Ballard Power Systems Europe A/S
Majsmarken 1
9500 Hobro
Denmark

Revision history		
Rev.	**Date.**	**Description**
001	6/5/2024	First Issue
002	28/03/2025	Update with network gateway PLC
003	28/10/2025	"reserved" empty page removed

Document Title:	**BLPH Project - Panel Cabinet Layout: UC50 AC Power Distribution**
Document Number:	K559-2254-CWIWP4202202-E03-006
Revision:	Rev003
Sequence Number:	006
File Name:	K559-2254-CWIWP4202202-E03-006Rev003
Purchaser Job:	K559-2254
Purchase Order:	CWIWP4202202
Code:	E03
Requsition Number:	n/a
Customer:	CrossWind C.V., Rotterdam, The Netherlands

BALLARD™

+UC50

Ballard Power Systems Europe - Technology Solutions

Cabinet: 40ft Container AC Distribution
Location: 40ft Container, next to access door

Vin = 400VAC, 3ph
Ikmax = 6kA - AC Supply
Ikmax

IP56

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	11		
EPLAN Project Pages	626		
=	++	+ UC50	& A01

REVISION INFORMATION
DESCRIPTION
DATE
28-Oct-25

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DRAWING	601456B UC50 AC Distribution Cabinet	REVISION	11
DRAWING TITLE	Crosswind UC50 AC Distribution Cabinet		
SHEET TYPE/DESC	Front Page		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 1 / 28

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)

Conductor Colour Identification

IEC 60757:1983 Designation	Description
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

Reference Item Number	Ballard Part # TBD
EPLAN Project Name	601456B - Shell Baseload Power Hub
EPLAN Revision	11
EPLAN Project Pages	626
=	++ | + UC50 | & A01

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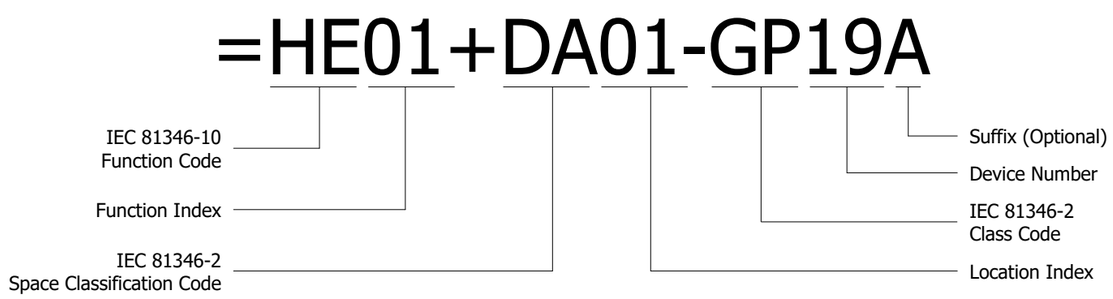
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DRAWING	601456B UC50 AC Distribution Cabinet	REVISION	11
DRAWING TITLE	Crosswind UC50 AC Distribution Cabinet		
SHEET TYPE/DESC	Standard Wire Colors		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 2 / 28

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)

0	1	2	3	4	5	6	7	8

=LA01+UC50-KE07
DEIF AMC300
Controller Extension Rack

-Slot1
DEIF PSM3.2
Power Supply Module 3.2

PSM3.2

	PE PE		Frame Ground	
	1 12-24V		Supply +	
	2 0V		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 +&C01/6.10:E X03 — Ethernet-1 IN

EtherCAT Follower Ring Topology — EtherCAT +&C01/6.11:E X03 — Ethernet-2 OUT

Bus Follower
Multi-line 300

-Slot2
ACM3.1
Alternating Current Module 3.1

ACM3.1

1 L1	UC50_L1	Voltage measurement Nanogrid L1	
2 L2	UC50_L2	Voltage measurement Nanogrid L2	
3 L3	UC50_L3	Voltage measurement Nanogrid L3	
4 N	UC50_N	Voltage measurement Nanogrid N	
5 L1	UC50_L1'	Voltage measurement AUX L1	
6 L2	UC50_L2'	Voltage measurement AUX L2	
7 L3	UC50_L3'	Voltage measurement AUX L3	
8 N	UC50_N'	Voltage measurement AUX N	
9 L1-S1	UC50_BC01	Current measurement AUX L1	
10 L1-S2	CH1-S2	Channel 1 - S2	
11 L2-S1	UC50_BC02	Current measurement AUX L2	
12 L2-S2	CH2-S2	Channel 2 - S2	
13 L3-S1	UC50_BC03	Current measurement AUX L3	
14 L3-S2	CH3-S2	Channel 3 - S2	
15 4-S1	CH4-S1	Channel 4 - S1	
16 4-S2	CH4-S2	Channel 4 - S2	

-Slot3
&C03/19.1
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	&C03/19.1	JA01_QM05.SP	Ventilation Outlet C Damper Postion SP
10 AO1 COM			AO1 COM
11 AO2	&C03/19.5	JA01_QM06.SP	Ventilation Outlet D Damper Postion SP
12 AO2 COM			AO2 COM
13 AO3		HE03_QN01.SP	LT Mixing valve SP
14 AO3	&C03/19.2		AO3 COM
15 AO4			Spare
16 AO4	&C03/19.5		AO4 COM
17 DI1			Spare
18 DI2			Spare
19 DI3			Spare
20 DI4			Spare
21 DI1-4 COM			DI1-4 COM
22 AI1	&C03/19.2	JA01_QM05.FB	Ventilation Outlet C Damper Postion FB
23 AI1 COM			AI1 COM
24 AI2	&C03/19.6	JA01_QM06.FB	Ventilation Outlet D Damper Postion FB
25 AI2 COM			AI2 COM
26 AI3			Spare
27 AI3 COM		HE03_QN01.FB	LT Mixing valve feedback
28 AI4			Spare
29 AI4 COM	&C08/19.6		AI4 COM

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	11		
EPLAN Project Pages	626		
=	++	+ UC50	& C02

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DESCRIPTION
DATE
28-Oct-25

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DRAWING	601456B UC50 AC Distribution Cabinet	REVISION	11
DRAWING TITLE	Crosswind UC50 AC Distribution Cabinet		
SHEET TYPE/DESC	Container Controller, Coolant Rack 1/2		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 4 / 28

0	1	2	3	4	5	6	7	8

=LA01+UC50-KE07
DEIF AMC300
Controller Extension Rack

-Slot4
IOM3.4
IO Module 3.4

IOM3.4

	1 12-24V			Supply +
	2 DO01	+CU50_KF01	Control Nanogrid supply	
	3 DO02	+CU50_KF02	AUX Nanogrid supply	
A3.0	4 DO03	DO03	Digital Out 03	
A3.1	5 DO04	DO04	Digital Out 04	
A3.2	6 DO05	DO05	Digital Out 05	
A3.3	7 DO06	DO06	Digital Out 06	
A3.4	8 DO07	DO07	Digital Out 07	
A3.5	9 DO08	DO08	Digital Out 08	
A3.6	10 DO09	DO09	Digital Out 09	
A3.7	11 DO10	DO10	Digital Out 10	
A4.0	12 DO11	DO11	Digital Out 11	
A4.1	13 DO12	DO12	Digital Out 12	
	14 COM		Supply COM	
	15 DI01	+UC50_FC01	Nanogrid MCCB feedback	
	16 DI02	+UC50_FC02	AUX Supply MCCB feedback	
	17 DI03	+UC50_QA01	Nanogrid contactor QA01 feedback	
	18 DI04	+UC50_QA02	AUX Contactor QA02 feedback	
	19 DI05	+UC50_FC03 - 05	Distribution MCB feedback	
	20 DI06	+UC50_13 - 14	Control MCB feedback	
	21 DI07	+UC50_FC10	Nanogrid measurement MCB feedback	
	22 DI08	+UC50_FC11	AUX measurement MCB feedback	
	23 COM		Supply COM	
	24 DI09	+UC50_FC12	Surge protection MCB feedback	
	25 DI10	+UC50_FA	Surge protection feedback	
E7.7	26 DI11	DI11	Digital In 11	
E8.0	27 DI12	DI12	Digital In 12	
E8.1	28 DI13	DI13	Digital In 13	
E8.2	29 DI14	DI14	Digital In 14	
E8.3	30 DI15	DI15	Digital In 15	
E8.4	31 DI16	DI16	Digital In 16	
	32 COM		Supply COM	

