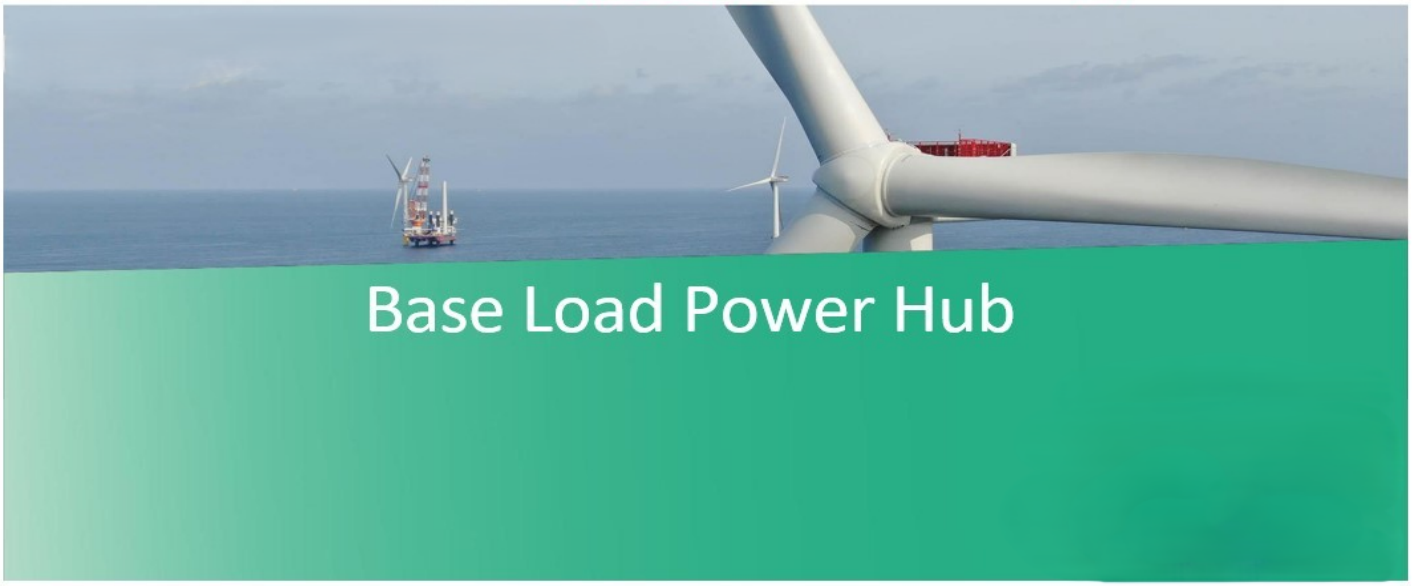
CROSSWIND

ROSETTI MARINO

PROVERLIS

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



MECHANICAL COMPLETION DOSSIER (ONSHORE)

SYSTEM	84 Battery & No-Break System
SUBSYSTEM	84-20 AC 15 kVA UPS System (UP-200F4)

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

Sub System N°:	84-20	Tick as appropriate	ONSHORE	O
Description:	AC 15 kVA UPS System (UP-200F4)		OFFSHORE	NA

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

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

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

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123A90 - HOLLANDSE KUST NOORD WIND PARK
BLPH Project

CROSSWIND

Ready For Commissioning (RFC) Certificate

COMPLETE	●	PARTIAL	

Revision:	2		Issued on:	2024-12-02	
System:	84	/	Battery & No-Break System		
SubSystem:	84-20	/	AC 15 kVA UPS System (UP-200F4)		

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

PUNCH LIST	PENDING POINTS	
Note: All Category "A" Items must be cleared prior to issue a Ready For Commissioning (RFC) Certificate	A	B
	'0	30

REMARKS:

	CONTRACTOR Construction Manager	**CONTRACTOR** Commissioning Manager	**COMPANY** Construction Lead (if required)	**COMPANY** Commissioning Lead (if required)
Name	Wolmer Borghi	Anthony Iveson	CPY NOT PRESENT	CPY NOT PRESENT
Date	2024-12-02	2024-12-02	2024-12-03	2024-12-03
Signature	PROVERLIS Digitaly signed by Wolmer Borghi 2024-12-02T18:07:25.876Z	PROVERLIS Digitaly signed by Anthony Iveson 2024-12-02T17:45:08.928Z	PROVERLIS Digitaly signed by CPY NOT PRESEN 2024-12-03T10:55:32.371Z	PROVERLIS Digitaly signed by CPY NOT PRESEN 2024-12-03T10:55:38.422Z

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 84-20 & process: MC

Electrical	84-20 AC 15 kVA UPS System (UP-200F4)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
83031-CEL	LV Switchgear / AC UPS F&G - 8h - Line A	ONSHORE	C10000556	CPX09	100	2024-11-04	RFC 1
83032-CEL	LV Switchgear / AC UPS F&G - 8h - Line B	ONSHORE	C10000557	CPX09	100	2024-11-04	RFC 1
83033-CEL	LV Switchgear / AC UPS F&G - 8h - Bypass	ONSHORE	C10000558	CPX09	100	2024-10-24	RFC 1
83123-CEL	Lighting & Small Power DB BoP / AC UPS F&G AUXILIARY	ONSHORE	C10002109	CPX09	100	2024-10-24	RFC 1
84410-CEC	Isolator Battery Box for AC UPS 15 kVA / AC UPS 15 kVA Redundant System with By-Pass	ONSHORE	C10002345	CPX10	100	2024-10-29	RFC 1
84411-CEC	Isolator Battery Box for AC UPS 15 kVA / AC UPS 15 kVA Redundant System with By-Pass	ONSHORE	C10002346	CPX10	100	2024-11-04	RFC 1
84411-CEL-1-N	AC UPS F&G - Charger-A / AC UPS F&G - Battery Isolator-A	ONSHORE	C10000651	CPX09	100	2024-11-05	RFC 1
84411-CEL-1-P	AC UPS F&G - Charger-A / AC UPS F&G - Battery Isolator-A	ONSHORE	C10000650	CPX09	100	2024-11-05	RFC 1
84411-CEL-2-N	AC UPS F&G - Battery Isolator-A / AC UPS F&G - Battery-A	ONSHORE	C10000653	CPX09	100	2024-11-20	RFC 2
84411-CEL-2-P	AC UPS F&G - Battery Isolator-A / AC UPS F&G - Battery-A	ONSHORE	C10000652	CPX09	100	2024-11-20	RFC 2
84412-CEL-1-N	AC UPS F&G - Charger-B / AC UPS F&G - Battery Isolator-B	ONSHORE	C10000655	CPX09	100	2024-11-05	RFC 1
84412-CEL-1-P	AC UPS F&G - Charger-B / AC UPS F&G - Battery Isolator-B	ONSHORE	C10000654	CPX09	100	2024-11-05	RFC 1
84412-CEL-2-N	AC UPS F&G - Battery Isolator-B / AC UPS F&G - Battery-B	ONSHORE	C10000657	CPX09	100	2024-11-21	RFC 2
84412-CEL-2-P	AC UPS F&G - Battery Isolator-B / AC UPS F&G - Battery-B	ONSHORE	C10000656	CPX09	100	2024-11-21	RFC 2
BA-200F4A	Battery Rack GEL VRLA-20Y for AC UPS 15 kVA	ONSHORE	C10000850	CPX17	100	2024-11-04	RFC 1
BA-200F4B	Battery Rack GEL VRLA-20Y for AC UPS 15 kVA	ONSHORE	C10000851	CPX17	100	2024-11-04	RFC 1
CB-200F4A	Isolator Battery Box for AC UPS 15 kVA	ONSHORE	C10000857	CPX00	100	2024-11-04	RFC 1
CB-200F4B	Isolator Battery Box for AC UPS 15 kVA	ONSHORE	C10000858	CPX00	100	2024-11-04	RFC 1
UP-200F4	AC UPS 15 kVA Redundant System with By-Pass	ONSHORE	C10000872	CPX16	100	2024-11-04	RFC 1

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 84-20 & process: MC

Instrumental	84-20 AC 15 kVA UPS System (UP-200F4)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
C-CB-200F4A/B400-SIS-001	TRIP SIGNAL / MARSHALLING PCS	ONSHORE	C10000199	CJX10	100	2024-11-25	RFC 2
C-CB-200F4B/B400-SIS-001	TRIP SIGNAL / MARSHALLING PCS	ONSHORE	C10000200	CJX10	100	2024-11-25	RFC 2
C-UP-200F4/B400-SIS-001	TRIP SIGNAL / MARSHALLING PCS	ONSHORE	C10000201	CJX10	100	2024-11-30	RFC 2

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 84-20 & process: MC

Telecom	84-20 AC 15 kVA UPS System (UP-200F4)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
UP-200F4/B400-NET-001.01	COMMUNICATION / EMCS SYSTEM	ONSHORE	C10004372	CIX09	100	2024-11-22	RFC 2
UP-200F4/B400-NET-001.02	COMMUNICATION / EMCS SYSTEM	ONSHORE	C10004373	CIX09	100	2024-11-22	RFC 2

CROSSWIND

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Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 84 Battery & No-Break System

SUBSYSTEM 84-20 AC 15 kVA UPS System (UP-200F4)

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000248	B	83033-CEL C10000558	Missing cable tags on internal and external side of MCT	-		Gtangianu 2024-10-24			
C30000249	B	83033-CEL C10000558	Plastic cable ties to be replaced on external routing	-		Gtangianu 2024-10-24			
C30000250	B	83033-CEL C10000558	Missing identification number of terminal strip X10 inside the UP-200F4	-		Gtangianu 2024-10-24			
C30000251	B	83033-CEL C10000558	Wrong core identification tag on both cable's termination	-		Gtangianu 2024-10-24			
C30000264	B	83123-CEL C10002109	Plastic cable ties to be replaced on external routing.	-		Gtangianu 2024-10-24			
C30000265	B	83123-CEL C10002109	Cable to be fixed with proper cable ties, after MCT installation of the panel DP-200N1	-		Gtangianu 2024-10-24			
C30000266	B	83123-CEL C10002109	Wrong core identification tag on both cable's termination	-		Gtangianu 2024-10-24			
C30000278	B	84410-CEC C10002345	Missing all core identification tag on terminals inside BC-200F4A	-		Gtangianu 2024-10-25		Lmussi	
C30000280	B	84410-CEC C10002345	Cable to be fixed with cable ties on all routing	-		Gtangianu 2024-10-29		Lmussi	

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Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 84 Battery & No-Break System

SUBSYSTEM 84-20 AC 15 kVA UPS System (UP-200F4)

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000308	B	83031-CEL C10000556	Plastic cable ties to be replaced on external routing	.		Gtangianu 2024-11-04			
C30000309	B	83031-CEL C10000556	Missing cable tags on internal and external side of MCT	.		Gtangianu 2024-11-04			
C30000310	B	83031-CEL C10000556	Identification tag of wire are wrong or missing inside SG-200N1 (A6/+05)	.		Gtangianu 2024-11-04			
C30000311	B	83032-CEL C10000557	Identification tag of wire are wrong or missing inside SG-200N1 (A6/+06)	.		Gtangianu 2024-11-04			
C30000312	B	83032-CEL C10000557	Missing cable tags on internal and external side of MCT	.		Gtangianu 2024-11-04			
C30000313	B	83032-CEL C10000557	Plastic cable ties to be replaced on external routing	.		Gtangianu 2024-11-04			
C30000314	B	CB-200F4B C10000858	Missing thermo shrink on internal earthing connections	.		Gtangianu 2024-11-04			
C30000315	B	CB-200F4A C10000857	Traffolyte tag "S2" is damaged.	.		Gtangianu 2024-11-04			
C30000316	B	CB-200F4A C10000857	Missing thermo shrink on internal earthing connections	.		Gtangianu 2024-11-04			

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 84 Battery & No-Break System

SUBSYSTEM 84-20 AC 15 kVA UPS System (UP-200F4)

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000317	B	BA-200F4B C10000851	Missing tag on battery bank	.		Gtangianu 2024-11-04			
C30000318	B	84411-CEC C10002346	Missing identification tag of wire inside BC-200F4B	.		Gtangianu 2024-11-04		Lmussi	
C30000319	B	84411-CEC C10002346	Missing cable tags on internal and external side of BC-200F4B	.		Gtangianu 2024-11-04			
C30000320	B	BA-200F4A C10000850	Missing tag on battery bank	.		Gtangianu 2024-11-04			
C30000321	B	83032-CEL C10000557	Identification tag on terminal strip X1 inside UP-200F4, are not as per drawing. (4U/4V/4W are indicated instead of 3U/3V/3W)_ one is	.		Gtangianu 2024-11-04			
C30000322	B	83031-CEL C10000556	inside UP-200F4 the Identification tag on terminal strip (X1 and 1W) are missing.	.		Gtangianu 2024-11-04			
C30000323	B	UP-200F4 C10000872	The panel needs to be cleaned.	.		Gtangianu 2024-11-04			
C30000325	B	CB-200F4A C10000857	Terminal X1 and X2 are different from drawing 172400372-EL-DG-00011. They are UKH 95 instead of UKH70. (see attached photo)	.		Ecarotenuto 2024-11-05		Ecarotenuto	
C30000326	B	CB-200F4B C10000858	Terminal X1 and X2 are different from drawing 172400372-EL-DG-00011. They are UKH 95 instead of UKH70. (see attached photo)	.		Ecarotenuto 2024-11-05		Ecarotenuto	

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	84	Battery & No-Break System
SUBSYSTEM	84-20	AC 15 kVA UPS System (UP-200F4)

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000675	B	84411-CEL-2-PC10000652	Fixing bolts of BTM are of various sizes. They needs to be replaced as per drawing. See attached Photo.	.		Gtangianu 2024-11-20			
C30000676	B	84411-CEL-2-NC10000653	Fixing bolts of BTM are of various sizes. They needs to be replaced as per drawing. See attached Photo.	.		Gtangianu 2024-11-20			

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Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	84	Battery & No-Break System
SUBSYSTEM	84-20	AC 15 kVA UPS System (UP-200F4)

Telecom

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000793	B	UP-200F4/B400 -NET-001.01 C10004372	Identification tag wire missing inside UP-200F4 connection.	.		Gtangianu 2024-11-22			
C30000794	B	UP-200F4/B400 -NET-001.02 C10004373	Identification tag wire missing inside UP-200F4 connection.	.		Gtangianu 2024-11-22			

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	84	Battery & No-Break System
SUBSYSTEM	84-20	AC 15 kVA UPS System (UP-200F4)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000882	B	C-CB-200F4A/B 400-SIS-001 C10000199	Missing cable tag outside B-400-SIS-001 panel	.		Pschintu 2024-11-25			
C30000900	B	C-CB-200F4B/B 400-SIS-001 C10000200	Missing cable tag outside B-400-SIS-001 panel	.		Pschintu 2024-11-25			
C30001059	B	C-UP-200F4/B4 00-SIS-001 C10000201	Missing SS cable tag	.		Pschintu 2024-11-30			
C30001060	B	C-UP-200F4/B4 00-SIS-001 C10000201	Missing core identification tag by UP-200F4 side	.		Pschintu 2024-11-30			

Section 2 CONSOLIDATED PUNCH LISTS

CROSSWIND

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Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 84 Battery & No-Break System

SUBSYSTEM 84-20 AC 15 kVA UPS System (UP-200F4)

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000248	B	83033-CEL C10000558	Missing cable tags on internal and external side of MCT	-		Gtangianu 2024-10-24	2025-01-31	Gtangianu 2025-01-31	2025-01-31
C30000249	B	83033-CEL C10000558	Plastic cable ties to be replaced on external routing	-		Gtangianu 2024-10-24	2025-02-26	Pschintu 2025-02-26	2025-02-26
C30000250	B	83033-CEL C10000558	Missing identification number of terminal strip X10 inside the UP-200F4	-		Gtangianu 2024-10-24	2025-03-06	Gtangianu 2025-03-06	2025-03-06
C30000251	B	83033-CEL C10000558	Wrong core identification tag on both cable's termination	-		Gtangianu 2024-10-24	2024-12-23	Ecarotenuto 2024-12-23	2024-12-23
C30000264	B	83123-CEL C10002109	Plastic cable ties to be replaced on external routing.	-		Gtangianu 2024-10-24	2025-02-26	Pschintu 2025-02-26	2025-02-26
C30000265	B	83123-CEL C10002109	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
C30000266	B	83123-CEL C10002109	Wrong core identification tag on both cable's termination	-		Gtangianu 2024-10-24	2025-03-06	Gtangianu 2025-03-06	2025-03-06
C30000278	B	84410-CEC C10002345	Missing all core identification tag on terminals inside BC-200F4A	-		Gtangianu 2024-10-25	2024-11-23	Lmussi 2024-11-23	2024-11-23
C30000280	B	84410-CEC C10002345	Cable to be fixed with cable ties on all routing	-		Gtangianu 2024-10-29	2024-11-23	Lmussi 2024-11-23	2024-11-23

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Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 84 Battery & No-Break System

SUBSYSTEM 84-20 AC 15 kVA UPS System (UP-200F4)

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000308	B	83031-CEL C10000556	Plastic cable ties to be replaced on external routing	.		Gtangianu 2024-11-04	2025-02-26	Pschintu 2025-02-26	2025-02-26
C30000309	B	83031-CEL C10000556	Missing cable tags on internal and external side of MCT	.		Gtangianu 2024-11-04	2025-01-31	Gtangianu 2025-01-31	2025-01-31
C30000310	B	83031-CEL C10000556	Identification tag of wire are wrong or missing inside SG-200N1 (A6/+05)	.		Gtangianu 2024-11-04	2025-02-04	Gtangianu 2025-02-04	2025-02-04
C30000311	B	83032-CEL C10000557	Identification tag of wire are wrong or missing inside SG-200N1 (A6/+06)	.		Gtangianu 2024-11-04	2025-02-04	Gtangianu 2025-02-04	2025-02-04
C30000312	B	83032-CEL C10000557	Missing cable tags on internal and external side of MCT	.		Gtangianu 2024-11-04	2025-01-31	Gtangianu 2025-01-31	2025-01-31
C30000313	B	83032-CEL C10000557	Plastic cable ties to be replaced on external routing	.		Gtangianu 2024-11-04	2025-02-26	Pschintu 2025-02-26	2025-02-26
C30000314	B	CB-200F4B C10000858	Missing thermo shrink on internal earthing connections	.		Gtangianu 2024-11-04	2025-03-06	Gtangianu 2025-03-06	2025-03-06
C30000315	B	CB-200F4A C10000857	Traffolyte tag "S2" is damaged.	.		Gtangianu 2024-11-04	2025-02-04	Gtangianu 2025-02-04	2025-02-04
C30000316	B	CB-200F4A C10000857	Missing thermo shrink on internal earthing connections	.		Gtangianu 2024-11-04	2025-03-06	Gtangianu 2025-03-06	2025-03-06

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PUNCH LIST REPORT

SYSTEM 84 Battery & No-Break System

SUBSYSTEM 84-20 AC 15 kVA UPS System (UP-200F4)

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000317	B	BA-200F4B C10000851	Missing tag on battery bank	.		Gtangianu 2024-11-04	2025-02-04	Gtangianu 2025-02-04	2025-02-04
C30000318	B	84411-CEC C10002346	Missing identification tag of wire inside BC-200F4B	.		Gtangianu 2024-11-04	2024-11-23	Lmussi 2024-11-23	2024-11-23
C30000319	B	84411-CEC C10002346	Missing cable tags on internal and external side of BC-200F4B	.		Gtangianu 2024-11-04	2024-12-14	Ecarotenuto 2024-12-14	2024-12-14
C30000320	B	BA-200F4A C10000850	Missing tag on battery bank	.		Gtangianu 2024-11-04	2025-02-04	Gtangianu 2025-02-04	2025-02-04
C30000321	B	83032-CEL C10000557	Identification tag on terminal strip X1 inside UP-200F4, are not as per drawing. (4U/4V/4W are indicated instead of 3U/3V/3W)_ one is	.		Gtangianu 2024-11-04	2025-03-06	Gtangianu 2025-03-06	2025-03-06
C30000322	B	83031-CEL C10000556	inside UP-200F4 the Identification tag on terminal strip (X1 and 1W) are missing.	.		Gtangianu 2024-11-04	2025-02-04	Gtangianu 2025-02-04	2025-02-04
C30000323	B	UP-200F4 C10000872	The panel needs to be cleaned.	.		Gtangianu 2024-11-04	2024-12-14	Ecarotenuto 2024-12-14	2024-12-14
C30000325	B	CB-200F4A C10000857	Terminal X1 and X2 are different from drawing 172400372-EL-DG-00011. They are UKH 95 instead of UKH70. (see attached photo)	.		Ecarotenuto 2024-11-05	2024-11-26	Ecarotenuto 2024-11-26	2024-11-26
C30000326	B	CB-200F4B C10000858	Terminal X1 and X2 are different from drawing 172400372-EL-DG-00011. They are UKH 95 instead of UKH70. (see attached photo)	.		Ecarotenuto 2024-11-05	2024-11-26	Ecarotenuto 2024-11-26	2024-11-26

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ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 84 Battery & No-Break System

SUBSYSTEM 84-20 AC 15 kVA UPS System (UP-200F4)

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000675	B	84411-CEL-2-PC10000652	Fixing bolts of BTM are of various sizes. They needs to be replaced as per drawing. See attached Photo.	.		Gtangianu 2024-11-20	2024-12-14	Ecarotenuto 2024-12-14	2024-12-14
C30000676	B	84411-CEL-2-NC10000653	Fixing bolts of BTM are of various sizes. They needs to be replaced as per drawing. See attached Photo.	.		Gtangianu 2024-11-20	2024-12-14	Ecarotenuto 2024-12-14	2024-12-14

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Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	84	Battery & No-Break System
SUBSYSTEM	84-20	AC 15 kVA UPS System (UP-200F4)

Telecom									
CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000793	B	UP-200F4/B400 -NET-001.01 C10004372	Identification cable tag missing inside UP-200F4 connection.	.		Gtangianu 2024-11-22	2025-02-21	Gtangianu 2025-02-21	2025-02-21
C30000794	B	UP-200F4/B400 -NET-001.02 C10004373	Identification cable tag missing inside UP-200F4 connection.	.		Gtangianu 2024-11-22	2025-02-21	Gtangianu 2025-02-21	2025-02-21

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 84 Battery & No-Break System

SUBSYSTEM 84-20 AC 15 kVA UPS System (UP-200F4)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000882	B	C-CB-200F4A/B 400-SIS-001 C10000199	Missing cable tag outside B-400-SIS-001 panel	.		Pschintu 2024-11-25	2024-12-11	Pschintu 2024-12-11	2024-12-11
C30000900	B	C-CB-200F4B/B 400-SIS-001 C10000200	Missing cable tag outside B-400-SIS-001 panel	.		Pschintu 2024-11-25	2025-01-07	Gtangianu 2025-01-07	2025-01-07
C30001059	B	C-UP-200F4/B400-SIS-001 C10000201	Missing SS cable tag	.		Pschintu 2024-11-30	2025-01-31	Gtangianu 2025-01-31	2025-01-31
C30001060	B	C-UP-200F4/B400-SIS-001 C10000201	Missing core identification tag by UP-200F4 side	.		Pschintu 2024-11-30	2025-03-06	Gtangianu 2025-03-06	2025-03-06

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000248

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000558	1.4 Discipline	Electrical
1.2 Item	83033-CEL	LV Switchgear / AC UPS F&G - 8h - Bypass	
1.3 Subsystem	84-20	AC 15 kVA UPS System (UP-200F4)	

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 2024-10-24T11:37:57.640Z

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 2024-10-24T11:38:08.471Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-01-31

Signature: Digitaly signed by Giovanni Tangianu 2025-01-31T10:46:35.052Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000249

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000558	1.4 Discipline	Electrical
1.2 Item	83033-CEL	LV Switchgear / AC UPS F&G - 8h - Bypass	
1.3 Subsystem	84-20	AC 15 kVA UPS System (UP-200F4)	

2 - OBSERVATION

Plastic cable ties to be replaced on external routing

Name: Giovanni Tangianu

Date: 2024-10-24

Signature: Digitaly signed by Giovanni Tangianu 2024-10-24T11:38:33.165Z

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 2024-10-24T11:38:44.350Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Paolo Schintu

Date: 2025-02-26

Signature: Digitaly signed by Paolo Schintu 2025-02-26T12:36:20.278Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000250

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000558	1.4 Discipline	Electrical
1.2 Item	83033-CEL	LV Switchgear / AC UPS F&G - 8h - Bypass	
1.3 Subsystem	84-20	AC 15 kVA UPS System (UP-200F4)	

2 - OBSERVATION

Missing identification number of terminal strip X10 inside the UP-200F4

Name: Giovanni Tangianu

Date: 2024-10-24

Signature: Digitaly signed by Giovanni Tangianu 2024-10-24T11:38:57.572Z

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 2024-10-24T11:40:34.706Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Punch accepted by RM (Rosetti Marino).

Name: Giovanni Tangianu

Date: 2025-03-06

Signature: Digitaly signed by Giovanni Tangianu 2025-03-06T07:28:36.269Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000251

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000558	1.4 Discipline	Electrical
1.2 Item	83033-CEL	LV Switchgear / AC UPS F&G - 8h - Bypass	
1.3 Subsystem	84-20	AC 15 kVA UPS System (UP-200F4)	

2 - OBSERVATION

Wrong core identification tag on both cable's termination

Name: Giovanni Tangianu

Date: 2024-10-24

Signature: Digitaly signed by Giovanni Tangianu 2024-10-24T11:41:49.125Z

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 2024-10-24T11:42:03.234Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

done

Name: Eleonora Carotenuto

Date: 2024-12-23

Signature: Digitaly signed by Eleonora Carotenuto 2024-12-23T16:51:08.975Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000264

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002109	1.4 Discipline	Electrical
1.2 Item	83123-CEL		Lighting & Small Power DB BoP / AC UPS F&G AUXILIARY
1.3 Subsystem	84-20		AC 15 kVA UPS System (UP-200F4)

2 - OBSERVATION

Plastic cable ties to be replaced on external routing.

Name: Giovanni Tangianu

Date: 2024-10-24

Signature: Digitaly signed by Giovanni Tangianu 2024-10-24T16:30:43.471Z

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 2024-10-24T16:30:54.791Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Paolo Schintu

Date: 2025-02-26

Signature: Digitaly signed by Paolo Schintu 2025-02-26T12:36:49.446Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000265

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002109	1.4 Discipline	Electrical
1.2 Item	83123-CEL		Lighting & Small Power DB BoP / AC UPS F&G AUXILIARY
1.3 Subsystem	84-20		AC 15 kVA UPS System (UP-200F4)

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 2024-10-24T16:31:26.204Z

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 2024-10-24T16:31:36.828Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

fixed.

Name: Giovanni Tangianu

Date: 2025-01-31

Signature: Digitaly signed by Giovanni Tangianu 2025-01-31T10:47:03.010Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000266

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002109	1.4 Discipline	Electrical
1.2 Item	83123-CEL		Lighting & Small Power DB BoP / AC UPS F&G AUXILIARY
1.3 Subsystem	84-20		AC 15 kVA UPS System (UP-200F4)

2 - OBSERVATION

Wrong core identification tag on both cable's termination

Name: Giovanni Tangianu

Date: 2024-10-24

Signature: Digitaly signed by Giovanni Tangianu 2024-10-24T16:32:14.239Z

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 2024-10-24T16:32:24.236Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Punch accepted by RM (Rosetti Marino).

Name: Giovanni Tangianu

Date: 2025-03-06

Signature: Digitaly signed by Giovanni Tangianu 2025-03-06T07:28:45.312Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000278

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002345	1.4 Discipline	Electrical
1.2 Item	84410-CEC	Isolator Battery Box for AC UPS 15 kVA / AC UPS 15 kVA Redundant System with By-Pass	
1.3 Subsystem	84-20	AC 15 kVA UPS System (UP-200F4)	

2 - OBSERVATION

Missing all core identification tag on terminals inside BC-200F4A

Name: Giovanni Tangianu

Date: 2024-10-25

Signature: Digitaly signed by Giovanni Tangianu 2024-10-25T08:49:46.092Z

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 2024-10-25T08:49:58.223Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Done

Name: Luca Mussi

Date: 2024-11-21

Signature: Digitaly signed by Luca Mussi 2024-11-21T17:38:26.875Z

6- CLEARANCE APPROVAL

Name

Date

Signature

84411-CEL-2-N
84410-CEC
CB-200F4B/B400-SIS-001

84411-CEL-2-P
84411-CEL-2-P/X2/+
84410-CEC
X3

84403-CEL
84411-CEL-1-P
83033-CEL
84411-CEL-1-N
84411-CEC
84410-CEC
83123-CEL

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000280

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002345	1.4 Discipline	Electrical
1.2 Item	84410-CEC	Isolator Battery Box for AC UPS 15 kVA / AC UPS 15 kVA Redundant System with By-Pass	
1.3 Subsystem	84-20	AC 15 kVA UPS System (UP-200F4)	

2 - OBSERVATION

Cable to be fixed with cable ties on all routing

Name: Giovanni Tangianu

Date: 2024-10-29

Signature: Digitaly signed by Giovanni Tangianu 2024-10-29T14:29:47.763Z

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	2024-10-29
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-10-29T14:30:07.162Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Done

Name: Luca Mussi

Date: 2024-11-21

Signature: Digitaly signed by Luca Mussi 2024-11-21T11:23:59.841Z

6- CLEARANCE APPROVAL

Name

Date

Signature

84403-CEL
84411-CEL-1-P
84411-CEC
84410-CEC
83123-CEL
84401-CF

84404-CEL
84401-CEI
84412-CEL-1-P
83031-CEI







ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000308

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000556	1.4 Discipline	Electrical
1.2 Item	83031-CEL	LV Switchgear / AC UPS F&G - 8h - Line A	
1.3 Subsystem	84-20	AC 15 kVA UPS System (UP-200F4)	

2 - OBSERVATION

Plastic cable ties to be replaced on external routing

Name: Giovanni Tangianu

Date: 2024-11-04

Signature: Digitaly signed by Giovanni Tangianu 2024-11-04T08:29:18.304Z

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	2024-11-04
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-11-04T08:31:08.208Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Paolo Schintu

Date: 2025-02-26

Signature: Digitaly signed by Paolo Schintu 2025-02-26T12:37:27.589Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000309

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000556	1.4 Discipline	Electrical
1.2 Item	83031-CEL	LV Switchgear / AC UPS F&G - 8h - Line A	
1.3 Subsystem	84-20	AC 15 kVA UPS System (UP-200F4)	

2 - OBSERVATION

Missing cable tags on internal and external side of MCT

Name: Giovanni Tangianu

Date: 2024-11-04

Signature: Digitaly signed by Giovanni Tangianu 2024-11-04T08:32:19.995Z

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	2024-11-04
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-11-04T08:35:18.668Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-01-31

Signature: Digitaly signed by Giovanni Tangianu 2025-01-31T10:45:43.168Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000310

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000556	1.4 Discipline	Electrical
1.2 Item	83031-CEL	LV Switchgear / AC UPS F&G - 8h - Line A	
1.3 Subsystem	84-20	AC 15 kVA UPS System (UP-200F4)	

2 - OBSERVATION

Identification tag of wire are wrong or missing inside SG-200N1 (A6/+05)

Name: Giovanni Tangianu

Date: 2024-11-04

Signature: Digitaly signed by Giovanni Tangianu 2024-11-04T08:41:58.480Z

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	2024-11-04
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-11-04T08:42:14.468Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Changed.

Name: Giovanni Tangianu

Date: 2025-02-04

Signature: Digitaly signed by Giovanni Tangianu 2025-02-04T12:58:58.817Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000311

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000557	1.4 Discipline	Electrical
1.2 Item	83032-CEL	LV Switchgear / AC UPS F&G - 8h - Line B	
1.3 Subsystem	84-20	AC 15 kVA UPS System (UP-200F4)	

2 - OBSERVATION

Identification tag of wire are wrong or missing inside SG-200N1 (A6/+06)

Name: Giovanni Tangianu

Date: 2024-11-04

Signature: Digitaly signed by Giovanni Tangianu 2024-11-04T08:44:13.272Z

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	2024-11-04
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-11-04T08:44:30.193Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

changed.

Name: Giovanni Tangianu

Date: 2025-02-04

Signature: Digitaly signed by Giovanni Tangianu 2025-02-04T12:58:34.396Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000312

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000557	1.4 Discipline	Electrical
1.2 Item	83032-CEL	LV Switchgear / AC UPS F&G - 8h - Line B	
1.3 Subsystem	84-20	AC 15 kVA UPS System (UP-200F4)	

2 - OBSERVATION

Missing cable tags on internal and external side of MCT

Name: Giovanni Tangianu

Date: 2024-11-04

Signature: Digitaly signed by Giovanni Tangianu 2024-11-04T08:45:33.040Z

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	2024-11-04
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-11-04T08:59:19.822Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-01-31

Signature: Digitaly signed by Giovanni Tangianu 2025-01-31T10:45:58.174Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000313

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000557	1.4 Discipline	Electrical
1.2 Item	83032-CEL	LV Switchgear / AC UPS F&G - 8h - Line B	
1.3 Subsystem	84-20	AC 15 kVA UPS System (UP-200F4)	

2 - OBSERVATION

Plastic cable ties to be replaced on external routing

Name: Giovanni Tangianu

Date: 2024-11-04

Signature: Digitaly signed by Giovanni Tangianu 2024-11-04T09:02:23.700Z

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	2024-11-04
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-11-04T09:02:43.220Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Paolo Schintu

Date: 2025-02-26

Signature: Digitaly signed by Paolo Schintu 2025-02-26T12:37:34.414Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000314

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000858	1.4 Discipline	Electrical
1.2 Item	CB-200F4B	Isolator Battery Box for AC UPS 15 kVA	
1.3 Subsystem	84-20	AC 15 kVA UPS System (UP-200F4)	

2 - OBSERVATION

Missing thermo shrink on internal earthing connections

Name: Giovanni Tangianu

Date: 2024-11-04

Signature: Digitaly signed by Giovanni Tangianu 2024-11-04T09:03:40.881Z

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	2024-11-04
3.5 Action by	VND Vendor	Signature	Digitaly signed by Giovanni Tangianu 2024-11-04T09:03:58.603Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Punch accepted by RM (Rosetti Marino).

Name: Giovanni Tangianu

Date: 2025-03-06

Signature: Digitaly signed by Giovanni Tangianu 2025-03-06T07:29:38.499Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000315

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000857	1.4 Discipline	Electrical
1.2 Item	CB-200F4A	Isolator Battery Box for AC UPS 15 kVA	
1.3 Subsystem	84-20	AC 15 kVA UPS System (UP-200F4)	

2 - OBSERVATION

Traffolyte tag "S2" is damaged.

Name: Giovanni Tangianu

Date: 2024-11-04

Signature: Digitaly signed by Giovanni Tangianu 2024-11-04T09:04:59.713Z

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	2024-11-04
3.5 Action by	VND Vendor	Signature	Digitaly signed by Giovanni Tangianu 2024-11-04T09:05:15.040Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

replace.

Name: Giovanni Tangianu

Date: 2025-02-04

Signature: Digitaly signed by Giovanni Tangianu 2025-02-04T12:58:06.741Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000316

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000857	1.4 Discipline	Electrical
1.2 Item	CB-200F4A	Isolator Battery Box for AC UPS 15 kVA	
1.3 Subsystem	84-20	AC 15 kVA UPS System (UP-200F4)	

2 - OBSERVATION

Missing thermo shrink on internal earthing connections

Name: Giovanni Tangianu

Date: 2024-11-04

Signature: Digitaly signed by Giovanni Tangianu 2024-11-04T09:09:10.439Z

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	2024-11-04
3.5 Action by	VND Vendor	Signature	Digitaly signed by Giovanni Tangianu 2024-11-04T09:09:25.007Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Punch accepted by RM (Rosetti Marino).

Name: Giovanni Tangianu

Date: 2025-03-06

Signature: Digitaly signed by Giovanni Tangianu 2025-03-06T07:29:46.929Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000317

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000851	1.4 Discipline	Electrical
1.2 Item	BA-200F4B		Battery Rack GEL VRLA-20Y for AC UPS 15 kVA
1.3 Subsystem	84-20		AC 15 kVA UPS System (UP-200F4)

2 - OBSERVATION

Missing tag on battery bank

Name: Giovanni Tangianu

Date: 2024-11-04

Signature: Digitaly signed by Giovanni Tangianu 2024-11-04T09:10:03.973Z

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	2024-11-04
3.5 Action by	VND Vendor	Signature	Digitaly signed by Giovanni Tangianu 2024-11-04T09:10:17.332Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-02-04

Signature: Digitaly signed by Giovanni Tangianu 2025-02-04T12:57:42.399Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000318

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002346	1.4 Discipline	Electrical
1.2 Item	84411-CEC	Isolator Battery Box for AC UPS 15 kVA / AC UPS 15 kVA Redundant System with By-Pass	
1.3 Subsystem	84-20	AC 15 kVA UPS System (UP-200F4)	

2 - OBSERVATION

Missing identification tag of wire inside BC-200F4B

Name: Giovanni Tangianu

Date: 2024-11-04

Signature: Digitaly signed by Giovanni Tangianu 2024-11-04T09:11:21.705Z

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	2024-11-04
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-11-04T09:11:54.180Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Done

Name: Luca Mussi

Date: 2024-11-21

Signature: Digitaly signed by Luca Mussi 2024-11-21T17:50:39.199Z

6- CLEARANCE APPROVAL

Name

Date

Signature


8411-CEC
C-CB-200F-1/B400-SIS-001
X3

84403-CEL
84411-CEL-1-P
83033-CEL
84411-CEL-1-N
84411-CEC
84410-CEC
83123-CEL

84411-CEC
CB-200F4A/B400-SIS-001

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000319

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002346	1.4 Discipline	Electrical
1.2 Item	84411-CEC	Isolator Battery Box for AC UPS 15 kVA / AC UPS 15 kVA Redundant System with By-Pass	
1.3 Subsystem	84-20	AC 15 kVA UPS System (UP-200F4)	

2 - OBSERVATION

Missing cable tags on internal and external side of BC-200F4B

Name: Giovanni Tangianu

Date: 2024-11-04

Signature: Digitaly signed by Giovanni Tangianu 2024-11-04T09:13:12.226Z

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	2024-11-04
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-11-04T09:13:27.173Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

done

Name: Eleonora Carotenuto

Date: 2024-12-14

Signature: Digitaly signed by Eleonora Carotenuto 2024-12-14T09:55:22.577Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000320

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000850	1.4 Discipline	Electrical
1.2 Item	BA-200F4A		Battery Rack GEL VRLA-20Y for AC UPS 15 kVA
1.3 Subsystem	84-20		AC 15 kVA UPS System (UP-200F4)

2 - OBSERVATION

Missing tag on battery bank

Name: Giovanni Tangianu

Date: 2024-11-04

Signature: Digitaly signed by Giovanni Tangianu 2024-11-04T09:14:03.037Z

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	2024-11-04
3.5 Action by	VND Vendor	Signature	Digitaly signed by Giovanni Tangianu 2024-11-04T09:14:21.160Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-02-04

Signature: Digitaly signed by Giovanni Tangianu 2025-02-04T12:57:30.316Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000321

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000557	1.4 Discipline	Electrical
1.2 Item	83032-CEL	LV Switchgear / AC UPS F&G - 8h - Line B	
1.3 Subsystem	84-20	AC 15 kVA UPS System (UP-200F4)	

2 - OBSERVATION

Identification tag on terminal strip X1 inside UP-200F4, are not as per drawing. (4U/4V/4W are indicated instead of 3U/3V/3W)_ one is missing _ See attached photo

Name: Giovanni Tangianu

Date: 2024-11-04

Signature: Digitaly signed by Giovanni Tangianu 2024-11-04T09:15:15.456Z

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	2024-11-04
3.5 Action by	VND Vendor	Signature	Digitaly signed by Giovanni Tangianu 2024-11-04T09:15:31.065Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Punch accepted by RM (Rosetti Marino).

Name: Giovanni Tangianu

Date: 2025-03-06

Signature: Digitaly signed by Giovanni Tangianu 2025-03-06T07:29:55.849Z

6- CLEARANCE APPROVAL

Name

Date

Signature

4U/X1/L1/1/6/0.2/CE1
4V/X1/L2/1/6/0.2/CE1
4W/X1/L3/1/6/0.2/CE1
4
U
4
V
4
W
X
1
4
U
4
V
4
W

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000322

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000556	1.4 Discipline	Electrical
1.2 Item	83031-CEL	LV Switchgear / AC UPS F&G - 8h - Line A	
1.3 Subsystem	84-20	AC 15 kVA UPS System (UP-200F4)	

2 - OBSERVATION

inside UP-200F4 the Identification tag on terminal strip (X1 and 1W) are missing.

Name: Giovanni Tangianu

Date: 2024-11-04

Signature: Digitaly signed by Giovanni Tangianu 2024-11-04T09:22:10.174Z

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	2024-11-04
3.5 Action by	VND Vendor	Signature	Digitaly signed by Giovanni Tangianu 2024-11-04T09:22:31.328Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-02-04

Signature: Digitaly signed by Giovanni Tangianu 2025-02-04T12:57:21.480Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000323

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000872	1.4 Discipline	Electrical
1.2 Item	UP-200F4		AC UPS 15 kVA Redundant System with By-Pass
1.3 Subsystem	84-20		AC 15 kVA UPS System (UP-200F4)

2 - OBSERVATION

The panel needs to be cleaned.

Name: Giovanni Tangianu

Date: 2024-11-04

Signature: Digitaly signed by Giovanni Tangianu 2024-11-04T10:30:01.310Z

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	2024-11-04
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-11-04T10:30:16.892Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

done

Name: Eleonora Carotenuto

Date: 2024-12-14

Signature: Digitaly signed by Eleonora Carotenuto 2024-12-14T09:55:37.337Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000325

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000857	1.4 Discipline	Electrical
1.2 Item	CB-200F4A	Isolator Battery Box for AC UPS 15 kVA	
1.3 Subsystem	84-20	AC 15 kVA UPS System (UP-200F4)	

2 - OBSERVATION

Terminal X1 and X2 are different from drawing 172400372-EL-DG-00011. They are UKH 95 instead of UKH70. (see attached photo)

Name: Eleonora Carotenuto

Date: 2024-11-05

Signature: Digitaly signed by Eleonora Carotenuto 2024-11-05T10:57:27.228Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Eleonora Carotenuto
3.4 Activity code	MC Mechanical Completion	Date	2024-11-05
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Eleonora Carotenuto 2024-11-05T10:58:00.934Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

RLMU done by ENG

Name: Eleonora Carotenuto

Date: 2024-11-26

Signature: Digitaly signed by Eleonora Carotenuto 2024-11-26T10:58:20.849Z

6- CLEARANCE APPROVAL

Name

Date

Signature

MODEL C-225 REV.1

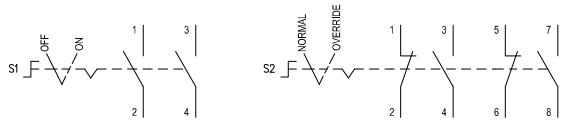
BATTERY PROTECTION BOX

CB-200F4 A/B

GENERAL NOTES:

-ENCLOSURE: EJBC-5
-MATERIAL: COPPER FREE ALUMINIUM ALLOY
-EXTERNAL PAINTING: RAL7035
-INTERNAL PAINTING: /
-ALL DIMENSION ARE IN mm
-WEIGHT: ≈57kg

SELECTOR SWITCHES DETAIL



TRUE TABLE

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

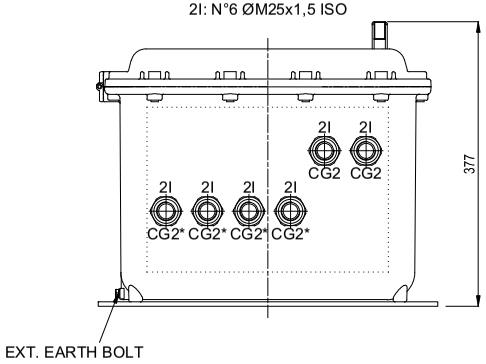
O	CONTACT OPEN
X	CONTACT CLOSED

TRUE TABLE

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

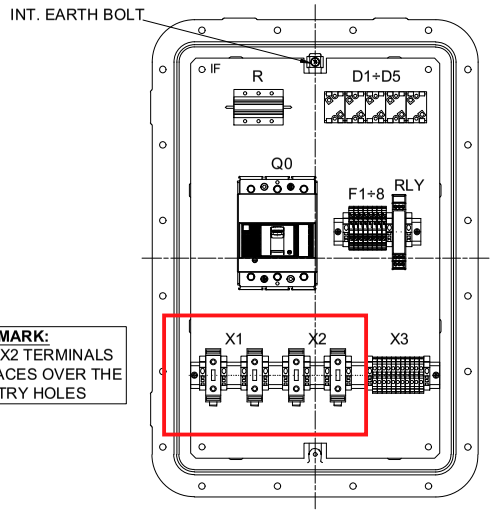
O	CONTACT OPEN
X	CONTACT CLOSED

BOTTOM VIEW
2I: N°6 ØM25x1,5 ISO



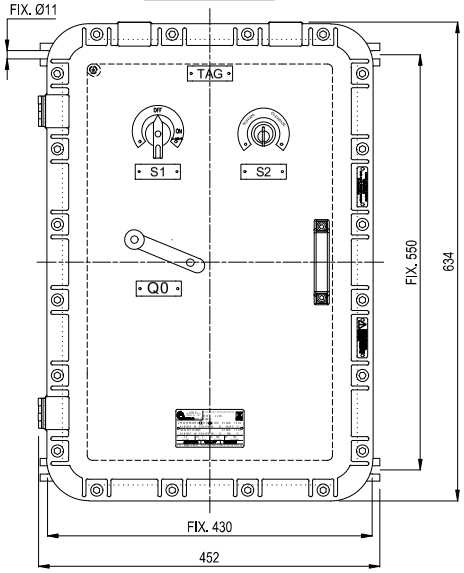
N°	Q.TY	CODE	DESCRIPTION
IF	1	BFE-5	ALUMINIUM INTERNAL FRAME
X1	2	UKH70	PHOENIX TERMINALS SUITABLE FOR 70mm² CABLE
X2	2	UKH70	PHOENIX TERMINALS SUITABLE FOR 70mm² CABLE
X3	11	UT4	PHOENIX TERMINALS SUITABLE FOR 4mm² CABLE
Q0	1	XT3N200TMD3	ABB XT3 MCCB, 3P, 200A, 36kA
	1	1SDA066399R1	220-240Vac/dc UNDERVOLTAGE 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
CG2*	4	NEV25IB	NICKEL PLATED BRASS CABLE GLANDS ØM25 FOR ARMORED CABLE Øint. 11-20mm Øext. 20-27,5mm, ARMOR THICKNESS 0,2-1,6mm
CG2	2	NAV25IB	NICKEL PLATED BRASS CABLE GLANDS ØM25 FOR NOT-ARMORED CABLE Ø11-20mm

INTERNAL VIEW

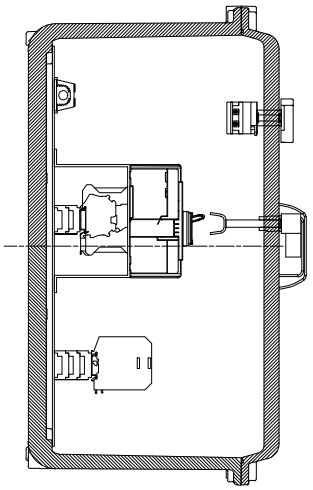


REMARK:
X1/X2 TERMINALS PLACES OVER THE ENTRY HOLES

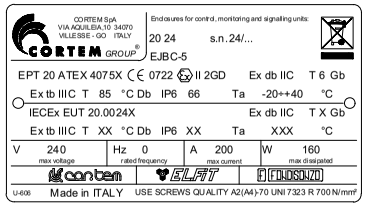
EXTERNAL VIEW



INT. LEFT SIDE VIEW



CERTIFICATE NAMEPLATE



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

N°	TAG N°
TAG	CB-200F4 A
	CB-200F4 B
	CB-200F3 A
	CB-200F3 B
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: AC UPS - TAG: UP-200F4
001 EJBC-5/C2401778/10.
ITEM 10
EXT/INT. LAYOUT

CORTEM JOB: COV2401778
DRAWING SCALE: /
DRAWING NUMBER: A3-C 27438
SHEET 1 NEXT 2
TOT. 4

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Smart Professional R. 2012

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000326

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000858	1.4 Discipline	Electrical
1.2 Item	CB-200F4B	Isolator Battery Box for AC UPS 15 kVA	
1.3 Subsystem	84-20	AC 15 kVA UPS System (UP-200F4)	

2 - OBSERVATION

Terminal X1 and X2 are different from drawing 172400372-EL-DG-00011. They are UKH 95 instead of UKH70. (see attached photo)

Name: Eleonora Carotenuto

Date: 2024-11-05

Signature: Digitaly signed by Eleonora Carotenuto 2024-11-05T10:59:01.064Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Eleonora Carotenuto
3.4 Activity code	MC Mechanical Completion	Date	2024-11-05
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Eleonora Carotenuto 2024-11-05T10:59:15.228Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

RLMU done by ENG

Name: Eleonora Carotenuto

Date: 2024-11-26

Signature: Digitaly signed by Eleonora Carotenuto 2024-11-26T10:58:13.301Z

6- CLEARANCE APPROVAL

Name

Date

Signature

MODEL C-225 REV.1

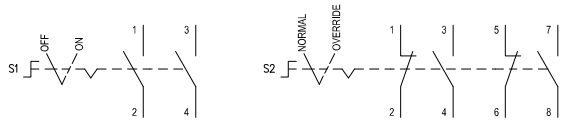
BATTERY PROTECTION BOX

CB-200F4 A/B

GENERAL NOTES:

-ENCLOSURE: EJBC-5
-MATERIAL: COPPER FREE ALUMINIUM ALLOY
-EXTERNAL PAINTING: RAL7035
-INTERNAL PAINTING: /
-ALL DIMENSION ARE IN mm
-WEIGHT: ≈57kg

SELECTOR SWITCHES DETAIL



TRUE TABLE

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

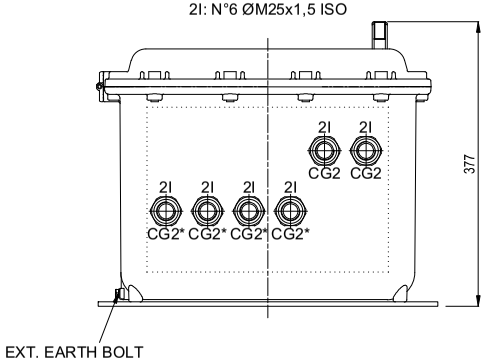
O	CONTACT OPEN
X	CONTACT CLOSED

TRUE TABLE

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

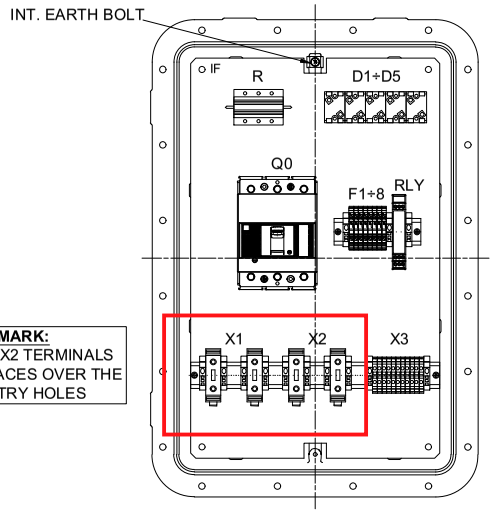
O	CONTACT OPEN
X	CONTACT CLOSED

BOTTOM VIEW
2I: N°6 ØM25x1,5 ISO



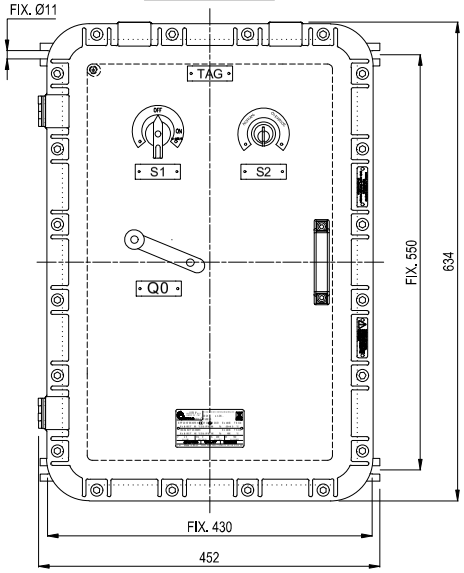
N°	Q.TY	CODE	DESCRIPTION
IF	1	BFE-5	ALUMINIUM INTERNAL FRAME
X1	2	UKH70	PHOENIX TERMINALS SUITABLE FOR 70mm² CABLE
X2	2	UKH70	PHOENIX TERMINALS SUITABLE FOR 70mm² CABLE
X3	11	UT4	PHOENIX TERMINALS SUITABLE FOR 4mm² CABLE
Q0	1	XT3N200TMD3	ABB XT3 MCCB, 3P, 200A, 36kA
	1	1SDA066399R1	220-240Vac/dc UNDERVOLTAGE 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
CG2*	4	NEV25IB	NICKEL PLATED BRASS CABLE GLANDS ØM25 FOR ARMORED CABLE Øint. 11-20mm Øext. 20-27,5mm, ARMOR THICKNESS 0,2-1,6mm
CG2	2	NAV25IB	NICKEL PLATED BRASS CABLE GLANDS ØM25 FOR NOT-ARMORED CABLE Ø11-20mm

INTERNAL VIEW

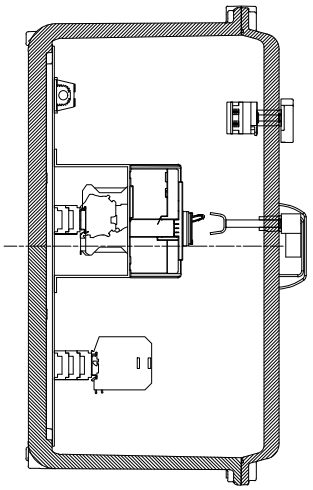


REMARK:
X1/X2 TERMINALS PLACES OVER THE ENTRY HOLES

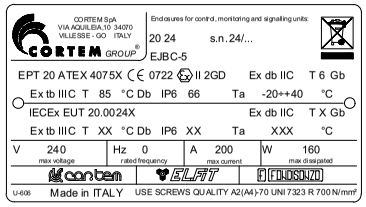
EXTERNAL VIEW



INT. LEFT SIDE VIEW



CERTIFICATE NAMEPLATE



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

N°	TAG N°
TAG	CB-200F4 A
	CB-200F4 B
	CB-200F3 A
	CB-200F3 B
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: AC UPS - TAG: UP-200F4
001 EJBC-5/C2401778/10.
ITEM 10
EXT/INT. LAYOUT

CORTEM JOB: COV2401778
DRAWING SCALE: /
DRAWING NUMBER: A3-C 27438
SHEET 1 NEXT 2
TOT. 4

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Smart Professional R. 2012

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000675

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000652	1.4 Discipline	Electrical
1.2 Item	84411-CEL-2-P	AC UPS F&G - Battery Isolator-A / AC UPS F&G - Battery-A	
1.3 Subsystem	84-20	AC 15 kVA UPS System (UP-200F4)	

2 - OBSERVATION

Fixing bolts of BTM are of various sizes. They needs to be replaced as per drawing.
See attached Photo.

Name: Giovanni Tangianu

Date: 2024-11-20

Signature: Digitaly signed by Giovanni Tangianu 2024-11-20T15:25:46.982Z

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	2024-11-20
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-11-20T15:26:29.297Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

done

Name: Eleonora Carotenuto

Date: 2024-12-14

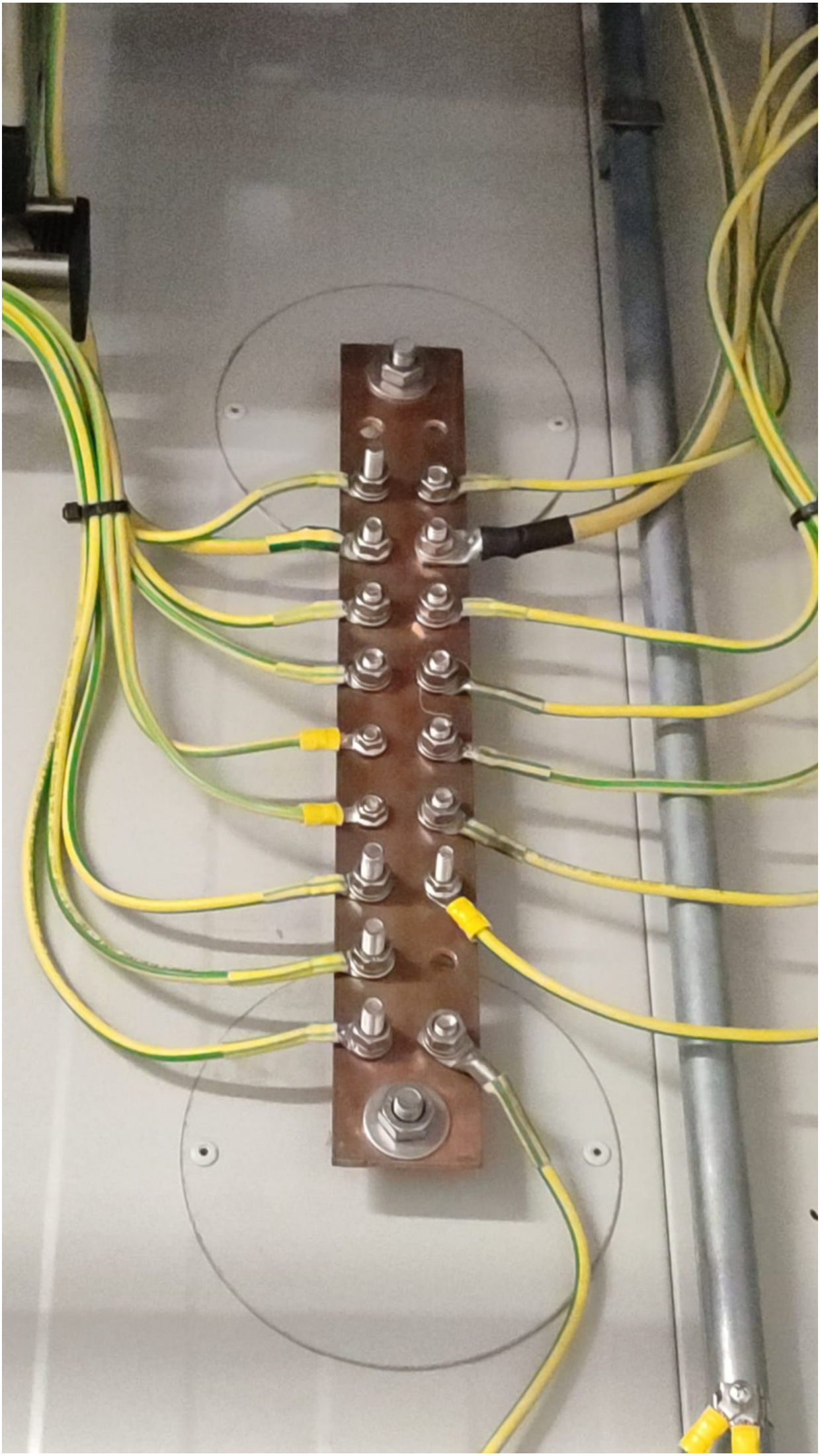
Signature: Digitaly signed by Eleonora Carotenuto 2024-12-14T10:40:25.303Z

6- CLEARANCE APPROVAL

Name

Date

Signature



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000676

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000653	1.4 Discipline	Electrical
1.2 Item	84411-CEL-2-N	AC UPS F&G - Battery Isolator-A / AC UPS F&G - Battery-A	
1.3 Subsystem	84-20	AC 15 kVA UPS System (UP-200F4)	

2 - OBSERVATION

Fixing bolts of BTM are of various sizes. They needs to be replaced as per drawing.
See attached Photo.

Name: Giovanni Tangianu

Date: 2024-11-20

Signature: Digitaly signed by Giovanni Tangianu 2024-11-20T15:28:14.891Z

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	2024-11-20
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-11-20T15:28:26.435Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

done

Name: Eleonora Carotenuto

Date: 2024-12-14

Signature: Digitaly signed by Eleonora Carotenuto 2024-12-14T10:40:36.806Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000793

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004372	1.4 Discipline	Telecom
1.2 Item	UP-200F4/B400-NET-001.01	COMMUNICATION / EMCS SYSTEM	
1.3 Subsystem	84-20	AC 15 kVA UPS System (UP-200F4)	

2 - OBSERVATION

Identification cable tag missing inside UP-200F4 connection.

Name: Giovanni Tangianu

Date: 2024-11-22

Signature: Digitaly signed by Giovanni Tangianu 2024-11-22T16:12:49.359Z

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 2024-11-22T16:13:03.103Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-02-21

Signature: Digitaly signed by Giovanni Tangianu 2025-02-21T15:44:21.318Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000794

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004373	1.4 Discipline	Telecom
1.2 Item	UP-200F4/B400-NET-001.02	COMMUNICATION / EMCS SYSTEM	
1.3 Subsystem	84-20	AC 15 kVA UPS System (UP-200F4)	

2 - OBSERVATION

Identification cable tag missing inside UP-200F4 connection.

Name: Giovanni Tangianu

Date: 2024-11-22

Signature: Digitaly signed by Giovanni Tangianu 2024-11-22T16:13:11.304Z

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 2024-11-22T16:13:25.750Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-02-21

Signature: Digitaly signed by Giovanni Tangianu 2025-02-21T15:44:32.900Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000882

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000199	1.4 Discipline	Instrumental
1.2 Item	C-CB-200F4A/B400-SIS-001	TRIP SIGNAL / MARSHALLING PCS	
1.3 Subsystem	84-20	AC 15 kVA UPS System (UP-200F4)	

2 - OBSERVATION

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

Name: Paolo Schintu

Date: 2024-11-25

Signature: Digitaly signed by Paolo Schintu 2024-11-25T14:37:32.726Z

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 2024-11-25T14:37:45.552Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Done.

Name: Paolo Schintu

Date: 2024-12-11

Signature: Digitaly signed by Paolo Schintu 2024-12-11T15:25:18.855Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000900

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000200	1.4 Discipline	Instrumental
1.2 Item	C-CB-200F4B/B400-SIS-001	TRIP SIGNAL / MARSHALLING PCS	
1.3 Subsystem	84-20	AC 15 kVA UPS System (UP-200F4)	

2 - OBSERVATION

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

Name: Paolo Schintu

Date: 2024-11-25

Signature: Digitaly signed by Paolo Schintu 2024-11-25T17:29:31.299Z

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 2024-11-25T17:29:45.713Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-01-07

Signature: Digitaly signed by Giovanni Tangianu 2025-01-07T16:31:06.594Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001059

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000201	1.4 Discipline	Instrumental
1.2 Item	C-UP-200F4/B400-SIS-001	TRIP SIGNAL / MARSHALLING PCS	
1.3 Subsystem	84-20	AC 15 kVA UPS System (UP-200F4)	

2 - OBSERVATION

Missing SS cable tag

Name: Paolo Schintu

Date: 2024-11-30

Signature: Digitaly signed by Paolo Schintu 2024-11-30T07:47:41.832Z

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 2024-11-30T07:47:51.731Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-01-31

Signature: Digitaly signed by Giovanni Tangianu 2025-01-31T10:47:25.325Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001060

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000201	1.4 Discipline	Instrumental
1.2 Item	C-UP-200F4/B400-SIS-001	TRIP SIGNAL / MARSHALLING PCS	
1.3 Subsystem	84-20	AC 15 kVA UPS System (UP-200F4)	

2 - OBSERVATION

Missing core identification tag by UP-200F4 side

Name: Paolo Schintu

Date: 2024-11-30

Signature: Digitaly signed by Paolo Schintu 2024-11-30T07:48:20.862Z

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 2024-11-30T07:48:31.764Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Punch accepted by RM (Rosetti Marino).

Name: Giovanni Tangianu

Date: 2025-03-06

Signature: Digitaly signed by Giovanni Tangianu 2025-03-06T07:30:28.140Z

6- CLEARANCE APPROVAL

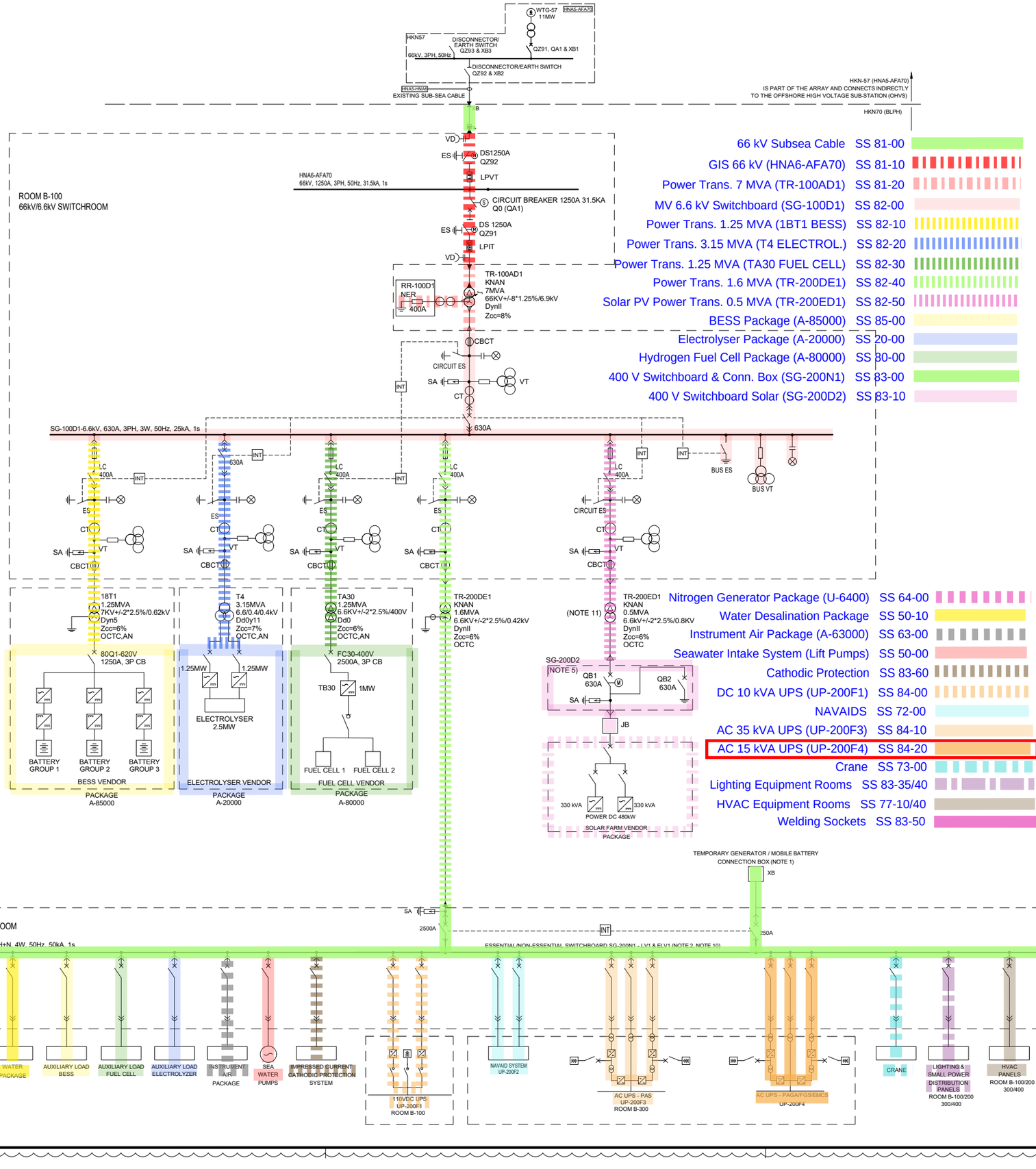
Name

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

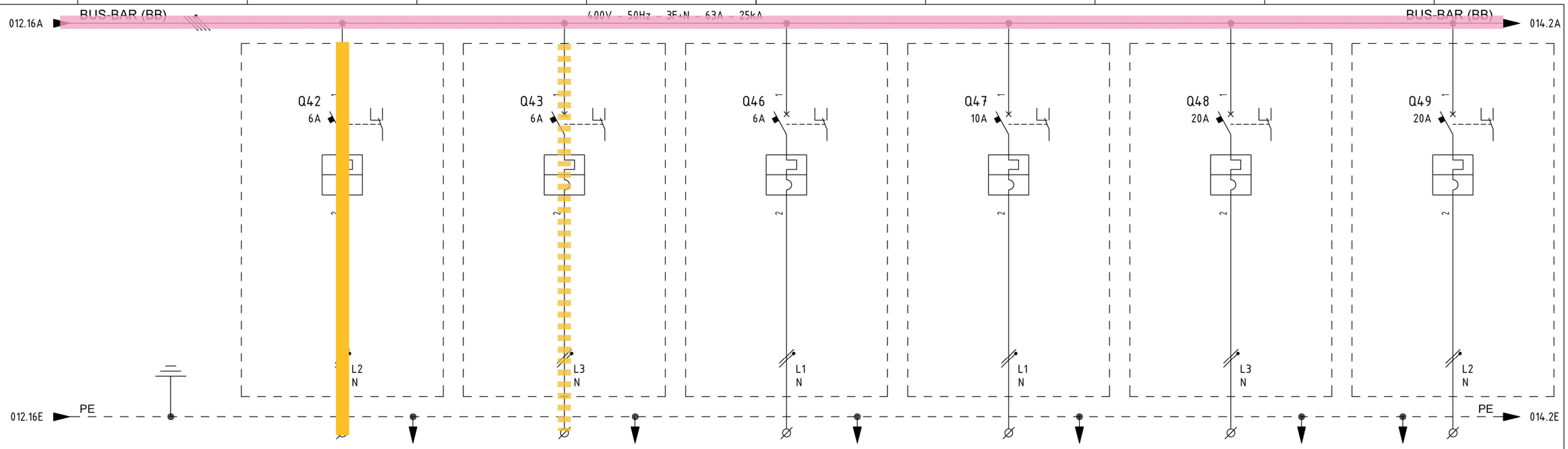
TITLE :

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	
CUBICLE			3	+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

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

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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)

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

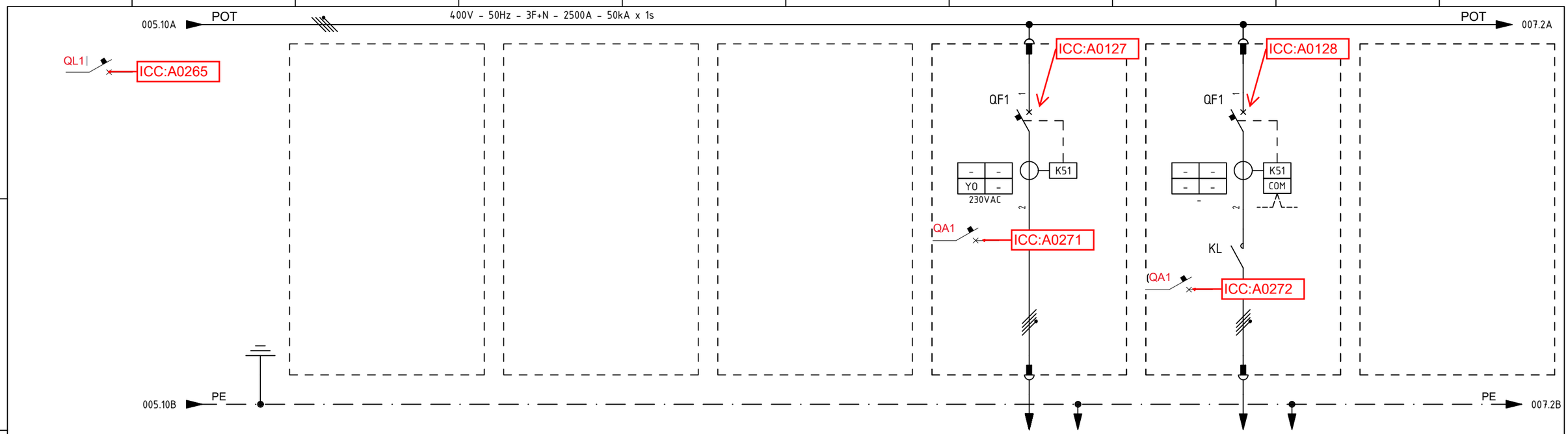
DRAWING NO. 1723002197-EL-DG-00013

SHEET 013

REV. 03

F.to UNI A3: 420mmx297mm

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



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

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DWG n° : 231298/SD/11

Item n° : PF1002983/26

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

IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200N1"

SINGLE LINE DIAGRAM

Single Line Drawing

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

SCALE : NTS

A3

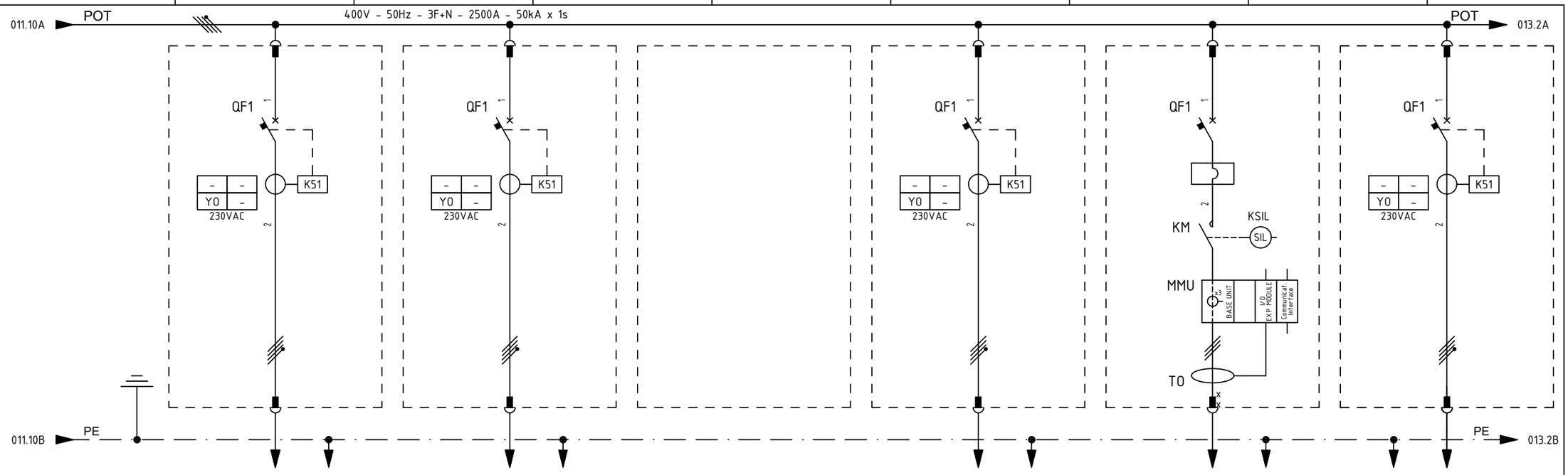
DRAWING NO. 1723002197-EL-DG-00011

SHEET 006

REV. 03

F.to UNI A3: 420mmx297mm

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



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

=
+

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

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

IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200N1"

SINGLE LINE DIAGRAM

Single Line Drawing

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

SCALE : NTS

A3

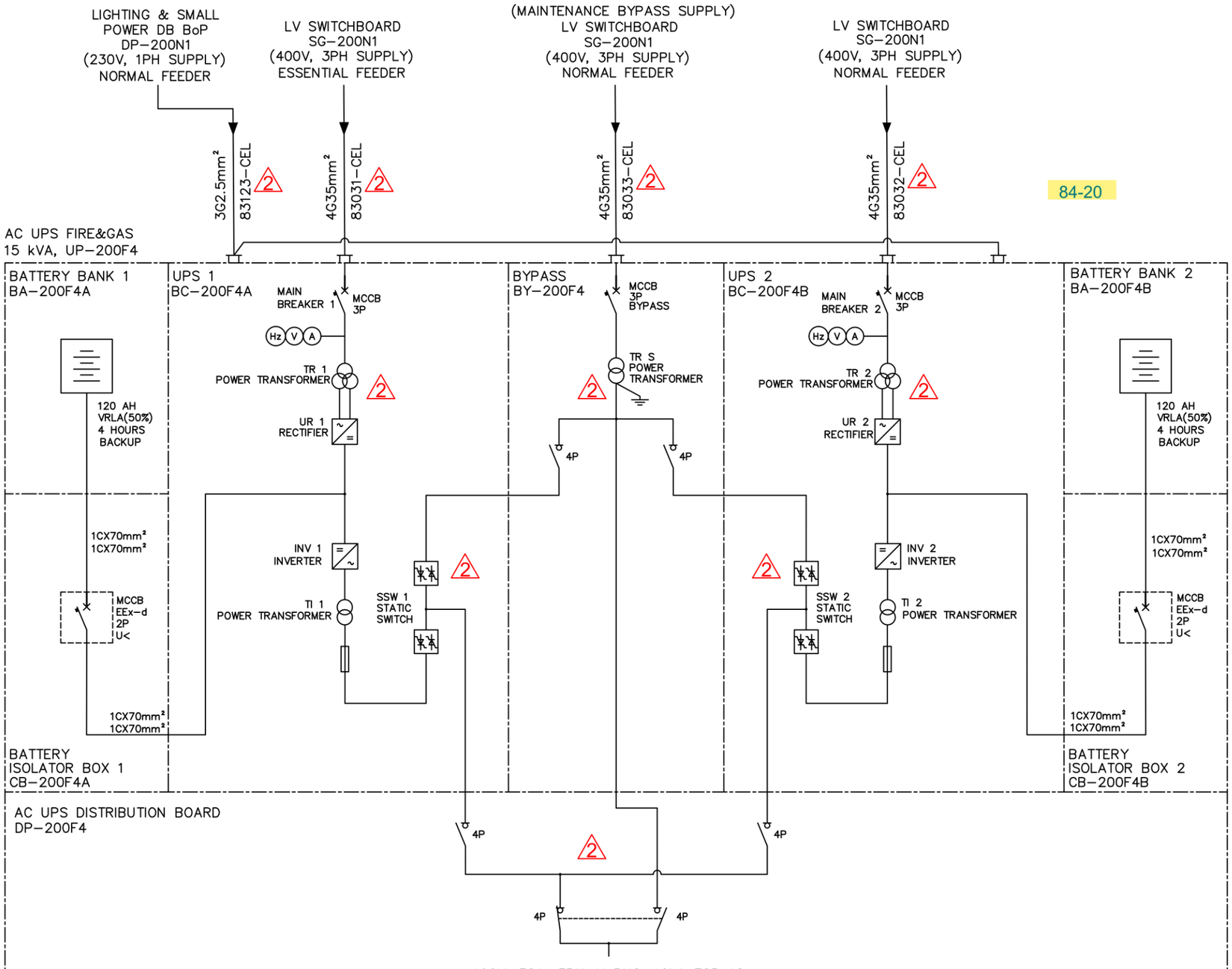
DRAWING NO. 1723002197-EL-DG-00011

SHEET 012

REV. 03

F.to UNI A3: 420mmx297mm

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



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

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL SINGLE LINE DIAGRAMS AC UPS SYSTEMS
AC UPS – FIRE & GAS SINGLE LINE DIAGRAM (UP–200F4)

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

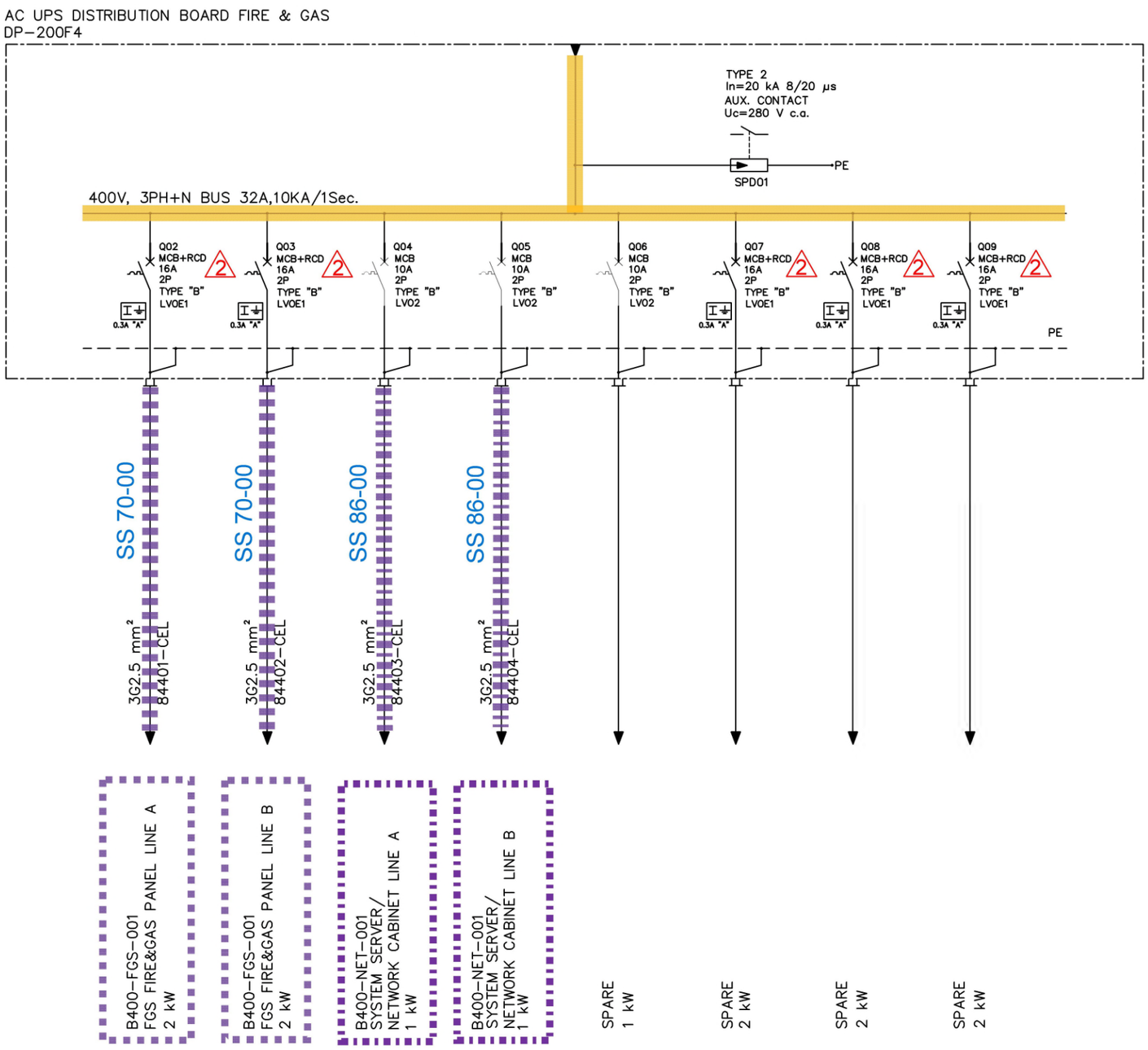
A3 | DRAWING NO. 123A90–DDL–EL–DG–20160 | SHEET 006 | REV. 02

F.to UNI A3: 420mmx297mm

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

AC UPS – FIRE & GAS SINGLE LINE DIAGRAM (UP–200F4) DISTRIBUTION BOARD DETAILS

84-20



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

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL SINGLE LINE DIAGRAMS AC UPS SYSTEMS
AC UPS DISTRIBUTION BOARD FIRE & GAS (UP–200F4)

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

SCALE : 1:X

A3

DRAWING NO. 123A90–DDL–EL–DG–20160

SHEET 007

REV. 02

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

F.to UNI A3: 420mmx297mm

Section 4 MECHANICAL COMPLETION STATUS INDEX - BUILDING DISCIPLINE

NOT APPLICABLE

Section 5 MECHANICAL COMPLETION STATUS INDEX - ELECTRICAL DISCIPLINE

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 84-20 & process: MC & discipline : E

Electrical	84-20 AC 15 kVA UPS System (UP-200F4)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
83031-CEL	LV Switchgear / AC UPS F&G - 8h - Line A	ONSHORE	C10000556	CPX09	100	2024-11-04	RFC 1
83032-CEL	LV Switchgear / AC UPS F&G - 8h - Line B	ONSHORE	C10000557	CPX09	100	2024-11-04	RFC 1
83033-CEL	LV Switchgear / AC UPS F&G - 8h - Bypass	ONSHORE	C10000558	CPX09	100	2024-10-24	RFC 1
83123-CEL	Lighting & Small Power DB BoP / AC UPS F&G AUXILIARY	ONSHORE	C10002109	CPX09	100	2024-10-24	RFC 1
84410-CEC	Isolator Battery Box for AC UPS 15 kVA / AC UPS 15 kVA Redundant System with By-Pass	ONSHORE	C10002345	CPX10	100	2024-10-29	RFC 1
84411-CEC	Isolator Battery Box for AC UPS 15 kVA / AC UPS 15 kVA Redundant System with By-Pass	ONSHORE	C10002346	CPX10	100	2024-11-04	RFC 1
84411-CEL-1-N	AC UPS F&G - Charger-A / AC UPS F&G - Battery Isolator-A	ONSHORE	C10000651	CPX09	100	2024-11-05	RFC 1
84411-CEL-1-P	AC UPS F&G - Charger-A / AC UPS F&G - Battery Isolator-A	ONSHORE	C10000650	CPX09	100	2024-11-05	RFC 1
84411-CEL-2-N	AC UPS F&G - Battery Isolator-A / AC UPS F&G - Battery-A	ONSHORE	C10000653	CPX09	100	2024-11-20	RFC 2
84411-CEL-2-P	AC UPS F&G - Battery Isolator-A / AC UPS F&G - Battery-A	ONSHORE	C10000652	CPX09	100	2024-11-20	RFC 2
84412-CEL-1-N	AC UPS F&G - Charger-B / AC UPS F&G - Battery Isolator-B	ONSHORE	C10000655	CPX09	100	2024-11-05	RFC 1
84412-CEL-1-P	AC UPS F&G - Charger-B / AC UPS F&G - Battery Isolator-B	ONSHORE	C10000654	CPX09	100	2024-11-05	RFC 1
84412-CEL-2-N	AC UPS F&G - Battery Isolator-B / AC UPS F&G - Battery-B	ONSHORE	C10000657	CPX09	100	2024-11-21	RFC 2
84412-CEL-2-P	AC UPS F&G - Battery Isolator-B / AC UPS F&G - Battery-B	ONSHORE	C10000656	CPX09	100	2024-11-21	RFC 2
BA-200F4A	Battery Rack GEL VRLA-20Y for AC UPS 15 kVA	ONSHORE	C10000850	CPX17	100	2024-11-04	RFC 1
BA-200F4B	Battery Rack GEL VRLA-20Y for AC UPS 15 kVA	ONSHORE	C10000851	CPX17	100	2024-11-04	RFC 1
CB-200F4A	Isolator Battery Box for AC UPS 15 kVA	ONSHORE	C10000857	CPX00	100	2024-11-04	RFC 1
CB-200F4B	Isolator Battery Box for AC UPS 15 kVA	ONSHORE	C10000858	CPX00	100	2024-11-04	RFC 1
UP-200F4	AC UPS 15 kVA Redundant System with By-Pass	ONSHORE	C10000872	CPX16	100	2024-11-04	RFC 1

ITEM	Tag	83031-CEL	: LV Switchgear / AC UPS F&G - 8h - Line A			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)			Module	LD_B-200/LD_B-300
TASK	code	C10000556		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 4G35 mm2 Color Grey

From SG-200N1 To UP-200F4

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).	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	PL
13	If required produce Red Line Mark Up for "AS BUILT"	

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	83031-CEL	: LV Switchgear / AC UPS F&G - 8h - Line A			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)			Module	LD_B-200/LD_B-300
TASK	code	C10000556		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

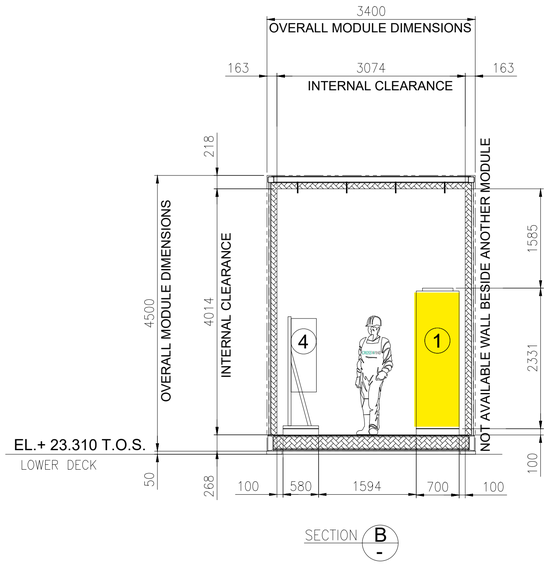
CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0.2	
6		PH 2	0.2	
7		PH 3	0.3	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		0.2	
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	>999	
12		PH3 / PH1-PH2-A-E	>999	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

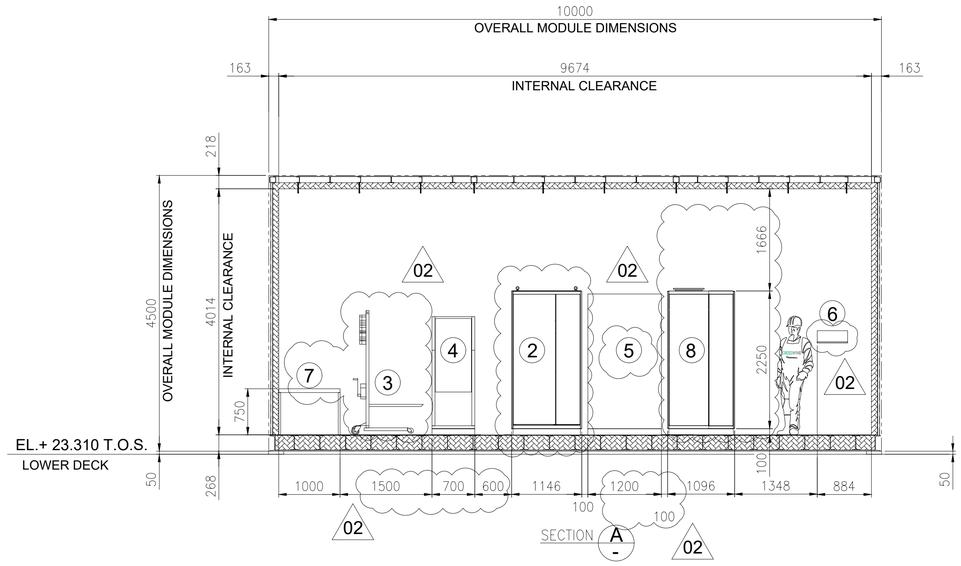
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207	TYPE / SERIAL N° :	MULTIMETER: FLUKE 175 SERIAL:AW1/018(17140769)
Calibration certificate N° and date:	N°7722/24 _ 10/07/2024	Calibration certificate N° and date:	N°7715/24 _ 10/07/2024

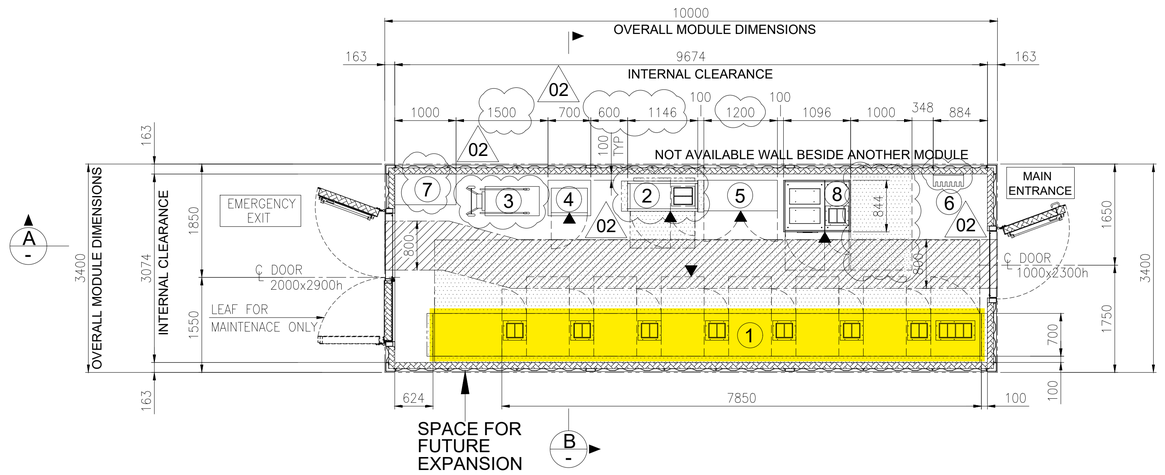
Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (Rosetti Marino)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-10-21	2024-11-04	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-10-21T17:24:00.379Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-11-04T10:24:59.444Z	

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







EQUIPMENT LAYOUT

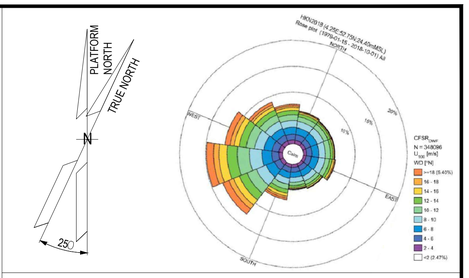
"B-200" LV (400V) SWITCHGEAR ROOM

BOTTOM PLAN

1

EQUIPMENT LIST

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



NOTES

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

02

LEGEND

U.N.O. _____ UNLESS NOTED OTHERWISE

T.O.S. _____ TOP OF STEEL

_____ ESCAPE CORRIDOR - WIDTH 800mm.

_____ MAINTENANCE AREA - VENDOR REQUIREMENT

_____ SWITCHGEAR ROOM ENCLOUSURE

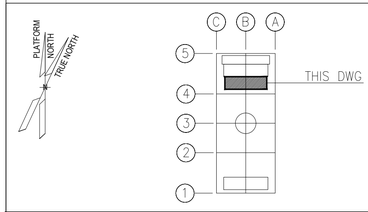
_____ FRONT OF EQUIPMENT

REFERENCES

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

02

KEY PLAN



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

CROSSWIND

ROSETTI MARINO

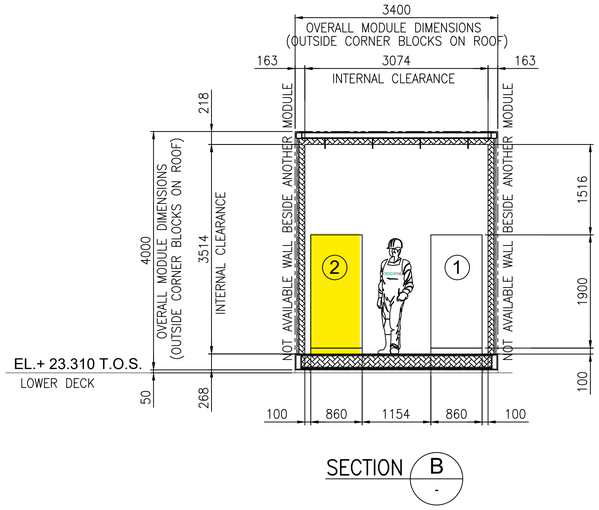
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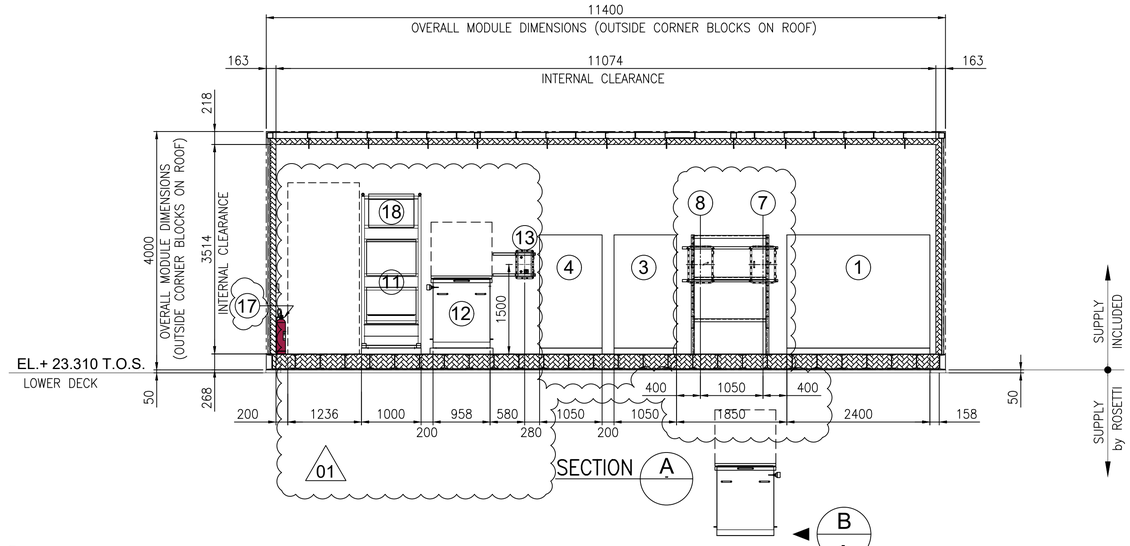
BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LV SWITCHROOM

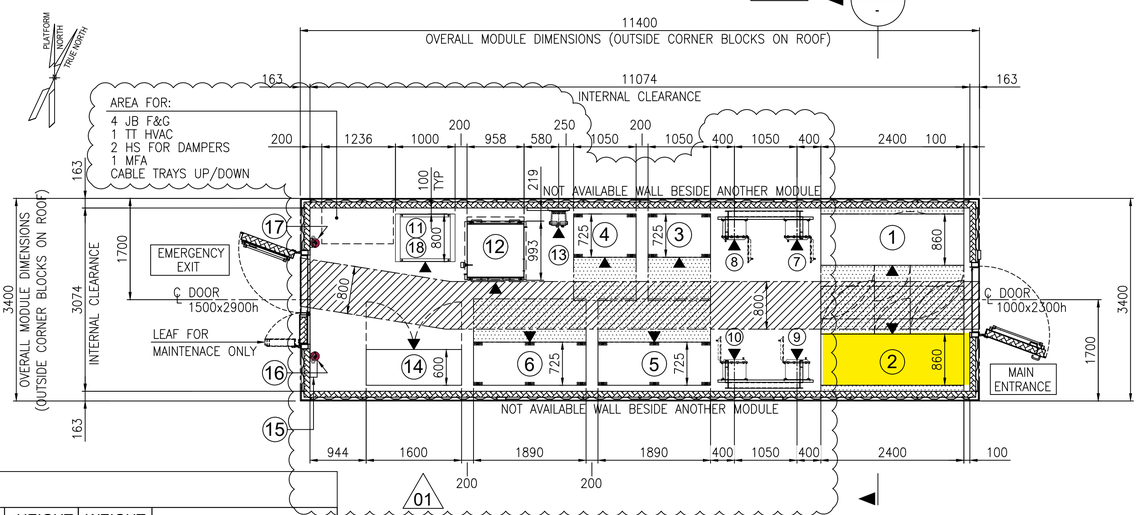
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN FMO	CHECKED LMA/AMA	APPROVED LMA/MDO	DATE 27/05/2024

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

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







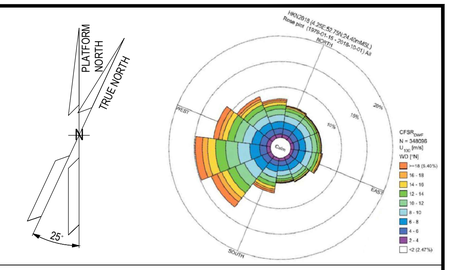
EQUIPMENT LIST

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

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

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

ROSETTI MARINO SpA



NOTES

01

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

LEGEND

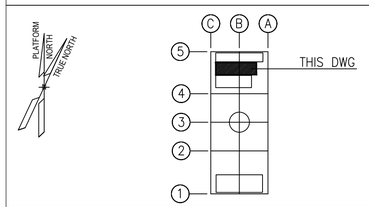
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR – WIDTH 800mm.
_____ MAINTENANCE AREA – VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

HOLDS

REFERENCE

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

KEY PLAN



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

CROSSWIND
ROSETTI MARINO

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

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

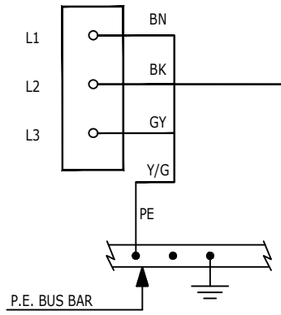
DRAWING NO. 123A90-DDL-EL-DL-20106 REV. 01

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

FROM	TO

DESCRIPTION: LV SWITCHGEAR
TAG NUMBER: SG-200N1

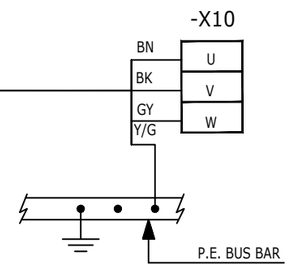
COLUMN/CUBIC.: A7/+02



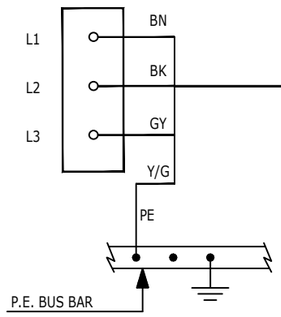
83030-CEL
4G35 mm²

DESCRIPTION: AC UPS PAS - 30MIN - BYPASS
TAG NUMBER: UP-200F3

PANEL:.BYPASS



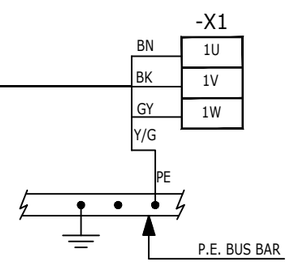
COLUMN/CUBIC.: A6/+05



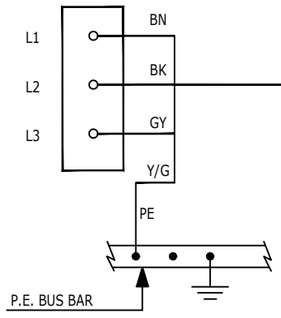
83031-CEL
4G35 mm²

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

PANEL:.UPS1

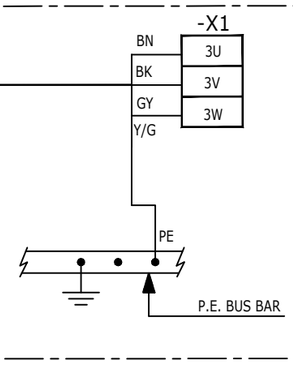


COLUMN/CUBIC.: A6/+06



83032-CEL
4G35 mm²

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



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
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

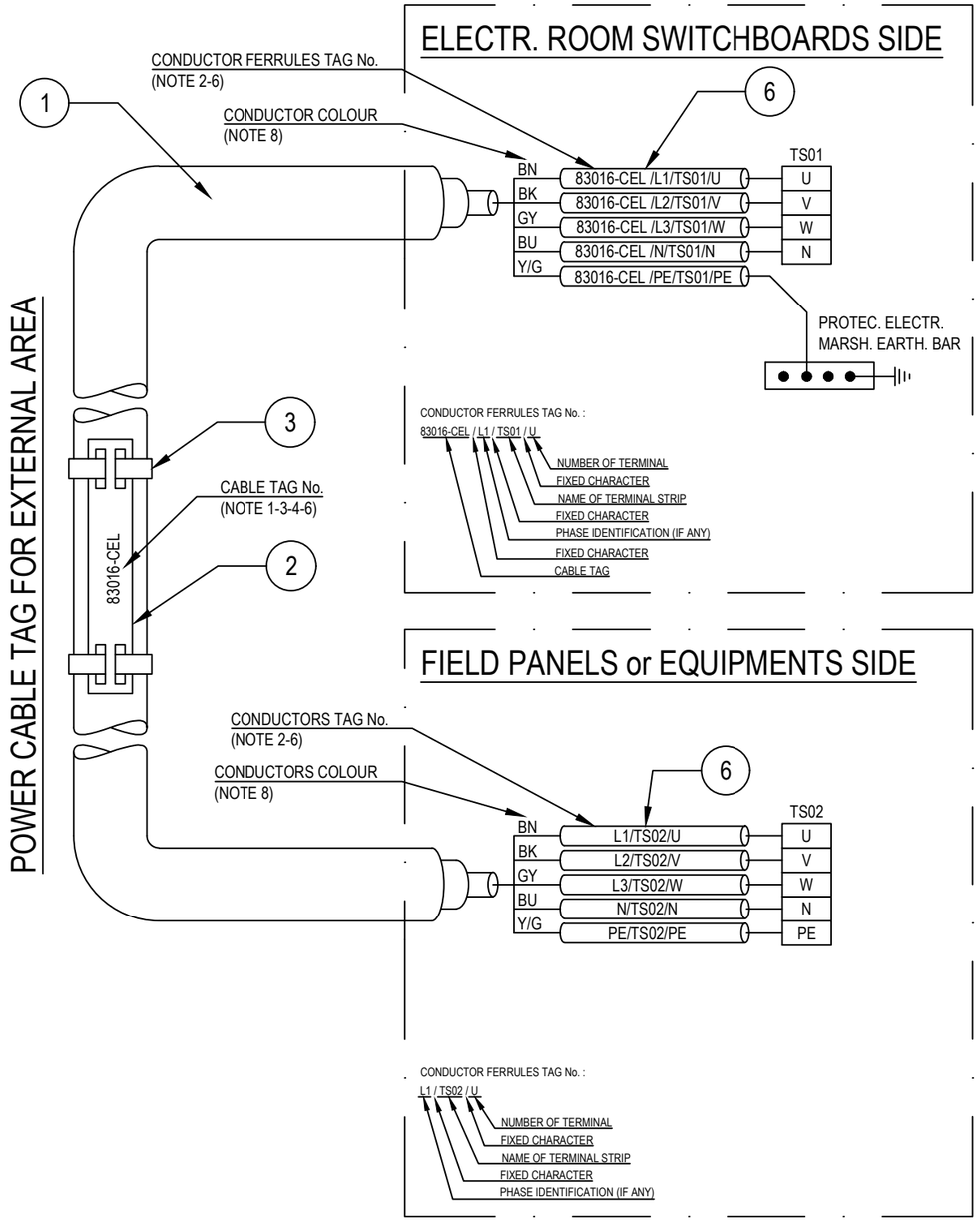
SHEET 028

REV. 01

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

F.to UNI A3: 420mmx297mm

C02



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

NOTES:

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

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

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

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

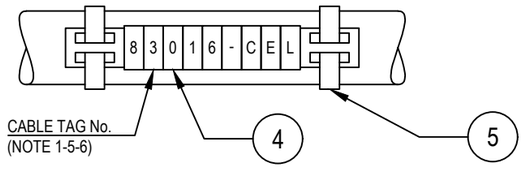
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

6) CABLE AND CONDUCTOR TAG ARE INDICATIVE ONLY.

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

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

POWER CABLE TAG FOR INTERNAL AREA



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

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

CROSSWIND

ROSETTI MARINO

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

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

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

F.to UNI A3: 420mmx297mm

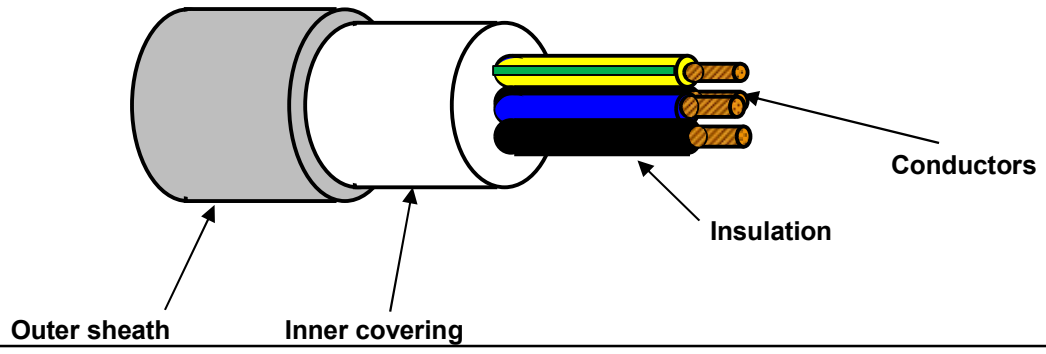
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	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
83031-CEL	Cable	EL	VFC	123A90-DDL-EL-LIS-20148					SG-200N1	LV 0,4 kV MCC Switchgear	Lower Deck (B-200)	UP-200F4	AC UPS 15 kVA Redundant System with By-Pass	Lower Deck (B-300)	ELECV09-4G35	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 4G35mm² - Grey	M40	n.a.			T1_M40_Single				L-450-101-LVT-023 / L-600-101-LVT-017 / L-600-101-LVT-019 / L-600-101-LVT-020 / E-MCT-204 / L-600-101-LVT-010 / L-450-101-LVT-005 / E-MCT-302 / L-600-101-LVT-035 / L-450-101-LVT-043

FLEI s.r.l.

