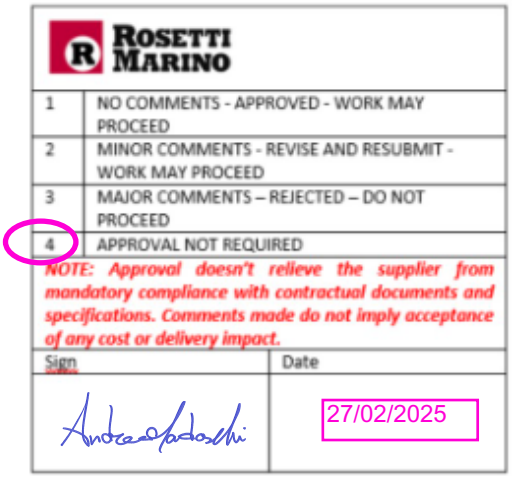
Base Load Power Hub (BLPH)

DC UPS - WIRING DIAGRAM & TERMINAL SCHEDULE INCLUDING EQUIPMENTS LIST & BILL OF MATERIAL


ROSETTI MARINO

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

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

Sign	Date
Andrea Padovani	27/02/2025

nber: 1724000372-EL-DG-00008

Document Class: 2

Rev.	Date	Description	Prepared	Reviewed	Approved
05	27/02/2025	As Built (ASB)	DA	DA	AD
04	18/12/2024	As Built (ASB)	DA	DA	AD
03	06/10/2024	Accepted for Construction (AFC)	DA	DA	AD
02	26/07/2024	Accepted for Construction (AFC)	DA	DA	AD
01	20/05/2024	Issue for Review (IFR)	DA	DA	AD
00	05/04/2024	Issue for Review (IFR)	DA	DA	AD

3W power | a company of AEG POWER SOLUTIONS

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Revision / Change Log

Rev.	Description
00	Issue for Review (IFR)
01	Issue for Review (IFR)
02	Accepted for Construction (AFC)
03	Accepted for Construction (AFC)
04	As Built (ASB)
05	As Built (ASB)

HOLDS LIST

No.	Description
1	
2	
3	
4	

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Table of contents

Description	Sheet
COVER	1
REVISION / CHANGE LOG	2
HOLDS LIST	2
TABLE OF CONTENTS	3
DC UPS - TAG: UP-200F1 - ELECTRICAL DRAWING	4

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AEG

POWER SOLUTIONS

Manufacturer (company) AEG Power Solutions Iberica S.A.

Manufacturer (address) Albert Einstein 31
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Spain

Phone +34 945 214110 www.aegps.es
+34 945 214165 servicios.iberica@aegps.com

AEG N°	ES521464
Customer	3W POWER S.P.A.
Project name	Hollandse Kust Noord (HKN) wind farm

Installation	
Systems Type	2xTPRe 110V 100A
Battery	10x FLG12-150 (60 Cells) (NON SUPPLIED)

Revision	01	Checked by :	JOP
Created on	21/03/2024	from	EBM
Changed by	22/07/2024	from	

Number of sheets 49

ES521464

				Date	21/03/2024	3W POWER S.P.A.			=
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm	AEG POWER SOLUTIONS	Title page / cover sheet	1724000372-EL-DG-00008 + 1 / 49
01		22/07/2024	eva.beitia	Checked	JOP				& EAA
Stat	Alteration	Date	Name	Standard				ES521464 en	A3 Sheet 1
									Sheets 1

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Table of contents

F06_T04

Installation	Mounting location	Document type	Sheet		Page description	Page	Rev	Date	Editor
		EAA	1/ 1		Title page / cover sheet	1/49			
		EAB	1/ 3		Table of contents	2/49			
		EAB	2/ 3		Table of contents	3/49			
		EAB	3/ 3		Table of contents	4/49		22/07/2024	eva.beitia
		EPZ	1/ 4		Symbols used	5/49			
		EPZ	2/ 4		Symbols used	6/49			
		EPZ	3/ 4		Symbols used	7/49			
		EPZ	4/ 4		Symbols used	8/49			
System									
		EFA	1/ 1		Single-line	9/49			
		EDA	1/ 1		Electrical characteristic	10/49	01	22/07/2024	eva.beitia
		MTB	1/ 1		Dimensional drawing	11/49			
	INT								
		EMA1	1/ 2		Interconnections	12/49	01	22/07/2024	eva.beitia
		EMA1	2/ 2		Interconnections	13/49	01	22/07/2024	eva.beitia
	REC1								
		EFS	1/ 13		Main supply	14/49			
		EFS	2/ 13		Rectifier	15/49			
		EFS	3/ 13		Rectifier	16/49			
		EFS	4/ 13		Filtering	17/49	01	22/07/2024	eva.beitia
		EFS	5/ 13		DC output	18/49			
		EFS	6/ 13		Distribution	19/49	01	22/07/2024	eva.beitia
		EFS	7/ 13		Distribution	20/49			
		EFS	8/ 13		Distribution	21/49			
		EFS	9/ 13		Battery	22/49	01	22/07/2024	eva.beitia
		EFS	10/ 13		Control Unit	23/49	01	22/07/2024	eva.beitia

ES521464

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Table of contents

F06_T04

Installation	Mounting location	Document type	Sheet		Page description	Page	Rev	Date	Editor
		EFS	11/ 13		PCB´s I2C communication buses	24/49			
		EFS	12/ 13		Relay board	25/49			
		EFS	13/ 13		Cabinet accesories	26/49			
		EMA	1/ 2		Terminal diagram	27/49			
		EMA	2/ 2		Terminal diagram	28/49	01	22/07/2024	eva.beitia
		EPB5	1/ 4		Bill of materials	29/49	01	22/07/2024	eva.beitia
		EPB5	2/ 4		Bill of materials	30/49	01	22/07/2024	eva.beitia
		EPB5	3/ 4		Bill of materials	31/49	01	22/07/2024	eva.beitia
		EPB5	4/ 4		Bill of materials	32/49	01	22/07/2024	eva.beitia
		MTB	1/ 1		Relay card detail	33/49			
	REC2								
		EFS	1/ 10		Main supply	34/49			
		EFS	2/ 10		Rectifier	35/49			
		EFS	3/ 10		Rectifier	36/49			
		EFS	4/ 10		Filtering	37/49	01	22/07/2024	eva.beitia
		EFS	5/ 10		DC output	38/49			
		EFS	6/ 10		Battery	39/49	01	22/07/2024	eva.beitia
		EFS	7/ 10		Control Unit	40/49	01	22/07/2024	eva.beitia
		EFS	8/ 10		PCB´s I2C communication buses	41/49			
		EFS	9/ 10		Relay board	42/49			
		EFS	10/ 10		Cabinet accesories	43/49			
		EMA	1/ 2		Terminal diagram	44/49	01	22/07/2024	eva.beitia
		EMA	2/ 2		Terminal diagram	45/49	01	22/07/2024	eva.beitia
		EPB5	1/ 3		Bill of materials	46/49	01	22/07/2024	eva.beitia
		EPB5	2/ 3		Bill of materials	47/49	01	22/07/2024	eva.beitia

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Table of contents

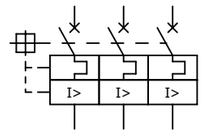
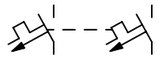
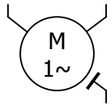
F06_T04

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		EPB5	3/ 3		Bill of materials	48/49	01	22/07/2024	eva.beitia
		MTB	1/ 1		Relay card detail	49/49			

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IEC_symbol

Symbol

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

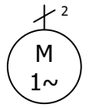
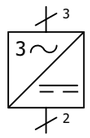
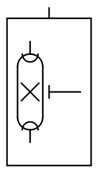
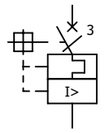
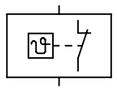
ES521464

				Date	21/03/2024	3W POWER S.P.A.	AEG POWER SOLUTIONS	Symbols used		=
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm				+ 4 / 47
				Checked	JOP					& EPZ
Stat	Alteration	Date	Name	Standard					ES521464 en	A3 Sheet 1 Sheets

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IEC_single_symbol

Symbol

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

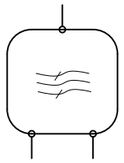
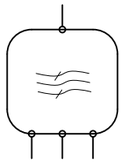
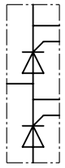
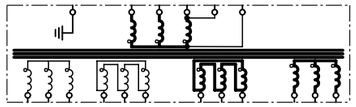
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				Editor	EBM	Hollandse Kust Noord (HKN) wind farm			+ 5 / 47
				Checked	JOP				& EPZ Sheet 2
Stat	Alteration	Date	Name	Standard				ES521464 en	A3 Sheets 4

AEGPS_DOC_REV01
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IEC_AEGPSI_symbol

Symbol

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

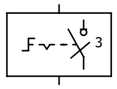
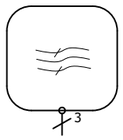
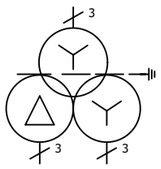
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				Date	21/03/2024	3W POWER S.P.A.	AEG POWER SOLUTIONS	Symbols used	=
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm			+ 6 / 47
				Checked	JOP				& EPZ
Stat	Alteration	Date	Name	Standard				ES521464 en	A3 Sheet 3 Sheets

AEGPS_DOC_REV01
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IEC_AEGPSI_single_symbol

Symbol

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

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+REC1
UP-200F1 A

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

-PR2-TH1
THERMOSTAT 100º

-PR2-TH2
THERMOSTAT 90º

-PR1-TH1
THERMOSTAT 100º

-PR1-TH2
THERMOSTAT 90º

Charger
100A 12Pulses

-Z1
0/450V

-X1
L1
70 mm²
4G16 mm2
unamoured cable

MAINS
3x400Vac 50Hz -50kA

L1;L2;L3;PE

-Q1
50A

-T1
110V/100A
019.6KVA

-PR2
-PR1

-R2
100mV
130A

-C1
3x6800µF
160V
Filtering 1%

-F1
NH00
125A

-V21
100A

-Q2
160A

-R3
100mV
130A

-Q3
160A

BATTERY
110Vdc
-X3
+/-
70 mm²

Battery
symmetry
-X31
+/-
4 mm²

-A10
BATTERY SIMMETRY
FAULT

+BP
BATTERY PROTECTION

2 (1x25) mm2

-F100
Plastic
box 80*80

+BAT

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

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

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

-SD1

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

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

-SD2

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

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

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

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

-Q14
50A-C
-X2 5+/5
16 mm²

SPARE 5,5KW

-Q15
20A-C
-X2 6+/6
16 mm²

SPARE 2KW

-Q16
16A-C
-X2 7+/7
16 mm²

SPARE 1KW

-F10/F11
DEHNguard

-A21
EARTH +/-

-A1
GCAU
CONTROL UNIT

-A5.1
Relays
-CR1-X5

-A71

-A300
DISPLAY

-A73
MODBUS-TCP/IP

-A8
Isolated

-A310
KEY PAD

-KF
PSR-SCP- 24DC / SIL3

SD1 / (+BAT-SD1 /1.8)

-PR2-A2
TPC

-A320
INTERFACE

-PR1-A2
TPC

AUXILIARY SUPPLY
230Vac-50Hz

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

-Q6
02A-C

-Q7
02A-C

-H3

-THF4
0/60ºC

-E50
100W

-Z2
400V

-X8
4 mm²
CHARGERS
INTERCONNECTION

2,5 mm²

INTERCONNECTION
-X6
50 mm²
PH4 35 mm²

+REC2
UP-200F1 B

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

-PR2-TH1
THERMOSTAT 100º

-PR2-TH2
THERMOSTAT 90º

-PR1-TH1
THERMOSTAT 100º

-PR1-TH2
THERMOSTAT 90º

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

Charger
100A 12Pulses

-Z1
0/450V

-X1
L1
70 mm²
4G16 mm2
unamoured cable

MAINS
3x400Vac 50Hz -50kA

L1;L2;L3;PE

-Q1
50A

-T1
110V/100A
019.6KVA

-PR2
-PR1

-R2
100mV
130A

-C1
3x6800µF
160V
Filtering 1%

-F1
NH00
125A

-V21
100A

-Q2
160A

-PR2-A2
TPC

-A320
INTERFACE

-PR1-A2
TPC

SD2 / (+BAT-SD2 /1.8)

-A1
GCAU
CONTROL UNIT

-A5.1
Relays
-CR1-X5

-A71

-A300
DISPLAY

-A73
MODBUS-TCP/IP

-A8
Isolated

-A310
KEY PAD

A8 / (+REC2-X8 /1.4)

AUXILIARY SUPPLY
230Vac-50Hz

-X7
L/N
6 mm²

-Q6
02A-C

-Q7
02A-C

-H3

-THF4
0/60ºC

-E50
100W

2,5 mm²

Battery
symmetry
-X31
+/-
4 mm²

-A10
BATTERY SIMMETRY
FAULT

ES521464

				Date	21/03/2024	3W POWER S.P.A.	AEG POWER SOLUTIONS	Single-line	1724000372-EL-DG-00006
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm		System	
				Checked	JOP				
Stat	Alteration	Date	Name	Standard					

= System
+ 8 / 47
& EFA
ES521464 en
A3
Sheet 1
Sheets 1

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Type 2xTPRe 110V 100A Battery 10x FLG12-150 (60 Cells) (NON SUPPLIED) Mains AC 3x400Vac 50Hz

SETTINGS	**20ºC**		TEMPERATURE COMPENSATION
FLOATING CHARGE	2,25	V/cel	X
HIGH RATE CHARGE	2,30	V/cel	

WIRING

CABLE LABELLING : Standard AEG PS

CABLE TYPE : Standard AEG PS

SECTION SEE WIRING SCHEMATIC

FITRAGE	1%
PROTECTION WITH DOOR OPEN	IP 20
PROTECTION WITH DOOR CLOSED	IP 43
ELECTRONIC BOARDS VARNISHED	
COMPONENTS LABEL	Engraved indivual labels

This system includes some components which must be replaced periodically. The average life time of these components is provided in parts list section of this document. Please contact your nearest customer service location for more information

RELAY CHARACTERISTICS

Common alarm (GCAU card) : 250VAC/5A

24Vdc	48Vdc	110Vdc	220Vdc
6A	1,2A	0,3A	0,1A

Relay Alarm (Relay PCB) : 250VAC/5A

24Vdc	48Vdc	110Vdc	220Vdc
8A	2A	0,5A	0,4A

Legend

Power Control

0.5 mm²

Interconnections

Provided — Int — Int

Not Supplied — Int — Int

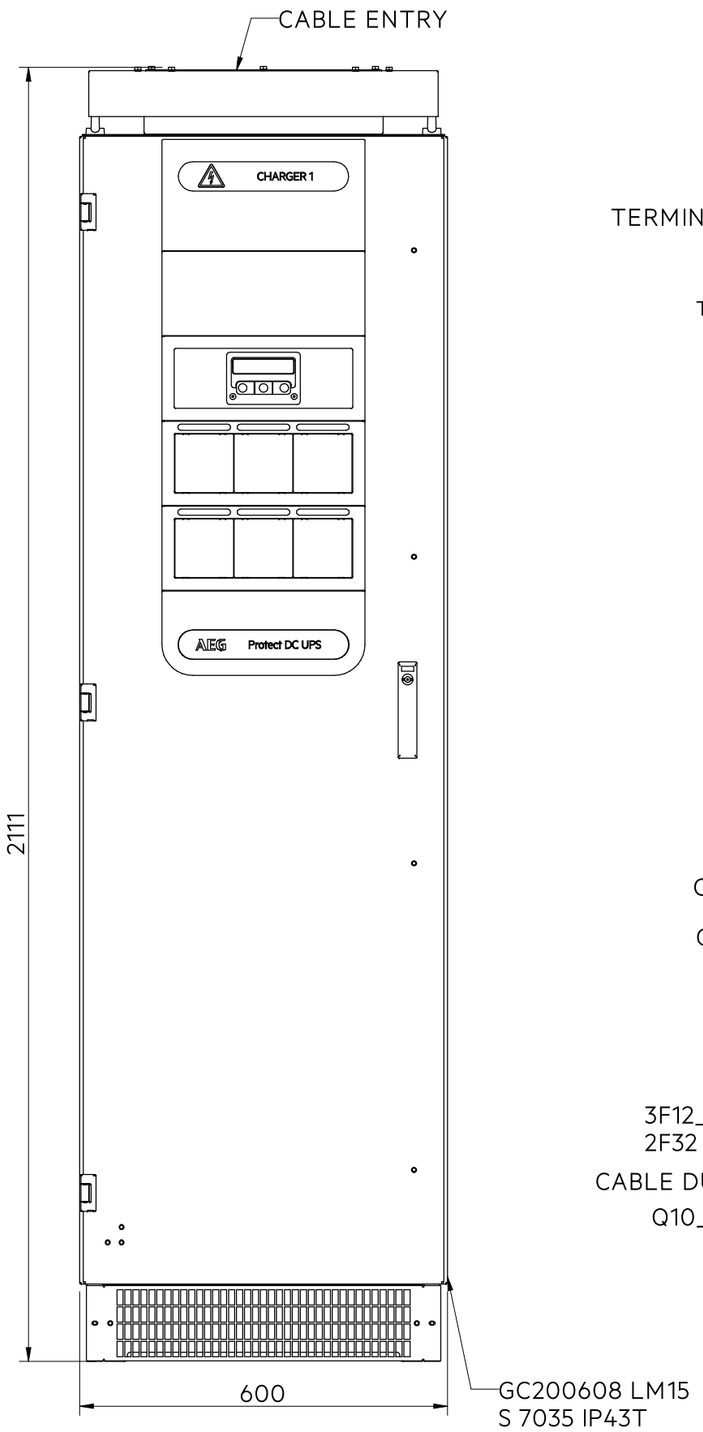
Power Control

ES521464

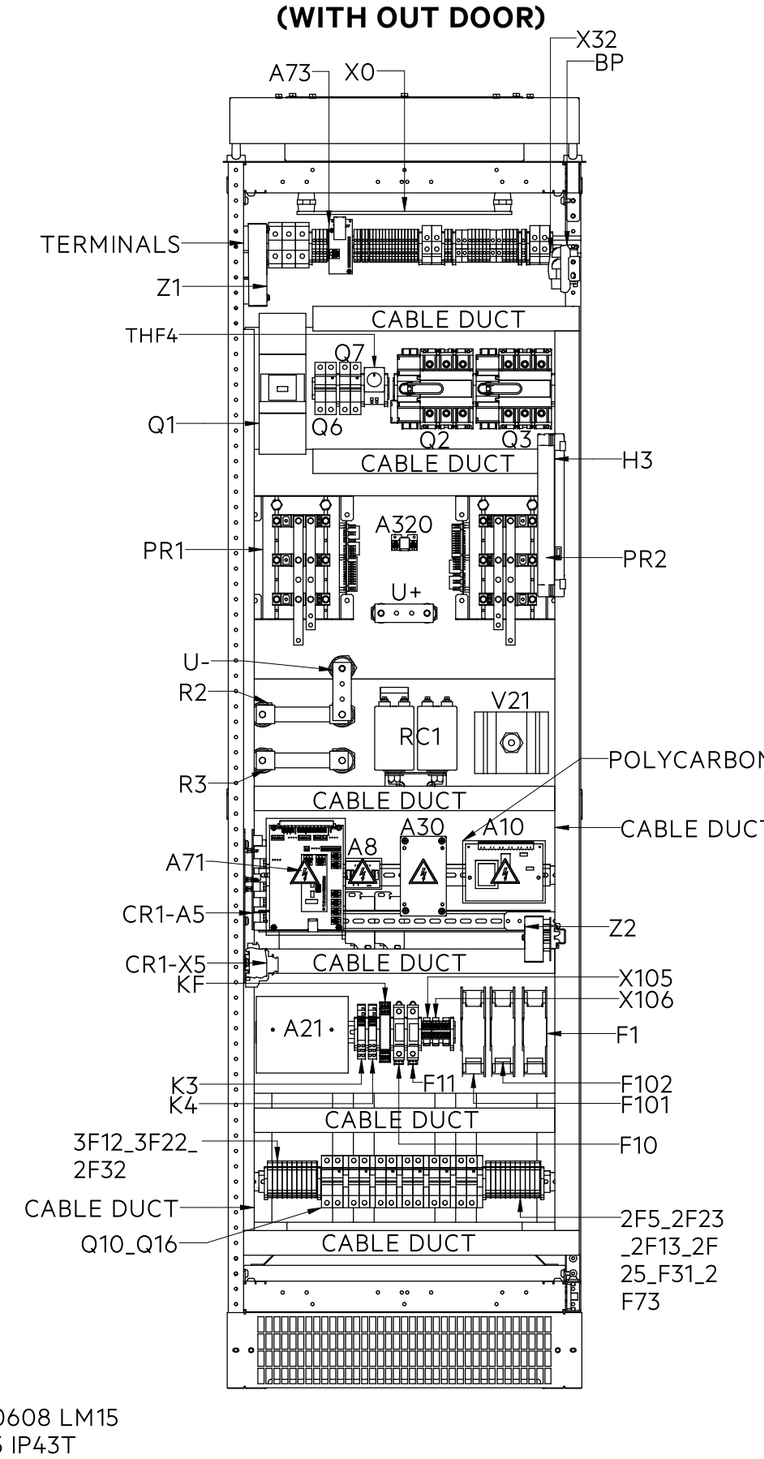
				Date	21/03/2024	3W POWER S.P.A.		Electrical characteristic	= System
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm	AEG POWER SOLUTIONS		+ 10 / 49
01		22/07/2024	eva.beitia	Checked	JOP			System	& EDA Sheet 1
Stat	Alteration	Date	Name	Standard				ES521464 en	A3 Sheets 1

