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No.4528, Kangxin Highway,
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Latest revision:
Rev 07
6/30/2020

Prepared by, date: Clyde

Approved by, date: Yang X. Gao



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Document no.
3HAC059896-009

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Customer :
 Drawing number : 3HAC059896-009
 Drawing version : Rev 07

Manufacture : ABB Engineering (Shanghai) Ltd.
 Type : Industrial robot controller
 Type of installation :
 Control cabinet : Project template with identifier structure to IEC standard
 Mains voltage : 220~230VAC, 50/60Hz
 Supply :
 Control voltage :
 Year of construction : 2019

Project start : 6/24/2016
 Project manager :
 Last revision :
 Designed by :
 Designed date : 3/29/2021
 Number of pages : 75

Latest revision:
 Rev 07
 6/30/2020

Prepared by, date: Clyde Approved by, date: Yang X. Gao



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Frontpage

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Rev 07 2021/03/23

1. Exchanged the 24V and 0V cable connection from T5-X2 to X45
2. Changed the description of AC_INPUT contacts from " L, N, PE " to " L1, L2 or N, PE"
3. Added the connected information of GS safety function.

Rev 06 2021/02/02

1. Removed auto-stop connection on harness W025, added notes to K2-X14.
2. Added IRB360 connection.

Rev 05 2020/08/20

Add IRB 1300 connection

Rev 04 2020/07/24

1. Correct some text errors.
2. Update the template.
3. Added E-stop status output information.
4. Merged main computer connection from 3 pages to 2 pages.
5. Merged master IO unit connection from 3 pages to 2 pages.

Rev 03 2019/12/03

1. Add wire numbers for all harness.
3. Changed page designation of page 18.a
4. Update the page template.

Rev 02 2019/04/22

New release.

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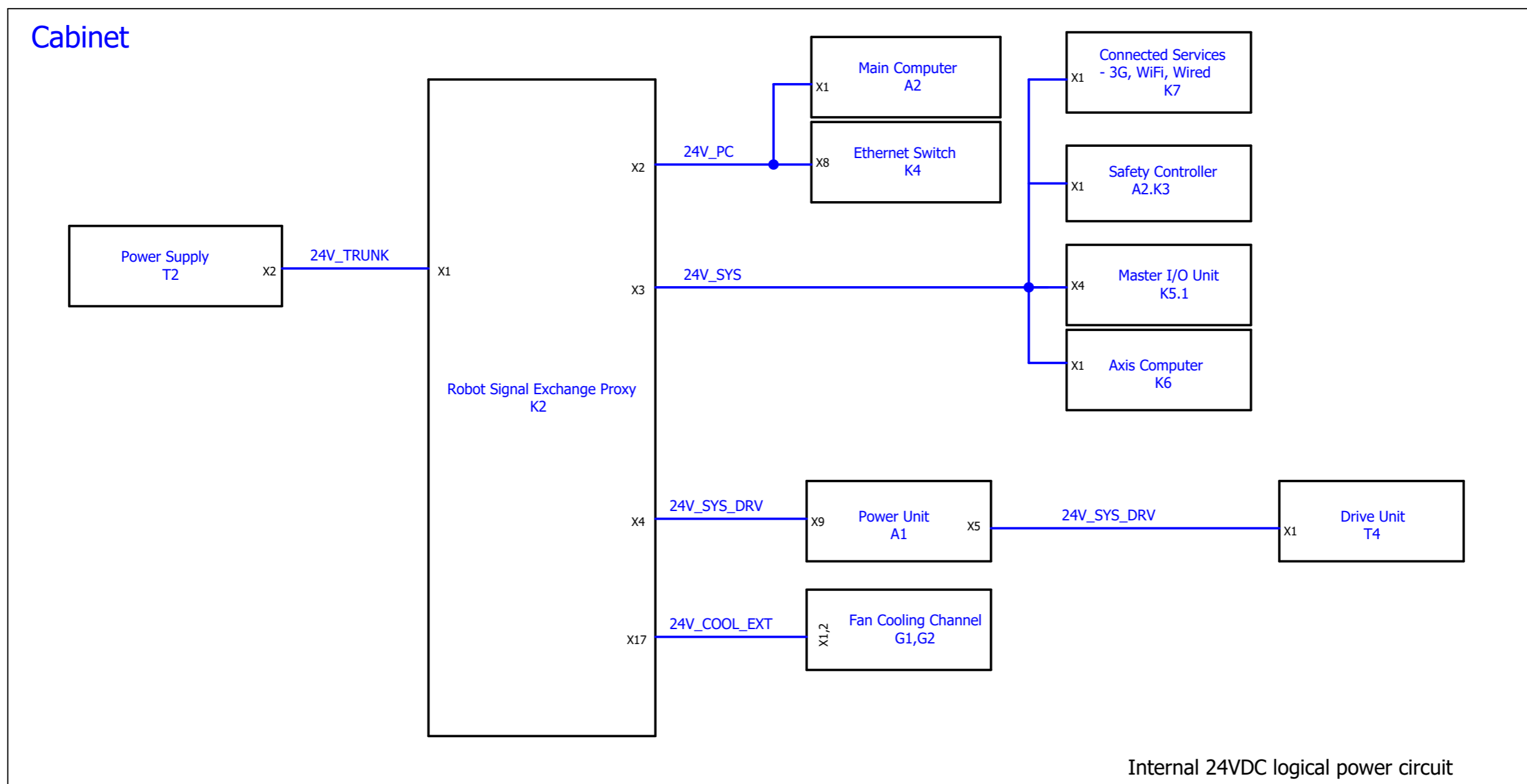
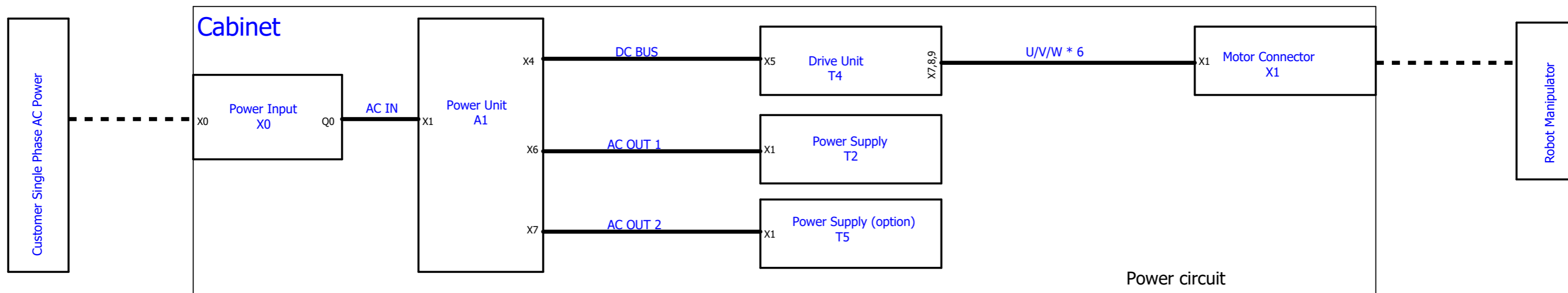
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Block diagram

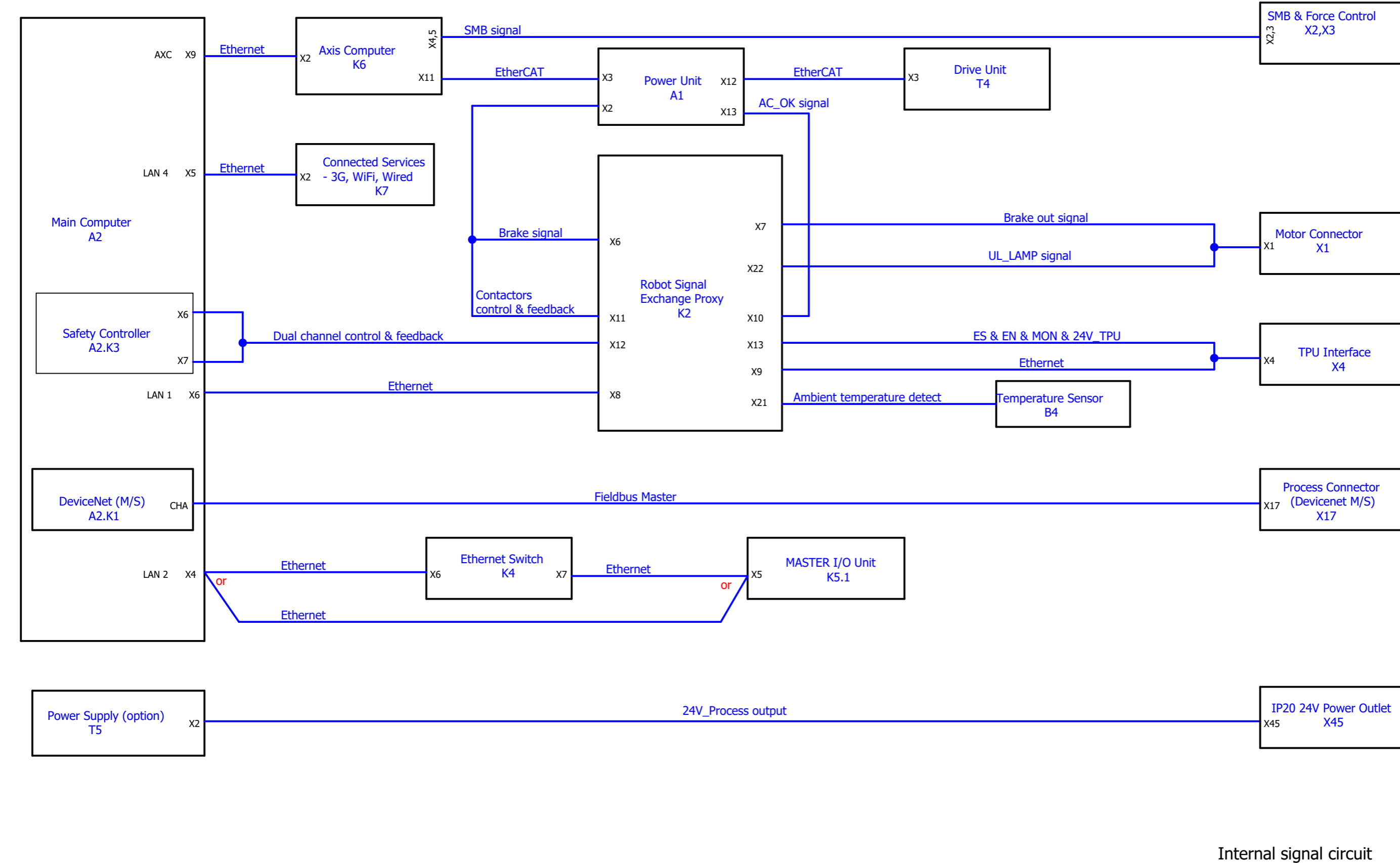
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Cabinet



Internal signal circuit

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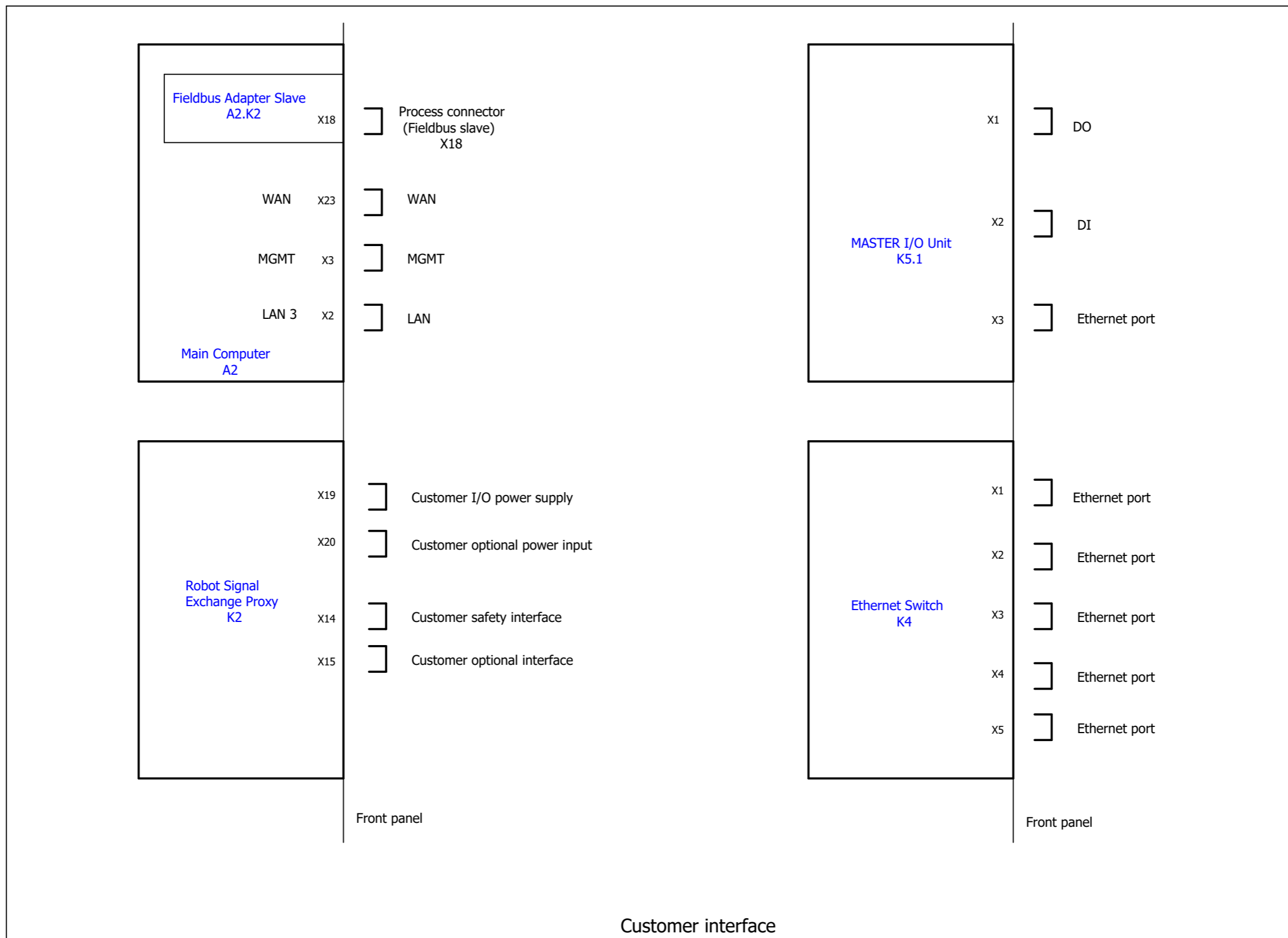
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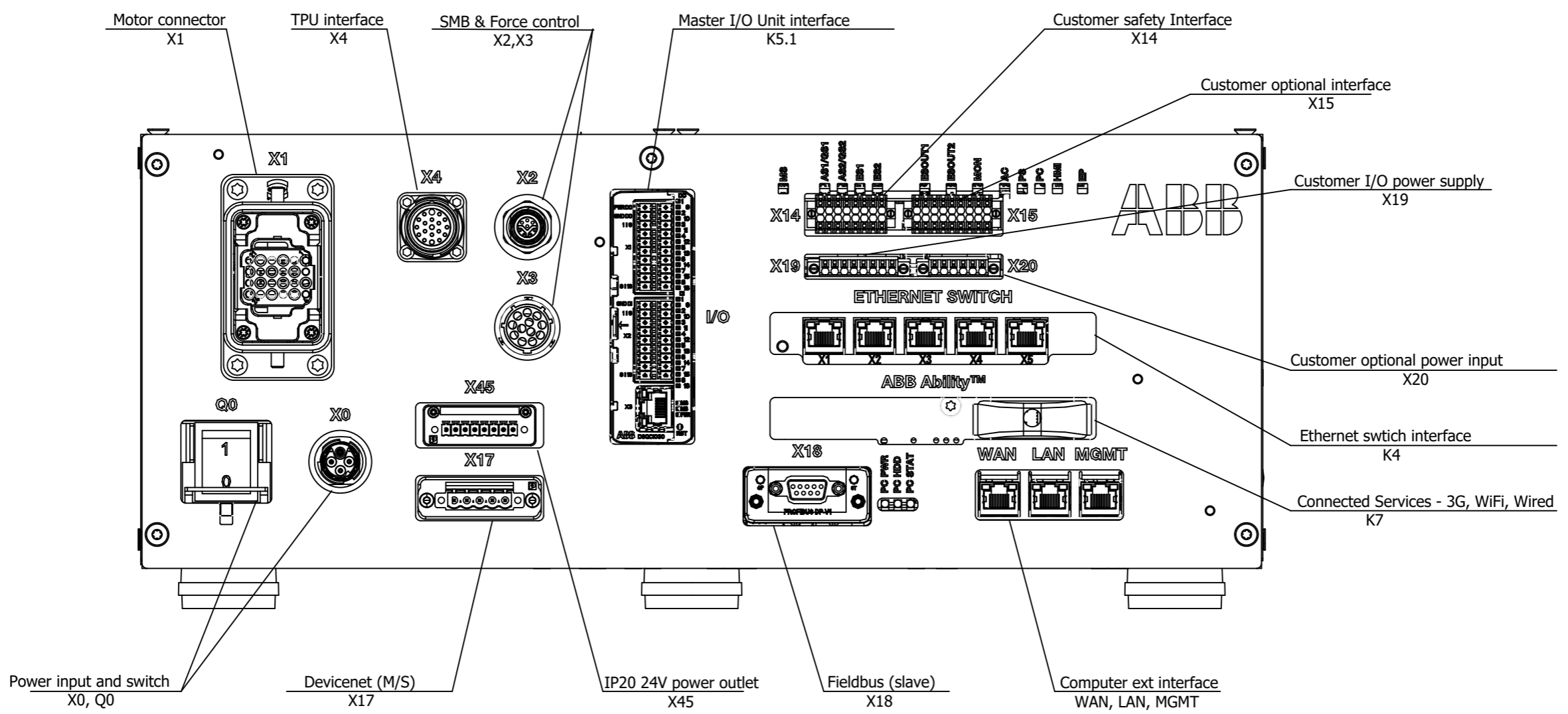
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Front view