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

4G35 - L.V. POWER CABLE - Flame Retardant



TECHNICAL FEATURES

Conductors :	**STRANDED COMPACTED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	EPR compound, quality to IEC 60092.360, Nominal Thickness 1,2 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 1,5 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 4G35 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 -**	
	Year of Manufacture - CE + Meter Marking	
Outer diameter :	(27,4 ± 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 :	≥ 480 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	83032-CEL	: LV Switchgear / AC UPS F&G - 8h - Line B			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)			Module	LD_B-200/LD_B-300
TASK	code	C10000557		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 4G35 mm2 Color Grey

From SG-200N1 To UP-200F4

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).	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	PL
13	If required produce Red Line Mark Up for "AS BUILT"	

ITEM	Tag	83032-CEL	: LV Switchgear / AC UPS F&G - 8h - Line B	Dwg	123A90-DDL-EL-LIS-20148		
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)	Module	LD_B-200/LD_B-300		
TASK	code	C10000557	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form CPX09	LV Power Cable

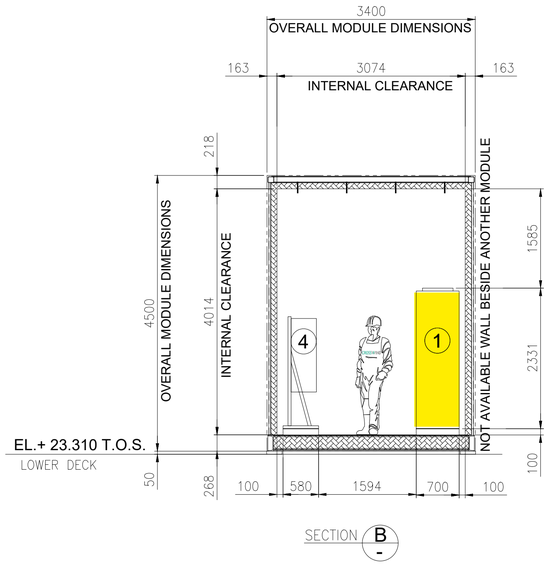
CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0.2	
6		PH 2	0.2	
7		PH 3	0.2	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		0.2	
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	>999	
12		PH3 / PH1-PH2-A-E	>999	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

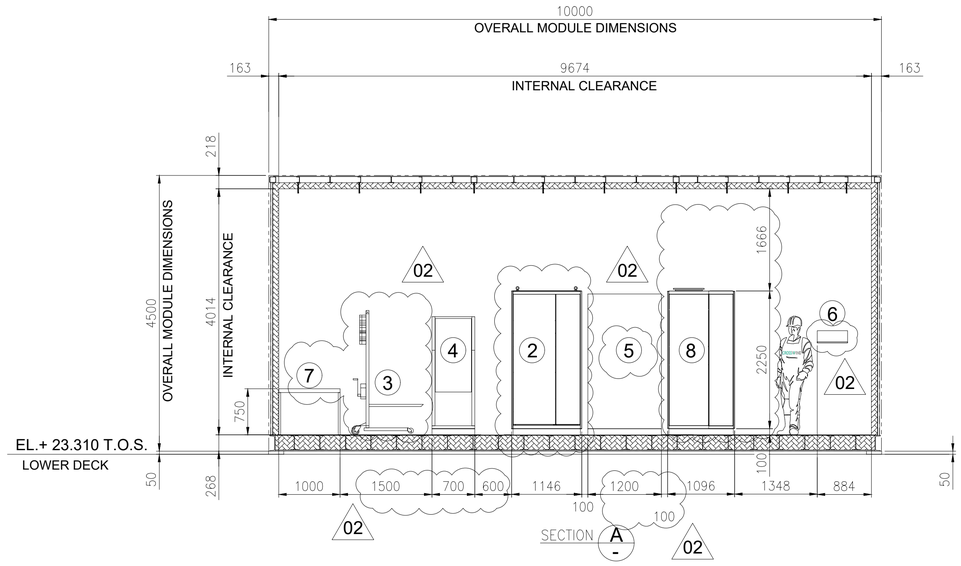
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207	TYPE / SERIAL N° :	MULTIMETER: FLUKE 175 SERIAL:AW1/018(17140769)
Calibration certificate N° and date:	N°7722/24 _ 10/07/2024	Calibration certificate N° and date:	N°7715/24 _ 10/07/2024

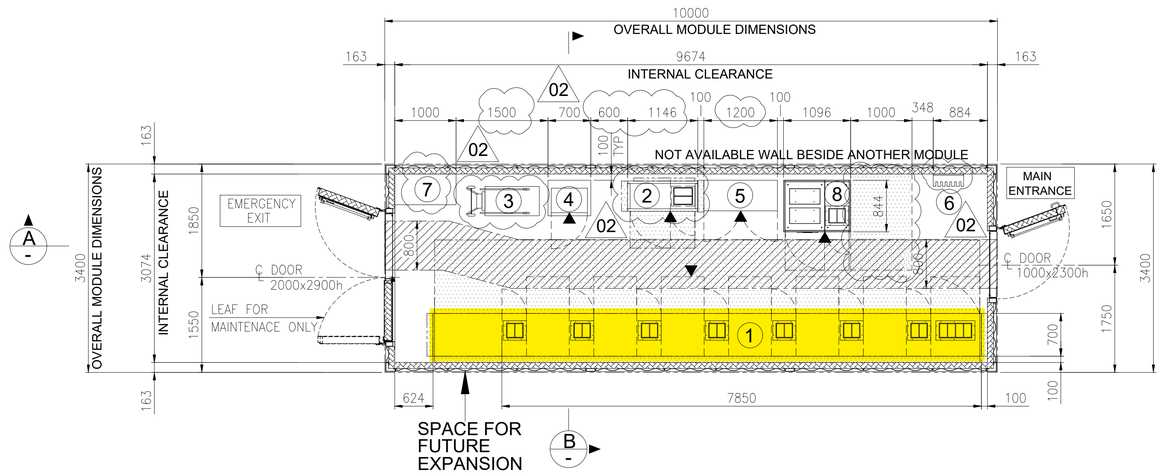
Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (Rosetti Marino)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-10-21	2024-11-04	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-10-21T17:24:17.936Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-11-04T10:26:54.769Z	

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







EQUIPMENT LAYOUT

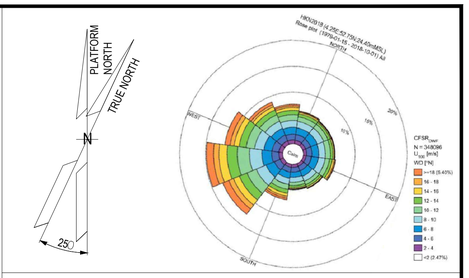
"B-200" LV (400V) SWITCHGEAR ROOM

BOTTOM PLAN

1

EQUIPMENT LIST

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



NOTES

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

02

LEGEND

U.N.O. _____ UNLESS NOTED OTHERWISE

T.O.S. _____ TOP OF STEEL

_____ ESCAPE CORRIDOR - WIDTH 800mm.

_____ MAINTENANCE AREA - VENDOR REQUIREMENT

_____ SWITCHGEAR ROOM ENCLOUSURE

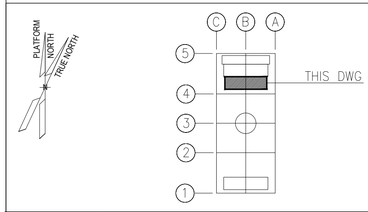
_____ FRONT OF EQUIPMENT

REFERENCES

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

02

KEY PLAN



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

CROSSWIND

ROSETTI MARINO

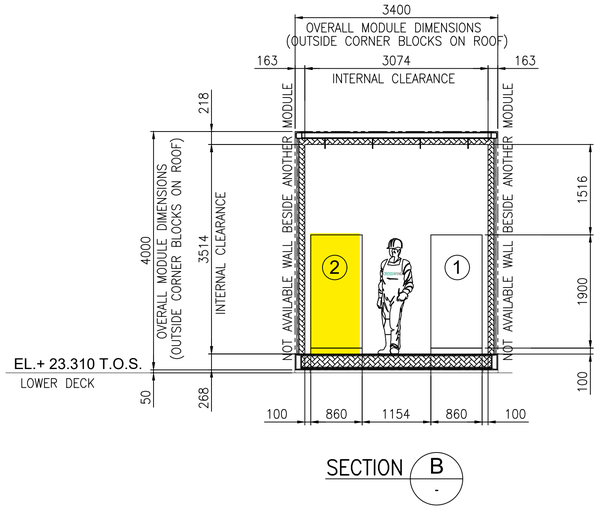
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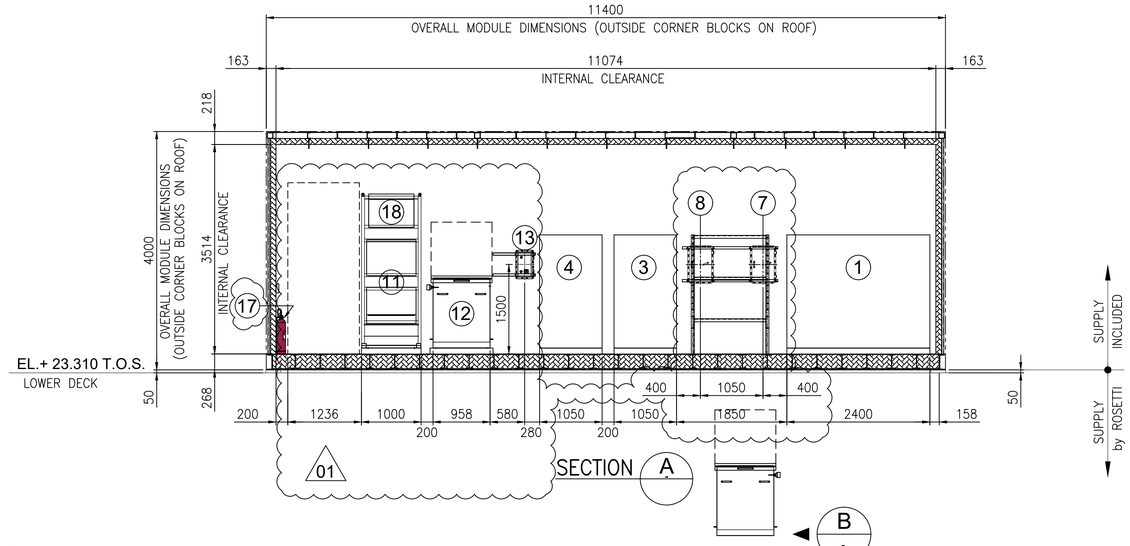
BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LV SWITCHROOM

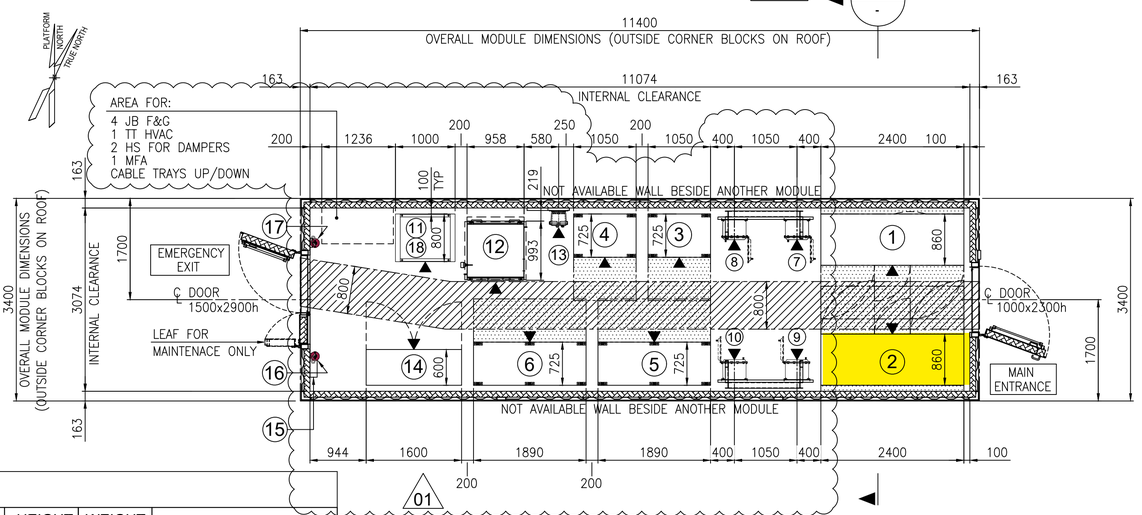
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN FMO	CHECKED LMA/AMA	APPROVED LMA/MDO	DATE 27/05/2024

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

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







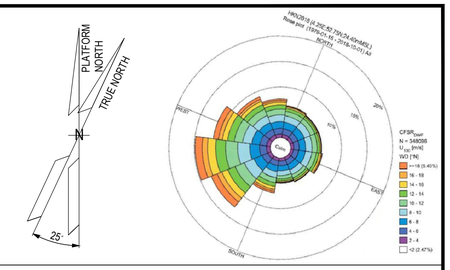
EQUIPMENT LIST

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

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

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

ROSETTI MARINO SpA



NOTES

01

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

LEGEND

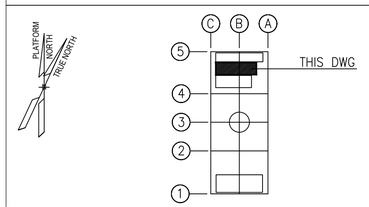
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR – WIDTH 800mm.
_____ MAINTENANCE AREA – VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

HOLDS

REFERENCE

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

KEY PLAN



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

CROSSWIND
ROSETTI MARINO

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

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

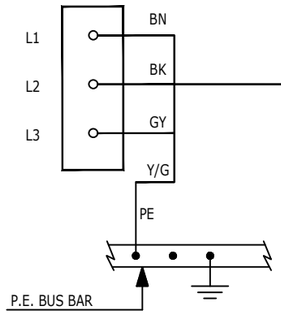
DRAWING NO. 123A90-DDL-EL-DL-20106 REV. 01

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

FROM	TO

DESCRIPTION: LV SWITCHGEAR
TAG NUMBER: SG-200N1

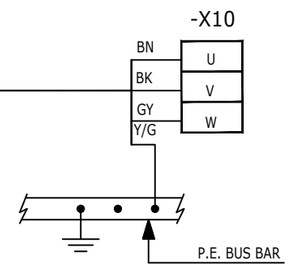
COLUMN/CUBIC.: A7/+02



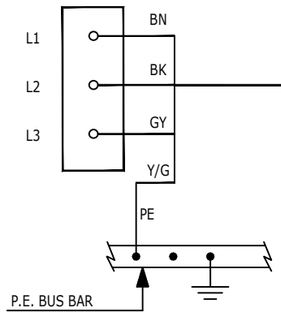
83030-CEL
4G35 mm²

DESCRIPTION: AC UPS PAS - 30MIN - BYPASS
TAG NUMBER: UP-200F3

PANEL:.BYPASS



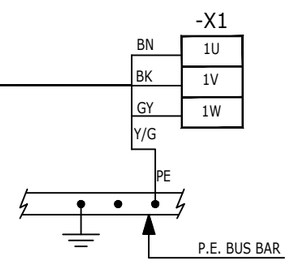
COLUMN/CUBIC.: A6/+05



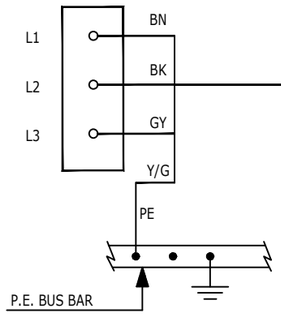
83031-CEL
4G35 mm²

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

PANEL:.UPS1



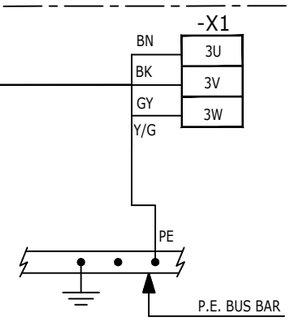
COLUMN/CUBIC.: A6/+06



83032-CEL
4G35 mm²

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

PANEL:.UPS2



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
LV SWITCHGEAR SG-200N1

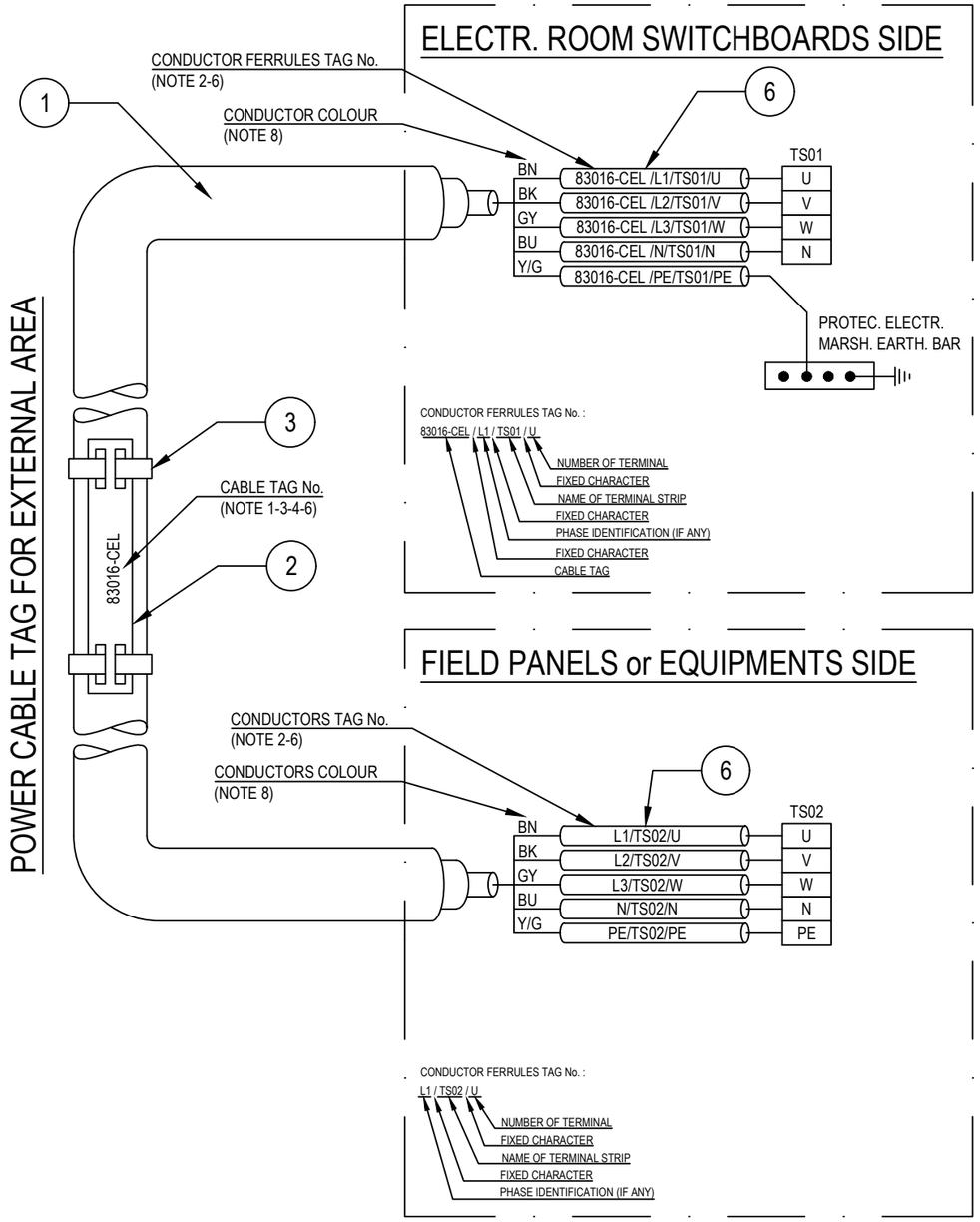
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 028 | 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.

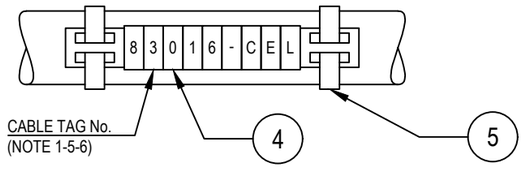
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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

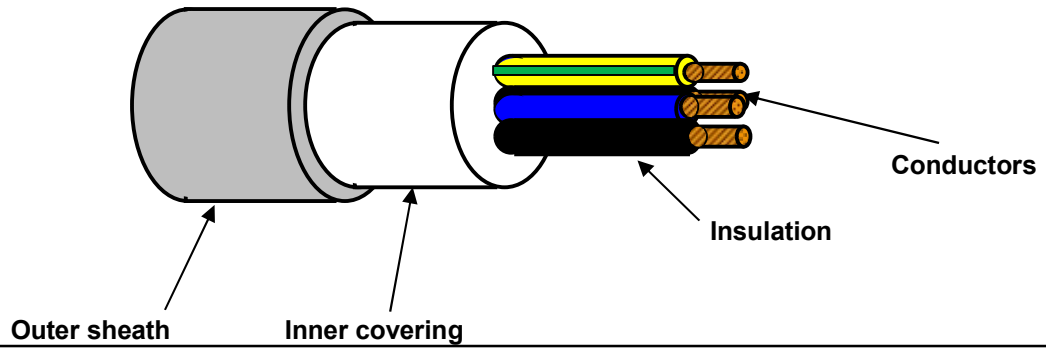
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	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
83032-CEL	Cable	EL	VFC	123A90-DDL-EL-LIS-20148					SG-200N1	LV 0,4 kV MCC Switchgear	Lower Deck (B-200)	UP-200F4	AC UPS 15 kVA Redundant System with By-Pass	Lower Deck (B-300)	ELECV09-4G35	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 4G35mm² - Grey	M40	n.a.			T1_M40_Single				L-450-101-LVT-027 / L-600-101-LVT-017 / L-600-101-LVT-018 / L-600-101-LVT-020 / E-MCT-204 / L-600-101-LVT-010 / L-450-101-LVT-005 / E-MCT-302 / L-600-101-LVT-035 / L-450-101-LVT-043

FLEI s.r.l.

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

4G35 - L.V. POWER CABLE - Flame Retardant



TECHNICAL FEATURES

Conductors :	**STRANDED COMPACTED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	EPR compound, quality to IEC 60092.360, Nominal Thickness 1,2 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 1,5 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 4G35 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 -**	
	Year of Manufacture - CE + Meter Marking	
Outer diameter :	(27,4 ± 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 :	≥ 480 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	83033-CEL	: LV Switchgear / AC UPS F&G - 8h - Bypass		Dwg	123A90-DDL-EL-LIS-20148	
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)		Module	LD_B-200/LD_B-300	
TASK	code	C10000558	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: 4G35 mm2 | Color: Grey

From: SG-200N1 | To: UP-200F4

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).	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	PL
13	If required produce Red Line Mark Up for "AS BUILT"	

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	83033-CEL	: LV Switchgear / AC UPS F&G - 8h - Bypass			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)			Module	LD_B-200/LD_B-300
TASK	code	C10000558		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

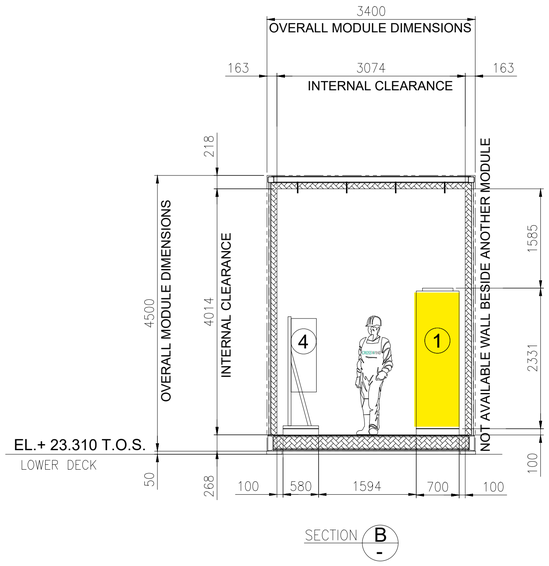
CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0.5	
6		PH 2	0.5	
7		PH 3	0.5	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		0.5	
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	>999	
12		PH3 / PH1-PH2-A-E	>999	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

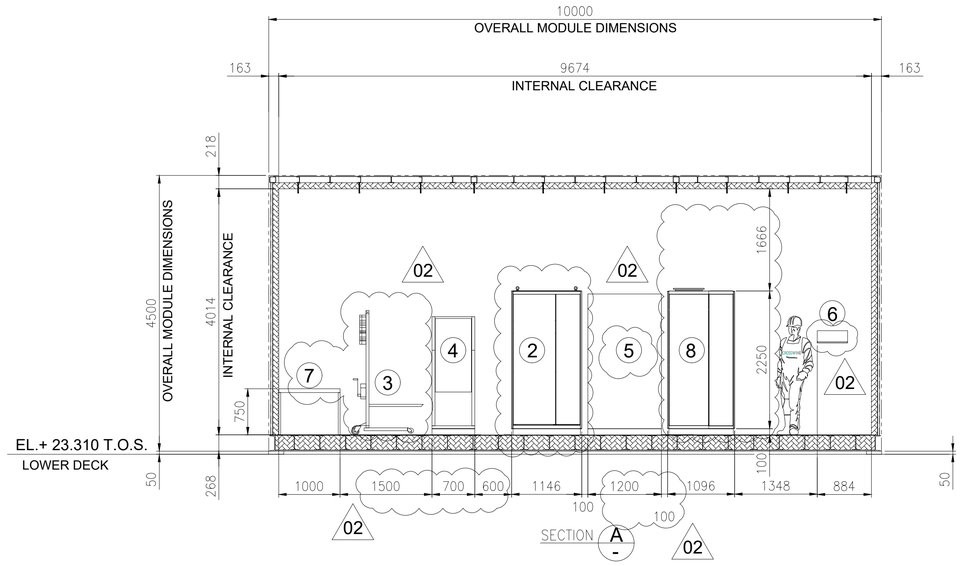
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207	TYPE / SERIAL N° :	MULTIMETER: FLUKE 175 SERIAL:AW1/018(17140769)
Calibration certificate N° and date:	N°7722/24 _ 10/07/2024	Calibration certificate N° and date:	N°7715/24 _ 10/07/2024

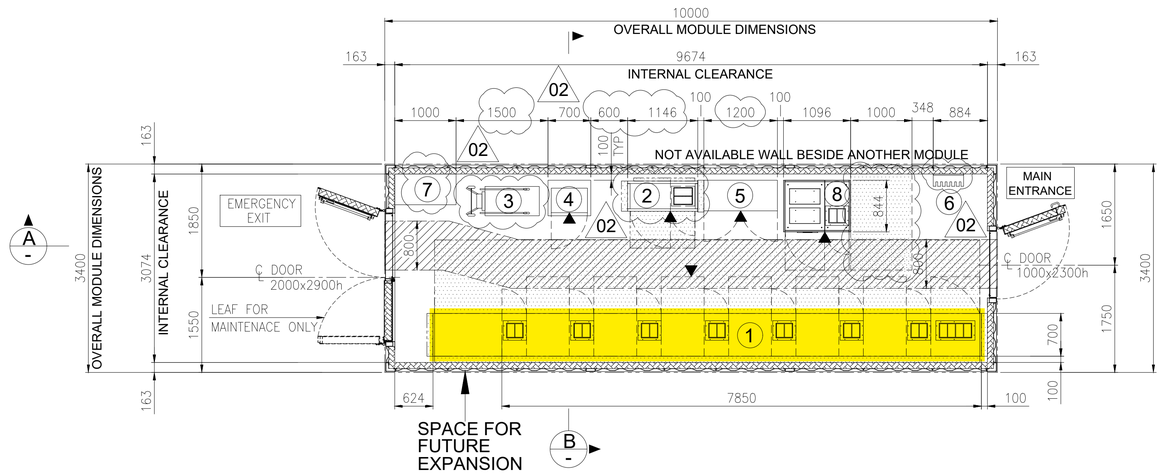
Comments:

	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 2024-10-21T17:24:34.422Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-10-24T11:43:14.744Z	

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







EQUIPMENT LAYOUT

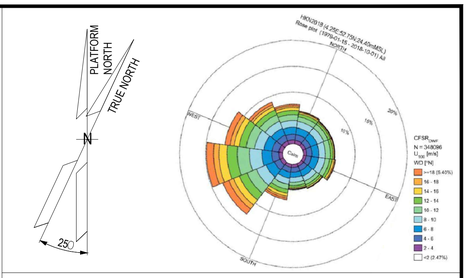
"B-200" LV (400V) SWITCHGEAR ROOM

BOTTOM PLAN

1

EQUIPMENT LIST

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



NOTES

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

02

LEGEND

U.N.O. _____ UNLESS NOTED OTHERWISE

T.O.S. _____ TOP OF STEEL

_____ ESCAPE CORRIDOR - WIDTH 800mm.

_____ MAINTENANCE AREA - VENDOR REQUIREMENT

_____ SWITCHGEAR ROOM ENCLOUSURE

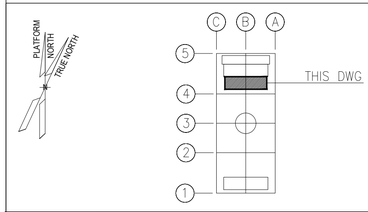
_____ FRONT OF EQUIPMENT

REFERENCES

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

02

KEY PLAN



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

CROSSWIND

ROSETTI MARINO

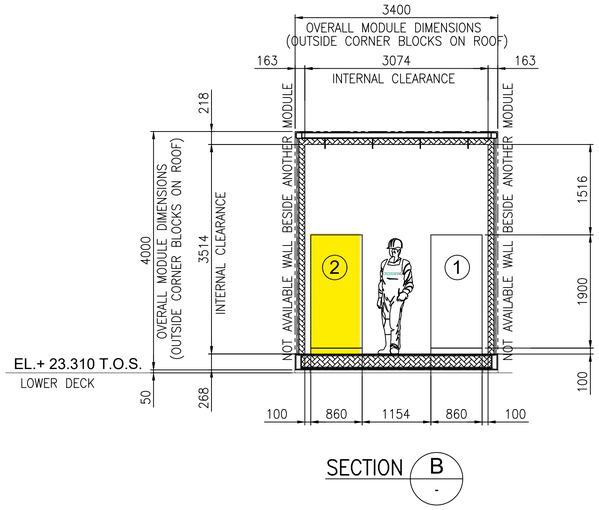
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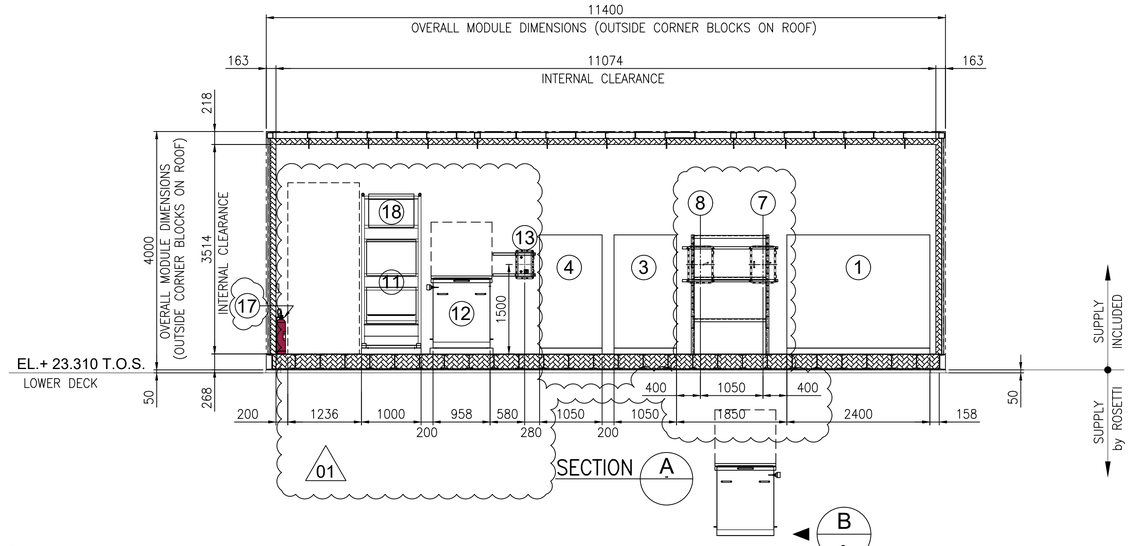
BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LV SWITCHROOM

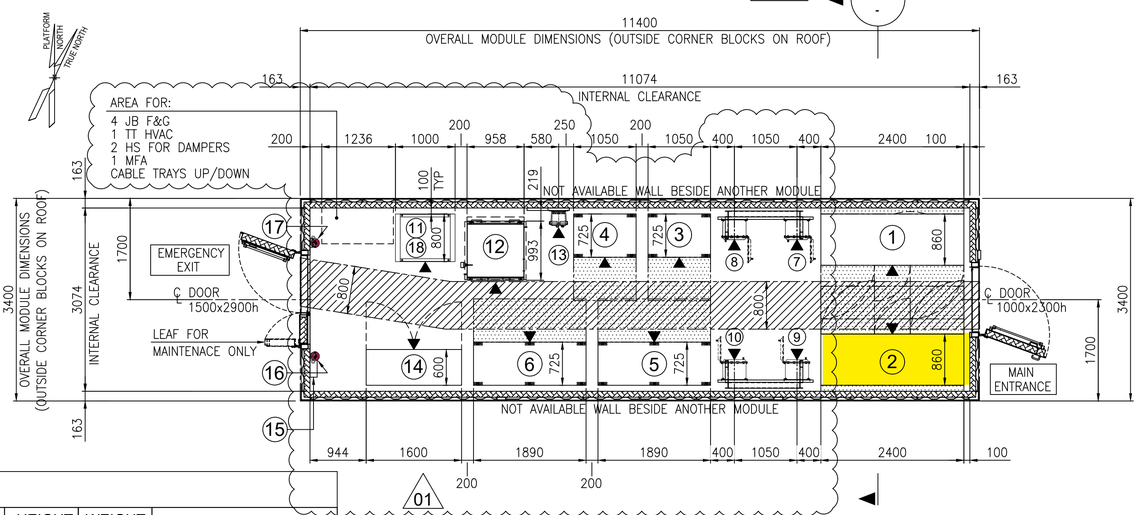
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN FMO	CHECKED LMA/AMA	APPROVED LMA/MDO	DATE 27/05/2024

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

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







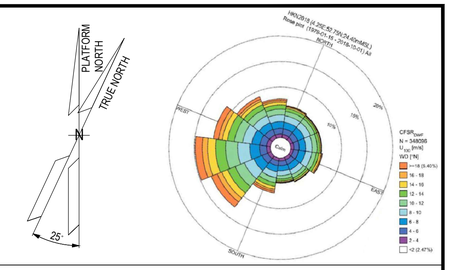
EQUIPMENT LIST

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

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

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

ROSETTI MARINO SpA



NOTES

01

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

LEGEND

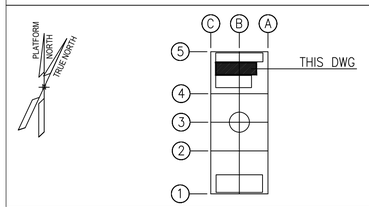
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR – WIDTH 800mm.
_____ MAINTENANCE AREA – VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

HOLDS

REFERENCE

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

KEY PLAN



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

CROSSWIND
ROSETTI MARINO

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

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

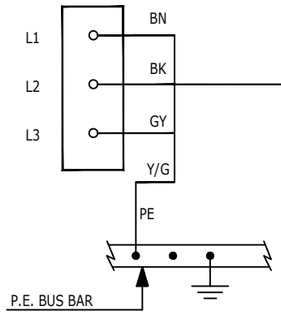
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File Name : 123A90-DDL-EL-DL-20106 Rev.00.dwg

FROM	TO

DESCRIPTION: LV SWITCHGEAR
TAG NUMBER: SG-200N1

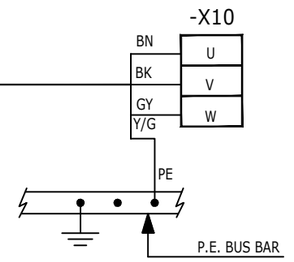
COLUMN/CUBIC.: A2/+04



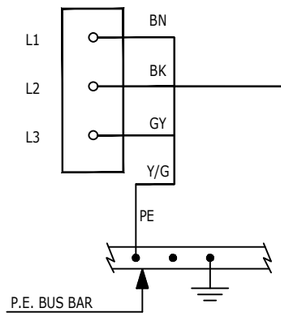
83033-CEL
4G35 mm²

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

PANEL:.BYPASS



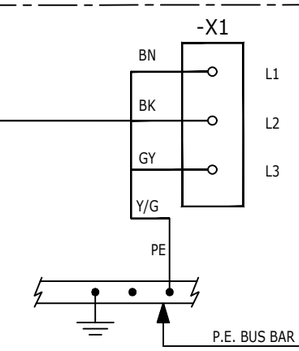
COLUMN/CUBIC.: A7/+03



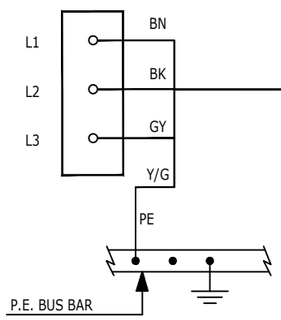
83034-CEL
4G16 mm²

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

PANEL:.CHARGER-1



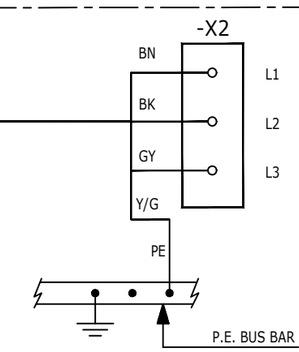
COLUMN/CUBIC.: A7/+04



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

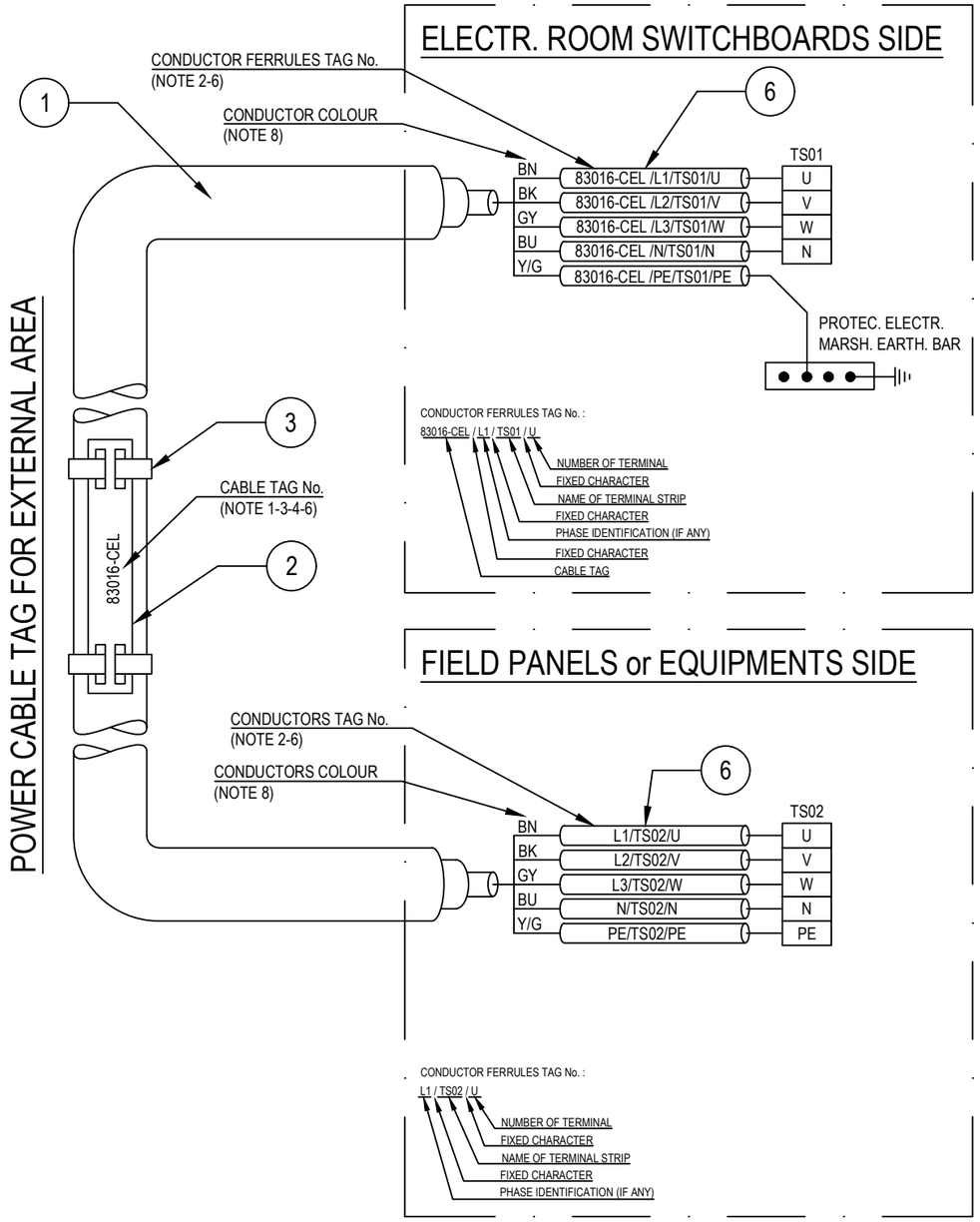
SHEET 029

REV. 01

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

F.to UNI A3: 420mmx297mm

C02



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

NOTES:

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

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

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

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

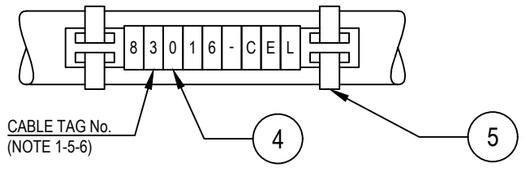
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

6) CABLE AND CONDUCTOR TAG ARE INDICATIVE ONLY.

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

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

POWER CABLE TAG FOR INTERNAL AREA



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

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

CROSSWIND

ROSETTI MARINO

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

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

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

F.to UNI A3: 420mmx297mm

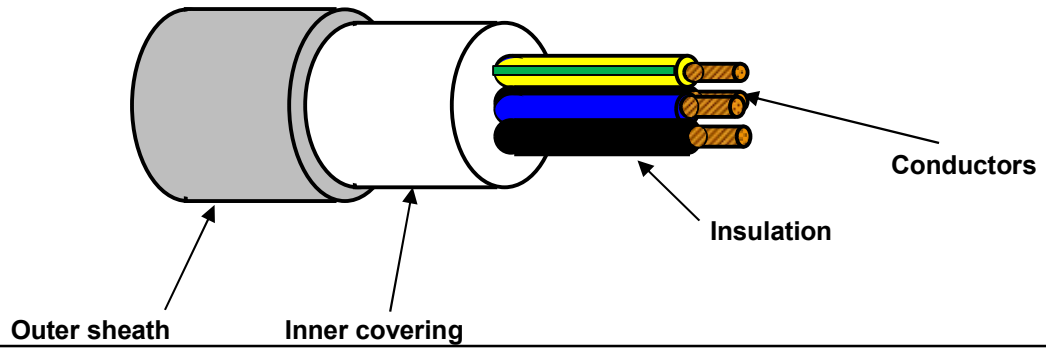
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	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
83033-CEL	Cable	EL	VFC	123A90-DDL-EL-LIS-20148					SG-200N1	LV 0,4 kV MCC Switchgear	Lower Deck (B-200)	UP-200F4	AC UPS 15 kVA Redundant System with By-Pass	Lower Deck (B-300)	ELECV09-4G35	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 4G35mm² - Grey	M40	n.a.			T1_M40_Single				L-450-101-LVT-027 / L-600-101-LVT-017 / L-600-101-LVT-018 / L-600-101-LVT-020 / E-MCT-204 / L-600-101-LVT-010 / L-450-101-LVT-005 / E-MCT-302 / L-600-101-LVT-035 / L-450-101-LVT-043

FLEI s.r.l.

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

4G35 - L.V. POWER CABLE - Flame Retardant



TECHNICAL FEATURES

Conductors :	**STRANDED COMPACTED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	EPR compound, quality to IEC 60092.360, Nominal Thickness 1,2 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 1,5 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 4G35 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 -**	
	Year of Manufacture - CE + Meter Marking	
Outer diameter :	(27,4 ± 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 :	≥ 480 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	84411-CEL-1-P	: AC UPS F&G - Charger-A / AC UPS F&G - Battery Isolator-A			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)			Module	LD_B-300
TASK	code	C10000650		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	1X70 mm2	Color	ORANGE
From	BC-200F4A	To	CB-200F4A		

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"	

REFER TO FINAL SHEET FOR ACCEPTANCE

ROSETTI MARINO PROVERLIS CROSSWIND

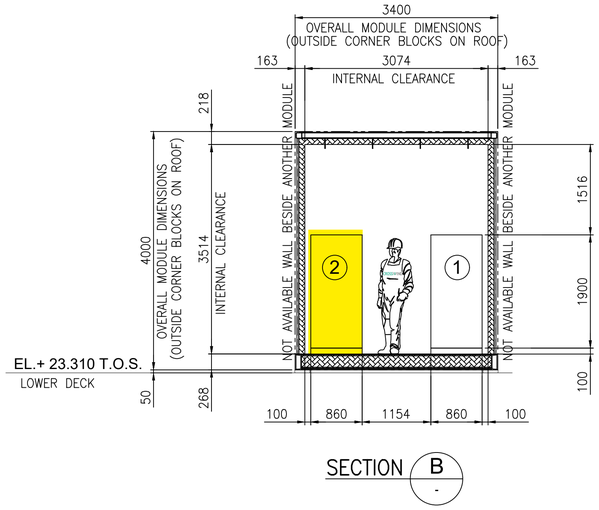
ITEM	Tag	84411-CEL-1-P	: AC UPS F&G - Charger-A / AC UPS F&G - Battery Isolator-A			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)			Module	LD_B-300
TASK	code	C10000650		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

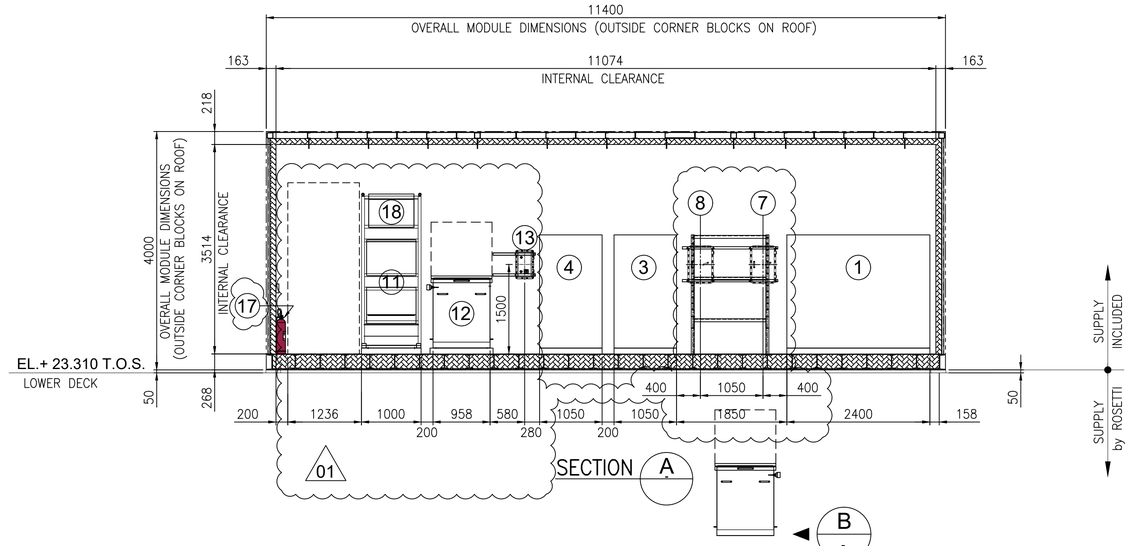
CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0.5	
6		PH 2	NA	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		0.5	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		NA	
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	NA	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

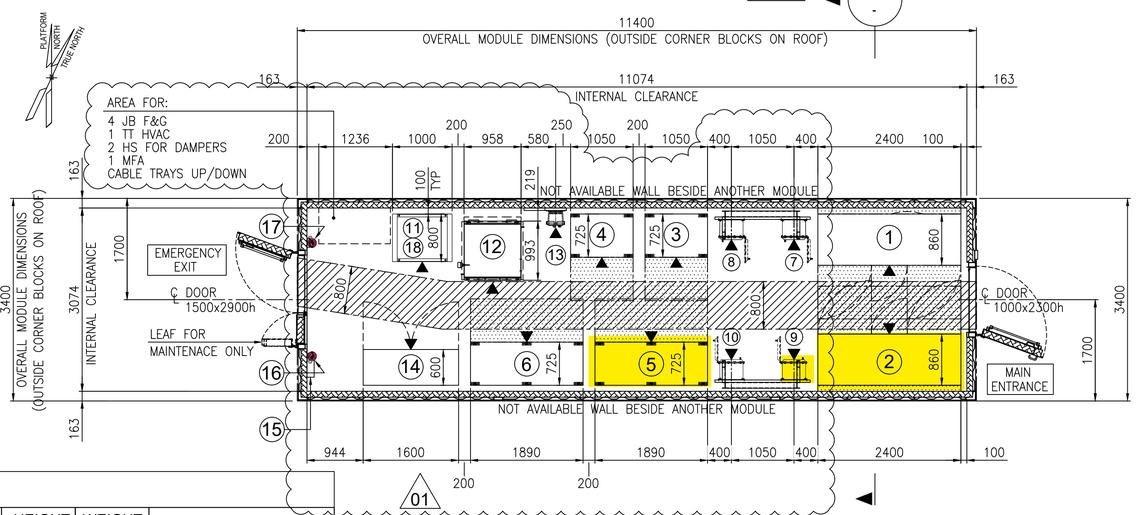
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207	TYPE / SERIAL N° :	MULTIMETER: FLUKE 175 SERIAL:AW1/018(17140769)
Calibration certificate N° and date:	N°7722/24 _ 10/07/2024	Calibration certificate N° and date:	N°7715/24 _ 10/07/2024

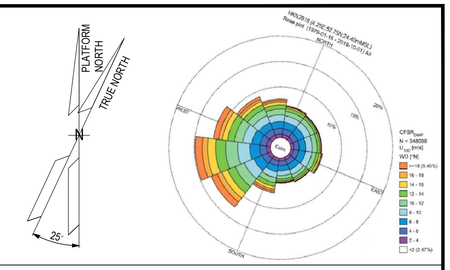
Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Carmelo Bongiovanni	Eleonora Carotenuto	
Date	2024-11-05	2024-11-05	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-11-05T10:33:20.927Z	PROVERLIS Digitaly signed by Eleonora Carotenuto 2024-11-05T10:45:00.552Z	









NOTES

01

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

LEGEND

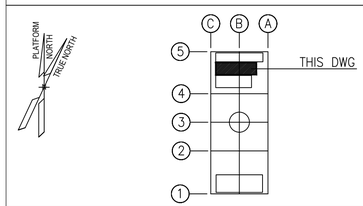
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR – WIDTH 800mm.
_____ MAINTENANCE AREA – VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

HOLDS

REFERENCE

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

KEY PLAN



EQUIPMENT LIST

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

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

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

ROSETTI MARINO SpA

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

CROSSWIND
ROSETTI MARINO

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

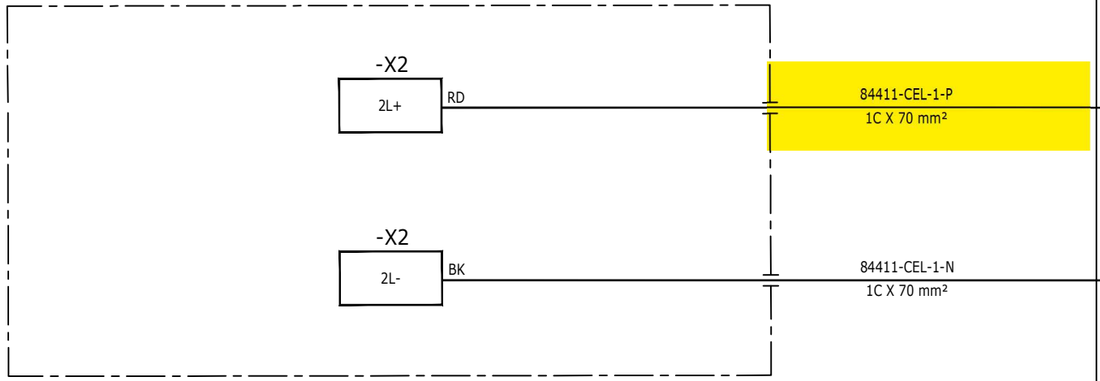
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE 1:50
DRAWN SAM | CHECKED FMA/AMA | APPROVED FPA/DLO | DATE 23/07/24
A1 | DRAWING NO. 123A90-DDL-EL-DL-20106 | SHEET 001 | REV. 01

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

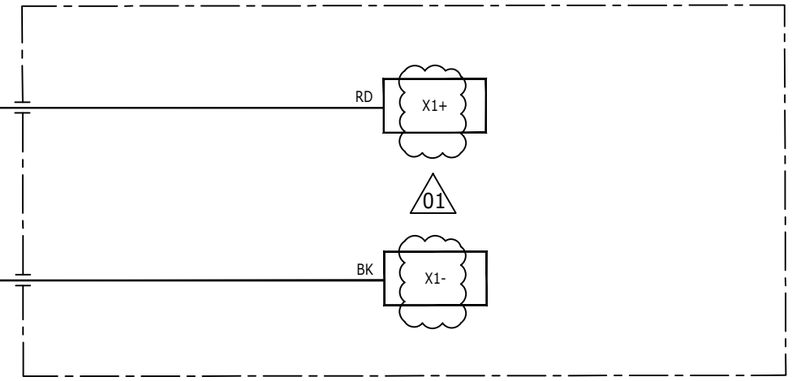
DRAWING NO. 123A90-DDL-EL-DL-20106 | REV. 01

FROM	TO

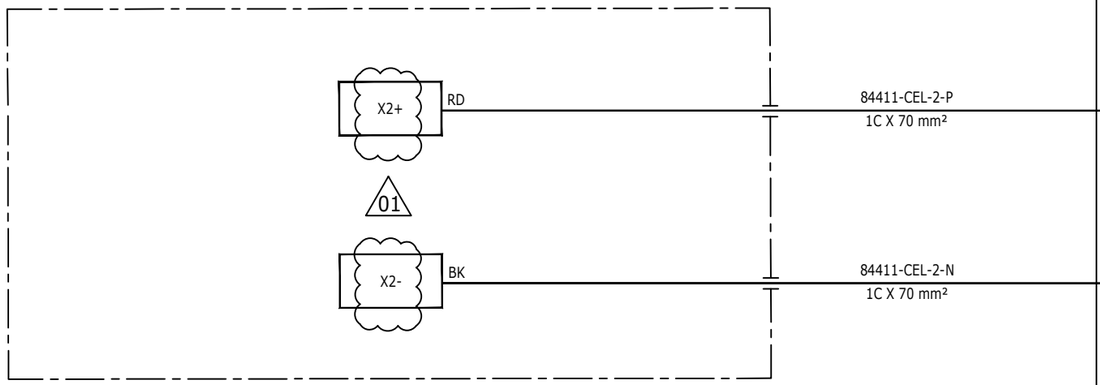
DESCRIPTION: AC UPS F&G - CHARGER-A
TAG NUMBER: BC-200F4A



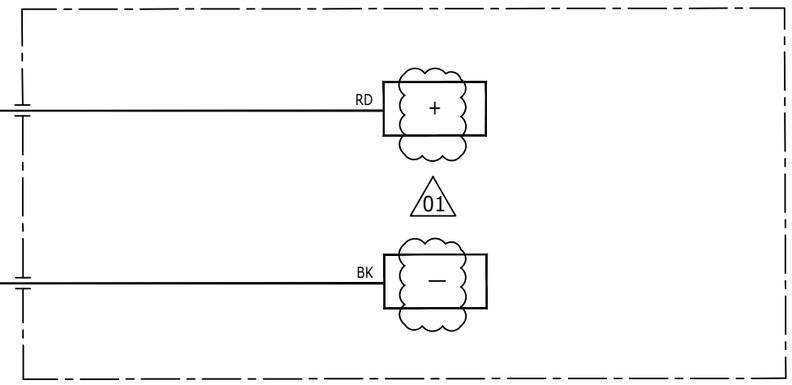
DESCRIPTION: AC UPS F&G - BATTERY ISOLATOR-A
TAG NUMBER: CB-200F4A



DESCRIPTION: AC UPS F&G - BATTERY ISOLATOR-A
TAG NUMBER: CB-200F4A



DESCRIPTION: AC UPS F&G - BATTERY-A
TAG NUMBER: BA-200F4A



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
AC UPS F&G – CHARGER-A & BATTERY ISOLATOR-A

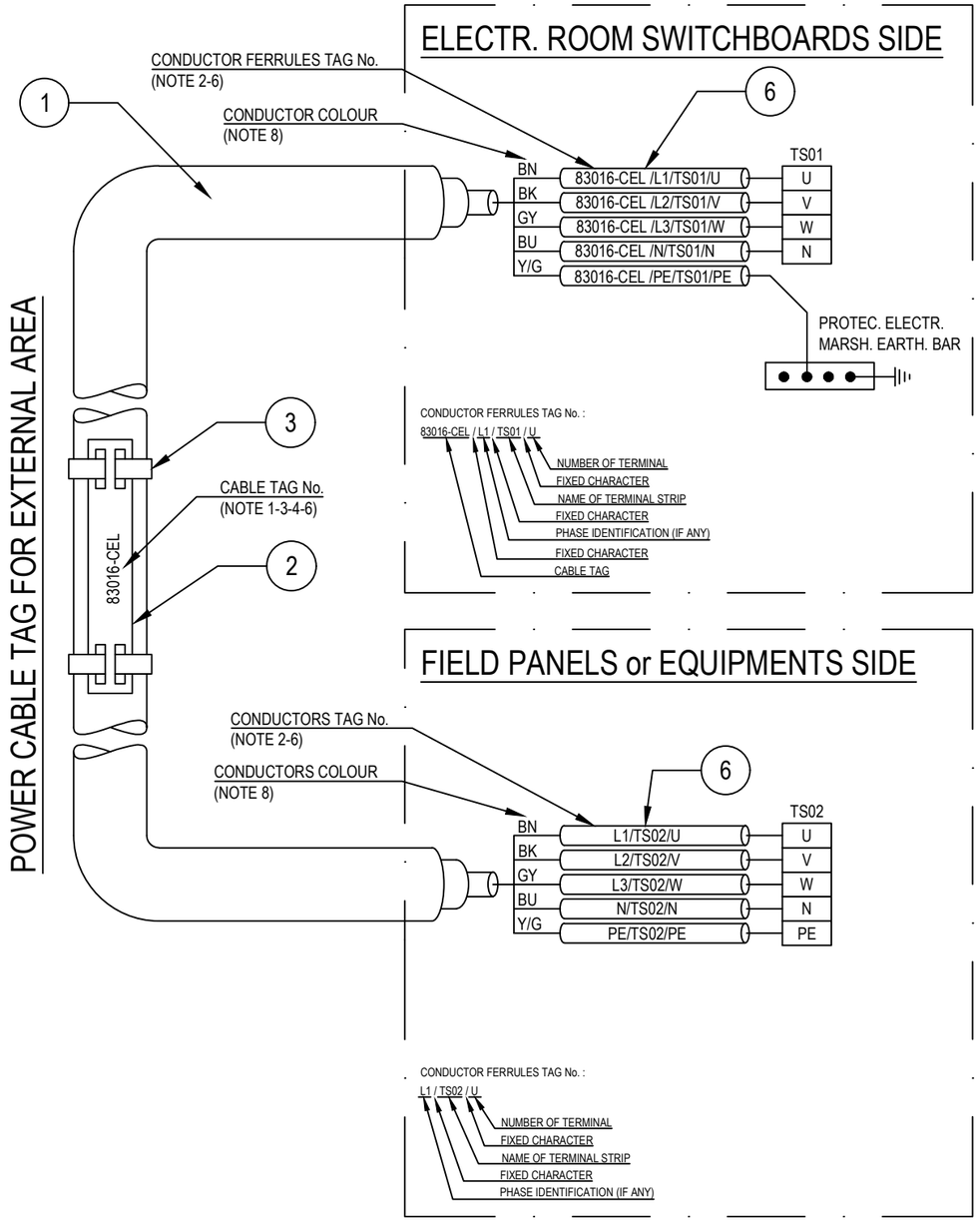
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 063 | 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.

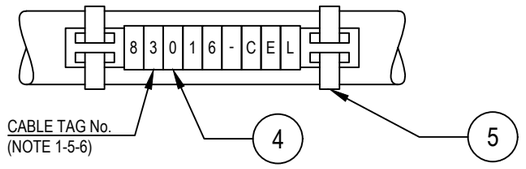
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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

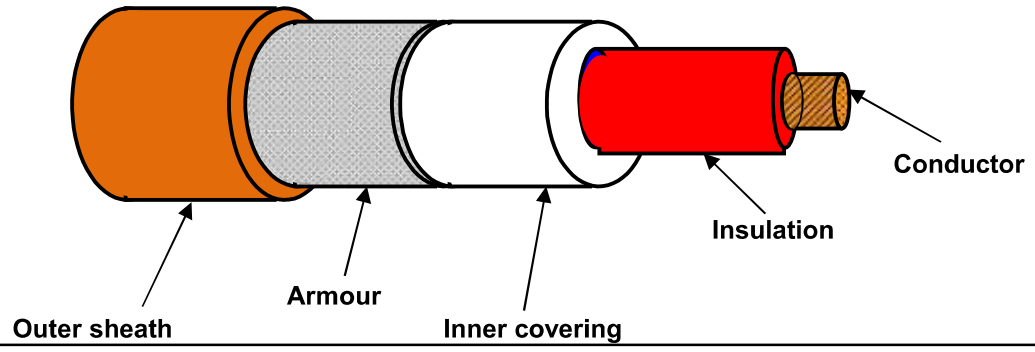
F.to UNI A3: 420mmx297mm

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

Tag Number	Category	Discipline	Eng Status	NativeDoc	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
84411-CEL-1-P	Cable	EL	VFC	123A90-DDL-EL-LIS-20148					BC-200F4A	AC UPS 15 kVA Redundant System with By-Pass	Lower Deck (B-300)	CB-200F4A	Isolator Battery Box for AC UPS 15 kVA	Lower Deck (B-300)	ELECV24-1X70	Cable Cu Cl.2/MGT/EPR/LSZH/GSWB/LSZH 0,6/1kV 1Cx70mm² - Orange (Ins. Red) - DC	M25S	T2_M25S_Double				T2_M25S_Double				L-450-101-LVT-043 / L-600-101-LVT-035 / L-300-101-LVT-050 / L-300-101-LVT-057

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

1CX70 - 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 1,4 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 1,5 mm	
Outer sheath color code:	**Orange**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 1CX70 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 :	(15,3 ± 10%) mm	
Over Armour diameter :	(16,5 ± 10%) mm	
Outer diameter :	(19,5 ± 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 :	≥ 380 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	84411-CEL-1-N	: AC UPS F&G - Charger-A / AC UPS F&G - Battery Isolator-A			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)			Module	LD_B-300
TASK	code	C10000651		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	1X70 mm2	Color	ORANGE
From	BC-200F4A	To	CB-200F4A		

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"	

REFER TO FINAL SHEET FOR ACCEPTANCE

ROSETTI MARINO PROVERLIS CROSSWIND

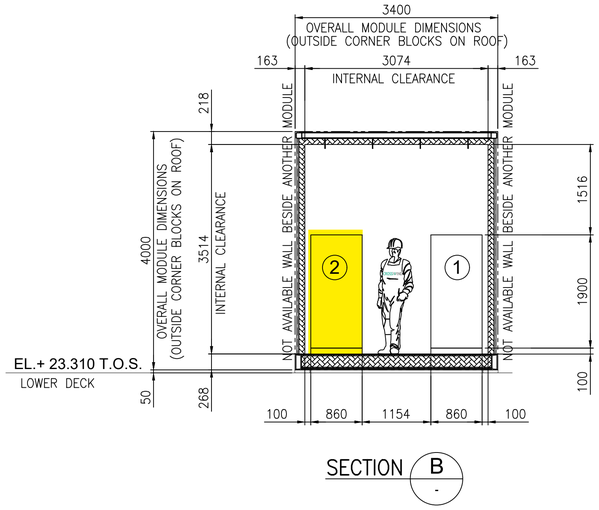
ITEM	Tag	84411-CEL-1-N	: AC UPS F&G - Charger-A / AC UPS F&G - Battery Isolator-A			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)			Module	LD_B-300
TASK	code	C10000651		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

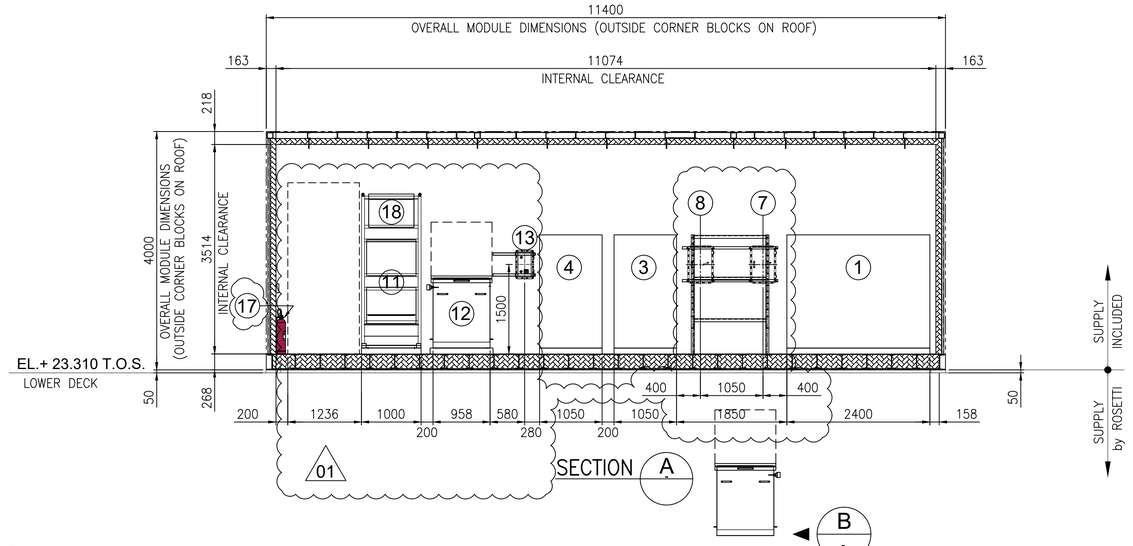
CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0.3	
6		PH 2	NA	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		0.3	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		NA	
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	NA	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

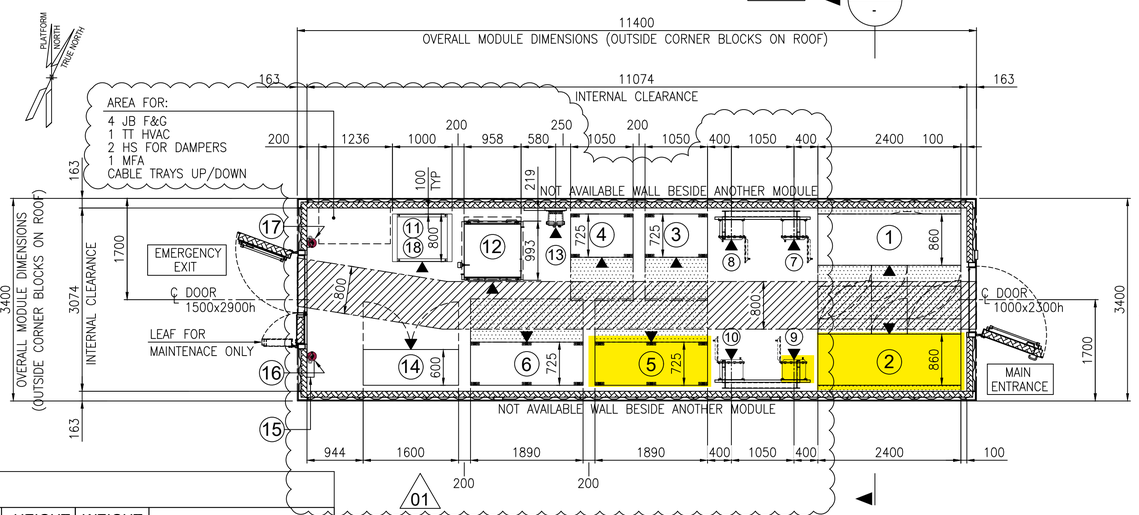
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207	TYPE / SERIAL N° :	MULTIMETER: FLUKE 175 SERIAL:AW1/018(17140769)
Calibration certificate N° and date:	N°7722/24 _ 10/07/2024	Calibration certificate N° and date:	N°7715/24 _ 10/07/2024

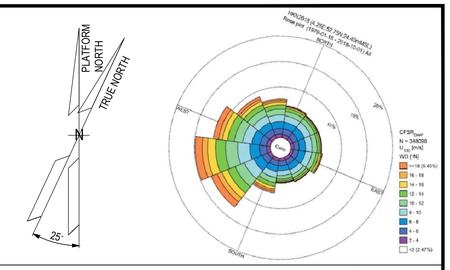
Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (Rosetti Marino)	
Name	Carmelo Bongiovanni	Eleonora Carotenuto	
Date	2024-11-05	2024-11-05	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-11-05T10:33:41.070Z	PROVERLIS Digitaly signed by Eleonora Carotenuto 2024-11-05T10:39:57.007Z	









NOTES

01

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

LEGEND

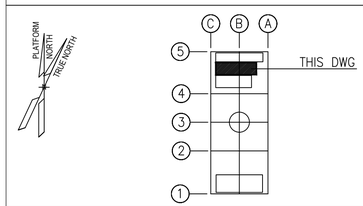
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR – WIDTH 800mm.
_____ MAINTENANCE AREA – VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

HOLDS

REFERENCE

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

KEY PLAN



EQUIPMENT LIST

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

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

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

ROSETTI MARINO SpA

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

CROSSWIND
ROSETTI MARINO

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

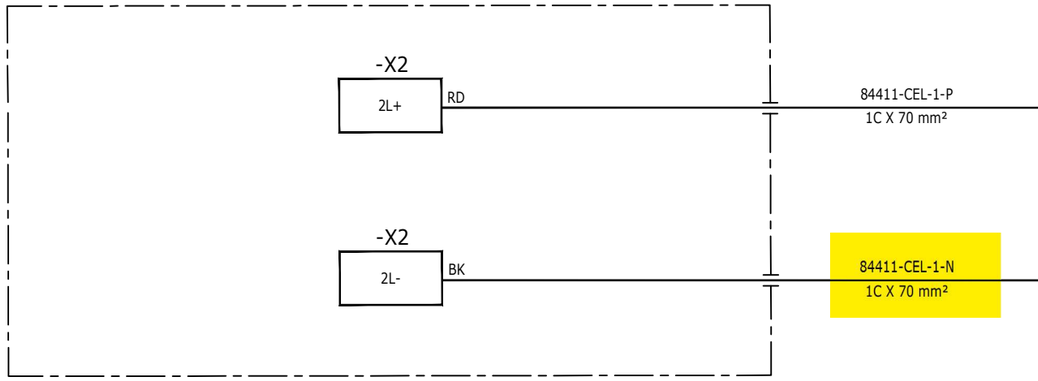
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE 1:50
DRAWN SAM | CHECKED FMA/AMA | APPROVED FPA/DLO | DATE 23/07/24
A1 | DRAWING NO. 123A90-DDL-EL-DL-20106 | SHEET 001 | REV. 01

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

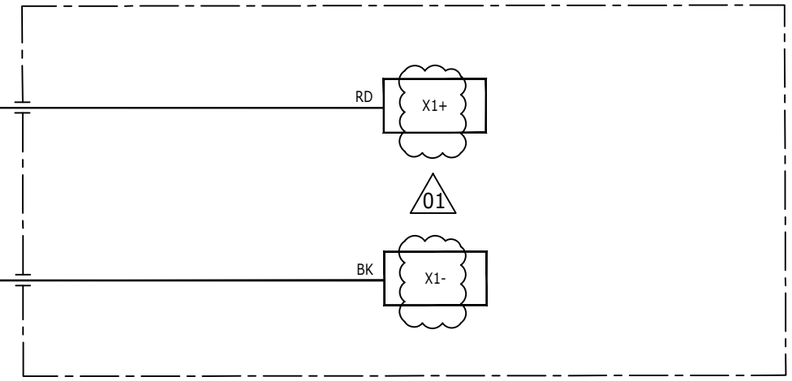
DRAWING NO. 123A90-DDL-EL-DL-20106 | REV. 01

FROM	TO

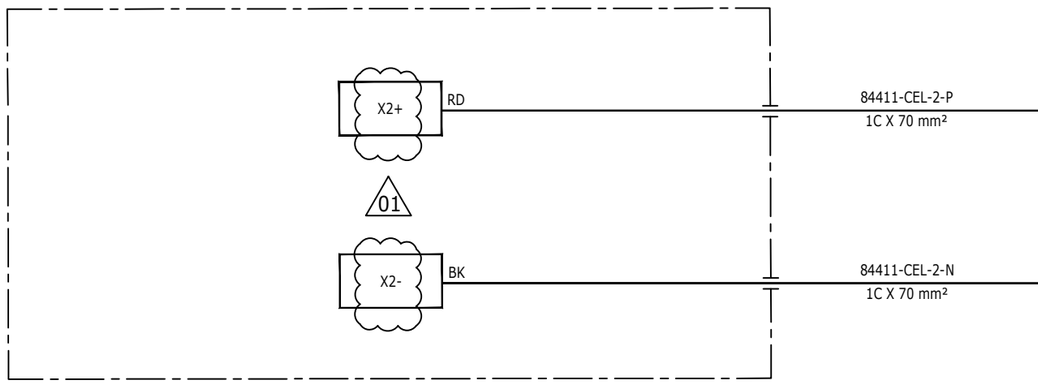
DESCRIPTION: AC UPS F&G - CHARGER-A
TAG NUMBER: BC-200F4A



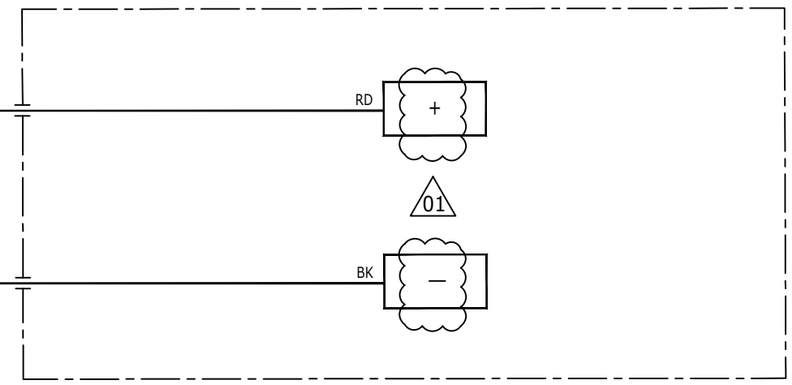
DESCRIPTION: AC UPS F&G - BATTERY ISOLATOR-A
TAG NUMBER: CB-200F4A



DESCRIPTION: AC UPS F&G - BATTERY ISOLATOR-A
TAG NUMBER: CB-200F4A



DESCRIPTION: AC UPS F&G - BATTERY-A
TAG NUMBER: BA-200F4A



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
AC UPS F&G – CHARGER–A & BATTERY ISOLATOR–A

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

SCALE : 1:X

A3

DRAWING NO. 123A90–DDL–EL–DG–20149

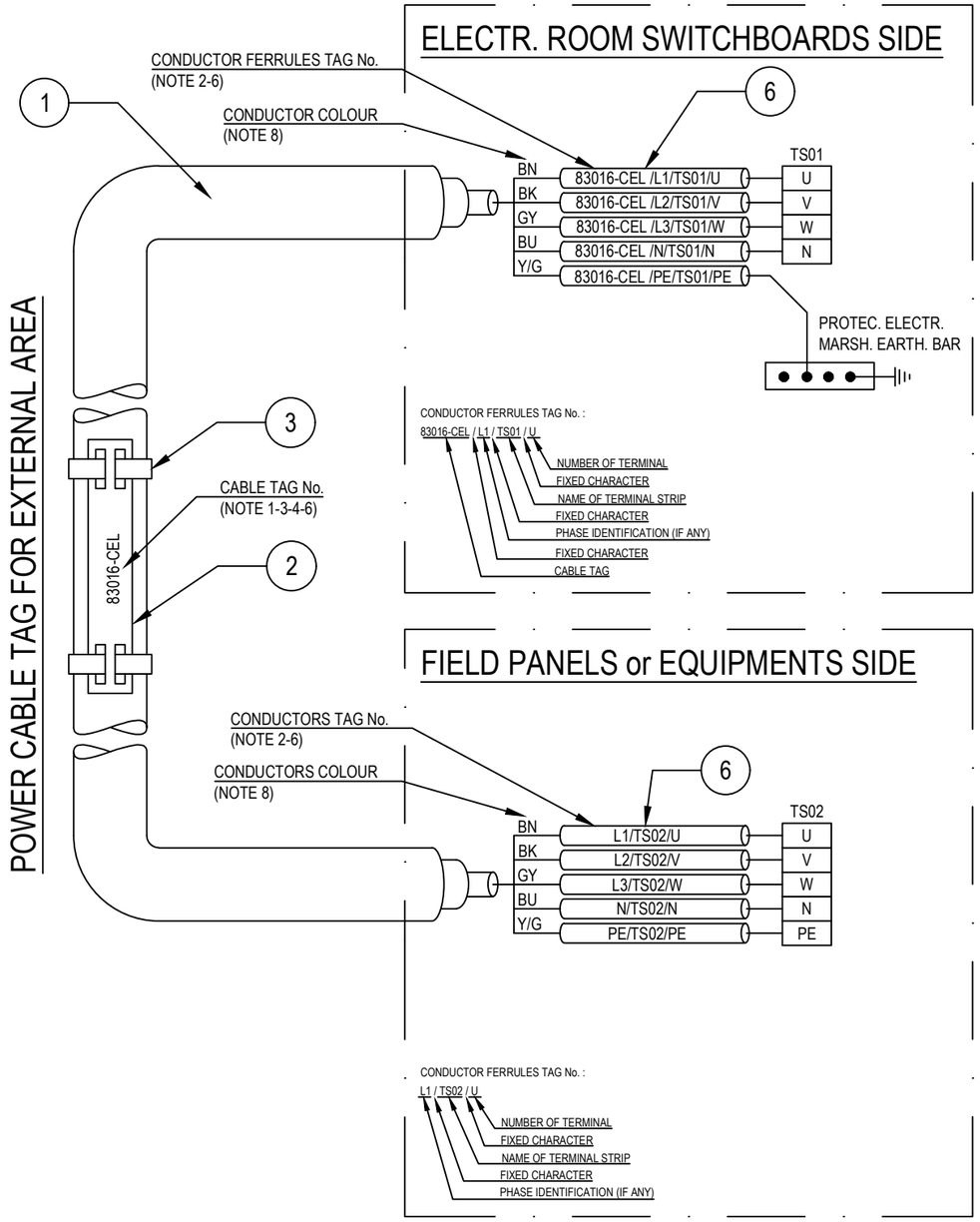
SHEET 063

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.

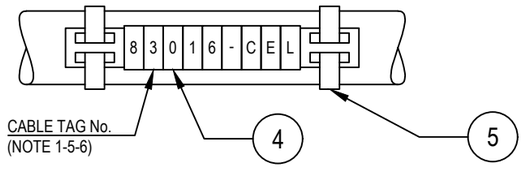
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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

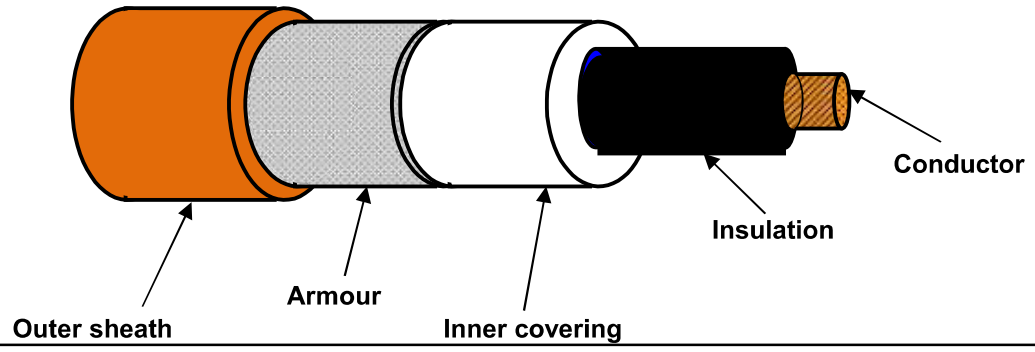
F.to UNI A3: 420mmx297mm

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

Tag Number	Category	Discipline	Eng Status	NativeDoc	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
84411-CEL-1-N	Cable	EL	VFC	123A90-DDL-EL-LIS-20148					BC-200F4A	AC UPS 15 kVA Redundant System with By-Pass	Lower Deck (B-300)	CB-200F4A	Isolator Battery Box for AC UPS 15 kVA	Lower Deck (B-300)	ELECV25-1X70	Cable Cu Cl.2/MGT/EPR/LSZH/GSWB/LSZH 0,6/1kV 1Cx70mm² - Orange (Ins. Black) - DC	M25S	T2_M25S_Double				T2_M25S_Double				L-450-101-LVT-043 / L-600-101-LVT-035 / L-300-101-LVT-050 / L-300-101-LVT-057

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

1CX70 - 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 1,4 mm	
Core colour code :	**Black**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not Required	
Total Assembling :	Not Required	
Overall Wrapping:	Not required	
Drain wire :	Not required	
Overall Shield:	Not required	
Inner covering :	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 1,5 mm	
Outer sheath color code:	**Orange**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 1CX70 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 :	(15,3 ± 10%) mm	
Over Armour diameter :	(16,5 ± 10%) mm	
Outer diameter :	(19,5 ± 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 :	≥ 380 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	84411-CEL-2-P	: AC UPS F&G - Battery Isolator-A / AC UPS F&G - Battery-A			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)			Module	
TASK	code	C10000652		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 1X70 mm2 Color Orange

From CB-200F4A To BA-200F4A

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.	PL
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	84411-CEL-2-P	: AC UPS F&G - Battery Isolator-A / AC UPS F&G - Battery-A			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)			Module	
TASK	code	C10000652		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0,3	
6		PH 2	NA	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		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	

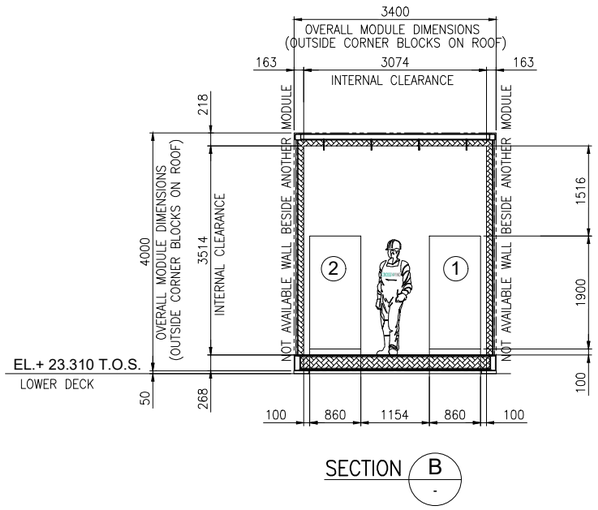
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207	TYPE / SERIAL N° :	MULTIMETER: FLUKE 175 SERIAL:AW1/018(17140769)
Calibration certificate N° and date:	N°7722/24 _ 10/07/2024	Calibration certificate N° and date:	N°7715/24 _ 10/07/2024

Comments:

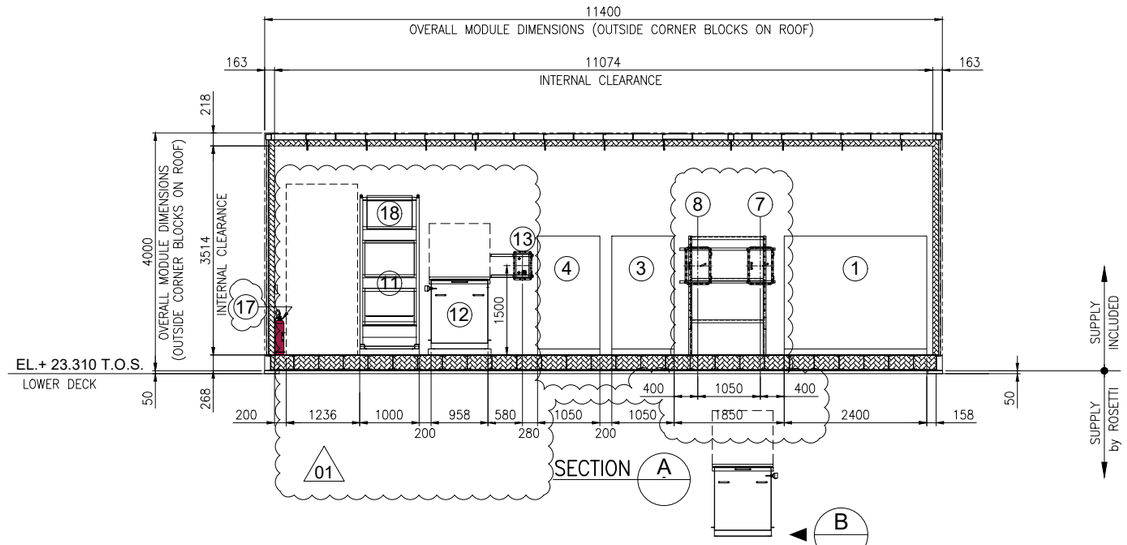
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-11-07	2024-11-20	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-11-07T15:29:11.141Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-11-20T15:27:08.481Z	

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

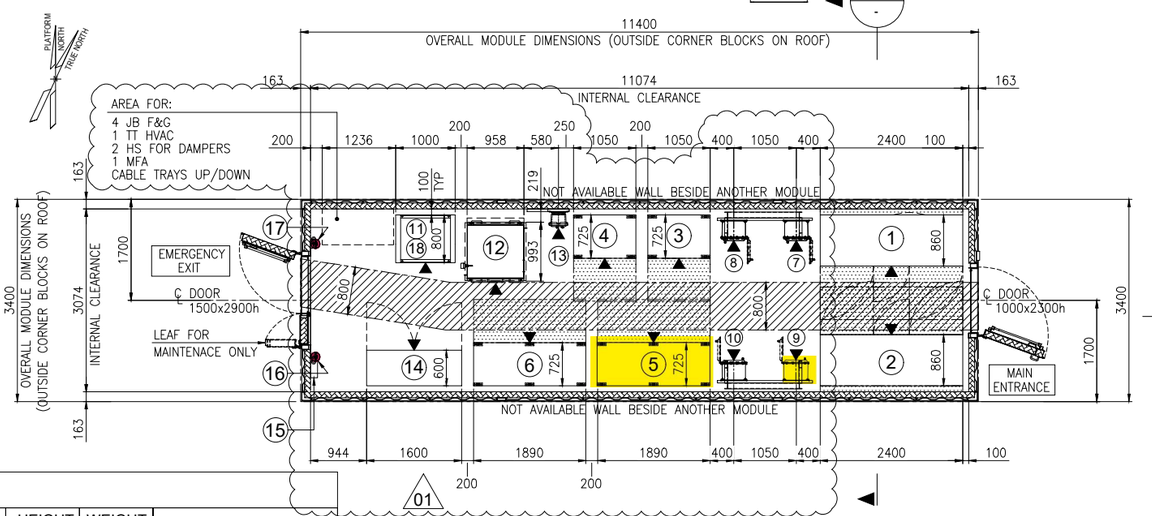
REV. 01



SECTION B -



SECTION A -



A -

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

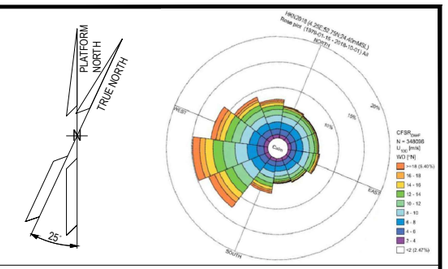
EQUIPMENT LIST

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

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

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

ROSETTI MARINO SpA



NOTES

01

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

LEGEND

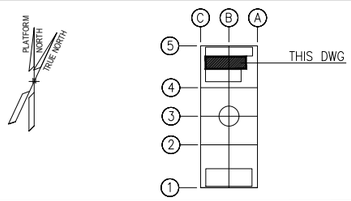
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR – WIDTH 800mm.
_____ MAINTENANCE AREA – VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

HOLDS

REFERENCE

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

KEY PLAN



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

CROSSWIND | ROSETTI MARINO

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

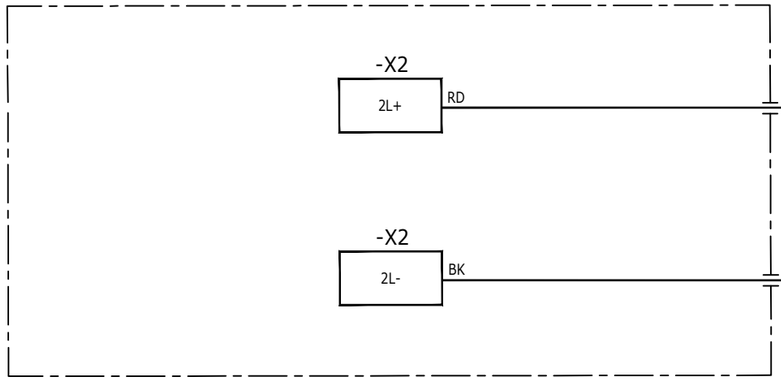
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN SAM	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 23/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-EL-DL-20106	001	01

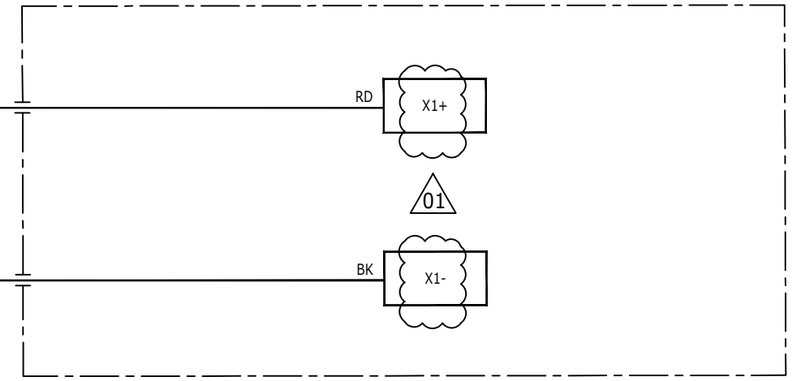
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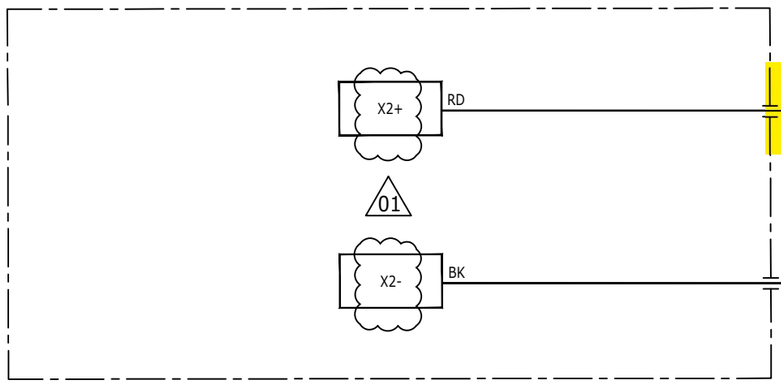
DESCRIPTION: AC UPS F&G - CHARGER-A
TAG NUMBER: BC-200F4A



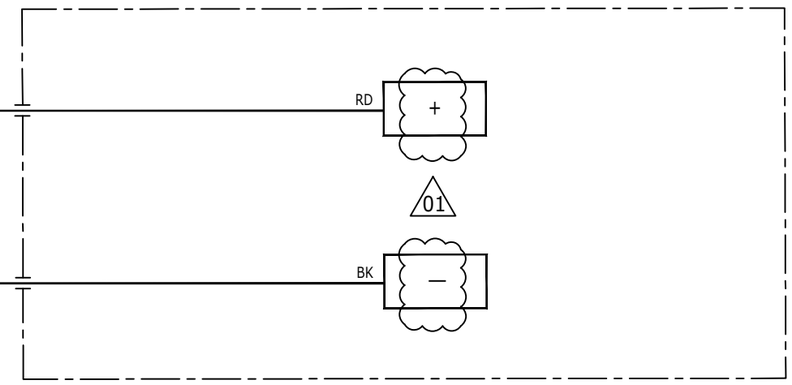
DESCRIPTION: AC UPS F&G - BATTERY ISOLATOR-A
TAG NUMBER: CB-200F4A



DESCRIPTION: AC UPS F&G - BATTERY ISOLATOR-A
TAG NUMBER: CB-200F4A



DESCRIPTION: AC UPS F&G - BATTERY-A
TAG NUMBER: BA-200F4A



VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-EL-DL-20149
REV.: 1_A | DATE: 17/10/24 | SIGNATURE: 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
AC UPS F&G – CHARGER-A & BATTERY ISOLATOR-A

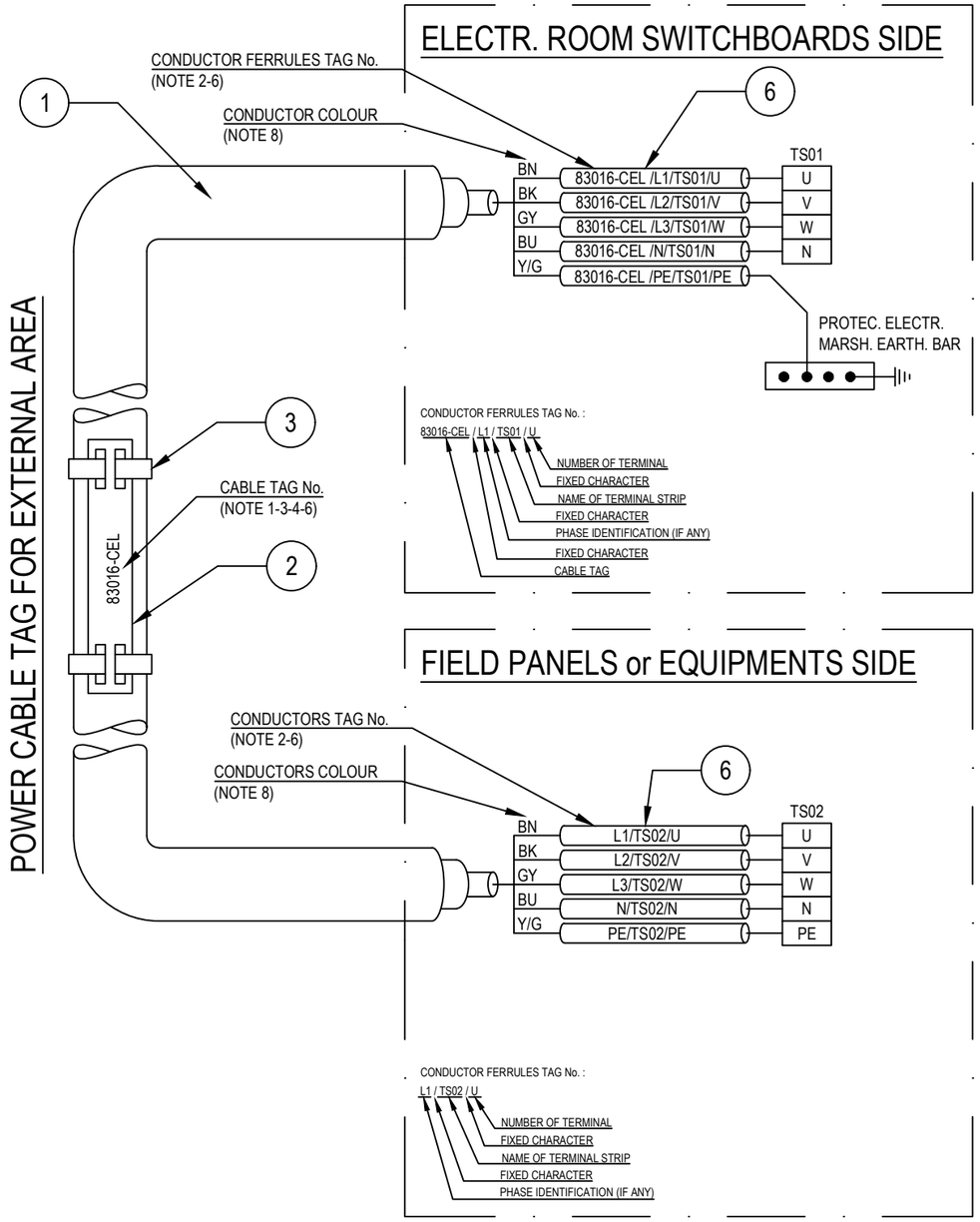
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 063 | 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.

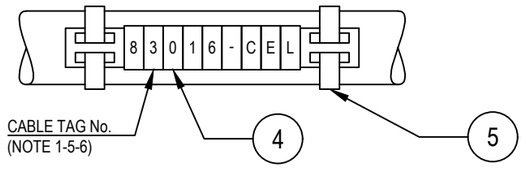
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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

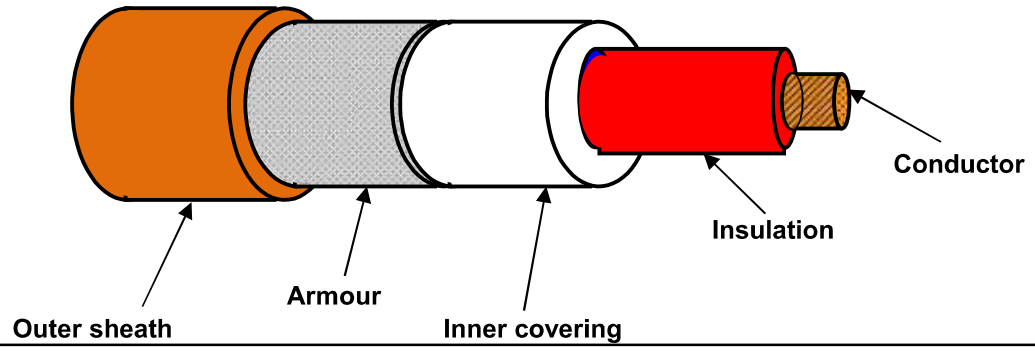
F.to UNI A3: 420mmx297mm

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

Tag Number	Category	Discipline	Eng Status	NativeDoc	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
84411-CEL-2-P	Cable	EL	VFC	123A90-DDL-EL-LIS-20148					CB-200F4A	Isolator Battery Box for AC UPS 15 kVA	Lower Deck (B-300)	BA-200F4A	Battery Rack GEL VRLA-20Y for AC UPS 15 kVA	Lower Deck (B-300)	ELECV24-1X70	Cable Cu Cl.2/MGT/EPR/LSZH/GSWB/LSZH 0,6/1kV 1Cx70mm² - Orange (Ins. Red) - DC	M25S	T2_M25S_ Double			T2_M25S_Do uble				L-300-101-LVT-057 / L-300-101 LVT-050 / L-600-101-LVT-035 / L-300-101-LVT-047

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

1CX70 - 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 1,4 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 1,5 mm	
Outer sheath color code:	**Orange**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 1CX70 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 :	(15,3 ± 10%) mm	
Over Armour diameter :	(16,5 ± 10%) mm	
Outer diameter :	(19,5 ± 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 :	≥ 380 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	84411-CEL-2-N	: AC UPS F&G - Battery Isolator-A / AC UPS F&G - Battery-A			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)			Module	
TASK	code	C10000653		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 1X70 mm2 Color Orange

From CB-200F4A To BA-200F4A

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.	PL
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	84411-CEL-2-N	: AC UPS F&G - Battery Isolator-A / AC UPS F&G - Battery-A			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)			Module	
TASK	code	C10000653		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0,3	
6		PH 2	NA	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		0,3	
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	

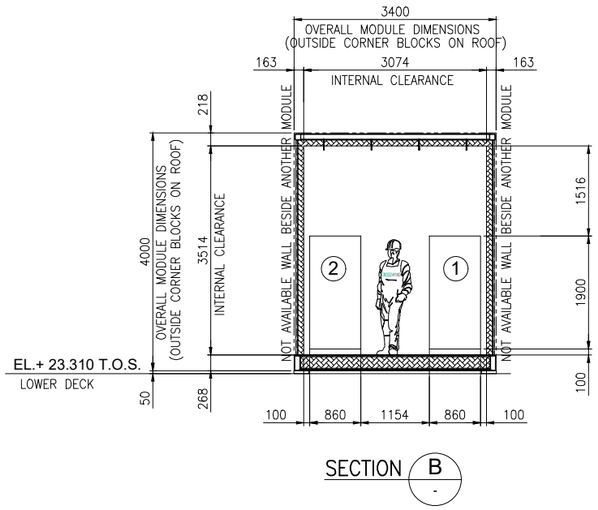
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207	TYPE / SERIAL N° :	MULTIMETER: FLUKE 175 SERIAL:AW1/018(17140769)
Calibration certificate N° and date:	N°7722/24 _ 10/07/2024	Calibration certificate N° and date:	N°7715/24 _ 10/07/2024

Comments:

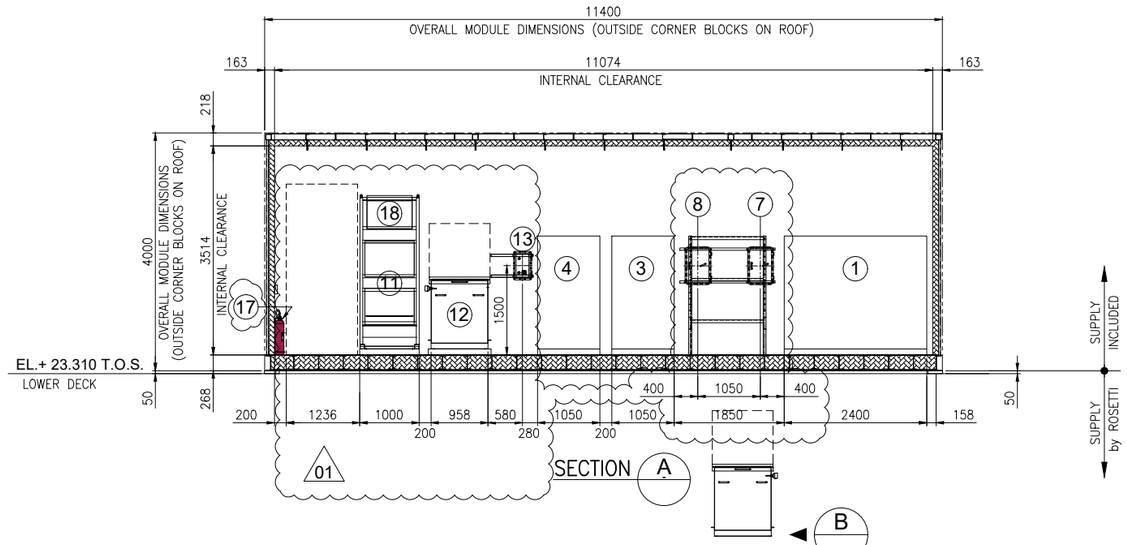
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company		RM (ROSETTI MARINO)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-11-07	2024-11-20	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-11-07T15:29:20.205Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-11-20T15:28:36.946Z	

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

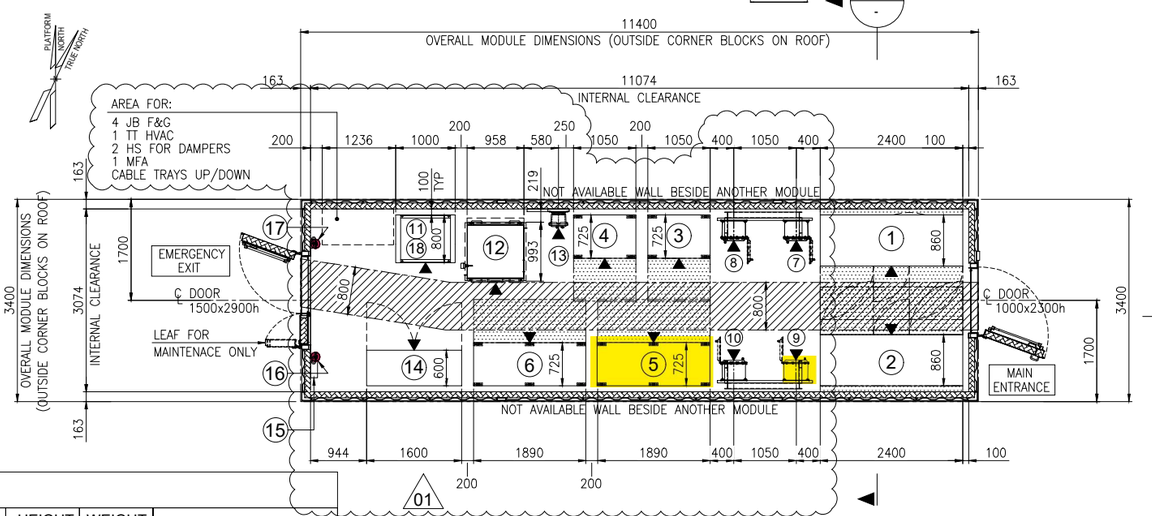
REV. 01



SECTION B -



SECTION A -



A -

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

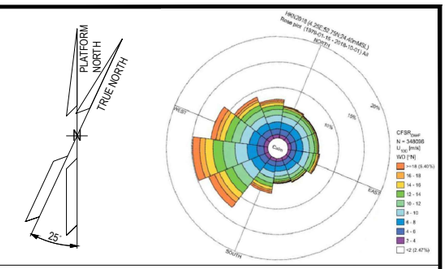
EQUIPMENT LIST

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

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

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

ROSETTI MARINO SpA



NOTES

01

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

LEGEND

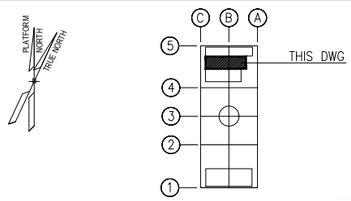
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR – WIDTH 800mm.
_____ MAINTENANCE AREA – VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

HOLDS

REFERENCE

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

KEY PLAN



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

CROSSWIND | ROSETTI MARINO

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

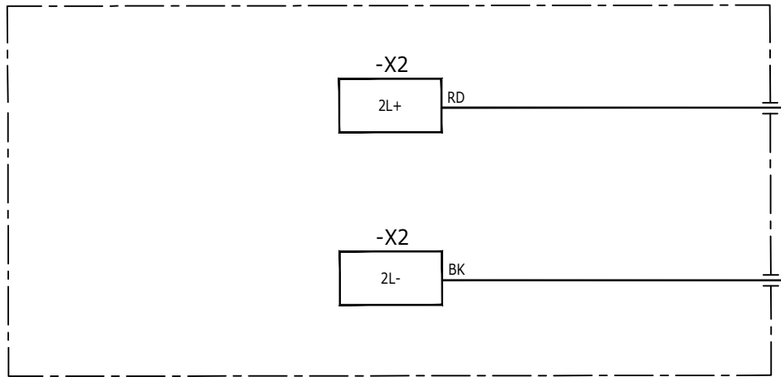
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN SAM	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 23/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-EL-DL-20106	001	01

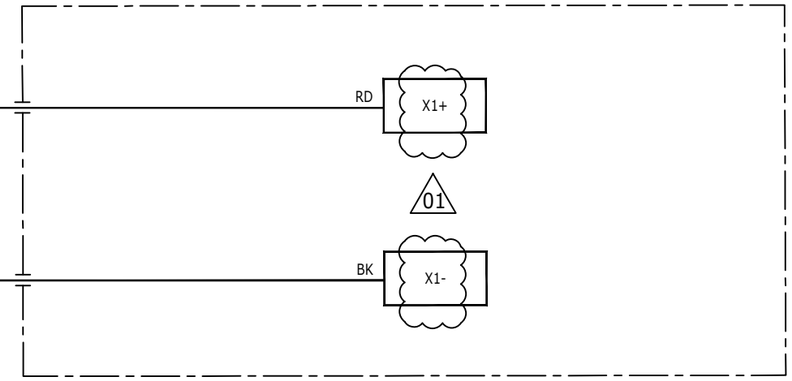
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FROM	TO

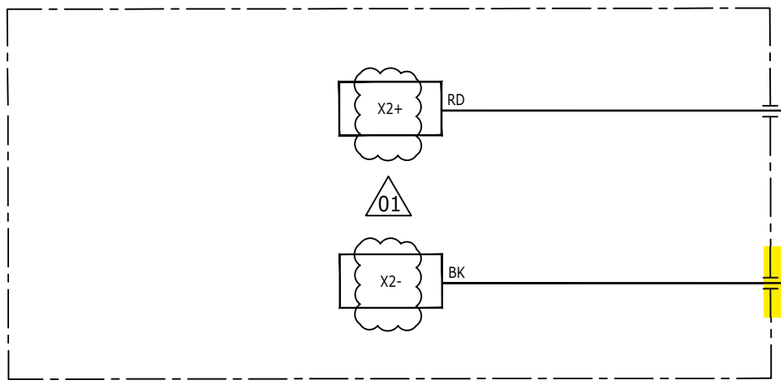
DESCRIPTION: AC UPS F&G - CHARGER-A
TAG NUMBER: BC-200F4A



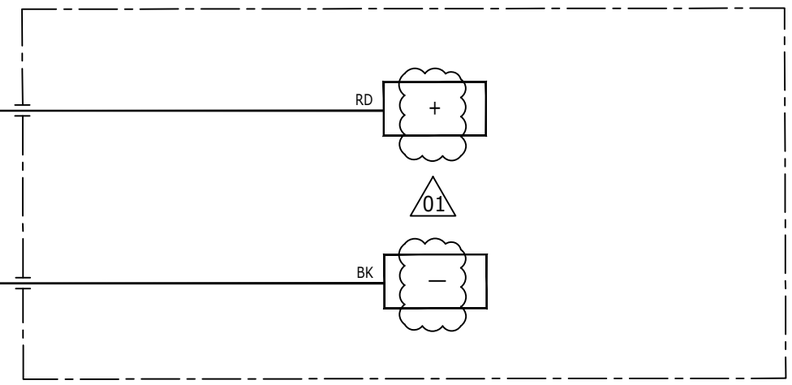
DESCRIPTION: AC UPS F&G - BATTERY ISOLATOR-A
TAG NUMBER: CB-200F4A



DESCRIPTION: AC UPS F&G - BATTERY ISOLATOR-A
TAG NUMBER: CB-200F4A



DESCRIPTION: AC UPS F&G - BATTERY-A
TAG NUMBER: BA-200F4A



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
AC UPS F&G – CHARGER-A & BATTERY ISOLATOR-A

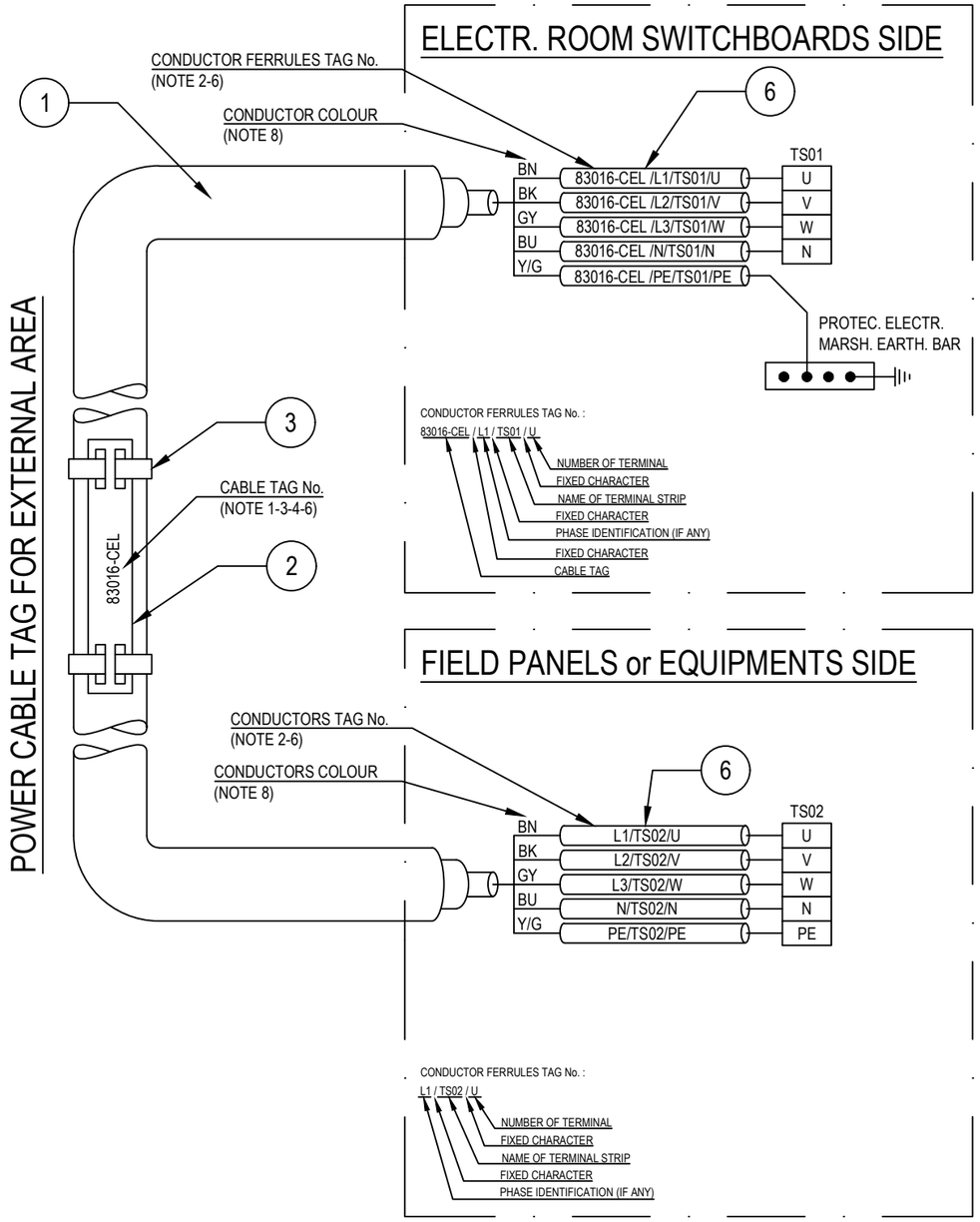
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:X

A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 063 | 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.