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

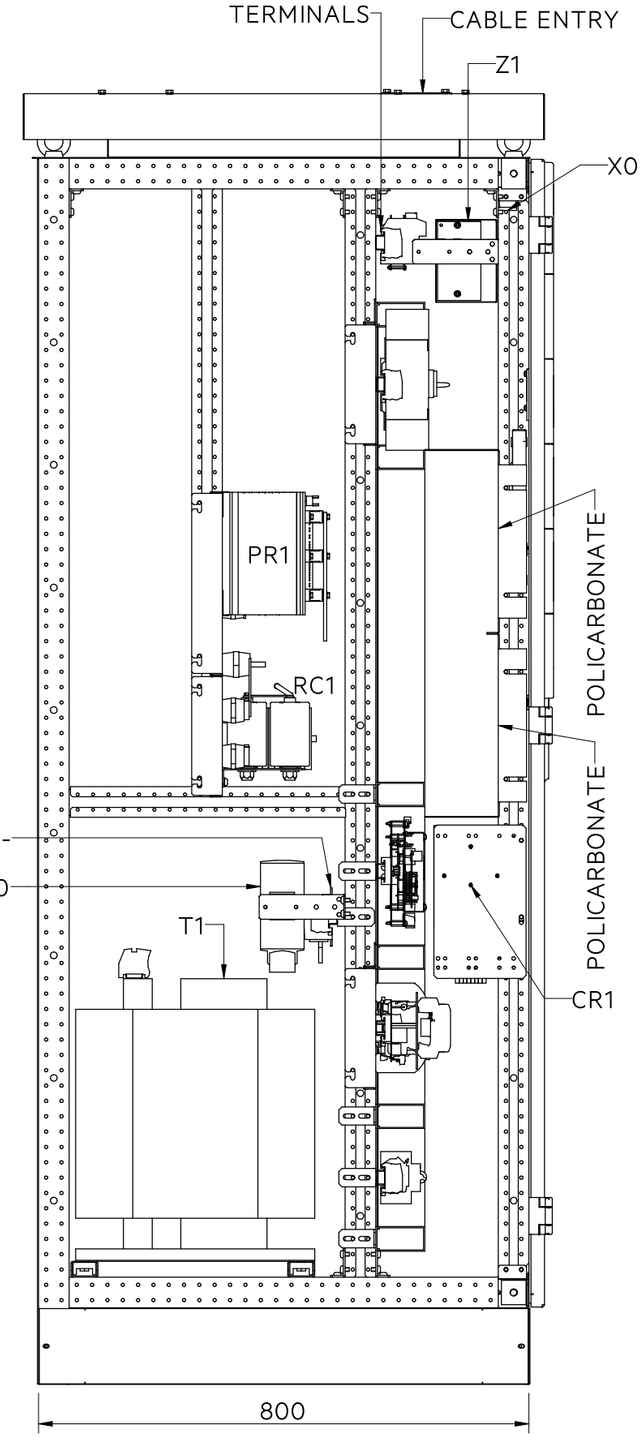
FRONT VIEW



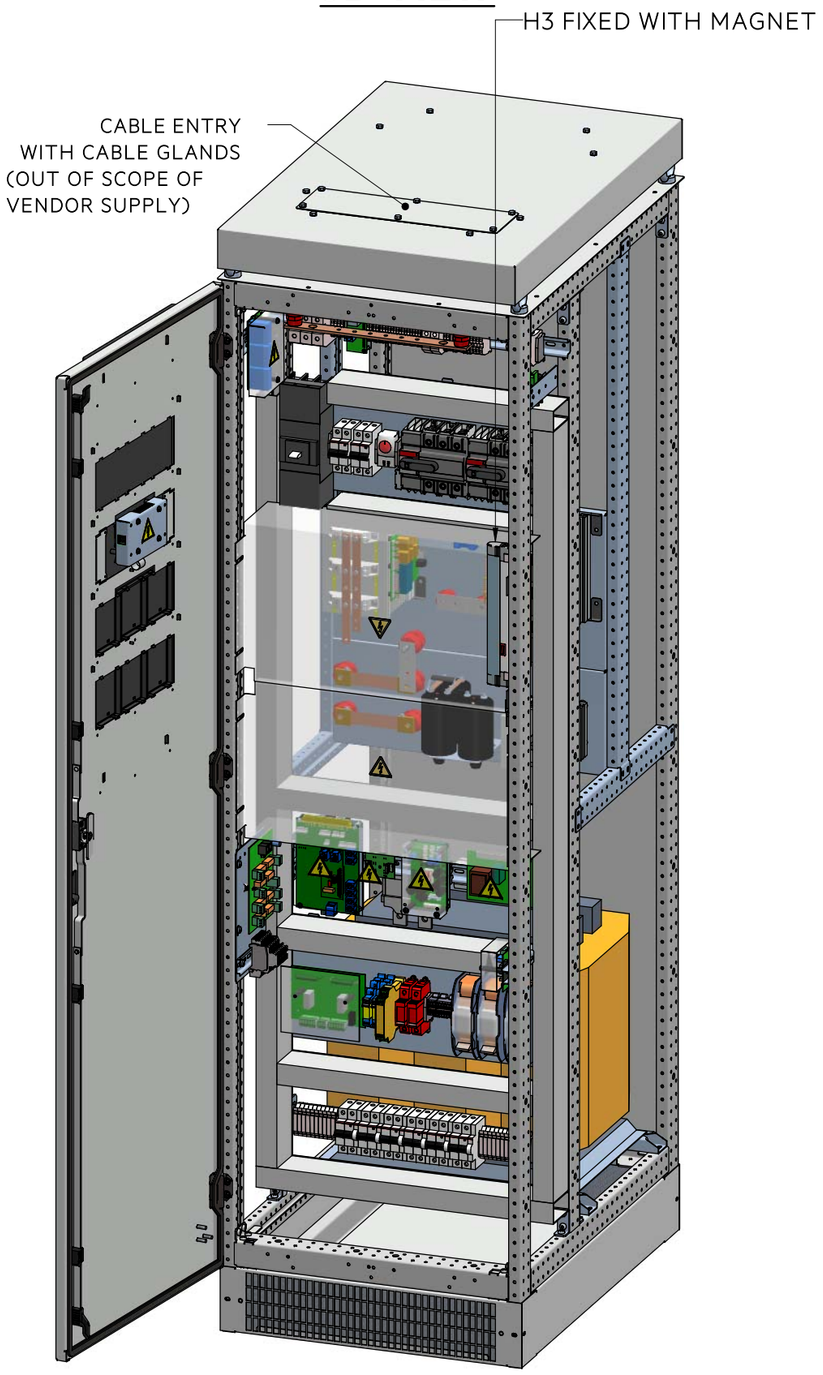
FRONT VIEW
(WITH OUT DOOR)



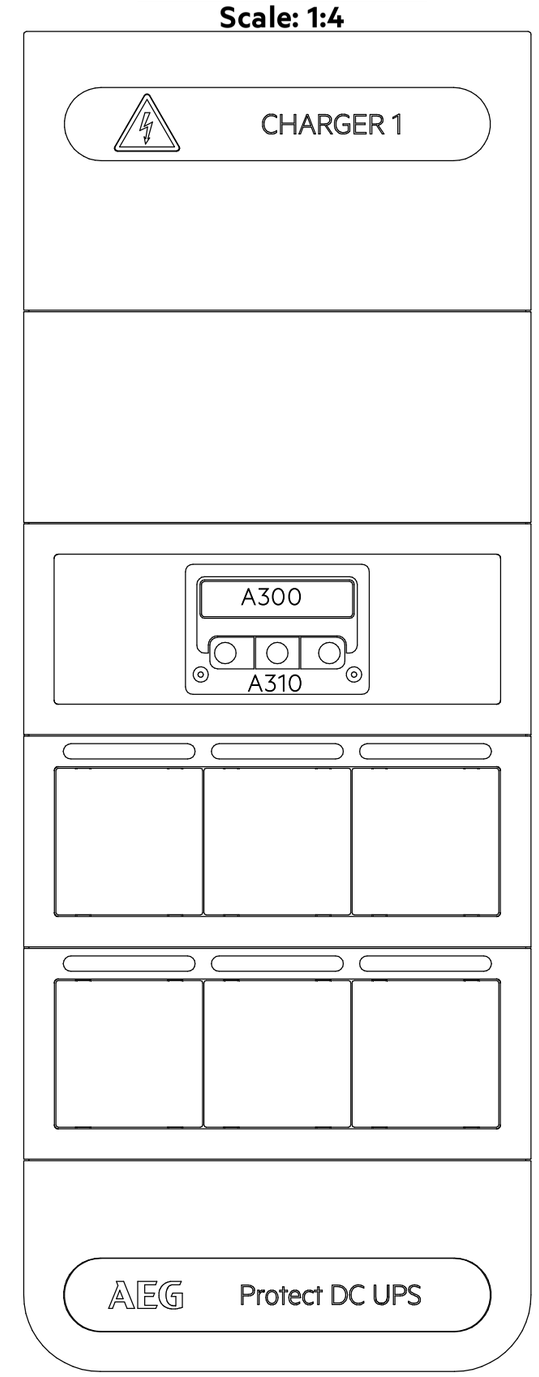
SIDE VIEW



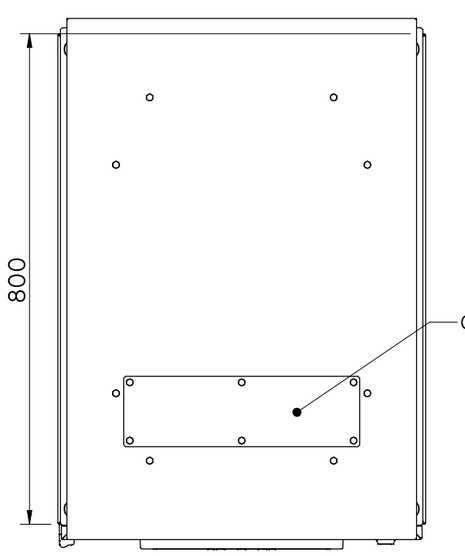
3D VIEW



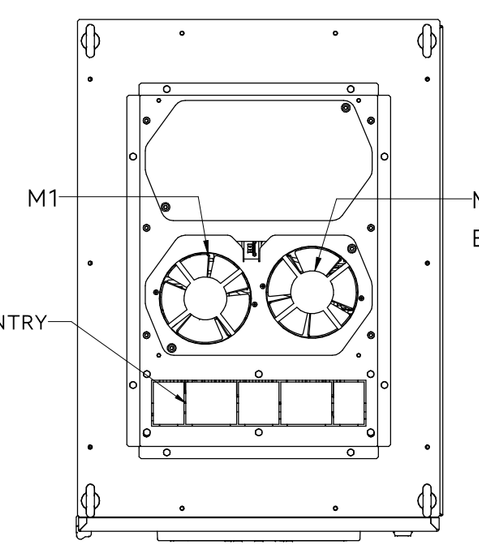
DOOR DETAIL
Scale: 1:4



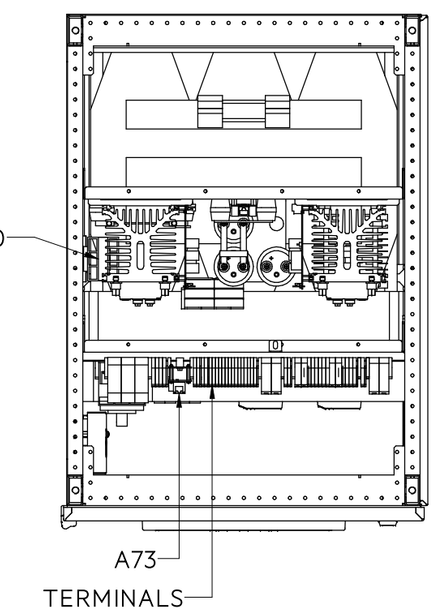
TOP VIEW



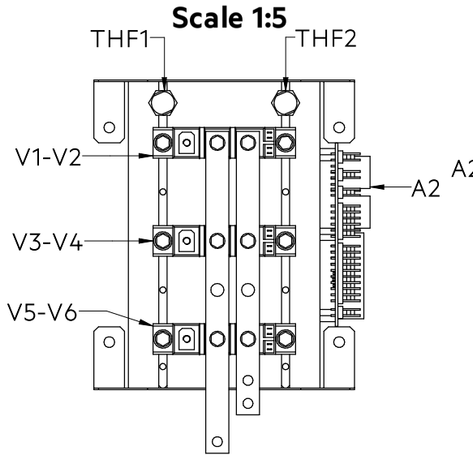
TOP VIEW
(FANS DETAIL)



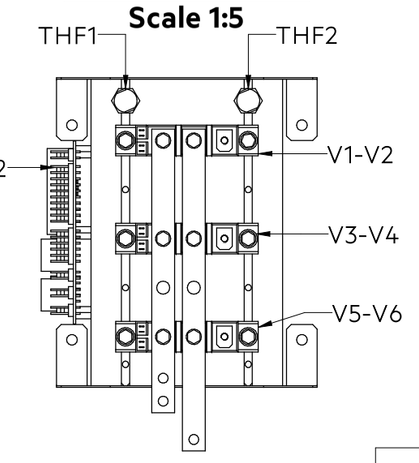
TOP VIEW
(WITHOUT ROOF)



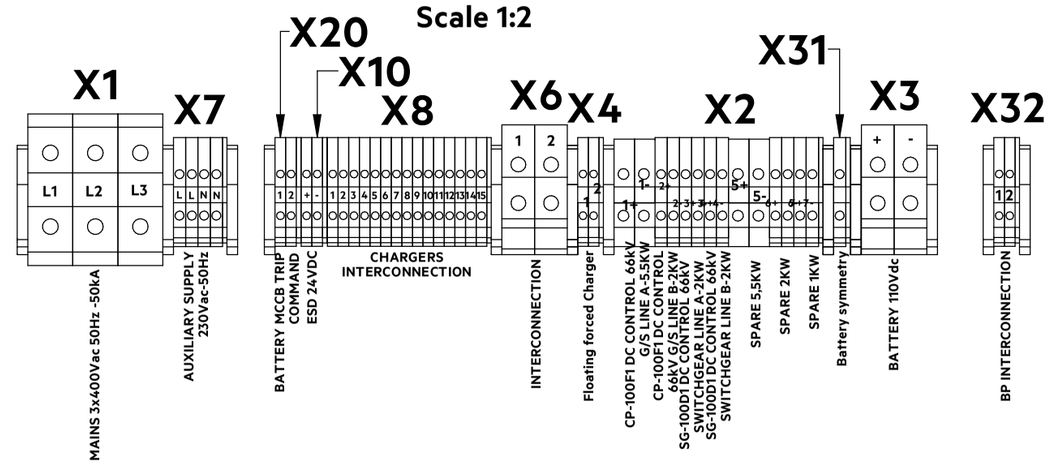
PR1 DETAIL
Scale 1:5



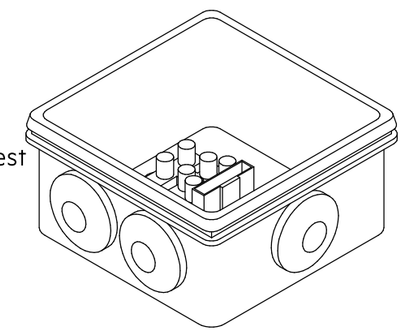
PR2 DETAIL
Scale 1:5



TERMINALS DETAIL
Scale 1:2



F100 DETAIL



Place the box the closest possible to the battery

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

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SAP Document: **ES521464A1_MEC**

SAP Code: **ES521464A1**

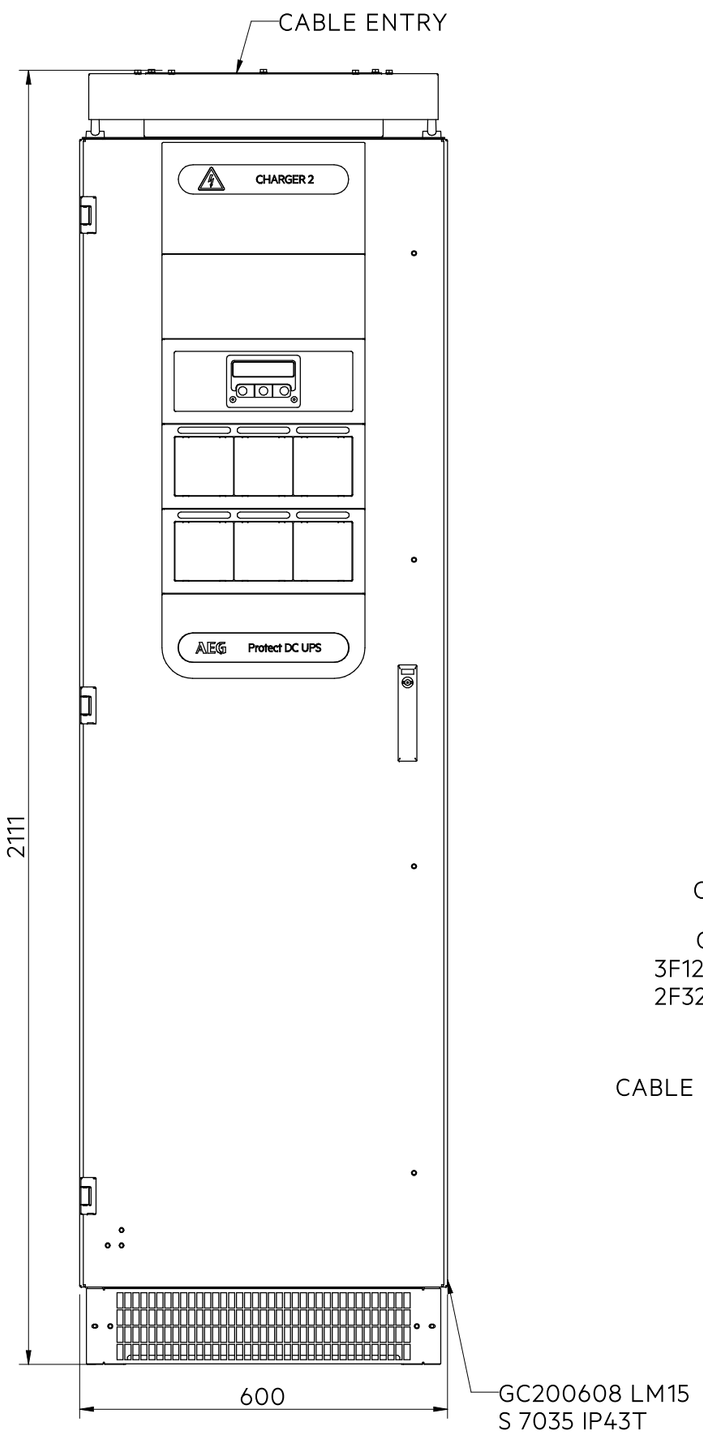
Denominación / *Description:*
DC UPS UP-200F1 CHARGER-A
1724000372-EL-DA-00003

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

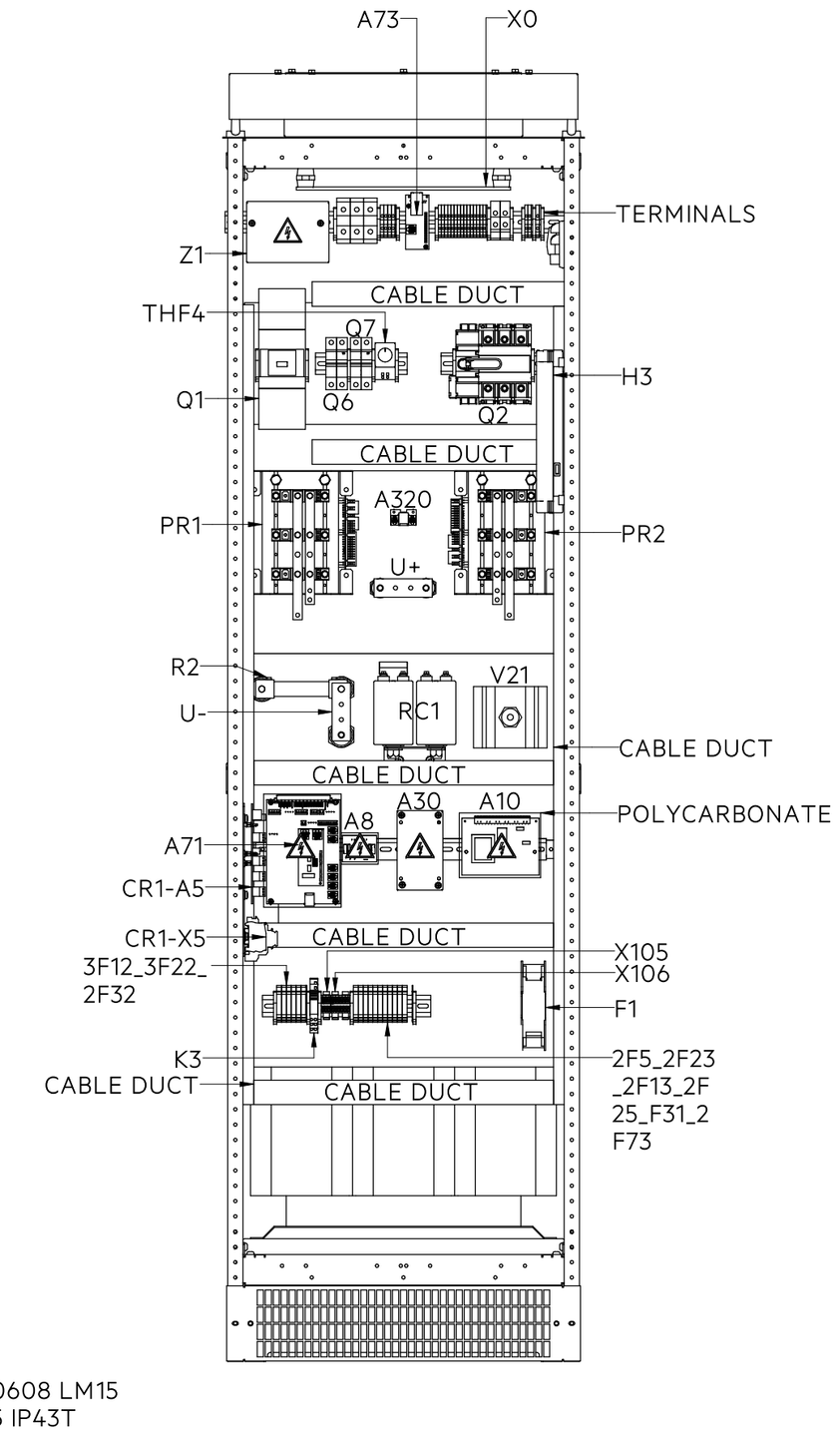
Hoja / *Sheet:* 1/4

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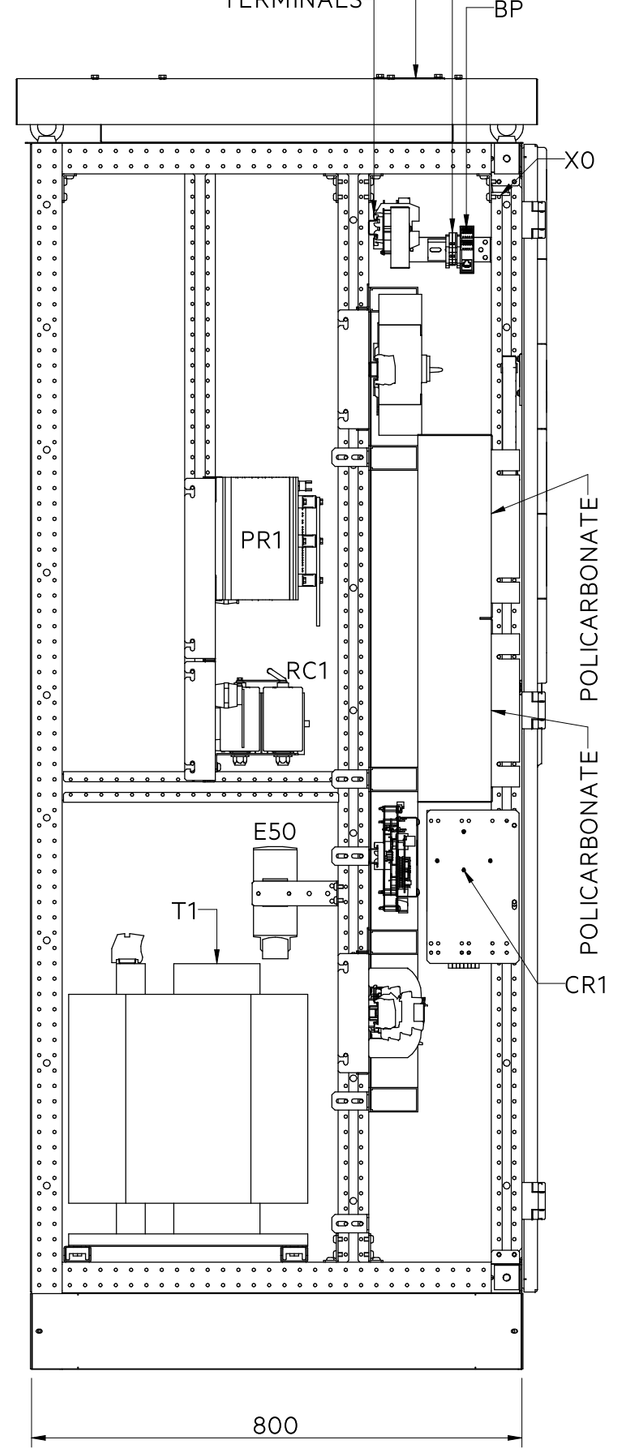
FRONT VIEW



