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Latest revision:

Rev 05  
7/9/2020

Prepared by, date: Clyde

Approved by, date: Zhuan Yu



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Document no.

3HAC063898-009

High-level function: = Overview  
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Customer :  
 Drawing number : 3HAC063898-009  
 Drawing version : Rev 05

Manufacture : ABB Engineering (Shanghai) Ltd.  
 Type : Industrial robot controller  
 Type of installation :  
 Control cabinet : OmniCore C30 for IRB14050  
 Mains voltage : 100~230VAC, 50/60Hz  
 Supply :  
 Control voltage :  
 Year of construction : 2019

Project start : 4/27/2018  
 Project manager :  
 Last revision :  
 Designed by :  
 Designed date : 7/30/2020  
 Number of pages : 66

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Frontpage

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Rev 05 2020/07/24

1. Update the template.
2. Added E-stop status output information.
3. Merged main computer connection from 3 pages to 2 pages.
4. Merged master IO unit connection from 3 pages to 2 pages.
5. Correct the A1-X5, A1-X9 & T4-X1 pins definition.

Rev 04 2019/12/03

- Correct the internal power supply input and output connection in power module.
- Add wire numbers for all cables.
- Update the page template.

Rev 03 2019/08/13


- Delete the connect information of safety relays in power module.

Rev 02 2019/04/22

New release.

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SCH	U	3	POWER SUPPLY /T2		7/9/2020	Clyde
SCH	U	4	DRIVE UNIT /T4		7/9/2020	Clyde
SCH	U	5	ROBOT SIGNAL EXCHANGE PROXY - K2		7/9/2020	Clyde
SCH	U	5.a	ROBOT SIGNAL EXCHANGE PROXY - K2		7/9/2020	Clyde
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SCH	U	14	MOTOR CONNECTOR - X1		7/10/2020	Clyde
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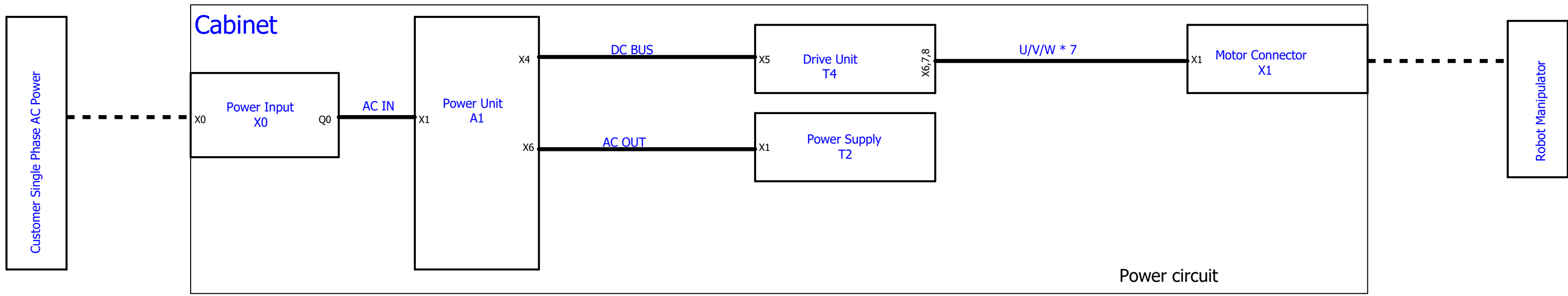
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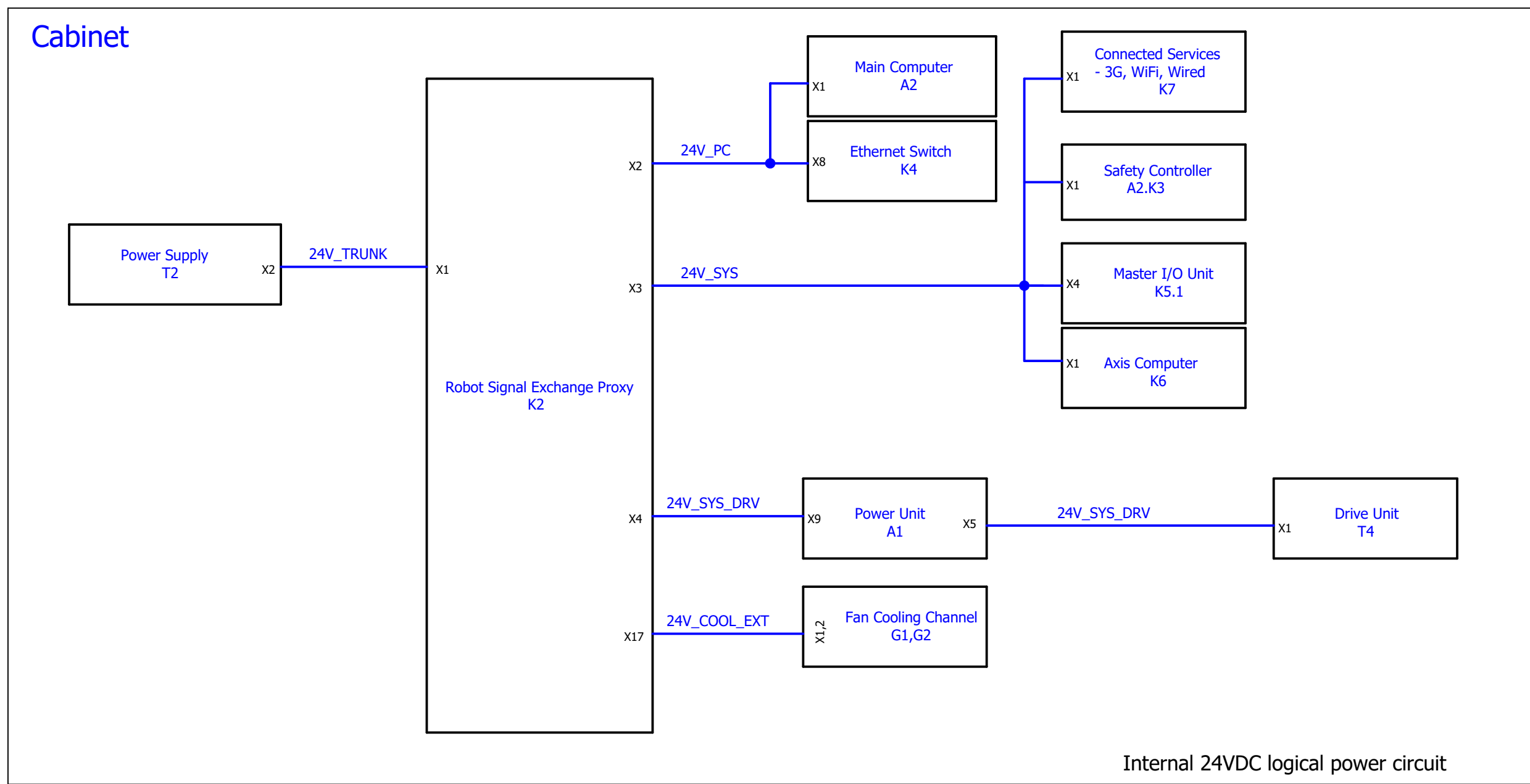
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Power circuit



Internal 24VDC logical power circuit

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Block diagram

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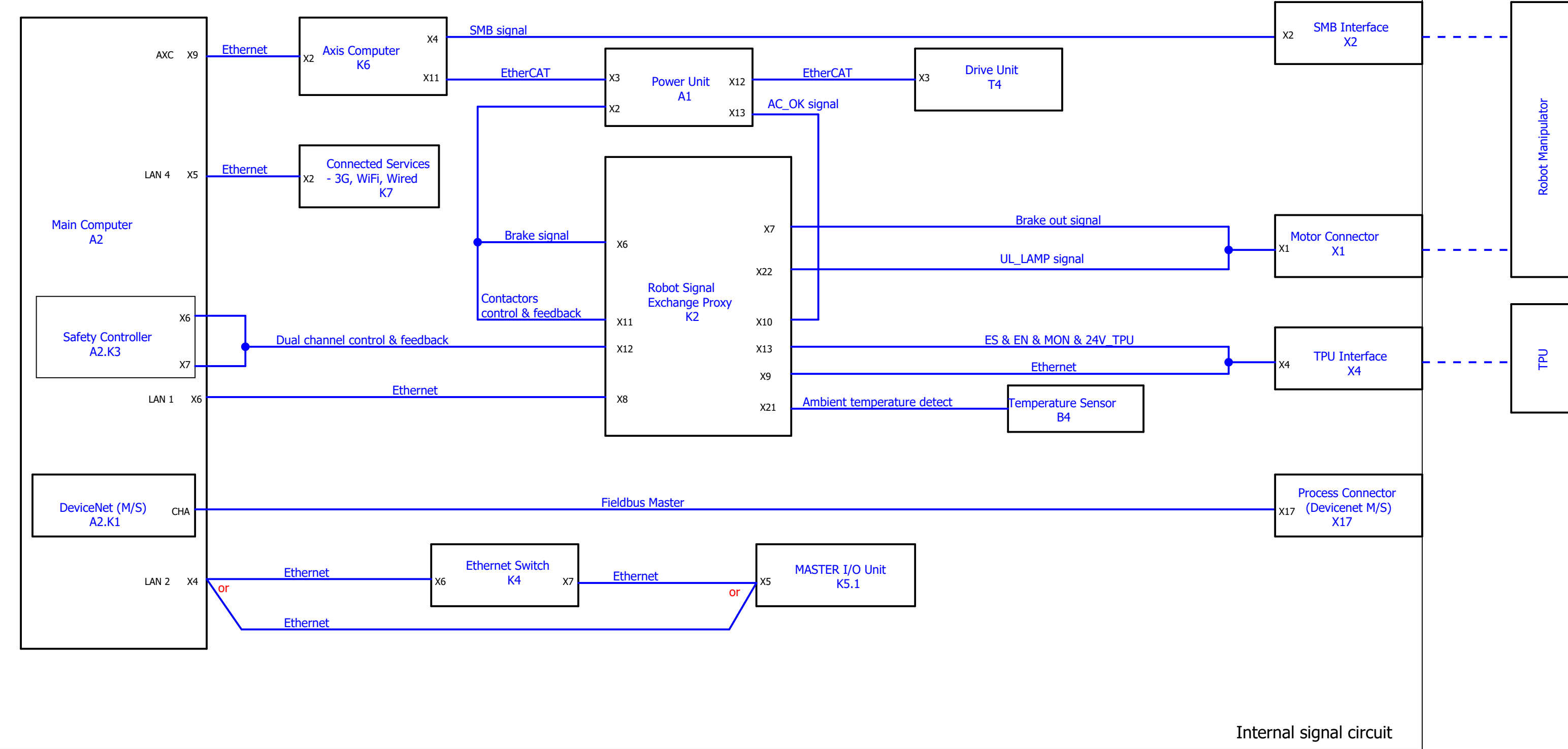
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# Cabinet



Internal signal circuit

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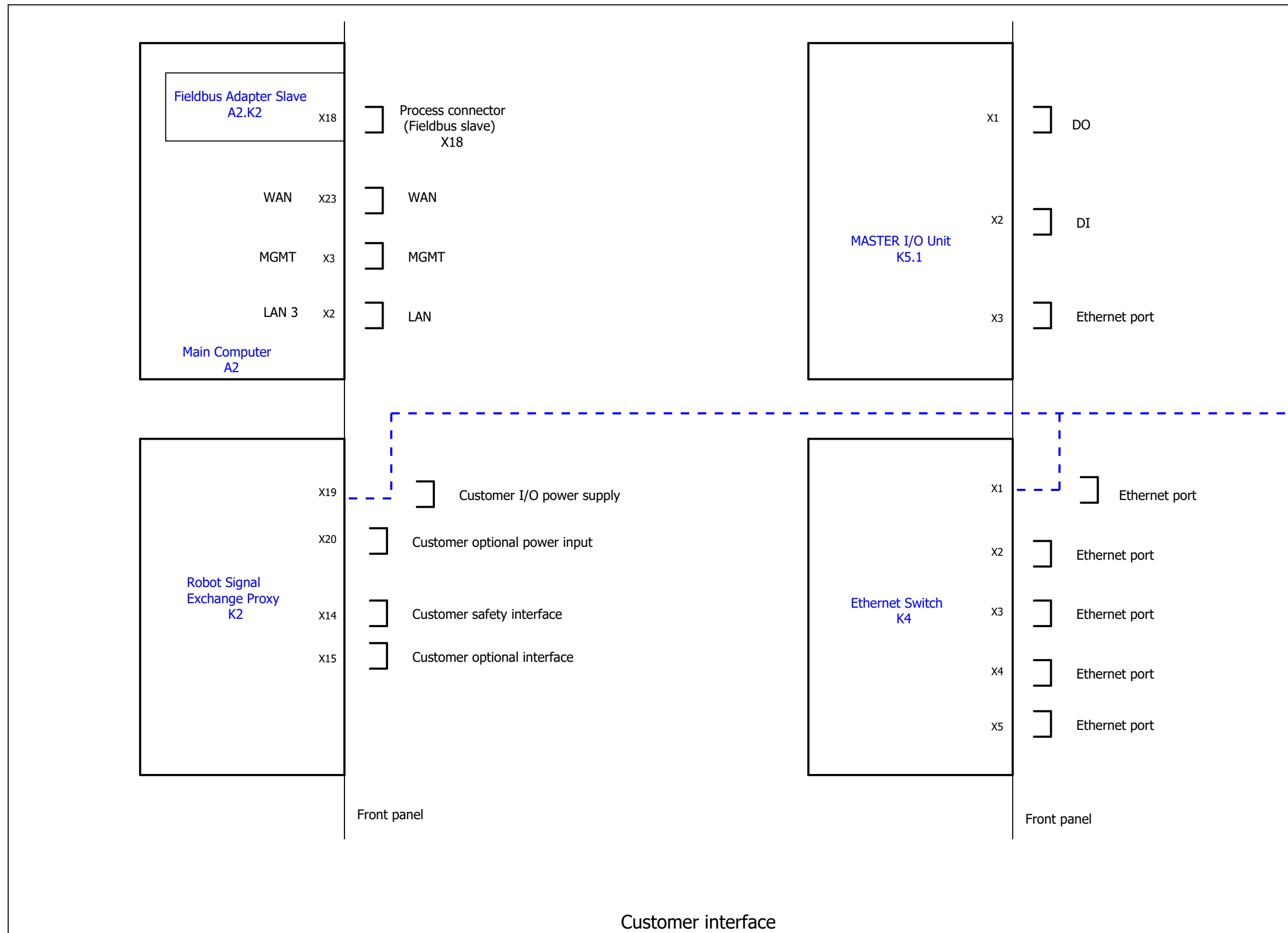
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Block diagram

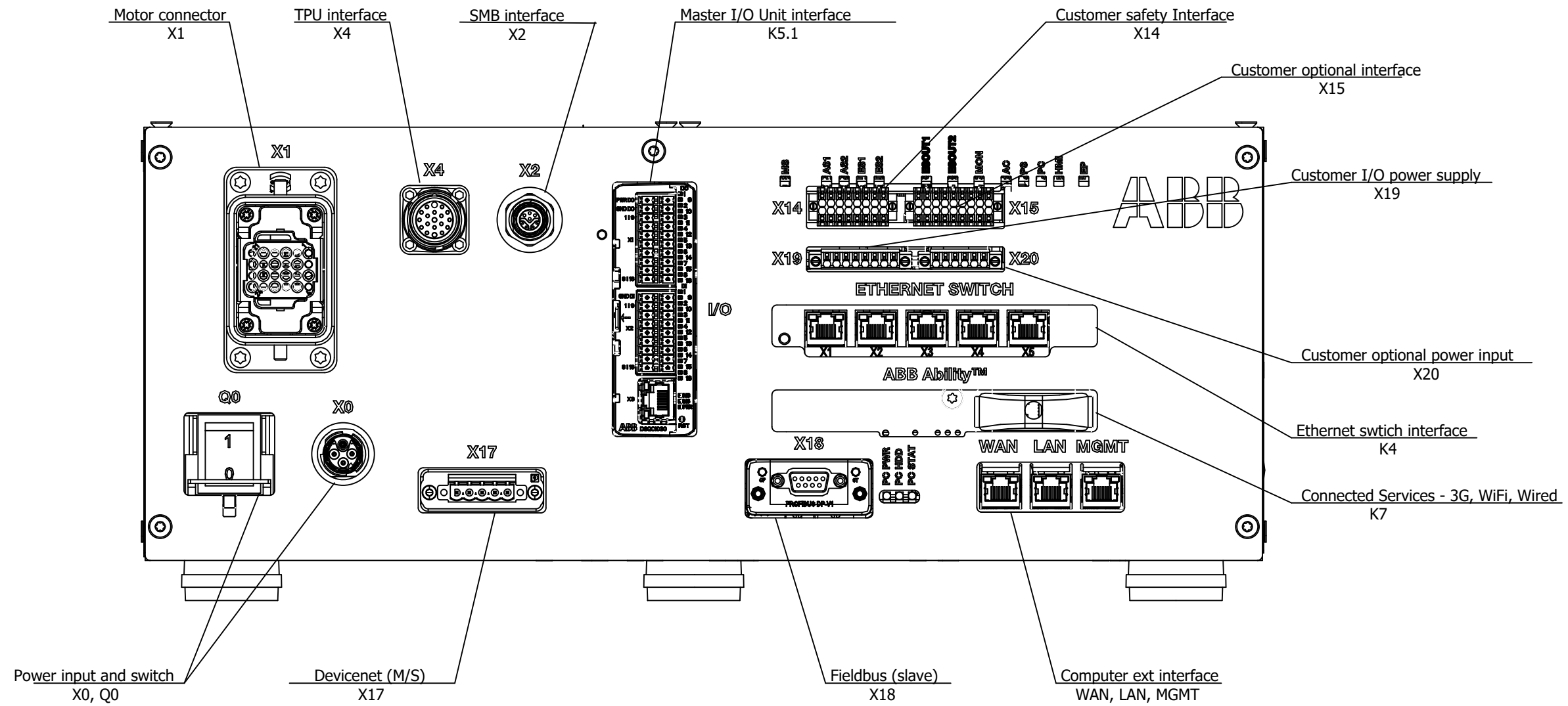
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Front view

