

Wire colors

Primary current : black
230V AC / 230V/0 : red / red-white
24V AC / 24V/0 : grey / grey-white
24V + / 24V - : darkblue / blue-white
external voltage : orange
DDC : brown
Test cable : white
Neutral conductor : blue
Ground connection : green - yellow
others : violet

EN regulations

HD 60364
EN 61439-1

VDE

VDE 0100
VDE 0660

Terminal strips

X01 in front of main switch
X1 Primary current
X2 control unit 230V
X3 low voltage
X4 analog signals
X5 signal-exchange with external unit
X6 bus lines
X7 external voltage
X8 ex area

international IEC

IEC 60364
IEC 61439-1

Electrical cabinet

Electrical cabinet : integrated in the AHU
Housing color :
Protection class : IP 54
Cable entry : bottom
Door hinges : left and right

Operating values

Operating voltage : 400V AC
control unit General : 230V AC / 24V DC
Optical Display : Auf Display
Frequency : 50 Hz
control system : DEOS
Feed-in : 100A

Project Mc Donald`s DK - Skjern				Component ventilation		customer 			
Created on	12.Sep.2024	Plannend :	K. Werner	highest page number :	160				
Last rev. date:	17.Okt.2024	Drafted :	K. Werner	Quantity of pages :	92				
Test date:	17.Sep.2024	Name :	Hr. Strunk						
						Following page -> 1.a			
		Date	17.Okt.2024	Mc Donald`s DK - Skjern ventilation				Cover page	
			KW					Fabr.. Nr. 7297	
								Auftr. Nr. 24503	
Change	Date	Name						D.No.: 9805	
								Page 1	
								Page 160	

			Date	18.Sep.2024	Mc Donald`s DK - Skjern ventilation		Output data	Fabr.. Nr. 7297		=	Page 1.a
				KW				+			
Change	Date	Name						Auftr. Nr. 24503	D.No.: 9805		Page 160

Table of contents

Mueller

Page	Page designation	Page supplementary field	Date	processed by
1	Cover page		27.Sep.2024	KW
1.a	Output data		18.Sep.2024	KW
2	Table of contents		27.Sep.2024	KW
2.a	Table of contents		27.Sep.2024	KW
2.b	Table of contents		27.Sep.2024	KW
2.c	Table of contents		27.Sep.2024	KW
3	Feed-in and lighting		26.Sep.2024	KW
4	phase monitoring		17.Sep.2024	KW
5	control voltage 230V AC and 24V DC		12.Sep.2024	KW
7	fault reset		12.Sep.2024	KW
9	safety-line		17.Sep.2024	KW
10	air handling unit kitchen		12.Sep.2024	KW
11	supply air fan kitchen		17.Sep.2024	KW
13	exhaust fan kitchen		26.Sep.2024	KW
14	exhaust fan dishes		26.Sep.2024	KW
16	flap drives kitchen		17.Sep.2024	KW
19	antifreeze thermostat		17.Sep.2024	KW
20	heating pump		26.Sep.2024	KW
21	heatpump 1 kitchen		26.Sep.2024	KW
22	heatpump 2 kitchen		26.Sep.2024	KW
23	heatpump 1 kitchen indoor unit		17.Sep.2024	KW
24	heatpump 2 kitchen indoor unit		17.Sep.2024	KW
30	air handling unit Lobby		12.Sep.2024	KW
31	supply air fan Lobby		26.Sep.2024	KW
33	exhaust fan Lobby		18.Sep.2024	KW
36	flap drives Lobby		17.Sep.2024	KW

Table of contents

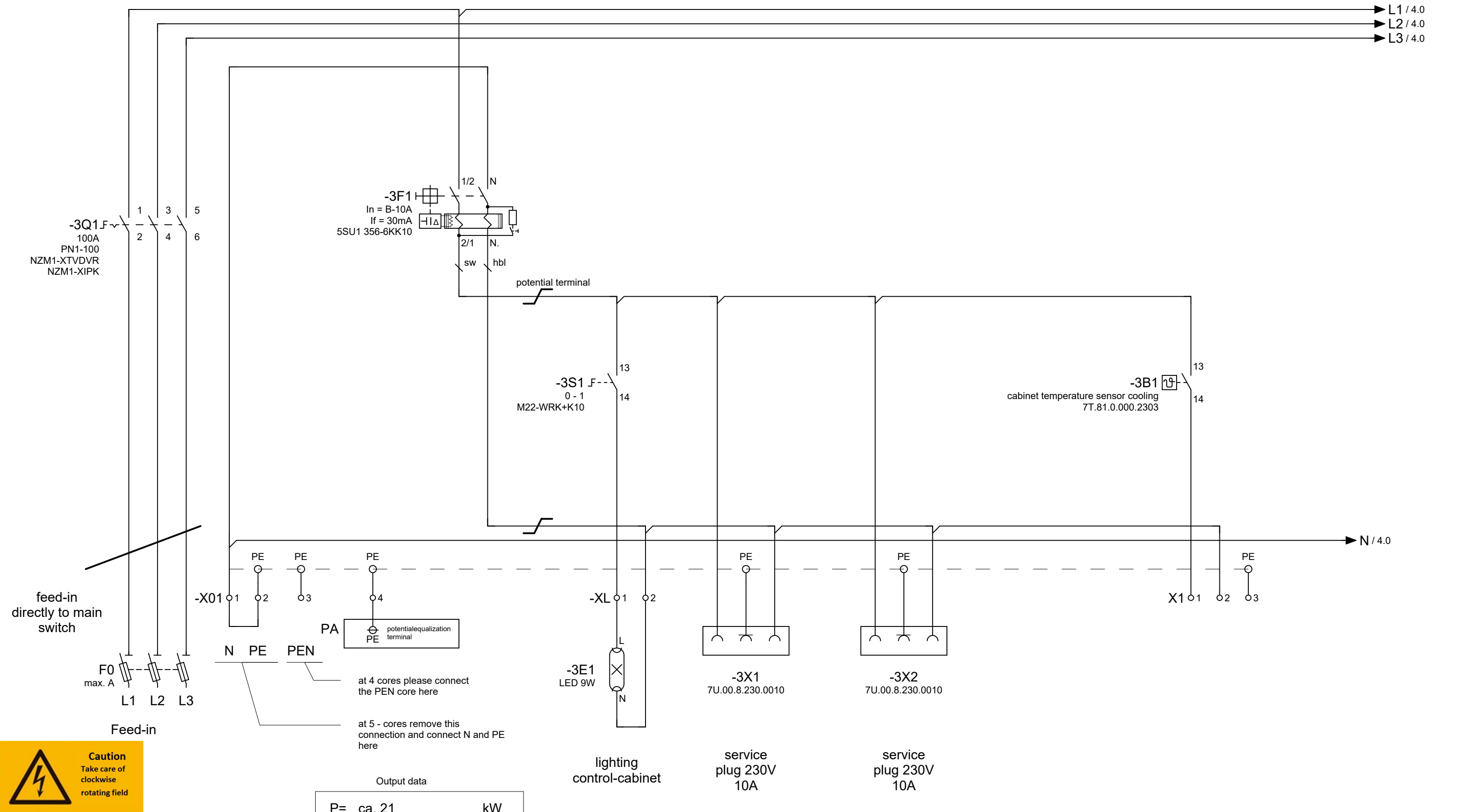
Mueller

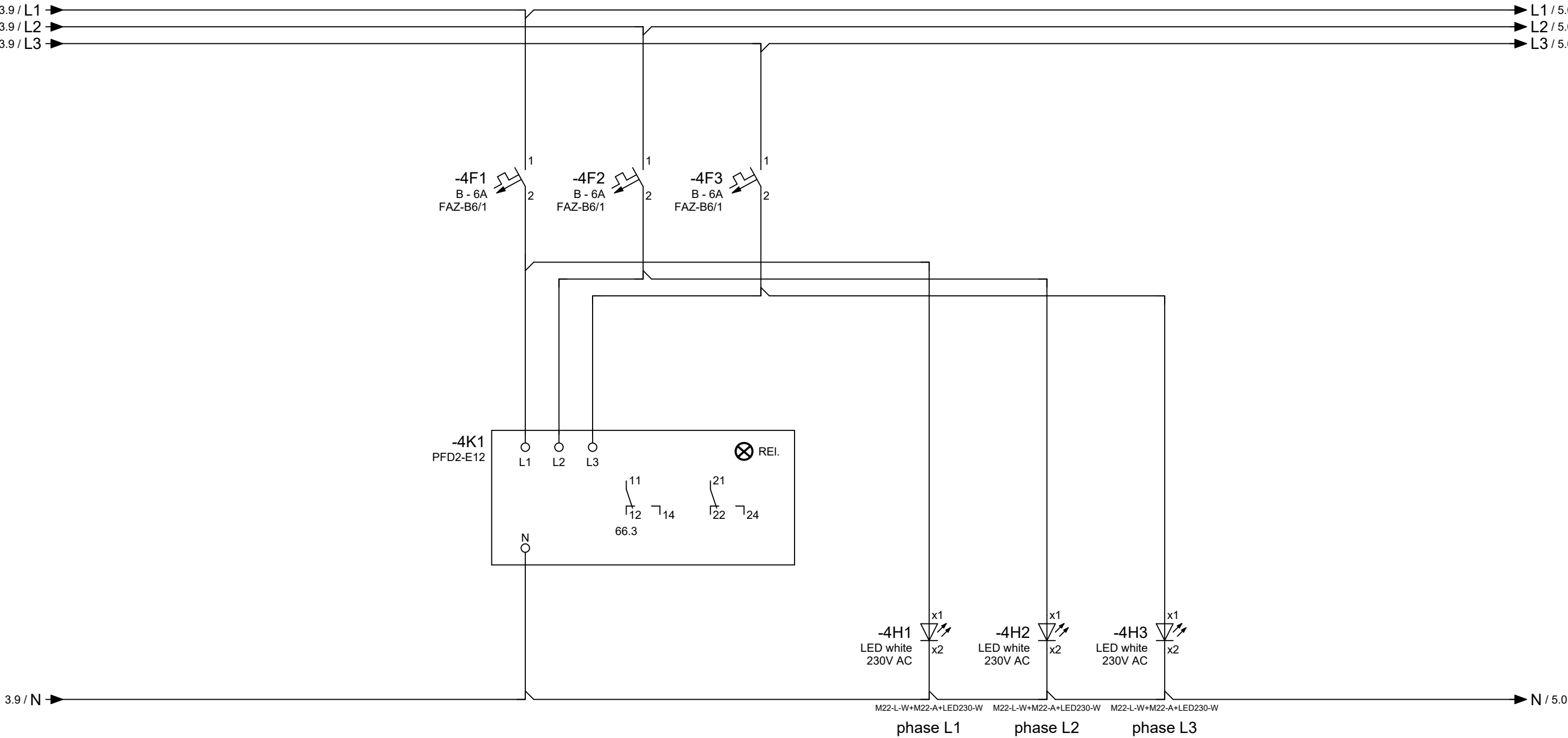
Page	Page designation	Page supplementary field	Date	processed by
37	volume flow regulator		17.Sep.2024	KW
38	gas detector		26.Sep.2024	KW
41	heatpump 1 Lobby		26.Sep.2024	KW
42	heatpump 2 Lobby		26.Sep.2024	KW
43	heatpump1 Lobby indoor unit		26.Sep.2024	KW
44	heatpump 2 Lobby indoor unit		26.Sep.2024	KW
50	unit discription General		27.Sep.2024	KW
51	common alarm and release kitchen ware		27.Sep.2024	KW
60	unit discription DDC		12.Sep.2024	KW
61	overview occupancy board 1		12.Sep.2024	KW
62	overview occupancy board 2		17.Sep.2024	KW
64	overview module		17.Sep.2024	KW
65	DDC - CPU Controller		17.Sep.2024	KW
66	CPU - digital inputs 8 x DI		26.Sep.2024	KW
67	CPU - digital outputs 8 x DO		27.Sep.2024	KW
68	CPU - digital outputs 8 x DO		26.Sep.2024	KW
69	CPU - analog outputs 4 x AO		13.Sep.2024	KW
70	CPU - analog inputs 8xAI		26.Sep.2024	KW
71	DDC - digital inputs 16 x DI		26.Sep.2024	KW
72	DDC - digital inputs 16 x DI		26.Sep.2024	KW
74	DDC - analog in- / outputs 8 x AI / 4 x AO		17.Sep.2024	KW
75	DDC - analog in- / outputs 8 x AI / 4 x AO		17.Sep.2024	KW
76	DDC - analog in- / outputs 8 x AI / 4 x AO		17.Sep.2024	KW
77	DDC - analog in- / outputs 8 x AI / 4 x AO		17.Sep.2024	KW
78	DDC - digital outputs 8 x DO - T		17.Sep.2024	KW
79	DDC - analog in- / outputs 8 x AI / 4 x AO		26.Sep.2024	KW

