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Prepared by, date:	Approved by, date: Per V. Carlsson			Document no. 3HAC089111-009	Page: 001 Next: 002 Total: 55



Customer :  
Drawing number : 3HAC089111-009  
Drawing version : Rev 02

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 : 2023

Project start : 5/27/2019  
Project manager :  
Last revision :  
Designed by :  
Designed date : 5/27/2024  
Number of pages : 55

Latest revision:  
Rev 02  
10/24/2023

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Frontpage

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Document no.  
3HAC089111-009

Page: 002  
Next: 003  
Total: 55

Rev 00, 2023/10/24  
New release.

Rev 01, 2023/10/24  
The designation of Power supply is added to block diagram in Page 005 and Page 005.a.  
The designation of Power supply is changed from T2 to T5 in Page 006.a.  
The destination of T5 is changed from A1-X7 to Q0.

Rev 02, 2024/05/20  
The CFI cable definition is added in Page 013

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### Revision

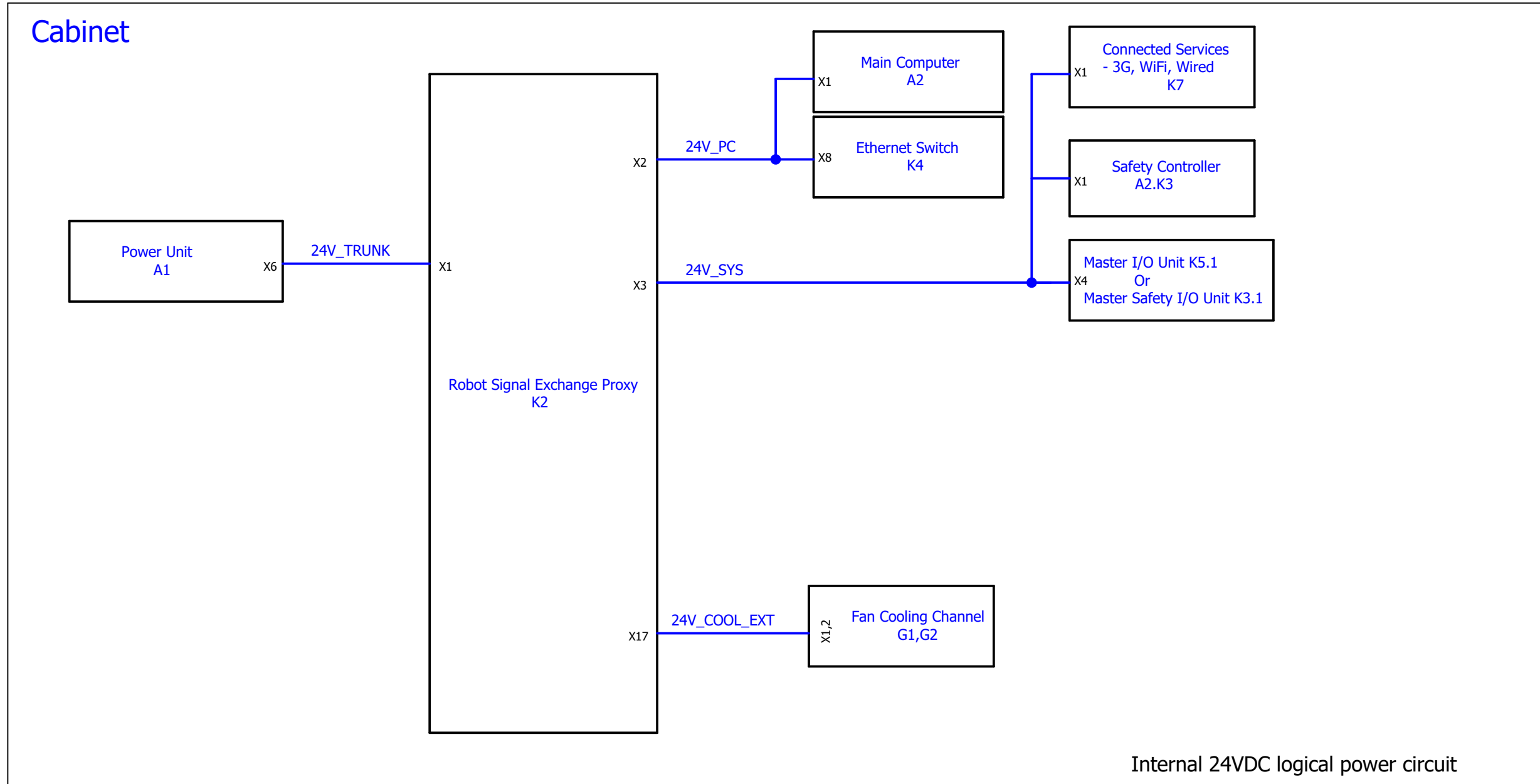
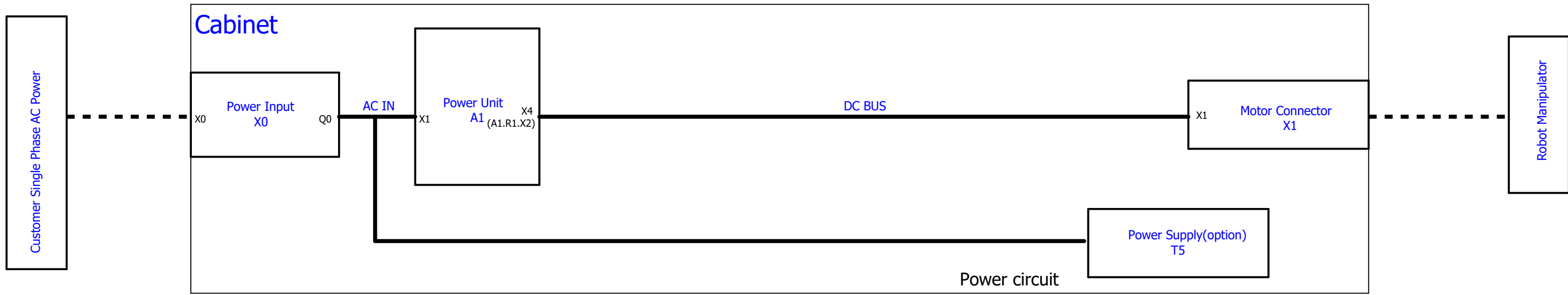
Status: Approved	High-level function: = Overview Mounting location: +
Document no. 3HAC089111-009	Page: 003 Next: 004 Total: 55

# Table of contents

High-level function	Mounting location	Page	Page description	Page supplementary field	Date	Editor
SCH	U	1	POWER INPUT /X0		3/27/2023	
SCH	U	2	POWER UNIT - CRB15000-5/A1		3/28/2023	
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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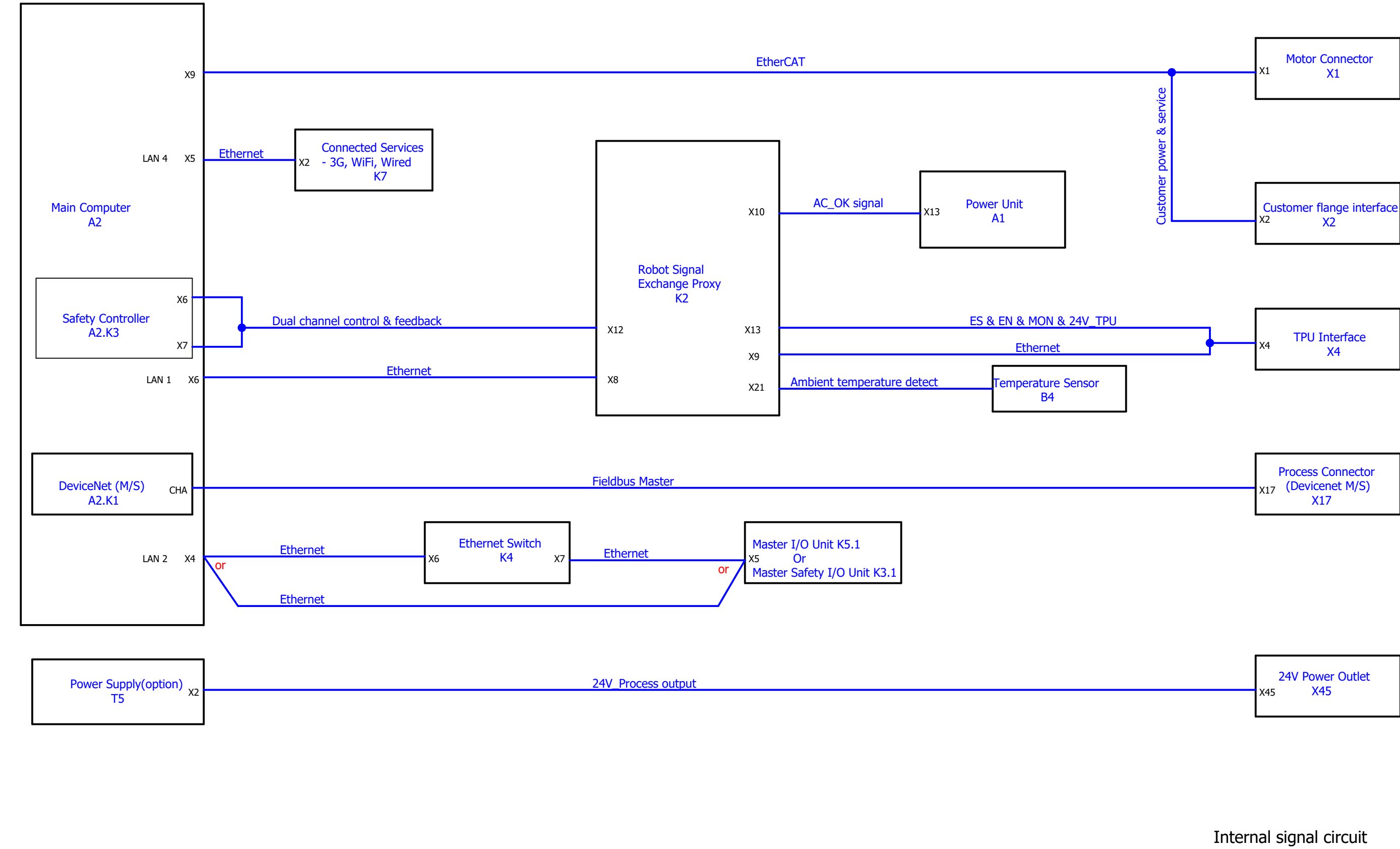
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Block diagram

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Document no. 3HAC089111-009	Page: 005 Next: 005.a Total: 55

# Cabinet



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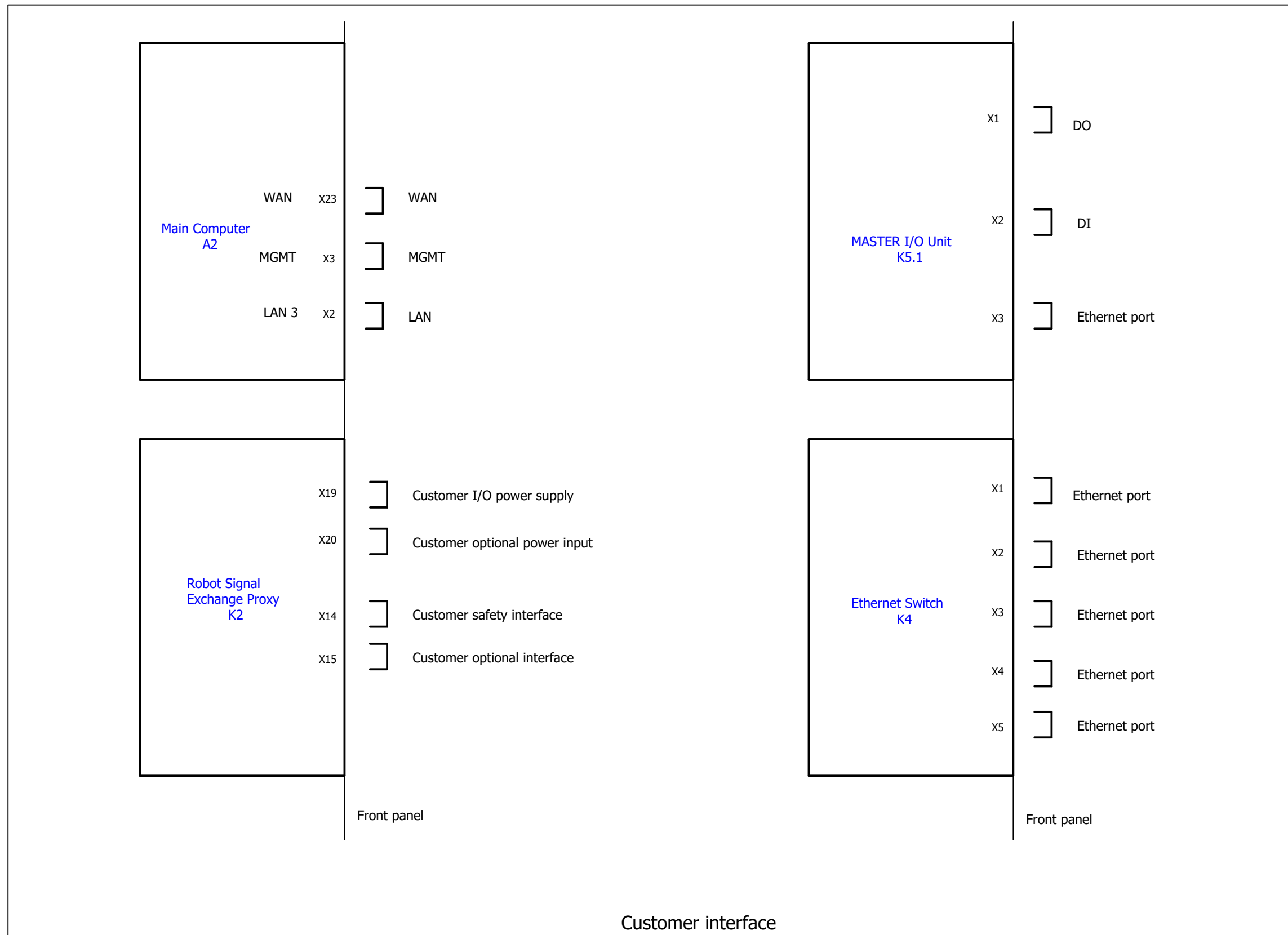
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**Block diagram**

Status:	High-level function: = Overview
Approved	Mounting location: +
Document no.	Page: 005.a
3HAC089111-009	Next: 005.b
	Total: 55