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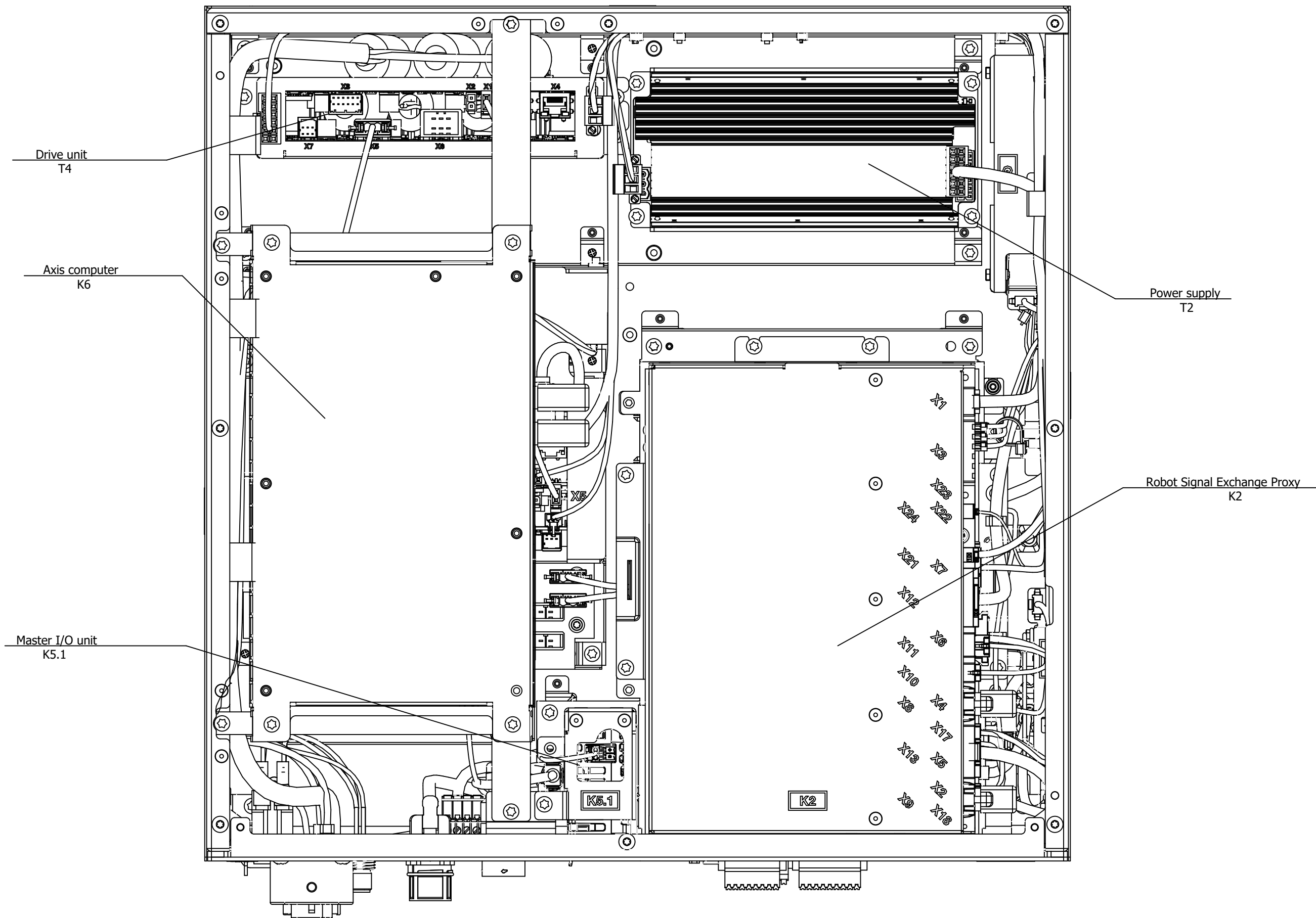
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Top view

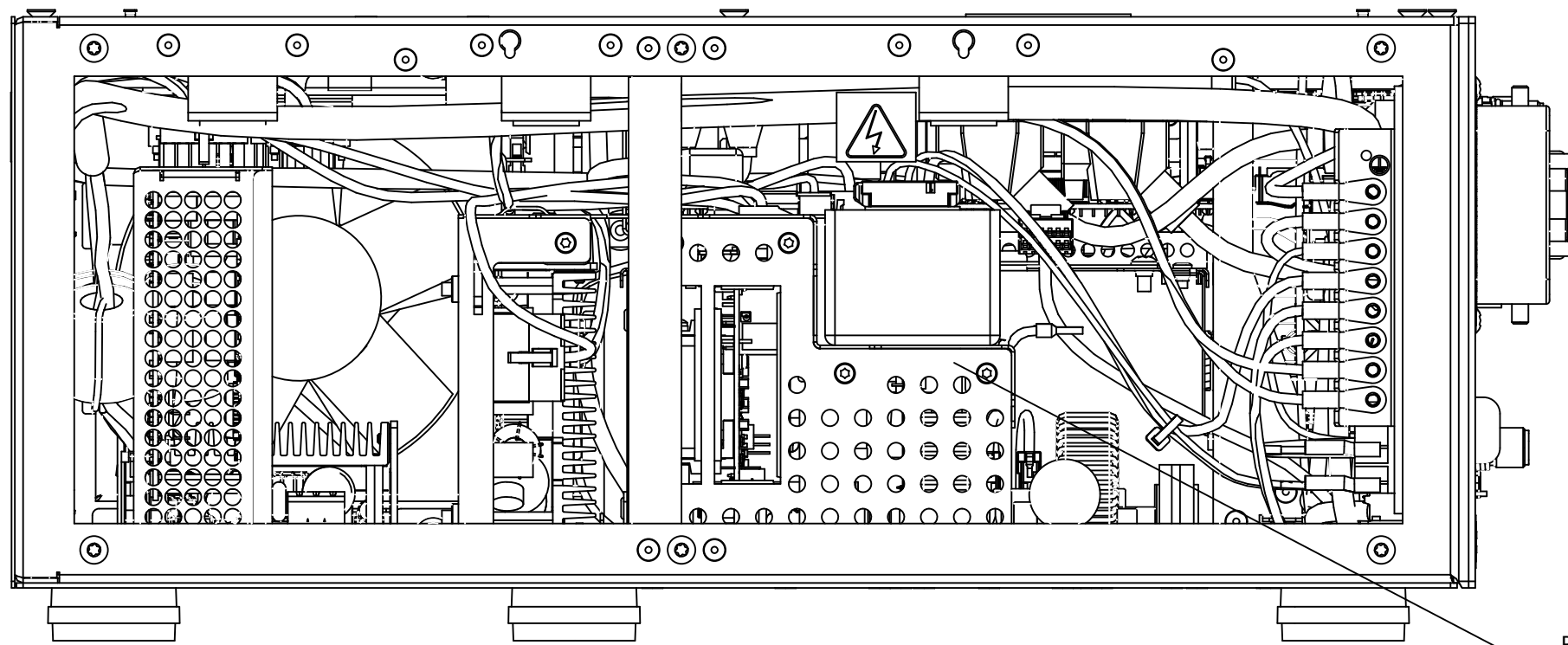
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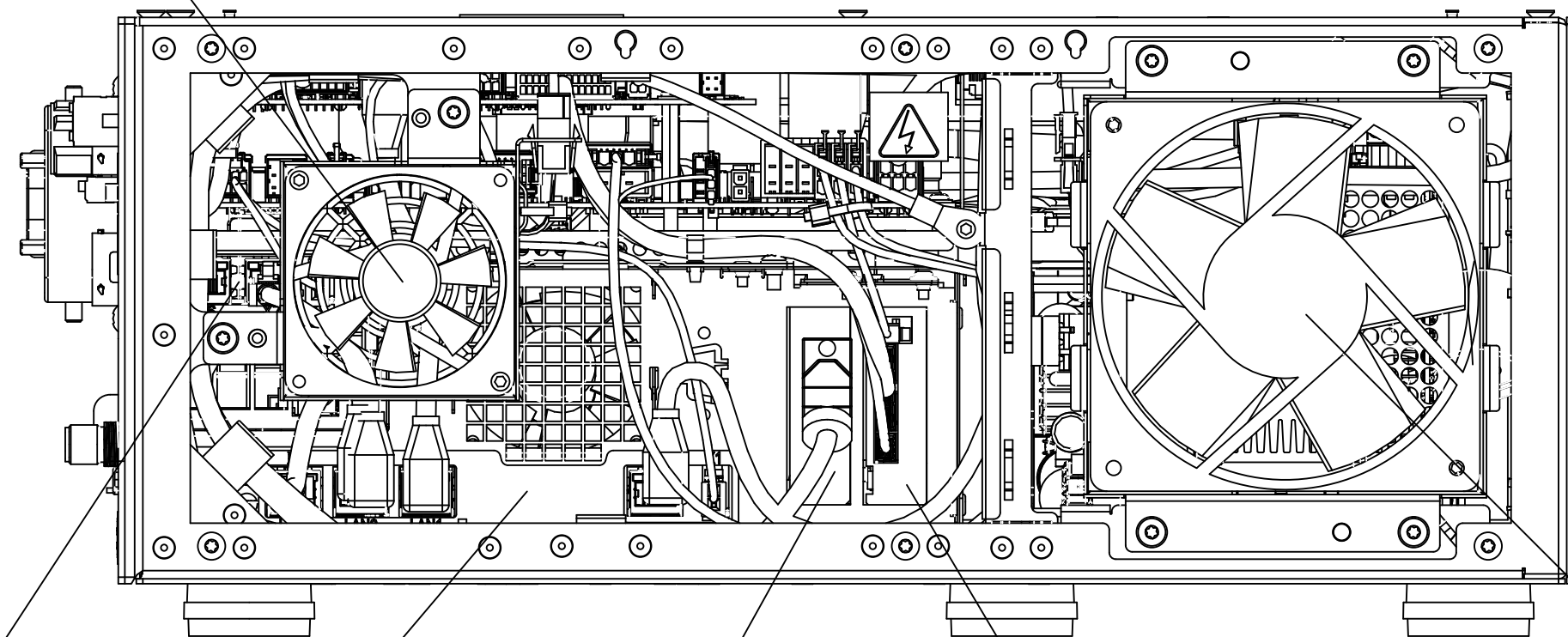
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Left View

Power unit  
A1

Cooling fan  
G2



Right View

Ethernet switch  
K4

Main computer  
A2

Devicenet M/S  
A2.K1

Safety Controller  
A2.K3

Cooling fan  
G1

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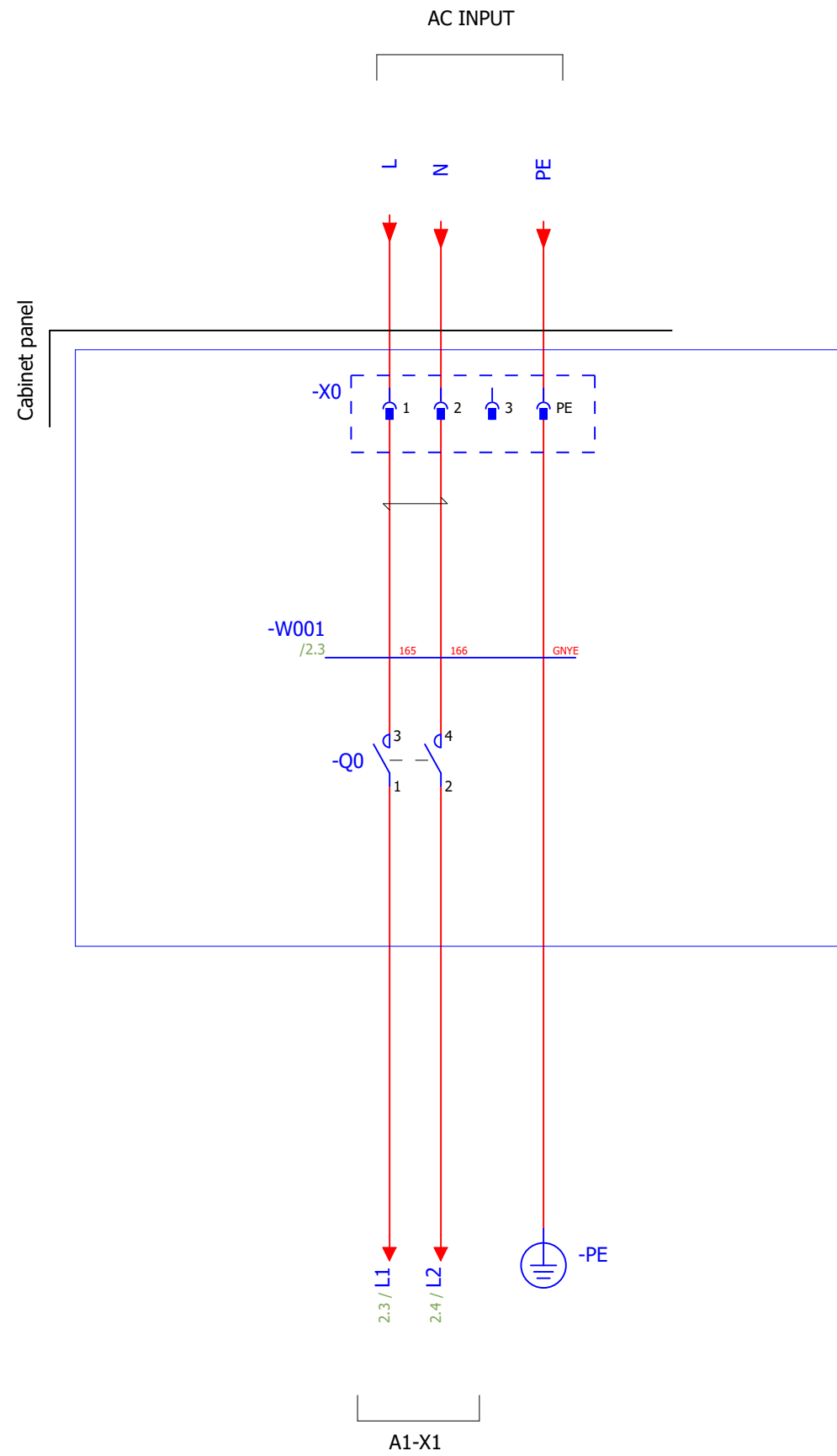
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Side view

