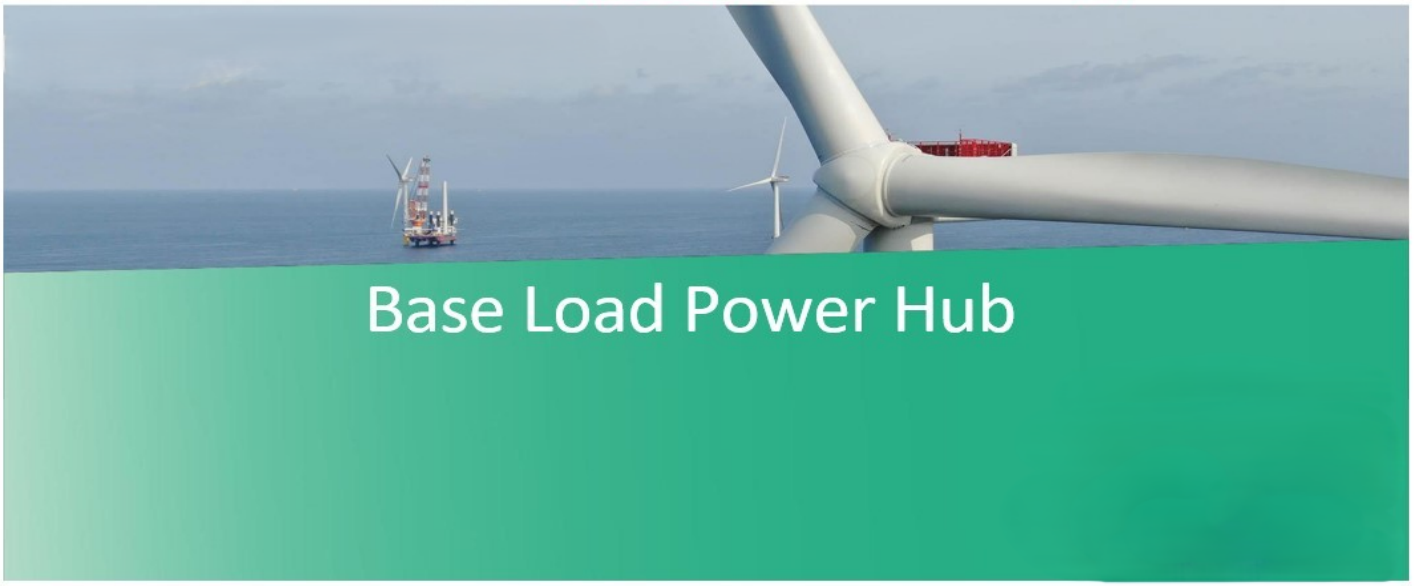
CROSSWIND

ROSETTI MARINO

PROVERUS

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



COMMISSIONING DOSSIER (ONSHORE)

SYSTEM	87 Instrumentation Systems incl. general control room equipment
SUBSYSTEM	87-00 Power Distribution System (EMCS)

CROSSWIND

123A90 - HOLLANDSE KUST NOORD WIND PARK
BLPH Project

COMMISSIONING DOSSIER INDEX

ROSETTI MARINO

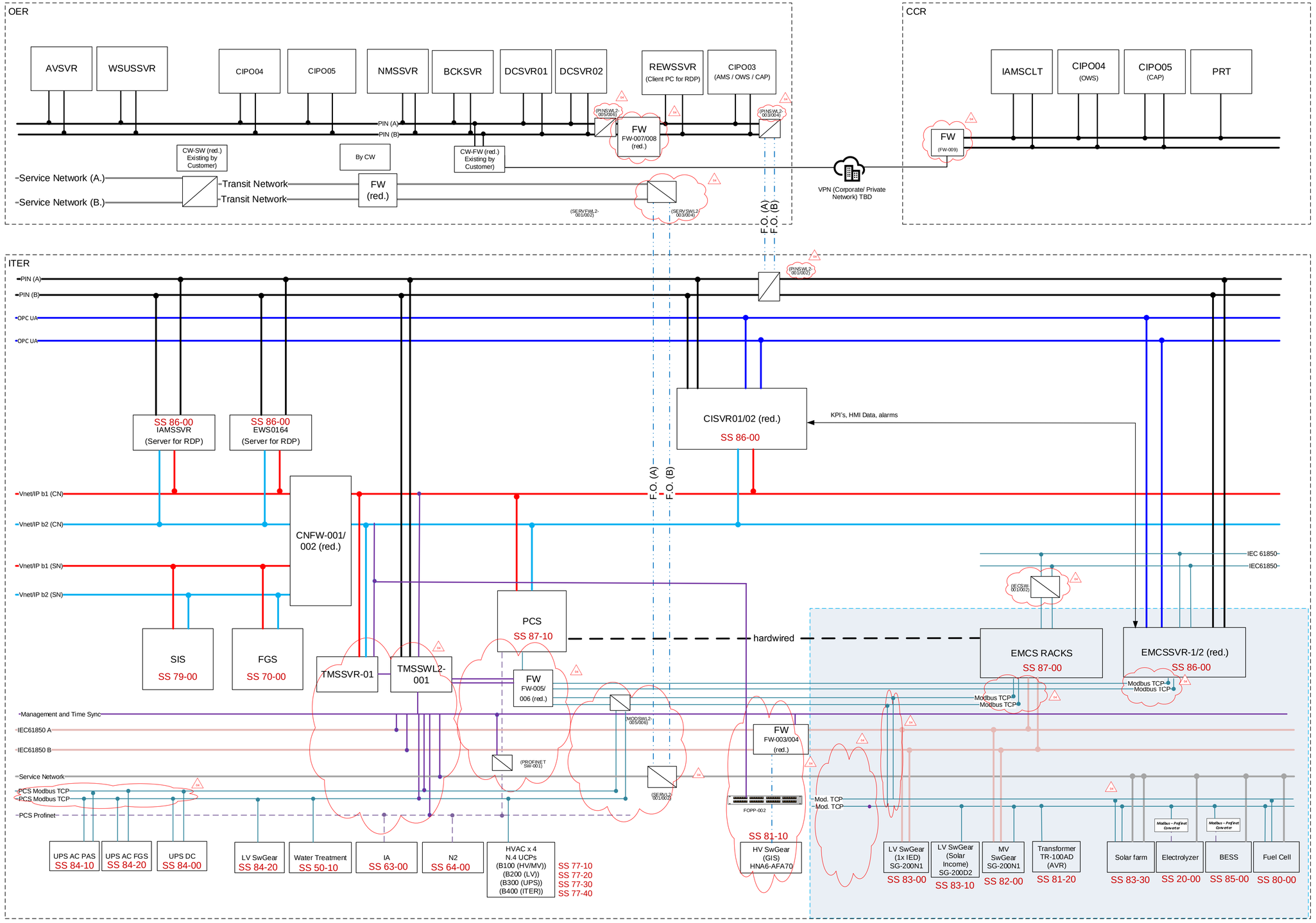
Sub System N°:	87-00	**Tick as appropriate**	ONSHORE	OK
Description:	Power Distribution System (EMCS)		OFFSHORE	

1. *SUB-SYSTEM DEFINITION*	OK
1.1 Sub-System Description / Boundary Limit Drawings	
2. *READY FOR OPERATION CERTIFICATE*	OK
2.1 Achievement Of Ready for Operation Certificate (RFO)	
2.2 Exception Punch Lists (per discipline)	
2.3 “As-Commissioned” P&ID’s / SLD’s / D&ID’s / C&E’s	
3. *CONSOLIDATED PUNCH LISTS*	OK
3.1 Cleared and Residual Items (sorted by discipline)	
4. *FUNCTIONAL TESTS SHEETS*	OK
4.1 Electrical functional test sheets index	
4.2 Electrical “As-Commissioned” interconnection diagrams	
4.3 Instrumentation Functional Test Sheets Index	
4.4 Instrumentation “As-Commissioned” interconnection diagrams	
4.5 Telecommunication Functional Test Sheets Index	
4.6 Telecommunication “As-Commissioned” I.C.D. / TSLD’s	
5. *SITE / OPERATIONAL:*	NA
5.1 Operational Test Procedure	
5.2 Operational Test Certificates	
6. *PIPING AND VESSEL PREPARATION*	NA
6.1 Final Mechanical / Vessel Inspection Checks Index	
6.2 Leak Test / Drying / Inerting Test Sheets Index	
6.3 Chemical Loading & First Fill records Index	
6.4 Chemical Cleaning Reports and Records Index	
6.5 Lubrication Schedule	
7. *VENDORS*	OK
7.1 Vendor Package Summary Index	
7.2 SAT Procedure with associated punch list and reference (Front Page)	
7.3 Vendor Spares & Special Tools lists references	
7.4 Vendor Data / Operations / Maintenance Manuals References	
8. *LIST OF MODIFICATIONS*	NA
8.1 List of changes initiated during the WORKSITE Commissioning phase pertaining to the relevant Sub-System will be incorporated in this section with relevant references (with location and position of blinds/spades, isolation LO & LC valves, list of electrical isolation status, and remaining inhibits and overrides)	
9. *SUPPORTING DOCUMENTS*	NA
9.1 Other supporting documents (as applicable)	

	Contractor Commissioning Site Leader	Company Commissioning Site Leader
Name	Anthony Iveson	Gerry McCann
Date	2025-05-14	2025-05-15
Signature	PROVERLIS Digitaly signed by Anthony Iveson 2025-05-14T11:18:48.814Z	PROVERLIS Digitaly signed by Gerry McCann 2025-05-15T13:40:02.258Z

Section 1 SUB-SYSTEM DEFINITION

CROSSWIND BLPH PROJECT - SYSTEM BLOCK DIAGRAM



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

LEGEND:

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

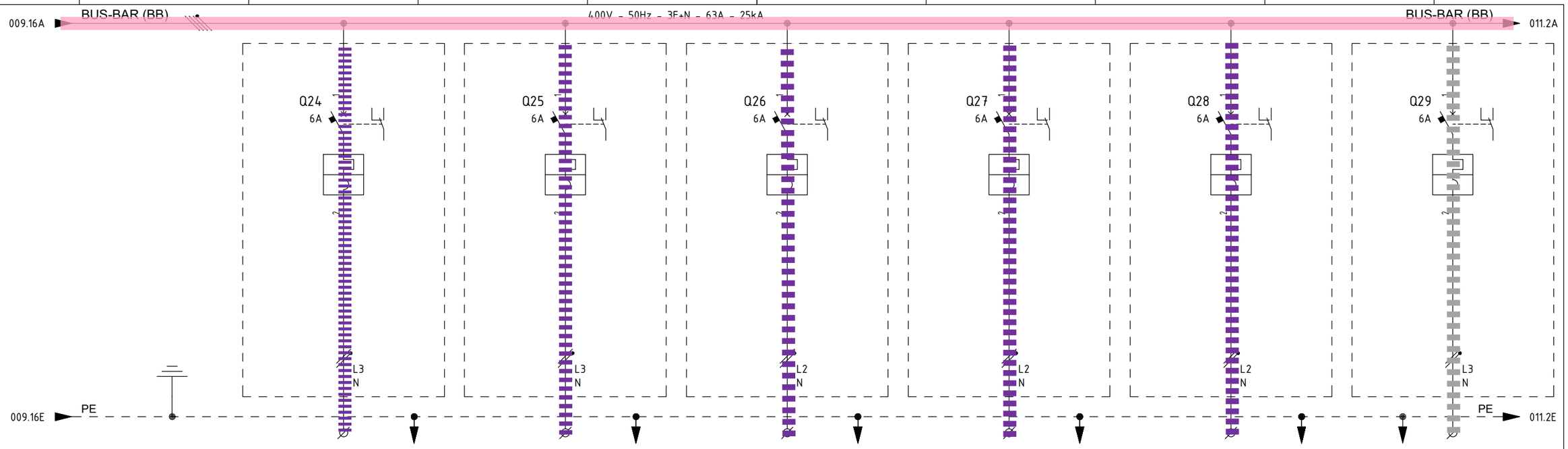
Note 1 : Exact assignment of Servers per cabinet to be defined in cabinet General Arrangement Drawing.
Note 2 : For IP Addresses refer to 1724000594-IN-RE-00043 Cyber Security Settings
Note 3 : All Network Components will be installed in Network Cabinet.
Note 4 : Supply of Console Desk in CCR is in Customer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

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

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

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

ROSETTI MARINO
HOLLANDSE KUST NOORD WIND PART Project
CROSSWIND
YOKOGAWA



ITEM			1	B400-PCS-001	B400-EMCS-001	B400-FGS-001	B400-NET-001	B400-SRV-001	CP-630E1
UTILITY			2	PCS-CONTROLLER AND I/O CABINET - AUXILIARY	EMCS-CONTROLLER AND I/O CABINET - AUXILIARY	FGS FIRE & GAS PANEL - AUXILIARY	SYSTEM SERVER / NETWORK CABINET - AUXILIARY	SERVER CABINET ITER - AUXILIARY	UCP - INSTRUMENT AIR PACKAGE -A-63000 - AUXILIARY
CUBICLE			3	+03	+03	+03	+03	+03	+03
RATED POWER | RATED CURRENT			4/5	0.5 KW | 2.72 A	0.5 KW | 2.72 A	0.8 KW | 4.35 A	0.5 KW | 2.72 A	0.5 KW | 2.72 A	0.5 KW | 2.72 A
TYPICAL FUNCTIONAL			6	-	-	-	-	-	-
CIRCUIT BREAKER (ABB)	TYPE		7	S302P-C6	S302P-C6	S302P-C6	S302P-C6	S302P-C6	S302P-C6
	VERSION		8	2P / MINIATURE	2P / MINIATURE	2P / MINIATURE	2P / MINIATURE	2P / MINIATURE	2P / MINIATURE
	TRIP UNITS		9	In=6A - Curve C	In=6A - Curve C	In=6A - Curve C	In=6A - Curve C	In=6A - Curve C	In=6A - Curve C
	Icu	KA	10	25kA	25kA	25kA	25kA	25kA	25kA
OVERLOAD	L	Range A	11	-	-	-	-	-	-
		Range t	12	-	-	-	-	-	-
SEL. SHORT-CIRCUIT	S	Range A	13	-	-	-	-	-	-
		Range t	14	-	-	-	-	-	-
INST. SHORT-CIRCUIT	I	Range A	15	-	-	-	-	-	-
		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 / 4	SCREW / 4
POWER CONDUCTOR		mm²	31	3G2.5	3G2.5	3G2.5	3G2.5	3G2.5	3G2.5
				SUBSYSTEM 87-10	SUBSYSTEM 87-00	SUBSYSTEM 70-00	SUBSYSTEM 86-00	SUBSYSTEM 86-00	SUBSYSTEM 63-00

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

IMESA ELECTRICAL ENGINEERING

DWG n° : 231298/SD/13

Item n° : PF1002888/101

CROSSWIND

ROSETTI MARINO

TITLE : "DP-200N1"

SINGLE LINE DIAGRAM

Single Line Drawing

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00013

SHEET 010

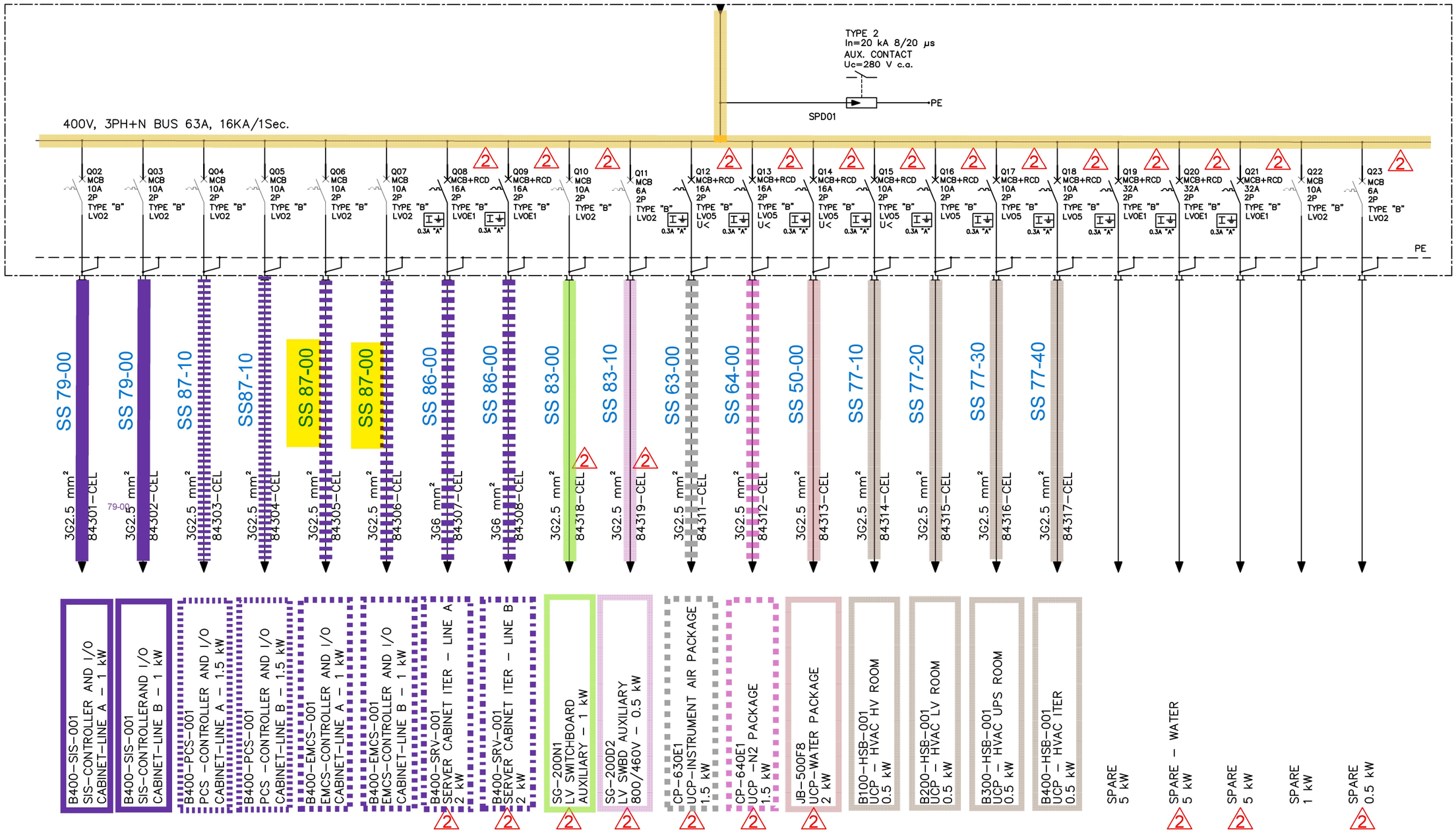
REV. 03

F.to UNI A3: 420mmx297mm

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

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

AC UPS DISTRIBUTION BOARD–PAS
DP–200F3



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

CROSSWIND

ROSETTI MARINO

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

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

A3 | DRAWING NO. 123A90–DDL–EL–DG–20160 | SHEET 005 | REV. 02

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

F.to UNI A3: 420mmx297mm

Section 2 READY FOR OPERATION

Section 2.1 Achievement Of Ready for Operation Certificate (RFO)

ROSETTI MARINO

123A90 - HOLLANDSE KUST NOORD WIND PARK
BLPH Project

CROSSWIND

Ready For Operation (RFO) Certificate

COMPLETE	●	PARTIAL	

Revision:	1		Issued on:	2025-03-29	

System:	87	/	Instrumentation Systems incl. general control room equipment

SubSystem:	87-00	/	Power Distribution System (EMCS)

We hereby confirm that all Mechanical Completion (MC) and Pre-Commissioning/Commissioning (Pre-Comm./Comm.) activities for the above-mentioned System/Sub-System have been successfully completed in accordance with project specifications, relevant standards and contractual requirements. The System/Sub-System has been tested and verified to ensure readiness for operation. Issuance of this Certificate shall not release CONTRACTOR from any of his obligations, responsibilities or liabilities under the CONTRACT.

Mechanical Completion: All required MC activities have been completed and approved
Pre-Commissioning & Commissioning: All required Pre-Comm. and Comm. activities and OTPs have been completed and approved (Status Index attached)
Punch List: All Punch items categorized as A and B have been cleared (PL report attached)
Documentation: As-built documentation and Commissioning dossier has been completed, reviewed and approved

PUNCH LIST	PENDING POINTS
Note: All Category "A" and "B" Items must be cleared prior to issuance of the Ready For Operation (RFO) Certificate	B: 2

REMARKS:

	CONTRACTOR Commissioning Manager	COMPANY Commissioning Lead
Name	Anthony Iveson	Gerry McCann
Date	2025-04-05	2025-05-13
Signature	PROVERLIS Digitaly signed by Anthony Iveson 2025-04-05T06:57:02.919Z	PROVERLIS Digitaly signed by Gerry McCann 2025-05-13T14:10:00.422Z

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 87-00 & process: COMM

Electrical	87-00 Power Distribution System (EMCS)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
DP-200N1-Q25	POWER SUPPLY EMCS AUX - DP-200N1-Q25	ONSHORE	C10002843	FTR-2	100	2024-10-28	RFO 1
UP-200F3-QF47	ALIMENTAZIONE EMCS - LINE A	ONSHORE	C10004584	FTR-2	100	2024-11-08	RFO 1
UP-200F3-QF48	ALIMENTAZIONE EMCS - LINE B	ONSHORE	C10004569	FTR-2	100	2024-11-08	RFO 1

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	87	Instrumentation Systems incl. general control room equipment
SUBSYSTEM	87-00	Power Distribution System (EMCS)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000221	A	B400-EMCS-001	Install MCT frame “B” on roof		ACTIVITY DONE	SLinari 2024-10-14	SLinari 2024-11-27	SLinari 2024-11-27	2024-11-27
C30000374	A	B400-EMCS-001	Install MCT frame "B" on roof		ACTIVITY DONE	SLinari 2024-10-14	SLinari 2024-11-27	SLinari 2024-11-27	2024-11-27
C30000220	B	B400-EMCS-001	Install and connect disconnector switches Q10 and Q11 with rating 32A, with NO auxiliary contact		INSTALLED	SLinari 2024-10-14	SLinari 2024-12-10	SLinari 2024-12-10	2024-12-10
C30000373	B	B400-EMCS-001	Install and connect disconnector switches Q10 and Q11 with the right rating 32A, with NO auxiliary contact			SLinari 2024-10-14	2024-12-07	LNovaga 2024-12-07	2024-12-07
C30000603	B	B400-EMCS-001 C10000838	Cleaning is required inside the panels.	.		Gtangianu 2024-11-19	2024-12-28	Gtangianu 2024-12-28	2024-12-28
C30000644	B	B400-EMCS-001 C10000838	24V/220V- plastic covers of cable tray inside the panel ,are not installed as per drawing.	.		Gtangianu 2024-11-20	2025-03-03	Gtangianu 2025-03-03	2025-03-03
C30000645	B	B400-EMCS-001 C10000838	All documentation listed in the SMIR, shall be re-issued in final revision and approved by RM and CW	.		Gtangianu 2024-11-20			
C30000647	B	B400-EMCS-001 C10000838	Earthing cable need to be fix.	.		Gtangianu 2024-11-20	2025-02-27	JKrizanic 2025-02-27	2025-02-27
C30000654	B	B400-EMCS-001 C10000838	Internal base plate will be installed after commissioning.	.		Gtangianu 2024-11-20			

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	87	Instrumentation Systems incl. general control room equipment
SUBSYSTEM	87-00	Power Distribution System (EMCS)

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000336	B	84305-CEL C10000583	Plastic cable ties to be replaced on external routing. Cable needs to be fixed also on B-400 cable trays.	.		Gtangianu 2024-11-08	2024-12-14	Ecarotenuto 2024-12-14	2024-12-14
C30000337	B	84306-CEL C10000584	Plastic cable ties to be replaced on external routing. Cable needs to be fixed also on B-400 cable trays.	.		Gtangianu 2024-11-08	2024-12-14	Ecarotenuto 2024-12-14	2024-12-14
C30000341	B	84306-CEL C10000584	Missing cable tag inside/outside the Panel B400-SRV-001.	.		Gtangianu 2024-11-08	2025-01-31	Gtangianu 2025-01-31	2025-01-31
C30000408	B	83106-CEL C10000625	Plastic cable ties to be replaced on external routing	.		Ecarotenuto 2024-11-09	2025-02-26	Pschintu 2025-02-26	2025-02-26
C30000409	B	83106-CEL C10000625	Missing cable tag inside the panel DP-200N1 and on MCT (both side)	.		Ecarotenuto 2024-11-09	2025-02-26	Pschintu 2025-02-26	2025-02-26

Section 2.2 Exception Punch Lists (per discipline)

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	87	Instrumentation Systems incl. general control room equipment
SUBSYSTEM	87-00	Power Distribution System (EMCS)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000645	B	B400-EMCS-001 C10000838	All documentation listed in the SMIR, shall be re-issued in final revision and approved by RM and CW	.		Gtangianu 2024-11-20			

Section 2.3 “As-Commissioned” P&ID's / SLD's / D&ID's / C&E's

CAE EPLAN Electric P8

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AUXILIARY
From Lighting & Small Power DB BOP DP 200N1
(Cubicle 33 Q41)
100-240V/N/PE~50/60Hz

LINE A
From LV Switchgear SG 200N1
(Cubicle A3/31)
Mains
400V;3/PE~50Hz

From LV Switchgear SG 200N1
(Cubicle A7/32)
Bypass mains
400V;3/PE~50Hz

LINE B
From LV Switchgear SG 200N1
(Cubicle A4/31)
Mains 400V;3/PE~50Hz

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

VALID FOR CONSTRUCTION
VENDOR DOCUMENT - FDL DWG:
123A90-FDL-1724000372-EL-DG-00009

REV.:	DATE:	SIGNATURE:
3_A	15/11/24	G.Randi

ROSETTI MARINO SpA

AS-COMMISSIONED
DAVIDE ZUCCONELLI
NO MARK UP
21/03/2025

*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.