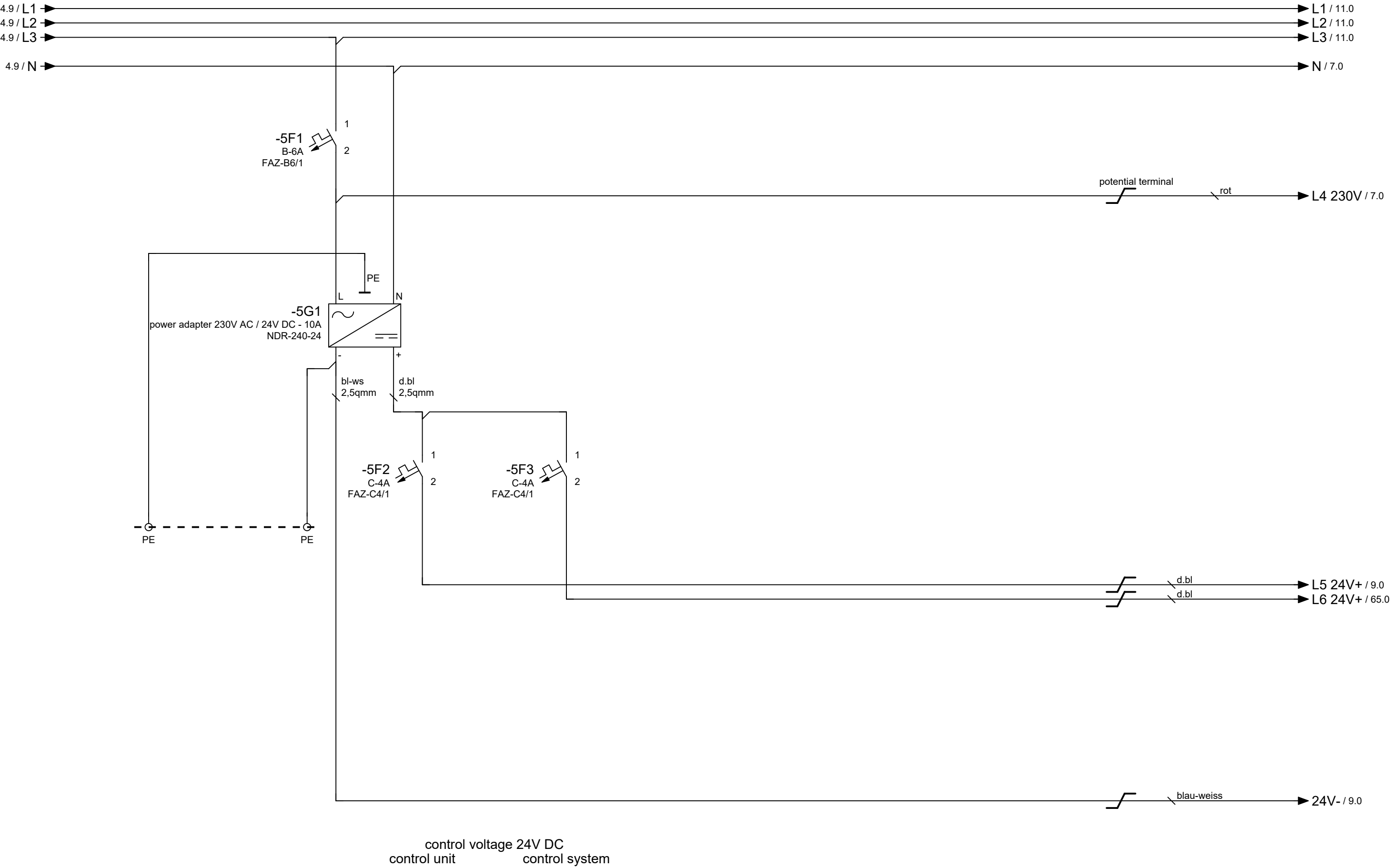
Table of contents

Mueller

Page	Page designation	Page supplementary field	Date	processed by
80	DDC - analog in- / outputs 8 x AI / 4 x AO		13.Sep.2024	KW
100	Overview terminal strips		27.Sep.2024	KW
101	terminal layout X1		27.Sep.2024	KW
102	terminal layout X1		27.Sep.2024	KW
103	terminal layout X1		27.Sep.2024	KW
104	terminal layout X01		27.Sep.2024	KW
105	terminal layout X2		27.Sep.2024	KW
106	terminal layout X3		27.Sep.2024	KW
107	terminal layout X3		27.Sep.2024	KW
108	terminal layout X3		27.Sep.2024	KW
109	terminal layout X3		27.Sep.2024	KW
110	terminal layout X3		27.Sep.2024	KW
111	terminal layout X3		27.Sep.2024	KW
112	terminal layout X3		27.Sep.2024	KW
113	terminal layout X4		27.Sep.2024	KW
114	terminal layout X4		27.Sep.2024	KW
115	terminal layout X4		27.Sep.2024	KW
116	terminal layout X4		27.Sep.2024	KW
117	terminal layout X4		27.Sep.2024	KW
118	terminal layout X4		27.Sep.2024	KW
119	terminal layout X4		27.Sep.2024	KW
120	terminal layout X6		27.Sep.2024	KW
121	terminal layout X6		27.Sep.2024	KW
122	terminal layout X7		27.Sep.2024	KW
123	terminal layout XR		27.Sep.2024	KW
130	Cable overview		27.Sep.2024	KW









