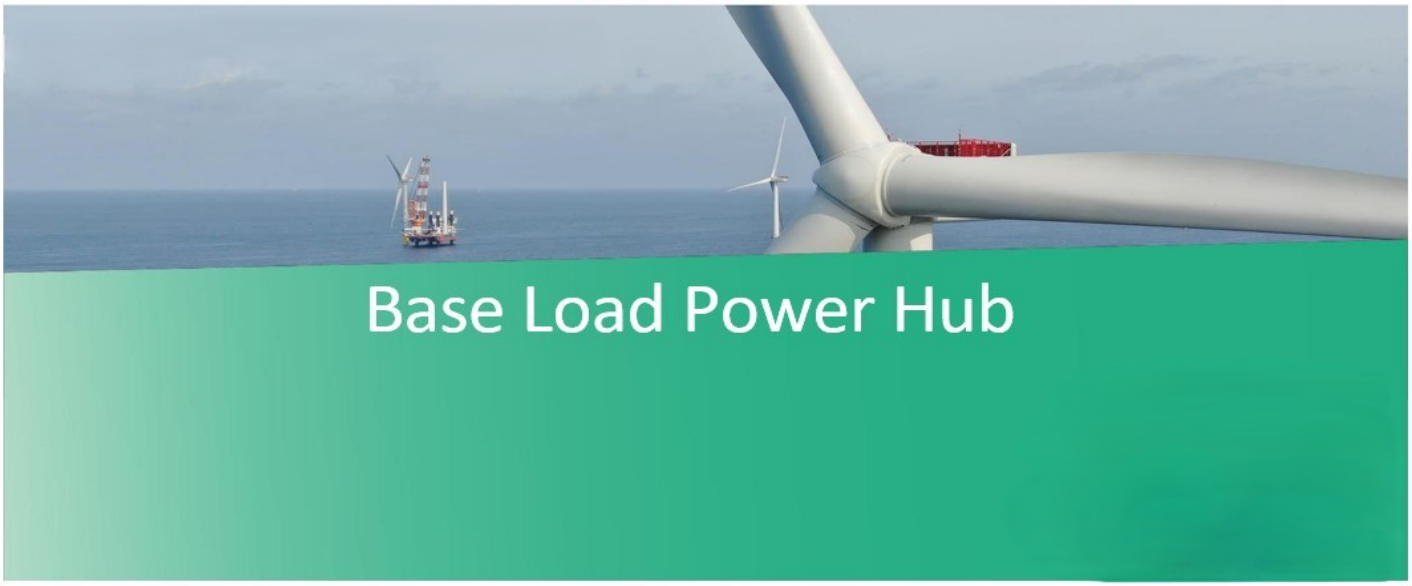
CROSSWIND

ROSETTI MARINO

PROVERLIS

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



MECHANICAL COMPLETION DOSSIER (ONSHORE)

SYSTEM	84 Battery & No-Break System
SUBSYSTEM	84-00 DC 10 kVA UPS System (UP-200F1)

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

Sub System N°:	84-00	Tick as appropriate	ONSHORE	O
Description:	DC 10 kVA UPS System (UP-200F1)		OFFSHORE	NA

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

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

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

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123A90 - HOLLANDSE KUST NOORD WIND PARK
BLPH Project

CROSSWIND

Ready For Commissioning (RFC) Certificate

COMPLETE	●	PARTIAL	

Revision:	2		Issued on:	2024-12-03	
System:	84	/	Battery & No-Break System		
SubSystem:	84-00	/	DC 10 kVA UPS System (UP-200F1)		

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 34

REMARKS:

	CONTRACTOR Construction Manager	**CONTRACTOR** Commissioning Manager	**COMPANY** Construction Lead (if required)	**COMPANY** Commissioning Lead (if required)
Name	Wolmer Borghi	Anthony Iveson	CPY NOT PRESENT	CPY NOT PRESENT
Date	2024-12-04	2024-12-04	2024-12-04	2024-12-04
Signature	PROVERLIS Digitaly signed by Wolmer Borghi 2024-12-04T14:18:55.409Z	PROVERLIS Digitaly signed by Anthony Iveson 2024-12-04T12:29:32.308Z	PROVERLIS Digitaly signed by CPY NOT PRESEN 2024-12-04T14:38:45.574Z	PROVERLIS Digitaly signed by CPY NOT PRESEN 2024-12-04T14:38:51.629Z

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 84-00 & process: MC

Electrical	84-00 DC 10 kVA UPS System (UP-200F1)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
83034-CEL	LV Switchgear / DC Battery System - Switchgears Control - Feeder A	ONSHORE	C10000559	CPX09	100	2024-10-24	RFC 2
83035-CEL	LV Switchgear / DC Battery System - Switchgears Control - Feeder B	ONSHORE	C10000560	CPX09	100	2024-10-24	RFC 2
83124-CEL	Lighting & Small Power DB BoP / DC BATTERY SYSTEM AUXILIARY	ONSHORE	C10002110	CPX09	100	2024-10-24	RFC 2
84110-CEC	Isolation Battery Box for DC UPS 10 kVA / DC UPS 10 kVA Redundant System	ONSHORE	C10002341	CPX10	100	2024-10-30	RFC 2
84111-CEC	Isolation Battery Box for DC UPS 10 kVA / DC UPS 10 kVA Redundant System	ONSHORE	C10002342	CPX10	100	2024-10-25	RFC 2
84111-CEL-1-N	DC UPS - Charger / DC UPS - Battery Isolator	ONSHORE	C10000659	CPX09	100	2024-10-25	RFC 2
84111-CEL-1-P	DC UPS - Charger / DC UPS - Battery Isolator	ONSHORE	C10000658	CPX09	100	2024-10-25	RFC 2
84111-CEL-2-N	DC UPS - Battery Isolator / DC UPS - Battery	ONSHORE	C10000661	CPX09	100	2024-10-25	RFC 2
84111-CEL-2-P	DC UPS - Battery Isolator / DC UPS - Battery	ONSHORE	C10000660	CPX09	100	2024-10-25	RFC 2
BA-200F1	Battery Bank for DC UPS 10 kVA	ONSHORE	C10000846	CPX17	100	2024-10-30	RFC 2
CB-200F1	Isolator Battery Box for DC UPS 10 kVA	ONSHORE	C10000853	CPX00	100	2024-10-30	RFC 2
UP-200F1	DC UPS 10 kVA Redundant System	ONSHORE	C10000870	CPX16	100	2024-10-30	RFC 2

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 84-00 & process: MC

Instrumental	84-00 DC 10 kVA UPS System (UP-200F1)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
C-CB-200F1/B400-SIS-001	TRIP SIGNAL / MARSHALLING PCS	ONSHORE	C10000192	CJX10	100	2024-11-25	RFC 2
C-UP-200F1/B400-SIS-001	TRIP SIGNAL / MARSHALLING PCS	ONSHORE	C10000193	CJX10	100	2024-11-30	RFC 2

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 84-00 & process: MC

Telecom	84-00 DC 10 kVA UPS System (UP-200F1)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
UP-200F1/B400-NET-001.01	COMMUNICATION / EMCS SYSTEM	ONSHORE	C10004368	CIX09	100	2024-11-22	RFC 2
UP-200F1/B400-NET-001.02	COMMUNICATION / EMCS SYSTEM	ONSHORE	C10004369	CIX09	100	2024-11-22	RFC 2

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Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	84	Battery & No-Break System
SUBSYSTEM	84-00	DC 10 kVA UPS System (UP-200F1)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000915	A	C-CB-200F1/B400-SIS-001 C10000192	Missing thermoshrink on cable entry CB-200F1 side.	.		Pschintu 2024-11-25	2024-12-04	Ecarotenuto 2024-12-04	2024-12-04
C30000912	B	C-CB-200F1/B400-SIS-001 C10000192	Missing cable tag outside B-400-SIS-001 panel	.		Pschintu 2024-11-25			
C30001097	B	C-UP-200F1/B400-SIS-001 C10000193	Missing core identification tag by UP-200F1 side	.		Pschintu 2024-11-30			
C30001098	B	C-UP-200F1/B400-SIS-001 C10000193	Missing SS cable tag	.		Pschintu 2024-11-30			

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 84 Battery & No-Break System
SUBSYSTEM 84-00 DC 10 kVA UPS System (UP-200F1)

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000009	B	UP-200F1	AEG has to make sure that all parts are safely protected (IP2X)			SLinari 2024-07-30			
C30000010	B	UP-200F1	Hardware and configuration of alarm for external battery protection box breaker to be included			SLinari 2024-07-30			
C30000011	B	UP-200F1	Terminals of Adapter RJ45 to be screwed (new customer requirement)			SLinari 2024-07-30			
C30000012	B	UP-200F1	Pictures of all spare parts and interconnections to be provided before shipping			SLinari 2024-07-30			
C30000013	B	UP-200F1	As-Built drawings with all final changes to be re-submitted: 1724000372-EL-DA-00003/1724000372-EL-DG-0			SLinari 2024-07-30			
C30000252	B	83034-CEL C10000559	Cable gland to be tighten after correction of Bending radius of cable on UP-200F1	-		Gtangianu 2024-10-24			
C30000253	B	83034-CEL C10000559	Wrong core identification tag on both cable's termination	-		Gtangianu 2024-10-24			
C30000254	B	83034-CEL C10000559	Missing cable tags on internal and external side of MCT	-		Gtangianu 2024-10-24			
C30000255	B	83034-CEL C10000559	Plastic cable ties to be replaced on external routing	-		Gtangianu 2024-10-24			

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 84 Battery & No-Break System
SUBSYSTEM 84-00 DC 10 kVA UPS System (UP-200F1)

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000256	B	83035-CEL C10000560	Missing cable tags on internal and external side of MCT	-		Gtangianu 2024-10-24			
C30000257	B	83035-CEL C10000560	Wrong core identification tag on both cable's termination	-		Gtangianu 2024-10-24			
C30000258	B	83035-CEL C10000560	Cable gland to be tighten after correction of Bending radius of cable on UP-200F1	-		Gtangianu 2024-10-24			
C30000259	B	83035-CEL C10000560	Plastic cable ties to be replaced on external routing	-		Gtangianu 2024-10-24			
C30000267	B	83124-CEL C10002110	Plastic cable ties to be replaced on external routing	.		Gtangianu 2024-10-24			
C30000268	B	83124-CEL C10002110	Cable to be fixed with proper cable ties, after MCT installation of the panel DP-200N1	.		Gtangianu 2024-10-24			
C30000269	B	83124-CEL C10002110	Wrong core identification tag on both cable's termination	.		Gtangianu 2024-10-24			
C30000270	B	84111-CEL-1-P C10000658	Missing core identification tag BC-200F1 side	-		Gtangianu 2024-10-25			
C30000271	B	84111-CEL-1-P C10000658	Cable tag is wrong inside and outside CB-200F1	-		Gtangianu 2024-10-25			

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 84 Battery & No-Break System
SUBSYSTEM 84-00 DC 10 kVA UPS System (UP-200F1)

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000272	B	84111-CEL-1-P C10000658	Bending radius of the cable to be correct on cable gland ingress above BC-200F1	-		Gtangianu 2024-10-25			
C30000273	B	84111-CEL-1-N C10000659	Missing core identification tag BC-200F1 side	.		Gtangianu 2024-10-25			
C30000274	B	84111-CEL-1-N C10000659	Bending radius of the cable to be correct on cable gland ingress above BC-200F1	.		Gtangianu 2024-10-25			
C30000275	B	84111-CEC C10002342	Core identification tag are missing or wrong on both termination. (CB-200F1 to BC-200F1B)	.		Gtangianu 2024-10-25			
C30000276	B	84111-CEC C10002342	Missing identification number of terminal trip X32 inside the panel BC-200F1B (UP-200F1B)	.		Gtangianu 2024-10-25			
C30000277	B	84111-CEC C10002342	Missing cable tags inside and outside both panels (CB-200F1 to BC-200F1B)	.		Gtangianu 2024-10-25			
C30000281	B	UP-200F1 C10000870	Cleaning is required inside the panels.	.		Gtangianu 2024-10-30		Lmussi	
C30000282	B	CB-200F1 C10000853	Missing thermo shrink on internal earthing connection	-		Gtangianu 2024-10-30			
C30000283	B	BA-200F1 C10000846	Missing tags on Battery Bank	.		Gtangianu 2024-10-30			

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	84	Battery & No-Break System
SUBSYSTEM	84-00	DC 10 kVA UPS System (UP-200F1)

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000284	B	BA-200F1 C10000846	Missing plastic Cover on SS jumper between cell 9 and 10. Plastic cover on SS jumper between cells 5 and6 is damaged.	.		Gtangianu 2024-10-30			
C30000285	B	84110-CEC C10002341	Missing core identification tag on spare wires inside UP-200F1B	.		Gtangianu 2024-10-30			
C30000286	B	84110-CEC C10002341	Missing cable tag inside BC_200F1A	.		Gtangianu 2024-10-30			

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	84	Battery & No-Break System
SUBSYSTEM	84-00	DC 10 kVA UPS System (UP-200F1)

Telecom

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000789	B	UP-200F1/B400 -NET-001.01 C10004368	Identification tag wire missing inside UP-200F1 connection.	.		Gtangianu 2024-11-22			
C30000790	B	UP-200F1/B400 -NET-001.02 C10004369	Identification tag wire missing inside UP-200F1 connection.	.		Gtangianu 2024-11-22			

Section 2 CONSOLIDATED PUNCH LISTS

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PUNCH LIST REPORT

SYSTEM 84 Battery & No-Break System

SUBSYSTEM 84-00 DC 10 kVA UPS System (UP-200F1)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000915	A	C-CB-200F1/B400-SIS-001 C10000192	Missing thermoshrink on cable entry CB-200F1 side.	.		Pschintu 2024-11-25	2024-12-04	Ecarotenuto 2024-12-04	2024-12-04
C30000912	B	C-CB-200F1/B400-SIS-001 C10000192	Missing cable tag outside B-400-SIS-001 panel	.		Pschintu 2024-11-25	2025-02-04	Pschintu 2025-02-04	2025-02-04
C30001097	B	C-UP-200F1/B400-SIS-001 C10000193	Missing core identification tag by UP-200F1 side	.		Pschintu 2024-11-30	2025-03-06	JKrizanic 2025-03-06	2025-03-06
C30001098	B	C-UP-200F1/B400-SIS-001 C10000193	Missing SS cable tag	.		Pschintu 2024-11-30	2025-01-07	Gtangianu 2025-01-07	2025-01-07

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Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	84	Battery & No-Break System
SUBSYSTEM	84-00	DC 10 kVA UPS System (UP-200F1)

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000009	B	UP-200F1	AEG has to make sure that all parts are safely protected (IP2X)		INSTALLED PROTECTION	SLinari 2024-07-30	SLinari 2024-12-05	SLinari 2024-12-05	2024-12-05
C30000010	B	UP-200F1	Hardware and configuration of alarm for external battery protection box breaker to be included		DONE_IMPLEMENTED	SLinari 2024-07-30	SLinari 2024-12-05	SLinari 2024-12-05	2024-12-05
C30000011	B	UP-200F1	Terminals of Adapter RJ45 to be screwed (new customer requirement)		INSTALLED	SLinari 2024-07-30	SLinari 2024-12-05	SLinari 2024-12-05	2024-12-05
C30000012	B	UP-200F1	Pictures of all spare parts and interconnections to be provided before shipping		PROVIDED AND DELIVERED	SLinari 2024-07-30	SLinari 2024-12-05	SLinari 2024-12-05	2024-12-05
C30000013	B	UP-200F1	As-Built drawings with all final changes to be re-submitted: 1724000372-EL-DA-00003/1724000372-EL-DG-0			SLinari 2024-07-30	2025-03-06	JKrizanic 2025-03-06	2025-03-06
C30000252	B	83034-CEL C10000559	Cable gland to be tighten after correction of Bending radius of cable on UP-200F1	-		Gtangianu 2024-10-24	2024-12-14	Ecarotenuto 2024-12-14	2024-12-14
C30000253	B	83034-CEL C10000559	Wrong core identification tag on both cable's termination	-		Gtangianu 2024-10-24	2025-03-06	JKrizanic 2025-03-06	2025-03-06
C30000254	B	83034-CEL C10000559	Missing cable tags on internal and external side of MCT	-		Gtangianu 2024-10-24	2025-01-31	Gtangianu 2025-01-31	2025-01-31
C30000255	B	83034-CEL C10000559	Plastic cable ties to be replaced on external routing	-		Gtangianu 2024-10-24	2025-02-26	Pschintu 2025-02-26	2025-02-26

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Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 84 Battery & No-Break System

SUBSYSTEM 84-00 DC 10 kVA UPS System (UP-200F1)

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000256	B	83035-CEL C10000560	Missing cable tags on internal and external side of MCT	-		Gtangianu 2024-10-24	2025-01-31	Gtangianu 2025-01-31	2025-01-31
C30000257	B	83035-CEL C10000560	Wrong core identification tag on both cable's termination	-		Gtangianu 2024-10-24	2025-03-06	JKrizanic 2025-03-06	2025-03-06
C30000258	B	83035-CEL C10000560	Cable gland to be tighten after correction of Bending radius of cable on UP-200F1	-		Gtangianu 2024-10-24	2024-12-14	Ecarotenuto 2024-12-14	2024-12-14
C30000259	B	83035-CEL C10000560	Plastic cable ties to be replaced on external routing	-		Gtangianu 2024-10-24	2025-02-26	Pschintu 2025-02-26	2025-02-26
C30000267	B	83124-CEL C10002110	Plastic cable ties to be replaced on external routing	.		Gtangianu 2024-10-24	2025-02-26	Pschintu 2025-02-26	2025-02-26
C30000268	B	83124-CEL C10002110	Cable to be fixed with proper cable ties, after MCT installation of the panel DP-200N1	.		Gtangianu 2024-10-24	2025-01-31	Gtangianu 2025-01-31	2025-01-31
C30000269	B	83124-CEL C10002110	Wrong core identification tag on both cable's termination	.		Gtangianu 2024-10-24	2025-02-15	AAndreani 2025-02-15	2025-02-15
C30000270	B	84111-CEL-1-P C10000658	Missing core identification tag BC-200F1 side	-		Gtangianu 2024-10-25	2025-01-31	Gtangianu 2025-01-31	2025-01-31
C30000271	B	84111-CEL-1-P C10000658	Cable tag is wrong inside and outside CB-200F1	-		Gtangianu 2024-10-25	2024-12-14	Ecarotenuto 2024-12-14	2024-12-14

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PUNCH LIST REPORT

SYSTEM 84 Battery & No-Break System

SUBSYSTEM 84-00 DC 10 kVA UPS System (UP-200F1)

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000272	B	84111-CEL-1-P C10000658	Bending radius of the cable to be correct on cable gland ingress above BC-200F1	-		Gtangianu 2024-10-25	2024-12-14	Ecarotenuto 2024-12-14	2024-12-14
C30000273	B	84111-CEL-1-N C10000659	Missing core identification tag BC-200F1 side	.		Gtangianu 2024-10-25	2025-01-31	Gtangianu 2025-01-31	2025-01-31
C30000274	B	84111-CEL-1-N C10000659	Bending radius of the cable to be correct on cable gland ingress above BC-200F1	.		Gtangianu 2024-10-25	2024-12-14	Ecarotenuto 2024-12-14	2024-12-14
C30000275	B	84111-CEC C10002342	Core identification tag are missing or wrong on both termination. (CB-200F1 to BC-200F1B)	.		Gtangianu 2024-10-25	2025-01-31	Gtangianu 2025-01-31	2025-01-31
C30000276	B	84111-CEC C10002342	Missing identification number of terminal trip X32 inside the panel BC-200F1B (UP-200F1B)	.		Gtangianu 2024-10-25	2025-03-06	JKrizanic 2025-03-06	2025-03-06
C30000277	B	84111-CEC C10002342	Missing cable tags inside and outside both panels (CB-200F1 to BC-200F1B)	.		Gtangianu 2024-10-25	2024-12-28	Gtangianu 2024-12-28	2024-12-28
C30000281	B	UP-200F1 C10000870	Cleaning is required inside the panels.	.		Gtangianu 2024-10-30	2024-11-23	Lmussi 2024-11-23	2024-11-23
C30000282	B	CB-200F1 C10000853	Missing thermo shrink on internal earthing connection	-		Gtangianu 2024-10-30	2025-03-06	JKrizanic 2025-03-06	2025-03-06
C30000283	B	BA-200F1 C10000846	Missing tags on Battery Bank	.		Gtangianu 2024-10-30	2025-02-04	Gtangianu 2025-02-04	2025-02-04

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Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 84 Battery & No-Break System

SUBSYSTEM 84-00 DC 10 kVA UPS System (UP-200F1)

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000284	B	BA-200F1 C10000846	Missing plastic Cover on SS jumper between cell 9 and 10. Plastic cover on SS jumper between cells 5 and6 is damaged.	.		Gtangianu 2024-10-30	2025-03-06	JKrizanic 2025-03-06	2025-03-06
C30000285	B	84110-CEC C10002341	Missing core identification tag on spare wires inside UP-200F1B	.		Gtangianu 2024-10-30	2025-01-31	Gtangianu 2025-01-31	2025-01-31
C30000286	B	84110-CEC C10002341	Missing cable tag inside BC_200F1A	.		Gtangianu 2024-10-30	2024-12-18	Gtangianu 2024-12-18	2024-12-18

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Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	84	Battery & No-Break System
SUBSYSTEM	84-00	DC 10 kVA UPS System (UP-200F1)

Telecom									
CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000789	B	UP-200F1/B400 -NET-001.01 C10004368	Identification cable tag missing inside UP-200F1 connection.	.		Gtangianu 2024-11-22	2025-03-06	JKrizanic 2025-03-06	2025-03-06
C30000790	B	UP-200F1/B400 -NET-001.02 C10004369	Identification tag wire missing inside UP-200F1 connection.	.		Gtangianu 2024-11-22	2024-12-18	Gtangianu 2024-12-18	2024-12-18

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000009

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task		1.4 Discipline	Electrical
1.2 Item	UP-200F1		DC UPS 10 kVA Redundant System
1.3 Subsystem	84-00		DC 10 kVA UPS System (UP-200F1)

2 - OBSERVATION

AEG has to make sure that all parts are safely protected (IP2X)

Name

Date

Signature

3 - DEFECT ASSESSMENT

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Stefano Linari
3.4 Activity code	MC Mechanical Completion	Date	2024-07-30
3.5 Action by		Signature	--- Proverlis --- Duplicata issued from database information Signature is on original form

4 - PERFORMED ACTION

INSTALLED PROTECTION

Name VENDOR AEG 3WPOWER

Date 2024-12-05

Signature PROVERLIS Digitaly signed by VENDOR AEG 3WPOW 2024-12-05T13:35:25.159Z

5 - CLEARANCE CHECK

INSTALLED PROTECTION

Name Stefano Linari

Date 2024-12-05

Signature PROVERLIS Digitaly signed by Stefano Linari 2024-12-05T13:35:38.677Z

6- CLEARANCE APPROVAL

Name

Date

Signature


AEG

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000010

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task		1.4 Discipline	Electrical
1.2 Item	UP-200F1		DC UPS 10 kVA Redundant System
1.3 Subsystem	84-00		DC 10 kVA UPS System (UP-200F1)

2 - OBSERVATION

Hardware and configuration of alarm for external battery protection box breaker to be included

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	2024-07-30
3.5 Action by		Signature	--- Proverlis --- Duplicata issued from database information Signature is on original form

4 - PERFORMED ACTION

DONE_IMPLEMENTED

Name VENDOR AEG 3WPOWER

Date 2024-12-05

Signature Digitaly signed by VENDOR AEG 3WPOW 2024-12-05T13:45:35.067Z

5 - CLEARANCE CHECK

DONE_IMPLEMENTED

Name Stefano Linari

Date 2024-12-05

Signature Digitaly signed by Stefano Linari 2024-12-05T13:45:48.143Z

6- CLEARANCE APPROVAL

Name

Date

Signature

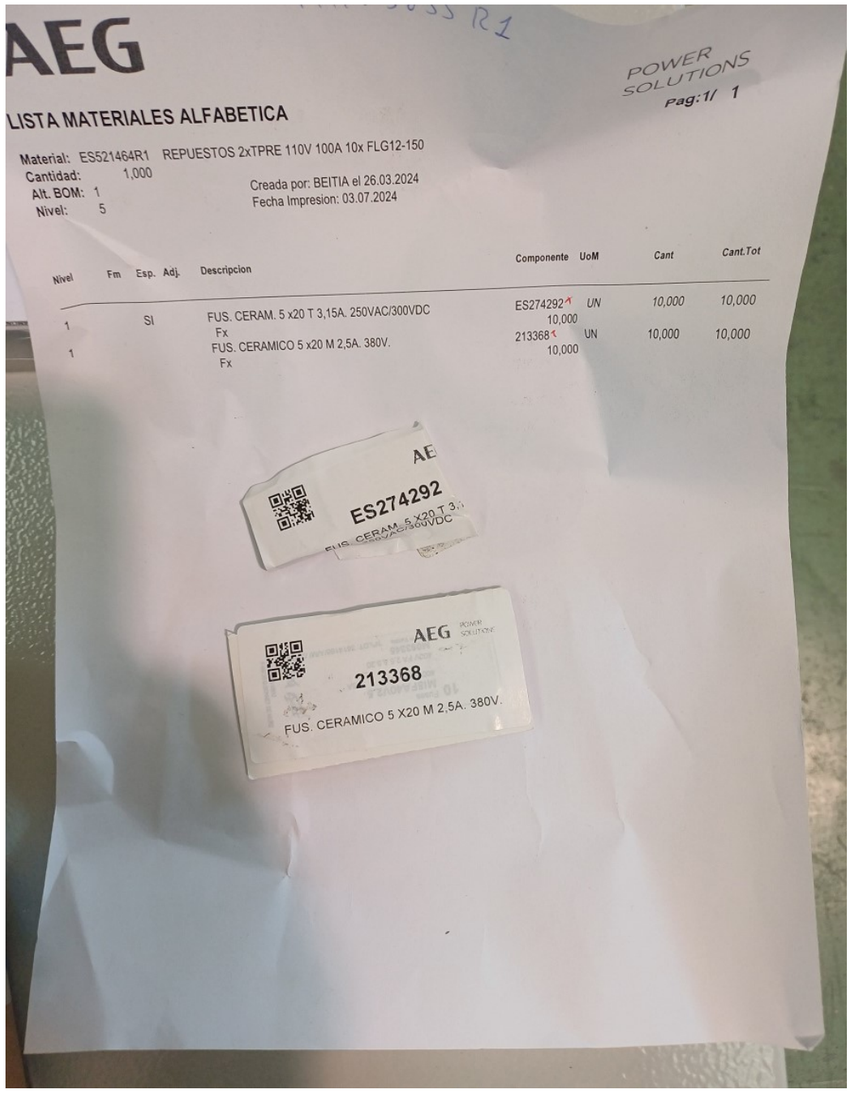
Linari Stefano (Rosetti)

Da: Dall'asta, Alberto <Alberto.Dall'asta@aegps.com>
Inviato: venerdì 26 luglio 2024 14:04
A: Pasquali Leonardo (ERM); Dell'atti, Davide; Antenori, Daniela
Cc: Rico Bonifacio (Rosetti); Lo Sterzo Davide (Rosetti); Linari Stefano (Rosetti); Madaschi Andrea (Rosetti); Bosio Lorenzo (ERM); Iveson Anthony (ERM)
Oggetto: R: 123A90 CROSSWIND – PO 1724000372 3W Power AEG - Rif. Vs. PO# 1724000372 123A90 - NI1584
Allegati: Punch_List_OV59193_20240719_rev1_signed_AEG.pdf; 1724000372-EL-DA-00003_02.pdf; 1724000372-EL-DG-00006_02.pdf; OV59193 - PL PRELIMINAR.pdf; 1724000372-EL-DG-00008_02.pdf; Rosetti-Attachment-Warning.txt

Buongiorno Leonardo -
in merito alla punch list (allegata per comodità) le confermo di aver caricato a portale i documenti elencati al punto 8.
Questi documenti sono anche allegati alla presente.
Inoltre allego la packing list preliminare (punto 6 della punch list) che verrà confermata dal collega Davide.
Ti confermo che la fabbrica ha implementato i punti 1, 3 e 4 ed i documenti sono stati aggiornati con queste modifiche.
Sotto alcune foto delle modifiche effettuate:



e delle spare parts:


AEG
POWER SOLUTIONS
Pag:1/ 1
LISTA MATERIALES ALFABETICA
Material: ES521464R1 REPUESTOS 2xTPRE 110V 100A 10x FLG12-150
Cantidad: 1,000
Alt. BOM: 1
Nivel: 5
Creada por: BEITIA el 26.03.2024
Fecha Impresion: 03.07.2024
Nivel Fm Esp. Adj. Descripcion Componente UoM Cant Cant.Tot
1 SI FUS. CERAM. 5 x20 T 3,15A. 250VAC/300VDC ES274292 UN 10,000 10,000
Fx 10,000
1 FUS. CERAMICO 5 x20 M 2,5A. 380V. 213368 UN 10,000 10,000
Fx 10,000
AE
ES274292
AEG
213368
FUS. CERAMICO 5 X20 M 2,5A. 380V.



Ciao

Alberto Dall'Asta
Managing Director
Mob: +39 348 1567 197
Desk: +39 02 0070 3376
alberto.dall_asta@aegps.com

AEG POWER SOLUTIONS

3W Power S.p.A.
Via Roma 108 I 20051 Cassina de' Pecchi (MI)
www.aegps.com

Da: Pasquali Leonardo (ERM) <Leonardo.Pasquali@rosetti.it>
Inviato: venerdì 26 luglio 2024 09:29
A: Dell'atti, Davide <davide.dell_atti@aegps.com>; Dall'asta, Alberto <Alberto.Dall'asta@aegps.com>; Antenori, Daniela <daniela.antenori@aegps.com>

Cc: Rico Bonifacio (Rosetti) <Bonifacio.Rico@rosetti.it>; Lo Sterzo Davide (Rosetti) <Davide.LoSterzo@rosetti.it>; Linari Stefano (Rosetti) <Stefano.Linari@rosetti.it>; Madaschi Andrea (Rosetti) <Andrea.Madaschi@rosetti.it>; Bosio Lorenzo (ERM) <Lorenzo.Bosio@rosetti.it>; Iveson Anthony (ERM) <Anthony.Iveson@rosetti.it>
Oggetto: RE: 123A90 CROSSWIND – PO 1724000372 3W Power AEG - Rif. Vs. PO# 1724000372 123A90 - NI1584

Buongiorno Davide,
Rimango in attesa della Packing List e possibilmente anche delle foto richieste.

Una volta che avrò ricevuto la Packing List vi manderò la relativa Release Note che vi darà il via libera per procedere con la spedizione.
Confermo, potrete spedire per quelle date.

Attendo vostro riscontro.
Grazie mille e buona giornata,
Leonardo Pasquali
Expeditor

ROSETTI MARINO SPA

Strada 1 Palazzo F7 - Milanofiori
20090 Assago (MI) – ITALY
Mob : +39 392 0469135
E-Mail : leonardo.pasquali@rosetti.it
company web site: www.rosetti.it

From: Dell'atti, Davide <davide.dell_atti@aegps.com>
Sent: giovedì 25 luglio 2024 17:32
To: Pasquali Leonardo (ERM) <Leonardo.Pasquali@rosetti.it>; Dall'asta, Alberto <Alberto.Dall'asta@aegps.com>; Antenori, Daniela <daniela.antenori@aegps.com>
Cc: Rico Bonifacio (Rosetti) <Bonifacio.Rico@rosetti.it>; Lo Sterzo Davide (Rosetti) <Davide.LoSterzo@rosetti.it>; Linari Stefano (Rosetti) <Stefano.Linari@rosetti.it>; Madaschi Andrea (Rosetti) <Andrea.Madaschi@rosetti.it>; Bosio Lorenzo (ERM) <Lorenzo.Bosio@rosetti.it>; Iveson Anthony (ERM) <Anthony.Iveson@rosetti.it>
Subject: R: 123A90 CROSSWIND – PO 1724000372 3W Power AEG - Rif. Vs. PO# 1724000372 123A90 - NI1584

Buongiorno sig. Pasquali,
le invieremo certamente la PL appena ci sarà resa disponibile quella definitiva dai colleghi spagnoli

Per quanto riguarda le foto, non credo che al momento si sia in grado di farne ma solitamente durante il FAT vengono scattate dall'ispettore che presenzia alle attività di test.
Proverò invece a farmi mandare le foto a packing completato ma non posso assicurarle di riuscirci in quanto la logistica spagnola è esternalizzata

I colleghi Dall'Asta/Antenori provvederanno invece ad inviarle il report del FAT, e nel caso fossero disponibili, anche qualche foto scattata durante il FAT.

Compreso che nella release note ci saranno gli orari di ricevimento merci, riesce cortesemente però a confermarmi fin d'ora che la merce sia ricevibile nel periodo dal 7/8 al 13/8 ? Diversamente rimanderemo tutto ai primi di settembre per via della chiusura del magazzino spagnolo.

Cordiali saluti

Davide Dell'Atti
Operations, Purchasing & Logistics Manager

Mobile: (+39) 334.6291623
davide.dell_atti@aegps.com

3W Power S.p.A. • Via Roma, 108 - Building CD1 • 20051 Cassina de' Pecchi (MI) Italy
www.aegps.com

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Da: Pasquali Leonardo (ERM) <Leonardo.Pasquali@rosetti.it>
Inviato: giovedì 25 luglio 2024 09:02
A: Dell'atti, Davide <davide.dell_atti@aegps.com>
Cc: Dall'asta, Alberto <Alberto.Dall'asta@aegps.com>; Rico Bonifacio (Rosetti) <Bonifacio.Rico@rosetti.it>; Lo Sterzo Davide (Rosetti) <Davide.LoSterzo@rosetti.it>; Linari Stefano (Rosetti) <Stefano.Linari@rosetti.it>; Madaschi Andrea (Rosetti) <Andrea.Madaschi@rosetti.it>; Bosio Lorenzo (ERM) <Lorenzo.Bosio@rosetti.it>; Iveson Anthony (ERM) <Anthony.Iveson@rosetti.it>; Antenori, Daniela <daniela.antenori@aegps.com>
Oggetto: 123A90 CROSSWIND – PO 1724000372 3W Power AEG - Rif. Vs. PO# 1724000372 123A90 - NI1584

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Buongiorno Davide,
Grazie della notifica.

Per autorizzarvi a procedere con la spedizione (con la relativa Release Note), avrei bisogno della Packing List, il Rapporto del Test della settimana scorsa e, se possibile, di qualche foto dell'UPS per nostro archivio.

L'indirizzo di spedizione completo è:
ROSETTI MARINO S.P.A.
Yard Piomboni
Via del Marchesato 37
I-48122 MARINA DI RAVENNA (RA)

Le informazioni riguardo il contatto e gli orari del magazzino saranno contenute nella Release Note che vi manderò a seguito del ricevimento dei documenti richiesti.

Grazie mille e buona giornata,
Leonardo Pasquali
Expeditor

ROSETTI MARINO SPA

Strada 1 Palazzo F7 - Milanofiori
20090 Assago (MI) – ITALY
Mob : +39 392 0469135
E-Mail : leonardo.pasquali@rosetti.it
company web site: www.rosetti.it

From: Dell'atti, Davide <davide.dell_atti@aegps.com>
Sent: mercoledì 24 luglio 2024 17:24
To: Pasquali Leonardo (ERM) <Leonardo.Pasquali@rosetti.it>
Cc: Dall'asta, Alberto <Alberto.Dall'asta@aegps.com>
Subject: Rif. Vs. PO# 1724000372 123A90 - NI1584

Buonasera sig. Pasquali
Con riferimento al Vs. ordine in oggetto ed in particolare alla pos.70 ed al relativo completamento del FAT svolto in Spagna del solo DC-UPS, saremmo in grado di spedirvelo dalla Spagna verso la fine della settimana prossima con consegna a Ravenna stimabile tra il 7/8 ed il 13/8 (da verificare per eventuale blocco circolazione mezzi pesanti)

Mi conferma Vs. disponibilità a ricevere la merce (solo il DC-UPS, escludendo quindi battery rack and isolation box) nelle date sopra indicate?

Sull'ordine, l'indirizzo di consegna riportato è:
ROSETTI MARINO SpA in Marina di Ravenna-RA (Italy)

Se la proposta è di Vs. interesse, mi servirebbe anche un Vs. riferimento da fornire all'autista per la consegna insieme ad indirizzo completo del Vs. magazzino ed agli orari di ricevimento merci.

Restiamo in attesa di suo cortese riscontro
Cordiali saluti

Davide Dell'Atti
Operations, Purchasing & Logistics Manager

Mobile: (+39) 334.6291623
davide.dell_atti@aegps.com

3W Power S.p.A. • Via Roma, 108 - Building CD1 • 20051 Cassina de' Pecchi (MI) Italy
www.aegps.com

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Save a tree! Don't print this e-mail unless you really need to.

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000011

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task		1.4 Discipline	Electrical
1.2 Item	UP-200F1		DC UPS 10 kVA Redundant System
1.3 Subsystem	84-00		DC 10 kVA UPS System (UP-200F1)

2 - OBSERVATION

Terminals of Adapter RJ45 to be screwed (new customer requirement)

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	2024-07-30
3.5 Action by		Signature	--- Proverlis --- Duplicata issued from database information Signature is on original form

4 - PERFORMED ACTION

INSTALLED

Name VENDOR AEG 3WPOWER

Date 2024-12-05

Signature PROVERLIS Digitaly signed by VENDOR AEG 3WPOW 2024-12-05T13:37:40.442Z

5 - CLEARANCE CHECK

INSTALLED

Name Stefano Linari

Date 2024-12-05

Signature PROVERLIS Digitaly signed by Stefano Linari 2024-12-05T13:37:52.850Z

6- CLEARANCE APPROVAL

Name

Date

Signature









ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000012

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task		1.4 Discipline	Electrical
1.2 Item	UP-200F1		DC UPS 10 kVA Redundant System
1.3 Subsystem	84-00		DC 10 kVA UPS System (UP-200F1)

2 - OBSERVATION

Pictures of all spare parts and interconnections to be provided before shipping

Name

Date

Signature

3 - DEFECT ASSESSMENT

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Stefano Linari
3.4 Activity code	MC Mechanical Completion	Date	2024-07-30
3.5 Action by		Signature	--- Proverlis --- Duplicata issued from database information Signature is on original form

4 - PERFORMED ACTION

PROVIDED AND DELIVERED

Name VENDOR AEG 3WPOWER

Date 2024-12-05

Signature PROVERLIS Digitaly signed by VENDOR AEG 3WPOW 2024-12-05T13:43:40.348Z

5 - CLEARANCE CHECK

PROVIDED AND DELIVERED

Name Stefano Linari

Date 2024-12-05

Signature PROVERLIS Digitaly signed by Stefano Linari 2024-12-05T13:43:57.716Z

6- CLEARANCE APPROVAL

Name

Date

Signature

AEG

POWER SOLUTIONS

LISTA MATERIALES ALFABETICA

Material: ES521464R1 REPUESTOS 2xTPRE 110V 100A 10x FLG12-150
Cantidad: 1,000
Alt. BOM: 1
Nivel: 5

Creada por: BEITIA el 26.03.2024
Fecha Impresion: 03.07.2024

Nivel	Fm	Esp.	Adj.	Descripcion	Componente	UoM	Cant	Cant.Tot
1		SI		FUS. CERAM. 5 x20 T 3,15A. 250VAC/300VDC Fx	ES274292 10,000	UN	10,000	10,000
1				FUS. CERAMICO 5 x20 M 2,5A. 380V. Fx	213368 10,000	UN	10,000	10,000






AEG
POWER
SOLUTIONS
LISTA MATERIALES ALFABETICA
Material: ES521464R2 REP.2 AÑOS 2xTPRE 110V 100A 10xFLG12-150
Cantidad: 1,000
Alt. BOM: 1
Nivel: 5
Creada por:BEITIA el 26.03.2024
Fecha Impresion: 03.07.2024
Pag:1/ 1
Nivel Fm Esp. Adj. Descripcion Componente UoM Cant Cant.Tot
1 PCA GCAU V3 3TN20661AAAA_BARNIZADA A1 ES272500 UN 1,000 1,000
1,000
.2 SI PCA GCAU V3 BOM ES272500RD UN 1,000 1,000
1 PCA RELES (8) RCS 3AW01092AAAA05_BARNIZ 228540 UN 1,000 1,000
ES272500
PCA GCAU V3 3TN20661AAAA_BARNIZADA
Almacen: E000
Cant./Pal.: 1
Stock: 324
75 de 115
AEG

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000013

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task		1.4 Discipline	Electrical
1.2 Item	UP-200F1		DC UPS 10 kVA Redundant System
1.3 Subsystem	84-00		DC 10 kVA UPS System (UP-200F1)

2 - OBSERVATION

As-Built drawings with all final changes to be re-submitted: 1724000372-EL-DA-00003/1724000372-EL-DG-00006 / 1724000372-EL-DG-00008(including new setting values: 2.25 Float & 2.30 Boost)

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	2024-07-30
3.5 Action by		Signature	--- Proverlis --- Duplicata issued from database information Signature is on original form

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

ACCEPTED BY ROSETTI MARINO

Name Josip Krizanic

Date 2025-03-06

Signature Digitaly signed by Josip Krizanic 2025-03-06T07:27:58.876Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000252

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000559	1.4 Discipline	Electrical
1.2 Item	83034-CEL		LV Switchgear / DC Battery System - Switchgears Control - Feeder A
1.3 Subsystem	84-00		DC 10 kVA UPS System (UP-200F1)

2 - OBSERVATION

Cable gland to be tighten after correction of Bending radius of cable on UP-200F1

Name: Giovanni Tangianu

Date: 2024-10-24

Signature: Digitaly signed by Giovanni Tangianu 2024-10-24T11:44:05.408Z

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	2024-10-24
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-10-24T11:44:16.384Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

done

Name: Eleonora Carotenuto

Date: 2024-12-14

Signature: Digitaly signed by Eleonora Carotenuto 2024-12-14T09:53:46.060Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000253

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000559	1.4 Discipline	Electrical
1.2 Item	83034-CEL		LV Switchgear / DC Battery System - Switchgears Control - Feeder A
1.3 Subsystem	84-00		DC 10 kVA UPS System (UP-200F1)

2 - OBSERVATION

Wrong core identification tag on both cable's termination

Name: Giovanni Tangianu

Date: 2024-10-24

Signature: Digitaly signed by Giovanni Tangianu 2024-10-24T11:44:27.997Z

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	2024-10-24
3.5 Action by	PRE-COMM	Signature	Digitaly signed by Giovanni Tangianu 2024-10-24T11:44:43.511Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

ACCEPTED BY ROSETTI MARINO

Name: Josip Krizanic

Date: 2025-03-06

Signature: Digitaly signed by Josip Krizanic 2025-03-06T07:28:15.327Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000254

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000559	1.4 Discipline	Electrical
1.2 Item	83034-CEL		LV Switchgear / DC Battery System - Switchgears Control - Feeder A
1.3 Subsystem	84-00		DC 10 kVA UPS System (UP-200F1)

2 - OBSERVATION

Missing cable tags on internal and external side of MCT

Name: Giovanni Tangianu

Date: 2024-10-24

Signature: Digitaly signed by Giovanni Tangianu 2024-10-24T11:45:05.319Z

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	2024-10-24
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-10-24T11:45:20.661Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-01-31

Signature: Digitaly signed by Giovanni Tangianu 2025-01-31T10:34:53.332Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000255

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000559	1.4 Discipline	Electrical
1.2 Item	83034-CEL		LV Switchgear / DC Battery System - Switchgears Control - Feeder A
1.3 Subsystem	84-00		DC 10 kVA UPS System (UP-200F1)

2 - OBSERVATION

Plastic cable ties to be replaced on external routing

Name: Giovanni Tangianu

Date: 2024-10-24

Signature: Digitaly signed by Giovanni Tangianu 2024-10-24T11:45:45.726Z

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	2024-10-24
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-10-24T11:45:55.153Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Paolo Schintu

Date: 2025-02-26

Signature: Digitaly signed by Paolo Schintu 2025-02-26T12:36:26.751Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000256

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000560	1.4 Discipline	Electrical
1.2 Item	83035-CEL		LV Switchgear / DC Battery System - Switchgears Control - Feeder B
1.3 Subsystem	84-00		DC 10 kVA UPS System (UP-200F1)

2 - OBSERVATION

Missing cable tags on internal and external side of MCT

Name: Giovanni Tangianu

Date: 2024-10-24

Signature: Digitaly signed by Giovanni Tangianu 2024-10-24T11:47:01.830Z

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	2024-10-24
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-10-24T11:47:36.775Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-01-31

Signature: Digitaly signed by Giovanni Tangianu 2025-01-31T10:35:29.388Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000257

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000560	1.4 Discipline	Electrical
1.2 Item	83035-CEL		LV Switchgear / DC Battery System - Switchgears Control - Feeder B
1.3 Subsystem	84-00		DC 10 kVA UPS System (UP-200F1)

2 - OBSERVATION

Wrong core identification tag on both cable's termination

Name: Giovanni Tangianu

Date: 2024-10-24

Signature: Digitaly signed by Giovanni Tangianu 2024-10-24T11:47:53.212Z

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	2024-10-24
3.5 Action by	PRE-COMM	Signature	Digitaly signed by Giovanni Tangianu 2024-10-24T11:48:03.158Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

ACCEPTED BY ROSETTI MARINO

Name: Josip Krizanic

Date: 2025-03-06

Signature: Digitaly signed by Josip Krizanic 2025-03-06T07:28:34.728Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000258

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000560	1.4 Discipline	Electrical
1.2 Item	83035-CEL		LV Switchgear / DC Battery System - Switchgears Control - Feeder B
1.3 Subsystem	84-00		DC 10 kVA UPS System (UP-200F1)

2 - OBSERVATION

Cable gland to be tighten after correction of Bending radius of cable on UP-200F1

Name: Giovanni Tangianu

Date: 2024-10-24

Signature: Digitaly signed by Giovanni Tangianu 2024-10-24T11:48:15.952Z

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	2024-10-24
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-10-24T11:48:27.898Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

done

Name: Eleonora Carotenuto

Date: 2024-12-14

Signature: Digitaly signed by Eleonora Carotenuto 2024-12-14T09:53:56.226Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000259

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000560	1.4 Discipline	Electrical
1.2 Item	83035-CEL		LV Switchgear / DC Battery System - Switchgears Control - Feeder B
1.3 Subsystem	84-00		DC 10 kVA UPS System (UP-200F1)

2 - OBSERVATION

Plastic cable ties to be replaced on external routing

Name: Giovanni Tangianu

Date: 2024-10-24

Signature: Digitaly signed by Giovanni Tangianu 2024-10-24T11:48:46.859Z

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	2024-10-24
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-10-24T11:48:58.960Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Paolo Schintu

Date: 2025-02-26

Signature: Digitaly signed by Paolo Schintu 2025-02-26T12:36:33.864Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000267

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002110	1.4 Discipline	Electrical
1.2 Item	83124-CEL		Lighting & Small Power DB BoP / DC BATTERY SYSTEM AUXILIARY
1.3 Subsystem	84-00		DC 10 kVA UPS System (UP-200F1)

2 - OBSERVATION

Plastic cable ties to be replaced on external routing

Name: Giovanni Tangianu

Date: 2024-10-24

Signature: Digitaly signed by Giovanni Tangianu 2024-10-24T16:35:26.901Z

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	2024-10-24
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-10-24T16:35:38.911Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Paolo Schintu

Date: 2025-02-26

Signature: Digitaly signed by Paolo Schintu 2025-02-26T12:36:56.696Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000268

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002110	1.4 Discipline	Electrical
1.2 Item	83124-CEL		Lighting & Small Power DB BoP / DC BATTERY SYSTEM AUXILIARY
1.3 Subsystem	84-00		DC 10 kVA UPS System (UP-200F1)

2 - OBSERVATION

Cable to be fixed with proper cable ties, after MCT installation of the panel DP-200N1

Name: Giovanni Tangianu

Date: 2024-10-24

Signature: Digitaly signed by Giovanni Tangianu 2024-10-24T16:35:53.885Z

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	2024-10-24
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-10-24T16:36:04.397Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Fixed.

Name: Giovanni Tangianu

Date: 2025-01-31

Signature: Digitaly signed by Giovanni Tangianu 2025-01-31T10:35:55.639Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000269

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002110	1.4 Discipline	Electrical
1.2 Item	83124-CEL		Lighting & Small Power DB BoP / DC BATTERY SYSTEM AUXILIARY
1.3 Subsystem	84-00		DC 10 kVA UPS System (UP-200F1)

2 - OBSERVATION

Wrong core identification tag on both cable's termination

Name: Giovanni Tangianu

Date: 2024-10-24

Signature: Digitaly signed by Giovanni Tangianu 2024-10-24T16:36:11.725Z

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	2024-10-24
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-10-24T16:36:21.280Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-02-15

Signature: Digitaly signed by Andrea Andreani 2025-02-15T17:21:19.369Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000270

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000658	1.4 Discipline	Electrical
1.2 Item	84111-CEL-1-P		DC UPS - Charger / DC UPS - Battery Isolator
1.3 Subsystem	84-00		DC 10 kVA UPS System (UP-200F1)

2 - OBSERVATION

Missing core identification tag BC-200F1 side

Name: Giovanni Tangianu

Date: 2024-10-25

Signature: Digitaly signed by Giovanni Tangianu 2024-10-25T08:40:03.886Z

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	2024-10-25
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-10-25T08:40:14.771Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-01-31

Signature: Digitaly signed by Giovanni Tangianu 2025-01-31T10:37:39.342Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000271

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000658	1.4 Discipline	Electrical
1.2 Item	84111-CEL-1-P	DC UPS - Charger / DC UPS - Battery Isolator	
1.3 Subsystem	84-00	DC 10 kVA UPS System (UP-200F1)	

2 - OBSERVATION

Cable tag is wrong inside and outside CB-200F1

Name: Giovanni Tangianu

Date: 2024-10-25

Signature: Digitaly signed by Giovanni Tangianu 2024-10-25T08:40:40.819Z

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	2024-10-25
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-10-25T08:40:51.290Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

done

Name: Eleonora Carotenuto

Date: 2024-12-14

Signature: Digitaly signed by Eleonora Carotenuto 2024-12-14T09:54:07.121Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000272

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000658	1.4 Discipline	Electrical
1.2 Item	84111-CEL-1-P		DC UPS - Charger / DC UPS - Battery Isolator
1.3 Subsystem	84-00		DC 10 kVA UPS System (UP-200F1)

2 - OBSERVATION

Bending radius of the cable to be correct on cable gland ingress above BC-200F1

Name: Giovanni Tangianu

Date: 2024-10-25

Signature: Digitaly signed by Giovanni Tangianu 2024-10-25T08:41:12.499Z

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	2024-10-25
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-10-25T08:41:25.996Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

done

Name: Eleonora Carotenuto

Date: 2024-12-14

Signature: Digitaly signed by Eleonora Carotenuto 2024-12-14T09:54:17.995Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000273

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000659	1.4 Discipline	Electrical
1.2 Item	84111-CEL-1-N		DC UPS - Charger / DC UPS - Battery Isolator
1.3 Subsystem	84-00		DC 10 kVA UPS System (UP-200F1)

2 - OBSERVATION

Missing core identification tag BC-200F1 side

Name: Giovanni Tangianu

Date: 2024-10-25

Signature: Digitaly signed by Giovanni Tangianu 2024-10-25T08:42:45.188Z

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	2024-10-25
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-10-25T08:42:55.605Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-01-31

Signature: Digitaly signed by Giovanni Tangianu 2025-01-31T10:37:19.525Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000274

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000659	1.4 Discipline	Electrical
1.2 Item	84111-CEL-1-N	DC UPS - Charger / DC UPS - Battery Isolator	
1.3 Subsystem	84-00	DC 10 kVA UPS System (UP-200F1)	

2 - OBSERVATION

Bending radius of the cable to be correct on cable gland ingress above BC-200F1

Name: Giovanni Tangianu

Date: 2024-10-25

Signature: Digitaly signed by Giovanni Tangianu 2024-10-25T08:43:03.911Z

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	2024-10-25
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-10-25T08:43:24.343Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

done

Name: Eleonora Carotenuto

Date: 2024-12-14

Signature: Digitaly signed by Eleonora Carotenuto 2024-12-14T09:54:30.079Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000275

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002342	1.4 Discipline	Electrical
1.2 Item	84111-CEC	Isolation Battery Box for DC UPS 10 kVA / DC UPS 10 kVA Redundant System	
1.3 Subsystem	84-00	DC 10 kVA UPS System (UP-200F1)	

2 - OBSERVATION

Core identification tag are missing or wrong on both termination. (CB-200F1 to BC-200F1B)

Name: Giovanni Tangianu

Date: 2024-10-25

Signature: Digitaly signed by Giovanni Tangianu 2024-10-25T08:46:07.944Z

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	2024-10-25
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-10-25T08:46:17.398Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Done.

Name: Giovanni Tangianu

Date: 2025-01-31

Signature: Digitaly signed by Giovanni Tangianu 2025-01-31T10:36:56.117Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000276

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002342	1.4 Discipline	Electrical
1.2 Item	84111-CEC	Isolation Battery Box for DC UPS 10 kVA / DC UPS 10 kVA Redundant System	
1.3 Subsystem	84-00	DC 10 kVA UPS System (UP-200F1)	

2 - OBSERVATION

Missing identification number of terminal trip X32 inside the panel BC-200F1B (UP-200F1B)

Name: Giovanni Tangianu

Date: 2024-10-25

Signature: Digitaly signed by Giovanni Tangianu 2024-10-25T08:46:38.459Z

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	2024-10-25
3.5 Action by	VND Vendor	Signature	Digitaly signed by Giovanni Tangianu 2024-10-25T08:47:00.092Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

ACCEPTED BY ROSETTI MARINO

Name: Josip Krizanic

Date: 2025-03-06

Signature: Digitaly signed by Josip Krizanic 2025-03-06T07:28:58.162Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000277

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002342	1.4 Discipline	Electrical
1.2 Item	84111-CEC	Isolation Battery Box for DC UPS 10 kVA / DC UPS 10 kVA Redundant System	
1.3 Subsystem	84-00	DC 10 kVA UPS System (UP-200F1)	

2 - OBSERVATION

Missing cable tags inside and outside both panels (CB-200F1 to BC-200F1B)

Name: Giovanni Tangianu

Date: 2024-10-25

Signature: Digitaly signed by Giovanni Tangianu 2024-10-25T08:47:25.071Z

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	2024-10-25
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-10-25T08:47:38.588Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2024-12-28

Signature: Digitaly signed by Giovanni Tangianu 2024-12-28T08:53:19.532Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000281

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000870	1.4 Discipline	Electrical
1.2 Item	UP-200F1	DC UPS 10 kVA Redundant System	
1.3 Subsystem	84-00	DC 10 kVA UPS System (UP-200F1)	

2 - OBSERVATION

Cleaning is required inside the panels.

Name: Giovanni Tangianu

Date: 2024-10-30

Signature: Digitaly signed by Giovanni Tangianu 2024-10-30T13:56:54.877Z

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	2024-10-30
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-10-30T13:57:10.351Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Done

Name: Luca Mussi

Date: 2024-11-21

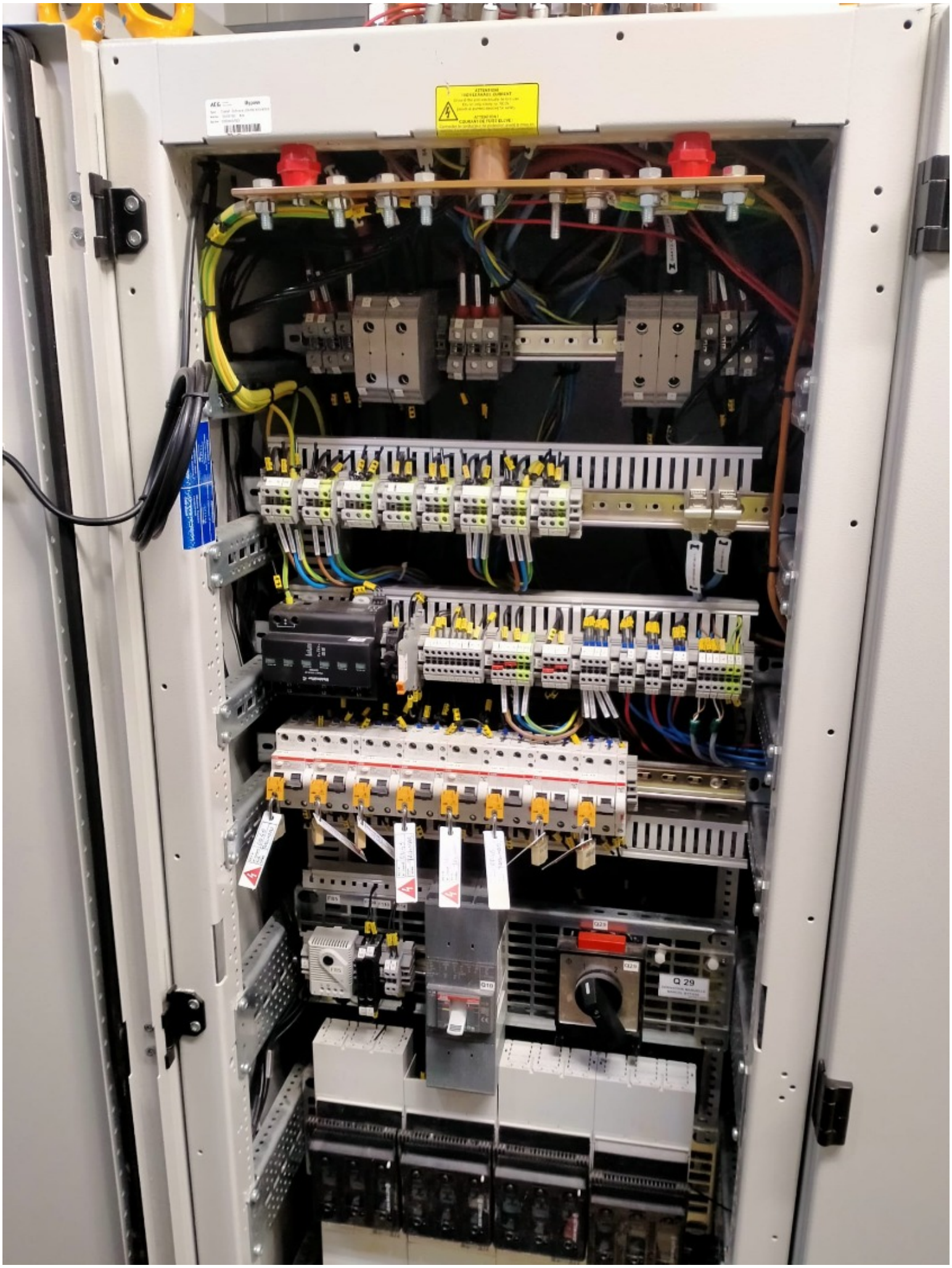
Signature: Digitaly signed by Luca Mussi 2024-11-21T18:04:41.072Z

6- CLEARANCE APPROVAL

Name

Date

Signature


Q 29


Q29
Q29
Q 29
Q10
F85

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000282

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000853	1.4 Discipline	Electrical
1.2 Item	CB-200F1	Isolator Battery Box for DC UPS 10 kVA	
1.3 Subsystem	84-00	DC 10 kVA UPS System (UP-200F1)	

2 - OBSERVATION

Missing thermo shrink on internal earthing connection

Name: Giovanni Tangianu

Date: 2024-10-30

Signature: Digitaly signed by Giovanni Tangianu 2024-10-30T13:59:48.256Z

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	2024-10-30
3.5 Action by	VND Vendor	Signature	Digitaly signed by Giovanni Tangianu 2024-10-30T14:00:06.023Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

ACCEPTED BY ROSETTI MARINO

Name: Josip Krizanic

Date: 2025-03-06

Signature: Digitaly signed by Josip Krizanic 2025-03-06T07:29:16.375Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000283

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000846	1.4 Discipline	Electrical
1.2 Item	BA-200F1	Battery Bank for DC UPS 10 kVA	
1.3 Subsystem	84-00	DC 10 kVA UPS System (UP-200F1)	

2 - OBSERVATION

Missing tags on Battery Bank

Name: Giovanni Tangianu

Date: 2024-10-30

Signature: Digitaly signed by Giovanni Tangianu 2024-10-30T14:27:18.531Z

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	2024-10-30
3.5 Action by	VND Vendor	Signature	Digitaly signed by Giovanni Tangianu 2024-10-30T14:27:41.929Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-02-04

Signature: Digitaly signed by Giovanni Tangianu 2025-02-04T13:00:16.566Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000284

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000846	1.4 Discipline	Electrical
1.2 Item	BA-200F1	Battery Bank for DC UPS 10 kVA	
1.3 Subsystem	84-00	DC 10 kVA UPS System (UP-200F1)	

2 - OBSERVATION

Missing plastic Cover on SS jumper between cell 9 and 10.
Plastic cover on SS jumper between cells 5 and6 is damaged.

Name: Giovanni Tangianu

Date: 2024-10-30

Signature: Digitaly signed by Giovanni Tangianu 2024-10-30T14:54:11.013Z

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	2024-10-30
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-10-30T14:54:42.975Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

ACCEPTED BY ROSETTI MARINO

Name: Josip Krizanic

Date: 2025-03-06

Signature: Digitaly signed by Josip Krizanic 2025-03-06T07:29:37.649Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000285

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002341	1.4 Discipline	Electrical
1.2 Item	84110-CEC	Isolation Battery Box for DC UPS 10 kVA / DC UPS 10 kVA Redundant System	
1.3 Subsystem	84-00	DC 10 kVA UPS System (UP-200F1)	

2 - OBSERVATION

Missing core identification tag on spare wires inside UP-200F1B

Name: Giovanni Tangianu

Date: 2024-10-30

Signature: Digitaly signed by Giovanni Tangianu 2024-10-30T14:57:29.598Z

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	2024-10-30
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-10-30T14:57:40.975Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-01-31

Signature: Digitaly signed by Giovanni Tangianu 2025-01-31T10:36:22.662Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000286

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002341	1.4 Discipline	Electrical
1.2 Item	84110-CEC	Isolation Battery Box for DC UPS 10 kVA / DC UPS 10 kVA Redundant System	
1.3 Subsystem	84-00	DC 10 kVA UPS System (UP-200F1)	

2 - OBSERVATION

Missing cable tag inside BC_200F1A

Name: Giovanni Tangianu

Date: 2024-10-30

Signature: Digitaly signed by Giovanni Tangianu 2024-10-30T14:59:20.978Z

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	2024-10-30
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-10-30T14:59:31.520Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

installed.

Name: Giovanni Tangianu

Date: 2024-12-18

Signature: Digitaly signed by Giovanni Tangianu 2024-12-18T16:31:03.293Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000789

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004368	1.4 Discipline	Telecom
1.2 Item	UP-200F1/B400-NET-001.01	COMMUNICATION / EMCS SYSTEM	
1.3 Subsystem	84-00	DC 10 kVA UPS System (UP-200F1)	

2 - OBSERVATION

Identification cable tag missing inside UP-200F1 connection.

Name: Giovanni Tangianu

Date: 2024-11-22

Signature: Digitaly signed by Giovanni Tangianu 2024-11-22T16:11:31.128Z

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	2024-11-22
3.5 Action by	PRE-COMM	Signature	Digitaly signed by Giovanni Tangianu 2024-11-22T16:11:43.675Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

ACCEPTED BY ROSETTI MARINO

Name: Josip Krizanic

Date: 2025-03-06

Signature: Digitaly signed by Josip Krizanic 2025-03-06T07:30:38.206Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000790

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004369	1.4 Discipline	Telecom
1.2 Item	UP-200F1/B400-NET-001.02	COMMUNICATION / EMCS SYSTEM	
1.3 Subsystem	84-00	DC 10 kVA UPS System (UP-200F1)	

2 - OBSERVATION

Identification tag wire missing inside UP-200F1 connection.

Name: Giovanni Tangianu

Date: 2024-11-22

Signature: Digitaly signed by Giovanni Tangianu 2024-11-22T16:11:51.687Z

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	2024-11-22
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-11-22T16:12:01.813Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

installed.

Name: Giovanni Tangianu

Date: 2024-12-18

Signature: Digitaly signed by Giovanni Tangianu 2024-12-18T16:32:34.018Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000912

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000192	1.4 Discipline	Instrumental
1.2 Item	C-CB-200F1/B400-SIS-001	TRIP SIGNAL / MARSHALLING PCS	
1.3 Subsystem	84-00	DC 10 kVA UPS System (UP-200F1)	

2 - OBSERVATION

Missing cable tag outside B-400-SIS-001 panel

Name: Paolo Schintu

Date: 2024-11-25

Signature: Digitaly signed by Paolo Schintu 2024-11-25T17:50:40.098Z

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	2024-11-25
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Paolo Schintu 2024-11-25T17:50:51.807Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Paolo Schintu

Date: 2025-02-04

Signature: Digitaly signed by Paolo Schintu 2025-02-04T11:25:44.317Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000915

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000192	1.4 Discipline	Instrumental
1.2 Item	C-CB-200F1/B400-SIS-001	TRIP SIGNAL / MARSHALLING PCS	
1.3 Subsystem	84-00	DC 10 kVA UPS System (UP-200F1)	

2 - OBSERVATION

Missing thermoshrink on cable entry CB-200F1 side.

Name: Paolo Schintu

Date: 2024-11-25

Signature: Digitaly signed by Paolo Schintu 2024-11-25T17:53:03.539Z

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	2024-11-25
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Paolo Schintu 2024-11-25T17:53:14.181Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

done

Name: Eleonora Carotenuto

Date: 2024-12-04

Signature: Digitaly signed by Eleonora Carotenuto 2024-12-04T10:15:55.230Z

6- CLEARANCE APPROVAL

Name

Date

Signature

C-CB-200F1/B400-SIS-001

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001097

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000193	1.4 Discipline	Instrumental
1.2 Item	C-UP-200F1/B400-SIS-001	TRIP SIGNAL / MARSHALLING PCS	
1.3 Subsystem	84-00	DC 10 kVA UPS System (UP-200F1)	

2 - OBSERVATION

Missing core identification tag by UP-200F1 side

Name: Paolo Schintu

Date: 2024-11-30

Signature: Digitaly signed by Paolo Schintu 2024-11-30T11:29:39.118Z

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	2024-11-30
3.5 Action by	RM Rosetti Marino Quality	Signature	Digitaly signed by Paolo Schintu 2024-11-30T11:29:49.214Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

ACCEPTED BY ROSETTI MARINO

Name: Josip Krizanic

Date: 2025-03-06

Signature: Digitaly signed by Josip Krizanic 2025-03-06T07:30:56.707Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001098

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000193	1.4 Discipline	Instrumental
1.2 Item	C-UP-200F1/B400-SIS-001	TRIP SIGNAL / MARSHALLING PCS	
1.3 Subsystem	84-00	DC 10 kVA UPS System (UP-200F1)	

2 - OBSERVATION

Missing SS cable tag

Name: Paolo Schintu

Date: 2024-11-30

Signature: Digitaly signed by Paolo Schintu 2024-11-30T11:30:41.489Z

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	2024-11-30
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Paolo Schintu 2024-11-30T11:30:51.262Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-01-07

Signature: Digitaly signed by Giovanni Tangianu 2025-01-07T16:30:32.680Z

6- CLEARANCE APPROVAL

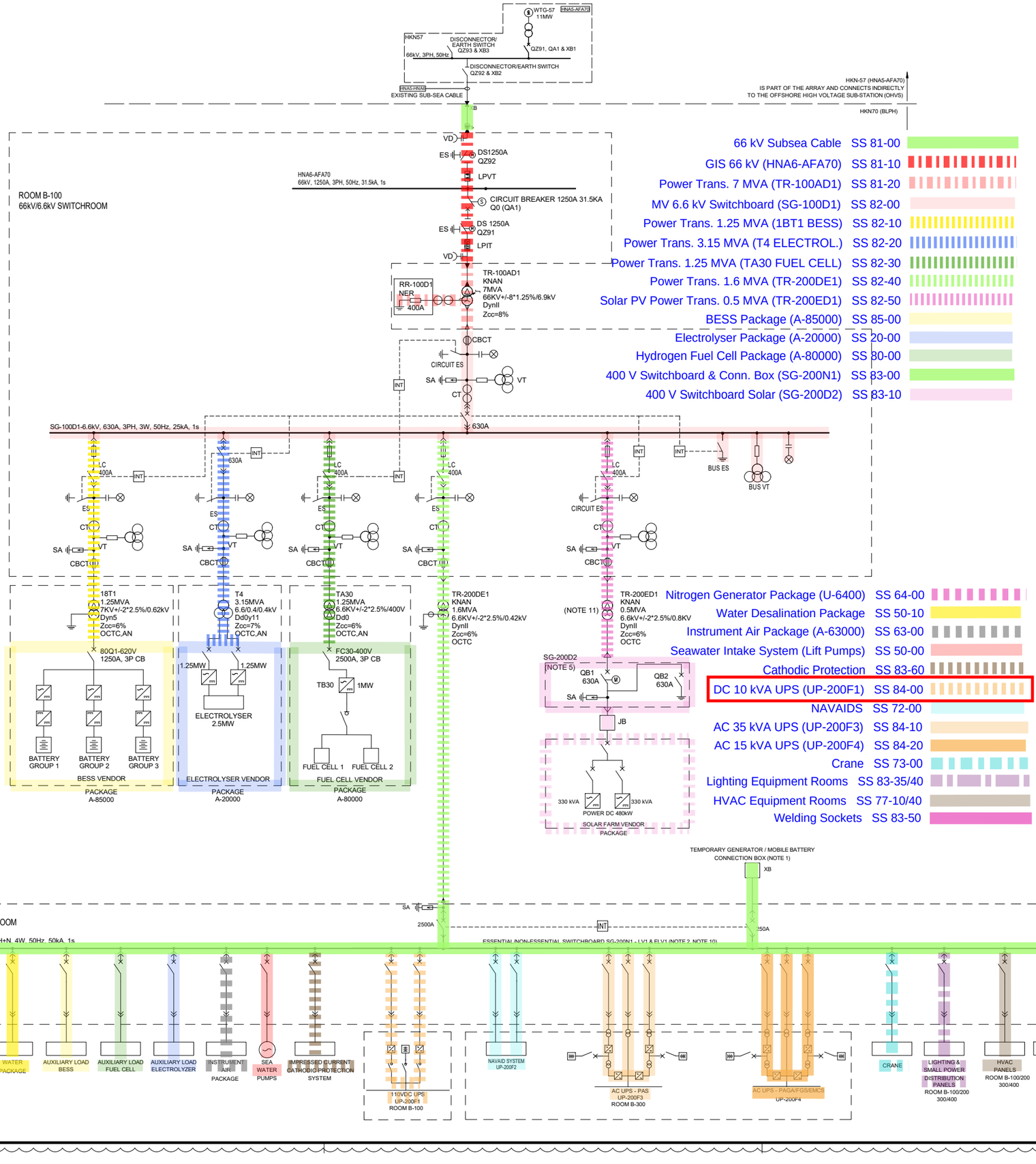
Name

Date

Signature

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

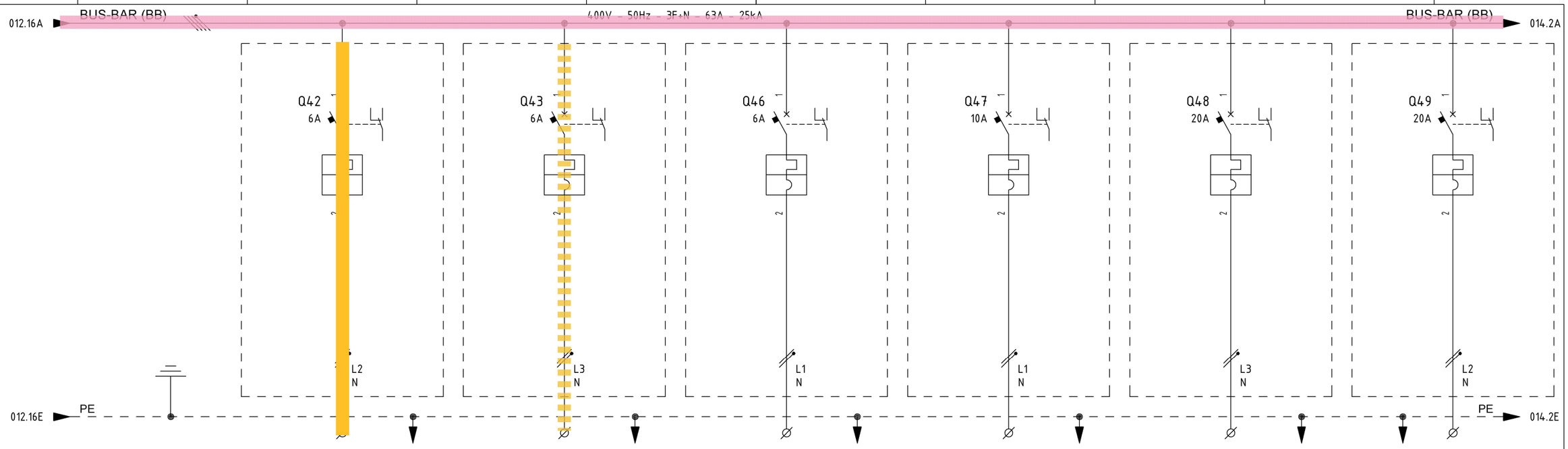
TITLE :

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



ITEM				1	UP-200F4	UP-200F1	-	-	-	-
UTILITY				2	AC UPS F&G AUXILIARY	DC BATTERY SYSTEM AUXILIARY	INS CABINET - SPARE AUXILIARY	SPARE	SPARE	SPARE
CUBICLE				3	+03	+03	+03	+03	+03	+03
RATED POWER | RATED CURRENT				4/5	0.2 KW | 0.82 A	0.2 KW | 0.82 A	0.5 KW | 2.72 A	1 KW | 5.43 A	3 KW | 16.3 A	3 KW | 16.3 A
TYPICAL FUNCTIONAL				6	-	-	-	-	-	-
CIRCUIT BREAKER (ABB)	TYPE			7	S302P-C6	S302P-C6	S302P-C6	S302P-C10	S302P-C20	S302P-C20
	VERSION			8	2P / MINIATURE	2P / MINIATURE	2P / MINIATURE	2P / MINIATURE	2P / MINIATURE	2P / MINIATURE
	TRIP UNITS			9	In=6A - Curve C	In=6A - Curve C	In=6A - Curve C	In=10A - Curve C	In=20A - Curve C	In=20A - Curve C
	Icu		KA	10	25kA	25kA	25kA	25kA	25kA	25kA
OVERLOAD	L	Range	A	11	-	-	-	-	-	-
		Range	t	12	-	-	-	-	-	-
SEL. SHORT-CIRCUIT	S	Range	A	13	-	-	-	-	-	-
		Range	t	14	-	-	-	-	-	-
INST. SHORT-CIRCUIT	I	Range	A	15	-	-	-	-	-	-
		Range	t	16	-	-	-	-	-	-
EARTH FAULT PROTECTION	G	Range	A	17	-	-	-	-	-	-
		Range	t	18	-	-	-	-	-	-
CONTACTOR (ABB)				19	-	-	-	-	-	-
THERMAL OVERLOAD RELAY (ABB)				20	-	-	-	-	-	-
SURGE ARRESTERS (DHENN)				21	-	-	-	-	-	-
TOROIDAL CURRENT TRANSFORMER (FRER)				22	-	-	-	-	-	-
FUSE HOLDER (ABB)				23	-	-	-	-	-	-
TWILIGHT SWITCH (ABB)				24	-	-	-	-	-	-
VOLTMETER (FRER)				25	-	-	-	-	-	-
CURRENT TRANSFORMER FOR MEASURE (FRER)	TYPE			26	-	-	-	-	-	-
	PERFORMANCE/CLASS			27	-	-	-	-	-	-
VOLTAGE TRANSFORMER FOR MEASURE (FRER)	TYPE			28	-	-	-	-	-	-
	PERFORMANCE/CLASS			29	-	-	-	-	-	-
POWER TERM. BLOCK (CABUR)			Type/mm²	30	SCREW / 4	SCREW / 4	SCREW / 4	SCREW / 4	SCREW / 6	SCREW / 6
POWER CONDUCTOR			mm²	31	3G2.5	3G2.5	3G2.5	-	-	-

SUBSYSTEM 84-20

SUBSYSTEM 84-00

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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)