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Block diagram

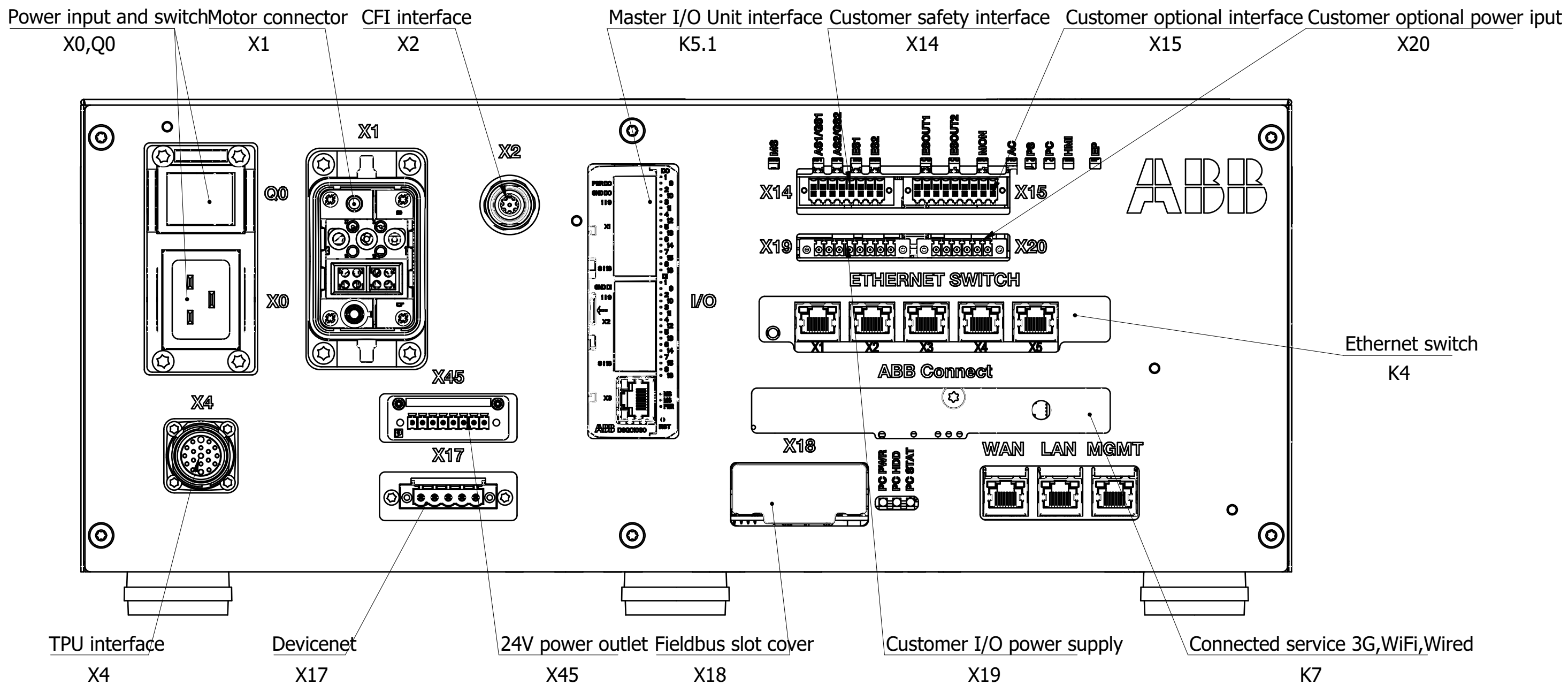
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Document no.  
3HAC089111-009

Page: 005.b  
Next: 006  
Total: 55

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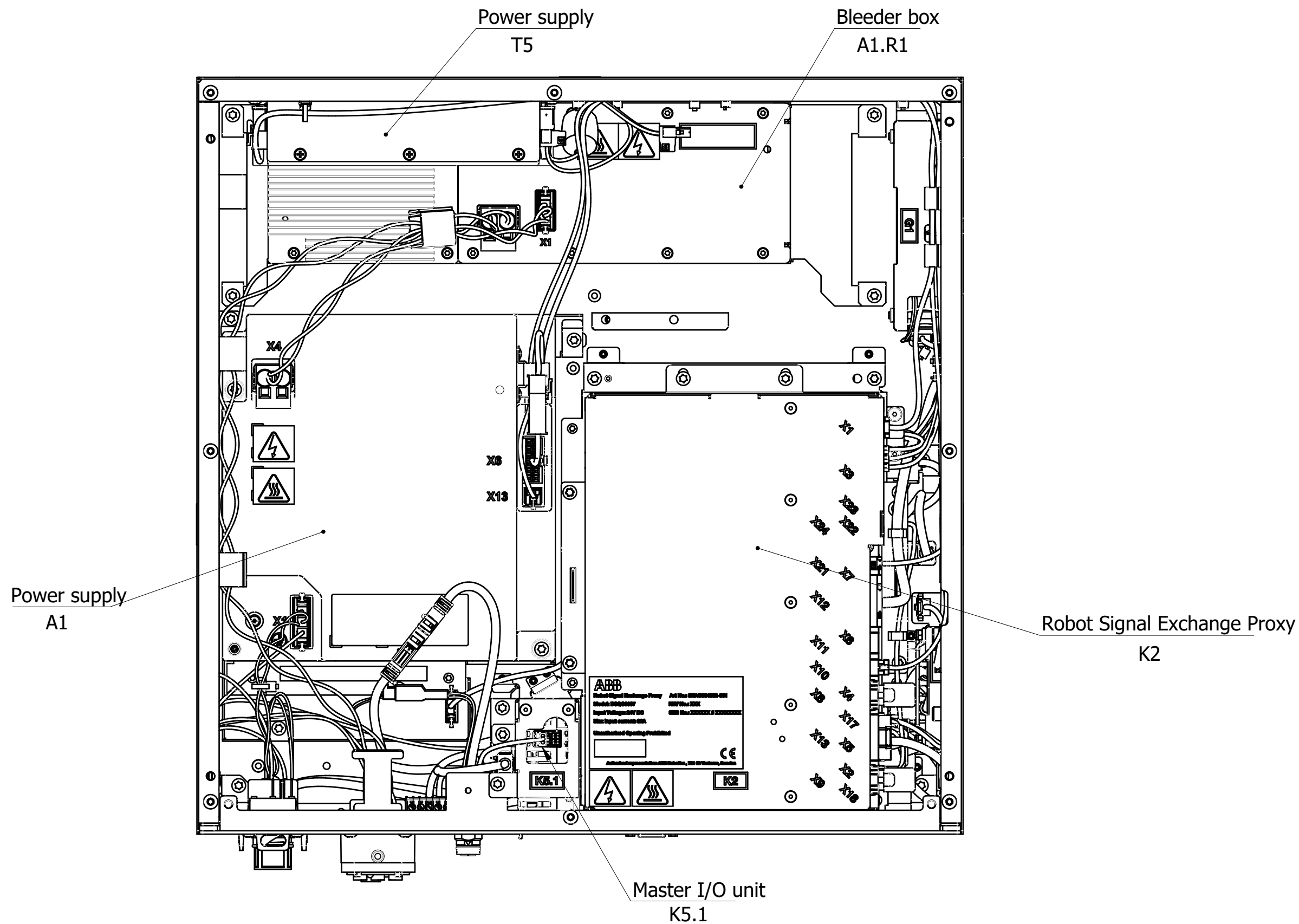
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Document no.  
3HAC089111-009 Page: 006  
Next: 006.a  
Total: 55



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Top view

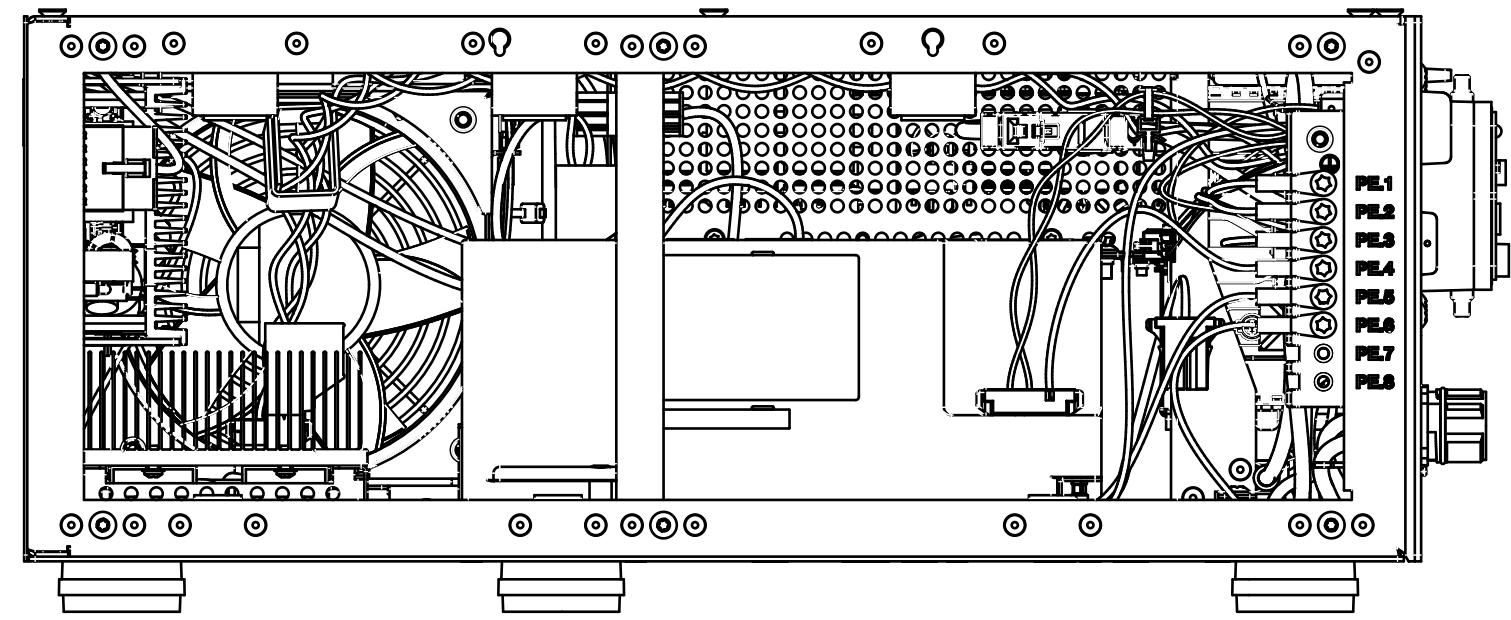
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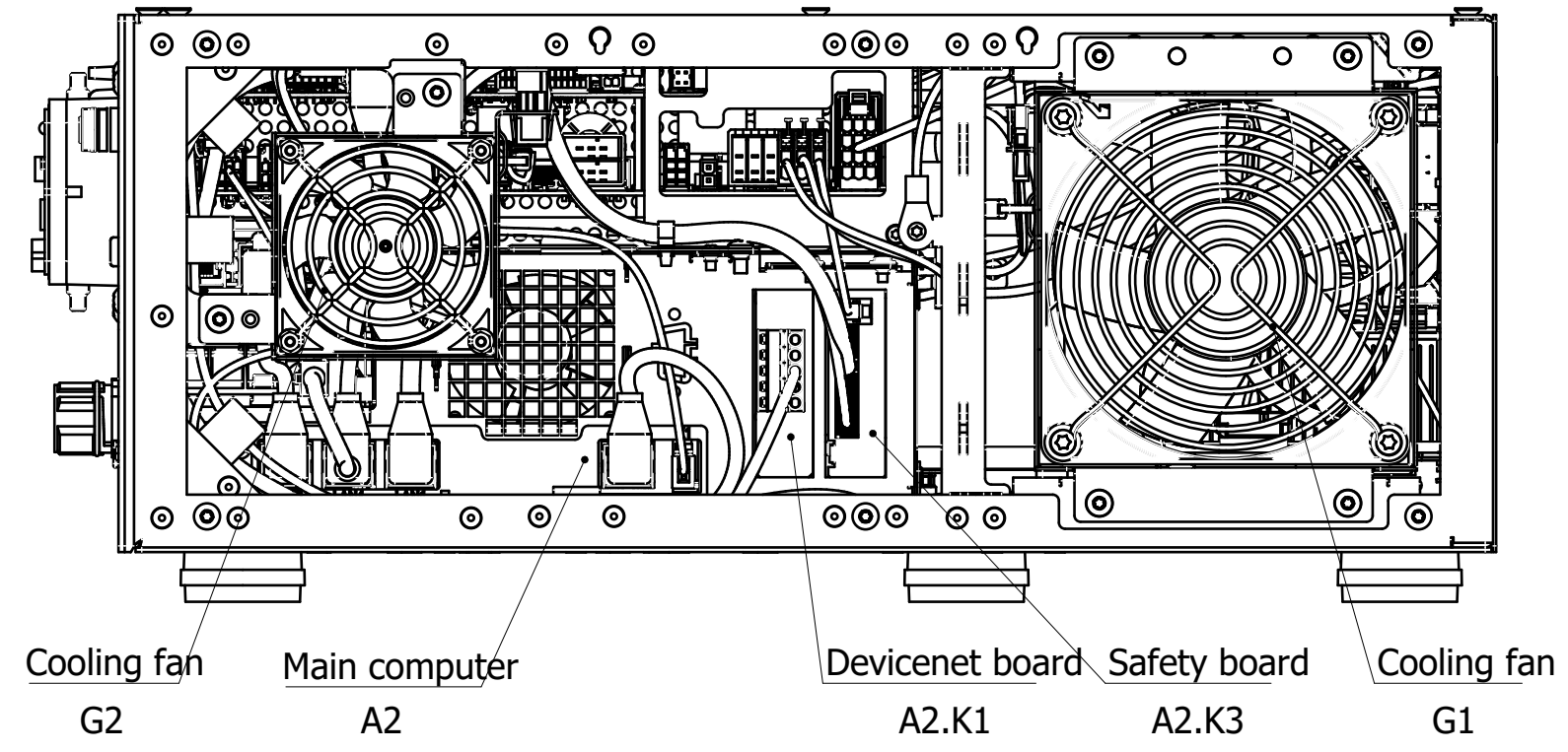
Document no.  
3HAC089111-009