-Slot5
IOM3.3
IO Module 3.3

IOM3.3

1 AI1		Spare
2 AI2	HE03_FT01	LT Cooling Circuit Flow Rate
3 AI3		Spare
4 AI4		Spare
5 AI5	HE03_TT02	LT Circuit Forward Temperature
6 AI6		Spare
7 AI7	HE03_TT01	LT Circuit Return Temperature
8 AI3		Spare
9 AI9		Spare
10 AI10	HE03_TT03	LT Circuit Radiator Outlet Temperature
11 AI11		Spare
12 AI12		Spare
13 AI13		Spare
14 AI14		Spare
15 AI15		Spare
16 AI16		Spare
17 AI17		Spare
18 AI18		Spare
19 AI19		Spare
20 AI20		Spare
21 AI21		Spare
22 AI22		Spare
23 AI23		Spare
24 AI24		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	11		
EPLAN Project Pages	626		
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DRAWING	601456B UC50 AC Distribution Cabinet	REVISION	11
DRAWING TITLE	Crosswind UC50 AC Distribution Cabinet		
SHEET TYPE/DESC	Container Controller, Coolant Rack 2/2		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 5 / 28

0	1	2	3	4	5	6	7	8

=LA01-KE10
DEIF AMC300
Network Separation PLC

-Slot1
DEIF PSM3.1
Power Supply
Module 3.1

PSM3.1

PE PE &C03/21.1 — Frame Ground
1 12&24V &C03/21.1 — Supply +
2 0V &C03/21.1 — Supply COM

3 R1 COM — Status OK Relay COM
A1.0 4 DO1 — DO1 — Status OK Relay

5 R2 COM — Relay 2 COM
A1.1 6 DO2 — DO2 — Relay 1 Out

7 R3 COM — Relay 3 COM
A1.2 8 DO3 — DO3 — Relay 3 Out

Note: Slot 2 and 3: Blanking plates

EtherCAT Master Ring Topology — Other bus systems X03 — Ethernet-1 IN
EtherCAT Master Ring Topology — Other bus systems X03 — Ethernet-2 OUT

Bus Master
Multi-line 300

-Slot4
DEIF PCM3.3
Processor and
Communication
Module 3.3
&C03/21.3

PCM3.3

X01 RS-483/232 — 1 2 3 4 5 6 7 8
X02 CAN-A / CAN-B — 9 10 11 12 13 14
X03 CAN-C / CAN-D — 15 16 17 18 19 20

ETH1 Other bus systems X04 — Ethernet-1 1
ETH1 Other bus systems &C03/21.4 X02 — Ethernet-3 1
ETH1 Other bus systems &C03/21.4 X02 — Ethernet-3 1
AGI Screen Connection Other bus systems X03 — Ethernet-4 1
ETH04 Other bus systems X04 — Ethernet-5 1

CPU
Multi-line 300

Reference Item Number	Ballard Part # TBD		
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DRAWING	601456B UC50 AC Distribution Cabinet	REVISION	11
DRAWING TITLE	Crosswind UC50 AC Distribution Cabinet		
SHEET TYPE/DESC	Network Gateway, Rack 1/1		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 6 / 28

0	1	2	3	4	5	6	7	8

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Multiline Documentation

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	11		
EPLAN Project Pages	626		
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DRAWING	601456B UC50 AC Distribution Cabinet	REVISION	11
DRAWING TITLE	Crosswind UC50 AC Distribution Cabinet		
SHEET TYPE/DESC	Multiline Documentation Intro		

ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 7 / 28

=BA20

L1 / 9.0
L2 / 9.0
L3 / 9.0
N / 9.0
PE / 9.0
-FC01.L1 / 12.1
FC01.N / 12.1

-QA01
/12.2
350A, 690V
MV Supply Isolator

-FC01
/14.1
MCCB - MV Supply

1SDA075465R1
XT4L 250 Ekip LSI In=250A 4p F F UL/CSA

Ekip LSI
K51
I>>>
I>
I>>
I>>
Y01

-FC10
/14.5
2A, C-curve
MCCB - MV Supply
Voltage Measurement

X01 1 X01 2 3 4
L1 L2 L3 N
-KE06-Slot2
UC50_L2
MV Supply L2

-X01 1 2 3

>=BA20+DA01-TA01.L1
>=BA20+DA01-TA01.L2
>=BA20+DA01-TA01.L3
>=BA20+DA01-TA01.N
>=BA20+DA01-TA01.PE

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DRAWING	601456B UC50 AC Distribution Cabinet	REVISION	11
DRAWING TITLE	Crosswind UC50 AC Distribution Cabinet		
SHEET TYPE/DESC	40ft Container - AC distrbution Nanogrid supply		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 8 / 28

0	1	2	3	4	5	6	7	8

=BA20

8.8 / L1 → L1 / 11.0
8.8 / L2 → L2 / 11.0
8.8 / L3 → L3 / 11.0
8.8 / N → N / 11.0
8.8 / PE → PE / 10.0

-QA02
/12.4
55A, 4-pole
AUX Isolation Contactor
1 3 5 7
2 4 6 8

-FC02.L1 / 12.4
FC02.N / 12.4

-BC01
/9.1
/9.1
1
2

-BC02
+&C01/2.3:B
1
2

-BC03
/9.1
/9.1
1
2

X03 9	L1-S1	-KE06-Slot2	
		UC50_BC01	
10	L1-S2	Current measurement AUX L1	
X03 11	L2-S1	-KE06-Slot2	
		UC50_BC02	
12	L2-S2	Current measurement AUX L2	
X03 13	L3-S1	-KE06-Slot2	
		UC50_BC03	
14	L3-S2	Current measurement AUX L3	

PE

-FC11
/14.6
2A, C-curve
MCCB - Aux Voltage Measurement
1 3 5 7
2 4 6 8

X02 5 6 7 8
L1 L2 L3 N

-KE06-Slot2
UC50_L2'
Voltage measurement AUX L2

-FC02
/14.2
63A, C-curve
MCCB - Aux Supply
1 3 5 7
2 4 6 8

EXT-L1 EXT-L2 EXT-L3 EXT-N

-SG01
63 A
AUX Supply Disconnector
L1 1 | L2 3 | L3 5 | L4 (N)7
2 T1 | 4 T2 | 6 T3 | (N)8 T4

EXT-L1 EXT-L2 EXT-L3 EXT-N EXT-PE

EXT-L1 EXT-L2 EXT-L3 EXT-N

2L1 / 10.0
2L2 / 10.0
2L3 / 10.0
2N / 10.0

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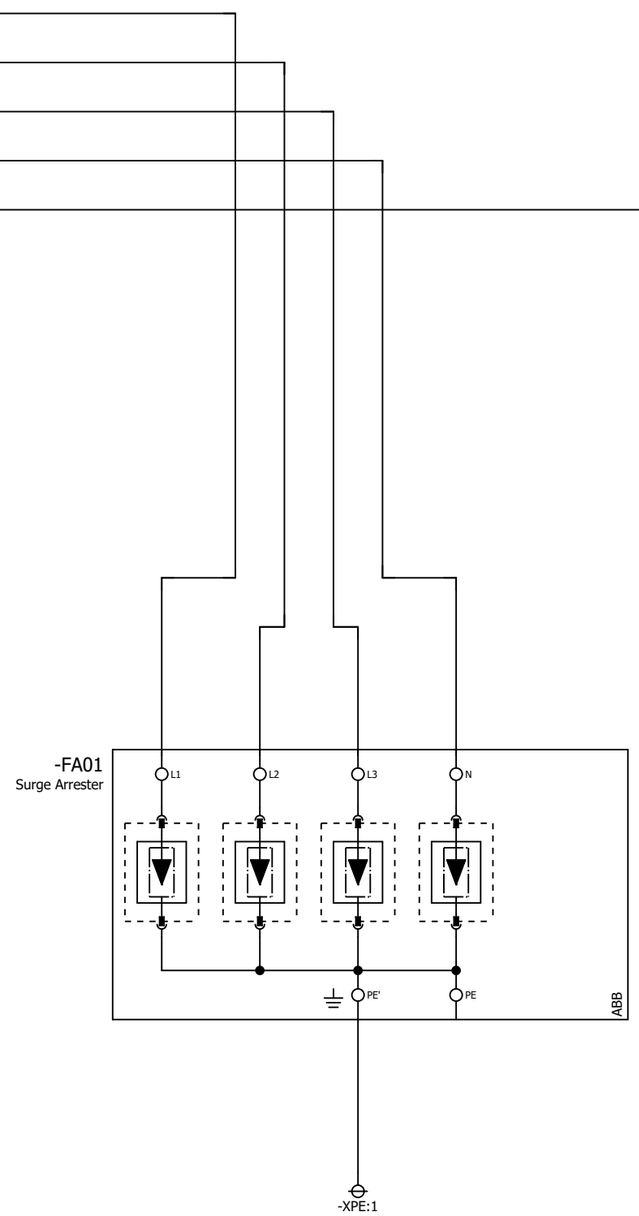
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DRAWING	601456B UC50 AC Distribution Cabinet	REVISION	11
DRAWING TITLE	Crosswind UC50 AC Distribution Cabinet		
SHEET TYPE/DESC	40ft Container - AC distrbution Nanogrid supply		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 9 / 28