85.04.8.240.0000 + 94.P4

14 ↘

12 ↘ 11 7.2

24 ↘

22 ↘ 21 9.4

34 ↘

32 ↘ 31

44 ↘

42 ↘ 41

55.34.8.230.0040 + 94.P4

14 ↘

12 ↘ 11

24 ↘

22 ↘ 21 19.4

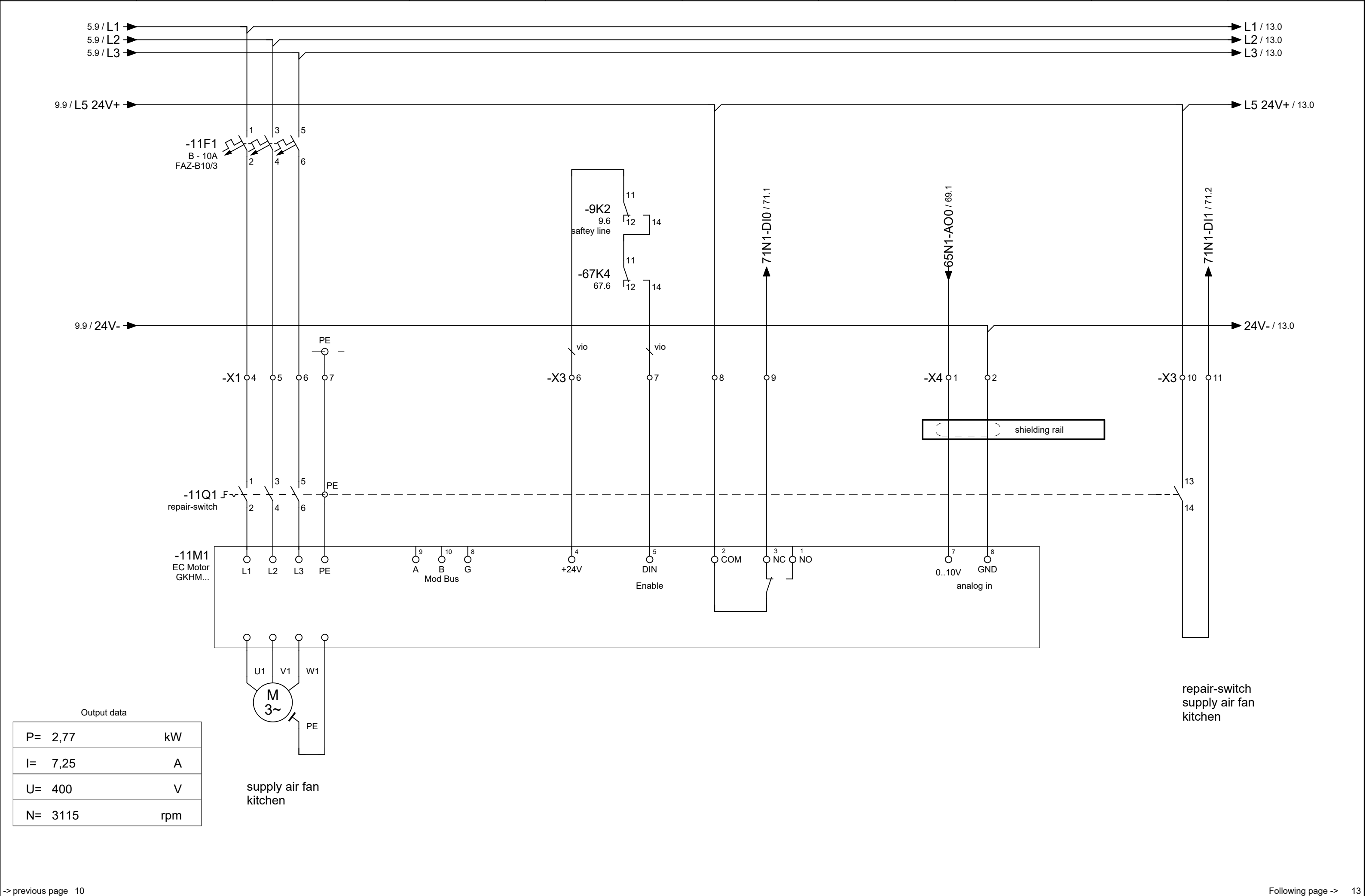
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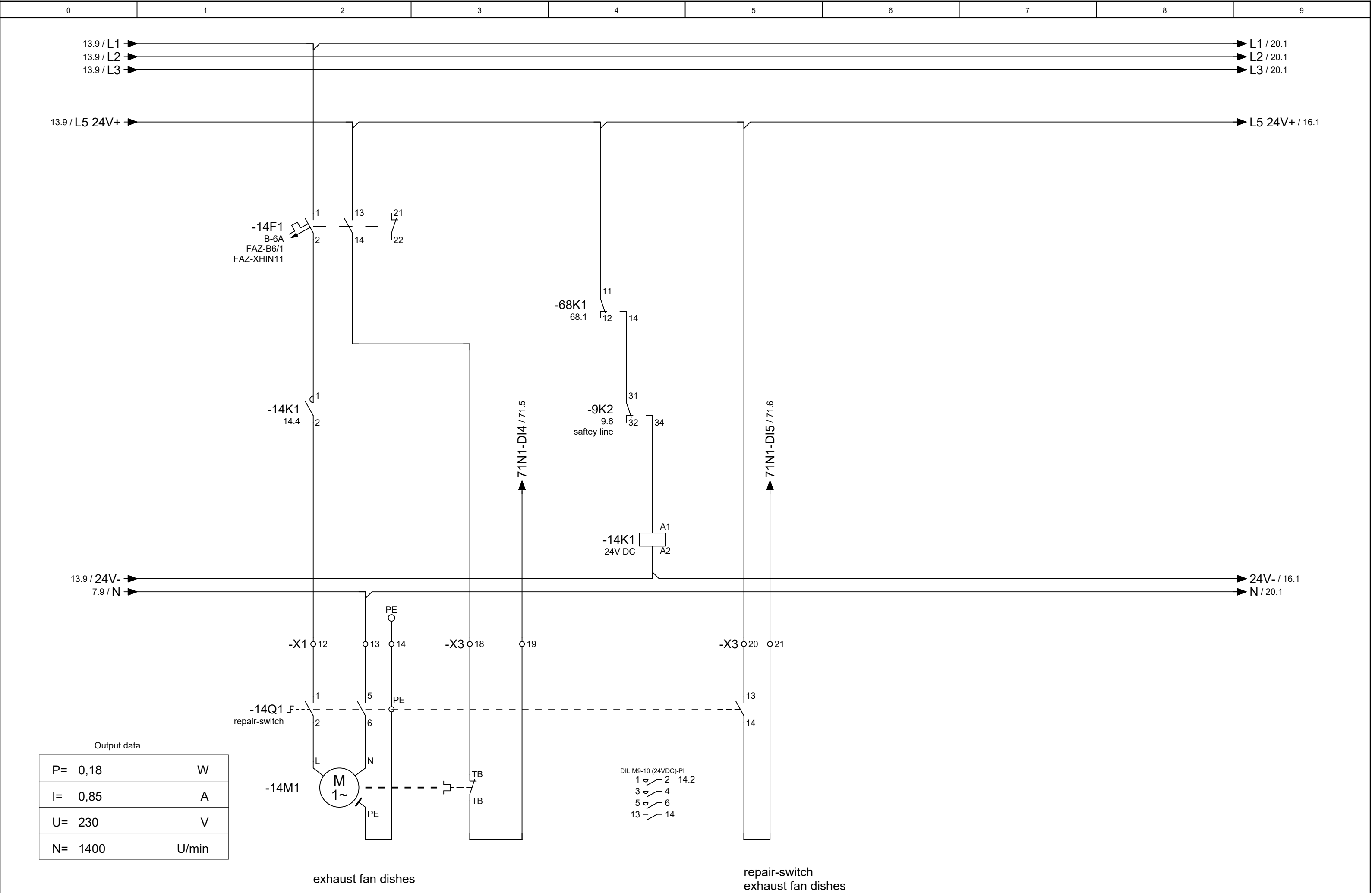