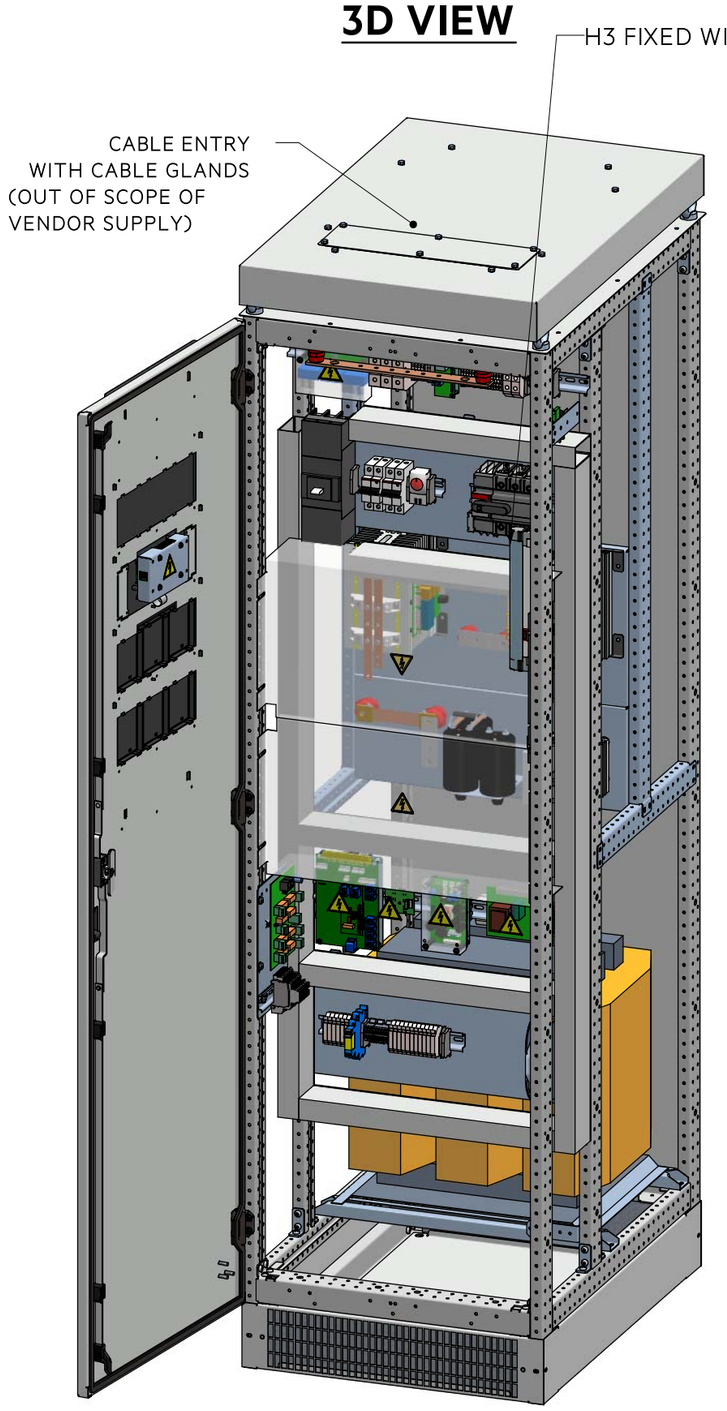
FRONT VIEW
(WITH OUT DOOR)



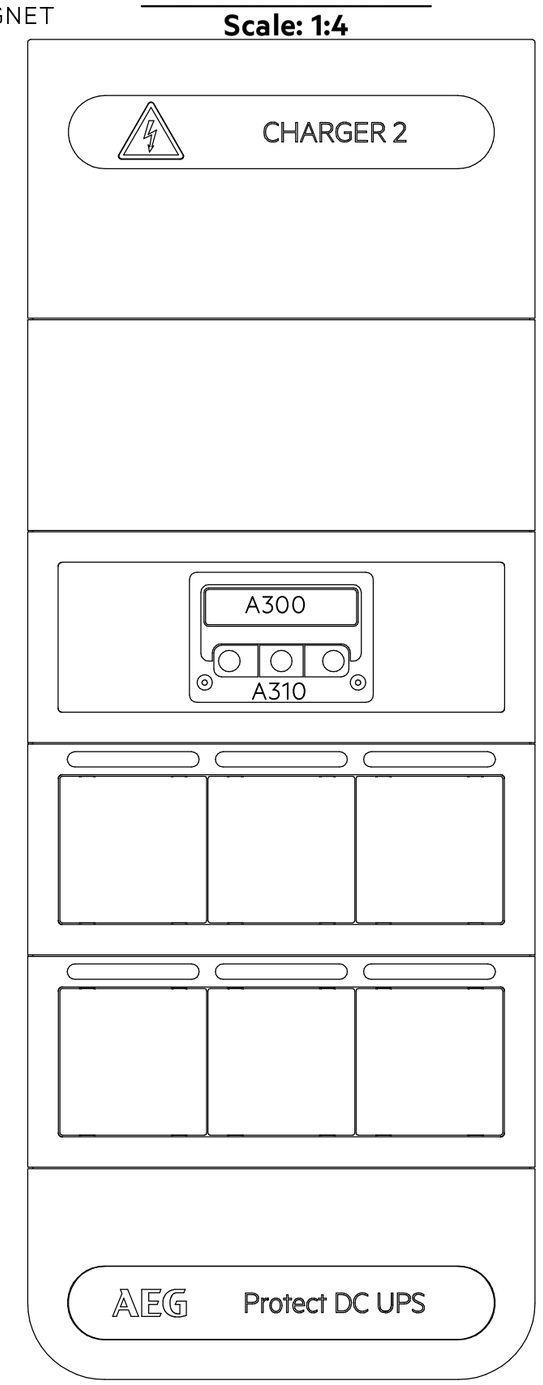
SIDE VIEW



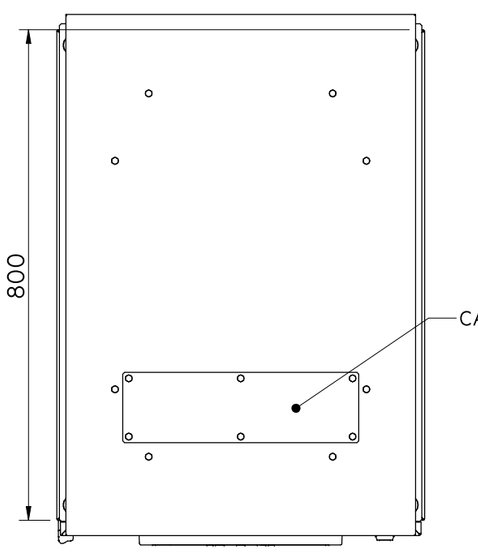
3D VIEW



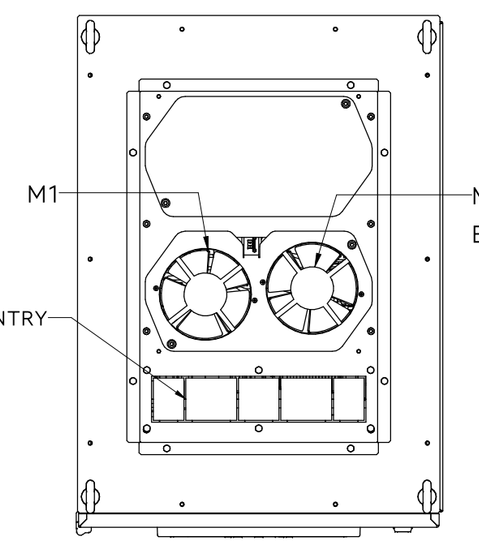
DOOR DETAIL
Scale: 1:4



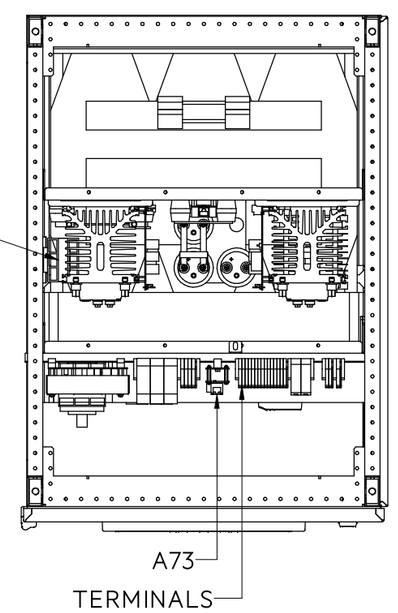
TOP VIEW



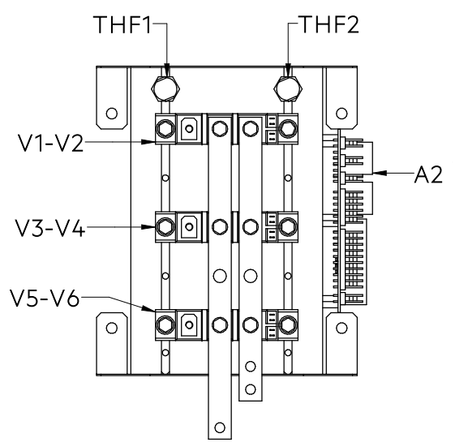
TOP VIEW
(FANS DETAIL)



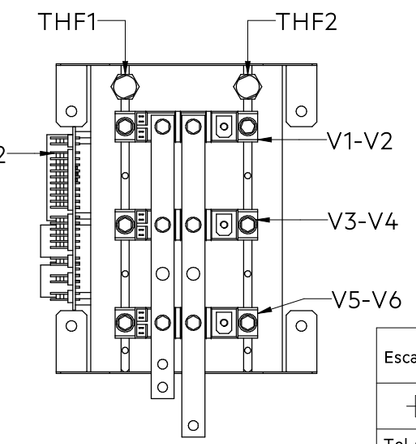
TOP VIEW
(WITHOUT ROOF)



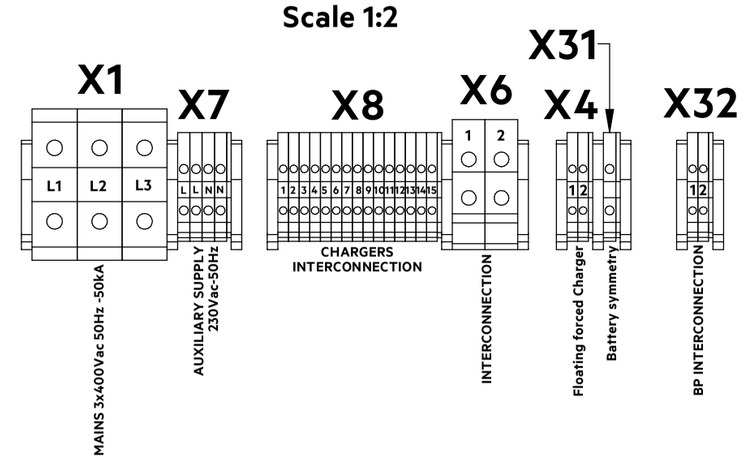
PR1 DETAIL
Scale 1:5



PR2 DETAIL
Scale 1:5



TERMINALS DETAIL
Scale 1:2



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

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SAP Document: **ES521464A2_MEC**
SAP Code: **ES521464A2**

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

Formato/ *Format:* **A2** | Rev/ *Issue* **00**
Hoja / *Sheet:* 1/4

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ES521464

Interconnections list

Source	Number From Cable					Target	Provided
	Wire Number Location	Cross-section	Cable type		Length		
+REC1-F100 (+REC1&EFS/9.6) Source terminal	F100⇔BAT:MP					(+REC1&EFS/9.8) +REC1-BAT:MP Target terminal	NO
+REC1-X6:2 (+REC1&EFS/5.5) Source terminal CORD END TERMINAL 50mm²	X6:2⇔X6:2	PH4 35 mm²	HV HFFR	BLACK	5	(+REC2&EFS/5.6) +REC2-X6:2 Target terminal CORD END TERMINAL 50mm²	YES
+REC1-X6:1 (+REC1&EFS/5.5) Source terminal CORD END TERMINAL 35mm²	X6:1⇔X6:1	PH4 35 mm²	HV HFFR	BLACK	5	(+REC2&EFS/5.6) +REC2-X6:1 Target terminal CORD END TERMINAL 35mm²	YES
+REC1-X7:L (+REC1&EFS/13.2) Source terminal CORD END TERMINAL 2,5mm²	X7:L⇔X7:L	2,5 mm²	H07Z1-K	BLACK	5	(+REC2&EFS/10.2) +REC2-X7:L Target terminal CORD END TERMINAL 2,5mm²	YES
+REC1-X7:N (+REC1&EFS/13.2) Source terminal CORD END TERMINAL 2,5mm²	X7:N⇔X7:N	2,5 mm²	H07Z1-K	BLACK	5	(+REC2&EFS/10.2) +REC2-X7:N Target terminal CORD END TERMINAL 2,5mm²	YES
+REC1-X8:7 (+REC1&EFS/6.2) Source terminal CORD END TERMINAL 2,5mm²	X8:7⇔X8:7	2,5 mm²	H07Z1-K	BLACK	5	(+REC2&EFS/7.7) +REC2-X8:7 Target terminal CORD END TERMINAL 2,5mm²	YES
+REC1-X8:6 (+REC1&EFS/6.2) Source terminal CORD END TERMINAL 2,5mm²	X8:6⇔X8:6	2,5 mm²	H07Z1-K	BLACK	5	(+REC2&EFS/7.7) +REC2-X8:6 Target terminal CORD END TERMINAL 2,5mm²	YES
+REC1-X8:5 (+REC1&EFS/6.2) Source terminal CORD END TERMINAL 2,5mm²	X8:5⇔X8:5	2,5 mm²	H07Z1-K	BLACK	5	(+REC2&EFS/7.7) +REC2-X8:5 Target terminal CORD END TERMINAL 2,5mm²	YES
+REC1-X8:14 (+REC1&EFS/6.4) Source terminal CORD END TERMINAL 2,5mm²	X8:14⇔X8:14	2,5 mm²	H07Z1-K	BLACK	5	(+REC2&EFS/7.7) +REC2-X8:14 Target terminal CORD END TERMINAL 2,5mm²	YES
+REC1-X8:15 (+REC1&EFS/6.4) Source terminal CORD END TERMINAL 2,5mm²	X8:15⇔X8:15	2,5 mm²	H07Z1-K	BLACK	5	(+REC2&EFS/7.7) +REC2-X8:15 Target terminal CORD END TERMINAL 2,5mm²	YES
+REC1-X8:10 (+REC1&EFS/8.5) Source terminal CORD END TERMINAL 2,5mm²	X8:10⇔X8:10	2,5 mm²	H07Z1-K	BLACK	5	(+REC2&EFS/7.7) +REC2-X8:10 Target terminal CORD END TERMINAL 2,5mm²	YES
+REC1-X8:11 (+REC1&EFS/8.5) Source terminal CORD END TERMINAL 2,5mm²	X8:11⇔X8:11	2,5 mm²	H07Z1-K	BLACK	5	(+REC2&EFS/7.7) +REC2-X8:11 Target terminal CORD END TERMINAL 2,5mm²	YES
+REC1-X8:9 (+REC1&EFS/9.2) Source terminal CORD END TERMINAL 2,5mm²	X8:9⇔X8:9	2,5 mm²	H07Z1-K	BLACK	5	(+REC2&EFS/7.3) +REC2-X8:9 Target terminal CORD END TERMINAL 2,5mm²	YES
+REC1-X8:8 (+REC1&EFS/9.2) Source terminal CORD END TERMINAL 2,5mm²	X8:8⇔X8:8	2,5 mm²	H07Z1-K	BLACK	5	(+REC2&EFS/7.4) +REC2-X8:8 Target terminal CORD END TERMINAL 2,5mm²	YES
+REC1-X8:13 (+REC1&EFS/9.5) Source terminal CORD END TERMINAL 2,5mm²	X8:13⇔X8:13	2,5 mm²	H07Z1-K	BLACK	5	(+REC2&EFS/6.5) +REC2-X8:13 Target terminal CORD END TERMINAL 2,5mm²	YES

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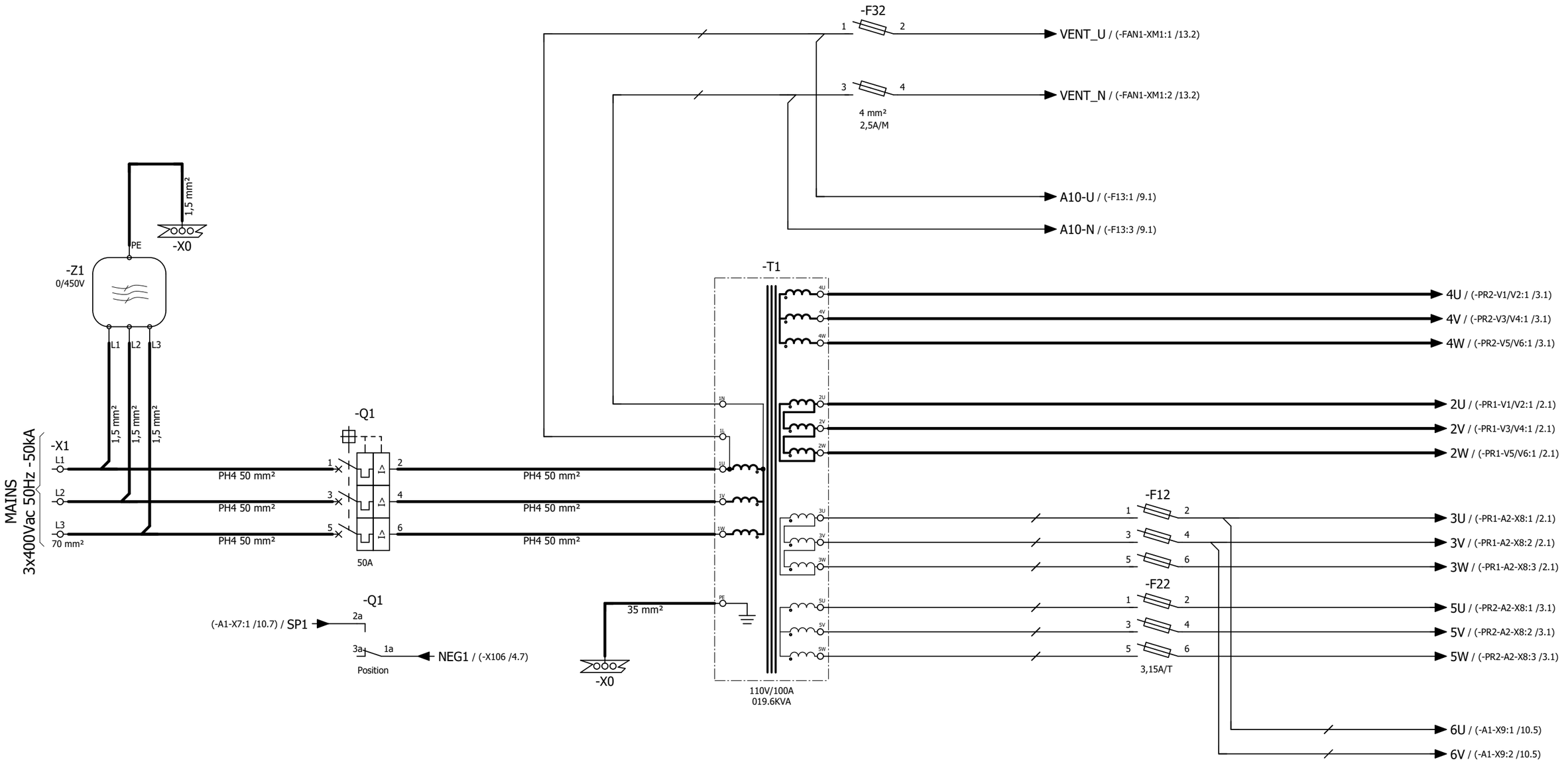
Interconnections list

