Ballard Power Systems Europe A/S
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9500 Hobro
Denmark

Revision history		
Rev.	**Date.**	**Description**
001	05/06/2024	First Issue

Document Title:	**BLPH Project - Panel Cabinet Layout: UC31 10ft Control Cabinet**
Document Number:	K559-2254-CWIWP4202202-E03-004
Revision:	Rev001
Sequence Number:	004
File Name:	K559-2254-CWIWP4202202-E03-004Rev001
Purchaser Job:	K559-2254
Purchase Order:	CWIWP4202202
Code:	E03
Requsition Number:	n/a
Customer:	CrossWind C.V., Rotterdam, The Netherlands

0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8

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+UC31

Ballard Power Systems Europe - Technology Solutions

Cabinet: 10ft Container Control
Location: 10ft Container, Behind access hatch

Cabinet Supply:
Vin = 400VAC, 3P+N+PE
IKmax = 10kA
IP20

AC / DC Sense:
AC: Vin = 400VAC, 3ph
AC: IKmax = 25kA

DC: Vin = 750VDC
DC: IKmax = 10kA

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& A01

REVISION INFORMATION
DESCRIPTION
DATE
05-Jun-24

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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Front Page		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 1 / 18

FRM5103656/0B

Ballard Power Systems Europe - Technology Solutions, Cabinet Wiring Colors

Standard Basis: EN 61439

Required wire standard compliance:

Required: IEC Wire
Required: UL Recognized
Required: CSA/UL

Wire Numbering:

- Wires inside panels are to be numbered
- Wire number system is perferably "potential oriented with subnumber"
- All wires of the same potential (e.g. DC Common) have the same main number, with sequential subnumber.
- Potential numbers with fewer digits may be leading zero padded (e.g. 19 -> 019)
- Separator between main and subnumber is "."

Example: 019.1 BUWH 0.75mm²

- 019 — Wire potential number
- 1 — Wire sequential subnumber with separator
- BUWH — Wire color code (Dark Blue with White stripe)
- 0.75mm² — Wire dimension

AC Wiring Colors

AC Power Circuit (Generic)	Black (BK)
AC Phase L1	Brown (BN)
AC Phase L2	Black (BK)
AC Phase L3	Grey (GY)
AC Neutral	Light Blue (BU)
Externally supplied circuit	Orange (OG)

DC Wiring Colors

DC Power Circuit	Black (BK)
DC Control Voltage (24V)	Dark Blue (BU)
DC Control Voltage Refence (0V)	Dark Blue with White Stripe (BUWH)
Signal Wire (DI, DO)	White (WH)
Signal Wire (AI, AO)	Violet (VT)
Externally supplied circuit	Orange (OG)

PE Wiring Colors

Protective Earth (PE)	Green/Yellow (GNYE)

Wire Color Abbreviations

BK	Black
BN	Brown
RD	Red
OG	Orange
YE	Yellow
GN	Green
BU	Blue
VT	Violet
GY	Gray
WH	White
PK	Pink
GD	Gold
TQ	Turquoise
SR	Silver
GNYE	Green/Yellow
SH	Shield

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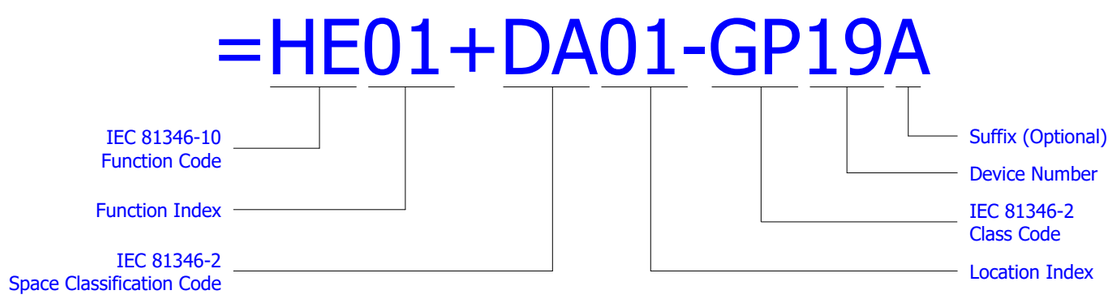
DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Standard Wire Colors		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 2 / 18

FRM5103656/0B

Ballard Power Systems Europe - Technology Solutions Device Tag Process

A Ballard Device Tagname consists of three parts:
- A function designation (=)
  - According to IEC81346-10, Table B.1 and B2.
  - Always two letters followed by two digits
- A location designation (+)
  - According to IEC81346-2, Table 4
  - Always two letters followed by two digits
- A class code (-)
  - According to IEC81346-2, Table 2
  - Always two letters followed by two or three digits plus optional suffix

Sample fully qualified Device Tag (DT) for a Coolant Pump



IEC81346-10 Function Examples

IEC 81346-10 Table B.1 and B.2 provide a class definition system, which provides a two letter code for the functional description
Table B.1 is used for power supply systems and table B.2 for other systems

IEC 81346-10 Table B.1 / B.2	Function Codes (Example)
=AA	Structural System, Load support (Frame)
=BA	Transporting Electrical Energy (Power Converters)
=HA	Supply System, Gaseous Matter (Gas Piping)
=HE	Supply System, Heating/Cooling (Radiator)
=JA	Distribution System, Gaseous Matter (Gas Handling Unit)
=JB	Distribution System, Liquid Matter (Fluid Drain)
=LA	Control System, Process (PLC, SCADA)
=LB	Control System, Safety (Safety PLC)
=QA	Storage System, Gaseous Matter (Gas Storage)
=RE	Energy Conversion System, Chemical to Electricity (Fuel cells, Batteries)

IEC81346-2 Space Classification

IEC 81346-2 Table 4 provide a classification scheme for spaces, which provides a two and three letter code for the space (location) classification.
Class code "1" and "1" is used for the location scheme

IEC 81346-2 Table 4	Location Codes (Example)
+GB	Space for power generation, Chemical (Fuel Cells)
+DA	Space for active technical equipment
+UC	Space for electrical equipment (Electrical Cabinet)

IEC81346-2 Class Code

IEC 81346-2 Class Codes is a scheme for defined objects for reference designations according to their inherent function

IEC 81346-2 Table 2	Class Codes (Example)
-BA	Sensing, electrical potential (Voltage Transducer)
-BC	Sensing, electrical current (Current Transducer)
-BP	Sensing, pressure (Pressure Transducer)
-BT	Sensing, temperature (Temperature Transducer)
-EA	Emitting, light (Light Fixture)
-FC	Protecting, overcurrent (Fuse, MCCB)
-GB	Generating, Chemical Reaction (Fuel Cell)
-GP	Generating, Liquid Flow (Pump)
-GQ	Generating, Gas Flow (Van, Ventilator)
-KE	Processing, Electrical signals (PLC)
-KF	Processing, Information (Network Switch)
-MA	Driving, Torque (AC Motor)
-QA	Controlling, Electric Current (Contactor, Motor Starter)
-QB	Controlling, Electric Separation (Disconnector)
-QM	Controlling, Fluid On/Off (Valve)
-QN	Controlling, Fluid Regulation (Damper, Gas Control Valve)
-WD	Guiding, Low Voltage Electric Energy (AC or DC power Cable)
-WE	Guiding, Reference Potential (Grounding Wire/Cable)
-WG	Guiding, Electric Signals (Control, Network Cable)

Reference Item Number	Ballard Part # TBD
EPLAN Project Name	601456B - Shell Baseload Power Hub
EPLAN Revision	01.P15
EPLAN Project Pages	478
= ++ + UC31 & A01	

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05-Jun-24

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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Tagging Standard		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 3 / 18

FRM5103656/0B

0	1	2	3	4	5	6	7	8

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Higher-Level Function	Mounting Location	Page	Page Description	Last Modified Date
	UC31	1	Front Page	05-Jun-24
	UC31	2	Standard Wire Colors	05-Jun-24
	UC31	3	Tagging Standard	05-Jun-24
	UC31	4	Table of contents : +UC31&A01/1 - +UC31&C03/16	05-Jun-24
	UC31	4.a	Table of contents : +UC31&C03/17 - +UC31&C04/3	05-Jun-24
	UC31	4.b	Table of contents : +UC31&C04/22 - +UC31&C04/51	05-Jun-24
	UC31	1	Container Controller, 20ft Rack 1/3	05-Jun-24
	UC31	2	Container Controller, 20ft Rack 1/3	05-Jun-24
	UC31	3	Container Controller, 20ft Rack 2/3	05-Jun-24
	UC31	4	Container Controller, 20ft Rack 3/3	05-Jun-24
	UC31	5	Safety Controller, 20ft Container 1/2	05-Jun-24
	UC31	6	Safety Controller, 20ft Container 2/2	05-Jun-24
	UC31	1	Multiline Documentation Intro	05-Jun-24
	UC31	2	AC Input	05-Jun-24
	UC31	3	PE Distribution	05-Jun-24
	UC31	4	AC - 24V Power Supplies	05-Jun-24
	UC31	5	AC - Container Heating	05-Jun-24
	UC31	6	AC - LT Fans	05-Jun-24
	UC31	7	AC - Precharge	05-Jun-24
	UC31	8	AC - Precharge	05-Jun-24
	UC31	9	AC - Sensing	05-Jun-24
	UC31	10	10A UPS Module	05-Jun-24
	UC31	11	40A UPS Module	05-Jun-24
	UC31	12	24V Fusing - FC100	05-Jun-24
	UC31	13	24V Fusing and Distribution - FC101	05-Jun-24
	UC31	14	24V Fusing and Distribution - FC102	05-Jun-24
	UC31	15	24V Fusing and Distribution - FC103	05-Jun-24
	UC31	16	24V Fusing and Distribution - FC104	05-Jun-24

Reference Item Number	Ballard Part # TBD
EPLAN Project Name	601456B - Shell Baseload Power Hub
EPLAN Revision	01.P15
EPLAN Project Pages	478

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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Table of contents : +UC31&A01/1 - +UC31&C03/16		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 4 /

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Higher-Level Function	Mounting Location	Page	Page Description	Last Modified Date
	UC31	17	PLC - 24V	05-Jun-24
	UC31	18	Safety PLC - 24V	05-Jun-24
	UC31	19	FC30 Breaker 24V	05-Jun-24
	UC31	20	FC30 Breaker DI DO	05-Jun-24
	UC31	21	MCCB Trip Indicators	05-Jun-24
	UC31	22	20ft Heating IO	05-Jun-24
	UC31	23	AC - Precharge IO	05-Jun-24
	UC31	24	Safety ESTOP	05-Jun-24
	UC31	25	Safety Relay KF31	05-Jun-24
	UC31	26	Safety Relay	05-Jun-24
	UC31	27	Safety Door Switches	05-Jun-24
	UC31	28	Safety Door Lock	05-Jun-24
	UC31	29	Safety Isolation Monitor	05-Jun-24
	UC31	30	Safety Smoke Detector	05-Jun-24
	UC31	31	Safety Battery Pack Inputs	05-Jun-24
	UC31	32	Safety Battery Pack Outputs	05-Jun-24
	UC31	33	Ventilation Damper IO	05-Jun-24
	UC31	34	Modbus Converter	05-Jun-24
	UC31	35	Network Switch	05-Jun-24
	UC31	36	LT Measurements	05-Jun-24
	UC31	37	Cont. Temp and Diff. Pressure	05-Jun-24
	UC31	38	Transformer Temperature Measurements	05-Jun-24
	UC31	39	Container ventilation and heating	05-Jun-24
	UC31	40	Container Lighting	05-Jun-24
	UC31	41	Main output breaker	05-Jun-24
	UC31	1	Panel Documentation and Layout	05-Jun-24
	UC31	2	Panel Layout	05-Jun-24
	UC31	3	Enclosure Legend	05-Jun-24

Reference Item Number	Ballard Part # TBD
EPLAN Project Name	601456B - Shell Baseload Power Hub
EPLAN Revision	01.P15
EPLAN Project Pages	478
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Table of contents : +UC31&C03/17 - +UC31&C04/3		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 4.a /

Table of Contents

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Higher-Level Function	Mounting Location	Page	Page Description	Last Modified Date
	UC31	22	Terminal-strip overview : =LA01+UC31-FC101-1 - =LA01+UC31-XE00	05-Jun-24
	UC31	30	Terminal-connection diagram =LA01+UC31-XD01	05-Jun-24
	UC31	31	Terminal-connection diagram =LA01+UC31-XD02	05-Jun-24
	UC31	32	Terminal-connection diagram =LA01+UC31-XD03	05-Jun-24
	UC31	33	Terminal-connection diagram =LA01+UC31-XD04	05-Jun-24
	UC31	34	Terminal-connection diagram =LA01+UC31-XD06	05-Jun-24
	UC31	35	Terminal-connection diagram =LA01+UC31-XD09	05-Jun-24
	UC31	36	Terminal-connection diagram =LA01+UC31-XD10	05-Jun-24
	UC31	37	Terminal-connection diagram =LA01+UC31-XD11	05-Jun-24
	UC31	38	Terminal-connection diagram =LA01+UC31-XD20	05-Jun-24
	UC31	39	Terminal-connection diagram =LA01+UC31-XD20	05-Jun-24
	UC31	40	Terminal-connection diagram =LA01+UC31-XD21	05-Jun-24
	UC31	41	Terminal-connection diagram =LA01+UC31-XD02	05-Jun-24
	UC31	42	Terminal-connection diagram =LA01+UC31-XD20	05-Jun-24
	UC31	43	Terminal-connection diagram =LA01+UC31-XD20	05-Jun-24
	UC31	47	Terminal-connection diagram =LA01+UC31-XE00	05-Jun-24
	UC31	48	Terminal-connection diagram =LA01+UC31-XD02	05-Jun-24
	UC31	49	Terminal-connection diagram =LA01+UC31-XD09	05-Jun-24
	UC31	50	Terminal-connection diagram =LA01+UC31-XD09	05-Jun-24
	UC31	51	Terminal-connection diagram =LA01+UC31-XD02	05-Jun-24

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Table of contents : +UC31&C04/22 - +UC31&C04/51		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 4.b /

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Controller IO Overview

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C02

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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Container Controller, 20ft Rack 1/3		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 1 / 18

0	1	2	3	4	5	6	7	8

=LA01+UC31-KE06
DEIF AMC300
Controller Extension Rack

-Slot1
DEIF PSM3.2
Power Supply
Module 3.2

PSM3.2

	PE	PE &C03/17.1		Frame Ground
	1	12/24V &C03/17.1		Supply +
	2	0V &C03/17.1		Supply COM
	3	R1 COM		Status OK Relay COM
A52.4	4	DO1	DO1	Status OK Relay
	5	R2 COM		Relay 2 COM
A52.5	6	DO2	DO2	Relay 1 Out
	7	R3 COM		Relay 3 COM
A52.6	8	DO3	DO3	Relay 3 Out

EtherCAT Follower Ring Topology — EtherCAT — +&C01/8.a.5:C +&C01/8.8:E — X03 — Ethernet-1 IN

EtherCAT Follower Ring Topology — EtherCAT — +&C01/8.a.6:C +&C01/8.8:E — X03 — Ethernet-2 OUT

Bus Follower
Multi-line 300

-Slot2
&C03/9.1
&C03/9.2
ACM3.1
Alternating Current Module 3.1

ACM3.1

1	L1 &C03/9.1	BA30_BA01_L1	Main Output (Busbar) - L1 Voltage	
2	L2 &C03/9.1	BA30_BA01_L2	Main Output (Busbar) - L2 Voltage	
3	L3 &C03/9.1	BA30_BA01_L3	Main Output (Busbar) - L3 Voltage	
4	N &C03/9.2	BA30_BA01_N	Main Output (Busbar) - N Voltage	
5	L1 &C03/9.3	BA30_BA02_L1	Main Output (Customer) - L1 Voltage	
6	L2 &C03/9.3	BA30_BA02_L2	Main Output (Customer) - L2 Voltage	
7	L3 &C03/9.3	BA30_BA02_L3	Main Output (Customer) - L3 Voltage	
8	N &C03/9.4	BA30_BA02_N	Main Output (Customer) - N Voltage	
9	L1 &C03/9.5	BA30_BC01_L1	Main Output (Busbar) - L1 Current	
10	L1 &C03/9.5	CH1-S2	Channel 1 - S2	
11	L2 &C03/9.6	BA30_BC01_L2	Main Output (Busbar) - L2 Current	
12	L2 &C03/9.6	CH2-S2	Channel 2 - S2	
13	L3 &C03/9.7	BA30_BC01_L3	Main Output (Busbar) - L3 Current	
14	L3 &C03/9.8	CH3-S2	Channel 3 - S2	
15	4-S1	CH4-S1	Channel 4 - S1	
16	4-S2	CH4-S2	Channel 4 - S2	

-Slot3
&C03/23.2
&C03/40.2
&C03/10.3
&C03/10.2
&C03/11.2
IOM3.1
Input Output Module 3.1

IOM3.1

1	DO1.1 &C03/23.2	UC31_QA40_O	Precharge contactor coil	
2	R1 COM &C03/23.2		Relay 1 Common	
3	DO1.2		Relay 1 NC	
4	DO2.1 &C03/40.2	DA03_EA01	Container lighting	
5	R2 COM &C03/40.2		Relay 2 Common	
6	DO2.2		Relay 2 NC	
7	DO3.1		Relay 3 NO	
8	R3 COM		Relay 3 Common	
9	DO3.2		Relay 3 NC	
10	DO4.1		Relay 4 NO	
11	R4 COM		Relay 4 Common	
12	DO4.2		Relay 4 NC	
13	DIO1 &C03/10.3	UC31_RB01_BAT	20ft PLC UPS Battery Operation	
14	DIO2 &C03/10.2	UC31_RB01_DIS	20ft PLC UPS Battery Discharged	
15	DIO3 &C03/10.4	UC31_RB01_RDY	20ft PLC UPS Battery Ready	
16	DIO4 &C03/11.3	UC31_RB02_BAT	20ft Breaker UPS Battery Operation	
17	DIO5 &C03/11.2	UC31_RB02_DIS	20ft Breaker UPS Battery Discharged	
18	DIO6 &C03/11.4	UC31_RB02_RDY	20ft Breaker UPS Battery Ready	
19	DIO7 &C03/23.6	UC31_FC40_I	Precharge MCCB feedback	
20	DIO8 &C03/23.5	UC31_QA40_I	Precharge contactor feedback	
21	DIO9		Spare	
22	DIO10		Spare	
23	COM &C03/17.3		Supply COM	

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DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Container Controller, 20ft Rack 1/3		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 2 / 18

0	1	2	3	4	5	6	7	8

=LA01+UC31-KE06
DEIF AMC300
Controller Extension Rack

-Slot4
&C03/20.1
&C03/33.3
&C03/33.4
IOM3.2
IO Module 3.2

IOM3.2

1	R1 COM	&C03/17.4		Relay 1 In
2	DO1	&C03/20.1	FC30_YO	Breaker FC30 Opening Coil
3	R2 COM	&C03/17.4		Relay 2 COM
4	DO2	&C03/20.2	FC30_YC	Breaker FC30 Closing Coil
5	R3 COM	&C03/17.4		Relay 3 In
6	DO3	&C03/20.3	FC30_RY	Breaker FC30 Trip Reset Coil
7	R4 COM	&C03/17.4		Relay 4 In
8	DO4	&C03/20.4	FC30_UR	Breaker FC30 Undervoltage Coil
9	AO1	&C03/33.3	JA01_QM07_SP	Intake Damper Position Setpoint
10	AO1 COM	&C03/33.3		AO1 COM
11	AO2	&C03/33.5	JA01_QM08_SP	Outlet Damper Position Setpoint
12	AO2 COM	&C03/33.5		AO2 COM
13	AO3			Spare
14	AO3 COM			AO3 COM
15	AO4			Spare
16	AO4 COM			AO4 COM
17	DI1	&C03/20.5	FC30_SPR	Breaker Sping Charge FB
18	DI2	&C03/20.6	FC30_Q1	Breaker Auxillary Contact Q1
19	DI3	&C03/20.7	FC30_Q2	Breaker Auxillary Contact Q2
20	DI4			Spare
21	DI1-4 COM	&C03/17.4		DI1-4 COM
22	AI1	&C03/33.4	JA01_QM07_FB	Damper Position Feedback
23	AI1 COM	&C03/33.4		AI1 COM
24	AI2	&C03/33.6	JA01_QM08_FB	Outlet Damper Position Feedback
25	AI2 COM	&C03/33.6		AI2 COM
26	AI3			Spare
27	AI3 COM			AI3 COM
28	AI4			Spare
29	AI4 COM			AI4 COM

-Slot5
&C03/22.2
&C03/21.8
IOM3.2
IO Module 3.2

IOM3.2

1	R1 COM	&C03/17.6		Relay 1 In
2	DO1	&C03/22.2	UC31_EA01_FAN	20ft Heater Fan Enable
3	R2 COM	&C03/17.6		Relay 2 COM
4	DO2	&C03/22.4	UC31_EA01_HTR	20ft Heater Enable
5	R3 COM			Relay 3 In
6	DO3			Breaker FC30 Trip Reset Coil
7	R4 COM			Relay 4 In
8	DO4			Battery Simulator Enable
9	AO1			Spare
10	AO1 COM			AO1 COM
11	AO2			Spare
12	AO2 COM			AO2 COM
13	AO3			Spare
14	AO3 COM			AO3 COM
15	AO4			Spare
16	AO4 COM			AO4 COM
17	DI1	&C03/21.8	IAH_05	MCCB Trip Indication AC Customer
18	DI2			Breaker Auxillary Contact Q1
19	DI3			Breaker Auxillary Contact Q2
20	DI4			Spare
21	DI1-4 COM			DI1-4 COM
22	AI1			Spare
23	AI1 COM			AI1 COM
24	AI2			Spare
25	AI2 COM			AI2 COM
26	AI3			Spare
27	AI3 COM			AI3 COM
28	AI4			Spare
29	AI4 COM			AI4 COM

-Slot6
&C03/21.1
IOM3.2
IO Module 3.2

IOM3.2

1	R1 COM			Relay 1 In
2	DO1			Relay 1 out
3	R2 COM			Relay 2 COM
4	DO2			Relay 2 Out
5	R3 COM			Relay 3 In
6	DO3			Relay 3 Out
7	R4 COM			Relay 4 In
8	DO4			Relay 4 Out
9	AO1			Spare
10	AO1 COM			AO1 COM
11	AO2			Spare
12	AO2 COM			AO2 COM
13	AO3			Spare
14	AO3 COM			AO3 COM
15	AO4			Spare
16	AO4 COM			AO4 COM
17	DI1	&C03/21.1	IAH_01	MCCB Trip Indication PSU
18	DI2	&C03/21.3	IAH_02	MCCB Trip Indication Heating
19	DI3	&C03/21.5	IAH_03	MCCB Trip Indication Battery
20	DI4	&C03/21.6	IAH_04	MCCB Trip Indication AC Busbar
21	DI1-4 COM	&C03/17.7		DI1-4 COM
22	AI1			Spare
23	AI1 COM			AI1 COM
24	AI2			Spare
25	AI2 COM			AI2 COM
26	AI3			Spare
27	AI3 COM			AI3 COM
28	AI4			Spare
29	AI4 COM			AI4 COM

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C02

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DESCRIPTION	
DATE	05-Jun-24

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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Container Controller, 20ft Rack 2/3		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 3 / 18

0	1	2	3	4	5	6	7	8

=LA01+UC31-KE06
DEIF AMC300
Controller Extension Rack

-Slot7
&C03/36.2
&C03/37.1
&C03/37.5
IOM3.3
IO Module 3.3

IOM3.3

1	AI1			Spare
2	AI2	&C03/36.2	HE03_BF02_FT	LT Coolant Flow Auxillary Sensor
3	AI3	&C03/36.2		Spare
4	AI4			Spare
5	AI5	&C03/36.3	HE03_BF02_TT	LT Coolant 20ft Temperature
6	AI6	&C03/36.3		Spare
7	AI7	&C03/36.4	HE03_BT07_TT	LT Coolant 20ft Forward
8	AI8	&C03/36.4		LT Coolant 20ft Forward
9	AI9	&C03/36.4		Spare
10	AI10	&C03/37.1	DA03_BT01	Container temperature
11	AI11	&C03/37.1		Spare
12	AI12	&C03/37.1		Spare
13	AI13		TA30_U_TT	TA30 U Primary Temp
14	AI14			Spare
15	AI15			Spare
16	AI16		TA30_V_TT	TA30 V Primary Temp
17	AI17			Spare
18	AI18			Spare
19	AI19		TA30_W_TT	TA30 W Primary Temp
20	AI20			Spare
21	AI21			Spare
22	AI22			Spare
23	AI23	&C03/37.5	DA03_BP01	Container Diff. Pressure
24	AI24	&C03/37.5		Spare
25	AI25			Spare
26	AI26			Spare
27	AI27			Spare
28	AI28			Spare
29	AI29			Spare
30	AI30			Spare

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C02

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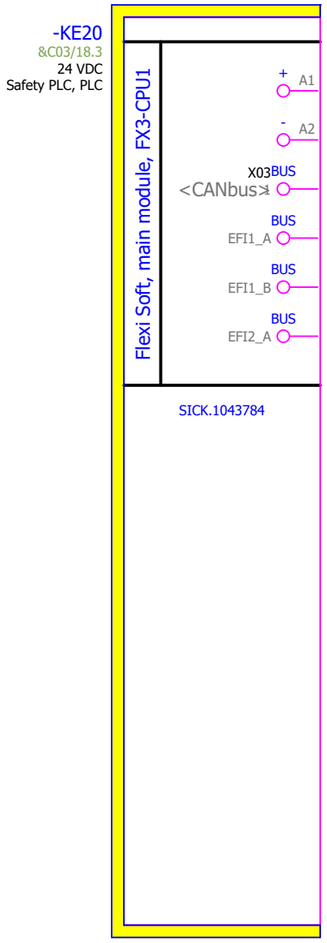
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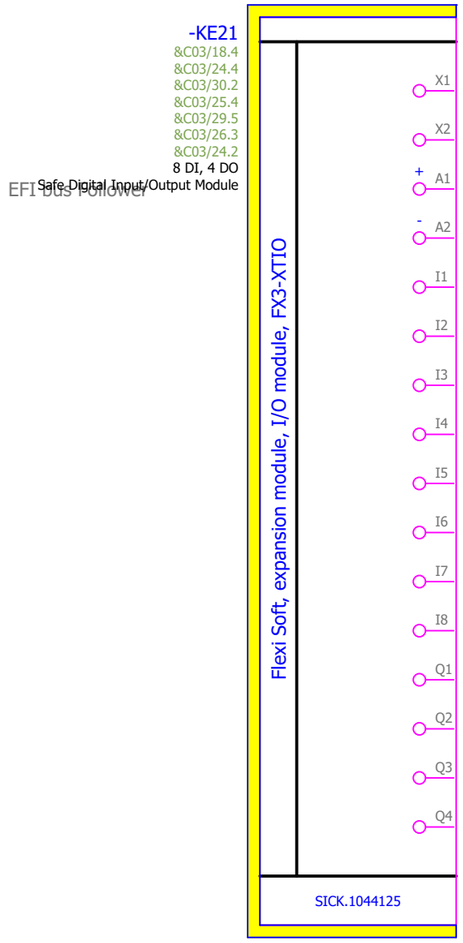
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Container Controller, 20ft Rack 3/3		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 4 / 18

