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No.4528, Kangxin Highway,
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Latest revision: Rev 04 7/21/2020	
Prepared by, date:	Approved by, date: Per V. Carlsson



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Customer :
Drawing number : 3HAC072448-009
Drawing version : Rev 04

Manufacture : ABB Engineering (Shanghai) Ltd.
Type : Industrial robot controller
Type of installation :
Control cabinet : OmniCore C30 for CRB15000
Mains voltage : 100~230VAC, 50/60Hz
Supply :
Control voltage :
Year of construction : 2019

Project start : 5/27/2019
Project manager :
Last revision :
Designed by :
Designed date : 11/3/2023
Number of pages : 53

Latest revision:
Rev 04
7/21/2020

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Rev 04 2023/08/11

1. Delete the fuse in circuit 13

Rev 03 2023/03/28

1. Add option in DC bus circuit in 2.

2. Add 2.a as new option circuit

3. Update the view at 006

Rev 02 2021/11/04

1. Changed the description of Customer Safety interface in 3.a.

2. Changed the description of LAN2 connector of main computer in 6.a

3. Added M17 in 14.

4. Changed the adaptor name to X110 in 8.a and the description of ethernet switch direction in 10.

Rev 01, 2021/04/20

1. Changed the description of AC_INPUT contacts from " L, N, PE " to " L1, L2 or N, PE"

2. Added the connected information of GS safety function.

Rev 00, 2021/03/15

New release.

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SCH	U	2.a	POWER UNIT - CRB15000-10/12 /A1		3/28/2023	
SCH	U	3	ROBOT SIGNAL EXCHANGE PROXY - K2		3/27/2023	
SCH	U	3.a	ROBOT SIGNAL EXCHANGE PROXY - K2		11/4/2021	
SCH	U	3.b	ROBOT SIGNAL EXCHANGE PROXY - K2		11/15/2021	
SCH	U	4	TPU - HMI SIGNAL CONNECTORS /X4		3/5/2021	Clyde
SCH	U	5	SAFETY CONTROLLER /A2.K3		11/15/2021	
SCH	U	6	MAIN COMPUTER /A2		7/23/2020	Clyde
SCH	U	6.a	MAIN COMPUTER /A2		11/10/2021	
SCH	U	7	FIELD BUS ADAPTER MASTER /A2.K1		2/22/2021	Clyde
SCH	U	8	MASTER I/O UNIT /K5.1		11/15/2021	
SCH	U	8.a	MASTER I/O UNIT /K5.1		11/15/2021	
SCH	U	9	FAN COOLING CHANNEL /G1,2		2/22/2021	Clyde
SCH	U	10	ETHERNET SWITCH /K4		11/4/2021	
SCH	U	11	MOTOR CONNECTOR - X1		3/28/2023	
SCH	U	12	CONNECTED SERVICES - 3G, WiFi, Wired /K7		11/15/2021	
SCH	U	13	CUSTOMER FLANGE INTERFACE (CFI) /X2		3/15/2021	Clyde
SCH	U	14	MASTER SAFE I/O UNIT/K3.1		11/4/2021	
SCH	U	14.a	MASTER SAFE I/O UNIT/K3.1		11/15/2021	
SCH	EXT	15	MANIPULATOR CONNECTION CRB15000		11/4/2021	

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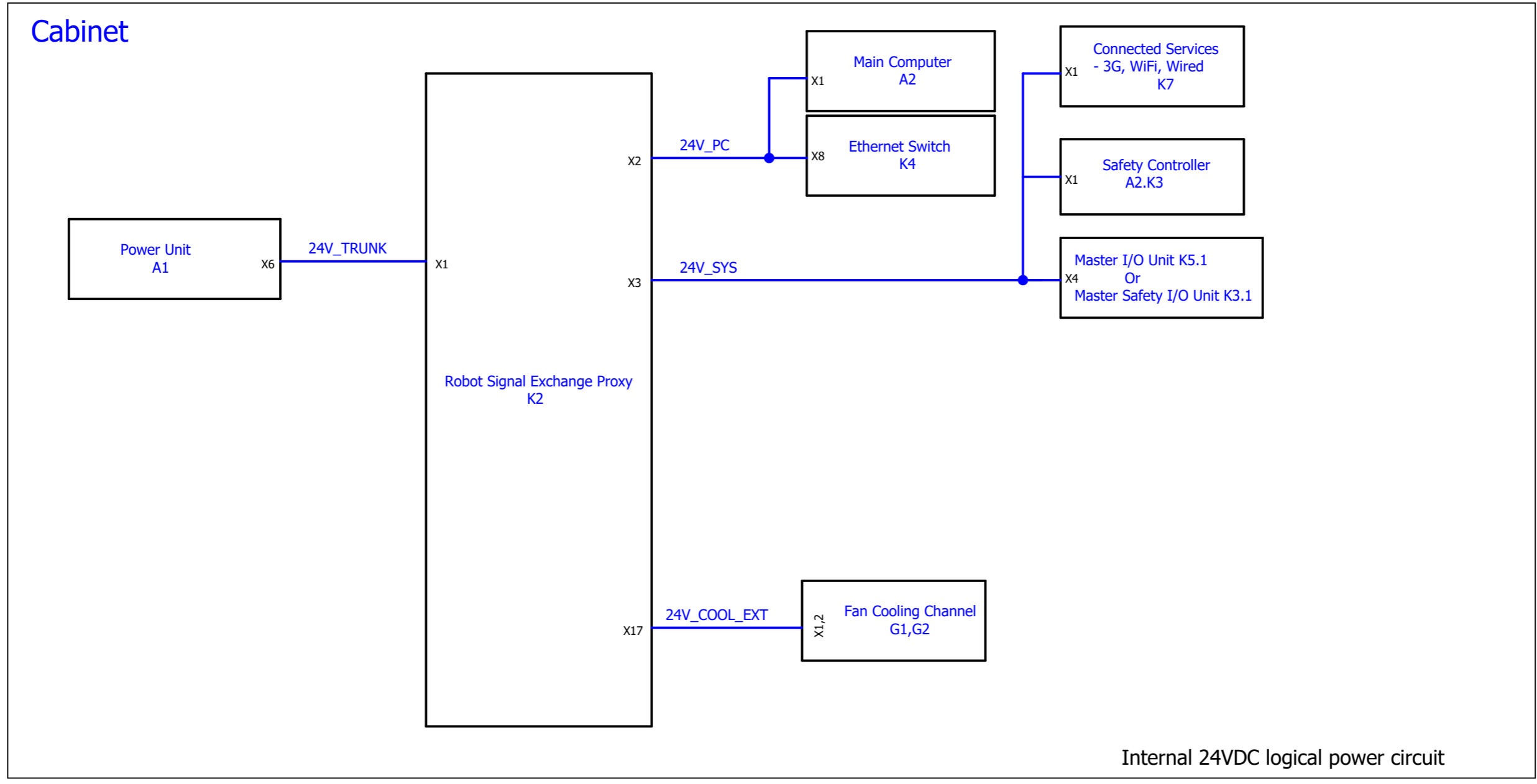
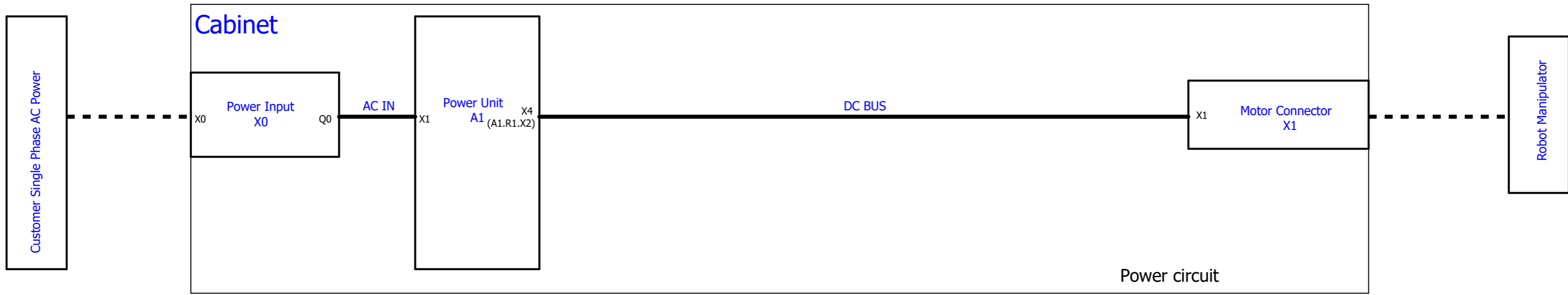
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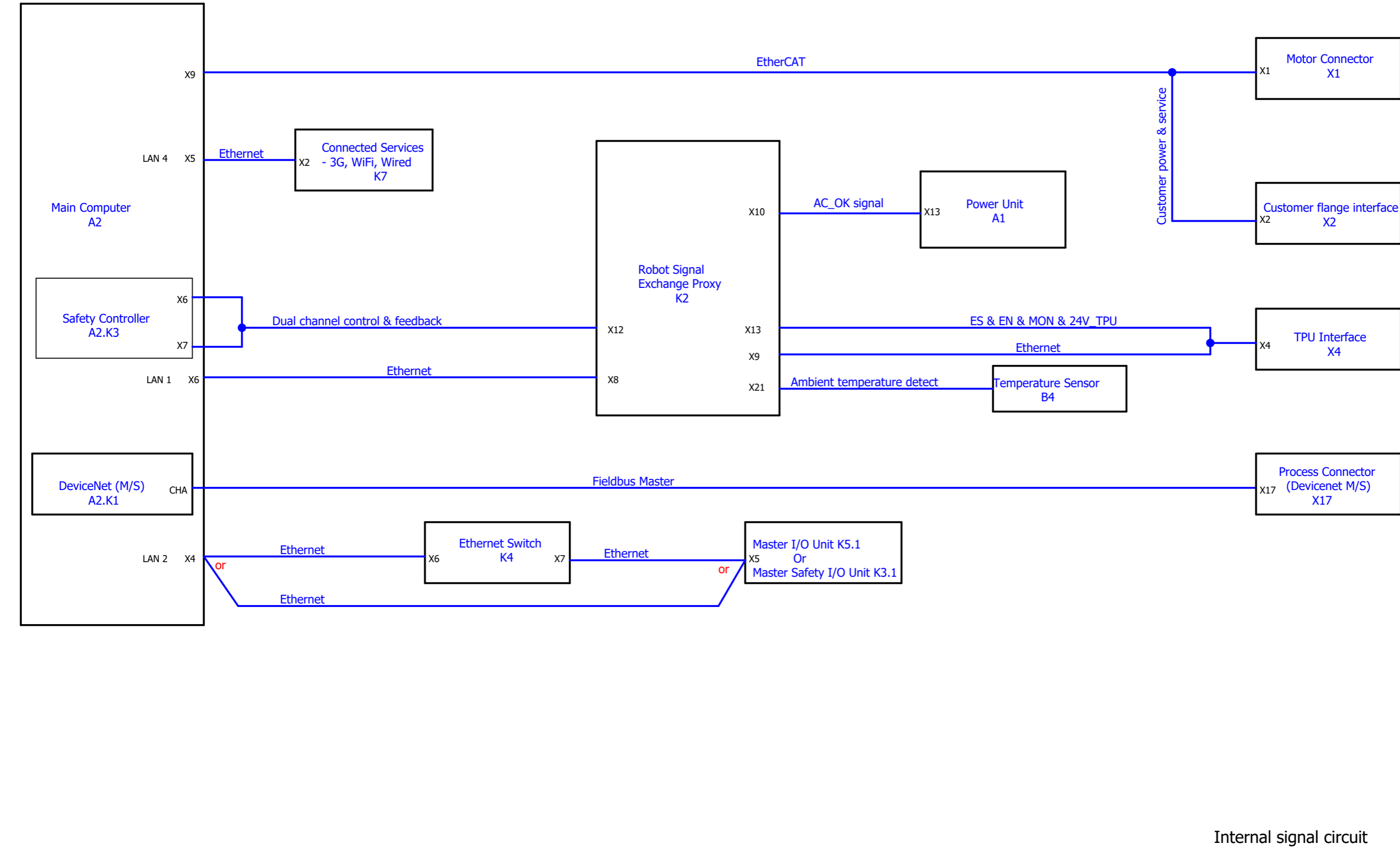
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Block diagram

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Cabinet



Internal signal circuit

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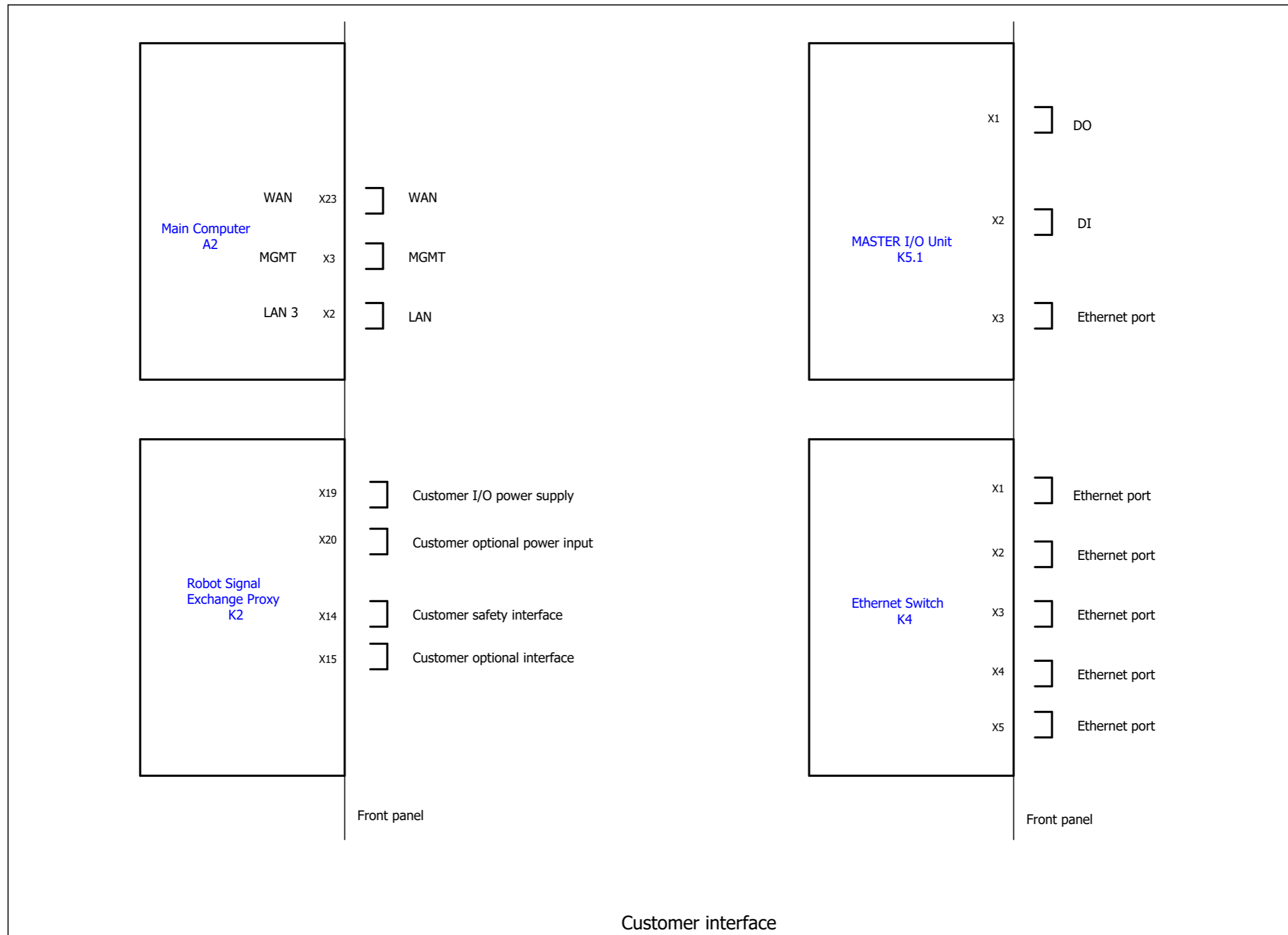
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Block diagram