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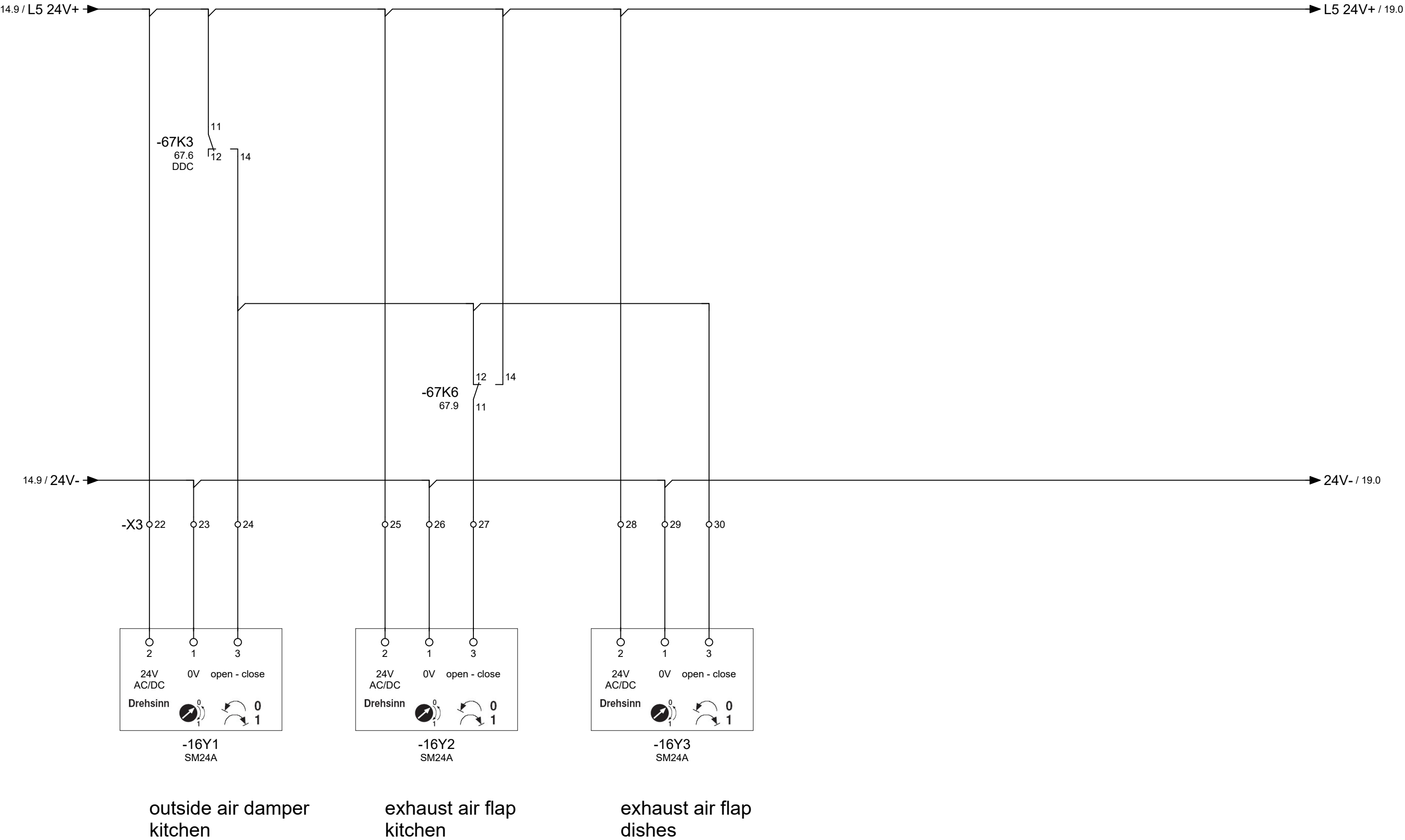
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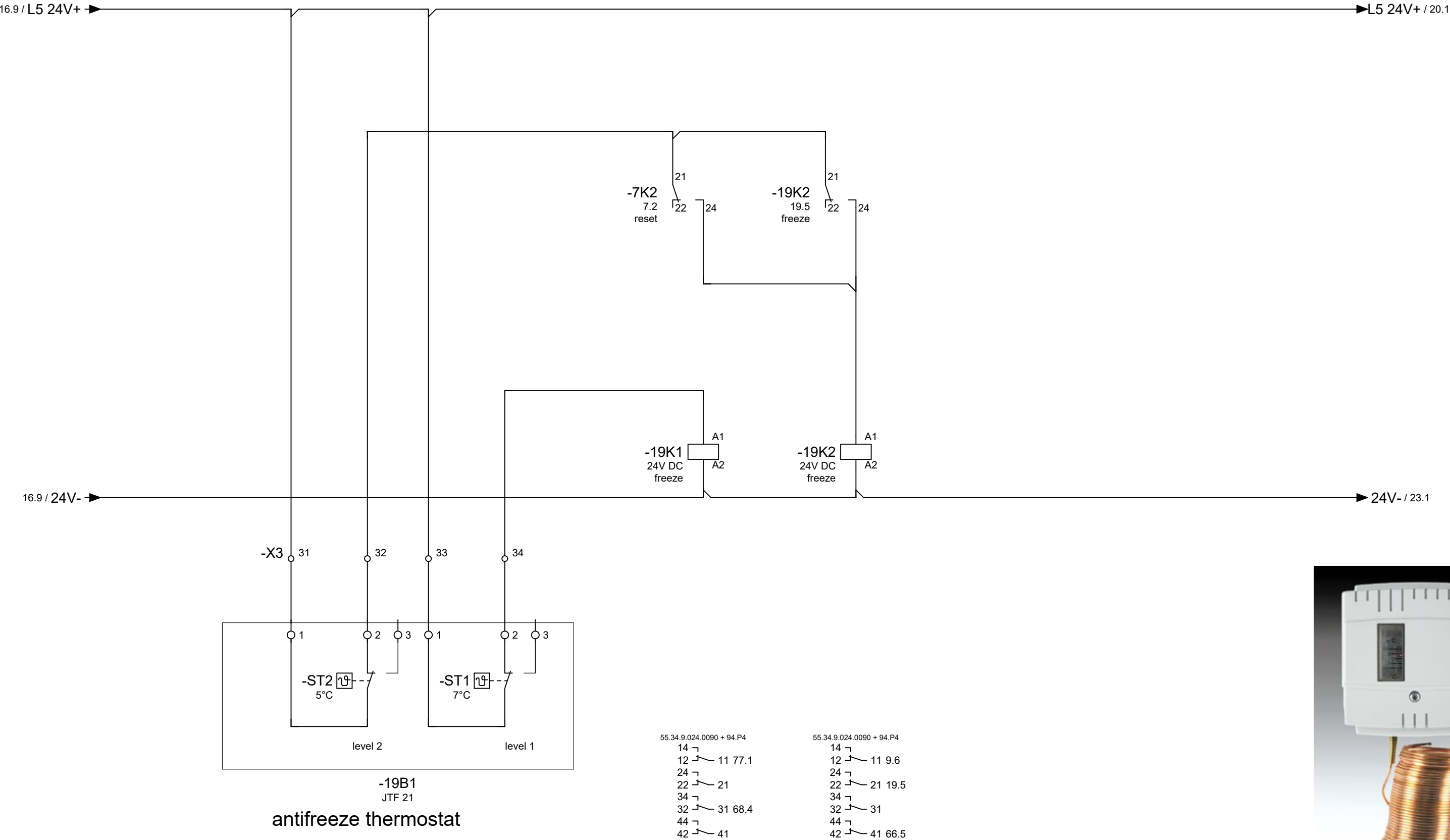
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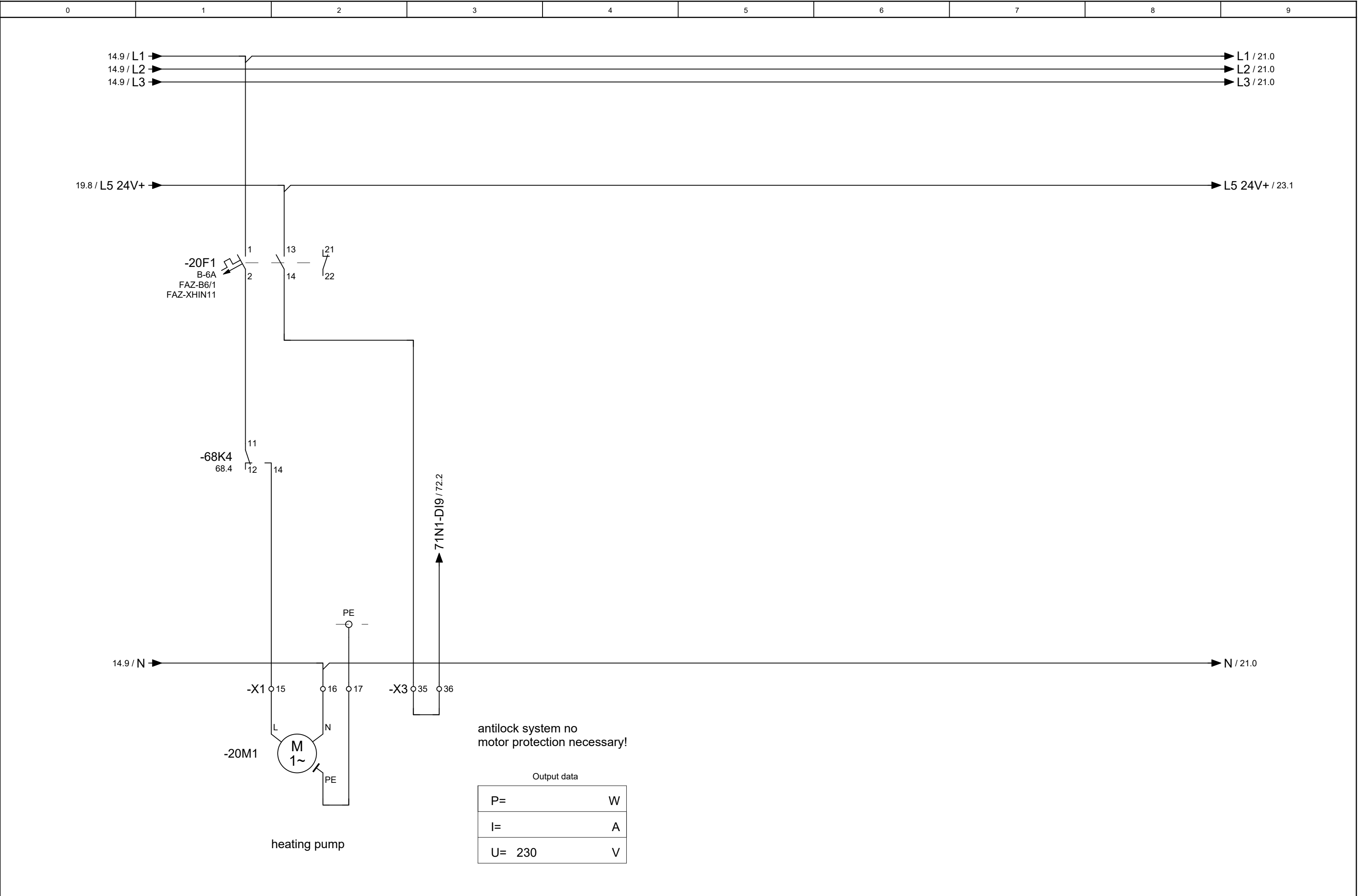
AHU KITCHEN