0	1	2	3	4	5	6	7	8

=LB02+UC31
Container Safety System, Control Cabinet 20 ft





X1	&C03/24.2	KE21PULSE01	KE21 Test pulse output CH1
X2	&C03/24.3	KE21PULSE02	KE21 Test pulse output CH2
I1	&C03/24.4	LB02_SG03_CH1	ESTOP SG03-CH1
I2	&C03/24.5	LB02_SG03_CH2	ESTOP SG03-CH21
I3	&C03/30.2	LB02_BQ07	Smoke Detector, 20ft Container 1/3
I4	&C03/30.4	LB02_BQ08	Smoke Detector, 20ft Container 2/3
I5	&C03/30.7	LB02_BQ09	Smoke Detector, 20ft Container 3/3
I6	&C03/25.4	LB02_KF30_FB	Safety Relay KF30 Feedback
I7	&C03/29.5	BB01_WARN	Isolation Monitor Value Warn
I8	&C03/29.6	BB01_ALARM	Isolation Monitor Value Alarm
Q1	&C03/26.3	LB02_KF30_Q	Safety Relay KF30 Coil

Reference Item Number	Ballard Part # TBD
EPLAN Project Name	601456B - Shell Baseload Power Hub
EPLAN Revision	01.P15
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=	++ | + UC31 | & C02

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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Safety Controller, 20ft Container 1/2		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 5 / 18

0	1	2	3	4	5	6	7	8

=LB02+UC31

Container Safety System, Control Cabinet 20 ft

-KE22

&C03/18.5
&C03/28.1
&C03/24.7
&C03/27.2
&C03/24.6

8 DI, 4 DO

Safe Digital Input/Output Module

Flexi Soft, expansion module, I/O module, FX3-XTIO

SICK.1044125

X1		KE22PULSE01	KE22 Test pulse output CH1
X2	&C03/24.6	KE22PULSE02	KE22 Test pulse output CH2
+ A1			
- A2			
I1	&C03/28.3	LB02_RL01_CH1	Door Lock Feedback CH1
I2	&C03/28.4	LB02_RL01_CH2	Door Lock Feedback CH2
I3	&C03/28.1	LB02_RL01_AUX	Door Lock Possible
I4	&C03/24.7	LB02_SG04	Safety System Reset
I5	&C03/27.2	LB02_BG01_CH1	Safety Door Sensor, Door A - CH1
I6	&C03/27.3	LB02_BG01_CH2	Safety Door Sensor, Door A - CH2
I7	&C03/27.5	LB02_BG02_CH1	Safety Door Sensor, Door B - CH1
I8	&C03/27.6	LB02_BG02_CH2	Safety Door Sensor, Door B - CH2
Q1	&C03/28.2	LB02_RL01_LOCK	Door Lock Command
Q2			
Q3			
Q4			

Safety IO - Battery Pack

-KE23

&C03/18.6
&C03/31.1
&C03/32.1

Flexi Soft, expansion module, I/O module, FX3-XTIO

SICK.1044125

X1	&C03/32.1
X2	&C03/32.2
+ A1	
- A2	
I1	&C03/31.1
I2	&C03/31.2
I3	&C03/31.3
I4	&C03/31.4
I5	&C03/31.4
I6	&C03/31.5
I7	&C03/31.6
I8	&C03/31.7
Q1	&C03/32.4
Q2	&C03/32.5
Q3	&C03/32.6
Q4	&C03/32.7

Reference Item Number	Ballard Part # TBD
EPLAN Project Name	601456B - Shell Baseload Power Hub
EPLAN Revision	01.P15
EPLAN Project Pages	478
=	++ | + UC31 | & C02

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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Safety Controller, 20ft Container 2/2		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3 | LANGUAGE EN	SHEET/TOTAL	6 / 18

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Ballard Power Systems Europe - Technology Solutions

Multiline Documentation

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C03

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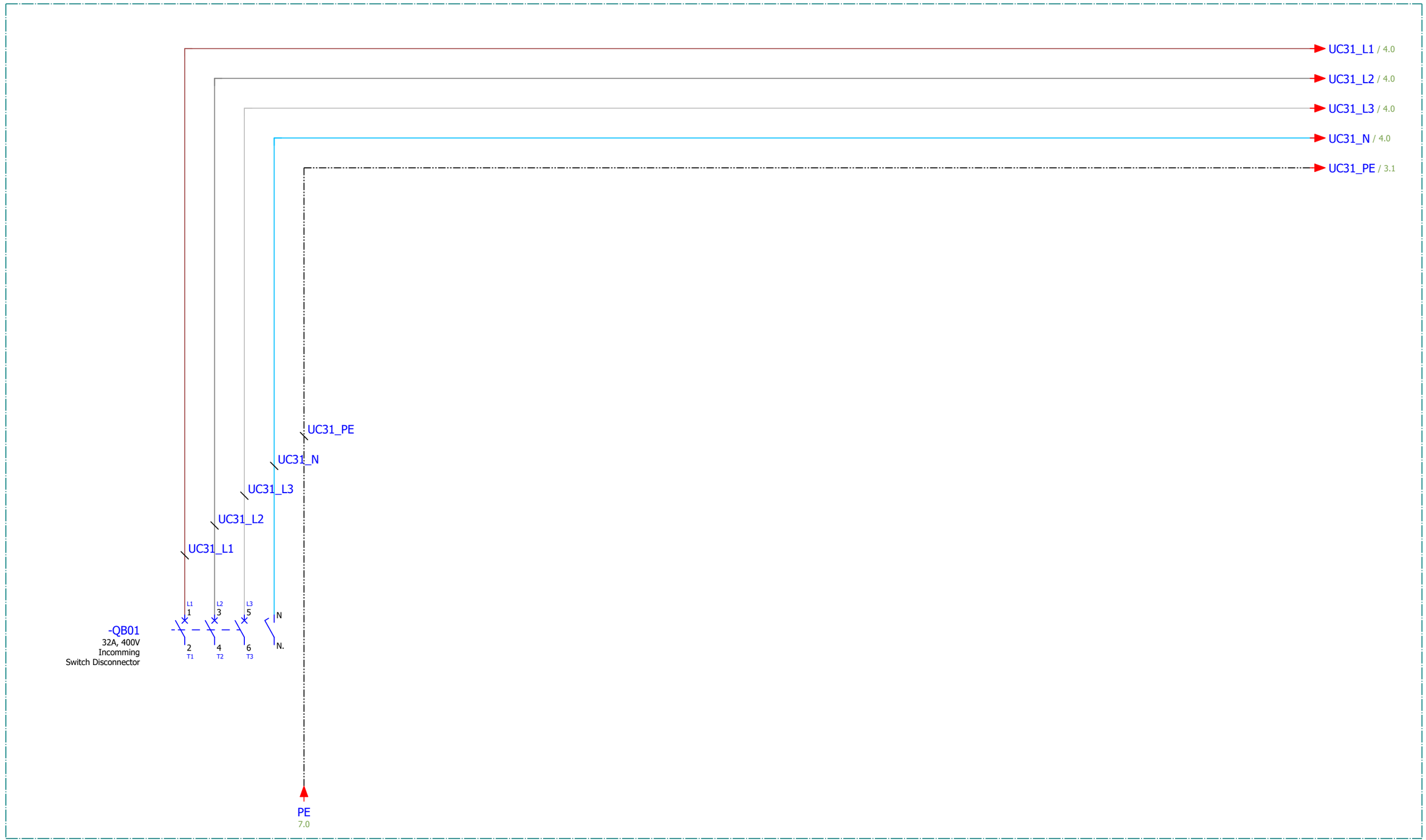
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Multiline Documentation Intro		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 1 / 2

=LA01



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C03

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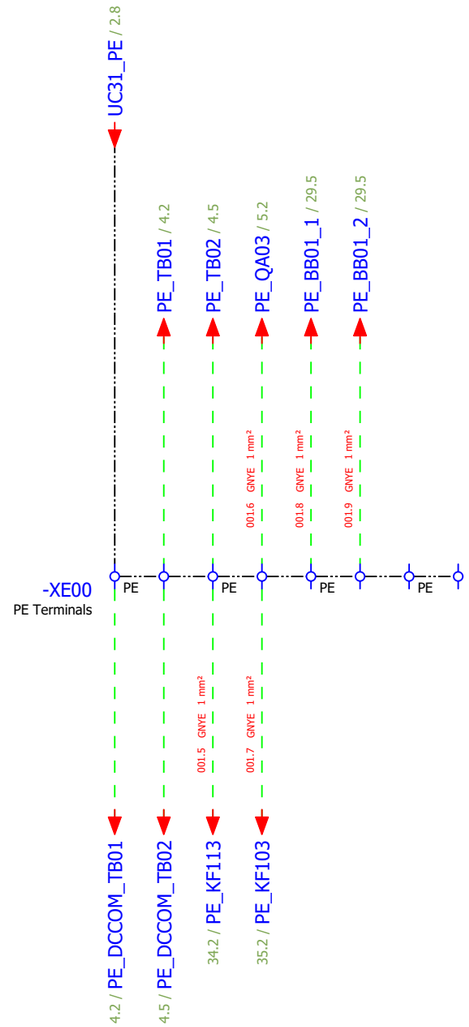
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	AC Input		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 2 / 18

=LA01



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C03

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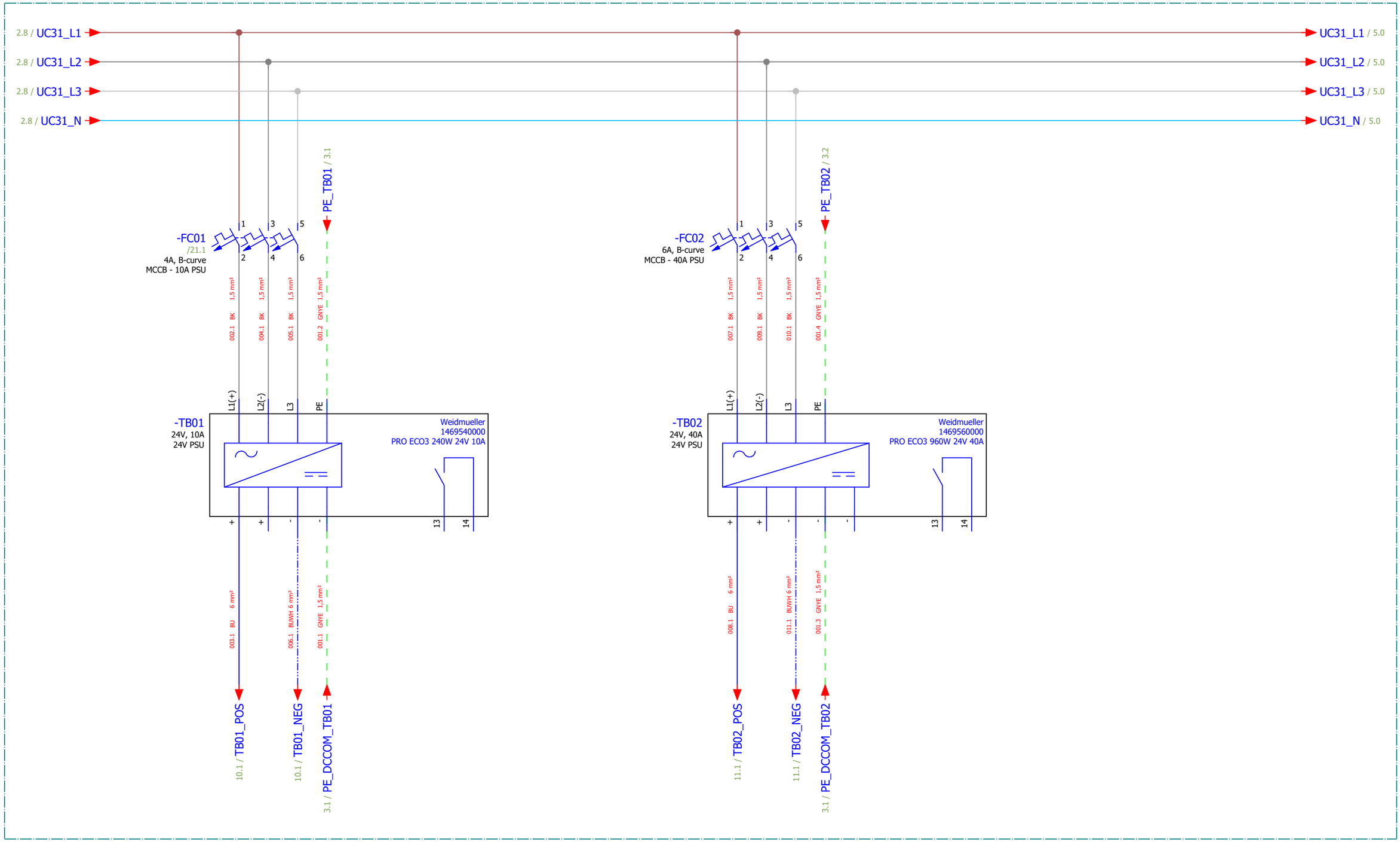
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	PE Distribution		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 3 / 18

=LA01



Reference Item Number	Ballard Part # TBD
EPLAN Project Name	601456B - Shell Baseload Power Hub
EPLAN Revision	01.P15
EPLAN Project Pages	478
=	++ | + UC31 | & C03

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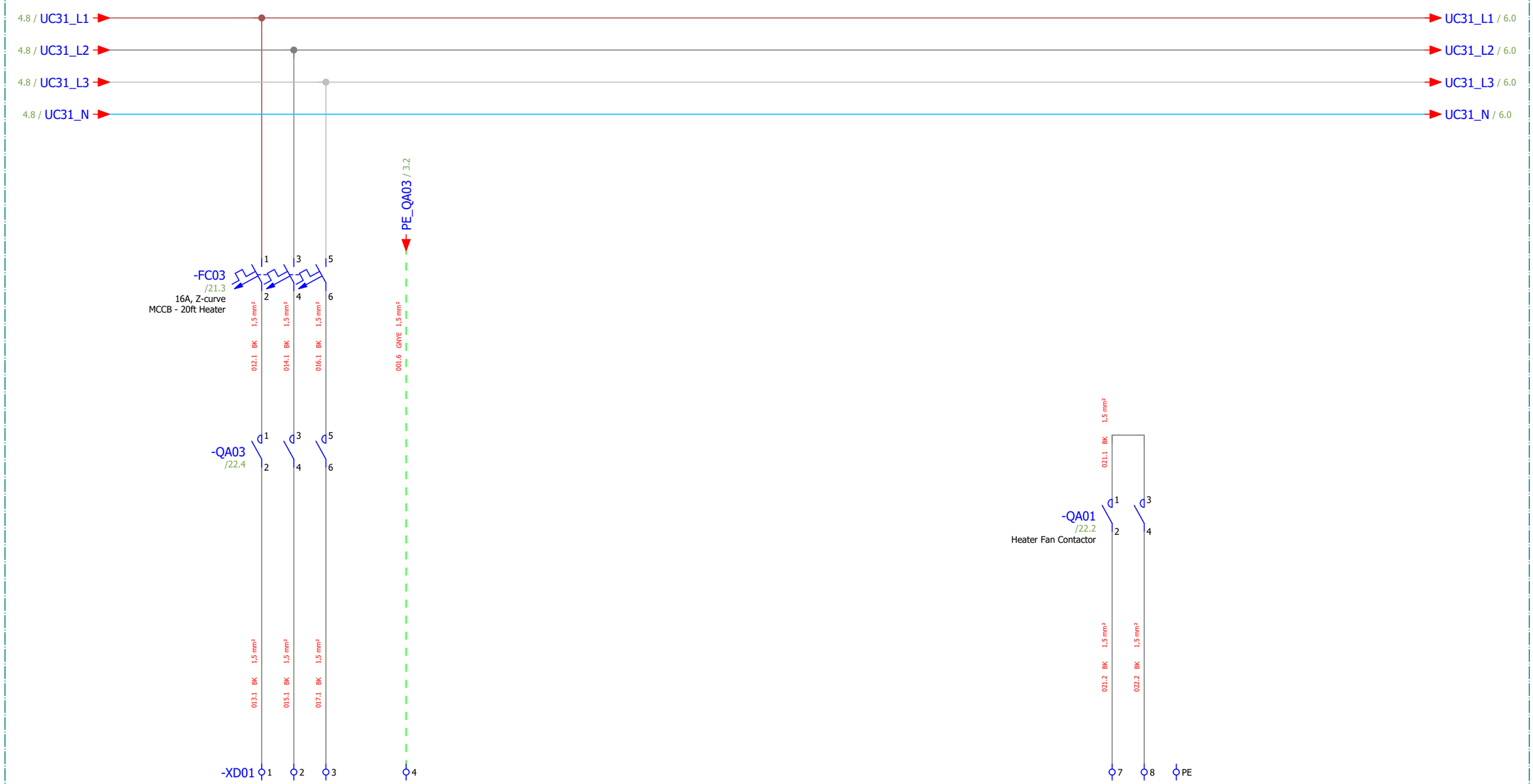
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	AC - 24V Power Supplies		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 4 / 18

=LA01



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C03

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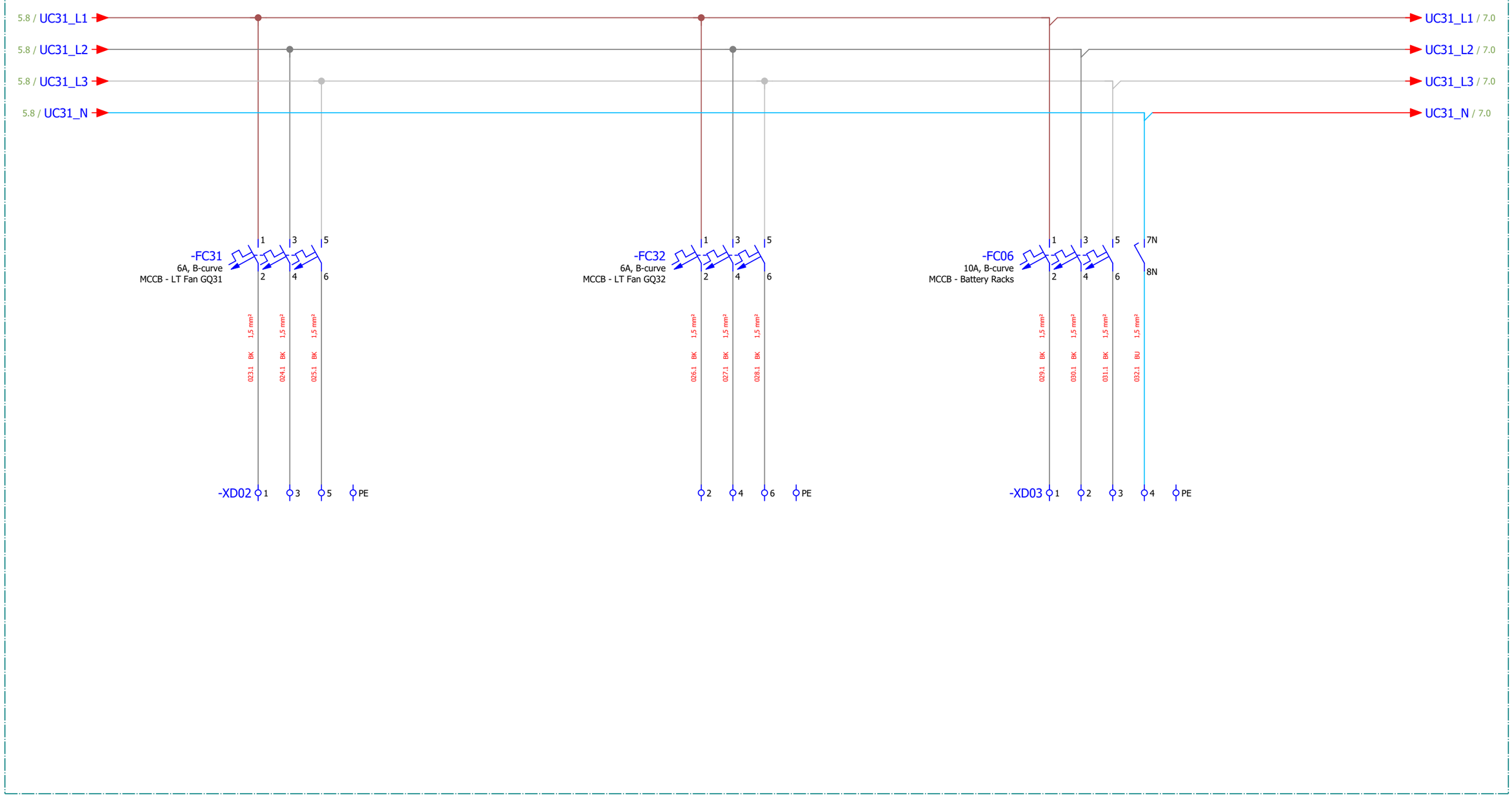
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	AC - Container Heating		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 5 / 18

0	1	2	3	4	5	6	7	8

=LA01



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C03

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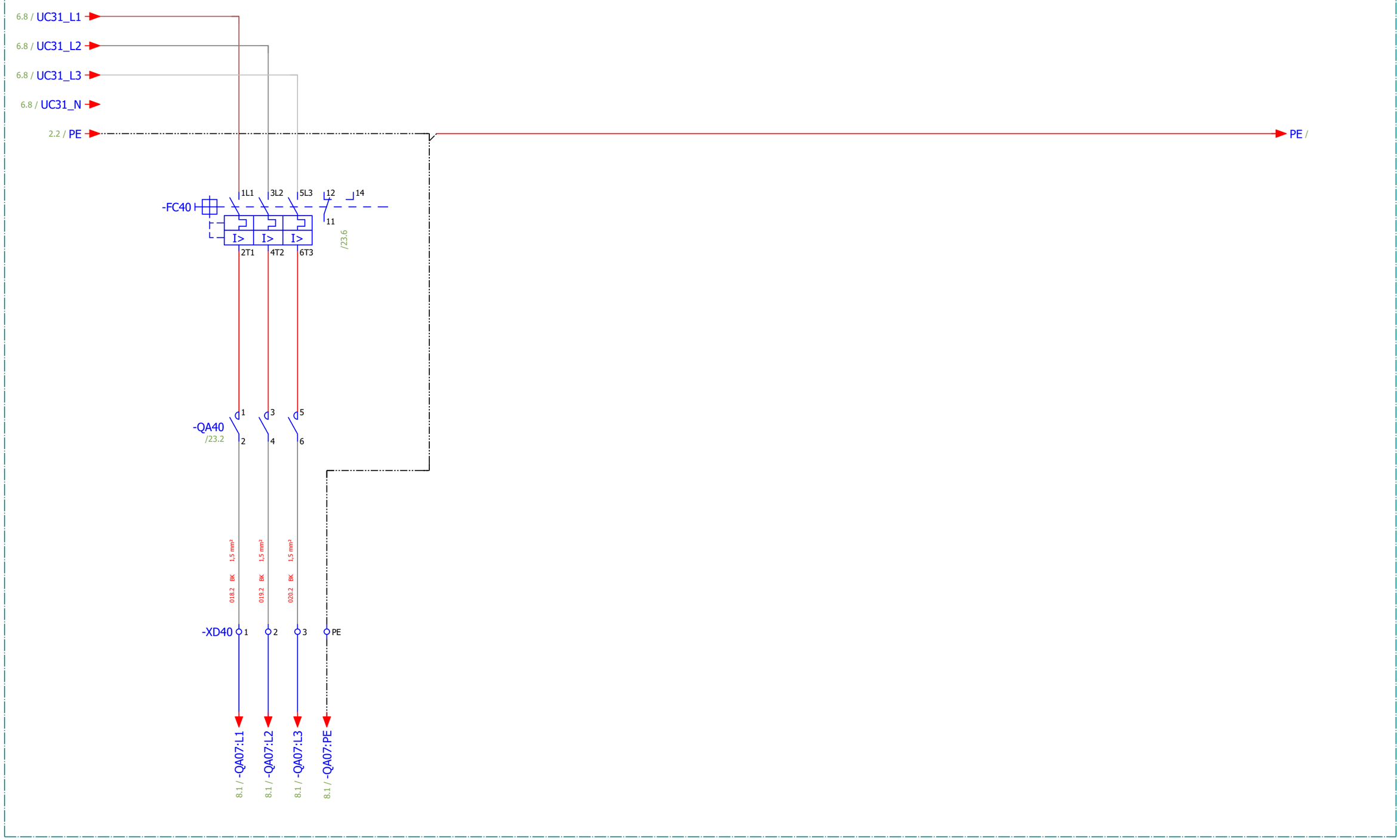
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	AC - LT Fans		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 6 / 18

FRM5103656/0B

=LA01



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C03

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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	AC - Precharge		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 7 / 18

0	1	2	3	4	5	6	7	8

=BA30+

7.1 / >=LA01+UC31-QA07:L1

7.1 / >=LA01+UC31-QA07:L2

7.2 / >=LA01+UC31-QA07:L3

7.2 / >=LA01+UC31-QA07:PE

-TA40

U V W PE

PRI

BLOCK

TT3 2,5-4-4

SEC

380U 380V 380W 400U 400V 400W 420U 420V 420W N

+DA30.TA40-WD01
ÖLFLEX® CLASSIC 130 H BK 0,6/1 kV
4x2,5
0,6/1,0 kV
Precharge supply