0	1	2	3	4	5	6	7	8

=BA20

9.8 / 2L1
9.8 / 2L2
9.8 / 2L3
9.8 / 2N
9.8 / PE



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	11		
EPLAN Project Pages	626		
=	++	+ UC50	& C03

REVISION INFORMATION
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DRAWING	601456B UC50 AC Distribution Cabinet		REVISION	11
DRAWING TITLE	Crosswind UC50 AC Distribution Cabinet			
SHEET TYPE/DESC	40ft Container - AC distrbution Surge Protection			
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL	10 / 28

0	1	2	3	4	5	6	7	8

=BA20

9.8 / L1
9.8 / L2
9.8 / L3
9.8 / N
11.8 / PE

L1 /
L2 /
L3 /
N /
PE / 11.0

-FC04
/14.3
160A, Trip Curve
MCCB Cooling Skid
+UC30

1 3 5 7

Ekip LSI
K51

I> I> I> I>
I>> I>> I>> I>>

I>>>
I>
I>>
I>>

Y01

2 4 6 8

-FC03
/14.3
63A, B-curve
MCCB Control Cabinet
+UC20

1 3 5 7
2 4 6 8

>=LA01+UC20-WD01
ÖLFLEX® CLASSIC 135 CH BK 0,6/1 kV
5x16
0,6/1,0 kV
Supply UC20 MCU cabinet

1 2 3 4 GNYE
1 2 3 4 GNYE

+UC20/19.1 / >=LA01+UC20-WD01

-FC05
/14.3
32A, B-curve
MCCB - 10ft Container

1 3 5 7
2 4 6 8

PE

>+UC31-WD01
ÖLFLEX® CLASSIC 135 CH BK 0,6/1 kV
5x6
0,6/1,0 kV
Supply +UC31 10ft Cabinet

1 2 3 4 GNGY
1 2 3 4 GNYE

>=LA01+UC31-WD01 / +UC31/14.0

+UC30/13.1 / >=BA20+UC30-L1
+UC30/13.1 / >=BA20+UC30-L2
+UC30/13.1 / >=BA20+UC30-L3
+UC30/13.1 / >=BA20+UC30-N
+UC30/13.1 / >=BA20+UC30-PE

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	11		
EPLAN Project Pages	626		
=	++	+ UC50	& C03

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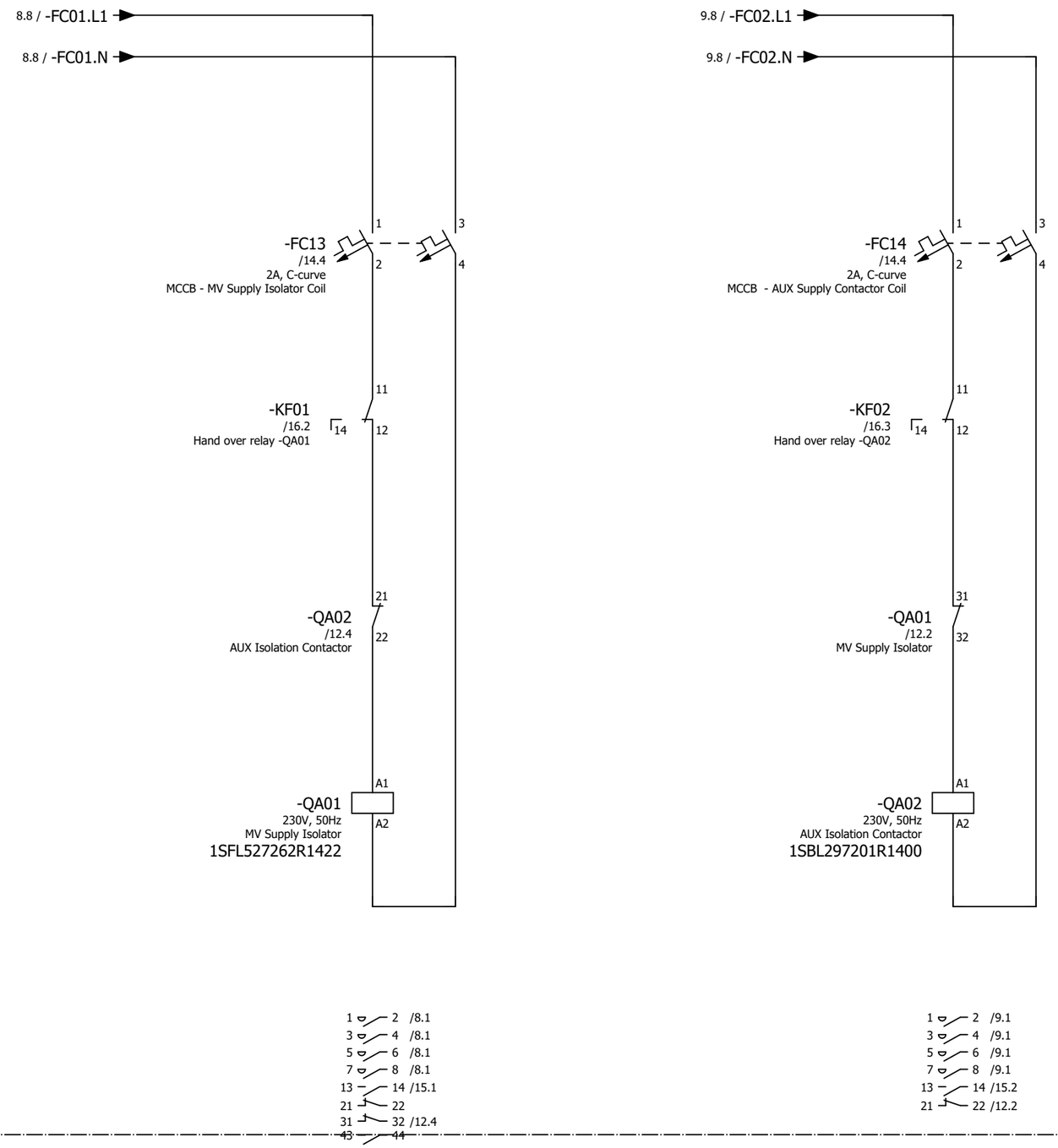
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DRAWING	601456B UC50 AC Distribution Cabinet	REVISION	11
DRAWING TITLE	Crosswind UC50 AC Distribution Cabinet		
SHEET TYPE/DESC	40ft Container - AC distrbution Nanogrid		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 11 / 28

0	1	2	3	4	5	6	7	8

=BA20



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	11		
EPLAN Project Pages	626		
=	++	+ UC50	& C03

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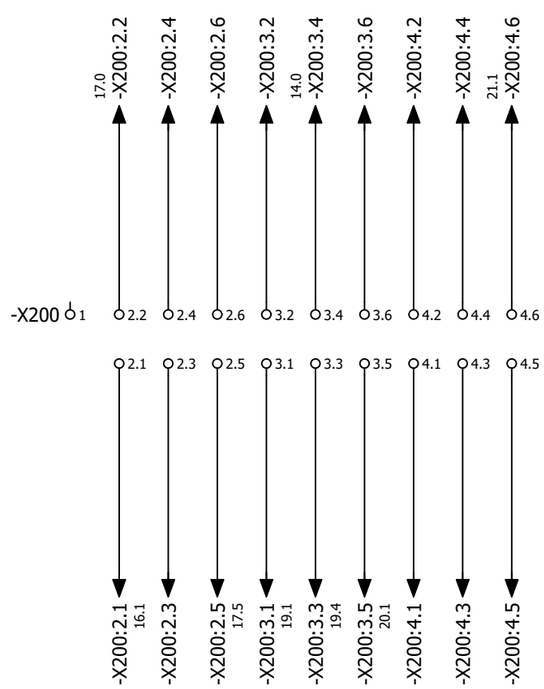
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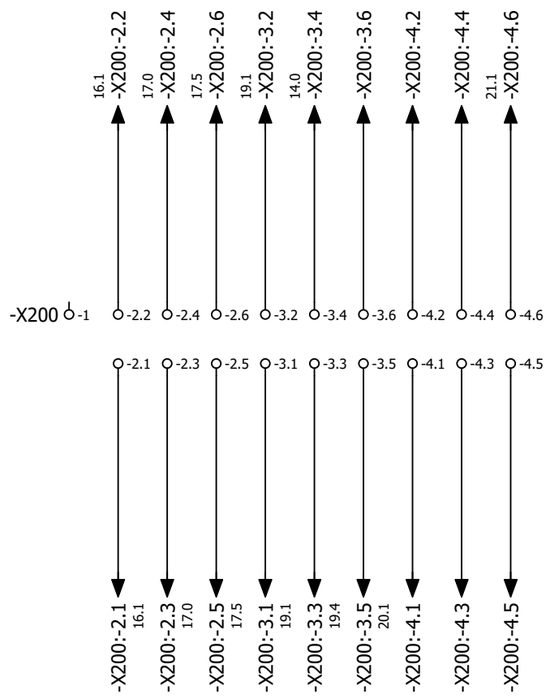
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DRAWING	601456B UC50 AC Distribution Cabinet	REVISION	11
DRAWING TITLE	Crosswind UC50 AC Distribution Cabinet		
SHEET TYPE/DESC	40ft Container - AC distrbution Control -QA01 & -QA02		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 12 / 28