Page: 006.a  
Next: 006.b  
Total: 55

Left side



Right side



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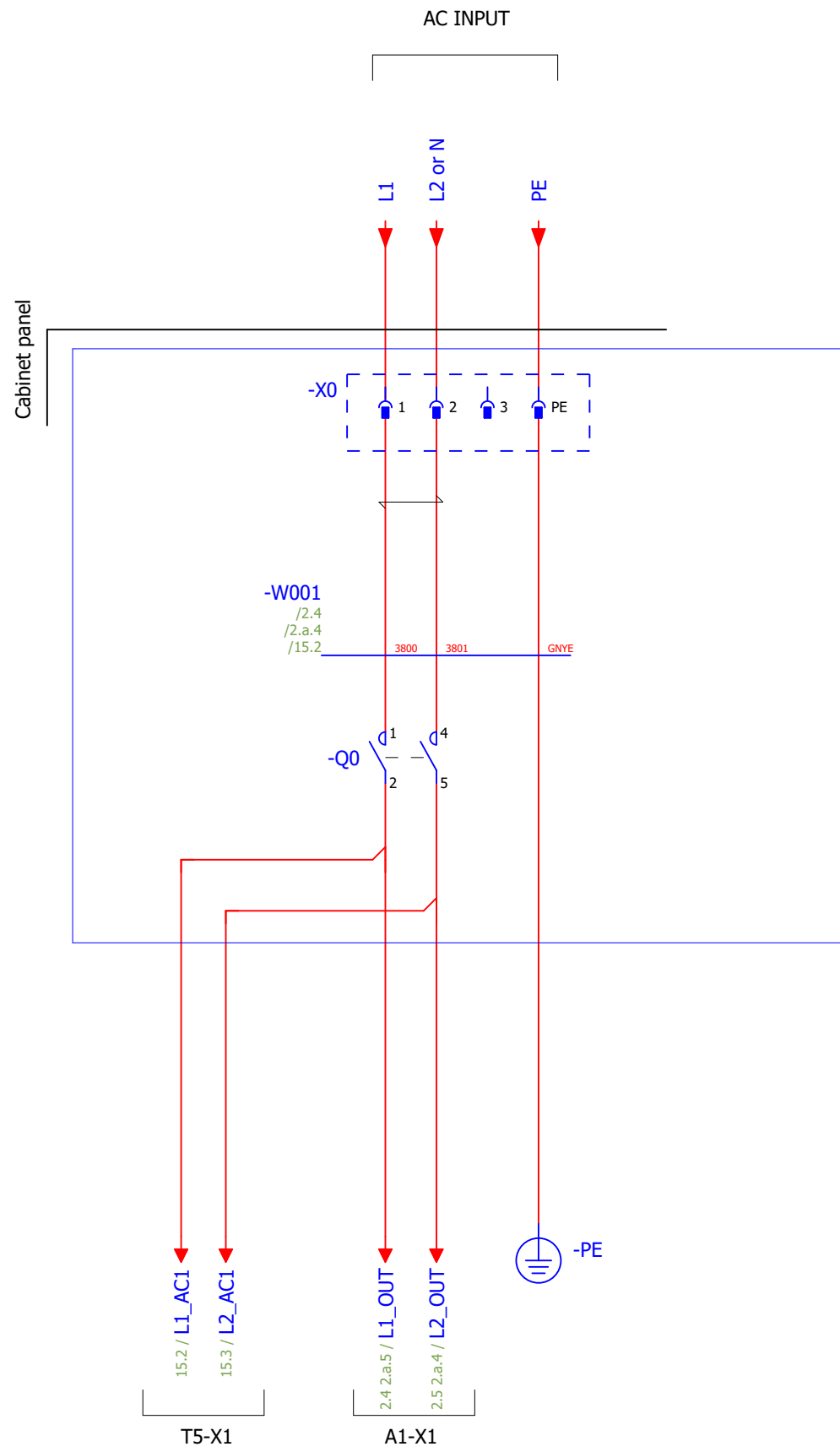
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Side view

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Document no. 3HAC089111-009	Page: 006.b Next: =SCH+U/1 Total: 55

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POWER INPUT /X0

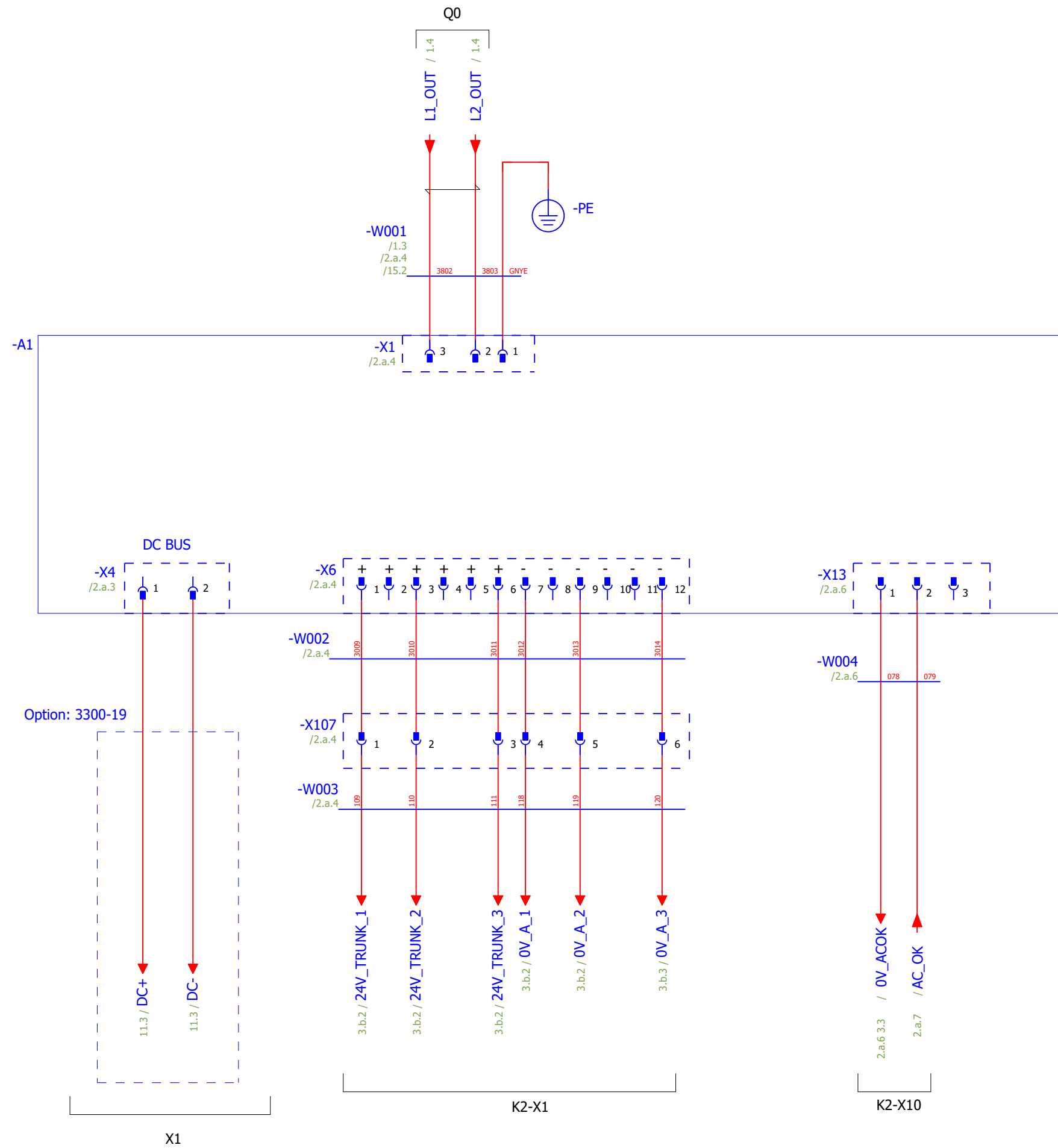
Status:  
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High-level function: = SCH  
Mounting location: + U

Document no.  
3HAC089111-009

Page: 1  
Next: 2  
Total: 55

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POWER UNIT - CRB15000-5/A1

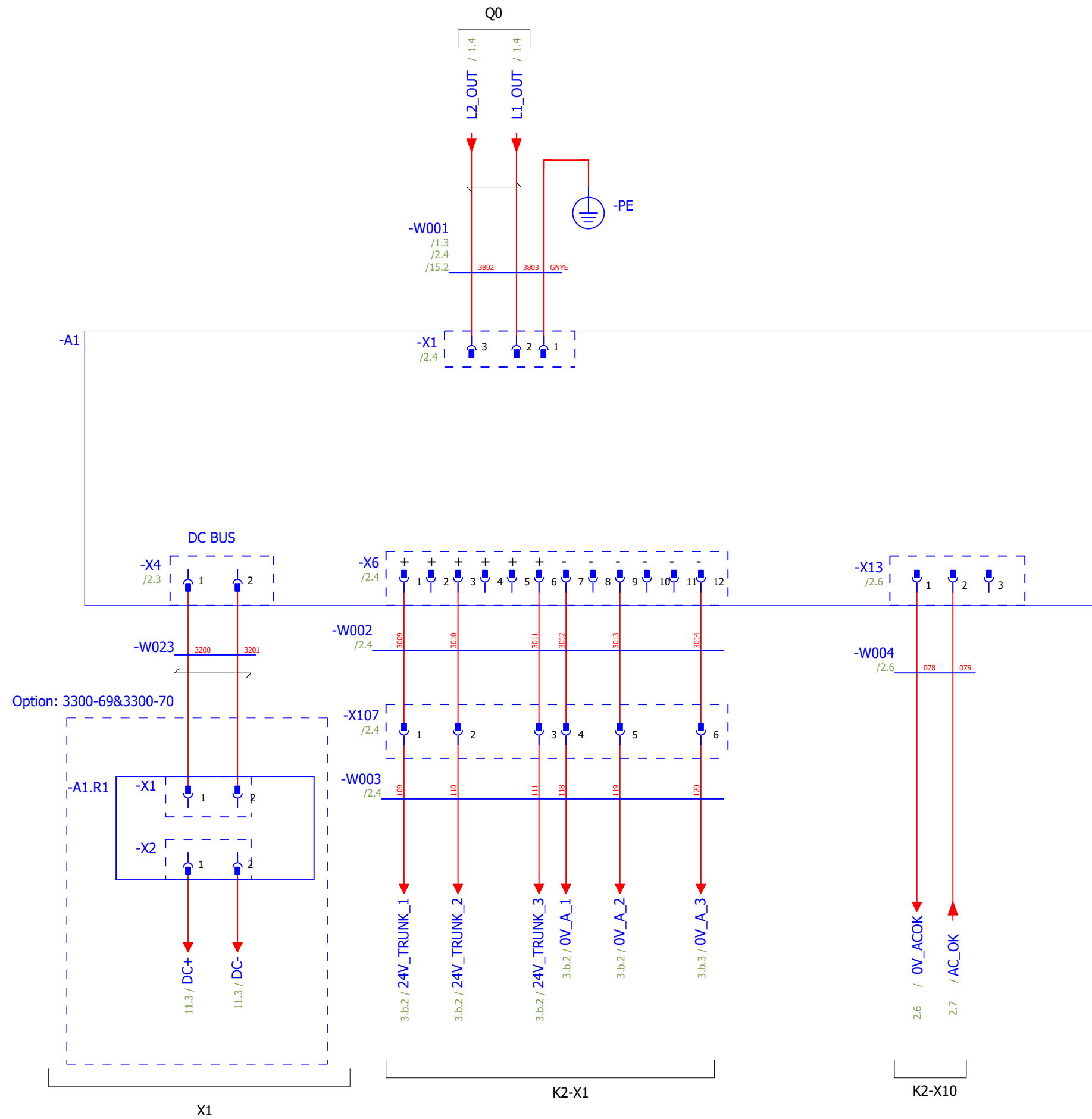
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Mounting location: + U

Document no.  
3HAC089111-009

Page: 2  
Next: 2.a  
Total: 55

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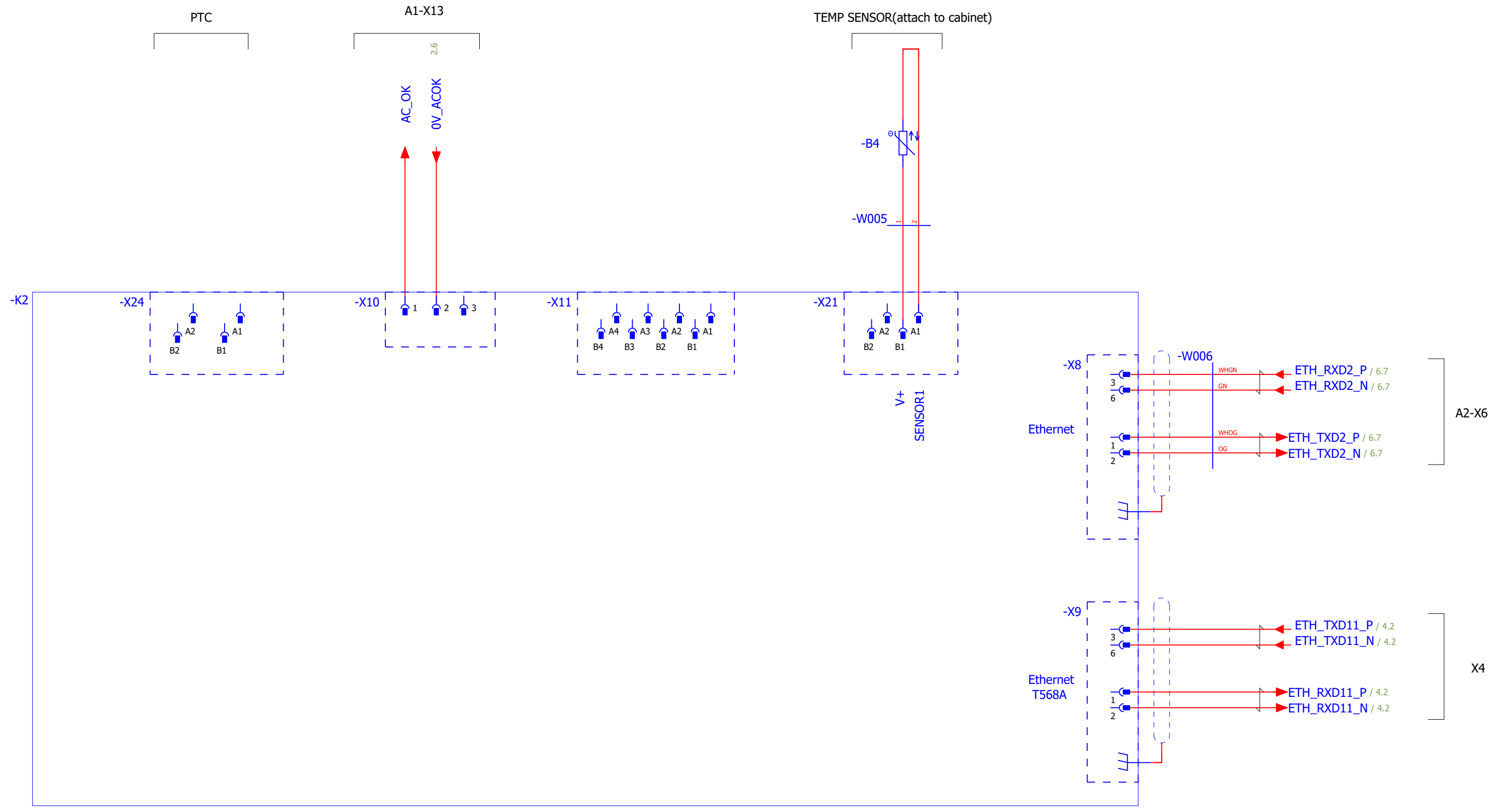
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Document no.  
3HAC089111-009

Page: 2.a  
Next: 3  
Total: 55



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**ROBOT SIGNAL EXCHANGE PROXY - K2**