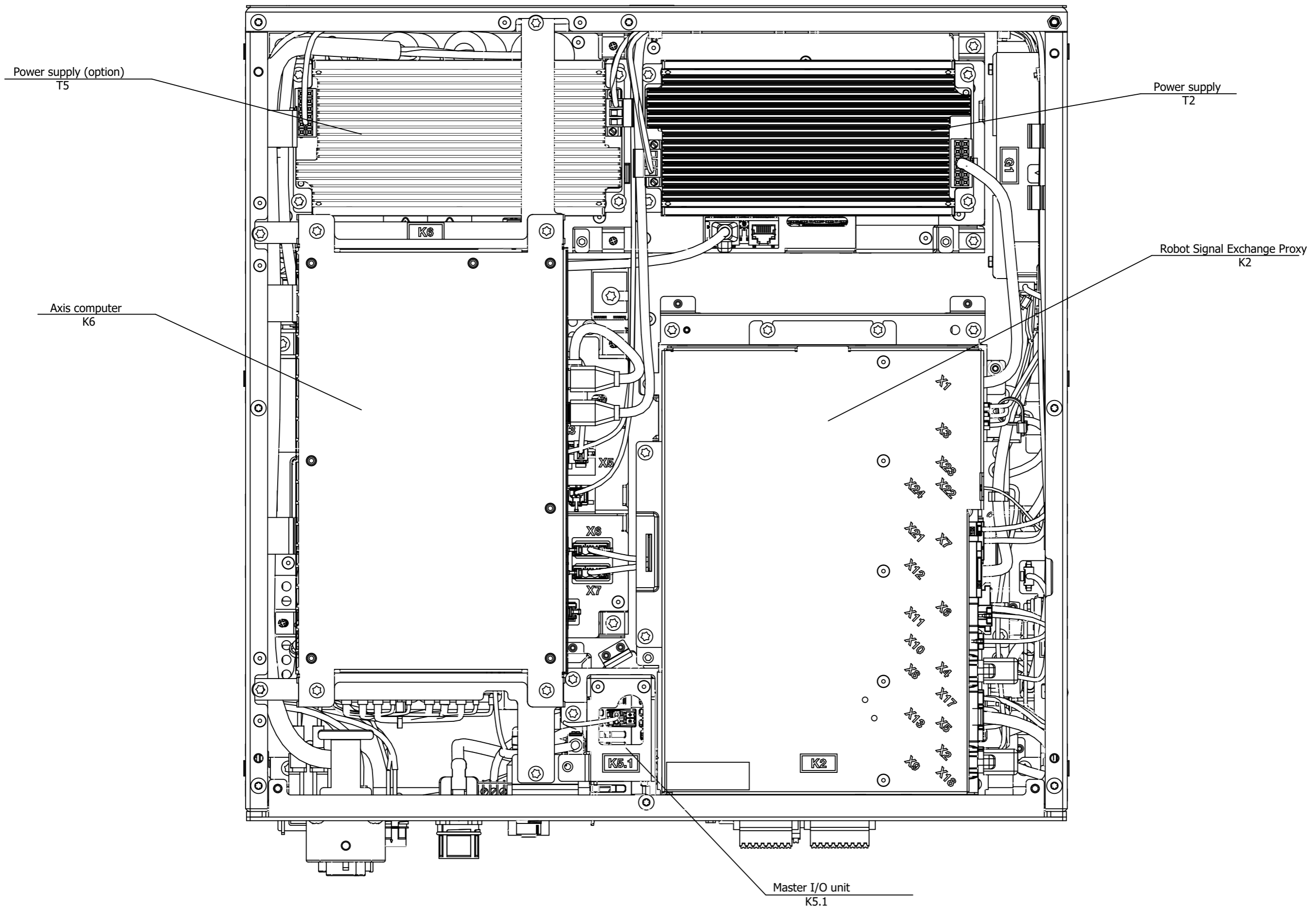
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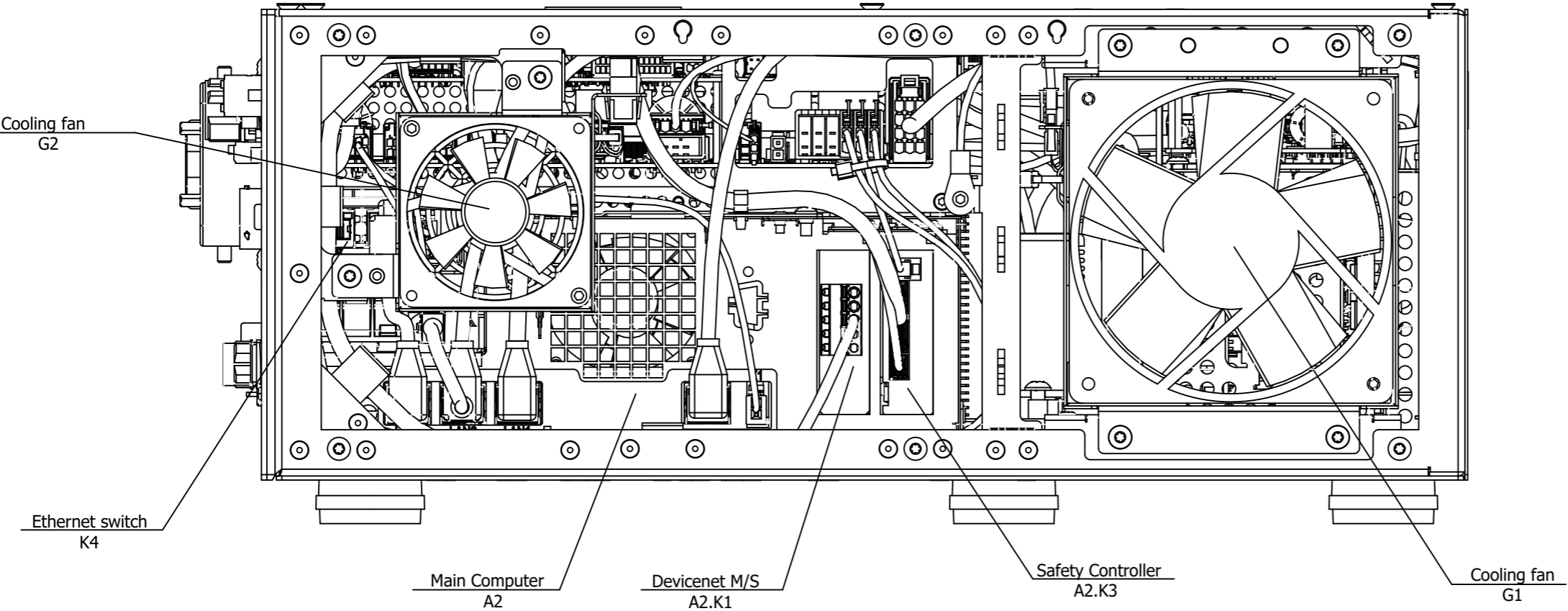
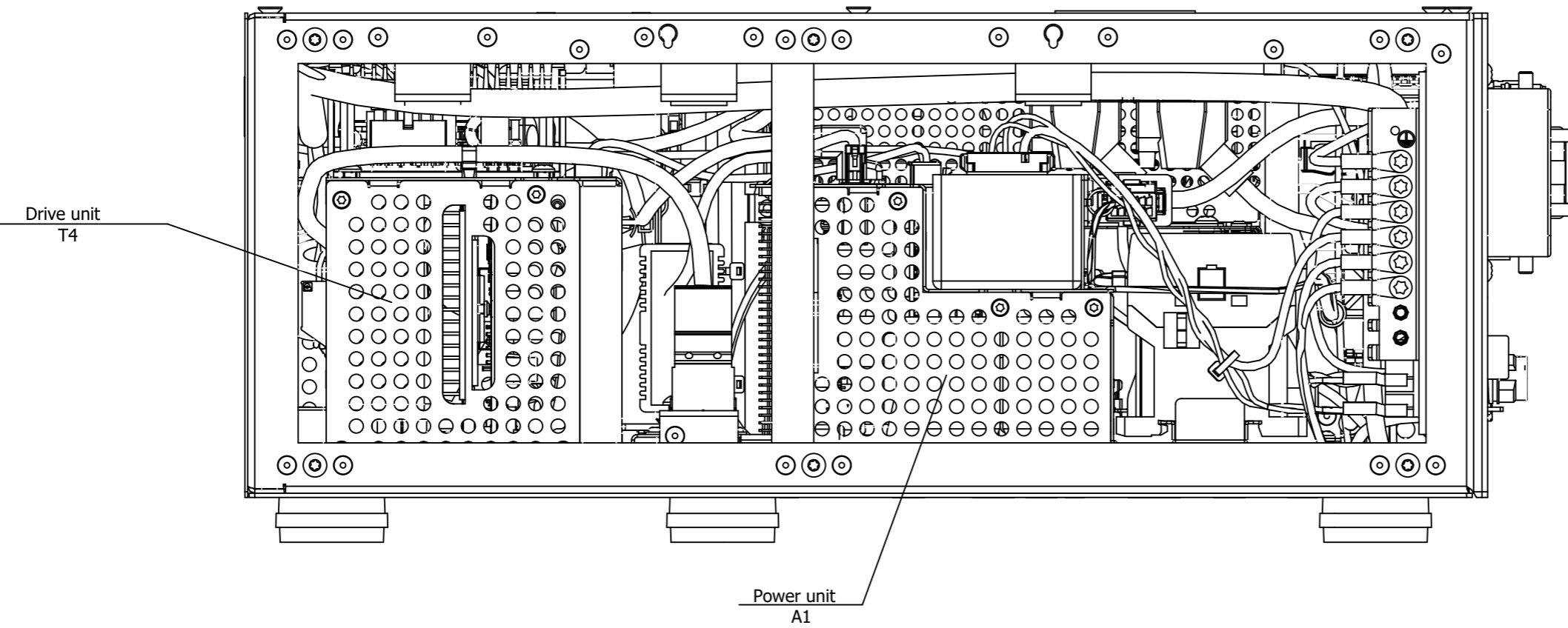
Top view

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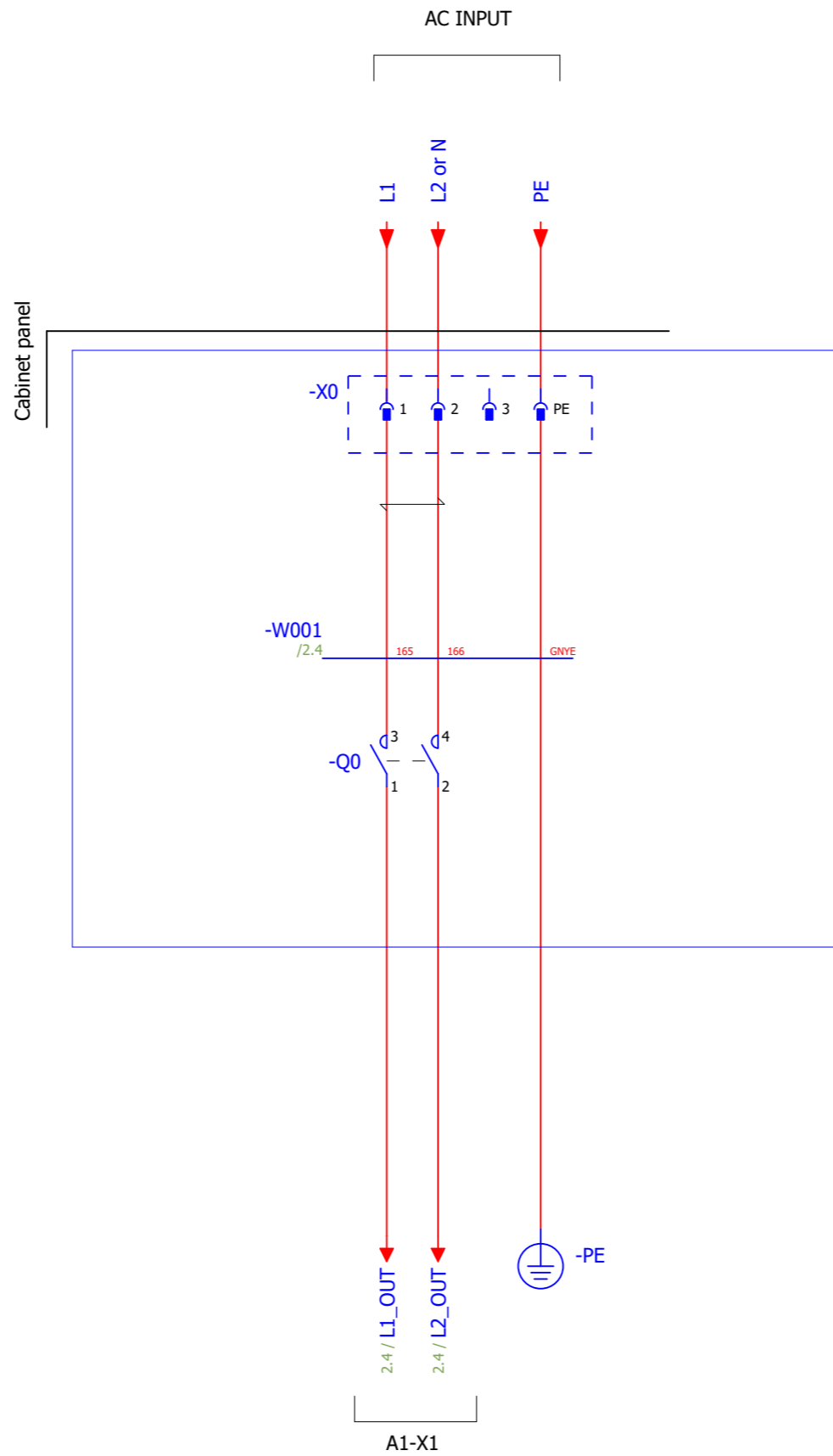
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Side view

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POWER INPUT /X0

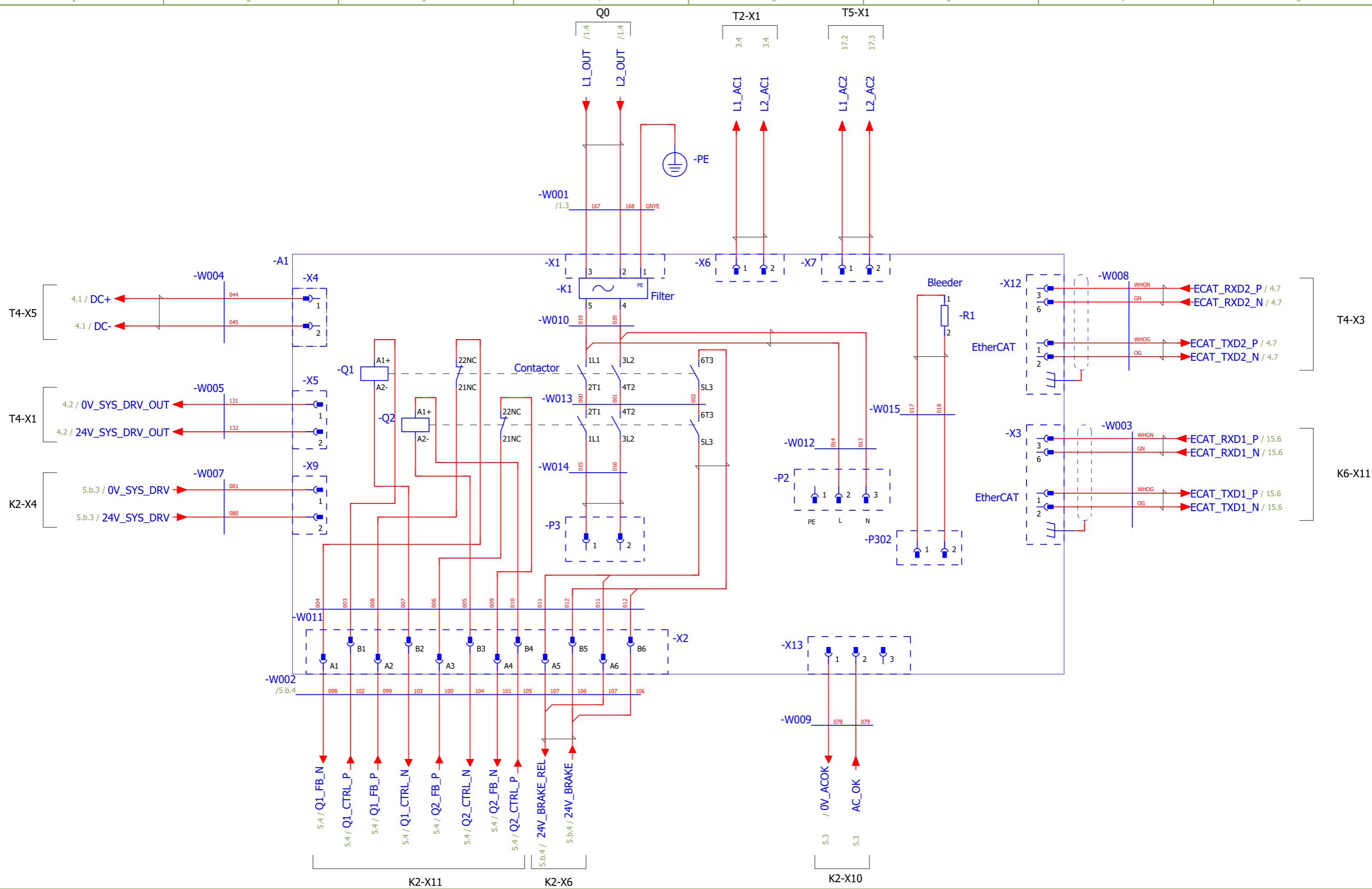
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POWER UNIT /A1