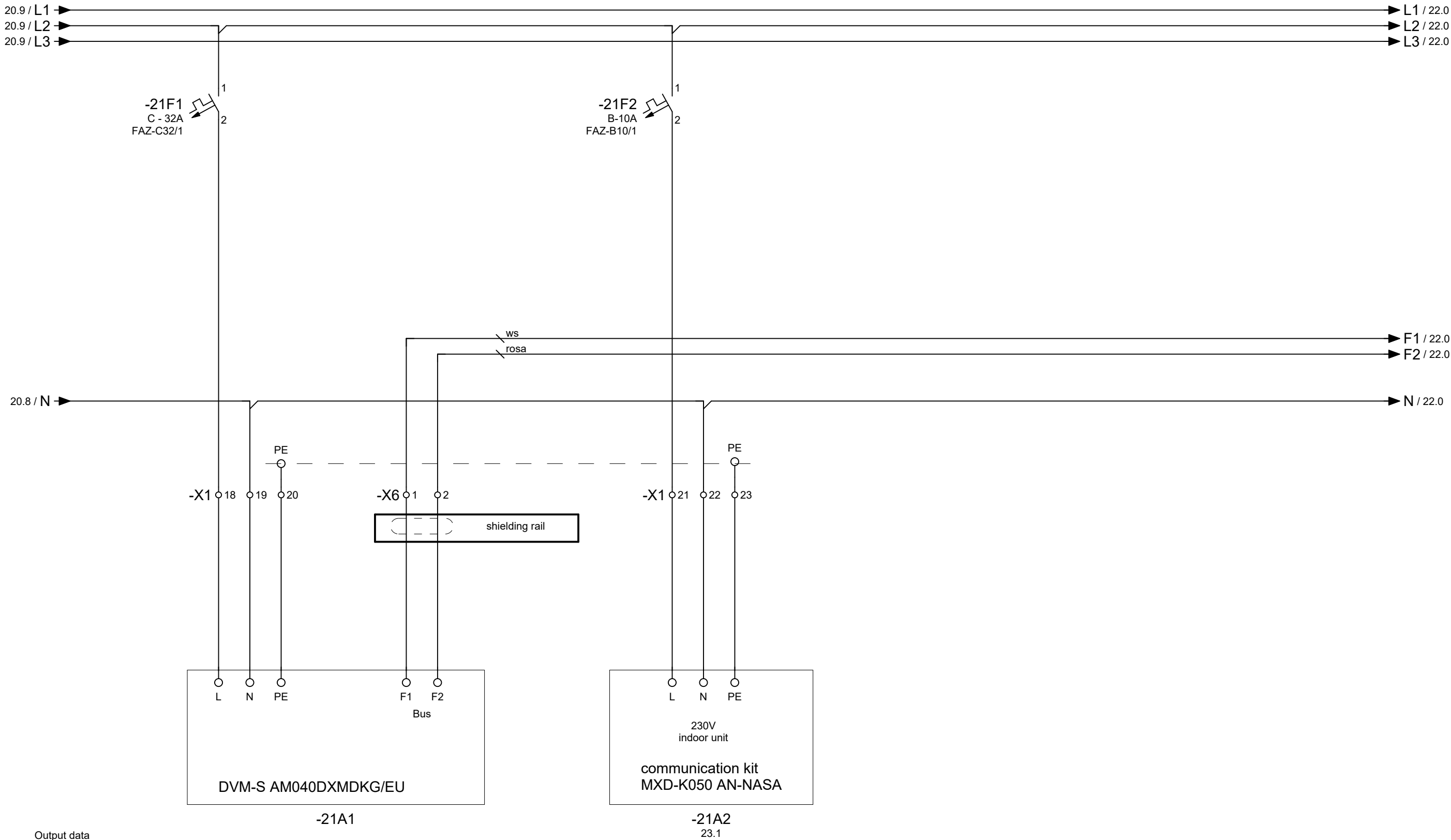








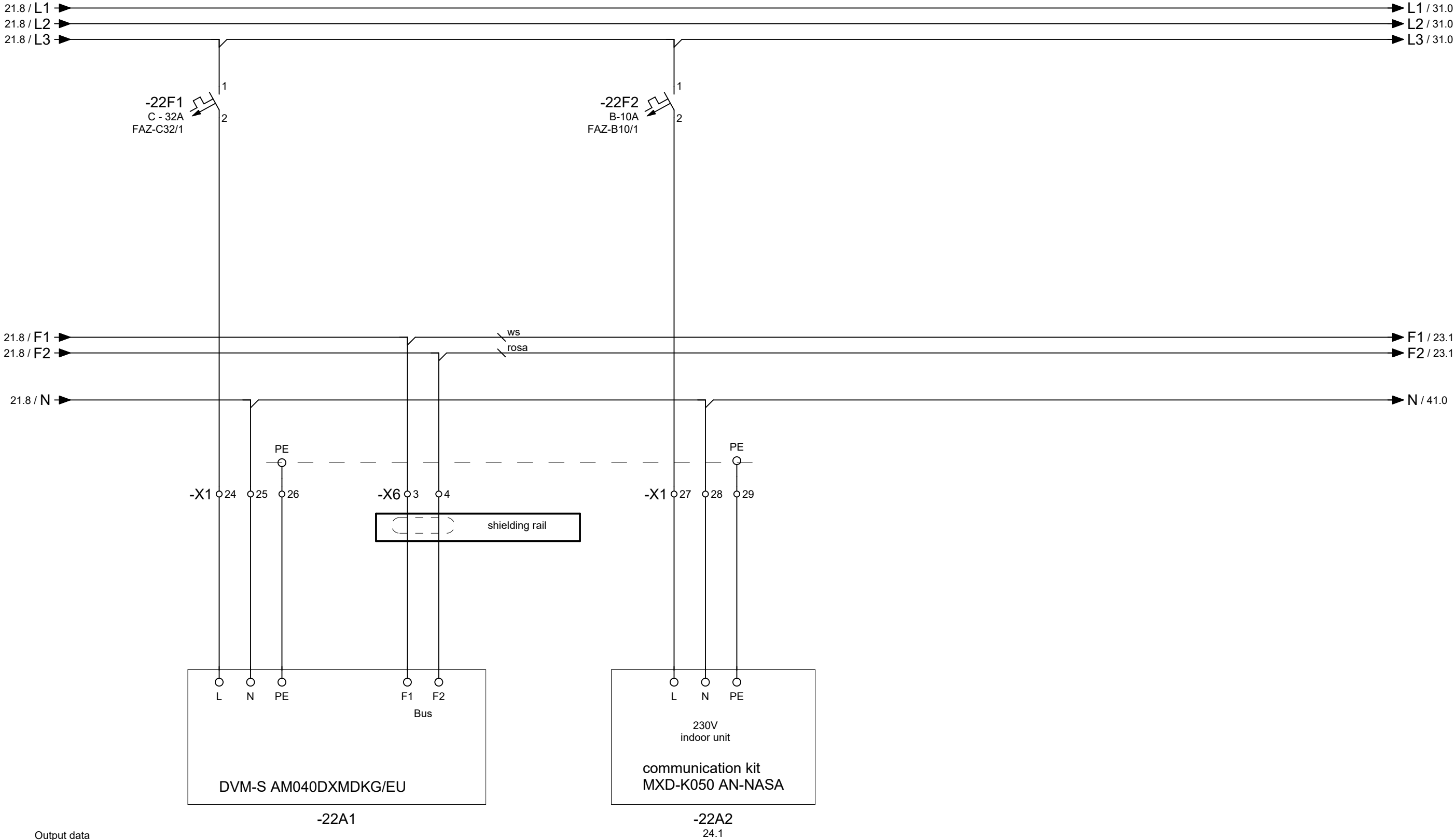




Output data			
P _{EL}	:	max. 3,6	kW
I	:	max. 24	A
U	:	230	V
I _{Betr.}	:		A

heatpump 1
kitchen
outdoor unit

heatpump 1
kitchen
indoor unit

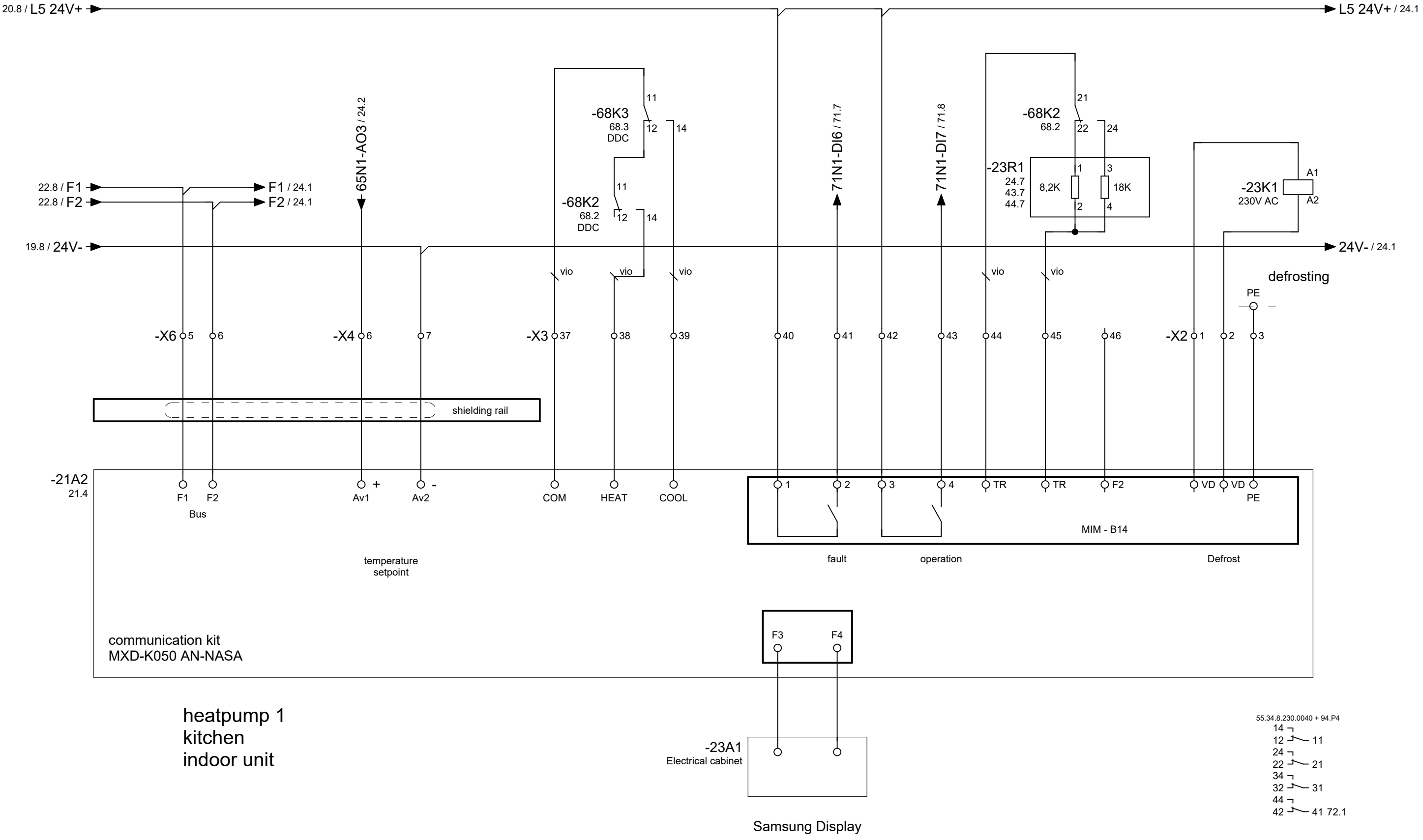