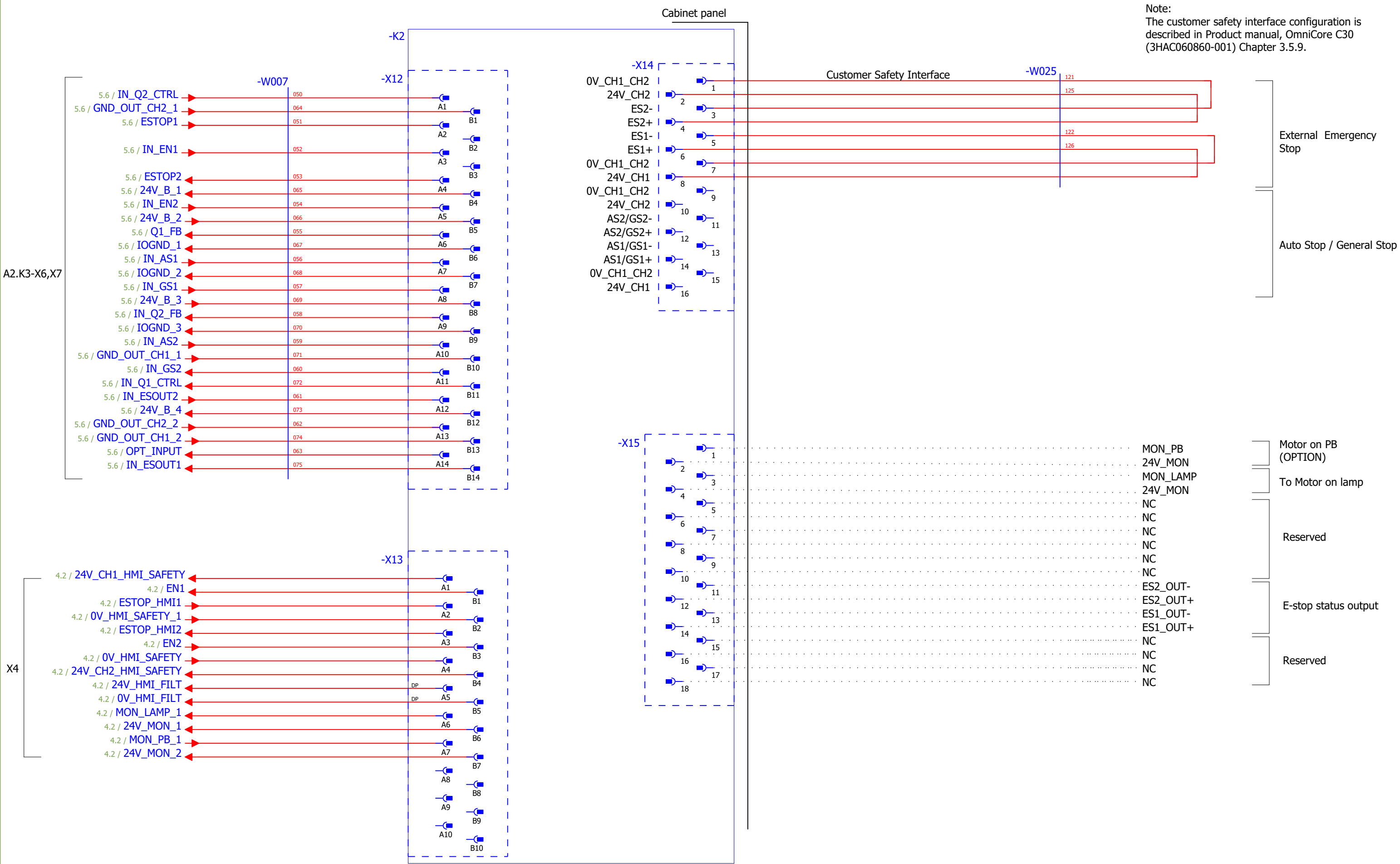
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Document no.  
3HAC089111-009

Page: 3  
Next: 3.a  
Total: 55

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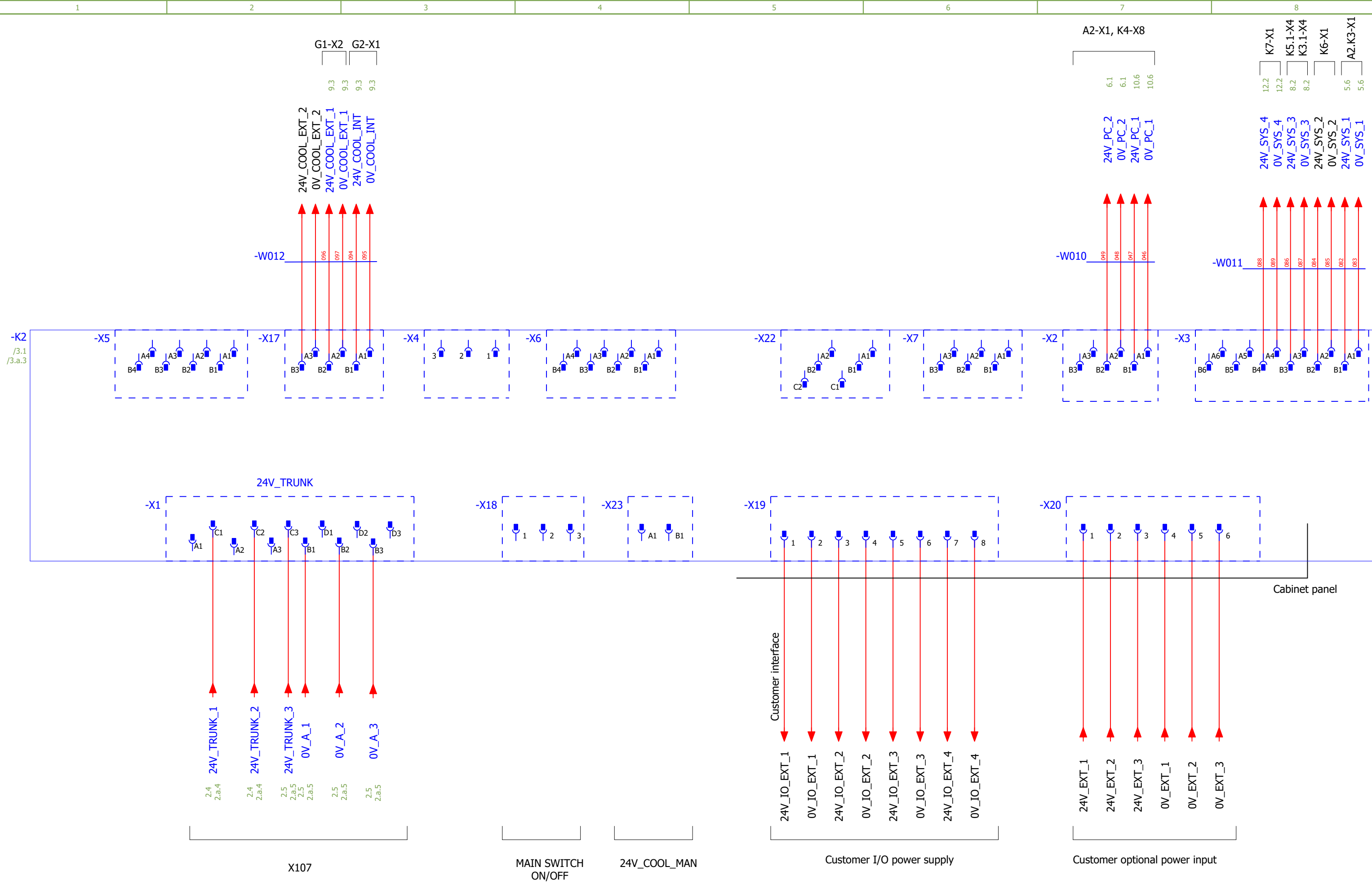
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High-level function: = SCH  
Mounting location: + U

Document no. 3HAC089111-009

Page: 3.a  
Next: 3.b  
Total: 55

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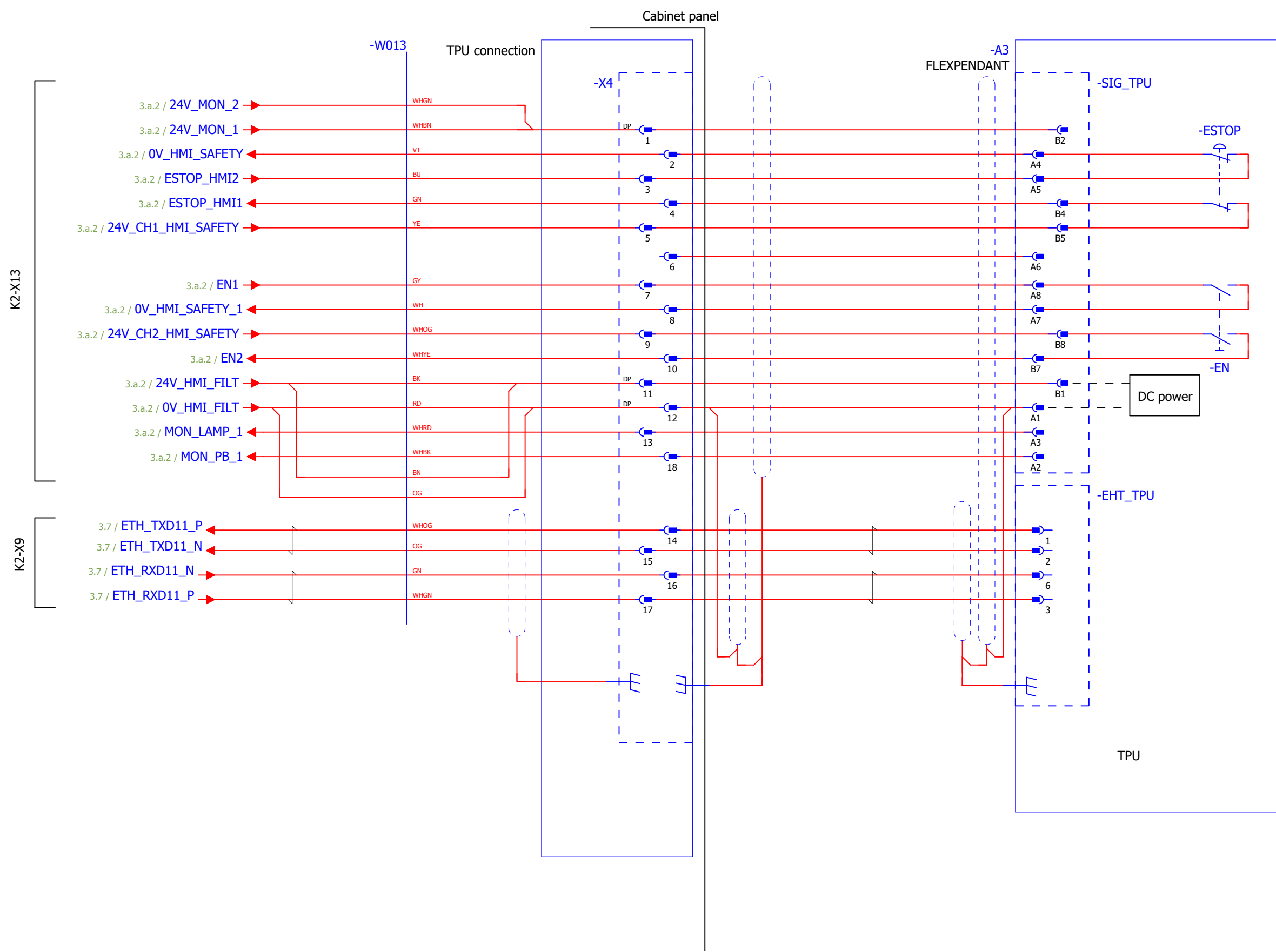
High-level function: = SCH  
Mounting location: + U

Document no.  
3HAC089111-009

Page: 3.b  
Next: 4  
Total: 55



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TPU - HMI SIGNAL CONNECTORS /X4

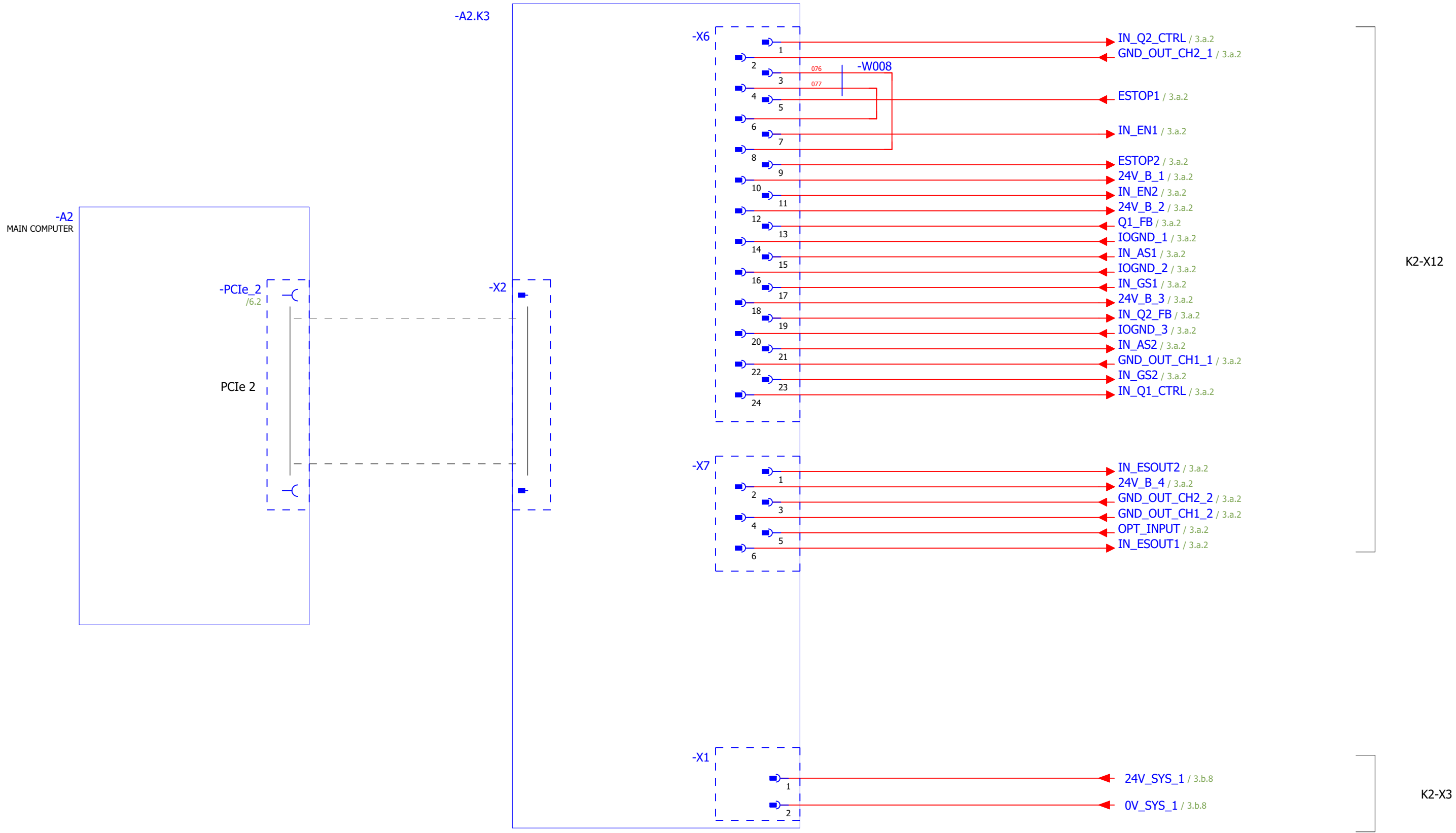
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Document no.  
3HAC089111-009

