / Solar Switchgear
1.3 Subsystem	83-10		400 V Switchboard Solar (SG-200D2)

2 - OBSERVATION

Missing cable tags inside and outside MCT (B-100/B-200) and inside and outside the panel SG-200D2

Name: Paolo Schintu

Date: 2025-01-07

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	2025-01-07
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Paolo Schintu

Date: 2025-02-04

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002358

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002115	1.4 Discipline	Electrical
1.2 Item	84319-CEL		AC UPS - PAS DB / LV SWBD 800/460V Auxiliary
1.3 Subsystem	83-10		400 V Switchboard Solar (SG-200D2)

2 - OBSERVATION

Missing core identification tag side DP-200F3

Name: Paolo Schintu

Date: 2025-01-07

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	2025-01-07
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Alessio Polo

Date: 2025-02-11

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002359

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002115	1.4 Discipline	Electrical
1.2 Item	84319-CEL		AC UPS - PAS DB / LV SWBD 800/460V Auxiliary
1.3 Subsystem	83-10		400 V Switchboard Solar (SG-200D2)

2 - OBSERVATION

Missing cable tags inside and outside MCT (B-300/B-200) and inside and outside the panels (DP-200F3 / SG-200D2)

Name: Paolo Schintu

Date: 2025-01-07

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	2025-01-07
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Paolo Schintu

Date: 2025-02-04

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002360

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002115	1.4 Discipline	Electrical
1.2 Item	84319-CEL		AC UPS - PAS DB / LV SWBD 800/460V Auxiliary
1.3 Subsystem	83-10		400 V Switchboard Solar (SG-200D2)

2 - OBSERVATION

Missing cable gland earthing tag inside DP-200F3

Name: Paolo Schintu

Date: 2025-01-07

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

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

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Paolo Schintu

Date: 2025-01-09

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004035

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001823	1.4 Discipline	Electrical
1.2 Item	83002-CEL-L1		Solar PV Power Cable JB / LV SWBD 800/460V
1.3 Subsystem	83-10		400 V Switchboard Solar (SG-200D2)

2 - OBSERVATION

What was installed in the field (busbar) does not report what is indicated in the project documentation (see picture)

Name: Alessio Polo
Date: 2025-02-20
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-20
3.5 Action by	ENG Engineering	Signature	

4 - PERFORMED ACTION

Name:
Date: 2025-04-15
Signature:

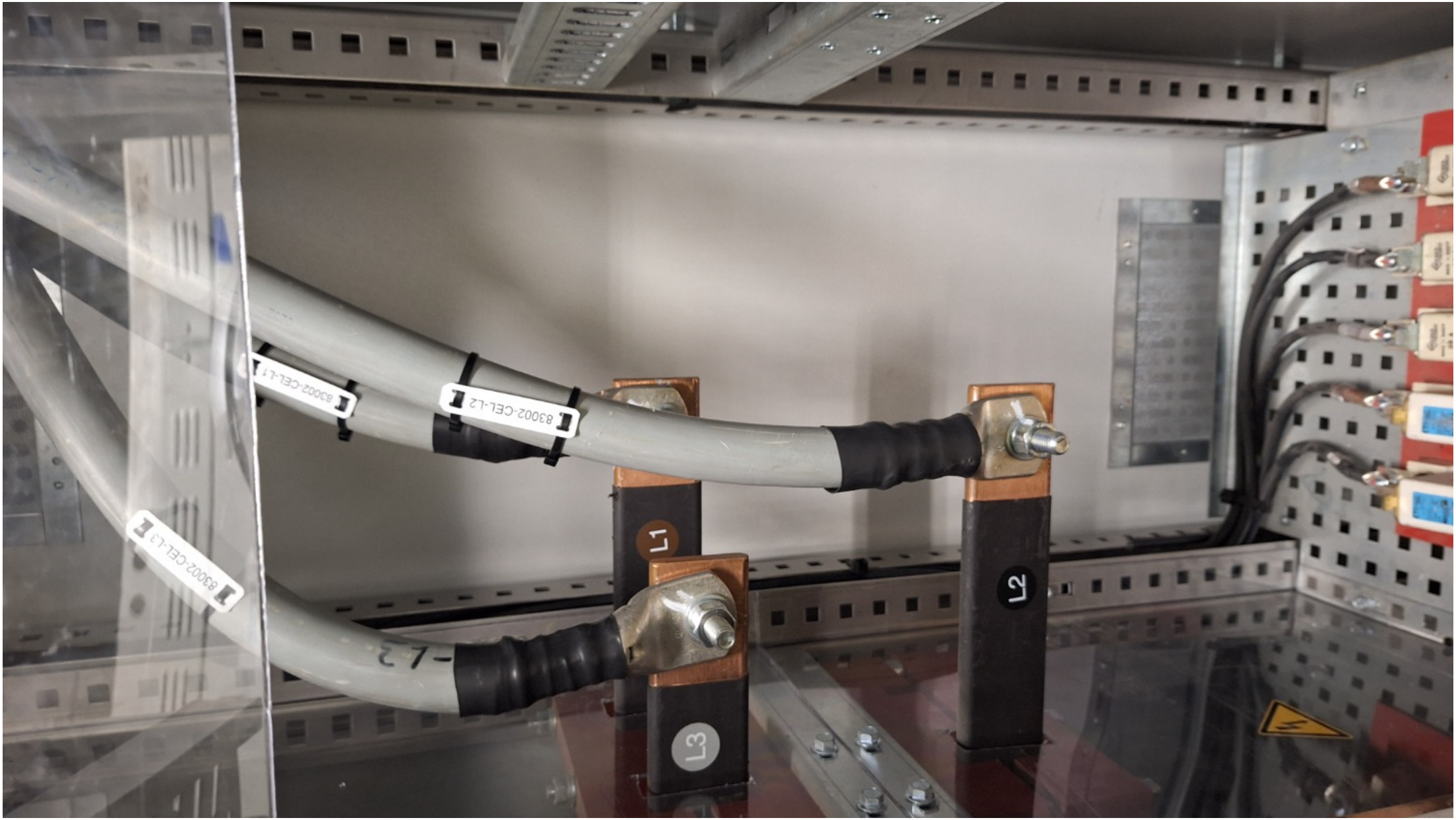
5 - CLEARANCE CHECK

The drawing was implemented.

Name: Giovanni Tangianu
Date: 2025-04-15
Signature:

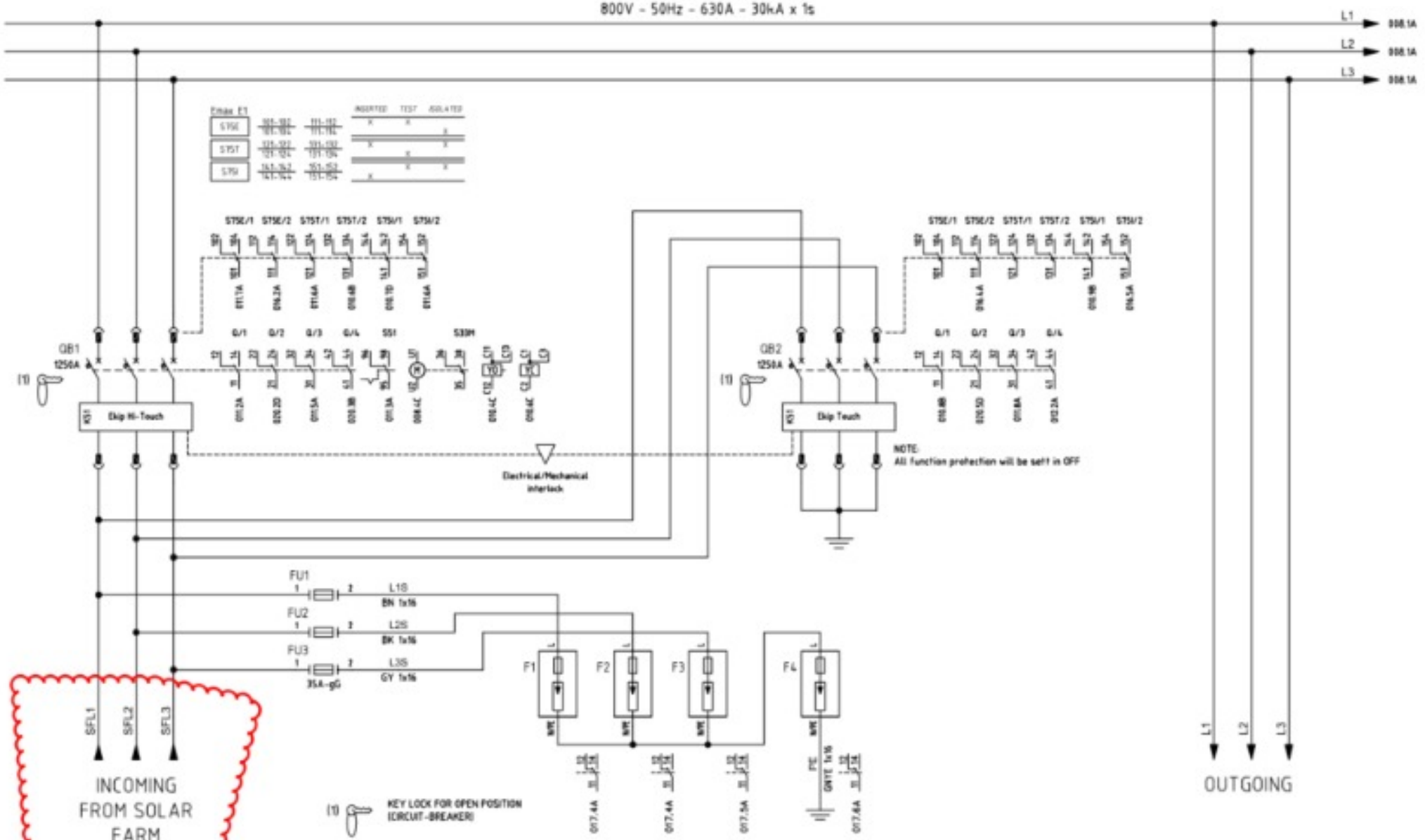
6- CLEARANCE APPROVAL

Name:
Date: 2025-04-15
Signature:


83002-CEL-L1
83002-CEL-L2
83002-CEL-L3
L1
L2
L3

POWER DISTRIBUTION

800V - 50Hz - 630A - 30kA x 1s



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
3	18/09/2024	Santinelli	Flaminio	Sigismondi	As Built (ASB)
2	10/07/2024	Santinelli	Flaminio	Sigismondi	Accepted for Construction (AFC)
1	22/05/2024	Santinelli	Flaminio	Sigismondi	Issued for review (IFR)
0	08/02/2024	Santinelli	Flaminio	Sigismondi	Issued for review (IFR)

DWG n°: 231298/SD/32

Rev.n°: PF1002669/3

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200D2"

FUNCTIONAL DIAGRAM

Functional Drawing

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00032

SHEET 007

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00032 Rev. 03

FROM

DESCRIPTION: SOLAR PV POWER CABLE JB
TAG NUMBER: JB-200E1

L1 — BK — 830E2-CEL-L1 1x300 mm² — BK — SPL1
L2 — BK — 830E2-CEL-L2 1x300 mm² — BK — SPL2
L3 — BK — 830E2-CEL-L3 1x300 mm² — BK — SPL3

TO

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

COLUMN: C1 (INCOMING)
CL01 A2/+03

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

COLUMN: C1 (OUTGOING)
CL01 A2/+01

L1 — BK — 830E3-CEL-L1 1x300 mm² — BK — IU
L2 — BK — 830E3-CEL-L2 1x300 mm² — BK — IV
L3 — BK — 830E3-CEL-L3 1x300 mm² — BK — IW

DESCRIPTION: 6.6/0.8 KV TRANSFORMER
TAG NUMBER: TR-200ED1

LV SIDE TERMINAL BOX

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

REV.	DATE	SIGNATURE
2_K	12/02/25	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
SOLAR PV POWER CABLE JB & LV SWBD 800/460V

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

SCALE : 1:X

A3

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

SHEET 018

REV. 02

F.to UNI A3: 420mmx297mm

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

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004036

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001824	1.4 Discipline	Electrical
1.2 Item	83002-CEL-L2		Solar PV Power Cable JB / LV SWBD 800/460V
1.3 Subsystem	83-10		400 V Switchboard Solar (SG-200D2)

2 - OBSERVATION

What was installed in the field (busbar) does not report what is indicated in the project documentation (see picture)

Name: Alessio Polo
Date: 2025-02-20
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-20
3.5 Action by	ENG Engineering	Signature	

4 - PERFORMED ACTION

Name:
Date: 2025-04-15
Signature:

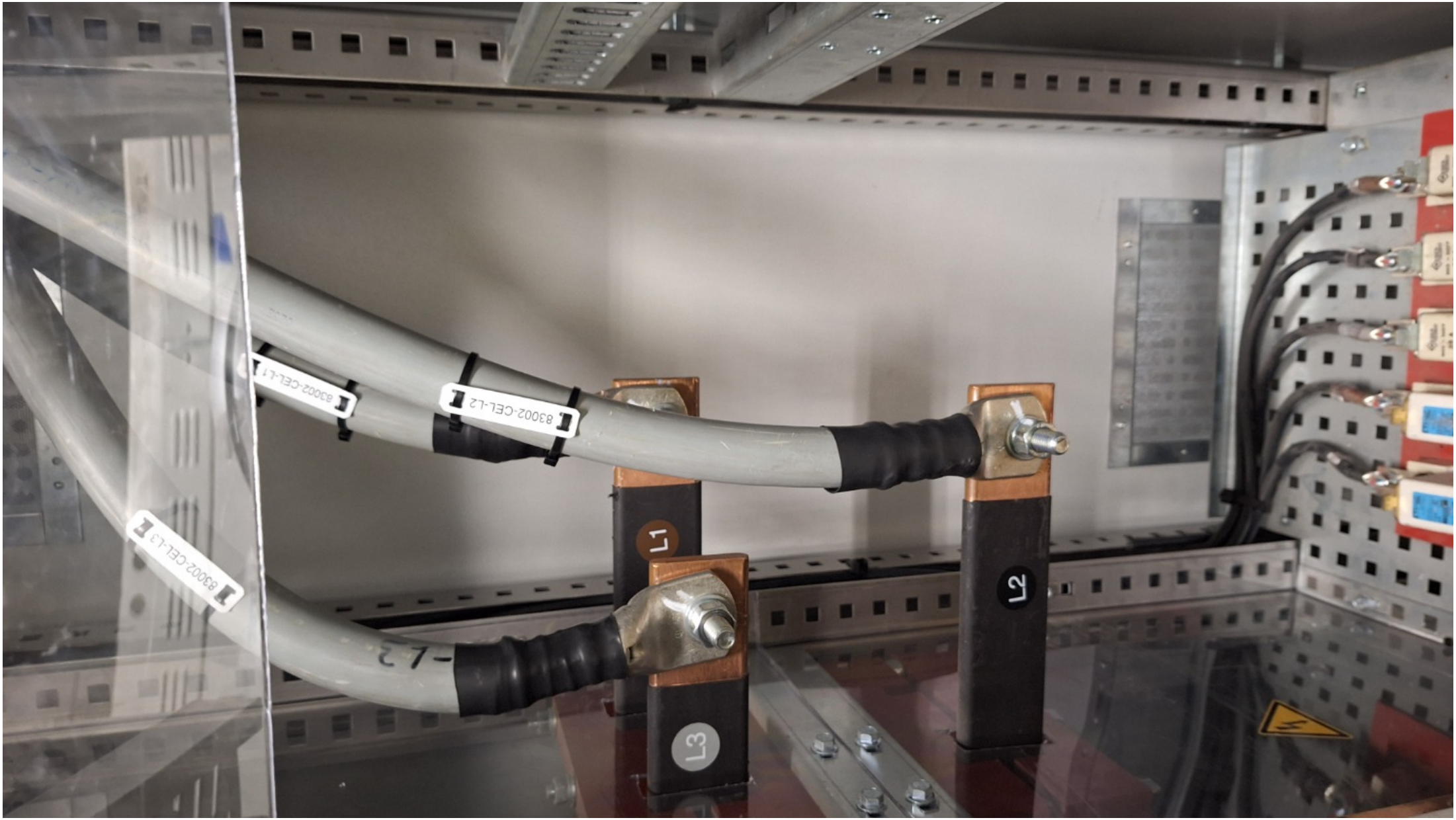
5 - CLEARANCE CHECK

The drawing was implemented.

Name: Giovanni Tangianu
Date: 2025-04-15
Signature:

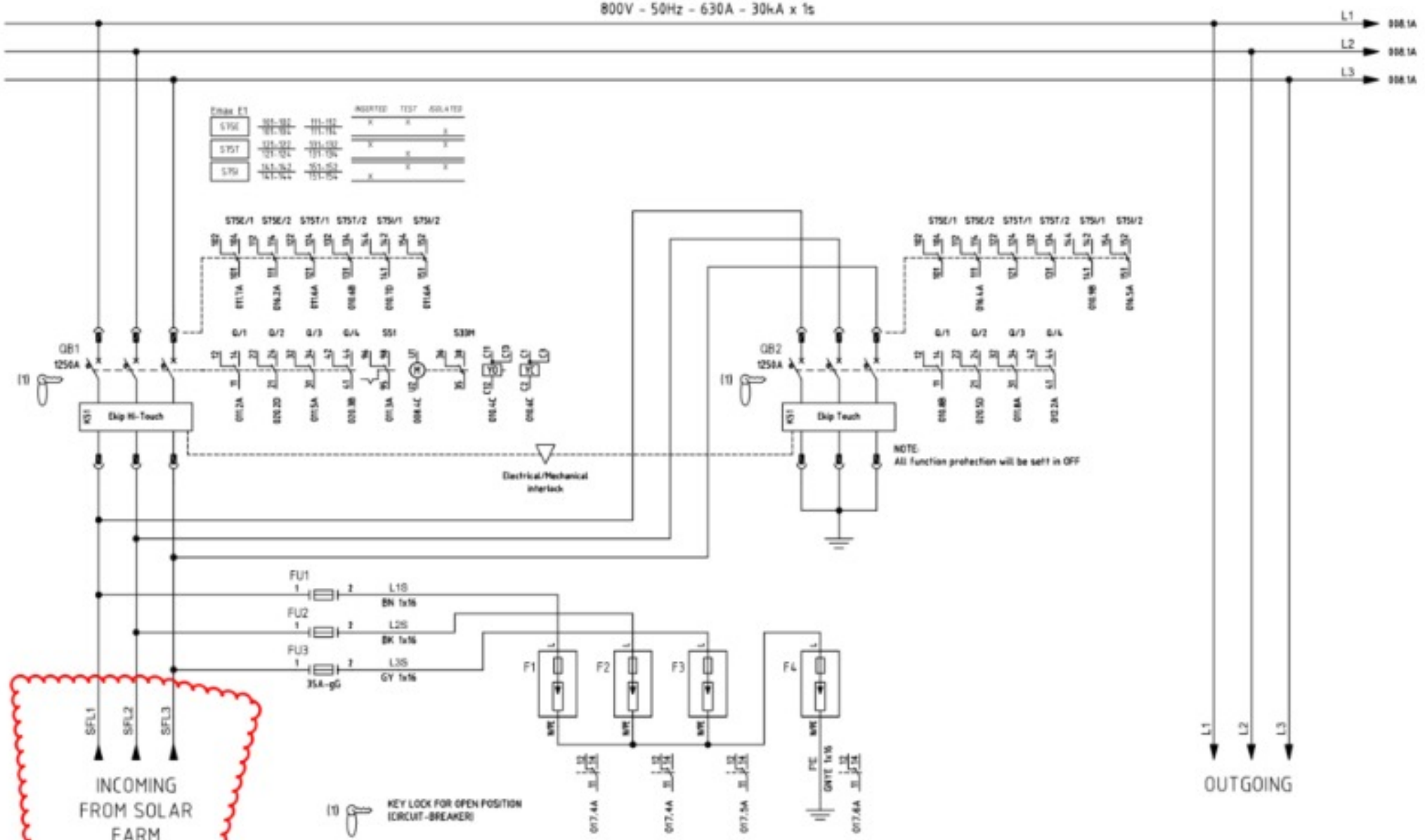
6- CLEARANCE APPROVAL

Name:
Date: 2025-04-15
Signature:


83002-CEL-L1
83002-CEL-L2
83002-CEL-L3
L1
L2
L3

POWER DISTRIBUTION

800V - 50Hz - 630A - 30kA x 1s



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
3	18/09/2024	Santinelli	Flaminio	Sigismondi	As Built (ASB)
2	10/07/2024	Santinelli	Flaminio	Sigismondi	Accepted for Construction (AFC)
1	22/05/2024	Santinelli	Flaminio	Sigismondi	Issued for review (IFR)
0	08/02/2024	Santinelli	Flaminio	Sigismondi	Issued for review (IFR)

DWG n°: 231298/SD/32

Rev.n°: PF1002669/3

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200D2"

FUNCTIONAL DIAGRAM

Functional Drawing

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00032

SHEET 007

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00032 Rev. 03

FROM

DESCRIPTION: SOLAR PV POWER CABLE JB
TAG NUMBER: JB-200E1

L1 — BK — 830E2-CEL-L1 1x300 mm² — BK — SPL1
L2 — BK — 830E2-CEL-L2 1x300 mm² — BK — SPL2
L3 — BK — 830E2-CEL-L3 1x300 mm² — BK — SPL3

TO

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

COLUMN: C1 (INCOMING)
CL01 A2/+03

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

COLUMN: C1 (OUTGOING)
CL01 A2/+01

L1 — BK — 830E3-CEL-L1 1x300 mm² — BK — IU
L2 — BK — 830E3-CEL-L2 1x300 mm² — BK — IV
L3 — BK — 830E3-CEL-L3 1x300 mm² — BK — IW

DESCRIPTION: 6.6/0.8 KV TRANSFORMER
TAG NUMBER: TR-200ED1

LV SIDE TERMINAL BOX

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

REV.	DATE	SIGNATURE
2_K	12/02/25	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
SOLAR PV POWER CABLE JB & LV SWBD 800/460V

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

SCALE : 1:X

A3

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

SHEET 018

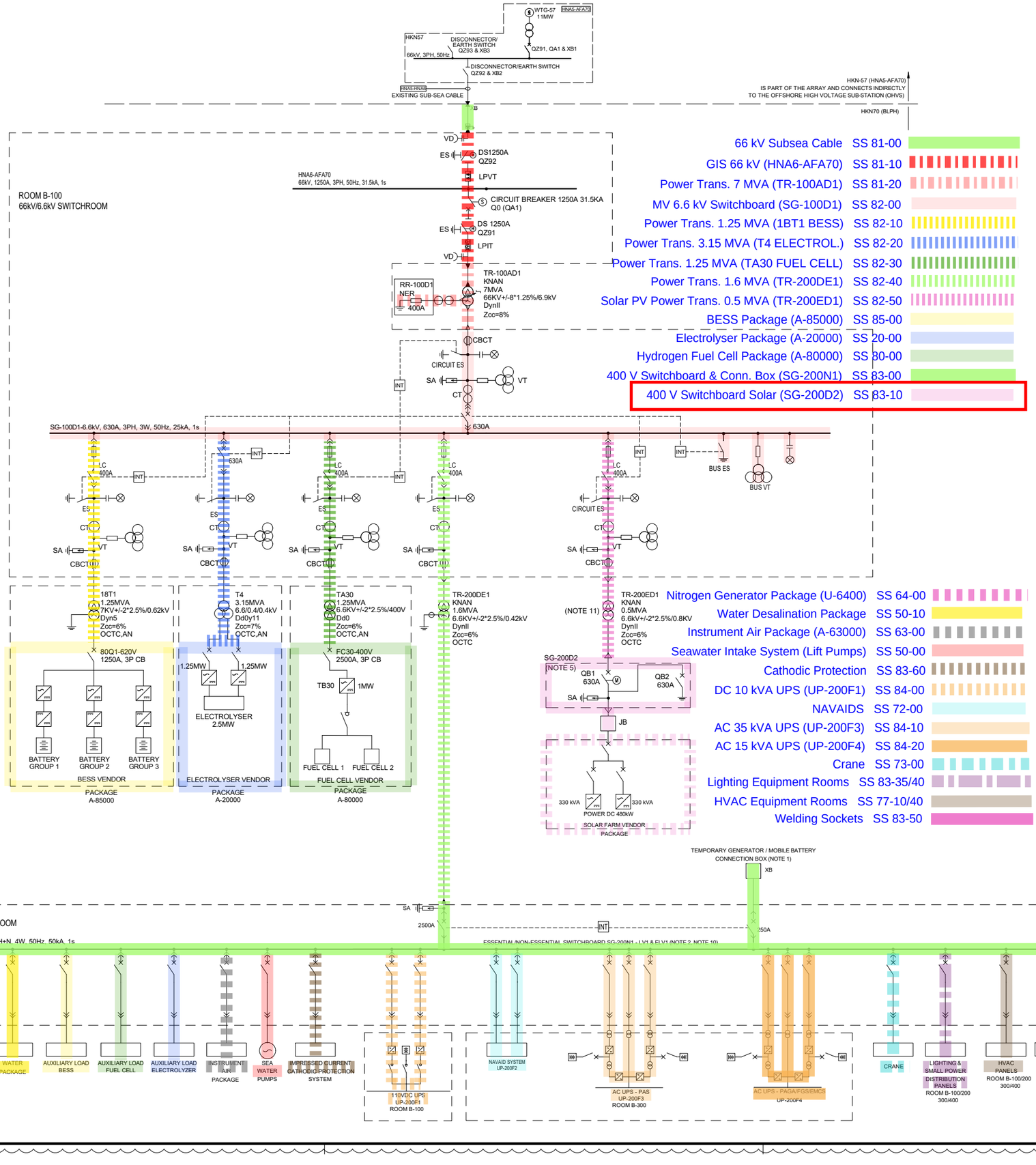
REV. 02

F.to UNI A3: 420mmx297mm

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

Section 3 SYSTEM,SUB-SYSTEM LIMIT DRAWINGS

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



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 :

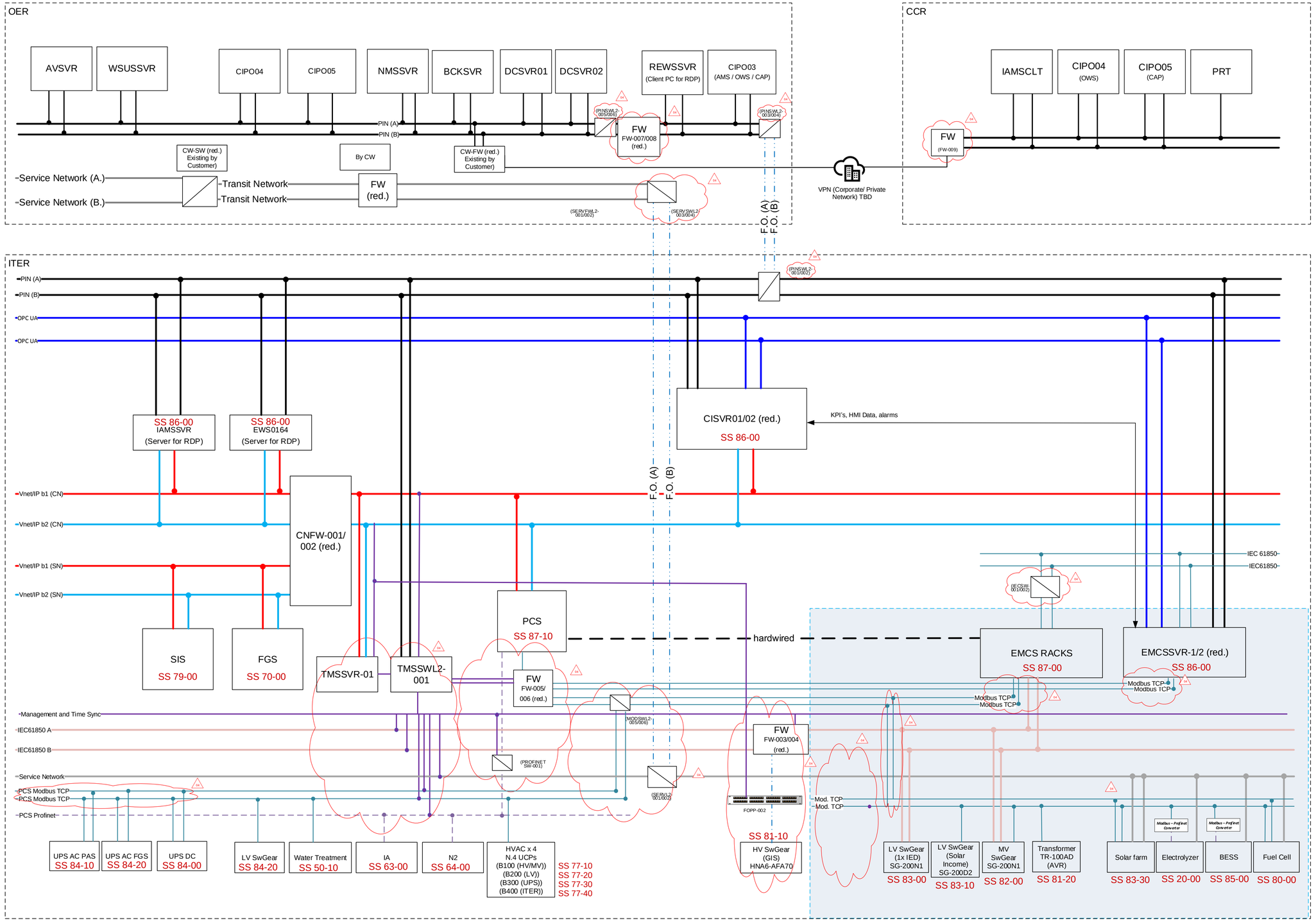
OVERALL/KEY SINGLE LINE DIAGRAM

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

CROSSWIND BLPH PROJECT - SYSTEM BLOCK DIAGRAM



AMS	: Alarm Management System	FCS	: Field Control Station
AV	: Anti-virus	FGS	: Fire & Gas System
BCK	: Backup Server	FO	: Fiber Optic
BESS	: Battery Energy Storage System	FOPP	: Fiber Optic Patch Panel (by others)
BLPH	: Base Load Power Hub	FTA	: Field Termination Assembly
CAP	: Critical Alarm Panel	HIST	: Historian
CCR	: Central Control Room	HKN	: Hollandse Kust Noord
CI	: Collaborative Infomation	IAMS	: Instrument Asset Management System
CN	: Control Network	ITER	: Instrument & Telecom Equipment Room
DC	: Domain Controller	LHVS	: Land High Voltage Station
DMZ	: De-militarized Zone	MCC	: Motor Control Center
ESB	: IO communication bus	MODB	: Modbus
EWS	: Engineering Work Station	MQTT	: Message Queuing Telemetry Transport
FC	: Field Communication (Vnet/IP)	NMS	: Network Management System
OER	: Onshore Equipment Room		
OHVS	: Offshore High Voltage Station		
OWS	: Operator Work Station		
PIN	: Plant Information Network		
PKG	: Package		
RDP	: Remote Desktop Protocol		
SCS	: Safety Control Station		
SIS	: Safety Instrumented System		
SN	: Safety Network		
SW	: Switch		
UCP	: Unit Control Panel (3rd party systems)		
VM	: Virtual Machine		
Vnet/IP	: Yokogawa's Control network		
WSUS	: Windows Security Update Services		

LEGEND:

- PIN (Plant Information Network)
- Vnet/IP BUS 1 PCS
- Vnet/IP BUS 2 PCS
- Vnet/IP BUS 1 SIS/FGS
- Vnet/IP BUS 2 SIS/FGS
- ESB bus connection
- IEC61850 connection
- OPC UA connection
- Service Network connection
- Modbus TCP connection
- Profinet (non redundant)
- Fiber Optic Patch Cords
- Fiber Optic connection (core by Crosswind)
- Fiber Optic backbone (by Crosswind)
- System Cable connection
- Management and Time sync.

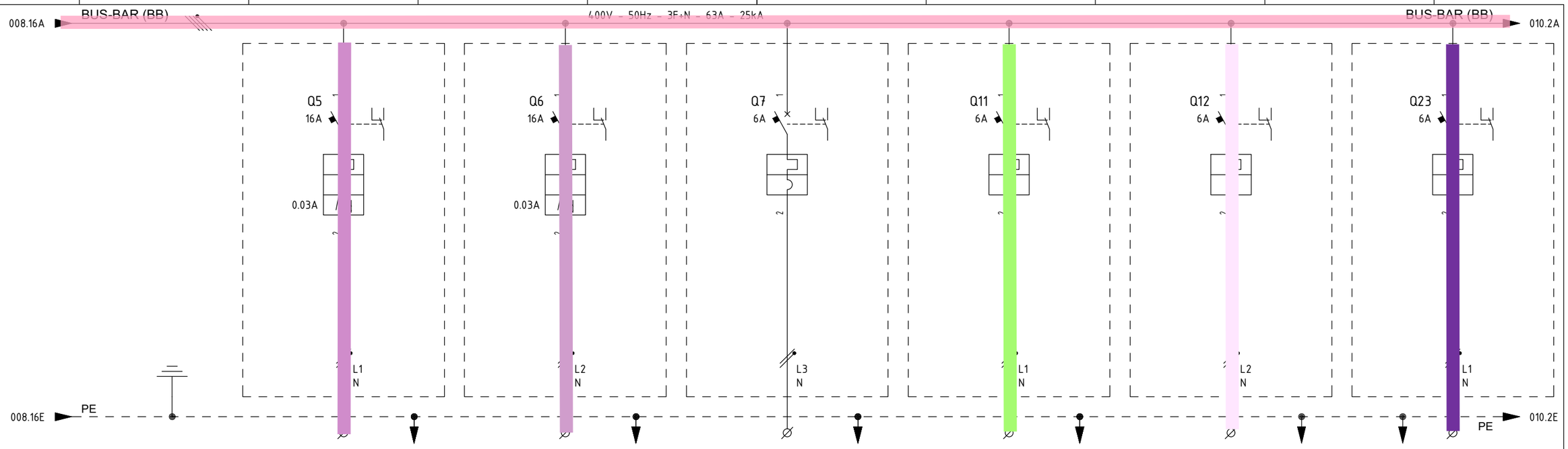
Note 1 : Exact assignment of Servers per cabinet to be defined in cabinet General Arrangement Drawing.
Note 2 : For IP Addresses refer to 1724000594-IN-RE-00043 Cyber Security Settings
Note 3 : All Network Components will be installed in Network Cabinet.
Note 4 : Supply of Console Desk in CCR is in Customer Scope.
Note 5 : All Network Switches and Firewall is configured in VLAN.
Note 6 : Intermediate FO Connection between HNA5 and OER Intentionally not shown.

Zone-1	: PCS Control Zone	Zone-2	: Safety Control Zone
Zone-3	: PCS Zone	Zone-4	: Application Server Facility Zone
Zone-5	: Security Management Zone-1	Zone-6	: Security Management Zone-2
Zone-7	: Demilitirized Zone	Zone-8	: Croswind Zone
Zone-9	: Service Network Zone	Zone-10	: Application Server Facility Zone-OD
Zone-11	: Third Party System Zone		: Out of Scope

REV	DWG BY	CHK BY	APP BY	DATE
04	SKR	MP/AB	SC	12-Feb-25
03	SKR	MP/AB	SC	26-Aug-24
02	SKR	MP/AB	SC	28-Jun-24
01	SKR	MP/AB	SC	24-May-24
00	SKR	AB	SC	23-Apr-24

Doc No : 1724000594-IN-DD-00015
Doc Name : System Architecture

ROSETTI MARINO
HOLLANDSE KUST NOORD WIND PART Project
CROSSWIND
YOKOGAWA



ITEM			1	ESO-200N1-05-L1-01		ESO-200N1-06-L2-01		-		ESH-200N1-11-L1-01		ESH-200N1-12-L2-01		B400-SIS-001	
UTILITY			2	SMALL POWER SOCKET (UPPER DECK)		SMALL POWER SOCKET (LOWER DECK)		SPARE		SPACE HEATERS JB - WIND FARM SUBSEA CABLE		SPACE HEATERS JB - SOLAR SUBSEA CABLE		SIS-CONTROLLER AND I/O CABINET - AUXILIARY	
CUBICLE			3	+03		+03		+03		+03		+03		+03	
RATED POWER | RATED CURRENT			4/5	3 KW	14.49 A	3 KW	14.49 A	0.726 KW	3.95 A	0.25 KW	1.14 A	0.25 KW	1.14 A	0.5 KW	2.72 A
TYPICAL FUNCTIONAL			6	-		-		-		-		-		-	
CIRCUIT BREAKER (ABB)	TYPE		7	S302P-C16 + DDA202 AC-25/0.03		S302P-C16 + DDA202 AC-25/0.03		S302P-C6		S302P-C6		S302P-C6		S302P-C6	
	VERSION		8	2P / MINIATURE		2P / MINIATURE		2P / MINIATURE		2P / MINIATURE		2P / MINIATURE		2P / MINIATURE	
	TRIP UNITS		9	In=16A - Curve C / Id=0.03A Class AC		In=16A - Curve C / Id=0.03A Class AC		In=6A - Curve C		In=6A - 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	SUBSYSTEM 83-55		SUBSYSTEM 83-55		-		SUBSYSTEM 81-00		SUBSYSTEM 83-10		SUBSYSTEM 79-00	
		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 / 10		SCREW / 10		SCREW / 4		SCREW / 4		SCREW / 4		SCREW / 4	
POWER CONDUCTOR		mm²	31	3G10		3G10		3G2.5		3G2.5		3G2.5		3G2.5	

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)

IMESA ELECTRICAL ENGINEERING

DWG n° : 231298/SD/13

Item n° : PF1002888/101

CROSSWIND

ROSETTI MARINO

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

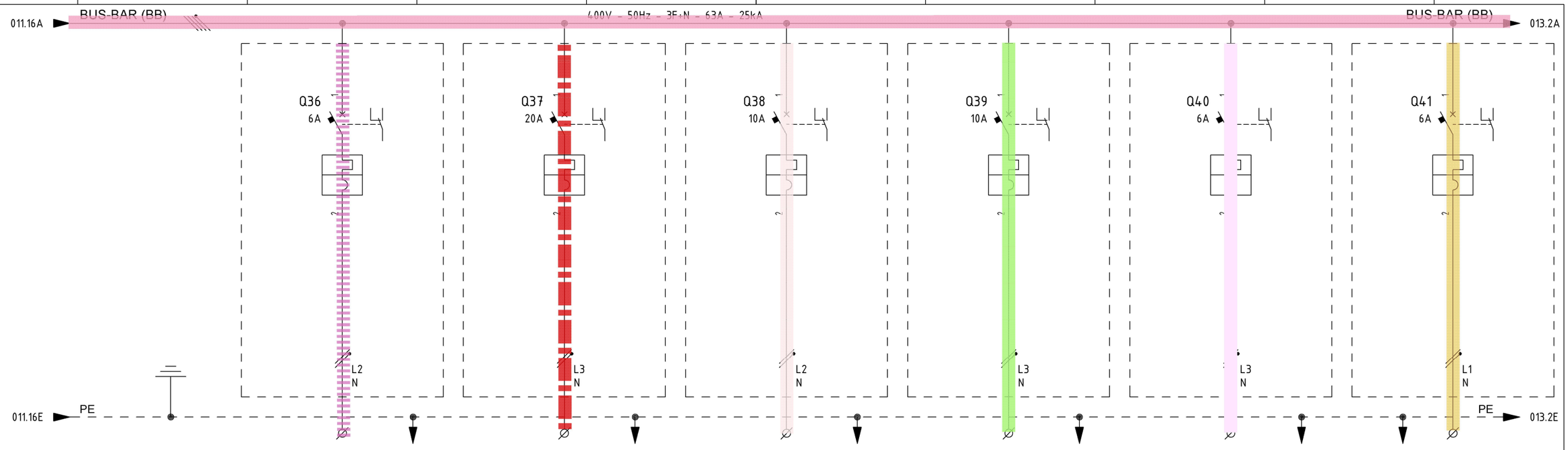
DRAWING NO. 1723002197-EL-DG-00013

SHEET 009

REV. 03

F.to UNI A3: 420mmx297mm

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



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	SUBSYSTEM 82-50	SUBSYSTEM 81-10	SUBSYSTEM 82-00	SUBSYSTEM 83-00	SUBSYSTEM 83-10	SUBSYSTEM 84-10
		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

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

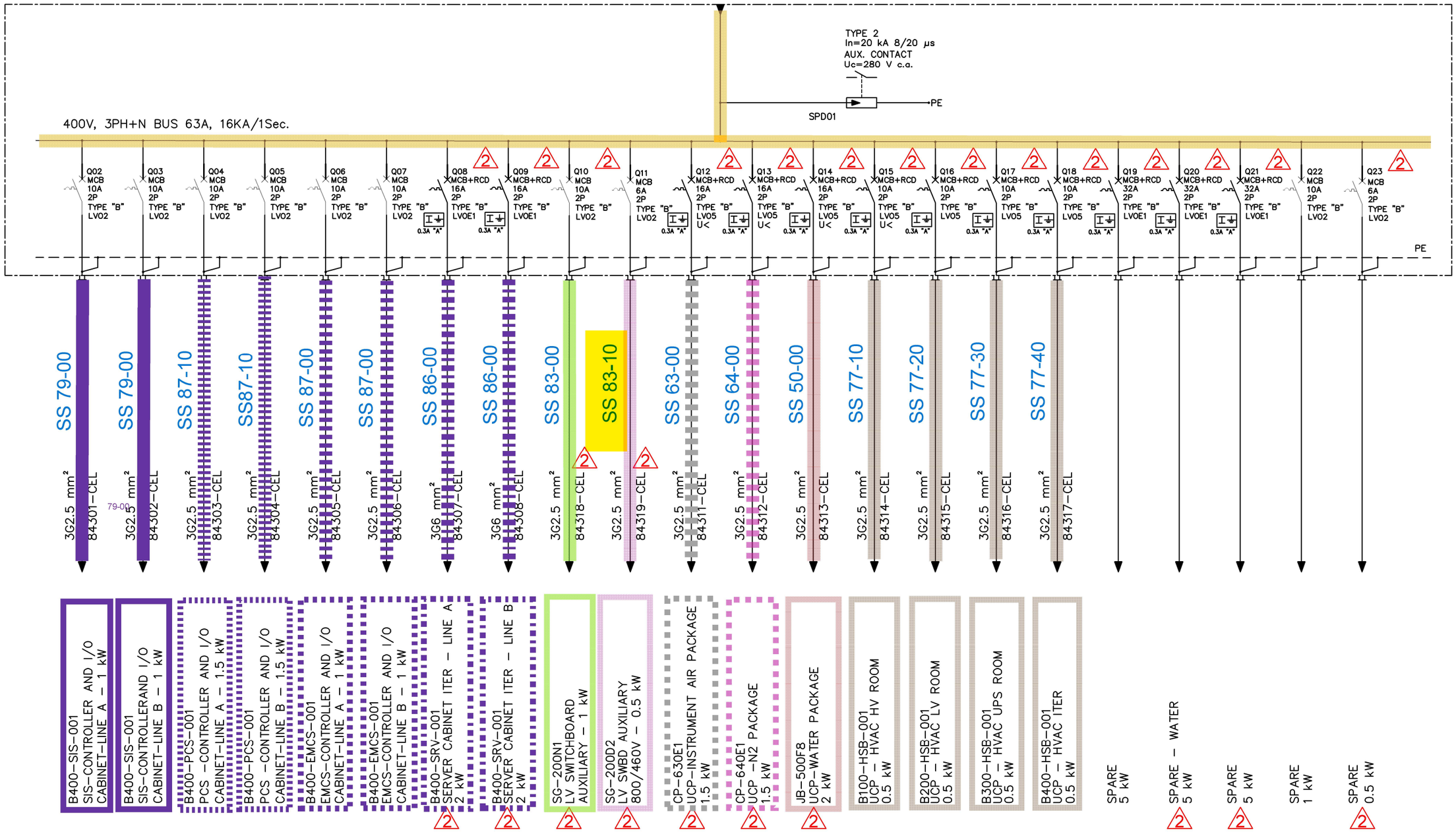
REV. 03

F.to UNI A3: 420mmx297mm

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

AC UPS – PAS SINGLE LINE DIAGRAM(UP–200F3) DISTRIBUTION BOARD DETAILS

AC UPS DISTRIBUTION BOARD–PAS
DP–200F3



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	27/09/24	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	12/04/24	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	14/02/24	SAM	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL SINGLE LINE DIAGRAMS AC UPS SYSTEMS
AC UPS – PAS DISTRIBUTION BOARD SLD (UP–200F3)

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

SCALE : 1:X

A3

DRAWING NO. 123A90–DDL–EL–DG–20160

SHEET 005

REV. 02

File Name : 123A90–DDL–EL–DG–20160 Rev. 02

F.to UNI A3: 420mmx297mm

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: 83-10 & process: MC & discipline : E

Electrical	83-10 400 V Switchboard Solar (SG-200D2)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
82008-CEC	6.6KV HV Switchgear / Solar Switchgear	ONSHORE	C10002323	CPX10	100	2025-01-07	RFC 1
83002-CEL-L1	Solar PV Power Cable JB / LV SWBD 800/460V	ONSHORE	C10001823	CPX09	100	2025-02-20	RFC 2
		OFFSHORE	C10004686	CPX09	0	-	-
83002-CEL-L2	Solar PV Power Cable JB / LV SWBD 800/460V	ONSHORE	C10001824	CPX09	100	2025-02-20	RFC 2
		OFFSHORE	C10004687	CPX09	0	-	-
83002-CEL-L3	Solar PV Power Cable JB / LV SWBD 800/460V	ONSHORE	C10001825	CPX09	100	2025-02-20	RFC 2
		OFFSHORE	C10004688	CPX09	0	-	-
83015-CEC	LV SWBD 800/460V / 6.6KV HV Switchgear	ONSHORE	C10002324	CPX10	100	2025-01-03	RFC 1
83016-CEC	LV SWBD 800/460V / LV Switchgear	ONSHORE	C10002116	CPX10	100	2024-11-22	RFC 1
83121-CEL	Lighting & Small Power DB BoP / Auxiliary SOLAR SWGR	ONSHORE	C10000640	CPX09	100	2024-12-03	RFC 1
84319-CEL	AC UPS - PAS DB / LV SWBD 800/460V Auxiliary	ONSHORE	C10002115	CPX09	100	2025-01-07	RFC 1
JB-200E1	Solar PV Power Cable JB	ONSHORE	C10001311	CPX31	100	2025-04-22	-
SG-200D2	LV 0,4 kV MCC Switchgear (Solar)	ONSHORE	C10000865	CPX05	100	2024-09-30	RFC 1

ITEM	Tag	83121-CEL	: Lighting & Small Power DB BoP / Auxiliary SOLAR SWGR			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-10	: 400 V Switchboard Solar (SG-200D2)			Module	LD_B-200
TASK	code	C10000640	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 mm2 | Color: GREY

From: DP-200N1 | To: SG-200D2

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	PL
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	83121-CEL	: Lighting & Small Power DB BoP / Auxiliary SOLAR SWGR			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-10	: 400 V Switchboard Solar (SG-200D2)			Module	LD_B-200
TASK	code	C10000640		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

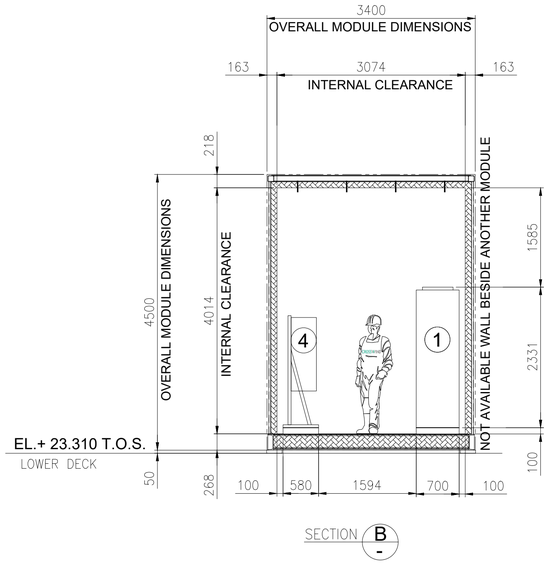
CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0,6	
6		PH 2	0,6	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		0,6	
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	>999	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

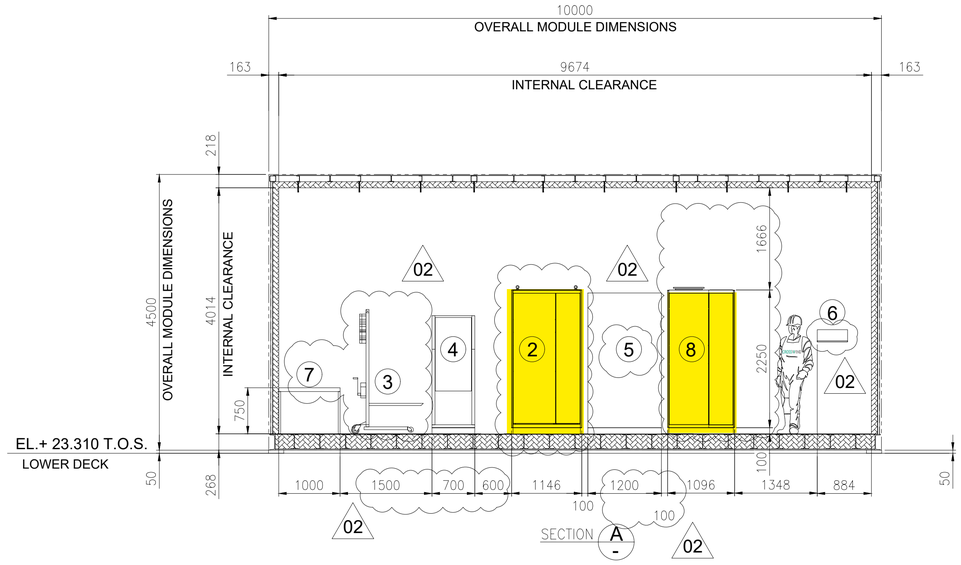
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207	TYPE / SERIAL N° :	MULTIMETER: FLUKE 175 SERIAL:AW1/018(17140769)
Calibration certificate N° and date:	N°7722/24 _ 10/07/2024	Calibration certificate N° and date:	N°7715/24 _ 10/07/2024

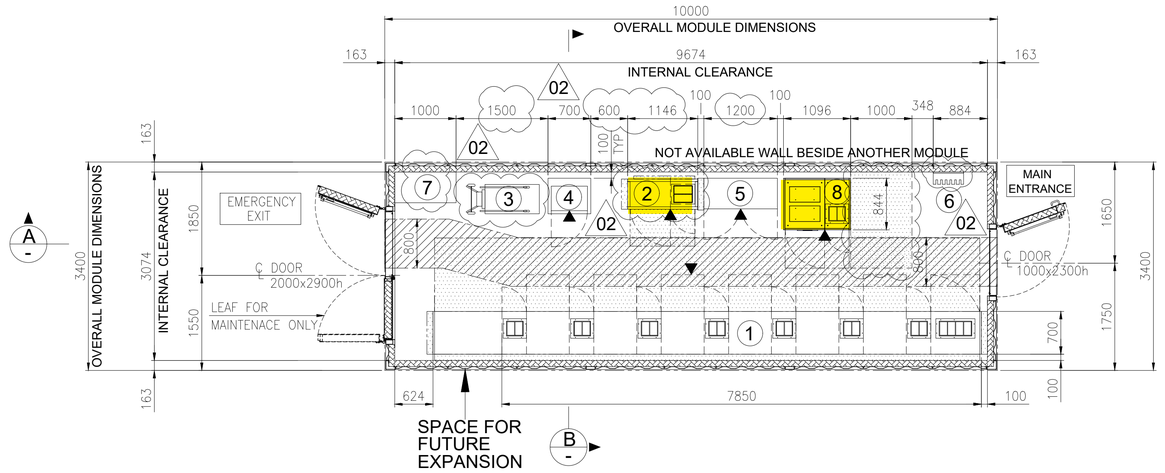
Comments: Nota 4: refer to PL C30000679

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Paolo Schintu	
Date	2024-11-27	2024-12-03	
Signature	PROVERLIS Digitaly signed by Francesco Zucca 2024-11-27T15:30:28.751Z	PROVERLIS Digitaly signed by Paolo Schintu 2024-12-03T15:05:50.538Z	

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







A -

EQUIPMENT LAYOUT

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

BOTTOM PLAN

1

EQUIPMENT LIST

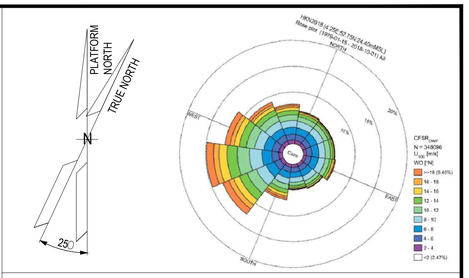
REF.	TAG No.	DESCRIPTION	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)	NOTE
1	SG-200N1	400V SWITCHGEAR	7850	700	2331	
2	DP-200N1	DISTRIBUTION BOARD FOR LIGHTING AND SMALL POWER B.O.P.	1146	520	2250	
3	-	SERVICE TROLLEY FOR 400V SWITCHGEAR	1034	490	2030	
4	CN-200N1	ICCP PANEL	700	580	1830	
5	B200-HSB-001	DISTRIBUTION & 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	

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-EL-DL-20105**

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

ROSETTI MARINO SpA



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

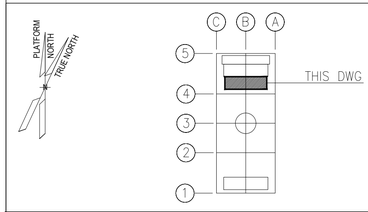
_____ FRONT OF EQUIPMENT

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

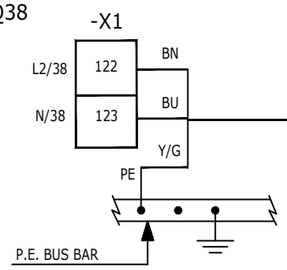
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN FMO	CHECKED LMA/AMA	APPROVED LMA/MDO	DATE 27/05/2024
A1	DRAWING NO. 123A90-DDL-EL-DL-20105	SHEET 001	REV. 02

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

FROM	TO

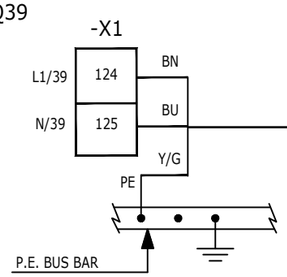
DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1

CUBICLE/CB: +03/Q38



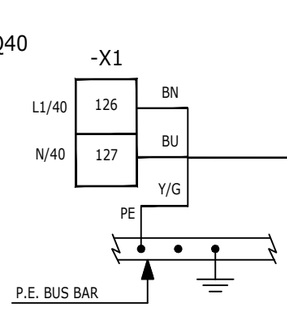
83119-CEL
3G2.5 mm²

CUBICLE/CB: +03/Q39



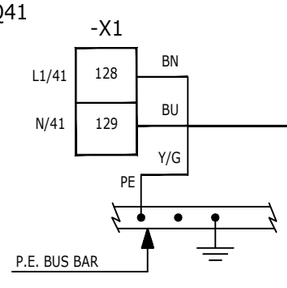
83120-CEL
3G2.5 mm²

CUBICLE/CB: +03/Q40



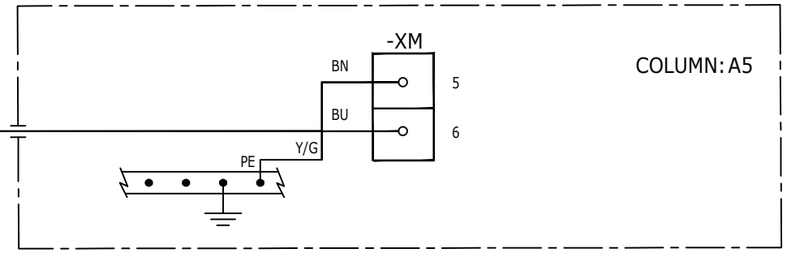
83121-CEL
3G2.5 mm²

CUBICLE/CB: +03/Q41

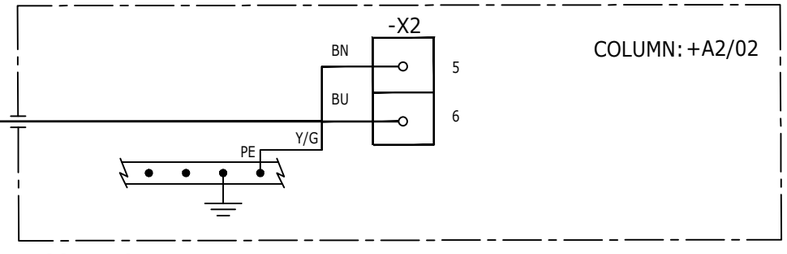


83122-CEL
3G2.5 mm²

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

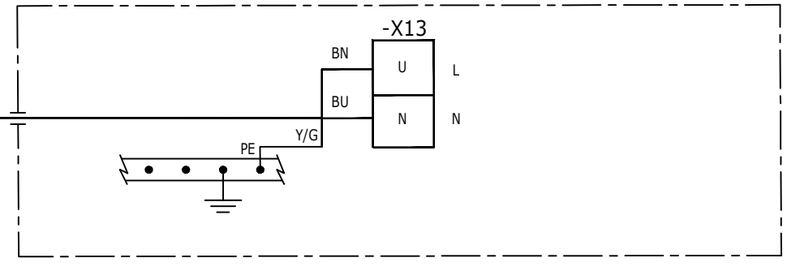


DESCRIPTION: AUXILIARY LV
TAG NUMBER: SG-200N1



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-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
LIGHTING & SMALL POWER DB BOP

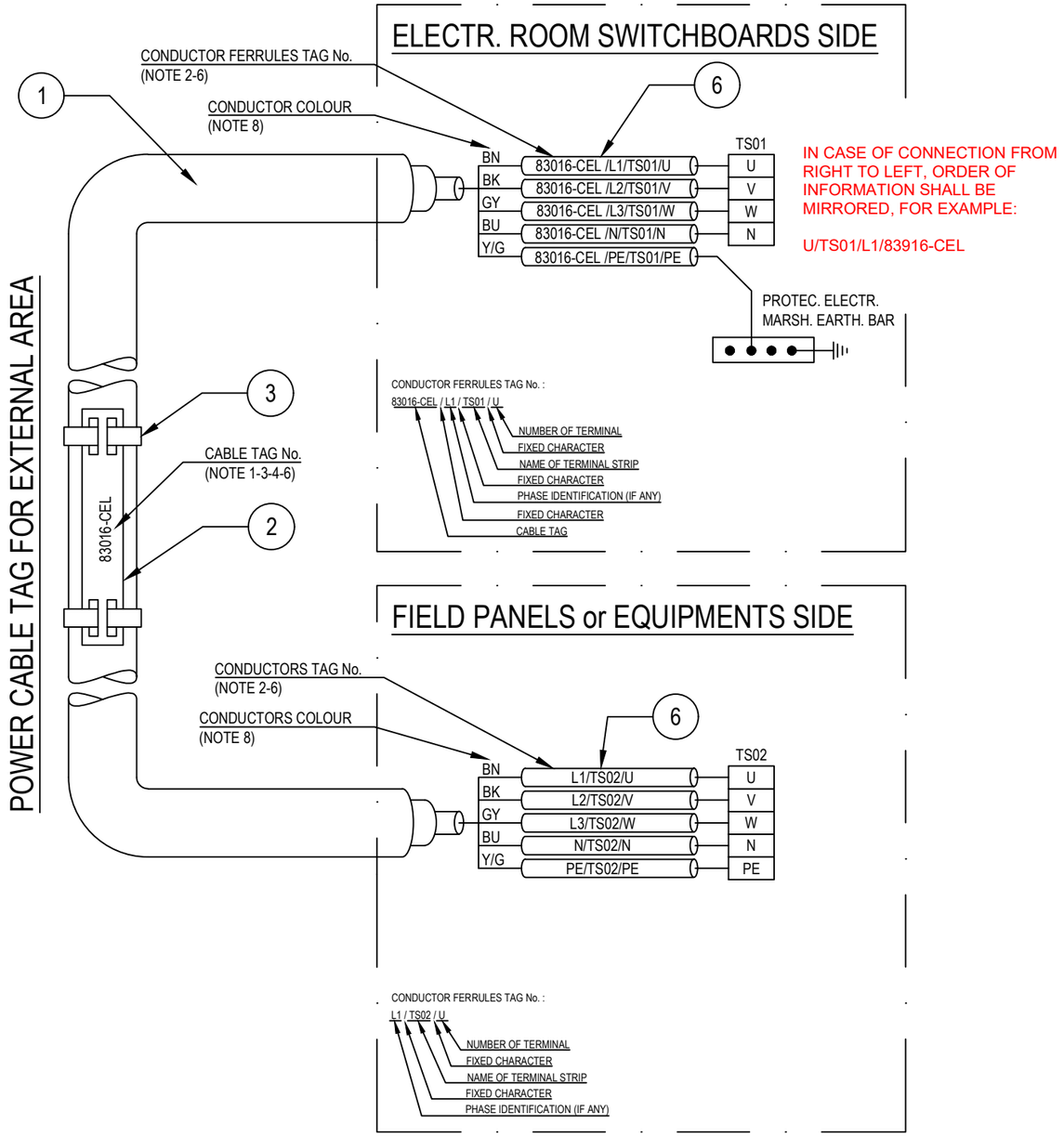
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 056 | REV. 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.

