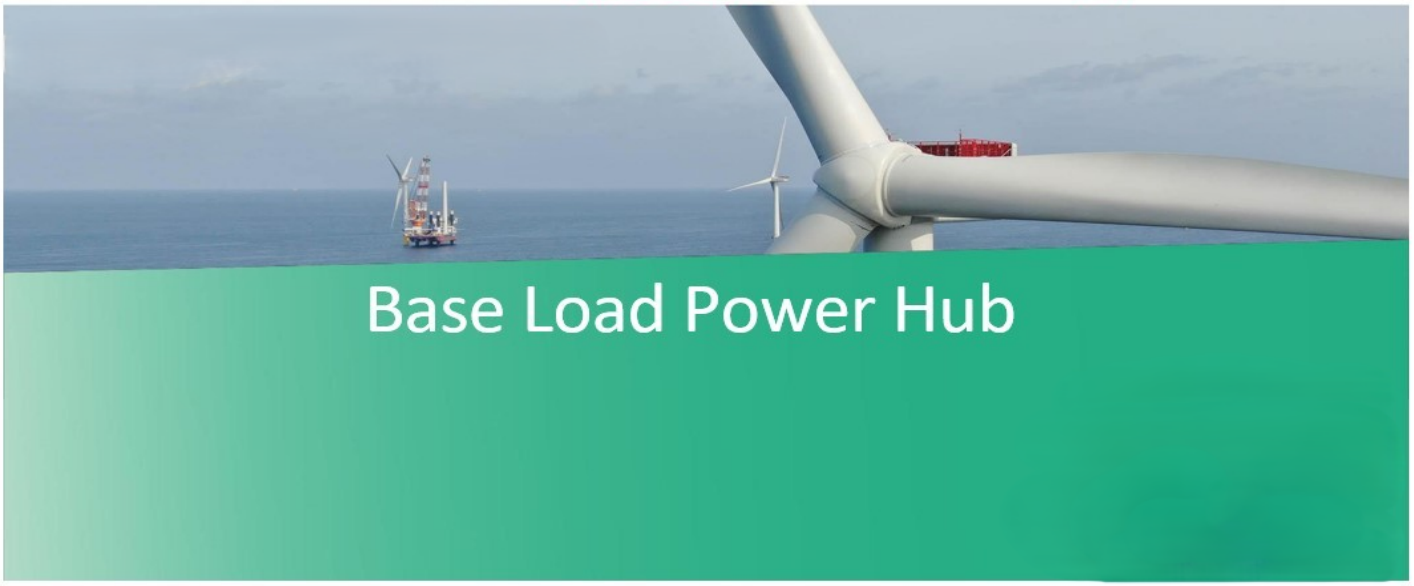
CROSSWIND

ROSETTI MARINO

PROVERLIS

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



COMMISSIONING DOSSIER (ONSHORE)

SYSTEM	99 Miscellaneous System
SUBSYSTEM	99-00 Crane

CROSSWIND

123A90 - HOLLANDSE KUST NOORD WIND PARK
BLPH Project

COMMISSIONING DOSSIER INDEX

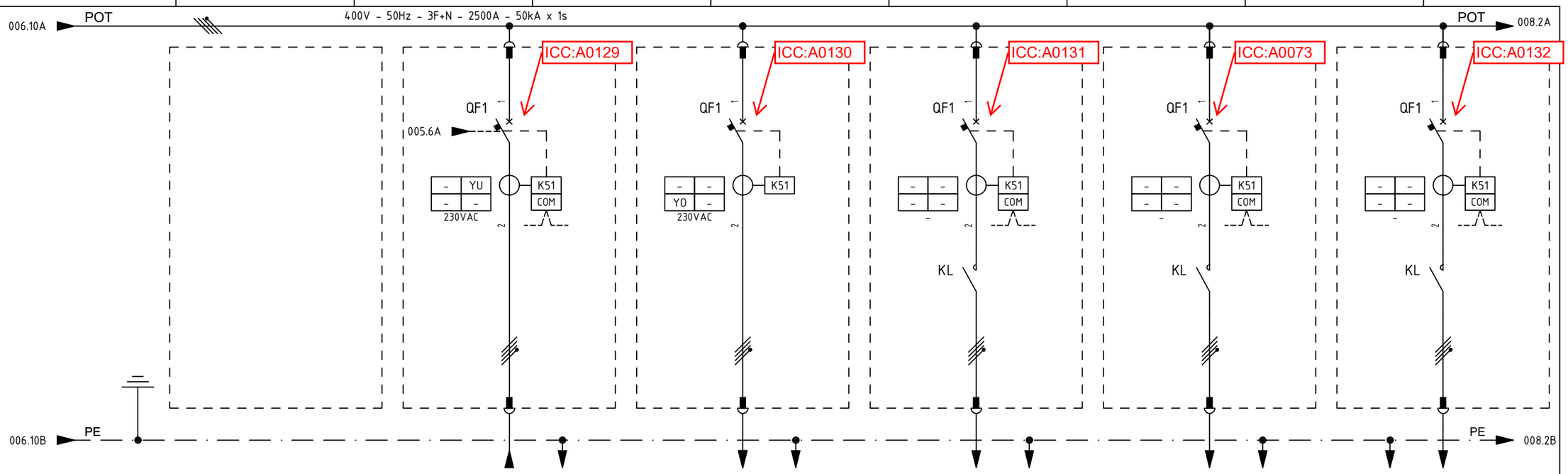
ROSETTI MARINO

Sub System N°:	99-00	**Tick as appropriate**	ONSHORE	OK
Description:	Crane		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*	OK
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	Martin Taylor
Date	2025-07-08	2025-07-08
Signature	PROVERLIS Digitaly signed by Anthony Iveson 2025-07-08T13:12:30.305Z	PROVERLIS Digitaly signed by Martin Taylor 2025-07-08T14:46:27.526Z

Section 1 SUB-SYSTEM DEFINITION



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

/ SYSTEM

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

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DWG n° : 231298/SD/11

Item n° : PF1002983/26

IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200N1"

SINGLE LINE DIAGRAM

Single Line Drawing

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00011

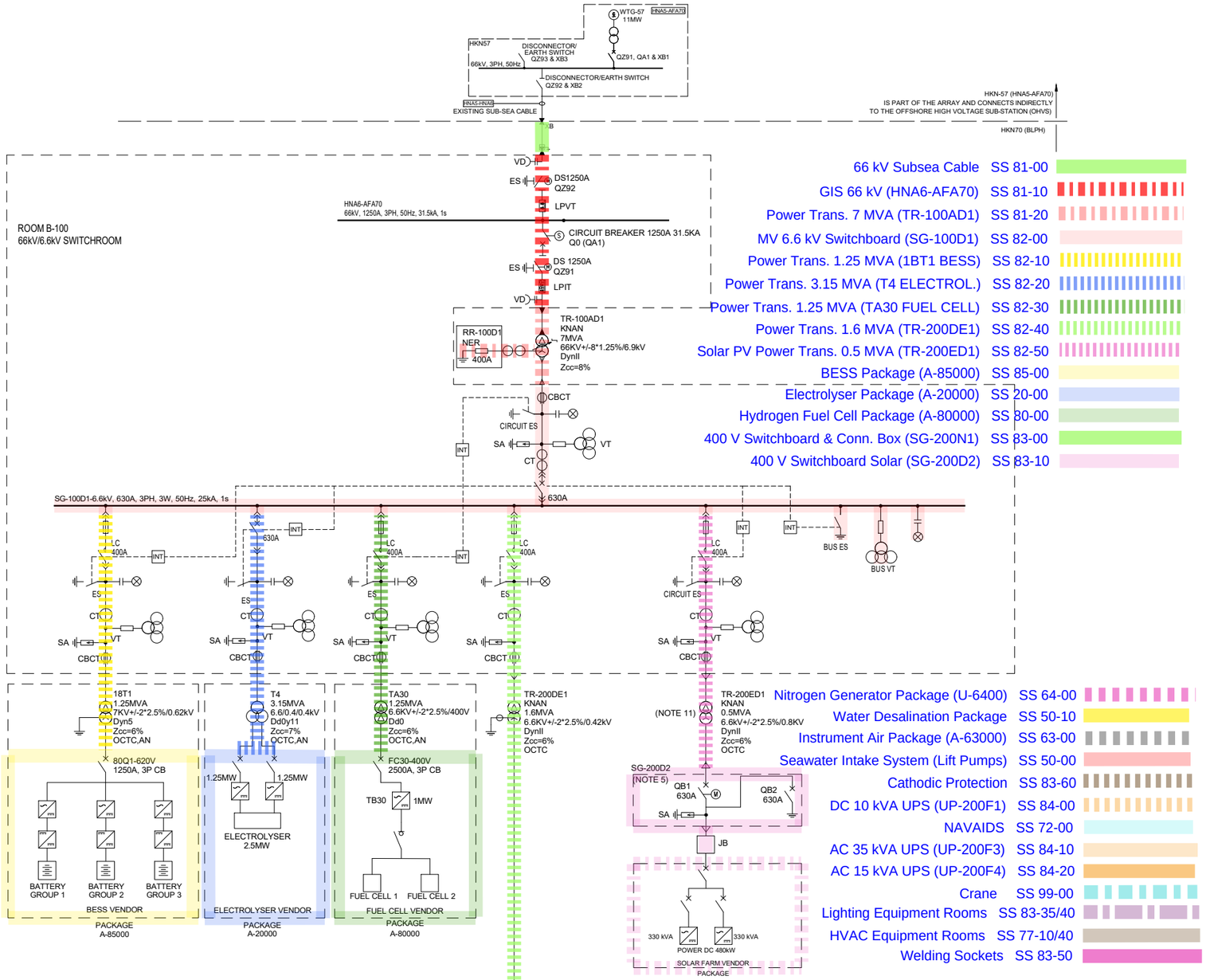
SHEET 007

REV. 03

F.to UNI A3: 420mmx297mm

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

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



SYMBOL LEGEND:

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

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

NOTES:

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

REFERENCES:

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

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

CROSSWIND

ROSETTI MARINO

TITLE :

OVERALL/KEY SINGLE LINE DIAGRAM

CONTRACT NO./TITLE CW-I-I/P4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE N/A
DRAWN GPA	CHECKED LMA/AMA	APPROVED LMA/MDO	DATE 26/03/2023
A1	DRAWING NO. 123A90-DDL-EL-DG-20158	SHEET 001	REV. 01

01

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

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:	2025-05-28	
System:	99	/	Miscellaneous System		
SubSystem:	99-00	/	Crane		

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: 1

REMARKS:

	CONTRACTOR Commissioning Manager	**COMPANY** Commissioning Lead
Name	Anthony Iveson	Martin Taylor
Date	2025-05-29	2025-07-08
Signature	Digitaly signed by Anthony Iveson 2025-05-29T08:58:13.727Z	Digitaly signed by Martin Taylor 2025-07-08T12:50:48.827Z

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 99-00 & process: COMM

Electrical	99-00 Crane						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
A3/+04-QF1	CRANE - A3/+04-QF1	ONSHORE	C10002921	FP00	100	2025-03-21	RFO 1
		ONSHORE	C10002922	FTR-2	100	2024-10-02	RFO 1
		ONSHORE	C10002923	FTR-6	100	2024-10-03	RFO 1
		ONSHORE	C10003019	FTR-5	100	2025-04-29	RFO 1

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 99-00 & process: COMM

Mechanical	99-00 Crane						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
X-99001	Lifting Davit	ONSHORE	C10004859	TMX12	100	2025-05-20	RFO 1

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	99	Miscellaneous System
SUBSYSTEM	99-00	Crane

Mechanical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003860	A	X-99001 C10002362	Earthing system not connected.	.		KAlbonetti 2025-02-17	2025-04-02	Gtangianu 2025-04-02	2025-04-02
C30003791	B	X-99001 C10002362	Several touch-ups to be made.	.		KAlbonetti 2025-02-13	2025-05-06	LNovaga 2025-05-06	2025-05-06

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 99 Miscellaneous System
SUBSYSTEM 99-00 Crane

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30004312	A	X-99001 C10002360	Missing on all cablegland the star washer and the teflhon washer. See attached photo.	.		Gtangianu 2025-04-03	2025-05-23	Gtangianu 2025-05-23	2025-05-23
C30004313	A	X-99001 C10002360	The internal cables need to be better dressed , Is short The power cable from 50D1 to motor.See attached photo.	.		Gtangianu 2025-04-03	2025-04-15	Gtangianu 2025-04-15	2025-04-15
C30000119	B	A3/+04-QF1 C10002922	New and definitive protection setting to be implemented on SG-200N1 drawer A3/+04.	Update the protection study on the drawer.		MGirotti 2024-10-01	2024-11-21	MGirotti 2024-11-21	2024-11-21
C30003139	B	83020-CEL C10000541	Bending radius to be arranged better on the MCT on the floor , near the Panel Crane- JB-200E3. See the attached photo.	.		Gtangianu 2025-01-21	2025-03-04	JKrizanic 2025-03-04	2025-03-04
C30003144	B	83020-CEL C10000541	Missing all SS cable tags on all cable routing. (inside control cabinet)	.		Gtangianu 2025-01-22	2025-04-29	Gtangianu 2025-04-29	2025-04-29
C30004301	B	83020-CEL C10000541	Missing identification cable wire insde the panel DP-200N1. See attached photo.	.		Gtangianu 2025-03-31	2025-04-17	Gtangianu 2025-04-17	2025-04-17
C30004314	B	X-99001 C10002360	The profibus cable is not connected. See attached photo.	.		Gtangianu 2025-04-03	2025-04-15	Gtangianu 2025-04-15	2025-04-15
C30004316	B	X-99001 C10002360	All Exstenal cable tags by Vendor is in plastic .Need to change to SS type. See attached photo.	.		Gtangianu 2025-04-03	2025-04-30	Gtangianu 2025-04-30	2025-04-30
C30004317	B	X-99001 C10002360	Vendor Crane wiring Diagram(1724001010-MAC-DG-00012_Rev.3) is not alligned with internal Panel. Documentation to be	.		Gtangianu 2025-04-03			

Section 2.2 Exception Punch Lists (per discipline)

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

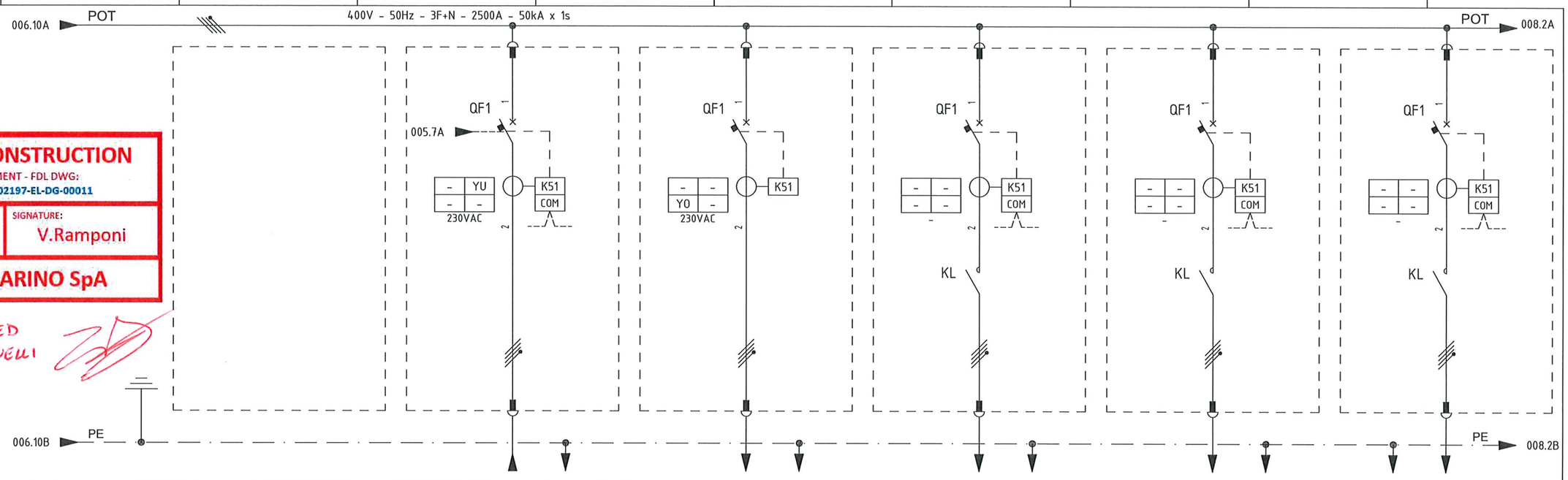
PUNCH LIST REPORT

SYSTEM	99	Miscellaneous System
SUBSYSTEM	99-00	Crane

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30004317	B	X-99001 C10002360	Vendor Crane wiring Diagram(1724001010-MAC-DG-00012_Rev.3) is not alligned with internal Panel. Documentation to be	.		Gtangianu 2025-04-03			

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



VALID FOR CONSTRUCTION

VENDOR DOCUMENT - FDL DWG:
123A90-FDL-1723002197-EL-DG-00011

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

ROSETTI MARINO SpA

AS-COMMISSIONED
DAVIDE ZOCCONELLI
20/03/2025
NO MARK UP

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

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
=					
+					
4	28/08/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
3	08/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
2	03/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
1	28/03/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
0	15/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

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

IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200N1"

SINGLE LINE DIAGRAM

Single Line Drawing

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00011

SHEET 007

REV. 04

File Name : 1723002197-EL-DG-00011 Rev. 04

F.to UNI A3: 420mmx297mm

Section 3 CONSOLIDATED PUNCH LISTS

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	99	Miscellaneous System
SUBSYSTEM	99-00	Crane

Mechanical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003860	A	X-99001 C10002362	Earthing system not connected.	.		KAlbonetti 2025-02-17	2025-04-02	Gtangianu 2025-04-02	2025-04-02
C30003791	B	X-99001 C10002362	Several touch-ups to be made.	.		KAlbonetti 2025-02-13	2025-05-06	LNovaga 2025-05-06	2025-05-06

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 99 Miscellaneous System

SUBSYSTEM 99-00 Crane

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30004312	A	X-99001 C10002360	Missing on all cablegland the star washer and the teflhon washer. See attached photo.	.		Gtangianu 2025-04-03	2025-05-23	Gtangianu 2025-05-23	2025-05-23
C30004313	A	X-99001 C10002360	The internal cables need to be better dressed , Is short The power cable from 50D1 to motor.See attached photo.	.		Gtangianu 2025-04-03	2025-04-15	Gtangianu 2025-04-15	2025-04-15
C30000119	B	A3/+04-QF1 C10002922	New and definitive protection setting to be implemented on SG-200N1 drawer A3/+04.	Update the protection study on the drawer.		MGirotti 2024-10-01	2024-11-21	MGirotti 2024-11-21	2024-11-21
C30003139	B	83020-CEL C10000541	Bending radius to be arranged better on the MCT on the floor , near the Panel Crane- JB-200E3. See the attached photo.	.		Gtangianu 2025-01-21	2025-03-04	JKrizanic 2025-03-04	2025-03-04
C30003144	B	83020-CEL C10000541	Missing all SS cable tags on all cable routing. (inside control cabinet)	.		Gtangianu 2025-01-22	2025-04-29	Gtangianu 2025-04-29	2025-04-29
C30004301	B	83020-CEL C10000541	Missing identification cable wire insde the panel DP-200N1. See attached photo.	.		Gtangianu 2025-03-31	2025-04-17	Gtangianu 2025-04-17	2025-04-17
C30004314	B	X-99001 C10002360	The profibus cable is not connected. See attached photo.	.		Gtangianu 2025-04-03	2025-04-15	Gtangianu 2025-04-15	2025-04-15
C30004316	B	X-99001 C10002360	All Exstenal cable tags by Vendor is in plastic .Need to change to SS type. See attached photo.	.		Gtangianu 2025-04-03	2025-04-30	Gtangianu 2025-04-30	2025-04-30
C30004317	B	X-99001 C10002360	Vendor Crane wiring Diagram(1724001010-MAC-DG-00012_Rev.3) is not alligned with internal Panel. Documentation to be	.		Gtangianu 2025-04-03			

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004317

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002360	1.4 Discipline	Electrical
1.2 Item	X-99001	Lifting Davit	
1.3 Subsystem	99-00	Crane	

2 - OBSERVATION

Vendor Crane wiring Diagram(1724001010-MAC-DG-00012_Rev.3) is not alligned with internal Panel. Documentation to be update in compliance with Items installation.

Name: Giovanni Tangianu

Date: 2025-04-03

Signature: Digitaly signed by Giovanni Tangianu 2025-04-03T14:11:28.305Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2025-04-03
3.5 Action by	VND Vendor	Signature	Digitaly signed by Giovanni Tangianu 2025-04-03T14:11:56.847Z

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

C30000119

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002922	1.4 Discipline	Electrical
1.2 Item	A3/+04-QF1	CRANE - A3/+04-QF1	
1.3 Subsystem	99-00	Crane	

2 - OBSERVATION

New and definitive protection setting to be implemented on SG-200N1 drawer A3/+04.

Name: Mattia Girotti

Date: 2024-10-01

Signature: Digitaly signed by Mattia Girotti 2024-10-01T13:21:31.566Z

3 - DEFECT ASSESSMENT

Update the protection study on the drawer.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Mattia Girotti
3.4 Activity code	COMM Commissioning	Date	2024-10-01
3.5 Action by	PRE-COMM	Signature	Digitaly signed by Mattia Girotti 2024-10-01T13:22:03.775Z

4 - PERFORMED ACTION

The definitive setting has been updated

Name

Date

Signature

5 - CLEARANCE CHECK

Done

Name: Mattia Girotti

Date: 2024-11-21

Signature: Digitaly signed by Mattia Girotti 2024-11-21T09:44:09.575Z

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003139

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000541	1.4 Discipline	Electrical
1.2 Item	83020-CEL	LV Switchgear / Crane	
1.3 Subsystem	99-00	Crane	

2 - OBSERVATION

Bending radius to be arranged better on the MCT on the floor , near the Panel Crane- JB-200E3.
See the attached photo.

Name: Giovanni Tangianu

Date: 2025-01-21

Signature: Digitaly signed by Giovanni Tangianu 2025-01-21T16:29:03.919Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2025-01-21
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Giovanni Tangianu 2025-01-21T16:29:52.523Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic

Date: 2025-03-04

Signature: Digitaly signed by Josip Krizanic 2025-03-04T14:18:46.236Z

6- CLEARANCE APPROVAL

Name

Date

Signature





ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003144

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000541	1.4 Discipline	Electrical
1.2 Item	83020-CEL	LV Switchgear / Crane	
1.3 Subsystem	99-00	Crane	

2 - OBSERVATION

Missing all SS cable tags on all cable routing. (inside control cabinet)

Name: Giovanni Tangianu

Date: 2025-01-22

Signature: Digitaly signed by Giovanni Tangianu 2025-01-22T10:26:16.994Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2025-01-22
3.5 Action by	PRE-COMM	Signature	Digitaly signed by Giovanni Tangianu 2025-01-22T10:27:10.311Z

4 - PERFORMED ACTION

Name

Date: 2025-04-29

Signature

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-04-29

Signature: Digitaly signed by Giovanni Tangianu 2025-04-29T06:21:48.915Z

6- CLEARANCE APPROVAL

Name

Date: 2025-04-29

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003791

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002362	1.4 Discipline	Mechanical
1.2 Item	X-99001	Lifting Davit	
1.3 Subsystem	99-00	Crane	

2 - OBSERVATION

Several touch-ups to be made.

Name: Kangi Albonetti

Date: 2025-02-13

Signature: Digitaly signed by Kangi Albonetti 2025-02-13T13:45:27.975Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-02-13
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Kangi Albonetti 2025-02-13T13:45:48.467Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Done

Name: Lorenzo Novaga

Date: 2025-05-06

Signature: Digitaly signed by Lorenzo Novaga 2025-05-06T09:57:28.322Z

6- CLEARANCE APPROVAL

Name

Date

Signature




The Novacel Solution
for LASER Fiber & CO_2



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003860

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002362	1.4 Discipline	Mechanical
1.2 Item	X-99001	Lifting Davit	
1.3 Subsystem	99-00	Crane	

2 - OBSERVATION

Earthing system not connected.

Name: Kangi Albonetti

Date: 2025-02-17

Signature: Digitaly signed by Kangi Albonetti 2025-02-17T11:57:40.193Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-02-17
3.5 Action by	RM_CONSTR RM	Signature	Digitaly signed by Kangi Albonetti 2025-02-17T11:57:53.239Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Grounding has been connected.

Name: Giovanni Tangianu

Date: 2025-04-02

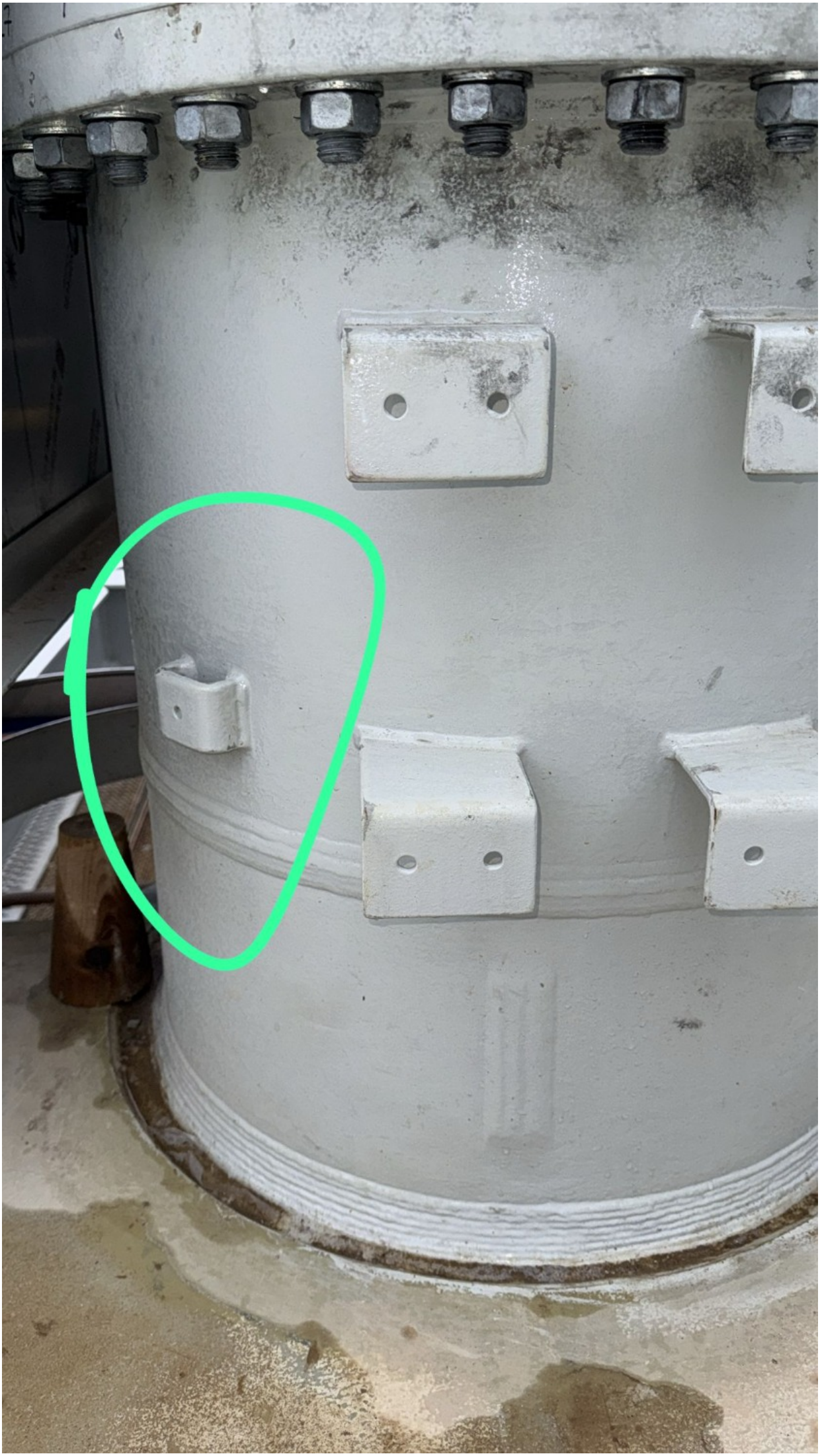
Signature: Digitaly signed by Giovanni Tangianu 2025-04-02T07:38:00.720Z

6- CLEARANCE APPROVAL

Name

Date

Signature



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004301

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000541	1.4 Discipline	Electrical
1.2 Item	83020-CEL	LV Switchgear / Crane	
1.3 Subsystem	99-00	Crane	

2 - OBSERVATION

Missing identification cable wire insde the panel DP-200N1. See attached photo.

Name: Giovanni Tangianu

Date: 2025-03-31

Signature: Digitaly signed by Giovanni Tangianu 2025-03-31T08:43:52.323Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2025-03-31
3.5 Action by	PRE-COMM	Signature	Digitaly signed by Giovanni Tangianu 2025-03-31T08:44:02.981Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-04-16

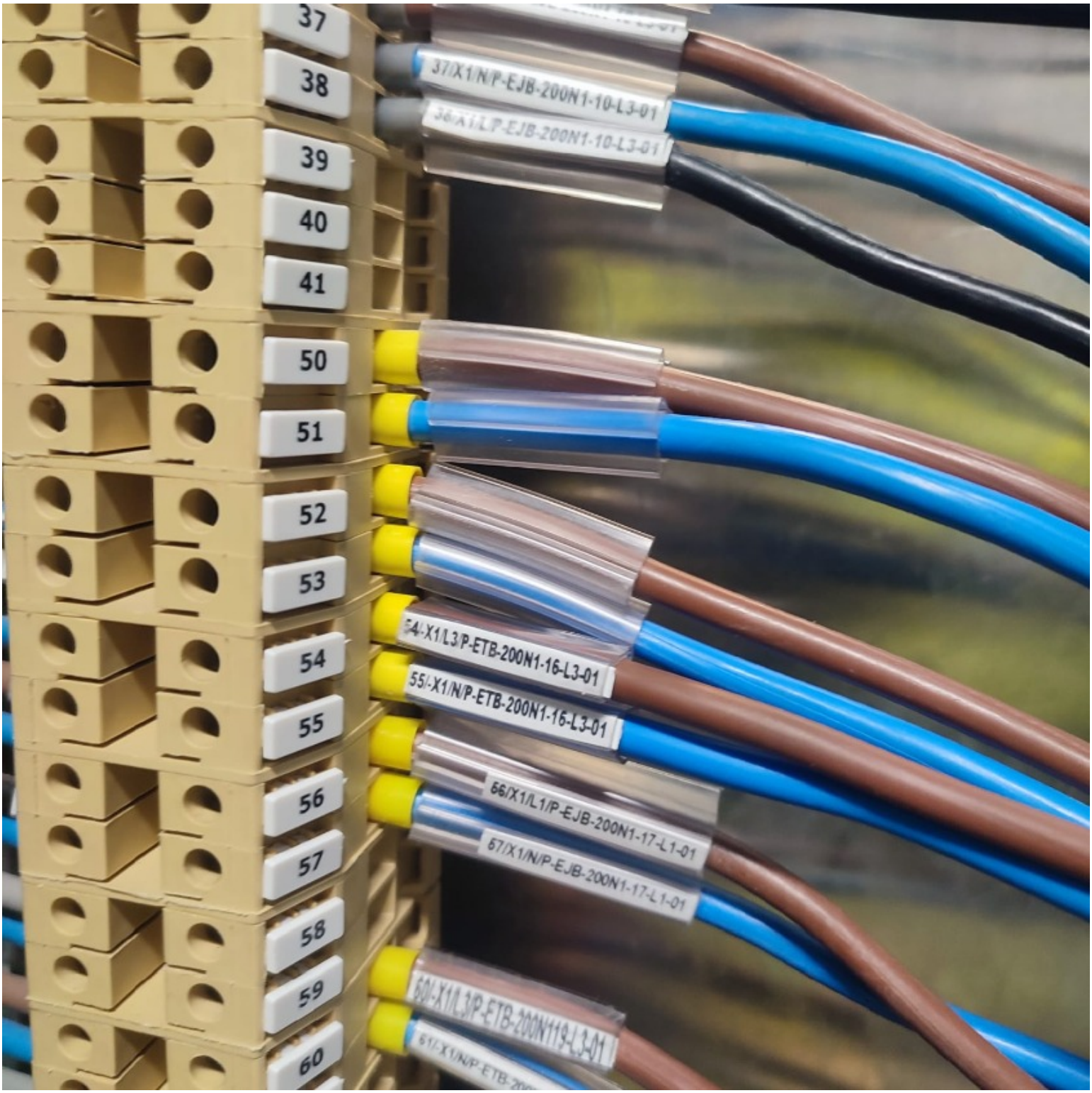
Signature: Digitaly signed by Giovanni Tangianu 2025-04-16T07:00:34.424Z

6- CLEARANCE APPROVAL

Name

Date

Signature


37
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59
60
37/X1/N/P-EJB-200N1-10-L3-01
54/-X1/L3/P-ETB-200N1-16-L3-01
55/-X1/N/P-ETB-200N1-16-L3-01
66/X1/L1/P-EJB-200N1-17-L1-01
67/X1/N/P-EJB-200N1-17-L1-01

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004312

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002360	1.4 Discipline	Electrical
1.2 Item	X-99001	Lifting Davit	
1.3 Subsystem	99-00	Crane	

2 - OBSERVATION

Missing on all cablegland the star washer and the teflhon washer.
See attached photo.

Name: Giovanni Tangianu

Date: 2025-04-03

Signature: Digitaly signed by Giovanni Tangianu 2025-04-03T12:43:28.975Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2025-04-03
3.5 Action by	VND Vendor	Signature	Digitaly signed by Giovanni Tangianu 2025-04-03T12:43:52.928Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Installed.

Name: Giovanni Tangianu

Date: 2025-05-23

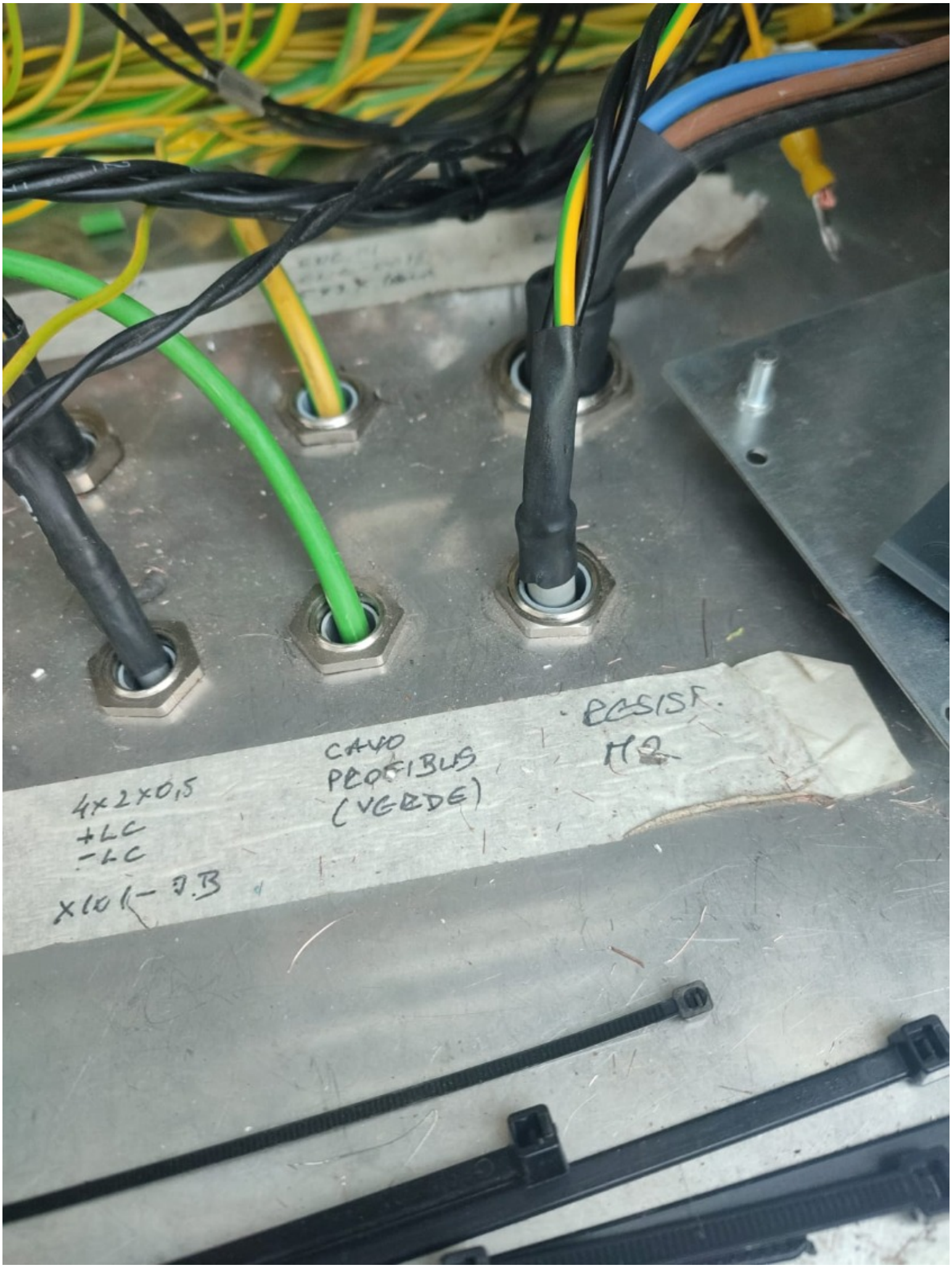
Signature: Digitaly signed by Giovanni Tangianu 2025-05-23T08:03:47.232Z

6- CLEARANCE APPROVAL

Name

Date

Signature


4x2x0,5
+LC
-LC
X101 - J.B
CAVO
PROFIBUS
(VERDE)
EASIST.
M2


PTC M1


M2 BRAKE
PTC M1

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004313

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002360	1.4 Discipline	Electrical
1.2 Item	X-99001	Lifting Davit	
1.3 Subsystem	99-00	Crane	

2 - OBSERVATION

The internal cables need to be better dressed , Is short The power cable from 50D1 to motor.See attached photo.

Name: Giovanni Tangianu

Date: 2025-04-03

Signature: Digitaly signed by Giovanni Tangianu 2025-04-03T12:57:37.517Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2025-04-03
3.5 Action by	VND Vendor	Signature	Digitaly signed by Giovanni Tangianu 2025-04-03T12:58:02.375Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

DONE.