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POWER INPUT /X0

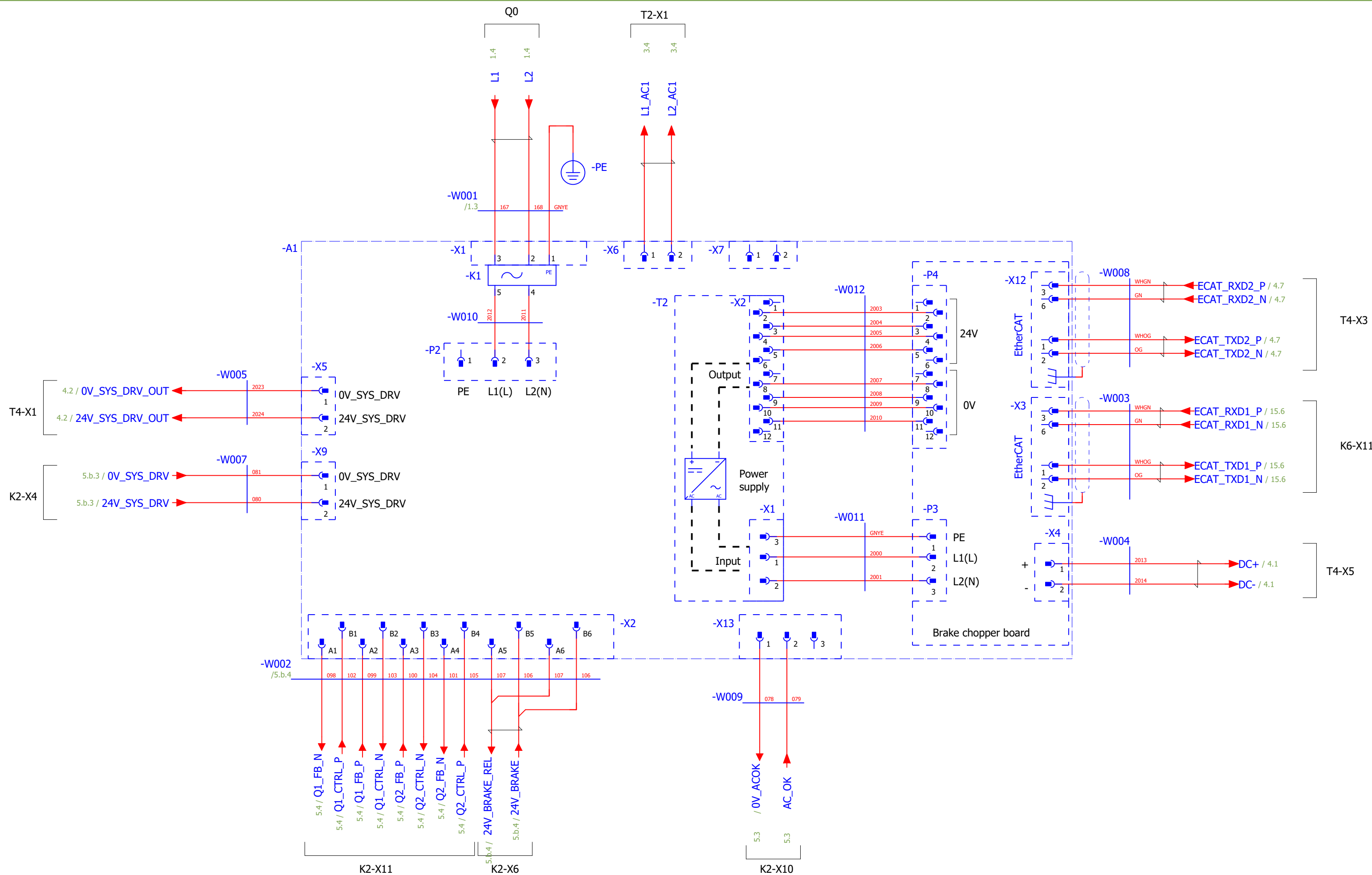
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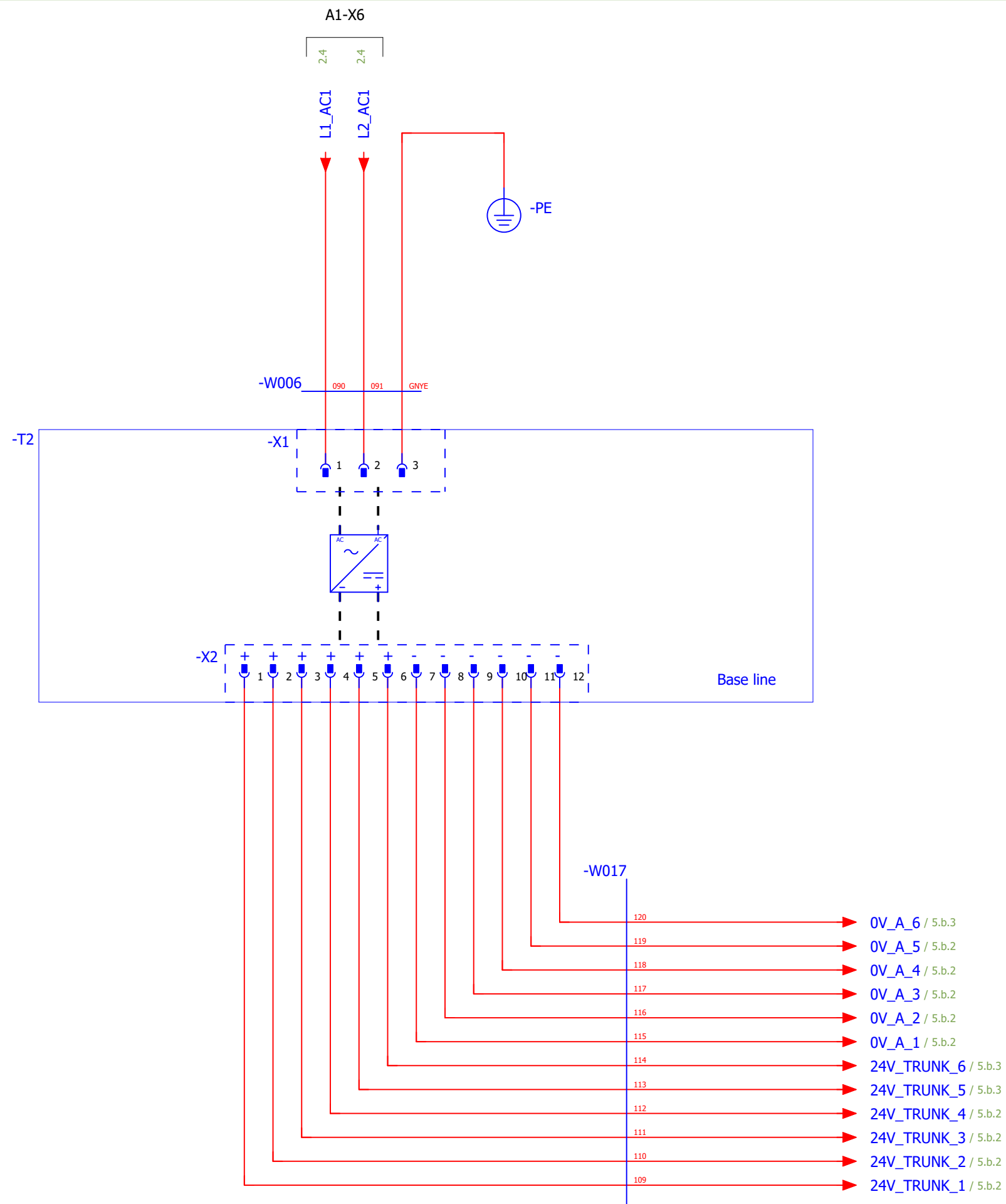
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POWER UNIT /A1

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POWER SUPPLY /T2

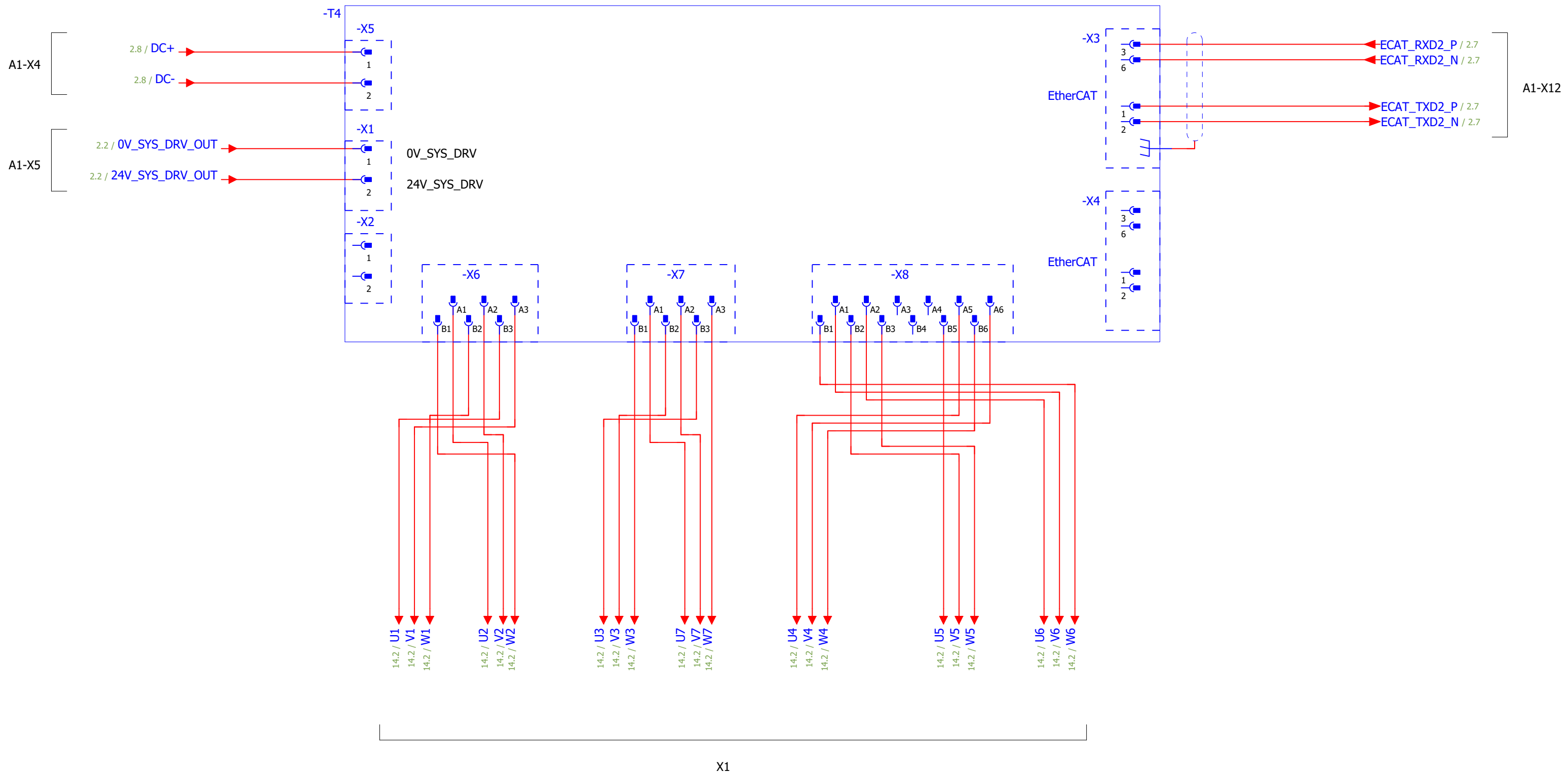
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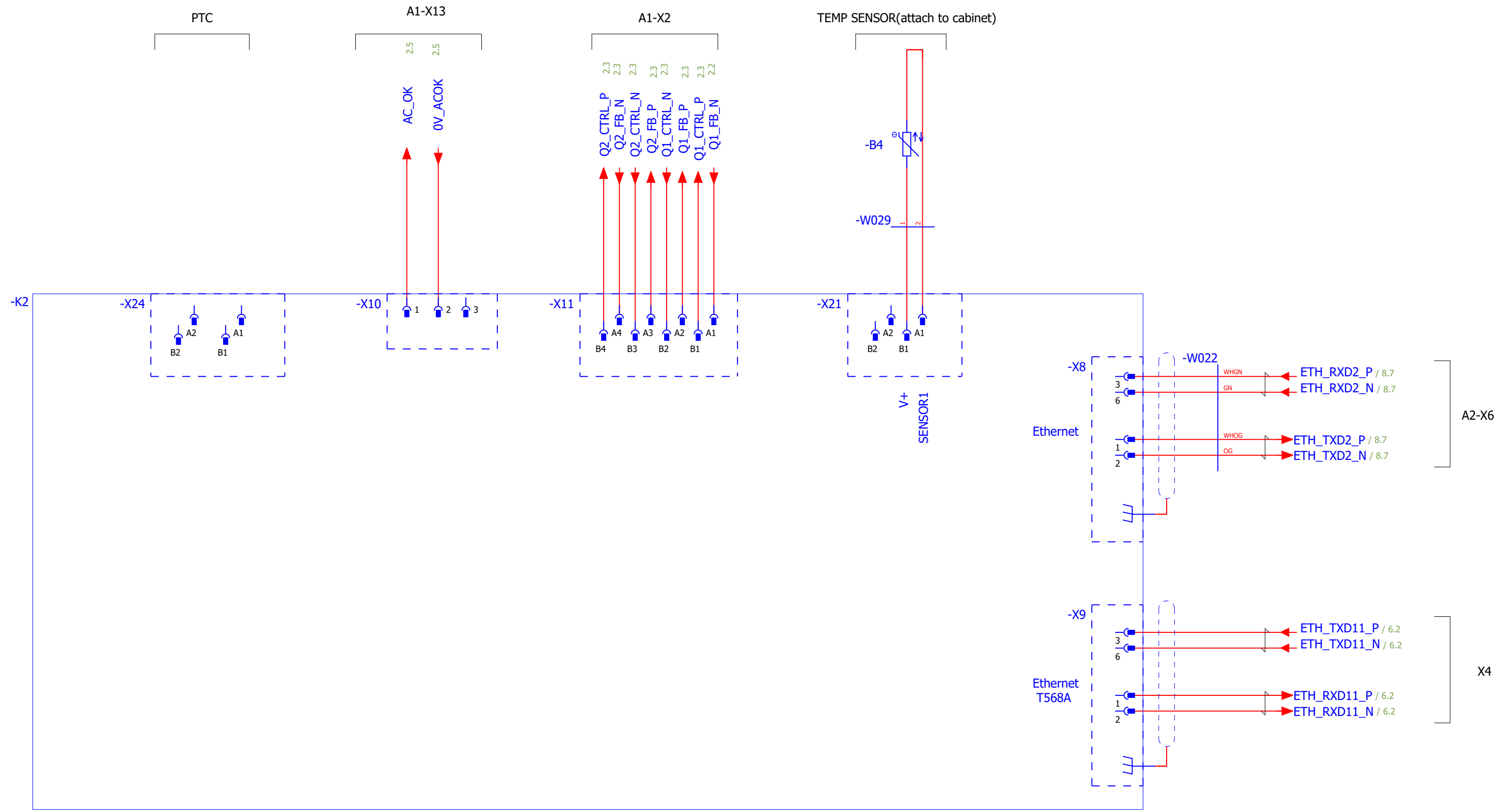
DRIVE UNIT /T4

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**ROBOT SIGNAL EXCHANGE PROXY - K2**