Source	Number From Cable: Wire Number Location	Cross-section	Cable type		Length	Target	Provided
+REC1-X8:12 (+REC1&EFS/9.5) Source terminal: CORD END TERMINAL 2,5mm²	X8:12⇔X8:12	2,5 mm²	H07Z1-K	BLACK	5	(+REC2&EFS/6.5) +REC2-X8:12 Target terminal: CORD END TERMINAL 2,5mm²	YES
+REC1-X8:4 (+REC1&EFS/10.7) Source terminal: CORD END TERMINAL 2,5mm²	X8:4⇔X8:1	2,5 mm²	H07Z1-K	BLACK	5	(+REC2&EFS/7.7) +REC2-X8:1 Target terminal: CORD END TERMINAL 2,5mm²	YES
+REC1-X8:3 (+REC1&EFS/10.7) Source terminal: CORD END TERMINAL 2,5mm²	X8:3⇔X8:2	2,5 mm²	H07Z1-K	BLACK	5	(+REC2&EFS/7.7) +REC2-X8:2 Target terminal: CORD END TERMINAL 2,5mm²	YES
+REC1-X8:2 (+REC1&EFS/10.7) Source terminal: CORD END TERMINAL 2,5mm²	X8:2⇔X8:3	2,5 mm²	H07Z1-K	BLACK	5	(+REC2&EFS/7.7) +REC2-X8:3 Target terminal: CORD END TERMINAL 2,5mm²	YES
+REC1-X8:1 (+REC1&EFS/10.7) Source terminal: CORD END TERMINAL 2,5mm²	X8:1⇔X8:4	2,5 mm²	H07Z1-K	BLACK	5	(+REC2&EFS/7.7) +REC2-X8:4 Target terminal: CORD END TERMINAL 2,5mm²	YES
+REC1-X31 (+REC1&EFS/9.6) Source terminal:	X31⇔F100					(+REC1&EFS/9.6) +REC1-F100 Target terminal:	NO
+REC1-X31 (+REC1&EFS/9.6) Source terminal: CORD END TERMINAL 2,5mm²	X31⇔X31	2,5 mm²	H07Z1-K	BLACK	5	(+REC2&EFS/6.6) +REC2-X31 Target terminal: CORD END TERMINAL 2,5mm²	YES
+REC1-X32:2 (+REC1&EFS/10.8) Source terminal:	X32:2⇔X30:2					(+REC1&EFS/9.6) +BP-X30:2 Target terminal:	NO
+REC1-X32:1 (+REC1&EFS/10.8) Source terminal:	X32:1⇔X30:1					(+REC1&EFS/9.6) +BP-X30:1 Target terminal:	NO
+REC2-X32:2 (+REC2&EFS/7.8) Source terminal:	X32:2⇔X30:4					(+REC1&EFS/9.6) +BP-X30:4 Target terminal:	NO
+REC2-X32:1 (+REC2&EFS/7.8) Source terminal:	X32:1⇔X30:3					(+REC1&EFS/9.6) +BP-X30:3 Target terminal:	NO

ES521464

				Date	21/03/2024	3W POWER S.P.A.	AEG POWER SOLUTIONS	Interconnections		= System
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm		Interconnections		+ INT 13 / 49
01		22/07/2024	eva.beitia	Checked	JOP			System		& EMA1
Stat	Alteration	Date	Name	Standard					ES521464 en	A3 Sheet 2
										Sheets

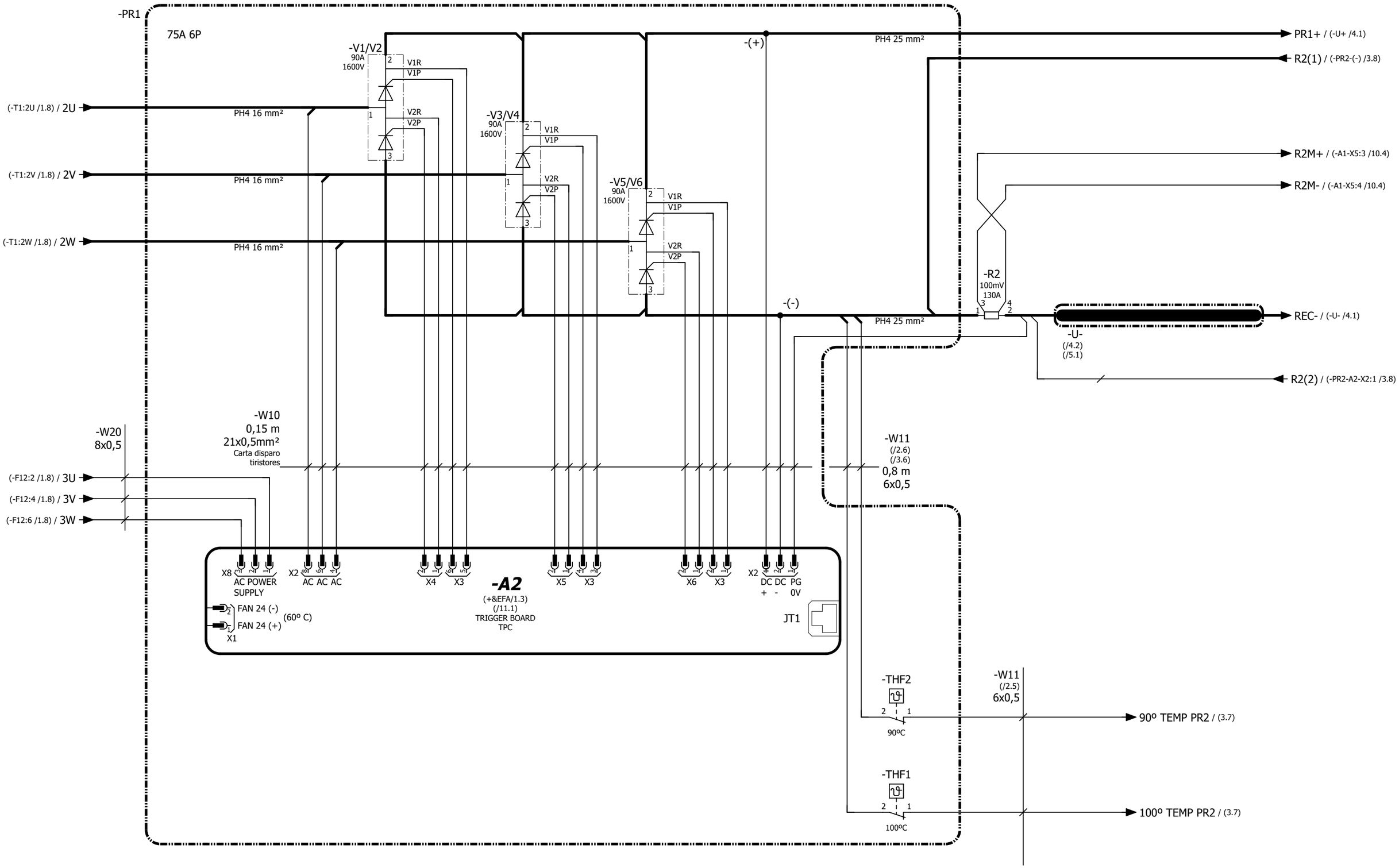
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				Date	21/03/2024	3W POWER S.P.A.	AEG POWER SOLUTIONS	Main supply		= System	
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm		Rectifier 1		+ REC1	14 / 49
				Checked	JOP			System		& EFS	Sheet 1
Stat	Alteration	Date	Name	Standard					ES521464 en	A3	Sheets 13

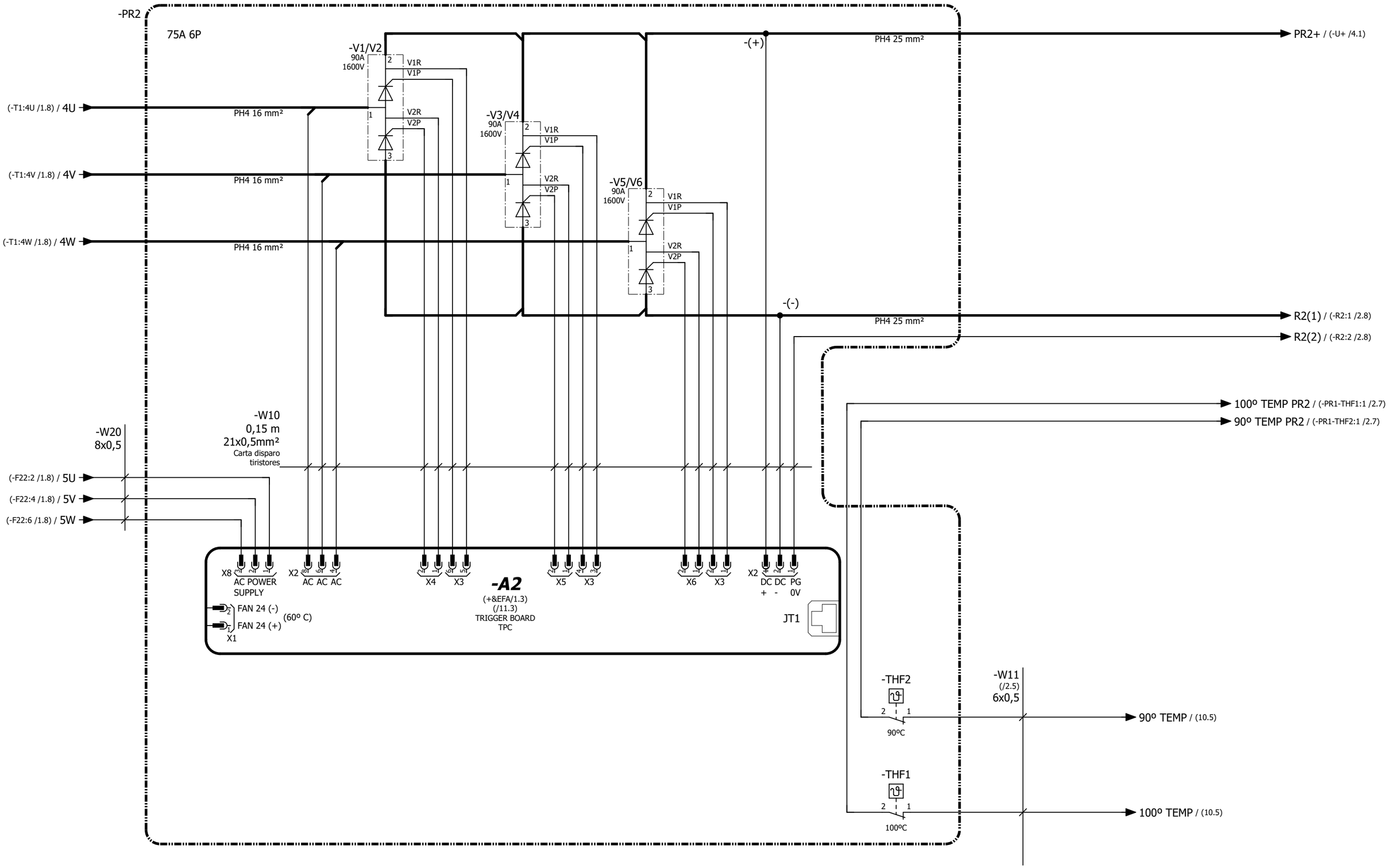
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ES521464

				Date	21/03/2024	3W POWER S.P.A.	AEG POWER SOLUTIONS	Rectifier	= System
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm		Rectifier 1	+ REC1 — 15 / 49
				Checked	JOP			System	& EFS — A3 — Sheet 2
Stat	Alteration	Date	Name	Standard				ES521464 en	Sheets 13

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ES521464

				Date	21/03/2024	3W POWER S.P.A.	AEG POWER SOLUTIONS	Rectifier	= System
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm		Rectifier 1	+ REC1 16 / 49
				Checked	JOP			System	& EFS
Stat	Alteration	Date	Name	Standard				ES521464 en	A3 Sheet 3
									Sheets 15

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(-PR1-(+) /2.8) / PR1+

(-PR2-(+) /3.8) / PR2+

-U+

PH4 35 mm²

PH4 10 mm²

-RC1
6800µF
160V

-C1
6800µF
160V

-R1
15K
±5%

CAUTION!!!!
CHARGED CAPACITORS INSIDE.
TERMINALS AND COMPONENTS COULD BE
LIVE EVEN WHEN THE EQUIPMENT IS
SWITCHED OFF. INSURE NO VOLTAGE IS PRESSENT
PRIOR TO ANY WORK INSIDE

-F1
1
2
125A/gL
NH00

PH4 35 mm²

REC+ / (-V21:A /5.1)

VBAT+ / (-A1-X2:1 /10.2)

GRD_FAULT / (-A1-X2:3 /10.2)

VPROT / (-A1-X2:4 /10.2)

(0V)_VPS0 / (-A1-X3:4 /10.3)

(-X32:2 /10.8) / NEG8

NEG7 / (-A10-X1:7 /9.3)
NEG6 / (-K4:11 /8.5)
NEG5 / (-X4:2 /10.8)
NEG4 / (-A21-JR1:2 /6.1)
NEG2 / (-KF:23 /6.4)
NEG1 / (-Q1:1a /1.3)

-X106
2.5 mm²
(-)

PH4 10 mm²

(-U- /2.8) / REC-

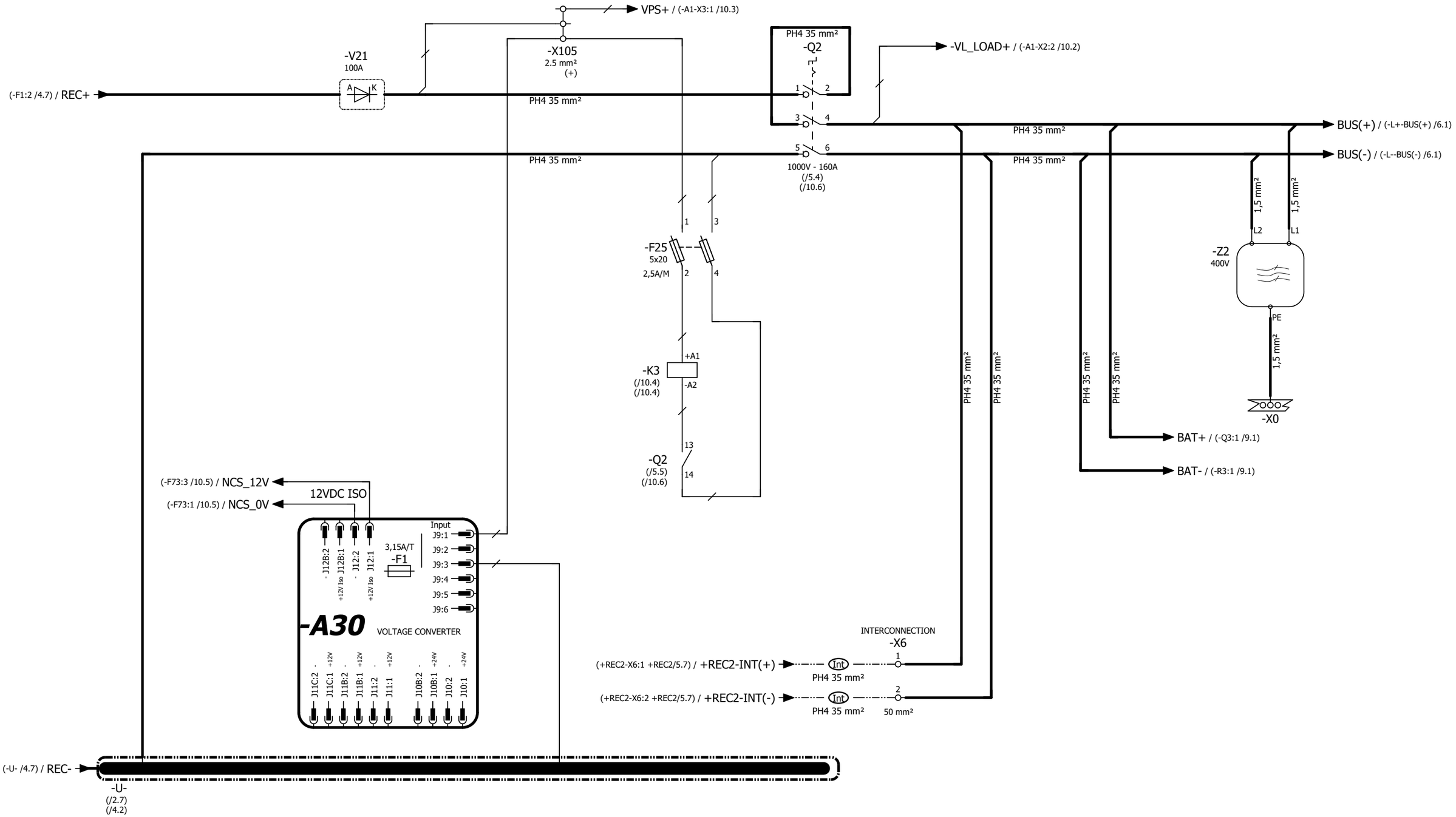
REC- / (-U- /5.1)

-U-
(/2.7)
(/5.1)

ES521464

				Date	21/03/2024	3W POWER S.P.A.			= System
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm	AEG POWER SOLUTIONS	Filtering Rectifier 1 System	+ REC1 17 / 49
01		22/07/2024	eva.beitia	Checked	JOP				& EFS Sheet 4
Stat	Alteration	Date	Name	Standard				ES521464 en	A3 Sheets 13

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				Date	21/03/2024	3W POWER S.P.A.	AEG POWER SOLUTIONS	DC output Rectifier 1 System		= System	
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm				+ REC1	18 / 49
				Checked	JOP					& EFS	Sheet 5
Stat	Alteration	Date	Name	Standard					ES521464 en	A3	Sheets 13

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-L+ 1P 250A. BUS BAR
(5.8) BUS(+)
-BUS(+)
(5.8) BUS(-)
-BUS(-)
-L- 1P 250A. BUS BAR
(7.1) (+)
(7.1) (-)

(-X106 /4.7) / NEG2

CHARGERS INTERCONNECTION -X8
(+REC2-X8:15 +REC2/7.7) / +REC2-NG2 — Int — 15

BATTERY MCCB TRIP COMMAND
-X20
1
2
4 mm²

-KF
PHOENIX CONTACT
2986960
PSR-SCP- 24DC / SIL3
A1 A2
13 14 23 24 31 32

-X10
ESD 24VDC
+ 1
- 2
4 mm²

Remote off from ESD. 24VDC Always energized.