BN BK GY

BN BK GY

-TB40

BN BK GY

\- +

-RA40.1
3.3Ω, 1000W

-RA40.2
3.3Ω, 1000W

-XD41 1 2

-RA40.3
3.3Ω, 1000W

-RA40.4
3.3Ω, 1000W

-FC41
20 A

1 1

>=BA20+DA03-WD01:1

>=BA20+DA03-WD01:2

>=BA20+DA03-L+ / 29.7

>=BA20+DA03-L- / 29.8

+BA20-WD02
ÖLFLEX® CLASSIC 130 H BK 0,6/1 kV
4x2,5
0,6/1,0 kV
Isolation monitoring

BN BK

-FC42
2 A

1 1

3

4

=BA20+
DC Bus

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C03

REVISION INFORMATION
DESCRIPTION
DATE
05-Jun-24

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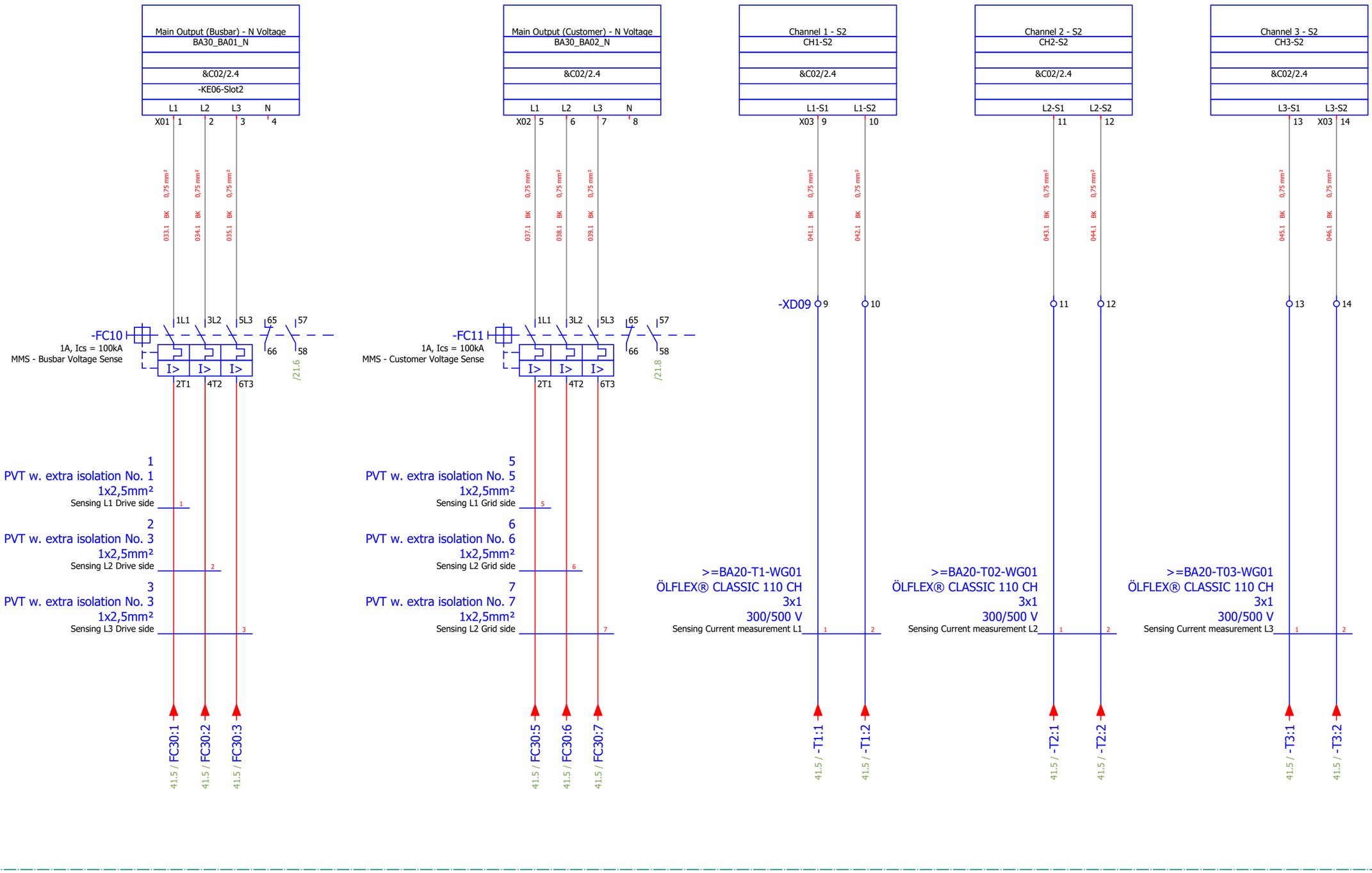
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	AC - Precharge		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 8 / 18

FRM5103656/0B

=LA01



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C03

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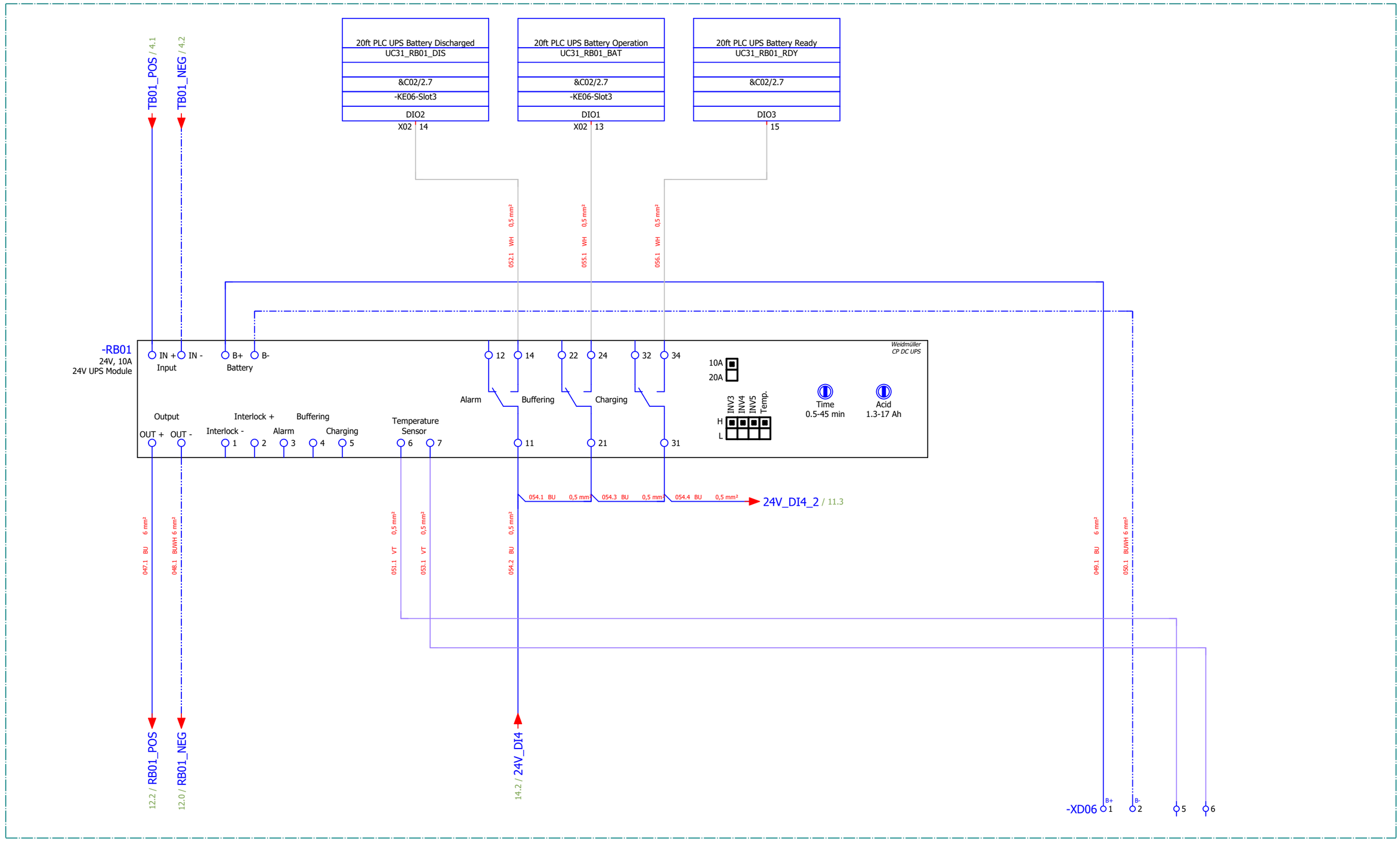
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	AC - Sensing		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 9 / 18

0	1	2	3	4	5	6	7	8

=LA01

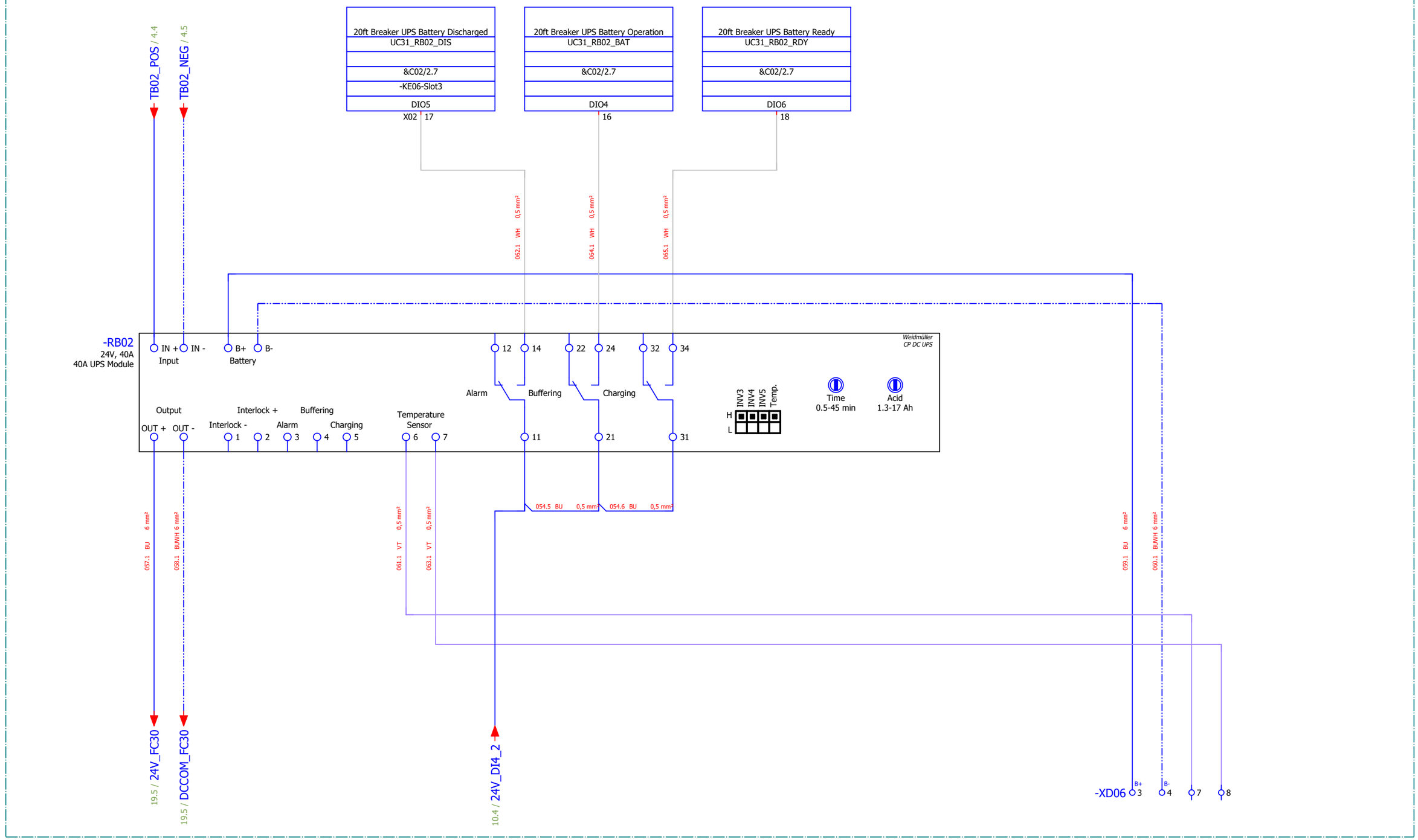


Reference Item Number	Ballard Part # TBD			REVISION INFORMATION	THIS DOCUMENT, SUBMITTED IN CONFIDENCE, CONTAINS PROPRIETARY INFORMATION WHICH SHALL NOT BE REPRODUCED OR TRANSFERRED TO OTHER DOCUMENTS OR DISCLOSED TO OTHERS OR USED FOR MANUFACTURING OR ANY OTHER PURPOSE WITHOUT PRIOR WRITTEN PERMISSION OF BALLARD POWER SYSTEMS INC. OR A RELATED WHOLLY-OWNED SUBSIDIARY OR AFFILIATE.	BALLARD™ CONFIDENTIAL	DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
EPLAN Project Name	601456B - Shell Baseload Power Hub			DESCRIPTION			DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
EPLAN Revision	01.P15						SHEET TYPE/DESC	10A UPS Module		
EPLAN Project Pages	478			DATE		THIS DOCUMENT'S APPROVAL IS MANAGED BY E-SIGNATURE ON FILE IN BALLARD POWER SYSTEMS' PLM SYSTEM	ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 10 / 18
=	++	+ UC31	& C03	05-Jun-24						

FRM5103656/0B

0	1	2	3	4	5	6	7	8

=LA01



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C03

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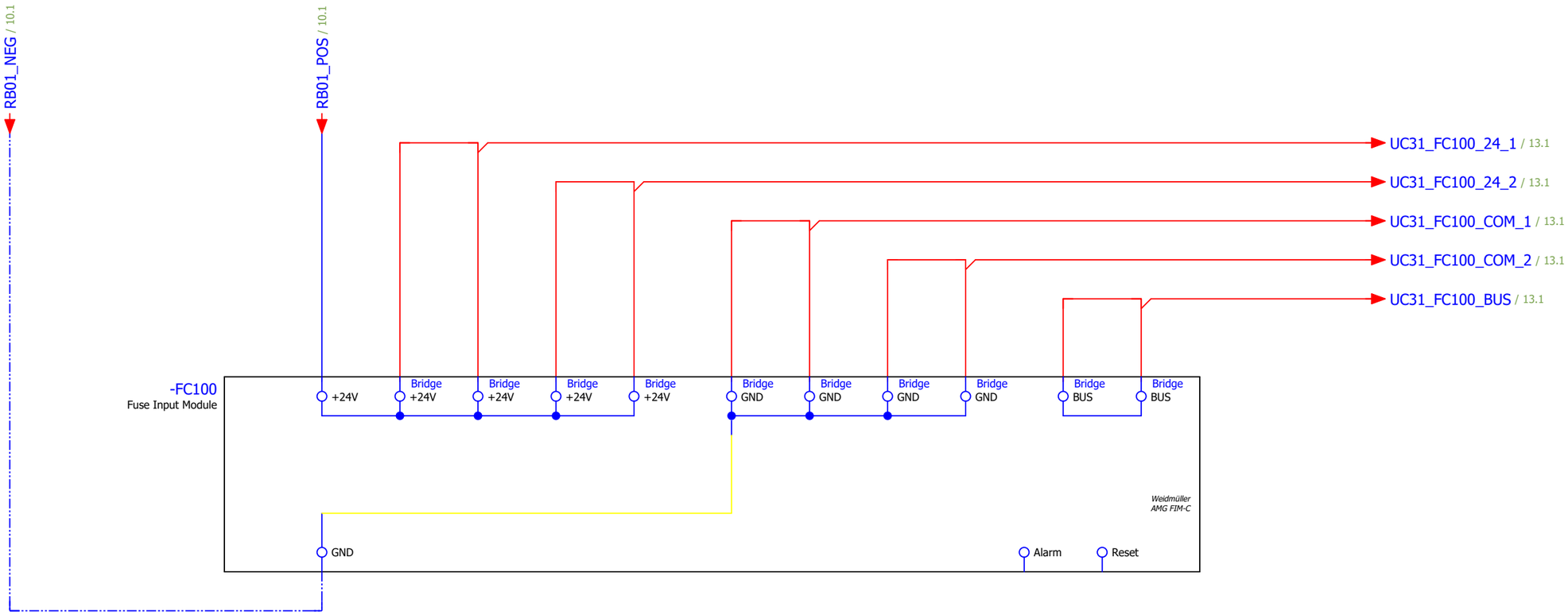
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	40A UPS Module		

ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 11 / 18

=LA01



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C03

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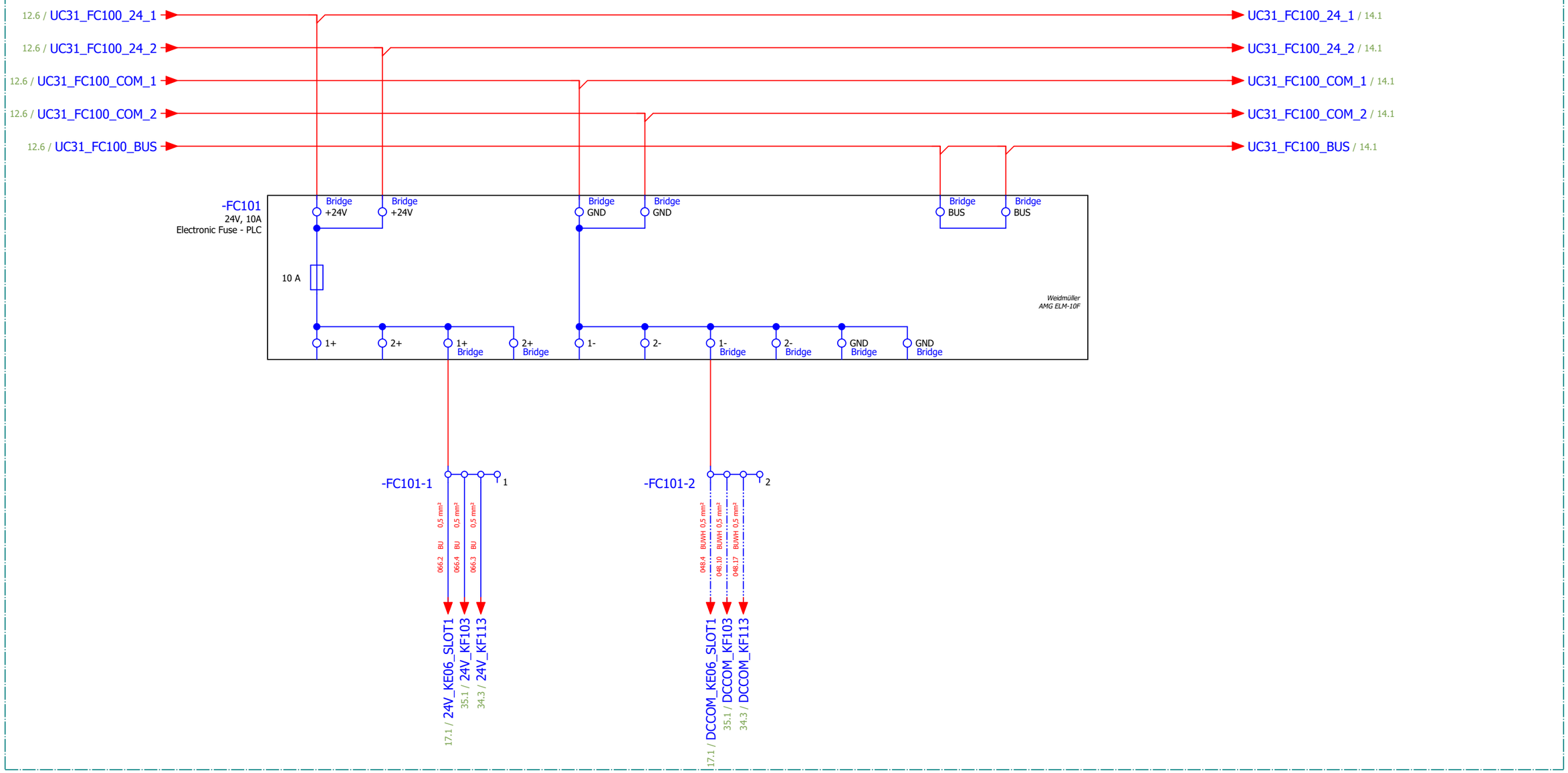
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	24V Fusing - FC100		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 12 / 18

0	1	2	3	4	5	6	7	8

=LA01



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C03

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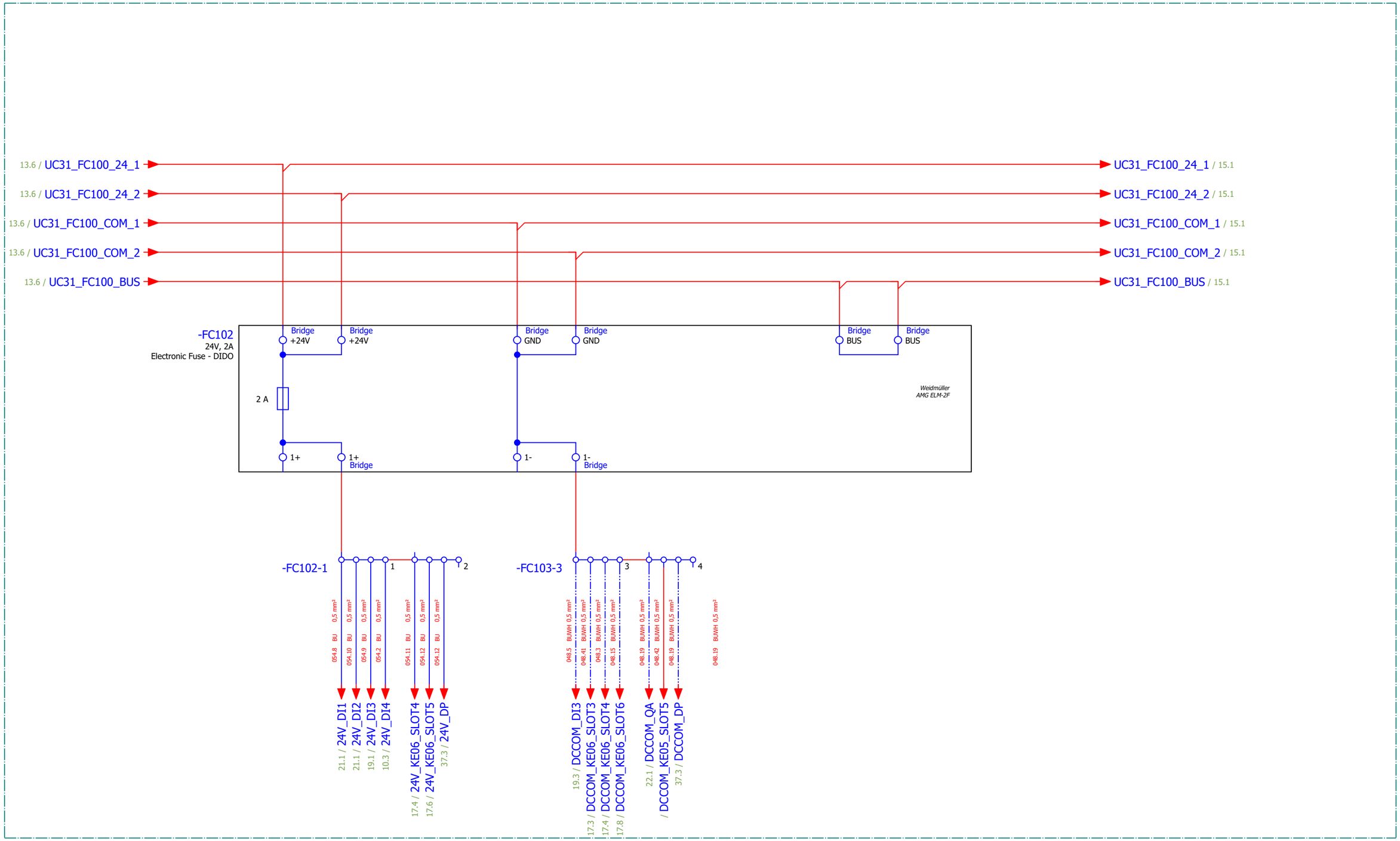
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	24V Fusing and Distribution - FC101		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 13 / 18

FRM5103656/0B

0	1	2	3	4	5	6	7	8

=LA01



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C03

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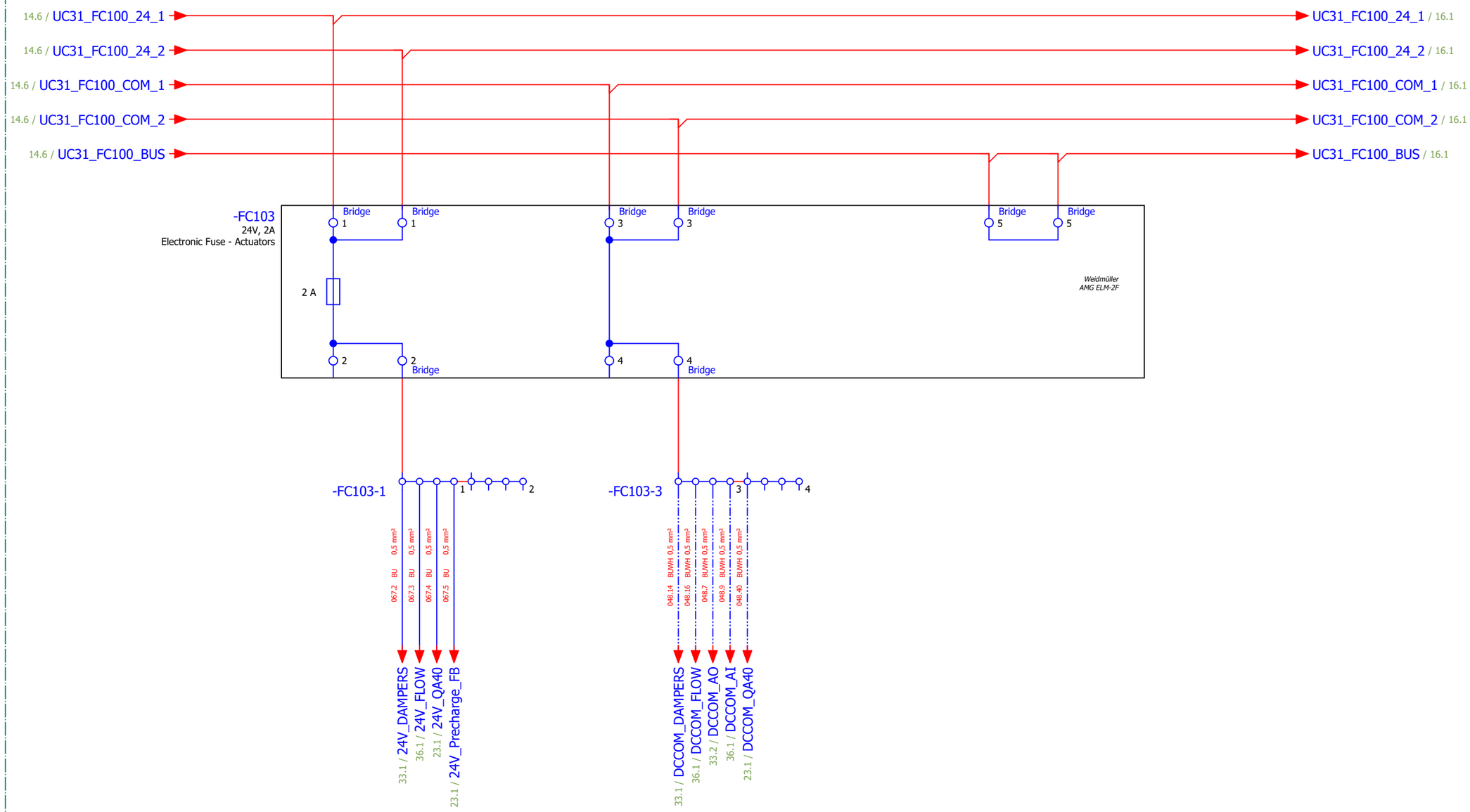
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	24V Fusing and Distribution - FC102		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 14 / 18