Name: Giovanni Tangianu

Date: 2025-04-15

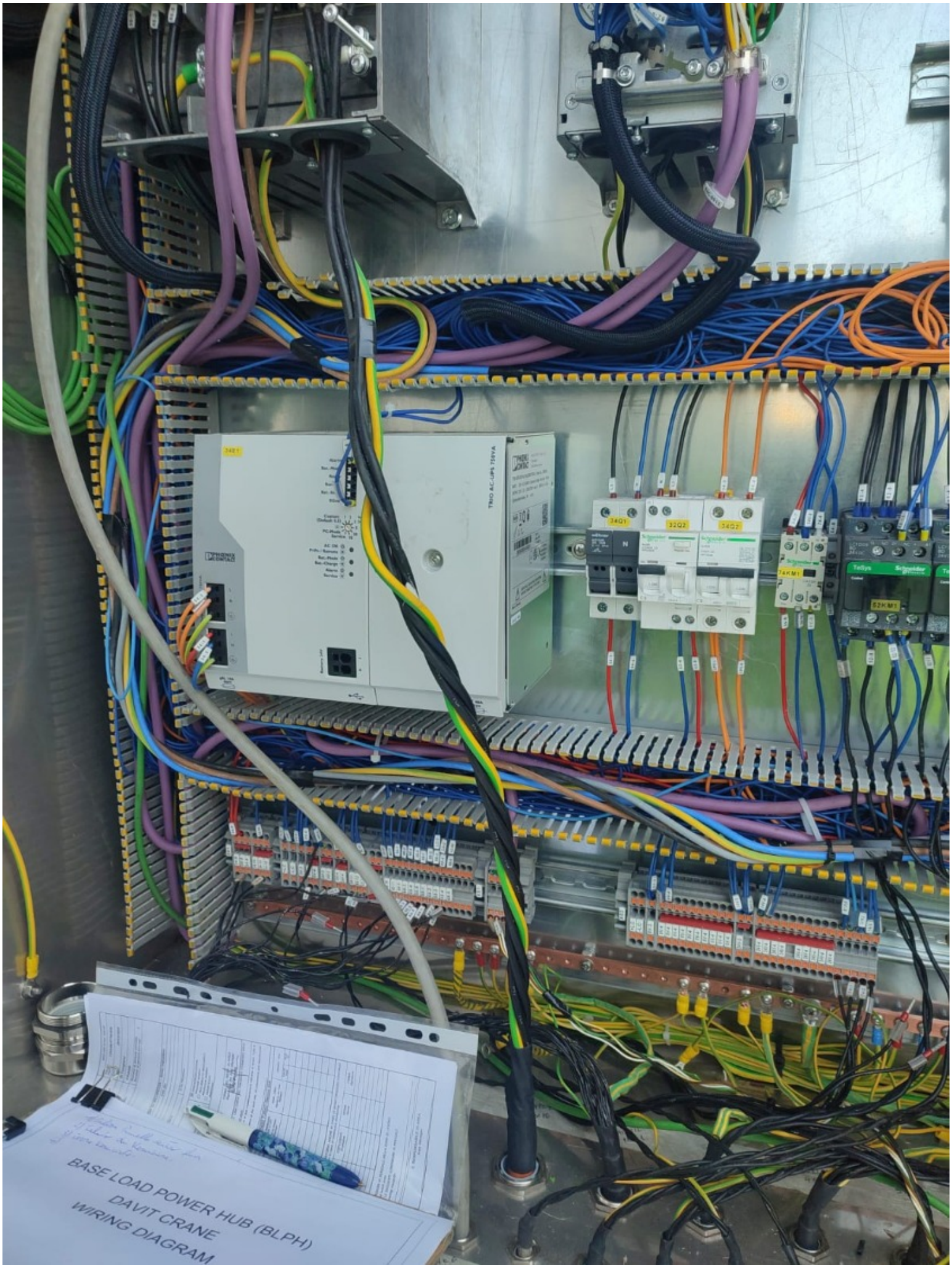
Signature: Digitaly signed by Giovanni Tangianu 2025-04-15T09:57:27.960Z

6- CLEARANCE APPROVAL

Name

Date

Signature


BASE LOAD POWER HUB (BLPH)
DAVIT CRANE
WIRING DIAGRAM

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004314

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002360	1.4 Discipline	Electrical
1.2 Item	X-99001	Lifting Davit	
1.3 Subsystem	99-00	Crane	

2 - OBSERVATION

The profibus cable is not connected. See attached photo.

Name: Giovanni Tangianu

Date: 2025-04-03

Signature: Digitaly signed by Giovanni Tangianu 2025-04-03T13:01:19.560Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2025-04-03
3.5 Action by	VND Vendor	Signature	Digitaly signed by Giovanni Tangianu 2025-04-03T13:01:36.807Z

4 - PERFORMED ACTION

Name

Date

Signature

5 - CLEARANCE CHECK

Connected.

Name: Giovanni Tangianu

Date: 2025-04-15

Signature: Digitaly signed by Giovanni Tangianu 2025-04-15T09:57:42.434Z

6- CLEARANCE APPROVAL

Name

Date

Signature



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004316

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002360	1.4 Discipline	Electrical
1.2 Item	X-99001	Lifting Davit	
1.3 Subsystem	99-00	Crane	

2 - OBSERVATION

All Exstenal cable tags by Vendor is in plastic .Need to change to SS type. See attached photo.

Name: Giovanni Tangianu

Date: 2025-04-03

Signature: Digitaly signed by Giovanni Tangianu 2025-04-03T14:03:56.098Z

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2025-04-03
3.5 Action by	VND Vendor	Signature	Digitaly signed by Giovanni Tangianu 2025-04-03T14:04:08.811Z

4 - PERFORMED ACTION

Name

Date: 2025-04-30

Signature

5 - CLEARANCE CHECK

The cable tag has been changed .See attached photo.

Name: Giovanni Tangianu

Date: 2025-04-30

Signature: Digitaly signed by Giovanni Tangianu 2025-04-30T08:52:41.225Z

6- CLEARANCE APPROVAL

Name

Date: 2025-04-30

Signature


M2 BRAKE
PTC M1

NOVACE
nd The Surface

Section 4 FUNCTIONAL TESTS SHEETS

Section 4.1 Electrical functional test sheets index

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 99-00 & process: COMM & discipline : E

Electrical	99-00 Crane						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
A3/+04-QF1	CRANE - A3/+04-QF1	ONSHORE	C10002921	FP00	100	2025-03-21	RFO 1
		ONSHORE	C10002922	FTR-2	100	2024-10-02	RFO 1
		ONSHORE	C10002923	FTR-6	100	2024-10-03	RFO 1
		ONSHORE	C10003019	FTR-5	100	2025-04-29	RFO 1

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	A3/+04-QF1	: CRANE - A3/+04-QF1			Dwg	1723002197-EL-DG-00011
	S/Sys	99-00	: Crane			Module	
TASK	code	C10002921		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	PRE-COMM	Activity FTS	Discipline	Electrical	Form	FP00 Miscellaneous electrical Consumer

DATA

Switchboard	SG-200N1	Circuit ref:	A3/+04-QF1
Breaker rating (A)	63A	Nominal current (A)	37.8A

FUNCTION TEST REQUIREMENT

1	Check pre-commissioning activities have been carried out				OK
2	Check equipment for cleaness				OK
3	Measure I/R value of equipment and feeder cable at 1000V (Min value: 10 Mohm)	>1000	MΩ		OK
4	Energise control of equipment feeder				OK
5	Full test feeder breaker operation in test position				OK
6	Check protection setting				OK
7	Test interface trips and signals (remote alarms & status). Check the relevant ITR presence in the system				OK
8	Test control and safety functions according to manufacturer's procedure.				OK
9	Energize				OK
10	Measure Voltage and Current values at feeder breaker	421	V	0.1 A	OK
11	Attach test procedure, if any				NA

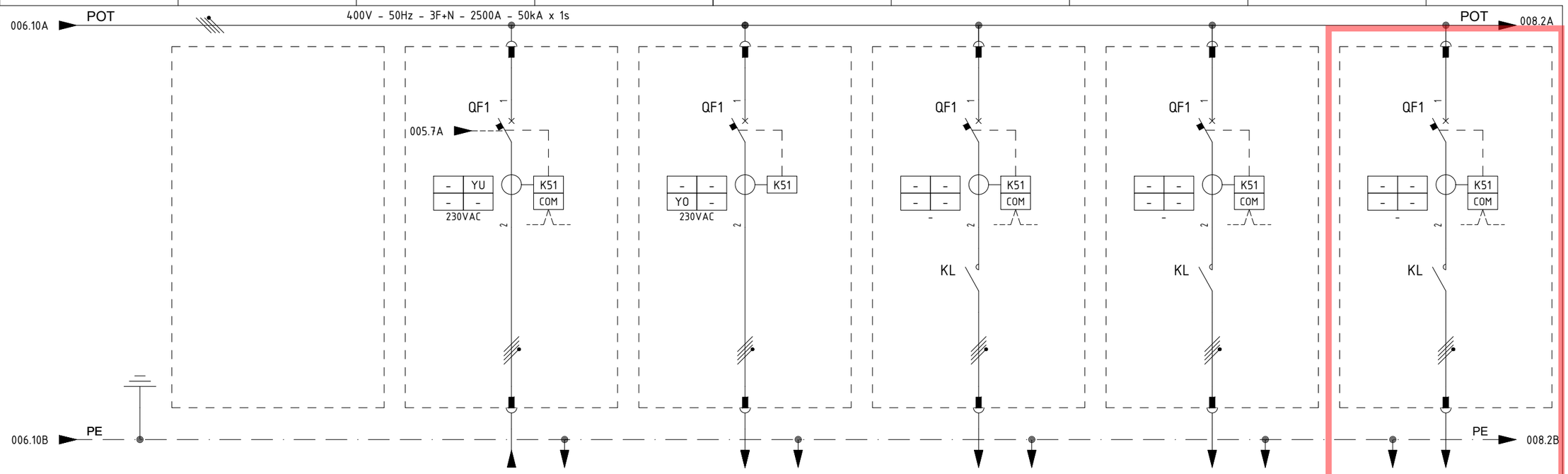
FUNCTION TEST REQUIREMENT	RESULT

Testing & measurement instruments used

Type	Serial n°	Calibration certificate	Validity
FLUKE 1663	5380144	7727/24	10/07/2025
FLUKE 376	A1711003	7710/24	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	2025-03-19	2025-03-21	2025-03-21
Signature	PROVERLIS Digitaly signed by Davide Zucconelli 2025-03-19T09:25:48.606Z	PROVERLIS Digitaly signed by Kristian Castellani 2025-03-21T10:00:51.495Z	PROVERLIS Digitaly signed by Witness waived 2025-03-21T16:57:00.109Z



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

=

+

DWG n° : 231298/SD/11

Item n° : PF1002983/26

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
4	28/08/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
3	08/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
2	03/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
1	28/03/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
0	15/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200N1"

SINGLE LINE DIAGRAM

Single Line Drawing

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00011

SHEET 007

REV. 04

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00011 Rev. 04

ITEMS ACRONYM

TYPICAL : LINE FEEDER "LK1-n" "LK2-n"

Composition of Typical :

LK-x = Common Parts
LK1-"nn" or LK2-"nn"= Specific Parts

Example for Composition of LK1-63:
- to take "LK-x" plus "LK1-63"

Example for Composition of LK2-160:
- to take "LK-x" plus "LK2-160"

	ACRONYM ITEMS [Comun parts]	ACRONYM ITEMS [Specific parts]					
	LK-x	LK1-40 [In=40A] [Current Trip Unit]	LK1-63 [In=63A] [Current Trip Unit]	LK1-100 [In=100A] [Current Trip Unit]	LK2-160 [In=160A] [Current Trip Unit]		
ASSOCIATED TYPICAL	This Item include all devices that are comun for both "Specific Parts" Items	This Items include only devices that are detail for "Specific Parts" Items					
LK1-40	X	X					
LK1-63	X		X				
LK1-100	X			X			
LK2-160	X				X		
-							

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

DWG n° : 231298/SD/31
Item n° : PF1002983/26

CROSSWIND

ROSETTI MARINO

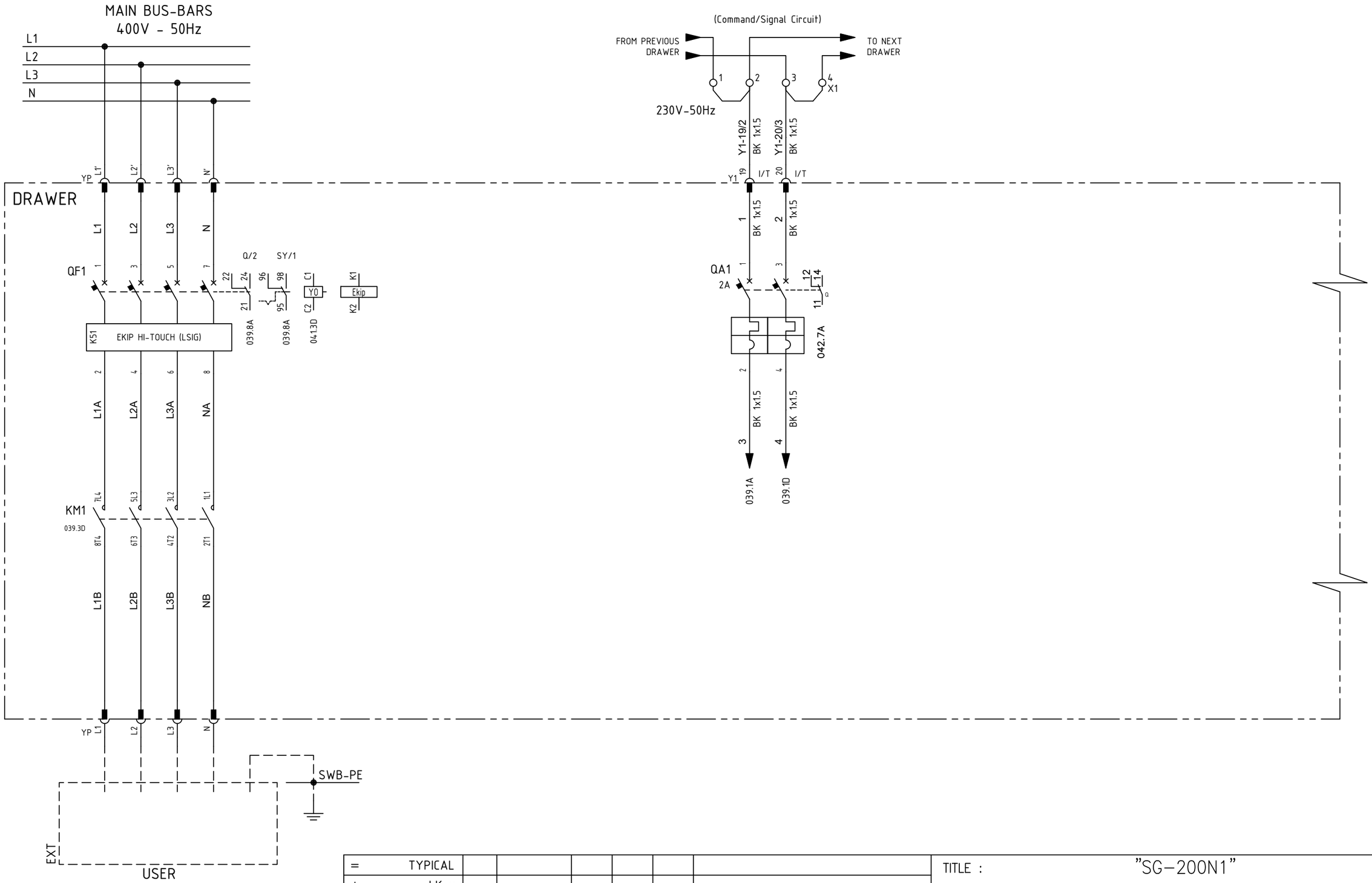
TITLE : "SG-200N1"
LV SWG FUNCTIONAL DIAGRAMS - TYPICAL FEEDERS
Items Acronym - Typical "LK1-n" & "LK2-n"

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

A3 | DRAWING NO. 1723002197-EL-DG-00031 | SHEET 037 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00031 Rev. 02



=	TYPICAL
+	LK-x

DWG n° : 231298/SD/31

Item n° : PF1002983/26

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

TITLE : "SG-200N1"

LV SWG FUNCTIONAL DIAGRAMS - TYPICAL FEEDERS

Functional Drawing - Typical "LK1-n" & "LK2-n"

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

SCALE : NTS

A3

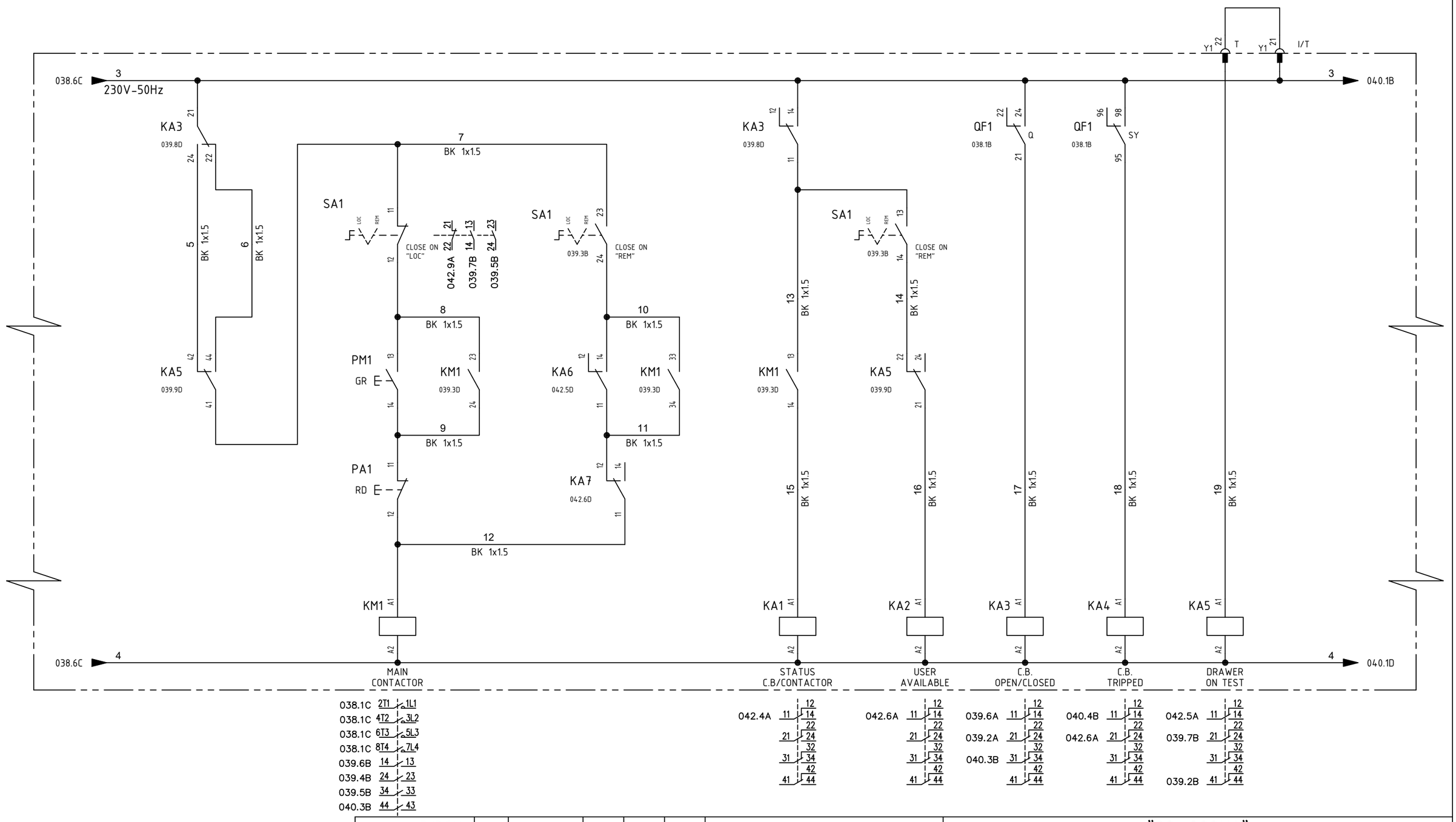
DRAWING NO. 1723002197-EL-DG-00031

SHEET 038

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00031 Rev. 02



=	TYPICAL
+	LK-x

DWG n° : 231298/SD/31

Item n° : PF1002983/26

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

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

TITLE : "SG-200N1"

LV SWG FUNCTIONAL DIAGRAMS - TYPICAL FEEDERS

Functional Drawing - Typical "LK1-n" & "LK2-n"

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

SCALE : NTS

A3

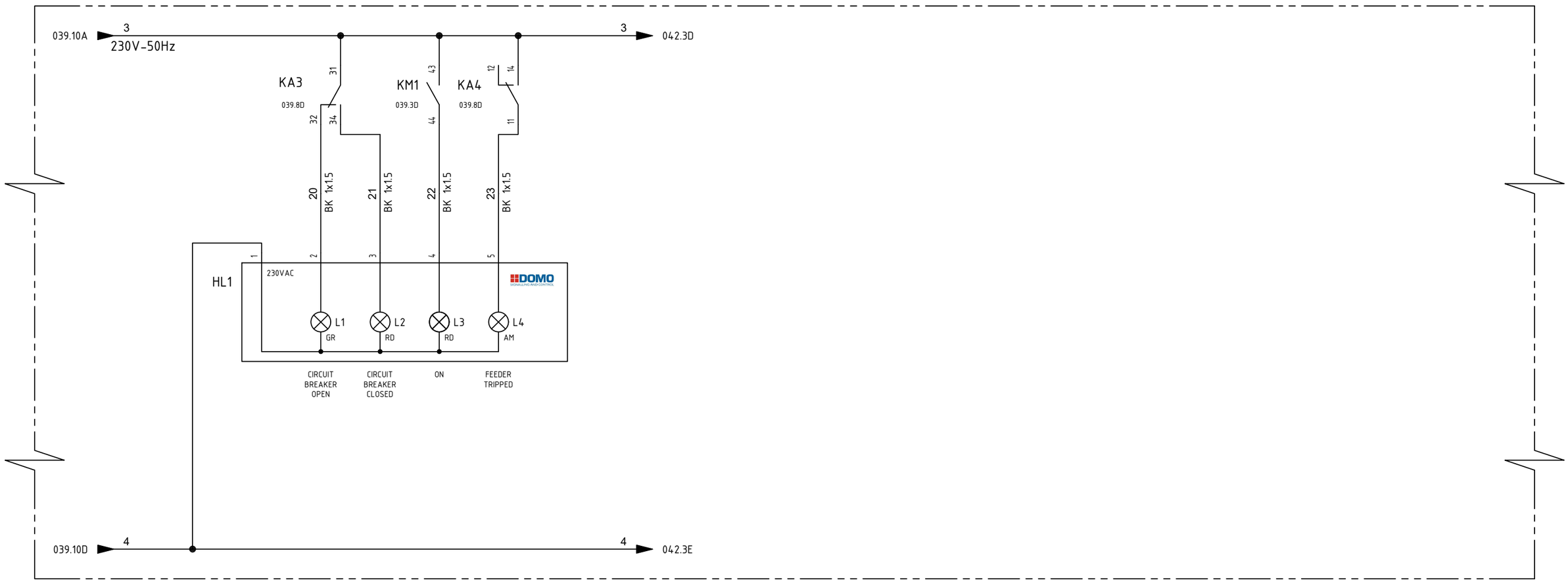
DRAWING NO. 1723002197-EL-DG-00031

SHEET 039

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00031 Rev. 02



=	TYPICAL						
+	LK-x						
DWG n° : 231298/SD/31							
Item n° : PF1002983/26							
		2	18/09/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
		1	10/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
		0	09/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
		REV.	DATE	DRN	CHKD	APPD	DESCRIPTION

IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200N1"

LV SWG FUNCTIONAL DIAGRAMS - TYPICAL FEEDERS

Functional Drawing - Typical "LK1-n" & "LK2-n"

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

SCALE : NTS

A3

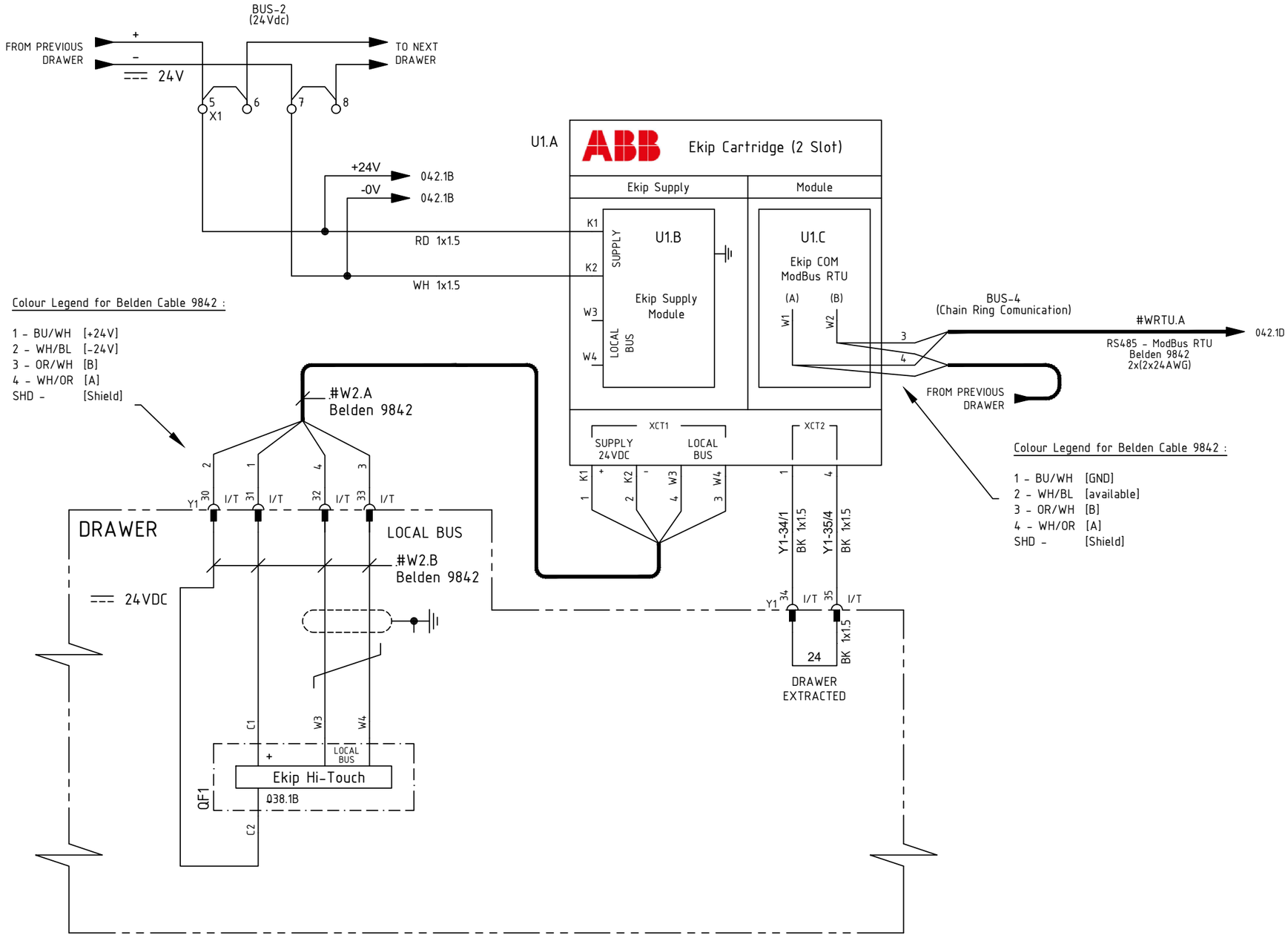
DRAWING NO. 1723002197-EL-DG-00031

SHEET 040

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00031 Rev. 02



=	TYPICAL						
+	LK-x						
DWG n° : 231298/SD/31							
Item n° : PF1002983/26		2	18/09/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
		1	10/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
		0	09/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
		REV.	DATE	DRN	CHKD	APPD	DESCRIPTION

IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200N1"

LV SWG FUNCTIONAL DIAGRAMS - TYPICAL FEEDERS

Functional Drawing - Typical "LK1-n" & "LK2-n"

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

SCALE : NTS

A3

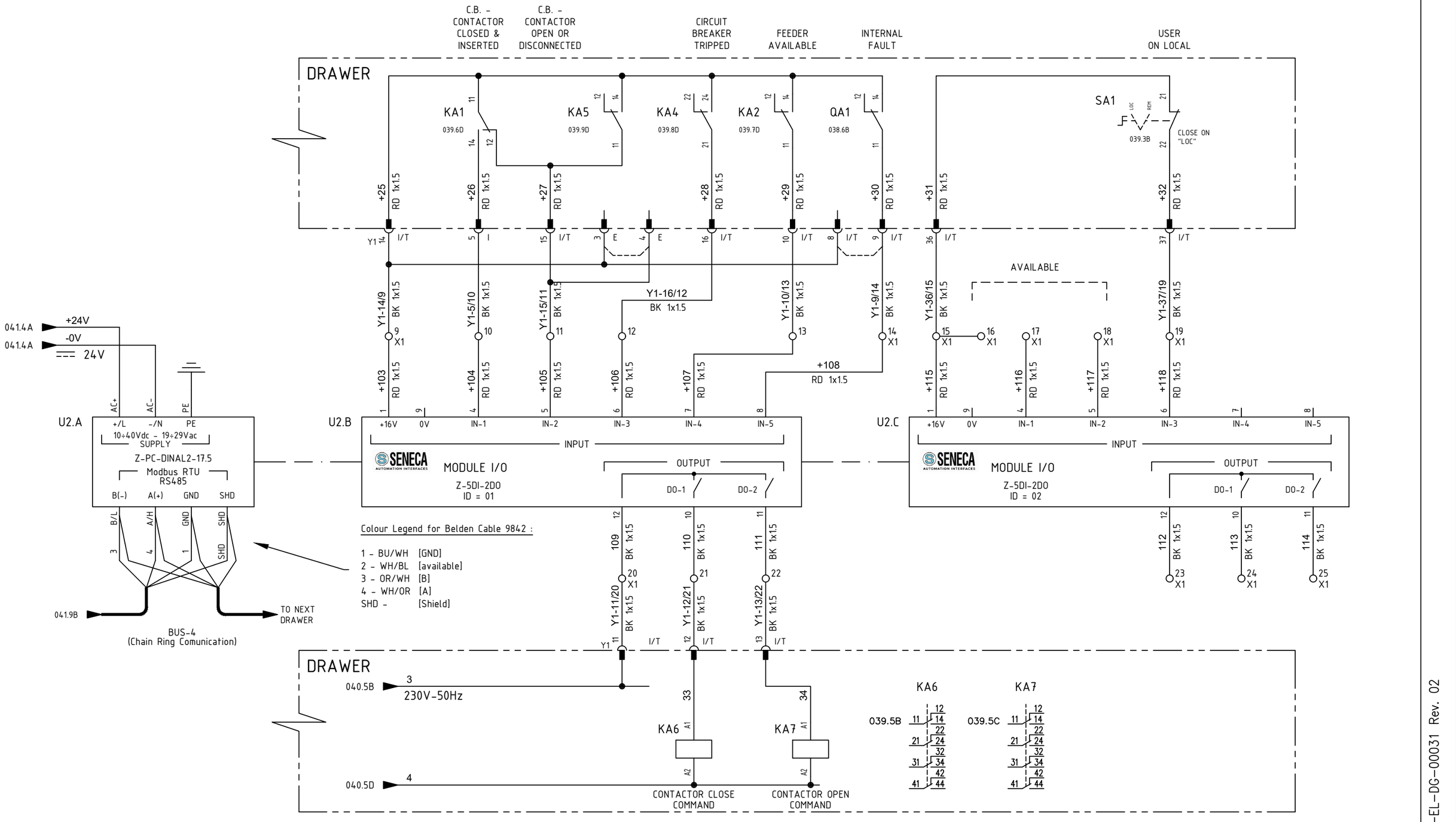
DRAWING NO. 1723002197-EL-DG-00031

SHEET 041

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00031 Rev. 02



=	TYPICAL					
+	LK-x					
DWG n° : 231298/SD/31						
Item n° : PF1002983/26						
	2	18/09/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
	1	10/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
	0	09/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
	REV.	DATE	DRN	CHKD	APPD	DESCRIPTION

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

TITLE : "SG-200N1"

LV SWG FUNCTIONAL DIAGRAMS - TYPICAL FEEDERS

Functional Drawing - Typical "LK1-n" & "LK2-n"

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00031

SHEET 042

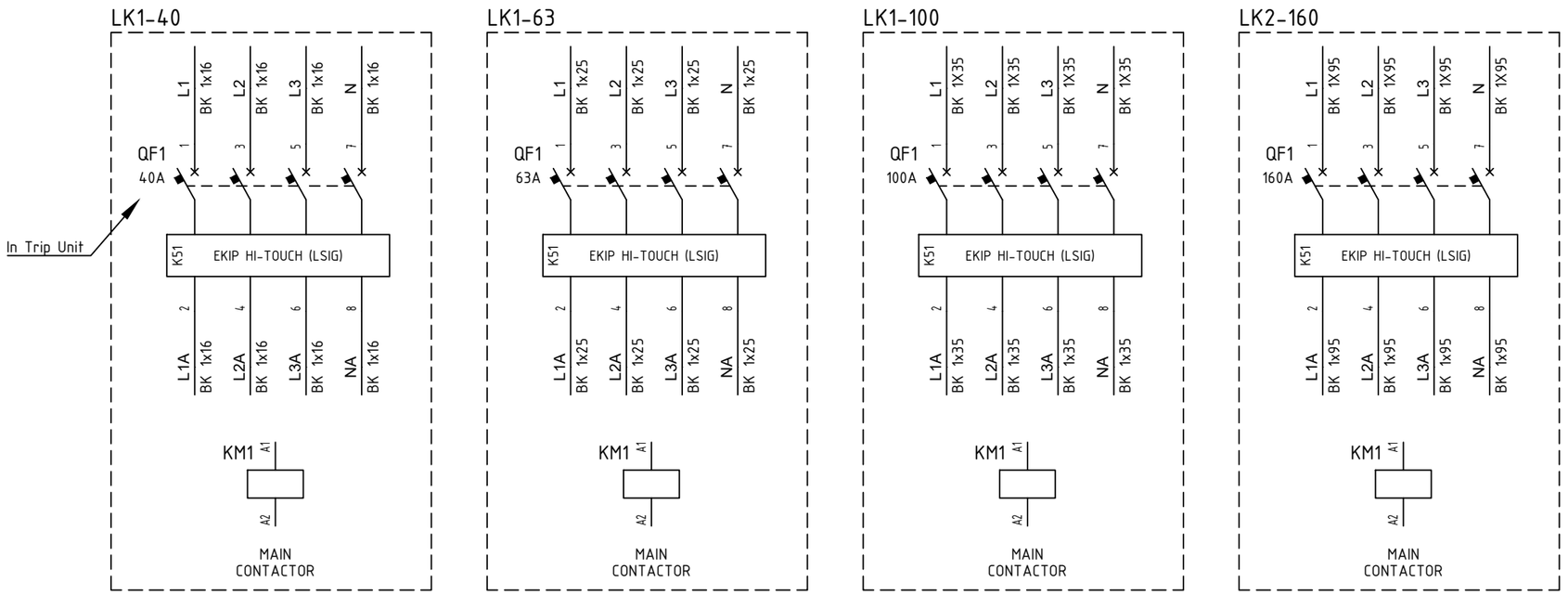
REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00031 Rev. 02

SPECIFIC PARTS

TYPICAL : LINE FEEDER "LK1-n" "LK2-n"



=	TYPICAL						
+	LK-x						
DWG n° : 231298/SD/31							
Item n° : PF1002983/26		2	18/09/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
		1	10/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
		0	09/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
		REV.	DATE	DRN	CHKD	APPD	DESCRIPTION

IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200N1"

LV SWG FUNCTIONAL DIAGRAMS - TYPICAL FEEDERS

Functional Drawing - Typical "LK1-n" & "LK2-n"

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00031

SHEET 043

REV. 02

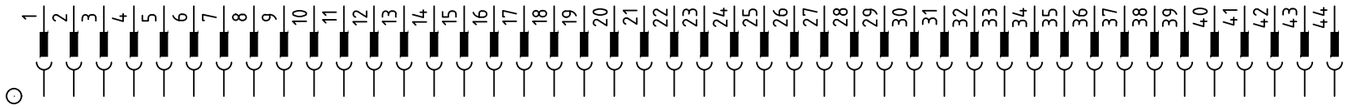
F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00031 Rev. 02

TYPICAL - LK-x - Y1

AUXILIARY SOCKET
136450/001 (PF – 2 pcs) + 136458/004 (PM – 2 pcs)

N° PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
JUMP			●	●				●	●																																			
RACKED-OUT			✕	✕				✕	✕																																			
TEST								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
RACKED-IN					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
PIN USED			042.5B	042.5B	042.4B			042.6B	042.7B	042.6B	042.5D	042.5D	042.6D	042.3B	042.4B	042.6B			038.6A	038.6A	039.9A	039.9A					041.3C	041.3C	041.4C	041.4C	041.6C	041.7C	042.7B	042.9B									



← FIELD WHIT "X" - CONTACT CLOSE WHEN DRAWER IS IN RACKED-OUT POSITION
← FIELD WHIT "X" - CONTACT CLOSE WHEN DRAWER IS IN TEST POSITION
← FIELD WHIT "X" - CONTACT CLOSE WHEN DRAWER IS IN RACKED-IN POSITION

← CROS-REFERENCE USED PIN

=	TYPICAL
+	LK-x

DWG n° : 231298/SD/31
Item n° : PF1002983/26

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

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200N1"
LV SWG FUNCTIONAL DIAGRAMS - TYPICAL FEEDERS
Functional Drawing - Typical "LK1-n" & "LK2-n"

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

A3 | DRAWING NO. 1723002197-EL-DG-00031 | SHEET 044 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00031 Rev. 02

TYPICAL - LK-x

X1

NumM	Fg.	Sez.	Tipo	Descrizione	Costruttore
			BT003	BT/3 End bracket	Cabur
1	038.5A	2.5	HD100GR__	HMD.2/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
2	038.6A	2.5	HD100GR__	HMD.2/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
3	038.6A	2.5	HD100GR__	HMD.2/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
4	038.6A	2.5	HD100GR__	HMD.2/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
5	041.3A	2.5	HD100GR__	HMD.2/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
6	041.3A	2.5	HD100GR__	HMD.2/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
7	041.4A	2.5	HD100GR__	HMD.2/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
8	041.4A	2.5	HD100GR__	HMD.2/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
			HD101GR	HMD/PT/GR End section - Grey	Cabur
9	042.3B	2.5	HD400GR__	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
10	042.4B	2.5	HD400GR__	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
11	042.4B	2.5	HD400GR__	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
12	042.5B	2.5	HD400GR__	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
13	042.6B	2.5	HD400GR__	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
14	042.7B	2.5	HD400GR__	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
15	042.7B	2.5	HD400GR__	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
16	042.7B	2.5	HD400GR__	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
17	042.8B	2.5	HD400GR__	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
18	042.8B	2.5	HD400GR__	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
19	042.9B	2.5	HD400GR__	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
20	042.5C	2.5	HD400GR__	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
21	042.5C	2.5	HD400GR__	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
22	042.6C	2.5	HD400GR__	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
23	042.9C	2.5	HD400GR__	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
24	042.9C	2.5	HD400GR__	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
25	042.10C	2.5	HD400GR__	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
			HD201GR	HMD.1/PT/GR End section - Grey	Cabur
			BT003	BT/3 End bracket	Cabur

= TYPICAL

\+ LK-x

DWG n° : 231298/SD/31

Item n° : PF1002983/26

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

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200N1"

LV SWG FUNCTIONAL DIAGRAMS - TYPICAL FEEDERS

Functional Drawing - Typical "LK1-n" & "LK2-n"