0	1	2	3	4	5	6	7	8

=BA20





Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	11		
EPLAN Project Pages	626		
=	++	+ UC50	& C03

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DRAWING	601456B UC50 AC Distribution Cabinet	REVISION	11
DRAWING TITLE	Crosswind UC50 AC Distribution Cabinet		
SHEET TYPE/DESC	40ft Container - AC distribution - 24VDC		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 13 / 28

=BA20

MCCB Feedback - MV Supply FC01	MCCB Feedback - AUX Supply	MCCB Feedback - Control Cabinets Supply	MCCB Feedback - Contactor Supply	MCCB Feedback - MV Supply Measurement	MCCB Feedback - AUX Supply Measurement
+UC50_FC01	+UC50_FC02	+UC50_FC03 - 05	+UC50_13 - 14	+UC50_FC10	+UC50_FC11
-KE06-Slot4					
DI01	DI02	DI05	DI06	DI07	DI08
X02 15	16	19	20	21	22

-KE06-Slot4:
X2
23 COM
Supply com

-FC05 /11.6 MCCB - 10ft Container — 12 14 / 11
-FC04 /11.3 MCCB Cooling Skid +UC30 — 12 14 / 11
-FC14 /12.4 MCCB - AUX Supply Contactor Coil — 12 14 / 11
-FC01 /8.0 MCCB - MV Supply — 14 / 11
-FC02 /9.1 MCCB - Aux Supply — 12 14 / 11
-FC03 /11.1 MCCB Control Cabinet +UC20 — 12 14 / 11
-FC13 /12.2 MCCB - MV Supply Contactor Coil — 12 14 / 11
-FC10 /8.4 MCCB - MV Supply Voltage Measurement — 12 14 / 11
-FC11 /9.6 MCCB - Aux Voltage Measurement — 12 14 / 11

13.2 / -X200:3.4 →
13.4 / -X200:-3.4 →
→ -X200:3.4 / 15.0
→ -X200:-3.4 / 15.0

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	11		
EPLAN Project Pages	626		
=	++	+ UC50	& C03

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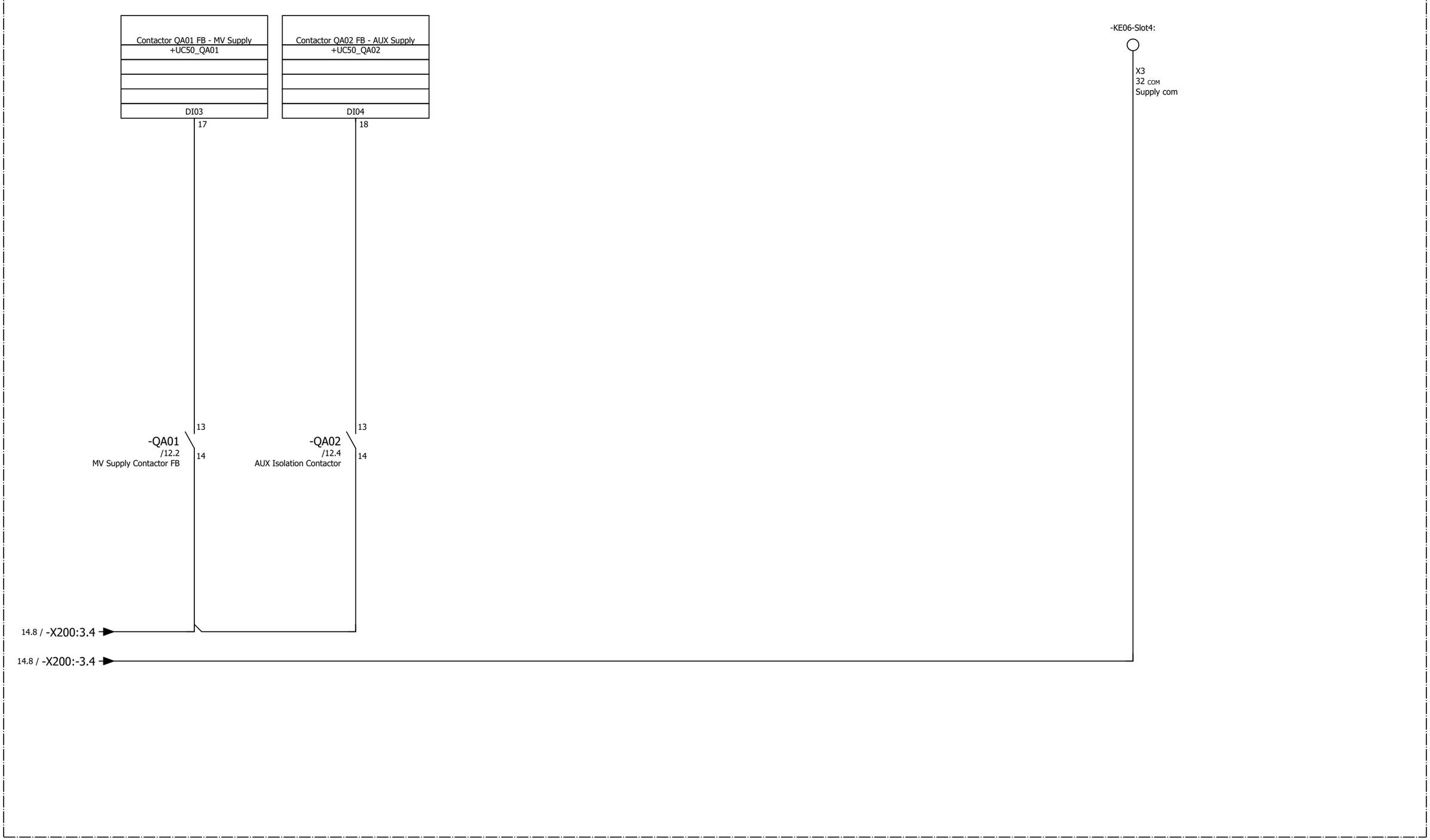
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DRAWING	601456B UC50 AC Distribution Cabinet	REVISION	11
DRAWING TITLE	Crosswind UC50 AC Distribution Cabinet		
SHEET TYPE/DESC	40ft Container - MCCB Feedback		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 14 / 28

=BA20



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	11		
EPLAN Project Pages	626		
=	++	+ UC50	& C03