Page: 4  
Next: 5  
Total: 55

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SAFETY CONTROLLER /A2.K3

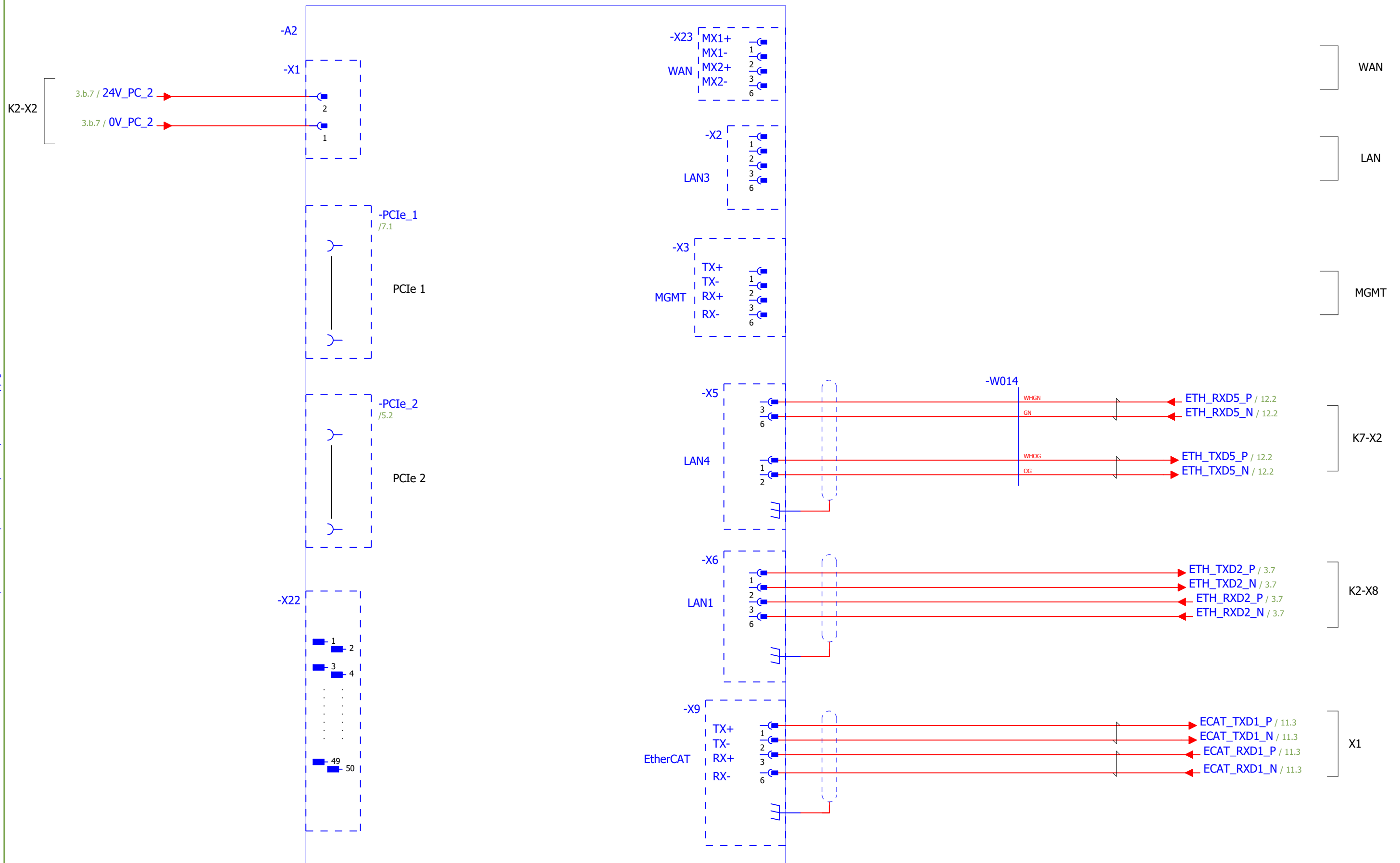
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Document no.  
3HAC089111-009

Page: 5  
Next: 6  
Total: 55

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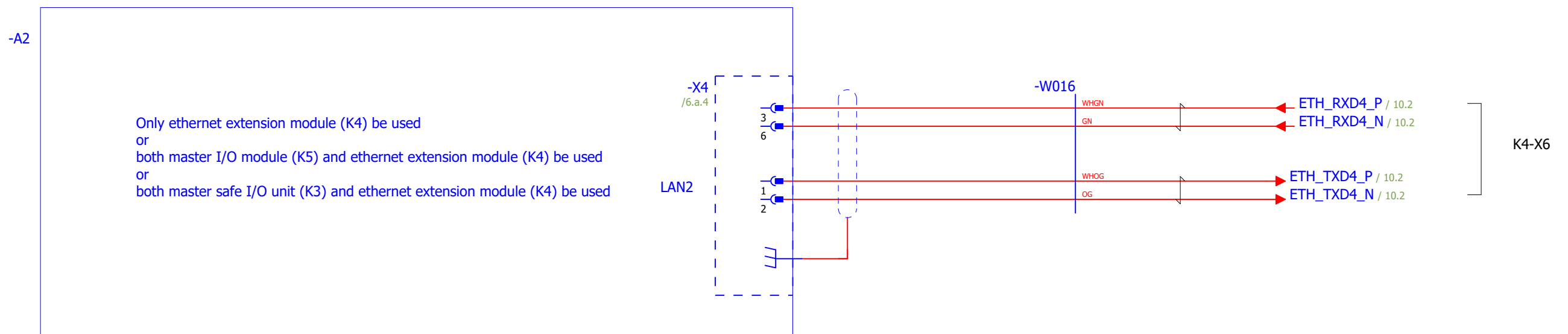
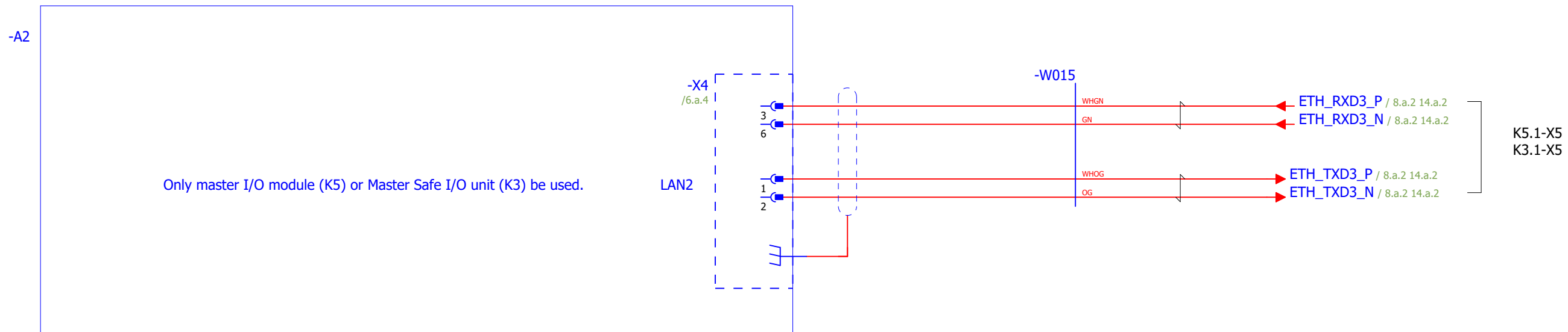
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**MAIN COMPUTER /A2**

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Document no. 3HAC089111-009	Page: 6 Next: 6.a Total: 55

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MAIN COMPUTER /A2

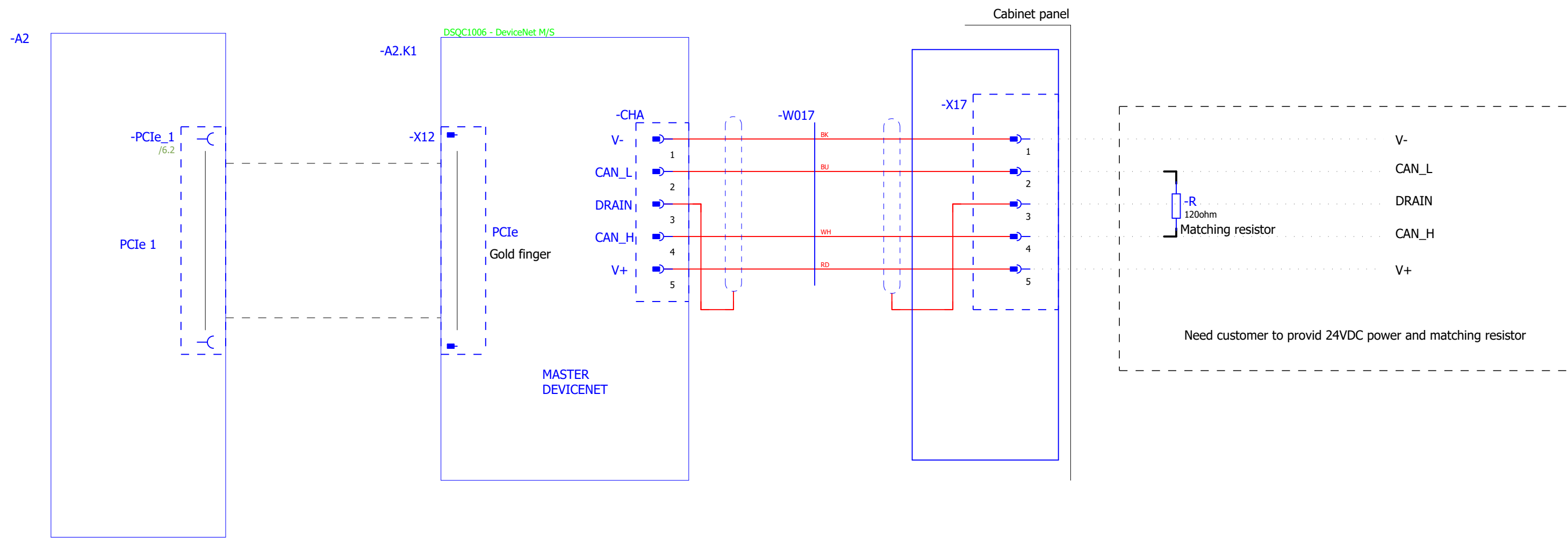
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Document no.  
3HAC089111-009

Page: 6.a  
Next: 7  
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**FIELD BUS ADAPTER MASTER /A2.K1**

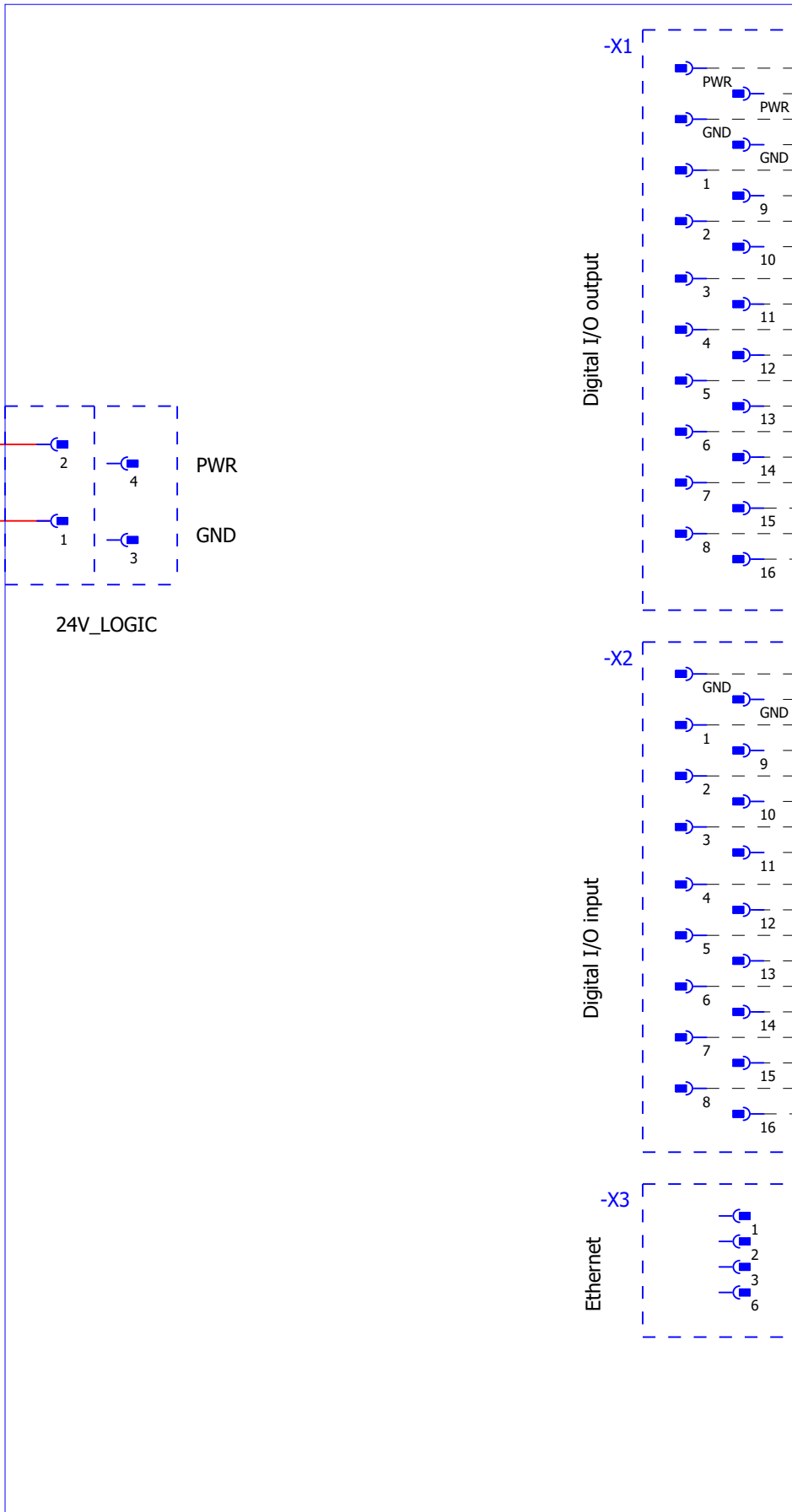
Status:	High-level function: = SCH
Approved	Mounting location: + U
Document no.	Page: 7
3HAC089111-009	Next: 8
	Total: 55