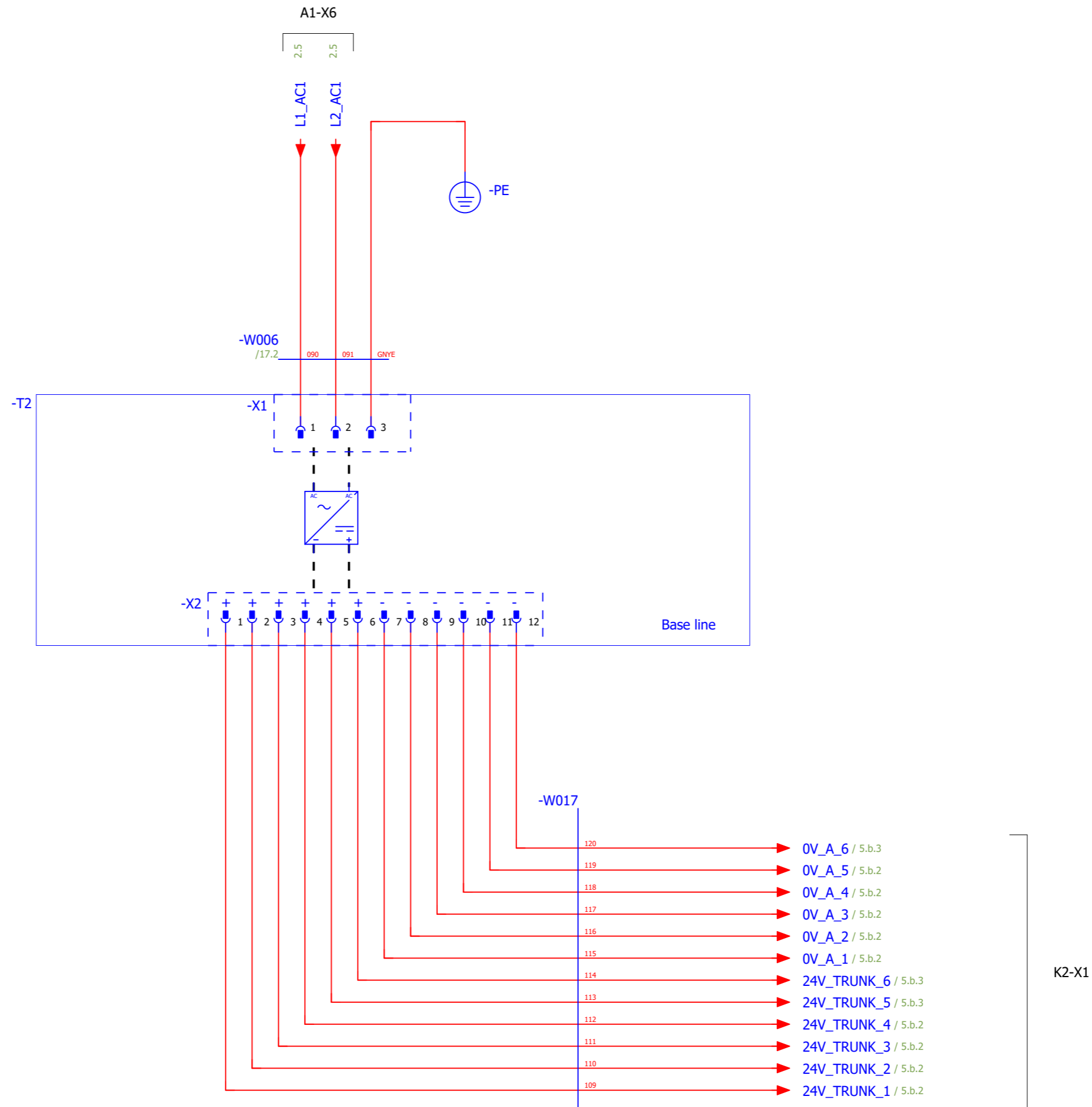
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POWER SUPPLY /T2

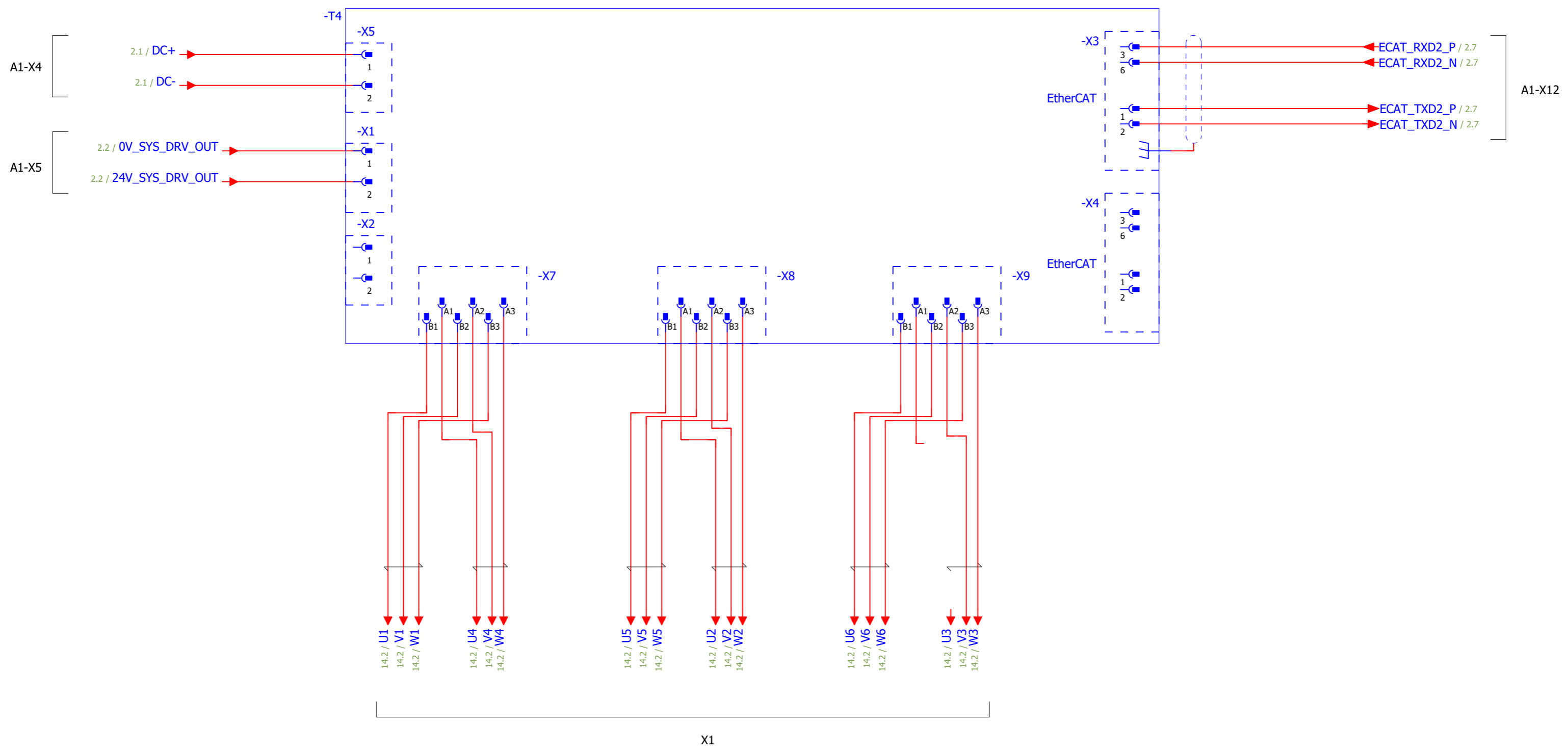
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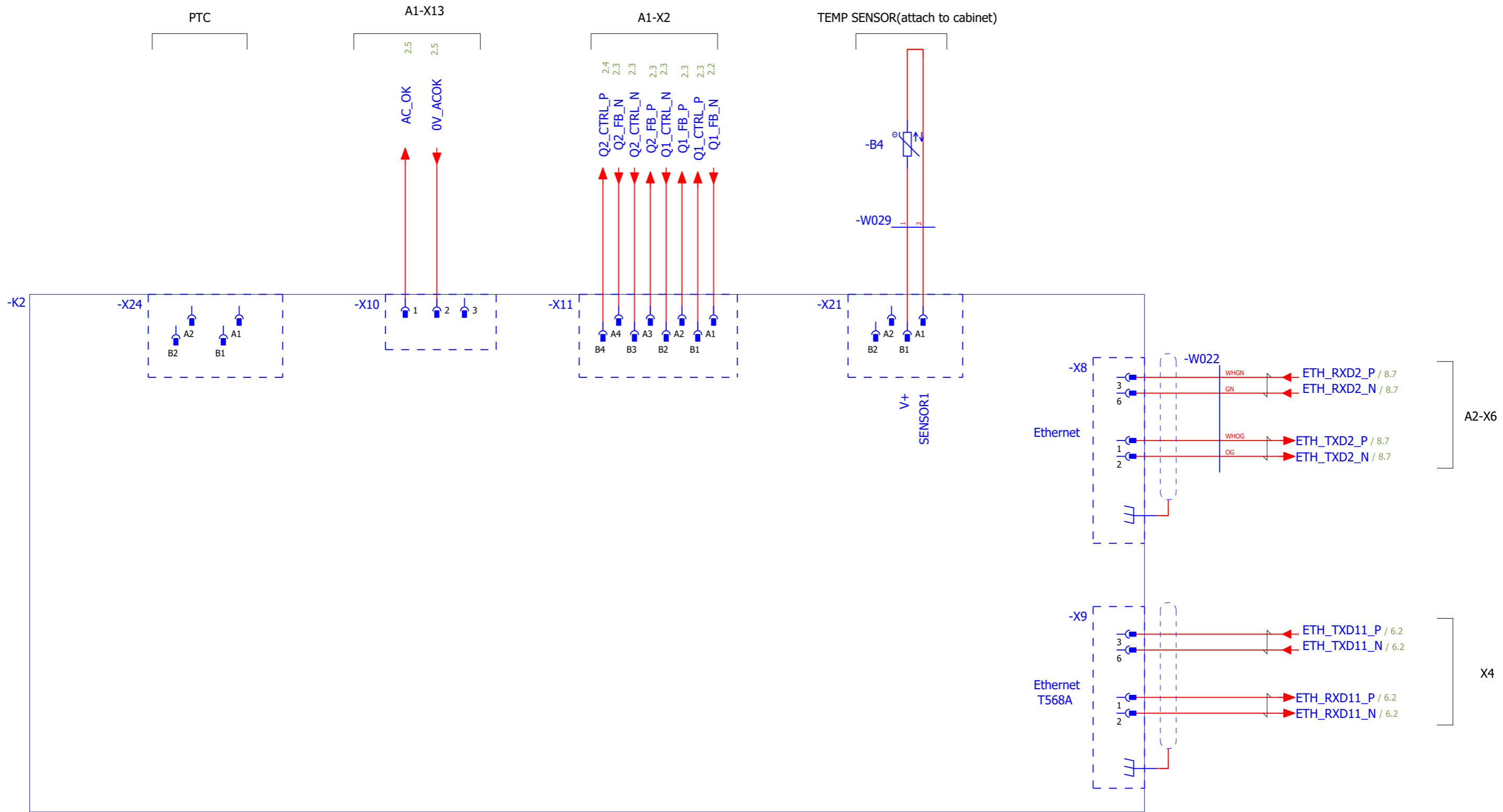
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ROBOT SIGNAL EXCHANGE PROXY - K2

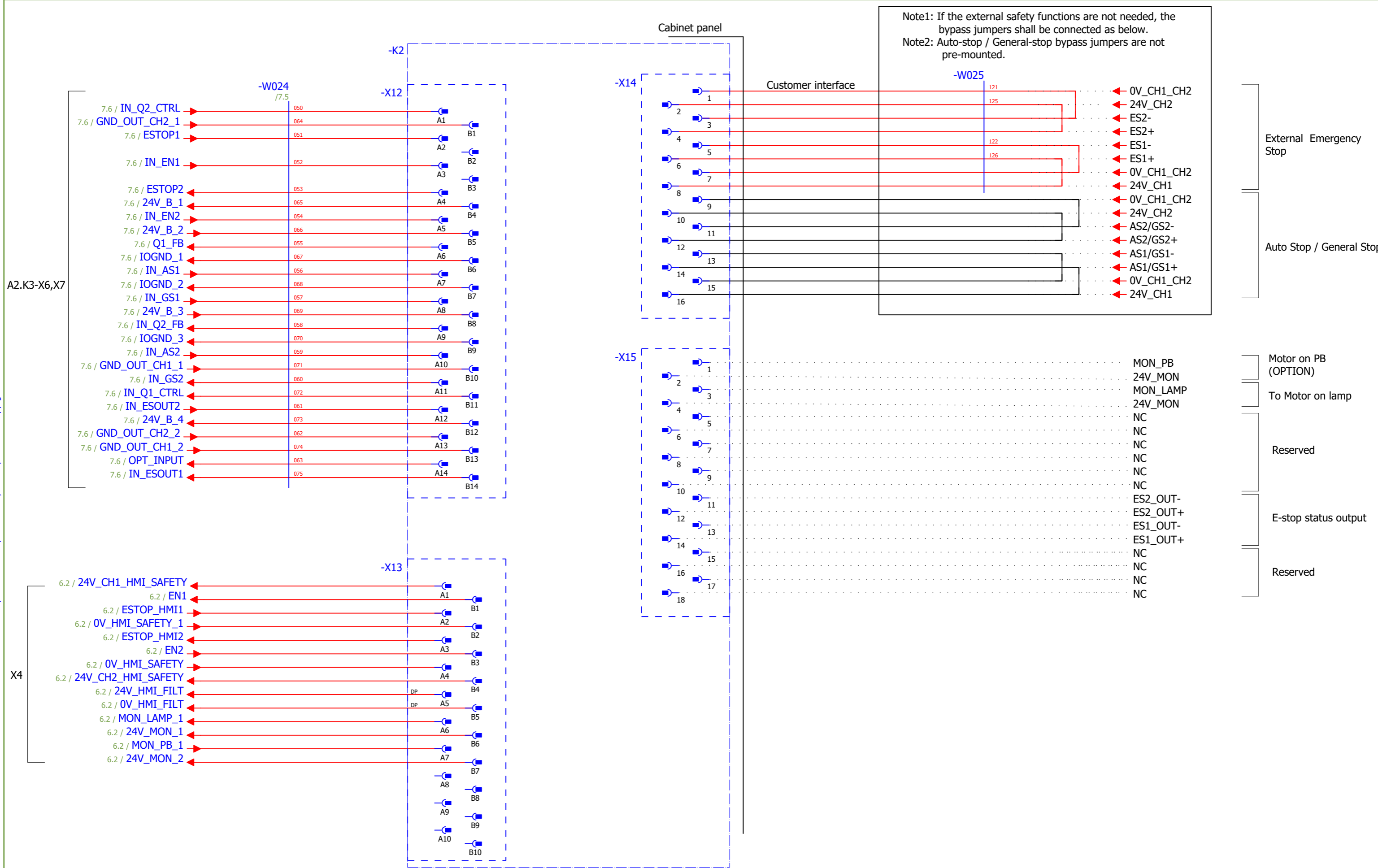
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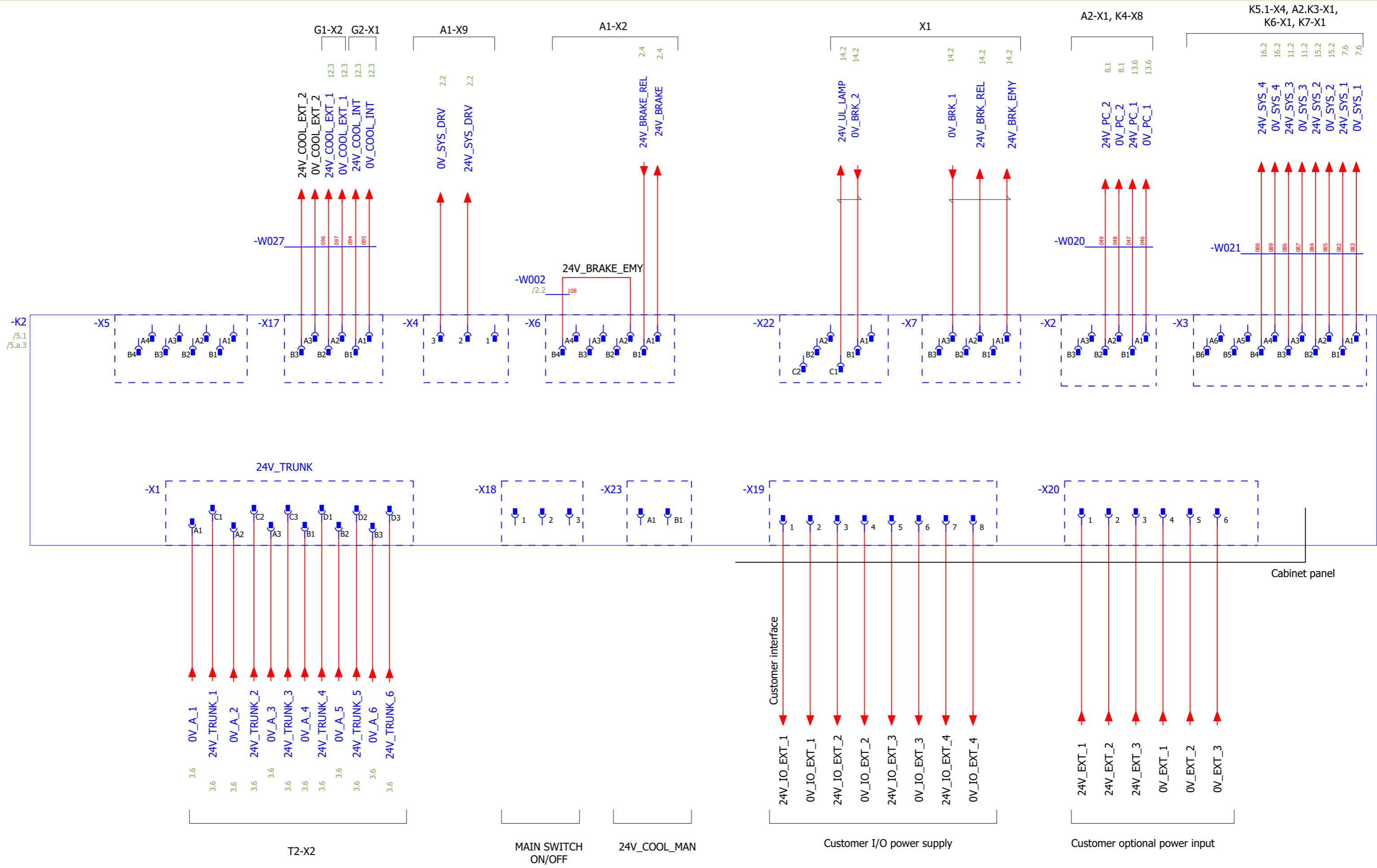
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ROBOT SIGNAL EXCHANGE PROXY - K2