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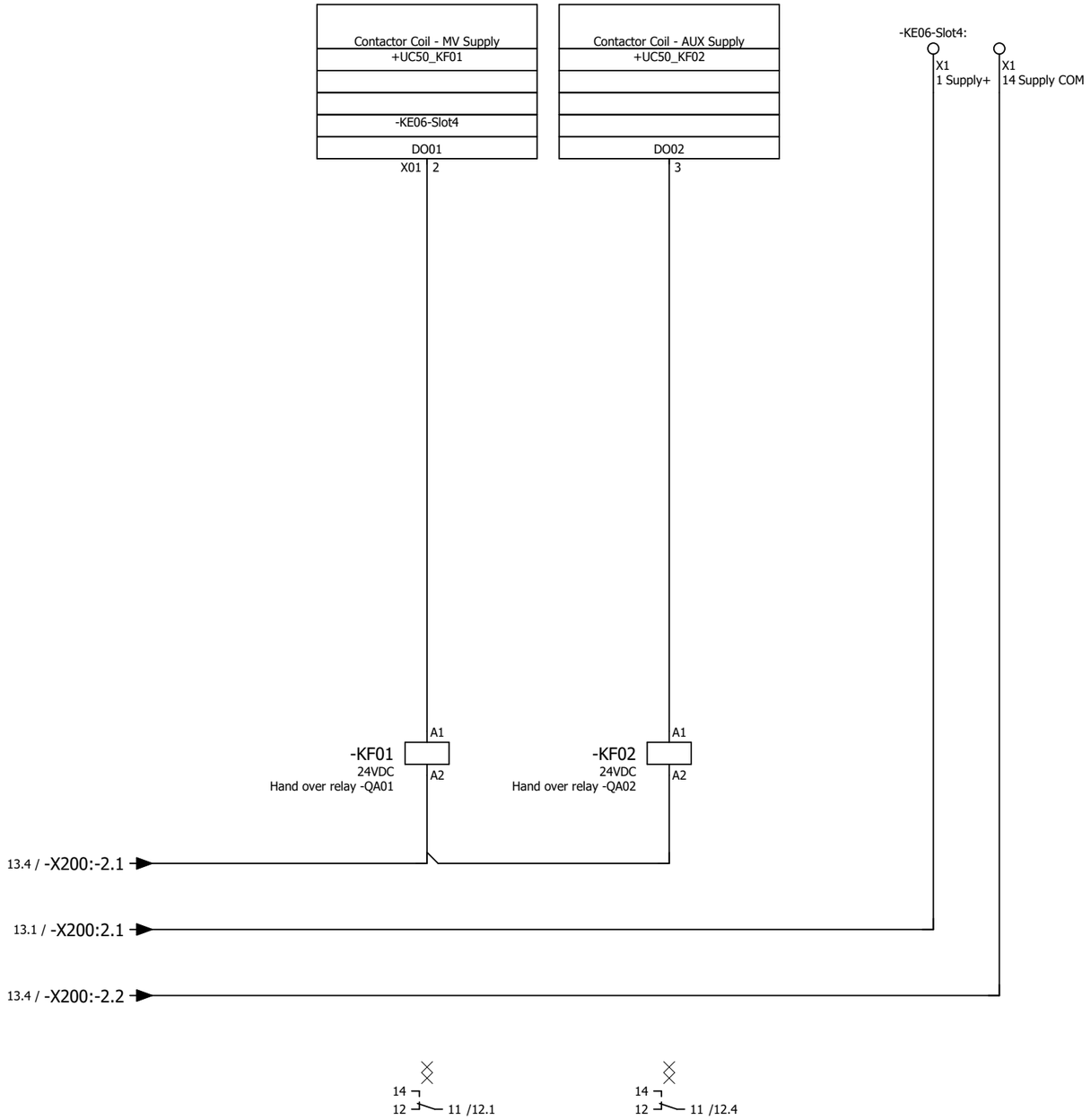
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DRAWING	601456B UC50 AC Distribution Cabinet	REVISION	11
DRAWING TITLE	Crosswind UC50 AC Distribution Cabinet		
SHEET TYPE/DESC	40ft Container - Contactor Feedback		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 15 / 28

0	1	2	3	4	5	6	7	8

=BA20



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	11		
EPLAN Project Pages	626		
=	++	+ UC50	& C03

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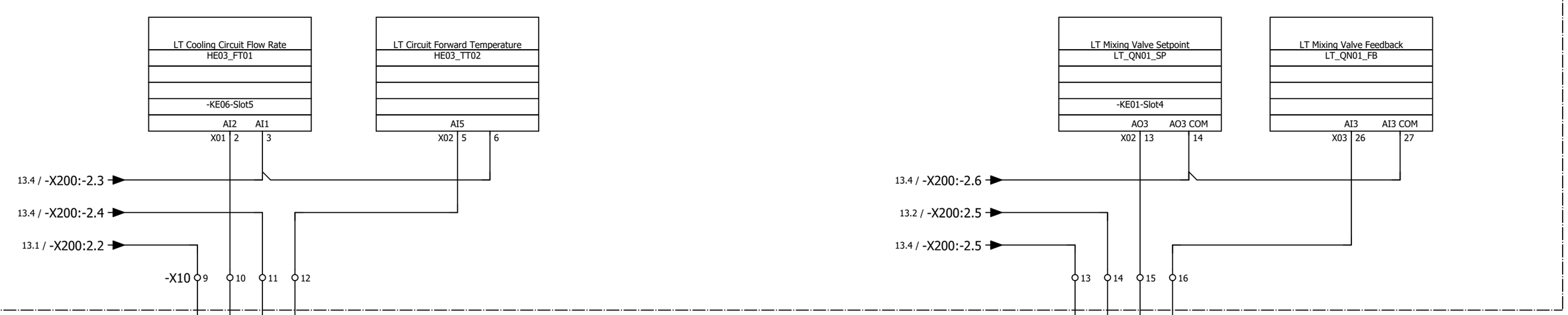
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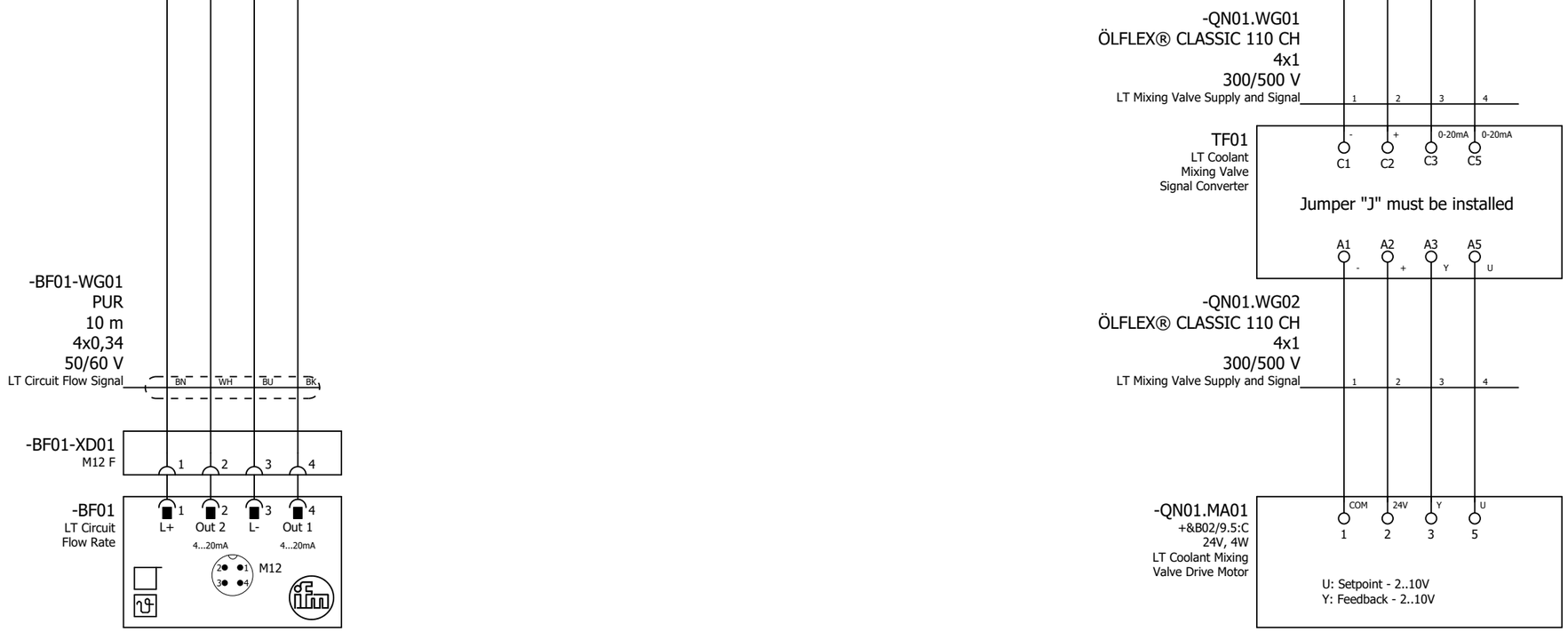
DRAWING	601456B UC50 AC Distribution Cabinet	REVISION	11
DRAWING TITLE	Crosswind UC50 AC Distribution Cabinet		
SHEET TYPE/DESC	40ft Container - Contactor Coils		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 16 / 28

0	1	2	3	4	5	6	7	8

=BA20



=HE03+DA01



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	11		
EPLAN Project Pages	626		
=	++	+ UC50	& C03