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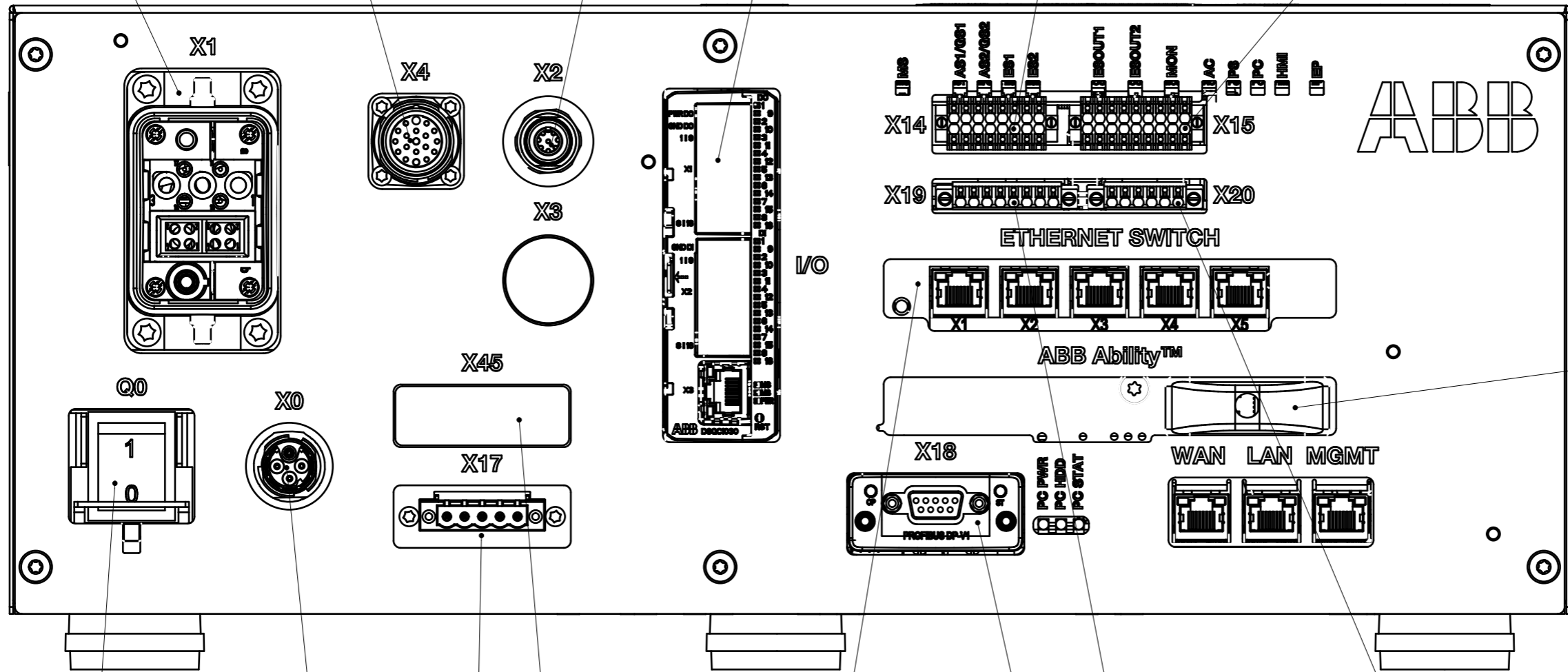
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Motor connector X1 TPU interface X4 CFI interface X2 Master I/O UNit interface K5.1 Customer safety interface X14 Customer optional interface X15



Power input and switch X0,Q0 Devicenet X17 Cover plate X45 Ethernet switch X20 Fieldbus(slave) X18 Customer I/O power supply X19 Customer optional power input X20

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Front view

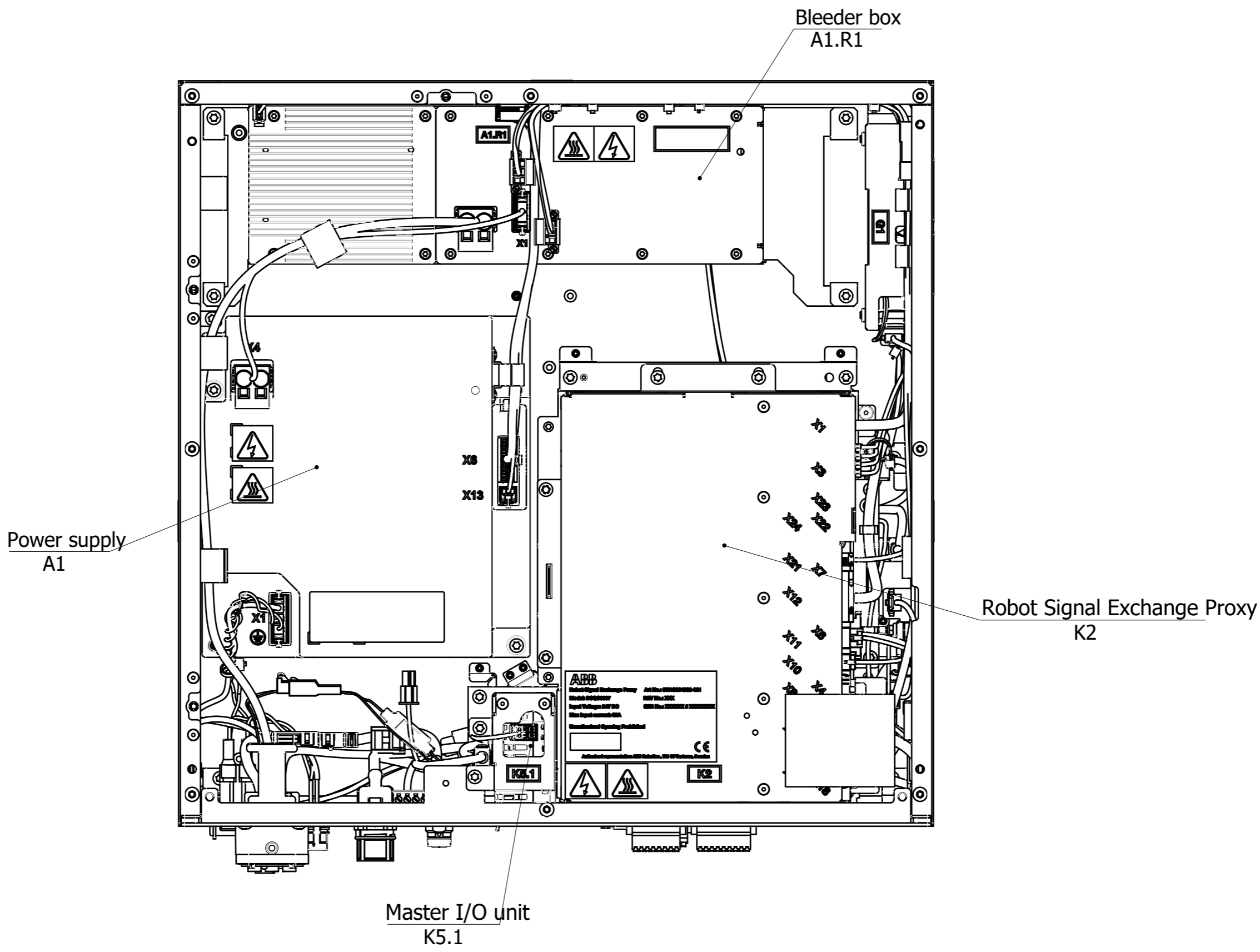
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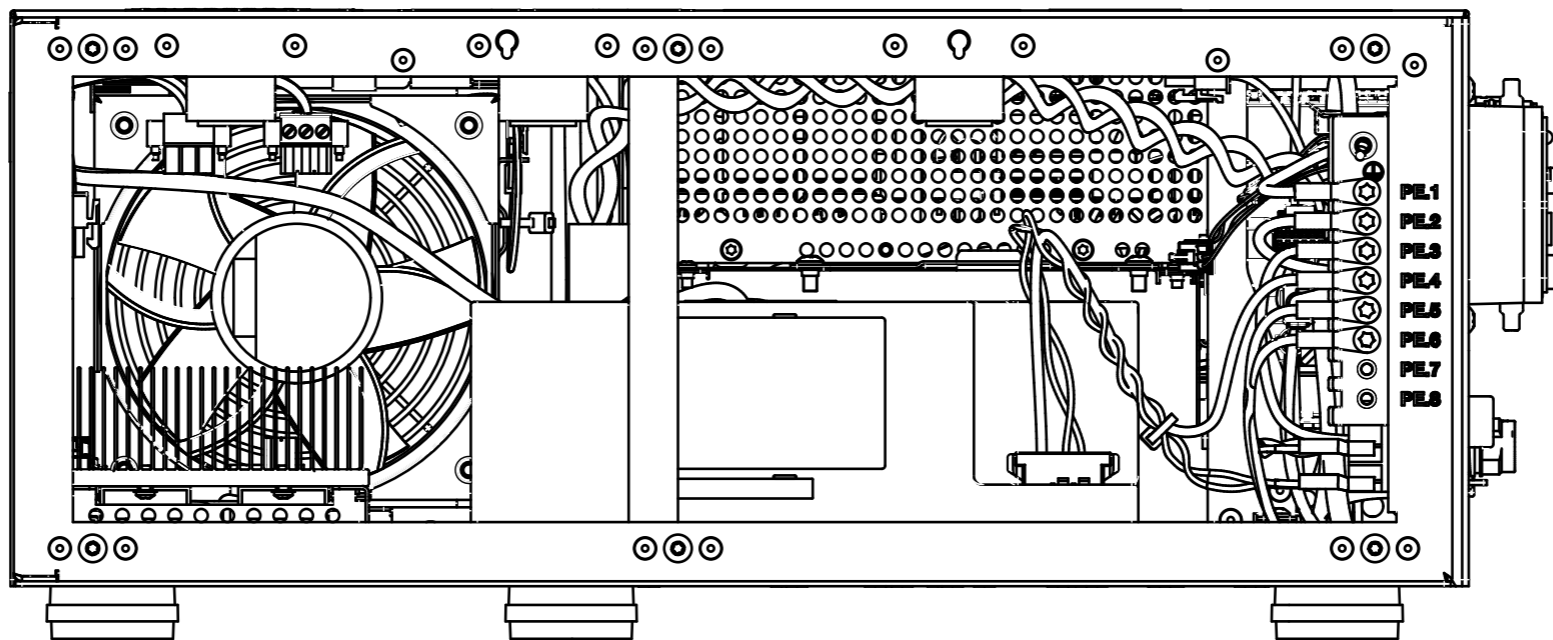
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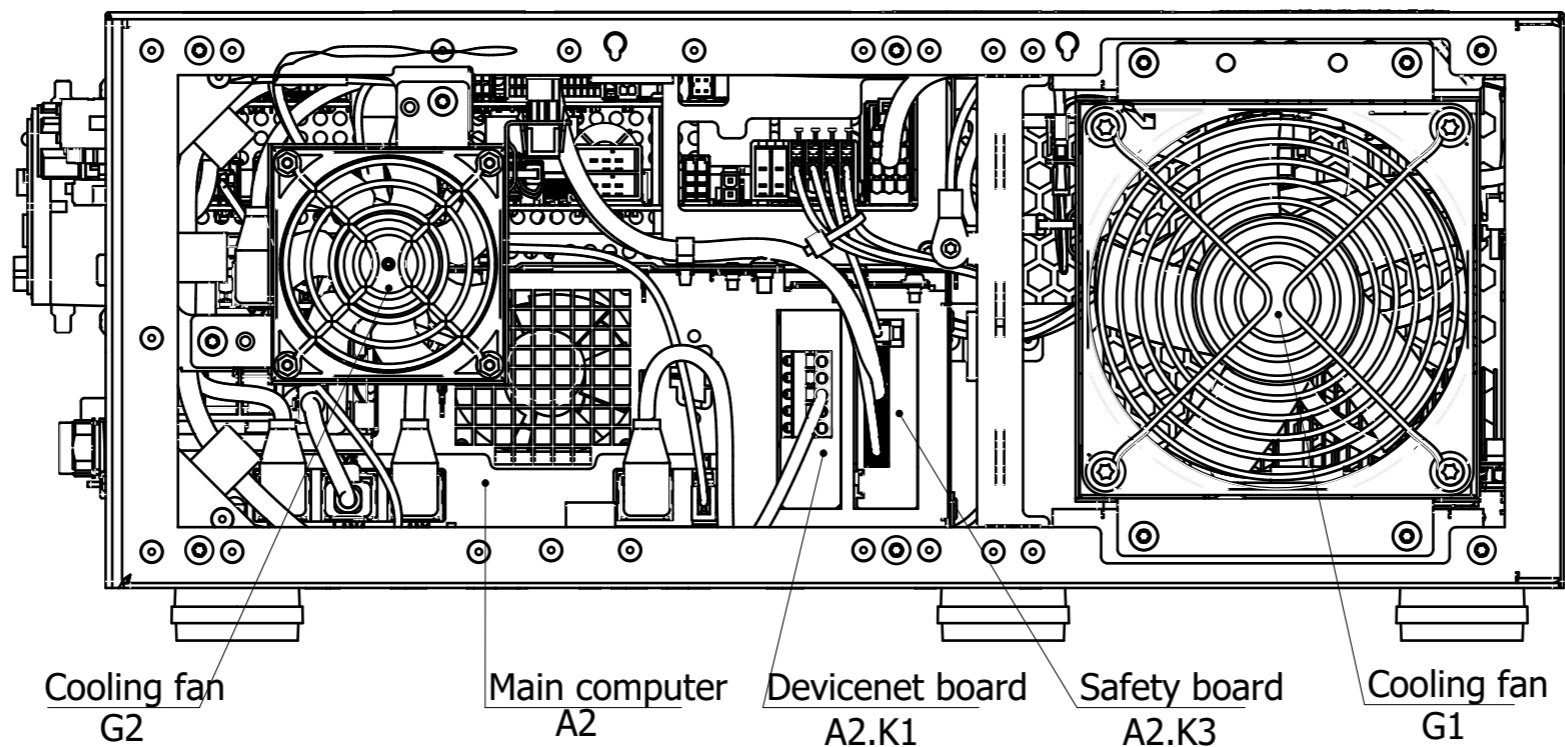
Top view