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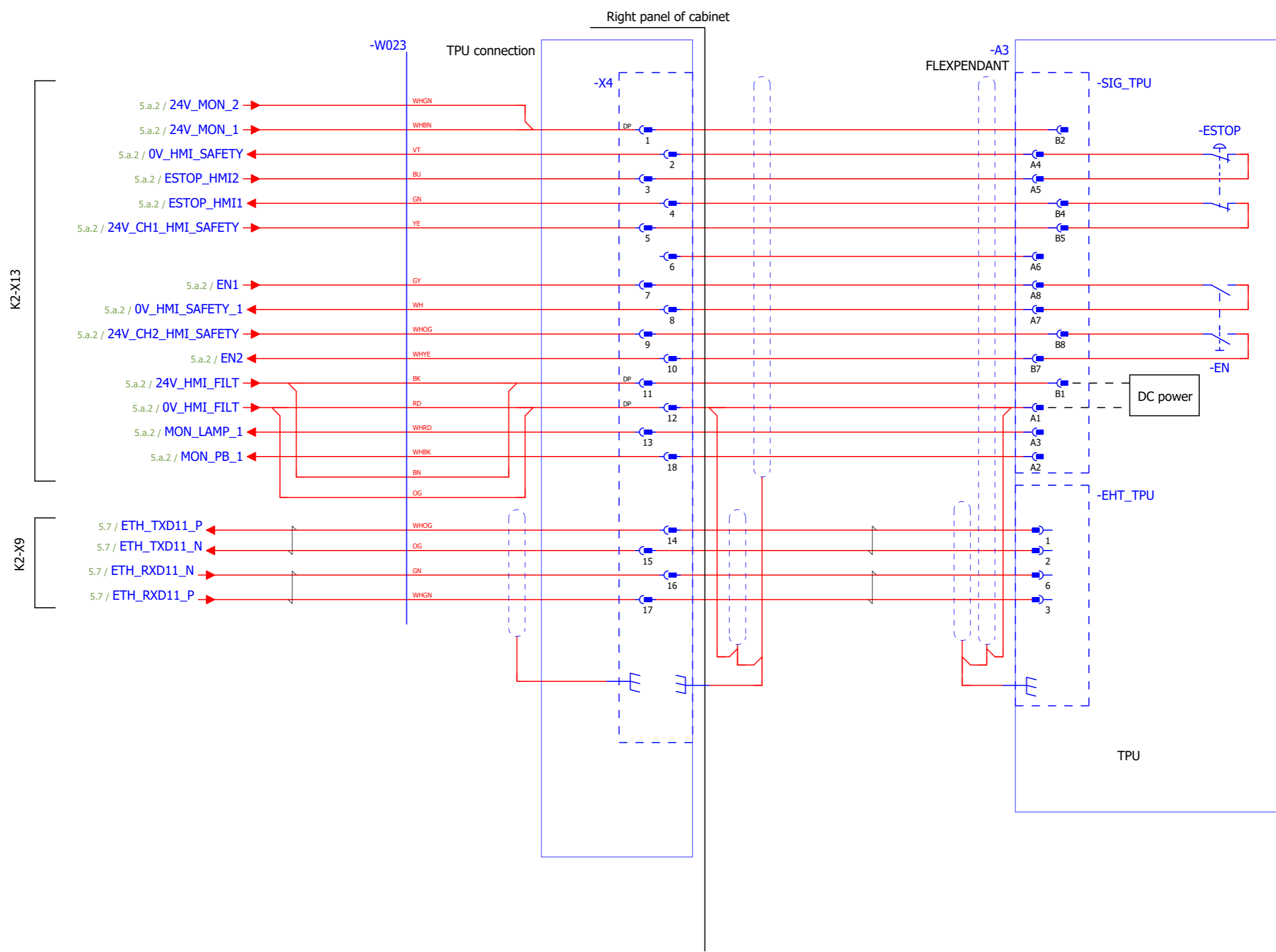
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TPU - HMI SIGNAL CONNECTORS /X4

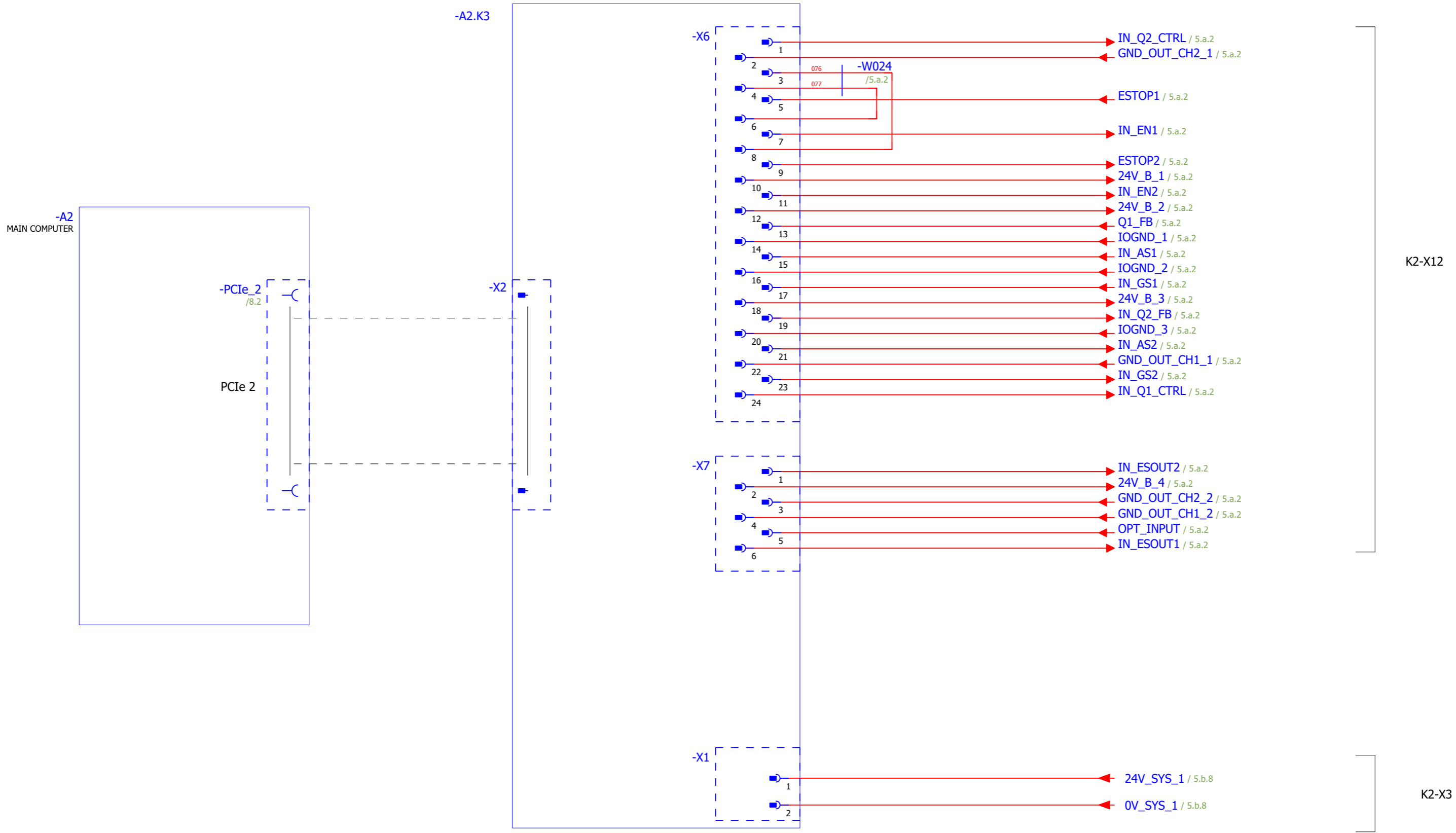
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SAFETY CONTROLLER /A2.K3

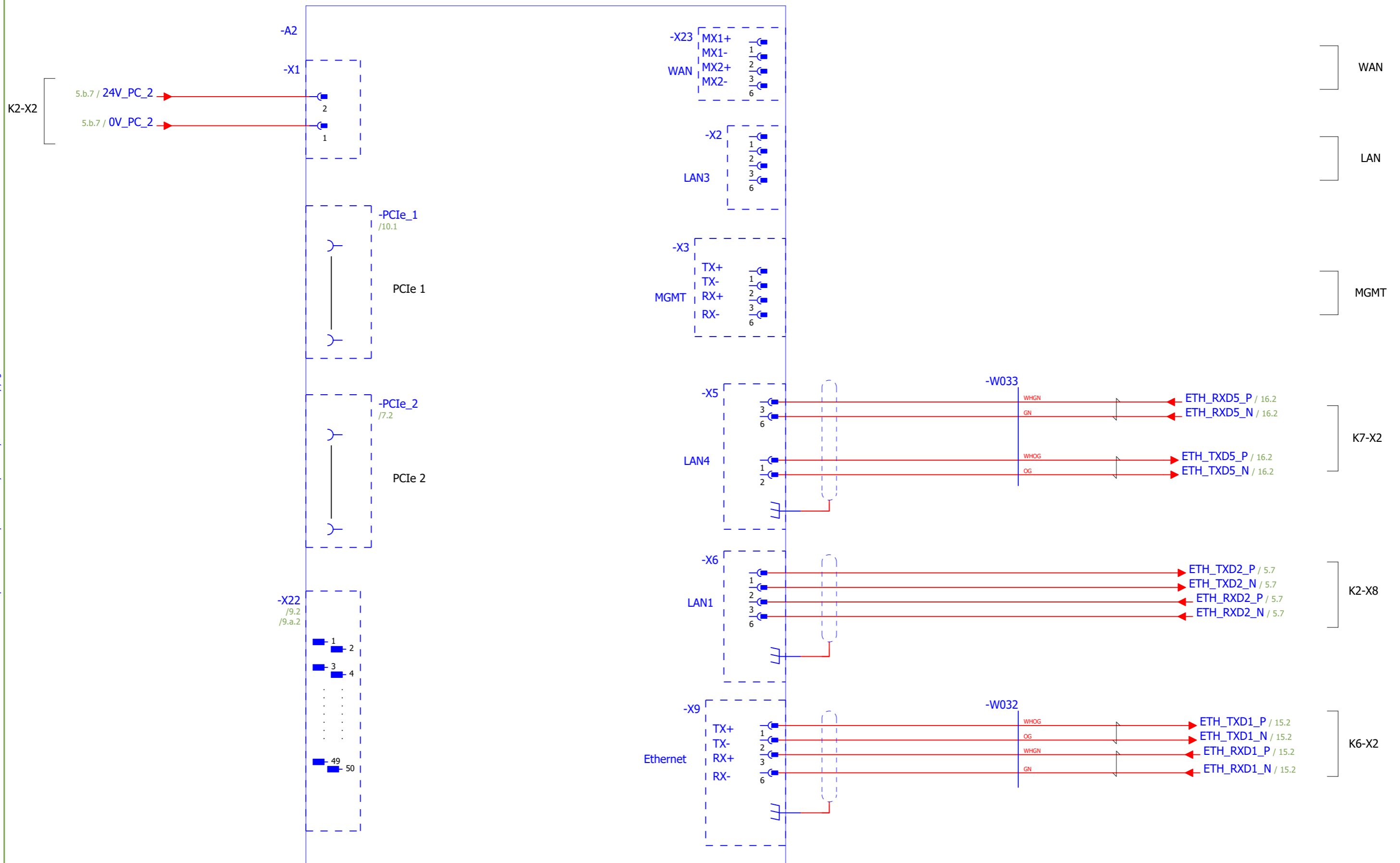
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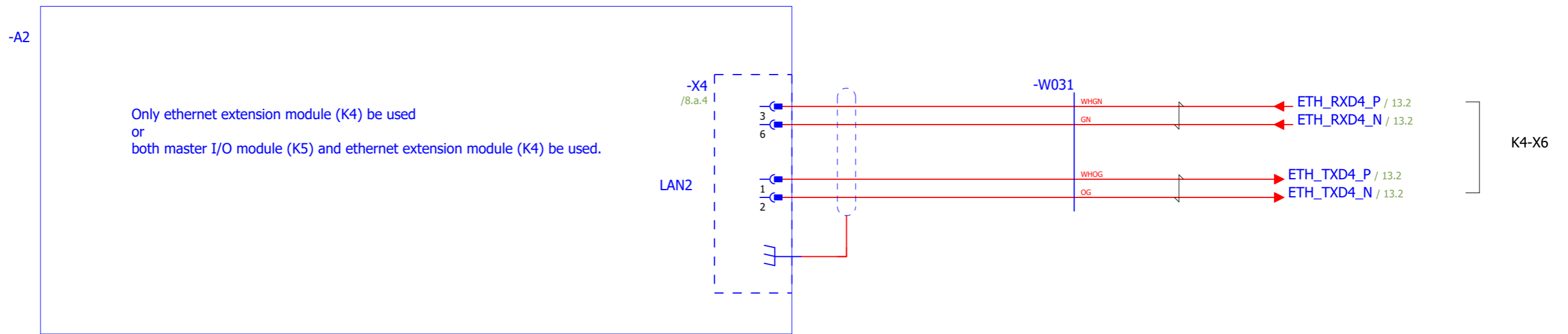
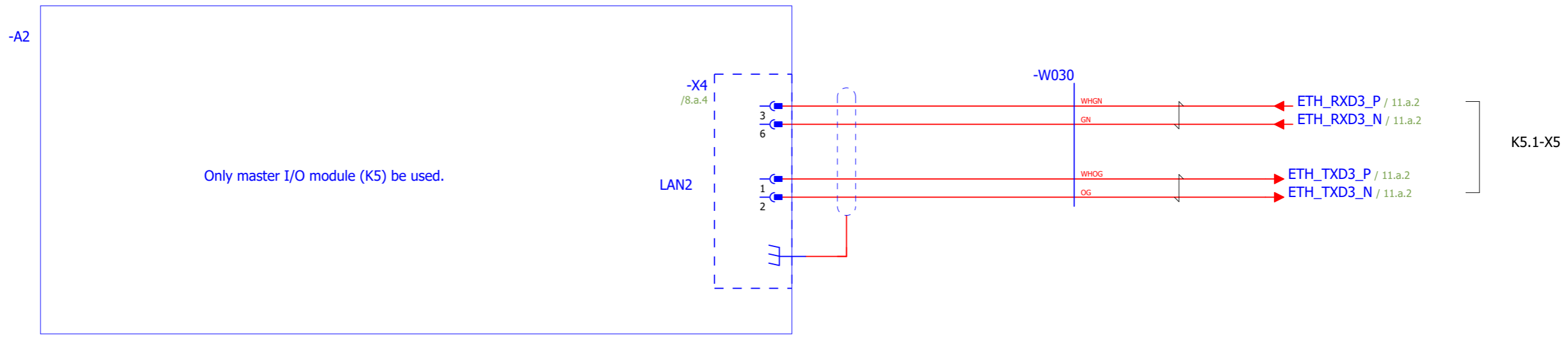
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MAIN COMPUTER /A2

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MAIN COMPUTER /A2

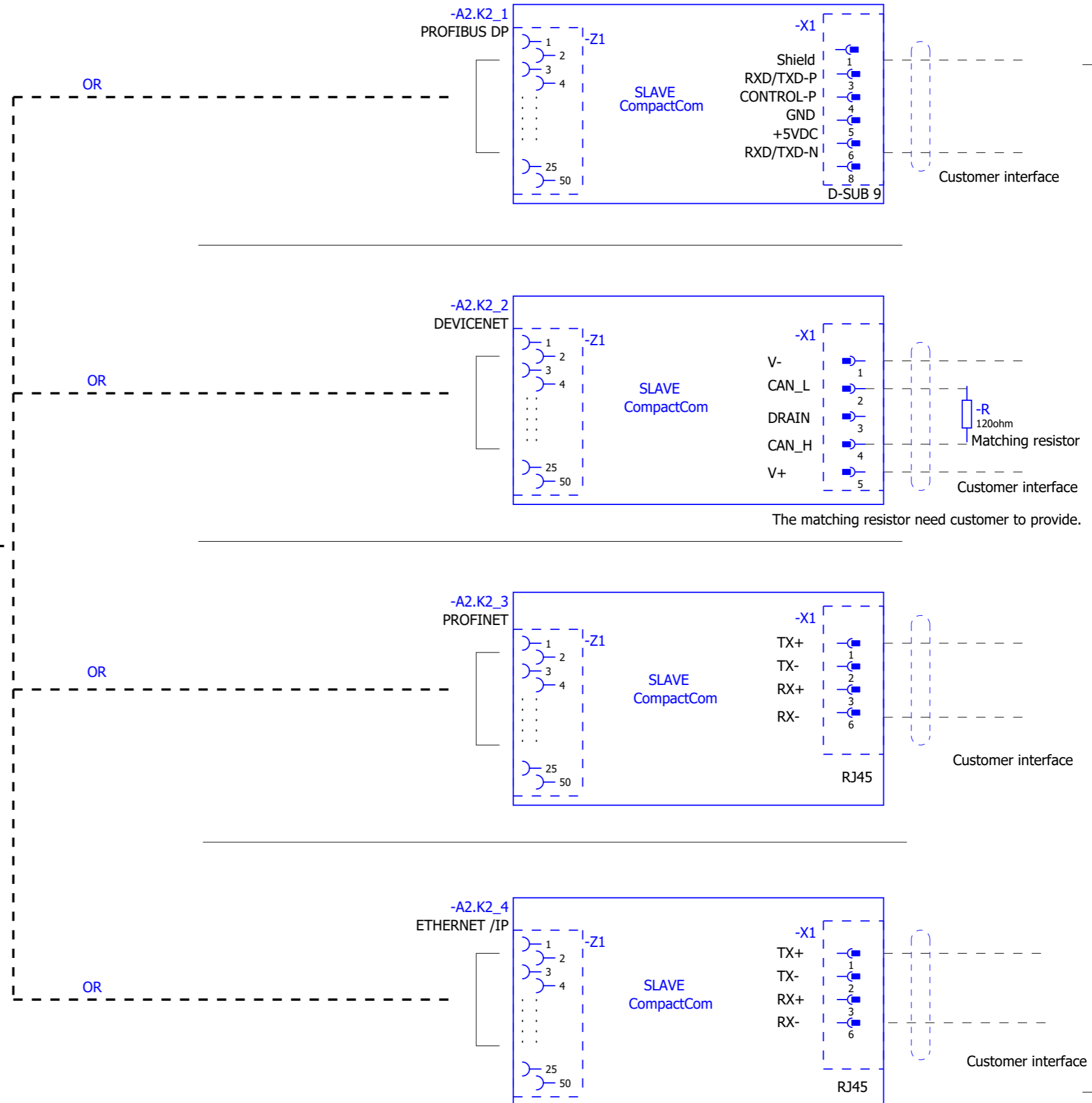
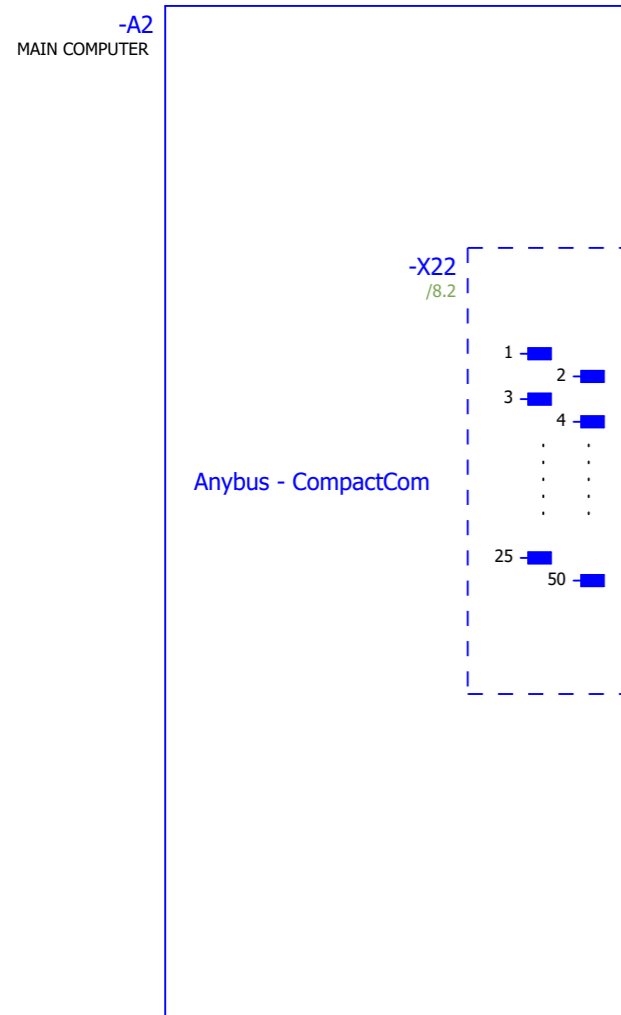
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FIELD BUS ADAPTER SLAVE /A2.K2