ROSETTI MARINO
Motorship Kasi Nasri (HCN) wind farm

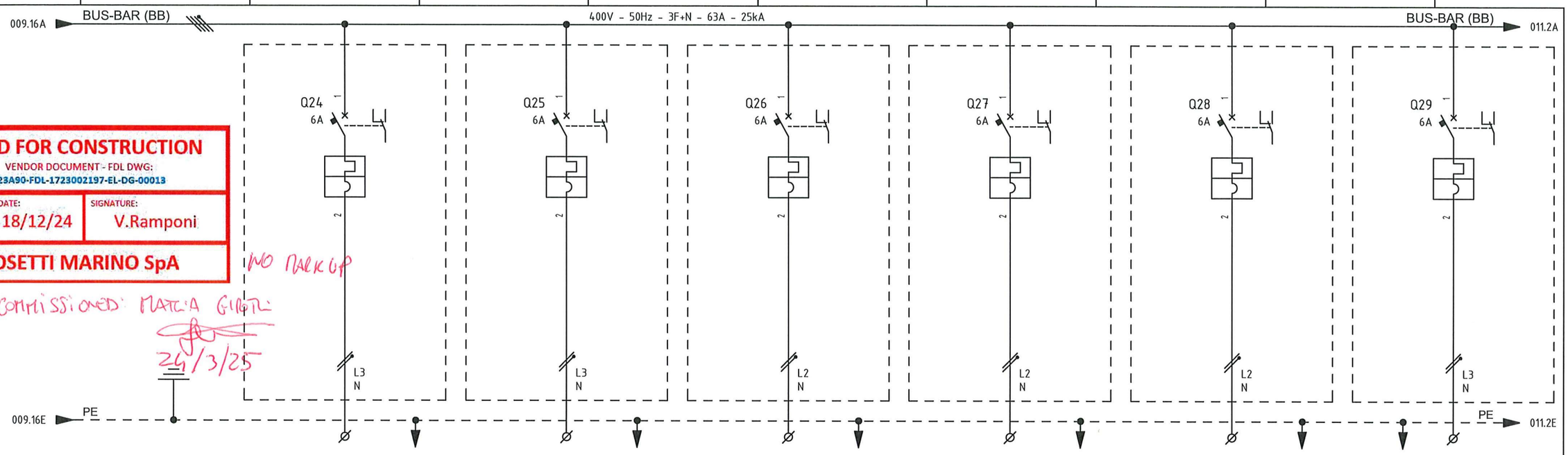
AEG

System 40 kVA

Single line diagram

1000007888_010 en

A0



VALID FOR CONSTRUCTION

VENDOR DOCUMENT - FDL DWG:
123A90-FDL-1723002197-EL-DG-00013

REV.:	DATE:	SIGNATURE:
4_A	18/12/24	V.Ramponi

ROSETTI MARINO SpA

NO MARK UP

AS COMMISSIONED: MATCA GIGTL:
26/3/25

ITEM			1	B400-PCS-001		B400-EMCS-001		B400-FGS-001		B400-NET-001		B400-SRV-001		CP-630E1	
UTILITY			2	PCS-CONTROLLER AND I/O CABINET - AUXILIARY		EMCS-CONTROLLER AND I/O CABINET - AUXILIARY		FGS FIRE & GAS PANEL - AUXILIARY		SYSTEM SERVER / NETWORK CABINET - AUXILIARY		SERVER CABINET ITER - AUXILIARY		UCP - INSTRUMENT AIR PACKAGE -A-63000 - AUXILIARY	
CUBICLE			3	+03		+03		+03		+03		+03		+03	
RATED POWER	RATED CURRENT		4/5	0.5 KW	2.72 A	0.5 KW	2.72 A	0.8 KW	4.35 A	0.5 KW	2.72 A	0.5 KW	2.72 A	0.5 KW	2.72 A
TYPICAL FUNCTIONAL			6	-		-		-		-		-		-	
CIRCUIT BREAKER (ABB)	TYPE		7	S302P-C6		S302P-C6		S302P-C6		S302P-C6		S302P-C6		S302P-C6	
	VERSION		8	2P / MINIATURE		2P / MINIATURE		2P / MINIATURE		2P / MINIATURE		2P / MINIATURE		2P / MINIATURE	
	TRIP UNITS		9	In=6A - Curve C		In=6A - Curve C		In=6A - Curve C		In=6A - Curve C		In=6A - Curve C		In=6A - Curve C	
	Icu	KA	10	25kA		25kA		25kA		25kA		25kA		25kA	
OVERLOAD	L	Range A	11	-		-		-		-		-		-	
		Range t	12	-		-		-		-		-		-	
SEL. SHORT-CIRCUIT	S	Range A	13	-		-		-		-		-		-	
		Range t	14	-		-		-		-		-		-	
INST. SHORT-CIRCUIT	I	Range A	15	-		-		-		-		-		-	
		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 / 4		SCREW / 4	
POWER CONDUCTOR		mm²	31	3G2.5		3G2.5		3G2.5		3G2.5		3G2.5		3G2.5	

=
+

DWG n° : 231298/SD/13
Item n° : PF1002888/101

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
4	18/09/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
3	05/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for construction (AFC)
2	24/04/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
1	15/03/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
0	08/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

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

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00013

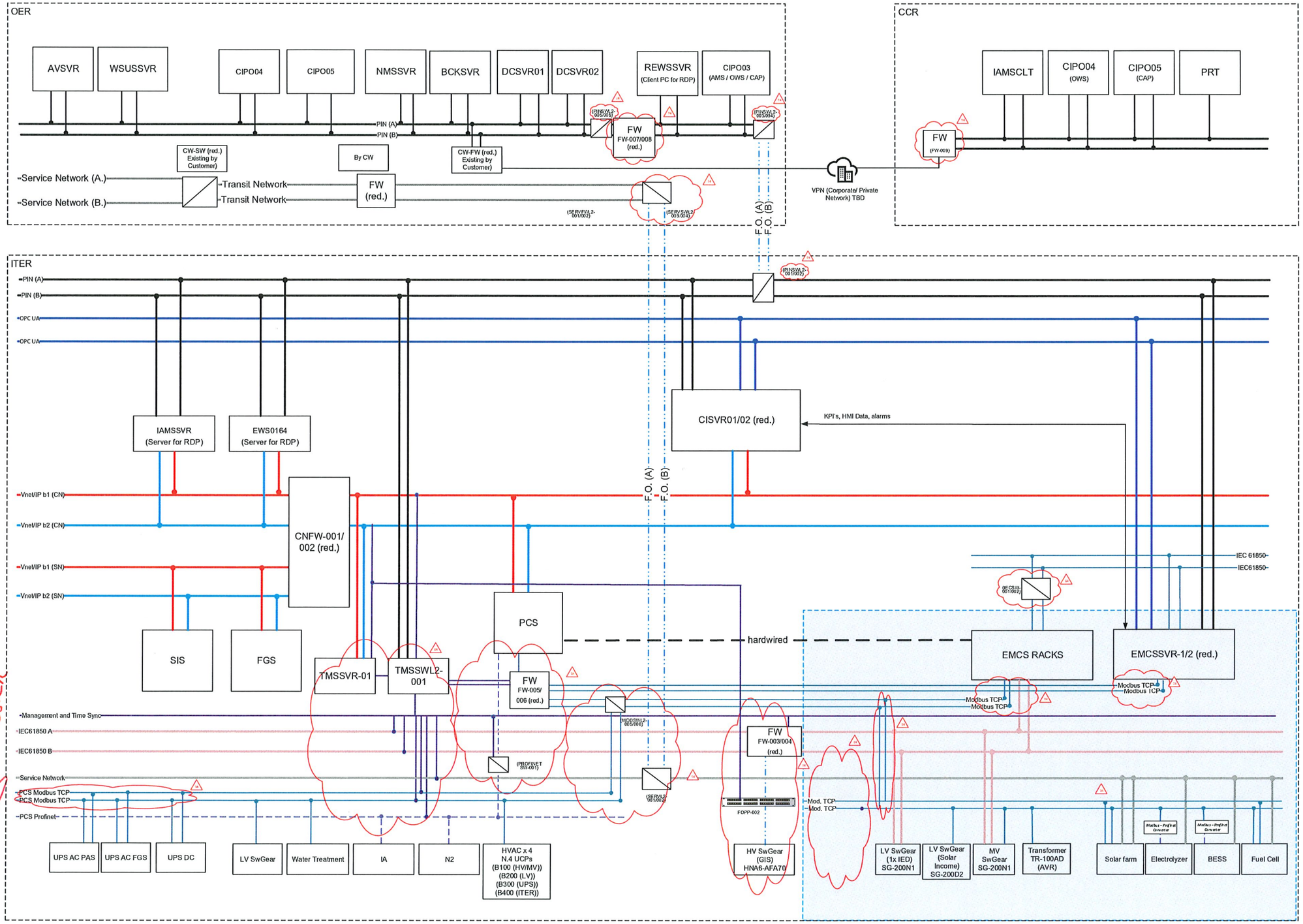
SHEET 010

REV. 04

File Name : 1723002197-EL-DG-00013 Rev. 04

F.to UNI A3: 420mmx297mm

CROSSWIND BLPH PROJECT - SYSTEM BLOCK DIAGRAM



As commissioning
08-05-2026
Giandonato De Mistri

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

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

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

Zone-1 : PCS Control Zone
Zone-2 : Safety Control Zone
Zone-3 : PCS Zone
Zone-4 : Application Server Facility Zone
Zone-5 : Security Management Zone-1
Zone-6 : Security Management Zone-2
Zone-7 : Demilitirized Zone
Zone-8 : Croswind Zone
Zone-9 : Service Network Zone
Zone-10: Application Server Facility Zone-OD
Zone-11: Third Party System Zone
Zone-12 : Out of Scope

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

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

ROSETTI MARINO | HOLLANDSE KUST NOORD WIND PART Project | CROSSWIND | YOKOGAWA

Section 3 CONSOLIDATED PUNCH LISTS

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 87 Instrumentation Systems incl. general control room equipment

SUBSYSTEM 87-00 Power Distribution System (EMCS)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000221	A	B400-EMCS-001	Install MCT frame “B” on roof		ACTIVITY DONE	SLinari 2024-10-14	SLinari 2024-11-27	SLinari 2024-11-27	2024-11-27
C30000374	A	B400-EMCS-001	Install MCT frame "B" on roof		ACTIVITY DONE	SLinari 2024-10-14	SLinari 2024-11-27	SLinari 2024-11-27	2024-11-27
C30000220	B	B400-EMCS-001	Install and connect disconnector switches Q10 and Q11 with rating 32A, with NO auxiliary contact		INSTALLED	SLinari 2024-10-14	SLinari 2024-12-10	SLinari 2024-12-10	2024-12-10
C30000373	B	B400-EMCS-001	Install and connect disconnector switches Q10 and Q11 with the right rating 32A, with NO auxiliary contact			SLinari 2024-10-14	2024-12-07	LNovaga 2024-12-07	2024-12-07
C30000603	B	B400-EMCS-001 C10000838	Cleaning is required inside the panels.	.		Gtangianu 2024-11-19	2024-12-28	Gtangianu 2024-12-28	2024-12-28
C30000644	B	B400-EMCS-001 C10000838	24V/220V- plastic covers of cable tray inside the panel ,are not installed as per drawing.	.		Gtangianu 2024-11-20	2025-03-03	Gtangianu 2025-03-03	2025-03-03
C30000645	B	B400-EMCS-001 C10000838	All documentation listed in the SMIR, shall be re-issued in final revision and approved by RM and CW	.		Gtangianu 2024-11-20			
C30000647	B	B400-EMCS-001 C10000838	Earthing cable need to be fix.	.		Gtangianu 2024-11-20	2025-02-27	JKrizanic 2025-02-27	2025-02-27
C30000654	B	B400-EMCS-001 C10000838	Internal base plate will be installed after commissioning.	.		Gtangianu 2024-11-20	2025-04-30	Gtangianu 2025-04-30	2025-04-30

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	87	Instrumentation Systems incl. general control room equipment
SUBSYSTEM	87-00	Power Distribution System (EMCS)

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30000336	B	84305-CEL C10000583	Plastic cable ties to be replaced on external routing. Cable needs to be fixed also on B-400 cable trays.	.		Gtangianu 2024-11-08	2024-12-14	Ecarotenuto 2024-12-14	2024-12-14
C30000337	B	84306-CEL C10000584	Plastic cable ties to be replaced on external routing. Cable needs to be fixed also on B-400 cable trays.	.		Gtangianu 2024-11-08	2024-12-14	Ecarotenuto 2024-12-14	2024-12-14
C30000341	B	84306-CEL C10000584	Missing cable tag inside/outside the Panel B400-SRV-001.	.		Gtangianu 2024-11-08	2025-01-31	Gtangianu 2025-01-31	2025-01-31
C30000408	B	83106-CEL C10000625	Plastic cable ties to be replaced on external routing	.		Ecarotenuto 2024-11-09	2025-02-26	Pschintu 2025-02-26	2025-02-26
C30000409	B	83106-CEL C10000625	Missing cable tag inside the panel DP-200N1 and on MCT (both side)	.		Ecarotenuto 2024-11-09	2025-02-26	Pschintu 2025-02-26	2025-02-26

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000645

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000838	1.4 Discipline	Instrumental
1.2 Item	B400-EMCS-001	EMCS Cabinet	
1.3 Subsystem	87-00	Power Distribution System (EMCS)	

2 - OBSERVATION

All documentation listed in the SMIR, shall be re-issued in final revision and approved by RM and CW

Name: Giovanni Tangianu

Date: 2024-11-19

Signature: Digitaly signed by Giovanni Tangianu 2024-11-19T14:42:56.514Z

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	VND Vendor	Signature	Digitaly signed by Giovanni Tangianu 2024-11-20T13:28:10.791Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Name

Date

Signature

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000220

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task		1.4 Discipline	Instrumental
1.2 Item	B400-EMCS-001	EMCS Cabinet	
1.3 Subsystem	87-00	Power Distribution System (EMCS)	

2 - OBSERVATION

Install and connect disconnector switches Q10 and Q11 with rating 32A, with NO auxiliary contact

Name

Date

Signature

3 - DEFECT ASSESSMENT

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Stefano Linari
3.4 Activity code	FAT factory acceptance test	Date	2024-10-14
3.5 Action by		Signature	--- Proverlis --- Duplicata issued from database information Signature is on original form

4 - PERFORMED ACTION

INSTALLED

Name VENDOR YOKOGAWA

Date 2024-12-10

Signature Digitaly signed by VENDOR YOKOGAWA 2024-12-10T14:32:43.770Z

5 - CLEARANCE CHECK

INSTALLED

Name Stefano Linari

Date 2024-12-10

Signature Digitaly signed by Stefano Linari 2024-12-10T14:33:13.715Z

6- CLEARANCE APPROVAL

Name

Date

Signature



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000221

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task		1.4 Discipline	Instrumental
1.2 Item	B400-EMCS-001	EMCS Cabinet	
1.3 Subsystem	87-00	Power Distribution System (EMCS)	

2 - OBSERVATION

Install MCT frame “B” on roof

Name

Date

Signature

3 - DEFECT ASSESSMENT

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Stefano Linari
3.4 Activity code	FAT factory acceptance test	Date	2024-10-14
3.5 Action by		Signature	--- Proverlis --- Duplicata issued from database information Signature is on original form

4 - PERFORMED ACTION

ACTIVITY DONE

Name YOKOGAWA

Date 2024-11-27

Signature Digitaly signed by YOKOGAWA 2024-11-27T15:32:29.144Z

5 - CLEARANCE CHECK

ACTIVITY DONE

Name Stefano Linari

Date 2024-11-27

Signature Digitaly signed by Stefano Linari 2024-11-27T15:32:43.193Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000336

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000583	1.4 Discipline	Electrical
1.2 Item	84305-CEL		AC UPS - PAS DB / EMCS -Controller and I/O Cabinet - Line A
1.3 Subsystem	87-00		Power Distribution System (EMCS)

2 - OBSERVATION

Plastic cable ties to be replaced on external routing. Cable needs to be fixed also on B-400 cable trays.

Name: Giovanni Tangianu

Date: 2024-11-08

Signature: Digitaly signed by Giovanni Tangianu 2024-11-08T10:59:58.786Z

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	2024-11-08
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-11-08T11:00:06.969Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

done

Name: Eleonora Carotenuto

Date: 2024-12-14

Signature: Digitaly signed by Eleonora Carotenuto 2024-12-14T09:55:53.916Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000337

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000584	1.4 Discipline	Electrical
1.2 Item	84306-CEL		AC UPS - PAS DB / EMCS -Controller and I/O Cabinet - Line B
1.3 Subsystem	87-00		Power Distribution System (EMCS)

2 - OBSERVATION

Plastic cable ties to be replaced on external routing. Cable needs to be fixed also on B-400 cable trays.

Name: Giovanni Tangianu

Date: 2024-11-08

Signature: Digitaly signed by Giovanni Tangianu 2024-11-08T12:36:12.518Z

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	2024-11-08
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-11-08T12:36:26.328Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

done

Name: Eleonora Carotenuto

Date: 2024-12-14

Signature: Digitaly signed by Eleonora Carotenuto 2024-12-14T09:56:04.421Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000341

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000584	1.4 Discipline	Electrical
1.2 Item	84306-CEL		AC UPS - PAS DB / EMCS -Controller and I/O Cabinet - Line B
1.3 Subsystem	87-00		Power Distribution System (EMCS)

2 - OBSERVATION

Missing cable tag inside/outside the Panel B400-SRV-001.

Name: Giovanni Tangianu

Date: 2024-11-08

Signature: Digitaly signed by Giovanni Tangianu 2024-11-08T13:05:00.593Z

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	2024-11-08
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-11-08T13:05:16.640Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-01-31

Signature: Digitaly signed by Giovanni Tangianu 2025-01-31T10:48:46.285Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000373

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task		1.4 Discipline	Instrumental
1.2 Item	B400-EMCS-001	EMCS Cabinet	
1.3 Subsystem	87-00	Power Distribution System (EMCS)	

2 - OBSERVATION

Install and connect disconnector switches Q10 and Q11 with the right rating 32A, with NO auxiliary contact

Name

Date

Signature

3 - DEFECT ASSESSMENT

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Stefano Linari
3.4 Activity code	FAT factory acceptance test	Date	2024-10-14
3.5 Action by		Signature	--- Proverlis --- Duplicata issued from database information Signature is on original form

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Refer to punch number: C30000220

Name Lorenzo Novaga

Date 2024-12-07

Signature PROVERLIS Digitaly signed by Lorenzo Novaga 2024-12-07T09:58:04.969Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000374

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task		1.4 Discipline	Instrumental
1.2 Item	B400-EMCS-001	EMCS Cabinet	
1.3 Subsystem	87-00	Power Distribution System (EMCS)	

2 - OBSERVATION

Install MCT frame "B" on roof

Name

Date

Signature

3 - DEFECT ASSESSMENT

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Stefano Linari
3.4 Activity code	FAT factory acceptance test	Date	2024-10-14
3.5 Action by		Signature	--- Proverlis --- Duplicata issued from database information Signature is on original form

4 - PERFORMED ACTION

ACTIVITY DONE

Name YOKOGAWA

Date 2024-11-27

Signature Digitaly signed by YOKOGAWA 2024-11-27T15:31:07.864Z

5 - CLEARANCE CHECK

ACTIVITY DONE

Name Stefano Linari

Date 2024-11-27

Signature Digitaly signed by Stefano Linari 2024-11-27T15:31:28.552Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000408

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000625	CPX09	1.4 Discipline	Electrical
1.2 Item	83106-CEL		Lighting & Small Power DB BoP / EMCS -Controller and I/O Cabinet - Auxiliary	
1.3 Subsystem	87-00		Power Distribution System (EMCS)	

2 - OBSERVATION

Plastic cable ties to be replaced on external routing

Name: Giovanni Tangianu

Date: 2024-11-08

Signature: Firma Digitale Sigura
Giovanni Tangianu
2024-11-08T09:42:00+0100

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	2024-11-09
3.5 Action by	RM Rosetti Marino Quality	Signature	Digitaly signed by Eleonora Carotenuto 2024-11-09T08:57:42.271Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Paolo Schintu

Date: 2025-02-26

Signature: Digitaly signed by Paolo Schintu
2025-02-26T12:39:30.438Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000409

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000625	CPX09	1.4 Discipline	Electrical
1.2 Item	83106-CEL		Lighting & Small Power DB BoP / EMCS -Controller and I/O Cabinet - Auxiliary	
1.3 Subsystem	87-00		Power Distribution System (EMCS)	

2 - OBSERVATION

Missing cable tag inside the panel DP-200N1 and on MCT (both side)

Name: Giovanni Tangianu

Date: 2024-11-08

Signature: Firma Digitale Sicura
Giovanni Tangianu
2024-11-08T09:44:57+0100

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	2024-11-09
3.5 Action by	PRE-COMM	Signature	Digitaly signed by Eleonora Carotenuto 2024-11-09T08:59:49.428Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Paolo Schintu

Date: 2025-02-26

Signature: Digitaly signed by Paolo Schintu
2025-02-26T12:39:39.745Z

6- CLEARANCE APPROVAL

Name

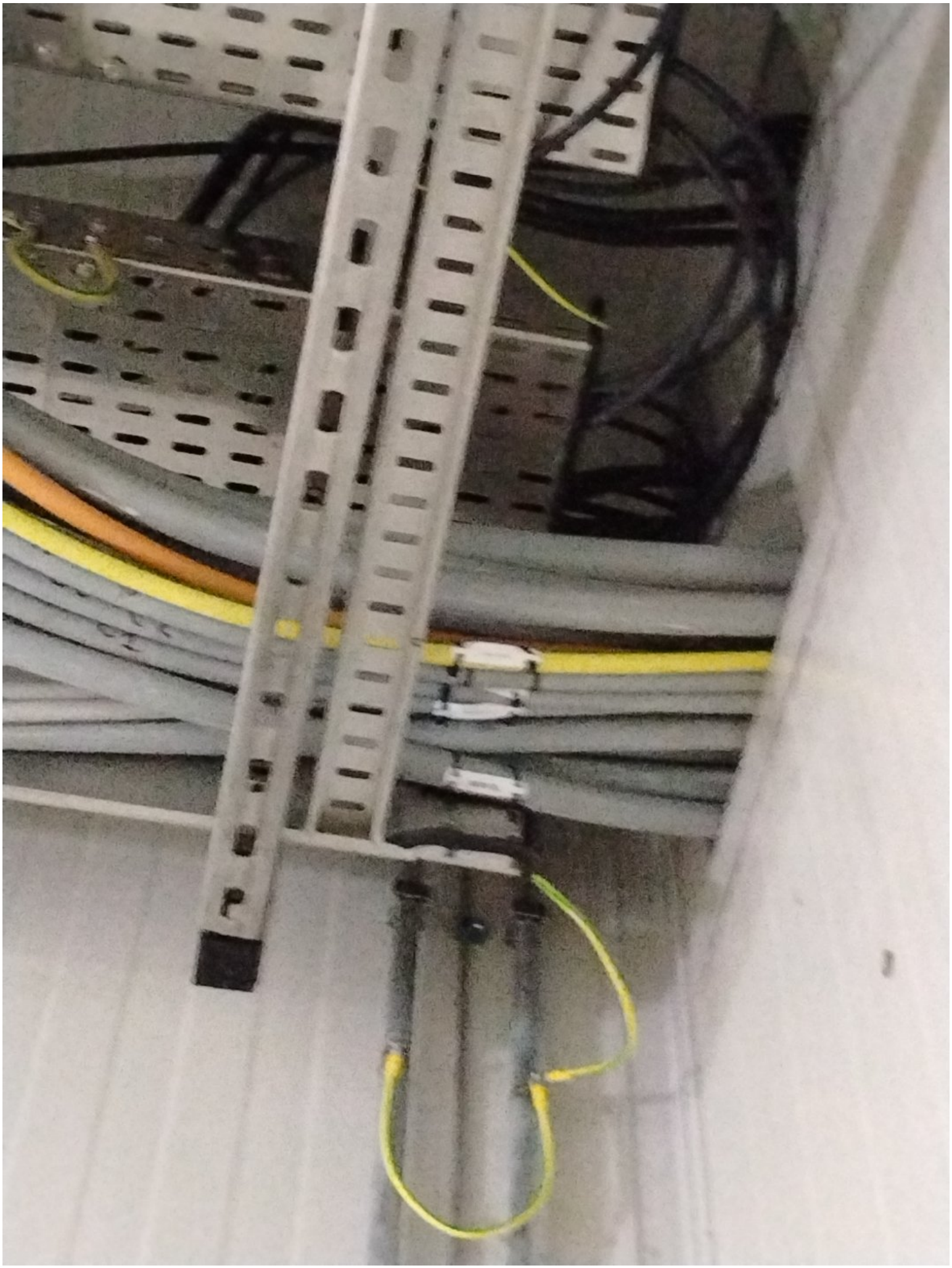
Date

Signature

2024-11-08 09:43 By Giovanni Tangianu



2024-11-08 09:44 By Giovanni Tangianu



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000603

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000838	1.4 Discipline	Instrumental
1.2 Item	B400-EMCS-001	EMCS Cabinet	
1.3 Subsystem	87-00	Power Distribution System (EMCS)	

2 - OBSERVATION

Cleaning is required inside the panels.