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



Customer I/O interface

-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

Customer I/O interface

-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

Ethernet  
-X3

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MASTER I/O UNIT /K5.1

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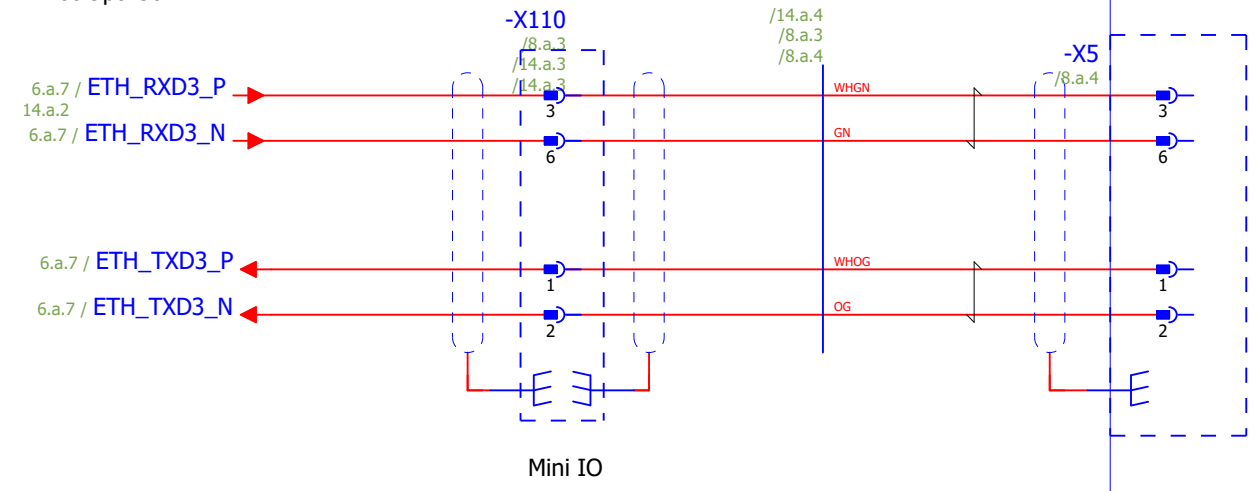
Document no.  
3HAC089111-009

Page: 8  
Next: 8.a  
Total: 55

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A2-X4

If not Opt. 3014-1

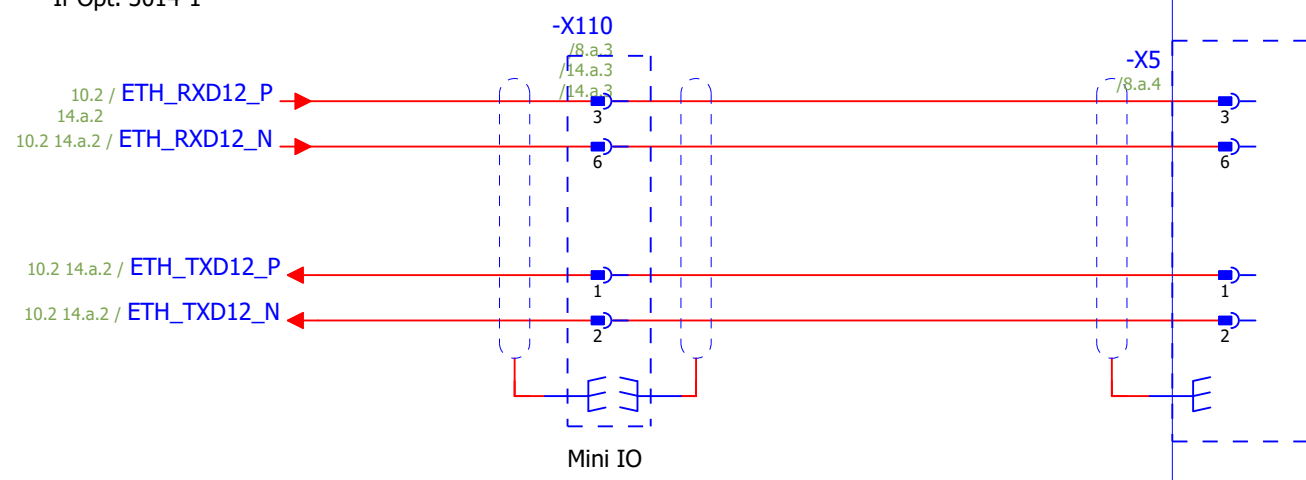


Ethernet

Only master I/O module (K5) be used.

K4-X7

If Opt. 3014-1



Ethernet

Both master I/O module (K5) and ethernet extension module (K4) be used.

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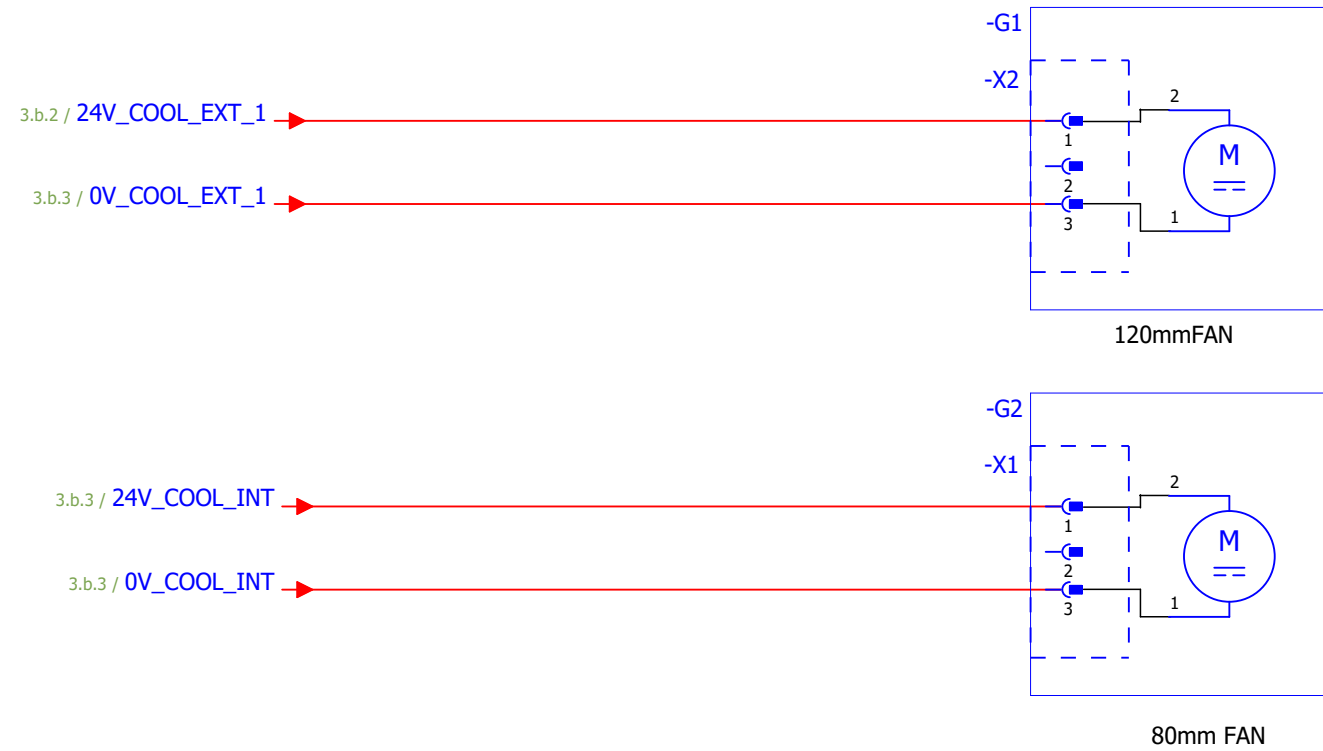
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MASTER I/O UNIT /K5.1

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Document no. 3HAC089111-009	Page: 8.a Next: 9 Total: 55

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K2-X17



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### FAN COOLING CHANNEL /G1,2

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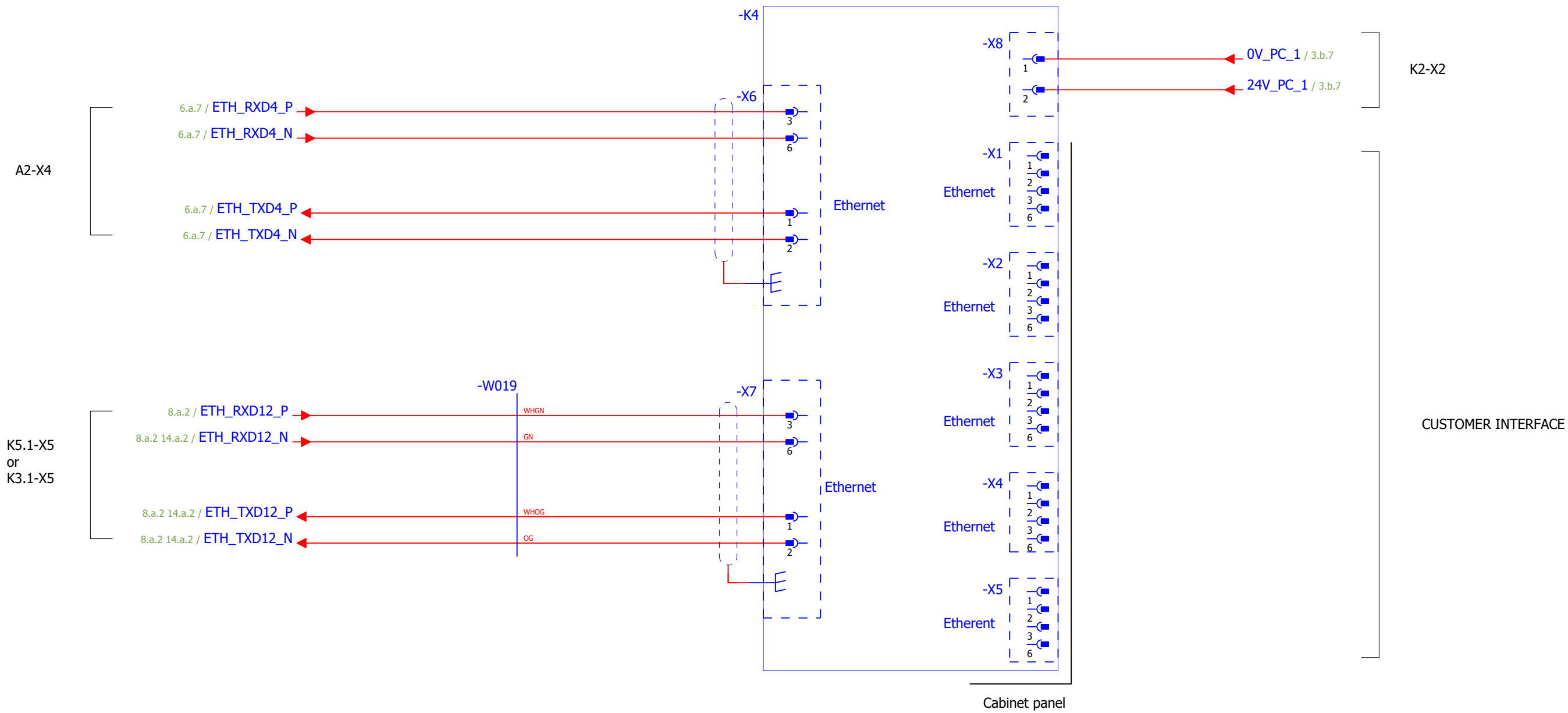
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Document no.  
3HAC089111-009

Page: 9  
Next: 10  
Total: 55



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### ETHERNET SWITCH /K4

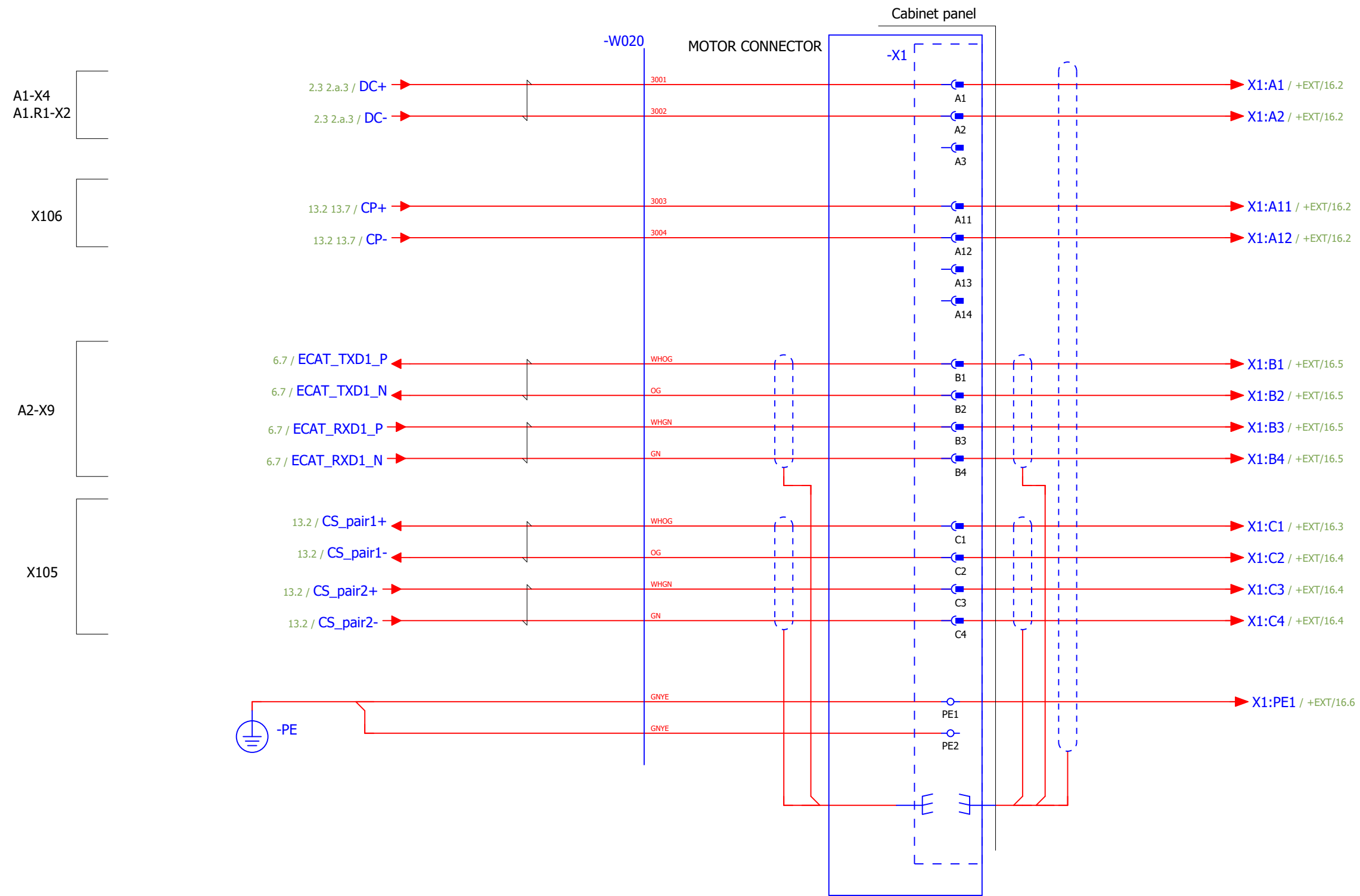
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Mounting location: + U