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

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00031

SHEET 045

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00031 Rev. 02

Nome/Item	Fg/Sh	Tipo/Type	Q.ta/Q.ty	Descrizione/Description	Costruttore/Manufacturer	Quadro (descrizione)
HL1	040	ML22/484L230STLTTR	1	MULTILED 48x48 - 4 LED - Vaux=230Vac/dc + LAMP TEST + TROP	DOMO	TYPICAL LK-x
KA1	039	ER 592 6	1	CR-M230AC4L SUPPLY 230VAC 4C/O 250V/6A LED	ABB	TYPICAL LK-x
		ER 609 8	1	CR-MH HOLDER FOR CR-M RELAY	ABB	TYPICAL LK-x
		ER 686 6	1	CR-M4SS SOCKET STANDARD X 2/4 C/O(CR-M)	ABB	TYPICAL LK-x
KA2	039	ER 592 6	1	CR-M230AC4L SUPPLY 230VAC 4C/O 250V/6A LED	ABB	TYPICAL LK-x
		ER 609 8	1	CR-MH HOLDER FOR CR-M RELAY	ABB	TYPICAL LK-x
		ER 686 6	1	CR-M4SS SOCKET STANDARD X 2/4 C/O(CR-M)	ABB	TYPICAL LK-x
KA3	039	ER 592 6	1	CR-M230AC4L SUPPLY 230VAC 4C/O 250V/6A LED	ABB	TYPICAL LK-x
		ER 609 8	1	CR-MH HOLDER FOR CR-M RELAY	ABB	TYPICAL LK-x
		ER 686 6	1	CR-M4SS SOCKET STANDARD X 2/4 C/O(CR-M)	ABB	TYPICAL LK-x
KA4	039	ER 592 6	1	CR-M230AC4L SUPPLY 230VAC 4C/O 250V/6A LED	ABB	TYPICAL LK-x
		ER 609 8	1	CR-MH HOLDER FOR CR-M RELAY	ABB	TYPICAL LK-x
		ER 686 6	1	CR-M4SS SOCKET STANDARD X 2/4 C/O(CR-M)	ABB	TYPICAL LK-x
KA5	039	ER 592 6	1	CR-M230AC4L SUPPLY 230VAC 4C/O 250V/6A LED	ABB	TYPICAL LK-x
		ER 609 8	1	CR-MH HOLDER FOR CR-M RELAY	ABB	TYPICAL LK-x
		ER 686 6	1	CR-M4SS SOCKET STANDARD X 2/4 C/O(CR-M)	ABB	TYPICAL LK-x
KA6	042	ER 592 6	1	CR-M230AC4L SUPPLY 230VAC 4C/O 250V/6A LED	ABB	TYPICAL LK-x
		ER 609 8	1	CR-MH HOLDER FOR CR-M RELAY	ABB	TYPICAL LK-x
		ER 686 6	1	CR-M4SS SOCKET STANDARD X 2/4 C/O(CR-M)	ABB	TYPICAL LK-x
KA7	042	ER 592 6	1	CR-M230AC4L SUPPLY 230VAC 4C/O 250V/6A LED	ABB	TYPICAL LK-x
		ER 609 8	1	CR-MH HOLDER FOR CR-M RELAY	ABB	TYPICAL LK-x
		ER 686 6	1	CR-M4SS SOCKET STANDARD X 2/4 C/O(CR-M)	ABB	TYPICAL LK-x
PA1	039	KW 075 2	1	MP1-10R PUSH BUTTON RED WITH BLACK RING	ABB	TYPICAL LK-x
		EO 569 7	1	MCBH-00 FIXING SUPPORT 3 CONTACTS	ABB	TYPICAL LK-x
		EO 571 3	2	MCB-01 CONTACT NC FOR PUSHBUTTOM	ABB	TYPICAL LK-x
PM1	039	KW 076 0	1	MP1-10G PUSH BUTTON GREEN WITH BLACK RING	ABB	TYPICAL LK-x
		EO 569 7	1	MCBH-00 FIXING SUPPORT 3 CONTACTS	ABB	TYPICAL LK-x
		EO 570 5	2	MCB-10 CONTACT NO FOR PUSHBUTTONS	ABB	TYPICAL LK-x
QA1	038	S550239	1	S202M C 2 AUTOMATIC CIRCUIT BREAKER 10KA 2P	ABB	TYPICAL LK-x
		A563819	1	S2-CS/H6R AUXILIARY STATE CONTACT 1CO	ABB	TYPICAL LK-x
SA1	039	KW 329 3	1	M2SS2-10B HANDLE SELECTOR 2P 90° BLACK RING BLACK	ABB	TYPICAL LK-x
		EO 569 7	1	MCBH-00 FIXING SUPPORT 3 CONTACTS	ABB	TYPICAL LK-x
		EO 570 5	2	MCB-10 CONTACT NO FOR PUSHBUTTONS	ABB	TYPICAL LK-x
		EO 571 3	2	MCB-01 CONTACT NC FOR PUSHBUTTOM	ABB	TYPICAL LK-x
U1.2	041	1SDA074173R1	1	MODUL EKIP SUPPLY 24÷48VDC	ABB	TYPICAL LK-x
U1.3	041	1SDA105166R1	1	Module Ekip Com Modbus RS485 Tmax XT	ABB	TYPICAL LK-x
U1.A	041	1SDA105203R1	1	EKIP CARTRIDGE 2SLOT FOR XT2-XT4-XT5	ABB	TYPICAL LK-x
U2.A	042	Z-PC-DINAL2-17.5	1	DIN RAIL 2SLOT WITH HEAD FOR "Z-5DI-2DO"	SENECA	TYPICAL LK-x
U2.B	042	Z-5DI-2DO	1	I/O MODUL 5DI+2DO modbus RS485 Vaux=10÷40Vdc 19÷28Vac	SENECA	TYPICAL LK-x
U2.C	042	Z-5DI-2DO	1	I/O MODUL 5DI+2DO modbus RS485 Vaux=10÷40Vdc 19÷28Vac	SENECA	TYPICAL LK-x
X1		HD100GR__	8	HMD.2/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur	TYPICAL LK-x
		HD400GR__	17	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur	TYPICAL LK-x
		BT003	2	BT/3 End bracket	Cabur	TYPICAL LK-x
		HD101GR	1	HMD/PT/GR End section - Grey	Cabur	TYPICAL LK-x

= TYPICAL
\+ LK-x

DWG n° : 231298/SD/31
Item n° : PF1002983/26

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

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200N1"

LV SWG FUNCTIONAL DIAGRAMS - TYPICAL FEEDERS

Functional Drawing - Typical "LK1-n" & "LK2-n"

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

A3 | DRAWING NO. 1723002197-EL-DG-00031 | SHEET 046 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00031 Rev. 02

Nome/Item	Fg/Sh	Tipo/Type	Q.ta/Q.ty	Descrizione/Description	Costruttore/Manufacturer	Quadro (descrizione)
X1		HD201GR	1	HMD.1/PT/GR End section - Grey	Cabur	TYPICAL LK-x

Nome/Item	Fg/Sh	Tipo/Type	Q.ta/Q.ty	Descrizione/Description	Costruttore/Manufacturer	Quadro (descrizione)
KM1	043	AF40400013	1	AF40-40-00-13 CONTACTOR 4P 40A 100-250VAC/DC	ABB	TYPICAL LK1-40
		CA440E	1	CA4-40E AUXILIARY FRONT CONTACT 4NO	ABB	TYPICAL LK1-40
QF1	043	1SDA068169R1	1	XT2S 160 BREAKING PART 4p F F	ABB	TYPICAL LK1-40
		1SDA100162R1	1	ELECTRONIC TRIP RELEASE Ekip Hi-Touch LSIG In=40A XT2 4p	ABB	TYPICAL LK1-40
		1SDA066431R1	1	AUX-C 1Q+1SY 250Vac/dc XT1..XT5 F/P	ABB	TYPICAL LK1-40

Nome/Item	Fg/Sh	Tipo/Type	Q.ta/Q.ty	Descrizione/Description	Costruttore/Manufacturer	Quadro (descrizione)
KM1	043	AF52400013	1	AF52-30-00-13 CONTACTOR 4P 53A(AC3) 100-250VAC/DC	ABB	TYPICAL LK1-63
		CA440E	1	CA4-40E AUXILIARY FRONT CONTACT 4NO	ABB	TYPICAL LK1-63
QF1	043	1SDA068169R1	1	XT2S 160 BREAKING PART 4p F F	ABB	TYPICAL LK1-63
		1SDA100163R1	1	ELECTRONIC TRIP RELEASE Ekip Hi-Touch LSIG In=63A XT2 4p	ABB	TYPICAL LK1-63
		1SDA066431R1	1	AUX-C 1Q+1SY 250Vac/dc XT1..XT5 F/P	ABB	TYPICAL LK1-63

Nome/Item	Fg/Sh	Tipo/Type	Q.ta/Q.ty	Descrizione/Description	Costruttore/Manufacturer	Quadro (descrizione)
KM1	043	AF80400013	1	AF80-30-00-13 CONTACTOR 4P 80A(AC3) 100-250VAC/DC	ABB	TYPICAL LK1-100
		CA440E	1	CA4-40E AUXILIARY FRONT CONTACT 4NO	ABB	TYPICAL LK1-100
QF1	043	1SDA068169R1	1	XT2S 160 BREAKING PART 4p F F	ABB	TYPICAL LK1-100
		1SDA100164R1	1	ELECTRONIC TRIP RELEASE Ekip Hi-Touch LSIG In=100A XT2 4p	ABB	TYPICAL LK1-100
		1SDA066431R1	1	AUX-C 1Q+1SY 250Vac/dc XT1..XT5 F/P	ABB	TYPICAL LK1-100

Nome/Item	Fg/Sh	Tipo/Type	Q.ta/Q.ty	Descrizione/Description	Costruttore/Manufacturer	Quadro (descrizione)
KM1	043	AF190401113	1	AF190-40-11-13 CONT 4P 190A AC3 100-250VAC/DC	ABB	TYPICAL LK2-160
		CAL1911	1	CAL19-11 CONTATTO AUSILIARIO 1NA+1NC PER AF116÷AF370	ABB	TYPICAL LK2-160
		CAL1911B	2	CAL19-11B AUXILIARY CONTACT 1NA+1NC PER AF116÷AF370	ABB	TYPICAL LK2-160
QF1	043	1SDA068179R1	1	XT4S 250 BREAKING PART 4p F F	ABB	TYPICAL LK2-160
		1SDA100334R1	1	ELECTRONIC TRIP RELEASE Ekip Hi-Touch LSIG In=160A XT4 4p	ABB	TYPICAL LK2-160
		1SDA066431R1	1	AUX-C 1Q+1SY 250Vac/dc XT1..XT5 F/P	ABB	TYPICAL LK2-160

= TYPICAL
+ LK-x

DWG n° : 231298/SD/31
Item n° : PF1002983/26

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

TITLE : "SG-200N1"

LV SWG FUNCTIONAL DIAGRAMS - TYPICAL FEEDERS

Functional Drawing - Typical "LK1-n" & "LK2-n"

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

A3 | DRAWING NO. 1723002197-EL-DG-00031 | SHEET 047 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00031 Rev. 02

ITEM	Tag	A3/+04-QF1	: CRANE - A3/+04-QF1		Dwg	1723002197-EL-DG-00011	
	S/Sys	99-00	: Crane		Module		
TASK	code	C10002922	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°:	EF8000253700N000	Relay type:	EKIP HI TOUCH LSIG
Auxiliary supply:	24Vdc	Location:	B200	Cubicle:	A3/+04
Switchboard:	SG-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	Time delay Trip value
L	31.5A			3s	
S	157.5A	189A		0.1s	103ms
I	315A	630A		INSTANT	27ms
G	12.6			0.1s	

Testing & measurement instruments used

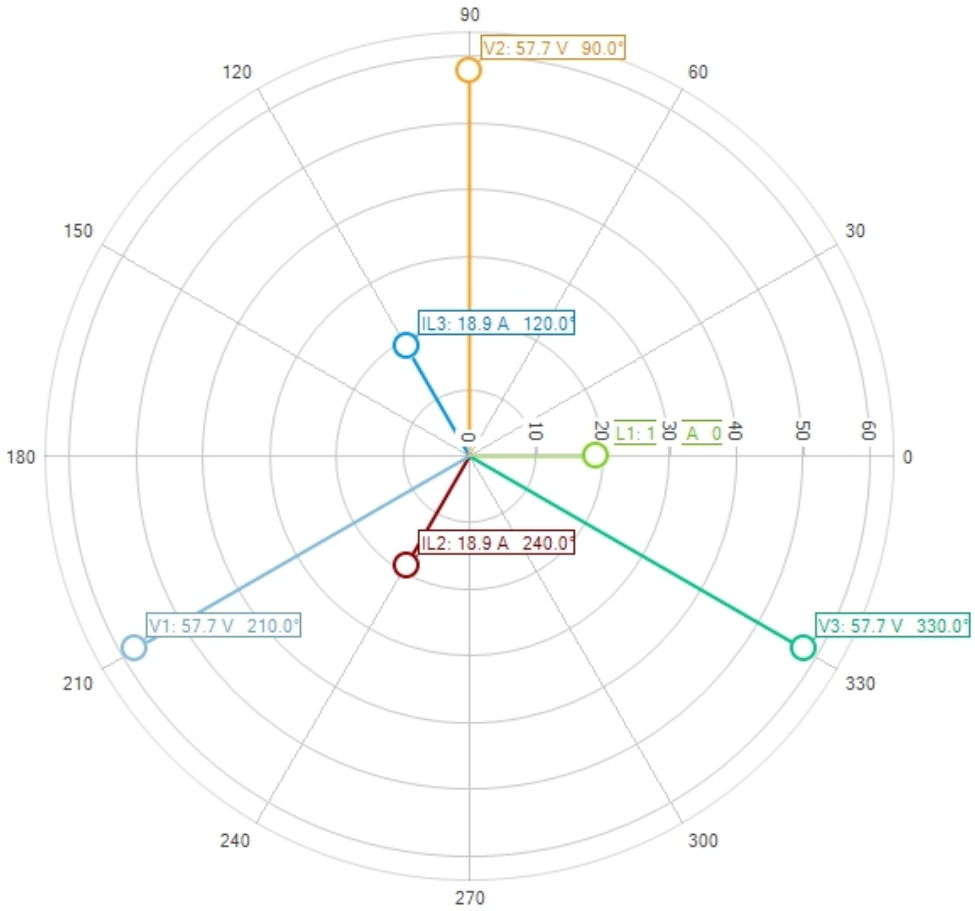
Type	Serial n°	Calibration certificate	Validity
ABB EKIP T&P	E34013804410W050		

Comments: The protection settings that have been implemented on drawer A3/+04 were defined by the Commissioning team to allow the internal testing of the HVAC system. The definitive settings will be implemented asap, in the meantime a PUNCH B ref. C30000119 has been raised to ensure traceability of this outstanding task.

Page 1/1	Performed by	☐ WITNESS ☉ REVIEW	☐ WITNESS ☐ REVIEW
Company	RM COMM	rm comm	CPY NOT PRESENT
Name	Mattia Girotti	Kristian Castellani	Witness waived
Date	2024-10-01	2024-10-01	2024-10-02
Signature	PROVERLIS Digitaly signed by Mattia Girotti 2024-10-01T13:23:01.905Z	PROVERLIS Digitaly signed by Kristian Castellani 2024-10-01T14:38:02.168Z	PROVERLIS Digitaly signed by Witness waived 2024-10-02T06:34:33.805Z

Page Name	Group Name	Variable Name	Variable Value	Variable Unit
Settings A				
	Overload Protection (L - ANSI 49)			
		PU nominal current In	63	
		Status	Enabled	
		Function	t=k/i^2	
		Prealarm I1	90	% I1
		Threshold I1	0.500	In
		Time t1 std	3.00	s
		Thermal memory (TM)	Disabled	
		TM Algorithm	RMS-independent	
		TM Time	Automatic	
		TM custom time	830	s
	Time-delayed overcurrent protection (S - ANSI 50 TD/68/51)			
		Status	Enabled	
		Trip enable	Enabled	
		BlockOnStartUp	--------	
		BlockOnOutOfFrequency	--------	
		BlockOnProgStatusA	--------	
		BlockOnProgStatusB	--------	
		BlockOnProgStatusC	--------	
		BlockOnProgStatusD	--------	
		Function	t=k	
		Threshold I2 (t=k)	2.50	In
		Time t2 (t=k) IEC - UL489	0.10	s
		Startup enable	Disabled	
		Startup time	0.10	s
		Startup threshold	0.60	In
		Set Startup th. on ProgStatusD	--------	
		Thermal memory status	Disabled	
		Zone Selectivity status	Disabled	
		Zone Selectivity time	0.04	s
		Zone Selectivity Type	Logic and Hardware	
	Second time-delayed overcurrent protection (S2 - ANSI 50 TD)			
		Status	Disabled	
		Trip enable	Enabled	
		BlockOnStartUp	--------	
		BlockOnOutOfFrequency	--------	
		BlockOnProgStatusA	--------	
		BlockOnProgStatusB	--------	
		BlockOnProgStatusC	--------	
		BlockOnProgStatusD	--------	
		Threshold I5 (t=k)	2.00	In
		Time t5 (t=k)	0.05	s
		Startup enable	Disabled	
		Startup time	0.10	s
		Startup threshold	2.00	In
		Set Startup th. on ProgStatusD	--------	
		Zone Selectivity status	Disabled	
		Zone Selectivity time	0.04	s
		Zone Selectivity Type	Logic and Hardware	
	Instantaneous overcurrent protection (I - ANSI 50)			
		Status	Enabled	
		Threshold I3	5.00	In
		Startup enable	Disabled	
		Startup time	0.10	s
		Startup threshold	1.50	In
		Set Startup th. on ProgStatusD	--------	
		BlockOnStartUp	--------	
		BlockOnOutOfFrequency	--------	
		BlockOnProgStatusA	--------	
		BlockOnProgStatusB	--------	
		BlockOnProgStatusC	--------	
		BlockOnProgStatusD	--------	
		Zone Selectivity status	Disabled	
		Zone Selectivity Type	Logic and Hardware	
	Second I			
		Prot Second I	---	
		Status	Disabled	
		Threshold I31	1.50	In
		Zone Selectivity status	Disabled	
		Zone Selectivity Type	Logic and Hardware	
		Second I Mode	Function Dependent	
		Function	Disabled	
		Delay On	0.00	s
		Delay Off	15.00	s
	Earth fault protection (G - ANSI 50N TD/68/51N)			
		Status	Enabled	
		Trip enable	Enabled	
		BlockOnStartUp	--------	
		BlockOnOutOfFrequency	--------	
		BlockOnProgStatusA	--------	
		BlockOnProgStatusB	--------	
		BlockOnProgStatusC	--------	
		BlockOnProgStatusD	--------	
		Function	t=k	
		Prealarm I4	90	% I4
		Threshold I4 (t=k)	0.200	In
		Time t4 (t=k) IEC - UL489	0.10	s

		Startup enable	Disabled	
		Startup time	0.10	s
		Startup threshold	0.20	In
		Set Startup th. on ProgStatusD	--------	
		Zone selectivity status	Disabled	
		Zone selectivity time	0.04	s
		Zone Selectivity Type	Logic and Hardware	
	Directional overcurrent protection (D - ANSI 67/68)			
		Status	Disabled	
		Trip enable	Disabled	
		tripOnlyForward	--------	
		tripOnlyBackward	--------	
		BlockOnStartUp	--------	
		BlockOnOutOfFrequency	--------	
		BlockOnProgStatusA	--------	
		BlockOnProgStatusB	--------	
		BlockOnProgStatusC	--------	
		BlockOnProgStatusD	--------	
		Threshold I7 FWD	2.00	In
		Time t7 FWD	0.20	s
		Threshold I7 BWD	2.00	In
		Time t7 BWD	0.20	s
		Startup enable	Disabled	
		Startup time	0.10	s
		Startup threshold FWD	2.00	In
		Startup threshold BWD	2.00	In
		Set Startup th. on ProgStatusD	--------	
		Zone Selectivity status	Disabled	
		Zone Selectivity time FWD	0.13	s
		Zone Selectivity time BWD	0.13	s
		Zone Selectivity Type	Logic and Hardware	
		Direction minimum angle	3.6	°
	Closing on short-circuit protection (MCR)			
		Status	Disabled	
		BlockOnOutOfFrequency	--------	
		BlockOnProgStatusA	--------	
		BlockOnProgStatusB	--------	
		BlockOnProgStatusC	--------	
		BlockOnProgStatusD	--------	
		Threshold I3	6.00	In
		Time t3	0.04	s
		Zone Selectivity status	Disabled	
		Zone Selectivity Type	Logic and Hardware	
	Over Temperature (T)			
		Trip enable	Disabled	



Test

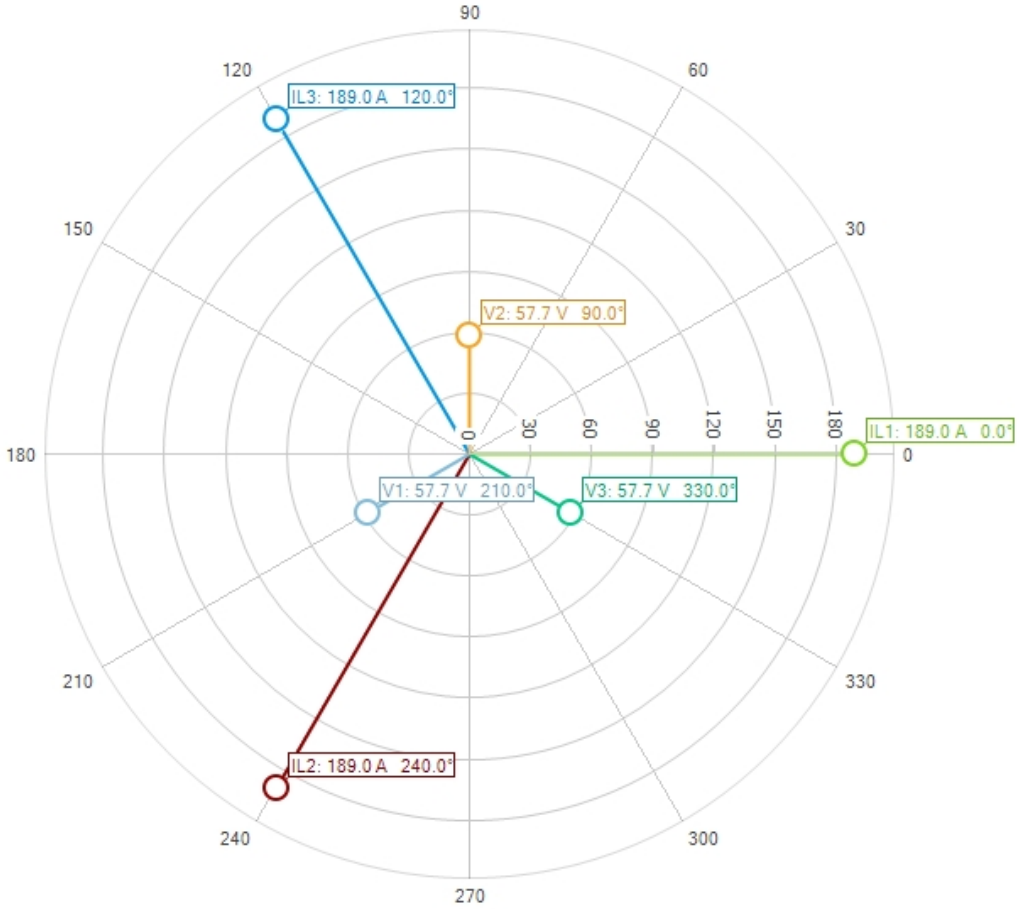
Name	Automatic test 1
Session	Default session
Customer	
Location	
Operator	

Device

Tag name	A3/+04
Relay Serial Number	EF8000253700N000
Circuit Breaker Serial Number	CE61066012number
	XT2/4
Device settings	In = 63 A Un = 100 V fn = 50 Hz
Protection Settings	Protection = L Curve type = t=k/i^2 Threshold = 0.500 In Time = 3.00 s Protection = S Curve type = t=k Threshold = 2.50 In Time = 0.10 s Protection = I Threshold = 5.00 In Protection = G Curve type = t=k Threshold = 0.200 In Time = 0.10 s
Preconditions	All preconditions satisfied.

Test result

⚠ Test completed without any trip in 3000 ms.



Test

Name	Automatic test 2
Session	Default session
Customer	
Location	
Operator	

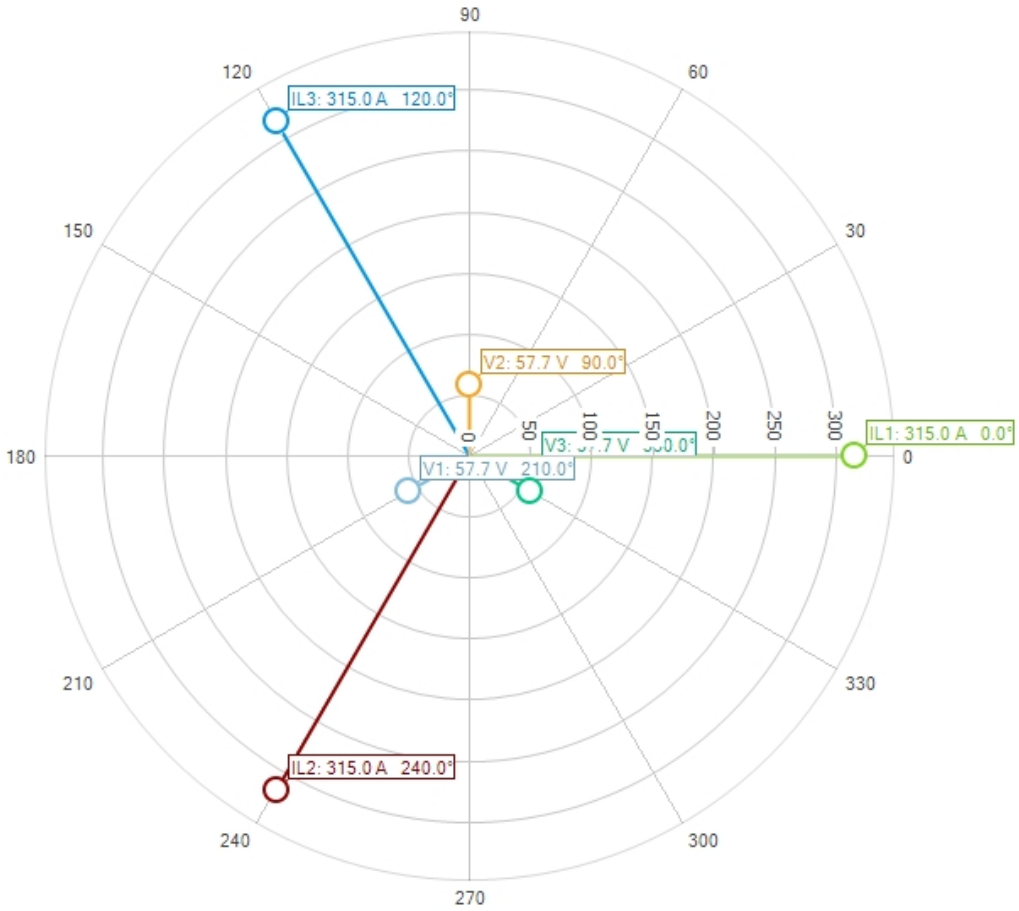
Device

Tag name	A3/+04
Relay Serial Number	EF8000253700N000
Circuit Breaker Serial Number	CE61066012number
	XT2/4
Device settings	In = 63 A Un = 100 V fn = 50 Hz
Protection Settings	Protection = L Curve type = t=k/i^2 Threshold = 0.500 In Time = 3.00 s Protection = S Curve type = t=k Threshold = 2.50 In Time = 0.10 s Protection = I Threshold = 5.00 In Protection = G Curve type = t=k Threshold = 0.200 In Time = 0.10 s
Preconditions	All preconditions satisfied.

Test result

Test completed with trip. Protection S tripped in 103 ms.
Trip time must be between 0 ms and 1000 ms

Trip time must be between 0 ms and 1000 ms.



Test

Name	Automatic test 3
Session	Default session
Customer	
Location	
Operator	

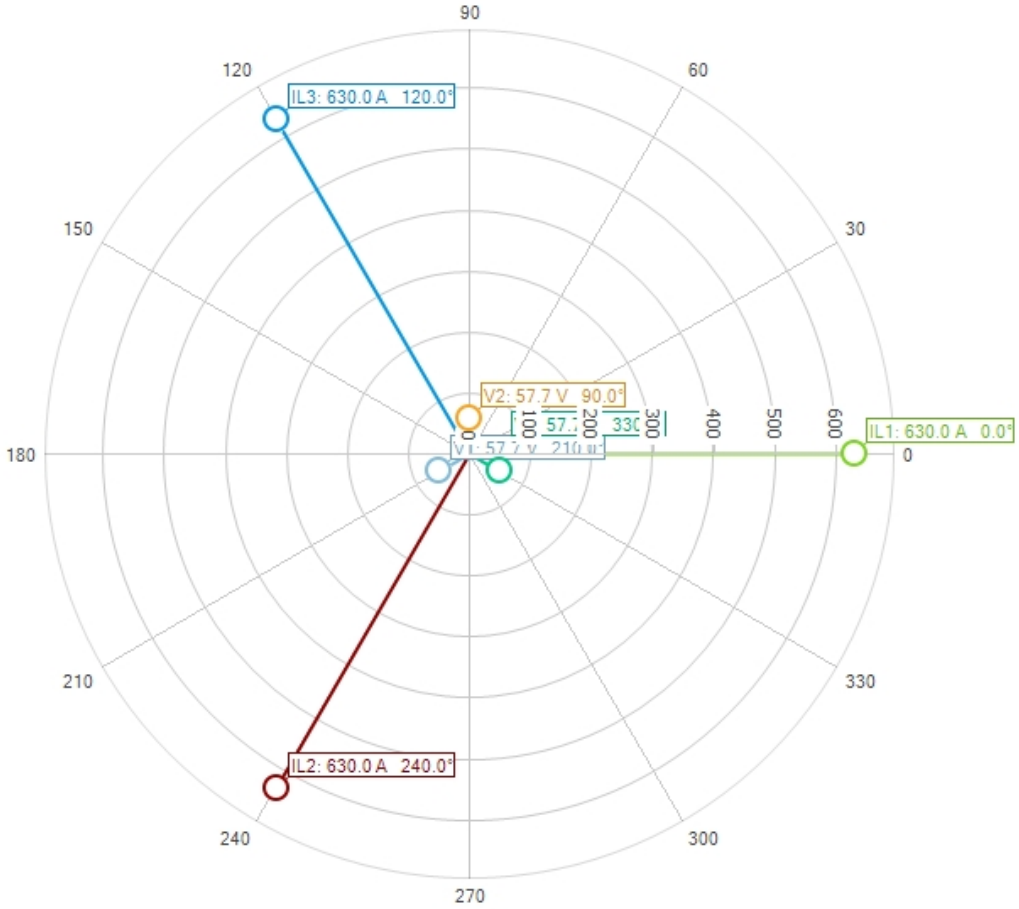
Device

Tag name	A3/+04
Relay Serial Number	EF8000253700N000
Circuit Breaker Serial Number	CE61066012number
	XT2/4
Device settings	In = 63 A Un = 100 V fn = 50 Hz
Protection Settings	Protection = L Curve type = t=k/i^2 Threshold = 0.500 In Time = 3.00 s Protection = S Curve type = t=k Threshold = 2.50 In Time = 0.10 s Protection = I Threshold = 5.00 In Protection = G Curve type = t=k Threshold = 0.200 In Time = 0.10 s
Preconditions	All preconditions satisfied.

Test result

Test completed with trip. Protection S tripped in 102 ms.
Trip time must be between 0 ms and 1000 ms

Trip time must be between 0 ms and 1000 ms.



Test

Name	Automatic test 4
Session	Default session
Customer	
Location	
Operator	

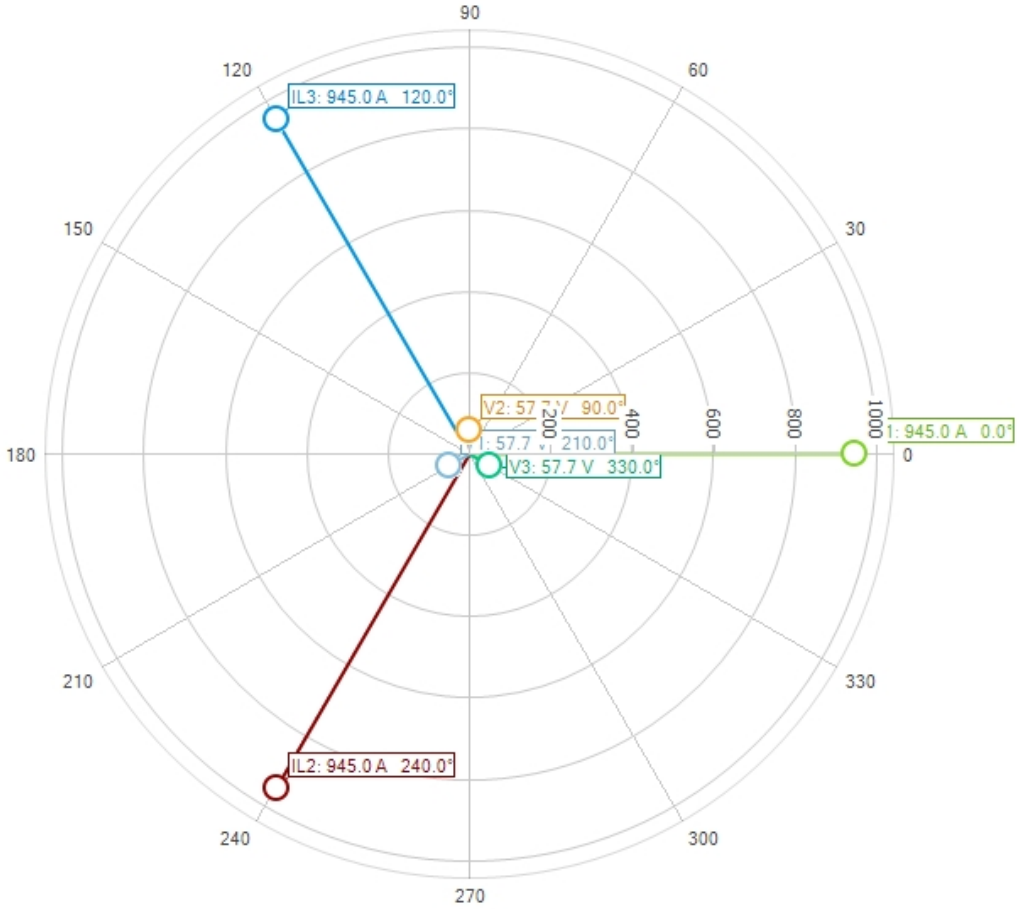
Device

Tag name	A3/+04
Relay Serial Number	EF8000253700N000
Circuit Breaker Serial Number	CE61066012number
	XT2/4
Device settings	In = 63 A Un = 100 V fn = 50 Hz
Protection Settings	Protection = L Curve type = t=k/i^2 Threshold = 0.500 In Time = 3.00 s Protection = S Curve type = t=k Threshold = 2.50 In Time = 0.10 s Protection = I Threshold = 5.00 In Protection = G Curve type = t=k Threshold = 0.200 In Time = 0.10 s
Preconditions	All preconditions satisfied.

Test result

Test completed with trip. Protection I tripped in 27 ms.
Trip time must be between 0 ms and 1000 ms

Trip time must be between 0 ms and 1000 ms.



Test

Name	Automatic test 5
Session	Default session
Customer	
Location	
Operator	

Device

Tag name	A3/+04
Relay Serial Number	EF8000253700N000
Circuit Breaker Serial Number	CE61066012number
	XT2/4
Device settings	In = 63 A Un = 100 V fn = 50 Hz
Protection Settings	Protection = L Curve type = t=k/i^2 Threshold = 0.500 In Time = 3.00 s Protection = S Curve type = t=k Threshold = 2.50 In Time = 0.10 s Protection = I Threshold = 5.00 In Protection = G Curve type = t=k Threshold = 0.200 In Time = 0.10 s
Preconditions	All preconditions satisfied.

Test result

Test completed with trip. Protection I tripped in 29 ms.
Trip time must be between 0 ms and 1000 ms

Trip time must be between 0 ms and 1000 ms.

ITEM	Tag	A3/+04-QF1	: CRANE - A3/+04-QF1		Dwg	1723002197-EL-DG-00011	
	S/Sys	99-00	: Crane		Module		
TASK	code	C10002923	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	PRE-COMM	Activity FTS	Discipline Electrical	Form	FTR-6	Electrical IO

FTR 6 - Electrical I/O check record sheet

Equipment Tag:	CRANE	Instrument Type / Serial N° :	FLUKE 175_17140796
Cubicle N°:	A3/+04	Calibration certificate date:	7715/24_10/07/2025

Link Type:	●	Hardwired	Communication	(strike through unapplicable type)
I/O Type:	●	Digital	Analogic	(strike through unapplicable type)

DIGITAL

Item	Signal description	Link Type (Hardwired/ Communication)	I/O Type (Digital/Analogic)	Point of Origin (From)	Point of Receival (to)	Text Labelling Display Satisfactory (Y/N)	Blinking/Static Display Satisfactory (Y/N)	Color Coding Satisfactory (Y/N)	Status Check			Time Stamping Satisfactory (Y/N)	Refresh Time (if >1s)	Appearing in all applicable display (Y/N)
									Event (Y/N)	Alarm (Y/N)	Fault (Y/N)			
1	CB CLOSED & INSERTED	HW	DI	A3/+04 - KA1/11-14	A3/+04 - X1/9-10	N/A	N/A	N/A	Y	N/A	N/A	N/A	N/A	N/A
2	CB OPEN OR DISCONNECTED	HW	DI	A3/+04 - KA1/11-12	A3/+04 - X1/9-11	N/A	N/A	N/A	Y	N/A	N/A	N/A	N/A	N/A
3	DRAWER ON TEST	HW	DI	A3/+04 - KA5/11-14	A3/+04 - X1/9-11	N/A	N/A	N/A	Y	N/A	N/A	N/A	N/A	N/A
4	CB TRIPPED	HW	DI	A3/+04 - KA4/21-22	A3/+04 - X1/9-12	N/A	N/A	N/A	N/A	N/A	Y	N/A	N/A	N/A
5	FEEDER AVAILABLE	HW	DI	A3/+04 - KA2/11-14	A3/+04 - X1/9-13	N/A	N/A	N/A	Y	N/A	N/A	N/A	N/A	N/A
6	INTERNAL FAULT	HW	DI	A3/+04 - QA1/11-14	A3/+04 - X1/9-14	N/A	N/A	N/A	N/A	N/A	Y	N/A	N/A	N/A
7	USER ON LOCAL	HW	DI	A3/+04 - SA1/21-22	A3/+04 - X1/15-19	N/A	N/A	N/A	Y	N/A	N/A	N/A	N/A	N/A
8														

ANALOGIC

Item	Signal description	Link Type (Hardwired/ Communication)	I/O Type (Digital/Analogic)	Point of Origin (From)	Point of Receival (to)	Min value sent	Min value received	Max value sent	Max value received	Intermediate value sent	Intermediate value received	Out of scale test (OK, Not OK)	Refresh time (if >2s)	Appearing in all applicable display (Y/N)
1														
2														
3														

Comments: The test of the cubicle was carried out on a test bench.

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	2024-10-03	2024-10-03	2024-10-03
Signature	PROVERLIS Digitaly signed by Davide Zucconelli 2024-10-03T10:55:09.563Z	PROVERLIS Digitaly signed by Kristian Castellani 2024-10-03T13:54:39.116Z	PROVERLIS Digitaly signed by Witness waived 2024-10-03T14:29:55.275Z

ITEM	Tag	A3/+04-QF1	: CRANE - A3/+04-QF1		Dwg	1723002197-EL-DG-00011	
	S/Sys	99-00	: Crane		Module		
TASK	code	C10003019	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	COMM	Activity FTS	Discipline Electrical	Form	FTR-5	Remote Signalling

FTR5 - Remote signalling
Record sheet

DATA

Switchboard:	SG-200N1	Cubicle N°:	A3/+04

FUNCTION TEST

	Order/Inputs				Status/Output											
	Start order		Stop order		Run		Fault		Stop Signalisation		Available/Ready to start		TRIP		CB OPEN/CLOSED	
UCP																
ECS																
SSS																
PSS																
PCS	●	●	●	●	●	●	●	●			●	●	●	●	●	●
Control Station																
Control Panel																
HVAC Panel																
MCC	●	●	●	●	●	●							●	●	●	●

Column 1 (To check) to be filled during commissioning preparation stage - black if the check is asked
Column 2 (Checked) to be filled black if check is Ok

Comments: During the test, we tested all the Analog Input with success: Current "L1",Current "L2",Current "L3", Voltage "L1-L2", Voltage "L2-L3", Voltage "L1-L3", Frequency, Apparent Power, Real Power, Reactive Power and Power Factor.