IMESA ELECTRICAL ENGINEERING

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

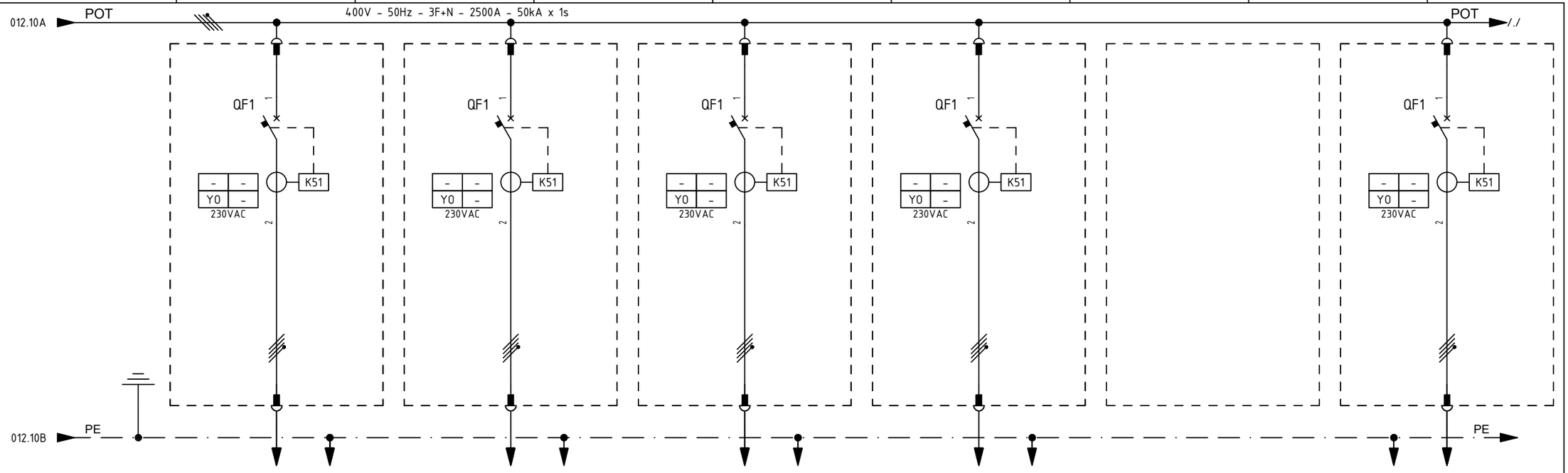
DRAWING NO. 1723002197-EL-DG-00013

SHEET 013

REV. 03

F.to UNI A3: 420mmx297mm

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



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

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DWG n° : 231298/SD/11

Item n° : PF1002983/26

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

IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200N1"

SINGLE LINE DIAGRAM

Single Line Drawing

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00011

SHEET 013

REV. 03

F.to UNI A3: 420mmx297mm

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

AEGPS_DOC_REV01
CAE EPLAN Electric P8
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+REC1
UP-200F1 A

-M1/2
220-240 Vca
50-60Hz
FAN

-PR2-TH1
THERMOSTAT 100º

-PR2-TH2
THERMOSTAT 90º

-PR1-TH1
THERMOSTAT 100º

-PR1-TH2
THERMOSTAT 90º

SS:8400

Charger
100A 12Pulses

-Z1
0/450V

-X1
L1
70 mm²
4G16 mm2
unamoured cable

MAINS
3x400Vac 50Hz -50kA

L1;L2;L3;PE

-Q1
50A

-T1
110V/100A
019.6KVA

-PR2
TPC

-PR1
TPC

-A320
INTERFACE

-R2
100mV
130A

-C1
3x6800µF
160V
Filtering 1%

-F1
NH00
125A

-V21
100A

-Q2
160A

-R3
100mV
130A

-Q3
160A

BATTERY
110Vdc
-X3
+/-
70 mm²

Battery
symmetry
-X31
+/-
4 mm²

-A10
BATTERY SIMMETRY
FAULT

-L+/-
2P 125A
BUS BAR
110 VDC

+BP
BATTERY PROTECTION

+BAT

2 (1x25) mm2

-F100
Plastic
box 80*80

-SD1

-SD2

-Q10
50A-C
-X2 1+/1-
16 mm²
3G16 mm2
amoured cable
SS 8110
(+REC1-A1 /1.4) / SD1

CP-100F1
DC CONTROL 66kV G/S
LINE A-5.2KW

-Q11
20A-C
-X2 2+/2-
16 mm²
3G16 mm2
amoured cable
SS 8110
(+REC2-A1 /1.4) / SD2

CP-100F1
DC CONTROL 66kV G/S
LINE B-2KW

-Q12
16A-C
-X2 3+/3-
16 mm²
3G16 mm2
amoured cable
SS 8200

SG-100D1
DC CONTROL 6,6kV
SWITCHGEAR LINE A-1KW

-Q13
16A-C
-X2 4+/4-
16 mm²
3G16 mm2
amoured cable
SS 8200

SG-100D1
DC CONTROL 6,6kV
SWITCHGEAR LINE B-1KW

-Q14
50A-C
-X2 5+/5-
16 mm²
SPARE 5,5KW

-Q15
20A-C
-X2 6+/6-
16 mm²
SPARE 2KW

-Q16
16A-C
-X2 7+/7-
16 mm²
SPARE 1KW

-F10/F11
DEHNguard

-A21
EARTH +/-

-A1
GCAU
CONTROL UNIT

-A5.1
Relays

-CR1-X5

-A71

-A300
DISPLAY

-A310
KEY PAD

-A73
MODBUS-TCP/IP

-A8
Isolated

-KF
PSR-SCP- 24DC / SIL3

SD1 / (+BAT-SD1 /1.8)

-Z2
400V

-Q6
02A-C

-H3

-Q7
02A-C

-THF4
0/60ºC

-E50
100W

AUXILIARY SUPPLY
230Vac-50Hz

-X7
L/N
6 mm²
3G2.5 mm2
unamoured cable

-X8
4 mm²
CHARGERS
INTERCONNECTION

2,5 mm²

INTERCONNECTION
50 mm²
-X6
PH4 35 mm²

-A8
(+REC1-CR1-J13:1 /1.4)

+REC2
UP-200F1 B
-M1/2
220-240 Vca
50-60Hz
FAN
-PR2-TH1
THERMOSTAT 100º
-PR2-TH2
THERMOSTAT 90º
-PR1-TH1
THERMOSTAT 100º
-PR1-TH2
THERMOSTAT 90º
Charger
100A 12Pulses
-Z1
0/450V
-X1
L1
70 mm²
4G16 mm2
unamoured cable
MAINS
3x400Vac 50Hz -50kA
L1;L2;L3;PE
-Q1
50A
-T1
110V/100A
019.6KVA
-PR2
TPC
-PR1
TPC
-A320
INTERFACE
-R2
100mV
130A
-C1
3x6800µF
160V
Filtering 1%
-F1
NH00
125A
-V21
100A
-Q2
160A
-A1
GCAU
CONTROL UNIT
-A5.1
Relays
-CR1-X5
-A71
-A300
DISPLAY
-A310
KEY PAD
-A73
MODBUS-TCP/IP
-A8
Isolated
-KF
PSR-SCP- 24DC / SIL3
SD2 / (+BAT-SD2 /1.8)
-Z2
400V
-Q6
02A-C
-H3
-Q7
02A-C
-THF4
0/60ºC
-E50
100W
AUXILIARY SUPPLY
230Vac-50Hz
-X7
L/N
6 mm²
-X8
4 mm²
CHARGERS
INTERCONNECTION
2,5 mm²
INTERCONNECTION
-X6
50 mm²
-A8
(+REC2-X8 /1.4)
A8 / (+REC2-X8 /1.4)
-A10
BATTERY SIMMETRY
FAULT
Battery
symmetry
-X31
+/-
4 mm²

ES521464

				Date	21/03/2024	3W POWER S.P.A.	AEG POWER SOLUTIONS	Single-line	1724000372-EL-DG-00006	= System
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm				+ 8 / 47
				Checked	JOP			System		& EFA A3 Sheet 1
Stat	Alteration	Date	Name	Standard					ES521464 en	Sheets 1

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: 84-00 & process: MC & discipline : E

Electrical	84-00 DC 10 kVA UPS System (UP-200F1)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
83034-CEL	LV Switchgear / DC Battery System - Switchgears Control - Feeder A	ONSHORE	C10000559	CPX09	100	2024-10-24	RFC 2
83035-CEL	LV Switchgear / DC Battery System - Switchgears Control - Feeder B	ONSHORE	C10000560	CPX09	100	2024-10-24	RFC 2
83124-CEL	Lighting & Small Power DB BoP / DC BATTERY SYSTEM AUXILIARY	ONSHORE	C10002110	CPX09	100	2024-10-24	RFC 2
84110-CEC	Isolation Battery Box for DC UPS 10 kVA / DC UPS 10 kVA Redundant System	ONSHORE	C10002341	CPX10	100	2024-10-30	RFC 2
84111-CEC	Isolation Battery Box for DC UPS 10 kVA / DC UPS 10 kVA Redundant System	ONSHORE	C10002342	CPX10	100	2024-10-25	RFC 2
84111-CEL-1-N	DC UPS - Charger / DC UPS - Battery Isolator	ONSHORE	C10000659	CPX09	100	2024-10-25	RFC 2
84111-CEL-1-P	DC UPS - Charger / DC UPS - Battery Isolator	ONSHORE	C10000658	CPX09	100	2024-10-25	RFC 2
84111-CEL-2-N	DC UPS - Battery Isolator / DC UPS - Battery	ONSHORE	C10000661	CPX09	100	2024-10-25	RFC 2
84111-CEL-2-P	DC UPS - Battery Isolator / DC UPS - Battery	ONSHORE	C10000660	CPX09	100	2024-10-25	RFC 2
BA-200F1	Battery Bank for DC UPS 10 kVA	ONSHORE	C10000846	CPX17	100	2024-10-30	RFC 2
CB-200F1	Isolator Battery Box for DC UPS 10 kVA	ONSHORE	C10000853	CPX00	100	2024-10-30	RFC 2
UP-200F1	DC UPS 10 kVA Redundant System	ONSHORE	C10000870	CPX16	100	2024-10-30	RFC 2

ITEM	Tag	83034-CEL	: LV Switchgear / DC Battery System - Switchgears Control - Feeder A			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-00	: DC 10 kVA UPS System (UP-200F1)			Module	LD_B-200/LD_B-100
TASK	code	C10000559		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

CABLE DATA

Type P4 | Cores/Size mm² 4G16 mm2 | Color Grey

From SG-200N1 | To UP-200F1

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.	PL
5	Check bending radius is within the specified limits.	PL
6	Confirm cable glands suit for cable type, correctly mounted and tightened.	PL
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"	

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	83034-CEL	: LV Switchgear / DC Battery System - Switchgears Control - Feeder A			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-00	: DC 10 kVA UPS System (UP-200F1)			Module	LD_B-200/LD_B-100
TASK	code	C10000559		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

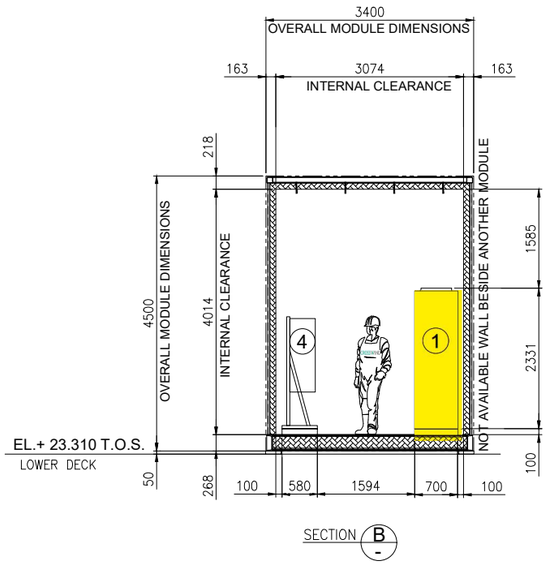
CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0.3	
6		PH 2	0.3	
7		PH 3	0.2	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		0.3	
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	>999	
12		PH3 / PH1-PH2-A-E	>999	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

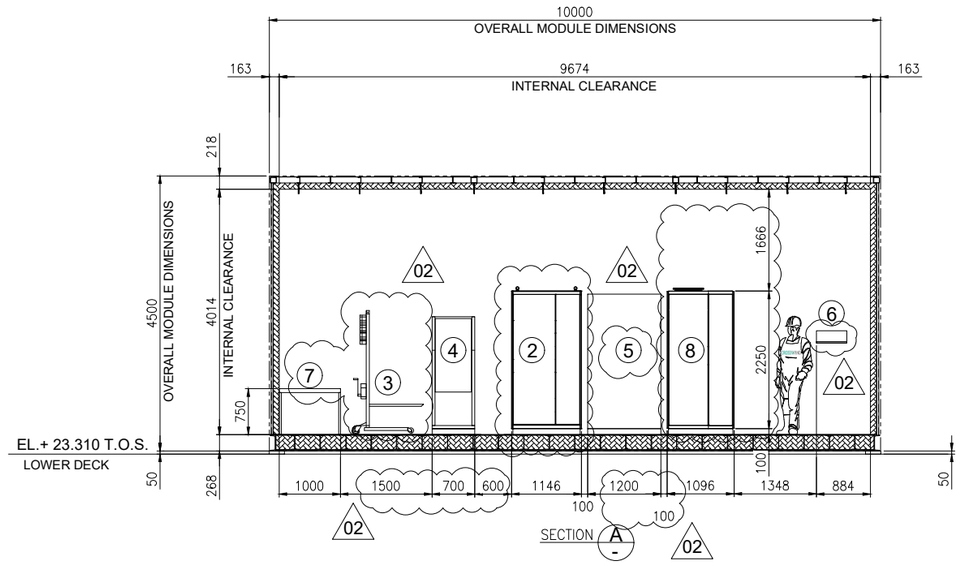
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207	TYPE / SERIAL N° :	MULTIMETER: FLUKE 175 SERIAL:AW1/018(17140769)
Calibration certificate N° and date:	N°7722/24 _ 10/07/2024	Calibration certificate N° and date:	N°7715/24 _ 10/07/2024

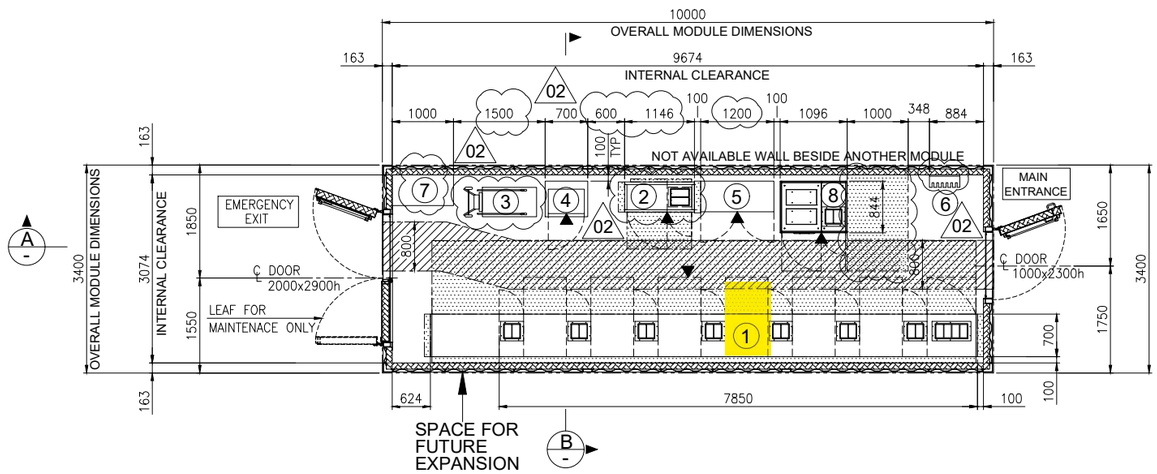
Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICSI IMPIANTI	RM (Rosetti Marino)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-10-21	2024-10-24	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-10-21T17:24:47.865Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-10-24T11:46:40.240Z	

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





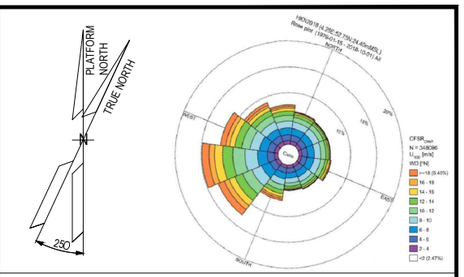


EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

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

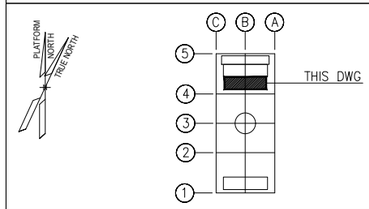
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

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)

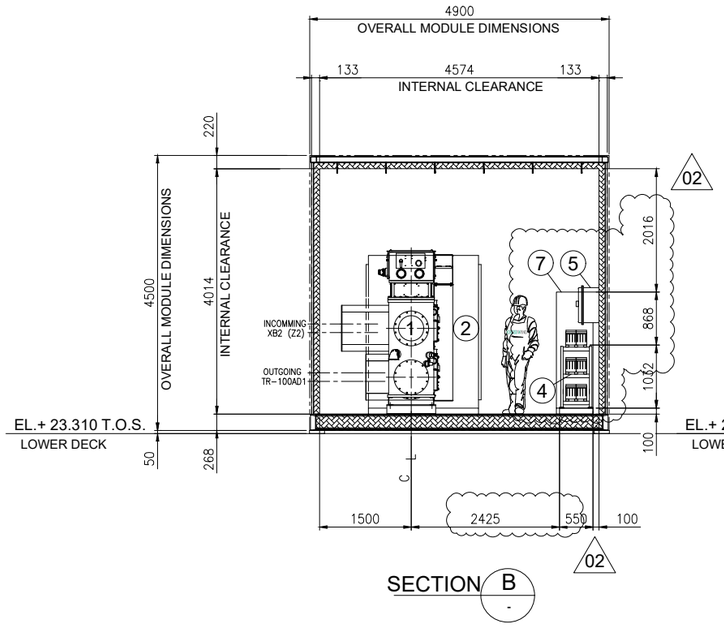
CROSSWIND | ROSETTI MARINO

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

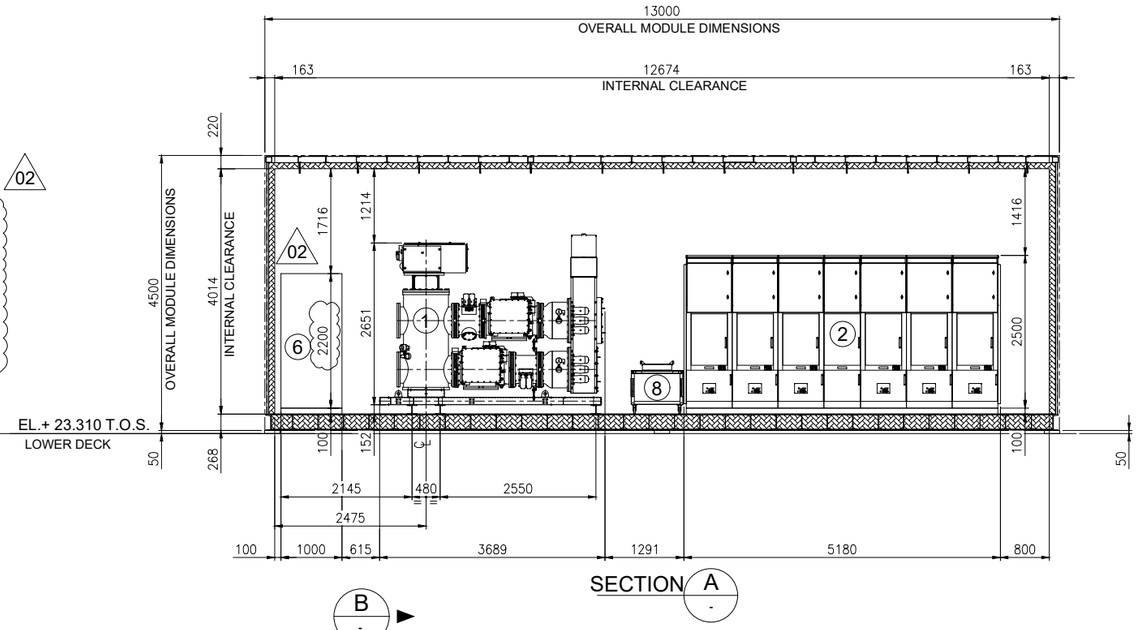
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN FMO	CHECKED LMA/AMA	APPROVED LMA/MDO	DATE 27/05/2024
A1	DRAWING NO. 123A90-DDL-EL-DL-20105	SHEET 001	REV. 02

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

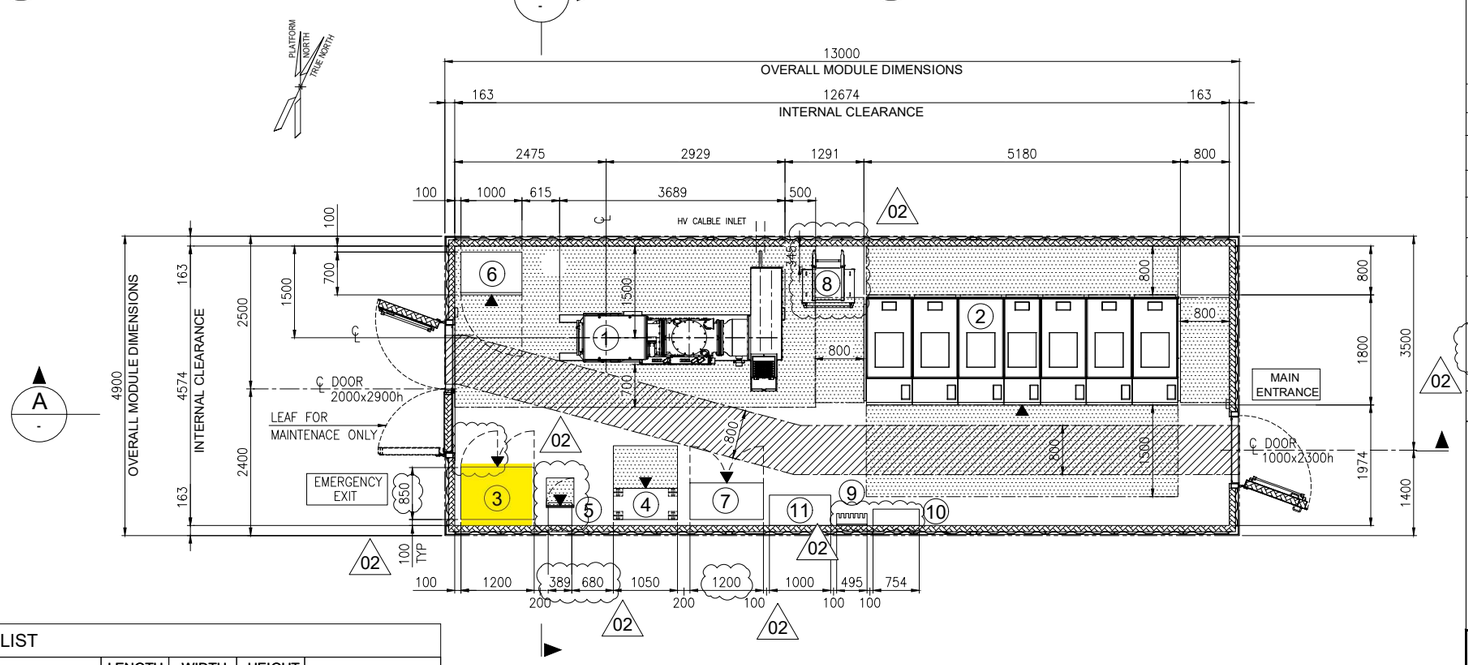
DRAWING NO. 123A90-DDL-EL-DL-20104 | REV. 02



SECTION B -



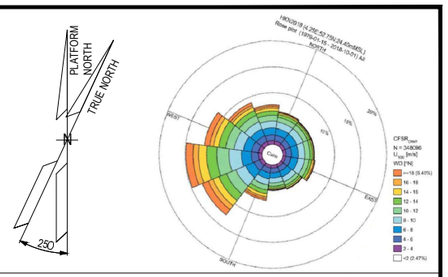
SECTION A -



A -

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

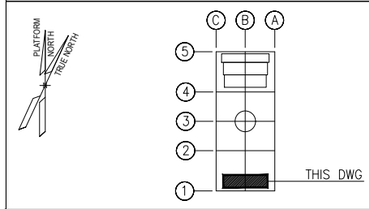
LEGEND

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

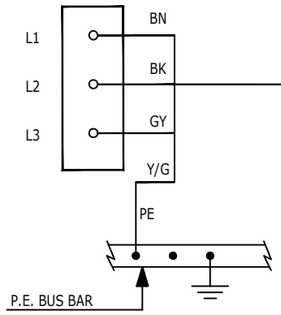
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN GPA	CHECKED LMA/AMA	APPROVED LMA/MDO	DATE 27/05/2024
A1	DRAWING NO. 123A90-DDL-EL-DL-20104	SHEET 001	REV. 02

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

FROM	TO

DESCRIPTION: LV SWITCHGEAR
TAG NUMBER: SG-200N1

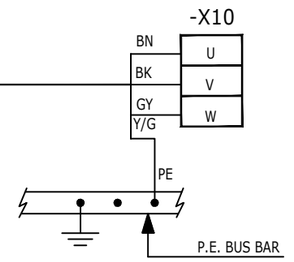
COLUMN/CUBIC.: A2/+04



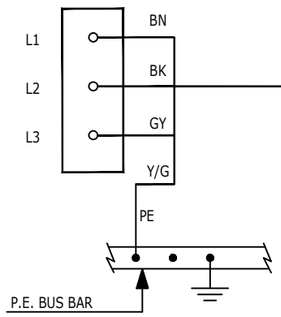
83033-CEL
4G35 mm²

DESCRIPTION: AC UPS F&G - 8H - BYPASS
TAG NUMBER: UP-200F4

PANEL:.BYPASS



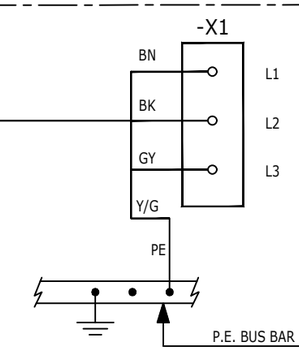
COLUMN/CUBIC.: A7/+03



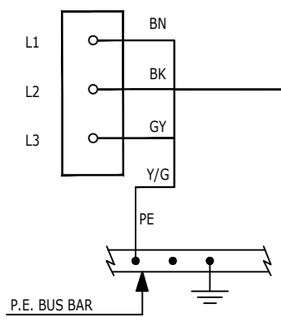
83034-CEL
4G16 mm²

DESCRIPTION: DC BATTERY SYSTEM - SWITCHGEAR CONTROL - FEEDER A
TAG NUMBER: UP-200F1

PANEL:.CHARGER-1



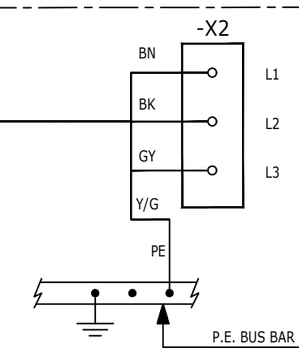
COLUMN/CUBIC.: A7/+04



83035-CEL
4G16 mm²

DESCRIPTION: DC BATTERY SYSTEM - SWITCHGEAR CONTROL - FEEDER B
TAG NUMBER: UP-200F1

PANEL:.CHARGER-2



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
LV SWITCHGEAR SG-200N1

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

SCALE : 1:X

A3

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

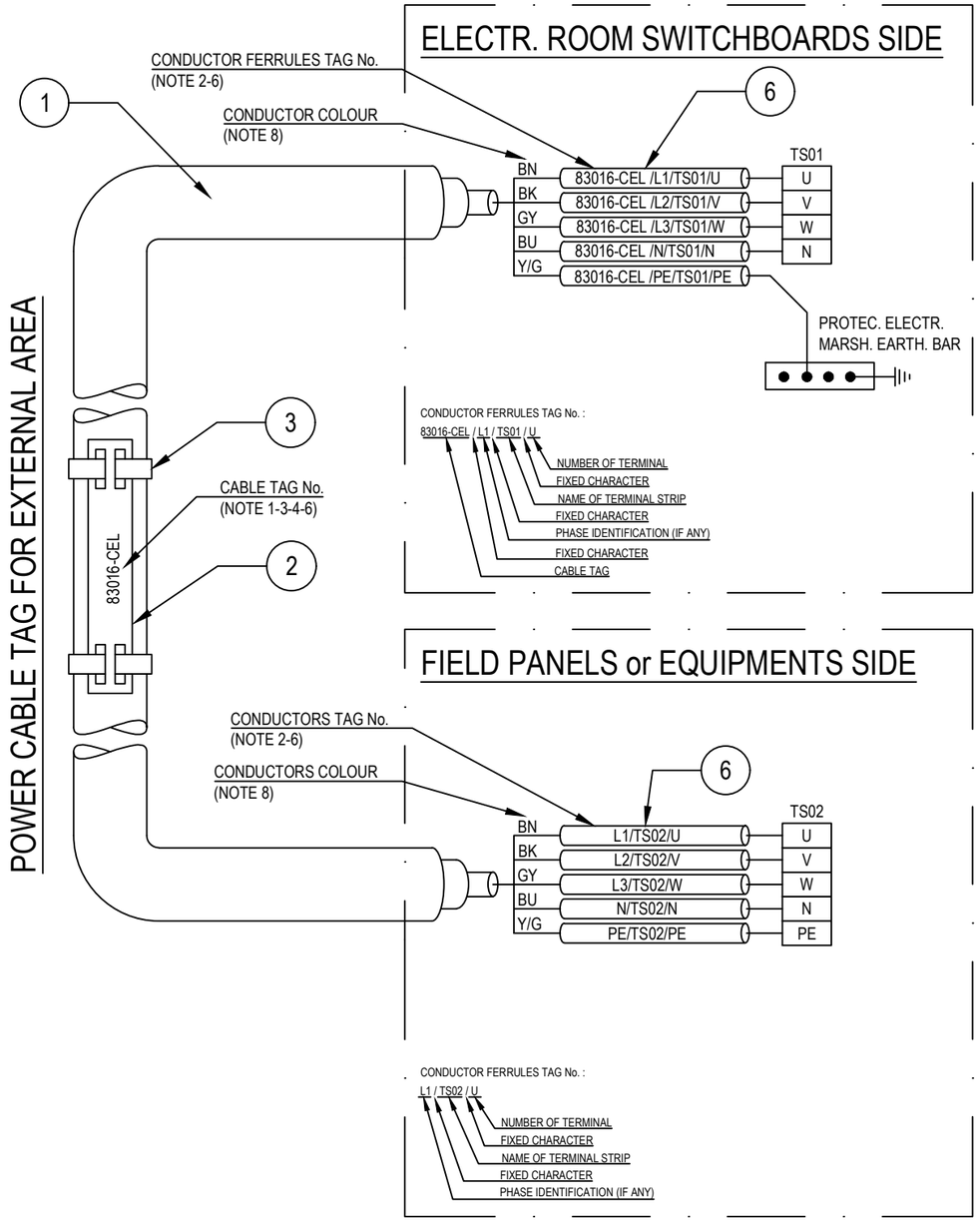
SHEET 029

REV. 01

F.to UNI A3: 420mmx297mm

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

C02



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

NOTES:

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

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

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

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

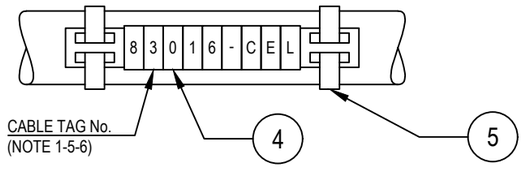
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

6) CABLE AND CONDUCTOR TAG ARE INDICATIVE ONLY.

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

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

POWER CABLE TAG FOR INTERNAL AREA



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

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

CROSSWIND

ROSETTI MARINO

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

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

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

F.to UNI A3: 420mmx297mm

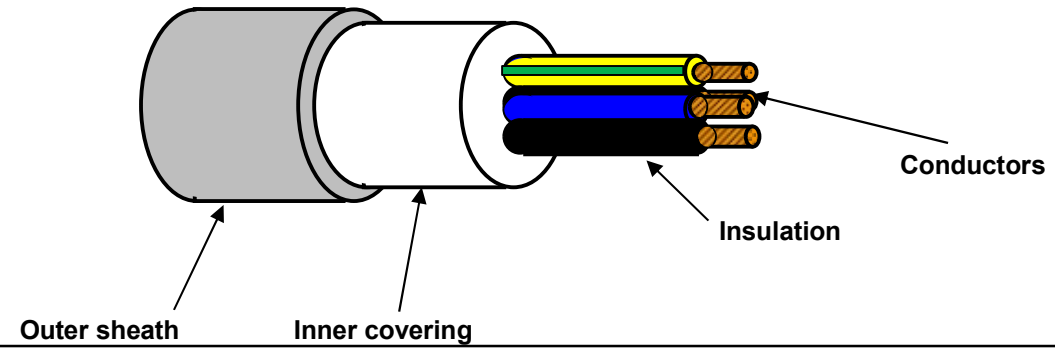
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Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	To Tag	To Main Function	To Area	Material ID	Material Desc.	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
83034-CEL	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						SG-200N1	LV 0,4 kV MCC Switchgear	Lower Deck (B-200)	UP-200F1	DC UPS 10 kVA Redundant System	Lower Deck (B-100)	ELECV08-4G16	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 4G16mm² - Grey	n.a.			T1_M32_Single				L-450-101-LVT-028 / L-600-101-LVT-016 / 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-060

FLEI s.r.l.

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

4G16 - 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 :	**Black - Brown - Grey - 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 1,4 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 4G16 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 -**	
	Year of Manufacture - CE + Meter Marking	
Outer diameter :	(21,9 ± 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 :	≥ 530 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.353**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Temperature Range :		
ON INSULATION	(max +90°C)	(max continuous operation temperature of conductors)
	(max +250°C)	(max conductors temperature during short-circuit for 5 seconds)
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C)	(in fixed installation)
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner covering together with correct ATEX approved equipment or accessories.**	

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

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

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ITEM	Tag	83035-CEL	: LV Switchgear / DC Battery System - Switchgears Control - Feeder B			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-00	: DC 10 kVA UPS System (UP-200F1)			Module	LD_B-200/LD_B-100
TASK	code	C10000560		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: 4G16 mm2 | Color: Grey

From: SG-200N1 | To: UP-200F1

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.	PL
5	Check bending radius is within the specified limits.	PL
6	Confirm cable glands suit for cable type, correctly mounted and tightened.	PL
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	83035-CEL	: LV Switchgear / DC Battery System - Switchgears Control - Feeder B			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-00	: DC 10 kVA UPS System (UP-200F1)			Module	LD_B-200/LD_B-100
TASK	code	C10000560	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

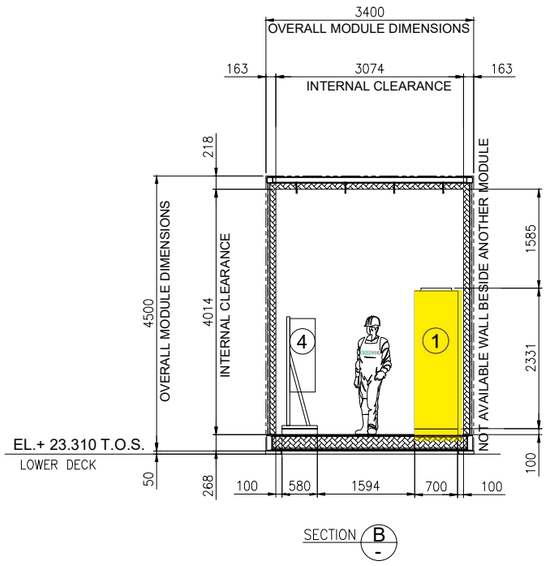
CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0.4	
6		PH 2	0.4	
7		PH 3	0.4	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		0.4	
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	>999	
12		PH3 / PH1-PH2-A-E	>999	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

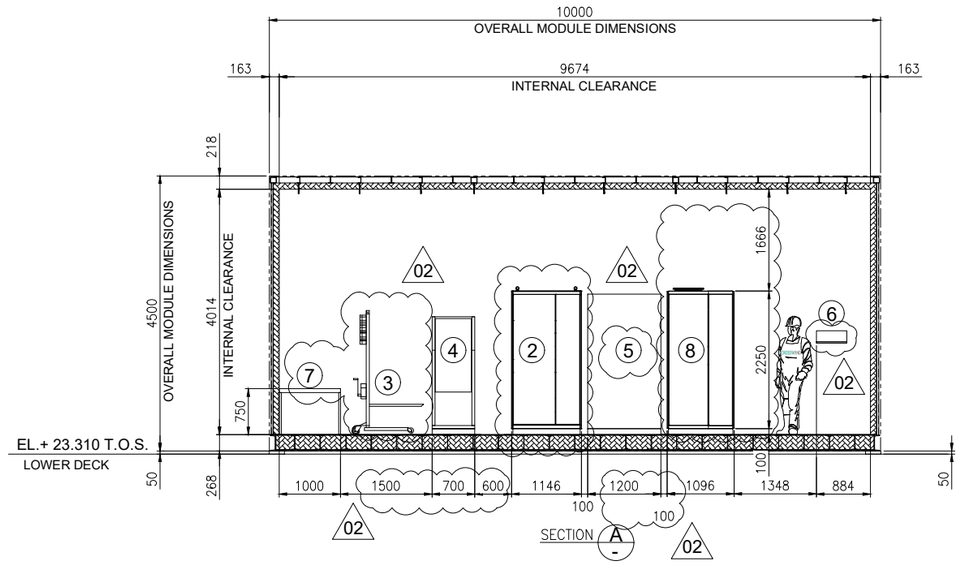
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207	TYPE / SERIAL N° :	MULTIMETER: FLUKE 175 SERIAL:AW1/018(17140769)
Calibration certificate N° and date:	N°7722/24 _ 10/07/2024	Calibration certificate N° and date:	N°7715/24 _ 10/07/2024

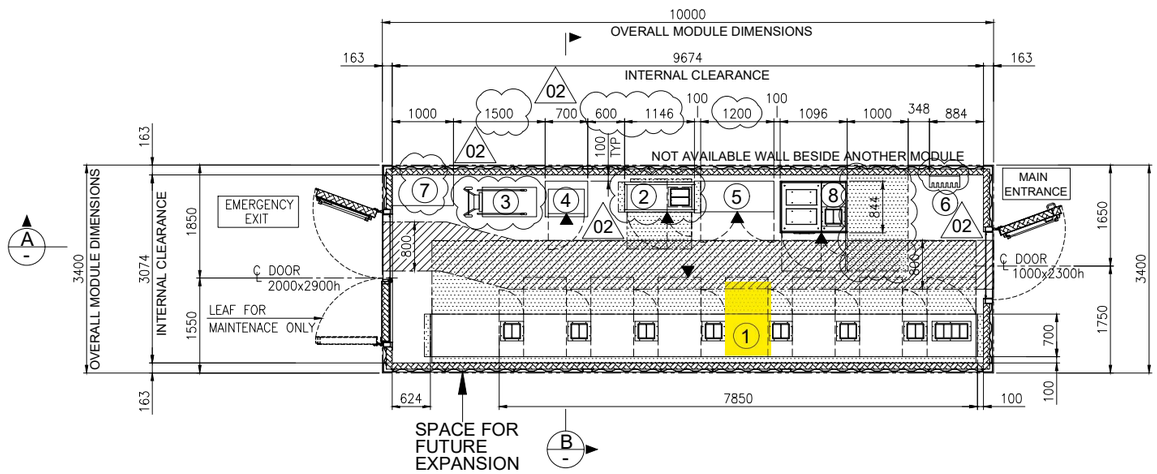
Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (Rosetti Marino)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-10-21	2024-10-24	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-10-21T17:25:04.130Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-10-24T11:49:26.544Z	

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





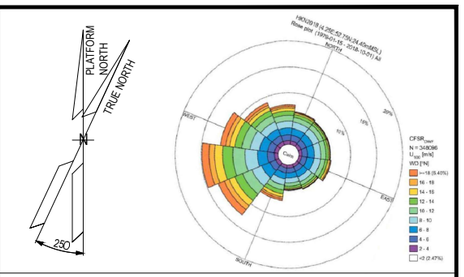


EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

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

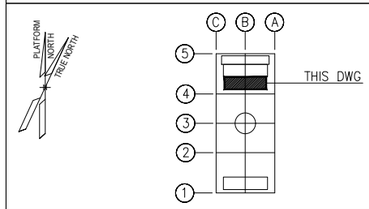
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T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

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)

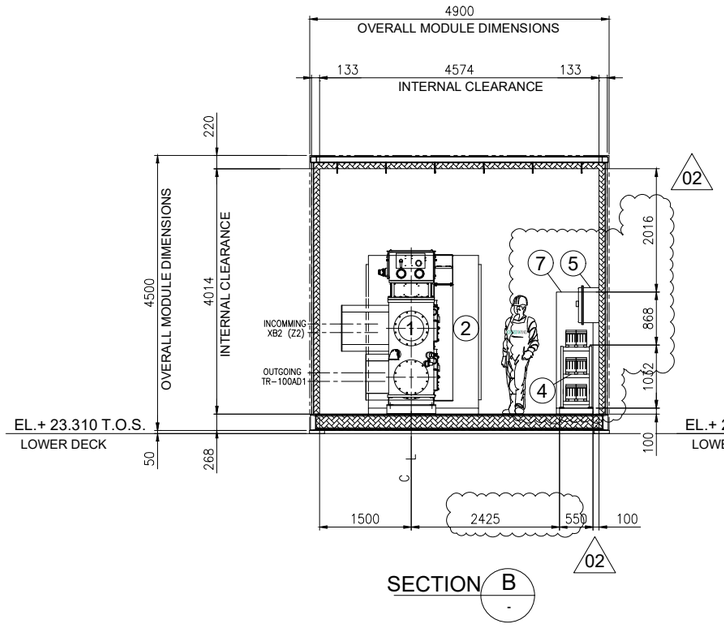
CROSSWIND | ROSETTI MARINO

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

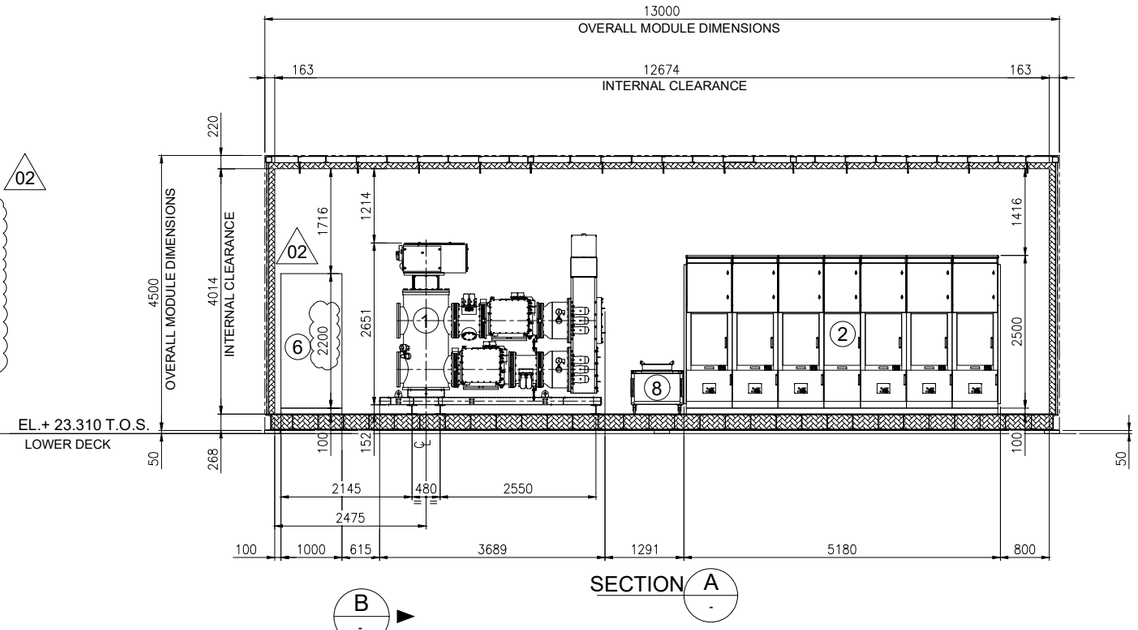
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN FMO	CHECKED LMA/AMA	APPROVED LMA/MDO	DATE 27/05/2024
A1	DRAWING NO. 123A90-DDL-EL-DL-20105	SHEET 001	REV. 02

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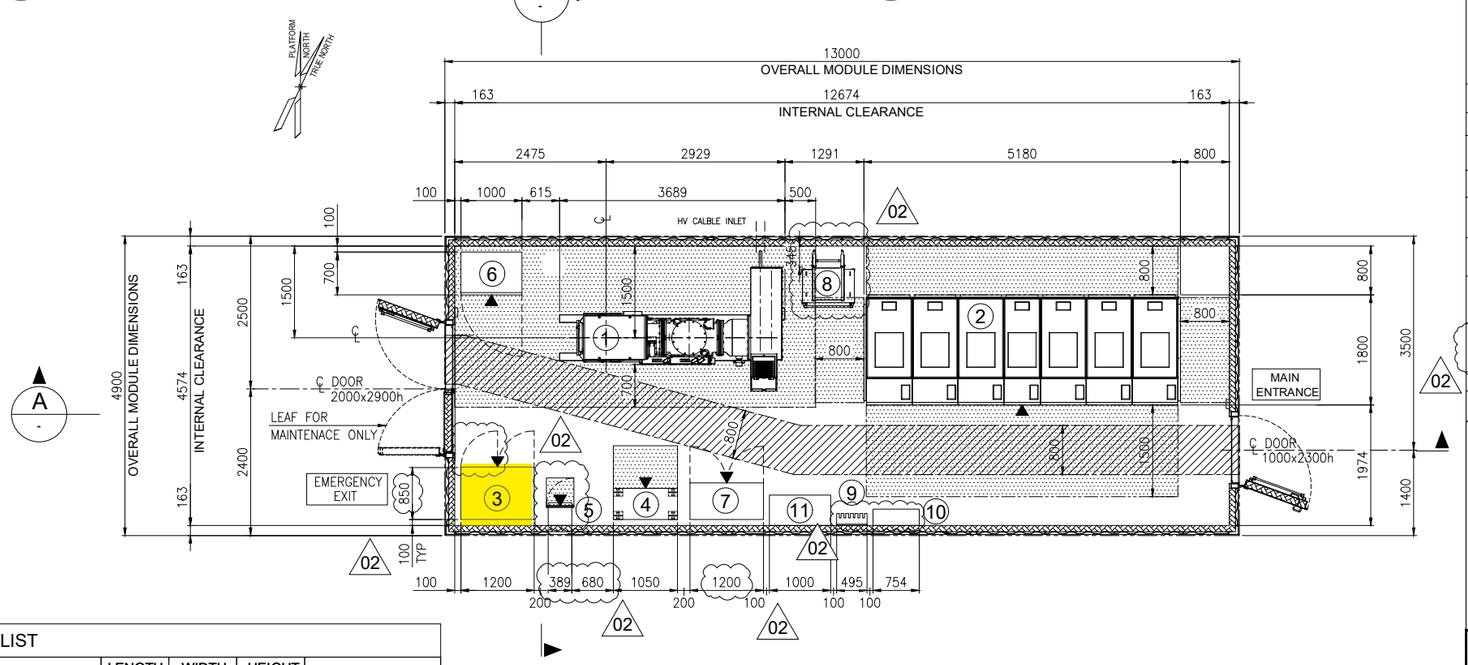
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SECTION B -



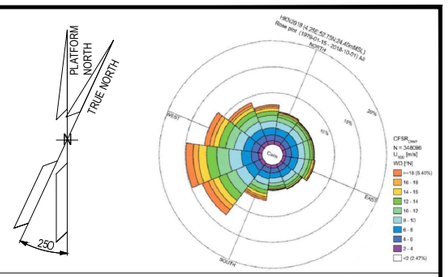
SECTION A -



A -

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

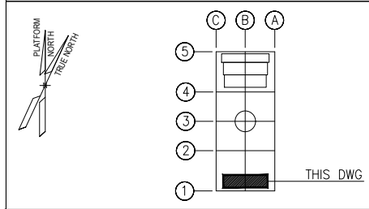
LEGEND

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

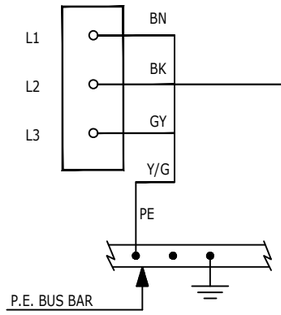
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DRAWN GPA	CHECKED LMA/AMA	APPROVED LMA/MDO	DATE 27/05/2024
A1	DRAWING NO. 123A90-DDL-EL-DL-20104	SHEET 001	REV. 02

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

FROM	TO

DESCRIPTION: LV SWITCHGEAR
TAG NUMBER: SG-200N1

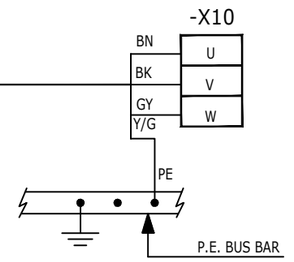
COLUMN/CUBIC.: A2/+04



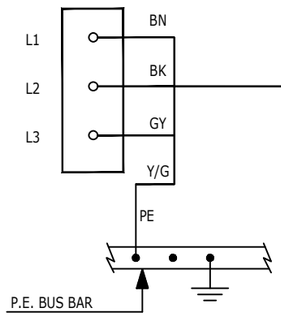
83033-CEL
4G35 mm²

DESCRIPTION: AC UPS F&G - 8H - BYPASS
TAG NUMBER: UP-200F4

PANEL:.BYPASS



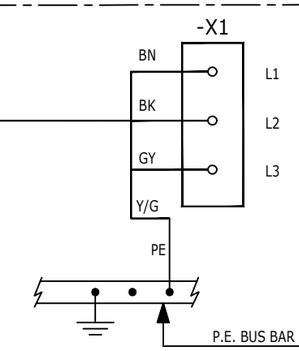
COLUMN/CUBIC.: A7/+03



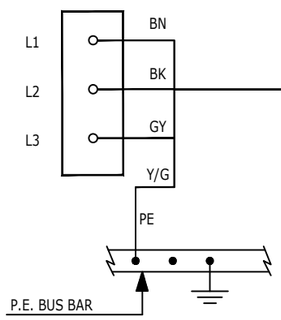
83034-CEL
4G16 mm²

DESCRIPTION: DC BATTERY SYSTEM - SWITCHGEAR CONTROL - FEEDER A
TAG NUMBER: UP-200F1

PANEL:.CHARGER-1



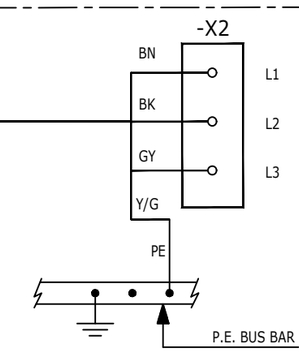
COLUMN/CUBIC.: A7/+04



83035-CEL
4G16 mm²

DESCRIPTION: DC BATTERY SYSTEM - SWITCHGEAR CONTROL - FEEDER B
TAG NUMBER: UP-200F1

PANEL:.CHARGER-2



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
LV SWITCHGEAR SG-200N1

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

SCALE : 1:X

A3

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

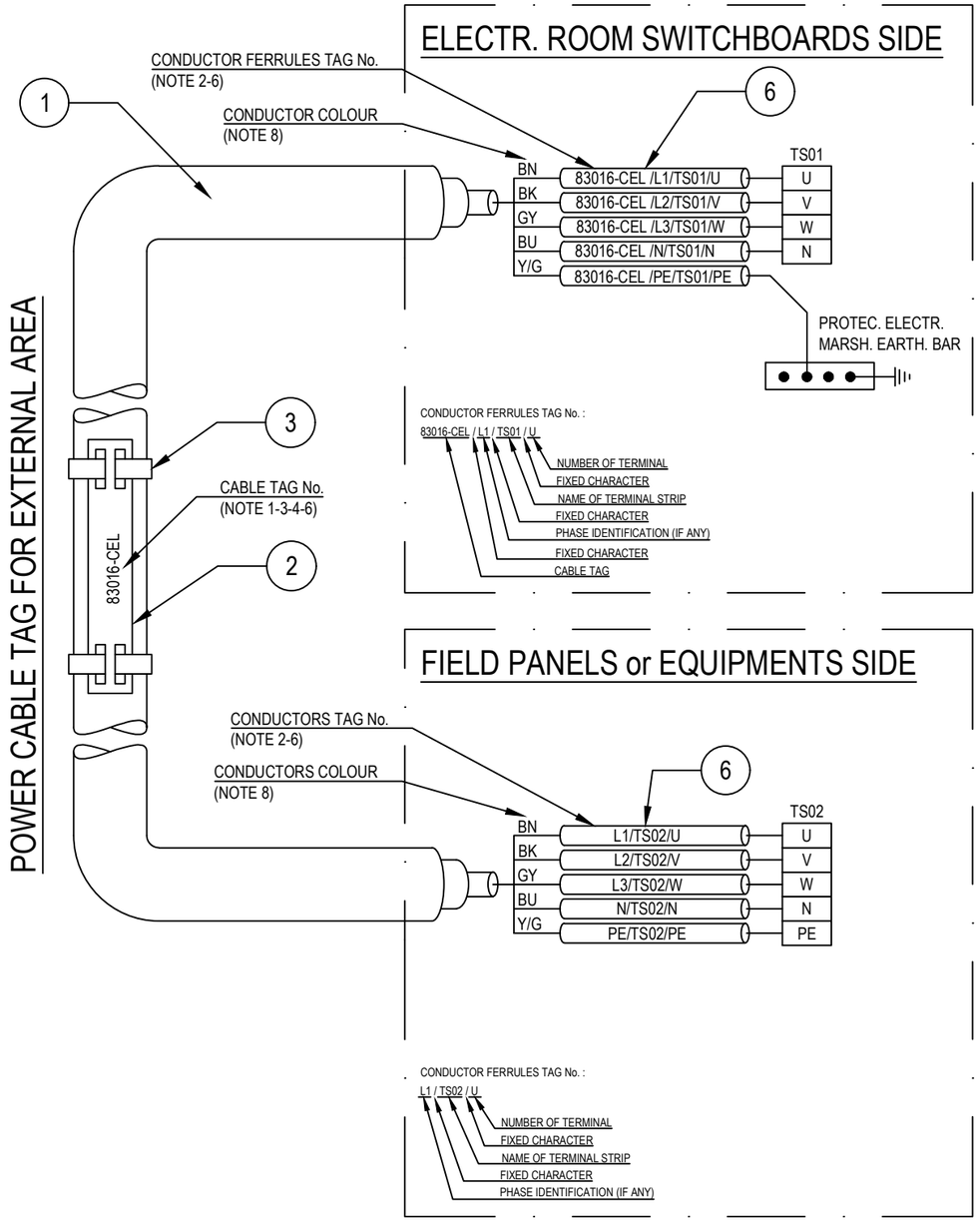
SHEET 029

REV. 01

F.to UNI A3: 420mmx297mm

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

C02



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

NOTES:

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

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

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

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

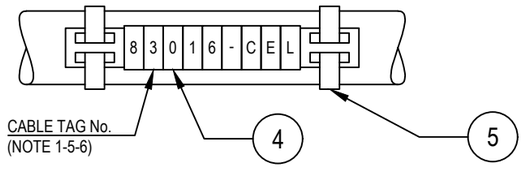
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

6) CABLE AND CONDUCTOR TAG ARE INDICATIVE ONLY.

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

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

POWER CABLE TAG FOR INTERNAL AREA



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

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

CROSSWIND

ROSETTI MARINO

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

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

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

F.to UNI A3: 420mmx297mm

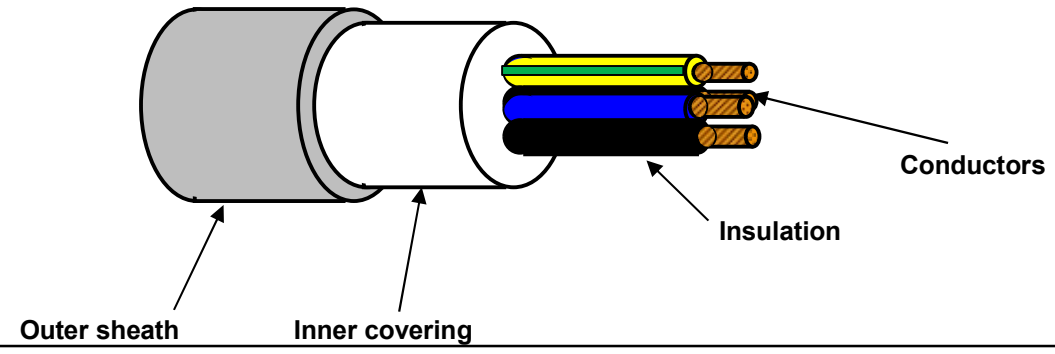
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	To Tag	To Main Function	To Area	Material ID	Material Desc.	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
83035-CEL	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						SG-200N1	LV 0,4 kV MCC Switchgear	Lower Deck (B-200)	UP-200F1	DC UPS 10 kVA Redundant System	Lower Deck (B-100)	ELECV08-4G16	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 4G16mm² - Grey	n.a.			T1_M32_Single				L-450-101-LVT-028 / L-600-101-LVT-016 / 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-060

FLEI s.r.l.

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

4G16 - 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 :	**Black - Brown - Grey - 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 1,4 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 4G16 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 -**	
	Year of Manufacture - CE + Meter Marking	
Outer diameter :	(21,9 ± 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 :	≥ 530 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	84111-CEL-1-P	: DC UPS - Charger / DC UPS - Battery Isolator		Dwg	123A90-DDL-EL-LIS-20148	
	S/Sys	84-00	: DC 10 kVA UPS System (UP-200F1)		Module	LD_B-100	
TASK	code	C10000658	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: 1X25 mm2 | Color: Orange

From: BC-200F1 | To: CB-200F1

1	Confirm cable is as specified in project cable schedule	OK
2	Visual Check cable physical integrity.	OK
3	Check is installed in accordance with layout drawing (segregation, distance…).	OK
4	Check cable is supported and fixed to rack according to project specification.	OK
5	Check bending radius is within the specified limits.	PL
6	Confirm cable glands suit for cable type, correctly mounted and tightened.	OK
7	Check gland plate for single core cables is non ferrous (non -magnetic).	OK
8	Confirm cable labelling is in accordance with specifications.	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"	

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	84111-CEL-1-P	: DC UPS - Charger / DC UPS - Battery Isolator		Dwg	123A90-DDL-EL-LIS-20148	
	S/Sys	84-00	: DC 10 kVA UPS System (UP-200F1)		Module	LD_B-100	
TASK	code	C10000658	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Electrical	Form	CPX09	LV Power Cable

CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0.2	
6		PH 2	NA	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		0.2	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		NA	
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	NA	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

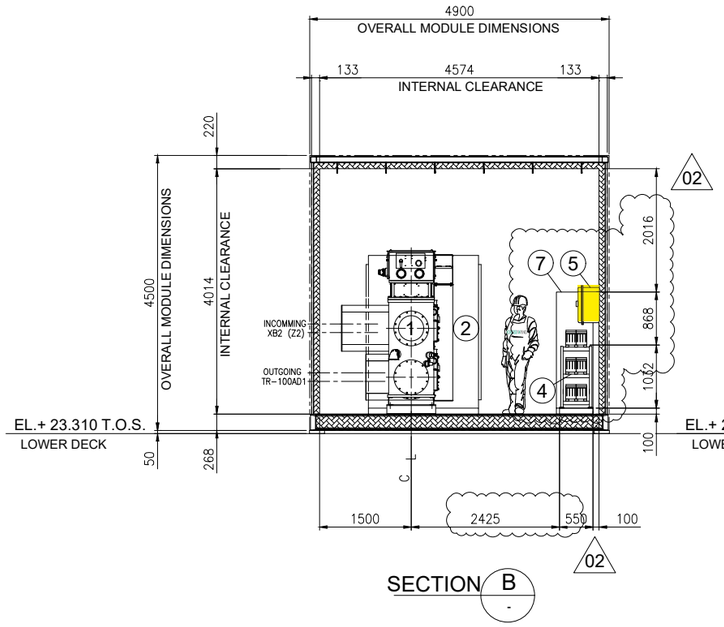
TESTING INSTRUMENTS USED

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

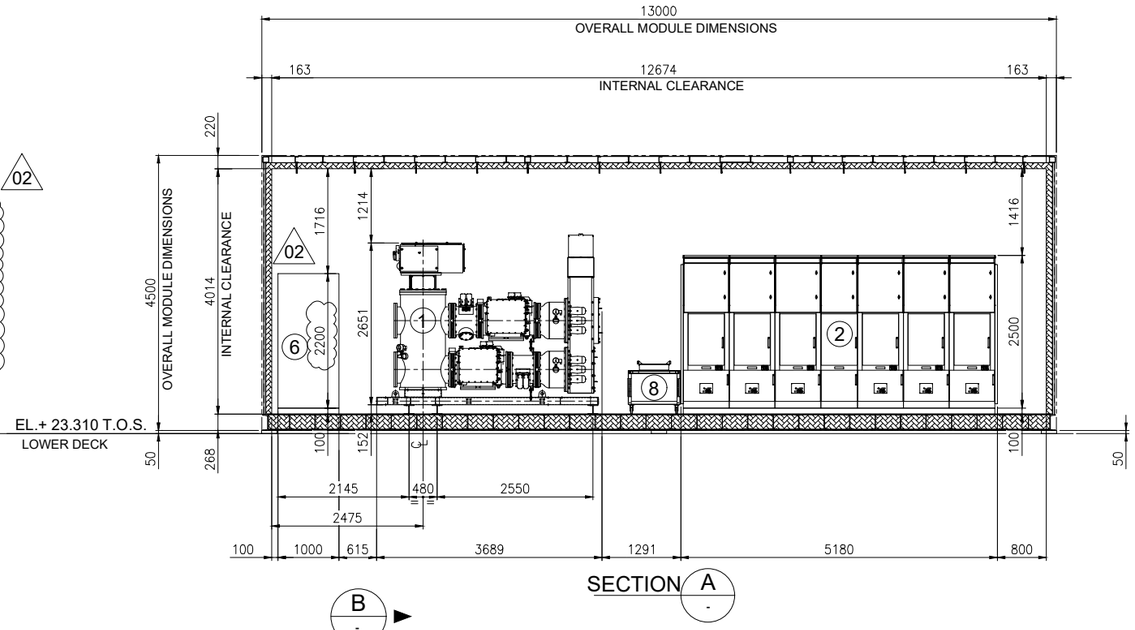
Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (Rosetti Marino)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-10-21	2024-10-25	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-10-21T17:25:34.223Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-10-25T08:42:07.872Z	

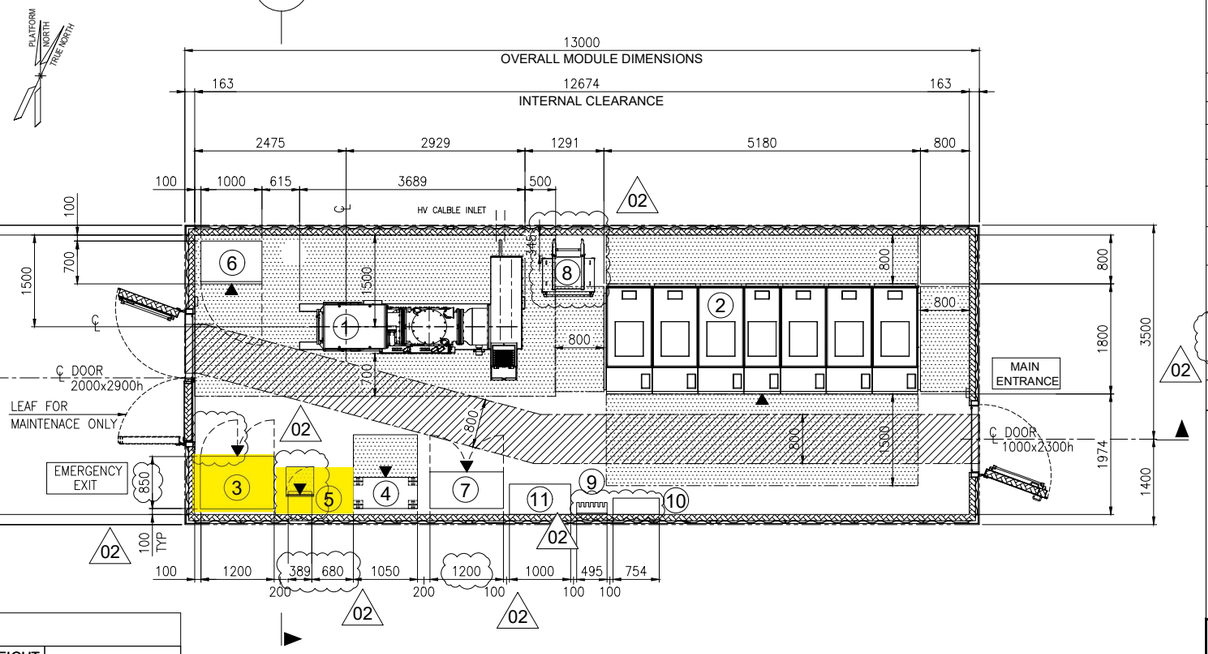
DRAWING NO. 123A90-DDL-EL-DL-20104 | REV. 02



SECTION B -



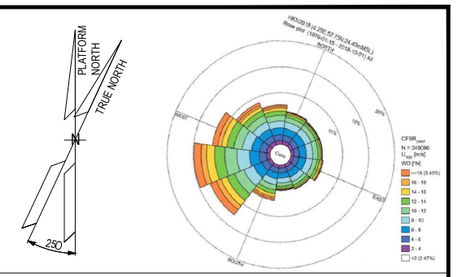
SECTION A -



A -

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

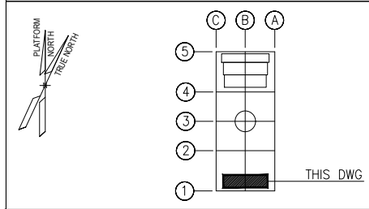
LEGEND

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



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

GENERAL NOTES:

1. FOR EQUIPMENT AND SYSTEM TAG NUMBERING REFER THE DOCUMENT 123A90-PML-DIG-PRO-00002

2. IDENTIFICATION ABBREVIATIONS FOR CABLES & OTHER ELECTRICAL EQUIPMENTS:

A) IDENTIFICATION COLOR CODE OF THE ELECTRICAL CABLE

BK = BLACK
BN = BROWN
BU = BLUE
GY = GRAY
RD = RED
Y/G = YELLOW AND GREEN

B) IDENTIFICATION CODE OF THE ELECTRICAL EQUIPMENT

TR = TRANSFORMER
NER = NEUTRAL EARTH RESISTOR
JB = JUNCTION BOX
CP = CONTROL PANEL

C) FUNCTION CODE OF THE ELECTRICAL EQUIPMENT

AP = ALARM PANEL
UP = AC UPS & DC UPS
BA = BATTERY
BC = BATTERY CHARGER / RECTIFIER
CB =CIRCUIT BRAKER BOX
CN = CATHODIC PROTECTION
CP = CONTROL PANEL
DP = DISTRIBUTION PANEL
JB = JUNCTION BOX
NC = NAVIGATIONAL AID CENTRAL CONTROL PANEL
RR = RESISTOR (EARTHING)
SB = SWITCHBOARD

D) IDENTIFIER ABBREVIATIONS OF THE ELECTRICAL SYSTEM:

EMCS = ELECTRICAL MONITORING & CONTROL SYSTEM
GIS = GAS INSULATED SWITCHGEAR
HVAC = HEATING, VENTILATION, AIR CONDITIONING
HV = HIGH VOLTAGE
MV = MEDIUM VOLTAGE
LCP = LOCAL CONTROL PANEL
LV = LOW VOLTAGE
UPS = UNINTERRUPTIBLE POWER SUPPLY
BESS = BATTERY ENERGY STORAGE SYSTEM
PAS = PROCESS AUTOMATION SYSTEM

E) IDENTIFIER OF THE LOADED PHASE FOR SINGLE-PHASE EQUIPMENT POWER SUPPLY(LV):

L = LINE
N = NEUTRAL
PE = PROTECTIVE EARTH

F) IDENTIFIER OF THE LOADED PHASE FOR THREE-PHASE EQUIPMENT POWER SUPPLY(MV&LV):

L1 = LINE 1
L2 = LINE 2
L3 = LINE 3

3. RED CONDUCTOR MUST BE COVERED WITH BLUE SLEEVE AT THE ENDS, TO USE IT AS NEUTRAL.

4. THE MINIMUM CABLE LENGTH IS 15 M, THE CABLE CANNOT BE SHORTER.

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

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
GENERAL NOTES

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

SCALE : NTS

A3

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

SHEET 006

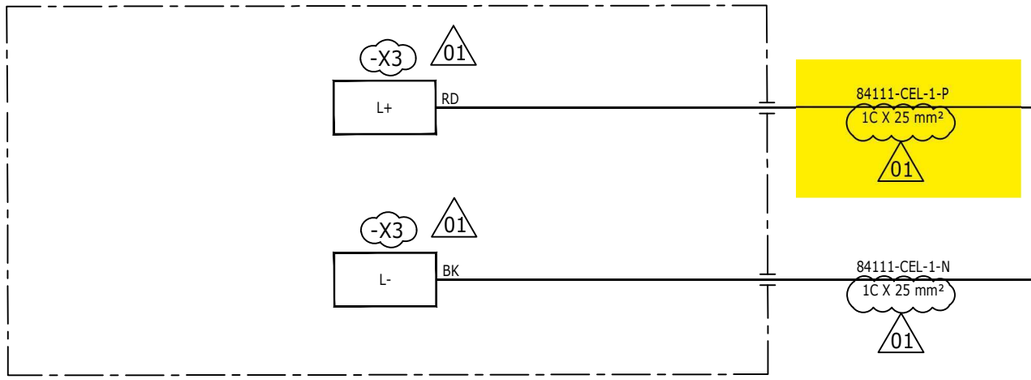
REV. 01

F.to UNI A3: 420mmx297mm

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

FROM	TO

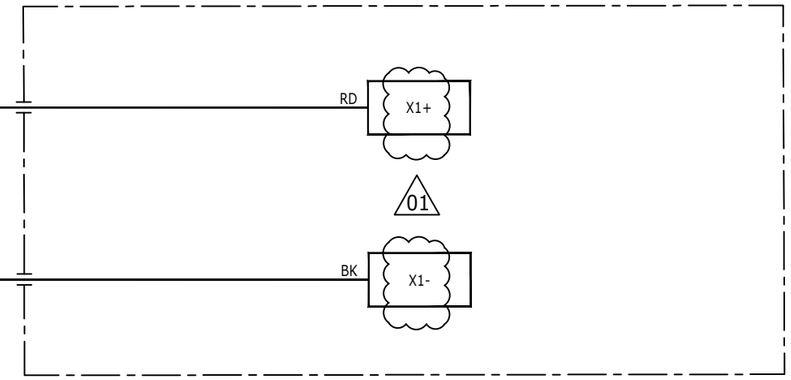
DESCRIPTION: DC UPS - CHARGER
TAG NUMBER: BC-200F1



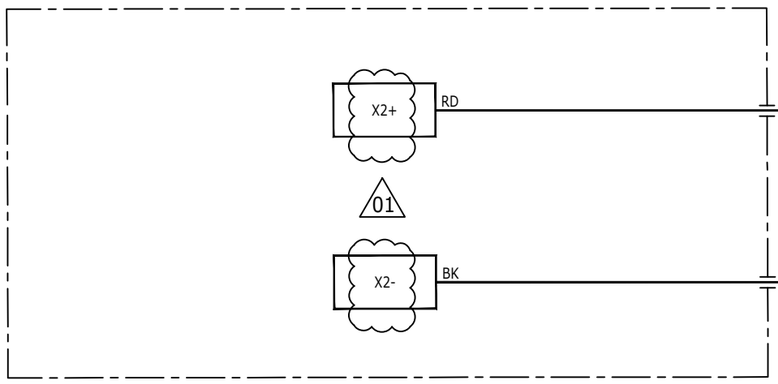
84111-CEL-1-P
1C X 25 mm²
01

84111-CEL-1-N
1C X 25 mm²
01

DESCRIPTION: DC UPS - BATTERY ISOLATOR
TAG NUMBER: CB-200F1



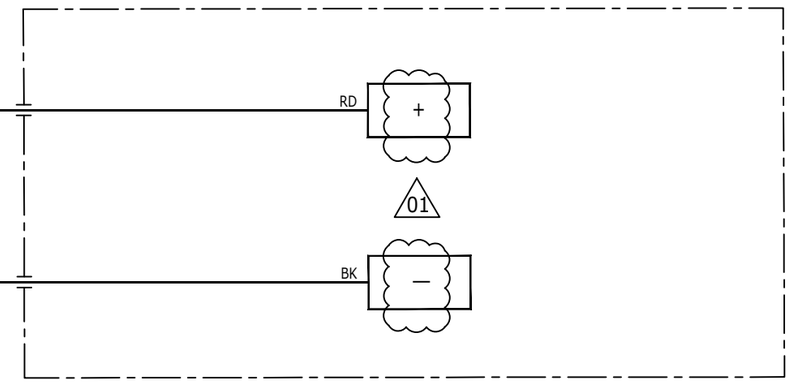
DESCRIPTION: DC UPS - BATTERY ISOLATOR
TAG NUMBER: CB-200F1



84111-CEL-2-P
1C X 25 mm²
01

84111-CEL-2-N
1C X 25 mm²
01

DESCRIPTION: DC UPS - BATTERY
TAG NUMBER: BA-200F1



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

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
DC UPS – CHARGER & DC UPS – BATTERY ISOLATOR

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

SCALE : 1:X

A3

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

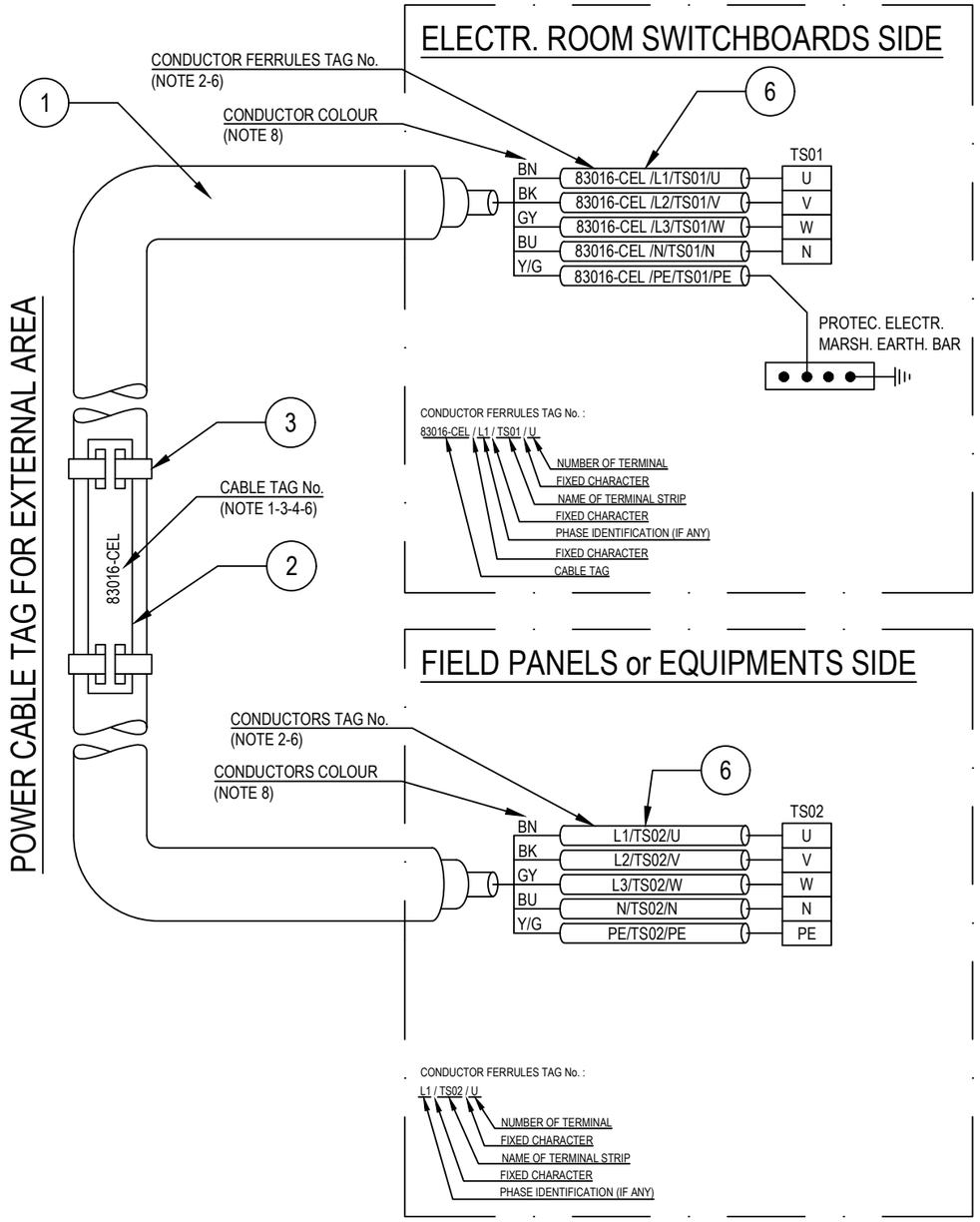
SHEET 065

REV. 01

F.to UNI A3: 420mmx297mm

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

C02



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

NOTES:

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

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

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

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

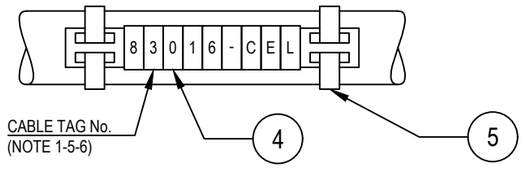
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

6) CABLE AND CONDUCTOR TAG ARE INDICATIVE ONLY.