0	1	2	3	4	5	6	7	8

=LA01



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C03

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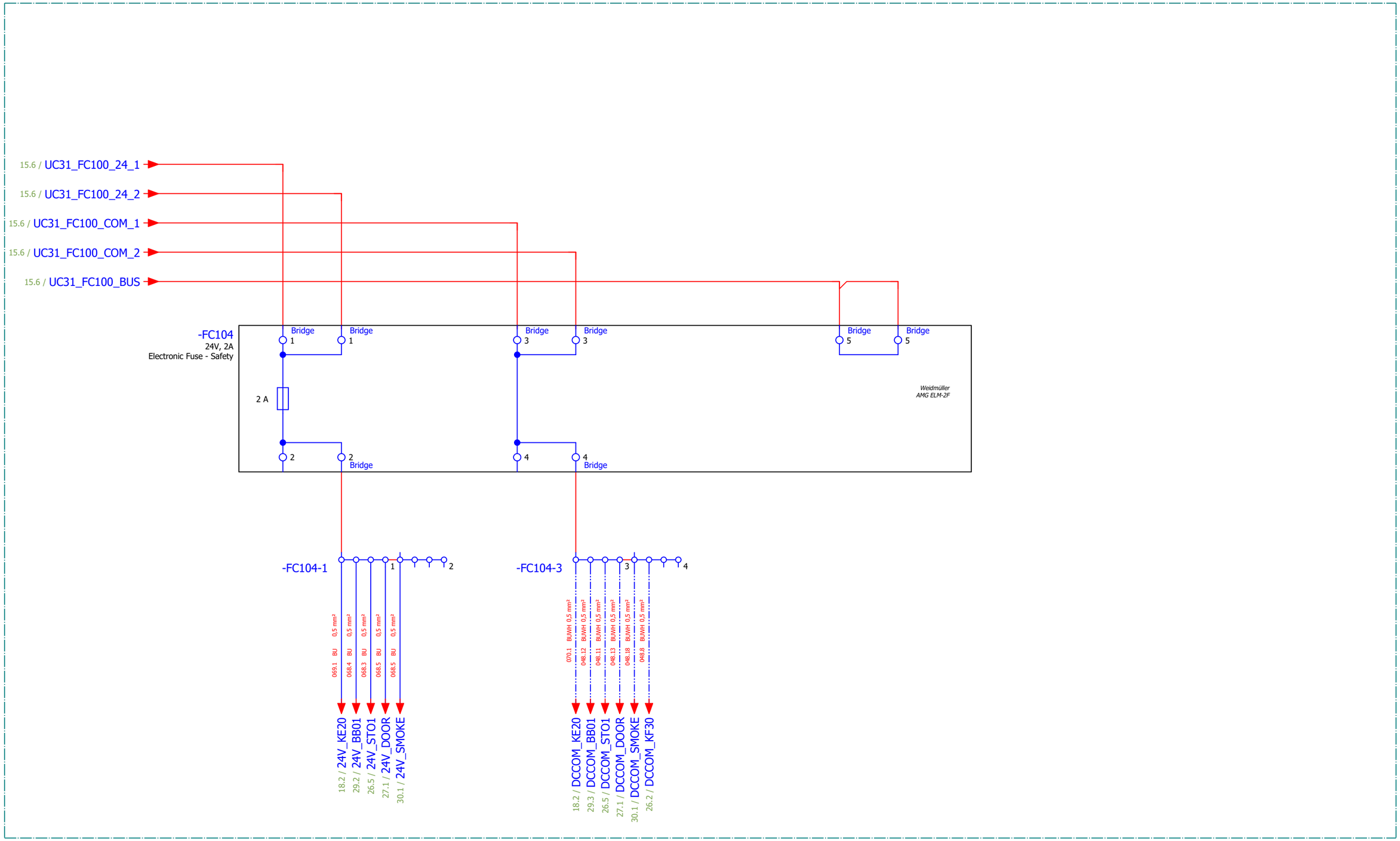
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	24V Fusing and Distribution - FC103		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 15 / 18

FRM5103656/0B

0	1	2	3	4	5	6	7	8

=LA01



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C03

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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	24V Fusing and Distribution - FC104		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 16 / 18

0	1	2	3	4	5	6	7	8

=LA01

-KE06
DEIF AMC300
Controller Extension Rack

-Slot1
DEIF PSM3.2

PE
PE
&C02/2.1

12-24V
1
&C02/2.1

0V
2
&C02/2.1

-Slot3

-Slot4

R1 COM
1
Relay 1 In &C02/3.1

R2 COM
3
Relay 2 COM &C02/3.1

R3 COM
5
Relay 3 In &C02/3.1

R4 COM
7
Relay 4 In &C02/3.1

DI1-4 COM
21
DI1-4 COM &C02/3.1

-Slot5

R1 COM
1
Relay 1 In &C02/3.4

R2 COM
3
Relay 2 COM &C02/3.4

-Slot6

DI1-4 COM
21
DI1-4 COM &C02/3.6

COM
23
Supply COM &C02/2.7

13.4 / DCCOM_KE06_SLOT1

13.2 / 24V_KE06_SLOT1

14.3 / DCCOM_KE06_SLOT3

14.2 / 24V_KE06_SLOT4

14.3 / DCCOM_KE06_SLOT4

14.2 / 24V_KE06_SLOT5

14.4 / DCCOM_KE06_SLOT6

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C03

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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	PLC - 24V		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 17 / 18

0	1	2	3	4	5	6	7	8

=AA01+WZ10
From 40ft Container

=LB02+UC31
Safety System, 20ft Control Cabinet

16.2 / >=LA01-24V_KE20
16.3 / >=LA01-DCCOM_KE20

-KE20
&C02/5.0
24 VDC
Safety PLC, PLC
+ A1
- A2

-KE21
&C02/5.3
Safe Digital
Input/Output Module
+ A1
- A2
068.8 BU 0,5 mm²
048.21 BUWH 0,5 mm²

-KE22
&C02/6.1
Safe Digital
Input/Output Module
+ A1
- A2
068.9 BU 0,5 mm²
048.22 BUWH 0,5 mm²

-KE23
&C02/6.5
Safe Digital
Input/Output Module
+ A1
- A2
068.9 BU 0,5 mm²
048.22 BUWH 0,5 mm²

+UC20/39.8 / EFI_CAN

BN 1 X03 Other bus systems
WH 2 X03 Other bus systems
GN 3 X03 Other bus systems
YE EFI2_B Other bus systems

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C03

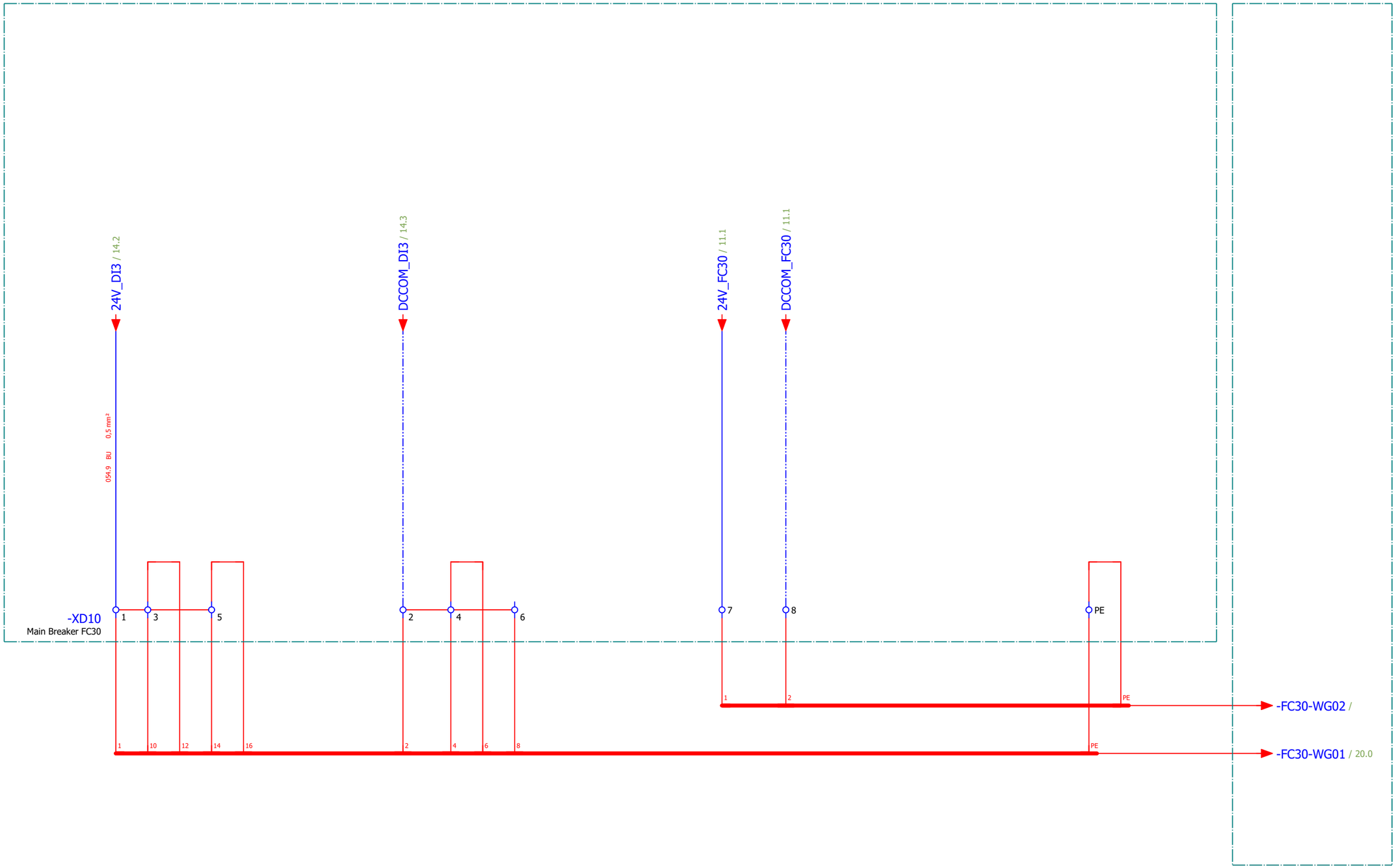
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Safety PLC - 24V		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 18 / 18



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
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DRAWING	601456B UC31 10ft Control Cabinet			REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet				
SHEET TYPE/DESC	FC30 Breaker 24V				
ALL SHEETS ARE THE SAME REVISION STATUS		SIZE A3	LANGUAGE EN	SHEET/TOTAL	19 / 18

FRM5103656/0B

=BA30+DA01-LA01
AC Power Output, 20ft Container Inside

=BA30+DA03
AC Power Output, 20ft Container Inside

Breaker FC30 Opening Coil	Breaker FC30 Closing Coil	Breaker FC30 Trip Reset Coil	Breaker FC30 Undervoltage Coil	Breaker Sping Charge FB	Breaker Auxillary Contact Q1	Breaker Auxillary Contact Q2
FC30_YO	FC30_YC	FC30_RY	FC30_UR	FC30_SPR	FC30_Q1	FC30_Q2
&C02/3.1	&C02/3.1	&C02/3.1	&C02/3.1	&C02/3.1	&C02/3.1	&C02/3.1
-KE06-Slot4						
DO1	DO2	DO3	DO4	DI1	DI2	DI3
X01 2	4	6	X01 8	X03 17	18	19

0,5 mm² WH 072.1

FC30_UR_1
26.6

26.6
FC30_UR_2

0,5 mm² WH 074.1

0,5 mm² WH 069.1
0,5 mm² WH 070.1
0,5 mm² WH 071.1
0,5 mm² WH 075.1
0,5 mm² WH 076.1
0,5 mm² WH 077.1

-XD10 10 11 12 13 14 15 16 17 18

19.8 / -FC30-WG01 → 3 5 7 17 9 11 → -FC30-WG01 /

1 2 → -TA30-WG0X /

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
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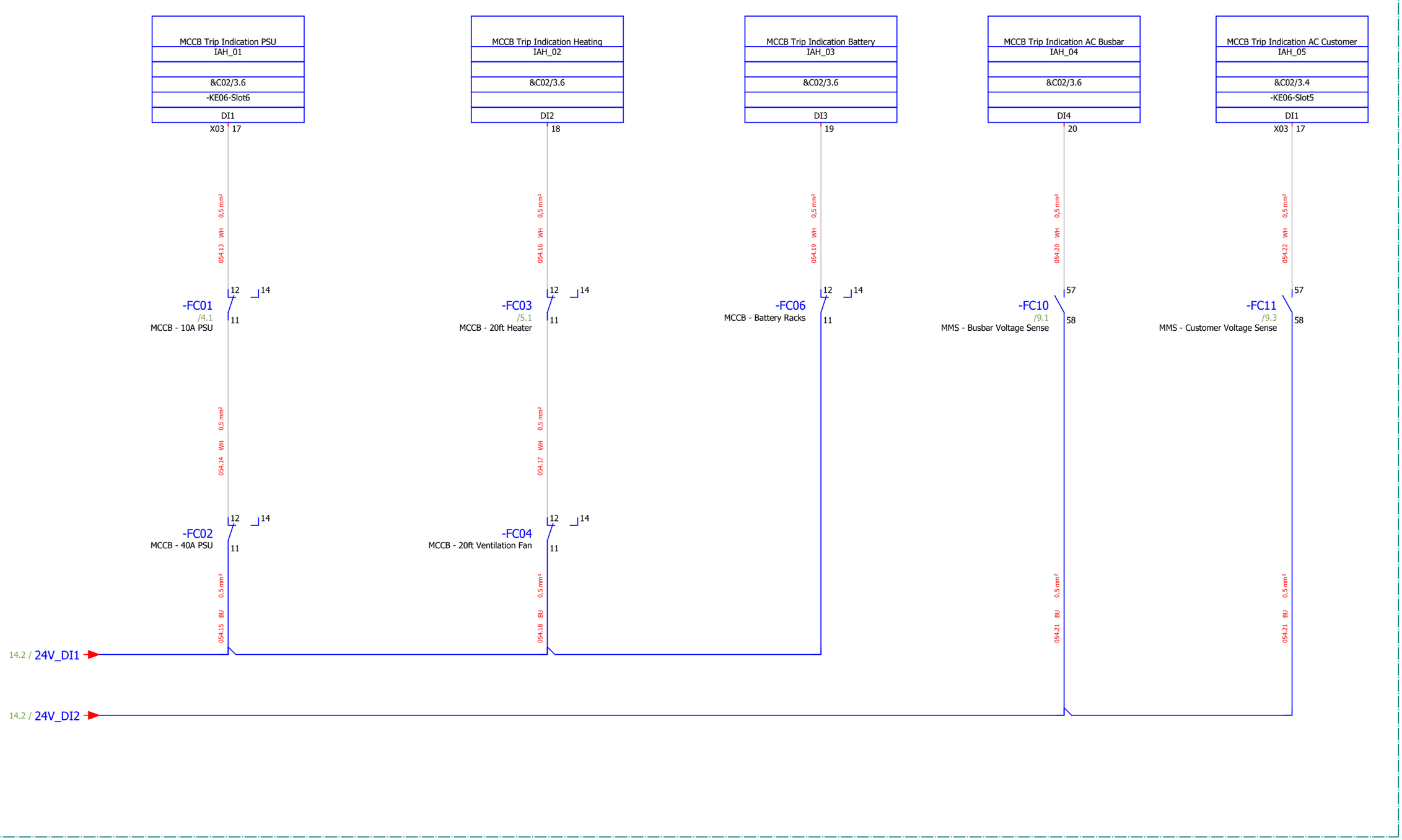
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	FC30 Breaker DI DO		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 20 / 18

FRM5103656/0B

=LA01



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
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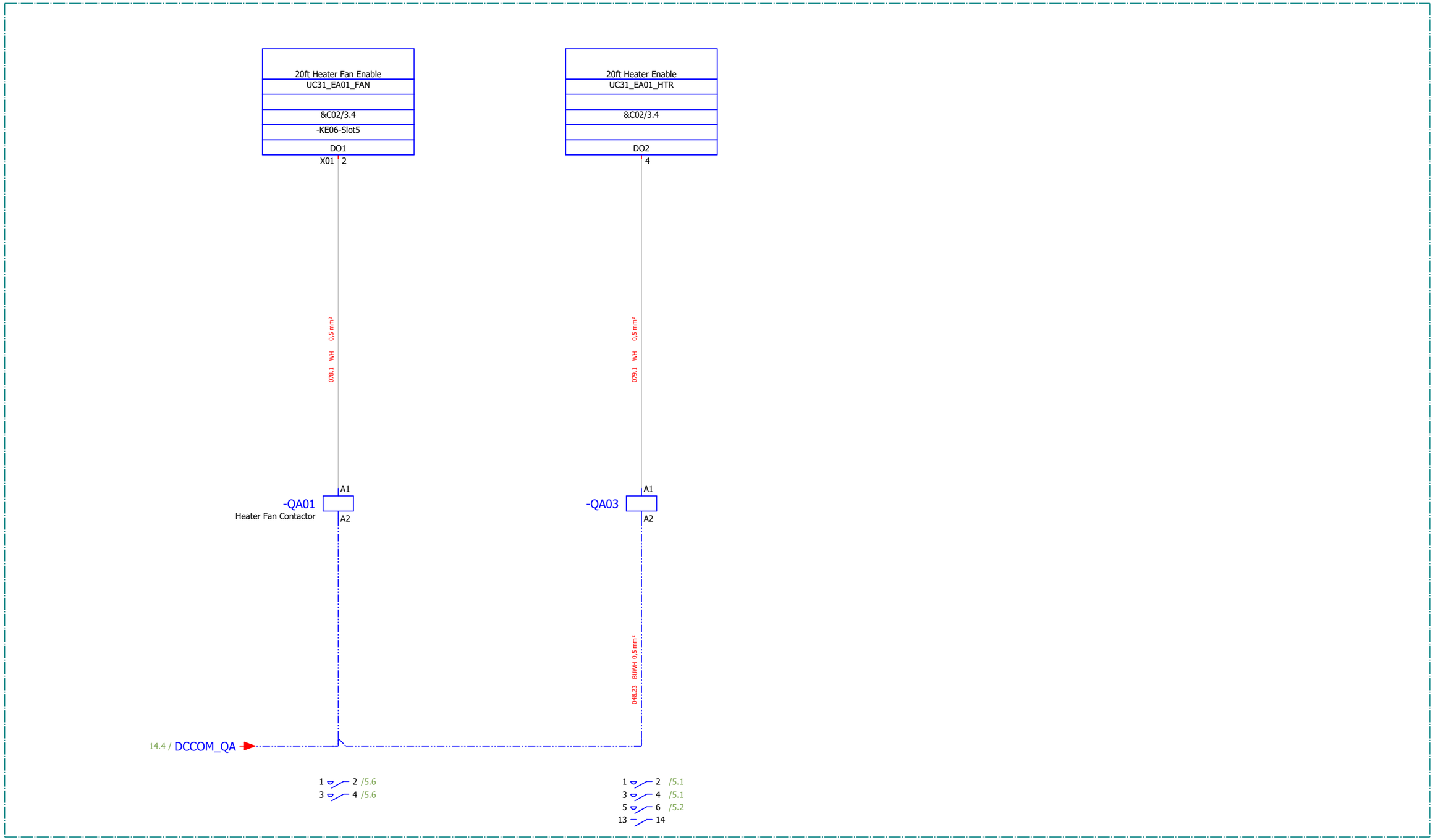
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	MCCB Trip Indicators		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 21 / 18

FRM5103656/0B

0	1	2	3	4	5	6	7	8

=LA01
Control System, 20ft Container



Reference Item Number	Ballard Part # TBD		
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EPLAN Revision	01.P15		
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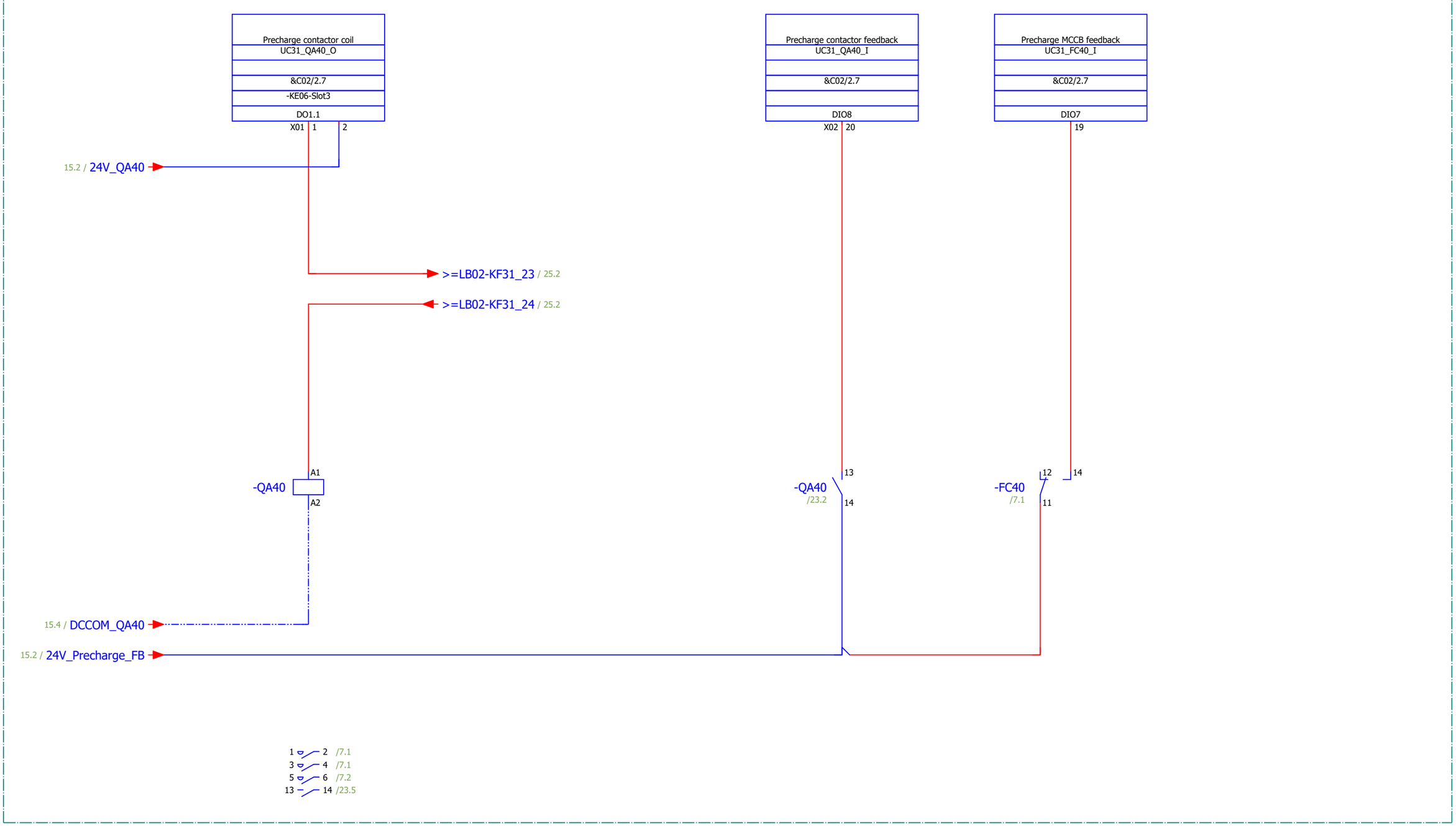
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	20ft Heating IO		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 22 / 18