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Next: 11  
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to manipulator

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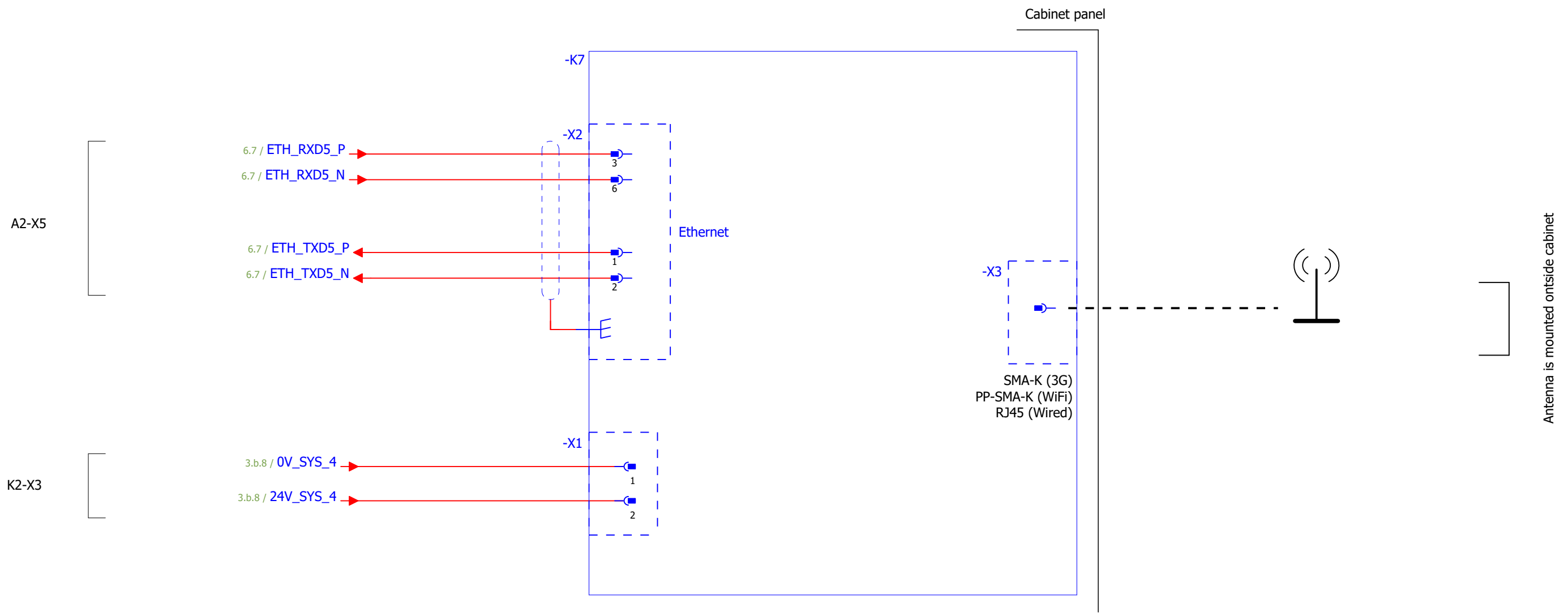
### MOTOR CONNECTOR - X1

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3HAC089111-009

Page: 11  
Next: 12  
Total: 55



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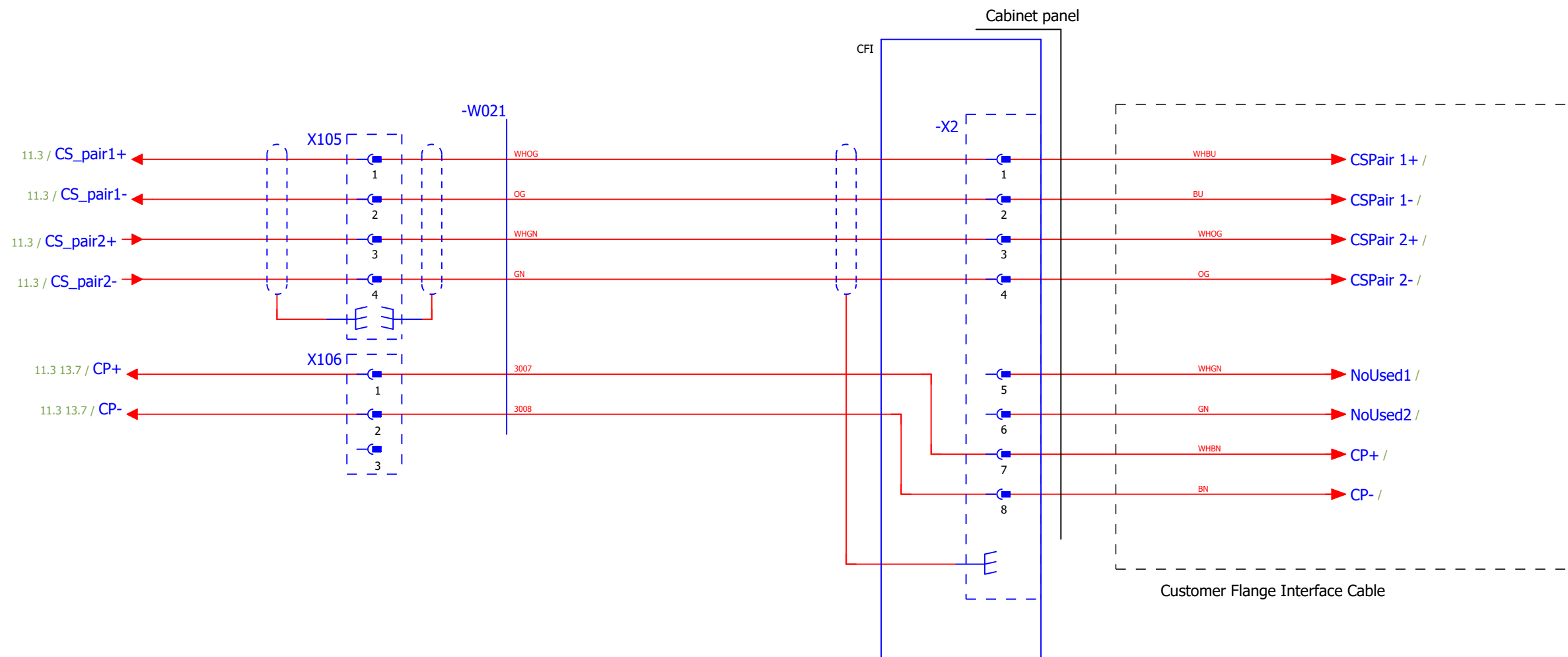
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**CONNECTED SERVICES - 3G, WiFi, Wired /K7**

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Document no.	Page: 12
3HAC089111-009	Next: 13
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to X1



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### CUSTOMER FLANGE INTERFACE (CFI) /X2

Status:  
Approved

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Mounting location: + U

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3HAC089111-009

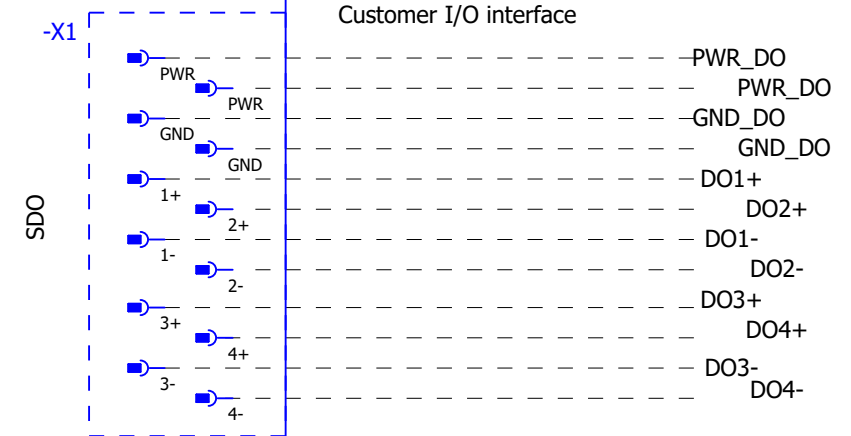
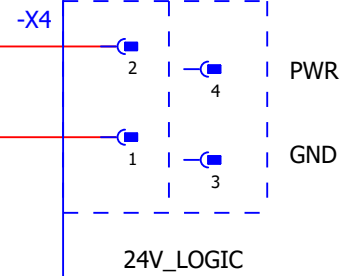
Page: 13  
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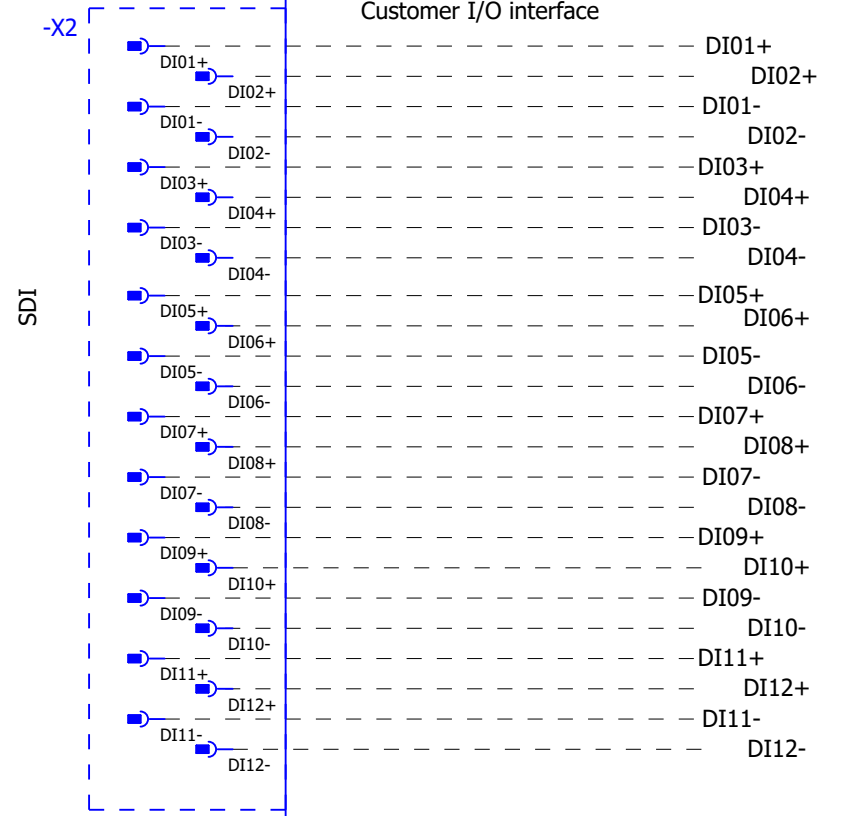
K2-X3