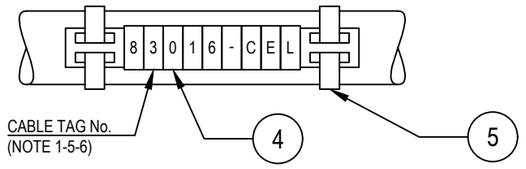
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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

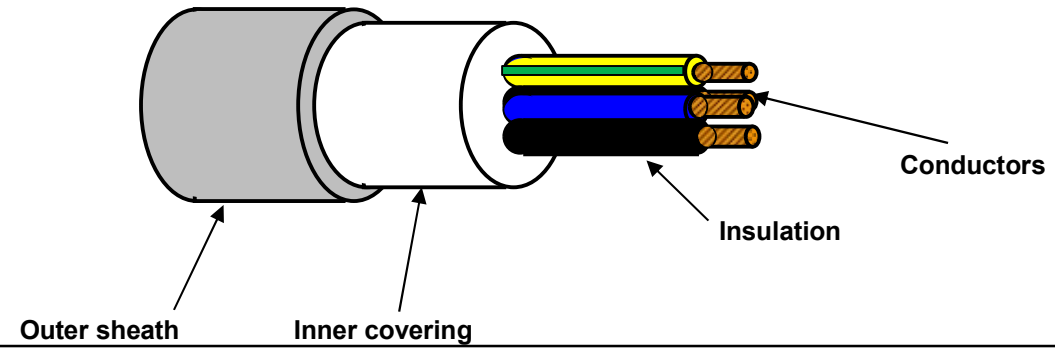
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Fun	Area	From Tag	From Main Function	From Area	From Tag Sectio	To Tag	To Main Function	To Area	To Tag Sectio	Material ID	Material Desc.	Gland Sta	From Gl	From Entr	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
83121-CEL	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						DP-200N1	LV 0,4 / 0,23 kV Distribution Switchgear	Lower Deck (B-200)	03/Q40	SG-200D2	LV 0,8/0,4 kV MCC Switchgear (Solar)	Lower Deck (B-200)	Auxiliary CL01/03	ELECV06-3G2,5	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 3G2,5mm² - Grey	M20	n.a.			n.a.				L-450-101-LVT-030 / L-600-101-LVT-020 / L-300-101-LVT-032

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.

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	SG-200D2	: LV 0,4 kV MCC Switchgear (Solar)		Dwg	123A90-DDL-EL-DS-20051	
	S/Sys	83-10	: 400 V Switchboard Solar (SG-200D2)		Module	LD_B-200	
TASK	code	C10000865	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)	OK
3	Check conformity against latest data sheet and project specification.	OK
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.	OK
7	Check if construction rating plate data is correct.	OK
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.	Note
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).	OK
15	Check interconnection wiring against latest drawings.	Note
16	If required produce Red Line Mark Up for "AS BUILT"	

ITEM	Tag	SG-200D2	: LV 0,4 kV MCC Switchgear (Solar)	Dwg	123A90-DDL-EL-DS-20051		
	S/Sys	83-10	: 400 V Switchboard Solar (SG-200D2)	Module	LD_B-200		
TASK	code	C10000865	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/070/2024	Voltage	800
Current	630	IP Rating	30	Datasheet	123A90-DDL-EL-DS-20051
RATED SC CURRENT (RMS):	63	**kA:1s**		Specification	1723002197-EL-DA-00008

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	Signalling wiring	Space heater circuit
Utility Insulation Resistance	Test Voltage	Min Required	MΩ			

See Attached

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

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

Note: for VT tests neutral to be disconnected from Secondary

Comments: Note:(10); Check on connection will be done during cable ispection. Please refer to the relevant ITR.
Note: (15) ; See punch list raised during FAT.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (Rosetti Marino)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-09-26	2024-09-30	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-09-26T13:03:32.029Z	Firma Digitale Sicura Giovanni Tangianu 2024-09-30T14:43:32+0200	

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°:	**347**	**Data / Date:**	**17/09/2024**
Commessa N° / Workorder N°:	**231298/SD**		
Matricola N° / Serial N°:	**231298/SD/070**		
Ordine N° / Order N°:	**1723002197 item: 70**		
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	
LINARI STEFANO	ROSETTI MARINO SPA	ROSETTI MARINO SpA Stefano Linari Quality Control Dept.
MARANGONI MASSIMILIANO	O.b.o. CROSSWIND	

RAPPORTO DI PROVA
TEST REPORT

N° Certificato/ Certificate N°:	347	Data / Date:	17/09/2024

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
Tensione Nominale di Isolamento (Ui): ***Rated Insulation Voltage (Ui)***	**1 kV**	

CARATTERISTICHE ELETTRICHE/ELECTRICAL INFORMATION:

Ue= 0,8 kV; Un= 0,8 kV; F= 50 Hz; In= 63A @45° C; Ik= 30kA /1s

DESCRIZIONE/DESCRIPTION:

LV SWITCHBOARD 800 V - BASE LOAD POWER HUB (BLPH)

PROJECT: CROSSWIND HOLLANDSE KUST NOORD WIND PARK

TAG: "SG-200D2"

DISEGNI/DRAWINGS:

DOCUMENT ID	TITLE
1723002197-EL-DA-00008	SG-200D2 GENERAL ARRANGEMENTS DWG AND FOUNDATION LOAD CALCULATION INCLUDING COG
1723002197-EL-DG-00012	SG-200D2 ELECTRICAL SINGLE LINE DIAGRAM
1723002197-EL-DG-00032	SG-200D2 LV SWG FUNCTIONAL DIAGRAMS

RAPPORTO DI PROVA
TEST REPORT

ISO 9001 ISO 14001 ISO 45001

N° Certificato/ Certificate N°:	347	Data / Date:	17/09/2024

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 = / MΩ**
CIRCUITI AUSILIARI
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 **2,2** kV
MAIN CIRCUITS *Point 4.3 FAT proc.*
Leakage curr. L1= <1 mA L2= <1 mA L3= <1 mA **N= / mA**

CIRCUITI AUSILIARI ; 230Vac= 1,5 kV
AUXILIARY CIRCUITS *Point 4.4 FAT proc.*
Leakage current: 230Vac= 1 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.*
N.A. not applicable

■ ***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: 0,003 Ω)
Point 4.5 FAT proc.

RAPPORTO DI PROVA
TEST REPORT

N° Certificato/ Certificate N°:	347	Data / Date:	17/09/2024

The Equipment is :

Compliant ☒ **/ Non Compliant** ☐

Referring to the FAT Procedure and relevant documents

Apparecchiature utilizzate/ Equipment used: ***Scadenza Taratura /Expiration date***

SP 214 MULTITEST FOR DIELECTRIC TEST	07/2024
SP 196 MULTIMETER FLUKE	03/2025
PP 143 DIGITAL THICKNESS GAUGE	12/2024

Note/ *Notes:*

Has been performed communication test with breaker.
Communication test with PLC will be performed at site.

Missing Ethernet Switch RSPS25 (see punch list)
EMAX E1.2N 1250A broken - to be replace (see punch list)

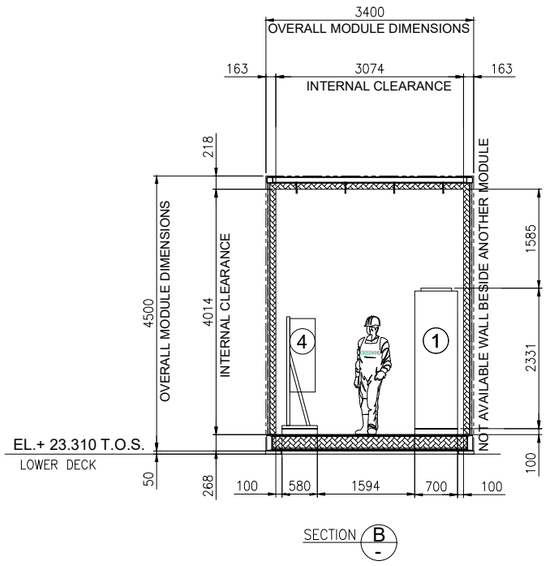
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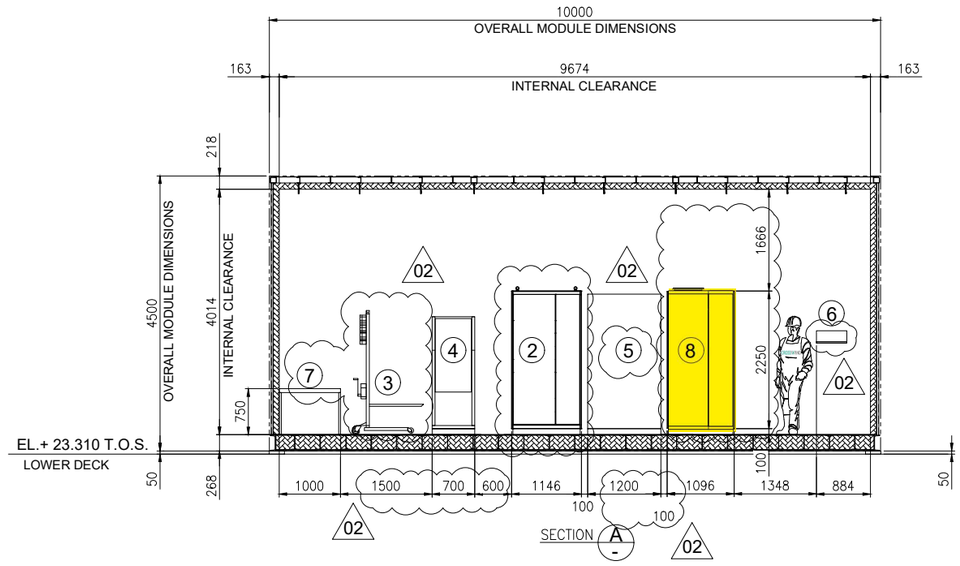
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TESTING OFFICE

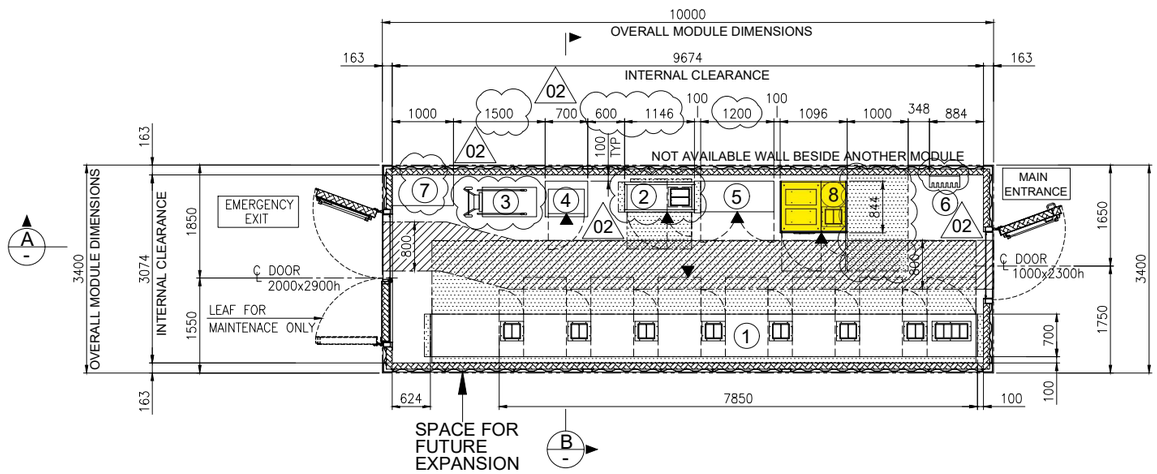
ROSETTI MARINO SPA
ROSETTI MARINO SpA
Stefano Linari
Quality Control Dept.

O.b.o. CROSSWIND
M. MARRONI
17.09.24

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





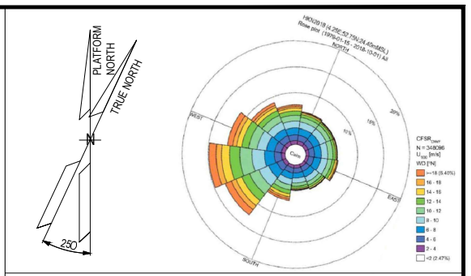


EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

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

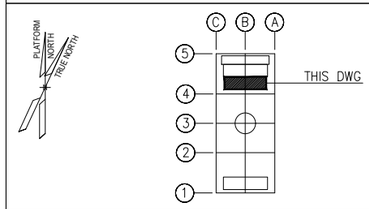
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

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	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

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

BASE LOAD POWER HUB (BLPH)

"SG-200D2" LV SWBD 800V

GENERAL ARRANGEMENTS DWG AND FOUNDATION LOAD CALCULATION INCLUDING COG

ROSETTI MARINO

1	NO COMMENTS - APPROVED - WORK MAY PROCEED
2	MINOR COMMENTS - REVISE AND RESUBMIT - WORK MAY PROCEED
3	MAJOR COMMENTS – REJECTED – DO NOT PROCEED
4	APPROVAL NOT REQUIRED

NOTE: Approval doesn't relieve the supplier from mandatory compliance with contractual documents and specifications. Comments made do not imply acceptance of any cost or delivery impact.

Sign	Date
Luca Macuz	25/09/2024

IMESA ELECTRICAL ENGINEERING

DWG n° : 231298/SD/8

Item n° : PF1002669/3

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
4	18/09/2024	Rossi	Santinelli	Santinelli	As Built (ASB)
3	08/07/2024	Rossi	Santinelli	Santinelli	Accepted for Construction (AFC)
2	22/05/2024	Rossi	Santinelli	Santinelli	Issue for review (IFR)
1	19/03/2024	Rossi	Santinelli	Santinelli	Issue for review (IFR)
0	09/02/2024	Rossi	Santinelli	Santinelli	Issue for review (IFR)

TITLE : "SG-200D2"

GENERAL ARRANGEMENTS
Cover

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DA-00008

SHEET 001

REV. 04

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DA-00008 Rev. 04

INDEX SHEETS

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

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

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DWG n° : 231298/SD/8
Item n° : PF1002669/3

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CROSSWIND

ROSETTI MARINO

TITLE : "SG-200D2"

GENERAL ARRANGEMENTS
Index

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DA-00008

SHEET 002

REV. 04

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DA-00008 Rev. 04

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)	0,8 kV
2	NOMINAL VOLTAGE (Un)	0,8 kV
3	RATED INSULATION VOLTAGE (Ui)	1 kV
4	RATED FREQUENCY (Fn)	50 Hz
5	RATED IMPULSE WITHSTAND (Uimp)	4 kV
6	RATED NORMAL CURRENT (In)	630 A @45 °C
7	RATED SHORT TIME WITHSTAND CURRENT (Ik)	30 kA
8	RATED DURATION OF SHORT CIRCUIT (tk)	1 s
9	RATED PEAK WITHSTAND CURRENT (Ipk)	63 kA
10	INTERNAL ARC CLASSIFICATION IAC	Not Applicable
11	ARCING CLASS	Not Applicable
12	NUMBER OF PHASES	3
13	PHASES IDENTIFICATION	L1-L2-L3
14	EARTHING CIRCUITS MAIN BUSBAR SECTION	> 300mmq
15	REFERENCE STANDARDS	IEC 61439-2
16	EARTHING SYSTEM	TN-S
17	NEUTRAL BUSBARS SIZING	-

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 : 3B (INCOMING) FORM : 3B (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	Not Applicable
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 LOCK
16	FRONT DOORS (CIRCUIT BREAKER)	HINGED WITH KEY LOCK
17	REAR/LATERAL PANELS	BOLTED
18	MINIMUM CLEARANCE	TO THE FRONT 1200 mm
19		TO THE REAR 50 mm
20		TO THE TOP 800 mm
21		TO THE SIDE 1200 mm
22	WEIGHTS	450 kg ± 10%
23	EXPANDABILITY	Not Applicable

CROSSWIND

ROSETTI MARINO

IMESA ELECTRICAL ENGINEERING

DWG n° : 231298/SD/8

Item n° : PF1002669/3

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TITLE : "SG-200D2"

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-00008

SHEET 003

REV. 04

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DA-00008 Rev. 04

D	BUSBAR SYSTEM	
1	MATERIALS	ELECTROLYTIC COPPER
2	BUSBAR SURFACE TREATMENT	not applicable
3	INSULATION BUSBARS (if Applicale)	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		PE
12	MARKING OF PHASES	ADHESIVE LABELS PLACED ON BARS

E	POWER / AUXILIARY CIRCUITS CABLES		
1	LOW VOLTAGE CABLE TYPE		Not Applicable
2	INSULATION		Not Applicable
	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	Not Applicable
10			Not Applicable
11			Not Applicable

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 CIRCUITS	24 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

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

DWG n° : 231298/SD/8

Item n° : PF1002669/3

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
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TITLE : "SG-200D2"

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-00008

SHEET 004

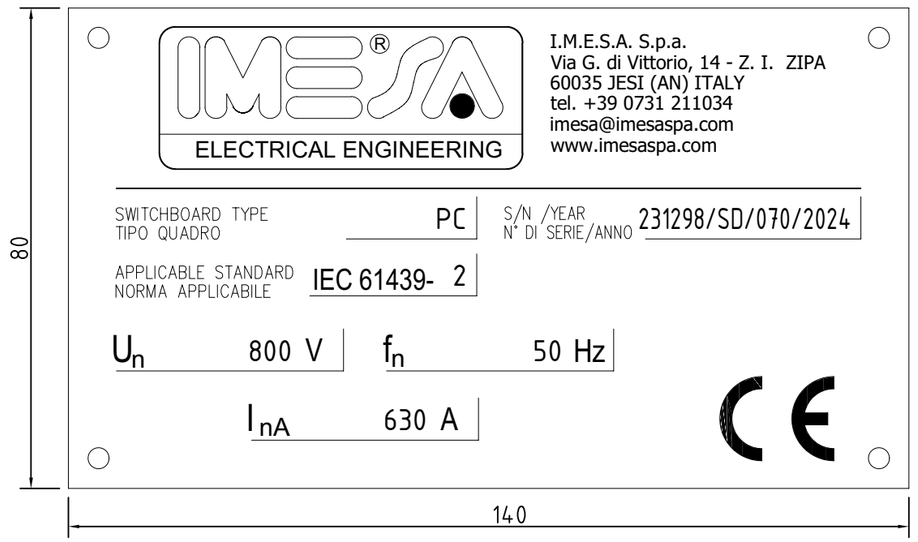
REV. 04

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DA-00008 Rev. 04

NAMEPLATE DATES

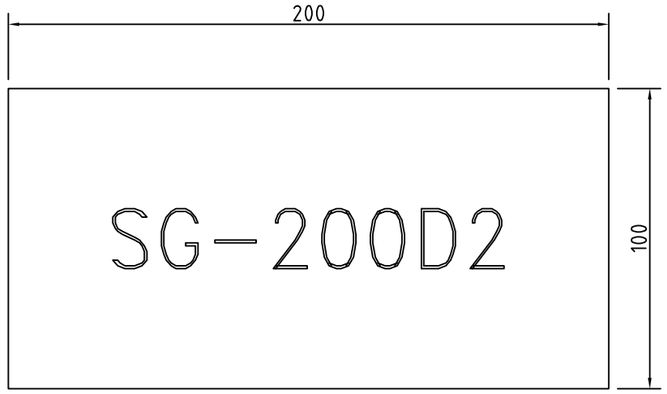
(1)



Material: Alloy

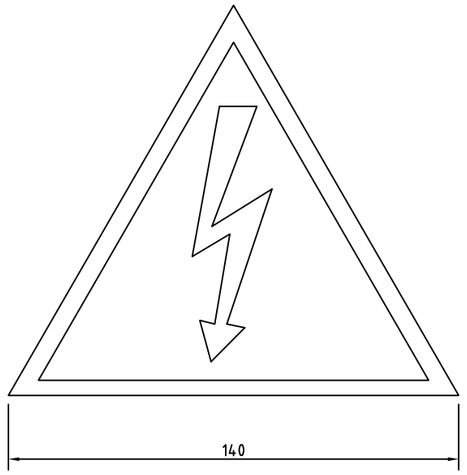
SWITCHGEAR TAG PLATE

(2)



Material: Traffolyte

WARNING LABEL



Material: Adhesive film

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
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DWG n°: 231298/SD/8
Item n°: PF1002669/3

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200D2"

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-00008

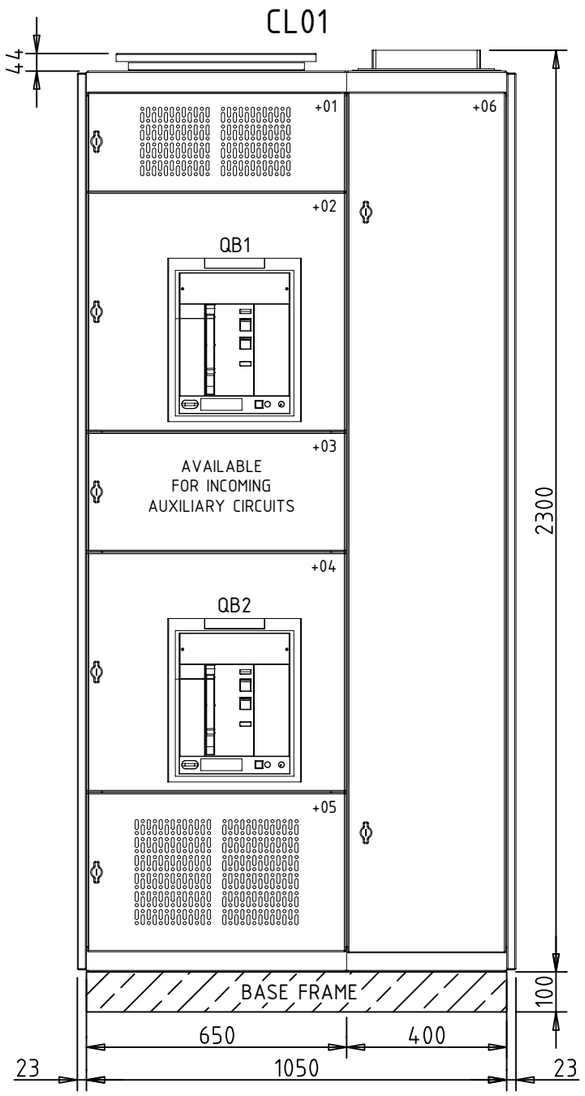
SHEET 005

REV. 04

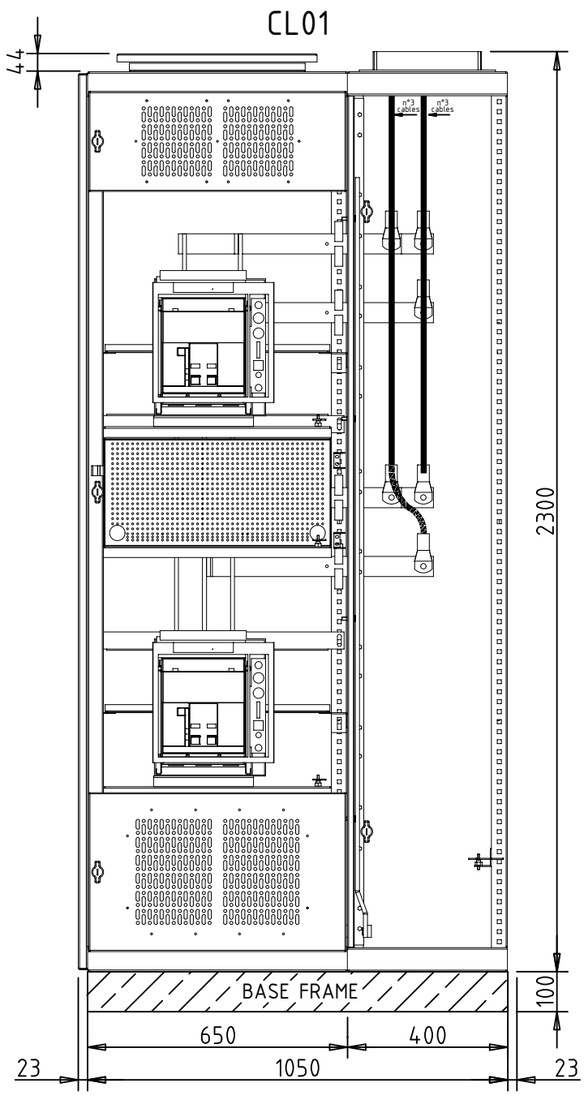
F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DA-00008 Rev. 04

FRONT VIEW



FRONT VIEW
(INTERNAL)



NOTE :
1. Measurement Tollerance + 0,25%
2. Weight Tollerance ± 10%

scale 1/15

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
4	18/09/2024	Rossi	Santinelli	Santinelli	As Built (ASB)
3	08/07/2024	Rossi	Santinelli	Santinelli	Accepted for Construction (AFC)
2	22/05/2024	Rossi	Santinelli	Santinelli	Issue for review (IFR)
1	19/03/2024	Rossi	Santinelli	Santinelli	Issue for review (IFR)
0	09/02/2024	Rossi	Santinelli	Santinelli	Issue for review (IFR)

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

DWG n° : 231298/SD/8

Item n° : PF1002669/3

TITLE : "SG-200D2"

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-00008

SHEET 006

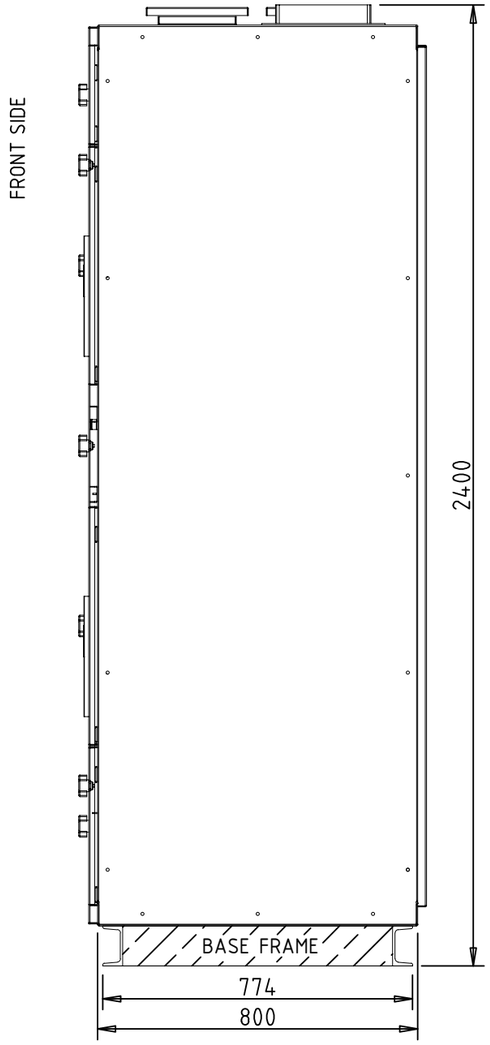
REV. 04

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DA-00008 Rev. 04

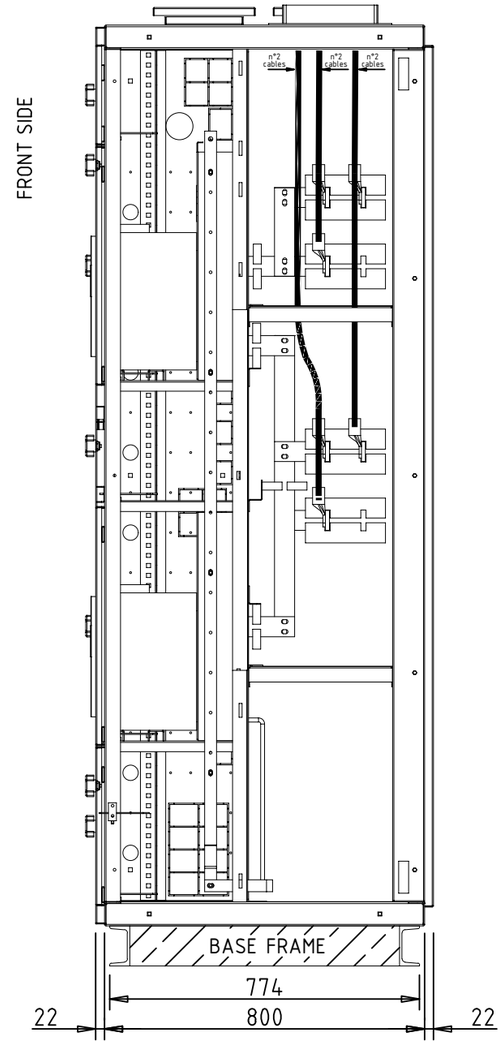
LATERAL VIEW

CL01



LATERAL VIEW
(W/O EXTERNAL PANEL)

CL01



NOTE :
1. Measurement Tollerance + 0,25%
2. Weight Tollerance ± 10%

scale 1/15

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
4	18/09/2024	Rossi	Santinelli	Santinelli	As Built (ASB)
3	08/07/2024	Rossi	Santinelli	Santinelli	Accepted for Construction (AFC)
2	22/05/2024	Rossi	Santinelli	Santinelli	Issue for review (IFR)
1	19/03/2024	Rossi	Santinelli	Santinelli	Issue for review (IFR)
0	09/02/2024	Rossi	Santinelli	Santinelli	Issue for review (IFR)

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

DWG n° : 231298/SD/8

Item n° : PF1002669/3

TITLE : "SG-200D2"

GENERAL ARRANGEMENTS
Switchgear Lay-Out - Laterals View

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DA-00008

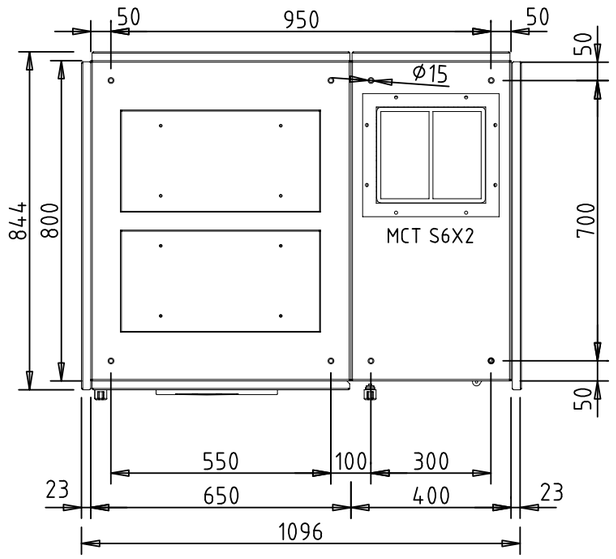
SHEET 007

REV. 04

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DA-00008 Rev. 04

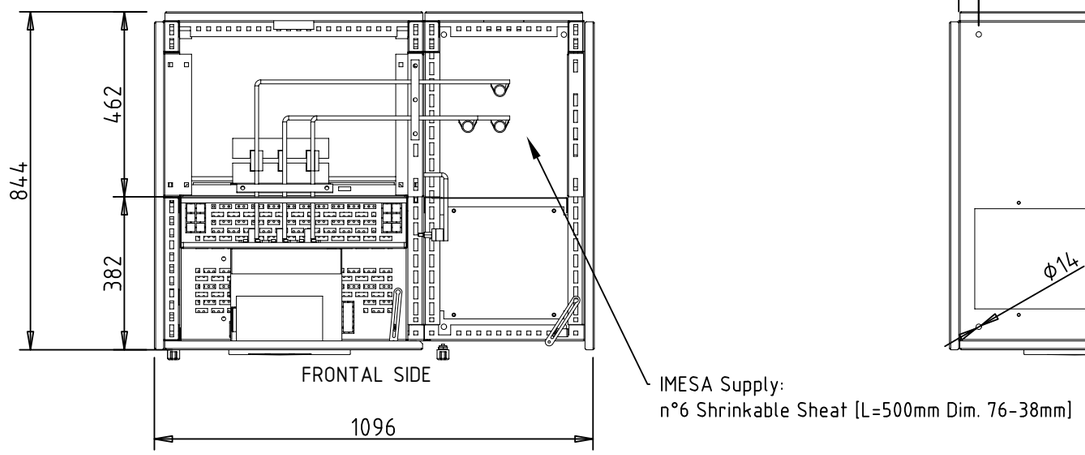
TOP VIEW



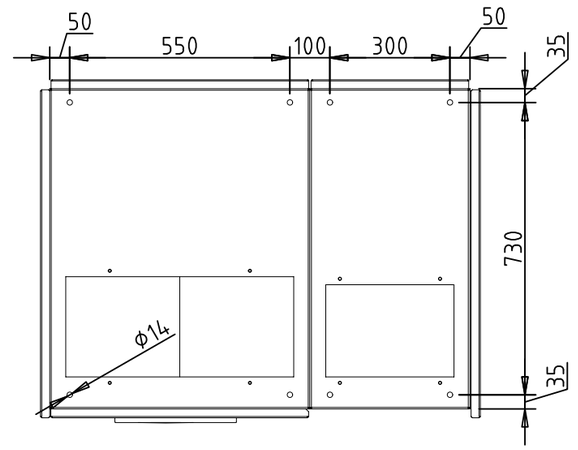
FRONT SIDE

TOP VIEW

(W/O EXTERNAL PANEL)

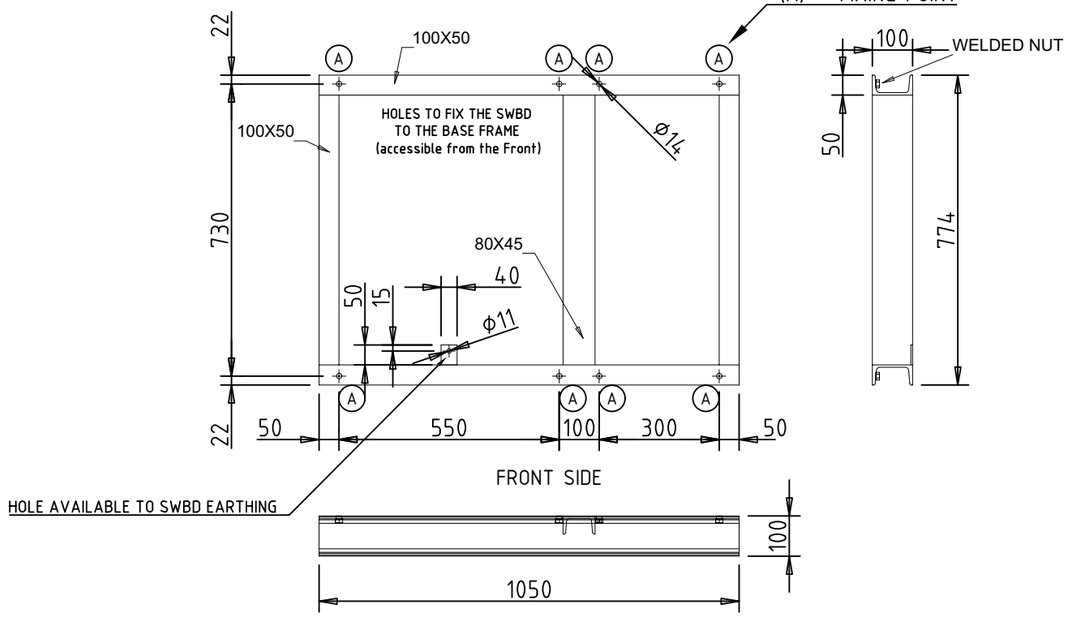


BOTTOM VIEW

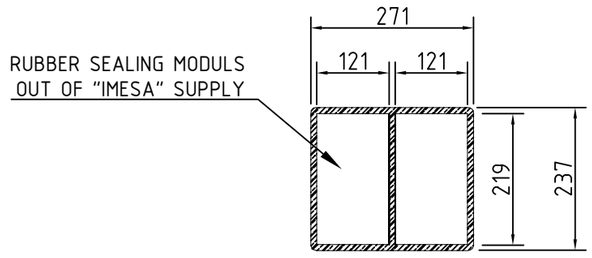


FRONT SIDE

BASE FRAME



"S6X2" MCT DETAILS



NOTE :
1. Measurement Tollerance + 0,25%
2. Weight Tollerance ± 10%

scale 1/15

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
4	18/09/2024	Rossi	Santinelli	Santinelli	As Built (ASB)
3	08/07/2024	Rossi	Santinelli	Santinelli	Accepted for Construction (AFC)
2	22/05/2024	Rossi	Santinelli	Santinelli	Issue for review (IFR)
1	19/03/2024	Rossi	Santinelli	Santinelli	Issue for review (IFR)
0	09/02/2024	Rossi	Santinelli	Santinelli	Issue for review (IFR)

IMESA ELECTRICAL ENGINEERING
DWG n° : 231298/SD/8
Item n° : PF1002669/3

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200D2"

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-00008

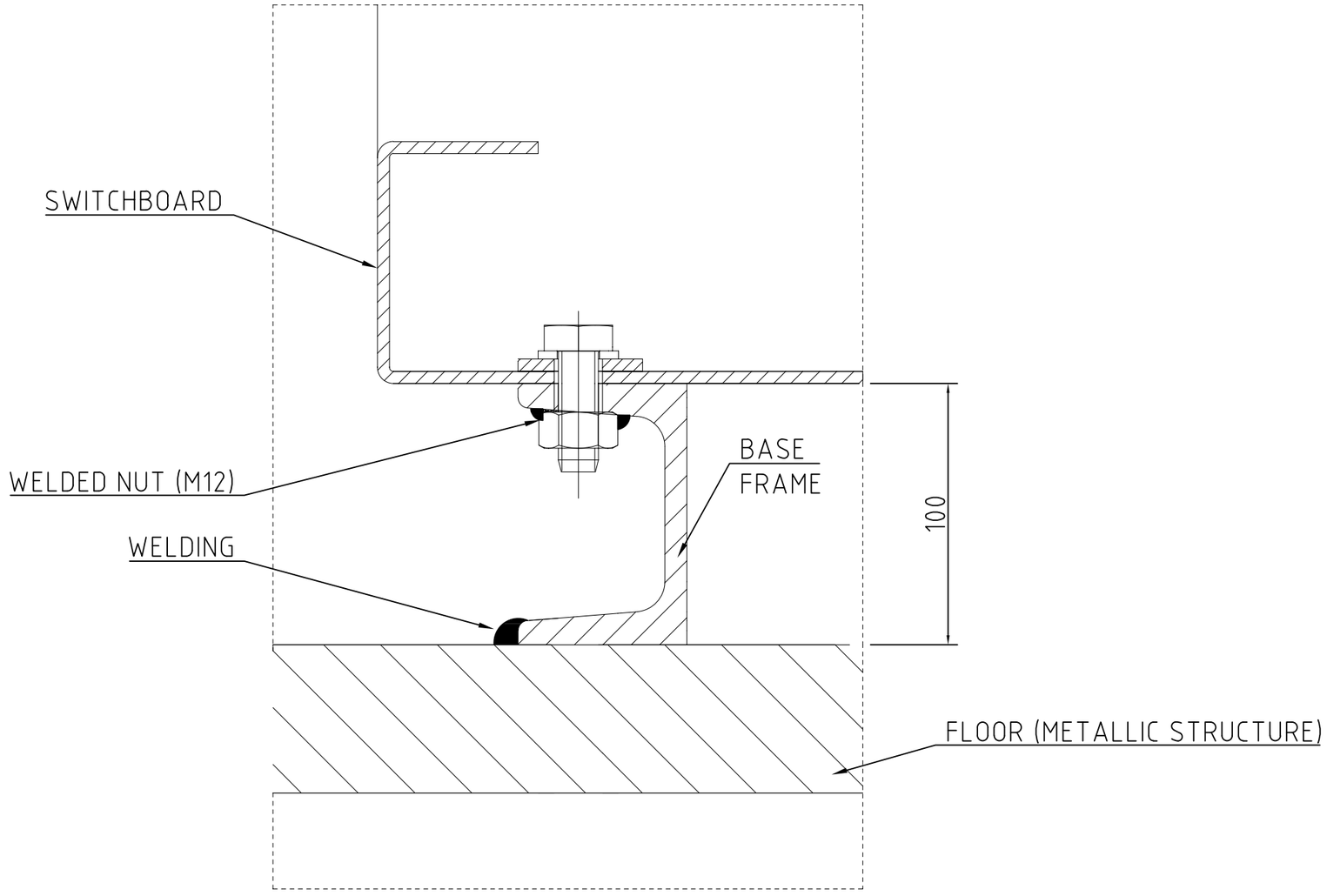
SHEET 008

REV. 04

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DA-00008 Rev. 04

BASE FRAME FIXING SYSTEM



NOTE :
1. Measurement Tollerance + 0,25%
2. Weight Tollerance ± 10%

scale 1/2

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
4	18/09/2024	Rossi	Santinelli	Santinelli	As Built (ASB)
3	08/07/2024	Rossi	Santinelli	Santinelli	Accepted for Construction (AFC)
2	22/05/2024	Rossi	Santinelli	Santinelli	Issue for review (IFR)
1	19/03/2024	Rossi	Santinelli	Santinelli	Issue for review (IFR)
0	09/02/2024	Rossi	Santinelli	Santinelli	Issue for review (IFR)

IMESA ELECTRICAL ENGINEERING

DWG n° : 231298/SD/8

Item n° : PF1002669/3

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200D2"

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-00008

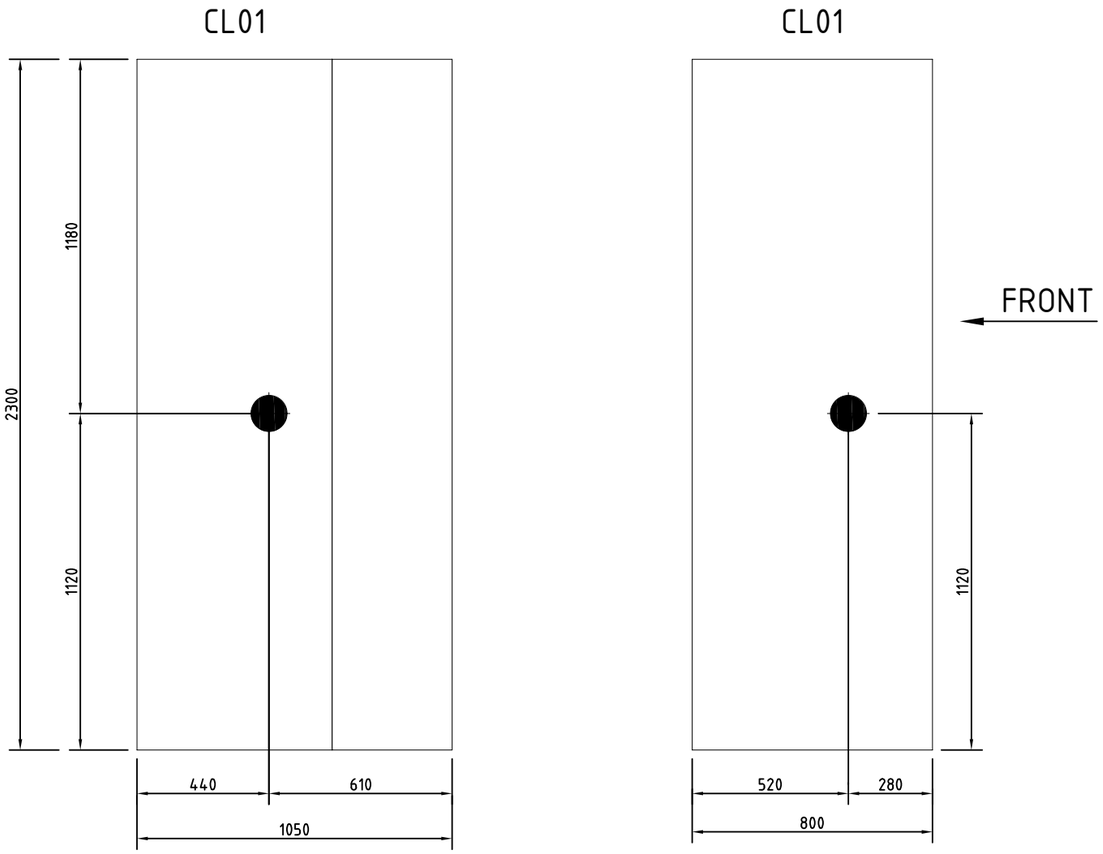
SHEET 009

REV. 04

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DA-00008 Rev. 04

CENTER OF GRAVITY POSITIONING



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
4	18/09/2024	Rossi	Santinelli	Santinelli	As Built (ASB)
3	08/07/2024	Rossi	Santinelli	Santinelli	Accepted for Construction (AFC)
2	22/05/2024	Rossi	Santinelli	Santinelli	Issue for review (IFR)
1	19/03/2024	Rossi	Santinelli	Santinelli	Issue for review (IFR)
0	09/02/2024	Rossi	Santinelli	Santinelli	Issue for review (IFR)

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

DWG n° : 231298/SD/8

Item n° : PF1002669/3

TITLE : "SG-200D2"

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-00008

SHEET 010

REV. 04

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DA-00008 Rev. 04

BASE LOAD POWER HUB (BLPH)

"SG-200D2" LV SWBD 800V

ELECTRICAL FUNCTIONAL DIAGRAM

ROSETTI MARINO	
1	NO COMMENTS - APPROVED - WORK MAY PROCEED
2	MINOR COMMENTS - REVISE AND RESUBMIT - WORK MAY PROCEED
3	MAJOR COMMENTS – REJECTED – DO NOT PROCEED
4	APPROVAL NOT REQUIRED

NOTE: Approval doesn't relieve the supplier from mandatory compliance with contractual documents and specifications. Comments made do not imply acceptance of any cost or delivery impact.

Sign	Date
Luca Maeule	23/09/2024

IMESA ELECTRICAL ENGINEERING

DWG n°: 231298/SD/32

Item n°: PF1002669/3

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
3	18/09/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
2	10/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
1	22/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
0	08/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

TITLE : "SG-200D2"
FUNCTIONAL DIAGRAM
Cover

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00032

SHEET 001

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00032 Rev. 03

INDEX SHEETS

Sheet	Description	Revision 0	1	2	3	4	5	6	7	8	9
001	Cover	X	X	X	X						
002	Index	X	X	X	X						
003	Graphical Symbols	X	X	X	X						
004	Graphical Symbols	X	X	X	X						
005	Door Layout	X	X	X	X						
006	Selector Switch Diagram	X	X	X	X						
007	Functional Drawing	X	X	X	X						
008	Functional Drawing	X	X	X	X						
009	Functional Drawing	X	X	X	X						
010	Functional Drawing	X	X	X	X						
011	Functional Drawing	X	X	X	X						
012	Functional Drawing	X	X	X	X						
013	Functional Drawing	X	X	X	X						
014	Functional Drawing	X	X	X	X						
015	Functional Drawing	X	X	X	X						
016	Functional Drawing	X	X	X	X						
017	Functional Drawing	X	X	X	X						
018	Functional Drawing	X	X	X	X						
019	Functional Drawing	X	X	X	X						
020	Functional Drawing	X	X	X	X						
021	Terminal Block	X	X	X	X						
022	Bill of Materials	X	X	X	X						
023	Bill of Materials	X	X	X	X						
024	Bill of Materials	X	X	X	X						

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

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
3	18/09/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
2	10/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
1	22/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
0	08/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

DWG n° : 231298/SD/32

Item n° : PF1002669/3

TITLE : "SG-200D2"

FUNCTIONAL DIAGRAM

Index

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

SCALE : NTS

A3

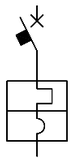
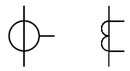
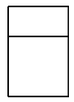
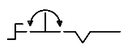
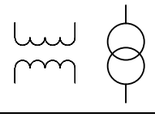
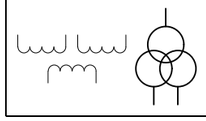
DRAWING NO. 1723002197-EL-DG-00032

SHEET 002

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00032 Rev. 03

GRAPHICAL SYMBOLS	DESCRIPTION	GRAPHICAL SYMBOLS	DESCRIPTION	GRAPHICAL SYMBOLS	DESCRIPTION	GRAPHICAL SYMBOLS	DESCRIPTION
	**CIRCUIT BREAKER WITH AUTOMATIC RELEASE**		**CAPACITOR (GENERAL SYMBOL)**		**BISTABLE RELAY**		**CHANGE-OVER BREAK BEFORE MAKE CONTACT**
	**CIRCUIT BREAKER WITH AUTOMATIC RELEASE AND BUILT-IN THERMOMAGNETIC RELEASE**		**CAPACITIVE VOLTAGE DIVIDER**		**COIL OF A MECHANICALLY LATCHED RELAY**		**DELAYED ACTION (IN THE DIRECTION OF MOVEMENT FROM THE ARC TOWARDS ITS CENTRE)**
			**CURRENT TRANSFORMER**		**INDICATOR, ELECTROMECHANICAL ELEMENT**		POSITION SWITCH (LIMIT SWITCH), MAKE CONTACT
	**SWITCH DISCONNECTOR**		RING CURRENT TRANSFORMER		**LAMP (GENERAL SYMBOL)**		**POSITION SWITCH (LIMIT SWITCH), MAKE CONTACT**
	**CONTACTOR**		**INDICATING INSTRUMENT GENERAL SYMBOL**		**SEMICONDUCTOR DIODE**		POSITION SWITCH (LIMIT SWITCH), BREAK CONTACT
	LOCK WITH FREE KEY WHEN THE DEVICE IS IN OPEN POSITION		**INTEGRATING INSTRUMENT (GENERAL SYMBOL)**		**LED**		**OPERATED BY TURNING**
	LOCK WITH FREE KEY WHEN THE DEVICE IS IN CLOSE POSITION		**DISCONNECTING FUSE, NOT WITH LIVE CIRCUIT AND WITH MECHANICAL LINKAGE (STRIKER FUSE))**		**TRANSDUCER OF ALTERNATING CURRENT MEASURE INTO DIRECT CURRENT SIGNAL**		**THREE HELD POSITIONS TURNING SWITCH**
	PLUG AND SOCKET (MALE AND FEMALE)		**OPERATING DEVICE (GENERAL SYMBOL)**		**EARTH, GROUND (GENERAL SYMBOL)**		**THREE POSITIONS TURNING SWITCH, WITH SPRING THROWBACK TO THE CENTRAL POSITION**
	**VOLTAGE TRANSFORMER WITH TWO WINDINGS**		**COIL OF A TIME DELAYED OPERATING RELAY**		**MAKE CONTACT**		MECHANICAL INTERLOCK BETWEEN TWO DEVICES
	**VOLTAGE TRANSFORMER WITH THREE WINDINGS**		**COIL OF A TIME DELAYED RELEASING RELAY**		**BREAK CONTACT**		

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
3	18/09/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
2	10/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
1	22/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
0	08/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

DWG n° : 231298/SD/32

Item n° : PF1002669/3

TITLE : "SG-200D2"

FUNCTIONAL DIAGRAM

Graphical Symbols

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00032

SHEET 003

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00032 Rev. 03

GRAPHICAL SYMBOLS	DESCRIPTION	GRAPHICAL SYMBOLS	DESCRIPTION	GRAPHICAL SYMBOLS	DESCRIPTION	GRAPHICAL SYMBOLS	DESCRIPTION
	RESISTOR (GENERAL SYMBOL)		AMPEROMETRIC TEST SOCKET				
	THERMISTOR (GENERAL SYMBOL)		3 PHASES LINE				
	HEATING ELEMENT						
	INTERCONNECTION TERMINAL						
	WITHDRAWABLE TERMINAL SHORT-CIRCUITABLE ON C.T. SECONDARY CIRCUITS						
	WITHDRAWABLE TERMINAL FOR V.T. SECONDARY CIRCUITS						
	SWITCHBOARD TERMINAL						
	ON - OFF SWITCH						
	SURGE ARRESTER						
	VOLTMETRIC TEST SOCKET						

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
3	18/09/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
2	10/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
1	22/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
0	08/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

IMESA ELECTRICAL ENGINEERING

DWG n° : 231298/SD/32

Item n° : PF1002669/3

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200D2"

FUNCTIONAL DIAGRAM

Graphical Symbols

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00032

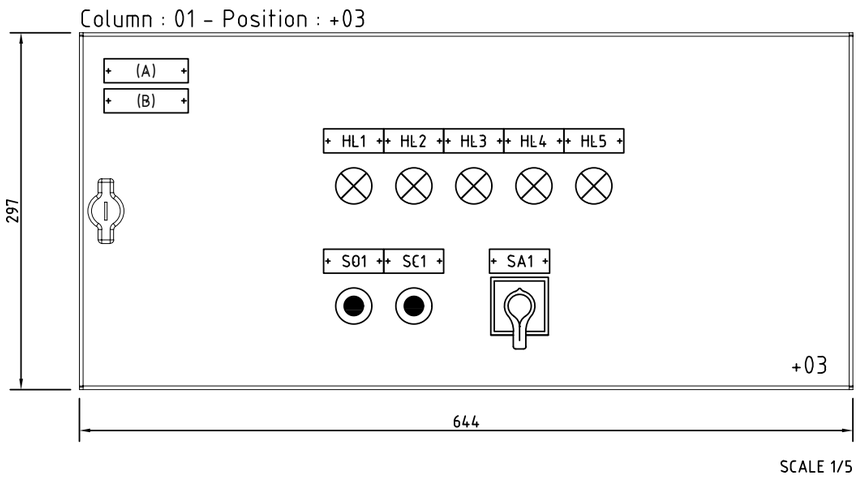
SHEET 004

REV. 03

F.to UNI A3: 420mmx297mm

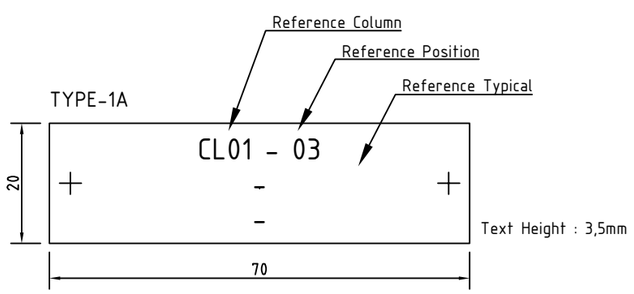
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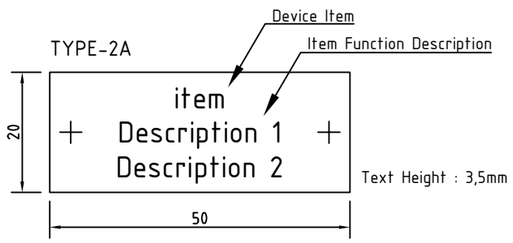
DOOR LAYOUT