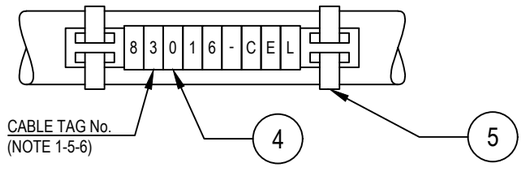
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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

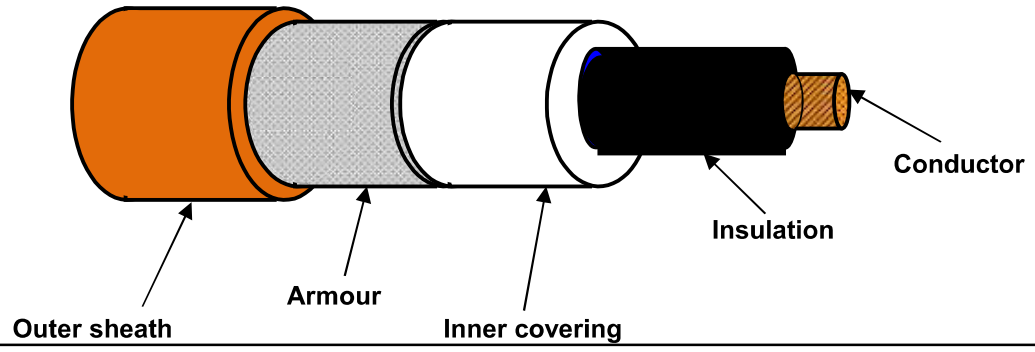
F.to UNI A3: 420mmx297mm

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

Tag Number	Category	Discipline	Eng Status	NativeDoc	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
84411-CEL-2-N	Cable	EL	VFC	123A90-DDL-EL-LIS-20148					CB-200F4A	Isolator Battery Box for AC UPS 15 kVA	Lower Deck (B-300)	BA-200F4A	Battery Rack GEL VRLA-20Y for AC UPS 15 kVA	Lower Deck (B-300)	ELECV25-1X70	Cable Cu Cl.2/MGT/EPR/LSZH/GSWB/LSZH 0,6/1kV 1Cx70mm² - Orange (Ins. Black) - DC	M25S	T2_M25S_ Double			T2_M25S_Do uble				L-300-101-LVT-057 / L-300-101 LVT-050 / L-600-101-LVT-035 / L-300-101-LVT-047

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

1CX70 - 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 1,4 mm	
Core colour code :	**Black**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not Required	
Total Assembling :	Not Required	
Overall Wrapping:	Not required	
Drain wire :	Not required	
Overall Shield:	Not required	
Inner covering :	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 1,5 mm	
Outer sheath color code:	**Orange**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 1CX70 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 :	(15,3 ± 10%) mm	
Over Armour diameter :	(16,5 ± 10%) mm	
Outer diameter :	(19,5 ± 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 :	≥ 380 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	84412-CEL-1-P	: AC UPS F&G - Charger-B / AC UPS F&G - Battery Isolator-B		Dwg	123A90-DDL-EL-LIS-20148	
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)		Module	LD_B-300	
TASK	code	C10000654	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	1X70 mm2	Color	ORANGE
From	BC-200F4B	To	CB-200F4B		

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"	

REFER TO FINAL SHEET FOR ACCEPTANCE

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	84412-CEL-1-P	: AC UPS F&G - Charger-B / AC UPS F&G - Battery Isolator-B			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)			Module	LD_B-300
TASK	code	C10000654		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	NA	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		0.4	
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.			

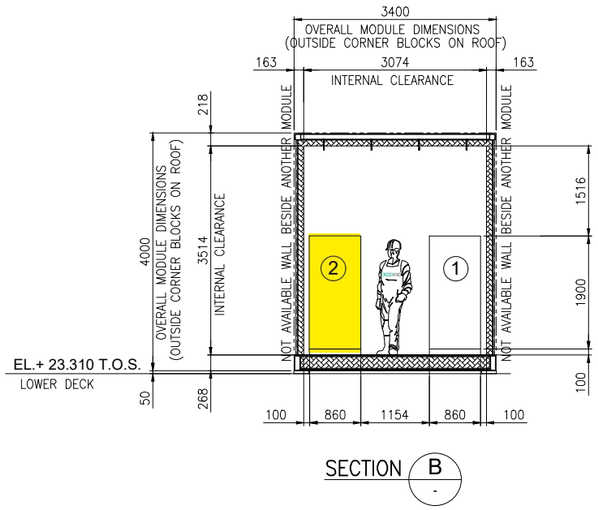
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207	TYPE / SERIAL N° :	MULTIMETER: FLUKE 175 SERIAL:AW1/018(17140769)
Calibration certificate N° and date:	N°7722/24 _ 10/07/2024	Calibration certificate N° and date:	N°7715/24 _ 10/07/2024

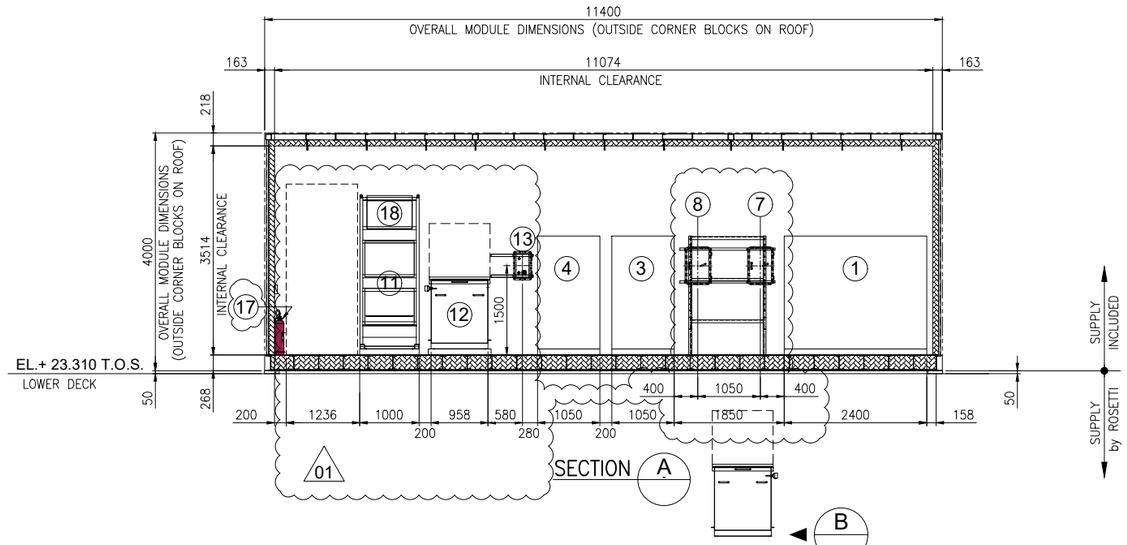
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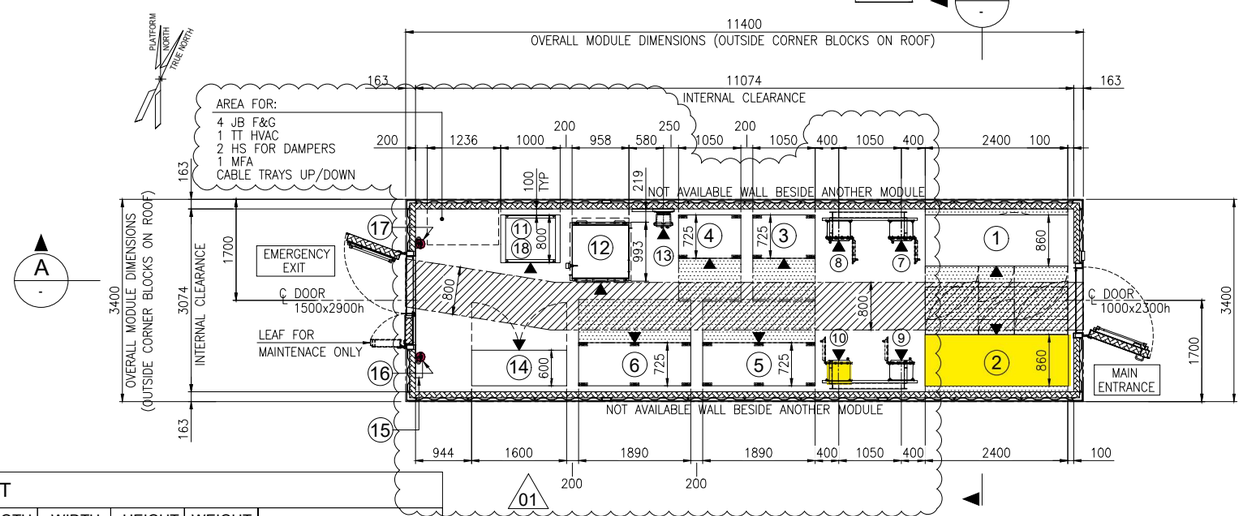
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Carmelo Bongiovanni	Eleonora Carotenuto	
Date	2024-11-05	2024-11-05	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-11-05T10:37:17.696Z	PROVERLIS Digitaly signed by Eleonora Carotenuto 2024-11-05T10:44:48.740Z	

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

REV. 01







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

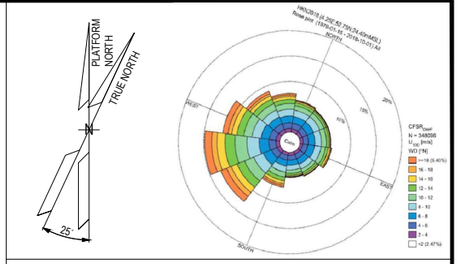
EQUIPMENT LIST

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

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

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

ROSETTI MARINO SpA



NOTES

01

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

LEGEND

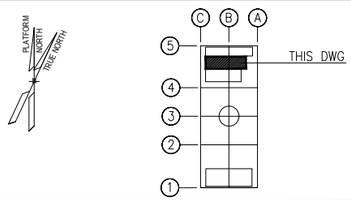
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR – WIDTH 800mm.
_____ MAINTENANCE AREA – VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

HOLDS

REFERENCE

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

KEY PLAN



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

CROSSWIND | ROSETTI MARINO

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

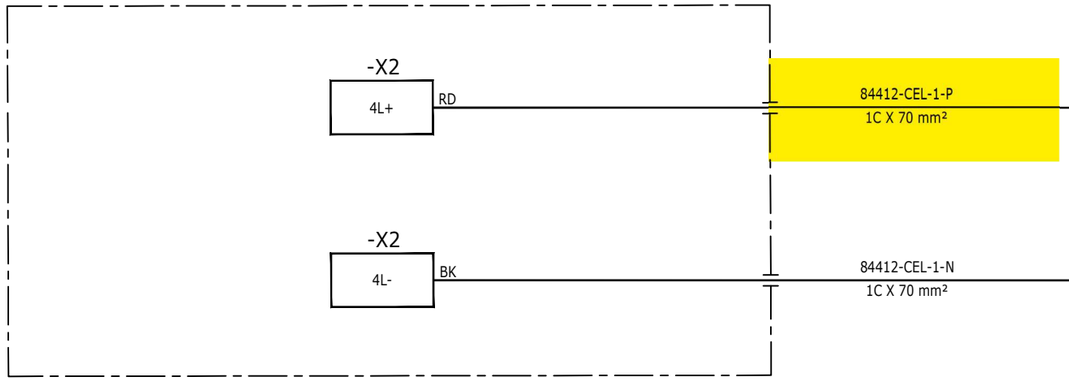
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN SAM	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 23/07/24

A1 | DRAWING NO. 123A90-DDL-EL-DL-20106 | SHEET 001 | REV. 01

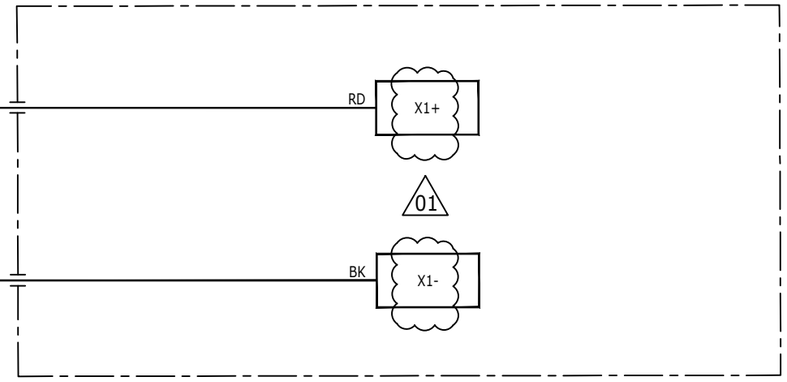
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FROM	TO

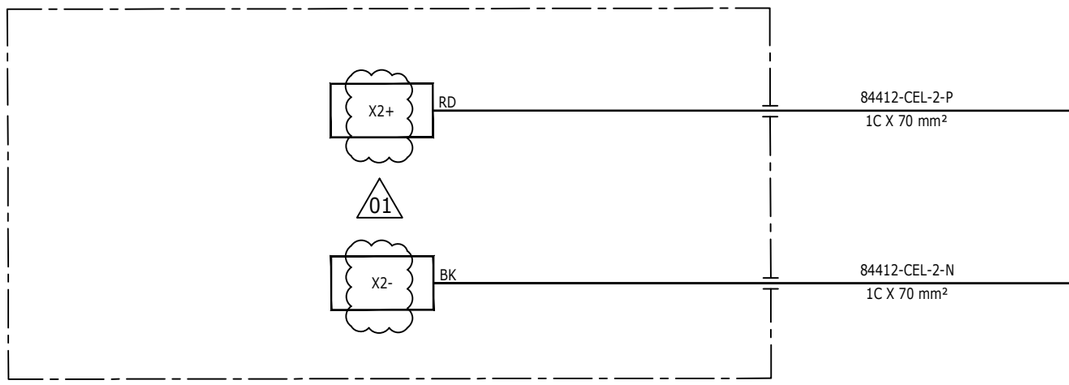
DESCRIPTION: AC UPS F&G - CHARGER-B
TAG NUMBER: BC-200F4B



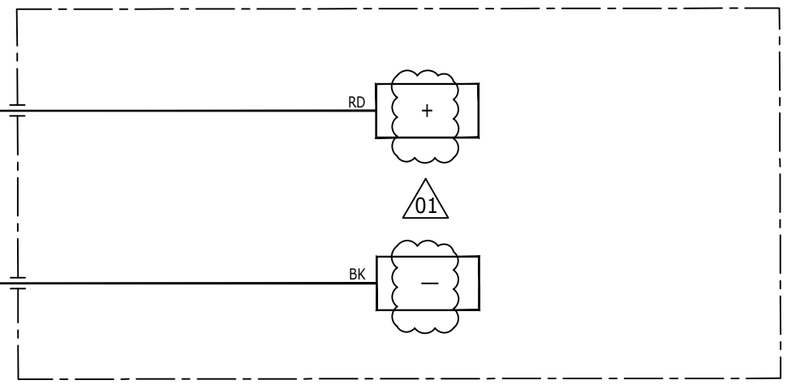
DESCRIPTION: AC UPS F&G - BATTERY ISOLATOR-B
TAG NUMBER: CB-200F4B



DESCRIPTION: AC UPS F&G - BATTERY ISOLATOR-B
TAG NUMBER: CB-200F4B



DESCRIPTION: AC UPS F&G - BATTERY-B
TAG NUMBER: BA-200F4B



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
AC UPS F&G – CHARGER–B & BATTERY ISOLATOR–B

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

SCALE : 1:X

A3

DRAWING NO. 123A90–DDL–EL–DG–20149

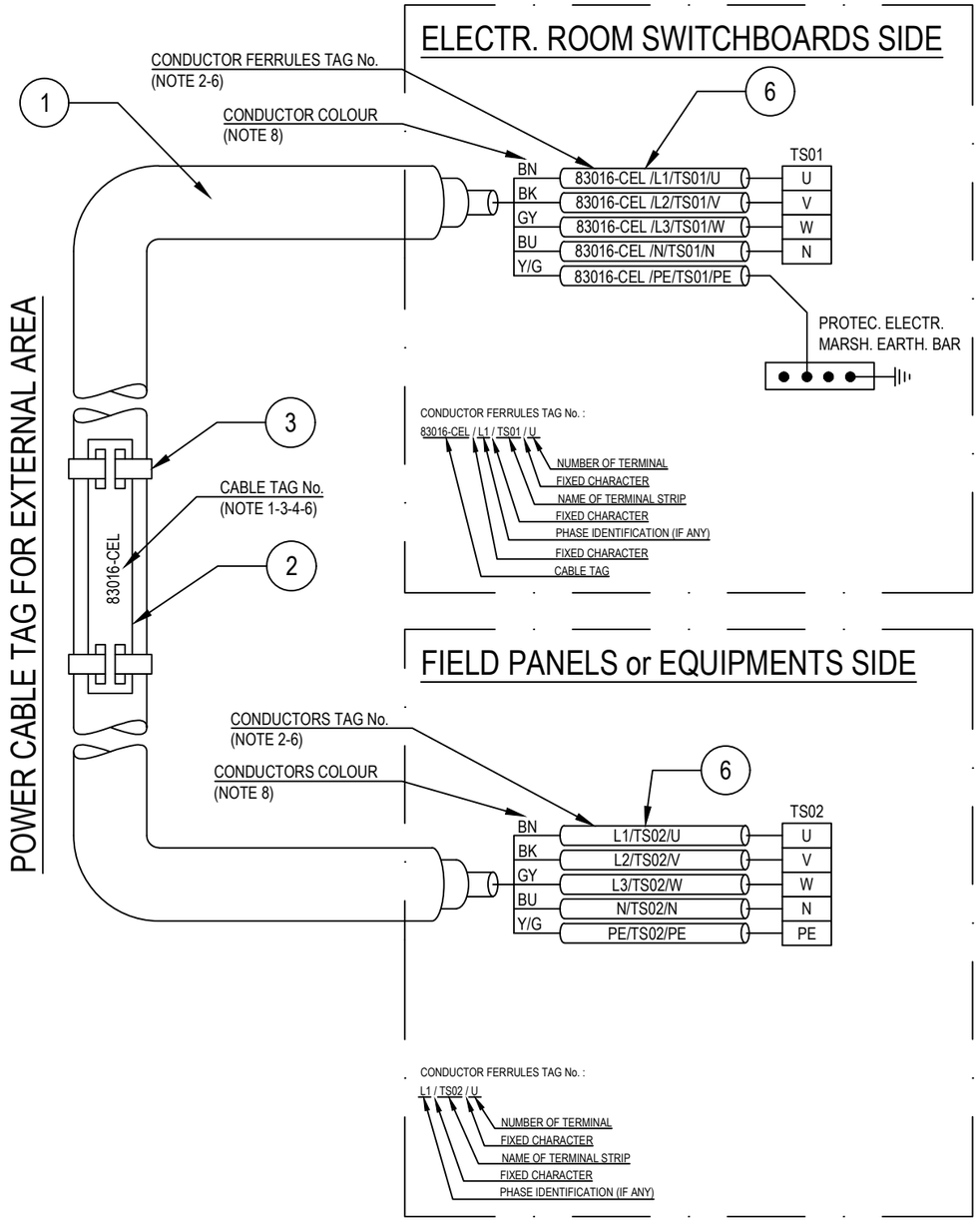
SHEET 064

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.

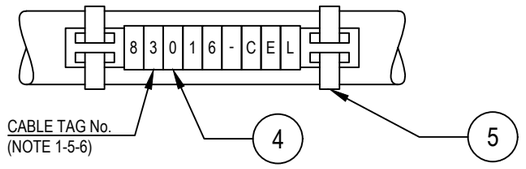
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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

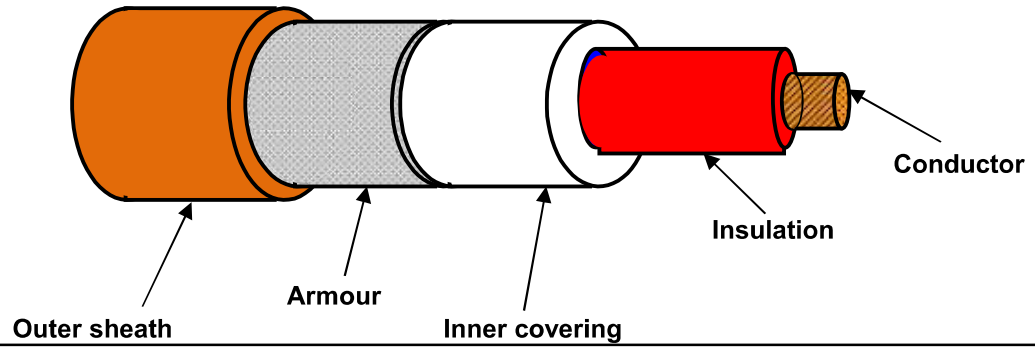
F.to UNI A3: 420mmx297mm

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

Tag Number	Category	Discipline	Eng Status	NativeDoc	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
84412-CEL-1-P	Cable	EL	VFC	123A90-DDL-EL-LIS-20148					BC-200F4B	AC UPS 15 kVA Redundant System with By-Pass	Lower Deck (B-300)	CB-200F4B	Isolator Battery Box for AC UPS 15 kVA	Lower Deck (B-300)	ELECV24-1X70	Cable Cu Cl.2/MGT/EPR/LSZH/GSWB/LSZH 0,6/1kV 1Cx70mm² - Orange (Ins. Red) - DC	M25S	T2_M25S_Double			T2_M25S_Double				L-450-101-LVT-043 / L-600-101-LVT-035 / L-300-101-LVT-050 / L-300-101-LVT-057

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

1CX70 - 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 1,4 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 1,5 mm	
Outer sheath color code:	**Orange**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 1CX70 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 :	(15,3 ± 10%) mm	
Over Armour diameter :	(16,5 ± 10%) mm	
Outer diameter :	(19,5 ± 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 :	≥ 380 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.353**	
ON COMPLETE CABLE		
Fire Resistant test :	**IEC 60331.21**	
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance	IEC 61034.2 (LT ≥ 60%)	
Temperature Range :		
ON INSULATION	(max +90°C)	(max continuous operation temperature of conductors)
	(max +250°C)	(max conductors temperature during short-circuit for 5 seconds)
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C)	(in fixed installation)
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner covering together with correct ATEX approved equipment or accessories.**	

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

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

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ITEM	Tag	84412-CEL-1-N	: AC UPS F&G - Charger-B / AC UPS F&G - Battery Isolator-B			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)			Module	LD_B-300
TASK	code	C10000655		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	1X70 mm2	Color	ORANGE
From	BC-200F4B	To	CB-200F4B		

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"	

ITEM	Tag	84412-CEL-1-N	: AC UPS F&G - Charger-B / AC UPS F&G - Battery Isolator-B			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)			Module	LD_B-300
TASK	code	C10000655		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	NA	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		0.4	
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	

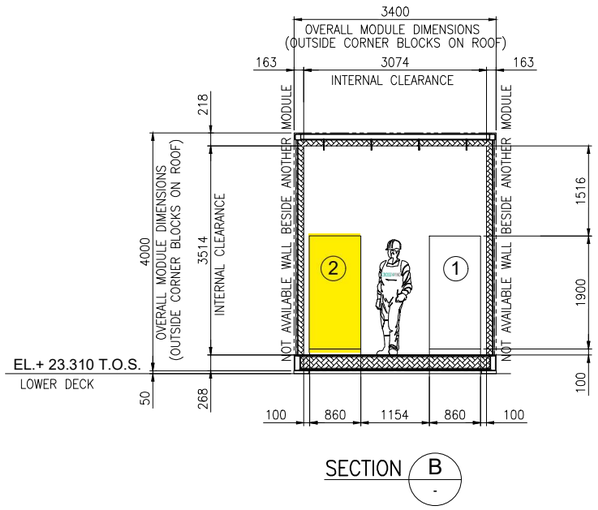
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207	TYPE / SERIAL N° :	MULTIMETER: FLUKE 175 SERIAL:AW1/018(17140769)
Calibration certificate N° and date:	N°7722/24 _ 10/07/2024	Calibration certificate N° and date:	N°7715/24 _ 10/07/2024

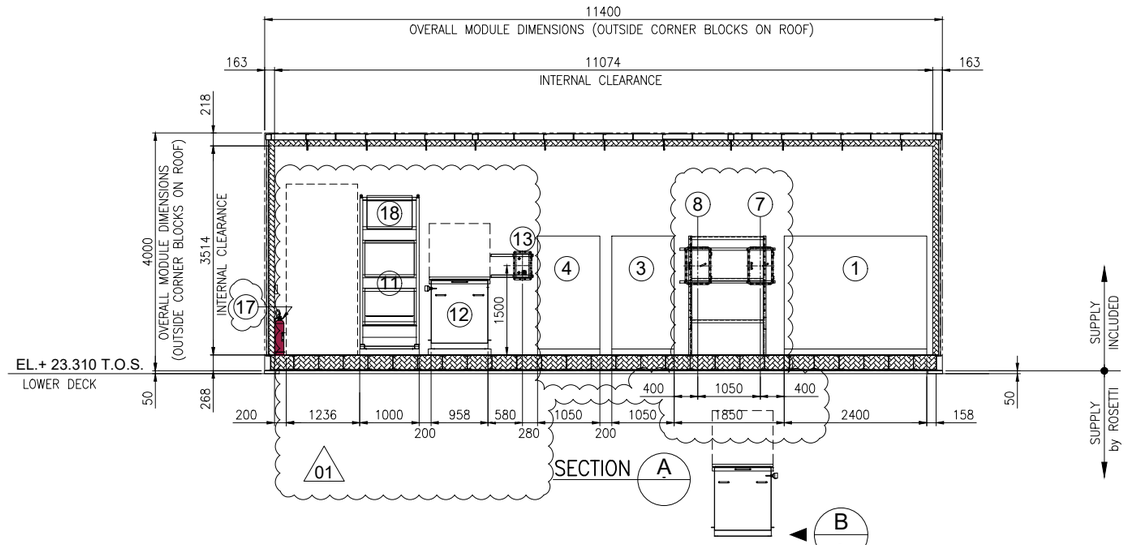
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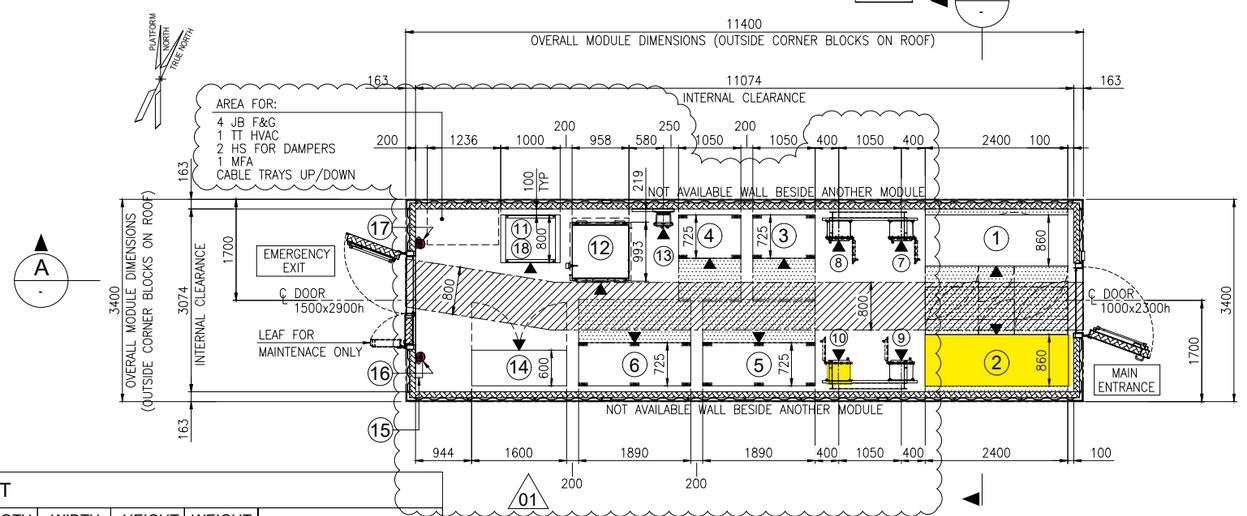
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Carmelo Bongiovanni	Eleonora Carotenuto	
Date	2024-11-05	2024-11-05	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-11-05T10:34:18.353Z	PROVERLIS Digitaly signed by Eleonora Carotenuto 2024-11-05T10:46:05.161Z	

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

REV. 01







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

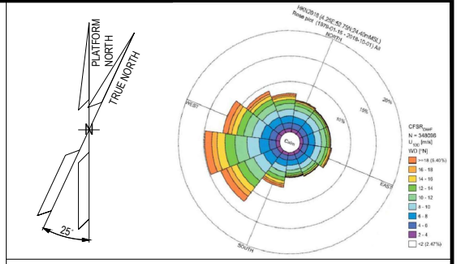
EQUIPMENT LIST

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

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

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

ROSETTI MARINO SpA



NOTES

01

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

LEGEND

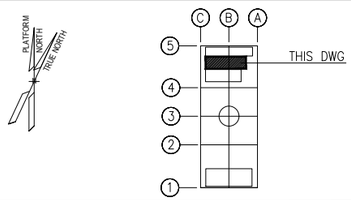
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR – WIDTH 800mm.
_____ MAINTENANCE AREA – VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

HOLDS

REFERENCE

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

KEY PLAN



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

CROSSWIND | ROSETTI MARINO

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

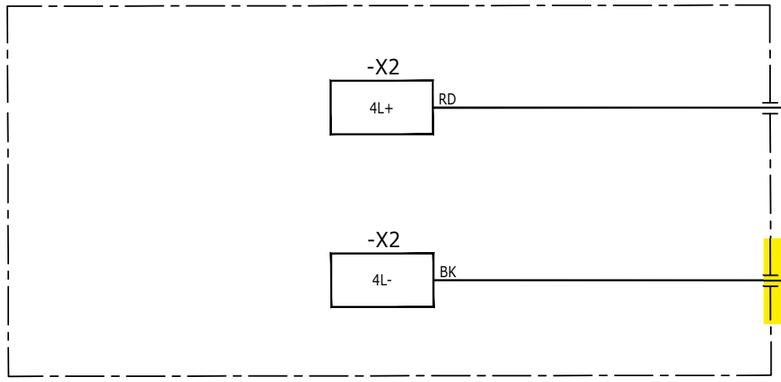
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN SAM	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 23/07/24

A1 | DRAWING NO. 123A90-DDL-EL-DL-20106 | SHEET 001 | REV. 01

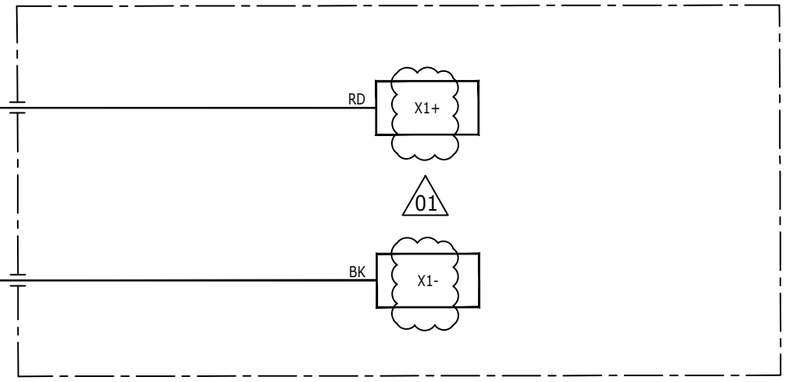
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FROM	TO

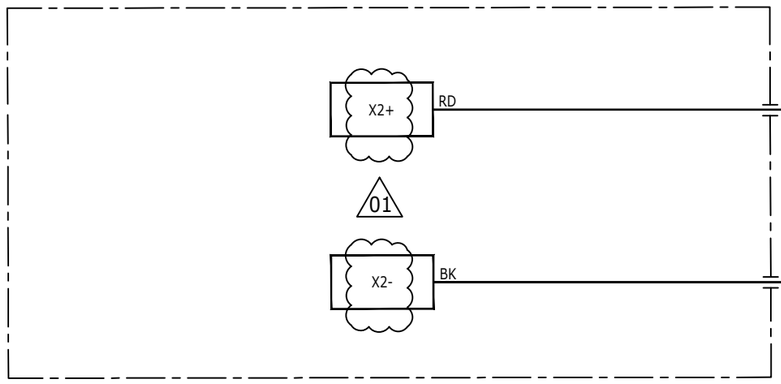
DESCRIPTION: AC UPS F&G - CHARGER-B
TAG NUMBER: BC-200F4B



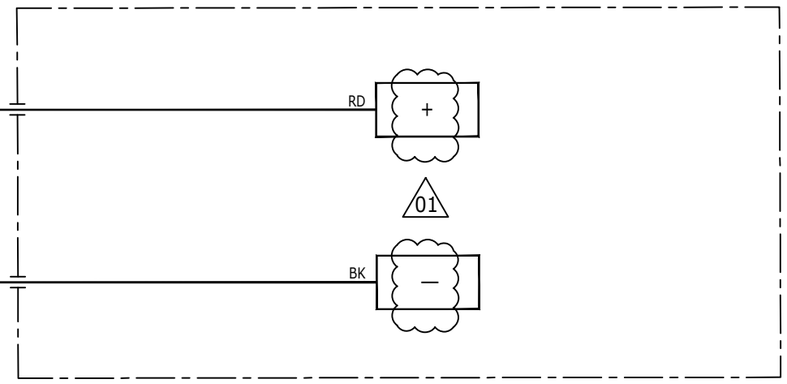
DESCRIPTION: AC UPS F&G - BATTERY ISOLATOR-B
TAG NUMBER: CB-200F4B



DESCRIPTION: AC UPS F&G - BATTERY ISOLATOR-B
TAG NUMBER: CB-200F4B



DESCRIPTION: AC UPS F&G - BATTERY-B
TAG NUMBER: BA-200F4B



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
AC UPS F&G – CHARGER–B & BATTERY ISOLATOR–B

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

SCALE : 1:X

A3

DRAWING NO. 123A90–DDL–EL–DG–20149

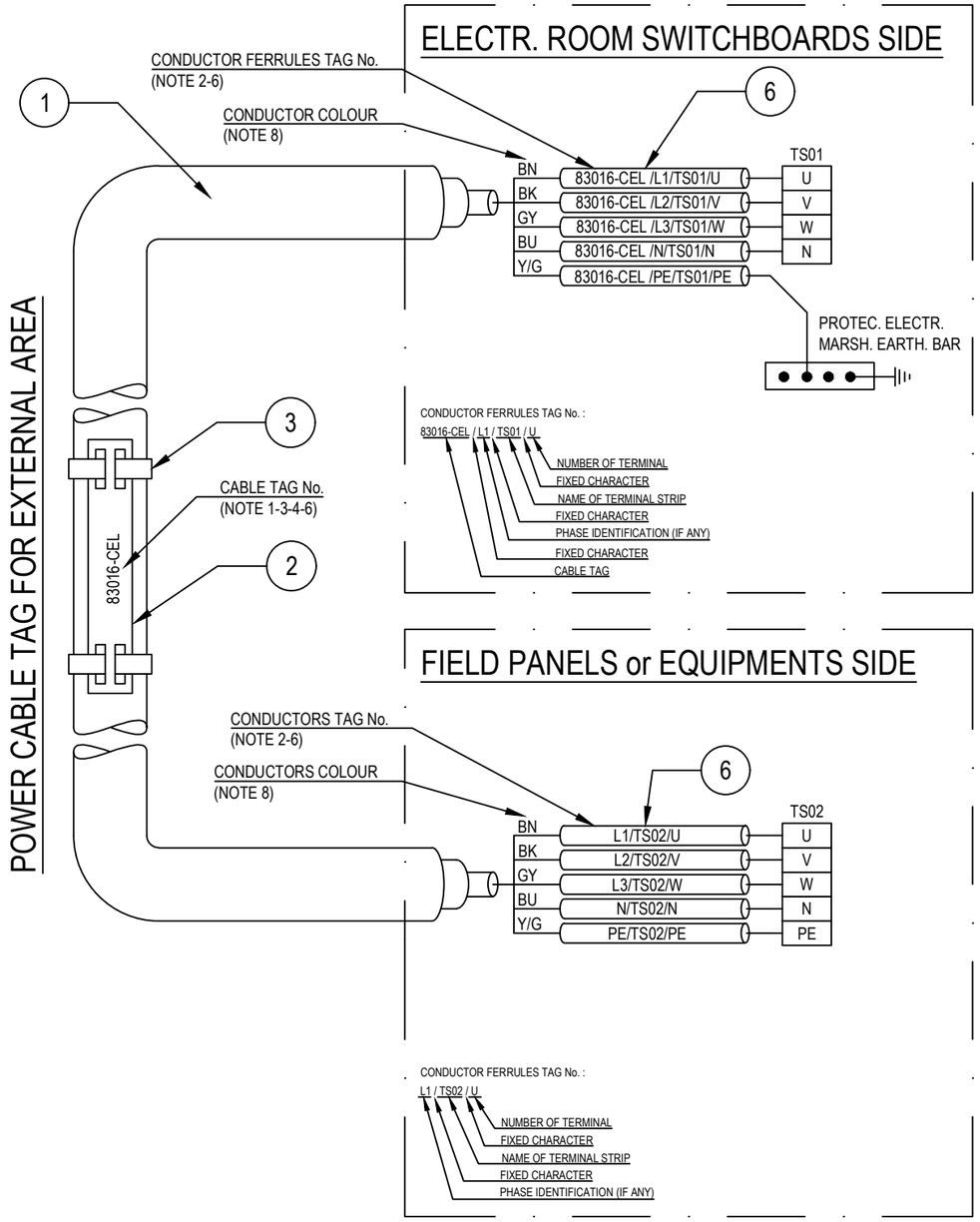
SHEET 064

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.

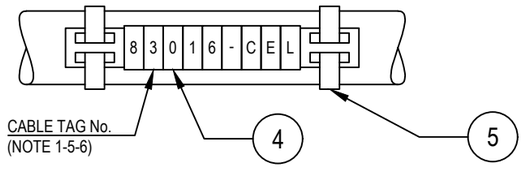
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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

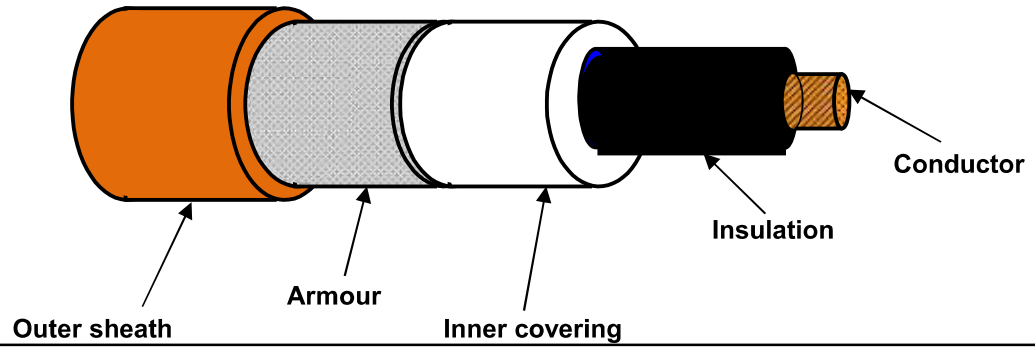
F.to UNI A3: 420mmx297mm

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

Tag Number	Category	Discipline	Eng Status	NativeDoc	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
84412-CEL-1-N	Cable	EL	VFC	123A90-DDL-EL-LIS-20148					BC-200F4B	AC UPS 15 kVA Redundant System with By-Pass	Lower Deck (B-300)	CB-200F4B	Isolator Battery Box for AC UPS 15 kVA	Lower Deck (B-300)	ELECV25-1X70	Cable Cu CI.2/MGT/EPR/LSZH/GSWB/LSZH 0,6/1kV 1Cx70mm² - Orange (Ins. Black) - DC	M25S	T2_M25S_Double			T2_M25S_Double				L-450-101-LVT-043 / L-600-101-LVT-035 / L-300-101-LVT-050 / L-300-101-LVT-057

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

1CX70 - 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 1,4 mm	
Core colour code :	**Black**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not Required	
Total Assembling :	Not Required	
Overall Wrapping:	Not required	
Drain wire :	Not required	
Overall Shield:	Not required	
Inner covering :	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 1,5 mm	
Outer sheath color code:	**Orange**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 1CX70 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 :	(15,3 ± 10%) mm	
Over Armour diameter :	(16,5 ± 10%) mm	
Outer diameter :	(19,5 ± 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 :	≥ 380 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	84412-CEL-2-P	: AC UPS F&G - Battery Isolator-B / AC UPS F&G - Battery-B			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)			Module	LD_B-300
TASK	code	C10000656		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	1X70 mm2	Color	ORANGE
From	CB-200F4B		To	BA-200F4B	

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"	

REFER TO FINAL SHEET FOR ACCEPTANCE

ROSETTI MARINO PROVERLIS CROSSWIND

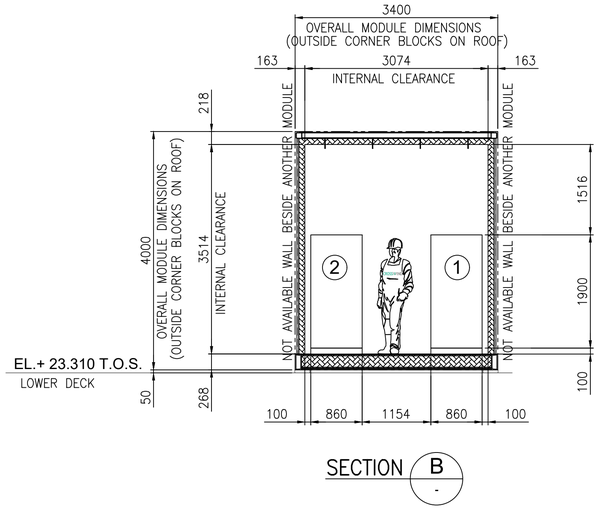
ITEM	Tag	84412-CEL-2-P	: AC UPS F&G - Battery Isolator-B / AC UPS F&G - Battery-B			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)			Module	LD_B-300
TASK	code	C10000656		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

CONTINUITY				
5	CORE CONTINUITY Ω	PH 1	0,6	
6		PH 2	NA	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		0,5	
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	

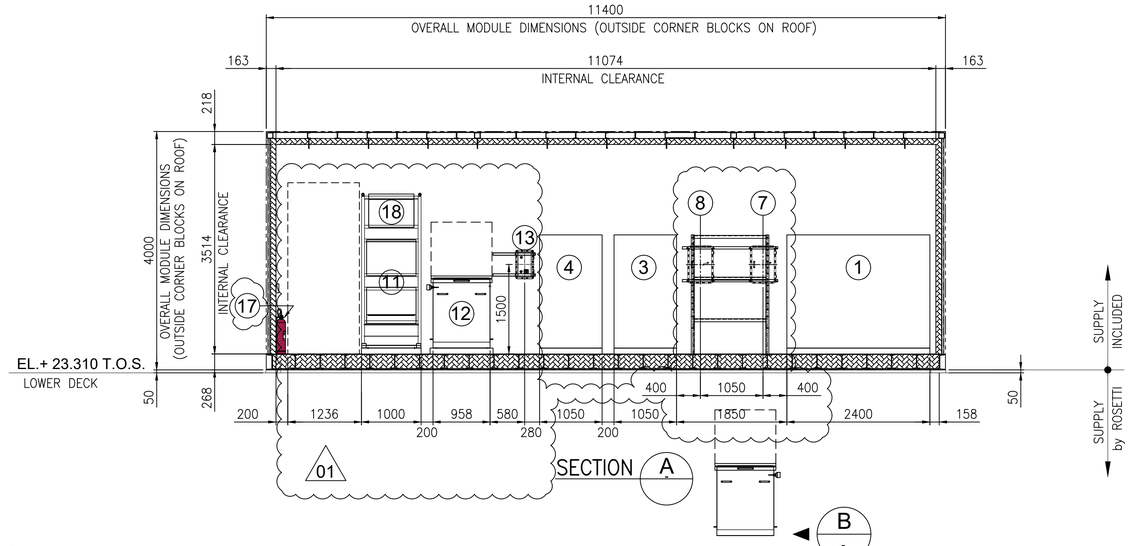
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207	TYPE / SERIAL N° :	MULTIMETER: FLUKE 175 SERIAL:AW1/018(17140769)
Calibration certificate N° and date:	N°7722/24 _ 10/07/2024	Calibration certificate N° and date:	N°7715/24 _ 10/07/2024

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-11-20	2024-11-21	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-11-20T17:19:05.708Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-11-21T08:21:17.594Z	



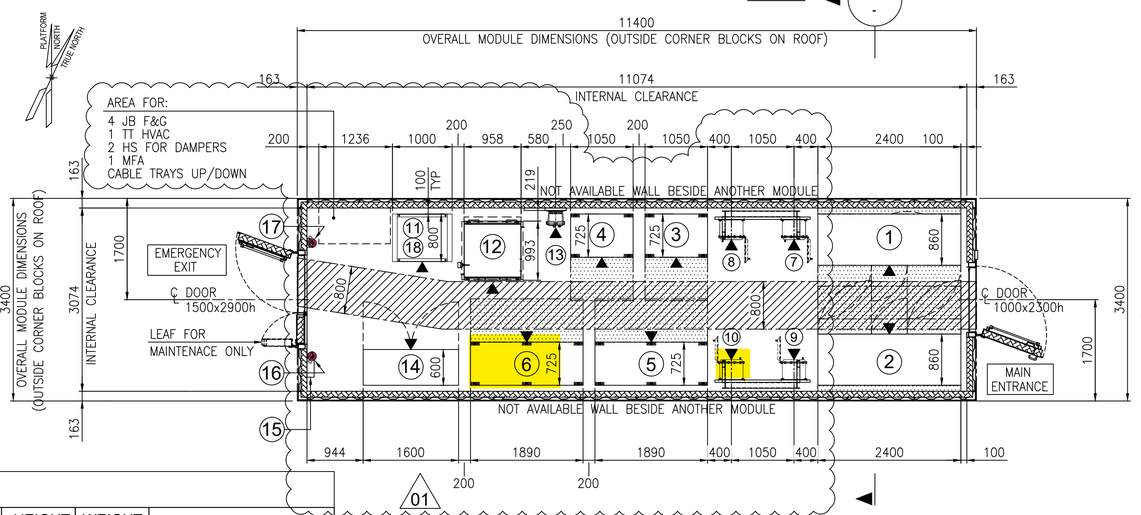
SECTION B -



SECTION A -

SUPPLY INCLUDED

SUPPLY by ROSETTI



A -

B -

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

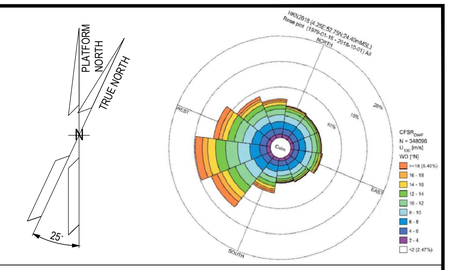
EQUIPMENT LIST

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

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

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

ROSETTI MARINO SpA



NOTES

01

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

LEGEND

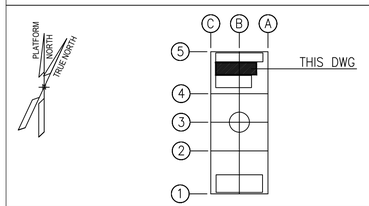
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR – WIDTH 800mm.
_____ MAINTENANCE AREA – VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

HOLDS

REFERENCE

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

KEY PLAN



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

CROSSWIND

ROSETTI MARINO

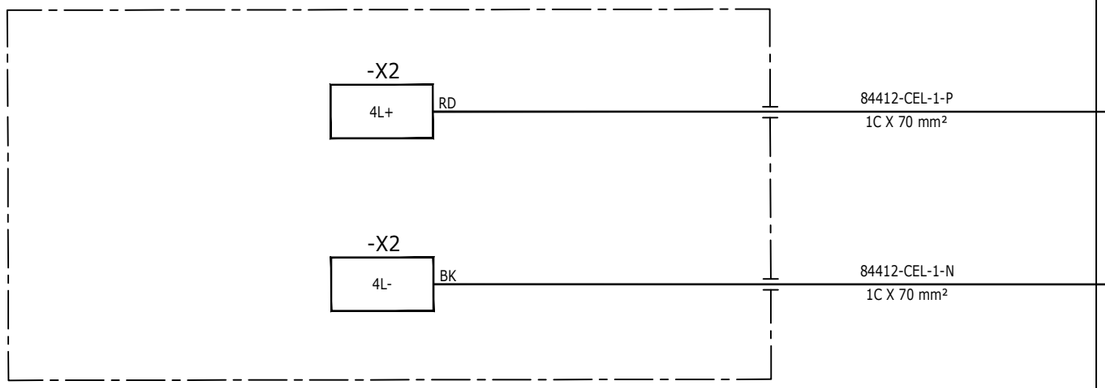
TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
UPSs & BATTERIES SWITCHROOM

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

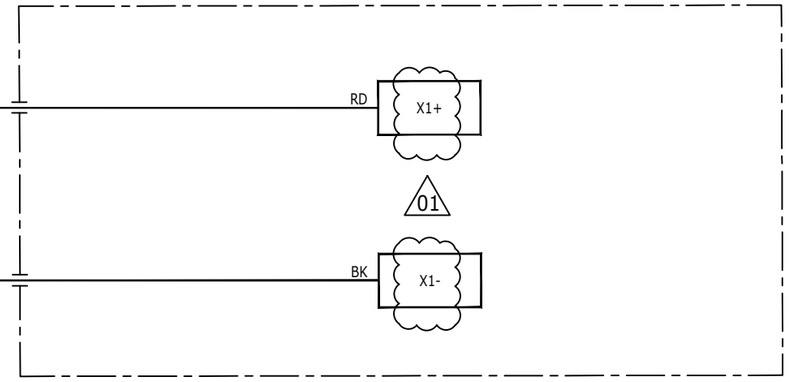
DRAWING NO. 123A90-DDL-EL-DL-20106
REV. 01
File Name : 123A90-DDL-EL-DL-20106 Rev.00.dwg

FROM	TO

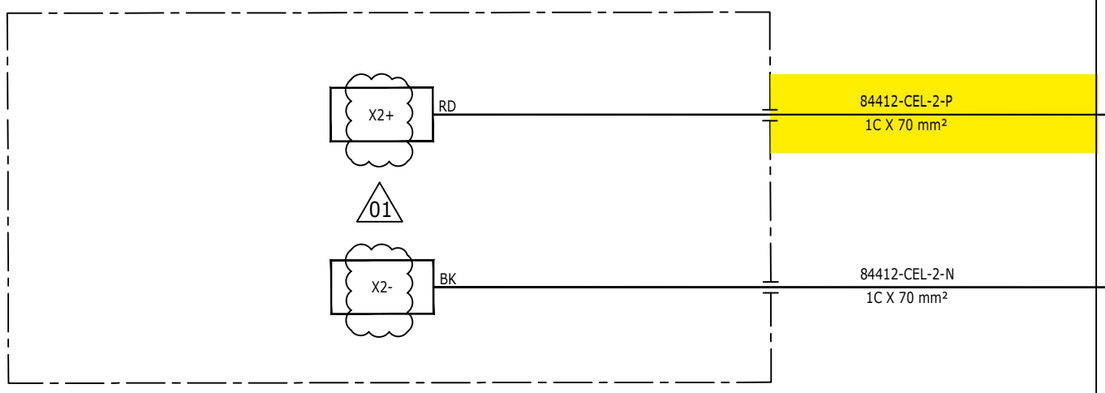
DESCRIPTION: AC UPS F&G - CHARGER-B
TAG NUMBER: BC-200F4B



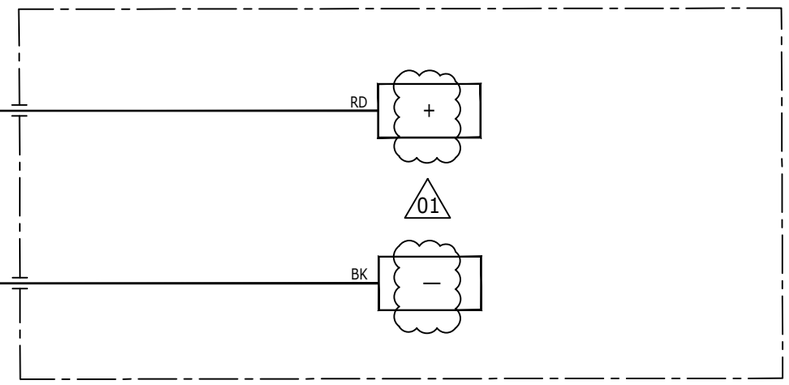
DESCRIPTION: AC UPS F&G - BATTERY ISOLATOR-B
TAG NUMBER: CB-200F4B



DESCRIPTION: AC UPS F&G - BATTERY ISOLATOR-B
TAG NUMBER: CB-200F4B



DESCRIPTION: AC UPS F&G - BATTERY-B
TAG NUMBER: BA-200F4B



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
AC UPS F&G – CHARGER–B & BATTERY ISOLATOR–B

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

SCALE : 1:X

A3

DRAWING NO. 123A90–DDL–EL–DG–20149

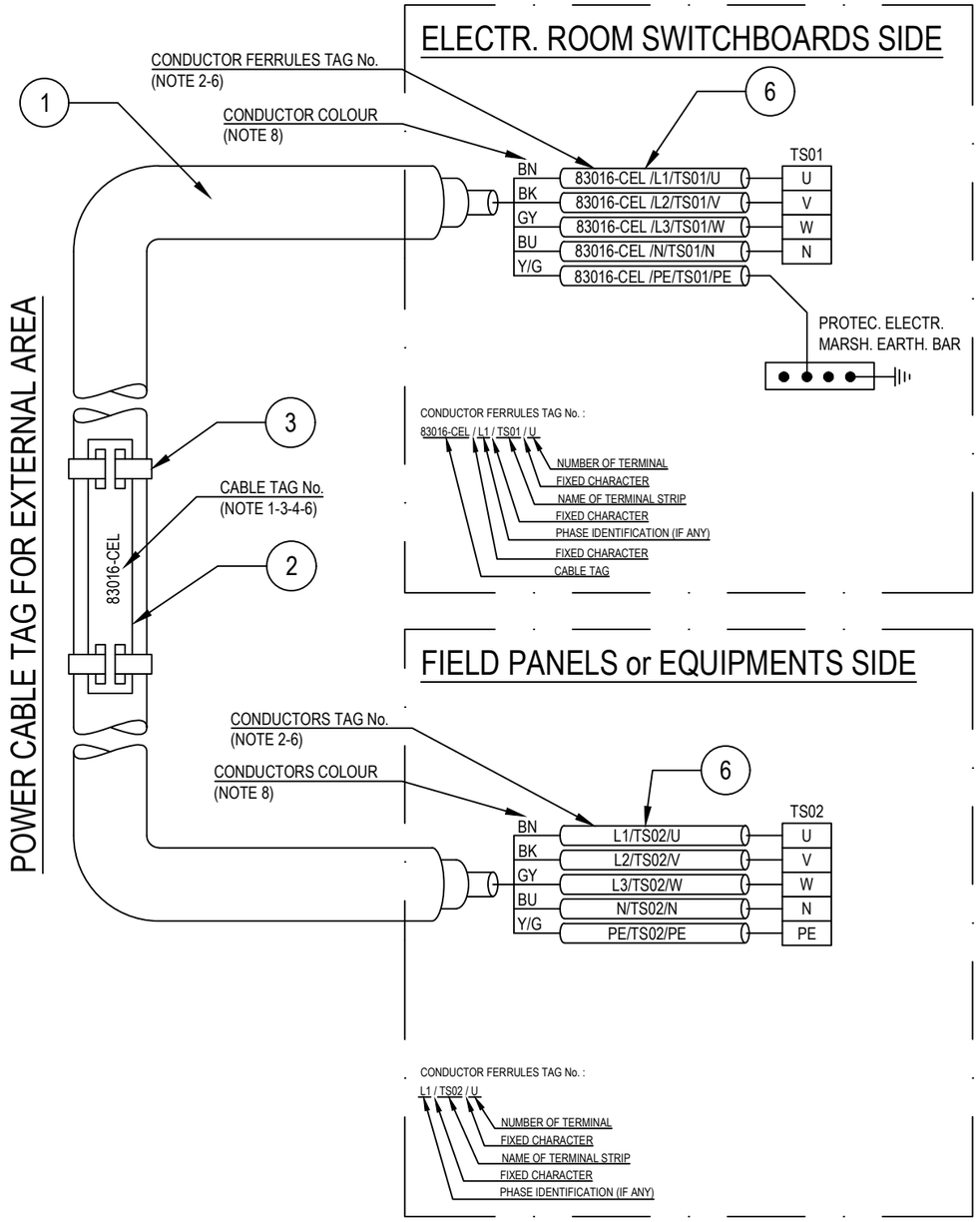
SHEET 064

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.

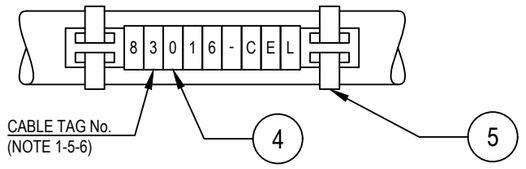
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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

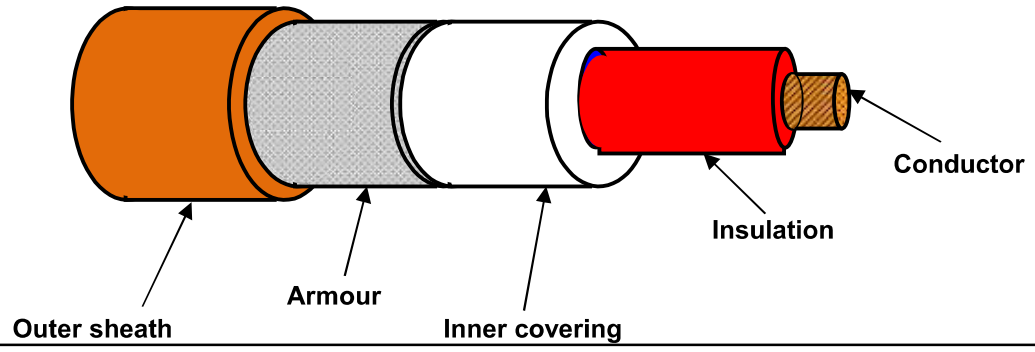
F.to UNI A3: 420mmx297mm

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

Tag Number	Category	Discipline	Eng Status	NativeDoc	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
84412-CEL-2-P	Cable	EL	VFC	123A90-DDL-EL-LIS-20148					CB-200F4B	Isolator Battery Box for AC UPS 15 kVA	Lower Deck (B-300)	BA-200F4B	Battery Rack GEL VRLA-20Y for AC UPS 15 kVA	Lower Deck (B-300)	ELECV24-1X70	Cable Cu Cl.2/MGT/EPR/LSZH/GSWB/LSZH 0,6/1kV 1Cx70mm² - Orange (Ins. Red) - DC	M25S	T2_M25S_ Double			T2_M25S_Do uble				L-300-101-LVT-057 / L-300-101 LVT-050 / L-600-101-LVT-035 / L-300-101-LVT-048

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

1CX70 - 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 1,4 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 1,5 mm	
Outer sheath color code:	**Orange**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 1CX70 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 :	(15,3 ± 10%) mm	
Over Armour diameter :	(16,5 ± 10%) mm	
Outer diameter :	(19,5 ± 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 :	≥ 380 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	84412-CEL-2-N	: AC UPS F&G - Battery Isolator-B / AC UPS F&G - Battery-B			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)			Module	LD_B-300
TASK	code	C10000657		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	1X70 mm2	Color	ORANGE
From	CB-200F4B	To	BA-200F4B		

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"	

REFER TO FINAL SHEET FOR ACCEPTANCE

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	84412-CEL-2-N	: AC UPS F&G - Battery Isolator-B / AC UPS F&G - Battery-B			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)			Module	LD_B-300
TASK	code	C10000657		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

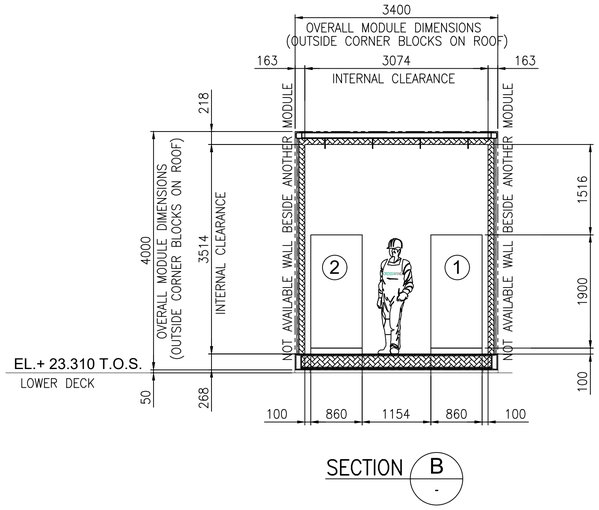
	CONTINUITY			
5	CORE CONTINUITY Ω	PH 1	0,6	
6		PH 2	NA	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		0,7	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		NA	
	INSULATION			
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	NA	
12		PH3 / PH1-PH2-A-E	NA	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

TESTING INSTRUMENTS USED

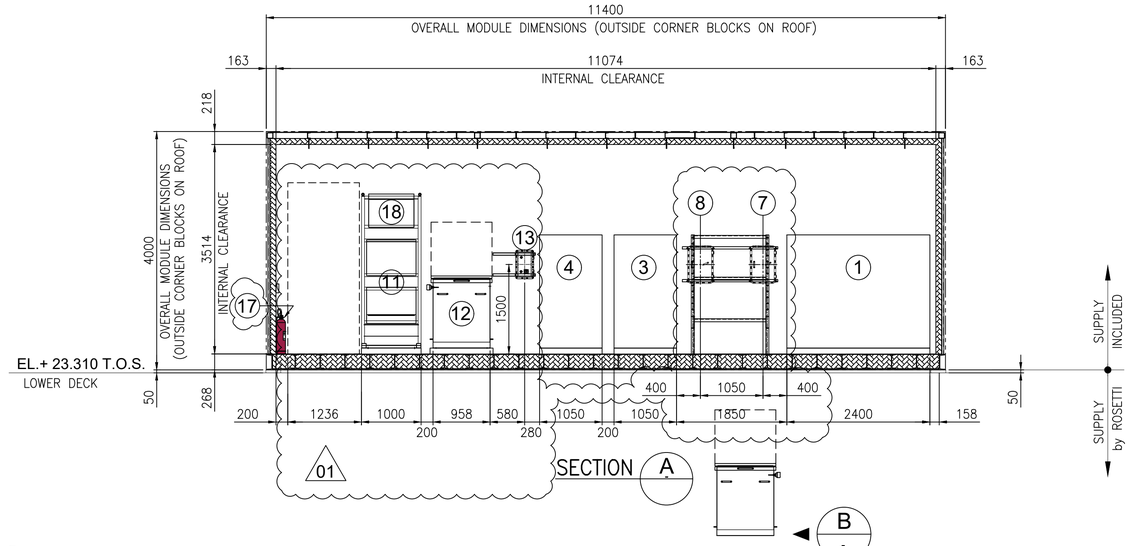
TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207	TYPE / SERIAL N° :	MULTIMETER: FLUKE 175 SERIAL:AW1/018(17140769)
Calibration certificate N° and date:	N°7722/24 _ 10/07/2024	Calibration certificate N° and date:	N°7715/24 _ 10/07/2024

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-11-20	2024-11-21	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-11-20T17:19:17.481Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-11-21T08:26:59.690Z	



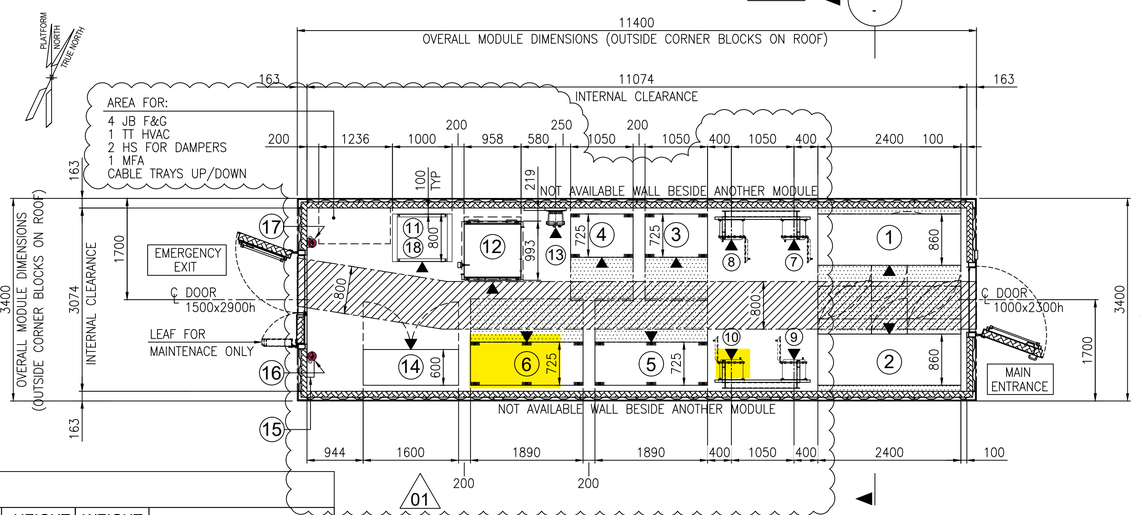
SECTION B -



SECTION A -

SUPPLY INCLUDED

SUPPLY by ROSETTI



A -

B -

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

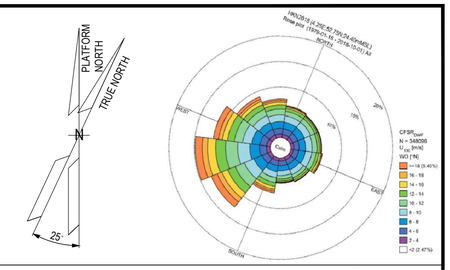
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13	CB-200F2	ISOLATOR BOX NAVAID	500	400	765	70	
14	B3000-HSB-001	DISTRIBUTION & HVAC PANEL - AC/UPS ROOM	1600	600	2300	1150	
15	-	EYE WASH STATION	228	80	290	5	
16	-	PORTABLE EXTINGUISHER (CO2) 5 Kg.	150	150	750	20	
17	-	PORTABLE EXTINGUISHER (CO2) 5 Kg.	150	150	750	20	
18	BC-200F2	BATTERY CHARGER NAVAID 01	-	-	-	-	INCLUDED IN THE RACK OF NC-200F2

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

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

ROSETTI MARINO SpA



NOTES

01

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   - "B-300" – DETAILED DRAWINGS DOC. N. 1724000049-AR-DD-00020

LEGEND

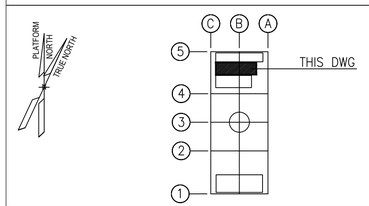
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR – WIDTH 800mm.
_____ MAINTENANCE AREA – VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

HOLDS

REFERENCE

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

KEY PLAN



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

CROSSWIND

ROSETTI MARINO

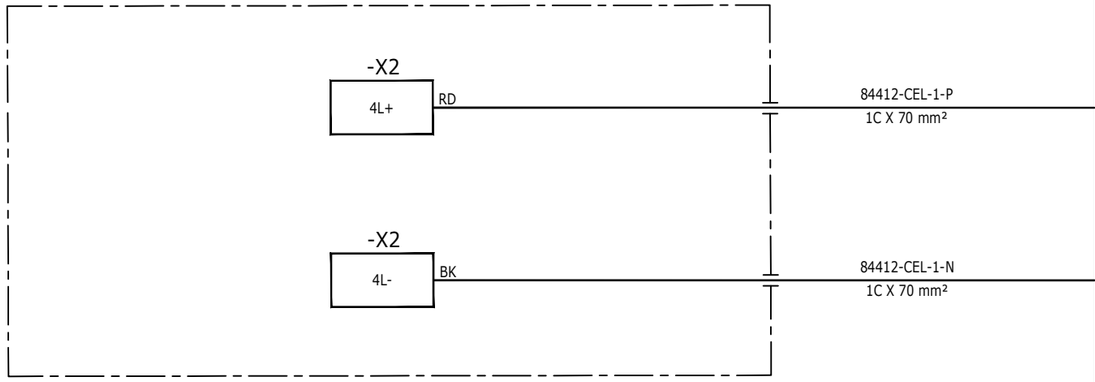
TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
UPSs & BATTERIES SWITCHROOM

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

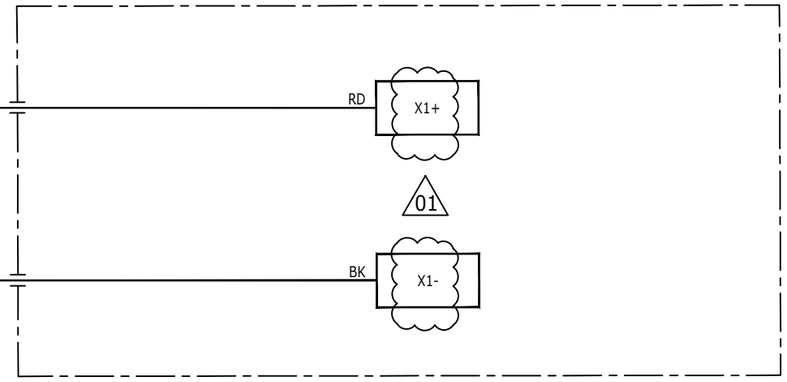
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REV. 01
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FROM	TO

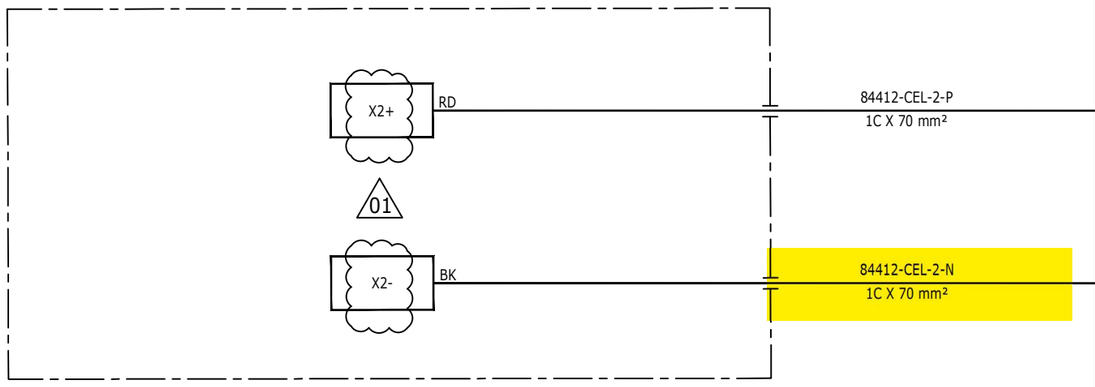
DESCRIPTION: AC UPS F&G - CHARGER-B
TAG NUMBER: BC-200F4B



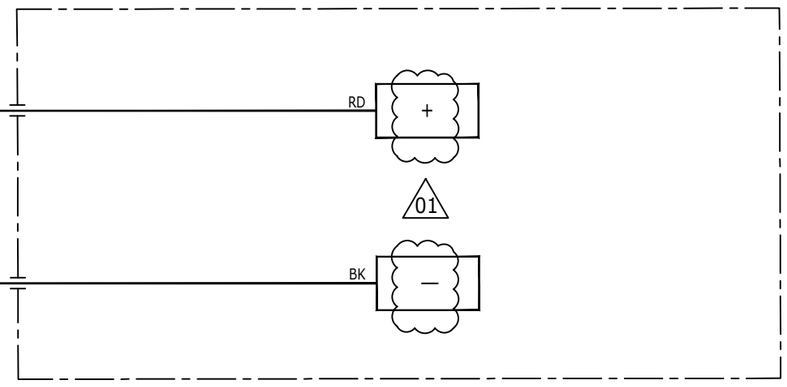
DESCRIPTION: AC UPS F&G - BATTERY ISOLATOR-B
TAG NUMBER: CB-200F4B



DESCRIPTION: AC UPS F&G - BATTERY ISOLATOR-B
TAG NUMBER: CB-200F4B



DESCRIPTION: AC UPS F&G - BATTERY-B
TAG NUMBER: BA-200F4B



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
AC UPS F&G – CHARGER–B & BATTERY ISOLATOR–B

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

SCALE : 1:X

A3

DRAWING NO. 123A90–DDL–EL–DG–20149

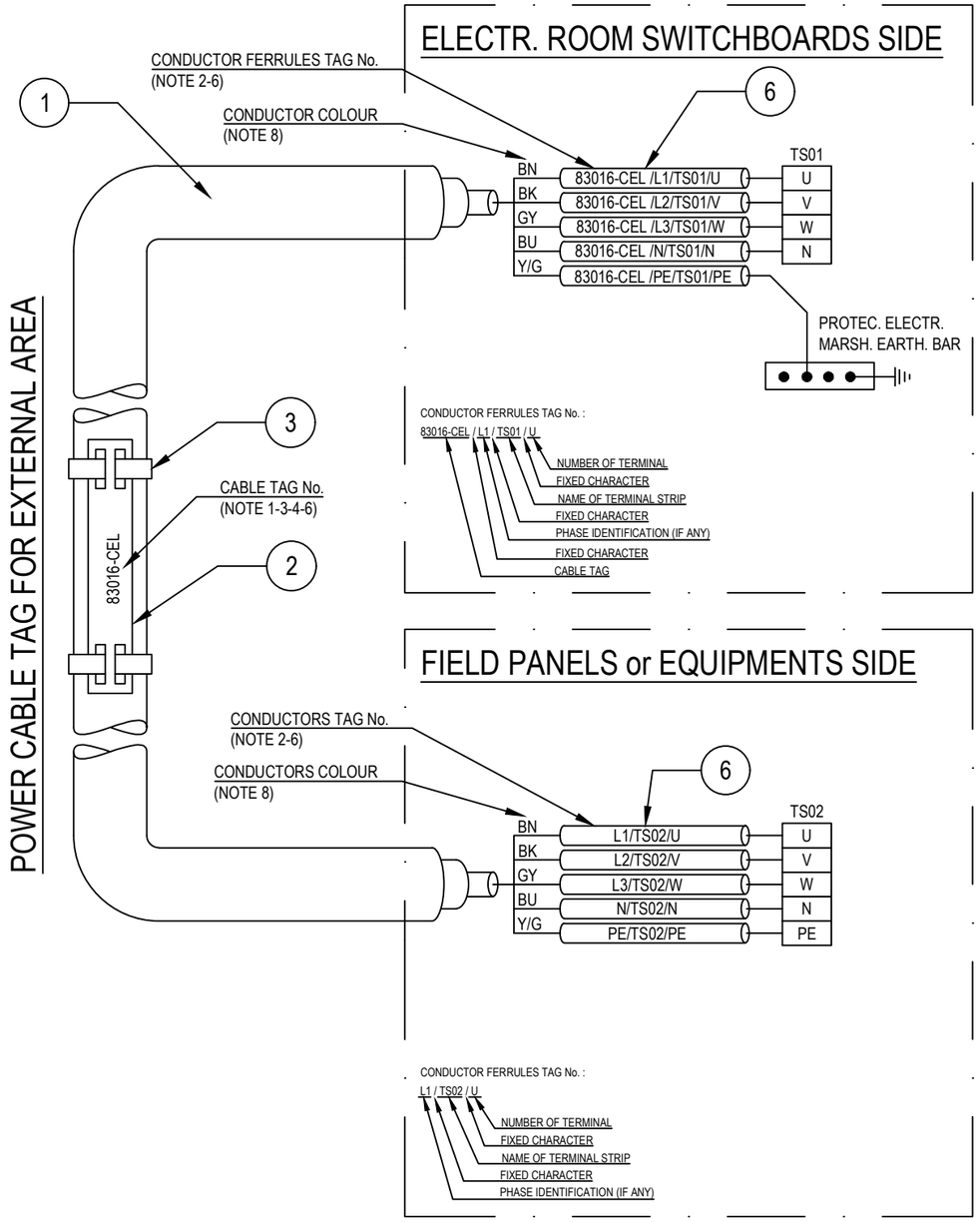
SHEET 064

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.

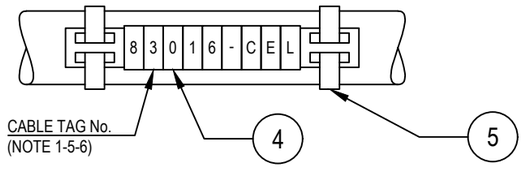
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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

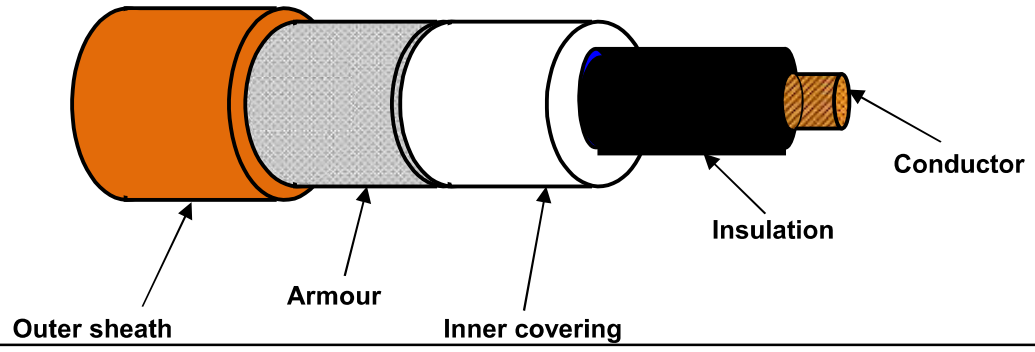
F.to UNI A3: 420mmx297mm

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

Tag Number	Category	Discipline	Eng Status	NativeDoc	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
84412-CEL-2-N	Cable	EL	VFC	123A90-DDL-EL-LIS-20148					CB-200F4B	Isolator Battery Box for AC UPS 15 kVA	Lower Deck (B-300)	BA-200F4B	Battery Rack GEL VRLA-20Y for AC UPS 15 kVA	Lower Deck (B-300)	ELECV25-1X70	Cable Cu Cl.2/MGT/EPR/LSZH/GSWB/LSZH 0,6/1kV 1Cx70mm² - Orange (Ins. Black) - DC	M25S	T2_M25S_ Double			T2_M25S_Do uble				L-300-101-LVT-057 / L-300-101 LVT-050 / L-600-101-LVT-035 / L-300-101-LVT-048

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

1CX70 - 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 1,4 mm	
Core colour code :	**Black**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not Required	
Total Assembling :	Not Required	
Overall Wrapping:	Not required	
Drain wire :	Not required	
Overall Shield:	Not required	
Inner covering :	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 1,5 mm	
Outer sheath color code:	**Orange**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 1CX70 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 :	(15,3 ± 10%) mm	
Over Armour diameter :	(16,5 ± 10%) mm	
Outer diameter :	(19,5 ± 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 :	≥ 380 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-200F4A	: Battery Rack GEL VRLA-20Y for AC UPS 15 kVA		Dwg	123A90-DDL-EL-DS-20032	
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)		Module	LD_B-300	
TASK	code	C10000850	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.	OK
7	Check cells interconnections against drawings.	OK
8	Check cable connections.	Note
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 :	FTG 12-120
N° of cells :	54	Cell voltage :	12 V d.c	Battery charger :	10 h
Battery capacity :	360 AH	Battery voltage	216 V d.c	Ambient temp.	40°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	8 Nm	Note										
Electrolyte level	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												

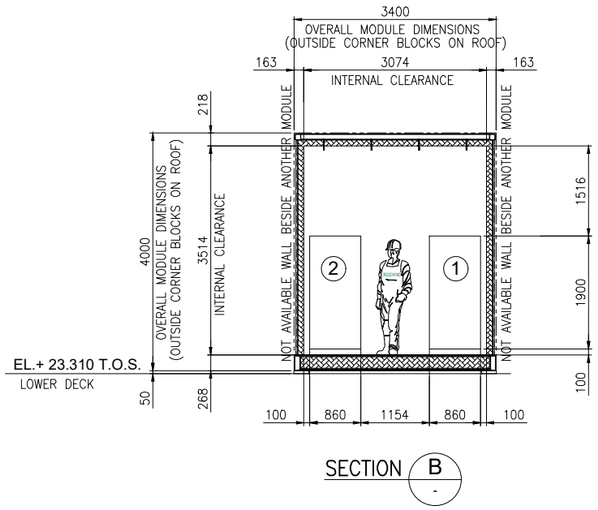
Comments: Note: Cable connections will be completed during commissioning

Note: All connections has been tightened at 8 Nm

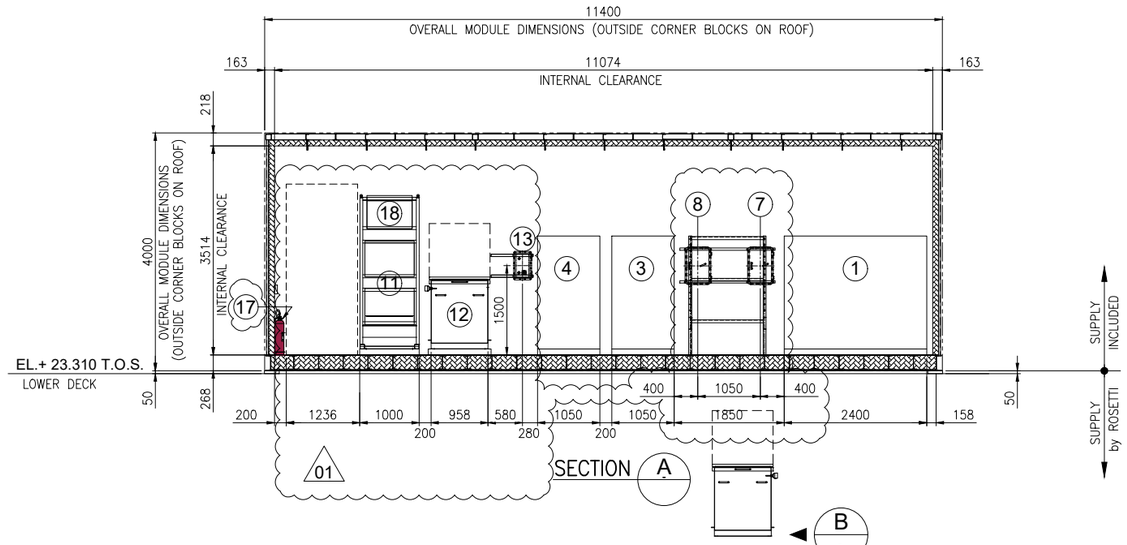
	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (Rosetti Marino)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-10-29	2024-11-04	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-10-29T16:02:21.614Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-11-04T09:32:15.967Z	

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

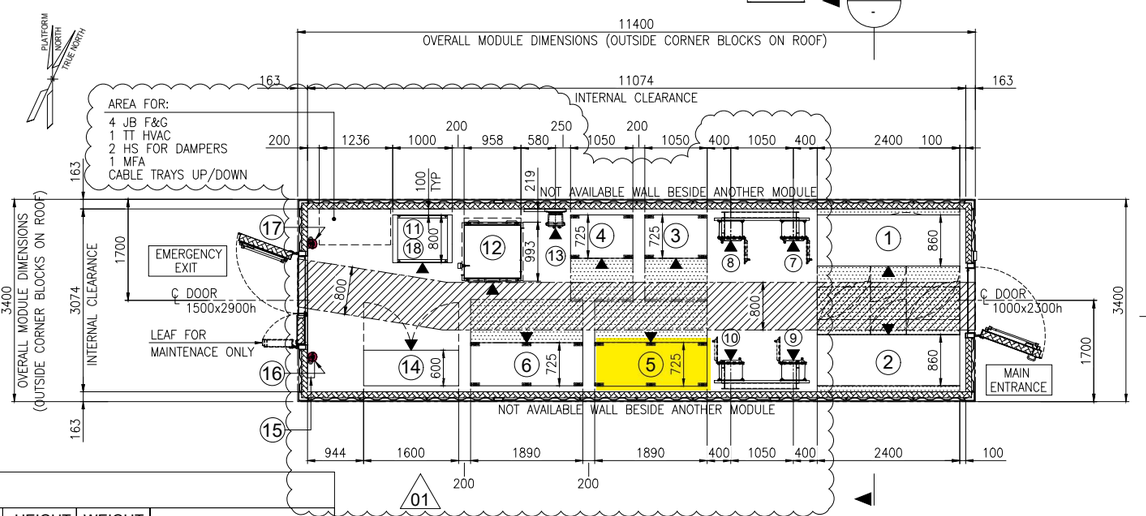
REV. 01



SECTION B -



SECTION A -



A -

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

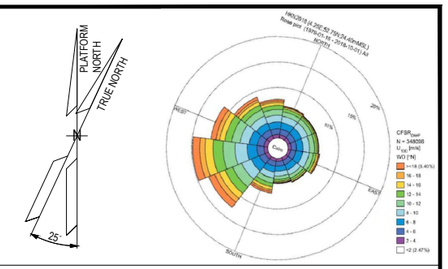
EQUIPMENT LIST

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

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

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

ROSETTI MARINO SpA



NOTES

01

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

LEGEND

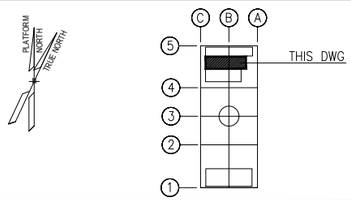
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR – WIDTH 800mm.
_____ MAINTENANCE AREA – VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

HOLDS

REFERENCE

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

KEY PLAN



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

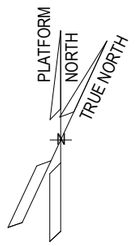
CROSSWIND | ROSETTI MARINO

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

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN SAM	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 23/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-EL-DL-20106	001	01

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



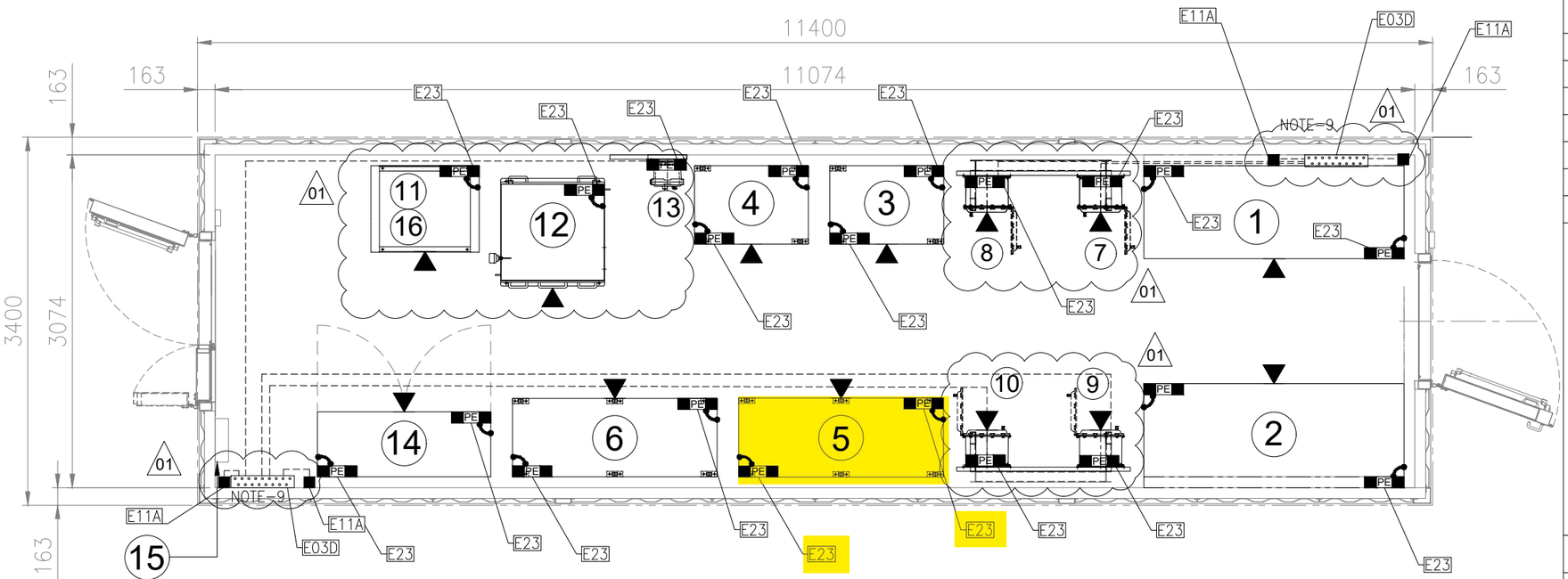
EQUIPMENT LIST		
REF.	TAG No.	DESCRIPTION
1	UP-200F3	AC UPS 35kVA
2	UP-200F4	AC UPS 15kVA
3	BA-200F3A	BATTERY RACK GEL VRLA 7y AC UPS 35kVA
4	BA-200F3B	BATTERY RACK GEL VRLA 7y AC UPS 35kVA
5	BA-200F4A	BATTERY RACK GEL VRLA 7y AC UPS 15kVA
6	BA-200F4B	BATTERY RACK GEL VRLA 7y AC UPS 15kVA
7	CB-200F3A	ISOLATOR BOX AC UPS 35kVA
8	CB-200F3B	ISOLATOR BOX AC UPS 35kVA
9	CB-200F4A	ISOLATOR BOX AC UPS 15kVA
10	CB-200F4B	ISOLATOR BOX AC UPS 15kVA
11	NC-200F2_BC-200F2A/B	NAVAID PANEL
12	BA-200F2	BATTERY BOX NAVAID
13	CB-200F2	ISOLATOR BOX NAVAID
14	B300-HSB-001	DISTRIBUTION & HVAC PANEL – AC/UPS ROOM
15	–	EYE WASH STATION
16	BC-200F2	BATTERY CHARGER NAVAID

01 (rows 11–12)

01 (rows 15–16)

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 THE NON WELDED OBJECTS SHALL BE EARTHED.
9. CONTAINER WILL HAVE A BTH (EARTHING BAR TINNED COPPER) WITH 2 EARTHING BOSS, INSTALLED IN THE SOUTH-WEST CORNER AT AN ELEVATION OF 2.5M FROM THE CONTAINER FLOOR. EARTHING BOSS SHALL BE INSTALLED AT SAME ELEVATION 2.5M.



EARTHING LAYOUT

"B-300" UPSs & BATTERIES 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
▲ 01	FRONT OF EQUIPMENT

REFERENCE	
DOCUMENT NUMBER	DOCUMENT TITLE
123A90-DDL-EL-DD-20090	ELECTRICAL TYPICAL INSTALLATION DETAILS -EARTHING SYSTEM
123A90-DDL-EL-DL-20106	ELECTRICAL EQUIPMENT LAYOUT-UPSs & BATTERIES SWITCHROOM
1724000049-AR-DD-00020	B-300 DETAILED DRAWINGS – E&I SHELTERS

01

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20138**

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

ROSETTI MARINO SpA

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

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EARTHING & LIGHTNING LAYOUT – UPSs & BATTERIES SWITCHROOM
"B-300" UPSs & BATTERIES SWITCHROOM

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

A3 | DRAWING NO. 123A90-DDL-EL-DL-20138 | SHEET 003 | REV. 01

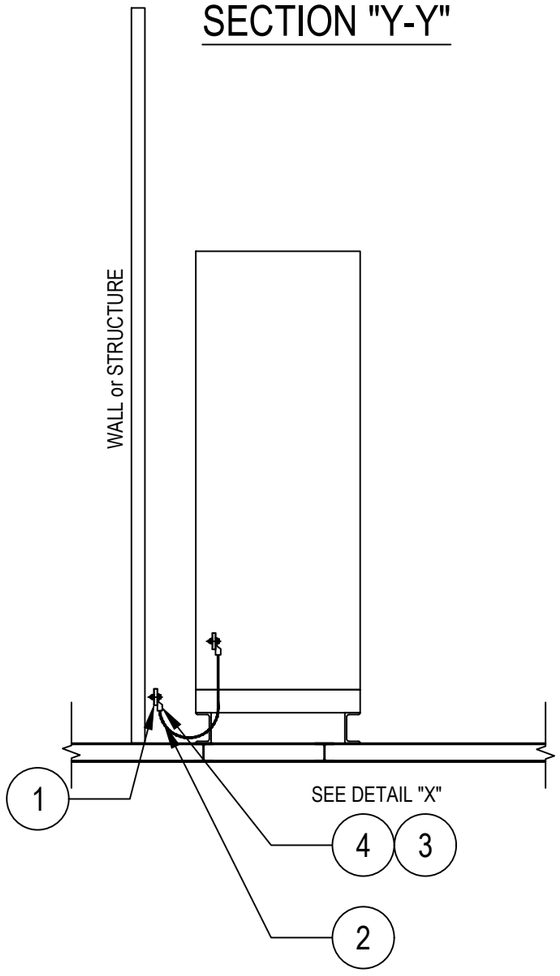
F.to UNI A3: 420mmx297mm

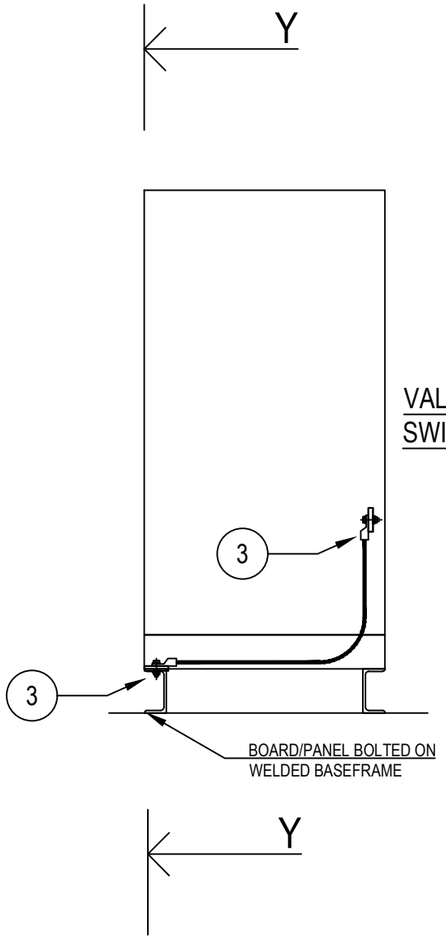
File Name : 123A90-DDL-EL-DL-20138 Rev. 01

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	

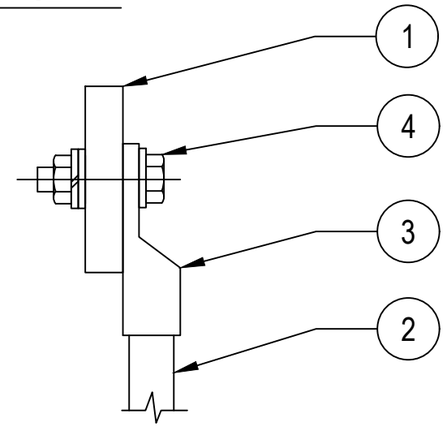
SECTION "Y-Y"





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

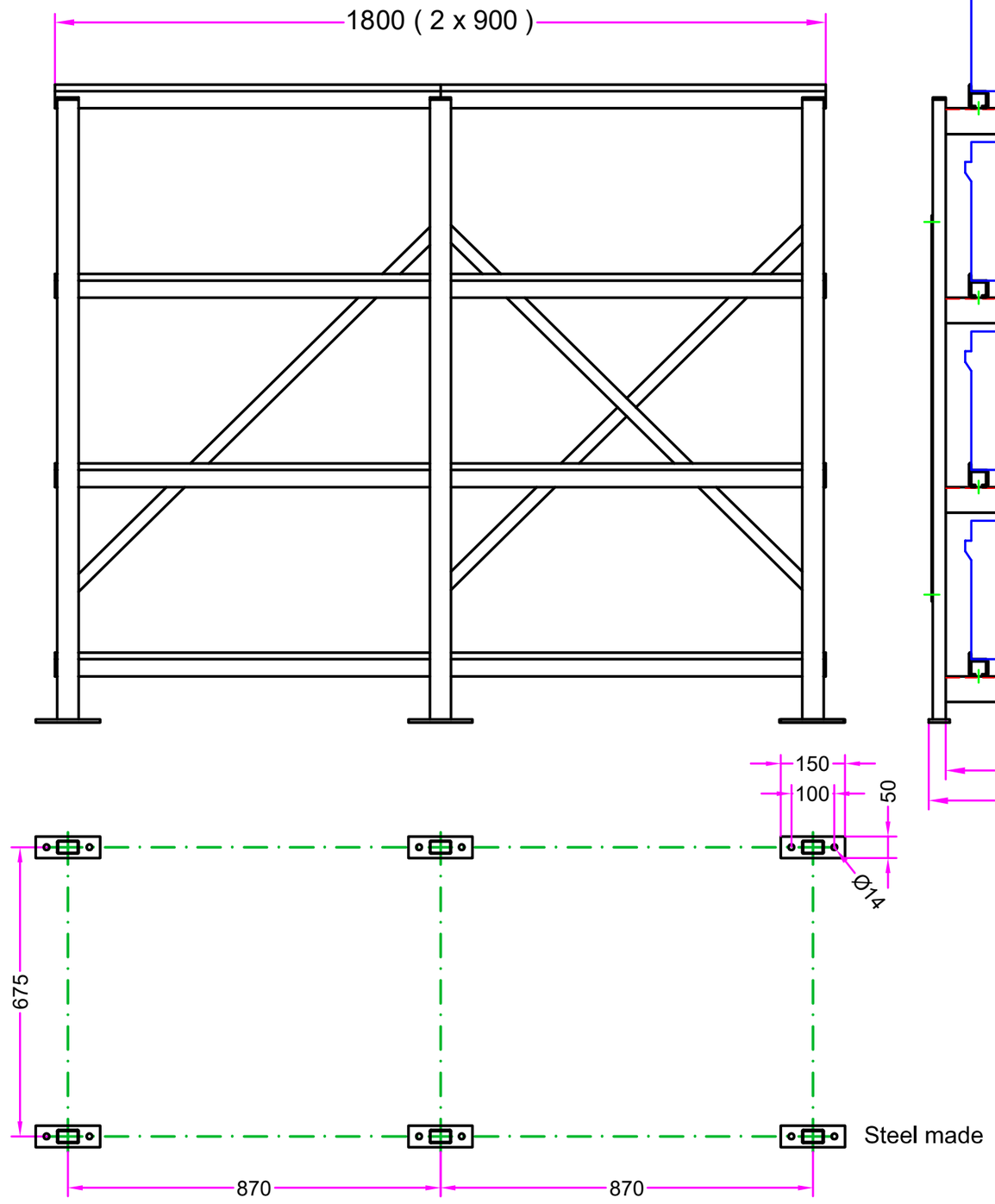
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

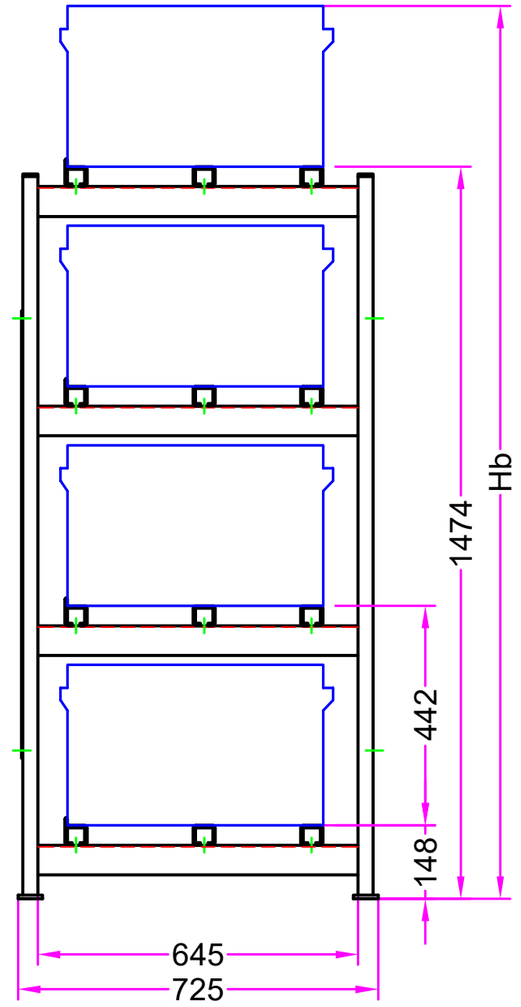
A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-EL-DD-20090	011	02

F.to UNI A3: 420mmx297mm

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

Battery Rack
BA-200F4 A/B





Rack weight : 100,6 kg
Battery weight : 2.295,0 kg
Total weight : 2.395,6 kg

Material:	S235 JR EN 10025 (St-37-2)
Coating:	Plastic Coated
Tolerance:	DIN ISO 2768 "C"
Battery:	

Date	Name	Checked
16/24	Riedel	St.Selig

Scale: none

Execution:
Rack, Standard

Drawing-/Article No:
4U1187FT

Rev:
00

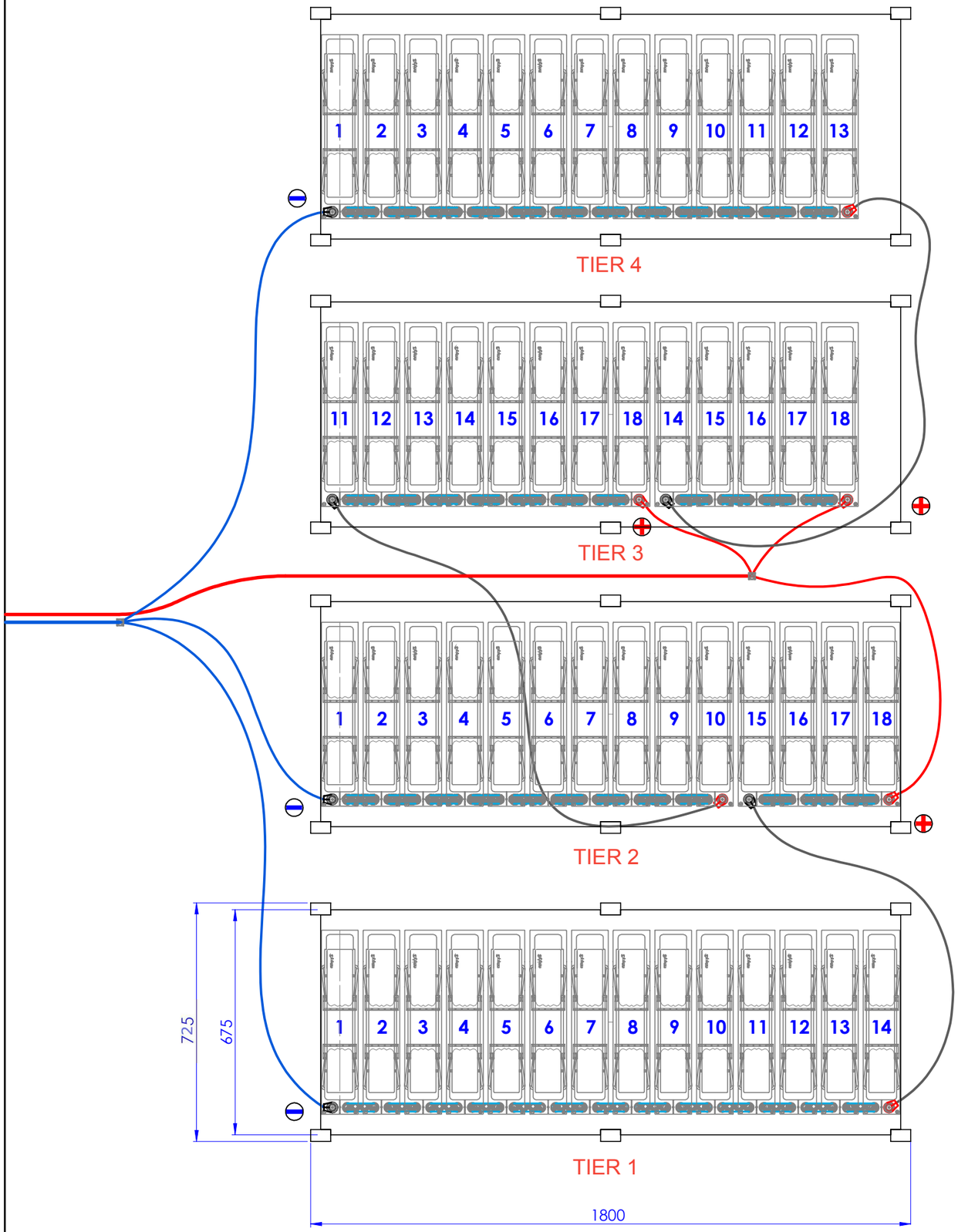
Type:
4E-PGU 1-18 HH FT with FIX002

Production Details: PPCS-01 rev. 0

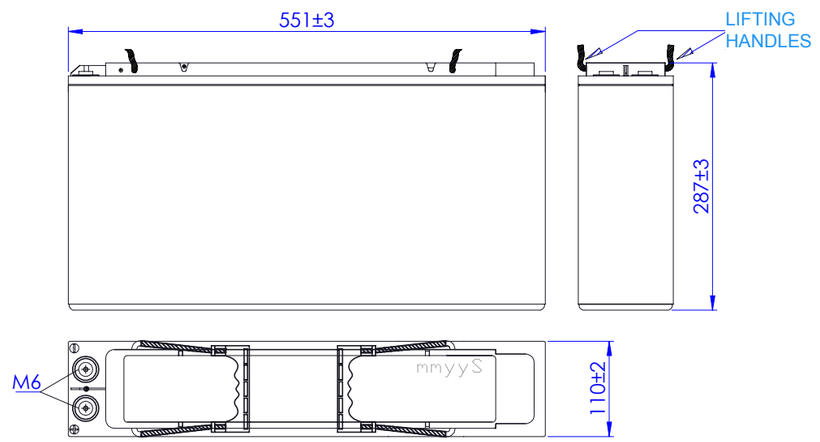
Welding execution according to WD0002

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EN 1090 EXC 3



BATTERY BLOCK : FTG12-120



SCALA 1 : 5

BILL OF MATERIALS	CODE	WEIGHT (kg)	Q.TY
CELL FTG12-120	11017386	42,5	54
CELLS CONNECTION CABLE 50mm	21000191	0,5	15 m
CABLE LUG F6 X 50	41005168	0,3	12
CABLE LUG COVER BLACK 50040	41000243	0,008	6
CABLE LUG COVER RED 50039	41000244	0,008	6

REV./REV.:	DATA/DATE	PROGETTISTA/DESIGNER	DISEGNATO/DRAWN	APPROVATO/APPROVED:	DESCRIZIONE MODIFICHE/DESCRIPTION REVISIONS

TOLLERANZE GENERALI/GENERAL ALLOWANCES: NORMA UNI EN 22768-mk

RUGOSITA' SUPERFICIALE/SUPERFICIAL ROUGHNESS: NORMA UNI ISO 1302

FORME E POSIZIONE/FORMS AND POSITION: NORMA UNI ISO 1101

SCALA/SCALE: 1:10 | PROIEZIONE/PROJECTION: | FOGLIO/SHEET: A2

DESCRIZIONE/DESCRIPTION:

CARATTERISTICHE ELETTRICHE/ELETTRIC CHARACTERISTICS:

PESO BATT./BTR. WEIGHT: 2295 kg

TIPO ELEMENTO/CELL TYPE: 3x18 FTG12-120

PESO EL./CELL WEIGHT: 42,5 kg

CODICE SAP EL./CELL SAP CODE: 11017386

PROGETTISTA/DESIGNER: P. VECCHIARELLI

DISEGNATO/DRAWN: P. VECCHIARELLI

APPROVATO/APPROVED: F. PAGLIARINI

DATA/DATE: 09/04/2024

FILE-DISEGNO/FILE-DRAWING: layout 3x18 FTG 12-120

TAV./TAB.: 1

FAAM

1724000372-EL-DG-00011

AC UPS 15kVA - 3 x 18 x FTG 12-120

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CAE EPLAN Electric P8

AUXILIARY
From Lighting & Small Power DB BOP DP-200N1 (Cubicle 03-Q42)
100-240V/N/PE~50/60Hz

LINE A
From LV Switchgear SG-200N1 (Cubicle A6/05)
Mains
400V;3/PE~50Hz

From LV Switchgear SG-200N1 (Cubicle A2/04)
Bypass mains
400V;3/PE~50Hz

LINE B
From LV Switchgear SG-200N1 (Cubicle A6/06)
Mains
400V;3/PE~50Hz

back-up fuse gG10A 3G2.5mm2

gG80A 4G35mm2

gG63A 4G35mm2

gG80A 4G35mm2

Not included in the AEG shipment

Code	Description
Q1	Rectifier input mains breaker
T40	Rectifier input isolation transformer
A1	Rectifier
A2	Inverter
T1	Inverter output isolation transformer
A3-A4	Static by-pass switch
A18	Display control module
A85	Heater
H1	Light

+MBC1
BY-200F4
Bypass-Trafoschrank mit HU 20 kVA
1000007888.090
10009760

-Q10 L=50/35A I=0,5kA Icu=50kA
-T8 400V/400V 20kVA
-Q28.1 NC
-Q28.2 NC

+UPS1
BC-200F4A
Protect 8.33 20-400-204-400
1000007888.080
10009759

+UPS2
BC-200F4B
Protect 8.33 20-400-204-400
1000007888.080
10009759

-Q1 L=100/85A I=1,0kA Icu=50kA
-T40
-A1 REC
-A2 INV
-T1
-F1,-F2,-F3
-A3 SBS
-A4
-A18 Display
-A20 Parallel Adapter
INV CAN -X3 1-3 → 203 / 1.6
INV Sync -X5 1-4 → 205 / 1.6
-L11,-L12,-L13 Parallel preventive choke coil
-A24.1 BLÜ-PRO -F91
-A24.2 BLÜ-PRO -F92
-A24.3 BLÜ-PRO -F93
-A12 ,-A13 Remote signaling

-Q71 NC
-Q72 NC
-Q29 INV operation / Manual bypass
-F25

DP-200F4
-QF31 B16A 300mA
-QF35 B16A 300mA
5pc
-QF36 B10A
-QF38 B10A
3pc

Not included in the AEG shipment

max. gG10A — max. gG10A
Load
400/230V;3/N/PE~50Hz

+BFB1
CB-200F4A
Battery fuse box 200 A
-Q2 L=200A
DC 24V max. 300W

+BFB2
CB-200F4B
Battery fuse box 200 A
-Q2 L=200A
DC 24V max. 300W

2(1x70 mm2)

+BAT1
BA-200F4A
Batteries installed on rack
3 x 18 x FTG 12-120
Battery voltage 216V
Battery capacity 360Ah
string 1
String 2
String 3
-R81

+BAT2
BA-200F4B
Batteries installed on rack
3 x 18 x FTG 12-120
Battery voltage 216V
Battery capacity 360Ah
string 1
String 2
String 3
-R81

*1 Attention! In the event of battery undervoltage < 130 V, the UPS automatically switches off battery isolator Q2.
If this happens, switch X15:3 must be switched into the open position (undervoltage trip blocked).
For restart, please refer to the chapter in the UPS operating instructions (charging the DC link capacitors) attached.
Unlock the tripped switch Q2 by switching to open position.
After charging the DC link capacitors, switch on Q2.
Attention! When the battery voltage reaches > 200 V, switch X15:3 must be switched back to the closed position.