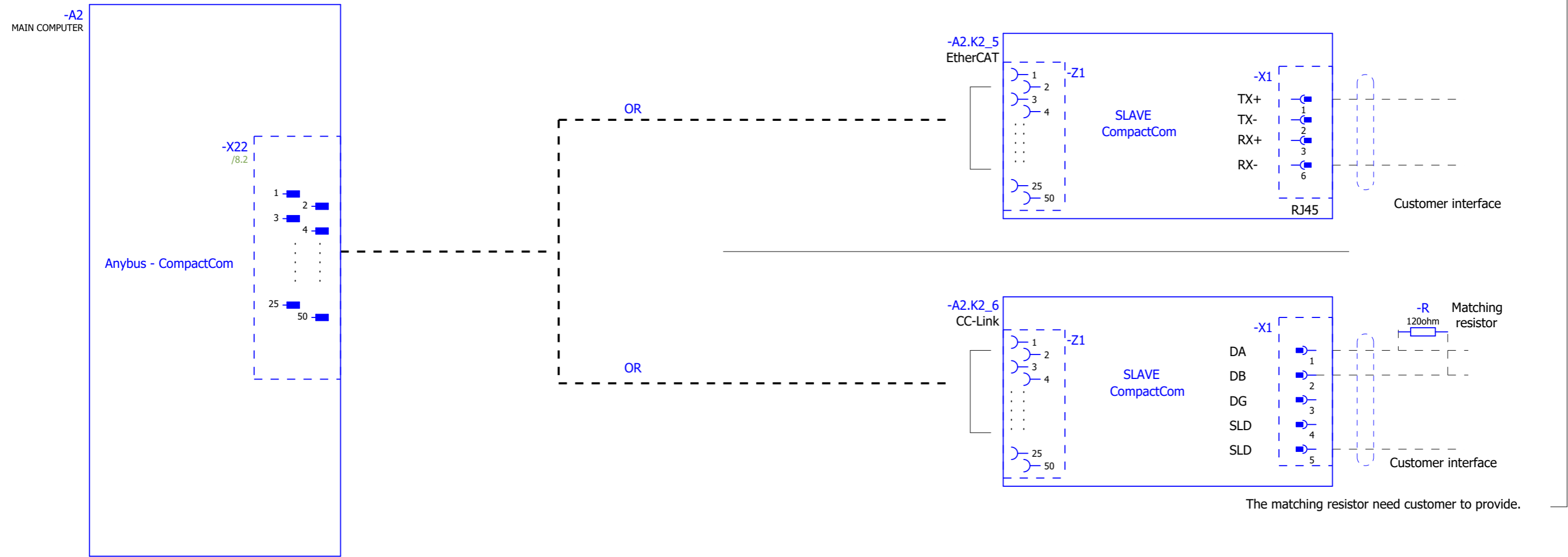
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FIELD BUS ADAPTER SLAVE /A2.K2

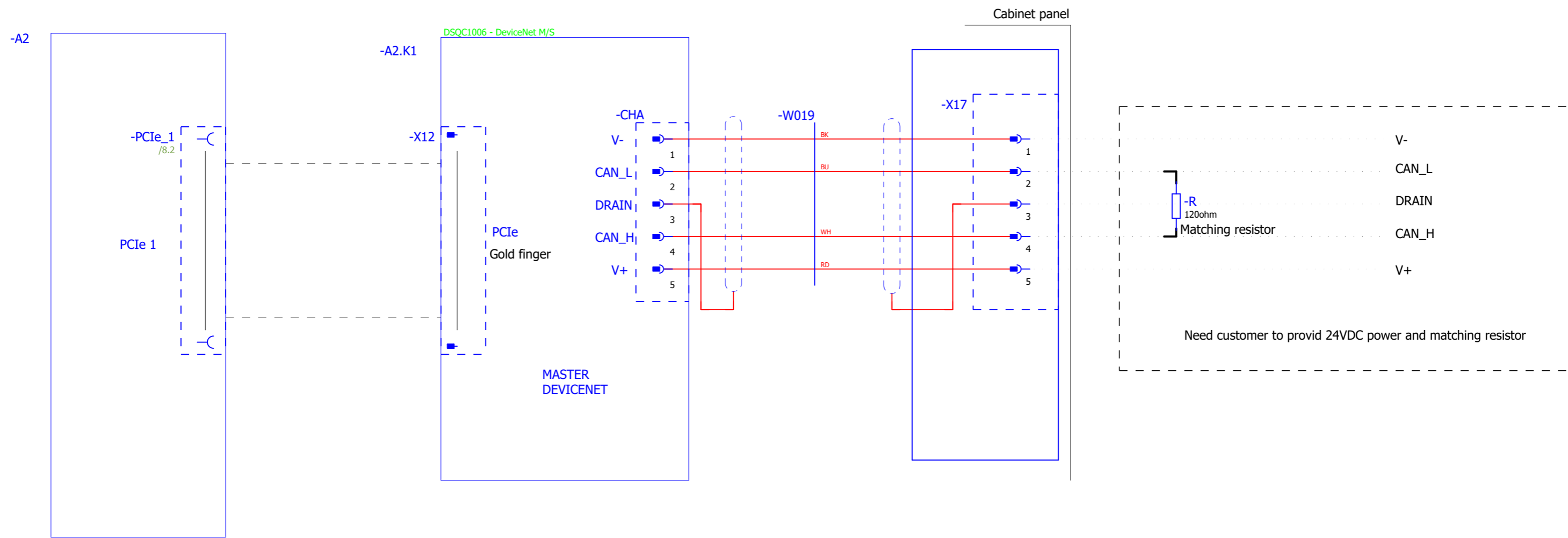
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FIELD BUS ADAPTER MASTER /A2.K1

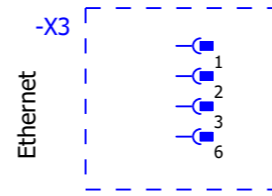
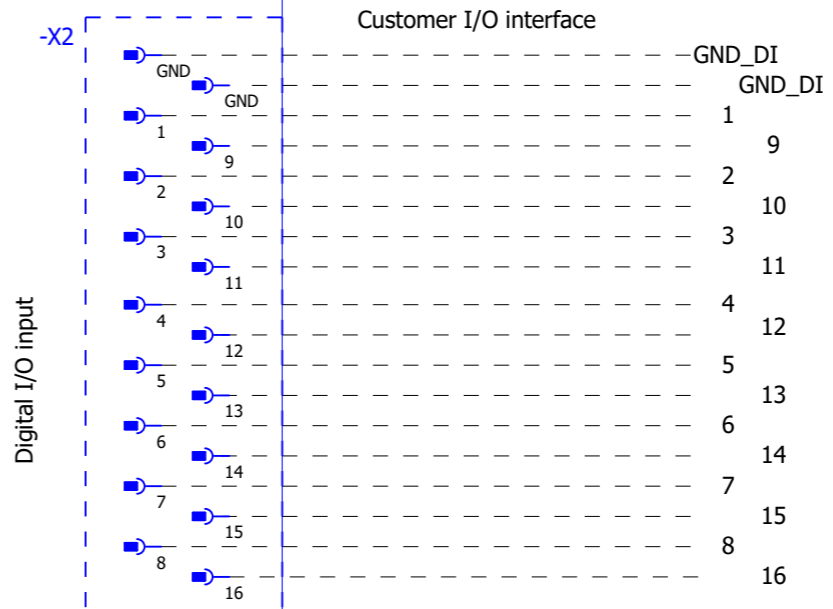
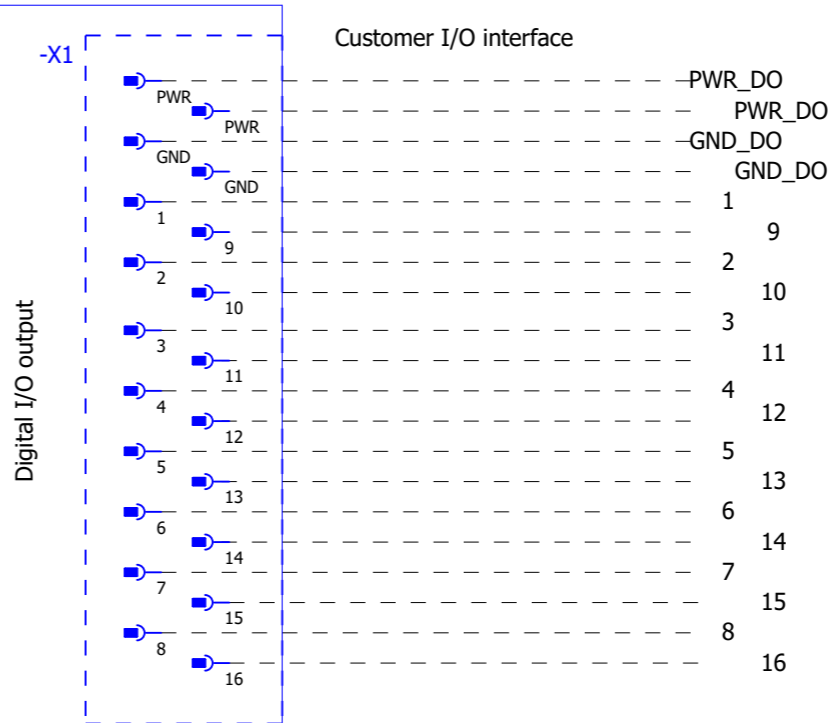
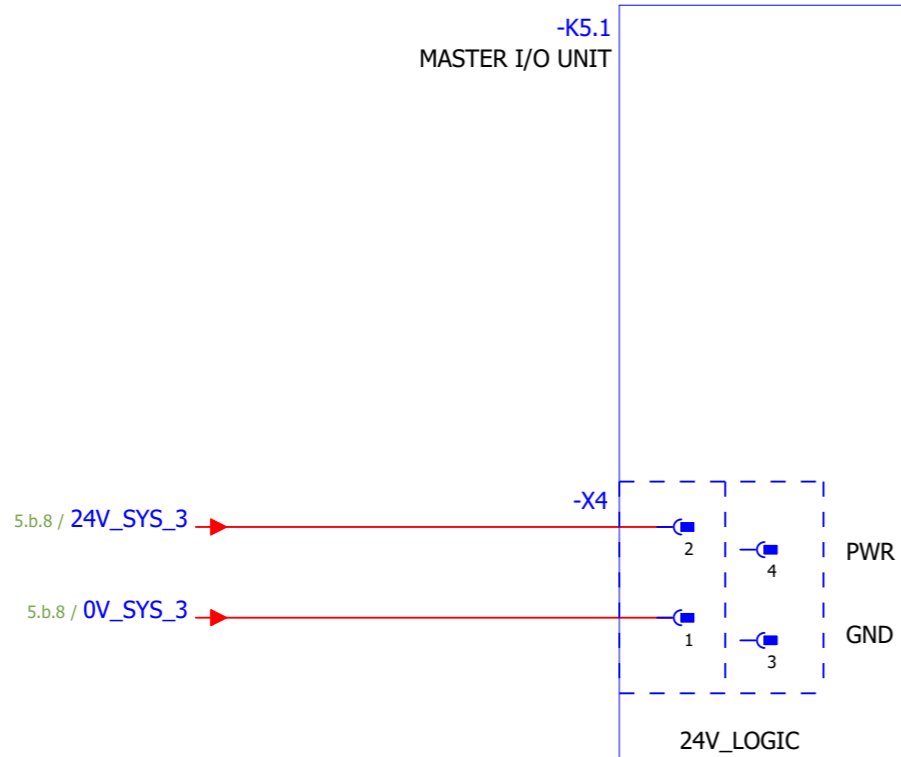
Status:
Approved

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

Document no.
3HAC059896-009

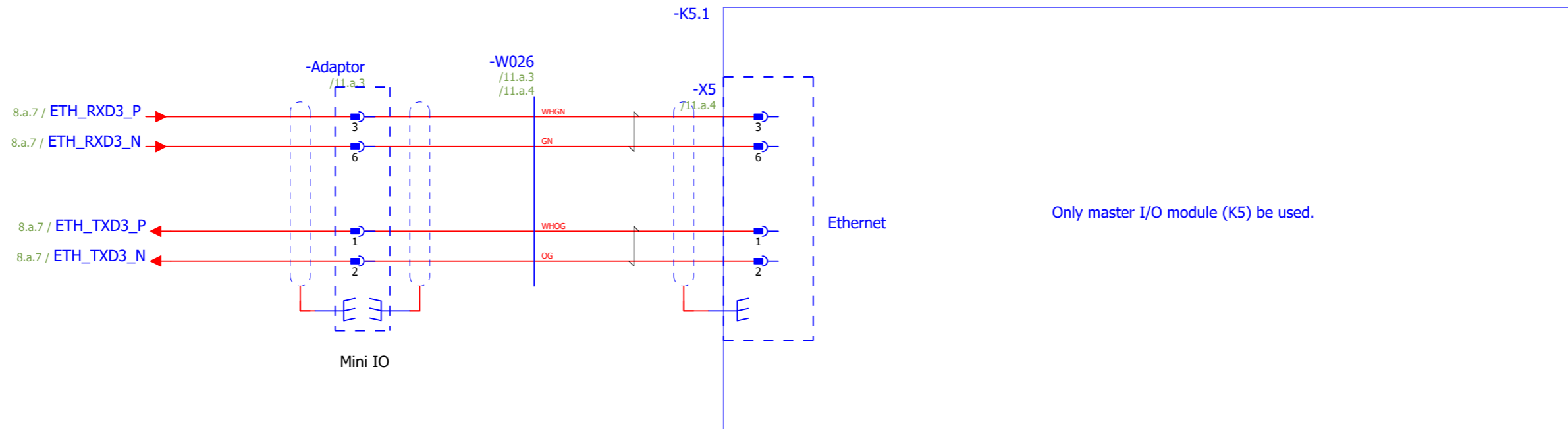
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Total: 75

K2-X3

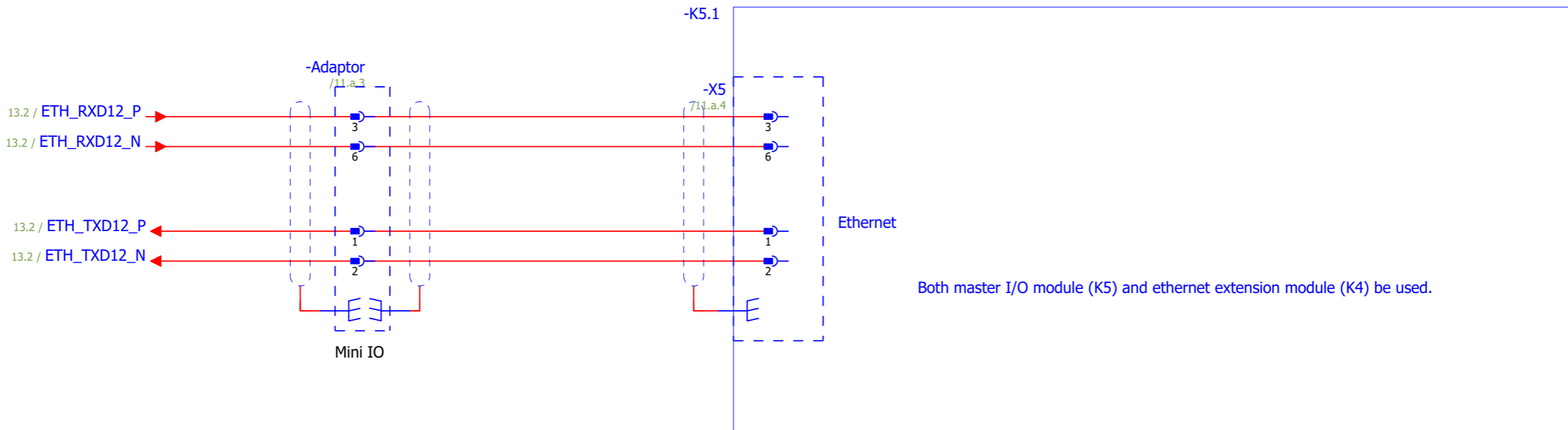


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A2-X4



K4-X7



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MASTER I/O UNIT /K5.1

Status:
Approved

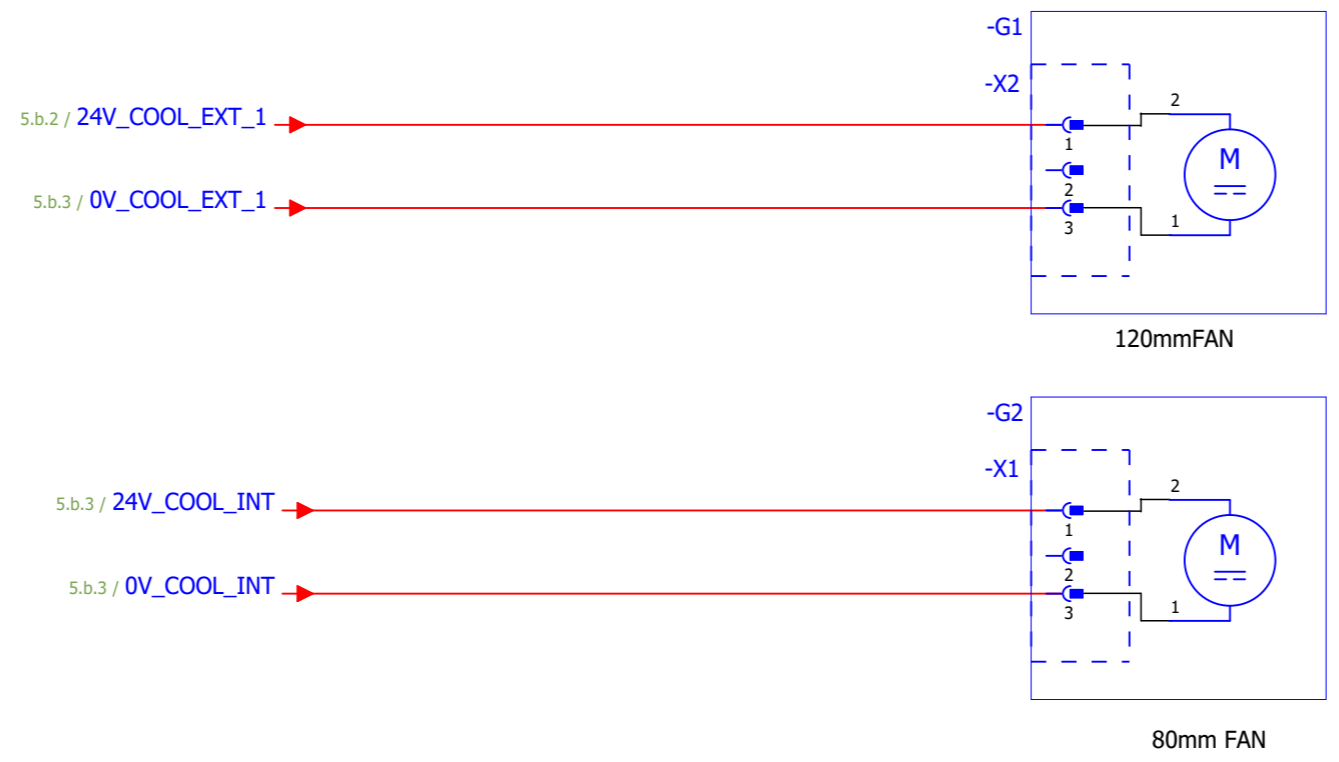
High-level function: = SCH
Mounting location: + U