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

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

POWER CABLE TAG FOR INTERNAL AREA



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

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

CROSSWIND

ROSETTI MARINO

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

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

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

F.to UNI A3: 420mmx297mm

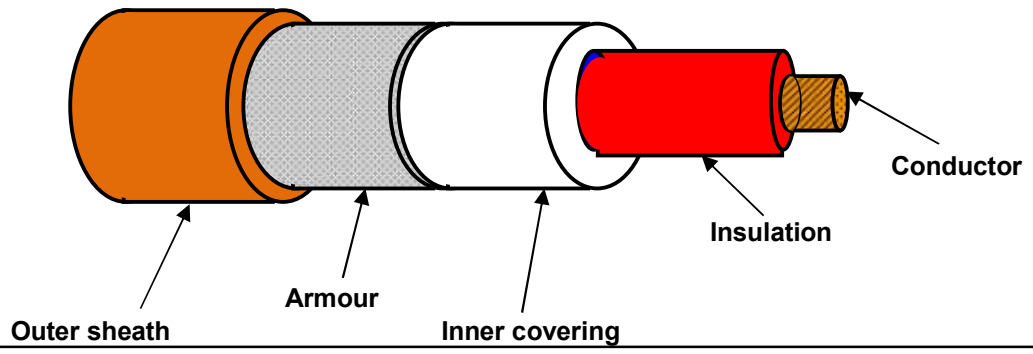
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	To Tag	To Main Function	To Area	Material ID	Material Desc.	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
84111-CEL-1-P	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						BC-200F1	DC UPS 10 kVA Redundant System	Lower Deck (B-100)	CB-200F1	Isolation Battery Box for DC UPS 10 kVA	Lower Deck (B-100)	ELECV26-1X25	Cable Cu Cl.2/MGT/EPR/LSZH/GSWB/LSZH 0,6/1kV 1Cx25mm² - Orange (Ins. Red) - DC	T2_M20_Double			T2_M20_Double				L-300-101-LVT-060 / L-300-101-LVT-061 / L-300-101-LVT-062

FLEI s.r.l.

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

1CX25 - DC POWER CABLE - Fire Resistant & Flame Retardant - ARMOURED



TECHNICAL FEATURES

Conductor :	**STRANDED COMPACTED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	Mica/Glass Tape/s (MGT) plus EPR compound, quality to IEC 60092.360, Nominal Thickness 1,2 mm	
Core colour code :	**Red**	
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 :	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 - 1CX25 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 :	(11,2 ± 10%) mm	
Over Armour diameter :	(12,4 ± 10%) mm	
Outer diameter :	(15,0 ± 10%) mm	
Bending radius :	cable outer diameter x 10	(in fixed installation)
Voltage test :	3,5 kV a.c. for 5' (Between Core - Armour)	
Conductors DC Resistance :		IEC 60228 Class 2
Insulation Resistance :	≥ 480 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.

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	84111-CEL-1-N	: DC UPS - Charger / DC UPS - Battery Isolator		Dwg	123A90-DDL-EL-LIS-20148	
	S/Sys	84-00	: DC 10 kVA UPS System (UP-200F1)		Module	LD_B-100	
TASK	code	C10000659	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 1X25 mm2 | Color Orange

From BC-200F1 | To CB-200F1

1	Confirm cable is as specified in project cable schedule	OK
2	Visual Check cable physical integrity.	OK
3	Check is installed in accordance with layout drawing (segregation, distance…).	OK
4	Check cable is supported and fixed to rack according to project specification.	OK
5	Check bending radius is within the specified limits.	PL
6	Confirm cable glands suit for cable type, correctly mounted and tightened.	OK
7	Check gland plate for single core cables is non ferrous (non -magnetic).	OK
8	Confirm cable labelling is in accordance with specifications.	OK
9	Check cable is correctly loomed and segregated in accordance with specification.	OK
10	Check cable earthing against lastest drawings.	OK
11	Check cores marking are in accordance with termination diagram	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	84111-CEL-1-N	: DC UPS - Charger / DC UPS - Battery Isolator			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-00	: DC 10 kVA UPS System (UP-200F1)			Module	LD_B-100
TASK	code	C10000659		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

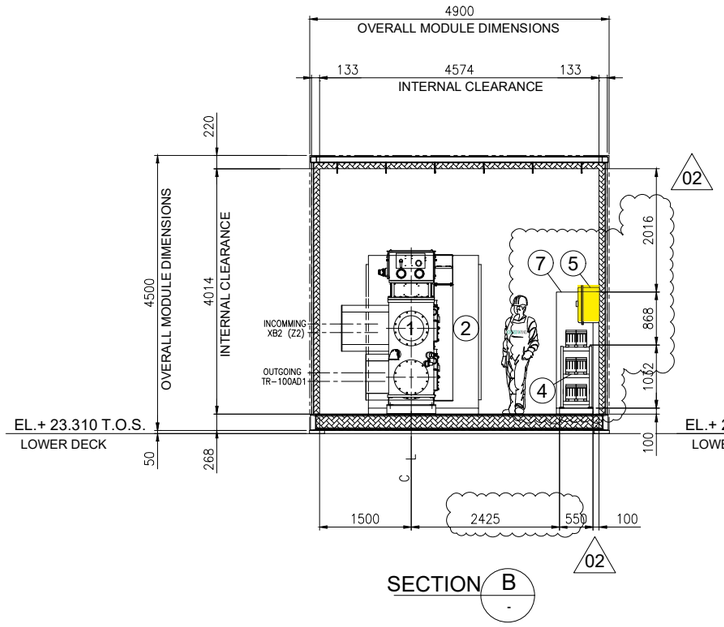
CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0.2	
6		PH 2	NA	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		0.2	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		NA	
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	NA	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

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

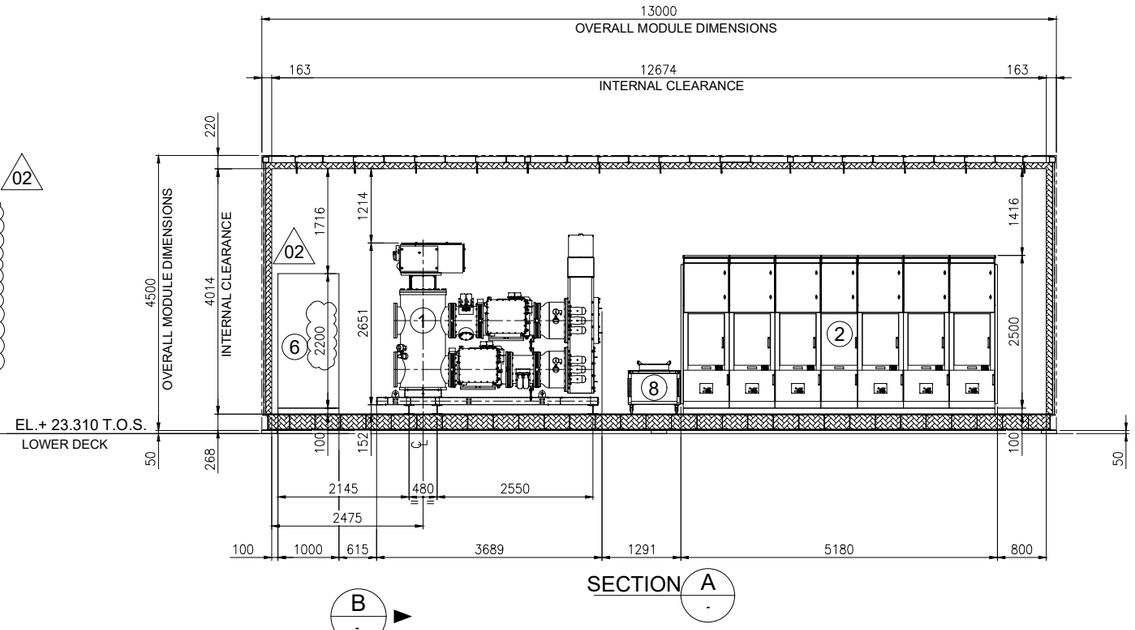
Comments:

	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (Rosetti Marino)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-10-21	2024-10-25	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-10-21T17:25:49.168Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-10-25T08:43:52.129Z	

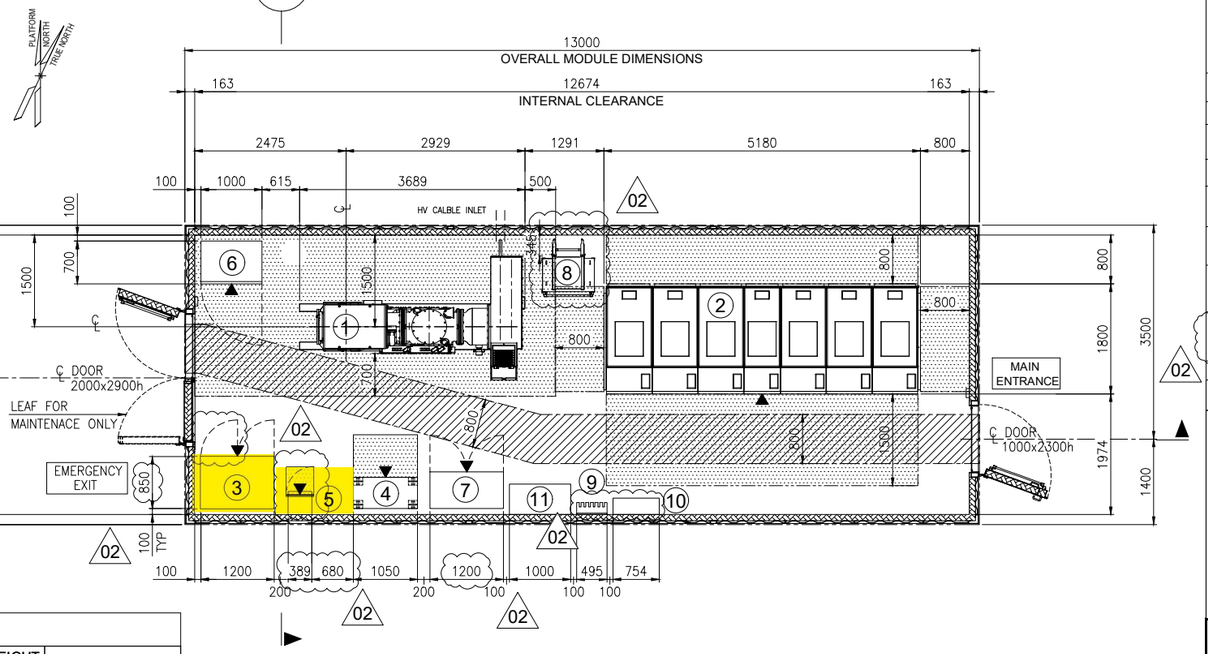
DRAWING NO. 123A90-DDL-EL-DL-20104 | REV. 02



SECTION B -



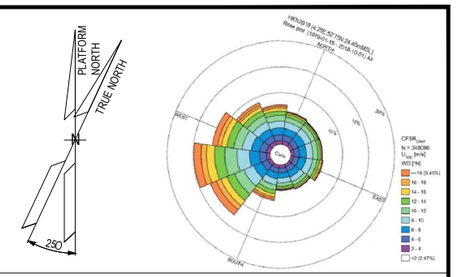
SECTION A -



A -

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

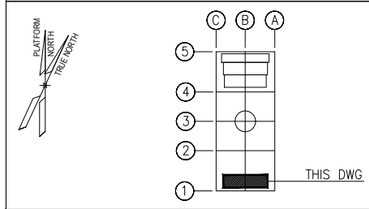
LEGEND

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



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

GENERAL NOTES:

1. FOR EQUIPMENT AND SYSTEM TAG NUMBERING REFER THE DOCUMENT 123A90-PML-DIG-PRO-00002

2. IDENTIFICATION ABBREVIATIONS FOR CABLES & OTHER ELECTRICAL EQUIPMENTS:

A) IDENTIFICATION COLOR CODE OF THE ELECTRICAL CABLE

BK = BLACK
BN = BROWN
BU = BLUE
GY = GRAY
RD = RED
Y/G = YELLOW AND GREEN

B) IDENTIFICATION CODE OF THE ELECTRICAL EQUIPMENT

TR = TRANSFORMER
NER = NEUTRAL EARTH RESISTOR
JB = JUNCTION BOX
CP = CONTROL PANEL

C) FUNCTION CODE OF THE ELECTRICAL EQUIPMENT

AP = ALARM PANEL
UP = AC UPS & DC UPS
BA = BATTERY
BC = BATTERY CHARGER / RECTIFIER
CB =CIRCUIT BRAKER BOX
CN = CATHODIC PROTECTION
CP = CONTROL PANEL
DP = DISTRIBUTION PANEL
JB = JUNCTION BOX
NC = NAVIGATIONAL AID CENTRAL CONTROL PANEL
RR = RESISTOR (EARTHING)
SB = SWITCHBOARD

D) IDENTIFIER ABBREVIATIONS OF THE ELECTRICAL SYSTEM:

EMCS = ELECTRICAL MONITORING & CONTROL SYSTEM
GIS = GAS INSULATED SWITCHGEAR
HVAC = HEATING, VENTILATION, AIR CONDITIONING
HV = HIGH VOLTAGE
MV = MEDIUM VOLTAGE
LCP = LOCAL CONTROL PANEL
LV = LOW VOLTAGE
UPS = UNINTERRUPTIBLE POWER SUPPLY
BESS = BATTERY ENERGY STORAGE SYSTEM
PAS = PROCESS AUTOMATION SYSTEM

E) IDENTIFIER OF THE LOADED PHASE FOR SINGLE-PHASE EQUIPMENT POWER SUPPLY(LV):

L = LINE
N = NEUTRAL
PE = PROTECTIVE EARTH

F) IDENTIFIER OF THE LOADED PHASE FOR THREE-PHASE EQUIPMENT POWER SUPPLY(MV&LV):

L1 = LINE 1
L2 = LINE 2
L3 = LINE 3

3. RED CONDUCTOR MUST BE COVERED WITH BLUE SLEEVE AT THE ENDS, TO USE IT AS NEUTRAL.

4. THE MINIMUM CABLE LENGTH IS 15 M, THE CABLE CANNOT BE SHORTER.

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

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
GENERAL NOTES

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

SCALE : NTS

A3

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

SHEET 006

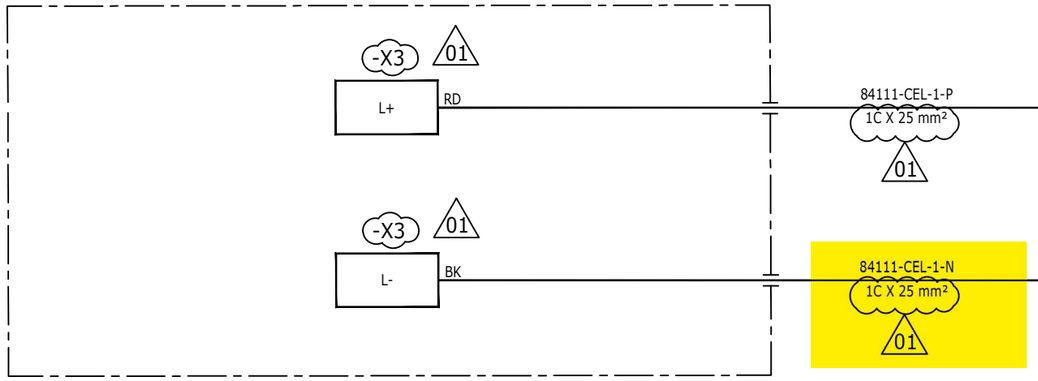
REV. 01

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

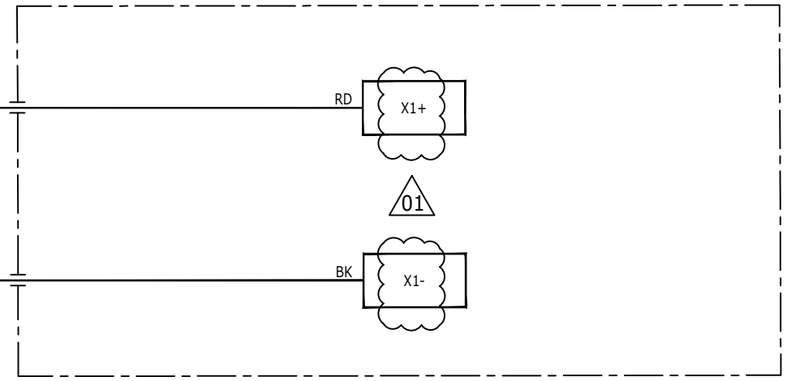
F.to UNI A3: 420mmx297mm

FROM	TO

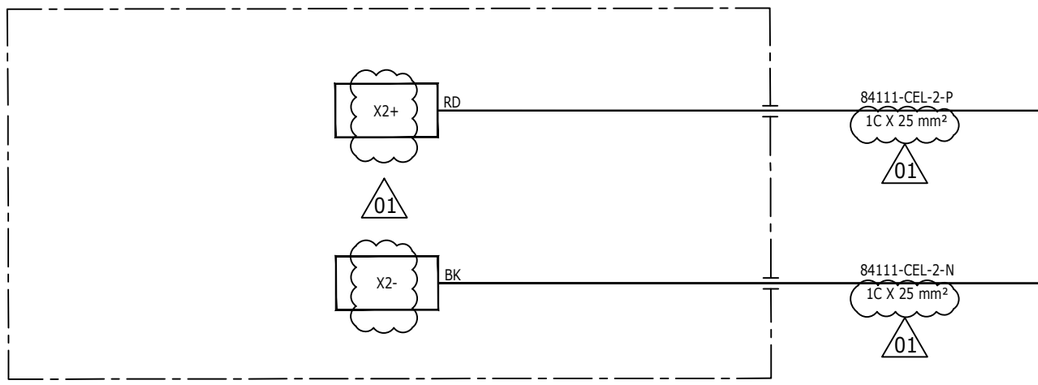
DESCRIPTION: DC UPS - CHARGER
TAG NUMBER: BC-200F1



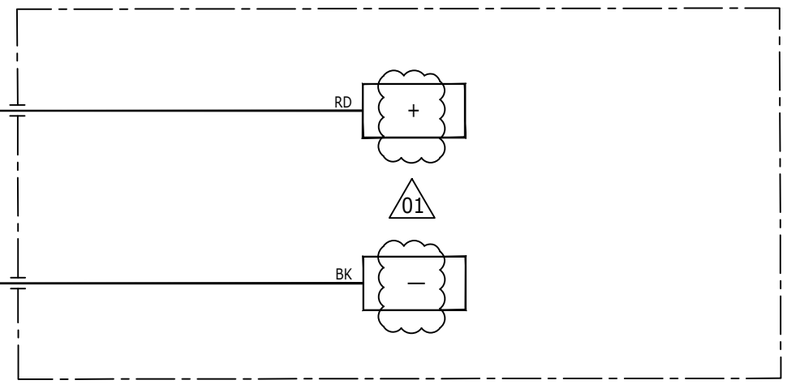
DESCRIPTION: DC UPS - BATTERY ISOLATOR
TAG NUMBER: CB-200F1



DESCRIPTION: DC UPS - BATTERY ISOLATOR
TAG NUMBER: CB-200F1



DESCRIPTION: DC UPS - BATTERY
TAG NUMBER: BA-200F1



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

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
DC UPS – CHARGER & DC UPS – BATTERY ISOLATOR

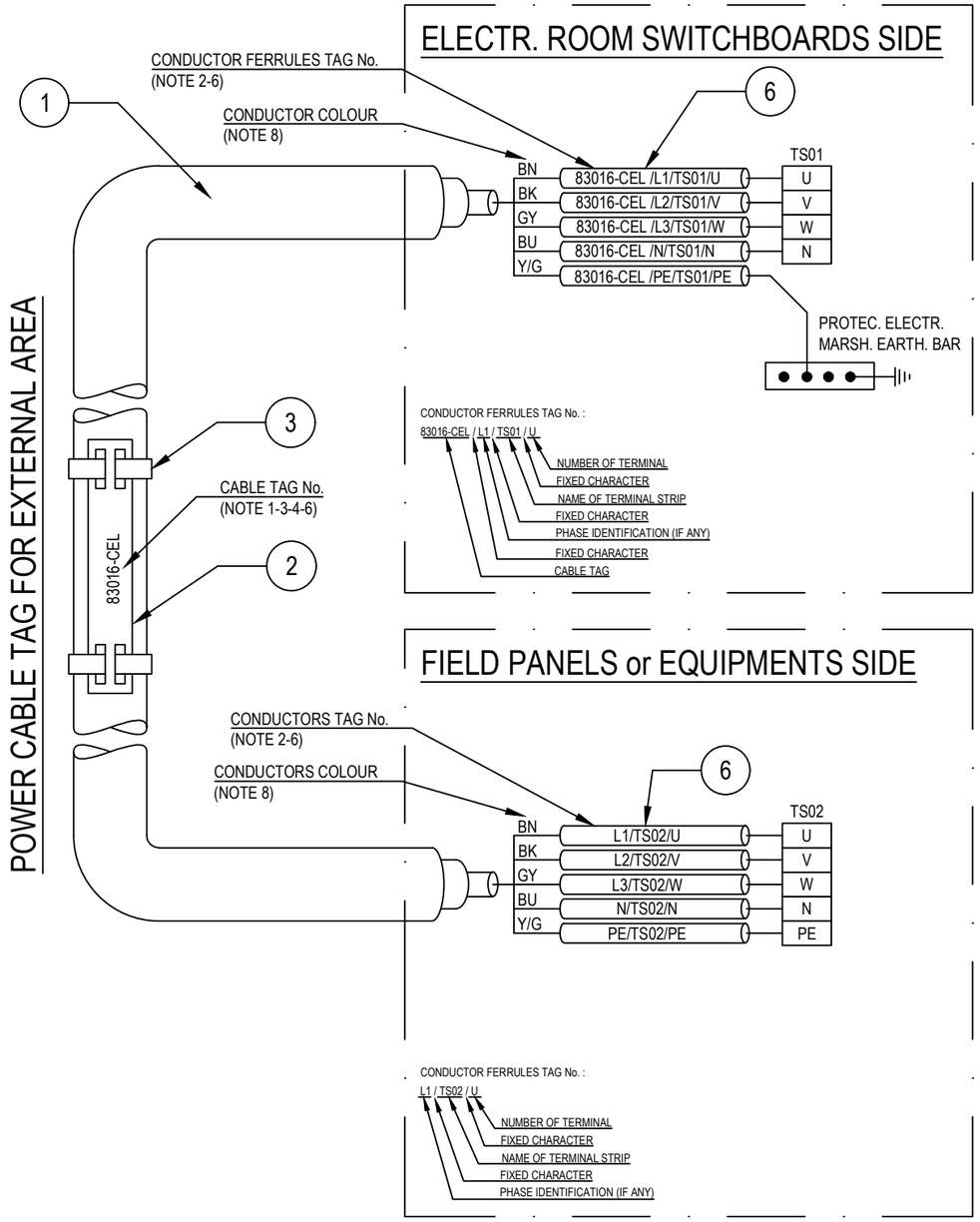
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 065 | REV. 01

F.to UNI A3: 420mmx297mm

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

C02



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

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

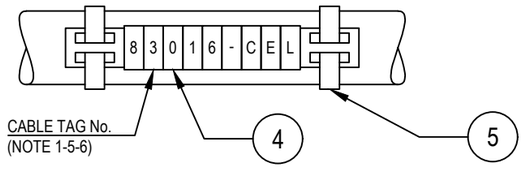
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

6) CABLE AND CONDUCTOR TAG ARE INDICATIVE ONLY.

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

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

POWER CABLE TAG FOR INTERNAL AREA



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

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

CROSSWIND

ROSETTI MARINO

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

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

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

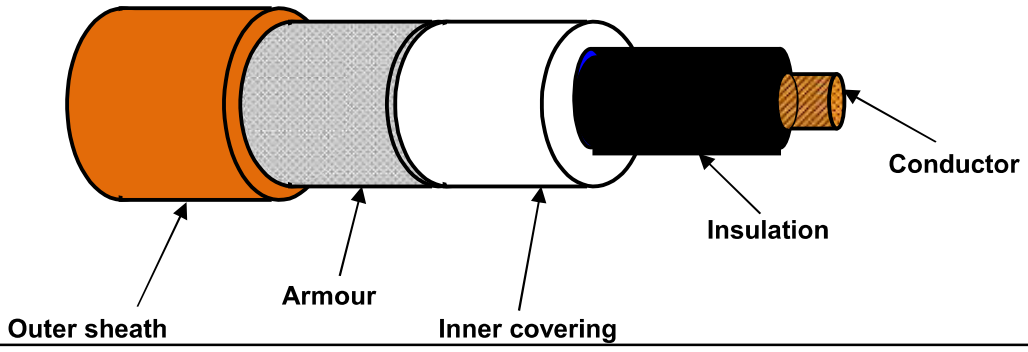
F.to UNI A3: 420mmx297mm

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

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	To Tag	To Main Function	To Area	Material ID	Material Desc.	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
84111-CEL-1-N	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						BC-200F1	DC UPS 10 kVA Redundant System	Lower Deck (B-100)	CB-200F1	Isolation Battery Box for DC UPS 10 kVA	Lower Deck (B-100)	ELECV27-1X25	Cable Cu CI.2/MGT/EPR/LSZH/GSWB/LSZH 0,6/1kV 1Cx25mm² - Orange (Ins. Black) - DC	T2_M20_Double			T2_M20_Double				L-300-101-LVT-060 / L-300-101-LVT-061 / L-300-101-LVT-062

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

1CX25 - DC POWER CABLE - Fire Resistant & Flame Retardant - ARMOURED



TECHNICAL FEATURES

Conductor :	**STRANDED COMPACTED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	Mica/Glass Tape/s (MGT) plus EPR compound, quality to IEC 60092.360, Nominal Thickness 1,2 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 :	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 - 1CX25 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 :	(11,2 ± 10%) mm	
Over Armour diameter :	(12,4 ± 10%) mm	
Outer diameter :	(15,0 ± 10%) mm	
Bending radius :	cable outer diameter x 10	(in fixed installation)
Voltage test :	3,5 kV a.c. for 5' (Between Core - Armour)	
Conductors DC Resistance :		IEC 60228 Class 2
Insulation Resistance :	≥ 480 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.

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	84111-CEL-2-P	: DC UPS - Battery Isolator / DC UPS - Battery			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-00	: DC 10 kVA UPS System (UP-200F1)			Module	LD_B-100
TASK	code	C10000660		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	1X25 mm2	Color	Orange
From	CB-200F1	To	BA-200F1		

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

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	84111-CEL-2-P	: DC UPS - Battery Isolator / DC UPS - Battery			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-00	: DC 10 kVA UPS System (UP-200F1)			Module	LD_B-100
TASK	code	C10000660		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

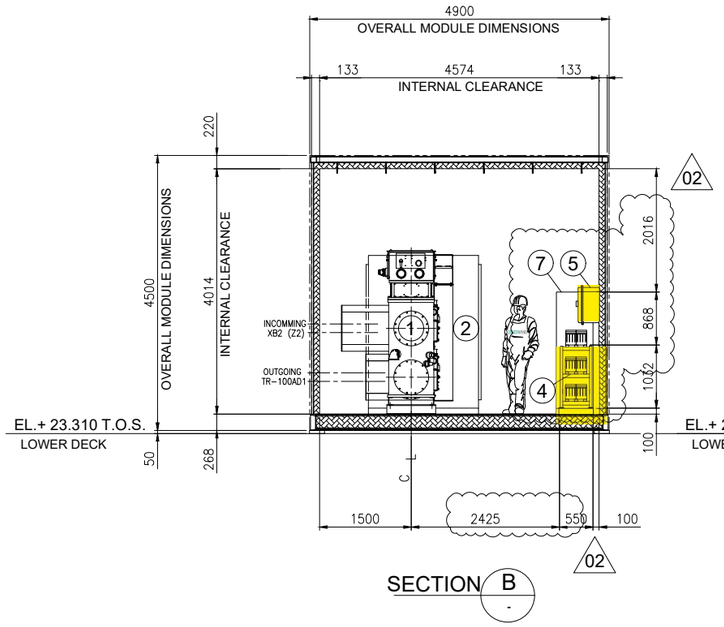
	CONTINUITY			
5	CORE CONTINUITY Ω	PH 1	0.2	
6		PH 2	NA	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		0.2	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		NA	
	INSULATION			
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	NA	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

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

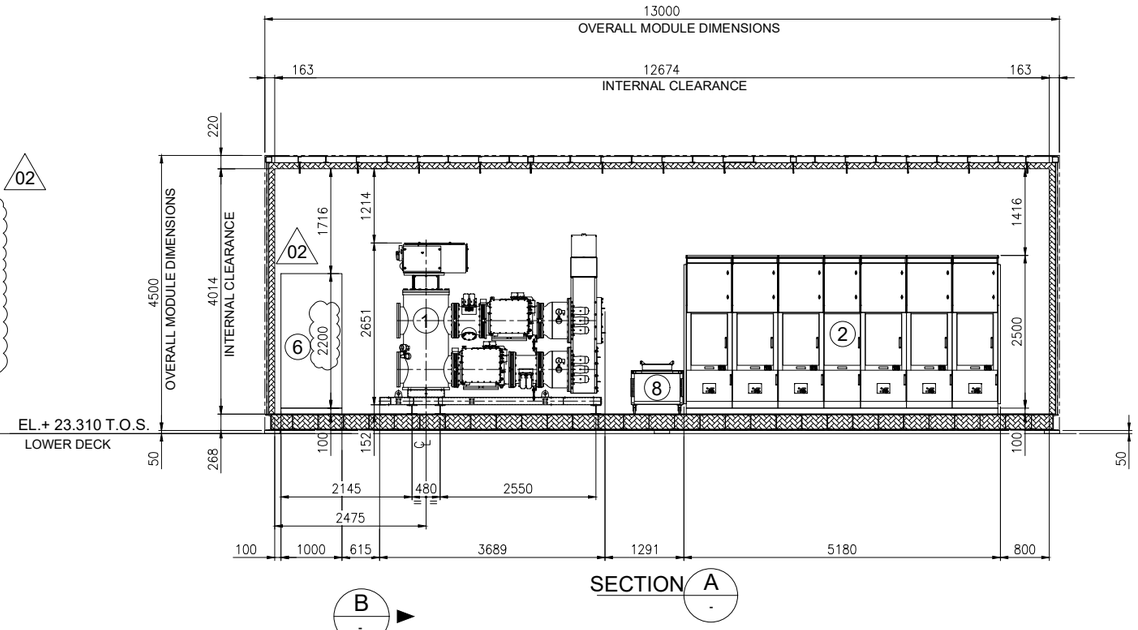
Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (Rosetti Marino)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-10-21	2024-10-25	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-10-21T17:26:04.523Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-10-25T08:44:30.006Z	

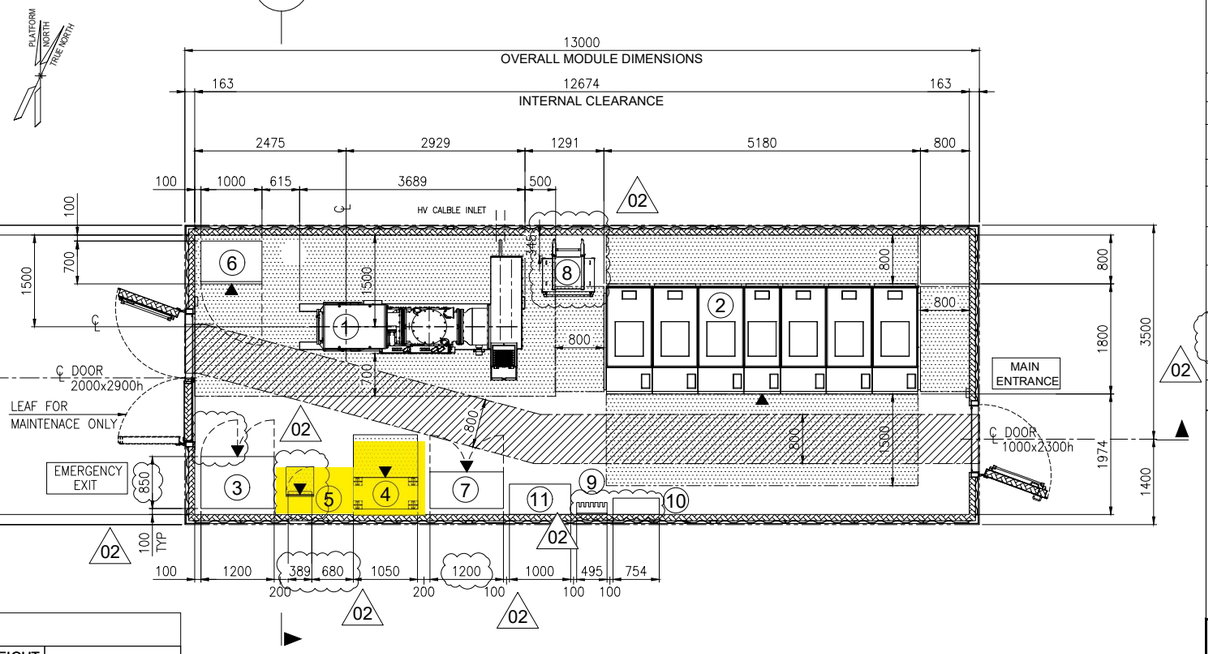
DRAWING NO. 123A90-DDL-EL-DL-20104 | REV. 02



SECTION B -



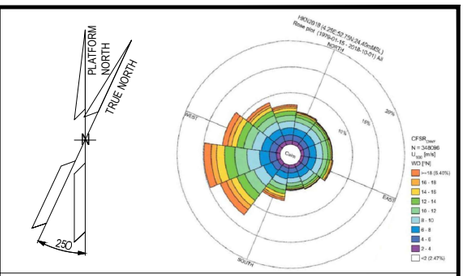
SECTION A -



A -

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

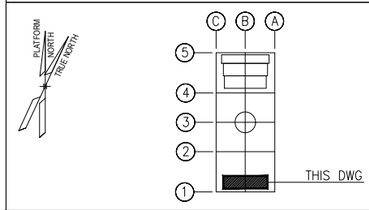
LEGEND

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



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

GENERAL NOTES:

1. FOR EQUIPMENT AND SYSTEM TAG NUMBERING REFER THE DOCUMENT 123A90-PML-DIG-PRO-00002

2. IDENTIFICATION ABBREVIATIONS FOR CABLES & OTHER ELECTRICAL EQUIPMENTS:

A) IDENTIFICATION COLOR CODE OF THE ELECTRICAL CABLE

BK = BLACK
BN = BROWN
BU = BLUE
GY = GRAY
RD = RED
Y/G = YELLOW AND GREEN

B) IDENTIFICATION CODE OF THE ELECTRICAL EQUIPMENT

TR = TRANSFORMER
NER = NEUTRAL EARTH RESISTOR
JB = JUNCTION BOX
CP = CONTROL PANEL

C) FUNCTION CODE OF THE ELECTRICAL EQUIPMENT

AP = ALARM PANEL
UP = AC UPS & DC UPS
BA = BATTERY
BC = BATTERY CHARGER / RECTIFIER
CB =CIRCUIT BRAKER BOX
CN = CATHODIC PROTECTION
CP = CONTROL PANEL
DP = DISTRIBUTION PANEL
JB = JUNCTION BOX
NC = NAVIGATIONAL AID CENTRAL CONTROL PANEL
RR = RESISTOR (EARTHING)
SB = SWITCHBOARD

D) IDENTIFIER ABBREVIATIONS OF THE ELECTRICAL SYSTEM:

EMCS = ELECTRICAL MONITORING & CONTROL SYSTEM
GIS = GAS INSULATED SWITCHGEAR
HVAC = HEATING, VENTILATION, AIR CONDITIONING
HV = HIGH VOLTAGE
MV = MEDIUM VOLTAGE
LCP = LOCAL CONTROL PANEL
LV = LOW VOLTAGE
UPS = UNINTERRUPTIBLE POWER SUPPLY
BESS = BATTERY ENERGY STORAGE SYSTEM
PAS = PROCESS AUTOMATION SYSTEM

E) IDENTIFIER OF THE LOADED PHASE FOR SINGLE-PHASE EQUIPMENT POWER SUPPLY(LV):

L = LINE
N = NEUTRAL
PE = PROTECTIVE EARTH

F) IDENTIFIER OF THE LOADED PHASE FOR THREE-PHASE EQUIPMENT POWER SUPPLY(MV&LV):

L1 = LINE 1
L2 = LINE 2
L3 = LINE 3

3. RED CONDUCTOR MUST BE COVERED WITH BLUE SLEEVE AT THE ENDS, TO USE IT AS NEUTRAL.

4. THE MINIMUM CABLE LENGTH IS 15 M, THE CABLE CANNOT BE SHORTER.

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

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
GENERAL NOTES

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

SCALE : NTS

A3

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

SHEET 006

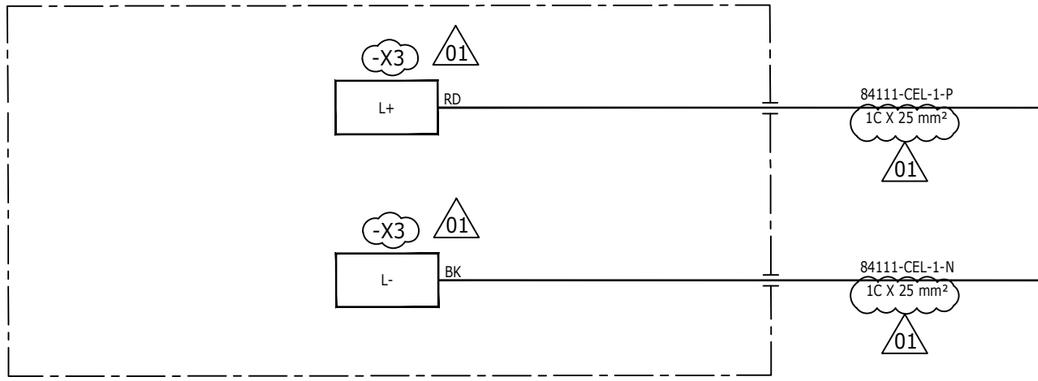
REV. 01

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

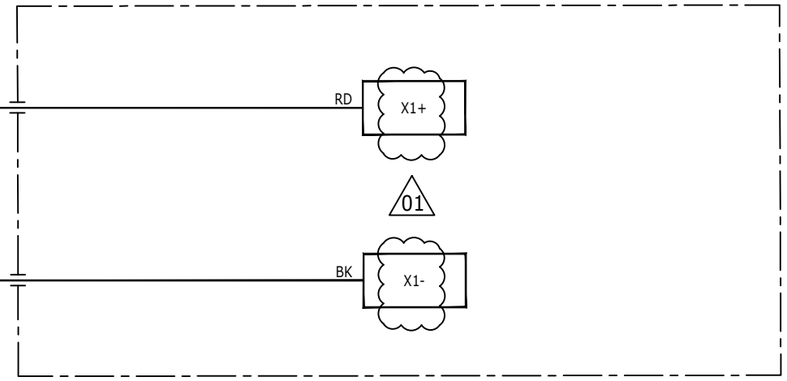
F.to UNI A3: 420mmx297mm

FROM	TO

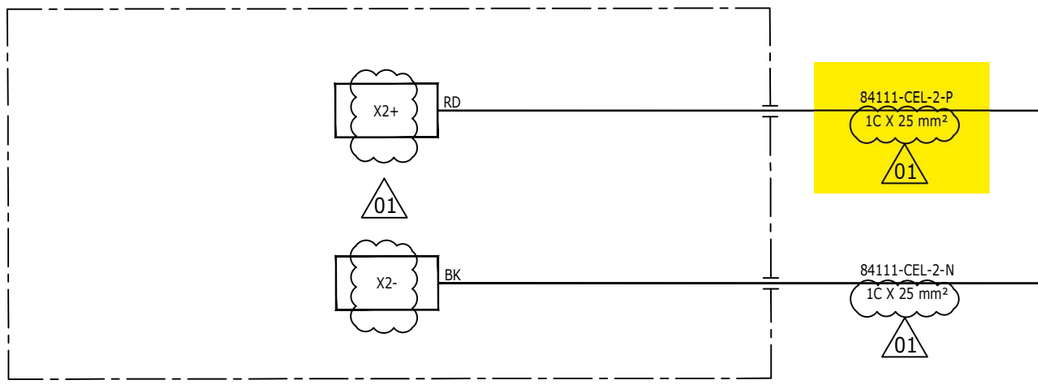
DESCRIPTION: DC UPS - CHARGER
TAG NUMBER: BC-200F1



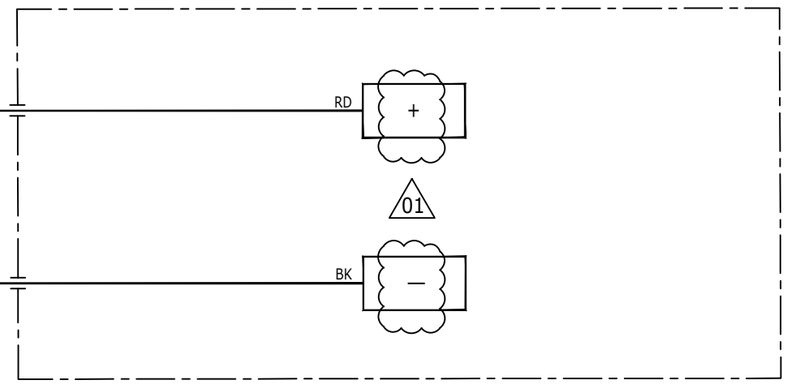
DESCRIPTION: DC UPS - BATTERY ISOLATOR
TAG NUMBER: CB-200F1



DESCRIPTION: DC UPS - BATTERY ISOLATOR
TAG NUMBER: CB-200F1



DESCRIPTION: DC UPS - BATTERY
TAG NUMBER: BA-200F1



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

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
DC UPS – CHARGER & DC UPS – BATTERY ISOLATOR

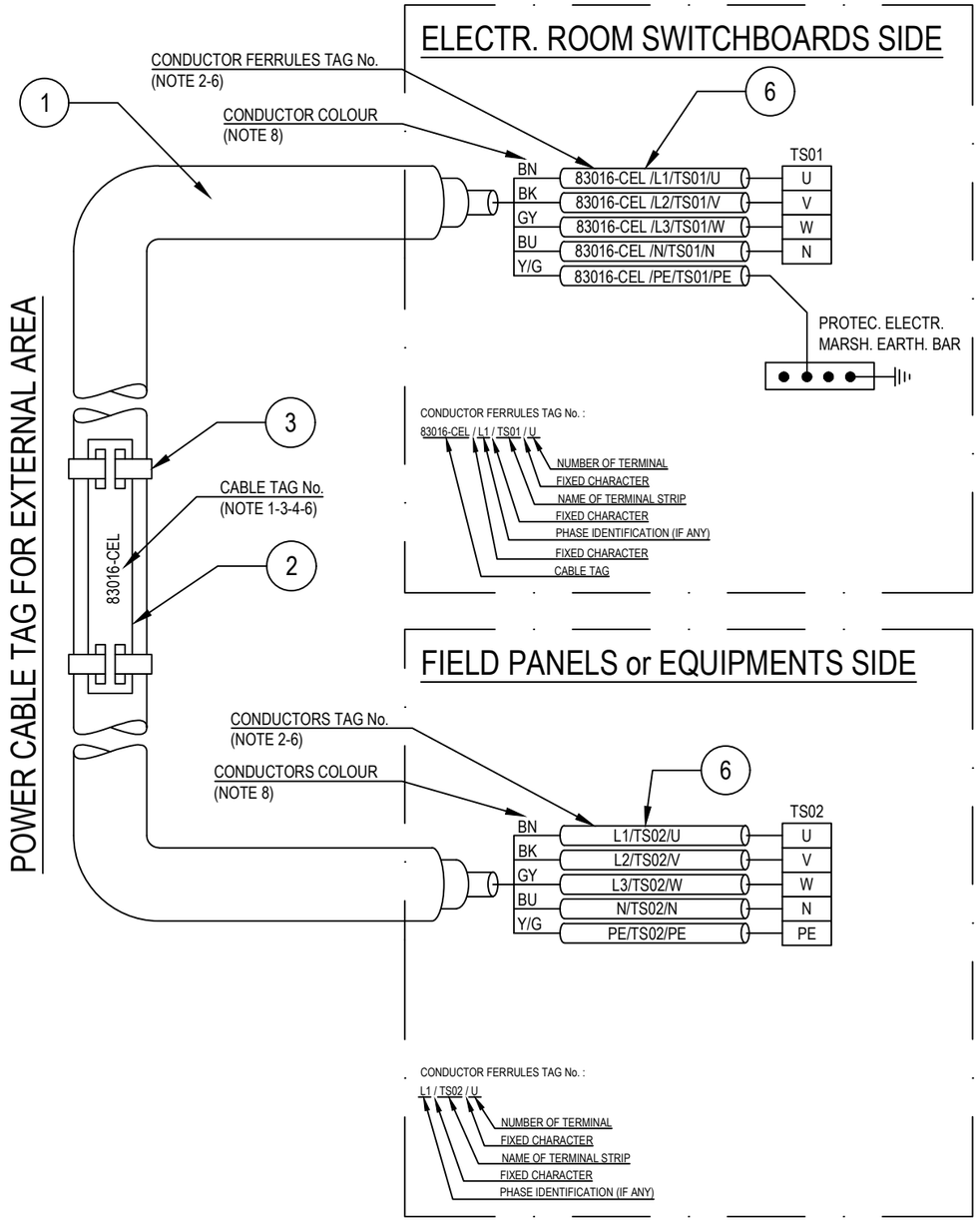
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 065 | REV. 01

F.to UNI A3: 420mmx297mm

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

C02



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

NOTES:

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

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

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

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

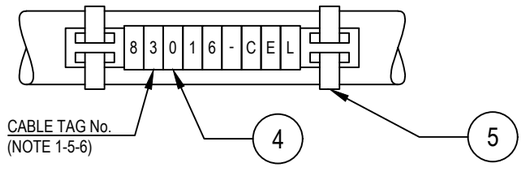
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6) CABLE AND CONDUCTOR TAG ARE INDICATIVE ONLY.

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

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

POWER CABLE TAG FOR INTERNAL AREA



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

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
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CROSSWIND

ROSETTI MARINO

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

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

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

F.to UNI A3: 420mmx297mm

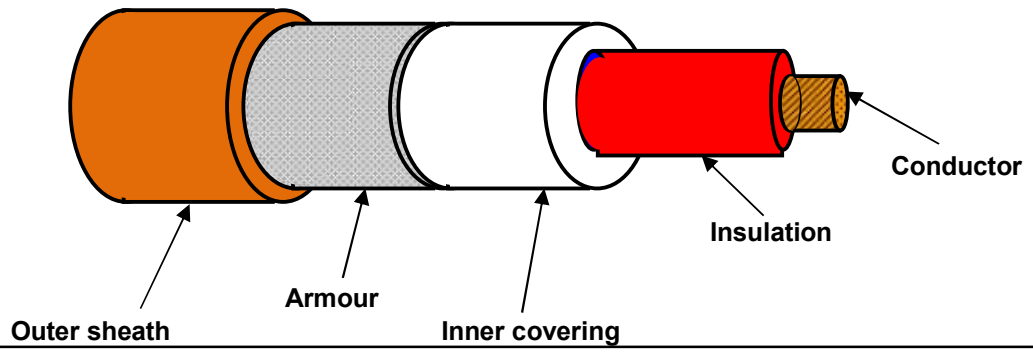
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	To Tag	To Main Function	To Area	Material ID	Material Desc.	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
84111-CEL-2-P	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						CB-200F1	Isolation Battery Box for DC UPS 10 kVA	Lower Deck (B-100)	BA-200F1	Battery Bank for DC UPS 10 kVA	Lower Deck (B-100)	ELECV26-1X25	Cable Cu Cl.2/MGT/EPR/LSZH/GSWB/LSZH 0,6/1kV 1Cx25mm² - Orange (Ins. Red) - DC	T2_M20_Double			T2_M20_Double				L-300-101-LVT-062

FLEI s.r.l.

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

1CX25 - DC POWER CABLE - Fire Resistant & Flame Retardant - ARMOURED



TECHNICAL FEATURES

Conductor :	**STRANDED COMPACTED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	Mica/Glass Tape/s (MGT) plus EPR compound, quality to IEC 60092.360, Nominal Thickness 1,2 mm	
Core colour code :	**Red**	
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 :	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 - 1CX25 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 :	(11,2 ± 10%) mm	
Over Armour diameter :	(12,4 ± 10%) mm	
Outer diameter :	(15,0 ± 10%) mm	
Bending radius :	cable outer diameter x 10	(in fixed installation)
Voltage test :	3,5 kV a.c. for 5' (Between Core - Armour)	
Conductors DC Resistance :		IEC 60228 Class 2
Insulation Resistance :	≥ 480 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.

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	84111-CEL-2-N	: DC UPS - Battery Isolator / DC UPS - Battery			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-00	: DC 10 kVA UPS System (UP-200F1)			Module	LD_B-100
TASK	code	C10000661		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	1X25 mm2	Color	Orange
From	CB-200F1	To	BA-200F1		

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

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	84111-CEL-2-N	: DC UPS - Battery Isolator / DC UPS - Battery			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-00	: DC 10 kVA UPS System (UP-200F1)			Module	LD_B-100
TASK	code	C10000661		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0.2	
6		PH 2	NA	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		0.2	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		NA	
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	NA	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

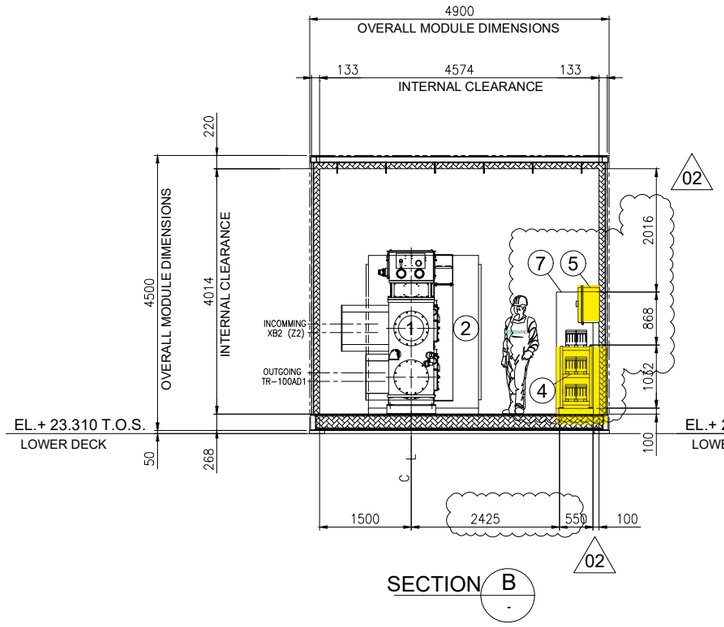
TESTING INSTRUMENTS USED

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

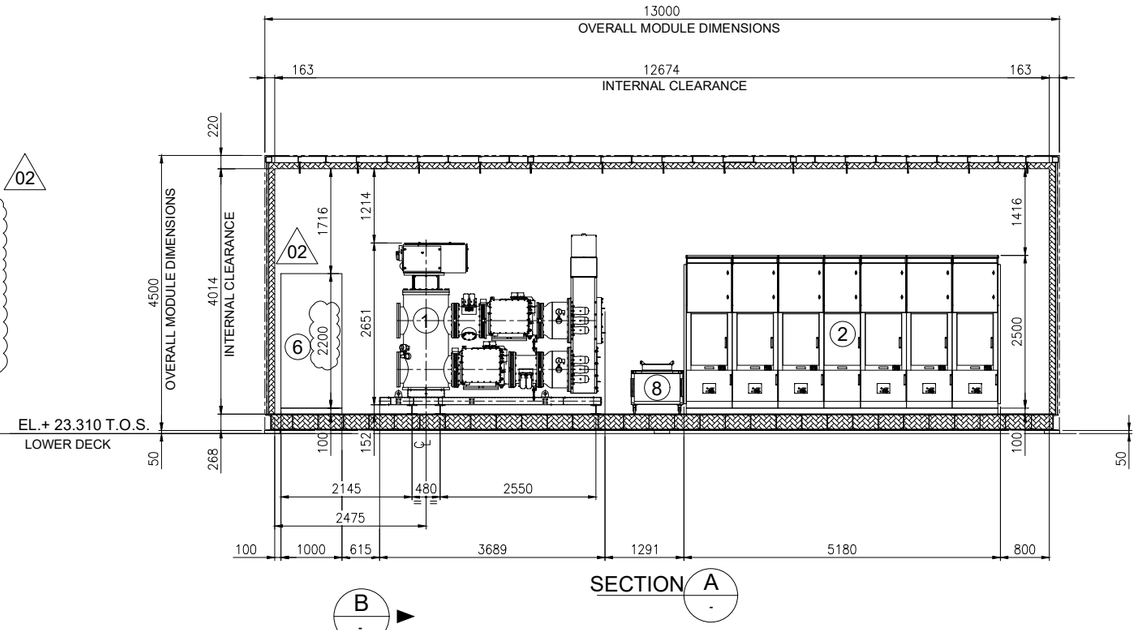
Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (Rosetti Marino)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-10-21	2024-10-25	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-10-21T17:26:17.968Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-10-25T08:45:00.042Z	

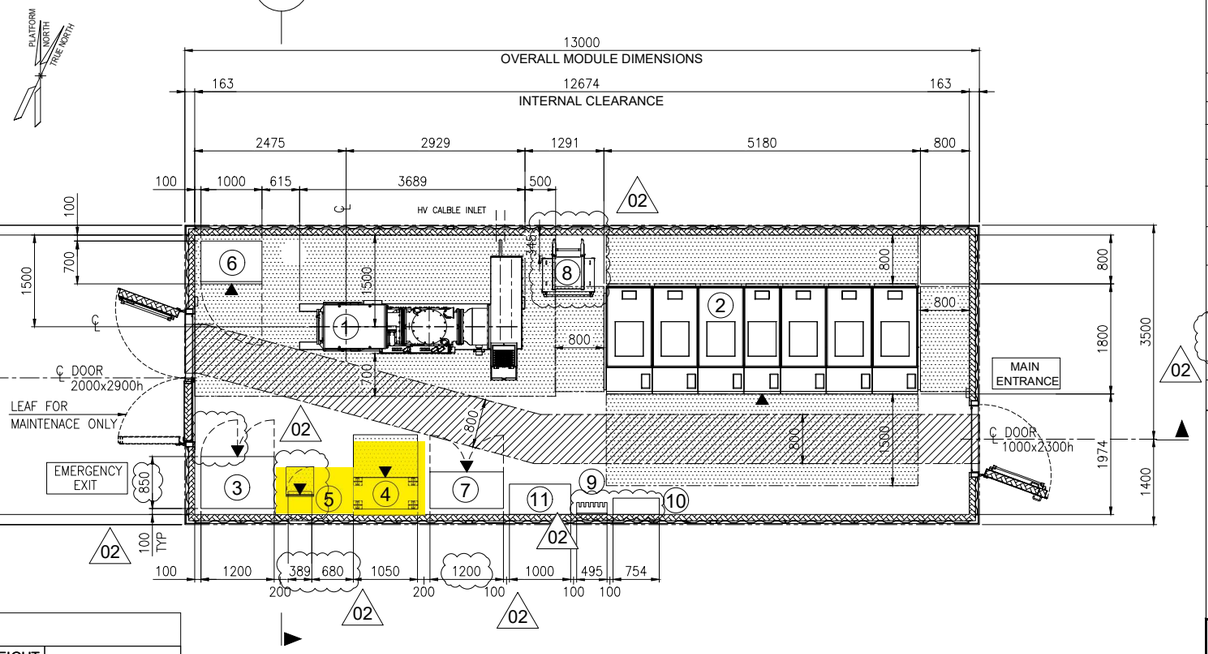
DRAWING NO. 123A90-DDL-EL-DL-20104 | REV. 02



SECTION B -



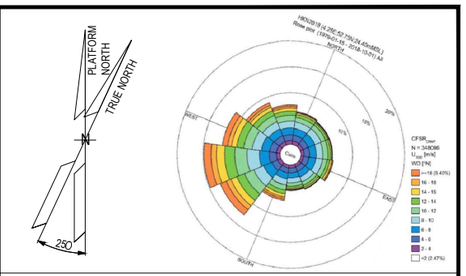
SECTION A -



A -

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

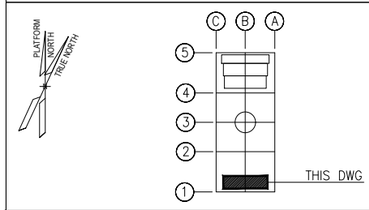
LEGEND

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



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

GENERAL NOTES:

1. FOR EQUIPMENT AND SYSTEM TAG NUMBERING REFER THE DOCUMENT 123A90-PML-DIG-PRO-00002

2. IDENTIFICATION ABBREVIATIONS FOR CABLES & OTHER ELECTRICAL EQUIPMENTS:

A) IDENTIFICATION COLOR CODE OF THE ELECTRICAL CABLE

BK = BLACK
BN = BROWN
BU = BLUE
GY = GRAY
RD = RED
Y/G = YELLOW AND GREEN

B) IDENTIFICATION CODE OF THE ELECTRICAL EQUIPMENT

TR = TRANSFORMER
NER = NEUTRAL EARTH RESISTOR
JB = JUNCTION BOX
CP = CONTROL PANEL

C) FUNCTION CODE OF THE ELECTRICAL EQUIPMENT

AP = ALARM PANEL
UP = AC UPS & DC UPS
BA = BATTERY
BC = BATTERY CHARGER / RECTIFIER
CB =CIRCUIT BRAKER BOX
CN = CATHODIC PROTECTION
CP = CONTROL PANEL
DP = DISTRIBUTION PANEL
JB = JUNCTION BOX
NC = NAVIGATIONAL AID CENTRAL CONTROL PANEL
RR = RESISTOR (EARTHING)
SB = SWITCHBOARD

D) IDENTIFIER ABBREVIATIONS OF THE ELECTRICAL SYSTEM:

EMCS = ELECTRICAL MONITORING & CONTROL SYSTEM
GIS = GAS INSULATED SWITCHGEAR
HVAC = HEATING, VENTILATION, AIR CONDITIONING
HV = HIGH VOLTAGE
MV = MEDIUM VOLTAGE
LCP = LOCAL CONTROL PANEL
LV = LOW VOLTAGE
UPS = UNINTERRUPTIBLE POWER SUPPLY
BESS = BATTERY ENERGY STORAGE SYSTEM
PAS = PROCESS AUTOMATION SYSTEM

E) IDENTIFIER OF THE LOADED PHASE FOR SINGLE-PHASE EQUIPMENT POWER SUPPLY(LV):

L = LINE
N = NEUTRAL
PE = PROTECTIVE EARTH

F) IDENTIFIER OF THE LOADED PHASE FOR THREE-PHASE EQUIPMENT POWER SUPPLY(MV&LV):

L1 = LINE 1
L2 = LINE 2
L3 = LINE 3

3. RED CONDUCTOR MUST BE COVERED WITH BLUE SLEEVE AT THE ENDS, TO USE IT AS NEUTRAL.

4. THE MINIMUM CABLE LENGTH IS 15 M, THE CABLE CANNOT BE SHORTER.

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

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
GENERAL NOTES

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

SCALE : NTS

A3

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

SHEET 006

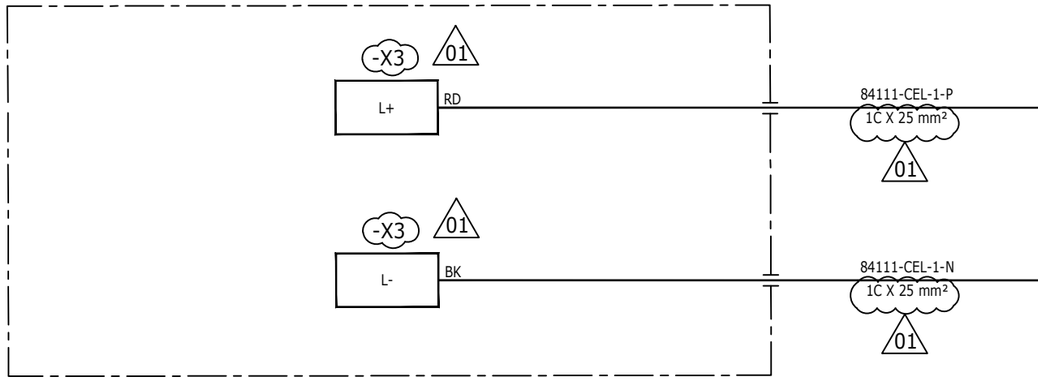
REV. 01

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

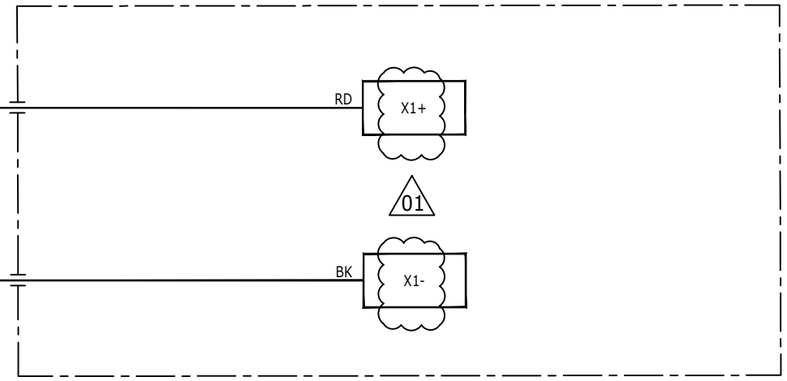
F.to UNI A3: 420mmx297mm

FROM	TO

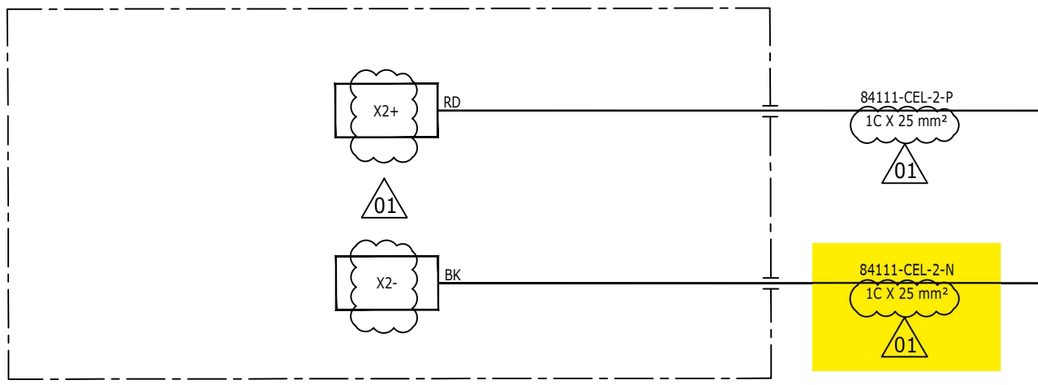
DESCRIPTION: DC UPS - CHARGER
TAG NUMBER: BC-200F1



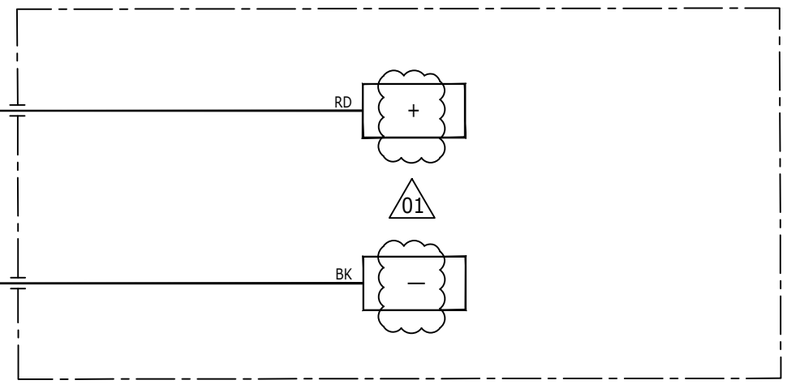
DESCRIPTION: DC UPS - BATTERY ISOLATOR
TAG NUMBER: CB-200F1



DESCRIPTION: DC UPS - BATTERY ISOLATOR
TAG NUMBER: CB-200F1



DESCRIPTION: DC UPS - BATTERY
TAG NUMBER: BA-200F1



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

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
DC UPS – CHARGER & DC UPS – BATTERY ISOLATOR

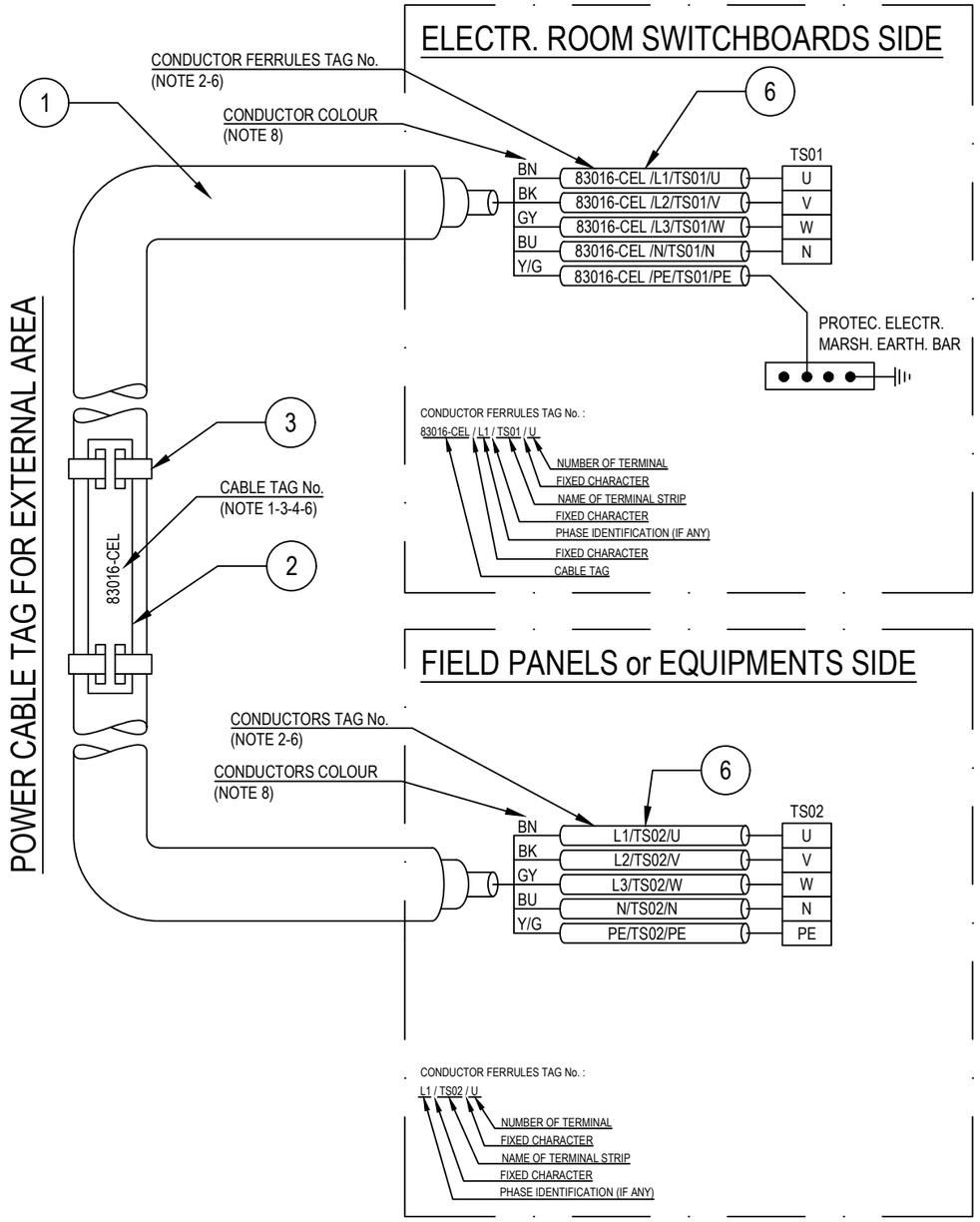
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 065 | REV. 01

F.to UNI A3: 420mmx297mm

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

C02



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

NOTES:

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

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

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

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

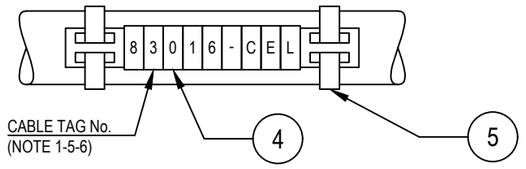
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

6) CABLE AND CONDUCTOR TAG ARE INDICATIVE ONLY.

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

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

POWER CABLE TAG FOR INTERNAL AREA



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

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

CROSSWIND

ROSETTI MARINO

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

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

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

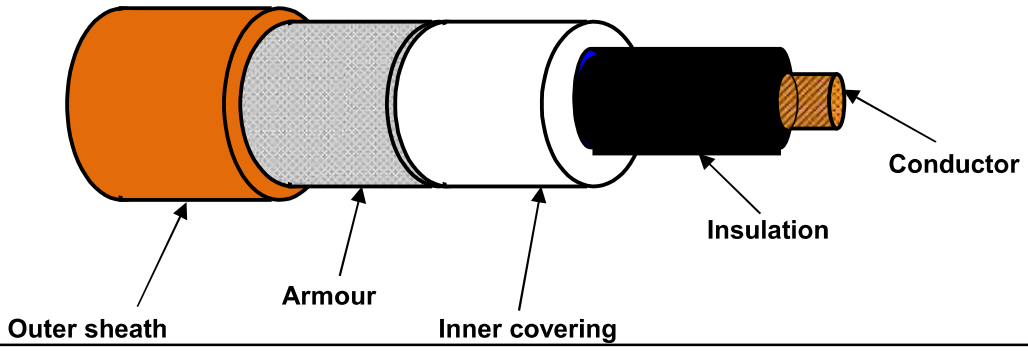
F.to UNI A3: 420mmx297mm

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

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	To Tag	To Main Function	To Area	Material ID	Material Desc.	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
84111-CEL-2-N	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						CB-200F1	Isolation Battery Box for DC UPS 10 kVA	Lower Deck (B-100)	BA-200F1	Battery Bank for DC UPS 10 kVA	Lower Deck (B-100)	ELECV27-1X25	Cable Cu Cl.2/MGT/EPR/LSZH/GSWB/LSZH 0,6/1kV 1Cx25mm² - Orange (Ins. Black) - DC	T2_M20_Double			T2_M20_Double				L-300-101-LVT-062

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

1CX25 - DC POWER CABLE - Fire Resistant & Flame Retardant - ARMOURED



TECHNICAL FEATURES

Conductor :	**STRANDED COMPACTED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	Mica/Glass Tape/s (MGT) plus EPR compound, quality to IEC 60092.360, Nominal Thickness 1,2 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 :	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 - 1CX25 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 :	(11,2 ± 10%) mm	
Over Armour diameter :	(12,4 ± 10%) mm	
Outer diameter :	(15,0 ± 10%) mm	
Bending radius :	cable outer diameter x 10	(in fixed installation)
Voltage test :	3,5 kV a.c. for 5' (Between Core - Armour)	
Conductors DC Resistance :		IEC 60228 Class 2
Insulation Resistance :	≥ 480 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.