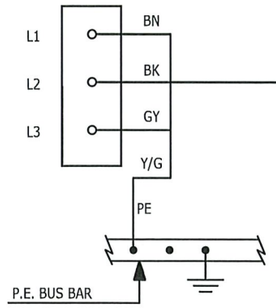
	Performed by	☐ WITNESS ☐ REVIEW	● WITNESS ☐ REVIEW
Company	RM COMM	RM COMM	CW
Name	Davide Zucconelli	Kristian Castellani	David Musgrove
Date	2025-04-29	2025-04-29	2025-04-29
Signature	PROVERLIS Digitaly signed by Davide Zucconelli 2025-04-29T07:55:07.013Z	PROVERLIS Digitaly signed by Kristian Castellani 2025-04-29T14:09:07.870Z	PROVERLIS Digitaly signed by David Musgrove 2025-04-29T15:41:04.918Z

Section 4.2 Electrical
“As-Commissioned” interconnection diagrams

FROM	TO

DESCRIPTION: LV SWITCHGEAR
TAG NUMBER: SG-200N1

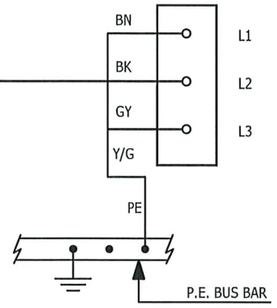
COLUMN/CUBIC.: A7/+01



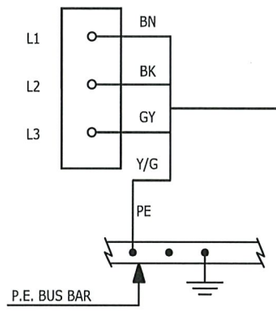
83018-CEL
4G4 mm²

NO MARK UP
MARCO MORETTO
21/3/25

DESCRIPTION: SEA WATER INTAKE PUMP A
TAG NUMBER: PM-50001 A



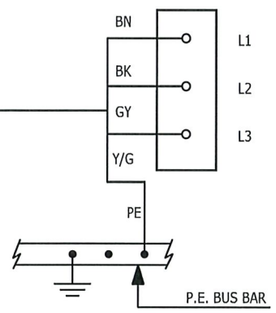
COLUMN/CUBIC.: A6/+01



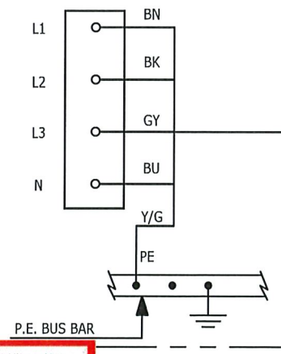
83019-CEL
4G4 mm²

NO MARK UP
MARCO MORETTO
21/3/25

DESCRIPTION: SEA WATER INTAKE PUMP B
TAG NUMBER: PM-50001 B



COLUMN/CUBIC.: A3/+04



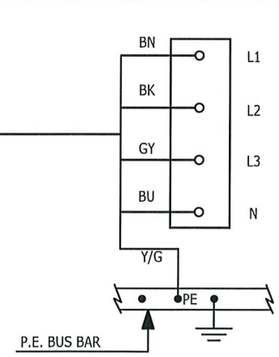
83020-CEL
5G16 mm²

NO MARK UP
MARCO MORETTO
22/3/25

AS COMMISSIONED: MATTIA GIROTTI
22/03/25

DESCRIPTION: CRANE
TAG NUMBER: JB-200E3

CB: 30Q1



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
LV SWITCHGEAR SG-200N1

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

A3 | DRAWING NO. 123A90-DDL-EL-DG-20149 | SHEET 024 | REV. 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

NOT APPLICABLE

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

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 99-00 & process: COMM

Mechanical	99-00 Crane						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
X-99001	Lifting Davit	ONSHORE	C10004859	TMX12	100	2025-05-20	RFO 1

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	X-99001	: Lifting Davit			Dwg	123A90-DDL-EL-DL-20100
	S/Sys	99-00	: Crane			Module	UD
TASK	code	C10004859		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	COMM	Activity PVP	Discipline	Mechanical Form TMX12		Platform Crane

DATA		
1	DATASHEET	1724001010-QC-PRO.00008
2	VENDOR	REMAZEL
3	MODEL	DAVIT CRANE
4	SERIAL N°	X-99001

TEST RESULT		
1	Erection of the complete crane on its pedestal.	●
2	All access platforming.	●
3	Reeving of all wire ropes.	●
4	Instrument and Electrical Pre-commissioning tasks done.	●

Comments: FAT (document n. 1724001010-QC-PRO.00008) performed also on site successfully.

Page 1/1	Performed by	☐ WITNESS ☑ REVIEW	☐ WITNESS ☐ REVIEW
Company	Rosetti Marino	Rosetti Marino	CPY NOT PRESENT
Name	Giuseppe Bruno	Anthony Iveson	Witness waived
Date	2025-05-09	2025-05-12	2025-05-20
Signature	PROVERLIS Digitaly signed by Giuseppe Bruno 2025-05-09T09:18:01.798Z	PROVERLIS Digitaly signed by Anthony Iveson 2025-05-12T08:04:52.885Z	PROVERLIS Digitaly signed by Witness waived 2025-05-20T06:07:17.556Z

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)

Daily Report

Job Order	24-27012
Distribution to	Rosetti Marino
Place	Ravenna
Location	Cantiere Piomboni
Date	09/04/2025
Subject	Davit Crane

Participants for REMAZEL Engineering	
Massimiliano Pretto	Software engineer
Bachiorrini Giovanni	Electrical engineer
Abobului Ionut Marius	Service Technician

Participants for Client	
Nome e cognome	Mansione/Ruolo

REMAZEL ENGINEERING S.P.A.
with sole shareholder

Headquarter: Via Portici Manarini 41/A, 24060 Chiuduno (BG), Italy
Phone +39 035 0693111 | Fax +39 035 687823
info@remazel.com | www.remazel.com
Registered Office: Via Carlo Ottavio Cornaggia 10, 20123 Milano (MI), Italy

Fully paid capital € 5.000.000,00
VAT 01023830167 | REA MI-1794737
Company subject to the direction and coordination of FINCANTIERI S.p.A.

09/04/2025:

1 ora:

spostamento da albergo a cantiere

8 ore:

verifica di tutti i movimenti della gru;

verifica e set dei limit switch degli encoder sul sollevamento;

riprogrammazione della funzione di anti-slack e test funzionali;

verifica e set dei limit switch degli encoder sulla traslazione;

sul movimento di rotazione gli attuali limit switch induttivi sono incompatibili con il movimento richiesto, in quanto, per come è installata la colonna, il movimento di 180° non permette di raggiungere la posizione desiderata dal cliente. Lo spostamento dei riscontri dei sensori induttivi non è possibile, in quanto il foro del pin di blocco crea interferenza e blocca in ogni caso il movimento della gru prima della posizione desiderata. Si contatta l'ufficio tecnico Remazel per la verifica di un'appropriata soluzione da proporre a Rosetti Marino.

Spare parts list:

Interested people are kindly requested to examine the content and report eventual inaccuracies, omissions and mistakes.
In absence of feedback, the text shall be considered as approved.

Remazel Engineering	Client
_____	_____
_____	_____
_____	_____
_____	_____

REMAZEL ENGINEERING S.P.A.
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Company subject to the direction and coordination of FINCANTIERI S.p.A.

Daily Report

Job Order	24-27012
Distribution to	Rosetti Marino
Place	Ravenna
Location	Cantiere Piomboni
Date	10/04/2025
Subject	Davit Crane

Participants for REMAZEL Engineering	
Massimiliano Pretto	Software engineer
Bachiorrini Giovanni	Electrical engineer
Abobului Ionut Marius	Service Technician

Participants for Client	
Nome e cognome	Mansione/Ruolo

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Company subject to the direction and coordination of FINCANTIERI S.p.A.

10/04/2025:
1 ora: spostamento da albergo a cantiere **8 ore:** Aggiornamento SW drive hoisting con l'ultima release. Prove funzionali gru e di sollevamento seguendo il FAT eseguito presso la sede Remazel con la presenza del personale Rosetti in loco.

Spare parts list:

Interested people are kindly requested to examine the content and report eventual inaccuracies, omissions and mistakes.
In absence of feedback, the text shall be considered as approved.

Remazel Engineering	Client
_____	_____
_____	_____
_____	_____
_____	_____

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Company subject to the direction and coordination of FINCANTIERI S.p.A.

Daily Report

Job Order	24-27012
Distribution to	Rosetti Marino
Place	Ravenna
Location	Cantiere Piomboni
Date	11/04/2025
Subject	Davit Crane

Participants for REMAZEL Engineering	
Massimiliano Pretto	Software engineer
Bachiorrini Giovanni	Electrical engineer
Abobului Ionut Marius	Service Technician

Participants for Client	
Nome e cognome	Mansione/Ruolo

11/04/2025:

1/2 ora:

spostamento da albergo a cantiere

8 ore:

Set zone offboarding.

Effettuati i test di carico statico sulle due portate.

Il load test, eseguito con personale di Rosetti Marino, nelle giornate di ieri e oggi, risulta completo e superato in tutti i punti.

Accettata da parte del cliente la proposta di modifica dei finecorsa di rotazione, proposta da Remazel, vengono montate le nuove staffe di riscontro e spostati i supporti dei sensori induttivi da personale esterno. La posizione delle staffe dei finecorsa vengono individuate in accordo con il personale Rosetti Marino presente.

Viene regolata la staffa di riscontro di finecorsa induttivo forward per centrare la lettura con il sensore.

Sistemato il cablaggio dei cavi di campo, effettuato all'interno del quadro.

5 ore:

viaggio Ravenna-Trieste

Spare parts list:

Interested people are kindly requested to examine the content and report eventual inaccuracies, omissions and mistakes.
In absence of feedback, the text shall be considered as approved.

Remazel Engineering	Client
_____	_____
_____	_____
_____	_____

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Phone +39 035 0693111 | Fax +39 035 687823
info@remazel.com | www.remazel.com
Registered Office: Via Carlo Ottavio Cornaggia 10, 20123 Milano (MI), Italy

Fully paid capital € 5.000.000,00
VAT 01023830167 | REA MI-1794737
Company subject to the direction and coordination of FINCANTIERI S.p.A.

Base Load Power Hub (BLPH)

DAVIT CRANE
FAT PROCEDURE

Document Number: 1724001010-QC-PRO-00008

Document Class: 2

02	26/11/2024	Accepted for Construction (AFC)	IZ	MP	MT
01	08/11/2024	Issue for Review (IFR)	IZ	MP	MT
00	01/10/2024	Issue for Review (IFR)	IZ	MP	MT
Rev.	Date	Description	Prepared	Reviewed	Approved

REMAZEL ENGINEERING

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File: 1724001010-QC-PRO-00008.docx

Revision / Change Log

Rev.	Description
00	Issue for Review (IFR)
01	Issue for Review (IFR)
02	Accepted for Construction (AFC)

HOLDS LIST

No.	Description
1	
2	
3	
4	

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1 INTRODUCTION

1.1 PROJECT OVERVIEW

Crosswind, a Shell and Eneco joint venture, was awarded the tender to develop the offshore Hollandse Kust Noord (HKN) wind farm, located 18.5km off the coast of Netherlands near the town of Egmond aan Zee. The consortium plans to have HKN operational in 2023 with an installed capacity of 759MW generating at least 3.3TWh per year. This is sufficient renewable power to supply more than 1 million Dutch households with green electricity.

Offshore wind farms produce intermittent electricity and balancing these dips and peaks and integrating this electricity into the national energy system requires new technologies. For this reason, the offshore wind farm will include several new technologies that could be implemented at full-scale in the future. The new technologies being explored include a floating solar park, a short-duration battery storage as well as long-term storage via green hydrogen produced by water electrolysis and subsequently consumed in a fuel cell. The combination of these individual measures, herein referred to as the Base Load Power Hub (BLPH) will ensure a continuous power supply regardless of the wind situation.

1.1.1 Project Location

The Hollandse Kust Noord (HKN) wind farm is located 18.5km off the coast of the Netherlands near the town of Egmond aan Zee.



Figure 1 HOLLANDSE KUST NOORD WIND PARK Location Map



Figure 2 - Wind Park Details

The wind farm will consist of No. 69 x 11.5MW wind turbine generators each to be installed on a dedicated monopile structure. A 70th monopile located on coordinates E 590719.1, N 5841602.3 is reserved for installing the platform accommodating the BLPH. The monopile structure was designed and installed by Van Oord Offshore Wind (VooW) and therefore not part of the BLPH scope.

1.1.2 Project Concept

All components included in the BLPH will be integrated onshore on a topsides and installed in an offshore location within the boundaries of the HKN wind farm. At its simplest, the BLPH will store energy during periods of high electricity generation from renewable sources (a wind turbine generator and the floating solar PV farm) and release it during periods of low generation. In practice. It is expected that the energy stored will supplement generation from renewable sources to ensure that at least 1.0MW of power is exported to the electrical grid regardless of wind/solar availability.

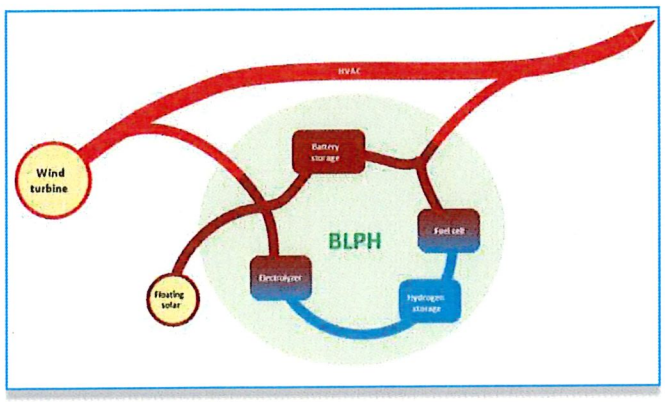


Figure 3 – BLPH Concept

Electricity in the BLPH will be stored in the form of electrons in a battery energy storage system (BESS) as well as converted into green hydrogen via water electrolysis. When the power output from the connecting wind turbine drops to below 1 MWe, the BLPH will return its stored energy to supplement the remaining power output. This will be by discharging the BESS, while stored hydrogen will be converted back into electricity using a fuel cell to extend the discharge duration.

The purpose of the BLPH s to function as a testbed for the integration of energy storage technologies with renewable generation. It is expected that equipment installed on the BLPH will operate as Normally Unmanned Installation for at least two (2) years with no or minimal maintenance and it will have its own independent control room with the ability to communicate with Crosswind's control room.

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2 DOCUMENT SCOPE

The purpose of the document is to draw up a procedure suitable for verifying all the functions of the crane, its safety devices, and its structural strength

2.1 REFERENCES

Doc. No.	Description
1724001010-MAC-DA-00009	CRANE GENERAL ARRANGEMENT DRAWINGS AND DATA SHEETS AND LOAD CHART-DAVIT CRANE
1724001010-MAC-DG-00012	WIRING DIAGRAM -DAVIT CRANE
123A90-DDL-MAC-SP-50034	Technical Specification for DAVIT CRANE

Table 1 - Reference Documents

2.2 DEFINITIONS AND ABBREVIATIONS

COMPANY or Client (CPY):	Crosswind
CONTRACTOR (CTR):	ROSETTI MARINO S.p.A.
PROJECT:	HOLLANDSE KUST NOORD WIND PARK Project
MANUFACTURER:	REMAZEL ENGINEERING

Table 2 - Definitions and Abbreviations

3 FAT PROCEDURE

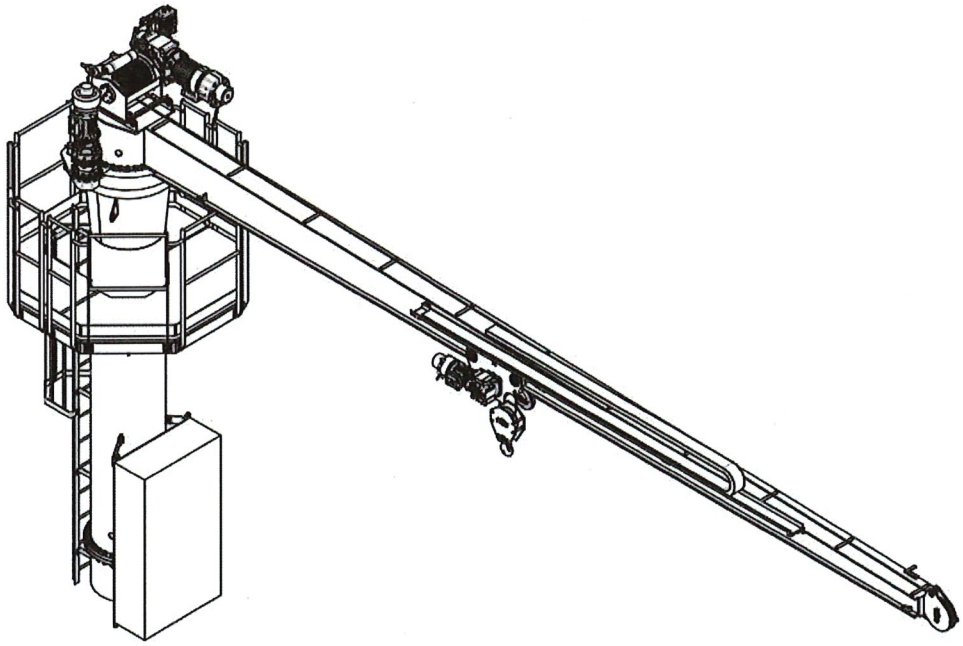
1 Scope 13
2 Definition and abbreviations 13
3 Documents reference 13
4 Introduction 14
5 Tests to be performed 14
6 Equipment main characteristics 15
7 Equipment Data and Testing Loads 16
8 Safety check 16
9 Measurement instruments 16
10 Preliminary controls 17
11 Testing 20
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BASE LOAD POWER HUB (BLPH) DAVIT CRANE C09-0001

JOB 24-27012

FACTORY ACCEPTANCE TEST (FAT) PROCEDURE



Rev.	Modify description	Issue	Approval	Date
02	Revision based on client comments	MPU	MTO	26/11/2024
01	Revision based on client comments	MPU	MTO	08/11/2024
00	First issue	IZA	MTO	30/09/2024

Signatures area

SUMMARY OF REVISION

Rev.	Date	Revised chapters	Revision description	Reason for revision
00	30/09/2024	All	First Issue	For approval
01	07/11/2024	All	Revision based on client comments	For approval
02	26/11/2024	All	Revision based on client comments	For approval

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8 Safety check 7

9 Measurement instruments 7

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1 Scope

The scope of this document is to define the tests that will be performed for the following customer and project:

Customer	Hull/Project	Company
ROSETTI MARINO	HOLLANDSE KUST NOORD WIND PARK Project	CROSSWIND

2 Definition and abbreviations

FAT	Factory Acceptance Test
CL	Rosetti Marino – Customer
RMZ	Remazel
SWL	Safety Working Load
PL	Proof Load
HKN	Hollandse Kust Noord
HSE	Health, Safety and Environment
CW	Clockwise
CCW	Counter-Clockwise
AOPS	Automatic Overload Protection System
MOPS	Manual Overload Protection System
DAF	Dynamic Amplification Factor

3 Documents reference

The last available revision of the documents below will be at disposal before the start of the FAT procedure.

REF.	DOCUMENT	REMAZEL CODE	ROSETTI MARINO CODE
[1]	CRANE GENERAL ARRANGEMENT DRAWINGS	24-27012-GA-001	1724001010-MAC-DA-00009
[2]	WIRING DIAGRAM incl JB TERMINALS	24-27012-WD-001	1724001010-MAC-LIS-00014
[3]	I/O LIST	24-27012-IOL-001	1724001010-MAC-DG-00012
[4]	HOOK ASSEMBLY	C09-0001-A0007	

4 Introduction

The "Attendees" are people involved during the test.

Attendees	Name	Title	Signature
REMAZEL			
REMAZEL			
ROSETTI MARINO			
ROSETTI MARINO			
CROSSWIND			
CROSSWIND			

5 Tests to be performed

1. Dimensional control
2. Check of decals and nameplates
3. Electrical board checks
4. Electrical test power supply
5. Power up procedure
6. Power up stop circuit procedure
7. Crane readiness check
8. Traslation, hoisting and slewing limit switch
9. MOPS testing
10. Load test at 3.5t and 1t
11. Blackout test at 3.5t and 1t
12. Emergency operation at 3.5t and 1t
13. Movement and speed checks at 3.5t and 1t
14. Overload device 110% of 3.5t and 1t
15. AOPS testing 140% of 3.5t and 1t
16. Overload test 3.5t and 1t
17. Final check of the crane
18. Electrical test on motors

6 Equipment main characteristics

Below the main characteristic of the BLHP Davit Crane.

TECHNICAL DATA		
Type	DAVIT CRANE	
Customer TAG		X-99001
General assembly	Drawing	C09-0001-A0002
DESIGN CRITERIA		DNV-ST-0378
Category of crane		Offshore crane
Ambient working temperature (min/max)	°C	-8°C to +25°C
Wind speed at davit crane[1]	m/s	Operative: 24 Out of service: 44
Crane static inclination angle heel/trim	deg	List / Trim = 0° / 0°
MECHANISMS CLASSIFICATION		
According to European Federation of Handling Industries FEM - 1.001 (10.1998)-Rules for design of hoisting appliances.	Equipment	A4
	Mechanism	M4
HOISTING		
General data		
Boom height from deck	m	4.85
Deck height from sea level	m	30.13
Max cargo lift	SWL	3.5 ton @ 5m | 1.0 ton @ 10m
Significant wave height	Hs	1.5
Hoisting 1st speed	m/min	3.75
Hoisting 2nd speed	m/min	15
Minimum Outreach	m	1.5
Maximum Outreach	m	10
Maximum hook stroke	m	40
Personnel handling		NO
AOPS		YES
MOPS		YES
Hook trolley (radial movement)		
1st speed	m/min	2
2nd speed	m/min	8
Slewing		
Slewing 1st speed	rpm	0. 5
Slewing 2nd speed	rpm	1
Slewing range angle (continuous)	deg	+/-90°
Electric motors		
Installed power (N. of motors x unitary power)	kW	1 x 15 for winch 1 x 4 for slewing 2 x1.5 for trolley and auxiliaries

[1] Wind conditions have been considered as per DNV-ST-0378 Appendix A, Table A-2 to be more conservative.

7 Equipment Data and Testing Loads

Below the main characteristics tested during FAT.

Items	Q.ty	Crane RMZ TAG (S/N)	ROSETTI MARINO TAG	SWL
BLPH DAVIT CRANE	1		X-99001	3.5t @ 5m / 1.0t @ 10m

Overload test (static)	Overload device alarm	AOPS Testing	MOPS Testing
5.3t @ 5m / 1.7t @ 10m	110% of SWL 3.85t @ 5m / 1.1t @ 10m	140% of SWL 4.9t @ 5m / 1.4t @10m	0.5t @ any outreach

8 Safety check

As soon as entering in the workshop and test bench area, as first, please check that all safety measure has been taken:

ID	Step/Test	Result	
8.1	Check all people involved wear proper PPE (protective shoes, hard hat, glasses, safety gloves, high visibility jacket)	OK	NOT OK
8.2	All persons involved in the test have received all information on the safety instructions to be given during test	OK	NOT OK
8.3	Check that the test area is identified, delimited, clean from residues or other clutter	OK	NOT OK
8.4	Check the workshop layout and identify emergency exits.	OK	NOT OK

9 Measurement instruments

Below the list of the tool and instruments used during the FAT with the related serial numbers and the relevant information.

Instrument	Maker	Serial Number	Remazel ID number	Calibration		
				Cert. No.	Issue Date	Expire Date
Dynamometer 9t	Dini Argeo Srl	0722200887	DNM-0015	2795/24	04/03/2024	04/03/2025
Voltage tester	Hioki	020431607	NDT-0036	2793/24	04/03/2024	04/03/2025
Insulation tester	Hioki	020504304	NDT-0037	2794/24	04/03/2024	04/03/2025
Rib	Stanley	34-296	NDT-0039	REM.815552	24/04/2024	24/04/2025
Current clamp meter	HT Italia	66401785	PZA-0016	1038-2022-9	06/05/2022	06/05/2025

10 Preliminary controls

Before testing the crane, personnel must execute the following controls:

10.1	INTERNAL TEST REPORT REVIEW				
10.1.1	Review of mechanical checks		OK	NOT OK	NA
10.1.2	Review of functional tests		OK	NOT OK	NA
10.2	**DIMENSIONAL CONTROL**				
ID	**Test**	**Expected value**	**Result**		**Notes**
10.2.1	Verify the distance from the center of the fixed pedestal to the hook with the trolley in first position (absolute minimum outreach)	1.5m (+50mm/-0mm)	OK	NOT OK	NA
10.2.2	Verify the distance from the center of the fixed pedestal to the hook with the trolley in second position (maximum outreach 3.5t)	5.0m (+50mm/-0mm)	OK	NOT OK	NA
10.2.3	Verify the distance from the center of the fixed pedestal to the hook with the trolley in third position (absolute maximum outreach)	10.0m (+50mm/-0mm)	OK	NOT OK	NA
10.3	**CHECK OF DECALS AND NAMEPLATES**				
ID	**Test**	**Expected value**	**Result**		**Notes**
10.3.1	RMZ decal fitted to crane	N/A	OK	NOT OK	NA
10.3.2	SWL decal fitted to crane	N/A	OK	NOT OK	NA
10.3.3	RMZ nameplate fitted to crane. Check it is legible and undamaged	N/A	OK	NOT OK	NA
10.3.4	Hazard warning decals fitted to, or adjacent to, electrical components	N/A	OK	NOT OK	NA
10.4	**ELECTRICAL BOARD CHECKS**				
ID	**Test**	**Expected value**	**Result**		**Notes**
10.4.1	Check for earth bonding between control panel enclosure / backplate and door	N/A	OK	NOT OK	
10.4.2	Visual and dimensional check	N/A	OK	NOT OK	NA
10.4.3	Dielectric test	N/A	OK	NOT OK	NA
10.4.4	Insulation test	N/A	OK	NOT OK	NA
10.5	**ELECTRICAL TEST POWER SUPPLY**				
ID	**Test**	**Expected value**	**Result**		**Notes**
10.5.1	Crane to be connected to power supply	N/A	OK	NOT OK	

10.5.2	Measurement of the voltage on the main switch	400V ±10% at 50Hz	OK	NOT OK	
10.6	**POWER UP PROCEDURE**				
ID	**Test**	**Expected value**	**Result**		**Notes**
10.6.1	Rotate the main switch from O position to I position	L1, L2 and L3 lights are on	OK	NOT OK	
10.7	**POWER UP STOP CIRCUIT PROCEDURE**				
ID	**Test**	**Expected value**	**Result**		**Notes**
10.7.1	Press RESET button on the electrical cabinet door	RESET blue blinking light turns off	OK	NOT OK	
10.7.2	Press EMERGENCY STOP button on electrical cabinet door	RESET light turns on	OK	NOT OK	
10.7.3	Press manouver buttons	Crane does not move	OK	NOT OK	
10.7.4	Release EMERGENCY STOP button on electrical cabinet door	RESET light starts blinking	OK	NOT OK	
10.7.5	Press manouver buttons	Crane does not move	OK	NOT OK	
10.7.6	Press RESET button on the electrical cabinet door	RESET blue blinking light turns off and crane is ready to start	OK	NOT OK	
10.7.7	Press manouver buttons (hoisting or traslation)	Crane does move	OK	NOT OK	
10.8	**CRANE READINESS CHECK**				
ID	**Test**	**Expected value**	**Result**		**Notes**
10.8.1	Remove slewing locking pin	Pin engaged light turns off	OK	NOT OK	
10.8.2	Check that either 1t or 3.5t light is on	N/A	OK	NOT OK	
10.9	**TRASLATION, HOISTING and SLEWING LIMIT SWITCH (no load)**				
ID	**Test**	**Expected value**	**Result**		**Notes**
10.9.1	Simulate 3.5t on hook and test the traslation forward limit switch	Trolley in second position	OK	NOT OK	
10.9.2	Remove the simulation of 3.5t and test the traslation forward limit switch	Trolley in third position	OK	NOT OK	
10.9.3	Test the traslation backward limit switch	Trolley in first position	OK	NOT OK	
10.9.4	Test the CW rotation limit switch	Boom +90°	OK	NOT OK	CHANGED LIMIT SWITCH POSITION
10.9.5	Test the CCW rotation limit switch	Boom -90°	OK	NOT OK	〃 〃
10.9.6	Test the hoisting up limit switch, verify clearance between hook center and pavement	Hook up, 4.0m	OK	NOT OK	4 m
10.9.7	Test the hoisting down limit switch, verify 40m of rope are out and at least 3 dead coils are left on the winch	Hook down, 40m	OK	NOT OK	NA

10.9.8	Hoist up the hook and verify engagement of anti-to-block system	Anti-to-block system engages correctly	OK	NOT OK	

11 Testing

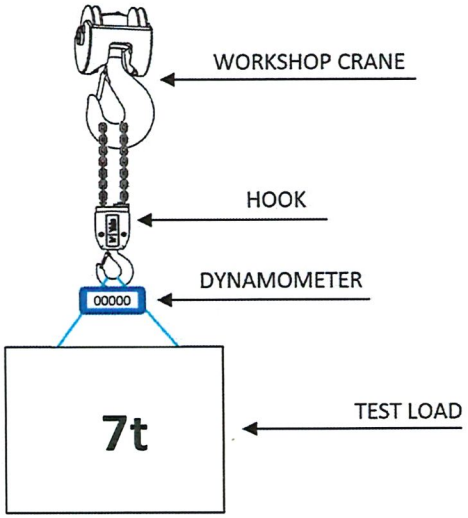
11.1	MOPS TESTING				
ID	Test	Expected value	Result		Notes
11.1.1	With no load, push the MOPS switch, start the 5 minutes timer and manually pull the hook down. Leave the MOPS switch in position for 5 minutes.	After 5 minutes the hook can still be pulled down, MOPS is functioning correctly	OK	NOT OK	
11.1.2	Apply 0.5t on the hook, turn off the power supply to the crane and operate the MOPS switch	The winch will release the load and the MOPS alarm will sound	OK	NOT OK	
11.1.3	Repeat the test for 3 times	UPS is expected to last for the whole duration of the tests	OK	NOT OK	
11.2	**LOAD TEST (SWL 3.5t) at outreach = 5m**				
ID	Test	Expected value	Result		Notes
11.2.1	Hoist about 2m up the SWL	Verify load force of 3.5t has been applied	OK	NOT OK	
11.2.2	Traslate the trolley about 1m forward	Verify movement forward under load	OK	NOT OK	
11.2.3	Traslate the trolley about 1m backward	Verify movement backward under load	OK	NOT OK	
11.3	**BLACKOUT TEST (SWL 3.5t) at outreach = 5m**				
ID	Test	Expected value	Result		Notes
11.3,.1	Lift the nominal load (3.5t) with the winch, disconnect the main power line (blackout simulation).	The load will remain motionless due to the negative brake action of the winch	OK	NOT OK	
11.4	**EMERGENCY OPERATION (SWL 3.5t) at outreach = 5m**				
ID	Test	Expected value	Result		Notes
11.4.1	With the nominal load (3.5t) hanged, act the levers on the hoisting motors to de-activate the brakes	The load can be lowered	OK	NOT OK	
11.4.2	With the nominal load (3.5t) hanged, act the levers on the slewing motors to de-activate the brakes and move the crane	Crane can rotate	OK	NOT OK	NA

11.5	MOVEMENT AND SPEED CHECKS (SWL 3.5t) at outreach = 5m				
ID	**Test**	**Expected value**	**Result**		**Notes**
11.5.1	With 3.5t on the hook, time how long it takes to lift the load through 1m in first speed Note, do not time from a starting start.	1.5 m/min ± 5%	(OK)	NOT OK	16 sec/mt
11.5.2	With 3.5t on the hook, time how long it takes to lift the load through 1m in second speed Note, do not time from a starting start.	15 m/min. ± 5%	(OK)	NOT OK	3,2 sec/mt
11.5.3	With 3.5t on the hook, rotate the boom clockwise 90° and time it. If necessary, repeat the operation by rotating the boom counter-clockwise.	0,5 rpm ± 5%	(OK)	NOT OK	28 sec
11.5.4	With 3.5t on the hook, move the trolley in first speed and time it	2 m/min ± 5%	(OK)	NOT OK	11 sec/0,5 mt
11.5.5	With 3.5t on the hook, move the trolley in second speed and time it	8 m/min ± 5%	(OK)	NOT OK	3,5 sec/0,5 mt
11.5.6	Check the current intensity during hoisting	< /= motor nominal current	2,5 A		OK
11.5.7	Check the current intensity during slewing	< /= motor nominal current	3,6 A		OK
11.5.8	Check the current intensity during traslation	< /= motor nominal current	1,6 A		OK
11.6	**OVERLOAD DEVICE (110% of NOMINAL LOAD 3.5t = 3.85t) at outreach = 5m**				
ID	**Test**	**Expected value**	**Result**		**Notes**
11.6.1	Apply on the hook 3.85t and try to lift with the winch only	The winch will not lift the load and the OVERLOAD alarm will sound	(OK)	NOT OK	
11.7	**AOPS TESTING (140% of NOMINAL LOAD 3.5t = 4.9t) at outreach = 5m**				
ID	**Test**	**Expected value**	**Result**		**Notes**
11.7.1	From deck level, apply 4.9t on the hook, check that the load is still.	The AOPS is disabled so the winch will not release the load.	(OK)	NOT OK	
11.7.2	Simulate off-board position, apply 4.9t on the hook, check that the load is lowering	The AOPS is enabled so the winch will release the load.	(OK)	NOT OK	
11.8	**OVERLOAD TEST (1.25x0,75xDAFxSWL 3.5t) – (DAF=Dynamic Amplification Factor) at outreach = 5m**				
ID	**Test**	**Expected value**	**Result**		**Notes**
11.8.1	Apply on the hook 5.3t (1.25x0.75x1.6x3.5t) without using the winch. Leave for 5 minutes	Load is supported for 5 minutes. No visible damage to the crane.	(OK)	NOT OK	

11.9	LOAD TEST (SWL 1t) at outreach = 10m				
ID	Test	Expected value	Result		Notes
11.9.1	Hoist about 2m up the SWL	Verify load force of 1t has been applied	OK	NOT OK	
11.9.2	Traslate the trolley about 1m forward	Verify movement forward under load	OK	NOT OK	
11.9.3	Traslate the trolley about 1m backward	Verify movement backward under load	OK	NOT OK	
11.10	OVERLOAD DEVICE (110% of NOMINAL LOAD 1t = 1.1t) at outreach = 10m				
ID	Test	Expected value	Result		Notes
11.10.1	Apply on the hook 1t and try to lift with the winch only	The winch will not lift the load and the OVERLOAD alarm will sound	OK	NOT OK	

11.11	AOPS TESTING (140% of NOMINAL LOAD 1t = 1.4t) at outreach = 10m				
ID	Test	Expected value	Result		Notes
11.11.1	From deck level, apply 1t on the hook, check that the load is still.	The AOPS is disabled so the winch will not release the load.	OK	NOT OK	
11.11.2	Simulate off-board position, apply 1t on the hook, check that the load is lowering	The AOPS is enabled so the winch will release the load.	OK	NOT OK	
11.12	OVERLOAD TEST (1.25x0,75xDAFxSWL 1t) at outreach = 10m				
ID	Test	Expected value	Result		Notes
11.12.1	Apply on the hook 1.7t (1.25x0.75x1.8x1t) without using the winch. Leave for 5 minutes	Load is supported for 5 minutes. No visible damage to the crane.	OK	NOT OK	
11.13	FINAL CHECK OF THE CRANE				
ID	Test	Expected value	Result		Notes
11.13.1	Visual check the components of the davit after testing to ensure the crane is in good condition and fit to operate	Crane is in good state	OK	NOT OK	

11.14	ELECTRICAL TEST ON MOTORS				
ID	Test	Expected value	Result		Notes
11.14.1	Perform dielectric test on motors for 60"	2000V	OK	NOT OK	N/A
11.14.2	Perform electric insulation test on motors	> 10 Mohm	OK	NOT OK	N/A
11.15	HOOK TEST (2xSWL)				
ID	Test	Expected value	Result		Notes
11.15.1	Hang 7t on the hook for 60" (hook will be tested disassembled from the crane)	Hook supports the load and is in a good state after the test	OK	NOT OK	N/A



12 Punch List

ITEM	PUNCH POINT DESCRIPTION	PUNCH POINT SOLUTION	COMPANY IN CHARGE OF RESOLVING	PERSON RESPONSIBLE FOR THE SOLUTION

SIGNATURE FOR APPROVAL					
	REMAZEL	ROSETTI MARINO	ROSETTI MARINO	CROSSWIND	CROSSWIND
Name		GIUSEPPE BRUNO			
Signature					
Position		COMM.			
Date		11/4/2025			

Daily Report

Job Order	24-27012
Distribution to	Rosetti Marino
Place	Ravenna
Location	Cantiere Piomboni
Date	07-08/04/2025
Subject	Davit Crane

Participants for REMAZEL Engineering	
Massimiliano Pretto	Software engineer
Bachiorrini Giovanni	Electrical engineer
Abobului Ionut Marius	Service Technician

Participants for Client	
Nome e cognome	Mansione/Ruolo

REMAZEL ENGINEERING S.P.A.
with sole shareholder

Headquarter: Via Portici Manarini 41/A, 24060 Chiuduno (BG), Italy
Phone +39 035 0693111 | Fax +39 035 687823
info@remazel.com | www.remazel.com
Registered Office: Via Carlo Ottavio Cornaggia 10, 20123 Milano (MI), Italy

Fully paid capital € 5.000.000,00
VAT 01023830167 | REA MI-1794737
Company subject to the direction and coordination of FINCANTIERI S.p.A.

07/04/2025:
5 ore: viaggio Trieste-Milano Marittima

08/04/2025:
1 ora: spostamento da albergo a cantiere **2 ore:** induction presso shipyard **6 ore:** verifica e correzione collegamenti elettrici, provenienti dal campo, nel quadro; creazione morsettiere di appoggio per l'alimentazione motore del sollevamento e la resistenza di frenatura di trolley/rotazione e ricablaggio quadro, in quanto i cavi risultano corti, forse a causa dello spostamento del quadro in corso di installazione; alimentazione del quadro e verifiche elettriche sui singoli circuiti; verifica software PLC e update software inverter; discussione punch list emerse durante la verifica del quadro elettrico da parte di Rosetti Marino.

Spare parts list:

Interested people are kindly requested to examine the content and report eventual inaccuracies, omissions and mistakes.
In absence of feedback, the text shall be considered as approved.