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Left side



Right side



Cooling fan
G2

Main computer
A2

Devicenet board
A2.K1

Safety board
A2.K3

Cooling fan
G1

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Side view

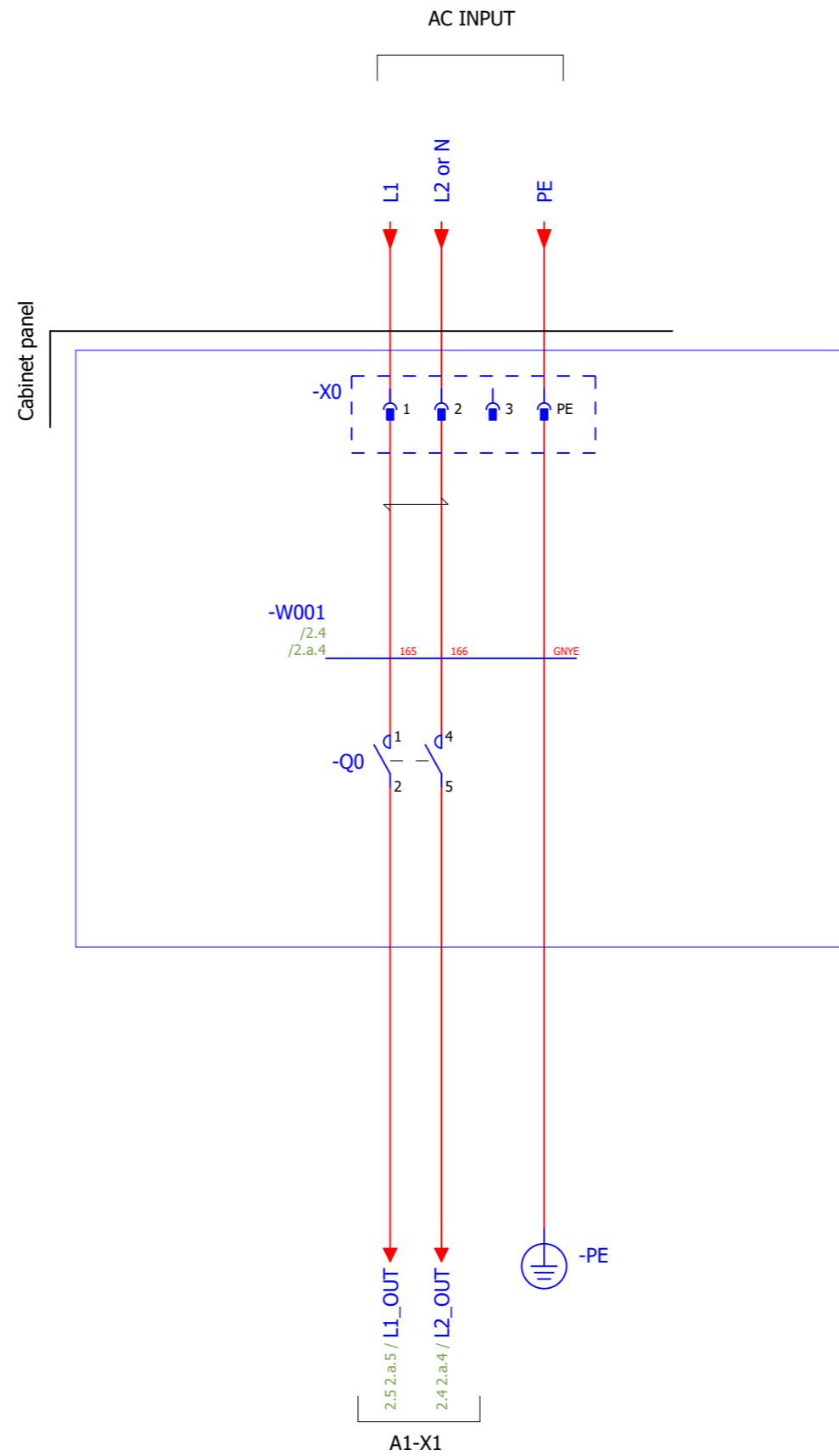
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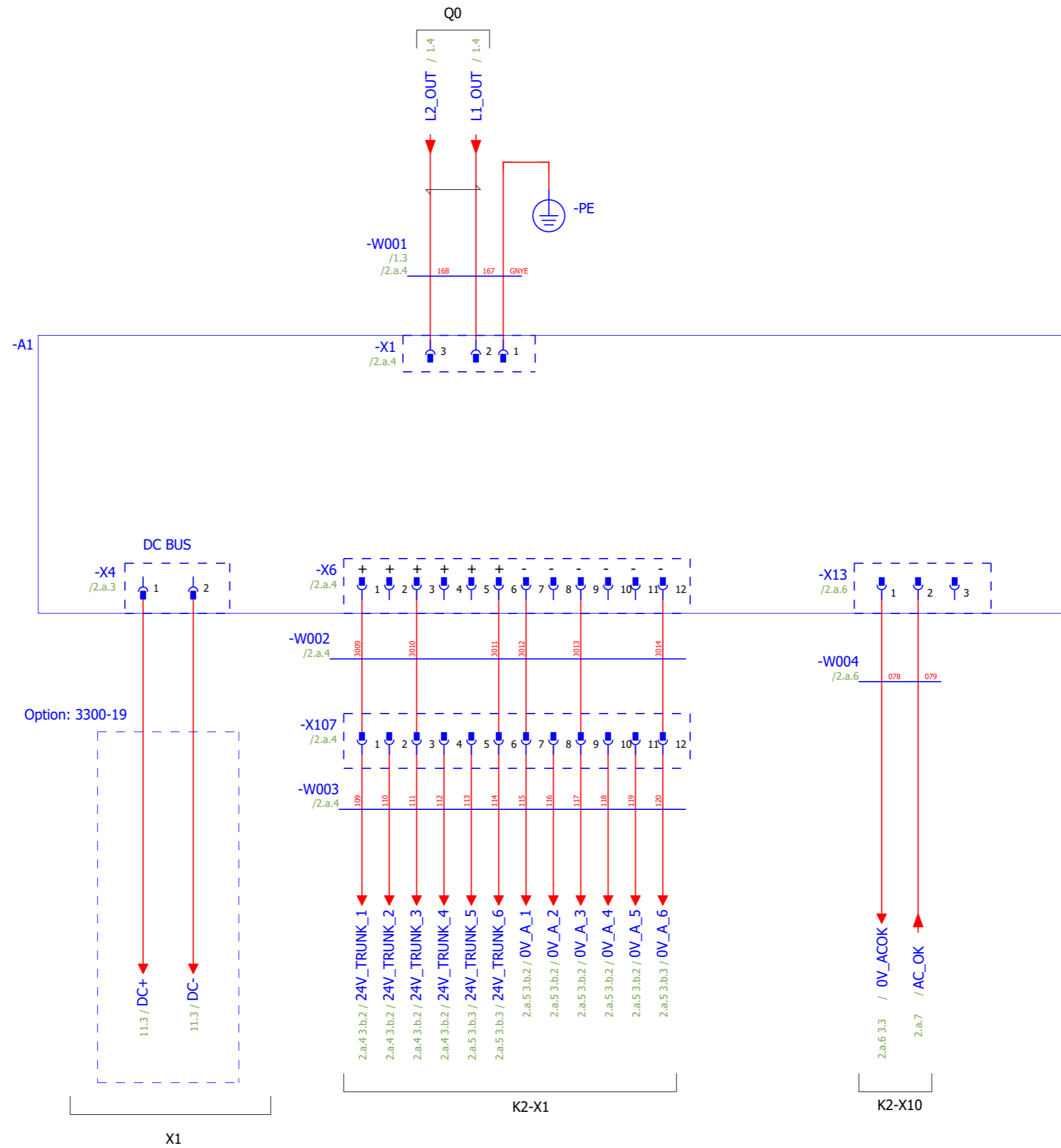
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POWER INPUT /X0

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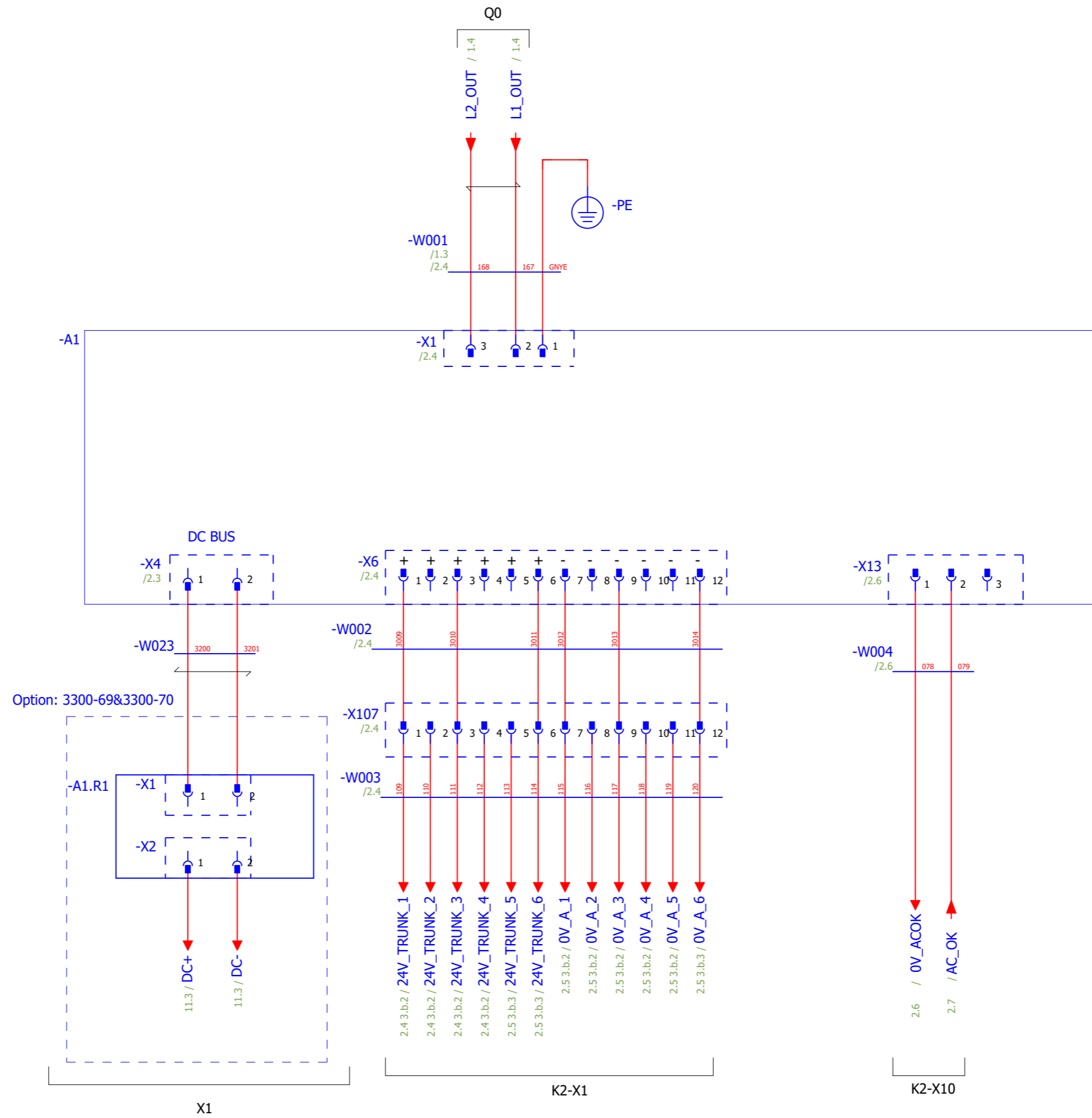
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POWER UNIT - CRB15000-5/A1

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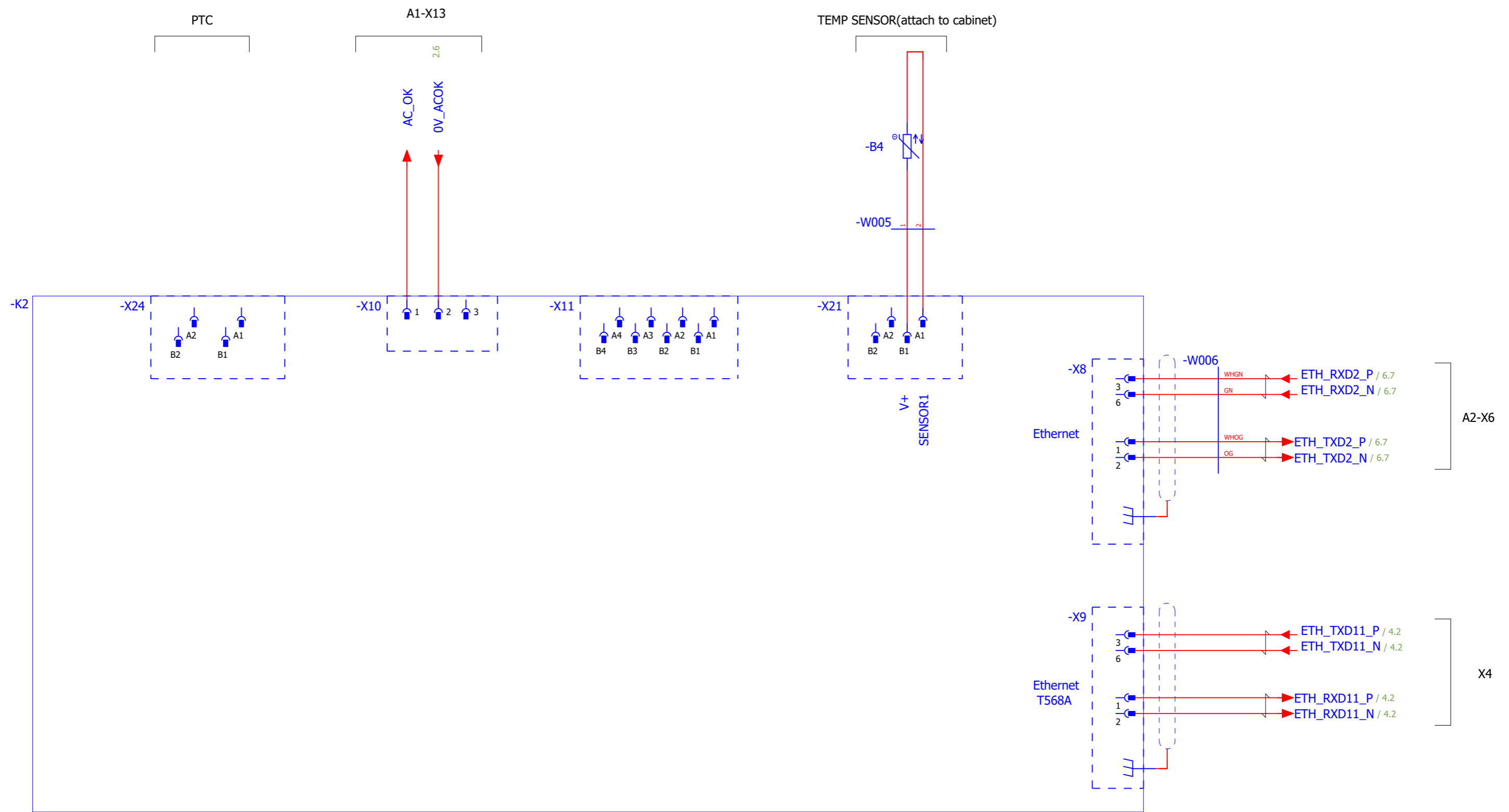
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ROBOT SIGNAL EXCHANGE PROXY - K2

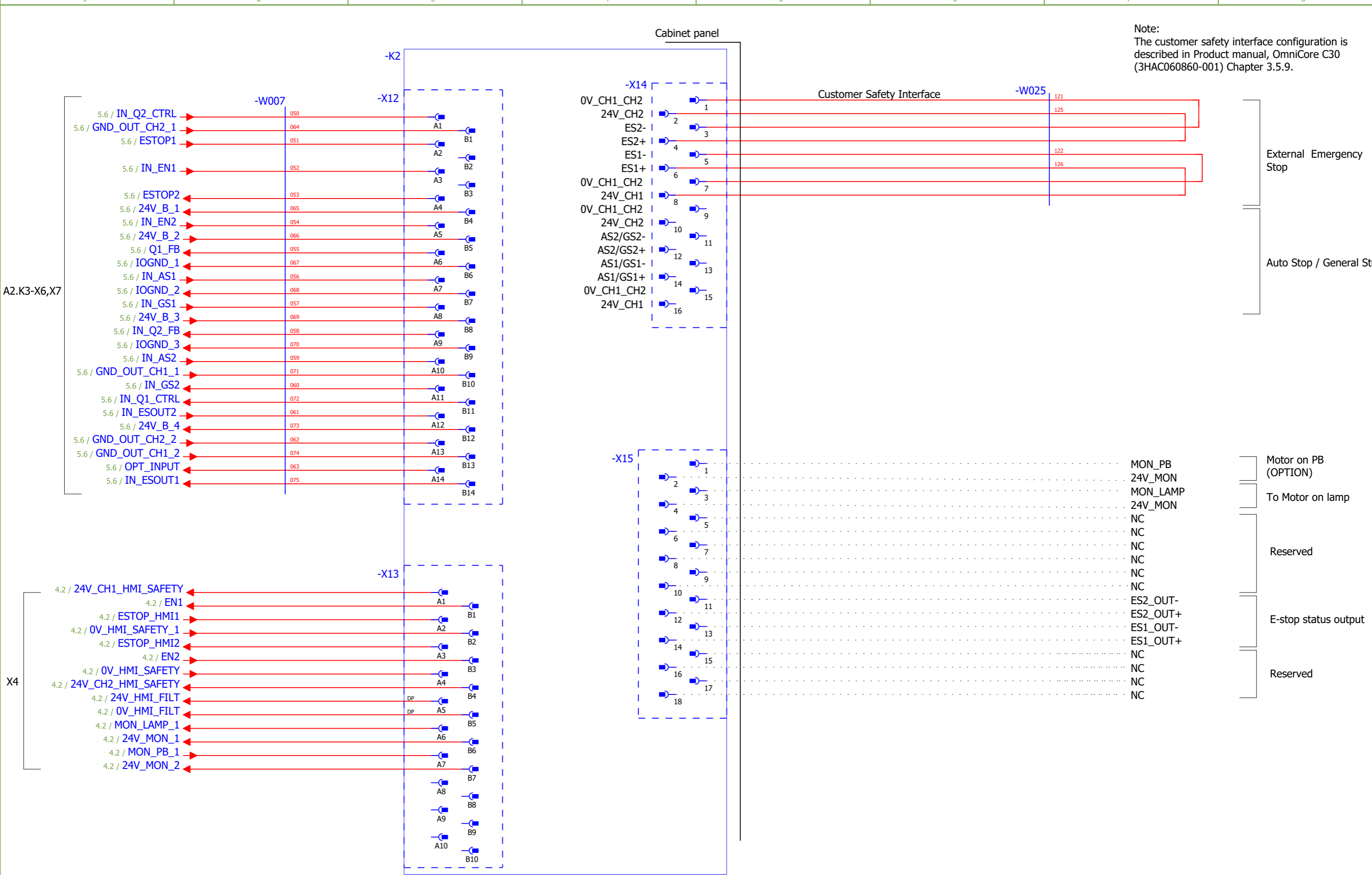
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ROBOT SIGNAL EXCHANGE PROXY - K2