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K2-X17



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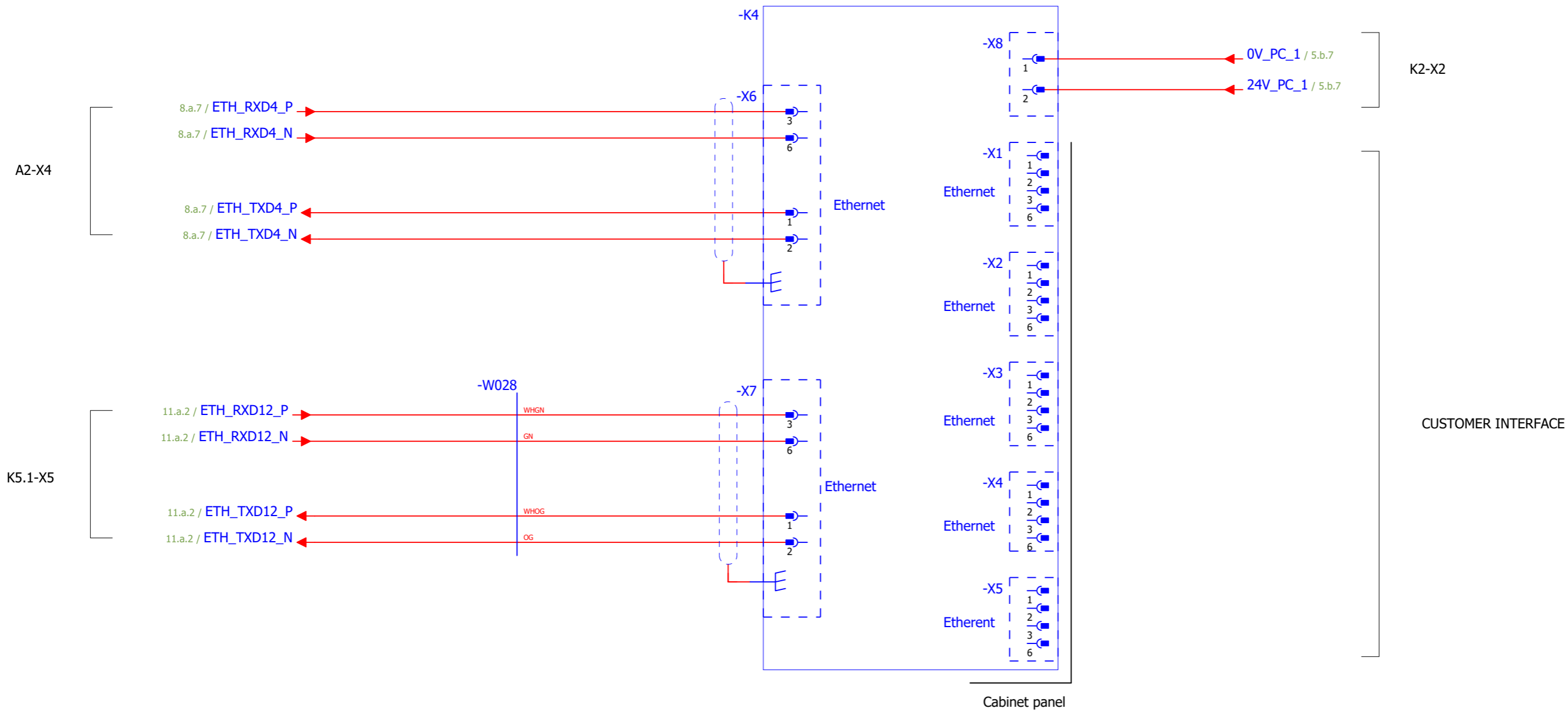
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FAN COOLING CHANNEL /G1,2

Status:	High-level function: = SCH
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ETHERNET SWITCH /K4

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

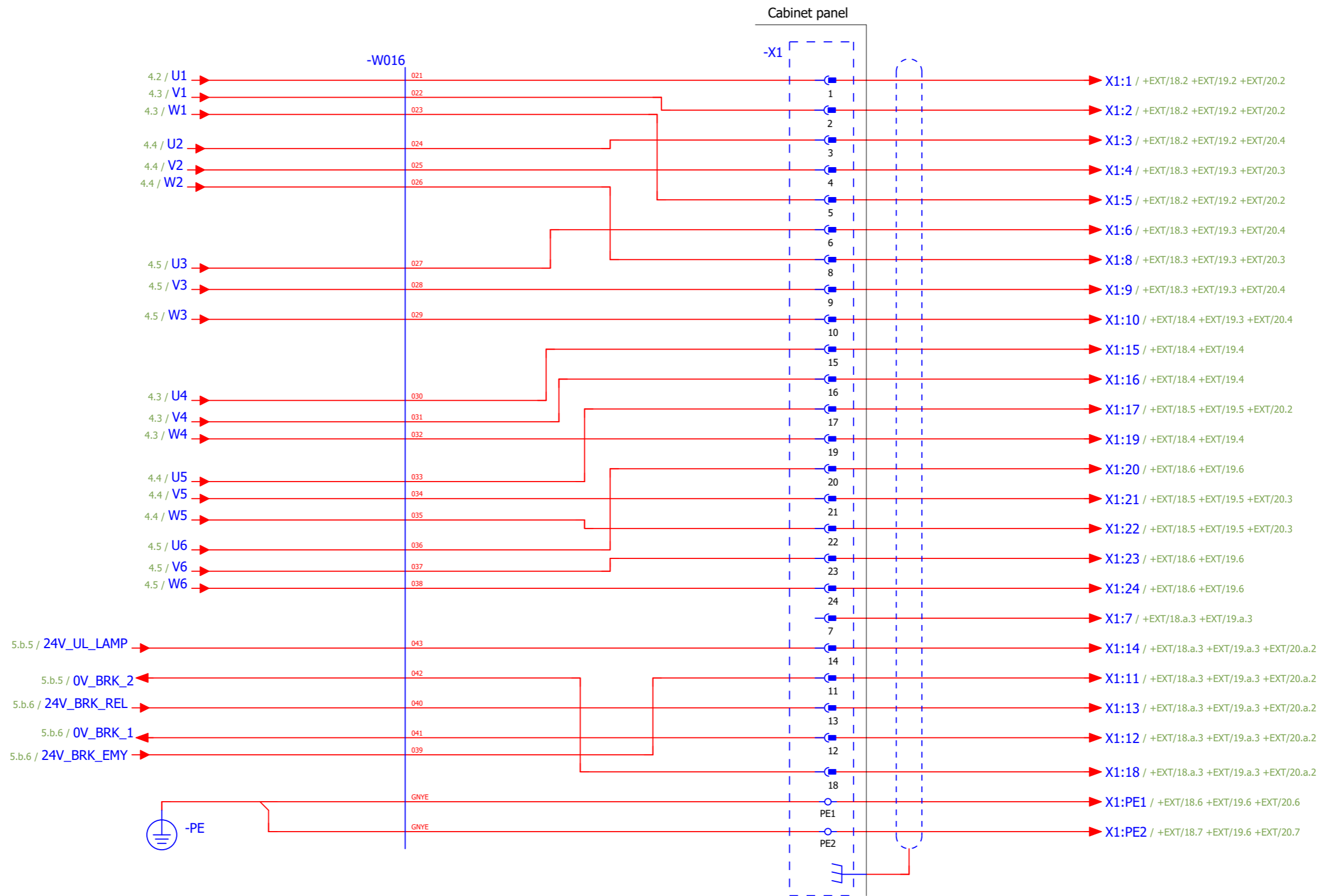
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T4-X7,X8,X9

K2-X7,X22



to manipulator

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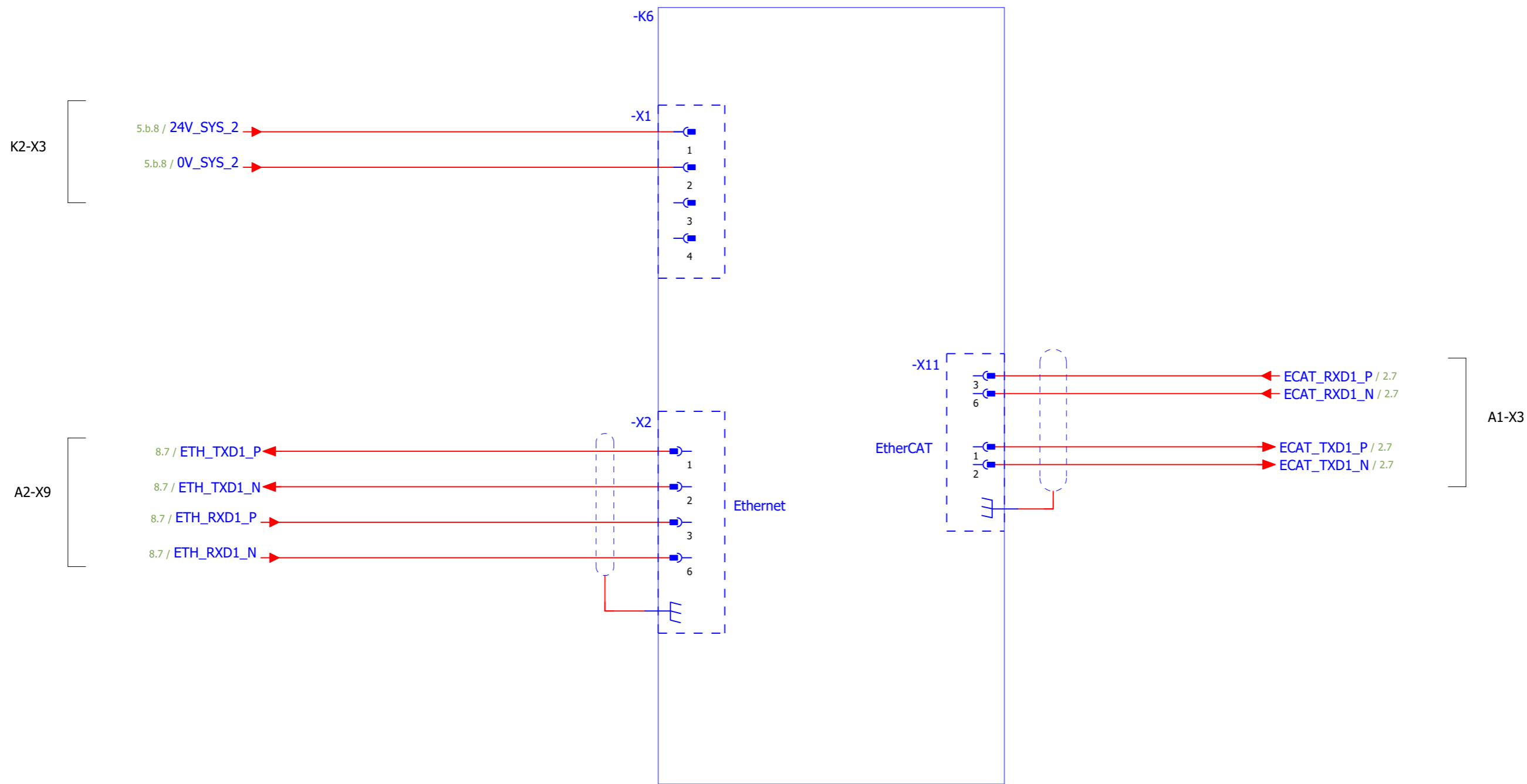
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MOTOR CONNECTOR - X1

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AXIS COMPUTER - 1 /K6

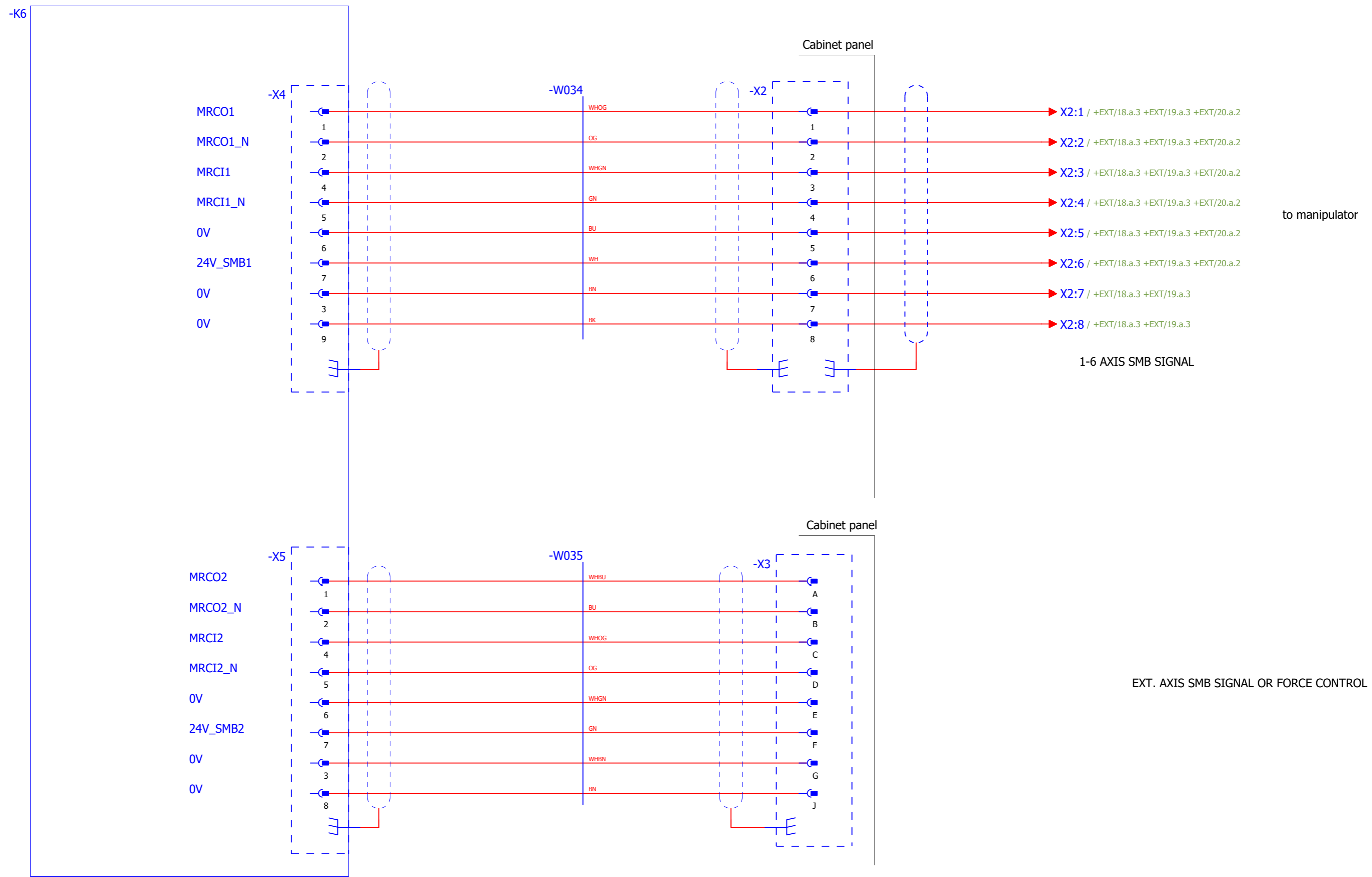
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AXIS COMPUTER - 2 /K6