CHARGERS INTERCONNECTION -X8
(+REC2-X8:14 +REC2/7.7) / +REC2-SP2 — Int — 14

(-A1-X7:2 /10.7) / SP2

-F101 NH 00 80A/gG
-F102 NH 00 80A/gG
PH4 16 mm²
-F10
-F11
DG S 150 FM DEHNguard
PH4 16 mm² -X0

-X0
-A21
EARTH + - BOARD
+ - PE
T+ T- T+ T-
JR1 JR2 JR1 JR2
1 2 3 1 2 3 4 5 6 4 5 6

(-X106 /4.7) / -NEG4

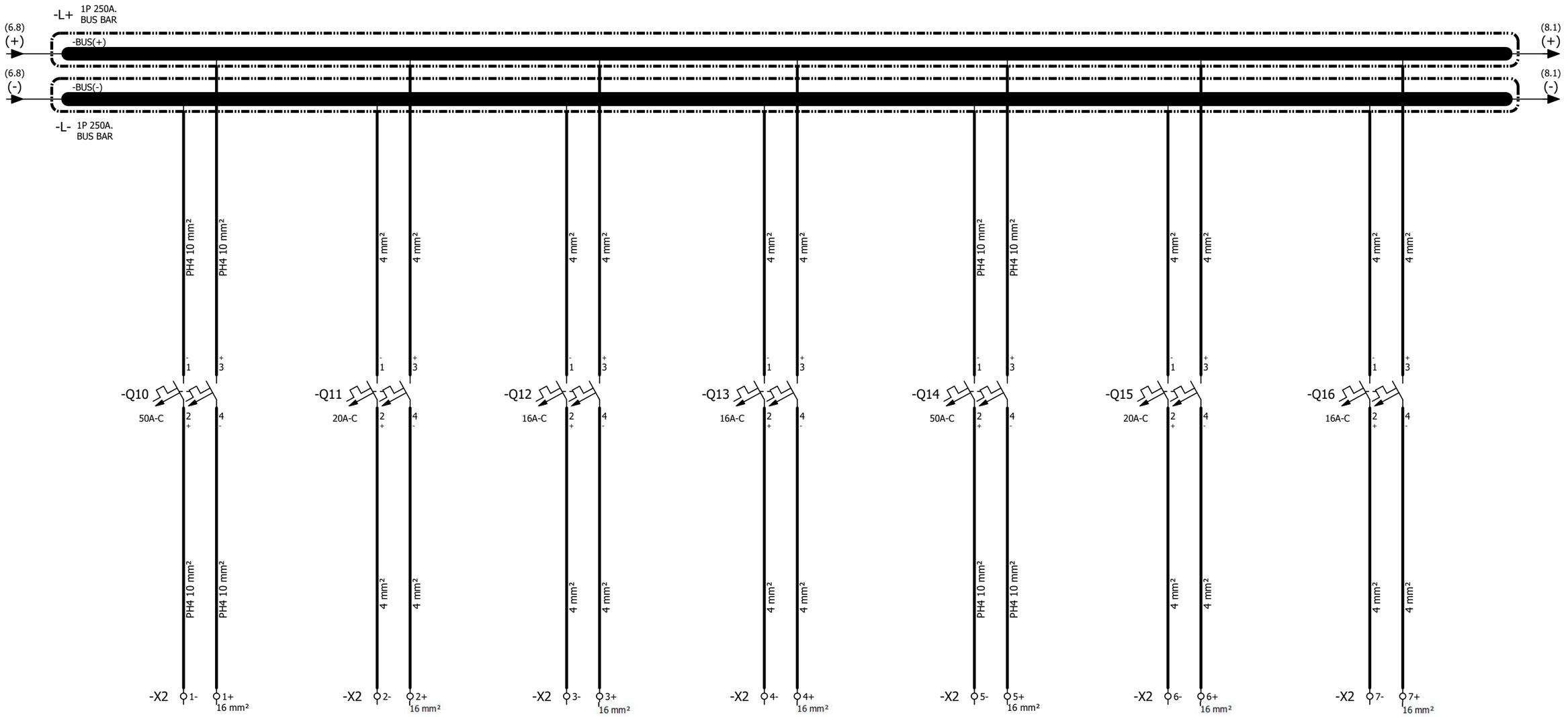
CHARGERS INTERCONNECTION -X8
5 — Int — +REC2-SP4 / (+REC2-X8:5 +REC2/7.7)
6 — Int — +REC2-SP5 / (+REC2-X8:6 +REC2/7.7)
7 — Int — +REC2-NG4 / (+REC2-X8:7 +REC2/7.7)
4 mm²

(-A1-X7:5 /10.7) / SP5
(-A1-X7:4 /10.7) / SP4

ES521464

				Date	21/03/2024	3W POWER S.P.A.	AEG POWER SOLUTIONS	Distribution		= System	
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm		Rectifier 1		+ REC1	19 / 49
01		22/07/2024	eva.beitia	Checked	JOP			System		& EFS	Sheet 6
Stat	Alteration	Date	Name	Standard					ES521464 en	A3	Sheets 13

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	-Q10	-Q11	-Q12	-Q13	-Q14	-Q15	-Q16
SUPPLIED FROM	50A-C	20A-C	16A-C	16A-C	50A-C	20A-C	16A-C
RATING	16 mm²	16 mm²	16 mm²	16 mm²	16 mm²	16 mm²	16 mm²
MAXIMUM CROSS-SECTION	98 96 95 (/8.5)	98 96 95 (/8.4)	98 96 95 (/8.4)	98 96 95 (/8.4)	98 96 95 (/8.4)	98 96 95 (/8.4)	98 96 95 (/8.4)
AUXILIARY CONTACT	CP-100F1 DC CONTROL 66kV G/S LINE A-5.2KW	CP-100F1 DC CONTROL 66kV G/S LINE B-2KW	SG-100D1 DC CONTROL 6,6kV SWITCHGEAR LINE A-1KW	SG-100D1 DC CONTROL 6,6kV SWITCHGEAR LINE B-1KW	SPARE 5,5KW	SPARE 2KW	SPARE 1KW
FUNCTION							

ES521464

				Date	21/03/2024	3W POWER S.P.A.	AEG POWER SOLUTIONS	Distribution Rectifier 1 System	= System
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm			+ REC1 20 / 49
				Checked	JOP				& EFS Sheet 7
Stat	Alteration	Date	Name	Standard				ES521464 en	A3 Sheets 13

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-L+ 1P 250A. BUS BAR
(7.8) (+) -BUS(+)
(7.8) (-) -BUS(-)
-L- 1P 250A. BUS BAR

1
-F31 3,15A/T
2
95
-Q10 (/7.2) 98 96 Tripped
98
96
-Q11 (/7.3) Tripped
95
95
-Q12 (/7.3) 98 96 Tripped
98
96
-Q13 (/7.4) Tripped
95
95
-Q14 (/7.5) 98 96 Tripped
98
96
-Q15 (/7.6) Tripped
95
95
-Q16 (/7.7) 98 96 Tripped
+A1
-K4 (/8.4) (/8.5)
-A2

-K4 11 12 14
(-A1-X7:6 /10.7) / SP6
(-X106 /4.7) / NEG6

K4 21 22 24
-X8 4 mm² CHARGERS INTERCONNECTION 10 11
Int Int
+REC2-NG6 / (+REC2-X8:11 +REC2/7.7)
+REC2-SP6 / (+REC2-X8:10 +REC2/7.7)

ES521464

				Date	21/03/2024	3W POWER S.P.A.	AEG POWER SOLUTIONS	Distribution Rectifier 1 System	= System
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm			+ REC1 21 / 49
				Checked	JOP				& EFS
Stat	Alteration	Date	Name	Standard				ES521464 en	A3 Sheet 8 Sheets 13

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(-L+-BUS(+) /5.7) / BAT+

(-L--BUS(-) /5.7) / BAT-

-R3
100mV
130A
1 2 3 4

PH4 35 mm²

(-K3:24 /10.4) / R3M+

(-K3:14 /10.4) / R3M-

CHARGERS INTERCONNECTION
-X8

(+REC2-X8:8 +REC2/7.4) / +REC2-R3M+ — Int — 8

(+REC2-X8:9 +REC2/7.3) / +REC2-R3M- — Int — 9

4 mm²

PH4 35 mm²
-Q3
1 2 3 4 5 6
1000V - 160A

PH4 35 mm²

PH4 35 mm²

50 mm²

BATTERY 110Vdc
-X3

+BP
(+&EFA/1.7)
BATTERY PROTECTION

BATTERY 110Vdc
BATTERY PROTECTION
NON SUPPLIED BY AEG PS
BATTERY 110Vdc

-BAT
10x FLG12-150 (60 Cells)
(+)
MP
(-)

(-X32:1 /10.8) / SP8 — Int — 1

(-X32:2 /10.8) / NG8 — Int — 2

(+REC2-X32:1 +REC2/7.8) / +REC2-SP8 — Int — 3

(+REC2-X32:2 +REC2/7.8) / +REC2-NG8 — Int — 4

-A10
(+&EFA/1.6)

(-F32:1 /1.6) / A10-U — F13 1 2 3,15A/T — X1 17

(-F32:3 /1.6) / A10-N — F13 3 4 3,15A/T 5x20 — X1 15

BATTERY SYMMETRY FAILURE

X1 3 1 5 + -

X1 7 8 9 13 12 11

F23
1 2 3,15A/T
3 4 3,15A/T 5x20

SP7 / (-A1-X7:7 /10.7)

NEG7 / (-X106 /4.7)

Battery symmetry
-X31

6 mm²

Int — max 10 mts — Plastic box 80*80 -F100 3.15A — max 10 mts — Int

Int — +REC2-BATT_SYMM / (+REC2-X31 +REC2/6.7)

CHARGERS INTERCONNECTION
-X8

12 — Int — +REC2-BATT_+ / (+REC2-X8:12 +REC2/6.6)

13 — Int — +REC2-BATT_- / (+REC2-X8:13 +REC2/6.6)

4 mm²

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				Date	21/03/2024	3W POWER S.P.A.			= System	
01		22/07/2024	eva.beitia	Editor	EBM	Hollandse Kust Noord (HKN) wind farm	AEG POWER SOLUTIONS	Battery Rectifier 1 System	+ REC1	22 / 49
01		22/07/2024	eva.beitia	Checked	JOP				& EFS	Sheet 9
Stat	Alteration	Date	Name	Standard					ES521464 en	A3 Sheets 13

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VBAT+ / (-F1:2 /4.7)
VL_LOAD+ / (-Q2:4 /5.6)
GRD_FAULT / (-F1:2 /4.7)
VPROT / (-F1:1 /4.7)
VPS+ / (-X105 /5.4)
(0V)_VPS0 / (-U- /4.7)
R3M- / (-R3:3 /9.2)
R3M+ / (-R3:4 /9.2)
R2M- / (-R2:3 /2.8)
R2M+ / (-R2:4 /2.8)
100º TEMP / (-PR2-THF1:1 /3.7)
90º TEMP / (-PR2-THF2:1 /3.7)
6U / (-F12:2 /1.8)
6V / (-F12:4 /1.8)

-K3 (12, 14, 11)
-K3 (22, 24, 21)
-W20 8x0,5
-Q2 (/5.5) (/5.4) (23, 24)
-F5 3,15A/T 5x20 (1, 3, 2, 4)

CHARGERS INTERCONNECTION
-X8

-A8
Isolated
REMOTE (cross)
+12V
0V
J1
J2
Int
4 mm² 2,5 mm²

+REC2-A / (+REC2-X8:4 +REC2/7.7)
+REC2-B / (+REC2-X8:3 +REC2/7.7)
+REC2-C / (+REC2-X8:2 +REC2/7.7)
+REC2-D / (+REC2-X8:1 +REC2/7.7)

BP INTERCONNECTION
-X32
SP8 / (+BP-X30:1 /9.6)
NG8 / (+BP-X30:2 /9.6)
NEG8 / (-X106 /4.6)

X1 Thyristor driving gate 1 / Thyristor driving cathode 1 / Thyristor driving gate 2 / Thyristor driving cathode 2
X2 Battery voltage measurement and charger regulation / Load voltage measurement / Ground fault dectection positive connection / Capacitor over voltage protection / Battery symmetry measurement
X3 Positive DC bus power supply / Low Voltage Disconnection contactor output / Negative DC bus power supply
X4 Relay shown in alarm status
X5 Battery shunt positive line / Battery shunt negative line / Charger shunt positive line / Charger shunt negative line
X6 Analog spare input positive line (0-10V) / Analog spare input negative line (0-10V)
X8 Dual Highrate (shared or parallel) / Feedback // high rate / Shutdown for bridge temperature security / Bridge temperature alarm
X9 Alternative power supply (20VAC) / Fan command (+24V)
X10 12V extern power supply + / Gnd & extern power supply -

-A1
(/11.2)
GCAU
CONTROL UNIT

A10

X7
Q1 OPEN — SP1 / (-Q1:2a /1.2)
REMOTE OFF INHIBITION — SP2 / (-KF:24 /6.4)
Digital spare input 3
GROUND FAULT - — SP4 / (-A21-JR2:3 /6.2)
GROUND FAULT + — SP5 / (-A21-JR1:3 /6.2)
DISTRIBUTION FAILURE — SP6 / (-K4:14 /8.4)
BATT.SYMM.FAULT — SP7 / (-A10-X1:8 /9.3)
VENTILATION FAILURE

-X4
Floating forced Charger (1)
Normally closed (2)
(-X106 /4.7) / NEG5
Stop boost charging in case of HVAC failure (open de contact)

-A71 EXTERN COMMUNICATION
H1
EIA232 J2
EIA485 J3
X11 DIN-Signal C096MS-4,4C1-2
J1 J2 J3 J4 J5 J7

-J8

-A73 NCS-TCP/IP
PT3 — PT4
PT1 — PT2
MODBUS-TCP/IP I4
EIA232
+12V
0V
H1

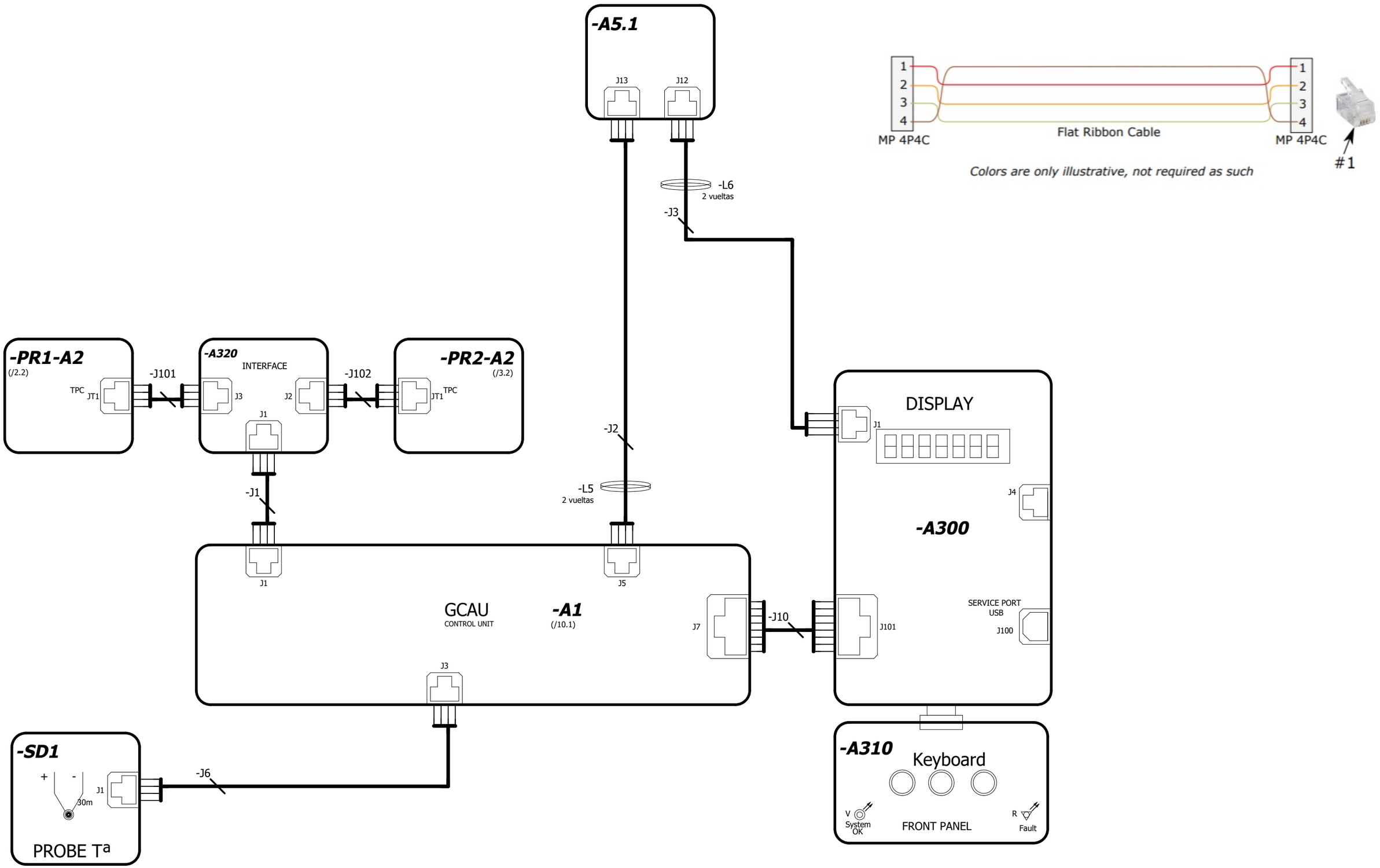
-F73 3,15A/T 5x20
NCS_0V / (-A30-J12:2 /5.2)
NCS_12V / (-A30-J12:1 /5.2)

-X
UMK-RJ45/S/8PTDA
-A7
-J16
CAT6A
MODBUS TCP/IP

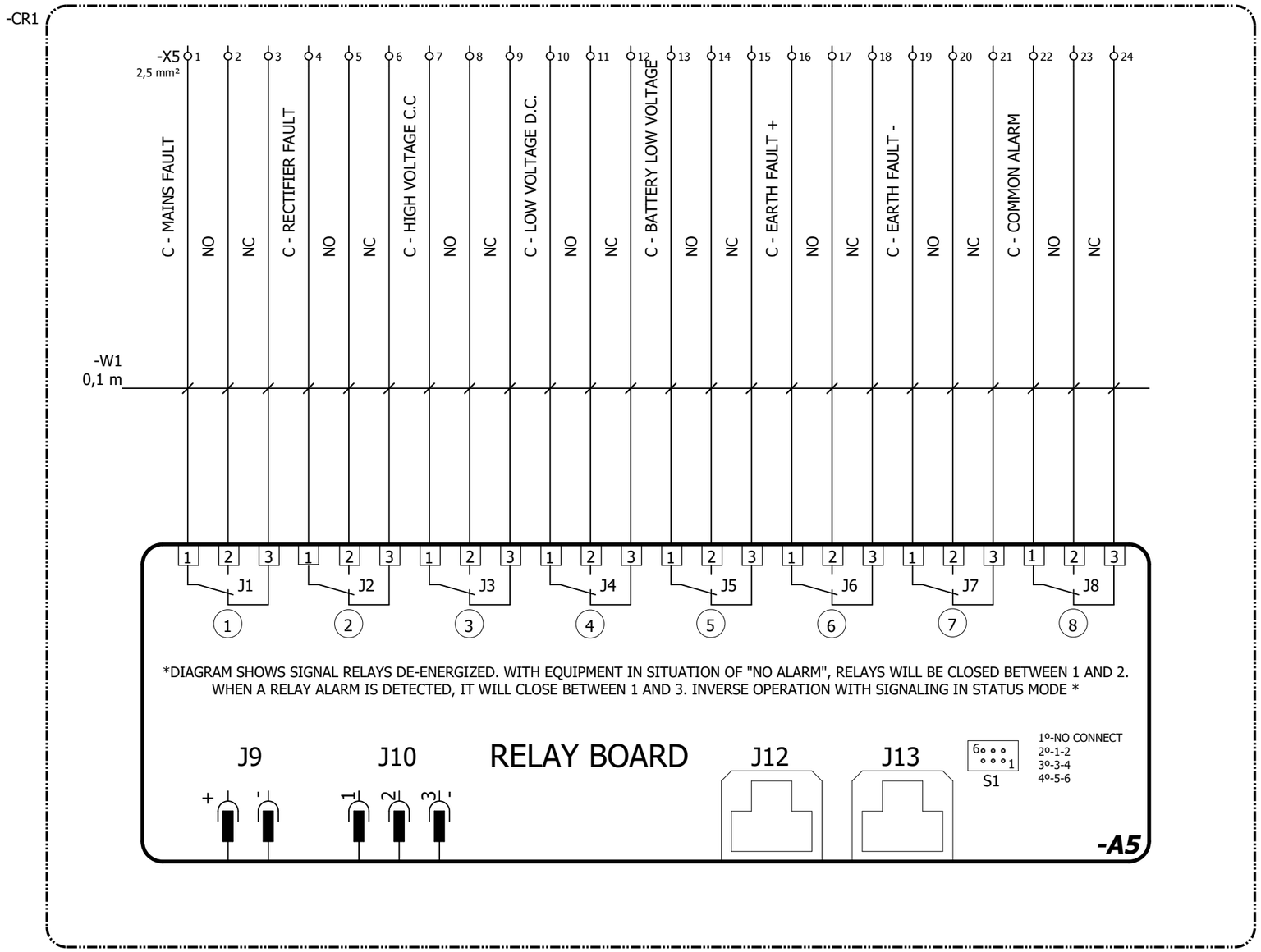
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				Date	21/03/2024	3W POWER S.P.A.			= System
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm	AEG POWER SOLUTIONS	Control Unit Rectifier 1 System	+ REC1 — 23 / 49
01		22/07/2024	eva.beitia	Checked	JOP				& EFS — A3 — Sheet 10
Stat	Alteration	Date	Name	Standard				ES521464 en	Sheets 13

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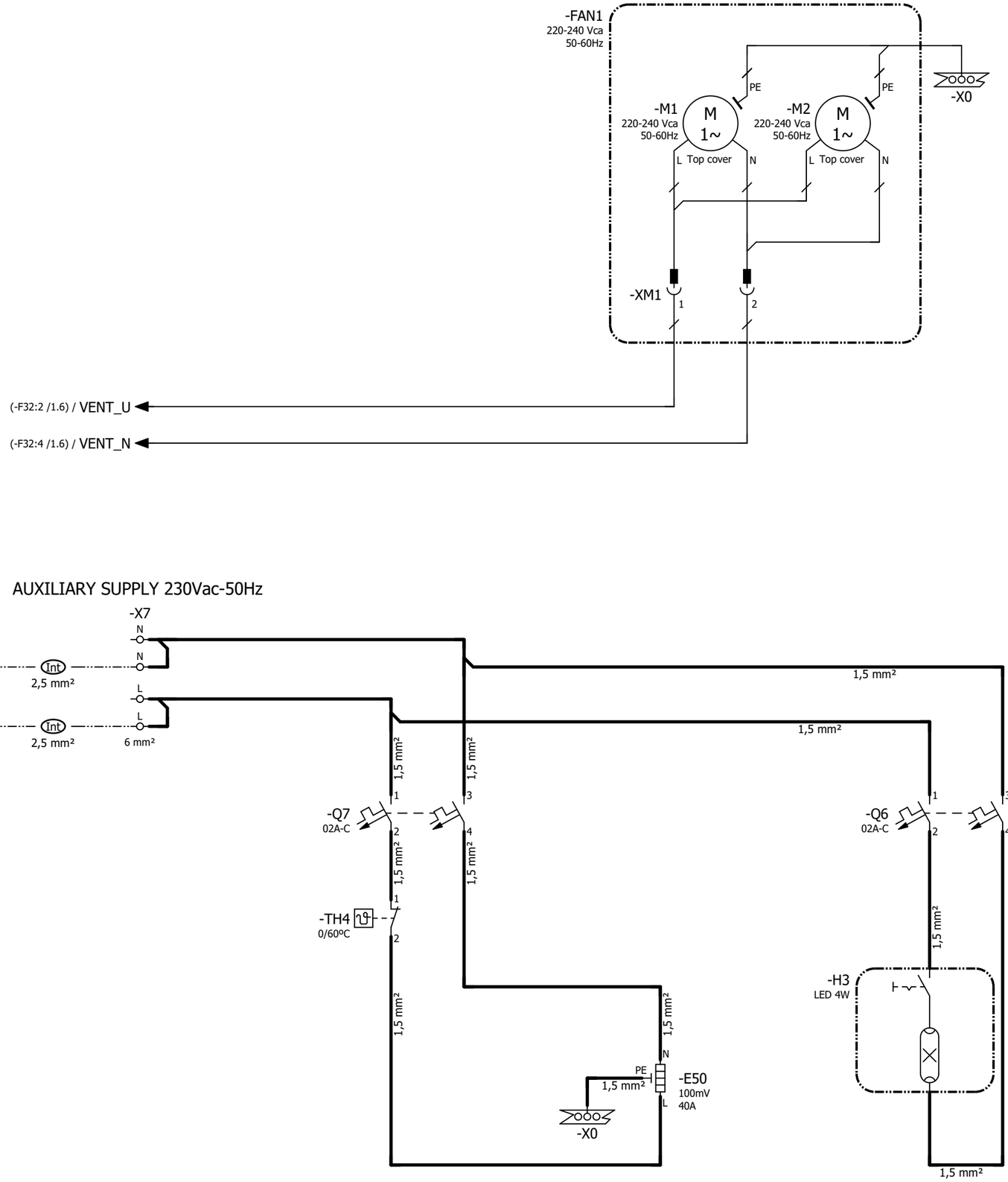
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				Date	21/03/2024	3W POWER S.P.A.	AEG POWER SOLUTIONS	Relay board Rectifier 1 System		= System	
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm				+ REC1	25 / 49
				Checked	JOP					& EFS	
Stat	Alteration	Date	Name	Standard					ES521464 en		A3
											Sheet 12
											Sheets 13