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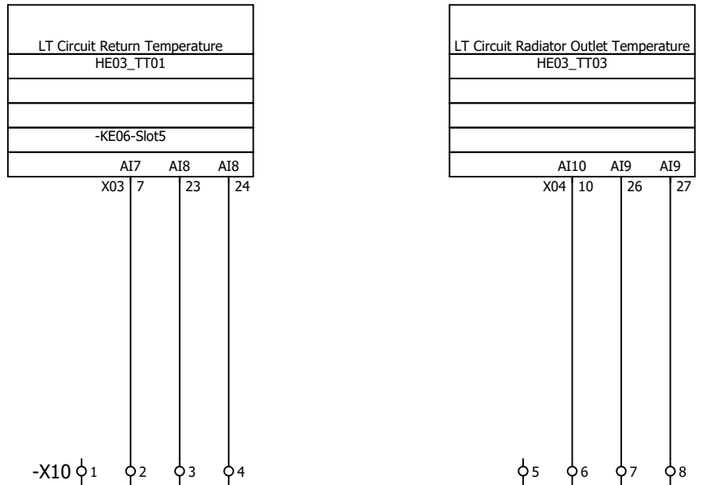
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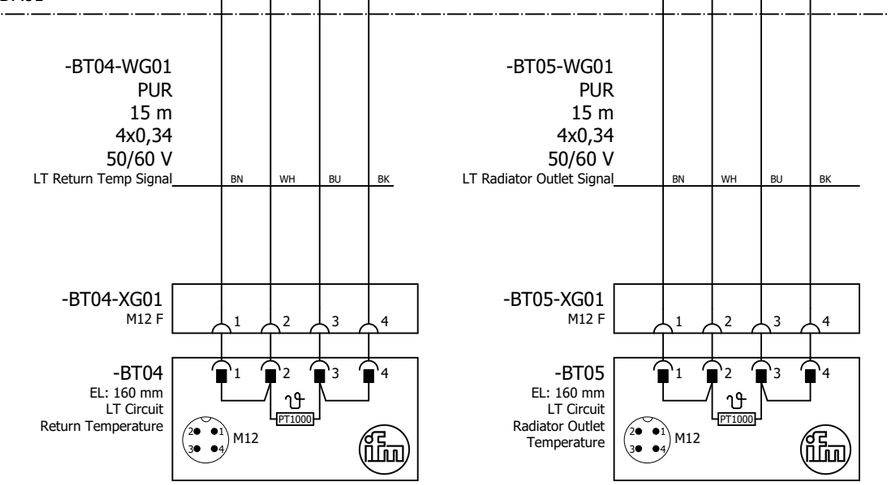
DRAWING	601456B UC50 AC Distribution Cabinet	REVISION	11
DRAWING TITLE	Crosswind UC50 AC Distribution Cabinet		
SHEET TYPE/DESC	40ft Container - LT Cooling System		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 17 / 28

0	1	2	3	4	5	6	7	8

=BA20



=HE03+DA01



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	11		
EPLAN Project Pages	626		
=	++	+ UC50	& C03

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DRAWING	601456B UC50 AC Distribution Cabinet	REVISION	11
DRAWING TITLE	Crosswind UC50 AC Distribution Cabinet		
SHEET TYPE/DESC	40ft Container - LT Cooling System		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 18 / 28

0	1	2	3	4	5	6	7	8

=BA20
Container Control System, Container #1 Inside

Ventilation Outlet C Damper Postion SP
JA01_QM05.SP
&C02/4.6
>=LA01-KE07-Slot3
AO1 AO3 COM
X02 9 14

Ventilation Outlet C Damper Postion FB
JA01_QM05.FB
&C02/4.6
AI1 AI3 COM
X03 22 27

Ventilation Outlet D Damper Postion SP
JA01_QM06.SP
&C02/4.6
AO2 AO4 COM
X02 11 16

Ventilation Outlet D Damper Postion FB
JA01_QM06.FB
&C02/4.6
AI2 AI2 COM
X03 24 29

13.4 / -X200:-3.2

13.2 / -X200:3.1
13.4 / -X200:-3.1
-X11 1 2 3 4

13.2 / -X200:3.3
13.4 / -X200:-3.3
5 6 7 8

=JA01+DA01
Ventilation System, Container #1 Inside

-QM05-WD01
+UC20/94.1
ÖLFLEX® CLASSIC 135 CH
4x1
300/500 V
Ventilation Outlet Louvre B1
1 2 3 4

-QM06-WD01
+UC20/94.4
ÖLFLEX® CLASSIC 135 CH
4x1
300/500 V
Ventilation Outlet Louvre B2
1 2 3 4

-AC05
+UC20/94.1
QM05 Junction Box
1 2 3 4

-AC06
+UC20/94.4
QM06 Junction Box
1 2 3 4

-QM05-WD02
4x19
300
Ventilation Outlet Louvre B1
BK RD WH OR

-QM06-WD02
4x19
300
Ventilation Outlet Louvre B2
BK RD WH OR

-QM05.MA01
24V, 4W
Louvre Drive Motor B1
COM 24V Y U
1 2 3 5
U: Setpoint - 2..10V
Y: Feedback - 2..10V

-QM06.MA01
24V, 4W
Louvre Drive Motor B2
COM 24V Y U
1 2 3 5
U: Setpoint - 2..10V
Y: Feedback - 2..10V

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	11		
EPLAN Project Pages	626		
=	++	+ UC50	& C03

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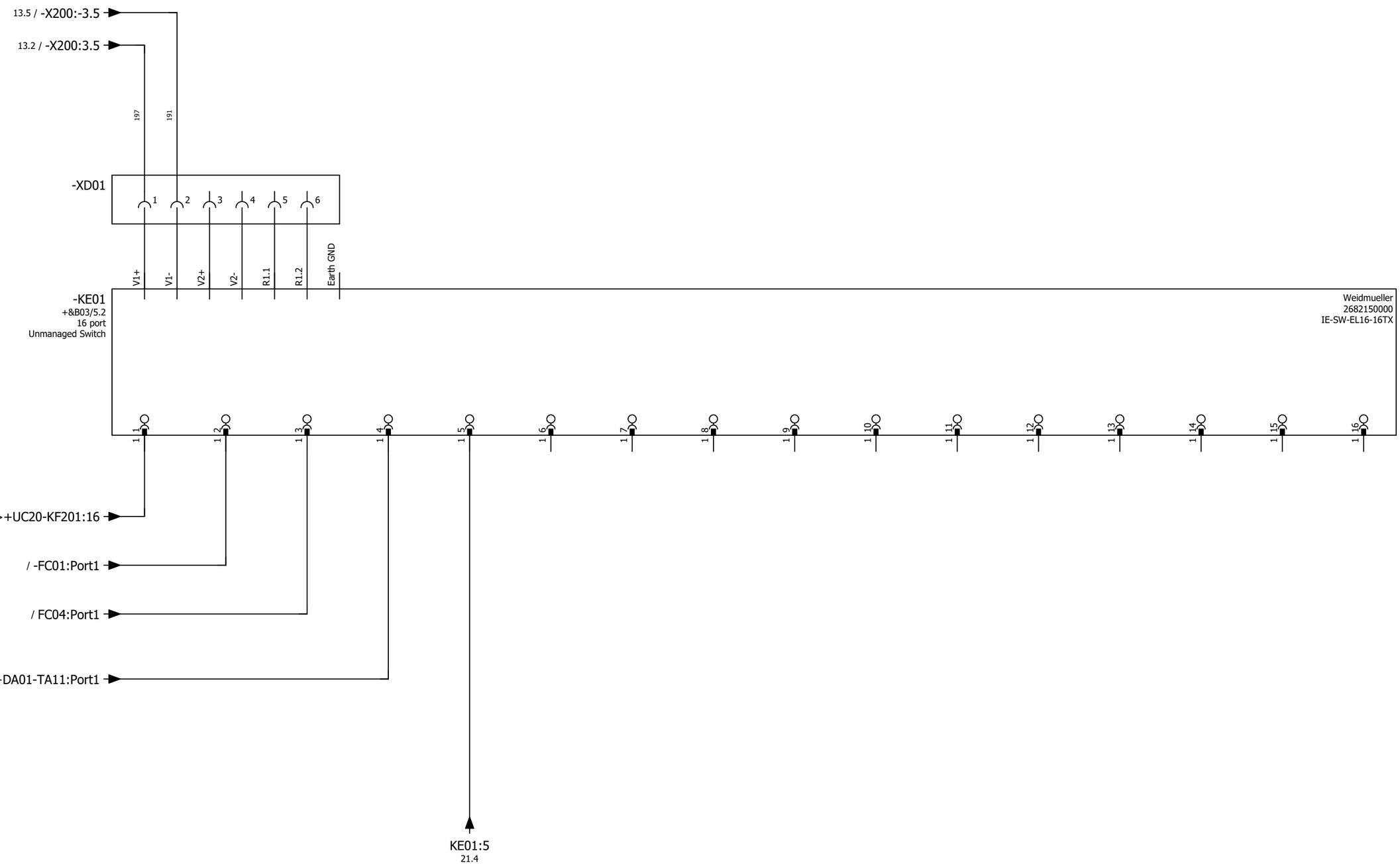
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DRAWING	601456B UC50 AC Distribution Cabinet	REVISION	11
DRAWING TITLE	Crosswind UC50 AC Distribution Cabinet		
SHEET TYPE/DESC	40ft Container - Container Exhaust Louvre B		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 19 / 28