0	1	2	3	4	5	6	7	8

=LA01



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C03

REVISION INFORMATION	
DESCRIPTION	
DATE	05-Jun-24

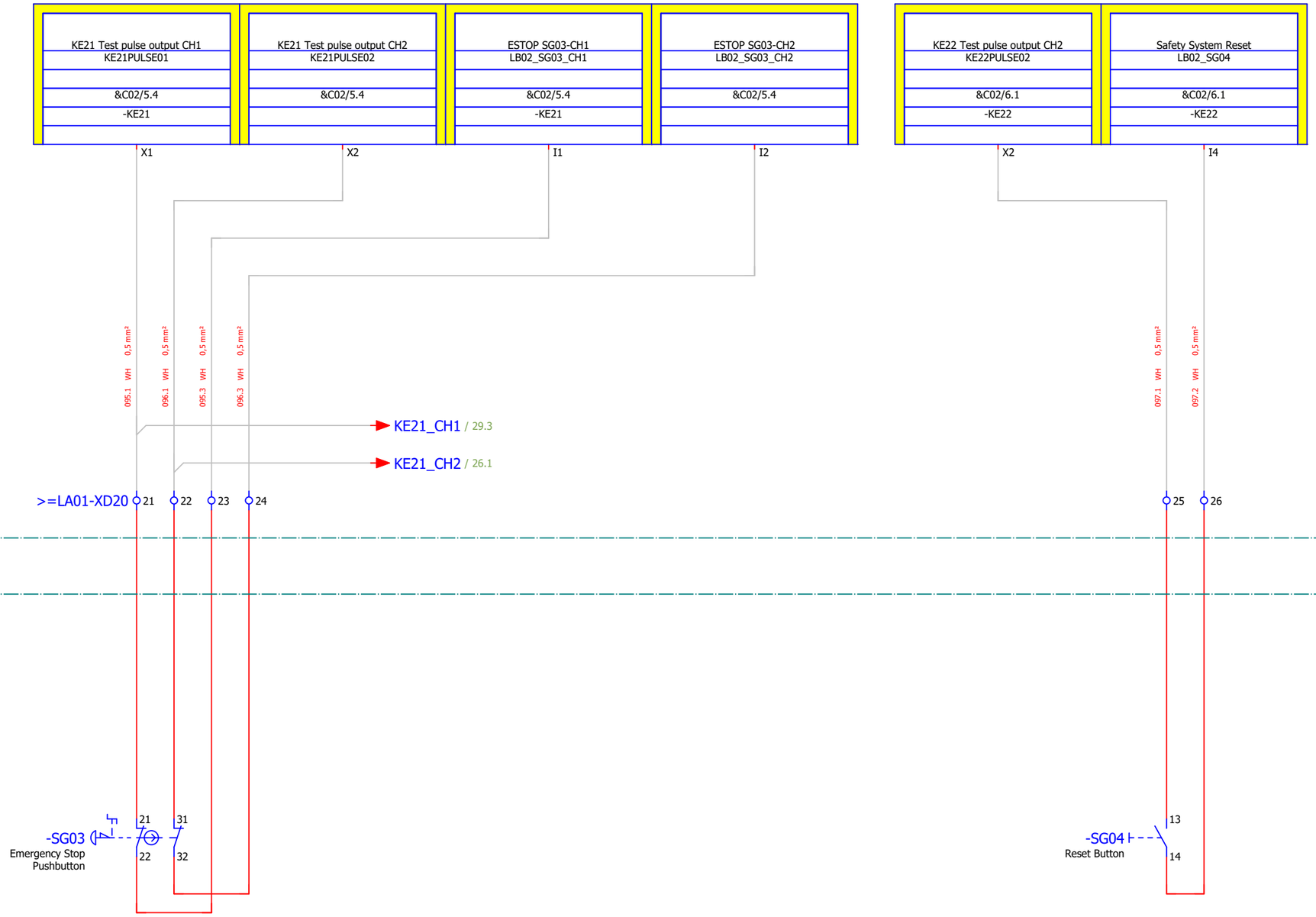
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	AC - Precharge IO		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 23 / 18

=LB02+UC31
Safety System, 20ft Control Cabinet



=LB02+DA03
Safety System, 20ft Container, Breaker Panel Front



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C03

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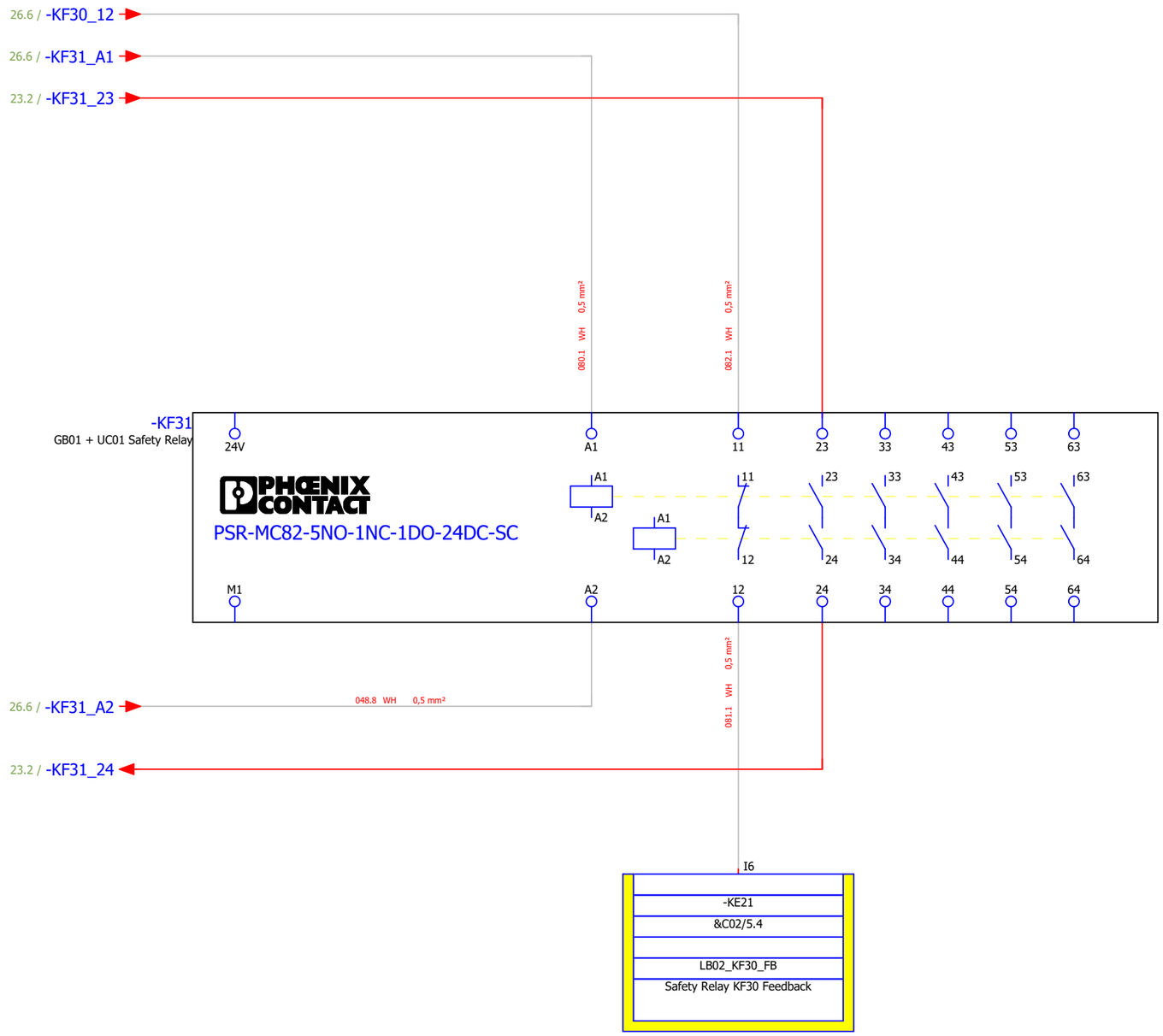
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Safety ESTOP		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 24 / 18

FRM5103656/0B

0	1	2	3	4	5	6	7	8

=LB02+UC31
Safety System, 20ft Control Cabinet



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C03

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DESCRIPTION
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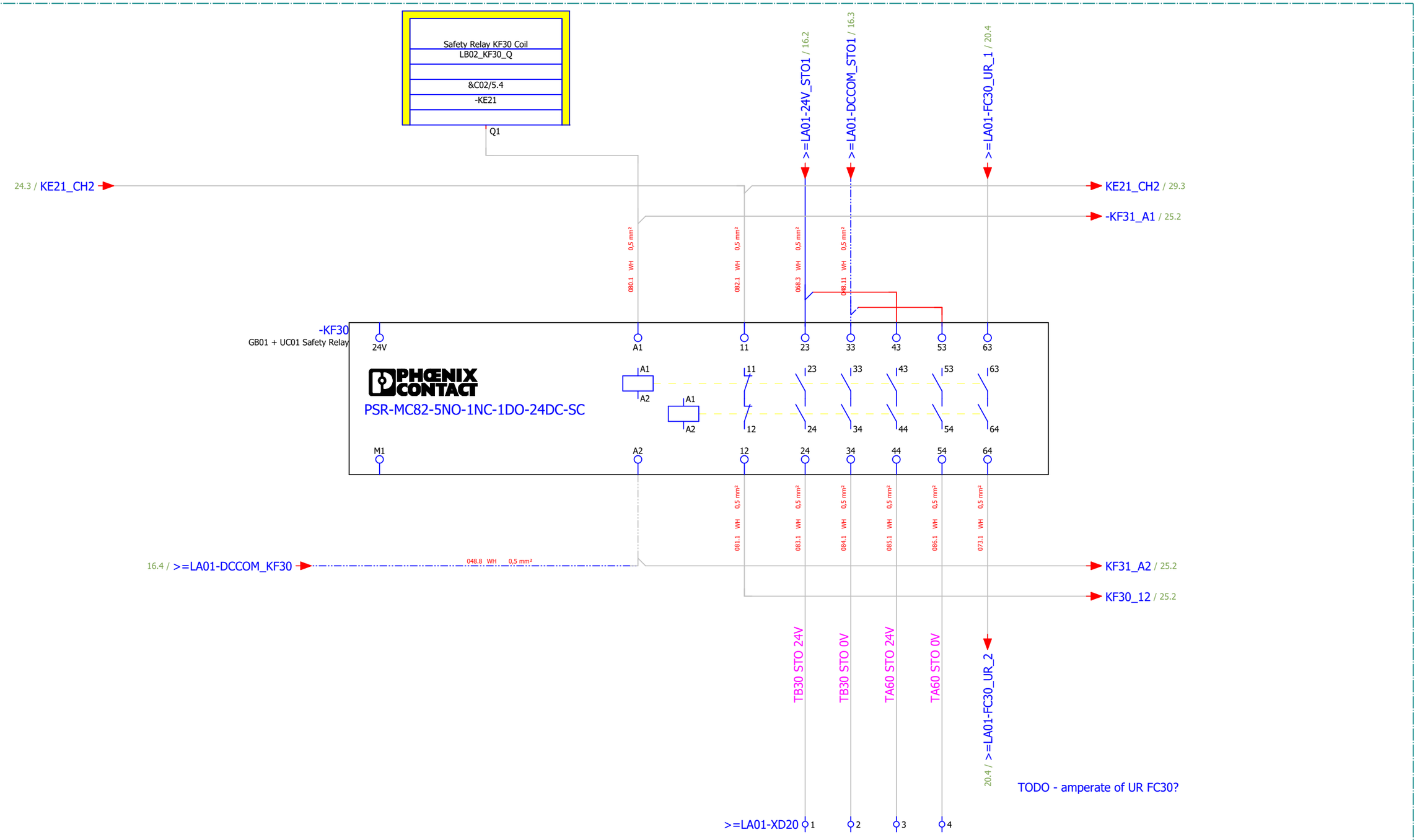
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Safety Relay KF31		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 25 / 18

FRM5103656/0B

0	1	2	3	4	5	6	7	8

=LB02+UC31
Safety System, 20ft Control Cabinet



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C03

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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Safety Relay		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 26 / 18

=LB02+UC31
Safety System, 20ft Control Cabinet

Safety Door Sensor, Door A - CH1
LB02_BG01_CH1
&C02/6.1
-KE22
I5

Safety Door Sensor, Door A - CH2
LB02_BG01_CH2
&C02/6.1
I6

Safety Door Sensor, Door B - CH1
LB02_BG02_CH1
&C02/6.1
I7

Safety Door Sensor, Door B - CH2
LB02_BG02_CH2
&C02/6.1
I8

16.2 / >=LA01-24V_DOOR → >=LA01-24V_DOOR / 28.1

16.4 / >=LA01-DCCOM_DOOR → >=LA01-DCCOM_DOOR / 28.1

087.1 WH 0,5 mm²
088.1 WH 0,5 mm²
088.11 BU 0,5 mm²
089.1 WH 0,5 mm²
048.25 BUWH 0,5 mm²
090.1 WH 0,5 mm²

>=LA01-XD20 5 6 7 8 9 10 11 12

=LB02+DA03
Safety System, 20ft Container, Inside

-BG01.WG01
20 m
4x0.25
300
Transformer Door Sensor
BN WH BU BK

-BG01
SICK.1069563
Door Sensor
Above door at transformer
+24V 1 | Out A 2 | 0V 3 | Out B 4 | Out Aux 5

-BG02.WG01
20 m
4x0.25
300
Battery Door Sensor
BN WH BU BK

-BG02
SICK.1069563
Door Sensor
Above door at batteries
+24V 1 | Out A 2 | 0V 3 | Out B 4 | Out Aux 5

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C03

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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Safety Door Switches		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 27 / 18

=LB02+UC31
Safety System, 20ft Control Cabinet

Door Lock Possible
LB02_RL01_AUX
&C02/6.1
-KE22
I3

Door Lock Command
LB02_RL01_LOCK
&C02/6.1
Q1

Door Lock Feedback CH1
LB02_RL01_CH1
&C02/6.1
I1

Door Lock Feedback CH2
LB02_RL01_CH2
&C02/6.1
I2

27.7 / >=LA01-24V_DOOR

27.7 / >=LA01-DCCOM_DOOR

091.1 WH 0,5 mm²
068.11 BU 0,5 mm²
092.1 WH 0,5 mm²
093.1 WH 0,5 mm²
094.1 WH 0,5 mm²
048.25 BUWH 0,5 mm²

>=LA01-XD20 13 14 15 16 17 18 19 20

Not applicable

=LB02+DA03
Safety System, 20ft Container, Inside

-RL01.WG01
PUR
10 m
8x0,25 mm²
300
Safety Door Lock
WH BN GN YE GY PK BK RD

-RL01.XG01
1 2 3 4 5 6 7 8

-RL01
SICK.1101321
FXL1-SPBMSA00
Safety Door Lock
20ft Container Door
Data sheet (DE)

1	2	3	4	5	6	7	8
OutAux	24VDC	LOCK	In2	OSSD1	OSSD2	0V	In1

M12 male

ImageVisible
Yes

SICK

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C03

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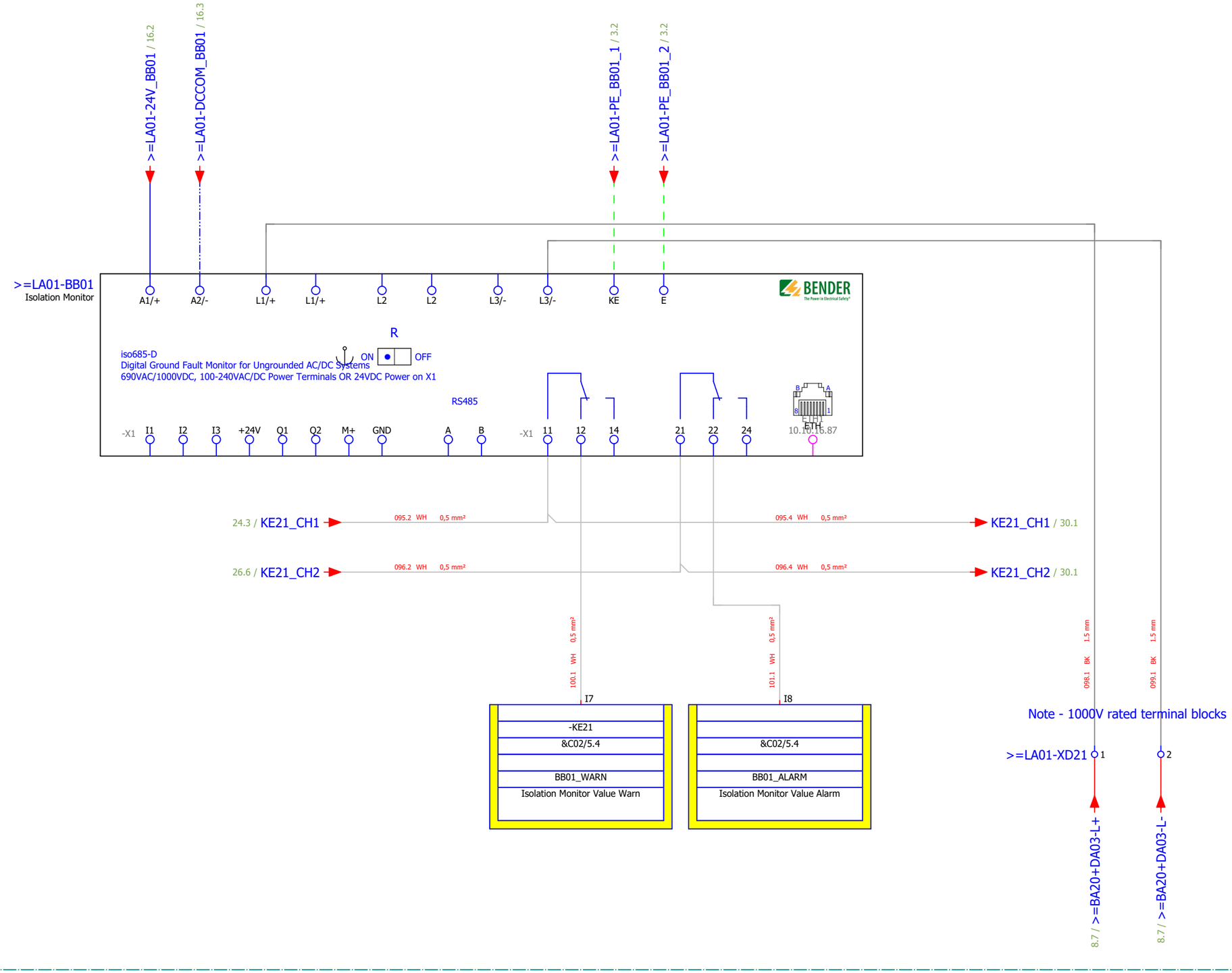
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Safety Door Lock		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 28 / 18

FRM5103656/0B

0	1	2	3	4	5	6	7	8

=LB02+UC31
Safety System, 20ft Control Cabinet



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
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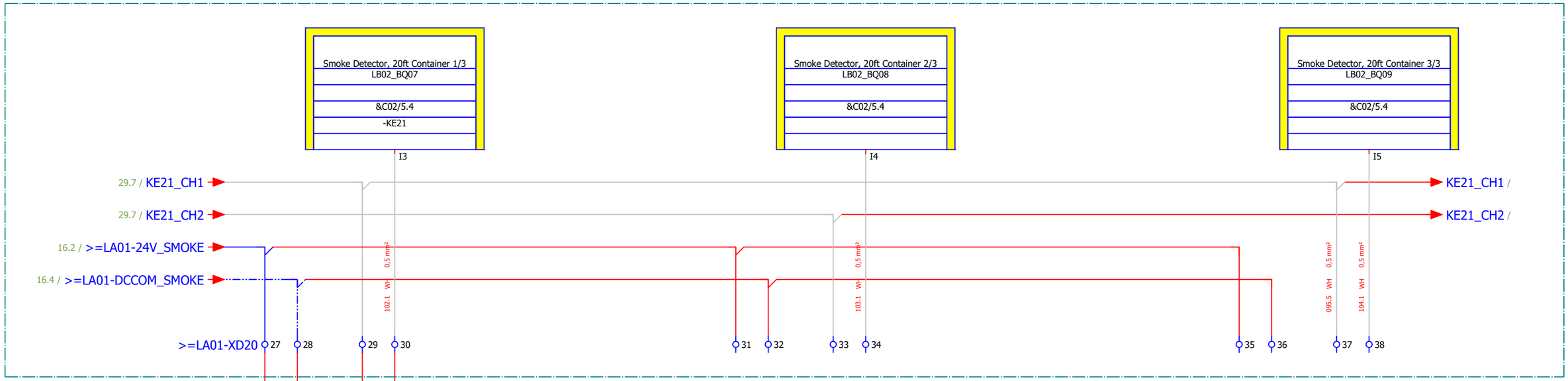
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Safety Isolation Monitor		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 29 / 18

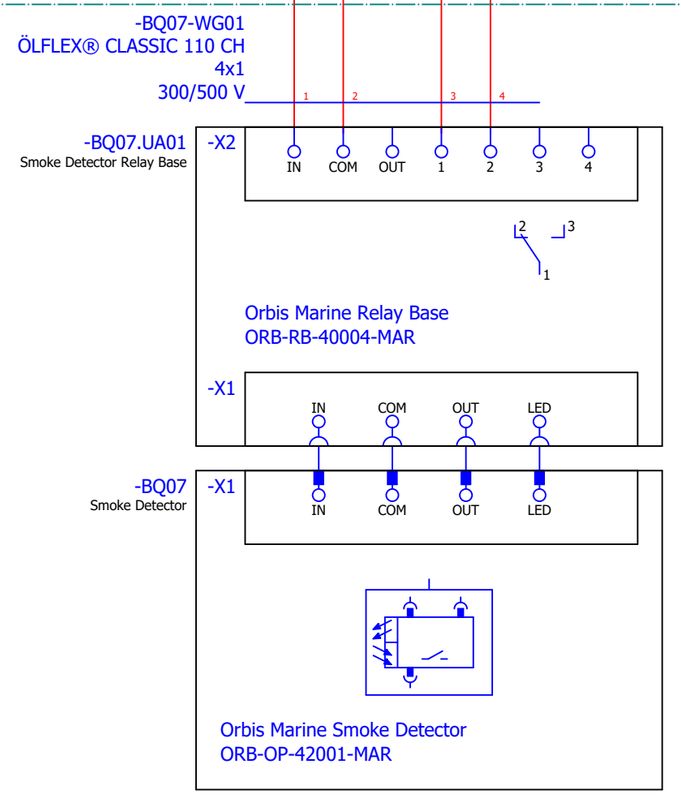
FRM5103656/0B

0	1	2	3	4	5	6	7	8

=LB02+UC31
Safety System, 20ft Control Cabinet



=LB02+DA03
Safety System, 20ft Container, Inside



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
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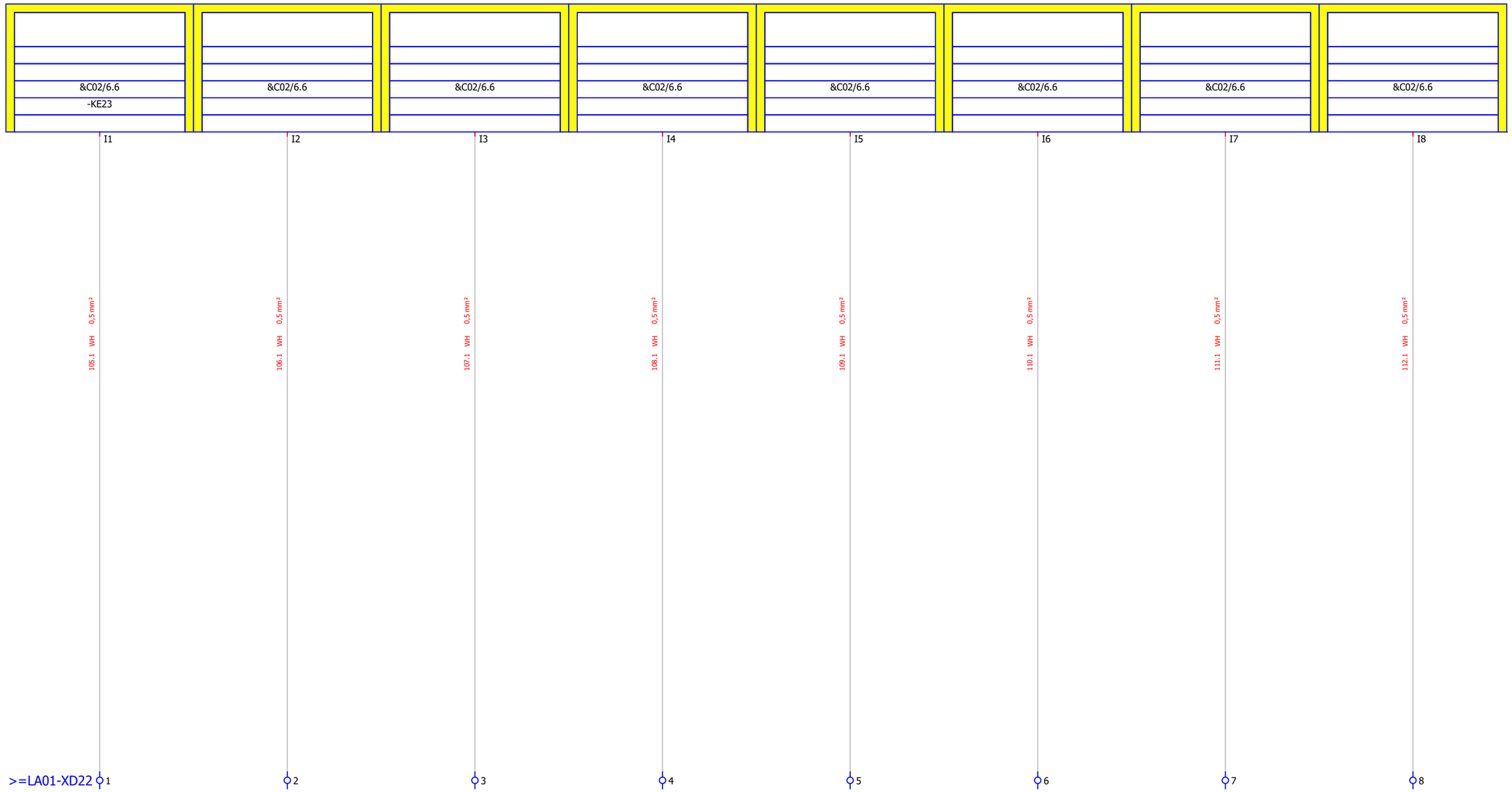
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Safety Smoke Detector		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 30 / 18