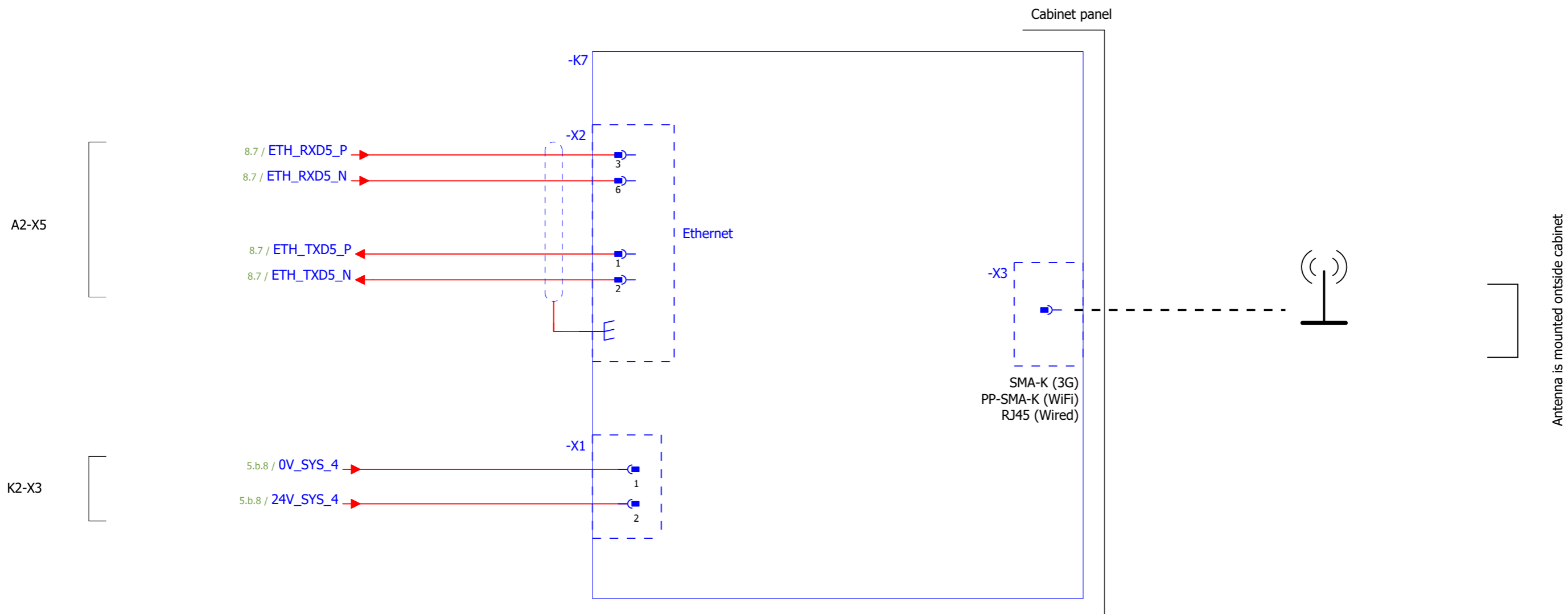
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CONNECTED SERVICES - 3G, WiFi, Wired /K7

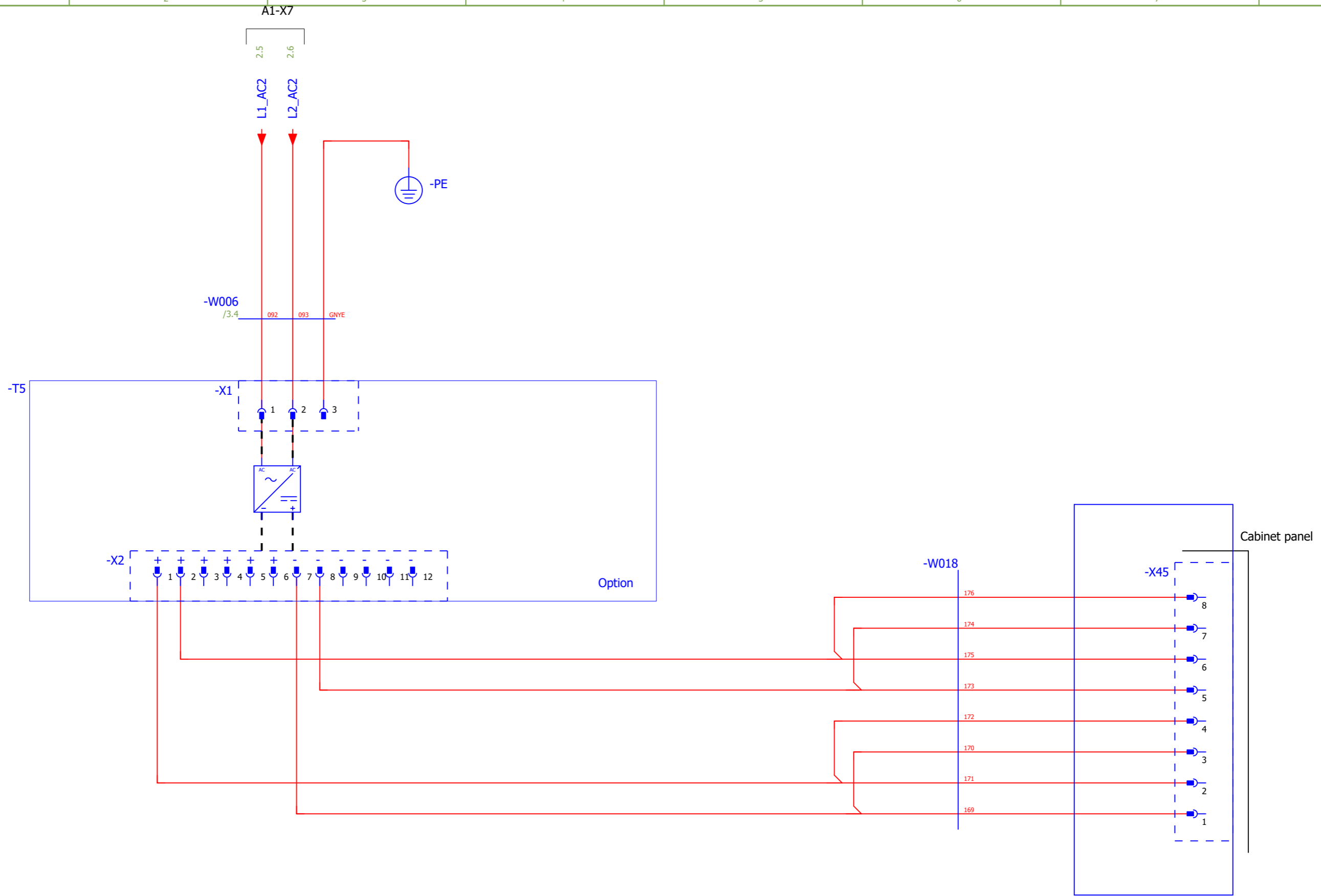
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POWER SUPPLY (OPTION) /T5

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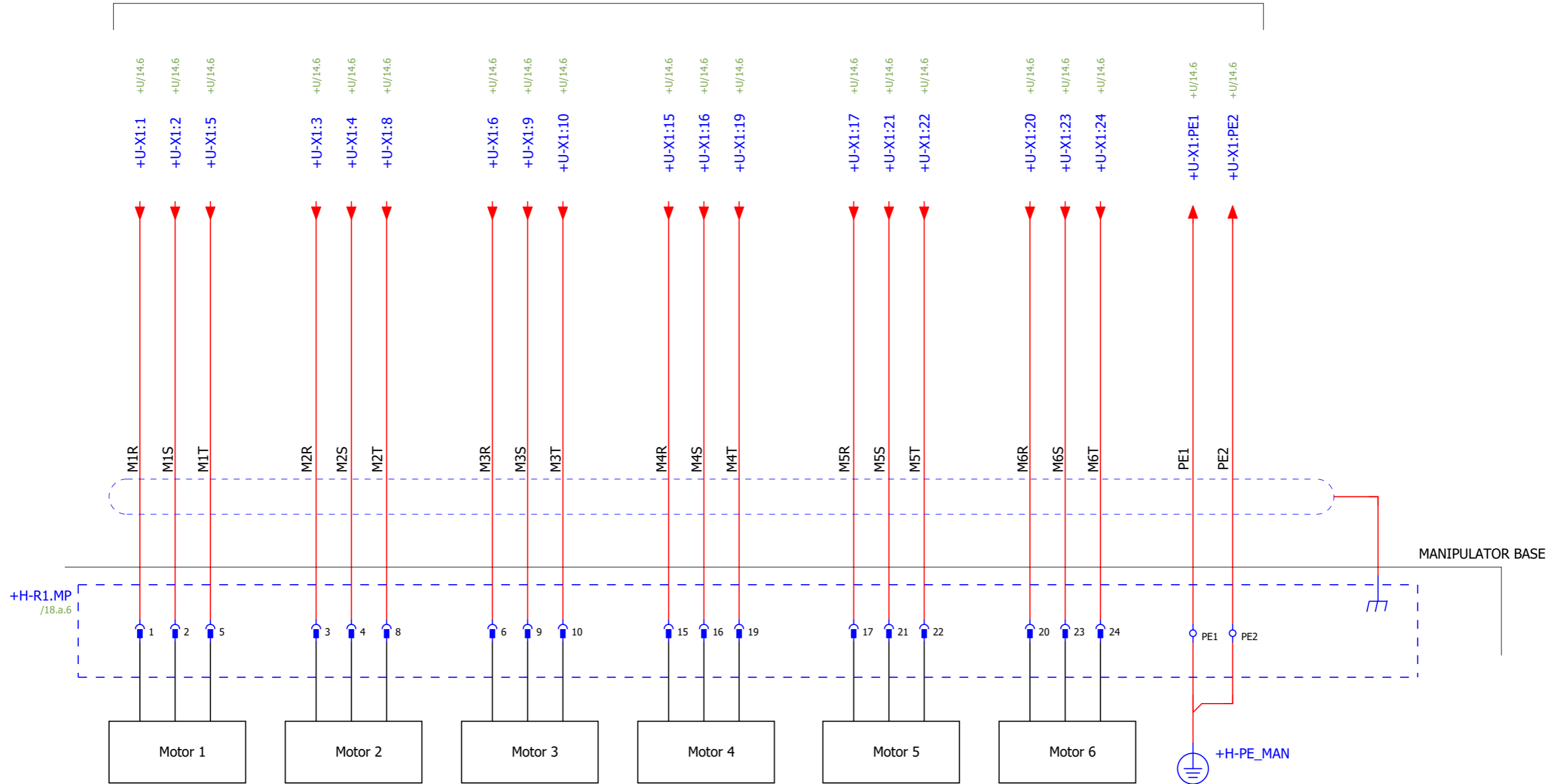
High-level function: = SCH
Mounting location: + U

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Total: 75

IRB 1100, IRB 1300 cabinet

Controller interface
+U-X1



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SERVO DRIVE SYSTEM IRB 1100, IRB 1300

Status:
Approved

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

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Controller interface
+U-X1

+U/14.6 / +U-X1:14
+U/14.6 / +U-X1:18
+U/14.6 / +U-X1:7
+U/14.6 / +U-X1:13
+U/14.6 / +U-X1:11
+U/14.6 / +U-X1:12

MANIPULATOR BASE

+H-R1.MP /18.1

24V_LAMP
Reserved
Reserved
24V_BRAKE REL
24V_BRAKE EMY
0V

Brake & Lamp

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-R1.SMB

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

SMB board

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CONTROL CABLE IRB 1100, IRB 1300

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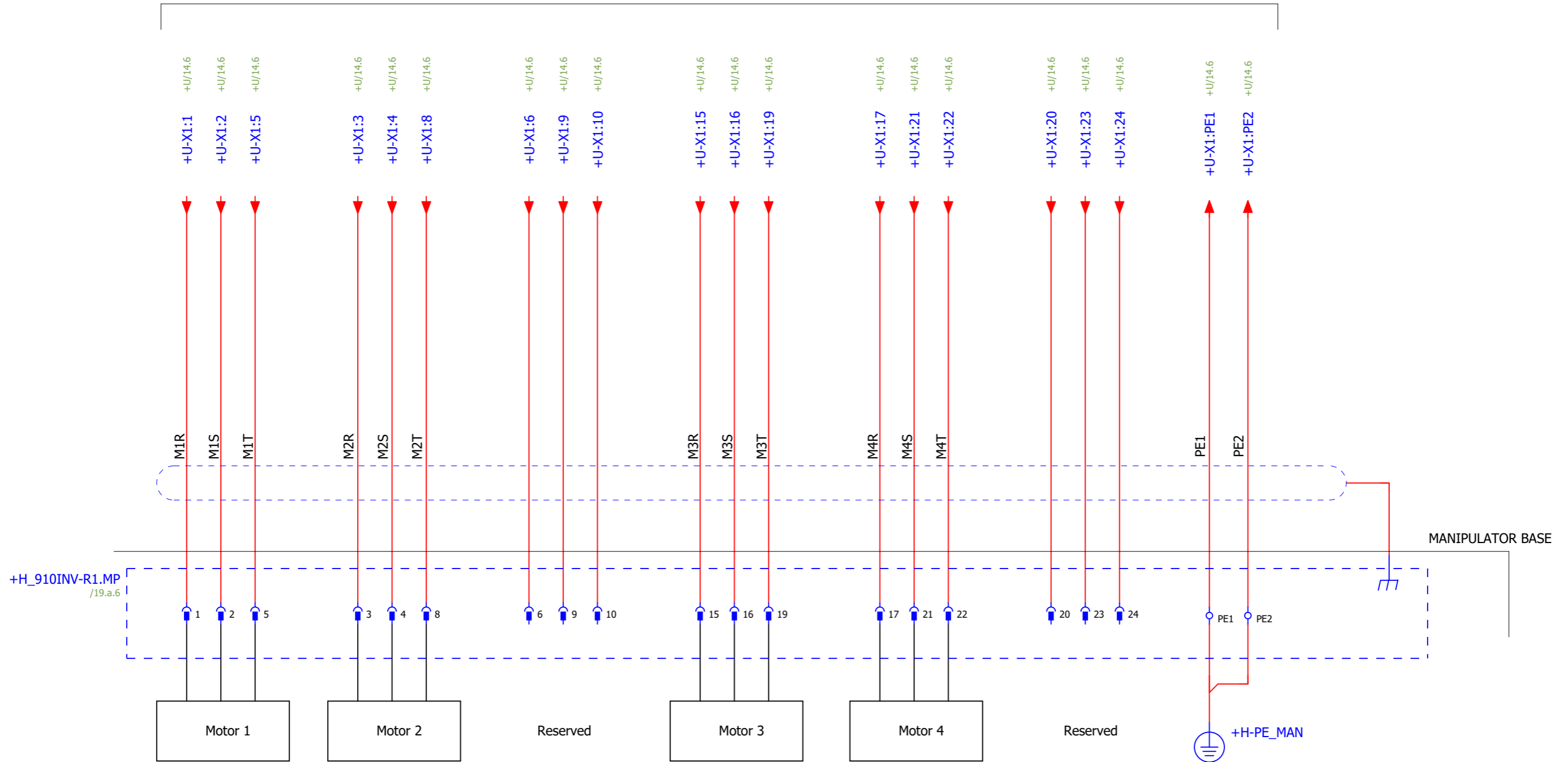
High-level function: = SCH
Mounting location: + EXT

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IRB 910INV cabinet

Controller interface
+U-X1



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SERVO DRIVE SYSTEM IRB 910INV

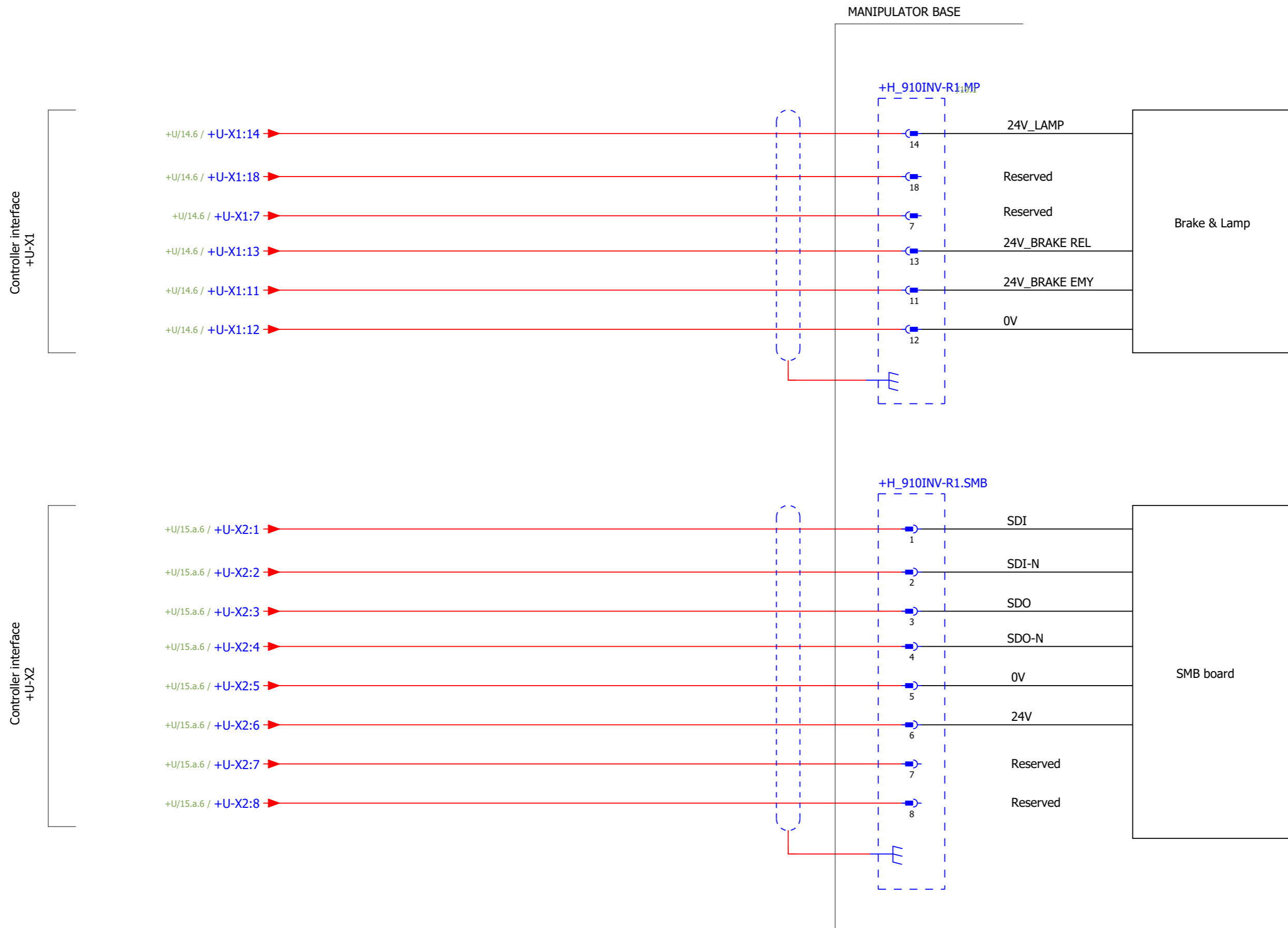
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High-level function: = SCH
Mounting location: + EXT