*2 Connection cables are not included.

					Date	14.05.2024	
01	5000000002053	13.08.2024	Bodeschäfer	Editor	EEC	ROSETTI MARINO Hollandse Kust Noord (HKN) wind farm	System 20 kVA
02	5000000007099	27.08.2024	Bodeschäfer	Checked	Ch.Peck		Single-line diagram
Stat	Alteration	Date	Name	Norm			

1000007888_080 en

S. FFA | A0 | sheet 1 | sheets 1

S-701D Data Sheet for AC Uninterruptible Power Systems (UPS) (IEC 62040-3)

JIP33 JOINT INDUSTRY PROGRAMME

Row							Issue
2	Tag No. :	UP-200F4					
3	Service :	AC UPS F&G					
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 enquiry	Noted			
8	5.1.2	Purchase order number, date :	Input Data	Noted			
9	5.1.2	Manufacturer :	Input Data	AEG Power Solutions			
10	5.1.2	Model number :	Input Data	2 x Protect 8.33 S10 20kVA			
11	5.1.2	Serial number :	Input Data	Released after production			
12	5.2.3	Application :	industrial	Noted			
13	5.3.3	Purchaser specified rated output power :	15	20kVA	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.2, Figure A.3A, Figure A.3B, Figure A.6	UPS configuration :	simplified parallel UPS with common bypass & common output-Figure A.3A	Confirmed			
18	5.1.1, B.1	UPS topology :	double conversion	Confirmed			
19	5.1.1	Static switch configuration :	in both inverter and bypass path	Confirmed			
20	5.4.2.3	Battery configuration :	2 x 50%	Confirmed. 240 min. autonomy each battery			
21	5.3.2, 5.3.4	Performance classification :	manufacturer to advise	-			
22	8.1.1.3	Bi-directional rectifier :	No	Not applicable			
23	8.4.2.11	Remote access required :	Yes (read only)	Confirmed. Modbus TCP			
24	8.4.2.11	Hardware (adapters, connectors, cables, etc.) required for remote access :	manufacturer to advise	Confirmed			
25	8.1.1.5, 8.1.1.6	On-line battery monitoring facility required :	string monitoring	Confirmed			
26	8.1.1.4	On-line battery testing feature required :	No	Noted			
27	8.1.1.4	Battery test load interface :	No	Noted			
28	5.4.2.3	DC earth leakage monitoring required :	No	Noted			
29	7.4.14	Single line diagram and status display :	on HMI	LCD display with synoptic			
30	8.1.2.11	Black start feature required :	Yes	Confirmed			
31	8.1.1.1	Earth screen required for isolation transformer :	manufacturer to advise	Confirmed on the by-pass isolation transformer			
32		**PHYSICAL ASPECTS**					
33	7.2.1	Mounting :	floor mounting	Confirmed			
34	7.2.1	Overall cabinet dimensions - length :	manufacturer to advise	900 + 600 + 900 mm	mm		
35	7.2.1	Overall cabinet dimensions - depth :	manufacturer to advise	860 mm	mm		
36	7.2.1	Overall cabinet dimensions - height :	manufacturer to advise	1915 mm	mm		
37	7.2.1	Reference outline drawing number :	Input Data	1724000372-EL-DA-00004			
38	7.2.1	Total UPS cabinet mass :	manufacturer to advise	1530 kg	kg		
39	7.2.1	Total UPS mass with batteries (if integrated) :	manufacturer to advise	Batteries not integrated	kg		
40	7.2.4, 7.2.5	Cable entry location :	top	Confirmed. Through by-pass cabinet by means of cable glands			
41	7.2.4, 7.2.5	Cable entry type :	removable - undrilled plate	Confirmed			
42	7.2.4, 7.2.5	Gland plate material :	manufacturer standard	Steel			
43	7.2.1	Paint colour :	supplier standard	RAL7035			
44	7.2.1	Canopy for cabinet required :	No	Noted			
45	7.3.9	Document holder :	Yes	Confirmed			
46		**INSTALLATION**					
47	4,1	Site :	offshore - fixed	Noted. Painting class C3-H			
48	4,1	Location of UPS cabinet installation :	indoor	Noted			
49	7.3.1, 7.3.2	Front access clearance dimensions for operation and maintenance :	800	Noted	mm		
50	7.3.2	Side clearance for ventilation (if required) :	manufacturer to advise	0	mm		
51	7.3.2	Rear clearance for ventilation (if required) :	manufacturer to advise	100 mm	mm		
52	7.2.3, 7.9.3	Installed location of battery :	inside UPS room	Battery housed on rack			
53	7.2.3	Maximum battery assembly dimensions (L x D x H) :	manufacturer to advise	Battery rack 1800 x 725 x 1474	mm		
54		**SAFETY**					
55	5.1.1	Accessibility :	operator access area	Front access			
56	5.1.1	Key required for cabinet :	Yes	Confirmed			
57	7.2.2	Degree of protection (with closed doors) :	IP31	IP43			
58	7.2.2	Degree of protection (with open doors) :	IP2X	Confirmed			
59	7.7.5	Cooling fan replacement while UPS in service :	No	Noted			
60	5.1.2	Local language for caution/danger/warning labels:	English	Confirmed			
61		**ELECTROMAGNETIC COMPATIBLITY**					
62	5.1.4	Emission :	UPS Cat C3	Confirmed			
63	5.1.4	Immunity :	UPS Cat C3	Confirmed			
64		**ENVIRONMENTAL CONDITIONS**					
65	4.2.1.1	Minimum ambient temperature (operation) :	-8,4	Confirmed with heater option included	°C		
66	4.2.1.1	Maximum ambient temperature (operation) :	40	Confirmed	°C		
67	4.2.1.1	Maximum relative humidity (operation) :	95	Confirmed. Not condensing	%		
68	4.2.1.1	Temperature at which relative humidity is specified (operation) :	Input Data	-	°C		
69	4.2.1.2	Maximum altitude (operation) :	Sea level	Noted	m		
70	4.2.2.1	Minimum ambient temperature (storage and transportation) :	-5	Noted	°C		
71	4.2.2.1	Maximum ambient temperature (storage and transportation) :	40	Noted	°C		
72	4.2.2.1	Maximum relative humidity (storage and transportation) :	95	Noted	%		
73	4.2.2.1	Temperature at which relative humidity is specified (storage and transportation) :	Input Data	-	°C		
74	4.3.2	Seismic requirement data :	Zone 2	Noted			
75	4.2.2.1	Storage site of UPS :	indoor – natural ventilation	Noted			
76	4.3.2	Additional or unusual conditions (operation) :	Input Data	Not applicable			
77	4.3.3	Additional or unusual conditions (storage and transportation) :	Input Data	Not applicable			
78	5.1.5	Acoustic noise at 1 m - normal mode :	70	< 65 dB(A)	dBA		
79	5.1.5	Acoustic noise at 1 m - stored energy mode :	70	< 65 dB(A)	dBA		
80		**COMMUNICATION INTERFACE(S)**					
81	5,6	(1) Interface media for SCADA (ICSS / DCS) :	serial	Modbus TCP + relays			

S-701D Data Sheet for
AC Uninterruptible Power Systems (UPS) (IEC 62040-3)

JIP33 JOINT INDUSTRY PROGRAMME

Issue

Row							
2	Tag No. :	UP-200F4					
3	Service :	AC UPS F&G					
4	Ref. Clause	Description	Project Requirement	Manufacturer Declared Values	Unit	Additional notes	
82	5,6	(1) Maximum allowable length of communication cable (for copper) :	Input Data	25 m	m		
83	5,6	(1) Interface protocol for SCADA (ICSS / DCS) :	Modbus	Modbus TCP + relays			
84	5,6	(2) Interface media for electrical management / control system :	serial	Modbus TCP + relays			
85	5,6	(2) Maximum allowable length of communication cable (for copper) :	Input Data	25 m	m		
86	5,6	(2) Interface protocol for electrical management / control system :	Modbus	Modbus TCP + relays			
87	5,6	(3) Remote access / monitoring software required :	Yes	Noted			
88	5,6	(3) Interface media for remote access / monitoring :	ethernet (fiber)	Noted			
89	5,6	(3) Maximum allowable length of communication cable (for copper) :	Input Data	25 m	m		
90	5,6	(3) Interface protocol for remote access / monitoring :	Modbus	Modbus TCP + relays			
91		**AC INPUT SPECIFICATIONS**					
92	5.2.1	Voltage (steady state, R.M.S) - rated :	400	Confirmed	V		
93	5.2.1	Voltage (steady state, R.M.S) - tolerance :	+/- 10	Confirmed	%		
94	5.2.1	Frequency - rated :	50 Hz	Confirmed			
95	5.2.1	Frequency - tolerance :	+/- 2	Confirmed	%		
96	5.2.2	Phases required :	3	3			
97	5.2.2	Neutral required :	Yes	Confirmed. Neutral not required for the rectifier supply			
98	5.2.2	Current (R.M.S) - rated (with the energy storage device charged) :	manufacturer to advise	35A	A		
99	5.2.2	Power factor :	manufacturer to advise	Data not characterized by the factory. Measurable on request			
100	5.2.2	In-rush (% of rated current) :	manufacturer to advise	Typically 10 x In	%		
101	5.2.2	In-rush (time) :	manufacturer to advise	Data not characterized by the factory. Measurable on request	s		
102	5.2.2	Maximum current (with low input volt and energy storage device charging) :	manufacturer to advise	43A at 400Vac	A		
103	5.2.2	Time for overload (125 % of rated current) :	10	Confirmed	min		
104	5.2.2	Time for overload (150 % of rated current) :	1	Confirmed	min		
105	5.2.2	Total harmonic distortion - current (THD p.u.) :	8	Confirmed. The AC UPS works with an input voltage harmonic distortion ≤ 8%	%		
106	5.2.3	Short circuit current of the input supply (Minimum and Maximum) :	50	Confirmed. The charger is equipped with an input MCCB (Q1) with Isc = 50kA	kA		
107	5.2.2	Minimum short circuit current :	Input Data	Data not characterized by the factory. Measurable on request	kA		
108	5.2.2	Earth leakage current :	Input Data	Data not characterized by the factory. Measurable on request	mA		
109	5.2.2	AC power distribution system - compatibility :	TN-S	Confirmed			
110	5.2.3	Additional or unusual conditions :	Input Data	Not applicable			
111	5.2.3, 7.5.4	Cable size (cross-section area) - input mains :	Input Data	min 25 sqmm - max 2x95 sqmm	sq.mm.		
112	5.2.3, 7.5.4	Cable size (cross-section area) - input bypass:	Input Data	min 10 sqmm - max 2x95 sqmm	sq.mm.		
113	5.2.3, 7.5.4	Cable size (cross-section area) - input maintenance bypass :	Input Data	min 10 sqmm - max 2x95 sqmm	sq.mm.		
114	7.4.8, 8.1.1.1	Input isolation transformer required :	Yes	Confirmed			
115	7.4.10	Input isolation transformer winding :	supplier standard	Aluminium			
116		**DC AND BATTERY SPECIFICATIONS**					
117	5.4.2.2	DC voltage level :	Select	Confirmed	V d.c.		
118	5.4.2.2	Design life :	5	10 years	years		
119	5.4.2.2	Float service life :	manufacturer to advise	Dependent from temperature	years		
120	5.4.2.2	Shelf life of battery :	manufacturer to advise	3 months	months		
121	5.4.2.2	Quantity of cells and strings :	manufacturer to advise	18 blocks - 3 strings	nos.		
122	5.4.2.2	Nominal voltage (total) :	manufacturer to advise	216V	V d.c.		
123	5.4.2.2	Battery technology :	sealed nickel cadmium	Lead-Acid VRLA GEL			
124	5.4.2.2	Nominal AH capacity :	manufacturer to advise	360Ah	AH		
125	5.4.2.2	Discharge rate (C-rate) :	Select	C10			
126	5.4.2.2	Electrolyte fill status :	manufacturer standard	Not applicable			
127	8.1.2.3	Purchaser's requirement (% of battery recharge level - 1) :	80	Confirmed with charging current limited to 0,1C	%		
128	8.1.2.3	Purchaser's requirement (time for battery recharge level - 1) :	10	Confirmed	Hours		
129	8.1.2.3	Purchaser's requirement (% of battery recharge level - 2) :	100	Data not characterized by the factory. Measurable on request	%		
130	8.1.2.3	Purchaser's requirement (time for battery recharge level - 2) :	24	Data not characterized by the factory. Measurable on request	Hours		
131	5.4.2.2	Stored energy time (Autonomy time at 100% rated load) :	8	Confirmed with both batteries	hours		
132	5.4.2.2	Restored energy time (recharge time to 80% capacity) :	manufacturer to advise	10h	hours		
133	5.4.2.2	Ambient reference temperature :	40	Confirmed	°C		
134	5.4.2.2	Earth condition/isolation :	manufacturer to advise	floating			
135	5.4.2.2	Ripple current (R.M.S) :	manufacturer to advise	< 2% RMS	%		
136	5.4.2.2	Nominal discharge current (stored energy mode):	manufacturer to advise	-	A		
137	5.4.2.2	DC Fault current rating :	manufacturer to advise	Data not characterized by the factory. Measurable on request	A d.c.		
138	5.4.2.2	Cable volt drop recommendation (≤ % at nominal discharge current) :	manufacturer to advise	2%	%		
139	5.4.2.2	Charging regime :	manufacturer to advise	Constant voltage, current limited			
140	5.4.2.2	Charge voltage (float) and tolerance band :	manufacturer to advise	2,28Vcell - 13,5 / 13,8 Vblock	V d.c.		
141	5.4.2.2	Charge voltage (boost) and tolerance band :	manufacturer to advise	2,28Vcell - 13,5 / 13,8 Vblock	V d.c.		
142	5.4.2.2	Charge voltage (equalising) and tolerance band :	manufacturer to advise	Not applicable to VRLA batteries	V d.c.		
143	5.4.2.2	Minimum end of discharge voltage :	manufacturer to advise	178,2V	V d.c.		
144	5.4.2.2	Charge current limit (or range) :	limitation of batteries charging to 30% of the UPS sizing	36A (0,1C)	A d.c.		
145	5.4.2.2	Temperature compensated chargingrequired:	Yes	Confirmed			
146	5.4.2.3	Battery isolation box required :	Yes	Confirmed			
147	5.4.2.3	Additional or unusual conditions :	Input Data	Not applicable			
148	5.4.2.3	Load profile for battery design, attached :	No	Noted			

S-701D Data Sheet for
AC Uninterruptible Power Systems (UPS) (IEC 62040-3)

JIP33 JOINT INDUSTRY PROGRAMME

Row							Issue
2	Tag No. :	UP-200F4					
3	Service :	AC UPS F&G					
4	Ref. Clause	Description	Project Requirement	Manufacturer Declared Values	Unit	Additional notes	
150		**BATTERY ROOM**					
151	4.2.1.1	Minimum ambient reference temperature :	-8,4	-8,4°C (used for battery sizing)	°C		
152	4.2.1.1	Maximum ambient reference temperature :	40	+40°C (used for battery sizing)	°C		
153	5.4.2.1	Area classification :	safe	Noted			
154	5.4.2.1	Hazardous area classification :	Zone 2	Noted			
155	5.4.2.1	Minimum gas subdivision and temperature class (for equipment in battery room) :	Select	-			
156	8.1.2.10	Temperature sensor (for VRLA / partial gas recombination batteries) :	Yes	Confirmed. Standard sensor			
157		**BATTERY ISOLATOR BOX SPECIFICATIONS**					
158	7.9.1	Enclosure material :	manufacturer standard	Aluminium alloy			
159	7.9.1	Mounting :	Select	Wall mounting			
160	7.9.1	Breathing valve required :	manufacturer to advise	No			
161	7.9.1	Internal earth bar :	tinned copper	-			
162	7.9.3	Minimum design temperature :	-8,4	Noted	°C		
163	7.9.3	Maximum design temperature :	40	Noted	°C		
164	7.9.3	Maximum relative humidity :	95	Noted	%		
165	7.9.3	Temperature at which relative humidity is specified:	Input Data	-	°C		
166	7.9.4	Degree of protection :	IP 31	IP65			
167	7.9.5	Area classification :	safe	Noted			
168	7.9.5	Hazardous area certification required :	none	-			
169	7.9.5	Hazardous area classification :	N/A	Not applicable			
170	7.9.5	Hazardous area level of protection :	N/A	Not applicable			
171	7.9.6	Cable entry :	top	Bottom with cable glands			
172	7.9.6	Cable indirect entry via 'ex e' enclosure :	No	Not applicable			
173	7.9.6	Battery cable size (cross-section area):	Input Data	70 sqmm armored cable class-2	sq.mm.		
174	7.9.6	Cable entry diameter in isolator box (ISO metric) :	Input Data	22,6 mm			
175	7.9.7	Battery isolator type :	MCCB	Confirmed			
176	7.9.8	Rated current of breaker / switch fuse unit :	manufacturer to advise	200A	A		
177	7.9.8	Rated breaking current (Icu) - (if breaker used) :	manufacturer to advise	36kA	kA		
178	7.9.10	Breaker status potential free contact (NO) :	two	Confirmed			
179	7.9.9	Under voltage trip feature required :	Yes	Confirmed			
180	7.9.9	Under voltage trip coil for :	black start reserve	Confirmed			
181	8.1.2.12	ESD trip required :	Yes - via shunt trip	Yes - through SIL relay			
182	8.1.2.12	ESD override key switch :	key captive in overridden position and with status contact	Confirmed			
183	7.9.9	Over voltage trip required :	Yes	Not applicable			
184		**AC OUTPUT SPECIFICATIONS**					
185	5.3.2	Rated output power (apparent) :	20	20kVA	kVA		
186	5.3.2	Rated output power (active) :	16	16kW	kW		
187	5.3.2	AC power distribution system - compatibility :	TN-S	Noted			
188	5.3.2	Phases available :	3	Confirmed			
189	5.3.2	Neutral available :	Yes	Confirmed			
190	5.3.2	Voltage (steady state, R.M.S) - rated :	400	Confirmed	V		
191	5.3.2	Voltage - normal mode variation :	manufacturer to advise	+/- 1%	%		
192	5.3.2	Voltage - storage energy mode variation :	manufacturer to advise	+/- 1%	%		
193	5.3.2, 8.2.3	Total harmonic distortion (V), 100% load - normal mode - linear :	5	< 3%	%		
194	5.3.2, 8.2.3	Total harmonic distortion (V), 100% load - normal mode - non linear :	5	Confirmed	%		
195	5.3.2, 8.2.3	Total harmonic distortion (V), 100% load - storage energy mode - linear :	5	< 3%	%		
196	5.3.2, 8.2.3	Total harmonic distortion (V), 100% load - storage energy mode - non linear :	5	Confirmed	%		
197	5.3.2	% Voltage unbalance, 100% load unbalance :	manufacturer to advise	Data not characterized by the factory. Measurable on request	%		
198	5.3.2	Phase angle displacement, 100% load unbalance :	manufacturer to advise	Data not characterized by the factory. Measurable on request	°		
199	5.3.2	% Voltage transient, 100% step load - linear :	manufacturer to advise	+/- 2%	%		
200	5.3.2	Voltage transient recovery time, 100% step load - linear :	manufacturer to advise	2 ms	s		
201	5.3.2	% Voltage transient, 100% step load - non linear :	manufacturer to advise	Data not characterized by the factory. Measurable on request	%		
202	5.3.2	Voltage transient recovery time, 100% step load - non linear :	manufacturer to advise	Data not characterized by the factory. Measurable on request	s		
203	5.3.2	% Voltage transient, 100% step load - transfer normal mode to storage energy mode :	manufacturer to advise	Data not characterized by the factory. Measurable on request	%		
204	5.3.2	Voltage transient recovery time, 100% step load - transfer normal mode to storage energy mode :	manufacturer to advise	Data not characterized by the factory. Measurable on request	s		
205	5.3.2	% Voltage transient, 100% step load -transfer storage energy mode to normal mode :	manufacturer to advise	Data not characterized by the factory. Measurable on request	%		
206	5.3.2	Voltage transient recovery time, 100% step load -transfer storage energy mode to normal mode :	manufacturer to advise	Data not characterized by the factory. Measurable on request	s		
207	5.3.2	Frequency (steady state) - rated :	50	Confirmed	Hz		
208	5.3.2	Frequency (steady state) - normal mode variation :	2	+/- 0,1%	%		
209	5.3.2	Frequency (steady state) - storage energy mode variation :	2	+/- 0,1%	%		
210	5.3.2	Frequency (steady state) - free running variation :	2	+/- 0,1%	%		
211	5.3.2	Synchronization (maximum ± % range of rated frequency) :	manufacturer to advise	-	%		
212	5.3.2	Maximum synchronism phase error (referred to 360° cycle) :	manufacturer to advise	-	%		
213	5.3.2	Maximum slew rate :	manufacturer to advise	-	Hz/s		
214	5.3.2	Current (R.M.S) - rated :	manufacturer to advise	29A	A		
215	5.1.8.1, 5.3.2	Current (R.M.S) - overload capability (% of rated current for ten minutes) :	manufacturer to advise	125%	%		
216	5.1.8.2, 5.3.2	Current (R.M.S) - overload capability (% of rated current for one minute) :	manufacturer to advise	150%	%		
217	5.1.8.3, 5.1.8.4	Current (R.M.S) - short circuit capability (% of rated current) :	manufacturer to advise	3,75 x In (1ph) - 2,15 x In (3ph)	%		
218	5.1.8.3, 5.1.8.4	Current (R.M.S) - short circuit capability (time duration) :	manufacturer to advise	500 ms	s		
219	5.3.2	Current (R.M.S) - limitation (% of rated current) :	manufacturer to advise	-	%		

Row	S-701D Data Sheet for AC Uninterruptible Power Systems (UPS) (IEC 62040-3)						Issue
2	Tag No. :	UP-200F4					
3	Service :	AC UPS F&G					
4	Ref. Clause	Description	Project Requirement	Manufacturer Declared Values	Unit	Additional notes	
220	5.3.2	Current (R.M.S) - limitation (time duration) :	manufacturer to advise	-	s		
221	5.3.2	Current (R.M.S) - fault clearing capability (normal mode) :	manufacturer to advise	-	A		
222	5.3.2	Current (R.M.S) - fault clearing capability (stored energy mode) :	manufacturer to advise	-	A		
223	5.3.2	Load power factor - rated :	manufacturer to advise	0,8			
224	5.3.2	Load power factor - displacement (permissible limit lead) :	manufacturer to advise	Cap - 1 - Ind			
225	5.3.2	Load power factor - displacement (permissible limit lag) :	manufacturer to advise	Cap - 1 - Ind			
226	5.3.2	Efficiency in normal mode - 100% load :	manufacturer to advise	85,6%	%		
227	5.3.2	Efficiency in normal mode - 75% load :	manufacturer to advise	85,8%	%		
228	5.3.2	Efficiency in normal mode - 50% load :	manufacturer to advise	85%	%		
229	5.3.2	Efficiency in normal mode - 25% load :	manufacturer to advise	79,3%	%		
230	7.4.8	Output isolation transformer required :	No	Yes. Output transformer is included in AEG standard design			
231	7.4.10	Output isolation transformer winding :	Select	Aluminium			
232	7.6.5	AC output neutral earth link :	earthed	Noted. Externally			
233	7.1.6	Reference document to AC output distribution board:	To see Electrical Load List	Noted			
234	5.3.3	Integrated AC output distribution board with MCBs :	Yes	Confirmed			
235	5.3.3	Cable size (cross-section area) - output :	manufacturer to advise	min 10 sqmm - max 2x95 sqmm	sq.mm.		
236		**BYPASS SPECIFICATIONS**					
237	C.3	Bypass transfer time :	manufacturer to advise	0	msec		
238	C.3	Bypass static switch rated current :	manufacturer to advise	20kVA - 29A	A		
239	C.3	Bypass protection fuse or circuit breaker rating :	manufacturer to advise	MCCB 35A	A		
240	7.4.8	Bypass transformer required :	Yes	Confirmed			
241	7.4.10	Bypass transformer winding :	copper or aluminum	Aluminium			
242	7.3.5	Maintenance bypass and bypass transformer location :	integrated	Manual by-pass integrated			
243	8.3.6, C.5	Overall maintenance bypass :	internal	Q29 manual by-pass integrated			

ITEM	Tag	BA-200F4B	: Battery Rack GEL VRLA-20Y for AC UPS 15 kVA			Dwg	123A90-DDL-EL-DS-20032
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)			Module	LD_B-300
TASK	code	C10000851		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.	OK
7	Check cells interconnections against drawings.	OK
8	Check cable connections.	Note
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 :	FTG 12-120
N° of cells :	54	Cell voltage :	12 V d.c	Battery charger :	10 h
Battery capacity :	360AH	Battery voltage	216 V d.c	Ambient temp.	40°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	8 Nm	Note										
Electrolyte level	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												

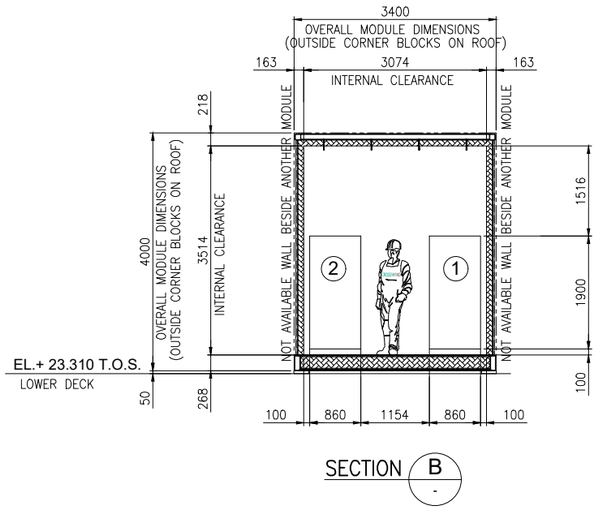
Comments: Note: Cable connections will be completed during commissioning

Note: All connections has been tightened at 8 Nm

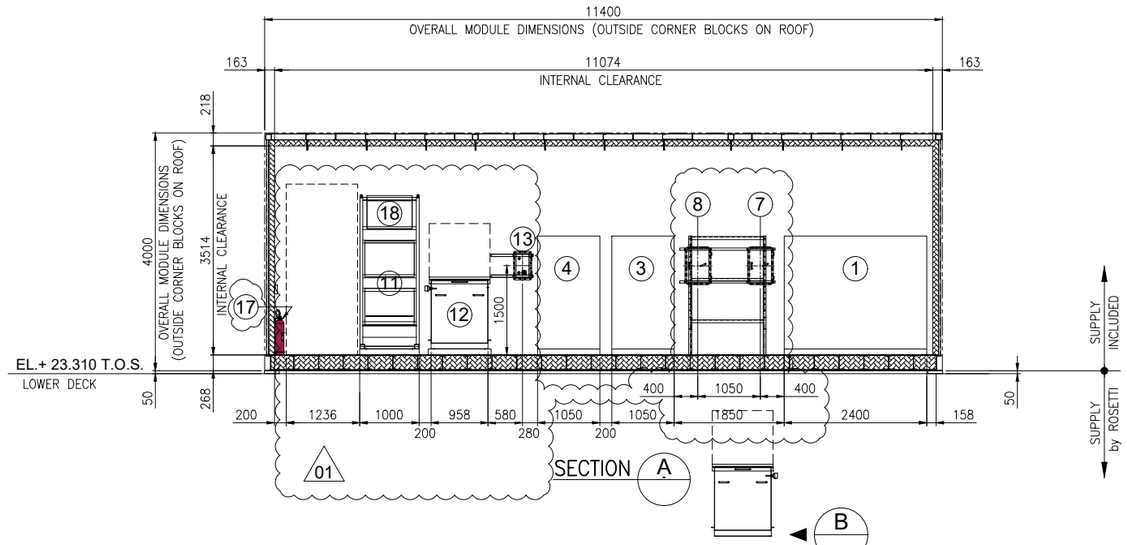
	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (Rosetti Marino)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-10-29	2024-11-04	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-10-29T16:02:32.337Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-11-04T09:33:19.535Z	

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

REV. 01



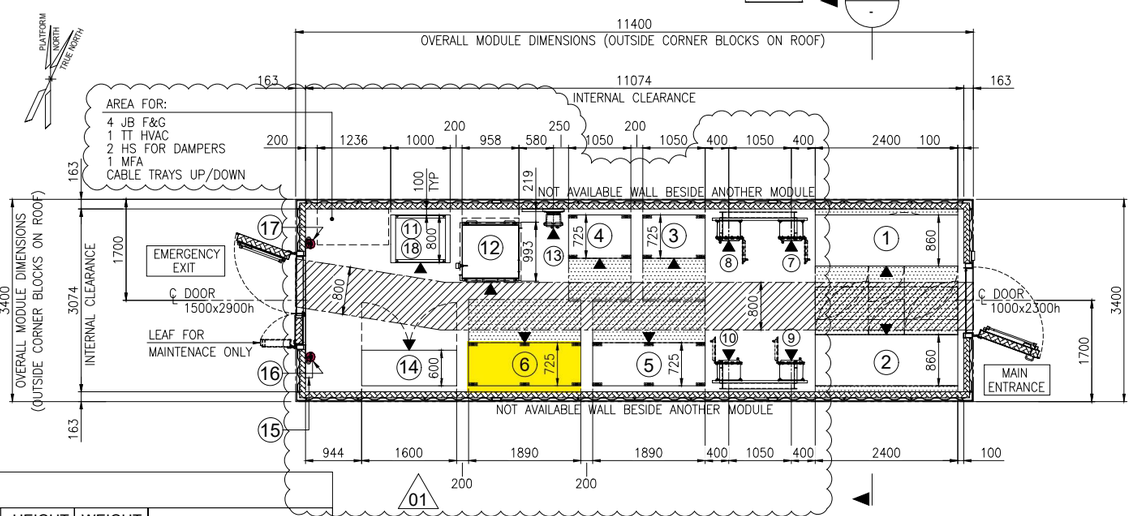
SECTION B -



SECTION A -

SUPPLY INCLUDED

SUPPLY by ROSETTI



A -

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

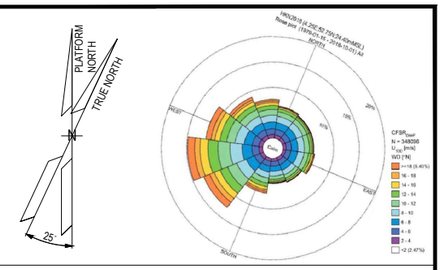
EQUIPMENT LIST

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

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

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

ROSETTI MARINO SpA



NOTES

01

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

LEGEND

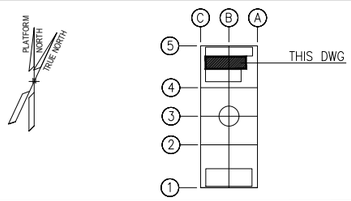
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR – WIDTH 800mm.
_____ MAINTENANCE AREA – VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

HOLDS

REFERENCE

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

KEY PLAN



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

CROSSWIND

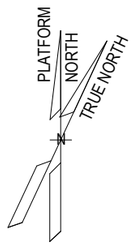
ROSETTI MARINO

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

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN SAM	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 23/07/24

A1	DRAWING NO. 123A90-DDL-EL-DL-20106	SHEET 001	REV. 01

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



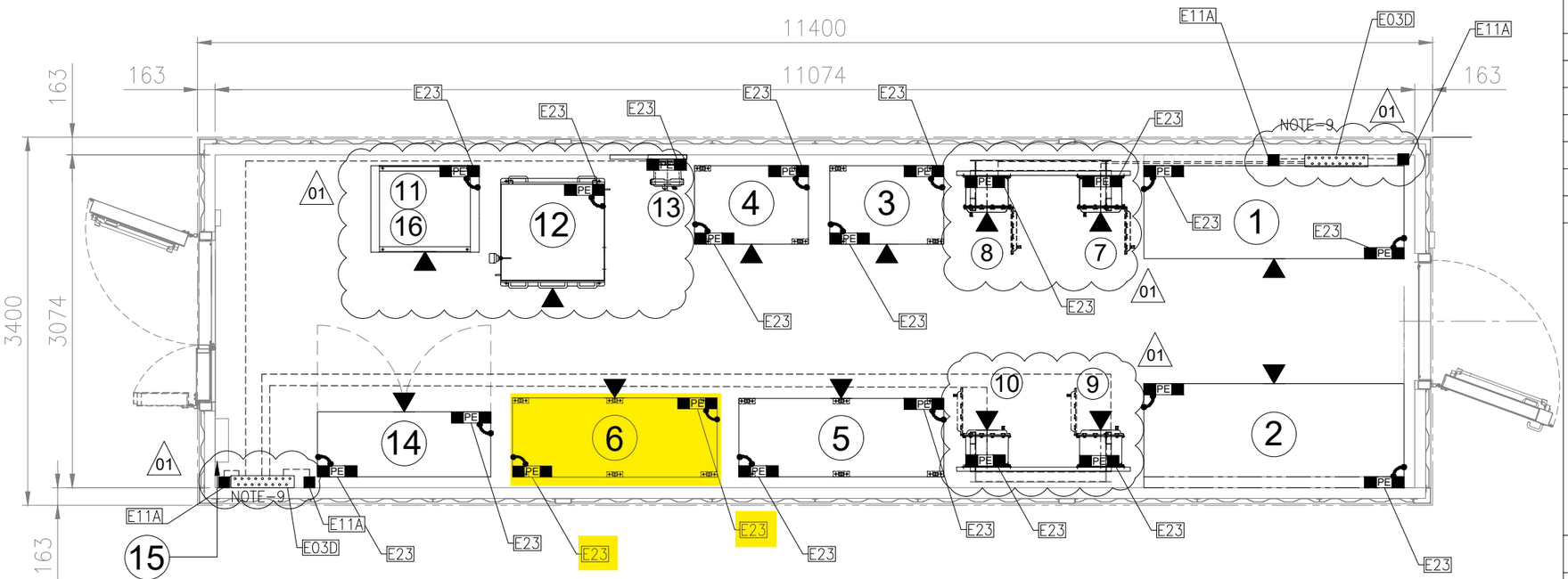
EQUIPMENT LIST		
REF.	TAG No.	DESCRIPTION
1	UP-200F3	AC UPS 35kVA
2	UP-200F4	AC UPS 15kVA
3	BA-200F3A	BATTERY RACK GEL VRLA 7y AC UPS 35kVA
4	BA-200F3B	BATTERY RACK GEL VRLA 7y AC UPS 35kVA
5	BA-200F4A	BATTERY RACK GEL VRLA 7y AC UPS 15kVA
6	BA-200F4B	BATTERY RACK GEL VRLA 7y AC UPS 15kVA
7	CB-200F3A	ISOLATOR BOX AC UPS 35kVA
8	CB-200F3B	ISOLATOR BOX AC UPS 35kVA
9	CB-200F4A	ISOLATOR BOX AC UPS 15kVA
10	CB-200F4B	ISOLATOR BOX AC UPS 15kVA
11	NC-200F2_BC-200F2A/B	NAVAID PANEL
12	BA-200F2	BATTERY BOX NAVAID
13	CB-200F2	ISOLATOR BOX NAVAID
14	B300-HSB-001	DISTRIBUTION & HVAC PANEL – AC/UPS ROOM
15	–	EYE WASH STATION
16	BC-200F2	BATTERY CHARGER NAVAID

01 (rows 11, 12, 13)

01 (rows 15, 16)

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 THE NON WELDED OBJECTS SHALL BE EARTHED.
9. CONTAINER WILL HAVE A BTH (EARTHING BAR TINNED COPPER) WITH 2 EARTHING BOSS, INSTALLED IN THE SOUTH-WEST CORNER AT AN ELEVATION OF 2.5M FROM THE CONTAINER FLOOR. EARTHING BOSS SHALL BE INSTALLED AT SAME ELEVATION 2.5M.



EARTHING LAYOUT

"B-300" UPSs & BATTERIES 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
▲ 01	FRONT OF EQUIPMENT

REFERENCE

DOCUMENT NUMBER	DOCUMENT TITLE
123A90-DDL-EL-DD-20090	ELECTRICAL TYPICAL INSTALLATION DETAILS -EARTHING SYSTEM
123A90-DDL-EL-DL-20106	ELECTRICAL EQUIPMENT LAYOUT-UPSs & BATTERIES SWITCHROOM
1724000049-AR-DD-00020	B-300 DETAILED DRAWINGS – E&I SHELTERS

01

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20138**

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

ROSETTI MARINO SpA

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

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EARTHING & LIGHTNING LAYOUT – UPSs & BATTERIES SWITCHROOM
"B-300" UPSs & BATTERIES SWITCHROOM

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

A3 | DRAWING NO. 123A90-DDL-EL-DL-20138 | SHEET 003 | REV. 01

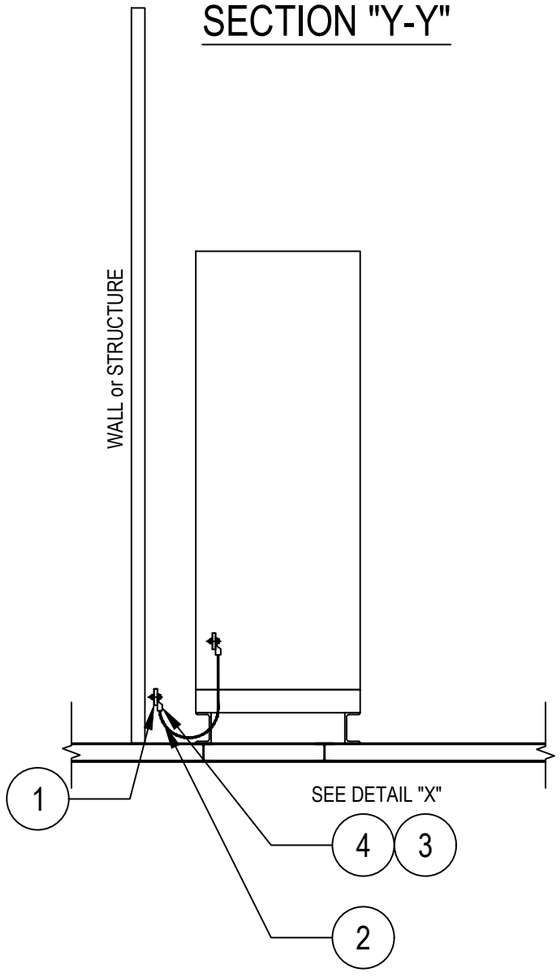
F.to UNI A3: 420mmx297mm

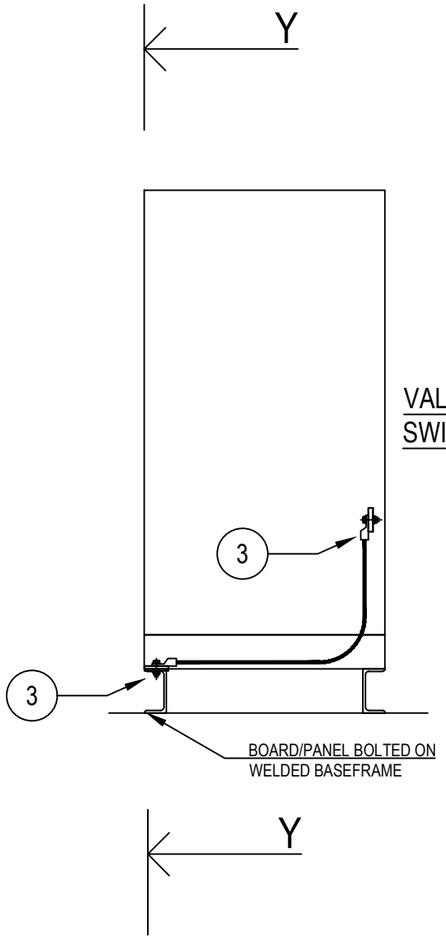
File Name : 123A90-DDL-EL-DL-20138 Rev. 01

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	

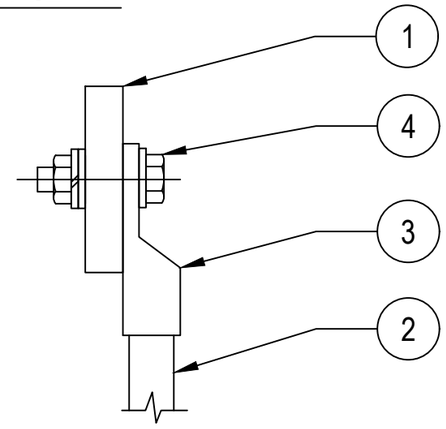
SECTION "Y-Y"





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

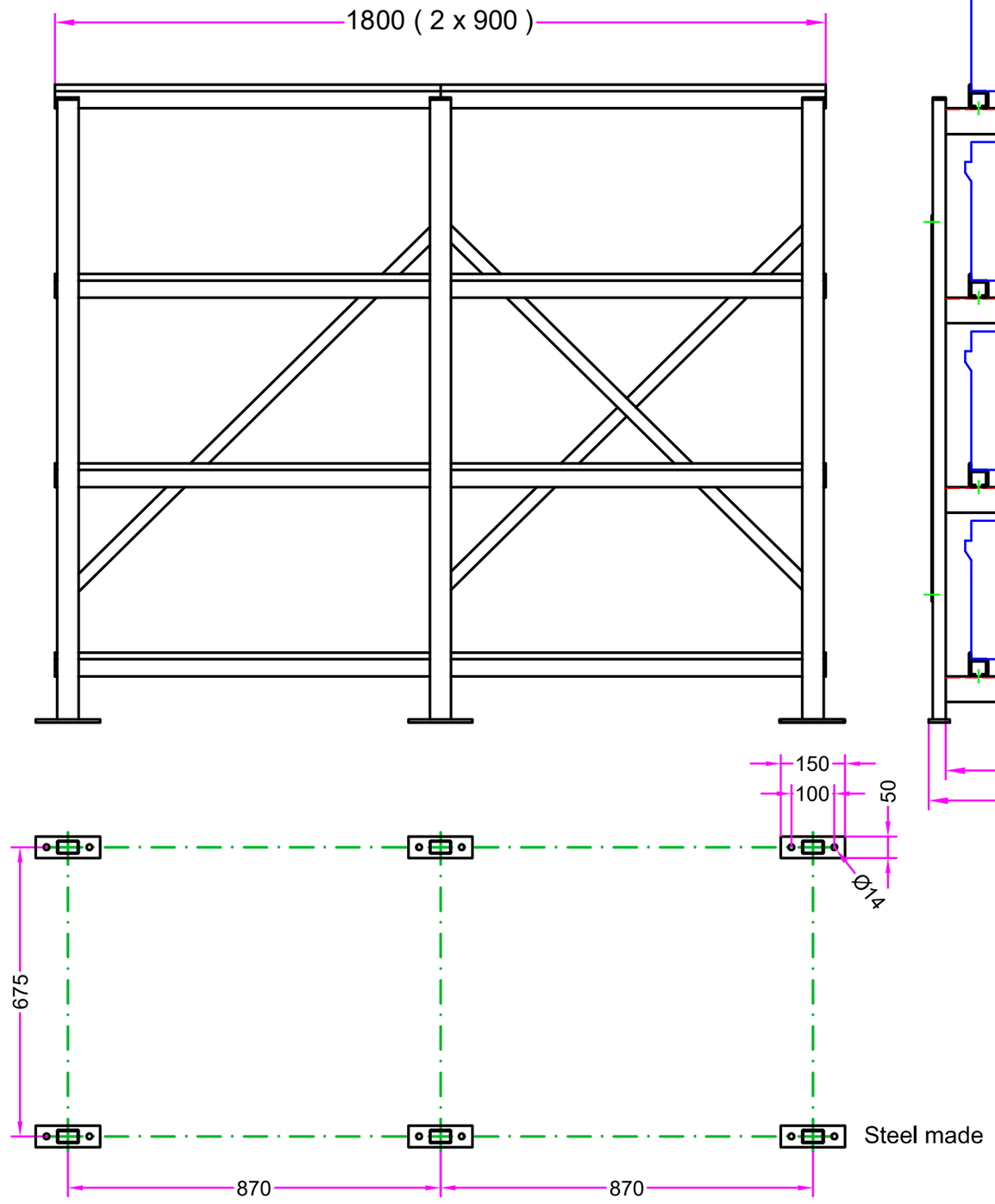
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

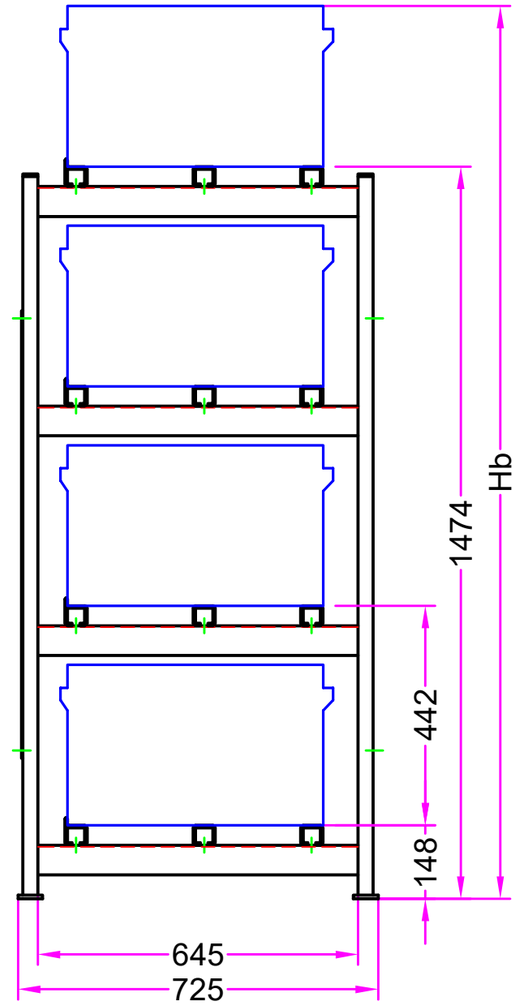
A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-EL-DD-20090	011	02

F.to UNI A3: 420mmx297mm

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

Battery Rack
BA-200F4 A/B





Rack weight : 100,6 kg
Battery weight : 2.295,0 kg
Total weight : 2.395,6 kg

Material:	S235 JR EN 10025 (St-37-2)
Coating:	Plastic Coated
Tolerance:	DIN ISO 2768 "C"
Battery:	

Date	Name	Checked
16/24	Riedel	St.Selig

Scale: none

Execution:
Rack, Standard

Drawing-/Article No:
4U1187FT

Rev:
00

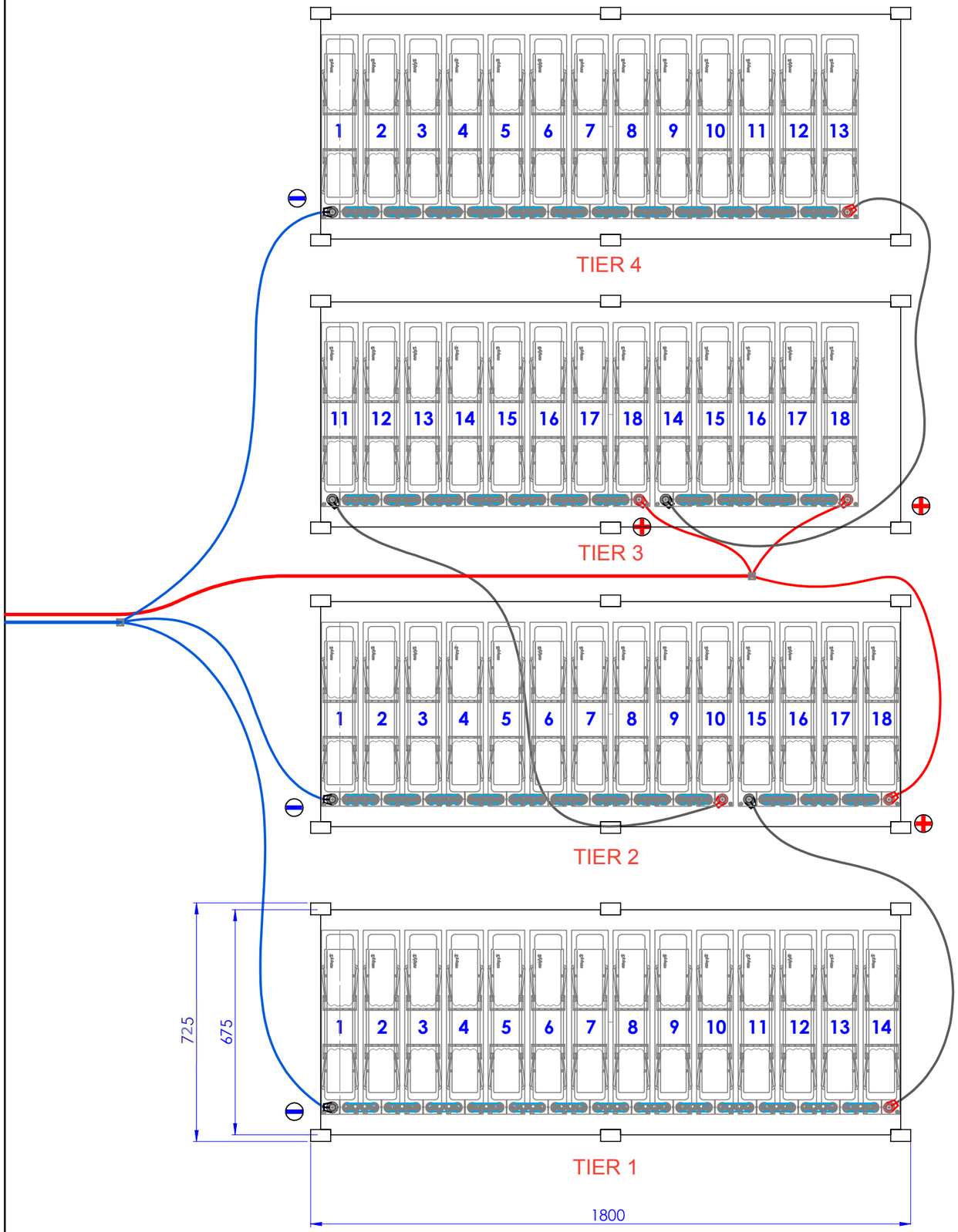
Type:
4E-PGU 1-18 HH FT with FIX002

Production Details: PPCS-01 rev. 0

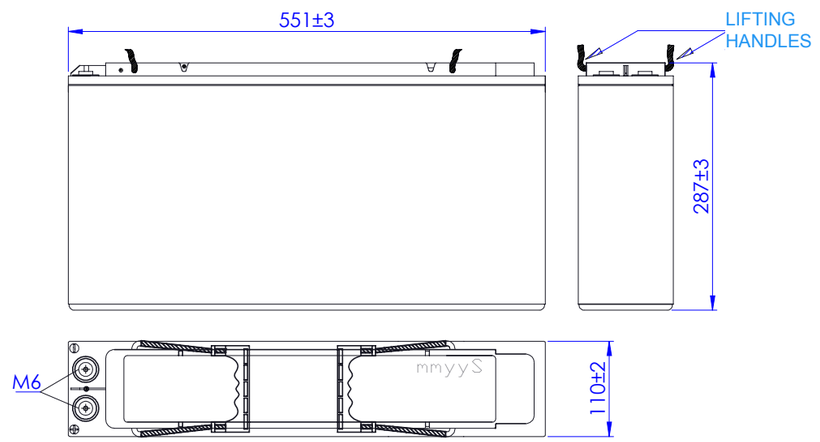
Welding execution according to WD0002

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EN 1090 EXC 3



BATTERY BLOCK : FTG12-120



SCALA 1 : 5

BILL OF MATERIALS	CODE	WEIGHT (kg)	Q.TY
CELL FTG12-120	11017386	42,5	54
CELLS CONNECTION CABLE 50mm	21000191	0,5	15 m
CABLE LUG F6 X 50	41005168	0,3	12
CABLE LUG COVER BLACK 50040	41000243	0,008	6
CABLE LUG COVER RED 50039	41000244	0,008	6

REV./REV.:	DATA/DATE	PROGETTISTA/DESIGNER	DISEGNATO/DRAWN	APPROVATO/APPROVED:	DESCRIZIONE MODIFICHE/DESCRIPTION REVISIONS

TOLLERANZE GENERALI/GENERAL ALLOWANCES: NORMA UNI EN 22768-mk

RUGOSITA' SUPERFICIALE/SUPERFICIAL ROUGHNESS: NORMA UNI ISO 1302

FORME E POSIZIONE/FORMS AND POSITION: NORMA UNI ISO 1101

SCALA/SCALE: 1:10 | PROIEZIONE/PROJECTION: | FOGLIO/SHEET: A2

DESCRIZIONE/DESCRIPTION:

CARATTERISTICHE ELETTRICHE/ELETTRIC CHARACTERISTICS:

PESO BATT./BTR. WEIGHT: 2295 kg

TIPO ELEMENTO/CELL TYPE: 3x18 FTG12-120

PESO EL./CELL WEIGHT: 42,5 kg

CODICE SAP EL./CELL SAP CODE: 11017386

PROGETTISTA/DESIGNER: P. VECCHIARELLI

DISEGNATO/DRAWN: P. VECCHIARELLI

APPROVATO/APPROVED: F. PAGLIARINI

DATA/DATE: 09/04/2024

FILE-DISEGNO/FILE-DRAWING: layout 3x18 FTG 12-120

TAV./TAB.: 1

FAAM

1724000372-EL-DG-00011

AC UPS 15kVA - 3 x 18 x FTG 12-120

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CAE EPLAN Electric P8

AUXILIARY
From Lighting & Small Power DB BOP DP-200N1 (Cubicle 03-Q42)
100-240V/N/PE~50/60Hz

LINE A
From LV Switchgear SG-200N1 (Cubicle A6/05)
Mains
400V;3/PE~50Hz

From LV Switchgear SG-200N1 (Cubicle A2/04)
Bypass mains
400V;3/PE~50Hz

LINE B
From LV Switchgear SG-200N1 (Cubicle A6/06)
Mains
400V;3/PE~50Hz

back-up fuse gG10A 3G2.5mm2

gG80A 4G35mm2

gG63A 4G35mm2

gG80A 4G35mm2

Not included in the AEG shipment

Code	Description
Q1	Rectifier input mains breaker
T40	Rectifier input isolation transformer
A1	Rectifier
A2	Inverter
T1	Inverter output isolation transformer
A3-A4	Static by-pass switch
A18	Display control module
A85	Heater
H1	Light

+MBC1
BY-200F4
Bypass-Trafoschrank mit HU 20 kVA
1000007888.090
10009760

-Q10 L=50/35A I=0,5kA Icu=50kA
-T8 400V/400V 20kVA
-Q28.1 NC
-Q28.2 NC

+UPS1
BC-200F4A
Protect 8.33 20-400-204-400
1000007888.080
10009759

+UPS2
BC-200F4B
Protect 8.33 20-400-204-400
1000007888.080
10009759

-Q1 L=100/85A I=1,0kA Icu=50kA
-T40
-A1 REC
-A2 INV
-T1
-F1,-F2,-F3
-A3 SBS
-A4
-A18 Display
-A20 Parallel Adapter
INV CAN -X3 1-3 → 203 / 1.6
INV Sync -X5 1-4 → 205 / 1.6
-L11,-L12,-L13 Parallel preventive choke coil
-A24.1 BLÜ-PRO -F91
-A24.2 BLÜ-PRO -F92
-A24.3 BLÜ-PRO -F93
-A12 ,-A13 Remote signaling

-Q71 NC
-Q72 NC
INV operation / Manual bypass
-Q29
-F25
DP-200F4
-QF31 B16A 300mA
-QF35 B16A 300mA
5pc
-QF36 B10A
-QF38 B10A
3pc

Not included in the AEG shipment

max. gG10A — max. gG10A
Load
400/230V;3/N/PE~50Hz

+BFB1
CB-200F4A
Battery fuse box 200 A
-Q2 L=200A
DC 24V max. 300W

+BFB2
CB-200F4B
Battery fuse box 200 A
-Q2 L=200A
DC 24V max. 300W

2(1x70 mm2)

+BAT1
BA-200F4A
Batteries installed on rack
3 x 18 x FTG 12-120
Battery voltage 216V
Battery capacity 360Ah
string 1
String 2
String 3
-R81

+BAT2
BA-200F4B
Batteries installed on rack
3 x 18 x FTG 12-120
Battery voltage 216V
Battery capacity 360Ah
string 1
String 2
String 3
-R81

*1 Attention! In the event of battery undervoltage < 130 V, the UPS automatically switches off battery isolator Q2.
If this happens, switch X15:3 must be switched into the open position (undervoltage trip blocked).
For restart, please refer to the chapter in the UPS operating instructions (charging the DC link capacitors) attached.
Unlock the tripped switch Q2 by switching to open position.
After charging the DC link capacitors, switch on Q2.
Attention! When the battery voltage reaches > 200 V, switch X15:3 must be switched back to the closed position.

*2 Connection cables are not included.

					Date	14.05.2024	
01	5000000002053	13.08.2024	Bockschäfer	Editor	EEC	ROSETTI MARINO Hollandse Kust Noord (HKN) wind farm	AEG POWER SOLUTIONS
02	5000000007089	27.08.2024	Bockschäfer	Checked	Ch.Peck		
Stat	Alteration	Date	Name	Norm			

System 20 kVA
Single-line diagram

1000007888_080 en

S. FFA

A0 sheet 1 sheets 1

S-701D Data Sheet for AC Uninterruptible Power Systems (UPS) (IEC 62040-3)

JIP33 JOINT INDUSTRY PROGRAMME

Row							Issue
2	Tag No. :	UP-200F4					
3	Service :	AC UPS F&G					
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 enquiry	Noted			
8	5.1.2	Purchase order number, date :	Input Data	Noted			
9	5.1.2	Manufacturer :	Input Data	AEG Power Solutions			
10	5.1.2	Model number :	Input Data	2 x Protect 8.33 S10 20kVA			
11	5.1.2	Serial number :	Input Data	Released after production			
12	5.2.3	Application :	industrial	Noted			
13	5.3.3	Purchaser specified rated output power :	15	20kVA	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.2, Figure A.3A, Figure A.3B, Figure A.6	UPS configuration :	simplified parallel UPS with common bypass & common output-Figure A.3A	Confirmed			
18	5.1.1, B.1	UPS topology :	double conversion	Confirmed			
19	5.1.1	Static switch configuration :	in both inverter and bypass path	Confirmed			
20	5.4.2.3	Battery configuration :	2 x 50%	Confirmed. 240 min. autonomy each battery			
21	5.3.2, 5.3.4	Performance classification :	manufacturer to advise	-			
22	8.1.1.3	Bi-directional rectifier :	No	Not applicable			
23	8.4.2.11	Remote access required :	Yes (read only)	Confirmed. Modbus TCP			
24	8.4.2.11	Hardware (adapters, connectors, cables, etc.) required for remote access :	manufacturer to advise	Confirmed			
25	8.1.1.5, 8.1.1.6	On-line battery monitoring facility required :	string monitoring	Confirmed			
26	8.1.1.4	On-line battery testing feature required :	No	Noted			
27	8.1.1.4	Battery test load interface :	No	Noted			
28	5.4.2.3	DC earth leakage monitoring required :	No	Noted			
29	7.4.14	Single line diagram and status display :	on HMI	LCD display with synoptic			
30	8.1.2.11	Black start feature required :	Yes	Confirmed			
31	8.1.1.1	Earth screen required for isolation transformer :	manufacturer to advise	Confirmed on the by-pass isolation transformer			
32		**PHYSICAL ASPECTS**					
33	7.2.1	Mounting :	floor mounting	Confirmed			
34	7.2.1	Overall cabinet dimensions - length :	manufacturer to advise	900 + 600 + 900 mm	mm		
35	7.2.1	Overall cabinet dimensions - depth :	manufacturer to advise	860 mm	mm		
36	7.2.1	Overall cabinet dimensions - height :	manufacturer to advise	1915 mm	mm		
37	7.2.1	Reference outline drawing number :	Input Data	1724000372-EL-DA-00004			
38	7.2.1	Total UPS cabinet mass :	manufacturer to advise	1530 kg	kg		
39	7.2.1	Total UPS mass with batteries (if integrated) :	manufacturer to advise	Batteries not integrated	kg		
40	7.2.4, 7.2.5	Cable entry location :	top	Confirmed. Through by-pass cabinet by means of cable glands			
41	7.2.4, 7.2.5	Cable entry type :	removable - undrilled plate	Confirmed			
42	7.2.4, 7.2.5	Gland plate material :	manufacturer standard	Steel			
43	7.2.1	Paint colour :	supplier standard	RAL7035			
44	7.2.1	Canopy for cabinet required :	No	Noted			
45	7.3.9	Document holder :	Yes	Confirmed			
46		**INSTALLATION**					
47	4,1	Site :	offshore - fixed	Noted. Painting class C3-H			
48	4,1	Location of UPS cabinet installation :	indoor	Noted			
49	7.3.1, 7.3.2	Front access clearance dimensions for operation and maintenance :	800	Noted	mm		
50	7.3.2	Side clearance for ventilation (if required) :	manufacturer to advise	0	mm		
51	7.3.2	Rear clearance for ventilation (if required) :	manufacturer to advise	100 mm	mm		
52	7.2.3, 7.9.3	Installed location of battery :	inside UPS room	Battery housed on rack			
53	7.2.3	Maximum battery assembly dimensions (L x D x H) :	manufacturer to advise	Battery rack 1800 x 725 x 1474	mm		
54		**SAFETY**					
55	5.1.1	Accessibility :	operator access area	Front access			
56	5.1.1	Key required for cabinet :	Yes	Confirmed			
57	7.2.2	Degree of protection (with closed doors) :	IP31	IP43			
58	7.2.2	Degree of protection (with open doors) :	IP2X	Confirmed			
59	7.7.5	Cooling fan replacement while UPS in service :	No	Noted			
60	5.1.2	Local language for caution/danger/warning labels:	English	Confirmed			
61		**ELECTROMAGNETIC COMPATIBLITY**					
62	5.1.4	Emission :	UPS Cat C3	Confirmed			
63	5.1.4	Immunity :	UPS Cat C3	Confirmed			
64		**ENVIRONMENTAL CONDITIONS**					
65	4.2.1.1	Minimum ambient temperature (operation) :	-8,4	Confirmed with heater option included	°C		
66	4.2.1.1	Maximum ambient temperature (operation) :	40	Confirmed	°C		
67	4.2.1.1	Maximum relative humidity (operation) :	95	Confirmed. Not condensing	%		
68	4.2.1.1	Temperature at which relative humidity is specified (operation) :	Input Data	-	°C		
69	4.2.1.2	Maximum altitude (operation) :	Sea level	Noted	m		
70	4.2.2.1	Minimum ambient temperature (storage and transportation) :	-5	Noted	°C		
71	4.2.2.1	Maximum ambient temperature (storage and transportation) :	40	Noted	°C		
72	4.2.2.1	Maximum relative humidity (storage and transportation) :	95	Noted	%		
73	4.2.2.1	Temperature at which relative humidity is specified (storage and transportation) :	Input Data	-	°C		
74	4.3.2	Seismic requirement data :	Zone 2	Noted			
75	4.2.2.1	Storage site of UPS :	indoor – natural ventilation	Noted			
76	4.3.2	Additional or unusual conditions (operation) :	Input Data	Not applicable			
77	4.3.3	Additional or unusual conditions (storage and transportation) :	Input Data	Not applicable			
78	5.1.5	Acoustic noise at 1 m - normal mode :	70	< 65 dB(A)	dBA		
79	5.1.5	Acoustic noise at 1 m - stored energy mode :	70	< 65 dB(A)	dBA		
80		**COMMUNICATION INTERFACE(S)**					
81	5,6	(1) Interface media for SCADA (ICSS / DCS) :	serial	Modbus TCP + relays			

S-701D Data Sheet for
AC Uninterruptible Power Systems (UPS) (IEC 62040-3)

JIP33 JOINT INDUSTRY PROGRAMME

Issue

Row							
2	Tag No. :	UP-200F4					
3	Service :	AC UPS F&G					
4	Ref. Clause	Description	Project Requirement	Manufacturer Declared Values	Unit	Additional notes	
82	5,6	(1) Maximum allowable length of communication cable (for copper) :	Input Data	25 m	m		
83	5,6	(1) Interface protocol for SCADA (ICSS / DCS) :	Modbus	Modbus TCP + relays			
84	5,6	(2) Interface media for electrical management / control system :	serial	Modbus TCP + relays			
85	5,6	(2) Maximum allowable length of communication cable (for copper) :	Input Data	25 m	m		
86	5,6	(2) Interface protocol for electrical management / control system :	Modbus	Modbus TCP + relays			
87	5,6	(3) Remote access / monitoring software required :	Yes	Noted			
88	5,6	(3) Interface media for remote access / monitoring :	ethernet (fiber)	Noted			
89	5,6	(3) Maximum allowable length of communication cable (for copper) :	Input Data	25 m	m		
90	5,6	(3) Interface protocol for remote access / monitoring :	Modbus	Modbus TCP + relays			
91		**AC INPUT SPECIFICATIONS**					
92	5.2.1	Voltage (steady state, R.M.S) - rated :	400	Confirmed	V		
93	5.2.1	Voltage (steady state, R.M.S) - tolerance :	+/- 10	Confirmed	%		
94	5.2.1	Frequency - rated :	50 Hz	Confirmed			
95	5.2.1	Frequency - tolerance :	+/- 2	Confirmed	%		
96	5.2.2	Phases required :	3	3			
97	5.2.2	Neutral required :	Yes	Confirmed. Neutral not required for the rectifier supply			
98	5.2.2	Current (R.M.S) - rated (with the energy storage device charged) :	manufacturer to advise	35A	A		
99	5.2.2	Power factor :	manufacturer to advise	Data not characterized by the factory. Measurable on request			
100	5.2.2	In-rush (% of rated current) :	manufacturer to advise	Typically 10 x In	%		
101	5.2.2	In-rush (time) :	manufacturer to advise	Data not characterized by the factory. Measurable on request	s		
102	5.2.2	Maximum current (with low input volt and energy storage device charging) :	manufacturer to advise	43A at 400Vac	A		
103	5.2.2	Time for overload (125 % of rated current) :	10	Confirmed	min		
104	5.2.2	Time for overload (150 % of rated current) :	1	Confirmed	min		
105	5.2.2	Total harmonic distortion - current (THD p.u.) :	8	Confirmed. The AC UPS works with an input voltage harmonic distortion ≤ 8%	%		
106	5.2.3	Short circuit current of the input supply (Minimum and Maximum) :	50	Confirmed. The charger is equipped with an input MCCB (Q1) with Isc = 50kA	kA		
107	5.2.2	Minimum short circuit current :	Input Data	Data not characterized by the factory. Measurable on request	kA		
108	5.2.2	Earth leakage current :	Input Data	Data not characterized by the factory. Measurable on request	mA		
109	5.2.2	AC power distribution system - compatibility :	TN-S	Confirmed			
110	5.2.3	Additional or unusual conditions :	Input Data	Not applicable			
111	5.2.3, 7.5.4	Cable size (cross-section area) - input mains :	Input Data	min 25 sqmm - max 2x95 sqmm	sq.mm.		
112	5.2.3, 7.5.4	Cable size (cross-section area) - input bypass:	Input Data	min 10 sqmm - max 2x95 sqmm	sq.mm.		
113	5.2.3, 7.5.4	Cable size (cross-section area) - input maintenance bypass :	Input Data	min 10 sqmm - max 2x95 sqmm	sq.mm.		
114	7.4.8, 8.1.1.1	Input isolation transformer required :	Yes	Confirmed			
115	7.4.10	Input isolation transformer winding :	supplier standard	Aluminium			
116		**DC AND BATTERY SPECIFICATIONS**					
117	5.4.2.2	DC voltage level :	Select	Confirmed	V d.c.		
118	5.4.2.2	Design life :	5	10 years	years		
119	5.4.2.2	Float service life :	manufacturer to advise	Dependent from temperature	years		
120	5.4.2.2	Shelf life of battery :	manufacturer to advise	3 months	months		
121	5.4.2.2	Quantity of cells and strings :	manufacturer to advise	18 blocks - 3 strings	nos.		
122	5.4.2.2	Nominal voltage (total) :	manufacturer to advise	216V	V d.c.		
123	5.4.2.2	Battery technology :	sealed nickel cadmium	Lead-Acid VRLA GEL			
124	5.4.2.2	Nominal AH capacity :	manufacturer to advise	360Ah	AH		
125	5.4.2.2	Discharge rate (C-rate) :	Select	C10			
126	5.4.2.2	Electrolyte fill status :	manufacturer standard	Not applicable			
127	8.1.2.3	Purchaser's requirement (% of battery recharge level - 1) :	80	Confirmed with charging current limited to 0,1C	%		
128	8.1.2.3	Purchaser's requirement (time for battery recharge level - 1) :	10	Confirmed	Hours		
129	8.1.2.3	Purchaser's requirement (% of battery recharge level - 2) :	100	Data not characterized by the factory. Measurable on request	%		
130	8.1.2.3	Purchaser's requirement (time for battery recharge level - 2) :	24	Data not characterized by the factory. Measurable on request	Hours		
131	5.4.2.2	Stored energy time (Autonomy time at 100% rated load) :	8	Confirmed with both batteries	hours		
132	5.4.2.2	Restored energy time (recharge time to 80% capacity) :	manufacturer to advise	10h	hours		
133	5.4.2.2	Ambient reference temperature :	40	Confirmed	°C		
134	5.4.2.2	Earth condition/isolation :	manufacturer to advise	floating			
135	5.4.2.2	Ripple current (R.M.S) :	manufacturer to advise	< 2% RMS	%		
136	5.4.2.2	Nominal discharge current (stored energy mode):	manufacturer to advise	-	A		
137	5.4.2.2	DC Fault current rating :	manufacturer to advise	Data not characterized by the factory. Measurable on request	A d.c.		
138	5.4.2.2	Cable volt drop recommendation (≤ % at nominal discharge current) :	manufacturer to advise	2%	%		
139	5.4.2.2	Charging regime :	manufacturer to advise	Constant voltage, current limited			
140	5.4.2.2	Charge voltage (float) and tolerance band :	manufacturer to advise	2,28Vcell - 13,5 / 13,8 Vblock	V d.c.		
141	5.4.2.2	Charge voltage (boost) and tolerance band :	manufacturer to advise	2,28Vcell - 13,5 / 13,8 Vblock	V d.c.		
142	5.4.2.2	Charge voltage (equalising) and tolerance band :	manufacturer to advise	Not applicable to VRLA batteries	V d.c.		
143	5.4.2.2	Minimum end of discharge voltage :	manufacturer to advise	178,2V	V d.c.		
144	5.4.2.2	Charge current limit (or range) :	limitation of batteries charging to 30% of the UPS sizing	36A (0,1C)	A d.c.		
145	5.4.2.2	Temperature compensated chargingrequired:	Yes	Confirmed			
146	5.4.2.3	Battery isolation box required :	Yes	Confirmed			
147	5.4.2.3	Additional or unusual conditions :	Input Data	Not applicable			
148	5.4.2.3	Load profile for battery design, attached :	No	Noted			

S-701D Data Sheet for
AC Uninterruptible Power Systems (UPS) (IEC 62040-3)

JIP33 JOINT INDUSTRY PROGRAMME

Row							Issue
2	Tag No. :	UP-200F4					
3	Service :	AC UPS F&G					
4	Ref. Clause	Description	Project Requirement	Manufacturer Declared Values	Unit	Additional notes	
150		**BATTERY ROOM**					
151	4.2.1.1	Minimum ambient reference temperature :	-8,4	-8,4°C (used for battery sizing)	°C		
152	4.2.1.1	Maximum ambient reference temperature :	40	+40°C (used for battery sizing)	°C		
153	5.4.2.1	Area classification :	safe	Noted			
154	5.4.2.1	Hazardous area classification :	Zone 2	Noted			
155	5.4.2.1	Minimum gas subdivision and temperature class (for equipment in battery room) :	Select	-			
156	8.1.2.10	Temperature sensor (for VRLA / partial gas recombination batteries) :	Yes	Confirmed. Standard sensor			
157		**BATTERY ISOLATOR BOX SPECIFICATIONS**					
158	7.9.1	Enclosure material :	manufacturer standard	Aluminium alloy			
159	7.9.1	Mounting :	Select	Wall mounting			
160	7.9.1	Breathing valve required :	manufacturer to advise	No			
161	7.9.1	Internal earth bar :	tinned copper	-			
162	7.9.3	Minimum design temperature :	-8,4	Noted	°C		
163	7.9.3	Maximum design temperature :	40	Noted	°C		
164	7.9.3	Maximum relative humidity :	95	Noted	%		
165	7.9.3	Temperature at which relative humidity is specified:	Input Data	-	°C		
166	7.9.4	Degree of protection :	IP 31	IP65			
167	7.9.5	Area classification :	safe	Noted			
168	7.9.5	Hazardous area certification required :	none	-			
169	7.9.5	Hazardous area classification :	N/A	Not applicable			
170	7.9.5	Hazardous area level of protection :	N/A	Not applicable			
171	7.9.6	Cable entry :	top	Bottom with cable glands			
172	7.9.6	Cable indirect entry via 'ex e' enclosure :	No	Not applicable			
173	7.9.6	Battery cable size (cross-section area):	Input Data	70 sqmm armored cable class-2	sq.mm.		
174	7.9.6	Cable entry diameter in isolator box (ISO metric) :	Input Data	22,6 mm			
175	7.9.7	Battery isolator type :	MCCB	Confirmed			
176	7.9.8	Rated current of breaker / switch fuse unit :	manufacturer to advise	200A	A		
177	7.9.8	Rated breaking current (Icu) - (if breaker used) :	manufacturer to advise	36kA	kA		
178	7.9.10	Breaker status potential free contact (NO) :	two	Confirmed			
179	7.9.9	Under voltage trip feature required :	Yes	Confirmed			
180	7.9.9	Under voltage trip coil for :	black start reserve	Confirmed			
181	8.1.2.12	ESD trip required :	Yes - via shunt trip	Yes - through SIL relay			
182	8.1.2.12	ESD override key switch :	key captive in overridden position and with status contact	Confirmed			
183	7.9.9	Over voltage trip required :	Yes	Not applicable			
184		**AC OUTPUT SPECIFICATIONS**					
185	5.3.2	Rated output power (apparent) :	20	20kVA	kVA		
186	5.3.2	Rated output power (active) :	16	16kW	kW		
187	5.3.2	AC power distribution system - compatibility :	TN-S	Noted			
188	5.3.2	Phases available :	3	Confirmed			
189	5.3.2	Neutral available :	Yes	Confirmed			
190	5.3.2	Voltage (steady state, R.M.S) - rated :	400	Confirmed	V		
191	5.3.2	Voltage - normal mode variation :	manufacturer to advise	+/- 1%	%		
192	5.3.2	Voltage - storage energy mode variation :	manufacturer to advise	+/- 1%	%		
193	5.3.2, 8.2.3	Total harmonic distortion (V), 100% load - normal mode - linear :	5	< 3%	%		
194	5.3.2, 8.2.3	Total harmonic distortion (V), 100% load - normal mode - non linear :	5	Confirmed	%		
195	5.3.2, 8.2.3	Total harmonic distortion (V), 100% load - storage energy mode - linear :	5	< 3%	%		
196	5.3.2, 8.2.3	Total harmonic distortion (V), 100% load - storage energy mode - non linear :	5	Confirmed	%		
197	5.3.2	% Voltage unbalance, 100% load unbalance :	manufacturer to advise	Data not characterized by the factory. Measurable on request	%		
198	5.3.2	Phase angle displacement, 100% load unbalance :	manufacturer to advise	Data not characterized by the factory. Measurable on request	°		
199	5.3.2	% Voltage transient, 100% step load - linear :	manufacturer to advise	+/- 2%	%		
200	5.3.2	Voltage transient recovery time, 100% step load - linear :	manufacturer to advise	2 ms	s		
201	5.3.2	% Voltage transient, 100% step load - non linear :	manufacturer to advise	Data not characterized by the factory. Measurable on request	%		
202	5.3.2	Voltage transient recovery time, 100% step load - non linear :	manufacturer to advise	Data not characterized by the factory. Measurable on request	s		
203	5.3.2	% Voltage transient, 100% step load - transfer normal mode to storage energy mode :	manufacturer to advise	Data not characterized by the factory. Measurable on request	%		
204	5.3.2	Voltage transient recovery time, 100% step load - transfer normal mode to storage energy mode :	manufacturer to advise	Data not characterized by the factory. Measurable on request	s		
205	5.3.2	% Voltage transient, 100% step load -transfer storage energy mode to normal mode :	manufacturer to advise	Data not characterized by the factory. Measurable on request	%		
206	5.3.2	Voltage transient recovery time, 100% step load -transfer storage energy mode to normal mode :	manufacturer to advise	Data not characterized by the factory. Measurable on request	s		
207	5.3.2	Frequency (steady state) - rated :	50	Confirmed	Hz		
208	5.3.2	Frequency (steady state) - normal mode variation :	2	+/- 0,1%	%		
209	5.3.2	Frequency (steady state) - storage energy mode variation :	2	+/- 0,1%	%		
210	5.3.2	Frequency (steady state) - free running variation :	2	+/- 0,1%	%		
211	5.3.2	Synchronization (maximum ± % range of rated frequency) :	manufacturer to advise	-	%		
212	5.3.2	Maximum synchronism phase error (referred to 360° cycle) :	manufacturer to advise	-	%		
213	5.3.2	Maximum slew rate :	manufacturer to advise	-	Hz/s		
214	5.3.2	Current (R.M.S) - rated :	manufacturer to advise	29A	A		
215	5.1.8.1, 5.3.2	Current (R.M.S) - overload capability (% of rated current for ten minutes) :	manufacturer to advise	125%	%		
216	5.1.8.2, 5.3.2	Current (R.M.S) - overload capability (% of rated current for one minute) :	manufacturer to advise	150%	%		
217	5.1.8.3, 5.1.8.4	Current (R.M.S) - short circuit capability (% of rated current) :	manufacturer to advise	3,75 x In (1ph) - 2,15 x In (3ph)	%		
218	5.1.8.3, 5.1.8.4	Current (R.M.S) - short circuit capability (time duration) :	manufacturer to advise	500 ms	s		
219	5.3.2	Current (R.M.S) - limitation (% of rated current) :	manufacturer to advise	-	%		

Row	S-701D Data Sheet for AC Uninterruptible Power Systems (UPS) (IEC 62040-3)						Issue
2	Tag No. :	UP-200F4					
3	Service :	AC UPS F&G					
4	Ref. Clause	Description	Project Requirement	Manufacturer Declared Values	Unit	Additional notes	
220	5.3.2	Current (R.M.S) - limitation (time duration) :	manufacturer to advise	-	s		
221	5.3.2	Current (R.M.S) - fault clearing capability (normal mode) :	manufacturer to advise	-	A		
222	5.3.2	Current (R.M.S) - fault clearing capability (stored energy mode) :	manufacturer to advise	-	A		
223	5.3.2	Load power factor - rated :	manufacturer to advise	0,8			
224	5.3.2	Load power factor - displacement (permissible limit lead) :	manufacturer to advise	Cap - 1 - Ind			
225	5.3.2	Load power factor - displacement (permissible limit lag) :	manufacturer to advise	Cap - 1 - Ind			
226	5.3.2	Efficiency in normal mode - 100% load :	manufacturer to advise	85,6%	%		
227	5.3.2	Efficiency in normal mode - 75% load :	manufacturer to advise	85,8%	%		
228	5.3.2	Efficiency in normal mode - 50% load :	manufacturer to advise	85%	%		
229	5.3.2	Efficiency in normal mode - 25% load :	manufacturer to advise	79,3%	%		
230	7.4.8	Output isolation transformer required :	No	Yes. Output transformer is included in AEG standard design			
231	7.4.10	Output isolation transformer winding :	Select	Aluminium			
232	7.6.5	AC output neutral earth link :	earthed	Noted. Externally			
233	7.1.6	Reference document to AC output distribution board:	To see Electrical Load List	Noted			
234	5.3.3	Integrated AC output distribution board with MCBs :	Yes	Confirmed			
235	5.3.3	Cable size (cross-section area) - output :	manufacturer to advise	min 10 sqmm - max 2x95 sqmm	sq.mm.		
236		**BYPASS SPECIFICATIONS**					
237	C.3	Bypass transfer time :	manufacturer to advise	0	msec		
238	C.3	Bypass static switch rated current :	manufacturer to advise	20kVA - 29A	A		
239	C.3	Bypass protection fuse or circuit breaker rating :	manufacturer to advise	MCCB 35A	A		
240	7.4.8	Bypass transformer required :	Yes	Confirmed			
241	7.4.10	Bypass transformer winding :	copper or aluminum	Aluminium			
242	7.3.5	Maintenance bypass and bypass transformer location :	integrated	Manual by-pass integrated			
243	8.3.6, C.5	Overall maintenance bypass :	internal	Q29 manual by-pass integrated			

ITEM	Tag	CB-200F4A	: Isolator Battery Box for AC UPS 15 kVA	Dwg	123A90-DDL-EL-DS-20032		
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)	Module	LD_B-300		
TASK	code	C10000857	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form CPX00	Miscellaneous Electrical Equipment

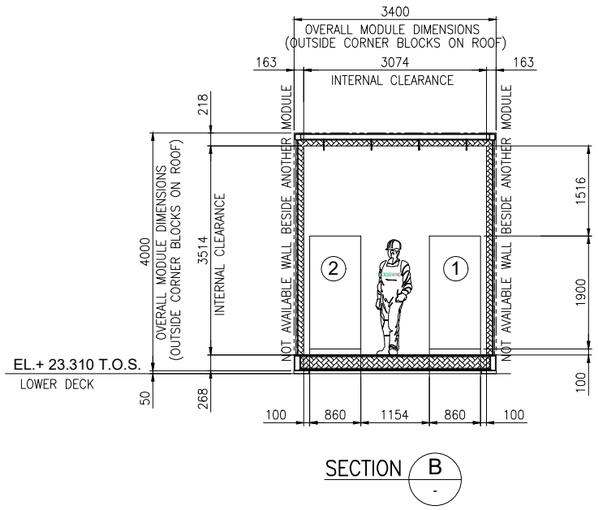
1	Check circuit is de-energized and safe.	OK
2	Check equipment is installed in accordance with layout drawing.	OK
3	Check equipment is undamaged and correcly tagged.	PL
4	Check nameplate data is correct.	OK
5	Check all bolts are fitted and all unused entries are suitably plugged.	OK
6	Check terminals for proper size and installation crimps	PL
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:

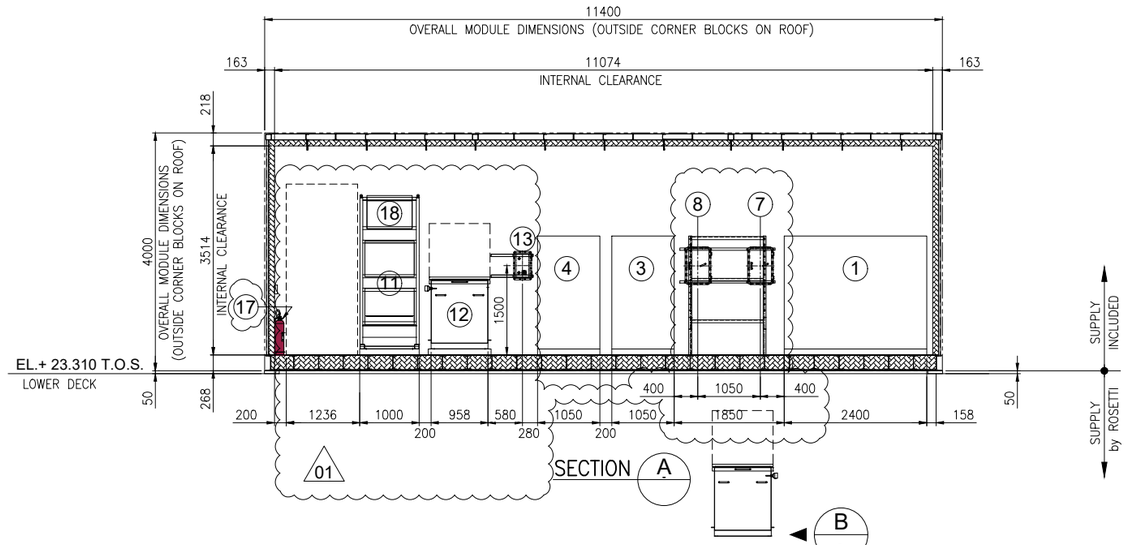
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Company	ICS IMPIANTI	RM (Rosetti Marino)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-10-29	2024-11-04	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-10-29T16:03:37.584Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-11-04T09:34:23.303Z	

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

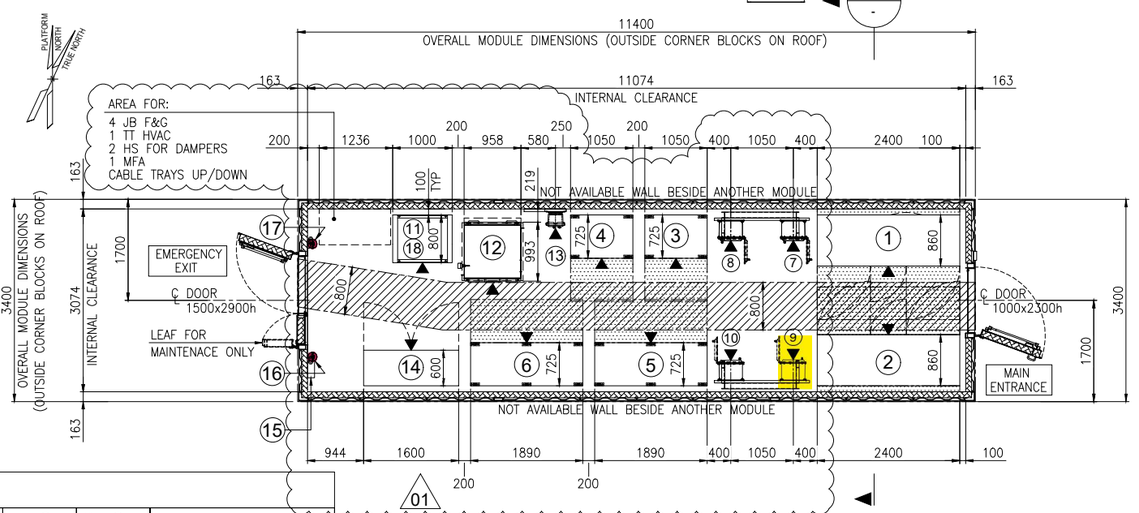
REV. 01



SECTION B -



SECTION A -



A -

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

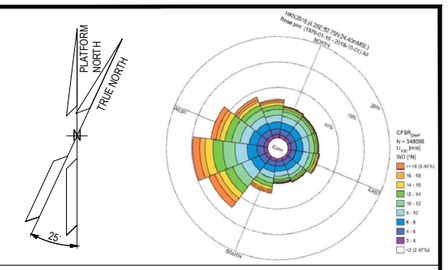
EQUIPMENT LIST

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

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

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

ROSETTI MARINO SpA



NOTES

01

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

LEGEND

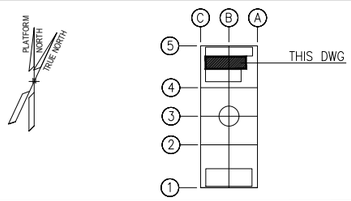
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR – WIDTH 800mm.
_____ MAINTENANCE AREA – VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

HOLDS

REFERENCE

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

KEY PLAN



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

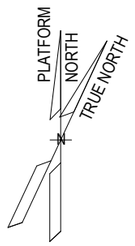
CROSSWIND | ROSETTI MARINO

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

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN SAM	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 23/07/24

A1	DRAWING NO. 123A90-DDL-EL-DL-20106	SHEET 001	REV. 01

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



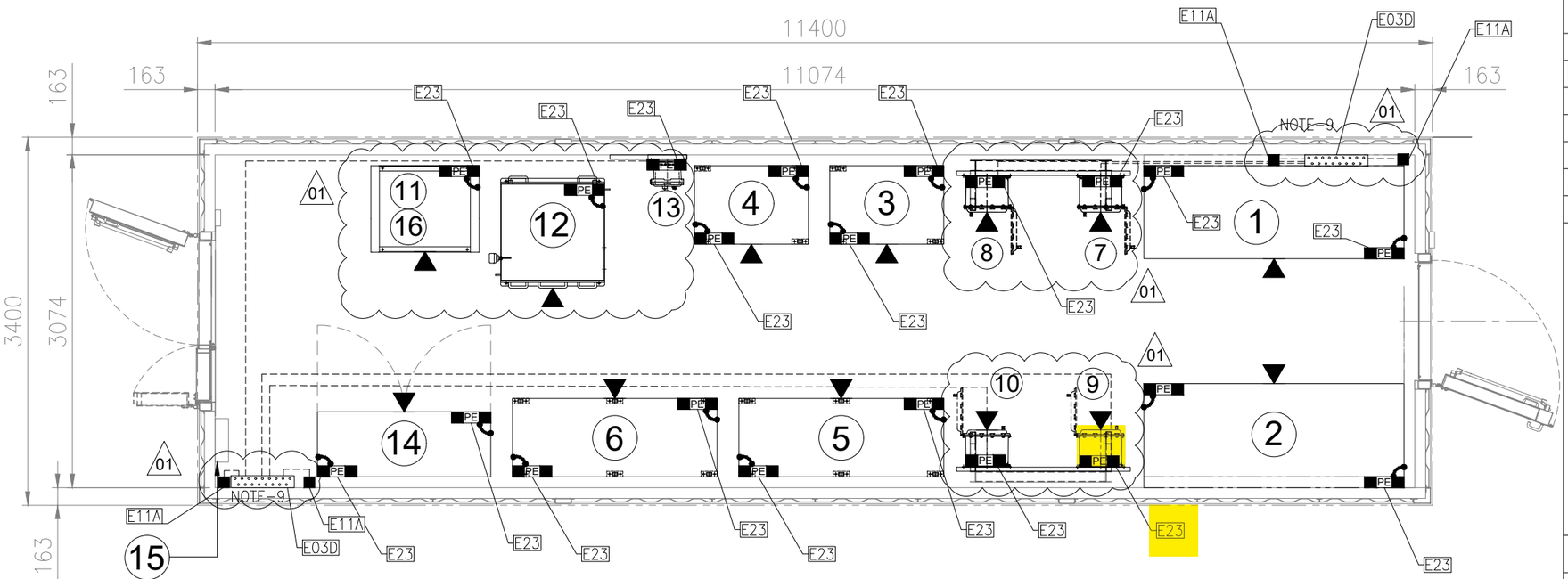
EQUIPMENT LIST		
REF.	TAG No.	DESCRIPTION
1	UP-200F3	AC UPS 35kVA
2	UP-200F4	AC UPS 15kVA
3	BA-200F3A	BATTERY RACK GEL VRLA 7y AC UPS 35kVA
4	BA-200F3B	BATTERY RACK GEL VRLA 7y AC UPS 35kVA
5	BA-200F4A	BATTERY RACK GEL VRLA 7y AC UPS 15kVA
6	BA-200F4B	BATTERY RACK GEL VRLA 7y AC UPS 15kVA
7	CB-200F3A	ISOLATOR BOX AC UPS 35kVA
8	CB-200F3B	ISOLATOR BOX AC UPS 35kVA
9	CB-200F4A	ISOLATOR BOX AC UPS 15kVA
10	CB-200F4B	ISOLATOR BOX AC UPS 15kVA
11	NC-200F2_BC-200F2A/B	NAVAID PANEL
12	BA-200F2	BATTERY BOX NAVAID
13	CB-200F2	ISOLATOR BOX NAVAID
14	B300-HSB-001	DISTRIBUTION & HVAC PANEL – AC/UPS ROOM
15	–	EYE WASH STATION
16	BC-200F2	BATTERY CHARGER NAVAID

01 (rows 11–12)

01 (rows 15–16)

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 THE NON WELDED OBJECTS SHALL BE EARTHED.
9. CONTAINER WILL HAVE A BTH (EARTHING BAR TINNED COPPER) WITH 2 EARTHING BOSS, INSTALLED IN THE SOUTH-WEST CORNER AT AN ELEVATION OF 2.5M FROM THE CONTAINER FLOOR. EARTHING BOSS SHALL BE INSTALLED AT SAME ELEVATION 2.5M.



EARTHING LAYOUT

"B-300" UPSs & BATTERIES 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
▲ 01	FRONT OF EQUIPMENT

REFERENCE

DOCUMENT NUMBER	DOCUMENT TITLE
123A90-DDL-EL-DD-20090	ELECTRICAL TYPICAL INSTALLATION DETAILS -EARTHING SYSTEM
123A90-DDL-EL-DL-20106	ELECTRICAL EQUIPMENT LAYOUT-UPSs & BATTERIES SWITCHROOM
1724000049-AR-DD-00020	B-300 DETAILED DRAWINGS – E&I SHELTERS

01

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20138**

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

ROSETTI MARINO SpA

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

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EARTHING & LIGHTNING LAYOUT – UPSs & BATTERIES SWITCHROOM
"B-300" UPSs & BATTERIES SWITCHROOM

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

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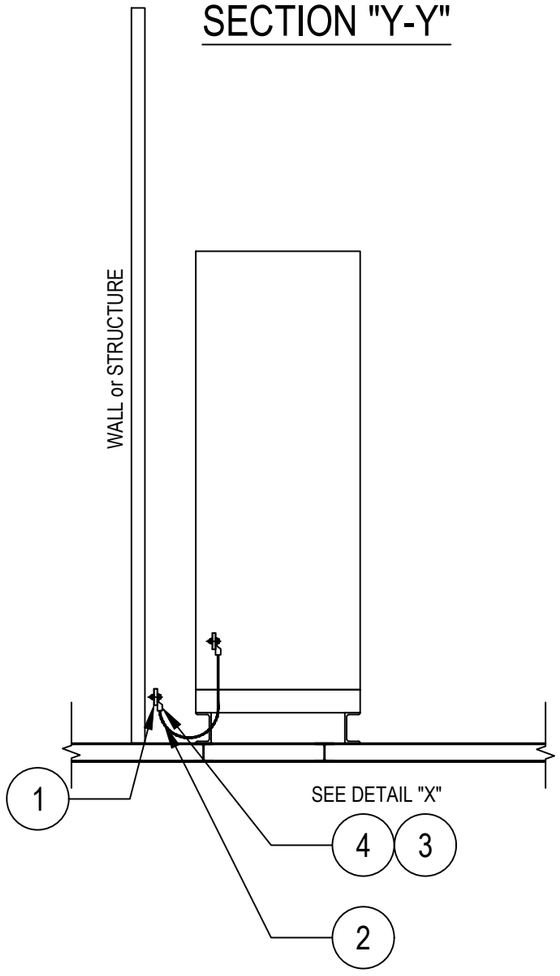
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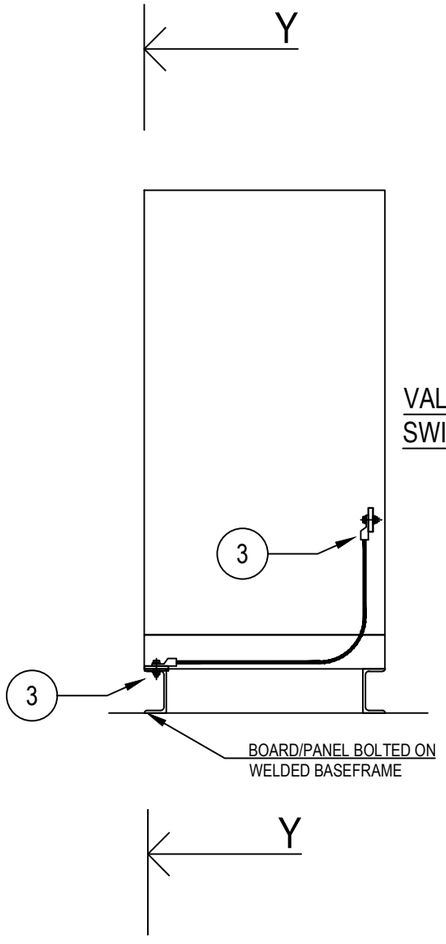
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E23

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	

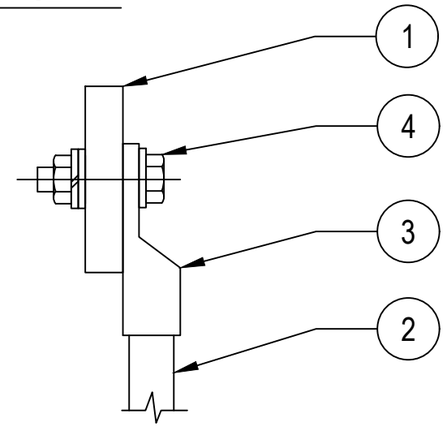
SECTION "Y-Y"





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

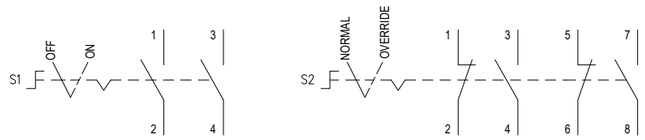
GENERAL NOTES:

-ENCLOSURE: EJBC-5
-MATERIAL: COPPER FREE ALUMINIUM ALLOY
-EXTERNAL PAINTING: RAL7035
-INTERNAL PAINTING: /
-ALL DIMENSION ARE IN mm
-WEIGHT: ≈57kg

BATTERY PROTECTION BOX

CB-200F4 A/B

SELECTOR SWITCHES DETAIL



TRUE TABLE

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

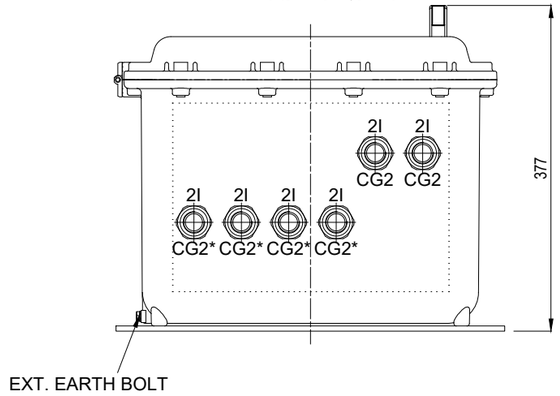
O	CONTACT OPEN
X	CONTACT CLOSED

TRUE TABLE

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

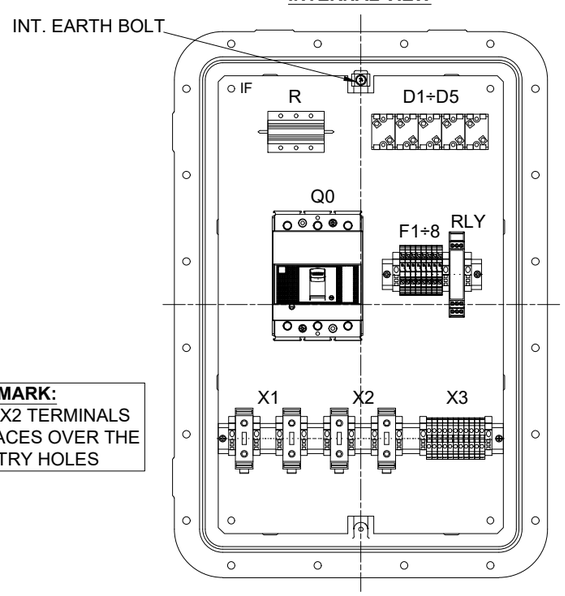
O	CONTACT OPEN
X	CONTACT CLOSED

BOTTOM VIEW
2I: N°6 ØM25x1,5 ISO



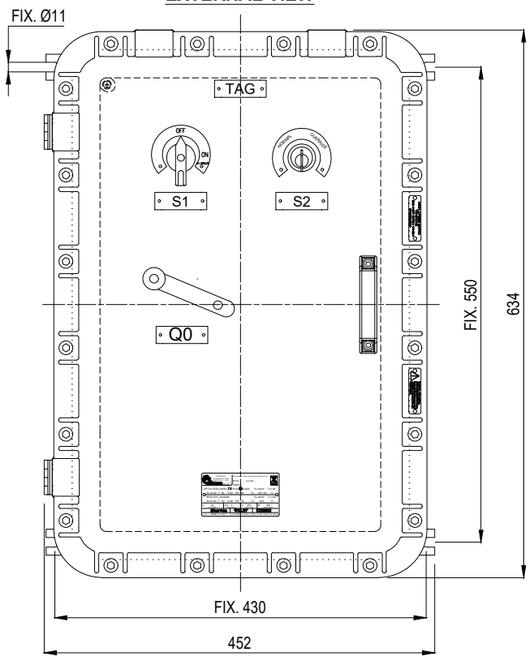
N°	Q.TY	CODE	DESCRIPTION
IF	1	BFE-5	ALUMINIUM INTERNAL FRAME
X1	2	UKH70	PHOENIX TERMINALS SUITABLE FOR 70mm² CABLE
X2	2	UKH70	PHOENIX TERMINALS SUITABLE FOR 70mm² CABLE
X3	11	UT4	PHOENIX TERMINALS SUITABLE FOR 4mm² CABLE
Q0	1	XT3N200TMD3	ABB XT3 MCCB, 3P, 200A, 36kA
	1	1SDA066399R1	220-240Vac/dc UNDERVOLTAGE 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
CG2*	4	NEV25IB	NICKEL PLATED BRASS CABLE GLANDS ØM25 FOR ARMORED CABLE Øint. 11-20mm Øext. 20-27,5mm, ARMOR THICKNESS 0,2-1,6mm
CG2	2	NAV25IB	NICKEL PLATED BRASS CABLE GLANDS ØM25 FOR NOT-ARMORED CABLE Ø11-20mm

INTERNAL VIEW

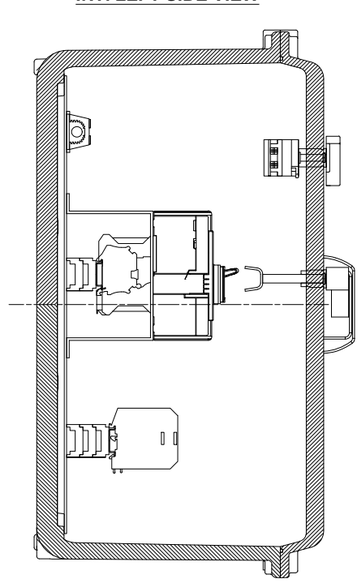


REMARK:
X1/X2 TERMINALS PLACES OVER THE ENTRY HOLES

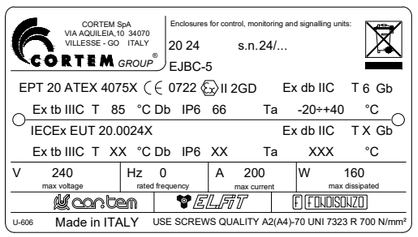
EXTERNAL VIEW



INT. LEFT SIDE VIEW



CERTIFICATE NAMEPLATE



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

N°	TAG N°
TAG	CB-200F4 A
	CB-200F4 B
	CB-200F3 A
	CB-200F3 B
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: AC UPS - TAG: UP-200F4
001 EJBC-5/C2401778/10.
ITEM 10
EXT/INT. LAYOUT

CORTEM JOB: COV2401778
DRAWING SCALE: /
DRAWING NUMBER: A3-C 27438
SHEET 1 NEXT 2 TOT. 4

CORTEM GROUP
contem
FONDISONZO
ELFIT

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Smart Professional R. 2012

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CAE EPLAN Electric P8

AUXILIARY
From Lighting & Small Power DB BOP DP-200N1 (Cubicle 03-Q42)
100-240V/N/PE~50/60Hz

back-up fuse gG10A 3G2.5mm2

LINE A
From LV Switchgear SG-200N1 (Cubicle A6/05)
Mains
400V;3/PE~50Hz

gG80A 4G35mm2

From LV Switchgear SG-200N1 (Cubicle A2/04)
Bypass mains
400V;3/PE~50Hz

gG63A 4G35mm2

LINE B
From LV Switchgear SG-200N1 (Cubicle A6/06)
Mains
400V;3/PE~50Hz

gG80A 4G35mm2

Not included in the AEG shipment

+MBC1
BY-200F4
Bypass-Trafoschrank mit HU 20 kVA
1000007888.090
10009760

-X1 1U,1V,1W,PE
-X10 U,V,W,PE
-X13 U,N,PE
-X14 U,N
-X1 3U,3V,3W,PE
-Q10 L=50/35A I=0,5kA Icu=50kA
-T8 400V/400V 20kVA
-A85
-H1
-Q28.1 NC
-Q28.2 NC
-X1 2U,2V,2W,PE
-X4 1U,1V,1W,1N,PE
-X4 2U,2V,2W,2N,PE
-X1 4U,4V,4W,PE

+UPS1
BC-200F4A
Protect 8.33 20-400-204-400
1000007888.080
10009759

+UPS2
BC-200F4B
Protect 8.33 20-400-204-400
1000007888.080
10009759

-E1-X1 U,V,W,PE
-E4-X4 U,V,W,N,PE
-Q1 L=100/85A I=1,0kA Icu=50kA
-T40
-A1 REC
-A2 INV
-T1
-F1,-F2,-F3
-A3 SBS
-A18 Display
-A20 Parallel Adapter
INV CAN -X3 1-3 → 203 / 1.6
INV Sync -X5 1-4 → 205 / 1.6
1.5 / 203
1.5 / 205
-A4
-L11,-L12,-L13 Parallel preventive choke coil
-A24.1 BLÜ-PRO -F91
-A24.2 BLÜ-PRO -F92
-A24.3 BLÜ-PRO -F93
-A12 ,-A13 Remote signaling
-E2-X2 L-,L+,PE
-X15 2,3
-X130 1,2
-E3-X3 U,V,W,N,PE
-X15 6,7
-X130 3,4,2PE
-X15 4,5
-X15 8,9
-X2 1L+,1L-,PE
-X91 1M
-X92 1M
-X93 1M
-X5 1U,1V,1W,1N,PE
-X5 2U,2V,2W,2N,PE
-X2 3L+,3L-,PE
-X91 3M
-X92 3M
-X93 3M
-X2 2L+,2L-,PE
-X91 2M
-X92 2M
-X93 2M
-X130 1,2,1PE
-X2 4L+,4L-,PE
-X91 4M
-X92 4M
-X93 4M
-X130 3,4,2PE
-Q71 NC
-Q72 NC
A / 1.6
1.5 / A
UNV operation Manual bypass
-Q29
-F25
DP-200F4
-QF31 B16A 300mA
-QF35 B16A 300mA
5pc
-QF36 B10A
-QF38 B10A
3pc
-X31 U,N,PE
-X35 V,N,PE
-X36 W,N,PE
-X38 V,N,PE
max. gG10A
max. gG10A
Load
400/230V;3/N/PE~50Hz

Not included in the AEG shipment

2(1x70 mm2)

+BFB1
CB-200F4A
Battery fuse box 200 A
*1
-Q2 L=200A
DC 24V max. 300W

+BFB2
CB-200F4B
Battery fuse box 200 A
*1
-Q2 L=200A
DC 24V max. 300W

+BAT1
BA-200F4A
Batteries installed on rack
3 x 18 x FTG 12-120
Battery voltage 216V
Battery capacity 360Ah
string 1
String 2
String 3
-R81

+BAT2
BA-200F4B
Batteries installed on rack
3 x 18 x FTG 12-120
Battery voltage 216V
Battery capacity 360Ah
string 1
String 2
String 3
-R81

Code	Description
Q1	Rectifier input mains breaker
T40	Rectifier input isolation transformer
A1	Rectifier
A2	Inverter
T1	Inverter output isolation transformer
A3-A4	Static by-pass switch
A18	Display control module
A85	Heater
H1	Light

*1 Attention! In the event of battery undervoltage < 130 V, the UPS automatically switches off battery isolator Q2.
If this happens, switch X15:3 must be switched into the open position (undervoltage trip blocked).
For restart, please refer to the chapter in the UPS operating instructions (charging the DC link capacitors) attached.
Unlock the tripped switch Q2 by switching to open position.
After charging the DC link capacitors, switch on Q2.
Attention! When the battery voltage reaches > 200 V, switch X15:3 must be switched back to the closed position.

*2 Connection cables are not included.