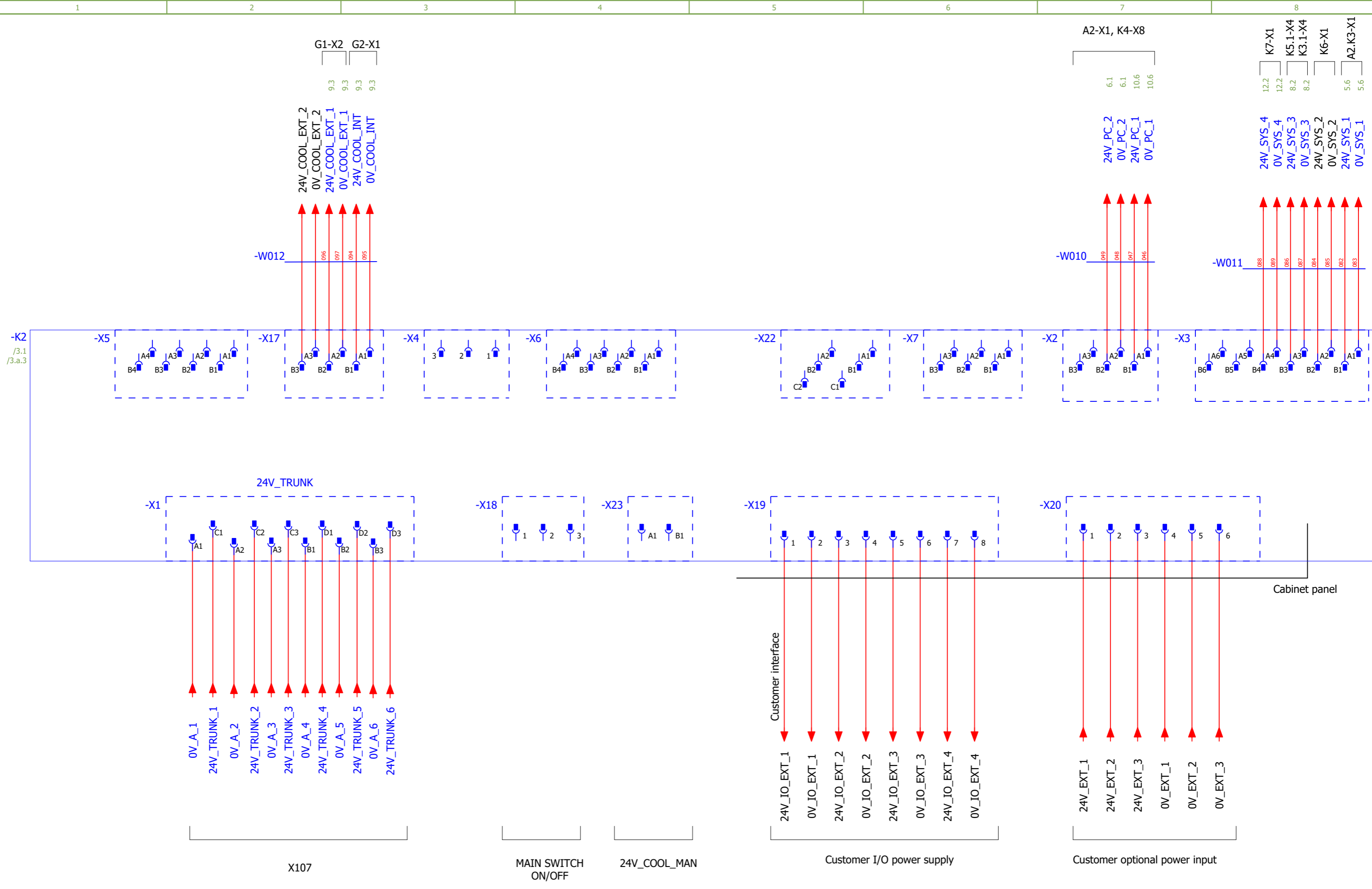
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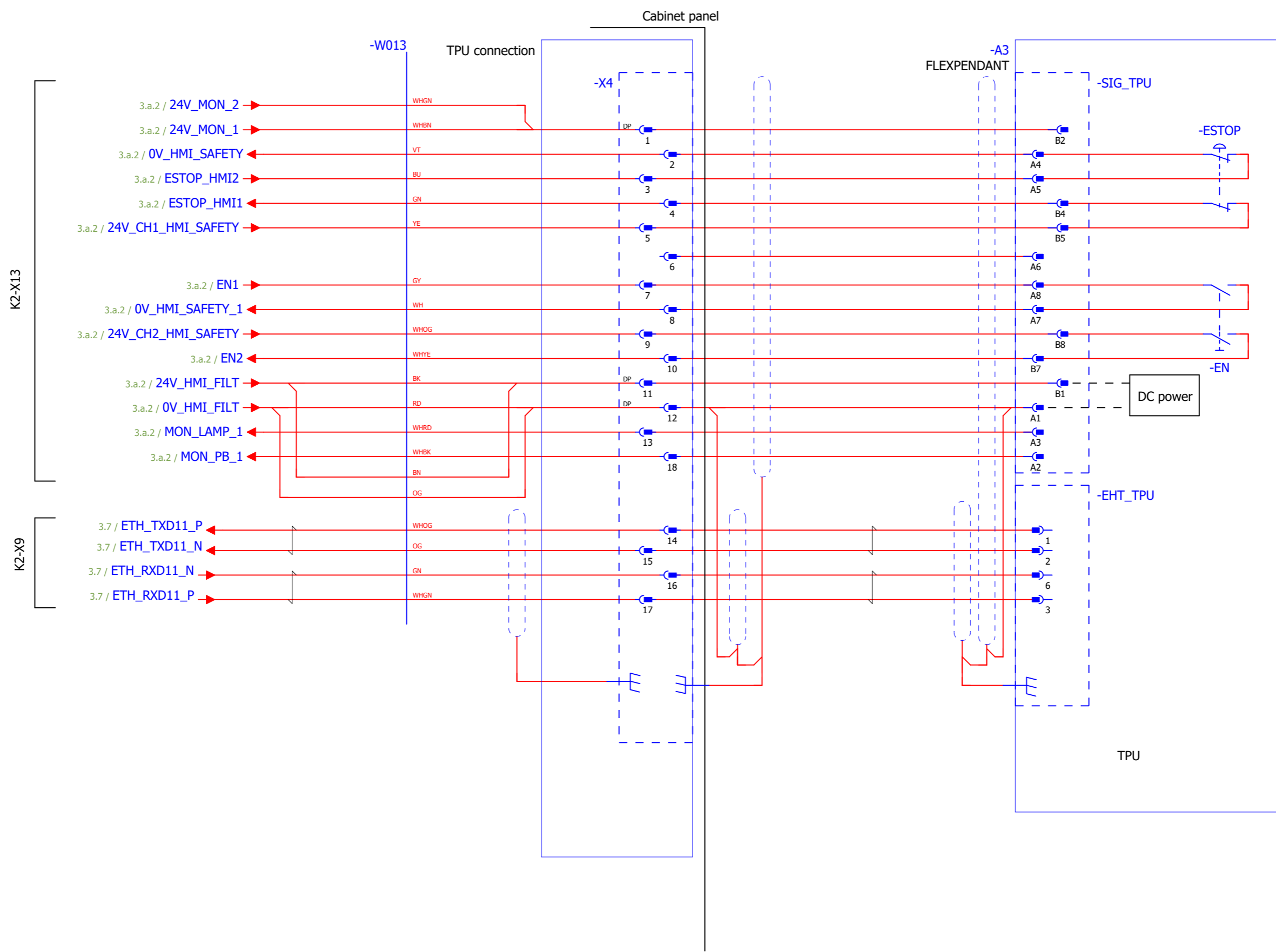
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TPU - HMI SIGNAL CONNECTORS /X4

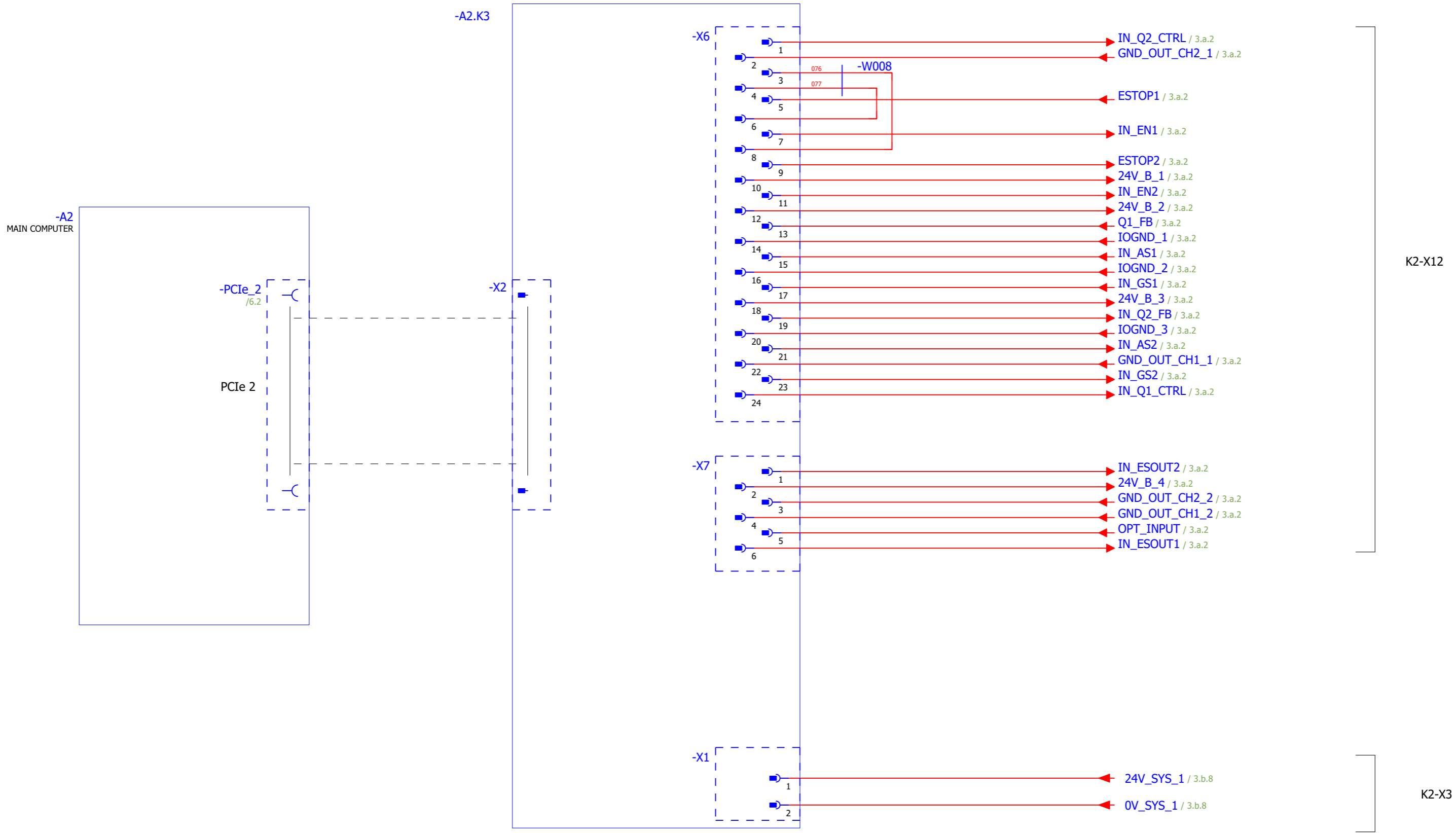
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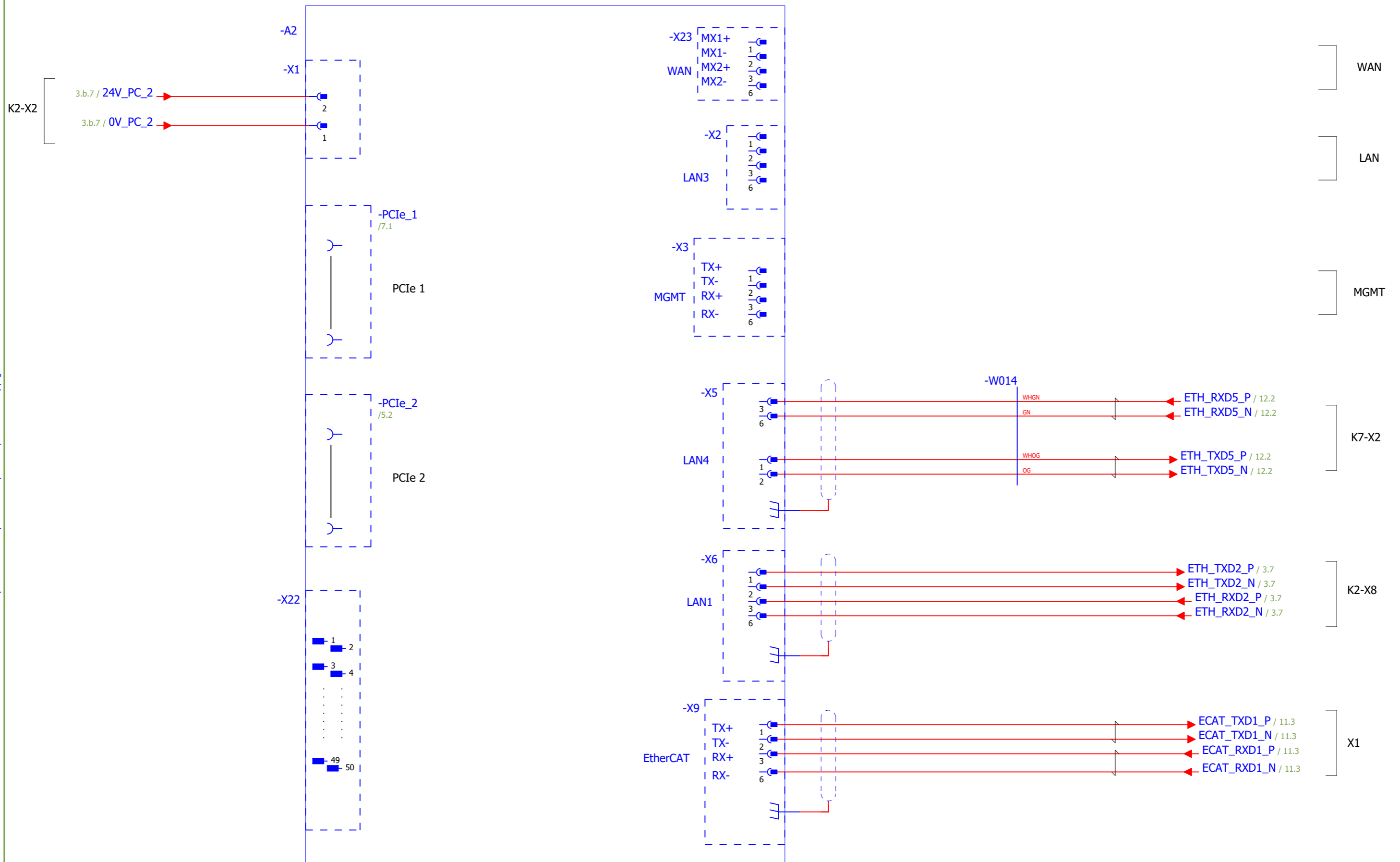
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SAFETY CONTROLLER /A2.K3

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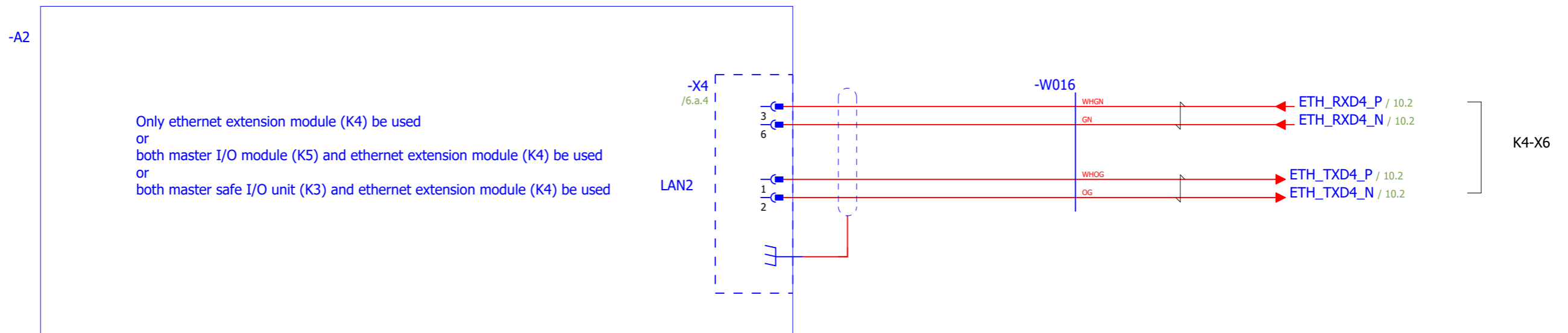
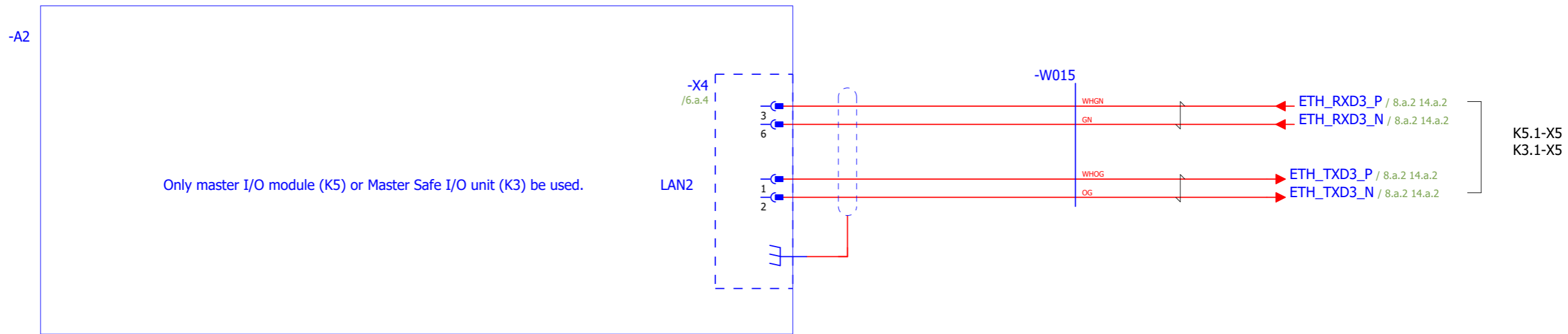
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MAIN COMPUTER /A2