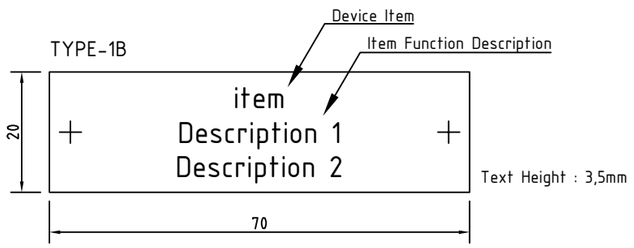


SCALE 1/5

DEVICES name plate				
ITEM	COMPONENT	DESCRIPTION 1	DESCRIPTION 2	NOTE
HL1	PILOT LIGHT	QB1 - CIRCUIT BREAKER	CLOSED	TYPE-2A
HL2	PILOT LIGHT	QB1 - CIRCUIT BREAKER	OPENED	TYPE-2A
HL3	PILOT LIGHT	QB1 - CIRCUIT BREAKER	TRIPPED	TYPE-2A
HL4	PILOT LIGHT	QB2 - CIRCUIT BREAKER	OPENED	TYPE-2A
HL5	PILOT LIGHT	QB2 - CIRCUIT BREAKER	CLOSED	TYPE-2A
S01	PUSH BUTTON	QB1 - CIRCUIT BREAKER	OPENING COMMAND	TYPE-2A
SC1	PUSH BUTTON	QB1 - CIRCUIT BREAKER	CLOSING COMMAND	TYPE-2A
SA1	SELECTOR SWITCH	SELECTOR	LOCAL / REMOTE	TYPE-2A







NOTE :

A) IDENTIFICATION name plate (type-1A) , with :
- Drawer position [Column / Position inside SWB]
- Typical name [reference applicability typical used, where applicable]

B) USER name plate (type-1B), with :
- Item User [to see SLD diagrams, where applicable]
- User Description [to see SLD diagrams, where applicable]

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
3	18/09/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
2	10/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
1	22/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
0	08/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

IMESA ELECTRICAL ENGINEERING

DWG n° : 231298/SD/32

Item n° : PF1002669/3

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200D2"

FUNCTIONAL DIAGRAM

Door Layout

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00032

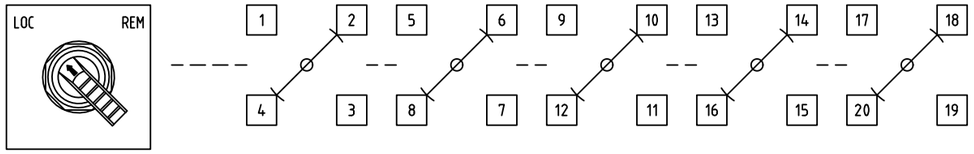
SHEET 005

REV. 03

F.to UNI A3: 420mmx297mm

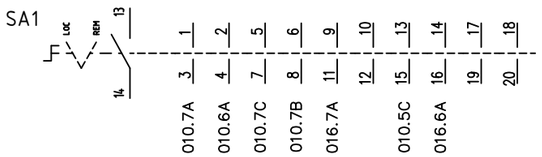
File Name : 1723002197-EL-DG-00032 Rev. 03

SELECTORS SWITCH DIAGRAM



Control Mode Switch

NOTE:
1. Square plate
2. Fixed position



NOTES

THE DIAGRAM INDICATES THE FOLLOWING CONDITIONS:

- INSERTED CIRCUIT BREAKER IN OPEN POSITION
- DE-ENERGIZED CIRCUITS
- DSCHARGED CLOSING SPRINGS

THE AUXILIARY CIRCUITS WILL HAVE THE FOLLOWING CHARACTERISTICS:

- 24+ 1,5mmq RED TYPE CABLE SH-W
- 24- 1,5mmq WHITE TYPE CABLE SH-W
- AUXILIARY CONTACTS TO TERMINAL STRIP 1,5mmq BLACK TYPE CABLE SH-W
- 230Vac 1,5mmq BLACK TYPE SH-W
- VOLTMETRICAL CIRCUITS 1,5mmq BLACK TYPE CABLE SH-W
- AMMETRICAL CIRCUIT 2,5mmq BLACK TYPE CABLE SH-W

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

DWG n°: 231298/SD/32

Item n°: PF1002669/3

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
3	18/09/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
2	10/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
1	22/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
0	08/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

TITLE : "SG-200D2"

FUNCTIONAL DIAGRAM

Selector Switch Diagram

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00032

SHEET 006

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00032 Rev. 03

POWER DISTRIBUTION

800V - 50Hz - 630A - 30kA x 1s

L1 008.1A
L2 008.1A
L3 008.1A

Emax E1

			INSERTED	TEST	ISOLATED
S75E	101-102 / 101-104	111-112 / 111-114	X	X	X
S75T	121-122 / 121-124	131-132 / 131-134	X	X	X
S75I	141-142 / 141-144	151-152 / 151-154	X	X	X

S75E/1 S75E/2 S75T/1 S75T/2 S75I/1 S75I/2
102 104 112 114 122 124 132 134 144 142 154 152
101 111 121 131 141 151
011.7A 016.2A 011.6A 010.6B 010.7D 011.6A

Q/1 Q/2 Q/3 Q/4 S51 S33M
12 14 22 24 32 34 42 44 96 98 U1 36 38 C11 C13 C1 C3
11 21 31 41 95 U2 35 C12 C2
011.2A 020.2D 011.5A 020.3B 011.3A 008.4C 010.4C 010.6C

QB1
1250A
(1)
K51 Ekip Hi-Touch

Electrical/Mechanical interlock

S75E/1 S75E/2 S75T/1 S75T/2 S75I/1 S75I/2
102 104 112 114 122 124 132 134 144 142 154 152
101 111 121 131 141 151
016.4A 010.9B 016.5A

Q/1 Q/2 Q/3 Q/4
12 14 22 24 32 34 42 44
11 21 31 41
010.8B 020.5D 011.8A 012.2A

QB2
1250A
(1)
K51 Ekip Touch

NOTE:
All function protection will be sett in OFF

FU1 1 2 L1S BN 1x16
FU2 1 2 L2S BK 1x16
FU3 1 2 L3S GY 1x16
35A-gG

F1 F2 F3 F4
L N/PE
12 14 / 11
017.4A 017.4A 017.5A

PE GNYE 1x16
017.6A

SFL1 SFL2 SFL3

INCOMING FROM SOLAR FARM

L1 L2 L3

OUTGOING

(1) KEY LOCK FOR OPEN POSITION (CIRCUIT-BREAKER)

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
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DWG n° : 231298/SD/32
Item n° : PF1002669/3

IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200D2"
FUNCTIONAL DIAGRAM
Functional Drawing

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00032

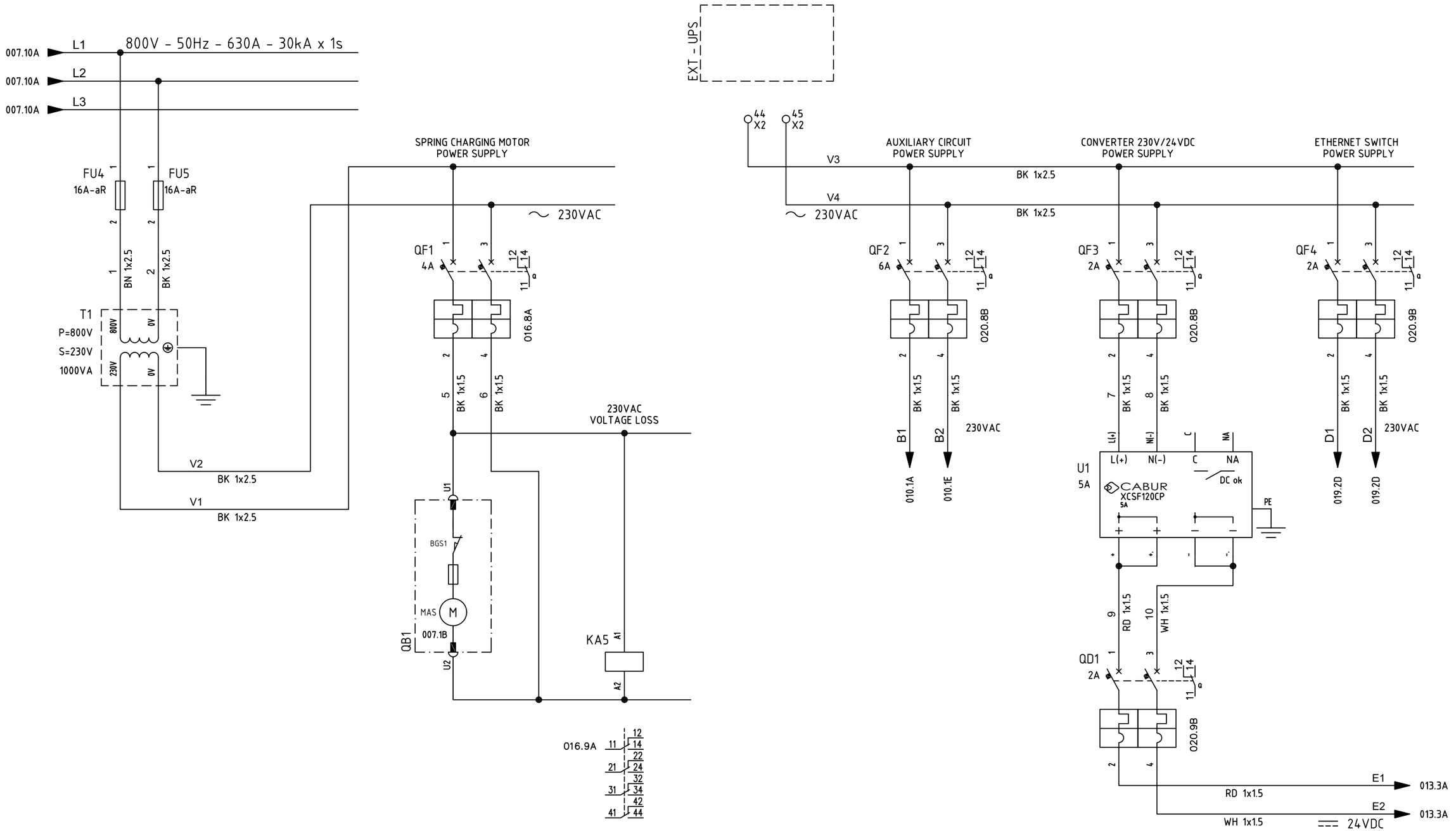
SHEET 007

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00032 Rev. 03

SUPPLY AUXILIARY CIRCUITS



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
3	18/09/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
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CROSSWIND

ROSETTI MARINO

IMESA ELECTRICAL ENGINEERING

DWG n° : 231298/SD/32

Item n° : PF1002669/3

TITLE : "SG-200D2"

FUNCTIONAL DIAGRAM

Functional Drawing

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00032

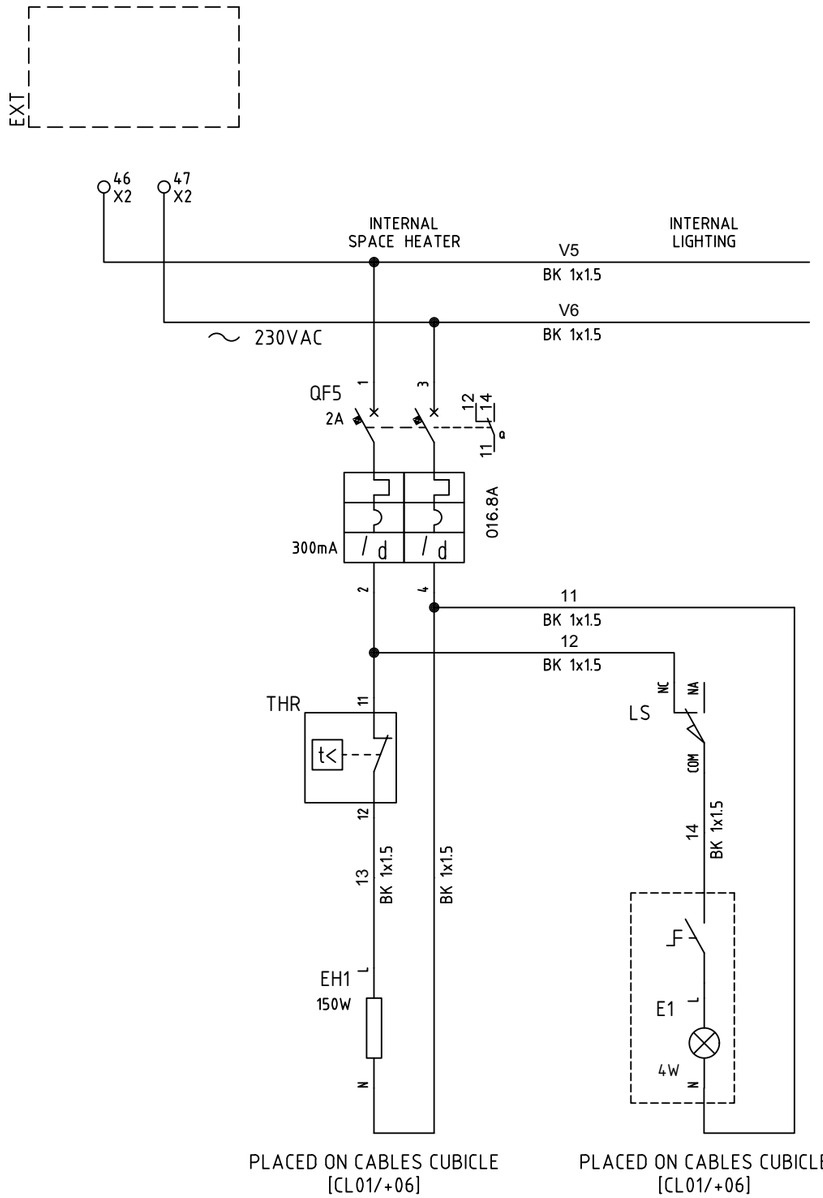
SHEET 008

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00032 Rev. 03

SUPPLY AUXILIARY CIRCUITS



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
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DWG n° : 231298/SD/32
Item n° : PF1002669/3

IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200D2"
FUNCTIONAL DIAGRAM
Functional Drawing

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00032

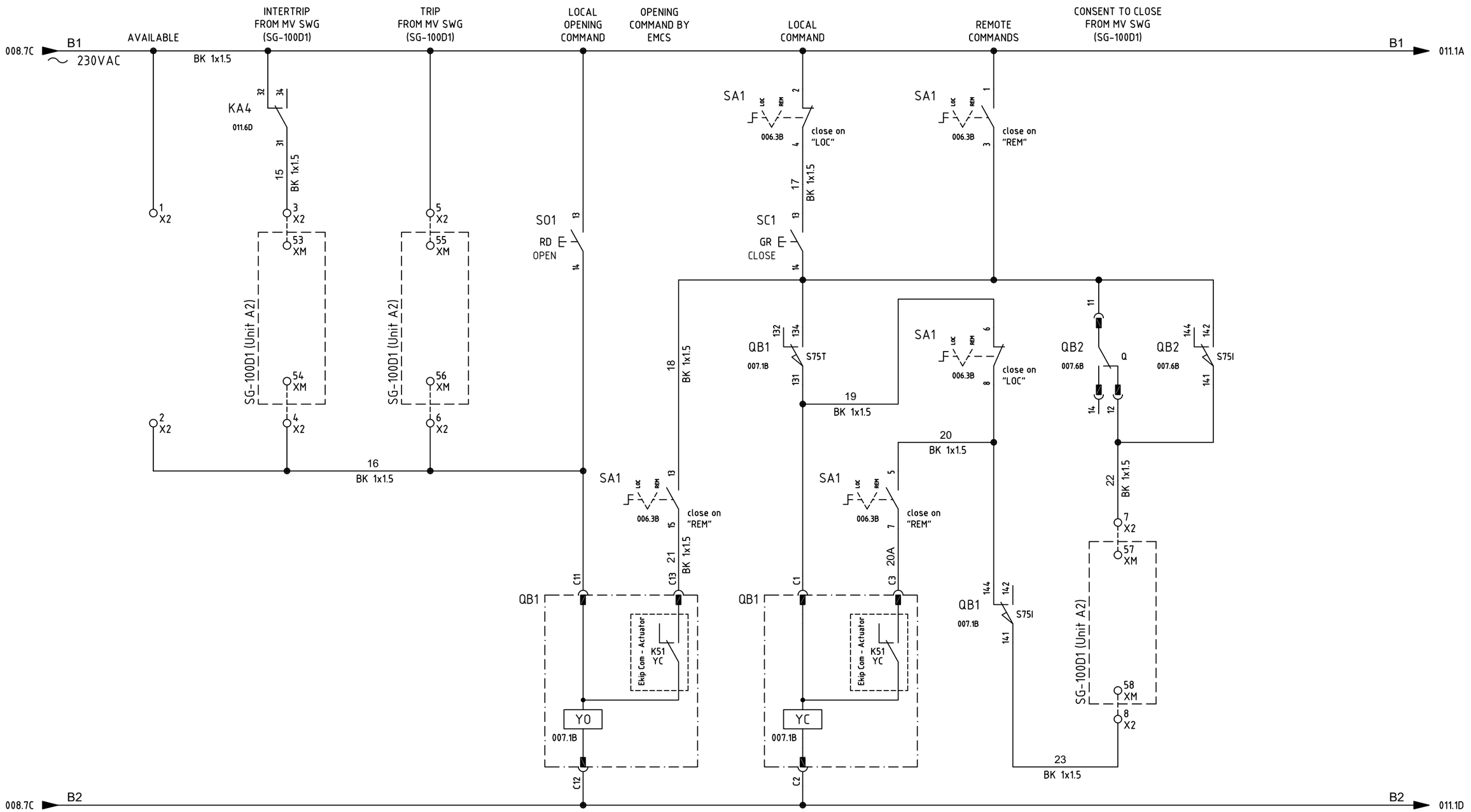
SHEET 009

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00032 Rev. 03

"QB1" CIRCUIT BREAKER - COMMAND CIRCUITS



=							
+							
	3	18/09/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
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	0	08/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
	REV.	DATE	DRN	CHKD	APPD	DESCRIPTION

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

DWG n°: 231298/SD/32

Item n°: PF1002669/3

TITLE : "SG-200D2"

FUNCTIONAL DIAGRAM

Functional Drawing

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00032

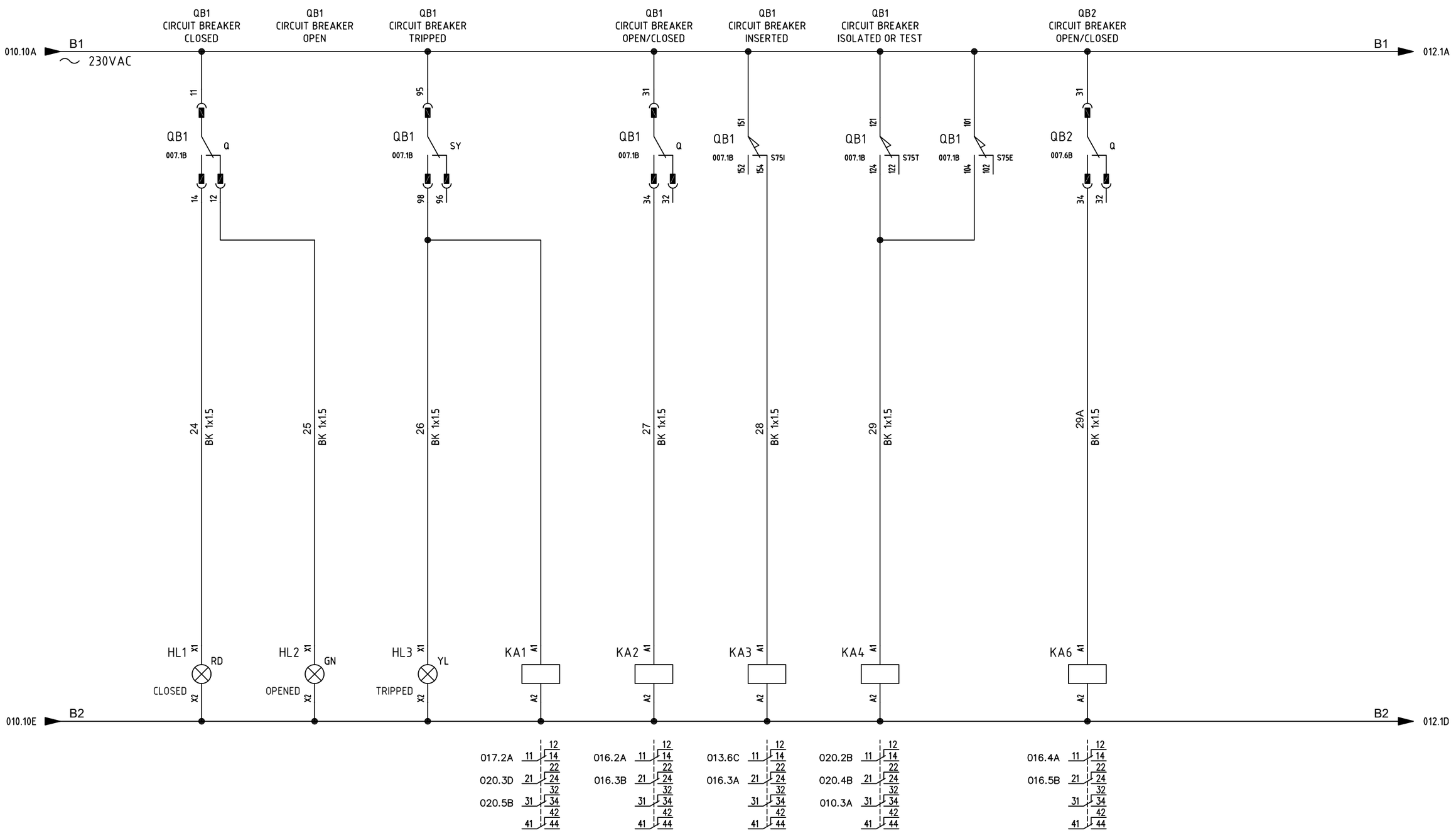
SHEET 010

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00032 Rev. 03

"QB1" CIRCUIT BREAKER - SIGNALLING CIRCUITS



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
3	18/09/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
2	10/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
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0	08/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

DWG n° : 231298/SD/32

Item n° : PF1002669/3

TITLE : "SG-200D2"

FUNCTIONAL DIAGRAM

Functional Drawing

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00032

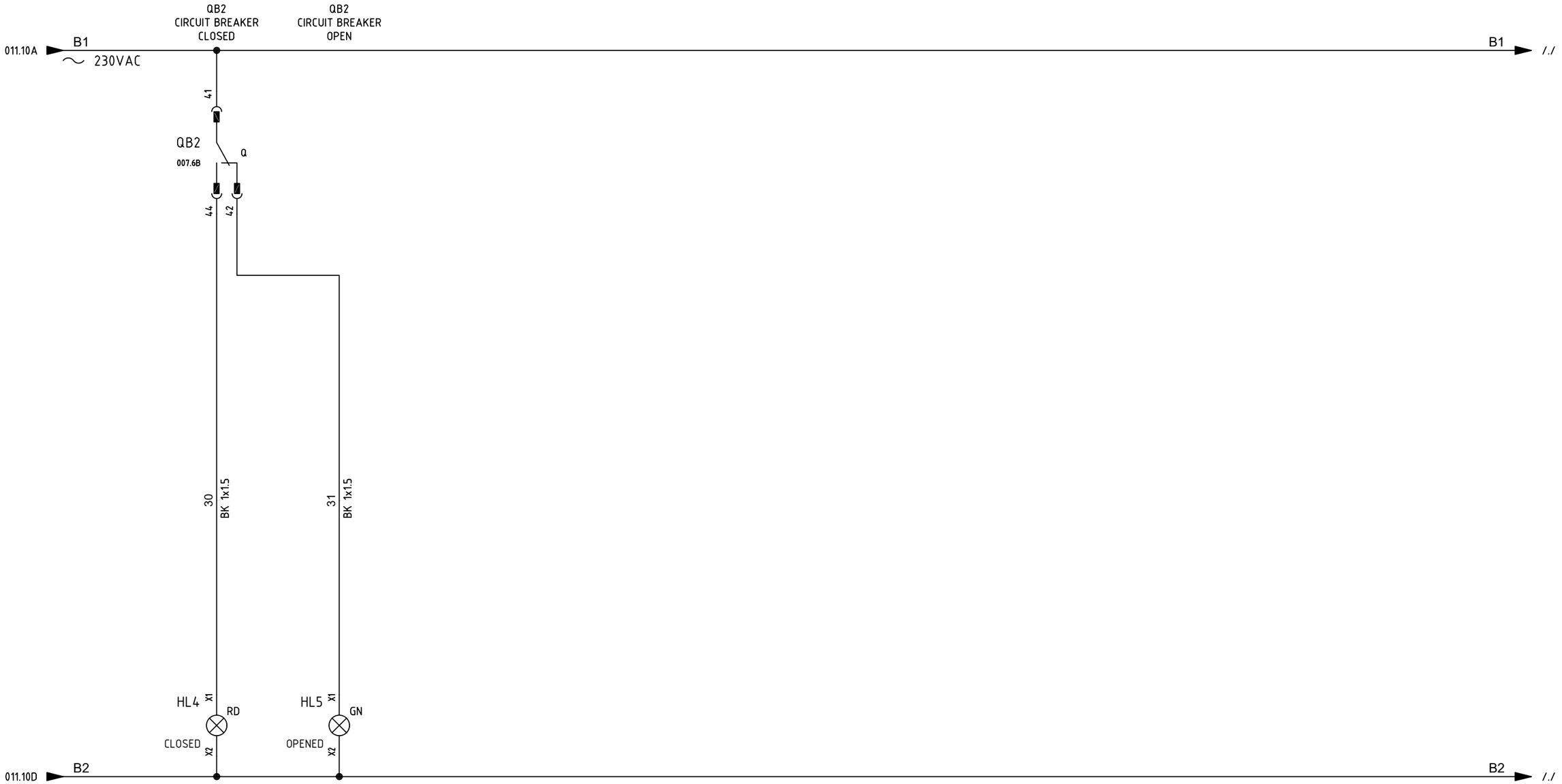
SHEET 011

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00032 Rev. 03

"QB2" CIRCUIT BREAKER - SIGNALLING CIRCUITS



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
3	18/09/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
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0	08/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

DWG n°: 231298/SD/32

Item n°: PF1002669/3

TITLE : "SG-200D2"

FUNCTIONAL DIAGRAM

Functional Drawing

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00032

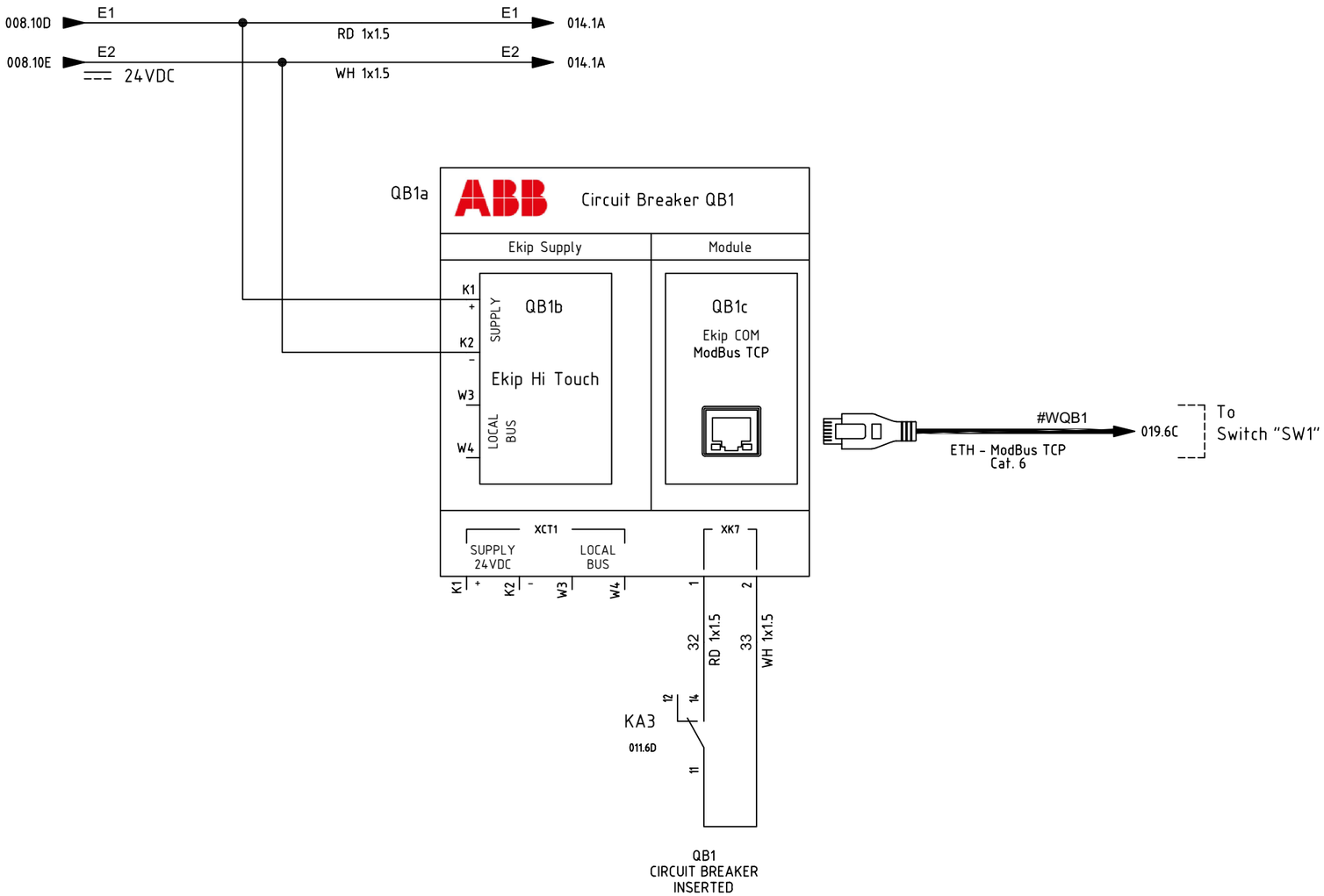
SHEET 012

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00032 Rev. 03

"QB1" CIRCUIT BREAKER - COMUNICATION CIRCUITS



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
3	18/09/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
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1	22/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
0	08/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

CROSSWIND

ROSETTI MARINO

IMESA ELECTRICAL ENGINEERING

DWG n° : 231298/SD/32

Item n° : PF1002669/3

TITLE : "SG-200D2"

FUNCTIONAL DIAGRAM

Functional Drawing

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00032

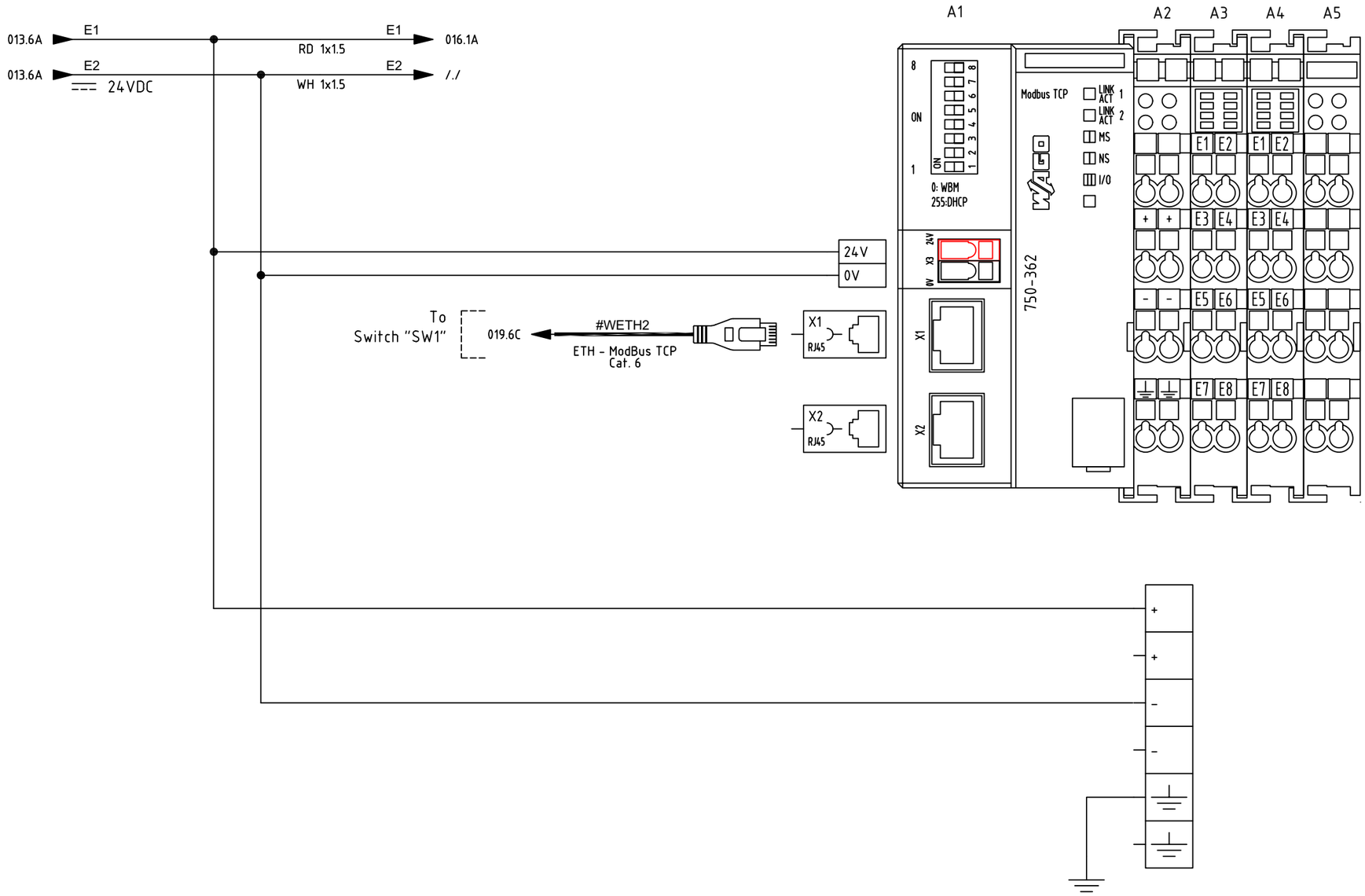
SHEET 013

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00032 Rev. 03

MODULE I/O CONNECTION



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
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+					
3	18/09/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
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DWG n° : 231298/SD/32
Item n° : PF1002669/3

IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200D2"
FUNCTIONAL DIAGRAM
Functional Drawing

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00032

SHEET 014

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00032 Rev. 03

MODULE I/O CONNECTION

Quadro: SG-200D2	Gruppo Funzione:	Sigla: A3					
CPU: SG-200D2	Rack: A1	Slot: 2					
Pin	Descrizione Pin	Indirizzo	Commento1	Commento2	Commento3	Commento4	Foglio
1 [E1]	DI 1	E0.0	SG-200D2	QB1	DISCONNECTED	OR OPEN	016
5 [E2]	DI 2	E0.1	SG-200D2	QB1	CONNECTED	AND CLOSED	016
2 [E3]	DI 3	E0.2	SG-200D2	QB2	DISCONNECTED	OR OPEN	016
6 [E4]	DI 4	E0.3	SG-200D2	QB2	CONNECTED	AND CLOSED	016
3 [E5]	DI 5	E0.4	SG-200D2	SA1	ON LOCAL	POSITION	016
7 [E6]	DI 6	E0.5	SG-200D2	SA1	ON REMOTE	POSITION	016
4 [E7]	DI 7	E0.6	SG-200D2	MCBs/VOLTAGE LOSS	ALARM		016
8 [E8]	DI 8	E0.7	SG-200D2	COMMUN	FAILURE		017

Quadro: SG-200D2	Gruppo Funzione:	Sigla: A4					
CPU: SG-200D2	Rack: A1	Slot: 3					
Pin	Descrizione Pin	Indirizzo	Commento1	Commento2	Commento3	Commento4	Foglio
1 [E1]	DI 1	E1.0	SG-200D2	SURGE ARRESTER	FAULT		017
5 [E2]	DI 2	E1.1	SG-200N1	MCBs	CLOSED		017
2 [E3]	DI 3	E1.2		AVAILABLE			017
6 [E4]	DI 4	E1.3		AVAILABLE			017
3 [E5]	DI 5	E1.4		AVAILABLE			017
7 [E6]	DI 6	E1.5		AVAILABLE			018
4 [E7]	DI 7	E1.6		AVAILABLE			018
8 [E8]	DI 8	E1.7		AVAILABLE			018

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
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IMESA ELECTRICAL ENGINEERING

DWG n° : 231298/SD/32

Item n° : PF1002669/3

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200D2"

FUNCTIONAL DIAGRAM

Functional Drawing

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00032

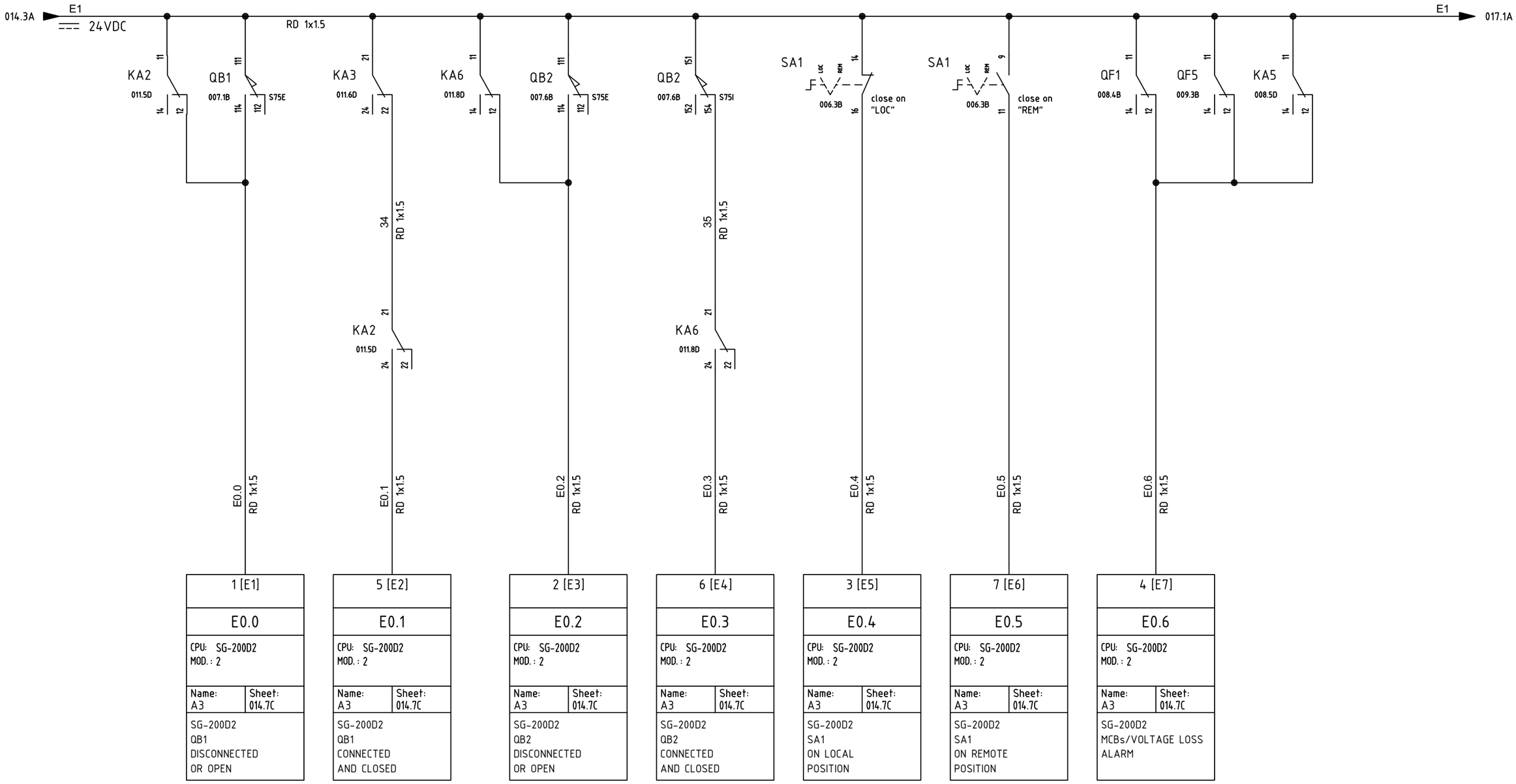
SHEET 015

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00032 Rev. 03

MODULE I/O CONNECTION



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
3	18/09/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
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DWG n° : 231298/SD/32
Item n° : PF1002669/3

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

TITLE : "SG-200D2"
FUNCTIONAL DIAGRAM
Functional Drawing

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00032

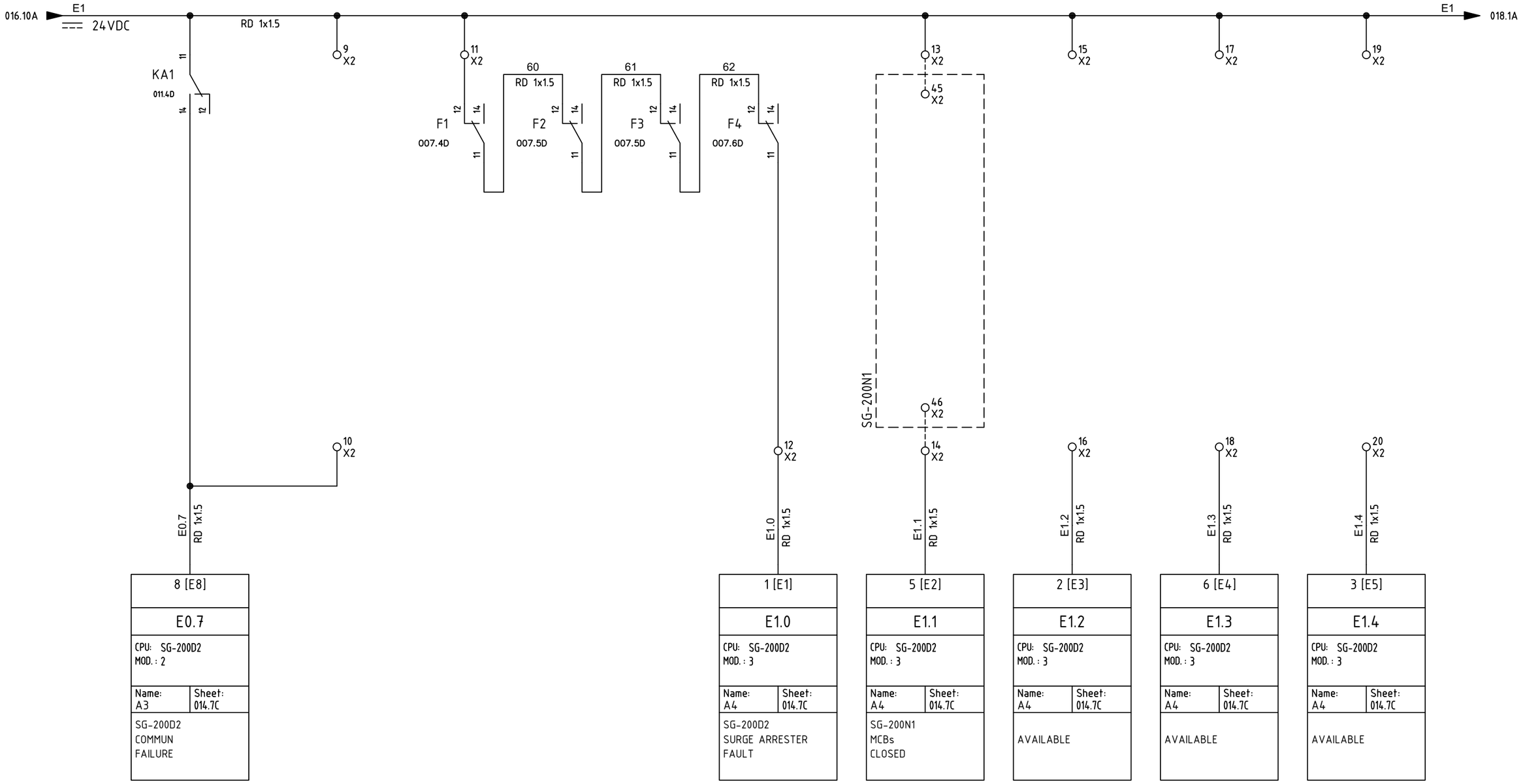
SHEET 016

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00032 Rev. 03

MODULE I/O CONNECTION



8 [E8]
E0.7
CPU: SG-200D2 MOD. : 2
Name: A3 / Sheet: 014.7C
SG-200D2 COMMUN FAILURE

1 [E1]
E1.0
CPU: SG-200D2 MOD. : 3
Name: A4 / Sheet: 014.7C
SG-200D2 SURGE ARRESTER FAULT

5 [E2]
E1.1
CPU: SG-200D2 MOD. : 3
Name: A4 / Sheet: 014.7C
SG-200N1 MCBs CLOSED

2 [E3]
E1.2
CPU: SG-200D2 MOD. : 3
Name: A4 / Sheet: 014.7C
AVAILABLE

6 [E4]
E1.3
CPU: SG-200D2 MOD. : 3
Name: A4 / Sheet: 014.7C
AVAILABLE

3 [E5]
E1.4
CPU: SG-200D2 MOD. : 3
Name: A4 / Sheet: 014.7C
AVAILABLE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
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+					
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CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

DWG n° : 231298/SD/32

Item n° : PF1002669/3

TITLE : "SG-200D2"

FUNCTIONAL DIAGRAM

Functional Drawing

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00032

SHEET 017

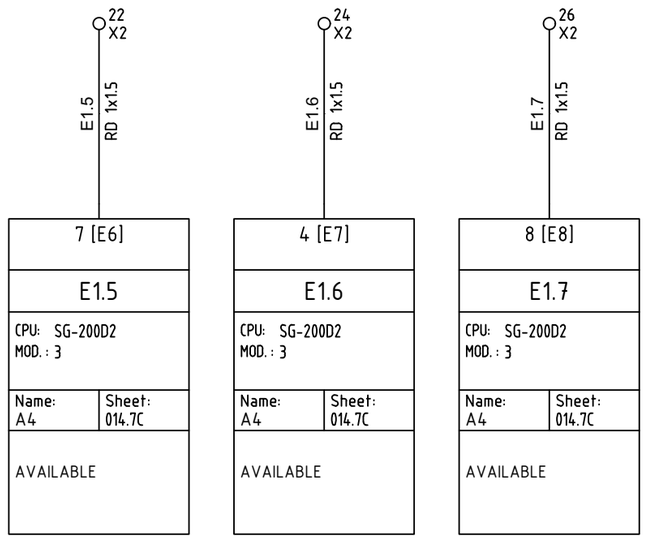
REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00032 Rev. 03

MODULE I/O CONNECTION





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
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DWG n° : 231298/SD/32
Item n° : PF1002669/3

IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200D2"
FUNCTIONAL DIAGRAM
Functional Drawing

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00032

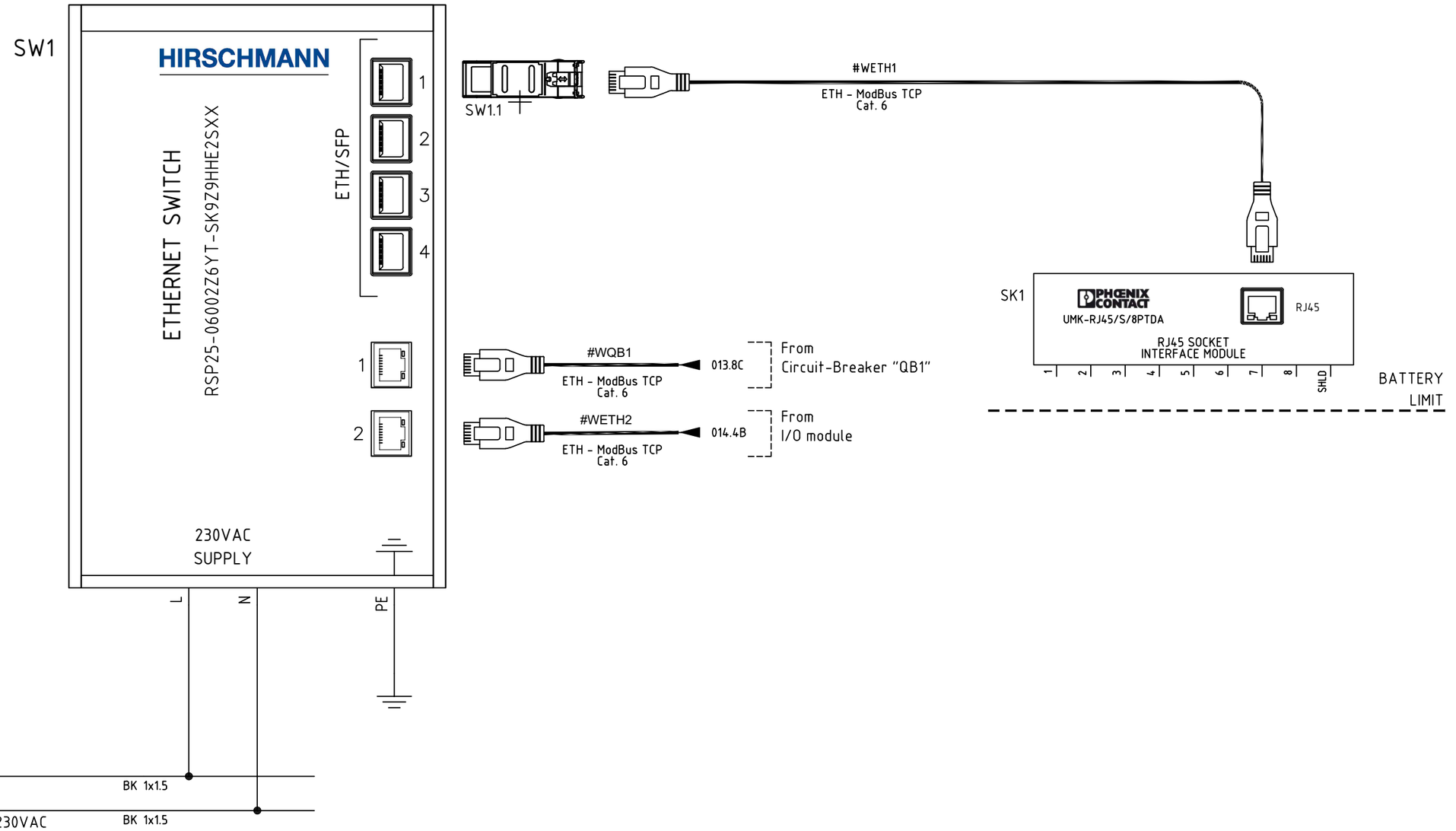
SHEET 018

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00032 Rev. 03

SWITCH CONNECTION



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
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+					
3	18/09/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
2	10/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
1	22/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
0	08/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

DWG n° : 231298/SD/32
Item n° : PF1002669/3

IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200D2"
FUNCTIONAL DIAGRAM
Functional Drawing

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00032

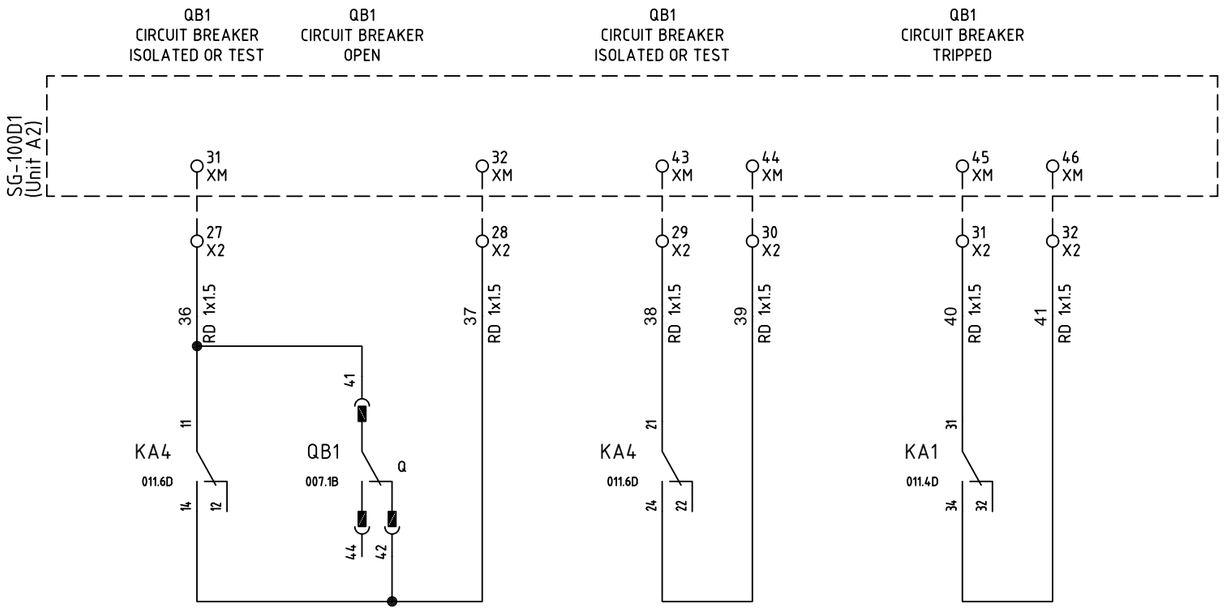
SHEET 019

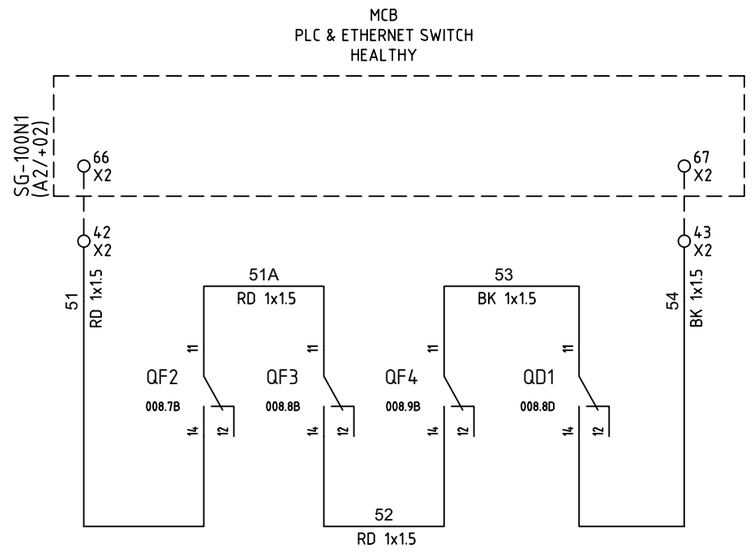
REV. 03

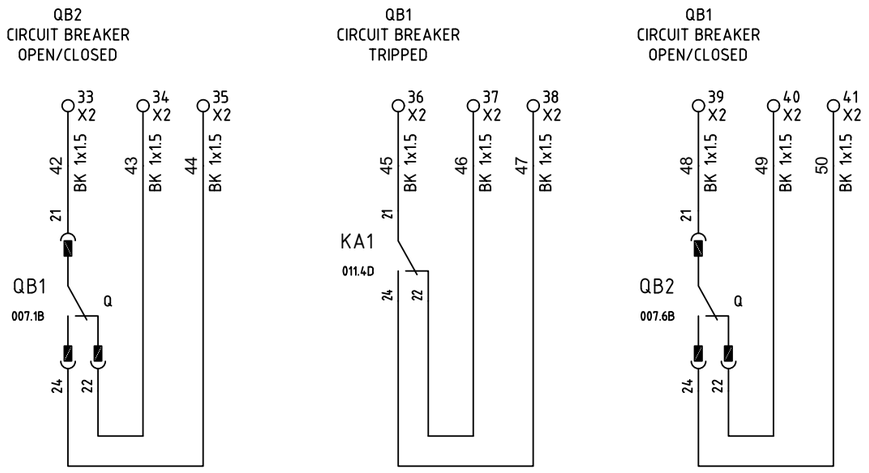
F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00032 Rev. 03

AVAILABLE SIGNALS







REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
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3	18/09/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
2	10/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
1	22/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
0	08/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

DWG n° : 231298/SD/32

Item n° : PF1002669/3

TITLE : "SG-200D2"

FUNCTIONAL DIAGRAM

Functional Drawing

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00032

SHEET 020

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00032 Rev. 03

FUN - SG-200D2
X2

NumM	Sheet	Sec.	Type	Manufacturer	Terminal Description
			BT003	Cabur	BT/3 End bracket
1	010.2B	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
2	010.2C	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
3	010.3B	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
4	010.3C	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
5	010.3B	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
6	010.3C	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
7	010.8C	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
8	010.8D	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
9	017.3A	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
10	017.3B	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
11	017.4A	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
12	017.6B	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
13	017.6A	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
14	017.6B	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
15	017.7A	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
16	017.7B	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
17	017.8A	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
18	017.8B	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
19	017.9A	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
20	017.9B	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
21	018.2A	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
22	018.2B	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
23	018.3A	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
24	018.3B	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
25	018.4A	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
26	018.4B	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
27	020.2B	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
28	020.3B	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
29	020.4B	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
30	020.4B	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
31	020.5B	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
32	020.6B	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
33	020.2C	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
34	020.2C	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
35	020.3C	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
36	020.3C	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type

FUN - SG-200D2
X2

NumM	Sheet	Sec.	Type	Manufacturer	Terminal Description
37	020.4C	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
38	020.4C	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
39	020.5C	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
40	020.5C	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
41	020.5C	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
42	020.8B	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
43	020.9B	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
44	008.6A	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
45	008.6A	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
46	009.2B	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
47	009.2B	4	HM250GR	Cabur	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type
			HM251GR	Cabur	HMT.4/PT/GR End section - Grey
			BT003	Cabur	BT/3 End bracket

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
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+					
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2	10/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
1	22/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
0	08/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

DWG n° : 231298/SD/32
Item n° : PF1002669/3

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200D2"
FUNCTIONAL DIAGRAM
Terminal Block