Name: Giovanni Tangianu

Date: 2024-11-19

Signature: Digitaly signed by Giovanni Tangianu 2024-11-19T14:03:37.828Z

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	2024-11-19
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2024-11-19T14:04:00.286Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Done.

Name: Giovanni Tangianu

Date: 2024-12-28

Signature: Digitaly signed by Giovanni Tangianu 2024-12-28T08:54:33.631Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000644

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000838	1.4 Discipline	Instrumental
1.2 Item	B400-EMCS-001	EMCS Cabinet	
1.3 Subsystem	87-00	Power Distribution System (EMCS)	

2 - OBSERVATION

24V/220V- plastic covers of cable tray inside the panel ,are not installed as per drawing.

Name: Giovanni Tangianu

Date: 2024-11-19

Signature: Digitaly signed by Giovanni Tangianu 2024-11-19T14:42:32.255Z

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 2024-11-20T13:27:18.256Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-03-03

Signature: Digitaly signed by Giovanni Tangianu 2025-03-03T10:44:26.008Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000647

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000838	1.4 Discipline	Instrumental
1.2 Item	B400-EMCS-001	EMCS Cabinet	
1.3 Subsystem	87-00	Power Distribution System (EMCS)	

2 - OBSERVATION

Earthing cable need to be fix.

Name: Giovanni Tangianu

Date: 2024-11-20

Signature: Digitaly signed by Giovanni Tangianu 2024-11-20T13:52:06.532Z

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 2024-11-20T13:52:19.027Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic

Date: 2025-02-27

Signature: Digitaly signed by Josip Krizanic 2025-02-27T15:42:49.945Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30000654

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000838	1.4 Discipline	Instrumental
1.2 Item	B400-EMCS-001	EMCS Cabinet	
1.3 Subsystem	87-00	Power Distribution System (EMCS)	

2 - OBSERVATION

Internal base plate will be installed after commissioning.

Name: Giovanni Tangianu

Date: 2024-11-20

Signature: Digitaly signed by Giovanni Tangianu 2024-11-20T14:03:18.956Z

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	PRE-COMM	Signature	Digitaly signed by Giovanni Tangianu 2024-11-20T14:03:30.123Z

4 - PERFORMED ACTION

Name

Date: 2025-04-30

Signature

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-04-30

Signature: Digitaly signed by Giovanni Tangianu 2025-04-30T08:53:45.327Z

6- CLEARANCE APPROVAL

Name

Date: 2025-04-30

Signature

Section 4 FUNCTIONAL TESTS SHEETS

Section 4.1 Electrical functional test sheets index

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 87-00 & process: COMM & discipline : E

Electrical	87-00 Power Distribution System (EMCS)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
DP-200N1-Q25	POWER SUPPLY EMCS AUX - DP-200N1-Q25	ONSHORE	C10002843	FTR-2	100	2024-10-28	RFO 1
UP-200F3-QF47	ALIMENTAZIONE EMCS - LINE A	ONSHORE	C10004584	FTR-2	100	2024-11-08	RFO 1
UP-200F3-QF48	ALIMENTAZIONE EMCS - LINE B	ONSHORE	C10004569	FTR-2	100	2024-11-08	RFO 1

ITEM	Tag	DP-200N1-Q25	: POWER SUPPLY EMCS AUX - DP-200N1-Q25	Dwg	1723002197-EL-DG-00013		
	S/Sys	87-00	: Power Distribution System (EMCS)	Module			
TASK	code	C10002843	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	PRE-COMM	Activity	FTS	Discipline	Electrical	Form	FTR-2	Protection Relay

FTR2 - Protection relay
Record sheet

RELAY DATA

Manufacturer: ABB	Serial N°: NA	Relay type: NA
Auxiliary supply: NA	Location: B200	Cubicle: +03
Switchboard: DP-200N1		

Current transformers

Tag	Number of	Ratio	Location

Voltage transformers

Tag	Number of	Ratio	Location

Test result (refer to manufacturer's procedure)

ANSI function	Setting	Injection	Trip value	Time delay	
				Setting	Trip value
I	6A	NA	NA	FIXED	NA

Testing & measurement instruments used

Type	Serial n°	Calibration certificate	Validity
FLUKE 1663	5380144	7727/24	10/07/2025

Comments:

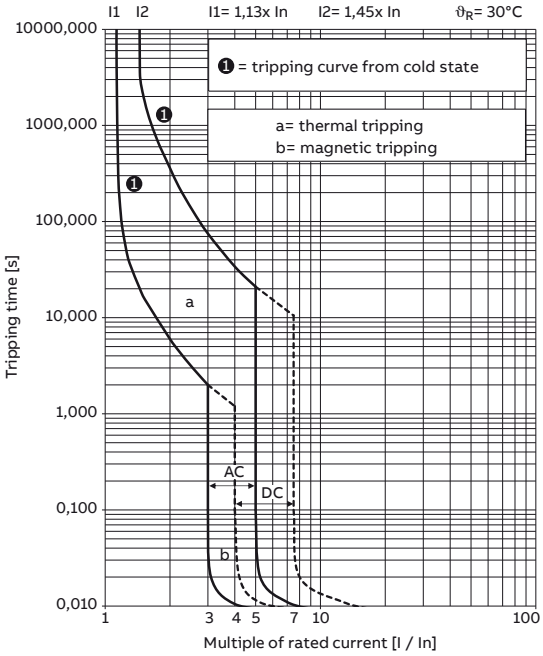
Page 1/1	Performed by	☐ WITNESS ☉ REVIEW	☐ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CPY NOT PRESENT
Name	Davide Zucconelli	Kristian Castellani	Witness waived
Date	2024-10-28	2024-10-28	2024-10-28
Signature	Digitaly signed by Davide Zucconelli 2024-10-28T11:46:12.649Z	Digitaly signed by Kristian Castellani 2024-10-28T12:57:29.674Z	Digitaly signed by Witness waived 2024-10-28T13:28:39.646Z

Miniature Circuit breakers S300P

Tripping characteristics

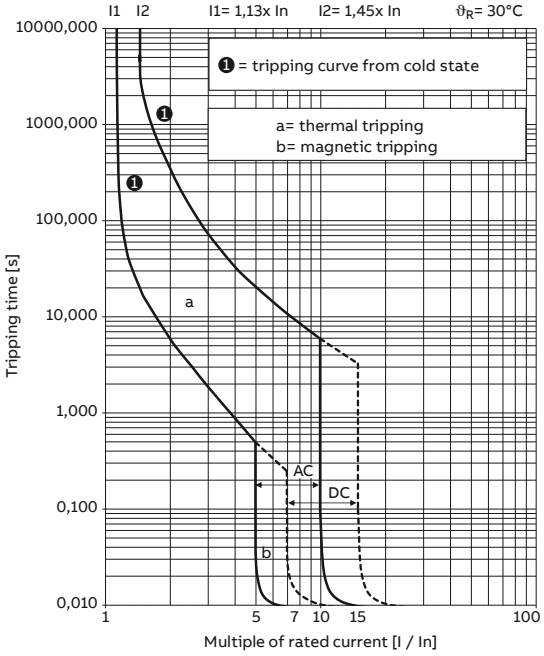
MCB Type S300P - B (3 ... 5 x I_n AC)

Tripping Characteristic IEC/EN 60898-1



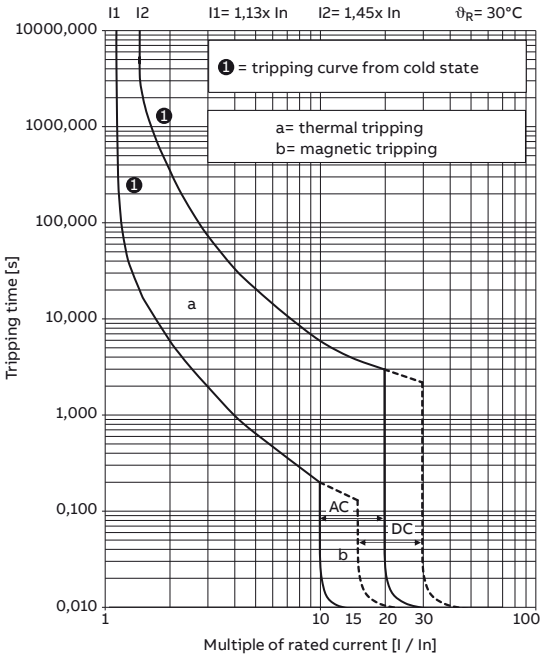
MCB Type S300P - C (5 ... 10 x I_n AC)

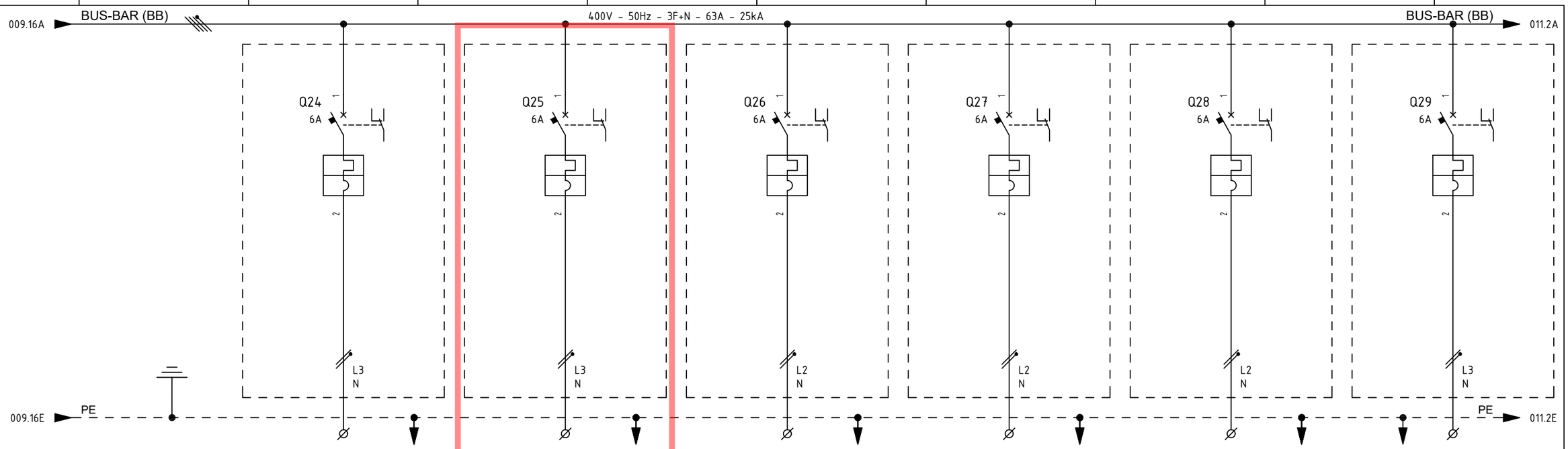
Tripping Characteristic IEC/EN 60898-1



MCB Type S300P - D (10 ... 20 x I_n AC)

Tripping Characteristic IEC/EN 60898-1





ITEM			1	B400-PCS-001	B400-EMCS-001	B400-FGS-001	B400-NET-001	B400-SRV-001	CP-630E1
UTILITY			2	PCS-CONTROLLER AND I/O CABINET - AUXILIARY	EMCS-CONTROLLER AND I/O CABINET - AUXILIARY	FGS FIRE & GAS PANEL - AUXILIARY	SYSTEM SERVER / NETWORK CABINET - AUXILIARY	SERVER CABINET ITER - AUXILIARY	UCP - INSTRUMENT AIR PACKAGE -A-63000 - AUXILIARY
CUBICLE			3	+03	+03	+03	+03	+03	+03
RATED POWER	RATED CURRENT		4/5	0.5 KW / 2.72 A	0.5 KW / 2.72 A	0.8 KW / 4.35 A	0.5 KW / 2.72 A	0.5 KW / 2.72 A	0.5 KW / 2.72 A
TYPICAL FUNCTIONAL			6	-	-	-	-	-	-
CIRCUIT BREAKER (ABB)	TYPE		7	S302P-C6	S302P-C6	S302P-C6	S302P-C6	S302P-C6	S302P-C6
	VERSION		8	2P / MINIATURE	2P / MINIATURE	2P / MINIATURE	2P / MINIATURE	2P / MINIATURE	2P / MINIATURE
	TRIP UNITS		9	In=6A - Curve C	In=6A - Curve C	In=6A - Curve C	In=6A - Curve C	In=6A - Curve C	In=6A - Curve C
	Icu	KA	10	25kA	25kA	25kA	25kA	25kA	25kA
OVERLOAD	L	Range A	11	-	-	-	-	-	-
		Range t	12	-	-	-	-	-	-
SEL. SHORT-CIRCUIT	S	Range A	13	-	-	-	-	-	-
		Range t	14	-	-	-	-	-	-
INST. SHORT-CIRCUIT	I	Range A	15	-	-	-	-	-	-
		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 / 4	SCREW / 4
POWER CONDUCTOR		mm²	31	3G2.5	3G2.5	3G2.5	3G2.5	3G2.5	3G2.5

=
+

DWG n° : 231298/SD/13
Item n° : PF1002888/101

IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
4	18/09/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
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

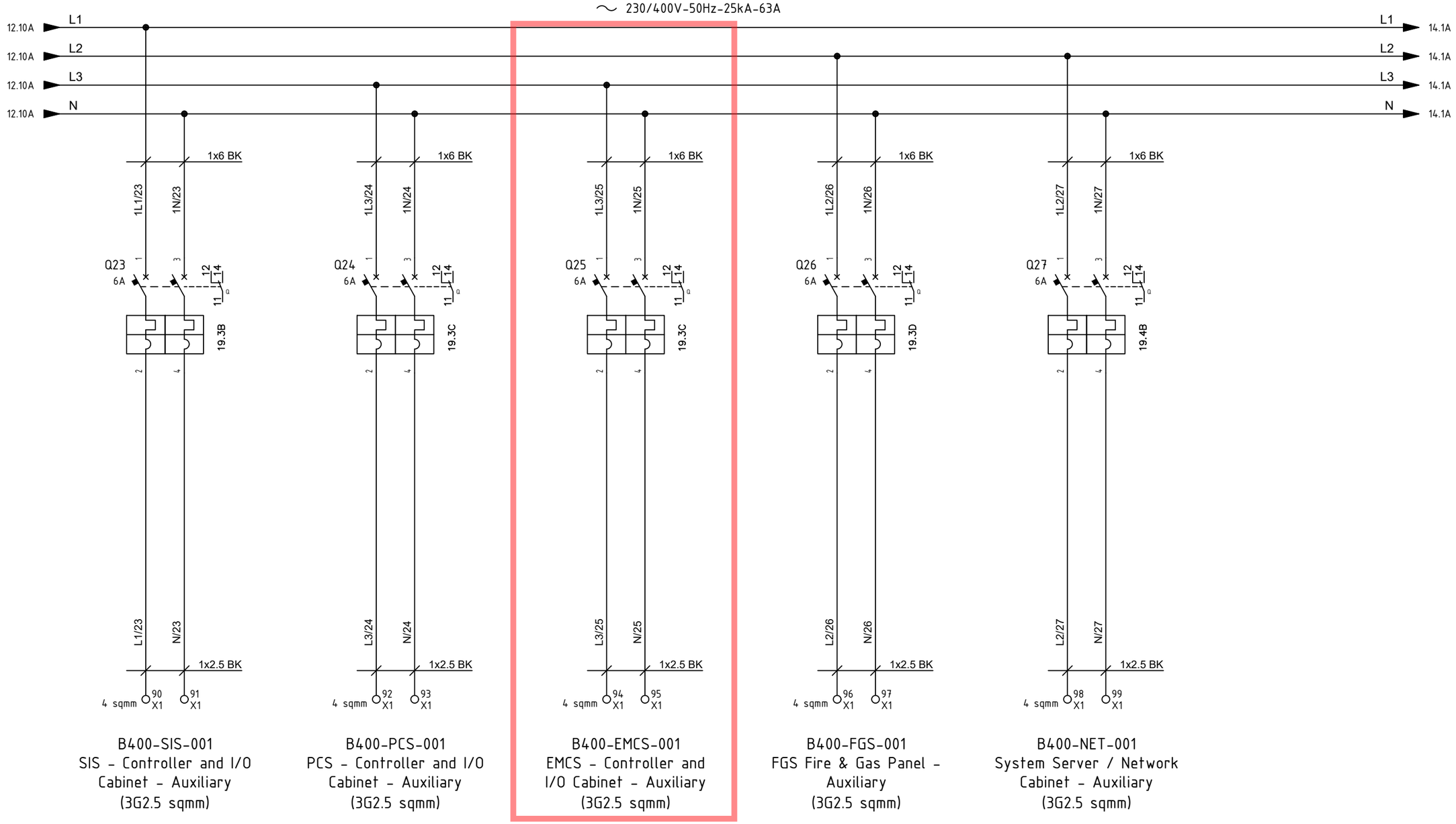
DRAWING NO. 1723002197-EL-DG-00013

SHEET 010

REV. 04

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00013 Rev. 04



B400-SIS-001
SIS - Controller and I/O Cabinet - Auxiliary
(3G2.5 sqmm)

B400-PCS-001
PCS - Controller and I/O Cabinet - Auxiliary
(3G2.5 sqmm)

B400-EMCS-001
EMCS - Controller and I/O Cabinet - Auxiliary
(3G2.5 sqmm)

B400-FGS-001
FGS Fire & Gas Panel - Auxiliary
(3G2.5 sqmm)

B400-NET-001
System Server / Network Cabinet - Auxiliary
(3G2.5 sqmm)

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
2	19/08/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
1	05/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for construction (AFC)
0	29/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

DWG n° : 231298/SD/33
Item n° : PF1002888/101

TITLE : "DP-200N1"
LV SWBD FUNCTIONAL DIAGRAMS
Functional Drawing

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00033

SHEET 13

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00033 Rev. 02

ITEM	Tag	UP-200F3-QF48	: ALIMENTAZIONE EMCS - LINE B		Dwg	1724000372-EL-DG-00009	
	S/Sys	87-00	: Power Distribution System (EMCS)		Module		
TASK	code	C10004569	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	PRE-COMM	Activity	FTS	Discipline	Electrical	Form	FTR-2	Protection Relay

FTR2 - Protection relay
Record sheet

RELAY DATA

Manufacturer:	ABB	Serial N°:	NA	Relay type:	NA
Auxiliary supply:	NA	Location:	B300	Cubicle:	NA
Switchboard:	UP-200F3				

Current transformers

Tag	Number of	Ratio	Location

Voltage transformers

Tag	Number of	Ratio	Location

Test result (refer to manufacturer's procedure)

ANSI function	Setting	Injection	Trip value	Time delay	
				Setting	Trip value
I	10A	NA	NA	FIXED	NA

Testing & measurement instruments used

Type	Serial n°	Calibration certificate	Validity
FLUKE 1663	5380144	7727/24	08/07/2025

Comments:

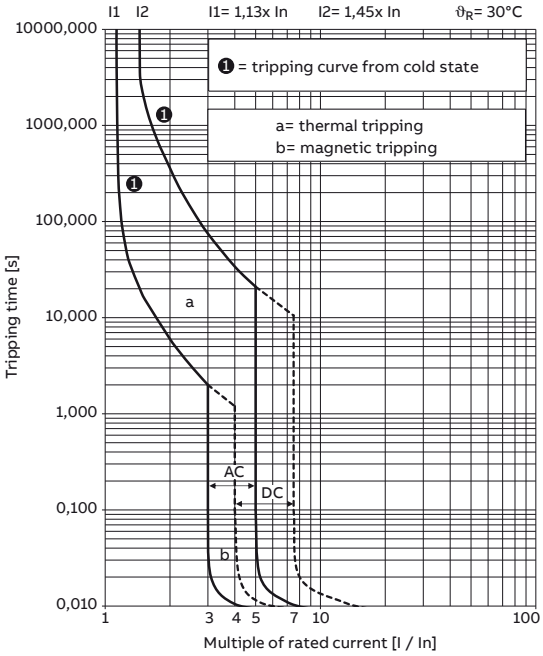
Page 1/1	Performed by	☐ WITNESS ☉ REVIEW	☐ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CPY NOT PRESENT
Name	Davide Zucconelli	Kristian Castellani	Witness waived
Date	2024-11-08	2024-11-08	2024-11-08
Signature	PROVERLIS Digitaly signed by Davide Zucconelli 2024-11-08T14:37:07.949Z	PROVERLIS Digitaly signed by Kristian Castellani 2024-11-08T15:10:35.861Z	PROVERLIS Digitaly signed by Witness waived 2024-11-08T16:26:10.558Z

Miniature Circuit breakers S300P

Tripping characteristics

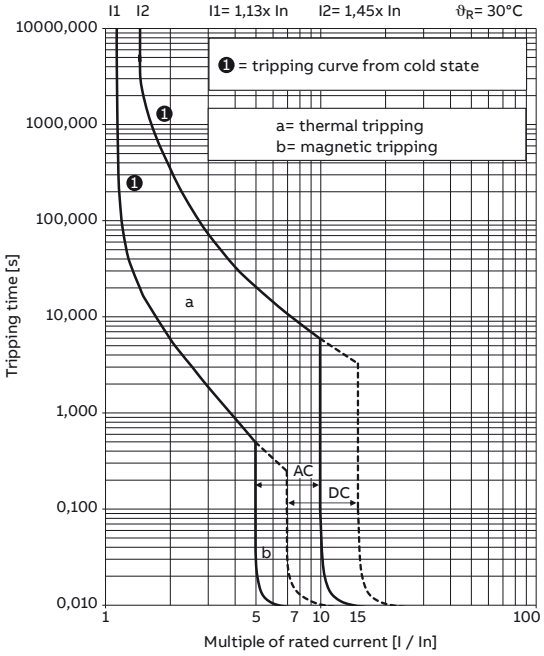
MCB Type S300P - B (3 ... 5 x I_n AC)

Tripping Characteristic IEC/EN 60898-1



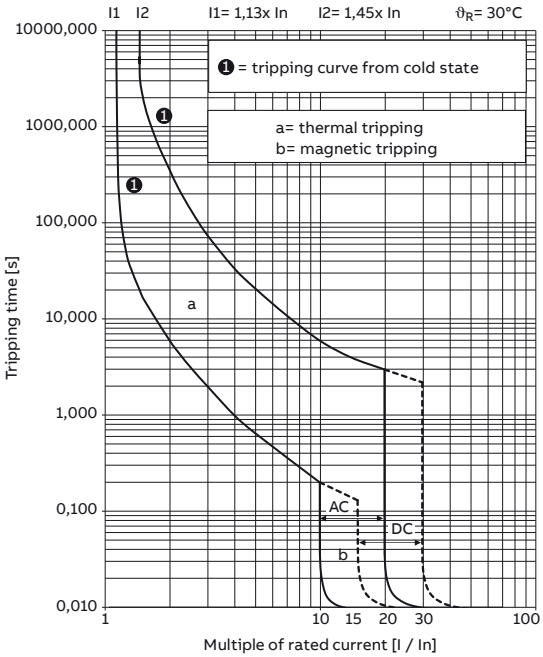
MCB Type S300P - C (5 ... 10 x I_n AC)