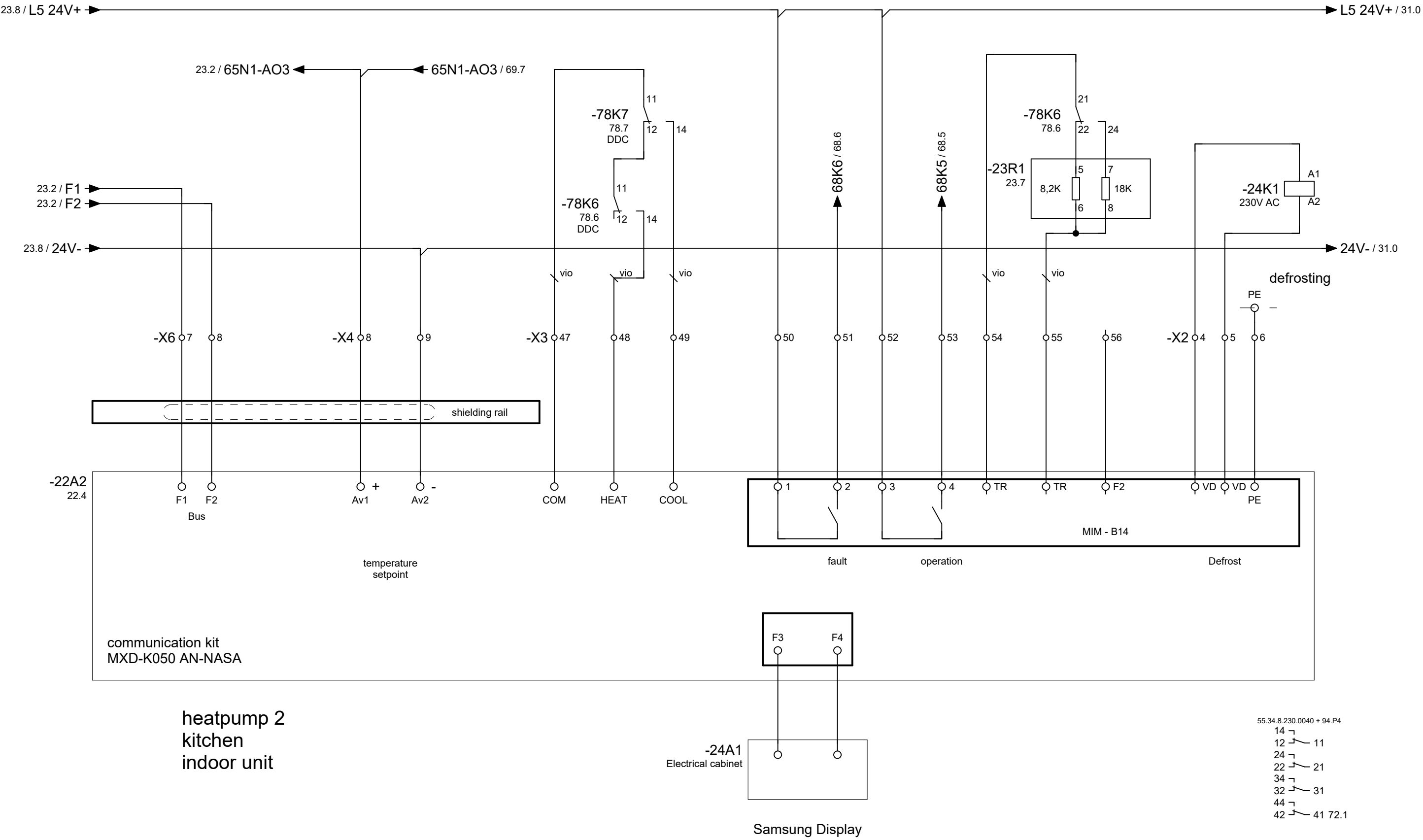
Output data

P _{EL} :	max. 3,6	kW
I :	max. 24	A
U :	230	V
I _{Betr.} :		A

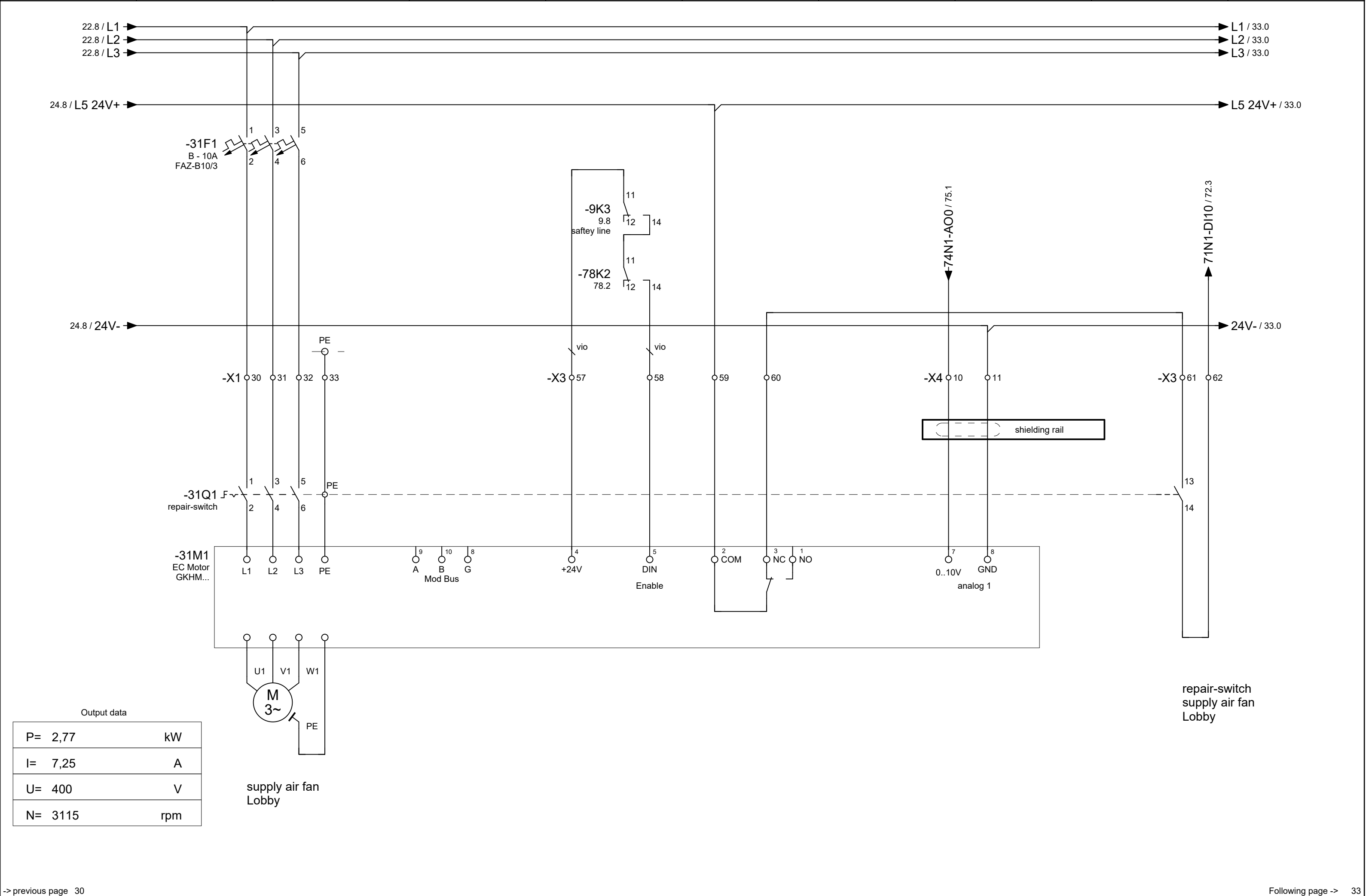
heatpump 2
kitchen
outdoor unit

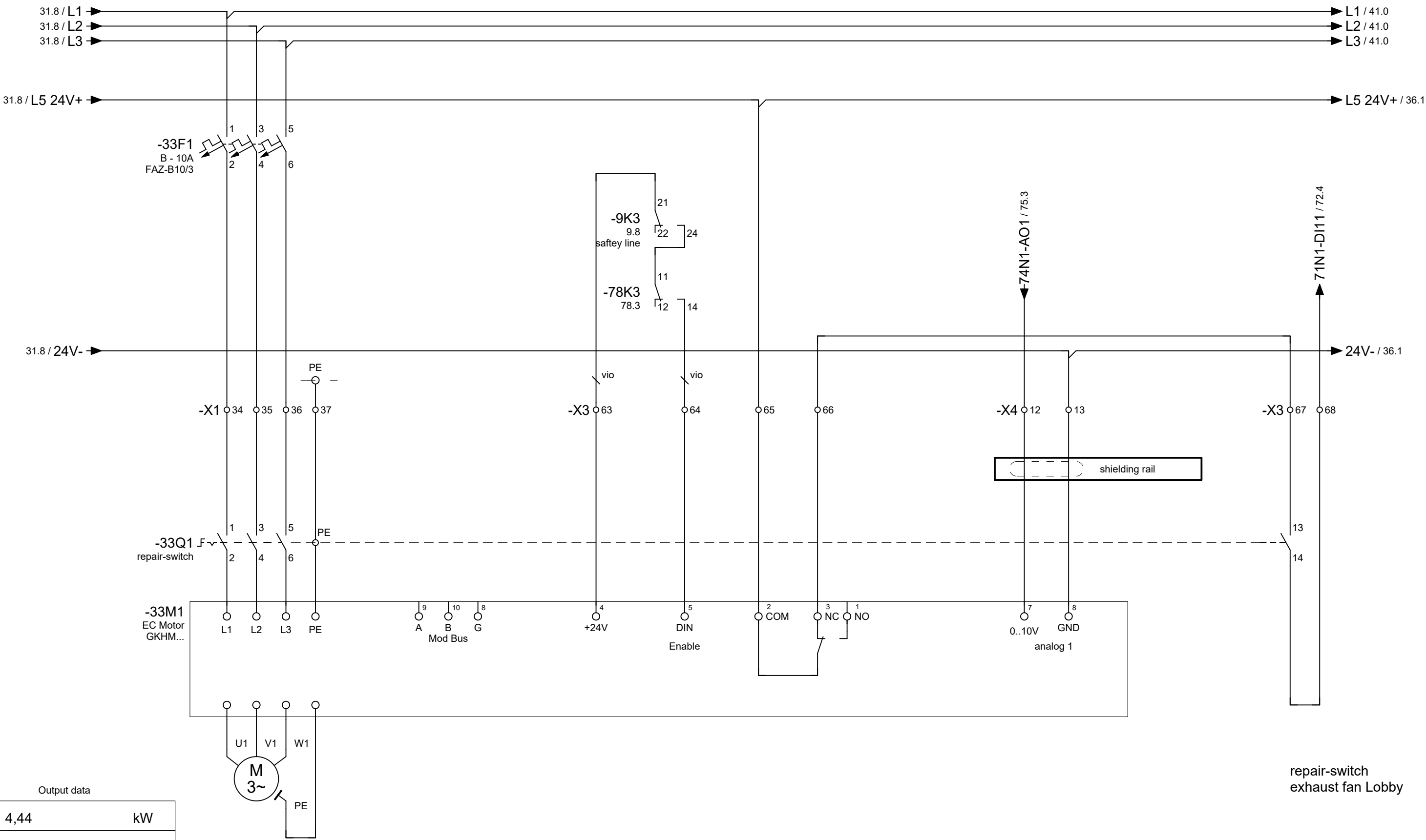
heatpump 2
kitchen
indoor unit