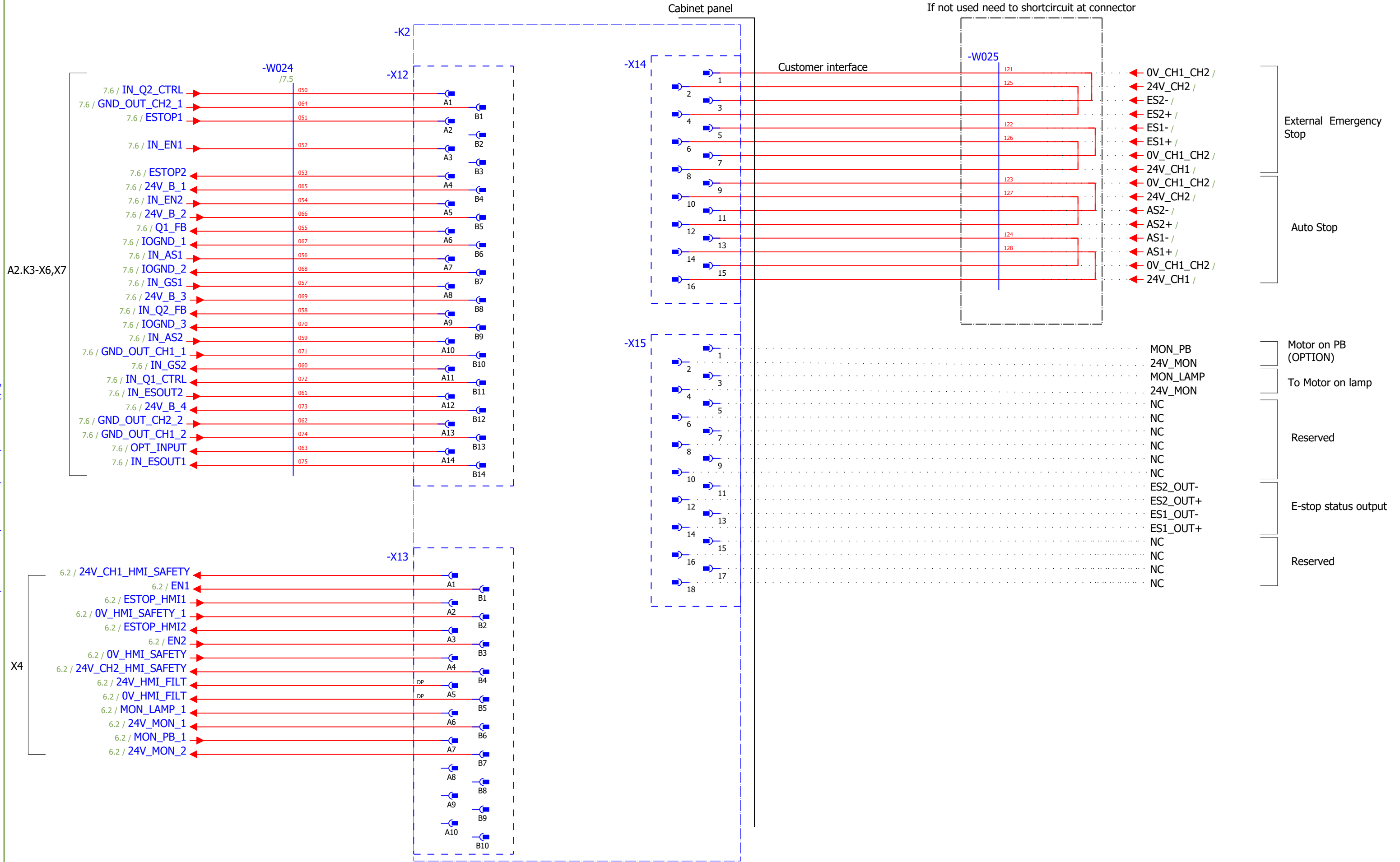
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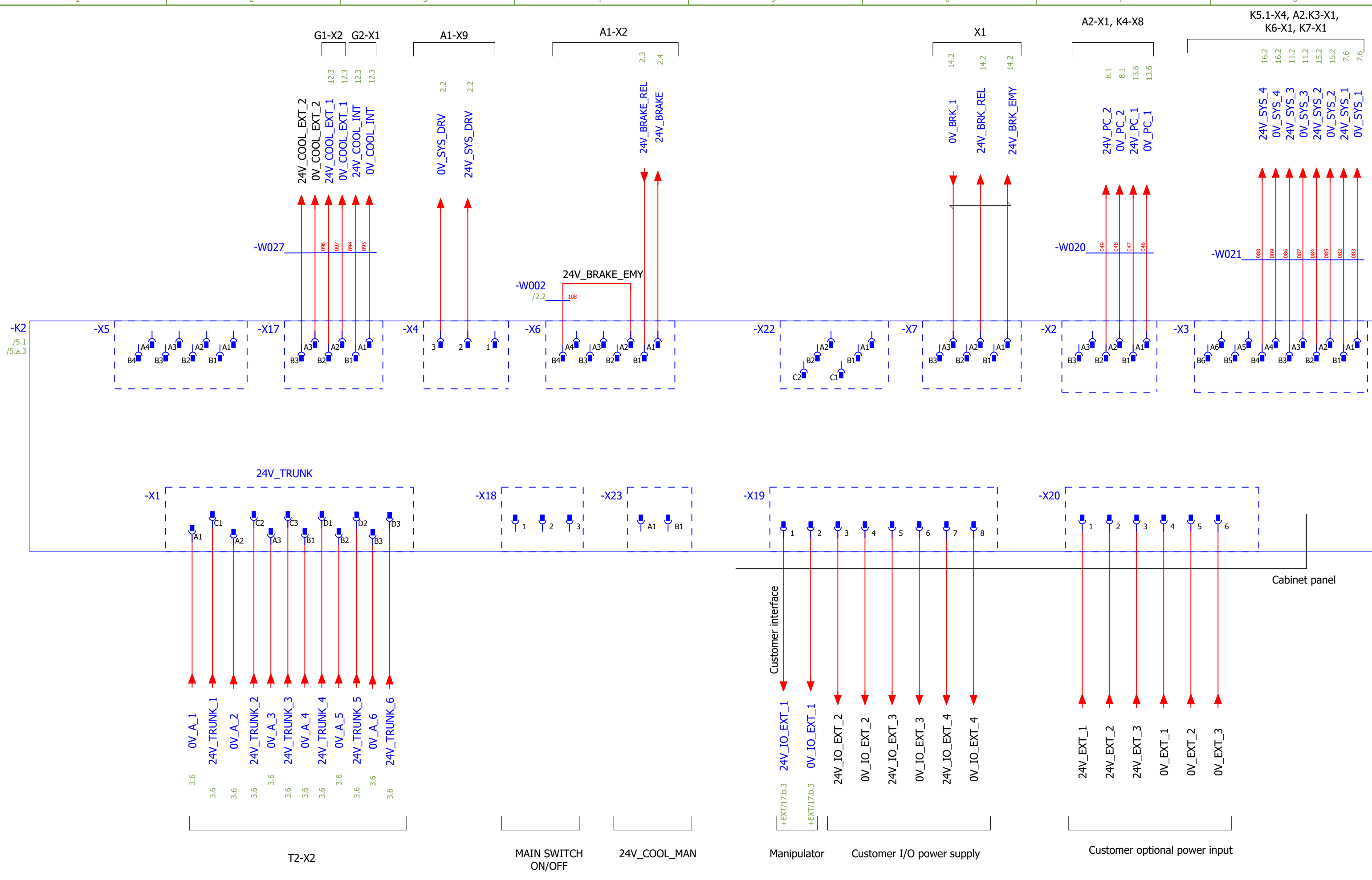
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T2-X2  
MAIN SWITCH ON/OFF  
24V\_COOL\_MAN

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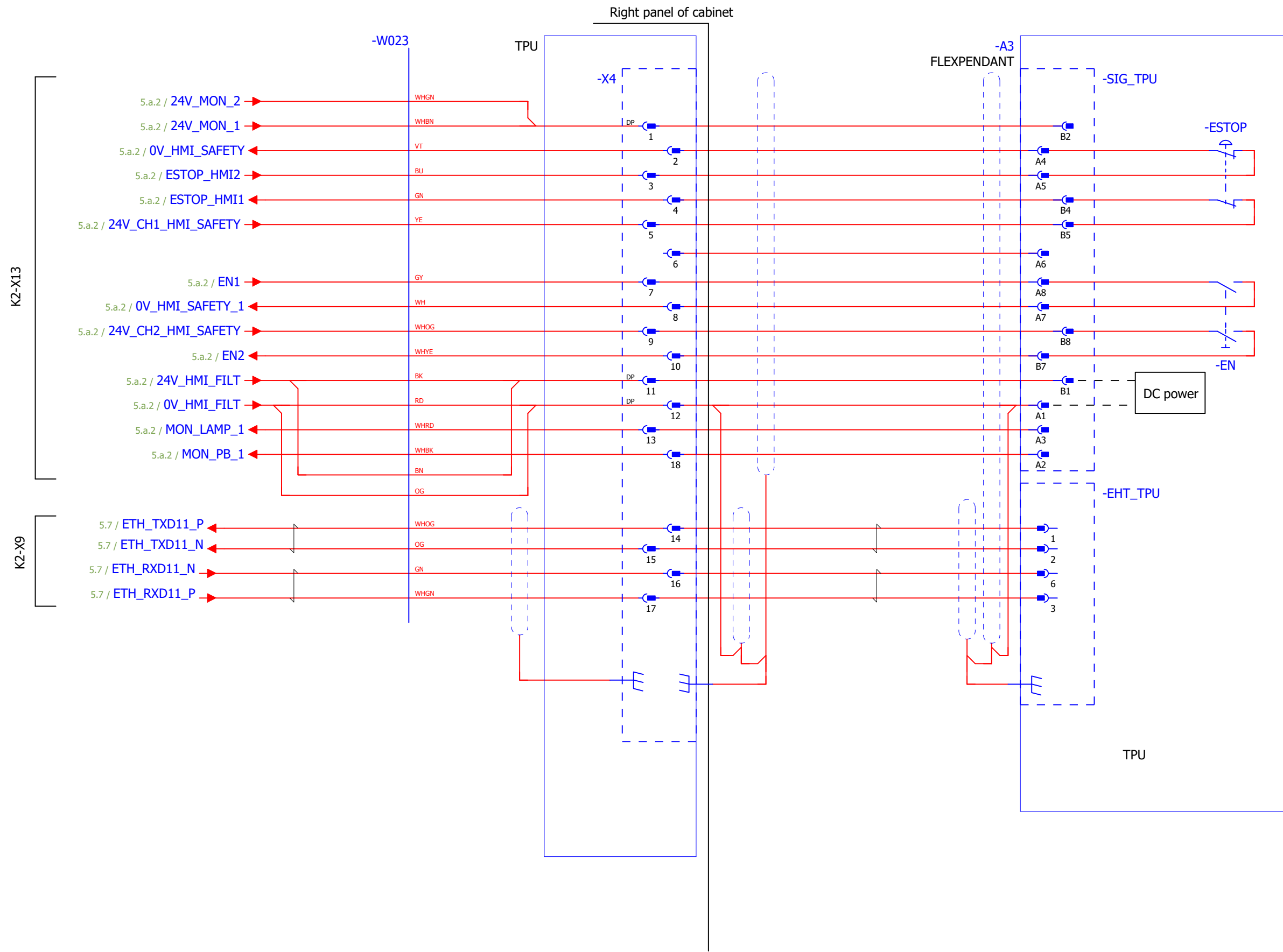
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TPU - HMI SIGNAL CONNECTORS /X4

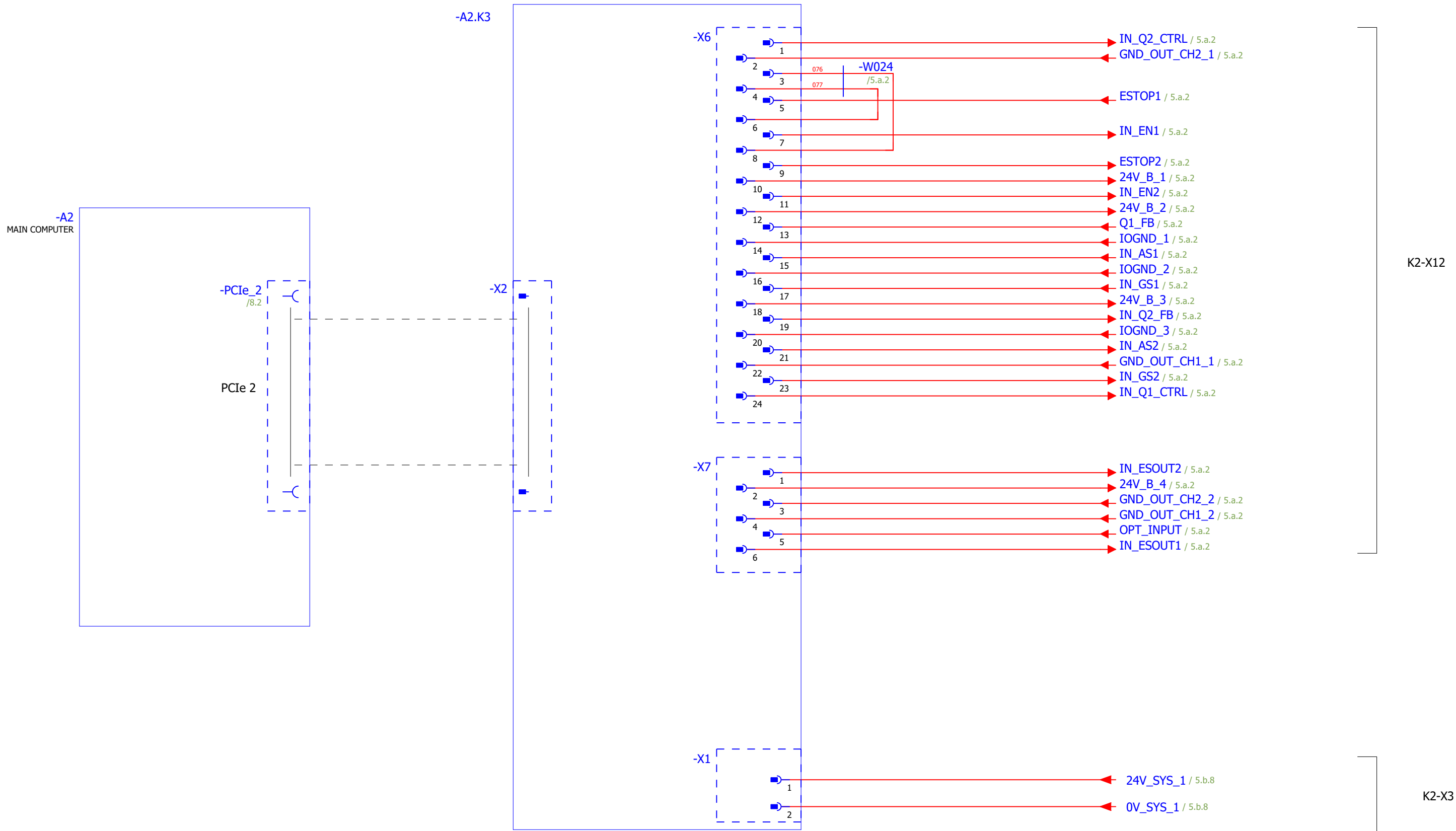
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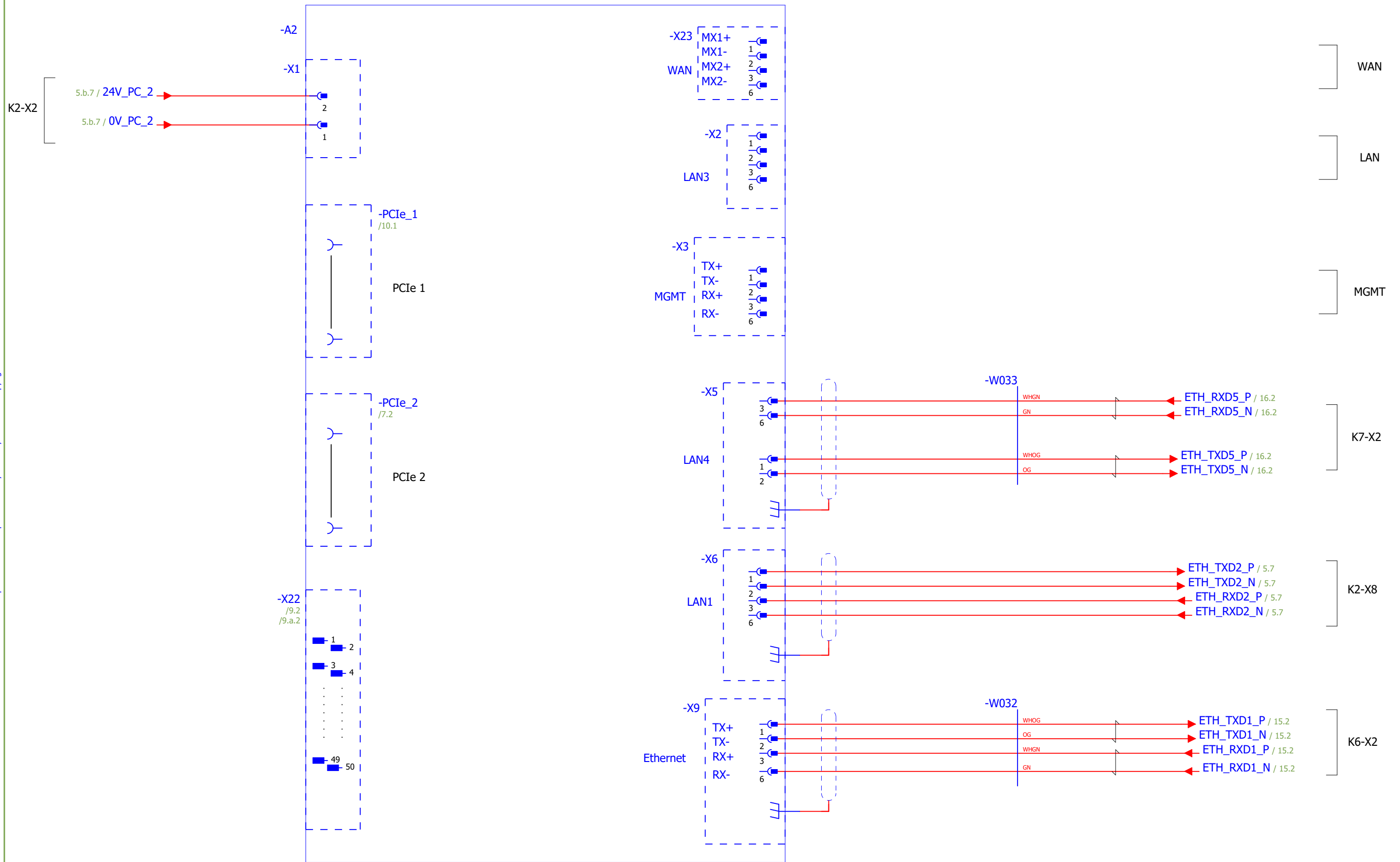
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**SAFETY CONTROLLER /A2.K3**