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

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	BA-200F1	: Battery Bank for DC UPS 10 kVA		Dwg	123A90-DDL-EL-DS-20036	
	S/Sys	84-00	: DC 10 kVA UPS System (UP-200F1)		Module	LD_B-100	
TASK	code	C10000846	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Electrical	Form	CPX17	Battery

1	Check battery is installed in accordance with manufacturer's instructions with sufficient clearance and accessibility for maintenance.	OK
2	Check battery cells are identified and tagged correctly.	PL
3	Check battery data against data sheet /project specification.	OK
4	Check all nuts and links are fitted, tightened and greased.	OK
5	Check caps for transportation have been removed.	NA
6	Check terminals protecting caps are installed.	PL
7	Check cells interconnections against drawings.	OK
8	Check cable connections.	OK
9	Check all electrolyte levels are correct (if applicable).	NA
10	Check special tools and safety equipment are available (if any).	NA
11	If required produce Red Line Mark Up for "AS BUILT"	

Battery data

Manufacturer :	FAAM	Serial N° :	NA	Battery Type :	FLG 12-150
N° of cells :	10	Cell voltage :	12 V d.c	Battery charger :	10 h
Battery capacity :	150 AH	Battery voltage	120 V d.c	Ambient temp.	20°C

TESTING AND MEASUREMENT INSTRUMENT USED

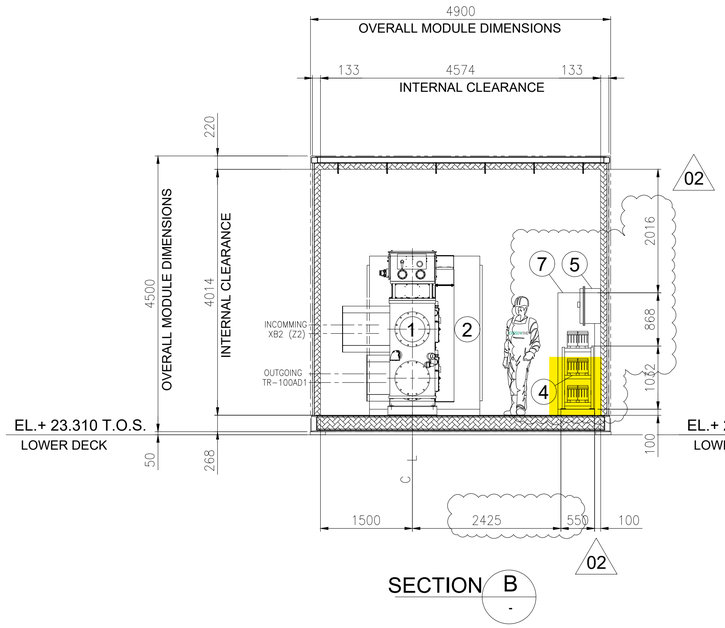
Type	Serial n°	Calibration certificate	Validity
TORQUE WRENCH 4-20Nm	118751936231191561	278623	02.10.2024

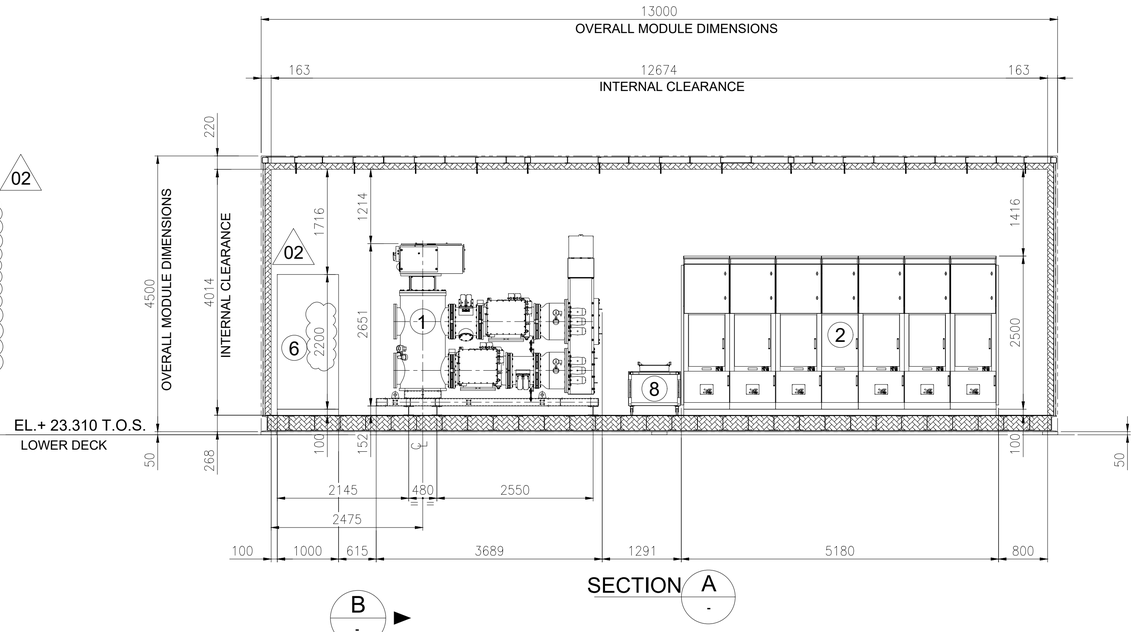
Cell number	1	2	3	4	5	6	7	8	9	10	11	12
Connection tightening	12 Nm	12 Nm	12 Nm	12 Nm	12 Nm	12 Nm	12 Nm	12 Nm	12 Nm	12 Nm		
Electrolyte level	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Cell number	13	14	15	16	17	18	19	20	21	22	23	24
Connection tightening												
Electrolyte level												
Cell number	25	26	27	28	29	30	31	32	33	34	35	36
Connection tightening												
Electrolyte level												
Cell number	37	38	39	40	41	42	43	44	45	46	47	48
Connection tightening												
Electrolyte level												

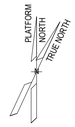
Comments:

	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (Rosetti Marino)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-10-22	2024-10-30	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-10-22T11:57:36.236Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-10-30T14:30:10.820Z	

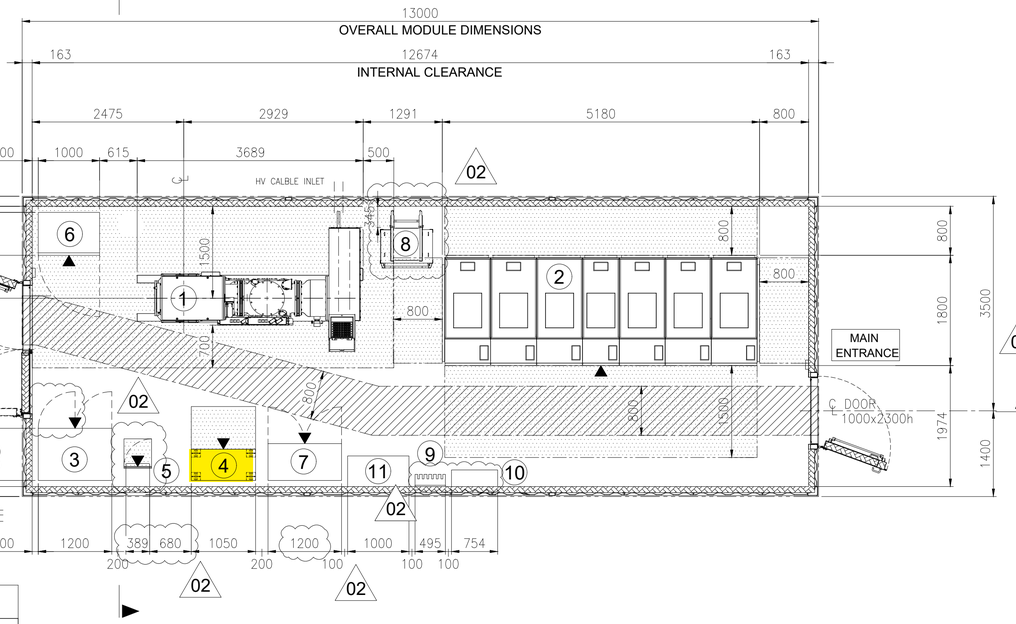
DRAWING NO. 123A90-DDL-EL-DL-20104 REV. 02



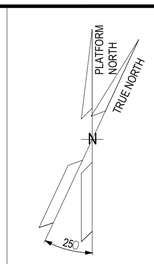


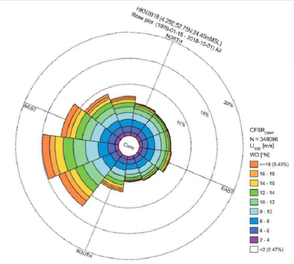


B -



A -





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

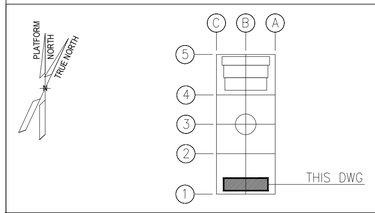
LEGEND

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



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	

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

PLATFORM NORTH
TRUE NORTH

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20136**

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

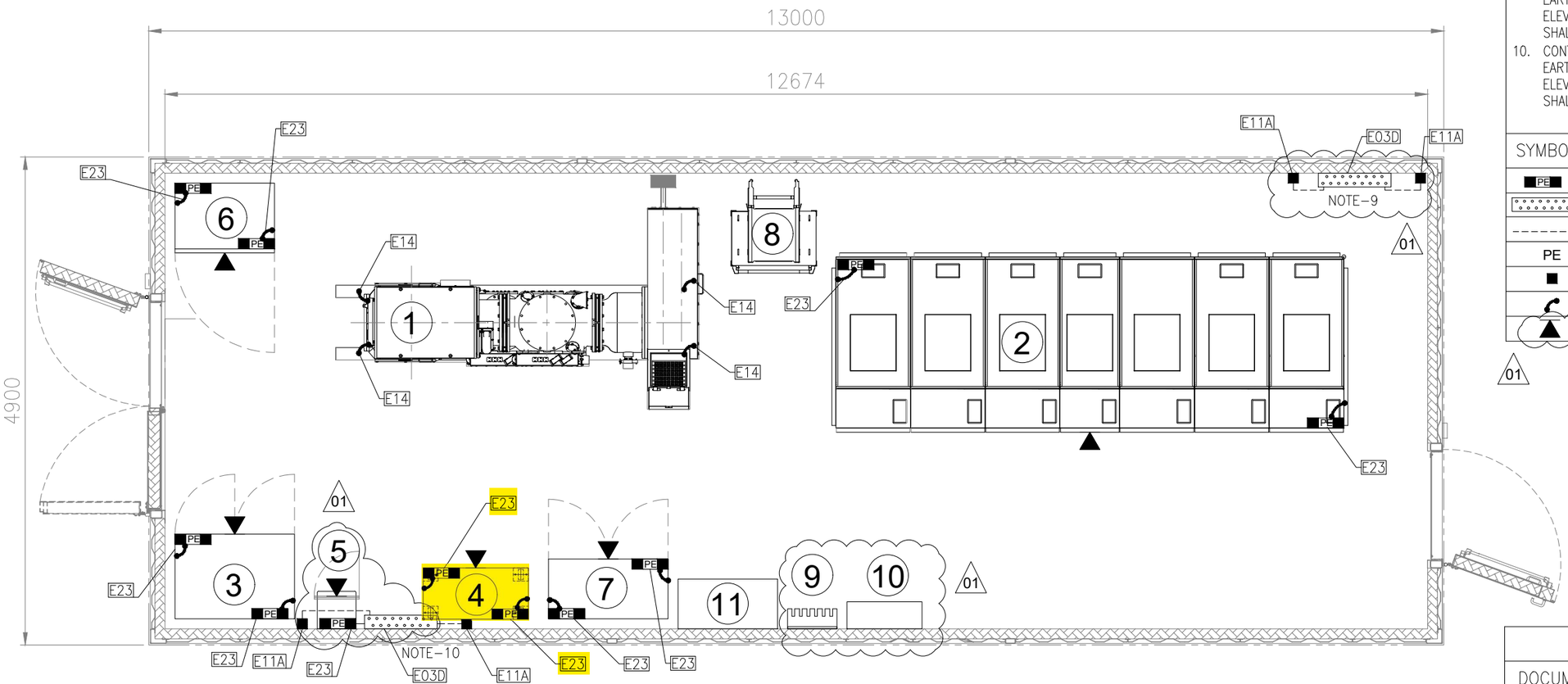
ROSETTI MARINO SpA

EQUIPMENT LIST		
REF.	TAG No.	DESCRIPTION
1	HNA6-AFA70	66kV SWITCHGEAR (GIS)
2	SG-100D1	6.6kV SWITCHGEAR
3	UP-200F1	DC UPS PANEL
4	BA-200F1	DC UPS BATTERY RACK
5	CB-200F1	ISOLATOR FOR DC UPS
6	CP-100E1	66 kV SWITCHGEAR LOCAL CONTROL PANEL
7	B100-HSB-001	DISTRIBUTION & HVAC PANEL – HV SWITCH ROOM
8	–	SERVICE TROLLEY FOR 6.6kV SWITCHGEAR
9	–	TOOL BOX
10	–	ELECTRIC SAFETY KIT
11	–	TABLE

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 NORTH-EAST CORNER AT AN ELEVATION OF 2.8M FROM THE CONTAINER FLOOR. EARTHING BOSS SHALL BE INSTALLED AT SAME ELEVATION 2.8M.
10. 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.



EARTHING LAYOUT
B-100-HV(66kV/6.6kV) SWITCHROOM
PLAN
EL.+ 23.310 T.O.S.

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-20104	ELECTRICAL EQUIPMENT LAYOUT- HV SWITCHROOM
01 1724000049-AR-DD-00018	B-100 DETAILED DRAWINGS-E&I SHELTERS

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-HV SWITCHROOM "B-100"HV SWITCHROOM

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

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-EL-DL-20136	003	01

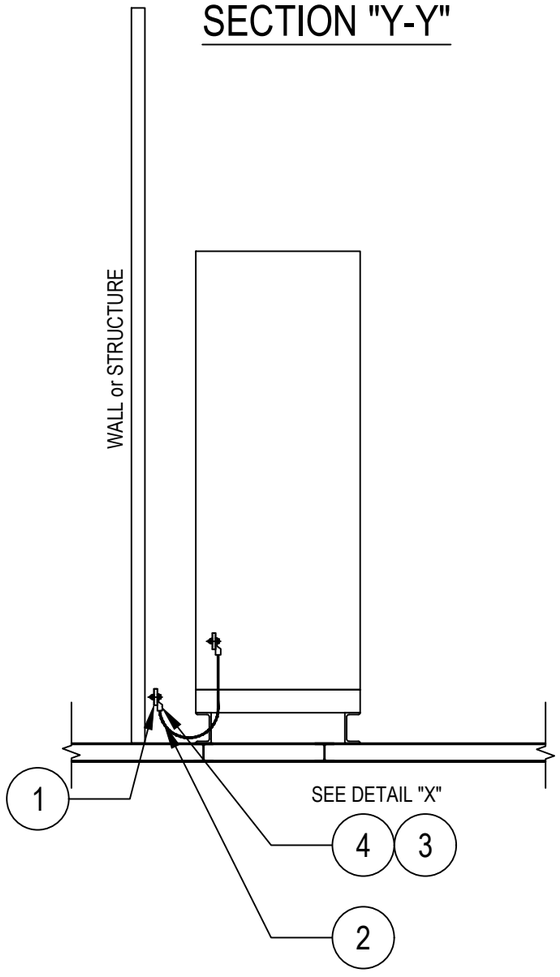
F.to UNI A3: 420mmx297mm

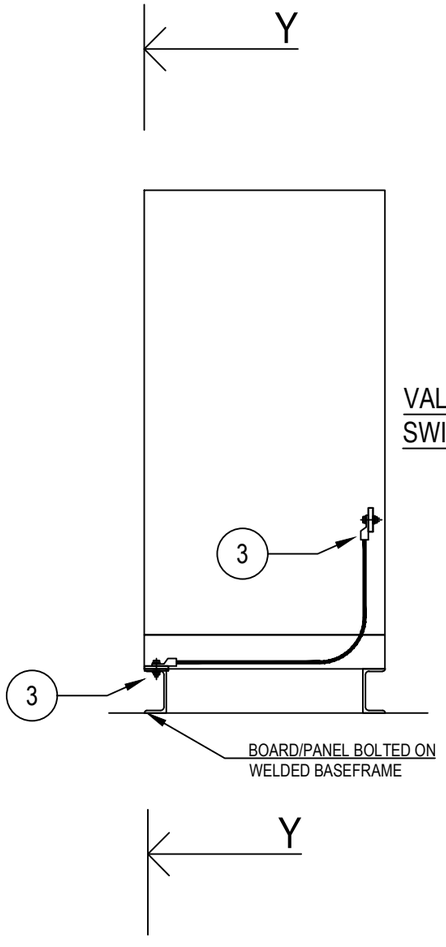
File Name : 123A90-DDL-EL-DL-20136 Rev. 01

E23

POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	MARSHALLING EARTHING BAR	TINNED COPPER	50X5		NOTE 1
2	Y/G INSULATING COPPER CONDUCTOR	COPPER	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	

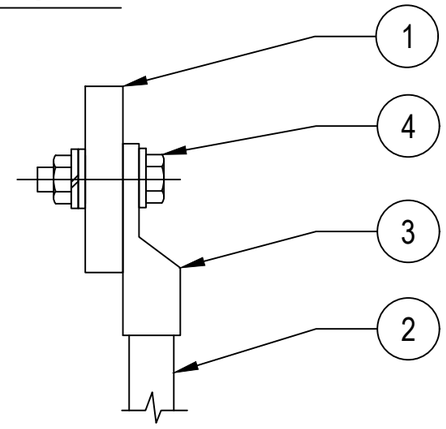
SECTION "Y-Y"





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_F	17/10/24	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

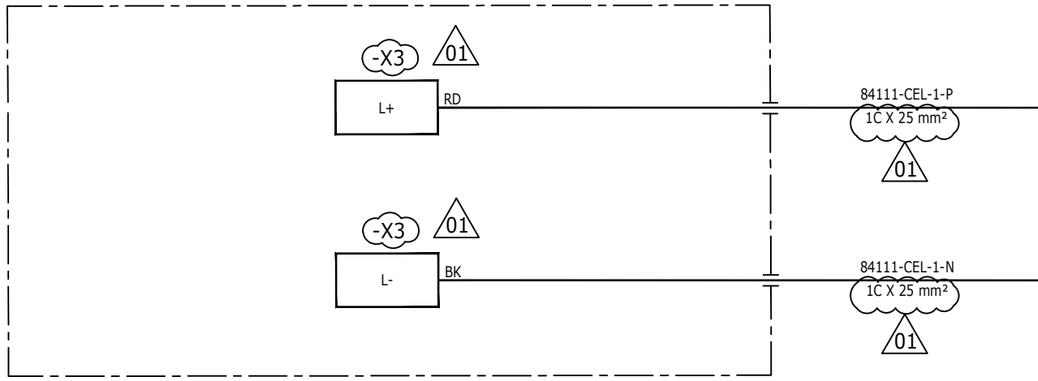
A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-EL-DD-20090	011	02

F.to UNI A3: 420mmx297mm

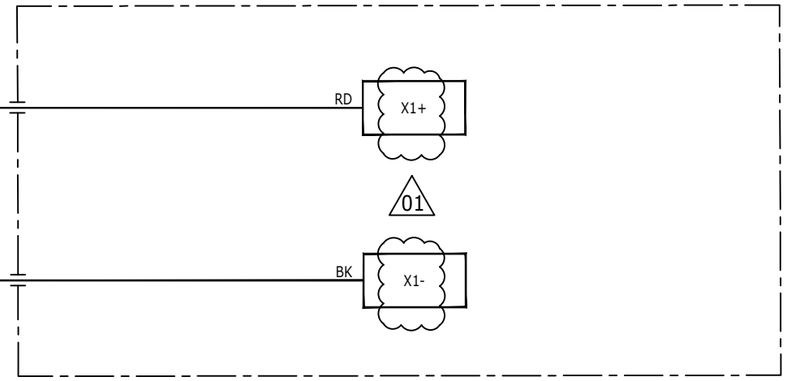
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FROM	TO

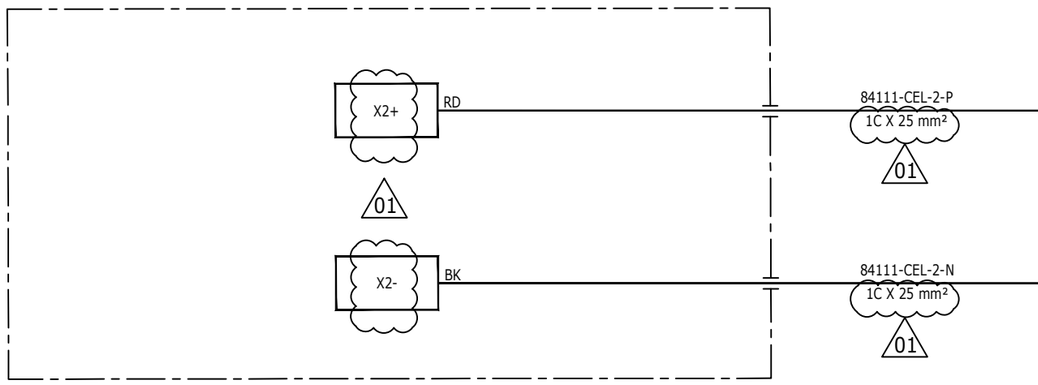
DESCRIPTION: DC UPS - CHARGER
TAG NUMBER: BC-200F1



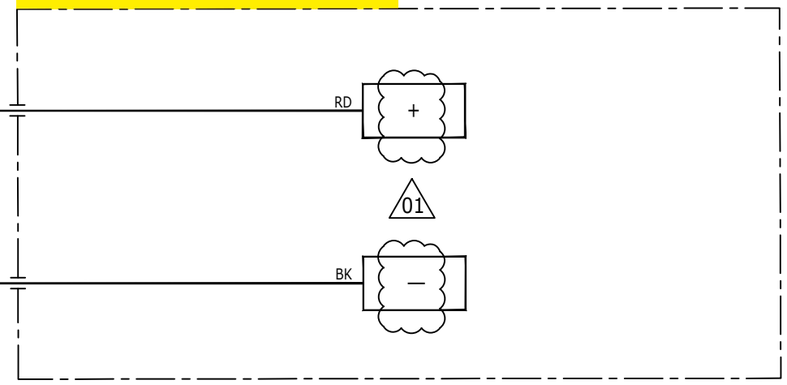
DESCRIPTION: DC UPS - BATTERY ISOLATOR
TAG NUMBER: CB-200F1



DESCRIPTION: DC UPS - BATTERY ISOLATOR
TAG NUMBER: CB-200F1



DESCRIPTION: DC UPS - BATTERY
TAG NUMBER: BA-200F1



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

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
DC UPS – CHARGER & DC UPS – BATTERY ISOLATOR

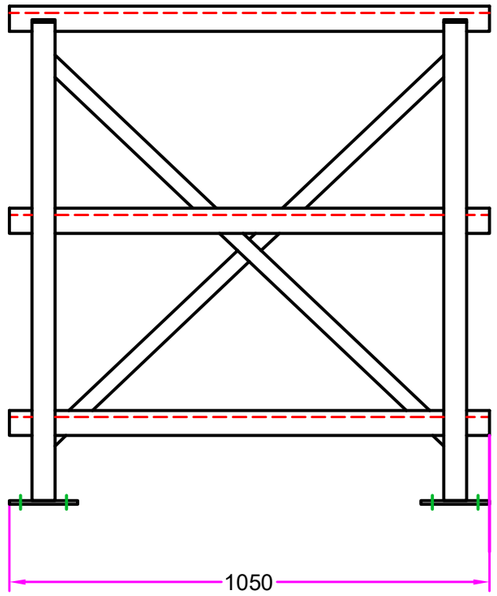
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

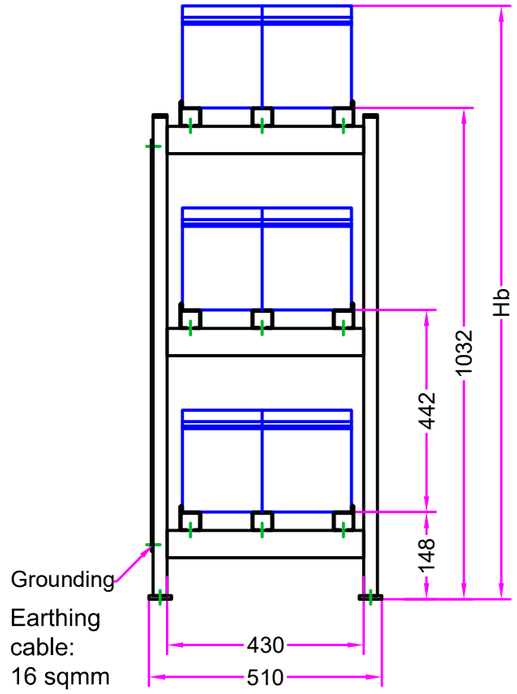
A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 065 | REV. 01

F.to UNI A3: 420mmx297mm

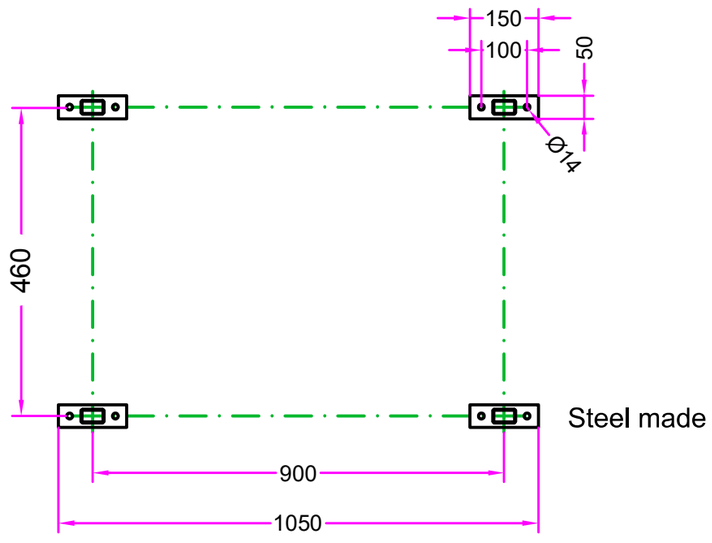
File Name : 123A90-DDL-EL-DG-20162 Rev. 01

Battery Rack
BA-200F1





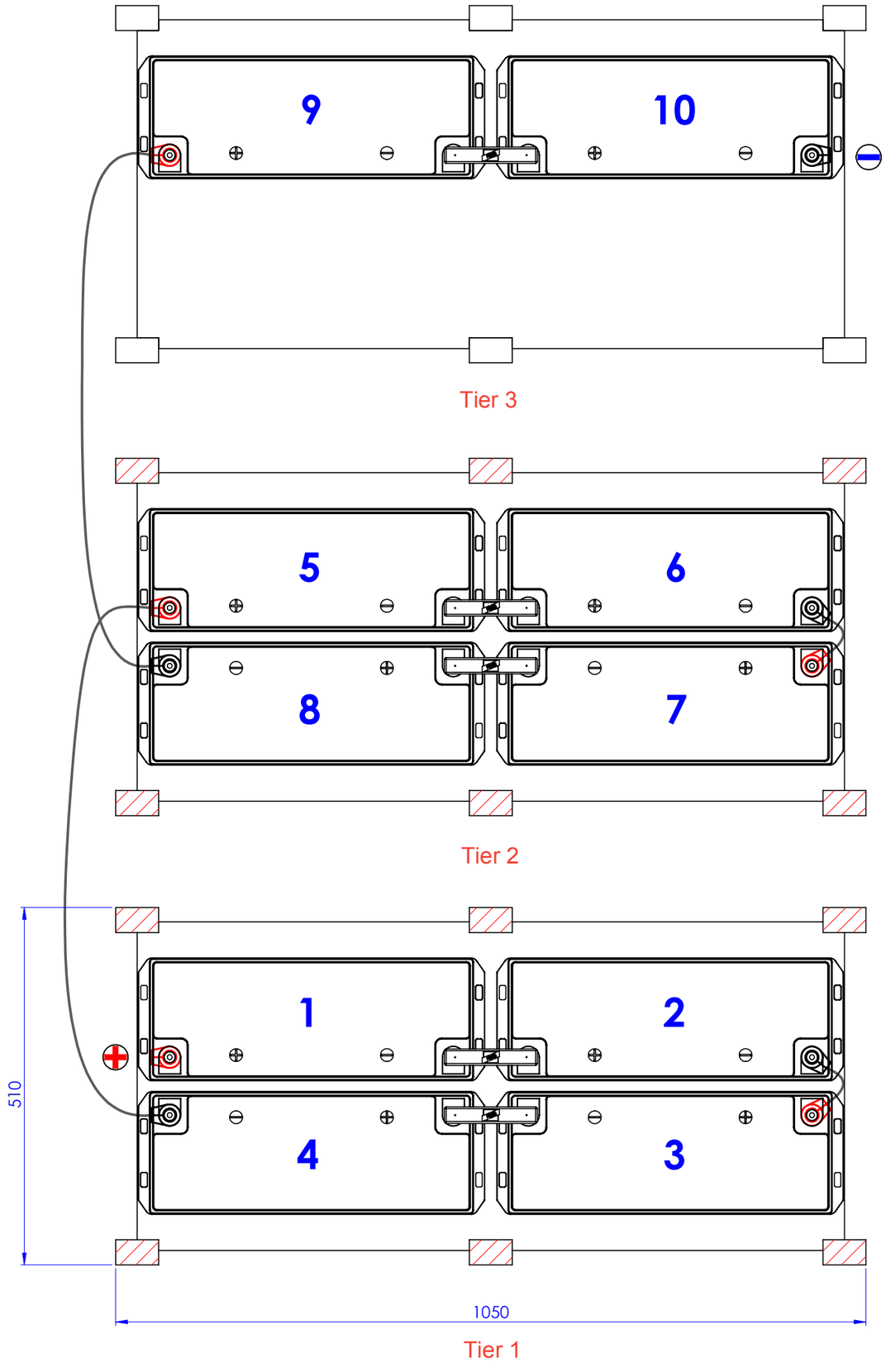
Foot-Print:



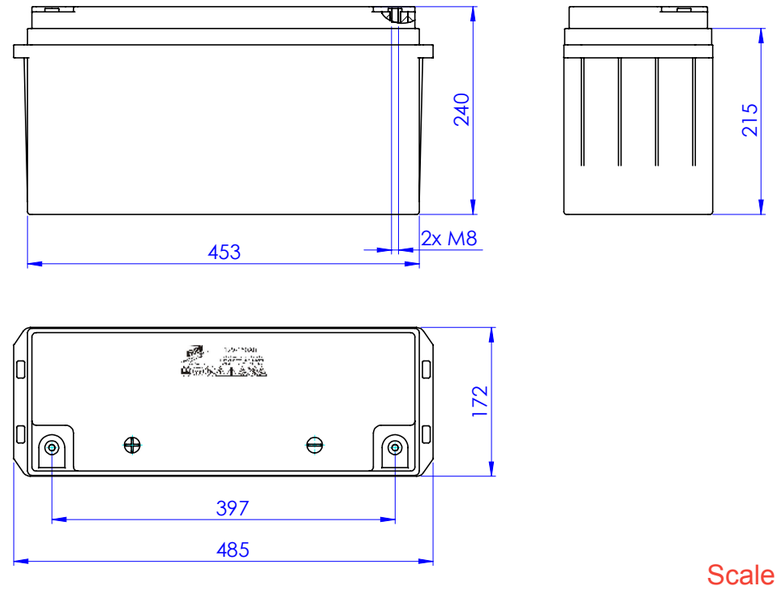
Rack weight : 44,4 kg
Battery weight : 475,0 kg
Total weight : 519,4 kg

Material:	S235 JR EN 10025 (St-37-2)		Date	Name	Checked	Execution: Rack, Standard	Drawing-/Article No: 3L2115	Rev: 00
Coating:	Plastic Coated		16/24	Riedel	St.Selig	Type: 3E-PGL 2-11 with FIX002		
Tolerance:	DIN ISO 2768 "C"							
Battery:			Scale: none			Production Details:	Welding execution according to	

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Battery block : FLG12-150



Scale 1:5

BILL OF MATERIALS	CODE	WEIGHT (kg)	Q.TY
CELL FLG 12-150	11000495	47,50	10
COPPER TIN STRIP FLL-FHP serie	41000222	0,04	5
CONNECTION AND AGM COVER CENTER DISTANCE 100	41000251	0,01	5
CELLS CONNECTION CABLE 50 mm	21000191	0,5	4 m
CABLE LUG F8 X 50	41005167	0,3	10
CABLE LUG COVER BLACK 50040	41000243	0,008	5
CABLE LUG COVER RED 50039	41000244	0,008	5

REV./REV.	DATA/DATE	PROGETTISTA/DESIGNER	DISEGNATO/DRAWN	APPROVATO/APPROVED	DESCRIZIONE MODIFICHE/DESCRIPTION REVISIONS
TOLLERANZE GENERALI/GENERAL ALLOWANCES: NORMA UNI EN 22768-mk			CARATTERISTICHE ELETTRICHE/ELETTRIC CHARACTERISTICS:	PESO BATT./BATT. WEIGHT: 475.24 kg	PROGETTISTA/DESIGNER: P. VECCHIARELLI
RUGOSITA' SUPERFICIALE/SUPERFICIAL ROUGHNESS: NORMA UNI ISO 1302					DISEGNATO/DRAWN: P. VECCHIARELLI
FORME E POSIZIONE/FORMS AND POSITION: NORMA UNI ISO 1101			TIPO ELEMENTO/CELL TYPE: 10 FLG12-150	PESO EL./CELL WEIGHT: 47.50 kg	APPROVATO/APPROVED: F. PAGLIARINI
SCALA/SCALE: 1:5	PROIEZIONE/PROJECTION:	FOGLIO/SHEET: A2	CODICE SAP EL./CELL SAP CODE: 11000495		DATA/DATE: 10/04/2024
DISEGNO/DESCRIPTION:				FILE-DISEGNO/FILE-DRAWING: layout 10 x FLG 12-150	REV./REV. 1

FAAM

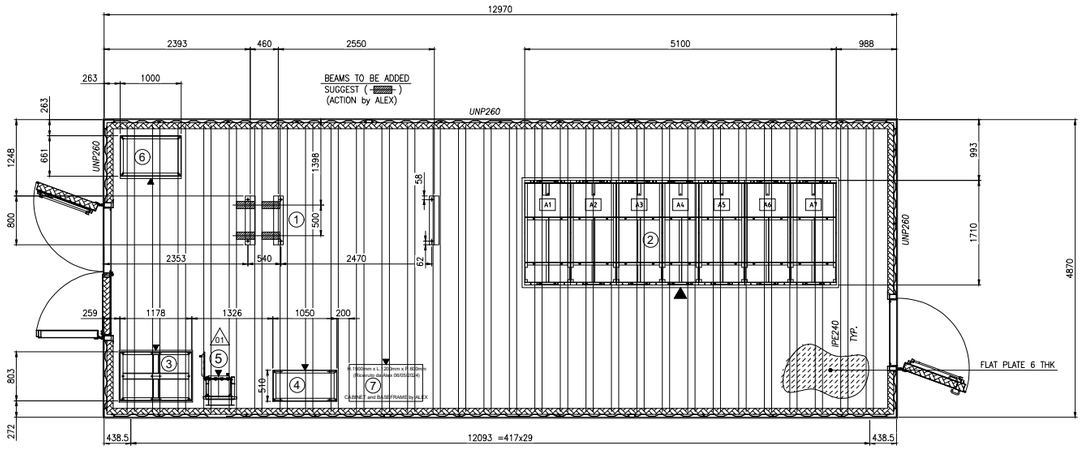
1724000372-EL-DG-00010

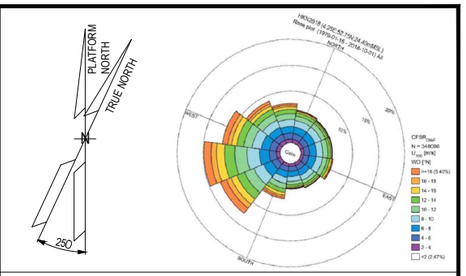
DC UPS 10kW - 10 x FLG 12-150

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DRAWING NO. 1724000049-AR-DD-00018 | REV. 02

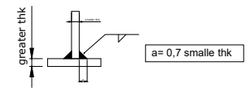
B-100
I&T EQUIPMENT ROOM
BASEFRAME LOCATION PLAN



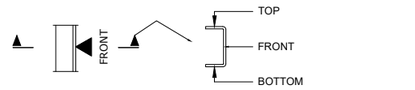


NOTES

1. UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN MILLIMETERS.
2. ALL WELDINGS SYMBOLS ARE IN ACCORDANCE WITH A.W.S. CODE D.1.1
3. UNLESS OTHERWISE INDICATED FILLET WELDS SHALL HAVE FOLLOWING DIM.:



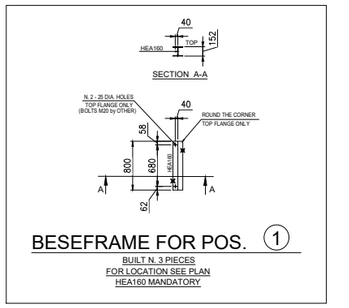
4. ALL WELDS ON TOP & BOTTOM SIDES OF BASEFRAMES MUST BE PERFECTLY SMOOTHED.
5. WHERE INDICATED " ▲ " SHOULD BE STAMP "FRONT", ABOVE "TOP" AND BELOW "BOTTOM".



6. SURFACE TREATMENT ACCORDING DOCUMENT N. 1724000049-MAT-PRO-00004 - PAINTING PROCEDURE FINAL COLOUR LIGHT GREY RAL 7035.

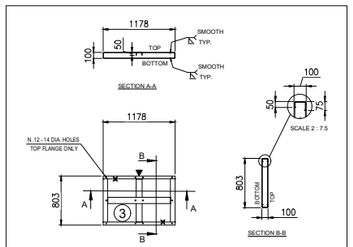
LEGEND

ASI = ALEX SISTEMI



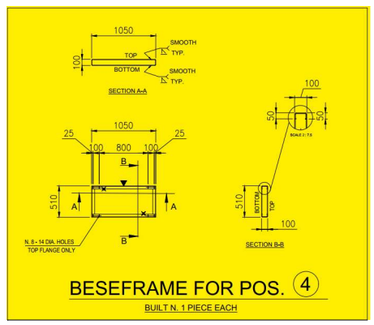
BESEFRAME FOR POS. ①

BUILT N. 3 PIECES
FOR LOCATION SEE PLAN
HEA160 MANDATORY



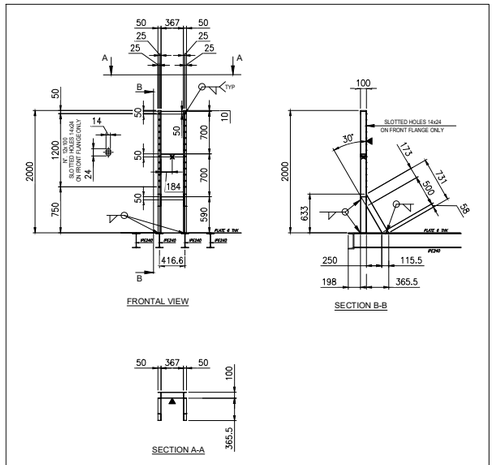
BESEFRAME FOR POS. ③

BUILT N. 1 PIECE



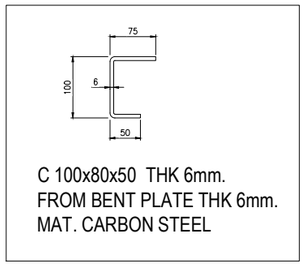
BESEFRAME FOR POS. ④

BUILT N. 1 PIECE EACH

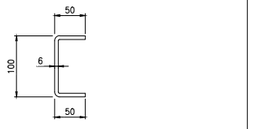


BESEFRAME FOR POS. ⑤

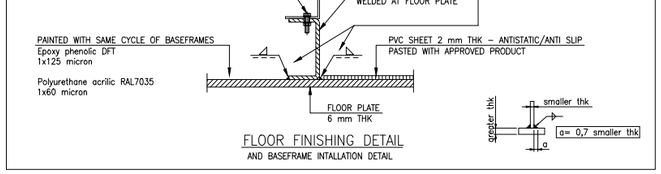
BUILT N. 1 PIECE EACH



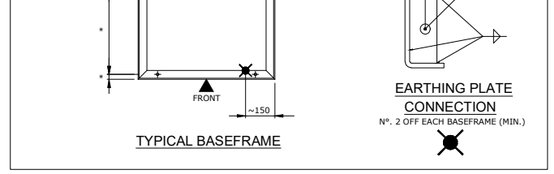
C 100x80x50 THK 6mm.
FROM BENT PLATE THK 6mm.
MAT. CARBON STEEL



C 100x50x50 THK 6mm.
FROM BENT PLATE THK 6mm.
MAT. CARBON STEEL

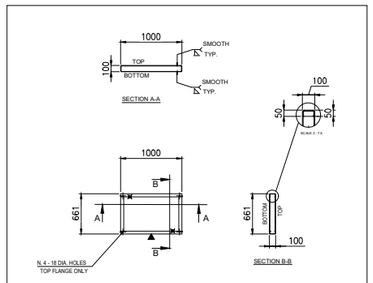


FLOOR FINISHING DETAIL
AND BASEFRAME INTALLATION DETAIL



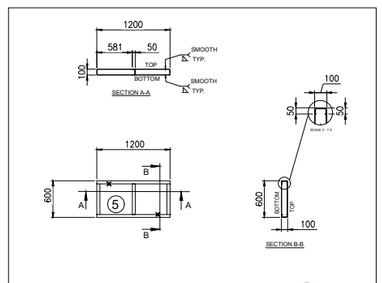
TYPICAL BASEFRAME

EARTHING PLATE CONNECTION
N°. 2 OFF EACH BASEFRAME (MIN.)



BESEFRAME FOR POS. ⑥

BUILT N. 1 PIECE



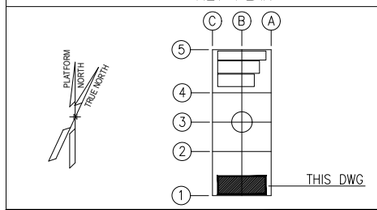
BESEFRAME FOR POS. ⑦

BUILT N. 1 PIECE

EQUIPMENT LIST

REF.	TAG No.	DESCRIPTION	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)	WEIGTH (Kg)	SCOPE
1	HNA6-AFA70	66kV SWITCHGEAR (GIS)	3689	2025	2651	2600	ASI
2	SG-100D1	6.6kV SWITCHGEAR	5180	1800	2500	7400	ROSETTI MARINO
3	UP-200F1	DC UPS PANEL	1200	850	2105	500	ASI
4	BA-200F1	DC UPS BATTERY RACK	1050	510	1272	522	ASI
5	CB-200F1	ISOLATOR FOR DC UPS	600	300	800	100	ASI
6	CP-100E1	66 kV SWITCHGEAR LOCAL CONTROL PANEL	1000	700	2100	2100	ASI
7	B100-HSB-001	DISTRIBUTION & HVAC PANEL - HV MV ROOM	1200	600	1900	TBD	ASI

KEY PLAN



ALEXSISTEMI spa

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	11/07/24	M.G.	O.A.	C.A.	ISSUE FOR REVIEW (IFR)
01	08/07/24	M.G.	O.A.	C.A.	ISSUE FOR REVIEW (IFR)
00	23/05/24	M.G.	O.A.	C.A.	ISSUE FOR CLIENT REVIEW (ICR)

CROSSWIND | ROSETTI MARINO

TITLE :
B-100 DETAILED DRAWINGS-E&I SHELTERS

CONTRACT NO./TITLE CONTRACT_NO. 1724000049			SCALE 1:50
DRAWN M.G.	CHECKED O.A.	APPROVED C.A.	DATE 11/07/24
A1	DRAWING NO. 1724000049-AR-DD-00018	SHEET 003	REV. 02

File Name : 1724000049-AR-DD-00018-REV.02

Row		S-702D Data Sheet for DC Uninterruptible Power Systems (UPS) (IEC 62040-5-3)					Issue
2	Tag No. :	UP-200F1					
3	Service :	DC UPS					
4	Ref. Clause	Description	Project Requirement	Manufacturer Declared Values	Unit	Additional notes	
5		**GENERAL**					
6	5.1.2	Vendor :	Input Data	AEG Power Solutions			
7	5.1.2	Order status :	for purchase	Noted			
8	5.1.2	Purchase order number, date :	1724000372 123A90A rev1 dated 22/4/2024	Noted			
9	5.1.2	Manufacturer :	Input Data	AEG Power Solutions			
10	5.1.2	Model number :	Input Data	2 x Protect RCS 110Vdc 100A			
11	5.1.2	Serial number :	Input Data	Released after production			
12	5.2.3	Application :	Industrial - Offshore	Noted			
13	5.3.2	Purchaser specified rated output power :	10	Confirmed	kVA		
14	5.1.1	Quantity :	1	Confirmed. Redundant system			
15		Conformity assessment system (CAS) level :	D	Noted			
16		**CONFIGURATION**					
17	5.1.1, A.1, Figure A.1, Figure A.3, Figure A.5	DC UPS configuration :	Two (2) 100% rated rectifiers connected to a common (shared) battery rated for the full rated load for the autonomy time	Confirmed			
18	A.2.2	Blocking diode required at output of single DC UPS :	Yes	Confirmed. Diode V21			
19	A.2.3	Scalability :	manufacturer standard	-			
20	5.1.1	DC UPS topology :	direct energy storage connect	Noted			
21	B.2.3	Series converter connect option :	manufacturer standard	Not applicable			
22	5.4.2.3	Battery configuration :	1 x 100%	Confirmed. 30 min autonomy			
23	5.3.2, 5.3.4	Performance classification :	manufacturer standard	-			
24	8.1.1.3	Bi-directional rectifier :	No	Not applicable			
25	8.2.2.11	Remote access required :	Yes (read only)	Confirmed. Modbus TCP			
26	8.2.2.11	Hardware (adapters, connectors, cables, etc.) required for remote monitor :	Yes	Confirmed			
27	8.1.1.5, 8.1.1.6	On-line battery monitoring facility required :	string monitoring	Confirmed			
28	8.1.1.4	On-line battery testing feature required :	No	Noted			
29	8.1.1.4	Battery test load interface :	No	Noted			
30	5.4.2.3	DC earth leakage monitoring required :	Yes	Confirmed			
31	7.4.14	Single line diagram and status display :	on HMI	LCD display without synoptic			
32	8.1.2.11	Black Start feature required :	Yes	Confirmed			
33	8.1.1.1	Earth screen required for isolation transformer :	manufacturer to advise	Confirmed			
34		**PHYSICAL ASPECTS**					
35	7.2.1	Mounting :	floor mounting	Confirmed			
36	7.2.1	Overall cabinet dimensions - length :	Input Data	600 (each charger)	mm		
37	7.2.1	Overall cabinet dimensions - depth :	Input Data	840	mm		
38	7.2.1	Overall cabinet dimensions - height :	Input Data	2105	mm		
39	7.2.1	Reference Outline Drawing number :	Input Data	1724000372-EL-DA-00003			
40	7.2.1	Total DC UPS cabinet mass :	Input Data	250 (each charger)	kg		
41	7.2.1	Total DC UPS mass with batteries (if integrated) :	Input Data	Batteries not integrated	kg		
42	7.2.4, 7.2.5	Cable entry location :	top	Confirmed. By means of cable glands			
43	7.2.4, 7.2.5	Cable entry type :	removable - undrilled plate	Confirmed			
44	7.2.4, 7.2.5	Gland plate material :	manufacturer standard	Steel			
45	7.2.1	Paint colour :	supplier standard	RAL7035			
46	7.2.1	Canopy for cabinet required :	No	Noted			
47	7.3.5	Document holder :	Yes	Confirmed			
48		**INSTALLATION**					
49	4,1	Site :	offshore - fixed	Noted. Painting class C3-H			
50	4,1	Location of DC UPS cabinet installation :	indoor	Noted			
51	7.3.1, 7.3.2	Front access clearance dimensions for operation and maintenance :	800	Noted	mm		
52	7.3.2	Side clearance for ventilation (if required) :	manufacturer to advise	0	mm		
53	7.3.2	Rear clearance for ventilation (if required) :	manufacturer to advise	100 mm	mm		
54	7.2.3, 7.9.3	Installed location of battery :	inside DC UPS enclosure	Battery housed on rack			
55	7.2.3	Maximum battery assembly dimensions (L x D x H) :	Input Data	Battery rack 1050 x 510 x 1032	mm		
56		**SAFETY**					
57	5.1.1	Accessibility :	operator access area	Front access			
58	5.1.1	Key required for cabinet :	Yes	Confirmed			
59	7.2.2	Degree of protection (with closed doors) :	IP31	IP43			
60	7.2.2	Degree of protection (with open doors) :	IP2X	IP20			
61	4.3.2	Area classification :	safe	Noted			
62	4.3.2	Hazardous area certification required :	none	Noted			
63	4.3.2	Level of protection :	N/A	Not applicable			
64	4.3.2	Gas group :	manufacturer to advise	Not applicable			
65	4.3.2	Temperature class :	manufacturer to advise	Not applicable			
66	4.3.2	Equipment protection level :	manufacturer to advise	Not applicable			
67	7.7.5	Cooling fan replacement while DC UPS in service :	No	Noted			
68	5.1.2	Local language for caution/danger/warning labels :	English	Confirmed			
69		**ELECTROMAGNETIC COMPATIBLITY**					
70	5.1.4	Emission :	UPS Cat C3	Confirmed			
71	5.1.4	Immunity :	UPS Cat C3	Confirmed			
72		**ENVIRONMENTAL CONDITIONS**					
73	4.2.1.1	Minimum ambient temperature (operation) :	-8,4	Confirmed with heater option included	°C		
74	4.2.1.1	Maximum ambient temperature (operation) :	40	Confirmed	°C		
75	4.2.1.1	Maximum relative humidity (operation) :	95	Confirmed. Not condensing	%		
76	4.2.1.1	Temperature at which relative humidity is specified (operation) :	Input Data	-	°C		
77	4.2.1.2	Maximum altitude (operation) :	Sea Level	Noted	m		
78	4.2.2	Minimum ambient temperature (storage and transportation) :	-5	Noted	°C		
79	4.2.2	Maximum ambient temperature (storage and transportation) :	40	Noted	°C		
80	4.2.2	Maximum relative humidity (storage and transportation) :	85	Noted	%		

Row		S-702D Data Sheet for DC Uninterruptible Power Systems (UPS) (IEC 62040-5-3)					Issue
2	Tag No. :	UP-200F1					
3	Service :	DC UPS					
4	Ref. Clause	Description	Project Requirement	Manufacturer Declared Values	Unit	Additional notes	
81	4.2.2	Temperature at which relative humidity is specified (storage and transportation) :	Input Data	-	°C		
82	4.3.2	Seismic requirement data :	Zone 2	Noted			
83	4.2.2	Storage site of DC UPS :	indoor – natural ventilation	Noted			
84	4.3.2	Additional or unusual conditions (operation) :	Input Data	Not applicable			
85	4.3.3	Additional or unusual conditions (storage and transportation) :	Input Data	Not applicable			
86	5.1.5	Acoustic noise at 1 m - normal mode :	70	66 dB(A)	dBA		
87	5.1.5	Acoustic noise at 1 m - stored energy mode :	70	66 dB(A)	dBA		
88		**COMMUNICATION INTERFACE(S)**					
89	5,6	(1) Interface media for SCADA (ICSS / DCS) :	serial	Modbus TCP + relays			
90	5,6	(1) Maximum allowable length of communication cable (for copper) :	25	Noted	m		
91	5,6	(1) Interface protocol for SCADA (ICSS / DCS) :	Modbus	Modbus TCP + relays			
92	5,6	(2) Interface media for Electrical Management / Control System :	serial	Modbus TCP + relays			
93	5,6	(2) Maximum allowable length of communication cable (for copper) :	25	Noted	m		
94	5,6	(2) Interface protocol for Electrical Management / Control System :	Modbus	Modbus TCP + relays			
95	5,6	(3) Remote access / monitoring software required :	Yes	Noted			
96	5,6	(3) Interface media for Remote access / monitoring :	ethernet (fiber)	Noted			
97	5,6	(3) Maximum allowable length of communication cable (for copper) :	25	Noted	m		
98	5,6	(3) Interface protocol for Remote access / monitoring :	Modbus	Modbus TCP + relays			
99		**AC INPUT SPECIFICATIONS**					
100	5.2.1	Voltage (steady state, R.M.S) - rated :	400	Confirmed	V		
101	5.2.1	Voltage (steady state, R.M.S - tolerance :	+/- 10	Confirmed	%		
102	5.2.1	Frequency - rated :	50 Hz	Confirmed			
103	5.2.1	Frequency - tolerance :	+/- 2	Confirmed	%		
104	5.2.2	Phases required :	3	3			
105	5.2.2	Neutral required :	Yes	No			
106	5.2.2	Current (R.M.S) - rated (with the energy storage device charged) :	manufacturer to advise	28A max	A		
107	5.2.2	Power factor :	manufacturer to advise	0,81			
108	5.2.2	In-rush (% of rated current) :	manufacturer to advise	Slow-start function included	%		
109	5.2.2	In-rush (time) :	manufacturer to advise	Data not characterized by the factory. Measurable on request	s		
110	5.2.2	Maximum current (with low input volt and energy storage device charging) :	manufacturer to advise	28A max	A		
111	5.2.2	Time for overload (125 % of rated current) :	manufacturer to advise	Not applicable	s		
112	5.2.2	Time for overload (150 % of rated current) :	manufacturer to advise	Not applicable	s		
113	5.2.2	Total harmonic distortion (THD p.u.) :	8	Confirmed. The DC UPS works with an input voltage harmonic distortion ≤ 8%	%		
114	5.2.3	Short circuit current of the input supply :	50	Confirmed. The charger is equipped with an input MCCB (Q1) with Isc = 50kA	kA		
115	5.2.2	Minimum prospective short circuit current :	Input Data	Data not characterized by the factory. Measurable on request	kA		
116	5.2.2	Earth leakage current :	Input Data	Data not characterized by the factory. Measurable on request	mA		
117	5.2.2	AC power distribution system - compatibility :	TN-S	Confirmed			
118	5.2.3	Additional or unusual conditions :	Input Data	Not applicable			
119	5.2.3, 7.5.4	Cable Size (cross-section area) - input mains (Float) :	Input Data	70 sqmm	sq.mm.		
120	7.5.4	Cable Size (cross-section area) - input mains (Boost) :	Input Data	70 sqmm	sq.mm.		
121	7.4.8, 8.1.1.1	Input isolation transformer required :	Select	Confirmed			
122	7.4.10	Input isolation transformer winding :	copper or aluminum	Aluminium			
123		**DC AND BATTERY SPECIFICATIONS**					
124	5.4.2.2	DC voltage level :	110	Confirmed	V d.c.		
125	5.4.2.2	Design life :	5	>12 years	years		
126	5.4.2.2	Float service life :	manufacturer to advise	Dependent from temperature	years		
127	5.4.2.2	Shelf life of battery :	manufacturer to advise	3	months		
128	5.4.2.2	Quantity of cells and strings :	manufacturer to advise	10 blocks - 1 string	nos.		
129	5.4.2.2	Nominal voltage (total) :	manufacturer to advise	120	V d.c.		
130	5.4.2.2	Battery technology :	sealed nickel cadmium	VRLA GEL technology			
131	5.4.2.2	Nominal AH capacity :	manufacturer to advise	150	AH		
132	5.4.2.2	Discharge rate (C-rate) :	manufacturer to advise	C20			
133	5.4.2.2	Electrolyte fill status :	manufacturer standard	Not applicable to VRLA battery			
134	8.1.2.3	Purchaser's requirement (% of battery recharge level - 1) :	80	Confirmed with charging current limited to 0,1C	%		
135	8.1.2.3	Purchaser's requirement (time for battery recharge level - 1) :	10	Confirmed	Hours		
136	8.1.2.3	Purchaser's requirement (% of battery recharge level - 2) :	100	Data not characterized by the factory. Measurable on request	%		
137	8.1.2.3	Purchaser's requirement (time for battery recharge level - 2) :	24	Data not characterized by the factory. Measurable on request	Hours		
138	5.4.2.2	Stored energy time (back-up time at 100% rated load) :	60	30 min @ 10kW load	min		
139	5.4.2.2	Restored energy time (recharge time to 80% capacity) :	manufacturer to advise	10h	hours		
140	5.4.2.2	Ambient reference temperature :	40	Confirmed	°C		
141	5.4.2.2	Earth condition/isolation :	manufacturer to advise	floating			
142	5.4.2.2	Ripple current (R.M.S) :	manufacturer to advise	1% ripple voltage RMS	%		
143	5.4.2.2	Maximum discharge current :	manufacturer to advise	Data not characterized by the factory. Measurable on request	A		
144	5.4.2.2	DC Fault current rating :	manufacturer to advise	Data not characterized by the factory. Measurable on request	A d.c.		
145	5.4.2.2	Cable volt drop recommendation (≤ % at nominal discharge current) :	manufacturer to advise	1	%		
146	5.4.2.2	Charging regime :	manufacturer to advise	Constant voltage, current limited			
147	5.4.2.2	Charge voltage (float) and tolerance band :	manufacturer to advise	2,28Vcell - 13,5 / 13,8 Vblock	V d.c.		
148	5.4.2.2	Charge voltage (boost) and tolerance band :	manufacturer to advise	2,28Vcell - 13,5 / 13,8 Vblock	V d.c.		

Row		S-702D Data Sheet for DC Uninterruptible Power Systems (UPS) (IEC 62040-5-3)					Issue
2	Tag No. :	UP-200F1					
3	Service :	DC UPS					
4	Ref. Clause	Description	Project Requirement	Manufacturer Declared Values	Unit	Additional notes	
149	5.4.2.2	Charge voltage (equalising) and tolerance band :	manufacturer to advise	Not applicable to VRLA battery	V d.c.		
150	5.4.2.2	Minimum end of discharge voltage :	manufacturer to advise	99	V d.c.		
151	5.4.2.2	Charge current limit (or range) :	manufacturer to advise	15A (0,1C)	A d.c.		
152	5.4.2.2	Temperature compensated charging required :	Yes	Confirmed			
153	5.4.2.3	Battery isolation box required :	manufacturer standard	Noted			
154	5.4.2.3	Additional or unusual conditions :	Input Data	Not applicable			
155	5.4.2.3	Load profile for battery design, attached :	Yes	Noted			
156	5.4.2.3	Battery rack design :	Batteries integrated inside UPS Cabinet	Battery housed on rack			
157		**BATTERY ROOM**					
158	4.2.1.1	Minimum ambient reference temperature :	Input Data	-8,4°C (used for battery sizing)	°C		
159	4.2.1.1	Maximum ambient reference temperature :	40	+40°C (used for battery sizing)	°C		
160	5.4.2.1	Area classification :	safe	Noted			
161	5.4.2.1	Hazardous area classification :	N/A	Not applicable			
162	5.4.2.1	Minimum Gas Subdivision and Temperature Class (for equipment in Battery room) :	N/A	Not applicable			
163	8.1.2.10	Temperature sensor (for VRLA / partial gas recombination batteries) :	Yes	Confirmed. Standard sensor			
164		**BATTERY ISOLATOR BOX SPECIFICATIONS**					
165	7.9.1	Enclosure material :	manufacturer standard	Aluminium alloy			
166	7.9.1	Mounting :	manufacturer standard	Wall mounting			
167	7.9.1	Breathing valve required :	manufacturer to advise	No			
168	7.9.1	Internal earth bar :	tinned copper	-			
169	7.9.3	Minimum design temperature :	-8,4	Noted	°C		
170	7.9.3	Maximum design temperature :	40	Noted	°C		
171	7.9.3	Maximum relative humidity :	95	Noted	%		
172	7.9.3	Temperature at which relative humidity is specified :	Input Data	-	°C		
173	7.9.4	Degree of protection :	IP 31	IP65			
174	7.9.5	Area classification :	safe	Noted			
175	7.9.5	Hazardous Area Certification required :	none	-			
176	7.9.5	Hazardous area classification :	N/A	Not applicable			
177	7.9.5	Hazardous area level of protection :	N/A	Not applicable			
178	7.9.6	Cable entry :	top	Bottom with cable glands			
179	7.9.6	Cable indirect entry via 'ex e' enclosure :	Select	Not applicable			
180	7.9.6	Battery cable size (cross-section area) :	No	25 sqmm armored cable class-2	sq.mm.		
181	7.9.6	Cable entry diameter in battery box (ISO metric) :	Input Data	17 mm			
182	7.9.7	Battery isolator type :	MCCB	Confirmed			
183	7.9.8	Rated current of breaker / switch fuse unit :	manufacturer to advise	125A	A		
184	7.9.8	Rated breaking current (Icu) - (if breaker used) :	manufacturer to advise	18kA	kA		
185	7.9.10	Breaker status potential free contact (NO) :	two	Confirmed			
186	7.9.9	Under Voltage trip feature required :	Yes	Confirmed			
187	7.9.9	Under Voltage trip coil for :	black start reserve	Confirmed			
188	8.1.2.12	ESD trip required :	Yes - via shunt trip	Yes - through SIL relay			
189	8.1.2.12	ESD override key switch :	key captive in overridden position and with status contact	Confirmed			
190	7.9.9	Over voltage trip required :	Yes	Not applicable			
191		**DC OUTPUT SPECIFICATIONS**					
192	5.3.2	DC power distribution system - compatibility :	IT	TN-S			
193	5.3.2	Voltage (steady state) - rated :	110	Confirmed	V d.c.		
194	5.3.2	Voltage - normal mode variation at no load :	manufacturer to advise	+/- 1% static stability	%		
195	5.3.2	Voltage - normal mode variation at full load :	manufacturer to advise	+/- 1% static stability	%		
196	5.3.2	Voltage - storage energy mode variation at no load :	manufacturer to advise	Min. voltage 1,65 Vcell = 99Vdc	%		
197	5.3.2	Voltage - storage energy mode variation at full load :	manufacturer to advise	Min. voltage 1,65 Vcell = 99Vdc	%		
198	5.3.2	% Voltage transient - transfer normal mode to storage energy mode :	manufacturer to advise	-	%		
199	5.3.2	Voltage transient time - transfer normal mode to storage energy mode :	manufacturer to advise	0	s		
200	5.3.2	% Voltage transient - transfer storage energy mode to normal mode :	manufacturer to advise	-	%		
201	5.3.2	Voltage transient time - transfer storage energy mode to normal mode :	manufacturer to advise	0	s		
202	5.3.2	% Voltage variation - normal mode at step load :	manufacturer to advise	-5% (10% to 90%) +8% (back)	%		
203	5.3.2	Duration of voltage variation - normal mode at step load :	manufacturer to advise	Data not characterized by the factory. Measurable on request	s		
204	5.3.2	% Voltage variation - storage energy mode at step load :	manufacturer to advise	Data not characterized by the factory. Measurable on request	%		
205	5.3.2	Duration of voltage variation - storage energy mode at step load :	manufacturer to advise	-	s		
206	5.3.2	Current - rated :	manufacturer to advise	100A	A d.c.		
207	5.3.2	Current - overload capability (% of rated current for ten minutes) :	manufacturer to advise	100% - Limited at 100A	%		
208	5.3.2	Current - overload capability (% of rated current for one minute) :	manufacturer to advise	100% - Limited at 100A	%		
209	5.3.2	Current - short circuit capability (% of rated current) :	manufacturer to advise	100A	%		
210	5.3.2	Current - short circuit capability (time duration):	manufacturer to advise	-	s		
211	5.3.2	Current - limitation (% of rated current) :	manufacturer to advise	100%	%		
212	5.3.2	Current - limitation (time duration) :	manufacturer to advise	-	s		
213	5.3.2	Current - fault clearing capability (normal mode) :	manufacturer to advise	100A	A		
214	5.3.2	Current - fault clearing capability (stored energy mode) :	manufacturer to advise	3250A +/- 10%	A		
215	5.3.2	AC / DC efficiency in normal mode - 100% load :	manufacturer to advise	88%	%		
216	5.3.2	AC / DC efficiency in normal mode - 75% load :	manufacturer to advise	86%	%		
217	5.3.2	AC / DC efficiency in normal mode - 50% load :	manufacturer to advise	87%	%		
218	5.3.2	AC / DC efficiency in normal mode - 25% load :	manufacturer to advise	Data not characterized by the factory. Measurable on request	%		
219	5.3.2	No load losses :	manufacturer to advise	Data not characterized by the factory. Measurable on request	W		
220	7.1.6	Reference document to DC output distribution board :	To see Electical Load List	Noted			
221	5.3.3	Additional or unusual conditions :	Input Data	Not applicable			
222	5.3.3	Cable size (cross-section area) - output :	manufacturer to advise	-	sq.mm.		

ROSETTI MARINO | PROVERLIS | CROSSWIND

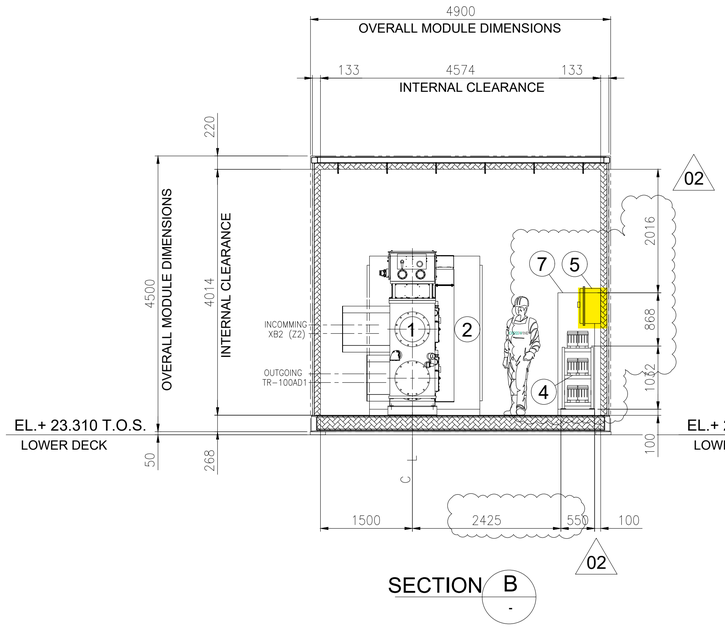
ITEM	Tag	CB-200F1	: Isolator Battery Box for DC UPS 10 kVA		Dwg	123A90-DDL-EL-DS-20036	
	S/Sys	84-00	: DC 10 kVA UPS System (UP-200F1)		Module	LD_B-100	
TASK	code	C10000853	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Electrical	Form	CPX00	Miscellaneous Electrical Equipment

1	Check circuit is de-energized and safe.	OK
2	Check equipment is installed in accordance with layout drawing.	OK
3	Check equipment is undamaged and correcly tagged.	OK
4	Check nameplate data is correct.	OK
5	Check all bolts are fitted and all unused entries are suitably plugged.	OK
6	Check terminals for proper size and installation crimps	OK
7	Check earthing and bonding against drawings.	PL
8	Check items are properly fixed on support.	OK
9	If required produce Red Line Mark Up for "AS BUILT"	

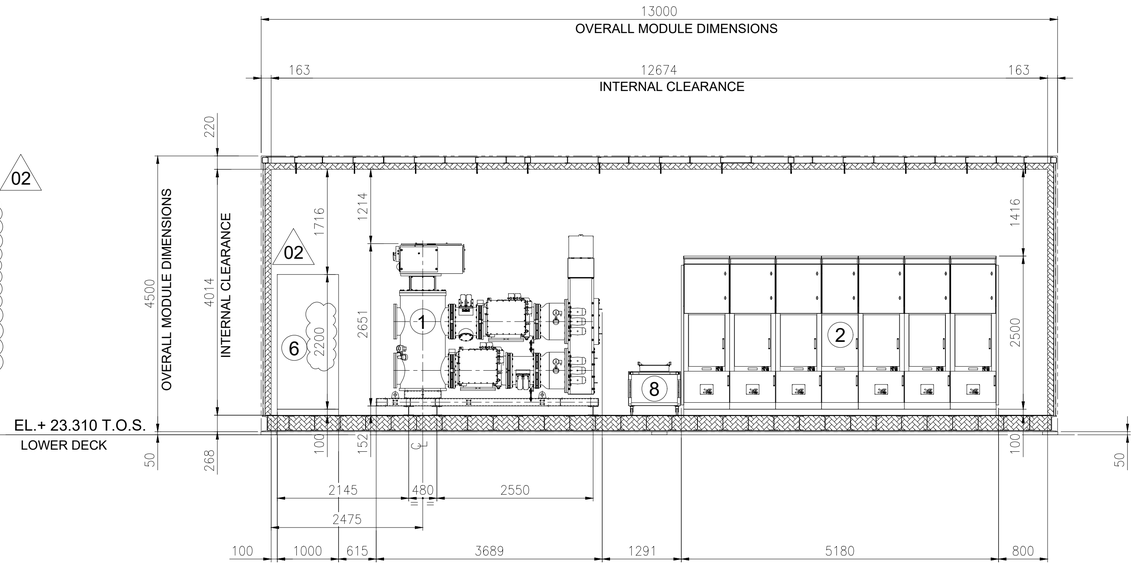
Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (Rosetti Marino)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-10-29	2024-10-30	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-10-29T16:02:48.218Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-10-30T14:03:31.072Z	

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

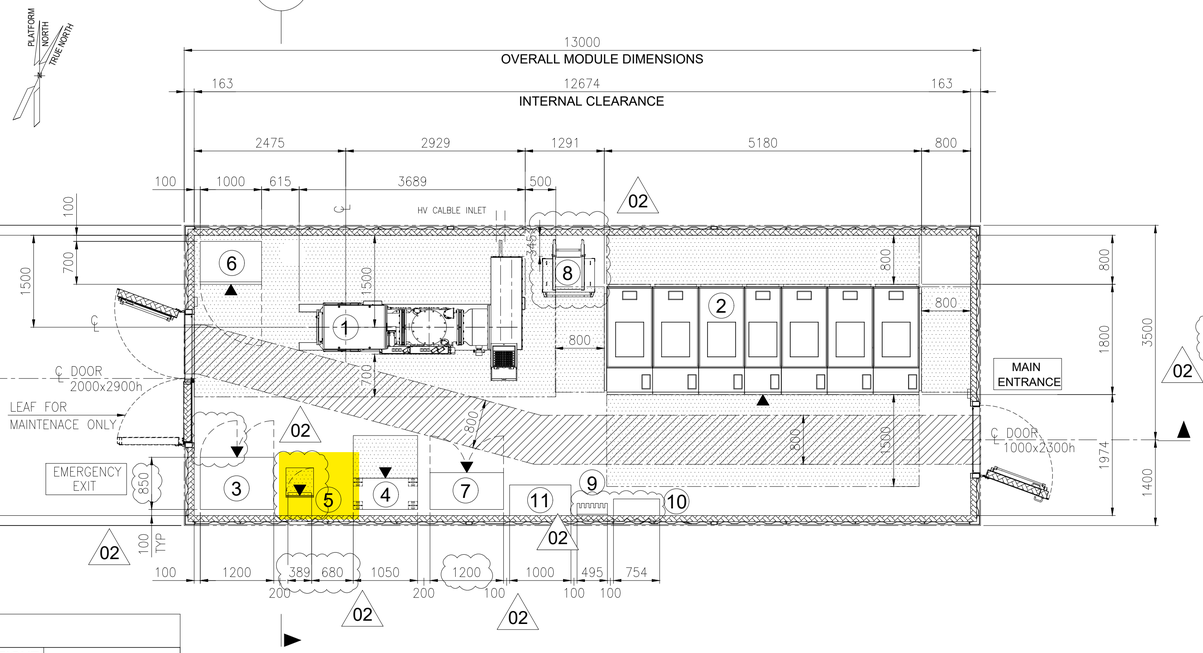


SECTION B -



SECTION A -

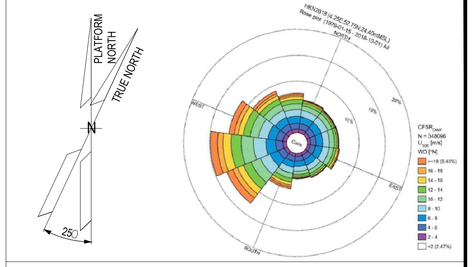
B -



A -

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

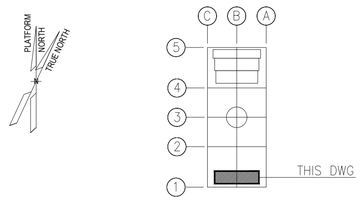
LEGEND

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

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

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

PLATFORM NORTH
TRUE NORTH

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20136**

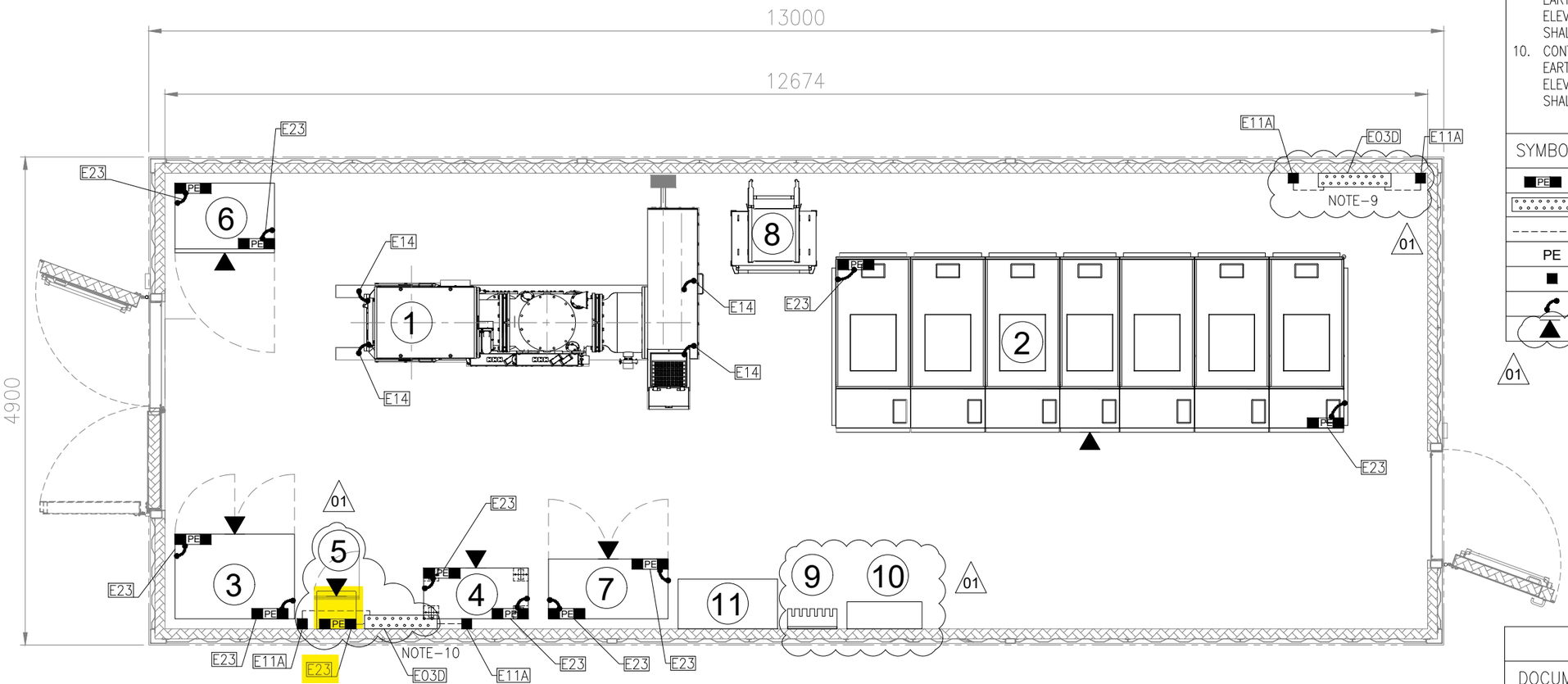
REV.:	DATE:	SIGNATURE:
1_A	08/08/24	G.Randi

ROSETTI MARINO SpA

EQUIPMENT LIST		
REF.	TAG No.	DESCRIPTION
1	HNA6-AFA70	66kV SWITCHGEAR (GIS)
2	SG-100D1	6.6kV SWITCHGEAR
3	UP-200F1	DC UPS PANEL
4	BA-200F1	DC UPS BATTERY RACK
5	CB-200F1	ISOLATOR FOR DC UPS 01
6	CP-100E1	66 kV SWITCHGEAR LOCAL CONTROL PANEL
7	B100-HSB-001	DISTRIBUTION & HVAC PANEL – HV SWITCH ROOM
8	–	SERVICE TROLLEY FOR 6.6kV SWITCHGEAR
9	–	TOOL BOX
10	–	ELECTRIC SAFETY KIT
11	–	TABLE

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 NORTH-EAST CORNER AT AN ELEVATION OF 2.8M FROM THE CONTAINER FLOOR. EARTHING BOSS SHALL BE INSTALLED AT SAME ELEVATION 2.8M.
10. 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.



EARTHING LAYOUT
B-100-HV(66kV/6.6kV) SWITCHROOM
PLAN
EL.+ 23.310 T.O.S.