Remazel Engineering	Client
_____	_____
_____	_____
_____	_____

REMAZEL ENGINEERING S.P.A.
with sole shareholder

Headquarter: Via Portici Manarini 41/A, 24060 Chiuduno (BG), Italy
Phone +39 035 0693111 | Fax +39 035 687823
info@remazel.com | www.remazel.com
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VAT 01023830167 | REA MI-1794737
Company subject to the direction and coordination of FINCANTIERI S.p.A.

Section 7.3 Vendor Spares & Special Tools lists references

SPARE PARTS FOR COMMISSIONING/START UP

Item	Number	Q.ty	Units	Item Description	Description Additional	Wiring Diagram
1	011-0014-C1311	2	Each	Fuse	10,3x38 CH10 1A gG	50Q2
2	011-0014-C1315	6	Each	Fuse	10,3x38 CH10 2A gG	32Q1
3	011-0014-C0643	1	Each	Fuse	10,3x38 CH10 6A gG	40Q2
4	011-0014-C0641	1	Each	Fuse	10,3x38 CH10 10A gG	34Q1
5	011-0014-C2598	2	Each	Fuse	22x58, CH22, 50A, aM	50Q1
6	011-0014-C1527	1	Each	Contactor	Contactor TeSys LC1D - 3 poles - AC3 440V 9 A - 24 V CC	50KM1
7	011-0014-C2604	1	Each	Contactor	Contactor TeSys LC1D - 4 poles - AC1 440V 32 A- 24 V CC	KM11
8	011-0014-C2605	1	Each	Contactor	Contactor aux TeSys CA3SK - 10 A - 24 V CC	74KM1
9	011-0014-C1828	1	Each	Contactor	Contactor TeSys LC1D - 3 poles - AC3 440V 9 A - 230 V AC	84KM1
10	006-0003-C0210	1	Each	Cylindrical roller bearing	Wheel roller bearing NNF 5008 ADA-2LSV (40x68x38)	N.A.
11	006-0003-C0849	1	Each	Cylindrical roller bearing	Pulley roller bearingNNF 5012 ADB-2LSV (60x95x46)	N.A.

SPARE PARTS 2Y OPERATION

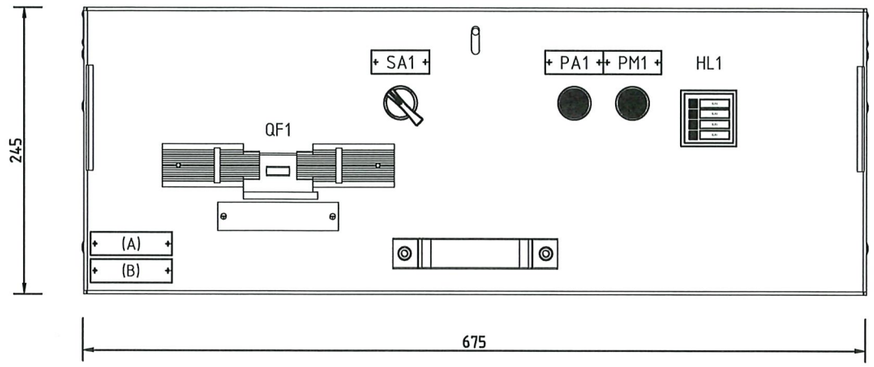
Item	Number	Q.ty	Units	Item Description	Description Additional	Wiring Diagram
1	011-0014-C2599	2	Each	Relay	PLC-INTERFACE, with PLC-BPT.../21 with connection Push-in and relay, mounting on NS 35/7,5, 1 contact, input voltage 24 V DC	32KA1
2	011-0015-C0034	1	Each	Load cell amplifier	Load cell amplifier, output 4-20mA	80E1
3	011-0008-C2442	1	Each	Load cell	PSPRX pin load cell - model PRX, rated capacity 500 kg to 4000 kg, double shear, Stainless steel, IP65	WT-0014
4	007-0003-C0579	1	m	Cable chain	Dim. 100mm, pitch: 75, curvature radius: 75mm, pitch n°: 72	N.A.
5	011-0008-C2429	1	Each	Limit switch	Proximity switch, M12, 4 mm, DC, 3 wires, PNP NA, IO-Link COM3, cable 5 m	LS0024-0025
6	011-0008-C2430	1	Each	Limit switch	Proximity switch, M12, 4 mm, DC, 3 wires, PNP NA, IO-Link COM3, cable 15 m	LS0034-0035
7	011-0008-C2436	1	Each	Hoisting limit switch	hoisting down limit switch for payout prevention	SW-0016
8	006-0003-C0210	2	Each	Cylindrical roller bearing	Wheel roller bearing NNF 5008 ADA-2LSV (40x68x38)	N.A.
9	006-0003-C0849	2	Each	Cylindrical roller bearing	Pulley roller bearingNNF 5012 ADB-2LSV (60x95x46)	N.A.
10	007-0006-C1220	1	Each	Electric motor	Slewing motor MGM BAHK2 100 LB4 Enhanced Power (E.P.)	M2
11	007-0006-C1221	1	Each	Electric motor	Hoisting motor MGM BAHK2 132 MC4 Enhanced Power (E.P.)	M1
12	007-0006-C1222	1	Each	Electric motor	Traversing motor MGM BAHK2 90 SA4 Enhanced Power (E.P.)	M3

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Section 7.4 Vendor Data / Operations / Maintenance Manuals References

DOOR FRONT LAY-OUT

TYPICAL : LINE FEEDER "LK1-n"

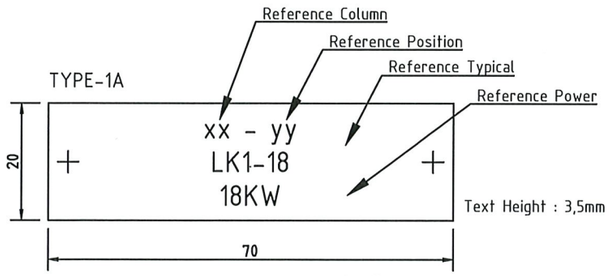


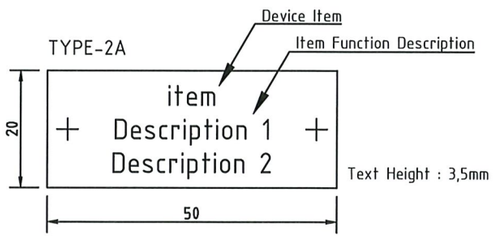
NOTE :

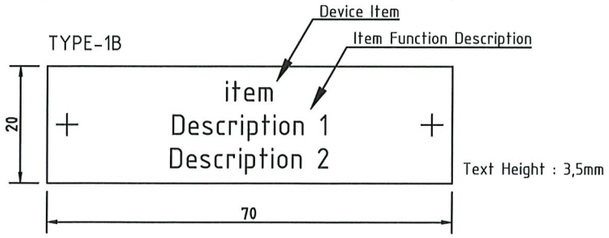
A) IDENTIFICATION name plate (type-1A) , with :
- Drawer position [Column / Position inside SWB]
- Typical name [reference applicability typical used]
- Power [reference applicability typical used]

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

DEVICES name plate			
ITEM	DESCRIPTION 1	DESCRIPTION 2	NOTE
QF1	Circuit Breaker		NO plate
SA1	LOC-REM	SELECTOR	Type-2A
PA1	STOP	MOTOR	Type-2A
PM1	RUN	MOTOR	Type-2A
HL1	Multiled	Signalling	NO plate







AS COMMISSIONED : NAOWA GIROW
26/3/25
NO MARK UP

VALID FOR CONSTRUCTION
VENDOR DOCUMENT - FDL DWG:
123A90-FDL-1724002197-EL-DG-00031
REV.: 2_A | DATE: 18/03/25 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

= TYPICAL
+ LK-x
DWG n° : 231298/SD/31
Item n° : PF1002983/26

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

TITLE : "SG-200N1"
LV SWG FUNCTIONAL DIAGRAMS - TYPICAL FEEDERS
Door Front Lay-Out - Typical "LK1-n" & "LK2-n"

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

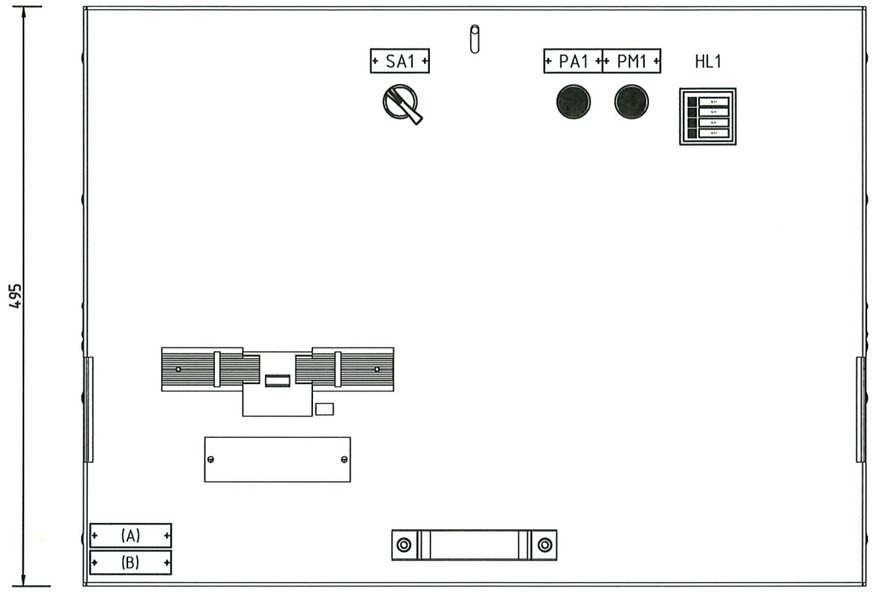
A3 | DRAWING NO. 1723002197-EL-DG-00031 | SHEET 034 | REV. 02

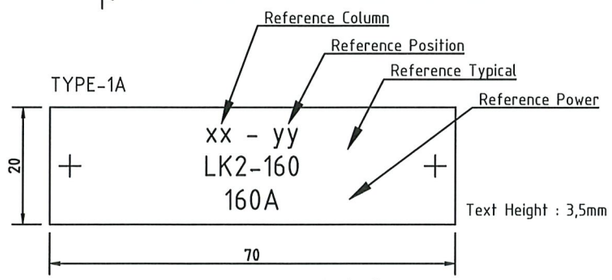
F.to UNI A3: 420mmx297mm

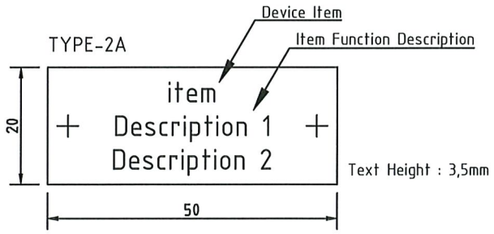
File Name : 1723002197-EL-DG-00031 Rev. 02

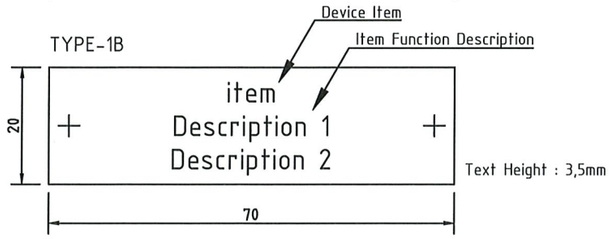
DOOR FRONT LAY-OUT

TYPICAL : LINE FEEDER "LK2-n"









NOTE :

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

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

DEVICES name plate			
ITEM	DESCRIPTION 1	DESCRIPTION 2	NOTE
QF1	Circuit Breaker		NO plate
SA1	LOC-REM	SELECTOR	Type-2A
PA1	STOP	MOTOR	Type-2A
PM1	RUN	MOTOR	Type-2A
HL1	Multiled	Signalling	NO plate

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

VALID FOR CONSTRUCTION
VENDOR DOCUMENT - FDL DWG:
123A90-FDL-1724002197-EL-DG-00031
REV.: 2_A | DATE: 18/03/25 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

= TYPICAL
+ LK-x
DWG n° : 231298/SD/31
Item n° : PF1002983/26

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
2	18/09/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
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TITLE : "SG-200N1"
LV SWG FUNCTIONAL DIAGRAMS - TYPICAL FEEDERS
Door Front Lay-Out - Typical "LK1-n" & "LK2-n"

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

A3 | DRAWING NO. 1723002197-EL-DG-00031 | SHEET 035 | REV. 02

File Name : 1723002197-EL-DG-00031 Rev. 02

F.to UNI A3: 420mmx297mm

USERS LEGEND

TYPICAL : LINE FEEDER "LK1-n" "LK2-n"

TYPICAL APPLICABILITY					
ITEM	ITEM TAG	DESCRIPTION TAG	REFERENCE POSITION (written on name name plate "type-1A)	REFERENCE NOMINAL CURRENT C.B. TRIP UNIT (written on name name plate "type-1A)	REFERENCE TYPICAL (written on name name plate "type-1A)
1	SPARE	SPARE	A2 / +05	40A	LK1-40
2	SPARE	SPARE	A3 / +02	40A	LK1-40
3	DP-200N1	DB-LIGHTING & SMALL POWER BoP	A3 / +03	100A	LK1-100
4	JB-200E3	CRANE	A3 / +04	63A	LK1-63
5	SPARE	SPARE	A3 / +05	40A	LK1-40
6	JB-500E8	WATER PACKAGE	A3 / +08	160A	LK2-160
7	B100-HSB-001	HVAC PANELS HV ROOM	A4 / +02	40A	LK1-40
8	A-80000	FUELL CELL AUXIALIRY LOAD	A4 / +03	63A	LK1-63
9	CP-850F03	BESS PCS CABINET	A4 / +04	40A	LK1-40
10	SPARE	SPARE	A4 / +05	40A	LK1-40
11	SPARE	SPARE	A4 / +06	40A	LK1-40
12	K-63001-A	INSTRUMENTS AIR PACKAGE 01A	A4 / +08	160A	LK2-160
13	SPARE	SPARE	A5 / +01	40A	LK1-40
14	B200-HSB-001	HVAC PANELS - LV ROOM	A5 / +02	40A	LK1-40
15	B300-HSB-001	HVAC PANELS - UPS ROOM	A5 / +03	63A	LK1-63
16	B400-HSB-001	HVAC PANELS - ITER	A5 / +04	63A	LK1-63
17	CN-200N1	IMPRESSED CURR. CATHODIC PROTECTION (ICCP) SYSTEM	A5 / +05	40A	LK1-40
18	SPARE	SPARE	A5 / +06	40A	LK1-40
19	K-63001-B	INSTRUMENTS AIR PACKAGE 01B	A5 / +08	160A	LK2-160
20	CP-850E1	BESS LV1 CABINAT (+DISTR 1)	A6 / +02	40A	LK1-40
21	CP-850E2	BESS LV2 CABINAT (+DISTR 2)	A6 / +03	40A	LK1-40
22	SPARE	SPARE	A6 / +04	40A	LK1-40

AS COMMISSIONED: NATALIA GINOLI
24/3/25
NO MARK UP

VALID FOR CONSTRUCTION
VENDOR DOCUMENT - FDL DWG:
123A90-FDL-1724002197-EL-DG-00031
REV.: 2_A | DATE: 18/03/25 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

= TYPICAL
+ LK-x
DWG n° : 231298/SD/31
Item n° : PF1002983/26

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
2	18/09/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
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TITLE : "SG-200N1"
LV SWG FUNCTIONAL DIAGRAMS - TYPICAL FEEDERS
Users Legend - Typical "LK1-n" & "LK2-n"

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

A3 | DRAWING NO. 1723002197-EL-DG-00031 | SHEET 036 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00031 Rev. 02

ITEMS ACRONYM

TYPICAL : LINE FEEDER "LK1-n" "LK2-n"

Composition of Typical :

LK-x = Common Parts
LK1-"nn" or LK2-"nn"= Specific Parts

Example for Composition of LK1-63:
- to take "LK-x" plus "LK1-63"

Example for Composition of LK2-160:
- to take "LK-x" plus "LK2-160"

	ACRONYM ITEMS (Comun parts)	ACRONYM ITEMS (Specific parts)					
	LK-x	LK1-40 (In=40A) (Current Trip Unit)	LK1-63 (In=63A) (Current Trip Unit)	LK1-100 (In=100A) (Current Trip Unit)	LK2-160 (In=160A) (Current Trip Unit)		
ASSOCIATED TYPICAL	This Item include all devices that are comun for both "Specific Parts" Items	This Items include only devices that are detail for "Specific Parts" Items					
LK1-40	X	X					
LK1-63	X		X				
LK1-100	X			X			
LK2-160	X				X		
-							

AS COMMISSIONED: NATWA GIRGIN
24/3/25
NO MARK UP

VALID FOR CONSTRUCTION
VENDOR DOCUMENT - FDL DWG:
123A90-FDL-1724002197-EL-DG-00031

REV.:	DATE:	SIGNATURE:
2_A	18/03/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

= TYPICAL
+ LK-x

DWG n° : 231298/SD/31
Item n° : PF1002983/26

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
2	18/09/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
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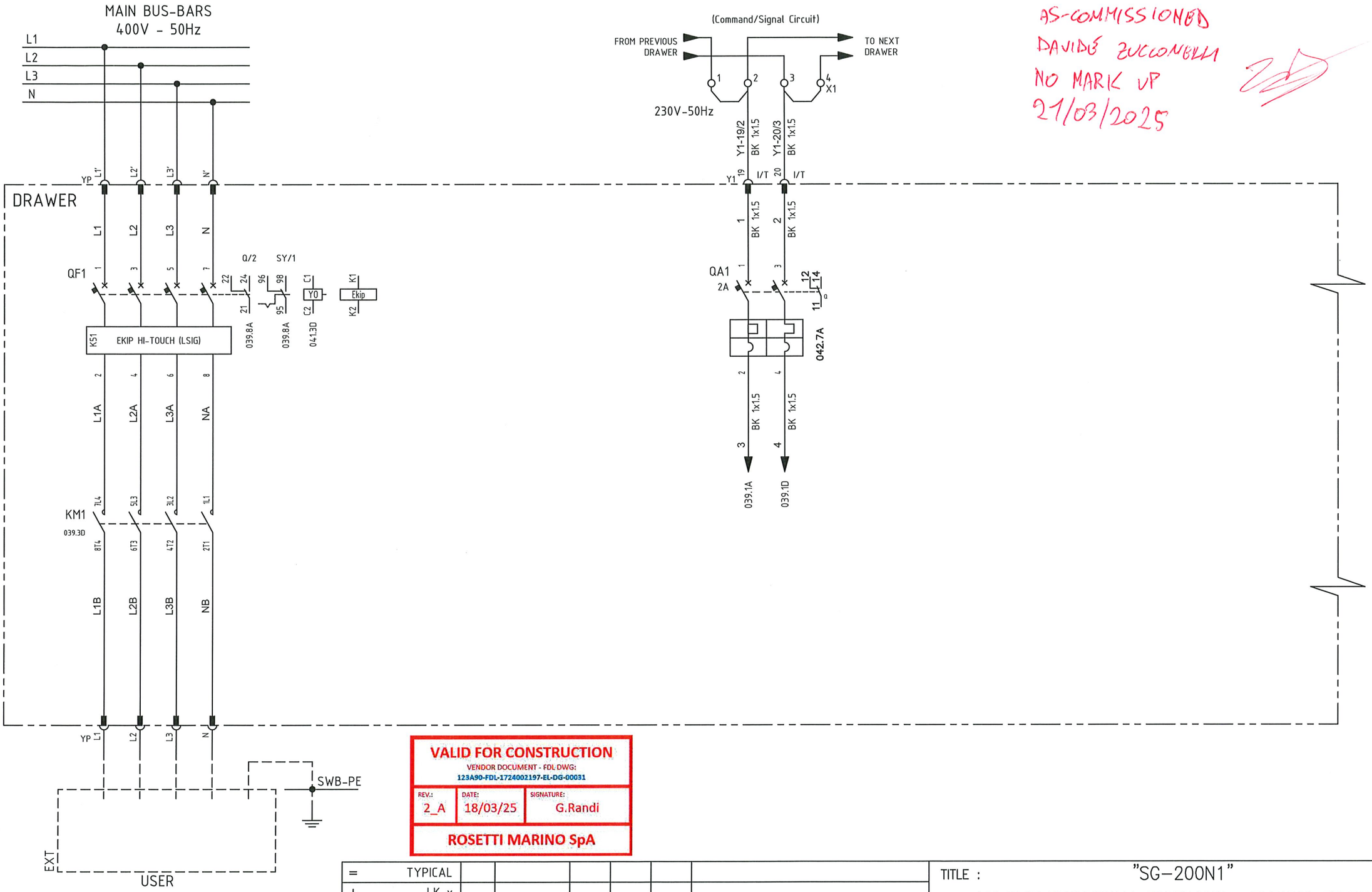
TITLE : "SG-200N1"
LV SWG FUNCTIONAL DIAGRAMS - TYPICAL FEEDERS
Items Acronym - Typical "LK1-n" & "LK2-n"

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

A3 | DRAWING NO. 1723002197-EL-DG-00031 | SHEET 037 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00031 Rev. 02



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

VALID FOR CONSTRUCTION
VENDOR DOCUMENT - FDL DWG:
123A90-FDL-1724002197-EL-DG-00031

REV.:	DATE:	SIGNATURE:
2_A	18/03/25	G.Randi

ROSETTI MARINO SpA

=	TYPICAL
+	LK-x

DWG n° : 231298/SD/31
Item n° : PF1002983/26

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
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IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200N1"
LV SWG FUNCTIONAL DIAGRAMS - TYPICAL FEEDERS
Functional Drawing - Typical "LK1-n" & "LK2-n"

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

SCALE : NTS

A3

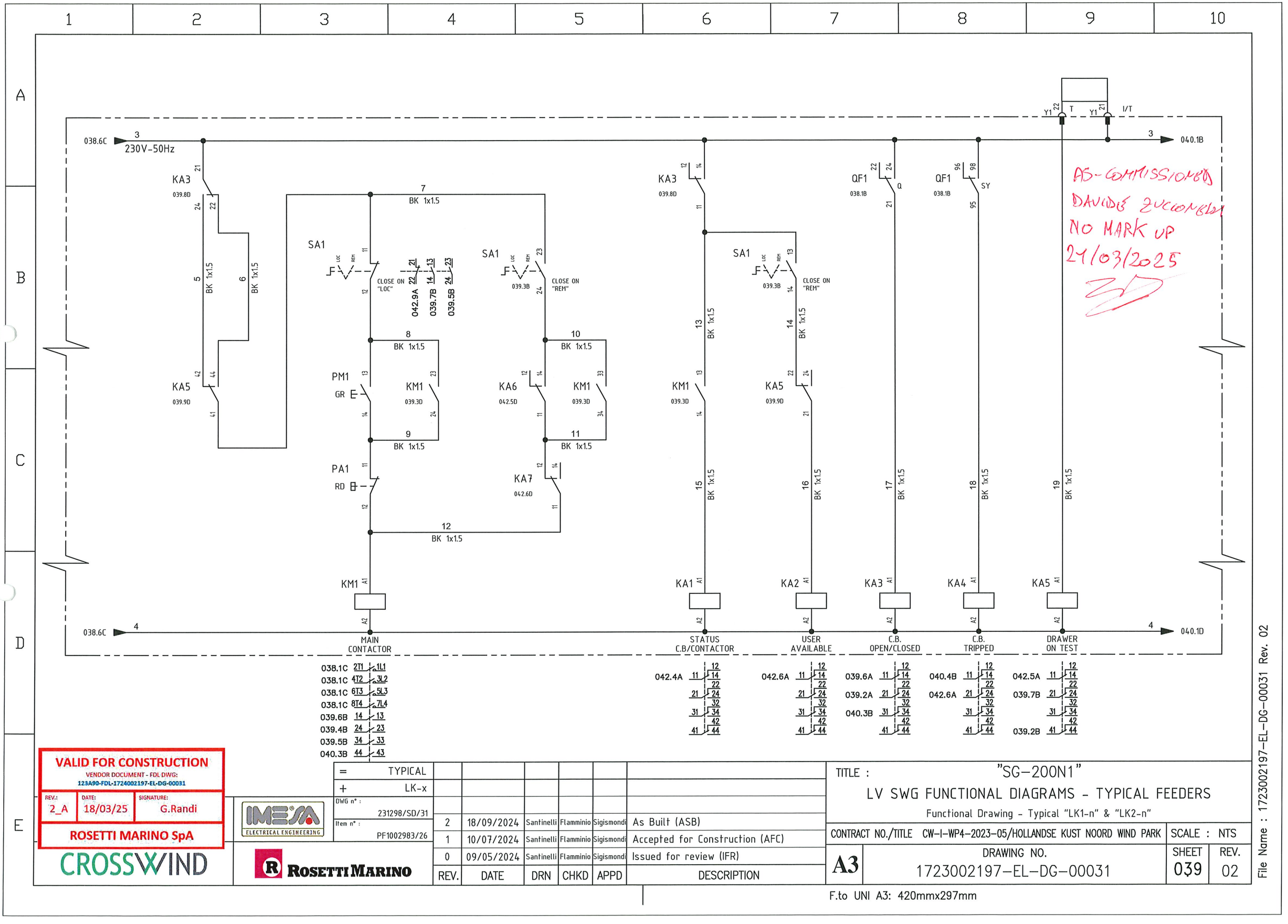
DRAWING NO. 1723002197-EL-DG-00031

SHEET 038

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00031 Rev. 02



VALID FOR CONSTRUCTION
VENDOR DOCUMENT - FDL DWG:
123A90-FDL-1724002197-EL-DG-00031

REV.:	DATE:	SIGNATURE:
2_A	18/03/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

= TYPICAL
+ LK-x
DWG n° : 231298/SD/31
Item n° : PF1002983/26

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
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TITLE : "SG-200N1"
LV SWG FUNCTIONAL DIAGRAMS - TYPICAL FEEDERS
Functional Drawing - Typical "LK1-n" & "LK2-n"

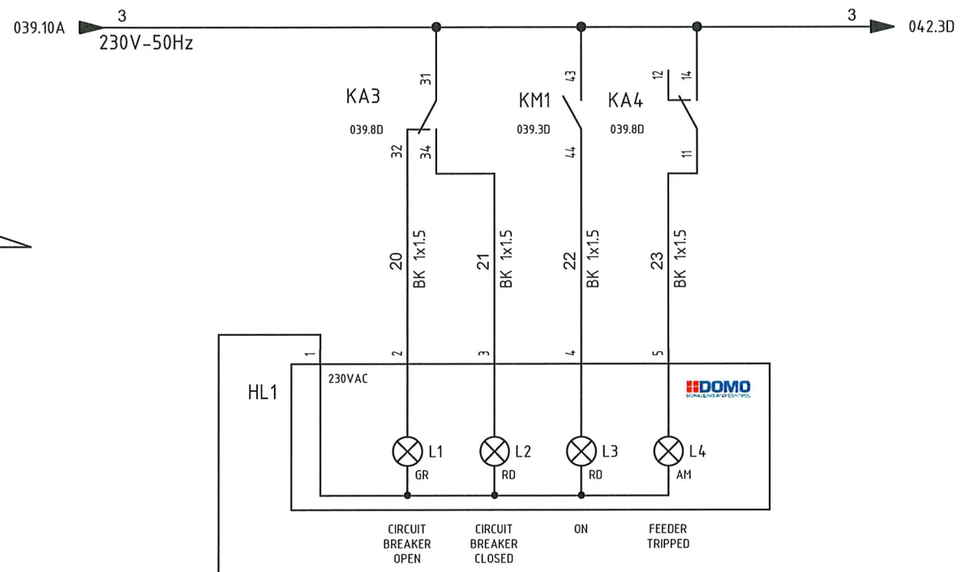
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

A3 | DRAWING NO. 1723002197-EL-DG-00031 | SHEET 039 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00031 Rev. 02

AS-COMMISSIONED
DAVIDE ZUCCONELLI
NO MARK UP
27/03/2025



VALID FOR CONSTRUCTION
VENDOR DOCUMENT - FDL DWG:
123A90-FDL-1724002197-EL-DG-00031

REV.:	DATE:	SIGNATURE:
2_A	18/03/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

=	TYPICAL
+	LK-x
DWG n° :	231298/SD/31
Item n° :	PF1002983/26

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
2	18/09/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)
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0	09/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

TITLE : "SG-200N1"
LV SWG FUNCTIONAL DIAGRAMS - TYPICAL FEEDERS
Functional Drawing - Typical "LK1-n" & "LK2-n"

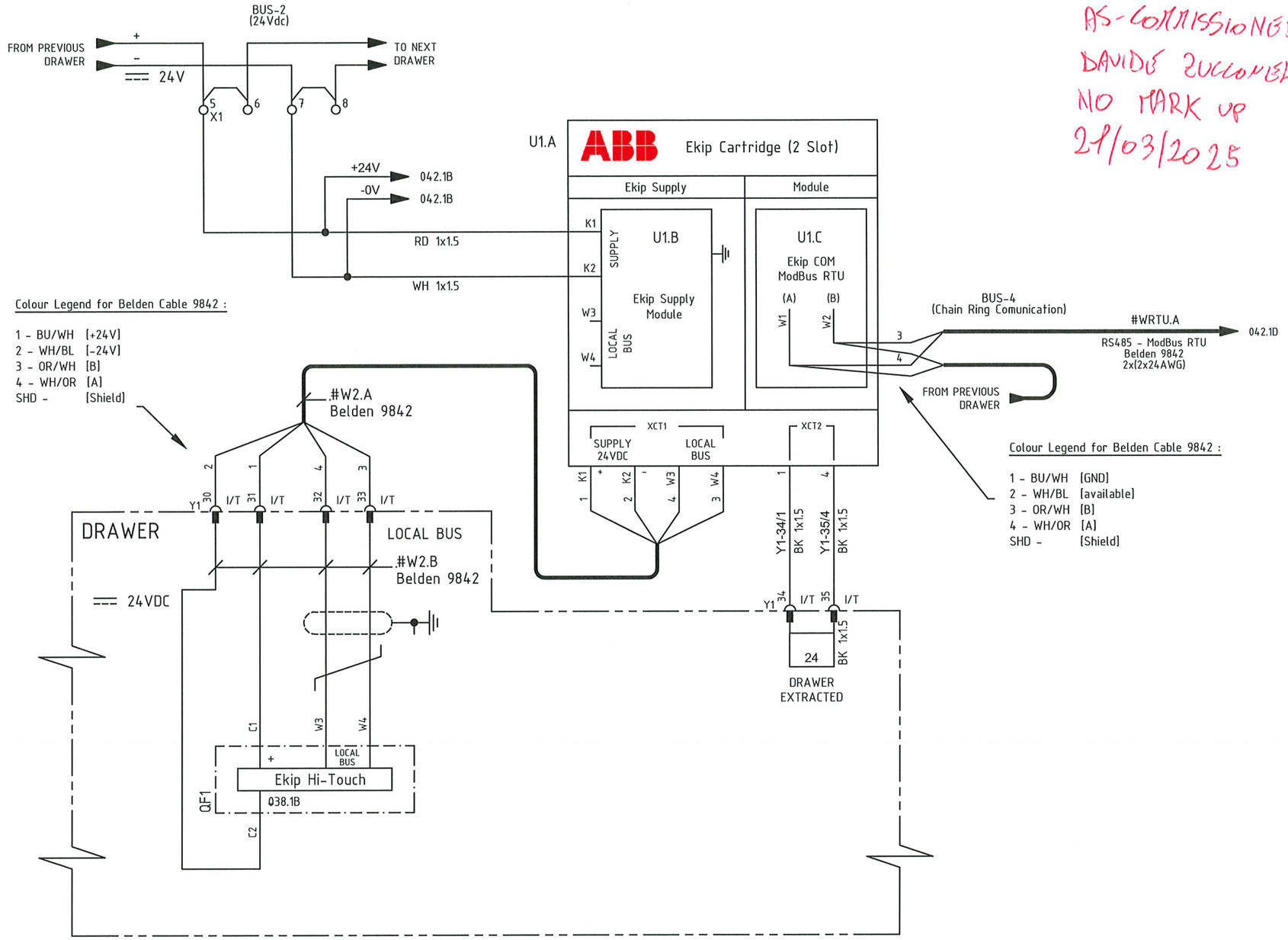
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

A3 | DRAWING NO. 1723002197-EL-DG-00031 | SHEET 040 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00031 Rev. 02

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



VALID FOR CONSTRUCTION
VENDOR DOCUMENT - FDL DWG:
123A90-FDL-1724002197-EL-DG-00031
REV.: 2_A | DATE: 18/03/25 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

=	TYPICAL						
+	LK-x						
DWG n° :	231298/SD/31						
Item n° :	PF1002983/26						
2	18/09/2024	Santinelli	Flamminio	Sigismondi	As Built (ASB)		
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REV.	DATE	DRN	CHKD	APPD	DESCRIPTION		

TITLE : "SG-200N1"
LV SWG FUNCTIONAL DIAGRAMS - TYPICAL FEEDERS
Functional Drawing - Typical "LK1-n" & "LK2-n"

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

A3 | DRAWING NO. 1723002197-EL-DG-00031 | SHEET 041 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00031 Rev. 02

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

DRAWER

C.B. - CONTACTOR CLOSED & INSERTED
C.B. - CONTACTOR OPEN OR DISCONNECTED
CIRCUIT BREAKER TRIPPED
FEEDER AVAILABLE
INTERNAL FAULT
USER ON LOCAL

KA1 039.6D
KA5 039.9D
KA4 039.8D
KA2 039.7D
QA1 038.6B
SA1 039.3B — CLOSE ON "LOC"

+25 RD 1x1.5 … +32 RD 1x1.5 — I/T — E

Y1-14/9 BK 1x1.5
Y1-5/10 BK 1x1.5
Y1-15/11 BK 1x1.5
Y1-16/12 BK 1x1.5
Y1-10/13 BK 1x1.5
Y1-9/14 BK 1x1.5
Y1-36/15 BK 1x1.5
Y1-37/19 BK 1x1.5

AVAILABLE

+103 … +108 RD 1x1.5
+115 … +118 RD 1x1.5

041.4A +24V
041.4A -0V
=== 24V

U2.A
+/L -/N PE
10÷40Vdc - 19÷29Vac SUPPLY
Z-PC-DINAL2-17.5
Modbus RTU RS485
B(-) A(+) GND SHD
B/L A/H GND SHD
041.9B
BUS-4 (Chain Ring Comunication)
TO NEXT DRAWER

U2.B
+16V 0V IN-1 IN-2 IN-3 IN-4 IN-5
INPUT
SENECA AUTOMATION INTERFACES
MODULE I/O
Z-5DI-2DO
ID = 01
OUTPUT
DO-1 DO-2

U2.C
+16V 0V IN-1 IN-2 IN-3 IN-4 IN-5
INPUT
SENECA AUTOMATION INTERFACES
MODULE I/O
Z-5DI-2DO
ID = 02
OUTPUT
DO-1 DO-2

Colour Legend for Belden Cable 9842 :

1 - BU/WH [GND]
2 - WH/BL [available]
3 - OR/WH [B]
4 - WH/OR [A]
SHD - [Shield]

Y1-11/20 BK 1x1.5
Y1-12/21 BK 1x1.5
Y1-13/22 BK 1x1.5
+109 … +114 RD 1x1.5

DRAWER
040.5B 3 230V-50Hz
040.5D 4
KA6 — CONTACTOR CLOSE COMMAND
KA7 — CONTACTOR OPEN COMMAND

KA6 039.5B
KA7 039.5C

VALID FOR CONSTRUCTION
VENDOR DOCUMENT - FDL DWG:
123A90-FDL-1724002197-EL-DG-00031
REV.: 2_A | DATE: 18/03/25 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

= TYPICAL
+ LK-x
DWG n° : 231298/SD/31
Item n° : PF1002983/26

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TITLE : "SG-200N1"
LV SWG FUNCTIONAL DIAGRAMS - TYPICAL FEEDERS
Functional Drawing - Typical "LK1-n" & "LK2-n"

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE : NTS
A3
DRAWING NO. 1723002197-EL-DG-00031
SHEET 042
REV. 02

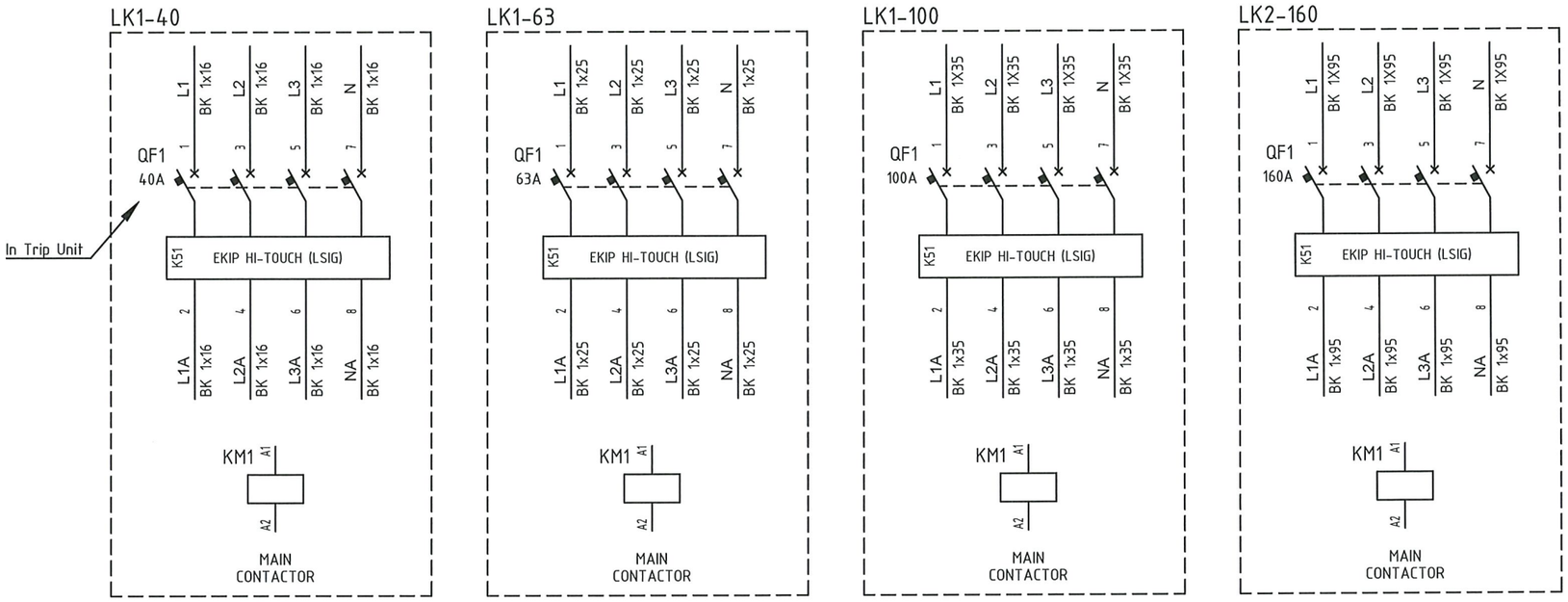
F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00031 Rev. 02

SPECIFIC PARTS

TYPICAL : LINE FEEDER "LK1-n" "LK2-n"

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



VALID FOR CONSTRUCTION
VENDOR DOCUMENT - FDL DWG:
123A90-FDL-1724002197-EL-DG-00031
REV.: 2_A | DATE: 18/03/25 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

= TYPICAL
+ LK-x
DWG n° : 231298/SD/31
Item n° : PF1002983/26

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
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TITLE : "SG-200N1"
LV SWG FUNCTIONAL DIAGRAMS - TYPICAL FEEDERS
Functional Drawing - Typical "LK1-n" & "LK2-n"

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

A3 | DRAWING NO. 1723002197-EL-DG-00031 | SHEET 043 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00031 Rev. 02