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00032

SHEET 021

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00032 Rev. 03

Nome/Item	Fg/Sh	Tipo/Type	Q.tà	Descrizione/Description	Costruttore/Manufacturer	Ubicazione (descrizione)	Quadro (descrizione)
A1	014	750-362	1	Accoppiatore fieldbus ETHERNET, 4ª generazione 24VDC	Wago	FUN	SG-200D2
A2	014	750-602	1	Alimentazione del potenziale 24 V DC / passiva	Wago	FUN	SG-200D2
A3	014	750-430	1	Modulo 8 ingressi digitali 24 V DC 3.0ms	Wago	FUN	SG-200D2
A4	014	750-430	1	Modulo 8 ingressi digitali 24 V DC 3.0ms	Wago	FUN	SG-200D2
A5	014	750-600	1	Modulo terminatore	Wago	FUN	SG-200D2
E1	009	BEG74041	1	LAMP 4W 220-240V 50-60HZ COD.74041 - RGL P LED 4W 313MM 4000K	Beghelli	FUN	SG-200D2
EH1	009	R1R150230	1	SPACE HEATER SKR 150W ALIM. 220VCA	Torresan	FUN	SG-200D2
F1	007	961146	1	SURGE ARRESTER LOW VOLTAGE DBM 1 CI 440 FM Uc=440V Tipo 1 / Classe I	DEHN	FUN	SG-200D2
		900461	1	WIRING SYSTEM 3POLES TYPE EB1310	DEHN	FUN	SG-200D2
F2	007	961146	1	SURGE ARRESTER LOW VOLTAGE DBM 1 CI 440 FM Uc=440V Tipo 1 / Classe I	DEHN	FUN	SG-200D2
F3	007	961146	1	SURGE ARRESTER LOW VOLTAGE DBM 1 CI 440 FM Uc=440V Tipo 1 / Classe I	DEHN	FUN	SG-200D2
F4	007	961146	1	SURGE ARRESTER LOW VOLTAGE DBM 1 CI 440 FM Uc=440V Tipo 1 / Classe I	DEHN	FUN	SG-200D2
FU1	007	2640014P	1	PK-0/1000 Fuseholders for fuses In=160A up to 1000V DC/AC	Italweber	FUN	SG-200D2
		1505036	1	Fusible NH-0 35A gG 500V	Italweber	FUN	SG-200D2
FU2	007	2640014P	1	PK-0/1000 Fuseholders for fuses In=160A up to 1000V DC/AC	Italweber	FUN	SG-200D2
		1505036	1	Fusible NH-0 35A gG 500V	Italweber	FUN	SG-200D2
FU3	007	2640014P	1	PK-0/1000 Fuseholders for fuses In=160A up to 1000V DC/AC	Italweber	FUN	SG-200D2
		1505036	1	Fusible NH-0 35A gG 500V	Italweber	FUN	SG-200D2
FU4	008	2640014P	1	PK-0/1000 Fuseholders for fuses In=160A up to 1000V DC/AC	Italweber	FUN	SG-200D2
		1544016M	1	Fuse NH-0 16A aR 1000V	Italweber	FUN	SG-200D2
FU5	008	2640014P	1	PK-0/1000 Fuseholders for fuses In=160A up to 1000V DC/AC	Italweber	FUN	SG-200D2
		1544016M	1	Fuse NH-0 16A aR 1000V	Italweber	FUN	SG-200D2
HL1	011	EO 562 2	1	ML1-100R RED LAMP	ABB	FUN	SG-200D2
		EO 569 7	1	MCBH-00 FIXING SUPPORT 3 CONTACTS	ABB	FUN	SG-200D2
		KV 035 7	1	MLBL-07R RED LED BLOCK INTEGRATED 230VAC	ABB	FUN	SG-200D2
HL2	011	EO 563 0	1	ML1-100G GREEN LAMP	ABB	FUN	SG-200D2
		EO 569 7	1	MCBH-00 FIXING SUPPORT 3 CONTACTS	ABB	FUN	SG-200D2
		KV 036 5	1	MLBL-07G GREEN LED BLOCK INTEGRATED 230VAC	ABB	FUN	SG-200D2
HL3	011	EO 564 8	1	ML1-100Y YELLOW LAMP	ABB	FUN	SG-200D2
		EO 569 7	1	MCBH-00 FIXING SUPPORT 3 CONTACTS	ABB	FUN	SG-200D2
		KV 037 3	1	MLBL-07Y YELLOW LED BLOCK INTEGRATED 230VAC	ABB	FUN	SG-200D2
HL4	012	EO 562 2	1	ML1-100R RED LAMP	ABB	FUN	SG-200D2
		EO 569 7	1	MCBH-00 FIXING SUPPORT 3 CONTACTS	ABB	FUN	SG-200D2
		KV 035 7	1	MLBL-07R RED LED BLOCK INTEGRATED 230VAC	ABB	FUN	SG-200D2
HL5	012	EO 563 0	1	ML1-100G GREEN LAMP	ABB	FUN	SG-200D2
		EO 569 7	1	MCBH-00 FIXING SUPPORT 3 CONTACTS	ABB	FUN	SG-200D2
		KV 036 5	1	MLBL-07G GREEN LED BLOCK INTEGRATED 230VAC	ABB	FUN	SG-200D2
KA1	011	ER 592 6	1	CR-M230AC4L SUPPLY 230VAC 4C/O 250V/6A LED	ABB	FUN	SG-200D2
		ER 686 6	1	CR-M4SS SOCKET STANDARD X 2/4 C/O(CR-M)	ABB	FUN	SG-200D2
		ER 609 8	1	CR-MH HOLDER FOR CR-M RELAY	ABB	FUN	SG-200D2
KA2	011	ER 592 6	1	CR-M230AC4L SUPPLY 230VAC 4C/O 250V/6A LED	ABB	FUN	SG-200D2
		ER 686 6	1	CR-M4SS SOCKET STANDARD X 2/4 C/O(CR-M)	ABB	FUN	SG-200D2
		ER 609 8	1	CR-MH HOLDER FOR CR-M RELAY	ABB	FUN	SG-200D2
KA3	011	ER 592 6	1	CR-M230AC4L SUPPLY 230VAC 4C/O 250V/6A LED	ABB	FUN	SG-200D2

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
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3	18/09/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
2	10/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
1	22/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
0	08/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

IMESA ELECTRICAL ENGINEERING

DWG n° : 231298/SD/32

Item n° : PF1002669/3

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200D2"

FUNCTIONAL DIAGRAM

Bill of Materials

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00032

SHEET 022

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00032 Rev. 03

Nome/Item	Fg/Sh	Tipo/Type	Q.tà	Descrizione/Description	Costruttore/Manufacturer	Ubicazione (descrizione)	Quadro (descrizione)
KA3	011	ER 686 6	1	CR-M4SS SOCKET STANDARD X 2/4 C/O(CR-M)	ABB	FUN	SG-200D2
		ER 609 8	1	CR-MH HOLDER FOR CR-M RELAY	ABB	FUN	SG-200D2
KA4	011	ER 592 6	1	CR-M230AC4L SUPPLY 230VAC 4C/O 250V/6A LED	ABB	FUN	SG-200D2
		ER 686 6	1	CR-M4SS SOCKET STANDARD X 2/4 C/O(CR-M)	ABB	FUN	SG-200D2
		ER 609 8	1	CR-MH HOLDER FOR CR-M RELAY	ABB	FUN	SG-200D2
KA5	008	ER 592 6	1	CR-M230AC4L SUPPLY 230VAC 4C/O 250V/6A LED	ABB	FUN	SG-200D2
		ER 686 6	1	CR-M4SS SOCKET STANDARD X 2/4 C/O(CR-M)	ABB	FUN	SG-200D2
		ER 609 8	1	CR-MH HOLDER FOR CR-M RELAY	ABB	FUN	SG-200D2
KA6	011	ER 592 6	1	CR-M230AC4L SUPPLY 230VAC 4C/O 250V/6A LED	ABB	FUN	SG-200D2
		ER 686 6	1	CR-M4SS SOCKET STANDARD X 2/4 C/O(CR-M)	ABB	FUN	SG-200D2
		ER 609 8	1	CR-MH HOLDER FOR CR-M RELAY	ABB	FUN	SG-200D2
LS	009	Z15GW2-1-1453270	1	MICROSWITCH 1sc	Omron	FUN	SG-200D2
		APB-PG	1	COVER TO MICRO-SWITCH	Omron	FUN	SG-200D2
QB1	007	1SDA073782R1	1	KLC-D BLOCK KEY ON OPEN POSITION TO E1.2	ABB	FUN	SG-200D2
		1SDA073822R1	1	KLP-D INSERTED/ISOLATED KEY BLOCK TO E1.2	ABB	FUN	SG-200D2
		1SDA073885R1	1	MECHANICAL INTERLOCKING CABLE TO TYPE A VERTICAL TO E1.2÷E6.2	ABB	FUN	SG-200D2
		1SDA073896R1	1	SUPPORT FOR MECHANICAL INTERLOCK OF FIXED PART FOR E1.2 TYPE A	ABB	FUN	SG-200D2
		1SDA073674R1	1	OPENING COIL YO 220÷240VAC/DC TO E12÷E6.2	ABB	FUN	SG-200D2
		1SDA073687R1	1	CLOSING COIL YC 220÷240VAC/DC TO E1.2÷E6.2	ABB	FUN	SG-200D2
		1SDA073711R1	1	MOTOR SPRING CHARGER 220÷250Vac/dc TO E1.2	ABB	FUN	SG-200D2
		1SDA073907R1	1	E1.2 W FP 1600 3P FIXED PART HR-HR	ABB	FUN	SG-200D2
		1SDA073762R1	1	AUP 6 CONTACT AUX INS/TEST/EST TO E1.2	ABB	FUN	SG-200D2
		1SDA074151R1	1	Module Ekip Com Modbus TCP Emax E1.2÷E6.2	ABB	FUN	SG-200D2
		1SDA074173R1	1	MODUL EKIP SUPPLY 24÷48VDC	ABB	FUN	SG-200D2
		1SDA073855R1	1	PBC Prot. Pushbutt.AP/CH D=4mm E1.2-XT7M	ABB	FUN	SG-200D2
		1SDA104297R1	1	E1.2N/E9 1250 3P Ekip Hi-Touch-LSIG In=1250A WITHDRAWABLE MOBIL PART	ABB	FUN	SG-200D2
		1SDA074166R1	2	Module Ekip Actuator Emax E1.2÷E6.2÷XT7÷XT7M	ABB	FUN	SG-200D2
		1SDA073906R1	1	AUXILIARY TERMINALS CONNECTION (10PC)	ABB	FUN	SG-200D2
		1SDA073838R1	1	ADDITIONAL BLOCK ISOALTED FOR E1	ABB	FUN	SG-200D2
QB2	007	1SDA073782R1	1	KLC-D BLOCK KEY ON OPEN POSITION TO E1.2	ABB	FUN	SG-200D2
		1SDA073822R1	1	KLP-D INSERTED/ISOLATED KEY BLOCK TO E1.2	ABB	FUN	SG-200D2
		1SDA073896R1	1	SUPPORT FOR MECHANICAL INTERLOCK OF FIXED PART FOR E1.2 TYPE A	ABB	FUN	SG-200D2
		1SDA074280R1	1	RATING PLUG 1250A FUNCTION L (OFF) TO EKIP RELEASE TO E1.2..E6.2 INSTALLED	ABB	FUN	SG-200D2
		1SDA073907R1	1	E1.2 W FP 1600 3P FIXED PART HR-HR	ABB	FUN	SG-200D2
		1SDA073762R1	1	AUP 6 CONTACT AUX INS/TEST/EST TO E1.2	ABB	FUN	SG-200D2
		1SDA073855R1	1	PBC Prot. Pushbutt.AP/CH D=4mm E1.2-XT7M	ABB	FUN	SG-200D2
		1SDA104296R1	1	E1.2N/E9 1250 3P Ekip Touch-LSIG In=1250A WITHDRAWABLE MOBIL PART	ABB	FUN	SG-200D2
		1SDA073906R1	1	AUXILIARY TERMINALS CONNECTION (10PC)	ABB	FUN	SG-200D2
		1SDA073885R1	1	MECHANICAL INTERLOCKING CABLE TO TYPE A VERTICAL TO E1.2÷E6.2	ABB	FUN	SG-200D2
		1SDA073838R1	1	ADDITIONAL BLOCK ISOALTED FOR E1	ABB	FUN	SG-200D2
QD1	008	S550239	1	S202M C 2 AUTOMATIC CIRCUIT BREAKER 10KA 2P	ABB	FUN	SG-200D2
		A563819	1	S2-CS/H6R AUXILIARY STATE CONTACT 1CO	ABB	FUN	SG-200D2
QF1	008	A563819	1	S2-CS/H6R AUXILIARY STATE CONTACT 1CO	ABB	FUN	SG-200D2
		S550253	1	S202M C 4 AUTOMATIC CIRCUIT-BREAKER 10KA 2P	ABB	FUN	SG-200D2

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
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3	18/09/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
2	10/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
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IMESA ELECTRICAL ENGINEERING

DWG n° : 231298/SD/32

Item n° : PF1002669/3

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200D2"

FUNCTIONAL DIAGRAM

Bill of Materials

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00032

SHEET 023

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00032 Rev. 03

Nome/Item	Fg/Sh	Tipo/Type	Q.tà	Descrizione/Description	Costruttore/Manufacturer	Ubicazione (descrizione)	Quadro (descrizione)
QF2	008	S550260	1	S202M C 6 AUTOMATIC CIRCUIT-BREAKER 10KA 2P	ABB	FUN	SG-200D2
		A563819	1	S2-CS/H6R AUXILIARY STATE CONTACT 1CO	ABB	FUN	SG-200D2
QF3	008	S550239	1	S202M C 2 AUTOMATIC CIRCUIT BREAKER 10KA 2P	ABB	FUN	SG-200D2
		A563819	1	S2-CS/H6R AUXILIARY STATE CONTACT 1CO	ABB	FUN	SG-200D2
QF4	008	S550239	1	S202M C 2 AUTOMATIC CIRCUIT BREAKER 10KA 2P	ABB	FUN	SG-200D2
		A563819	1	S2-CS/H6R AUXILIARY STATE CONTACT 1CO	ABB	FUN	SG-200D2
QF5	009	S550239	1	S202M C 2 AUTOMATIC CIRCUIT BREAKER 10KA 2P	ABB	FUN	SG-200D2
		B427960	1	DDA202 A 25A 300MA RCD BLOCK 2P	ABB	FUN	SG-200D2
		A563819	1	S2-CS/H6R AUXILIARY STATE CONTACT 1CO	ABB	FUN	SG-200D2
SA1	006	R601-205__02-W002	1	SWITCH R16 2/5 - 2 STAY POSITION	Cometric	FUN	SG-200D2
		Q4820030	1	Frontplate 48x48mm (LOC-REM)	Cometric	FUN	SG-200D2
SC1	010	KW 076 0	1	MP1-10G PUSH BUTTON GREEN WITH BLACK RING	ABB	FUN	SG-200D2
		EO 569 7	1	MCBH-00 FIXING SUPPORT 3 CONTACTS	ABB	FUN	SG-200D2
		EO 570 5	1	MCB-10 CONTACT NO FOR PUSHBUTTONS	ABB	FUN	SG-200D2
SK1	019	2900682	1	UMK-RJ45/S/8PTDA Modul VARIOFACE	Phoenix Contact	FUN	SG-200D2
SO1	010	KW 075 2	1	MP1-10R PUSH BUTTON RED WITH BLACK RING	ABB	FUN	SG-200D2
		EO 569 7	1	MCBH-00 FIXING SUPPORT 3 CONTACTS	ABB	FUN	SG-200D2
		EO 570 5	1	MCB-10 CONTACT NO FOR PUSHBUTTONS	ABB	FUN	SG-200D2
SW1	019	RSPS25-06002Z6YT-SK9Z9HHE2SXX.X	1	Managed Industrial Switch for DIN Rail, fanless design Fast Ethernet Type - Enhanced (PRP, Fast MRP, HSR, NAT with L3 type) - 2 x RJ45; 4 x SFP - V=48V÷320VDC -88÷265VAC)	HIRSCHMANN	FUN	SG-200D2
SW1.1	019	M-FAST SFP-TX/RJ45	1	SFP TX Fast Ethernet Transceiver with RJ45	HIRSCHMANN	FUN	SG-200D2
T1	008	F14XXX__01	1	Moofase Transformer 50Hz 800/230Vac 50Hz P=1000VA ? tropicalized	L.E.F.	FUN	SG-200D2
THR	009	TRT-10A230V-NC	1	Regolable Thermostat -10÷80°C 1NC IP20 DIN Mounting	Fandis	FUN	SG-200D2
U1	008	XCSF120CP	1	CSF120CP Switching power supply Cool Power 1-phase 90...264 Vac & 100...345 Vdc / 24 Vdc 5 A redundant version	Cabur	FUN	SG-200D2
X2		HM250GR	47	HMM.4/GR Feed-through Terminal Block - Grey (4 mmq) - spring type	Cabur	FUN	SG-200D2
		BT003	2	BT/3 End bracket	Cabur	FUN	SG-200D2
		HM251GR	1	HMT.4/PT/GR End section - Grey	Cabur	FUN	SG-200D2

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
3	18/09/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
2	10/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
1	22/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
0	08/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

DWG n° : 231298/SD/32
Item n° : PF1002669/3

IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200D2"
FUNCTIONAL DIAGRAM
Bill of Materials

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00032

SHEET 024

REV. 03

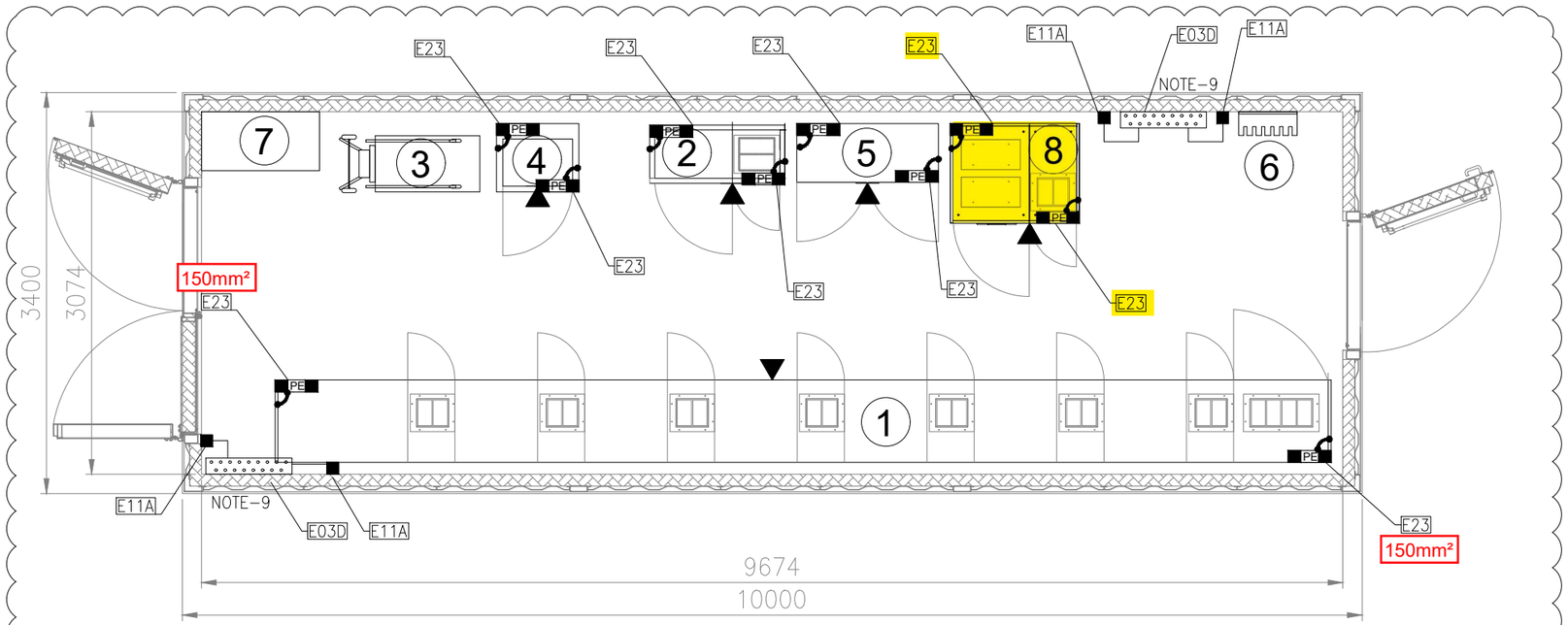
F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00032 Rev. 03

PLATFORM NORTH
TRUE NORTH

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_B	02/09/24	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)

CROSSWIND

ROSETTI MARINO

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

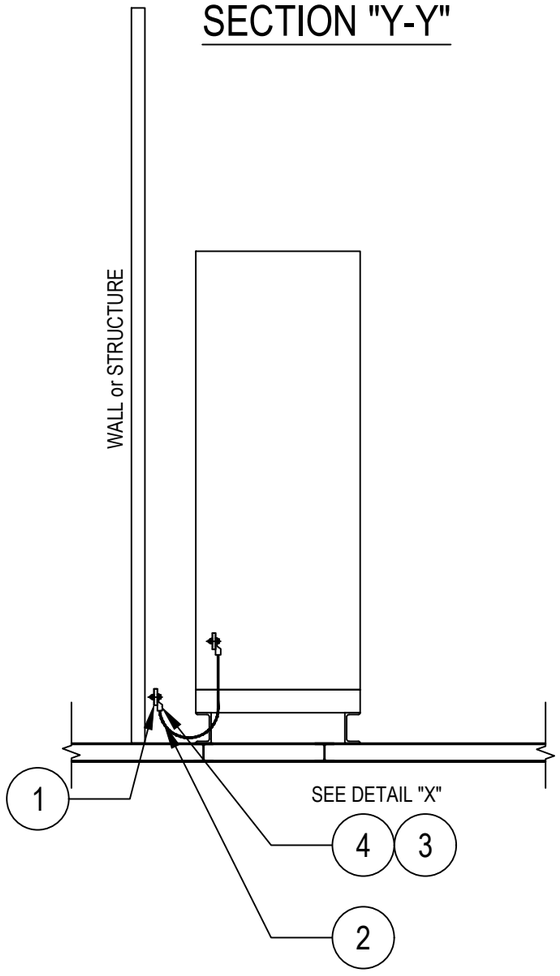
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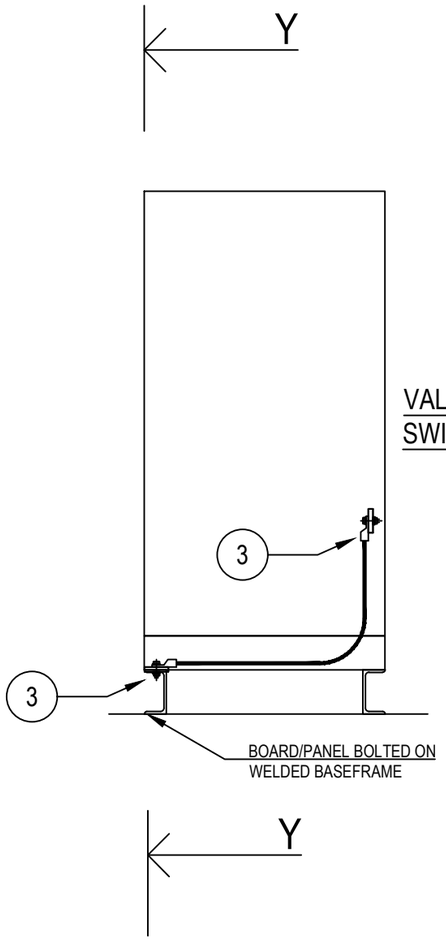
F.to UNI A3: 420mmx297mm

E23

POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	MARSHALLING EARTHING BAR	TINNED COPPER	50X5		NOTE 1
2	Y/G INSULATING COPPER CONDUCTOR	COPPER	35mm² SEE NOTE 1		NOTE 1
3	COMPRESSION TYPE LUG FOR INSULATION COPPER CONDUCTOR	TINNED COPPER	35mm² SEE NOTE 1	4	NOTE 1
4	BOLT, PLANE WASHER, GROWER SPRING WASHER AND NUT	AISI 316L	M10X30	4	

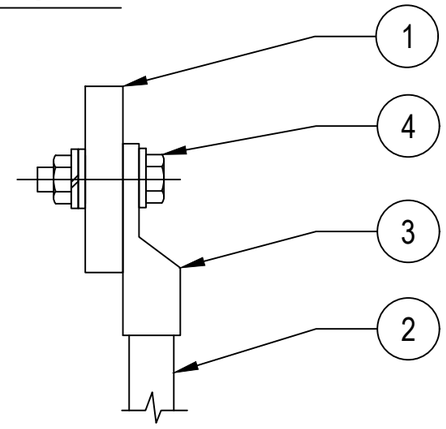
SECTION "Y-Y"





VALID FOR HV/LV SWITCHGEAR

DETAIL "X"



NOTES:

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

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

REV.:	DATE:	SIGNATURE:
2_C	09/09/24	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 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

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

IOGP S-560D (3.0) Procurement Technical Data Sheet (TDS) - Solar Farm - In-Feed Power Isolator Panel

Row	Ref. Clause	Description	Purchaser requirement	Purchaser requirement UOM	Supplier offered value	Supplier offered UOM	Additional notes	Issue
1		**Identifier**						
2		Tag number :	SG-200D2		SG-200D2			
3		Tag description :	LV Switchgears		LV Switchgears			
4		**General information**						
5		Conformity assessment system (CAS) level :	D		D			
6		Project country :	Netherlands		Netherlands			
7		Project region :	Netherlands		Netherlands			
8		**Electrical system**						
9	8.6.1	Earthing system :	IT		IT			02
10		System configuration phases/wires :	3-phase 3-wire		3-phase 3-wire			
11		**Voltage ratings**						
12	5.2.1	Nominal voltage of supply system :	800	V	800	V		
13		Transient overvoltages :	category III		category III			
14		**Current ratings**						
15	5.3.1	Rated current of assembly busbars (I_{nA}) :	630	A	630	A		
16	6.1	Rated peak withstand current (I_{pk}) :	25	kA	63	kA		
17	6.1,9.3.1	Rated short-time withstand current (I_{cw}) :	10	kA	30	kA		
18	6.1	Rated short-time withstand current (I_{cw}) time duration :	1	s	1	s		
19		Short-circuit current in neutral conductor and in protective circuit :	60	%	other	%	Not applicable	
20		**Rated diversity factor (RDF)**						
21		Assumed loading factor distribution - 1 circuit :	1,0		1,0			
22		Assumed loading factor distribution - 2 and 3 circuits :	0,9				Not applicable	
23		Assumed loading factor distribution - 4 and 5 circuits :	0,8				Not applicable	
24		Assumed loading factor distribution - 6 and 9 circuits :	0,6				Not applicable	
25		Assumed loading factor distribution - 10 or more circuits :	0,7				Not applicable	
26		Assumed loading factor electric actuator (MOV) :	0,2				Not applicable	
27		Assumed loading factor motors rated less than or equal to 100 kW :	0,8				Not applicable	
28		Assumed loading factor motors rated greater than 100 kW :	1				Not applicable	
29		**Rated frequency (f_n)**						
30	5.5	Rated frequency (f_n) :	50	Hz	50	Hz		
31		**Other characteristics**						
32	8.102.1	Mounting arrangement :	longitudinal channels flush with floor		longitudinal channels flush with floor			
33		**Information relating to assembly**						
34		Language used for all provided information :	English		English			
35		**Instructions for handling, installation, operation and maintenance**						
36	6.2.2	Lifting device for withdrawable parts heavier than 25 kg :	not required		not required			
37		**Device and/or component identification**						
38		Main component, primary identification language :	English		English			
39		Mimic (synoptic) diagrams :	required		select		Not applicable	
40		**Normal service conditions**						
41		Location type :	indoor climate controlled		indoor climate controlled			
42	8.102.3,8.102.4	Operating environment :	offshore – fixed		offshore – fixed			
43	7.1.1	Ambient air temperature - lower limit :	-8.4	°C	-8.4	°C		
44		Ambient air temperature - upper limit :	40	°C	40	°C		
45		Ambient air temperature - daily average maximum :	35	°C	35	°C		
46		Humidity conditions - maximum relative humidity :	95 % at −5 °C to +30 °C	%	95 % at −5 °C to +30 °C	%		
47		Pollution degree of macro-environment (of installation environment) :	3		3			
48		Altitude :	≤ 2 000	m	≤ 2 000	m		
49		**Special service conditions**						
50		Seismic activity zone in accordance with IEC 60721-2-6 :	not applicable		not applicable			
51		EMC environment :	A		A			
52	8.102.3,8.102.4	Maximum rolling of vessel in dynamic conditions :	not applicable		not applicable			
53	8.102.3,8.102.4	Maximum pitching of vessel in dynamic conditions :	not applicable		not applicable			
54		**Storage and handling**						
55		Storage and handling environmental conditions :	within IEC default conditions		within IEC default conditions			
56		**Degree of protection provided by assembly enclosure**						
57		Minimum external mechanical impact protection :	IK08		IK08			
58	8.2.2	Protection against ingress of solid foreign bodies and ingress of water :	IP 2X		IP30			
59		**Protection against electric shock**						
60		Type of protection against electric shock - basic protection :	constructional (manufacturer's standard)		constructional (manufacturer's standard)			
61		Type of protection against electric shock - fault protection :	automatic disconnection of supply		automatic disconnection of supply			
62		Access to manually operated devices :	authorized persons		authorized persons			
63	8.5.5.101.7	Closed compartment doors :	hasp and padlock		manufacturer's standard locking facility		Door with hinged with key lock.	
64	8.2.3	Safety shutters, disconnectors and switches :	hasp and padlock		manufacturer's standard locking facility		ACBs are equipped with key locks.	
65	8.5.5.101.7	Padlock provider :	manufacturer supplied		user supplied			
66		**Withdrawable parts (IEC 61439-2)**						
67	8.5.101	Type of electrical connections for outgoing functional units rated up to and including 630 A :	withdrawable		withdrawable		Circuit breaker withdrawable	
68	8.5.2.101	Facility to remotely test withdrawn functional units :	required		not required			
69		**Selection of switching devices and components**						
70	8.5.3.101.2	Incoming unit switching device requirement :	withdrawable ACB		withdrawable ACB			
71		Bus coupler switching device requirement :	withdrawable ACB		withdrawable ACB			
72	8.5.3,8.5.3.104.1	Main circuit protection for lighting and small power feeders :	MCCB/MCB		MCCB/MCB			
73	8.5.3.104.1,8.5.3.105.1	Main circuit protection for motor starters and contactor feeders :	MCCB/MCB		MCCB/MCB			
74		**Air circuit breakers**						
75	8.5.3.103.2.5	Spring charging motor voltage :	110 V DC		230	V AC		
76		Air circuit breaker control voltage :	110 V DC		230	V AC		
77	8.5.3.103.2.10	Air circuit breaker auxiliary contact provision :	2 NO and 2 NC					
78		**Motor starters and contactor feeders**						
79	8.5.3.105.13,8.5.3.105.14,8.5.3.105.15	Contactor control circuit voltage :	230 V AC		other		Not applicable	
80	8.5.3.105.13,8.5.3.105.14,8.5.3.105.15	Contactor control power source :	internal within each bus section		other		Not applicable	
81	8.5.3.106.6	Earth fault front of compartment reset :	required		not required		Not applicable	
82		Minimum motor size for space heater :	not required	kW	not required	kW	Not applicable	
83		Motor space heater supply voltage :	230 V AC		other		Not applicable	
84		**Unearthed electrical supplies (IT)**						
85		Provision of portable insulation fault locator :	not required		not required			
86		**Accessibility**						
87	8.5.5.101.2	PSC-assembly physical configuration :	access front only		access front only			
88		**Auxiliary components**						
89	8.5.10.2.3.3,8.5.3.103.2.11	Test blocks for ACB protection relay injection testing :	required - manufacturer's standard		not required			
90	8.5.10.2.3.1	Energy and maximum demand metering accuracy :	class 0,5		class 1,0			
91		**Internal electrical circuits and connections**						
92	8.6.1	Main circuit busbar insulation :	required		required			

	Ref. Clause	Description	Purchaser requirement	Purchaser requirement UOM	Supplier offered value	Supplier offered UOM	Additional notes	
93		Main circuit earth-neutral link within incoming circuit units :	required		required			
94		Auxiliary circuit wiring insulation type :	low smoke zero halogen		low smoke zero halogen			
95	8.6.5	Supplementary conductor marking by colour :	not required		not required			
96		**Terminals for external conductors**						
97		Incoming (supply) unit direction of external conductors :	from above		from above			
98	8,8	Incoming (supply) unit external conductor type :	cable		cable			
99		Outgoing (load) unit direction of external conductors :	from above		from above			
100	8,8	Outgoing (load) unit external conductor type :	cable		cable			
101		Auxiliary cable direction of external conductors :	from above		from above			
102		Auxiliary cable external conductor type :	cable		cable			
103		External conductor material :	copper		copper			
104	8,8	Multicore cable entry method :	multi-cable transit		multi-cable transit			
105	8,8	Single core cable entry method (non-magnetic) :	multi-cable transit		multi-cable transit			
106		Special glanding requirement :	none		none			
107		**Terminals for control and auxiliaries**						
108		Minimum spare unwired terminal provision for future use :	10 % spare		other		Not applicable	
109		**Internal separation of PSC-assemblies (IEC 61439-2:2020)**						
110	8.101]	Internal separation for ACB functional units :	Form 4 type 5		select		Form 3b	
111	8.101]	Internal separation for non-ACB functional units :	Form 4 type 5		Form 3b		Form 3b	
112		**Enclosure space heaters**						
113	8.103.1.1	Assembly enclosure space heater requirement :	required		required			
114	8.103.1.1	Assembly enclosure space heater voltage :	230 V AC		230 V AC			
115		Assembly enclosure space heater control method :	thermostat		thermostat			
116	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			
117		**Provision for future development**						
118		Provision of equipped spare functional outgoing units :	10%				Not applicable	
119		Provision of space for future outgoing functional units :	10%				Not applicable	
120		**Condition monitoring**						
121	8.105.2.1	Thermal monitoring :	not required		not required			
122		Circuit breaker condition monitoring :	not required		not required			
123		Motor condition monitoring equipment :	not required		not required			
124		**Interface with control systems**						
125		IED brand :	manufacturer's standard		manufacturer's standard		Ekip touch	
126		Process control interface (ICSS/DCS) media :	manufacturer's standard		ethernet (cu)			
127		Process control interface (ICSS/DCS) protocol :	IEC 61850		Modbus TCP/IP			
128		Process control interface (ICSS/DCS) network redundancy :	not applicable		not applicable			
129		Electrical control interface (ECMS) media :	manufacturer's standard		other		Not applicable	
130		Electrical control interface (ECMS) protocol :	IEC 61850		other		Not applicable	
131		Electrical control interface (ECMS) network redundancy :	not applicable		not applicable			
132	8.5.3.106.10	IED remote configuration via ECMS :	not applicable		not applicable			
133		**Switchgear interlocking / intertripping interfaces**						
134		Interlocking / intertripping interface media :	hardwired discrete		hardwired discrete		Via software link with solar farm	
135		Interlocking / intertripping interface protocol :	hardwired		hardwired		Via software link with solar farm	
136		**Power management system (PMS) interfaces**						
137		IED to power management system interface media :	manufacturer's standard		other		Not applicable	
138		IED to power management system interface protocol :	IEC 61850		other		Not applicable	
139		IED to power management system network redundancy :	not applicable		not applicable			
140		**Generator control panel interfaces**						
141		IED to generator control panel interface media :	not required		not required			
142		IED to generator control panel interface protocol :	not required		not required			
143		**Cyber security**						
144		Security certification for industrial automation and control system components :	required		not required			
145		**Ratings of the internal arc classification (IAC)**						
146	6.1.9.3.1	IEC TR 61641:2014 arcing class :	arcing class C		select		Not arc resistant	
147	9.3.1	Permissible short-circuit current under arcing conditions ($I_{p\ arc}$) :	30	kA	NA	kA	Not arc resistant	
148	9.3.1	Permissible arc duration (t_{arc}) :	0,3	s	select	s	Not arc resistant	
149	9.3.1	Integrated internal arc-fault mitigation system (IAMS) :	not required		not required			
150		Internal arc-fault control device (IACD) type :	not required		not required			
151		Internal arc-fault reduction device (IARD) type :	not required		not required			
152		**Routine verification**						
153	11.101.1	ECMS simulation test :	not applicable		not applicable			
154		**Dimensions and accessories**						
155		Switchgear dimensions - SG-200D2	required	mm	1100 x 850 x 2250			
156		Switchgear weight - SG-200D2	required	kg	1000			

Row	IOGP S-560D (3.0) Procurement Technical Data Sheet (TDS) - Solar Farm - In-Feed Power Isolator Panel	Issue
2	**PURCHASE ORDER SPECIFIC REQUIREMENTS**	
3		
4	The column "Supplier offered value" must be entirely filled in by Supplier, the red color is imposed by the IOGP STANDARD	

IOGP S-560D (3.0) Procurement Technical Data Sheet (TDS) - Solar Farm - In-Feed Power Isolator Panel

Guidance on the use of this procurement data sheet

To be used in conjunction with :
IOGP S-560 Supplementary Specification to IEC 61439-1 and IEC 61439-2 for Low-voltage Switchgear and Controlgear.

This procurement data sheet is designed to be used in MS Excel electronic format by the purchaser and the supplier.

This procurement data sheet, completed with requested values, should be delivered back to the purchaser by using the procurement data sheet template or other mutually agreed method.

Ref. Clause provides reference back to the parent standard or the supplementary specification where relevant.

Guidance specific to an item may be provided as a note in the description. This guidance is meant to provide a better understanding of the procurement data sheet item and/or an explanation of how to complete the input.

Additional notes may be used by the purchaser or supplier to provide additional information pertinent to the specification or supply of the equipment.

Issue should be used by the purchaser for revision purposes. After the first issue, for each subsequent revision of the procurement data sheet that is issued to suppliers for enquiry or purchase, the purchaser should use this column to denote that the data on a specific row has been updated since the previous revision. This enables the supplier to easily identify where changes have been made.

Default values (if applicable) have been set according to essential minimum requirements as an integral part of this specification and should only be changed where specific justification can be provided.

The **Supplement** worksheet is provided in an open format for application of specific items not covered in the main part of the procurement data sheet. This worksheet is not intended to modify requirements defined in the specification.

Purchaser requirement and **Purchaser requirement UOM** specify the functional and early design requirements of the equipment. Specified requirements allow the supplier to provide an offer to the purchaser.

Supplier offered value and **Supplier offered UOM** are used by the supplier to declare the offered value. Where the offered product characteristic differs from the **Purchaser requirement**, the cell shading is automatically updated (by conditional formatting) to highlight the deviation from the **Purchaser requirement**.

Requirement CFIHOS ID and **Equipment CFIHOS ID** are prepopulated and hidden in columns K and L of the procurement data sheet worksheet. The purpose of the CFIHOS IDs is to enable information exchange in a data-centric manner.

Legend

select	Purchaser completed, drop-down list of pre-defined values (may be prepopulated with a default value)
input data	Purchaser completed data entry
select	Supplier completed, drop-down list of pre-defined values
input data	Supplier completed data entry
select	Either supplier or purchaser completed, drop-down list of predefined values (may be prepopulated with a default value)
input data	Either supplier or purchaser completed data entry
select	Selection of units from a pre-defined drop-down list
select	No input expected
input data	No input expected
UOM	Fixed unit of measure
UOM	Fixed unit of measure
	No unit of measure (null)

Configuration of purchaser and supplier input columns
The following table, to be read alongside the above legend, shows the possible combinations of relationships between purchaser requirement and supplier offered values.

Purchaser requirement	Purchaser requirement UOM	Supplier offered value	Supplier offered UOM
select	select	select	select
input data	select	input data	select
select	UOM	select	UOM
input data	UOM	input data	UOM
select		select	
input data		input data	
select	select	select	select
input data	select	input data	select
select	UOM	select	UOM
input data	UOM	input data	UOM
select		select	
input data		input data	
select	select	select	select
input data	select	input data	select
select	UOM	select	UOM
input data	UOM	input data	UOM
select		select	
input data		input data	

ITEM	Tag	JB-200E1	: Solar PV Power Cable JB			Dwg	123A90-DDL-EL-DS-20048
	S/Sys	83-10	: 400 V Switchboard Solar (SG-200D2)			Module	TP
TASK	code	C10001311		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX31 Junction and Marshalling Box

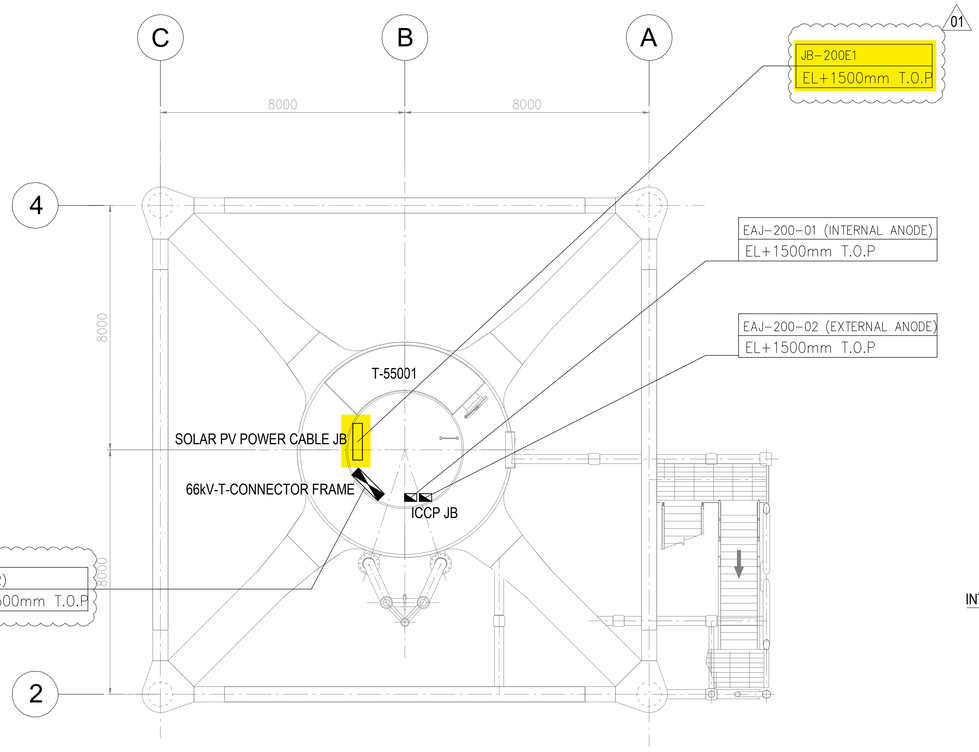
1	Check box is de-energized and safe.	OK
2	Check box is correctly mounted and easily accessible.	OK
3	Check box tagging against drawing.	OK
4	Check nameplate data is correct.	OK
5	Check flameproof joints are clean and greased with approved lubricants (if required).	NA
6	Check for damaging gaskets.	OK
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: All cable connections will be connected during offshore activities. See task: C10004686-C10004687-C1000488.

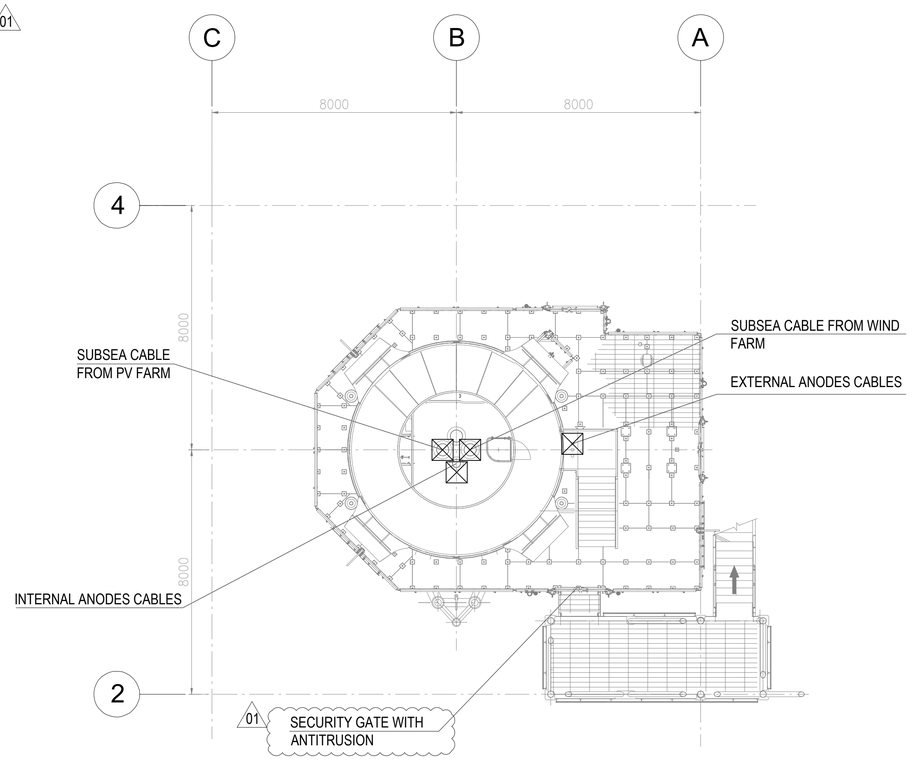
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	VIP	RM(ROSETTI MARINO)	
Name	Madhankumar Arunagiri	Giovanni Tangianu	
Date	2025-04-18	2025-04-22	
Signature	PROVERLIS Digitaly signed by Madhankumar Arunagiri 2025-04-18T06:11:14.619Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-04-22T12:53:49.866Z	

DRAWING NO. 123A90-DDL-EL-DL-20102

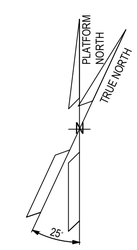
REV. 01

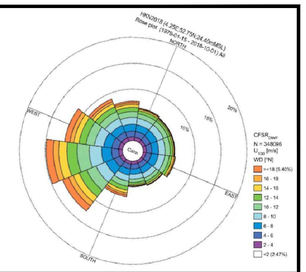


PLAN ON TRANSITION PIECE
EL+21.710 T.O.S.



PLAN ON EXISTING PLATFORM AT
EL+16.860 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. UNLESS NOTED OTHERWISE.
4. ELEVATIONS REFER TO THE HORIZONTAL AXIS OF THE OBJECT. 01

LEGEND

JB-200E1 EL+1500mm T.O.P	TAG ITEM REFERED ELEVATION TO T.O.P. (TOP OF PLATFORM)
	SOLAR PV POWER CABLE JB
	66kV T-CONNECTOR FRAME
01	ICCP JUNCTION BOX
01	EXISTING CABLE ENTRY

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-EL-DL-20140	ELECTRICAL HEAT TRACING JUNCTION BOX LAYOUT
123A90-DDL-EL-DL-20120	LIGHTING & SOCKET LAYOUT - BELOW LOWER DECK
123A90-DDL-EL-DS-20048	TDS - IAC CABLE INTERFACE JB + SOLAR PV JB
123A90-DDL-EL-DS-20054	T-CONNECTORS & HV TERMINATIONS
DRW-15547-001-SAE-001	ICCP DRAWINGS & SPECIFICATIONS

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	23/07/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	24/05/24	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20102**

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

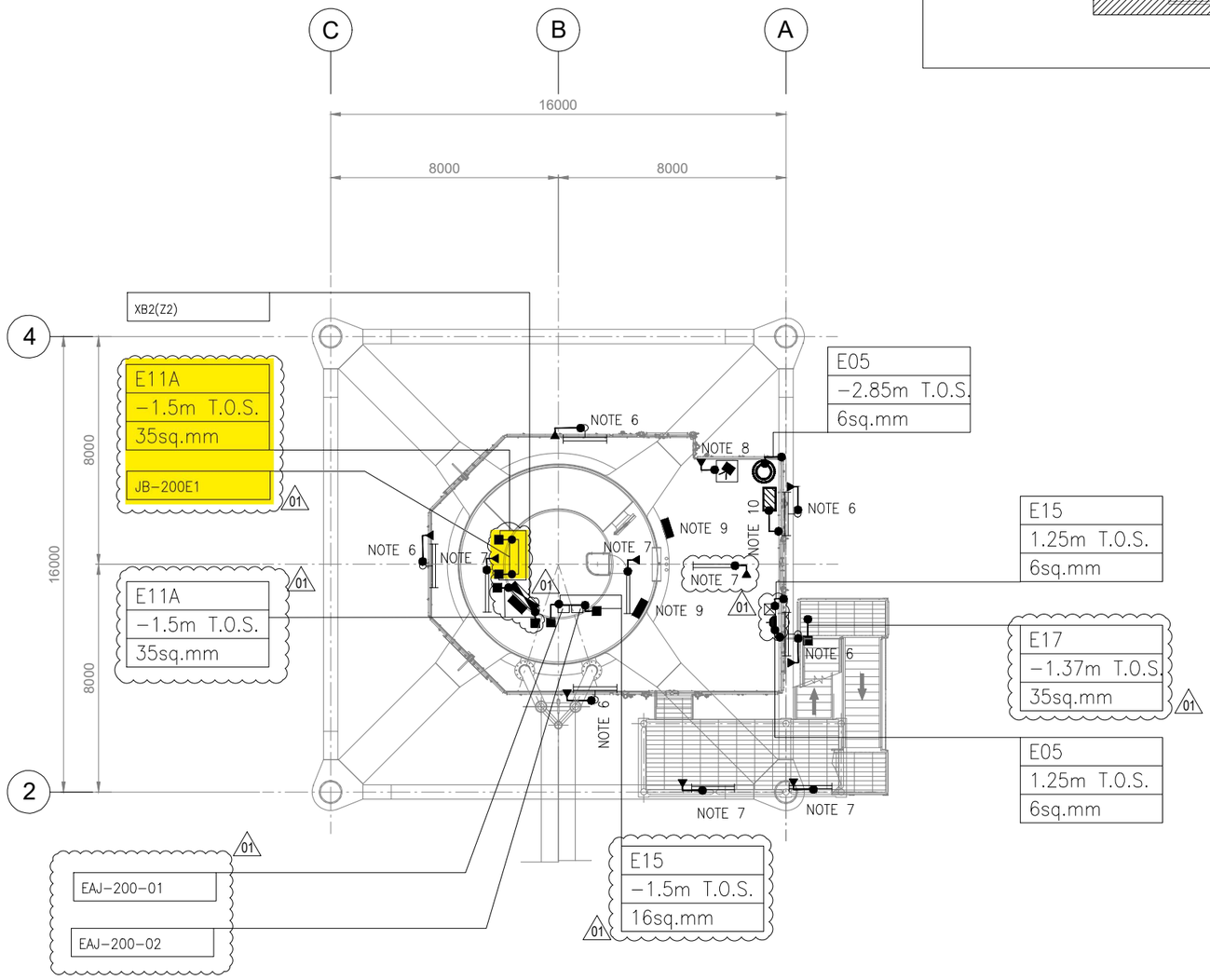
TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
BELOW LOWER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 23/07/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20102	SHEET 001	REV. 01

File Name : 123A90-DDL-EL-DL-20102-Electrical Equipment Layout - Stair Towers

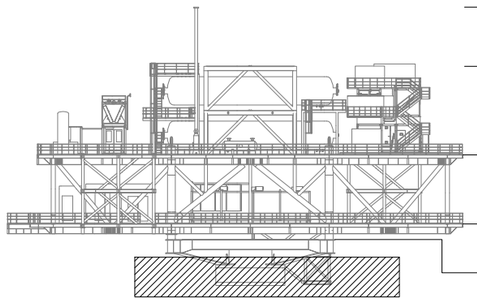
DRAWING NO. 123A90-DDL-EL-DL-20134

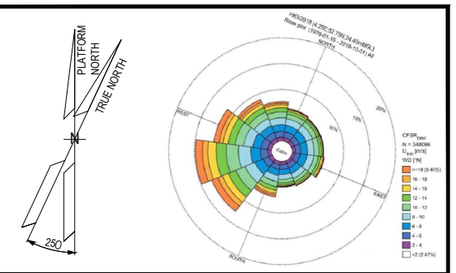
REV. 01



PLAN ON TRANSITION PIECE
EL+21.710 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. FOR LIGHTNING PROTECTION SYSTEM SURGE PROTECTIVE DEVICES (SPD), REFER TO DOCUMENT 123A90-DDL-EL-RE-20154. 01
6. ALL NON-WELDED POLES WILL BE EARTHED AS PER TYPICAL E05 AND E24.
7. ALL LINEAR LIGHTING FIXTURE WILL BE EARTHED AS PER TYPICAL E32.
8. ALL POLE MOUNTED INSTRUMENT DETECTORS WILL BE EARTHED AS PER TYPICAL E05 AND E24.
9. EARTH BAR WILL BE FIXED TO THE PRIMARY BEAMS OF THE UPPER DECK. COMPLETE EARTHING INCLUDING WITH 2 THREADED STUDS. ALL EARTH BAR WILL BE EARTHED AS PER TYPICAL E03D / 6.50M T.O.S. / 35 SQ MM.
10. ALL INSTRUMENT RACK WILL BE EARTHED AS PER TYPICAL E15.

LEGEND

- LIGHTING FIXTURE POLE MOUNTED
- LINEAR LIGHTING FIXTURE
- EARTHING BOSS AISI316L
- COMPRESSION TYPE LUG TINNED COPPER
- THREADED STUD FOR EARTHING CONNECTION
- Exx EARTHING TYPICAL CODE
- EARTHING BAR
- SMALL POWER SOCKET & JB 01
- INSTRUMENT RACK
- UV-IR FLAME DETECTOR
- STATUS LIGHT

TYP.	TYPICAL
ELE	ELEVATION
SIZE	

REFERENCE DOCUMENTS

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-20102	ELECTRICAL EQUIPMENT LAYOUT - BELOW LOWER DECK
123A90-DDL-EL-DL-20120	LIGHTING & SOCKET LAYOUT - BELOW LOWER DECK
123A90-DDL-SAF-DL-30028	F & G DETECTORS LAYOUT - BELOW LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	26/07/24	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	24/05/24	NLK	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20134**

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

ROSETTI MARINO SpA

CROSSWIND | ROSETTI MARINO

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

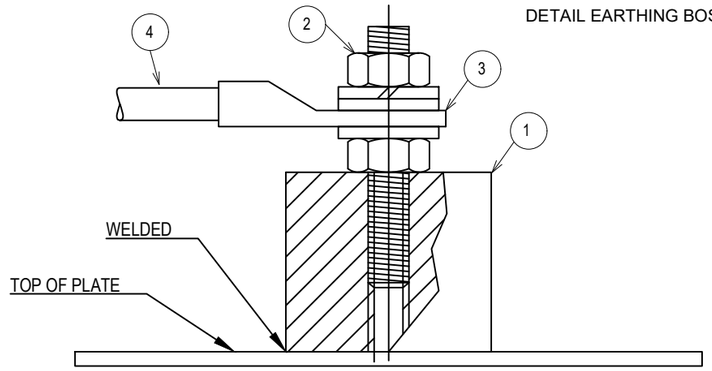
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN NLK	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 26/07/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20134	SHEET 001	REV. 01

File Name : 123A90-DDL-EL-DL-20134

POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	EARTHING BOSS WITH THREADED HOLE M10	AISI 316L	50X50 50X150	1	NOTE 2
2	STUD BOLT WITH PLANE WASHER, GROWER AND NUT	AISI 316L	M10X50		
3	COMPRESSION TYPE LUG FOR INSULATION COPPER CONDUCTOR	TINNED COPPER			~~NOTE 3~~
4	Y/G INSULATING COPPER CONDUCTOR				NOTE 1 NOTE 5
5	EARTHING PLATE	AISI 316L (NOT PAINTED)	50X50X5		NOTE 4
6	HEXAGONAL BOLT WITH PLANE WASHERS, GROWER AND NUT.	AISI 316L	M10X30		
7	THREADED STUD COMPLETE WITH GROWER AND NUTS	AISI 316L	M10X28		NOTE 6 NOTE 7

E11A

DETAIL EARTHING BOSS 50x50

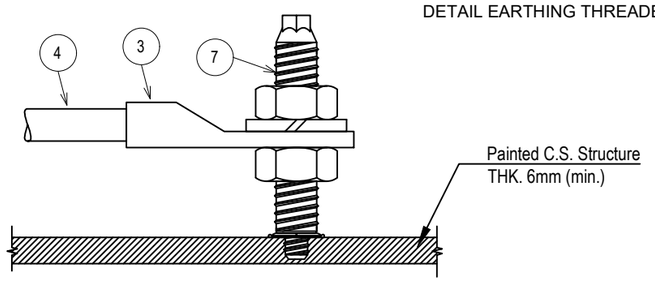


E11D

SEE NOTE 6

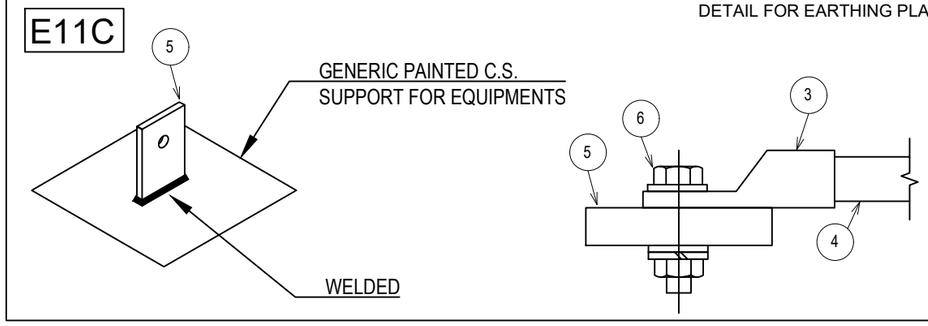
FOR CABLE
MAX 10mm²

DETAIL EARTHING THREADED STUD



E11C

DETAIL FOR EARTHING PLATE

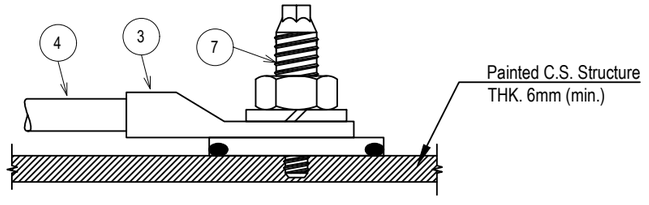


E11E

SEE NOTE 7

FOR CABLE
MAX 35mm²

DETAIL EARTHING THREADED STUD



NOTES:

1) ONLY ONE PROTECTIVE CONDUCTOR TERMINATION LUG SHALL BE CONNECTED TO A DEDICATED EARTHING BOSS, EARTH PLATE OR EARTH STUD.
2) EXTERNAL EARTHING CONNECTION ONLY SHALL BE PROTECTED AGAINST CORROSION USING OXIDE RESISTANT COMPOUND (E.G. COPPER GREASE).
3) ~~CABLE LUG CRIMPING METHOD SHALL BE HEXAGONAL COMPRESSION DIES ONLY.~~
4) EARTHING PLATE SHALL BE DEDICATED TO CABLE TRAY AND PIPE SUPPORTS, JUNCTION BOX, LOCAL CONTROL STATION AND SMALL EQUIPMENT SUPPORTS, LIGHTING POLES, RECEPTACLE SUPPORTS AND REMOVABLE HANDRAILS, ONLY.
5) FOR SIZE OF THE EARTHING CABLE SEE EARTHING LAYOUT DRAWINGS OF RESPECTIVE AREAS
6) HILTI S-BT-ER M10/15 SN6 CERTIFIED FOR EARTHING SYSTEM. RECOMMENDED MAX CONDUCTOR SIZE 10mm².
7) HILTI S-BT-ER M10 HC 120 CERTIFIED FOR EARTHING SYSTEM. RECOMMENDED MAX CONDUCTOR SIZE 35mm².