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				Date	21/03/2024	3W POWER S.P.A.	AEG POWER SOLUTIONS	Cabinet accesories	= System
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm		Rectifier 1	+ REC1 26 / 49
				Checked	JOP			System	& EFS Sheet 13
Stat	Alteration	Date	Name	Standard				ES521464 en	A3 Sheets 13

Terminal diagram

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Nº Operating medium	Nº Terminal	Jumper connection	Min section	Max section	Connection point type		Function
=System+REC1-X1						PART Nº	229170
-X1 (&EFS/1.1)	L1		16 mm²	70 mm²	SCREW TYPE	L1	MAINS 3x400Vac 50Hz -50kA
-X1 (&EFS/1.1)	L2		16 mm²	70 mm²	SCREW TYPE	L2	=
-X1 (&EFS/1.1)	L3		16 mm²	70 mm²	SCREW TYPE	L3	=

Nº Operating medium	Nº Terminal	Jumper connection	Min section	Max section	Connection point type		Function
=System+REC1-X2						PART Nº	229106
-X2 (&EFS/7.2)	1+		0.5 mm²	16 mm²	SCREW TYPE		CP-100F1 DC CONTROL 66kV G/S LINE A-5.2KW
-X2 (&EFS/7.2)	1-		0.5 mm²	16 mm²	SCREW TYPE		=
-X2 (&EFS/7.3)	2+		0.2 mm²	16 mm²	SCREW TYPE		CP-100F1 DC CONTROL 66kV G/S LINE B-2KW
-X2 (&EFS/7.3)	2-		0.2 mm²	16 mm²	SCREW TYPE		=
-X2 (&EFS/7.4)	3+		0.2 mm²	16 mm²	SCREW TYPE		SG-100D1 DC CONTROL 6,6kV SWITCHGEAR LINE A-1KW
-X2 (&EFS/7.3)	3-		0.2 mm²	16 mm²	SCREW TYPE		=
-X2 (&EFS/7.5)	4+		0.2 mm²	16 mm²	SCREW TYPE		SG-100D1 DC CONTROL 6,6kV SWITCHGEAR LINE B-1KW
-X2 (&EFS/7.4)	4-		0.2 mm²	16 mm²	SCREW TYPE		=
-X2 (&EFS/7.6)	5+		0.5 mm²	16 mm²	SCREW TYPE		SPARE 5,5KW
-X2 (&EFS/7.5)	5-		0.5 mm²	16 mm²	SCREW TYPE		=
-X2 (&EFS/7.6)	6+		0.2 mm²	16 mm²	SCREW TYPE		SPARE 2KW
-X2 (&EFS/7.6)	6-		0.2 mm²	16 mm²	SCREW TYPE		=

Nº Operating medium	Nº Terminal	Jumper connection	Min section	Max section	Connection point type		Function
=System+REC1-X2						PART Nº	229106
-X2 (&EFS/7.7)	7+		0.2 mm²	16 mm²	SCREW TYPE		SPARE 1KW
-X2 (&EFS/7.7)	7-		0.2 mm²	16 mm²	SCREW TYPE		=

Nº Operating medium	Nº Terminal	Jumper connection	Min section	Max section	Connection point type		Function
=System+REC1-X3						PART Nº	ES273150
-X3 (&EFS/9.6)	+		1 mm²	50 mm²	SCREW TYPE	+	BATTERY 110Vdc
-X3 (&EFS/9.6)	-		1 mm²	50 mm²	SCREW TYPE	-	=

Nº Operating medium	Nº Terminal	Jumper connection	Min section	Max section	Connection point type		Function
=System+REC1-X4						PART Nº	229104
-X4 (&EFS/10.8)	1		0.22 mm²	4 mm²	SCREW TYPE	C	Floating forced Charger
-X4 (&EFS/10.8)	2		0.22 mm²	4 mm²	SCREW TYPE	NC	=

Nº Operating medium	Nº Terminal	Jumper connection	Min section	Max section	Connection point type		Function
=System+REC1-X6						PART Nº	ES273150
-X6 (&EFS/5.5)	1		1 mm²	50 mm²	SCREW TYPE		INTERCONNECTION
-X6 (&EFS/5.5)	2		1 mm²	50 mm²	SCREW TYPE		=

Nº Operating medium	Nº Terminal	Jumper connection	Min section	Max section	Connection point type		Function
=System+REC1-X7						PART Nº	229106
-X7 (&EFS/13.2)	L		0.2 mm²	6 mm²	SCREW TYPE	L	AUXILIARY SUPPLY 230Vac-50Hz

Terminal diagram

Nº Operating medium	Nº Terminal	Jumper connection	Min section	Max section	Connection point type		Function
=System+REC1-X7						PART Nº	229106
-X7 (&EFS/13.2)	L		0.2 mm²	6 mm²	SCREW TYPE	L	AUXILIARY SUPPLY 230Vac-50Hz
-X7 (&EFS/13.2)	N		0.2 mm²	6 mm²	SCREW TYPE	N	=
-X7 (&EFS/13.2)	N		0.2 mm²	6 mm²	SCREW TYPE	N	=

Nº Operating medium	Nº Terminal	Jumper connection	Min section	Max section	Connection point type		Function
=System+REC1-X8						PART Nº	229104
-X8 (&EFS/10.7)	1		0.22 mm²	4 mm²	SCREW TYPE		CHARGERS INTERCONNECTION
-X8 (&EFS/10.7)	2		0.22 mm²	4 mm²	SCREW TYPE		=
-X8 (&EFS/10.7)	3		0.22 mm²	4 mm²	SCREW TYPE		=
-X8 (&EFS/10.7)	4		0.22 mm²	4 mm²	SCREW TYPE		=
-X8 (&EFS/6.2)	5		0.22 mm²	4 mm²	SCREW TYPE		=
-X8 (&EFS/6.2)	6		0.22 mm²	4 mm²	SCREW TYPE		=
-X8 (&EFS/6.2)	7		0.22 mm²	4 mm²	SCREW TYPE		=
-X8 (&EFS/9.2)	8		0.22 mm²	4 mm²	SCREW TYPE		=
-X8 (&EFS/9.2)	9		0.22 mm²	4 mm²	SCREW TYPE		=
-X8 (&EFS/8.5)	10		0.22 mm²	4 mm²	SCREW TYPE		=
-X8 (&EFS/8.5)	11		0.22 mm²	4 mm²	SCREW TYPE		=
-X8 (&EFS/9.5)	12		0.22 mm²	4 mm²	SCREW TYPE		=
-X8 (&EFS/9.5)	13		0.22 mm²	4 mm²	SCREW TYPE		=
-X8 (&EFS/6.4)	14		0.22 mm²	4 mm²	SCREW TYPE		=
-X8 (&EFS/6.4)	15		0.22 mm²	4 mm²	SCREW TYPE		=

Nº Operating medium	Nº Terminal	Jumper connection	Min section	Max section	Connection point type		Function
=System+REC1-X10						PART Nº	229104
-X10 (&EFS/6.4)	1		0.22 mm²	4 mm²	SCREW TYPE	+	ESD 24VDC
-X10 (&EFS/6.4)	2		0.22 mm²	4 mm²	SCREW TYPE	-	=

Nº Operating medium	Nº Terminal	Jumper connection	Min section	Max section	Connection point type		Function
=System+REC1-X20						PART Nº	229104
-X20 (&EFS/6.5)	1		0.22 mm²	4 mm²	SCREW TYPE	NO	BATTERY MCCB TRIP COMMAND
-X20 (&EFS/6.5)	2		0.22 mm²	4 mm²	SCREW TYPE	C	=

Nº Operating medium	Nº Terminal	Jumper connection	Min section	Max section	Connection point type		Function
=System+REC1-X31						PART Nº	229106
-X31 (&EFS/9.6)			0.2 mm²	6 mm²	SCREW TYPE		Battery symmetry

Nº Operating medium	Nº Terminal	Jumper connection	Min section	Max section	Connection point type		Function
=System+REC1-X32						PART Nº	229104
-X32 (&EFS/10.8)	1		0.22 mm²	4 mm²	SCREW TYPE		BP INTERCONNECTION
-X32 (&EFS/10.8)	2		0.22 mm²	4 mm²	SCREW TYPE		=

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				Editor	EBM	Hollandse Kust Noord (HKN) wind farm		Rectifier 1	+ REC1 28 / 49
01		22/07/2024	eva.beitia	Checked	JOP			System	& EMA A3 Sheet 2
Stat	Alteration	Date	Name	Standard				ES521464 en	Sheets

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Bill of materials

AEGPSI.V04

Identifier	Quantity	AEG Part Number	Designation		AEG Recomended as Spare Part	Servicetime (Years)
A1	1	GC_ES272500	GCAU BOARD	GCAU	X	
A1-A71	1	ES416161	PCA COMMUNIC. EXT. GCAU 232/485		X	
A7	1	ES277921	ADAPTER		X	
A8	1	ES275962	ISOLATION BOARD		X	
A10	1	215293	BATTERY SIMETRY BOARD A10		X	
A21	1	GC_ES425889	EARTH FAULT BOARD		X	
A30	1	ES417940	CONVERTER BOARD		X	
A30-F1;F5;F12;F13;F22;F23;F31;F73;F100-F100	17	ES274292	FUSE	3,15A/T	X	
A73	1	GC_ES273626	PCA COMMUNIC. TCP/IP		X	
A300-A300	1	ES272501	DISPLAY		X	
A300-A310	1	211921	KEY PAD		X	
A320	1	ES416456	TPC INTERFACE BOARD		X	
CR1-A5	1	228540	RELAYS PCB EXT		X	
CR1-X5	16	221606	TRIPLE TERMINAL	2,5 mm²		
CR1-W1	1	ES275423	WIRES SET			
CR1-X5	1	221607	ENDPLATE			
E50-E1	1	220659	HEATING RESISTOR	100W		
F1;F101;F102	3	223181	FUSE HOLDER	NH 00		
F1	1	213381	FUSE	125A/gL	X	
F5;F13;F23;F25;F32;F73	6	ES417902	DOUBLE FUSE HOLDER	5x20		
F10;F11	2	228018	SURGE PROTECTION			
F12;F22	2	ES417903	TRIPLE FUSE HOLDER	5x20		

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AEGPSI.V04

Identifier	Quantity	AEG Part Number	Designation		AEG Recomended as Spare Part	Servicetime (Years)
F25;F32	4	213368	FUSE	2,5A/M	X	
F31	1	229134	FUSE HOLDER TERMINAL			
F31	1	229334	ENDPLATE			
F101;F102	2	ES275254	FUSE	80A/gL		
FAN1-M1;FAN1-M2	2	BMPU00287000	FAN	220-240 Vac 50-60Hz	X	5
H3	1	228099	LIGHTING SET	LED 4W		
J16	1	ES277638	ETHERNET CABLES	1m		
K3;K4	2	ES271165	AUXILIARY RELAY			
KF	1	ES274796	SECURITY RELAY			
L5;L6	2	228112	FERRITE			
L+;L-	2	226856	BUS	1P 250A.		
PR1-A2;PR2-A2	2	3TN21023AAAA	TPC BOARD		X	
PR1-V1/V2;PR1-V3/V4;PR1-V5/V6;PR2-V1/V2 PR2-V3/V4;PR2-V5/V6	6	214849	SEMIPACK 2 THYRISTORS	90A 1600V		
PR1-W10;PR2-W10	2	ES273576	WIRES SET			
PR1-THF1;PR2-THF1	2	ES212095	THERMOSTAT	100ºC		
PR1-THF2;PR2-THF2	2	ES215170	THERMOSTAT	90ºC		
Q1	1	ES272892	CIRCUIT BREAKER	50A		
Q1	1	BKD001036000	AUXILIARY CONTACT	Posición OF		
Q2;Q3	2	ES274517	DISCONNECTOR	1000V - 160A		
Q2	2	ES229261	AUXILIARY CONTACT			
Q6;Q7	2	224404	CIRCUIT BREAKER	2A-C		
Q10;Q14	2	ES271746	CIRCUIT BREAKER	50A-C		

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Identifier	Quantity	AEG Part Number	Designation		AEG Recomended as Spare Part	Servicetime (Years)
Q10...Q16	7	224157	AUXILIARY CONTACT			
Q11;Q15	2	ES272068	CIRCUIT BREAKER	20A-C		
Q12;Q13;Q16	3	ES271440	CIRCUIT BREAKER	16A-C		
R2;R3	2	212055	SHUNT	100mV 130A		
R2-1;R3-1	4	210012	INSULATOR			
RC1-1	3	ES229059	WASHER			
RC1-2	2	418226	TINNED COPPER CONNECTIONS			
RC1-3	1	213180	CAPACITOR METAL PLATE			
RC1-4;Z1;Z2	6	213787	ADAPTER		X	
RC1-C1	3	219804	CAPACITOR	6800µF 160V	X	7
RC1-R1	1	ES273618	RESISTANCE	15K ±5%		
SD1	1	ES272385	TEMPERATURE PROBE	30m		
T1	1	B00992740040	TRANSFORMER WITH CHOKE	110V/100A 019.6KVA		
TH4	1	220275	THERMOSTAT	0/60ºC		
U+;U-	2	ES273807	TINNED COPPER CONNECTIONS			
V21	1	214872	DIODE	240A 1200V		
V21	2	216359	INSULATOR			
V21	1	410283	HEATSINK	L=100 mm		
W11	1	ES273652	WIRES SET			
X0	1	219059	TINNED COPPER CONNECTIONS			
X1	3	229170	GRAY TERMINAL	70 mm²		
X2	14	229116	GRAY TERMINAL	16 mm²		

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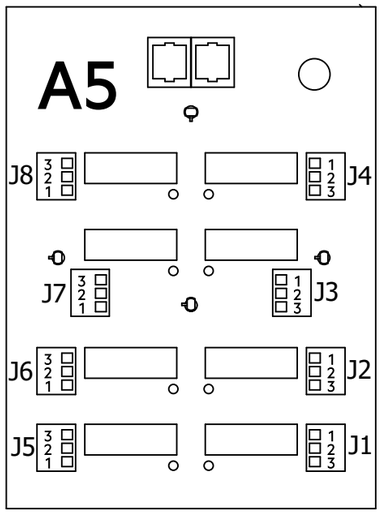
AEGPSI.V04

Identifier	Quantity	AEG Part Number	Designation	AEG Recomended as Spare Part	Servicetime (Years)
X2;X7;X31	5	229106	GRAY TERMINAL 6 mm²		
X2;X4;X7;X8;X20;X31;X32	8	229304	ENDPLATE		
X3;X6	4	ES273150	GRAY TERMINAL 50 mm²		
X4;X8;X10;X20;X32	23	229104	GRAY TERMINAL 4 mm²		
X7	2	227799	JUMPER		
X105	1	ES277127	BUS		
X106	1	ES276860	BUS		
Z1	1	ES229868	PCA FILTER EMC 0/450V	X	
Z1	1	ES273041	PROTECTIÓN COVER	X	
Z2	1	ES229869	PCA FILTER EMC 400V	X	
Z2	1	ES228792	PROTECTIÓN COVER	X	

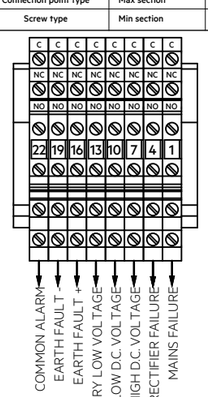
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Relay card detail

CR1



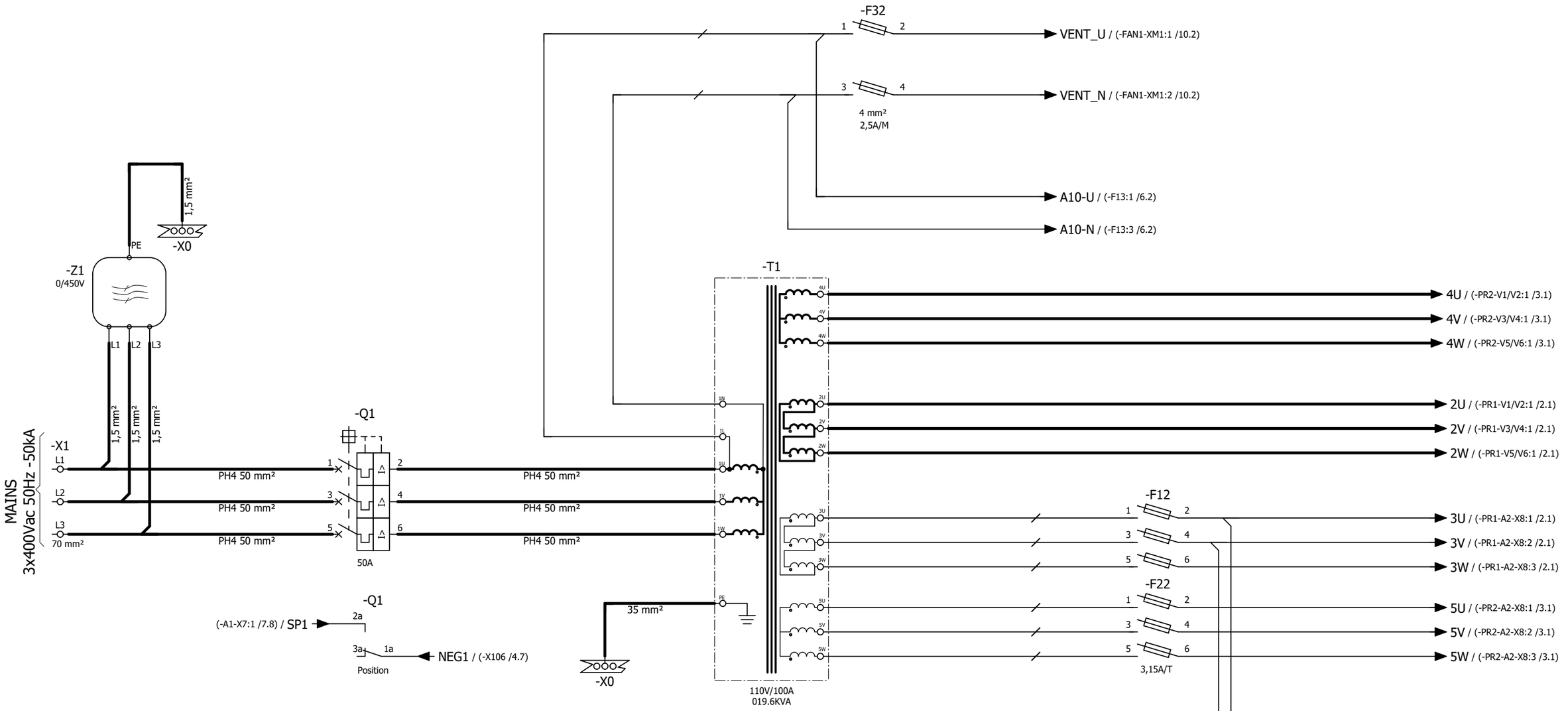
Terminal	Connection point type	Max section	4 mm²
	Screw type	Min section	0.2 mm²



				Date	21/03/2024	3W POWER S.P.A.	AEG POWER SOLUTIONS	Relay card detail
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm		Rectifier 1
				Checked	JOP			System
Stat	Alteration	Date	Name	Standard			ES521464 en	A3