=LB02+UC31

Safety System, 20ft Control Cabinet



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
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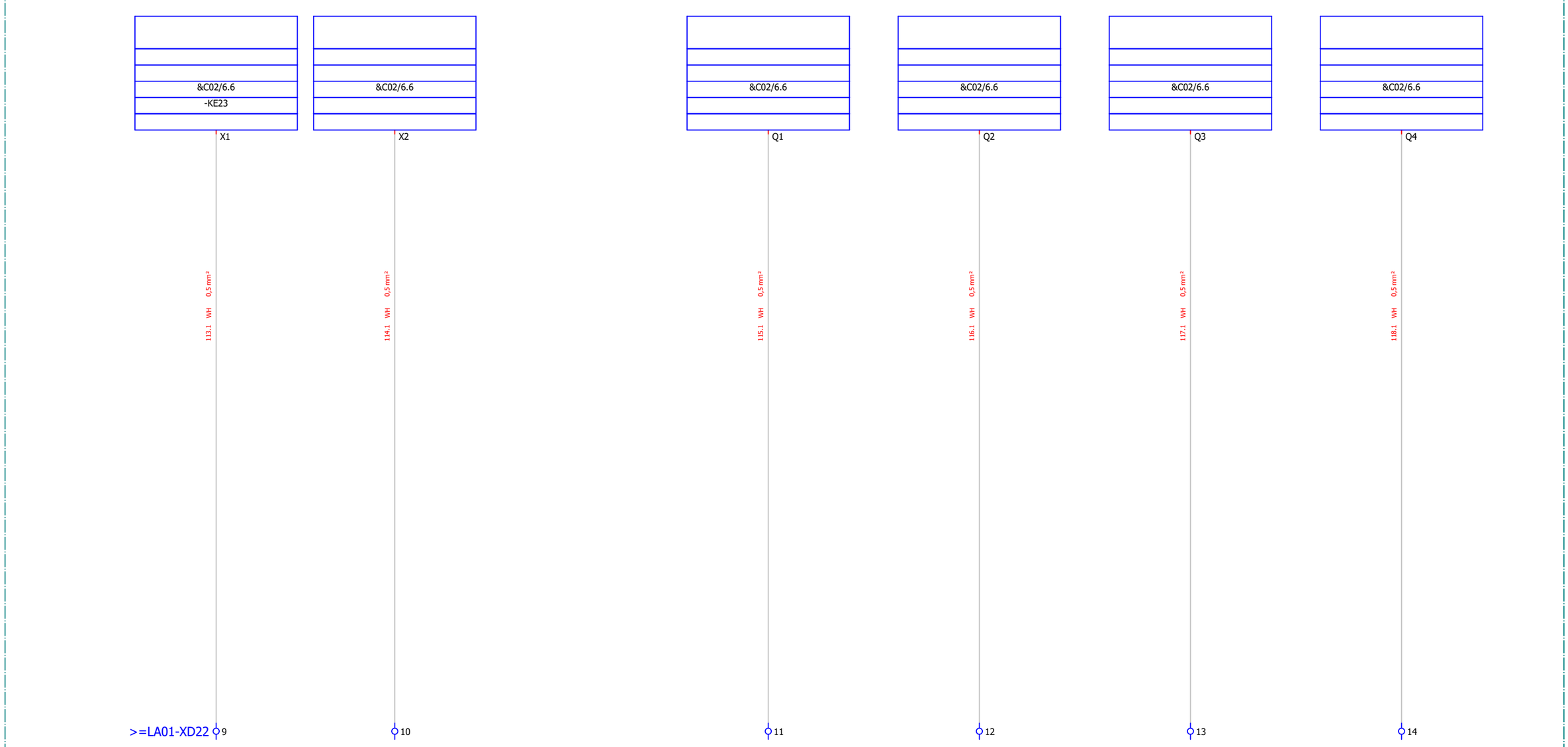
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Safety Battery Pack Inputs		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 31 / 18

=LB02+UC31

Safety System, 20ft Control Cabinet



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
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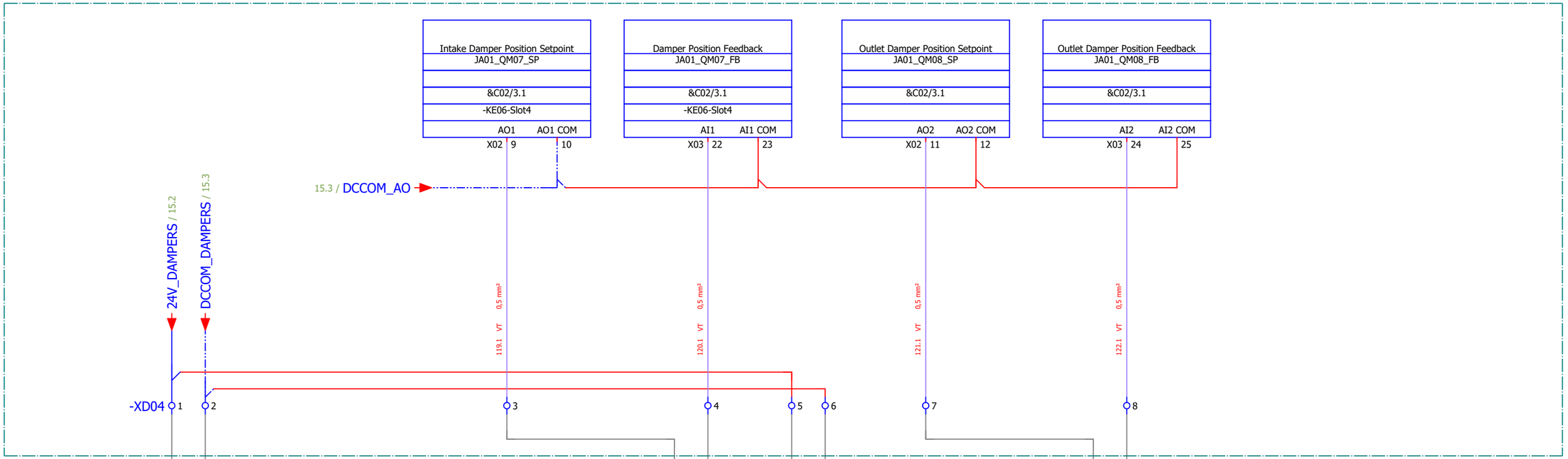
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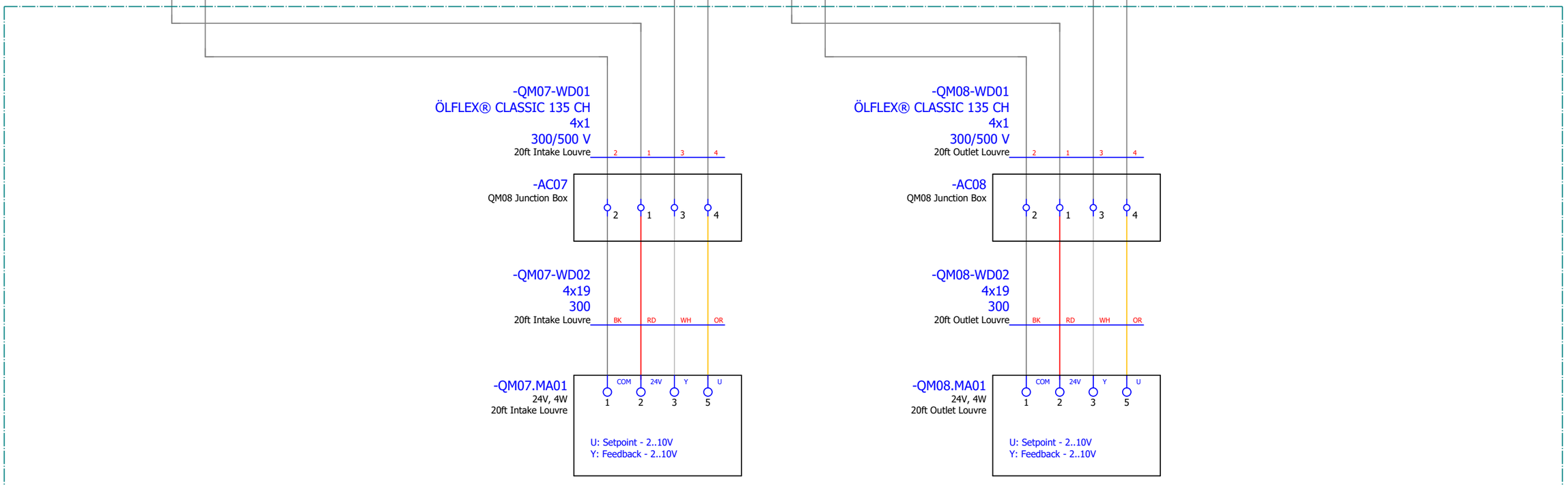
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Safety Battery Pack Outputs		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 32 / 18

=LA01
Control System, 20ft Container



=JA01+DA03



Reference Item Number	Ballard Part # TBD
EPLAN Project Name	601456B - Shell Baseload Power Hub
EPLAN Revision	01.P15
EPLAN Project Pages	478
=	++ + UC31 & C03

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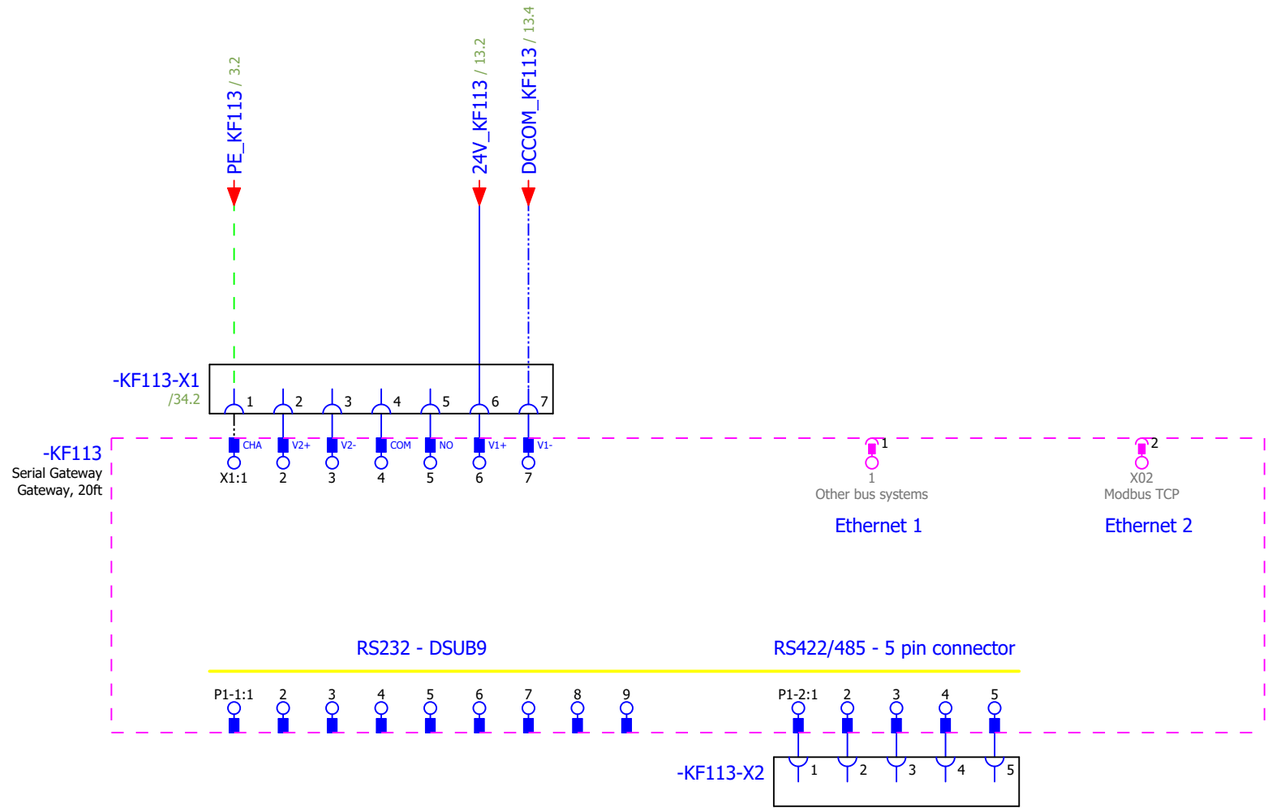
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Ventilation Damper IO		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 33 / 18

FRM5103656/0B

=LA01
Control System, 20ft Container



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C03

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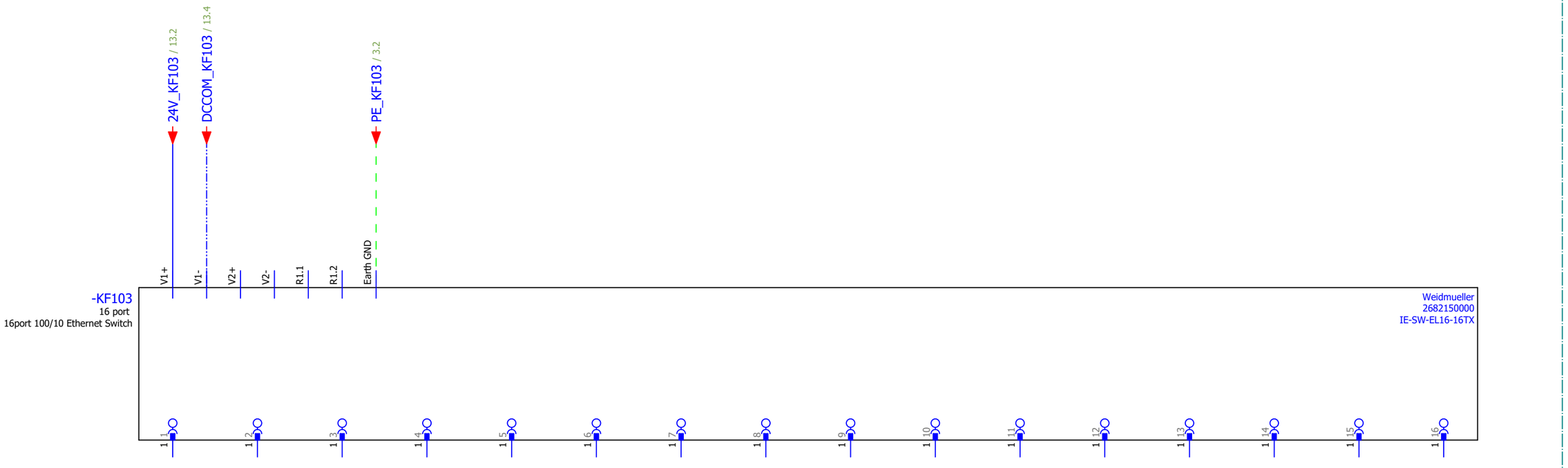
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Modbus Converter		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 34 / 18

FRM5103656/0B

=LA01
Control System, 20ft Container

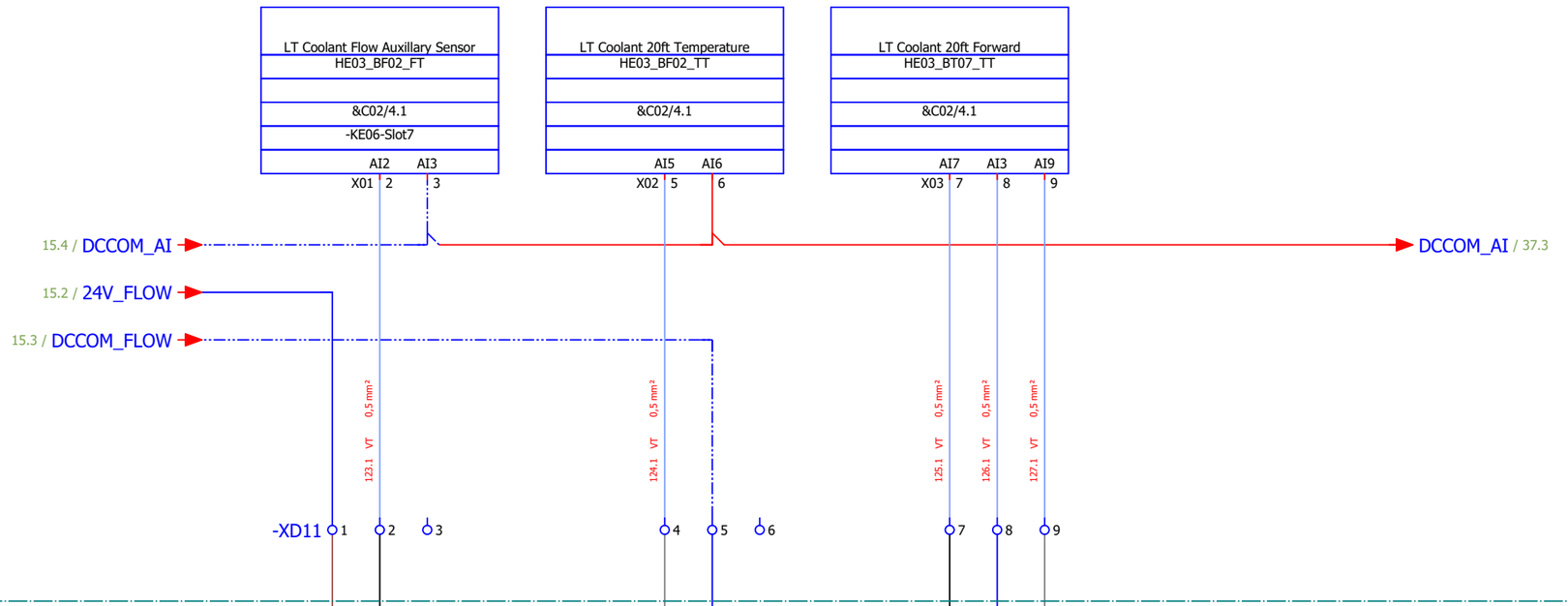


Reference Item Number	Ballard Part # TBD			REVISION INFORMATION	THIS DOCUMENT, SUBMITTED IN CONFIDENCE, CONTAINS PROPRIETARY INFORMATION WHICH SHALL NOT BE REPRODUCED OR TRANSFERRED TO OTHER DOCUMENTS OR DISCLOSED TO OTHERS OR USED FOR MANUFACTURING OR ANY OTHER PURPOSE WITHOUT PRIOR WRITTEN PERMISSION OF BALLARD POWER SYSTEMS INC. OR A RELATED WHOLLY-OWNED SUBSIDIARY OR AFFILIATE.	BALLARD™ CONFIDENTIAL	DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
EPLAN Project Name	601456B - Shell Baseload Power Hub			DESCRIPTION			DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
EPLAN Revision	01.P15					THIS DOCUMENT'S APPROVAL IS MANAGED BY E-SIGNATURE ON FILE IN BALLARD POWER SYSTEMS' PLM SYSTEM	SHEET TYPE/DESC	Network Switch		
EPLAN Project Pages	478			DATE			ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 35 / 18
=	++	+ UC31	& C03	05-Jun-24						

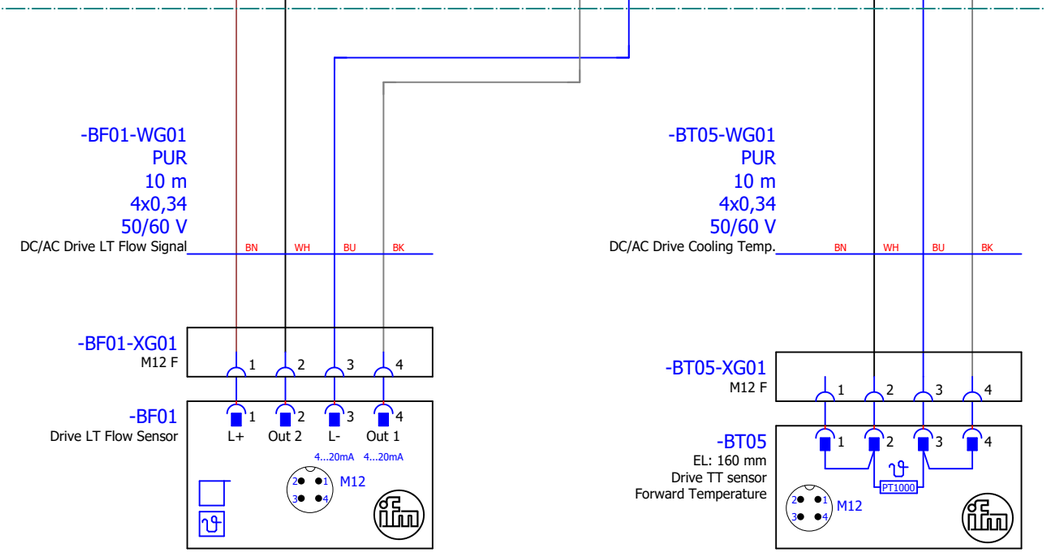
FRM5103656/0B

0	1	2	3	4	5	6	7	8

=LA01
Control System, 20ft Container



=HE03+DA03
Tempereature and flow sensors. Drive cooling



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
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=	++	+ UC31	& C03

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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15		
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet				
SHEET TYPE/DESC	LT Measurements				
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL	36 / 18	

FRM5103656/0B

0	1	2	3	4	5	6	7	8

=LA01
Control System, 20ft Container

Container temperature
DA03_BT01
&C02/4.1
-KE06-Slot7
AI10 AI11 AI12
X04 10 11 12

Container Diff. Pressure
DA03_BP01
&C02/4.1
-KE06-Slot7
AI23
X08 23 24

36.6 / DCCOM_AI
14.4 / DCCOM_DP
14.2 / 24V_DP

0,5 mm² VT 128.1
0,5 mm² VT 129.1
0,5 mm² VT 130.1

-XD11 10 11 12
-XD11 22 23 24

Klemmer skal monteres

=JA01+DA03
Control System, 20ft Container

-BT01-WG01
PUR
10 m
4x0,34
50/60 V
Container Temperature
BN WH BU BK

-BT01-XG01
M12 F
1 2 3 4

-BT01
-25...80 °C
Container Temperature B
Transducer
1 2 3 4
PT1000
M12

-BP01.WG01
ÖLFLEX® CLASSIC 110 CH
4x1
300/500 V
Differential-pressure intake filter
1 2 3

-BP01
Container Indoor/Outdoor
Diffential Pressure Sensor
UB+ GND AOU1 AOI1
AC/DC 24 V
DC 0...5/10V
DC 4...20mA
ON 1 2 3 4 5 6
Setting: 0 to 500 Pa

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C03

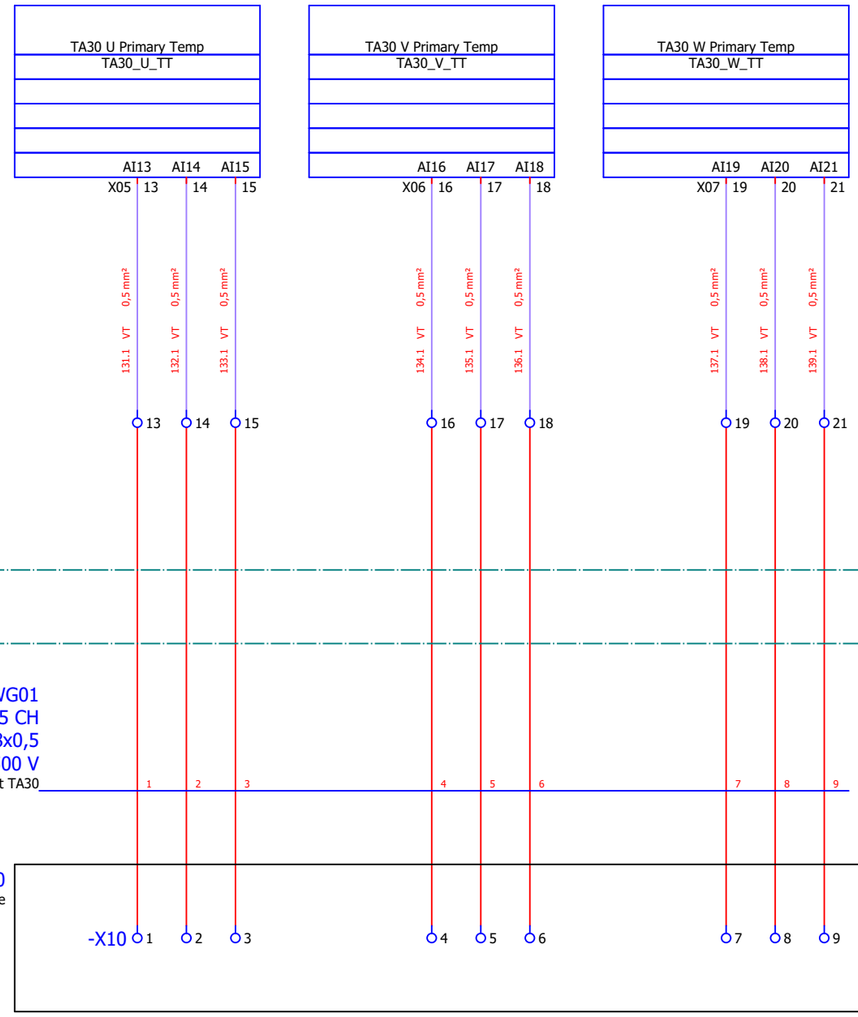
REVISION INFORMATION
DESCRIPTION
DATE
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Cont. Temp and Diff. Pressure		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 37 / 18

=LA01
Control System, 20ft Container



=BA20+DA03.TA30
Control System, 20ft Container

-WG01
ÖLFLEX® CLASSIC 135 CH
18x0,5
300/500 V
Temperature measurement TA30

-AC10
Transformer temperature

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C03

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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Transformer Temperature Measurements		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 38 / 18

FRM5103656/0B

=JA01+DA03
Container ventilation fan

/ >+UC31-XD01:2
/ >+UC31-XD01:4
/ >+UC31-XD01:6
/ >+UC31-XD01:PE2

-GQ01.WD01
ÖLFLEX® CLASSIC 135 CH BK 0,6/1 kV
4x2,5
0,6/1,0 kV
Container fan supply
GN/YE 1 2 3

-GQ01.WG01
UNITRONIC® BUS CAN FD P
2x0,5
300 V
Container fan Modbus
BN WH

BN WH >=LA01+UC31-MB01 /

-GQ01-R01
120Ohm

-GQ01
1kW
Container ventilation fan

PE	PE	L1	L2	L3	NC	COM	0-10V	RSB	RSA	GND	10V
1	2	3	4	5	6	7	8	10	11	12	13

M
3~
PE

>=LA01+UC31-XD01:1 /
>=LA01+UC31-XD01:3 /
>=LA01+UC31-XD01:5 /
>=LA01+UC31-XD01:N /
>=LA01+UC31-XD01:PE /

-EB02-WD01
ÖLFLEX® CLASSIC 110 CH
5x2,5
300/500 V
Container heater supply
1 2 3 4 GNYE