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
SINGLE EARTHING CONNECTION

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

SCALE : NTS

A3

DRAWING NO. 123A90–DDL–EL–DD–20090

SHEET 003

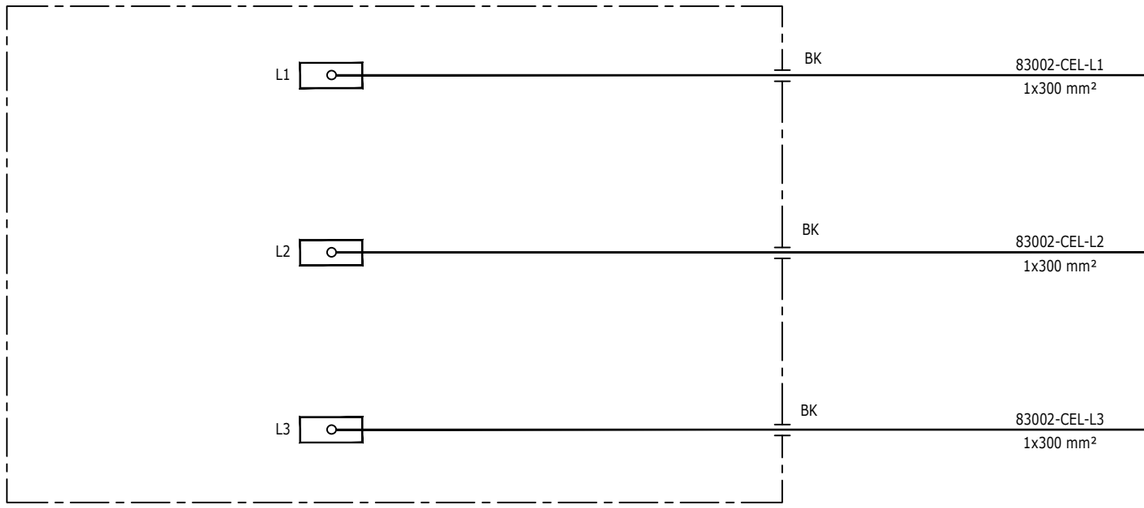
REV. 02

F.to UNI A3: 420mmx297mm

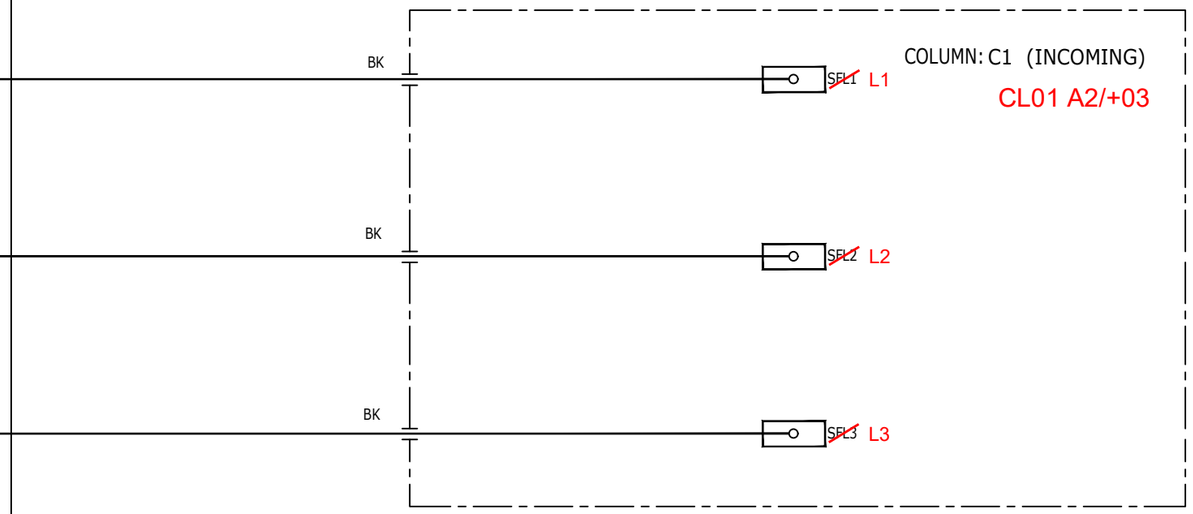
File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

FROM	TO

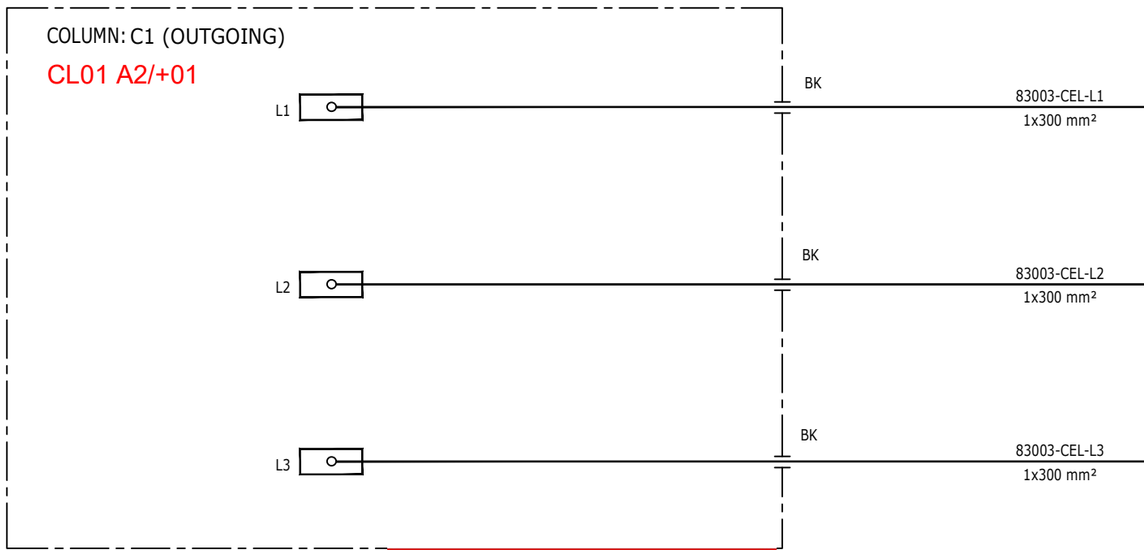
DESCRIPTION: SOLAR PV POWER CABLE JB
TAG NUMBER: JB-200E1



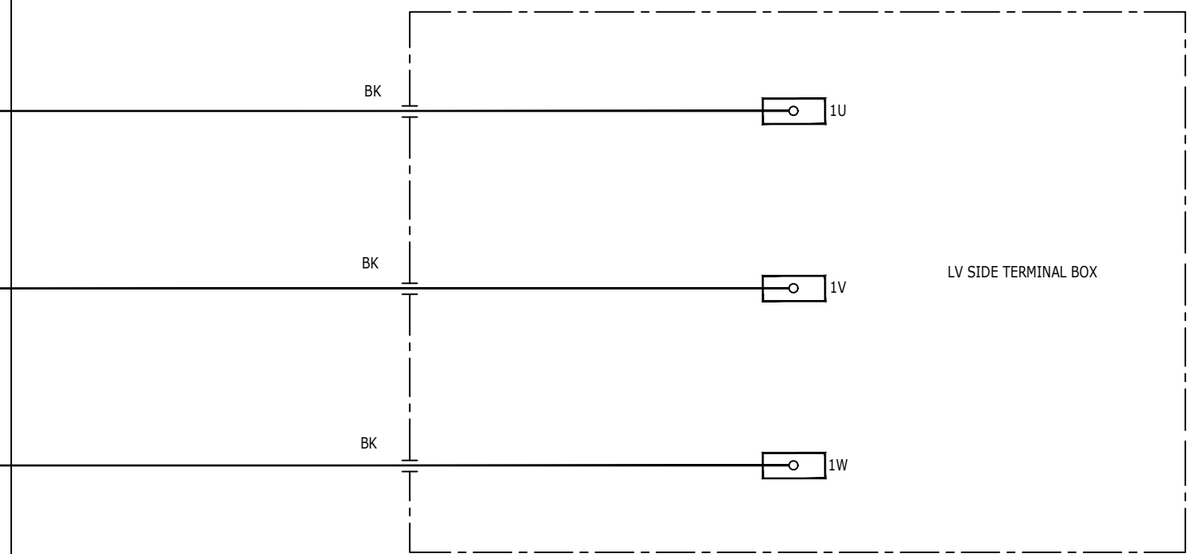
DESCRIPTION: LV SWBD 800/460V
TAG NUMBER: SG-200D2



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



DESCRIPTION: 6.6/0.8 KV TRANSFORMER
TAG NUMBER: TR-200ED1



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

REV.:	DATE:	SIGNATURE:
2_M	02/05/25	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
SOLAR PV POWER CABLE JB & LV SWBD 800/460V

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

SCALE : 1:X

A3

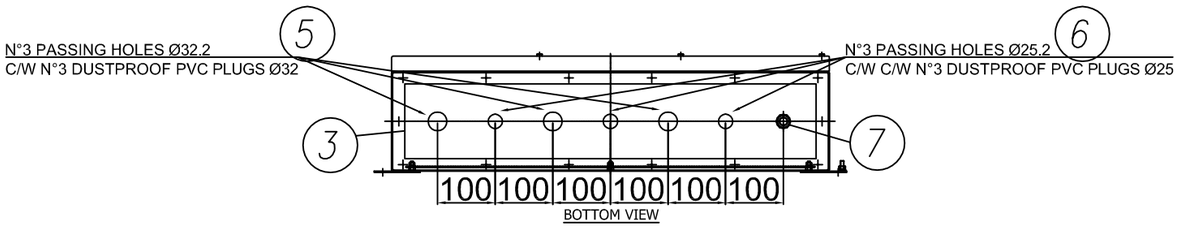
DRAWING NO. 123A90-DDL-EL-DG-20149

SHEET 018

REV. 02

F.to UNI A3: 420mmx297mm

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



10

I2400722-B016I00029817

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

CE

MADE IN ITALY

Serial Nr.:
Year of construction:

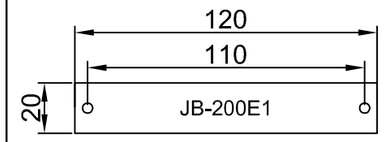
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800VAC 50Hz 630A

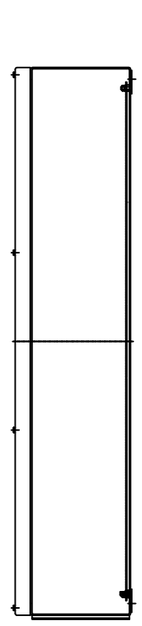
T.amb -20/+50°C

IP66

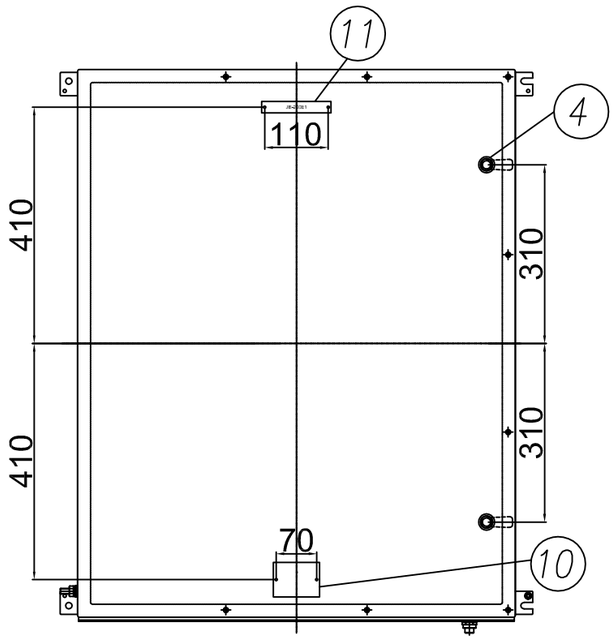
11 PLATE DETAIL



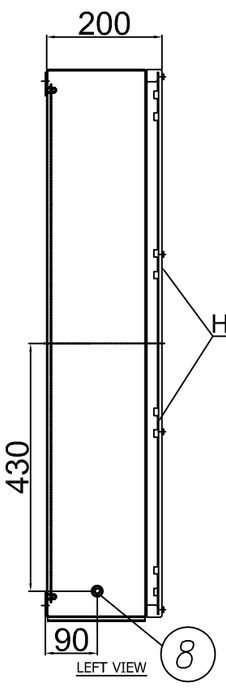
MATERIAL: LAMINATED PLASTIC
BACKGROUND: WHITE
LETTERS: BLACK



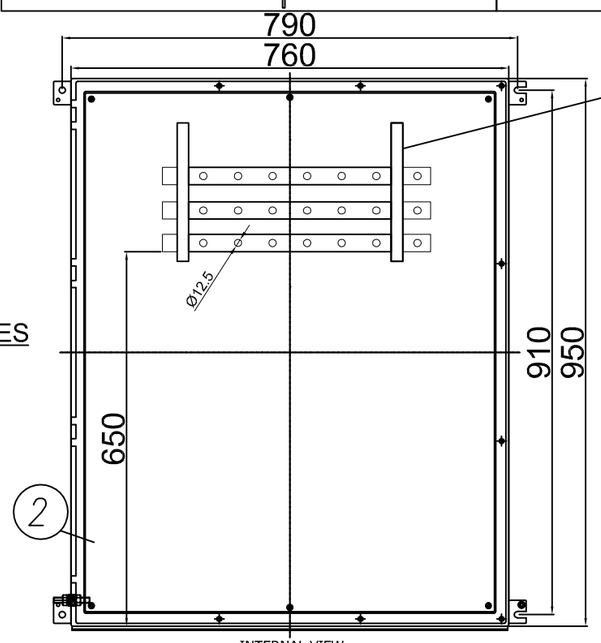
RIGHT VIEW



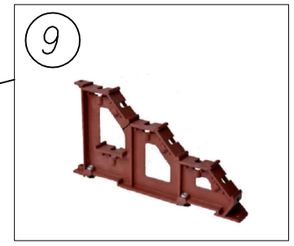
FRONT VIEW

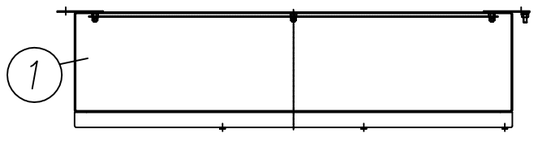


LEFT VIEW



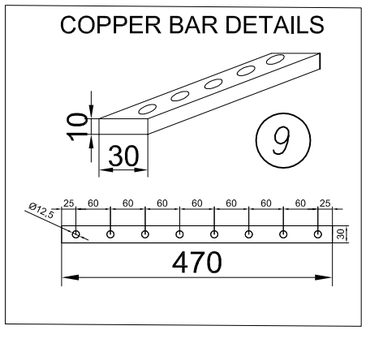
INTERNAL VIEW





TOP VIEW

COPPER BAR DETAILS



ITEM	DESCRIPTION	Pcs Q.TY	NOTE/MAT.	CODE	MANUFACTURER
11	LAMINATED PLASTIC TAG 120X20	1	–	.	TECHNOR ITALSMEA
10	AISI316L CERTIFICATE PLATE 80X60	1	–	.	TECHNOR ITALSMEA
9	COPPER BARS FOR DISTRIBUTION, 30X10 MM C/W SUPPORT WITH 3 TIERS	3	GW45562	.	GEWISS
8	AISI316L INT/EXT EARTH BOLT M10	1	BTP–10	.	TECHNOR ITALSMEA
7	AISI316L DRAIN/BREATHER VALVE M16	1	ECR–3	.	TECHNOR ITALSMEA
6	DUSTPROOF PVC PLUG Ø25	3	–	.	TECHNOR ITALSMEA
5	DUSTPROOF PVC PLUG Ø32	3	–	.	TECHNOR ITALSMEA
4	1/4 TURN LOCK HYGENIC	2	–	.	TECHNOR ITALSMEA
3	REMOVABLE GLAND PLATE THK. 3 MM	1	FL L76 H20	.	TECHNOR ITALSMEA
2	AISI316L INTERNAL MOUNTING PLATE	1	PS–7695	.	TECHNOR ITALSMEA
1	AISI316L ENCLOSURE THK. 1.5 MM	1	SB–769520	.	TECHNOR ITALSMEA

-ELECTROPOLISHED
Q.TY 1, ITEM 10: 2JBXXSSSA, ELEJB01

Explosion Proof
Electrical Equipment
Materiali Elettrici Antideflagranti

TECHNOR ITALSMEA
A COMPANY OF MARECHAL ELECTRIC

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
05	20/12/24	FB	OB	OB	ACCEPTED FOR CONSTRUCTION (AFC)
04	26/11/24	FB	OB	OB	ACCEPTED FOR CONSTRUCTION (AFC)
03	25/10/24	FB	OB	OB	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/09/24	FB	OB	OB	ACCEPTED FOR CONSTRUCTION (AFC)
01	03/09/24	FB	OB	OB	ACCEPTED FOR CONSTRUCTION (AFC)
00	30/07/24	FB	OB	OB	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)

Solar PV Power Cable JB

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

SCALE : NTS

A3

DRAWING NO. 1724001481–EL–DA–00003

SHEET 003

REV. 05

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

F.to UNI A3: 420mmx297mm

ENCLOSURES / JUNCTION BOXES WITH TERMINALS

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

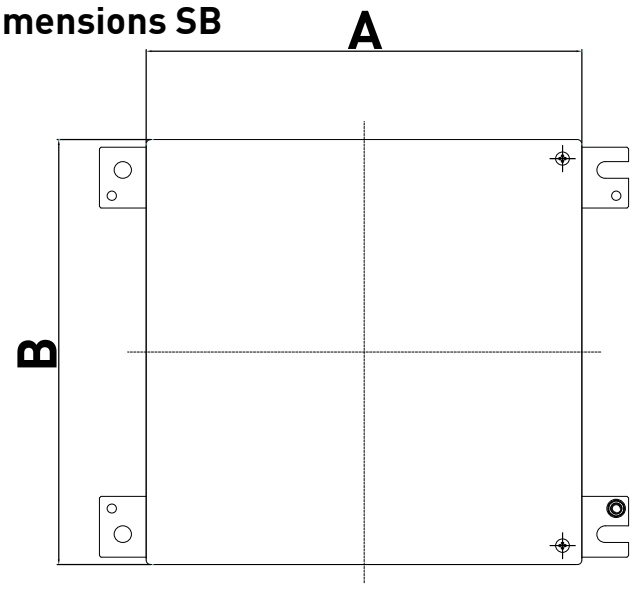


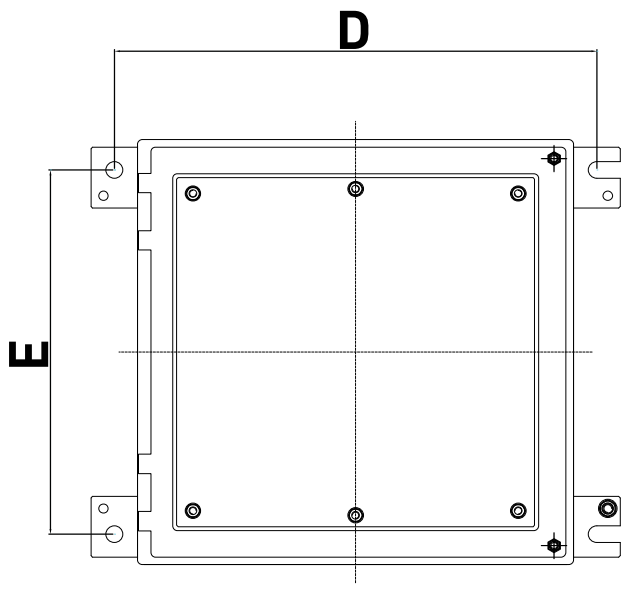
- SB../ST.. Series enclosures are suitable for housing Ex e/eb and Ex i terminals and can be provided with internal mounting plate to facilitate terminal board mounting.
- Maximum numbers of terminals varies according to: terminals section and current, enclosure size, operating temperature and required 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

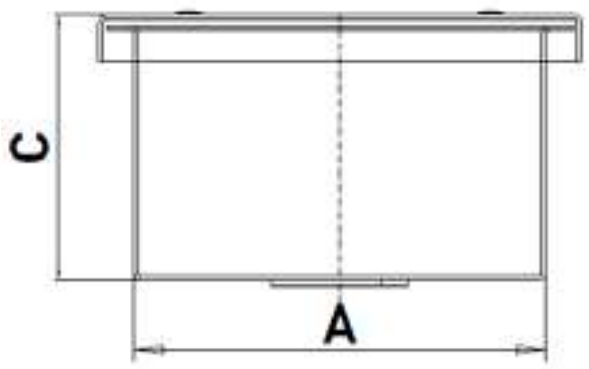
Material	AISI316L stainless steel - with thickness 1,5 mm - upon request other thickness available		
IP rating	IP66/IP67	IP66/IP67	IP55/IP66 (SBHT.. Series high temperature)
Shock resistance	IK 10	IK 10	IK 10
Ambient temperature range	Ambient From -50°C to +95°C	Service From -50°C to +105°C	SBHT.. Series: 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		

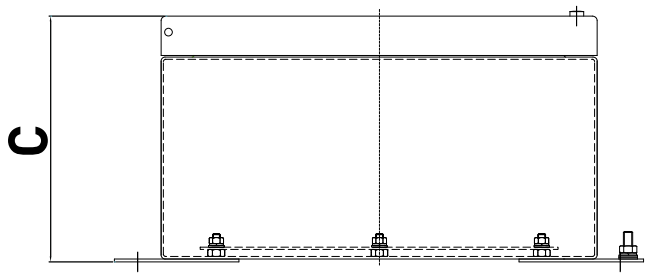
Dimensions SB





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.

ITEM	Tag	83002-CEL-L1	: Solar PV Power Cable JB / LV SWBD 800/460V			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-10	: 400 V Switchboard Solar (SG-200D2)			Module	TP/LD_B-200
TASK	code	C10001823		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: 1X300 mm2 | Color: GREY

From: JB-200E1 | To: SG-200D2

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…).	Note
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.	NA
11	Check cores marking are in accordance with termination diagram	OK
12	Check terminations are in accordance with latest termination diagram	Note
13	If required produce Red Line Mark Up for "AS BUILT"	

REFER TO FINAL SHEET FOR ACCEPTANCE

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	83002-CEL-L1	: Solar PV Power Cable JB / LV SWBD 800/460V			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-10	: 400 V Switchboard Solar (SG-200D2)			Module	TP/LD_B-200
TASK	code	C10001823		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	0,6	
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	>1999	
11		PH2 / PH1-PH3-A-E	NA	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		NA	

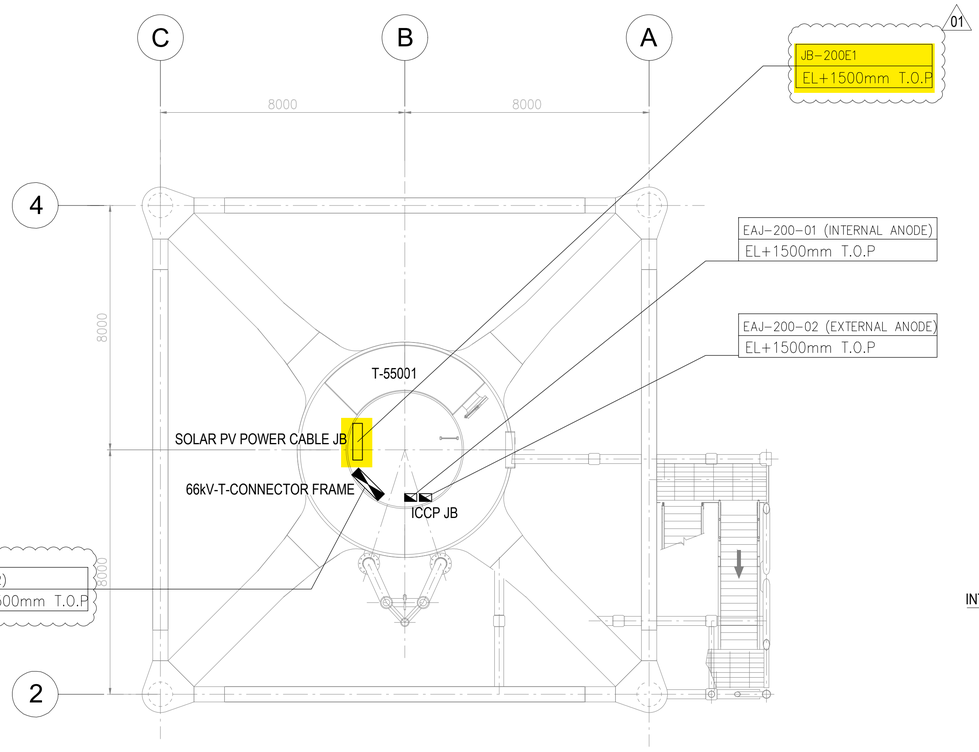
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	VOLCRAFT 1000V - ET-200 S/N:H240103023	TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207
Calibration certificate N° and date:	N°LAT 042 00768/24 _ 12/10/2024	Calibration certificate N° and date:	N°7722/24 _ 10/07/2024

Comments: Note 3,12: Cable dressing and termination will be completed on OFFSHORE phase. Refer to task C10004686

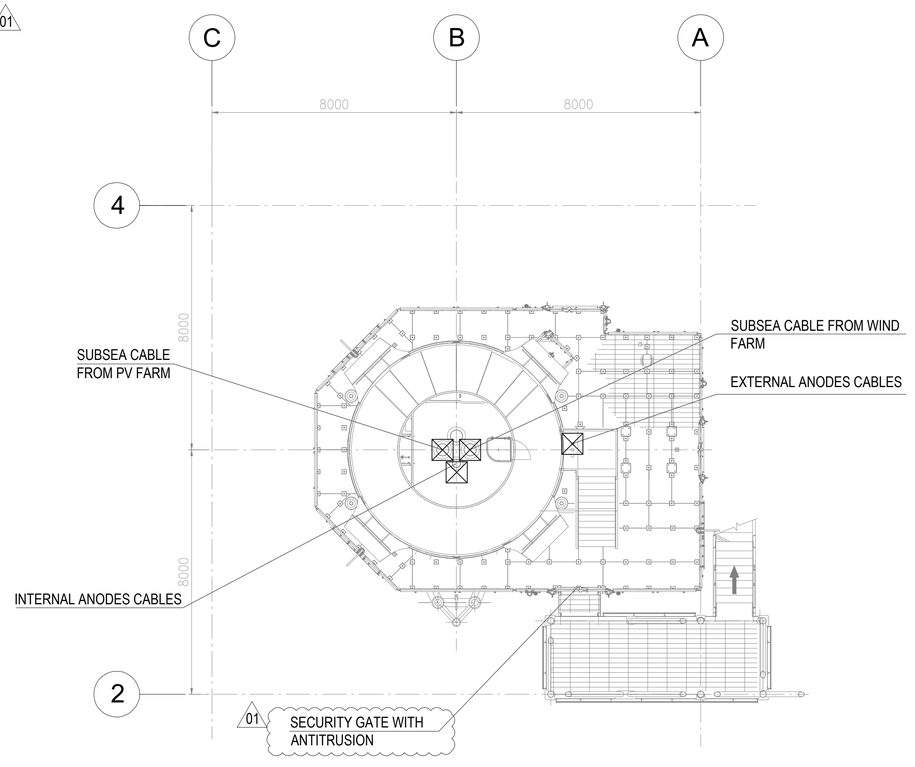
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-18	2025-02-20	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-18T16:01:11.388Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-20T10:07:43.192Z	

DRAWING NO. 123A90-DDL-EL-DL-20102

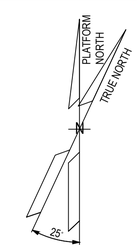
REV. 01

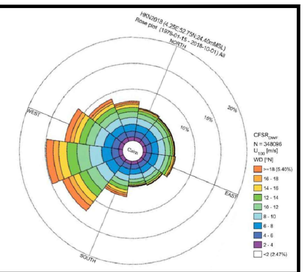


PLAN ON TRANSITION PIECE
EL+21.710 T.O.S.



PLAN ON EXISTING PLATFORM AT
EL+16.860 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. UNLESS NOTED OTHERWISE.
4. ELEVATIONS REFER TO THE HORIZONTAL AXIS OF THE OBJECT. 01

LEGEND

JB-200E1 EL+1500mm T.O.P	TAG ITEM REFERED ELEVATION TO T.O.P. (TOP OF PLATFORM)
	SOLAR PV POWER CABLE JB
	66kV T-CONNECTOR FRAME
01	ICCP JUNCTION BOX
01	EXISTING CABLE ENTRY

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-EL-DL-20140	ELECTRICAL HEAT TRACING JUNCTION BOX LAYOUT
123A90-DDL-EL-DL-20120	LIGHTING & SOCKET LAYOUT - BELOW LOWER DECK
123A90-DDL-EL-DS-20048	TDS - IAC CABLE INTERFACE JB + SOLAR PV JB
123A90-DDL-EL-DS-20054	T-CONNECTORS & HV TERMINATIONS
DRW-15547-001-SAE-001	ICCP DRAWINGS & SPECIFICATIONS

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	23/07/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	24/05/24	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20102**

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

ROSETTI MARINO SpA

CROSSWIND

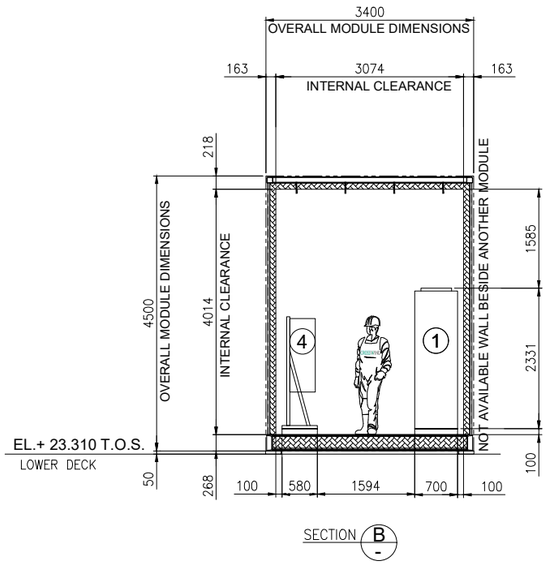
ROSETTI MARINO

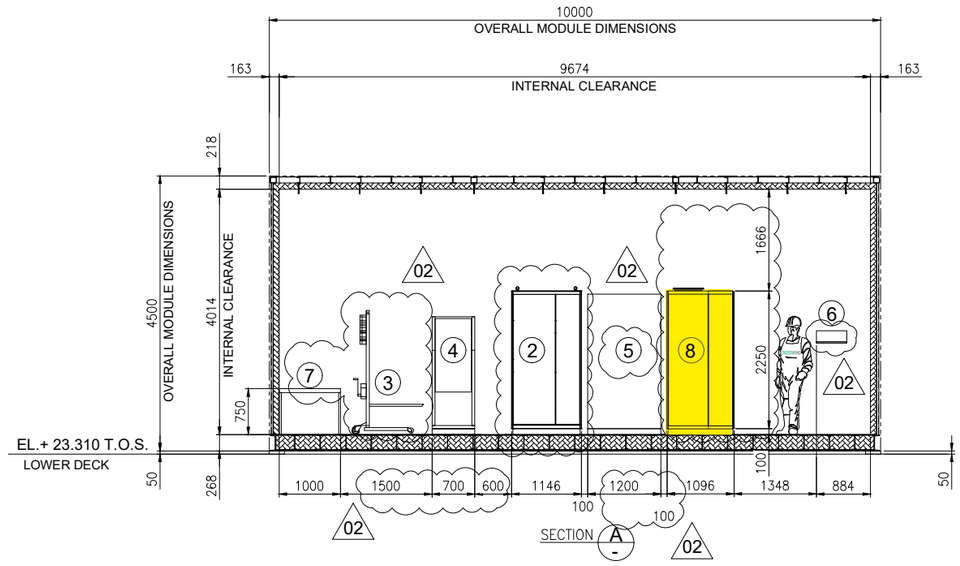
TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
BELOW LOWER DECK

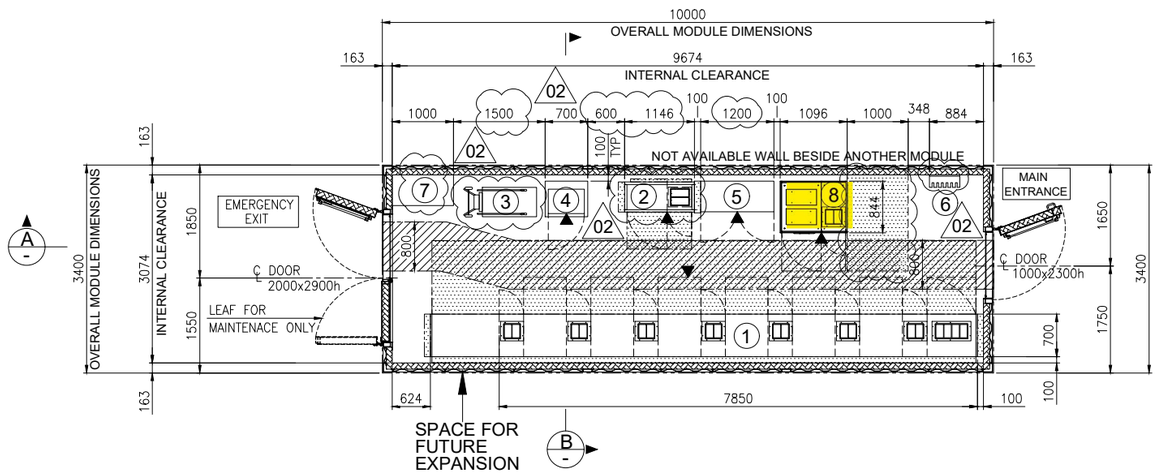
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 23/07/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20102	SHEET 001	REV. 01

File Name : 123A90-DDL-EL-DL-20102-Electrical Equipment Layout - Stair Towers

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





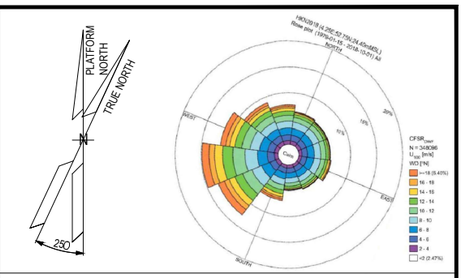


EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

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

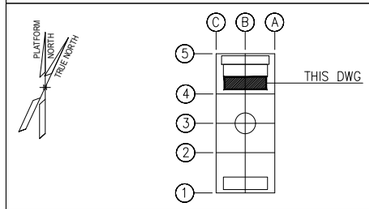
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

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	OYFO/MDO	ISSUE FOR REVIEW (IFR)

CROSSWIND | ROSETTI MARINO

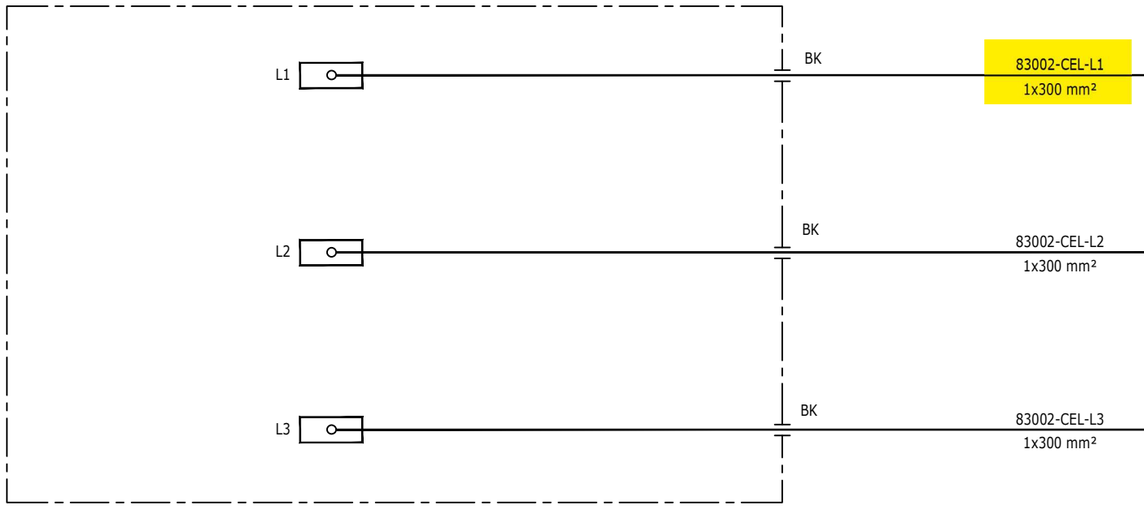
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LV SWITCHROOM

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

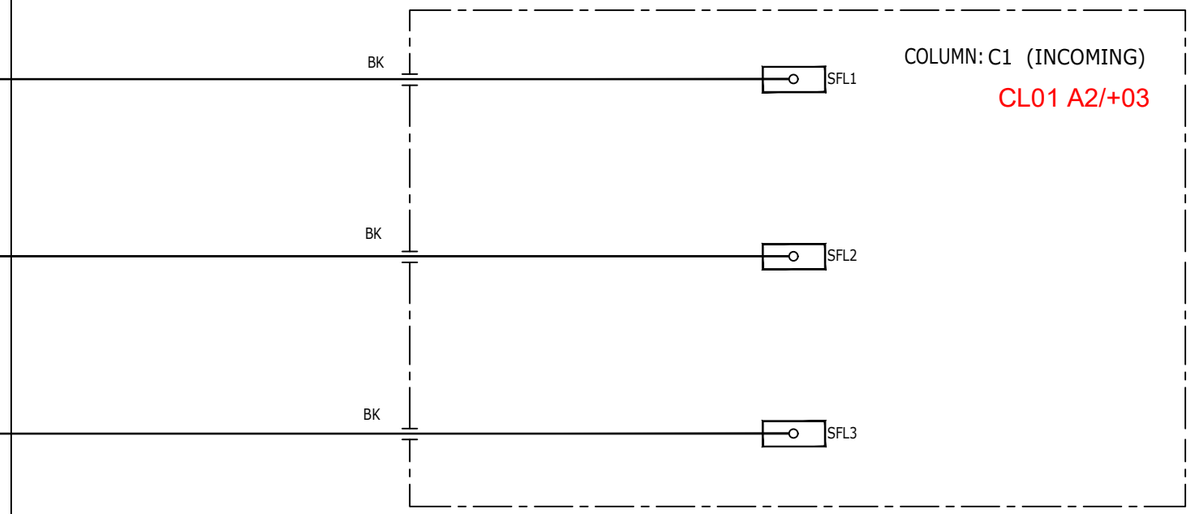
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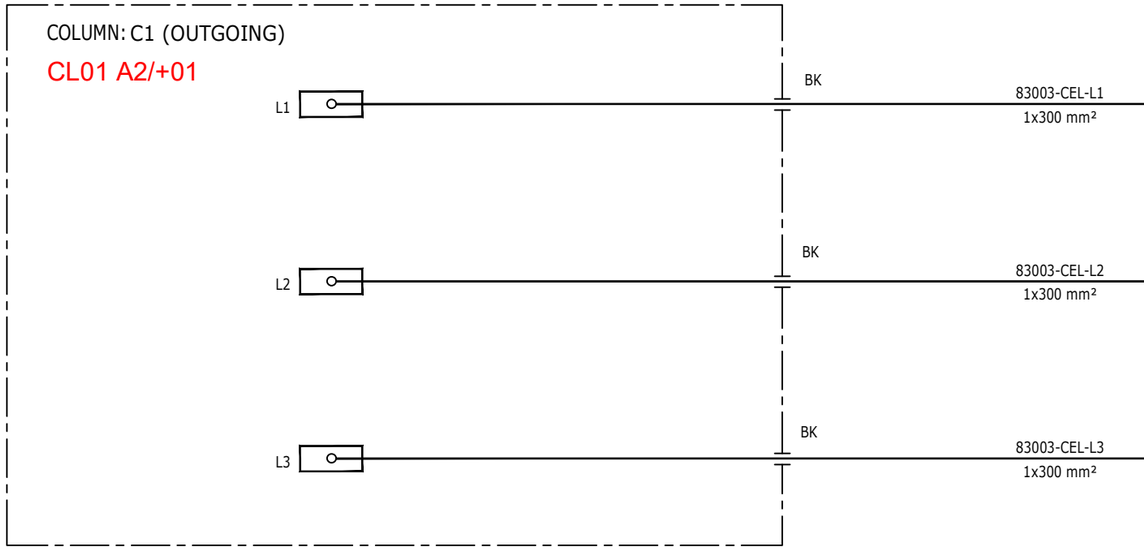
DESCRIPTION: SOLAR PV POWER CABLE JB
TAG NUMBER: JB-200E1



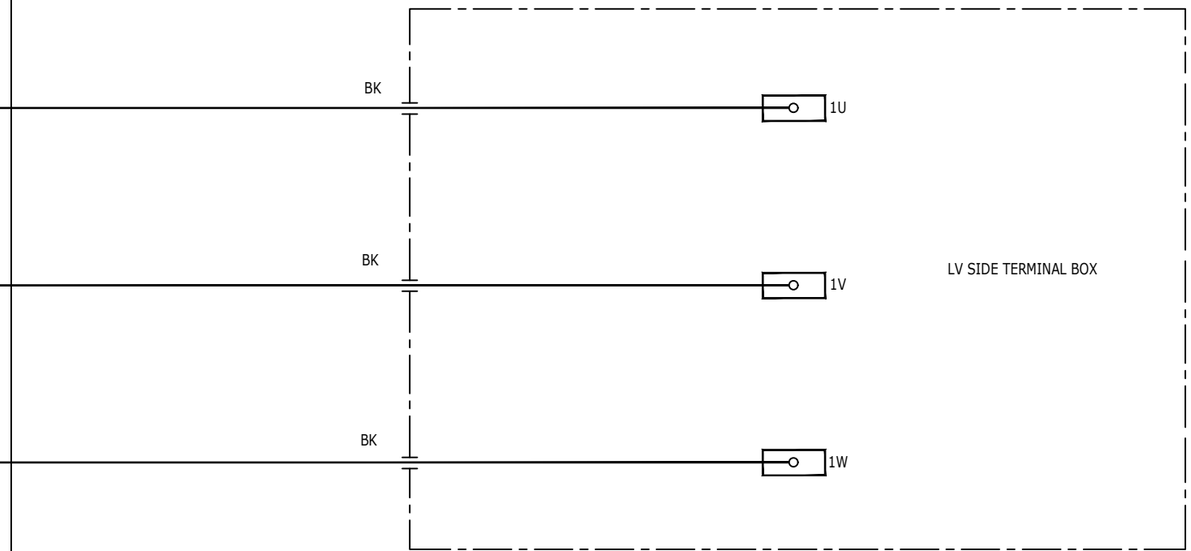
DESCRIPTION: LV SWBD 800/460V
TAG NUMBER: SG-200D2



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



DESCRIPTION: 6.6/0.8 KV TRANSFORMER
TAG NUMBER: TR-200ED1



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

REV.:	DATE:	SIGNATURE:
2_K	12/02/25	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
SOLAR PV POWER CABLE JB & LV SWBD 800/460V

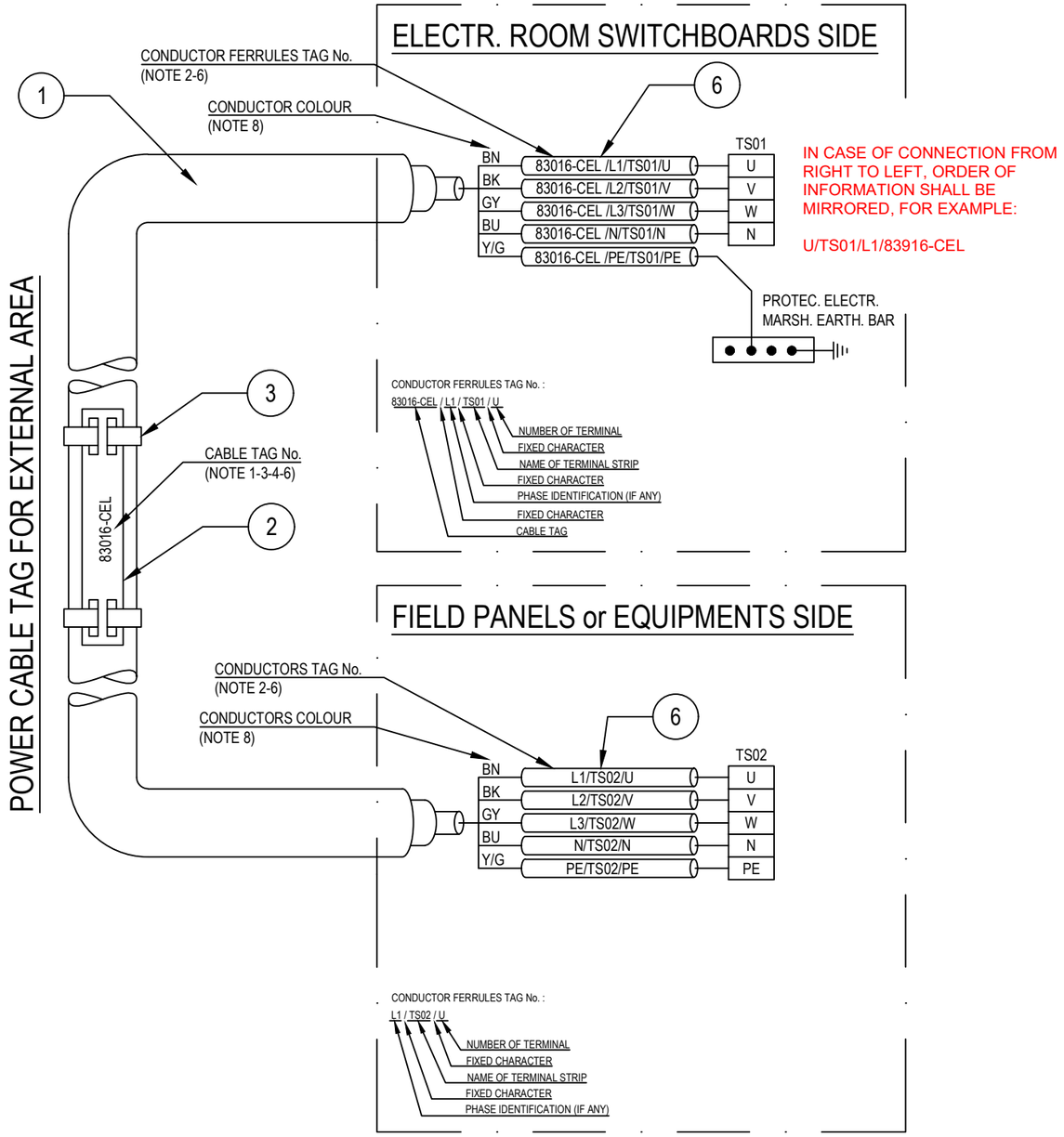
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-EL-DG-20149	018	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.

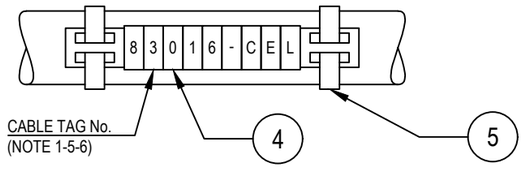
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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_D	20/12/24	V.Ramponi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

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

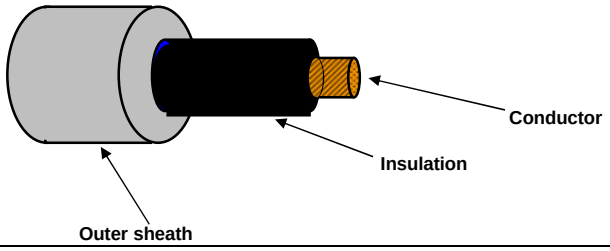
F.to UNI A3: 420mmx297mm

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	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
83002-CEL-L1	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						JB-200E1	Solar PV Power Cable JB	Transition Piece	Junction Box	SG-200D2	LV 0,8/0,4 kV MCC Switchgear (Solar)	Lower Deck (B-200)	C1	ELECV01-1X300	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 1Cx300mm² - Grey	M40	T1_M40_Single	M32	ADAP_M32M-x n.a. M40F					L-300-100-LVT-005 / E-MCT-T03 / L-300-100-LVT-006 / PASSAGE-1 / L-300-101-LVT-004 / L-300-101-LVT-003 / L-750-101-LVT-011 / E-MCT-201 / L-600-101-LVT-017 / L-600-101-LVT-018 / L-600-101-LVT-020 / L-300-101-LVT-032

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

1CX300 - 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 2,4 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 1,6 mm
Outer sheath color code:	**Grey**
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 1CX300 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 - Year of Manufacture - CE + Meter Marking**
Outer diameter :	(29,4 ± 10%) mm
Bending radius :	cable outer diameter x 10 (in fixed installation)
Spark test :	16 kV a.c. (on insulation)
	12 kV a.c. (on outer sheath)
Conductors DC Resistance :	IEC 60228 Class 2
Insulation Resistance :	≥ 330 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	83002-CEL-L2	: Solar PV Power Cable JB / LV SWBD 800/460V			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-10	: 400 V Switchboard Solar (SG-200D2)			Module	TP/LD_B-200
TASK	code	C10001824		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: 1X300 mm2 | Color: GREY

From: JB-200E1 | To: SG-200D2

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…).	Note
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.	NA
11	Check cores marking are in accordance with termination diagram	OK
12	Check terminations are in accordance with latest termination diagram	Note
13	If required produce Red Line Mark Up for "AS BUILT"	

REFER TO FINAL SHEET FOR ACCEPTANCE

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	83002-CEL-L2	: Solar PV Power Cable JB / LV SWBD 800/460V			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-10	: 400 V Switchboard Solar (SG-200D2)			Module	TP/LD_B-200
TASK	code	C10001824		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	0,6	
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	>1999	
11		PH2 / PH1-PH3-A-E	NA	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		NA	

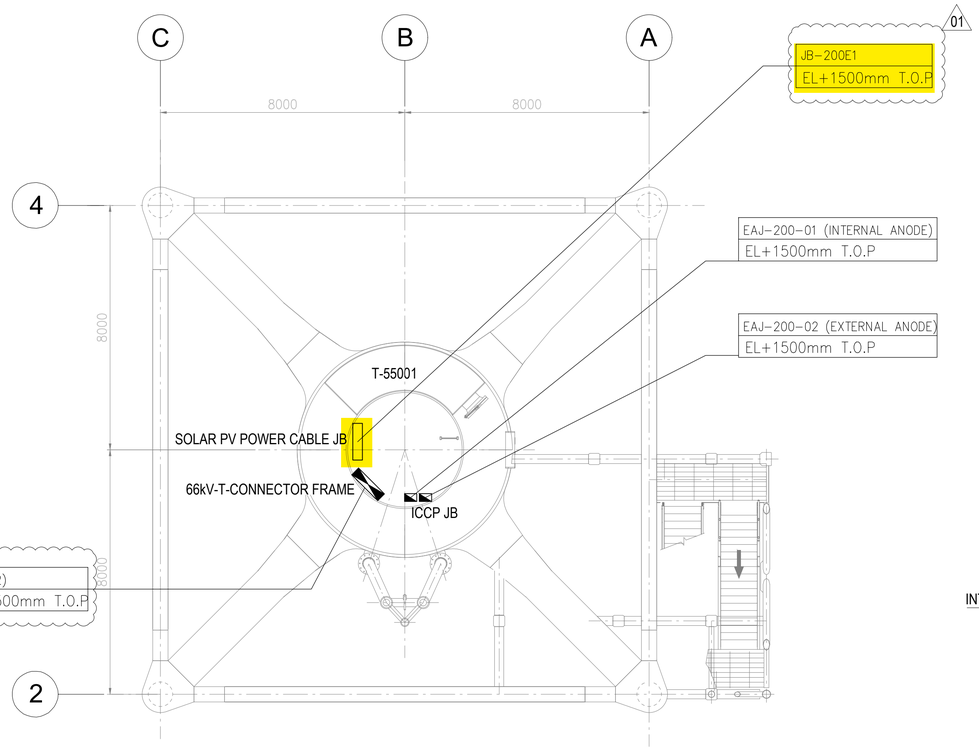
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	VOLCRAFT 1000V - ET-200 S/N:H240103023	TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207
Calibration certificate N° and date:	N°LAT 042 00768/24 _ 12/10/2024	Calibration certificate N° and date:	N°7722/24 _ 10/07/2024

Comments: Note 3,12: Cable dressing and termination will be completed on OFFSHORE phase. Refer to task C10004687

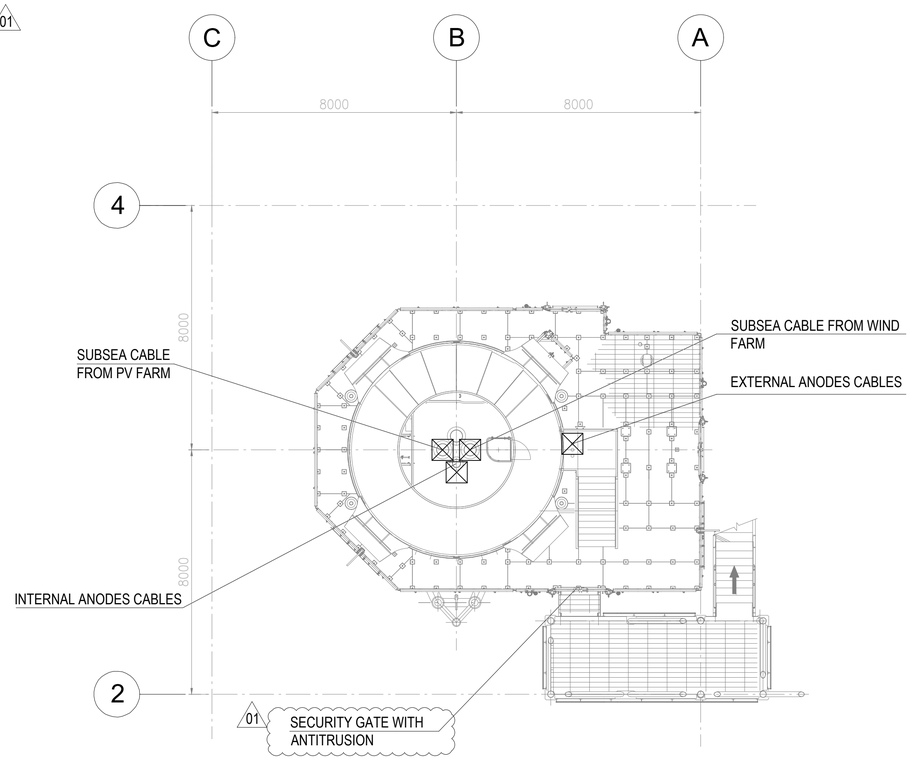
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-18	2025-02-20	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-18T16:01:32.216Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-20T10:07:57.819Z	

DRAWING NO. 123A90-DDL-EL-DL-20102

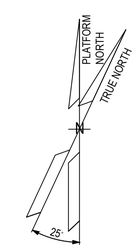
REV. 01

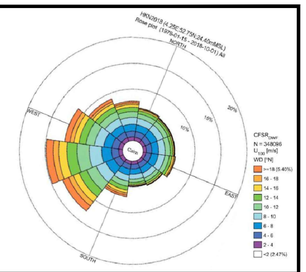


PLAN ON TRANSITION PIECE
EL+21.710 T.O.S.