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MAIN COMPUTER /A2

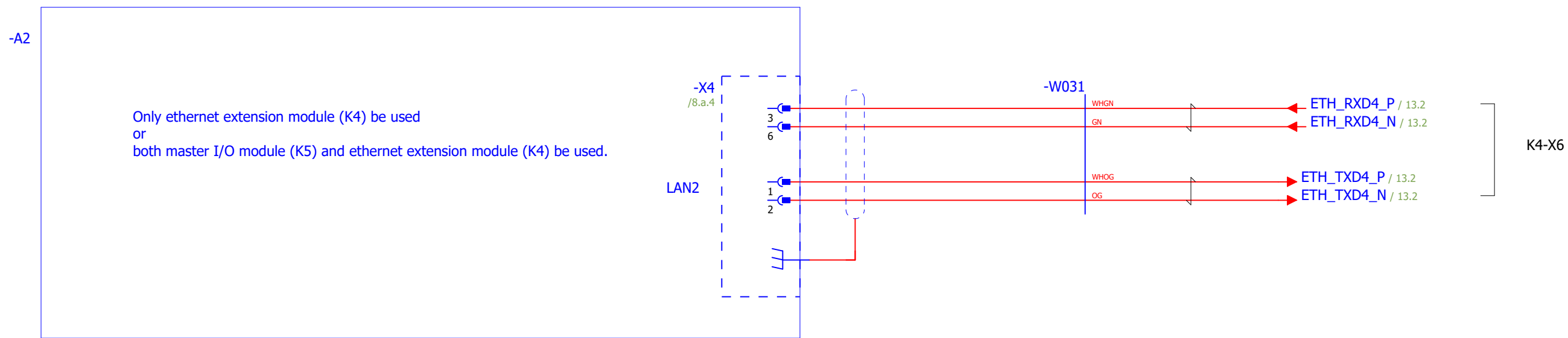
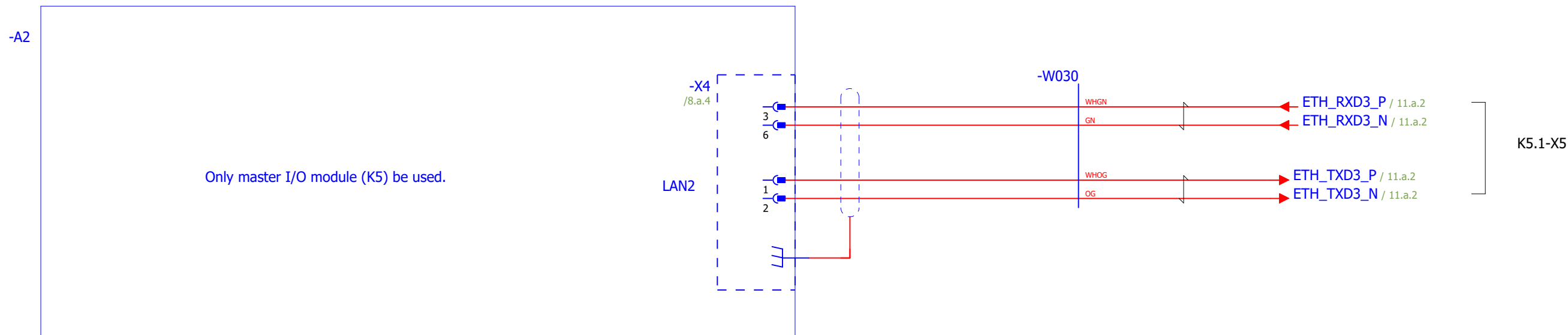
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**MAIN COMPUTER /A2**

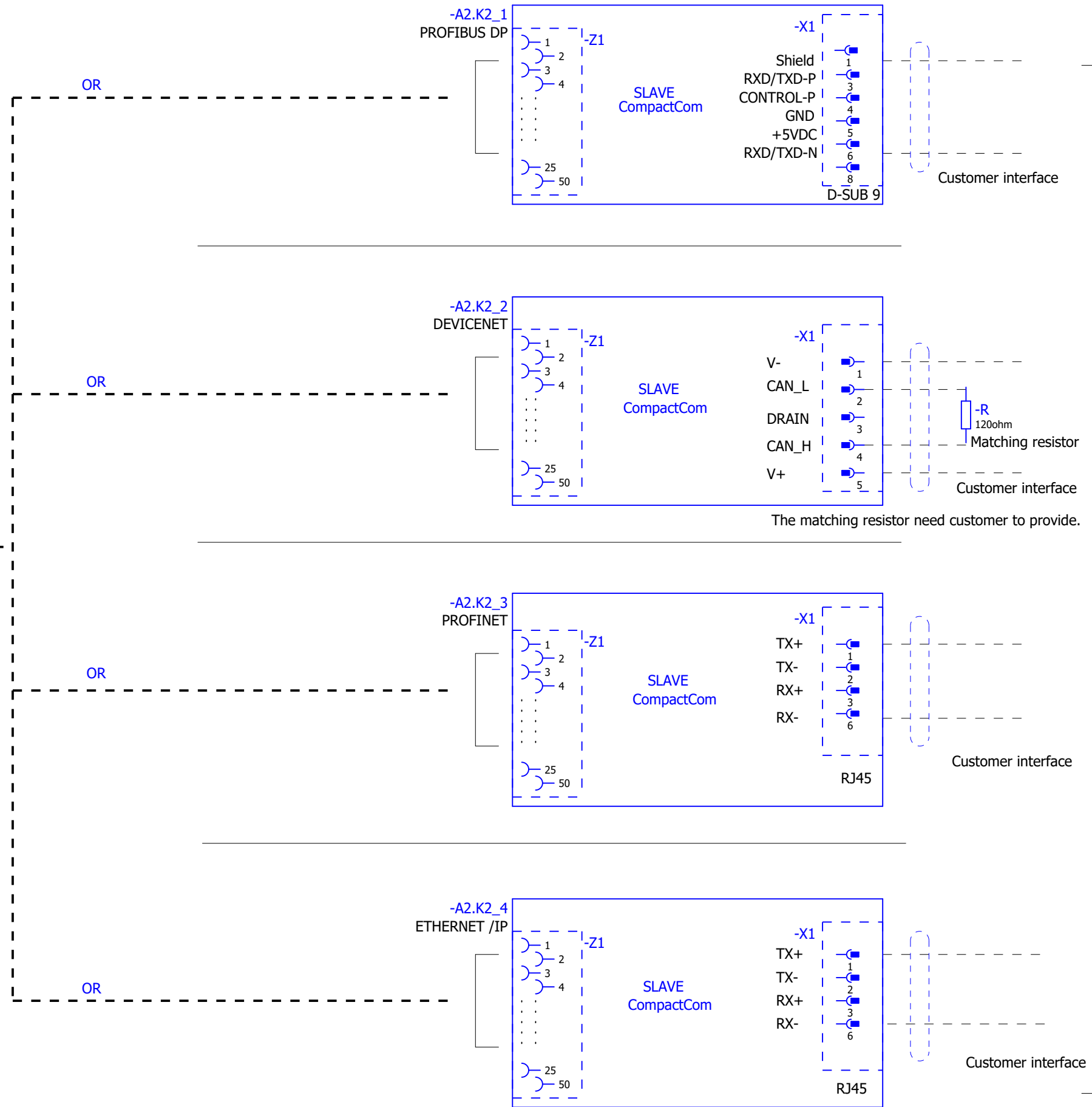
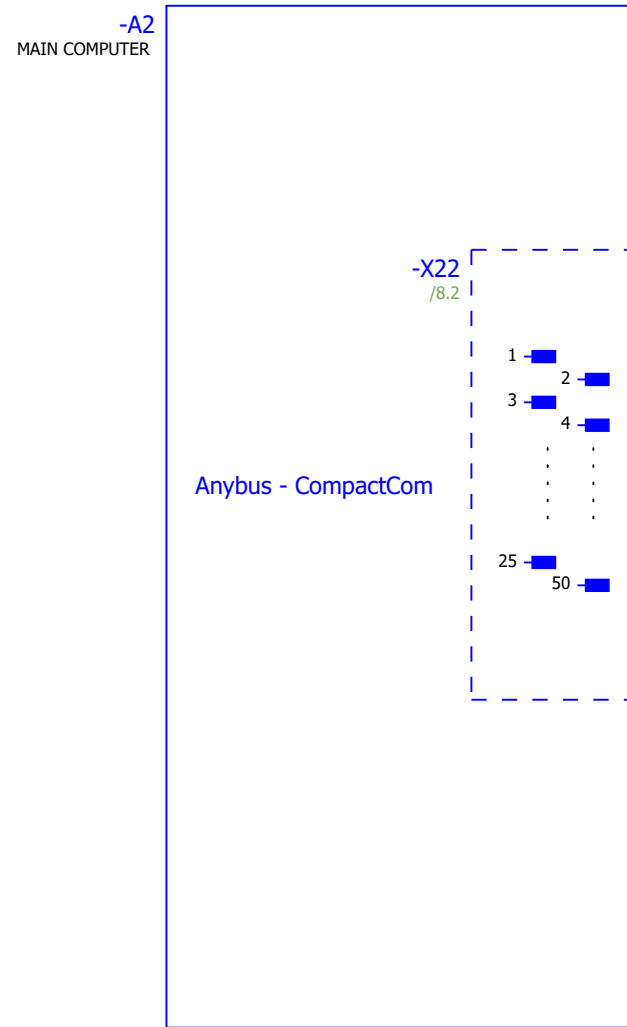
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OPTION & HARNESS TO CUSTOMER I/O

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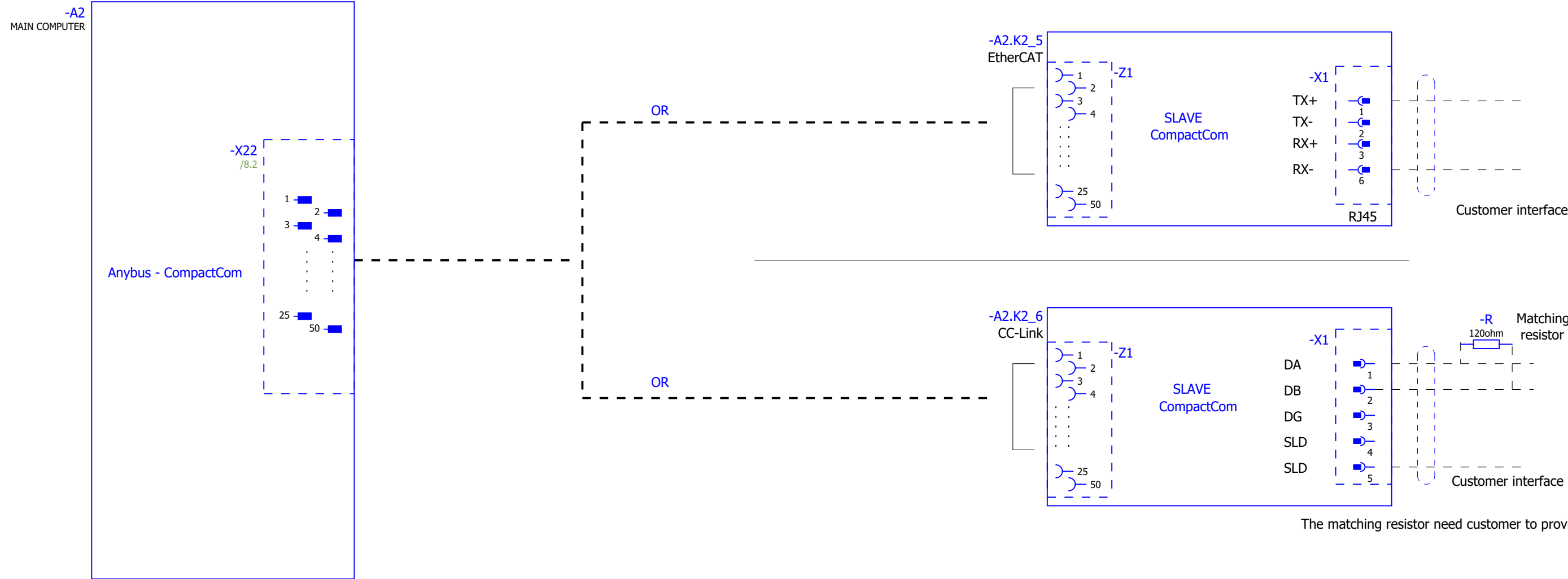
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**FIELD BUS ADAPTER SLAVE /A2.K2**

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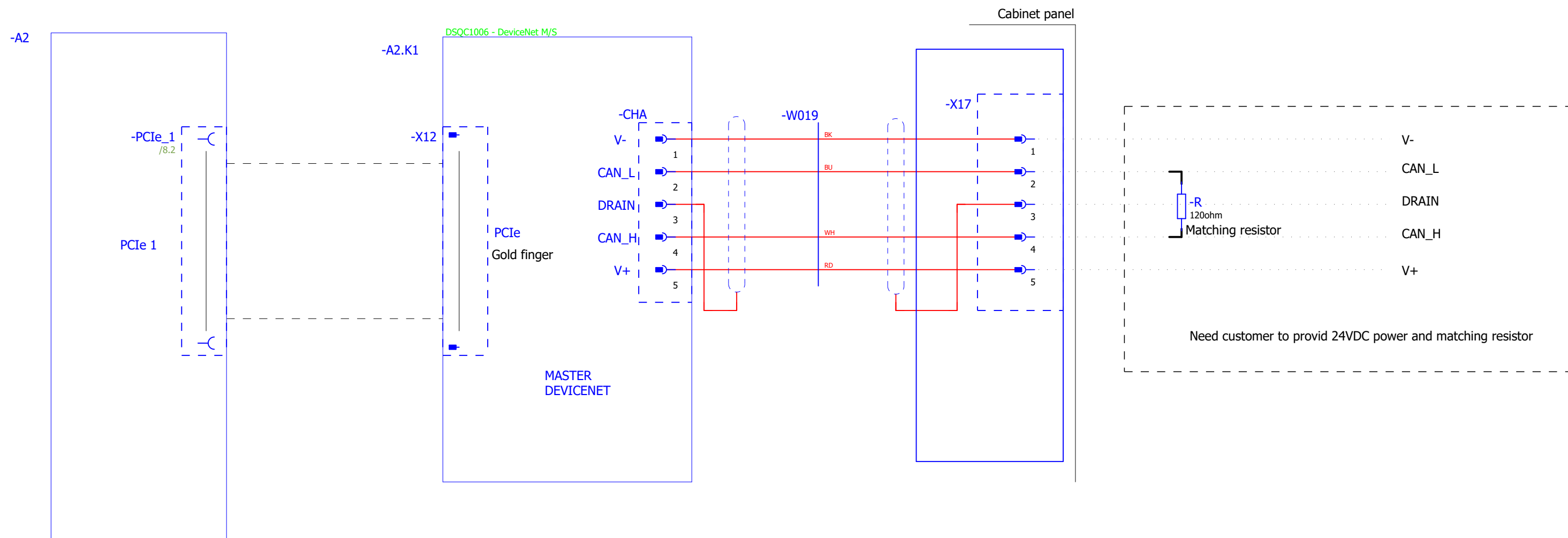
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**FIELD BUS ADAPTER SLAVE /A2.K2**

Status:	High-level function: = SCH
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FIELD BUS ADAPTER MASTER /A2.K1

Status:  
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Mounting location: + U

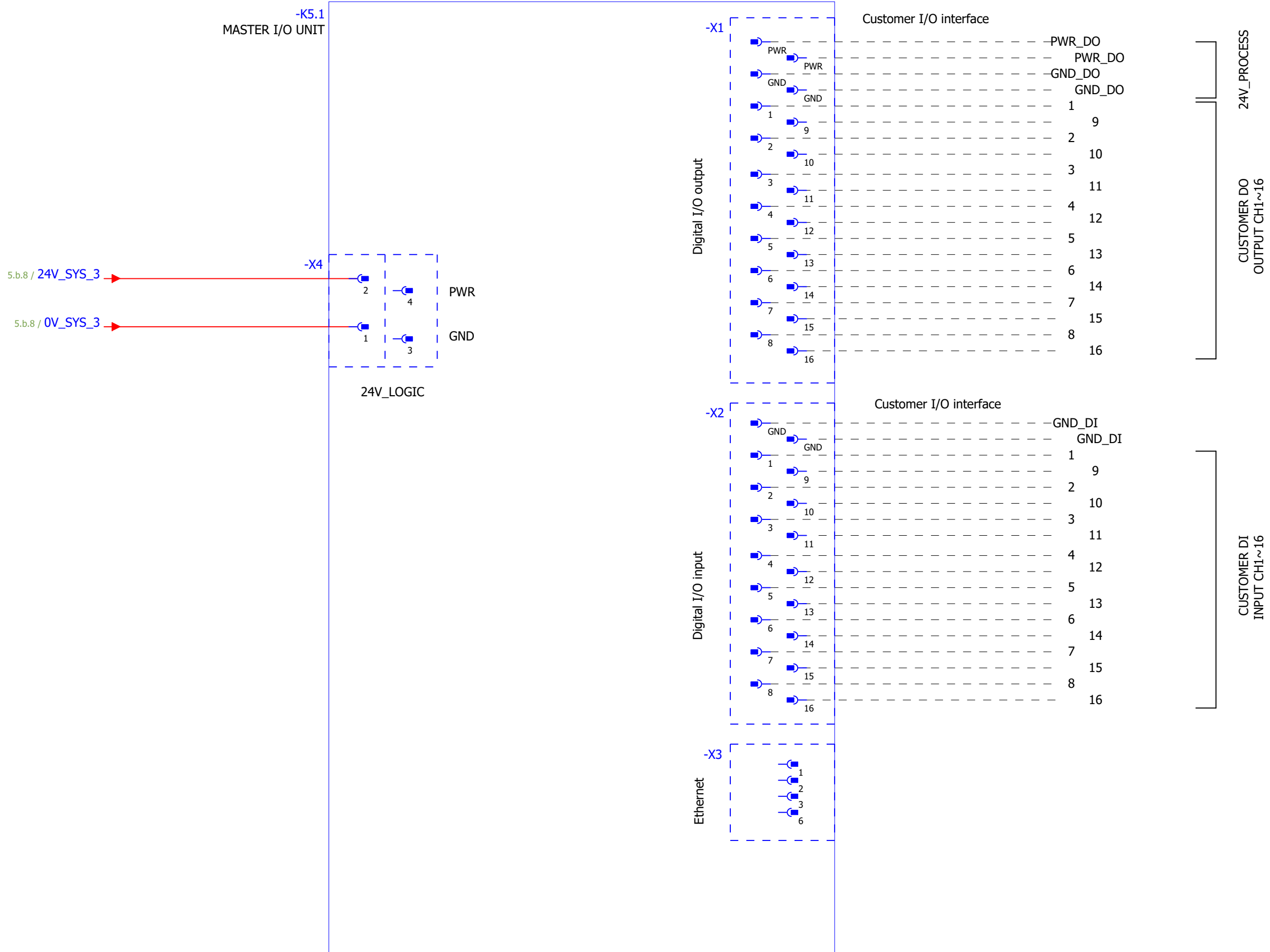
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K2-X3