TYPICAL - LK-x - Y1

AUXILIARY SOCKET
136450/001 (PF – 2 pcs) + 136458/004 (PM – 2 pcs)

N° PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
JUMP			●	●				●	●																																			
RACKED-OUT			✕	✕				✕	✕																																			
TEST								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
RACKED-IN					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
PIN USED			042.5B	042.5B	042.4B			042.6B	042.7B	042.6B	042.5D	042.5D	042.6D	042.3B	042.4B	042.6B			038.6A	038.6A	039.9A	039.9A								041.3C	041.3C	041.4C	041.4C	041.6C	041.7C	042.7B	042.9B							

← FIELD WHIT "X" - CONTACT CLOSE WHEN DRAWER IS IN RACKED-OUT POSITION
← FIELD WHIT "X" - CONTACT CLOSE WHEN DRAWER IS IN TEST POSITION
← FIELD WHIT "X" - CONTACT CLOSE WHEN DRAWER IS IN RACKED-IN POSITION

← CROS-REFERENCE USED PIN

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

VALID FOR CONSTRUCTION
VENDOR DOCUMENT - FDL DWG:
123A90-FDL-1724002197-EL-DG-00031
REV.: 2_A | DATE: 18/03/25 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

= TYPICAL
+ LK-x
DWG n° : 231298/SD/31
Item n° : PF1002983/26

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

TITLE : "SG-200N1"
LV SWG FUNCTIONAL DIAGRAMS - TYPICAL FEEDERS
Functional Drawing - Typical "LK1-n" & "LK2-n"

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

A3 | DRAWING NO. 1723002197-EL-DG-00031 | SHEET 044 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00031 Rev. 02

TYPICAL - LK-x X1					
NumM	Fg.	Sez.	Tipo	Descrizione	Costruttore
			BT003	BT/3 End bracket	Cabur
1	038.5A	2.5	HD100GR_	HMD.2/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
2	038.6A	2.5	HD100GR_	HMD.2/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
3	038.6A	2.5	HD100GR_	HMD.2/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
4	038.6A	2.5	HD100GR_	HMD.2/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
5	041.3A	2.5	HD100GR_	HMD.2/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
6	041.3A	2.5	HD100GR_	HMD.2/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
7	041.4A	2.5	HD100GR_	HMD.2/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
8	041.4A	2.5	HD100GR_	HMD.2/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
			HD101GR	HMD/PT/GR End section - Grey	Cabur
9	042.3B	2.5	HD400GR_	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
10	042.4B	2.5	HD400GR_	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
11	042.4B	2.5	HD400GR_	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
12	042.5B	2.5	HD400GR_	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
13	042.6B	2.5	HD400GR_	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
14	042.7B	2.5	HD400GR_	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
15	042.7B	2.5	HD400GR_	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
16	042.7B	2.5	HD400GR_	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
17	042.8B	2.5	HD400GR_	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
18	042.8B	2.5	HD400GR_	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
19	042.9B	2.5	HD400GR_	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
20	042.5C	2.5	HD400GR_	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
21	042.5C	2.5	HD400GR_	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
22	042.6C	2.5	HD400GR_	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
23	042.9C	2.5	HD400GR_	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
24	042.9C	2.5	HD400GR_	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
25	042.10C	2.5	HD400GR_	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur
			HD201GR	HMD.1/PT/GR End section - Grey	Cabur
			BT003	BT/3 End bracket	Cabur

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

VALID FOR CONSTRUCTION
VENDOR DOCUMENT - FDL DWG:
123A90-FDL-1724002197-EL-DG-00031
REV.: 2_A | DATE: 18/03/25 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

= TYPICAL
+ LK-x
DWG n° : 231298/SD/31
Item n° : PF1002983/26

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

TITLE : "SG-200N1"
LV SWG FUNCTIONAL DIAGRAMS - TYPICAL FEEDERS
Functional Drawing - Typical "LK1-n" & "LK2-n"

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

A3 | DRAWING NO. 1723002197-EL-DG-00031 | SHEET 045 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00031 Rev. 02

Nome/Item	Fg/Sh	Tipo/Type	Q.ta/Q.ty	Descrizione/Description	Costruttore/Manufacturer	Quadro (descrizione)
HL1	040	ML22/484L230STLTTR	1	MULTILED 48x48 - 4 LED - Vaux=230Vac/dc + LAMP TEST + TROP	DOMO	TYPICAL LK-x
KA1	039	ER 592 6	1	CR-M230AC4L SUPPLY 230VAC 4C/O 250V/6A LED	ABB	TYPICAL LK-x
		ER 609 8	1	CR-MH HOLDER FOR CR-M RELAY	ABB	TYPICAL LK-x
		ER 686 6	1	CR-M4SS SOCKET STANDARD X 2/4 C/O(CR-M)	ABB	TYPICAL LK-x
KA2	039	ER 592 6	1	CR-M230AC4L SUPPLY 230VAC 4C/O 250V/6A LED	ABB	TYPICAL LK-x
		ER 609 8	1	CR-MH HOLDER FOR CR-M RELAY	ABB	TYPICAL LK-x
		ER 686 6	1	CR-M4SS SOCKET STANDARD X 2/4 C/O(CR-M)	ABB	TYPICAL LK-x
KA3	039	ER 592 6	1	CR-M230AC4L SUPPLY 230VAC 4C/O 250V/6A LED	ABB	TYPICAL LK-x
		ER 609 8	1	CR-MH HOLDER FOR CR-M RELAY	ABB	TYPICAL LK-x
		ER 686 6	1	CR-M4SS SOCKET STANDARD X 2/4 C/O(CR-M)	ABB	TYPICAL LK-x
KA4	039	ER 592 6	1	CR-M230AC4L SUPPLY 230VAC 4C/O 250V/6A LED	ABB	TYPICAL LK-x
		ER 609 8	1	CR-MH HOLDER FOR CR-M RELAY	ABB	TYPICAL LK-x
		ER 686 6	1	CR-M4SS SOCKET STANDARD X 2/4 C/O(CR-M)	ABB	TYPICAL LK-x
KA5	039	ER 592 6	1	CR-M230AC4L SUPPLY 230VAC 4C/O 250V/6A LED	ABB	TYPICAL LK-x
		ER 609 8	1	CR-MH HOLDER FOR CR-M RELAY	ABB	TYPICAL LK-x
		ER 686 6	1	CR-M4SS SOCKET STANDARD X 2/4 C/O(CR-M)	ABB	TYPICAL LK-x
KA6	042	ER 592 6	1	CR-M230AC4L SUPPLY 230VAC 4C/O 250V/6A LED	ABB	TYPICAL LK-x
		ER 609 8	1	CR-MH HOLDER FOR CR-M RELAY	ABB	TYPICAL LK-x
		ER 686 6	1	CR-M4SS SOCKET STANDARD X 2/4 C/O(CR-M)	ABB	TYPICAL LK-x
KA7	042	ER 592 6	1	CR-M230AC4L SUPPLY 230VAC 4C/O 250V/6A LED	ABB	TYPICAL LK-x
		ER 609 8	1	CR-MH HOLDER FOR CR-M RELAY	ABB	TYPICAL LK-x
		ER 686 6	1	CR-M4SS SOCKET STANDARD X 2/4 C/O(CR-M)	ABB	TYPICAL LK-x
PA1	039	KW 075 2	1	MP1-10R PUSH BUTTON RED WITH BLACK RING	ABB	TYPICAL LK-x
		EO 569 7	1	MCBH-00 FIXING SUPPORT 3 CONTACTS	ABB	TYPICAL LK-x
		EO 571 3	2	MCB-01 CONTACT NC FOR PUSHBUTTOM	ABB	TYPICAL LK-x
PM1	039	KW 076 0	1	MP1-10G PUSH BUTTON GREEN WITH BLACK RING	ABB	TYPICAL LK-x
		EO 569 7	1	MCBH-00 FIXING SUPPORT 3 CONTACTS	ABB	TYPICAL LK-x
		EO 570 5	2	MCB-10 CONTACT NO FOR PUSHBUTTONS	ABB	TYPICAL LK-x
QA1	038	S550239	1	S202M C 2 AUTOMATIC CIRCUIT BREAKER 10KA 2P	ABB	TYPICAL LK-x
		A563819	1	S2-CS/H6R AUXILIARY STATE CONTACT 1CO	ABB	TYPICAL LK-x
SA1	039	KW 329 3	1	M2SS2-10B HANDLE SELECTOR 2P 90° BLACK RING BLACK	ABB	TYPICAL LK-x
		EO 569 7	1	MCBH-00 FIXING SUPPORT 3 CONTACTS	ABB	TYPICAL LK-x
		EO 570 5	2	MCB-10 CONTACT NO FOR PUSHBUTTONS	ABB	TYPICAL LK-x
		EO 571 3	2	MCB-01 CONTACT NC FOR PUSHBUTTOM	ABB	TYPICAL LK-x
U1.2	041	1SDA074173R1	1	MODUL EKIP SUPPLY 24÷48VDC	ABB	TYPICAL LK-x
U1.3	041	1SDA105166R1	1	Module Ekip Com Modbus RS485 Tmax XT	ABB	TYPICAL LK-x
U1.A	041	1SDA105203R1	1	EKIP CARTRIDGE 2SLOT FOR XT2-XT4-XT5	ABB	TYPICAL LK-x
U2.A	042	Z-PC-DINAL2-17.5	1	DIN RAIL 2SLOT WITH HEAD FOR "Z-5DI-2DO"	SENECA	TYPICAL LK-x
U2.B	042	Z-5DI-2DO	1	I/O MODUL 5DI+2DO modbus RS485 Vaux=10÷40Vdc 19÷28Vac	SENECA	TYPICAL LK-x
U2.C	042	Z-5DI-2DO	1	I/O MODUL 5DI+2DO modbus RS485 Vaux=10÷40Vdc 19÷28Vac	SENECA	TYPICAL LK-x
X1		HD100GR_	8	HMD.2/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur	TYPICAL LK-x
		HD400GR_	17	HMD.2N/GR Two-level feed-through Terminal Block - Grey (2.5 mmq) - Spring type	Cabur	TYPICAL LK-x
		BT003	2	BT/3 End bracket	Cabur	TYPICAL LK-x
		HD101GR	1	HMD/PT/GR End section - Grey	Cabur	TYPICAL LK-x

VALID FOR CONSTRUCTION
VENDOR DOCUMENT - FDL DWG:
123A90-FDL-1724002197-EL-DG-00031
REV.: 2_A | DATE: 18/03/25 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

= TYPICAL
+ LK-x
DWG n° : 231298/SD/31
Item n° : PF1002983/26

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

TITLE : "SG-200N1"
LV SWG FUNCTIONAL DIAGRAMS - TYPICAL FEEDERS
Functional Drawing - Typical "LK1-n" & "LK2-n"

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

A3 | DRAWING NO. 1723002197-EL-DG-00031 | SHEET 046 | REV. 02

File Name : 1723002197-EL-DG-00031 Rev. 02

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

Fito UNI A3: 420mmx297mm

Nome/Item	Fg/Sh	Tipo/Type	Q.ta/Q.ty	Descrizione/Description	Costruttore/Manufacturer	Quadro (descrizione)
X1		HD201GR	1	HMD.1/PT/GR End section - Grey	Cabur	TYPICAL LK-x

AS-COMMISSIONED
DAVIDE ZUCCOMELLI

NO MARK UP
21/03/2025

Nome/Item	Fg/Sh	Tipo/Type	Q.ta/Q.ty	Descrizione/Description	Costruttore/Manufacturer	Quadro (descrizione)
KM1	043	AF40400013	1	AF40-40-00-13 CONTACTOR 4P 40A 100-250VAC/DC	ABB	TYPICAL LK1-40
		CA440E	1	CA4-40E AUXILIARY FRONT CONTACT 4NO	ABB	TYPICAL LK1-40
QF1	043	1SDA068169R1	1	XT2S 160 BREAKING PART 4p F F	ABB	TYPICAL LK1-40
		1SDA100162R1	1	ELECTRONIC TRIP RELEASE Ekip Hi-Touch LSIG In=40A XT2 4p	ABB	TYPICAL LK1-40
		1SDA066431R1	1	AUX-C 1Q+1SY 250Vac/dc XT1..XT5 F/P	ABB	TYPICAL LK1-40

Nome/Item	Fg/Sh	Tipo/Type	Q.ta/Q.ty	Descrizione/Description	Costruttore/Manufacturer	Quadro (descrizione)
KM1	043	AF52400013	1	AF52-30-00-13 CONTACTOR 4P 53A(AC3) 100-250VAC/DC	ABB	TYPICAL LK1-63
		CA440E	1	CA4-40E AUXILIARY FRONT CONTACT 4NO	ABB	TYPICAL LK1-63
QF1	043	1SDA068169R1	1	XT2S 160 BREAKING PART 4p F F	ABB	TYPICAL LK1-63
		1SDA100163R1	1	ELECTRONIC TRIP RELEASE Ekip Hi-Touch LSIG In=63A XT2 4p	ABB	TYPICAL LK1-63
		1SDA066431R1	1	AUX-C 1Q+1SY 250Vac/dc XT1..XT5 F/P	ABB	TYPICAL LK1-63

Nome/Item	Fg/Sh	Tipo/Type	Q.ta/Q.ty	Descrizione/Description	Costruttore/Manufacturer	Quadro (descrizione)
KM1	043	AF80400013	1	AF80-30-00-13 CONTACTOR 4P 80A(AC3) 100-250VAC/DC	ABB	TYPICAL LK1-100
		CA440E	1	CA4-40E AUXILIARY FRONT CONTACT 4NO	ABB	TYPICAL LK1-100
QF1	043	1SDA068169R1	1	XT2S 160 BREAKING PART 4p F F	ABB	TYPICAL LK1-100
		1SDA100164R1	1	ELECTRONIC TRIP RELEASE Ekip Hi-Touch LSIG In=100A XT2 4p	ABB	TYPICAL LK1-100
		1SDA066431R1	1	AUX-C 1Q+1SY 250Vac/dc XT1..XT5 F/P	ABB	TYPICAL LK1-100

Nome/Item	Fg/Sh	Tipo/Type	Q.ta/Q.ty	Descrizione/Description	Costruttore/Manufacturer	Quadro (descrizione)
KM1	043	AF190401113	1	AF190-40-11-13 CONT 4P 190A AC3 100-250VAC/DC	ABB	TYPICAL LK2-160
		CAL1911	1	CAL19-11 CONTATTO AUSILIARIO 1NA+1NC PER AF116÷AF370	ABB	TYPICAL LK2-160
		CAL1911B	2	CAL19-11B AUXILIARY CONTACT 1NA+1NC PER AF116÷AF370	ABB	TYPICAL LK2-160
QF1	043	1SDA068179R1	1	XT4S 250 BREAKING PART 4p F F	ABB	TYPICAL LK2-160
		1SDA100334R1	1	ELECTRONIC TRIP RELEASE Ekip Hi-Touch LSIG In=160A XT4 4p	ABB	TYPICAL LK2-160
		1SDA066431R1	1	AUX-C 1Q+1SY 250Vac/dc XT1..XT5 F/P	ABB	TYPICAL LK2-160

VALID FOR CONSTRUCTION
VENDOR DOCUMENT - FDL DWG:
123A90-FDL-1724002197-EL-DG-00031

REV.:	DATE:	SIGNATURE:
2_A	18/03/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

IMESA ELECTRICAL ENGINEERING

ROSETTI MARINO

=	TYPICAL
+	LK-x
DWG n° :	231298/SD/31
Item n° :	PF1002983/26

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

TITLE : "SG-200N1"

LV SWG FUNCTIONAL DIAGRAMS - TYPICAL FEEDERS

Functional Drawing - Typical "LK1-n" & "LK2-n"

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

A3 | DRAWING NO. 1723002197-EL-DG-00031 | SHEET 047 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00031 Rev. 02

BASE LOAD POWER HUB (BLPH)

DAVIT CRANE

WIRING DIAGRAM

NO MARK UP

AS COMMISSIONED : FIRST PATCH

20/5/25

REMAZEL ENGINEERING
Chiuduno (BG) - 24060 - ITALY
Phone : +39-035-68.44.14 - Fax : +39-035-68.78.23
e-mail : info@remazel.com / website : www.remazel.com

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	22/10/2024	MPR	GBA	ATR	ACCEPTED FOR CONSTRUCTION (AFC)
02	26/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
01	03/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
00	26/07/2024	MPR	GBA	ATR	ISSUE FOR COMMENT (IFC)

TITLE : BASE LOAD POWER HUB (BLPH)
DAVIT CRANE WIRING DIAGRAM

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

SCALE : NTS

A3	DRAWING NO.	SHEET	REV.
	1724001010-MAC-DG-00012	1	03

F.to UNI A3: 420mmx297mm

File Name : 24-27012-WD-001 Rev. 03

REV.	SHEET NUMBER	DESCRIPTION	REF. CODE
02	1	FRONT PAGE	
02	2	SUMMARY and GENERAL NOTES	
02	10	SYMBOLS LEGEND	
03	30	INCOMING POWER LINE	
02	32	ENCLOSURE SERVICE	
02	34	UPS AND STANDSTILL HEATERS	
02	40	24Vdc SUPPLY	
02	50	HOISTING VFD CONNECTIONS	
02	52	ROTATION AND TROLLEY VFD CONNECTIONS	
02	54	ROTATION AND TROLLEY MOTORS	
02	56	MOTOR BRAKES	
02	60	CPU	
02	62	SAFETY MODULES	
02	64	SAFETY MODULES	
02	66	DIGITAL INPUT	
02	68	DIGITAL INPUT	
02	70	DIGITAL INPUT	
02	72	DIGITAL INPUT	
02	74	DIGITAL OUTPUT	
02	76	DIGITAL OUTPUT	
02	78	ANALOG INPUT AND OUTPUT	
02	80	LOAD CELL	
02	82	HOISTING AND ROTATION ENCODERS	
02	84	TROLLEY ENCODER	
02	86	MOPS COMMAND	
02	90	TERMINAL STRIP X01	
02	92	TERMINAL STRIP XS1	
02	94	TERMINAL STRIP JB / X02	

GENERAL NOTES

1:

2:

3:

4:

NO MARK UP
AS COMMISSIONED : NATHA GIROTO
20/5/25

REMAZEL ENGINEERING
Chiuduno (BG) - 24060 - ITALY
Phone : +39-035-68.44.14 - Fax : +39-035-68.78.23
e-mail : info@remazel.com / website : www.remazel.com

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	22/10/2024	MPR	GBA	ATR	ACCEPTED FOR CONSTRUCTION (AFC)
02	26/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
01	03/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
00	26/07/2024	MPR	GBA	ATR	ISSUE FOR COMMENT (IFC)

TITLE : BASE LOAD POWER HUB (BLPH)
DAVIT CRANE WIRING DIAGRAM

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

SCALE : NTS

A3

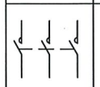
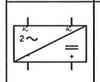
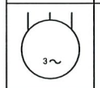
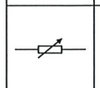
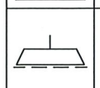
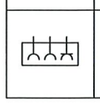
DRAWING NO. 1724001010-MAC-DG-00012

SHEET 2

REV. 03

File Name : 24-27012-WD-001 Rev. 03

F.to UNI A3: 420mmx297mm

	MANUAL POWER DISCONNECTING SWITCH		FAN		
	FUSE POWER DISCONNECTING SWITCH		STANDSTILL HEATER		
	THERMAL-MAGNETIC CIRCUIT BREAKER		NORMALLY OPEN THERMOSTAT		
	DIFFERENTIAL THERMAL-MAGNETIC CIRCUIT BREAKER		NORMALLY CLOSE THERMOSTAT		
	CONTACTOR / RELE' COIL		LAMP		
	POWER CONTACT		EMERGENCY PUSH BUTTON		
	NORMALLY OPEN CONTACT		NORMALLY OPEN PUSH BUTTON		
	NORMALLY CLOSE CONTACT		NORMALLY OPEN KEY SELECTOR		
	SWITCHING POWER SUPPLY		NORMALLY CLOSE LIMIT SWITCH		
	MOTOR		INDUCTIVE LIMIT SWITCH		
	MOTOR THERMAL PROTECTION		HORN		
	ENCODER		LOAD CELL		
	MOTOR BRAKE		PROTECTIVE EARTH		
	SERVICE SOCKET				

AS COMMISSIONED: MATTIA GINETTI 20/5/25
NO MARK UP

REMAZEL ENGINEERING
Chiuduno (BG) - 24060 - ITALY
Phone : +39-035-68.44.14 - Fax : +39-035-68.78.23
e-mail : info@remazel.com / website : www.remazel.com

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	22/10/2024	MPR	GBA	ATR	ACCEPTED FOR CONSTRUCTION (AFC)
02	26/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
01	03/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
00	26/07/2024	MPR	GBA	ATR	ISSUE FOR COMMENT (IFC)

TITLE : BASE LOAD POWER HUB (BLPH)
DAVIT CRANE WIRING DIAGRAM
SYMBOLS LEGEND

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

SCALE : NTS

A3

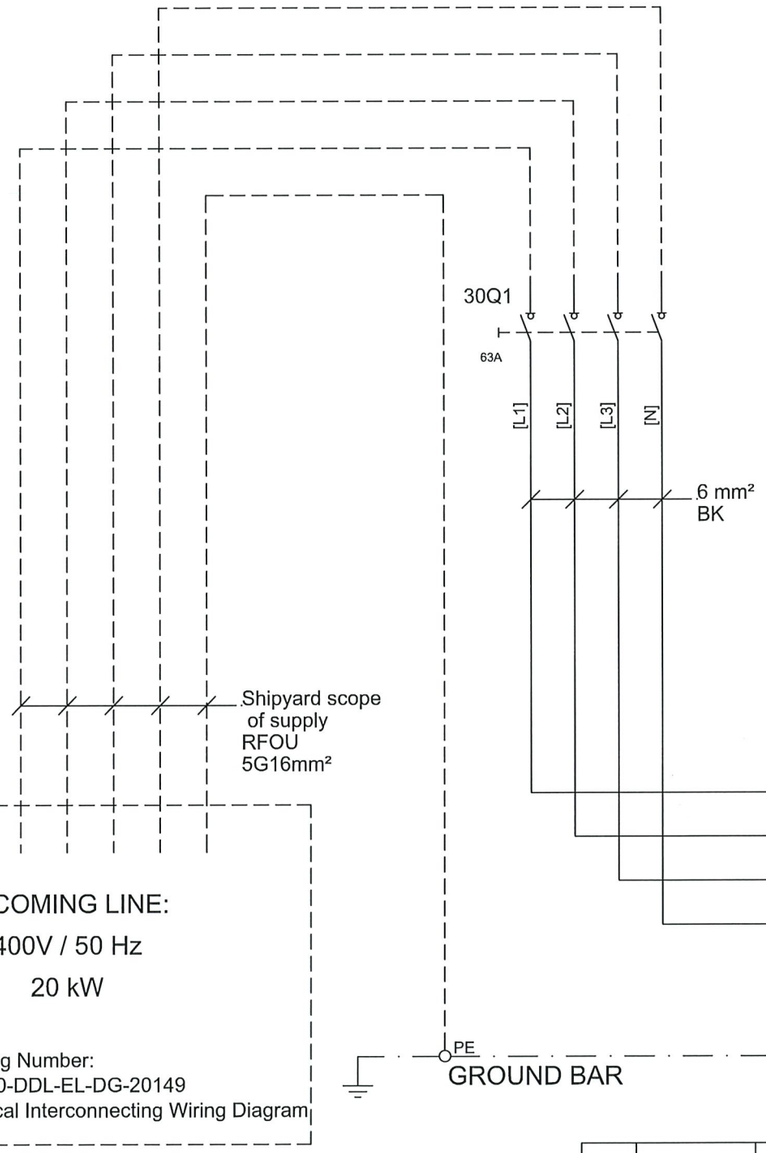
DRAWING NO. 1724001010-MAC-DG-00012

SHEET 10

REV. 03

File Name : 24-27012-WD-001 Rev. 03

F.to UNI A3: 420mmx297mm



IDENTIFICAZIONE CONDUTTORI
WIRES IDENTIFICATION (CEI EN 60204-32)

COLORE COLOR	LEGENDA LEGEND	TIPO DI CIRCUITO CIRCUIT TYPE	TENSIONE VOLTAGE
NERO BLACK	BK	CIRCUITI DI ALIMENTAZIONE IN CORRENTE ALTERNATA ALTERNATING CURRENT SUPPLY CIRCUITS	690 - 400 Vac
ROSSO RED	RD	CIRCUITI DI ALIMENTAZIONE IN CORRENTE ALTERNATA ALTERNATING CURRENT SUPPLY CIRCUITS	230 Vac
BLU BLUE	BL	CONDUTTORE DI NEUTRO (identificato tramite marcatura) NEUTRAL WIRE (identified by marking)	230 - 400 Vac
GIALLO/VERDE YELLOW/GREEN	GN/YE	CIRCUITO DI PROTEZIONE PROTECTION EARTH	--
ROSSO RED	RD	CIRCUITI DI COMANDO E CONTROLLO IN CORRENTE ALTERNATA ALTERNATING CURRENT CONTROL CIRCUITS	230 - 24 Vac
BLU BLUE	BL	CIRCUITI DI COMANDO E CONTROLLO IN CORRENTE CONTINUA DIRECT CURRENT CONTROL CIRCUITS	24 Vdc
BIANCO WHITE	WH	SEGNALI ANALOGICI ANALOG SIGNALS	--
AZZURRO LIGHT BLUE	LB	CIRCUITI A SICUREZZA INTRINSECA INTRINSICALLY SAFE CIRCUITS	--
VERDE GREEN	GN	CIRCUITO DI PROTEZIONE A SICUREZZA INTRINSECA INTRINSICALLY SAFE PROTECTION EARTH	--
ARANCIO ORANGE	OG	CIRCUITO NON SEZIONATO UNSECTIONED CIRCUIT	--

NO MARK UP
AS COMMISSIONED: NATALIA GIRALT 20/5/25

[L1] → L1 32
[L2] → L2 32
[L3] → L3 32
[N] → N 32
PE → PE 32

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Chiuduno (BG) - 24060 - ITALY
Phone : +39-035-68.44.14 - Fax : +39-035-68.78.23
e-mail : info@remazel.com / website : www.remazel.com

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	22/10/2024	MPR	GBA	ATR	ACCEPTED FOR CONSTRUCTION (AFC)
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01	03/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
00	26/07/2024	MPR	GBA	ATR	ISSUE FOR COMMENT (IFC)

TITLE : BASE LOAD POWER HUB (BLPH)
DAVIT CRANE WIRING DIAGRAM
INCOMING POWER LINE

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

SCALE : NTS

A3

DRAWING NO. 1724001010-MAC-DG-00012

SHEET 30

REV. 03

File Name : 24-27012-WD-001 Rev. 03

F.to UNI A3: 420mmx297mm

30 L1 [L1] [L1] L1 34
30 L2 [L2] [L2] L2 34
30 L3 [L3] [L3] L3 34
30 N [N] [N] N 34
30 PE PE 34

[L1] [L2] [L3] [N] 1,5 mm² BK x 3 + BL

[L1] [N] 1,5 mm² RD + BL + GN/YE

[L2] [N] 1,5 mm² RD + BL + GN/YE

32Q1 1 3 5 2A 2 4 6

32Q2 1 3 C 6A 1d 1d 2 4

32Q3 2A

32E1 Stigo ZR 011 θ θ 11 12 23 24

1,5 mm² BK

[32-1] [32-1] [32-2] [32-3] [32-4]

[32-5] [32-6]

[32-7] [32-8]

32KA1 66 32HL1 32HL2 32HL3

32X1

32R1

32E2 M 1AC

400Vac VOLTAGE PRESENCE

ELECTRIC SOCKET

HEATER FAN

NO MARK UP

AS COMMISSIONED: MATCIA GINZI 20/5/25

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Chiuduno (BG) - 24060 - ITALY
Phone : +39-035-68.44.14 - Fax : +39-035-68.78.23
e-mail : info@remazel.com / website : www.remazel.com

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	22/10/2024	MPR	GBA	ATR	ACCEPTED FOR CONSTRUCTION (AFC)
02	26/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
01	03/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
00	26/07/2024	MPR	GBA	ATR	ISSUE FOR COMMENT (IFC)

TITLE : BASE LOAD POWER HUB (BLPH)
DAVIT CRANE WIRING DIAGRAM
ENCLOSURE SERVICE

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

SCALE : NTS

A3

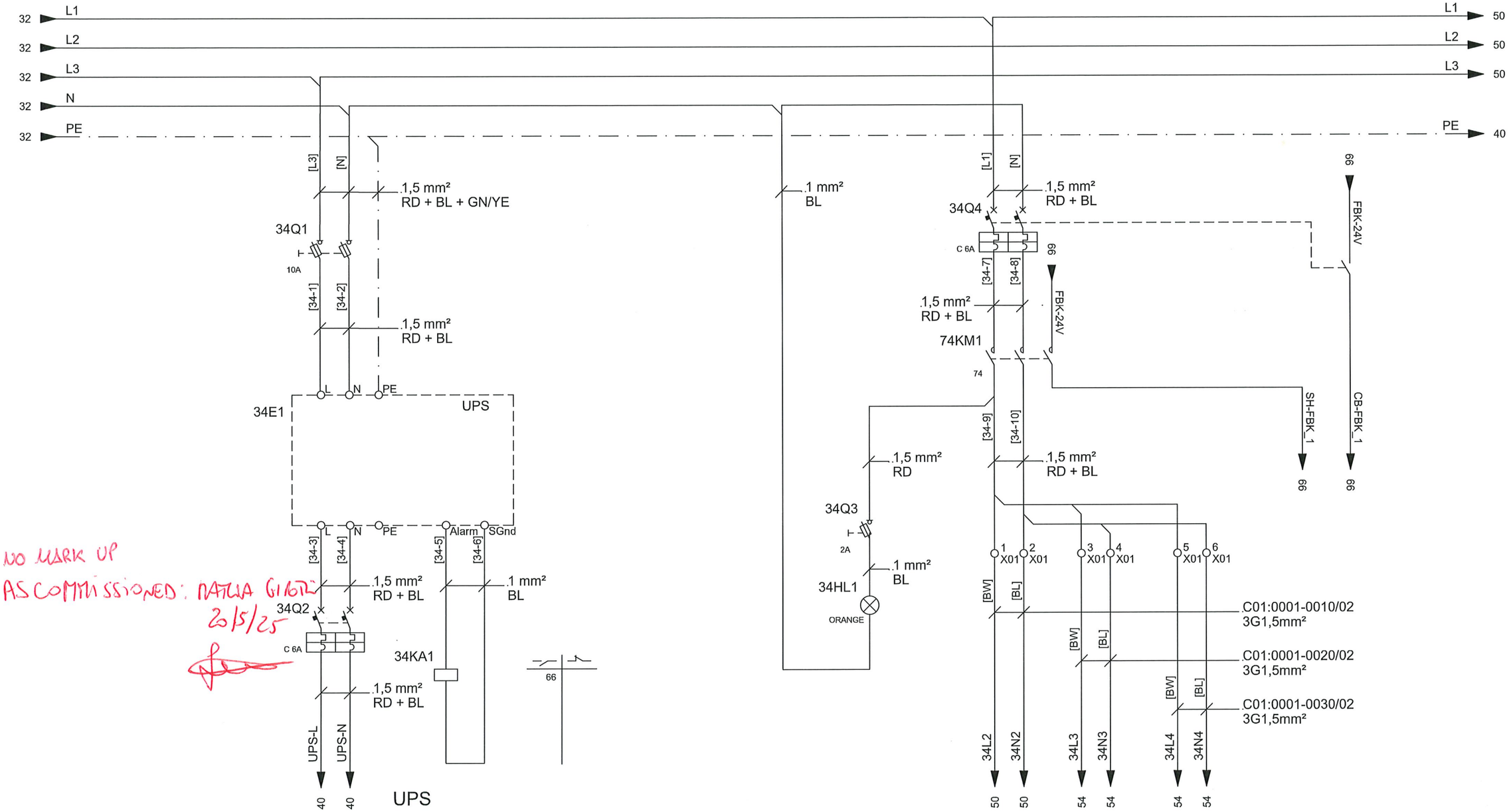
DRAWING NO. 1724001010-MAC-DG-00012

SHEET 32

REV. 03

File Name : 24-27012-WD-001 Rev. 03

F.to UNI A3: 420mmx297mm



STANDSTILL HEATERS

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	22/10/2024	MPR	GBA	ATR	ACCEPTED FOR CONSTRUCTION (AFC)
02	26/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
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REMAZEL ENGINEERING
Chiuduno (BG) - 24060 - ITALY
Phone : +39-035-68.44.14 - Fax : +39-035-68.78.23
e-mail : info@remazel.com / website : www.remazel.com

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
DAVIT CRANE WIRING DIAGRAM
UPS AND STANDSTILL HEATERS

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

SCALE : NTS

A3

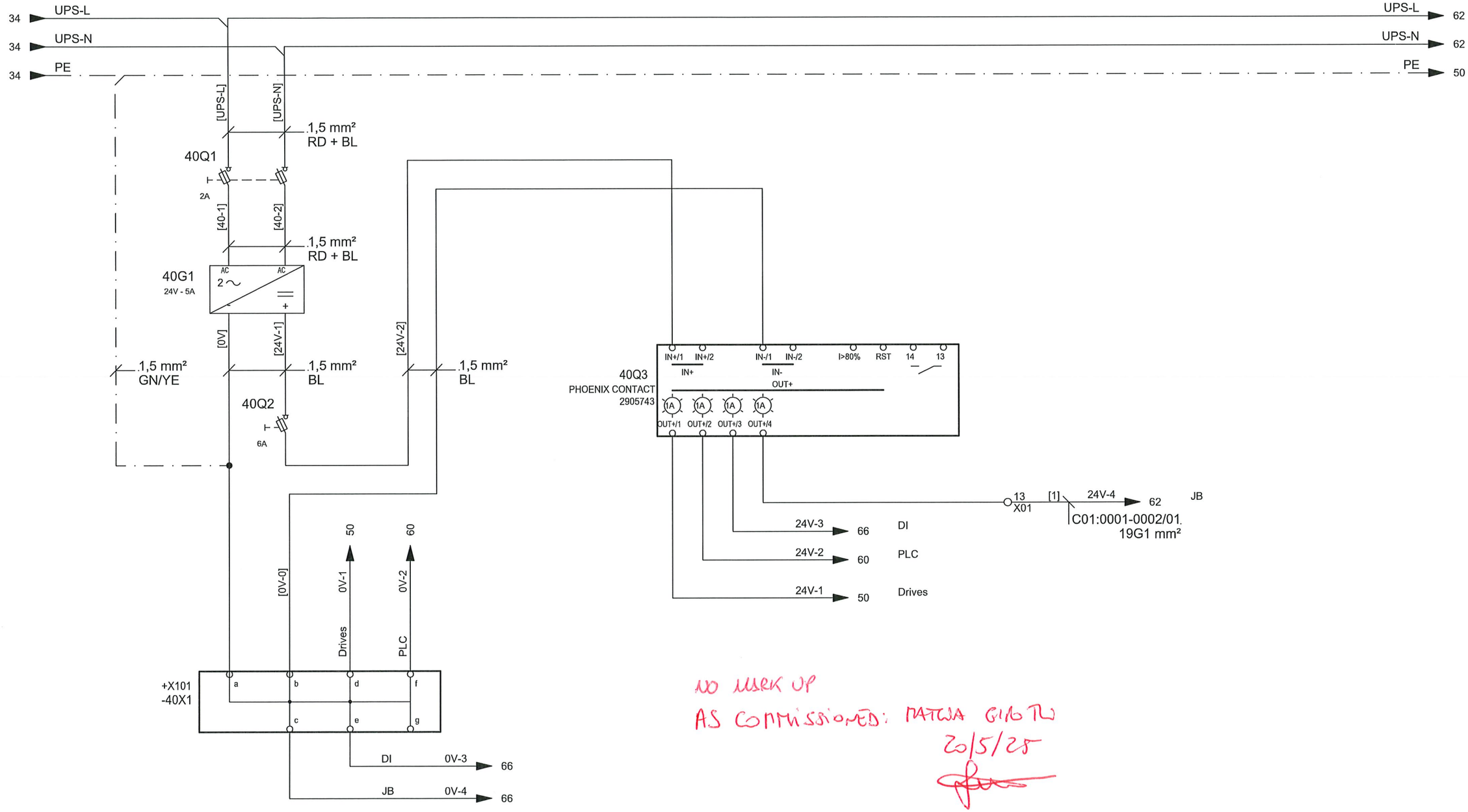
DRAWING NO. 1724001010-MAC-DG-00012

SHEET 34

REV. 03

File Name : 24-27012-WD-001 Rev. 03

F.to UNI A3: 420mmx297mm



NO MARK UP
AS COMMISSIONED: MATTIA GIOTTI
20/5/25

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Chiuduno (BG) - 24060 - ITALY
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e-mail : info@remazel.com / website : www.remazel.com

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	22/10/2024	MPR	GBA	ATR	ACCEPTED FOR CONSTRUCTION (AFC)
02	26/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
01	03/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
00	26/07/2024	MPR	GBA	ATR	ISSUE FOR COMMENT (IFC)

TITLE : BASE LOAD POWER HUB (BLPH)
DAVIT CRANE WIRING DIAGRAM
24Vdc SUPPLY

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

SCALE : NTS

A3

DRAWING NO. 1724001010-MAC-DG-00012

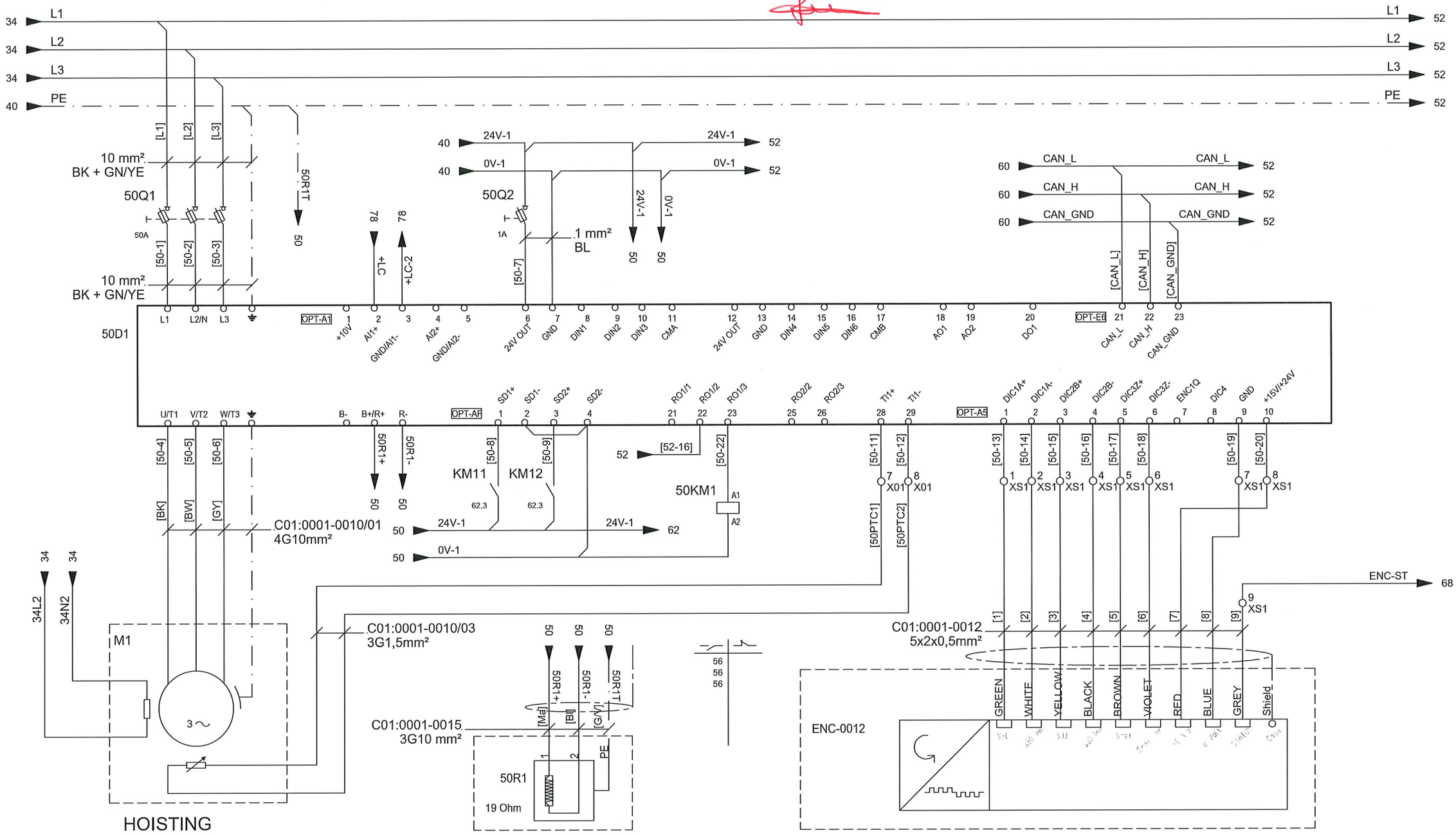
SHEET 40

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 24-27012-WD-001 Rev. 03

NO MARK UP
AS COMMISSIONED: NATALIA GIROTTO 20/5/25



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	22/10/2024	MPR	GBA	ATR	ACCEPTED FOR CONSTRUCTION (AFC)
02	26/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
01	03/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
00	26/07/2024	MPR	GBA	ATR	ISSUE FOR COMMENT (IFC)