= System
+ REC1 — 33 / 49
& MTB — Sheet 1
Sheets 1

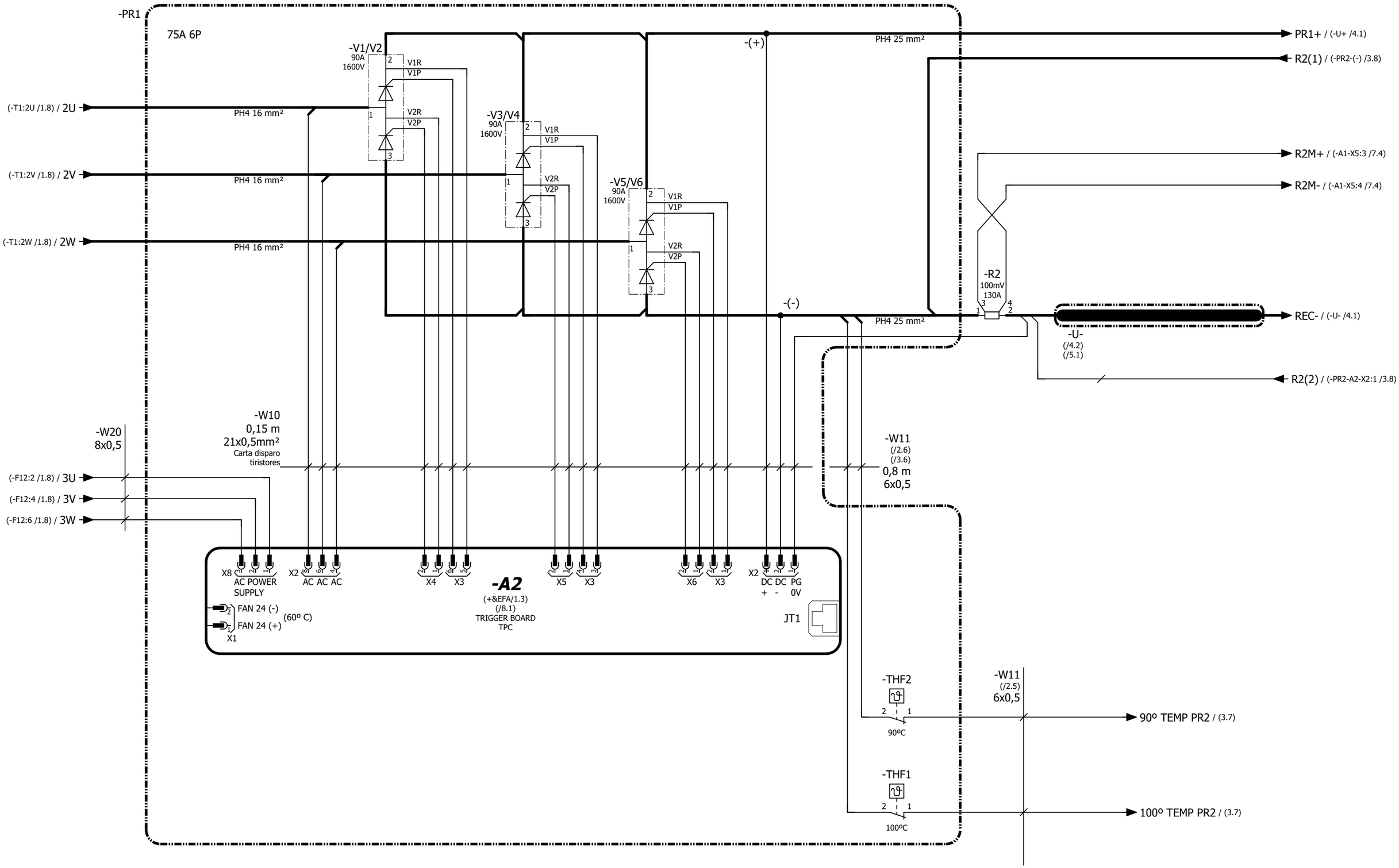
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				Date	21/03/2024	3W POWER S.P.A.	AEG POWER SOLUTIONS	Main supply		= System	
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm		Rectifier 2		+ REC2	34 / 49
				Checked	JOP			System		& EFS	Sheet 1
Stat	Alteration	Date	Name	Standard					ES521464 en	A3	Sheets 10

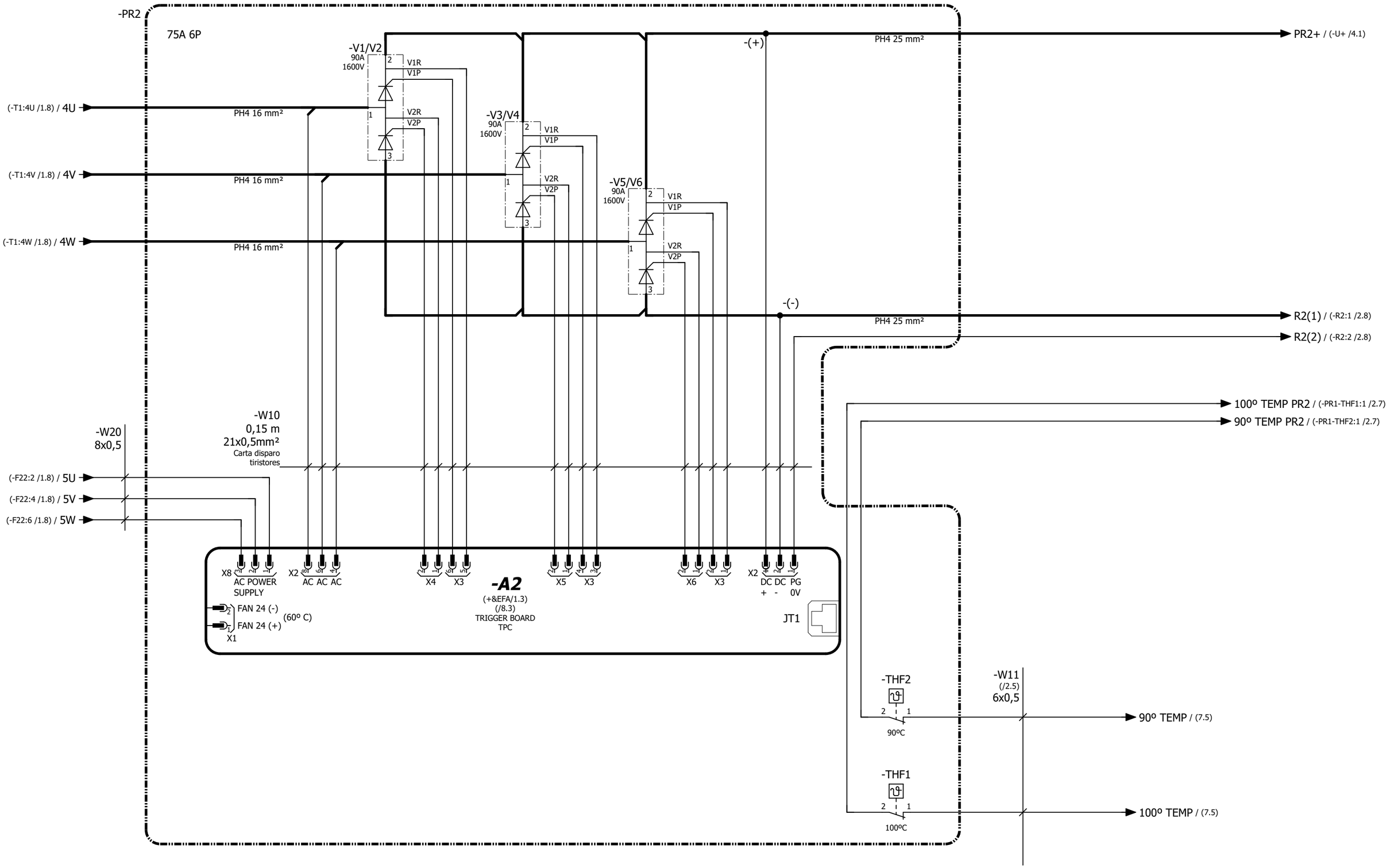
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				Date	21/03/2024	3W POWER S.P.A.	AEG POWER SOLUTIONS	Rectifier Rectifier 2 System	= System + REC2 35 / 49 & EFS
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm			
				Checked	JOP				
Stat	Alteration	Date	Name	Standard				ES521464 en	A3 Sheet 2 Sheets 10

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				Date	21/03/2024	3W POWER S.P.A.	AEG POWER SOLUTIONS	Rectifier Rectifier 2 System		= System
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm				+ REC2 36 / 49
				Checked	JOP					& EFS
Stat	Alteration	Date	Name	Standard					ES521464 en	A3 Sheet 3 / Sheets 10

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(-PR1-(+) /2.8) / PR1+

(-PR2-(+) /3.8) / PR2+

-U+

PH4 35 mm²

PH4 10 mm²

-RC1
6800µF
160V

-C1
6800µF
160V

-R1
15K
±5%

CAUTION!!!!
CHARGED CAPACITORS INSIDE.
TERMINALS AND COMPONENTS COULD BE
LIVE EVEN WHEN THE EQUIPMENT IS
SWITCHED OFF. INSURE NO VOLTAGE IS PRESSENT
PRIOR TO ANY WORK INSIDE

-F1
1
2
125A/gL
NH00

PH4 35 mm²

REC+ / (-V21:A /5.1)

VBAT+ / (-A1-X2:1 /7.2)

GRD_FAULT / (-A1-X2:3 /7.2)

VPROT / (-A1-X2:4 /7.2)

(0V)_VPS0 / (-A1-X3:4 /7.3)

(-X32:2 /7.8) / NEG8

NEG7 / (-A10-X1:7 /6.3)
NEG6 / (-X8:11 /7.8)
NEG5 / (-X4:2 /7.7)
NEG4 / (-X8:7 /7.8)
NEG2 / (-X8:15 /7.8)
NEG1 / (-Q1:1a /1.3)

-X106
2.5 mm²
(-)

PH4 10 mm²

(-U- /2.8) / REC-

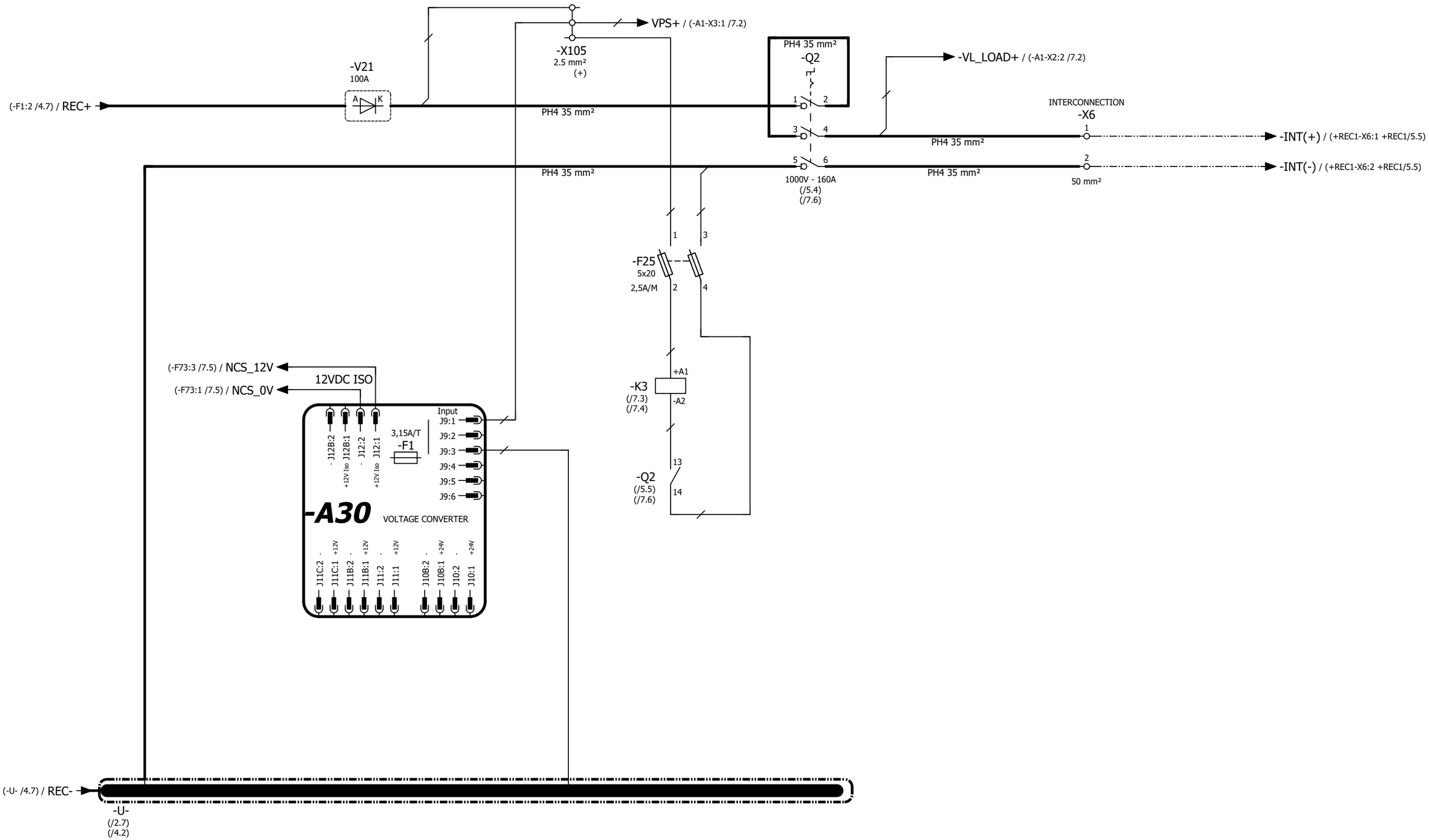
REC- / (-U- /5.1)

-U-
(/2.7)
(/5.1)

ES521464

				Date	21/03/2024	3W POWER S.P.A.				= System	
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm	AEG POWER SOLUTIONS	Filtering Rectifier 2 System		+ REC2	37 / 49
01		22/07/2024	eva.beitia	Checked	JOP					& EFS	Sheet 4
Stat	Alteration	Date	Name	Standard					ES521464 en		A3 Sheets 10

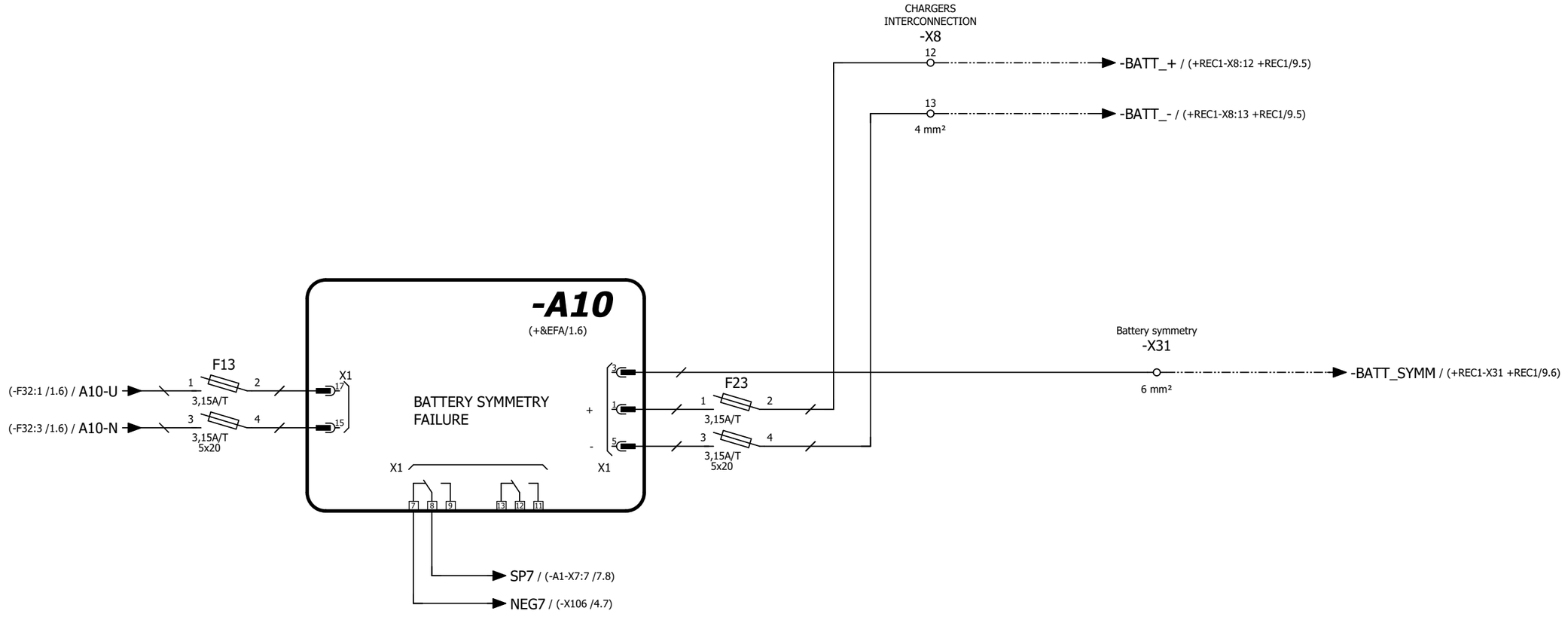
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				Date	21/03/2024	3W POWER S.P.A.	AEG POWER SOLUTIONS	DC output	= System
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm		Rectifier 2	+ REC2 38 / 49
				Checked	JOP			System	& EFS
Stat	Alteration	Date	Name	Standard				ES521464 en	A3 Sheet 5 Sheets 10

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				Date	21/03/2024	3W POWER S.P.A.	AEG POWER SOLUTIONS	Battery Rectifier 2 System	= System
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm			+ REC2 39 / 49
01		22/07/2024	eva.beitia	Checked	JOP				& EFS Sheet 6
Stat	Alteration	Date	Name	Standard				ES521464 en	A3 Sheets 10

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-A1
(/8.2)
GCAU
CONTROL UNIT

VBAT+ / (-F1:2 /4.7)
VL_LOAD+ / (-Q2:4 /5.6)
GRD_FAULT / (-F1:2 /4.7)
VPROT / (-F1:1 /4.7)
VPS+ / (-X105 /5.4)
(0V)_VPS0 / (-U- /4.7)
R3M- / (+REC1-X8:9 +REC1/9.2)
R3M+ / (+REC1->X8:8 +REC1/9.2)
R2M- / (-R2:3 /2.8)
R2M+ / (-R2:4 /2.8)
100º TEMP / (-PR2-THF1:1 /3.7)
90º TEMP / (-PR2-THF2:1 /3.7)
6U / (-F12:2 /1.8)
6V / (-F12:4 /1.8)

-X8 CHARGERS INTERCONNECTION
4 mm²
-K3
-W20 8x0,5
-Q2 (/5.5) (/5.4)
-F5 3,15A/T 5x20

X1 Thyristor driving gate 1 / Thyristor driving cathode 1 / Thyristor driving gate 2 / Thyristor driving cathode 2
X2 Battery voltage measurement and charger regulation / Load voltage measurement / Ground fault dectection positive connection / Capacitor over voltage protection / Battery symmetry measurement
X3 Positive DC bus power supply / Low Voltage Disconnection contactor output / Negative DC bus power supply
X4 Relay shown in alarm status
X5 Battery shunt positive line / Battery shunt negative line / Charger shunt positive line / Charger shunt negative line
X6 Analog spare input positive line (0-10V) / Analog spare input negative line (0-10V)
X8 Dual Highrate (shared or parallel) / Feedback // high rate / Shutdown for bridge temperature security / Bridge temperature alarm
X9 Alternative power supply (20VAC) / Fan command (+24V)
X10 12V extern power supply + / Gnd & extern power supply -

A10

-A8 Isolated
J1: +12V, 0V
J2: REMOTE (cross)

CHARGERS INTERCONNECTION -X8
+REC2-D / (+REC1-X8:4 +REC1/10.8)
+REC2-C / (+REC1-X8:3 +REC1/10.8)
+REC2-B / (+REC1-X8:2 +REC1/10.8)
+REC2-A / (+REC1-X8:1 +REC1/10.8)
4 mm²

-X8 4 mm² CHARGERS INTERCONNECTION
SP4 / (+REC1-X8:5 +REC1/6.3)
SP5 / (+REC1-X8:6 +REC1/6.3)
NG4 / (+REC1-X8:7 +REC1/6.3)
SP6 / (+REC1-X8:10 +REC1/8.6)
NG6 / (+REC1-X8:11 +REC1/8.6)
SP2 / (+REC1-X8:14 +REC1/6.4)
NG2 / (+REC1-X8:15 +REC1/6.4)

BP INTERCONNECTION -X32
SP8 / (+BP-X30:3 +REC1/9.6)
NG8 / (+BP-X30:4 +REC1/9.6)

NEG8 / (-X106 /4.6)
NEG2 / (-X106 /4.7)
NEG4 / (-X106 /4.7)
NEG6 / (-X106 /4.7)

X7
Q1 OPEN
REMOTE OFF INHIBITION
BATTERY PROTECTION
GROUND FAULT -
GROUND FAULT +
DISTRIBUTION FAILURE
BATT.SYMM.FAULT
VENTILATION FAILURE
SP1 / (-Q1:2a /1.2)
SP7 / (-A10-X1:8 /6.3)

-X4 Floating forced Charger
Normally closed
(-X106 /4.7) / NEG5
Stop boost charging in case of HVAC failure (open de contact)

-A71 EXTERN COMMUNICATION
H1
EIA232 J2
EIA485 J3
X11 DIN-Signal C096MS-4,4C1-2
J1 J2 J3 J4 J5 J7

-J8

-A73 NCS-TCP/IP
PT3 PT4 PT1 PT2
MODBUS-TCP/IP I4
EIA232
+12V
0V
H1

-F73 3,15A/T 5x20
NCS_0V / (-A30-J12:2 /5.2)
NCS_12V / (-A30-J12:1 /5.2)

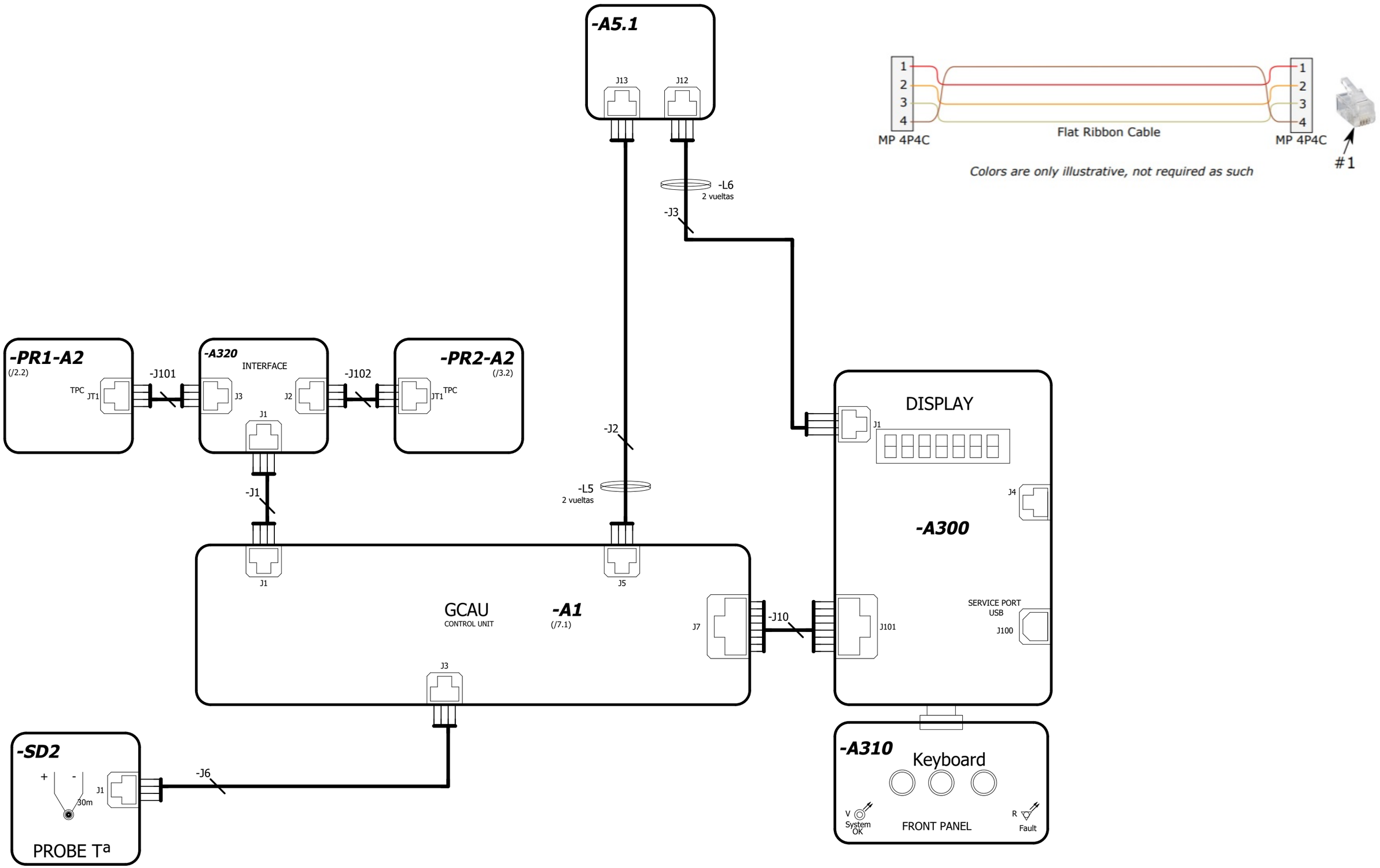
-X
UMK-RJ45/S/8PTDA
-A7
-J16
CAT6A
MODBUS TCP/IP