01	5000000002053	13.08.2024	Bockschäfer	Editor	Date 14.05.2024	ROSETTI MARINO Hollandse Kust Noord (HKN) wind farm
02	5000000007089	27.08.2024	Bockschäfer	Checked	Ch.Peck	
Stat	Alteration	Date	Name	Norm		

AEG POWER SOLUTIONS

System 20 kVA
Single-line diagram

1000007888_080 en

S. FFA

A0 sheet 1 sheets 1

1000007888_080

S-701D Data Sheet for AC Uninterruptible Power Systems (UPS) (IEC 62040-3)

JIP33 JOINT INDUSTRY PROGRAMME

Row							Issue
2	Tag No. :	UP-200F4					
3	Service :	AC UPS F&G					
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 enquiry	Noted			
8	5.1.2	Purchase order number, date :	Input Data	Noted			
9	5.1.2	Manufacturer :	Input Data	AEG Power Solutions			
10	5.1.2	Model number :	Input Data	2 x Protect 8.33 S10 20kVA			
11	5.1.2	Serial number :	Input Data	Released after production			
12	5.2.3	Application :	industrial	Noted			
13	5.3.3	Purchaser specified rated output power :	15	20kVA	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.2, Figure A.3A, Figure A.3B, Figure A.6	UPS configuration :	simplified parallel UPS with common bypass & common output-Figure A.3A	Confirmed			
18	5.1.1, B.1	UPS topology :	double conversion	Confirmed			
19	5.1.1	Static switch configuration :	in both inverter and bypass path	Confirmed			
20	5.4.2.3	Battery configuration :	2 x 50%	Confirmed. 240 min. autonomy each battery			
21	5.3.2, 5.3.4	Performance classification :	manufacturer to advise	-			
22	8.1.1.3	Bi-directional rectifier :	No	Not applicable			
23	8.4.2.11	Remote access required :	Yes (read only)	Confirmed. Modbus TCP			
24	8.4.2.11	Hardware (adapters, connectors, cables, etc.) required for remote access :	manufacturer to advise	Confirmed			
25	8.1.1.5, 8.1.1.6	On-line battery monitoring facility required :	string monitoring	Confirmed			
26	8.1.1.4	On-line battery testing feature required :	No	Noted			
27	8.1.1.4	Battery test load interface :	No	Noted			
28	5.4.2.3	DC earth leakage monitoring required :	No	Noted			
29	7.4.14	Single line diagram and status display :	on HMI	LCD display with synoptic			
30	8.1.2.11	Black start feature required :	Yes	Confirmed			
31	8.1.1.1	Earth screen required for isolation transformer :	manufacturer to advise	Confirmed on the by-pass isolation transformer			
32		**PHYSICAL ASPECTS**					
33	7.2.1	Mounting :	floor mounting	Confirmed			
34	7.2.1	Overall cabinet dimensions - length :	manufacturer to advise	900 + 600 + 900 mm	mm		
35	7.2.1	Overall cabinet dimensions - depth :	manufacturer to advise	860 mm	mm		
36	7.2.1	Overall cabinet dimensions - height :	manufacturer to advise	1915 mm	mm		
37	7.2.1	Reference outline drawing number :	Input Data	1724000372-EL-DA-00004			
38	7.2.1	Total UPS cabinet mass :	manufacturer to advise	1530 kg	kg		
39	7.2.1	Total UPS mass with batteries (if integrated) :	manufacturer to advise	Batteries not integrated	kg		
40	7.2.4, 7.2.5	Cable entry location :	top	Confirmed. Through by-pass cabinet by means of cable glands			
41	7.2.4, 7.2.5	Cable entry type :	removable - undrilled plate	Confirmed			
42	7.2.4, 7.2.5	Gland plate material :	manufacturer standard	Steel			
43	7.2.1	Paint colour :	supplier standard	RAL7035			
44	7.2.1	Canopy for cabinet required :	No	Noted			
45	7.3.9	Document holder :	Yes	Confirmed			
46		**INSTALLATION**					
47	4,1	Site :	offshore - fixed	Noted. Painting class C3-H			
48	4,1	Location of UPS cabinet installation :	indoor	Noted			
49	7.3.1, 7.3.2	Front access clearance dimensions for operation and maintenance :	800	Noted	mm		
50	7.3.2	Side clearance for ventilation (if required) :	manufacturer to advise	0	mm		
51	7.3.2	Rear clearance for ventilation (if required) :	manufacturer to advise	100 mm	mm		
52	7.2.3, 7.9.3	Installed location of battery :	inside UPS room	Battery housed on rack			
53	7.2.3	Maximum battery assembly dimensions (L x D x H) :	manufacturer to advise	Battery rack 1800 x 725 x 1474	mm		
54		**SAFETY**					
55	5.1.1	Accessibility :	operator access area	Front access			
56	5.1.1	Key required for cabinet :	Yes	Confirmed			
57	7.2.2	Degree of protection (with closed doors) :	IP31	IP43			
58	7.2.2	Degree of protection (with open doors) :	IP2X	Confirmed			
59	7.7.5	Cooling fan replacement while UPS in service :	No	Noted			
60	5.1.2	Local language for caution/danger/warning labels:	English	Confirmed			
61		**ELECTROMAGNETIC COMPATIBLITY**					
62	5.1.4	Emission :	UPS Cat C3	Confirmed			
63	5.1.4	Immunity :	UPS Cat C3	Confirmed			
64		**ENVIRONMENTAL CONDITIONS**					
65	4.2.1.1	Minimum ambient temperature (operation) :	-8,4	Confirmed with heater option included	°C		
66	4.2.1.1	Maximum ambient temperature (operation) :	40	Confirmed	°C		
67	4.2.1.1	Maximum relative humidity (operation) :	95	Confirmed. Not condensing	%		
68	4.2.1.1	Temperature at which relative humidity is specified (operation) :	Input Data	-	°C		
69	4.2.1.2	Maximum altitude (operation) :	Sea level	Noted	m		
70	4.2.2.1	Minimum ambient temperature (storage and transportation) :	-5	Noted	°C		
71	4.2.2.1	Maximum ambient temperature (storage and transportation) :	40	Noted	°C		
72	4.2.2.1	Maximum relative humidity (storage and transportation) :	95	Noted	%		
73	4.2.2.1	Temperature at which relative humidity is specified (storage and transportation) :	Input Data	-	°C		
74	4.3.2	Seismic requirement data :	Zone 2	Noted			
75	4.2.2.1	Storage site of UPS :	indoor – natural ventilation	Noted			
76	4.3.2	Additional or unusual conditions (operation) :	Input Data	Not applicable			
77	4.3.3	Additional or unusual conditions (storage and transportation) :	Input Data	Not applicable			
78	5.1.5	Acoustic noise at 1 m - normal mode :	70	< 65 dB(A)	dBA		
79	5.1.5	Acoustic noise at 1 m - stored energy mode :	70	< 65 dB(A)	dBA		
80		**COMMUNICATION INTERFACE(S)**					
81	5,6	(1) Interface media for SCADA (ICSS / DCS) :	serial	Modbus TCP + relays			

S-701D Data Sheet for
AC Uninterruptible Power Systems (UPS) (IEC 62040-3)

JIP33 JOINT INDUSTRY PROGRAMME

Issue

Row							
2	Tag No. :	UP-200F4					
3	Service :	AC UPS F&G					
4	Ref. Clause	Description	Project Requirement	Manufacturer Declared Values	Unit	Additional notes	
82	5,6	(1) Maximum allowable length of communication cable (for copper) :	Input Data	25 m	m		
83	5,6	(1) Interface protocol for SCADA (ICSS / DCS) :	Modbus	Modbus TCP + relays			
84	5,6	(2) Interface media for electrical management / control system :	serial	Modbus TCP + relays			
85	5,6	(2) Maximum allowable length of communication cable (for copper) :	Input Data	25 m	m		
86	5,6	(2) Interface protocol for electrical management / control system :	Modbus	Modbus TCP + relays			
87	5,6	(3) Remote access / monitoring software required :	Yes	Noted			
88	5,6	(3) Interface media for remote access / monitoring :	ethernet (fiber)	Noted			
89	5,6	(3) Maximum allowable length of communication cable (for copper) :	Input Data	25 m	m		
90	5,6	(3) Interface protocol for remote access / monitoring :	Modbus	Modbus TCP + relays			
91		**AC INPUT SPECIFICATIONS**					
92	5.2.1	Voltage (steady state, R.M.S) - rated :	400	Confirmed	V		
93	5.2.1	Voltage (steady state, R.M.S) - tolerance :	+/- 10	Confirmed	%		
94	5.2.1	Frequency - rated :	50 Hz	Confirmed			
95	5.2.1	Frequency - tolerance :	+/- 2	Confirmed	%		
96	5.2.2	Phases required :	3	3			
97	5.2.2	Neutral required :	Yes	Confirmed. Neutral not required for the rectifier supply			
98	5.2.2	Current (R.M.S) - rated (with the energy storage device charged) :	manufacturer to advise	35A	A		
99	5.2.2	Power factor :	manufacturer to advise	Data not characterized by the factory. Measurable on request			
100	5.2.2	In-rush (% of rated current) :	manufacturer to advise	Typically 10 x In	%		
101	5.2.2	In-rush (time) :	manufacturer to advise	Data not characterized by the factory. Measurable on request	s		
102	5.2.2	Maximum current (with low input volt and energy storage device charging) :	manufacturer to advise	43A at 400Vac	A		
103	5.2.2	Time for overload (125 % of rated current) :	10	Confirmed	min		
104	5.2.2	Time for overload (150 % of rated current) :	1	Confirmed	min		
105	5.2.2	Total harmonic distortion - current (THD p.u.) :	8	Confirmed. The AC UPS works with an input voltage harmonic distortion ≤ 8%	%		
106	5.2.3	Short circuit current of the input supply (Minimum and Maximum) :	50	Confirmed. The charger is equipped with an input MCCB (Q1) with Isc = 50kA	kA		
107	5.2.2	Minimum short circuit current :	Input Data	Data not characterized by the factory. Measurable on request	kA		
108	5.2.2	Earth leakage current :	Input Data	Data not characterized by the factory. Measurable on request	mA		
109	5.2.2	AC power distribution system - compatibility :	TN-S	Confirmed			
110	5.2.3	Additional or unusual conditions :	Input Data	Not applicable			
111	5.2.3, 7.5.4	Cable size (cross-section area) - input mains :	Input Data	min 25 sqmm - max 2x95 sqmm	sq.mm.		
112	5.2.3, 7.5.4	Cable size (cross-section area) - input bypass:	Input Data	min 10 sqmm - max 2x95 sqmm	sq.mm.		
113	5.2.3, 7.5.4	Cable size (cross-section area) - input maintenance bypass :	Input Data	min 10 sqmm - max 2x95 sqmm	sq.mm.		
114	7.4.8, 8.1.1.1	Input isolation transformer required :	Yes	Confirmed			
115	7.4.10	Input isolation transformer winding :	supplier standard	Aluminium			
116		**DC AND BATTERY SPECIFICATIONS**					
117	5.4.2.2	DC voltage level :	Select	Confirmed	V d.c.		
118	5.4.2.2	Design life :	5	10 years	years		
119	5.4.2.2	Float service life :	manufacturer to advise	Dependent from temperature	years		
120	5.4.2.2	Shelf life of battery :	manufacturer to advise	3 months	months		
121	5.4.2.2	Quantity of cells and strings :	manufacturer to advise	18 blocks - 3 strings	nos.		
122	5.4.2.2	Nominal voltage (total) :	manufacturer to advise	216V	V d.c.		
123	5.4.2.2	Battery technology :	sealed nickel cadmium	Lead-Acid VRLA GEL			
124	5.4.2.2	Nominal AH capacity :	manufacturer to advise	360Ah	AH		
125	5.4.2.2	Discharge rate (C-rate) :	Select	C10			
126	5.4.2.2	Electrolyte fill status :	manufacturer standard	Not applicable			
127	8.1.2.3	Purchaser's requirement (% of battery recharge level - 1) :	80	Confirmed with charging current limited to 0,1C	%		
128	8.1.2.3	Purchaser's requirement (time for battery recharge level - 1) :	10	Confirmed	Hours		
129	8.1.2.3	Purchaser's requirement (% of battery recharge level - 2) :	100	Data not characterized by the factory. Measurable on request	%		
130	8.1.2.3	Purchaser's requirement (time for battery recharge level - 2) :	24	Data not characterized by the factory. Measurable on request	Hours		
131	5.4.2.2	Stored energy time (Autonomy time at 100% rated load) :	8	Confirmed with both batteries	hours		
132	5.4.2.2	Restored energy time (recharge time to 80% capacity) :	manufacturer to advise	10h	hours		
133	5.4.2.2	Ambient reference temperature :	40	Confirmed	°C		
134	5.4.2.2	Earth condition/isolation :	manufacturer to advise	floating			
135	5.4.2.2	Ripple current (R.M.S) :	manufacturer to advise	< 2% RMS	%		
136	5.4.2.2	Nominal discharge current (stored energy mode):	manufacturer to advise	-	A		
137	5.4.2.2	DC Fault current rating :	manufacturer to advise	Data not characterized by the factory. Measurable on request	A d.c.		
138	5.4.2.2	Cable volt drop recommendation (≤ % at nominal discharge current) :	manufacturer to advise	2%	%		
139	5.4.2.2	Charging regime :	manufacturer to advise	Constant voltage, current limited			
140	5.4.2.2	Charge voltage (float) and tolerance band :	manufacturer to advise	2,28Vcell - 13,5 / 13,8 Vblock	V d.c.		
141	5.4.2.2	Charge voltage (boost) and tolerance band :	manufacturer to advise	2,28Vcell - 13,5 / 13,8 Vblock	V d.c.		
142	5.4.2.2	Charge voltage (equalising) and tolerance band :	manufacturer to advise	Not applicable to VRLA batteries	V d.c.		
143	5.4.2.2	Minimum end of discharge voltage :	manufacturer to advise	178,2V	V d.c.		
144	5.4.2.2	Charge current limit (or range) :	limitation of batteries charging to 30% of the UPS sizing	36A (0,1C)	A d.c.		
145	5.4.2.2	Temperature compensated chargingrequired:	Yes	Confirmed			
146	5.4.2.3	Battery isolation box required :	Yes	Confirmed			
147	5.4.2.3	Additional or unusual conditions :	Input Data	Not applicable			
148	5.4.2.3	Load profile for battery design, attached :	No	Noted			

S-701D Data Sheet for
AC Uninterruptible Power Systems (UPS) (IEC 62040-3)

JIP33 JOINT INDUSTRY PROGRAMME

Row							Issue
2	Tag No. :	UP-200F4					
3	Service :	AC UPS F&G					
4	Ref. Clause	Description	Project Requirement	Manufacturer Declared Values	Unit	Additional notes	
150		**BATTERY ROOM**					
151	4.2.1.1	Minimum ambient reference temperature :	-8,4	-8,4°C (used for battery sizing)	°C		
152	4.2.1.1	Maximum ambient reference temperature :	40	+40°C (used for battery sizing)	°C		
153	5.4.2.1	Area classification :	safe	Noted			
154	5.4.2.1	Hazardous area classification :	Zone 2	Noted			
155	5.4.2.1	Minimum gas subdivision and temperature class (for equipment in battery room) :	Select	-			
156	8.1.2.10	Temperature sensor (for VRLA / partial gas recombination batteries) :	Yes	Confirmed. Standard sensor			
157		**BATTERY ISOLATOR BOX SPECIFICATIONS**					
158	7.9.1	Enclosure material :	manufacturer standard	Aluminium alloy			
159	7.9.1	Mounting :	Select	Wall mounting			
160	7.9.1	Breathing valve required :	manufacturer to advise	No			
161	7.9.1	Internal earth bar :	tinned copper	-			
162	7.9.3	Minimum design temperature :	-8,4	Noted	°C		
163	7.9.3	Maximum design temperature :	40	Noted	°C		
164	7.9.3	Maximum relative humidity :	95	Noted	%		
165	7.9.3	Temperature at which relative humidity is specified:	Input Data	-	°C		
166	7.9.4	Degree of protection :	IP 31	IP65			
167	7.9.5	Area classification :	safe	Noted			
168	7.9.5	Hazardous area certification required :	none	-			
169	7.9.5	Hazardous area classification :	N/A	Not applicable			
170	7.9.5	Hazardous area level of protection :	N/A	Not applicable			
171	7.9.6	Cable entry :	top	Bottom with cable glands			
172	7.9.6	Cable indirect entry via 'ex e' enclosure :	No	Not applicable			
173	7.9.6	Battery cable size (cross-section area):	Input Data	70 sqmm armored cable class-2	sq.mm.		
174	7.9.6	Cable entry diameter in isolator box (ISO metric) :	Input Data	22,6 mm			
175	7.9.7	Battery isolator type :	MCCB	Confirmed			
176	7.9.8	Rated current of breaker / switch fuse unit :	manufacturer to advise	200A	A		
177	7.9.8	Rated breaking current (Icu) - (if breaker used) :	manufacturer to advise	36kA	kA		
178	7.9.10	Breaker status potential free contact (NO) :	two	Confirmed			
179	7.9.9	Under voltage trip feature required :	Yes	Confirmed			
180	7.9.9	Under voltage trip coil for :	black start reserve	Confirmed			
181	8.1.2.12	ESD trip required :	Yes - via shunt trip	Yes - through SIL relay			
182	8.1.2.12	ESD override key switch :	key captive in overridden position and with status contact	Confirmed			
183	7.9.9	Over voltage trip required :	Yes	Not applicable			
184		**AC OUTPUT SPECIFICATIONS**					
185	5.3.2	Rated output power (apparent) :	20	20kVA	kVA		
186	5.3.2	Rated output power (active) :	16	16kW	kW		
187	5.3.2	AC power distribution system - compatibility :	TN-S	Noted			
188	5.3.2	Phases available :	3	Confirmed			
189	5.3.2	Neutral available :	Yes	Confirmed			
190	5.3.2	Voltage (steady state, R.M.S) - rated :	400	Confirmed	V		
191	5.3.2	Voltage - normal mode variation :	manufacturer to advise	+/- 1%	%		
192	5.3.2	Voltage - storage energy mode variation :	manufacturer to advise	+/- 1%	%		
193	5.3.2, 8.2.3	Total harmonic distortion (V), 100% load - normal mode - linear :	5	< 3%	%		
194	5.3.2, 8.2.3	Total harmonic distortion (V), 100% load - normal mode - non linear :	5	Confirmed	%		
195	5.3.2, 8.2.3	Total harmonic distortion (V), 100% load - storage energy mode - linear :	5	< 3%	%		
196	5.3.2, 8.2.3	Total harmonic distortion (V), 100% load - storage energy mode - non linear :	5	Confirmed	%		
197	5.3.2	% Voltage unbalance, 100% load unbalance :	manufacturer to advise	Data not characterized by the factory. Measurable on request	%		
198	5.3.2	Phase angle displacement, 100% load unbalance :	manufacturer to advise	Data not characterized by the factory. Measurable on request	°		
199	5.3.2	% Voltage transient, 100% step load - linear :	manufacturer to advise	+/- 2%	%		
200	5.3.2	Voltage transient recovery time, 100% step load - linear :	manufacturer to advise	2 ms	s		
201	5.3.2	% Voltage transient, 100% step load - non linear :	manufacturer to advise	Data not characterized by the factory. Measurable on request	%		
202	5.3.2	Voltage transient recovery time, 100% step load - non linear :	manufacturer to advise	Data not characterized by the factory. Measurable on request	s		
203	5.3.2	% Voltage transient, 100% step load - transfer normal mode to storage energy mode :	manufacturer to advise	Data not characterized by the factory. Measurable on request	%		
204	5.3.2	Voltage transient recovery time, 100% step load - transfer normal mode to storage energy mode :	manufacturer to advise	Data not characterized by the factory. Measurable on request	s		
205	5.3.2	% Voltage transient, 100% step load -transfer storage energy mode to normal mode :	manufacturer to advise	Data not characterized by the factory. Measurable on request	%		
206	5.3.2	Voltage transient recovery time, 100% step load -transfer storage energy mode to normal mode :	manufacturer to advise	Data not characterized by the factory. Measurable on request	s		
207	5.3.2	Frequency (steady state) - rated :	50	Confirmed	Hz		
208	5.3.2	Frequency (steady state) - normal mode variation :	2	+/- 0,1%	%		
209	5.3.2	Frequency (steady state) - storage energy mode variation :	2	+/- 0,1%	%		
210	5.3.2	Frequency (steady state) - free running variation :	2	+/- 0,1%	%		
211	5.3.2	Synchronization (maximum ± % range of rated frequency) :	manufacturer to advise	-	%		
212	5.3.2	Maximum synchronism phase error (referred to 360° cycle) :	manufacturer to advise	-	%		
213	5.3.2	Maximum slew rate :	manufacturer to advise	-	Hz/s		
214	5.3.2	Current (R.M.S) - rated :	manufacturer to advise	29A	A		
215	5.1.8.1, 5.3.2	Current (R.M.S) - overload capability (% of rated current for ten minutes) :	manufacturer to advise	125%	%		
216	5.1.8.2, 5.3.2	Current (R.M.S) - overload capability (% of rated current for one minute) :	manufacturer to advise	150%	%		
217	5.1.8.3, 5.1.8.4	Current (R.M.S) - short circuit capability (% of rated current) :	manufacturer to advise	3,75 x In (1ph) - 2,15 x In (3ph)	%		
218	5.1.8.3, 5.1.8.4	Current (R.M.S) - short circuit capability (time duration) :	manufacturer to advise	500 ms	s		
219	5.3.2	Current (R.M.S) - limitation (% of rated current) :	manufacturer to advise	-	%		

Row	S-701D Data Sheet for AC Uninterruptible Power Systems (UPS) (IEC 62040-3)						Issue
2	Tag No. :	UP-200F4					
3	Service :	AC UPS F&G					
4	Ref. Clause	Description	Project Requirement	Manufacturer Declared Values	Unit	Additional notes	
220	5.3.2	Current (R.M.S) - limitation (time duration) :	manufacturer to advise	-	s		
221	5.3.2	Current (R.M.S) - fault clearing capability (normal mode) :	manufacturer to advise	-	A		
222	5.3.2	Current (R.M.S) - fault clearing capability (stored energy mode) :	manufacturer to advise	-	A		
223	5.3.2	Load power factor - rated :	manufacturer to advise	0,8			
224	5.3.2	Load power factor - displacement (permissible limit lead) :	manufacturer to advise	Cap - 1 - Ind			
225	5.3.2	Load power factor - displacement (permissible limit lag) :	manufacturer to advise	Cap - 1 - Ind			
226	5.3.2	Efficiency in normal mode - 100% load :	manufacturer to advise	85,6%	%		
227	5.3.2	Efficiency in normal mode - 75% load :	manufacturer to advise	85,8%	%		
228	5.3.2	Efficiency in normal mode - 50% load :	manufacturer to advise	85%	%		
229	5.3.2	Efficiency in normal mode - 25% load :	manufacturer to advise	79,3%	%		
230	7.4.8	Output isolation transformer required :	No	Yes. Output transformer is included in AEG standard design			
231	7.4.10	Output isolation transformer winding :	Select	Aluminium			
232	7.6.5	AC output neutral earth link :	earthed	Noted. Externally			
233	7.1.6	Reference document to AC output distribution board:	To see Electrical Load List	Noted			
234	5.3.3	Integrated AC output distribution board with MCBs :	Yes	Confirmed			
235	5.3.3	Cable size (cross-section area) - output :	manufacturer to advise	min 10 sqmm - max 2x95 sqmm	sq.mm.		
236		**BYPASS SPECIFICATIONS**					
237	C.3	Bypass transfer time :	manufacturer to advise	0	msec		
238	C.3	Bypass static switch rated current :	manufacturer to advise	20kVA - 29A	A		
239	C.3	Bypass protection fuse or circuit breaker rating :	manufacturer to advise	MCCB 35A	A		
240	7.4.8	Bypass transformer required :	Yes	Confirmed			
241	7.4.10	Bypass transformer winding :	copper or aluminum	Aluminium			
242	7.3.5	Maintenance bypass and bypass transformer location :	integrated	Manual by-pass integrated			
243	8.3.6, C.5	Overall maintenance bypass :	internal	Q29 manual by-pass integrated			

ITEM	Tag	CB-200F4B	: Isolator Battery Box for AC UPS 15 kVA		Dwg	123A90-DDL-EL-DS-20032	
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)		Module	LD_B-300	
TASK	code	C10000858	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Electrical	Form	CPX00	Miscellaneous Electrical Equipment

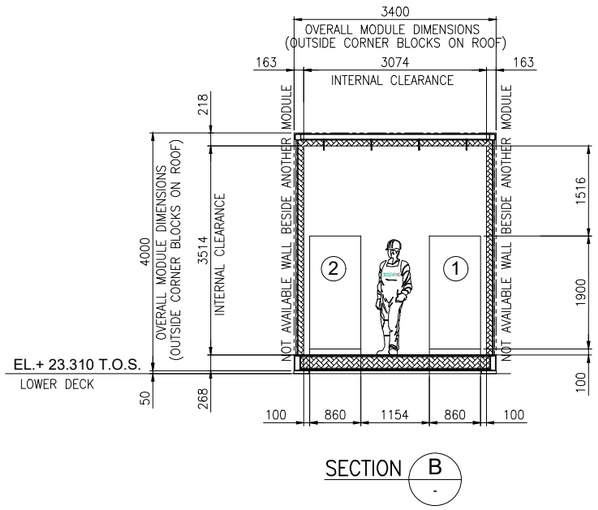
1	Check circuit is de-energized and safe.	OK
2	Check equipment is installed in accordance with layout drawing.	OK
3	Check equipment is undamaged and correcly tagged.	OK
4	Check nameplate data is correct.	OK
5	Check all bolts are fitted and all unused entries are suitably plugged.	OK
6	Check terminals for proper size and installation crimps	PL
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:

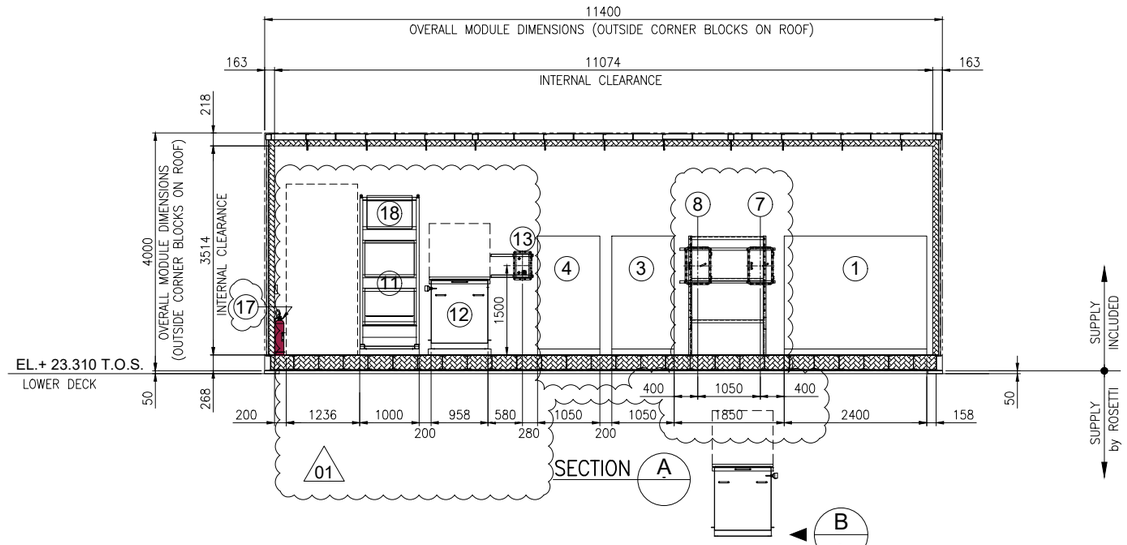
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Company	ICS IMPIANTI	RM (Rosetti Marino)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-10-29	2024-11-04	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-10-29T16:03:47.184Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-11-04T09:34:48.753Z	

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

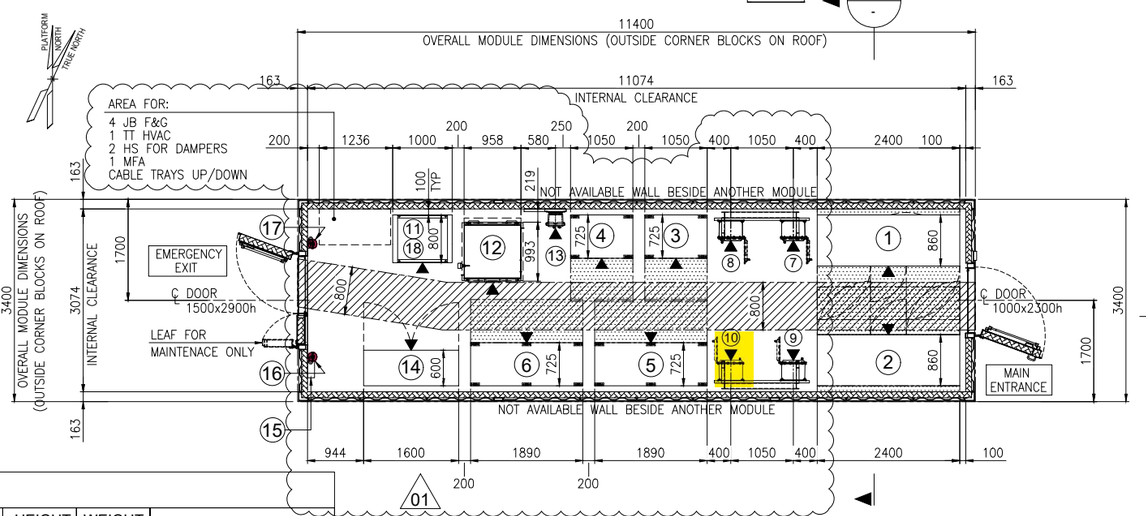
REV. 01



SECTION B -



SECTION A -

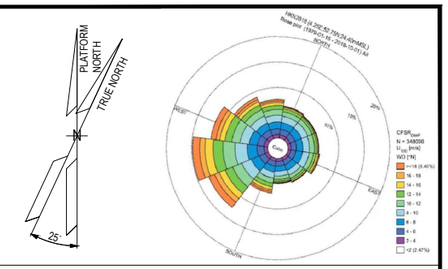


A -

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

EQUIPMENT LIST

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



NOTES

01

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

LEGEND

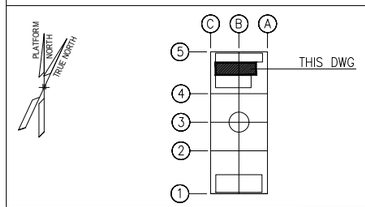
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR – WIDTH 800mm.
_____ MAINTENANCE AREA – VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

HOLDS

REFERENCE

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

KEY PLAN



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

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

ROSETTI MARINO SpA

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

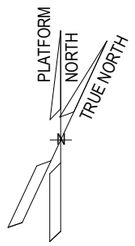
CROSSWIND | ROSETTI MARINO

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

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN SAM	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 23/07/24

	DRAWING NO.	SHEET	REV.
A1	123A90-DDL-EL-DL-20106	001	01

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



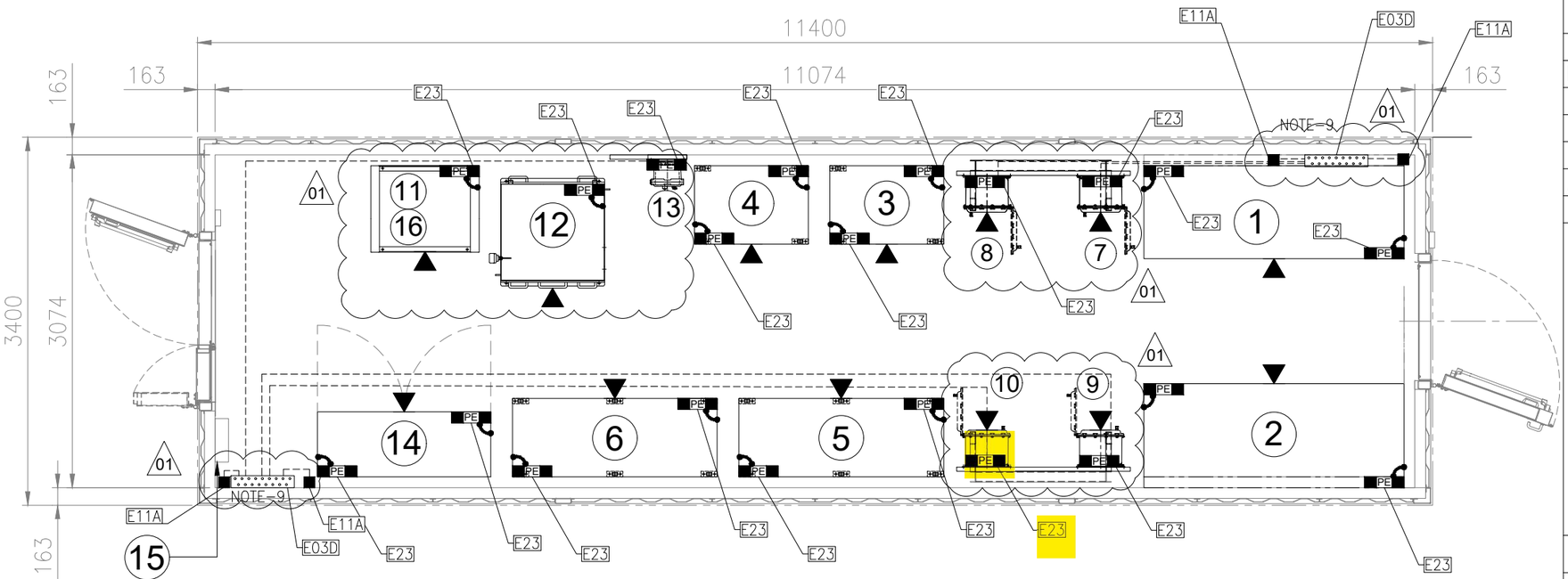
EQUIPMENT LIST		
REF.	TAG No.	DESCRIPTION
1	UP-200F3	AC UPS 35kVA
2	UP-200F4	AC UPS 15kVA
3	BA-200F3A	BATTERY RACK GEL VRLA 7y AC UPS 35kVA
4	BA-200F3B	BATTERY RACK GEL VRLA 7y AC UPS 35kVA
5	BA-200F4A	BATTERY RACK GEL VRLA 7y AC UPS 15kVA
6	BA-200F4B	BATTERY RACK GEL VRLA 7y AC UPS 15kVA
7	CB-200F3A	ISOLATOR BOX AC UPS 35kVA
8	CB-200F3B	ISOLATOR BOX AC UPS 35kVA
9	CB-200F4A	ISOLATOR BOX AC UPS 15kVA
10	CB-200F4B	ISOLATOR BOX AC UPS 15kVA
11	NC-200F2_BC-200F2A/B	NAVAID PANEL
12	BA-200F2	BATTERY BOX NAVAID
13	CB-200F2	ISOLATOR BOX NAVAID
14	B300-HSB-001	DISTRIBUTION & HVAC PANEL – AC/UPS ROOM
15	–	EYE WASH STATION
16	BC-200F2	BATTERY CHARGER NAVAID

01

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 THE NON WELDED OBJECTS SHALL BE EARTHED.
9. CONTAINER WILL HAVE A BTH (EARTHING BAR TINNED COPPER) WITH 2 EARTHING BOSS, INSTALLED IN THE SOUTH-WEST CORNER AT AN ELEVATION OF 2.5M FROM THE CONTAINER FLOOR. EARTHING BOSS SHALL BE INSTALLED AT SAME ELEVATION 2.5M.



EARTHING LAYOUT

"B-300" UPSs & BATTERIES 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-20106	ELECTRICAL EQUIPMENT LAYOUT-UPSs & BATTERIES SWITCHROOM
1724000049-AR-DD-00020	B-300 DETAILED DRAWINGS – E&I SHELTERS

01

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20138**

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

ROSETTI MARINO SpA

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

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EARTHING & LIGHTNING LAYOUT – UPSs & BATTERIES SWITCHROOM
"B-300" UPSs & BATTERIES SWITCHROOM

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

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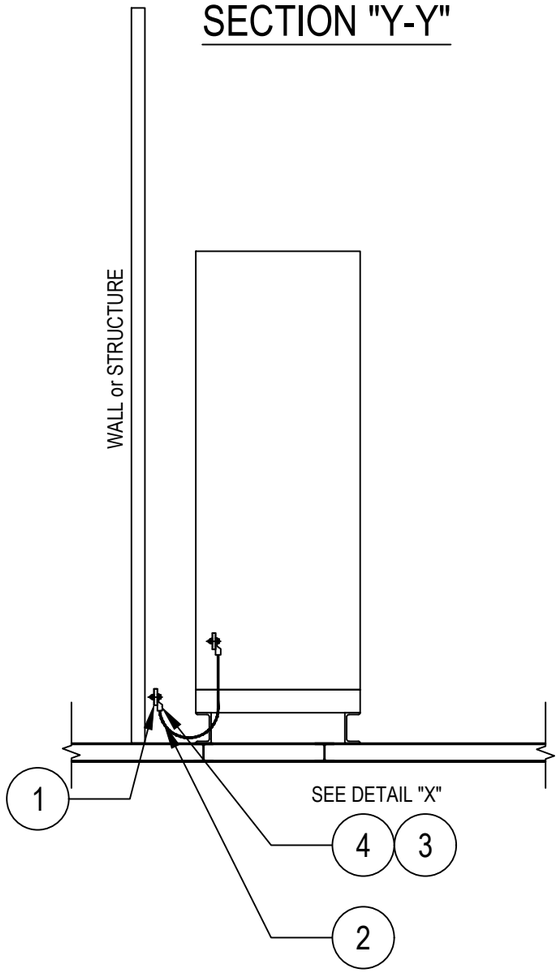
F.to UNI A3: 420mmx297mm

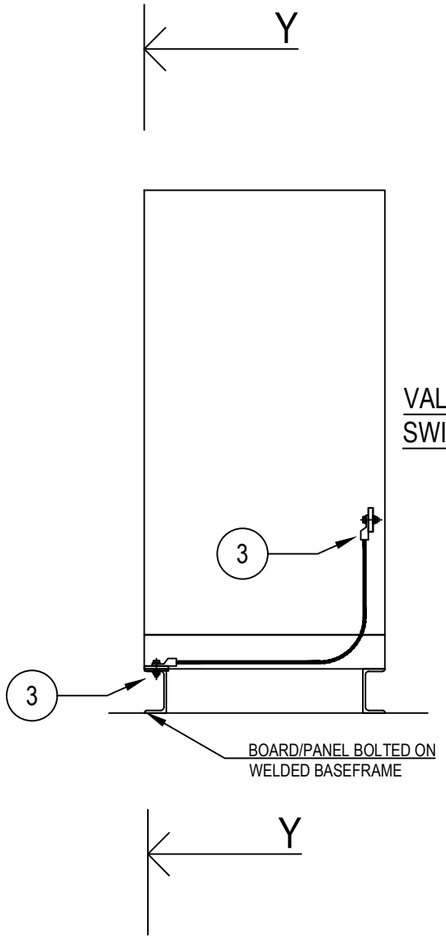
File Name : 123A90-DDL-EL-DL-20138 Rev. 01

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	

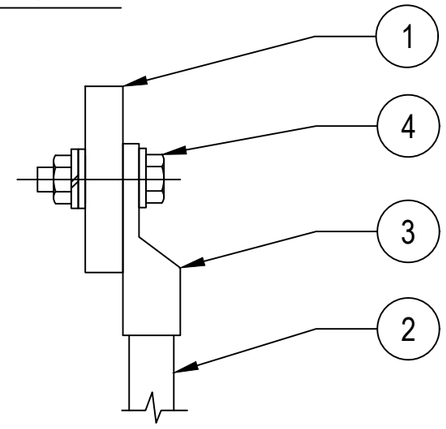
SECTION "Y-Y"





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

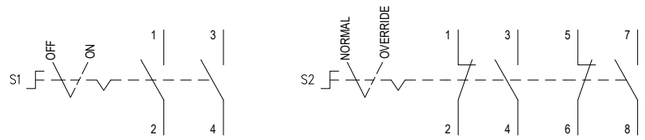
GENERAL NOTES:

-ENCLOSURE: EJBC-5
-MATERIAL: COPPER FREE ALUMINIUM ALLOY
-EXTERNAL PAINTING: RAL7035
-INTERNAL PAINTING: /
-ALL DIMENSION ARE IN mm
-WEIGHT: ≈57kg

BATTERY PROTECTION BOX

CB-200F4 A/B

SELECTOR SWITCHES DETAIL



TRUE TABLE

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

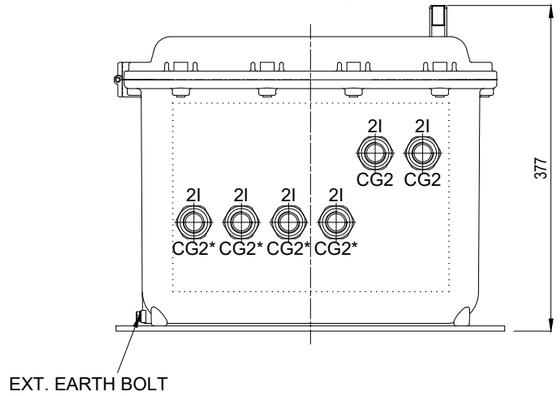
O	CONTACT OPEN
X	CONTACT CLOSED

TRUE TABLE

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

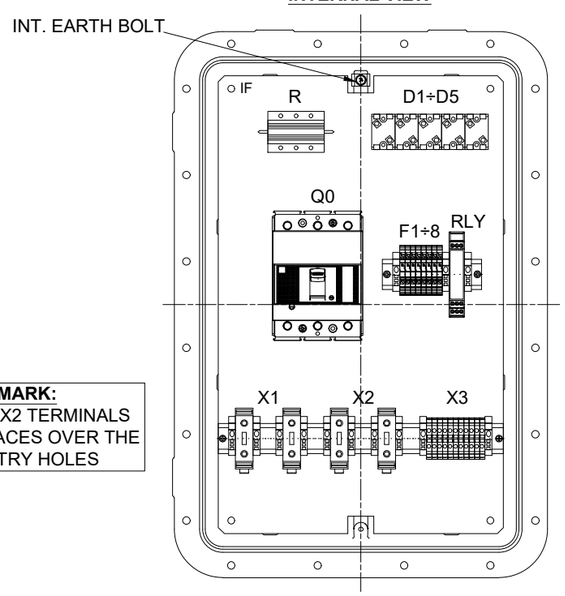
O	CONTACT OPEN
X	CONTACT CLOSED

BOTTOM VIEW
2I: N°6 ØM25x1,5 ISO



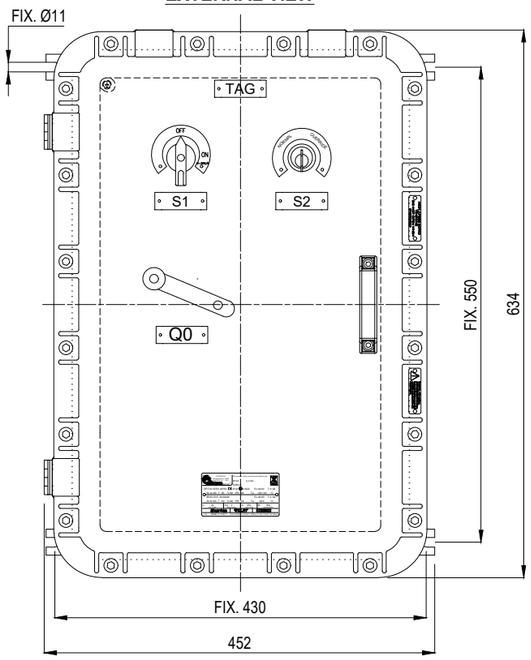
N°	Q.TY	CODE	DESCRIPTION
IF	1	BFE-5	ALUMINIUM INTERNAL FRAME
X1	2	UKH70	PHOENIX TERMINALS SUITABLE FOR 70mm² CABLE
X2	2	UKH70	PHOENIX TERMINALS SUITABLE FOR 70mm² CABLE
X3	11	UT4	PHOENIX TERMINALS SUITABLE FOR 4mm² CABLE
Q0	1	XT3N200TMD3	ABB XT3 MCCB, 3P, 200A, 36kA
	1	1SDA066399R1	220-240Vac/dc UNDERVOLTAGE 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
CG2*	4	NEV25IB	NICKEL PLATED BRASS CABLE GLANDS ØM25 FOR ARMORED CABLE Øint. 11-20mm Øext. 20-27,5mm, ARMOR THICKNESS 0,2-1,6mm
CG2	2	NAV25IB	NICKEL PLATED BRASS CABLE GLANDS ØM25 FOR NOT-ARMORED CABLE Ø11-20mm

INTERNAL VIEW

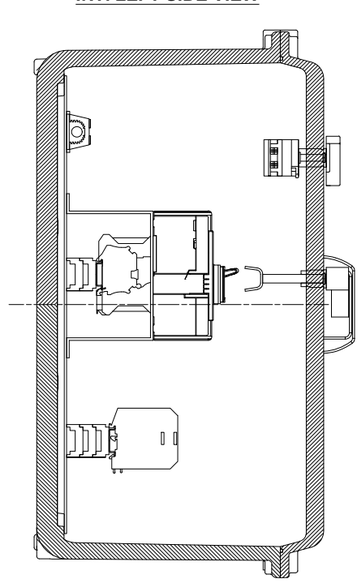


REMARK:
X1/X2 TERMINALS PLACES OVER THE ENTRY HOLES

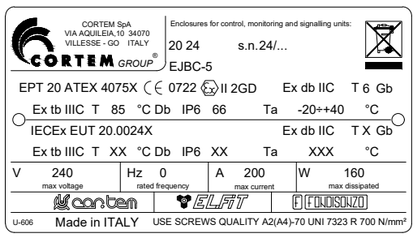
EXTERNAL VIEW



INT. LEFT SIDE VIEW



CERTIFICATE NAMEPLATE



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

N°	TAG N°
TAG	CB-200F4 A
	CB-200F4 B
	CB-200F3 A
	CB-200F3 B
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: AC UPS - TAG: UP-200F4
001 EJBC-5/C2401778/10.
ITEM 10
EXT/INT. LAYOUT

CORTEM JOB: COV2401778
DRAWING SCALE: /
DRAWING NUMBER: A3-C 27438
SHEET 1 NEXT 2 TOT. 4

CORTEM GROUP
contem
FONDISONZO
ELFIT

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Smart Professional R. 2012

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CAE EPLAN Electric P8

AUXILIARY
From Lighting & Small Power DB BOP DP-200N1 (Cubicle 03-Q42)
100-240V/N/PE~50/60Hz

LINE A
From LV Switchgear SG-200N1 (Cubicle A6/05)
Mains
400V;3/PE~50Hz

From LV Switchgear SG-200N1 (Cubicle A2/04)
Bypass mains
400V;3/PE~50Hz

LINE B
From LV Switchgear SG-200N1 (Cubicle A6/06)
Mains
400V;3/PE~50Hz

back-up fuse
gG10A
3G2.5mm2

gG80A
4G35mm2

gG63A
4G35mm2

gG80A
4G35mm2

Not included in the AEG shipment

Code	Description
Q1	Rectifier input mains breaker
T40	Rectifier input isolation transformer
A1	Rectifier
A2	Inverter
T1	Inverter output isolation transformer
A3-A4	Static by-pass switch
A18	Display control module
A85	Heater
H1	Light

+MBC1
BY-200F4
Bypass-Trafoschrank mit HU 20 kVA
1000007888.090
10009760

-Q10
L=50/35A
I=0,5kA
Icu=50kA

-T8
400V/400V
20kVA

-Q28.1 NC
-Q28.2 NC

+UPS1
BC-200F4A
Protect 8.33 20-400-204-400
1000007888.080
10009759

+UPS2
BC-200F4B
Protect 8.33 20-400-204-400
1000007888.080
10009759

-Q1
L=100/85A
I=1,0kA
Icu=50kA

-T40
-A1 REC
-A2 INV
-T1
-F1,-F2,-F3
-A3 SBS
-A4
-A18 Display
-A20 Parallel Adapter
INV CAN -X3 1-3 → 203 / 1.6
INV Sync -X5 1-4 → 205 / 1.6
1.5 / 203
1.5 / 205
-A85
-H1

-L11,-L12,-L13
Parallel preventive choke coil

-A24.1 BLÜ-PRO -F91
-A24.2 BLÜ-PRO -F92
-A24.3 BLÜ-PRO -F93

-A12 ,-A13
Remote signaling

-Q71 NC
-Q72 NC

-Q29 UNV operation / Manual bypass

-F25

DP-200F4
-QF31 B16A 300mA
-QF35 B16A 300mA
5pc
-QF36 B10A
-QF38 B10A
3pc

Not included in the AEG shipment

max. gG10A — max. gG10A
Load
400/230V;3/N/PE~50Hz

+BFB1
CB-200F4A
Battery fuse box 200 A
-Q2 L=200A
DC 24V
max. 300W

+BFB2
CB-200F4B
Battery fuse box 200 A
-Q2 L=200A
DC 24V
max. 300W

2(1x70 mm2)

+BAT1
BA-200F4A
Batteries installed on rack
3 x 18 x FTG 12-120
Battery voltage 216V
Battery capacity 360Ah
string 1
String 2
String 3
-R81

+BAT2
BA-200F4B
Batteries installed on rack
3 x 18 x FTG 12-120
Battery voltage 216V
Battery capacity 360Ah
string 1
String 2
String 3
-R81

*1 Attention! In the event of battery undervoltage < 130 V, the UPS automatically switches off battery isolator Q2.
If this happens, switch X15:3 must be switched into the open position (undervoltage trip blocked).
For restart, please refer to the chapter in the UPS operating instructions (charging the DC link capacitors) attached.
Unlock the tripped switch Q2 by switching to open position.
After charging the DC link capacitors, switch on Q2.
Attention! When the battery voltage reaches > 200 V, switch X15:3 must be switched back to the closed position.

*2 Connection cables are not included.

					Date	14.05.2024	
01	5000000002053	13.08.2024	Bockschäfer	Editor	EEC	ROSETTI MARINO	AEG POWER SOLUTIONS
02	5000000007089	27.08.2024	Bockschäfer	Checked	Ch.Peck	Hollandse Kust Noord (HKN) wind farm	System 20 kVA
Stat	Alteration	Date	Name	Norm			Single-line diagram

1000007888_080 en | S. FFA | A0 | sheet 1 | sheets 1

S-701D Data Sheet for AC Uninterruptible Power Systems (UPS) (IEC 62040-3)

JIP33 JOINT INDUSTRY PROGRAMME

Row							Issue
2	Tag No. :	UP-200F4					
3	Service :	AC UPS F&G					
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 enquiry	Noted			
8	5.1.2	Purchase order number, date :	Input Data	Noted			
9	5.1.2	Manufacturer :	Input Data	AEG Power Solutions			
10	5.1.2	Model number :	Input Data	2 x Protect 8.33 S10 20kVA			
11	5.1.2	Serial number :	Input Data	Released after production			
12	5.2.3	Application :	industrial	Noted			
13	5.3.3	Purchaser specified rated output power :	15	20kVA	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.2, Figure A.3A, Figure A.3B, Figure A.6	UPS configuration :	simplified parallel UPS with common bypass & common output-Figure A.3A	Confirmed			
18	5.1.1, B.1	UPS topology :	double conversion	Confirmed			
19	5.1.1	Static switch configuration :	in both inverter and bypass path	Confirmed			
20	5.4.2.3	Battery configuration :	2 x 50%	Confirmed. 240 min. autonomy each battery			
21	5.3.2, 5.3.4	Performance classification :	manufacturer to advise	-			
22	8.1.1.3	Bi-directional rectifier :	No	Not applicable			
23	8.4.2.11	Remote access required :	Yes (read only)	Confirmed. Modbus TCP			
24	8.4.2.11	Hardware (adapters, connectors, cables, etc.) required for remote access :	manufacturer to advise	Confirmed			
25	8.1.1.5, 8.1.1.6	On-line battery monitoring facility required :	string monitoring	Confirmed			
26	8.1.1.4	On-line battery testing feature required :	No	Noted			
27	8.1.1.4	Battery test load interface :	No	Noted			
28	5.4.2.3	DC earth leakage monitoring required :	No	Noted			
29	7.4.14	Single line diagram and status display :	on HMI	LCD display with synoptic			
30	8.1.2.11	Black start feature required :	Yes	Confirmed			
31	8.1.1.1	Earth screen required for isolation transformer :	manufacturer to advise	Confirmed on the by-pass isolation transformer			
32		**PHYSICAL ASPECTS**					
33	7.2.1	Mounting :	floor mounting	Confirmed			
34	7.2.1	Overall cabinet dimensions - length :	manufacturer to advise	900 + 600 + 900 mm	mm		
35	7.2.1	Overall cabinet dimensions - depth :	manufacturer to advise	860 mm	mm		
36	7.2.1	Overall cabinet dimensions - height :	manufacturer to advise	1915 mm	mm		
37	7.2.1	Reference outline drawing number :	Input Data	1724000372-EL-DA-00004			
38	7.2.1	Total UPS cabinet mass :	manufacturer to advise	1530 kg	kg		
39	7.2.1	Total UPS mass with batteries (if integrated) :	manufacturer to advise	Batteries not integrated	kg		
40	7.2.4, 7.2.5	Cable entry location :	top	Confirmed. Through by-pass cabinet by means of cable glands			
41	7.2.4, 7.2.5	Cable entry type :	removable - undrilled plate	Confirmed			
42	7.2.4, 7.2.5	Gland plate material :	manufacturer standard	Steel			
43	7.2.1	Paint colour :	supplier standard	RAL7035			
44	7.2.1	Canopy for cabinet required :	No	Noted			
45	7.3.9	Document holder :	Yes	Confirmed			
46		**INSTALLATION**					
47	4,1	Site :	offshore - fixed	Noted. Painting class C3-H			
48	4,1	Location of UPS cabinet installation :	indoor	Noted			
49	7.3.1, 7.3.2	Front access clearance dimensions for operation and maintenance :	800	Noted	mm		
50	7.3.2	Side clearance for ventilation (if required) :	manufacturer to advise	0	mm		
51	7.3.2	Rear clearance for ventilation (if required) :	manufacturer to advise	100 mm	mm		
52	7.2.3, 7.9.3	Installed location of battery :	inside UPS room	Battery housed on rack			
53	7.2.3	Maximum battery assembly dimensions (L x D x H) :	manufacturer to advise	Battery rack 1800 x 725 x 1474	mm		
54		**SAFETY**					
55	5.1.1	Accessibility :	operator access area	Front access			
56	5.1.1	Key required for cabinet :	Yes	Confirmed			
57	7.2.2	Degree of protection (with closed doors) :	IP31	IP43			
58	7.2.2	Degree of protection (with open doors) :	IP2X	Confirmed			
59	7.7.5	Cooling fan replacement while UPS in service :	No	Noted			
60	5.1.2	Local language for caution/danger/warning labels:	English	Confirmed			
61		**ELECTROMAGNETIC COMPATIBLITY**					
62	5.1.4	Emission :	UPS Cat C3	Confirmed			
63	5.1.4	Immunity :	UPS Cat C3	Confirmed			
64		**ENVIRONMENTAL CONDITIONS**					
65	4.2.1.1	Minimum ambient temperature (operation) :	-8,4	Confirmed with heater option included	°C		
66	4.2.1.1	Maximum ambient temperature (operation) :	40	Confirmed	°C		
67	4.2.1.1	Maximum relative humidity (operation) :	95	Confirmed. Not condensing	%		
68	4.2.1.1	Temperature at which relative humidity is specified (operation) :	Input Data	-	°C		
69	4.2.1.2	Maximum altitude (operation) :	Sea level	Noted	m		
70	4.2.2.1	Minimum ambient temperature (storage and transportation) :	-5	Noted	°C		
71	4.2.2.1	Maximum ambient temperature (storage and transportation) :	40	Noted	°C		
72	4.2.2.1	Maximum relative humidity (storage and transportation) :	95	Noted	%		
73	4.2.2.1	Temperature at which relative humidity is specified (storage and transportation) :	Input Data	-	°C		
74	4.3.2	Seismic requirement data :	Zone 2	Noted			
75	4.2.2.1	Storage site of UPS :	indoor – natural ventilation	Noted			
76	4.3.2	Additional or unusual conditions (operation) :	Input Data	Not applicable			
77	4.3.3	Additional or unusual conditions (storage and transportation) :	Input Data	Not applicable			
78	5.1.5	Acoustic noise at 1 m - normal mode :	70	< 65 dB(A)	dBA		
79	5.1.5	Acoustic noise at 1 m - stored energy mode :	70	< 65 dB(A)	dBA		
80		**COMMUNICATION INTERFACE(S)**					
81	5,6	(1) Interface media for SCADA (ICSS / DCS) :	serial	Modbus TCP + relays			

S-701D Data Sheet for
AC Uninterruptible Power Systems (UPS) (IEC 62040-3)

JIP33 JOINT INDUSTRY PROGRAMME

Issue

Row							
2	Tag No. :	UP-200F4					
3	Service :	AC UPS F&G					
4	Ref. Clause	Description	Project Requirement	Manufacturer Declared Values	Unit	Additional notes	
82	5,6	(1) Maximum allowable length of communication cable (for copper) :	Input Data	25 m	m		
83	5,6	(1) Interface protocol for SCADA (ICSS / DCS) :	Modbus	Modbus TCP + relays			
84	5,6	(2) Interface media for electrical management / control system :	serial	Modbus TCP + relays			
85	5,6	(2) Maximum allowable length of communication cable (for copper) :	Input Data	25 m	m		
86	5,6	(2) Interface protocol for electrical management / control system :	Modbus	Modbus TCP + relays			
87	5,6	(3) Remote access / monitoring software required :	Yes	Noted			
88	5,6	(3) Interface media for remote access / monitoring :	ethernet (fiber)	Noted			
89	5,6	(3) Maximum allowable length of communication cable (for copper) :	Input Data	25 m	m		
90	5,6	(3) Interface protocol for remote access / monitoring :	Modbus	Modbus TCP + relays			
91		**AC INPUT SPECIFICATIONS**					
92	5.2.1	Voltage (steady state, R.M.S) - rated :	400	Confirmed	V		
93	5.2.1	Voltage (steady state, R.M.S) - tolerance :	+/- 10	Confirmed	%		
94	5.2.1	Frequency - rated :	50 Hz	Confirmed			
95	5.2.1	Frequency - tolerance :	+/- 2	Confirmed	%		
96	5.2.2	Phases required :	3	3			
97	5.2.2	Neutral required :	Yes	Confirmed. Neutral not required for the rectifier supply			
98	5.2.2	Current (R.M.S) - rated (with the energy storage device charged) :	manufacturer to advise	35A	A		
99	5.2.2	Power factor :	manufacturer to advise	Data not characterized by the factory. Measurable on request			
100	5.2.2	In-rush (% of rated current) :	manufacturer to advise	Typically 10 x In	%		
101	5.2.2	In-rush (time) :	manufacturer to advise	Data not characterized by the factory. Measurable on request	s		
102	5.2.2	Maximum current (with low input volt and energy storage device charging) :	manufacturer to advise	43A at 400Vac	A		
103	5.2.2	Time for overload (125 % of rated current) :	10	Confirmed	min		
104	5.2.2	Time for overload (150 % of rated current) :	1	Confirmed	min		
105	5.2.2	Total harmonic distortion - current (THD p.u.) :	8	Confirmed. The AC UPS works with an input voltage harmonic distortion ≤ 8%	%		
106	5.2.3	Short circuit current of the input supply (Minimum and Maximum) :	50	Confirmed. The charger is equipped with an input MCCB (Q1) with Isc = 50kA	kA		
107	5.2.2	Minimum short circuit current :	Input Data	Data not characterized by the factory. Measurable on request	kA		
108	5.2.2	Earth leakage current :	Input Data	Data not characterized by the factory. Measurable on request	mA		
109	5.2.2	AC power distribution system - compatibility :	TN-S	Confirmed			
110	5.2.3	Additional or unusual conditions :	Input Data	Not applicable			
111	5.2.3, 7.5.4	Cable size (cross-section area) - input mains :	Input Data	min 25 sqmm - max 2x95 sqmm	sq.mm.		
112	5.2.3, 7.5.4	Cable size (cross-section area) - input bypass:	Input Data	min 10 sqmm - max 2x95 sqmm	sq.mm.		
113	5.2.3, 7.5.4	Cable size (cross-section area) - input maintenance bypass :	Input Data	min 10 sqmm - max 2x95 sqmm	sq.mm.		
114	7.4.8, 8.1.1.1	Input isolation transformer required :	Yes	Confirmed			
115	7.4.10	Input isolation transformer winding :	supplier standard	Aluminium			
116		**DC AND BATTERY SPECIFICATIONS**					
117	5.4.2.2	DC voltage level :	Select	Confirmed	V d.c.		
118	5.4.2.2	Design life :	5	10 years	years		
119	5.4.2.2	Float service life :	manufacturer to advise	Dependent from temperature	years		
120	5.4.2.2	Shelf life of battery :	manufacturer to advise	3 months	months		
121	5.4.2.2	Quantity of cells and strings :	manufacturer to advise	18 blocks - 3 strings	nos.		
122	5.4.2.2	Nominal voltage (total) :	manufacturer to advise	216V	V d.c.		
123	5.4.2.2	Battery technology :	sealed nickel cadmium	Lead-Acid VRLA GEL			
124	5.4.2.2	Nominal AH capacity :	manufacturer to advise	360Ah	AH		
125	5.4.2.2	Discharge rate (C-rate) :	Select	C10			
126	5.4.2.2	Electrolyte fill status :	manufacturer standard	Not applicable			
127	8.1.2.3	Purchaser's requirement (% of battery recharge level - 1) :	80	Confirmed with charging current limited to 0,1C	%		
128	8.1.2.3	Purchaser's requirement (time for battery recharge level - 1) :	10	Confirmed	Hours		
129	8.1.2.3	Purchaser's requirement (% of battery recharge level - 2) :	100	Data not characterized by the factory. Measurable on request	%		
130	8.1.2.3	Purchaser's requirement (time for battery recharge level - 2) :	24	Data not characterized by the factory. Measurable on request	Hours		
131	5.4.2.2	Stored energy time (Autonomy time at 100% rated load) :	8	Confirmed with both batteries	hours		
132	5.4.2.2	Restored energy time (recharge time to 80% capacity) :	manufacturer to advise	10h	hours		
133	5.4.2.2	Ambient reference temperature :	40	Confirmed	°C		
134	5.4.2.2	Earth condition/isolation :	manufacturer to advise	floating			
135	5.4.2.2	Ripple current (R.M.S) :	manufacturer to advise	< 2% RMS	%		
136	5.4.2.2	Nominal discharge current (stored energy mode):	manufacturer to advise	-	A		
137	5.4.2.2	DC Fault current rating :	manufacturer to advise	Data not characterized by the factory. Measurable on request	A d.c.		
138	5.4.2.2	Cable volt drop recommendation (≤ % at nominal discharge current) :	manufacturer to advise	2%	%		
139	5.4.2.2	Charging regime :	manufacturer to advise	Constant voltage, current limited			
140	5.4.2.2	Charge voltage (float) and tolerance band :	manufacturer to advise	2,28Vcell - 13,5 / 13,8 Vblock	V d.c.		
141	5.4.2.2	Charge voltage (boost) and tolerance band :	manufacturer to advise	2,28Vcell - 13,5 / 13,8 Vblock	V d.c.		
142	5.4.2.2	Charge voltage (equalising) and tolerance band :	manufacturer to advise	Not applicable to VRLA batteries	V d.c.		
143	5.4.2.2	Minimum end of discharge voltage :	manufacturer to advise	178,2V	V d.c.		
144	5.4.2.2	Charge current limit (or range) :	limitation of batteries charging to 30% of the UPS sizing	36A (0,1C)	A d.c.		
145	5.4.2.2	Temperature compensated chargingrequired:	Yes	Confirmed			
146	5.4.2.3	Battery isolation box required :	Yes	Confirmed			
147	5.4.2.3	Additional or unusual conditions :	Input Data	Not applicable			
148	5.4.2.3	Load profile for battery design, attached :	No	Noted			

S-701D Data Sheet for
AC Uninterruptible Power Systems (UPS) (IEC 62040-3)

JIP33 JOINT INDUSTRY PROGRAMME

Row							Issue
2	Tag No. :	UP-200F4					
3	Service :	AC UPS F&G					
4	Ref. Clause	Description	Project Requirement	Manufacturer Declared Values	Unit	Additional notes	
150		**BATTERY ROOM**					
151	4.2.1.1	Minimum ambient reference temperature :	-8,4	-8,4°C (used for battery sizing)	°C		
152	4.2.1.1	Maximum ambient reference temperature :	40	+40°C (used for battery sizing)	°C		
153	5.4.2.1	Area classification :	safe	Noted			
154	5.4.2.1	Hazardous area classification :	Zone 2	Noted			
155	5.4.2.1	Minimum gas subdivision and temperature class (for equipment in battery room) :	Select	-			
156	8.1.2.10	Temperature sensor (for VRLA / partial gas recombination batteries) :	Yes	Confirmed. Standard sensor			
157		**BATTERY ISOLATOR BOX SPECIFICATIONS**					
158	7.9.1	Enclosure material :	manufacturer standard	Aluminium alloy			
159	7.9.1	Mounting :	Select	Wall mounting			
160	7.9.1	Breathing valve required :	manufacturer to advise	No			
161	7.9.1	Internal earth bar :	tinned copper	-			
162	7.9.3	Minimum design temperature :	-8,4	Noted	°C		
163	7.9.3	Maximum design temperature :	40	Noted	°C		
164	7.9.3	Maximum relative humidity :	95	Noted	%		
165	7.9.3	Temperature at which relative humidity is specified:	Input Data	-	°C		
166	7.9.4	Degree of protection :	IP 31	IP65			
167	7.9.5	Area classification :	safe	Noted			
168	7.9.5	Hazardous area certification required :	none	-			
169	7.9.5	Hazardous area classification :	N/A	Not applicable			
170	7.9.5	Hazardous area level of protection :	N/A	Not applicable			
171	7.9.6	Cable entry :	top	Bottom with cable glands			
172	7.9.6	Cable indirect entry via 'ex e' enclosure :	No	Not applicable			
173	7.9.6	Battery cable size (cross-section area):	Input Data	70 sqmm armored cable class-2	sq.mm.		
174	7.9.6	Cable entry diameter in isolator box (ISO metric) :	Input Data	22,6 mm			
175	7.9.7	Battery isolator type :	MCCB	Confirmed			
176	7.9.8	Rated current of breaker / switch fuse unit :	manufacturer to advise	200A	A		
177	7.9.8	Rated breaking current (Icu) - (if breaker used) :	manufacturer to advise	36kA	kA		
178	7.9.10	Breaker status potential free contact (NO) :	two	Confirmed			
179	7.9.9	Under voltage trip feature required :	Yes	Confirmed			
180	7.9.9	Under voltage trip coil for :	black start reserve	Confirmed			
181	8.1.2.12	ESD trip required :	Yes - via shunt trip	Yes - through SIL relay			
182	8.1.2.12	ESD override key switch :	key captive in overridden position and with status contact	Confirmed			
183	7.9.9	Over voltage trip required :	Yes	Not applicable			
184		**AC OUTPUT SPECIFICATIONS**					
185	5.3.2	Rated output power (apparent) :	20	20kVA	kVA		
186	5.3.2	Rated output power (active) :	16	16kW	kW		
187	5.3.2	AC power distribution system - compatibility :	TN-S	Noted			
188	5.3.2	Phases available :	3	Confirmed			
189	5.3.2	Neutral available :	Yes	Confirmed			
190	5.3.2	Voltage (steady state, R.M.S) - rated :	400	Confirmed	V		
191	5.3.2	Voltage - normal mode variation :	manufacturer to advise	+/- 1%	%		
192	5.3.2	Voltage - storage energy mode variation :	manufacturer to advise	+/- 1%	%		
193	5.3.2, 8.2.3	Total harmonic distortion (V), 100% load - normal mode - linear :	5	< 3%	%		
194	5.3.2, 8.2.3	Total harmonic distortion (V), 100% load - normal mode - non linear :	5	Confirmed	%		
195	5.3.2, 8.2.3	Total harmonic distortion (V), 100% load - storage energy mode - linear :	5	< 3%	%		
196	5.3.2, 8.2.3	Total harmonic distortion (V), 100% load - storage energy mode - non linear :	5	Confirmed	%		
197	5.3.2	% Voltage unbalance, 100% load unbalance :	manufacturer to advise	Data not characterized by the factory. Measurable on request	%		
198	5.3.2	Phase angle displacement, 100% load unbalance :	manufacturer to advise	Data not characterized by the factory. Measurable on request	°		
199	5.3.2	% Voltage transient, 100% step load - linear :	manufacturer to advise	+/- 2%	%		
200	5.3.2	Voltage transient recovery time, 100% step load - linear :	manufacturer to advise	2 ms	s		
201	5.3.2	% Voltage transient, 100% step load - non linear :	manufacturer to advise	Data not characterized by the factory. Measurable on request	%		
202	5.3.2	Voltage transient recovery time, 100% step load - non linear :	manufacturer to advise	Data not characterized by the factory. Measurable on request	s		
203	5.3.2	% Voltage transient, 100% step load - transfer normal mode to storage energy mode :	manufacturer to advise	Data not characterized by the factory. Measurable on request	%		
204	5.3.2	Voltage transient recovery time, 100% step load - transfer normal mode to storage energy mode :	manufacturer to advise	Data not characterized by the factory. Measurable on request	s		
205	5.3.2	% Voltage transient, 100% step load -transfer storage energy mode to normal mode :	manufacturer to advise	Data not characterized by the factory. Measurable on request	%		
206	5.3.2	Voltage transient recovery time, 100% step load -transfer storage energy mode to normal mode :	manufacturer to advise	Data not characterized by the factory. Measurable on request	s		
207	5.3.2	Frequency (steady state) - rated :	50	Confirmed	Hz		
208	5.3.2	Frequency (steady state) - normal mode variation :	2	+/- 0,1%	%		
209	5.3.2	Frequency (steady state) - storage energy mode variation :	2	+/- 0,1%	%		
210	5.3.2	Frequency (steady state) - free running variation :	2	+/- 0,1%	%		
211	5.3.2	Synchronization (maximum ± % range of rated frequency) :	manufacturer to advise	-	%		
212	5.3.2	Maximum synchronism phase error (referred to 360° cycle) :	manufacturer to advise	-	%		
213	5.3.2	Maximum slew rate :	manufacturer to advise	-	Hz/s		
214	5.3.2	Current (R.M.S) - rated :	manufacturer to advise	29A	A		
215	5.1.8.1, 5.3.2	Current (R.M.S) - overload capability (% of rated current for ten minutes) :	manufacturer to advise	125%	%		
216	5.1.8.2, 5.3.2	Current (R.M.S) - overload capability (% of rated current for one minute) :	manufacturer to advise	150%	%		
217	5.1.8.3, 5.1.8.4	Current (R.M.S) - short circuit capability (% of rated current) :	manufacturer to advise	3,75 x In (1ph) - 2,15 x In (3ph)	%		
218	5.1.8.3, 5.1.8.4	Current (R.M.S) - short circuit capability (time duration) :	manufacturer to advise	500 ms	s		
219	5.3.2	Current (R.M.S) - limitation (% of rated current) :	manufacturer to advise	-	%		

Row	S-701D Data Sheet for AC Uninterruptible Power Systems (UPS) (IEC 62040-3)						Issue
2	Tag No. :	UP-200F4					
3	Service :	AC UPS F&G					
4	Ref. Clause	Description	Project Requirement	Manufacturer Declared Values	Unit	Additional notes	
220	5.3.2	Current (R.M.S) - limitation (time duration) :	manufacturer to advise	-	s		
221	5.3.2	Current (R.M.S) - fault clearing capability (normal mode) :	manufacturer to advise	-	A		
222	5.3.2	Current (R.M.S) - fault clearing capability (stored energy mode) :	manufacturer to advise	-	A		
223	5.3.2	Load power factor - rated :	manufacturer to advise	0,8			
224	5.3.2	Load power factor - displacement (permissible limit lead) :	manufacturer to advise	Cap - 1 - Ind			
225	5.3.2	Load power factor - displacement (permissible limit lag) :	manufacturer to advise	Cap - 1 - Ind			
226	5.3.2	Efficiency in normal mode - 100% load :	manufacturer to advise	85,6%	%		
227	5.3.2	Efficiency in normal mode - 75% load :	manufacturer to advise	85,8%	%		
228	5.3.2	Efficiency in normal mode - 50% load :	manufacturer to advise	85%	%		
229	5.3.2	Efficiency in normal mode - 25% load :	manufacturer to advise	79,3%	%		
230	7.4.8	Output isolation transformer required :	No	Yes. Output transformer is included in AEG standard design			
231	7.4.10	Output isolation transformer winding :	Select	Aluminium			
232	7.6.5	AC output neutral earth link :	earthed	Noted. Externally			
233	7.1.6	Reference document to AC output distribution board:	To see Electrical Load List	Noted			
234	5.3.3	Integrated AC output distribution board with MCBs :	Yes	Confirmed			
235	5.3.3	Cable size (cross-section area) - output :	manufacturer to advise	min 10 sqmm - max 2x95 sqmm	sq.mm.		
236		**BYPASS SPECIFICATIONS**					
237	C.3	Bypass transfer time :	manufacturer to advise	0	msec		
238	C.3	Bypass static switch rated current :	manufacturer to advise	20kVA - 29A	A		
239	C.3	Bypass protection fuse or circuit breaker rating :	manufacturer to advise	MCCB 35A	A		
240	7.4.8	Bypass transformer required :	Yes	Confirmed			
241	7.4.10	Bypass transformer winding :	copper or aluminum	Aluminium			
242	7.3.5	Maintenance bypass and bypass transformer location :	integrated	Manual by-pass integrated			
243	8.3.6, C.5	Overall maintenance bypass :	internal	Q29 manual by-pass integrated			

ITEM	Tag	UP-200F4	: AC UPS 15 kVA Redundant System with By-Pass	Dwg	123A90-DDL-EL-DS-20032		
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)	Module	LD_B-300		
TASK	code	C10000872	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.	OK
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.	OK
9	If required produce Red Line Mark Up for "AS BUILT"	

NAMEPLATE DATA

Manufacturer :	AEG Power Solution		Serial N° :	BC-200F4A: 1010865/001 BC-200F4B: 1010849/002		Type	Protect 8.33 / 20kVA	
Input	400	V	Output	400	V	Rating	10	kVA
Input	68	A	Output	29	A	Specification	1724000372-EL-DA-00004	
SUPPLY SWBD & CUB ref:	1724000372-EL-DG-00007					Data Sheet:	1724000372-EL-DS-00005	

TESTING AND MEASUREMENT INSTRUMENT USED

Type	Serial n°	Calibration certificate	Validity

TEST RESULTS

TEST VOLTAGE	
INSULATION RESISTANCE	

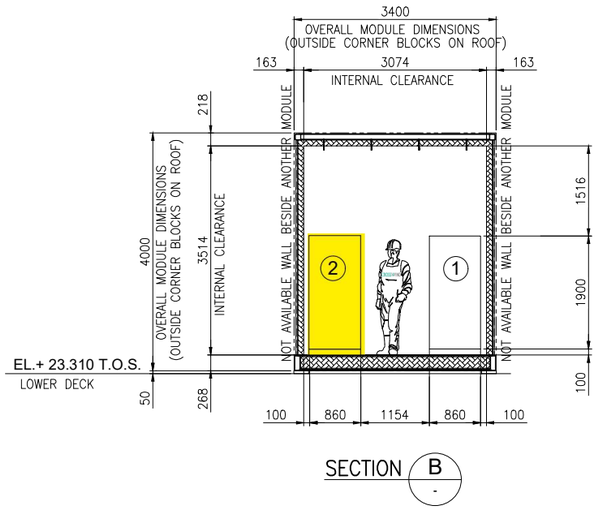
Comments: Note: check on connection is done during cable ispection. Please refer to the relevant ITR.

Note: TEST done during FAT.

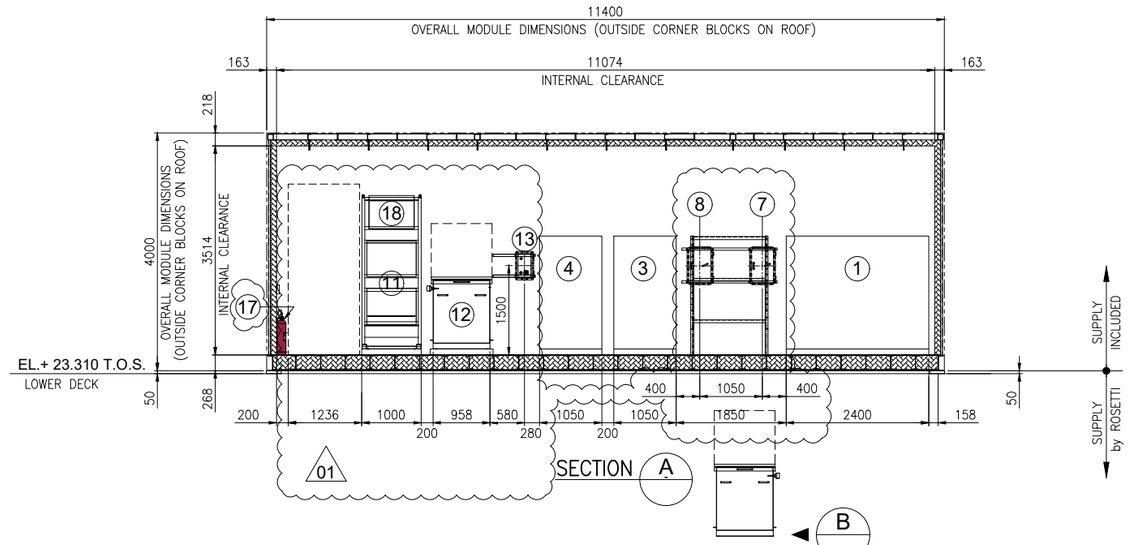
Page 1/1	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (Rosetti Marino)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-10-29	2024-11-04	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-10-29T16:04:48.916Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-11-04T09:53:11.962Z	

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

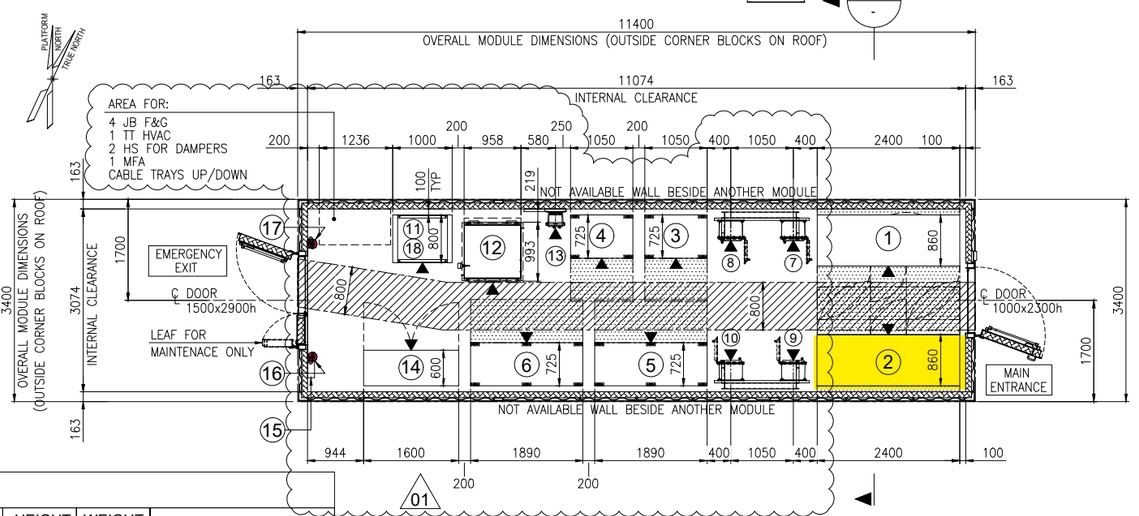
REV. 01



SECTION B -



SECTION A -



A -

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

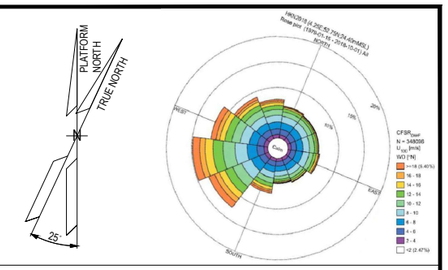
EQUIPMENT LIST

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

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

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

ROSETTI MARINO SpA



NOTES

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

LEGEND

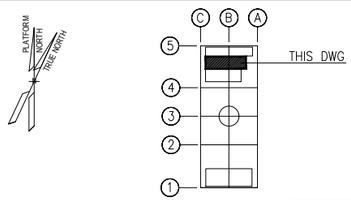
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR – WIDTH 800mm.
_____ MAINTENANCE AREA – VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

HOLDS

REFERENCE

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

KEY PLAN



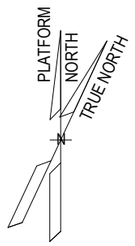
REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	23/07/24	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	28/03/24	SAM	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND | ROSETTI MARINO

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

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

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



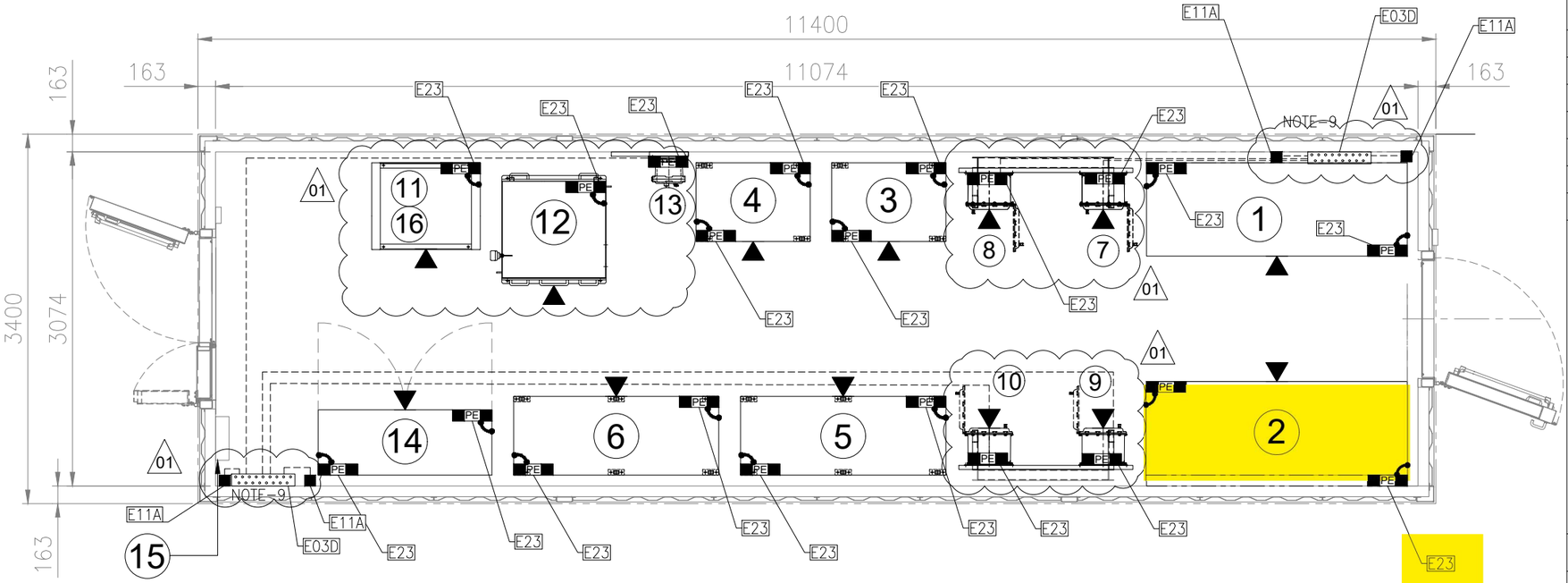
EQUIPMENT LIST		
REF.	TAG No.	DESCRIPTION
1	UP-200F3	AC UPS 35kVA
2	UP-200F4	AC UPS 15kVA
3	BA-200F3A	BATTERY RACK GEL VRLA 7y AC UPS 35kVA
4	BA-200F3B	BATTERY RACK GEL VRLA 7y AC UPS 35kVA
5	BA-200F4A	BATTERY RACK GEL VRLA 7y AC UPS 15kVA
6	BA-200F4B	BATTERY RACK GEL VRLA 7y AC UPS 15kVA
7	CB-200F3A	ISOLATOR BOX AC UPS 35kVA
8	CB-200F3B	ISOLATOR BOX AC UPS 35kVA
9	CB-200F4A	ISOLATOR BOX AC UPS 15kVA
10	CB-200F4B	ISOLATOR BOX AC UPS 15kVA
11	NC-200F2_BC-200F2A/B	NAVAID PANEL
12	BA-200F2	BATTERY BOX NAVAID
13	CB-200F2	ISOLATOR BOX NAVAID
14	B300-HSB-001	DISTRIBUTION & HVAC PANEL – AC/UPS ROOM
15	–	EYE WASH STATION
16	BC-200F2	BATTERY CHARGER NAVAID

01 (rows 11, 12, 13)

01 (rows 15, 16)

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 THE NON WELDED OBJECTS SHALL BE EARTHED.
9. CONTAINER WILL HAVE A BTH (EARTHING BAR TINNED COPPER) WITH 2 EARTHING BOSS, INSTALLED IN THE SOUTH-WEST CORNER AT AN ELEVATION OF 2.5M FROM THE CONTAINER FLOOR. EARTHING BOSS SHALL BE INSTALLED AT SAME ELEVATION 2.5M.



EARTHING LAYOUT

"B-300" UPSs & BATTERIES 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
▲ 01	FRONT OF EQUIPMENT

REFERENCE

DOCUMENT NUMBER	DOCUMENT TITLE
123A90-DDL-EL-DD-20090	ELECTRICAL TYPICAL INSTALLATION DETAILS -EARTHING SYSTEM
123A90-DDL-EL-DL-20106	ELECTRICAL EQUIPMENT LAYOUT-UPSs & BATTERIES SWITCHROOM
1724000049-AR-DD-00020	B-300 DETAILED DRAWINGS – E&I SHELTERS

01

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DL-20138**

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

ROSETTI MARINO SpA

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

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EARTHING & LIGHTNING LAYOUT – UPSs & BATTERIES SWITCHROOM
"B-300" UPSs & BATTERIES SWITCHROOM

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

SCALE : 1:50

A3

DRAWING NO. 123A90-DDL-EL-DL-20138

SHEET 003

REV. 01

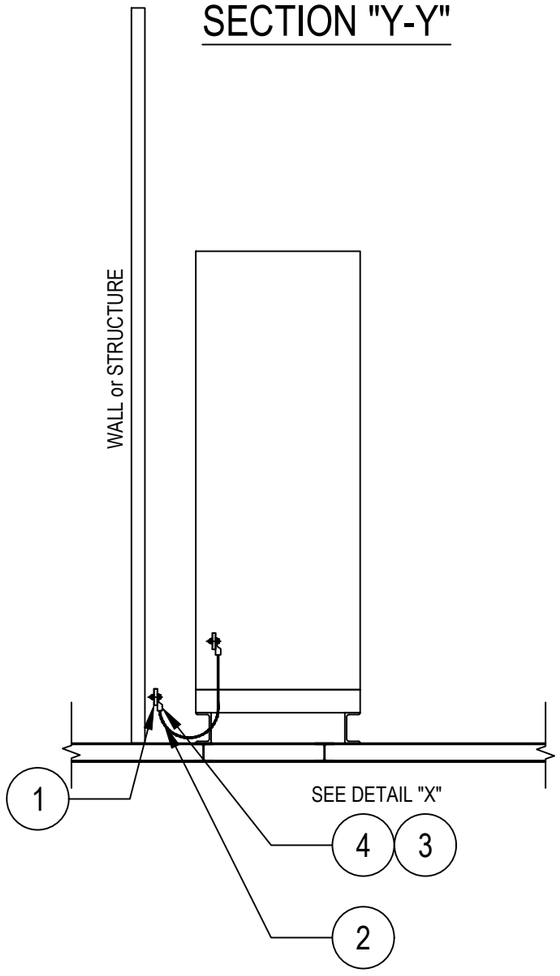
F.to UNI A3: 420mmx297mm

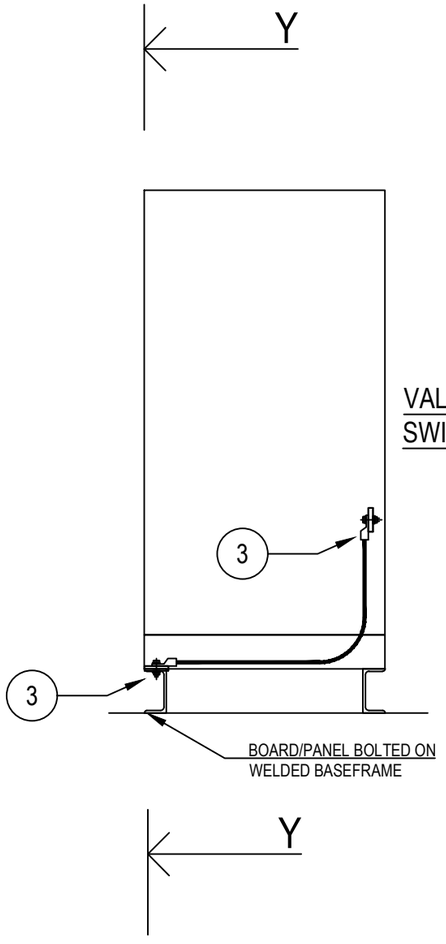
File Name : 123A90-DDL-EL-DL-20138 Rev. 01

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	

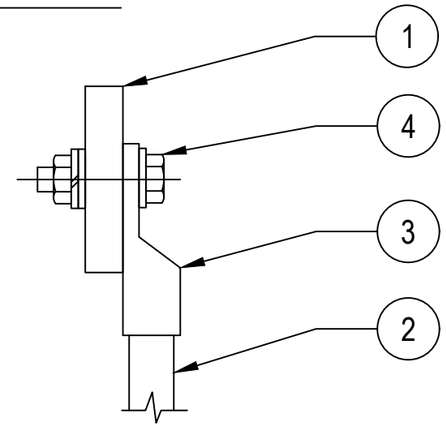
SECTION "Y-Y"





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

Base Load Power Hub (BLPH)

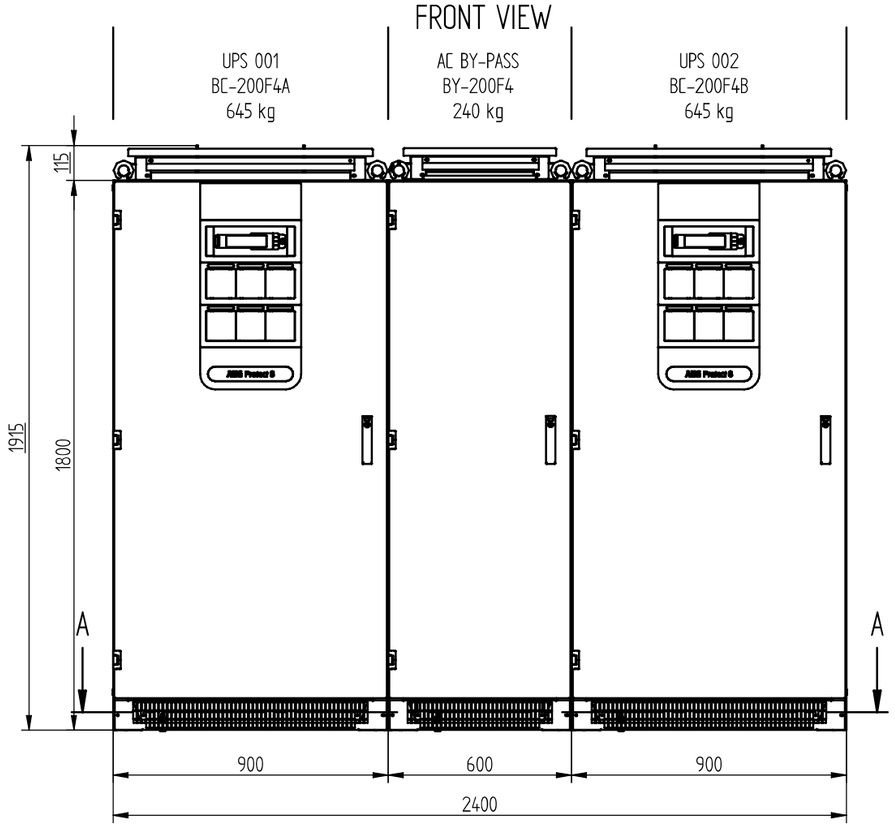
AC UPS F&G - TAG: UP-200F4

GENERAL ARRANGEMENT AND DIMENSIONAL DRAWINGS

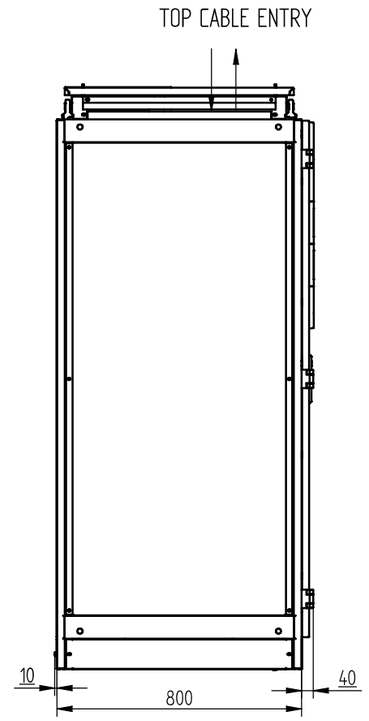
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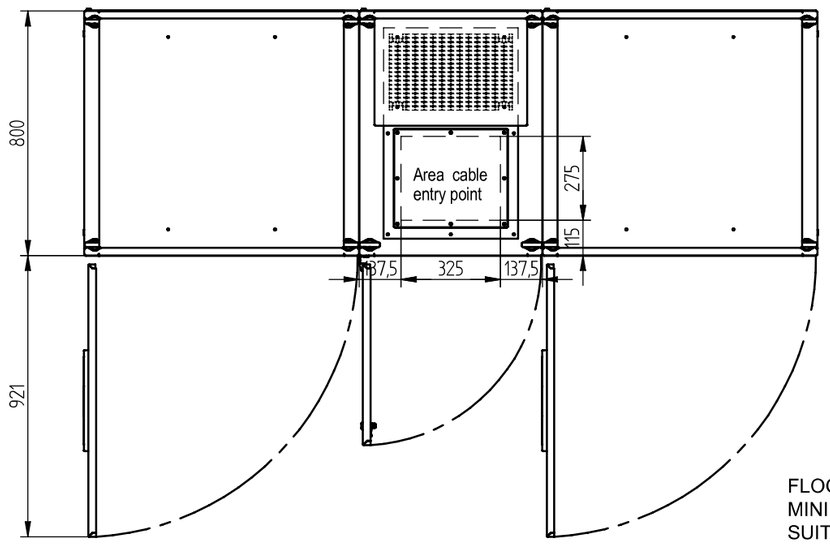
FRONT VIEW



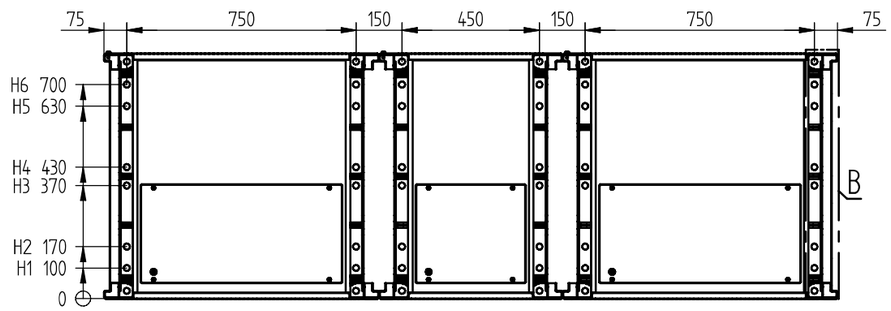
SIDE VIEW



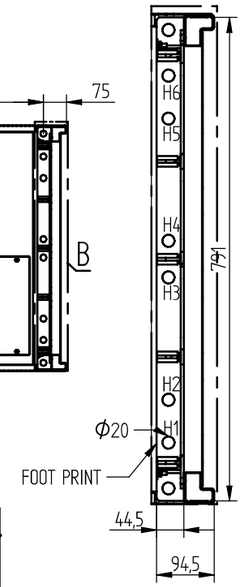
TOP VIEW



SECTION A-A - FOOT PRINT VIEW



DETAIL B
FOOT PRINT



Befestigungspunkte / attachment points		
Zugänglichkeit / accessibility	Vorzug / preference	Optional
nur von vorn / only from the front	H1, H5	H2-H4
von vorn u. hinten / from front a. rear	H1, H6	H2-H5

FLOOR FIXING RECOMMENDED
MINI 150daN AT TEARING.
SUITABLE FROM M8 TO M18 BOLT RANGE.
SUGGESTED M16 BOLT WITH LARGE WASHER

Scale 1:20 Mass:-

Stat.	Alteration	Date	Name		
02	Top Entry	14.06.2024	Ste	Editor	A.Stemmer
01	First Issue	16.04.2024	Ste	Date	16.04.2024
				Date	16.04.2024
				Check	J.S.

Origin: repl.for: repl.by:

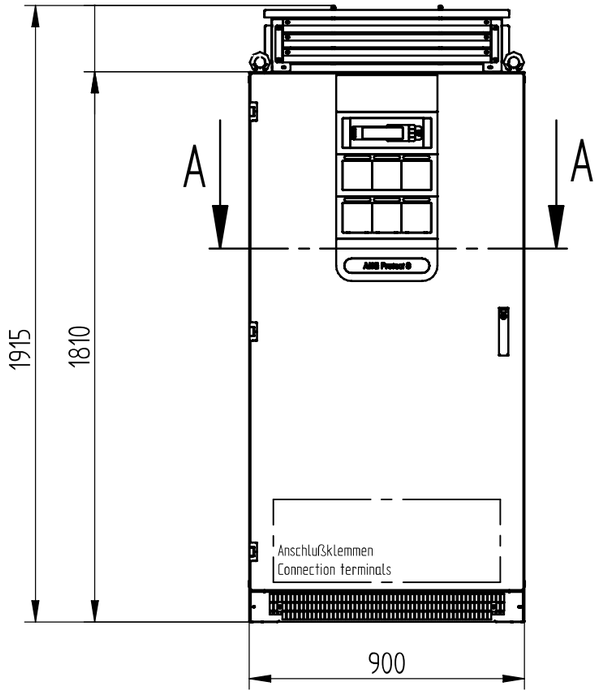
AEG POWER SOLUTIONS

UPS SYSTEM 15 kVA
AC UPS F&G - TAG: UP-200F4
Outline drawing

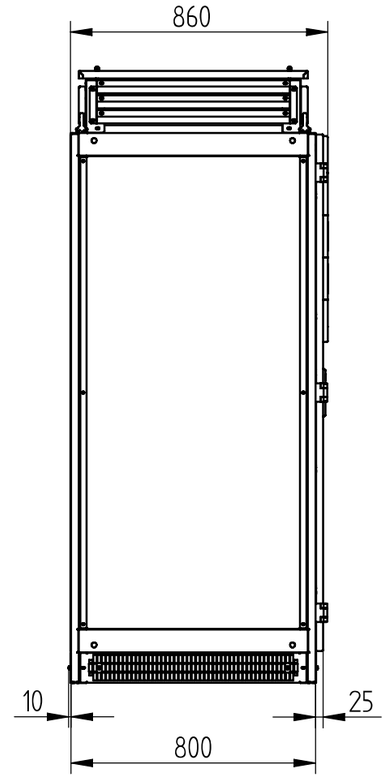
1724000372-EL-DA-00004

10009760_MTD_EN-02 CAD A3 en

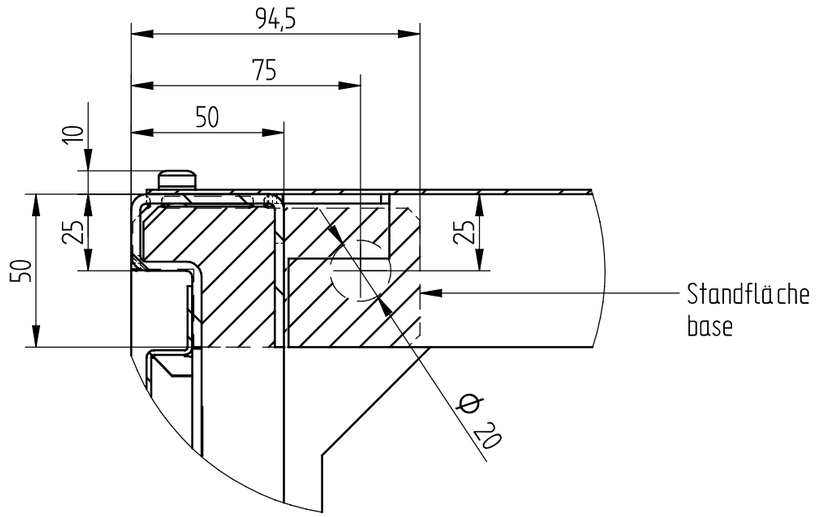
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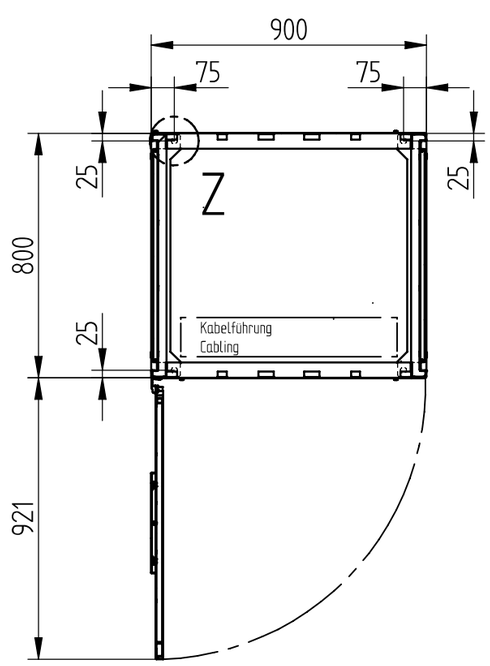
SECTION A-A



DETAIL Z



1:2



FOOT PRINT
VIEW

Supplementary data:
Technical data sheet

Ergänzende Angaben:
Technisches Datenblatt

Scale 1:20

				Date	25.11.2013				
				Editor	A.Gabel				
01	Logo/IP height update	23.01.2019	Sik	Date	23.01.2019				
Stat.	Alteration	Date	Name	Check	M.Wäsche	Origin:	repl.for:	repl.by:	

AEG POWER SOLUTIONS

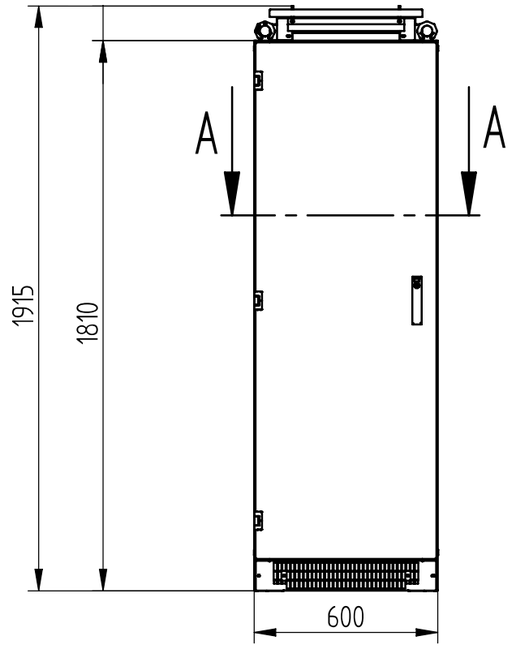
Cabinet 900 mm width
Mechanical details

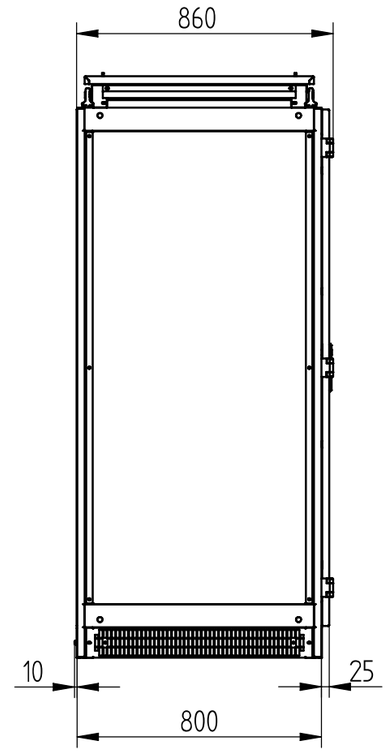
9100002469_mb-01

CAD A3 en

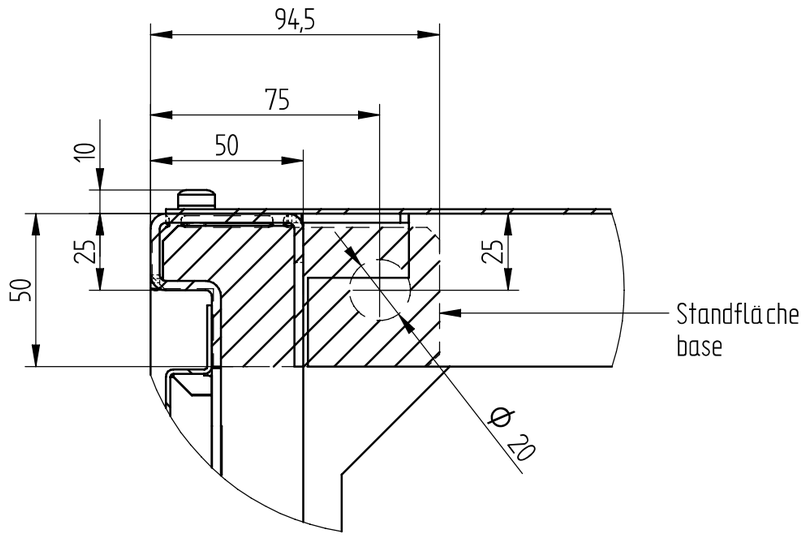
Page Pa.

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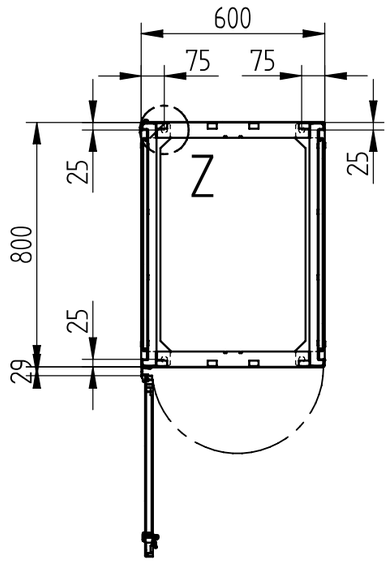


DETAIL Z



1:2

SECTION A-A

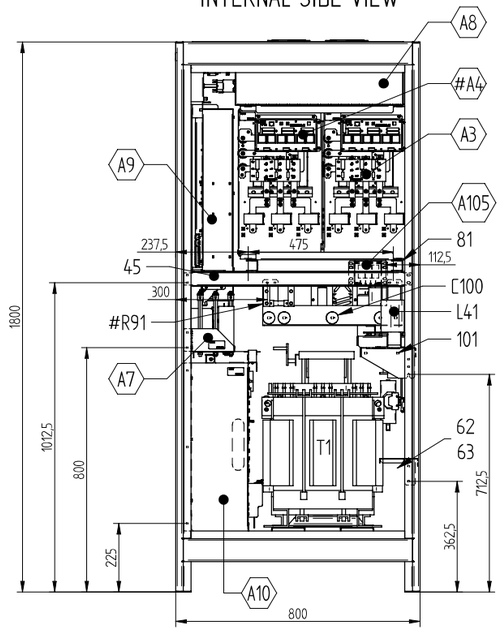


FOOT PRINT
VIEW

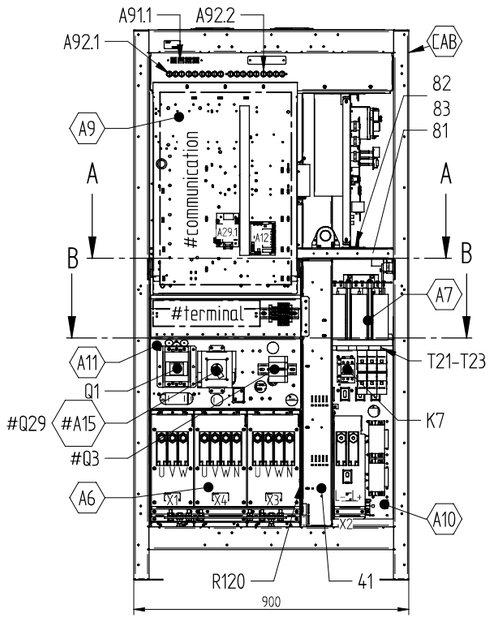
Scale 1:20

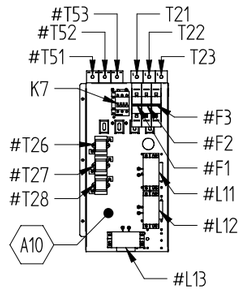
				Date	25.01.2019		AEG POWER SOLUTIONS	Cabinet 600 mm width Mechanical details	
				Editor	S.Sikora				9100003148_mb-00
				Date	25.01.2019				CAD A3 en
Stat.	Alteration	Date	Name	Check	M.Wäsche	Origin:	repl.for:	repl.by:	Page Pa.