PLAN ON EXISTING PLATFORM AT
EL+16.860 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. UNLESS NOTED OTHERWISE.
4. ELEVATIONS REFER TO THE HORIZONTAL AXIS OF THE OBJECT. 01

LEGEND

JB-200E1 EL+1500mm T.O.P	TAG ITEM REFERED ELEVATION TO T.O.P. (TOP OF PLATFORM)
	SOLAR PV POWER CABLE JB
	66kV T-CONNECTOR FRAME
01	ICCP JUNCTION BOX
01	EXISTING CABLE ENTRY

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-EL-DL-20140	ELECTRICAL HEAT TRACING JUNCTION BOX LAYOUT
123A90-DDL-EL-DL-20120	LIGHTING & SOCKET LAYOUT - BELOW LOWER DECK
123A90-DDL-EL-DS-20048	TDS - IAC CABLE INTERFACE JB + SOLAR PV JB
123A90-DDL-EL-DS-20054	T-CONNECTORS & HV TERMINATIONS
DRW-15547-001-SAE-001	ICCP DRAWINGS & SPECIFICATIONS

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	23/07/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	24/05/24	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20102**

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

ROSETTI MARINO SpA

CROSSWIND

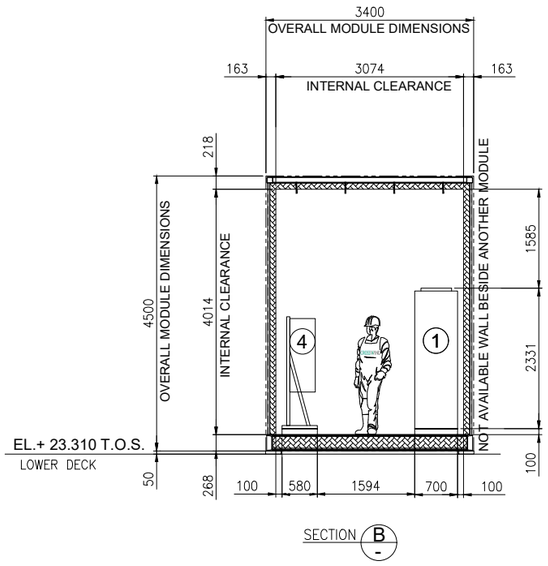
ROSETTI MARINO

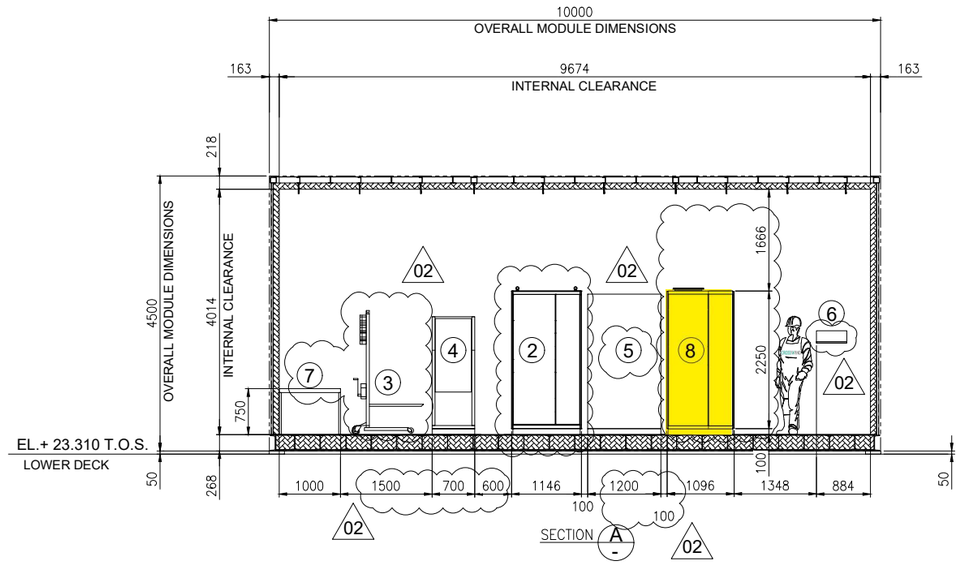
TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
BELOW LOWER DECK

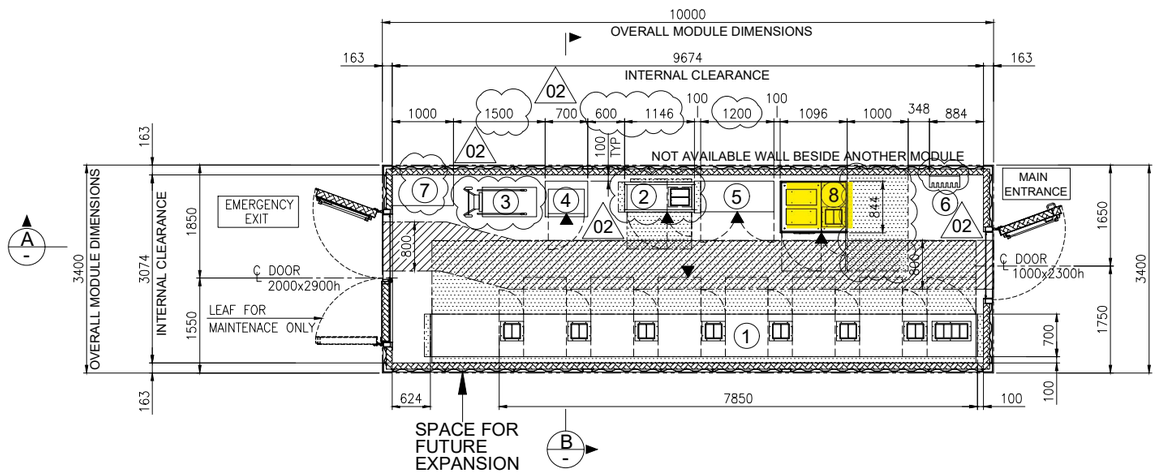
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 23/07/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20102	SHEET 001	REV. 01

File Name : 123A90-DDL-EL-DL-20102-Electrical Equipment Layout - Stair Towers

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





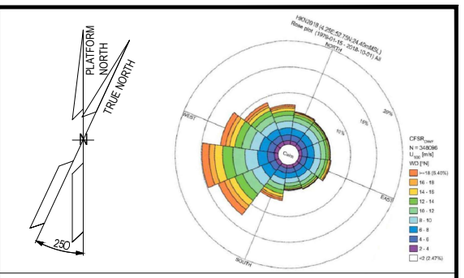


EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

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

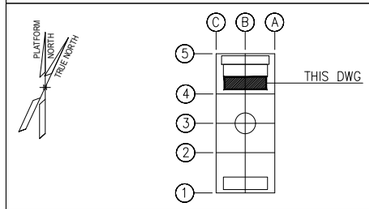
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

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	OYFO/MDO	ISSUE FOR REVIEW (IFR)

CROSSWIND | ROSETTI MARINO

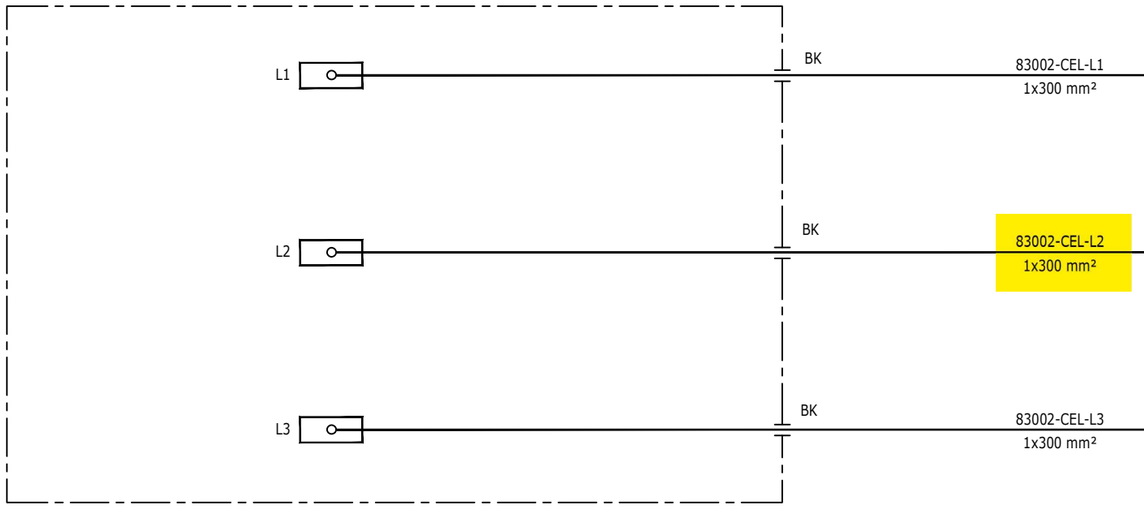
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LV SWITCHROOM

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

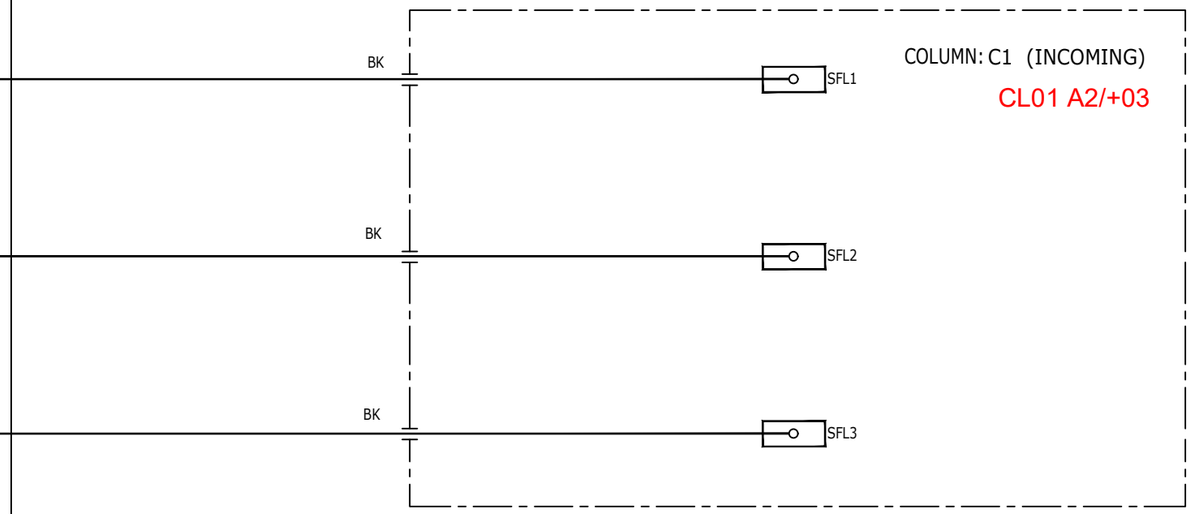
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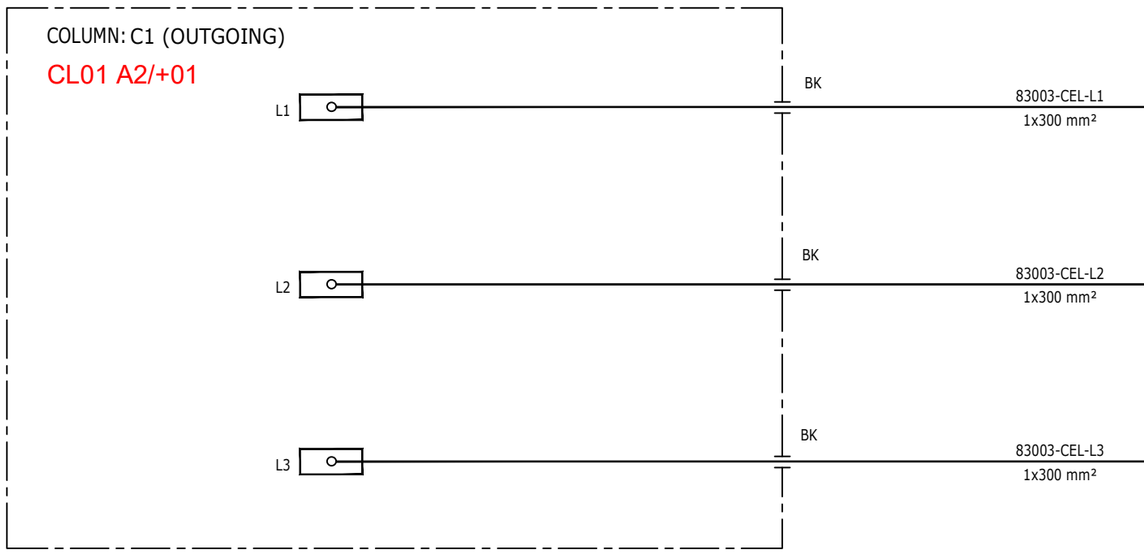
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TAG NUMBER: JB-200E1



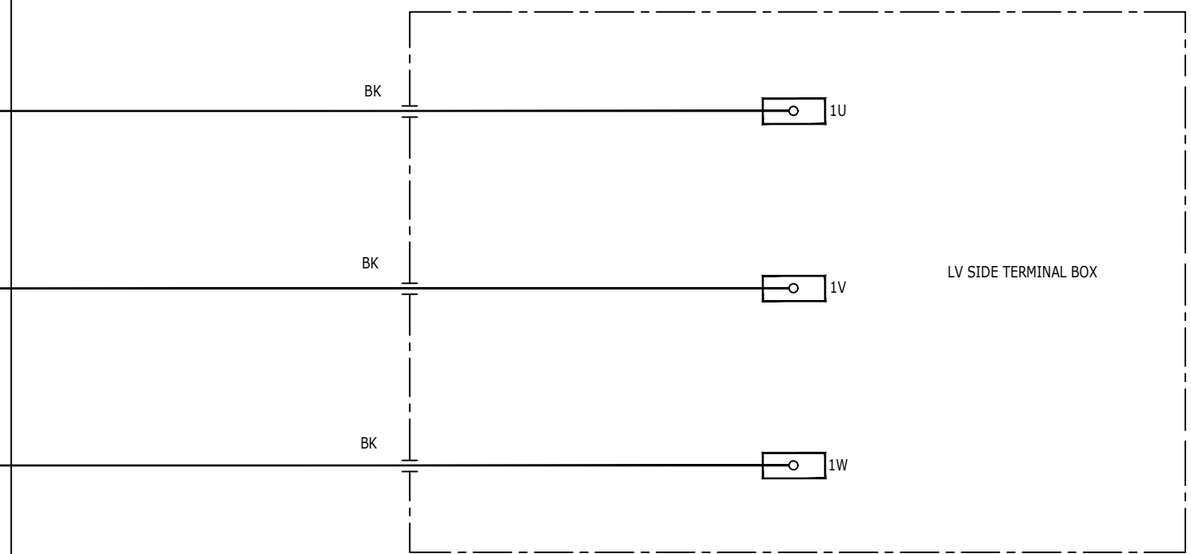
DESCRIPTION: LV SWBD 800/460V
TAG NUMBER: SG-200D2



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



DESCRIPTION: 6.6/0.8 KV TRANSFORMER
TAG NUMBER: TR-200ED1



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

REV.:	DATE:	SIGNATURE:
2_K	12/02/25	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
SOLAR PV POWER CABLE JB & LV SWBD 800/460V

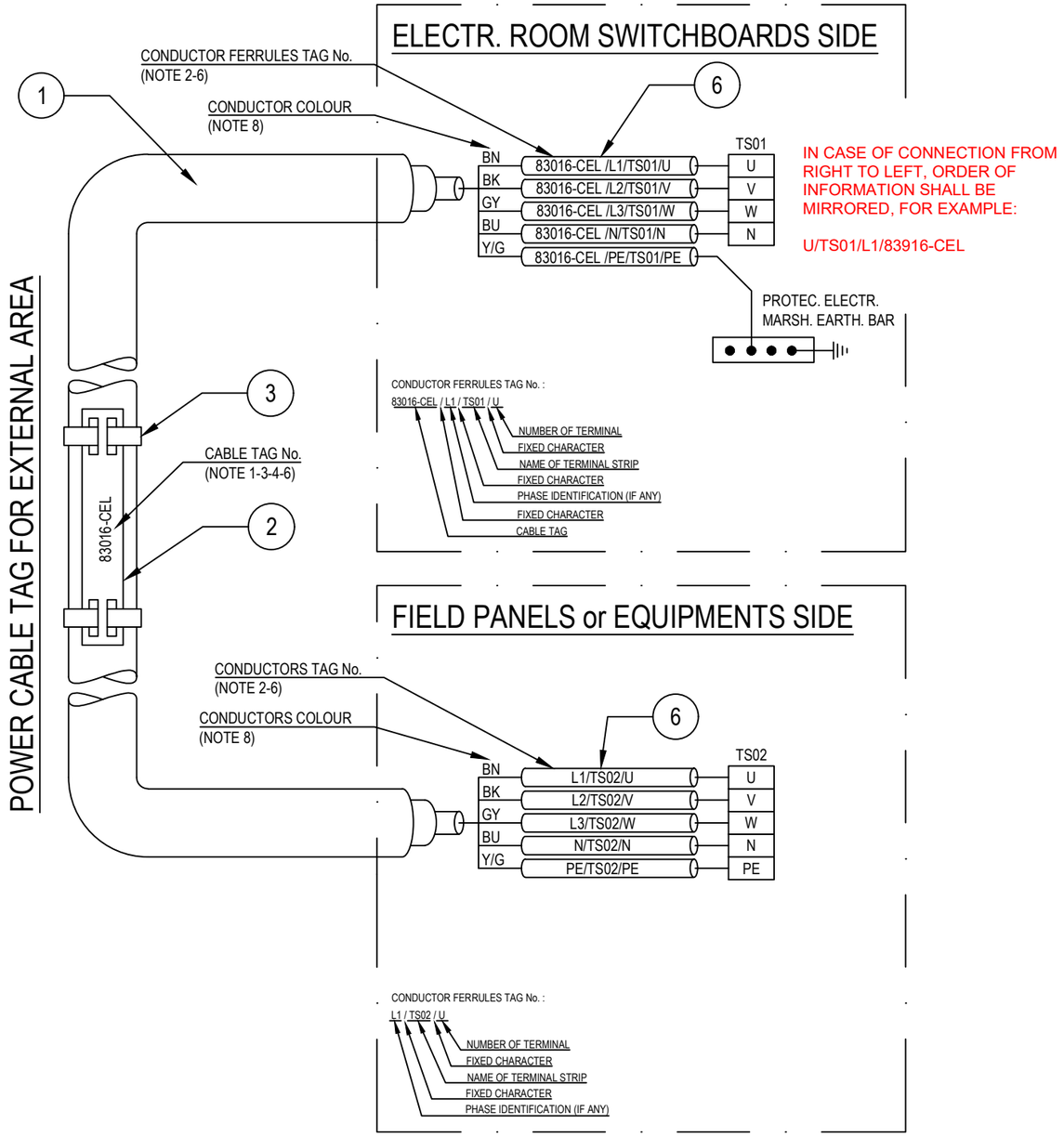
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-EL-DG-20149	018	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.

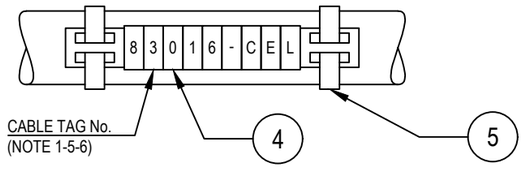
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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_D	20/12/24	V.Ramponi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

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

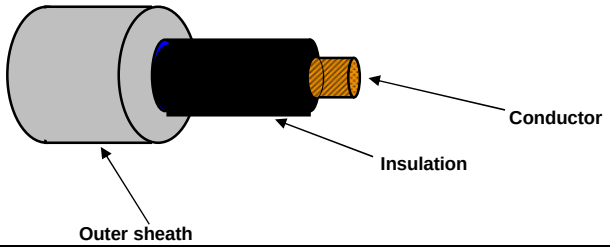
F.to UNI A3: 420mmx297mm

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	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
83002-CEL-L2	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						JB-200E1	Solar PV Power Cable JB	Transition Piece	Junction Box	SG-200D2	LV 0,8/0,4 kV MCC Switchgear (Solar)	Lower Deck (B-200)	CL01/D2	ELECV01-1X300	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 1Cx300mm² - Grey	M40	T1_M40_Single	M32	ADAP_M32M x n.a. M40F					L-300-100-LVT-005 / E-MCT-T03 / L-300-100-LVT-006 / PASSAGE-1 / L-300-101-LVT-004 / L-300-101-LVT-003 / L-750-101-LVT-011 / E-MCT-201 / L-600-101-LVT-017 / L-600-101-LVT-018 / L-600-101-LVT-020 / L-300-101-LVT-032

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

1CX300 - 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 2,4 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 1,6 mm
Outer sheath color code:	**Grey**
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 1CX300 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 - Year of Manufacture - CE + Meter Marking**
Outer diameter :	(29,4 ± 10%) mm
Bending radius :	cable outer diameter x 10 (in fixed installation)
Spark test :	16 kV a.c. (on insulation)
	12 kV a.c. (on outer sheath)
Conductors DC Resistance :	IEC 60228 Class 2
Insulation Resistance :	≥ 330 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	83002-CEL-L3	: Solar PV Power Cable JB / LV SWBD 800/460V			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-10	: 400 V Switchboard Solar (SG-200D2)			Module	TP/LD_B-200
TASK	code	C10001825		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: 1X300 mm2 | Color: GREY

From: JB-200E1 | To: SG-200D2

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…).	Note
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.	NA
11	Check cores marking are in accordance with termination diagram	OK
12	Check terminations are in accordance with latest termination diagram	Note
13	If required produce Red Line Mark Up for "AS BUILT"	

REFER TO FINAL SHEET FOR ACCEPTANCE

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	83002-CEL-L3	: Solar PV Power Cable JB / LV SWBD 800/460V			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-10	: 400 V Switchboard Solar (SG-200D2)			Module	TP/LD_B-200
TASK	code	C10001825		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	0,6	
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	>1999	
11		PH2 / PH1-PH3-A-E	NA	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		NA	

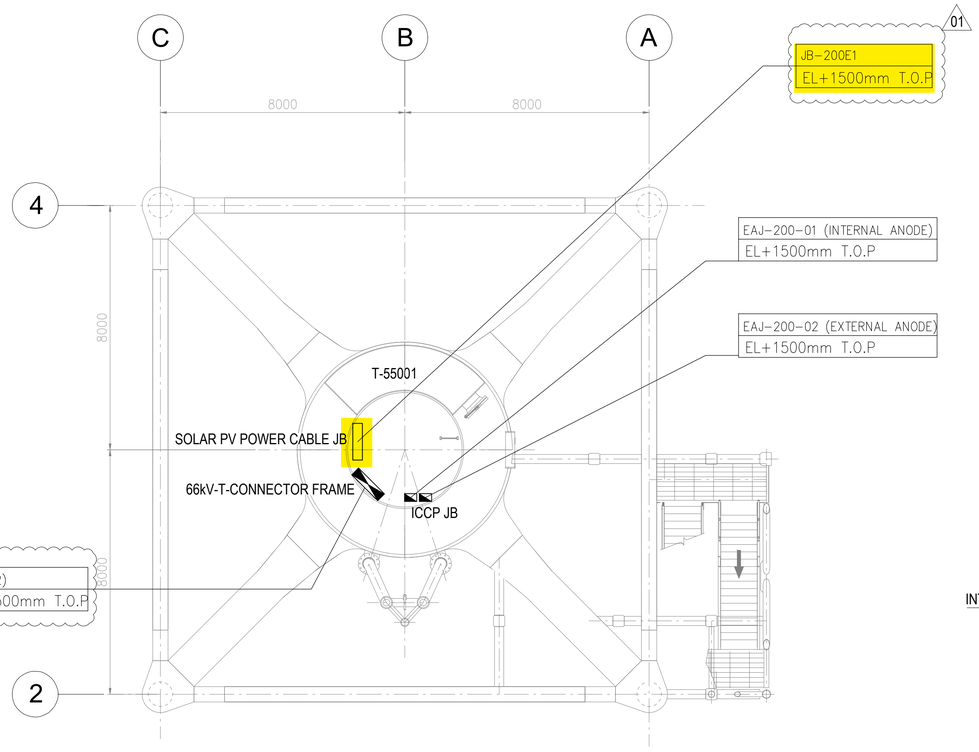
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	VOLCRAFT 1000V - ET-200 S/N:H240103023	TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207
Calibration certificate N° and date:	N°LAT 042 00768/24 _ 12/10/2024	Calibration certificate N° and date:	N°7722/24 _ 10/07/2024

Comments: Note 3,12: Cable dressing and termination will be completed on OFFSHORE phase. Refer to task C10004688

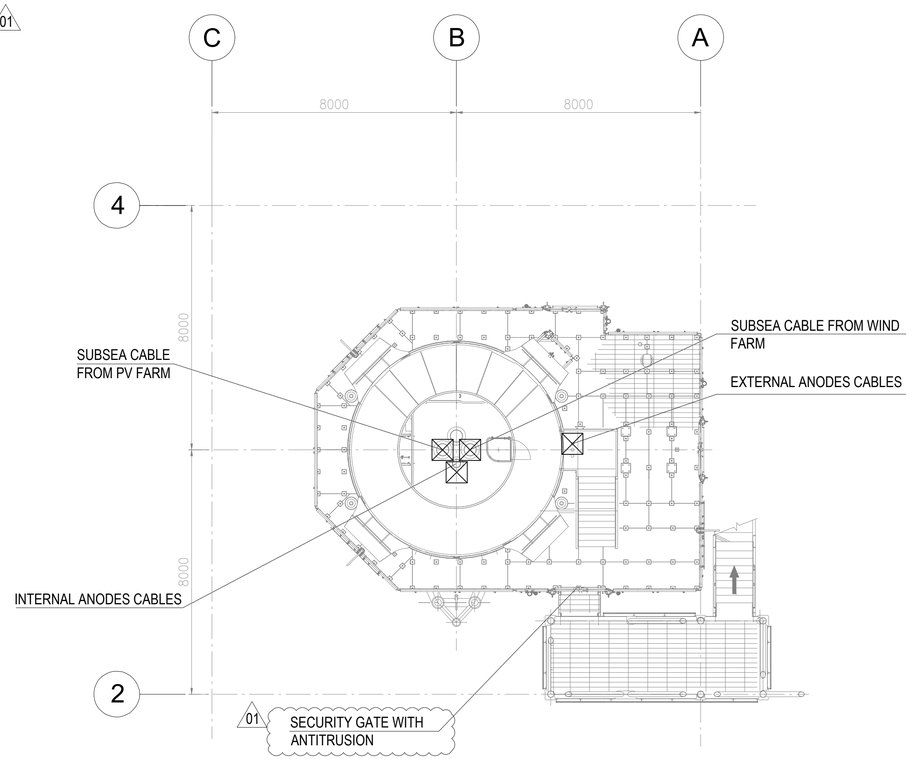
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-18	2025-02-20	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-18T16:01:43.005Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-20T10:08:10.763Z	

DRAWING NO. 123A90-DDL-EL-DL-20102

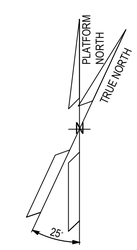
REV. 01

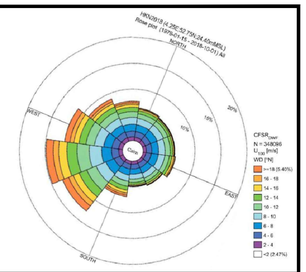


PLAN ON TRANSITION PIECE
EL+21.710 T.O.S.



PLAN ON EXISTING PLATFORM AT
EL+16.860 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. UNLESS NOTED OTHERWISE.
4. ELEVATIONS REFER TO THE HORIZONTAL AXIS OF THE OBJECT. 01

LEGEND

JB-200E1 EL+1500mm T.O.P	TAG ITEM REFERED ELEVATION TO T.O.P. (TOP OF PLATFORM)
	SOLAR PV POWER CABLE JB
	66kV T-CONNECTOR FRAME
01	ICCP JUNCTION BOX
01	EXISTING CABLE ENTRY

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70071	PLOT PLAN - BELOW LOWER DECK
123A90-DDL-EL-DL-20140	ELECTRICAL HEAT TRACING JUNCTION BOX LAYOUT
123A90-DDL-EL-DL-20120	LIGHTING & SOCKET LAYOUT - BELOW LOWER DECK
123A90-DDL-EL-DS-20048	TDS - IAC CABLE INTERFACE JB + SOLAR PV JB
123A90-DDL-EL-DS-20054	T-CONNECTORS & HV TERMINATIONS
DRW-15547-001-SAE-001	ICCP DRAWINGS & SPECIFICATIONS

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	23/07/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	24/05/24	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20102**

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

ROSETTI MARINO SpA

CROSSWIND

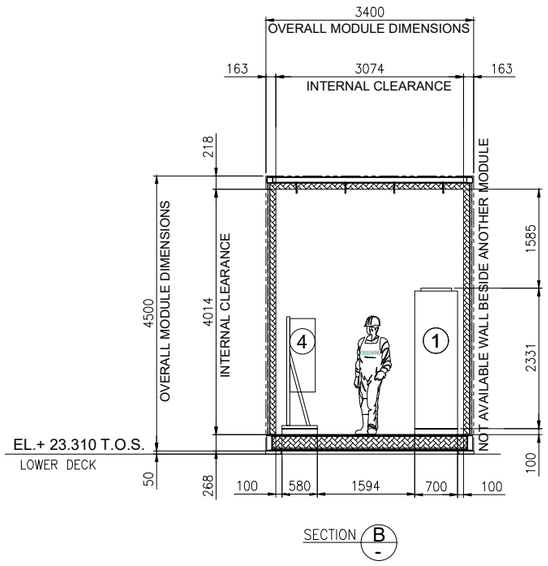
ROSETTI MARINO

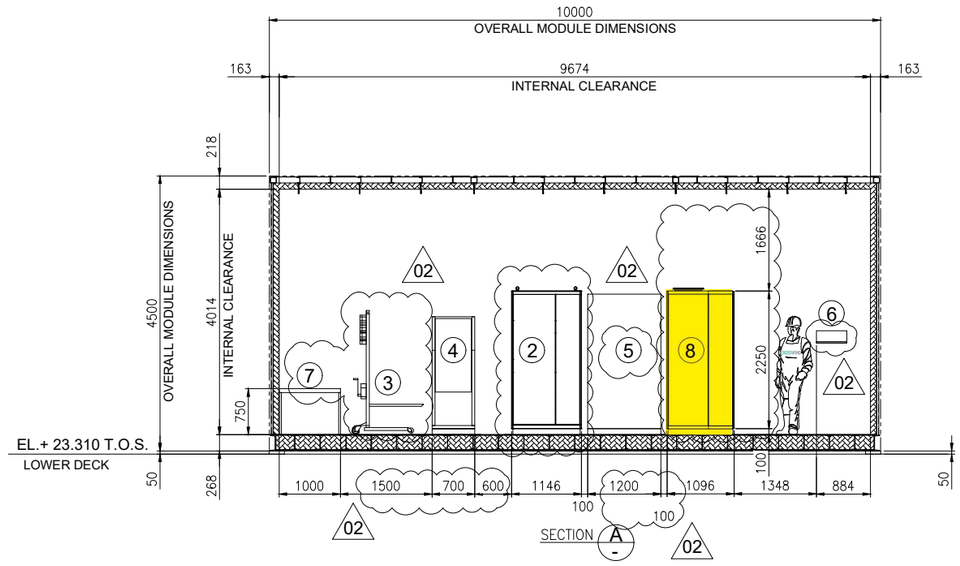
TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
BELOW LOWER DECK

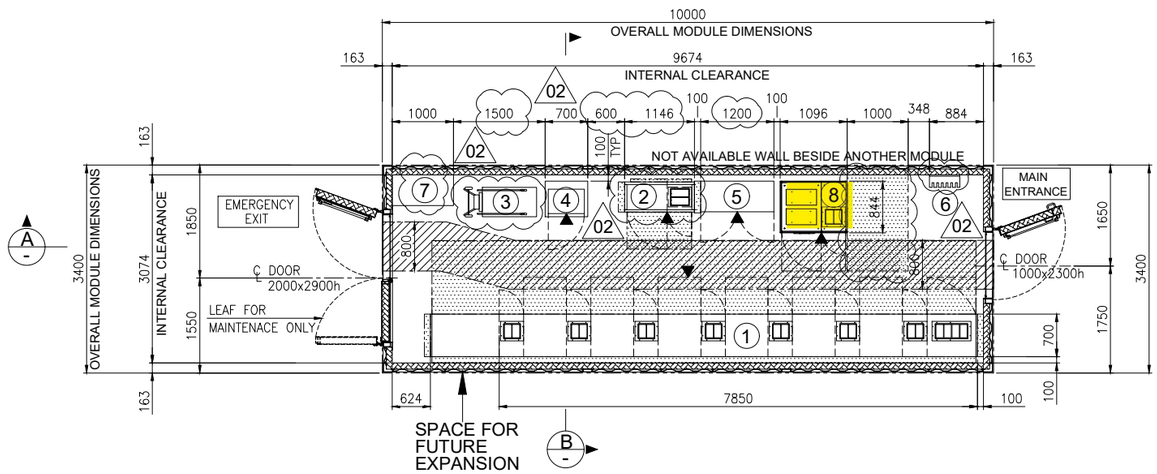
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:100
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 23/07/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20102	SHEET 001	REV. 01

File Name : 123A90-DDL-EL-DL-20102-Electrical Equipment Layout - Stair Towers

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





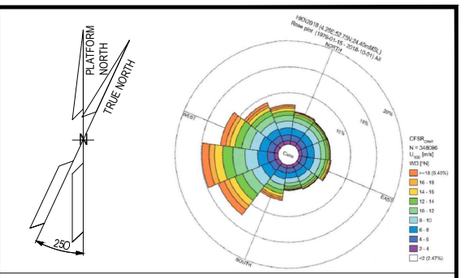


EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

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

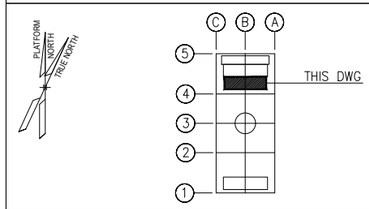
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

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	OYFO/MDO	ISSUE FOR REVIEW (IFR)

CROSSWIND | ROSETTI MARINO

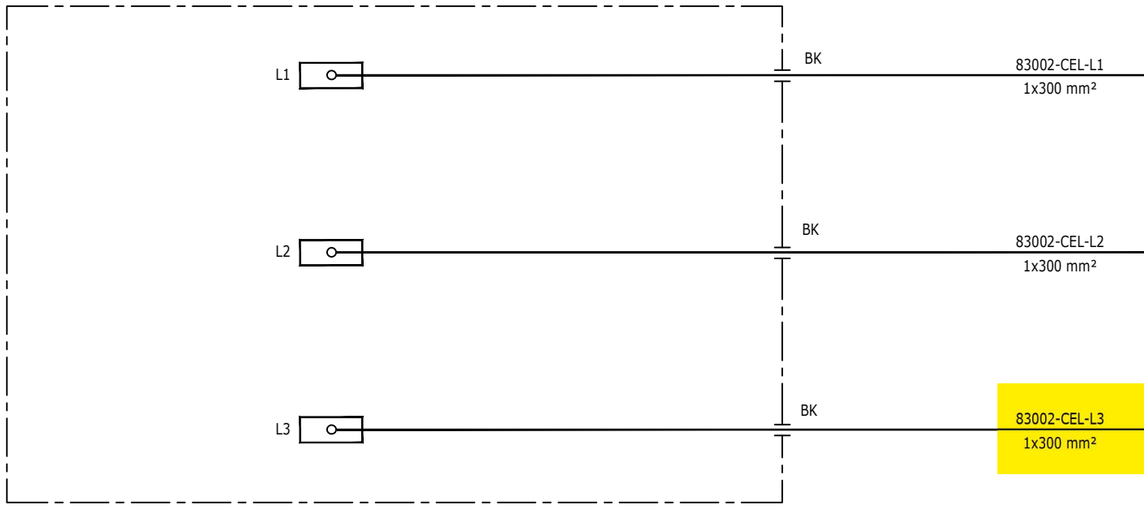
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LV SWITCHROOM

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

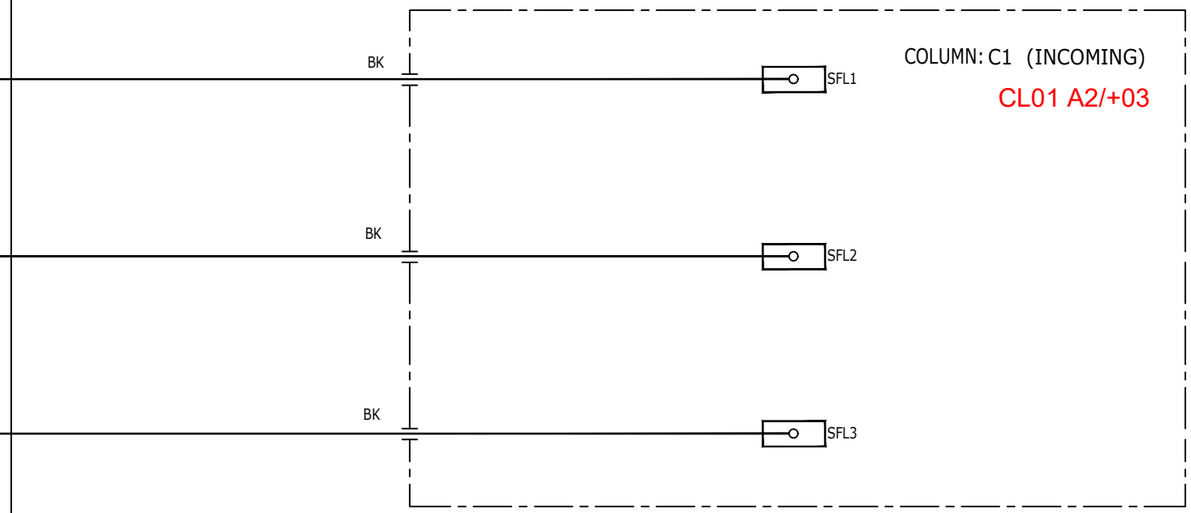
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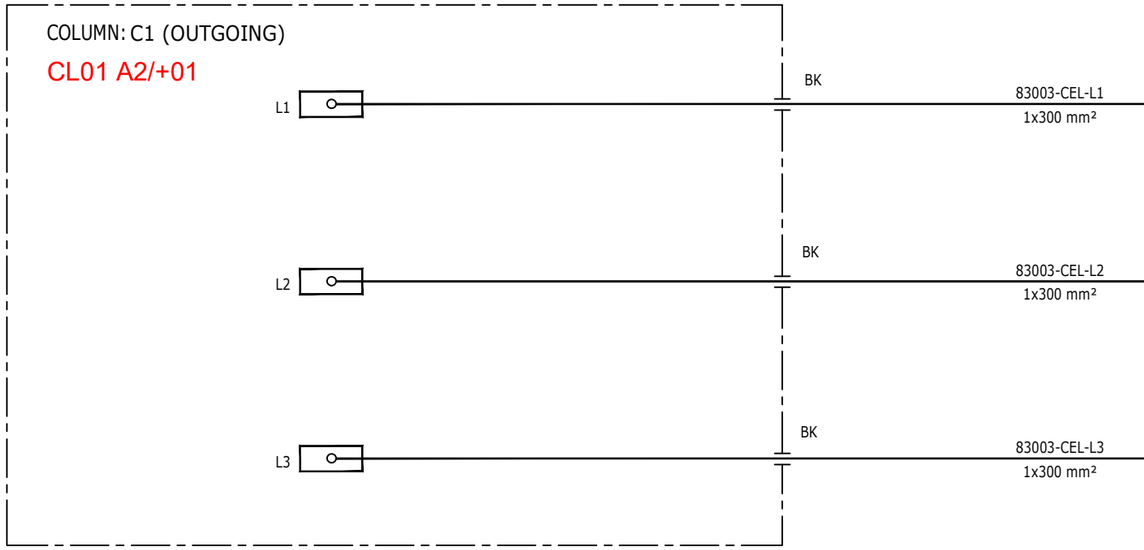
DESCRIPTION: SOLAR PV POWER CABLE JB
TAG NUMBER: JB-200E1



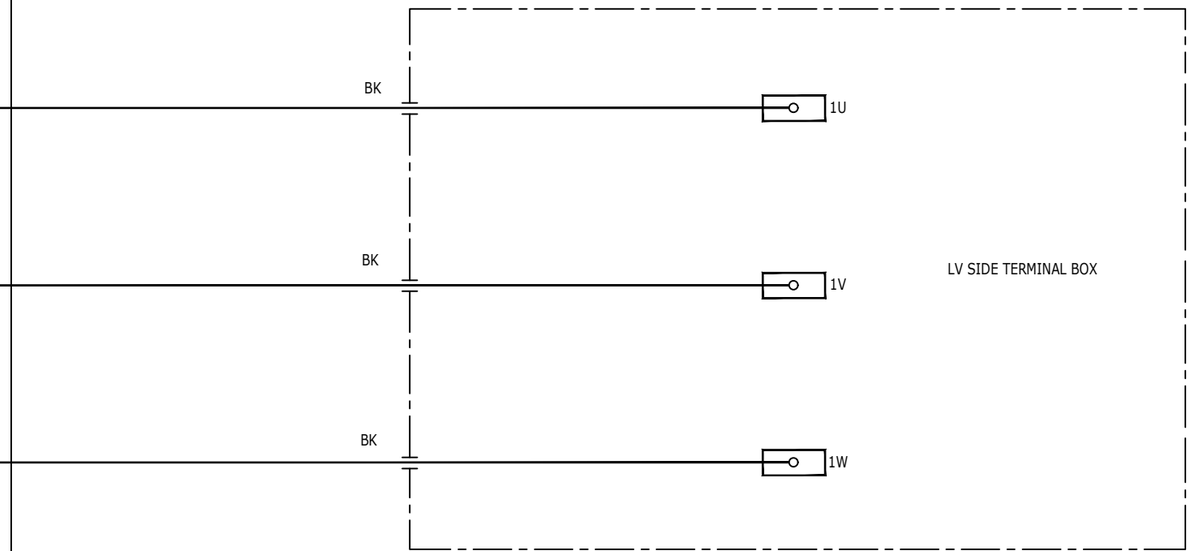
DESCRIPTION: LV SWBD 800/460V
TAG NUMBER: SG-200D2



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



DESCRIPTION: 6.6/0.8 KV TRANSFORMER
TAG NUMBER: TR-200ED1



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

REV.:	DATE:	SIGNATURE:
2_K	12/02/25	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
SOLAR PV POWER CABLE JB & LV SWBD 800/460V

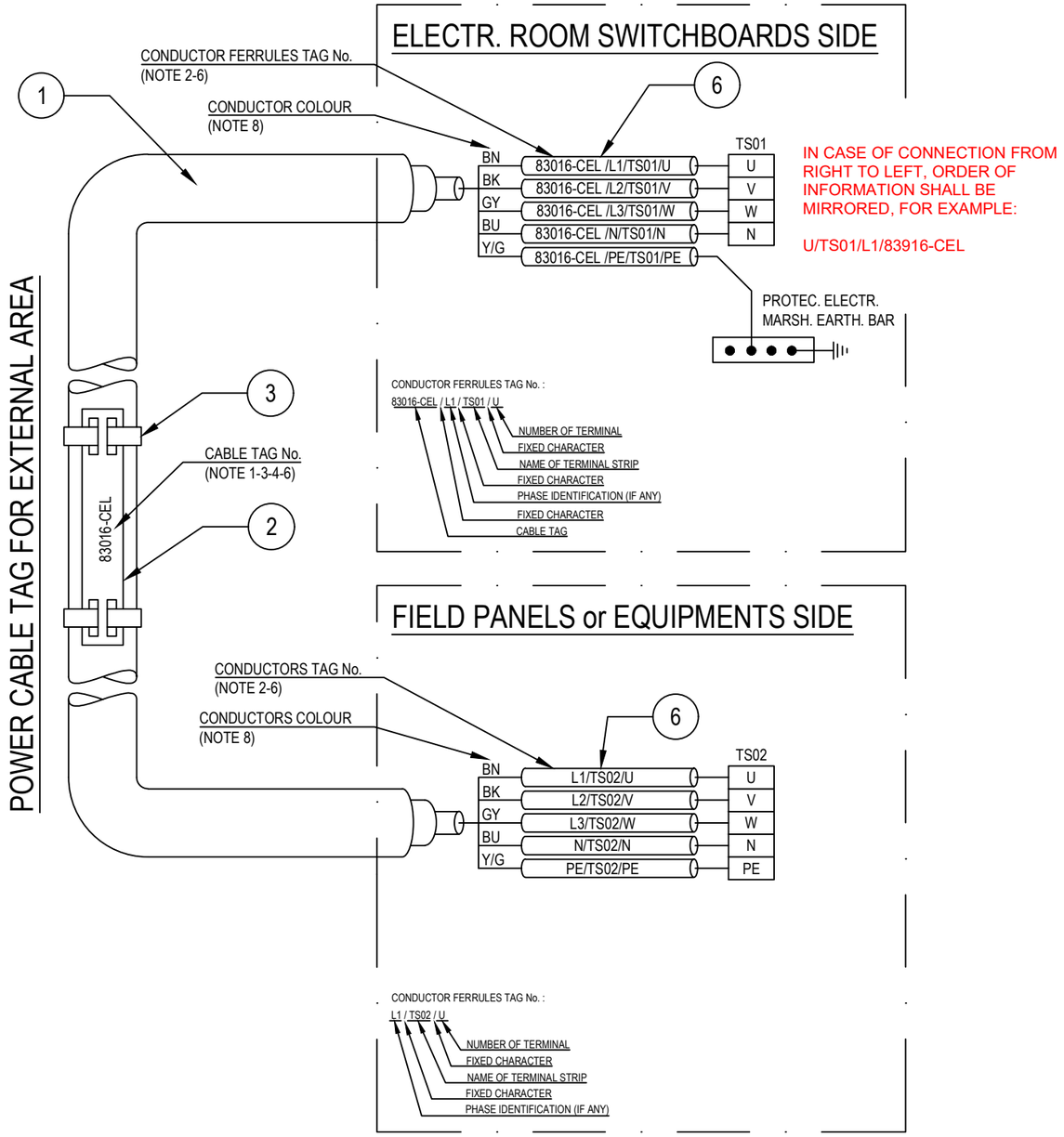
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-EL-DG-20149	018	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.

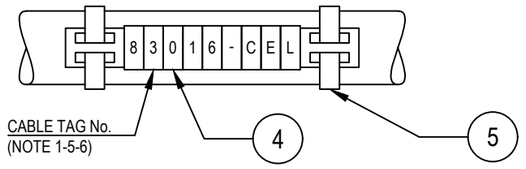
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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_D	20/12/24	V.Ramponi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

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

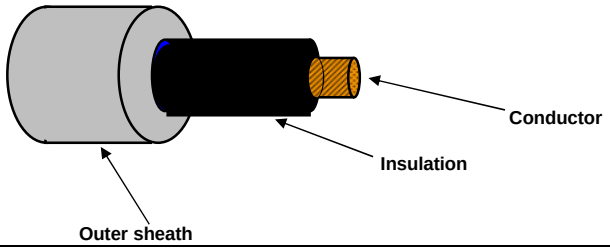
F.to UNI A3: 420mmx297mm

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	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
83002-CEL-L3	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						JB-200E1	Solar PV Power Cable JB	Transition Piece	Junction Box	SG-200D2	LV 0,8/0,4 kV MCC Switchgear (Solar)	Lower Deck (B-200)	CL01/D2	ELECV01-1X300	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 1Cx300mm² - Grey	M40	T1_M40_Single	M32	ADAP_M32M x n.a. M40F					L-300-100-LVT-005 / E-MCT-T03 / L-300-100-LVT-006 / PASSAGE-1 / L-300-101-LVT-004 / L-300-101-LVT-003 / L-750-101-LVT-011 / E-MCT-201 / L-600-101-LVT-017 / L-600-101-LVT-018 / L-600-101-LVT-020 / L-300-101-LVT-032

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

1CX300 - 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 2,4 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 1,6 mm
Outer sheath color code:	**Grey**
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 1CX300 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 - Year of Manufacture - CE + Meter Marking**
Outer diameter :	(29,4 ± 10%) mm
Bending radius :	cable outer diameter x 10 (in fixed installation)
Spark test :	16 kV a.c. (on insulation)
	12 kV a.c. (on outer sheath)
Conductors DC Resistance :	IEC 60228 Class 2
Insulation Resistance :	≥ 330 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.

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ITEM	Tag	84319-CEL	: AC UPS - PAS DB / LV SWBD 800/460V Auxiliary			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-10	: 400 V Switchboard Solar (SG-200D2)			Module	LD_B-300/LD_B-200
TASK	code	C10002115		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-200D2		

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.	PL
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	84319-CEL	: AC UPS - PAS DB / LV SWBD 800/460V Auxiliary			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-10	: 400 V Switchboard Solar (SG-200D2)			Module	LD_B-300/LD_B-200
TASK	code	C10002115		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	1.2	
6		PH 2	1.2	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		1.2	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		1.1	
	INSULATION			
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	>999	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

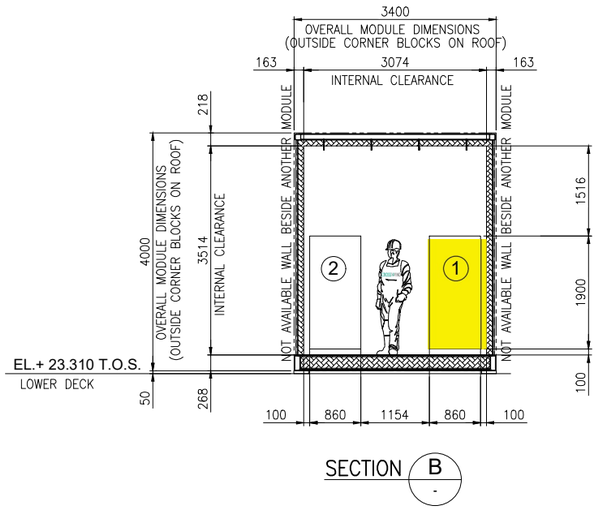
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207	TYPE / SERIAL N° :	MULTIMETER: FLUKE 175 SERIAL:AW1/018(17140769)
Calibration certificate N° and date:	N°7722/24 _ 10/07/2024	Calibration certificate N° and date:	N°7715/24 _ 10/07/2024

Comments: Nota 4: refer to PL C30000679

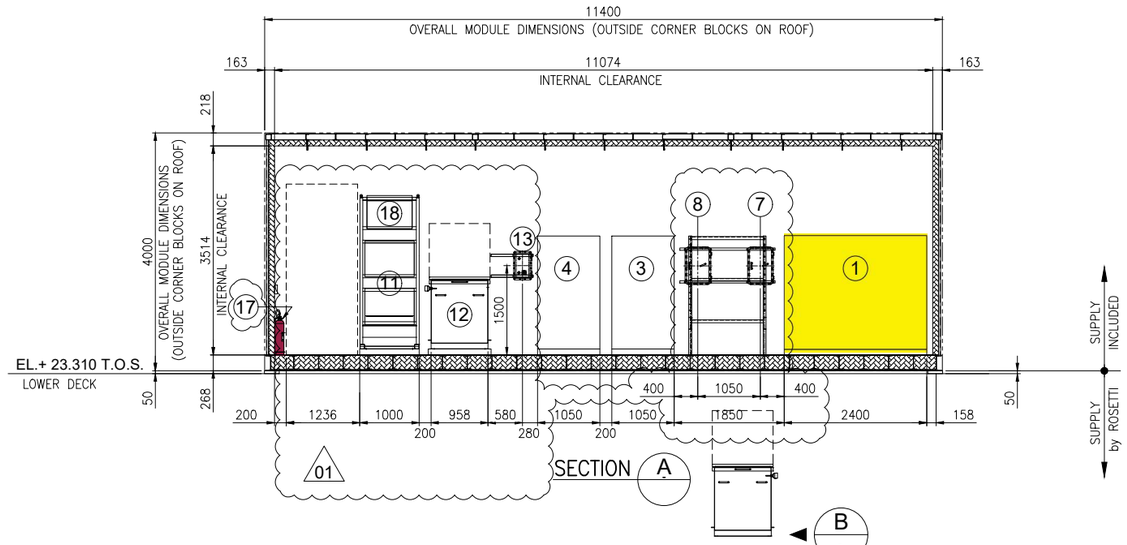
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Paolo Schintu	
Date	2025-01-04	2025-01-07	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-04T10:56:01.946Z	PROVERLIS Digitaly signed by Paolo Schintu 2025-01-07T08:22:29.218Z	

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

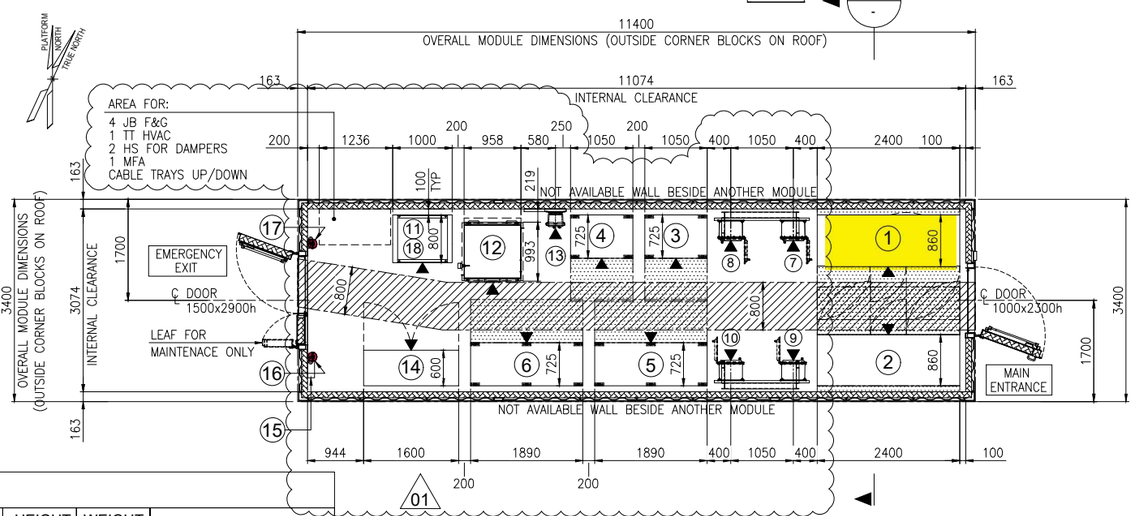
REV. 01



SECTION B -



SECTION A -



A -

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

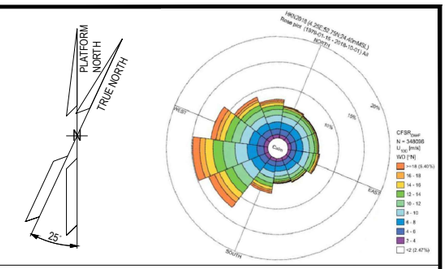
EQUIPMENT LIST

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

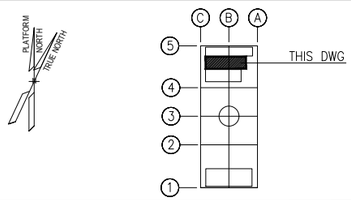
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR – WIDTH 800mm.
_____ MAINTENANCE AREA – VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

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)

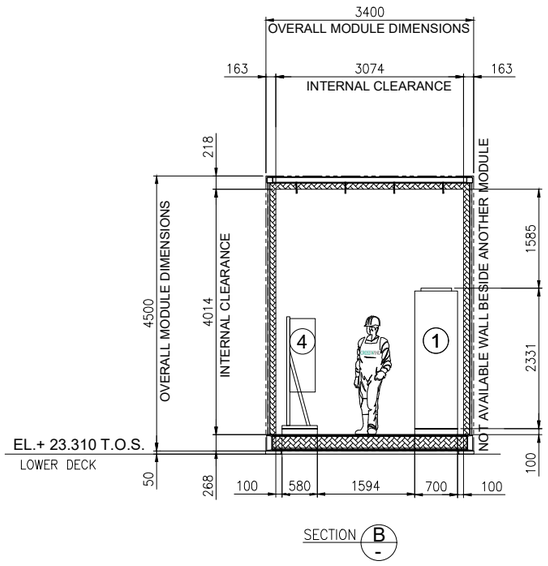
CROSSWIND | ROSETTI MARINO

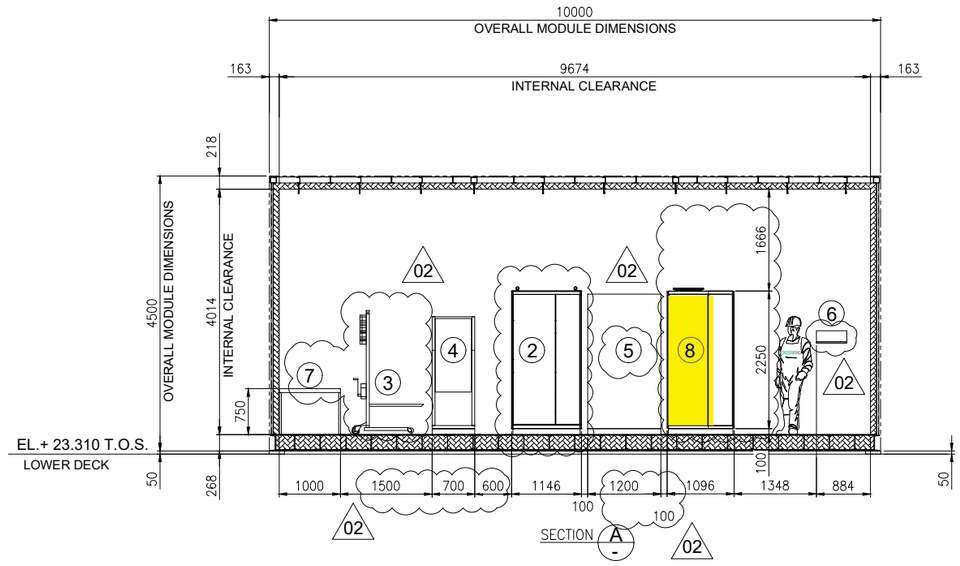
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
UPSs & BATTERIES SWITCHROOM