ES521464

				Date	21/03/2024	3W POWER S.P.A.			= System
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm	AEG POWER SOLUTIONS	Control Unit Rectifier 2 System	+ REC2
01		22/07/2024	eva.beitia	Checked	JOP				& EFS
Stat	Alteration	Date	Name	Standard				ES521464 en	A3

40 / 49
Sheet 7
Sheets 10

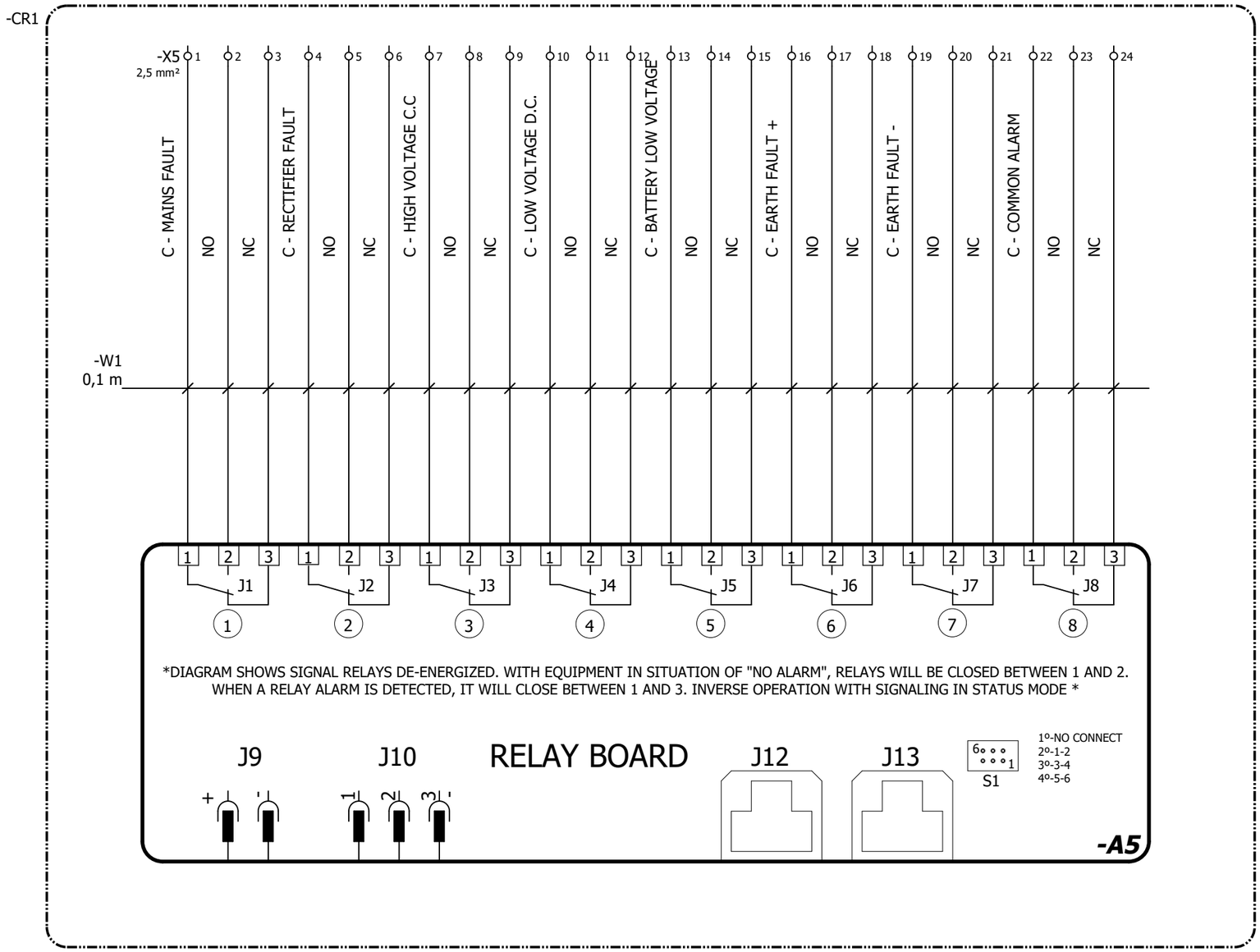
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				Date	21/03/2024	3W POWER S.P.A.	AEG POWER SOLUTIONS	PCB´s I2C communication buses		= System	
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm		Rectifier 2		+ REC2	41 / 49
				Checked	JOP			System		& EFS	Sheet 8
Stat	Alteration	Date	Name	Standard					ES521464 en	A3	Sheets 10

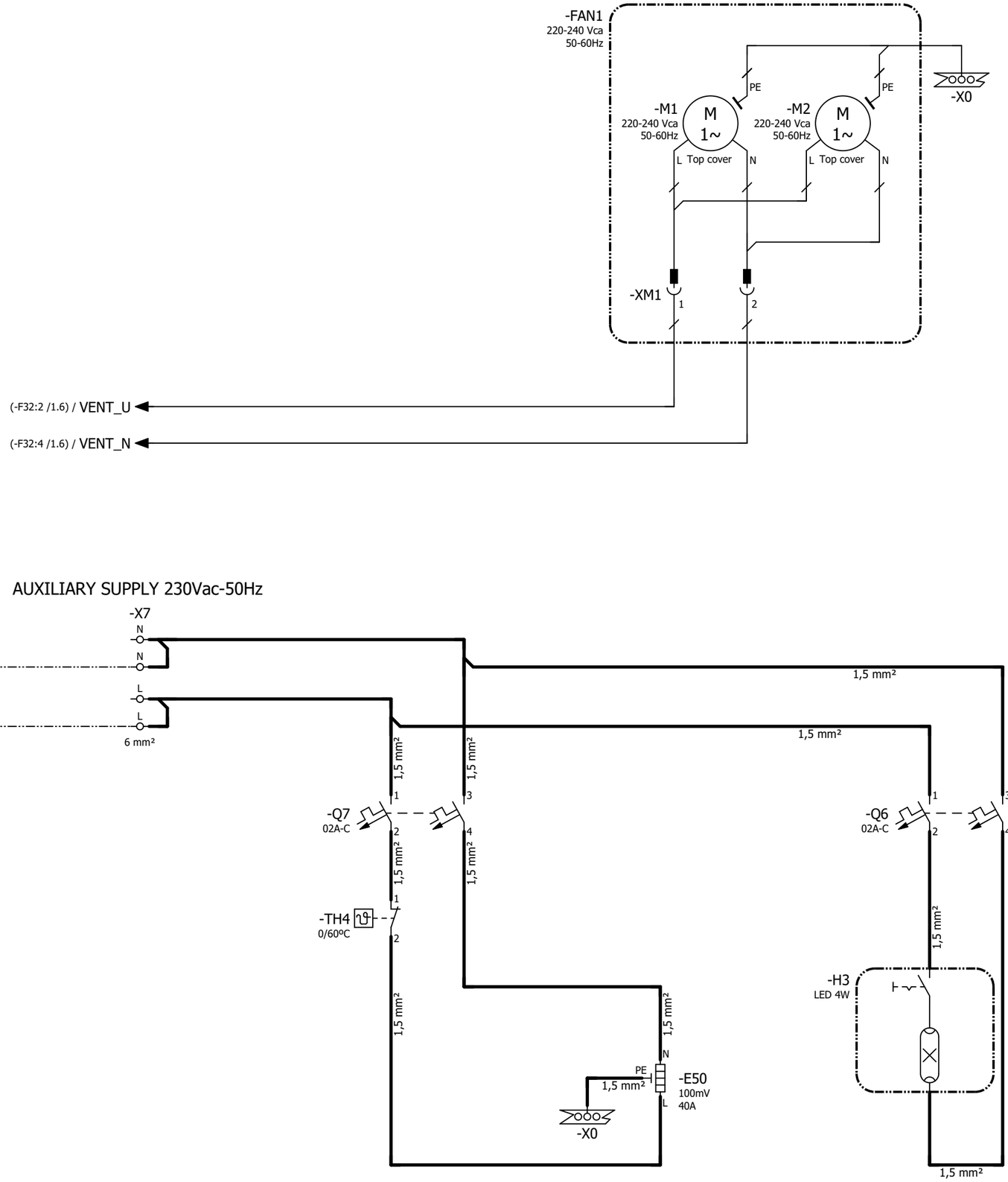
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				Date	21/03/2024	3W POWER S.P.A.	AEG POWER SOLUTIONS	Relay board		= System	
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm		Rectifier 2		+ REC2	42 / 49
				Checked	JOP			System		& EFS	Sheet 9
Stat	Alteration	Date	Name	Standard					ES521464 en		A3 Sheets 10

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				Date	21/03/2024	3W POWER S.P.A.	AEG POWER SOLUTIONS	Cabinet accesories	= System
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm		Rectifier 2	+ REC2 43 / 49
				Checked	JOP			System	& EFS Sheet 10
Stat	Alteration	Date	Name	Standard				ES521464 en	A3 Sheets 10

Terminal diagram

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Nº Operating medium	Nº Terminal	Jumper connection	Min section	Max section	Connection point type	Function	
=System+REC2-X1						PART Nº	
-X1 (&EFS/1.1)	L1		16 mm²	70 mm²	SCREW TYPE	L1	MAINS 3x400Vac 50Hz -50kA
-X1 (&EFS/1.1)	L2		16 mm²	70 mm²	SCREW TYPE	L2	=
-X1 (&EFS/1.1)	L3		16 mm²	70 mm²	SCREW TYPE	L3	=

Nº Operating medium	Nº Terminal	Jumper connection	Min section	Max section	Connection point type	Function	
=System+REC2-X4						PART Nº 229104	
-X4 (&EFS/7.7)	1		0.22 mm²	4 mm²	SCREW TYPE	C	Floating forced Charger
-X4 (&EFS/7.7)	2		0.22 mm²	4 mm²	SCREW TYPE	NC	=

Nº Operating medium	Nº Terminal	Jumper connection	Min section	Max section	Connection point type	Function	
=System+REC2-X6						PART Nº ES273150	
-X6 (&EFS/5.6)	1		1 mm²	50 mm²	SCREW TYPE		INTERCONNECTION
-X6 (&EFS/5.6)	2		1 mm²	50 mm²	SCREW TYPE		=

Nº Operating medium	Nº Terminal	Jumper connection	Min section	Max section	Connection point type	Function	
=System+REC2-X7						PART Nº	
-X7 (&EFS/10.2)	L		0.2 mm²	6 mm²	SCREW TYPE	L	AUXILIARY SUPPLY 230Vac-50Hz
-X7 (&EFS/10.2)	L		0.2 mm²	6 mm²	SCREW TYPE	L	=
-X7 (&EFS/10.2)	N		0.2 mm²	6 mm²	SCREW TYPE	N	=
-X7 (&EFS/10.2)	N		0.2 mm²	6 mm²	SCREW TYPE	N	=

Nº Operating medium	Nº Terminal	Jumper connection	Min section	Max section	Connection point type	Function	
=System+REC2-X8						PART Nº 229104	
-X8 (&EFS/7.7)	1		0.22 mm²	4 mm²	SCREW TYPE		CHARGERS INTERCONNECTION
-X8 (&EFS/7.7)	2		0.22 mm²	4 mm²	SCREW TYPE		=
-X8 (&EFS/7.7)	3		0.22 mm²	4 mm²	SCREW TYPE		=
-X8 (&EFS/7.7)	4		0.22 mm²	4 mm²	SCREW TYPE		=
-X8 (&EFS/7.7)	5		0.22 mm²	4 mm²	SCREW TYPE		=
-X8 (&EFS/7.7)	6		0.22 mm²	4 mm²	SCREW TYPE		=
-X8 (&EFS/7.7)	7		0.22 mm²	4 mm²	SCREW TYPE		=
-X8 (&EFS/7.4)	8		0.22 mm²	4 mm²	SCREW TYPE		=
-X8 (&EFS/7.3)	9		0.22 mm²	4 mm²	SCREW TYPE		=
-X8 (&EFS/7.7)	10		0.22 mm²	4 mm²	SCREW TYPE		=
-X8 (&EFS/7.7)	11		0.22 mm²	4 mm²	SCREW TYPE		=
-X8 (&EFS/6.5)	12		0.22 mm²	4 mm²	SCREW TYPE		=
-X8 (&EFS/6.5)	13		0.22 mm²	4 mm²	SCREW TYPE		=
-X8 (&EFS/7.7)	14		0.22 mm²	4 mm²	SCREW TYPE		=
-X8 (&EFS/7.7)	15		0.22 mm²	4 mm²	SCREW TYPE		=

Nº Operating medium	Nº Terminal	Jumper connection	Min section	Max section	Connection point type	Function	
=System+REC2-X31						PART Nº 229106	
-X31 (&EFS/6.6)			0.2 mm²	6 mm²	SCREW TYPE		Battery symmetry

ES521464

				Date	21/03/2024	3W POWER S.P.A.	AEG POWER SOLUTIONS	Terminal diagram	= System
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm		Rectifier 2	+ REC2 44 / 49
01		22/07/2024	eva.beitia	Checked	JOP			System	& EMA A3 Sheet 1
Stat	Alteration	Date	Name	Standard				ES521464 en	Sheets 2

Terminal diagram

Nº Operating medium	Nº Terminal	Jumper connection	Min section	Max section	Connection point type		Function
=System+REC2-X32						PART Nº	229104
-X32 (&EFS/7.8)	1		0.22 mm²	4 mm²	SCREW TYPE		BP INTERCONNECTION
-X32 (&EFS/7.8)	2		0.22 mm²	4 mm²	SCREW TYPE		=

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				Date	21/03/2024	3W POWER S.P.A.		Terminal diagram		= System
		22/07/2024	eva.beitia	Editor	EBM	Hollandse Kust Noord (HKN) wind farm	AEG POWER SOLUTIONS	Rectifier 2		+ REC2 45 / 49
01		22/07/2024	eva.beitia	Checked	JOP			System		& EMA Sheet 2
Stat	Alteration	Date	Name	Standard					ES521464 en	A3 Sheets 2

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Bill of materials

AEGPSI.V04

Identifier	Quantity	AEG Part Number	Designation		AEG Recomended as Spare Part	Servicetime (Years)
A1	1	GC_ES272500	GCAU BOARD	GCAU	X	
A1-A71	1	ES416161	PCA COMMUNIC. EXT. GCAU 232/485		X	
A7	1	ES277921	ADAPTER		X	
A8	1	ES275962	ISOLATION BOARD		X	
A10	1	215293	BATTERY SIMETRY BOARD A10		X	
A30	1	ES417940	CONVERTER BOARD		X	
A30-F1;F5;F12;F13;F22;F23;F73	15	ES274292	FUSE	3,15A/T	X	
A73	1	GC_ES273626	PCA COMMUNIC. TCP/IP		X	
A300-A300	1	ES272501	DISPLAY		X	
A300-A310	1	211921	KEY PAD		X	
A320	1	ES416456	TPC INTERFACE BOARD		X	
CR1-A5	1	228540	RELAYS PCB EXT		X	
CR1-X5	16	221606	TRIPLE TERMINAL	2,5 mm²		
CR1-W1	1	ES275423	WIRES SET			
CR1-X5	1	221607	ENDPLATE			
E50-E1	1	220659	HEATING RESISTOR	100W		
F1	1	223181	FUSE HOLDER	NH 00		
F1	1	213381	FUSE	125A/gL	X	
F5;F13;F23;F25;F32;F73	6	ES417902	DOUBLE FUSE HOLDER	5x20		
F12;F22	2	ES417903	TRIPLE FUSE HOLDER	5x20		
F25;F32	4	213368	FUSE	2,5A/M	X	
FAN1-M1;FAN1-M2	2	BMPU00287000	FAN	220-240 Vac 50-60Hz	X	5

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Bill of materials

AEGPSI.V04

Identifier	Quantity	AEG Part Number	Designation		AEG Recomended as Spare Part	Servicetime (Years)
H3	1	228099	LIGHTING SET	LED 4W		
J16	1	ES277638	ETHERNET CABLES	1m		
K3	1	ES271165	AUXILIARY RELAY			
L5;L6	2	228112	FERRITE			
PR1-A2;PR2-A2	2	3TN21023AAAA	TPC BOARD		X	
PR1-V1/V2;PR1-V3/V4;PR1-V5/V6;PR2-V1/V2 PR2-V3/V4;PR2-V5/V6	6	214849	SEMIPACK 2 THYRISTORS	90A 1600V		
PR1-W10;PR2-W10	2	ES273576	WIRES SET			
PR1-THF1;PR2-THF1	2	ES212095	THERMOSTAT	100ºC		
PR1-THF2;PR2-THF2	2	ES215170	THERMOSTAT	90ºC		
Q1	1	GC_ES272892	CIRCUIT BREAKER	50A		
Q1	1	BKD001036000	AUXILIARY CONTACT	Posición OF		
Q2	1	ES274517	DISCONNECTOR	1000V - 160A		
Q2	2	ES229261	AUXILIARY CONTACT			
Q6;Q7	2	224404	CIRCUIT BREAKER	2A-C		
R2	1	212055	SHUNT	100mV 130A		
R2-1	2	210012	INSULATOR			
RC1-1	3	ES229059	WASHER			
RC1-2	2	418226	TINNED COPPER CONNECTIONS			
RC1-3	1	213180	CAPACITOR METAL PLATE			
RC1-4;Z1	4	213787	ADAPTER		X	
RC1-C1	3	219804	CAPACITOR	6800µF 160V	X	7
RC1-R1	1	ES273618	RESISTANCE	15K ±5%		

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Bill of materials

AEGPSI.V04

Identifier	Quantity	AEG Part Number	Designation		AEG Recomended as Spare Part	Servicetime (Years)
SD2	1	ES272385	TEMPERATURE PROBE	30m		
T1	1	B00992740040	TRANSFORMER WITH CHOKE	110V/100A 019.6KVA		
TH4	1	220275	THERMOSTAT	0/60ºC		
U+;U-	2	ES273807	TINNED COPPER CONNECTIONS			
V21	1	214872	DIODE	240A 1200V		
V21	2	216359	INSULATOR			
V21	1	410283	HEATSINK	L=100 mm		
W11	1	ES273652	WIRES SET			
X0	1	219059	TINNED COPPER CONNECTIONS			
X1	3	229170	GRAY TERMINAL	70 mm²		
X4;X8;X32	19	229104	GRAY TERMINAL	4 mm²		
X4;X7;X8;X31;X32	5	229304	ENDPLATE			
X6	2	ES273150	GRAY TERMINAL	50 mm²		
X7;X31	5	229106	GRAY TERMINAL	6 mm²		
X7	2	227799	JUMPER			
X105	1	ES277127	BUS			
X106	1	ES276860	BUS			
Z1	1	ES229868	PCA FILTER EMC	0/450V	X	
Z1	1	ES273041	PROTECTIÓN COVER		X	

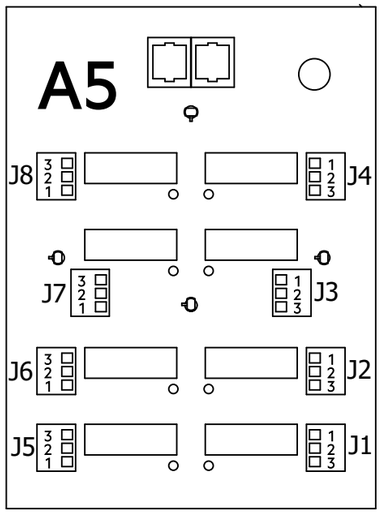
ES521464

				Date	21/03/2024	3W POWER S.P.A.	AEG POWER SOLUTIONS	Bill of materials	= System
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm		Rectifier 2	+ REC2 48 / 49
01		22/07/2024	eva.beitia	Checked	JOP			System	& EPB5 A3 Sheet 3
Stat	Alteration	Date	Name	Standard				ES521464 en	Sheets 3

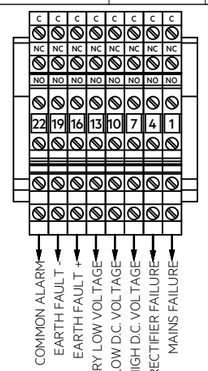
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Relay card detail

CR1



Terminal	Connection point type	Max section	4 mm²
	Screw type	Min section	0.2 mm²



				Date	21/03/2024	3W POWER S.P.A.		= System
				Editor	EBM	Hollandse Kust Noord (HKN) wind farm	Relay card detail	+ REC2 49 / 49
				Checked	JOP		Rectifier 2	& MTB
Stat	Alteration	Date	Name	Standard			System	ES521464 en A3 Sheet 1
								Sheets 1