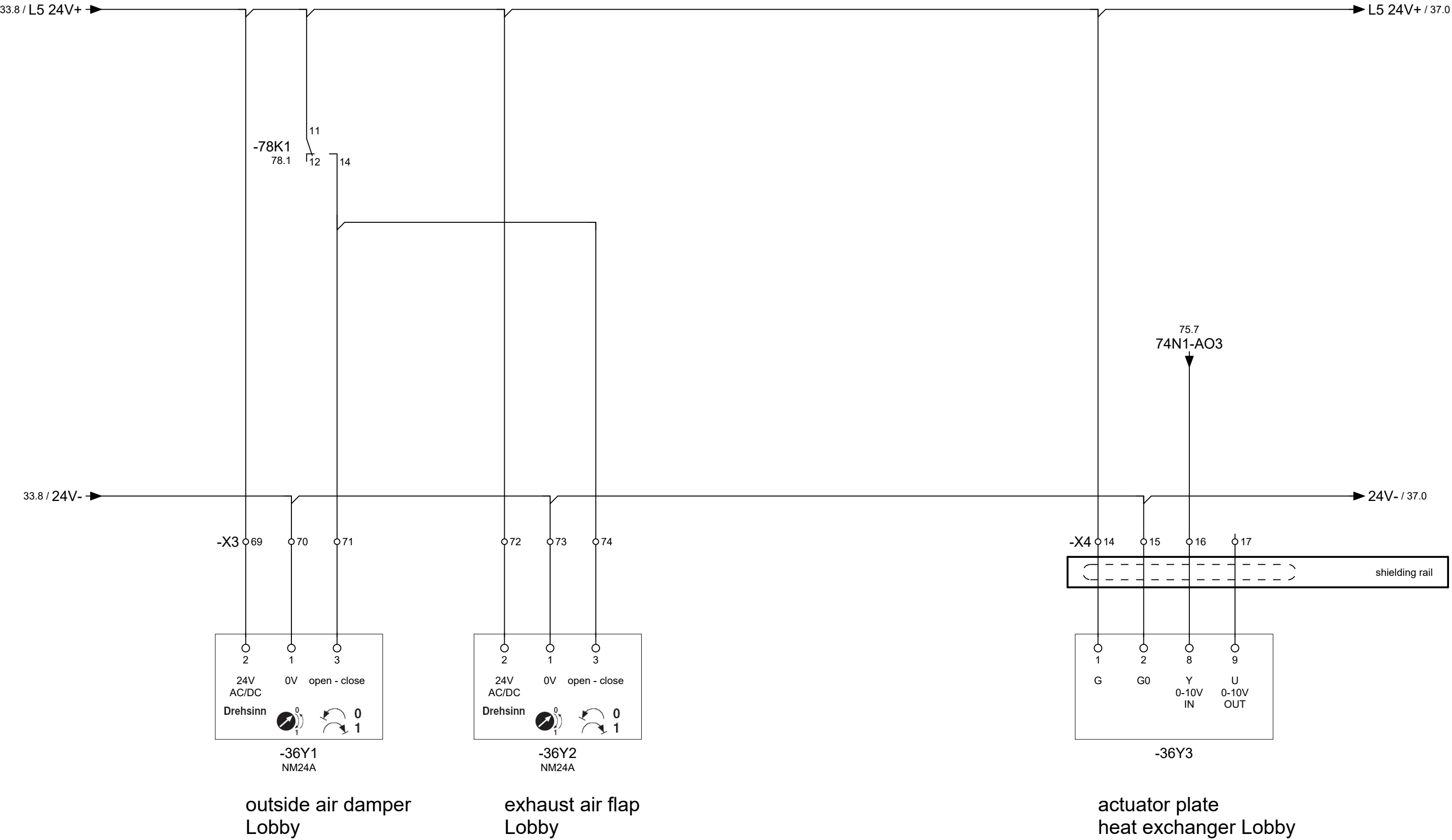


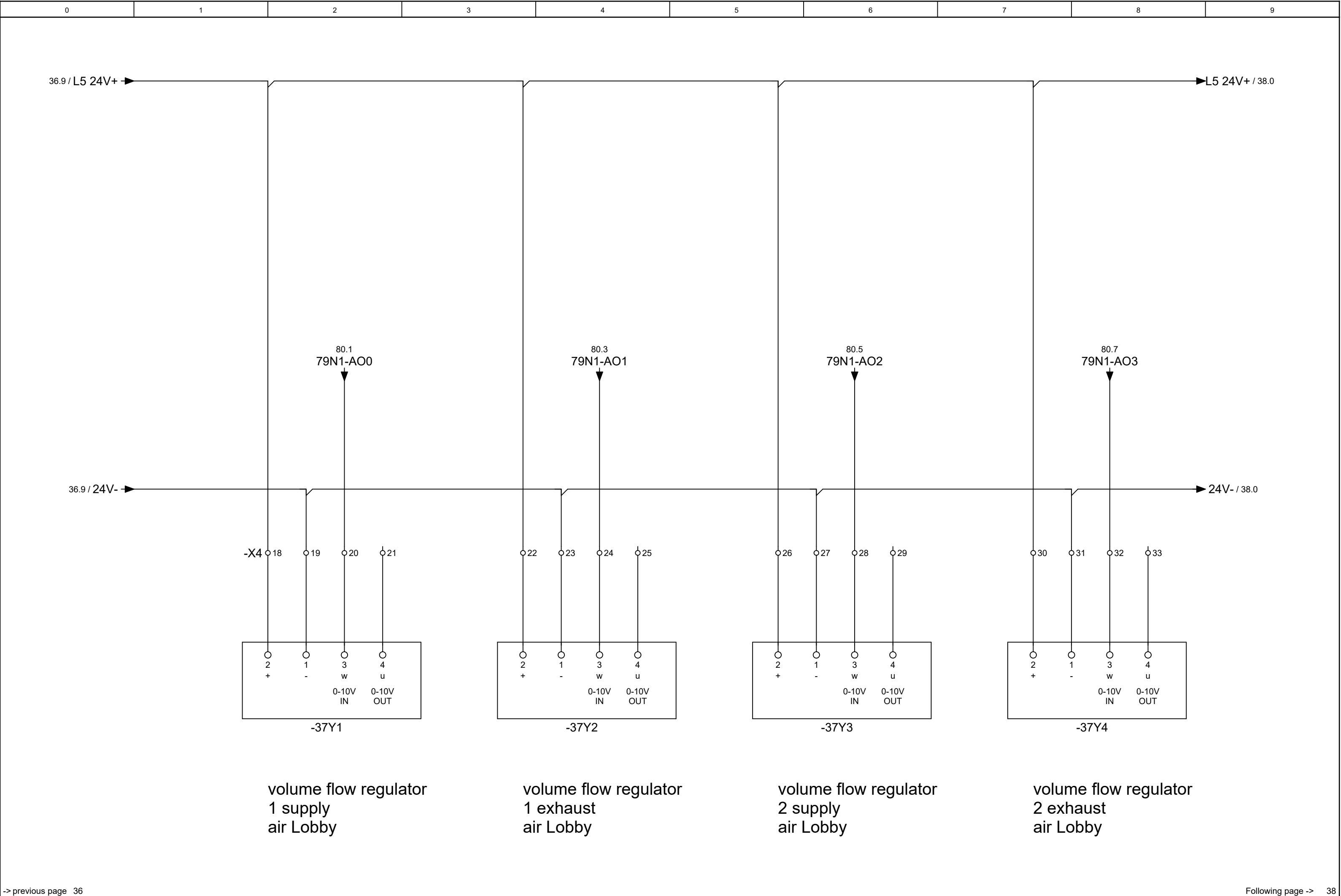
AHU Lobby

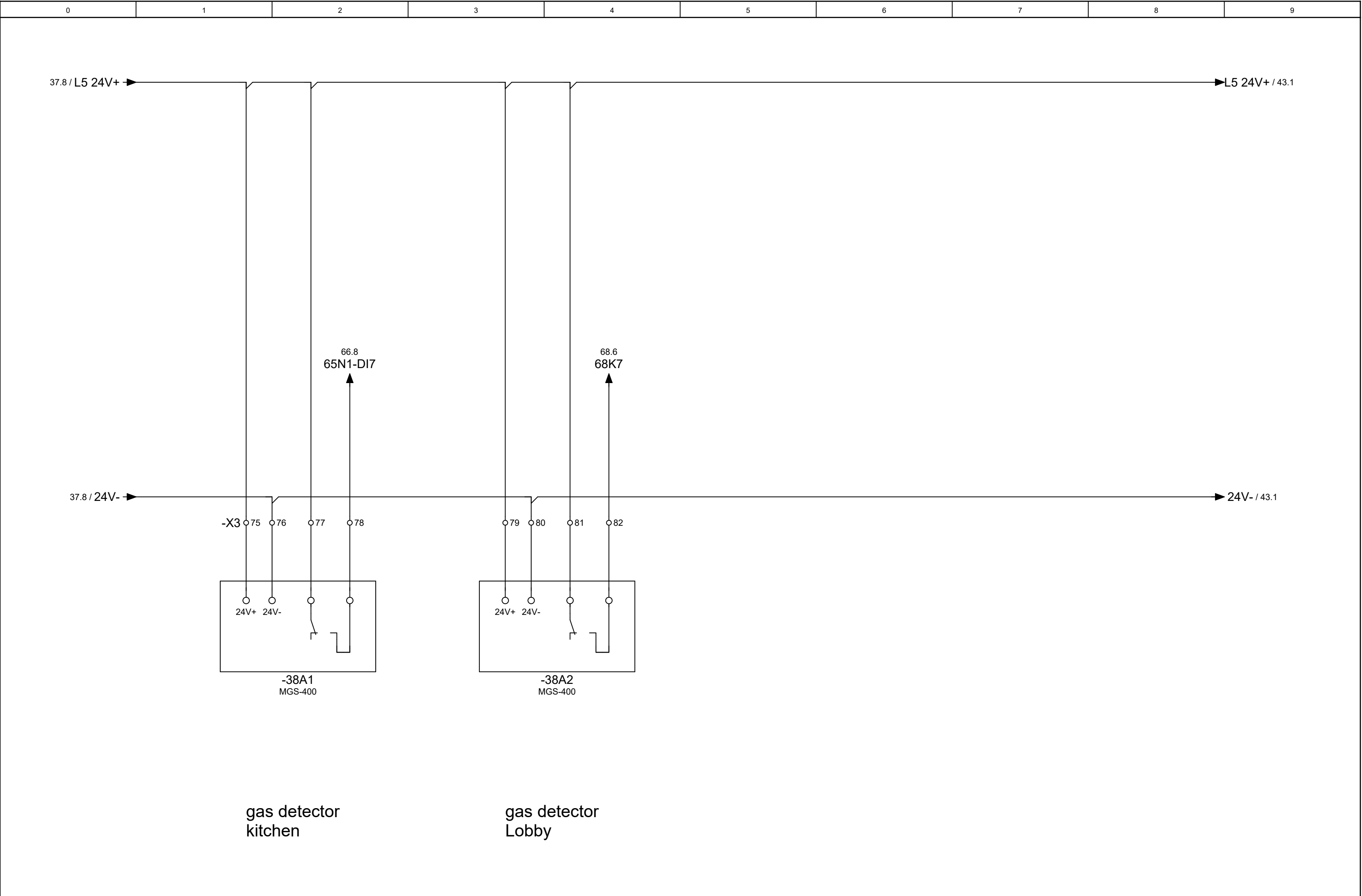


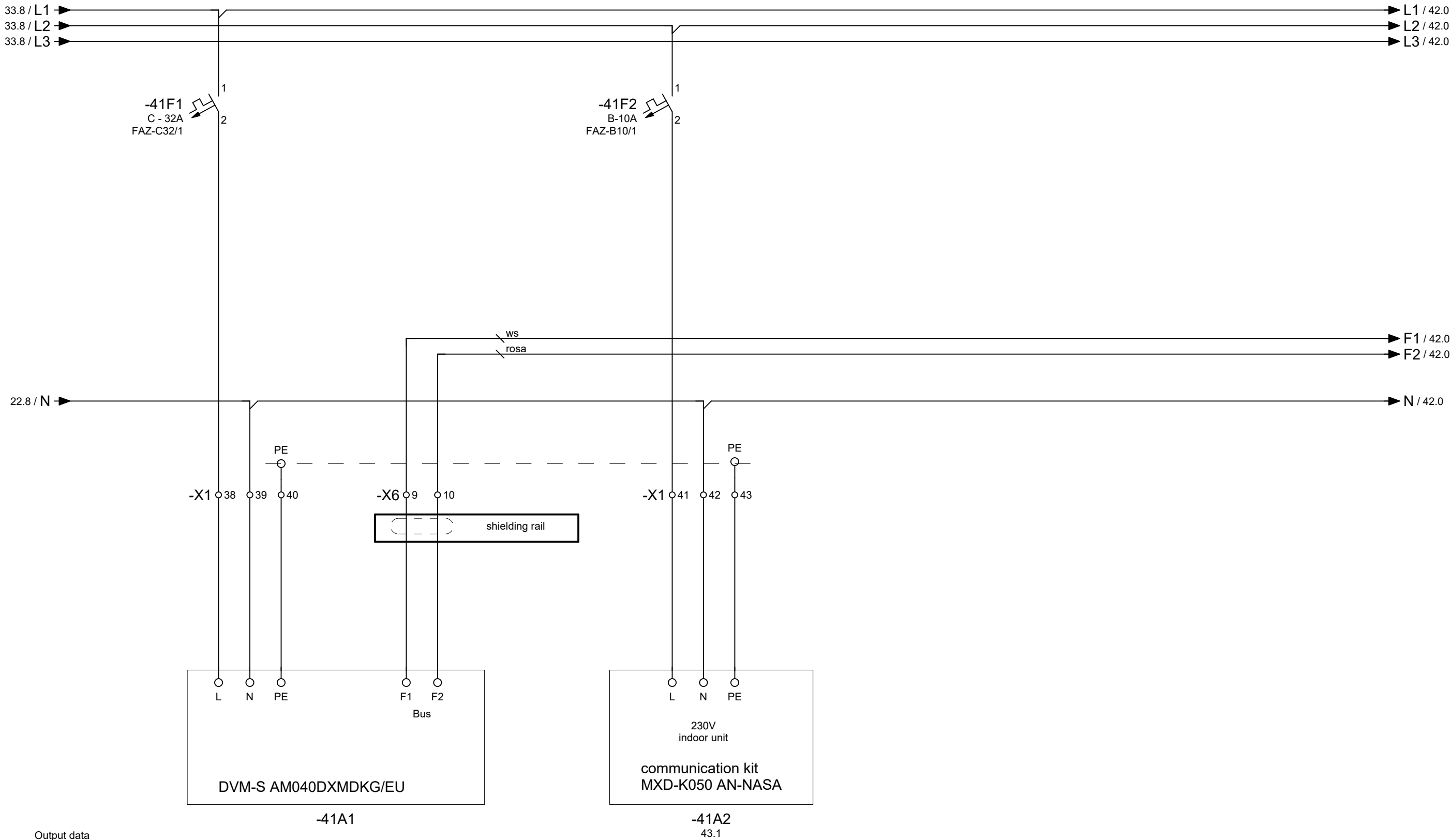


Output data	
P= 4,44	kW
I= 6,8	A
U= 400	V
N= 3650	rpm







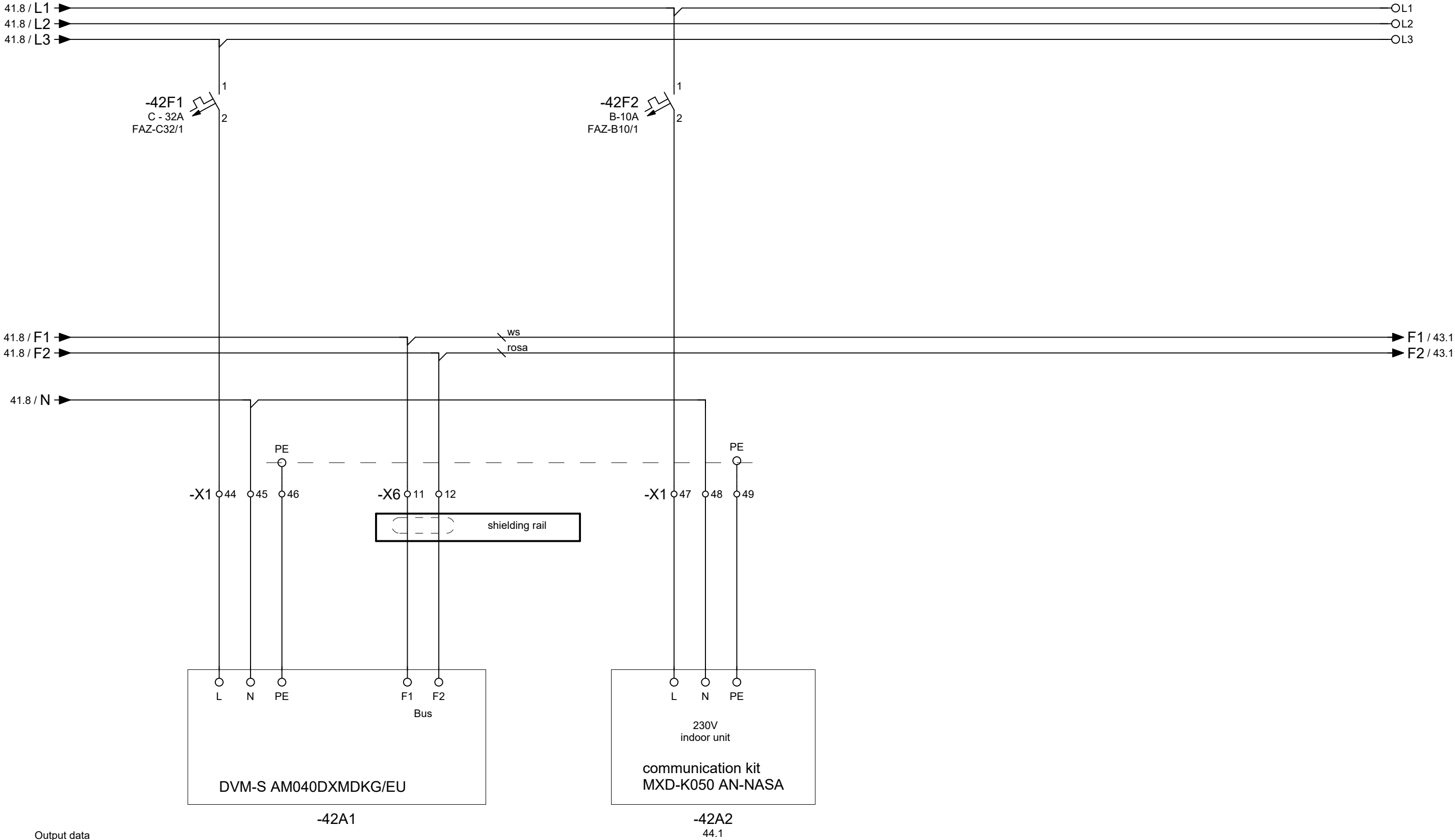


Output data