INTERNAL SIDE VIEW

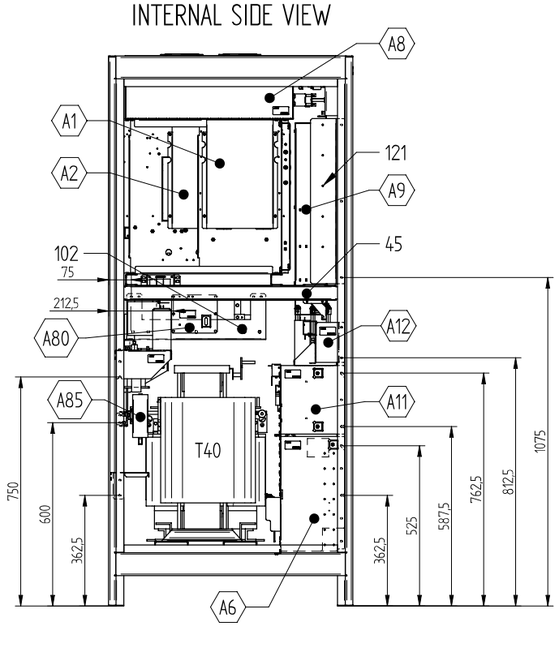


INTERNAL FRONT VIEW

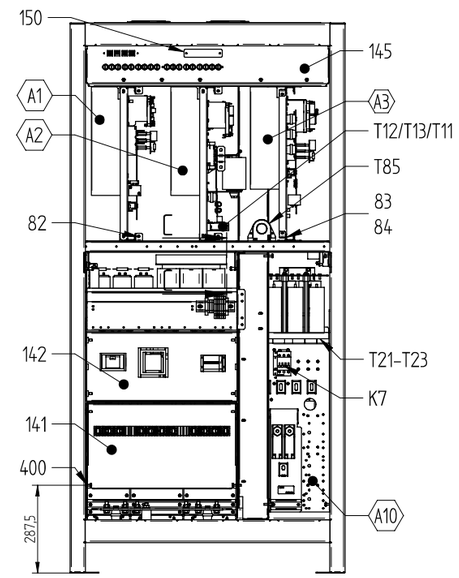




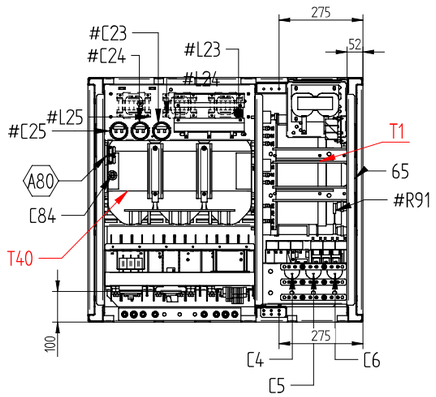
INTERNAL SIDE VIEW



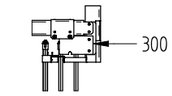
INTERNAL FRONTVIEW WITHOUT CONTROL



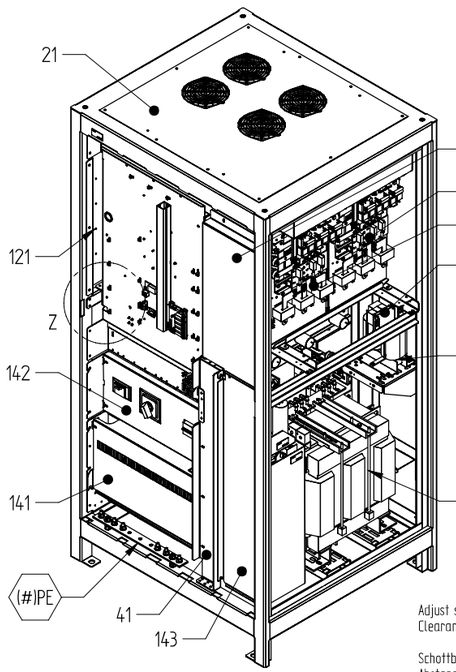
SECTION A-A



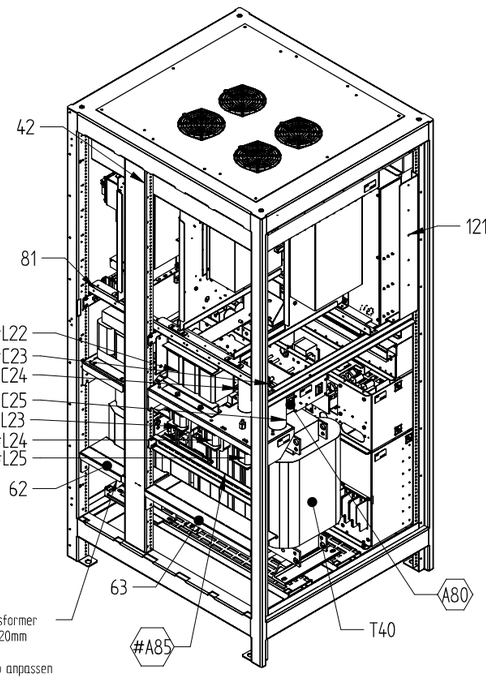
SECTION C-C



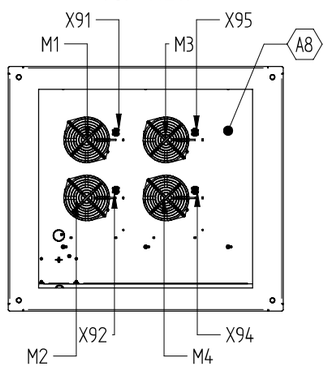
ISO VIEW



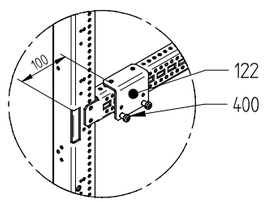
ISO VIEW



TOP VIEW

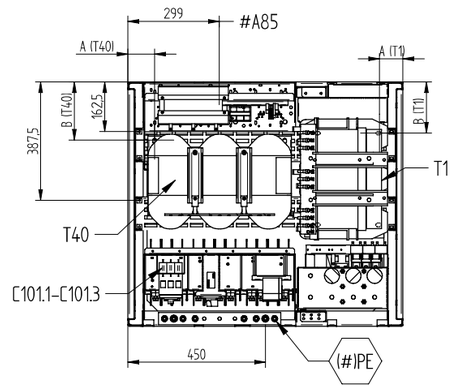


DETAIL Z



1:5

SECTION B-B



Adjust sheet to transformer
Clearance to be ca. 20mm

Schottblech an Trafo anpassen
Abstand ca. 20mm

Einbauorte T1 & T40 Assemblypositions T1 & T40			
Sachnummer Partnumber	Zulieferer Supplier	A	B
T1-40004031	Trasfo Project	80	168
T1-40004031	Intermagnetics	90	168
T1-40004031	IMEL	110	168
T1 - 40014529	Elettromil	87.5	219.5
T40-40012283	Eurotrafo	219	217
T40-40012283	Intermagnetics	90	194
T40-40012283	Trasfo Project	130	193
T40-40000247	Trasfo Project	138	169
T40-40000247	Intermagnetics	135	168
T40-40000247	IMEL	87	193
T40-40012282	Trasfo Project	138	167
T40-40012282	Intermagnetics	133	193
T40-40012282	IMEL	115	218
T40-40004293	Trasfo Project	120	168
T40-40004293	Intermagnetics	120	168
T40-40004293	IMEL	113	193
T40-40010351	Tamura	120	195
T40-40013398	Elettromil	137	170
T40-40014516	Elettromil	115	220

FOR THE ACRONYMS INDICATED IN THIS DRAWING PLEASE REFER TO THE ELECTRICAL DRAWING 1724000372-EL-DG-00009

A85 - Position may vary due to given space
- Position kann aufgrund der vorliegenden Platzverhältnisse variieren

#	= option
#terminal	= for options see 80000611
#communication	= for options see 80000614
PE/#PE	= for assembly see 80000619

Protect 8			
08	500000000331	04.04.2022	GDL
07	80013319	11.08.2021	MK
06	THDI add	11.08.2021	MK
05	T40 TAMURA hinzu	18.03.2020	PA
04	adaption to standard	19.12.2019	PA
03	80009868	03.08.2018	MK
02	80009540	30.01.2017	SIK
01	add option #A93	11.11.2016	WA
Rev.	Alteration	Date	Name

Free size tolerances DIN ISO 2768 m		Surfaces
	Date	Name
Editor	10.08.2021	MKrieger
Check	19.08.2022	BSchulte
Norm.		

AEG POWER SOLUTIONS

Origin

Scale 1:5 | Mass: 3947.797 kg

Material:
Blank:

Protect 8.33/20-400-216-400-H18

Protect 8.33/20-400-216-400-H18

3AD000 | A1 | Page 1

20001273_MTL_EN-08 | en | 1 Pa.

repl.for: | repl.by:

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CAE EPLAN Electric P8

AUXILIARY
From Lighting & Small Power DB BOP DP-200N1 (Cubicle 03-Q42)
100-240V/N/PE~50/60Hz

back-up fuse
gG10A
3G2.5mm2

LINE A
From LV Switchgear SG-200N1 (Cubicle A6/05)
Mains
400V;3/PE~50Hz

gG80A
4G35mm2

From LV Switchgear SG-200N1 (Cubicle A2/04)
Bypass mains
400V;3/PE~50Hz

gG63A
4G35mm2

LINE B
From LV Switchgear SG-200N1 (Cubicle A6/06)
Mains
400V;3/PE~50Hz

gG80A
4G35mm2

Not included in the AEG shipment

Code	Description
Q1	Rectifier input mains breaker
T40	Rectifier input isolation transformer
A1	Rectifier
A2	Inverter
T1	Inverter output isolation transformer
A3-A4	Static by-pass switch
A18	Display control module
A85	Heater
H1	Light

+MBC1
BY-200F4
Bypass-Trafoschrank mit HU 20 kVA
1000007888.090
10009760

-X1 1U,1V,1W,PE
-X10 U,V,W,PE
-X13 U,N,PE
-X14 U,N
-X1 3U,3W,3PE
-Q10 L=50/35A I=0,5kA Icu=50kA
-T8 400V/400V 20kVA
-A85
-H1
-Q28.1 NC
-Q28.2 NC
-X1 2U,2V,2W,PE
-X4 1U,1V,1W,1N,PE
-X4 2U,2V,2W,2N,PE
-X1 4U,4V,4W,PE

+UPS1
BC-200F4A
Protect 8.33 20-400-204-400
1000007888.080
10009759

+UPS2
BC-200F4B
Protect 8.33 20-400-204-400
1000007888.080
10009759

-E1-X1 U,V,W,PE
-E4-X4 U,V,W,N,PE
-Q1 L=100/85A I=1,0kA Icu=50kA
-T40
-A1 REC
-A2 INV
-T1
-F1,-F2,-F3
-A3 SBS
-A4
-A18 Display
-A20 Parallel Adapter
INV CAN -X3 1-3 → 203 / 1.6
INV Sync -X5 1-4 → 205 / 1.6
1.5 / 203 → -X3 1-3 INV CAN
1.5 / 205 → -X5 1-4 INV Sync
-L11,-L12,-L13 Parallel preventive choke coil
-A24.1 BLÜ-PRO -F91
-A24.2 BLÜ-PRO -F92
-A24.3 BLÜ-PRO -F93
-A12 ,-A13 Remote signaling
-E2-X2 L-,L+,PE
-X15 2,3
-X130 1,2
-E3-X3 U,V,W,N,PE
-X15 6,7
-X130 3,4,2PE
-X15 8,9

-X2 1L+,1L-,PE
-X15 4,5
-X91 1M
-X92 1M
-X93 1M
-X130 1,2,1PE
-X5 1U,1V,1W,1N,PE
-X2 3L+,3L-,PE
-X91 3M
-X92 3M
-X93 3M
-X2 2L+,2L-,PE
-X91 2M
-X92 2M
-X93 2M
-X5 2U,2V,2W,2N,PE
-X2 4L+,4L-,PE
-X91 4M
-X92 4M
-X93 4M

-Q71 NC
-Q72 NC
A / 1.6
1.5 / A
-Q29 INV operation / Manual bypass
-F25
DP-200F4
-QF31 B16A 300mA
5pc
-QF35 B16A 300mA
-QF36 B10A
3pc
-QF38 B10A
-X31 U,N,PE
-X35 V,N,PE
-X36 W,N,PE
-X38 V,N,PE

Not included in the AEG shipment

max. gG10A — max. gG10A
Load
400/230V;3/N/PE~50Hz

2(1x70 mm2)

+BFB1
CB-200F4A
Battery fuse box 200 A
*1
-Q2 L=200A
DC 24V max. 300W

+BFB2
CB-200F4B
Battery fuse box 200 A
*1
-Q2 L=200A
DC 24V max. 300W

+BAT1
BA-200F4A
Batteries installed on rack
3 x 18 x FTG 12-120
Battery voltage 216V
Battery capacity 360Ah
string 1
String 2
String 3
-R81

+BAT2
BA-200F4B
Batteries installed on rack
3 x 18 x FTG 12-120
Battery voltage 216V
Battery capacity 360Ah
string 1
String 2
String 3
-R81

*1 Attention! In the event of battery undervoltage < 130 V, the UPS automatically switches off battery isolator Q2.
If this happens, switch X15:3 must be switched into the open position (undervoltage trip blocked).
For restart, please refer to the chapter in the UPS operating instructions (charging the DC link capacitors) attached.
Unlock the tripped switch Q2 by switching to open position.
After charging the DC link capacitors, switch on Q2.
Attention! When the battery voltage reaches > 200 V, switch X15:3 must be switched back to the closed position.

*2 Connection cables are not included.

						Date	14.05.2024	ROSETTI MARINO Hollandse Kust Noord (HKN) wind farm	AEG POWER SOLUTIONS	System 20 kVA			
01	5000000002053	13.08.2024	Beckschäfer	Editor	IEC								
02	5000000002089	27.08.2024	Beckschäfer	Checked	Ch.Peck					Single-line diagram			
Stat	Alteration	Date	Name	Norm							1000007888_080 en	A0	sheet 1 sheets 1

1000007888_080

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1000007888_080

REC mains

UPS1

Top entry

-X1 1U 1V 1W

-PE1

PE busbar

Cu 40x5 mm

Door

GNYE 6 mm²

Rack

Rack

BK R16 mm²

BK R16 mm²

BK R16 mm²

GNYE R35 mm²

Bottom entry

-PE

Cu 40x5 mm

-X1 2U 2V 2W

+UPS1

Protect 8.33 20-400-204-400

1000007888.080

10009759

GZ1_1 +UPS1/1.2

GZ1_2 +UPS1/1.2

GZ1_3 +UPS1/1.2

REC mains

UPS2

Top entry

-X1 3U 3V 3W

-PE1

BK R16 mm²

BK R16 mm²

BK R16 mm²

Bottom entry

-PE

-X1 4U 4V 4W

+UPS2

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GZ1_1

GZ1_2

GZ1_3

				Date	28.05.2024	ROSETTI MARINO Hollandse Kust Noord (HKN) wind farm	AEG POWER SOLUTIONS	REC mains Bypass transformer cabinet with manual bypass 20 kVA Circuit diagram	=
				Editor	Beckschäfer				+ MBC1
				Checked	Ch.Peck			1000007888.090 10009760	1000007888_080 en & EFS
Stat	Alteration	Date	Name	Norm					A3 sheet 1 sheets 11

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+UPS1
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GZ2_1 +UPS1/4.3
GZ2_2 +UPS1/4.2
GZ2_3 +UPS1/4.3
GZ15_2 +UPS1/12.8
GZ15_3 +UPS1/12.8
GZ91_1 +UPS1/18.3
GZ92_1 +UPS1/18.7
GZ93_1 +UPS1/19.3
GZ130_1 +UPS1/12.2
GZ130_2 +UPS1/12.2

-W208
LiYCY 3x0,5 mm²
WH
BN

Bottom entry
-X2 1L+
1L-
-PE
-X15 2
3
-X91 1M
-X92 1M
-X93 1M

BK R70 mm²
BK R70 mm²
BK R2,5 mm²
BK R2,5 mm²
BK R2,5 mm²
BK R2,5 mm²
BK R2,5 mm²

Top entry
-X2 2L+
2L-
-PE
-X15 4
5
-X91 2M
-X92 2M
-X93 2M

Battery fuse

Battery MCCB
Shunt opening release

Battery central tapping

Top entry
-X130 1
2
1PE
OG 1,5 mm²

+BAT1
Battery cabinet
-R81
-X1 1
2

1000007888_080

				Date	28.05.2024	ROSETTI MARINO Hollandse Kust Noord (HKN) wind farm	AEG POWER SOLUTIONS	GR-Ausgang UPS1 Bypass transformer cabinet with manual bypass 20 kVA Circuit diagram	=
				Editor	Beckschäfer				+ MBC1
				Checked	Ch.Peck			1000007888.090 10009760	1000007888_080 en
Stat	Alteration	Date	Name	Norm					& EFS

A3 | sheet 2 | sheets 11

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+UPS2
Protect 8.33 20-400-204-400
1000007888.080
10009759

GZ2_1 GZ2_2 GZ2_3 GZ15_2 +UPS2/12.8 GZ15_3 +UPS2/12.8 GZ91_1 +UPS2/18.3 GZ92_1 +UPS2/18.7 GZ93_1 +UPS2/19.3 GZ130_1 +UPS2/12.2 GZ130_2 +UPS2/12.2

-W209
LiYCY 3x0,5 mm²
WH BN

Bottom entry
-X2 3L+ 3L- -PE
-X15 6 7
-X91 3M
-X92 3M
-X93 3M

BK R70 mm² BK R70 mm² BK R2,5 mm² BK R2,5 mm² BK R2,5 mm² BK R2,5 mm² BK R2,5 mm²

Top entry
-X2 4L+ 4L- -PE
-X15 8 9
-X91 4M
-X92 4M
-X93 4M

Battery fuse

Battery MCCB
Shunt opening release

Battery central tapping

Top entry
-X130 3 4 2PE
OG 1,5 mm²

+BAT2
Battery cabinet
-R81
-X1 1 2

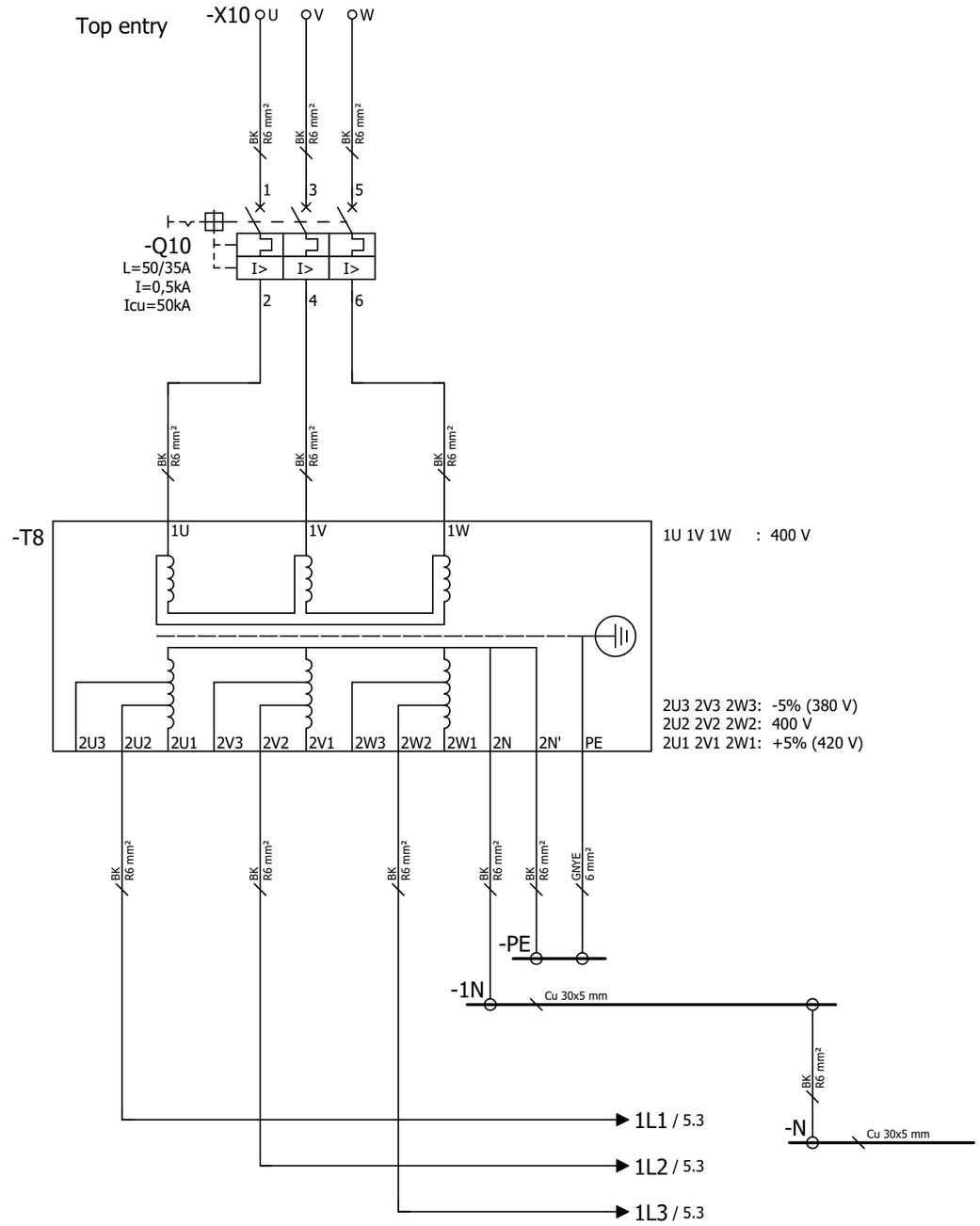
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				Date	28.05.2024	ROSETTI MARINO Hollandse Kust Noord (HKN) wind farm	AEG POWER SOLUTIONS	GR-Ausgang UPS2 Bypass transformer cabinet with manual bypass 20 kVA Circuit diagram		=
				Editor	Beckschäfer					+ MBC1
				Checked	Ch.Peck				1000007888.090 10009760	& EFS
Stat	Alteration	Date	Name	Norm					1000007888_080 en	A3 sheet 3 / sheets 11

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Mains
400V;3/PE~50Hz

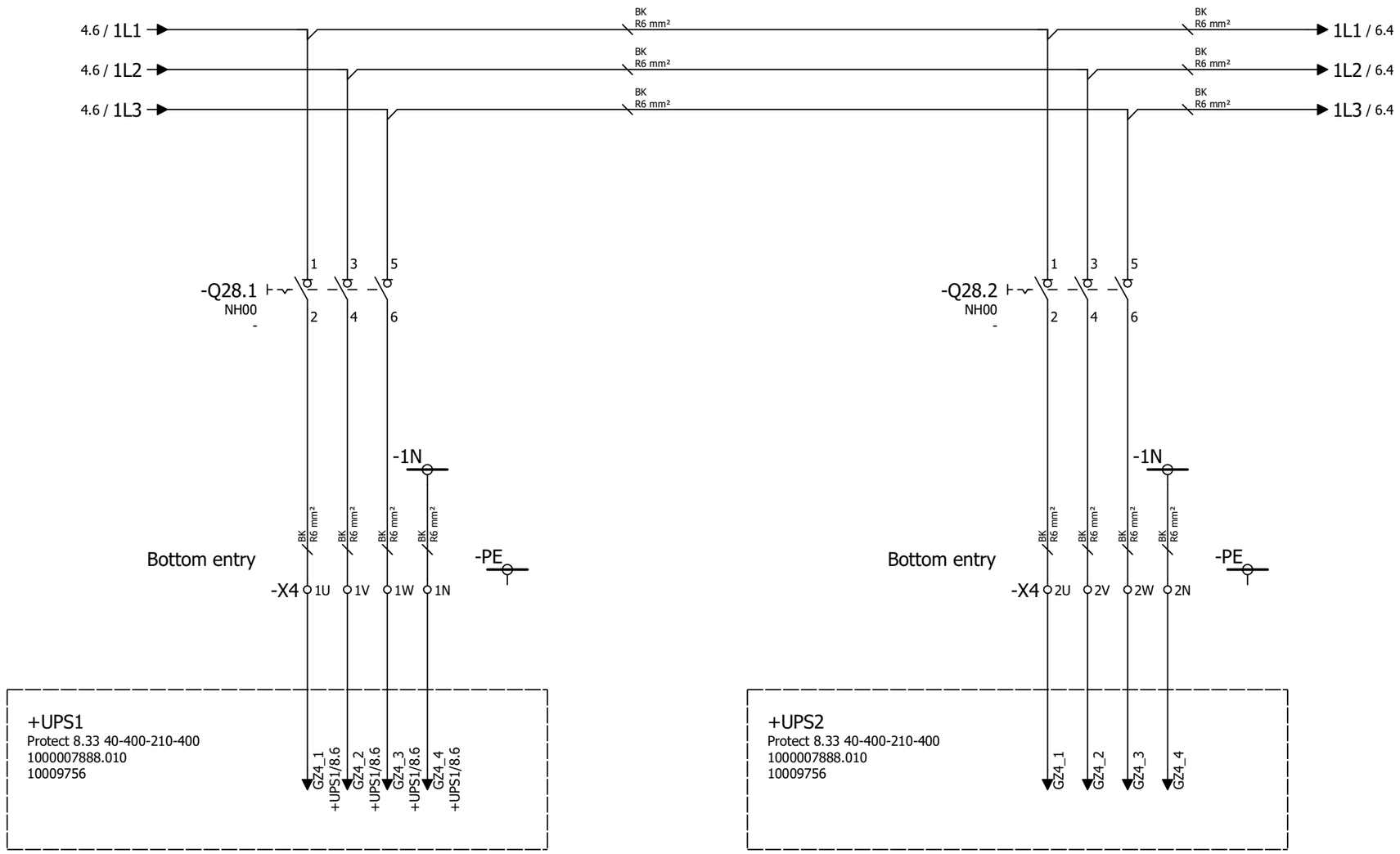


				Date	28.05.2024	ROSETTI MARINO Hollandse Kust Noord (HKN) wind farm	AEG POWER SOLUTIONS	Bypass Transformator Bypass transformer cabinet with manual bypass 20 kVA Circuit diagram		=	
				Editor	Beckschäfer					+ MBC1	
				Checked	Ch.Peck				1000007888.090	& EFS	A3 sheet 4
Stat	Alteration	Date	Name	Norm					10009760	1000007888_080 en	sheets 11

1000007888_080

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				Date	28.05.2024	ROSETTI MARINO Hollandse Kust Noord (HKN) wind farm	AEG POWER SOLUTIONS	SBS mains Bypass transformer cabinet with manual bypass 20 kVA Circuit diagram
				Editor	Beckschäfer			
				Checked	Ch.Peck			1000007888.090 10009760
Stat	Alteration	Date	Name	Norm				1000007888_080 en

=			
+ MBC1			
& EFS	A3	sheet	5
		sheets	11

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1000007888_080

+UPS1
Protect 8.33 40-400-210-400
1000007888.010
10009756

GZ3_1 +UPS1/8.2
GZ3_2 +UPS1/8.2
GZ3_3 +UPS1/8.2
GZ3_4 +UPS1/8.3

+UPS2
Protect 8.33 40-400-210-400
1000007888.010
10009756

GZ3_1
GZ3_2
GZ3_3
GZ3_4

Switch position
Q29

Bottom entry

-X5 1U 1V 1W 1N -PE

BK R6 mm²

-1N

-Q71
NH00
-
2 4 6
1 3 5

Bottom entry

-X5 2U 2V 2W 2N -PE

BK R6 mm²

-1N

-Q72
NH00
-
2 4 6
1 3 5

Top entry

-X12 1 2 3

BK R0,75 mm²

BK R6 mm²

5.7 / 1L1
5.7 / 1L2
5.7 / 1L3

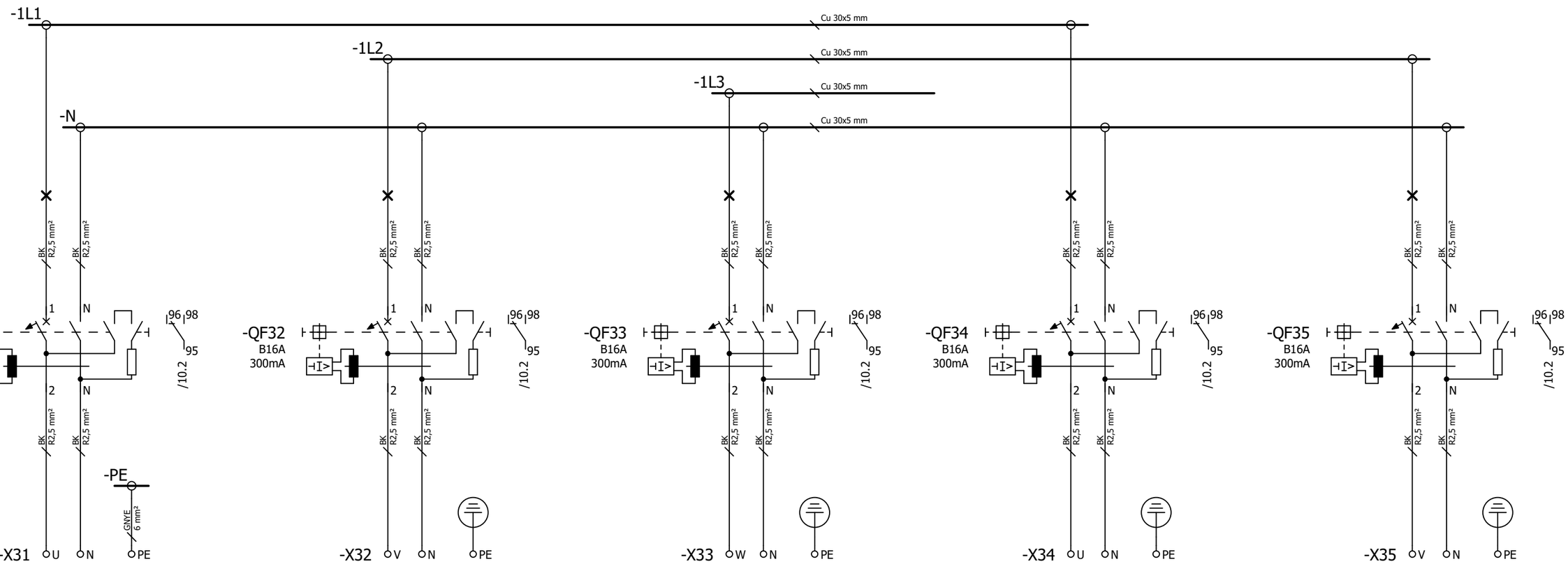
-Q29
115A
1 INV operation
2 Manual bypass
1 3 5 7 9 11 101 103
2/4 6/8 10/12
2 6 10 102 104

-1L3 Cu 30x5 mm
-1L2 Cu 30x5 mm
-1L1 Cu 30x5 mm

				Date	28.05.2024	ROSETTI MARINO Hollandse Kust Noord (HKN) wind farm	AEG POWER SOLUTIONS	Manual bypass Bypass transformer cabinet with manual bypass 20 kVA Circuit diagram		=
				Editor	Beckschäfer					+ MBC1
				Checked	Ch.Peck			1000007888.090 10009760	1000007888_080 en	& EFS
Stat	Alteration	Date	Name	Norm						A3 sheet 6 / sheets 11

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Load
230V/N/PE~50Hz

B400-FGS-001
FGS PANEL LINE A
2KW

Load
230V/N/PE~50Hz

B400-FGS-001
FGS PANEL LINE B
2KW

Load
230V/N/PE~50Hz

SPARE
2KW

Load
230V/N/PE~50Hz

SPARE
2KW

Load
230V/N/PE~50Hz

SPARE
2KW

1000007888_080

				Date	28.05.2024
01	500000002053	13.08.2024	Beckschäfer	Editor	Beckschäfer
02	500000002089	27.08.2024	Beckschäfer	Checked	Ch.Peck
Stat	Alteration	Date	Name	Norm	

ROSETTI MARINO
Hollandse Kust Noord (HKN) wind farm

AEG POWER SOLUTIONS

Load
Bypass transformer cabinet
with manual bypass 20 kVA
Circuit diagram

1000007888.090
10009760

1000007888_080 en

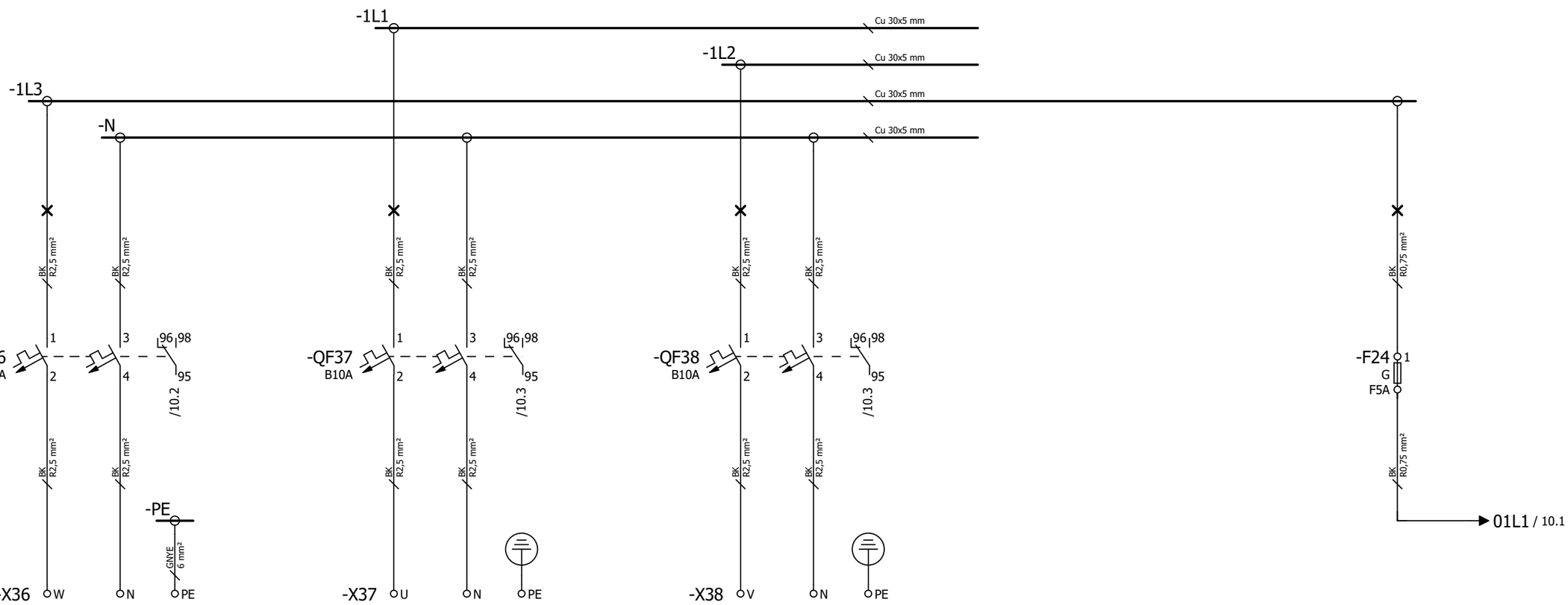
=
+ MBC1
& EFS

A3

sheet 7
sheets 11

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Load
230V/N/PE~50Hz

B400-NET-01
NETWORK CABINET LINE A
1KW

Load
230V/N/PE~50Hz

B400-NET-01
NETWORK CABINET LINE B
1KW

Load
230V/N/PE~50Hz

SPARE
1KW

1000007888_080

				Date	28.05.2024
01	500000002053	13.08.2024	Beckschäfer	Editor	Beckschäfer
02	500000002089	27.08.2024	Beckschäfer	Checked	Ch.Peck
Stat	Alteration	Date	Name	Norm	

ROSETTI MARINO
Hollandse Kust Noord (HKN) wind farm

AEG POWER SOLUTIONS

Load
Bypass transformer cabinet
with manual bypass 20 kVA
Circuit diagram

1000007888.090
10009760

1000007888_080 en

=
+ MBC1
& EFS

A3

sheet 8
sheets 11

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1000007888_080

status
Surge arrester

Top entry

-X12 4 5 6

-1L3 Cu 30x5 mm
-1L2 Cu 30x5 mm
-1L1 Cu 30x5 mm
-PE Cu 40x5 mm

BK R6 mm²
BK R6 mm²
BK R6 mm²
GNYE 6 mm²

BK R0,75 mm²
BK R0,75 mm²
BK R0,75 mm²

-F25

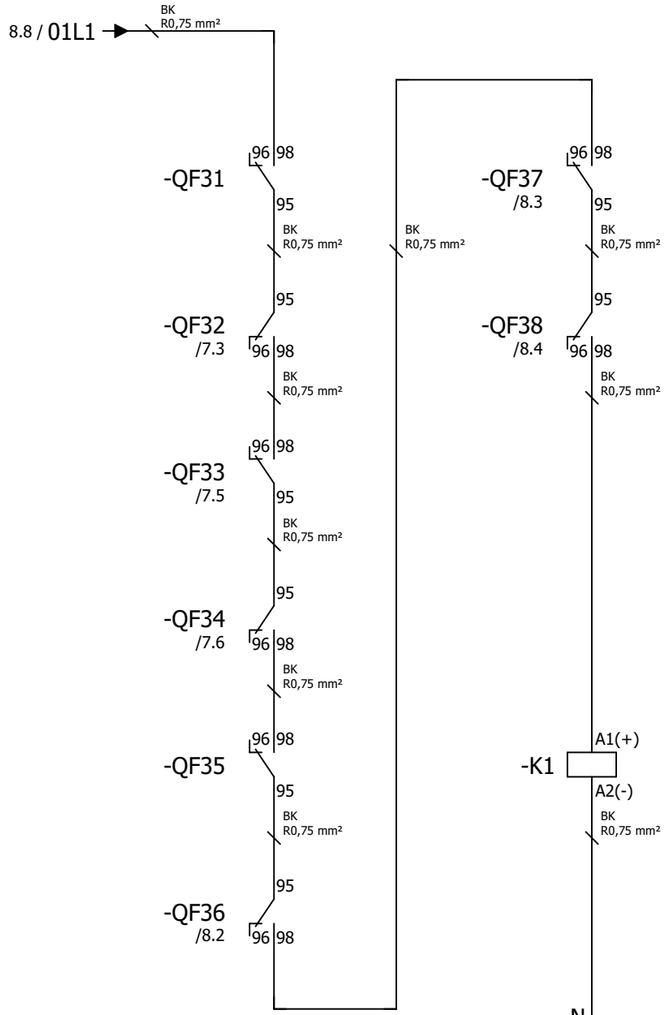
L1 L1' L2 L2' L3 L3' PE(N) PE(N)'

11 12 14

				Date	28.05.2024	ROSETTI MARINO Hollandse Kust Noord (HKN) wind farm	AEG POWER SOLUTIONS	Surge arrester Bypass transformer cabinet with manual bypass 20 kVA Circuit diagram		=	
				Editor	Beckschäfer					+ MBC1	
				Checked	Ch.Peck				1000007888.090 10009760	& EFS	A3 sheet 9 / sheets 11
Stat	Alteration	Date	Name	Norm					1000007888_080 en		

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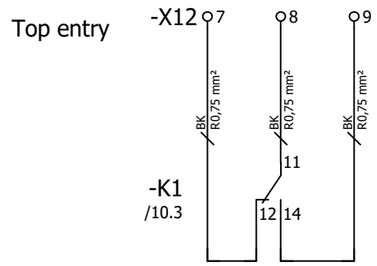
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Common fault

QF31 - QF38

Top entry



PXC.2966207_PLC-RSC-230UC/21
14 — 11 /10.7
12

1000007888_080

				Date	28.05.2024	ROSETTI MARINO Hollandse Kust Noord (HKN) wind farm	AEG POWER SOLUTIONS	Common fault Bypass transformer cabinet with manual bypass 20 kVA Circuit diagram		=	
				Editor	Beckschäfer					+ MBC1	
01	500000002053	13.08.2024	Beckschäfer	Checked	Ch.Peck				1000007888.090	& EFS	A3 sheet 10
Stat	Alteration	Date	Name	Norm					10009760	1000007888_080 en	sheets 11

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+UPS1
Protect 8.33 20-400-204-400
1000007888.080
10009759

GZ13_1
+UPS1/23.7

GZ13_2
+UPS1/23.7

+UPS2
Protect 8.33 20-400-204-400
1000007888.080
10009759

GZ13_1
+UPS2/23.2

GZ13_2
+UPS2/23.3

BK
R1,5 mm²

BK
R1,5 mm²

Top entry

-X13 U U N N PE PE

BK
R0,75 mm²

BK
R0,75 mm²

-F100 1
G
T6,3A

BK
R0,75 mm²

-F85 L
I 3 2

BK
R0,75 mm²

-A85 -X1 3 2

-R1

Top entry

-X14 U U N N

BK
R0,75 mm²

-F110 1
G
T6,3A 2

BK
R0,75 mm²

BK
R0,75 mm²

-X114 U N

-W100
H05VV
2x1 mm²
3 m

L N

-H1
Enclosure light

1000007888_080

				Date	28.05.2024	ROSETTI MARINO Hollandse Kust Noord (HKN) wind farm	AEG POWER SOLUTIONS	external connection Bypass transformer cabinet with manual bypass 20 kVA Circuit diagram		=
				Editor	Beckschäfer					+ MBC1
				Checked	Ch.Peck			1000007888.090 10009760	1000007888_080 en	& EFS
Stat	Alteration	Date	Name	Norm						A3 sheet 11 / sheets 11

S-701D Data Sheet for AC Uninterruptible Power Systems (UPS) (IEC 62040-3)

JIP33 JOINT INDUSTRY PROGRAMME

Row							Issue
2	Tag No. :	UP-200F4					
3	Service :	AC UPS F&G					
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 enquiry	Noted			
8	5.1.2	Purchase order number, date :	Input Data	Noted			
9	5.1.2	Manufacturer :	Input Data	AEG Power Solutions			
10	5.1.2	Model number :	Input Data	2 x Protect 8.33 S10 20kVA			
11	5.1.2	Serial number :	Input Data	Released after production			
12	5.2.3	Application :	industrial	Noted			
13	5.3.3	Purchaser specified rated output power :	15	20kVA	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.2, Figure A.3A, Figure A.3B, Figure A.6	UPS configuration :	simplified parallel UPS with common bypass & common output-Figure A.3A	Confirmed			
18	5.1.1, B.1	UPS topology :	double conversion	Confirmed			
19	5.1.1	Static switch configuration :	in both inverter and bypass path	Confirmed			
20	5.4.2.3	Battery configuration :	2 x 50%	Confirmed. 240 min. autonomy each battery			
21	5.3.2, 5.3.4	Performance classification :	manufacturer to advise	-			
22	8.1.1.3	Bi-directional rectifier :	No	Not applicable			
23	8.4.2.11	Remote access required :	Yes (read only)	Confirmed. Modbus TCP			
24	8.4.2.11	Hardware (adapters, connectors, cables, etc.) required for remote access :	manufacturer to advise	Confirmed			
25	8.1.1.5, 8.1.1.6	On-line battery monitoring facility required :	string monitoring	Confirmed			
26	8.1.1.4	On-line battery testing feature required :	No	Noted			
27	8.1.1.4	Battery test load interface :	No	Noted			
28	5.4.2.3	DC earth leakage monitoring required :	No	Noted			
29	7.4.14	Single line diagram and status display :	on HMI	LCD display with synoptic			
30	8.1.2.11	Black start feature required :	Yes	Confirmed			
31	8.1.1.1	Earth screen required for isolation transformer :	manufacturer to advise	Confirmed on the by-pass isolation transformer			
32		**PHYSICAL ASPECTS**					
33	7.2.1	Mounting :	floor mounting	Confirmed			
34	7.2.1	Overall cabinet dimensions - length :	manufacturer to advise	900 + 600 + 900 mm	mm		
35	7.2.1	Overall cabinet dimensions - depth :	manufacturer to advise	860 mm	mm		
36	7.2.1	Overall cabinet dimensions - height :	manufacturer to advise	1915 mm	mm		
37	7.2.1	Reference outline drawing number :	Input Data	1724000372-EL-DA-00004			
38	7.2.1	Total UPS cabinet mass :	manufacturer to advise	1530 kg	kg		
39	7.2.1	Total UPS mass with batteries (if integrated) :	manufacturer to advise	Batteries not integrated	kg		
40	7.2.4, 7.2.5	Cable entry location :	top	Confirmed. Through by-pass cabinet by means of cable glands			
41	7.2.4, 7.2.5	Cable entry type :	removable - undrilled plate	Confirmed			
42	7.2.4, 7.2.5	Gland plate material :	manufacturer standard	Steel			
43	7.2.1	Paint colour :	supplier standard	RAL7035			
44	7.2.1	Canopy for cabinet required :	No	Noted			
45	7.3.9	Document holder :	Yes	Confirmed			
46		**INSTALLATION**					
47	4,1	Site :	offshore - fixed	Noted. Painting class C3-H			
48	4,1	Location of UPS cabinet installation :	indoor	Noted			
49	7.3.1, 7.3.2	Front access clearance dimensions for operation and maintenance :	800	Noted	mm		
50	7.3.2	Side clearance for ventilation (if required) :	manufacturer to advise	0	mm		
51	7.3.2	Rear clearance for ventilation (if required) :	manufacturer to advise	100 mm	mm		
52	7.2.3, 7.9.3	Installed location of battery :	inside UPS room	Battery housed on rack			
53	7.2.3	Maximum battery assembly dimensions (L x D x H) :	manufacturer to advise	Battery rack 1800 x 725 x 1474	mm		
54		**SAFETY**					
55	5.1.1	Accessibility :	operator access area	Front access			
56	5.1.1	Key required for cabinet :	Yes	Confirmed			
57	7.2.2	Degree of protection (with closed doors) :	IP31	IP43			
58	7.2.2	Degree of protection (with open doors) :	IP2X	Confirmed			
59	7.7.5	Cooling fan replacement while UPS in service :	No	Noted			
60	5.1.2	Local language for caution/danger/warning labels:	English	Confirmed			
61		**ELECTROMAGNETIC COMPATIBLITY**					
62	5.1.4	Emission :	UPS Cat C3	Confirmed			
63	5.1.4	Immunity :	UPS Cat C3	Confirmed			
64		**ENVIRONMENTAL CONDITIONS**					
65	4.2.1.1	Minimum ambient temperature (operation) :	-8,4	Confirmed with heater option included	°C		
66	4.2.1.1	Maximum ambient temperature (operation) :	40	Confirmed	°C		
67	4.2.1.1	Maximum relative humidity (operation) :	95	Confirmed. Not condensing	%		
68	4.2.1.1	Temperature at which relative humidity is specified (operation) :	Input Data	-	°C		
69	4.2.1.2	Maximum altitude (operation) :	Sea level	Noted	m		
70	4.2.2.1	Minimum ambient temperature (storage and transportation) :	-5	Noted	°C		
71	4.2.2.1	Maximum ambient temperature (storage and transportation) :	40	Noted	°C		
72	4.2.2.1	Maximum relative humidity (storage and transportation) :	95	Noted	%		
73	4.2.2.1	Temperature at which relative humidity is specified (storage and transportation) :	Input Data	-	°C		
74	4.3.2	Seismic requirement data :	Zone 2	Noted			
75	4.2.2.1	Storage site of UPS :	indoor – natural ventilation	Noted			
76	4.3.2	Additional or unusual conditions (operation) :	Input Data	Not applicable			
77	4.3.3	Additional or unusual conditions (storage and transportation) :	Input Data	Not applicable			
78	5.1.5	Acoustic noise at 1 m - normal mode :	70	< 65 dB(A)	dBA		
79	5.1.5	Acoustic noise at 1 m - stored energy mode :	70	< 65 dB(A)	dBA		
80		**COMMUNICATION INTERFACE(S)**					
81	5,6	(1) Interface media for SCADA (ICSS / DCS) :	serial	Modbus TCP + relays			

S-701D Data Sheet for
AC Uninterruptible Power Systems (UPS) (IEC 62040-3)

JIP33 JOINT INDUSTRY PROGRAMME

Issue

Row							
2	Tag No. :	UP-200F4					
3	Service :	AC UPS F&G					
4	Ref. Clause	Description	Project Requirement	Manufacturer Declared Values	Unit	Additional notes	
82	5,6	(1) Maximum allowable length of communication cable (for copper) :	Input Data	25 m	m		
83	5,6	(1) Interface protocol for SCADA (ICSS / DCS) :	Modbus	Modbus TCP + relays			
84	5,6	(2) Interface media for electrical management / control system :	serial	Modbus TCP + relays			
85	5,6	(2) Maximum allowable length of communication cable (for copper) :	Input Data	25 m	m		
86	5,6	(2) Interface protocol for electrical management / control system :	Modbus	Modbus TCP + relays			
87	5,6	(3) Remote access / monitoring software required :	Yes	Noted			
88	5,6	(3) Interface media for remote access / monitoring :	ethernet (fiber)	Noted			
89	5,6	(3) Maximum allowable length of communication cable (for copper) :	Input Data	25 m	m		
90	5,6	(3) Interface protocol for remote access / monitoring :	Modbus	Modbus TCP + relays			
91		**AC INPUT SPECIFICATIONS**					
92	5.2.1	Voltage (steady state, R.M.S) - rated :	400	Confirmed	V		
93	5.2.1	Voltage (steady state, R.M.S) - tolerance :	+/- 10	Confirmed	%		
94	5.2.1	Frequency - rated :	50 Hz	Confirmed			
95	5.2.1	Frequency - tolerance :	+/- 2	Confirmed	%		
96	5.2.2	Phases required :	3	3			
97	5.2.2	Neutral required :	Yes	Confirmed. Neutral not required for the rectifier supply			
98	5.2.2	Current (R.M.S) - rated (with the energy storage device charged) :	manufacturer to advise	35A	A		
99	5.2.2	Power factor :	manufacturer to advise	Data not characterized by the factory. Measurable on request			
100	5.2.2	In-rush (% of rated current) :	manufacturer to advise	Typically 10 x In	%		
101	5.2.2	In-rush (time) :	manufacturer to advise	Data not characterized by the factory. Measurable on request	s		
102	5.2.2	Maximum current (with low input volt and energy storage device charging) :	manufacturer to advise	43A at 400Vac	A		
103	5.2.2	Time for overload (125 % of rated current) :	10	Confirmed	min		
104	5.2.2	Time for overload (150 % of rated current) :	1	Confirmed	min		
105	5.2.2	Total harmonic distortion - current (THD p.u.) :	8	Confirmed. The AC UPS works with an input voltage harmonic distortion ≤ 8%	%		
106	5.2.3	Short circuit current of the input supply (Minimum and Maximum) :	50	Confirmed. The charger is equipped with an input MCCB (Q1) with Isc = 50kA	kA		
107	5.2.2	Minimum short circuit current :	Input Data	Data not characterized by the factory. Measurable on request	kA		
108	5.2.2	Earth leakage current :	Input Data	Data not characterized by the factory. Measurable on request	mA		
109	5.2.2	AC power distribution system - compatibility :	TN-S	Confirmed			
110	5.2.3	Additional or unusual conditions :	Input Data	Not applicable			
111	5.2.3, 7.5.4	Cable size (cross-section area) - input mains :	Input Data	min 25 sqmm - max 2x95 sqmm	sq.mm.		
112	5.2.3, 7.5.4	Cable size (cross-section area) - input bypass:	Input Data	min 10 sqmm - max 2x95 sqmm	sq.mm.		
113	5.2.3, 7.5.4	Cable size (cross-section area) - input maintenance bypass :	Input Data	min 10 sqmm - max 2x95 sqmm	sq.mm.		
114	7.4.8, 8.1.1.1	Input isolation transformer required :	Yes	Confirmed			
115	7.4.10	Input isolation transformer winding :	supplier standard	Aluminium			
116		**DC AND BATTERY SPECIFICATIONS**					
117	5.4.2.2	DC voltage level :	Select	Confirmed	V d.c.		
118	5.4.2.2	Design life :	5	10 years	years		
119	5.4.2.2	Float service life :	manufacturer to advise	Dependent from temperature	years		
120	5.4.2.2	Shelf life of battery :	manufacturer to advise	3 months	months		
121	5.4.2.2	Quantity of cells and strings :	manufacturer to advise	18 blocks - 3 strings	nos.		
122	5.4.2.2	Nominal voltage (total) :	manufacturer to advise	216V	V d.c.		
123	5.4.2.2	Battery technology :	sealed nickel cadmium	Lead-Acid VRLA GEL			
124	5.4.2.2	Nominal AH capacity :	manufacturer to advise	360Ah	AH		
125	5.4.2.2	Discharge rate (C-rate) :	Select	C10			
126	5.4.2.2	Electrolyte fill status :	manufacturer standard	Not applicable			
127	8.1.2.3	Purchaser's requirement (% of battery recharge level - 1) :	80	Confirmed with charging current limited to 0,1C	%		
128	8.1.2.3	Purchaser's requirement (time for battery recharge level - 1) :	10	Confirmed	Hours		
129	8.1.2.3	Purchaser's requirement (% of battery recharge level - 2) :	100	Data not characterized by the factory. Measurable on request	%		
130	8.1.2.3	Purchaser's requirement (time for battery recharge level - 2) :	24	Data not characterized by the factory. Measurable on request	Hours		
131	5.4.2.2	Stored energy time (Autonomy time at 100% rated load) :	8	Confirmed with both batteries	hours		
132	5.4.2.2	Restored energy time (recharge time to 80% capacity) :	manufacturer to advise	10h	hours		
133	5.4.2.2	Ambient reference temperature :	40	Confirmed	°C		
134	5.4.2.2	Earth condition/isolation :	manufacturer to advise	floating			
135	5.4.2.2	Ripple current (R.M.S) :	manufacturer to advise	< 2% RMS	%		
136	5.4.2.2	Nominal discharge current (stored energy mode):	manufacturer to advise	-	A		
137	5.4.2.2	DC Fault current rating :	manufacturer to advise	Data not characterized by the factory. Measurable on request	A d.c.		
138	5.4.2.2	Cable volt drop recommendation (≤ % at nominal discharge current) :	manufacturer to advise	2%	%		
139	5.4.2.2	Charging regime :	manufacturer to advise	Constant voltage, current limited			
140	5.4.2.2	Charge voltage (float) and tolerance band :	manufacturer to advise	2,28Vcell - 13,5 / 13,8 Vblock	V d.c.		
141	5.4.2.2	Charge voltage (boost) and tolerance band :	manufacturer to advise	2,28Vcell - 13,5 / 13,8 Vblock	V d.c.		
142	5.4.2.2	Charge voltage (equalising) and tolerance band :	manufacturer to advise	Not applicable to VRLA batteries	V d.c.		
143	5.4.2.2	Minimum end of discharge voltage :	manufacturer to advise	178,2V	V d.c.		
144	5.4.2.2	Charge current limit (or range) :	limitation of batteries charging to 30% of the UPS sizing	36A (0,1C)	A d.c.		
145	5.4.2.2	Temperature compensated chargingrequired:	Yes	Confirmed			
146	5.4.2.3	Battery isolation box required :	Yes	Confirmed			
147	5.4.2.3	Additional or unusual conditions :	Input Data	Not applicable			
148	5.4.2.3	Load profile for battery design, attached :	No	Noted			

S-701D Data Sheet for
AC Uninterruptible Power Systems (UPS) (IEC 62040-3)

JIP33 JOINT INDUSTRY PROGRAMME

Row							Issue
2	Tag No. :	UP-200F4					
3	Service :	AC UPS F&G					
4	Ref. Clause	Description	Project Requirement	Manufacturer Declared Values	Unit	Additional notes	
150		**BATTERY ROOM**					
151	4.2.1.1	Minimum ambient reference temperature :	-8,4	-8,4°C (used for battery sizing)	°C		
152	4.2.1.1	Maximum ambient reference temperature :	40	+40°C (used for battery sizing)	°C		
153	5.4.2.1	Area classification :	safe	Noted			
154	5.4.2.1	Hazardous area classification :	Zone 2	Noted			
155	5.4.2.1	Minimum gas subdivision and temperature class (for equipment in battery room) :	Select	-			
156	8.1.2.10	Temperature sensor (for VRLA / partial gas recombination batteries) :	Yes	Confirmed. Standard sensor			
157		**BATTERY ISOLATOR BOX SPECIFICATIONS**					
158	7.9.1	Enclosure material :	manufacturer standard	Aluminium alloy			
159	7.9.1	Mounting :	Select	Wall mounting			
160	7.9.1	Breathing valve required :	manufacturer to advise	No			
161	7.9.1	Internal earth bar :	tinned copper	-			
162	7.9.3	Minimum design temperature :	-8,4	Noted	°C		
163	7.9.3	Maximum design temperature :	40	Noted	°C		
164	7.9.3	Maximum relative humidity :	95	Noted	%		
165	7.9.3	Temperature at which relative humidity is specified:	Input Data	-	°C		
166	7.9.4	Degree of protection :	IP 31	IP65			
167	7.9.5	Area classification :	safe	Noted			
168	7.9.5	Hazardous area certification required :	none	-			
169	7.9.5	Hazardous area classification :	N/A	Not applicable			
170	7.9.5	Hazardous area level of protection :	N/A	Not applicable			
171	7.9.6	Cable entry :	top	Bottom with cable glands			
172	7.9.6	Cable indirect entry via 'ex e' enclosure :	No	Not applicable			
173	7.9.6	Battery cable size (cross-section area):	Input Data	70 sqmm armored cable class-2	sq.mm.		
174	7.9.6	Cable entry diameter in isolator box (ISO metric) :	Input Data	22,6 mm			
175	7.9.7	Battery isolator type :	MCCB	Confirmed			
176	7.9.8	Rated current of breaker / switch fuse unit :	manufacturer to advise	200A	A		
177	7.9.8	Rated breaking current (Icu) - (if breaker used) :	manufacturer to advise	36kA	kA		
178	7.9.10	Breaker status potential free contact (NO) :	two	Confirmed			
179	7.9.9	Under voltage trip feature required :	Yes	Confirmed			
180	7.9.9	Under voltage trip coil for :	black start reserve	Confirmed			
181	8.1.2.12	ESD trip required :	Yes - via shunt trip	Yes - through SIL relay			
182	8.1.2.12	ESD override key switch :	key captive in overridden position and with status contact	Confirmed			
183	7.9.9	Over voltage trip required :	Yes	Not applicable			
184		**AC OUTPUT SPECIFICATIONS**					
185	5.3.2	Rated output power (apparent) :	20	20kVA	kVA		
186	5.3.2	Rated output power (active) :	16	16kW	kW		
187	5.3.2	AC power distribution system - compatibility :	TN-S	Noted			
188	5.3.2	Phases available :	3	Confirmed			
189	5.3.2	Neutral available :	Yes	Confirmed			
190	5.3.2	Voltage (steady state, R.M.S) - rated :	400	Confirmed	V		
191	5.3.2	Voltage - normal mode variation :	manufacturer to advise	+/- 1%	%		
192	5.3.2	Voltage - storage energy mode variation :	manufacturer to advise	+/- 1%	%		
193	5.3.2, 8.2.3	Total harmonic distortion (V), 100% load - normal mode - linear :	5	< 3%	%		
194	5.3.2, 8.2.3	Total harmonic distortion (V), 100% load - normal mode - non linear :	5	Confirmed	%		
195	5.3.2, 8.2.3	Total harmonic distortion (V), 100% load - storage energy mode - linear :	5	< 3%	%		
196	5.3.2, 8.2.3	Total harmonic distortion (V), 100% load - storage energy mode - non linear :	5	Confirmed	%		
197	5.3.2	% Voltage unbalance, 100% load unbalance :	manufacturer to advise	Data not characterized by the factory. Measurable on request	%		
198	5.3.2	Phase angle displacement, 100% load unbalance :	manufacturer to advise	Data not characterized by the factory. Measurable on request	°		
199	5.3.2	% Voltage transient, 100% step load - linear :	manufacturer to advise	+/- 2%	%		
200	5.3.2	Voltage transient recovery time, 100% step load - linear :	manufacturer to advise	2 ms	s		
201	5.3.2	% Voltage transient, 100% step load - non linear :	manufacturer to advise	Data not characterized by the factory. Measurable on request	%		
202	5.3.2	Voltage transient recovery time, 100% step load - non linear :	manufacturer to advise	Data not characterized by the factory. Measurable on request	s		
203	5.3.2	% Voltage transient, 100% step load - transfer normal mode to storage energy mode :	manufacturer to advise	Data not characterized by the factory. Measurable on request	%		
204	5.3.2	Voltage transient recovery time, 100% step load - transfer normal mode to storage energy mode :	manufacturer to advise	Data not characterized by the factory. Measurable on request	s		
205	5.3.2	% Voltage transient, 100% step load -transfer storage energy mode to normal mode :	manufacturer to advise	Data not characterized by the factory. Measurable on request	%		
206	5.3.2	Voltage transient recovery time, 100% step load -transfer storage energy mode to normal mode :	manufacturer to advise	Data not characterized by the factory. Measurable on request	s		
207	5.3.2	Frequency (steady state) - rated :	50	Confirmed	Hz		
208	5.3.2	Frequency (steady state) - normal mode variation :	2	+/- 0,1%	%		
209	5.3.2	Frequency (steady state) - storage energy mode variation :	2	+/- 0,1%	%		
210	5.3.2	Frequency (steady state) - free running variation :	2	+/- 0,1%	%		
211	5.3.2	Synchronization (maximum ± % range of rated frequency) :	manufacturer to advise	-	%		
212	5.3.2	Maximum synchronism phase error (referred to 360° cycle) :	manufacturer to advise	-	%		
213	5.3.2	Maximum slew rate :	manufacturer to advise	-	Hz/s		
214	5.3.2	Current (R.M.S) - rated :	manufacturer to advise	29A	A		
215	5.1.8.1, 5.3.2	Current (R.M.S) - overload capability (% of rated current for ten minutes) :	manufacturer to advise	125%	%		
216	5.1.8.2, 5.3.2	Current (R.M.S) - overload capability (% of rated current for one minute) :	manufacturer to advise	150%	%		
217	5.1.8.3, 5.1.8.4	Current (R.M.S) - short circuit capability (% of rated current) :	manufacturer to advise	3,75 x In (1ph) - 2,15 x In (3ph)	%		
218	5.1.8.3, 5.1.8.4	Current (R.M.S) - short circuit capability (time duration) :	manufacturer to advise	500 ms	s		
219	5.3.2	Current (R.M.S) - limitation (% of rated current) :	manufacturer to advise	-	%		

Row	S-701D Data Sheet for AC Uninterruptible Power Systems (UPS) (IEC 62040-3)						Issue
2	Tag No. :	UP-200F4					
3	Service :	AC UPS F&G					
4	Ref. Clause	Description	Project Requirement	Manufacturer Declared Values	Unit	Additional notes	
220	5.3.2	Current (R.M.S) - limitation (time duration) :	manufacturer to advise	-	s		
221	5.3.2	Current (R.M.S) - fault clearing capability (normal mode) :	manufacturer to advise	-	A		
222	5.3.2	Current (R.M.S) - fault clearing capability (stored energy mode) :	manufacturer to advise	-	A		
223	5.3.2	Load power factor - rated :	manufacturer to advise	0,8			
224	5.3.2	Load power factor - displacement (permissible limit lead) :	manufacturer to advise	Cap - 1 - Ind			
225	5.3.2	Load power factor - displacement (permissible limit lag) :	manufacturer to advise	Cap - 1 - Ind			
226	5.3.2	Efficiency in normal mode - 100% load :	manufacturer to advise	85,6%	%		
227	5.3.2	Efficiency in normal mode - 75% load :	manufacturer to advise	85,8%	%		
228	5.3.2	Efficiency in normal mode - 50% load :	manufacturer to advise	85%	%		
229	5.3.2	Efficiency in normal mode - 25% load :	manufacturer to advise	79,3%	%		
230	7.4.8	Output isolation transformer required :	No	Yes. Output transformer is included in AEG standard design			
231	7.4.10	Output isolation transformer winding :	Select	Aluminium			
232	7.6.5	AC output neutral earth link :	earthed	Noted. Externally			
233	7.1.6	Reference document to AC output distribution board:	To see Electrical Load List	Noted			
234	5.3.3	Integrated AC output distribution board with MCBs :	Yes	Confirmed			
235	5.3.3	Cable size (cross-section area) - output :	manufacturer to advise	min 10 sqmm - max 2x95 sqmm	sq.mm.		
236		**BYPASS SPECIFICATIONS**					
237	C.3	Bypass transfer time :	manufacturer to advise	0	msec		
238	C.3	Bypass static switch rated current :	manufacturer to advise	20kVA - 29A	A		
239	C.3	Bypass protection fuse or circuit breaker rating :	manufacturer to advise	MCCB 35A	A		
240	7.4.8	Bypass transformer required :	Yes	Confirmed			
241	7.4.10	Bypass transformer winding :	copper or aluminum	Aluminium			
242	7.3.5	Maintenance bypass and bypass transformer location :	integrated	Manual by-pass integrated			
243	8.3.6, C.5	Overall maintenance bypass :	internal	Q29 manual by-pass integrated			

ITEM	Tag	83123-CEL	: Lighting & Small Power DB BoP / AC UPS F&G AUXILIARY			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)			Module	LD_B-200/LD_B-300
TASK	code	C10002109	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-200F4

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"	

REFER TO FINAL SHEET FOR ACCEPTANCE

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	83123-CEL	: Lighting & Small Power DB BoP / AC UPS F&G AUXILIARY			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)			Module	LD_B-200/LD_B-300
TASK	code	C10002109		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	0,9	
6		PH 2	0,9	
7		PH 3	NA	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		0,9	
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	

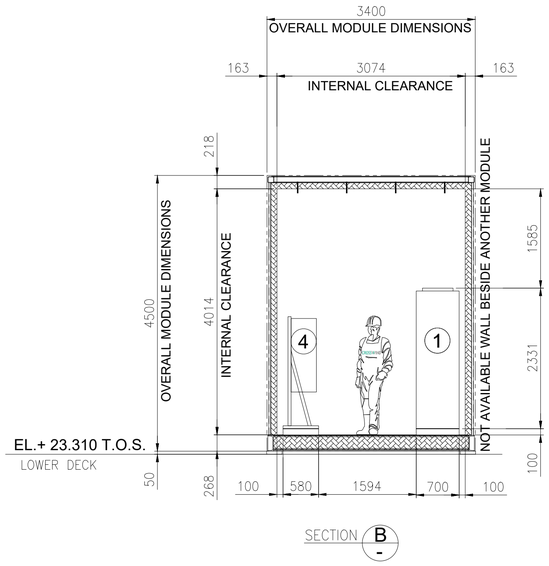
TESTING INSTRUMENTS USED

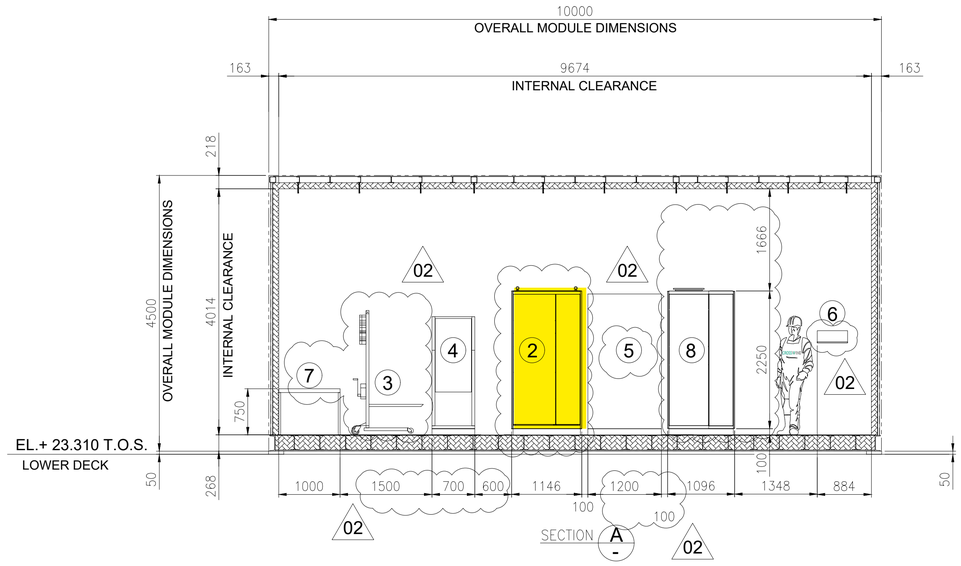
TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207	TYPE / SERIAL N° :	MULTIMETER: FLUKE 175 SERIAL:AW1/018(17140769)
Calibration certificate N° and date:	N°7722/24 _ 10/07/2024	Calibration certificate N° and date:	N°7715/24 _ 10/07/2024

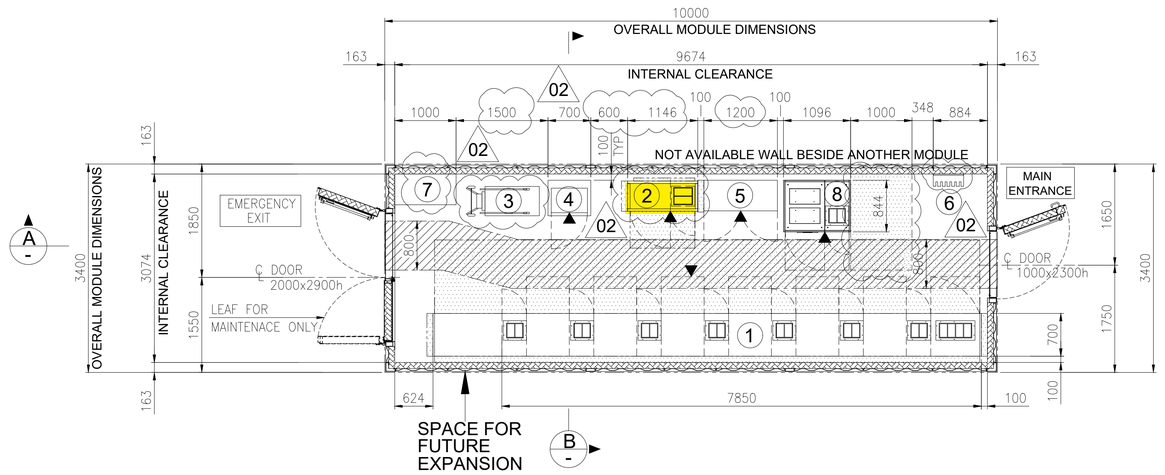
Comments: .

	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 2024-10-21T17:26:31.380Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-10-24T16:33:01.458Z	

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





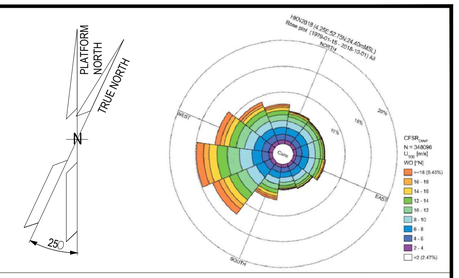


EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

1

EQUIPMENT LIST

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



NOTES

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

02

LEGEND

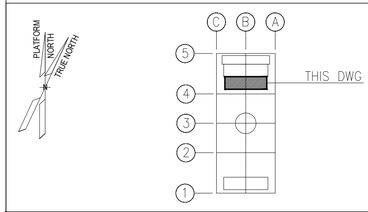
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

REFERENCES

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

02

KEY PLAN



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

CROSSWIND

ROSETTI MARINO

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

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

ROSETTI MARINO SpA

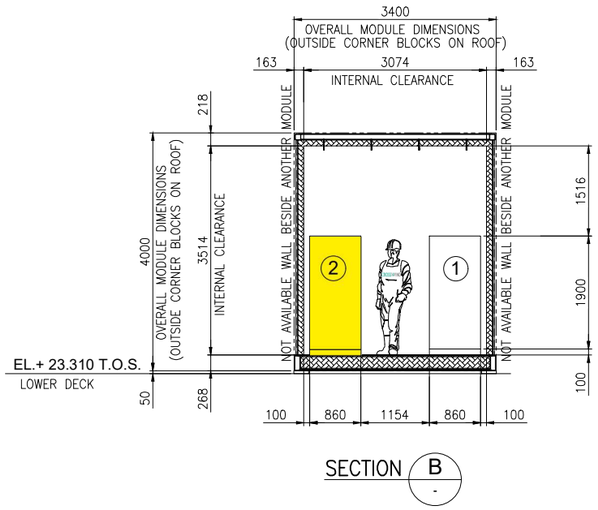
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LV SWITCHROOM

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

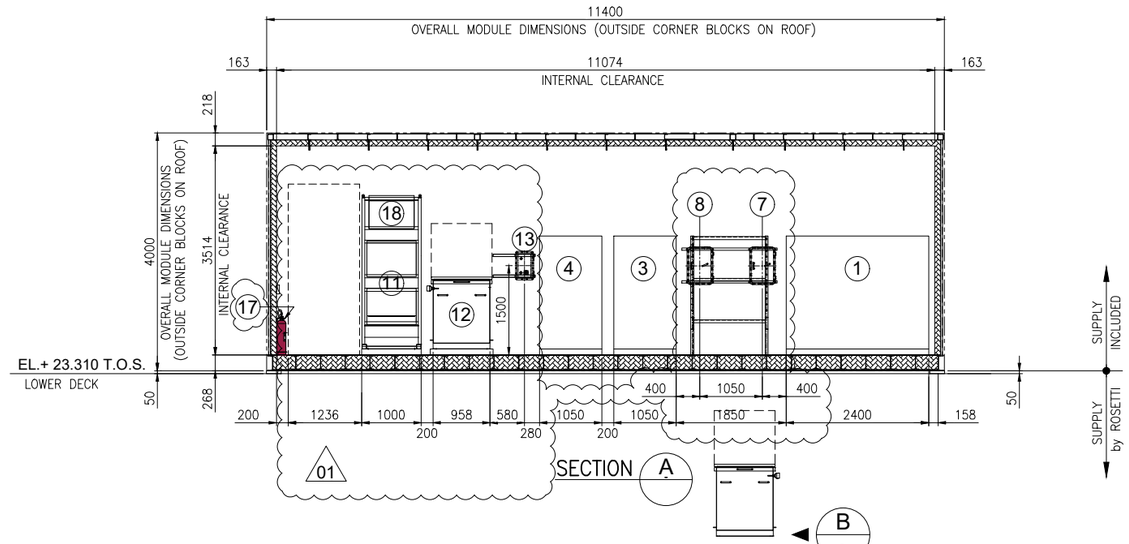
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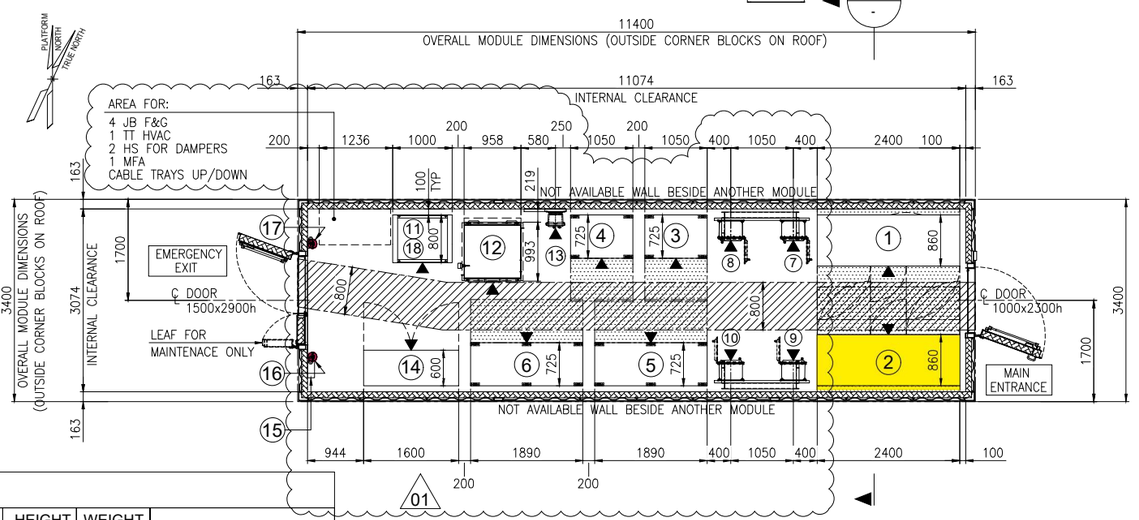
REV. 01



SECTION B



SECTION A



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

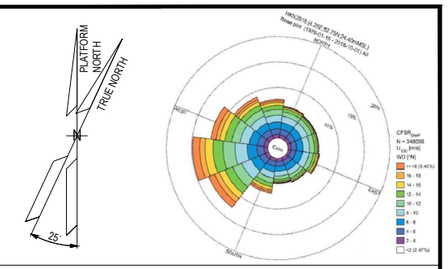
EQUIPMENT LIST

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

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

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

ROSETTI MARINO SpA



NOTES

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

LEGEND

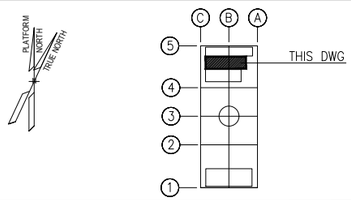
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR – WIDTH 800mm.
_____ MAINTENANCE AREA – VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

HOLDS

REFERENCE

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

KEY PLAN



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

CROSSWIND | ROSETTI MARINO

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

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN SAM	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 23/07/24

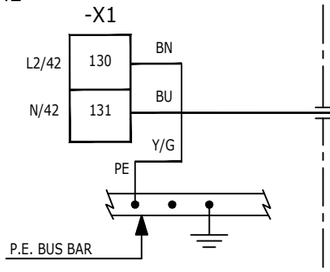
A1	DRAWING NO. 123A90-DDL-EL-DL-20106	SHEET 001	REV. 01

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

FROM	TO

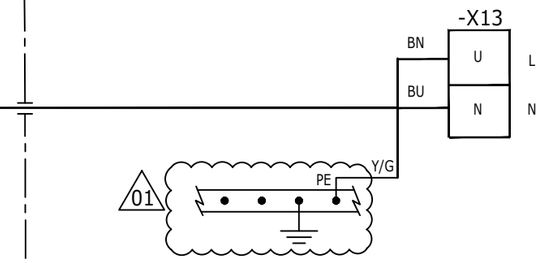
DESCRIPTION: LIGHTING & SMALL POWER DB BOP
TAG NUMBER: DP-200N1

CUBICLE/CB: +03/Q42

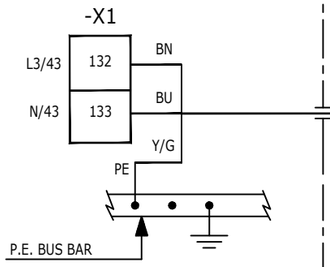


83123-CEL
3G2.5 mm²

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

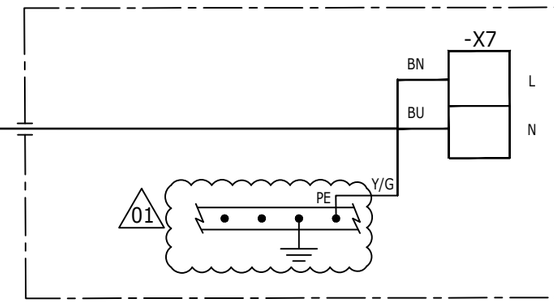


CUBICLE/CB: +03/Q43



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

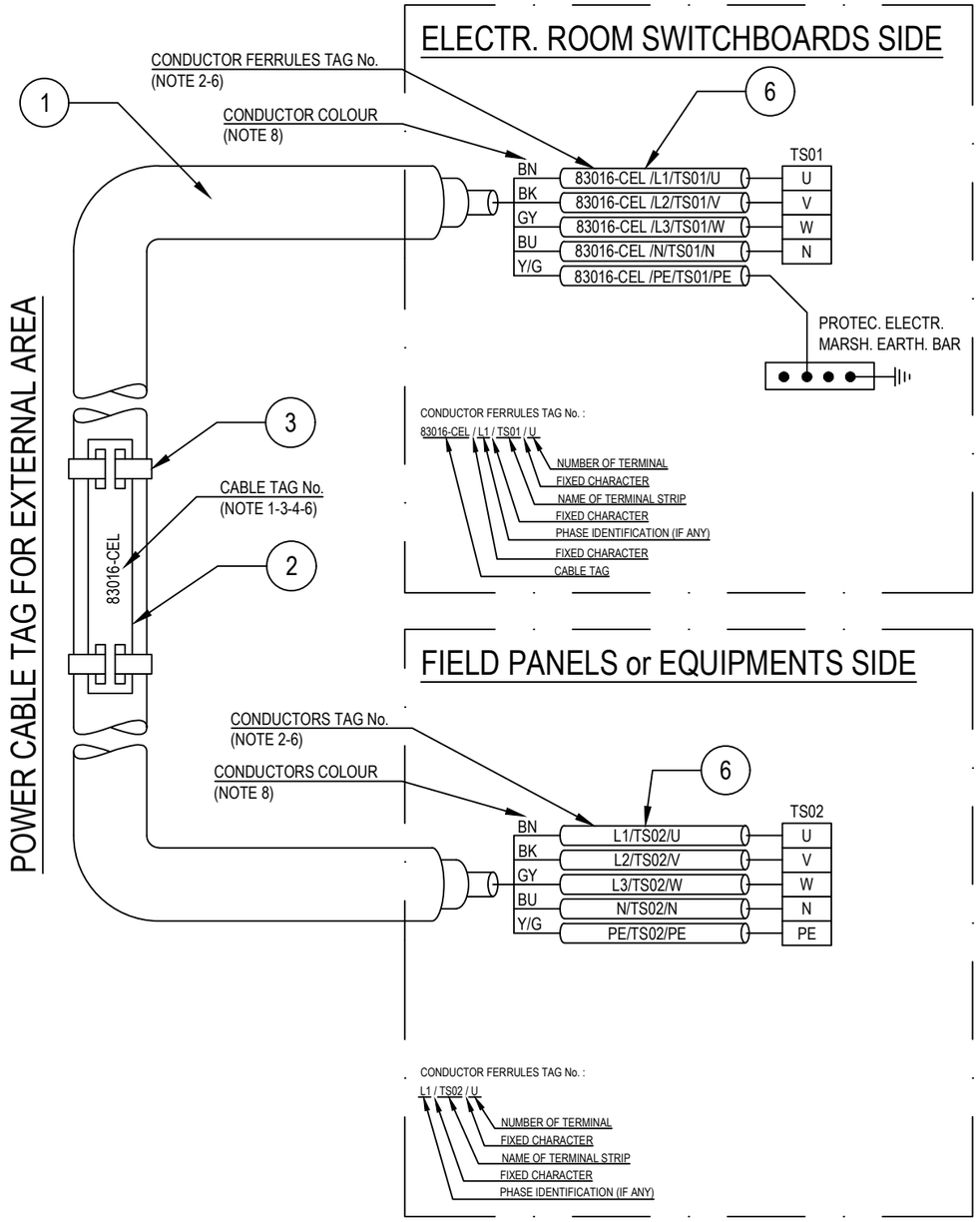
SHEET 057

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.

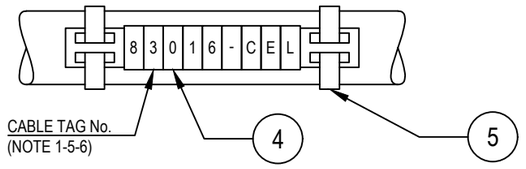
5) THE CABLE TAG FOR INTERNAL AREA SHALL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

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

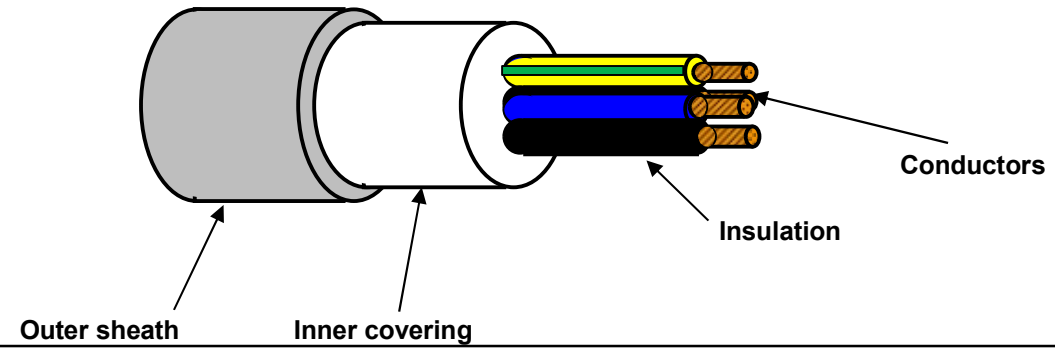
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	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
83123-CEL	Cable	EL	VFC	123A90-DDL-EL-LIS-20148					DP-200N1	LV 0,4 / 0,23 kV Distribution Switchgear	Lower Deck (B-200)	UP-200F4	AC UPS 15 kVA Redundant System with By-Pass	Lower Deck (B-300)	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 / E-MCT-204 / L-600-101-LVT-010 / L-450-101-LVT-005 / E-MCT-302 / L-600-101-LVT-035 / L-450-101-LVT-043

FLEI s.r.l.

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

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



TECHNICAL FEATURES

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

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

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

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ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	84410-CEC	: Isolator Battery Box for AC UPS 15 kVA / AC UPS 15 kVA Redundant System with By-Pass			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)			Module	LD_B-300
TASK	code	C10002345		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-200F4A | To: BC-200F4A

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.	PL
5	Check bending radius is within the specified limits.	OK
6	Check cable and core marking against latest drawings	PL
7	Check cable labelling is in accordance with latest specification.	OK
8	Check cable glands suit for cable type and are in accordance with latest specification.	OK
9	Check terminations are in accordance with latest termination diagram.	OK
10	Check cable earthing against lastest drawings.	NA
11	Check gland plate for single core cables is non magnetic.	NA
12	If required produce Red Line Mark Up for "AS BUILT"	

CONTINUITY	CORE 1 / All cores+screen+armour+earth	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 M
	CORE 5	>999 M
	CORE 6	>999 M
	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 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:

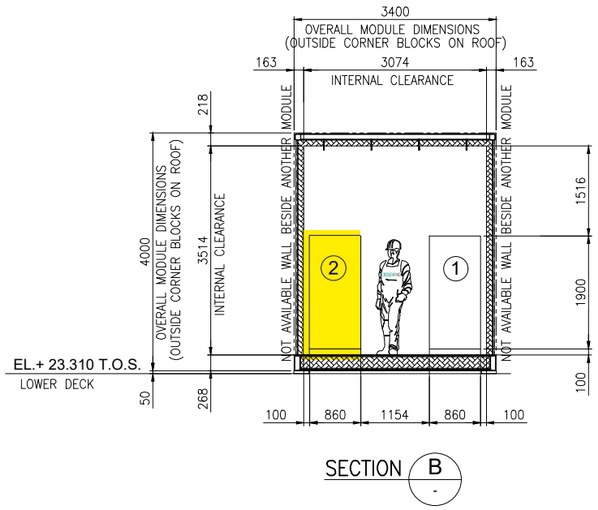
Comments:

Page 1/1

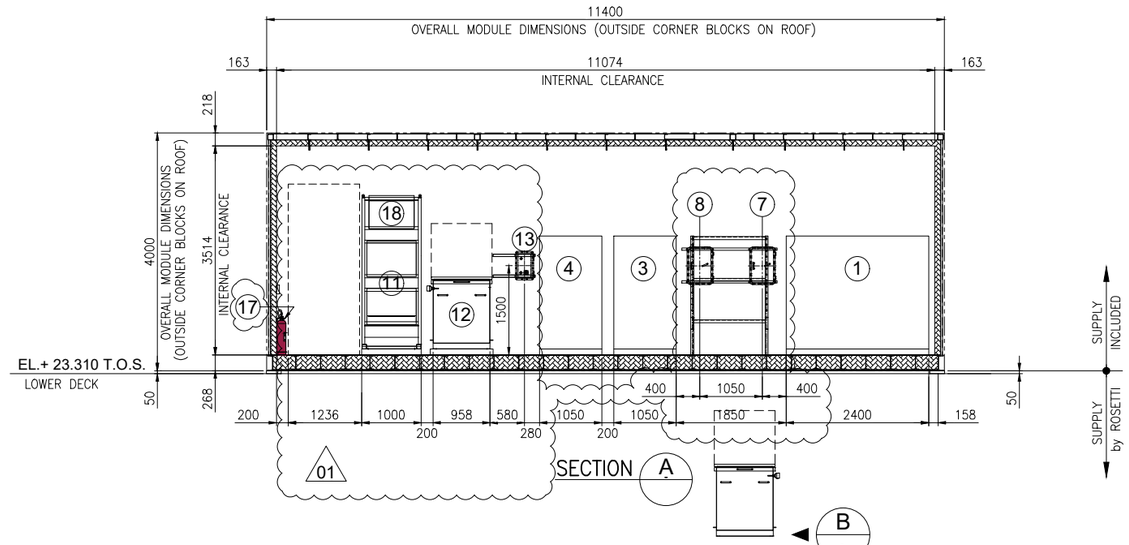
	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (Rosetti Marino)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-10-22	2024-10-29	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-10-22T11:57:58.920Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-10-29T14:29:15.689Z	

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

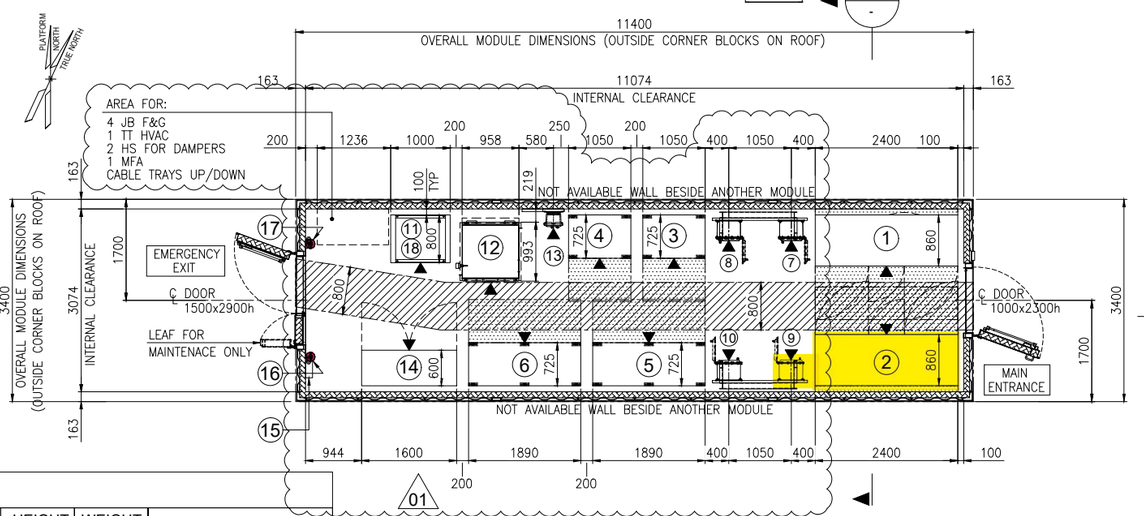
REV. 01



SECTION B



SECTION A



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

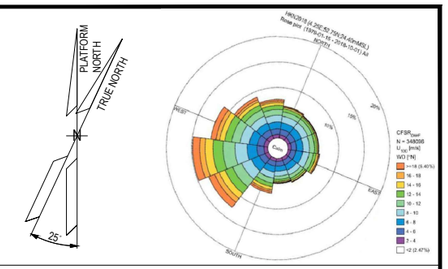
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REF.	TAG No.	DESCRIPTION	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)	WEIGHT (Kg)	NOTES
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15	-	EYE WASH STATION	228	80	290	5	
16	-	PORTABLE EXTINGUISHER (CO2) 5 Kg.	150	150	750	20	
17	-	PORTABLE EXTINGUISHER (CO2) 5 Kg.	150	150	750	20	
18	BC-200F2	BATTERY CHARGER NAVAID 01	-	-	-	-	INCLUDED IN THE RACK OF NC-200F2

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

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

ROSETTI MARINO SpA



NOTES

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   - "B-300" – DETAILED DRAWINGS DOC. N. 1724000049-AR-DD-00020

LEGEND

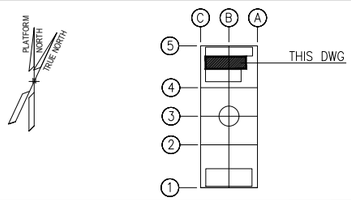
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR – WIDTH 800mm.
_____ MAINTENANCE AREA – VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

HOLDS

REFERENCE

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

KEY PLAN



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

CROSSWIND | ROSETTI MARINO

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

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN SAM	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 23/07/24

A1	DRAWING NO. 123A90-DDL-EL-DL-20106	SHEET 001	REV. 01

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

FROM	TO

DESCRIPTION: AC UPS PAS - BATTERY ISOLATOR-B
TAG NUMBER: CB-200F3B

COLUMN: -

-X3

BATTERY BREAKER STATUS

X3 / 4 — 1
X3 / 5 — 2
3
4 — BK
5
6
7

84331-CEC
7C X 1.5 mm²

DESCRIPTION: AC UPS PAS - CHARGER-B
TAG NUMBER: BC-200F3B

COLUMN: -

-X15

1 — X15 / 8
2 — X15 / 9
3
4 — BK
5
6
7

BATTERY BREAKER STATUS

DESCRIPTION: AC UPS F&G - BATTERY ISOLATOR-A
TAG NUMBER: CB-200F4A

COLUMN: -

-X3

BATTERY BREAKER STATUS

X3 / 1 — 1
X3 / 3 — 2
3
4 — BK
5
6
7

84410-CEC
7C X 1.5 mm²

DESCRIPTION: AC UPS F&G - CHARGER-A
TAG NUMBER: BC-200F4A

COLUMN: -

-X15

1 — X15 / 4
2 — X15 / 5
3
4 — BK
5
6
7

BATTERY BREAKER STATUS

01

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

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

ROSETTI MARINO SpA

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

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
SIGNALS FOR CONTROL SYSTEM

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

SCALE : 1:X

A3

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

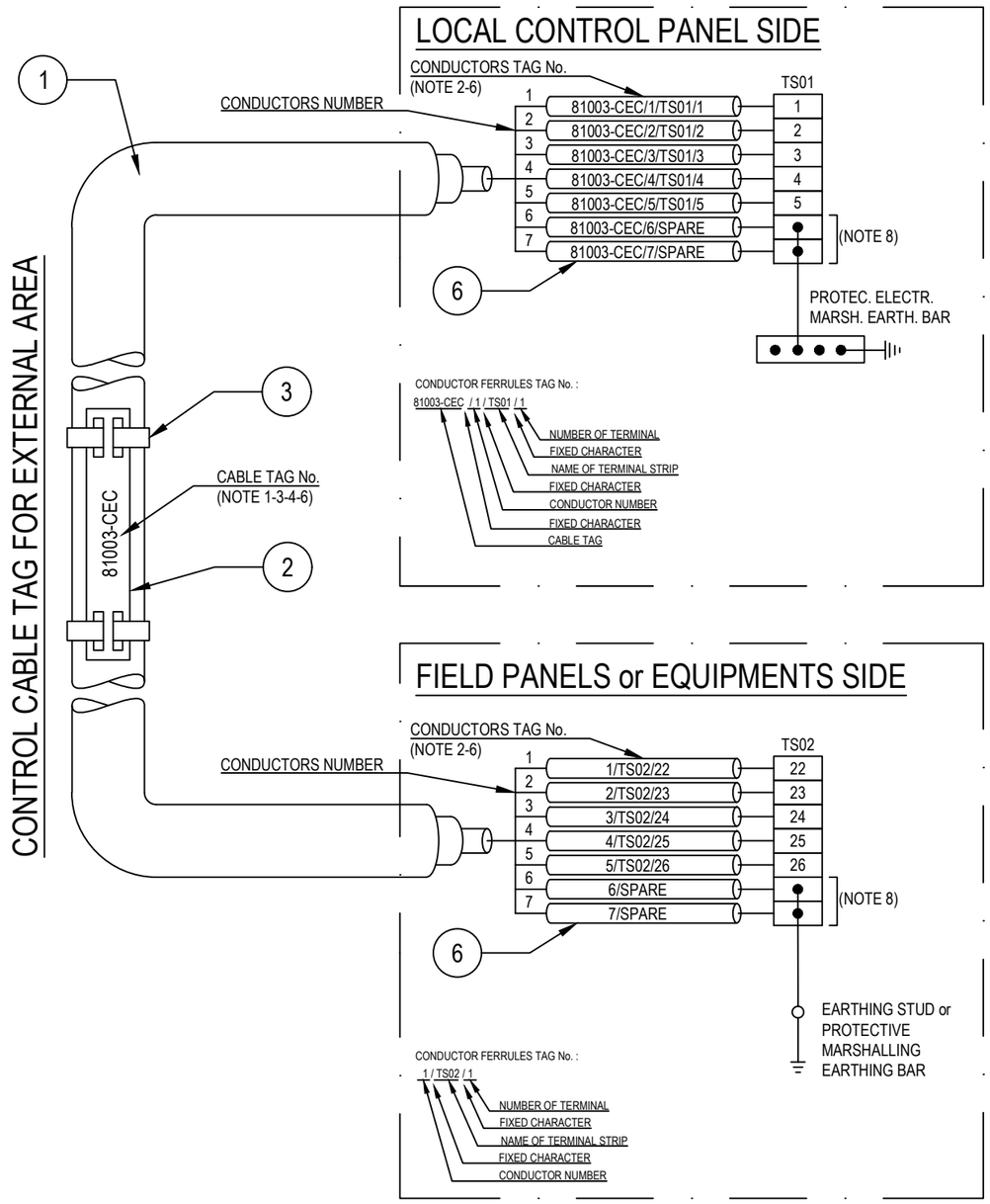
SHEET 090

REV. 01

F.to UNI A3: 420mmx297mm

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

C04



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

NOTES:

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

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

3) ON CABLE TRAYS OR LADDERS, CABLES SHALL BE IDENTIFIED AT EACH END, AND EVERY 50 METERS.

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

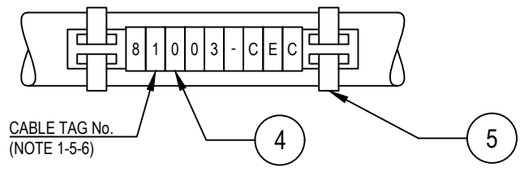
5) THE CABLE TAG FOR INTERNAL AREA SHAL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

6) CABLE AND CONDUCTOR TAG ARE INDICATIVE ONLY.

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

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

CONTROL CABLE TAG FOR INTERNAL AREA



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

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

CROSSWIND

ROSETTI MARINO

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

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

A3 | DRAWING NO. 123A90-DDL-EL-DD-20092 | SHEET 008 | REV. 02

F.to UNI A3: 420mmx297mm

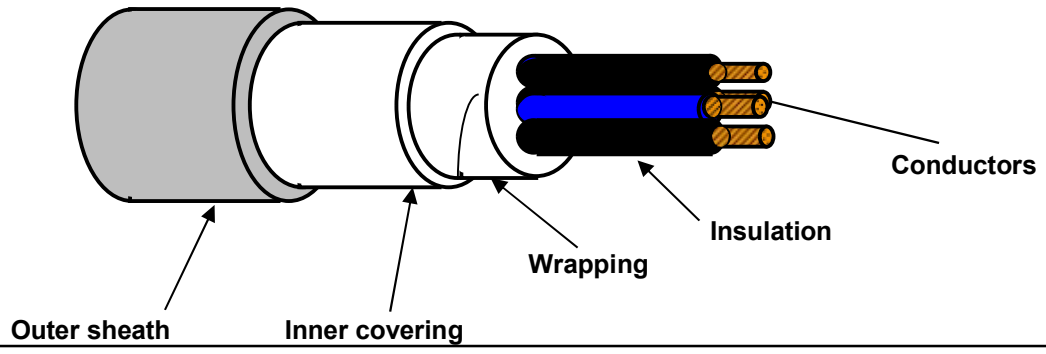
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	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
84410-CEC	Cable	EL	VFC	123A90-DDL-EL-LIS-20148					CB-200F4A	Isolator Battery Box for AC UPS 15 kVA	Lower Deck (B-300)	BC-200F4A	AC UPS 15 kVA Redundant System with By-Pass	Lower Deck (B-300)	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-057 / L-300-101 LVT-050 / L-600-101-LVT-035 / L-450-101-LVT-043

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	84411-CEC	: Isolator Battery Box for AC UPS 15 kVA / AC UPS 15 kVA Redundant System with By-Pass			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	84-20	: AC 15 kVA UPS System (UP-200F4)			Module	LD_B-300
TASK	code	C10002346		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-200F4B | To: BC-200F4B

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.	OK
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	0.3
	CORE 3 / All cores+screen+armour+earth	0.3
	CORE 4 / All cores+screen+armour+earth	0.3
	CORE 5 / All cores+screen+armour+earth	0.3
	CORE 6 / All cores+screen+armour+earth	0.3
	CORE 7 / All cores+screen+armour+earth	0.3
	CORE 8 / All cores+screen+armour+earth	NA
	CORE 9 / All cores+screen+armour+earth	NA
	CORE 10 / All cores+screen+armour+earth	NA
INSULATION	CORE 1	>999
	CORE 2	>999
	CORE 3	>999
	CORE 4	>999
	CORE 5	>999
	CORE 6	>999
	CORE 7	>999
	CORE 8	NA
	CORE 9	NA
	CORE 10	NA
	SCREEN	NA
	EARTH	NA
	ARMr	NA
	TEST VOLTS	1000

TESTING INSTRUMENTS USED

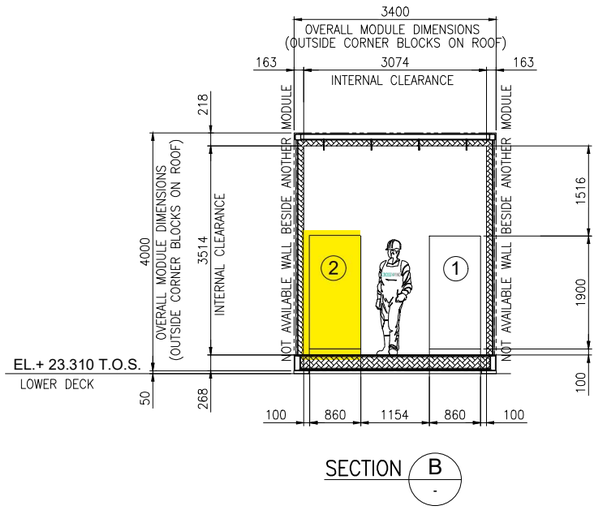
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TYPE / SERIAL N° : Calibration certificate N° and date:	TYPE / SERIAL N° : Calibration certificate N° and date:

Comments:

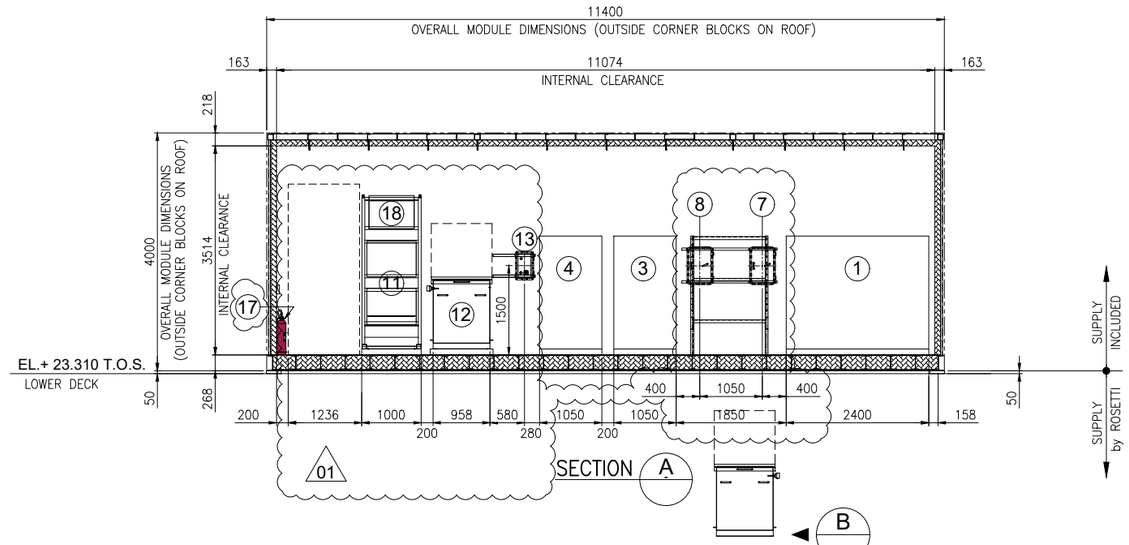
Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (Rosetti Marino)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-10-28	2024-11-04	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-10-28T09:15:21.996Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-11-04T10:36:39.280Z	

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

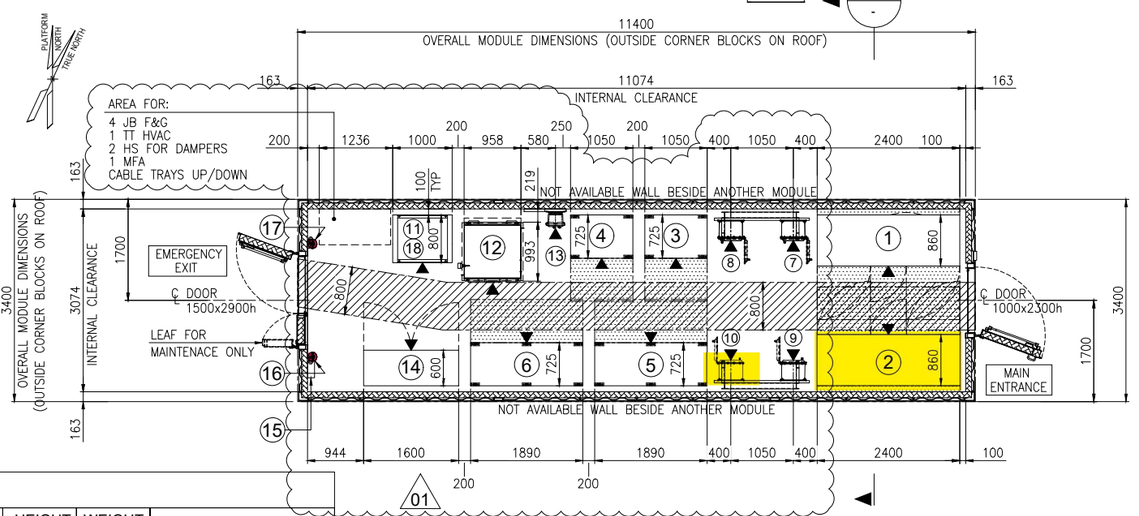
REV. 01



SECTION B



SECTION A



A

B

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

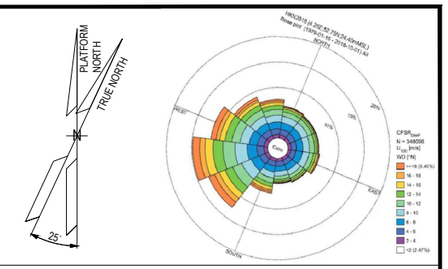
EQUIPMENT LIST

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

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

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

ROSETTI MARINO SpA



NOTES

01

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

LEGEND

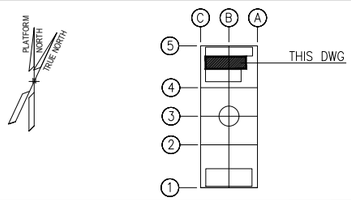
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR – WIDTH 800mm.
_____ MAINTENANCE AREA – VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

HOLDS

REFERENCE

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

KEY PLAN



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

CROSSWIND | ROSETTI MARINO

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

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

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

FROM

DESCRIPTION: AC UPS F&G - BATTERY ISOLATOR-B
TAG NUMBER: CB-200F4B

COLUMN: -

-X3

BATTERY BREAKER STATUS

X3 / 4
X3 / 5

1
2
3
4
5
6
7

BK

84411-CEC
7C X 1.5 mm²

TO

DESCRIPTION: AC UPS F&G - CHARGER-B
TAG NUMBER: BC-200F4B

COLUMN: -

-X15

1
2
3
4
5
6
7

X15 / 8
X15 / 9

BATTERY BREAKER STATUS

BK

01

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
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

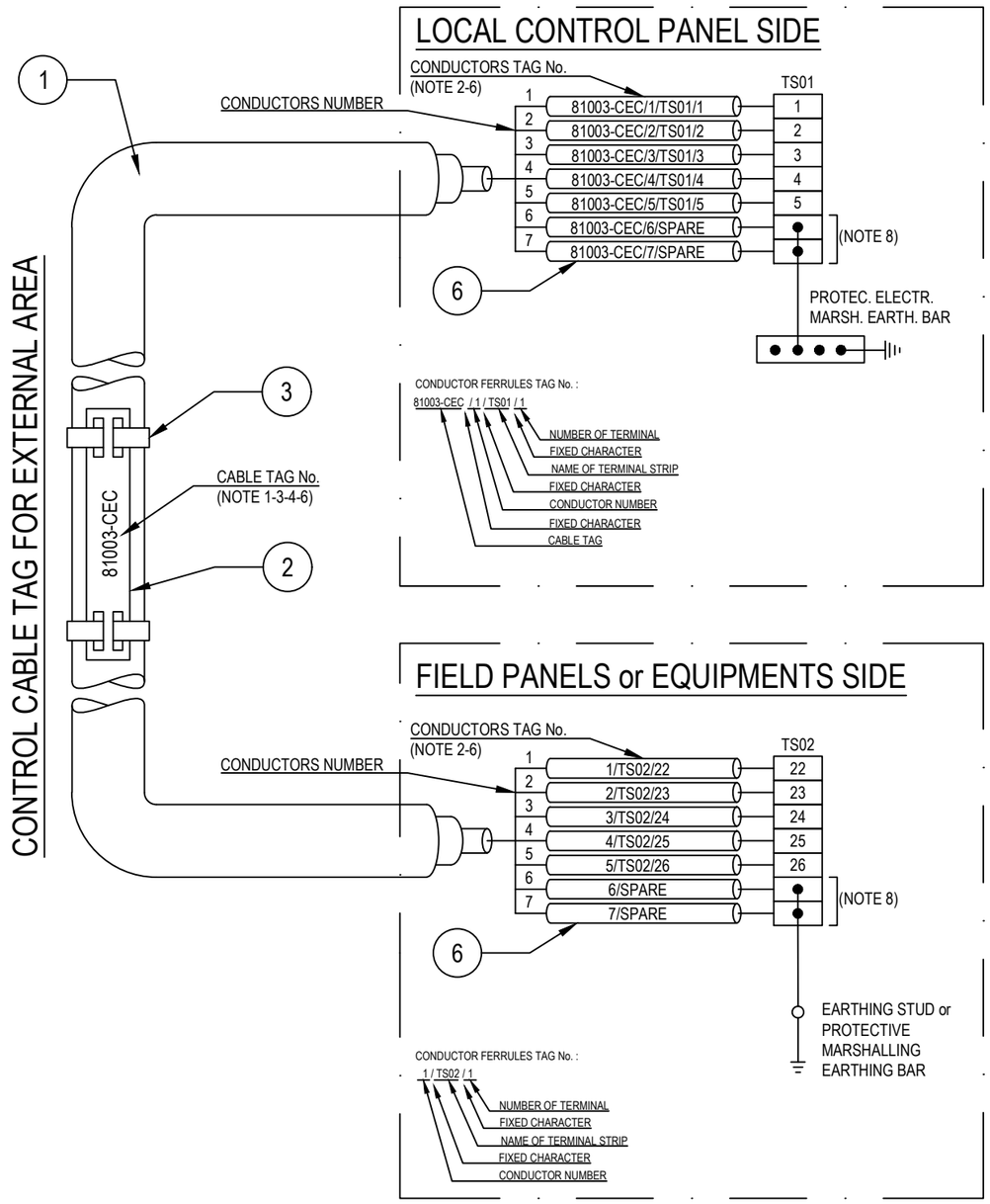
SHEET 091

REV. 01

F.to UNI A3: 420mmx297mm

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

C04



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

NOTES:

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

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

3) ON CABLE TRAYS OR LADDERS, CABLES SHALL BE IDENTIFIED AT EACH END, AND EVERY 50 METERS.

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

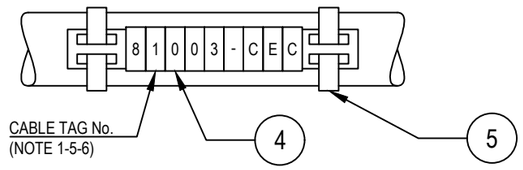
5) THE CABLE TAG FOR INTERNAL AREA SHAL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

6) CABLE AND CONDUCTOR TAG ARE INDICATIVE ONLY.