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-20104	ELECTRICAL EQUIPMENT LAYOUT- HV SWITCHROOM
01 1724000049-AR-DD-00018	B-100 DETAILED DRAWINGS-E&I SHELTERS

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-HV SWITCHROOM "B-100"HV SWITCHROOM

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

A3 | DRAWING NO. 123A90-DDL-EL-DL-20136 | SHEET 003 | REV. 01

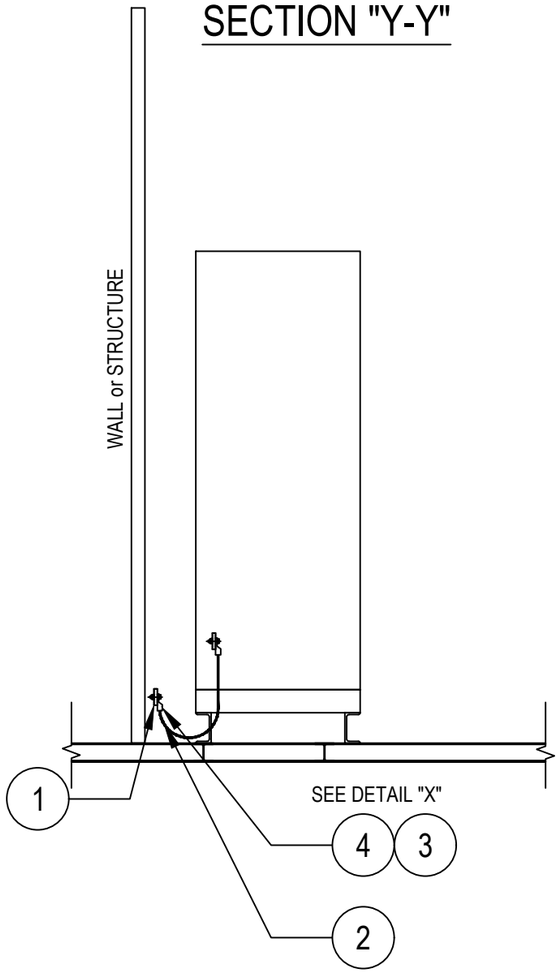
F.to UNI A3: 420mmx297mm

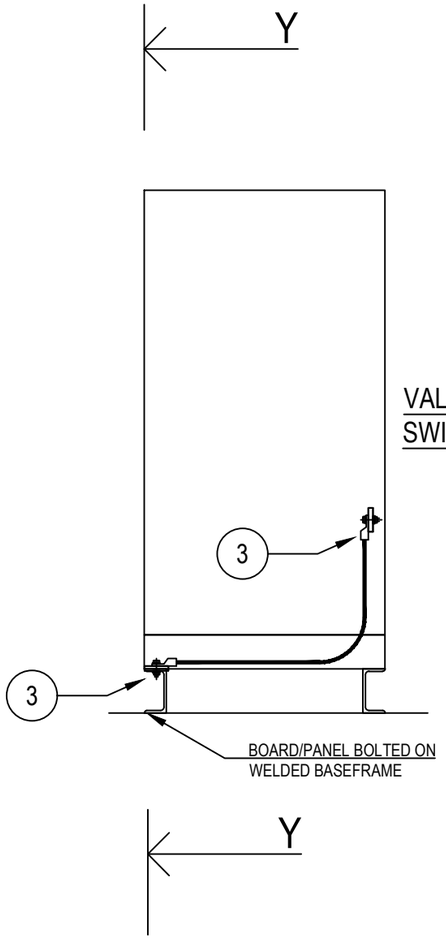
File Name : 123A90-DDL-EL-DL-20136 Rev. 01

E23

POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	MARSHALLING EARTHING BAR	TINNED COPPER	50X5		NOTE 1
2	Y/G INSULATING COPPER CONDUCTOR	COPPER	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	

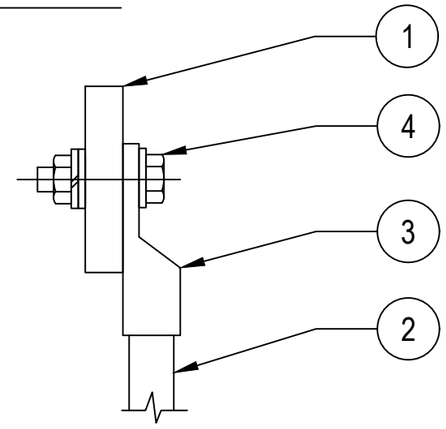
SECTION "Y-Y"





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_G	25/10/24	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

MODEL C-225 REV.1

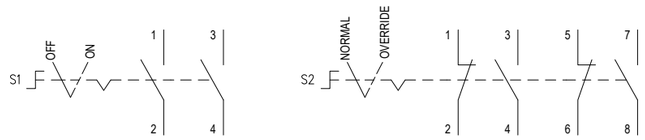
GENERAL NOTES:

-ENCLOSURE: EJBC-5
-MATERIAL: COPPER FREE ALUMINIUM ALLOY
-EXTERNAL PAINTING: RAL7035
-INTERNAL PAINTING: /
-ALL DIMENSION ARE IN mm
-WEIGHT: ≈55kg

BATTERY PROTECTION BOX

CB-200F1

SELECTOR SWITCHES DETAIL



TRUE TABLE

POSITION	CONTACT	
	1-2	3-4
OFF	O	O
ON	X	X

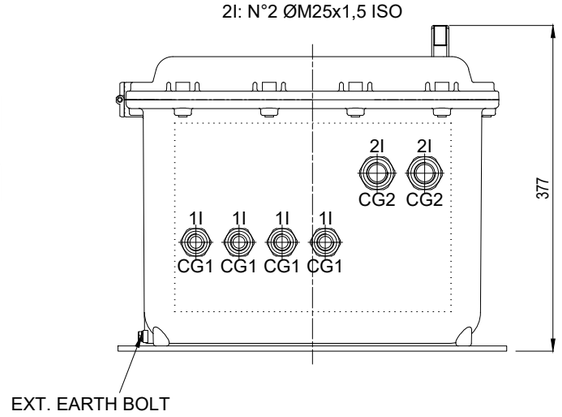
O	CONTACT OPEN
X	CONTACT CLOSED

TRUE TABLE

POSITION	CONTACT			
	1-2	3-4	5-6	7-8
NORMAL	X	O	X	O
OVERRIDE	O	X	O	X

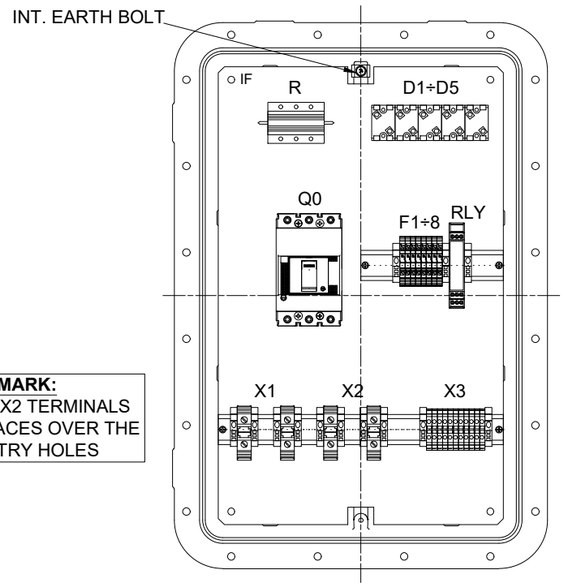
O	CONTACT OPEN
X	CONTACT CLOSED

BOTTOM VIEW
1I: N°4 ØM20x1,5 ISO
2I: N°2 ØM25x1,5 ISO



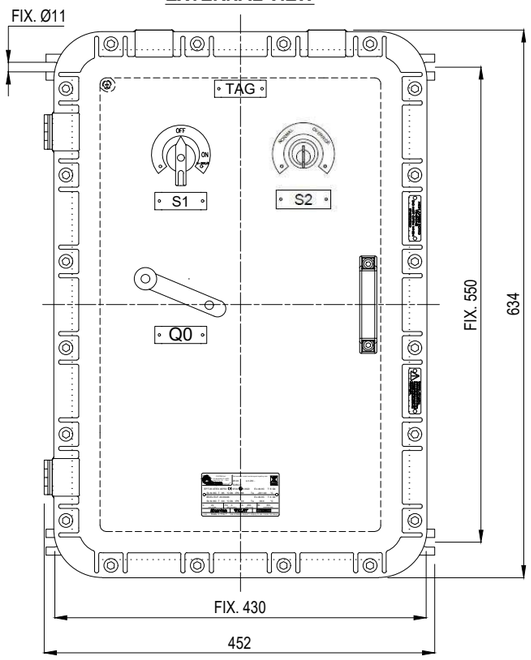
N°	Q.TY	CODE	DESCRIPTION
IF	1	BFE-5	ALUMINIUM INTERNAL FRAME
X1	2	UT35	PHOENIX TERMINALS SUITABLE FOR 35mm² CABLE
X2	2	UT35	PHOENIX TERMINALS SUITABLE FOR 35mm² CABLE
X3	11	UT4	PHOENIX TERMINALS SUITABLE FOR 4mm² CABLE
Q0	1	XT1B125TMD3	ABB XT1 MCCB, 3P, 125A, 18kA
	1	1SDA066399R1	220-240Vac/dc UNDERVOLTAGE RELEASE COIL
	2	1SDA066423R1	2NO AS PER TBE AUX CONTACTS FREE VOLTAGE
	1	M-0439/V1 + M-1044	PADLOCKABLE EXTERNAL HANDLE
F1,F2	2	UT4-HESI	PHOENIX FUSE HOLDER TERMINALS SUITABLE FOR 4mm² CABLE WITH 4A FUSE
	2	FUS5X20/4	
F3÷F8	6	UT4-HESI	PHOENIX FUSE HOLDER TERMINALS SUITABLE FOR 4mm² CABLE WITH 2,5A FUSE
	6	FUS5X20/2,5	
RLY	1	PHO2986575	PHOENIX SECURITY RELAY, 24Vcc, 3 EXCHANGE CONTACTS
R	1	RS1752429	47Ω RESISTOR, 95W, NOT ADJUSTABLE
D1÷D5	5	RS3959141	40A, 1000V, DIODES
S1	1	A2-10E/R	SELECTOR SWITCH, 2P, 16A, SCHEME I "OFF-ON"
	1	M-0553	EXTERNAL HANDLE
S2	1	WS2-10E/R	SELECTOR SWITCH, 4P, 16A, SCHEME 2Z "NORMAL-OVERRIDE"
	1	M-093/CF	KEY LOCK EXTERNAL HANDLE
CG1	4	NEV20IB	NICKEL PLATED BRASS CABLE GLANDS ØM20 FOR ARMORED CABLE Øint. 6,5-14mm Øext. 12,5-21mm, ARMOR THICKNESS 0,2-1,4mm
CG2	2	NAV25IB	NICKEL PLATED BRASS CABLE GLANDS ØM25 FOR NOT-ARMORED CABLE Ø11-20mm

INTERNAL VIEW

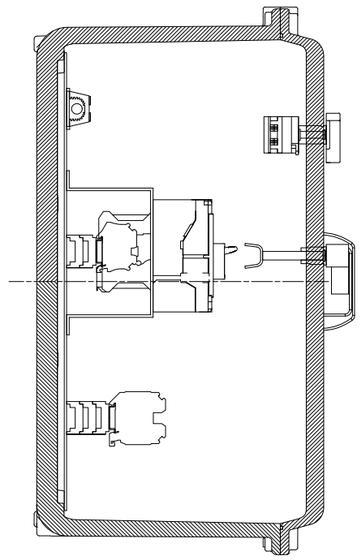


REMARK:
X1/X2 TERMINALS PLACES OVER THE ENTRY HOLES

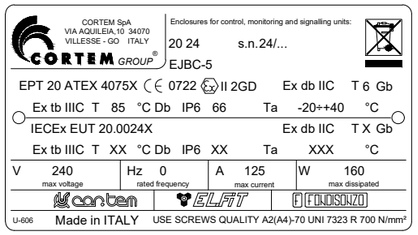
EXTERNAL VIEW



INT. LEFT SIDE VIEW



CERTIFICATE NAMEPLATE



TAG NAMEPLATE
MATERIAL: TRAPHOLITE
DIMENSIONS: 60X20
BLACK TEXT ON WHITE BACKGROUND

N°	TAG N°
TAG	CB-200F1
S1	S1
S2	S2
Q0	Q0

REV.	DATE	PREP'D	CHK'D	APP'D	DESCRIPTION
1	24/05/2024	GRATTON	GIUSTI	GRATTON	MODIFIED AND REISSUED FOR APPROVAL
0	13/05/2024	BOGAR	GIUSTI	GRATTON	ISSUED FOR APPROVAL

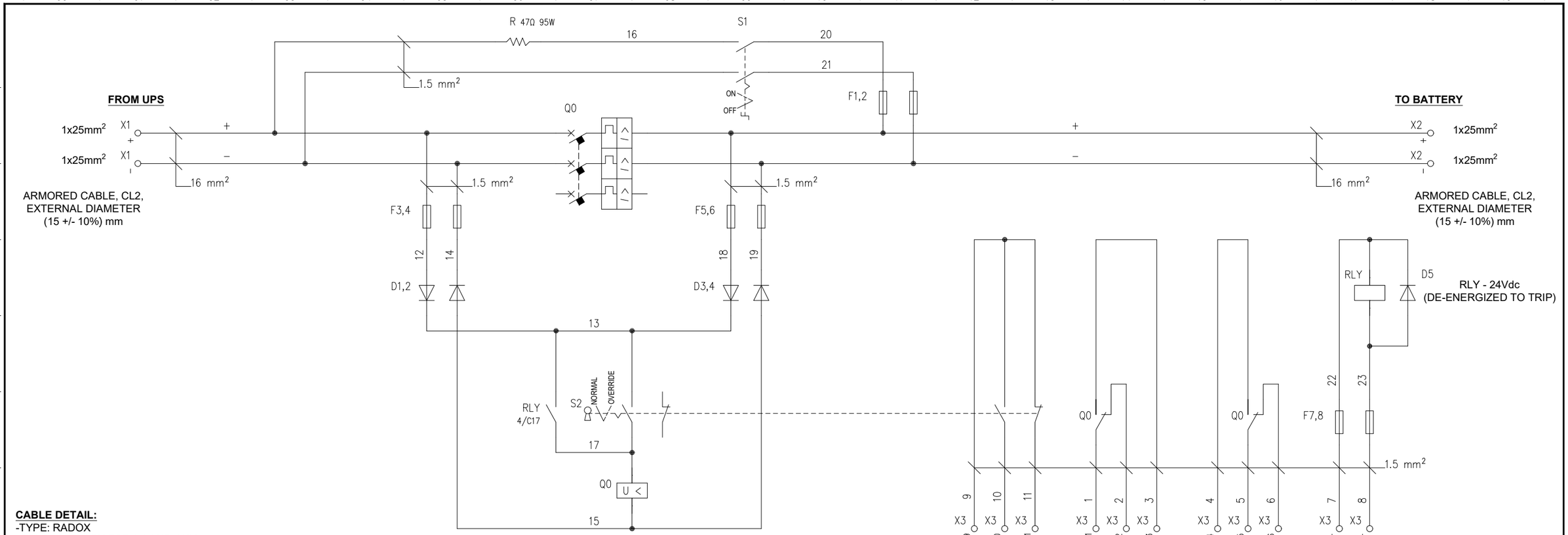
DRAWING TITLE: DC UPS - TAG: UP-200F1
002 EJBC-5/C2401778/20.
ITEM 20
EXT/INT. LAYOUT

CORTEM JOB: COV2401778
DRAWING SCALE: /
DRAWING NUMBER: A3-C 27438
SHEET 3 / NEXT 4 / TOT. 4

THIS DRAWING IS PROPERTY OF CORTEM SPA
AND IT CANNOT BE REPRODUCED WITHOUT CORTEM'S
AUTHORIZATION

Smart Professional R. 2012

MODEL C-225 REV.1



CABLE DETAIL:
-TYPE: RADOX
-COLORS: BLACK FOR (+) AND AUX
WHITE FOR (-)

CIRCUIT	DESCRIPTION			F3,4		Q0		F5,6		F1,2							F7,8						
	NUMBER																						
	PHASE	POWER	kW	+ -		+ -		+ -		+ -							+ -						
SWITCH	MANUFACTURER					ABB																	
	TYPE					XT3N200TMD3																	
	POLE N.	In	A			3	125																
	Idn A	CURVE																					
	Pdi kA	JUNCTION BOX N°				36kA																	
FUSE	TYPE			FUS5X20				FUS5X20		FUS5X20							FUS5X20						
	CURRENT		A	2,5				2,5		4							2,5						
CONTACTOR	TYPE																						
	In A	Pn	kW																				
THERMAL RELAY	TYPE																						
	CURRENT		A																				
TERMINALS CABLES	TERMINAL TYPE											UT		UT			UT						
	TERMINAL SECTION		mm²									4		4			4						
	TERMINAL NUMBER																						
	CABLE SECTION		mm²																				

REV.	DATE	PREP'D	CHK'D	APP'D	DESCRIPTION
1	24/05/2024	GRATTON	GIUSTI	GRATTON	MODIFIED AND REISSUED FOR APPROVAL
0	13/05/2024	BOGAR	GIUSTI	GRATTON	ISSUED FOR APPROVAL

DRAWING TITLE: DC UPS - TAG: UP-200F1

002 EJBC-5/C2401778/20.
ITEM 20
INTERNAL WIRING

CORTEM JOB: COV2401778
DRAWING SCALE: /
DRAWING NUMBER: A3-C 27438
SHEET 2 NEXT 3
TOT. 4

CORTEM GROUP
contem
FONDISONZO
ELFIT

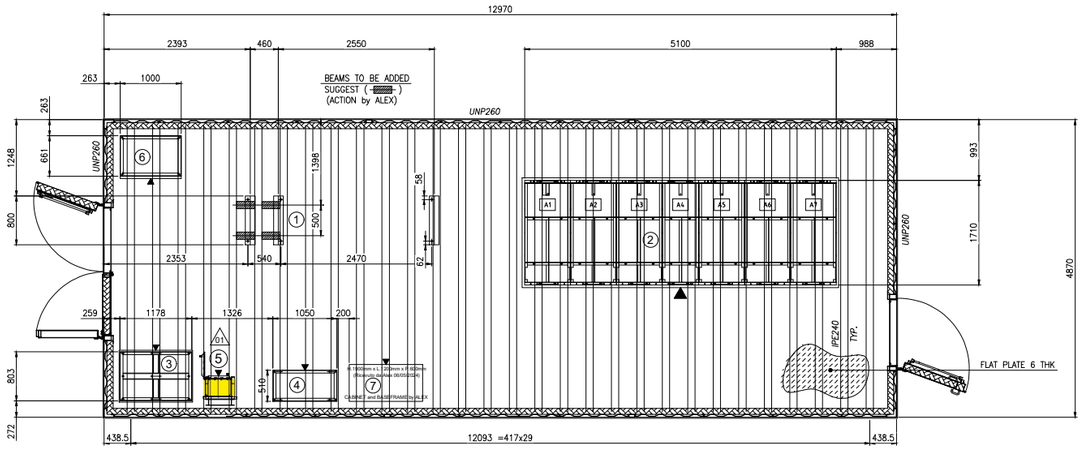
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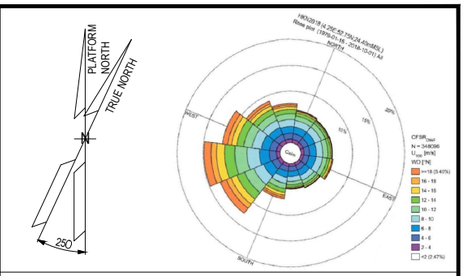
Smart Professional R. 2012

DRAWING NO. 1724000049-AR-DD-00018

REV. 02

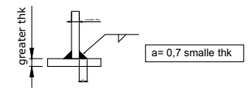
B-100
I&T EQUIPMENT ROOM
BASEFRAME LOCATION PLAN



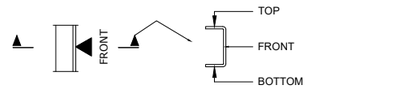


NOTES

1. UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN MILLIMETERS.
2. ALL WELDINGS SYMBOLS ARE IN ACCORDANCE WITH A.W.S. CODE D.1.1
3. UNLESS OTHERWISE INDICATED FILLET WELDS SHALL HAVE FOLLOWING DIM.:



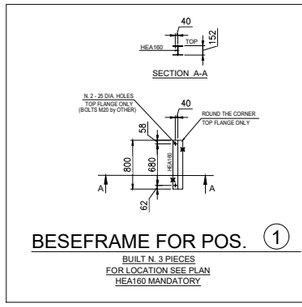
4. ALL WELDS ON TOP & BOTTOM SIDES OF BASEFRAMES MUST BE PERFECTLY SMOOTHED.
5. WHERE INDICATED " ▲ " SHOULD BE STAMP "FRONT", ABOVE "TOP" AND BELOW "BOTTOM".



6. SURFACE TREATMENT ACCORDING DOCUMENT N. 1724000049-MAT-PRO-00004 - PAINTING PROCEDURE FINAL COLOUR LIGHT GREY RAL 7035.

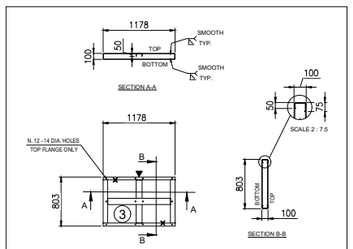
LEGEND

ASI = ALEX SISTEMI



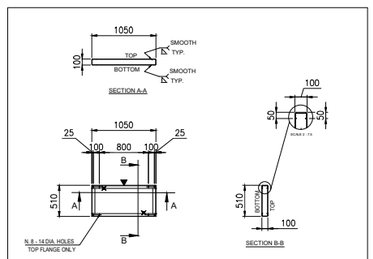
BESEFRAME FOR POS. ①

BUILT N. 3 PIECES
FOR LOCATION SEE PLAN
HEA160 MANDATORY



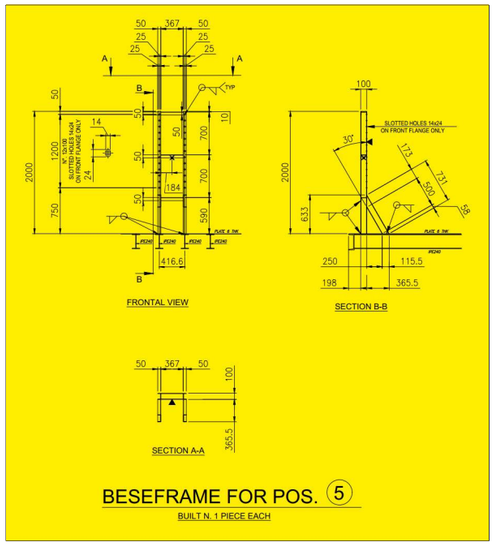
BESEFRAME FOR POS. ③

BUILT N. 1 PIECE



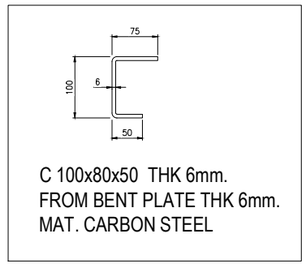
BESEFRAME FOR POS. ④

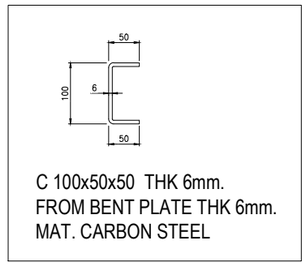
BUILT N. 1 PIECE EACH

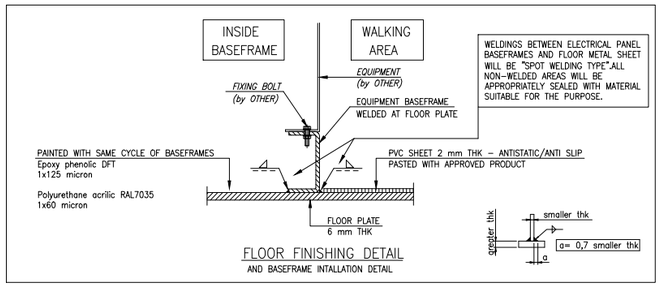


BESEFRAME FOR POS. ⑤

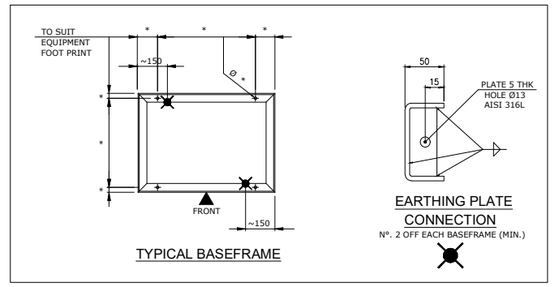
BUILT N. 1 PIECE EACH





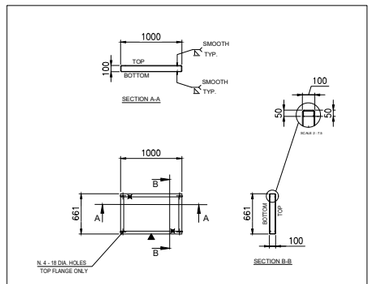


FLOOR FINISHING DETAIL
AND BASEFRAME INTALLATION DETAIL



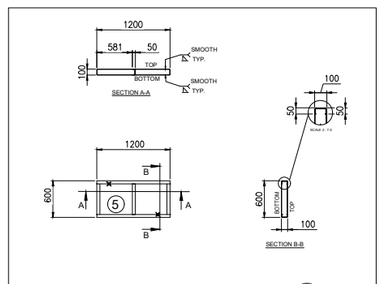
TYPICAL BASEFRAME

EARTHING PLATE CONNECTION
N°. 2 OFF EACH BASEFRAME (MIN.)



BESEFRAME FOR POS. ⑥

BUILT N. 1 PIECE



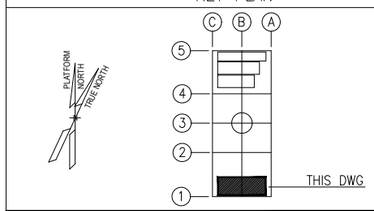
BESEFRAME FOR POS. ⑦

BUILT N. 1 PIECE

EQUIPMENT LIST

REF.	TAG No.	DESCRIPTION	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)	WEIGTH (Kg)	SCOPE
1	HNA6-AFA70	66kV SWITCHGEAR (GIS)	3689	2025	2651	2600	ASI
2	SG-100D1	6.6kV SWITCHGEAR	5180	1800	2500	7400	ROSETTI MARINO
3	UP-200F1	DC UPS PANEL	1200	850	2105	500	ASI
4	BA-200F1	DC UPS BATTERY RACK	1050	510	1272	522	ASI
5	CB-200F1	ISOLATOR FOR DC UPS	600	300	800	100	ASI
6	CP-100E1	66 kV SWITCHGEAR LOCAL CONTROL PANEL	1000	700	2100	2100	ASI
7	B100-HSB-001	DISTRIBUTION & HVAC PANEL - HV MV ROOM	1200	600	1900	TBD	ASI

KEY PLAN



ALEXSISTEMI spa

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	11/07/24	M.G.	O.A.	C.A.	ISSUE FOR REVIEW (IFR)
01	08/07/24	M.G.	O.A.	C.A.	ISSUE FOR REVIEW (IFR)
00	23/05/24	M.G.	O.A.	C.A.	ISSUE FOR CLIENT REVIEW (ICR)

CROSSWIND

ROSETTI MARINO

TITLE :

B-100 DETAILED DRAWINGS-E&I SHELTERS

CONTRACT NO./TITLE CONTRACT_NO. 1724000049			SCALE 1:50
DRAWN M.G.	CHECKED O.A.	APPROVED C.A.	DATE 11/07/24
A1	DRAWING NO. 1724000049-AR-DD-00018	SHEET 003	REV. 02

File Name : 1724000049-AR-DD-00018-REV.02

Row		S-702D Data Sheet for DC Uninterruptible Power Systems (UPS) (IEC 62040-5-3)					Issue
2	Tag No. :	UP-200F1					
3	Service :	DC UPS					
4	Ref. Clause	Description	Project Requirement	Manufacturer Declared Values	Unit	Additional notes	
5		**GENERAL**					
6	5.1.2	Vendor :	Input Data	AEG Power Solutions			
7	5.1.2	Order status :	for purchase	Noted			
8	5.1.2	Purchase order number, date :	1724000372 123A90A rev1 dated 22/4/2024	Noted			
9	5.1.2	Manufacturer :	Input Data	AEG Power Solutions			
10	5.1.2	Model number :	Input Data	2 x Protect RCS 110Vdc 100A			
11	5.1.2	Serial number :	Input Data	Released after production			
12	5.2.3	Application :	Industrial - Offshore	Noted			
13	5.3.2	Purchaser specified rated output power :	10	Confirmed	kVA		
14	5.1.1	Quantity :	1	Confirmed. Redundant system			
15		Conformity assessment system (CAS) level :	D	Noted			
16		**CONFIGURATION**					
17	5.1.1, A.1, Figure A.1, Figure A.3, Figure A.5	DC UPS configuration :	Two (2) 100% rated rectifiers connected to a common (shared) battery rated for the full rated load for the autonomy time	Confirmed			
18	A.2.2	Blocking diode required at output of single DC UPS :	Yes	Confirmed. Diode V21			
19	A.2.3	Scalability :	manufacturer standard	-			
20	5.1.1	DC UPS topology :	direct energy storage connect	Noted			
21	B.2.3	Series converter connect option :	manufacturer standard	Not applicable			
22	5.4.2.3	Battery configuration :	1 x 100%	Confirmed. 30 min autonomy			
23	5.3.2, 5.3.4	Performance classification :	manufacturer standard	-			
24	8.1.1.3	Bi-directional rectifier :	No	Not applicable			
25	8.2.2.11	Remote access required :	Yes (read only)	Confirmed. Modbus TCP			
26	8.2.2.11	Hardware (adapters, connectors, cables, etc.) required for remote monitor :	Yes	Confirmed			
27	8.1.1.5, 8.1.1.6	On-line battery monitoring facility required :	string monitoring	Confirmed			
28	8.1.1.4	On-line battery testing feature required :	No	Noted			
29	8.1.1.4	Battery test load interface :	No	Noted			
30	5.4.2.3	DC earth leakage monitoring required :	Yes	Confirmed			
31	7.4.14	Single line diagram and status display :	on HMI	LCD display without synoptic			
32	8.1.2.11	Black Start feature required :	Yes	Confirmed			
33	8.1.1.1	Earth screen required for isolation transformer :	manufacturer to advise	Confirmed			
34		**PHYSICAL ASPECTS**					
35	7.2.1	Mounting :	floor mounting	Confirmed			
36	7.2.1	Overall cabinet dimensions - length :	Input Data	600 (each charger)	mm		
37	7.2.1	Overall cabinet dimensions - depth :	Input Data	840	mm		
38	7.2.1	Overall cabinet dimensions - height :	Input Data	2105	mm		
39	7.2.1	Reference Outline Drawing number :	Input Data	1724000372-EL-DA-00003			
40	7.2.1	Total DC UPS cabinet mass :	Input Data	250 (each charger)	kg		
41	7.2.1	Total DC UPS mass with batteries (if integrated) :	Input Data	Batteries not integrated	kg		
42	7.2.4, 7.2.5	Cable entry location :	top	Confirmed. By means of cable glands			
43	7.2.4, 7.2.5	Cable entry type :	removable - undrilled plate	Confirmed			
44	7.2.4, 7.2.5	Gland plate material :	manufacturer standard	Steel			
45	7.2.1	Paint colour :	supplier standard	RAL7035			
46	7.2.1	Canopy for cabinet required :	No	Noted			
47	7.3.5	Document holder :	Yes	Confirmed			
48		**INSTALLATION**					
49	4,1	Site :	offshore - fixed	Noted. Painting class C3-H			
50	4,1	Location of DC UPS cabinet installation :	indoor	Noted			
51	7.3.1, 7.3.2	Front access clearance dimensions for operation and maintenance :	800	Noted	mm		
52	7.3.2	Side clearance for ventilation (if required) :	manufacturer to advise	0	mm		
53	7.3.2	Rear clearance for ventilation (if required) :	manufacturer to advise	100 mm	mm		
54	7.2.3, 7.9.3	Installed location of battery :	inside DC UPS enclosure	Battery housed on rack			
55	7.2.3	Maximum battery assembly dimensions (L x D x H) :	Input Data	Battery rack 1050 x 510 x 1032	mm		
56		**SAFETY**					
57	5.1.1	Accessibility :	operator access area	Front access			
58	5.1.1	Key required for cabinet :	Yes	Confirmed			
59	7.2.2	Degree of protection (with closed doors) :	IP31	IP43			
60	7.2.2	Degree of protection (with open doors) :	IP2X	IP20			
61	4.3.2	Area classification :	safe	Noted			
62	4.3.2	Hazardous area certification required :	none	Noted			
63	4.3.2	Level of protection :	N/A	Not applicable			
64	4.3.2	Gas group :	manufacturer to advise	Not applicable			
65	4.3.2	Temperature class :	manufacturer to advise	Not applicable			
66	4.3.2	Equipment protection level :	manufacturer to advise	Not applicable			
67	7.7.5	Cooling fan replacement while DC UPS in service :	No	Noted			
68	5.1.2	Local language for caution/danger/warning labels :	English	Confirmed			
69		**ELECTROMAGNETIC COMPATIBLITY**					
70	5.1.4	Emission :	UPS Cat C3	Confirmed			
71	5.1.4	Immunity :	UPS Cat C3	Confirmed			
72		**ENVIRONMENTAL CONDITIONS**					
73	4.2.1.1	Minimum ambient temperature (operation) :	-8,4	Confirmed with heater option included	°C		
74	4.2.1.1	Maximum ambient temperature (operation) :	40	Confirmed	°C		
75	4.2.1.1	Maximum relative humidity (operation) :	95	Confirmed. Not condensing	%		
76	4.2.1.1	Temperature at which relative humidity is specified (operation) :	Input Data	-	°C		
77	4.2.1.2	Maximum altitude (operation) :	Sea Level	Noted	m		
78	4.2.2	Minimum ambient temperature (storage and transportation) :	-5	Noted	°C		
79	4.2.2	Maximum ambient temperature (storage and transportation) :	40	Noted	°C		
80	4.2.2	Maximum relative humidity (storage and transportation) :	85	Noted	%		

Row		S-702D Data Sheet for DC Uninterruptible Power Systems (UPS) (IEC 62040-5-3)					Issue
2	Tag No. :	UP-200F1					
3	Service :	DC UPS					
4	Ref. Clause	Description	Project Requirement	Manufacturer Declared Values	Unit	Additional notes	
81	4.2.2	Temperature at which relative humidity is specified (storage and transportation) :	Input Data	-	°C		
82	4.3.2	Seismic requirement data :	Zone 2	Noted			
83	4.2.2	Storage site of DC UPS :	indoor – natural ventilation	Noted			
84	4.3.2	Additional or unusual conditions (operation) :	Input Data	Not applicable			
85	4.3.3	Additional or unusual conditions (storage and transportation) :	Input Data	Not applicable			
86	5.1.5	Acoustic noise at 1 m - normal mode :	70	66 dB(A)	dBA		
87	5.1.5	Acoustic noise at 1 m - stored energy mode :	70	66 dB(A)	dBA		
88		**COMMUNICATION INTERFACE(S)**					
89	5,6	(1) Interface media for SCADA (ICSS / DCS) :	serial	Modbus TCP + relays			
90	5,6	(1) Maximum allowable length of communication cable (for copper) :	25	Noted	m		
91	5,6	(1) Interface protocol for SCADA (ICSS / DCS) :	Modbus	Modbus TCP + relays			
92	5,6	(2) Interface media for Electrical Management / Control System :	serial	Modbus TCP + relays			
93	5,6	(2) Maximum allowable length of communication cable (for copper) :	25	Noted	m		
94	5,6	(2) Interface protocol for Electrical Management / Control System :	Modbus	Modbus TCP + relays			
95	5,6	(3) Remote access / monitoring software required :	Yes	Noted			
96	5,6	(3) Interface media for Remote access / monitoring :	ethernet (fiber)	Noted			
97	5,6	(3) Maximum allowable length of communication cable (for copper) :	25	Noted	m		
98	5,6	(3) Interface protocol for Remote access / monitoring :	Modbus	Modbus TCP + relays			
99		**AC INPUT SPECIFICATIONS**					
100	5.2.1	Voltage (steady state, R.M.S) - rated :	400	Confirmed	V		
101	5.2.1	Voltage (steady state, R.M.S - tolerance :	+/- 10	Confirmed	%		
102	5.2.1	Frequency - rated :	50 Hz	Confirmed			
103	5.2.1	Frequency - tolerance :	+/- 2	Confirmed	%		
104	5.2.2	Phases required :	3	3			
105	5.2.2	Neutral required :	Yes	No			
106	5.2.2	Current (R.M.S) - rated (with the energy storage device charged) :	manufacturer to advise	28A max	A		
107	5.2.2	Power factor :	manufacturer to advise	0,81			
108	5.2.2	In-rush (% of rated current) :	manufacturer to advise	Slow-start function included	%		
109	5.2.2	In-rush (time) :	manufacturer to advise	Data not characterized by the factory. Measurable on request	s		
110	5.2.2	Maximum current (with low input volt and energy storage device charging) :	manufacturer to advise	28A max	A		
111	5.2.2	Time for overload (125 % of rated current) :	manufacturer to advise	Not applicable	s		
112	5.2.2	Time for overload (150 % of rated current) :	manufacturer to advise	Not applicable	s		
113	5.2.2	Total harmonic distortion (THD p.u.) :	8	Confirmed. The DC UPS works with an input voltage harmonic distortion ≤ 8%	%		
114	5.2.3	Short circuit current of the input supply :	50	Confirmed. The charger is equipped with an input MCCB (Q1) with Isc = 50kA	kA		
115	5.2.2	Minimum prospective short circuit current :	Input Data	Data not characterized by the factory. Measurable on request	kA		
116	5.2.2	Earth leakage current :	Input Data	Data not characterized by the factory. Measurable on request	mA		
117	5.2.2	AC power distribution system - compatibility :	TN-S	Confirmed			
118	5.2.3	Additional or unusual conditions :	Input Data	Not applicable			
119	5.2.3, 7.5.4	Cable Size (cross-section area) - input mains (Float) :	Input Data	70 sqmm	sq.mm.		
120	7.5.4	Cable Size (cross-section area) - input mains (Boost) :	Input Data	70 sqmm	sq.mm.		
121	7.4.8, 8.1.1.1	Input isolation transformer required :	Select	Confirmed			
122	7.4.10	Input isolation transformer winding :	copper or aluminum	Aluminium			
123		**DC AND BATTERY SPECIFICATIONS**					
124	5.4.2.2	DC voltage level :	110	Confirmed	V d.c.		
125	5.4.2.2	Design life :	5	>12 years	years		
126	5.4.2.2	Float service life :	manufacturer to advise	Dependent from temperature	years		
127	5.4.2.2	Shelf life of battery :	manufacturer to advise	3	months		
128	5.4.2.2	Quantity of cells and strings :	manufacturer to advise	10 blocks - 1 string	nos.		
129	5.4.2.2	Nominal voltage (total) :	manufacturer to advise	120	V d.c.		
130	5.4.2.2	Battery technology :	sealed nickel cadmium	VRLA GEL technology			
131	5.4.2.2	Nominal AH capacity :	manufacturer to advise	150	AH		
132	5.4.2.2	Discharge rate (C-rate) :	manufacturer to advise	C20			
133	5.4.2.2	Electrolyte fill status :	manufacturer standard	Not applicable to VRLA battery			
134	8.1.2.3	Purchaser's requirement (% of battery recharge level - 1) :	80	Confirmed with charging current limited to 0,1C	%		
135	8.1.2.3	Purchaser's requirement (time for battery recharge level - 1) :	10	Confirmed	Hours		
136	8.1.2.3	Purchaser's requirement (% of battery recharge level - 2) :	100	Data not characterized by the factory. Measurable on request	%		
137	8.1.2.3	Purchaser's requirement (time for battery recharge level - 2) :	24	Data not characterized by the factory. Measurable on request	Hours		
138	5.4.2.2	Stored energy time (back-up time at 100% rated load) :	60	30 min @ 10kW load	min		
139	5.4.2.2	Restored energy time (recharge time to 80% capacity) :	manufacturer to advise	10h	hours		
140	5.4.2.2	Ambient reference temperature :	40	Confirmed	°C		
141	5.4.2.2	Earth condition/isolation :	manufacturer to advise	floating			
142	5.4.2.2	Ripple current (R.M.S) :	manufacturer to advise	1% ripple voltage RMS	%		
143	5.4.2.2	Maximum discharge current :	manufacturer to advise	Data not characterized by the factory. Measurable on request	A		
144	5.4.2.2	DC Fault current rating :	manufacturer to advise	Data not characterized by the factory. Measurable on request	A d.c.		
145	5.4.2.2	Cable volt drop recommendation (≤ % at nominal discharge current) :	manufacturer to advise	1	%		
146	5.4.2.2	Charging regime :	manufacturer to advise	Constant voltage, current limited			
147	5.4.2.2	Charge voltage (float) and tolerance band :	manufacturer to advise	2,28Vcell - 13,5 / 13,8 Vblock	V d.c.		
148	5.4.2.2	Charge voltage (boost) and tolerance band :	manufacturer to advise	2,28Vcell - 13,5 / 13,8 Vblock	V d.c.		

Row		S-702D Data Sheet for DC Uninterruptible Power Systems (UPS) (IEC 62040-5-3)					Issue
2	Tag No. :	UP-200F1					
3	Service :	DC UPS					
4	Ref. Clause	Description	Project Requirement	Manufacturer Declared Values	Unit	Additional notes	
149	5.4.2.2	Charge voltage (equalising) and tolerance band :	manufacturer to advise	Not applicable to VRLA battery	V d.c.		
150	5.4.2.2	Minimum end of discharge voltage :	manufacturer to advise	99	V d.c.		
151	5.4.2.2	Charge current limit (or range) :	manufacturer to advise	15A (0,1C)	A d.c.		
152	5.4.2.2	Temperature compensated charging required :	Yes	Confirmed			
153	5.4.2.3	Battery isolation box required :	manufacturer standard	Noted			
154	5.4.2.3	Additional or unusual conditions :	Input Data	Not applicable			
155	5.4.2.3	Load profile for battery design, attached :	Yes	Noted			
156	5.4.2.3	Battery rack design :	Batteries integrated inside UPS Cabinet	Battery housed on rack			
157		**BATTERY ROOM**					
158	4.2.1.1	Minimum ambient reference temperature :	Input Data	-8,4°C (used for battery sizing)	°C		
159	4.2.1.1	Maximum ambient reference temperature :	40	+40°C (used for battery sizing)	°C		
160	5.4.2.1	Area classification :	safe	Noted			
161	5.4.2.1	Hazardous area classification :	N/A	Not applicable			
162	5.4.2.1	Minimum Gas Subdivision and Temperature Class (for equipment in Battery room) :	N/A	Not applicable			
163	8.1.2.10	Temperature sensor (for VRLA / partial gas recombination batteries) :	Yes	Confirmed. Standard sensor			
164		**BATTERY ISOLATOR BOX SPECIFICATIONS**					
165	7.9.1	Enclosure material :	manufacturer standard	Aluminium alloy			
166	7.9.1	Mounting :	manufacturer standard	Wall mounting			
167	7.9.1	Breathing valve required :	manufacturer to advise	No			
168	7.9.1	Internal earth bar :	tinned copper	-			
169	7.9.3	Minimum design temperature :	-8,4	Noted	°C		
170	7.9.3	Maximum design temperature :	40	Noted	°C		
171	7.9.3	Maximum relative humidity :	95	Noted	%		
172	7.9.3	Temperature at which relative humidity is specified :	Input Data	-	°C		
173	7.9.4	Degree of protection :	IP 31	IP65			
174	7.9.5	Area classification :	safe	Noted			
175	7.9.5	Hazardous Area Certification required :	none	-			
176	7.9.5	Hazardous area classification :	N/A	Not applicable			
177	7.9.5	Hazardous area level of protection :	N/A	Not applicable			
178	7.9.6	Cable entry :	top	Bottom with cable glands			
179	7.9.6	Cable indirect entry via 'ex e' enclosure :	Select	Not applicable			
180	7.9.6	Battery cable size (cross-section area) :	No	25 sqmm armored cable class-2	sq.mm.		
181	7.9.6	Cable entry diameter in battery box (ISO metric) :	Input Data	17 mm			
182	7.9.7	Battery isolator type :	MCCB	Confirmed			
183	7.9.8	Rated current of breaker / switch fuse unit :	manufacturer to advise	125A	A		
184	7.9.8	Rated breaking current (Icu) - (if breaker used) :	manufacturer to advise	18kA	kA		
185	7.9.10	Breaker status potential free contact (NO) :	two	Confirmed			
186	7.9.9	Under Voltage trip feature required :	Yes	Confirmed			
187	7.9.9	Under Voltage trip coil for :	black start reserve	Confirmed			
188	8.1.2.12	ESD trip required :	Yes - via shunt trip	Yes - through SIL relay			
189	8.1.2.12	ESD override key switch :	key captive in overridden position and with status contact	Confirmed			
190	7.9.9	Over voltage trip required :	Yes	Not applicable			
191		**DC OUTPUT SPECIFICATIONS**					
192	5.3.2	DC power distribution system - compatibility :	IT	TN-S			
193	5.3.2	Voltage (steady state) - rated :	110	Confirmed	V d.c.		
194	5.3.2	Voltage - normal mode variation at no load :	manufacturer to advise	+/- 1% static stability	%		
195	5.3.2	Voltage - normal mode variation at full load :	manufacturer to advise	+/- 1% static stability	%		
196	5.3.2	Voltage - storage energy mode variation at no load :	manufacturer to advise	Min. voltage 1,65 Vcell = 99Vdc	%		
197	5.3.2	Voltage - storage energy mode variation at full load :	manufacturer to advise	Min. voltage 1,65 Vcell = 99Vdc	%		
198	5.3.2	% Voltage transient - transfer normal mode to storage energy mode :	manufacturer to advise	-	%		
199	5.3.2	Voltage transient time - transfer normal mode to storage energy mode :	manufacturer to advise	0	s		
200	5.3.2	% Voltage transient - transfer storage energy mode to normal mode :	manufacturer to advise	-	%		
201	5.3.2	Voltage transient time - transfer storage energy mode to normal mode :	manufacturer to advise	0	s		
202	5.3.2	% Voltage variation - normal mode at step load :	manufacturer to advise	-5% (10% to 90%) +8% (back)	%		
203	5.3.2	Duration of voltage variation - normal mode at step load :	manufacturer to advise	Data not characterized by the factory. Measurable on request	s		
204	5.3.2	% Voltage variation - storage energy mode at step load :	manufacturer to advise	Data not characterized by the factory. Measurable on request	%		
205	5.3.2	Duration of voltage variation - storage energy mode at step load :	manufacturer to advise	-	s		
206	5.3.2	Current - rated :	manufacturer to advise	100A	A d.c.		
207	5.3.2	Current - overload capability (% of rated current for ten minutes) :	manufacturer to advise	100% - Limited at 100A	%		
208	5.3.2	Current - overload capability (% of rated current for one minute) :	manufacturer to advise	100% - Limited at 100A	%		
209	5.3.2	Current - short circuit capability (% of rated current) :	manufacturer to advise	100A	%		
210	5.3.2	Current - short circuit capability (time duration):	manufacturer to advise	-	s		
211	5.3.2	Current - limitation (% of rated current) :	manufacturer to advise	100%	%		
212	5.3.2	Current - limitation (time duration) :	manufacturer to advise	-	s		
213	5.3.2	Current - fault clearing capability (normal mode) :	manufacturer to advise	100A	A		
214	5.3.2	Current - fault clearing capability (stored energy mode) :	manufacturer to advise	3250A +/- 10%	A		
215	5.3.2	AC / DC efficiency in normal mode - 100% load :	manufacturer to advise	88%	%		
216	5.3.2	AC / DC efficiency in normal mode - 75% load :	manufacturer to advise	86%	%		
217	5.3.2	AC / DC efficiency in normal mode - 50% load :	manufacturer to advise	87%	%		
218	5.3.2	AC / DC efficiency in normal mode - 25% load :	manufacturer to advise	Data not characterized by the factory. Measurable on request	%		
219	5.3.2	No load losses :	manufacturer to advise	Data not characterized by the factory. Measurable on request	W		
220	7.1.6	Reference document to DC output distribution board :	To see Electical Load List	Noted			
221	5.3.3	Additional or unusual conditions :	Input Data	Not applicable			
222	5.3.3	Cable size (cross-section area) - output :	manufacturer to advise	-	sq.mm.		

ITEM	Tag	UP-200F1	: DC UPS 10 kVA Redundant System		Dwg	123A90-DDL-EL-DS-20036	
	S/Sys	84-00	: DC 10 kVA UPS System (UP-200F1)		Module	LD_B-100	
TASK	code	C10000870	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Electrical	Form	CPX16	Charger/Inverter

1	Check equipment is de-energized and safe.	OK
2	Check equipment is undammaged, correctly mounted, tagged and installed in accordance with layout drawings.	Note
3	Check conformity against data sheet and project specification	OK
4	Check manufacturer's nameplate data.	OK
5	Check all panel-front components, indicators, lamps, meters are securely mounted and undamaged.	OK
6	Check equipment cleanliness.	PL
7	Check all earthing and bonding against drawings.	OK
8	Check battery cable termination against drawings.	Note
9	If required produce Red Line Mark Up for "AS BUILT"	

NAMEPLATE DATA

Manufacturer :	AEG Power Solution		Serial N° :	UP-200F1A: TPRE3855/01 UP-200F1B: TPRE3855/02		Type	2 x Protect RCS 110Vdc 100A
Input	400	V	Output	110	V	Rating	10 kVA
Input	28	A	Output	100	A	Specification	1724000372-EL-DA-00003
SUPPLY SWBD & CUB ref:			1724000372-EL-DG-00006			Data Sheet:	1724000372-EL-DS-00005

TESTING AND MEASUREMENT INSTRUMENT USED

Type	Serial n°	Calibration certificate	Validity
NA	NA	NA	NA

TEST RESULTS

TEST VOLTAGE	Note
INSULATION RESISTANCE	Note

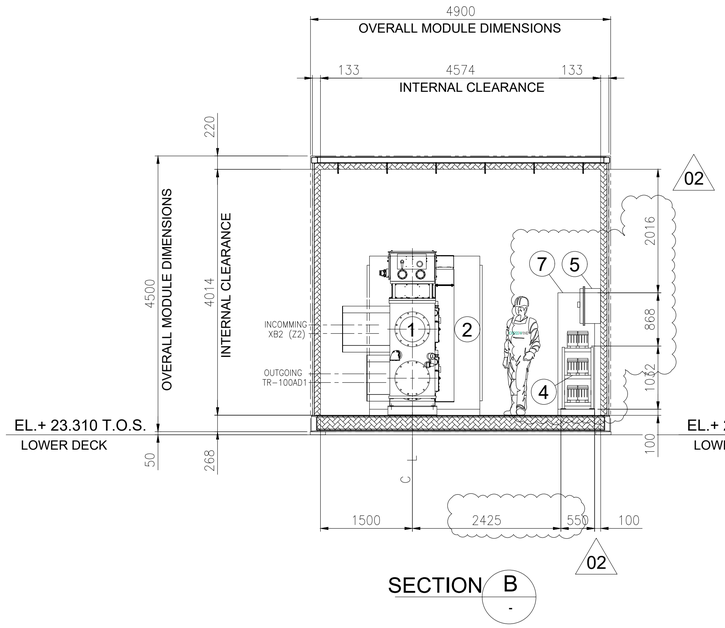
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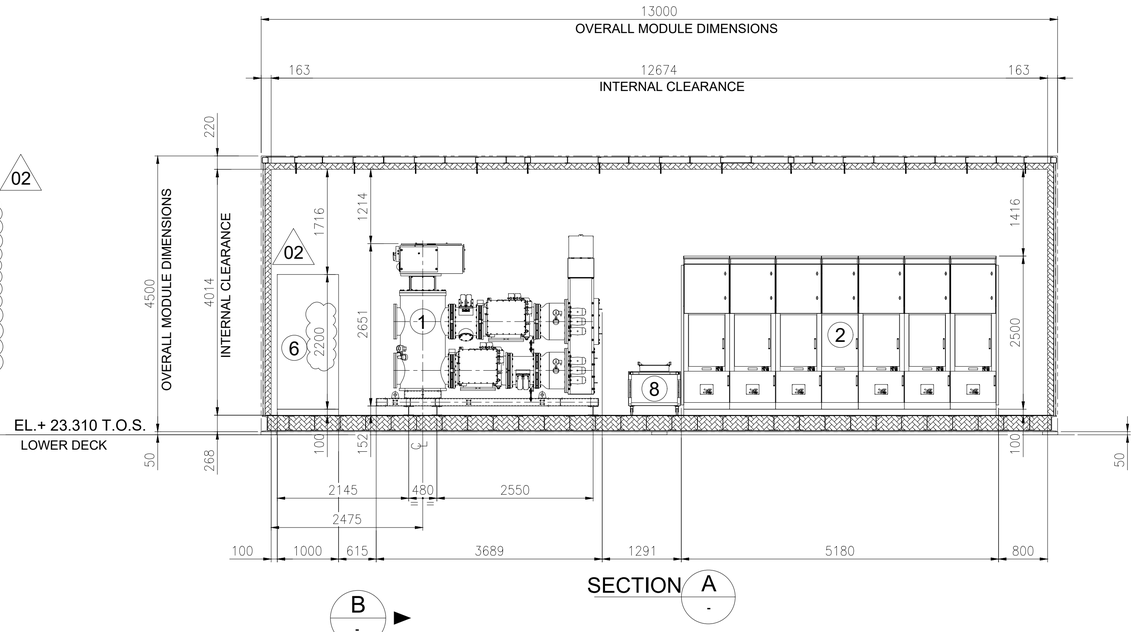
Note 2): See punch list raised during FAT : C30000013
Note 8) check on connection is done during cable ispection. Please refer to the relevant ITR.

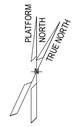
Note: TEST done during FAT.

Page 1/1	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (Rosetti Marino)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-10-29	2024-10-30	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-10-29T16:03:57.602Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-10-30T13:57:43.534Z	

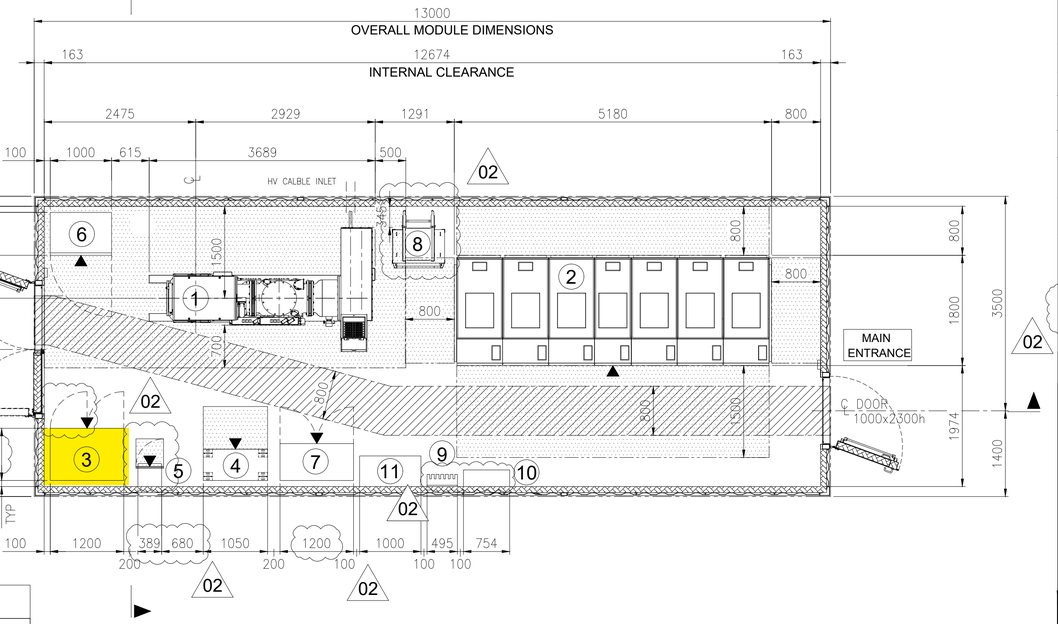
DRAWING NO. 123A90-DDL-EL-DL-20104 REV. 02

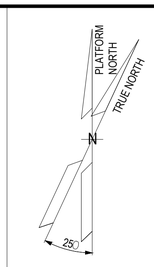


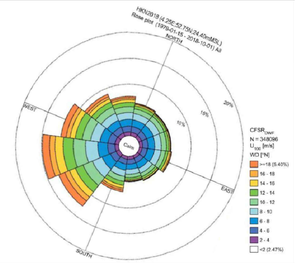




B -







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

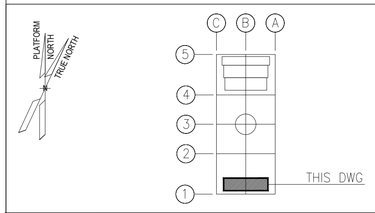
LEGEND

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



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	

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	OYFO/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

PLATFORM NORTH
TRUE NORTH

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20136**

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

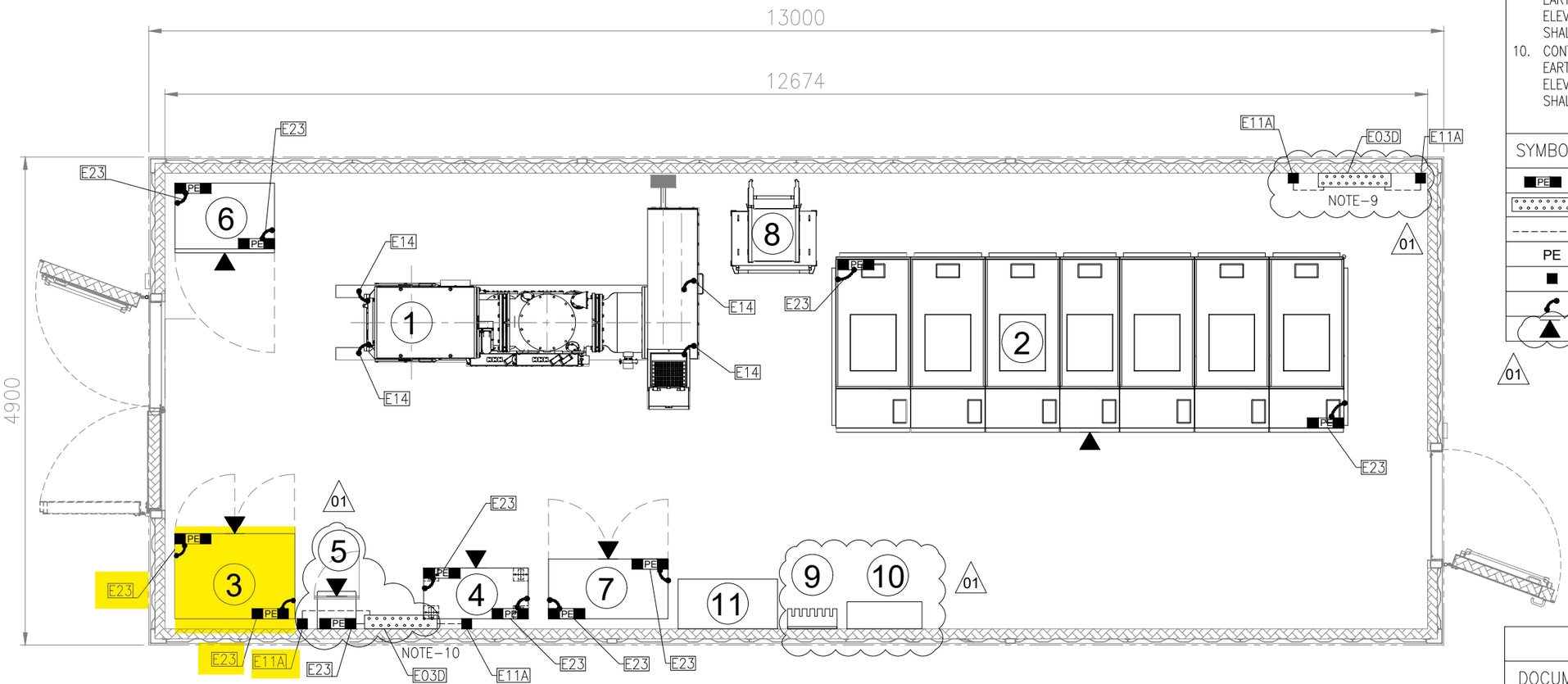
ROSETTI MARINO SpA

EQUIPMENT LIST		
REF.	TAG No.	DESCRIPTION
1	HNA6-AFA70	66kV SWITCHGEAR (GIS)
2	SG-100D1	6.6kV SWITCHGEAR
3	UP-200F1	DC UPS PANEL
4	BA-200F1	DC UPS BATTERY RACK
5	CB-200F1	ISOLATOR FOR DC UPS
6	CP-100E1	66 kV SWITCHGEAR LOCAL CONTROL PANEL
7	B100-HSB-001	DISTRIBUTION & HVAC PANEL – HV SWITCH ROOM
8	–	SERVICE TROLLEY FOR 6.6kV SWITCHGEAR
9	–	TOOL BOX
10	–	ELECTRIC SAFETY KIT
11	–	TABLE

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 NORTH-EAST CORNER AT AN ELEVATION OF 2.8M FROM THE CONTAINER FLOOR. EARTHING BOSS SHALL BE INSTALLED AT SAME ELEVATION 2.8M.
10. 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.



EARTHING LAYOUT
B-100-HV(66kV/6.6kV) SWITCHROOM
PLAN
EL.+ 23.310 T.O.S.

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-20104	ELECTRICAL EQUIPMENT LAYOUT- HV SWITCHROOM
01 1724000049-AR-DD-00018	B-100 DETAILED DRAWINGS-E&I SHELTERS

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-HV SWITCHROOM "B-100"HV SWITCHROOM

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

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-EL-DL-20136	003	01

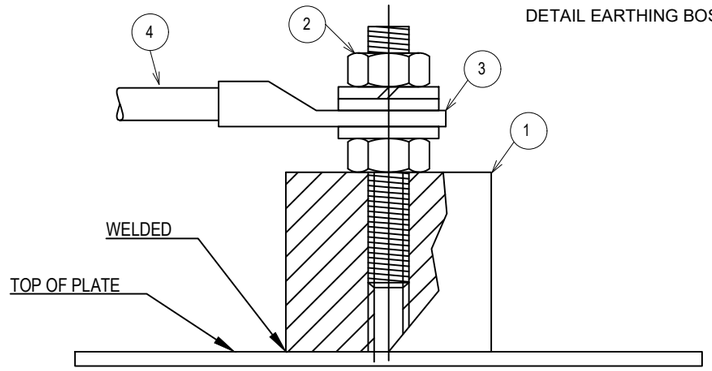
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File Name : 123A90-DDL-EL-DL-20136 Rev. 01

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

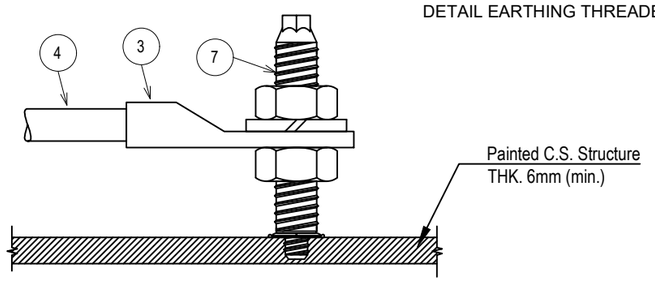


E11D

SEE NOTE 6

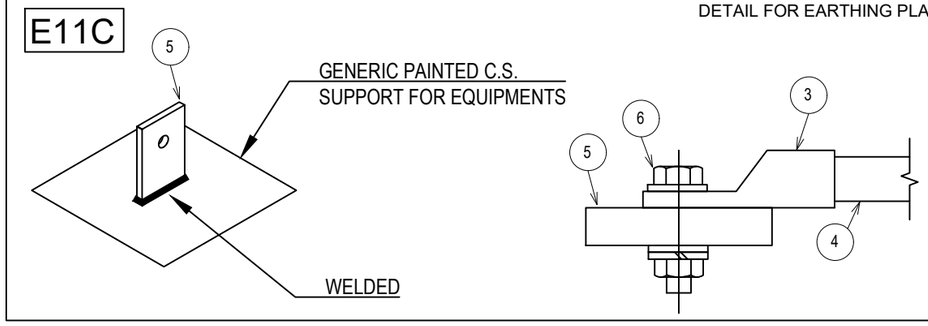
FOR CABLE
MAX 10mm²

DETAIL EARTHING THREADED STUD



E11C

DETAIL FOR EARTHING PLATE

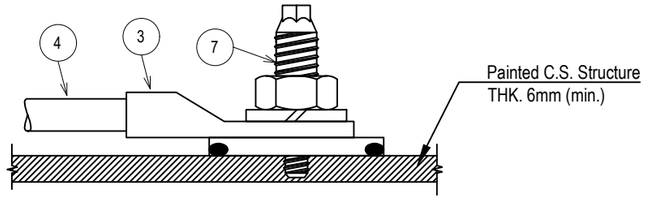


E11E

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_G	25/10/24	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

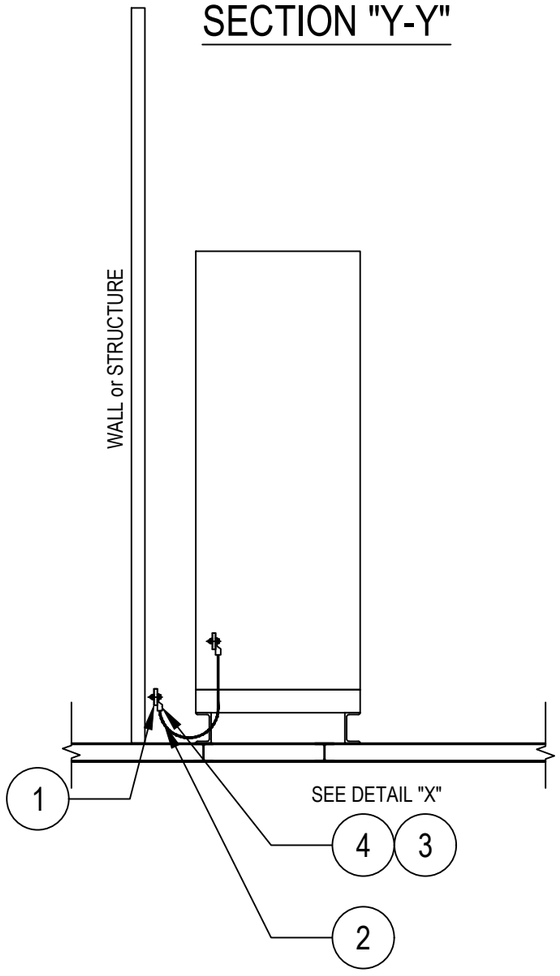
F.to UNI A3: 420mmx297mm

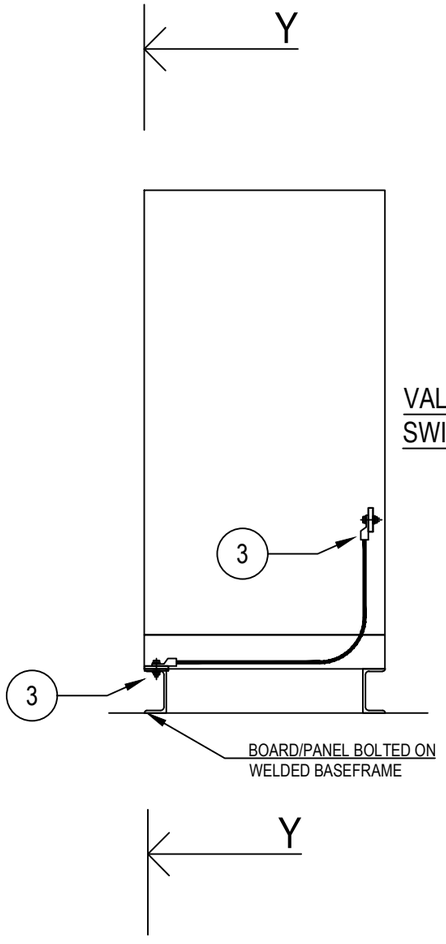
File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

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	

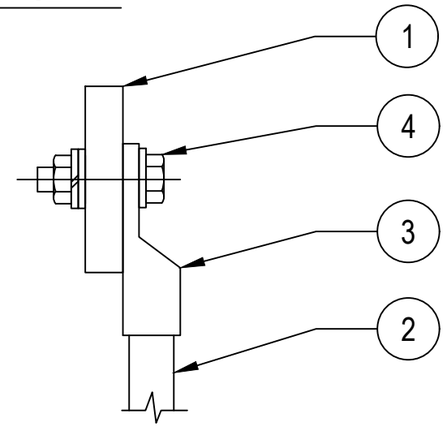
SECTION "Y-Y"





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_G	25/10/24	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

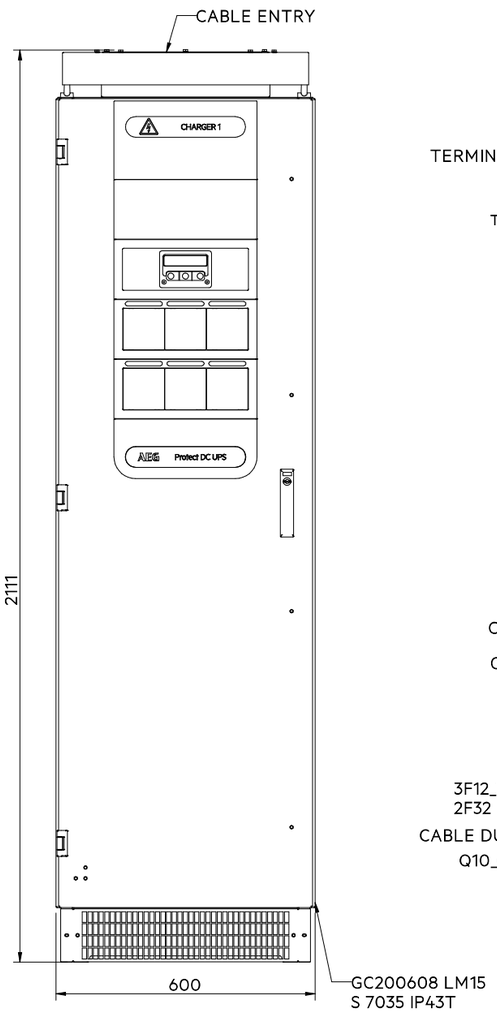
A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-EL-DD-20090	011	02

F.to UNI A3: 420mmx297mm

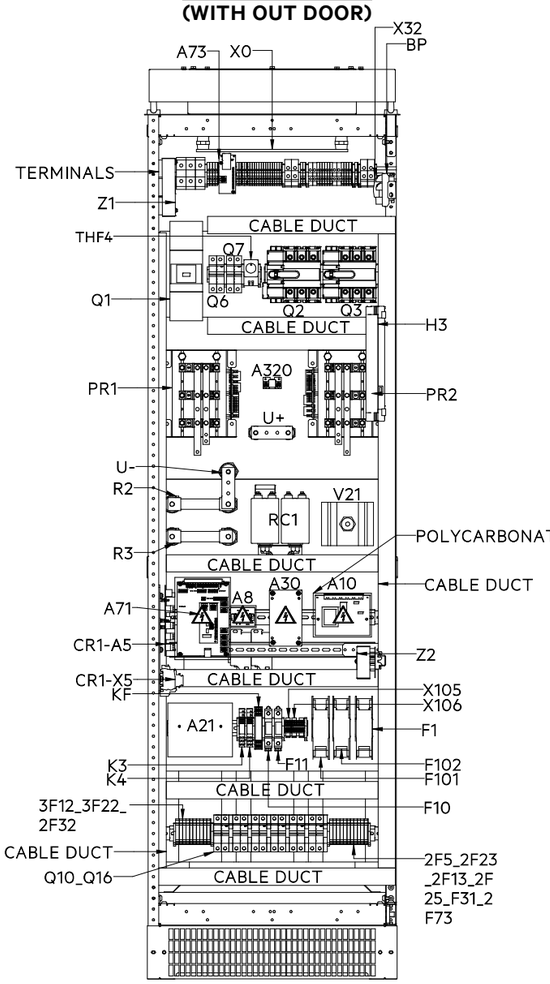
File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

Los productos fabricados en este documento cumplen de acuerdo con la directiva RoHS 2002/95 / EC - Products manufactured according to this document must be compliant with RoHS 2002/95/EC

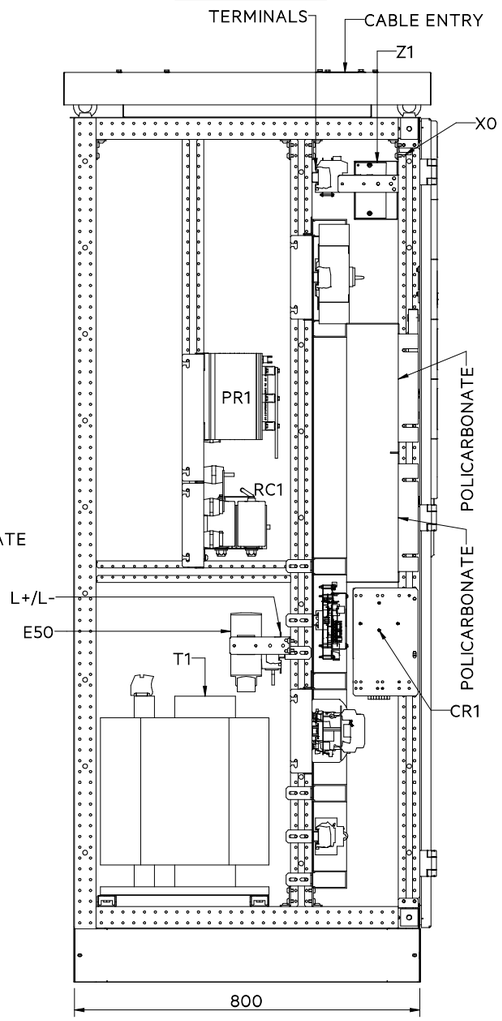
FRONT VIEW



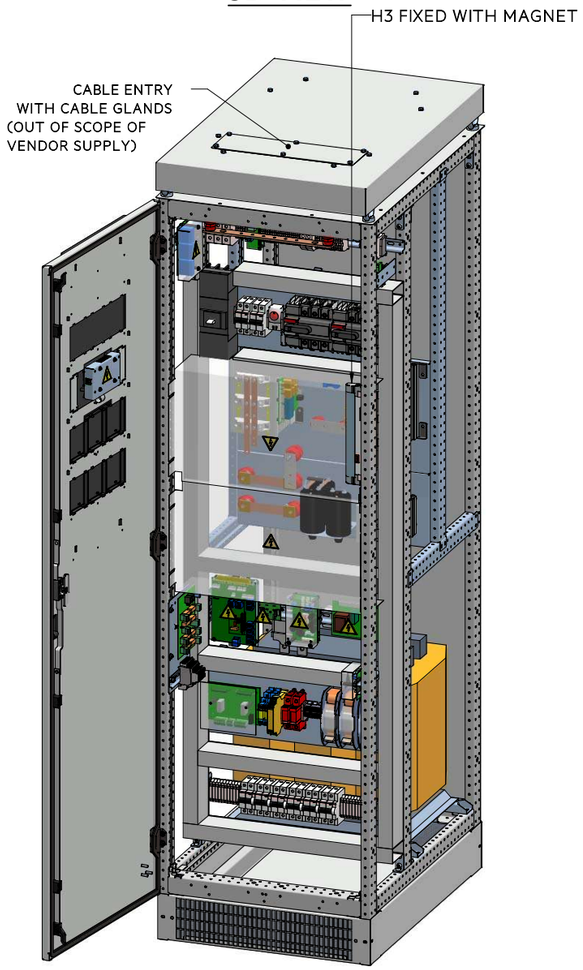
FRONT VIEW
(WITH OUT DOOR)



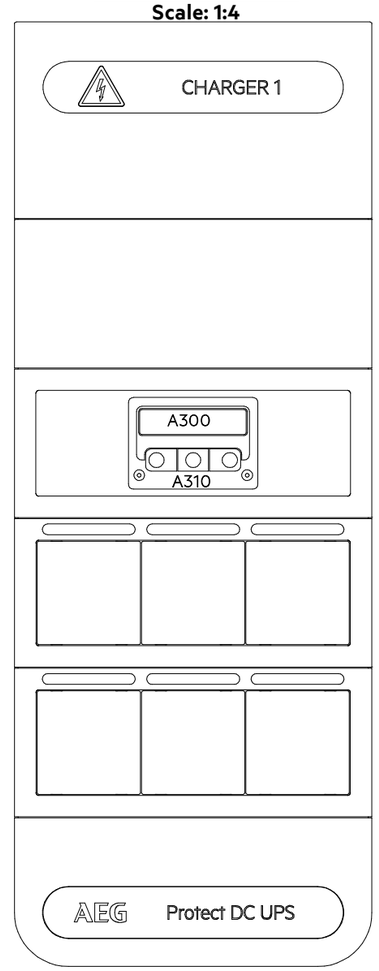
SIDE VIEW



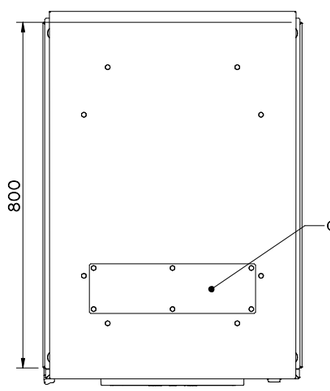
3D VIEW



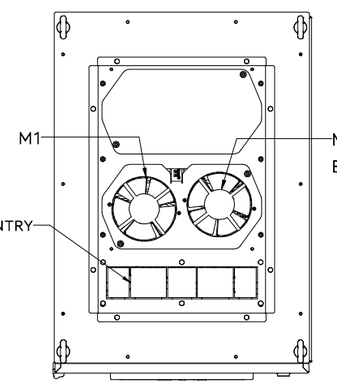
DOOR DETAIL
Scale: 1:4



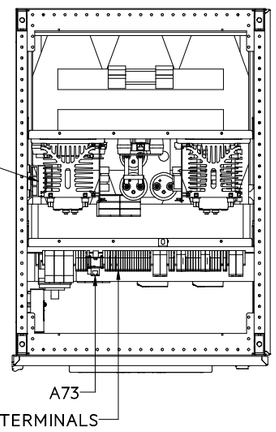
TOP VIEW



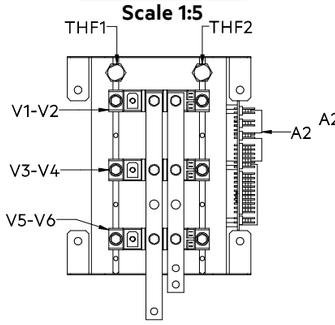
TOP VIEW
(FANS DETAIL)



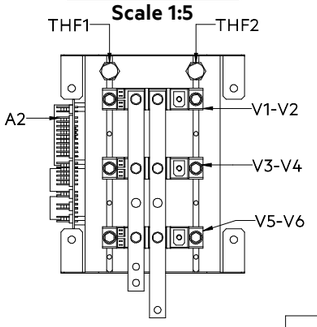
TOP VIEW
(WITHOUT ROOF)



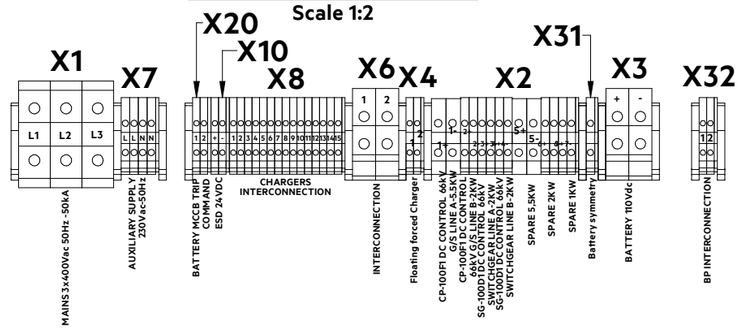
PR1 DETAIL
Scale 1:5



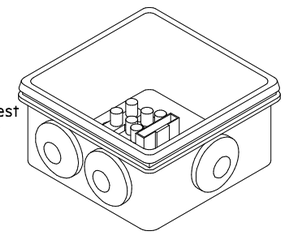
PR2 DETAIL
Scale 1:5



TERMINALS DETAIL
Scale 1:2



F100 DETAIL



Place the box the closest possible to the battery

Escala / *Scale:* 1:10					
Tol. Gen. / *Gen. Tol.:* ISO 2768-mK					
Dibujado / *Drawn* 22/05/2024 Por / *By* EAA	Rev *Issue*	Fecha *Date*	Dib. *Drawn*	Revisado *Checked*	Comentarios / *Comments*
Verificado / *Checked* 22/05/2024 Por / *By* EBM					

C/ ALBERT EINSTEIN, 31
PARQUE TECNOLÓGICO DE ALAVA
01510 - VITORIA (ALAVA)
TELF: +34 945 21 41 10 / FAX: +34 945 21 41 11
WEB: WWW.AEGPS.ES

SAP Document: **ES521464A1_MEC**

SAP Code: **ES521464A1**

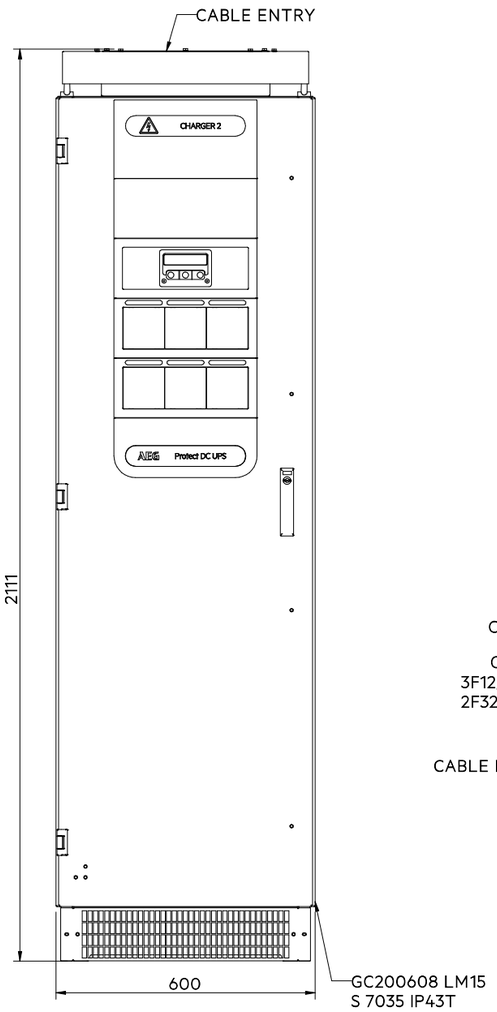
Denominación / *Description:*
DC UPS UP-200F1 CHARGER-A
1724000372-EL-DA-00003