0	1	2	3	4	5	6	7	8

=BA20
40ft Container - AUX distribution



Reference Item Number	Ballard Part # TBD		
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=	++	+ UC50	& C03

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DRAWING	601456B UC50 AC Distribution Cabinet	REVISION	11
DRAWING TITLE	Crosswind UC50 AC Distribution Cabinet		
SHEET TYPE/DESC	40ft Container AUX distribution - Newtwork switch		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 20 / 28

0	1	2	3	4	5	6	7	8

=BA20
40ft Container - AUX distribution

20.3
KE01:5

>=LA01-KE10-Slot1
DEIF PSM3.1
Power Supply
Module 3.1

Supply +
&C02/6.1
1
12-24V

Supply COM
&C02/6.1
2
0V

Frame Ground
&C02/6.1
PE
PE

>=LA01-KE10-Slot4
&C02/6.5
DEIF PCM3.3
Processor and
Communication
Module 3.3

1
Top side of card
X02
Other bus systems
&C02/6.5
&C02/6.5

Other bus systems
X03
Bottom side of card
3

Connected to RM network cable - See sheet &B03:5

13.3
-X200:4.6

13.5
-X200:-4.6

Reference Item Number	Ballard Part # TBD		
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=	++	+ UC50	& C03

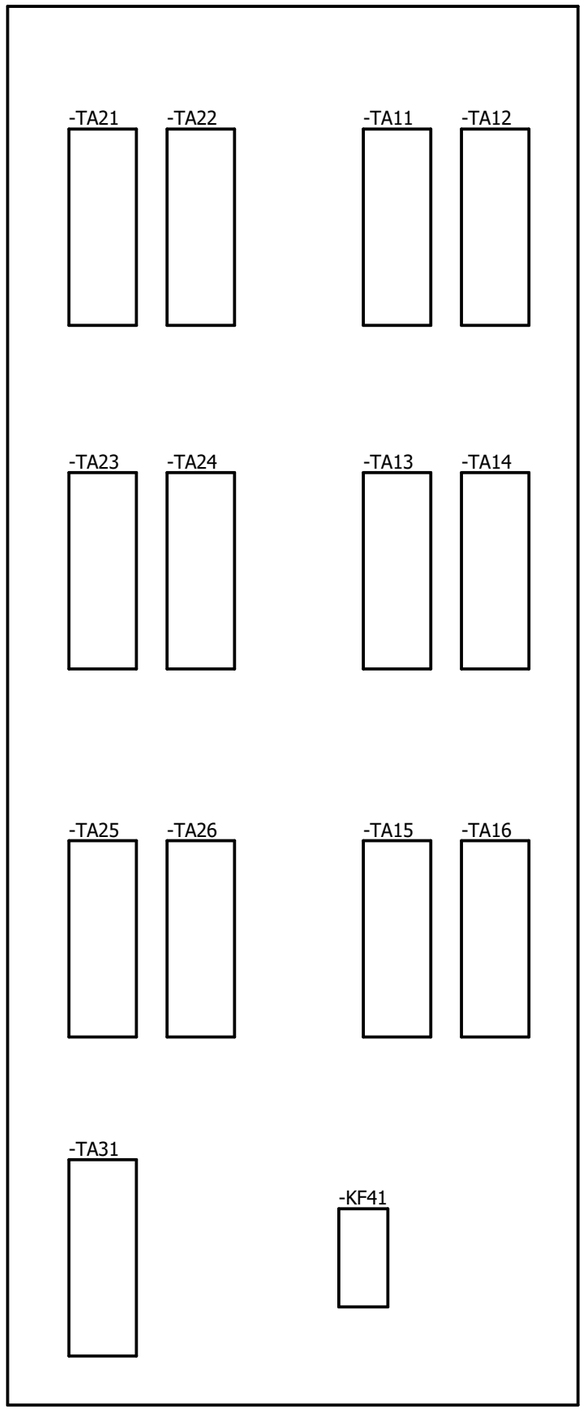
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DRAWING	601456B UC50 AC Distribution Cabinet	REVISION	11
DRAWING TITLE	Crosswind UC50 AC Distribution Cabinet		
SHEET TYPE/DESC	40ft Container - Gateway PLC		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 21 / 28



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	11		
EPLAN Project Pages	626		
=	++	+ UC50	& C04

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DRAWING	601456B UC50 AC Distribution Cabinet	REVISION	11
DRAWING TITLE	Crosswind UC50 AC Distribution Cabinet		
SHEET TYPE/DESC	Front Page		

ALL SHEETS ARE THE SAME REVISION STATUS | SIZE A3 | LANGUAGE EN | SHEET/TOTAL 22 / 28

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	
=BA20-X01		1	3	0	0	3	
=BA20-X10		1	16	0	0	20	
=BA20-X11		1	8	0	0	10	
=BA20-X200		1	4.6	0	0	22	
=BA20-XB01		1	1	0	0	1	

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	11		
EPLAN Project Pages	626		
=	++	+ UC50	& C04

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DESCRIPTION
DATE
28-Oct-25

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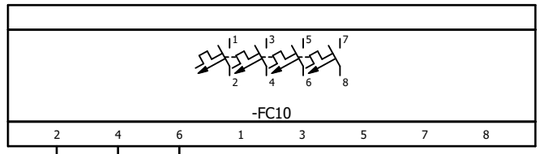
THIS DOCUMENT'S APPROVAL IS MANAGED BY E-SIGNATURE ON FILE IN BALLARD POWER SYSTEMS' PLM SYSTEM

DRAWING	601456B UC50 AC Distribution Cabinet	REVISION	11
DRAWING TITLE	Crosswind UC50 AC Distribution Cabinet		
SHEET TYPE/DESC	Terminal-strip overview : =BA20+UC50-X01 - =BA20+UC50-XB01		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 23 / 28

Terminal-connection diagram

F11_001
PETBLA 28-Oct-25

Internal targets



=BA20+UC50-X01

Jumpers

Terminal

Connection point

External targets

Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	11		
EPLAN Project Pages	626		
=	++	+ UC50	& C04

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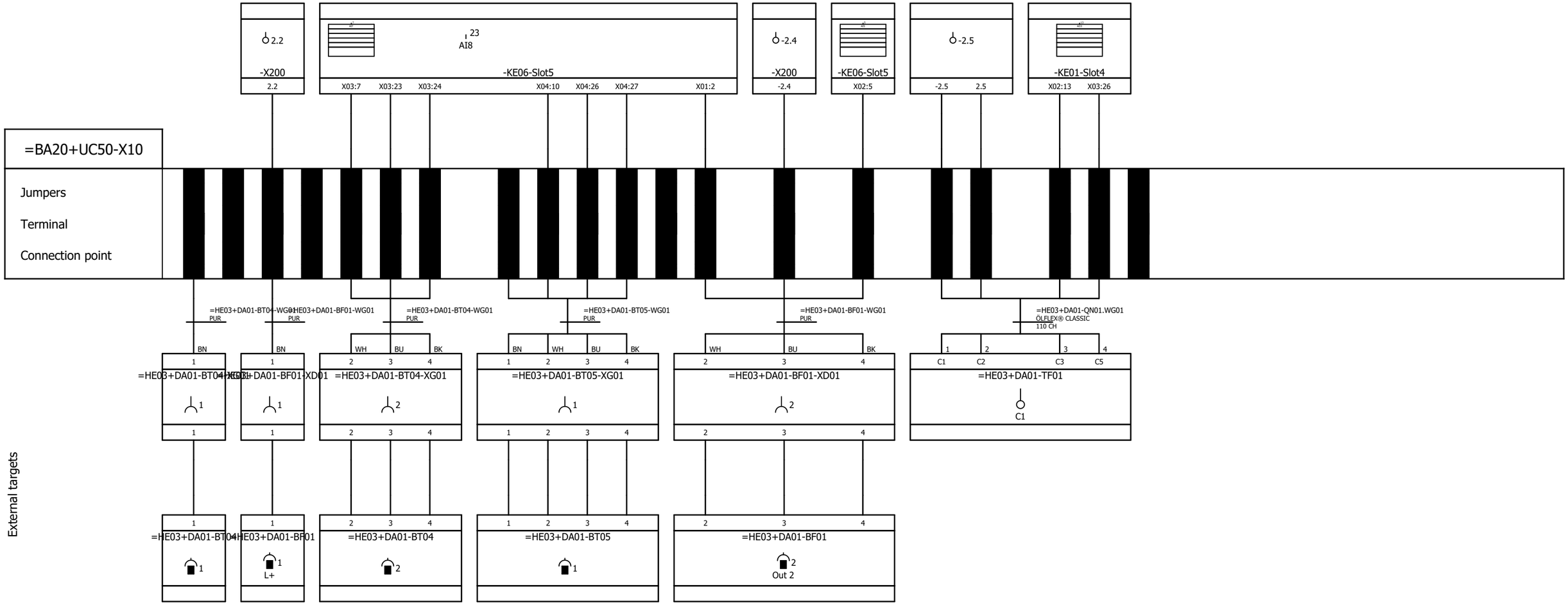
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DRAWING	601456B UC50 AC Distribution Cabinet		REVISION	11
DRAWING TITLE	Crosswind UC50 AC Distribution Cabinet			
SHEET TYPE/DESC	Terminal-connection diagram =BA20+UC50-X01			
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL	24 / 28