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Chiuduno (BG) - 24060 - ITALY
Phone : +39-035-68.44.14 - Fax : +39-035-68.78.23
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CROSSWIND
ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
DAVIT CRANE WIRING DIAGRAM
HOISTING VFD CONNECTIONS

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

SCALE : NTS

A3

DRAWING NO. 1724001010-MAC-DG-00012

SHEET 50

REV. 03

File Name : 24-27012-WD-001 Rev. 03

F.to UNI A3: 420mmx297mm

NO MARK UP
AS COMMISSIONED: MATCHA GIRZI
20/5/25

50 L1 — L1 56
50 L2 — L2 56
50 L3 — L3 56
50 PE — PE 56

[L1] [L2] [L3]
2,5 mm² BK + GN/YE
52Q1
16A
[52-1] [52-2] [52-3]
2,5 mm² BK + GN/YE

50 24V-1
50 0V-1
52Q2
2A
[52-7]
.1 mm² BL
24V-1 52
0V-1 52

50 CAN_L — CAN_L 60
50 CAN_H — CAN_H 60
50 CAN_GND — CAN_GND 60
[CAN_L] [CAN_H] [CAN_GND]

52D1
L1 L2/N L3
OPT-A1: 1 +10V, 2 AI1+, GND/AI1-, 3, 4 AI2+, GND/AI2-, 5, 6 24V OUT, 7 GND, 8 DIN1, 9 DIN2, 10 DIN3, 11 CMA, 12 24V OUT, 13 GND, 14 DIN4, 15 DIN5, 16 DIN6, 17 CMB, 18 AO1, 19 AO2, 20 DO1
OPT-E6: 21 CAN_L, 22 CAN_H, 23 CAN_GND

U/T1 V/T2 W/T3
B- B+/R+ R-
OPT-AF: SD1+, SD1-, SD2+, SD2-
RO1/1 RO1/2 RO1/3 RO2/2 RO2/3 TI1+ TI1-
OPT-A5: DIC1A+, DIC1A-, DIC2B+, DIC2B-, DIC3Z+, DIC3Z-, ENC1Q, DIC4, GND, +15V/+24V
OPT-B5: 22 23 25 26 28 29

[52-4] [52-5] [52-6] [52-8] [52-9] [52-11] [52-13] [52-16] [52-17] [52-14] [52-15]

KA13
62.4
[52-16] → 50

KM11 62.3
KM12 62.3
52KM2 — [52-10] — 52
52KM1 — [52-12] — 52
52KM1 A1/A2
52KM2 A1/A2
9 X01, 10 X01, 11 X01, 12 X01
52KM3 A1/A2
52KM4 A1/A2

52 24V-1
52 0V-1

54 52 / 54 52 / 54 52
52PCT1 54
52PCT2 54
52PCT3 54
52PCT4 54
56 56 56 / 56 56 56

52L1 54
52L2 54
52L3 54
52GND 54

[Ma] [Bl] [G/V] C01:0001-0016 3G2,5mm²
52R1
63 Ohm
1 2 PE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
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01	03/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
00	26/07/2024	MPR	GBA	ATR	ISSUE FOR COMMENT (IFC)

REMAZEL ENGINEERING
Chiuduno (BG) - 24060 - ITALY
Phone : +39-035-68.44.14 - Fax : +39-035-68.78.23
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CROSSWIND
ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
DAVIT CRANE WIRING DIAGRAM
ROTATION AND TROLLEY VFD CONNECTIONS

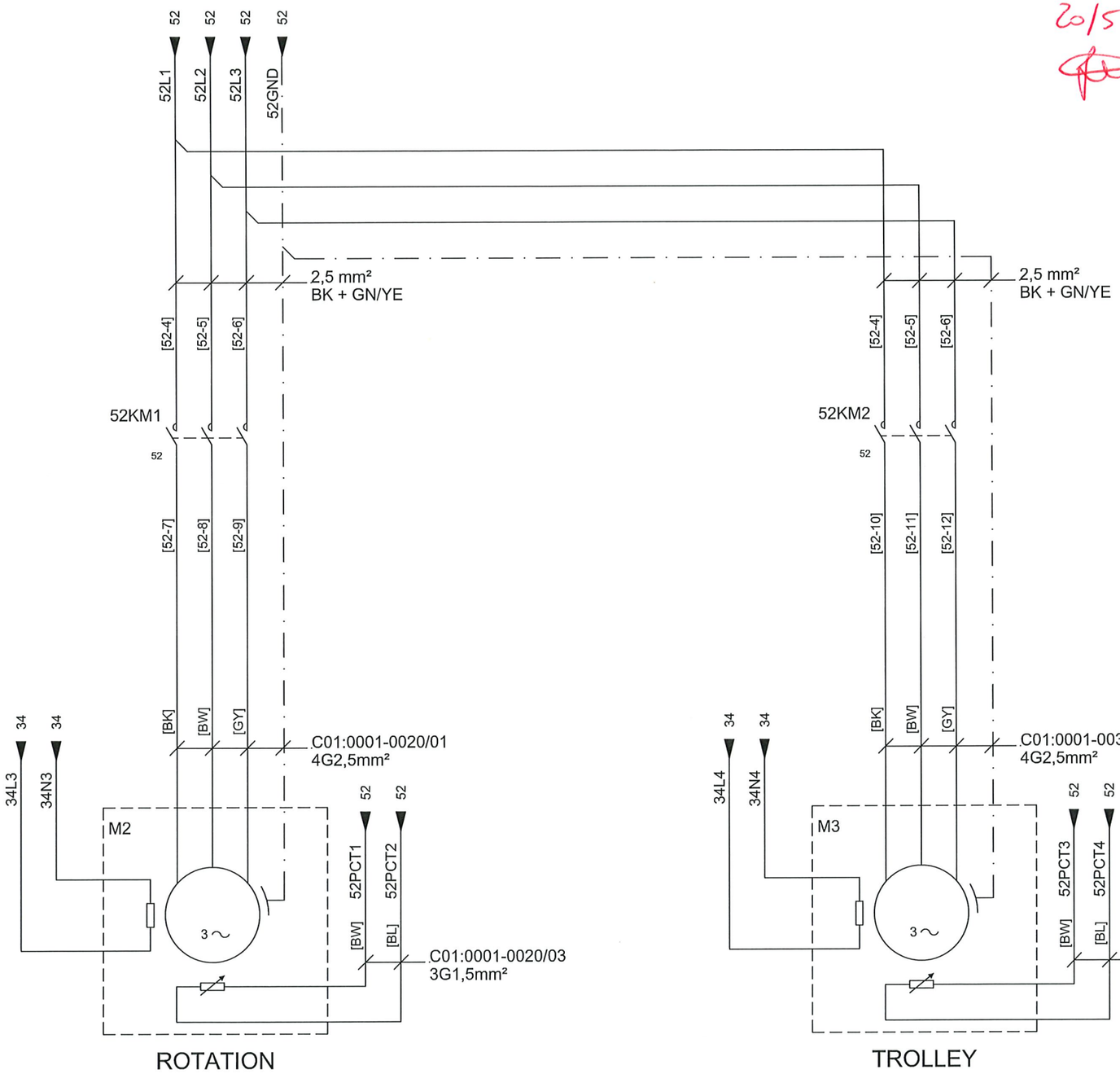
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE : NTS
A3
DRAWING NO. 1724001010-MAC-DG-00012
SHEET 52
REV. 03

File Name : 24-27012-WD-001 Rev. 03

F.to UNI A3: 420mmx297mm

NO MARK UP

AS COMMISSIONED: MATWA GIBTL
20/5/25



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	22/10/2024	MPR	GBA	ATR	ACCEPTED FOR CONSTRUCTION (AFC)
02	26/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
01	03/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
00	26/07/2024	MPR	GBA	ATR	ISSUE FOR COMMENT (IFC)

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Chiuduno (BG) - 24060 - ITALY
Phone : +39-035-68.44.14 - Fax : +39-035-68.78.23
e-mail : info@remazel.com / website : www.remazel.com

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
DAVIT CRANE WIRING DIAGRAM
ROTATION AND TROLLEY MOTORS

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

SCALE : NTS

A3

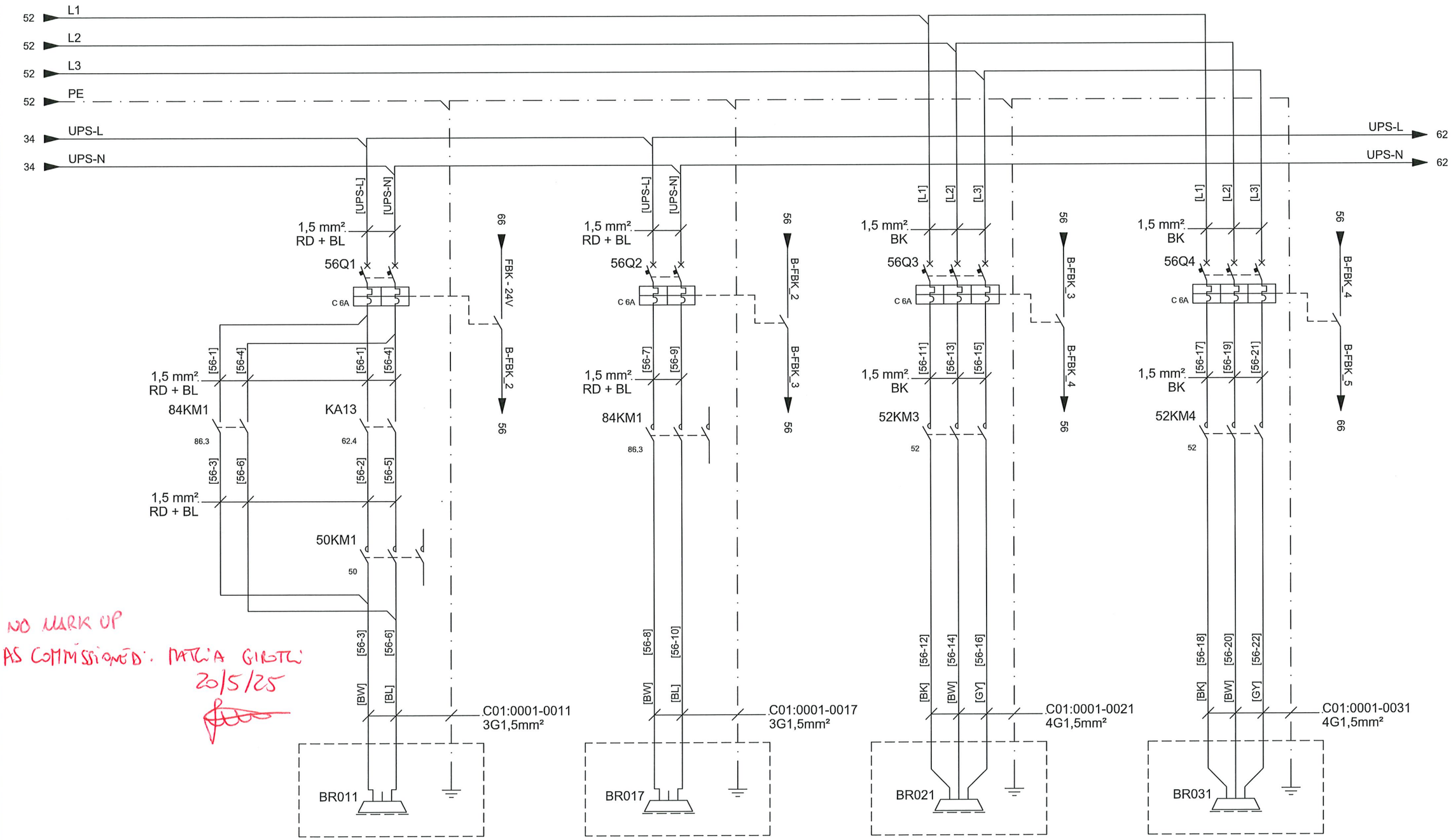
DRAWING NO. 1724001010-MAC-DG-00012

SHEET 54

REV. 03

File Name : 24-27012-WD-001 Rev. 03

F.to UNI A3: 420mmx297mm



NO MARK UP
AS COMMISSIONED: PATRIA GIOTTI
20/5/25

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Chiuduno (BG) - 24060 - ITALY
Phone : +39-035-68.44.14 - Fax : +39-035-68.78.23
e-mail : info@remazel.com / website : www.remazel.com

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	22/10/2024	MPR	GBA	ATR	ACCEPTED FOR CONSTRUCTION (AFC)
02	26/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
01	03/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
00	26/07/2024	MPR	GBA	ATR	ISSUE FOR COMMENT (IFC)

TITLE : BASE LOAD POWER HUB (BLPH)
DAVIT CRANE WIRING DIAGRAM
MOTOR BRAKES

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

SCALE : NTS

A3

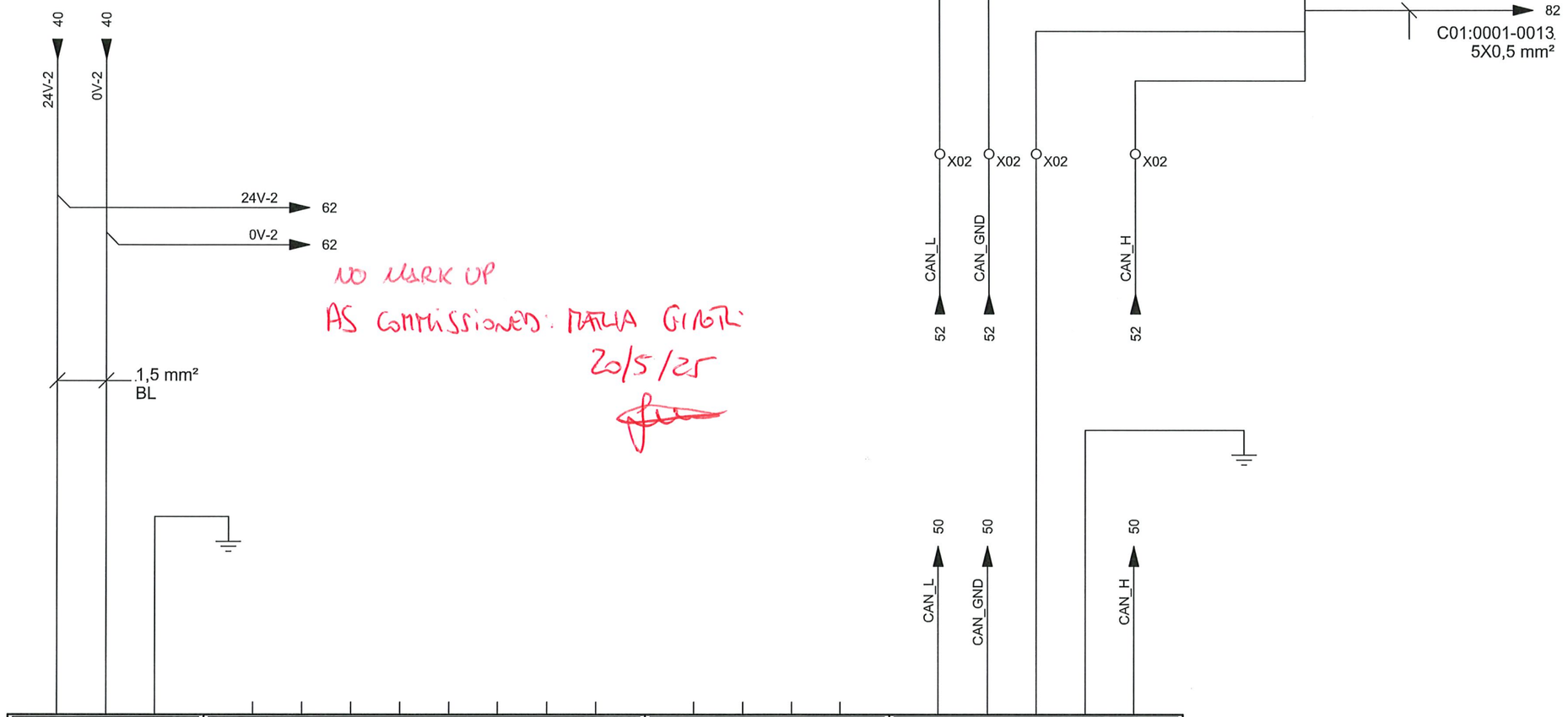
DRAWING NO. 1724001010-MAC-DG-00012

SHEET 56

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 24-27012-WD-001 Rev. 03



NO MARK UP
AS COMMISSIONED: MATTIA GIACCI
20/5/25

CPU

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e-mail : info@remazel.com / website : www.remazel.com

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	22/10/2024	MPR	GBA	ATR	ACCEPTED FOR CONSTRUCTION (AFC)
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01	03/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
00	26/07/2024	MPR	GBA	ATR	ISSUE FOR COMMENT (IFC)

TITLE : BASE LOAD POWER HUB (BLPH)
DAVIT CRANE WIRING DIAGRAM
CPU

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

SCALE : NTS

A3

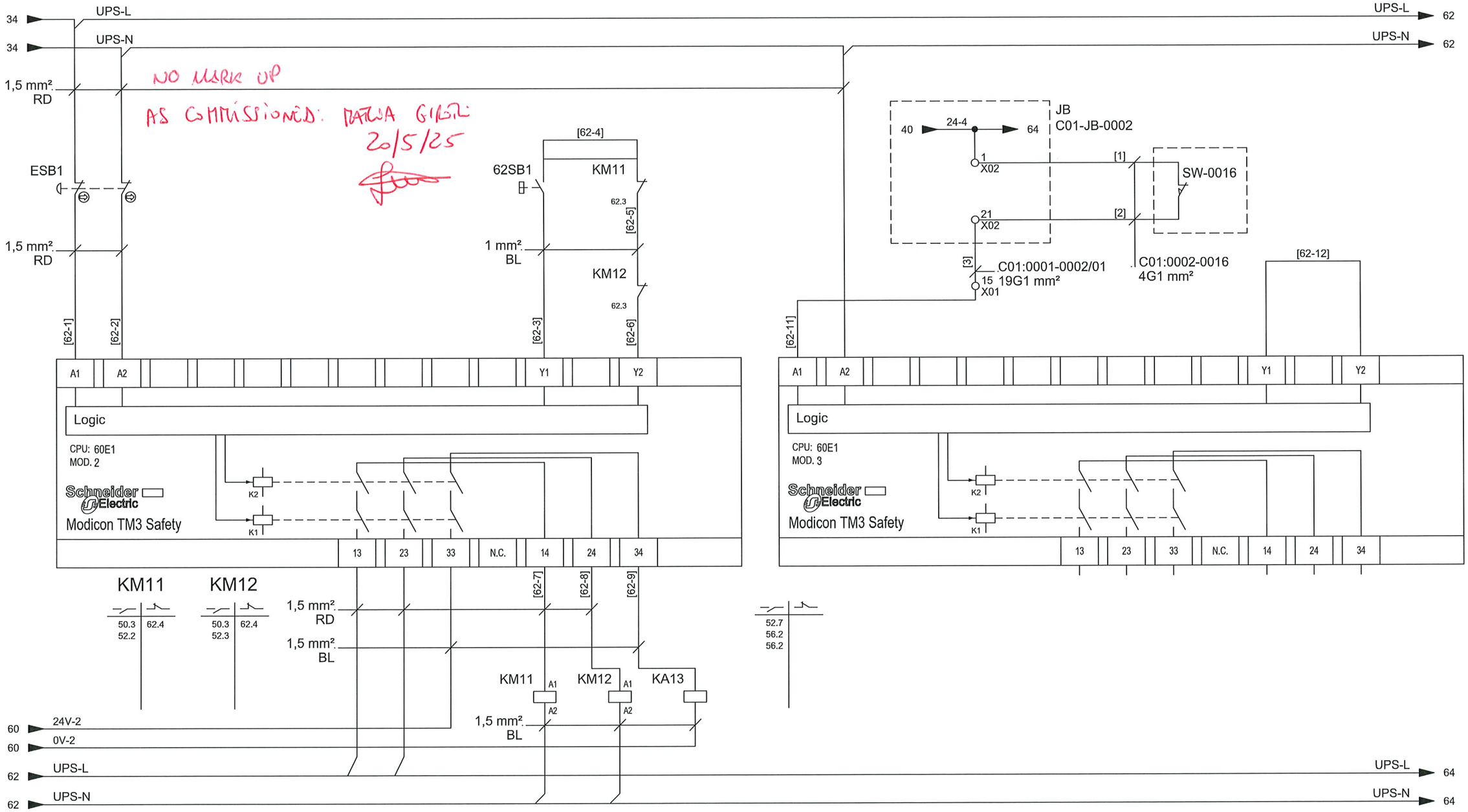
DRAWING NO. 1724001010-MAC-DG-00012

SHEET 60

REV. 03

File Name : 24-27012-WD-001 Rev. 03

F.to UNI A3: 420mmx297mm



EESD

PAYOUT LIMIT

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	22/10/2024	MPR	GBA	ATR	ACCEPTED FOR CONSTRUCTION (AFC)
02	26/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
01	03/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
00	26/07/2024	MPR	GBA	ATR	ISSUE FOR COMMENT (IFC)

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Chiuduno (BG) - 24060 - ITALY
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e-mail : info@remazel.com / website : www.remazel.com
CROSSWIND
ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
DAVIT CRANE WIRING DIAGRAM
SAFETY MODULES

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

SCALE : NTS

A3

DRAWING NO. 1724001010-MAC-DG-00012

SHEET 62

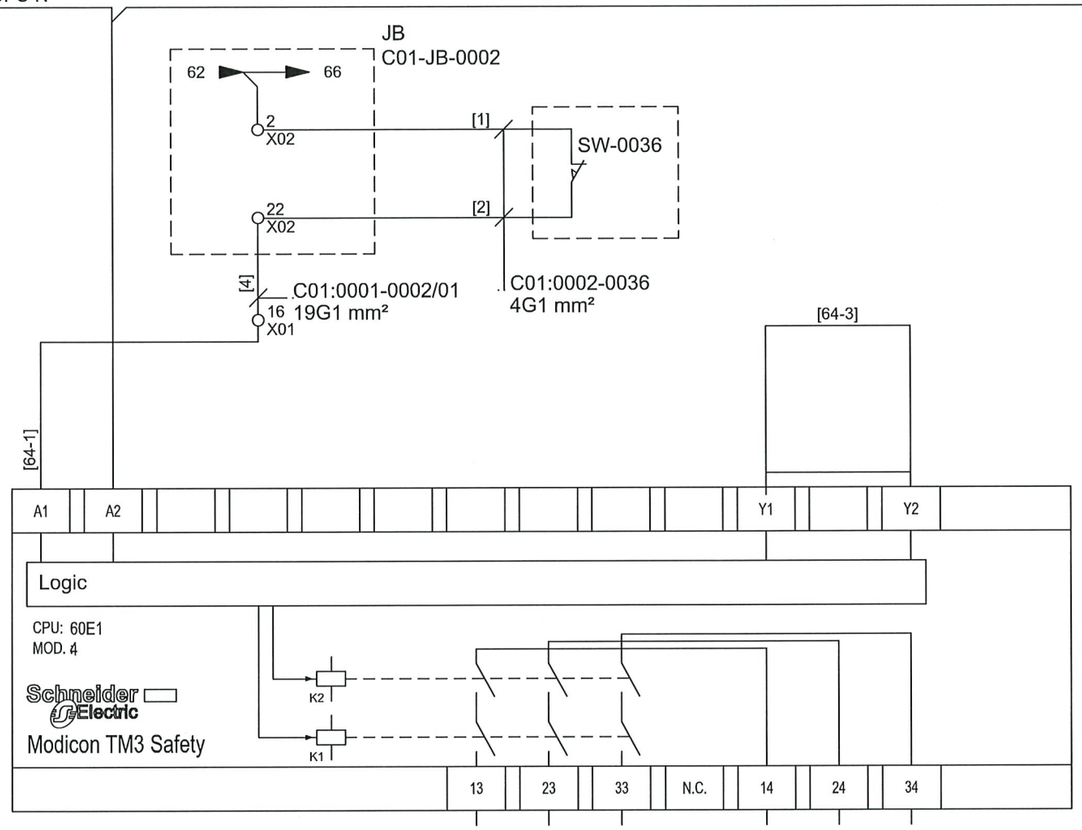
REV. 03

File Name : 24-27012-WD-001 Rev. 03

F.to UNI A3: 420mmx297mm

62 UPS-L → 64 UPS-L

62 UPS-N → 64 UPS-N



NO MARK UP
AS COMMISSIONED: MATHIA GIROTTI
20/5/25

64 UPS-L → 86 UPS-L

64 UPS-N → 86 UPS-N

A2B

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	22/10/2024	MPR	GBA	ATR	ACCEPTED FOR CONSTRUCTION (AFC)
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REMAZEL ENGINEERING
Chiuduno (BG) - 24060 - ITALY
Phone : +39-035-68.44.14 - Fax : +39-035-68.78.23
e-mail : info@remazel.com / website : www.remazel.com

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
DAVIT CRANE WIRING DIAGRAM
SAFETY MODULES

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

SCALE : NTS

A3

DRAWING NO. 1724001010-MAC-DG-00012

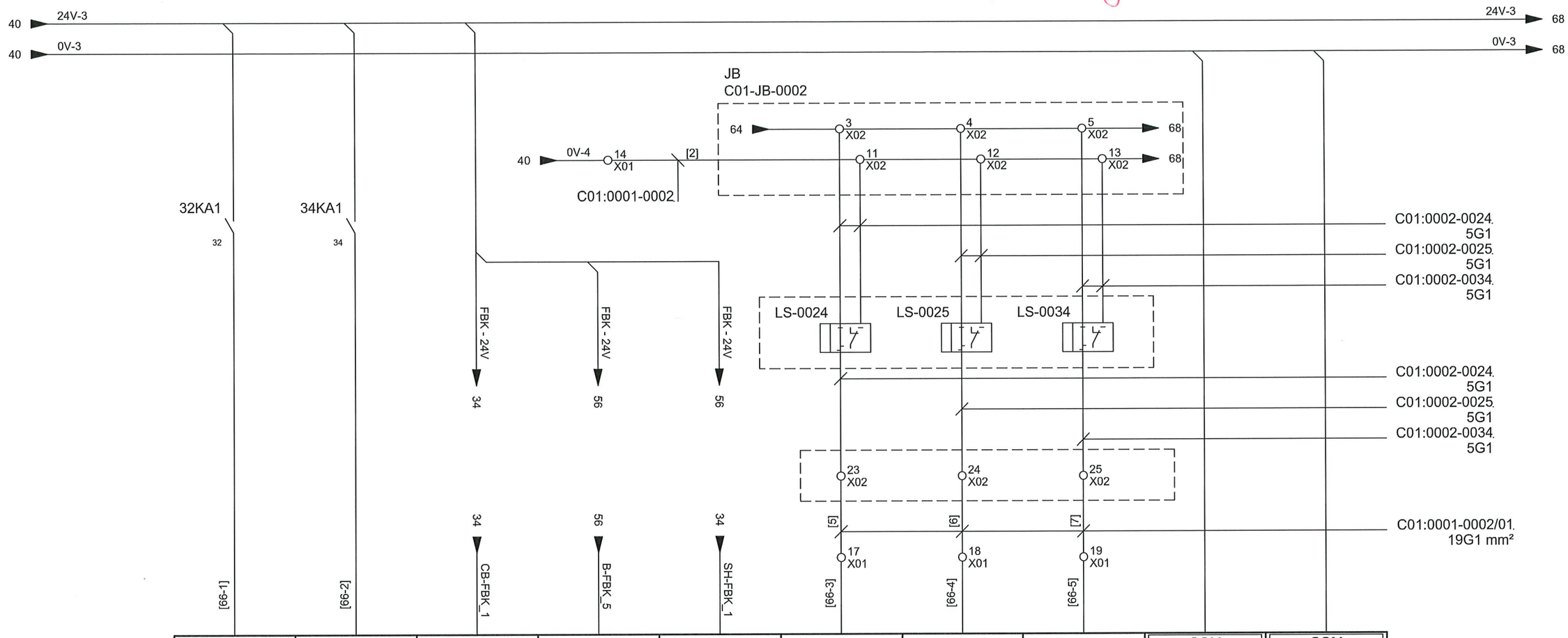
SHEET 64

REV. 03

File Name : 24-27012-WD-001 Rev. 03

F.to UNI A3: 420mmx297mm

NO MARK UP
AS COMMISSIONED: MATIA GIRON 20/5/25



0	1	2	3	4	5	6	7	COM	COM
CPU: 60E1 MOD. 5	CPU: 60E1 MOD. 5	CPU: 60E1 MOD. 5	CPU: 60E1 MOD. 5	CPU: 60E1 MOD. 5	CPU: 60E1 MOD. 5	CPU: 60E1 MOD. 5	CPU: 60E1 MOD. 5	CPU: 60E1 MOD. 5	CPU: 60E1 MOD. 5
Name: / Sheet:	Name: / Sheet:	Name: / Sheet:	Name: / Sheet:	Name: / Sheet:	Name: / Sheet:	Name: / Sheet:	Name: / Sheet:	Name: / Sheet:	Name: / Sheet:
400Vac OK	UPS STATUS OK	CB FEEDBACK	BRAKE CB FEEDBACK	STANDSTILL HEATERS FEEDBACK	LIMIT SWITCH ROTATION CW	LIMIT SWITCH ROTATION CCW	LIMIT SWITCH TROLLEY TRAVELING FORWARD		

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Chiuduno (BG) - 24060 - ITALY
Phone : +39-035-68.44.14 - Fax : +39-035-68.78.23
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CROSSWIND
ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	22/10/2024	MPR	GBA	ATR	ACCEPTED FOR CONSTRUCTION (AFC)
02	26/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
01	03/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
00	26/07/2024	MPR	GBA	ATR	ISSUE FOR COMMENT (IFC)

TITLE : BASE LOAD POWER HUB (BLPH)
DAVIT CRANE WIRING DIAGRAM
DIGITAL INPUT

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

SCALE : NTS

A3

DRAWING NO. 1724001010-MAC-DG-00012

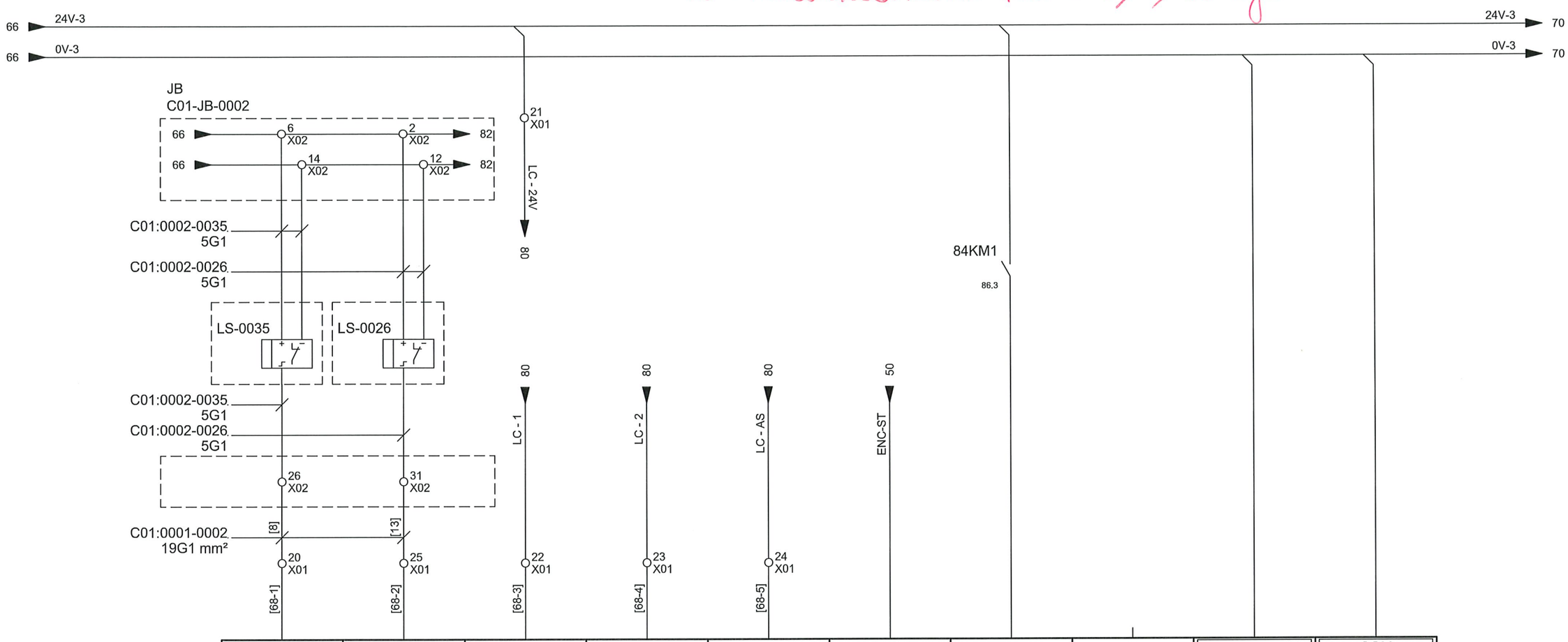
SHEET 66

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 24-27012-WD-001 Rev. 03

NO MARK UP
AS COMMISSIONED: MATIA GIROTTI 20/5/25



8	9	10	11	12	13	14	15	COM	COM
CPU: 60E1 MOD. 5	CPU: 60E1 MOD. 5	CPU: 60E1 MOD. 5	CPU: 60E1 MOD. 5	CPU: 60E1 MOD. 5	CPU: 60E1 MOD. 5	CPU: 60E1 MOD. 5	CPU: 60E1 MOD. 5	CPU: 60E1 MOD. 5	CPU: 60E1 MOD. 5
Name: Sheet:	Name: Sheet:	Name: Sheet:	Name: Sheet:	Name: Sheet:	Name: Sheet:	Name: Sheet:	Name: Sheet:	Name: Sheet:	Name: Sheet:
LIMIT SWITCH TROLLEY TRAVELING BACKWARD	LIMIT SWITCH BLOCK PIN	OVERLOAD 1st LIMIT	OVERLOAD 2nd LIMIT	ANTISLACK	HOISTING ENCODER STATUS	MOPS ACTIVE	SPARE		

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Chiuduno (BG) - 24060 - ITALY
Phone : +39-035-68.44.14 - Fax : +39-035-68.78.23
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ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	22/10/2024	MPR	GBA	ATR	ACCEPTED FOR CONSTRUCTION (AFC)
02	26/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
01	03/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
00	26/07/2024	MPR	GBA	ATR	ISSUE FOR COMMENT (IFC)

TITLE : BASE LOAD POWER HUB (BLPH)
DAVIT CRANE WIRING DIAGRAM
DIGITAL INPUT

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

SCALE : NTS

A3

DRAWING NO. 1724001010-MAC-DG-00012

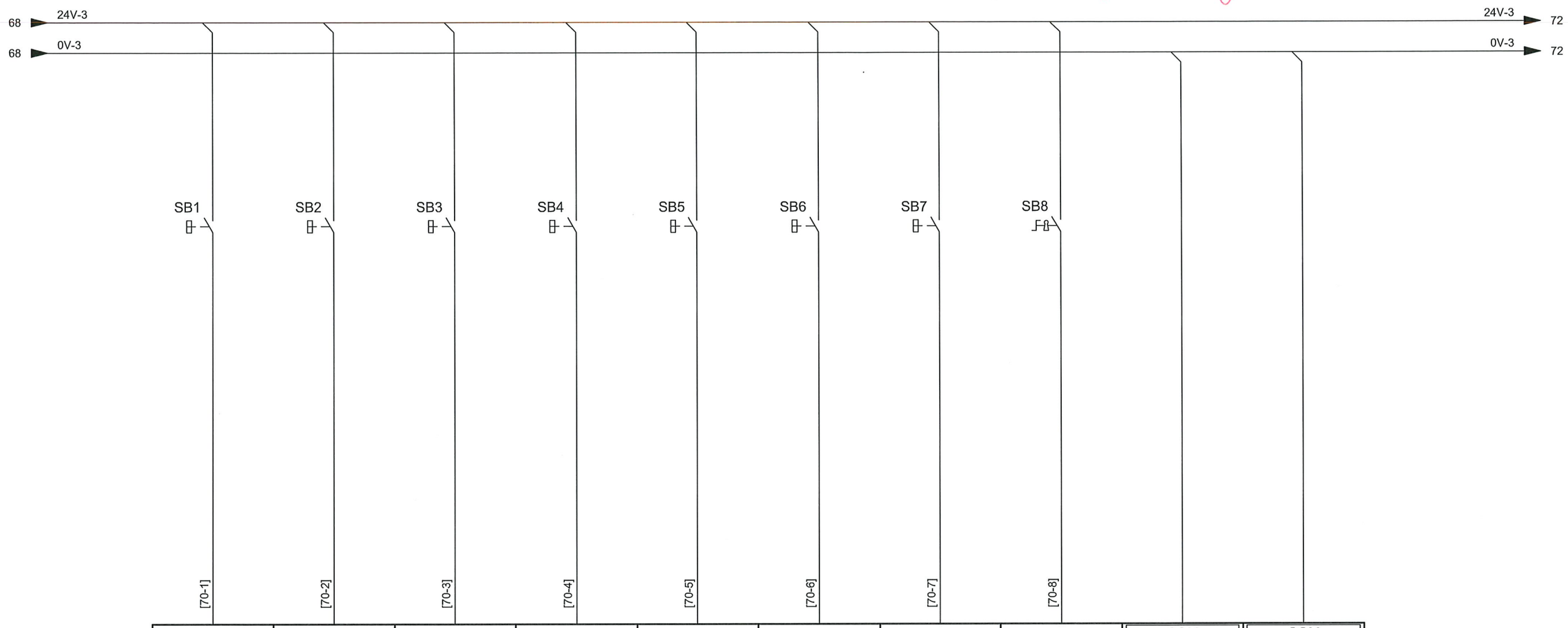
SHEET 68

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 24-27012-WD-001 Rev. 03

NO MARK UP
AS COMMISSIONED: MARIA GIROTTI 20/5/25



0	1	2	3	4	5	6	7	COM	COM
CPU: 60E1 MOD. 6	CPU: 60E1 MOD. 6	CPU: 60E1 MOD. 6	CPU: 60E1 MOD. 6	CPU: 60E1 MOD. 6	CPU: 60E1 MOD. 6	CPU: 60E1 MOD. 6	CPU: 60E1 MOD. 6	CPU: 60E1 MOD. 6	CPU: 60E1 MOD. 6
Name: Sheet:	Name: Sheet:	Name: Sheet:	Name: Sheet:	Name: Sheet:	Name: Sheet:	Name: Sheet:	Name: Sheet:	Name: Sheet:	Name: Sheet:
ROTATION CW PUSH BUTTON	ROTATION CCW PUSH BUTTON	TROLLEY TRAVELING FORWARD PUSH BUTTON	TROLLEY TRAVELING BACKWARD PUSH BUTTON	HOISTING UP PUSH BUTTON	HOISTING DOWN PUSH BUTTON	SECOND SPEED PUSH BUTTON	OVERLOAD BYPASS		

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Chiuduno (BG) - 24060 - ITALY
Phone : +39-035-68.44.14 - Fax : +39-035-68.78.23
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CROSSWIND
ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	22/10/2024	MPR	GBA	ATR	ACCEPTED FOR CONSTRUCTION (AFC)
02	26/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
01	03/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
00	26/07/2024	MPR	GBA	ATR	ISSUE FOR COMMENT (IFC)

TITLE : BASE LOAD POWER HUB (BLPH)
DAVIT CRANE WIRING DIAGRAM
DIGITAL INPUT

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

A3 | DRAWING NO. 1724001010-MAC-DG-00012 | SHEET 70 | REV. 03

F.to UNI A3: 420mmx297mm

File Name : 24-27012-WD-001 Rev. 03

70 24V-3 → 74 24V-3

70 0V-3 → 74 0V-3

NO MARK UP

AS COMMISSIONED: MATIA GIROTTI.