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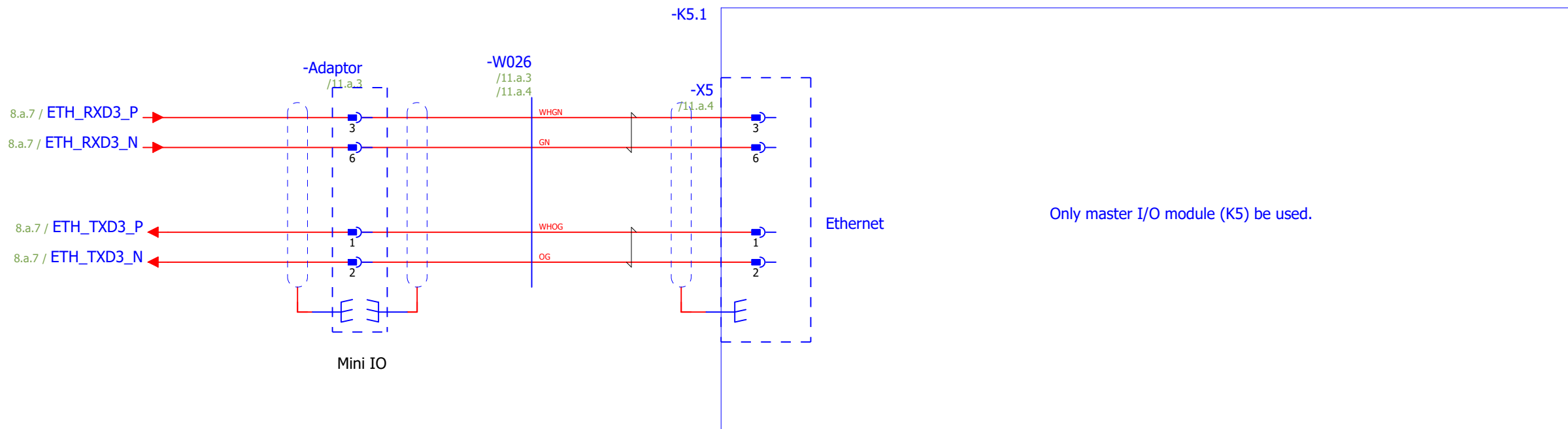
High-level function: = SCH  
Mounting location: + U

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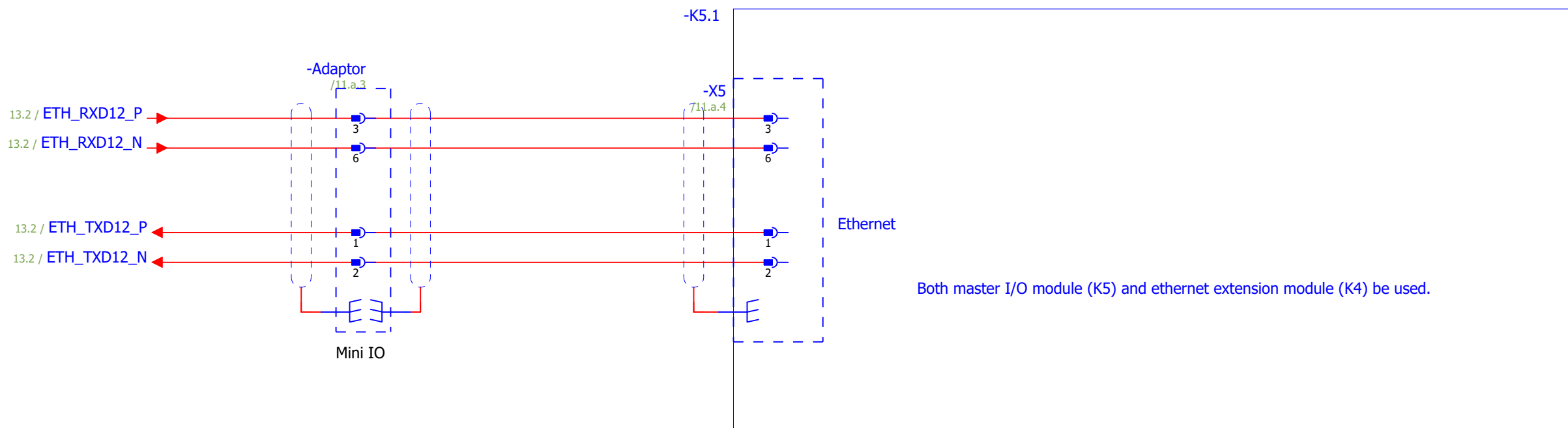
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A2-X4



K4-X7



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Status:  
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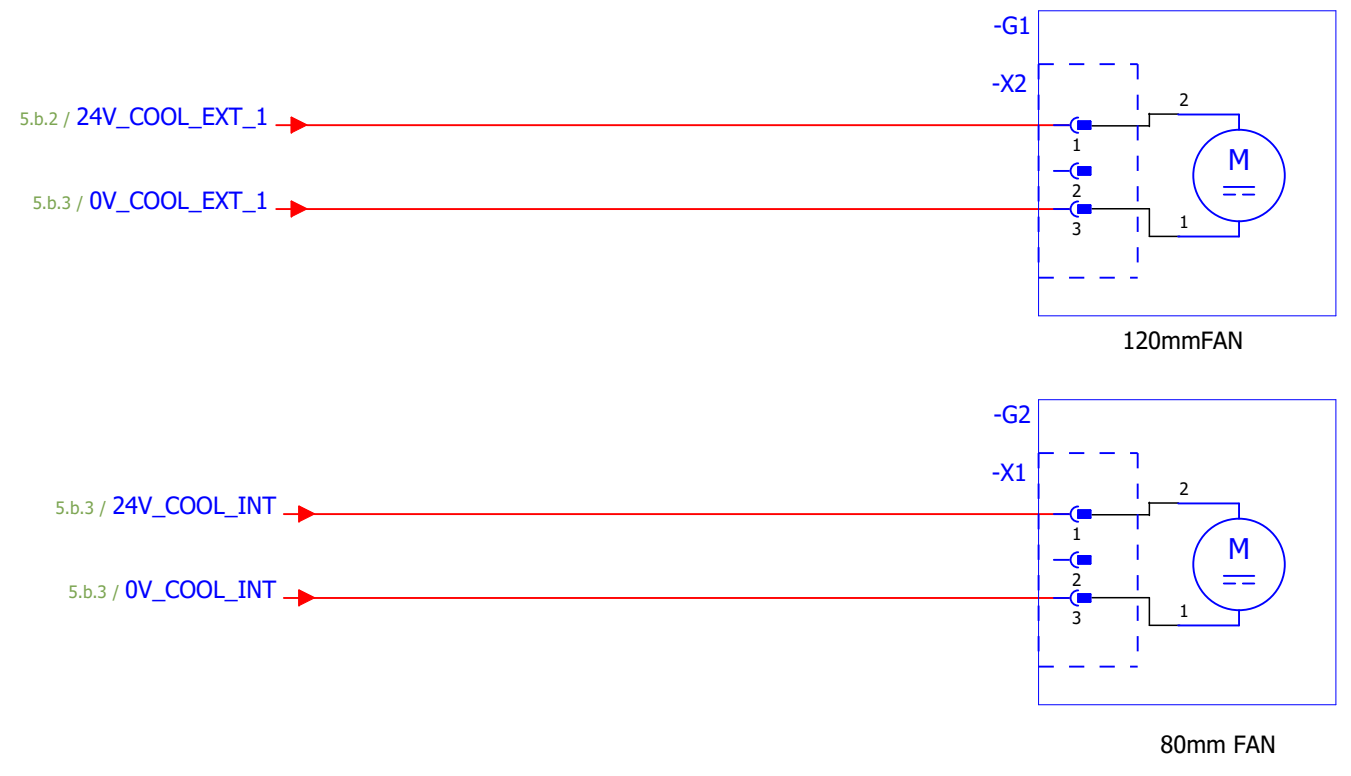
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K2-X17



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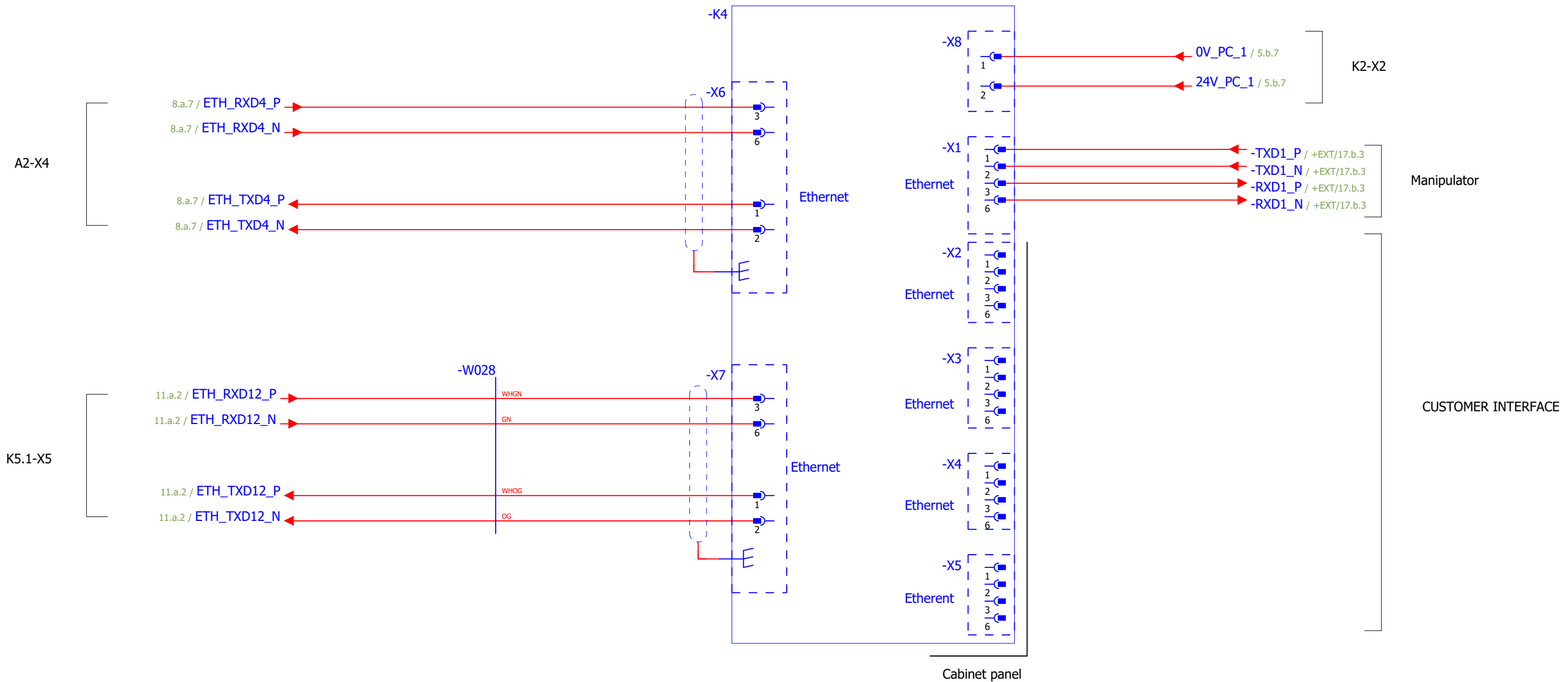
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**FAN COOLING CHANNEL /G1,2**

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ETHERNET SWITCH /K4

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

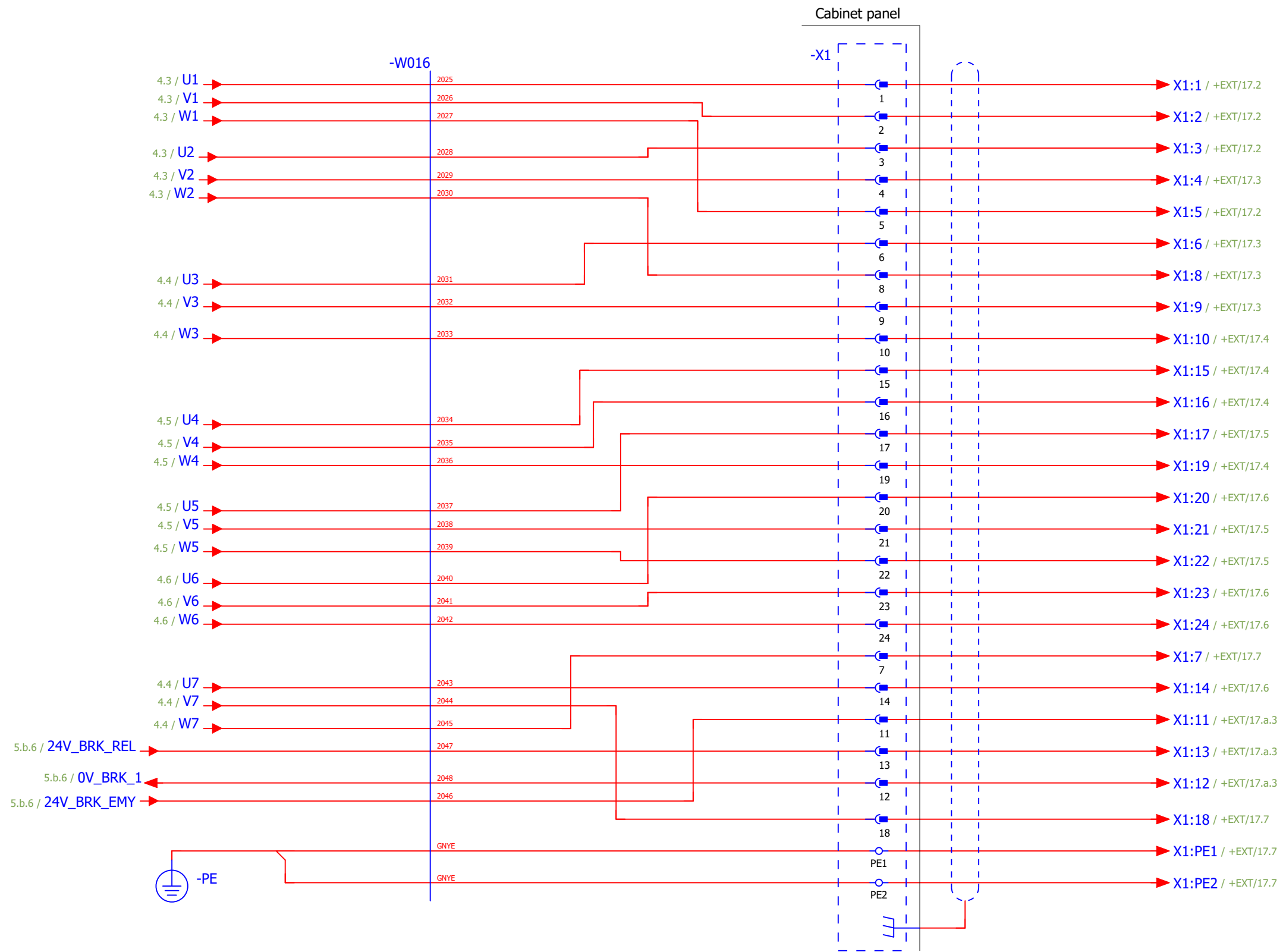
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T4-X6,X7,X8