Tripping Characteristic IEC/EN 60898-1



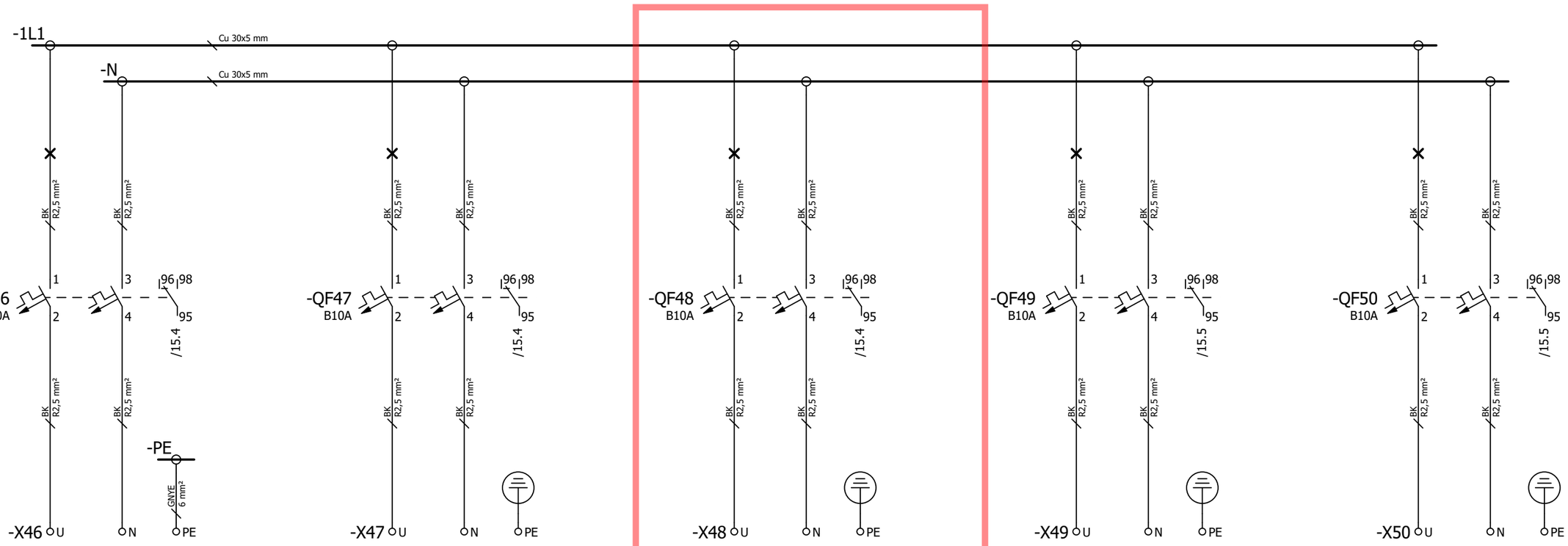
MCB Type S300P - D (10 ... 20 x I_n AC)

Tripping Characteristic IEC/EN 60898-1



CAE EPLAN Electric P8

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Load
230V/N/PE~50Hz

B400-PCS-001
PCS-CONTROLLER AND I/O
CABINET-LINE B - 1.5KW

Load
230V/N/PE~50Hz

B400-EMCS-001
EMCS-CONTROLLER AND I/O
CABINET-LINE A - 1KW

Load
230V/N/PE~50Hz

B400-EMCS-001
EMCS-CONTROLLER AND I/O
CABINET-LINE B - 1KW

Load
230V/N/PE~50Hz

SG-200-N1
LV SWITCHBOARD AUXILIARY
1KW

Load
230V/N/PE~50Hz

SPARE

1000007888_010

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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 40 kVA
Circuit diagram

1000007888.020
10009757

1000007888_010 en

=
+ MBC1
& EFS

A3

sheet 10
sheets 17

ITEM	Tag	UP-200F3-QF47	: ALIMENTAZIONE EMCS - LINE A		Dwg	1724000372-EL-DG-00009	
	S/Sys	87-00	: Power Distribution System (EMCS)		Module		
TASK	code	C10004584	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	PRE-COMM	Activity FTS	Discipline Electrical	Form	FTR-2	Protection Relay

FTR2 - Protection relay
Record sheet

RELAY DATA

Manufacturer:	ABB	Serial N°:	NA	Relay type:	NA
Auxiliary supply:	NA	Location:	B300	Cubicle:	NA
Switchboard:	UP-200F3				

Current transformers

Tag	Number of	Ratio	Location

Voltage transformers

Tag	Number of	Ratio	Location

Test result (refer to manufacturer's procedure)

ANSI function	Setting	Injection	Trip value	Time delay	
				Setting	Trip value
I	10A	NA	NA	FIXED	NA

Testing & measurement instruments used

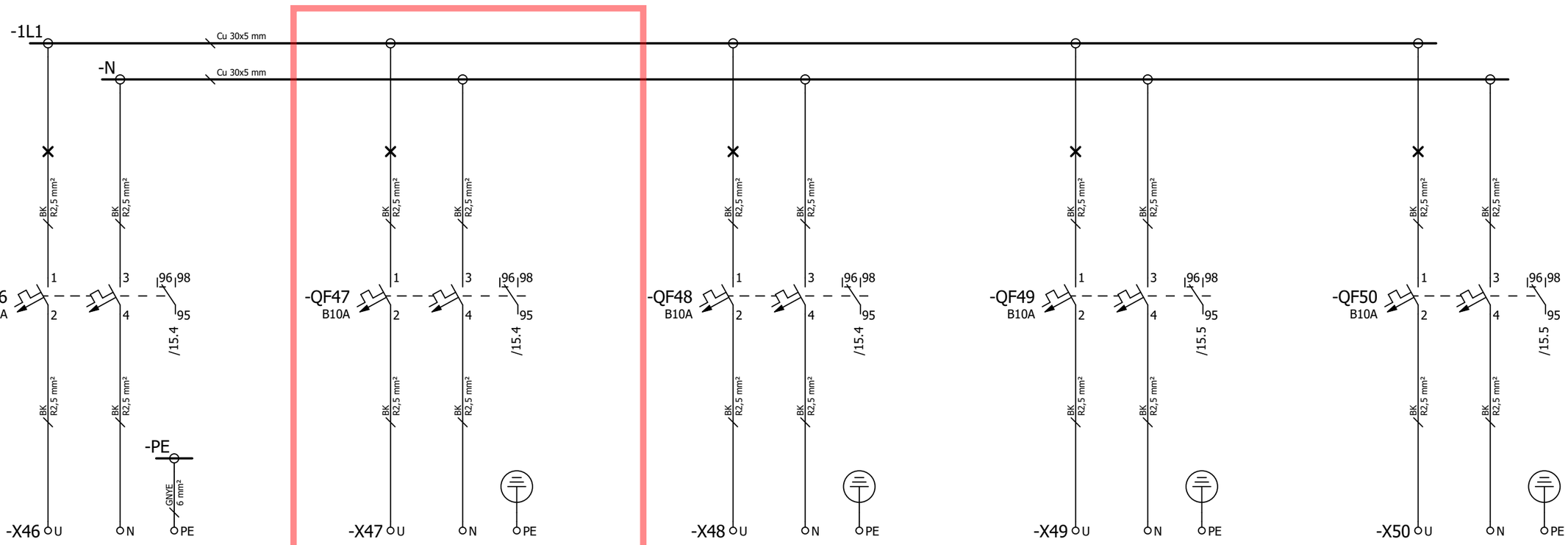
Type	Serial n°	Calibration certificate	Validity
FLUKE 1663	5380144	7727/24	08/07/2025

Comments:

Page 1/1	Performed by	☐ WITNESS ☑ REVIEW	☐ WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CPY NOT PRESENT
Name	Davide Zucconelli	Kristian Castellani	Witness waived
Date	2024-11-08	2024-11-08	2024-11-08
Signature	Digitaly signed by Davide Zucconelli 2024-11-08T14:22:02.288Z	Digitaly signed by Kristian Castellani 2024-11-08T15:18:29.260Z	Digitaly signed by Witness waived 2024-11-08T16:28:32.919Z

CAE EPLAN Electric P8

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Load
230V/N/PE~50Hz

B400-PCS-001
PCS-CONTROLLER AND I/O
CABINET-LINE B - 1.5KW

Load
230V/N/PE~50Hz

B400-EMCS-001
EMCS-CONTROLLER AND I/O
CABINET-LINE A - 1KW

Load
230V/N/PE~50Hz

B400-EMCS-001
EMCS-CONTROLLER AND I/O
CABINET-LINE B - 1KW

Load
230V/N/PE~50Hz

SG-200-N1
LV SWITCHBOARD AUXILIARY
1KW

Load
230V/N/PE~50Hz

SPARE

1000007888_010

				Date	23.05.2024
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 40 kVA
Circuit diagram

1000007888.020
10009757

1000007888_010 en

=
+ MBC1
& EFS

A3

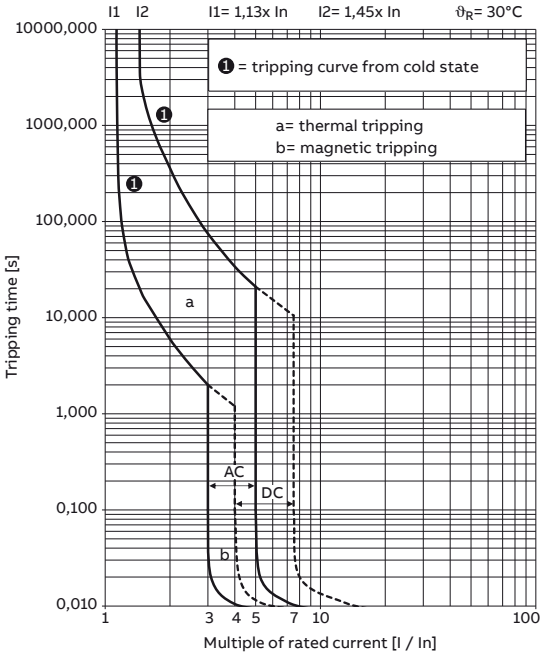
sheet 10
sheets 17

Miniature Circuit breakers S300P

Tripping characteristics

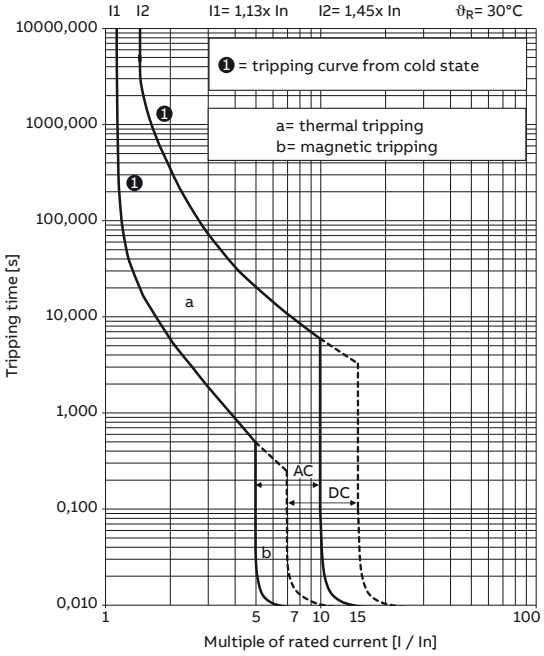
MCB Type S300P - B (3 ... 5 x I_n AC)

Tripping Characteristic IEC/EN 60898-1



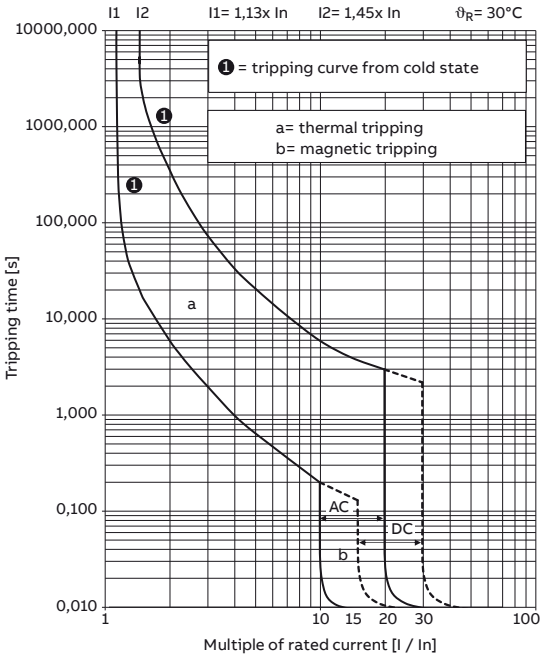
MCB Type S300P - C (5 ... 10 x I_n AC)

Tripping Characteristic IEC/EN 60898-1



MCB Type S300P - D (10 ... 20 x I_n AC)

Tripping Characteristic IEC/EN 60898-1



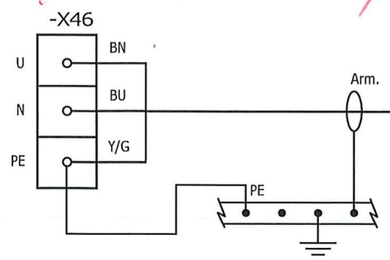
Section 4.2 Electrical
“As-Commissioned” interconnection diagrams

FROM	TO

DESCRIPTION: AC UPS - PAS DB
TAG NUMBER: DP-200F3

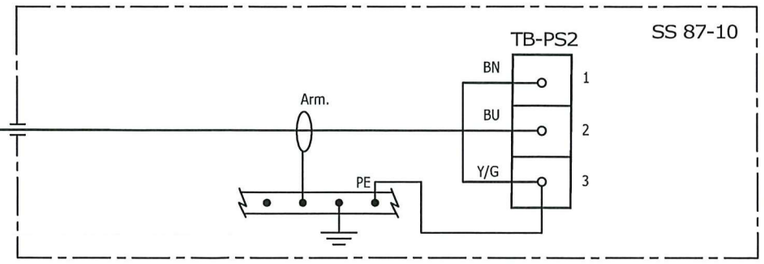
UP-200 F3 BY PASS
MARCO MORETTO
21/3/25

-X46

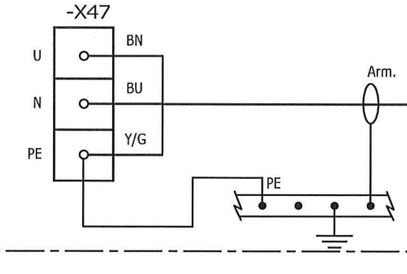


84304-CEL
3G2.5 mm²

DESCRIPTION: PCS -CONTROLLER AND I/O CABINET - LINE B
TAG NUMBER: B400-PCS-001



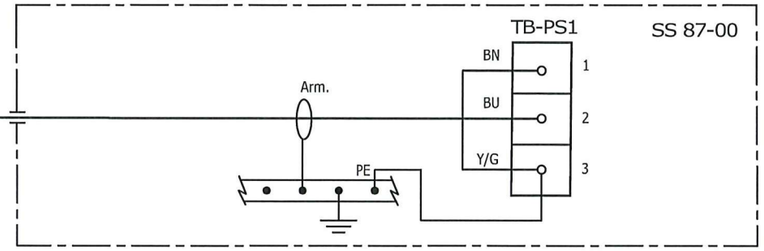
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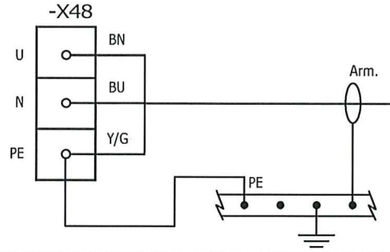
84305-CEL
3G2.5 mm²

NO MARK UP
MARCO MORETTO
21/3/25

DESCRIPTION: EMCS -CONTROLLER AND I/O CABINET - LINE A
TAG NUMBER: B400-EMCS-001



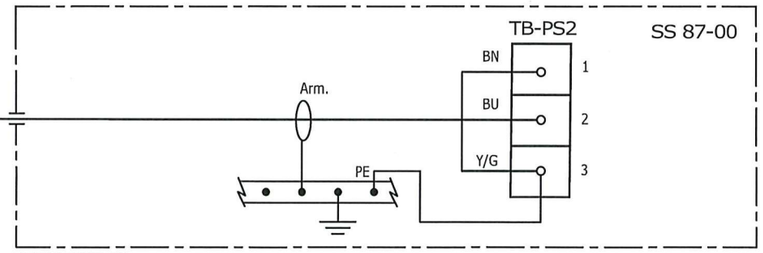
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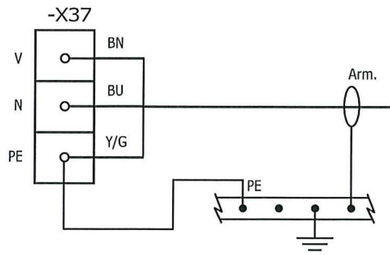
84306-CEL
3G2.5 mm²

NO MARK UP
MARCO MORETTO
21/3/25

DESCRIPTION: EMCS -CONTROLLER AND I/O CABINET - LINE B
TAG NUMBER: B400-EMCS-001



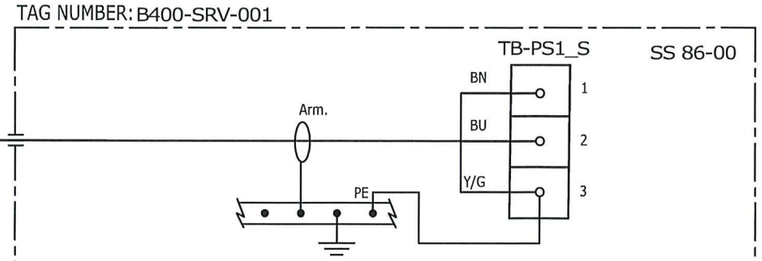
-X37



84307-CEL
3G6 mm²

NO MARK UP
MARCO MORETTO
21/3/25

DESCRIPTION: SERVER CABINET ITER - LINE A
TAG NUMBER: B400-SRV-001



AS COMMISSIONED. MARCO MORETTO
21/3/25

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

REV.:	DATE:	SIGNATURE:
2_F	09/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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

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

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

SCALE : 1:X

A3

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

SHEET 039

REV. 02

F.to UNI A3: 420mmx297mm

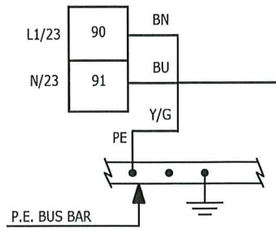
File Name : 123A90-DDL-EL-DG-20149 Rev. 02

FROM	TO

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

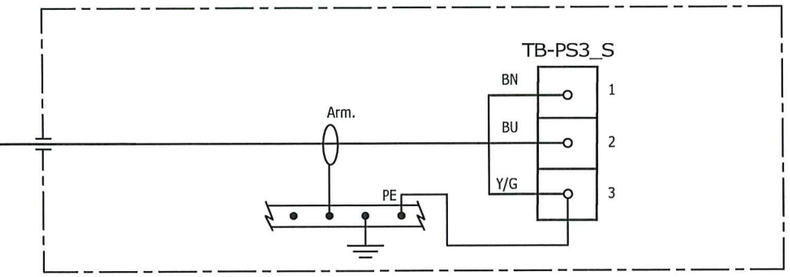
NO MARK UP
MARCO MORETTO
21/3/25

CUBICLE/CB: +03/Q23

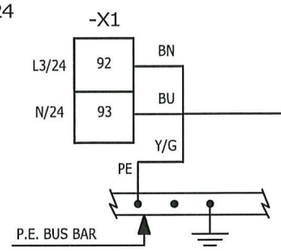


83104-CEL
3G2.5 mm²

DESCRIPTION: SIS -CONTROLLER AND I/O CABINET - AUXILIARY
TAG NUMBER: B400-SIS-001



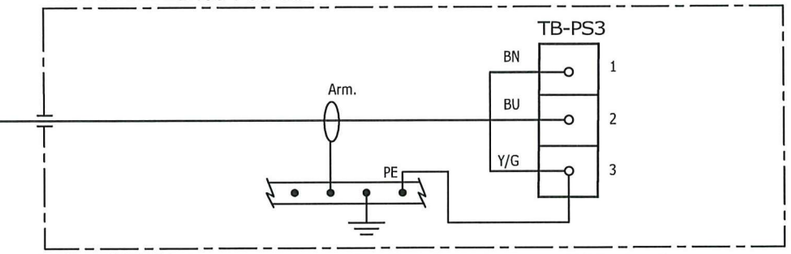
CUBICLE/CB: +03/Q24



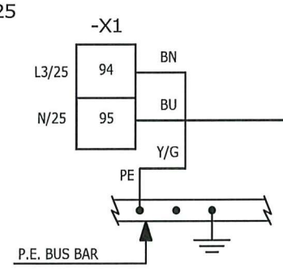
83105-CEL
3G2.5 mm²

NO MARK UP
MARCO MORETTO
21/3/25

DESCRIPTION: PCS -CONTROLLER AND I/O CABINET - AUXILIARY
TAG NUMBER: B400-PCS-001



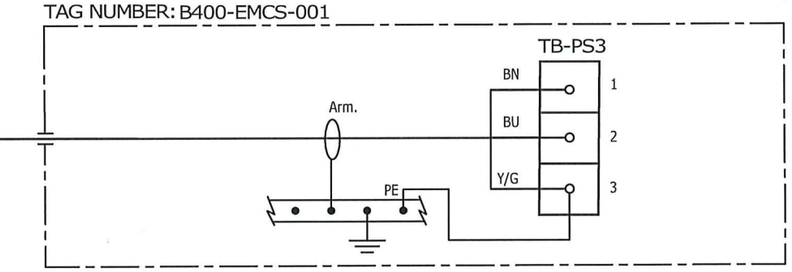
CUBICLE/CB: +03/Q25



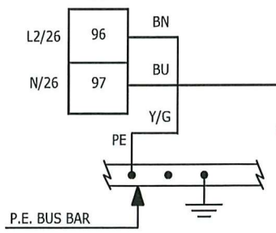
83106-CEL
3G2.5 mm²

NO MARK UP
MARCO MORETTO
21/3/25

DESCRIPTION: EMCS -CONTROLLER AND I/O CABINET - AUXILIARY
TAG NUMBER: B400-EMCS-001



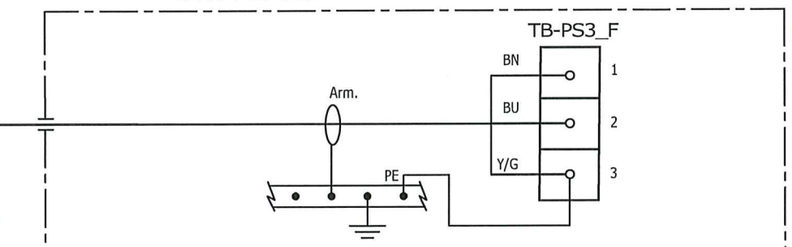
CUBICLE/CB: +03/Q26



83107-CEL
3G2.5 mm²

NO MARK UP
MARCO MORETTO
21/3/25

DESCRIPTION: FGS FIRE & GAS PANEL - AUXILIARY
TAG NUMBER: B400-FGS-001



AS COMMISSIONED: MATCHA GIROTI
21/3/25

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

REV.:	DATE:	SIGNATURE:
2_F	09/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

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

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

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

SCALE : 1:X

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-EL-DG-20149	052	02

F.to UNI A3: 420mmx297mm

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

Section 4.3 Instrumentation functional test sheets index

NOT APPLICABLE

Section 4.4 Instrumentation “As-Commissioned” interconnection diagrams

BASE LOAD POWER HUB (BLPH)
EMCS CABINET
WIRING DIAGRAMS AND TERMINAL STRIPS

AS COMMISSIONING

10-05-2025

GIANDOMENICO DE MISSIER

NO MARK UP

REV	DATE	PREPARED	CHECKED	APPROVED	DESCRIPTION
2	11.11.2024	A.G.	A.B.	S.C.	ACCEPTED FOR CONSTRUCTION (AFC)
1	25.09.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)
0	05.08.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)