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

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

CONTROL CABLE TAG FOR INTERNAL AREA



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

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

CROSSWIND

ROSETTI MARINO

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

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

A3 | DRAWING NO. 123A90-DDL-EL-DD-20092 | SHEET 008 | REV. 02

F.to UNI A3: 420mmx297mm

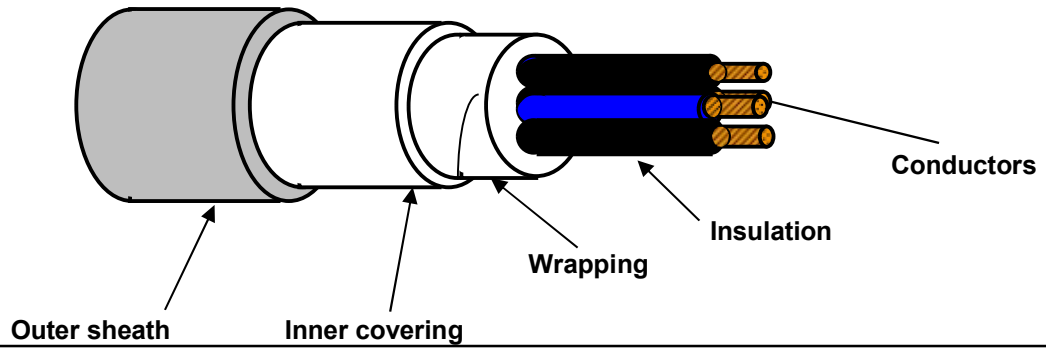
File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	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
84411-CEC	Cable	EL	VFC	123A90-DDL-EL-LIS-20148					CB-200F4B	Isolator Battery Box for AC UPS 15 kVA	Lower Deck (B-300)	BC-200F4B	AC UPS 15 kVA Redundant System with By-Pass	Lower Deck (B-300)	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-057 / L-300-101-LVT-050 / L-600-101-LVT-035 / L-450-101-LVT-043

FLEI s.r.l.

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

7CX1,5 - CONTROL CABLE - Flame Retardant



TECHNICAL FEATURES

Conductors :	**STRANDED** plain/bare annealed copper wires	IEC 60228 Class 2
Insulation :	**XLPE** compound, quality to IEC 60092.360, Nominal Thickness 0,7 mm	
Cores colour code :	**Black NUMBERED (from 1 to 7)**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not Required	
Total Assembling :	Cores layed up with optimal lay length	
Overall Wrapping:	by plastic tape helically wound	
Drain wire :	Not required	
Overall Shield:	Not required	
Inner covering :	Extruded LSZH compound, Average Thickness 1,0 mm	
Inner covering color code:	**Black or Natural**	
Armour :	Not required	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,2 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 7CX1,5 SQMM - XLPE/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 -**	
	Year of Manufacture - CE + Meter Marking	
Outer diameter :	(13,5 ± 10%) mm	
Bending radius :	cable outer diameter x 10	(in fixed installation)
Voltage test :	3,5 kV a.c. for 5' (Between Cores)	
Conductors DC Resistance :		IEC 60228 Class 2
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Applicable Standards		
Design Guidelines :	**IEC 60092.353**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Temperature Range :		
ON INSULATION	(max +90°C)	(max continuous operation temperature of conductors)
	(max +250°C)	(max conductors temperature during short-circuit for 5 seconds)
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C)	(in fixed installation)
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner covering together with correct ATEX approved equipment or accessories.**	

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

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

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Section 6 MECHANICAL COMPLETION STATUS INDEX - INSTRUMENTAL DISCIPLINE

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 84-20 & process: MC & discipline : I

Instrumental	84-20 AC 15 kVA UPS System (UP-200F4)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
C-CB-200F4A/B400-SIS-001	TRIP SIGNAL / MARSHALLING PCS	ONSHORE	C10000199	CJX10	100	2024-11-25	RFC 2
C-CB-200F4B/B400-SIS-001	TRIP SIGNAL / MARSHALLING PCS	ONSHORE	C10000200	CJX10	100	2024-11-25	RFC 2
C-UP-200F4/B400-SIS-001	TRIP SIGNAL / MARSHALLING PCS	ONSHORE	C10000201	CJX10	100	2024-11-30	RFC 2

ROSETTI MARINO — PROVERLIS — CROSSWIND

ITEM	Tag	C-CB-200F4A/B400-SIS-001 : TRIP SIGNAL / MARSHALLING PCS			Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	84-20 : AC 15 kVA UPS System (UP-200F4)			Module	LD_B-300/LD_B-400	
TASK	code	C10000199	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-200F4A	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.	OK
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		0.5	Ω
	SCREEN		0.5	Ω
	EARTH		NA	Ω
	ARMr		0.5	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

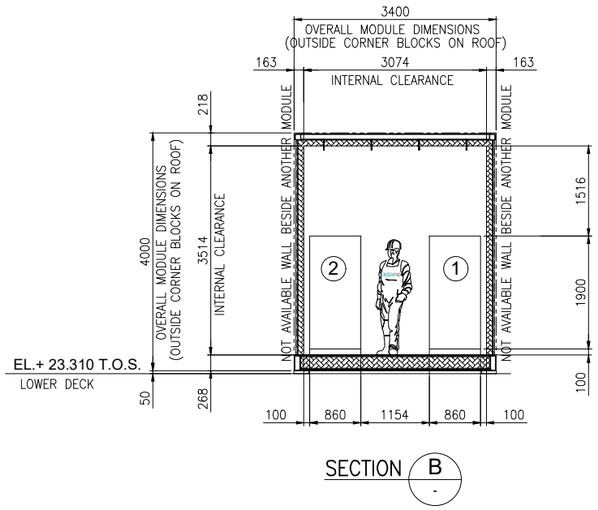
TYPE / SERIAL N°: MEGGER : KEW3125A SERIAL: W8330207 Calibration date: N°7722/24 10/07/2024

Comments Nota 5: refer to PL C30000680

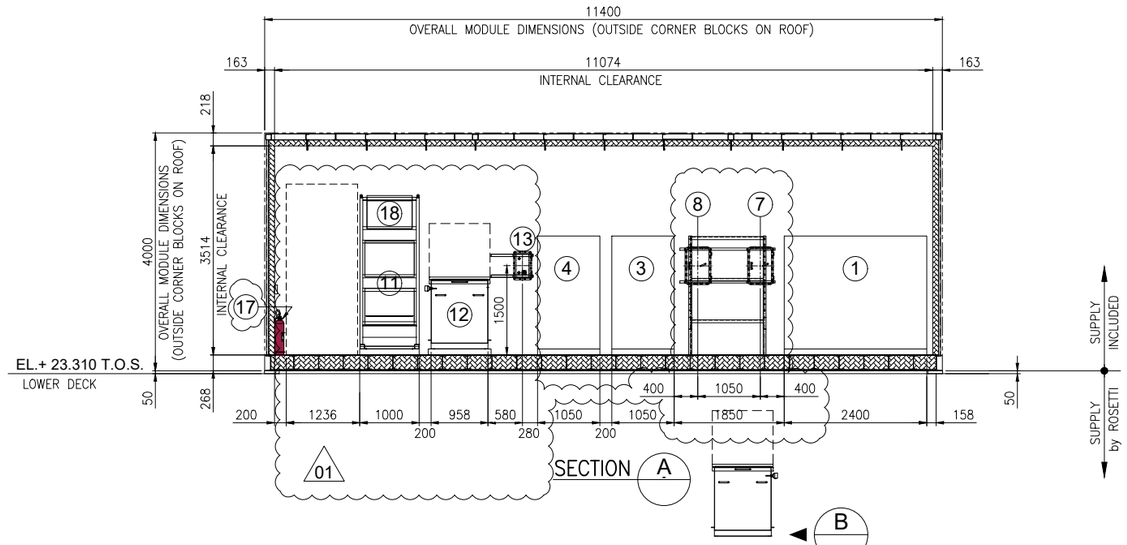
Page 1/1	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Carmelo Bongiovanni	Paolo Schintu	
Date	2024-11-22	2024-11-25	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-11-22T17:13:48.171Z	PROVERLIS Digitaly signed by Paolo Schintu 2024-11-25T14:38:09.926Z	

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

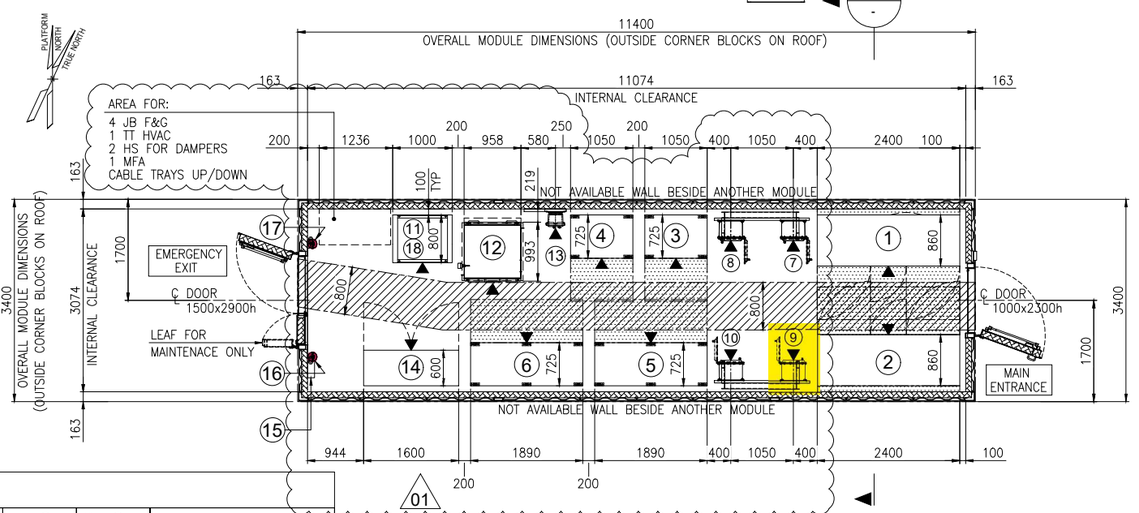
REV. 01



SECTION B -



SECTION A -

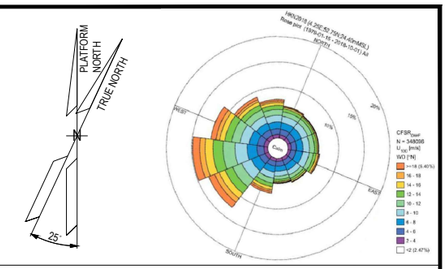


A -

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

EQUIPMENT LIST

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



NOTES

01

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

LEGEND

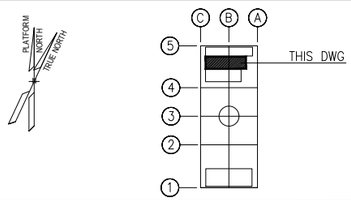
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR – WIDTH 800mm.
_____ MAINTENANCE AREA – VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

HOLDS

REFERENCE

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

KEY PLAN



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

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

ROSETTI MARINO SpA

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

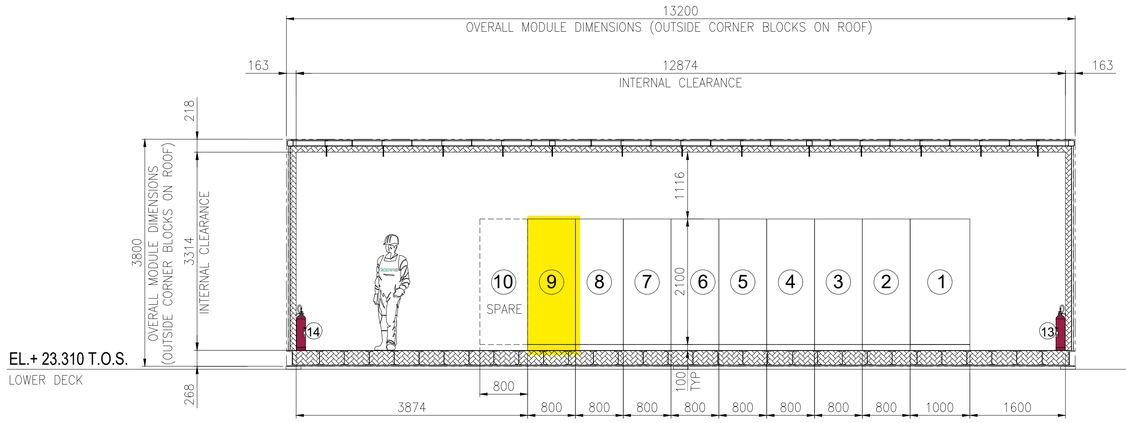
CROSSWIND | ROSETTI MARINO

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

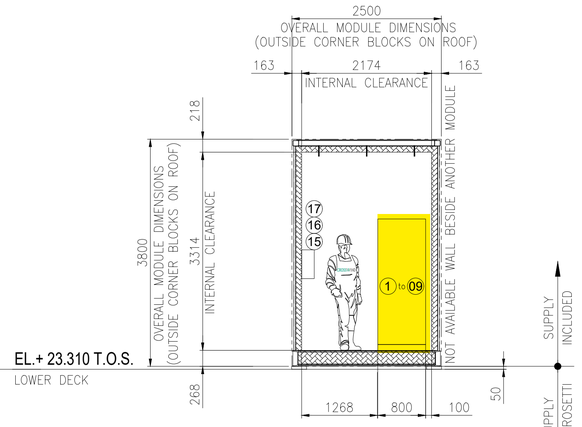
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN SAM	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 23/07/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20106	SHEET 001	REV. 01

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

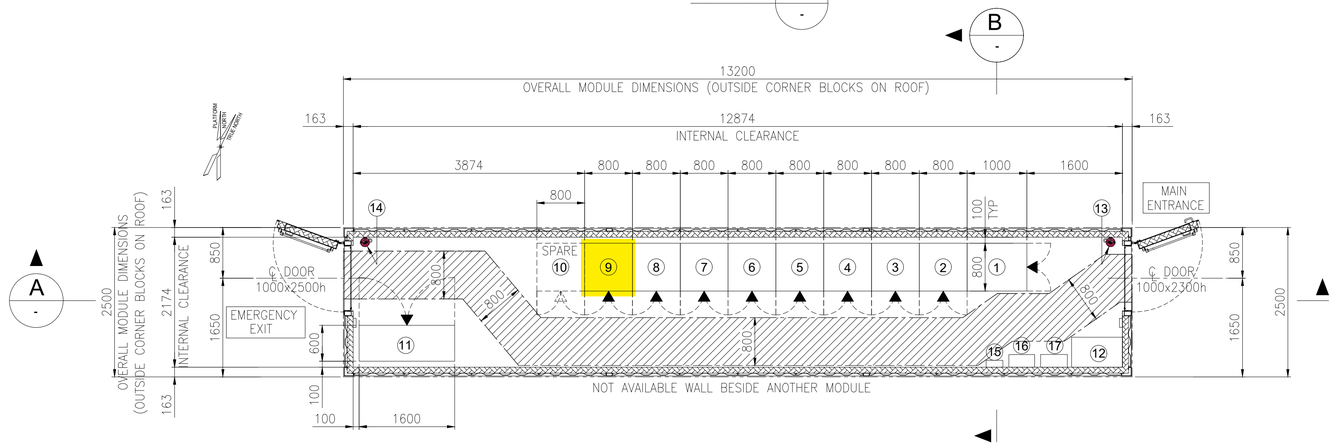
DRAWING NO. 123A90-DDL-IN-DL-40012 REV. 03



SECTION A -



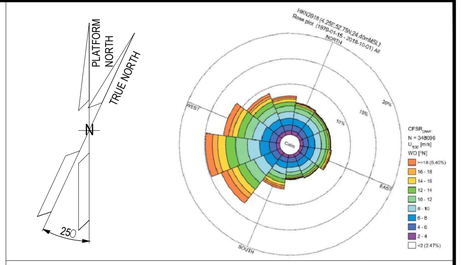
SECTION B -



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

EQUIPMENT LIST

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



NOTES

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

LEGEND

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

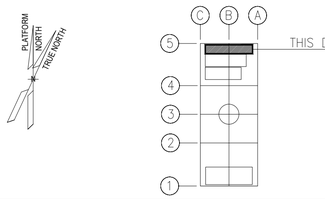
HOLDS

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REFERENCE

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

KEY PLAN



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

CROSSWIND | ROSETTI MARINO

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-40016

REV. 01

FIELD		I&T EQUIPMENT ROOM (ITER)
B-300 - UPS ROOM	CABLE NO	MARSHALLING CABINET B400-SIS-001

<01>

DISCONNECT AC UPS UP-200F3 BATTERIES A (CB-200F3A)	84-XS-007A ~~81-XS-007A~~	TB-X3 7 1BK / 8 2BK NOTE-2	C-CB-200F3A/B400-SIS-001 ~~CB-200F3A/B400-SIS-001~~ 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	Shield Bar	TB-XS-000 1BK 03 / 2BK 04	81-XS-007A
DISCONNECT AC UPS UP-200F3 BATTERIES B (CB-200F3B)	84-XS-007B ~~81-XS-007B~~	TB-X3 7 1BK / 8 2BK NOTE-2	C-CB-200F3B/B400-SIS-001 ~~CB-200F3B/B400-SIS-001~~ 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	Shield Bar	TB-XS-000 1BK 11 / 2BK 12	81-XS-007B
DISCONNECT AC UPS UP-200F4 BATTERIES A (CB-200F4A)	84-XS-008A ~~81-XS-008A~~	TB-X3 7 1BK / 8 2BK NOTE-2	C-CB-200F4A/B400-SIS-001 ~~CB-200F4A/B400-SIS-001~~ 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	Shield Bar	TB-XS-000 1BK 05 / 2BK 06	81-XS-008A
DISCONNECT AC UPS UP-200F4 BATTERIES B (CB-200F4B)	84-XS-008A ~~81-XS-008B~~	TB-X3 7 1BK / 8 2BK NOTE-2	C-CB-200F4B/B400-SIS-001 ~~CB-200F4B/B400-SIS-001~~ 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	Shield Bar	TB-XS-000 1BK 13 / 2BK 14	81-XS-008B
INHIBIT. BATTERY CHARGING AC UPS (UP-200F4)	84-XS-011	TB-120 1 1BK / 2 2BK NOTE-2	C-UP-200F4/B400-SIS-001 ~~UP-200F4/B400-SIS-001~~ 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	Shield Bar	TB-XS-000 1BK 43 / 2BK 44	84-XS-011

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	025	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>

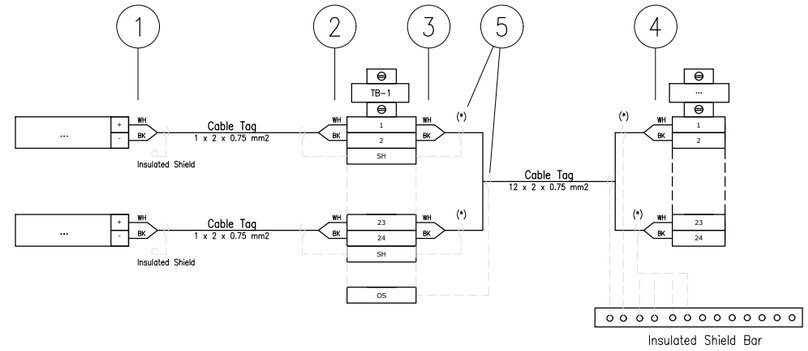
LEGENDS & SYMBOLS:

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

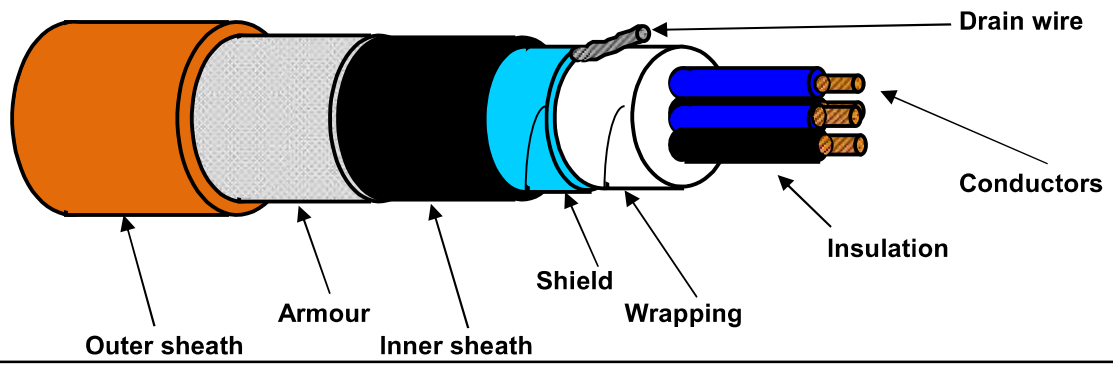
	DRAWING NO.	SHEET	REV.
A3	123A90-DDL-IN-DG-40016	003	01

File Name : 123A90-DDL-IN-DG-40016_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
C-CB-200F4A/B400-SIS-001	Cable	IN	VFC	123A90-DDL-IN-LIS-40091					CB-200F4A	Isolator Battery Box for AC UPS 15 kVA	Lower Deck (B-300)	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	M20	T2_M20_D ouble			n.a.				I-MCT-301 / B-300-SEC-1E / B-300-SEC-1C / B-300-SEC-1A / L-SEC-4 / 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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ROSETTI MARINO

CROSSWIND

ITEM	Tag	C-CB-200F4B/B400-SIS-001 : TRIP SIGNAL / MARSHALLING PCS				Dwg	123A90-DDL-IN-LIS-40091
	S/Sys	84-20 : AC 15 kVA UPS System (UP-200F4)				Module	LD_B-300/LD_B-400
TASK	code	C10000200		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-200F4B 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.	OK
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	0.6	Ω
	SCREEN	0.6	Ω
	EARTH	NA	Ω
	ARMr	0.6	Ω
	TEST VOLTS	500	V

TEST ALL CORES AND RECORD LOWEST VALUE

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

TESTING INSTRUMENTS USED

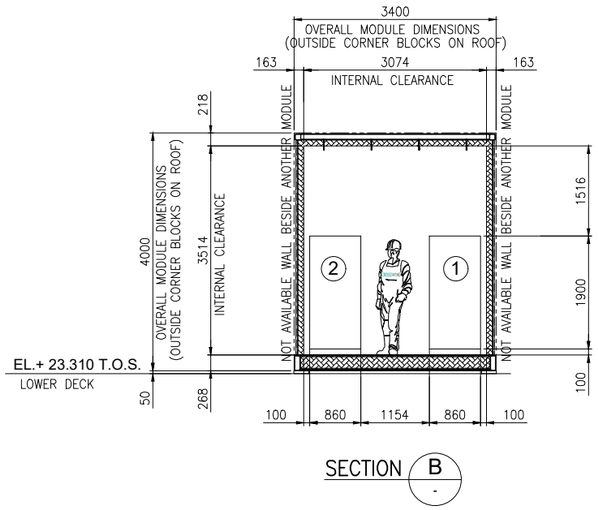
TYPE / SERIAL N°: MEGGER : KEW3125A SERIAL: W8330207 Calibration date: N°7722/24 10/07/2024

Comments: Nota 5: refer to PL C30000680

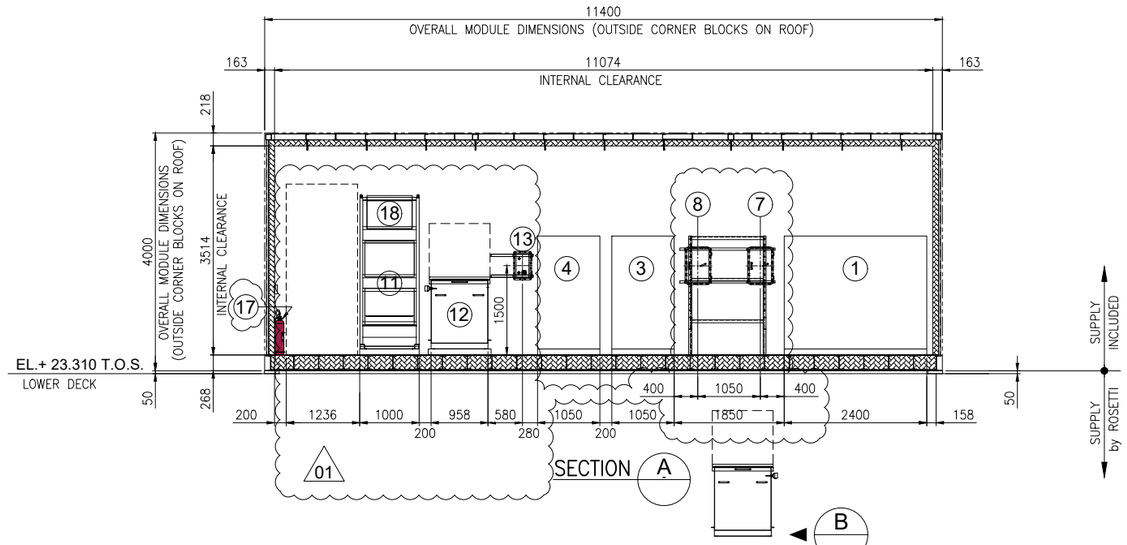
Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Carmelo Bongiovanni	Paolo Schintu	
Date	2024-11-22	2024-11-25	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-11-22T17:14:04.092Z	PROVERLIS Digitaly signed by Paolo Schintu 2024-11-25T17:43:15.481Z	

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

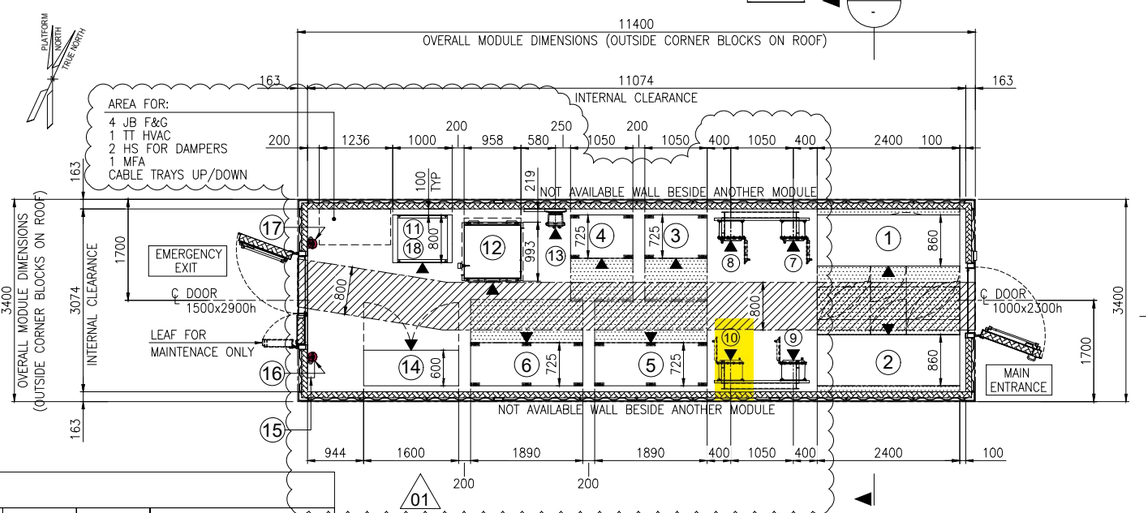
REV. 01



SECTION B -



SECTION A -



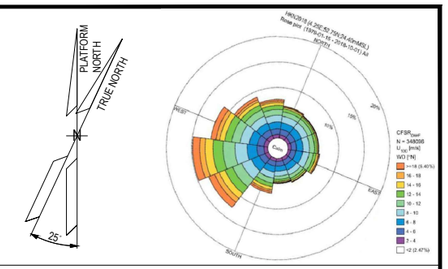
A -

B -

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

EQUIPMENT LIST

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



NOTES

01

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

LEGEND

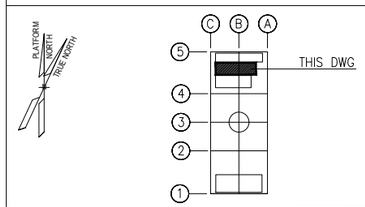
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR – WIDTH 800mm.
_____ MAINTENANCE AREA – VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

HOLDS

REFERENCE

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

KEY PLAN



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

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

ROSETTI MARINO SpA

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

CROSSWIND | ROSETTI MARINO

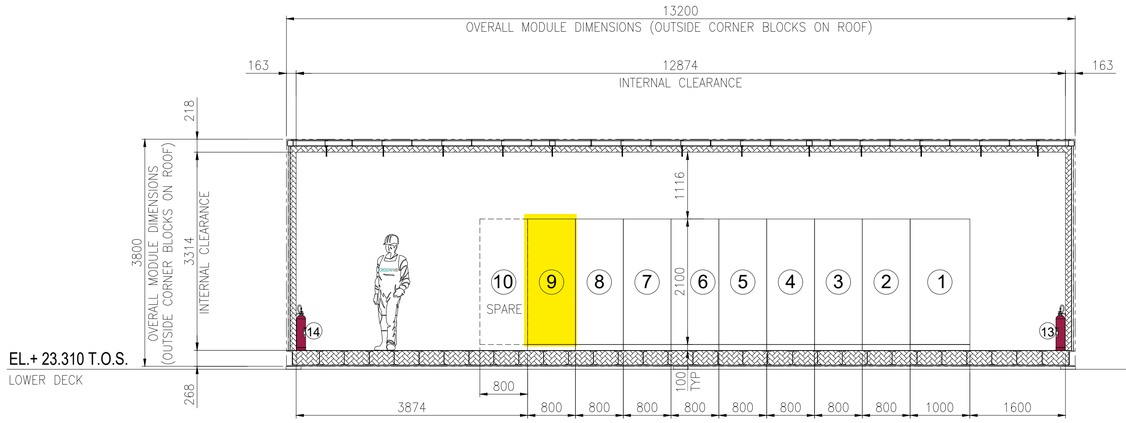
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
UPSs & BATTERIES SWITCHROOM

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN SAM	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 23/07/24

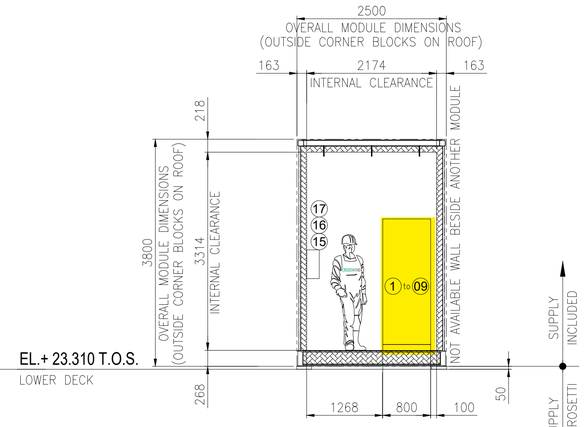
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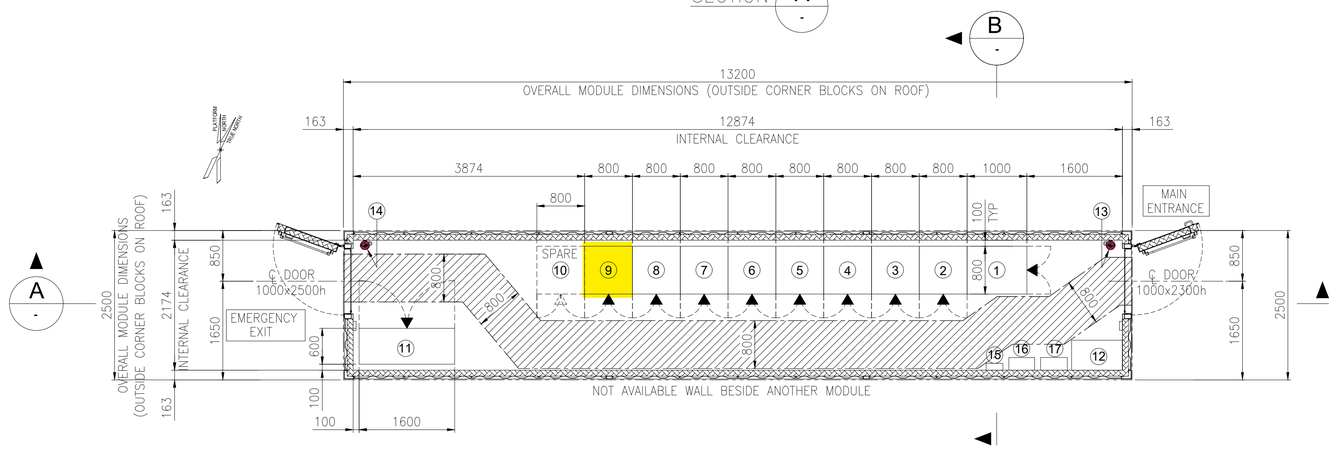
DRAWING NO. 123A90-DDL-IN-DL-40012 REV. 03



SECTION A -



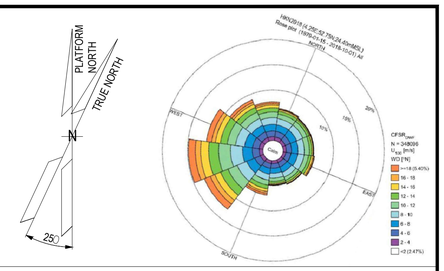
SECTION B -



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

EQUIPMENT LIST

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



NOTES

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

LEGEND

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

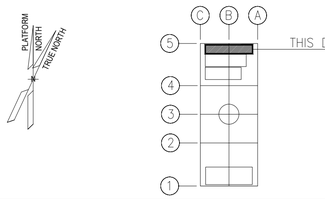
HOLDS

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REFERENCE

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

KEY PLAN



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

CROSSWIND — ROSETTI MARINO

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

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

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40012**

REV.:	DATE:	SIGNATURE:
3_A	07/10/24	G.Randi

ROSETTI MARINO SpA

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

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

REV. 01

FIELD		I&T EQUIPMENT ROOM (ITER)
B-300 - UPS ROOM	CABLE NO	MARSHALLING CABINET B400-SIS-001

<01>

DISCONNECT AC UPS UP-200F3 BATTERIES A (CB-200F3A)	84-XS-007A ~~81-XS-007A~~	TB-X3 7 (1BK) 8 (2BK) NOTE-2	C-CB-200F3A/B400-SIS-001 ~~CB-200F3A/B400-SIS-001~~ 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	Shield Bar	TB-XS-000 1BK 03 2BK 04	81-XS-007A
DISCONNECT AC UPS UP-200F3 BATTERIES B (CB-200F3B)	84-XS-007B ~~81-XS-007B~~	TB-X3 7 (1BK) 8 (2BK) NOTE-2	C-CB-200F3B/B400-SIS-001 ~~CB-200F3B/B400-SIS-001~~ 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	Shield Bar	TB-XS-000 1BK 11 2BK 12	81-XS-007B
DISCONNECT AC UPS UP-200F4 BATTERIES A (CB-200F4A)	84-XS-008A ~~81-XS-008A~~	TB-X3 7 (1BK) 8 (2BK) NOTE-2	C-CB-200F4A/B400-SIS-001 ~~CB-200F4A/B400-SIS-001~~ 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	Shield Bar	TB-XS-000 1BK 05 2BK 06	81-XS-008A
DISCONNECT AC UPS UP-200F4 BATTERIES B (CB-200F4B)	84-XS-008A ~~81-XS-008B~~	TB-X3 7 (1BK) 8 (2BK) NOTE-2	C-CB-200F4B/B400-SIS-001 ~~CB-200F4B/B400-SIS-001~~ 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	Shield Bar	TB-XS-000 1BK 13 2BK 14	81-XS-008B
INHIBIT. BATTERY CHARGING AC UPS (UP-200F4)	84-XS-011	TB-120 1 (1BK) 2 (2BK) NOTE-2	C-UP-200F4/B400-SIS-001 ~~UP-200F4/B400-SIS-001~~ 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	Shield Bar	TB-XS-000 1BK 43 2BK 44	84-XS-011

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

A3	DRAWING NO. 123A90–DDL–IN–DG–40016	SHEET 025	REV. 01

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

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

REV. 01

NOTES:

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

<01>

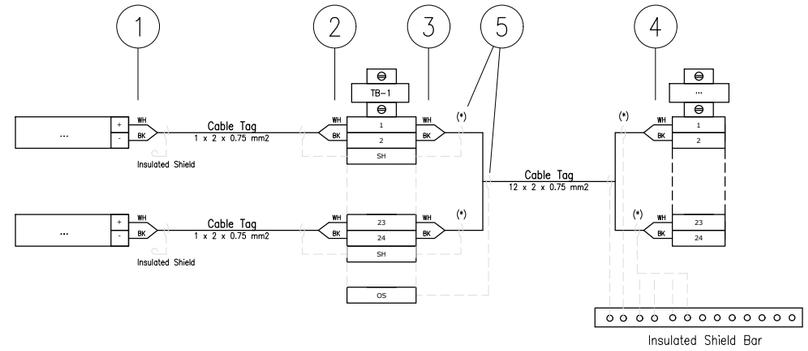
LEGENDS & SYMBOLS:

LEGEND:

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

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

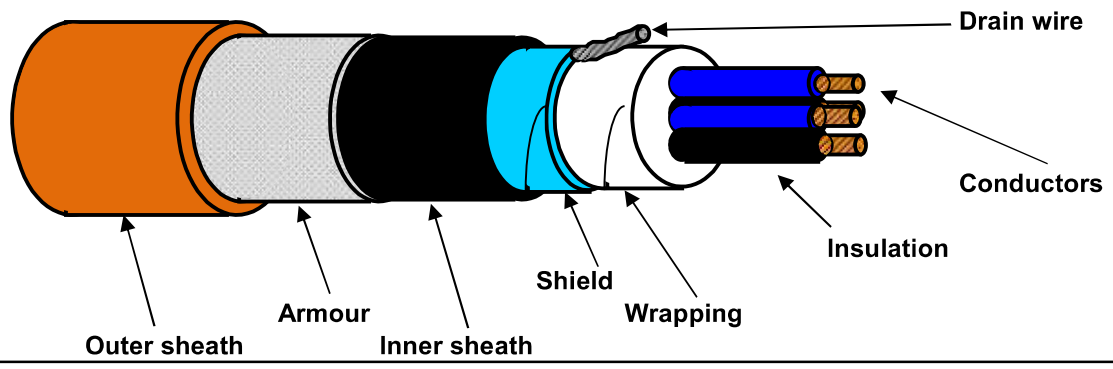
	DRAWING NO.	SHEET	REV.
A3	123A90-DDL-IN-DG-40016	003	01

File Name : 123A90-DDL-IN-DG-40016_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
C-CB-200F4B/B400-SIS-001	Cable	IN	VFC	123A90-DDL-IN-LIS-40091					CB-200F4B	Isolator Battery Box for AC UPS 15 kVA	Lower Deck (B-300)	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	M20	T2_M20_D ouble			n.a.				I-MCT-301 / B-300-SEC-1E / B-300-SEC-1C / B-300-SEC-1A / L-SEC-4 / 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-200F4/B400-SIS-001 : TRIP SIGNAL / MARSHALLING PCS				Dwg	123A90-DDL-IN-LIS-40091
	S/Sys	84-20 : AC 15 kVA UPS System (UP-200F4)				Module	LD_B-300/LD_B-400
TASK	code	C10000201		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-200F4 | To: B400-SIS-001

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	Note
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	PL
9	Check cable labelling is in accordance with specification.	PL
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	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		0.6	Ω
	SCREEN		0.6	Ω
	EARTH		NA	Ω
	ARMr		0.6	Ω
	TEST VOLTS		500	V

TEST ALL CORES AND RECORD LOWEST VALUE

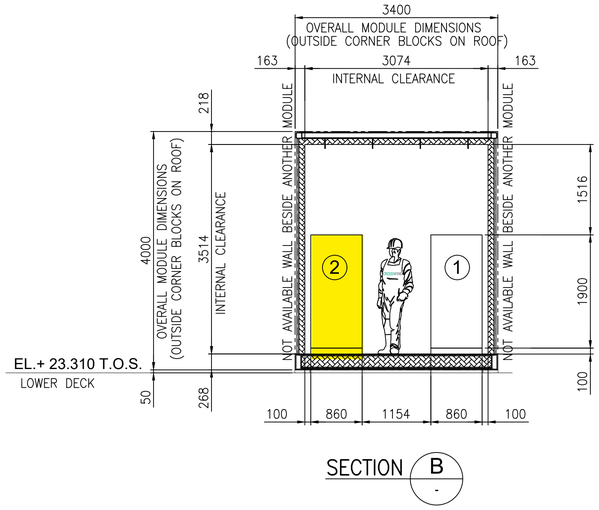
Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

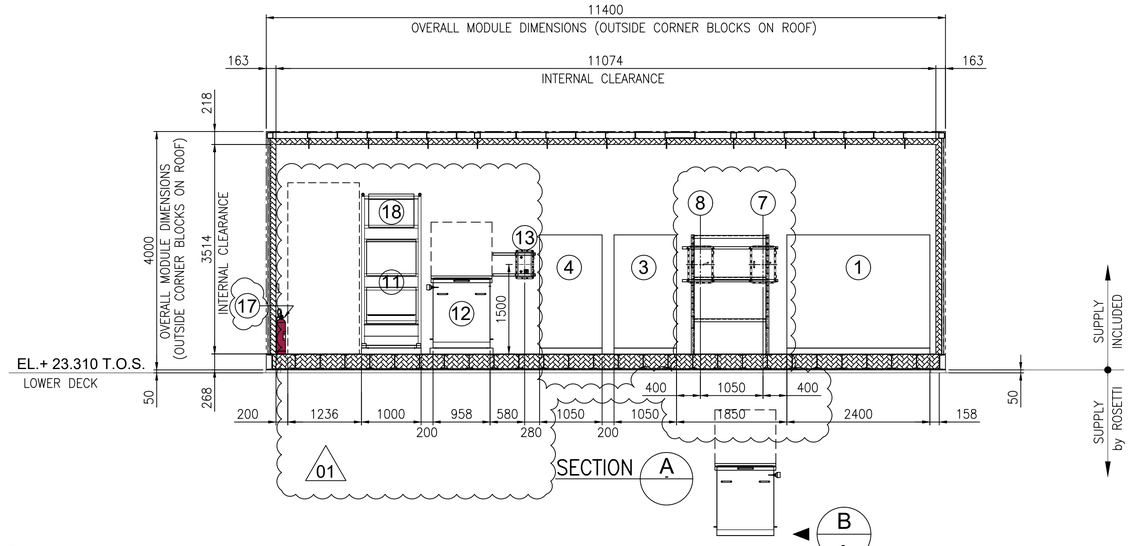
TYPE / SERIAL N°: MEGGER : KEW3125A SERIAL: W8330207 | Calibration date: N°7722/24 10/07/2024

Comments: Nota 5: refer to PL C30000680

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Carmelo Bongiovanni	Paolo Schintu	
Date	2024-11-22	2024-11-30	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-11-22T17:14:15.369Z	PROVERLIS Digitaly signed by Paolo Schintu 2024-11-30T07:48:37.064Z	



SECTION B

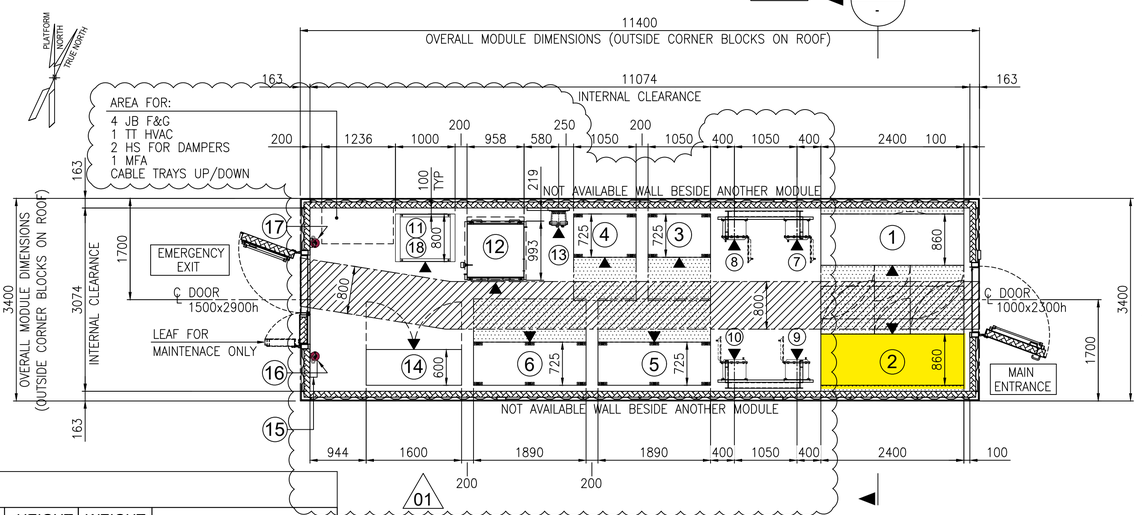


SECTION A

SUPPLY INCLUDED

SUPPLY by ROSETTI

B



A

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

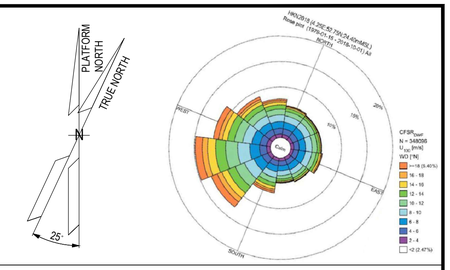
EQUIPMENT LIST

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

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

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

ROSETTI MARINO SpA



NOTES

01

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

LEGEND

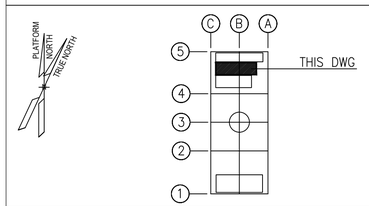
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR – WIDTH 800mm.
_____ MAINTENANCE AREA – VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

HOLDS

REFERENCE

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

KEY PLAN



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

CROSSWIND

ROSETTI MARINO

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

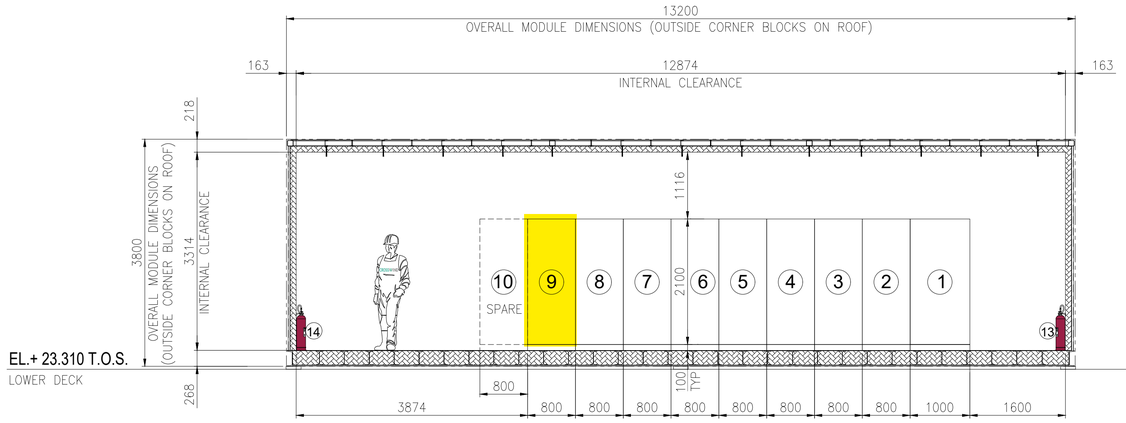
CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1:50
DRAWN SAM	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 23/07/24

A1	DRAWING NO. 123A90-DDL-EL-DL-20106	SHEET 001	REV. 01

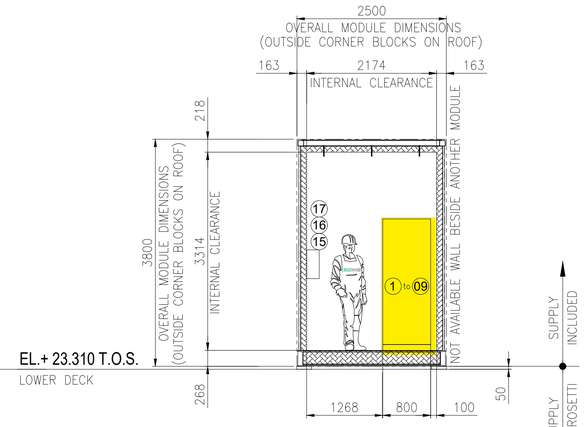
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DRAWING NO. 123A90-DDL-EL-DL-20106 REV. 01

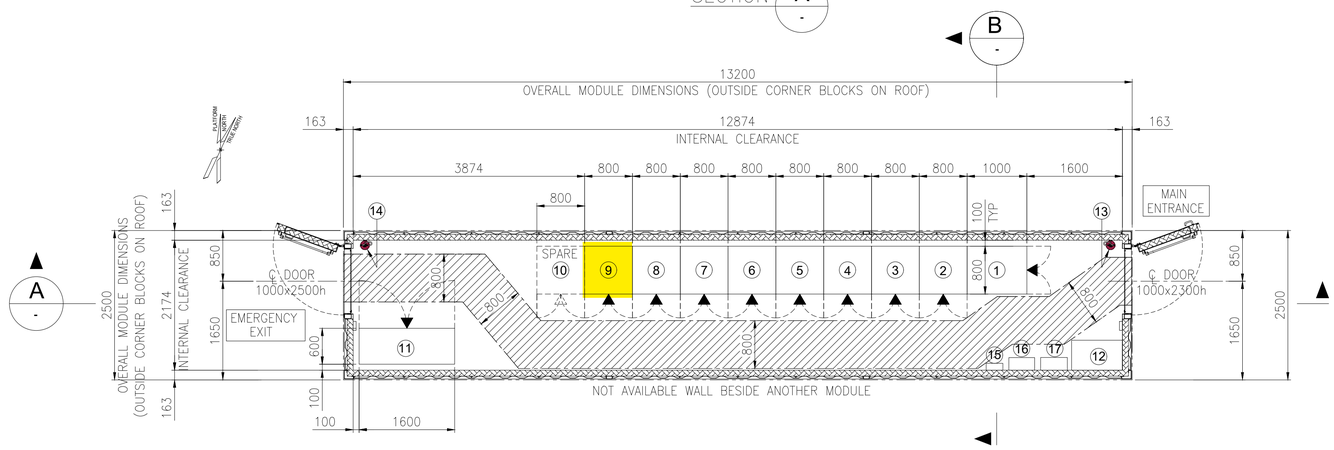
DRAWING NO. 123A90-DDL-IN-DL-40012 REV. 03



SECTION A -



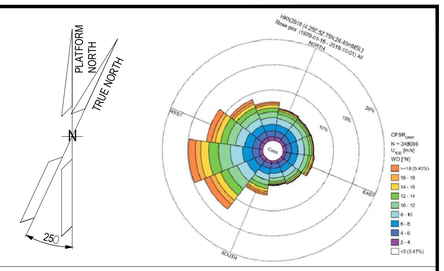
SECTION B -



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

EQUIPMENT LIST

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



NOTES

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

LEGEND

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

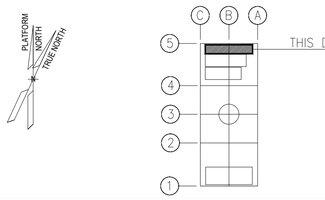
HOLDS

.

REFERENCE

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

KEY PLAN



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

CROSSWIND — ROSETTI MARINO

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

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

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40012**

REV.:	DATE:	SIGNATURE:
3_A	07/10/24	G.Randi

ROSETTI MARINO SpA

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

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

REV. 01

FIELD		I&T EQUIPMENT ROOM (ITER)
B-300 - UPS ROOM	CABLE NO	MARSHALLING CABINET B400-SIS-001

<01>

DISCONNECT AC UPS UP-200F3 BATTERIES A (CB-200F3A)	84-XS-007A ~~81-XS-007A~~	TB-X3 7 (1BK) 8 (2BK) NOTE-2	C-CB-200F3A/B400-SIS-001 ~~CB-200F3A/B400-SIS-001~~ 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	Shield Bar	TB-XS-000 1BK 03 2BK 04	81-XS-007A
DISCONNECT AC UPS UP-200F3 BATTERIES B (CB-200F3B)	84-XS-007B ~~81-XS-007B~~	TB-X3 7 (1BK) 8 (2BK) NOTE-2	C-CB-200F3B/B400-SIS-001 ~~CB-200F3B/B400-SIS-001~~ 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	Shield Bar	TB-XS-000 1BK 11 2BK 12	81-XS-007B
DISCONNECT AC UPS UP-200F4 BATTERIES A (CB-200F4A)	84-XS-008A ~~81-XS-008A~~	TB-X3 7 (1BK) 8 (2BK) NOTE-2	C-CB-200F4A/B400-SIS-001 ~~CB-200F4A/B400-SIS-001~~ 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	Shield Bar	TB-XS-000 1BK 05 2BK 06	81-XS-008A
DISCONNECT AC UPS UP-200F4 BATTERIES B (CB-200F4B)	84-XS-008A ~~81-XS-008B~~	TB-X3 7 (1BK) 8 (2BK) NOTE-2	C-CB-200F4B/B400-SIS-001 ~~CB-200F4B/B400-SIS-001~~ 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	Shield Bar	TB-XS-000 1BK 13 2BK 14	81-XS-008B
INHIBIT. BATTERY CHARGING AC UPS (UP-200F4)	84-XS-011	TB-120 1 (1BK) 2 (2BK) NOTE-2	C-UP-200F4/B400-SIS-001 ~~UP-200F4/B400-SIS-001~~ 2x2.5mm2,ShT+ARM,F.Res,ORANGE,NIS	Shield Bar	TB-XS-000 1BK 43 2BK 44	84-XS-011

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

A3	DRAWING NO. 123A90–DDL–IN–DG–40016	SHEET 025	REV. 01

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

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

REV. 01

NOTES:

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

<01>

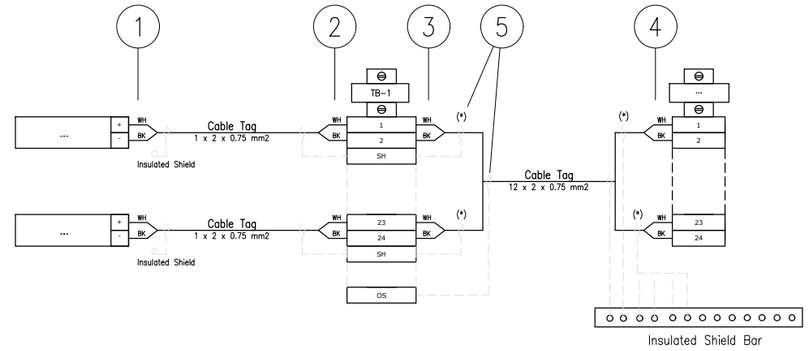
LEGENDS & SYMBOLS:

LEGEND:

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

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

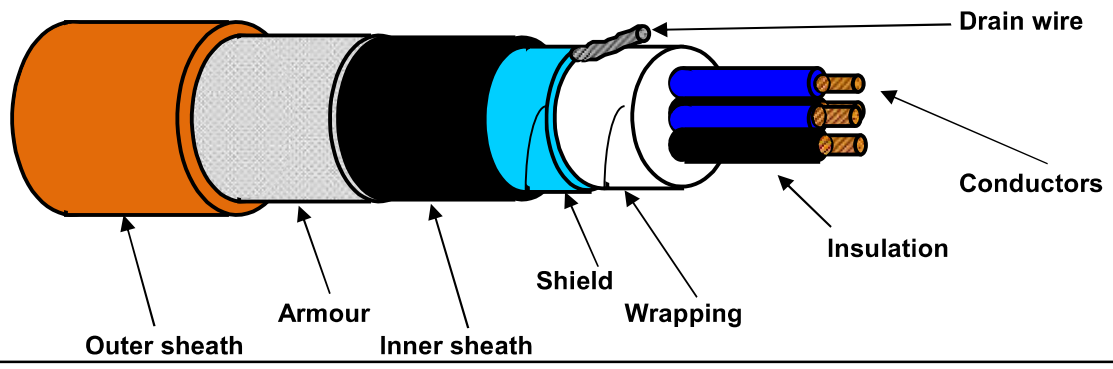
	DRAWING NO.	SHEET	REV.
A3	123A90-DDL-IN-DG-40016	003	01

File Name : 123A90-DDL-IN-DG-40016_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
C-UP-200F4/B400-SIS-001	Cable	IN	VFC	123A90-DDL-IN-LIS-40091					UP-200F4	AC UPS 15 kVA Redundant System with By-Pass	Lower Deck (B-300)	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	M20	T2_M20_Double			n.a.				I-MCT-301 / B-300-SEC-1E / B-300-SEC-1C / B-300-SEC-1A / L-SEC-4 / 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: 84-20 & process: MC & discipline : T

Telecom	84-20 AC 15 kVA UPS System (UP-200F4)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
UP-200F4/B400-NET-001.01	COMMUNICATION / EMCS SYSTEM	ONSHORE	C10004372	CIX09	100	2024-11-22	RFC 2
UP-200F4/B400-NET-001.02	COMMUNICATION / EMCS SYSTEM	ONSHORE	C10004373	CIX09	100	2024-11-22	RFC 2

ROSETTI MARINO | CROSSWIND

ITEM	Tag	UP-200F4/B400-NET-001.01 : COMMUNICATION / EMCS SYSTEM			Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	84-20 : AC 15 kVA UPS System (UP-200F4)			Module	LD_B-300/LD_B-400	
TASK	code	C10004372	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-200F4	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 2024-11-21T14:41:43.332Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-11-22T16:25:02.279Z	

ROSETTI MARINO

Cable ID: UP-200F4/B400-NET-001.01

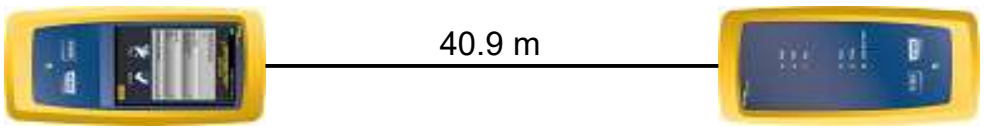
Test Summary: PASS

Test Limit: ISO11801 PL2 Class Ea
Limits Version: V7.6
Date / Time: 21-11-2024 16:28:31
Headroom 5.8 dB (NEXT 1,2-4,5)
Cable Type: Cat 6A S/FTP
NVP: 77.0%

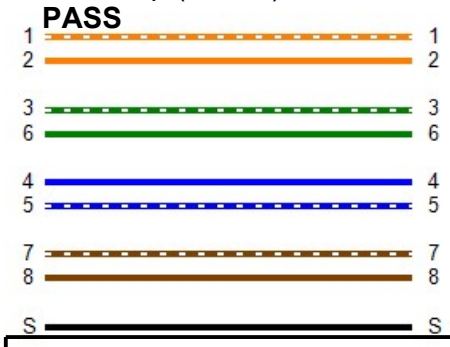
Main: Versiv
S/N: 2226344
Software Version: V6.7 Build 1
Calibration Date: 12-12-2022
Adapter: DSX-8000 (DSX-PLA804)
S/N: 22340270

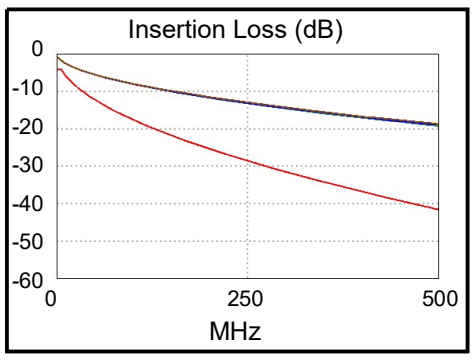
Remote: Versiv
S/N: 2226336
Software Version: V6.7 Build 1
Calibration Date: 12-12-2022
Adapter: DSX-8000R (DSX-PLA804)
S/N: 22340257

Length (m), Limit 90.0	[Pair 3,6]	40.9
Prop. Delay (ns), Limit 496	[Pair 1,2]	180
Delay Skew (ns), Limit 43	[Pair 1,2]	3
Resistance (ohms), Limit 20.60	[Pair 3,6]	5.77
Insertion Loss Margin (dB)	[Pair 3,6]	22.2
Frequency (MHz)	[Pair 3,6]	500.0
Limit (dB)	[Pair 3,6]	41.6

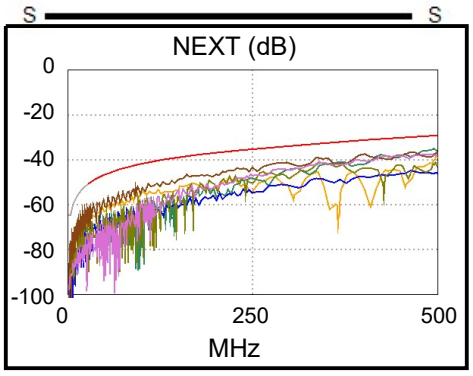


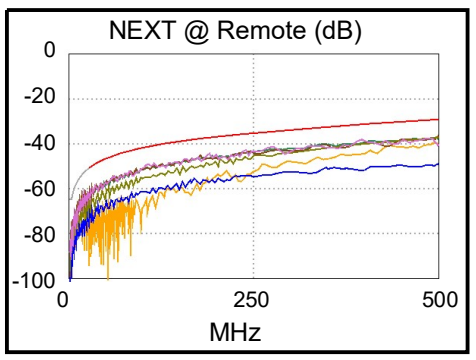
Wire Map (T568B)
PASS



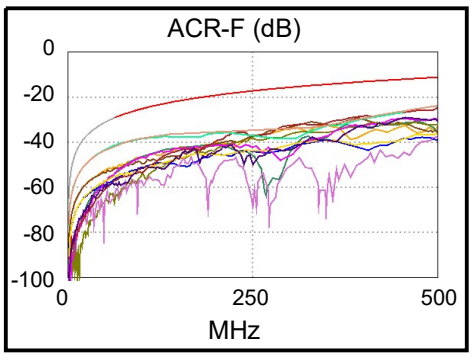


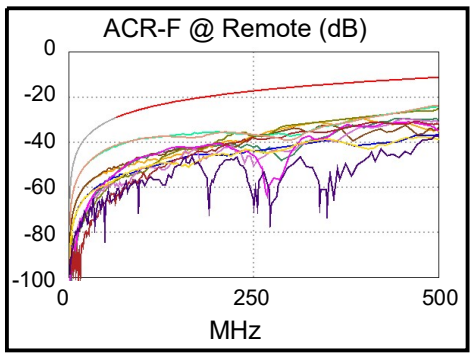
	Worst Case Margin		Worst Case Value	
PASS	MAIN	SR	MAIN	SR
Worst Pair	1,2-4,5	4,5-7,8	1,2-4,5	3,6-4,5
NEXT (dB)	5.8	6.6	5.9	7.4
Freq. (MHz)	494.0	395.0	495.0	499.0
Limit (dB)	29.4	31.5	29.3	29.3
Worst Pair	4,5	4,5	4,5	4,5
PS NEXT (dB)	5.5	5.5	5.5	6.1
Freq. (MHz)	496.0	328.0	496.0	473.0
Limit (dB)	26.5	30.5	26.5	26.9



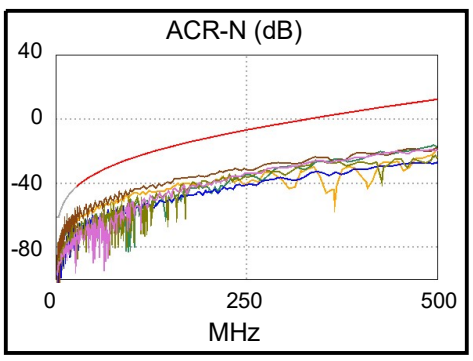


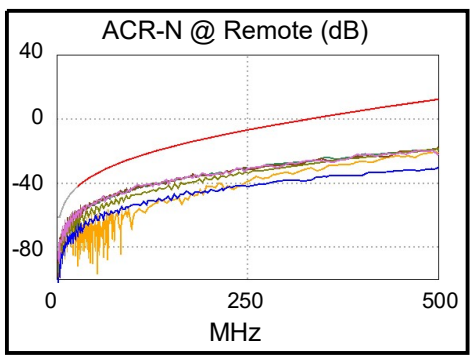
PASS	MAIN	SR	MAIN	SR
Worst Pair	4,5-7,8	7,8-4,5	7,8-4,5	7,8-4,5
ACR-F (dB)	11.5	11.5	12.6	12.5
Freq. (MHz)	3.4	3.4	500.0	500.0
Limit (dB)	54.7	54.7	11.3	11.3
Worst Pair	4,5	4,5	4,5	4,5
PS ACR-F (dB)	14.4	12.6	14.7	12.6
Freq. (MHz)	476.0	499.0	500.0	499.0
Limit (dB)	8.7	8.3	8.3	8.3



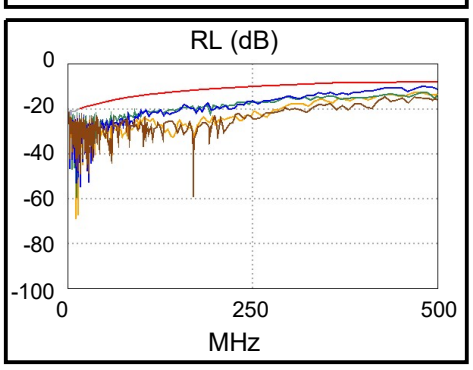


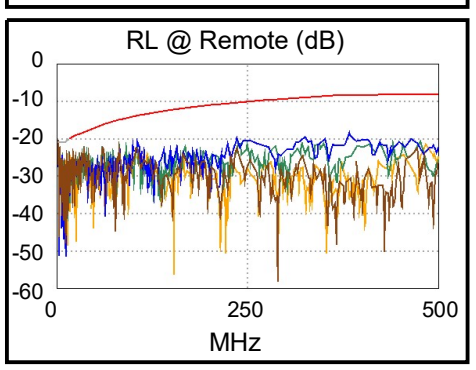
PASS	MAIN	SR	MAIN	SR
Worst Pair	3,6-4,5	3,6-4,5	1,2-4,5	3,6-4,5
ACR-N (dB)	15.4	14.7	28.4	30.1
Freq. (MHz)	28.4	28.5	495.0	499.0
Limit (dB)	41.4	41.4	-12.1	-12.3
Worst Pair	3,6	4,5	4,5	3,6
PS ACR-N (dB)	16.7	14.1	28.1	28.9
Freq. (MHz)	28.4	34.5	496.0	499.0
Limit (dB)	39.0	36.7	-15.0	-15.2





PASS	MAIN	SR	MAIN	SR
Worst Pair	4,5	7,8	4,5	4,5
RL (dB)	1.7	4.7	1.7	10.2
Freq. (MHz)	479.0	21.3	479.0	383.0
Limit (dB)	8.0	19.4	8.0	8.2





Compliant Network Standards:

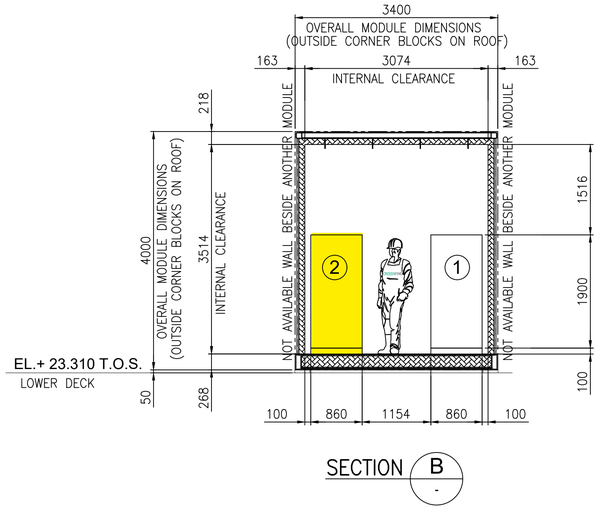
10BASE-T	100BASE-TX	100BASE-T4
1000BASE-T	2.5GBASE-T	5GBASE-T
10GBASE-T	ATM-25	ATM-51
ATM-155	100VG-AnyLan	TR-4
TR-16 Active	TR-16 Passive	

LinkWare™ PC Version 11.4

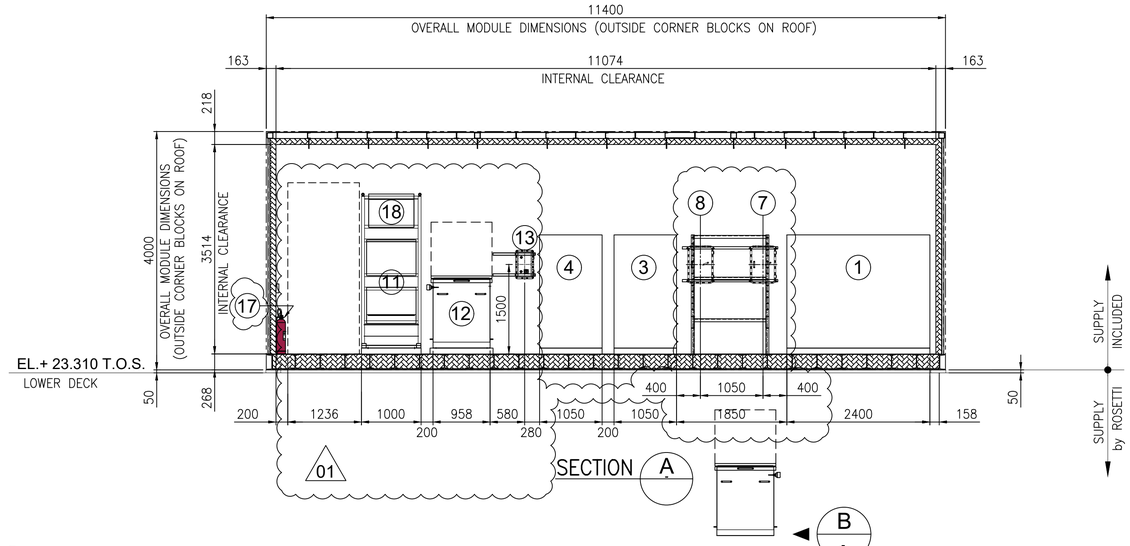
Project: CROSSWIND
Site: Not Set
Floor: Not Set
Rack: Not Set
ROSETTI - CROSSWIND RAME 21.11.2024.flw

Building: Not Set
Room: Not Set
Patch: Not Set

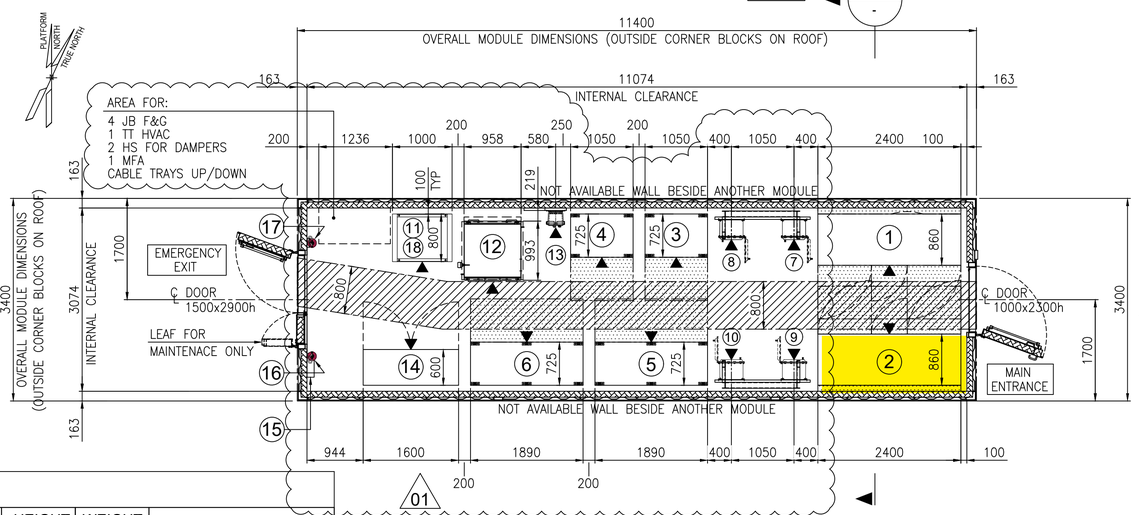
FLUKE networks



SECTION B -



SECTION A -

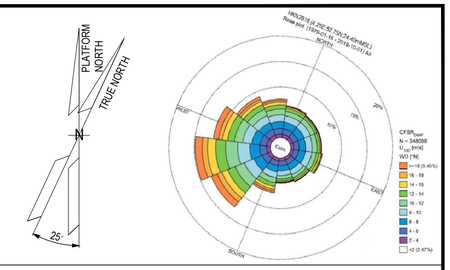


A -

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

EQUIPMENT LIST

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



NOTES

01

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

LEGEND

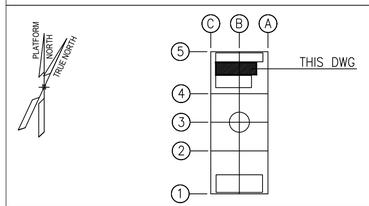
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR – WIDTH 800mm.
_____ MAINTENANCE AREA – VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

HOLDS

REFERENCE

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

KEY PLAN



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

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

ROSETTI MARINO SpA

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

CROSSWIND | ROSETTI MARINO

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

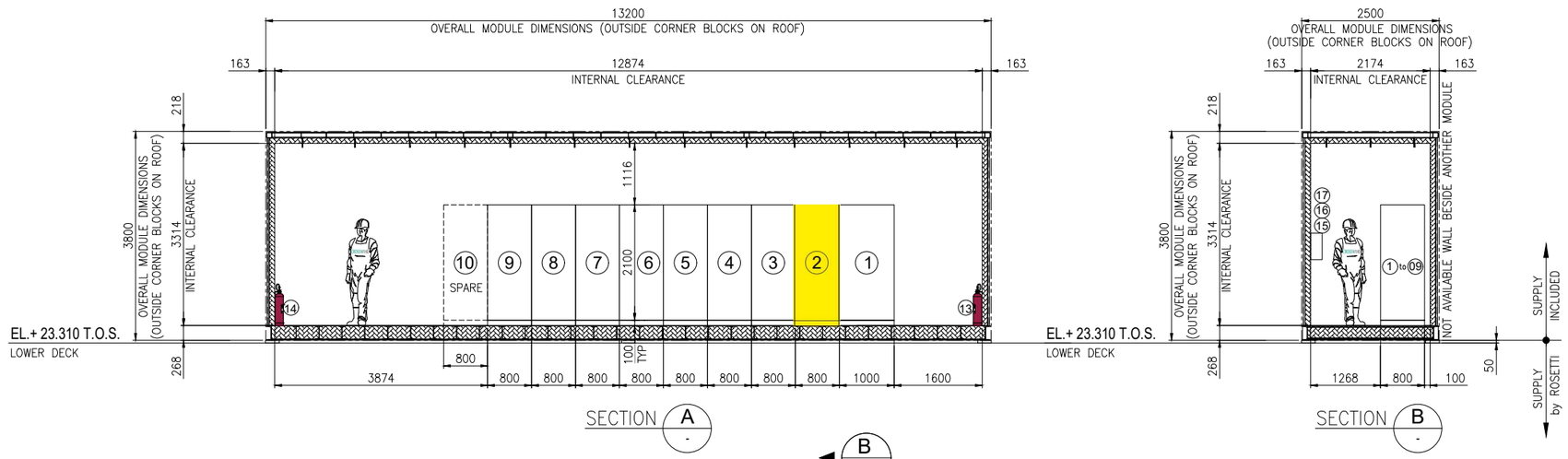
CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1:50
DRAWN SAM	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 23/07/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20106	SHEET 001	REV. 01

DRAWING NO. 123A90-DDL-EL-DL-20106 REV. 01

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

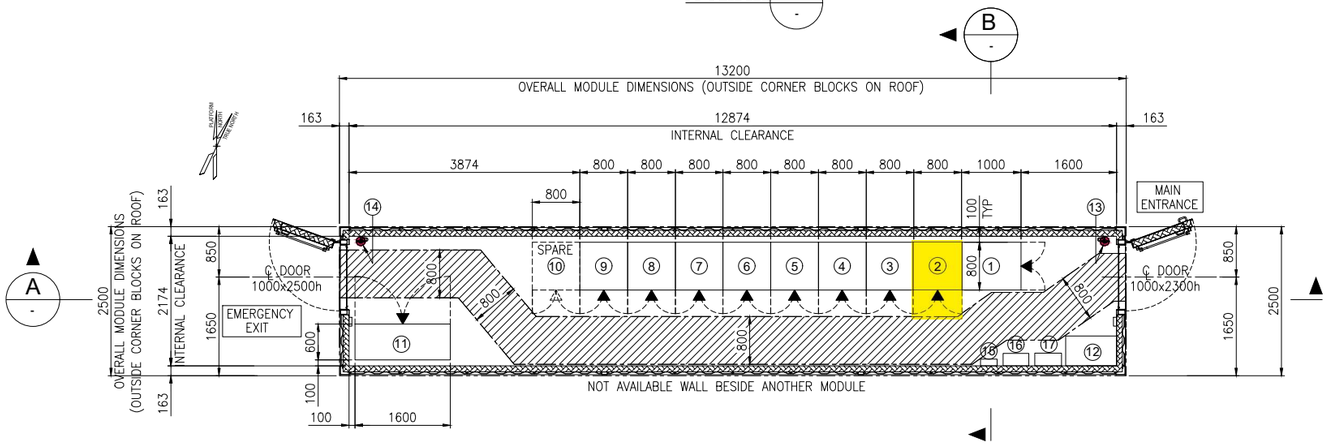
DRAWING NO. 123A90-DDL-IN-DL-40012

REV. 03



SECTION A -

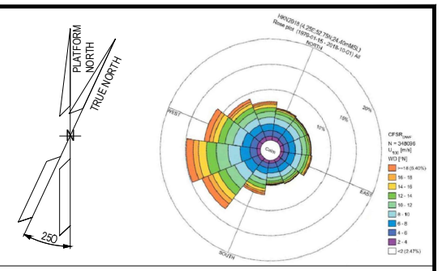
SECTION B -



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

EQUIPMENT LIST

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



NOTES

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

LEGEND

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

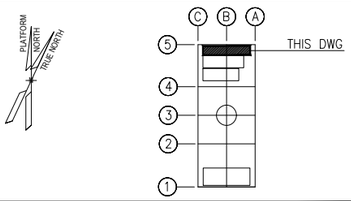
HOLDS

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REFERENCE

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

KEY PLAN



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

CROSSWIND

ROSETTI MARINO

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

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

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

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

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

AC UPS (B-300)

I&T EQUIPMENT ROOM (ITER B400)

NETWORK CABINET - B400-NET-001

HVAC CABINET B300-HSB-001	ITEM: SCALANCE XC208 PORT: P3 LAN	RJ45	B300-HSB-001/B400-NET-001 CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS	RJ45	SWITCH: COOP-01 PORT: P13
Ref. Vendor Doc.: 1724000049-HV-DA-00028					
AC UP 35kVA UP -200F3	ITEM: MULTICANCOM2 UPS1 -A9 / -A29.1 PORT: -X5	RJ45	UP-200F3/B400-NET-001.01 CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS	RJ45	SWITCH: COOP-01 PORT: P05
Ref. Vendor Doc.: 1724000372-EL-DG-00009					
AC UP 35kVA UP -200F3	ITEM: MULTICANCOM2 UPS2 -A9 / -A29.1 PORT: -X5	RJ45	UP-200F3/B400-NET-001.02 CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS	RJ45	SWITCH: COOP-01 PORT: ~~P06~~ P23
Ref. Vendor Doc.: 1724000372-EL-DG-00009					
AC UP 15kVA UP -200F4	ITEM: MULTICANCOM2 UPS2 -A9 / -A29.1 PORT: -X5	RJ45	UP-200F4/B400-NET-001.01 CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS	RJ45	SWITCH: COOP-01 PORT: ~~P07~~ P24
Ref. Vendor Doc.: 1724000372-EL-DG-00009					
AC UP 15kVA UP -200F4	ITEM: MULTICANCOM2 UPS2 -A9 / -A29.1 PORT: -X5	RJ45	UP-200F4/B400-NET-001.02 CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS	RJ45	SWITCH: COOP-01 PORT: P08
Ref. Vendor Doc.: 1724000372-EL-DG-00009					

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 035	REV. 01

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

DRAWING NO. 123A90-DDL-IN-DG-40015

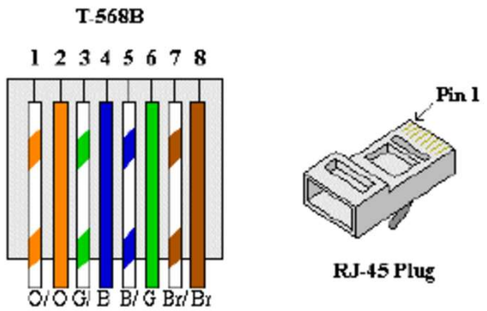
REV. 01

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

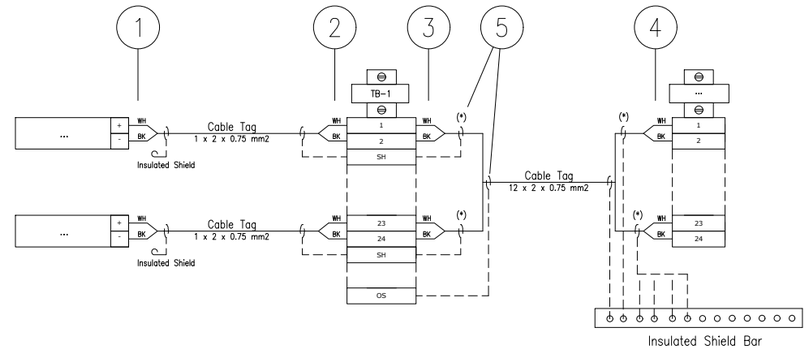
LEGENDS & SYMBOLS:

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

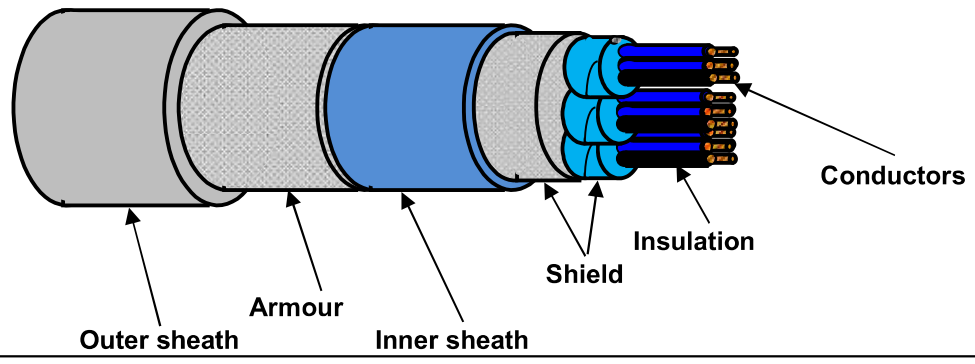
File Name : 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	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
UP-200F4/B400-NET-001.01	Cable	IN	VFC	123A90-DDL-IN-LIS-40091					UP-200F4	AC UPS 15 kVA Redundant System with By-Pass	Lower Deck (B-300)	B400-NET-001	Network Cabinet / EMCS System	Lower Deck (B-400)	TELCV03-4X2X23AWG	Cable CAT 6A S/FTP 4x2x23AWG Armoured LSZH - Grey	M20S	T2_M20S_Double			n.a.				I-MCT-301 / B-300-SEC-1E / B-300-SEC-1C / B-300-SEC-1A / L-SEC-4 / L-SEC-1B / B-400-SEC-3A / B-400-SEC-2I / B-400-SEC-2G / B-400-SEC-2E / B-400-SEC-2C / B-400-SEC-3B / I-MCT-402

FLEI s.r.l.

CAT. 6A S/FTP ARMOURED LSZH

4X2X23AWG - Based on Draka UC500 HS23



TECHNICAL FEATURES

Conductors :	**SOLID** plain annealed copper wires (AWG23) **ø 0,56 mm**
Insulation :	Foamskin PE - **ø 1,38 mm**
Cores colour code :	**blue/white; orange/white; green/white; brown/white**
Pair Assembling :	Cores twisted in pairs
Pair Shield :	Al-laminated plastic foil
Overall Shield:	Tinned copper braid
Inner sheath :	Extruded LSZH Thermoplastic Compound
Inner sheath color code:	**Blue**
Armour :	**Galvanized Steel Wire Braid Armour (coverage ≥ 90%)**
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant, Average Thickness 1,2 mm
Outer sheath color code:	**Grey**
Outer printing (INKJET) :	**FLEI - 4X2X23AWG - CAT.6A S/FTP ARMOURED LSZH - IEC 60332.1.2 - IEC 60332.3.22 -**
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**
Under armour diameter :	(7,5 ± 10%) mm
Over armour diameter :	(8,3 ± 10%) mm
Outer diameter :	(10,7 ± 10%) mm
Bending radius :	cable outer diameter x 8 (in fixed installation)
Test Voltage :	1000 V DC for 1' (Between Cores) / 1000 V DC for 1' (Between Cores - Shield)
Loop Resistance :	≤ 154 Ω/Km (@ 20°C)
Insulation Resistance :	≥ 2000 MΩ x km (@ 20°C)
Mutual Capacitance :	Nom. 43 nF/km
Characteristic Impedance :	(100 ± 5) Ω
Applicable Standards	
Design Guidelines :	**Generally to ISO/IEC 11801 / IEC 61156-5 / EN 50173-1 / EN 50288-10 / IEEE 802.3at / af / bt**
ON COMPLETE CABLE	
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22
Acid Gas generation :	IEC 60754.1/2
Smoke density/Light Transm	IEC 61034.2 (LT ≥ 60%)
Hazardous Areas :	IEC 60079.14 par.9.3.2a
Temperature Range :	
ON COMPLETE CABLE	
During Operation :	(-20°C up to +60°C) (in fixed installation)
During installation :	(0°C up to +50°C)
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner Sheath together with correct ATEX approved equipment or accessories.**

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	29/05/2024	Messa			
Checked :	29/05/2024	Spaccasassi			
Approved :	29/05/2024	Cucinotta			

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

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ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	UP-200F4/B400-NET-001.02	:	COMMUNICATION / EMCS SYSTEM	Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	84-20	:	AC 15 kVA UPS System (UP-200F4)	Module	LD_B-300/LD_B-400	
TASK	code	C10004373	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-200F4	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 2024-11-21T14:41:52.560Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-11-22T16:25:21.073Z	

ROSETTI MARINO

Cable ID: UP-200F4/B400-NET-001.02

Test Summary: PASS

Test Limit: ISO11801 PL2 Class Ea
Limits Version: V7.6
Date / Time: 21-11-2024 15:39:36
Headroom 5.7 dB (NEXT 1,2-4,5)
Cable Type: Cat 6A S/FTP
NVP: 77.0%

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

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

Length (m), Limit 90.0	[Pair 4,5]	40.9
Prop. Delay (ns), Limit 496	[Pair 1,2]	180
Delay Skew (ns), Limit 43	[Pair 1,2]	3
Resistance (ohms), Limit 20.60	[Pair 3,6]	5.78
Insertion Loss Margin (dB)	[Pair 3,6]	22.1
Frequency (MHz)	[Pair 3,6]	500.0
Limit (dB)	[Pair 3,6]	41.6

	Worst Case Margin		Worst Case Value	
PASS	MAIN	SR	MAIN	SR
Worst Pair	1,2-4,5	4,5-7,8	1,2-4,5	3,6-4,5
NEXT (dB)	5.7	6.6	5.8	7.5
Freq. (MHz)	494.0	395.0	495.0	499.0
Limit (dB)	29.4	31.5	29.3	29.3
Worst Pair	4,5	4,5	4,5	3,6
PS NEXT (dB)	5.7	5.3	5.7	6.6
Freq. (MHz)	496.0	328.0	496.0	499.0
Limit (dB)	26.5	30.5	26.5	26.4

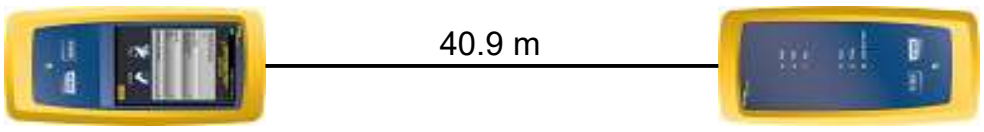
PASS	MAIN	SR	MAIN	SR
Worst Pair	4,5-7,8	7,8-4,5	4,5-7,8	7,8-4,5
ACR-F (dB)	11.5	11.5	12.4	12.2
Freq. (MHz)	4.9	4.9	500.0	500.0
Limit (dB)	51.5	51.5	11.3	11.3
Worst Pair	4,5	4,5	4,5	4,5
PS ACR-F (dB)	14.3	12.6	14.6	12.6
Freq. (MHz)	476.0	499.0	500.0	499.0
Limit (dB)	8.7	8.3	8.3	8.3

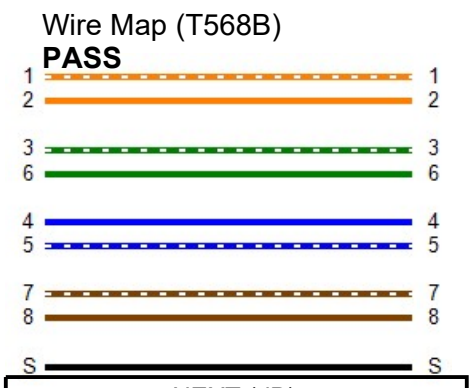
PASS	MAIN	SR	MAIN	SR
Worst Pair	3,6-4,5	3,6-4,5	1,2-4,5	3,6-4,5
ACR-N (dB)	14.6	14.2	28.2	30.0
Freq. (MHz)	28.5	28.4	495.0	499.0
Limit (dB)	41.4	41.4	-12.1	-12.3
Worst Pair	3,6	4,5	4,5	3,6
PS ACR-N (dB)	16.0	13.6	28.1	28.7
Freq. (MHz)	28.3	34.5	496.0	499.0
Limit (dB)	39.1	36.7	-15.0	-15.2

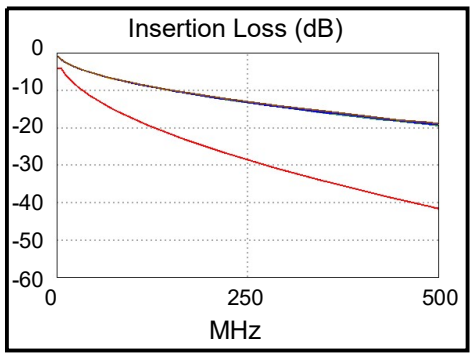
PASS	MAIN	SR	MAIN	SR
Worst Pair	4,5	3,6	4,5	4,5
RL (dB)	1.7	4.2	1.7	10.7
Freq. (MHz)	479.0	21.4	479.0	383.0
Limit (dB)	8.0	19.4	8.0	8.2

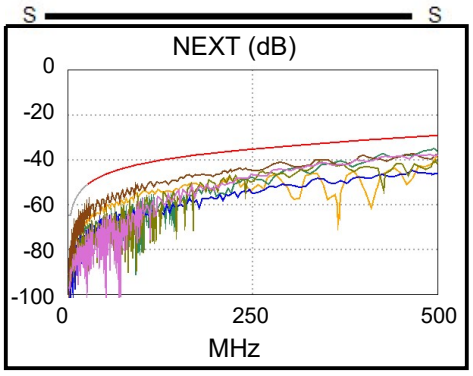
Compliant Network Standards:

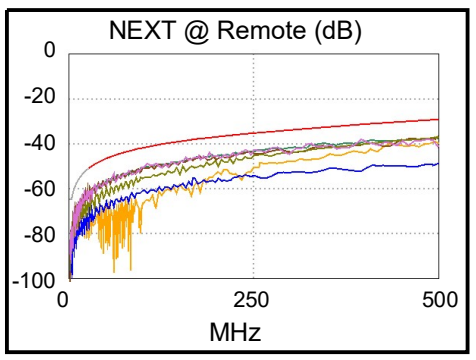
10BASE-T	100BASE-TX	100BASE-T4
1000BASE-T	2.5GBASE-T	5GBASE-T
10GBASE-T	ATM-25	ATM-51
ATM-155	100VG-AnyLan	TR-4
TR-16 Active	TR-16 Passive	

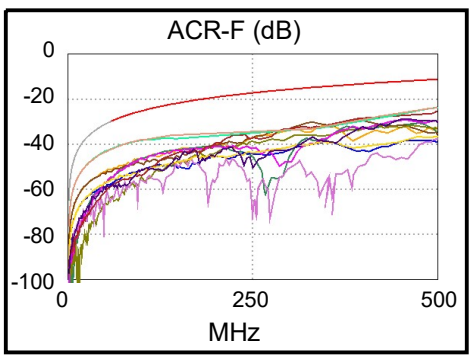


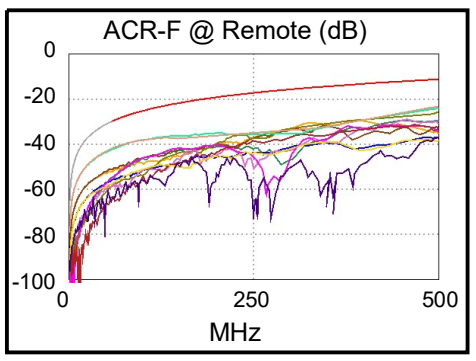


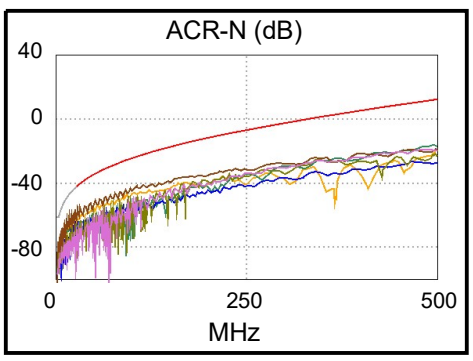


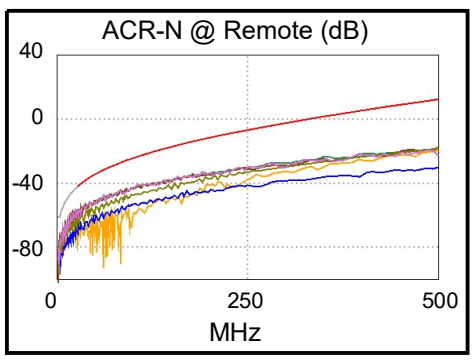


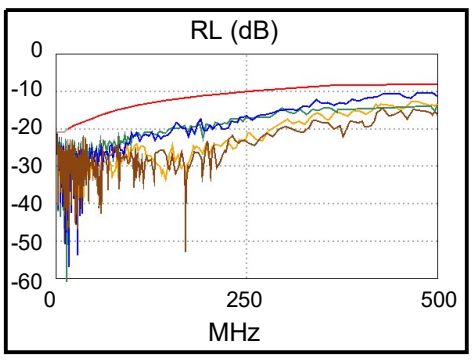


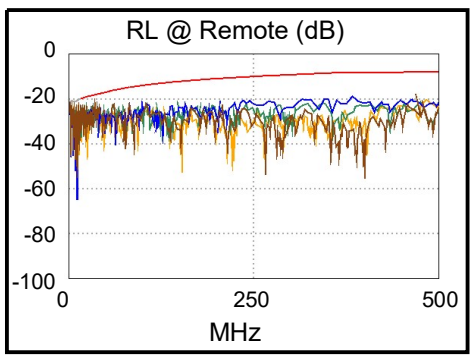










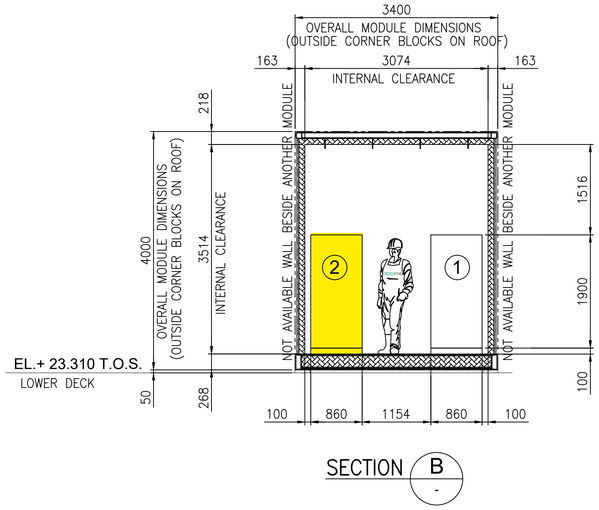


LinkWare™ PC Version 11.4

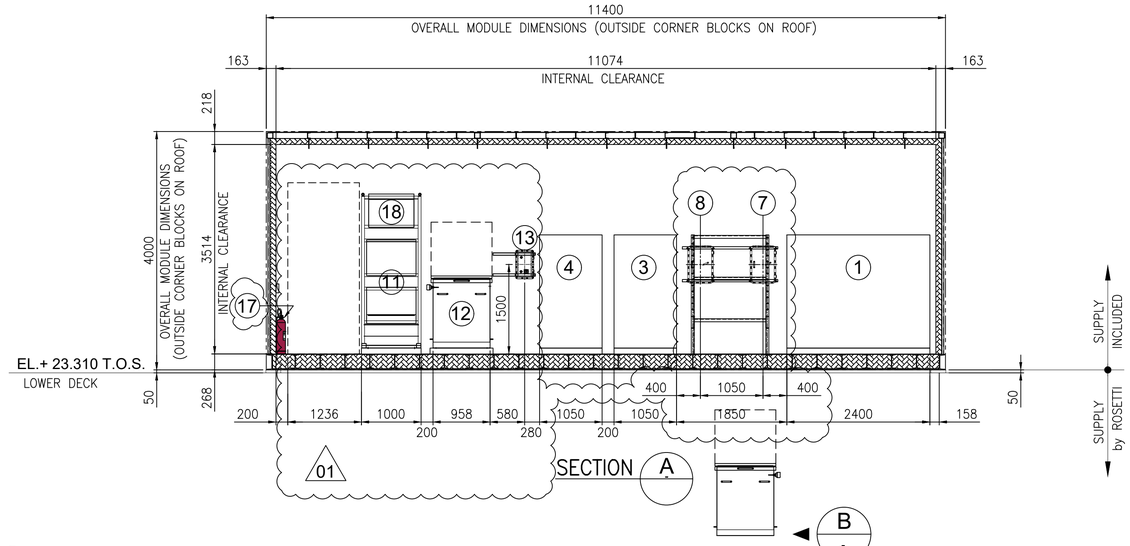
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Floor: Not Set
Rack: Not Set
ROSETTI - CROSSWIND RAME 21.11.2024.flw

Building: Not Set
Room: Not Set
Patch: Not Set

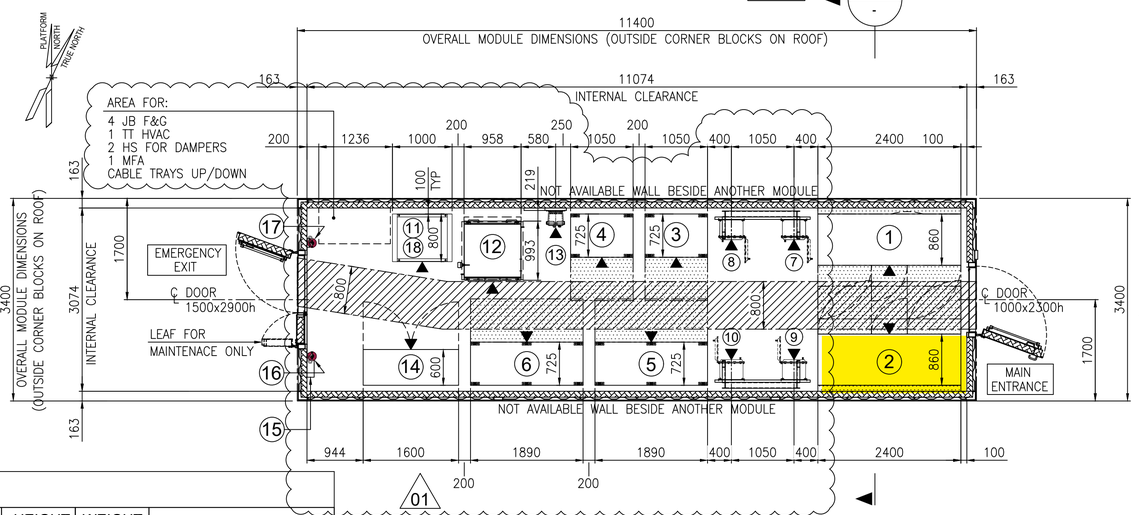
FLUKE networks



SECTION B -



SECTION A -

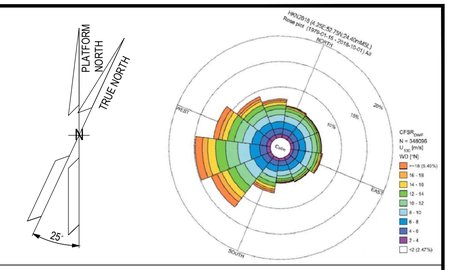


A -

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

EQUIPMENT LIST

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



NOTES

01

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

LEGEND

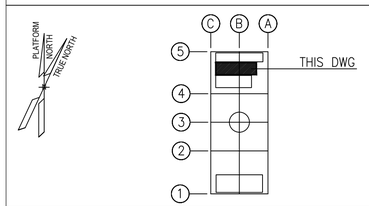
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR – WIDTH 800mm.
_____ MAINTENANCE AREA – VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

HOLDS

REFERENCE

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

KEY PLAN



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

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

ROSETTI MARINO SpA

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

CROSSWIND | ROSETTI MARINO

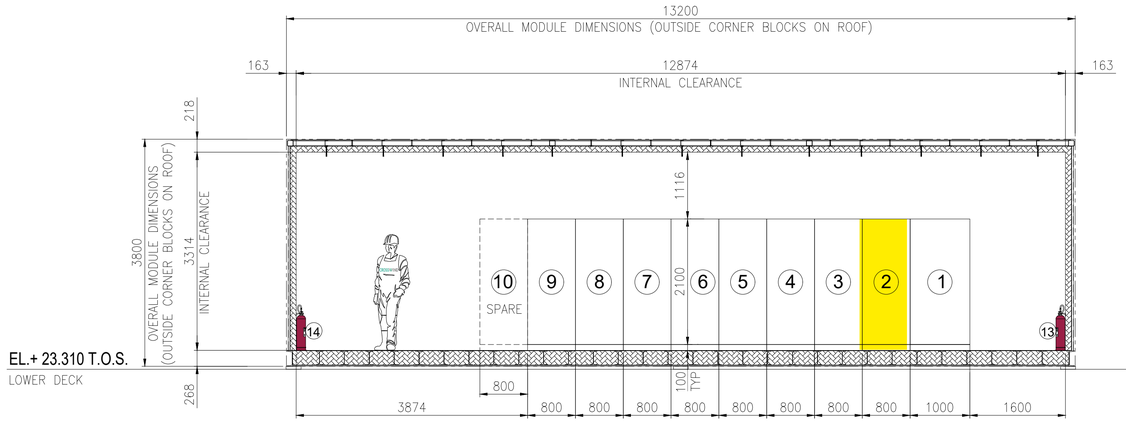
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
UPSs & BATTERIES SWITCHROOM

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

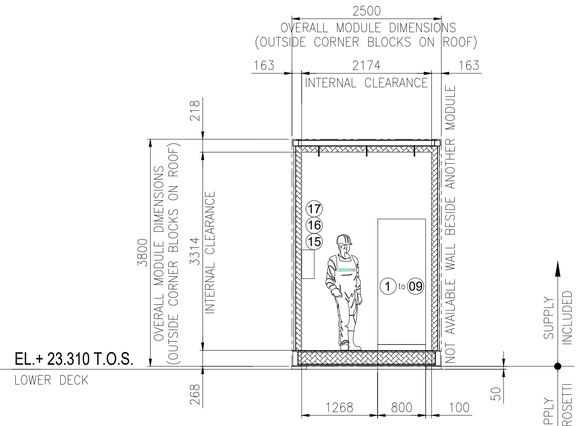
DRAWING NO. 123A90-DDL-EL-DL-20106 REV. 01

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

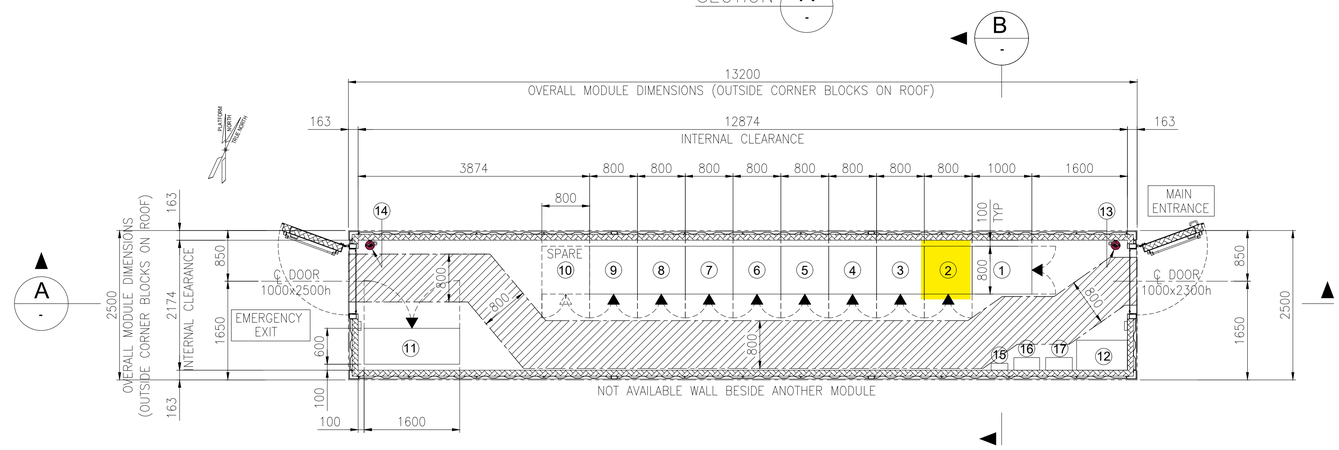
DRAWING NO. 123A90-DDL-IN-DL-40012 REV. 03



SECTION A -



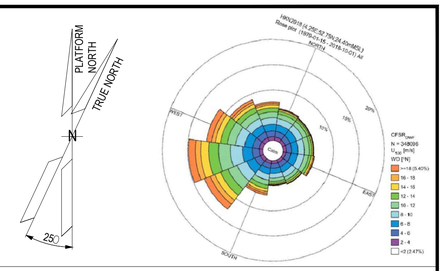
SECTION B -



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

EQUIPMENT LIST

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



NOTES

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

LEGEND

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

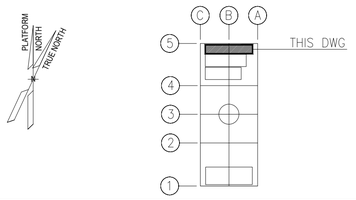
HOLDS

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REFERENCE

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

KEY PLAN



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

CROSSWIND — ROSETTI MARINO

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

AC UPS (B-300)

I&T EQUIPMENT ROOM (ITER B400)

NETWORK CABINET - B400-NET-001

HVAC CABINET B300-HSB-001 Ref. Vendor Doc.: 1724000049-HV-DA-00028	ITEM: SCALANCE XC208 PORT: P3 LAN	RJ45	B300-HSB-001/B400-NET-001 CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS	RJ45	SWITCH: COOP-01 PORT: P13
AC UP 35kVA UP -200F3 Ref. Vendor Doc.: 1724000372-EL-DG-00009	ITEM: MULTICANCOM2 UPS1 -A9 / -A29.1 PORT: -X5	RJ45	UP-200F3/B400-NET-001.01 CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS	RJ45	SWITCH: COOP-01 PORT: P05
AC UP 35kVA UP -200F3 Ref. Vendor Doc.: 1724000372-EL-DG-00009	ITEM: MULTICANCOM2 UPS2 -A9 / -A29.1 PORT: -X5	RJ45	UP-200F3/B400-NET-001.02 CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS	RJ45	SWITCH: COOP-01 PORT: ~~P06~~ P23
AC UP 15kVA UP -200F4 Ref. Vendor Doc.: 1724000372-EL-DG-00009	ITEM: MULTICANCOM2 UPS2 -A9 / -A29.1 PORT: -X5	RJ45	UP-200F4/B400-NET-001.01 CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS	RJ45	SWITCH: COOP-01 PORT: ~~P07~~ P24
AC UP 15kVA UP -200F4 Ref. Vendor Doc.: 1724000372-EL-DG-00009	ITEM: MULTICANCOM2 UPS2 -A9 / -A29.1 PORT: -X5	RJ45	UP-200F4/B400-NET-001.02 CAT.6A4x2xAWG23,Sh+ShT+ARM,F.Ret,GREEN,NIS	RJ45	SWITCH: COOP-01 PORT: P08

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 035	REV. 01

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

DRAWING NO. 123A90-DDL-IN-DG-40015

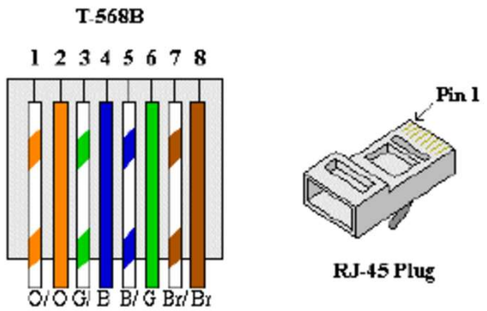
REV. 01

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

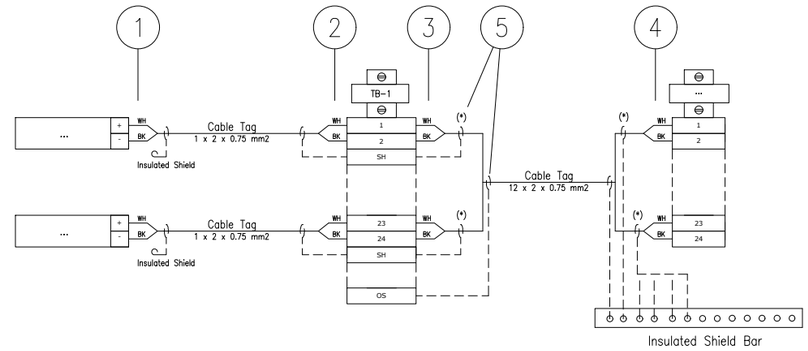
LEGENDS & SYMBOLS:

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

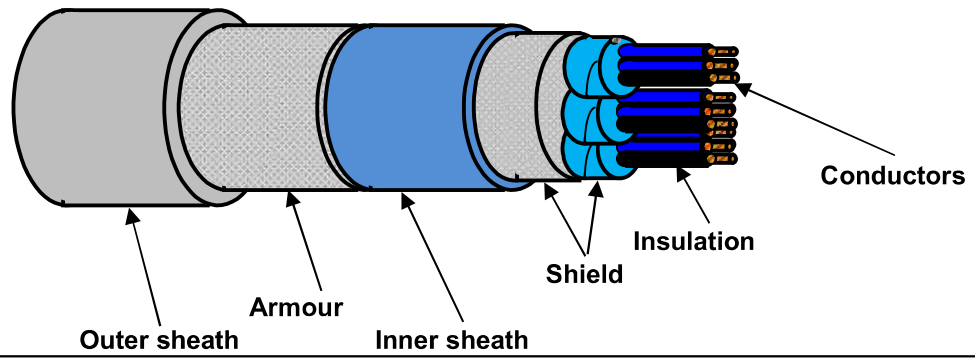
File Name : 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	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
UP-200F4/B400-NET-001.02	Cable	IN	VFC	123A90-DDL-IN-LIS-40091					UP-200F4	AC UPS 15 kVA Redundant System with By-Pass	Lower Deck (B-300)	B400-NET-001	Network Cabinet / EMCS System	Lower Deck (B-400)	TELCV03-4X2X23AWG	Cable CAT 6A S/FTP 4x2x23AWG Armoured LSZH - Grey	M20S	T2_M20S_Double			n.a.				I-MCT-301 / B-300-SEC-1E / B-300-SEC-1C / B-300-SEC-1A / L-SEC-4 / L-SEC-1B / B-400-SEC-3A / B-400-SEC-2I / B-400-SEC-2G / B-400-SEC-2E / B-400-SEC-2C / B-400-SEC-3B / I-MCT-402

FLEI s.r.l.