>=LA01+UC31-XD01:7 /
>=LA01+UC31-XD01:8 /

-EB02-WG01
ÖLFLEX® CLASSIC 110 CH
3x1
300/500 V
Container heater thermostat
1 2

-EB02
Container heating unit

L1	L2	L3	N	PE	T1	T2
1	2	3	4	5	6	7

11 kW Heater fan

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C03

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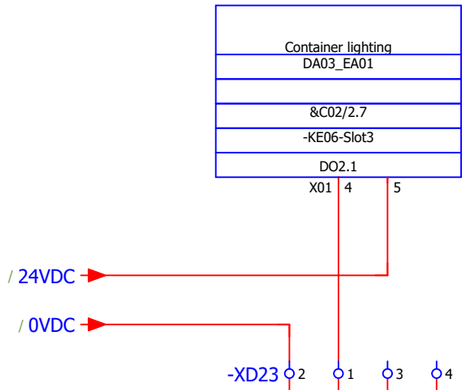
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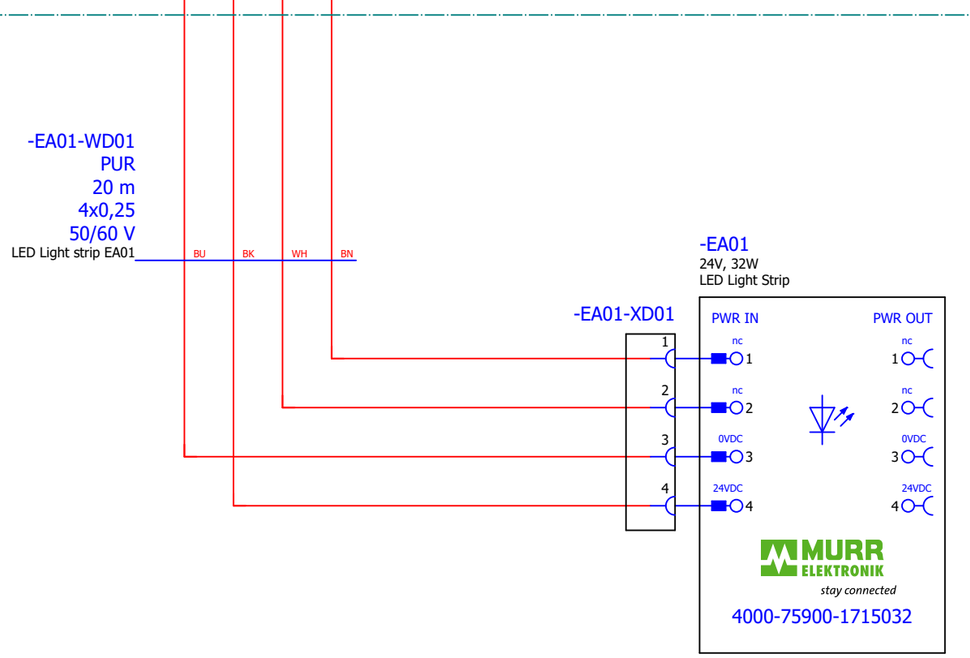
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Container ventilation and heating		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 39 / 18

=LA01+UC31
Container AUX control



=JA01+DA03
Container Lighting



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C03

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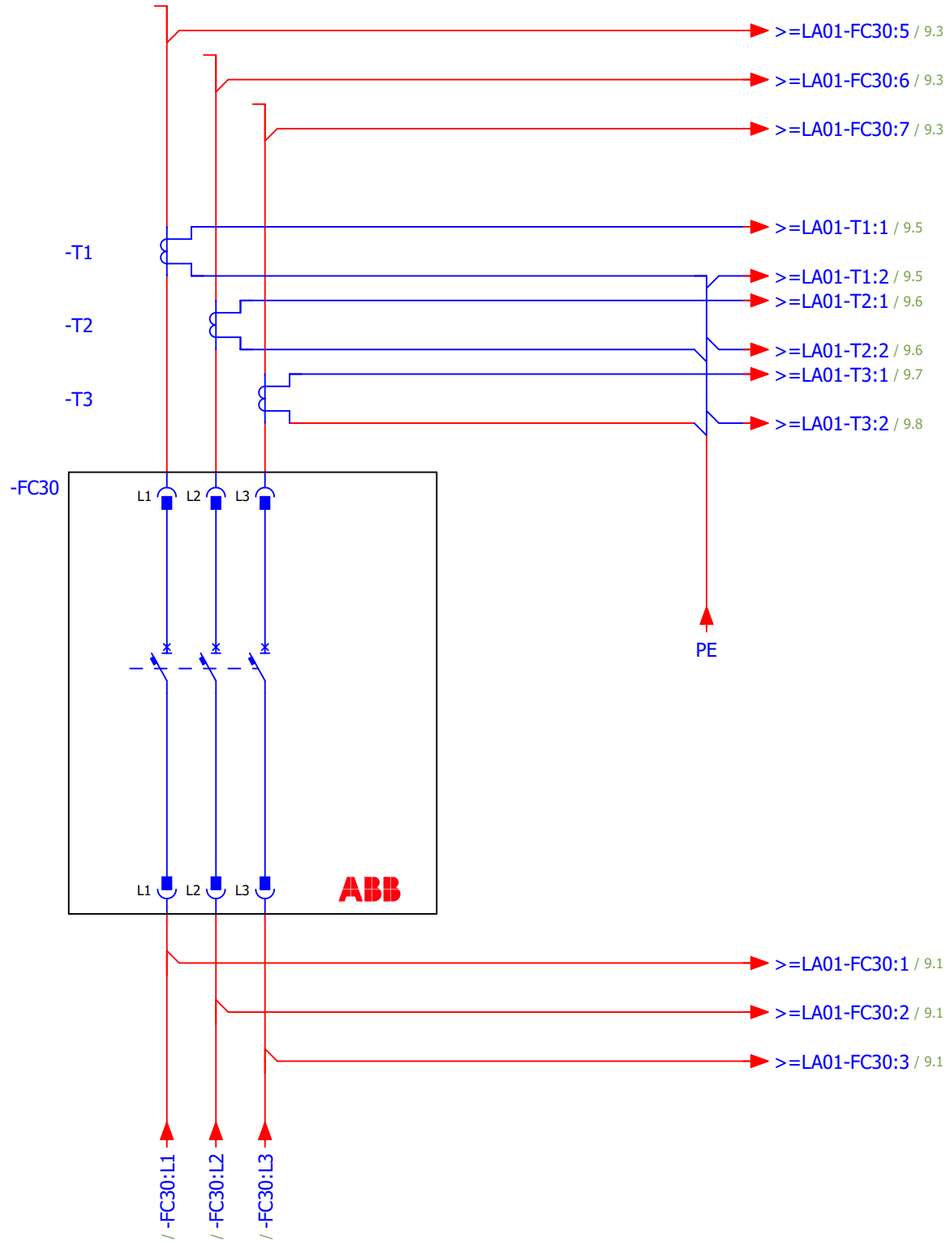
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Container Lighting		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 40 / 18

0	1	2	3	4	5	6	7	8

=BA30
Output Breaker



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C03

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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Main output breaker		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 41 / 18

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Ballard Power Systems Europe - Technology Solutions

Panel Documentation

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C04

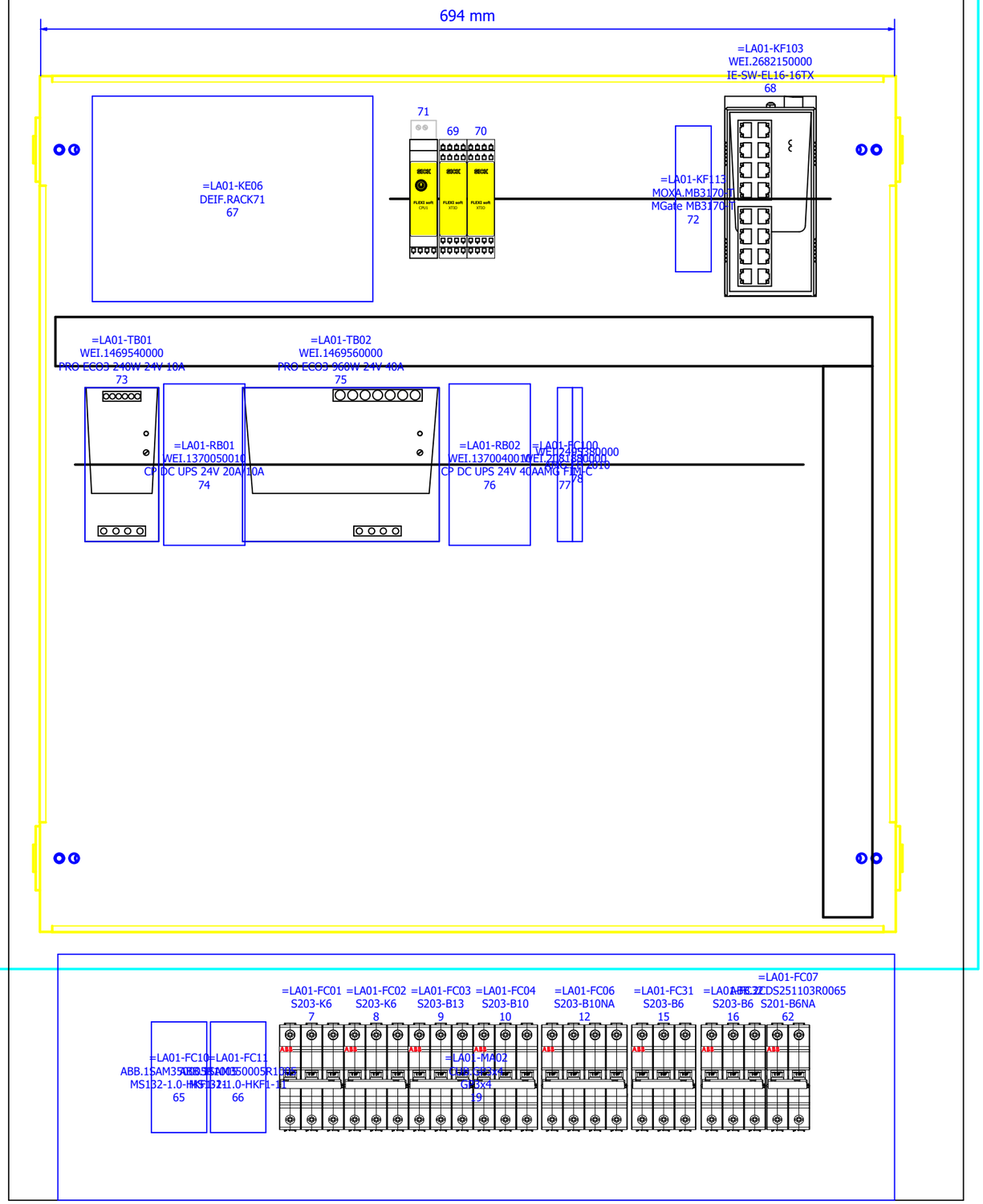
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Panel Documentation and Layout		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 1 / 18



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Panel Layout		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 2 / 18

Enclosure legend

Item number	Device tag	Type number	Part number	Manufacturer	Function text
7	FC01	S203-K6	ABB.2CDS253001R0377	ABB	
8	FC02	S203-K6	ABB.2CDS253001R0377	ABB	
9	FC03	S203-B13	ABB.2CDS253001R0135	ABB	
10	FC04	S203-B10	ABB.2CDS253001R0105	ABB	
12	FC06	S203-B10NA	ABB.2CDS253103R0105	ABB	
15	FC31	S203-B6	ABB.2CDS253001R0065	ABB	
16	FC32	S203-B6	ABB.2CDS253001R0065	ABB	
19	MA02	GP3x4	CUB.GP3x4	CUB	
62	FC07	S201-B6NA	ABB.2CDS251103R0065	ABB	
65	FC10	MS132-1.0-HKF1-11	ABB.1SAM350005R1005	ABB	MMS - Busbar Voltage Sense
66	FC11	MS132-1.0-HKF1-11	ABB.1SAM350005R1005	ABB	MMS - Customer Voltage Sense
67	KE06		DEIF.RACK71	DEIF	Controller Extension Rack
68	KF103	IE-SW-EL16-16TX	WEI.2682150000	WEI	16port 100/10 Ethernet Switch
69	KE21	FX3-XTIO84002	SICK.1044125	SICK	Safe Digital Input/Output Module
70	KE22	FX3-XTIO84002	SICK.1044125	SICK	=
71	KE20	FX3-CPU130002	SICK.1043784	SICK	Safety PLC, PLC
72	KF113	MGate MB3170-T	MOXA.MB3170-T	MOXA	Gateway, 20ft
73	TB01	PRO ECO3 240W 24V 10A	WEI.1469540000	WEI	24V PSU
74	RB01	CP DC UPS 24V 20A/10A	WEI.1370050010	WEI	24V UPS Module
75	TB02	PRO ECO3 960W 24V 40A	WEI.1469560000	WEI	24V PSU
76	RB02	CP DC UPS 24V 40A	WEI.1370040010	WEI	40A UPS Module

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C04

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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Enclosure Legend		

ALL SHEETS ARE THE SAME REVISION STATUS | SIZE A3 | LANGUAGE EN | SHEET/TOTAL 3 / 18

FRM5103656/0B

Terminal-strip overview

F14_001

Terminal strip	Terminal strip definition text	Terminals					Graphical page of terminal diagrams
		first	last	Total PE	Total N	Total number	
=LA01-FC101-1		1	1	0	0	1	
=LA01-FC101-2		2	2	0	0	1	
=LA01-FC102-1		1	2	0	0	2	
=LA01-FC103-1		1	2	0	0	2	
=LA01-FC103-3		3	4	0	0	4	
=LA01-FC104-1		1	2	0	0	2	
=LA01-FC104-3		3	4	0	0	2	
=LA01-XD01		1	PE	5	0	16	
=LA01-XD02		1	PE	2	0	8	
=LA01-XD03		1	PE	2	0	6	
=LA01-XD04		1	8	0	0	8	
=LA01-XD06		1	8	0	0	8	
=LA01-XD09		9	14	0	0	6	
=LA01-XD10		1	18	2	0	20	
=LA01-XD11		1	24	0	0	15	
=LA01-XD20		1	38	0	0	38	
=LA01-XD21		1	2	0	0	2	
=LA01-XD22		1	14	0	0	14	
=LA01-XD23		1	4	0	0	4	
=LA01-XD40		1	PE	3	0	12	
=LA01-XE00		PE		8	0	8	

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
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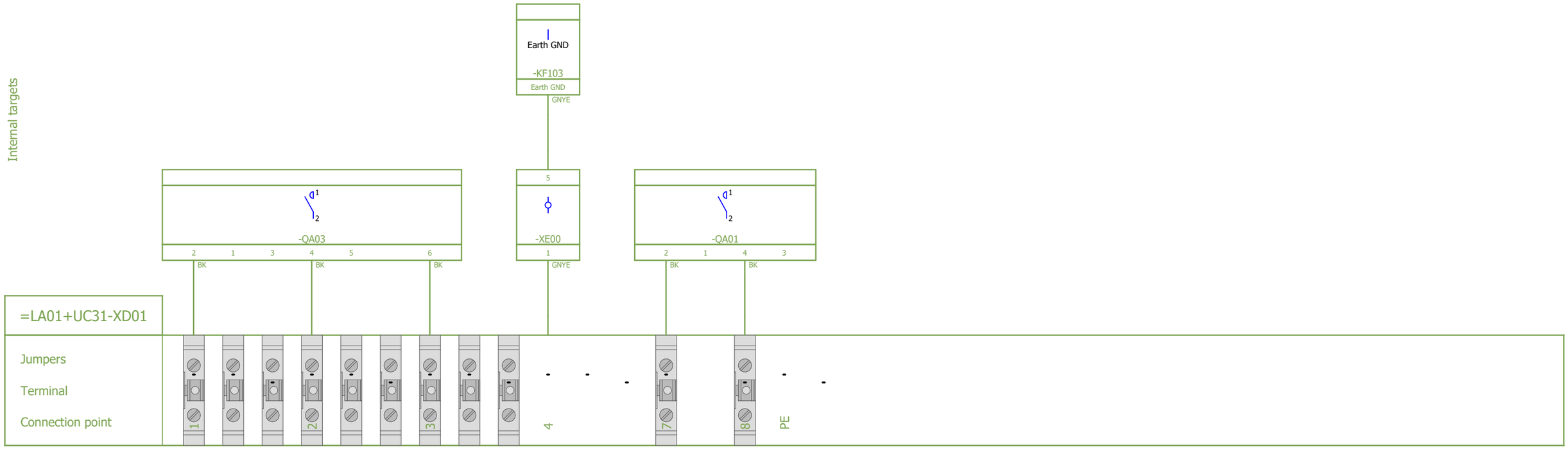
DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Terminal-strip overview : =LA01+UC31-FC101-1 - =LA01+UC31-XE00		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 22 /

FRM5103656/0B

Terminal-connection diagram

F11_001
PBL 05-Jun-24

Internal targets



External targets

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C04

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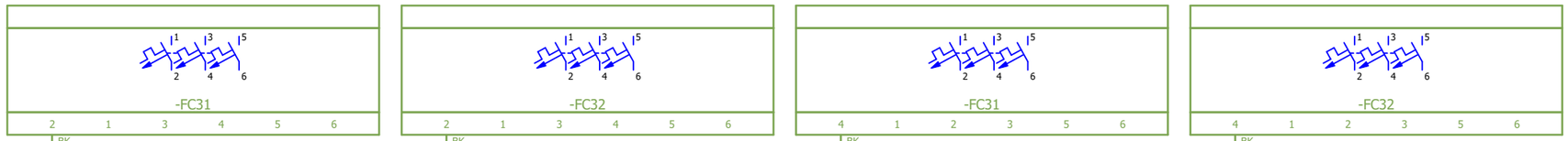
DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Terminal-connection diagram =LA01+UC31-XD01		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 30 /

FRM5103656/0B

Terminal-connection diagram

F11_001
PBL 05-Jun-24

Internal targets



=LA01+UC31-XD02

Jumpers

Terminal

Connection point

1 2 3 4

External targets

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
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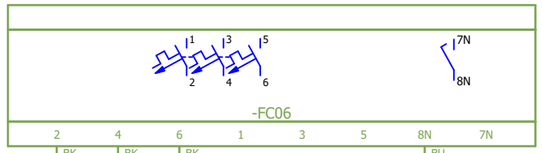
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Terminal-connection diagram =LA01+UC31-XD02		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 31 /

Terminal-connection diagram

F11_001
PBL 05-Jun-24

Internal targets



=LA01+UC31-XD03

Jumpers

Terminal

Connection point



External targets

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
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DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Terminal-connection diagram =LA01+UC31-XD03		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 32 /

FRM5103656/0B

Terminal-connection diagram

F11_001
PBL 05-Jun-24

Internal targets

-FC103 (2) — 2 — 4

1 — -FC103-1 (1) — 1 — BU

3 — -FC103-3 (3) — 3 — BUWH

-KE06-Slot4 — X02:9 VT — X03:22 VT — X02:11 VT — X03:24 VT

=LA01+UC31-XD04

Jumpers

Terminal

Connection point

1 5 2 6 3 4 7 8

	=JA01+DA03-QM07-WD01	=JA01+DA03-QM08-WD01	=JA01+DA03-QM07-WD01	=JA01+DA03-QM08-WD01	=JA01+DA03-QM07-WD01	=JA01+DA03-QM08-WD01
	ÖLFLEX® CLASSIC 135 CH	ÖLFLEX® CLASSIC 135 CH	ÖLFLEX® CLASSIC 135 CH	ÖLFLEX® CLASSIC 135 CH	ÖLFLEX® CLASSIC 135 CH	ÖLFLEX® CLASSIC 135 CH
	1	1	2	2	3 4	3 4
	1:2	1:2	2:1	2:1	3:3 4:4	3:3 4:4
	=JA01+DA03-AC07	=JA01+DA03-AC08	=JA01+DA03-AC07	=JA01+DA03-AC08	=JA01+DA03-AC07	=JA01+DA03-AC08
	1	1	2	2	3	3
	1:2	1:2	2:1	2:1	3:3 4:4	3:3 4:4
	RD	RD	BK	BK	WH OR	WH OR
	2	2	1	1	3 5	3 5
	=JA01+DA03-QM07.MA01	=JA01+DA03-QM08.MA01	=JA01+DA03-QM07.MA01	=JA01+DA03-QM08.MA01	=JA01+DA03-QM07.MA01	=JA01+DA03-QM08.MA01
	2	2	1	1	3	3

External targets

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C04

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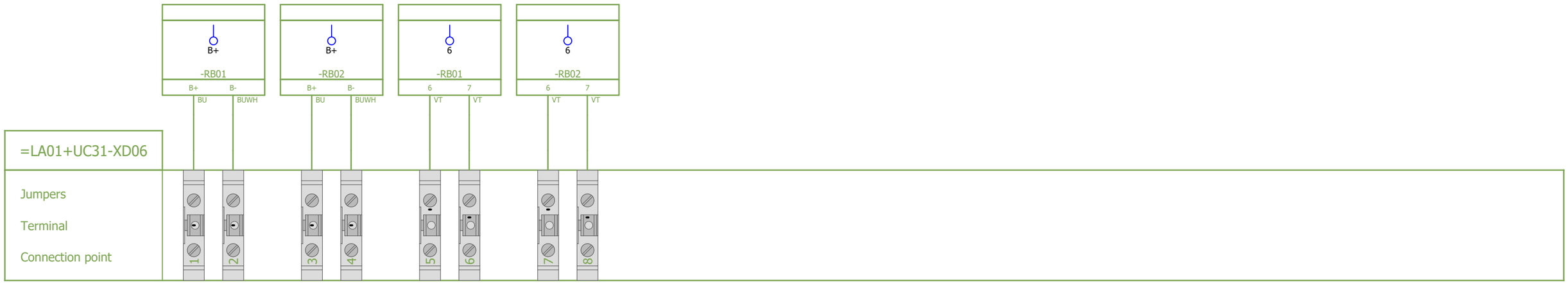
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Terminal-connection diagram =LA01+UC31-XD04		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 33 /

Terminal-connection diagram

F11_001
PBL 05-Jun-24

Internal targets



External targets

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C04

REVISION INFORMATION
DESCRIPTION
DATE
05-Jun-24

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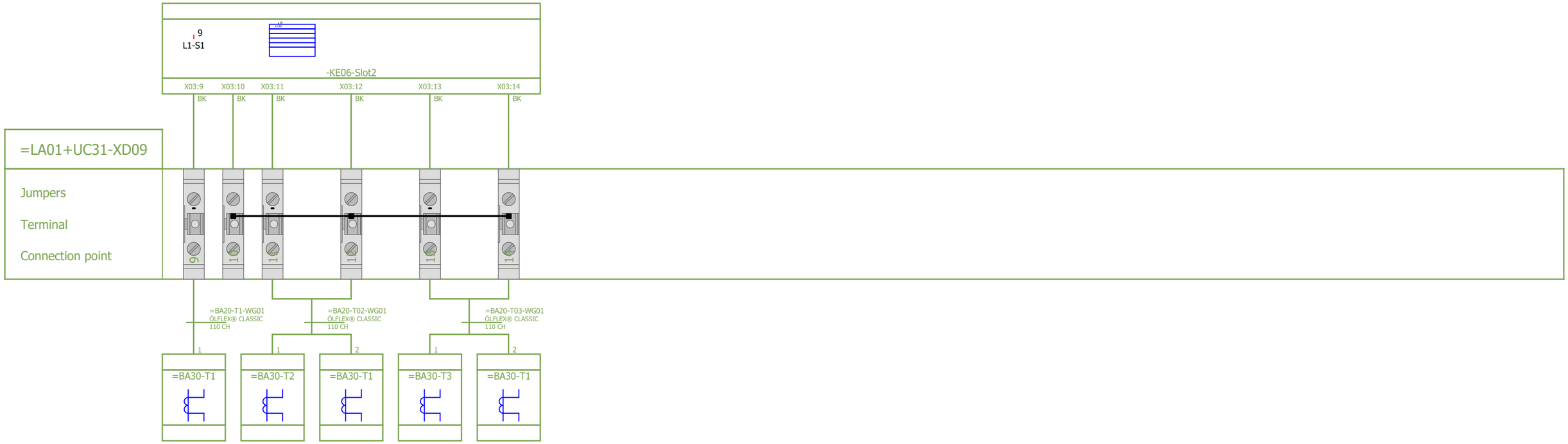
DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Terminal-connection diagram =LA01+UC31-XD06		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 34 /

FRM5103656/0B

Terminal-connection diagram

F11_001
PBL 05-Jun-24

Internal targets



External targets

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C04

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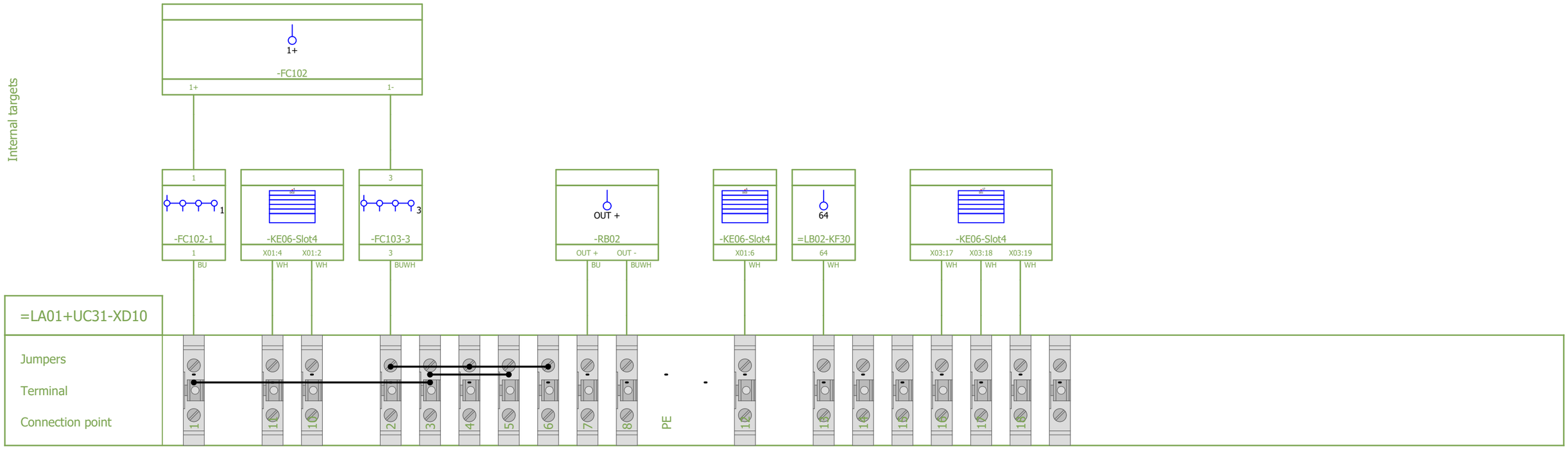
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Terminal-connection diagram =LA01+UC31-XD09		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 35 /