YOKOGAWA ◆ PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-EMCS_WD

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
COVER PAGE

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

SCALE : 1

A3

DRAWING NO. 1724000594-IN-DG-00024

SHEET 001

REV. 2

PAG. NR.	REVISION 0	1	2	3	4	5	6	7	8	TITLE
001	X	X	X							BASE LOAD POWER HUB (BLPH) COVER PAGE
002	X	X	X							BASE LOAD POWER HUB (BLPH) INDEX
003	X									BASE LOAD POWER HUB (BLPH) LEGEND
004	X	X	X							BASE LOAD POWER HUB (BLPH) SYMBOL LEGEND
005	X	X								BASE LOAD POWER HUB (BLPH) TYPICAL WIRE MARKING & EARTH BAR CONNECTION DETAILS
016	X									BASE LOAD POWER HUB (BLPH) EMCS PANEL - 230Vac POWER DISTRIBUTION FROM UPS LINE 1
017	X									BASE LOAD POWER HUB (BLPH) EMCS PANEL - 230Vac POWER DISTRIBUTION FROM UPS LINE 2
018	X									BASE LOAD POWER HUB (BLPH) EMCS PANEL - 230Vac POWER DISTRIBUTION FROM NON-UPS
019	X									BASE LOAD POWER HUB (BLPH) EMCS PANEL - 230Vac POWER DISTRIBUTION FROM NON-UPS
020	X	X	X							BASE LOAD POWER HUB (BLPH) EMCS PANEL - 230Vac 50Hz POWER DISTRIBUTION VENTILATION FAN
021	X									BASE LOAD POWER HUB (BLPH) SPARE PAGE
022	X	X	X							BASE LOAD POWER HUB (BLPH) EMCS PANEL - 230Vac / 24Vdc POWER DISTRIBUTION
023	X									BASE LOAD POWER HUB (BLPH) SPARE PAGE
024	X	X	X							BASE LOAD POWER HUB (BLPH) EMCS PANEL - BREAKER FAULT ALARM CIRCUIT
025	X									BASE LOAD POWER HUB (BLPH) EMCS PANEL - SHIELD / GROUND CONNECTION
026	X	X	X							BASE LOAD POWER HUB (BLPH) EMCS PANEL - FAULT ALARM SIGNALS TO DCS
027	X	X	X							BASE LOAD POWER HUB (BLPH) EMCS PANEL - 24Vdc POWER DISTRIBUTION
028	X	X								BASE LOAD POWER HUB (BLPH) EMCS PANEL - AO SWITCH COMMAND
029	X	X	X							BASE LOAD POWER HUB (BLPH) EMCS PANEL - RACK "1"-SEL-2241
030	X	X	X							BASE LOAD POWER HUB (BLPH) EMCS PANEL - RACK "2"-SEL-2241

PAG. NR.	REVISION 0	1	2	3	4	5	6	7	8	TITLE
031	X	X	X							BASE LOAD POWER HUB (BLPH) EMCS PANEL - TYPICAL WIRING DIGITAL INPUT
032	X	X	X							BASE LOAD POWER HUB (BLPH) SPARE PAGE
033	X	X								BASE LOAD POWER HUB (BLPH) EMCS PANEL - TYPICAL WIRING DIGITAL OUTPUT
034	X	X	X							BASE LOAD POWER HUB (BLPH) EMCS PANEL - TYPICAL WIRING ANALOG INPUT
035	X	X	X							BASE LOAD POWER HUB (BLPH) EMCS PANEL - TYPICAL WIRING ANALOG OUTPUT
036	X	X	X							BASE LOAD POWER HUB (BLPH) EMCS PANEL - DIGITAL INPUT SIGNALS
037		X	X							BASE LOAD POWER HUB (BLPH) EMCS PANEL - DIGITAL OUTPUT SIGNALS
038		X	X							BASE LOAD POWER HUB (BLPH) EMCS PANEL - ANALOG INPUT SIGNALS
039		X	X							BASE LOAD POWER HUB (BLPH) EMCS PANEL - ANALOG OUTPUT SIGNALS (SIGNAL PART)
040		X								BASE LOAD POWER HUB (BLPH) EMCS PANEL - ANALOG OUTPUT SIGNALS (SWITCH PART)

PAG. NR.	REVISION 0	1	2	3	4	5	6	7	8	TITLE

REV	DATE	PREPARED	CHECKED	APPROVED	DESCRIPTION
2	11.11.2024	A.G.	A.B.	S.C.	ACCEPTED FOR CONSTRUCTION (AFC)
1	25.09.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)
0	05.08.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)

YOKOGAWA ◆ PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-EMCS_WD

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
INDEX

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

SCALE : 1

A3

DRAWING NO. 1724000594-IN-DG-00024

SHEET 002

REV. 2

NUMBER	SYMBOL	REFERENCE	DESCRIPTION
01		IEC 60417-5031	DIRECT CURRENT
02		IEC 60417-5032	ALTERNATING CURRENT
03		IEC 60417-5033	BOTH DIRECT AND ALTERNATING CURRENT
04		.	THREE-PHASE ALTERNATING CURRENT
05		IEC 60417-5017	EARTH (GROUND) TERMINAL
06		IEC 60417-5019	PROTECTIVE CONDUCTOR TERMINAL
07		IEC 60417-5020	FRAME OR CHASSIS TERMINAL
08		IEC 60417-5021	EQUIPOTENTIALITY
09		IEC 60417-5007	ON (SUPPLY)
10		IEC 60417-5008	OFF (SUPPLY)
11		IEC 60417-5172	EQUIPMENT PROTECTED THROUGHOUT BY DOUBLE INSULATION OR REINFORCED INSULATION
12		.	CAUTION RISK OF ELECTRIC SHOCK
13		IEC 60417-5041	CAUTION HOT SURFACE
14		ISO 7000-0434	CAUTION RISK OF DANGER
15		IEC 60417-5266	IN POSITION OF A BI-STABLE PUSH CONTROL
16		IEC 60417-5269	OUT POSITION OF A BI-STABLE PUSH CONTROL

REV	DATE	PREPARED	CHECKED	APPROVED	DESCRIPTION
2	11.11.2024	A.G.	A.B.	S.C.	ACCEPTED FOR CONSTRUCTION (AFC)
1	25.09.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)
0	05.08.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)

YOKOGAWA ◆ PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-EMCS_WD

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
LEGEND

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

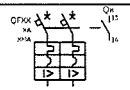
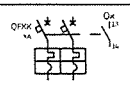
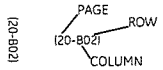
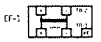
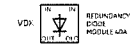
SCALE : 1

A3

DRAWING NO. 1724000594-IN-DG-00024

SHEET 003

REV. 2

	ROTATIVE MAIN SWITCH -		ELECTRIC FAN WITH FAULT DETECTION		I.S. BARRIER (NOTE: AB-xx FOR ACTIVE BARRIERS, ZB-xx FOR ZENER BARRIERS)
	DIFFERENTIAL RESIDUAL CURRENT CIRCUIT BREAKER WITH AUXILIARY CONTACT		PANEL ELECTRIC HEATER -		GALVANIC ISOLATOR -
	AUTOMATIC CIRCUIT BREAKER WITH AUXILIARY CONTACT		AC/AC VOLTAGE TRANSFORMER -		FUSED TERMINAL -
	DISCONNECTOR WITH FUSE -		THERMOSTATE NO CONTACT -		KNIFE TERMINAL -
	PURE RESIDUAL CURRENT CIRCUIT BREAKER		NO CONTACT -		FEED THROUGH TERMINAL -
	SURGE ARRESTOR -		NC CONTACT -		PAGE CROSS REFERENCE INDICATION -
	LINE FILTER MODULE -		DOOR LIMIT SWITCH -		COMMON BOX -
	SERVICE SOCKET -		FRONT PANEL ALARM BUZZER -		- -
	AC/DC FEEDER -		INTERNAL LIGHT OR FRONT PANEL LIGHT		- -
	REDUNDANCY DIODE MODULE -		MUSHROOM PUSHBUTTON INDICATOR NORMAL PUSHBUTTON INDICATOR		- -
	RELAYS -		ROTATIVE SELECTOR INDICATOR -		- -
 <2>	STEP RELAYS <2> -		RESISTOR -		- -
	- -		- -		- -

REV	DATE	PREPARED	CHECKED	APPROVED	DESCRIPTION
2	11.11.2024	A.G.	A.B.	S.C.	ACCEPTED FOR CONSTRUCTION (AFC)
1	25.09.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)
0	05.08.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)

YOKOGAWA ◆ PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-EMCS_WD

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
SYMBOL LEGEND

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

SCALE : 1

A3

DRAWING NO. 1724000594-IN-DG-00024

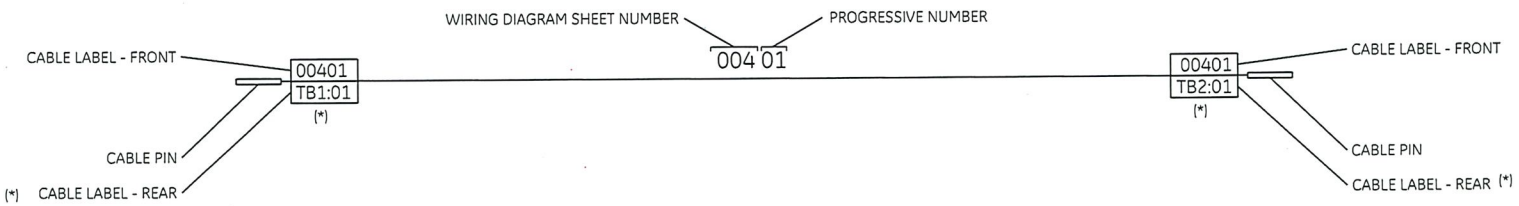
SHEET 004

REV. 2

COLOR ACRONYMS LIST :

RD	-	RED
BK	-	BLACK
BL	-	BLUE
LB	-	LIGHT BLUE
GR	-	GREY
GN	-	GREEN
YE	-	YELLOW
Y/G	-	YELLOW/GREEN
BR	-	BROWN
WH	-	WHITE

TYPICAL WIRE MARKING



EARTH CONNECTION RESUME TABLE:

	CABINET
P.E. EARTH	
I.E. EARTH	

EARTH ACRONYMS LEGEND :

P.E. (GND) - PROTECTION EARTH (GROUND, FRAME CHASSIS)
I.E. (F.E.) - INSTRUMENT EARTH (NOISELESS), FUNCTIONAL EARTH

AS COMMISSIONING
10-05-2025
GIANDONATO DE MISSIER
NO MARK UP

REV	DATE	PREPARED	CHECKED	APPROVED	DESCRIPTION
2	11.11.2024	A.G.	A.B.	S.C.	ACCEPTED FOR CONSTRUCTION (AFC)
1	25.09.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)
0	05.08.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)

YOKOGAWA ◆ PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-EMCS_WD

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
TYPICAL WIRE MARKING & EARTH BAR CONNECTION DETAILS

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

SCALE : 1

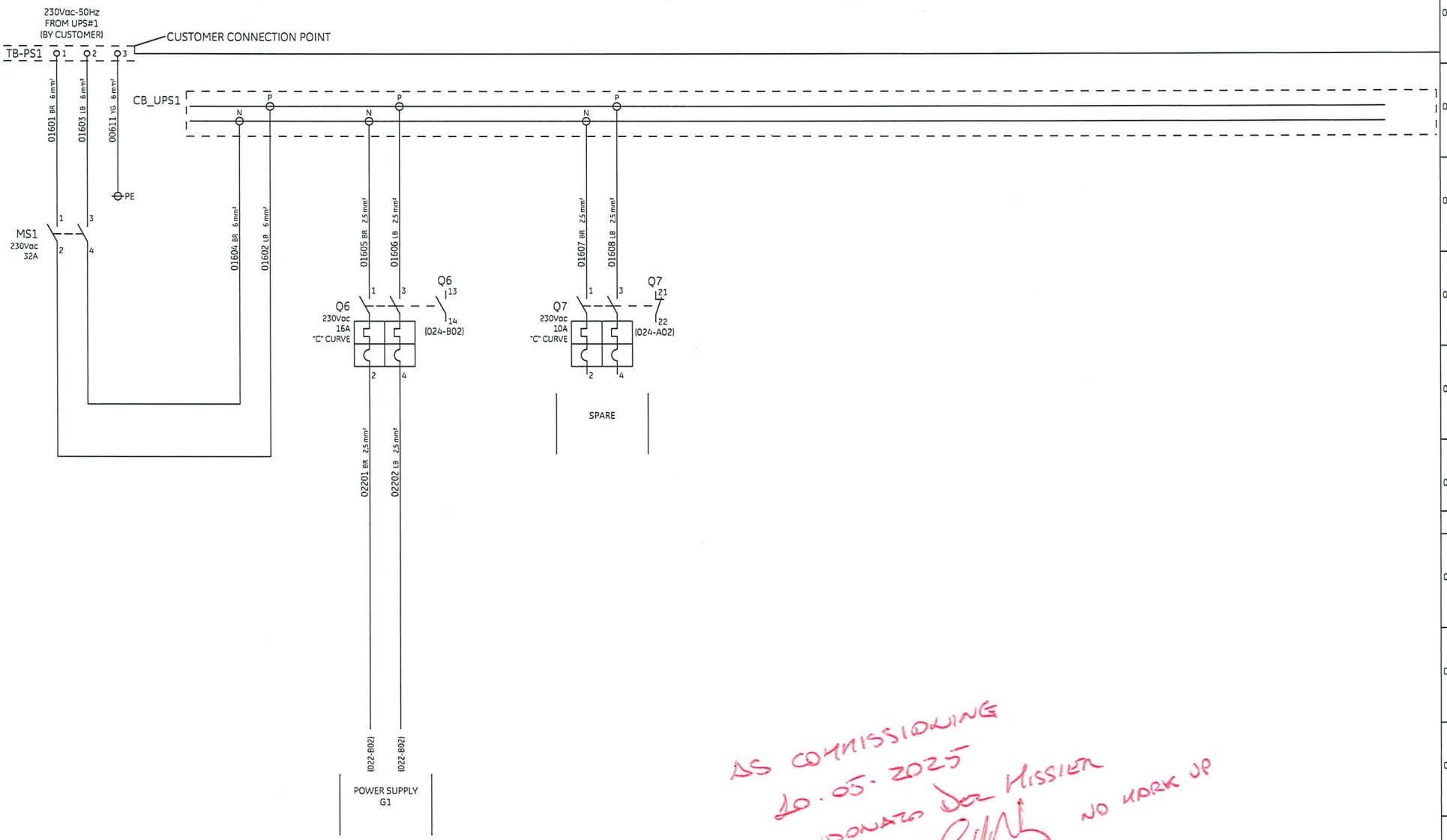
A3

DRAWING NO. 1724000594-IN-DG-00024

SHEET 005

REV. 2

EMCS PANEL - POWER DISTRIBUTION FROM UPS LINE 1



AS COMMISSIONING
10.05.2025
GIANDONATO DE MISSIER
NO MARK UP

REV	DATE	PREPARED	CHECKED	APPROVED	DESCRIPTION
2	11.11.2024	A.G.	A.B.	S.C.	ACCEPTED FOR CONSTRUCTION (AFC)
1	25.09.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)
0	05.08.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)

YOKOGAWA ◆ PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-EMCS_WD

CROSSWIND | ROSETTI MARINO

TITLE: BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
EMCS PANEL - 230Vac POWER DISTRIBUTION FROM UPS LINE 1

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

SCALE: 1

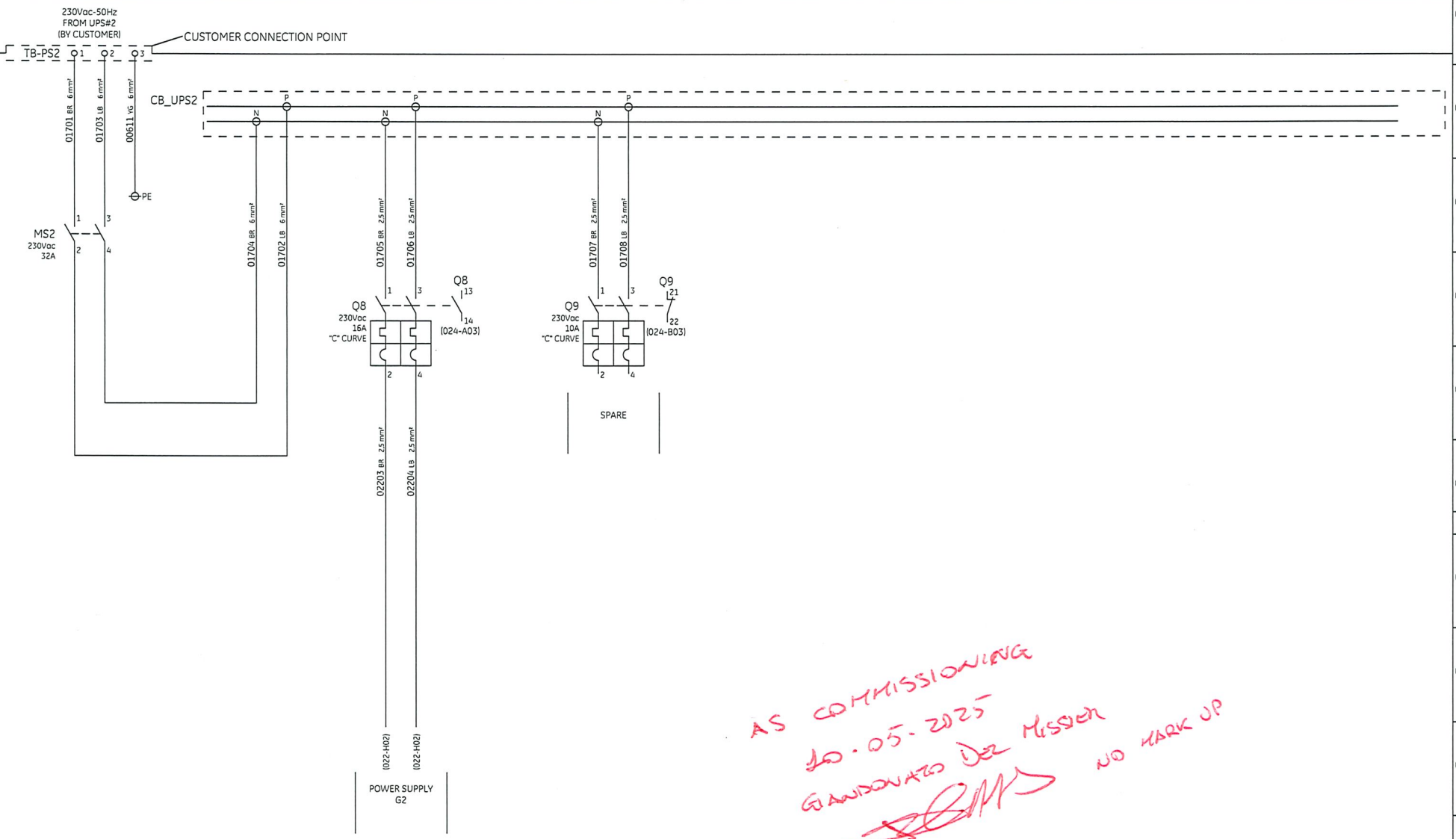
A3

DRAWING NO. 1724000594-IN-DG-00024

SHEET 016

REV. 2

EMCS PANEL - POWER DISTRIBUTION FROM UPS LINE 2



AS COMMISSIONING
10.05.2025
GIANDONATO DE MISSIER
NO MARK UP

REV	DATE	PREPARED	CHECKED	APPROVED	DESCRIPTION
2	11.11.2024	A.G.	A.B.	S.C.	ACCEPTED FOR CONSTRUCTION (AFC)
1	25.09.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)
0	05.08.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)

YOKOGAWA ◆ PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-EMCS_WD

CROSSWIND | ROSETTI MARINO

TITLE: BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
EMCS PANEL - 230Vac POWER DISTRIBUTION FROM UPS LINE 2

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

SCALE: 1

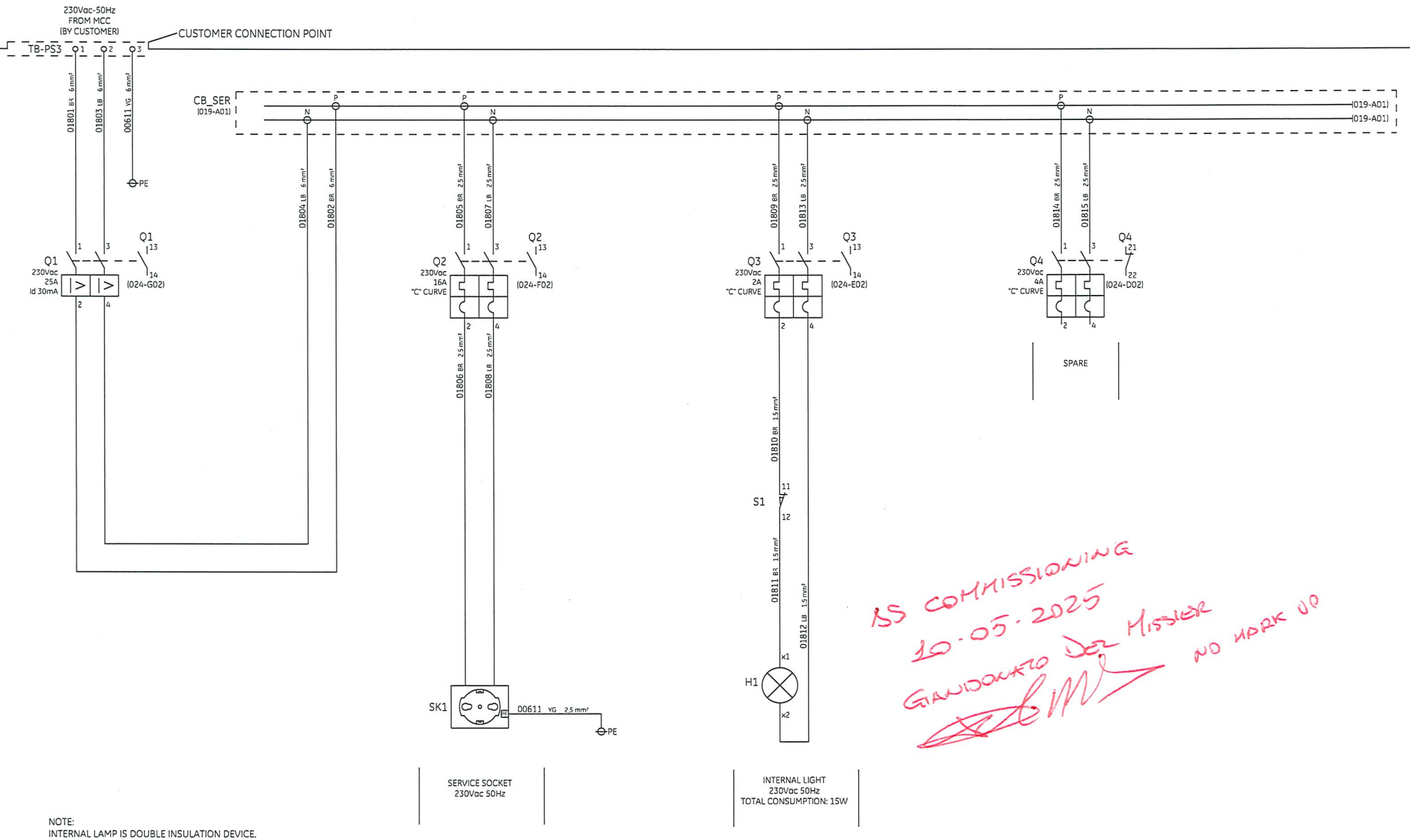
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DRAWING NO. 1724000594-IN-DG-00024

SHEET 017

REV. 2

EMCS PANEL - POWER DISTRIBUTION FROM NON UPS



AS COMMISSIONING
10-05-2025
GIANDOMENICO DE MISSIER
NO MARK UP

NOTE:
INTERNAL LAMP IS DOUBLE INSULATION DEVICE.
NO EARTH CONNECTION REQUIRED.