CAT. 6A S/FTP ARMOURED LSZH

4X2X23AWG - Based on Draka UC500 HS23



TECHNICAL FEATURES

Conductors :	**SOLID** plain annealed copper wires (AWG23) **ø 0,56 mm**
Insulation :	Foamskin PE - **ø 1,38 mm**
Cores colour code :	**blue/white; orange/white; green/white; brown/white**
Pair Assembling :	Cores twisted in pairs
Pair Shield :	Al-laminated plastic foil
Overall Shield:	Tinned copper braid
Inner sheath :	Extruded LSZH Thermoplastic Compound
Inner sheath color code:	**Blue**
Armour :	**Galvanized Steel Wire Braid Armour (coverage ≥ 90%)**
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant, Average Thickness 1,2 mm
Outer sheath color code:	**Grey**
Outer printing (INKJET) :	**FLEI - 4X2X23AWG - CAT.6A S/FTP ARMOURED LSZH - IEC 60332.1.2 - IEC 60332.3.22 -**
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**
Under armour diameter :	(7,5 ± 10%) mm
Over armour diameter :	(8,3 ± 10%) mm
Outer diameter :	(10,7 ± 10%) mm
Bending radius :	cable outer diameter x 8 (in fixed installation)
Test Voltage :	1000 V DC for 1' (Between Cores) / 1000 V DC for 1' (Between Cores - Shield)
Loop Resistance :	≤ 154 Ω/Km (@ 20°C)
Insulation Resistance :	≥ 2000 MΩ x km (@ 20°C)
Mutual Capacitance :	Nom. 43 nF/km
Characteristic Impedance :	(100 ± 5) Ω
Applicable Standards	
Design Guidelines :	**Generally to ISO/IEC 11801 / IEC 61156-5 / EN 50173-1 / EN 50288-10 / IEEE 802.3at / af / bt**
ON COMPLETE CABLE	
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22
Acid Gas generation :	IEC 60754.1/2
Smoke density/Light Transm	IEC 61034.2 (LT ≥ 60%)
Hazardous Areas :	IEC 60079.14 par.9.3.2a
Temperature Range :	
ON COMPLETE CABLE	
During Operation :	(-20°C up to +60°C) (in fixed installation)
During installation :	(0°C up to +50°C)
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner Sheath together with correct ATEX approved equipment or accessories.**

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	29/05/2024	Messa			
Checked :	29/05/2024	Spaccasassi			
Approved :	29/05/2024	Cucinotta			

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

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Section 9 MECHANICAL COMPLETION STATUS INDEX - HVAC DISCIPLINE

NOT APPLICABLE

Section 10 MECHANICAL COMPLETION STATUS INDEX - PIPING DISCIPLINE

NOT APPLICABLE

Section 11 MECHANICAL COMPLETION INDEX - SAFETY DISCIPLINE

NOT APPLICABLE

Section 12 FAT / VENDOR REPORTS

AEG

POWER
SOLUTIONS

Factory Acceptance Test Report		Document-No.: 14188_FAT_2
Type:	**UPS System Protect 8.33/20kVA-S10**	**Tag No.: BC-200F4A, BC-200F4B, BY-200F4**

Configuration No.: 1000007888_080 1000007888_090	**Order-No.:** 4400007525
Serial No.: 1010849/001-002 Protect 8.33/20-400-216-400-RP-IP43 1010865/001 Bypass Trans. Cabinet 20kVA 400/400V	**Project name:** Hollandse Kust Noord (HKN) wind farm

Participants:	Company:	Date/Signature:
1. Anthony Ivenson	Rosetti Marino	27-SEP-2024
2. Andrea Lambertini	Rosetti Marino	27/9/24
3. Vahe Avetisyan	On behalf of Crosswind	FTR Fulkrum Technical Resources
4. Stephan Wrede	AEG Power Solutions	
5. Christian Peck	AEG Power Solutions	27/09/2024 i.V. C. Peck

Remark:
Both UPS with the serial numbers respectively ending with 001 and 002 are electrically tested at the FAT.

Note:
For the start-up step-by-step procedure and for the shut-down step-by-step procedure please refer to the SAT procedure document.

Ch.Peck	Rev. 00	Warstein,	20.06.2024
Ch.Peck	Rev. 01	Warstein,	26.09.2024

Factory Acceptance Test Report		Document-No.: 14188_FAT_2
Type:	**UPS System Protect 8.33/20kVA-S10**	**Tag No.: BC-200F4A, BC-200F4B, BY-200F4**

Content:

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2. Visual Inspection 4
3 .Static Test (Load Characteristic): 5
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Factory Acceptance Test Report		Document-No.: 14188_FAT_2
Type:	**UPS System Protect 8.33/20kVA-S10**	**Tag No.: BC-200F4A, BC-200F4B, BY-200F4**

1. Overview:

SCOPE
This procedure describes the methods for inspecting and checking the UPS system to ensure that it meets the operational requirements and specification.

REFERENCE DOCUMENT
Engineering Documents
IEC 62040-3
Routine test report
14188_FAT_2

TESTING EQUIPMENT & ACCESSORIES
Digital Multimeter, Oscilloscope and Clamp-meter.
Calibration certificates are available for review.

DIELECTRIC AND INSULATION TEST
according EN / IEC 62040-3:2021 Clause 5.2.3.4
See Test Report from AEG PS (Internal Test Report)
Not tested during FAT

LOAD DURATION TEST (Optional)
See Separate Test Report from AEG PS
Not tested during FAT

Factory Acceptance Test Report		Document-No.: 14188_FAT_2
Type:	**UPS System Protect 8.33/20kVA-S10**	**Tag No.: BC-200F4A, BC-200F4B, BY-200F4**

2. Visual Inspection

Reference to EN IEC 62040-3:2021 Clause 6.2.2.2

1.) General construction	**Check**
• Complete arrangement	Okay
• Degree of Protection (IP43)	Okay
• Dimensions	Okay
• Coating (RAL7035)	Okay
2.) Labels	
• Nameplate / Rating Plate	Okay
• Tag Plate	Okay
• Warning labels	Okay
• Components Labelling of Instruments and Lamps	Okay
3.) Installation of technical components	
• Arrangement and accessibility	Okay
• Exchange of PCB	Okay
• Terminals	Okay
• Wiring	Okay
4.) Protection against touching	
• Installation and connection of protective conductors	Okay
• Covers, Shrouding	Okay
5.) Check the arrangement Of measuring apparatus	Okay

***) See separate Punch List**

Factory Acceptance Test Report		Document-No.: 14188_FAT_2
Type:	**UPS System Protect 8.33/20kVA-S10**	**Tag No.: BC-200F4A, BC-200F4B, BY-200F4**

3 .Static Test (Load Characteristic):

Reference to EN / IEC 62040-3:2021 Clause 6.4.2.3

Incorporates Tests for:

Inverter I/P Voltage Tolerance,
0%, 50% and 100% Inverter Load Tests,
Inverter O/P Voltage and Frequency Regulation,
Quality of the Inverter Output Voltage (THDv Measurement).

This test is carried out using a test rectifier (in order to demonstrate the I/P tolerance of the Inverter.)
Please note that “Inverter Load” relates to the Protect 8 rating with a power factor of 0.8 lag.

Test field Rectifier is connected to the terminals X2 of the UPS

Acceptance Criteria:

Inverter I/P Voltage Tolerance:	max 259 Vdc, min 184 Vdc
Inverter O/P Voltage Tolerance:	230.9 V +/-1% (max 233.2 Vac, min 228.6 Vac)
Inverter Frequency Regulation:	50 Hz +/-0.2% (max 50.1 Hz, min 49.9 Hz)
Inverter O/P Voltage Distortion (THDv):	<3% (linear load)

Factory Acceptance Test Report		Document-No.: 14188_FAT_2
Type:	**UPS System Protect 8.33/20kVA-S10**	**Tag No.: BC-200F4A, BC-200F4B, BY-200F4**

UPS1 Serial-No.: 1010849/001

U_{DC} [V]		I_{DC} [A]	I_{L1} [A]	I_{L2} [A]	I_{L3} [A]	U_{L1-N} [V]	U_{L2-N} [V]	U_{L3-N} [V]	THDv [%]	f [Hz]
		X2	X3	X3	X3	X3	X3	X3	X3	X3
U_{nom}	no load	5.5	0	0	0	231.9	233.0	232.6	0.2	50
-15%	0,5*I_n*cos φ 0,8	47.9	14.0	13.9	14.1	231.2	231.4	231.9	0.3	50
184 V	1,0*I_n*cos φ 0,8	92.2	28.5	28.8	28.6	230.1	230.4	229.9	0.2	50
U_{nom}	no load	4.9	0	0	0	232.0	233.0	232.6	0.2	50
216 V	0,5*I_n*cos φ 0,8	40.9	14.0	13.8	14.1	231.2	231.4	230.9	0.3	50
	1,0*I_n*cos φ 0,8	79.0	28.5	28.8	28.6	230.1	230.4	229.9	0.2	50
U_{nom}	no load	4.2	0	0	0	232.0	233.0	232.6	0.3	50
+20%	0,5*I_n*cos φ 0,8	34.3	14.0	13.8	14.1	231.2	231.4	230.9	0.3	50
259 V	1,0*I_n*cos φ 0,8	66.3	28.5	28.8	28.6	230.1	230.4	229.9	0.3	50

Factory Acceptance Test Report		Document-No.: 14188_FAT_2
Type:	**UPS System Protect 8.33/20kVA-S10**	**Tag No.: BC-200F4A, BC-200F4B, BY-200F4**

UPS2 Serial-No.: 1010849/002

U_{DC} [V]		I_{DC} [A]	I_{L1} [A]	I_{L2} [A]	I_{L3} [A]	U_{L1-N} [V]	U_{L2-N} [V]	U_{L3-N} [V]	THDv [%]	f [Hz]
		X2	X3	X3	X3	X3	X3	X3	X3	X3
U_{nom} -15% **184 V**	no load	5.5	0	0	0	232.1	232.9	232.3	0.2	50
	0,5*I_n*cos φ 0,8	47.7	14.0	14.3	14.1	231.3	231.3	230.7	0.2	50
	1,0*I_n*cos φ 0,8	93.8	28.7	28.6	28.4	230.3	230.3	229.7	0.3	50
U_{nom} **216 V**	no load	4.9	0	0	0	232.1	232.9	232.3	0.3	50
	0,5*I_n*cos φ 0,8	41.2	14.0	14.4	14.1	231.3	231.3	230.7	0.2	50
	1,0*I_n*cos φ 0,8	80.0	28.6	28.5	28.2	230.3	230.3	229.7	0.2	50
U_{nom} +20% **259 V**	no load	4.2	0	0	0	232.1	232.9	232.4	0.2	50
	0,5*I_n*cos φ 0,8	34.8	14.1	14.4	14.2	231.3	231.3	230.7	0.3	50
	1,0*I_n*cos φ 0,8	66.6	28.6	28.4	28.2	230.3	230.3	229.7	0.2	50

Result: Passed

Factory Acceptance Test Report		Document-No.: 14188_FAT_2
Type:	**UPS System Protect 8.33/20kVA-S10**	**Tag No.: BC-200F4A, BC-200F4B, BY-200F4**

4 .Dynamic Test:

Reference to EN / IEC 62040-3: 2011 Clause 6.4.2.11.4

Incorporates Tests for:

Load Application (100%): Inverter
Load Removal (100%): Inverter.
20 kVA cos phi 0.8, U = 216 Vdc

Please note that “Inverter Load” relates to the Protect 8 rating with a power factor of 0.8 lag.

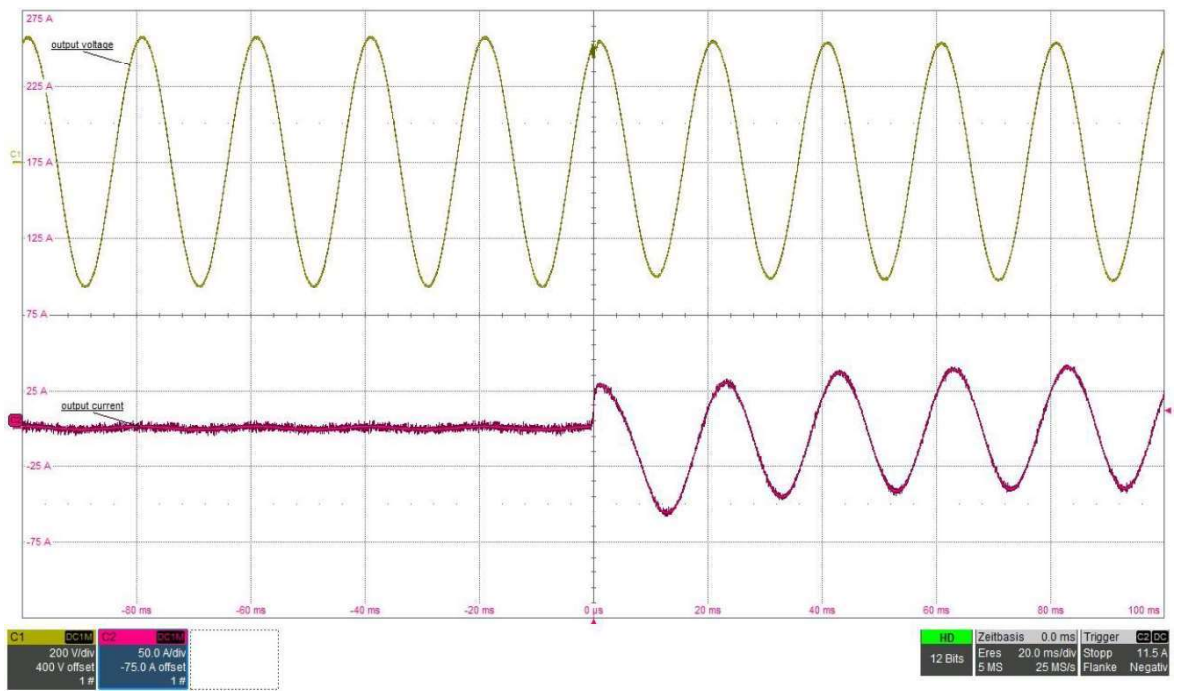
Acceptance Criteria:

Inverter O/P Voltage Tolerance:	230.9V +/-1% (max 233.2 Vac, min 228.6 Vac)
Response time: ≤ 2ms	According EN/IEC 62040-3 5.3.1 Figure1

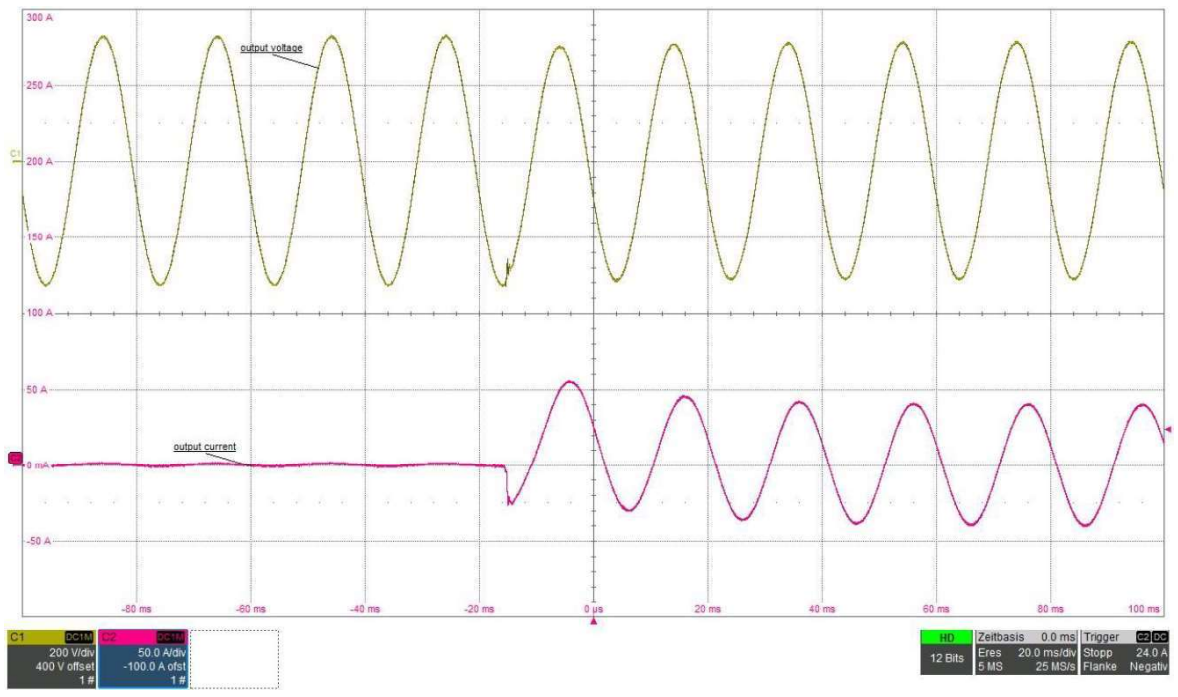
Factory Acceptance Test Report		Document-No.: 14188_FAT_2
Type:	**UPS System Protect 8.33/20kVA-S10**	**Tag No.: BC-200F4A, BC-200F4B, BY-200F4**

Load switched on
Connecting load from test field switch board
Test 0 to 100 % cos φ = 0.8 ind.
Recording of AC load voltage and AC load current at X3 **with screen shot**

UPS1 Serial-No.: 1010849/001



UPS2 Serial-No.: 1010849/002

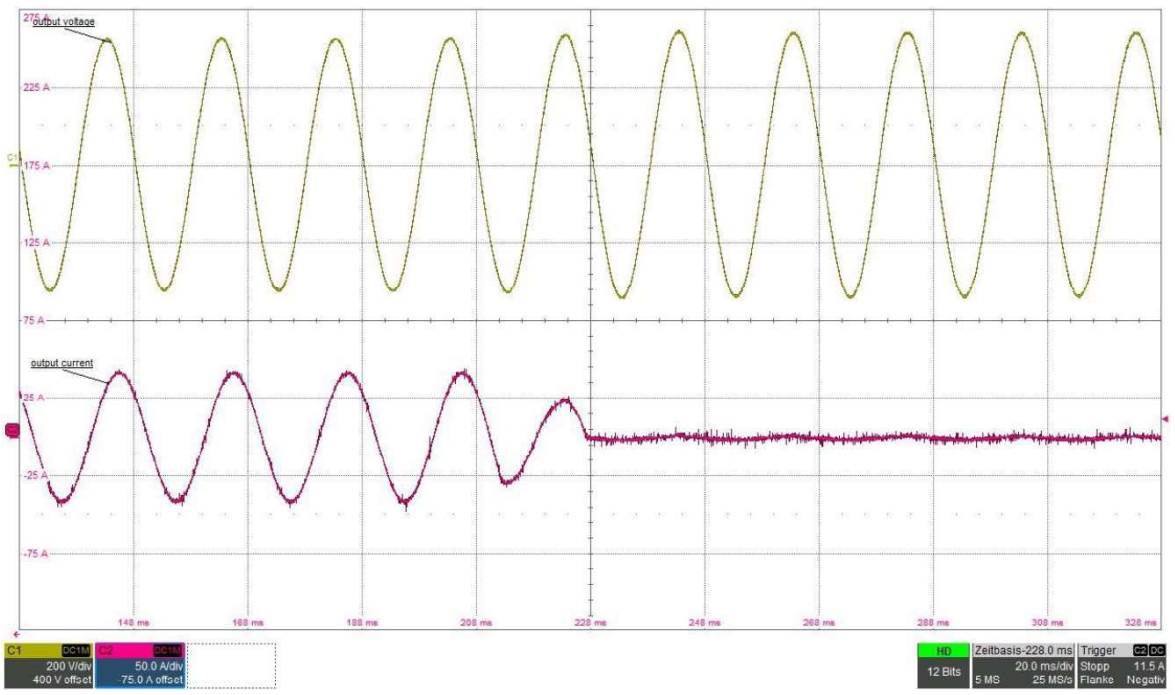


Result: Passed

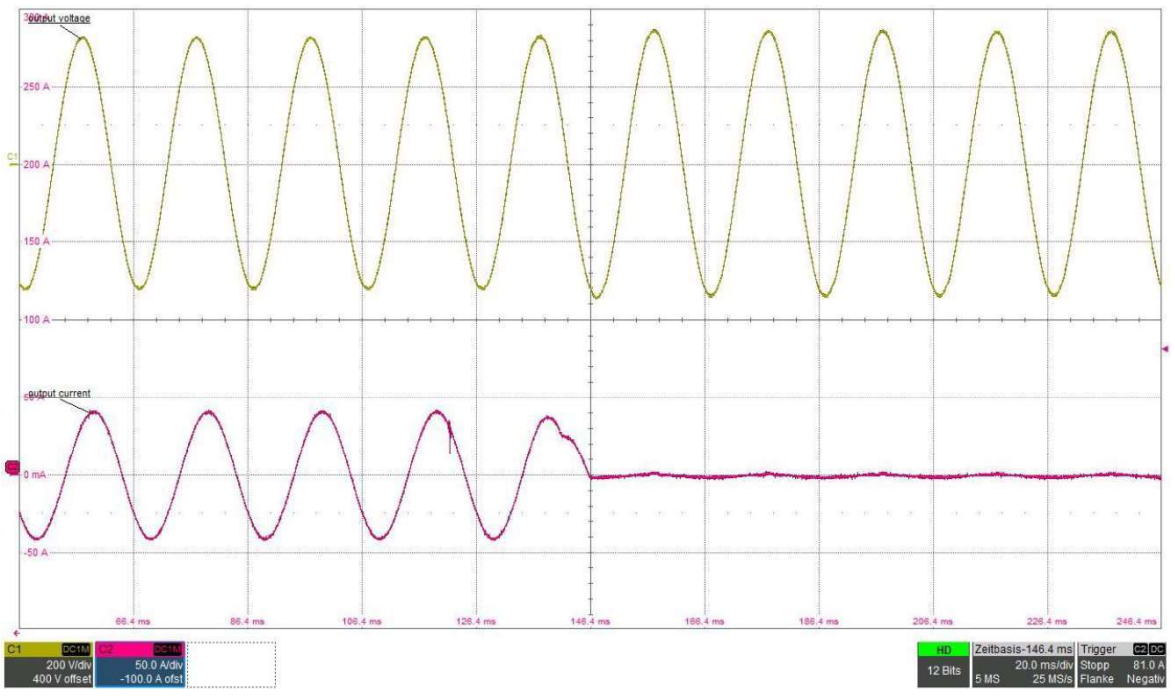
Factory Acceptance Test Report		Document-No.: 14188_FAT_2
Type:	**UPS System Protect 8.33/20kVA-S10**	**Tag No.: BC-200F4A, BC-200F4B, BY-200F4**

Load switched off
Disconnecting load from test field switch board
Test 100 to 0 % cos φ = 0.8 ind.
Recording of AC load voltage and AC load current at X3 **with screen shot**

UPS1 Serial-No.: 1010849/001



UPS2 Serial-No.: 1010849/002



Result: Passed

Factory Acceptance Test Report		Document-No.: 14188_FAT_2
Type:	**UPS System Protect 8.33/20kVA-S10**	**Tag No.: BC-200F4A, BC-200F4B, BY-200F4**

5. Short Circuit Test:

Reference to EN / IEC 62040-3: 2021 Clause 6.4.2.9.2

Incorporates Tests for:

O/P Short Circuit via Fuse/MCB, without Bypass Mains available,
O/P Short Circuit via Fuse/MCB, with Bypass Mains available,
O/P Short Circuit @ terminals, with Inverter only.

Please note that “Inverter Load” relates to the Protect 8 rating with a power factor of 0.8 lag.

Acceptance Criteria:

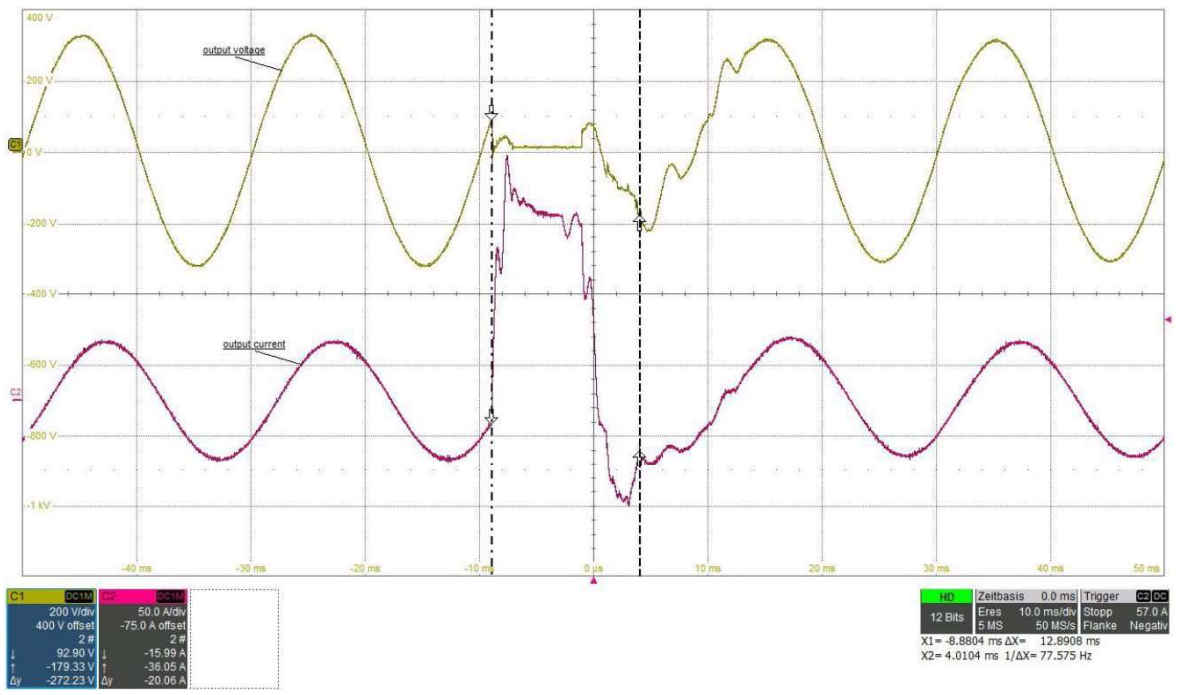
Fuse Characteristic Curves
Short circuit without bypass → Inverter trips fuse without switching OFF.
Short circuit with bypass → Inverter switch over to mains without gap and trip the fuse.
Terminal short circuit without Bypass mains → Inverter switches off after a certain time (Dynamic Current Limit Duration).
The Dynamic Current Limit Duration is approx. 500 ms
Recording of AC load voltage and AC load current

Factory Acceptance Test Report		Document-No.: 14188_FAT_2
Type:	**UPS System Protect 8.33/20kVA-S10**	**Tag No.: BC-200F4A, BC-200F4B, BY-200F4**

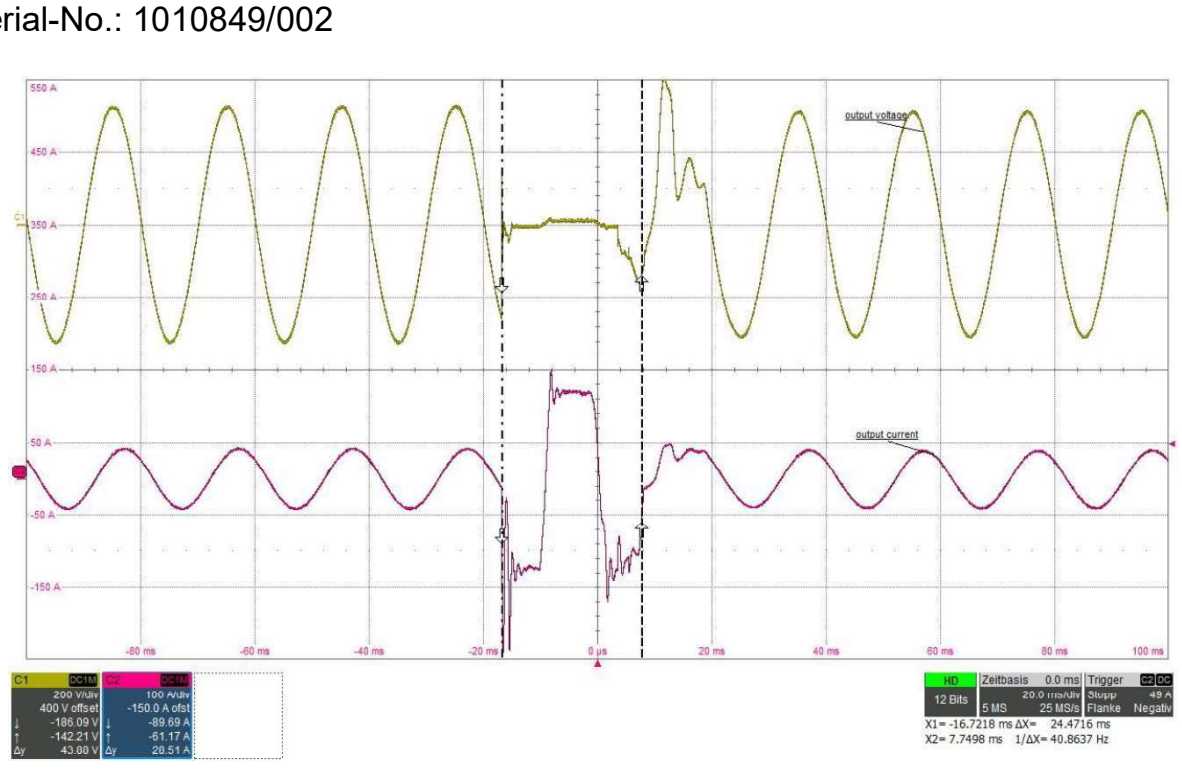
Short circuit without Bypass mains with fuse/MCB
Fuse is tripped by Inverter
Test on 100 % Load = 40 kVA cos φ = 0.8 ind.
Protection: 10 A fuse gG
Measured tripping time of the Fuse:
12.9 ms UPS1 Serial-No.: 1010849/001
24.5 ms UPS2 Serial-No.: 1010849/002

Recording of AC load voltage and AC load current at X3 **with screen shot**

UPS1 Serial-No.: 1010849/001



UPS2 Serial-No.: 1010849/002

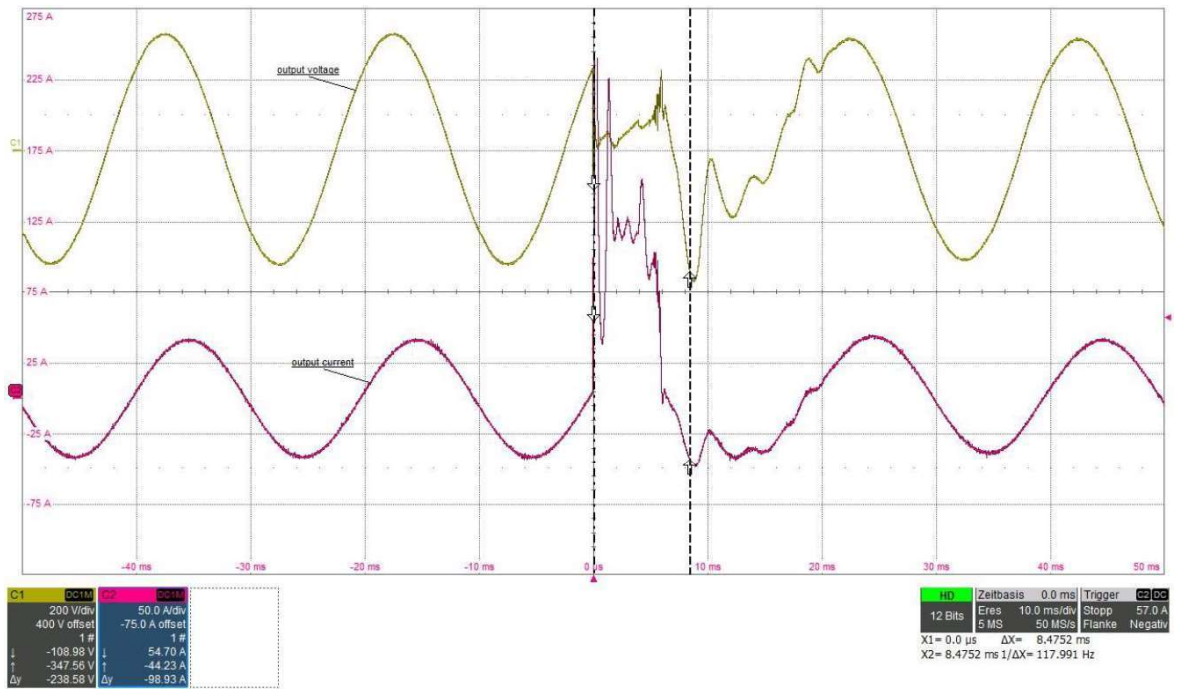


Factory Acceptance Test Report		Document-No.: 14188_FAT_2
Type:	**UPS System Protect 8.33/20kVA-S10**	**Tag No.: BC-200F4A, BC-200F4B, BY-200F4**

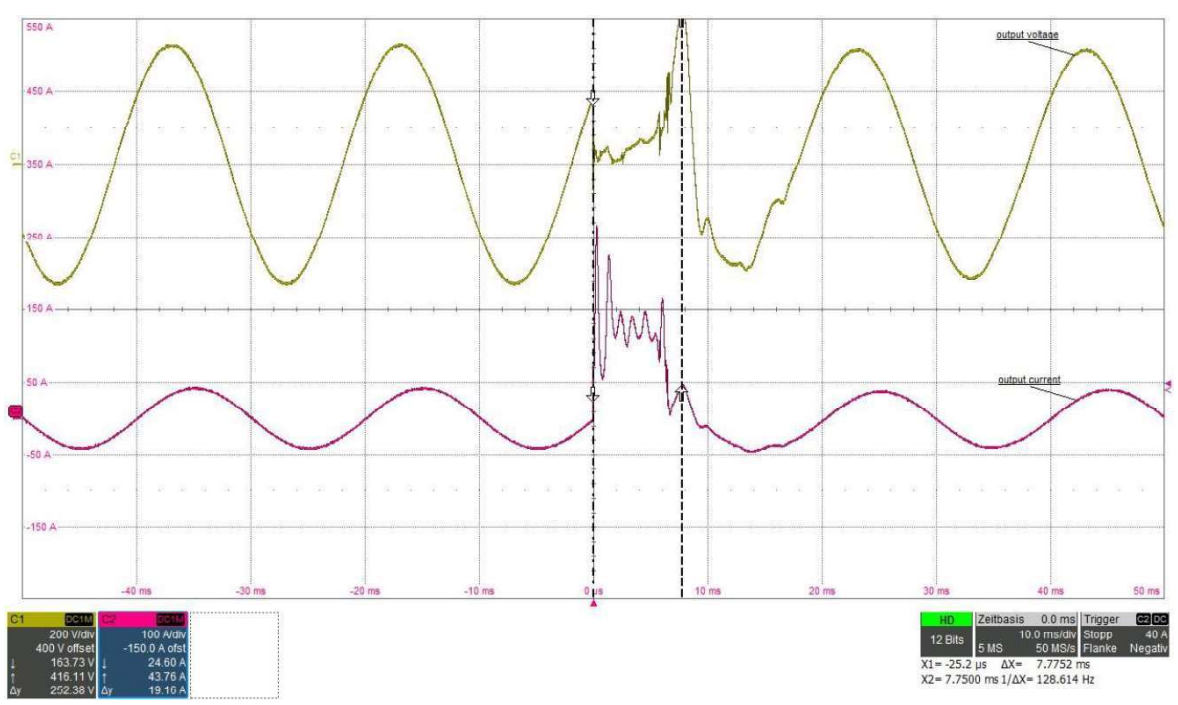
MCB is tripped by Inverter
Test on 100 % Load = 20 kVA cos φ = 0.8 ind.
Protection: 16 A MCB B-curve
Measured tripping time of the Fuse:
8.5 ms UPS1 Serial-No.: 1010849/001
7.8 ms UPS2 Serial-No.: 1010849/002

Recording of AC load voltage and AC load current at X3 **with screen shot**

UPS1 Serial-No.: 1010849/001



UPS2 Serial-No.: 1010849/002

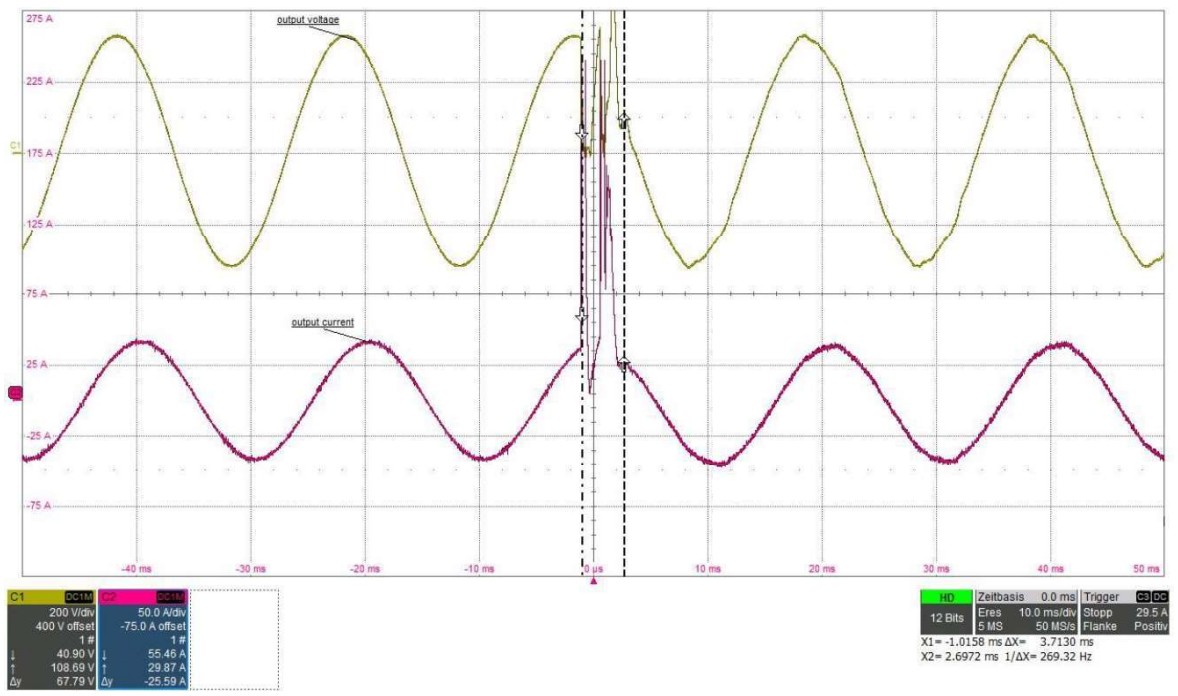


Result: Passed

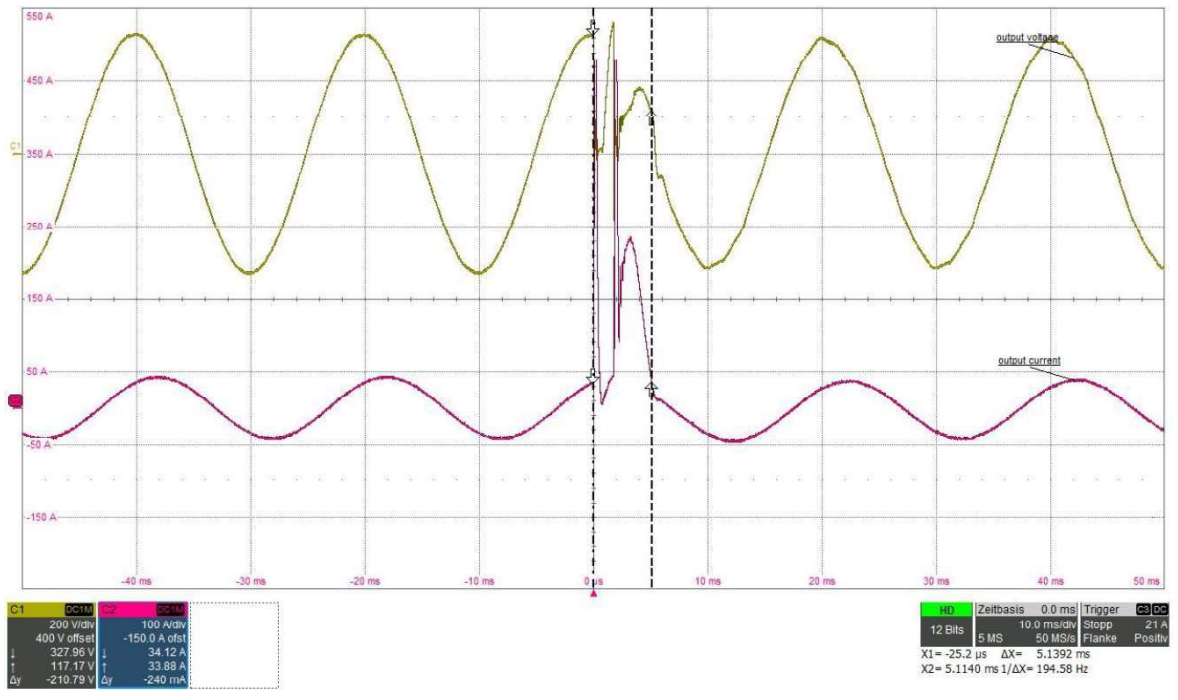
Factory Acceptance Test Report		Document-No.: 14188_FAT_2
Type:	**UPS System Protect 8.33/20kVA-S10**	**Tag No.: BC-200F4A, BC-200F4B, BY-200F4**

Short circuit with Bypass mains with fuse/MCB
Transfer to SBS. Fuse is tripped by SBS. Retransfer to Inverter
Test on 100 % Load = 40 kVA cos φ = 0.8 ind.
Protection: 10 A fuse gG
Measured tripping time of the Fuse/MCB:
3.7 ms UPS1 Serial-No.: 1010849/001
5.1 ms UPS2 Serial-No.: 1010849/002
Recording of AC load voltage and AC load current at X3 **with screen shot**

UPS1 Serial-No.: 1010849/001



UPS2 Serial-No.: 1010849/002

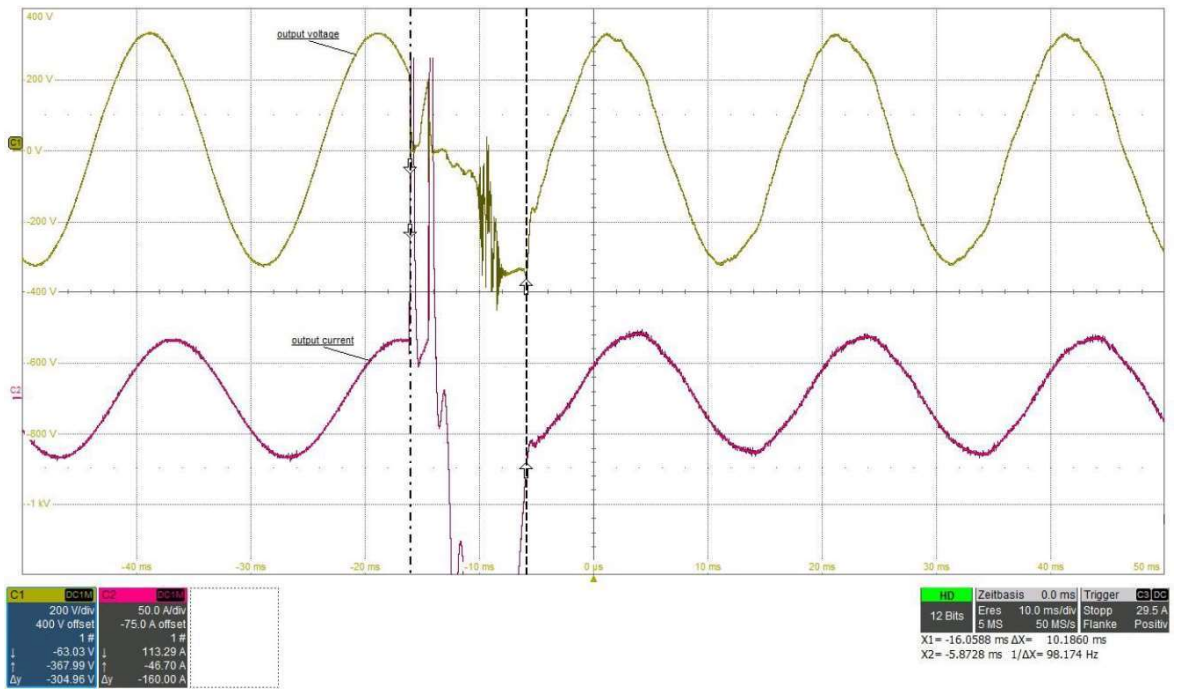


Factory Acceptance Test Report		Document-No.: 14188_FAT_2
Type:	**UPS System Protect 8.33/20kVA-S10**	**Tag No.: BC-200F4A, BC-200F4B, BY-200F4**

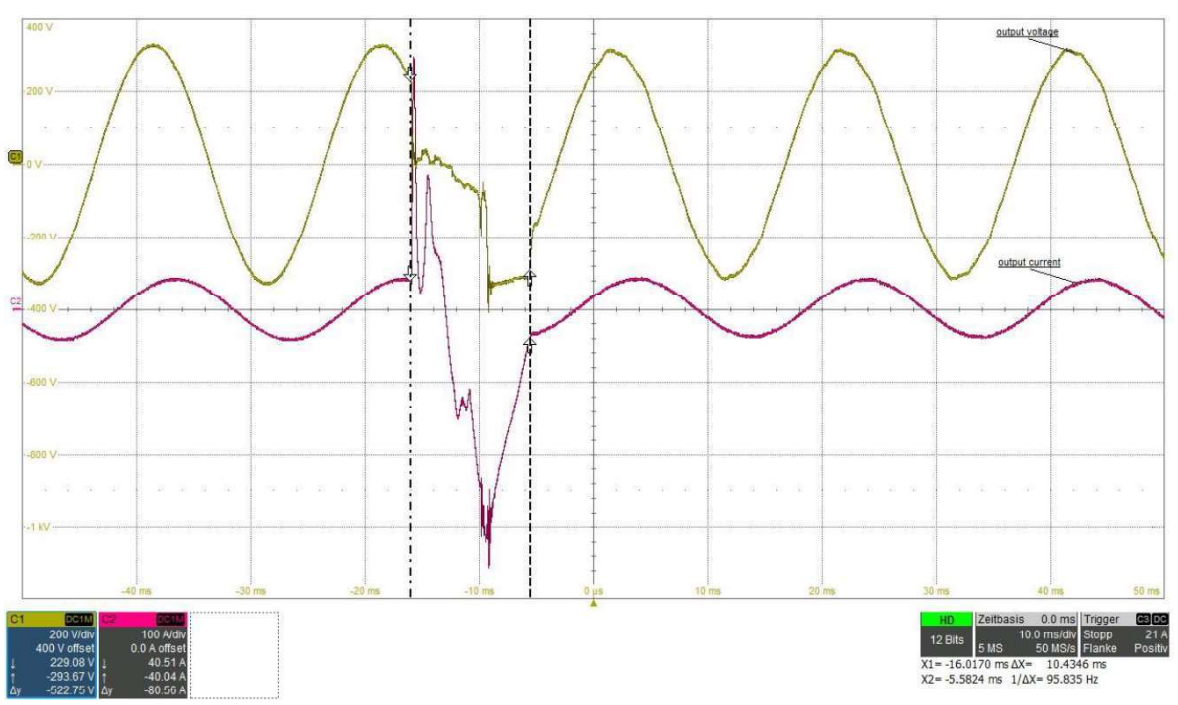
MCB is tripped by Inverter
Test on 100 % Load = 20 kVA cos φ = 0.8 ind.
Protection: 16 A MCB B-curve
Measured tripping time of the Fuse:
10.2 ms UPS1 Serial-No.: 1010849/001
10.4 ms UPS2 Serial-No.: 1010849/002

Recording of AC load voltage and AC load current at X3 **with screen shot**

UPS1 Serial-No.: 1010849/001



UPS2 Serial-No.: 1010849/002



Result: Passed

Factory Acceptance Test Report		Document-No.: 14188_FAT_2
Type:	**UPS System Protect 8.33/20kVA-S10**	**Tag No.: BC-200F4A, BC-200F4B, BY-200F4**

Terminal short circuit without Bypass mains

Inverter is supplying appox. 2.1 x Inom (3 phase) for measured time and then switched off

Test on 100 % Load = 20 kVA cos φ = 0.8 ind.

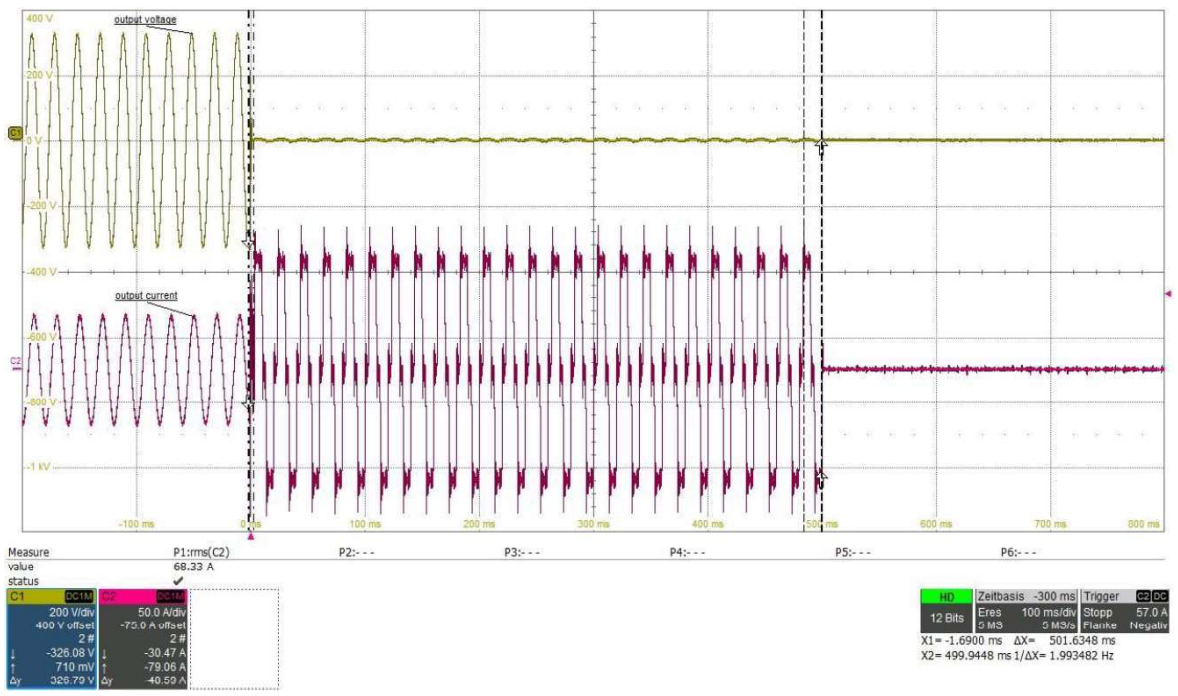
Measured switch off time Inverter:

502 ms / **68.3** A UPS1 Serial-No.: 1010849/001

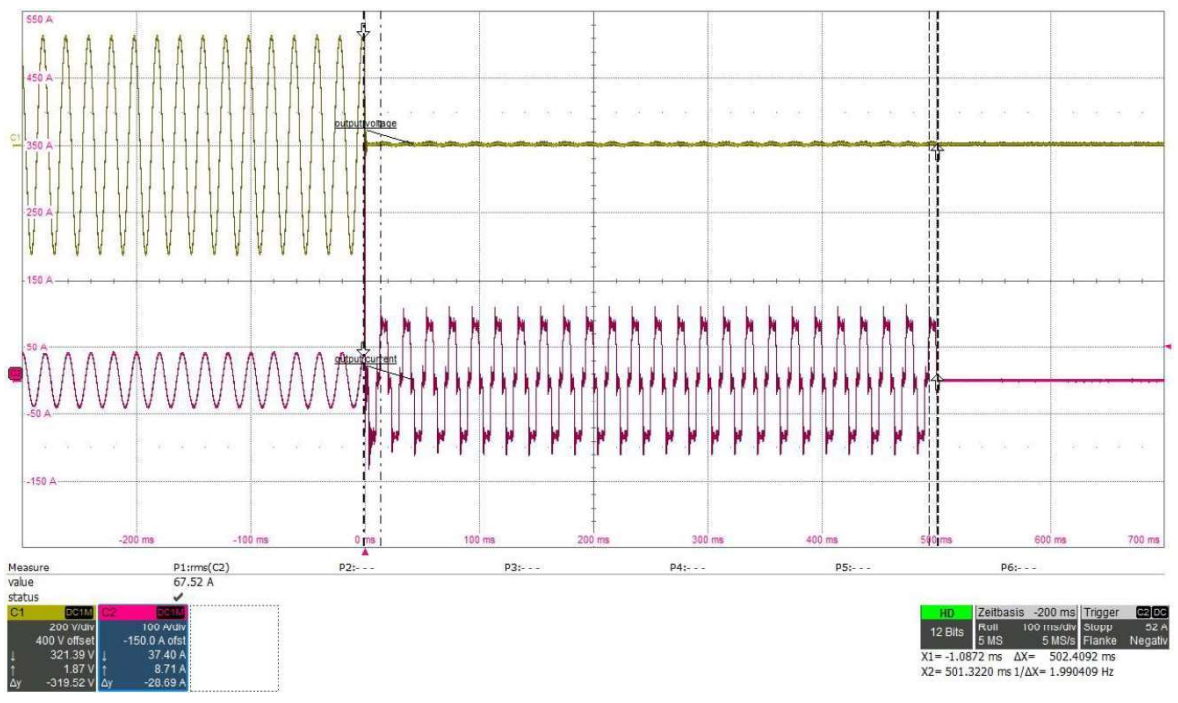
502 ms / **67.5** A UPS2 Serial-No.: 1010849/002

Recording of AC load voltage and AC load current at X3 **with screen shot**

UPS1 Serial-No.: 1010849/001



UPS2 Serial-No.: 1010849/002



Result: Passed

Factory Acceptance Test Report		Document-No.: 14188_FAT_2
Type:	**UPS System Protect 8.33/20kVA-S10**	**Tag No.: BC-200F4A, BC-200F4B, BY-200F4**

6. Overload Test:

Reference to EN / IEC 62040-3: 2021 Clause 6.4.2.9.1

Incorporates Tests for:

150% Load Capability Test

Please note that “Inverter Load” relates to the Protect 8 rating with a power factor of 0.8 lag.

Acceptance Criteria:

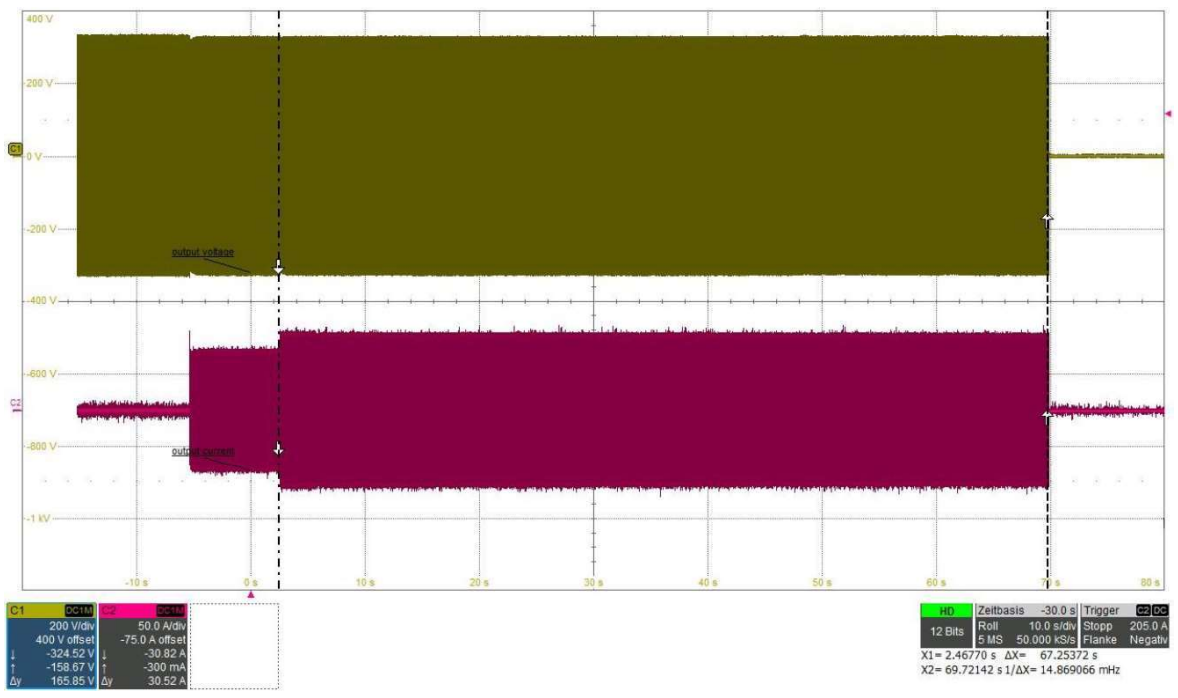
The Inverter swithes off after a certain time (Minimum Overlad Duration)

Inverter O/P Voltage Tolerance:	230.9V +/-1% (max 233.2 Vac, min 228.6 Vac)
Inverter Frequency Regulation:	50 Hz +/-0.2% (max 50.1 Hz, min 49.9 Hz)
Inverter O/P Voltage Distortion:	<3% (linear load)
Minimum Overload Duration:	approx. 60 seconds

Load connected from test field switch board
Load: 150% / cos φ = 0.8 ind. = 30 kVA
67 s UPS1 Serial-No.: 1010849/001
81 s UPS2 Serial-No.: 1010849/002

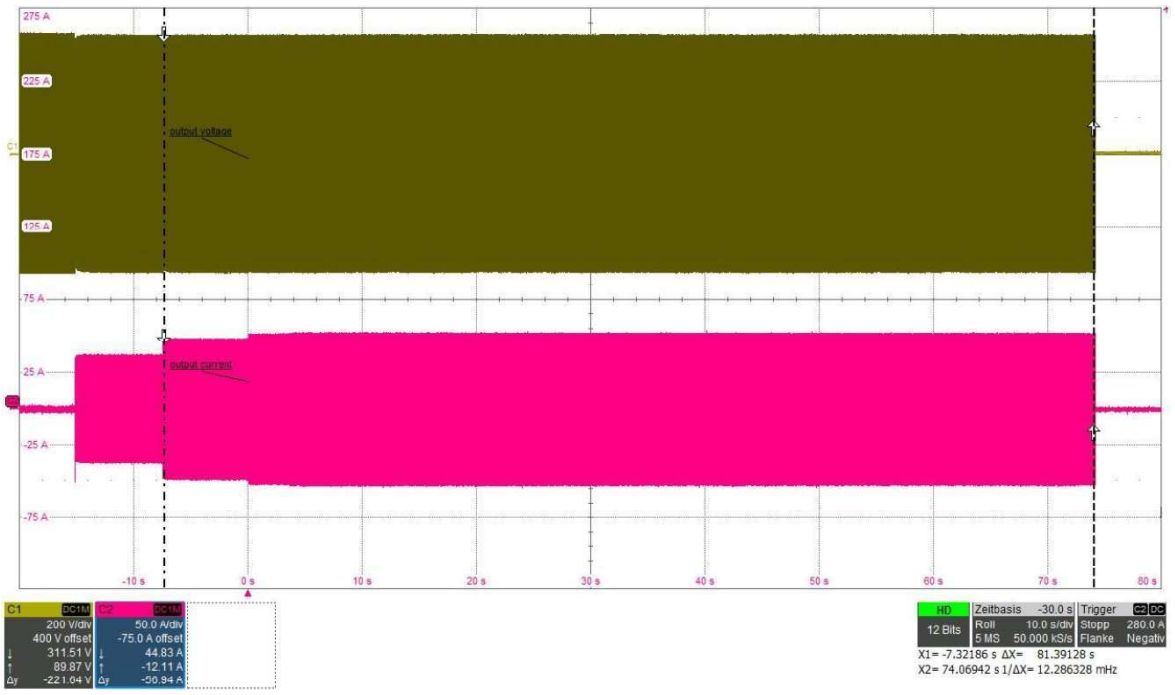
Recording of AC load voltage and AC load current at X3 **with screen shot**

UPS1 Serial-No.: 1010849/001



Factory Acceptance Test Report		Document-No.: 14188_FAT_2
Type:	**UPS System Protect 8.33/20kVA-S10**	**Tag No.: BC-200F4A, BC-200F4B, BY-200F4**

UPS2 Serial-No.: 1010849/002



Result: Passed

Factory Acceptance Test Report		Document-No.: 14188_FAT_2
Type:	**UPS System Protect 8.33/20kVA-S10**	**Tag No.: BC-200F4A, BC-200F4B, BY-200F4**

7. Functional tests UPS / Load Transfer Tests:

Reference to EN / IEC 62040-3:2021 Clause 6.2.2.7 / 6.2.2.8 / 6.2.2.9

Incorporates Tests for:

Rectifier Mains Failure – continued Inverter operation via Battery
Rectifier Mains Return – auto start of the rectifier
Inverter Failure – transfer of load from Inverter to Bypass Mains
Inverter Restoration – transfer of load from Bypass Mains to Inverter

The tests are performed at Inverter full load.

Please note that “Inverter Load” relates to the Protect 8 rating with a power factor of 0.8 lag.

Acceptance Criteria:

Rectifier Mains Failure:	No disruption to the Inverter operation.
Rectifier Mains Return:	Auto start of the rectifier and charging of the Battery
Transfer Inverter to Static Bypass:	No-break transfers
Re transfer Static Bypass to Inverter:	No-break transfers

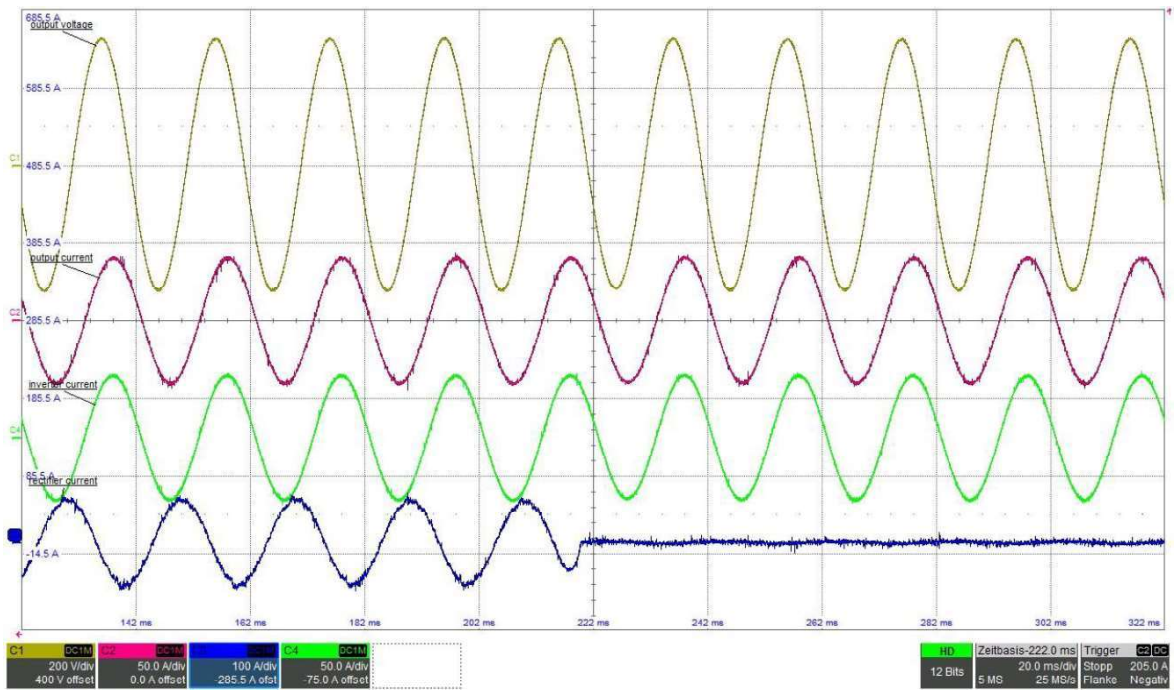
Factory Acceptance Test Report		Document-No.: 14188_FAT_2
Type:	**UPS System Protect 8.33/20kVA-S10**	**Tag No.: BC-200F4A, BC-200F4B, BY-200F4**

A) Rectifier Mains Failure

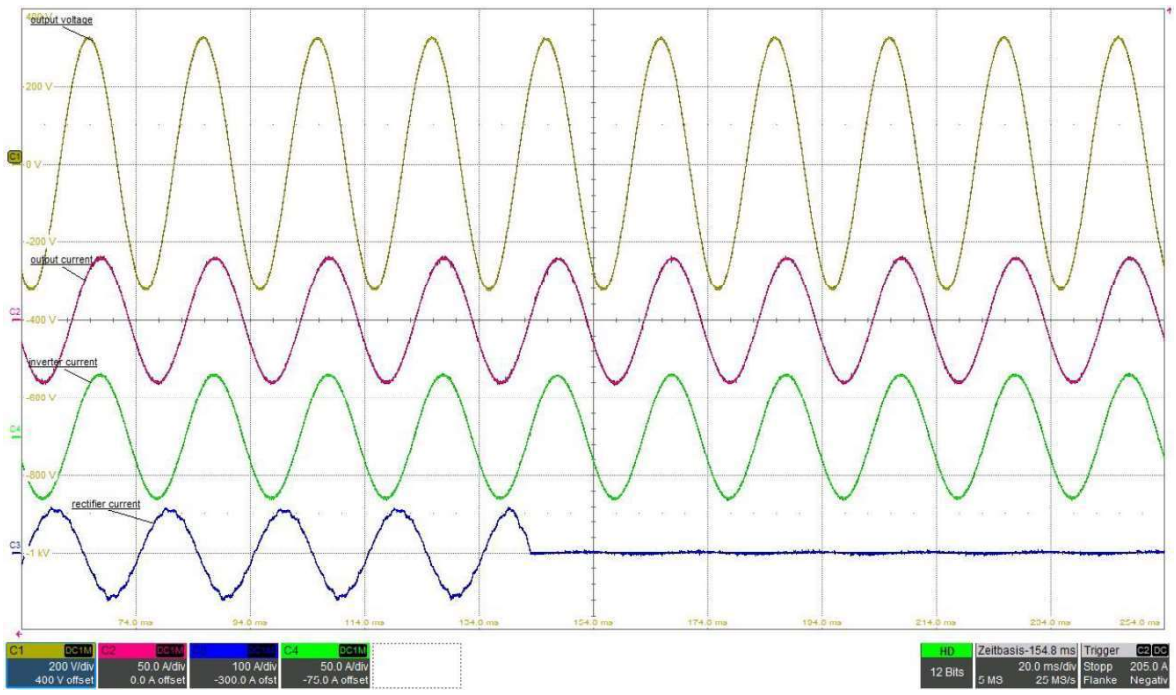
Switch OFF rectifier Mains via Rectifier input isolator Q1

Recording of Rectifier AC current at X1 and AC load voltage and AC load current at X3

UPS1 Serial-No.: 1010849/001



UPS2 Serial-No.: 1010849/002



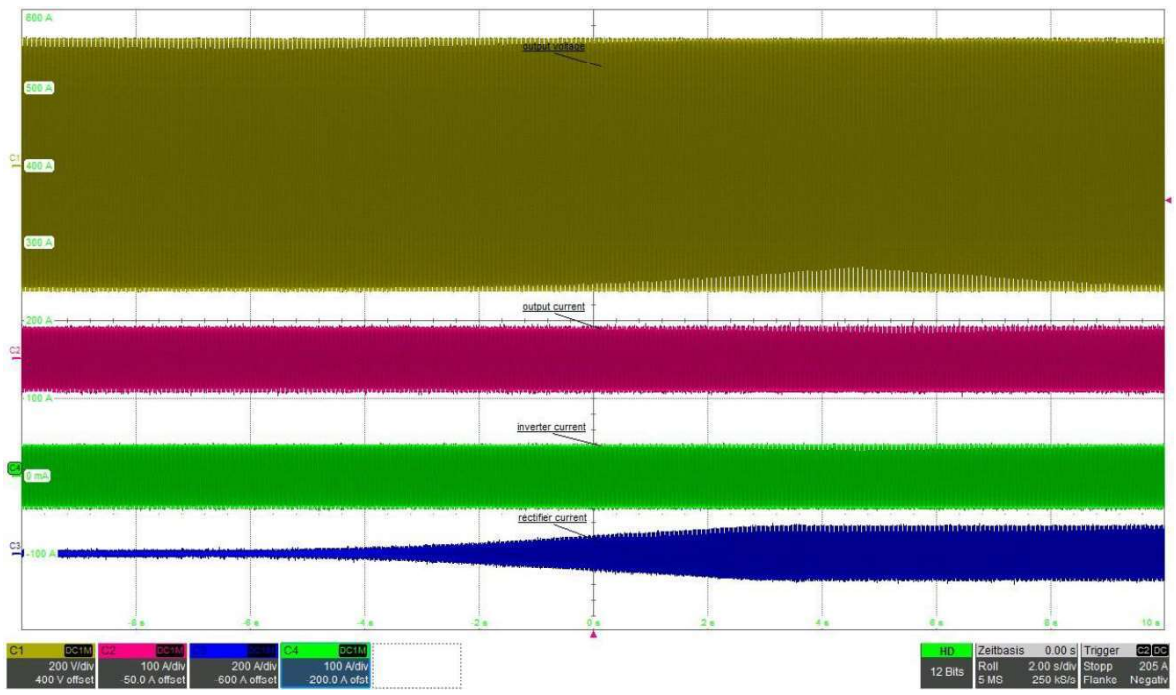
Result: Passed

B) Rectifier Mains Return

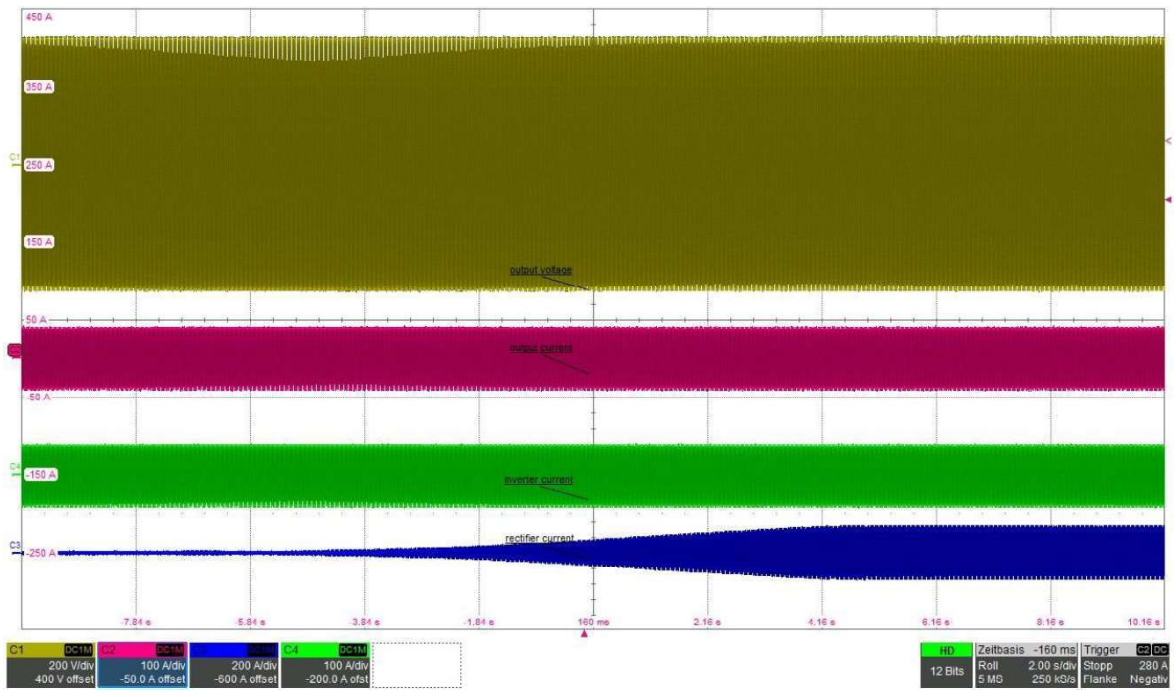
Switch ON rectifier mains via Rectifier input isolator Q1

Recording of Rectifier AC current at X1 and AC load voltage and AC load current at X3

UPS1 Serial-No.: 1010849/001



UPS2 Serial-No.: 1010849/002



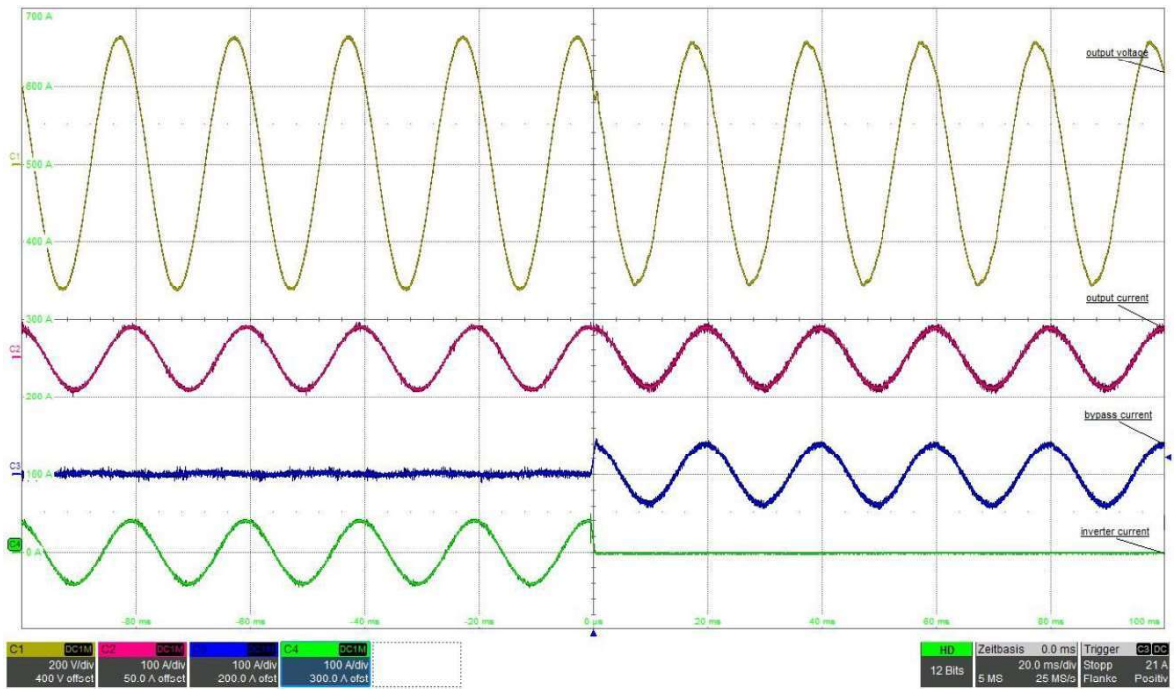
Result: Passed

C) Transfer inverter-SBS mains

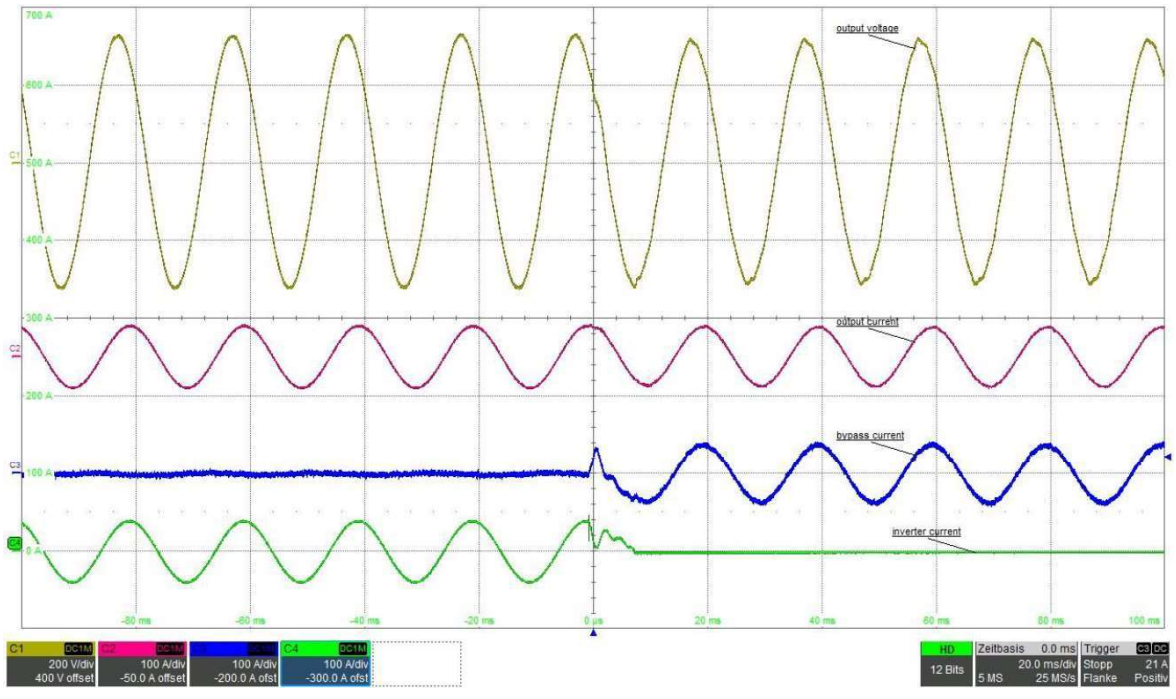
Switch OFF Inverter via Display

Recording of AC load voltage and AC load current at X3 and Bypass current at X4

UPS1 Serial-No.: 1010849/001



UPS2 Serial-No.: 1010849/002



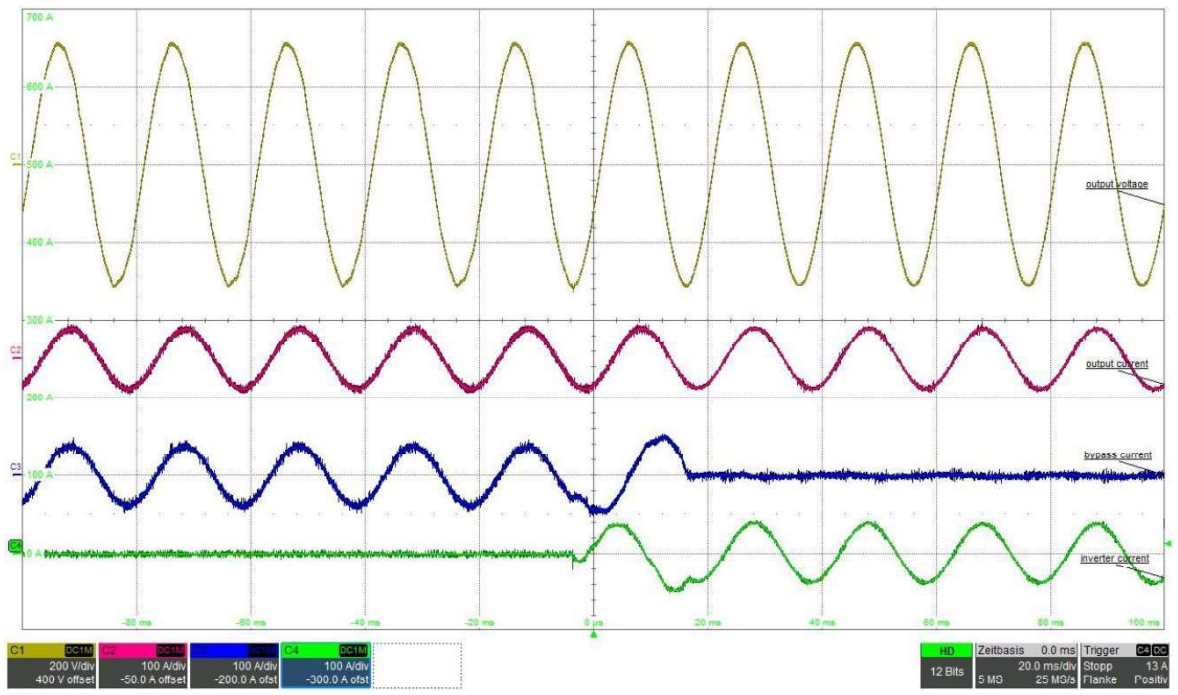
Result: Passed

D) Transfer SBS mains-inverter

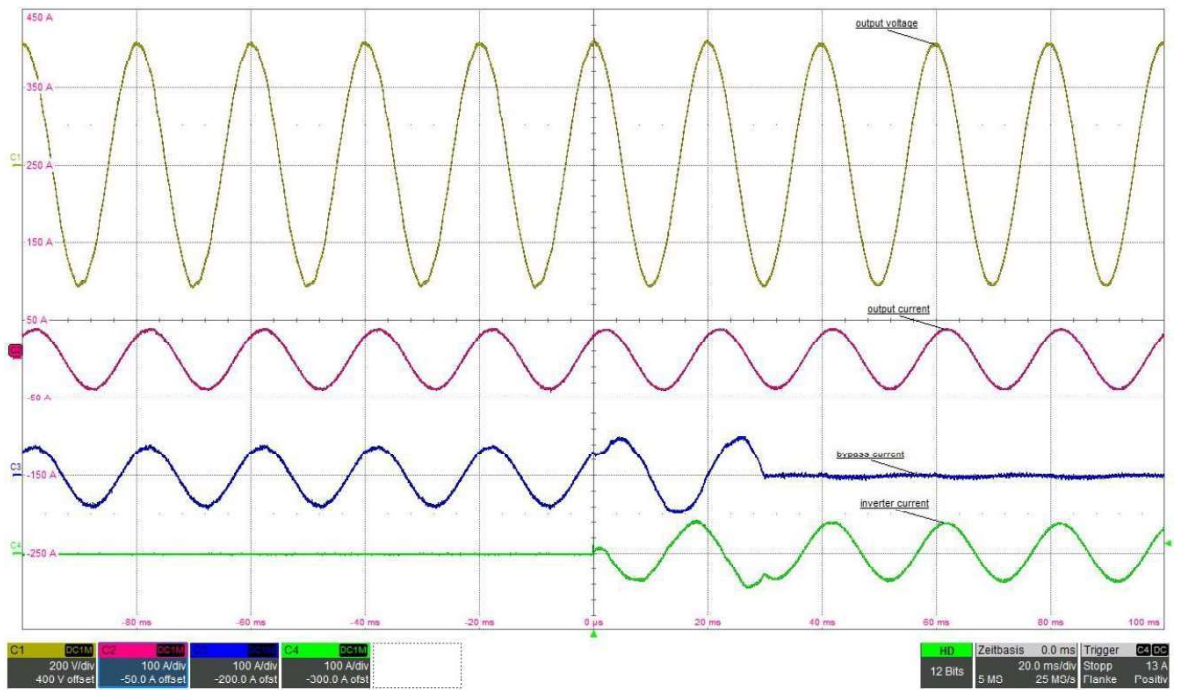
Switch ON Inverter via Display

Recording of AC load voltage and AC load current at X3 and Bypass current at X4

UPS1 Serial-No.: 1010849/001



UPS2 Serial-No.: 1010849/002

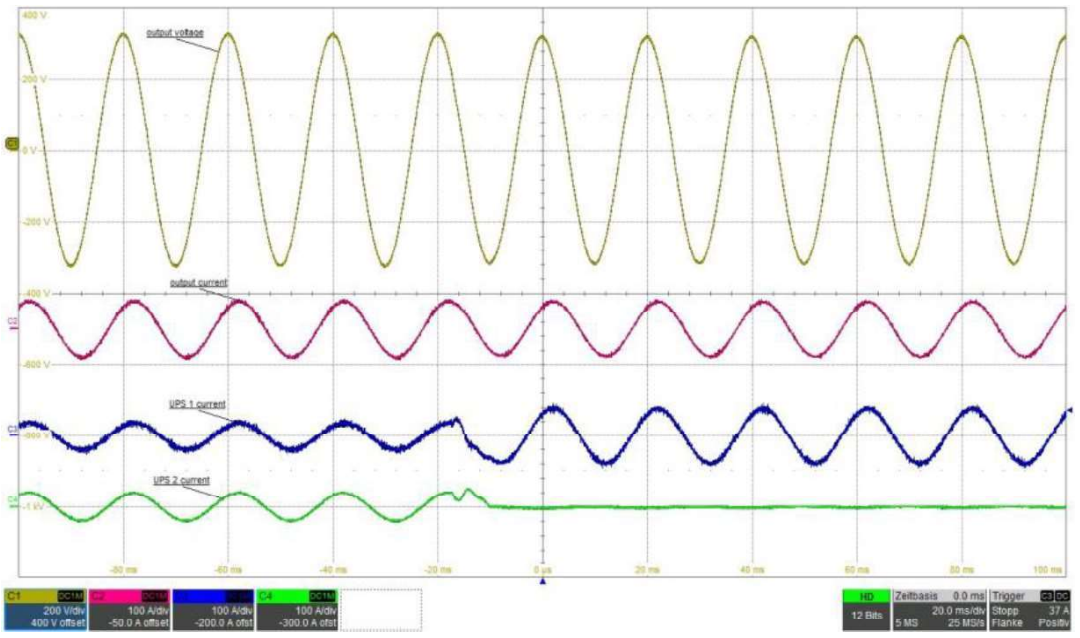


Result: Passed

E) Parallel Operation

Parallel operation UPS n.1 and UPS n.2 - Switching OFF UPS n.2 via Display A18 on the door of the UPS

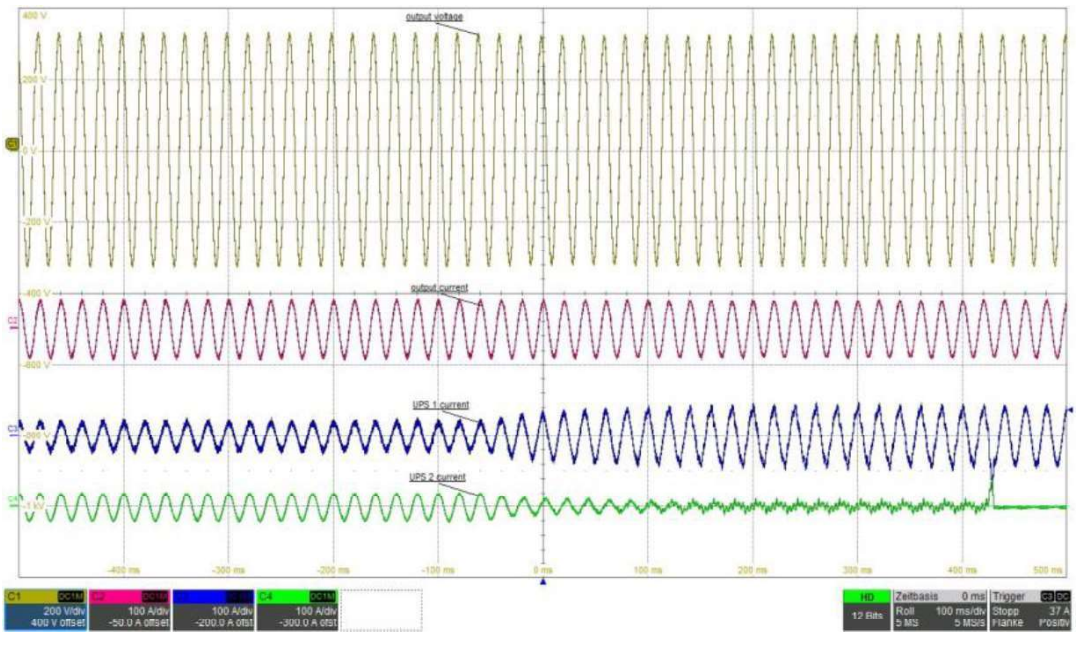
UPS n.1 takes over 100% Load
AC load voltage and AC load current and SBS current by screen shot.



and in addition repeat the test as following indicated:

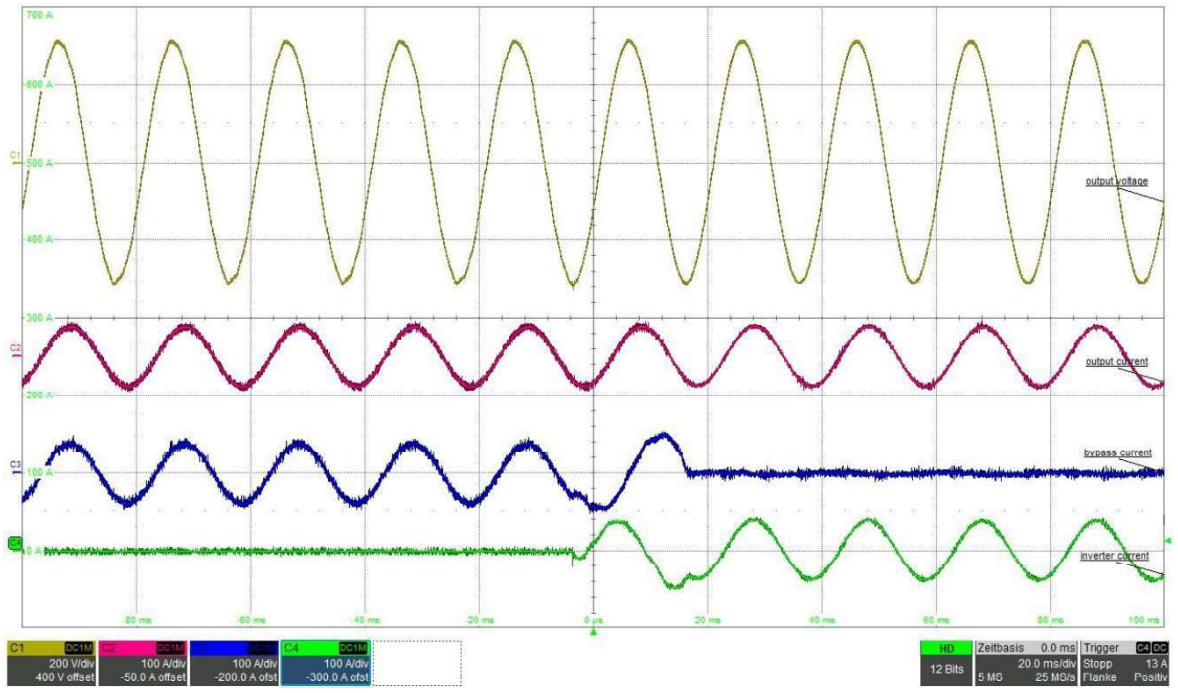
Parallel operation UPS n.1 and UPS n.2 - Switching OFF UPS n.2 via de-energization of its upstream power supply

UPS n.1 takes over 100% Load
AC load voltage and AC load current and SBS current by screen shot.



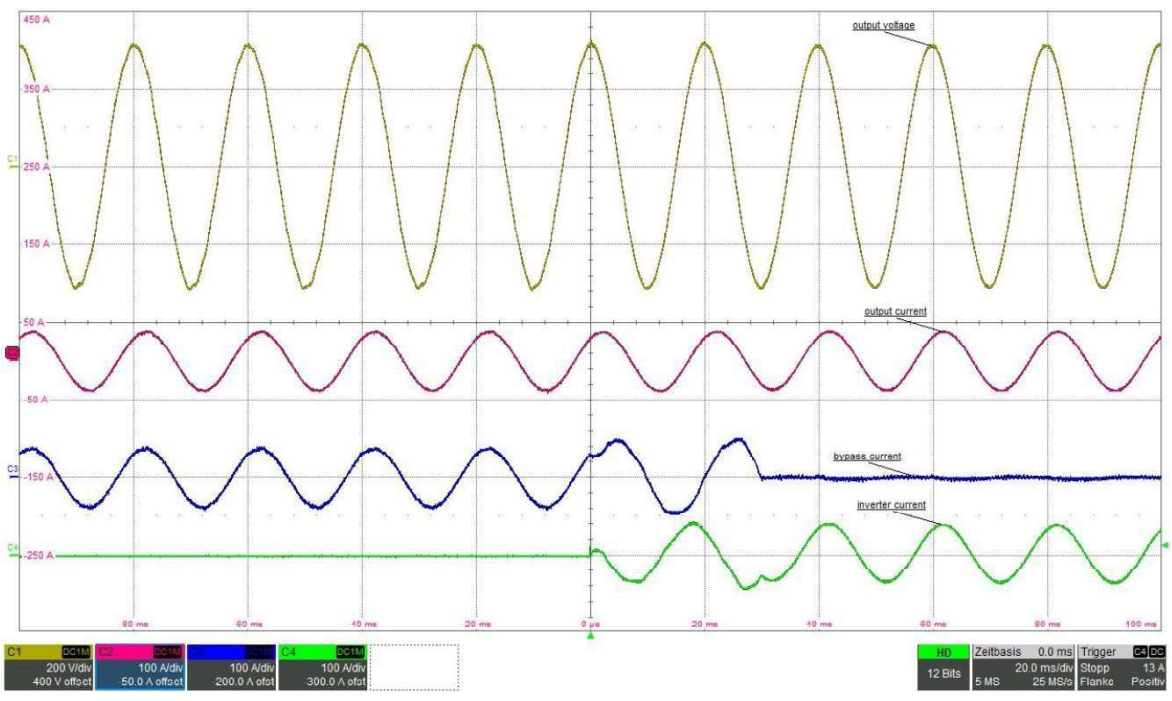
Factory Acceptance Test Report		Document-No.: 14188_FAT_2
Type:	**UPS System Protect 8.33/20kVA-S10**	**Tag No.: BC-200F4A, BC-200F4B, BY-200F4**

Switching OFF UPS n.1 via Display A18 on the door of the UPS
Transfer to Bypass operation
AC load voltage and AC load current and SBS current by screen shot.



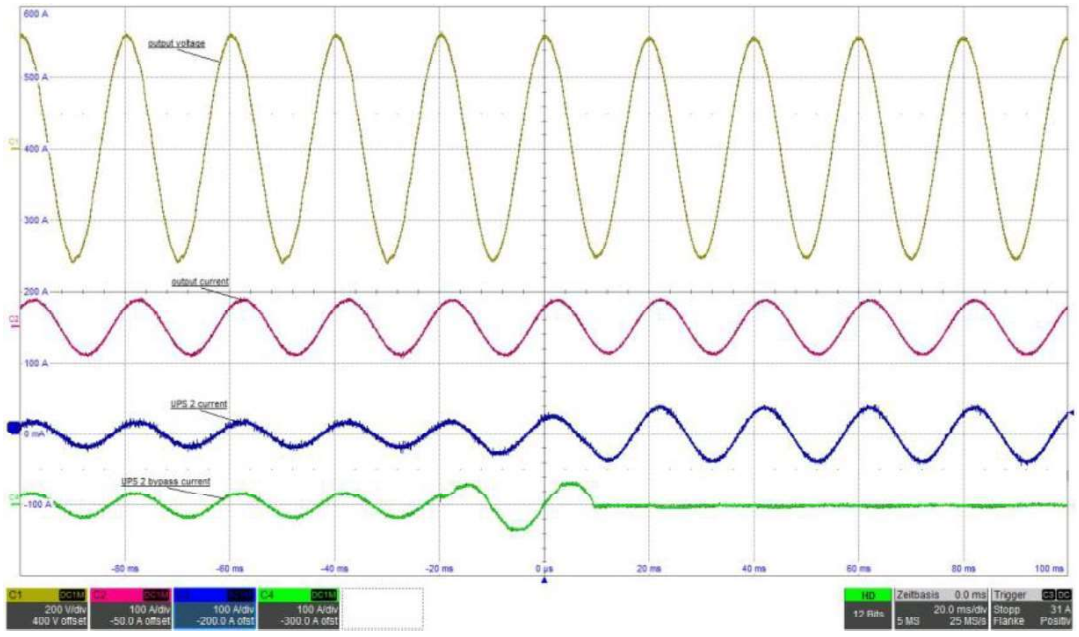
and in addition repeat the test as following indicated:

Switching OFF UPS n.1 via de-energization of its upstream power supply
Transfer to Bypass operation
AC load voltage and AC load current and SBS current by screen shot.



Factory Acceptance Test Report		Document-No.: 14188_FAT_2
Type:	**UPS System Protect 8.33/20kVA-S10**	**Tag No.: BC-200F4A, BC-200F4B, BY-200F4**

Bypass operation - Switching ON UPS n.2 via Display A18 on the door of of the UPS
UPS n.2 takes over 100% load
AC load voltage and AC load current and SBS current by screen shot.



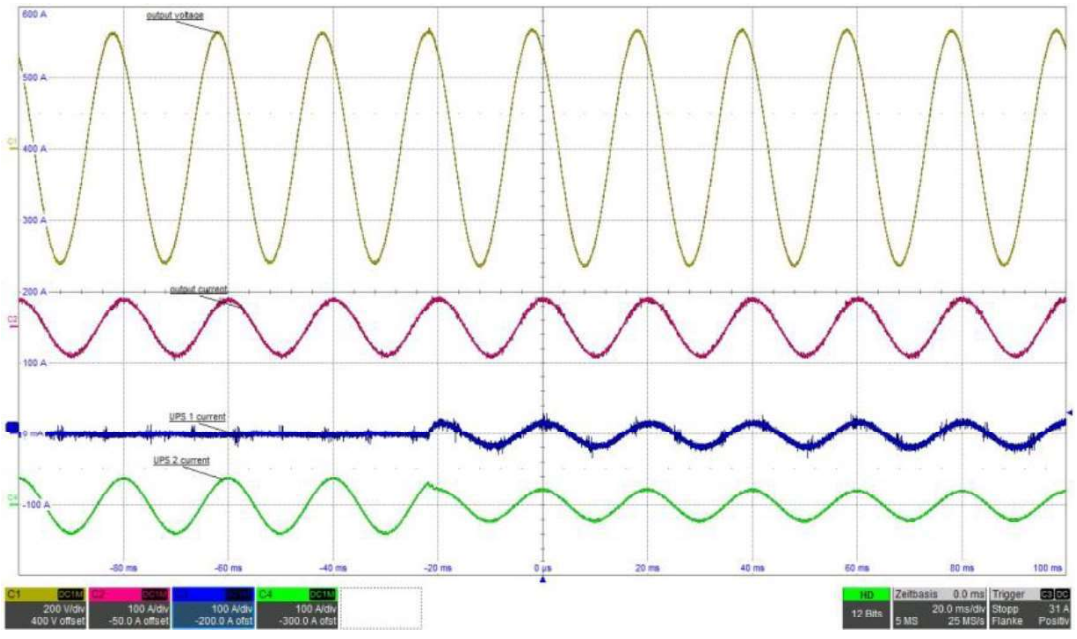
<u>and in addition repeat the test as following indicated:</u>

Bypass operation - Switching ON UPS n.2 via re-energization of its upstream power supply
UPS n.2 takes over 100% load
AC load voltage and AC load current and SBS current by screen shot

NA, because after switch on Q1, the INV must be started via display. → Same as previous step.

Factory Acceptance Test Report		Document-No.: 14188_FAT_2
Type:	**UPS System Protect 8.33/20kVA-S10**	**Tag No.: BC-200F4A, BC-200F4B, BY-200F4**

Switching ON UPS n.1 via Display A18 on the door of of the UPS
Load sharing 50%
Parallel operation with load sharing 50% of UPS n.1 and UPS n.2
AC load voltage and AC load current and SBS current by screen shot.



<u>and in addition repeat the test as following indicated:</u>

Switching ON UPS n.1 via re-energization of its upstream power supply
Load sharing 50%
Parallel operation with load sharing 50% of UPS n.1 and UPS n.2
AC load voltage and AC load current and SBS current by screen shot.

NA, because after switch on Q1, the INV must be started via display. → Same as previous step.

Result: Passed

Factory Acceptance Test Report		Document-No.: 14188_FAT_2
Type:	**UPS System Protect 8.33/20kVA-S10**	**Tag No.: BC-200F4A, BC-200F4B, BY-200F4**

F) Parallel Operation (functional sequence test)
Starting condition:
UPS redundant system working in normal operation with By-Pass input and both Rectifier inputs n.1 and n.2 all energized. UPS n.1 and UPS n.2 synchronized with the By-Pass

1. De-energize upstream power supply to Rectifier input n.2
2. De-energize upstream power supply to By-Pass
3. Confirm the normal operation of UPS n.1 at the correct load
4. Re-energize upstream power supply to Rectifier input n.2
5. Confirm the correct synchronization and normal operation of both UPS n.1 and n.2 with load sharing activated
6. Re-energize upstream power supply to By-Pass
7. Confirm reinstatement and normal operation of all UPS unit functions.
8. At each test step, validate correct functioning of hardwired I/O signals

G) Parallel Operation (functional sequence test)
Starting condition:
UPS redundant system working in normal operation with By-Pass input and both Rectifier inputs n.1 and n.2 all energized. UPS n.1 and UPS n.2 synchronized with the By-Pass

1. De-energize upstream power supply to Rectifier input n.1
2. De-energize upstream power supply to By-Pass
3. Confirm the normal operation of UPS n.2 at the correct load
4. Re-energize upstream power supply to Rectifier input n.1
5. Confirm the correct synchronization and normal operation of both UPS n.1 and n.2 with load sharing activated
6. Re-energize upstream power supply to By-Pass
7. Confirm reinstatement and normal operation of all UPS unit functions.
8. At each test step, validate correct functioning of hardwired I/O signals

Result: Passed

8. DC Ripple Current Measurement

with Test field battery

Reference to EN / IEC 62040-3:2021 Clause 6.4.3.3

Acceptance Criteria:

Current ripple of less than 5 A rms for every 100 Ah / Measured with test field battery

with **screen shot**

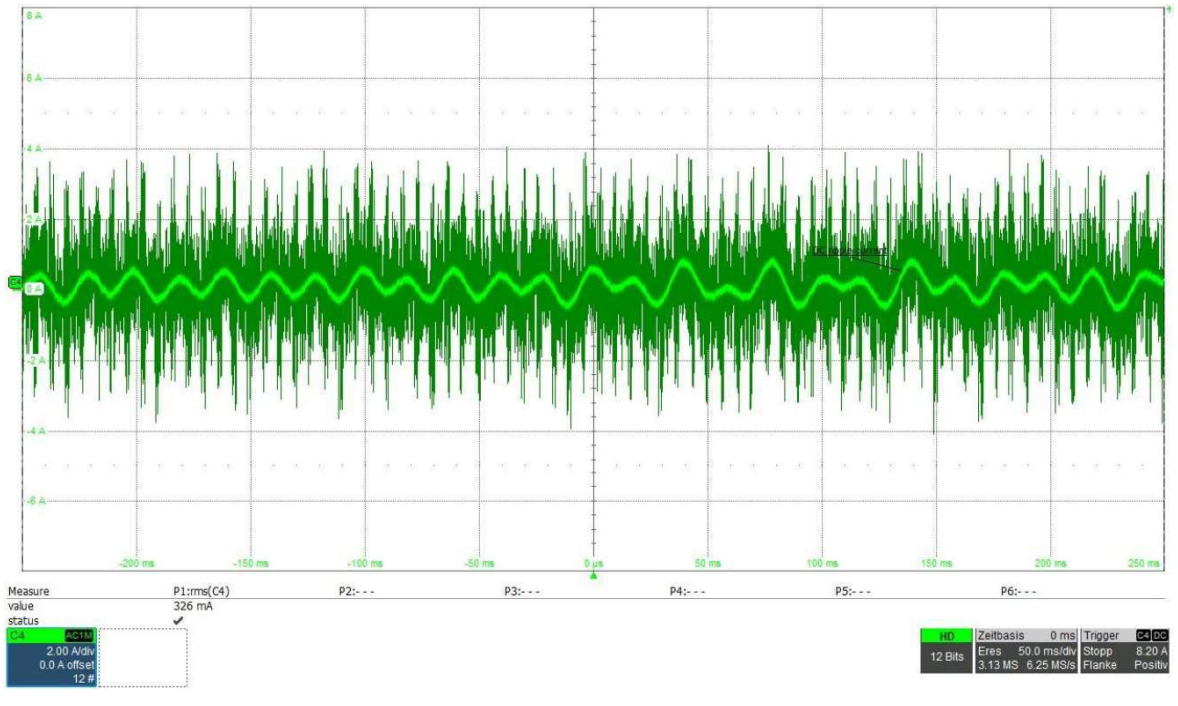
The capacity of the test field battery is 300Ah.

The measured value is (1 V = 1 A)

0.3 A rms UPS1 Serial-No.: 1010849/001

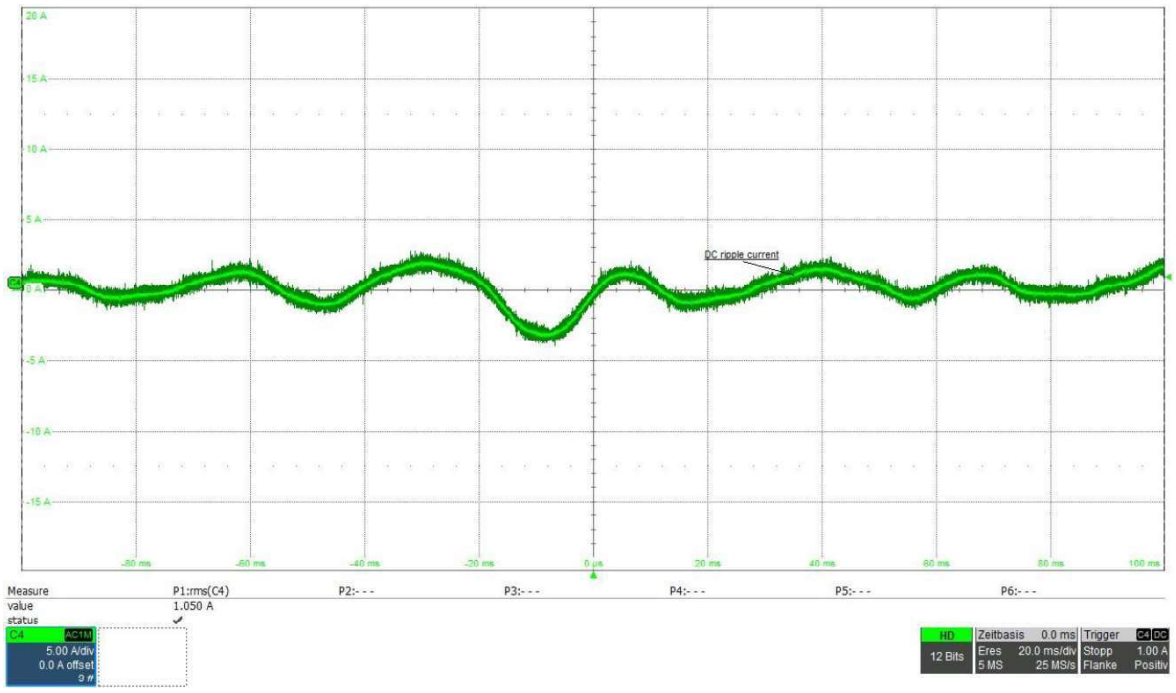
1.1 A rms UPS2 Serial-No.: 1010849/002

UPS1 Serial-No.: 1010849/001



Factory Acceptance Test Report		Document-No.: 14188_FAT_2
Type:	**UPS System Protect 8.33/20kVA-S10**	**Tag No.: BC-200F4A, BC-200F4B, BY-200F4**

UPS2 Serial-No.: 1010849/002



Result: Passed

9. MODBUS Adapter (Demonstration)

Incorporates Tests for:
A29.1 MODBUS Adapter

Test to be performed for chosen failure messages, status messages and measuring values.

Designation	Source	Terminals	Checked
MODBUS Adapter	A29.1	A29.1	**Okay**

10. Alarm Test:

Reference to EN IEC 62040-3:2021 Clause 6.2.2.3

Incorporates Tests for:

Remote Alarm signalling on Boards A12/A13
System Operational Check

Acceptance Criteria:

Technical datasheet (TD)

Designation	Terminals	Relay/Opto	Result
Inverter operation 1)	UPS A12-X3: 1, 2, 3	**A12K21**	**Okay**
SBS operation 1)	UPS A12-X3: 4, 5, 6	**A12K22**	**Okay**
Rec Fault / Rec mains fault 1)	UPS A12-X3: 7, 8, 9	**A12K23**	**Okay**
Battery undervoltage 1)	UPS A12-X3: 10, 11, 12	**A12K24**	**Okay**
Common fault 2)	UPS A12-X4: 1, 2, 3	**A12K25**	**Okay**
SBS blocked 1)	UPS A13-X3: 1, 2, 3	**A13K26**	**Okay**
DC voltage < 178 V 1)	UPS A13-X3: 4, 5, 6	**A13K27**	**Okay**
BAT room fan on 1)	UPS A13-X3: 7, 8, 9	**A13K28**	**Okay**
INV remote off 3)	UPS A12-X5: 1, 2	**A12Opto1**	**Okay**
BAT room fan fault 3)	UPS A13-X4: 1, 2	**A13Opto2**	**Okay**
BAT MCCB open 3)	UPS A13-X4: 3, 4	**A13Opto3**	**Okay**
Fan fault 1)	Bypass X12: 7, 8, 9	**N/A**	**Okay**
Common fault 1)	Bypass X12: 10, 11, 12	**N/A**	**Okay**

1) Remote signal / close on the terminals with the lower number
2) Remote signal / close on the terminals with the higher number
3) OPTO Input

Result: Passed

Factory Acceptance Test Report		Document-No.: 14188_FAT_2
Type:	UPS System Protect 8.33/20kVA-S10	Tag No.: BC-200F4A, BC-200F4B, BY-200F4

11. Measuring Devices:

AEG internal Measuring device No.:	Measuring device name	Seriel number:	Calibrated until:
24740	LeCroy WS4024HD	LCRY4903C18666	Sep 25
23265	TesTec TT-SI 9010	112048	Dez 24
22263	Fluke 8846 A	9718026	Dez 24
23188	Fluke 8846 A	1586024	Dez 24
23187	Fluke 8846 A	1586003	Nov 24
23346	Fluke 43 B	16880401	Mrz 26
23373	Shunt 600/60mV/A	-	Dez 25
23987	Fluke I 400 S	20690042	Dez 24
24214	Fluke I 1000 S	98261327	Jul 25
20996	Fluke I 1000 S	932684033	Nov 24

12. Remarks:

1. TAG tag plates must be engraved and mounted → Done → Closed
2. The cover in front of the power terminals in the UPS units must be closed at the top. → Done → Closed.
3. Assembly drawing of the bypass cabinet must be updated to ‘as built’.
4. Start-up and shut-down instructions must be prepared by AEG for this specific system and handed over to Rosetti Marino.

Section 13 MECHANICAL COMPLETION CHANGES / MARK-UPS

NOT APPLICABLE