Terminal-connection diagram

F11_001
PETBLA 28-Oct-25

Internal targets



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	11		
EPLAN Project Pages	626		
=	++	+ UC50	& C04

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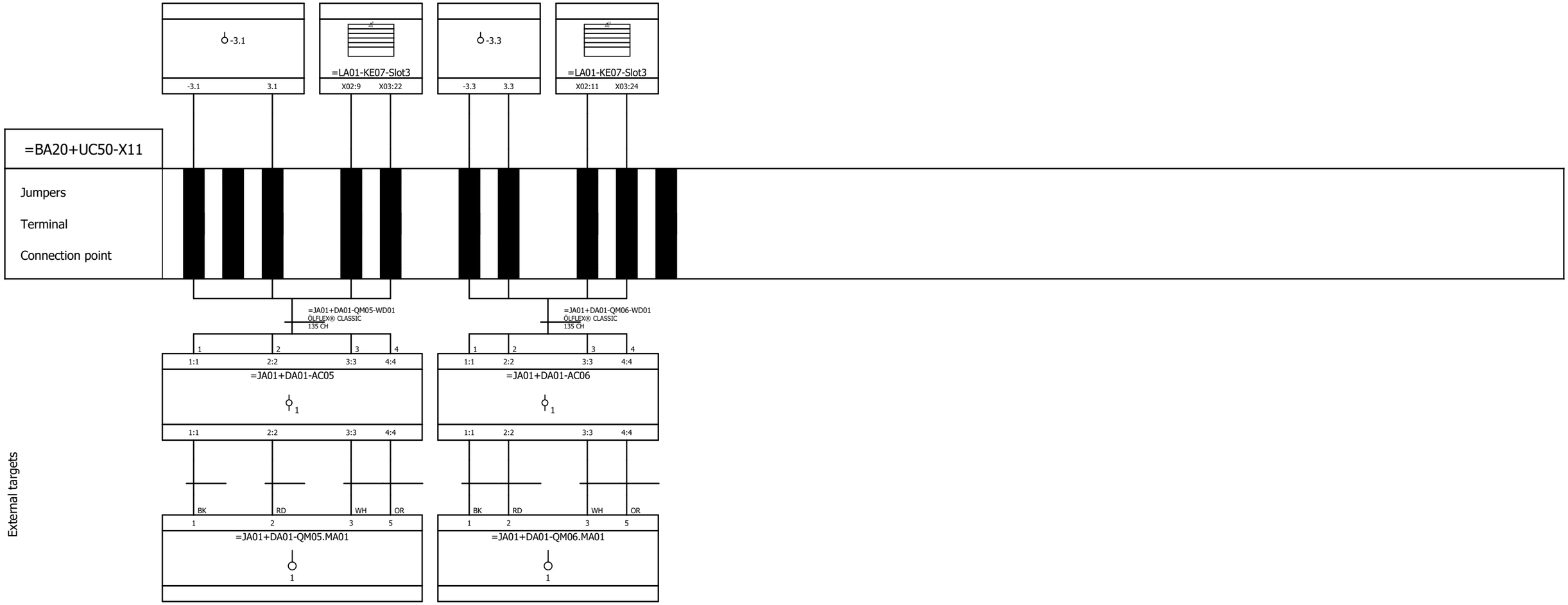
DRAWING	601456B UC50 AC Distribution Cabinet		REVISION	11	
DRAWING TITLE	Crosswind UC50 AC Distribution Cabinet				
SHEET TYPE/DESC	Terminal-connection diagram =BA20+UC50-X10				
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL	25 / 28	

Terminal-connection diagram

F11_001
PETBLA 28-Oct-25

Internal targets

External targets



Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	11		
EPLAN Project Pages	626		
=	++	+ UC50	& C04

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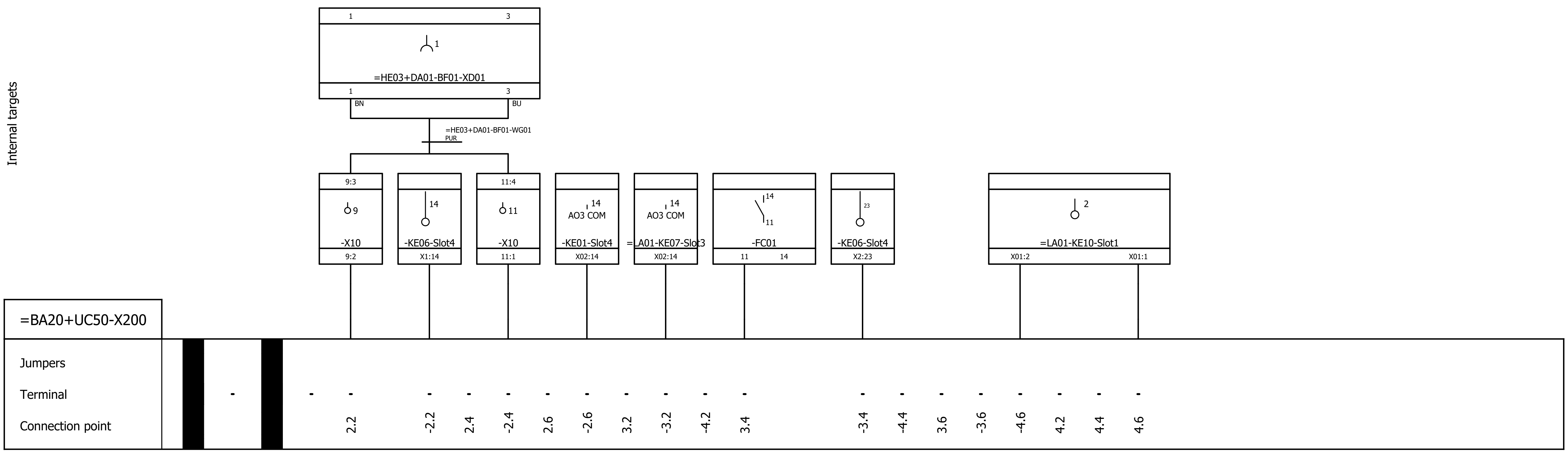
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DRAWING	601456B UC50 AC Distribution Cabinet	REVISION	11
DRAWING TITLE	Crosswind UC50 AC Distribution Cabinet		
SHEET TYPE/DESC	Terminal-connection diagram =BA20+UC50-X11		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 26 / 28

Terminal-connection diagram

F11_001
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Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	11		
EPLAN Project Pages	626		
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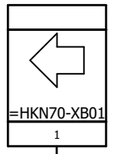
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DRAWING	601456B UC50 AC Distribution Cabinet			REVISION	11
DRAWING TITLE	Crosswind UC50 AC Distribution Cabinet				
SHEET TYPE/DESC	Terminal-connection diagram =BA20+UC50-X200				
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 27 / 28		

Terminal-connection diagram

F11_001
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Internal targets



=BA20+UC50-XB01	
Jumpers	
Terminal	
Connection point	1

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 UC50 AC Distribution Cabinet	REVISION	11
EPLAN Project Name	601456B - Shell Baseload Power Hub			DESCRIPTION		THIS DOCUMENT'S APPROVAL IS MANAGED BY E-SIGNATURE ON FILE IN BALLARD POWER SYSTEMS' PLM SYSTEM	DRAWING TITLE	Crosswind UC50 AC Distribution Cabinet		
EPLAN Revision	11						SHEET TYPE/DESC	Terminal-connection diagram =BA20+UC50-XB01		
EPLAN Project Pages	626			DATE			ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 28 / 28
=	++	+ UC50	& C04	28-Oct-25						

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