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MAIN COMPUTER /A2

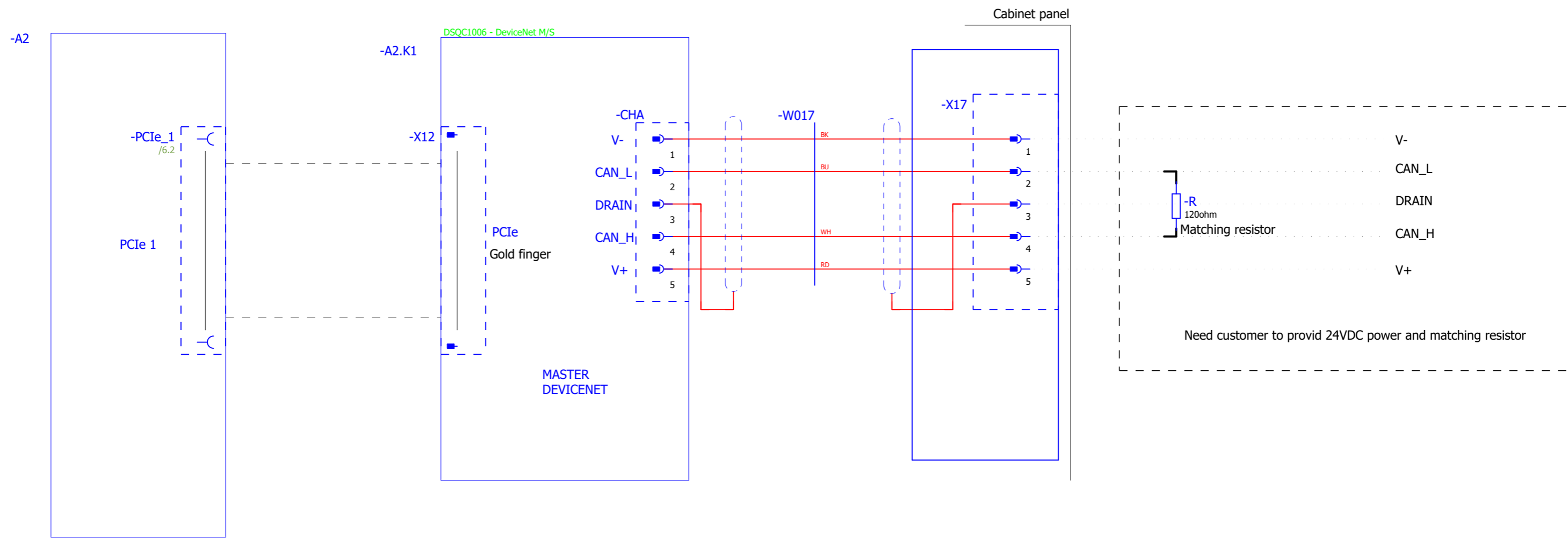
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FIELD BUS ADAPTER MASTER /A2.K1

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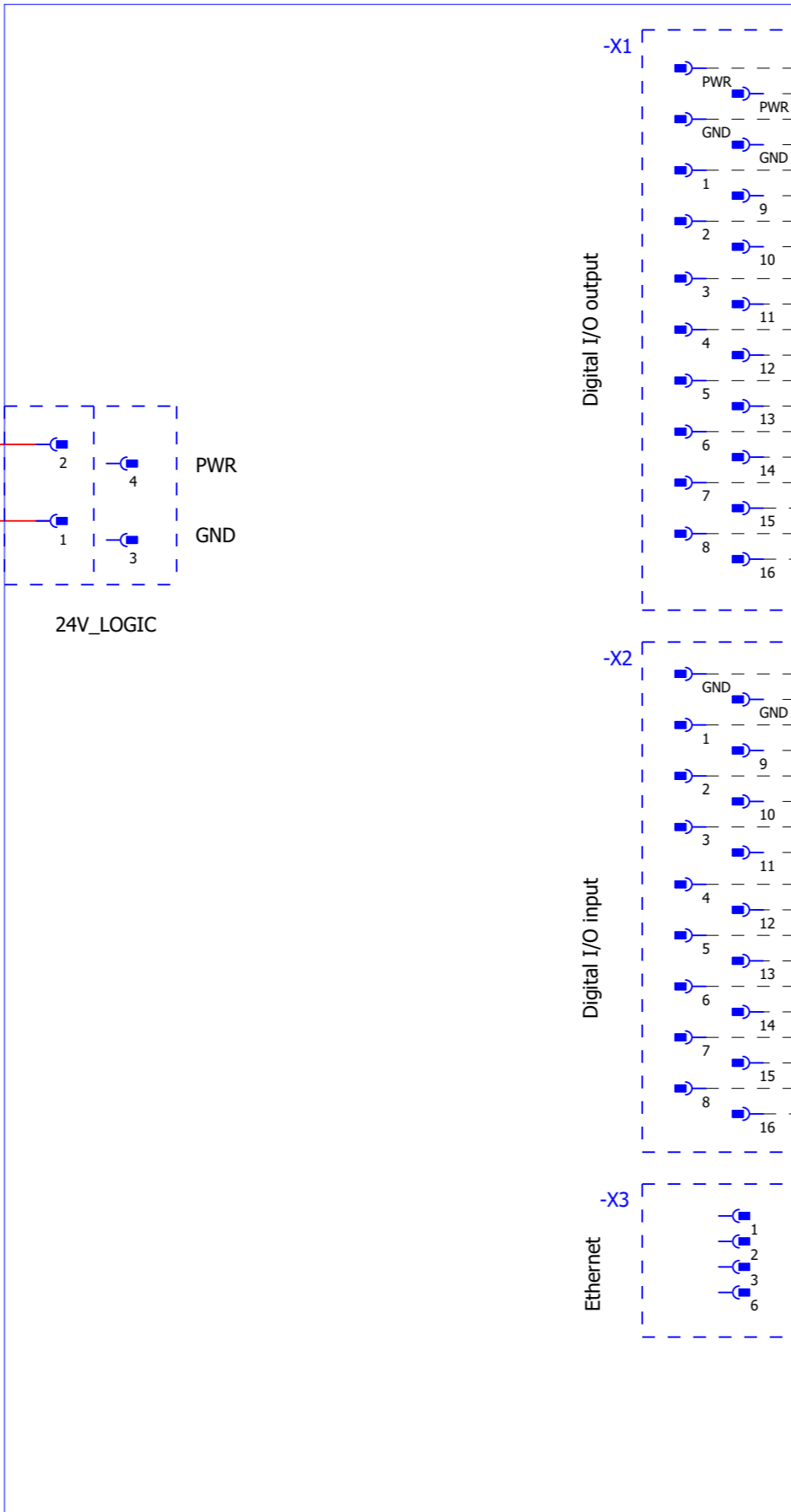
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K2-X3

3.b.8 14.2 / 24V_SYS_3
3.b.8 14.2 / 0V_SYS_3

-K5.1
MASTER I/O UNIT

-X4



-X1

Customer I/O interface

Digital I/O output

-X2

Customer I/O interface

Digital I/O input

-X3

Ethernet

PWR_DO
PWR_DO
GND_DO
GND_DO
1
9
2
10
3
11
4
12
5
13
6
14
7
15
8
16

24V_PROCESS
CUSTOMER DO
OUTPUT CH1~16

GND_DI
GND_DI
1
9
2
10
3
11
4
12
5
13
6
14
7
15
8
16

CUSTOMER DI
INPUT CH1~16

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MASTER I/O UNIT /K5.1

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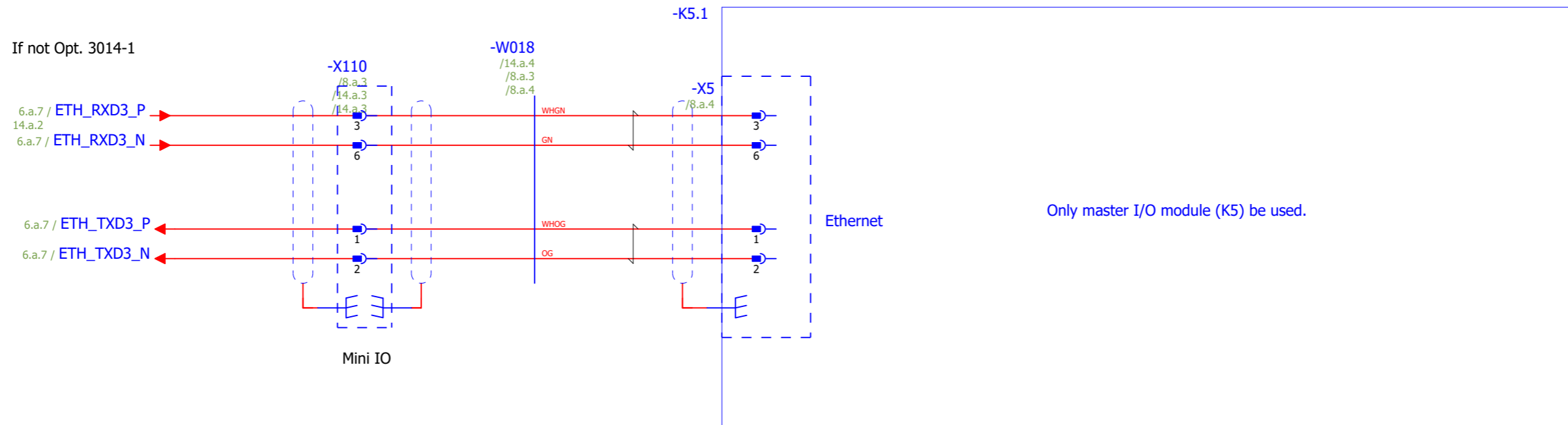
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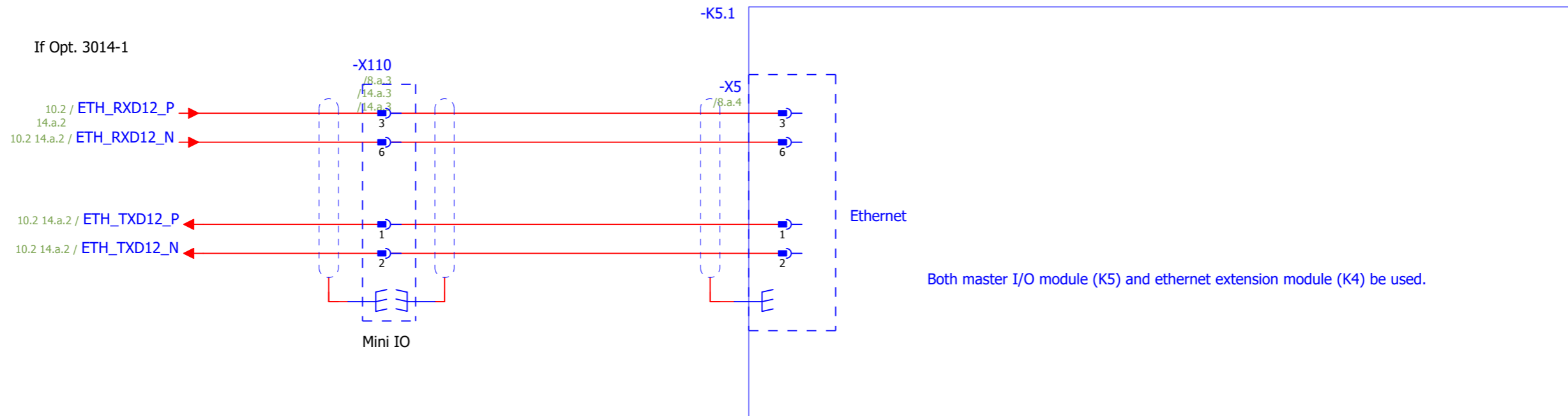
A2-X4

If not Opt. 3014-1



K4-X7

If Opt. 3014-1



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MASTER I/O UNIT /K5.1

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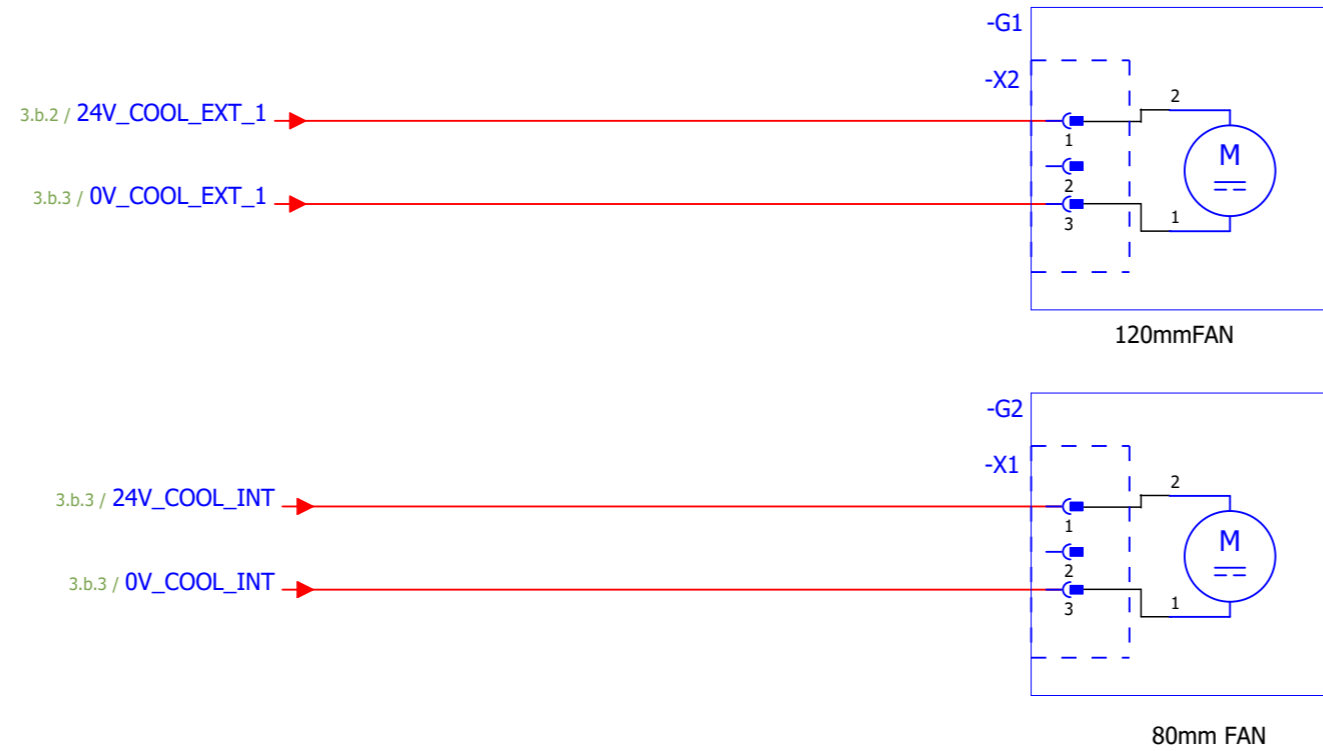
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K2-X17