Formato/ *Format*: A2 | Rev/ *Issue*: **00**

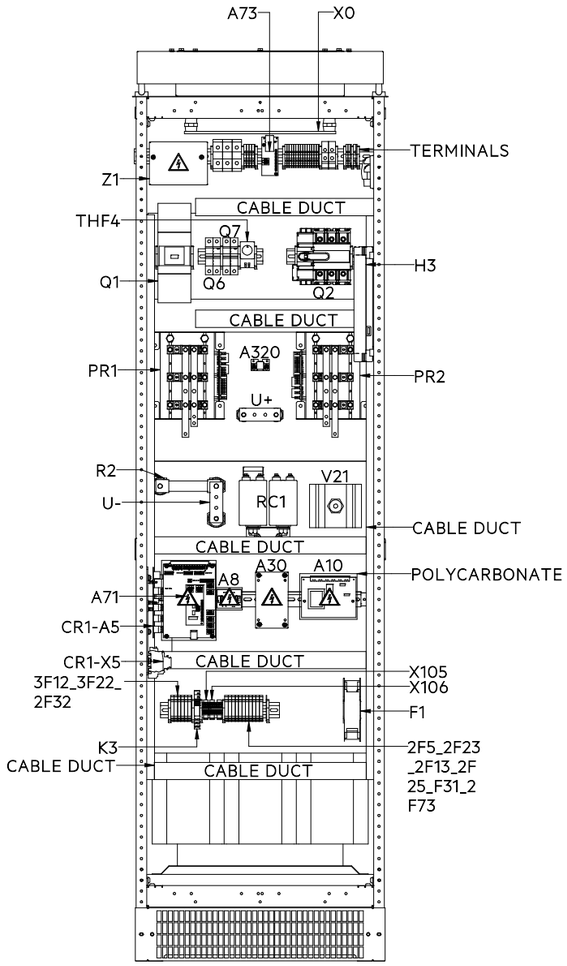
Hoja / *Sheet*: 1/4

Los productos fabricados en este documento cumplen de acuerdo con la directiva RoHS 2002/95 / EC - Products manufactured according to this document must be compliant with RoHS 2002/95/EC

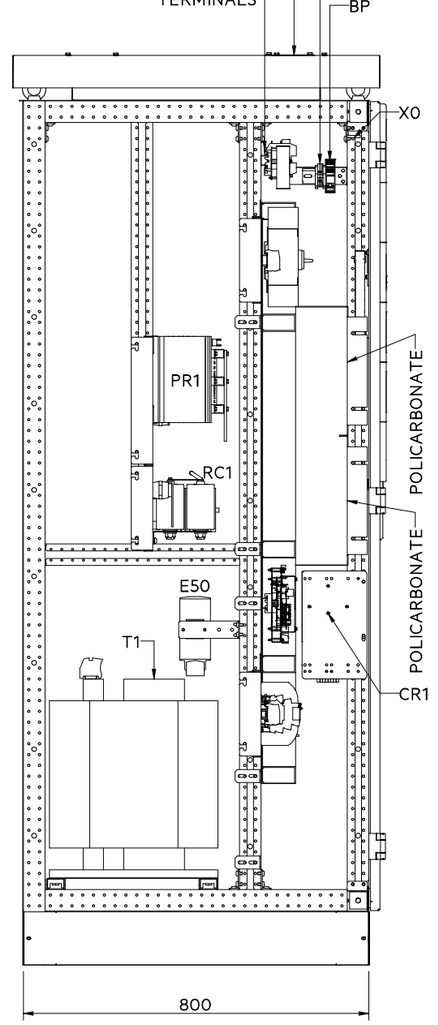
FRONT VIEW



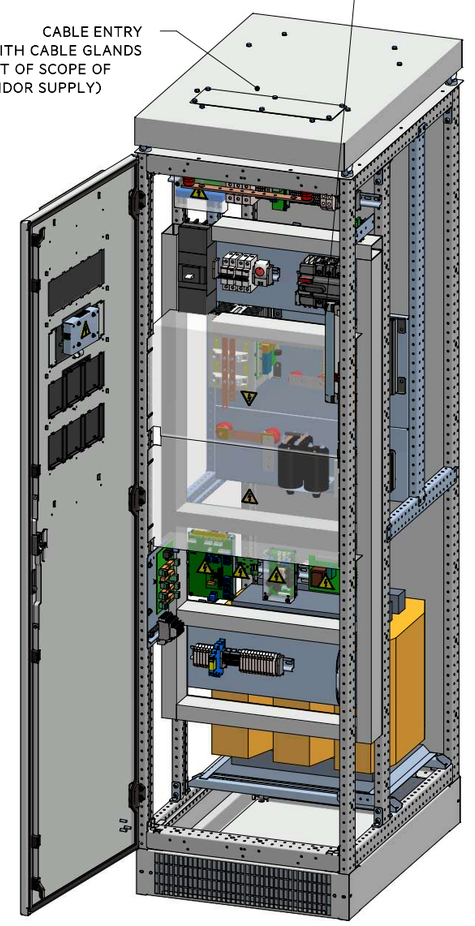
FRONT VIEW
(WITH OUT DOOR)



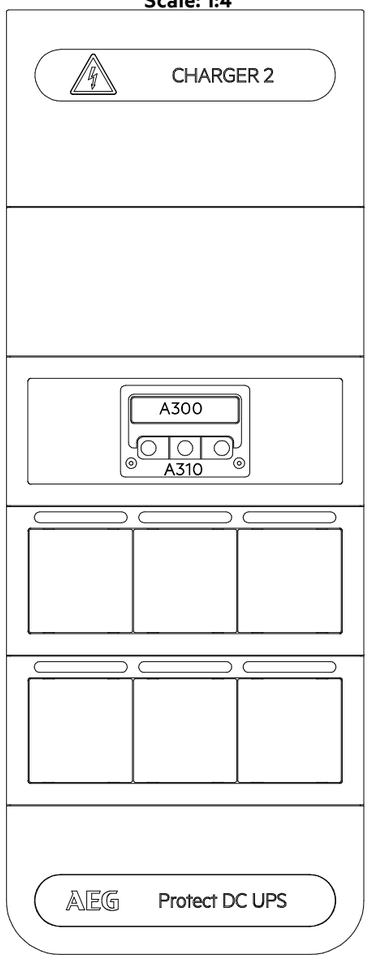
SIDE VIEW



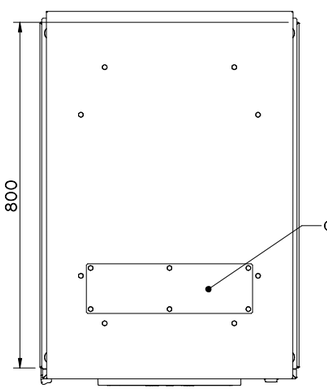
3D VIEW



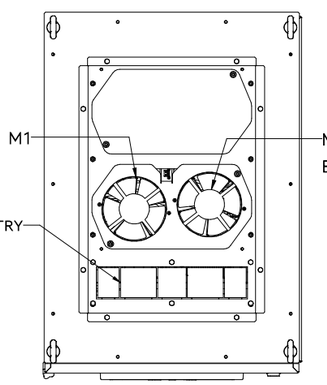
DOOR DETAIL
Scale: 1:4



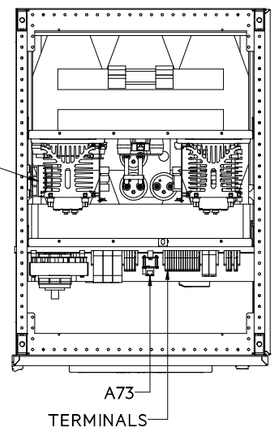
TOP VIEW



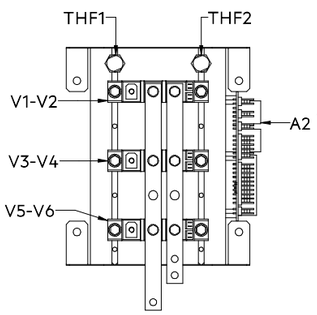
TOP VIEW
(FANS DETAIL)



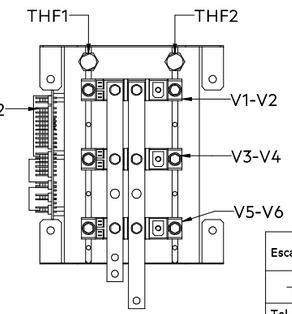
TOP VIEW
(WITHOUT ROOF)



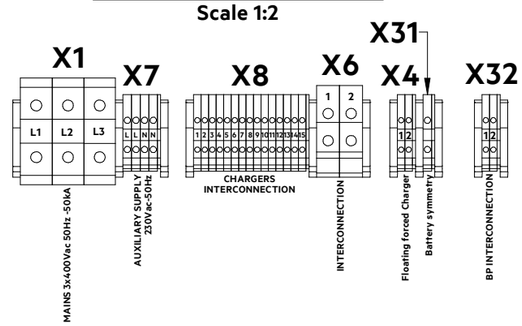
PR1 DETAIL
Scale 1:5



PR2 DETAIL
Scale 1:5



TERMINALS DETAIL
Scale 1:2



Escala / *Scale:* 1:10					
Tol. Gen. / *Gen. Tol.:* ISO 2768-mK					
Dibujado / *Drawn* 27/05/2024 Por / *By* EAA	Rev *Issue*	Fecha *Date*	Dib. *Drawn*	Revisado *Checked*	Comentarios / *Comments*
Verificado / *Checked* 27/05/2024 Por / *By* EBM					

AEG POWER SOLUTIONS
C/ ALBERT EINSTEIN, 31
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01510 - VITORIA (ALAVA)
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WEB: WWW.AEGPS.ES

SAP Document: **ES521464A2_MEC**

SAP Code: **ES521464A2**

Denominación / *Description:*
DC UPS UP-200F1 CHARGER-B
1724000372-EL-DA-00003

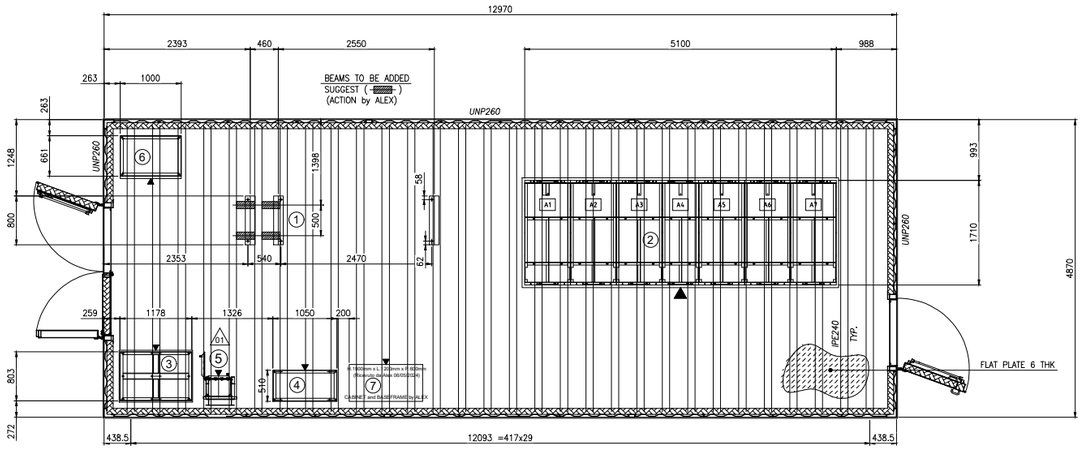
Formato/ *Format:* **A2** | Rev/ *Issue* **00**

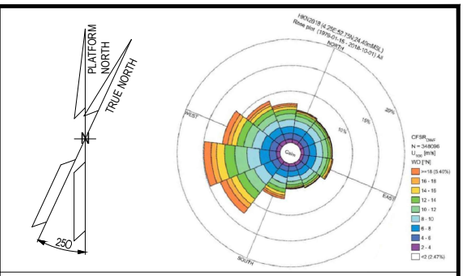
Hoja / *Sheet:* 1/4

DRAWING NO. 1724000049-AR-DD-00018

REV. 02

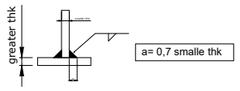
B-100
I&T EQUIPMENT ROOM
BASEFRAME LOCATION PLAN



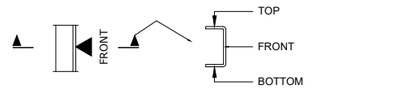


NOTES

1. UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN MILLIMETERS.
2. ALL WELDINGS SYMBOLS ARE IN ACCORDANCE WITH A.W.S. CODE D.1.1
3. UNLESS OTHERWISE INDICATED FILLET WELDS SHALL HAVE FOLLOWING DIM.:



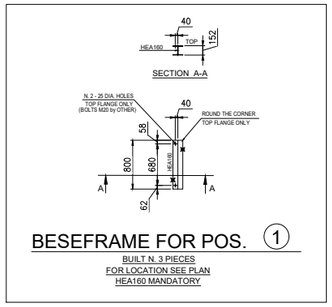
4. ALL WELDS ON TOP & BOTTOM SIDES OF BASEFRAMES MUST BE PERFECTLY SMOOTHED.
5. WHERE INDICATED " ▲ " SHOULD BE STAMP "FRONT", ABOVE "TOP" AND BELOW "BOTTOM".



6. SURFACE TREATMENT ACCORDING DOCUMENT N. 1724000049-MAT-PRO-00004 - PAINTING PROCEDURE FINAL COLOUR LIGHT GREY RAL 7035.

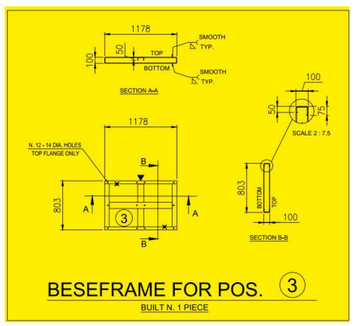
LEGEND

ASI = ALEX SISTEMI



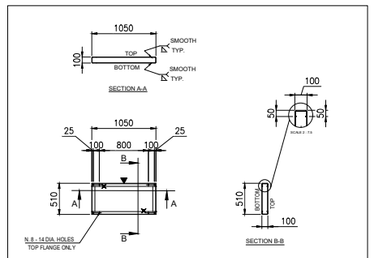
BESEFRAME FOR POS. ①

BUILT N. 3 PIECES
FOR LOCATION SEE PLAN
HEA160 MANDATORY



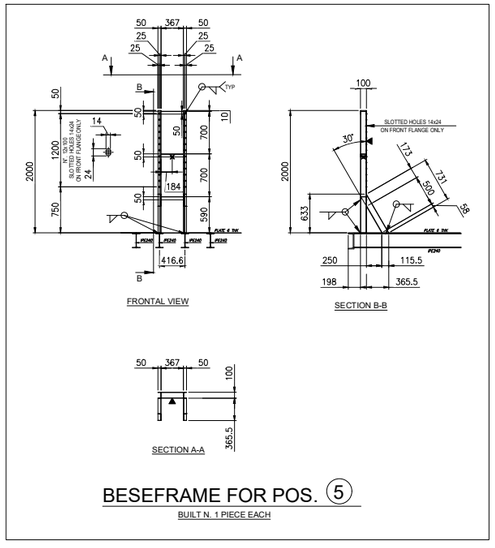
BESEFRAME FOR POS. ③

BUILT N. 1 PIECE



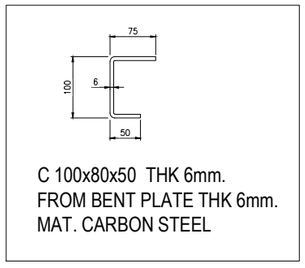
BESEFRAME FOR POS. ④

BUILT N. 1 PIECE EACH

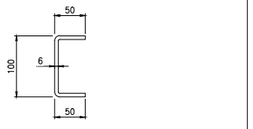


BESEFRAME FOR POS. ⑤

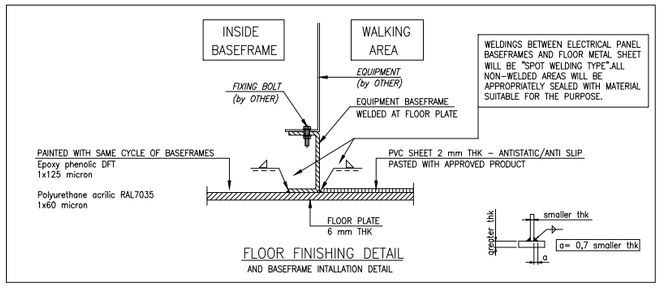
BUILT N. 1 PIECE EACH



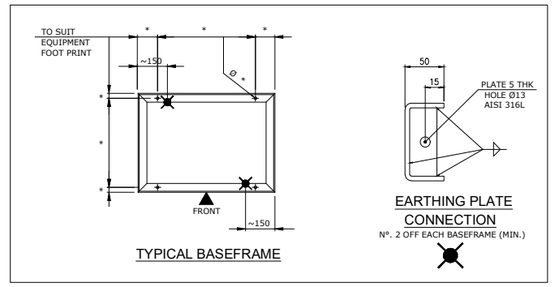
C 100x80x50 THK 6mm.
FROM BENT PLATE THK 6mm.
MAT. CARBON STEEL



C 100x50x50 THK 6mm.
FROM BENT PLATE THK 6mm.
MAT. CARBON STEEL

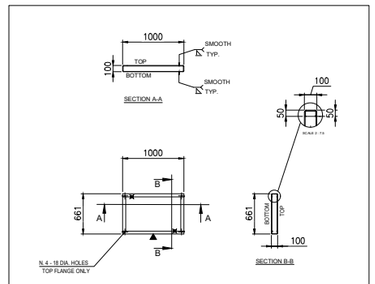


FLOOR FINISHING DETAIL
AND BASEFRAME INTALLATION DETAIL



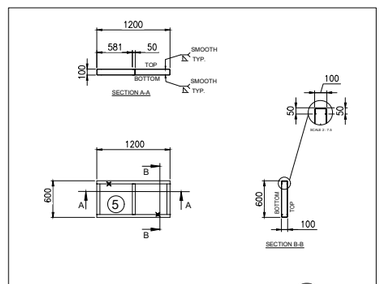
TYPICAL BASEFRAME

EARTHING PLATE CONNECTION
N°. 2 OFF EACH BASEFRAME (MIN.)



BESEFRAME FOR POS. ⑥

BUILT N. 1 PIECE



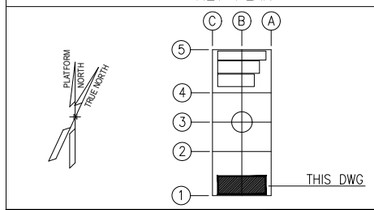
BESEFRAME FOR POS. ⑦

BUILT N. 1 PIECE

EQUIPMENT LIST

REF.	TAG No.	DESCRIPTION	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)	WEIGTH (Kg)	SCOPE
1	HNA6-AFA70	66kV SWITCHGEAR (GIS)	3689	2025	2651	2600	ASI
2	SG-100D1	6.6kV SWITCHGEAR	5180	1800	2500	7400	ROSETTI MARINO
3	UP-200F1	DC UPS PANEL	1200	850	2105	500	ASI
4	BA-200F1	DC UPS BATTERY RACK	1050	510	1272	522	ASI
5	CB-200F1	ISOLATOR FOR DC UPS	600	300	800	100	ASI
6	CP-100E1	66 kV SWITCHGEAR LOCAL CONTROL PANEL	1000	700	2100	2100	ASI
7	B100-HSB-001	DISTRIBUTION & HVAC PANEL - HV MV ROOM	1200	600	1900	TBD	ASI

KEY PLAN



ALEXSISTEMI spa

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	11/07/24	M.G.	O.A.	C.A.	ISSUE FOR REVIEW (IFR)
01	08/07/24	M.G.	O.A.	C.A.	ISSUE FOR REVIEW (IFR)
00	23/05/24	M.G.	O.A.	C.A.	ISSUE FOR CLIENT REVIEW (ICR)

CROSSWIND

ROSETTI MARINO

TITLE :

B-100 DETAILED DRAWINGS-E&I SHELTERS

CONTRACT NO./TITLE CONTRACT_NO. 1724000049			SCALE 1:50
DRAWN M.G.	CHECKED O.A.	APPROVED C.A.	DATE 11/07/24
A1	DRAWING NO. 1724000049-AR-DD-00018	SHEET 003	REV. 02

File Name : 1724000049-AR-DD-00018-REV.02

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+REC1
UP-200F1 A

-M1/2
220-240 Vca
50-60Hz
FAN

-PR2-TH1
THERMOSTAT 100º

-PR2-TH2
THERMOSTAT 90º

-PR1-TH1
THERMOSTAT 100º

-PR1-TH2
THERMOSTAT 90º

Charger
100A 12Pulses

-Z1
0/450V

-X1
L1
70 mm²
4G16 mm2
unamoured cable

MAINS
3x400Vac 50Hz -50kA

L1;L2;L3;PE

-Q1
50A

-T1
110V/100A
019.6KVA

-PR2
-PR1

-R2
100mV
130A

-C1
3x6800µF
160V
Filtering 1%

-F1
NH00
125A

-V21
100A

-Q2
160A

-R3
100mV
130A

-Q3
160A

BATTERY
110Vdc
-X3
+/-
70 mm²

Battery
symmetry
-X31
+/-
4 mm²

-A10
BATTERY SIMMETRY FAULT

-L+/-
2P 125A
BUS BAR
110 VDC

+BP
BATTERY PROTECTION

+BAT

2 (1x25) mm2
Int

-F100
Plastic
box 80*80

-SD1
-SD2

-PR2-A2
TPC

-A320
INTERFACE

-PR1-A2
TPC

SD1 / (+BAT-SD1 /1.8)

-A1
GCAU
CONTROL UNIT

-A5.1
Relays

-CR1-X5

-A71

-A300
DISPLAY

-A73
MODBUS-TCP/IP

-A8
Isolated

-A310
KEY PAD

-KF
PSR-SCP- 24DC / SIL3

-Z2
400V

-X8
4 mm²
CHARGERS
INTERCONNECTION

2,5 mm²

INTERCONNECTION
-X6
50 mm²
PH4 35 mm²

-Q10
50A-C
CP-100F1
DC CONTROL 66kV G/S
LINE A-5.2KW
-X2 1+/1
16 mm²
3G16 mm2
amoured cable
(+REC1-A1 /1.4) / SD1

-Q11
20A-C
CP-100F1
DC CONTROL 66kV G/S
LINE B-2KW
-X2 2+/2
16 mm²
3G16 mm2
amoured cable
(+REC2-A1 /1.4) / SD2

-Q12
16A-C
SG-100D1
DC CONTROL 6,6kV
SWITCHGEAR LINE A-1KW
-X2 3+/3
16 mm²
3G16 mm2
amoured cable

-Q13
16A-C
SG-100D1
DC CONTROL 6,6kV
SWITCHGEAR LINE B-1KW
-X2 4+/4
16 mm²
3G16 mm2
amoured cable

-Q14
50A-C
SPARE 5,5KW
-X2 5+/5
16 mm²

-Q15
20A-C
SPARE 2KW
-X2 6+/6
16 mm²

-Q16
16A-C
SPARE 1KW
-X2 7+/7
16 mm²

-F10/F11
DEHNguard

-A21
EARTH +/-

-Q6
02A-C

-H3

AUXILIARY SUPPLY
230Vac-50Hz

-X7
L/N
6 mm²
3G2.5 mm2
unamoured cable

-Q7
02A-C

-THF4
0/60ºC

-E50
100W

+REC2
UP-200F1 B

-M1/2
220-240 Vca
50-60Hz
FAN
-PR2-TH1
THERMOSTAT 100º
-PR2-TH2
THERMOSTAT 90º
-PR1-TH1
THERMOSTAT 100º
-PR1-TH2
THERMOSTAT 90º
Charger
100A 12Pulses
-Z1
0/450V
-X1
L1
70 mm²
4G16 mm2
unamoured cable
MAINS
3x400Vac 50Hz -50kA
L1;L2;L3;PE
-Q1
50A
-T1
110V/100A
019.6KVA
-PR2
-PR1
-R2
100mV
130A
-C1
3x6800µF
160V
Filtering 1%
-F1
NH00
125A
-V21
100A
-Q2
160A
-PR2-A2
TPC
-A320
INTERFACE
-PR1-A2
TPC
SD2 / (+BAT-SD2 /1.8)
-A1
GCAU
CONTROL UNIT
-A5.1
Relays
-CR1-X5
-A71
-A300
DISPLAY
-A73
MODBUS-TCP/IP
-A8
Isolated
-A310
KEY PAD
-Q6
02A-C
-H3
AUXILIARY SUPPLY
230Vac-50Hz
-X7
L/N
6 mm²
-Q7
02A-C
-THF4
0/60ºC
-E50
100W

2,5 mm²
Int

-X8
4 mm²
CHARGERS
INTERCONNECTION
(+REC1-CR1-J13:1 /1.4)
-A8

INTERCONNECTION
-X6
50 mm²

A8 / (+REC2-X8 /1.4)

Battery
symmetry
-X31
+/-
4 mm²
-A10
BATTERY SIMMETRY FAULT

2,5 mm²
Int

ES521464

				Date	21/03/2024	3W POWER S.P.A.	AEG POWER SOLUTIONS	Single-line	1724000372-EL-DG-00006	= System
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm		System		+ 8 / 47
				Checked	JOP					& EFA Sheet 1
Stat	Alteration	Date	Name	Standard					ES521464 en	A3 Sheets 1

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IEC_symbol

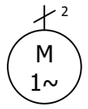
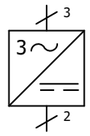
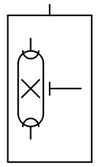
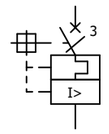
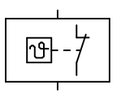
Symbol

NO contact	Female pin of a plug connection with direct connection point	Circuit breaker, two-pole, form 2
NC contact	Plug of a plug connection with direct connection point	Terminal with 2 connection points
Electromechanical operating device, general / relay coil	Capacitor, polarized (electrolytic capacitor)	
Fused terminal	Change-over contact with break point (2-path)	Terminal with 6 connection points without saddle jumper connection points
Fuse, single-pole, general	Change-over contact with break point (3-path)	Power circuit breaker, three-pole (L-, I-characteristic)
Resistor, general	Terminal	
Circuit breaker, two-pole	NC temperature switch	
AC motor	Heating element with PE	

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IEC_single_symbol

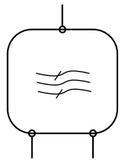
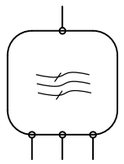
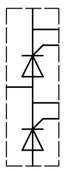
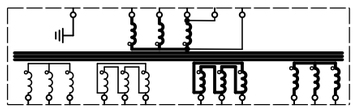
Symbol

Semiconductor diode, general 	AC motor, without PE, with straight connection point 	
Thermocouple 	Circuit breaker, two-pole, form 2 	
Fuse circuit breaker, single-pole 	Terminal	
3Ph Bridge Rectifier 		
Fluorescent lamp with PE 	Power circuit breaker, three-pole (L-, I-characteristic) 	
Capacitor, polarized (electrolytic capacitor) 		
NC temperature switch 		
Heating element with PE 		

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IEC_AEGPSI_symbol

Symbol

Cable, wire	Fuse 	
0.5mm² Wire	Shunt 	
Power interconnection Supplied 	Fuse-holder 1	
Power interconnection not supplied 	BUSBAR 	
Load switch disconnector, three-pole;rotary handle 	Filter single-phase 	
Ferrita 	Filter three-phase 	
Semipack SKKT 	Three-phase transformer 	
Fuse switch disconnector, three-pole 	Fuse holder Terminal 	

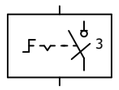
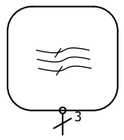
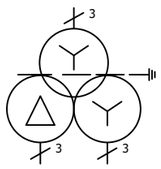
ES521464

				Date	21/03/2024	3W POWER S.P.A.	AEG POWER SOLUTIONS	Symbols used	=	
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm			+	6 / 47
				Checked	JOP				& EPZ	Sheet 3
Stat	Alteration	Date	Name	Standard				ES521464 en	A3	Sheets 4

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IEC_AEGPSI_single_symbol

Symbol

Load switch disconnector, three-pole;rotary handle 		
SHUNT 		
Filter three-phase 		
Three-phase transformer 		

Row		S-702D Data Sheet for DC Uninterruptible Power Systems (UPS) (IEC 62040-5-3)					Issue
2	Tag No. :	UP-200F1					
3	Service :	DC UPS					
4	Ref. Clause	Description	Project Requirement	Manufacturer Declared Values	Unit	Additional notes	
5		**GENERAL**					
6	5.1.2	Vendor :	Input Data	AEG Power Solutions			
7	5.1.2	Order status :	for purchase	Noted			
8	5.1.2	Purchase order number, date :	1724000372 123A90A rev1 dated 22/4/2024	Noted			
9	5.1.2	Manufacturer :	Input Data	AEG Power Solutions			
10	5.1.2	Model number :	Input Data	2 x Protect RCS 110Vdc 100A			
11	5.1.2	Serial number :	Input Data	Released after production			
12	5.2.3	Application :	Industrial - Offshore	Noted			
13	5.3.2	Purchaser specified rated output power :	10	Confirmed	kVA		
14	5.1.1	Quantity :	1	Confirmed. Redundant system			
15		Conformity assessment system (CAS) level :	D	Noted			
16		**CONFIGURATION**					
17	5.1.1, A.1, Figure A.1, Figure A.3, Figure A.5	DC UPS configuration :	Two (2) 100% rated rectifiers connected to a common (shared) battery rated for the full rated load for the autonomy time	Confirmed			
18	A.2.2	Blocking diode required at output of single DC UPS :	Yes	Confirmed. Diode V21			
19	A.2.3	Scalability :	manufacturer standard	-			
20	5.1.1	DC UPS topology :	direct energy storage connect	Noted			
21	B.2.3	Series converter connect option :	manufacturer standard	Not applicable			
22	5.4.2.3	Battery configuration :	1 x 100%	Confirmed. 30 min autonomy			
23	5.3.2, 5.3.4	Performance classification :	manufacturer standard	-			
24	8.1.1.3	Bi-directional rectifier :	No	Not applicable			
25	8.2.2.11	Remote access required :	Yes (read only)	Confirmed. Modbus TCP			
26	8.2.2.11	Hardware (adapters, connectors, cables, etc.) required for remote monitor :	Yes	Confirmed			
27	8.1.1.5, 8.1.1.6	On-line battery monitoring facility required :	string monitoring	Confirmed			
28	8.1.1.4	On-line battery testing feature required :	No	Noted			
29	8.1.1.4	Battery test load interface :	No	Noted			
30	5.4.2.3	DC earth leakage monitoring required :	Yes	Confirmed			
31	7.4.14	Single line diagram and status display :	on HMI	LCD display without synoptic			
32	8.1.2.11	Black Start feature required :	Yes	Confirmed			
33	8.1.1.1	Earth screen required for isolation transformer :	manufacturer to advise	Confirmed			
34		**PHYSICAL ASPECTS**					
35	7.2.1	Mounting :	floor mounting	Confirmed			
36	7.2.1	Overall cabinet dimensions - length :	Input Data	600 (each charger)	mm		
37	7.2.1	Overall cabinet dimensions - depth :	Input Data	840	mm		
38	7.2.1	Overall cabinet dimensions - height :	Input Data	2105	mm		
39	7.2.1	Reference Outline Drawing number :	Input Data	1724000372-EL-DA-00003			
40	7.2.1	Total DC UPS cabinet mass :	Input Data	250 (each charger)	kg		
41	7.2.1	Total DC UPS mass with batteries (if integrated) :	Input Data	Batteries not integrated	kg		
42	7.2.4, 7.2.5	Cable entry location :	top	Confirmed. By means of cable glands			
43	7.2.4, 7.2.5	Cable entry type :	removable - undrilled plate	Confirmed			
44	7.2.4, 7.2.5	Gland plate material :	manufacturer standard	Steel			
45	7.2.1	Paint colour :	supplier standard	RAL7035			
46	7.2.1	Canopy for cabinet required :	No	Noted			
47	7.3.5	Document holder :	Yes	Confirmed			
48		**INSTALLATION**					
49	4,1	Site :	offshore - fixed	Noted. Painting class C3-H			
50	4,1	Location of DC UPS cabinet installation :	indoor	Noted			
51	7.3.1, 7.3.2	Front access clearance dimensions for operation and maintenance :	800	Noted	mm		
52	7.3.2	Side clearance for ventilation (if required) :	manufacturer to advise	0	mm		
53	7.3.2	Rear clearance for ventilation (if required) :	manufacturer to advise	100 mm	mm		
54	7.2.3, 7.9.3	Installed location of battery :	inside DC UPS enclosure	Battery housed on rack			
55	7.2.3	Maximum battery assembly dimensions (L x D x H) :	Input Data	Battery rack 1050 x 510 x 1032	mm		
56		**SAFETY**					
57	5.1.1	Accessibility :	operator access area	Front access			
58	5.1.1	Key required for cabinet :	Yes	Confirmed			
59	7.2.2	Degree of protection (with closed doors) :	IP31	IP43			
60	7.2.2	Degree of protection (with open doors) :	IP2X	IP20			
61	4.3.2	Area classification :	safe	Noted			
62	4.3.2	Hazardous area certification required :	none	Noted			
63	4.3.2	Level of protection :	N/A	Not applicable			
64	4.3.2	Gas group :	manufacturer to advise	Not applicable			
65	4.3.2	Temperature class :	manufacturer to advise	Not applicable			
66	4.3.2	Equipment protection level :	manufacturer to advise	Not applicable			
67	7.7.5	Cooling fan replacement while DC UPS in service :	No	Noted			
68	5.1.2	Local language for caution/danger/warning labels :	English	Confirmed			
69		**ELECTROMAGNETIC COMPATIBLITY**					
70	5.1.4	Emission :	UPS Cat C3	Confirmed			
71	5.1.4	Immunity :	UPS Cat C3	Confirmed			
72		**ENVIRONMENTAL CONDITIONS**					
73	4.2.1.1	Minimum ambient temperature (operation) :	-8,4	Confirmed with heater option included	°C		
74	4.2.1.1	Maximum ambient temperature (operation) :	40	Confirmed	°C		
75	4.2.1.1	Maximum relative humidity (operation) :	95	Confirmed. Not condensing	%		
76	4.2.1.1	Temperature at which relative humidity is specified (operation) :	Input Data	-	°C		
77	4.2.1.2	Maximum altitude (operation) :	Sea Level	Noted	m		
78	4.2.2	Minimum ambient temperature (storage and transportation) :	-5	Noted	°C		
79	4.2.2	Maximum ambient temperature (storage and transportation) :	40	Noted	°C		
80	4.2.2	Maximum relative humidity (storage and transportation) :	85	Noted	%		

Row		S-702D Data Sheet for DC Uninterruptible Power Systems (UPS) (IEC 62040-5-3)					Issue
2	Tag No. :	UP-200F1					
3	Service :	DC UPS					
4	Ref. Clause	Description	Project Requirement	Manufacturer Declared Values	Unit	Additional notes	
81	4.2.2	Temperature at which relative humidity is specified (storage and transportation) :	Input Data	-	°C		
82	4.3.2	Seismic requirement data :	Zone 2	Noted			
83	4.2.2	Storage site of DC UPS :	indoor – natural ventilation	Noted			
84	4.3.2	Additional or unusual conditions (operation) :	Input Data	Not applicable			
85	4.3.3	Additional or unusual conditions (storage and transportation) :	Input Data	Not applicable			
86	5.1.5	Acoustic noise at 1 m - normal mode :	70	66 dB(A)	dBA		
87	5.1.5	Acoustic noise at 1 m - stored energy mode :	70	66 dB(A)	dBA		
88		**COMMUNICATION INTERFACE(S)**					
89	5,6	(1) Interface media for SCADA (ICSS / DCS) :	serial	Modbus TCP + relays			
90	5,6	(1) Maximum allowable length of communication cable (for copper) :	25	Noted	m		
91	5,6	(1) Interface protocol for SCADA (ICSS / DCS) :	Modbus	Modbus TCP + relays			
92	5,6	(2) Interface media for Electrical Management / Control System :	serial	Modbus TCP + relays			
93	5,6	(2) Maximum allowable length of communication cable (for copper) :	25	Noted	m		
94	5,6	(2) Interface protocol for Electrical Management / Control System :	Modbus	Modbus TCP + relays			
95	5,6	(3) Remote access / monitoring software required :	Yes	Noted			
96	5,6	(3) Interface media for Remote access / monitoring :	ethernet (fiber)	Noted			
97	5,6	(3) Maximum allowable length of communication cable (for copper) :	25	Noted	m		
98	5,6	(3) Interface protocol for Remote access / monitoring :	Modbus	Modbus TCP + relays			
99		**AC INPUT SPECIFICATIONS**					
100	5.2.1	Voltage (steady state, R.M.S) - rated :	400	Confirmed	V		
101	5.2.1	Voltage (steady state, R.M.S - tolerance :	+/- 10	Confirmed	%		
102	5.2.1	Frequency - rated :	50 Hz	Confirmed			
103	5.2.1	Frequency - tolerance :	+/- 2	Confirmed	%		
104	5.2.2	Phases required :	3	3			
105	5.2.2	Neutral required :	Yes	No			
106	5.2.2	Current (R.M.S) - rated (with the energy storage device charged) :	manufacturer to advise	28A max	A		
107	5.2.2	Power factor :	manufacturer to advise	0,81			
108	5.2.2	In-rush (% of rated current) :	manufacturer to advise	Slow-start function included	%		
109	5.2.2	In-rush (time) :	manufacturer to advise	Data not characterized by the factory. Measurable on request	s		
110	5.2.2	Maximum current (with low input volt and energy storage device charging) :	manufacturer to advise	28A max	A		
111	5.2.2	Time for overload (125 % of rated current) :	manufacturer to advise	Not applicable	s		
112	5.2.2	Time for overload (150 % of rated current) :	manufacturer to advise	Not applicable	s		
113	5.2.2	Total harmonic distortion (THD p.u.) :	8	Confirmed. The DC UPS works with an input voltage harmonic distortion ≤ 8%	%		
114	5.2.3	Short circuit current of the input supply :	50	Confirmed. The charger is equipped with an input MCCB (Q1) with Isc = 50kA	kA		
115	5.2.2	Minimum prospective short circuit current :	Input Data	Data not characterized by the factory. Measurable on request	kA		
116	5.2.2	Earth leakage current :	Input Data	Data not characterized by the factory. Measurable on request	mA		
117	5.2.2	AC power distribution system - compatibility :	TN-S	Confirmed			
118	5.2.3	Additional or unusual conditions :	Input Data	Not applicable			
119	5.2.3, 7.5.4	Cable Size (cross-section area) - input mains (Float) :	Input Data	70 sqmm	sq.mm.		
120	7.5.4	Cable Size (cross-section area) - input mains (Boost) :	Input Data	70 sqmm	sq.mm.		
121	7.4.8, 8.1.1.1	Input isolation transformer required :	Select	Confirmed			
122	7.4.10	Input isolation transformer winding :	copper or aluminum	Aluminium			
123		**DC AND BATTERY SPECIFICATIONS**					
124	5.4.2.2	DC voltage level :	110	Confirmed	V d.c.		
125	5.4.2.2	Design life :	5	>12 years	years		
126	5.4.2.2	Float service life :	manufacturer to advise	Dependent from temperature	years		
127	5.4.2.2	Shelf life of battery :	manufacturer to advise	3	months		
128	5.4.2.2	Quantity of cells and strings :	manufacturer to advise	10 blocks - 1 string	nos.		
129	5.4.2.2	Nominal voltage (total) :	manufacturer to advise	120	V d.c.		
130	5.4.2.2	Battery technology :	sealed nickel cadmium	VRLA GEL technology			
131	5.4.2.2	Nominal AH capacity :	manufacturer to advise	150	AH		
132	5.4.2.2	Discharge rate (C-rate) :	manufacturer to advise	C20			
133	5.4.2.2	Electrolyte fill status :	manufacturer standard	Not applicable to VRLA battery			
134	8.1.2.3	Purchaser's requirement (% of battery recharge level - 1) :	80	Confirmed with charging current limited to 0,1C	%		
135	8.1.2.3	Purchaser's requirement (time for battery recharge level - 1) :	10	Confirmed	Hours		
136	8.1.2.3	Purchaser's requirement (% of battery recharge level - 2) :	100	Data not characterized by the factory. Measurable on request	%		
137	8.1.2.3	Purchaser's requirement (time for battery recharge level - 2) :	24	Data not characterized by the factory. Measurable on request	Hours		
138	5.4.2.2	Stored energy time (back-up time at 100% rated load) :	60	30 min @ 10kW load	min		
139	5.4.2.2	Restored energy time (recharge time to 80% capacity) :	manufacturer to advise	10h	hours		
140	5.4.2.2	Ambient reference temperature :	40	Confirmed	°C		
141	5.4.2.2	Earth condition/isolation :	manufacturer to advise	floating			
142	5.4.2.2	Ripple current (R.M.S) :	manufacturer to advise	1% ripple voltage RMS	%		
143	5.4.2.2	Maximum discharge current :	manufacturer to advise	Data not characterized by the factory. Measurable on request	A		
144	5.4.2.2	DC Fault current rating :	manufacturer to advise	Data not characterized by the factory. Measurable on request	A d.c.		
145	5.4.2.2	Cable volt drop recommendation (≤ % at nominal discharge current) :	manufacturer to advise	1	%		
146	5.4.2.2	Charging regime :	manufacturer to advise	Constant voltage, current limited			
147	5.4.2.2	Charge voltage (float) and tolerance band :	manufacturer to advise	2,28Vcell - 13,5 / 13,8 Vblock	V d.c.		
148	5.4.2.2	Charge voltage (boost) and tolerance band :	manufacturer to advise	2,28Vcell - 13,5 / 13,8 Vblock	V d.c.		

Row		S-702D Data Sheet for DC Uninterruptible Power Systems (UPS) (IEC 62040-5-3)					Issue
2	Tag No. :	UP-200F1					
3	Service :	DC UPS					
4	Ref. Clause	Description	Project Requirement	Manufacturer Declared Values	Unit	Additional notes	
149	5.4.2.2	Charge voltage (equalising) and tolerance band :	manufacturer to advise	Not applicable to VRLA battery	V d.c.		
150	5.4.2.2	Minimum end of discharge voltage :	manufacturer to advise	99	V d.c.		
151	5.4.2.2	Charge current limit (or range) :	manufacturer to advise	15A (0,1C)	A d.c.		
152	5.4.2.2	Temperature compensated charging required :	Yes	Confirmed			
153	5.4.2.3	Battery isolation box required :	manufacturer standard	Noted			
154	5.4.2.3	Additional or unusual conditions :	Input Data	Not applicable			
155	5.4.2.3	Load profile for battery design, attached :	Yes	Noted			
156	5.4.2.3	Battery rack design :	Batteries integrated inside UPS Cabinet	Battery housed on rack			
157		**BATTERY ROOM**					
158	4.2.1.1	Minimum ambient reference temperature :	Input Data	-8,4°C (used for battery sizing)	°C		
159	4.2.1.1	Maximum ambient reference temperature :	40	+40°C (used for battery sizing)	°C		
160	5.4.2.1	Area classification :	safe	Noted			
161	5.4.2.1	Hazardous area classification :	N/A	Not applicable			
162	5.4.2.1	Minimum Gas Subdivision and Temperature Class (for equipment in Battery room) :	N/A	Not applicable			
163	8.1.2.10	Temperature sensor (for VRLA / partial gas recombination batteries) :	Yes	Confirmed. Standard sensor			
164		**BATTERY ISOLATOR BOX SPECIFICATIONS**					
165	7.9.1	Enclosure material :	manufacturer standard	Aluminium alloy			
166	7.9.1	Mounting :	manufacturer standard	Wall mounting			
167	7.9.1	Breathing valve required :	manufacturer to advise	No			
168	7.9.1	Internal earth bar :	tinned copper	-			
169	7.9.3	Minimum design temperature :	-8,4	Noted	°C		
170	7.9.3	Maximum design temperature :	40	Noted	°C		
171	7.9.3	Maximum relative humidity :	95	Noted	%		
172	7.9.3	Temperature at which relative humidity is specified :	Input Data	-	°C		
173	7.9.4	Degree of protection :	IP 31	IP65			
174	7.9.5	Area classification :	safe	Noted			
175	7.9.5	Hazardous Area Certification required :	none	-			
176	7.9.5	Hazardous area classification :	N/A	Not applicable			
177	7.9.5	Hazardous area level of protection :	N/A	Not applicable			
178	7.9.6	Cable entry :	top	Bottom with cable glands			
179	7.9.6	Cable indirect entry via 'ex e' enclosure :	Select	Not applicable			
180	7.9.6	Battery cable size (cross-section area) :	No	25 sqmm armored cable class-2	sq.mm.		
181	7.9.6	Cable entry diameter in battery box (ISO metric) :	Input Data	17 mm			
182	7.9.7	Battery isolator type :	MCCB	Confirmed			
183	7.9.8	Rated current of breaker / switch fuse unit :	manufacturer to advise	125A	A		
184	7.9.8	Rated breaking current (Icu) - (if breaker used) :	manufacturer to advise	18kA	kA		
185	7.9.10	Breaker status potential free contact (NO) :	two	Confirmed			
186	7.9.9	Under Voltage trip feature required :	Yes	Confirmed			
187	7.9.9	Under Voltage trip coil for :	black start reserve	Confirmed			
188	8.1.2.12	ESD trip required :	Yes - via shunt trip	Yes - through SIL relay			
189	8.1.2.12	ESD override key switch :	key captive in overridden position and with status contact	Confirmed			
190	7.9.9	Over voltage trip required :	Yes	Not applicable			
191		**DC OUTPUT SPECIFICATIONS**					
192	5.3.2	DC power distribution system - compatibility :	IT	TN-S			
193	5.3.2	Voltage (steady state) - rated :	110	Confirmed	V d.c.		
194	5.3.2	Voltage - normal mode variation at no load :	manufacturer to advise	+/- 1% static stability	%		
195	5.3.2	Voltage - normal mode variation at full load :	manufacturer to advise	+/- 1% static stability	%		
196	5.3.2	Voltage - storage energy mode variation at no load :	manufacturer to advise	Min. voltage 1,65 Vcell = 99Vdc	%		
197	5.3.2	Voltage - storage energy mode variation at full load :	manufacturer to advise	Min. voltage 1,65 Vcell = 99Vdc	%		
198	5.3.2	% Voltage transient - transfer normal mode to storage energy mode :	manufacturer to advise	-	%		
199	5.3.2	Voltage transient time - transfer normal mode to storage energy mode :	manufacturer to advise	0	s		
200	5.3.2	% Voltage transient - transfer storage energy mode to normal mode :	manufacturer to advise	-	%		
201	5.3.2	Voltage transient time - transfer storage energy mode to normal mode :	manufacturer to advise	0	s		
202	5.3.2	% Voltage variation - normal mode at step load :	manufacturer to advise	-5% (10% to 90%) +8% (back)	%		
203	5.3.2	Duration of voltage variation - normal mode at step load :	manufacturer to advise	Data not characterized by the factory. Measurable on request	s		
204	5.3.2	% Voltage variation - storage energy mode at step load :	manufacturer to advise	Data not characterized by the factory. Measurable on request	%		
205	5.3.2	Duration of voltage variation - storage energy mode at step load :	manufacturer to advise	-	s		
206	5.3.2	Current - rated :	manufacturer to advise	100A	A d.c.		
207	5.3.2	Current - overload capability (% of rated current for ten minutes) :	manufacturer to advise	100% - Limited at 100A	%		
208	5.3.2	Current - overload capability (% of rated current for one minute) :	manufacturer to advise	100% - Limited at 100A	%		
209	5.3.2	Current - short circuit capability (% of rated current) :	manufacturer to advise	100A	%		
210	5.3.2	Current - short circuit capability (time duration):	manufacturer to advise	-	s		
211	5.3.2	Current - limitation (% of rated current) :	manufacturer to advise	100%	%		
212	5.3.2	Current - limitation (time duration) :	manufacturer to advise	-	s		
213	5.3.2	Current - fault clearing capability (normal mode) :	manufacturer to advise	100A	A		
214	5.3.2	Current - fault clearing capability (stored energy mode) :	manufacturer to advise	3250A +/- 10%	A		
215	5.3.2	AC / DC efficiency in normal mode - 100% load :	manufacturer to advise	88%	%		
216	5.3.2	AC / DC efficiency in normal mode - 75% load :	manufacturer to advise	86%	%		
217	5.3.2	AC / DC efficiency in normal mode - 50% load :	manufacturer to advise	87%	%		
218	5.3.2	AC / DC efficiency in normal mode - 25% load :	manufacturer to advise	Data not characterized by the factory. Measurable on request	%		
219	5.3.2	No load losses :	manufacturer to advise	Data not characterized by the factory. Measurable on request	W		
220	7.1.6	Reference document to DC output distribution board :	To see Electical Load List	Noted			
221	5.3.3	Additional or unusual conditions :	Input Data	Not applicable			
222	5.3.3	Cable size (cross-section area) - output :	manufacturer to advise	-	sq.mm.		

ITEM	Tag	83124-CEL	: Lighting & Small Power DB BoP / DC BATTERY SYSTEM AUXILIARY			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-00	: DC 10 kVA UPS System (UP-200F1)			Module	LD_B-200/LD_B-100
TASK	code	C10002110		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: UP-200F1

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.	PL
5	Check bending radius is within the specified limits.	OK
6	Confirm cable glands suit for cable type, correctly mounted and tightened.	OK
7	Check gland plate for single core cables is non ferrous (non -magnetic).	OK
8	Confirm cable labelling is in accordance with specifications.	OK
9	Check cable is correctly loomed and segregated in accordance with specification.	OK
10	Check cable earthing against lastest drawings.	OK
11	Check cores marking are in accordance with termination diagram	PL
12	Check terminations are in accordance with latest termination diagram	OK
13	If required produce Red Line Mark Up for "AS BUILT"	

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ITEM	Tag	83124-CEL	: Lighting & Small Power DB BoP / DC BATTERY SYSTEM AUXILIARY			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-00	: DC 10 kVA UPS System (UP-200F1)			Module	LD_B-200/LD_B-100
TASK	code	C10002110		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

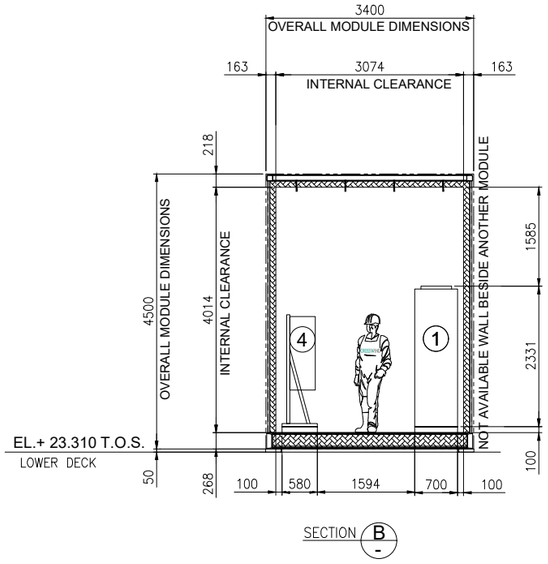
CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0.6	
6		PH 2	0.6	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		0.6	
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	>999	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

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

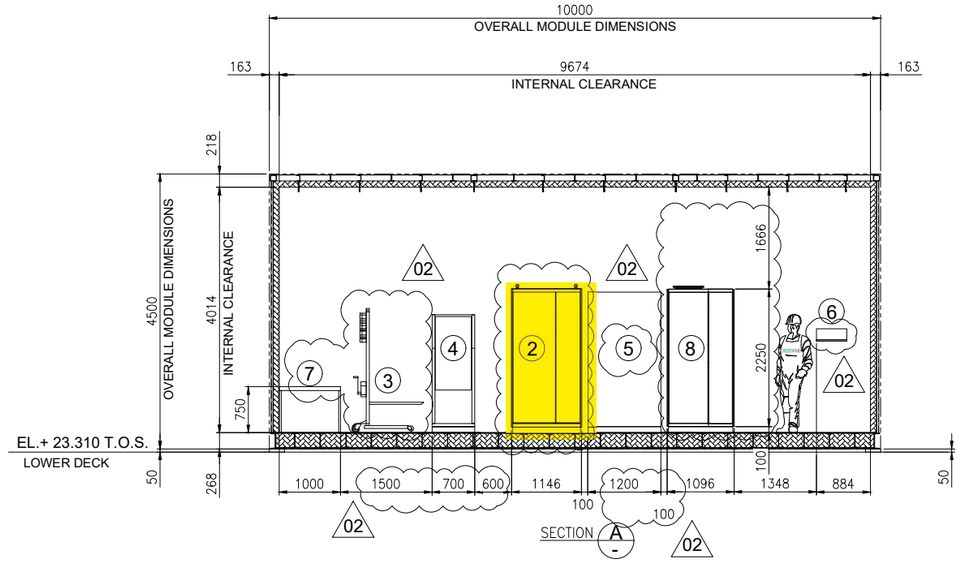
Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (Rosetti Marino)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-10-21	2024-10-24	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-10-21T17:26:46.507Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-10-24T16:36:48.357Z	

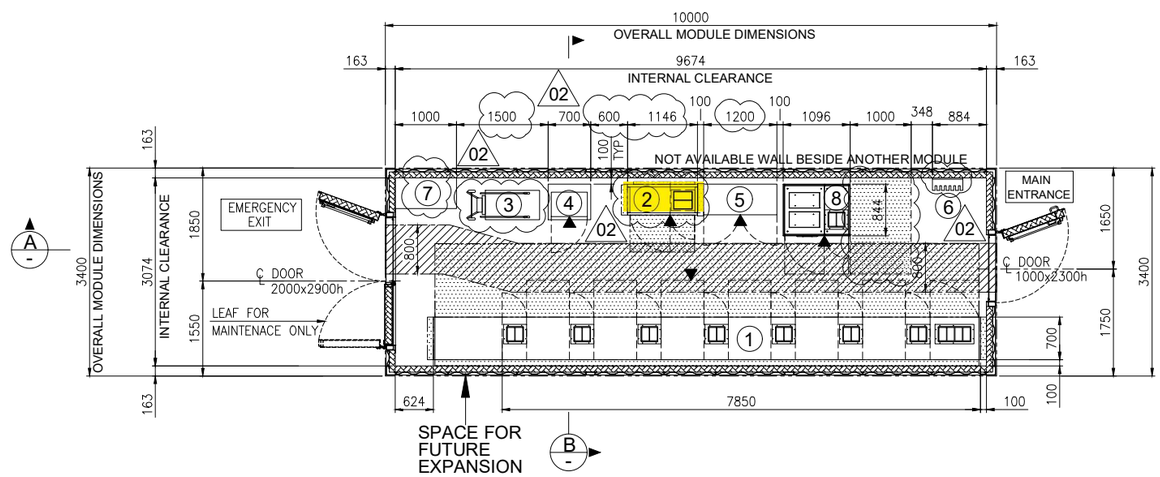
DRAWING NO. 123A90-DDL-EL-DL-20105 | REV. 02



SECTION B



SECTION A

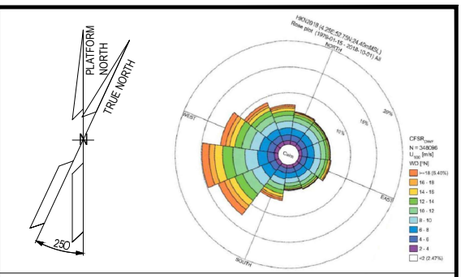


EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

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	



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

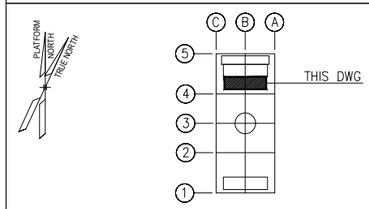
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T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

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)

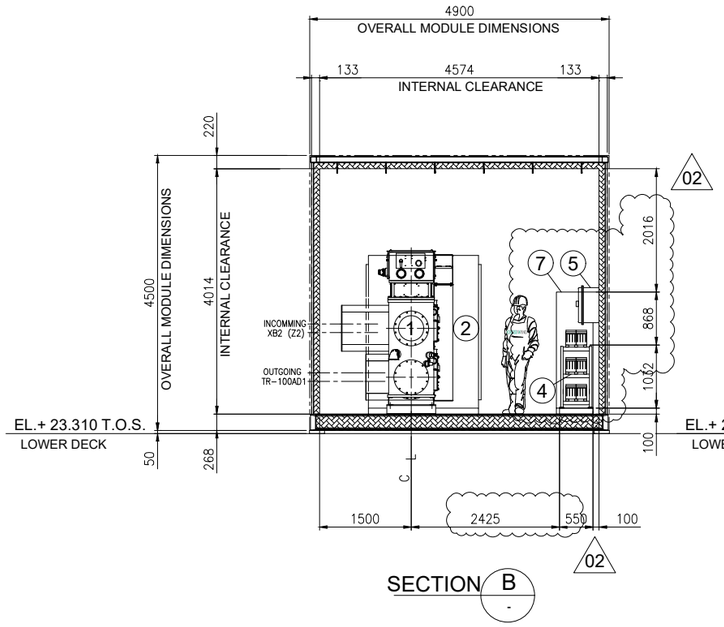
CROSSWIND | ROSETTI MARINO

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

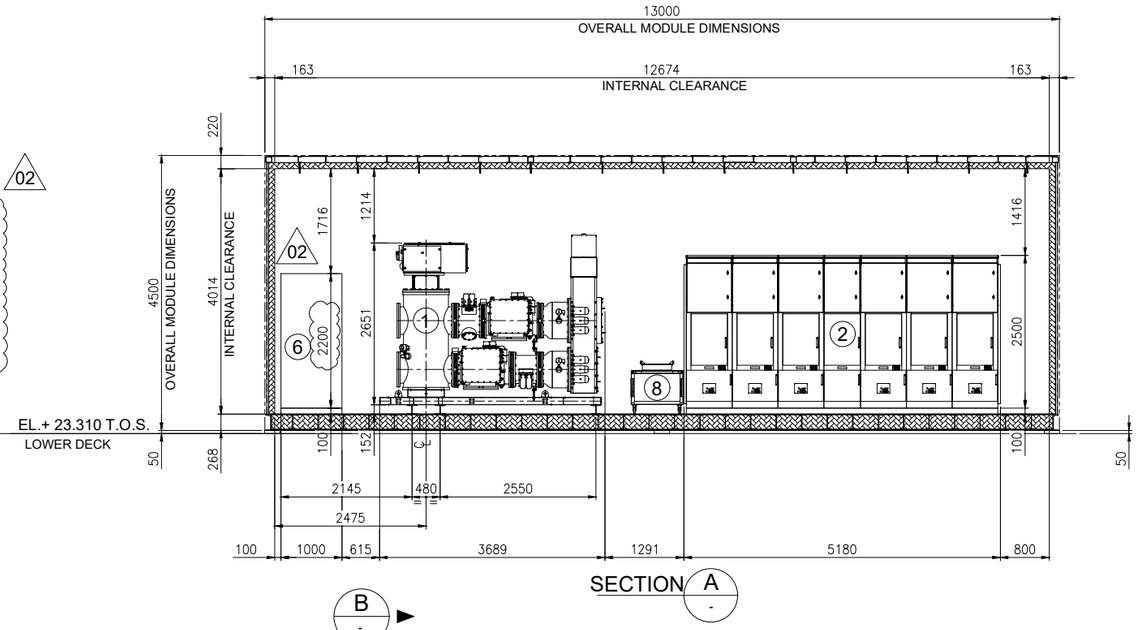
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN FMO	CHECKED LMA/AMA	APPROVED LMA/MDO	DATE 27/05/2024
A1	DRAWING NO. 123A90-DDL-EL-DL-20105	SHEET 001	REV. 02

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

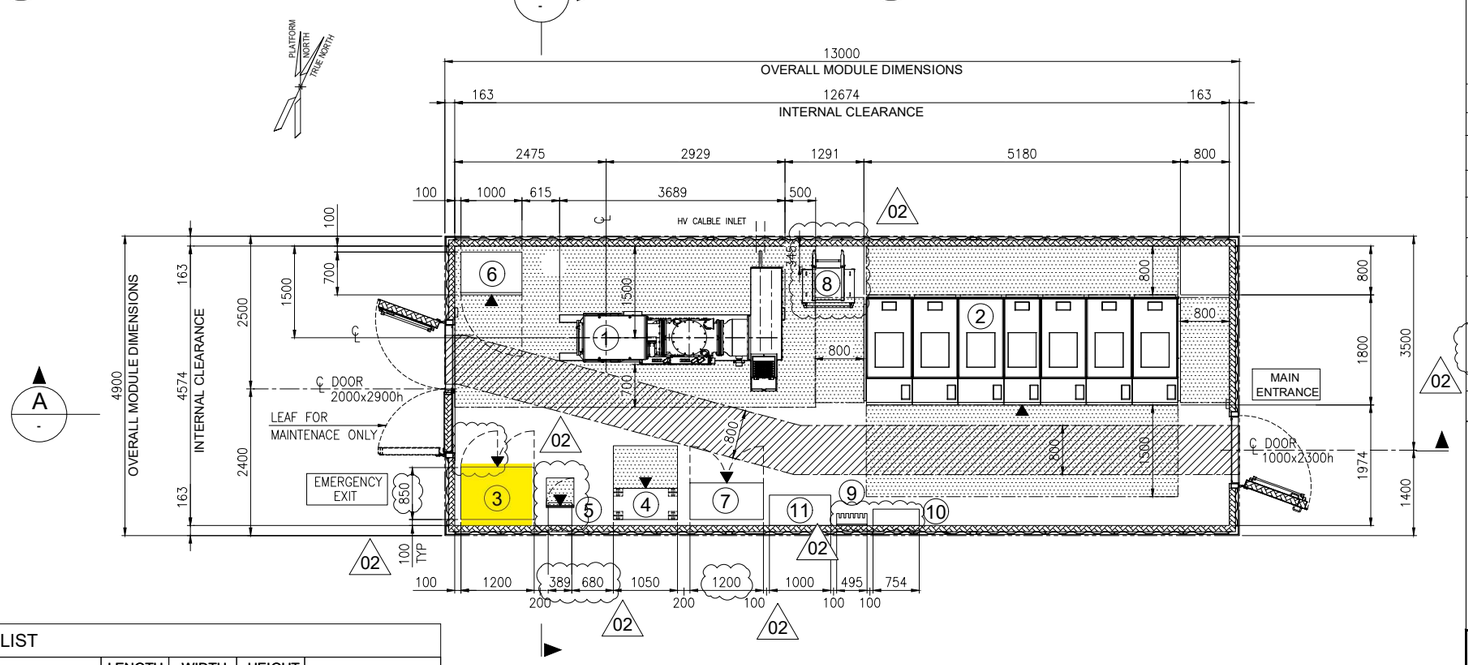
DRAWING NO. 123A90-DDL-EL-DL-20104 | REV. 02



SECTION B -



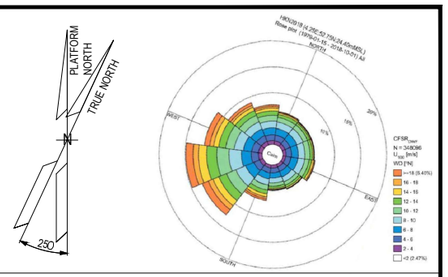
SECTION A -



A -

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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5. HEIGHT OF ALL PANELS IN THE EQUIPMENT LIST TABLE IS WITHOUT THE BASE FRAME (100mm)

02

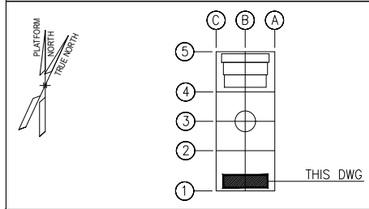
LEGEND

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
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

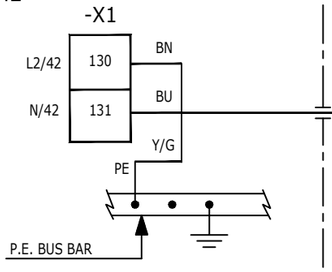
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DRAWN GPA	CHECKED LMA/AMA	APPROVED LMA/MDO	DATE 27/05/2024
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File Name : 123A90-DDL-EL-DL-20104_REV02.dwg

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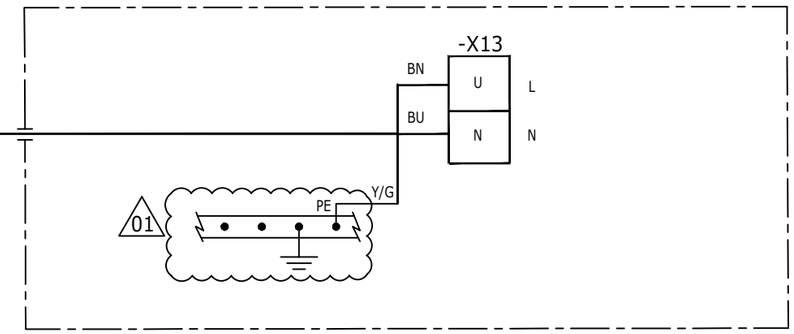
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TAG NUMBER: DP-200N1

CUBICLE/CB: +03/Q42

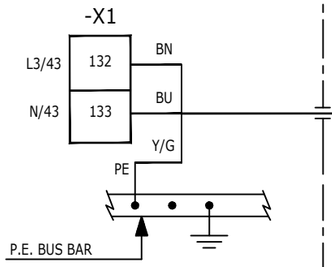


83123-CEL
3G2.5 mm²

DESCRIPTION: AC UPS F&G AUXILIARY
TAG NUMBER: UP-200F4

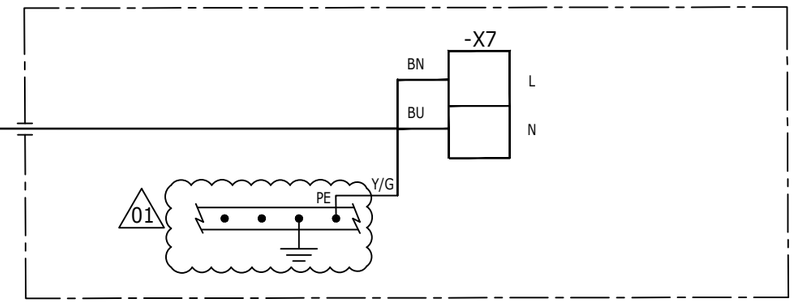


CUBICLE/CB: +03/Q43



83124-CEL
3G2.5 mm²

DESCRIPTION: DC BATTERY SYSTEM AUXILIARY
TAG NUMBER: UP-200F1



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

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

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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)

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

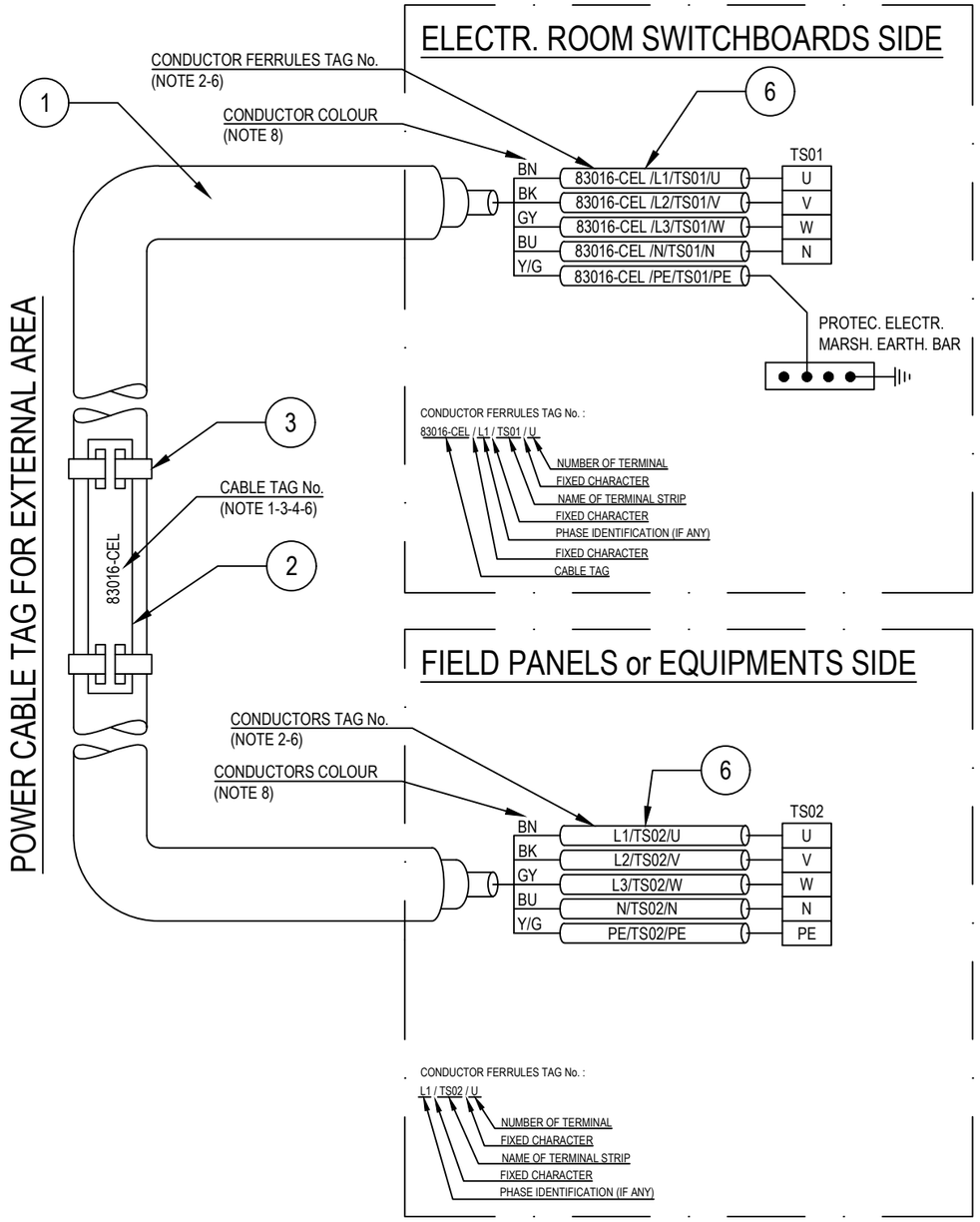
SHEET 057

REV. 01

F.to UNI A3: 420mmx297mm

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

C02



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

NOTES:

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

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

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

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

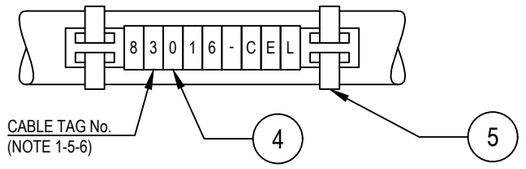
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

6) CABLE AND CONDUCTOR TAG ARE INDICATIVE ONLY.

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

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

POWER CABLE TAG FOR INTERNAL AREA



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

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

CROSSWIND

ROSETTI MARINO

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

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

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

F.to UNI A3: 420mmx297mm

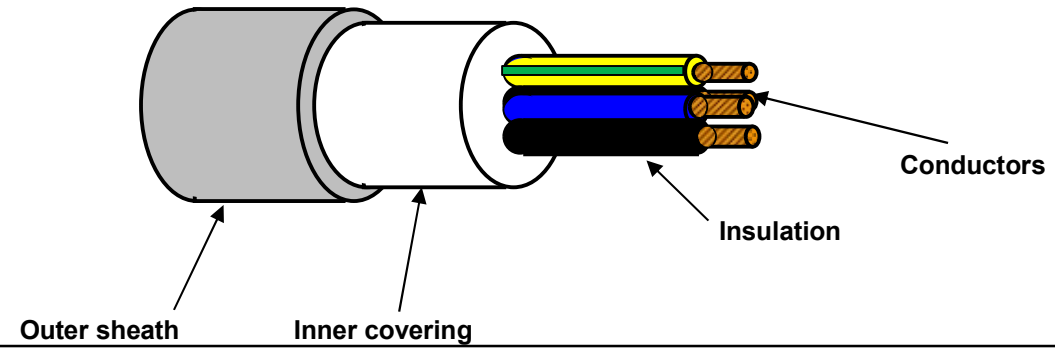
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	To Tag	To Main Function	To Area	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
83124-CEL	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						DP-200N1	LV 0,4 / 0,23 kV Distribution Switchgear	Lower Deck (B-200)	UP-200F1	DC UPS 10 kVA Redundant System	Lower Deck (B-100)	ELECV06-3G2,5	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 3G2,5mm² - Grey	M20	n.a.			T1_M20_Single				L-450-101-LVT-030 / L-600-101-LVT-020 / L-600-101-LVT-019 / 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-060

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.