Terminal-connection diagram

F11_001
PBL 05-Jun-24

Internal targets



External targets

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C04

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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Terminal-connection diagram =LA01+UC31-XD10		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 36 /

FRM5103656/0B

0	1	2	3	4	5	6	7	8

Terminal-connection diagram

F11_001
PBL 05-Jun-24

Internal targets

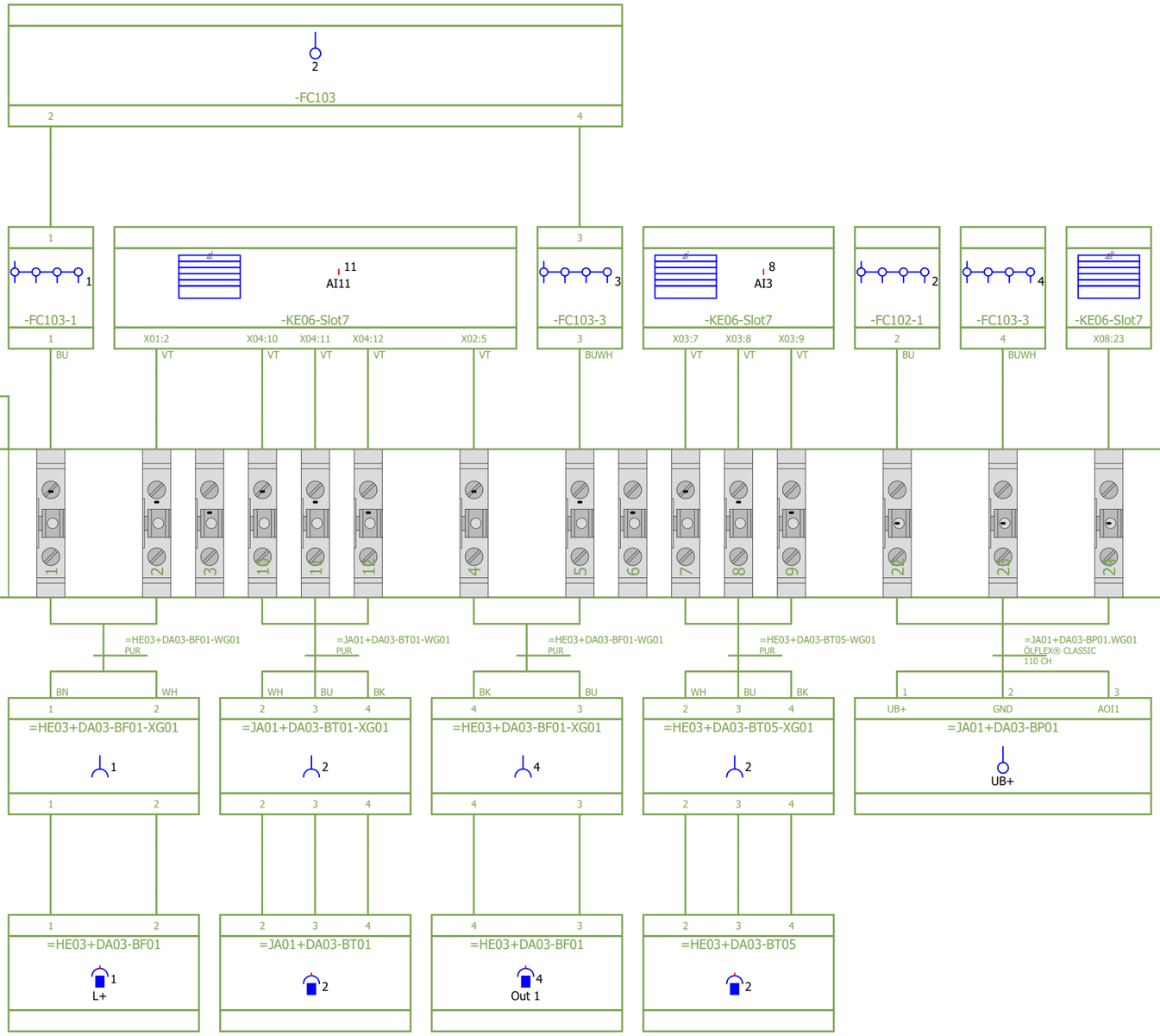
External targets

=LA01+UC31-XD11

Jumpers

Terminal

Connection point



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C04

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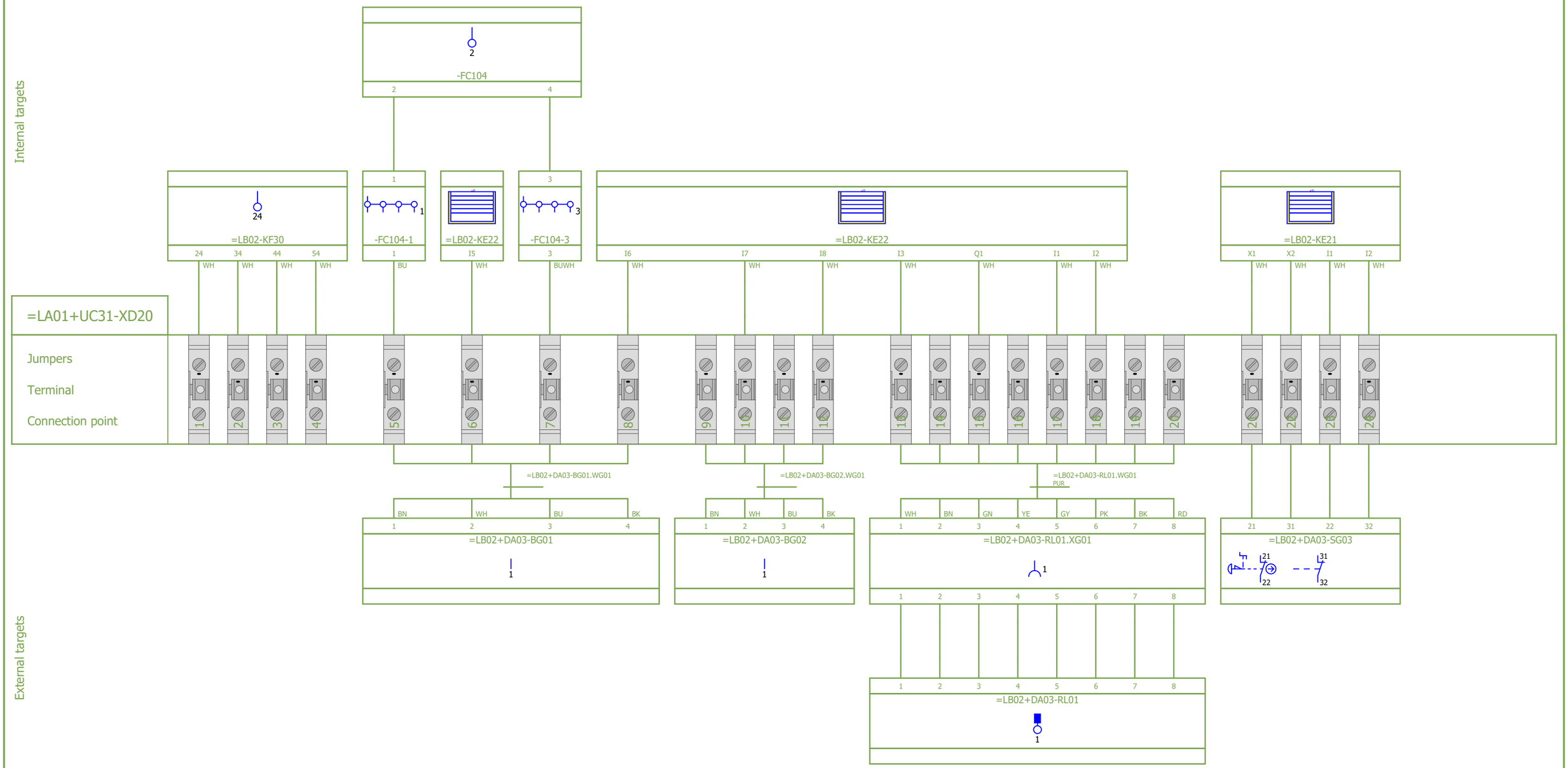
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DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Terminal-connection diagram =LA01+UC31-XD11		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 37 /

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Terminal-connection diagram

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Internal targets



External targets

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
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DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Terminal-connection diagram =LA01+UC31-XD20		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 38 /

Terminal-connection diagram

F11_001
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Internal targets

External targets

=LA01+UC31-XD20

Jumpers

Terminal

Connection point

-FC104

=LB02-KF30

-FC104-1

=LB02-KE22

-FC104-3

=LB02-KE22

=LB02-KE21

=LB02+DA03-BG01.WG01

=LB02+DA03-BG02.WG01

=LB02+DA03-RL01.WG01

=LB02+DA03-BG01

=LB02+DA03-BG02

=LB02+DA03-RL01.XG01

=LB02+DA03-SG03

=LB02+DA03-RL01

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
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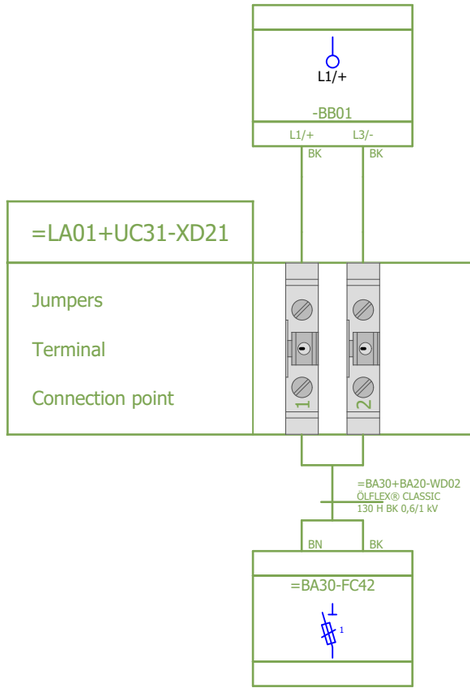
DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Terminal-connection diagram =LA01+UC31-XD20		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 39 /

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Terminal-connection diagram

F11_001
PBL 05-Jun-24

Internal targets



External targets

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C04

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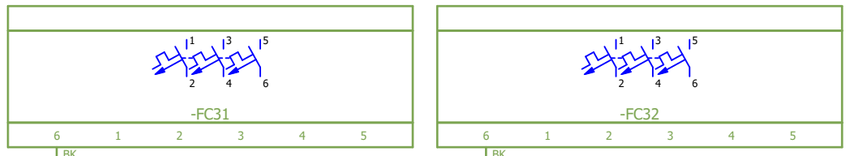
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DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Terminal-connection diagram =LA01+UC31-XD21		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 40 /

Terminal-connection diagram

F11_001
PBL 05-Jun-24

Internal targets



=LA01+UC31-XD02

Jumpers		
Terminal	5	6
Connection point		PE PE

External targets

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C04

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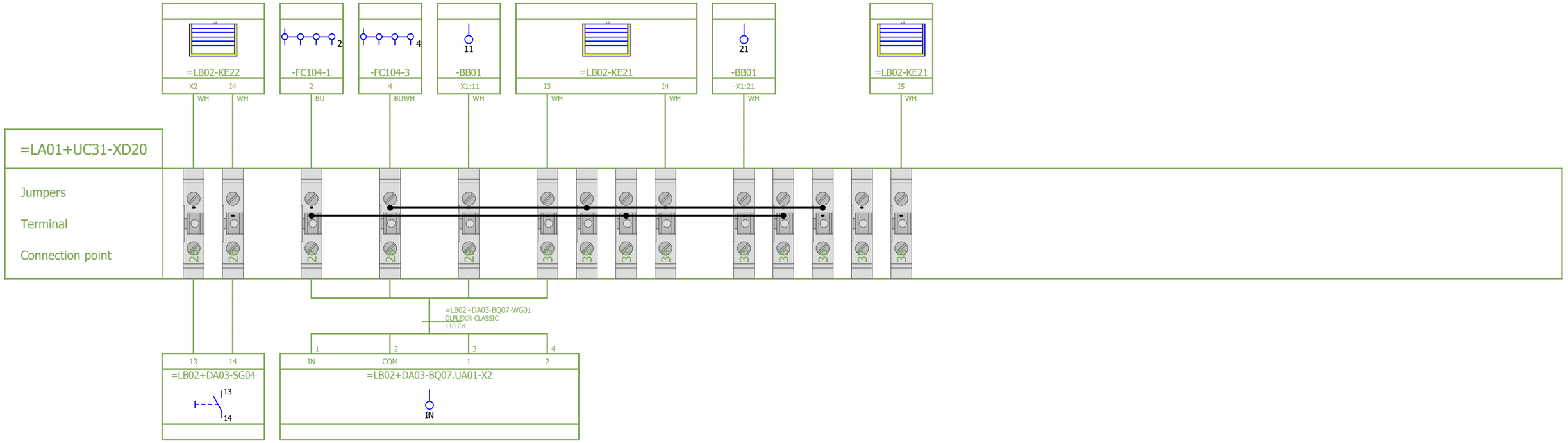
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Terminal-connection diagram =LA01+UC31-XD02		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 41 /

Terminal-connection diagram

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PBL 05-Jun-24

Internal targets



External targets

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C04

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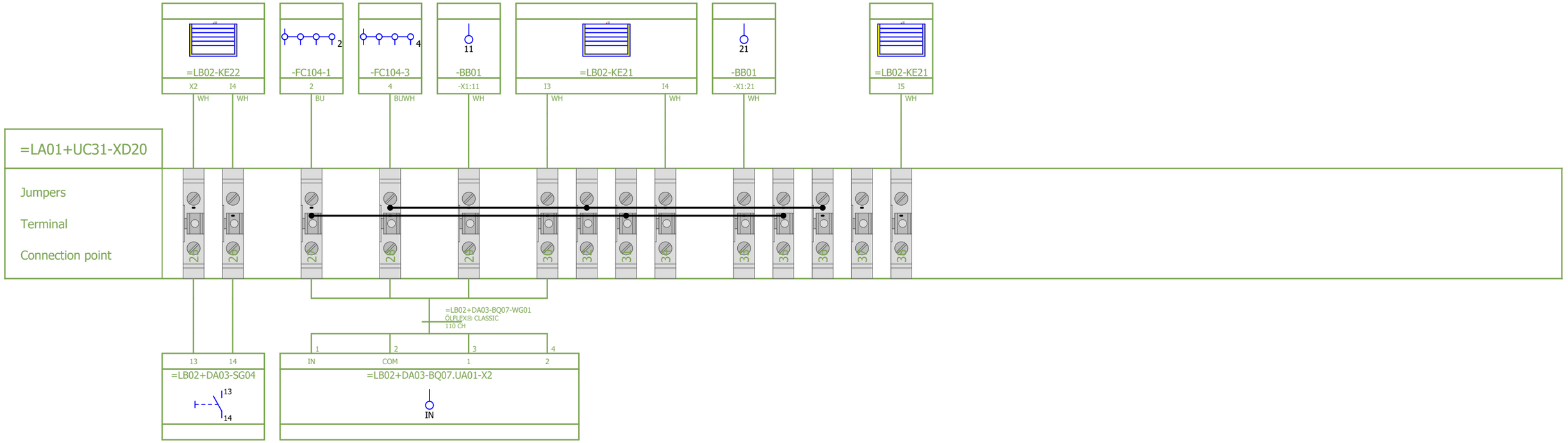
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DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Terminal-connection diagram =LA01+UC31-XD20		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 42 /

Terminal-connection diagram

F11_001
PBL 05-Jun-24

Internal targets



External targets

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C04

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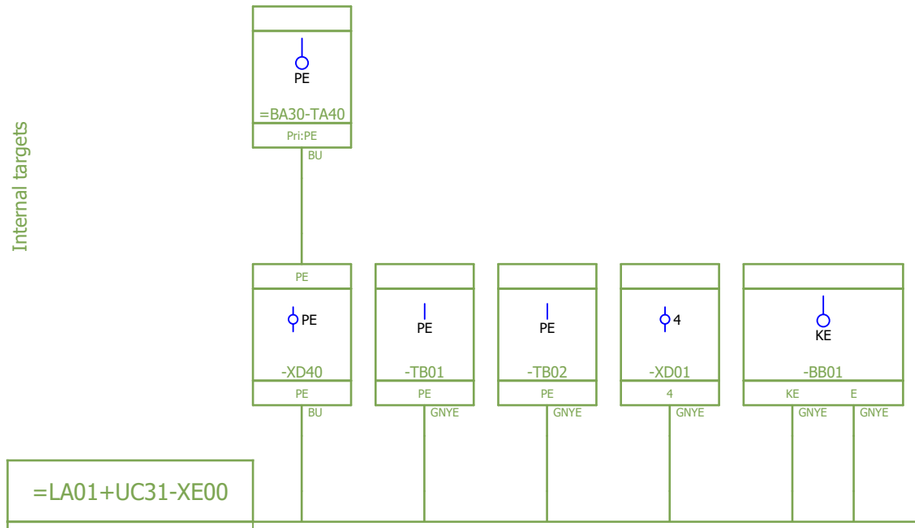
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DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Terminal-connection diagram =LA01+UC31-XD20		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 43 /

Terminal-connection diagram

F11_001
PBL 05-Jun-24

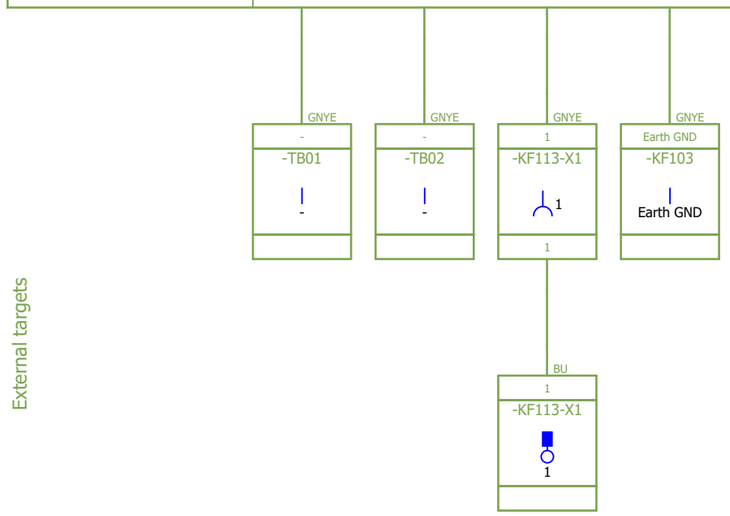
Internal targets



=LA01+UC31-XE00

Jumpers	-	-	-	-	-	-	-	-
Terminal								
Connection point	PE		PE		PE		PE	

External targets



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C04

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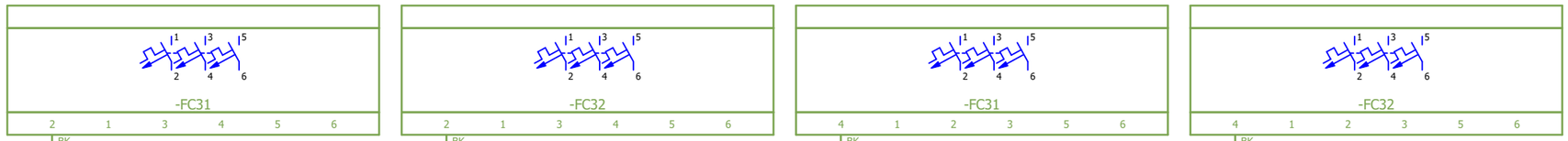
DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Terminal-connection diagram =LA01+UC31-XE00		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 47

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Terminal-connection diagram

F11_001
PBL 05-Jun-24

Internal targets



=LA01+UC31-XD02

Jumpers

Terminal

Connection point

1 2 3 4

External targets

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
=	++	+ UC31	& C04

REVISION INFORMATION	
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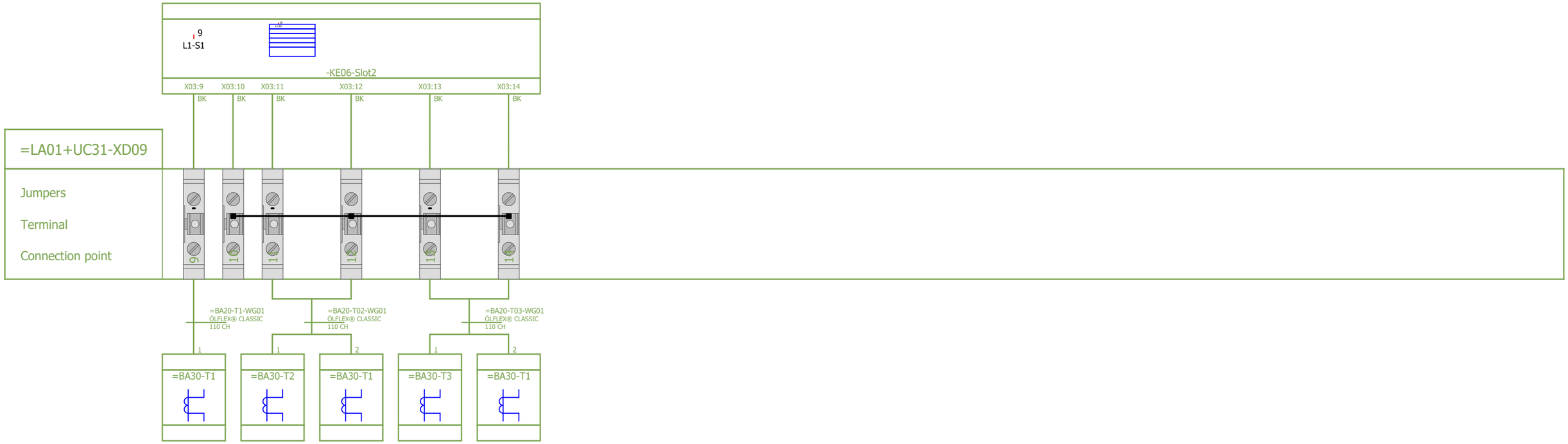
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Terminal-connection diagram =LA01+UC31-XD02		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 48 /

Terminal-connection diagram

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Internal targets



External targets

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
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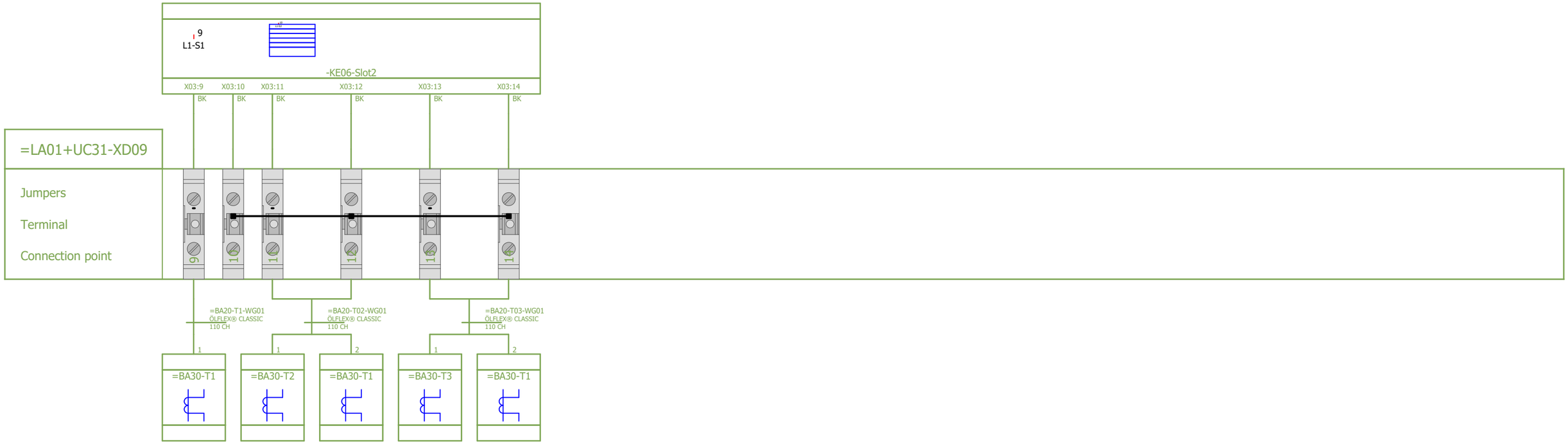
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Terminal-connection diagram =LA01+UC31-XD09		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 49 /

Terminal-connection diagram

F11_001
PBL 05-Jun-24

Internal targets



External targets

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	01.P15		
EPLAN Project Pages	478		
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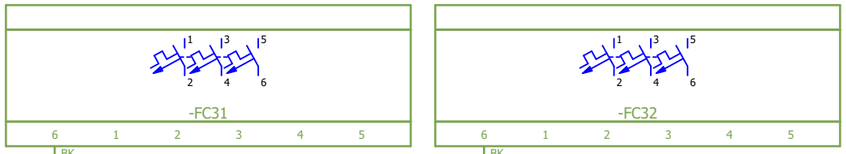
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DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
SHEET TYPE/DESC	Terminal-connection diagram =LA01+UC31-XD09		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 50 /

Terminal-connection diagram

F11_001
PBL 05-Jun-24

Internal targets



=LA01+UC31-XD02

Jumpers	-	-
Terminal	-	-
Connection point	5	6 PE PE

External targets

Reference Item Number	Ballard Part # TBD			REVISION INFORMATION	THIS DOCUMENT, SUBMITTED IN CONFIDENCE, CONTAINS PROPRIETARY INFORMATION WHICH SHALL NOT BE REPRODUCED OR TRANSFERRED TO OTHER DOCUMENTS OR DISCLOSED TO OTHERS OR USED FOR MANUFACTURING OR ANY OTHER PURPOSE WITHOUT PRIOR WRITTEN PERMISSION OF BALLARD POWER SYSTEMS INC. OR A RELATED WHOLLY-OWNED SUBSIDIARY OR AFFILIATE.	BALLARD™ CONFIDENTIAL	DRAWING	601456B UC31 10ft Control Cabinet	REVISION	01.P15
EPLAN Project Name	601456B - Shell Baseload Power Hub			DESCRIPTION			DRAWING TITLE	Crosswind UC31 10ft Control Cabinet		
EPLAN Revision	01.P15					THIS DOCUMENT'S APPROVAL IS MANAGED BY E-SIGNATURE ON FILE IN BALLARD POWER SYSTEMS' PLM SYSTEM	SHEET TYPE/DESC	Terminal-connection diagram =LA01+UC31-XD02		
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=	++	+ UC31	& C04	DATE 05-Jun-24						

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