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FAN COOLING CHANNEL /G1,2

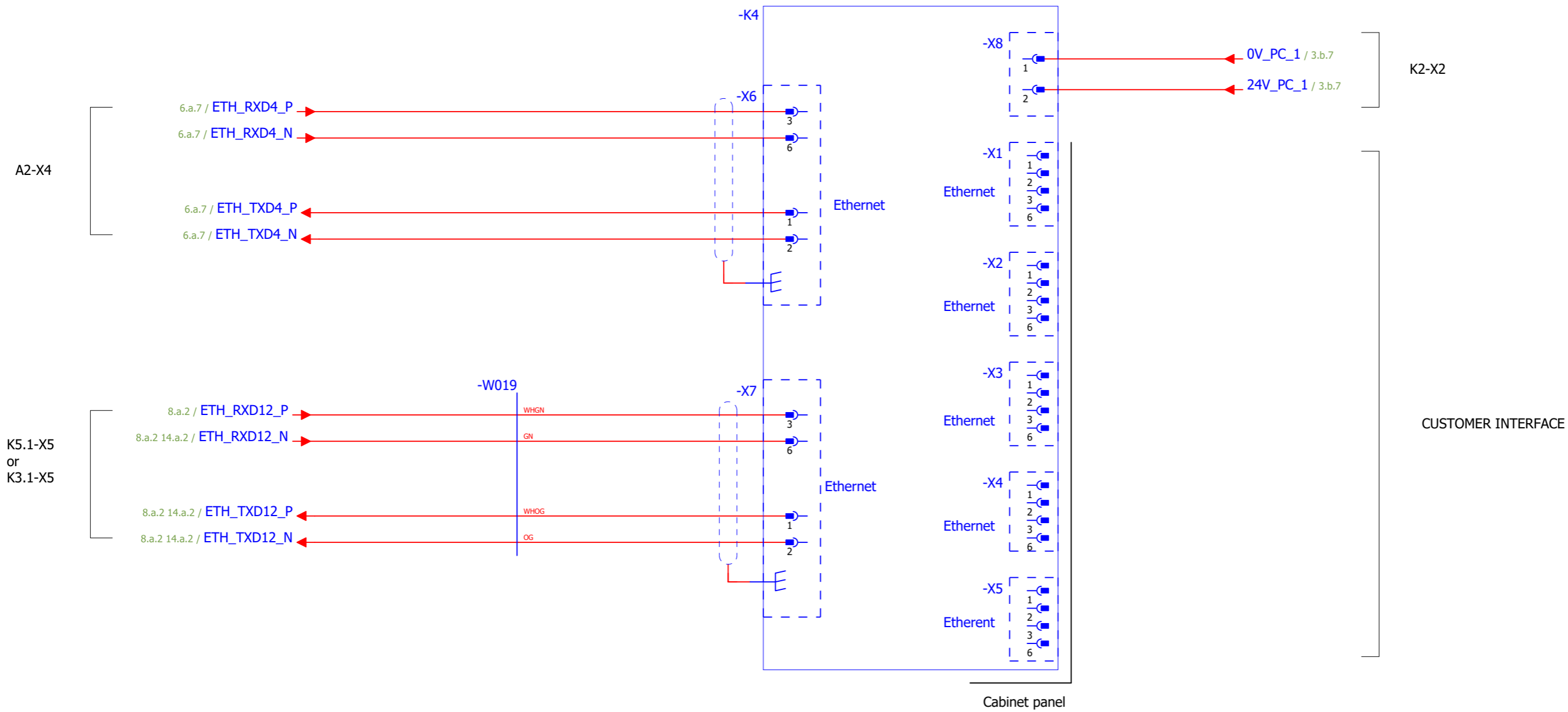
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Mounting location: + U

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ETHERNET SWITCH /K4

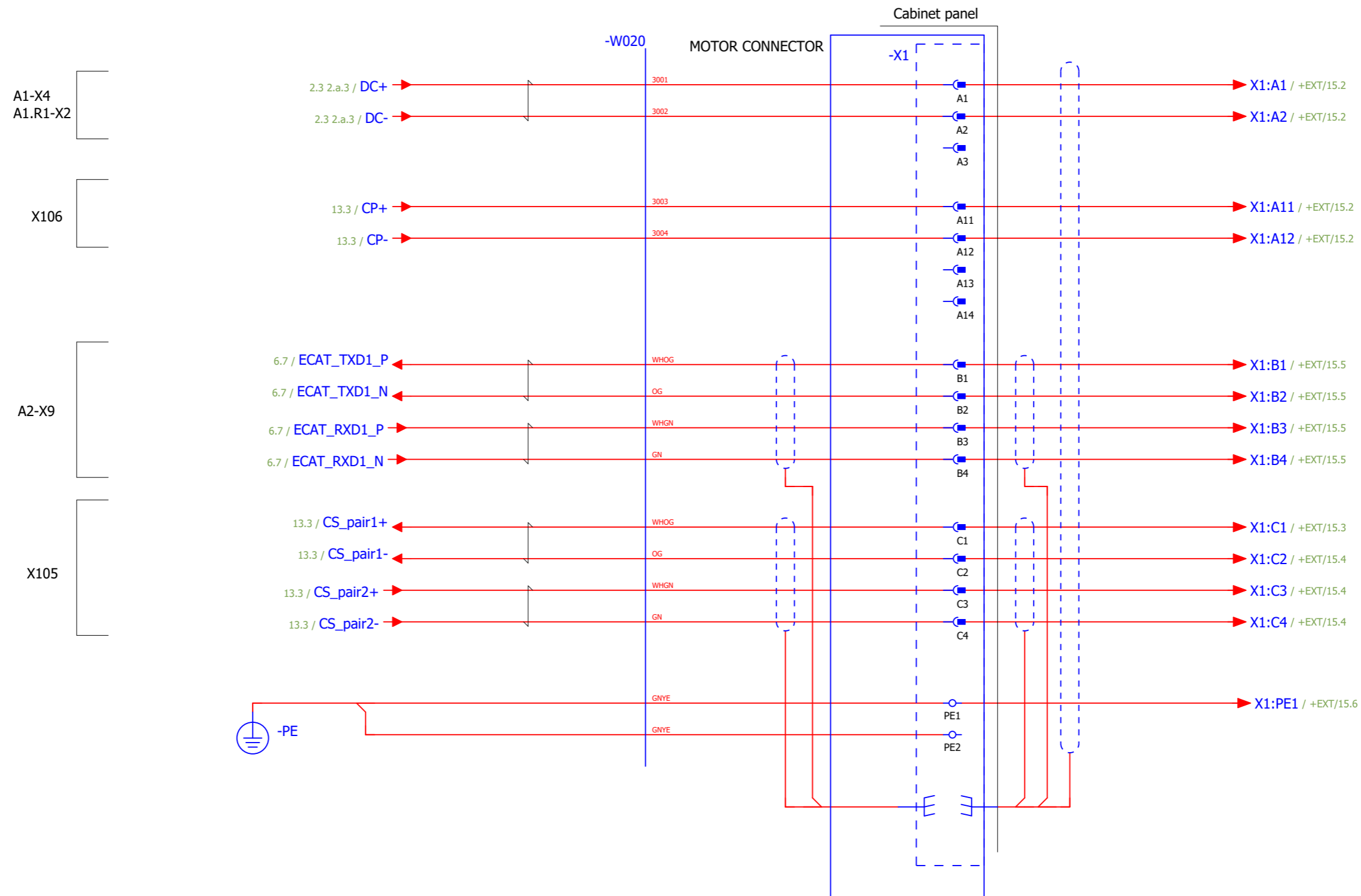
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to manipulator

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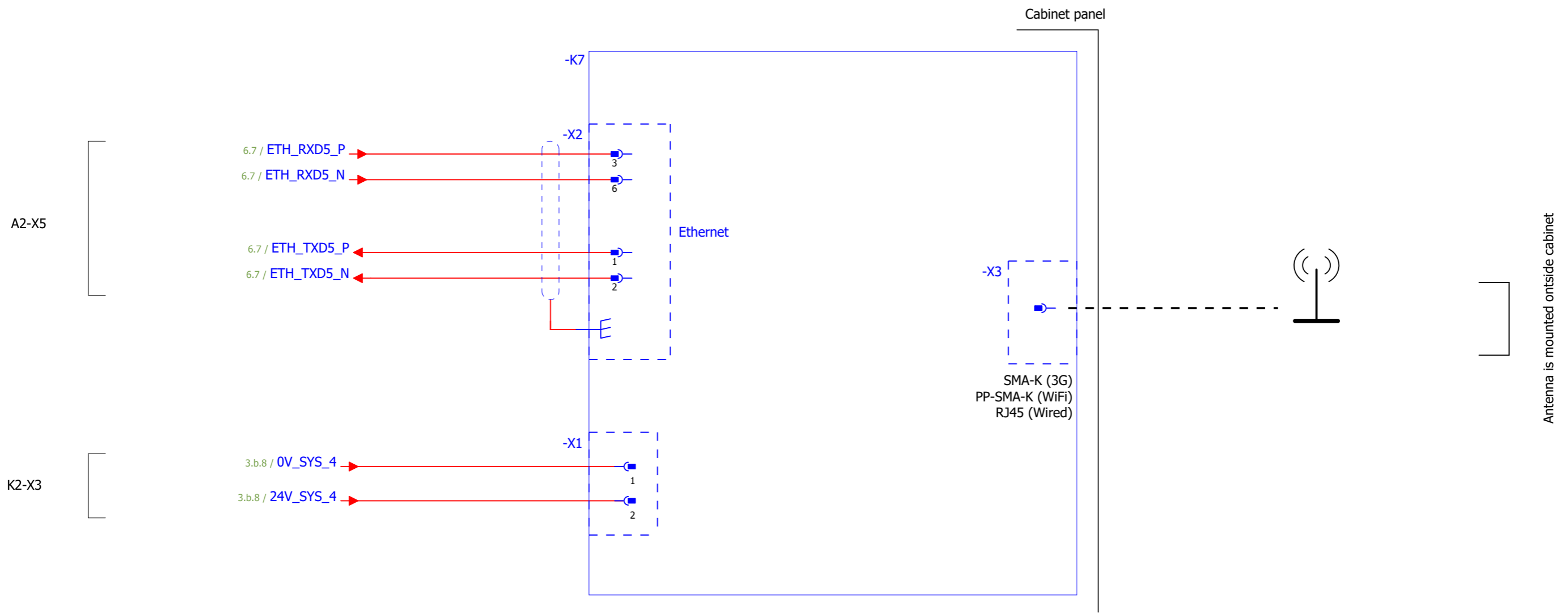
MOTOR CONNECTOR - X1

Status:
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Mounting location: + U

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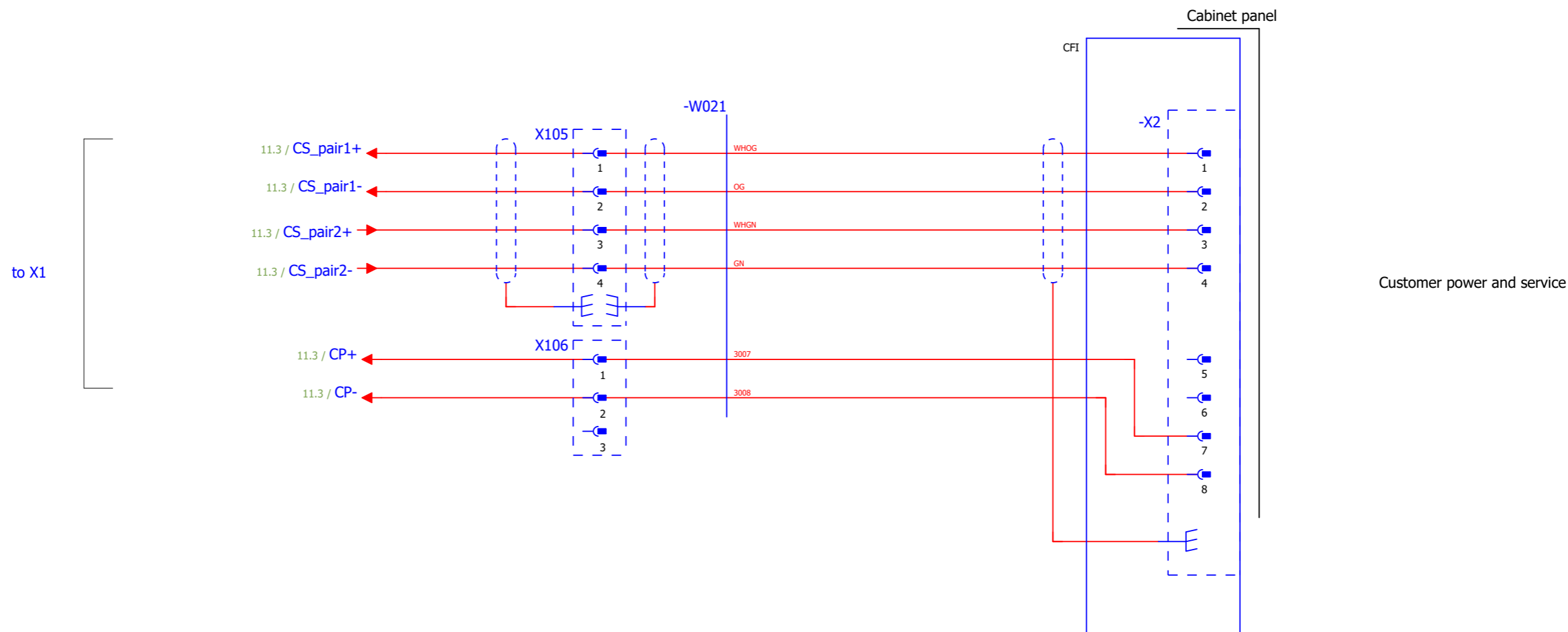
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CONNECTED SERVICES - 3G, WiFi, Wired /K7

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CUSTOMER FLANGE INTERFACE (CFI) /X2

Status:
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Mounting location: + U

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3HAC072448-009

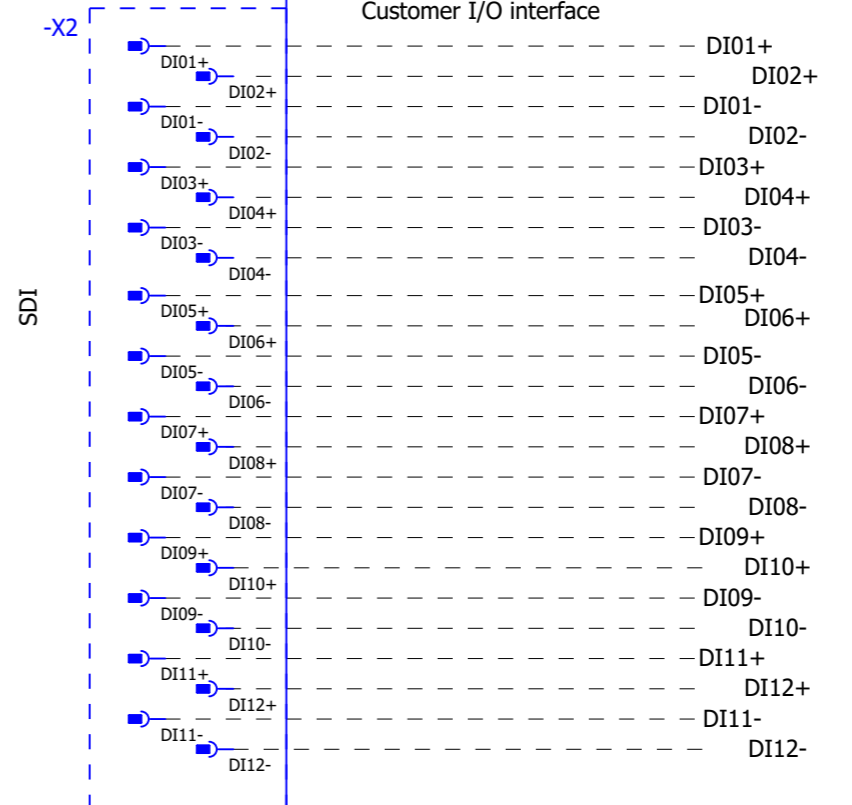
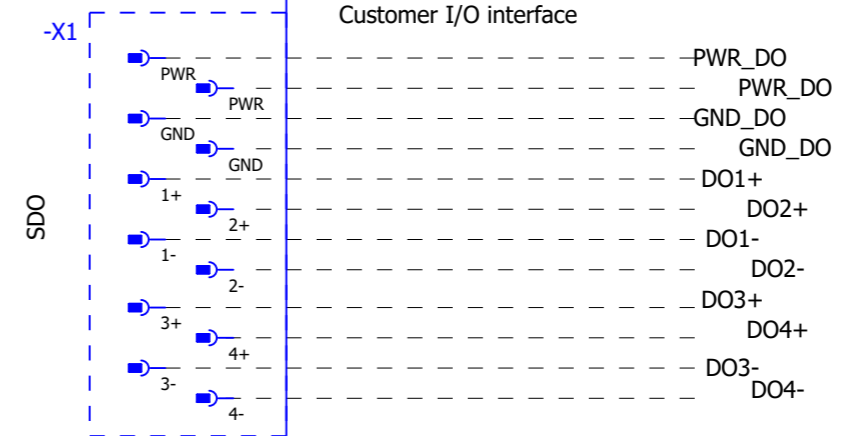
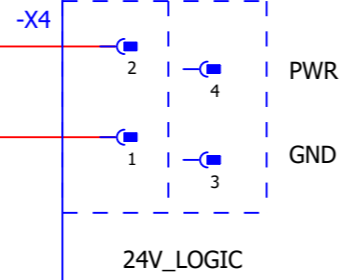
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K2-X3