REV	DATE	PREPARED	CHECKED	APPROVED	DESCRIPTION
2	11.11.2024	A.G.	A.B.	S.C.	ACCEPTED FOR CONSTRUCTION (AFC)
1	25.09.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)
0	05.08.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)

YOKOGAWA ◆ PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-EMCS_WD

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
EMCS PANEL - 230Vac POWER DISTRIBUTION FROM NON-UPS

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

SCALE : 1

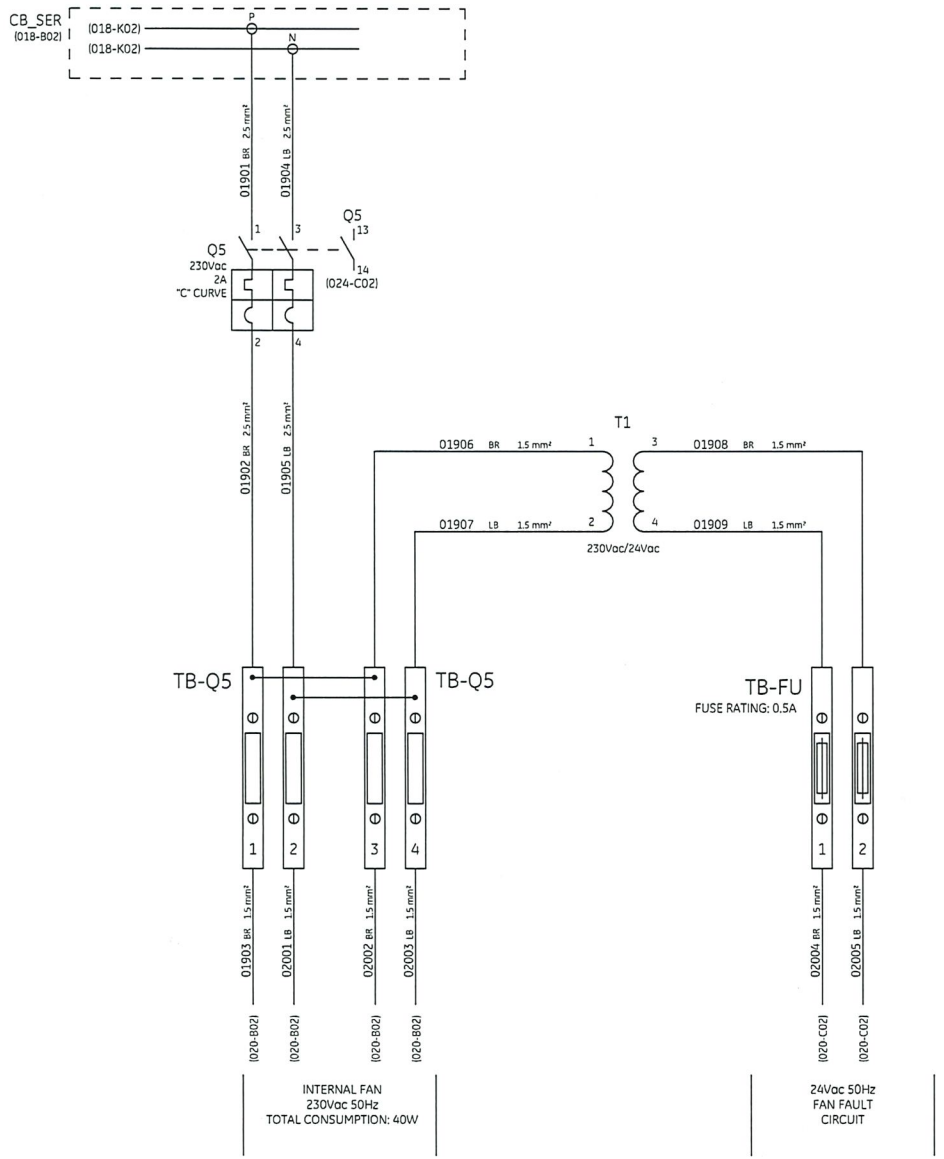
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DRAWING NO. 1724000594-IN-DG-00024

SHEET 018

REV. 2

EMCS PANEL - POWER DISTRIBUTION FROM NON UPS



AS COMMISSIONING
10-05-2025
GIANDONATO DE MISSIER
NO MARK UP

REV	DATE	PREPARED	CHECKED	APPROVED	DESCRIPTION
2	11.11.2024	A.G.	A.B.	S.C.	ACCEPTED FOR CONSTRUCTION (AFC)
1	25.09.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)
0	05.08.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)

YOKOGAWA ◆ PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-EMCS_WD

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
EMCS PANEL - 230Vac POWER DISTRIBUTION FROM NON-UPS

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

SCALE : 1

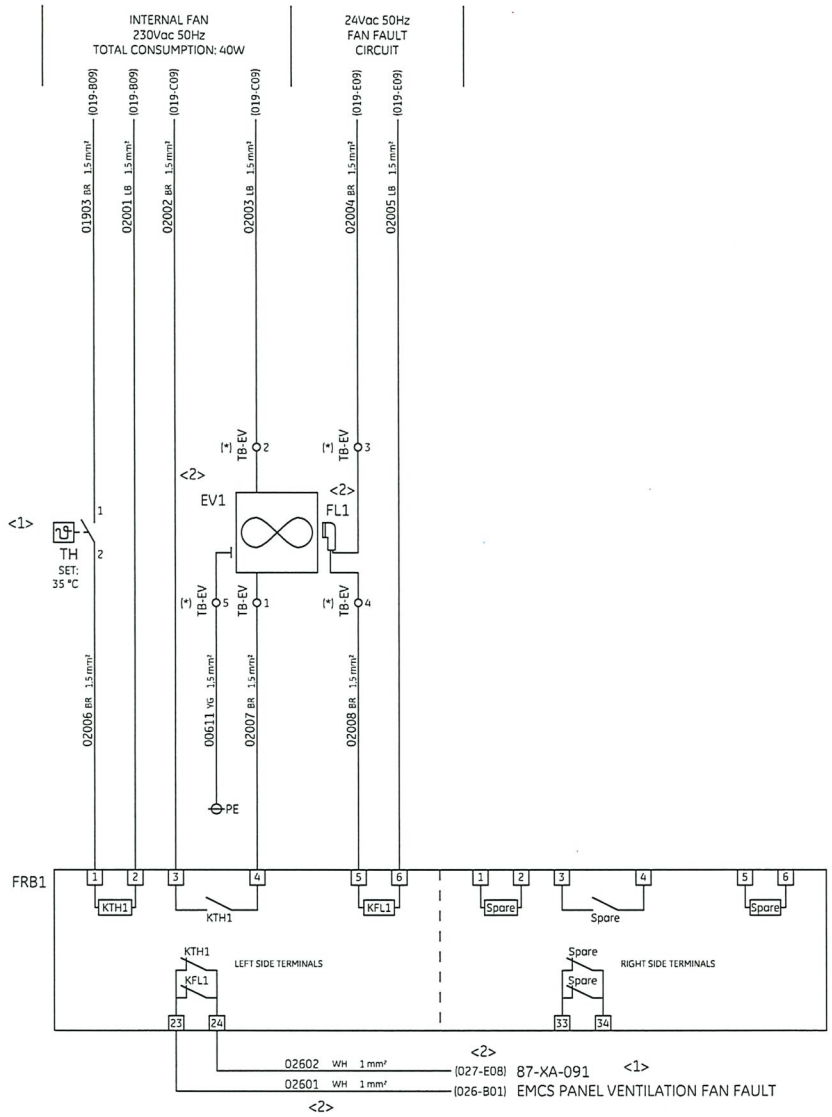
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DRAWING NO. 1724000594-IN-DG-00024

SHEET 019

REV. 2

EMCS PANEL - 230Vac 50Hz POWER DISTRIBUTION VENTILATION FAN & HEATER



AS COMMISSIONING
10-05-2025
GIANDONATO DE MISSIER
NO MARK UP

NOTE (*):
TB-EV IS A FEED THROUGH TERMINAL BOARD FOR PRE-WIRED ITEMS CONNECTION. FOR THIS REASON, WIRE NUMBERS WILL BE THE SAME ON BOTH SIDES.

REV	DATE	PREPARED	CHECKED	APPROVED	DESCRIPTION
2	11.11.2024	A.G.	A.B.	S.C.	ACCEPTED FOR CONSTRUCTION (AFC)
1	25.09.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)
0	05.08.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)

YOKOGAWA ◆ PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-EMCS_WD

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
EMCS PANEL - 230Vac 50Hz POWER DISTRIBUTION VENTILATION FAN

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

SCALE : 1

A3

DRAWING NO. 1724000594-IN-DG-00024

SHEET 020

REV. 2

SHEET LEFT INTENTIONALLY BLANK

REV	DATE	PREPARED	CHECKED	APPROVED	DESCRIPTION
2	11.11.2024	A.G.	A.B.	S.C.	ACCEPTED FOR CONSTRUCTION (AFC)
1	25.09.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)
0	05.08.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)

YOKOGAWA ◆ PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-EMCS_WD

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
SPARE PAGE

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

SCALE : 1

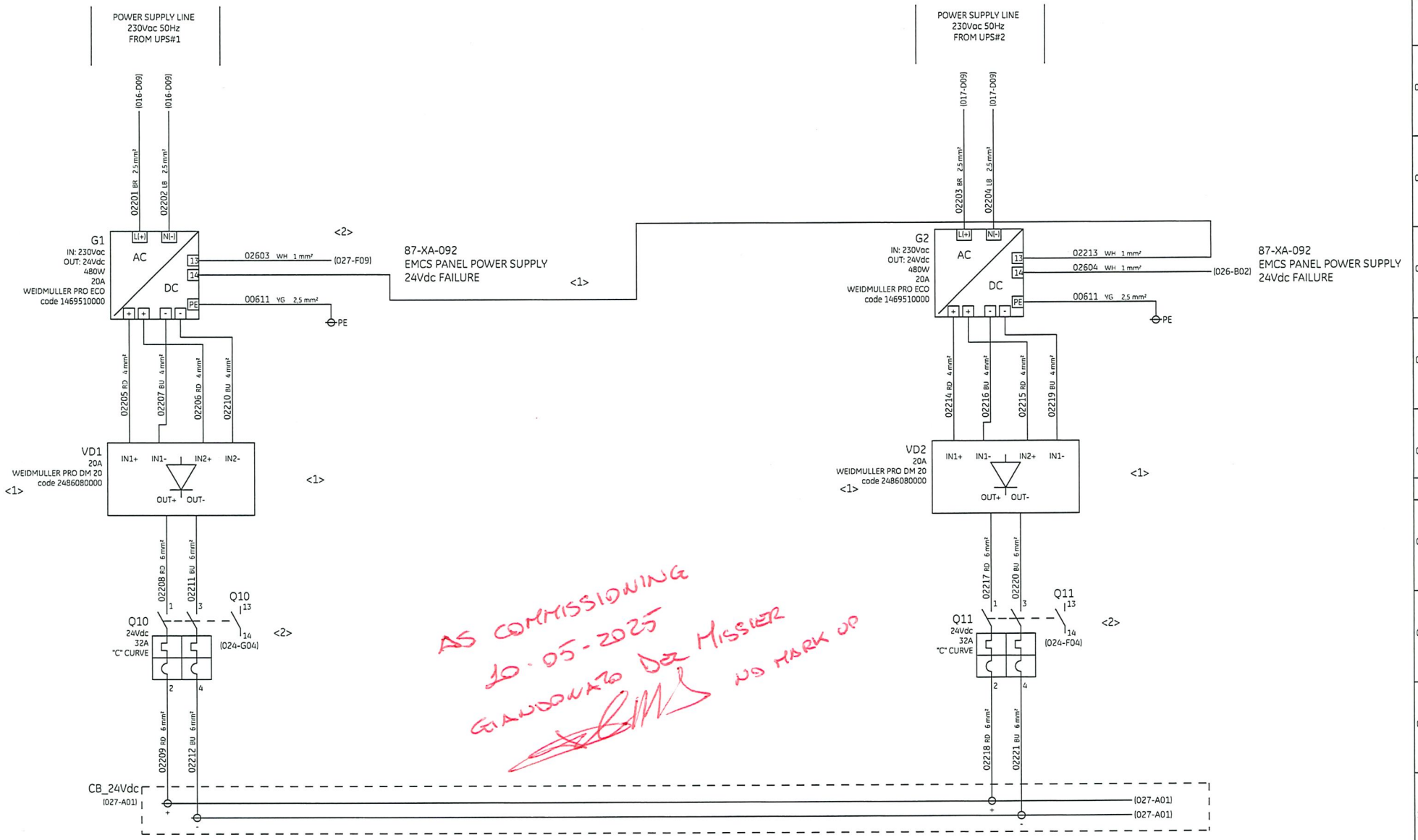
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DRAWING NO. 1724000594-IN-DG-00024

SHEET 021

REV. 2

EMCS PANEL - 230Vac/24Vdc POWER DISTRIBUTION



REV	DATE	PREPARED	CHECKED	APPROVED	DESCRIPTION
2	11.11.2024	A.G.	A.B.	S.C.	ACCEPTED FOR CONSTRUCTION (AFC)
1	25.09.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)
0	05.08.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)

YOKOGAWA ◆ PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-EMCS_WD

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
EMCS PANEL - 230Vac / 24Vdc POWER DISTRIBUTION

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

SCALE : 1

A3

DRAWING NO. 1724000594-IN-DG-00024

SHEET 022

REV. 2

SHEET LEFT INTENTIONALLY BLANK

REV	DATE	PREPARED	CHECKED	APPROVED	DESCRIPTION
2	11.11.2024	A.G.	A.B.	S.C.	ACCEPTED FOR CONSTRUCTION (AFC)
1	25.09.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)
0	05.08.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)

YOKOGAWA ◆ PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-EMCS_WD

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
SPARE PAGE

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

SCALE : 1

A3

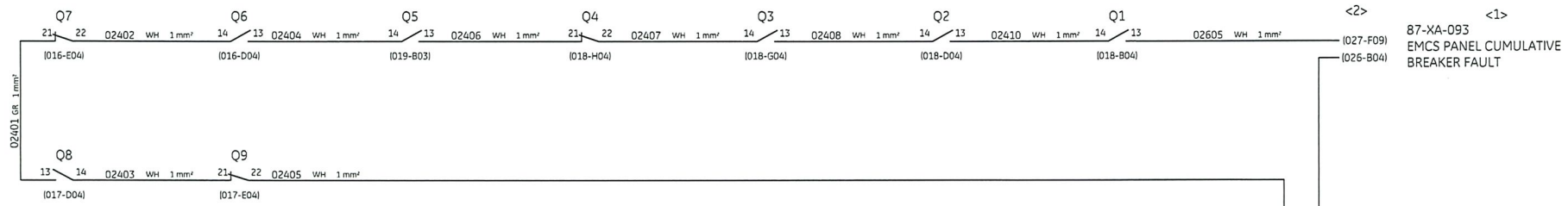
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SHEET 023

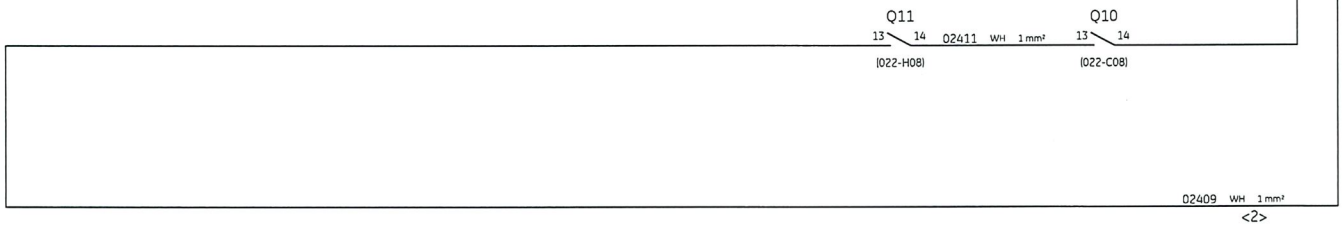
REV. 2

EMCS PANEL - BRAKER FAULT ALARM CIRCUIT

230Vac CIRCUIT BREAKER



24Vdc CIRCUIT BREAKER



AS COMMISSIONING
10-05-2025
GIANDONATO DE MISSIER
NO MARK UP

NOTE : SPARE CIRCUIT BREAKER FAULT CONTACT TO BE CONNECTED ON NORMALLY CLOSE CONTACT.
CHANGE CONNECTION TO NORMALLY OPEN CONTACT WHEN THE BREAKER WILL BE USED

REV	DATE	PREPARED	CHECKED	APPROVED	DESCRIPTION
2	11.11.2024	A.G.	A.B.	S.C.	ACCEPTED FOR CONSTRUCTION (AFC)
1	25.09.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)
0	05.08.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)

YOKOGAWA ◆ PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-EMCS_WD

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
EMCS PANEL - BREAKER FAULT ALARM CIRCUIT

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

SCALE : 1

A3

DRAWING NO. 1724000594-IN-DG-00024

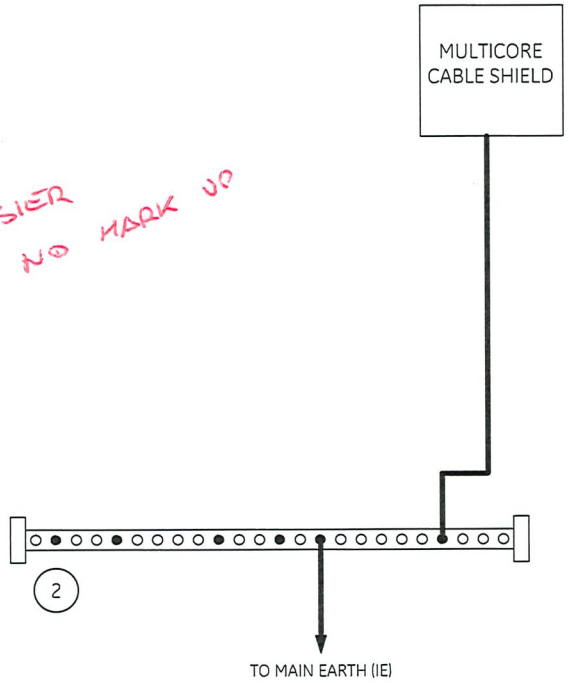
SHEET 024

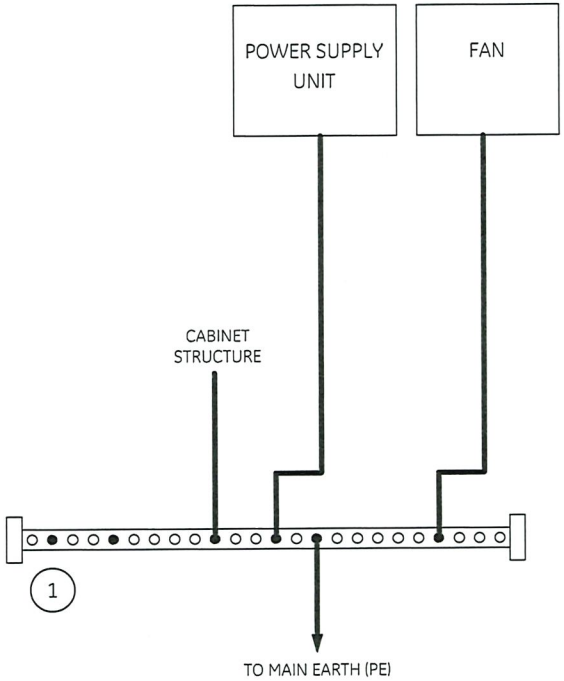
REV. 2

EMCS PANEL - SHIELD/GROUND CONNECTION

POS.	EARTH TYPE	DESCRIPTION SYSTEM EARTH
1	P.E. EARTH	PROTECTION EARTH (GROUND, FRAME CHASSIS)
2	I.E. EARTH	INSTRUMENTAL EARTH

AS COMMISSIONING
10.05.2025
GIANDONATO DEL MISSIER
NO MARK UP





REV	DATE	PREPARED	CHECKED	APPROVED	DESCRIPTION
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YOKOGAWA ◆ PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-EMCS_WD

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
EMCS PANEL - SHIELD / GROUND CONNECTION

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

SCALE : 1

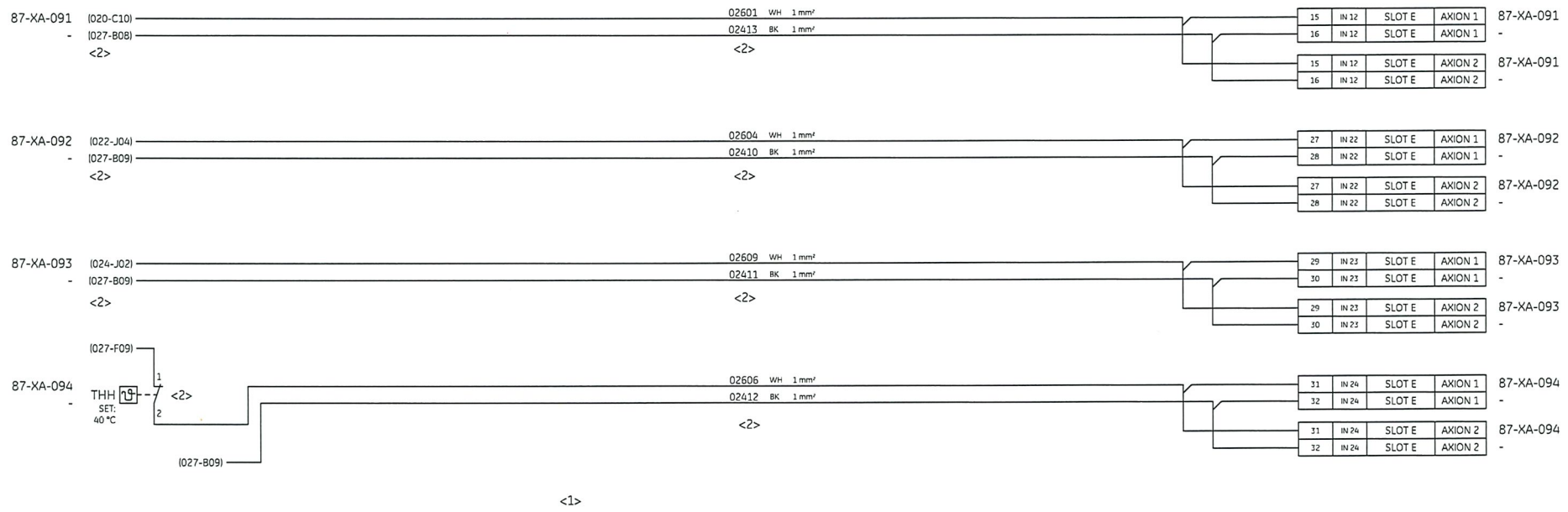
A3

DRAWING NO. 1724000594-IN-DG-00024

SHEET 025

REV. 2

EMCS PANEL - FAULT ALARM SIGNALS TO DCS



AS COMMISSIONING
10-05-2025
GIANDONATO DE MISSIER
NO MARK UP

CUSTOMER TAG	SIGNAL DESCRIPTION FROM IO LIST
87-XA-091	EMCS PANEL VENTILATION FAN FAULT
87-XA-092	EMCS PANEL POWER SUPPLY & DIODES FAILURE
87-XA-093	EMCS PANEL CUMULATIVE BREAKER FAULT
87-XA-094	EMCS PANEL HIGH TEMPERATURE ALARM

CUSTOMER TAG	SIGNAL DESCRIPTION FROM IO LIST
-	-
-	-
-	-
-	-
-	-

REV	DATE	PREPARED	CHECKED	APPROVED	DESCRIPTION
2	11.11.2024	A.G.	A.B.	S.C.	ACCEPTED FOR CONSTRUCTION (AFC)
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0	05.08.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)

YOKOGAWA

PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-EMCS_WD

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
EMCS PANEL - FAULT ALARM SIGNALS TO DCS