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	84110-CEC	: Isolation Battery Box for DC UPS 10 kVA / DC UPS 10 kVA Redundant System			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-00	: DC 10 kVA UPS System (UP-200F1)			Module	LD_B-100
TASK	code	C10002341		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: UP-200F1 | To: UP-200F1

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	0.3
	CORE 2 / All cores+screen+armour+earth	0,4
	CORE 3 / All cores+screen+armour+earth	0,5
	CORE 4 / All cores+screen+armour+earth	0,5
	CORE 5 / All cores+screen+armour+earth	0,5
	CORE 6 / All cores+screen+armour+earth	0,5
	CORE 7 / All cores+screen+armour+earth	0,5
	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

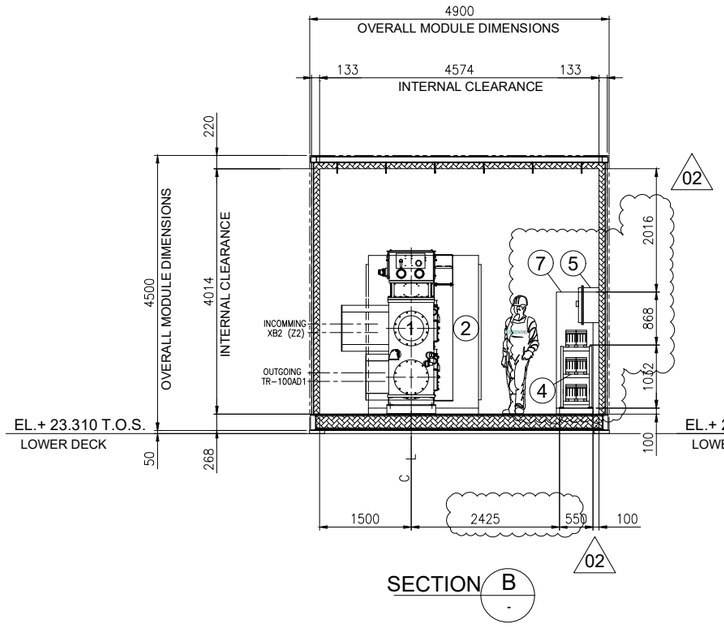
TESTING INSTRUMENTS USED

TYPE / SERIAL N° : KEW3125A SERIAL: W8330207 Calibration certificate N° and date: N°7722/24 _ 10/07/2024	TYPE / SERIAL N° : 175 SERIAL: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:

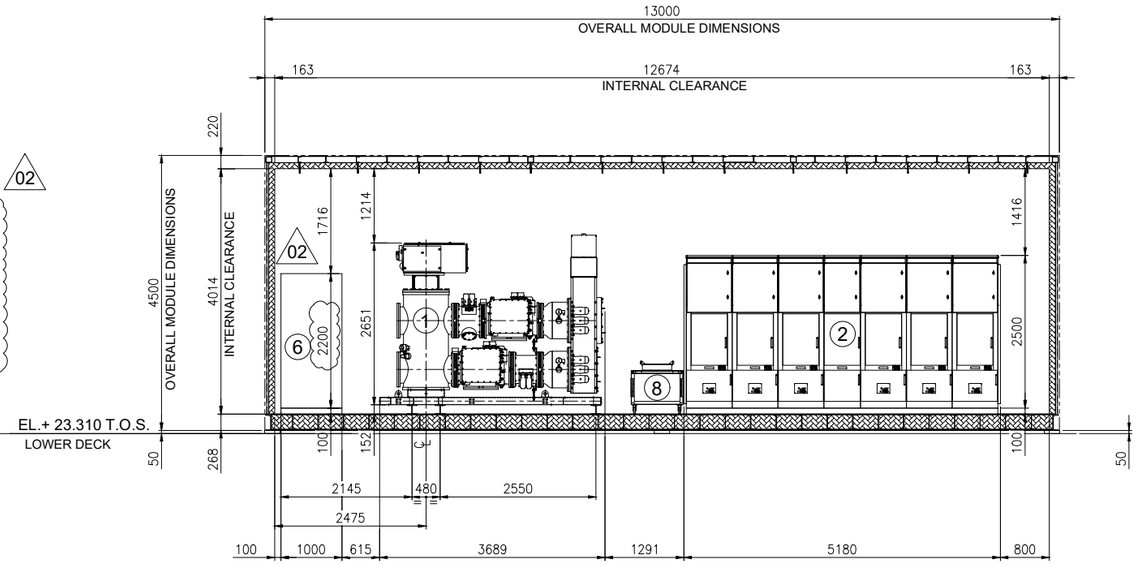
Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-10-28	2024-10-30	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-10-28T09:15:01.738Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-10-30T14:59:46.363Z	

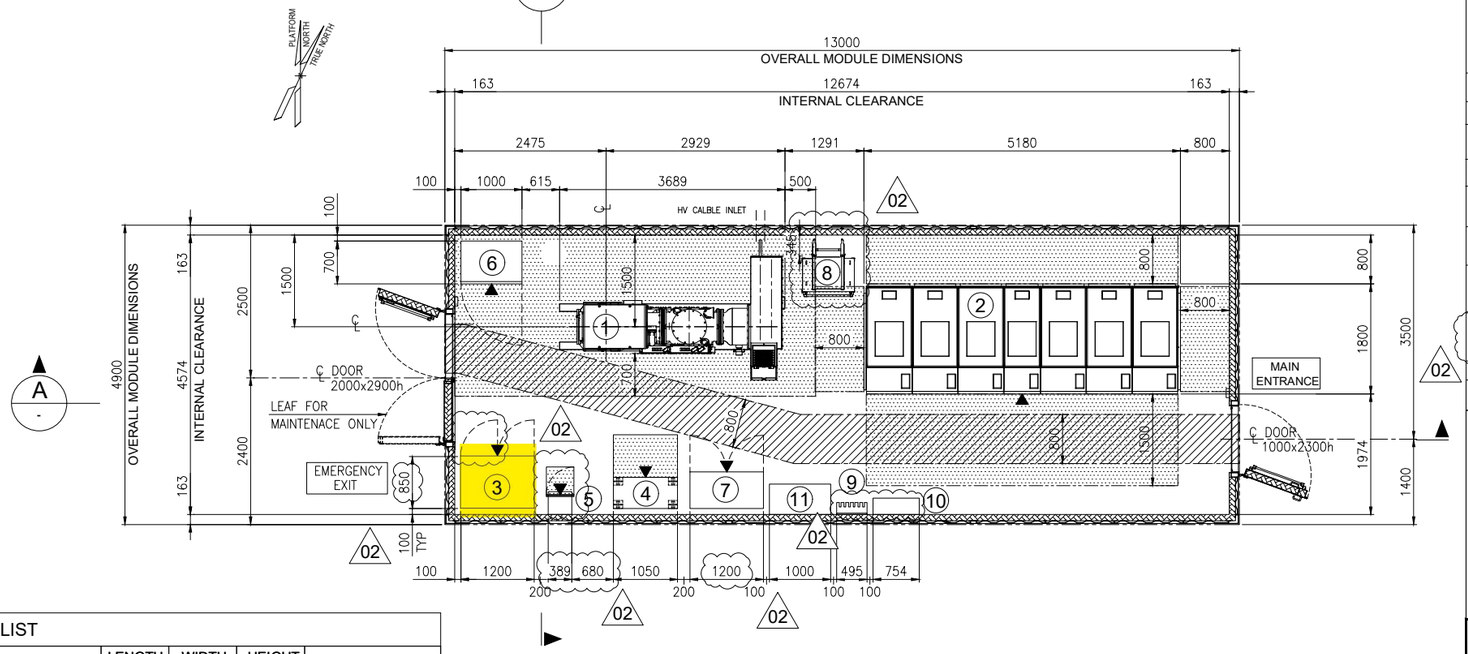
DRAWING NO. 123A90-DDL-EL-DL-20104 | REV. 02



SECTION B -



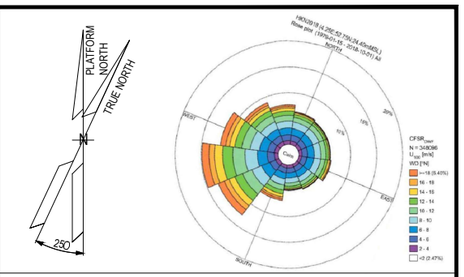
SECTION A -



A -

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

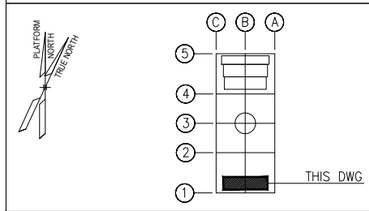
LEGEND

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

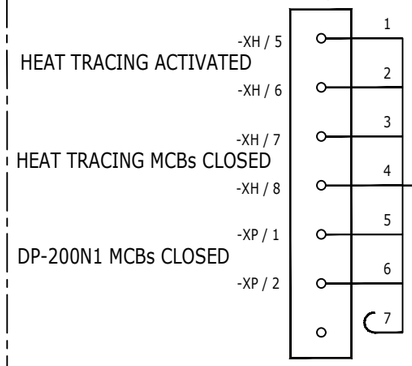
File Name : 123A90-DDL-EL-DL-20104_REV02.dwg

FROM	TO

DESCRIPTION: SIGNALS FOR CONTROL SYSTEM
TAG NUMBER: DP-200N1

COLUMN: -

-XH/XP



BK

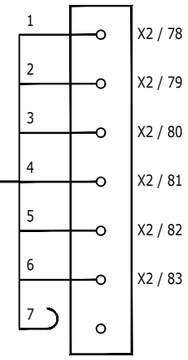
83127-CEC
7C X 1.5 mm²

BK

DESCRIPTION: AUXILIARY LV
TAG NUMBER: SG-200N1

COLUMN: +A2/02

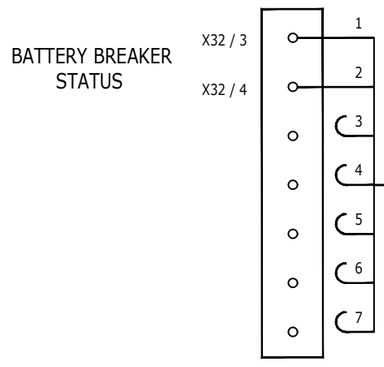
-X2



DESCRIPTION: DC UPS - CHARGER
TAG NUMBER: BC-200F1B (UP-200F1B)

COLUMN: -

-X32



BK

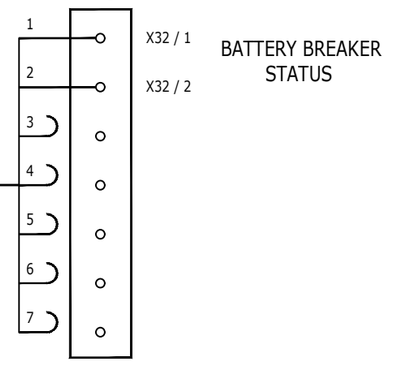
84110-CEC
7C X 1.5 mm²

BK

DESCRIPTION: DC UPS - CHARGER
TAG NUMBER: BC-200F1A

COLUMN: -

-X32



01

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-EL-DL-20149
REV.: 1_A | DATE: 17/10/24 | SIGNATURE: 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

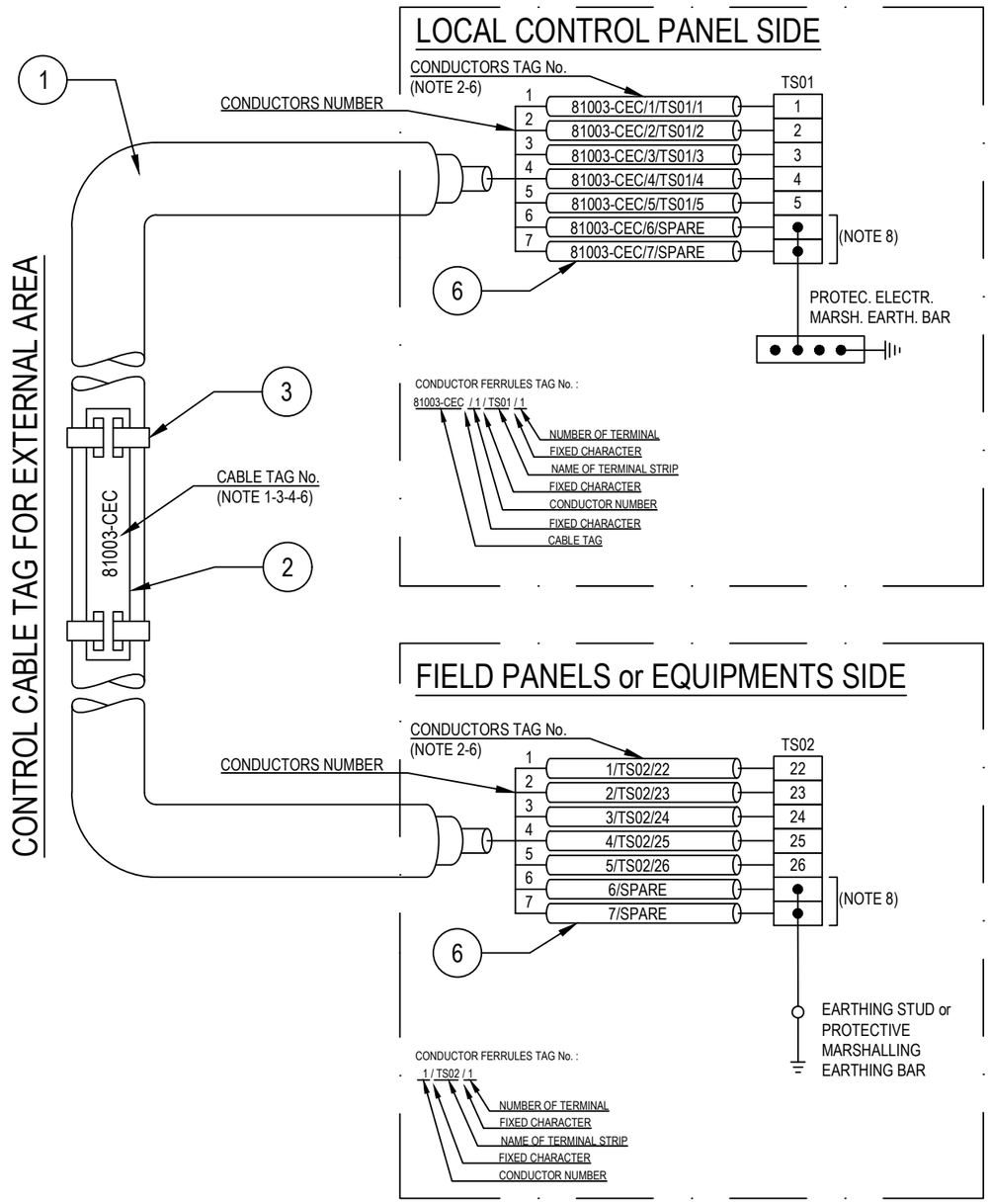
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 088 | 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.

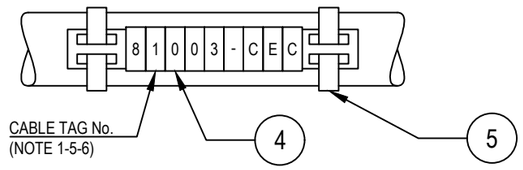
5) THE CABLE TAG FOR INTERNAL AREA SHAL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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

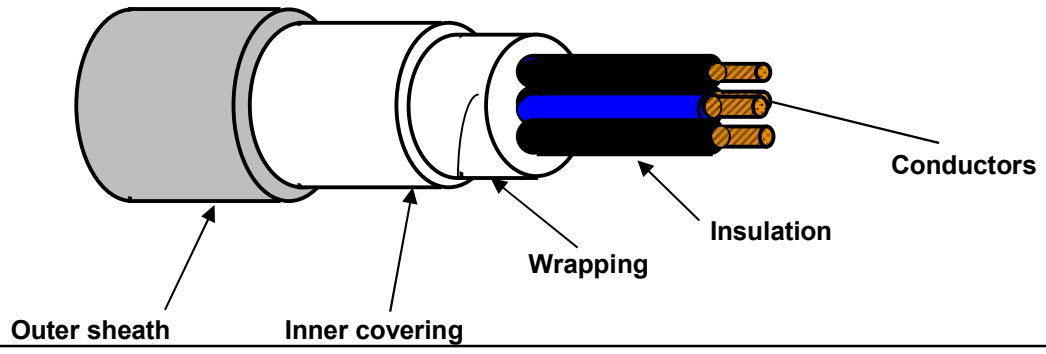
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Info	Category	Discipl	Eng Status	NativeDoc	Entity Type	Main Function	Module	Area	From Tag	From Main Fun	From Tag Section	To Tag	To Main Funct	To Tag Sectic	Material ID	Material Desc.	Gland St	From Gland	From Entry	From F	To Gland	To Entry	To Fitting	Routing	Routing Manual
84110-CEC		Cable	EL	VFC	123A90-DDL-EL-LIS-20148					UP-200F1	Redundant	UPS Cabinet B	UP-200F1	kVA	Panel UPS	ELECV34-7X1,5	Cable Cu Cl.2/XLPE/LSZH 0,6/1kV 7Cx1,5mm^2 - Grey	M25	T1_M25_Single			ngle				LVT-060

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	84111-CEC	: Isolation Battery Box for DC UPS 10 kVA / DC UPS 10 kVA Redundant System			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-00	: DC 10 kVA UPS System (UP-200F1)			Module	LD_B-100
TASK	code	C10002342		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	CB-200F1	To	UP-200F1		

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	OK
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.	PL
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 M
	CORE 2	>999 M
	CORE 3	>999 M
	CORE 4	>999 M
	CORE 5	>999 M
	CORE 6	>999 M
	CORE 7	>999 M
	CORE 8	NA
	CORE 9	NA
	CORE 10	NA
	SCREEN	NA
	EARTH	NA
	ARMr	NA
	TEST VOLTS	1000

TESTING INSTRUMENTS USED

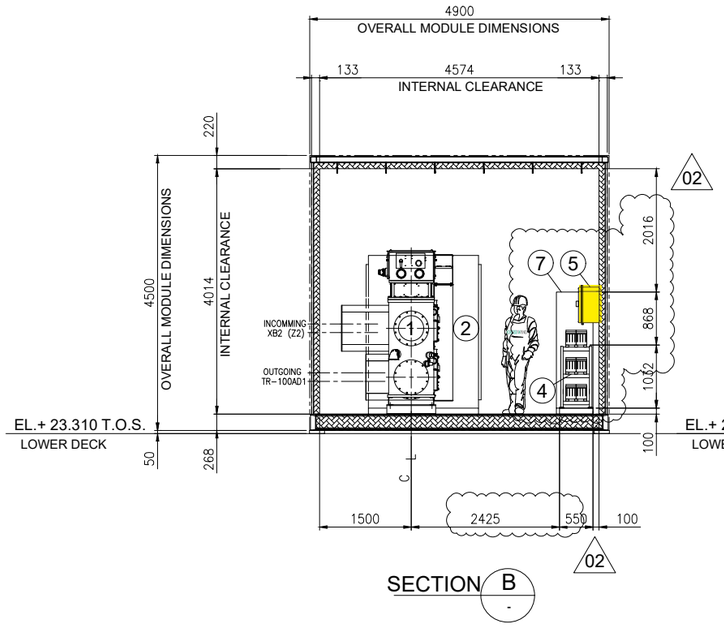
TYPE / SERIAL N° : KEW3125A S/N: W8330207 Calibration certificate N° and date: N°7722/24 _ 10/07/2024	TYPE / SERIAL N° : FLUKE 175 S/N:AW1/018(17140769) Calibration certificate N° and date: N°7715/24 _ 10/07/2024
TYPE / SERIAL N° : Calibration certificate N° and date:	TYPE / SERIAL N° : Calibration certificate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

Comments:

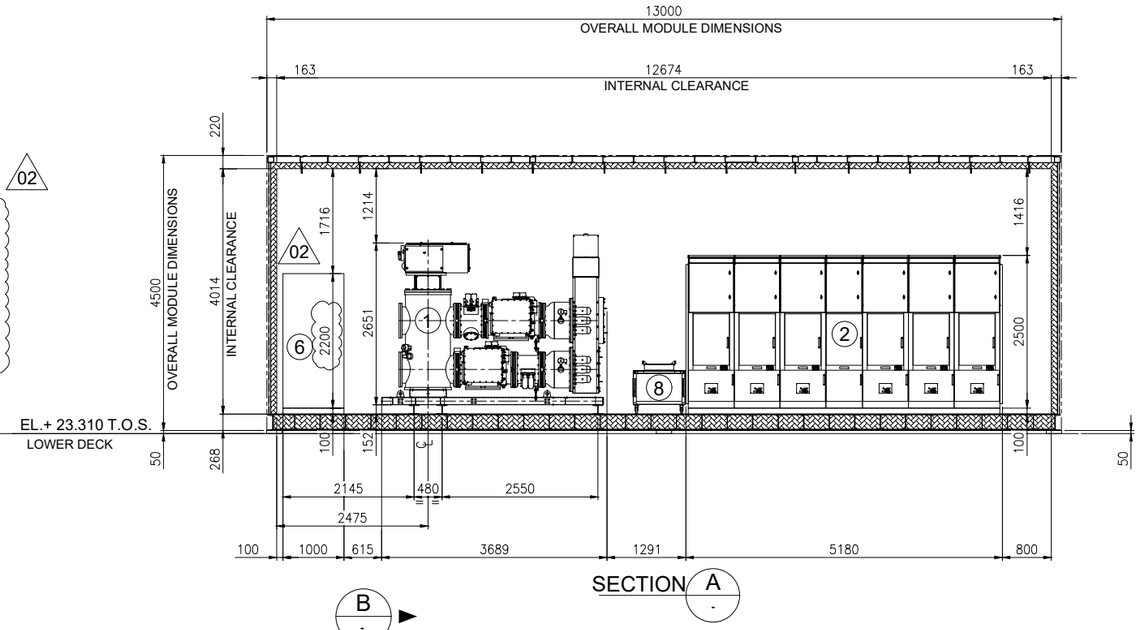
Page 1/1

	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (Rosetti Marino)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-10-21	2024-10-25	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-10-21T17:27:02.029Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-10-25T08:48:30.805Z	

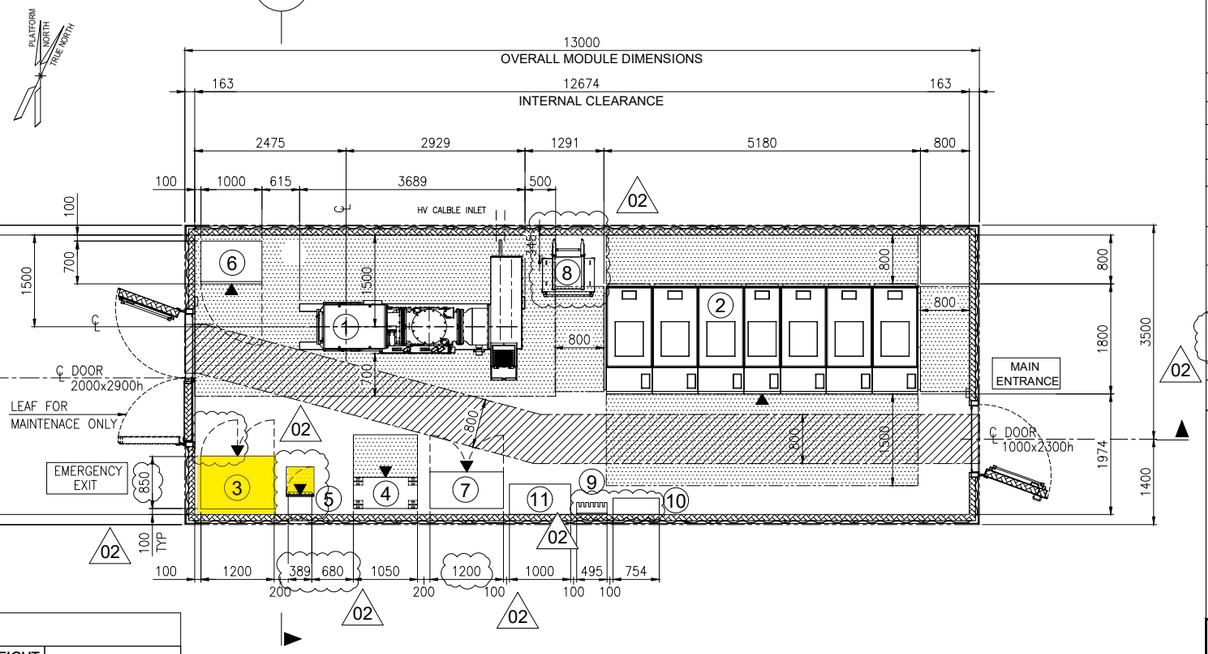
DRAWING NO. 123A90-DDL-EL-DL-20104 | REV. 02



SECTION B -



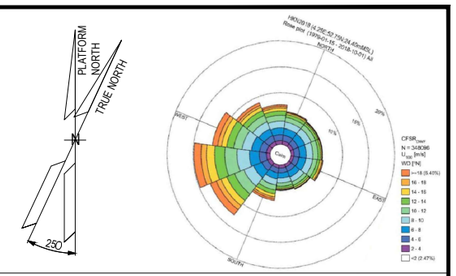
SECTION A -



A -

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

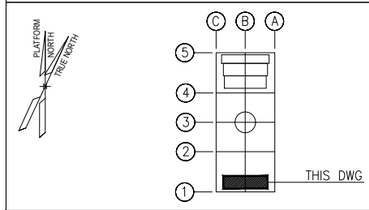
LEGEND

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



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

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

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

ROSETTI MARINO SpA

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: DC UPS - BATTERY ISOLATOR
TAG NUMBER: CB-200F1

COLUMN: -

-X3

BATTERY BREAKER STATUS	X3 / 1	1
	X3 / 3	2
BATTERY BREAKER STATUS	X3 / 5	3
	X3 / 4	4
		5
		6
		7

BK — 84111-CEC 7C X 1.5 mm² — BK

DESCRIPTION: DC UPS - CHARGER
TAG NUMBER: BC-200F1B (UP-200F1B)

COLUMN: -

-X32

1	X32 / 1	BATTERY BREAKER STATUS
2	X32 / 2	
3	X32 / 3	BATTERY BREAKER STATUS
4	X32 / 4	
5		
6		
7		

DESCRIPTION: AC UPS PAS - BATTERY ISOLATOR-A
TAG NUMBER: CB-200F3A

COLUMN: -

-X3

BATTERY BREAKER STATUS	X3 / 1	1
	X3 / 3	2
		3
		4
		5
		6
		7

BK — 84330-CEC 7C X 1.5 mm² — BK

DESCRIPTION: AC UPS PAS - CHARGER-A
TAG NUMBER: BC-200F3A

COLUMN: -

-X15

1	X15 / 4	BATTERY BREAKER STATUS
2	X15 / 5	
3		
4		
5		
6		
7		

01

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-EL-DL-20149
REV.: 1_A | DATE: 17/10/24 | SIGNATURE: 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 089 | REV. 01

F.to UNI A3: 420mmx297mm

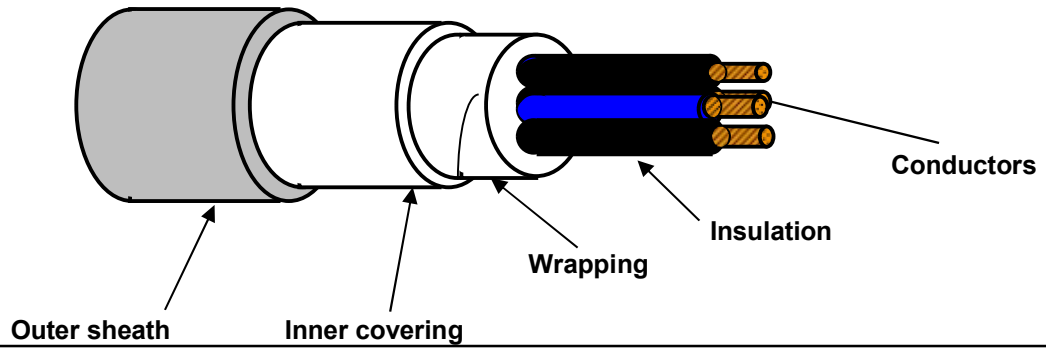
File Name : 123A90-DDL-EL-DG-20162 Rev. 01

Tag Number	Category	Discipline	Eng Status	NativeDoc	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 Standar	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
84111-CEC	Cable	EL	VFC	123A90-DDL-EL-LIS-20148					CB-200F1	Isolation Battery Box for DC UPS 10 kVA	Lower Deck (B-100)	UP-200F1	DC UPS 10 kVA Redundant System	Lower Deck (B-100)	ELECV34-7X1,5	Cable Cu Cl.2/XLPE/LSZH 0,6/1kV 7Cx1,5mm² - Grey	M25	T1_M25_Single			T1_M25_Single				L-300-101-LVT-062 / L-300-101-LVT-061 / L-300-101-LVT-060

FLEI s.r.l.

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

7CX1,5 - CONTROL CABLE - Flame Retardant



TECHNICAL FEATURES

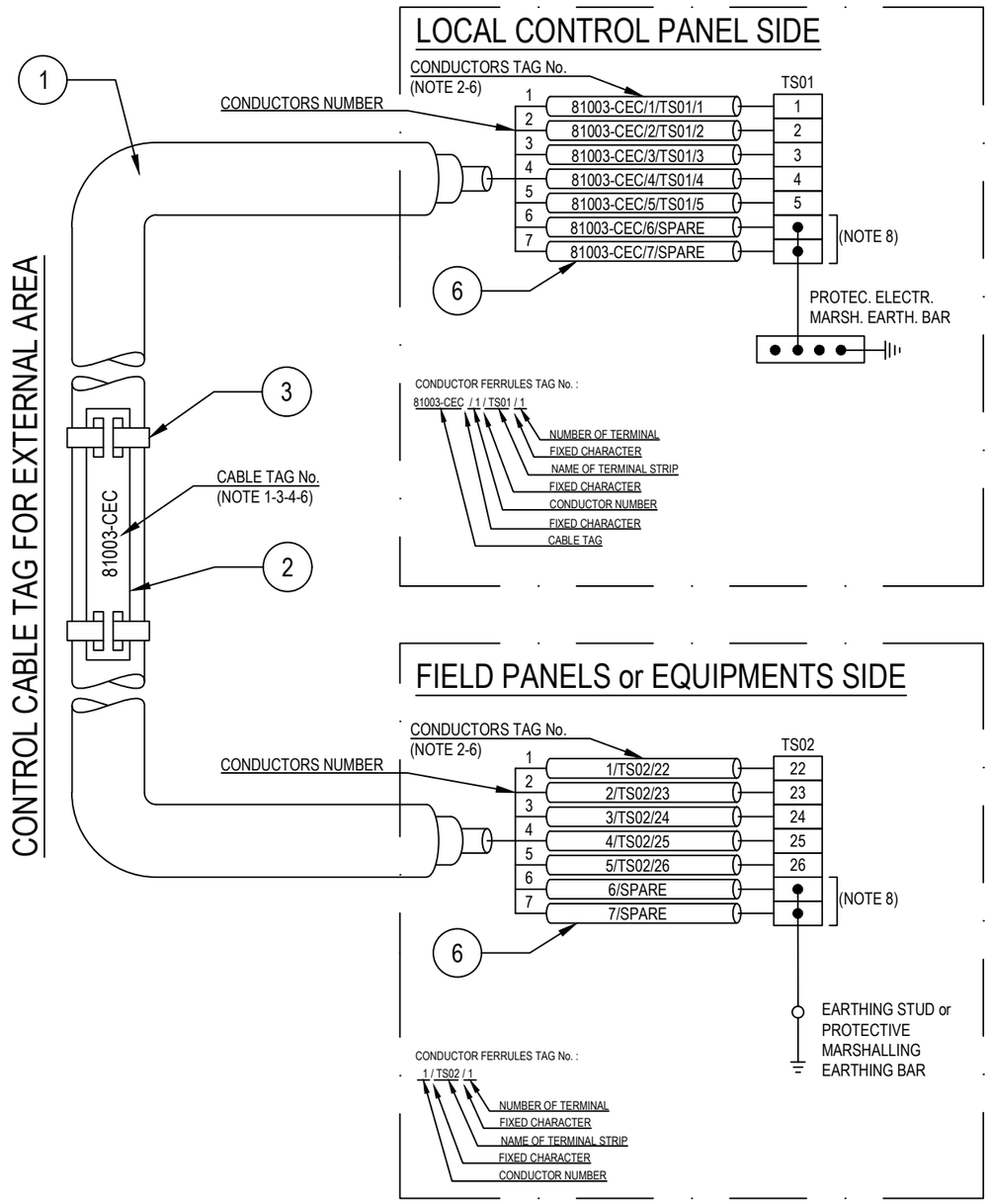
Conductors :	**STRANDED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	**XLPE** compound, quality to IEC 60092.360, Nominal Thickness 0,7 mm	
Cores colour code :	**Black NUMBERED (from 1 to 7)**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
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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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.

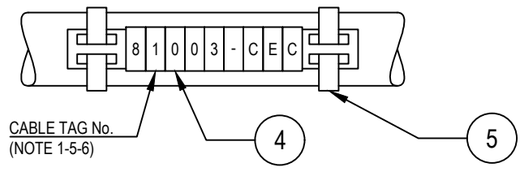
5) THE CABLE TAG FOR INTERNAL AREA SHAL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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

Section 6 MECHANICAL COMPLETION STATUS INDEX - INSTRUMENTAL DISCIPLINE

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 84-00 & process: MC & discipline : I

Instrumental	84-00 DC 10 kVA UPS System (UP-200F1)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
C-CB-200F1/B400-SIS-001	TRIP SIGNAL / MARSHALLING PCS	ONSHORE	C10000192	CJX10	100	2024-11-25	RFC 2
C-UP-200F1/B400-SIS-001	TRIP SIGNAL / MARSHALLING PCS	ONSHORE	C10000193	CJX10	100	2024-11-30	RFC 2

ITEM	Tag	C-CB-200F1/B400-SIS-001 : TRIP SIGNAL / MARSHALLING PCS				Dwg	123A90-DDL-IN-LIS-40091
	S/Sys	84-00 : DC 10 kVA UPS System (UP-200F1)				Module	LD_B-100/LD_B-400
TASK	code	C10000192		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX10 Multi/Single-Core Instrument Control Cable

CABLE DATA

Type	Cu-MICA-XLPE-OS-LSZH-SWB-LSZH	Cores/Size mm²	2X2,5 mm2	Color	ORANGE
From	CB-200F1		To	B400-SIS-001	

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

INSULATION	CORE to EARTH	>999	MΩ
	CORE to CORE	>999	MΩ
	CORE to SCREEN	>999	MΩ
	CORE to ARMr	>999	MΩ
	SCREEN to EARTH	>999	MΩ
	SCREEN to ARMr	>999	MΩ
CONTINUITY	CORES	0.7	Ω
	SCREEN	0.7	Ω
	EARTH	NA	Ω
	ARMr	0.7	Ω
	TEST VOLTS	500	V

TEST ALL CORES AND RECORD LOWEST VALUE

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

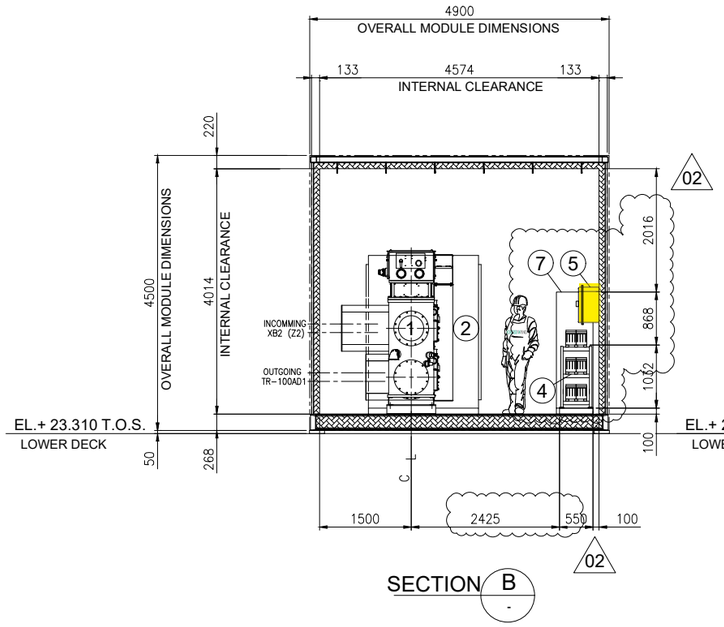
TESTING INSTRUMENTS USED

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

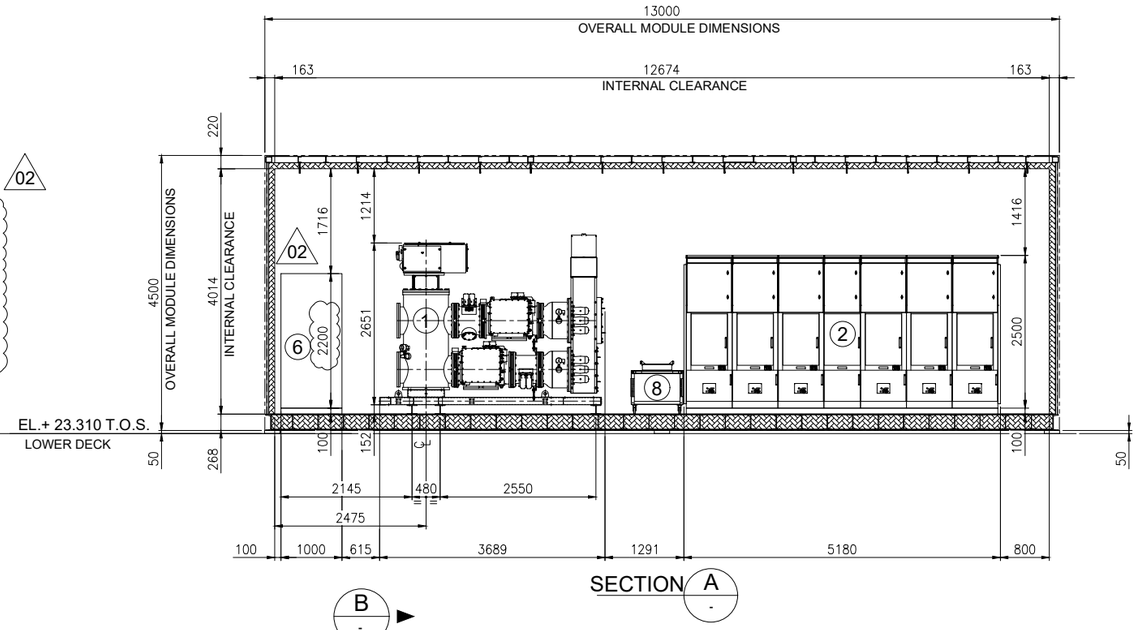
Comments Nota 5: refer to PL C30000680

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Carmelo Bongiovanni	Paolo Schintu	
Date	2024-11-22	2024-11-25	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-11-22T17:42:47.251Z	PROVERLIS Digitaly signed by Paolo Schintu 2024-11-25T18:22:11.023Z	

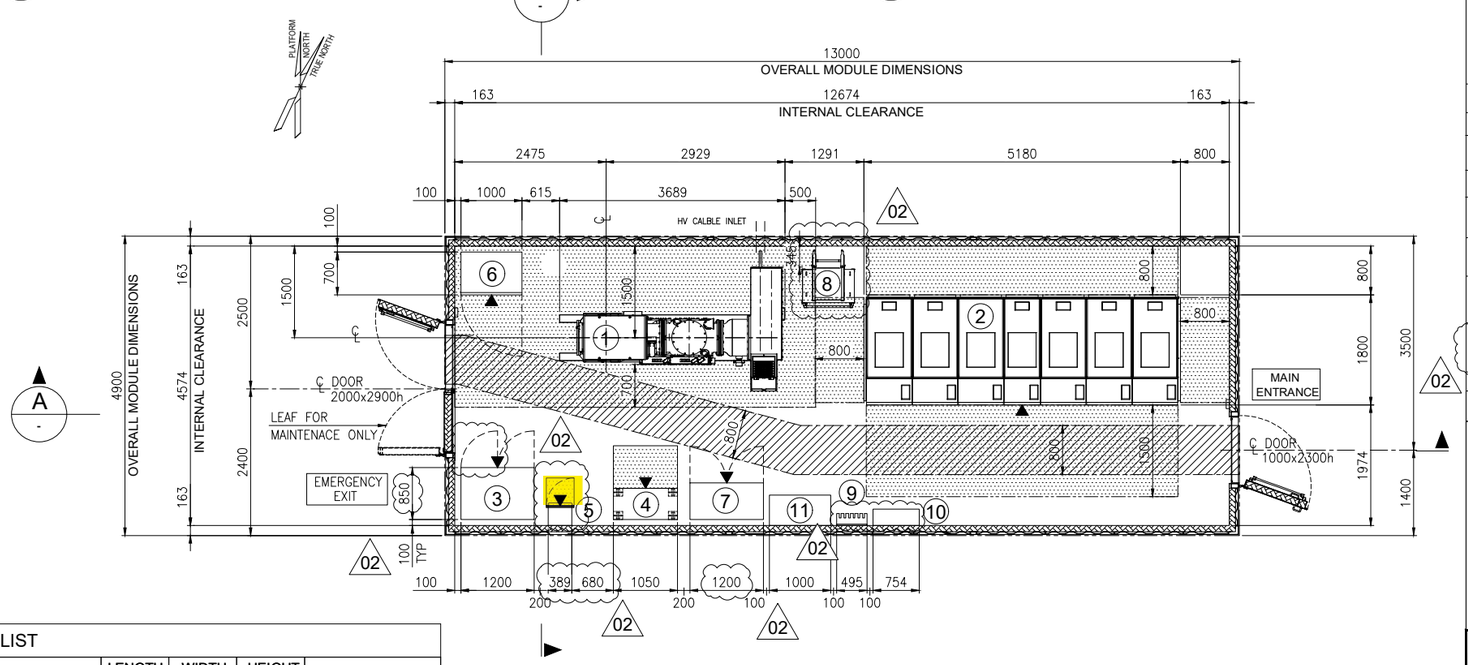
DRAWING NO. 123A90-DDL-EL-DL-20104 | REV. 02



SECTION B -

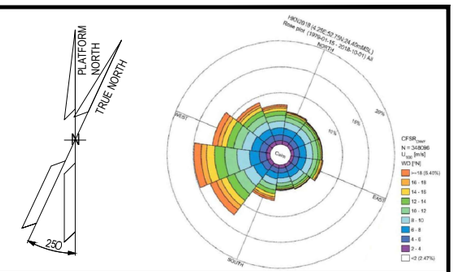


SECTION A -



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

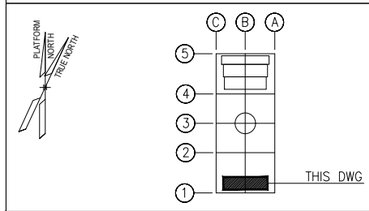
LEGEND

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



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

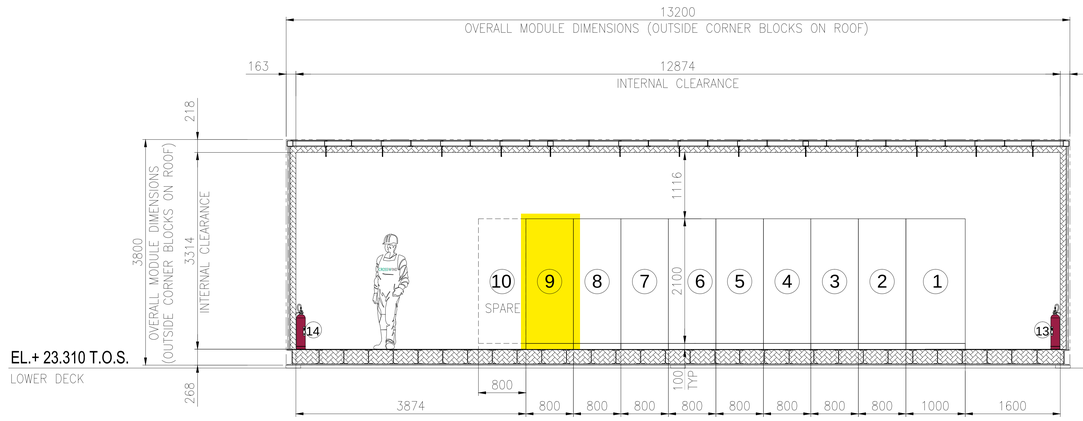
TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
HV SWITCHROOM

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

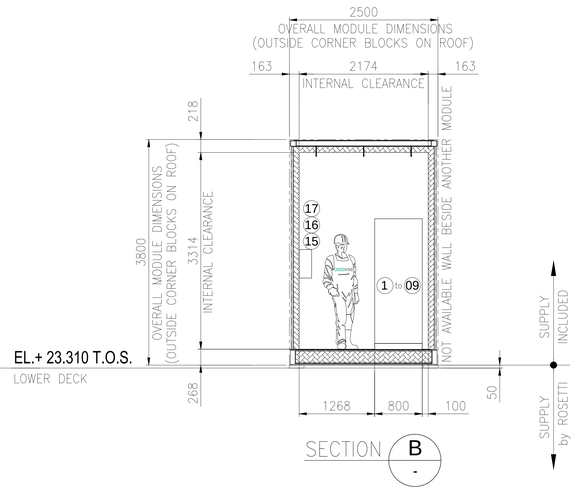
File Name : 123A90-DDL-EL-DL-20104_REV02.dwg

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

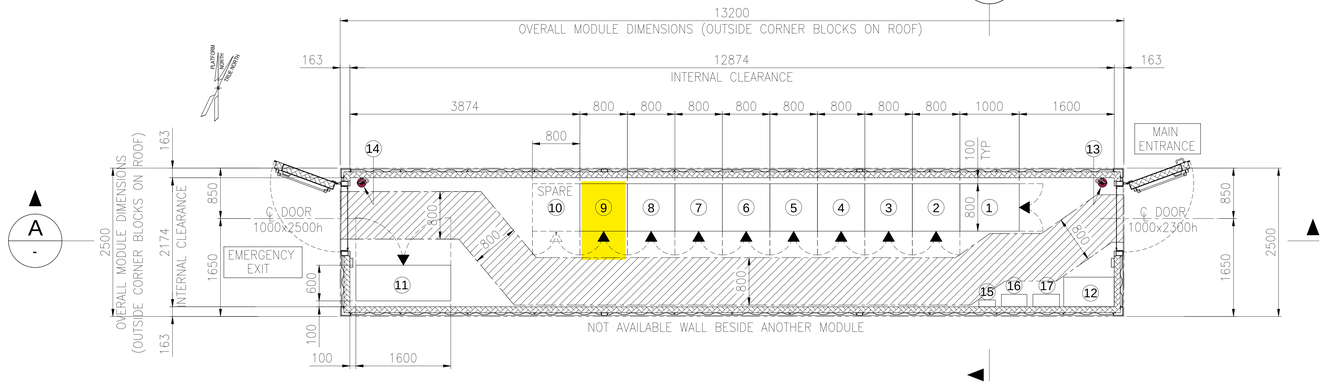
REV. 02



SECTION A -



SECTION B -

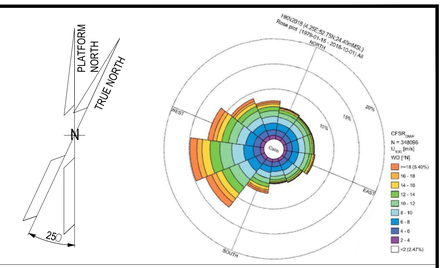


EQUIPMENT LAYOUT
"B-400" I&T EQUIPMENT ROOM
BOTTOM PLAN

02

EQUIPMENT LIST

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



NOTES

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

LEGEND

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

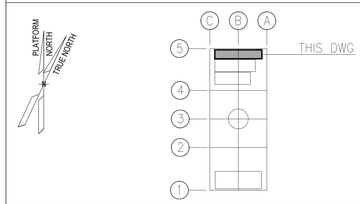
HOLDS

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REFERENCE

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

KEY PLAN



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

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DL-40012
REV.: 2_A | DATE: 08/08/24 | 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. 02

File Name : 123A90-DDL-IN-DL-40012 Rev.02.dwg

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

REV. 01

FIELD		I&T EQUIPMENT ROOM (ITER)
B-100 - HV SWITCHGEAR ROOM	CABLE NO	MARSHALLING CABINET B400-SIS-001

<01>

OPEN WIND FARM INCOMING CIRCUIT BREAKERS (CP-100E1)	81-XS-001	TB-X13 13 (1BK) 14 (2BK) NOTE-2	C-CP-100E1/B400-SIS-001 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	Shield Bar	TB-XS-000 31 (1BK) 32 (2BK)	81-XS-001
OPEN SOLAR INCOMING CIRCUIT BREAKERS (SG-100D1)	82-XS-001	TB-XM 51 (1BK) 52 (2BK) NOTE-2	C-SG-100D1-001/B400-SIS-001 ~~SG-100D1-001/B400-SIS-001~~ 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	Shield Bar	TB-XS-000 33 (1BK) 34 (2BK)	82-XS-001
OPEN BESS A-85000 INCOMING CIRCUIT BREAKERS (SG-100D1)	82-XS-002	TB-XM 43 (1BK) 44 (2BK) NOTE-2	C-SG-100D1-002/B400-SIS-001 ~~SG-100D1-002/B400-SIS-001~~ 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	Shield Bar	TB-XS-000 35 (1BK) 36 (2BK)	82-XS-002
OPEN FUEL CELL A-80000 INCOMING C. BREAKERS (SG-100D1)	82-XS-003	TB-XM 37 (1BK) 38 (2BK) NOTE-2	C-SG-100D1-003/B400-SIS-001 ~~SG-100D1-003/B400-SIS-001~~ 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	Shield Bar	TB-XS-000 37 (1BK) 38 (2BK)	82-XS-003
DISCONNECT DC UPS BATTERY DC UPS (CB-200F1)	84-XS-006	TB-X3 7 (1BK) 8 (2BK) NOTE-2	C-CB-200F1/B400-SIS-001 ~~CB-200F1/B400-SIS-001~~ 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	Shield Bar	TB-XS-000 39 (1BK) 40 (2BK)	84-XS-006
INHIBIT. BATTERY CHARGING DA UPS (UP-200F1)	84-XS-009	TB-X10 1 (1BK) 2 (2BK) NOTE-2	C-UP-200F1/B400-SIS-001 ~~UP-200F1/B400-SIS-001~~ 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	Shield Bar	TB-XS-000 41 (1BK) 42 (2BK)	84-XS-009

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

REV.:	DATE:	SIGNATURE:
1_K	18/11/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT–SAFETY SYSTEM WIRING DIAGRAMS
ELECTRICAL EQUIPMENT – SHUTDOWN

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

	DRAWING NO.	SHEET	REV.
A3	123A90–DDL–IN–DG–40016	022	01

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

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

REV. 01

NOTES:

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

<01>

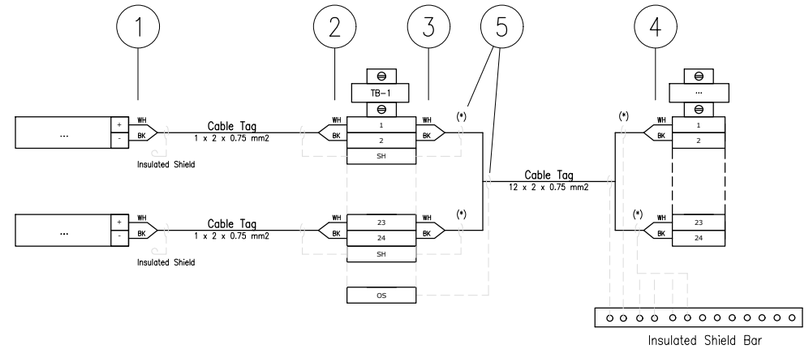
LEGENDS & SYMBOLS:

LEGEND:

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

TYPICAL WIRE CROSS-FERRULING:

PHILOSOPHY OF CROSS-FERRULING: <01>



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

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

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

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

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

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

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

REFERENCE DRAWINGS

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

CROSSWIND

ROSETTI MARINO

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

REV.:	DATE:	SIGNATURE:
1_K	18/11/24	G.Randi

ROSETTI MARINO SpA

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

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

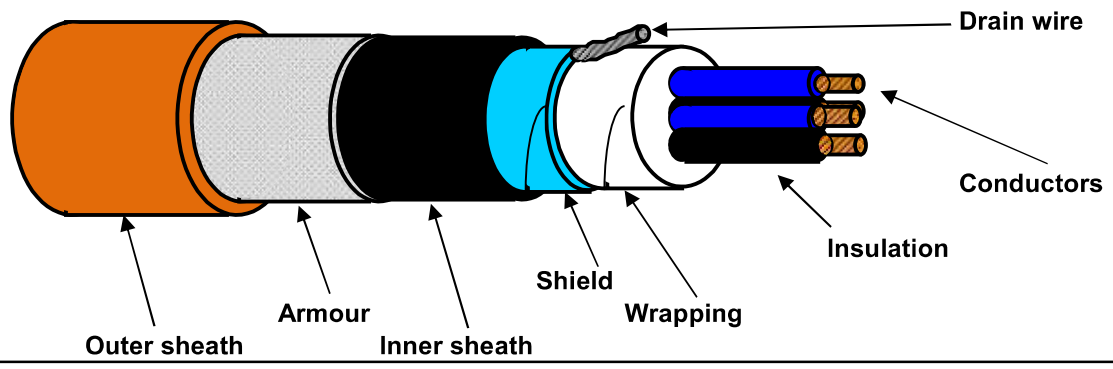
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A3	123A90-DDL-IN-DG-40016	003	01

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

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	To Tag	To Main Function	To Area	Material ID	Material Desc.	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-CB-200F1/B400-SIS-001	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						CB-200F1	Isolation Battery Box for DC UPS 10 kVA	Lower Deck (B-100)	B400-SIS-001	Marshalling SIS	Lower Deck (B-400)	SMICV12-2X2,5	Cable Cu Cl.2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 2x2,5mm² - Orange	T2_M20_Double			n.a.				I-MCT-101 / B-100-SEC-1A / L-SEC-17 / L-SEC-1N / L-SEC-1M / L-SEC-1L / L-SEC-1J / L-SEC-1I / L-SEC-1H / L-SEC-1G / L-SEC-1F / L-SEC-1E / L-SEC-1D / L-SEC-1C / L-SEC-1B / L-SEC-1A / B-400-SEC-1A / I-MCT-401

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

2X2,5 - INSTRUMENT CABLE - Fire Resistant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires	**IEC 60228 Class 2**
Insulation :	Mica/Glass Tape (MGT) plus XLPE, Nominal Thickness 0,6 mm	
Cores colour code :	**Black NUMBERED (from 1 to 2)**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	8/1mt	
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 1,0 sqmm**, in continuous contact with the shield	
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,1 mm	
Inner sheath color code:	**Black**	
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant,	
	Average Thickness 1,3 mm	
Outer sheath color code:	**Orange**	
Outer printing (INKJET) :	**FLEI - 2X2,5 SQMM - MGT/XLPE/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60331.21 -**	
(every 1000 mm)	**IEC 60332.1.2 - IEC 60332.3.22 - Year of Manufacture - CE + Meter Marking**	
Under armour diameter :	(10,3 ± 10%) mm	
Over armour diameter :	(11,5 ± 10%) mm	
Outer diameter :	(14,1 ± 10%) mm	
Bending radius :	cable outer diameter x 10 (in fixed installation)	
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)	
Conductors DC Resistance :	≤ 7,86 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.376**	
ON COMPLETE CABLE		
Fire Resistant test :	**IEC 60331.21**	
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Hazardous Areas :	IEC 60079.14 par.9.3.2a	
Temperature Range :		
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)	
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)	
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C) (in fixed installation)	
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**	

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

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

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	C-UP-200F1/B400-SIS-001 : TRIP SIGNAL / MARSHALLING PCS				Dwg	123A90-DDL-IN-LIS-40091
	S/Sys	84-00 : DC 10 kVA UPS System (UP-200F1)				Module	LD_B-100/LD_B-400
TASK	code	C10000193		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental Form CJX10		Multi/Single-Core Instrument Control Cable

CABLE DATA

Type: Cu-MICA-XLPE-OS-LSZH-SWB-LSZH | Cores/Size mm²: 2X2,5 mm2 | Color: ORANGE

From: UP-200F1 | To: B400-SIS-001

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

INSULATION	CORE to EARTH	>999	MΩ
	CORE to CORE	>999	MΩ
	CORE to SCREEN	>999	MΩ
	CORE to ARMr	>999	MΩ
	SCREEN to EARTH	>999	MΩ
	SCREEN to ARMr	>999	MΩ
CONTINUITY	CORES	0.7	Ω
	SCREEN	0.7	Ω
	EARTH	NA	Ω
	ARMr	0.7	Ω
	TEST VOLTS	500	V

TEST ALL CORES AND RECORD LOWEST VALUE

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

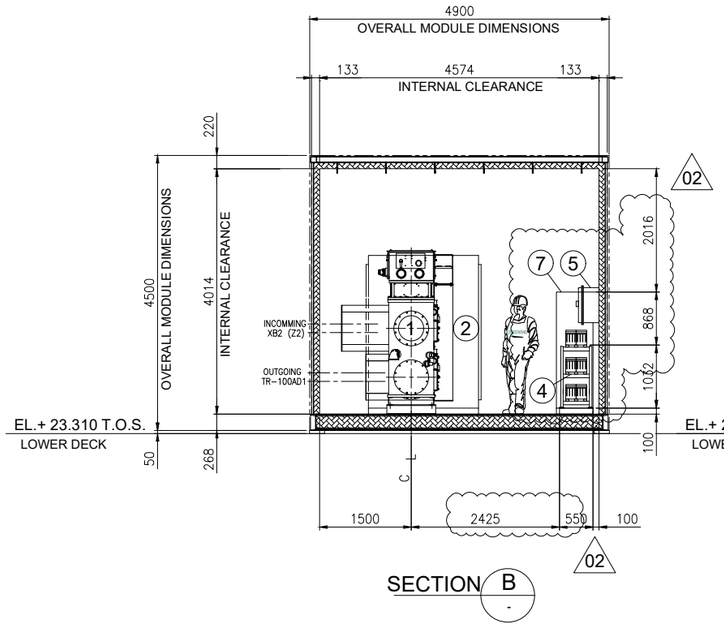
TESTING INSTRUMENTS USED

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

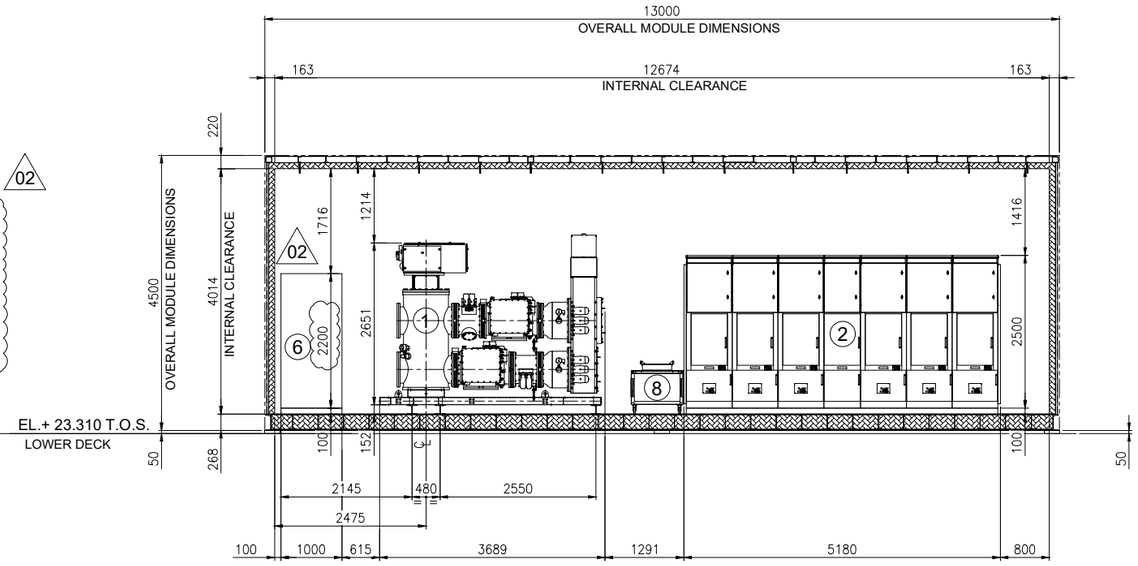
Comments: Nota 5: refer to PL C30000680

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Carmelo Bongiovanni	Paolo Schintu	
Date	2024-11-22	2024-11-25	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-11-22T17:12:59.425Z	PROVERLIS Digitaly signed by Paolo Schintu 2024-11-25T17:54:14.344Z	

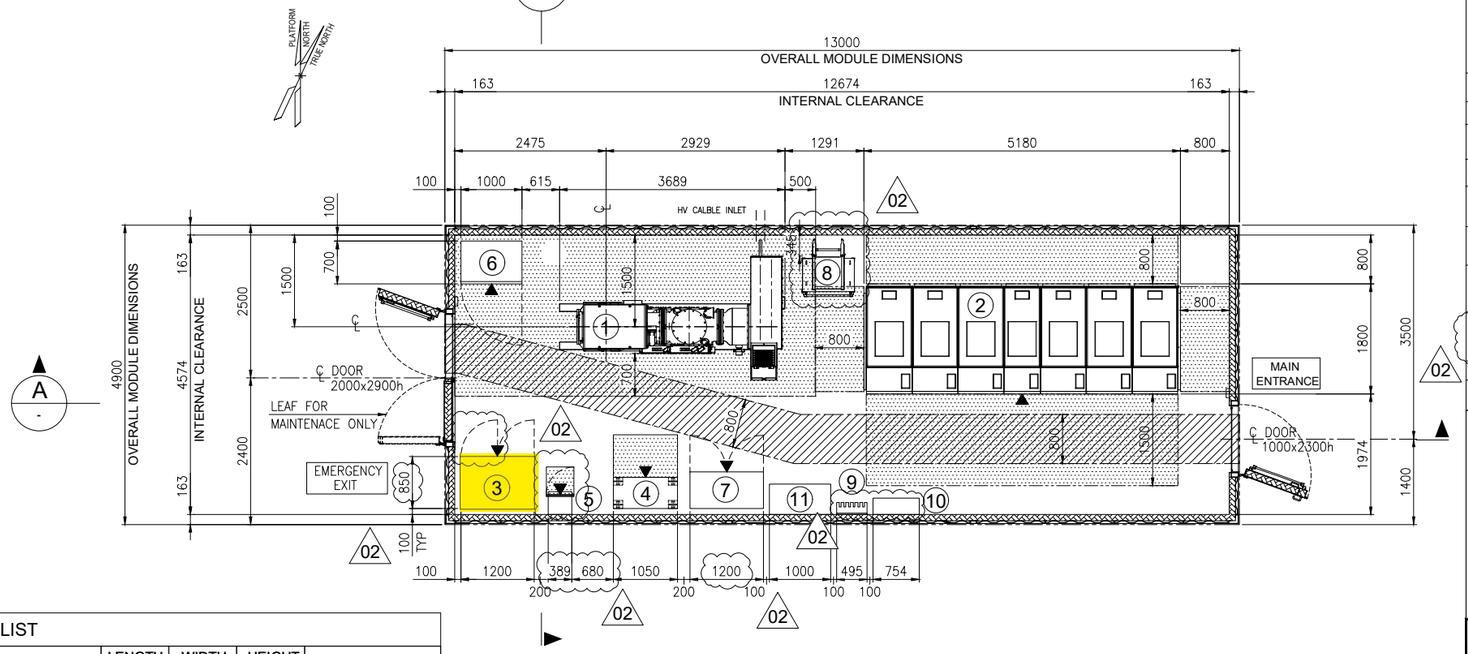
DRAWING NO. 123A90-DDL-EL-DL-20104 | REV. 02



SECTION B -



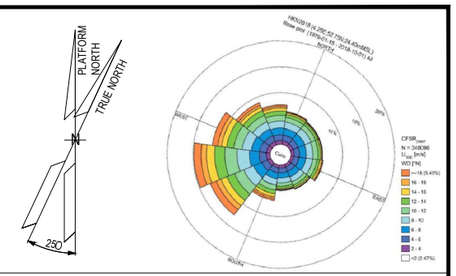
SECTION A -



A -

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	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

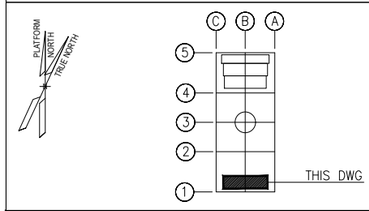
LEGEND

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



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

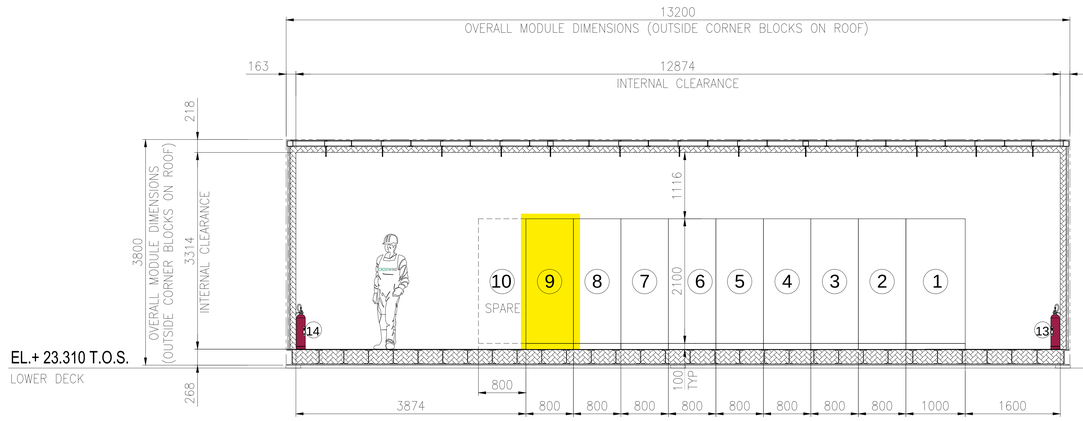
TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
HV SWITCHROOM

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

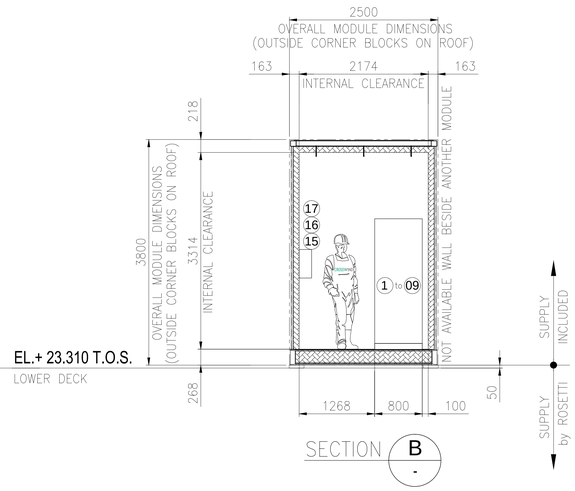
File Name : 123A90-DDL-EL-DL-20104_REV02.dwg

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

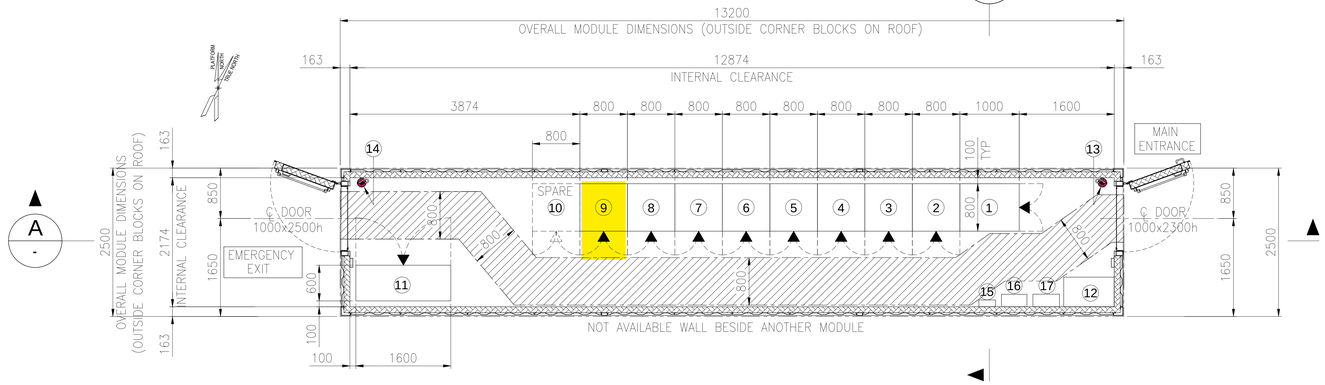
REV. 02



SECTION A -



SECTION B -

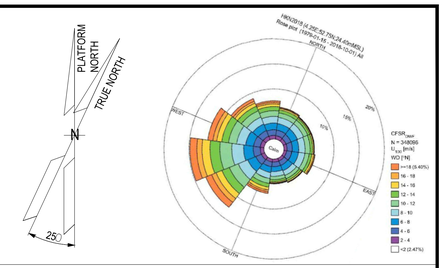


EQUIPMENT LAYOUT
"B-400" I&T EQUIPMENT ROOM
BOTTOM PLAN

02

EQUIPMENT LIST

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



NOTES

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

LEGEND

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

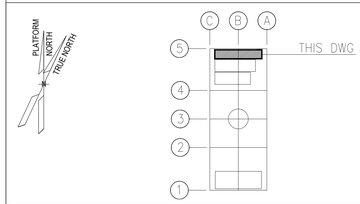
HOLDS

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REFERENCE

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

KEY PLAN



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

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DL-40012
REV.: 2_A | DATE: 08/08/24 | 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. 02

File Name : 123A90-DDL-IN-DL-40012 Rev.02.dwg

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

REV. 01

FIELD		I&T EQUIPMENT ROOM (ITER)
B-100 - HV SWITCHGEAR ROOM	CABLE NO	MARSHALLING CABINET B400-SIS-001

<01>

OPEN WIND FARM INCOMING CIRCUIT BREAKERS (CP-100E1)	81-XS-001	TB-X13 13 14 1BK 2BK NOTE-2	C-CP-100E1/B400-SIS-001 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	Shield Bar	TB-XS-000 1BK 2BK 31 32	81-XS-001
OPEN SOLAR INCOMING CIRCUIT BREAKERS (SG-100D1)	82-XS-001	TB-XM 51 52 1BK 2BK NOTE-2	C-SG-100D1-001/B400-SIS-001 ~~SG-100D1-001/B400-SIS-001~~ 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	Shield Bar	TB-XS-000 1BK 2BK 33 34	82-XS-001
OPEN BESS A-85000 INCOMING CIRCUIT BREAKERS (SG-100D1)	82-XS-002	TB-XM 43 44 1BK 2BK NOTE-2	C-SG-100D1-002/B400-SIS-001 ~~SG-100D1-002/B400-SIS-001~~ 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	Shield Bar	TB-XS-000 1BK 2BK 35 36	82-XS-002
OPEN FUEL CELL A-80000 INCOMING C. BREAKERS (SG-100D1)	82-XS-003	TB-XM 37 38 1BK 2BK NOTE-2	C-SG-100D1-003/B400-SIS-001 ~~SG-100D1-003/B400-SIS-001~~ 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	Shield Bar	TB-XS-000 1BK 2BK 37 38	82-XS-003
DISCONNECT DC UPS BATTERY DC UPS (CB-200F1)	84-XS-006	TB-X3 7 8 1BK 2BK NOTE-2	C-CB-200F1/B400-SIS-001 ~~CB-200F1/B400-SIS-001~~ 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	Shield Bar	TB-XS-000 1BK 2BK 39 40	84-XS-006
INHIBIT. BATTERY CHARGING DA UPS (UP-200F1)	84-XS-009	TB-X10 1 2 1BK 2BK NOTE-2	C-UP-200F1/B400-SIS-001 ~~UP-200F1/B400-SIS-001~~ 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	Shield Bar	TB-XS-000 1BK 2BK 41 42	84-XS-009

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

REV.:	DATE:	SIGNATURE:
1_K	18/11/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT–SAFETY SYSTEM WIRING DIAGRAMS
ELECTRICAL EQUIPMENT – SHUTDOWN

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

	DRAWING NO.	SHEET	REV.
A3	123A90–DDL–IN–DG–40016	022	01

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

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

REV. 01

NOTES:

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

<01>

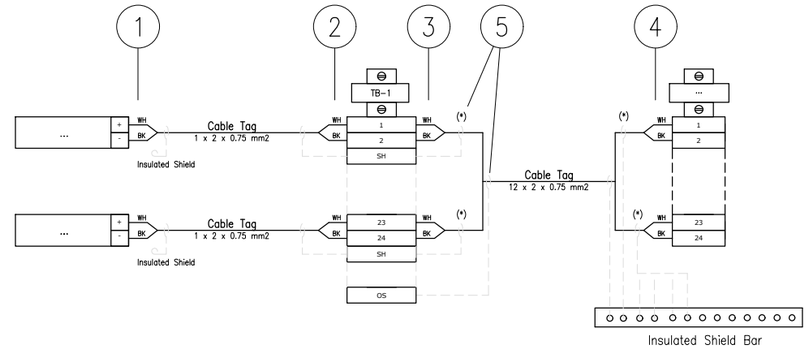
LEGENDS & SYMBOLS:

LEGEND:

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

TYPICAL WIRE CROSS-FERRULING:

PHILOSOPHY OF CROSS-FERRULING: <01>



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

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

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

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

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

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

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

REFERENCE DRAWINGS

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

CROSSWIND

ROSETTI MARINO

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

REV.:	DATE:	SIGNATURE:
1_K	18/11/24	G.Randi

ROSETTI MARINO SpA

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

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

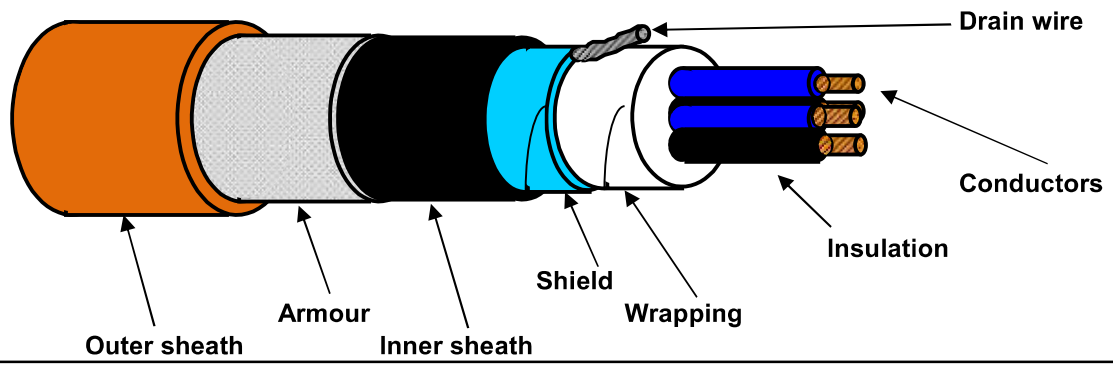
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A3	123A90-DDL-IN-DG-40016	003	01

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

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	To Tag	To Main Function	To Area	Material ID	Material Desc.	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-UP-200F1/B400-SIS-001	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						UP-200F1	DC UPS 10 kVA Redundant System	Lower Deck (B-100)	B400-SIS-001	Marshalling SIS	Lower Deck (B-400)	SMICV12-2X2,5	Cable Cu Cl.2/MGT/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 2x2,5mm² - Orange	T2_M20_Double			n.a.				I-MCT-101 / B-100-SEC-1A / L-SEC-17 / L-SEC-1N / L-SEC-1M / L-SEC-1L / L-SEC-1J / L-SEC-1I / L-SEC-1H / L-SEC-1G / L-SEC-1F / L-SEC-1E / L-SEC-1D / L-SEC-1C / L-SEC-1B / L-SEC-1A / B-400-SEC-1A / I-MCT-401

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

2X2,5 - INSTRUMENT CABLE - Fire Resistant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires	**IEC 60228 Class 2**
Insulation :	Mica/Glass Tape (MGT) plus XLPE, Nominal Thickness 0,6 mm	
Cores colour code :	**Black NUMBERED (from 1 to 2)**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	8/1mt	
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 1,0 sqmm**, in continuous contact with the shield	
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,1 mm	
Inner sheath color code:	**Black**	
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant,	
	Average Thickness 1,3 mm	
Outer sheath color code:	**Orange**	
Outer printing (INKJET) :	**FLEI - 2X2,5 SQMM - MGT/XLPE/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60331.21 -**	
(every 1000 mm)	**IEC 60332.1.2 - IEC 60332.3.22 - Year of Manufacture - CE + Meter Marking**	
Under armour diameter :	(10,3 ± 10%) mm	
Over armour diameter :	(11,5 ± 10%) mm	
Outer diameter :	(14,1 ± 10%) mm	
Bending radius :	cable outer diameter x 10 (in fixed installation)	
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)	
Conductors DC Resistance :	≤ 7,86 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.376**	
ON COMPLETE CABLE		
Fire Resistant test :	**IEC 60331.21**	
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Hazardous Areas :	IEC 60079.14 par.9.3.2a	
Temperature Range :		
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)	
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)	
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C) (in fixed installation)	
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**	

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

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

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Section 7 MECHANICAL COMPLETION STATUS INDEX - MECHANICAL DISCIPLINE

NOT APPLICABLE

Section 8 MECHANICAL COMPLETION STATUS INDEX - TELECOMMUNICATION DISCIPLINE

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 84-00 & process: MC & discipline : T

Telecom	84-00 DC 10 kVA UPS System (UP-200F1)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
UP-200F1/B400-NET-001.01	COMMUNICATION / EMCS SYSTEM	ONSHORE	C10004368	CIX09	100	2024-11-22	RFC 2
UP-200F1/B400-NET-001.02	COMMUNICATION / EMCS SYSTEM	ONSHORE	C10004369	CIX09	100	2024-11-22	RFC 2

ROSETTI MARINO | CROSSWIND

ITEM	Tag	UP-200F1/B400-NET-001.01 : COMMUNICATION / EMCS SYSTEM			Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	84-00 : DC 10 kVA UPS System (UP-200F1)			Module	LD_B-100/LD_B-400	
TASK	code	C10004368	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	UP-200F1	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 C3000680

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-11-21	2024-11-22	
Signature	Digitaly signed by Carmelo Bongiovanni 2024-11-21T14:41:04.054Z	Digitaly signed by Giovanni Tangianu 2024-11-22T16:23:28.515Z	

ROSETTI MARINO

Cable ID: UP-200F1/B400-NET-001.01

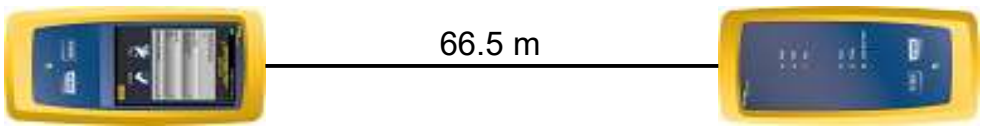
Test Summary: PASS

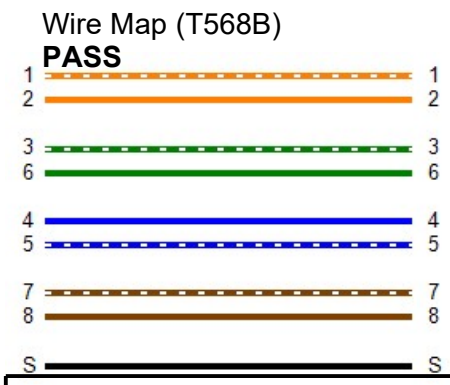
Test Limit: ISO11801 PL2 Class Ea
Limits Version: V7.6
Date / Time: 19-11-2024 15:56:21
Headroom 3.3 dB (NEXT 3,6-4,5)
Cable Type: Cat 6A S/FTP
NVP: 77.0%

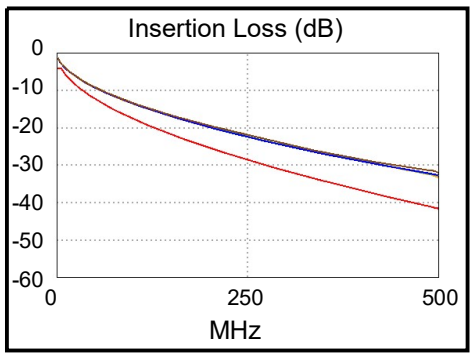
Main: Versiv
S/N: 2226344
Software Version: V6.7 Build 1
Calibration Date: 12-12-2022
Adapter: DSX-8000 (DSX-PLA804)
S/N: 22340270