3.b.8 8.2 / 24V_SYS_3
3.b.8 8.2 / 0V_SYS_3

-K3.1
MASTER SAFE I/O UNIT



24V_PROCESS
CUSTOMER SDO
OUTPUT CH1~2

CUSTOMER SDI
INPUT CH1~12

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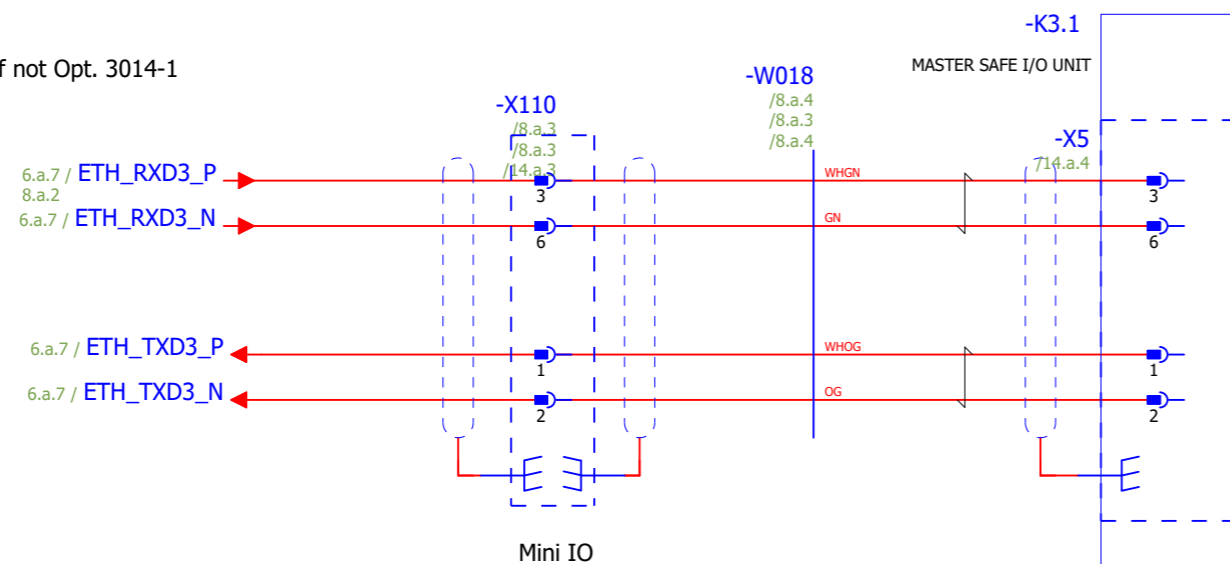
MASTER SAFE I/O UNIT/K3.1

Status: Approved	High-level function: = SCH Mounting location: + U
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A2-X4

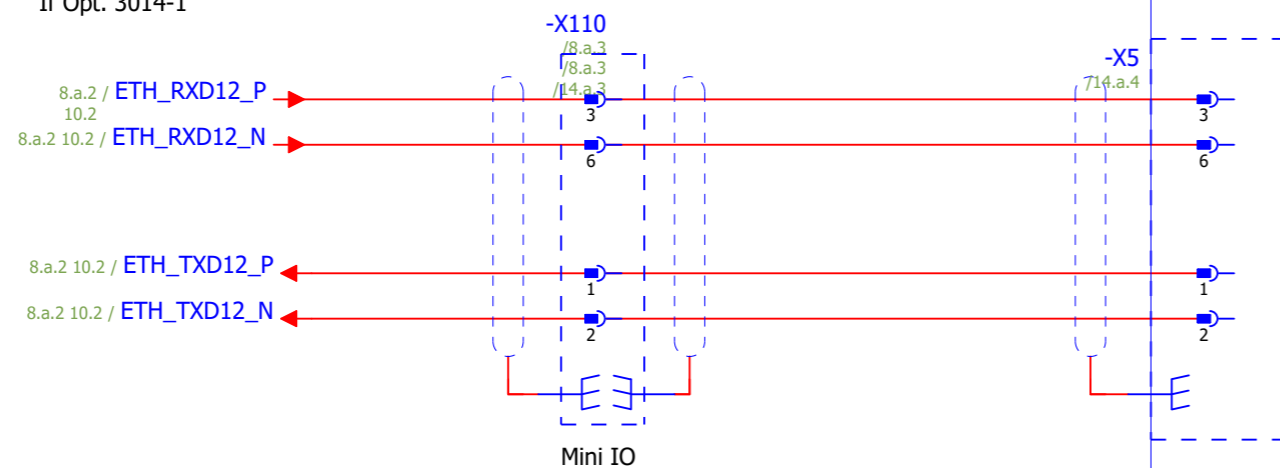
If not Opt. 3014-1



Ethernet Only master safe I/O unit (K3.1) be used.

K4-X7

If Opt. 3014-1



Ethernet Both master safe I/O unit (K3.1) and ethernet extension module (K4) be used.

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MASTER SAFE I/O UNIT/K3.1

Status:
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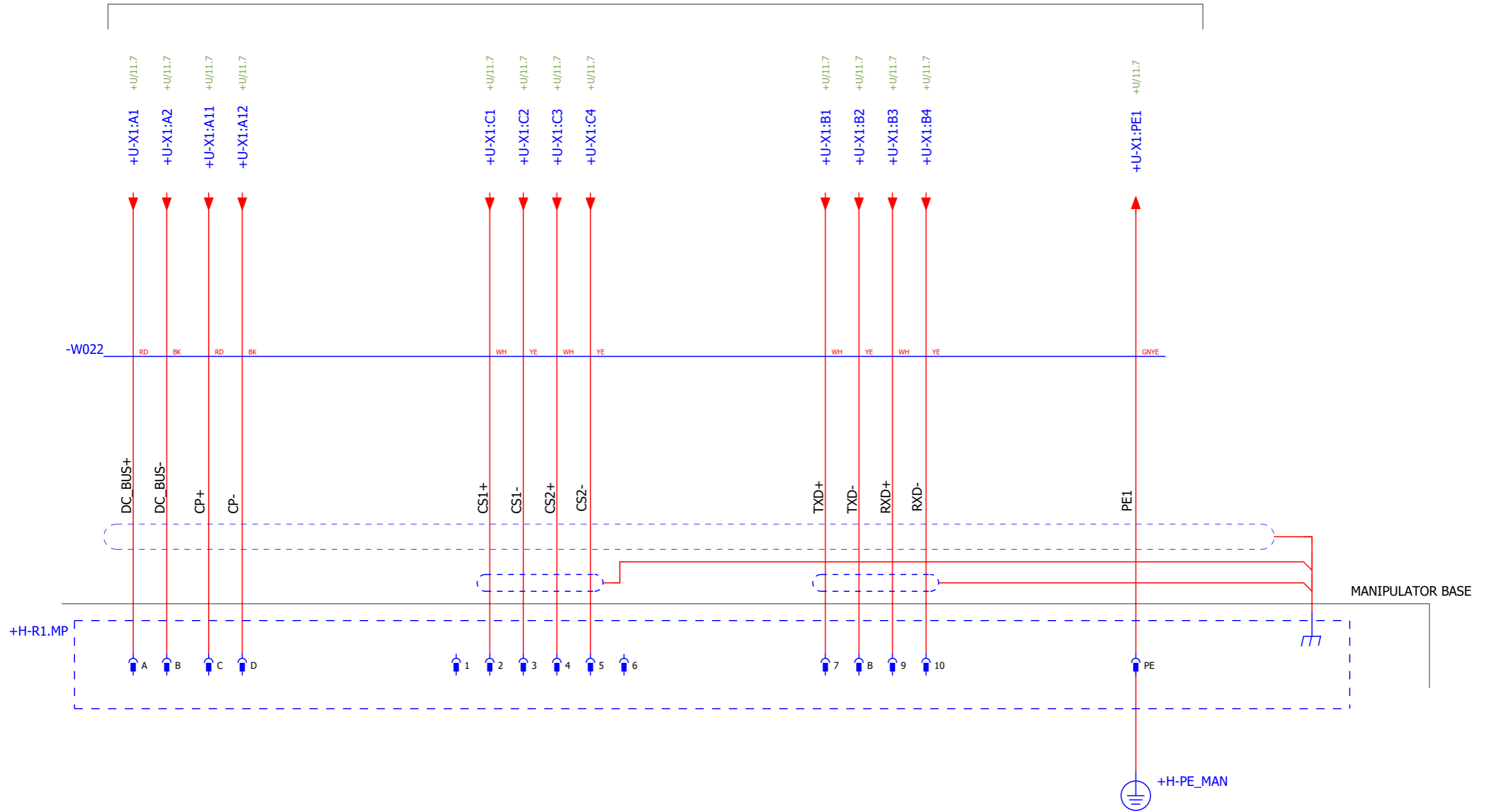
High-level function: = SCH
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CRB 15000 cabinet

Controller interface
+U-X1



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MANIPULATOR CONNECTION CRB15000

Status:
Approved

High-level function: = SCH
Mounting location: + EXT

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Cable diagram

-W001

Harness Power input single phase

				Connection point A				Connection point B						
Wire no.	Specification	Size (AWG)	Lgth. (mm)	Item description	: term	Type	Ref.	Item description	: term	Type	Ref.	Remark	Rev	Page
GNYE	GNYE, UL1015	14		A1-X1	1			PE				PE		1
GNYE	GNYE, UL1015	14		A1-X1	1			PE				PE		
167	BK, UL1015, Twisted-2	14		A1-X1	2			Q0	2			L		
167	BK, UL1015, Twisted-2	14		A1-X1	2			Q0	2			L		
168	BK, UL1015, Twisted-2	14		A1-X1	3			Q0	5			N		
168	BK, UL1015, Twisted-2	14		A1-X1	3			Q0	5			N		
GNYE	GNYE, UL1015	14		X0		PE		PE				PE		
165	BK, UL1015, Twisted-1	14		X0	1			Q0	1			L		
166	BK, UL1015, Twisted-1	14		X0	2			Q0	4			N		

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Cable diagram =SCH+U-W001

Status:
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High-level function: = Report
Mounting location: +

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Next: 008
Total: 53

Cable diagram

-W002

Harness 24V_Trunk extension

				Connection point A				Connection point B						
Wire no.	Specification	Size (AWG)	Lgth. (mm)	Item description	: term	Type	Ref.	Item description	: term	Type	Ref.	Remark	Rev	Page
3009	BU UL1569	18		A1-X6	1			X107	1			24V_TRUNK		2
3009	BU UL1569	18		A1-X6	1			X107	1			24V_TRUNK		
3010	BU UL1569	18		A1-X6	3			X107	3			24V_TRUNK		
3010	BU UL1569	18		A1-X6	3			X107	3			24V_TRUNK		
3011	BU UL1569	18		A1-X6	6			X107	6			24V_TRUNK		
3011	BU UL1569	18		A1-X6	6			X107	6			24V_TRUNK		
3012	BU, UL1569	18		A1-X6	7			X107	7			0V_A		
3012	BU, UL1569	18		A1-X6	7			X107	7			0V_A		
3013	BU, UL1569	18		A1-X6	9			X107	9			0V_A		
3013	BU, UL1569	18		A1-X6	9			X107	9			0V_A		
3014	BU, UL1569	18		A1-X6	12			X107	12			0V_A		
3014	BU, UL1569	18		A1-X6	12			X107	12			0V_A		

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Cable diagram -W003

Harness 24V_Trunk

				Connection point A				Connection point B						
Wire no.	Specification	Size (AWG)	Lgth. (mm)	Item description	: term	Type	Ref.	Item description	: term	Type	Ref.	Remark	Rev	Page
109	BU, UL1569	18		X107	1			X107	1			24V		2
110	BU, UL1569	18		X107	2			X107	2			24V		
111	BU, UL1569	18		X107	3			X107	3			24V		
112	BU, UL1569	18		X107	4			X107	4			24V		
113	BU, UL1569	18		X107	5			X107	5			24V		
114	BU, UL1569	18		X107	6			X107	6			24V		
115	BU, UL1569	18		X107	7			X107	7			0V		
116	BU, UL1569	18		X107	8			X107	8			0V		
117	BU, UL1569	18		X107	9			X107	9			0V		
118	BU, UL1569	18		X107	10			X107	10			0V		
119	BU, UL1569	18		X107	11			X107	11			0V		
120	BU, UL1569	18		X107	12			X107	12			0V		

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Status:
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Cable diagram

-W004

/

/

Harness AC_OK

Wire no.	Specification	Size (AWG)	Lgth. (mm)	Connection point A				Connection point B				Remark	Rev	Page
				Item descrtion	: term	Type	Ref.	Item descrtion	: term	Type	Ref.			
078	BU, UL1569	20		A1-X13	1			A1-X13	1			0V_AC_OK		2
078	BU, UL1569	20		A1-X13	1			K2-X10	2			0V_AC_OK		
079	BU, UL1569	20		A1-X13	2			A1-X13	2			AC_OK		

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Cable diagram -W005

Harness TempSensor with cable

				Connection point A				Connection point B						
Wire no.	Specification	Size (AWG)	Lgth. (mm)	Item description	: term	Type	Ref.	Item description	: term	Type	Ref.	Remark	Rev	Page
1	WH build-in temp sensor			K2-X21	B1			B4				V+		3
2	WH build-in temp sensor			K2-X21	A1			B4				SENSOR1		

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Cable diagram =SCH+U-W005

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Cable diagram

-W006

/ / Harness Ethernet

				Connection point A				Connection point B						
Wire no.	Specification	Size (AWG)	Lgth. (mm)	Item description	: term	Type	Ref.	Item description	: term	Type	Ref.	Remark	Rev	Page
Shield				A2-X6-SHELL				K2-X8-SHELL						3
WHOG	Twisted_1, 3HAC025999-001 cat5e SF/UTP 26			A2-X6	1			K2-X8	1			TXD+		
OG	Twisted_1, 3HAC025999-001 cat5e SF/UTP 26			A2-X6	2			K2-X8	2			TXD-		
WHGN	Twisted_2, 3HAC025999-001 cat5e SF/UTP 26			A2-X6	3			K2-X8	3			RXD+		
GN	Twisted_2, 3HAC025999-001 cat5e SF/UTP 26			A2-X6	6			K2-X8	6			RXD-		

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Cable diagram

-W007

Harness dual channel safety

				Connection point A				Connection point B						
Wire no.	Specification	Size (AWG)	Lgth. (mm)	Item description	: term	Type	Ref.	Item description	: term	Type	Ref.	Remark	Rev	Page
050	BU UL1569, 3HAB8303-16	26		A2.K3-X6	1			K2-X12	A1			IN_Q2_CTRL		3.a
064	BU UL1569, 3HAB8303-16	26		A2.K3-X6	2			K2-X12	B1			GND_OUT-CH2		
051	BU UL1569, 3HAB8303-16	26		A2.K3-X6	5			K2-X12	A2			ESTOP1		
052	BU UL1569, 3HAB8303-16	26		A2.K3-X6	7			K2-X12	A3			IN_EN1		
053	BU UL1569, 3HAB8303-16	26		A2.K3-X6	9			K2-X12	A4			ESTOP2		
065	BU UL1569, 3HAB8303-16	26		A2.K3-X6	10			K2-X12	B4			24V_B		
054	BU UL1569, 3HAB8303-16	26		A2.K3-X6	11			K2-X12	A5			IN_EN2		
066	BU UL1569, 3HAB8303-16	26		A2.K3-X6	12			K2-X12	B5			24V_B		
055	BU UL1569, 3HAB8303-16	26		A2.K3-X6	13			K2-X12	A6			Q1_FB		
067	BU UL1569, 3HAB8303-16	26		A2.K3-X6	14			K2-X12	B6			IOGND		
056	BU UL1569, 3HAB8303-16	26		A2.K3-X6	15			K2-X12	A7			IN_AS1		
068	BU UL1569, 3HAB8303-16	26		A2.K3-X6	16			K2-X12	B7			IOGND		
057	BU UL1569, 3HAB8303-16	26		A2.K3-X6	17			K2-X12	A8			IN_GS1		
069	BU UL1569, 3HAB8303-16	26		A2.K3-X6	18			K2-X12	B8			24V_B		
058	BU UL1569, 3HAB8303-16	26		A2.K3-X6	19			K2-X12	A9			IN_Q2_FB		
070	BU UL1569, 3HAB8303-16	26		A2.K3-X6	20			K2-X12	B9			IOGND		
059	BU UL1569, 3HAB8303-16	26		A2.K3-X6	21			K2-X12	A10			IN_AS2		
071	BU UL1569, 3HAB8303-16	26		A2.K3-X6	22			K2-X12	B10			GND_OUT_CH1		
060	BU UL1569, 3HAB8303-16	26		A2.K3-X6	23			K2-X12	A11			IN-GS2		
072	BU UL1569, 3HAB8303-16	26		A2.K3-X6	24			K2-X12	B11			IN_Q1_CTRL		
061	BU UL1569, 3HAB8303-16	26		A2.K3-X7	1			K2-X12	A12			IN_OPT_OUT2		
073	BU UL1569, 3HAB8303-16	26		A2.K3-X7	2			K2-X12	B12			24V_B		
062	BU UL1569, 3HAB8303-16	26		A2.K3-X7	3			K2-X12	A13			GND_OUT_CH2		
074	BU UL1569, 3HAB8303-16	26		A2.K3-X7	4			K2-X12	B13			GND_OUT_CH1		
063	BU UL1569, 3HAB8303-16	26		A2.K3-X7	5			K2-X12	A14			OPT_INPUT		
075	BU UL1569, 3HAB8303-16	26		A2.K3-X7	6			K2-X12	B14			IN_OPT_OUT1		

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Cable diagram =SCH+U-W007

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Cable diagram

-W010

/ Harness 24V_PC

Wire no.	Specification	Size (AWG)	Lgth. (mm)	Connection point A				Connection point B				Remark	Rev	Page
				Item description	: term	Type	Ref.	Item description	: term	Type	Ref.			
048	BU UL1569, 3HAB8303-46	20		A2-X1	1			K2-X2	A2			0V_PC		3.b
049	BU UL1569, 3HAB8303-46	20		A2-X1	2			K2-X2	B2			24V_PC		
046	BU UL1569, 3HAB8303-46	20		K4-X8	1			K2-X2	A1			0V_PC		
047	BU UL1569, 3HAB8303-46	20		K4-X8	2			K2-X2	B1			24V_PC		