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

SCALE : 1

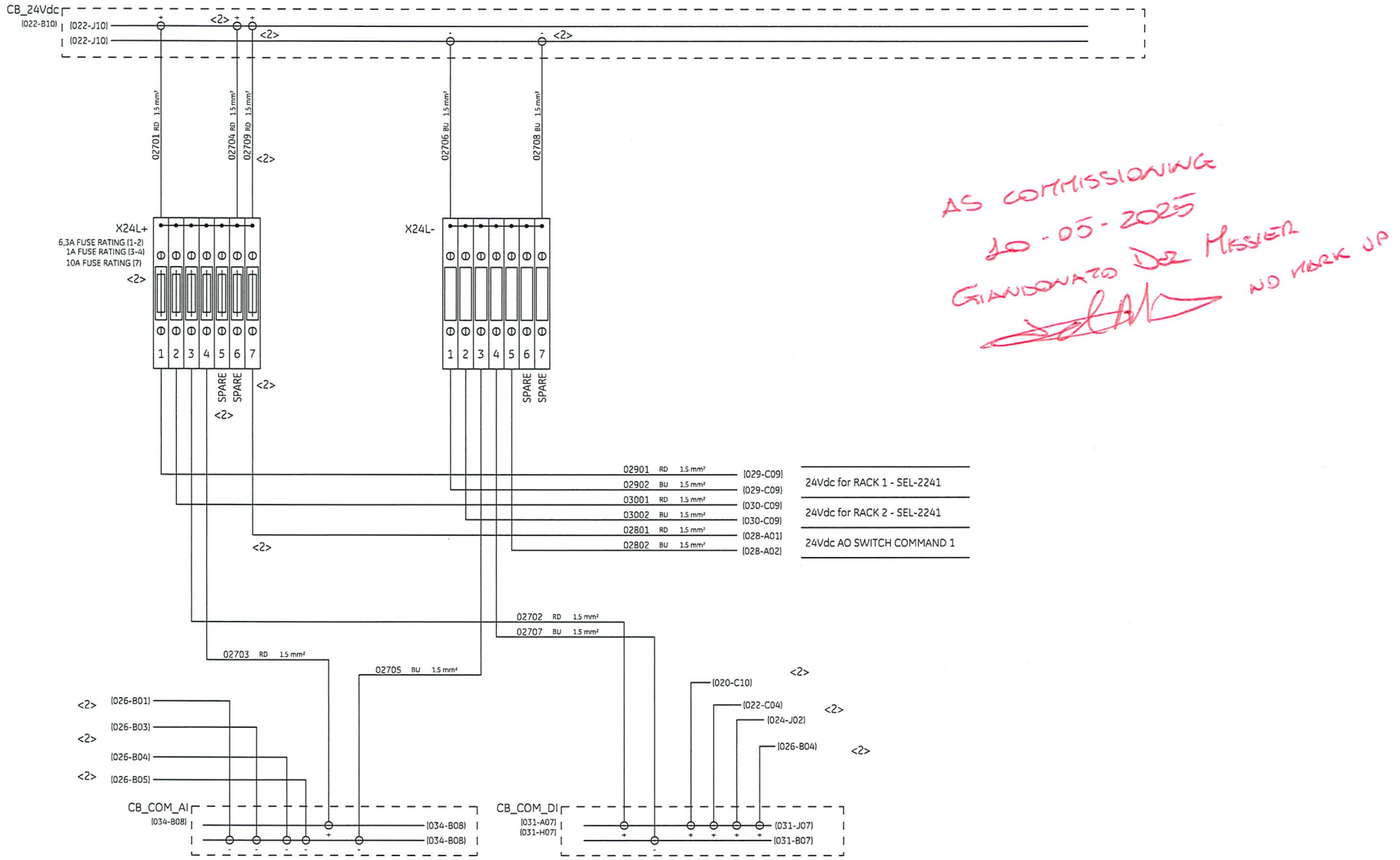
A3

DRAWING NO.
1724000594-IN-DG-00024

SHEET 026

REV. 2

EMCS PANEL - 24Vdc POWER DISTRIBUTION



AS COMMISSIONING
10-05-2025
GIANDONATO DE MESSIER
NO WORK UP

REV	DATE	PREPARED	CHECKED	APPROVED	DESCRIPTION
2	11.11.2024	A.G.	A.B.	S.C.	ACCEPTED FOR CONSTRUCTION (AFC)
1	25.09.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)
0	05.08.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)

YOKOGAWA ◆ PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-PCS_WD

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
EMCS PANEL - 24Vdc POWER DISTRIBUTION

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

SCALE : 1

A3

DRAWING NO. 1724000594-IN-DG-00024

SHEET 027

REV. 2

EMCS PANEL - AO SWITCH COMMAND



AS COMMISSIONING
20-05-2025
GIANDONATO DEL MISSIER
NO MARK UP

REV	DATE	PREPARED	CHECKED	APPROVED	DESCRIPTION
2	11.11.2024	A.G.	A.B.	S.C.	ACCEPTED FOR CONSTRUCTION (AFC)
1	25.09.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)
0	05.08.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)

YOKOGAWA ◆ PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-PCS_WD

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
EMCS PANEL - AO SWITCH COMMAND

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

SCALE : 1

A3

DRAWING NO. 1724000594-IN-DG-00024

SHEET 028

REV. 2

EMCS PANEL - RACK 1-SEL-2241

A	B	C	D	E	F	G	H	I	J
SLOT 1	SLOT 2	SLOT 3	SLOT 4	SLOT 5	SLOT 6	SLOT 7	SLOT 8	SLOT 9	SLOT 10
RTAC MODULE CARD SEL-2241	POWER SUPPLY (24Vdc) SEL-2243	ANALOG INPUT CARD SEL-2245-2	ANALOG OUTPUT CARD SEL-2245-3	DIGITAL INPUT CARD SEL-2244-2	DIGITAL OUTPUT CARD SEL-2244-3	SPARE	SPARE	SPARE	SPARE

<1>

<2>
TO VNET/IP
IEC61850 LINKS
(SERVER ITER)

02901 RD 1.5mm² (027-E06)

02902 BU 1.5mm² (027-E06)

POWER SUPPLY LINE
24Vdc FROM X24L

AS COMMISSIONING
20.05.2025
GIANDONATO DE MISSIER
NO MARK UP

REFER TO DOC. N. 1724000594-IN-DG-00016
"NETWORK CONNECTION DIAGRAM" <2>

YOKOGAWA ◆ PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-EMCS_WD

CROSSWIND | ROSETTI MARINO

REV	DATE	PREPARED	CHECKED	APPROVED	DESCRIPTION
2	11.11.2024	A.G.	A.B.	S.C.	ACCEPTED FOR CONSTRUCTION (AFC)
1	25.09.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)
0	05.08.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
EMCS PANEL - RACK "1"-SEL-2241 <2>

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

SCALE : 1

A3

DRAWING NO. 1724000594-IN-DG-00024

SHEET 029

REV. 2

EMCS PANEL - RACK 2-SEL-2241

A	B	C	D	E	F	G	H	I	J
SLOT 1	SLOT 2	SLOT 3	SLOT 4	SLOT 5	SLOT 6	SLOT 7	SLOT 8	SLOT 9	SLOT 10
RTAC MODULE CARD SEL-2241	POWER SUPPLY (24Vdc) SEL-2243	ANALOG INPUT CARD SEL-2245-2	ANALOG OUTPUT CARD SEL-2245-3	DIGITAL INPUT CARD SEL-2244-2	DIGITAL OUTPUT CARD SEL-2244-3	SPARE	SPARE	SPARE	SPARE

<1>

<2>
TO VNET/IP
IEC61850 LINKS
(SERVER ITER)

03001 RD 1.5mm² (027-E06)

03002 BU 1.5mm² (027-E07)

POWER SUPPLY LINE
24Vdc FROM X24L

AS COMMISSIONING
10.05.2025
GIANDONATO DE MISSIER
NO MARK AP

REFER TO DOC. N. 1724000594-IN-DG-00016
"NETWORK CONNECTION DIAGRAM" <2>

YOKOGAWA ◆ PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-EMCS_WD

CROSSWIND | ROSETTI MARINO

REV	DATE	PREPARED	CHECKED	APPROVED	DESCRIPTION
2	11.11.2024	A.G.	A.B.	S.C.	ACCEPTED FOR CONSTRUCTION (AFC)
1	25.09.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)
0	05.08.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
EMCS PANEL - RACK "2"-SEL-2241 <2>

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

SCALE : 1

A3

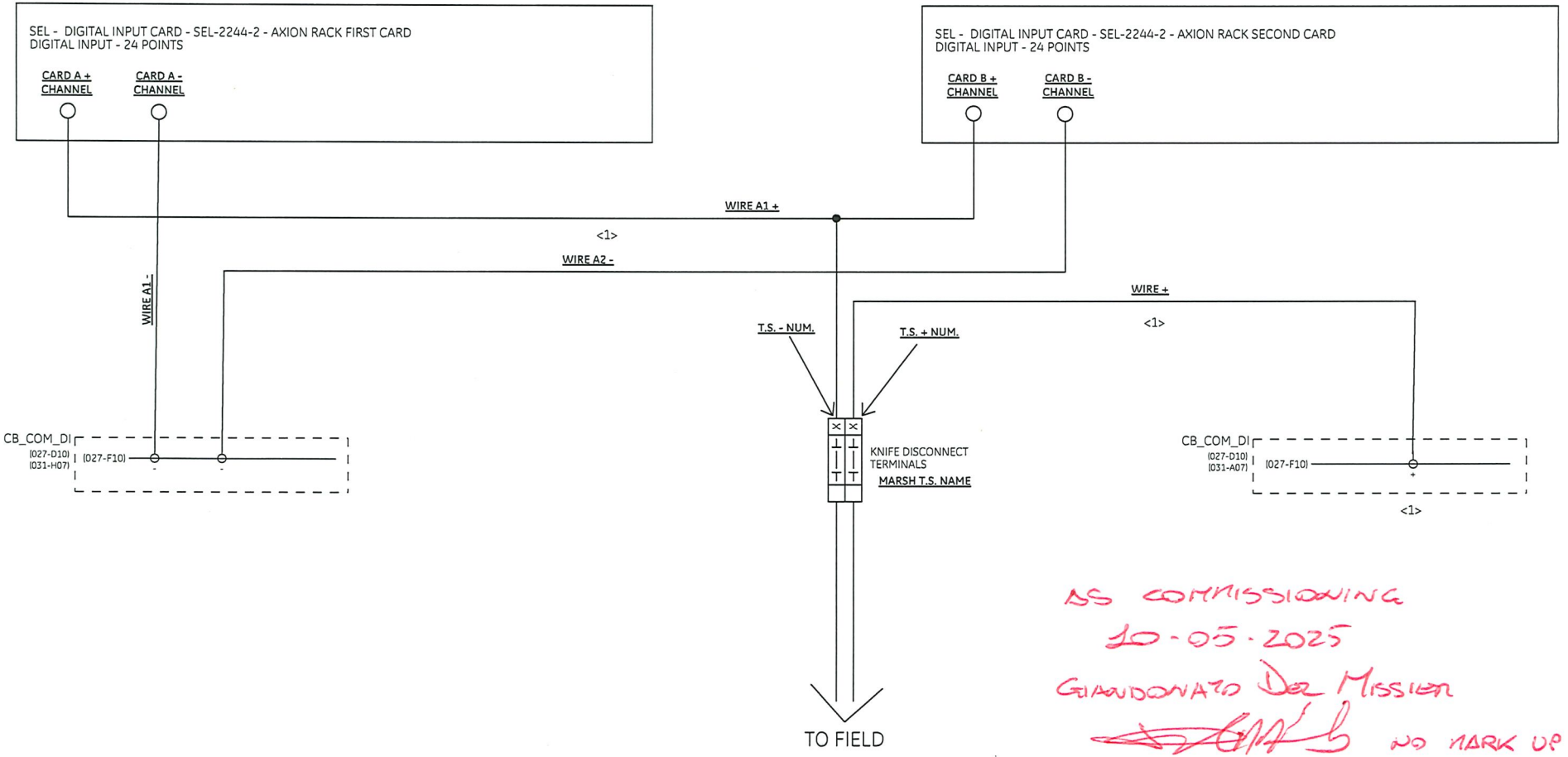
DRAWING NO. 1724000594-IN-DG-00024

SHEET 030

REV. 2

EMCS PANEL - TYPICAL WIRING DIGITAL INPUT (COMMON NEGATIVE)

EMCS_DI01



AS COMMISSIONING
10-05-2025
GIANDONATO DEL MISSIER
NO MARK UP

REV	DATE	PREPARED	CHECKED	APPROVED	DESCRIPTION
2	11.11.2024	A.G.	A.B.	S.C.	ACCEPTED FOR CONSTRUCTION (AFC)
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0	05.08.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)

YOKOGAWA ◆ PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-EMCS_WD

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
EMCS PANEL - TYPICAL WIRING DIGITAL INPUT <2>

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

SCALE : 1

A3

DRAWING NO. 1724000594-IN-DG-00024

SHEET 031

REV. 2

SHEET LEFT INTENTIONALLY BLANK

REV	DATE	PREPARED	CHECKED	APPROVED	DESCRIPTION
2	11.11.2024	A.G.	A.B.	S.C.	ACCEPTED FOR CONSTRUCTION (AFC)
1	25.09.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)
0	05.08.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)

YOKOGAWA ◆ PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-EMCS_WD

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
SPARE PAGE

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

SCALE : 1

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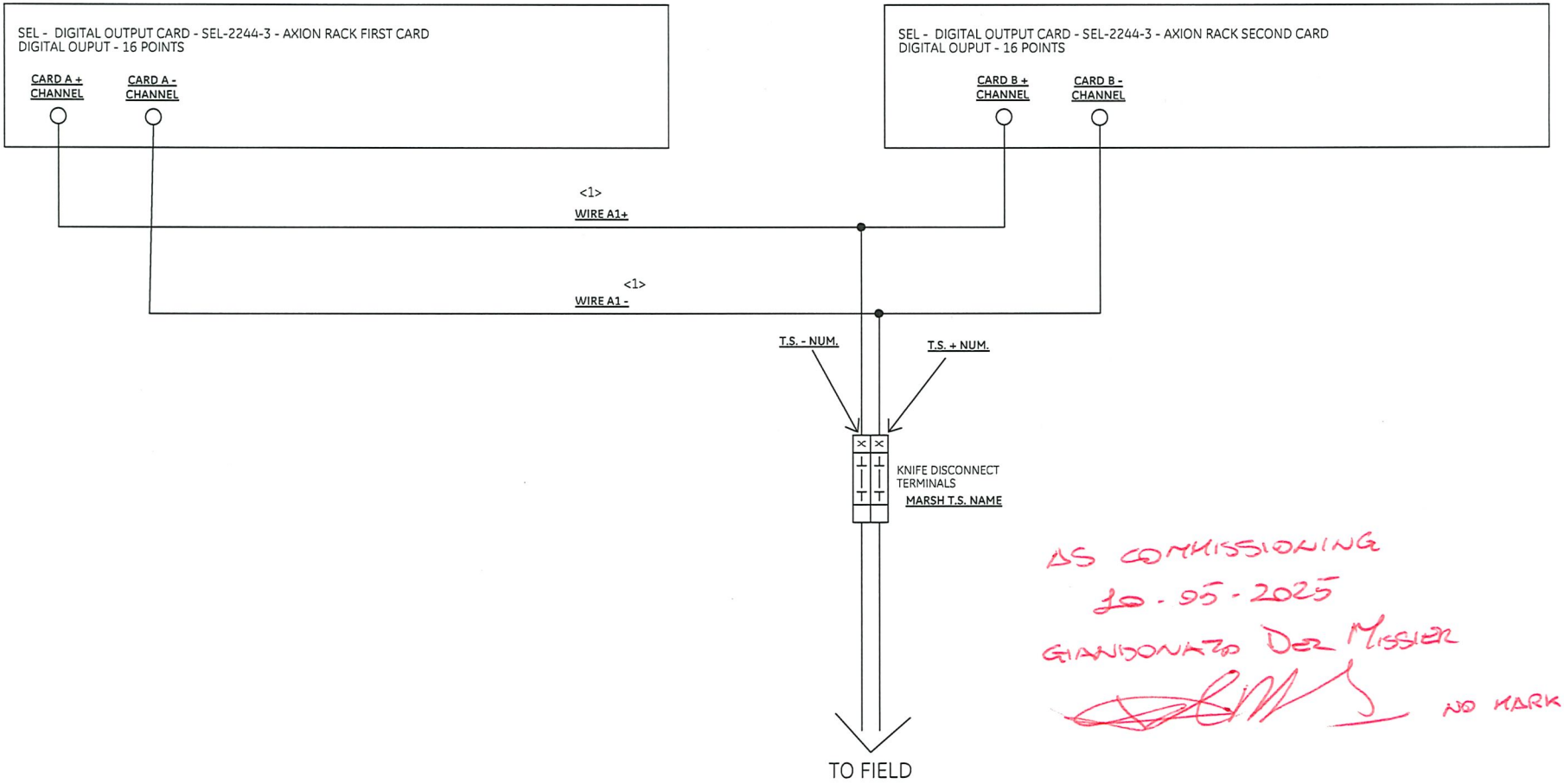
DRAWING NO. 1724000594-IN-DG-00024

SHEET 032

REV. 2

EMCS PANEL - TYPICAL WIRING DIGITAL OUTPUT

EMCS_DO01



AS COMMISSIONING
10-05-2025
GIANDONATO DE MISSIER
NO MARK UP

REV	DATE	PREPARED	CHECKED	APPROVED	DESCRIPTION
2	11.11.2024	A.G.	A.B.	S.C.	ACCEPTED FOR CONSTRUCTION (AFC)
1	25.09.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)
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YOKOGAWA ◆ PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-EMCS_WD

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
EMCS PANEL - TYPICAL WIRING DIGITAL OUTPUT

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

SCALE : 1

A3

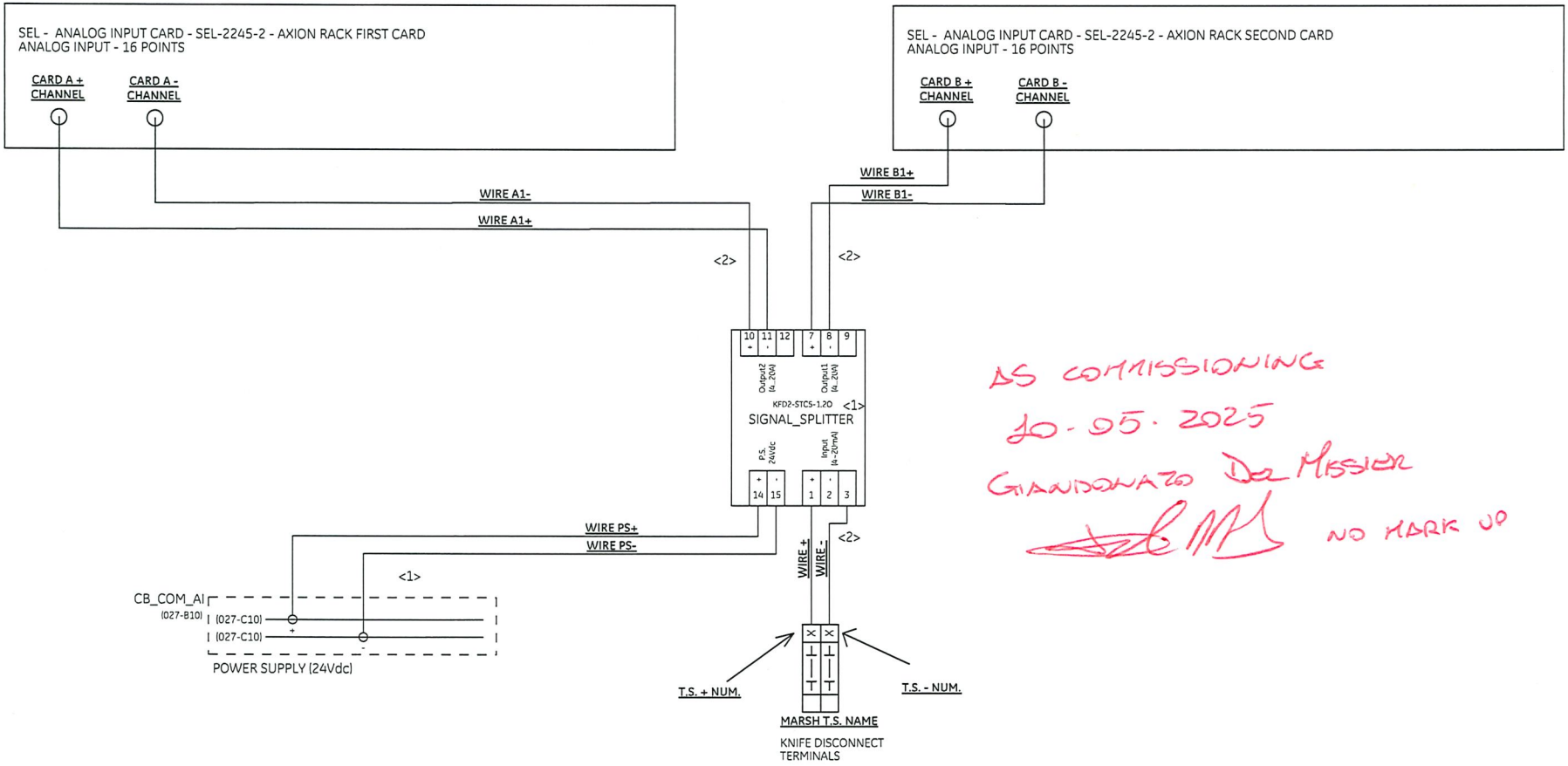
DRAWING NO. 1724000594-IN-DG-00024

SHEET 033

REV. 2

EMCS PANEL - TYPICAL WIRING ANALOG INPUT

EMCS AI01



AS COMMISSIONING
10-05-2025
GIANDONATO DA MISSIER
NO MARK UP

REV	DATE	PREPARED	CHECKED	APPROVED	DESCRIPTION
2	11.11.2024	A.G.	A.B.	S.C.	ACCEPTED FOR CONSTRUCTION (AFC)
1	25.09.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)
0	05.08.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)

YOKOGAWA ◆ PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-EMCS_WD

CROSSWIND | ROSETTI MARINO

TITLE: BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
EMCS PANEL - TYPICAL WIRING ANALOG INPUT

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

SCALE: 1

A3

DRAWING NO. 1724000594-IN-DG-00024

SHEET 034

REV. 2

EMCS PANEL - TYPICAL WIRING ANALOG OUTPUT

EMCS AO01

SEL - ANALOG OUTPUT CARD - SEL-2245-3 - AXION RACK FIRST CARD
ANALOG OUTPUT - 8 POINTS

CARD A + CHANNEL
CARD A - CHANNEL

SEL - ANALOG OUTPUT CARD - SEL-2245-3 - AXION RACK SECOND CARD
ANALOG OUTPUT - 8 POINTS

CARD B + CHANNEL
CARD B - CHANNEL

WIRE A1-
WIRE A1+
WIRE B1+
WIRE B1-
WIRE KA+
WIRE KB+
WIRE KA-
WIRE KB-
WIRE KC+
WIRE KD+
WIRE KC-
WIRE KD-
WIRE A2+
WIRE A2-
WIRE B2+
WIRE B2-
WIRE -
WIRE +

<2> KA
<2> KB
<2> KC
<2> KD

CB_AO_COMMAND_1
(028-C09) (028-D09) +
(028-D09) -

CB_AO_COMMAND_2
(028-F09) (028-G09) +
(028-G09) -

T.S. + NUM.
T.S. - NUM.
MARSH T.S. NAME
KNIFE DISCONNECT TERMINALS

AS COMMISSIONING
10.05.2025
GANDONATO DE MISSIER
NO MARK UP

REV	DATE	PREPARED	CHECKED	APPROVED	DESCRIPTION
2	11.11.2024	A.G.	A.B.	S.C.	ACCEPTED FOR CONSTRUCTION (AFC)
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YOKOGAWA
PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-EMCS_WD
CROSSWIND
ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
EMCS PANEL - TYPICAL WIRING ANALOG OUTPUT

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

SCALE : 1

A3

DRAWING NO. 1724000594-IN-DG-00024

SHEET 035

REV. 2

<2> EMCS PANEL - DIGITAL INPUT SIGNALS

	TAG NAME	IO TYPE	MARSH T.S. NAME	T.S. + NUM.	T.S. - NUM.	WIRE A1+	WIRE A1-	WIRE A2-	WIRE +	WIRE SECTION (A)	WIRE COLOUR + (A)	WIRE COLOUR - (A)	CARD (A&B) + CHANNEL	CARD (A&B) - CHANNEL	SLOT A&B	TYIPICAL	CHANNEL NUMBER	<2>
<2>	WS_DI01	DI	TB_DI	01	02	03601	03602	03603	03604	1mm²	BK	WH	1	10	E	EMCS_DI01	1	
<2>	WS_DI02	DI	TB_DI	03	04	03605	==	==	03606	1mm²	BK	WH	2	10	E	EMCS_DI01	2	
<2>	WS_DI03	DI	TB_DI	05	06	03607	==	==	03608	1mm²	BK	WH	3	10	E	EMCS_DI01	3	
<2>	WS_DI04	DI	TB_DI	07	08	03609	==	==	03610	1mm²	BK	WH	4	10	E	EMCS_DI01	4	
<2>	WS_DI05	DI	TB_DI	09	10	03611	==	==	03612	1mm²	BK	WH	5	10	E	EMCS_DI01	5	
<2>	WS_DI06	DI	TB_DI	11	12	03613	==	==	03614	1mm²	BK	WH	6	10	E	EMCS_DI01	6	
<2>	WS_DI07	DI	TB_DI	13	14	03615	==	==	03616	1mm²	BK	WH	7	10	E	EMCS_DI01	7	
<2>	WS_DI08	DI	TB_DI	15	16	03617	==	==	03618	1mm²	BK	WH	8	10	E	EMCS_DI01	8	
	WS_DI09	DI	TB_DI	17	18	03619	==	==	03620	1mm²	BK	WH	9	10	E	EMCS_DI01	9	
	WS_DI13	DI	TB_DI	19	20	03621	03622	03623	03624	1mm²	BK	WH	17	26	E	EMCS_DI01	13	
	WS_DI14	DI	TB_DI	21	22	03625	==	==	03626	1mm²	BK	WH	18	26	E	EMCS_DI01	14	
	WS_DI15	DI	TB_DI	23	24	03627	==	==	03628	1mm²	BK	WH	19	26	E	EMCS_DI01	15	
	WS_DI16	DI	TB_DI	25	26	03629	==	==	03630	1mm²	BK	WH	20	26	E	EMCS_DI01	16	
	WS_DI17	DI	TB_DI	27	28	03631	==	==	03632	1mm²	BK	WH	21	26	E	EMCS_DI01	17	
	WS_DI18	DI	TB_DI	29	30	03633	==	==	03634	1mm²	BK	WH	22	26	E	EMCS_DI01	18	
	WS_DI19	DI	TB_DI	31	32	03635	==	==	03636	1mm²	BK	WH	23	26	E	EMCS_DI01	19	
	WS_DI20	DI	TB_DI	33	34	03637	==	==	03638	1mm²	BK	WH	24	26	E	EMCS_DI01	20	
	WS_DI21	DI	TB_DI	35	36	03639	==	==	03640	1mm²	BK	WH	25	26	E	EMCS_DI01	21	
	70ZSL-000	DI	TB_DI	37	38	03641	03642	N/A	N/A	1mm²	BK	WH	11	12	E	EMCS_DI01	10	
	70ZSH-005	DI	TB_DI	39	40	03643	03644	N/A	N/A	1mm²	BK	WH	13	14	E	EMCS_DI01	11	