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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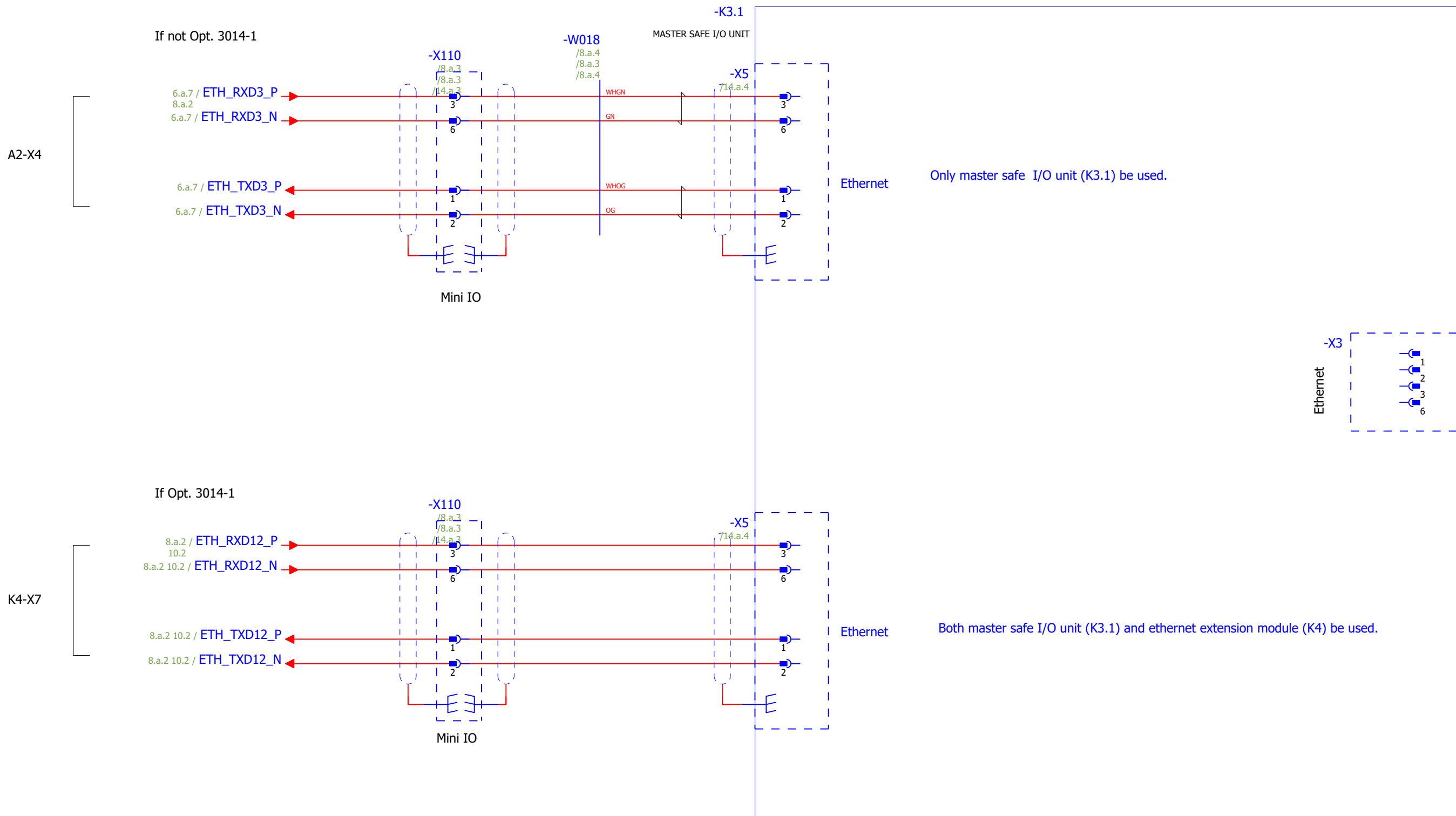
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Next: 14.a  
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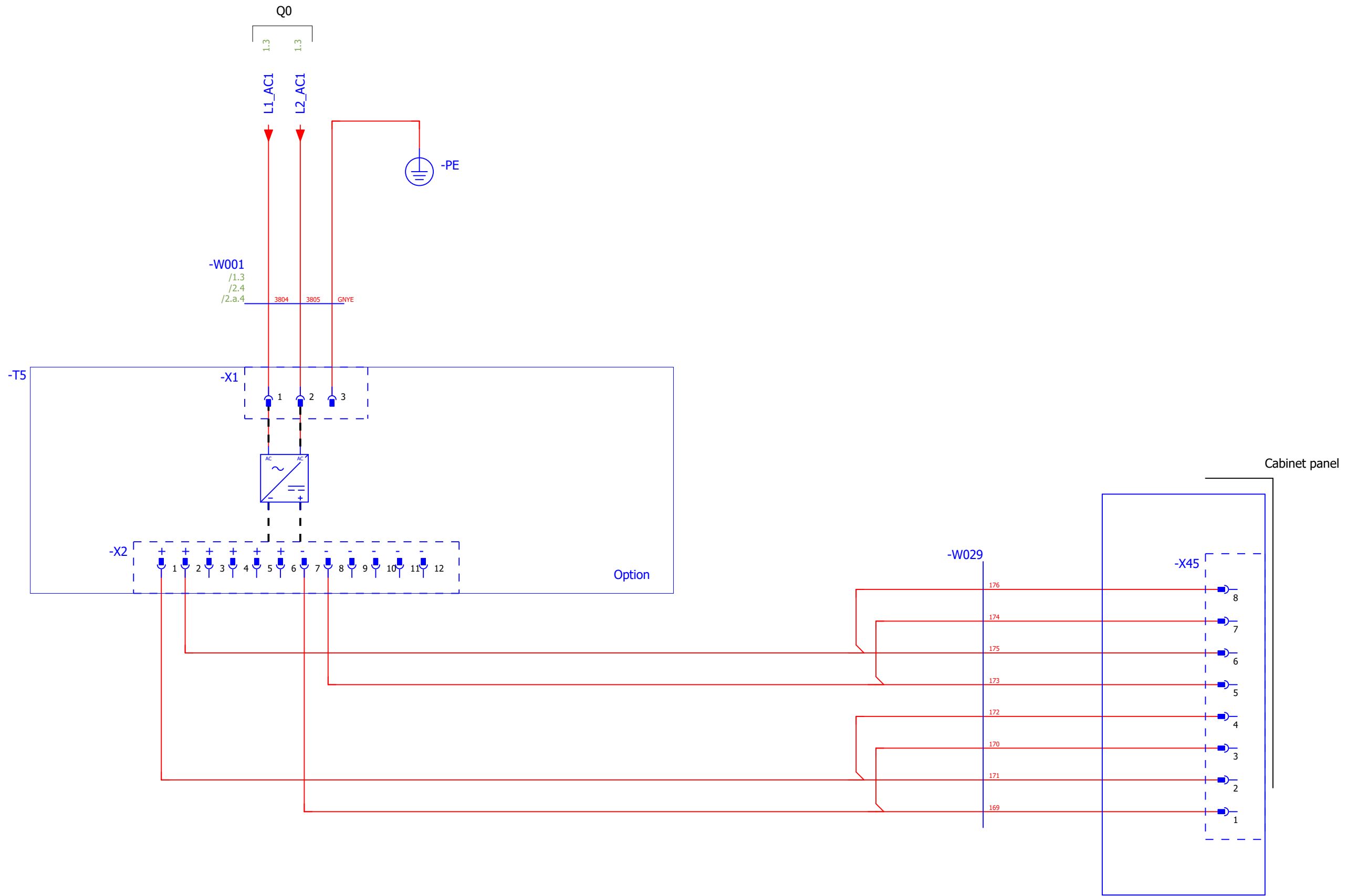
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### POWER SUPPLY (OPTION) /T5

Status:  
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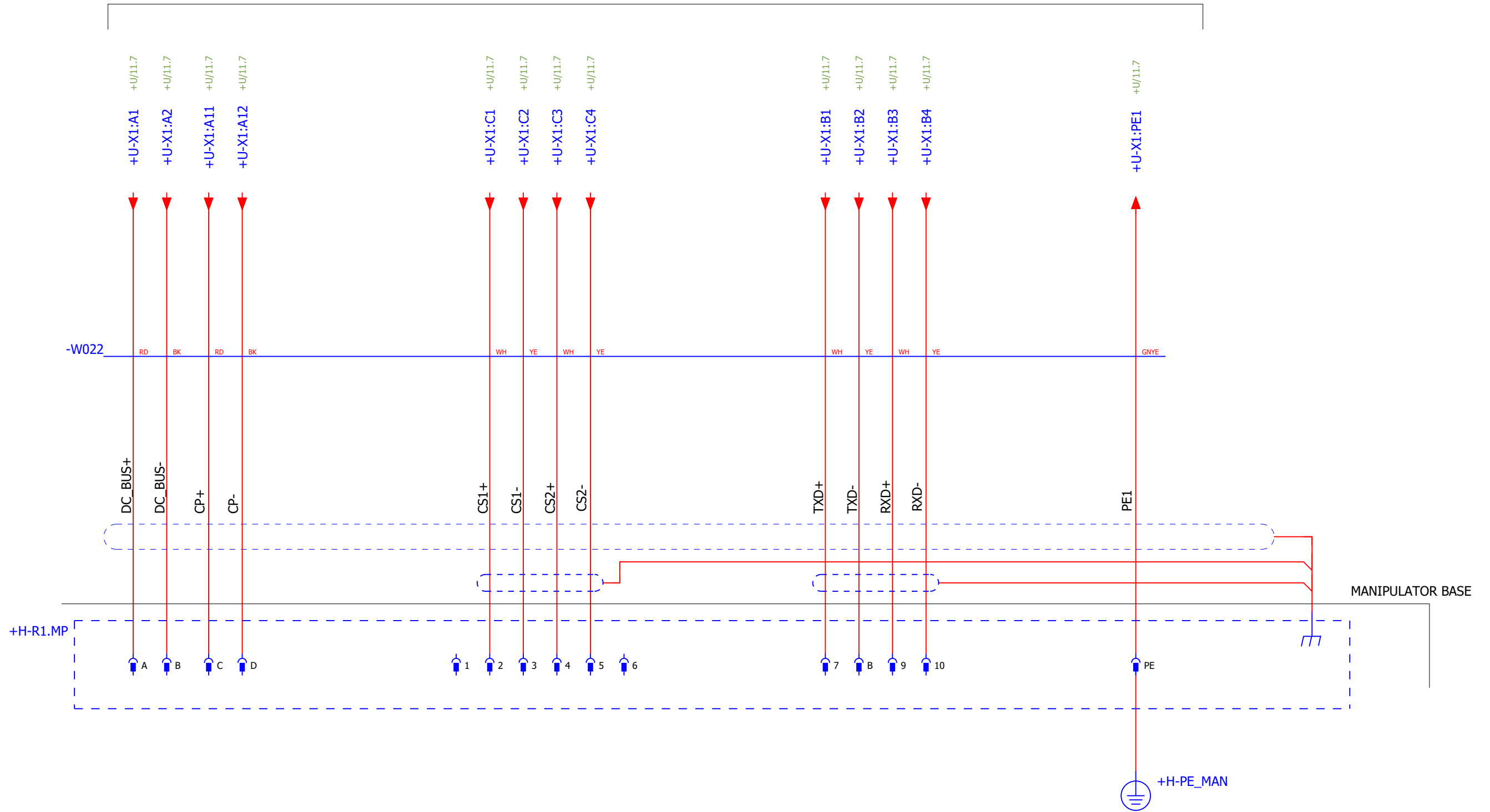
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Document no.  
3HAC089111-009

Page: 15  
Next: +EXT/16  
Total: 55

# CRB 15000 cabinet

Controller interface  
+U-X1



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3HAC089111-009

Page: 16  
Next: =Report+/007  
Total: 55



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		
3803	BK, UL1015, Twisted-2	14		A1-X1	2			Q0	2			L		
3803	BK, UL1015, Twisted-2	14		A1-X1	2			Q0	5			L		
3802	BK, UL1015, Twisted-2	14		A1-X1	3			Q0	2			N		
3802	BK, UL1015, Twisted-2	14		A1-X1	3			Q0	5			N		
GNYE	GNYE, UL1015	14		X0		PE		PE				PE		
GNYE	GNYE, UL1015	14		T5-X1	3			PE				PE		
3800	BK, UL1015, Twisted-1	14		X0	1			Q0	1			L		
3804	BK, UL1015, Twisted-2	16		T5-X1	1			Q0	2			L		
3801	BK, UL1015, Twisted-1	14		X0	2			Q0	4			N		
3805	BK, UL1015, Twisted-2	16		T5-X1	2			Q0	5			N		

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Cable diagram =SCH+U-W001

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# 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	2			24V_TRUNK		
3010	BU UL1569	18		A1-X6	3			X107	2			24V_TRUNK		
3011	BU UL1569	18		A1-X6	6			X107	3			24V_TRUNK		
3011	BU UL1569	18		A1-X6	6			X107	3			24V_TRUNK		
3012	BU, UL1569	18		A1-X6	7			X107	4			0V_A		
3012	BU, UL1569	18		A1-X6	7			X107	4			0V_A		
3013	BU, UL1569	18		A1-X6	9			X107	5			0V_A		
3013	BU, UL1569	18		A1-X6	9			X107	5			0V_A		
3014	BU, UL1569	18		A1-X6	12			X107	6			0V_A		
3014	BU, UL1569	18		A1-X6	12			X107	6			0V_A		

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**Status:**  
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**Mounting location: +**

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3HAC089111-009

**Page: 008**  
**Next: 009**  
**Total: 55**

# 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
118	BU, UL1569	18		K2-X1	B1			X107	4			0V		2
118	BU, UL1569	18		K2-X1	B1			X107	4			0V		
119	BU, UL1569	18		K2-X1	B2			X107	5			0V		
119	BU, UL1569	18		K2-X1	B2			X107	5			0V		
120	BU, UL1569	18		K2-X1	B3			X107	6			0V		
120	BU, UL1569	18		K2-X1	B3			X107	6			0V		
109	BU, UL1569	18		K2-X1	C1			X107	1			24V		
109	BU, UL1569	18		K2-X1	C1			X107	1			24V		
110	BU, UL1569	18		K2-X1	C2			X107	2			24V		
110	BU, UL1569	18		K2-X1	C2			X107	2			24V		
111	BU, UL1569	18		K2-X1	C3			X107	3			24V		
111	BU, UL1569	18		K2-X1	C3			X107	3			24V		

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# Cable diagram -W004 / 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			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

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+		3
2	WH build-in temp sensor			K2-X21	A1			B4				SENSOR1		

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Page: 011  
Next: 012  
Total: 55

# 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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Status:  
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3HAC089111-009

Page: 013  
Next: 014  
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# Cable diagram

-W010

/ 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		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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Page: 014  
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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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Cable diagram =SCH+U-W011

Status: Approved	High-level function: = Report Mounting location: +
Document no. 3HAC089111-009	Page: 015 Next: 016 Total: 55

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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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Rev 02  
10/24/2023

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Cable diagram =SCH+U-W012

Status:  
Approved

High-level function: = Report  
Mounting location: +

Document no. 3HAC089111-009	Page: 016
	Next: 017
	Total: 55

# 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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<b>Prepared by, date:</b>			<b>Approved by, date:</b> Per V. Carlsson		Document no. 3HAC089111-009	Page: 017 Next: 018 Total: 55	

# 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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Cable diagram =SCH+U-W014

Status: Approved	High-level function: = Report Mounting location: +
Document no. 3HAC089111-009	Page: 018 Next: 019 Total: 55

# Cable diagram

-W015

/ Harness Ethernet

				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				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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Cable diagram =SCH+U-W015

Status: Approved	High-level function: = Report Mounting location: +
Document no. 3HAC089111-009	Page: 019 Next: 020 Total: 55

# 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-		

Latest revision:  
Rev 02  
10/24/2023

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Cable diagram =SCH+U-W016

Status:  
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Mounting location: +

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Page: 020  
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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
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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Prepared by, date:	Approved by, date: Per V. Carlsson	Document no. 3HAC089111-009	Page: 021 Next: 022 Total: 55		

# Cable diagram -W018

# Harness Ethernet with Mini-IO

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				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 =SCH+U-W018

Status:  
Approved

High-level function: = Report  
 Mounting location: +

Document no.  
3HAC089111-009

Page: 022  
 Next: 023  
 Total: 55



# 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

-W020

/

/

Harness Motors power ULV

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.			
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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Cable diagram =SCH+U-W020

**Status:**  
Approved

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

**Document no.**  
3HAC089111-009

**Page:** 024  
**Next:** 025  
**Total:** 55


**Cable diagram**      -W021

/      /      **Harness CFI connection**

Wire no.	Specification	Size (AWG)	Lgth. (mm)	Connection point A				Connection point B				Remark	Rev	Page	
				Item descrption	: term	Type	Ref.	Item descrption	: term	Type	Ref.				
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 =SCH+U-W021**

<b>Status:</b> Approved	<b>High-level function: =</b> Report <b>Mounting location: +</b>
<b>Document no.</b> 3HAC089111-009	<b>Page:</b> 025 <b>Next:</b> 026 <b>Total:</b> 55

# 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						16
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       -W023       /

/       Harness BleedBox

Wire no.	Specification	Size (AWG)	Lgth. (mm)	Connection point A				Connection point B				Remark	Rev	Page
				Item descrption	: term	Type	Ref.	Item descrption	: term	Type	Ref.			
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. 3HAC089111-009	Page: 027 Next: 028 Total: 55

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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					Document no. 3HAC089111-009	Page: 028 Next: 029 Total: 55

# Cable diagram -W029

## 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
169	BU, UL1569	18		T5-X2	7			X45	1			0V		15
170	BU, UL1569	18		X45	1			X45	3			0V		
171	BU, UL1569	18		T5-X2	1			X45	2			24V		
172	BU, UL1569	18		X45	2			X45	4			24V		
173	BU, UL1569	18		T5-X2	8			X45	5			0V		
174	BU, UL1569	18		X45	5			X45	7			0V		
175	BU, UL1569	18		T5-X2	2			X45	6			24V		
176	BU, UL1569	18		X45	6			X45	8			24V		

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Latest revision:	
Rev 02	10/24/2023
Prepared by, date:	Approved by, date: Per V. Carlsson

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Cable diagram =SCH+U-W029

Status: Approved	High-level function: = Report Mounting location: +
Document no. 3HAC089111-009	Page: 029 Next: Total: 55