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Cable diagram

-W011

Harness 24V_SYS

				Connection point A				Connection point B						
Wire no.	Specification	Size (AWG)	Lgth. (mm)	Item description	: term	Type	Ref.	Item description	: term	Type	Ref.	Remark	Rev	Page
082	BU UL1569, 3HAB8303-46	20		K2-X3	B1			A2.K3-X1	1			24V_SYS_1		3.b
083	BU UL1569, 3HAB8303-46	20		K2-X3	A1			A2.K3-X1	2			0V_SYS_1		
087	BU UL1569, 3HAB8303-46	20		K2-X3	A3			K5.1-X4	1			24V_SYS_3		
089	BU UL1569, 3HAB8303-46	20		K2-X3	A4			K7-X1	1			0V_SYS_4		
086	BU UL1569, 3HAB8303-46	20		K2-X3	B3			K5.1-X4	2			24V_SYS_3		
088	BU UL1569, 3HAB8303-46	20		K2-X3	B4			K7-X1	2			24V_SYS_4		

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Status:
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 Mounting location: +

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Cable diagram

-W012

Harness 24V_Cooling

				Connection point A				Connection point B						
Wire no.	Specification	Size (AWG)	Lgth. (mm)	Item description	: term	Type	Ref.	Item description	: term	Type	Ref.	Remark	Rev	Page
096	BU UL1569, 3HAB8303-46	20		G1-X2	1			K2-X17	B2			24V_COOLING_G1		3.b
097	BU UL1569, 3HAB8303-46	20		G1-X2	3			K2-X17	A2			0V_COOLING_G1		
094	BU UL1569, 3HAB8303-46	20		G2-X1	1			K2-X17	B1			24V_COOLING_G2		
095	BU UL1569, 3HAB8303-46	20		G2-X1	3			K2-X17	A1			0V_COOLING_G2		

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Cable diagram =SCH+U-W012

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Cable diagram

-W013

Harness TPU connection

				Connection point A				Connection point B						
Wire no.	Specification	Size (AWG)	Lgth. (mm)	Item description	: term	Type	Ref.	Item description	: term	Type	Ref.	Remark	Rev	Page
Shield				K2-X9-SHELL				X4-SHELL						4
WHGN	Twisted_2, 3HAC025999-001 cat5e SF/UTP	26		K2-X9	1			X4	17			RXD+		
GN	Twisted_2, 3HAC025999-001 cat5e SF/UTP	26		K2-X9	2			X4	16			RXD-		
WHOG	Twisted_1, 3HAC025999-001 cat5e SF/UTP	26		K2-X9	3			X4	14			TXD+		
OG	Twisted_1, 3HAC025999-001 cat5e SF/UTP	26		K2-X9	6			X4	15			TXD-		
YE	3HAC063242-032, 16wires	22		K2-X13	A1			X4	5			ESTOP1_TPU_A		
GN	3HAC063242-032, 16wires	22		K2-X13	A2			X4	4			ESTOP1_TPU_B		
BU	3HAC063242-032, 16wires	22		K2-X13	A3			X4	3			ESTOP2_TPU_A		
VT	3HAC063242-032, 16wires	22		K2-X13	A4			X4	2			ESTOP2_TPU_B		
BK	3HAC063242-032, 16wires	22		K2-X13	A5			X4	11			24V_TPU		
BN	3HAC063242-032, 16wires	22		K2-X13	A5			X4	11			24V_TPU		
WHRD	3HAC063242-032, 16wires	22		K2-X13	A6			X4	13			MON_LAMP		
WHBK	3HAC063242-032, 16wires	22		K2-X13	A7			X4	18			MON_PB		
GY	3HAC063242-032, 16wires	22		K2-X13	B1			X4	7			EN1		
WH	3HAC063242-032, 16wires	22		K2-X13	B2			X4	8			GND		
WHYE	3HAC063242-032, 16wires	22		K2-X13	B3			X4	10			EN2		
WHOG	3HAC063242-032, 16wires	22		K2-X13	B4			X4	9			24V_CH2		
OG	3HAC063242-032, 16wires	22		K2-X13	B5			X4	12			GND_TPU		
RD	3HAC063242-032, 16wires	22		K2-X13	B5			X4	12			GND_TPU		
WHBN	3HAC063242-032, 16wires	22		K2-X13	B6			X4	1			24V_MON		

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Prepared by, date:			Approved by, date: Per V. Carlsson		Document no.		Page: 017 Next: 018 Total: 53

Cable diagram

-W014

Harness Ethernet with Mini-IO

				Connection point A				Connection point B						
Wire no.	Specification	Size (AWG)	Lgth. (mm)	Item description	: term	Type	Ref.	Item description	: term	Type	Ref.	Remark	Rev	Page
Shield				A2-X5-SHELL				K7-X2						6
WHOG	Twisted_1, 3HAC025999-001 cat5e SF/UTP	26		A2-X5	1			K7-X2	1			TXD+		
OG	Twisted_1, 3HAC025999-001 cat5e SF/UTP	26		A2-X5	2			K7-X2	2			TXD-		
WHGN	Twisted_2, 3HAC025999-001 cat5e SF/UTP	26		A2-X5	3			K7-X2	3			RXD+		
GN	Twisted_2, 3HAC025999-001 cat5e SF/UTP	26		A2-X5	6			K7-X2	6			RXD-		

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Prepared by, date:	Approved by, date: Per V. Carlsson			Document no.	Page: 018 Next: 019 Total: 53

Cable diagram -W015 / Harness Ethernet

				Connection point A				Connection point B						
Wire no.	Specification	Size (AWG)	Lgth. (mm)	Item description	: term	Type	Ref.	Item description	: term	Type	Ref.	Remark	Rev	Page
Shield				A2-X4				X110						6.a
WHOG	Twisted_1, 3HAC025999-001 cat5e SF/UTP 26			A2-X4	1			X110	1			TXD+		
WHOG	Twisted_1, 3HAC025999-001 cat5e SF/UTP 26			A2-X4	1			X110	1			TXD+		
OG	Twisted_1, 3HAC025999-001 cat5e SF/UTP 26			A2-X4	2			X110	2			TXD-		
OG	Twisted_1, 3HAC025999-001 cat5e SF/UTP 26			A2-X4	2			X110	2			TXD-		
WHGN	Twisted_2, 3HAC025999-001 cat5e SF/UTP 26			A2-X4	3			X110	3			RXD+		
GN	Twisted_2, 3HAC025999-001 cat5e SF/UTP 26			A2-X4	6			X110	6			RXD-		
GN	Twisted_2, 3HAC025999-001 cat5e SF/UTP 26			A2-X4	6			X110	6			RXD-		

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Prepared by, date:				Approved by, date: Per V. Carlsson			Document no.		Page: 019	
								Next: 020		
							Total: 53			

Cable diagram

-W016

Harness Ethernet

				Connection point A				Connection point B						
Wire no.	Specification	Size (AWG)	Lgth. (mm)	Item description	: term	Type	Ref.	Item description	: term	Type	Ref.	Remark	Rev	Page
Shield				A2-X4-SHELL				K4-X6-SHELL						6.a
WHOG	Twisted_1, 3HAC025999-001 cat5e SF/UTP 26			A2-X4	1			K4-X6	1			TXD+		
OG	Twisted_1, 3HAC025999-001 cat5e SF/UTP 26			A2-X4	2			K4-X6	2			TXD-		
WHGN	Twisted_2, 3HAC025999-001 cat5e SF/UTP 26			A2-X4	3			K4-X6	3			RXD+		
GN	Twisted_2, 3HAC025999-001 cat5e SF/UTP 26			A2-X4	6			K4-X6	6			RXD-		

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Cable diagram -W017

Harness DeviceNet connection

				Connection point A				Connection point B						
Wire no.	Specification	Size (AWG)	Lgth. (mm)	Item description	: term	Type	Ref.	Item description	: term	Type	Ref.	Remark	Rev	Page
BK	3HAB8277-1, 2 pair	22		A2.K1-CHA	1			X17	1			V-		7
BU	3HAB8277-1, 2 pair	24		A2.K1-CHA	2			X17	2			CAN_L		
Shield				A2.K1-CHA	3			X17	3					
WH	3HAB8277-1, 2 pair	24		A2.K1-CHA	4			X17	4			CAN_H		
RD	3HAB8277-1, 2 pair	22		A2.K1-CHA	5			X17	5			V+		

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Cable diagram -W018

Harness Ethernet with Mini-IO

				Connection point A				Connection point B						
Wire no.	Specification	Size (AWG)	Lgth. (mm)	Item description	: term	Type	Ref.	Item description	: term	Type	Ref.	Remark	Rev	Page
Shield				K5.1-X5				X110						8.a
WHOG	Twisted_1, 3HAC025999-001 cat5e SF/UTP 26			K5.1-X5	1			X110	1			TXD+		
OG	Twisted_1, 3HAC025999-001 cat5e SF/UTP 26			K5.1-X5	2			X110	2			TXD-		
WHGN	Twisted_2, 3HAC025999-001 cat5e SF/UTP 26			K5.1-X5	3		LAN4	X110	3		LAN4	RXD+		
GN	Twisted_2, 3HAC025999-001 cat5e SF/UTP 26			K5.1-X5	6			X110	6			RXD-		

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Cable diagram

-W019

/ Harness Ethernet

				Connection point A				Connection point B						
Wire no.	Specification	Size (AWG)	Lgth. (mm)	Item description	: term	Type	Ref.	Item description	: term	Type	Ref.	Remark	Rev	Page
Shield				K4-X7-SHELL				X110-SHELL						10
WHOG	Twisted_1, 3HAC025999-001 cat5e SF/UTP 26			K4-X7	1			X110	1			TXD+		
OG	Twisted_1, 3HAC025999-001 cat5e SF/UTP 26			K4-X7	2			X110	2			TXD-		
WHGN	Twisted_2, 3HAC025999-001 cat5e SF/UTP 26			K4-X7	3		LAN4	X110	3		LAN4	RXD+		
GN	Twisted_2, 3HAC025999-001 cat5e SF/UTP 26			K4-X7	6			X110	6			RXD-		

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Cable diagram =SCH+U-W019

Status: Approved	High-level function: = Report Mounting location: +
Document no.	Page: 023 Next: 024 Total: 53

Cable diagram

-W020

/ Harness Motors power ULV

				Connection point A				Connection point B						
Wire no.	Specification	Size (AWG)	Lgth. (mm)	Item description	: term	Type	Ref.	Item description	: term	Type	Ref.	Remark	Rev	Page
3001	BK UL1015, Twisted_5	12		A1-X4	1			X1	A1			DC_BUS+		11
3002	BK UL1015, Twisted_5	12		A1-X4	2			X1	A2			DC_BUS-		
3001	BK UL1015, Twisted_5	12		A1.R1-X2	1			X1	A1			DC_BUS+		
3002	BK UL1015, Twisted_5	12		A1.R1-X2	2			X1	A2			DC_BUS-		
Shield_1				A2-X9-SHELL				X1-SHELL						
WHOG	Twisted_1, 3HAC025999-001 cat5e SF/UTP	26		A2-X9	1			X1	B1			TXD+		
OG	Twisted_1, 3HAC025999-001 cat5e SF/UTP	26		A2-X9	2			X1	B2			TXD-		
WHGN	Twisted_2, 3HAC025999-001 cat5e SF/UTP	26		A2-X9	3			X1	B3			RXD+		
GN	Twisted_2, 3HAC025999-001 cat5e SF/UTP	26		A2-X9	6			X1	B4			RXD-		
GNYE	GNYE UL1015	14		PE				X1	PE1			PE		
GNYE	GNYE UL1015	14		PE				X1	PE2			PE		
Shield_2				X105-SHELL				X1-SHELL						
3003	BU UL1569	22		X106	1			X1	A11			Customer power+		
3004	BU UL1569	22		X106	2			X1	A12			Customer power-		
WHOG	Twisted_3, 3HAC025999-001 cat5e SF/UTP	26		X105	1			X1	C1			CS1+		
OG	Twisted_3, 3HAC025999-001 cat5e SF/UTP	26		X105	2			X1	C2			CS1-		
WHGN	Twisted_4, 3HAC025999-001 cat5e SF/UTP	26		X105	3			X1	C3			CS2+		
GN	Twisted_4, 3HAC025999-001 cat5e SF/UTP	26		X105	4			X1	C4			CS2-		

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				Connection point A				Connection point B						
Wire no.	Specification	Size (AWG)	Lgth. (mm)	Item description	: term	Type	Ref.	Item description	: term	Type	Ref.	Remark	Rev	Page
Shield				X105-SHELL				X2-SHELL						13
WHOG	Twisted_1, 3HAC025999-001 cat5e SF/UTP	26		X2	1			X105	1			CS1+		
OG	Twisted_1, 3HAC025999-001 cat5e SF/UTP	26		X2	2			X105	2			CS1-		
WHGN	Twisted_2, 3HAC025999-001 cat5e SF/UTP	26		X2	3			X105	3			CS2+		
GN	Twisted_2, 3HAC025999-001 cat5e SF/UTP	26		X2	4			X105	4			CS2-		
3007	BU UL1569	22		X2	7			X106	1			CP+		
3008	BU UL1569	26		X2	8			X106	2			CP-		

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Cable diagram

-W022

Control cable hybrid power

				Connection point A				Connection point B						
Wire no.	Specification	Size (AWG)	Lgth. (mm)	Item description	: term	Type	Ref.	Item description	: term	Type	Ref.	Remark	Rev	Page
CAT_Shielding				X1-SHELL				R1.MP-SHELL						15
CS_Shielding				X1-SHELL				R1.MP-SHELL						
Outer_Shielding				X1-SHELL				R1.MP-SHELL						
RD	3HAC073413-001 raw cable	12		X1	A1			R1.MP	A			DC_BUS+		
BK	3HAC073413-001 raw cable	12		X1	A2			R1.MP	B			DC_BUS-		
RD	3HAC073413-001 raw cable	18		X1	A11			R1.MP	C			CP+		
BK	3HAC073413-001 raw cable	18		X1	A12			R1.MP	D			CP-		
WH	3HAC073413-001 raw cable, Twisted_1	24		X1	B1			R1.MP	7			TXD+		
YE	3HAC073413-001 raw cable, Twisted_1	24		X1	B2			R1.MP	B			TXD-		
WH	3HAC073413-001 raw cable, Twisted_2	24		X1	B3			R1.MP	9			RXD+		
YE	3HAC073413-001 raw cable, Twisted_2	24		X1	B4			R1.MP	10			RXD-		
WH	3HAC073413-001 raw cable, Twisted_3	24		X1	C1			R1.MP	2			CS1+		
YE	3HAC073413-001 raw cable, Twisted_3	24		X1	C2			R1.MP	3			CS1-		
WH	3HAC073413-001 raw cable, Twisted_4	24		X1	C3			R1.MP	4			CS2+		
YE	3HAC073413-001 raw cable, Twisted_4	24		X1	C4			R1.MP	5			CS2-		
GNYE	3HAC073413-001 raw cable	14		X1	PE1			R1.MP	PE			PE		

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Cable diagram =SCH+EXT-W022

Status:	Approved	High-level function: = Report
Document no.	Page: 026	Mounting location: +
	Next: 027	
	Total: 53	

Cable diagram -W023

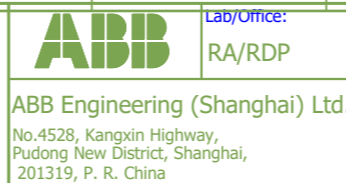
Harness BleedBox

				Connection point A				Connection point B						
Wire no.	Specification	Size (AWG)	Lgth. (mm)	Item description	: term	Type	Ref.	Item description	: term	Type	Ref.	Remark	Rev	Page
3200	BK UL1015, Twisted_5	12		A1-X4	1			A1.R1-X1	1			DC_BUS+		2.a
3201	BK UL1015, Twisted_5	12		A1-X4	2			A1.R1-X1	2			DC_BUS-		

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Cable diagram =SCH+U-W023

Status:
Approved

High-level function: = Report
 Mounting location: +

Document no. _____ Page: 027
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 Total: 53

Cable diagram

-W025

Harness Short-circuit connector

Wire no.	Specification	Size (AWG)	Lgth. (mm)	Connection point A				Connection point B				Remark	Rev	Page
				Item description	: term	Type	Ref.	Item description	: term	Type	Ref.			
121	BU UL1569, 3HAB8303-46	20		K2-X14	1			K2-X14	3			Short circuit		3.a
125	BU UL1569, 3HAB8303-46	20		K2-X14	2			K2-X14	4			Short circuit		
122	BU UL1569, 3HAB8303-46	20		K2-X14	5			K2-X14	7			Short circuit		
126	BU UL1569, 3HAB8303-46	20		K2-X14	6			K2-X14	8			Short circuit		

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Cable diagram =SCH+U-W025

Status: Approved

High-level function: = Report
Mounting location: +

Document no. Page: 028

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