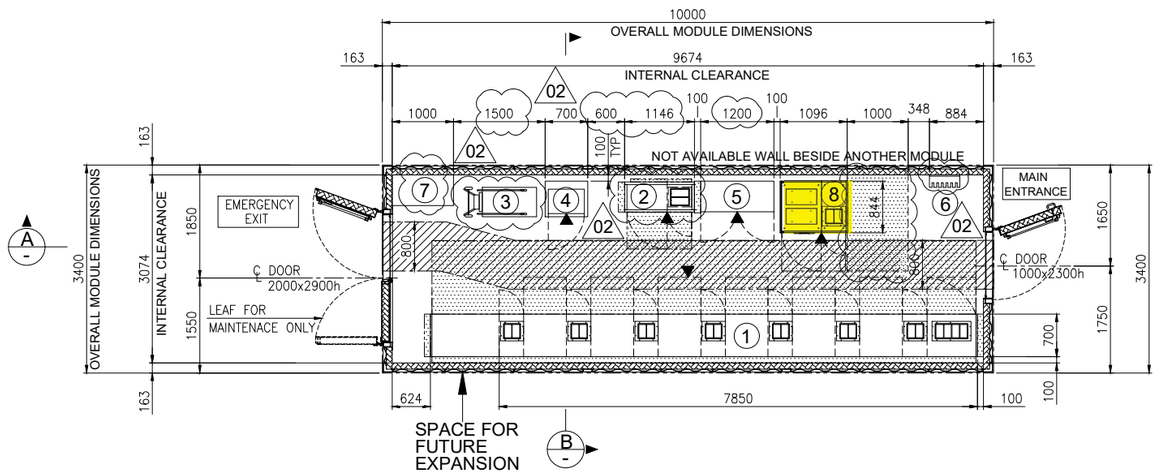
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN SAM	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 23/07/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20106	SHEET 001	REV. 01

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

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





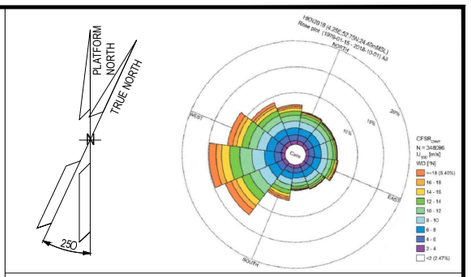


EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

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

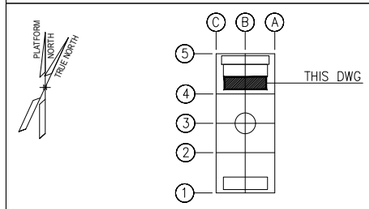
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

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



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

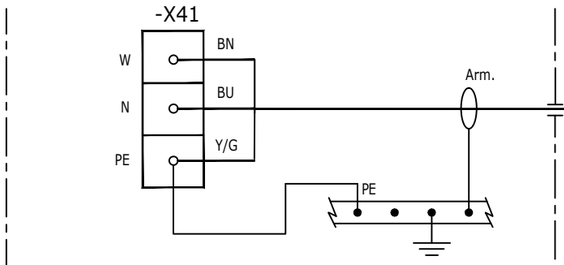
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LV SWITCHROOM

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

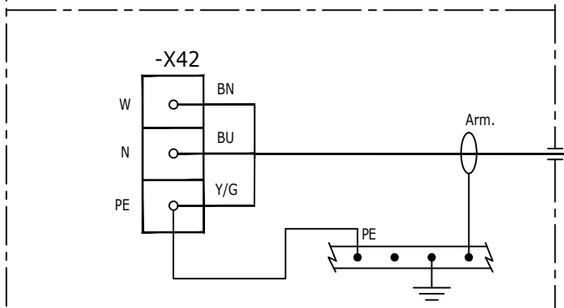
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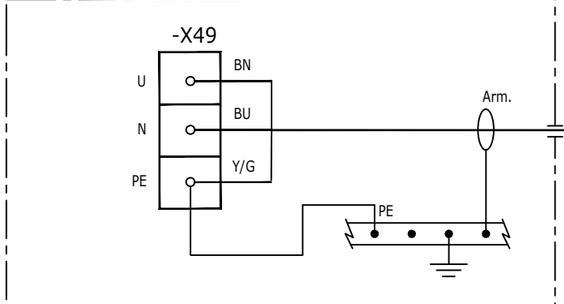
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TAG NUMBER: DP-200F3



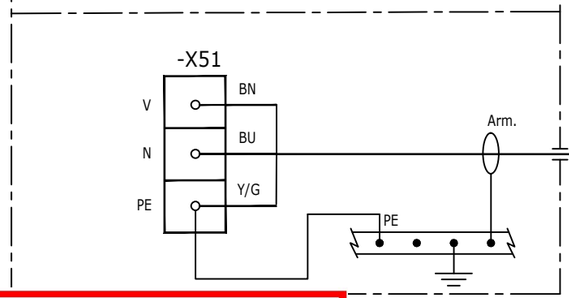
84316-CEL
3G2.5 mm²



84317-CEL
3G2.5 mm²

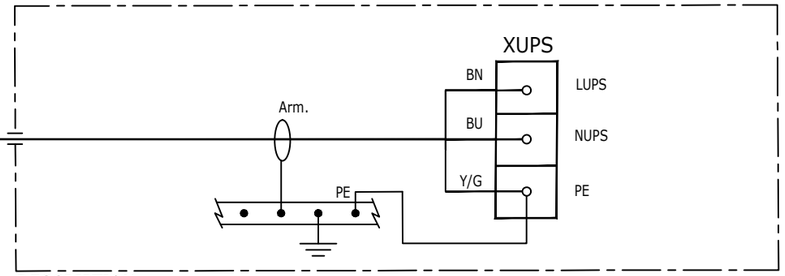


84318-CEL
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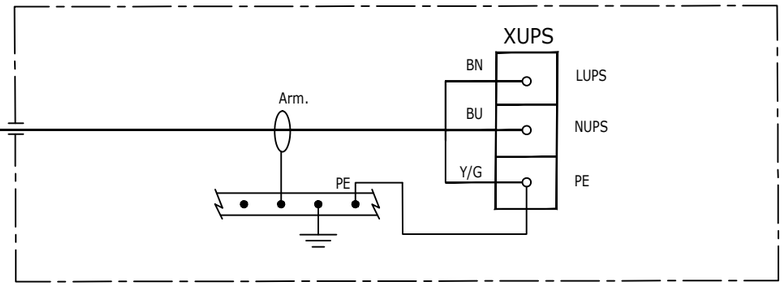


84319-CEL
3G2.5 mm²

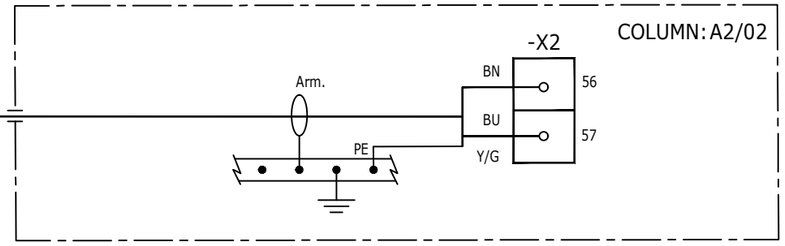
DESCRIPTION: UCP - HVAC UPS ROOM
TAG NUMBER: B300-HSB-001



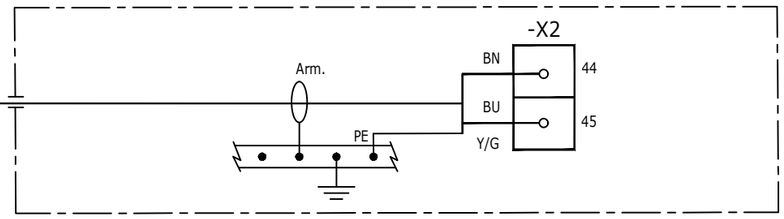
DESCRIPTION: UCP - HVAC ITER
TAG NUMBER: B400-HSB-001



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_E	20/12/24	V.Ramponi

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

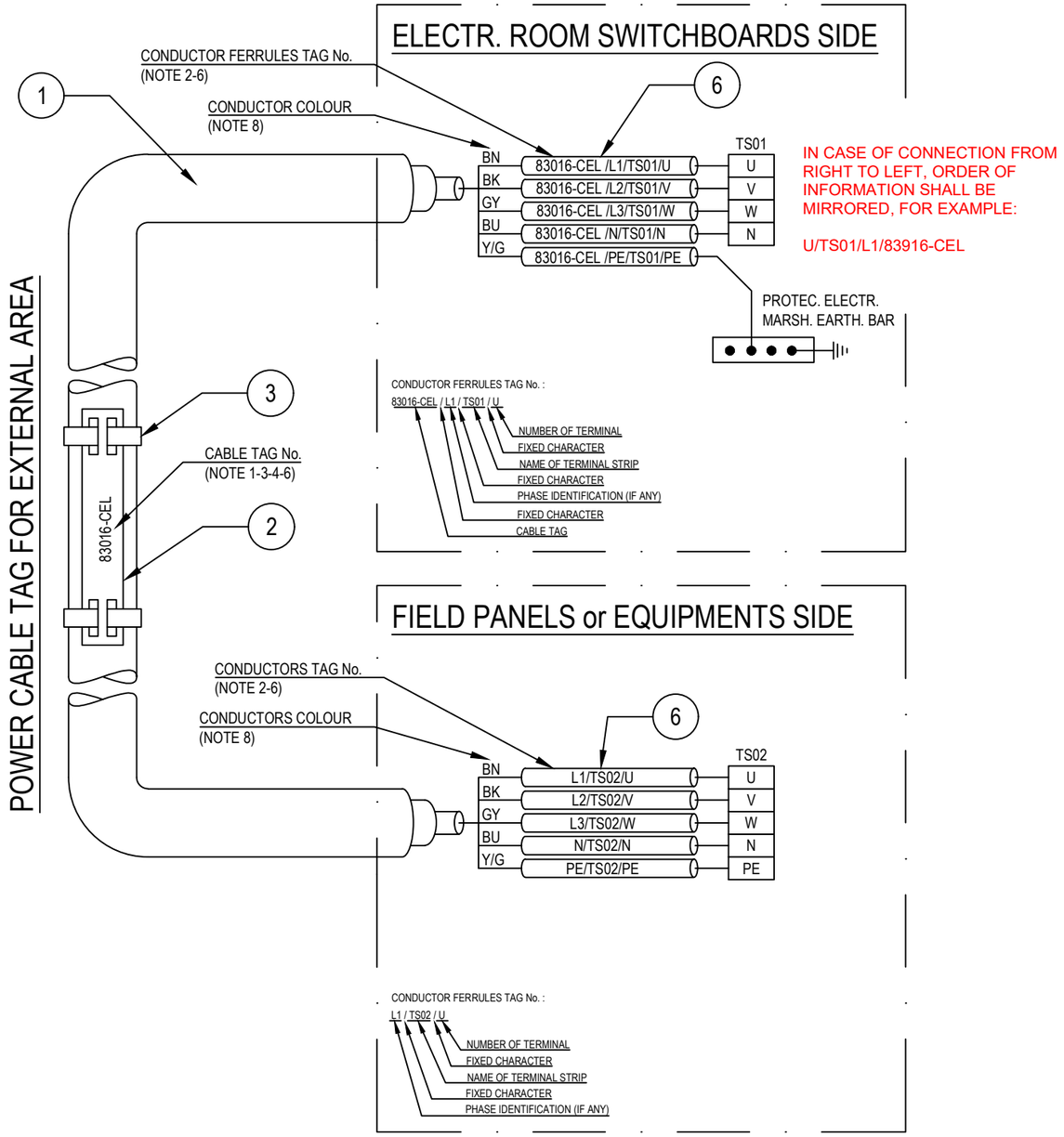
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

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

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.

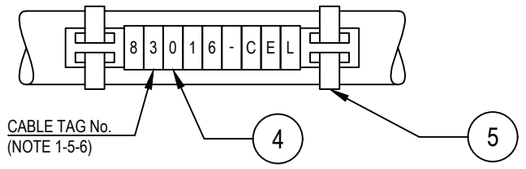
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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_C	06/12/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

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

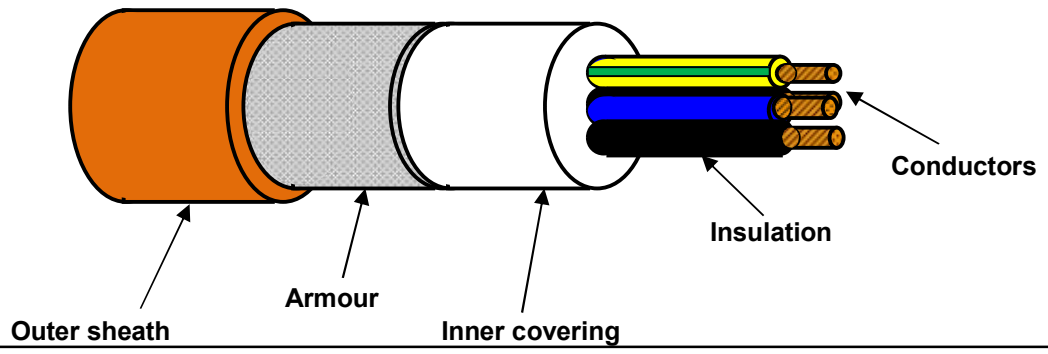
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Functi	Area	From Tag	From Main Function	From Area	To Tag	To Main Function	To Area	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
84319-CEL	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						DP-200F3	AC UPS 35 kVA Distribution Board	Lower Deck (B-300)	SG-200D2	LV 0,8/0,4 kV MCC Switchgear (Solar)	Lower Deck (B-200)	ELECV19-3G2,5	Cable Cu Cl.2/MGT/EPR/LSZH/GSWB/LSZH 0,6/1kV 3G2,5mm² - Orange	M20	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-300-101-LVT-032

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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ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	83016-CEC	: LV SWBD 800/460V / LV Switchgear			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-10	: 400 V Switchboard Solar (SG-200D2)			Module	LD_B-200
TASK	code	C10002116		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX10 Multicore Electrical Control Cable

CABLE DATA

Type	Cu Cl.2/XLPE/LSZH	Cores/Size mm²	7X1,5 mm2	Color	GREY
From	SG-200D2	To	SG-200N1		

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

CONTINUITY	CORE 1 / All cores+screen+armour+earth	0.4
	CORE 2 / All cores+screen+armour+earth	0.4
	CORE 3 / All cores+screen+armour+earth	0.4
	CORE 4 / All cores+screen+armour+earth	0.4
	CORE 5 / All cores+screen+armour+earth	0.4
	CORE 6 / All cores+screen+armour+earth	0.4
	CORE 7 / All cores+screen+armour+earth	0.4
	CORE 8 / All cores+screen+armour+earth	NA
	CORE 9 / All cores+screen+armour+earth	NA
	CORE 10 / All cores+screen+armour+earth	NA
INSULATION	CORE 1	>999
	CORE 2	>999
	CORE 3	>999
	CORE 4	>999
	CORE 5	>999
	CORE 6	>999
	CORE 7	>999
	CORE 8	NA
	CORE 9	NA
	CORE 10	NA
	SCREEN	NA
	EARTH	NA
	ARMr	NA
	TEST VOLTS	1000

TESTING INSTRUMENTS USED

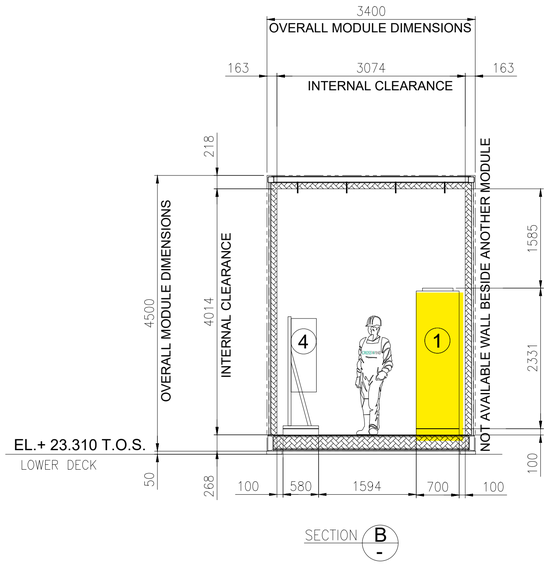
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TYPE / SERIAL N° : Calibration certificate N° and date:	TYPE / SERIAL N° : Calibration certificate N° and date:

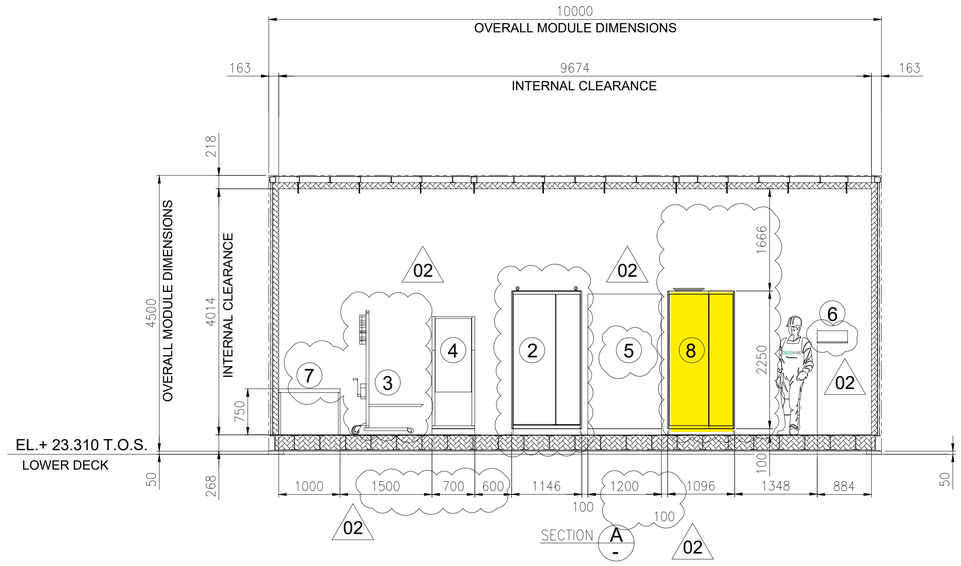
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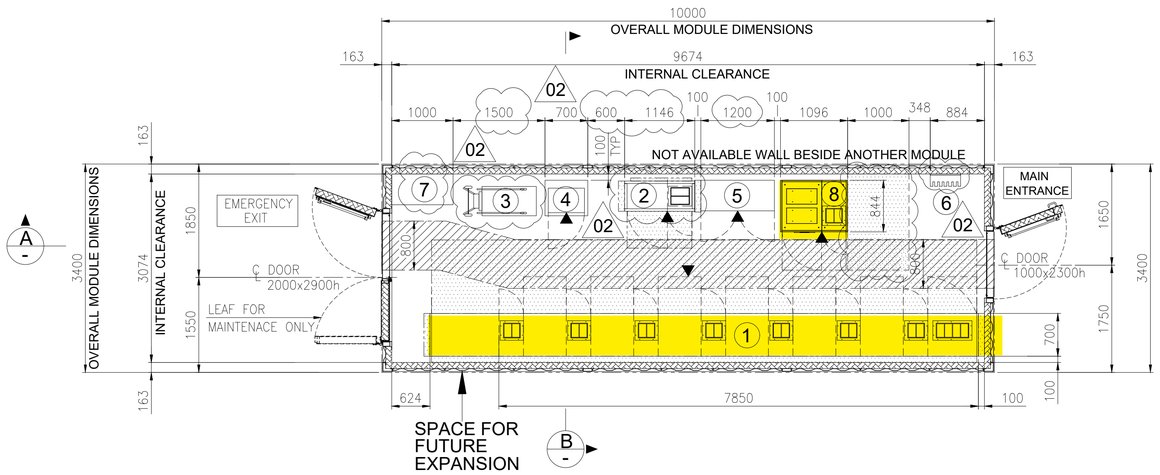
Page 1/1

	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (Rosetti Marino)	
Name	Carmelo Bongiovanni	Paolo Schintu	
Date	2024-11-04	2024-11-22	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-11-04T17:09:49.469Z	PROVERLIS Digitaly signed by Paolo Schintu 2024-11-22T13:57:18.709Z	

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





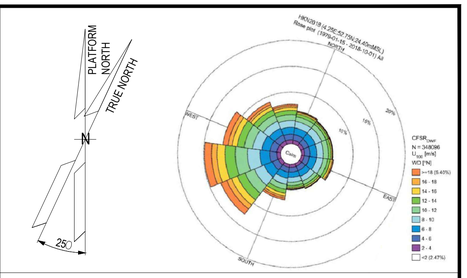


EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

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

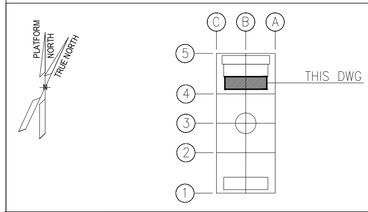
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

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

FROM	TO

DESCRIPTION: ELECTROLYSER
TAG NUMBER: A-20000

COLUMN: -

SPARE FOR PERMISSIVES
AND INTERLOCKS

01

1 2 3 4 5 6 7

BK

20001-CEC
7C X 1.5 mm²

01

BK

DESCRIPTION: 6.6KV HV SWITCHGEAR
TAG NUMBER: SG-100D1

COLUMN: A1

01

1 2 3 4 5 6 7

SPARE FOR PERMISSIVES
AND INTERLOCKS

01

DESCRIPTION: SIGNALS FOR CONTROL SYSTEM
TAG NUMBER: SG-200D2

-X2

MCB HEALTY ON
SG-200D2
X2 / 42
X2 / 43

MCB HEALTY ON
SG-200N1
X2 / 13
X2 / 14

1 2 3 4 5 6 7

BK

83016-CEC
7C X 1.5 mm²

BK

DESCRIPTION: AUXILIARY LV
TAG NUMBER: SG-200N1

COLUMN: +A2/02

-X2

1 2 3 4 5 6 7

X2 / 66
X2 / 67
X2 / 45
X2 / 46

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
SIGNALS FOR CONTROL SYSTEM

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

SCALE : 1:X

A3

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

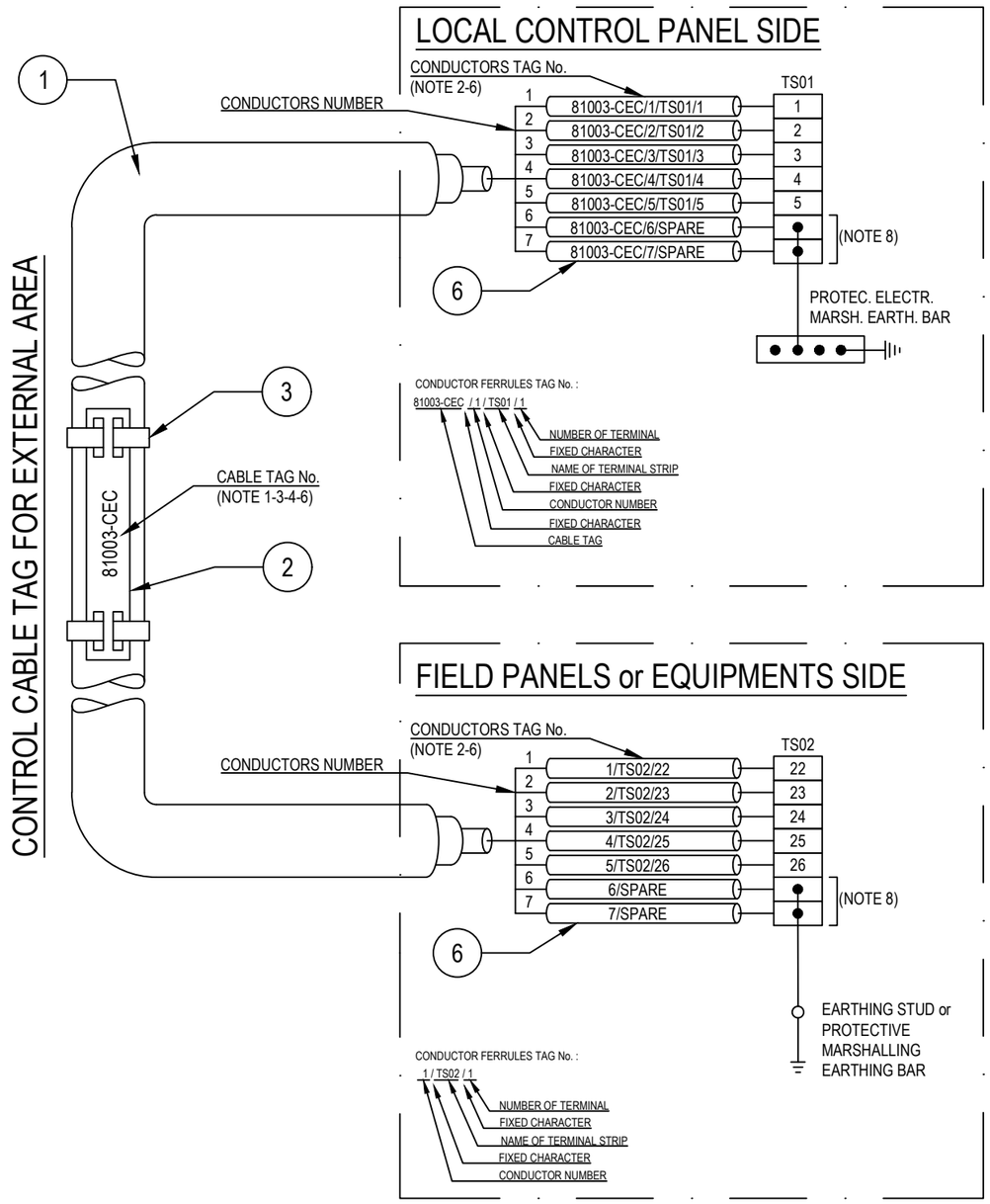
SHEET 086

REV. 01

F.to UNI A3: 420mmx297mm

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

C04



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 50 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.

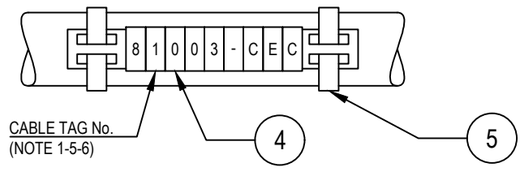
5) THE CABLE TAG FOR INTERNAL AREA SHAL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

6) CABLE AND CONDUCTOR TAG ARE INDICATIVE ONLY.

7) THE EARTHING CONNECTION OF THE ARMOUR CABLE IS NOT APPLICABILE IF THE ARMOUR IS CONNECTED TO EARTH WITH METALLIC CABLE GLAND.
   WITHIN TECHNICAL BUILDING, PROTECTIVE CONDUCTOR SHALL BE TAGGED BETWEEN FOLLOWING ITEMS:
   - PANEL (SWITCHBOARD, SWITCHGEAR, DISTRIBUTION BOARD, ETC) AND EARTH RING
   - EARTHING BOSS AND EARTH RING
   - EARTH BAR AND EARTH BAR (IF ANY).

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.

CONTROL 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 CONTROL 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 008 | REV. 02

F.to UNI A3: 420mmx297mm

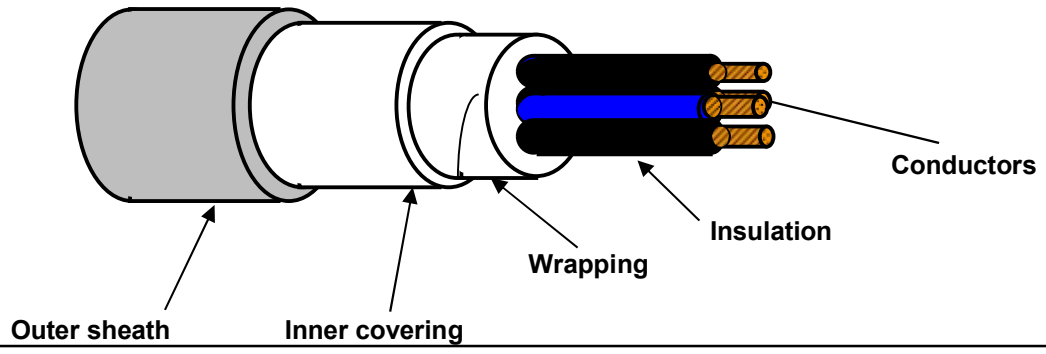
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

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.	Gland St	From Gland	From Entry	From Fittin	To Gland	To Entry	To Fitting	Routing	Routing Manual
83016-CEC	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						SG-200D2	LV 0,8/0,4 kV MCC Switchgear (Solar)	Lower Deck (B-200)	SG-200N1	LV 0,4 kV MCC Switchgear	Lower Deck (B-200)	ELECV34-7X1,5	Cable Cu Cl.2/XLPE/LSZH 0,6/1kV 7Cx1,5mm² - Grey	M25	n.a.			n.a.				L-300-101-LVT-032 / L-600-101-LVT-020 / L-600-101-LVT-019 / L-600-101-LVT-017 / L-450-101-LVT-024

FLEI s.r.l.

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

7CX1,5 - CONTROL CABLE - Flame Retardant



TECHNICAL FEATURES

Conductors :	**STRANDED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	**XLPE** compound, quality to IEC 60092.360, Nominal Thickness 0,7 mm	
Cores colour code :	**Black NUMBERED (from 1 to 7)**	
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:	by plastic tape helically wound	
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 - 7CX1,5 SQMM - XLPE/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 -**	
	Year of Manufacture - CE + Meter Marking	
Outer diameter :	(13,5 ± 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 :	≥ 1000 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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ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	82008-CEC	: 6.6KV HV Switchgear / Solar Switchgear			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	83-10	: 400 V Switchboard Solar (SG-200D2)			Module	LD_B-100
TASK	code	C10002323		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX10 Multicore Electrical Control Cable

CABLE DATA

Type: Cu Cl.2/XLPE/LSZH | Cores/Size mm²: 7X1,5 mm2 | Color: GREY

From: SG-100D1 | To: SG-200D2

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

CONTINUITY	CORE 1 / All cores+screen+armour+earth	1.1
	CORE 2 / All cores+screen+armour+earth	1.1
	CORE 3 / All cores+screen+armour+earth	1.1
	CORE 4 / All cores+screen+armour+earth	1.1
	CORE 5 / All cores+screen+armour+earth	1.1
	CORE 6 / All cores+screen+armour+earth	1.1
	CORE 7 / All cores+screen+armour+earth	1.1
	CORE 8 / All cores+screen+armour+earth	NA
	CORE 9 / All cores+screen+armour+earth	NA
	CORE 10 / All cores+screen+armour+earth	NA

INSULATION	CORE 1	>999
	CORE 2	>999
	CORE 3	>999
	CORE 4	>999
	CORE 5	>999
	CORE 6	>999
	CORE 7	>999
	CORE 8	NA
	CORE 9	NA
	CORE 10	NA
	SCREEN	NA
	EARTH	NA
	ARMr	NA
	TEST VOLTS	NA

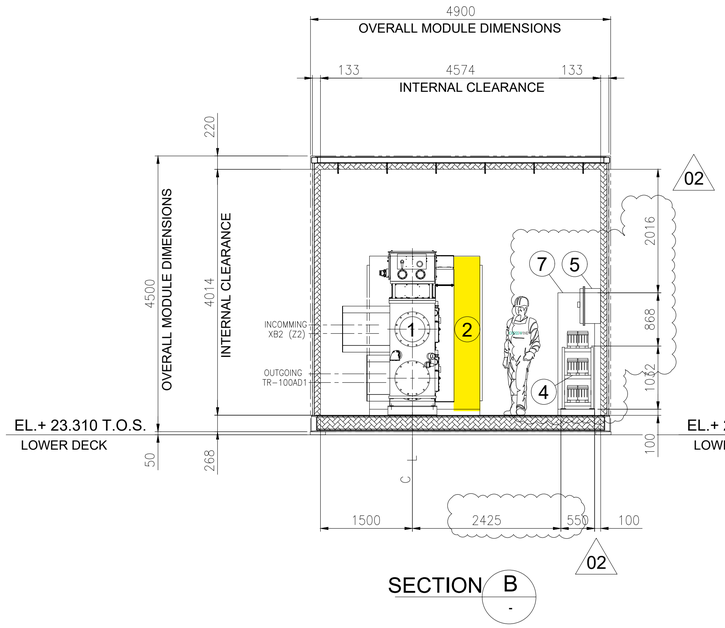
TESTING INSTRUMENTS USED

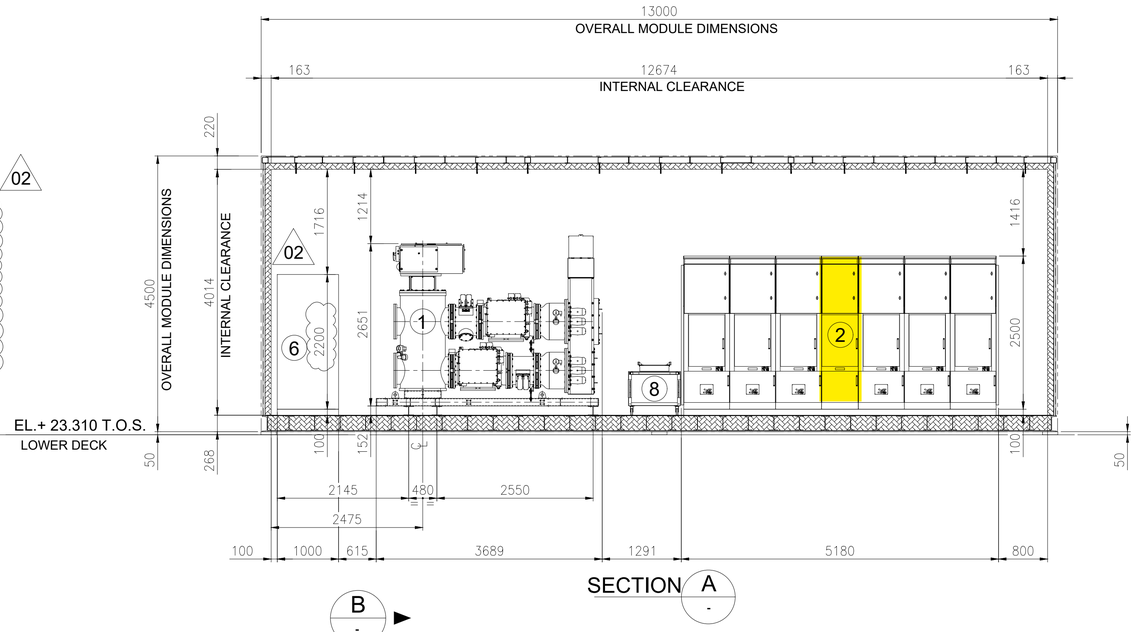
TYPE / SERIAL N° : KEW3125A S/N: W8330207 Calibration certificate N° and date: N°7722/24 _ 10/07/2024	TYPE / SERIAL N° : FLUKE 175 S/N:AW1/018(17140769) Calibration certificate N° and date: N°7715/24 _ 10/07/2024
TYPE / SERIAL N° : Calibration certificate N° and date:	TYPE / SERIAL N° : Calibration certificate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

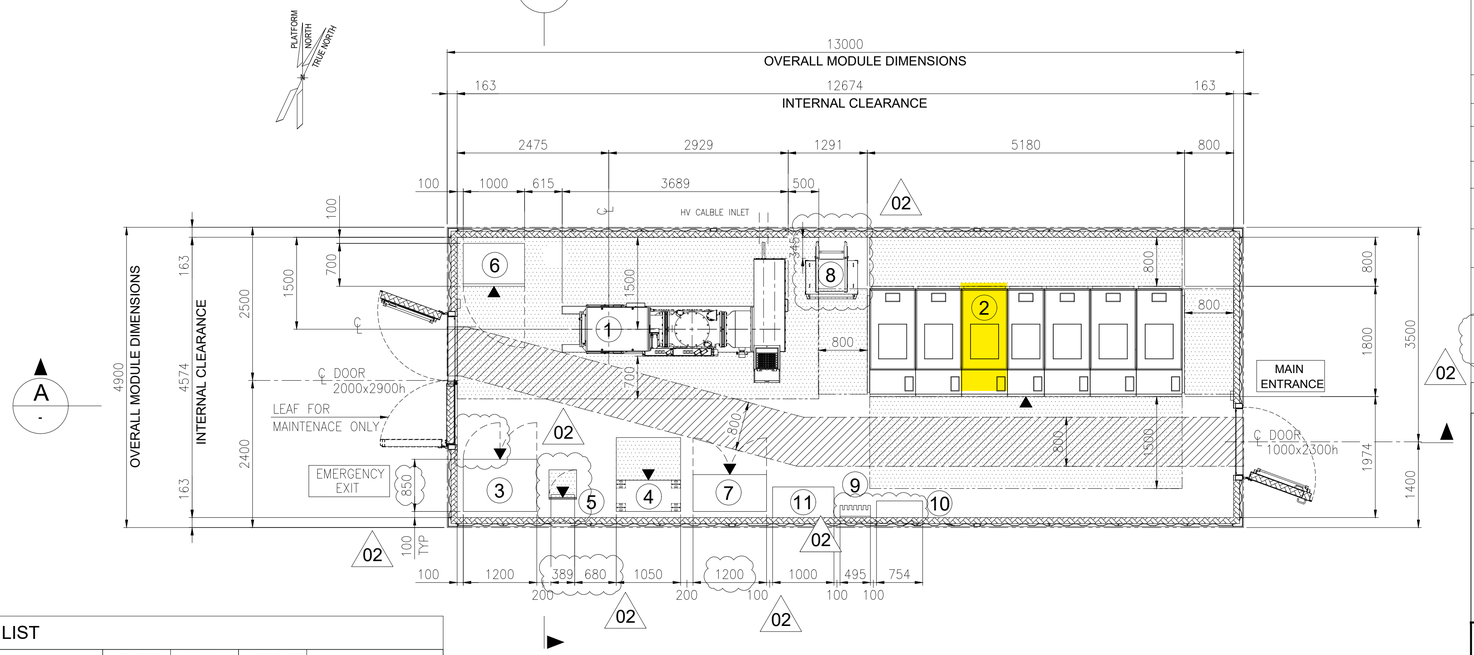
Comments: Nota 4: refer to PL C30000679

Page 1/1	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Paolo Schintu	
Date	2025-01-04	2025-01-07	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-01-04T11:01:16.117Z	PROVERLIS Digitaly signed by Paolo Schintu 2025-01-07T07:56:17.187Z	

DRAWING NO. 123A90-DDL-EL-DL-20104 REV. 02

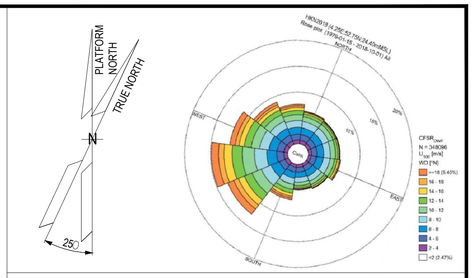






EQUIPMENT LIST

REF.	TAG No.	DESCRIPTION	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)	NOTE
1	HNA6-AFA70	66kV SWITCHGEAR (GIS)	3689	2025	2651	
2	SG-100D1	6.6kV SWITCHGEAR	5180	1800	2500	
3	UP-200F1	DC UPS PANEL	1200	850	2105	
4	BA-200F1	DC UPS BATTERY RACK	1050	510	1272	
5	CB-200F1 02	ISOLATOR FOR DC UPS	452	377	634	
6	CP-100E1	66 kV SWITCHGEAR LOCAL CONTROL PANEL	1000	700	2200	02
7	B100-HSB-001	DISTRIBUTION & HVAC PANEL - HV MV ROOM	1200	600	1900	
8	-	SERVICE TROLLEY FOR 6.6kV SWITCHGEAR	943	862	874	
9	-	TOOL BOX	495	200	200	
10	-	SUBSTATION LIFE SAVING & INTERVENTION KIT	754	270	840	
11	-	TABLE	1000	500	750	



NOTES

1. U.N.O. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DELETED
3. DOCUMENT VALID ONLY FOR ELECTRICAL COMPONENT.
4. FOR OTHER ITEMS, CORRECT LOCATION AND INFROMATION, 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

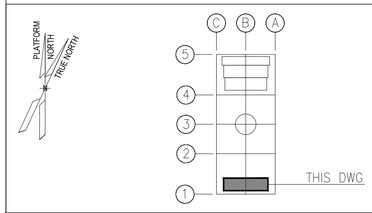
LEGEND

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
66kV SWITCHGEAR (GIS) GENERAL ARRANGEMENT DRAWING	1723001595-EL-DA-00006
CIRCUIT AND WIRING DIAGRAM	1723001595-EL-DG-00015
SG-100D1 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00006
DC UPS – GENERAL ARRANGEMENT AND DIMENSIONAL DRAWINGS	1724000372-EL-DA-00003
DC UPS – BATTERY LAYOUT AND INTERCONNECTING DIAGRAM	1724000372-EL-DG-00010
B-100 - GENERAL ARRANGEMENT DRAWINGS - E&I SHELTER	1724000049-AR-DA-00014

KEY PLAN



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20104**

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	10/11/2023	DSF	CB/AMA	DYFO/MDO	ISSUE FOR REVIEW (IFR)

CROSSWIND — ROSETTI MARINO

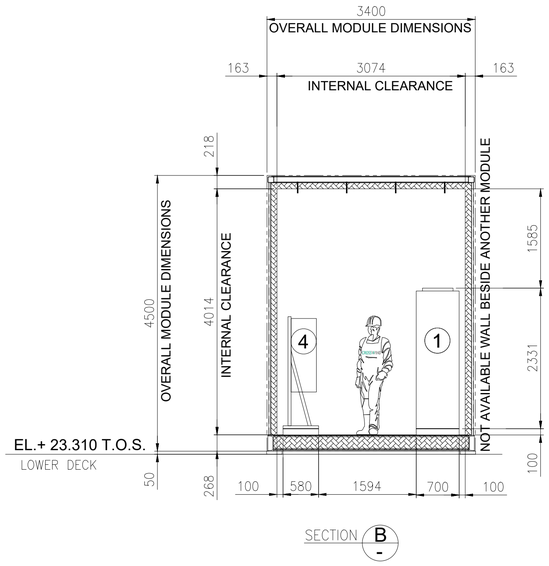
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
HV SWITCHROOM

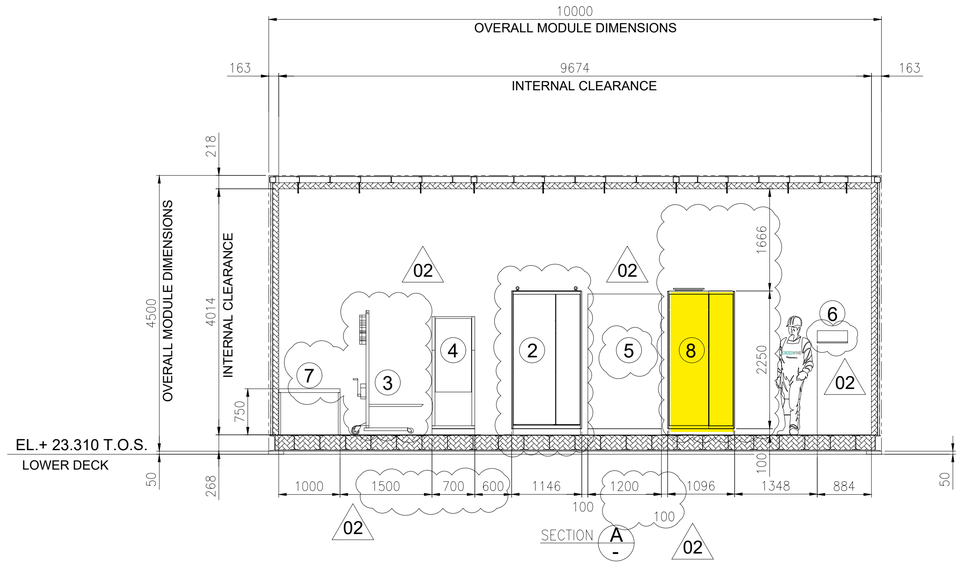
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN GPA	CHECKED LMA/AMA	APPROVED LMA/MDO	DATE 27/05/2024

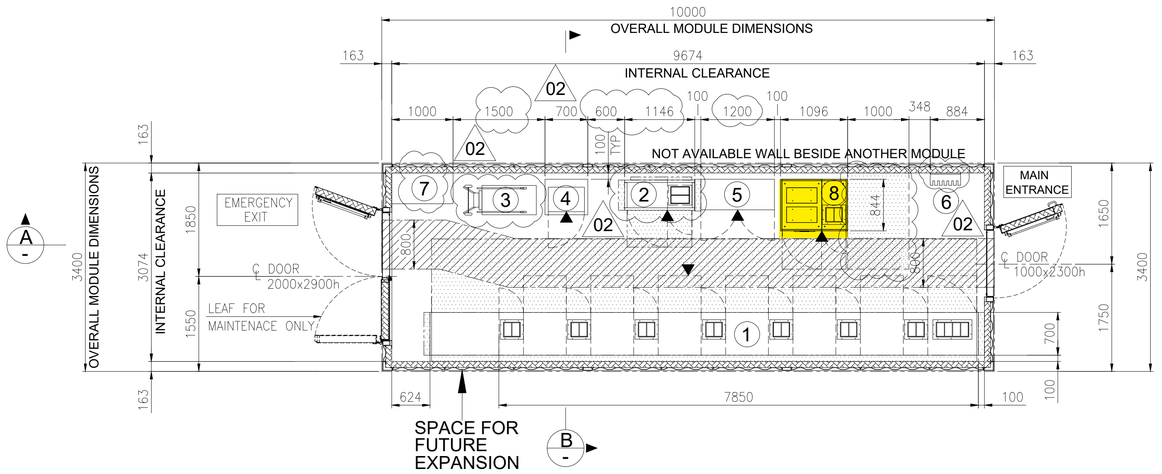
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File Name : 123A90-DDL-EL-DL-20104_REV02.dwg

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





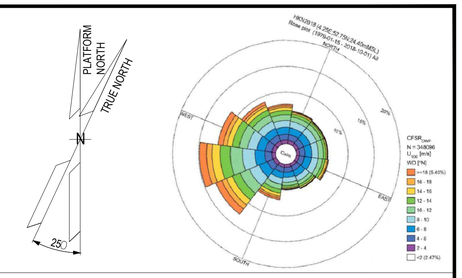


EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

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

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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

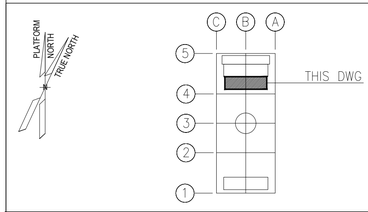
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

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

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

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

ROSETTI MARINO SpA

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

FROM	TO

DESCRIPTION: 6.6KV HV SWITCHGEAR
TAG NUMBER: SG-100D1

COLUMN/CUBIC.:A2

-XM

INTER TRIP	XM / 53	1
	XM / 54	2
TRIP	XM / 55	3
	XM / 56	4
CB OPEN POSITION	XM / 57	5
	XM / 58	6
		7

BK

82008-CEC
7C X 1.5 mm²

BK

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

COLUMN/CUBIC.:CL01/+03

-XM

1	X2 / 3	INTERTRIP FROM 6.6 KV SWBD.
2	X2 / 4	
3	X2 / 5	TRIP FROM 6.6 KV SWBD.
4	X2 / 6	
5	X2 / 7	CONSENT TO CLOSE FROM 6.6KV SWBD.
6	X2 / 8	
7		

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

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

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
6.6KV SWBD AND LV SWBD 800/460V INTER TRIP

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

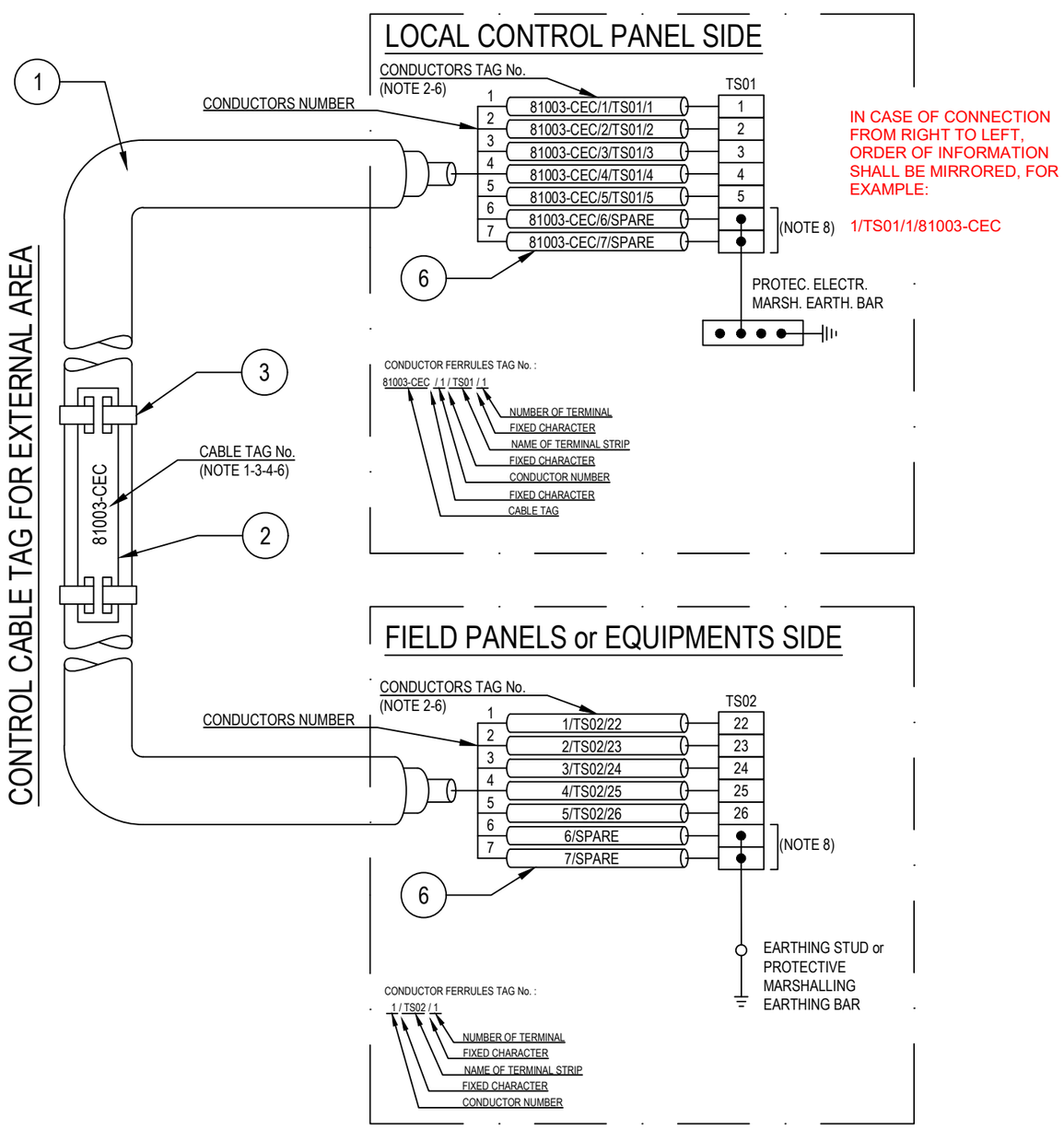
SCALE : 1:X

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-EL-DG-20149	075	02

F.to UNI A3: 420mmx297mm

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

C04



IN CASE OF CONNECTION FROM RIGHT TO LEFT, ORDER OF INFORMATION SHALL BE MIRRORED, FOR EXAMPLE:

1/TS01/1/81003-CEC

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 50 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.

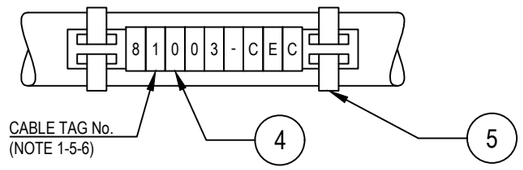
5) THE CABLE TAG FOR INTERNAL AREA SHAL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

6) CABLE AND CONDUCTOR TAG ARE INDICATIVE ONLY.

7) THE EARTHING CONNECTION OF THE ARMOUR CABLE IS NOT APPLICABILE IF THE ARMOUR IS CONNECTED TO EARTH WITH METALLIC CABLE GLAND.
WITHIN TECHNICAL BUILDING, PROTECTIVE CONDUCTOR SHALL BE TAGGED BETWEEN FOLLOWING ITEMS:
- PANEL (SWITCHBOARD, SWITCHGEAR, DISTRIBUTION BOARD, ETC) AND EARTH RING
- EARTHING BOSS AND EARTH RING
- EARTH BAR AND EARTH BAR (IF ANY).

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.

CONTROL CABLE TAG FOR INTERNAL AREA



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

REV.:	DATE:	SIGNATURE:
2_C	06/12/24	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 CONTROL 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 008 | REV. 02

F.to UNI A3: 420mmx297mm

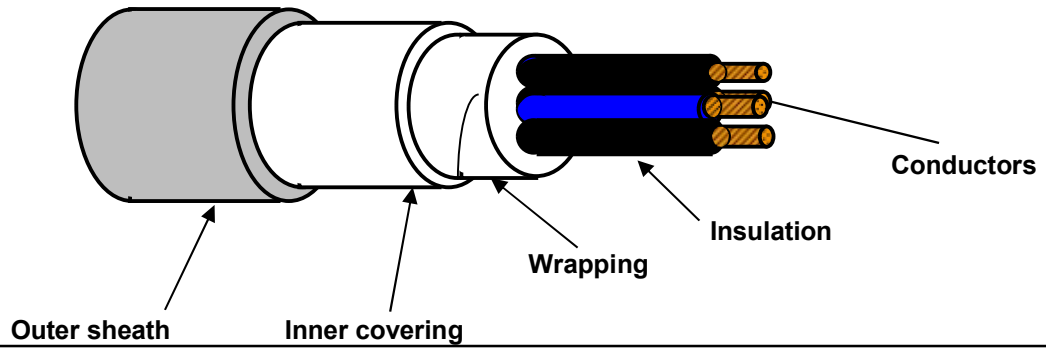
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Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
82008-CEC	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						SG-100D1	MV 6,6kV Switchgear	Lower Deck (B-100)	A2	SG-200D2	LV 0,8/0,4 kV MCC Switchgear (Solar)	Lower Deck (B-200)	Cable Box	ELECV34-7X1,5	Cable Cu Cl.2/XLPE/LSZH 0,6/1kV 7Cx1,5mm² - Grey	M25	n.a.			n.a.				L-300-101-LVT-059 / L-600-101-LVT-058 / E-MCT-105 / L-300-101-LVT-074 / L-600-101-LVT-012 / L-750-101-LVT-011 / E-MCT-201 / L-600-101-LVT-017 / L-600-101-LVT-018 / L-600-101-LVT-020 / L-300-101-LVT-032

FLEI s.r.l.

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

7CX1,5 - CONTROL CABLE - Flame Retardant



TECHNICAL FEATURES

Conductors :	**STRANDED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	**XLPE** compound, quality to IEC 60092.360, Nominal Thickness 0,7 mm	
Cores colour code :	**Black NUMBERED (from 1 to 7)**	
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:	by plastic tape helically wound	
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 - 7CX1,5 SQMM - XLPE/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 -**	
	Year of Manufacture - CE + Meter Marking	
Outer diameter :	(13,5 ± 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 :	≥ 1000 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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ROSETTI MARINO

CROSSWIND

ITEM	Tag	83015-CEC	: LV SWBD 800/460V / 6.6KV HV Switchgear	Dwg	123A90-DDL-EL-LIS-20148		
	S/Sys	83-10	: 400 V Switchboard Solar (SG-200D2)	Module	LD_B-200/LD_B-100		
TASK	code	C10002324	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX10

Multicore Electrical Control Cable

CABLE DATA

Type: Cu Cl.2/XLPE/LSZH — Cores/Size mm²: 7X1,5 mm2 — Color: GREY

From: SG-200D2 — To: SG-100D1

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

CONTINUITY	CORE 1 / All cores+screen+armour+earth	1,27
	CORE 2 / All cores+screen+armour+earth	1,27
	CORE 3 / All cores+screen+armour+earth	1,27
	CORE 4 / All cores+screen+armour+earth	1,27
	CORE 5 / All cores+screen+armour+earth	1,27
	CORE 6 / All cores+screen+armour+earth	1,27
	CORE 7 / All cores+screen+armour+earth	1,27
	CORE 8 / All cores+screen+armour+earth	NA
	CORE 9 / All cores+screen+armour+earth	NA
	CORE 10 / All cores+screen+armour+earth	NA

INSULATION	CORE 1	>999
	CORE 2	>999
	CORE 3	>999
	CORE 4	>999
	CORE 5	>999
	CORE 6	>999
	CORE 7	>999
	CORE 8	NA
	CORE 9	NA
	CORE 10	NA
	SCREEN	NA
	EARTH	NA
	ARMr	NA
	TEST VOLTS	NA

TESTING INSTRUMENTS USED

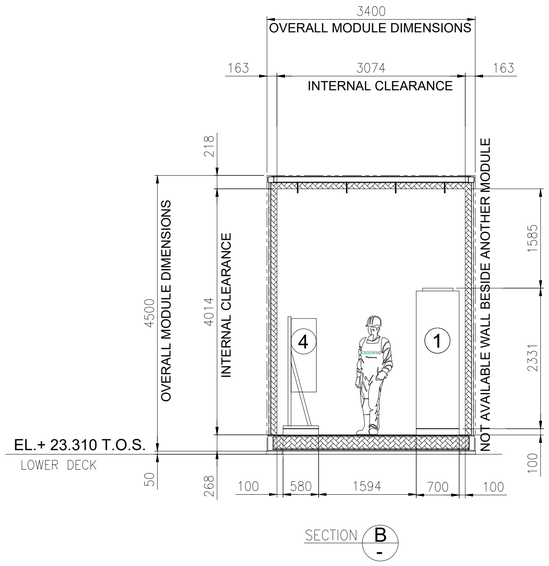
TYPE / SERIAL N° : KEW3125A S/N: W8330207 Calibration certificate N° and date: N°7722/24 _ 10/07/2024	TYPE / SERIAL N° : FLUKE 175 S/N:AW1/018(17140769) Calibration certificate N° and date: N°7715/24 _ 10/07/2024
TYPE / SERIAL N° : Calibration certificate N° and date:	TYPE / SERIAL N° : Calibration certificate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

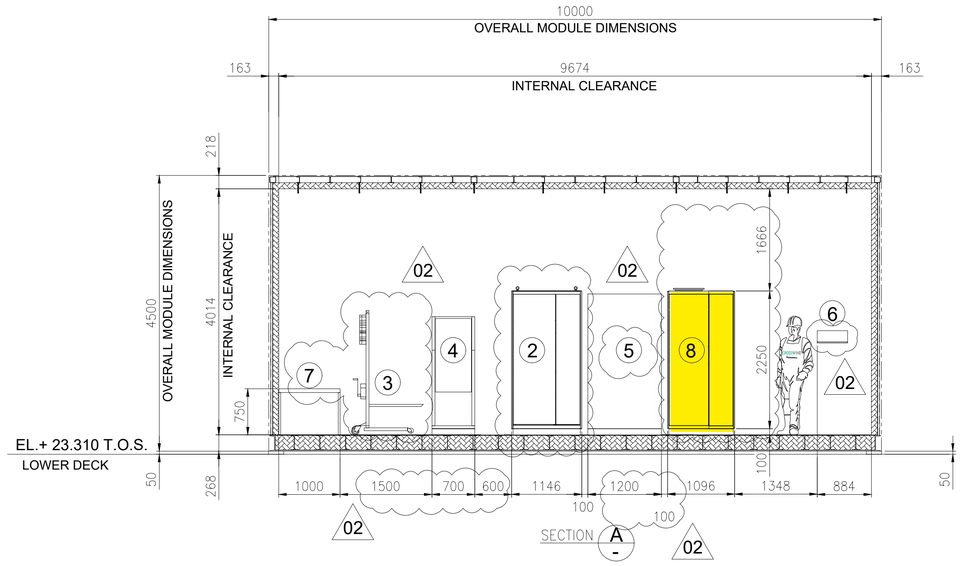
Comments: Nota 4: refer to PL C30000679

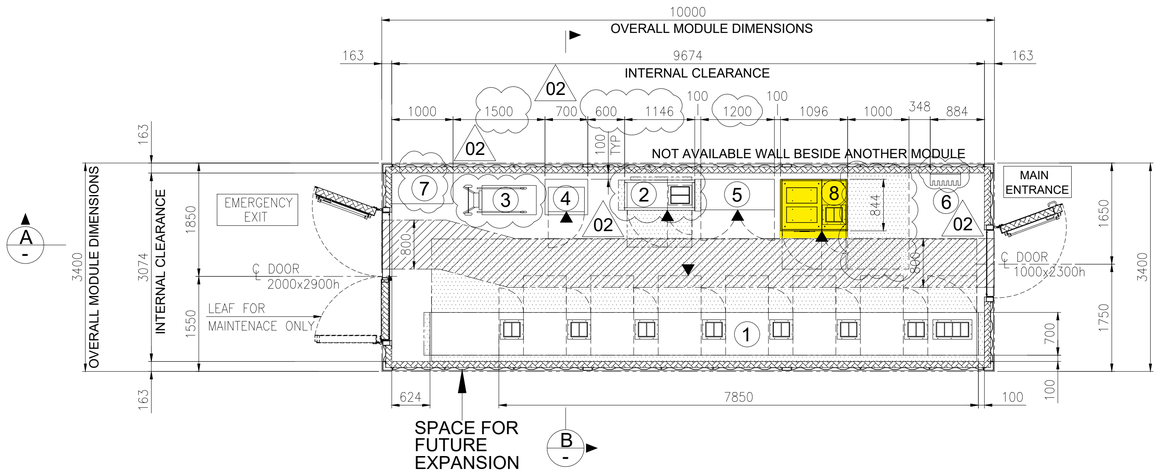
Note 9 :cable terminations must be reconnected during the commissioning phase.