K2-X7



to manipulator

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MOTOR CONNECTOR - X1

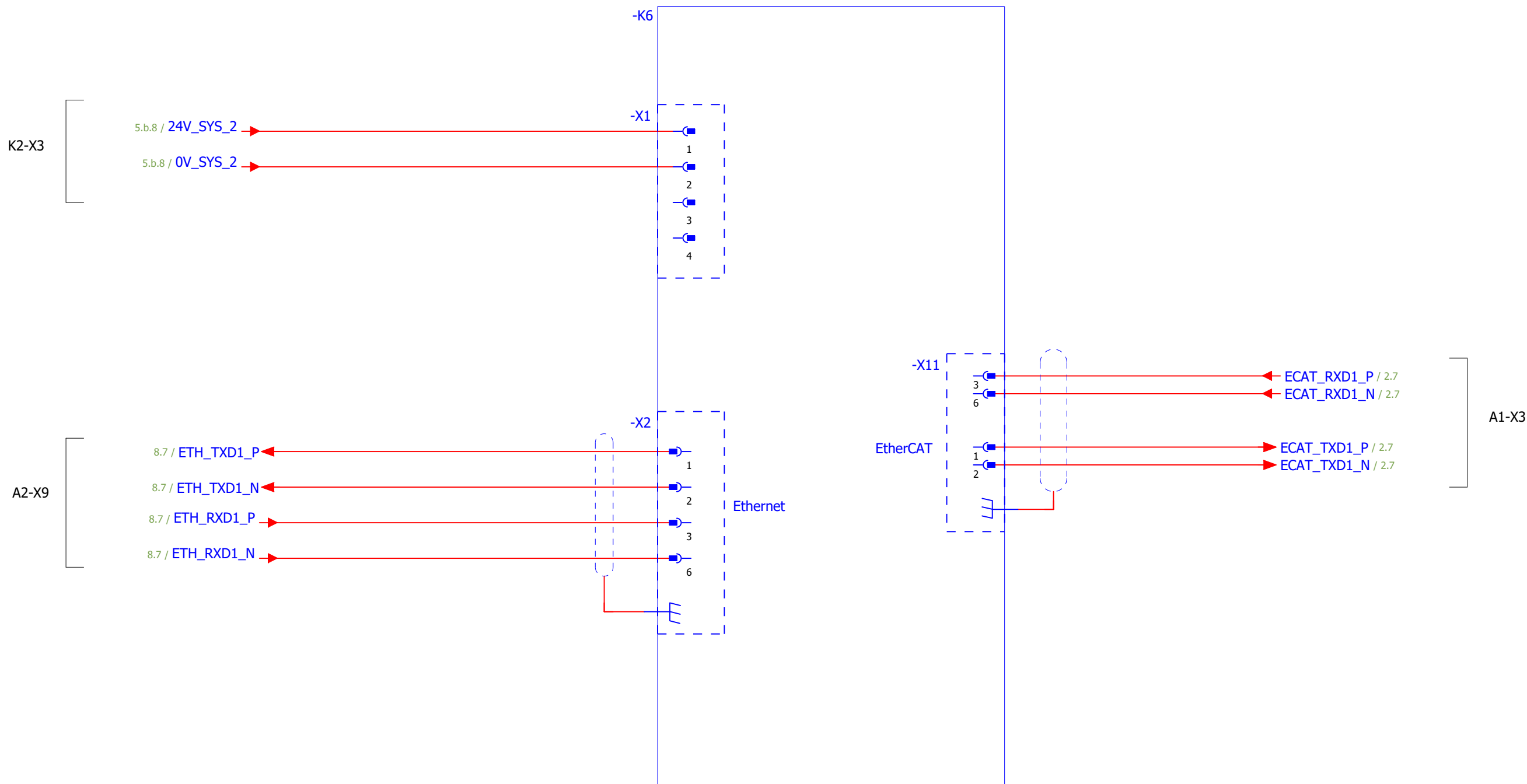
Status:  
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Mounting location: + U

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AXIS COMPUTER - 1 /K6

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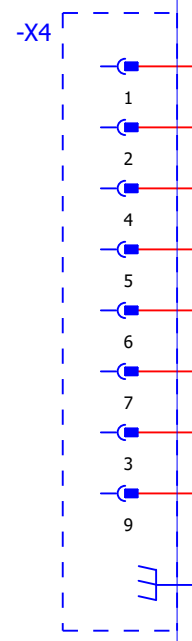
High-level function: = SCH  
Mounting location: + U

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Total: 66

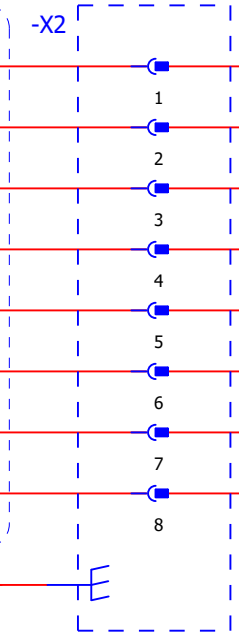
-K6

MRCO1  
 MRCO1\_N  
 MRCI1  
 MRCI1\_N  
 0V  
 24V\_SMB1  
 0V  
 0V



-W034

WHOG  
 OG  
 WHGN  
 GN  
 BU  
 WH  
 BN  
 BK



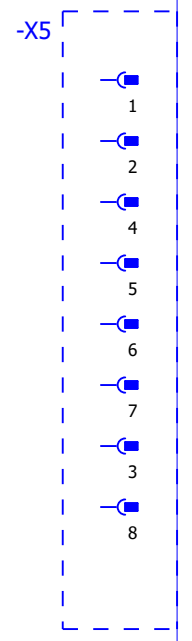
Cabinet panel

X2:1 / +EXT/17.a.3  
 X2:2 / +EXT/17.a.3  
 X2:3 / +EXT/17.a.3  
 X2:4 / +EXT/17.a.3  
 X2:5 / +EXT/17.a.3  
 X2:6 / +EXT/17.a.3  
 X2:7 / +EXT/17.a.3  
 X2:8 / +EXT/17.a.3

1-7 AXIS SMB SIGNAL

to manipulator

MRCO2  
 MRCO2\_N  
 MRCI2  
 MRCI2\_N  
 0V  
 24V\_SMB2  
 0V  
 0V



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AXIS COMPUTER - 2 /K6

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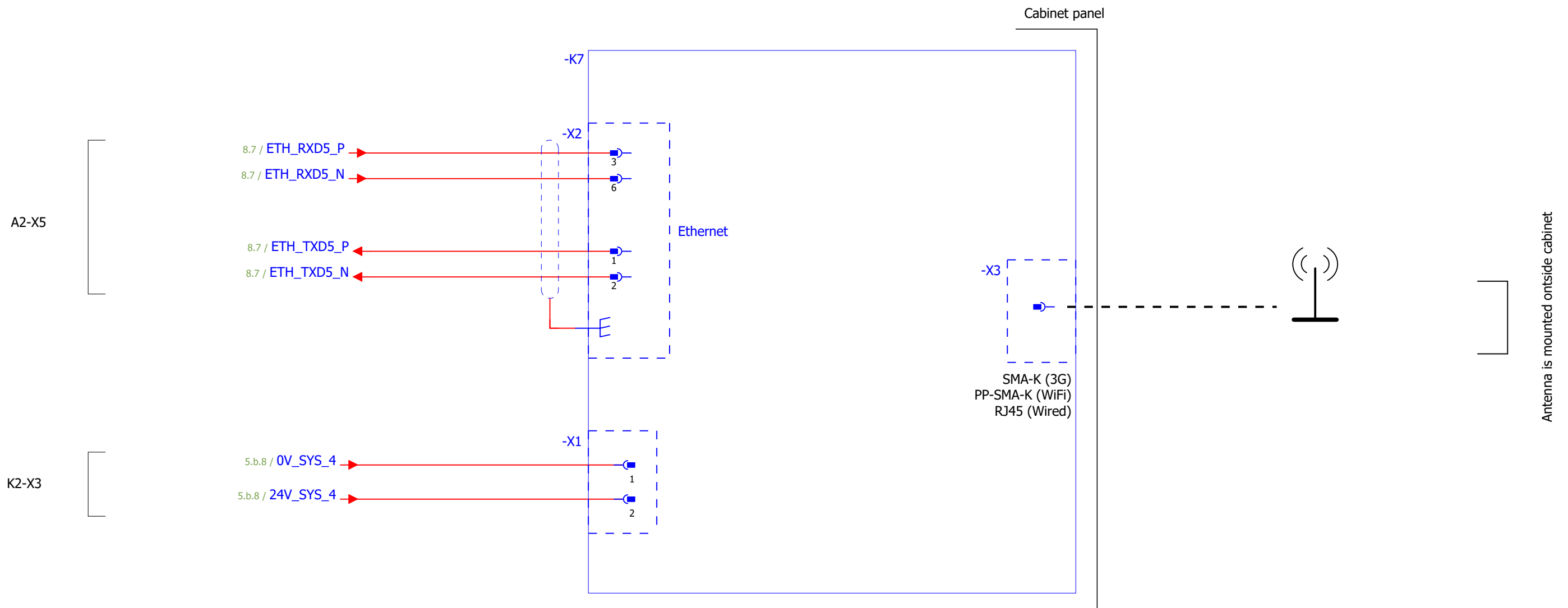
High-level function: = SCH  
 Mounting location: + U

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CONNECTED SERVICES - 3G, WiFi, Wired /K7

Status:  
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 Mounting location: + U

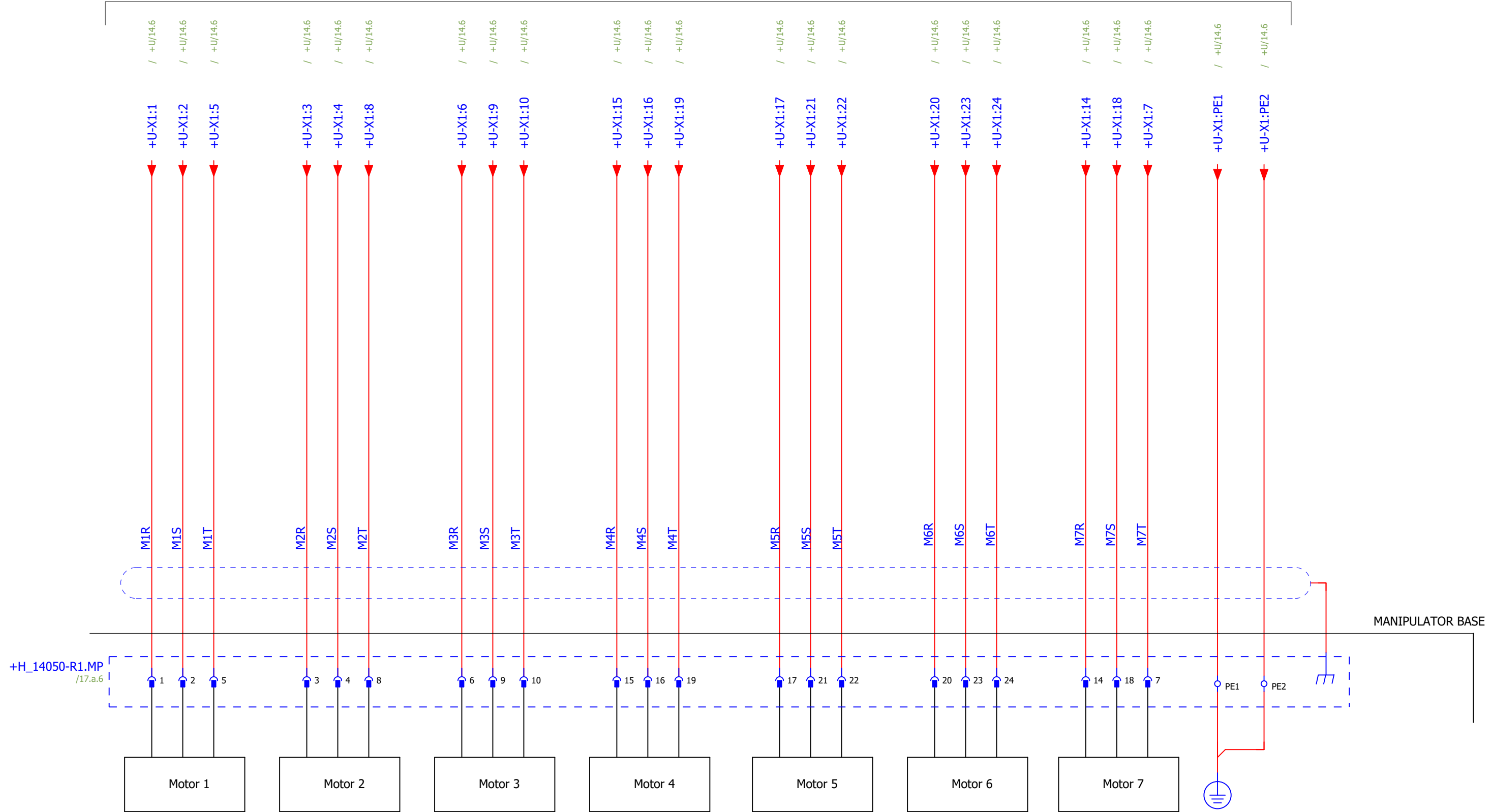
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# IRB 14050 cabinet

Controller interface  
+U-X1



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SERVO DRIVE SYSTEM IRB 14050

Status:  
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Mounting location: + EXT

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Controller interface  
+U-X1

+U/14.6 / +U-X1:13  
+U/14.6 / +U-X1:11  
+U/14.6 / +U-X1:12

MANIPULATOR BASE

+H\_14050-R1.MP

/17.1

24V\_BRAKE REL  
24V\_BRAKE FMY  
0V

Brake

Controller interface  
+U-X2

+U/15.a.6 / +U-X2:1  
+U/15.a.6 / +U-X2:2  
+U/15.a.6 / +U-X2:3  
+U/15.a.6 / +U-X2:4  
+U/15.a.6 / +U-X2:5  
+U/15.a.6 / +U-X2:6  
+U/15.a.6 / +U-X2:7  
+U/15.a.6 / +U-X2:8

+H\_14050-R1.SMB

SDI  
SDI-N  
SDO  
SDO-N  
0V  
24V  
Reserved  
Reserved

SMB board

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CONTROL CABLE IRB 14050

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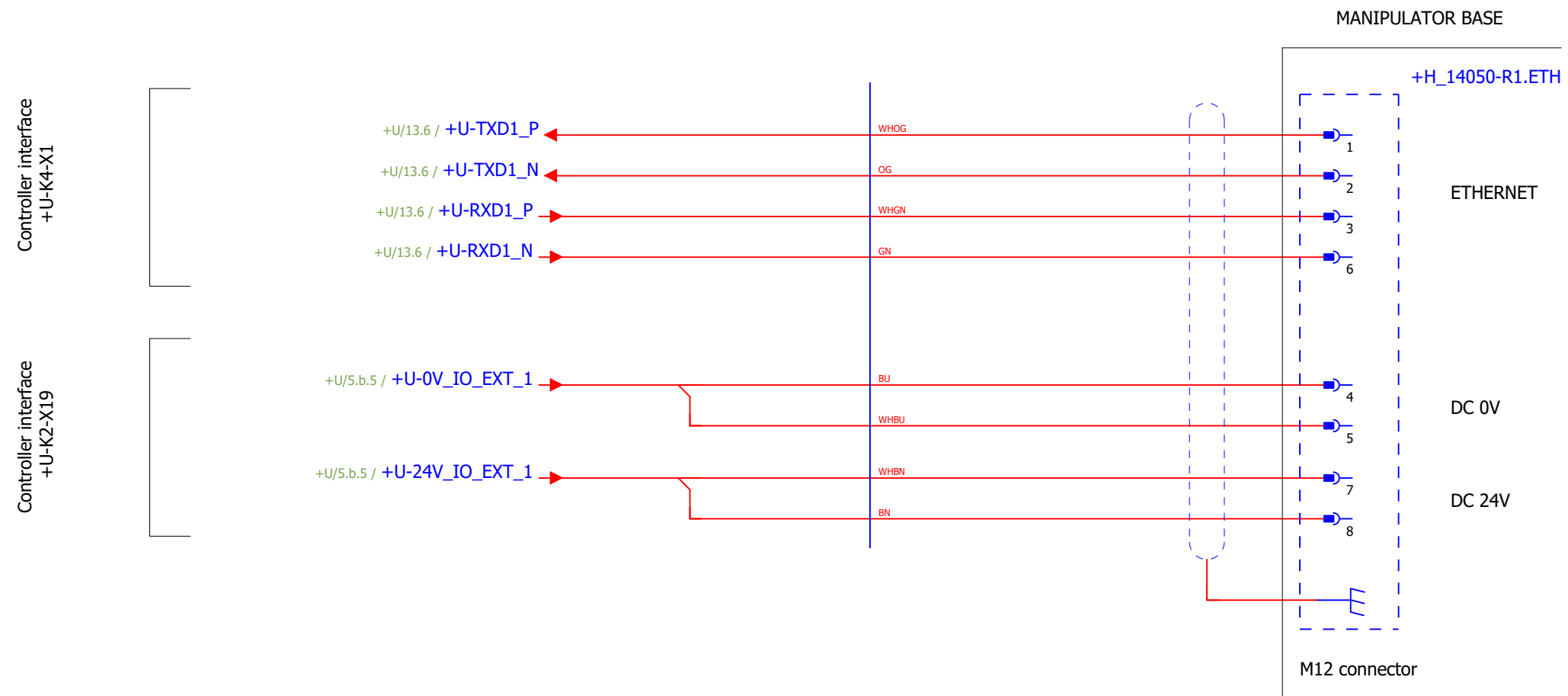
High-level function: = SCH  
Mounting location: + EXT