20/5/25

8	9	10	11	12	13	14	15	COM	COM
CPU: 60E1 MOD. 6	CPU: 60E1 MOD. 6	CPU: 60E1 MOD. 6	CPU: 60E1 MOD. 6	CPU: 60E1 MOD. 6	CPU: 60E1 MOD. 6	CPU: 60E1 MOD. 6	CPU: 60E1 MOD. 6	CPU: 60E1 MOD. 6	CPU: 60E1 MOD. 6
Name: Sheet:	Name: Sheet:	Name: Sheet:	Name: Sheet:	Name: Sheet:	Name: Sheet:	Name: Sheet:	Name: Sheet:	Name: Sheet:	Name: Sheet:
SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE		

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Chiuduno (BG) - 24060 - ITALY
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CROSSWIND
ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	22/10/2024	MPR	GBA	ATR	ACCEPTED FOR CONSTRUCTION (AFC)
02	26/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
01	03/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
00	26/07/2024	MPR	GBA	ATR	ISSUE FOR COMMENT (IFC)

TITLE : BASE LOAD POWER HUB (BLPH)
DAVIT CRANE WIRING DIAGRAM
DIGITAL INPUT

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

SCALE : NTS

A3 | DRAWING NO. 1724001010-MAC-DG-00012 | SHEET 72 | REV. 03

F.to UNI A3: 420mmx297mm

File Name : 24-27012-WD-001 Rev. 03

HORN COMAND		HORN STAGE 2		HORN STAGE 3		STANDSTILL HEATERS		RESET REQUEST		PIN ENGAGED		ALARM		OVERLOAD WARNING					
Name:	Sheet:	Name:	Sheet:	Name:	Sheet:	Name:	Sheet:	Name:	Sheet:	Name:	Sheet:	Name:	Sheet:	Name:	Sheet:	Name:	Sheet:	Name:	Sheet:
CPU: 60E1 MOD. 7		CPU: 60E1 MOD. 7		CPU: 60E1 MOD. 7		CPU: 60E1 MOD. 7		CPU: 60E1 MOD. 7		CPU: 60E1 MOD. 7		CPU: 60E1 MOD. 7		CPU: 60E1 MOD. 7		CPU: 60E1 MOD. 7		CPU: 60E1 MOD. 7	
0		1		2		3		4		5		6		7		COM0		COM0	

NO MARK UP
AS COMMISSIONED: MATA GIKEN
20/5/25

HAL1
ALM1
ALM2
ALM3
SIRENA
SE 120 LED
+
-
COM

34
34
34
74KM1

62SB1
BLUE

74SB2
ORANGE

74SB3
RED

74SB4
ORANGE

72 24V-3
72 0V-3

24V-3 76
0V-3 76

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Chiuduno (BG) - 24060 - ITALY
Phone : +39-035-68.44.14 - Fax : +39-035-68.78.23
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CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	22/10/2024	MPR	GBA	ATR	ACCEPTED FOR CONSTRUCTION (AFC)
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01	03/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
00	26/07/2024	MPR	GBA	ATR	ISSUE FOR COMMENT (IFC)

TITLE : BASE LOAD POWER HUB (BLPH)
DAVIT CRANE WIRING DIAGRAM
DIGITAL OUTPUT

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

SCALE : NTS

A3

DRAWING NO. 1724001010-MAC-DG-00012

SHEET 74

REV. 03

File Name : 24-27012-WD-001 Rev. 03

F.to UNI A3: 420mmx297mm

AOPS ACTIVATED		MOPS ACTIVATED		3.5 tonn LOAD LIMIT		1 tonn LOAD LIMIT		WARNING		SPARE		SPARE		SPARE					
Name:	Sheet:	Name:	Sheet:	Name:	Sheet:	Name:	Sheet:	Name:	Sheet:	Name:	Sheet:	Name:	Sheet:	Name:	Sheet:	Name:	Sheet:	Name:	Sheet:
CPU: 60E1 MOD. 7		CPU: 60E1 MOD. 7		CPU: 60E1 MOD. 7		CPU: 60E1 MOD. 7		CPU: 60E1 MOD. 7		CPU: 60E1 MOD. 7		CPU: 60E1 MOD. 7		CPU: 60E1 MOD. 7		CPU: 60E1 MOD. 7			
8		9		10		11		12		13		14		15		COM1		COM1	

76SB1 YELLOW

76SB2 YELLOW

76SB3 YELLOW

76SB4 YELLOW

76SB5 YELLOW

74 24V-3

74 0V-3

24V-3 78

0V-3 78

NO MARK UP

AS COMMISSIONED: MATCH

GIRT.

20/5/25

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CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	22/10/2024	MPR	GBA	ATR	ACCEPTED FOR CONSTRUCTION (AFC)
02	26/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
01	03/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
00	26/07/2024	MPR	GBA	ATR	ISSUE FOR COMMENT (IFC)

TITLE : BASE LOAD POWER HUB (BLPH)
DAVIT CRANE WIRING DIAGRAM
DIGITAL OUTPUT

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

SCALE : NTS

A3

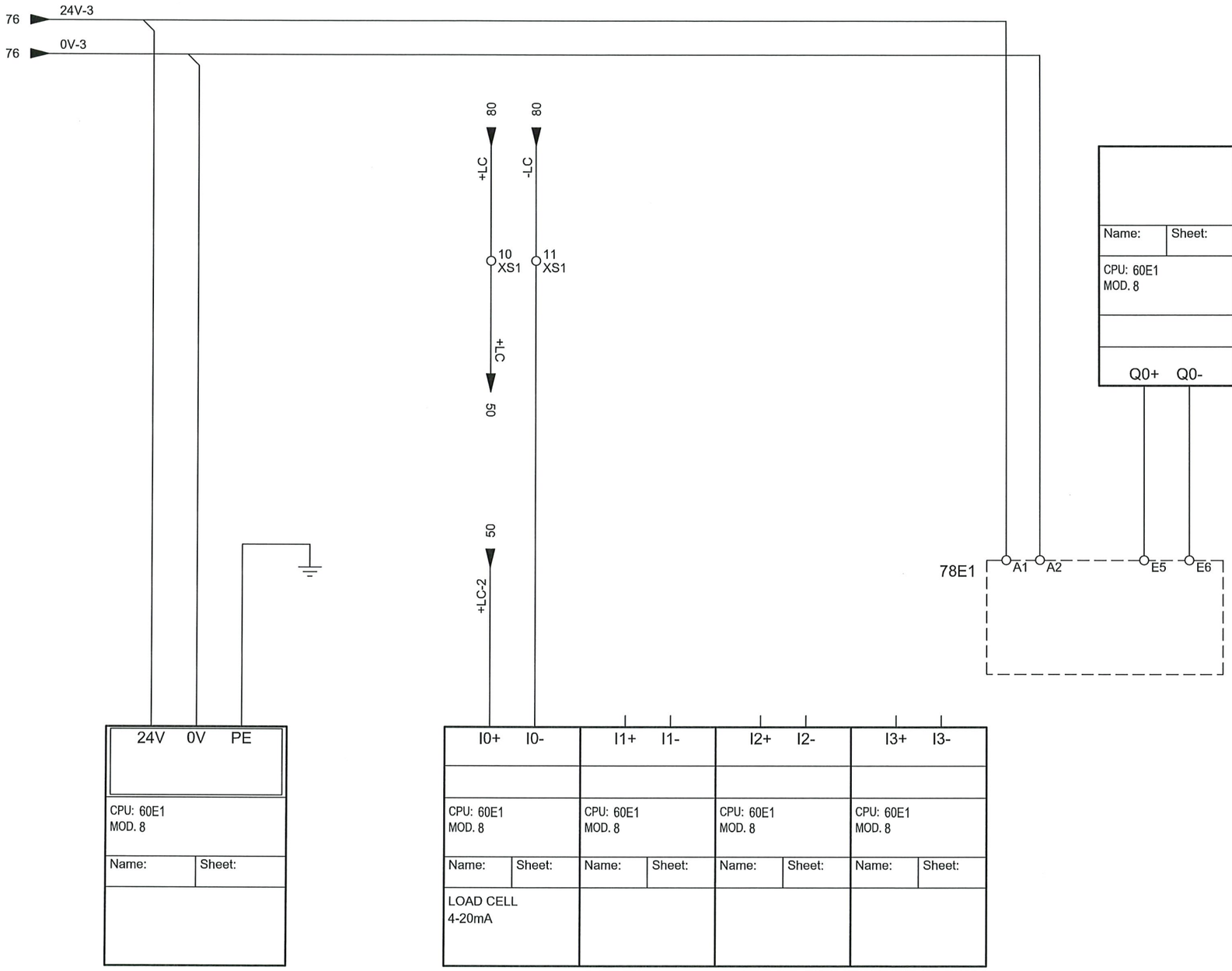
DRAWING NO. 1724001010-MAC-DG-00012

SHEET 76

REV. 03

File Name : 24-27012-WD-001 Rev. 03

F.to UNI A3: 420mmx297mm



NO MARK UP

AS COMMISSIONED: MS TM I A

GIRO TM.

20/5/25

03	22/10/2024	MPR	GBA	ATR	ACCEPTED FOR CONSTRUCTION (AFC)
02	26/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
01	03/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
00	26/07/2024	MPR	GBA	ATR	ISSUE FOR COMMENT (IFC)
REV.	DATE	DRN	CHKD	APPD	DESCRIPTION

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Chiuduno (BG) - 24060 - ITALY
Phone : +39-035-68.44.14 - Fax : +39-035-68.78.23
e-mail : info@remazel.com / website : www.remazel.com
CROSSWIND
ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
DAVIT CRANE WIRING DIAGRAM
ANALOG INPUT AND OUTPUT

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

SCALE : NTS

A3

DRAWING NO. 1724001010-MAC-DG-00012

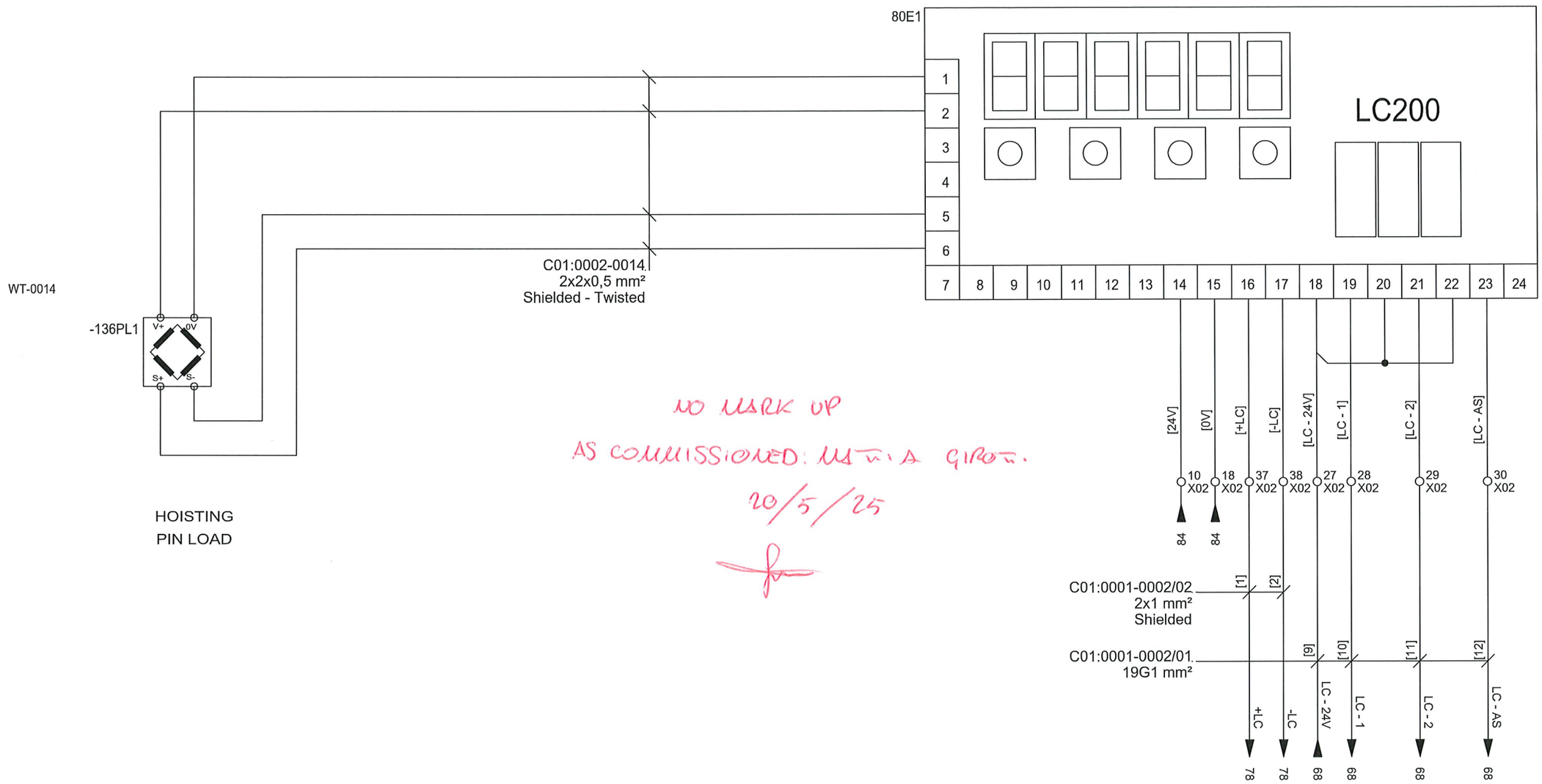
SHEET 78

REV. 03

File Name : 24-27012-WD-001 Rev. 03

F.to UNI A3: 420mmx297mm

LOAD CELL AMPLIFIER



NO MARK UP
AS COMMISSIONED: MUTUA GIROT.
20/5/25

HOISTING
PIN LOAD

LOAD CELL

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Chiuduno (BG) - 24060 - ITALY
Phone : +39-035-68.44.14 - Fax : +39-035-68.78.23
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CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	22/10/2024	MPR	GBA	ATR	ACCEPTED FOR CONSTRUCTION (AFC)
02	26/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
01	03/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
00	26/07/2024	MPR	GBA	ATR	ISSUE FOR COMMENT (IFC)

TITLE : BASE LOAD POWER HUB (BLPH)
DAVIT CRANE WIRING DIAGRAM
LOAD CELL

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

SCALE : NTS

A3

DRAWING NO. 1724001010-MAC-DG-00012

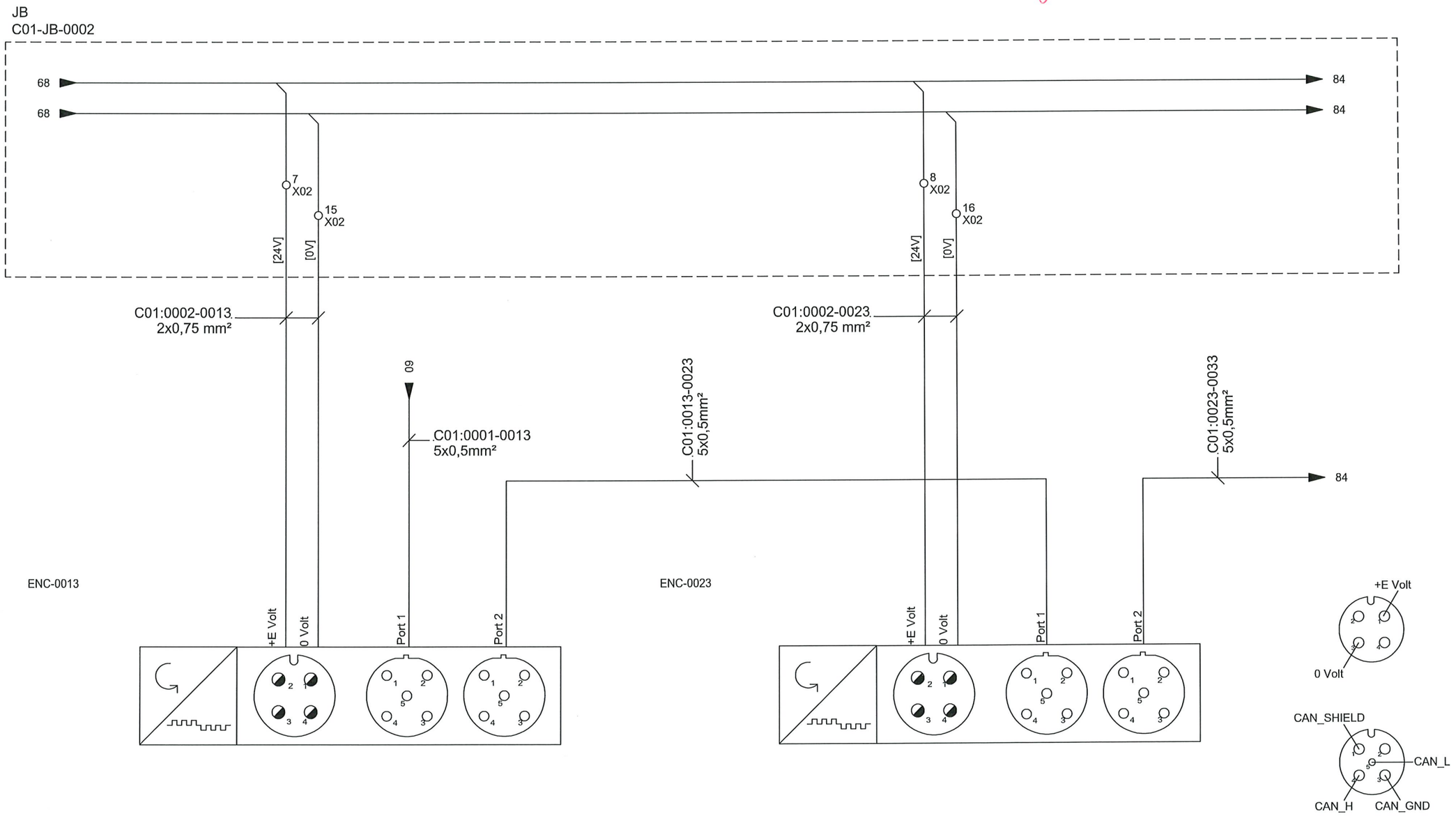
SHEET 80

REV. 03

File Name : 24-27012-WD-001 Rev. 03

F.to UNI A3: 420mmx297mm

NO MARK UP
AS COMMISSIONED: MATIA GIROTTI
20/5/25



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Chiuduno (BG) - 24060 - ITALY
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e-mail : info@remazel.com / website : www.remazel.com

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ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	22/10/2024	MPR	GBA	ATR	ACCEPTED FOR CONSTRUCTION (AFC)
02	26/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
01	03/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
00	26/07/2024	MPR	GBA	ATR	ISSUE FOR COMMENT (IFC)

TITLE : BASE LOAD POWER HUB (BLPH)
DAVIT CRANE WIRING DIAGRAM
HOISTING AND ROTATION ENCODERS

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

SCALE : NTS

A3

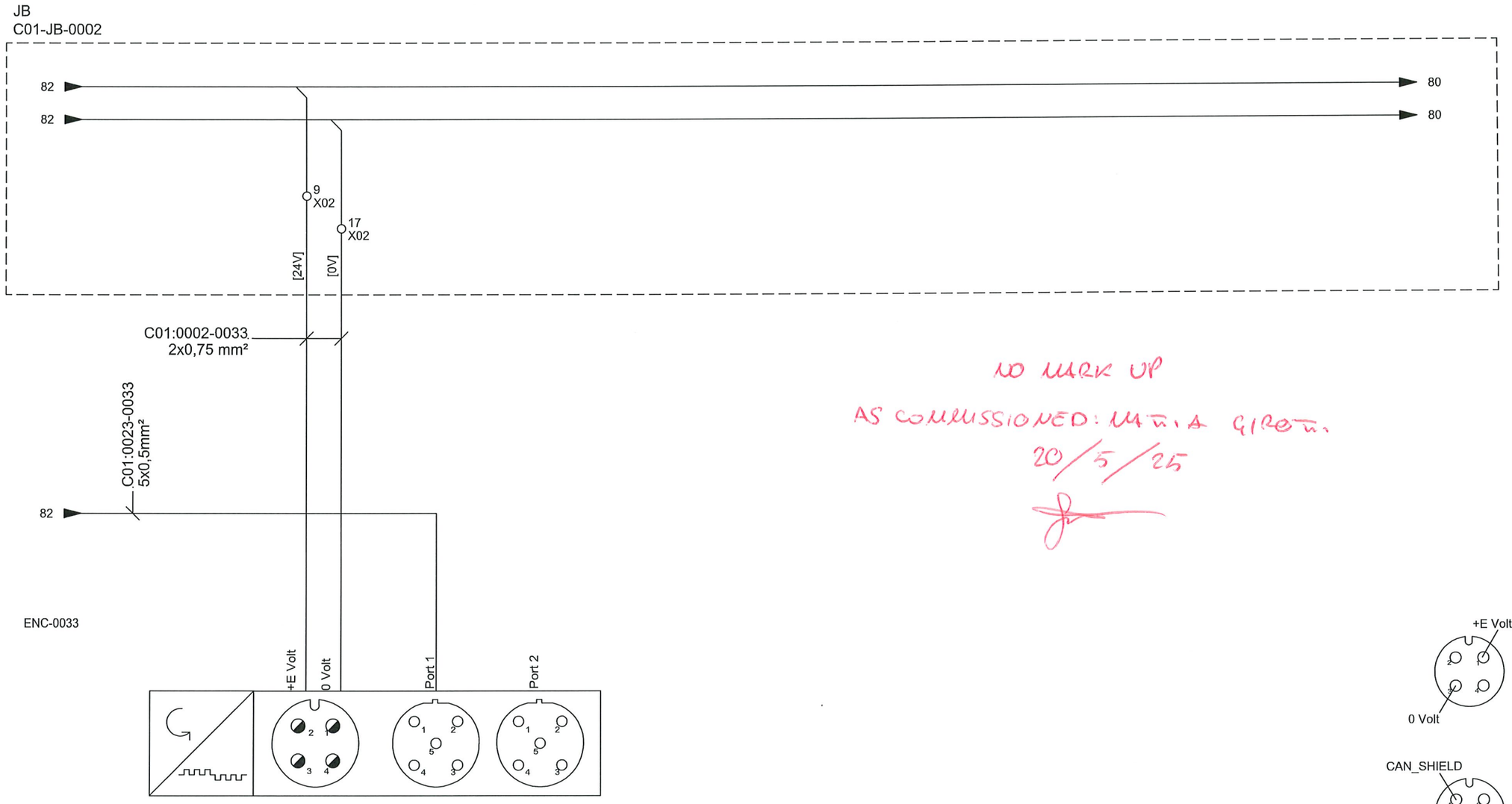
DRAWING NO. 1724001010-MAC-DG-00012

SHEET 82

REV. 03

F.to UNI A3: 420mmx297mm

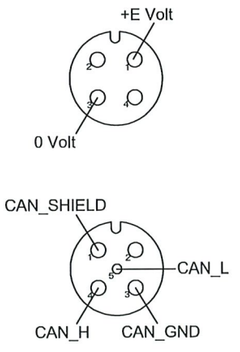
File Name : 24-27012-WD-001 Rev. 03



NO MARK UP

AS COMMISSIONED: MARIA GIROTTI

20/5/25



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Phone : +39-035-68.44.14 - Fax : +39-035-68.78.23
e-mail : info@remazel.com / website : www.remazel.com

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	22/10/2024	MPR	GBA	ATR	ACCEPTED FOR CONSTRUCTION (AFC)
02	26/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
01	03/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
00	26/07/2024	MPR	GBA	ATR	ISSUE FOR COMMENT (IFC)

TITLE : BASE LOAD POWER HUB (BLPH)
DAVIT CRANE WIRING DIAGRAM
TROLLEY ENCODER

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

SCALE : NTS

A3

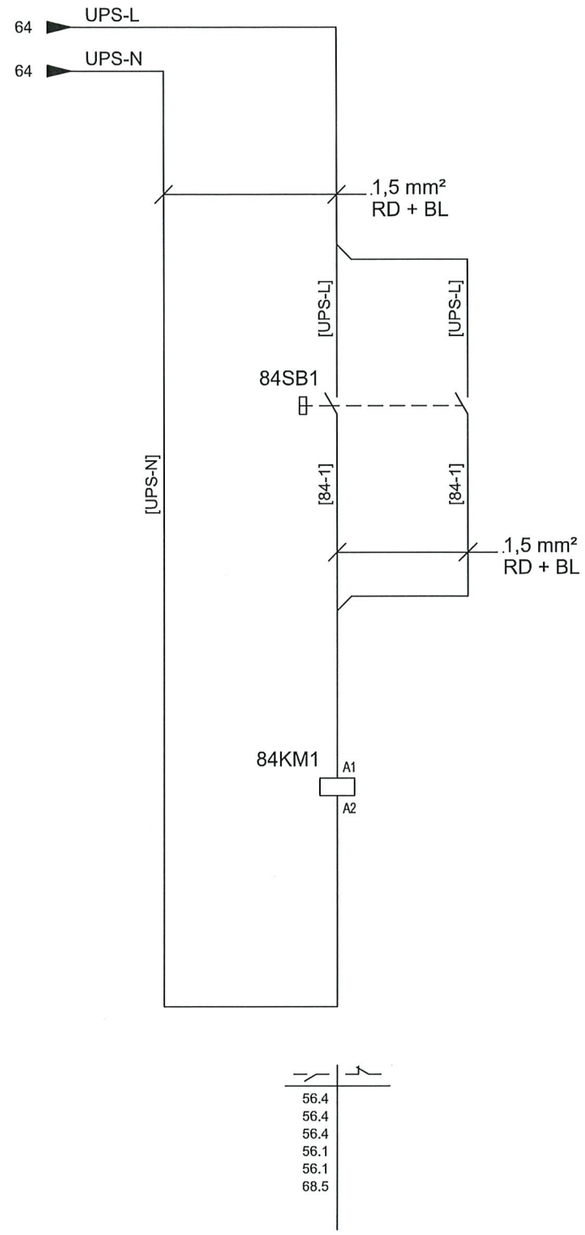
DRAWING NO. 1724001010-MAC-DG-00012

SHEET 84

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 24-27012-WD-001 Rev. 03



NO MARK UP

AS COMMISSIONED: MAS GIROT.

20/5/25

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Chiuduno (BG) - 24060 - ITALY
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e-mail : info@remazel.com / website : www.remazel.com

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	22/10/2024	MPR	GBA	ATR	ACCEPTED FOR CONSTRUCTION (AFC)
02	26/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
01	03/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
00	26/07/2024	MPR	GBA	ATR	ISSUE FOR COMMENT (IFC)

TITLE : BASE LOAD POWER HUB (BLPH)
DAVIT CRANE WIRING DIAGRAM
MOPS COMMAND

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

SCALE : NTS

A3

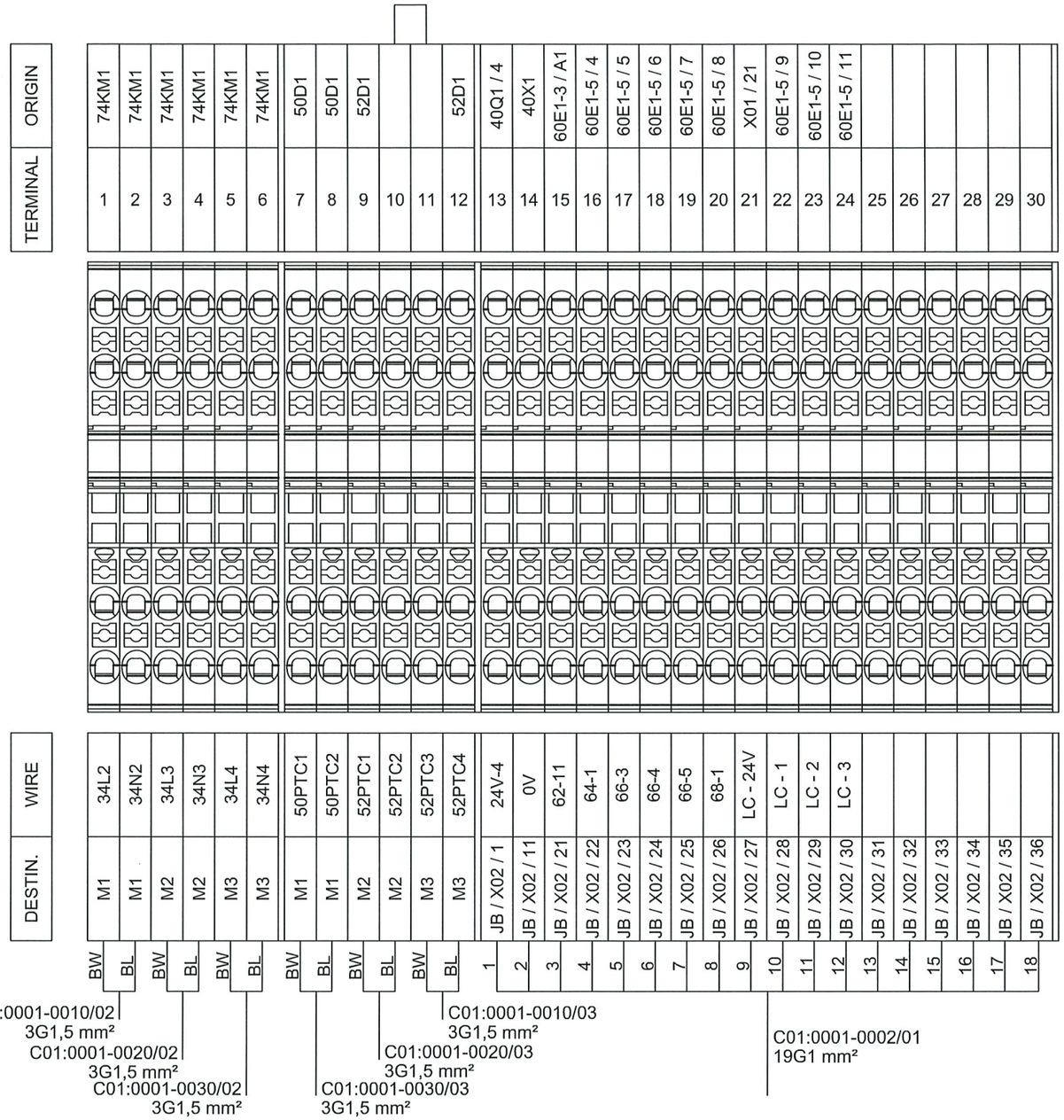
DRAWING NO. 1724001010-MAC-DG-00012

SHEET 86

REV. 03

File Name : 24-27012-WD-001 Rev. 03

F.to UNI A3: 420mmx297mm



NO MARK UP
AS COMMISSIONED: MATRIA GIROTTI
20/5/25

REMAZEL ENGINEERING
Chiuduno (BG) - 24060 - ITALY
Phone : +39-035-68.44.14 - Fax : +39-035-68.78.23
e-mail : info@remazel.com / website : www.remazel.com

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	22/10/2024	MPR	GBA	ATR	ACCEPTED FOR CONSTRUCTION (AFC)
02	26/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
01	03/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
00	26/07/2024	MPR	GBA	ATR	ISSUE FOR COMMENT (IFC)

TITLE : BASE LOAD POWER HUB (BLPH)
DAVIT CRANE WIRING DIAGRAM
TERMINAL STRIP X01

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

SCALE : NTS

A3

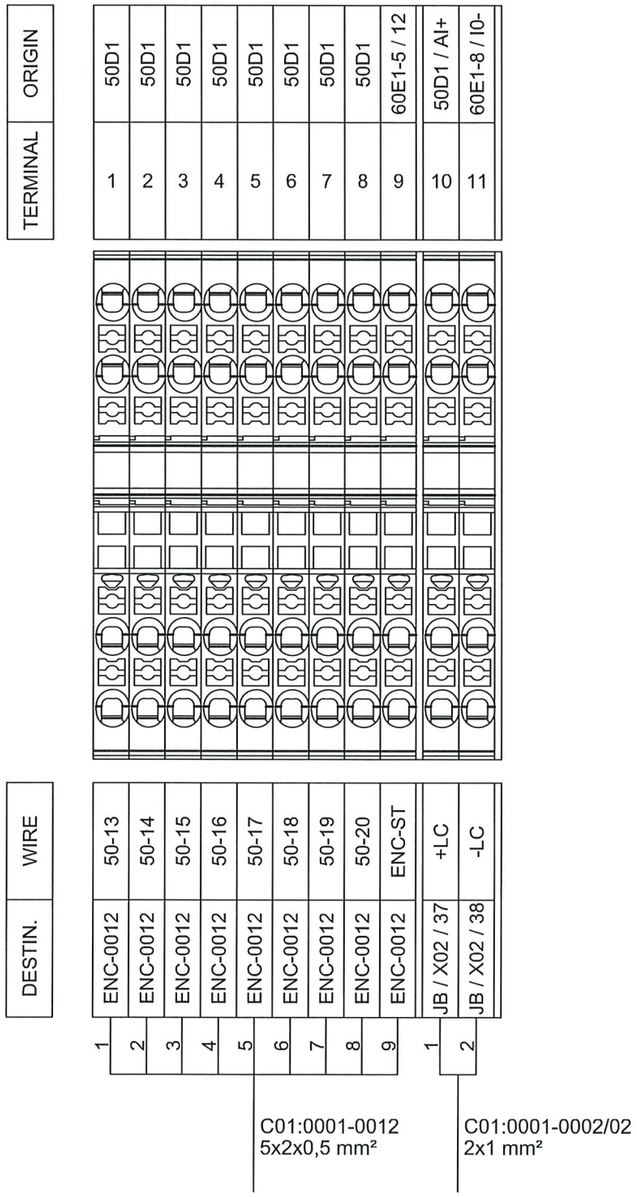
DRAWING NO. 1724001010-MAC-DG-00012

SHEET 90

REV. 03

File Name : 24-27012-WD-001 Rev. 03

F.to UNI A3: 420mmx297mm



NO MARK UP
AS COMMISSIONED: MA.A GIROTTI
20/5/25

REMAZEL ENGINEERING
Chiuduno (BG) - 24060 - ITALY
Phone : +39-035-68.44.14 - Fax : +39-035-68.78.23
e-mail : info@remazel.com / website : www.remazel.com
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ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	22/10/2024	MPR	GBA	ATR	ACCEPTED FOR CONSTRUCTION (AFC)
02	26/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
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00	26/07/2024	MPR	GBA	ATR	ISSUE FOR COMMENT (IFC)

TITLE : BASE LOAD POWER HUB (BLPH)
DAVIT CRANE WIRING DIAGRAM
TERMINAL STRIP XS1

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

SCALE : NTS

A3

DRAWING NO. 1724001010-MAC-DG-00012

SHEET 92

REV. 03

File Name : 24-27012-WD-001 Rev. 03

F.to UNI A3: 420mmx297mm

TERMINAL	ORIGIN
1	SW-0016
2	SW-0036
3	LS-0024
4	LS-0025
5	LS-0034
6	LS-0035
7	ENC-0013
8	ENC-0023
9	ENC-0033
10	80E1 / 14
11	LS-0024
12	LS-0025
13	LS-0034
14	LS-0035
15	ENC-0013
16	ENC-0023
17	ENC-0033
18	80E1 / 15
19	
20	
21	SW-0016
22	SW-0036
23	LS-0024
24	LS-0025
25	LS-0034
26	LS-0035
27	
28	80E1 / 19
29	80E1 / 21
30	80E1 / 23
31	LS-0026
32	
33	
34	
35	
36	
37	80E1 / 16
38	80E1 / 17

DESTIN.	WIRE
X01 / 13	24V-4
LS-0026	24V-4
	24V-4
	24V-4
	24V-4
	24V-4
	24V-4
	24V-4
	24V-4
	24V-4
X01 / 14	0V
LS-0026	0V
	0V
	0V
	0V
	0V
	0V
	0V
X01 / 15	62-11
X01 / 16	64-1
X01 / 17	66-3
X01 / 18	66-4
X01 / 19	66-5
X01 / 20	68-1
X01 / 21	LC - 24V
X01 / 22	LC - 1
X01 / 23	LC - 2
X01 / 24	LC - 3
X01 / 25	68-2
X01 / 26	
X01 / 27	
X01 / 28	
X01 / 29	
X01 / 30	
50D1 / AI+	+LC
60E1-8 / I0-	-LC

1 2 — C01:0001-0002/01
19G1 mm²

1 2 — C01:0001-0002/02
2X1 mm² shielded

NO MARK UP
AS COMMISSIONED: MATIAS GIROTTI
20/5/24

REMAZEL ENGINEERING
Chiuduno (BG) - 24060 - ITALY
Phone : +39-035-68.44.14 - Fax : +39-035-68.78.23
e-mail : info@remazel.com / website : www.remazel.com

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	22/10/2024	MPR	GBA	ATR	ACCEPTED FOR CONSTRUCTION (AFC)
02	26/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
01	03/09/2024	MPR	GBA	ATR	ISSUE FOR REVIEW (IFR)
00	26/07/2024	MPR	GBA	ATR	ISSUE FOR COMMENT (IFC)

TITLE : BASE LOAD POWER HUB (BLPH)
DAVIT CRANE WIRING DIAGRAM
TERMINAL STRIP JB / X02

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

SCALE : NTS

A3

DRAWING NO. 1724001010-MAC-DG-00012

SHEET 94

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 24-27012-WD-001 Rev. 03

Section 8 LIST OF MODIFICATIONS

NOT APPLICABLE

Section 8.1 List of changes

NOT APPLICABLE

Section 9 SUPPORTING DOCUMENTS

NOT APPLICABLE