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

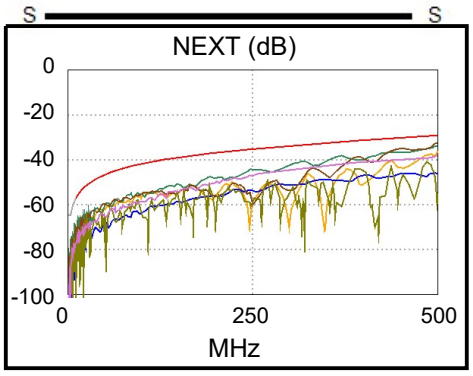
Length (m), Limit 90.0	[Pair 4,5]	66.5
Prop. Delay (ns), Limit 496	[Pair 1,2]	293
Delay Skew (ns), Limit 43	[Pair 1,2]	5
Resistance (ohms), Limit 20.60	[Pair 3,6]	9.18
Insertion Loss Margin (dB)	[Pair 1,2]	8.4
Frequency (MHz)	[Pair 1,2]	500.0
Limit (dB)	[Pair 1,2]	41.6

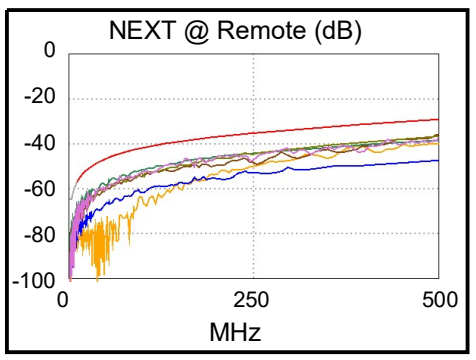




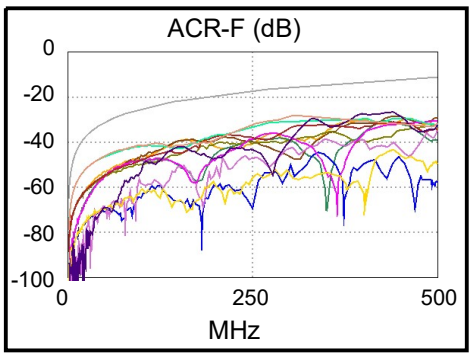


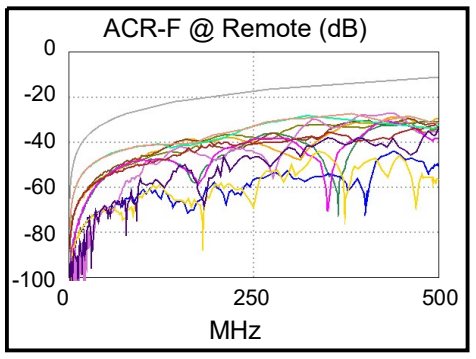
	Worst Case Margin		Worst Case Value	
PASS	MAIN	SR	MAIN	SR
Worst Pair	3,6-4,5	3,6-4,5	3,6-4,5	3,6-4,5
NEXT (dB)	3.3	6.6	3.4	6.6
Freq. (MHz)	499.0	499.0	500.0	499.0
Limit (dB)	29.3	29.3	29.2	29.3
Worst Pair	4,5	3,6	4,5	3,6
PS NEXT (dB)	3.2	6.0	3.2	6.0
Freq. (MHz)	500.0	500.0	500.0	500.0
Limit (dB)	26.4	26.4	26.4	26.4



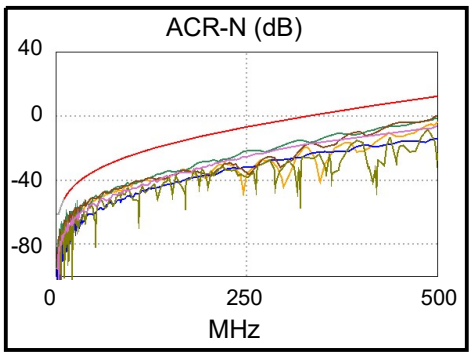


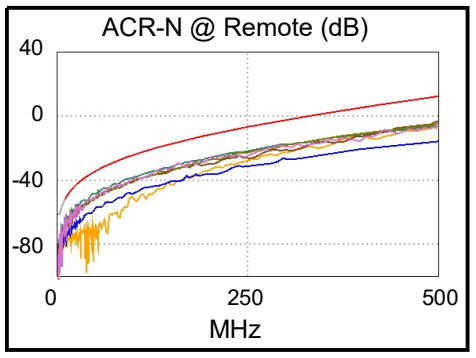
PASS	MAIN	SR	MAIN	SR
Worst Pair	7,8-4,5	4,5-7,8	7,8-3,6	3,6-7,8
ACR-F (dB)	12.6	13.0	14.0	14.6
Freq. (MHz)	305.0	305.0	439.0	439.0
Limit (dB)	15.5	15.5	12.4	12.4
Worst Pair	3,6	7,8	3,6	7,8
PS ACR-F (dB)	14.7	14.0	15.0	15.0
Freq. (MHz)	403.0	330.0	439.0	397.0
Limit (dB)	10.1	11.9	9.4	10.3



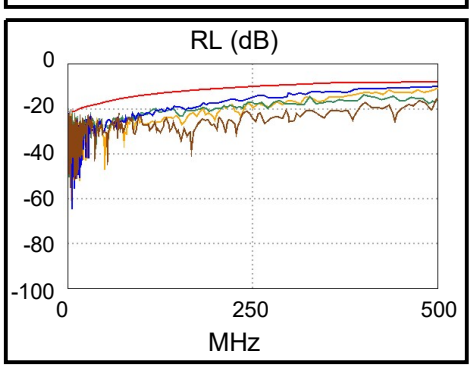


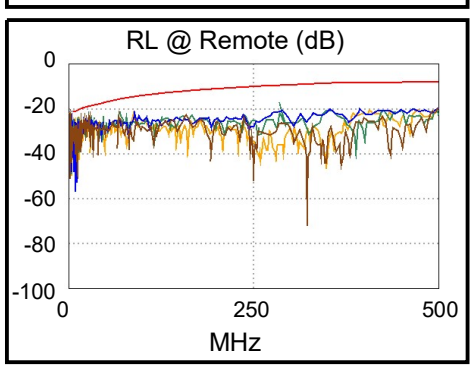
PASS	MAIN	SR	MAIN	SR
Worst Pair	3,6-4,5	1,2-4,5	3,6-4,5	3,6-4,5
ACR-N (dB)	12.2	12.8	12.3	15.5
Freq. (MHz)	499.0	55.5	500.0	499.0
Limit (dB)	-12.3	33.0	-12.4	-12.3
Worst Pair	4,5	4,5	4,5	3,6
PS ACR-N (dB)	12.1	12.0	12.2	14.8
Freq. (MHz)	499.0	158.5	500.0	500.0
Limit (dB)	-15.2	13.6	-15.3	-15.3





PASS	MAIN	SR	MAIN	SR
Worst Pair	4,5	7,8	4,5	4,5
RL (dB)	1.7	5.0	1.7	10.7
Freq. (MHz)	484.0	19.8	484.0	429.0
Limit (dB)	8.0	19.5	8.0	8.0





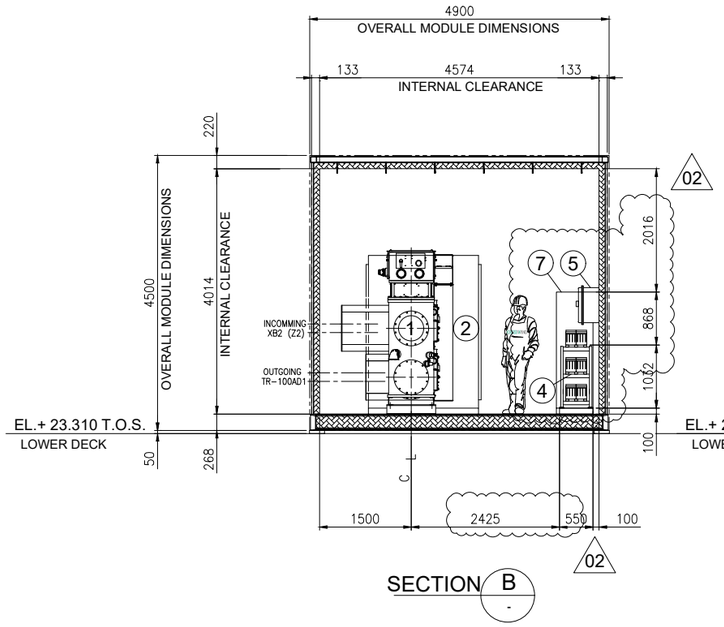
Compliant Network Standards:

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	

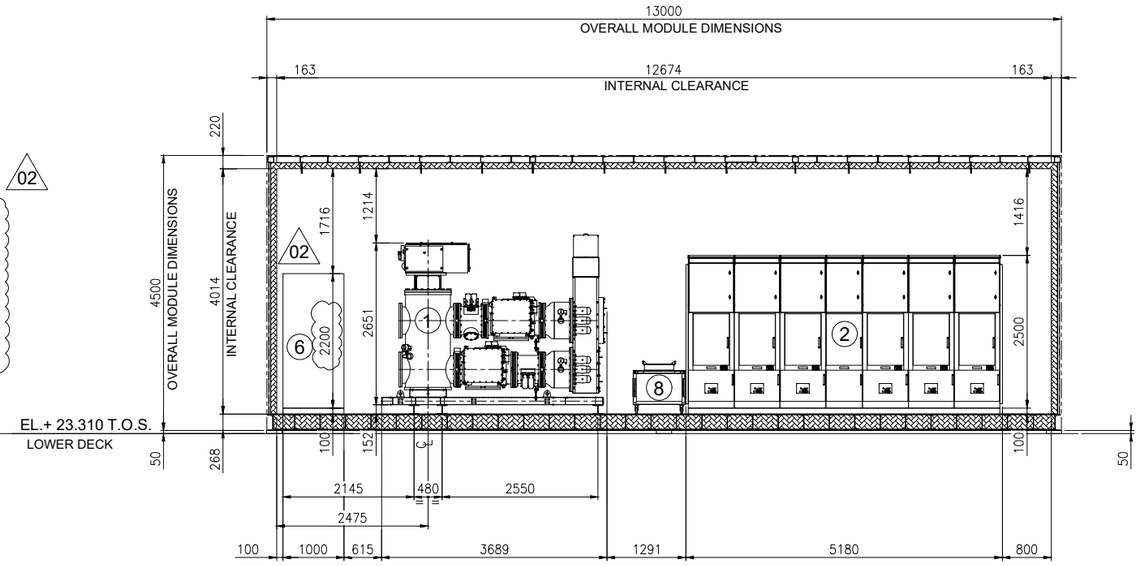
LinkWare™ PC Version 11.4

FLUKE networks

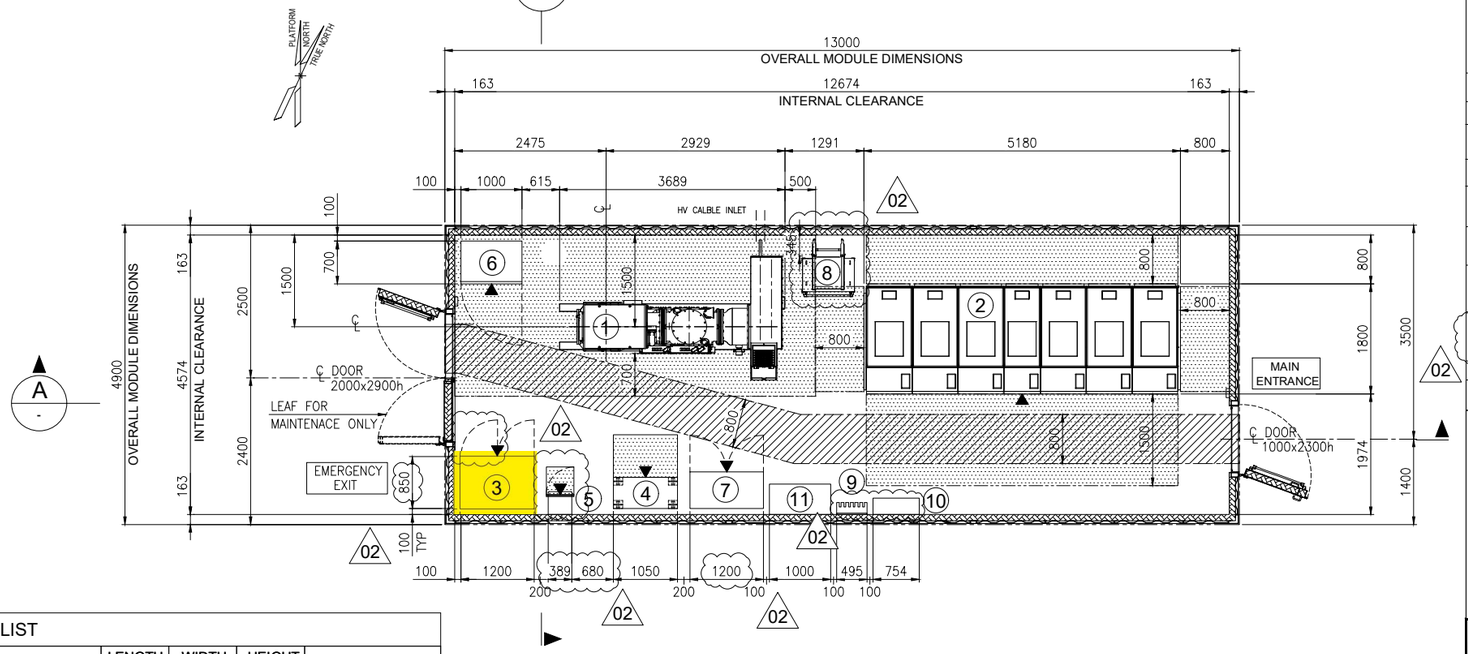
DRAWING NO. 123A90-DDL-EL-DL-20104 | REV. 02



SECTION B -

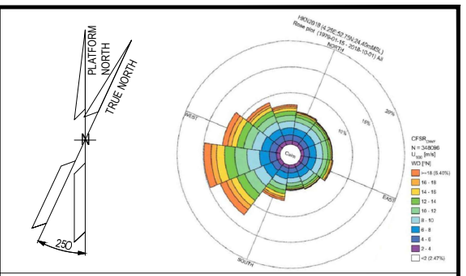


SECTION A -



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

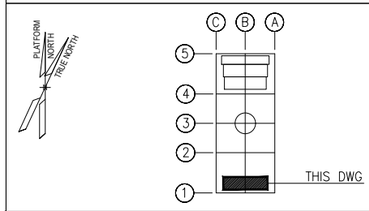
LEGEND

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



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)

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

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

ROSETTI MARINO SpA

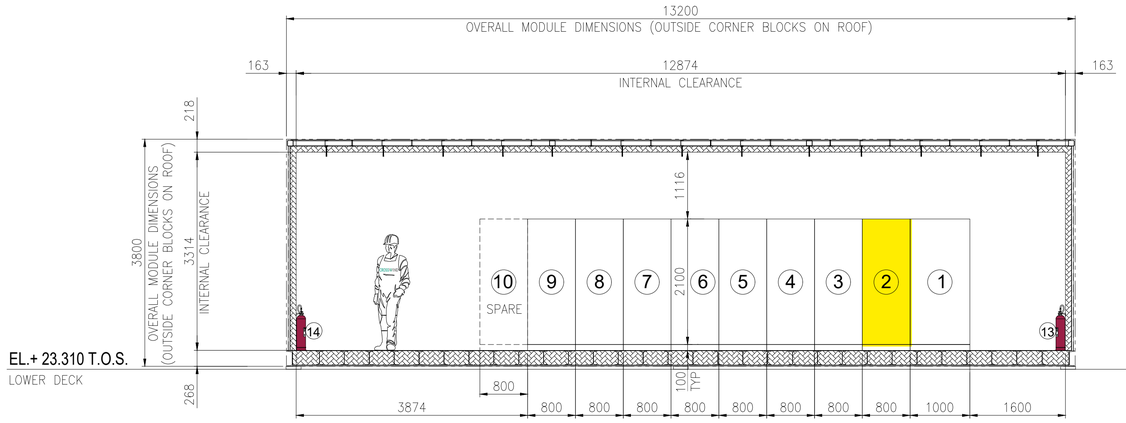
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
HV SWITCHROOM

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

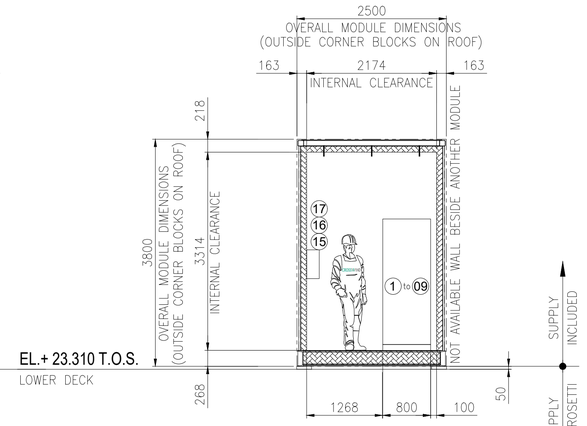
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File Name : 123A90-DDL-EL-DL-20104_REV02.dwg

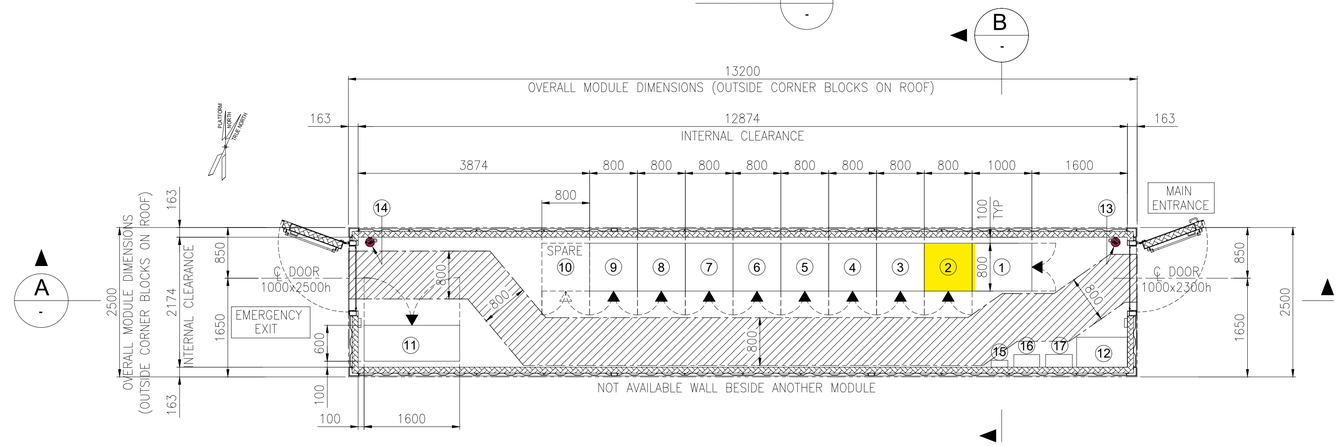
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SECTION A -



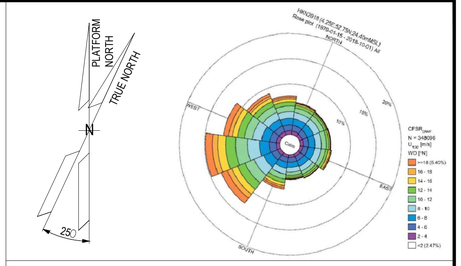
SECTION B -



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

EQUIPMENT LIST

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



NOTES

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

LEGEND

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

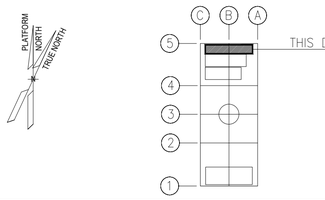
HOLDS

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REFERENCE

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

KEY PLAN



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

CROSSWIND | ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40012**

REV.:	DATE:	SIGNATURE:
3_A	07/10/24	G.Randi

ROSETTI MARINO SpA

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

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

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

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

HV SWITCHROOM (B-100)

I&T EQUIPMENT ROOM (ITER B400)

NETWORK CABINET - B400-NET-001

<01>

HVAC CABINET B100-HSB-001	ITEM: SCALANCE XC208 PORT: P3 LAN	RJ45	B100-HSB-001/B400-NET-001 CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS	RJ45	SWITCH: COOP-01 PORT: P11
Ref. Vendor Doc.: 1724000049-HV-DA-00026					
DCS UPS PANEL UP-200F1	ITEM: -A1 GCAU (/8.2) -A73 NCS-TCP/IP PORT: IN	RJ45	UP-200F1/B400-NET-001.01 CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS	RJ45	SWITCH: COOP-01 PORT: P09
Ref. Vendor Doc.: 1724000372-EL-DG-00010					
DCS UPS PANEL UP-200F1	ITEM: -A1 GCAU (/11.2) -A73 NCS-TCP/IP PORT: IN	RJ45	UP-200F1/B400-NET-001.02 CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS	RJ45	SWITCH: COOP-01 PORT: P10
Ref. Vendor Doc.: 1724000372-EL-DG-00010					

~~EMCS SYSTEM - B400-EMCS-001~~

6.6kV SWITCHGEAR SG-100D1	ITEM: VT BUS BARS "A5" SWH.A PORT: 8	RJ45	SG-100D1/B400-NET-001.01 ~~SG-100D1/B400-EMCS-001.01~~ CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS	RJ45	SWITCH: COOP-01 PORT: P20
Ref. Vendor Doc.: 1723002197-EL-DG-00022					
6.6kV SWITCHGEAR SG-100D1	ITEM: VT BUS BARS "A5" SWH.B PORT: 8	RJ45	SG-100D1/B400-NET-001.02 ~~SG-100D1/B400-EMCS-001.02~~ CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS	RJ45	SWITCH: COOP-01 PORT: P01
Ref. Vendor Doc.: 1723002197-EL-DG-00022					
6.6kV SWITCHGEAR SG-100D1	ITEM: VT BUS BARS "A5" SWH.C PORT: 1	RJ45	SG-100D1/B400-NET-001.03 ~~SG-100D1/B400-EMCS-001.03~~ CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS	RJ45	SWITCH: COOP-01 PORT: P03
Ref. Vendor Doc.: 1723002197-EL-DG-00022					

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. 123A90-DDL-IN-DG-40015	SHEET 033	REV. 01

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

DRAWING NO. 123A90-DDL-IN-DG-40015

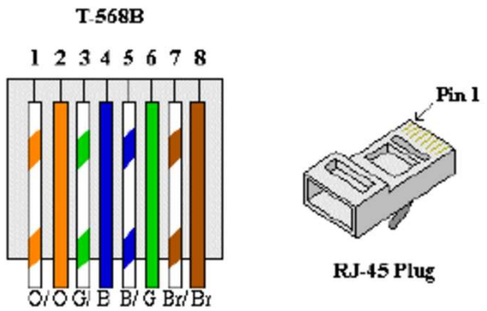
REV. 01

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

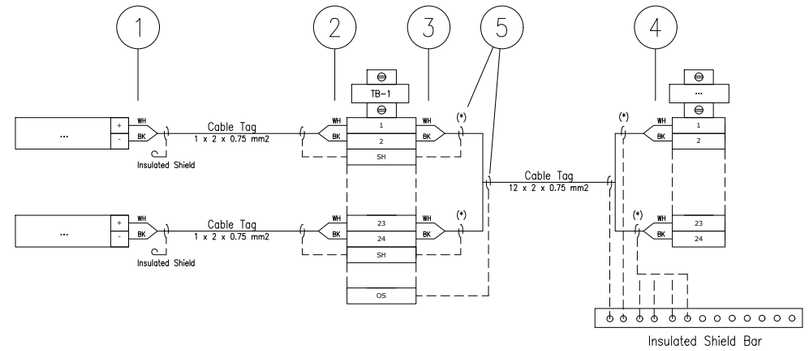
LEGENDS & SYMBOLS:

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

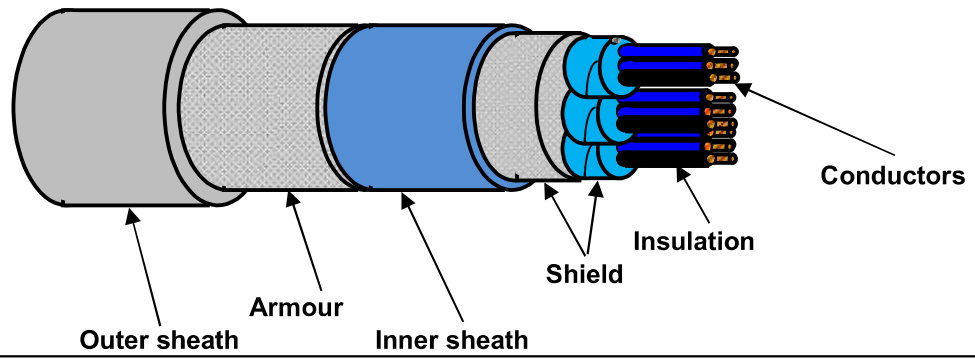
File Name : 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	Info	Category	Discipline	Eng Status	NativeDoc	Grouping	Entity Type	Main Function	Secondary Function	Module	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.	PO Position	RFID	Eng Gross Qty	Over All Gross Qty	UM	Overall Prj Part Number	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
UP-200F1/B400-NET-001.01		Cable	IN	VFC	123A90-DOL-IN-LIS-40091	Int-Ext						UP-200F1	DC UPS 10 KVA Redundant System	Lower Deck (B-100)		B400-NET-001	Network Cabinet / EMCS System	Lower Deck (B-400)		TELCVD1-4X2X23AWG	Cable CAT 6A S/FTP 4x2x23AWG Armoured LSZH - Grey	220		55	55	m		M20S	T2_M20S_Double			n.a.					I-MCT-101 / I-SEC-17 / I-SEC-1N / I-SEC-SM / I-SEC-S1 / I-SEC-3K / I-SEC-S2 / I-SEC-3J / I-SEC-SH / I-SEC-1G / I-SEC-1F / I-SEC-1E / I-SEC-SD / I-SEC-1C / I-SEC-1B / I-SEC-1A / I-MCT-402

FLEI s.r.l.

CAT. 6A S/FTP ARMOURED LSZH

4X2X23AWG - Based on Draka UC500 HS23



TECHNICAL FEATURES

Conductors :	**SOLID** plain annealed copper wires (AWG23) **ø 0,56 mm**
Insulation :	Foamskin PE - **ø 1,38 mm**
Cores colour code :	**blue/white; orange/white; green/white; brown/white**
Pair Assembling :	Cores twisted in pairs
Pair Shield :	Al-laminated plastic foil
Overall Shield:	Tinned copper braid
Inner sheath :	Extruded LSZH Thermoplastic Compound
Inner sheath color code:	**Blue**
Armour :	**Galvanized Steel Wire Braid Armour (coverage ≥ 90%)**
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant, Average Thickness 1,2 mm
Outer sheath color code:	**Grey**
Outer printing (INKJET) :	**FLEI - 4X2X23AWG - CAT.6A S/FTP ARMOURED LSZH - IEC 60332.1.2 - IEC 60332.3.22 -**
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**
Under armour diameter :	(7,5 ± 10%) mm
Over armour diameter :	(8,3 ± 10%) mm
Outer diameter :	(10,7 ± 10%) mm
Bending radius :	cable outer diameter x 8 (in fixed installation)
Test Voltage :	1000 V DC for 1' (Between Cores) / 1000 V DC for 1' (Between Cores - Shield)
Loop Resistance :	≤ 154 Ω/Km (@ 20°C)
Insulation Resistance :	≥ 2000 MΩ x km (@ 20°C)
Mutual Capacitance :	Nom. 43 nF/km
Characteristic Impedance :	(100 ± 5) Ω
Applicable Standards	
Design Guidelines :	**Generally to ISO/IEC 11801 / IEC 61156-5 / EN 50173-1 / EN 50288-10 / IEEE 802.3at / af / bt**
ON COMPLETE CABLE	
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22
Acid Gas generation :	IEC 60754.1/2
Smoke density/Light Transm	IEC 61034.2 (LT ≥ 60%)
Hazardous Areas :	IEC 60079.14 par.9.3.2a
Temperature Range :	
ON COMPLETE CABLE	
During Operation :	(-20°C up to +60°C) (in fixed installation)
During installation :	(0°C up to +50°C)
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner Sheath together with correct ATEX approved equipment or accessories.**

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	29/05/2024	Messa			
Checked :	29/05/2024	Spaccasassi			
Approved :	29/05/2024	Cucinotta			

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

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ROSETTI MARINO | CROSSWIND

ITEM	Tag	UP-200F1/B400-NET-001.02 : COMMUNICATION / EMCS SYSTEM			Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	84-00 : DC 10 kVA UPS System (UP-200F1)			Module	LD_B-100/LD_B-400	
TASK	code	C10004369	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	UP-200F1	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 C3000680

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-11-21	2024-11-22	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-11-21T14:41:13.911Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-11-22T16:23:51.266Z	

ROSETTI MARINO

Cable ID: UP-200F1/B400-NET-001.02

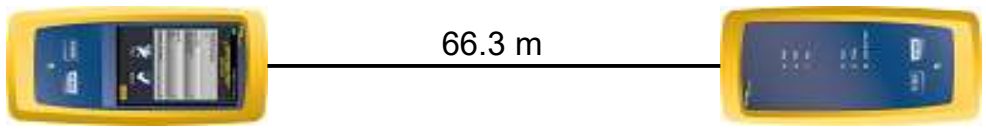
Test Summary: PASS

Test Limit: ISO11801 PL2 Class Ea
Limits Version: V7.6
Date / Time: 21-11-2024 09:53:24
Headroom 5.2 dB (NEXT 3,6-4,5)
Cable Type: Cat 6A S/FTP
NVP: 77.0%

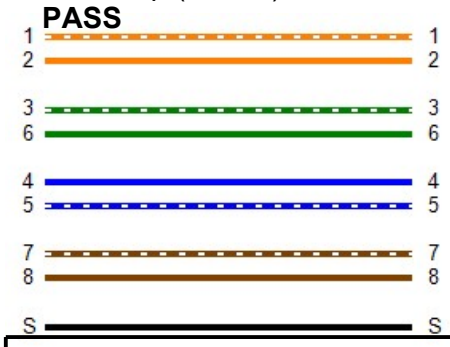
Main: Versiv
S/N: 2226344
Software Version: V6.7 Build 1
Calibration Date: 12-12-2022
Adapter: DSX-8000 (DSX-PLA804)
S/N: 22340270

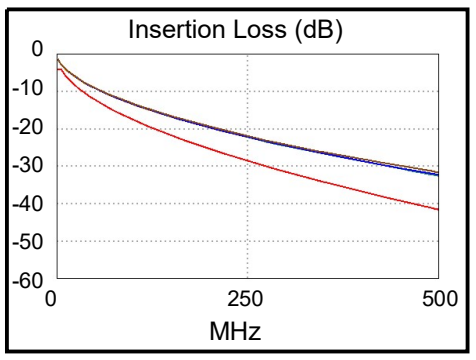
Remote: Versiv
S/N: 2226336
Software Version: V6.7 Build 1
Calibration Date: 12-12-2022
Adapter: DSX-8000R (DSX-PLA804)
S/N: 22340257

Length (m), Limit 90.0	[Pair 4,5]	66.3
Prop. Delay (ns), Limit 496	[Pair 1,2]	292
Delay Skew (ns), Limit 43	[Pair 1,2]	5
Resistance (ohms), Limit 20.60	[Pair 3,6]	8.97
Insertion Loss Margin (dB)	[Pair 3,6]	9.0
Frequency (MHz)	[Pair 3,6]	500.0
Limit (dB)	[Pair 3,6]	41.6

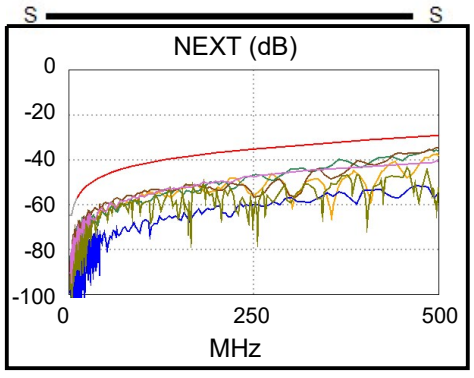


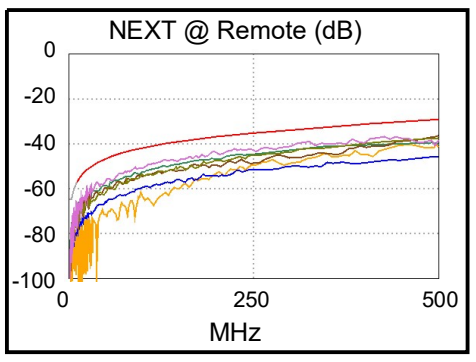
Wire Map (T568B)
PASS



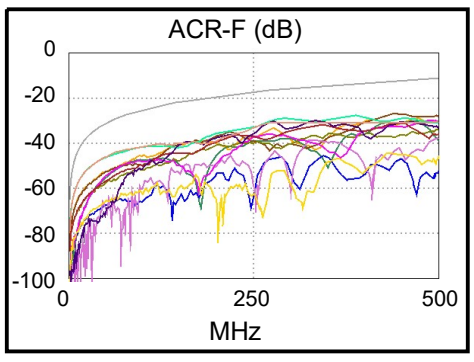


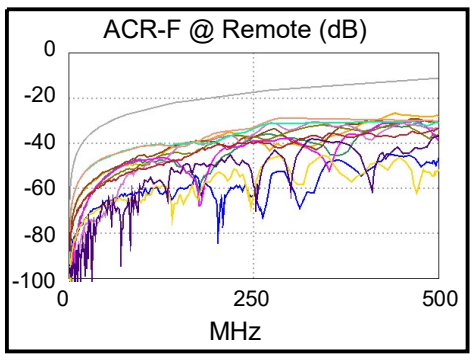
	Worst Case Margin		Worst Case Value	
PASS	MAIN	SR	MAIN	SR
Worst Pair	3,6-4,5	4,5-7,8	3,6-4,5	3,6-4,5
NEXT (dB)	5.2	5.8	5.2	7.3
Freq. (MHz)	500.0	325.0	500.0	500.0
Limit (dB)	29.2	33.3	29.2	29.2
Worst Pair	4,5	4,5	4,5	4,5
PS NEXT (dB)	5.1	5.8	5.1	6.4
Freq. (MHz)	500.0	443.0	500.0	488.0
Limit (dB)	26.4	27.6	26.4	26.6



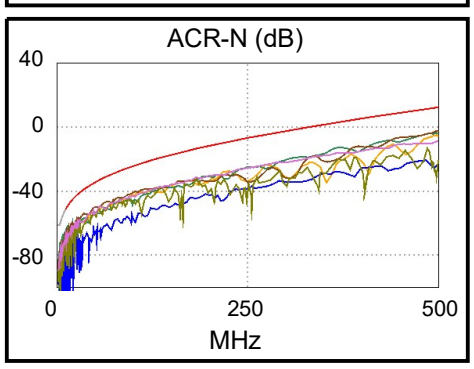


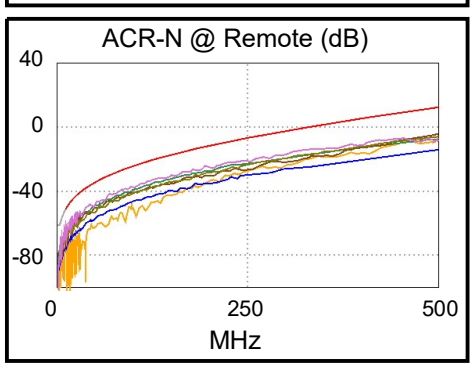
PASS	MAIN	SR	MAIN	SR
Worst Pair	4,5-7,8	7,8-4,5	3,6-1,2	1,2-3,6
ACR-F (dB)	13.0	12.7	14.4	14.4
Freq. (MHz)	291.0	291.0	441.0	441.0
Limit (dB)	16.0	16.0	12.3	12.3
Worst Pair	3,6	4,5	1,2	4,5
PS ACR-F (dB)	14.7	14.4	16.3	16.5
Freq. (MHz)	278.0	291.0	441.0	454.0
Limit (dB)	13.4	13.0	9.3	9.1



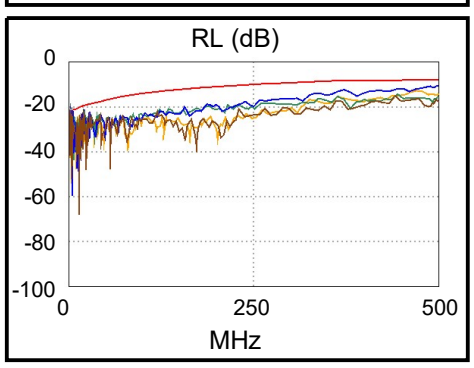


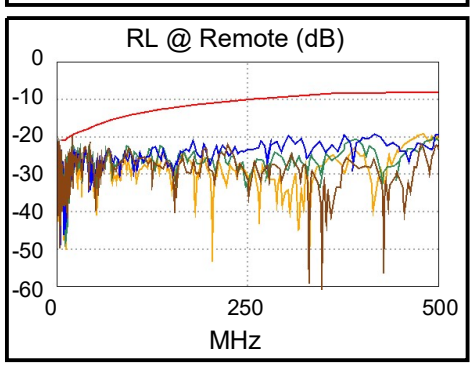
PASS	MAIN	SR	MAIN	SR
Worst Pair	3,6-4,5	4,5-7,8	3,6-4,5	3,6-4,5
ACR-N (dB)	14.5	11.3	14.5	16.6
Freq. (MHz)	500.0	37.5	500.0	500.0
Limit (dB)	-12.4	38.1	-12.4	-12.4
Worst Pair	4,5	4,5	4,5	3,6
PS ACR-N (dB)	14.4	11.6	14.5	16.0
Freq. (MHz)	496.0	89.8	500.0	500.0
Limit (dB)	-15.0	23.4	-15.3	-15.3





PASS	MAIN	SR	MAIN	SR
Worst Pair	4,5	7,8	4,5	1,2
RL (dB)	2.6	2.3	2.6	10.7
Freq. (MHz)	500.0	20.0	500.0	479.0
Limit (dB)	8.0	19.5	8.0	8.0





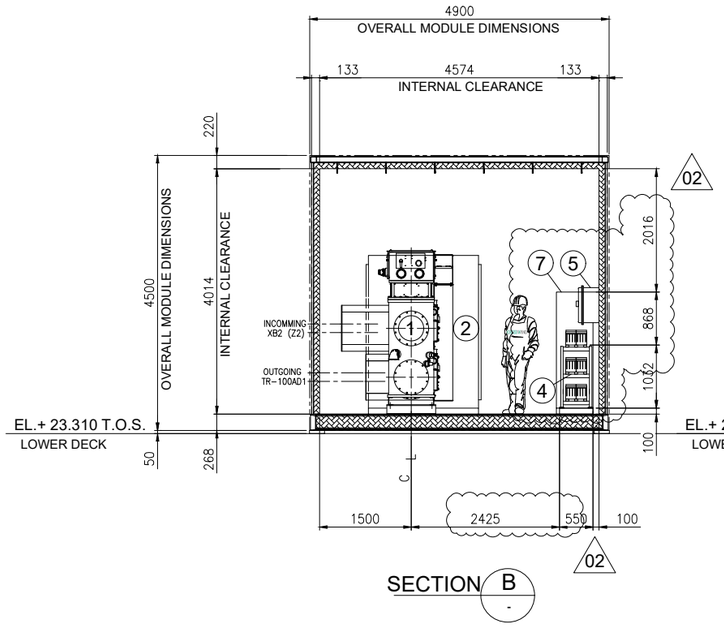
Compliant Network Standards:

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	

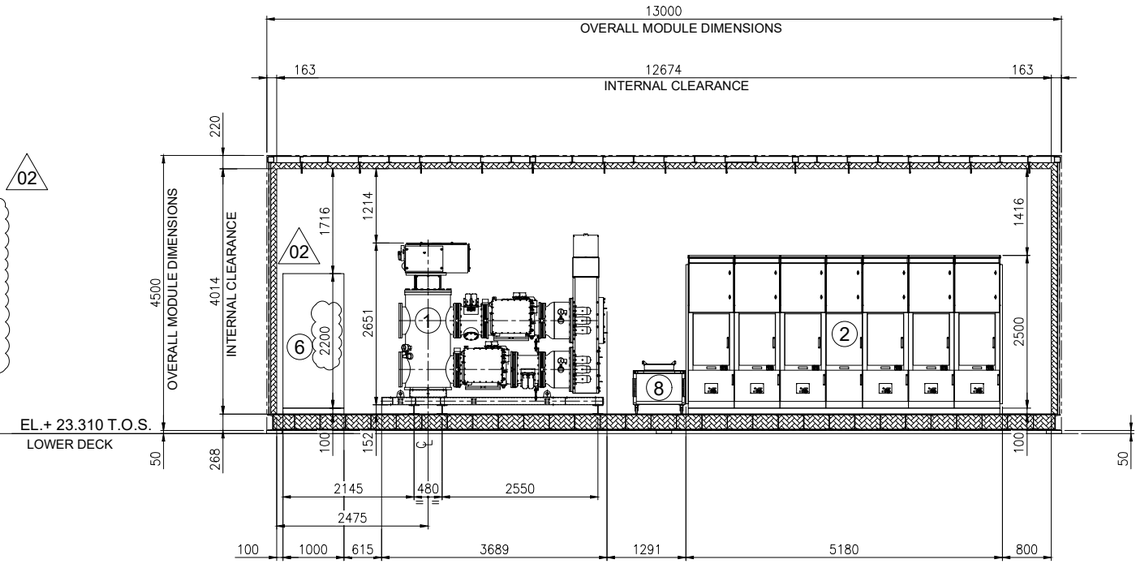
LinkWare™ PC Version 11.4

FLUKE networks

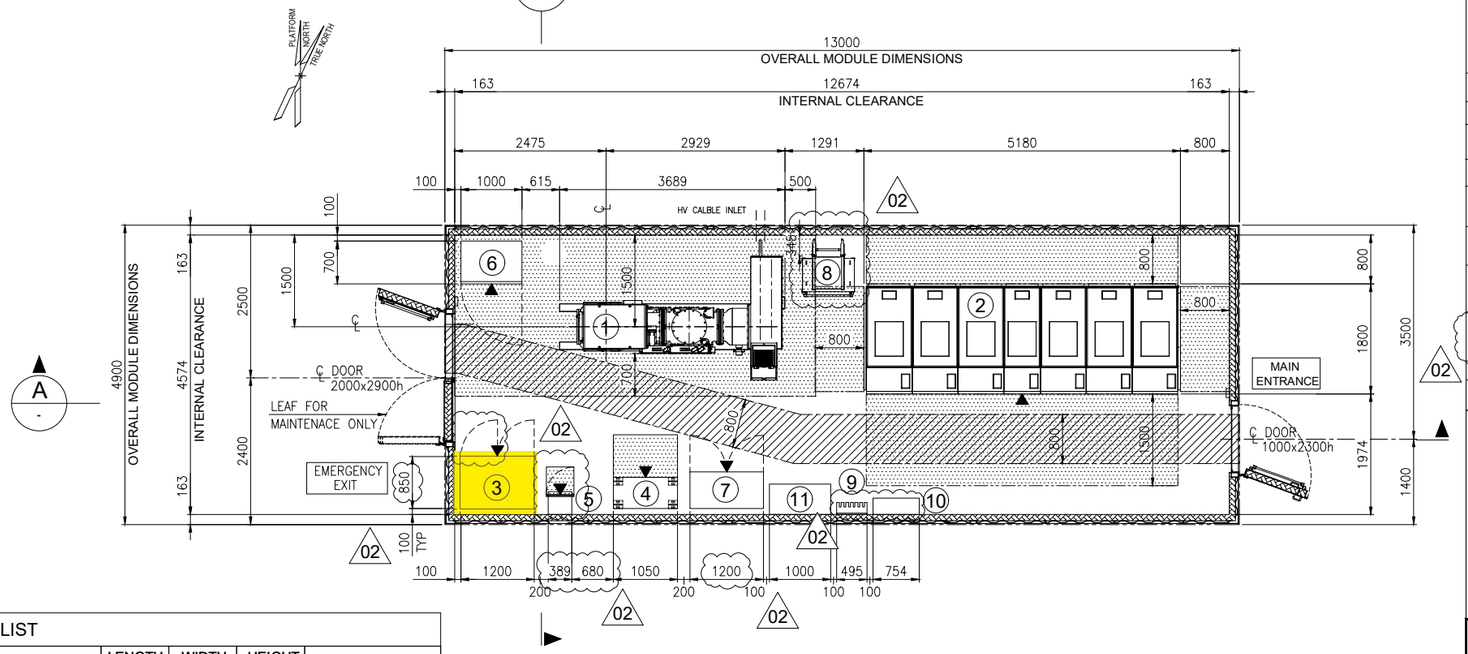
DRAWING NO. 123A90-DDL-EL-DL-20104 | REV. 02



SECTION B -

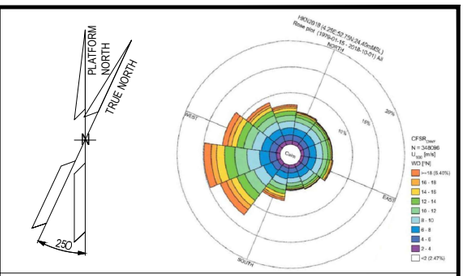


SECTION A -



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

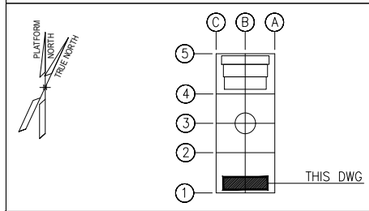
LEGEND

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



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

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

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

ROSETTI MARINO SpA

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

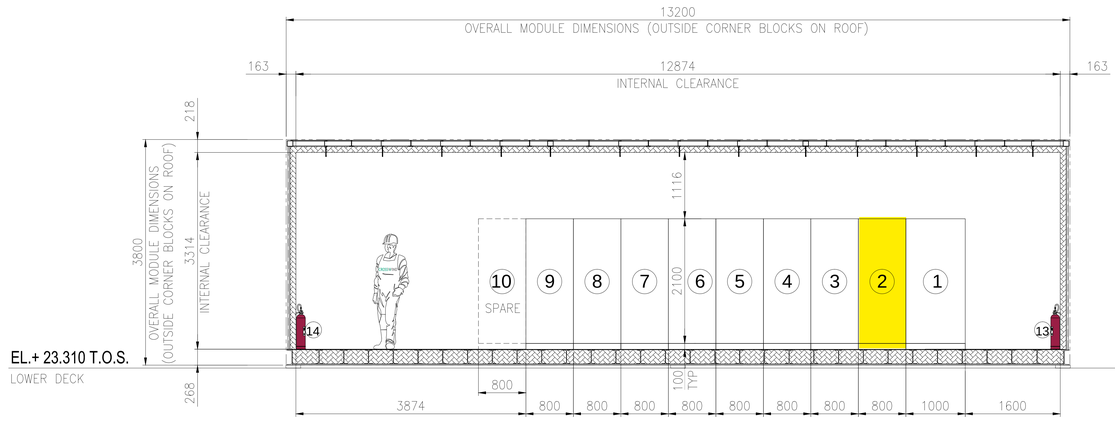
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN GPA	CHECKED LMA/AMA	APPROVED LMA/MDO	DATE 27/05/2024

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

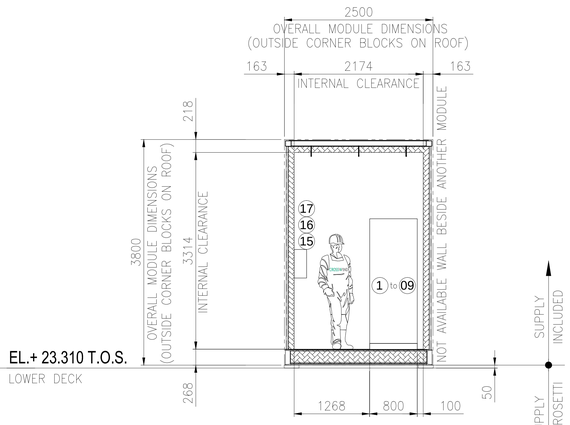
File Name : 123A90-DDL-EL-DL-20104_REV02.dwg

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

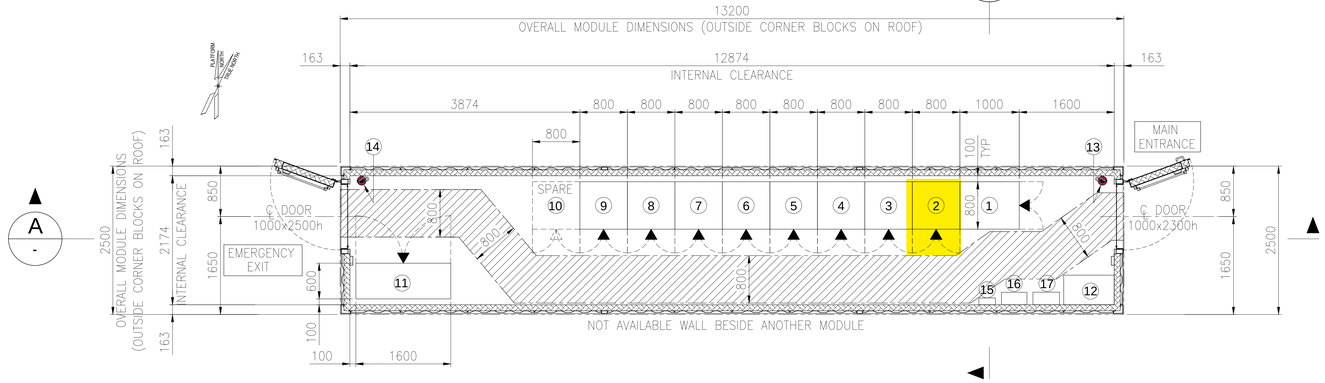
REV. 02



SECTION A -



SECTION B -

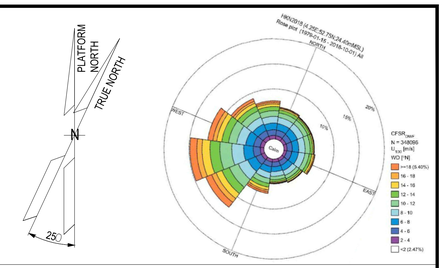


EQUIPMENT LAYOUT
"B-400" I&T EQUIPMENT ROOM
BOTTOM PLAN

02

EQUIPMENT LIST

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



NOTES

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

LEGEND

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

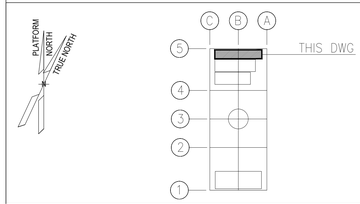
HOLDS

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REFERENCE

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

KEY PLAN



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

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DL-40012
REV.: 2_A | DATE: 08/08/24 | 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. 02

File Name : 123A90-DDL-IN-DL-40012 Rev.02.dwg

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

HV SWITCHROOM (B-100)

I&T EQUIPMENT ROOM (ITER B400)

NETWORK CABINET - B400-NET-001

<01>

HVAC CABINET B100-HSB-001	ITEM: SCALANCE XC208 PORT: P3 LAN	RJ45	B100-HSB-001/B400-NET-001 CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS	RJ45	SWITCH: COOP-01 PORT: P11
Ref. Vendor Doc.: 1724000049-HV-DA-00026					
DCS UPS PANEL UP-200F1	ITEM: -A1 GCAU (/8.2) -A73 NCS-TCP/IP PORT: IN	RJ45	UP-200F1/B400-NET-001.01 CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS	RJ45	SWITCH: COOP-01 PORT: P09
Ref. Vendor Doc.: 1724000372-EL-DG-00010					
DCS UPS PANEL UP-200F1	ITEM: -A1 GCAU (/11.2) -A73 NCS-TCP/IP PORT: IN	RJ45	UP-200F1/B400-NET-001.02 CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS	RJ45	SWITCH: COOP-01 PORT: P10
Ref. Vendor Doc.: 1724000372-EL-DG-00010					

~~EMCS SYSTEM - B400-EMCS-001~~

6.6kV SWITCHGEAR SG-100D1	ITEM: VT BUS BARS "A5" SWH.A PORT: 8	RJ45	SG-100D1/B400-NET-001.01 ~~SG-100D1/B400-EMCS-001.01~~ CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS	RJ45	SWITCH: COOP-01 PORT: P20
Ref. Vendor Doc.: 1723002197-EL-DG-00022					
6.6kV SWITCHGEAR SG-100D1	ITEM: VT BUS BARS "A5" SWH.B PORT: 8	RJ45	SG-100D1/B400-NET-001.02 ~~SG-100D1/B400-EMCS-001.02~~ CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS	RJ45	SWITCH: COOP-01 PORT: P01
Ref. Vendor Doc.: 1723002197-EL-DG-00022					
6.6kV SWITCHGEAR SG-100D1	ITEM: VT BUS BARS "A5" SWH.C PORT: 1	RJ45	SG-100D1/B400-NET-001.03 ~~SG-100D1/B400-EMCS-001.03~~ CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS	RJ45	SWITCH: COOP-01 PORT: P03
Ref. Vendor Doc.: 1723002197-EL-DG-00022					

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. 123A90-DDL-IN-DG-40015	SHEET 033	REV. 01

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

DRAWING NO. 123A90-DDL-IN-DG-40015

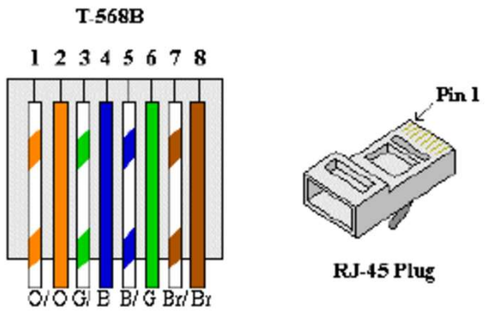
REV. 01

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

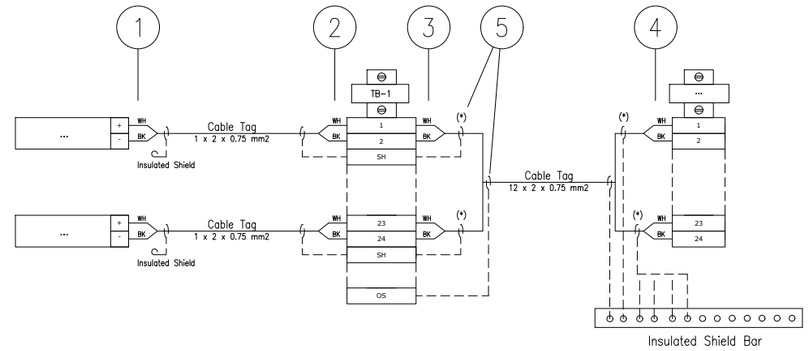
LEGENDS & SYMBOLS:

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

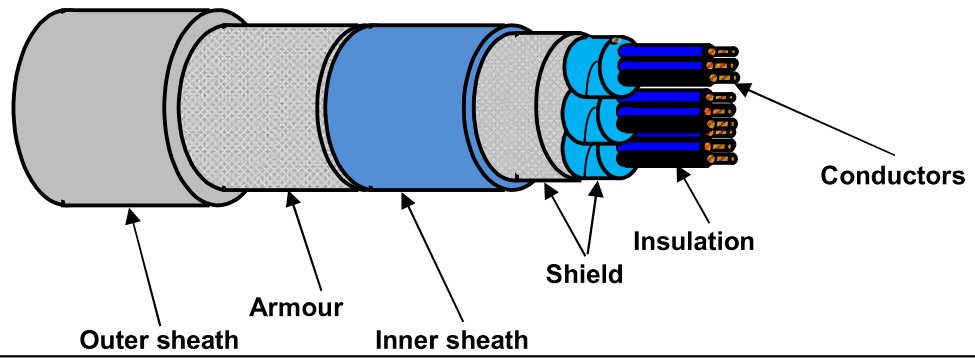
File Name : 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	Info	Category	Discipline	Eng Status	NativeDoc	Grouping	Entity Type	Main Function	Secondary Function	Module	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.	PO Position	RFID	Eng Gross Qty	Over All Gross Qty	UM	Overall Prj Part Number	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
UP-200F1/B400-NET-001.02		Cable	IN	VFC	123A90-DOL-IN-LIS-40091	Intl-Ext						UP-200F1	DC UPS 10 KVA Redundant System	Lower Deck (B-100)		B400-NET-001	Network Cabinet / EMCS System	Lower Deck (B-400)		TELCVD1-4X2X23AWG	Cable CAT 6A S/FTP 4x2x23AWG Armoured LSZH - Grey	220		55	55	m		M20S	T2_M20S_Double			n.a.				I-MCT-201 / L-SEC-17 / L-SEC-1N / L-SEC-SM / L-SEC-S1 / L-SEC-3K / L-SEC-S2 / L-SEC-3J / L-SEC-3H / L-SEC-3G / L-SEC-1F / L-SEC-1E / L-SEC-3D / L-SEC-1C / L-SEC-1B / L-SEC-1A / 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

Base Load Power Hub (BLPH)

DC UPS - TAG: UP-200F1

FACTORY ACCEPTANCE TEST PROCEDURE

This document undergoes an issuance cycle within EDMS Fusionlive". Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

Base Load Power Hub (BLPH)

DC UPS - FACTORY ACCEPTANCE TEST PROCEDURE

Document Number: 1724000372-QC-PRO-00016

Document Class: 2

01	13/07/2024	Issue for Review (IFR)	DA	DA	AD
00	01/06/2024	Issue for Review (IFR)	DA	DA	AD
Rev.	Date	Description	Prepared	Reviewed	Approved

3W power | a company of AEG POWER SOLUTIONS

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Revision / Change Log

Rev.	Description
00	Issue for Review (IFR)
01	Issue for Review (IFR)

HOLDS LIST

No.	Description
1	
2	
3	
4	

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Description	Sheet
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REVISION / CHANGE LOG	2
HOLDS LIST	2
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DC UPS - FACTORY ACCEPTANCE TEST PROCEDURE	4

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AEG POWER SOLUTIONS

Project	Hollandse Kust Noord (HKN) wind farm
Client	ROSETTI MARINO
Equipment/s to be tested during FAT	1 x 2TPRE 110V 100A 10x FLG12-150 (CHARG.1) 1 x 2TPRE 110V 100A 10x FLG12-150 (CHARG.2)
Serial number	TPRE 3855/01 TPRE 3855/02
Order number	4400007526 (OV59193)

Participants:	Company:
ALBERTO DALL'ASTA	3W POWER - AEG ITALY
Alberto Trujillo	AEGPS (PM)
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☐ ACCEPTED ☐ ACCEPTED WITH COMMENTS ☐ REFUSED

For the Customer:
Date, Name, Signature:
17/07/2024
LINARI STEFANO
17 July 2024

For AEG Power Solutions:
Date, Name, Signature: 17/07/2024
AEG POWER SOLUTIONS
Calidad / Quality

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1. SCOPE

The scope of this document is to describe the test procedure to follow during the factory acceptance test of the system, and to record the values measured during the tests.

List of equipment within the scope of the PO:

EQUIPMENTS			
TAG	***Serial Number***	***Code***	***Description***
	TPRE3855/01	*ES521464A1*	*2x TPRE 110V 100A 10x FLG12-150 (CHARG.1)*
	TPRE3855/02	*ES521464A2*	*2x TPRE 110V 100A 10x FLG12-150 (CHARG.2)*
		ES521464R1	*SPARES 2x TPRE 110V 100A 10x FLG12-150*
		ES521464R2	*SPA.2YEARS 2x TPRE 110V 100A 10x FLG12-150*

List of equipment subjected to FAT:

EQUIPMENTS			
TAG	***Serial Number***	***Code***	***Description***
	TPRE3855/01	*ES521464A1*	*2x TPRE 110V 100A 10x FLG12-150 (CHARG.1)*
	TPRE3855/02	*ES521464A2*	*2x TPRE 110V 100A 10x FLG12-150 (CHARG.2)*

2. REFERENCE DOCUMENTS

ref. **1724000372-EL-DA-00003** DC UPS - GENERAL ARRANGEMENT AND DIMENSIONAL DRAWINGS
ref. **1724000372-EL-DG-00006** DC UPS - SINGLE LINE DIAGRAM and INTERCONNECTING DIAGRAM
ref. **1724000372-EL-DG-00008** DC UPS - WIRING DIAGRAM & TERMINAL SCHEDULE
ref. **ES521464_SCH**

These documents include the electrical values, single line drawing, electrical drawing, internal mechanical layout and general arrangement drawing.

3. TESTING EQUIPMENT

Multimeters

Current clamp

Oscilloscope (If needed)

Mains voltage variator

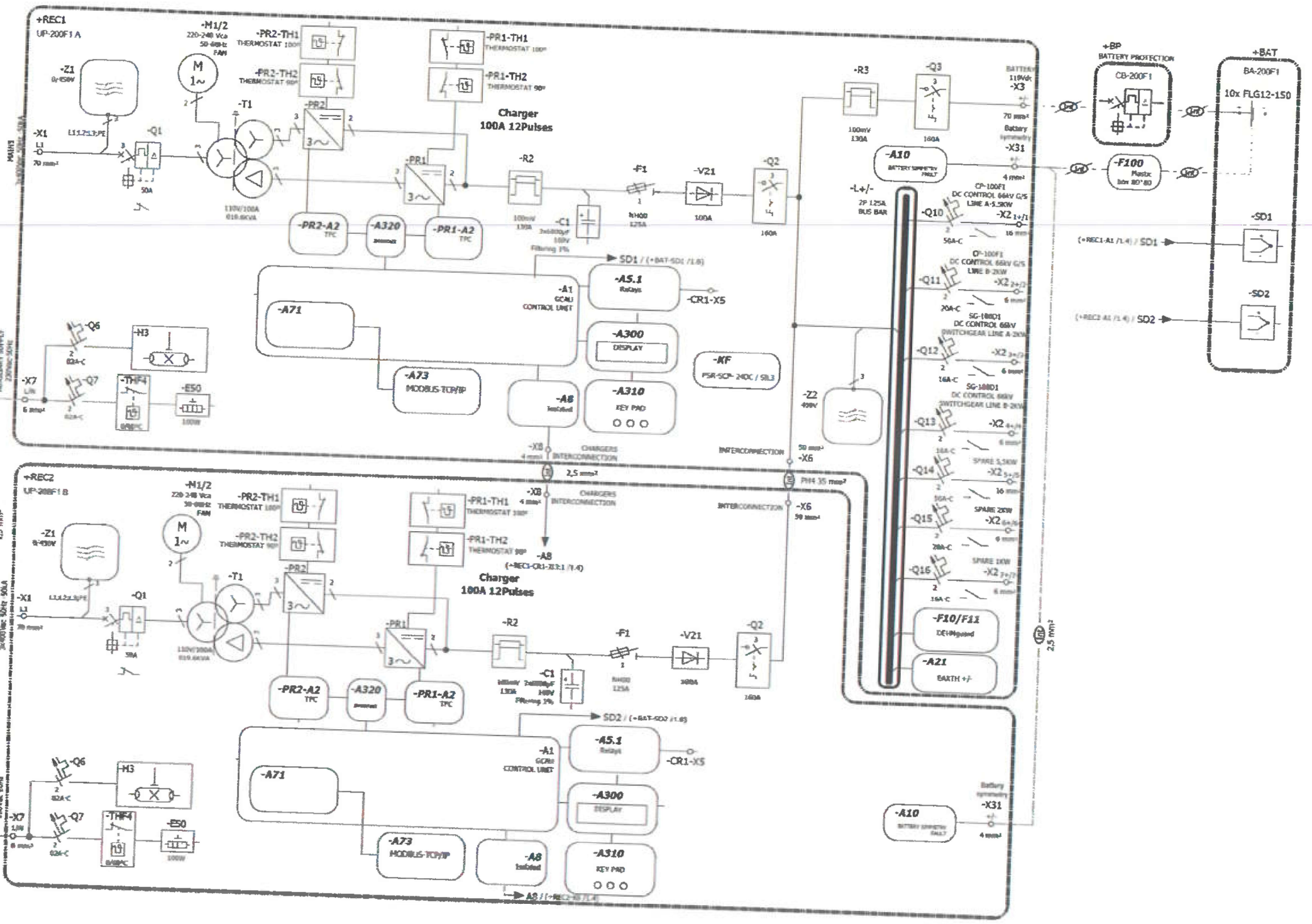
Resistive adjustable load (100% of nominal power)

AEG internal testing battery bank: The client's batteries are never subjected to tests. Therefore, they are never connected for FAT development.

Calibration certificates can be provided upon request for all testing equipment.

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4. CONNECTION DIAGRAM



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5. VISUAL INSPECTION

5.1. General construction

Check	Conformity with drawings
Location and labelling components identifications	OK
Cabinet TAGs labelling	UP-200F1A UP-200 F1B
Cabinet name plate	OK
Paint (RAL7035)	OK
Protection degree (IP43)	OK
Dimensional check	(600x800x2000)x2 OK
Cabling (numbering, crimping) & assembly (connection torque)	OK

5.2. Protections

Check	Conformity with drawings
Mains protections	Q1 50A
Load protections	Q2 160A
Battery switch/Breaker/Fuse	Q3 160A
Auxiliary devices protections	Q6-2A / Q7-2A
Provision for cabinet earthing (bar X0, ground cabling)	OK **

* Complete plastic protection?

* Q10 .... Q16 → Ok as per drawing

** Possibility of additional ground bar for instrumentation

6. FUNCTIONAL INSPECTION

6.1. Static test

Ambient temperature during the tests: ..20... °C

6.2. Functional test

Initial state : Charger is OFF
Input circuit breaker Q1 is open
Output switch (Q2) and battery switch (Q3) are open

Starting : Close Q2
Charger is powered ON by closing the input circuit breaker Q1 ~~Q2~~
Output switch (Q2) and battery switch (Q3) are closed
Only the charger subject to the test is ON
The mains is adjusted to its nominal value

Test description : The load is adjusted to 10, 50 and 100% of the system nominal load
The input and output electrical values are recorded and shall remain within the acceptance criteria
The tests are done in floating and high rate mode

Rectifier and load output voltage : CHARGER 1

Mode	Rectifier output power	AC mains voltage	Rectifier output current	Rectifier output voltage to obtain (VBAT)	Measured rectifier output voltage	Load output voltage to obtain (VBAT-V21)	Measured load output voltage	Conformity (Yes/No)
Floating (2'25)	10%	3x400Vac	10A	136,8V +/-1%	137'1 V	136,8V+/-1%	137'1 V	OK
Floating	50%	3x400Vac	50A	136,8V +/-1%	136'9 V	136,8V+/-1%	136'9 V	OK
Floating	100%	3x400Vac	100A	136,8V +/-1%	136'7 V	136,8V+/-1%	136'7 V	OK
High rate (2'30)	10%	3x400Vac	10A	136,8V +/-1%	— V	136,1V+/-1%	— V	—
High rate	50%	3x400Vac	50A	136,8V +/-1%	— V	136,1V+/-1%	— V	—
High rate	100%	3x400Vac	100A	136,8V +/-1%	— V	136,1V+/-1%	— V	—

135 ~~135~~ 138,0

configuration

(*) The rectifier voltage shall be corrected with the temperature compensation ratio if applicable.

Rectifier output ripple voltage: CHARGER1

Mode	Rectifier output power	AC mains voltage	Rectifier output current	Ripple voltage to obtain	Measured ripple voltage	Conformity (Yes/No)
Floating	100%	3x400V	100A	<5% of U nominal DC without battery	20'2 Vrms	OK

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Rectifier and load output voltage : CHARGER 2

Mode	Rectifier output power	AC mains voltage	Rectifier output current	Rectifier output voltage to obtain (VBAT)	Measured rectifier output voltage	Load output voltage to obtain (VBAT-V21)	Measured load output voltage	Conformity (Yes/No)
Floating 135	10%	3x400Vac	10A	~~136,8~~V +/-1%	135'8 V	136,1V+/-1%	135'8 V	ok
Floating 135	50%	3x400Vac	50A	~~136,8~~V +/-1%	135'5 V	136,1V+/-1%	135'5 V	ok
Floating 135	100%	3x400Vac	100A	~~136,8~~V +/-1%	135'2 V	136,1V+/-1%	135'2 V	ok
High rate 138	10%	3x400Vac	10A	~~136,8~~V +/-1%	138'8 V	136,1V+/-1%	138'8 V	ok
High rate 138	50%	3x400Vac	50A	~~136,8~~V +/-1%	138'6 V	136,1V+/-1%	138'6 V	ok
High rate 138	100%	3x400Vac	100A	~~136,8~~V +/-1%	138'2 V	136,1V+/-1%	138'2 V	ok

(*) The rectifier voltage shall be corrected with the temperature compensation ratio if applicable.

Rectifier output ripple voltage: CHARGER 2

Mode	Rectifier output power	AC mains voltage	Rectifier output current	Ripple voltage to obtain	Measured ripple voltage	Conformity (Yes/No)
Floating	100%	3x400V	100A	<5% of U nominal DC without battery	<0'22	ok

6.3. Alarm test

Description	Relay	Display	LED Box	Result (OK/NOK/Not applicable)	
				CH 1	CH 2
MAINS FAULT	OK	OK	—	OK	
RECTIFIER FAULT	OK	Ok	—	OK	
HIGH VOLTAGE C.C 147 V	Ok	Ok	—	OK	
LOW VOLTAGE D.C. 111 V	OK	OK	—	Ok	
BATTERY LOW VOLTAGE 117 V	OK	Ok	—	OK	
EARTH FAULT +	OK	OK	—	O	
EARTH FAULT -	OK	ok	—	OK	
COMMON ALARM	OK	OK	—	OK	

OK Battery ~~breaker~~ box breaker (not supplied by AEG)
~~See~~ signal to implement in charger

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7. ADDITIONAL TESTS

7.1. Parallel redundancy tests

Initial state : Both chargers are OFF
Input breakers Q1 are open
Output switches (Q2) and battery switch (Q3) are open

Starting : Chargers are powered ON by closing input breakers Q1 Q2 then Q1
Output switches Q1 are closed to put the two chargers in parallel
Battery switch Q3 remains open to simulate the worst condition (no battery)
The 2x chargers are now working and connected in parallel (floating mode)
The load is adjusted to 100% of the system nominal load
The mains is adjusted to its nominal value

Test description : To initiate the load transfer from redundant chargers to one charger, the relevant charger is stopped from mains
To initiate the load transfer to initial state, the relevant charger is turned ON from mains

Load transfer between the 2 chargers

Test	*Load transfer to charger 2*	*Recovery to initial state*	*Load transfer to charger 1*	*Recovery to initial state*
Acceptance criteria	No load supply interruption, the second charger takes 100% of the load	No load supply interruption. Return to dual redundant mode	No load supply interruption, the second charger takes 100% of the load	No load supply interruption. Return to dual redundant mode
Conclusion the test (OK/NOK)				

7.2. Performance tests

Check	Conformity with drawings
Insulation test (review of the routine test reports)	
Rectifier Current limitation 100A	OK, we get the alarm
Battery Current limitation 15A	OK, current of bat. limited to max 15A.
Burn in test 24 hours to 1 charger	

8. COMMENTS

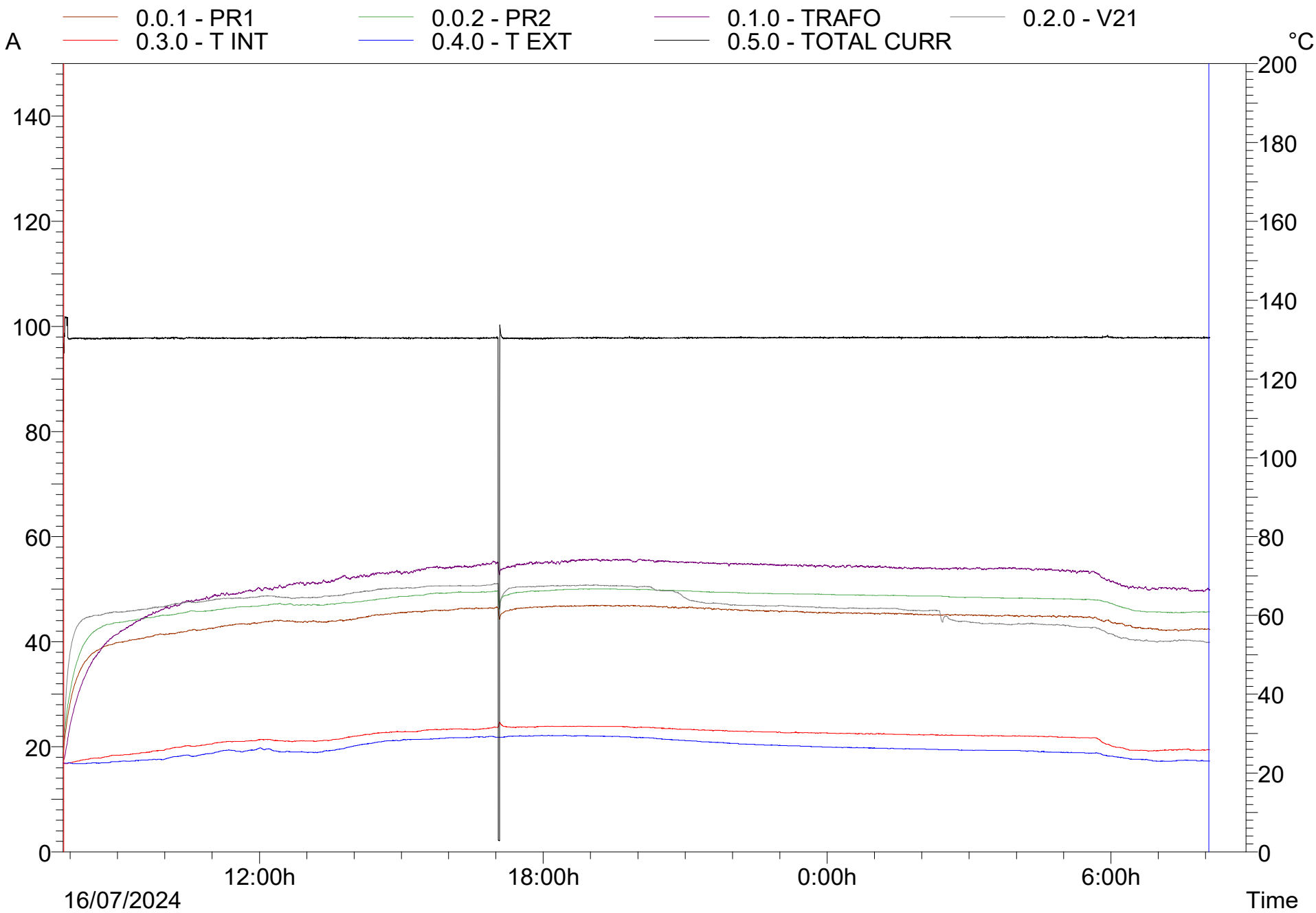
* Factory routine test to be updated with customer new requirements
  - 2 level of charge (floating 2'25V + HR 2'30V)
  - Alarm for ESD STOP BOOST
* Updating of drawing for all changes
* ~~- Complete IP2x safety protection already mounted but customer ask for additional protection inside door~~ mechanical more
  ~~- Additional ground bar for instrumentation~~
* To add hardware for battery box breaker (not supplied by AEG) alarm and communications
*

9. APPENDICES

Document	Document reference
CHARGER 1 routine test reports	
CHARGER 2 routine test reports	

→ AEG to sure all the parts fulfil IP2x
* Converter/adapter RJ45 to screw terminals requested addionally by customer (to be study/quoted)
* Burning test report to be attached
* CE declaration to provide
* Packing list to include clear information about intercommections
* Photos of the Spare parts and interconnection before shipping.

ES521464-TPRE3855ch1.amr



Channel	Left Cursor		Right Cursor		Difference		Minimum		Maximum		Max - Min	
Time	16/07/2024, 07:51:58		17/07/2024, 08:04:02		1.00:12:04							
0.0.1 - PR1	26,3	°C	56,5	°C	30,2	°C	26,3	°C	62,6	°C	36,3	°C
0.0.2 - PR2	28,3	°C	60,9	°C	32,6	°C	28,3	°C	66,7	°C	38,4	°C
0.1.0 - TRAFO	23,5	°C	66,5	°C	43	°C	23,5	°C	74,3	°C	50,8	°C
0.2.0 - V21	28,1	°C	53,2	°C	25,1	°C	28,1	°C	68,1	°C	40	°C
0.3.0 - T INT	22,5	°C	25,9	°C	3,4	°C	22,4	°C	32,9	°C	10,5	°C
0.4.0 - T EXT	22,5	°C	23,1	°C	0,6	°C	22,4	°C	29,6	°C	7,2	°C
0.5.0 - TOTAL CURR	95,37	A	97,75	A	2,38	A	2,1	A	101,83	A	99,73	A

17/07/2024, 09:20

\\Nas-spsi\Company\Plataforma\Calentamientos\ES521464-TPRE3855ch1.amr

Section 13 MECHANICAL COMPLETION CHANGES / MARK-UPS

NOT APPLICABLE