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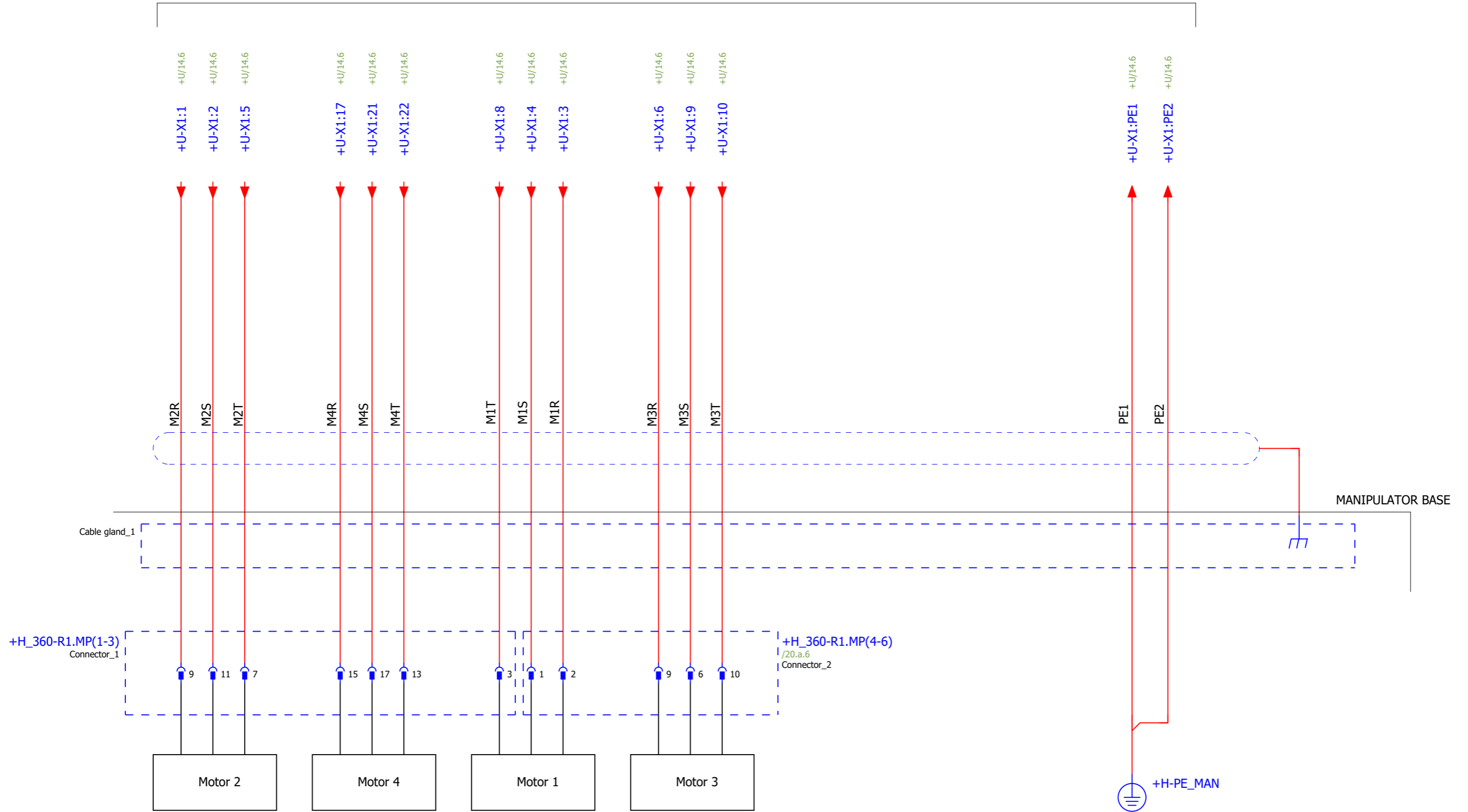
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CONTROL CABLE IRB 910INV

Status: Approved	High-level function: = SCH Mounting location: + EXT
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IRB 360 OmniCore cabinet

Controller interface
+U-X1



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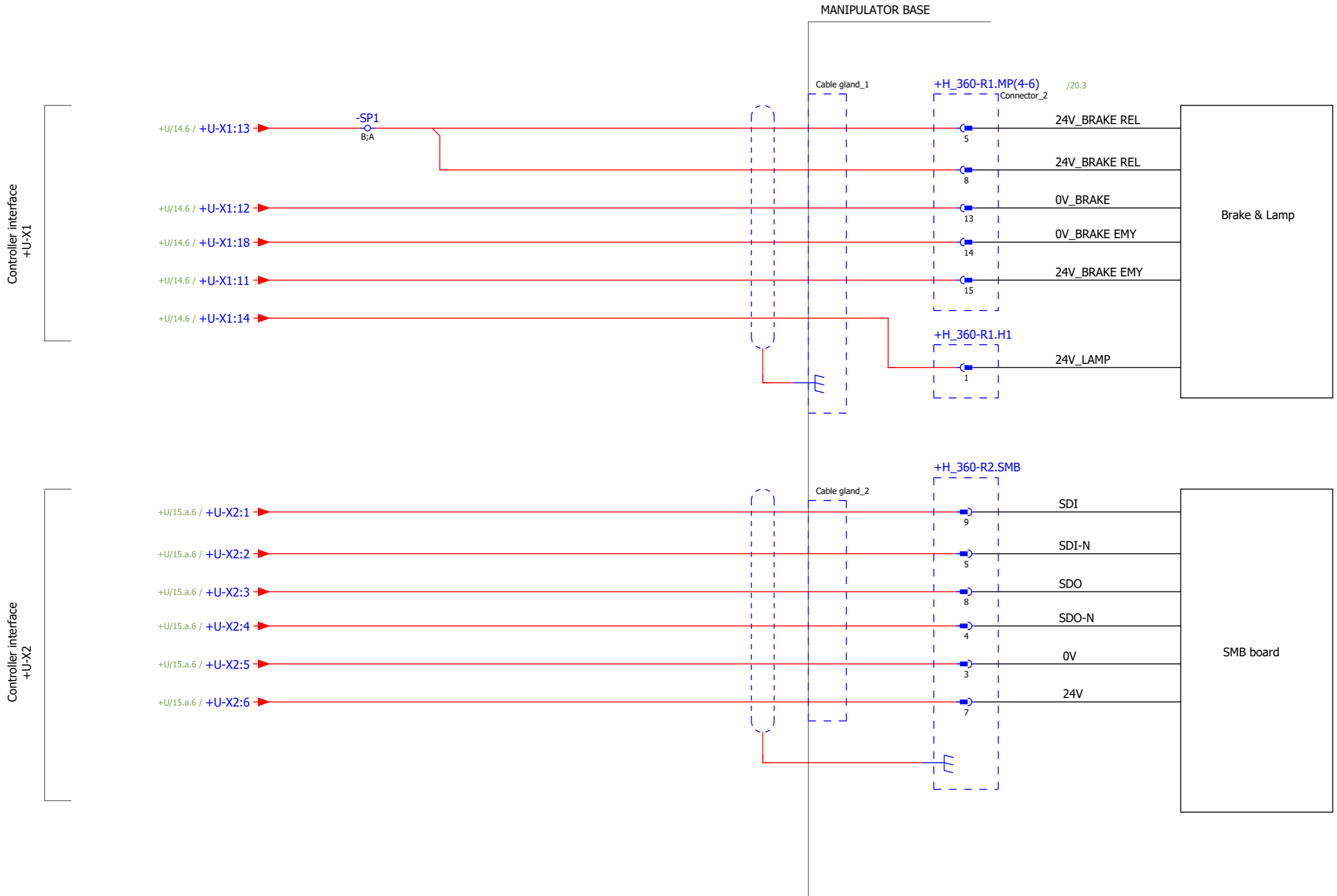
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SERVO DRIVE SYSTEM IRB 360 OmniCore

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CONTROL CABLE IRB 360 OmniCore

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

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3HAC059896-009

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Next: =Report+/007
Total: 75

				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

/ Harness contactors signals

				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		2
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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Cable diagram =SCH+U-W002

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

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Page: 008
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 Total: 75

Cable diagram

-W003

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

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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
044	BK, UL1015, Twisted	12		A1-X4	1			T4-X5	1			DC_BUS+		2
045	BK, UL1015, Twisted	12		A1-X4	2			T4-X5	2			DC_BUS-		

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Cable diagram


-W005

/ Harness 24V_SYS_DRV

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.			
131	BU, UL1569	20		A1-X5	1			T4-X1	1			0V_SYS_DRV_OUT		2
132	BU, UL1569	20		A1-X5	2			T4-X1	2			24V_SYS_DRV_OUT		

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Status:
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 High-level function: = Report
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 Document no.
 3HAC059896-009
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 Total: 75

Cable diagram

-W006

/

/

Harness AC input 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.			
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		
092	BK, UL1015, Twisted-2	16		A1-X7	1			T5-X1	1			L		
093	BK, UL1015, Twisted-2	16		A1-X7	2			T5-X1	2			N		
GNYE	GNYE, UL1015	14		PE				T2-X1	3			PE		
GNYE	GNYE, UL1015	14		PE				T5-X1	3			PE		

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Cable diagram =SCH+U-W006

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	Total: 75	

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

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

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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				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

-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 -W010

Harness filter 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
020	BU build-in filter, twisted			A1-K1	4			A1-Q1	3L2			N		2
019	BN build-in filter, twisted			A1-K1	5			A1-Q1	1L1			L		

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				Document no. 3HAC059896-009	Page: 016 Next: 017 Total: 75
Prepared by, date: Clyde	Approved by, date: Yang X. Gao	ABB Engineering (Shanghai) Ltd. No.4528, Kangxin Highway, Pudong New District, Shanghai, 201319, P. R. China			

Cable diagram

-W012

/ Harness AC input on power module

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.			
014	BK UL1015, twisted, 3HAB7885-50	16		A1-P2	2			A1-Q1	1L1			L		2
013	BK UL1015, twisted, 3HAB7885-50	16		A1-P2	3			A1-Q1	3L2			N		

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6/30/2020

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Cable diagram =SCH+U-A1-W012

Status: Approved

High-level function: = Report
Mounting location: +

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Cable diagram -W013

Harness power circuit of contactors

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.			
000	BK UL1015, 3HAB7885-50	16		A1-Q1	2T1			A1-Q2	2T1			L		2
001	BK UL1015, 3HAB7885-50	16		A1-Q1	4T2			A1-Q2	4T2			N		
002	BK UL1015, 3HAB7885-50	16		A1-Q1	5L3			A1-Q2	6T3			Brake		

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Cable diagram

-W014

Harness power out of contactors

				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
015	BK UL1015, twisted, 3HAB7885-50	16		A1-P3	1			A1-Q2	1L1			L		2
016	BK UL1015, twisted, 3HAB7885-50	16		A1-P3	2			A1-Q2	3L2			N		

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Cable diagram =SCH+U-A1-W014

Status:
Approved

High-level function: = Report
Mounting location: +

Document no.
3HAC059896-009

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Cable diagram

-W015

Harness Bleeder 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
017	WH build-in bleeder, twisted			A1-P302	1			A1-R1	1			DC+		2
018	WH build-in bleeder, twisted			A1-P302	2			A1-R1	2			DC-		



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Cable diagram

-W016

Harness Motors power LV 6-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
021	BK UL1015, twisted_1, 3HAB7885-60	14		T4-X7	B1			X1	1			U1		14
022	BK UL1015, twisted_1, 3HAB7885-60	14		T4-X7	B2			X1	2			V1		
024	BK UL1015, twisted_2, 3HAB7885-60	14		T4-X8	A1			X1	3			U2		
025	BK UL1015, twisted_2, 3HAB7885-60	14		T4-X8	A2			X1	4			V2		
023	BK UL1015, twisted_1, 3HAB7885-60	14		T4-X7	B3			X1	5			W1		
026	BK UL1015, twisted_2, 3HAB7885-60	14		T4-X8	A3			X1	8			W2		
028	BK UL1015, twisted_3, 3HAB7885-60	14		T4-X9	A2			X1	9			V3		
029	BK UL1015, twisted_3, 3HAB7885-60	14		T4-X9	A3			X1	10			W3		
039	BU, UL1569, Twisted-8	18		K2-X7	A1			X1	11			24V_BRK_EMY		
041	BU, UL1569, Twisted-8	18		K2-X7	A3			X1	12			0V_BRK		
040	BU, UL1569, Twisted-8	18		K2-X7	A2			X1	13			24V_BRK_REL		
043	BU,UL1569, Twisted-7	18		K2-X22	C1			X1	14			24V_UL_LAMP		
030	BK UL1015, twisted_4, 3HAB7885-60	14		T4-X7	A1			X1	15			U4		
031	BK UL1015, twisted_4, 3HAB7885-60	14		T4-X7	A2			X1	16			V4		
033	BK UL1015, twisted_5, 3HAB7885-60	14		T4-X8	B1			X1	17			U5		
042	BU, UL1569, Twisted-7	18		K2-X22	B1			X1	18			0V_BRK		
032	BK UL1015, twisted_4, 3HAB7885-60	14		T4-X7	A3			X1	19			W4		
036	BK UL1015, twisted_6, 3HAB7885-60	14		T4-X9	B1			X1	20			U6		
034	BK UL1015, twisted_5, 3HAB7885-60	14		T4-X8	B2			X1	21			V5		
035	BK UL1015, twisted_5, 3HAB7885-60	14		T4-X8	B3			X1	22			W5		
037	BK UL1015, twisted_6, 3HAB7885-60	14		T4-X9	B2			X1	23			V6		
038	BK UL1015, twisted_6, 3HAB7885-60	14		T4-X9	B3			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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Latest revision:
Rev 07
6/30/2020

Prepared by, date: Clyde
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Pudong New District, Shanghai,
201319, P. R. China

Cable diagram =SCH+U-W016

Status:
Approved

High-level function: = Report
Mounting location: +

Document no.
3HAC059896-009

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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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6/30/2020

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Pudong New District, Shanghai,
201319, P. R. China

Cable diagram =SCH+U-W017

Status:
Approved

High-level function: = Report
Mounting location: +

Document no.
3HAC059896-009

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Cable diagram

-W018

/ Harness 24V_Process output

				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
171	BU, UL1569	18		T5-X2	1			X45	2			24V		17
175	BU, UL1569	18		T5-X2	2			X45	6			24V		
169	BU, UL1569	18		T5-X2	7			X45	1			0V		
173	BU, UL1569	18		T5-X2	8			X45	5			0V		
170	BU, UL1569	18		X45	1			X45	3			0V		
172	BU, UL1569	18		X45	2			X45	4			24V		
174	BU, UL1569	18		X45	5			X45	7			0V		
176	BU, UL1569	18		X45	6			X45	8			24V		

Latest revision:
Rev 07
2/20/2021

Prepared by, date: Clyde Approved by, date: Yang X. Gao



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Cable diagram =SCH+U-W018

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

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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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6/30/2020

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Cable diagram =SCH+U-W019

Status: Approved

High-level function: = Report
Mounting location: +

Document no. 3HAC059896-009

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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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 Rev 07
 6/30/2020

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Cable diagram =SCH+U-W020

Status:
Approved

High-level function: = Report
Mounting location: +

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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		

Latest revision:
 Rev 07
 6/30/2020

Prepared by, date: Clyde
 Approved by, date: Yang X. Gao



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 Pudong New District, Shanghai,
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Cable diagram =SCH+U-W021

Status:
Approved

High-level function: = Report
 Mounting location: +

Document no.
3HAC059896-009

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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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Cable diagram =SCH+U-W022

Status:
Approved

High-level function: = Report
 Mounting location: +

Document no. 3HAC059896-009
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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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Prepared by, date: Clyde			Approved by, date: Yang X. Gao		Document no. 3HAC059896-009	Page: 029 Next: 030 Total: 75	

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		

Latest revision:
Rev 07
6/30/2020

Prepared by, date: Clyde
Approved by, date: Yang X. Gao



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Cable diagram =SCH+U-W024

Status:
Approved

High-level function: = Report
Mounting location: +

Document no.
3HAC059896-009

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Cable diagram -W024

Harness dual channel safety

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

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 Rev 07
 6/30/2020

Prepared by, date: Clyde Approved by, date: Yang X. Gao

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 201319, P. R. China

Cable diagram =SCH+U-W024

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

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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
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		

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Cable diagram

-W026

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				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-		

Latest revision:
Rev 07
6/30/2020

Prepared by, date: Clyde Approved by, date: Yang X. Gao



Cable diagram =SCH+U-W026

Status:
Approved

High-level function: = Report
Mounting location: +

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Cable diagram

-W027

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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Prepared by, date: Clyde			Approved by, date: Yang X. Gao		Document no. 3HAC059896-009	Page: 033 Next: 034 Total: 75		

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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Cable diagram =SCH+U-W028

Status:
Approved

High-level function: = Report
 Mounting location: +

Document no.
3HAC059896-009

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Cable diagram -W029

Harness TempSensor with cable

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.			
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 =SCH+U-W029

Status:
Approved

High-level function: = Report
Mounting location: +

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Cable diagram

-W030

/ Harness Ethernet

				Connection point A				Connection point B						
Wire no.	Specification	Size (AWG)	Lgth. (mm)	Item descrtion	: term	Type	Ref.	Item descrtion	: 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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Cable diagram =SCH+U-W030

Status: Approved

High-level function: = Report

Mounting location: +

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Cable diagram

-W031

/ Harness Ethernet

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.			
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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Prepared by, date: Clyde		Approved by, date: Yang X. Gao		Document no. 3HAC059896-009
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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
WHOG	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-		
WHGN	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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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 descrption	: term	Type	Ref.	Item descrption	: 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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		Prepared by, date: Clyde		Approved by, date: Yang X. Gao		

Cable diagram

-W035

Harness Double SMB connection

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.			
Shield				K6-X5				X3						15.a
WHBU	3HAC2360-1, 6x2x0,23 mm2+Shield	0.23		K6-X5	1			X3	A			MRCO (TXD+)		
BU	3HAC2360-1, 6x2x0,23 mm2+Shield	0.23		K6-X5	2			X3	B			MRCO_N (TXD-)		
WHBN	3HAC2360-1, 6x2x0,23 mm2+Shield	0.23		K6-X5	3			X3	G			0V_2		
WHOG	3HAC2360-1, 6x2x0,23 mm2+Shield	0.23		K6-X5	4			X3	C			MRCI (RXD+)		
OG	3HAC2360-1, 6x2x0,23 mm2+Shield	0.23		K6-X5	5			X3	D			MRCI_N (RXD-)		
WHGN	3HAC2360-1, 6x2x0,23 mm2+Shield	0.23		K6-X5	6			X3	E			0V_1		
GN	3HAC2360-1, 6x2x0,23 mm2+Shield	0.23		K6-X5	7			X3	F			24V_SMB		
BN	3HAC2360-1, 6x2x0,23 mm2+Shield	0.23		K6-X5	8			X3	J			0V_3		

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