NOTE: FOR CHANNEL NUMBER 12, 22, 23, 24 CHECK PAGE 26 (INTERNAL FAULT SYSTEM)
<2>

AS COMMISSIONING
10-05-2025
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REV	DATE	PREPARED	CHECKED	APPROVED	DESCRIPTION
2	11.11.2024	A.G.	A.B.	S.C.	ACCEPTED FOR CONSTRUCTION (AFC)
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0	05.08.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)

YOKOGAWA ◆ PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-EMCS_WD
CROSSWIND
ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
EMCS PANEL - DIGITAL INPUT SIGNALS

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

SCALE : 1

A3

DRAWING NO. 1724000594-IN-DG-00024

SHEET 036

REV. 2

	TAG NAME	IO TYPE	MARSH T.S. NAME	T.S. + NUM.	T.S. - NUM.	WIRE A1+	WIRE A1-	WIRE A2-	WIRE +	WIRE SECTION (A)	WIRE COLOUR + (A)	WIRE COLOUR - (A)	CARD (A&B) + CHANNEL	CARD (A&B) - CHANNEL	SLOT A&B	TYIPICAL	CHANNEL NUMBER
	WS_DO01	DO	TB_DO	01	02	03701	03702	N/A	N/A	1mm²	BK	WH	1	2	F	EMCS_DO01	1
<2>	WS_DO02	DO	TB_DO	03	04	03703	03704	N/A	N/A	1mm²	BK	WH	3	4	F	EMCS_DO01	2
<2>	WS_DO03	DO	TB_DO	05	06	03705	03706	N/A	N/A	1mm²	BK	WH	5	6	F	EMCS_DO01	3
<2>	WS_DO04	DO	TB_DO	07	08	03707	03708	N/A	N/A	1mm²	BK	WH	7	8	F	EMCS_DO01	4
<2>	WS_DO05	DO	TB_DO	09	10	03709	03710	N/A	N/A	1mm²	BK	WH	9	10	F	EMCS_DO01	5
	WS_DO06	DO	TB_DO	11	12	03711	03712	N/A	N/A	1mm²	BK	WH	11	12	F	EMCS_DO01	6
	WS_DO07	DO	TB_DO	13	14	03713	03714	N/A	N/A	1mm²	BK	WH	13	14	F	EMCS_DO01	7
	WS_DO08	DO	TB_DO	15	16	03715	03716	N/A	N/A	1mm²	BK	WH	15	16	F	EMCS_DO01	8
	WS_DO09	DO	TB_DO	17	18	03717	03718	N/A	N/A	1mm²	BK	WH	17	18	F	EMCS_DO01	9
	WS_DO10	DO	TB_DO	19	20	03719	03720	N/A	N/A	1mm²	BK	WH	19	20	F	EMCS_DO01	10
	WS_DO11	DO	TB_DO	21	22	03721	03722	N/A	N/A	1mm²	BK	WH	21	22	F	EMCS_DO01	11
	WS_DO12	DO	TB_DO	23	24	03723	03724	N/A	N/A	1mm²	BK	WH	23	24	F	EMCS_DO01	12
	WS_DO13	DO	TB_DO	25	26	03725	03726	N/A	N/A	1mm²	BK	WH	25	26	F	EMCS_DO01	13
	WS_DO14	DO	TB_DO	27	28	03727	03728	N/A	N/A	1mm²	BK	WH	27	28	F	EMCS_DO01	14
<2>	SPARE	DO	TB_DO	29	30												
<2>	SPARE	DO	TB_DO	31	32												

<2>

NOTE: FOR CHANNEL NUMBER OUT15, 16 CHECK PAGE 28 (AO SWITCH COMMAND)

<2>

AS COMMISSIONING
10.05.2025
GIANDONATO DEL MISSIER
NO MARK UP

REV	DATE	PREPARED	CHECKED	APPROVED	DESCRIPTION
2	11.11.2024	A.G.	A.B.	S.C.	ACCEPTED FOR CONSTRUCTION (AFC)
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0	05.08.2024	A.G.	A.B.	S.C.	ISSUE FOR REVIEW (IFR)

YOKOGAWA ◆ PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-EMCS_WD

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
EMCS PANEL - DIGITAL OUTPUT SIGNALS

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

SCALE : 1

A3

DRAWING NO. 1724000594-IN-DG-00024

SHEET 037

REV. 2

EMCS PANEL - ANALOG INPUT SIGNALS

<2>

TAG NAME	IO TYPE	MARSH T.S. NAME	T.S. + NUM.	T.S. - NUM.	WIRE +	WIRE -	WIRE A1+	WIRE A1-	WIRE B1+	WIRE B1-	WIRE SECTION (A&B)	WIRE COLOUR + (A&B)	WIRE COLOUR - (A&B)	WIRE PS+	WIRE PS-	WIRE SECTION PS	WIRE COLOUR PS +	WIRE COLOUR PS -	SIGNAL SPLITTER	CARD (A&B) + CHANNEL	CARD (A&B) - CHANNEL	SLOT	TYPICAL	CHANNEL NUMBER
WS_AI01	AI	TB_AI	1	2	03801	03802	03803	03804	03805	03806	1mm²	BK	WH	02811	02812	1,5mm²	RD	BU	SSP1	1	2	C	EMCS_AI01	1
WS_AI02	AI	TB_AI	3	4	03807	03808	03809	03810	03811	03812	1mm²	BK	WH	02813	02814	1,5mm²	RD	BU	SSP2	4	5	C	EMCS_AI01	2
WS_AI03	AI	TB_AI	5	6	03813	03814	03815	03816	03817	03818	1mm²	BK	WH	02815	02816	1,5mm²	RD	BU	SSP3	6	7	C	EMCS_AI01	3
WS_AI04	AI	TB_AI	7	8	03819	03820	03821	03822	03823	03824	1mm²	BK	WH	02817	02818	1,5mm²	RD	BU	SSP4	9	10	C	EMCS_AI01	4
WS_AI05	AI	TB_AI	9	10	03825	03826	03827	03828	03829	03830	1mm²	BK	WH	02819	02820	1,5mm²	RD	BU	SSP5	11	12	C	EMCS_AI01	5
WS_AI06	AI	TB_AI	11	12	03831	03832	03833	03834	03835	03836	1mm²	BK	WH	02821	02822	1,5mm²	RD	BU	SSP6	14	15	C	EMCS_AI01	6
WS_AI07	AI	TB_AI	13	14	03837	03838	03839	03840	03841	03842	1mm²	BK	WH	02823	02824	1,5mm²	RD	BU	SSP7	16	17	C	EMCS_AI01	7
WS_AI08	AI	TB_AI	15	16	03843	03844	03845	03846	03847	03848	1mm²	BK	WH	02825	02826	1,5mm²	RD	BU	SSP8	19	20	C	EMCS_AI01	8
WS_AI09	AI	TB_AI	17	18	03849	03850	03851	03852	03853	03854	1mm²	BK	WH	02827	02828	1,5mm²	RD	BU	SSP9	21	22	C	EMCS_AI01	9
WS_AI10	AI	TB_AI	19	20	03855	03856	03857	03858	03859	03860	1mm²	BK	WH	02829	02830	1,5mm²	RD	BU	SSP10	24	25	C	EMCS_AI01	10
WS_AI11	AI	TB_AI	21	22	03861	03862	03863	03864	03865	03866	1mm²	BK	WH	02831	02832	1,5mm²	RD	BU	SSP11	26	27	C	EMCS_AI01	11
WS_AI12	AI	TB_AI	23	24	03867	03868	03869	03870	03871	03872	1mm²	BK	WH	02833	02834	1,5mm²	RD	BU	SSP12	29	30	C	EMCS_AI01	12
WS_AI13	AI	TB_AI	25	26	03873	03874	03875	03876	03877	03878	1mm²	BK	WH	02835	02836	1,5mm²	RD	BU	SSP13	31	32	C	EMCS_AI01	13
WS_AI14	AI	TB_AI	27	28	03879	03880	03881	03882	03883	03884	1mm²	BK	WH	02837	02838	1,5mm²	RD	BU	SSP14	34	35	C	EMCS_AI01	14
WS_AI15	AI	TB_AI	29	30	03885	03886	03887	03888	03889	03890	1mm²	BK	WH	02839	02840	1,5mm²	RD	BU	SSP15	36	37	C	EMCS_AI01	15
WS_AI16	AI	TB_AI	31	32	03891	03892	03893	03894	03895	03896	1mm²	BK	WH	02841	02842	1,5mm²	RD	BU	SSP16	39	40	C	EMCS_AI01	16
																				<2>	<2>			

AS COMMISSIONING
10-05-2025
GIANDONATO DE MISSIER
NO MARK UP

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YOKOGAWA ◆ PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-EMCS_WD

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
EMCS PANEL - ANALOG INPUT SIGNALS

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

SCALE : 1

A3

DRAWING NO. 1724000594-IN-DG-00024

SHEET 038

REV. 2

TAG NAME	IO TYPE	MARSH T.S. NAME	T.S. + NUM.	T.S. - NUM.	WIRE +	WIRE -	WIRE A1+	WIRE A1-	WIRE B1+	WIRE B1-	WIRE A2+	WIRE A2-	WIRE B2+	WIRE B2-	WIRE SECTION (A&B)	WIRE COLOUR + (A&B)	WIRE COLOUR - (A&B)	CARD (A&B) + CHANNEL	CARD (A&B) - CHANNEL	SLOT	CHANNEL NUMBER	
70VC-001	AO	TB_AO	1	2	03901	03902	03903	03904	03905	03906	03907	03908	03909	03910	1mm²	BK	WH	1	2	D	1	<2>
WS_AO02	AO	TB_AO	3	4	03911	03912	03913	03914	03915	03916	03917	03918	03919	03920	1mm²	BK	WH	4	5	D	2	<2>
WS_AO03	AO	TB_AO	5	6	03921	03922	03923	03924	03925	03926	03927	03928	03929	03930	1mm²	BK	WH	6	7	D	3	<2>
WS_AO04	AO	TB_AO	7	8	03931	03932	03933	03934	03935	03936	03937	03938	03939	03940	1mm²	BK	WH	9	10	D	4	<2>
WS_AO05	AO	TB_AO	9	10	03941	03942	03943	03944	03945	03946	03947	03948	03949	03950	1mm²	BK	WH	11	12	D	5	<2>
WS_AO06	AO	TB_AO	11	12	03951	03952	03953	03954	03955	03956	03957	03958	03959	03960	1mm²	BK	WH	14	15	D	6	<2>
WS_AO07	AO	TB_AO	13	14	03961	03962	03963	03964	03965	03966	03967	03968	03969	03970	1mm²	BK	WH	16	17	D	7	<2>
WS_AO08	AO	TB_AO	15	16	03971	03972	03973	03974	03975	03976	03977	03978	03979	03980	1mm²	BK	WH	19	20	D	8	<2>
																		<2>	<2>			

AS COMMISSIONING
10-05-2025
GIANDONATO DE MISSIER
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YOKOGAWA ◆ PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-EMCS_WD

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
EMCS PANEL - ANALOG OUTPUT SIGNALS (SIGNAL PART)

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

SCALE : 1

A3

DRAWING NO. 1724000594-IN-DG-00024

SHEET 039

REV. 2

KA	KB	KC	KD	WIRE KA+	WIRE KA-	WIRE KB+	WIRE KB-	WIRE KC+	WIRE KC-	WIRE KD+	WIRE KD-	TYPICAL
KA1	KA2	KA3	KA4	04001	04002	04003	04004	04005	04006	04007	04008	EMCS_AO1
KA5	KA6	KA7	KA8	04009	04010	04011	04012	04013	04014	04015	04016	EMCS_AO1
KA9	KA10	KA11	KA12	04017	04018	04019	04020	04021	04022	04023	04024	EMCS_AO1
KA13	KA14	KA15	KA16	04025	04026	04027	04028	04029	04030	04031	04032	EMCS_AO1
KA17	KA18	KA19	KA20	04033	04034	04035	04036	04037	04038	04039	04040	EMCS_AO1
KA21	KA22	KA23	KA24	04041	04042	04043	04044	04045	04046	04047	04048	EMCS_AO1
KA25	KA26	KA27	KA28	04049	04050	04051	04052	04053	04054	04055	04056	EMCS_AO1
KA29	KA30	KA31	KA32	04057	04058	04059	04060	04061	04062	04063	04064	EMCS_AO1

AS COMMISSIONING
10-05-2025
GIANDONATO Joe Missier
NO MARK UP

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YOKOGAWA ◆ PROJECT Nr. E36672C00
DESCRIPTION: E366772C00-EMCS_WD

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EMCS CABINET WIRING DIAGRAMS AND TERMINAL STRIPS
EMCS PANEL - ANALOG OUTPUT SIGNALS (SWITCH PART)

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

SCALE : 1

A3

DRAWING NO. 1724000594-IN-DG-00024

SHEET 040

REV. 2

Section 4.5 Telecommunication functional test sheets index

NOT APPLICABLE

Section 4.6 Telecommunication
“As-Commissioned” I.C.D. / TSLD's

NOT APPLICABLE

Section 5 SITE / OPERATIONAL

Section 5.1 Operational Test Procedure

Section 5.2 Operational Test Certificates

NOT APPLICABLE

Section 6 PIPING AND VESSEL PREPARATION

Section 6.1 Final Mechanical / Vessel Inspection Checks Index

NOT APPLICABLE

Section 6.2 Leak Test / Drying / Inerting Test Sheets Index

NOT APPLICABLE

Section 6.3 Chemical Loading & First Fill records Index

NOT APPLICABLE

Section 6.4 Chemical Cleaning Reports and Records Index

NOT APPLICABLE

Section 6.5 Lubrication Schedule

NOT APPLICABLE

Section 7 VENDOR

Section 7.1 Vendor Package Summary Index

NOT APPLICABLE

Section 7.2 SAT Procedure with associated punch list and reference (Front Page)

NOT APPLICABLE

Section 7.3 Vendor Spares & Special Tools lists references

NOT APPLICABLE

Section 7.4 Vendor Data / Operations / Maintenance Manuals References

CAE EPLAN Electric P8

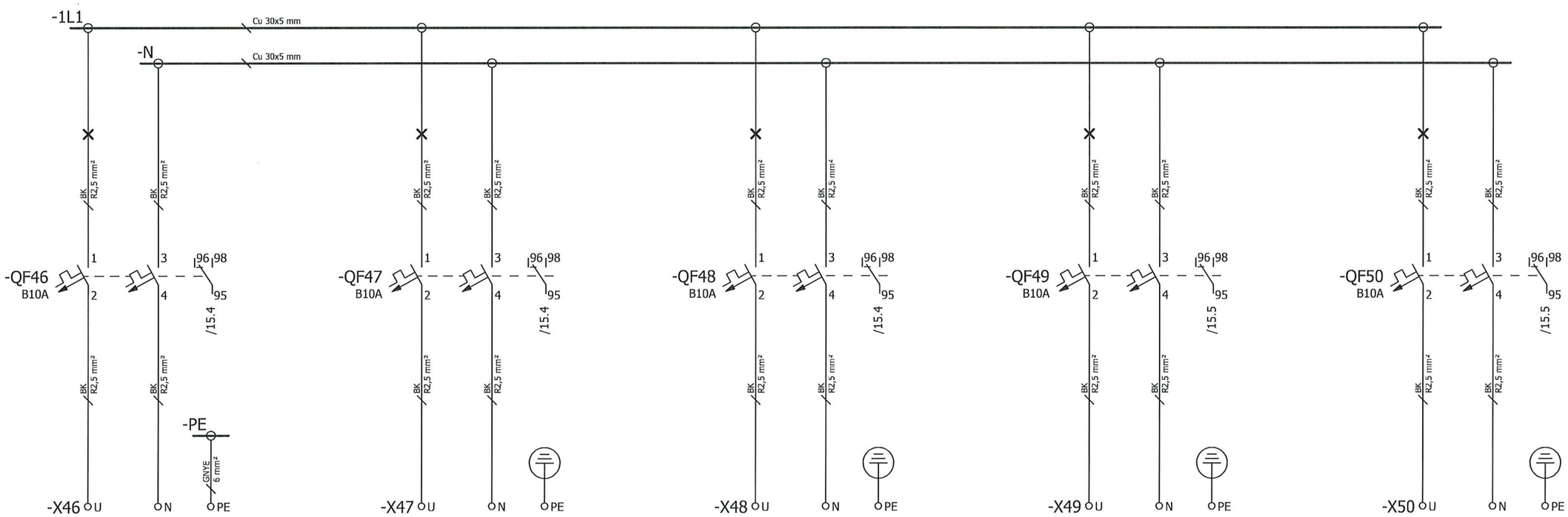
VALID FOR CONSTRUCTION
VENDOR DOCUMENT - FDL DWG:
123A90-FDL-1724000372-EL-DG-00009

REV.:	DATE:	SIGNATURE:
3_A	15/11/24	G.Randi

ROSETTI MARINO SpA

AS-COMMISSIONED
DAVIDE ZUCCONELLI
NO MARK UP
21/03/2025

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Load
230V/N/PE~50Hz

B400-PCS-001
PCS-CONTROLLER AND I/O
CABINET-LINE B - 1.5KW

Load
230V/N/PE~50Hz

B400-EMCS-001
EMCS-CONTROLLER AND I/O
CABINET-LINE A - 1KW

Load
230V/N/PE~50Hz

B400-EMCS-001
EMCS-CONTROLLER AND I/O
CABINET-LINE B - 1KW

Load
230V/N/PE~50Hz

SG-200-N1
LV SWITCHBOARD AUXILIARY
1KW

Load
230V/N/PE~50Hz

SPARE

1000007888_010

				Date	23.05.2024
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 40 kVA
Circuit diagram

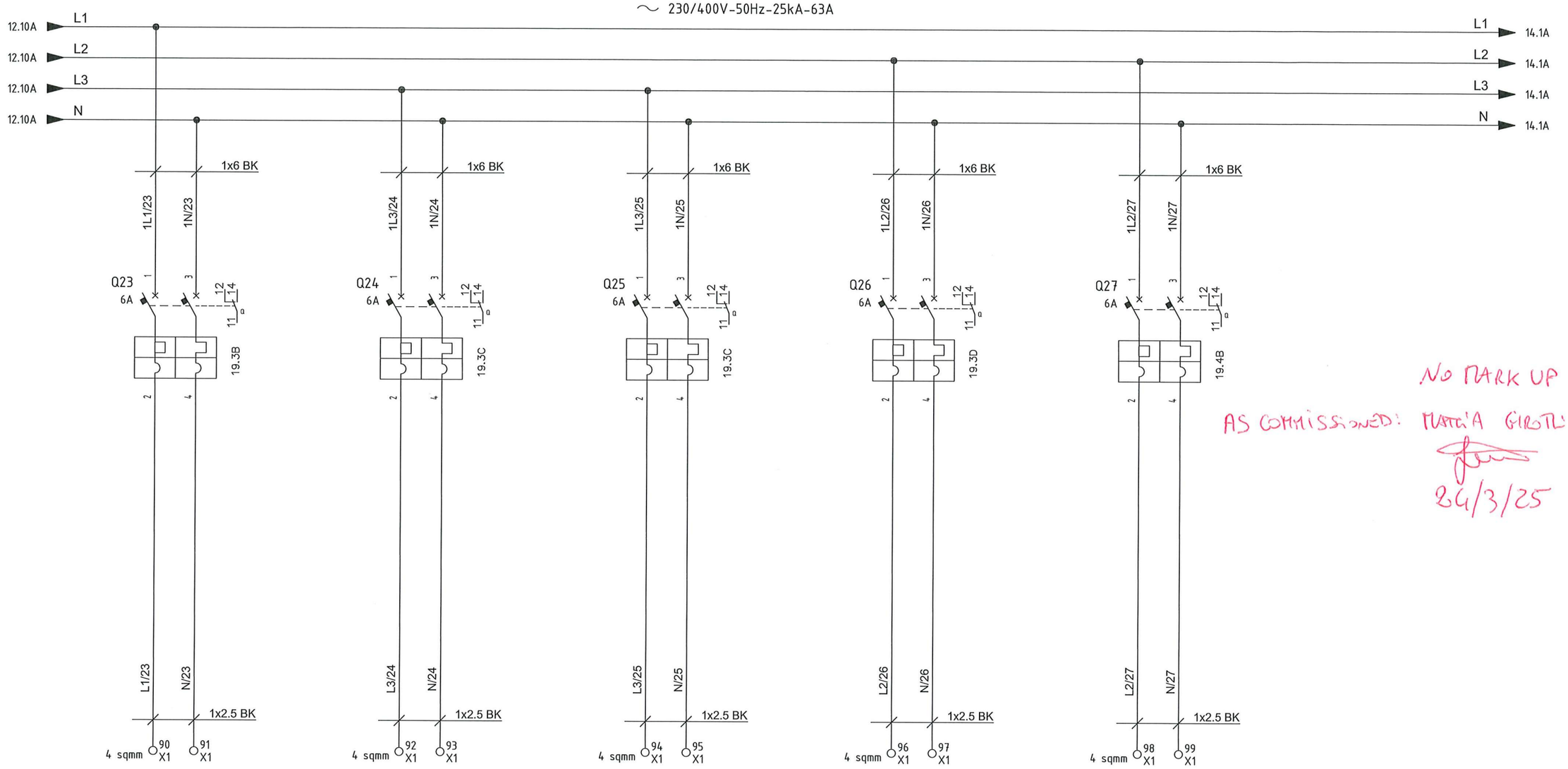
1000007888.020
10009757

1000007888_010 en

=
+ MBC1
& EFS

A3

sheet 10
sheets 17



B400-SIS-001
SIS - Controller and I/O Cabinet - Auxiliary
(3G2.5 sqmm)

B400-PCS-001
PCS - Controller and I/O Cabinet - Auxiliary
(3G2.5 sqmm)

B400-EMCS-001
EMCS - Controller and I/O Cabinet - Auxiliary
(3G2.5 sqmm)

B400-FGS-001
FGS Fire & Gas Panel - Auxiliary
(3G2.5 sqmm)

B400-NET-001
System Server / Network Cabinet - Auxiliary
(3G2.5 sqmm)

NO MARK UP
AS COMMISSIONED: MATTIA GIROTTI
24/3/25

VALID FOR CONSTRUCTION
VENDOR DOCUMENT - FDL DWG:
123A90-FDL-1724002197-EL-DG-00033
REV.: 3_A | DATE: 18/03/25 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

DWG n° : 231298/SD/33
Item n° : PF1002888/101

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
3	12/03/2025	Santinelli	Flamminio	Sigismondi	Replaced Twiligh Switch TW1
2	19/08/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
1	05/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for construction (AFC)
0	29/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

TITLE : "DP-200N1"
LV SWBD FUNCTIONAL DIAGRAMS
Functional Drawing

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

A3 | DRAWING NO. 1723002197-EL-DG-00033 | SHEET 1.3 | REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00033 Rev. 03

Section 8 LIST OF MODIFICATIONS

NOT APPLICABLE

Section 8.1 List of changes

NOT APPLICABLE

Section 9 SUPPORTING DOCUMENTS

NOT APPLICABLE