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ETHERNET CABLE IRB 14050

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

Page: 17.b  
Next: =Report+/007  
Total: 66

# 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-K1	1			PE				PE		1
168	BK, UL1015, Twisted-2	14		A1-K1	2			Q0	2			N		
167	BK, UL1015, Twisted-2	14		A1-K1	3			Q0	1			L		
GNYE	GNYE, UL1015	14		X0	PE			PE				PE		
165	BK, UL1015, Twisted-1	14		X0	1			Q0	3			L		
166	BK, UL1015, Twisted-1	14		X0	2			Q0	4			N		

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# Cable diagram

-W002

/ /

				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
098	BU, UL1569	20		A1-X2	A1			K2-X11	A1			Q1_FB_N		5.b
099	BU, UL1569	20		A1-X2	A2			K2-X11	A2			Q1_FB_P		
100	BU, UL1569	20		A1-X2	A3			K2-X11	A3			Q2_FB_P		
101	BU, UL1569	20		A1-X2	A4			K2-X11	A4			Q2_FB_N		
107	BU, UL1569, Twisted-1	18		A1-X2	A5			K2-X6	B1			24V_BRAKE_REL		
107	BU, UL1569, Twisted-2	18		A1-X2	A6			K2-X6	B1			24V_BRAKE_REL		
102	BU, UL1569	20		A1-X2	B1			K2-X11	B1			Q1_CTRL_P		
103	BU, UL1569	20		A1-X2	B2			K2-X11	B2			Q1_CTRL_N		
104	BU, UL1569	20		A1-X2	B3			K2-X11	B3			Q2_CTRL_N		
105	BU, UL1569	20		A1-X2	B4			K2-X11	B4			Q2_CTRL_P		
106	BU, UL1569, Twisted-1	18		A1-X2	B5			K2-X6	A1			24V_BRAKE		
106	BU, UL1569, Twisted-2	18		A1-X2	B6			K2-X6	A1			24V_BRAKE		
108	BU, UL1569	18		K2-X6	A2			K2-X6	B4			24V_BRAKE_EMY		

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High-level function: = Report  
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Page: 008  
Next: 009  
Total: 66

Cable diagram -W003 / /

				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				A1-X3				K6-X11						15
WHOG	CAT5E, SF/UTP, Twisted-1	26		A1-X3	1			K6-X11	1			TXD+		
OG	CAT5E, SF/UTP, Twisted-1	26		A1-X3	2			K6-X11	2			TXD-		
WHGN	CAT5E, SF/UTP, Twisted-2	26		A1-X3	3			K6-X11	3			RXD+		
GN	CAT5E, SF/UTP, Twisted-2	26		A1-X3	6			K6-X11	6			RXD-		

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**Cable diagram** -W004


Harness DC-BUS

				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
2013	BK, UL1015, Twisted	16		A1-X4	1			T4-X5	1			DC_BUS+		2
2014	BK, UL1015, Twisted	16		A1-X4	2			T4-X5	2			DC_BUS-		

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 Mounting location: +

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                               Next: 011  
                               Total: 66

Cable diagram

-W005

/

/

Harness 24V\_SYS\_DRV

				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
2023	BU, UL1569	20		A1-X5	1			T4-X1	1			24V_SYS_DRV_OUT		2
2024	BU, UL1569	20		A1-X5	2			T4-X1	2			0V_SYS_DRV_OUT		

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Cable diagram =SCH+U-W005

Status:  
Approved

Document no.

High-level function: = Report  
 Mounting location: +

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# Cable diagram -W006

## Harness AC input of power supply

				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
090	BK, UL1015, Twisted-1	16		A1-X6	1			T2-X1	1			L		3
091	BK, UL1015, Twisted-1	16		A1-X6	2			T2-X1	2			N		
GNYE	GNYE, UL1015	14		PE				T2-X1	3			PE		

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# Cable diagram

-W007

/ Harness 24V\_SYS\_DRV

				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
081	BU, UL1569	20		A1-X9	1			K2-X4	3			0V_SYS_DRV		2
080	BU, UL1569	20		A1-X9	2			K2-X4	2			24V_SYS_DRV		

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**Cable diagram =SCH+U-W007**

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# Cable diagram


-W008

/ Harness EtherCAT

				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				T4-X3				A1-X12						2
WHOG	CAT5E, SF/UTP, Twisted-1	26		T4-X3	1			A1-X12	1			TXD+		
OG	CAT5E, SF/UTP, Twisted-1	26		T4-X3	2			A1-X12	2			TXD-		
WHGN	CAT5E, SF/UTP, Twisted-2	26		T4-X3	3			A1-X12	3			RXD+		
GN	CAT5E, SF/UTP, Twisted-2	26		T4-X3	6			A1-X12	6			RXD-		

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**Cable diagram =SCH+U-W008**

**Status:**  
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# Cable diagram

-W009

/

/

Harness AC\_OK

				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
078	BU, UL1569	20		A1-X13	1			K2-X10	2			0V_AC_OK		2
079	BU, UL1569	20		A1-X13	2			K2-X10	1			AC_OK		

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Cable diagram =SCH+U-W009

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

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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.			
2011	BU build-in filter, twisted			A1-P2	3			A1-K1	4			N		2
2012	BN build-in filter, twisted			A1-P2	2			A1-K1	5			L		


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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
GNYE	GNYE, UL1015	16		A1-T2-X1	3			A1-P3	1			PE		2
2000	BK, UL1015	16		A1-T2-X1	1			A1-P3	2			L		
2001	BK, UL1015	16		A1-T2-X1	2			A1-P3	3			N		

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Cable diagram =SCH+U-A1-W011

Status:  
 Approved

High-level function: = Report  
 Mounting location: +

Document no.  
 Page: 017  
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 Total: 66

Cable diagram -W012

Harness DC output of power supply

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.			
2003	BU, UL1569	18		A1-T2-X2	2			A1-P4	2			24V_Trunk		2
2004	BU, UL1569	18		A1-T2-X2	3			A1-P4	3			24V_Trunk		
2005	BU, UL1569	18		A1-T2-X2	4			A1-P4	4			24V_Trunk		
2006	BU, UL1569	18		A1-T2-X2	5			A1-P4	5			24V_Trunk		
2007	BU, UL1569	18		A1-T2-X2	8			A1-P4	8			0V_Trunk		
2008	BU, UL1569	18		A1-T2-X2	9			A1-P4	9			0V_Trunk		
2009	BU, UL1569	18		A1-T2-X2	10			A1-P4	10			0V_Trunk		
2010	BU, UL1569	18		A1-T2-X2	11			A1-P4	11			0V_Trunk		

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High-level function: = Report  
Mounting location: +

Document no.      Page: 018  
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Total: 66

# Cable diagram

-W016

Harness Motors power ULV 7-axis

				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
2025	BK UL1569, twisted_1	16		T4-X6	B3			X1	1			U1		14
2026	BK UL1569, twisted_1	16		T4-X6	A3			X1	2			V1		
2028	BK UL1569, twisted_2	16		T4-X6	A1			X1	3			U2		
2029	BK UL1569, twisted_2	16		T4-X6	A2			X1	4			V2		
2027	BK UL1569, twisted_1	16		T4-X6	B2			X1	5			W1		
2031	BK UL1569, twisted_3	18		T4-X7	B3			X1	6			U3		
2030	BK UL1569, twisted_2	16		T4-X6	B1			X1	8			W2		
2032	BK UL1569, twisted_3	18		T4-X7	B2			X1	9			V3		
2033	BK UL1569, twisted_3	18		T4-X7	B1			X1	10			W3		
2046	BU, UL1569, Twisted-8	18		K2-X7	A1			X1	11			24V_BRK_EMY		
2048	BU, UL1569, Twisted-8	18		K2-X7	A3			X1	12			0V_BRK		
2047	BU, UL1569, Twisted-8	18		K2-X7	A2			X1	13			24V_BRK_REL		
2043	BK UL1569, twisted_7	18		T4-X7	A1			X1	14			U7		
2034	BK UL1569, twisted_4	18		T4-X8	A5			X1	15			U4		
2035	BK UL1569, twisted_4	18		T4-X8	A6			X1	16			V4		
2037	BK UL1569, twisted_5	18		T4-X8	B5			X1	17			U5		
2044	BK UL1569, twisted_7	18		T4-X7	A2			X1	18			V7		
2036	BK UL1569, twisted_4	18		T4-X8	B6			X1	19			W4		
2040	BK UL1569, twisted_6	18		T4-X8	A2			X1	20			U6		
2038	BK UL1569, twisted_5	18		T4-X8	B2			X1	21			V5		
2039	BK UL1569, twisted_5	18		T4-X8	B3			X1	22			W5		
2041	BK UL1569, twisted_6	18		T4-X8	A1			X1	23			V6		
2042	BK UL1569, twisted_6	18		T4-X8	B1			X1	24			W6		
GNYE	GNYE UL1015, 3HAB7917-2	14		PE				X1	PE1			PE1		
GNYE	GNYE UL1015, 3HAB7917-2	14		PE				X1	PE2			PE2		

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Page: 019  
Next: 020  
Total: 66

Prepared by, date: Clyde



Cable diagram

-W017

/ 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
115	BU, UL1569	18		K2-X1	A1			T2-X2	7			0V		3
116	BU, UL1569	18		K2-X1	A2			T2-X2	8			0V		
117	BU, UL1569	18		K2-X1	A3			T2-X2	9			0V		
118	BU, UL1569	18		K2-X1	B1			T2-X2	10			0V		
119	BU, UL1569	18		K2-X1	B2			T2-X2	11			0V		
120	BU, UL1569	18		K2-X1	B3			T2-X2	12			0V		
109	BU, UL1569	18		K2-X1	C1			T2-X2	1			24V		
110	BU, UL1569	18		K2-X1	C2			T2-X2	2			24V		
111	BU, UL1569	18		K2-X1	C3			T2-X2	3			24V		
112	BU, UL1569	18		K2-X1	D1			T2-X2	4			24V		
113	BU, UL1569	18		K2-X1	D2			T2-X2	5			24V		
114	BU, UL1569	18		K2-X1	D3			T2-X2	6			24V		

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Total: 66

Cable diagram

-W019

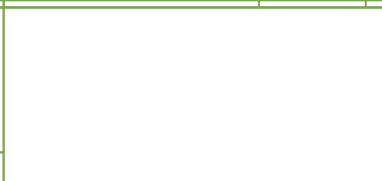
Harness DeviceNet connection

				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-		10
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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 Mounting location: +

Document no.      Page: 021  
                               Next: 022  
                               Total: 66

# Cable diagram -W020

# Harness 24V\_PC

				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
048	BU UL1569, 3HAB8303-46	20		A2-X1	1			K2-X2	A2			0V_PC		5.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

-W021

/ 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		5.b
083	BU UL1569, 3HAB8303-46	20		K2-X3	A1			A2.K3-X1	2			0V_SYS_1		
085	BU UL1569, 3HAB8303-46	20		K2-X3	A2			K6-X1	2			0V_SYS_2		
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		
084	BU UL1569, 3HAB8303-46	20		K2-X3	B2			K6-X1	1			24V_SYS_2		
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: +

Document no.      Page: 023  
Next: 024  
Total: 66

# Cable diagram

-W022


/

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				K2-X8						5
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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Mounting location: +

Document no.      Page: 024  
Next: 025  
Total: 66

# Cable diagram

-W023

/

/

# 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				X4-SHELL						6
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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# Cable diagram

-W024

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		5.a
064	BU UL1569, 3HAB8303-16	26		A2.K3-X6	2			K2-X12	B1			GND_OUT-CH2		
076	BU UL1569, 3HAB8303-16	26		A2.K3-X6	3			A2.K3-X6	8			Short circuit		
077	BU UL1569, 3HAB8303-16	26		A2.K3-X6	4			A2.K3-X6	6			Short circuit		
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		

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Mounting location: +

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Page: 026  
Next: 026.a  
Total: 66

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# Cable diagram

-W024

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
075	BU UL1569, 3HAB8303-16	26		A2.K3-X7	6			K2-X12	B14			IN_OPT_OUT1		5.a

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Document no.      Page: 026.a  
                              Next: 027  
                              Total: 66



# Cable diagram

-W025


Harness Short-circuit connector

				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
121	BU UL1569, 3HAB8303-46	20		K2-X14	1			K2-X14	3			Short circuit		5.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		
123	BU UL1569, 3HAB8303-46	20		K2-X14	9			K2-X14	11			Short circuit		
127	BU UL1569, 3HAB8303-46	20		K2-X14	10			K2-X14	12			Short circuit		
124	BU UL1569, 3HAB8303-46	20		K2-X14	13			K2-X14	15			Short circuit		
128	BU UL1569, 3HAB8303-46	20		K2-X14	14			K2-X14	16			Short circuit		

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**Cable diagram =SCH+U-W025**

**Status:**  
Approved

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

**Document no.**     **Page: 027**  
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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
				Adaptor				K5.1-X5						11.a
WHOG	Twisted_1, 3HAC025999-001 cat5e SF/UTP 26			Adaptor	1		LAN4	K5.1-X5	1		LAN4	TXD+		
OG	Twisted_1, 3HAC025999-001 cat5e SF/UTP 26			Adaptor	2		LAN4	K5.1-X5	2		LAN4	TXD-		
WHGN	Twisted_2, 3HAC025999-001 cat5e SF/UTP 26			Adaptor	3		LAN4	K5.1-X5	3		LAN4	RXD+		
GN	Twisted_2, 3HAC025999-001 cat5e SF/UTP 26			Adaptor	6		LAN4	K5.1-X5	6		LAN4	RXD-		

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Cable diagram =SCH+U-W026

**Status:**  
Approved

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

**Document no.**  
**Page:** 028  
**Next:** 029  
**Total:** 66

Cable diagram

-W027

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/

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		5.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-W027

Status: Approved

High-level function: = Report  
Mounting location: +

Document no.      Page: 029  
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Total: 66

Cable diagram

-W028

/

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				Adaptor				K4-X7						13
WHOG	Twisted_1, 3HAC025999-001 cat5e SF/UTP	26		Adaptor	1		LAN4	K4-X7	1		LAN4	TXD+		
OG	Twisted_1, 3HAC025999-001 cat5e SF/UTP	26		Adaptor	2		LAN4	K4-X7	2		LAN4	TXD-		
WHGN	Twisted_2, 3HAC025999-001 cat5e SF/UTP	26		Adaptor	3		LAN4	K4-X7	3		LAN4	RXD+		
GN	Twisted_2, 3HAC025999-001 cat5e SF/UTP	26		Adaptor	6		LAN4	K4-X7	6		LAN4	RXD-		

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**Status:**  
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**Document no.**  
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# Cable diagram -W029

# 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+		5
2	WH build-in temp sensor			K2-X21	A1			B4				SENSOR1		

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# Cable diagram

-W030

/ 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				Adaptor						8.a
WHOG	Twisted_1, 3HAC025999-001 cat5e SF/UTP	26		A2-X4	1			Adaptor	1			TXD+		
OG	Twisted_1, 3HAC025999-001 cat5e SF/UTP	26		A2-X4	2			Adaptor	2			TXD-		
WHGN	Twisted_2, 3HAC025999-001 cat5e SF/UTP	26		A2-X4	3			Adaptor	3			RXD+		
GN	Twisted_2, 3HAC025999-001 cat5e SF/UTP	26		A2-X4	6			Adaptor	6			RXD-		

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**Mounting location: +**

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# Cable diagram -W031

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				K4-X6						8.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

-W032

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-X9				K6-X2						8
W HOG	Twisted_1, 3HAC025999-001 cat5e SF/UTP	26		A2-X9	1			K6-X2	1			TXD+		
OG	Twisted_1, 3HAC025999-001 cat5e SF/UTP	26		A2-X9	2			K6-X2	2			TXD-		
W HGN	Twisted_2, 3HAC025999-001 cat5e SF/UTP	26		A2-X9	3			K6-X2	3			RXD+		
GN	Twisted_2, 3HAC025999-001 cat5e SF/UTP	26		A2-X9	6			K6-X2	6			RXD-		

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			Prepared by, date: Clyde      Approved by, date: Zhuan Yu		<b>Document no.</b>	



# Cable diagram

-W033



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				K7-X2						8
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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# Cable diagram

-W034

Harness Single SMB 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				K6-X4				X2						15.a
WHOG	3HAC066598-001 build in Y-CODE conn	26		K6-X4	1			X2	1			MRCO (TXD+)		
OG	3HAC066598-001 build in Y-CODE conn	26		K6-X4	2			X2	2			MRCO_N (TXD-)		
BN	3HAC066598-001 build in Y-CODE conn	20		K6-X4	3			X2	7			0V_2		
WHGN	3HAC066598-001 build in Y-CODE conn	26		K6-X4	4			X2	3			MRCI (RXD+)		
GN	3HAC066598-001 build in Y-CODE conn	26		K6-X4	5			X2	4			MRCI_N (RXD-)		
BU	3HAC066598-001 build in Y-CODE conn	20		K6-X4	6			X2	5			0V_1		
WH	3HAC066598-001 build in Y-CODE conn	20		K6-X4	7			X2	6			24V_SMB		
BK	3HAC066598-001 build in Y-CODE conn	20		K6-X4	9			X2	8			0V_3		

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