Page 1/1	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Francesco Zucca	Giovanni Tangianu	
Date	2024-12-28	2025-01-03	
Signature	Digitaly signed by Francesco Zucca 2024-12-28T07:36:20.164Z	Digitaly signed by Giovanni Tangianu 2025-01-03T07:45:39.613Z	

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





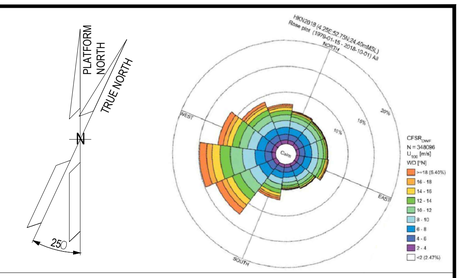


EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

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

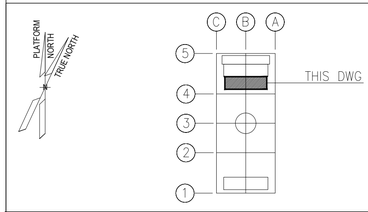
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

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

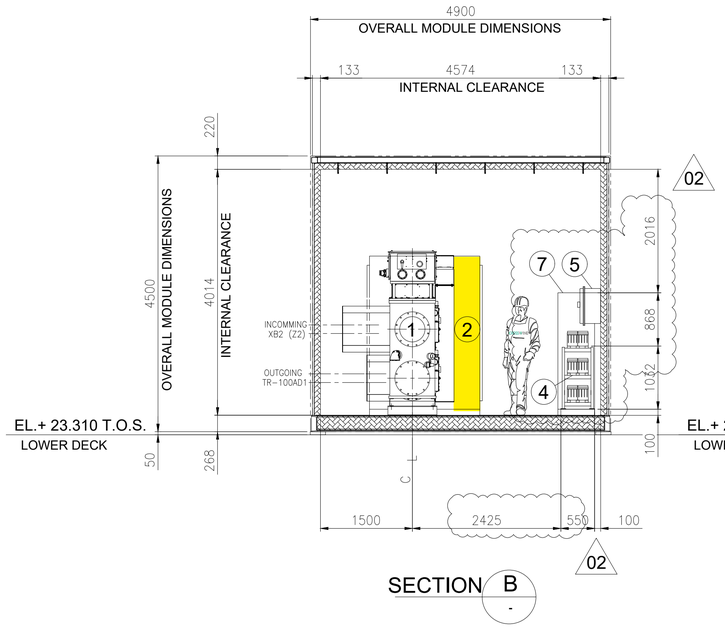
VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20105**

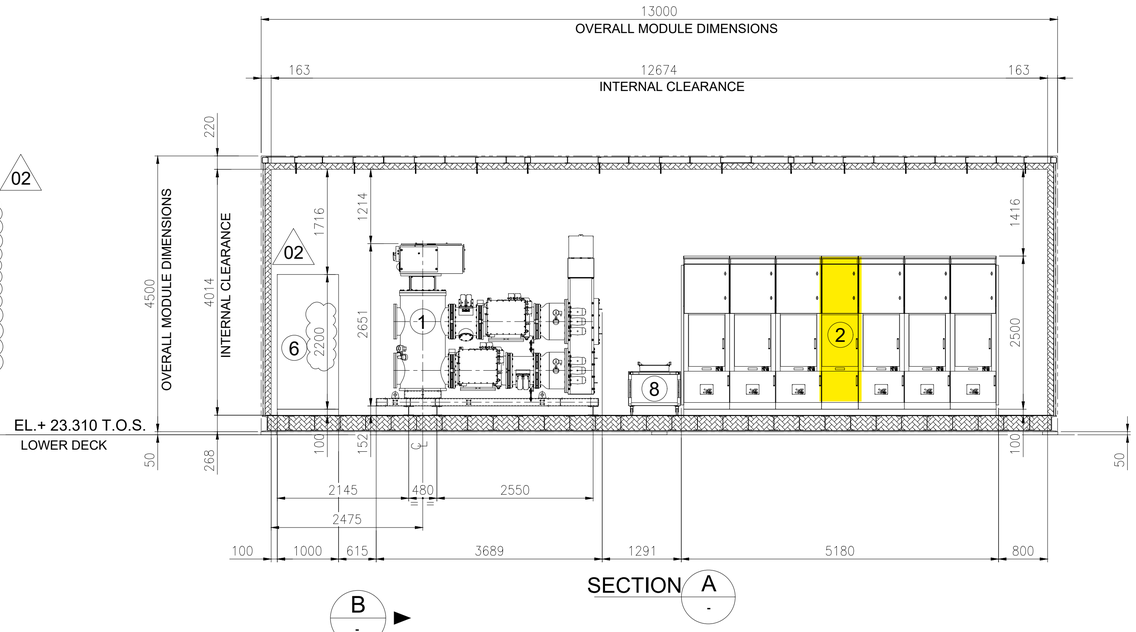
REV.:	DATE:	SIGNATURE:
2_A	08/08/24	G.Randi

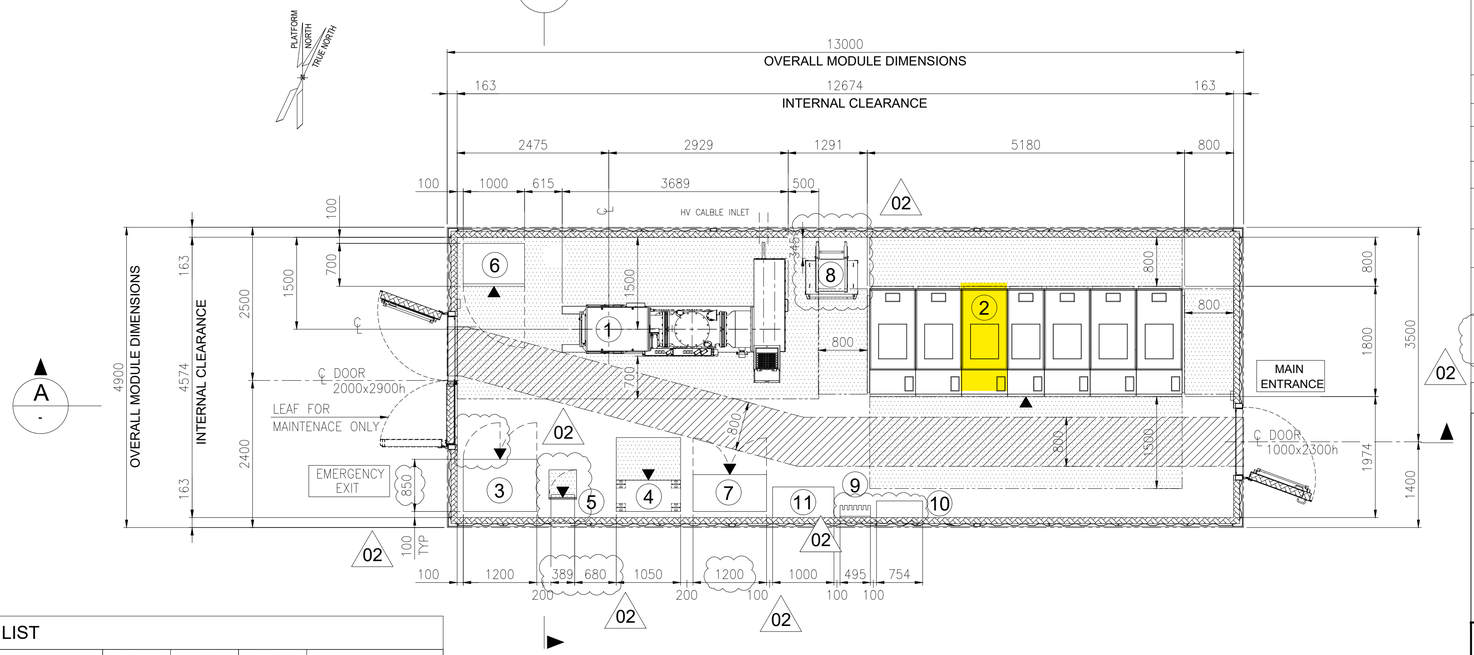
ROSETTI MARINO SpA

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

DRAWING NO. 123A90-DDL-EL-DL-20104 REV. 02

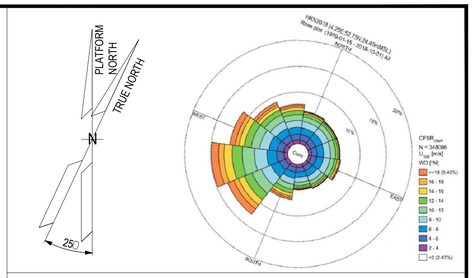






EQUIPMENT LIST

REF.	TAG No.	DESCRIPTION	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)	NOTE
1	HNA6-AFA70	66kV SWITCHGEAR (GIS)	3689	2025	2651	
2	SG-100D1	6.6kV SWITCHGEAR	5180	1800	2500	
3	UP-200F1	DC UPS PANEL	1200	850	2105	
4	BA-200F1	DC UPS BATTERY RACK	1050	510	1272	
5	CB-200F1 02	ISOLATOR FOR DC UPS	452	377	634	
6	CP-100E1	66 kV SWITCHGEAR LOCAL CONTROL PANEL	1000	700	2200	02
7	B100-HSB-001	DISTRIBUTION & HVAC PANEL - HV MV ROOM	1200	600	1900	
8	-	SERVICE TROLLEY FOR 6.6kV SWITCHGEAR	943	862	874	
9	-	TOOL BOX	495	200	200	
10	-	SUBSTATION LIFE SAVING & INTERVENTION KIT	754	270	840	
11	-	TABLE	1000	500	750	



NOTES

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2. DELETED
3. DOCUMENT VALID ONLY FOR ELECTRICAL COMPONENT.
4. FOR OTHER ITEMS, CORRECT LOCATION AND INFROMATION, 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

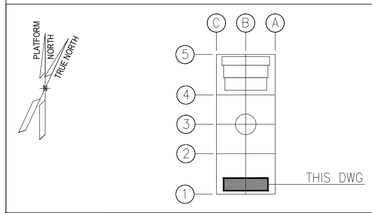
LEGEND

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
66kV SWITCHGEAR (GIS) GENERAL ARRANGEMENT DRAWING	1723001595-EL-DA-00006
CIRCUIT AND WIRING DIAGRAM	1723001595-EL-DG-00015
SG-100D1 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00006
DC UPS – GENERAL ARRANGEMENT AND DIMENSIONAL DRAWINGS	1724000372-EL-DA-00003
DC UPS – BATTERY LAYOUT AND INTERCONNECTING DIAGRAM	1724000372-EL-DG-00010
B-100 - GENERAL ARRANGEMENT DRAWINGS - E&I SHELTER	1724000049-AR-DA-00014

KEY PLAN



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20104**

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	10/11/2023	DSF	CB/AMA	DYFO/MDO	ISSUE FOR REVIEW (IFR)

CROSSWIND — ROSETTI MARINO

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

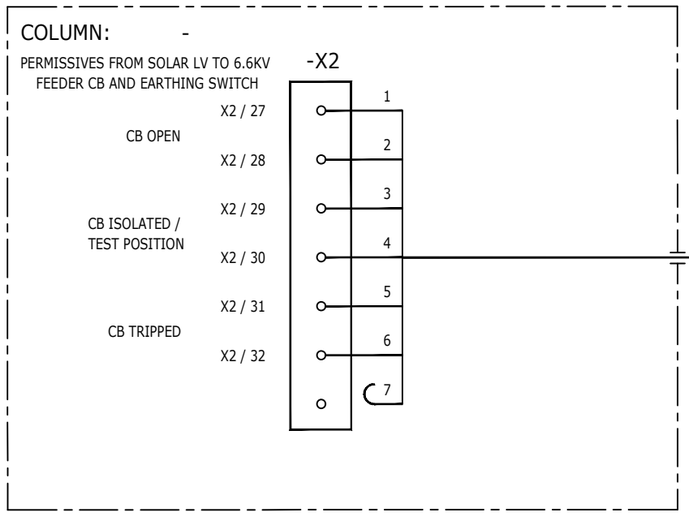
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN GPA	CHECKED LMA/AMA	APPROVED LMA/MDO	DATE 27/05/2024

A1	DRAWING NO. 123A90-DDL-EL-DL-20104	SHEET 001	REV. 02

File Name : 123A90-DDL-EL-DL-20104_REV02.dwg

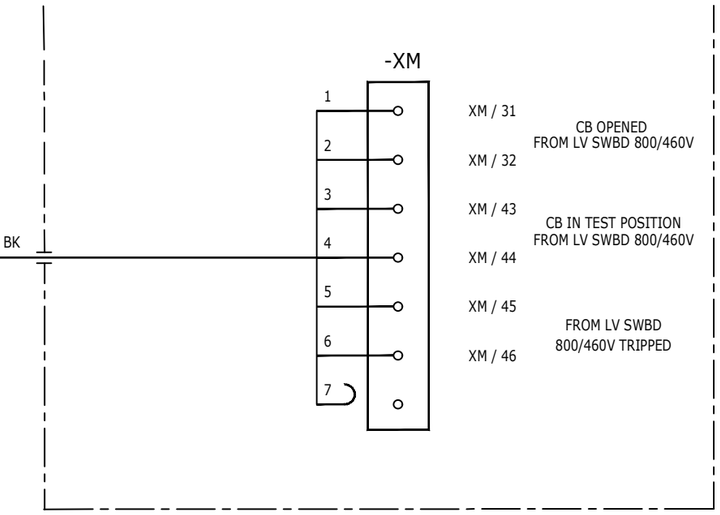
FROM	TO

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

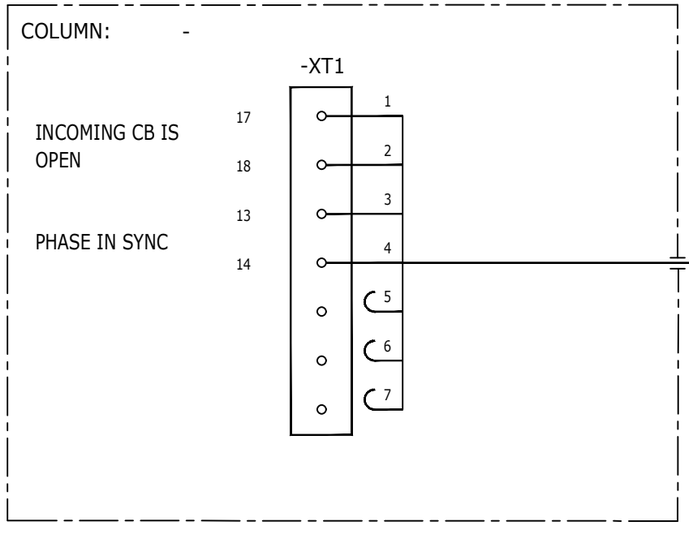


83015-CEC
7C X 1.5 mm²

DESCRIPTION: 6.6KV HV SWITCHGEAR
TAG NUMBER: SG-100D1

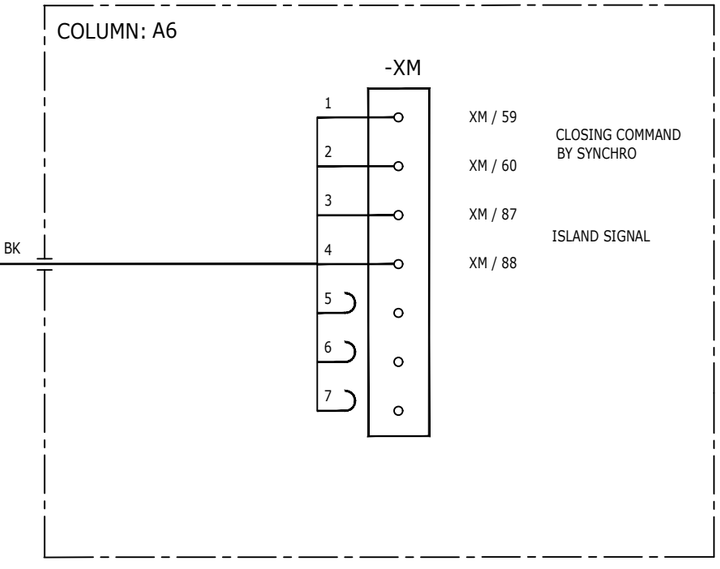


DESCRIPTION: BESS
TAG NUMBER: A-85000



85001-CEC
7C X 1.5 mm²

DESCRIPTION: 6.6KV HV SWITCHGEAR
TAG NUMBER: SG-100D1



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

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

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
INTERLOCKS BETWEEN BESS & 6.6KV HV SWITCHGEAR

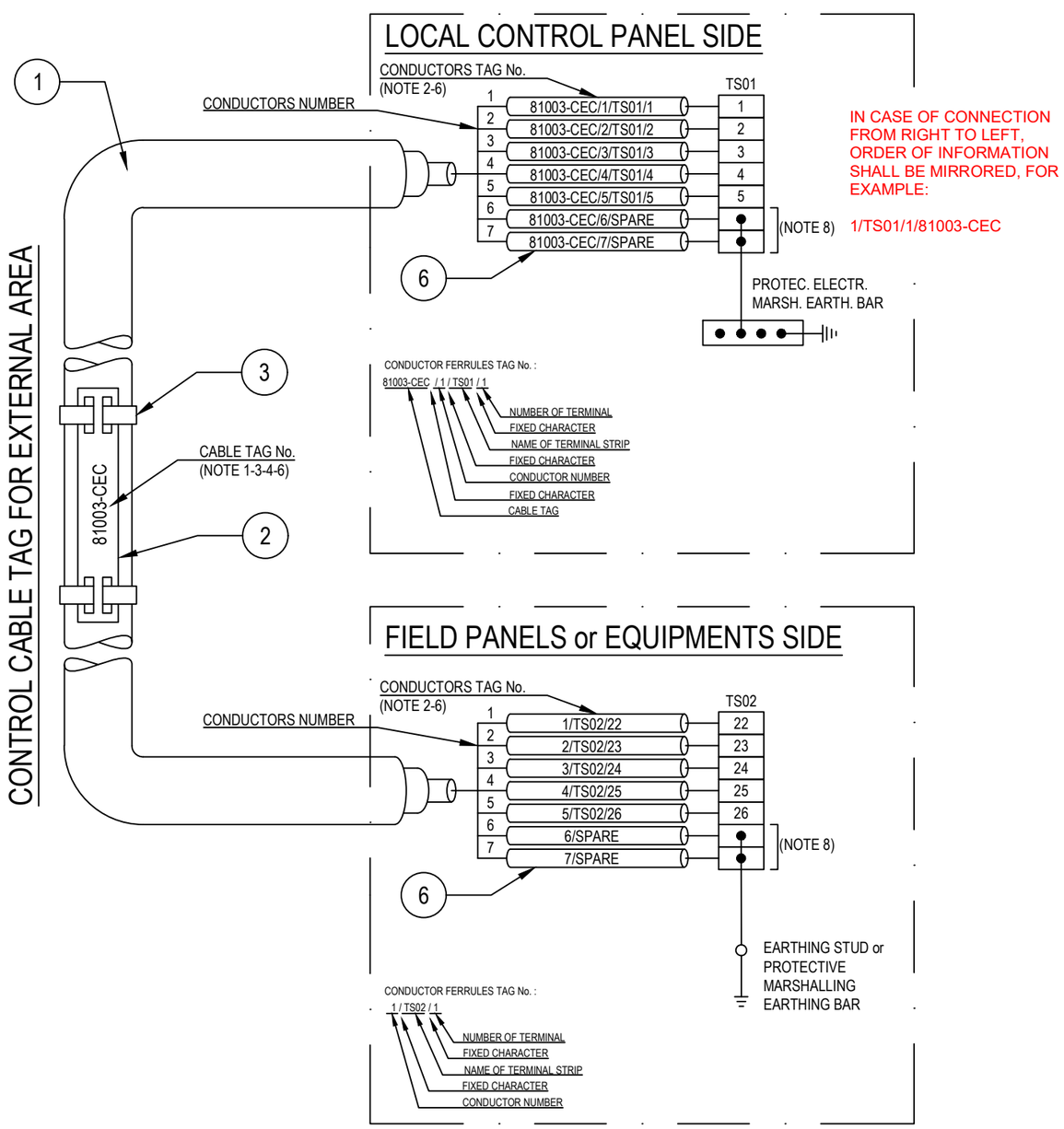
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A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 084 | REV. 02

F.to UNI A3: 420mmx297mm

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

C04



IN CASE OF CONNECTION FROM RIGHT TO LEFT, ORDER OF INFORMATION SHALL BE MIRRORED, FOR EXAMPLE:

1/TS01/1/81003-CEC

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 50 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.

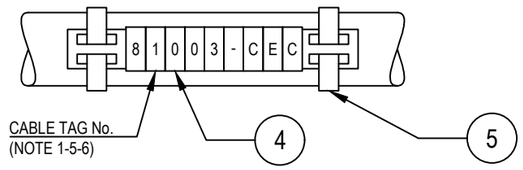
5) THE CABLE TAG FOR INTERNAL AREA SHAL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

6) CABLE AND CONDUCTOR TAG ARE INDICATIVE ONLY.

7) THE EARTHING CONNECTION OF THE ARMOUR CABLE IS NOT APPLICABILE IF THE ARMOUR IS CONNECTED TO EARTH WITH METALLIC CABLE GLAND.
WITHIN TECHNICAL BUILDING, PROTECTIVE CONDUCTOR SHALL BE TAGGED BETWEEN FOLLOWING ITEMS:
- PANEL (SWITCHBOARD, SWITCHGEAR, DISTRIBUTION BOARD, ETC) AND EARTH RING
- EARTHING BOSS AND EARTH RING
- EARTH BAR AND EARTH BAR (IF ANY).

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.

CONTROL CABLE TAG FOR INTERNAL AREA



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

REV.:	DATE:	SIGNATURE:
2_C	06/12/24	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 CONTROL 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 008 | REV. 02

F.to UNI A3: 420mmx297mm

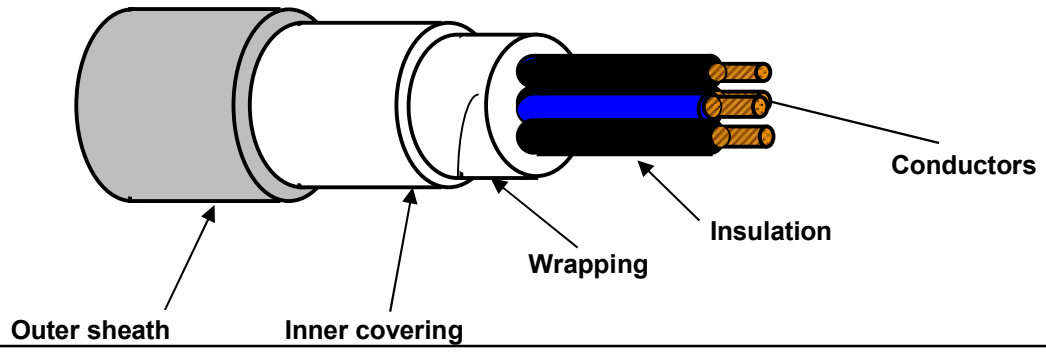
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Statu	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Secti	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Sta	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
83015-CEC	Cable	EL	VFC	123A90-DDL-EL-US-20148						SG-200D2	LV 0,8/0,4 kV MCC Switchgear (Solar)	Lower Deck (B-200)	CL01/03	SG-100D1	MV 6,6kV Switchgear	Lower Deck (B-100)	A2	ELECV34-7X1,5	Cable Cu Cl.2/XLPE/LSZH 0,6/1kV 7Cx1,5mm² - Grey	M25	n.a.			n.a.				L-300-101-LVT-032 / L-600-101-LVT-020 / L-600-101-LVT-018 / L-600-101-LVT-017 / E-MCT-201 / L-750-101-LVT-011 / L-600-101-LVT-012 / L-300-101-LVT-074 / E-MCT-105 / L-600-101-LVT-058 / L-300-101-LVT-059

FLEI s.r.l.

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

7CX1,5 - CONTROL CABLE - Flame Retardant



TECHNICAL FEATURES

Conductors :	**STRANDED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	**XLPE** compound, quality to IEC 60092.360, Nominal Thickness 0,7 mm	
Cores colour code :	**Black NUMBERED (from 1 to 7)**	
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:	by plastic tape helically wound	
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 - 7CX1,5 SQMM - XLPE/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 -**	
	Year of Manufacture - CE + Meter Marking	
Outer diameter :	(13,5 ± 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 :	≥ 1000 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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Section 6 MECHANICAL COMPLETION STATUS INDEX - INSTRUMENTAL DISCIPLINE

NOT APPLICABLE

Section 7 MECHANICAL COMPLETION STATUS INDEX - MECHANICAL DISCIPLINE

NOT APPLICABLE

Section 8 MECHANICAL COMPLETION STATUS INDEX - TELECOMMUNICATION DISCIPLINE

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 83-10 & process: MC & discipline : T

Telecom	83-10 400 V Switchboard Solar (SG-200D2)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
SG-200D2/B400-NET-001	LV 0,8/0,4 kV MCC Switchgear (Solar) / Network Cabinet / EMCS System	ONSHORE	C10004516	CIX09	100	2024-11-23	RFC 1

ROSETTI MARINO

CROSSWIND

ITEM	Tag	SG-200D2/B400-NET-001	: LV 0,8/0,4 kV MCC Switchgear (Solar) / Network Cabinet / EMCS System			Dwg	123A90-DDL-IN-LIS-40091
	S/Sys	83-10	: 400 V Switchboard Solar (SG-200D2)			Module	LD_B-200/LD_B-400
TASK	code	C10004516		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-200D2 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	Digitaly signed by Carmelo Bongiovanni 2024-11-22T17:38:55.509Z	Digitaly signed by Giovanni Tangianu 2024-11-23T11:14:39.174Z	

ROSETTI MARINO

Cable ID: SG-200D2/B400-NET-001

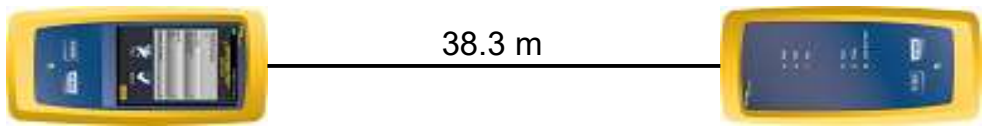
Test Limit: ISO11801 PL2 Class Ea
Limits Version: V7.6
Date / Time: 21-11-2024 16:52:08
Headroom 5.5 dB (NEXT 1,2-4,5)
Cable Type: Cat 6A S/FTP
NVP: 77.0%

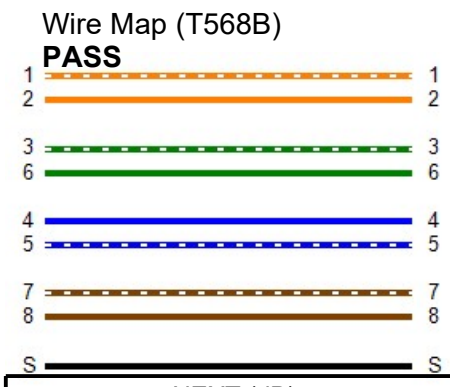
Main: Versiv
S/N: 2226344
Software Version: V6.7 Build 1
Calibration Date: 12-12-2022
Adapter: DSX-8000 (DSX-PLA804)
S/N: 22340270

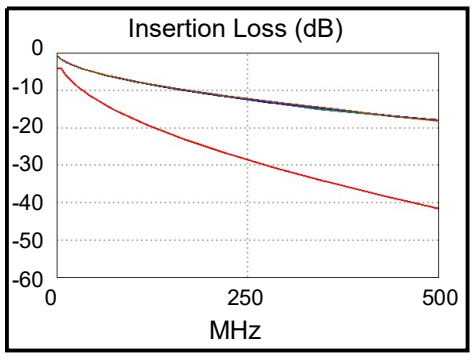
Test Summary: PASS

Remote: Versiv
S/N: 2226336
Software Version: V6.7 Build 1
Calibration Date: 12-12-2022
Adapter: DSX-8000R (DSX-PLA804)
S/N: 22340257

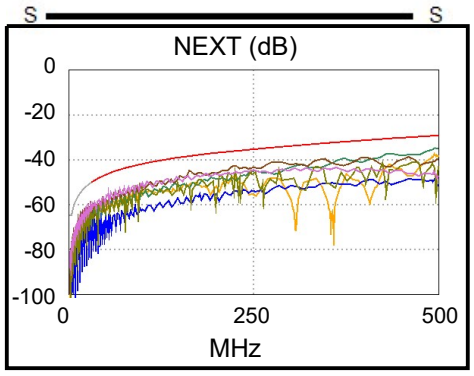
Length (m), Limit 90.0	[Pair 3,6]	38.3
Prop. Delay (ns), Limit 496	[Pair 1,2]	169
Delay Skew (ns), Limit 43	[Pair 1,2]	3
Resistance (ohms), Limit 20.60	[Pair 3,6]	5.42
Insertion Loss Margin (dB)	[Pair 1,2]	23.2
Frequency (MHz)	[Pair 1,2]	500.0
Limit (dB)	[Pair 1,2]	41.6

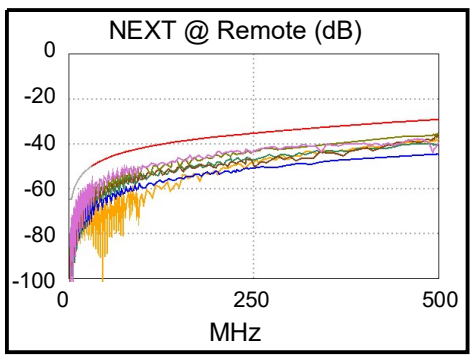




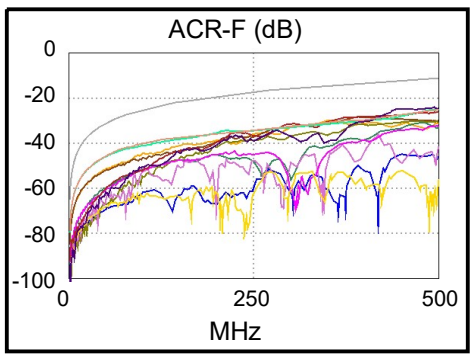


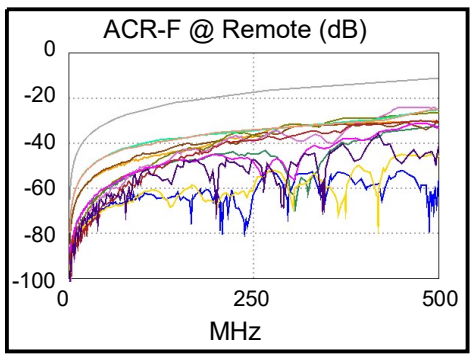
	Worst Case Margin		Worst Case Value	
PASS	MAIN	SR	MAIN	SR
Worst Pair	1,2-4,5	4,5-7,8	1,2-4,5	3,6-7,8
NEXT (dB)	5.5	5.8	5.5	6.3
Freq. (MHz)	495.0	268.0	495.0	499.0
Limit (dB)	29.3	34.8	29.3	29.3
Worst Pair	1,2	3,6	1,2	3,6
PS NEXT (dB)	6.4	5.4	6.4	5.4
Freq. (MHz)	494.0	499.0	494.0	499.0
Limit (dB)	26.5	26.4	26.5	26.4



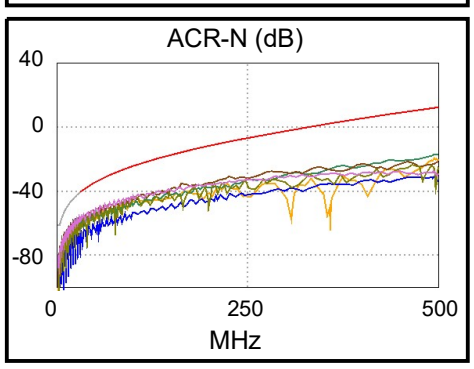


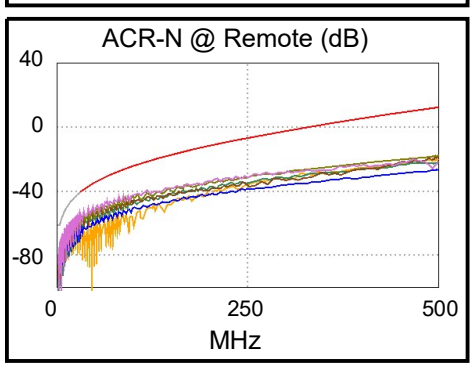
PASS	MAIN	SR	MAIN	SR
Worst Pair	7,8-3,6	3,6-7,8	7,8-3,6	3,6-7,8
ACR-F (dB)	12.1	11.8	12.6	11.8
Freq. (MHz)	447.0	447.0	494.0	447.0
Limit (dB)	12.2	12.2	11.4	12.2
Worst Pair	3,6	7,8	3,6	7,8
PS ACR-F (dB)	13.0	13.0	13.2	13.4
Freq. (MHz)	447.0	447.0	494.0	494.0
Limit (dB)	9.2	9.2	8.4	8.4



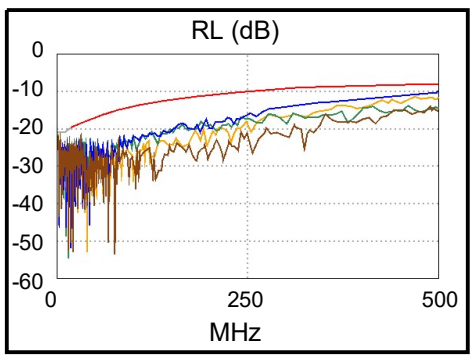


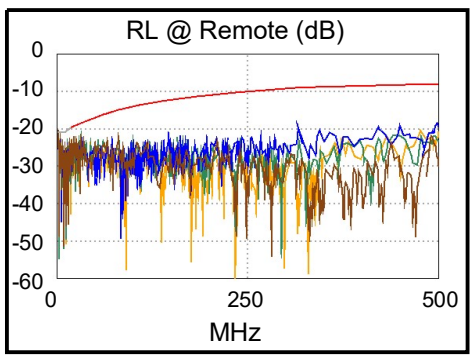
PASS	MAIN	SR	MAIN	SR
Worst Pair	4,5-7,8	4,5-7,8	1,2-4,5	3,6-7,8
ACR-N (dB)	15.3	12.7	29.1	29.9
Freq. (MHz)	32.0	31.8	495.0	499.0
Limit (dB)	40.0	40.1	-12.1	-12.3
Worst Pair	4,5	7,8	1,2	3,6
PS ACR-N (dB)	15.0	13.0	29.7	28.9
Freq. (MHz)	30.1	31.8	494.0	499.0
Limit (dB)	38.3	37.7	-14.9	-15.2





PASS	MAIN	SR	MAIN	SR
Worst Pair	4,5	7,8	4,5	4,5
RL (dB)	1.6	3.6	1.6	10.5
Freq. (MHz)	482.0	22.5	482.0	498.0
Limit (dB)	8.0	19.2	8.0	8.0





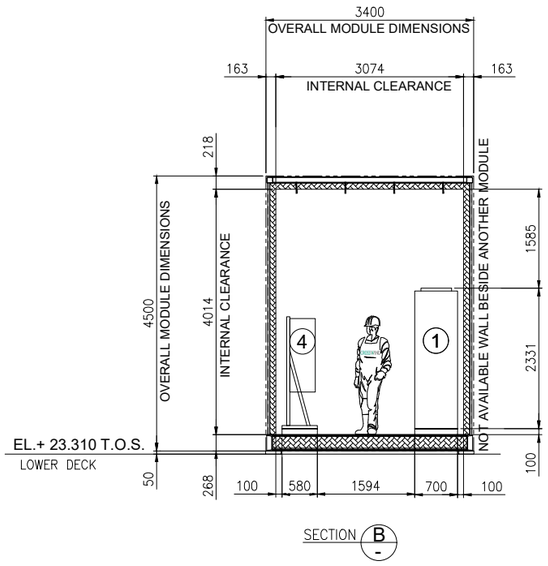
Compliant Network Standards:

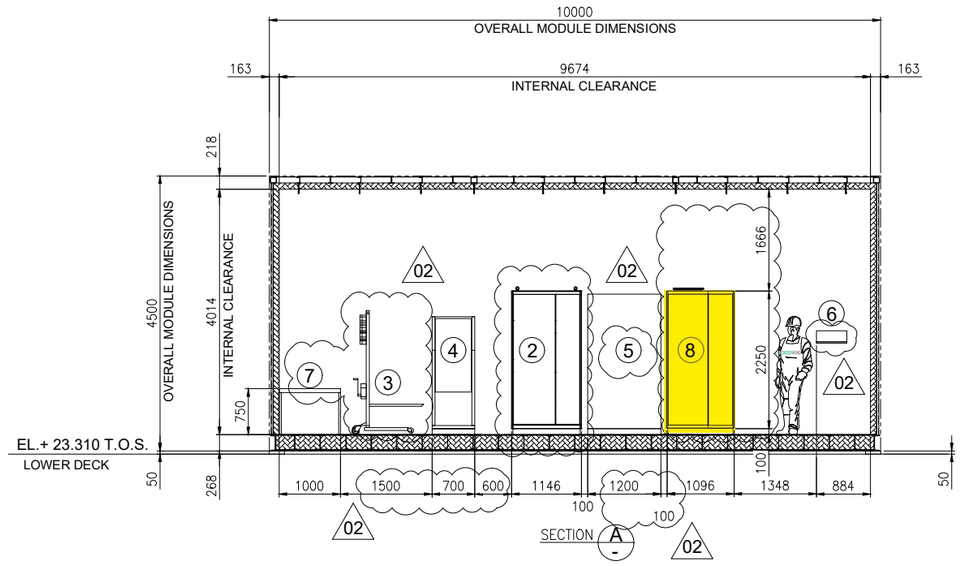
10BASE-T	100BASE-TX	100BASE-T4
1000BASE-T	2.5GBASE-T	5GBASE-T
10GBASE-T	ATM-25	ATM-51
ATM-155	100VG-AnyLan	TR-4
TR-16 Active	TR-16 Passive	

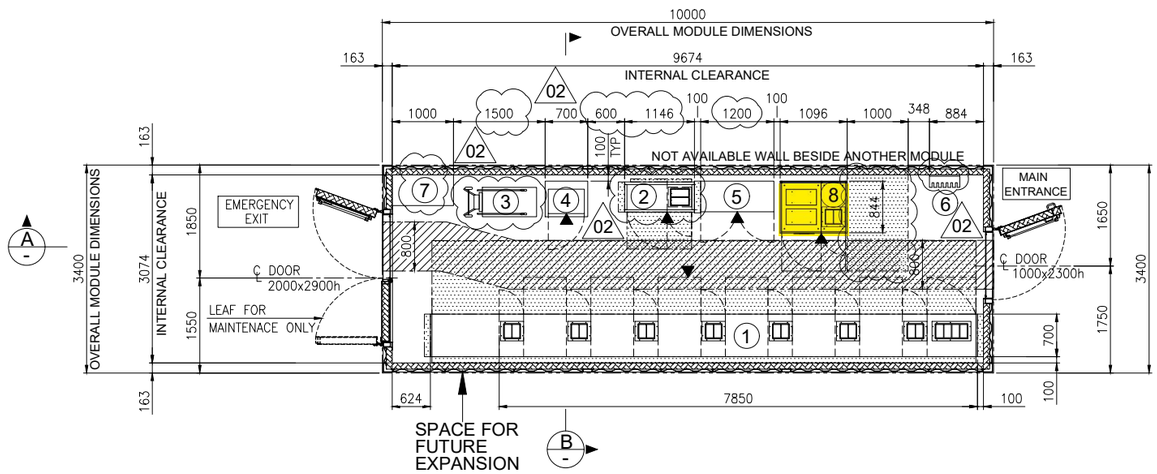
LinkWare™ PC Version 11.4

FLUKE networks

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





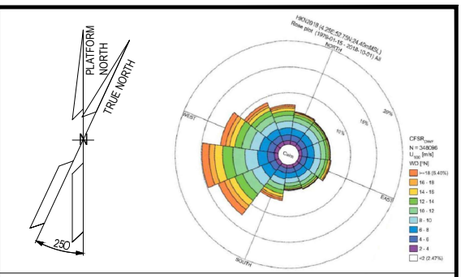


EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

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

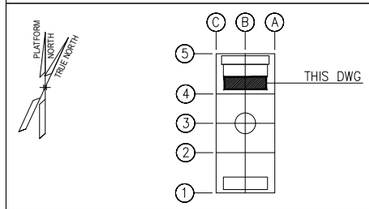
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOSURE
_____ FRONT OF EQUIPMENT

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

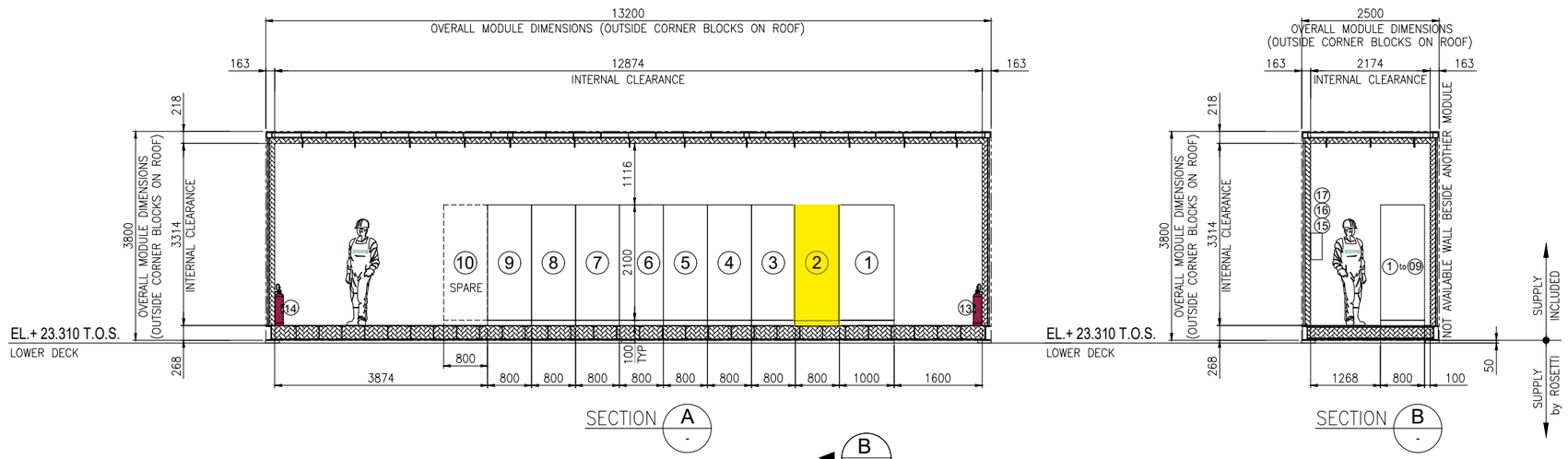
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LV SWITCHROOM

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

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

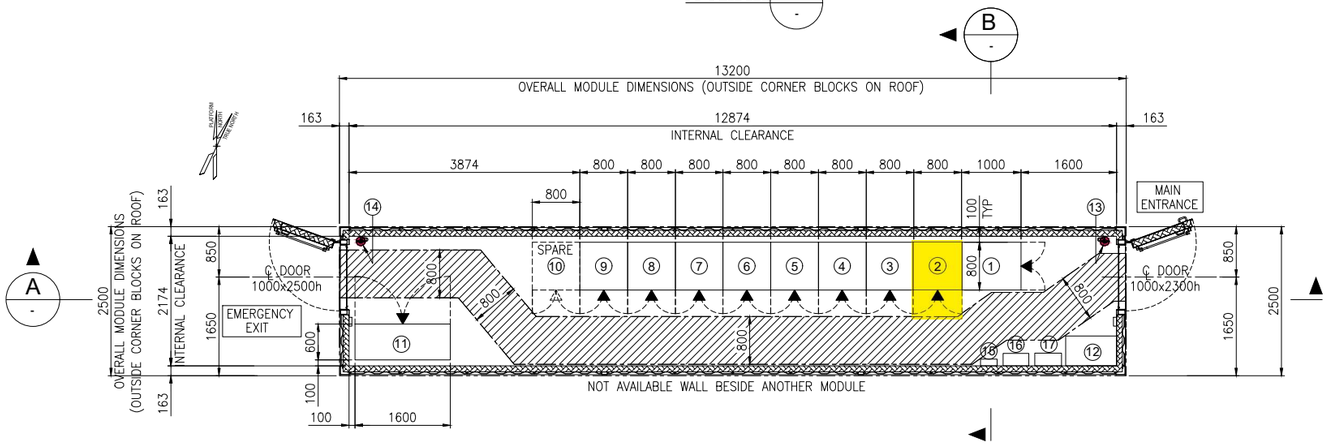
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REV. 03



SECTION A -

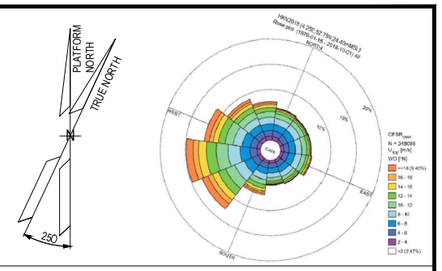
SECTION B -



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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LEGEND

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

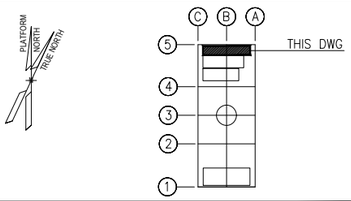
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REFERENCE

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

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

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

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

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

DRAWING NO. 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

SG-200N1/B400-NET-001.01
~~SG-200N1/B400-EMCS-001.01~~
CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS

SWITCH: COOP-01
PORT: P15

400V SWITCHGEAR
SG-200N1

ITEM: REF615 PROTECTION FUNCTION (ABB)
PORT: X3

Ref. Vendor Doc.: 1723002197-EL-DG-00030

SG-200N1/B400-NET-001.02
~~SG-200N1/B400-EMCS-001.02~~
CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS

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

SG-200N1/B400-NET-001.03
~~SG-200N1/B400-EMCS-001.03~~
CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS

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

SG-200D2/B400-NET-001
~~SG-200D2/B400-EMCS-001~~
CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS

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

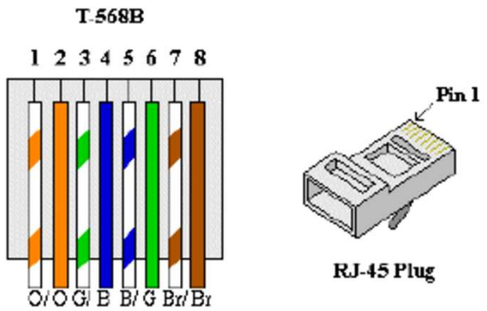
REV. 01

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

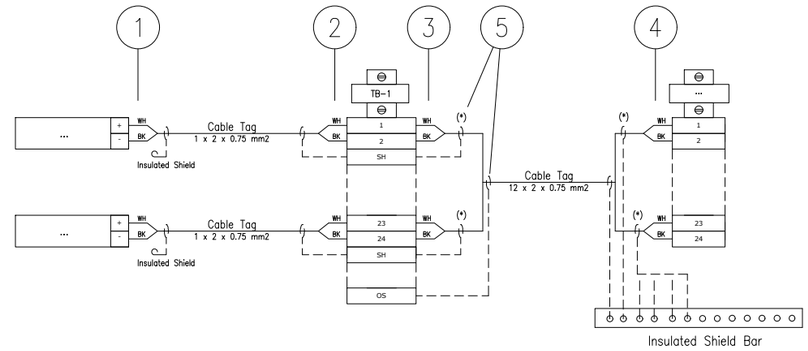
LEGENDS & SYMBOLS:

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

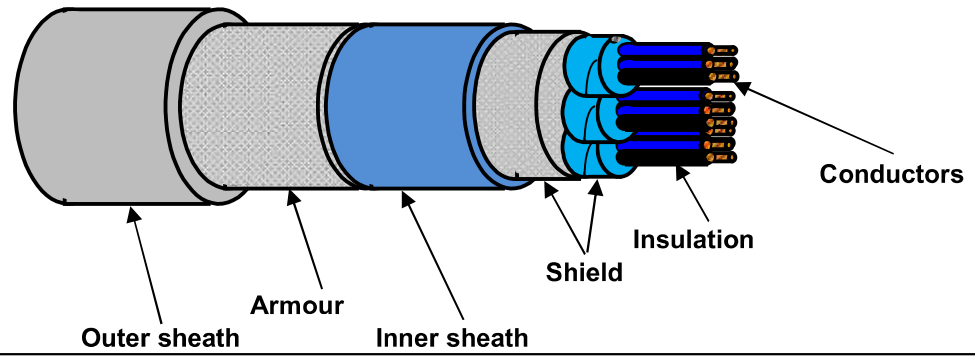
File Name : 123A90-DDL-IN-DG-40015_Rev.01

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-200D2/B400-NET-001	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						SG-200D2	LV 0,8/0,4 kV MCC Switchgear (Solar)	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-1D / 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°:	**347**	**Data / Date:**	**17/09/2024**
Commessa N° / Workorder N°:	**231298/SD**		
Matricola N° / Serial N°:	**231298/SD/070**		
Ordine N° / Order N°:	**1723002197 item: 70**		
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	
LINARI STEFANO	ROSETTI MARINO SPA	ROSETTI MARINO SpA Stefano Linari Quality Control Dept.
MARANGONI MASSIMILIANO	O.b.o. CROSSWIND	

RAPPORTO DI PROVA
TEST REPORT

N° Certificato/ Certificate N°:	347	Data / Date:	17/09/2024

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
Tensione Nominale di Isolamento (Ui): ***Rated Insulation Voltage (Ui)***	**1 kV**	

CARATTERISTICHE ELETTRICHE/ELECTRICAL INFORMATION:

Ue= 0,8 kV; Un= 0,8 kV; F= 50 Hz; In= 63A @45° C; Ik= 30kA /1s

DESCRIZIONE/DESCRIPTION:

LV SWITCHBOARD 800 V - BASE LOAD POWER HUB (BLPH)

PROJECT: CROSSWIND HOLLANDSE KUST NOORD WIND PARK

TAG: "SG-200D2"

DISEGNI/DRAWINGS:

DOCUMENT ID	TITLE
1723002197-EL-DA-00008	SG-200D2 GENERAL ARRANGEMENTS DWG AND FOUNDATION LOAD CALCULATION INCLUDING COG
1723002197-EL-DG-00012	SG-200D2 ELECTRICAL SINGLE LINE DIAGRAM
1723002197-EL-DG-00032	SG-200D2 LV SWG FUNCTIONAL DIAGRAMS

RAPPORTO DI PROVA
TEST REPORT

ISO 9001 ISO 14001 ISO 45001

N° Certificato/ Certificate N°:	347	Data / Date:	17/09/2024

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 = / MΩ**
CIRCUITI AUSILIARI
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 **2,2** kV
MAIN CIRCUITS *Point 4.3 FAT proc.*
Leakage curr. L1= <1 mA L2= <1 mA L3= <1 mA **N= / mA**

CIRCUITI AUSILIARI ; 230Vac= 1,5 kV
AUXILIARY CIRCUITS *Point 4.4 FAT proc.*
Leakage current: 230Vac= 1 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.*
N.A. not applicable

■ ***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: 0,003 Ω)
Point 4.5 FAT proc.

RAPPORTO DI PROVA
TEST REPORT

N° Certificato/ Certificate N°:	347	Data / Date:	17/09/2024

The Equipment is :

Compliant ☒ **/ Non Compliant** ☐

Referring to the FAT Procedure and relevant documents

Apparecchiature utilizzate/ Equipment used: ***Scadenza Taratura /Expiration date***

SP 214 MULTITEST FOR DIELECTRIC TEST	07/2024
SP 196 MULTIMETER FLUKE	03/2025
PP 143 DIGITAL THICKNESS GAUGE	12/2024

Note/ *Notes:*

Has been performed communication test with breaker.
Communication test with PLC will be performed at site.

Missing Ethernet Switch RSPS25 (see punch list)
EMAX E1.2N 1250A broken - to be replace (see punch list)

FIRMA/ *SIGNATURE*

IMESA SPA
IMESA SPA
TESTING OFFICE

ROSETTI MARINO SPA
ROSETTI MARINO SpA
Stefano Linari
Quality Control Dept.

O.b.o. CROSSWIND
M. MARRONI
17.09.24

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

N° Certificato/ Certificate N°:	**348**	**Data / Date:**	**17/09/2024**
Commessa N° / Workorder N°:	**231298/SD**		
Matricola N° / Serial N°:	**231298/SD/080**		
Ordine N° / Order N°:	**1723002197 item: 80**		
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	
LINARI STEFANO	ROSETTI MARINO SPA	ROSETTI MARINO SpA Stefano Linari Quality Control Dept.
MARANGONI MASSIMILIANO	O.b.o. CROSSWIND	

RAPPORTO DI PROVA
TEST REPORT

N° Certificato/ Certificate N°:	348	Data / Date:	17/09/2024

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
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= 63A; Ik= 25kA

DESCRIZIONE/DESCRIPTION:

LV SWITCHBOARD 400/230V - BASE LOAD POWER HUB (BLPH)

PROJECT: CROSSWIND HOLLANDSE KUST NOORD WIND PARK

TAG: "DP-200N1"

DISEGNI/DRAWINGS:

DOCUMENT ID	TITLE
1723002197-EL-DA-00009	DP-200N1 GENERAL ARRANGEMENTS DWG AND FOUNDATION LOAD CALCULATION INCLUDING COG
1723002197-EL-DG-00013	DP-200N1 ELECTRICAL SINGLE LINE DIAGRAM
1723002197-EL-DG-00033	DP-200N1 LV SWG FUNCTIONAL DIAGRAMS -

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ISO 9001 ISO 14001 ISO 45001

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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
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= 3 mA L2= 3 mA L3= 3 mA* N= 5 mA**

CIRCUITI AUSILIARI **230Vac= 1,5** kV
AUXILIARY CIRCUITS *Point 4.4 FAT proc.*
Leakage current: 230Vac= <1 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.*
N.A. not applicable

■ ***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: 0,001 Ω)
Point 4.5 FAT proc.

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The Equipment is :

Compliant ☒ **/ Non Compliant** ☐

Referring to the FAT Procedure and relevant documents

Apparecchiature utilizzate/ Equipment used:	***Scadenza Taratura /Expiration date***
SP 214 MULTITEST FOR DIELECTRIC TEST	07/2024
SP 196 MULTIMETER FLUKE	03/2025
PP 143 DIGITAL THICKNESS GAUGE	12/2024

Note/ *Notes:*

DUSK SWITCH MISSING (see Punch list)

FIRMA/ *SIGNATURE*

IMESA SPA

IMESA SPA
TESTING OFFICE

ROSETTI MARINO SPA

ROSETTI MARINO SpA
Stefano Linari
Quality Control Dept.

O.b.o. CROSSWIND

M MARANGONI
17.09.24

Section 13 MECHANICAL COMPLETION CHANGES / MARK-UPS

NOT APPLICABLE