P _{EL}	:	max. 3,6	kW
I	:	max. 24	A
U	:	230	V
I _{Betr.}	:		A

heatpump 1
Lobby
outdoor unit

heatpump 1
Lobby
indoor unit

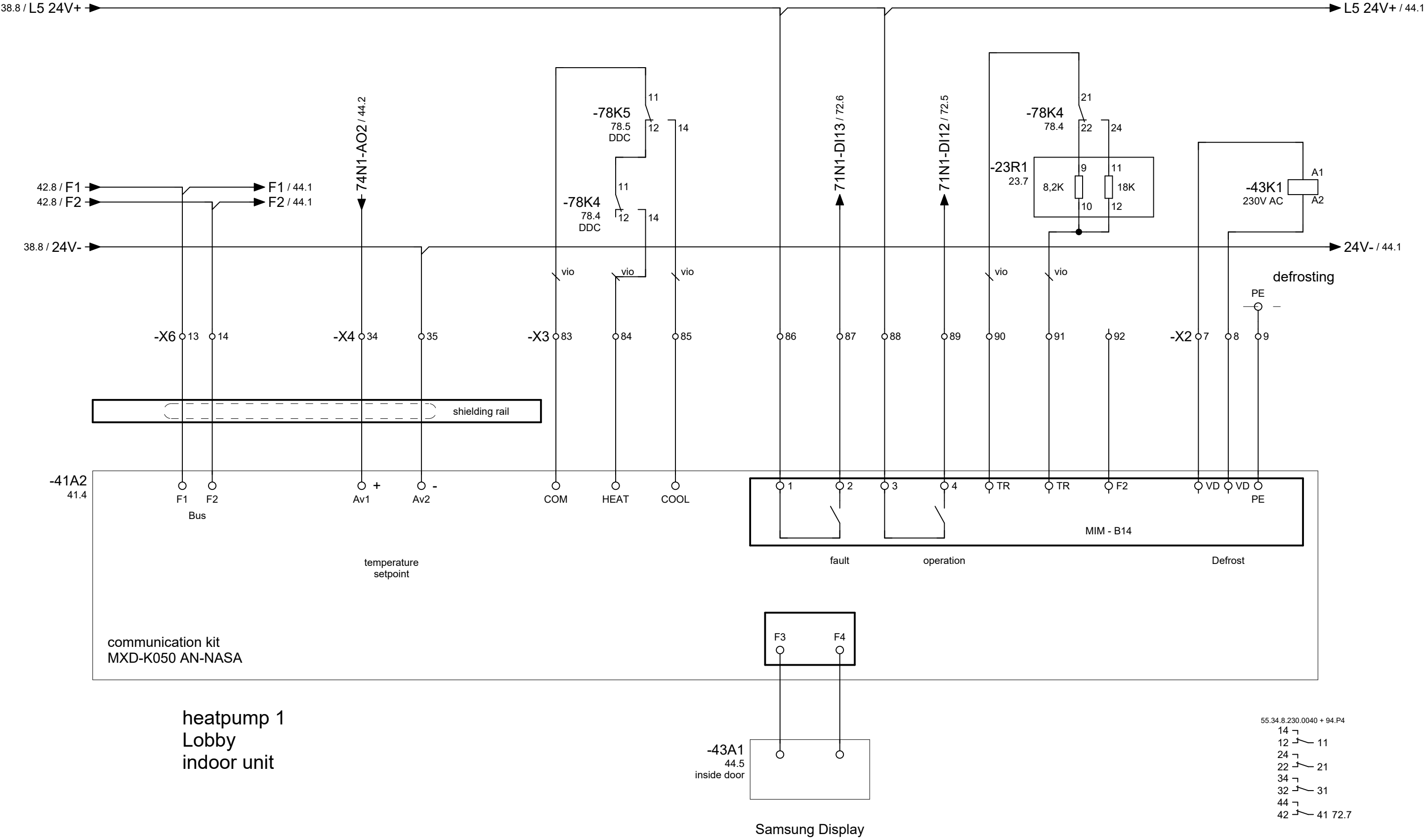


Output data

P _{EL} :	max. 3,6	kW
I :	max. 24	A
U :	230	V
I _{Betr.} :		A

heatpump 2
Lobby
outdoor unit

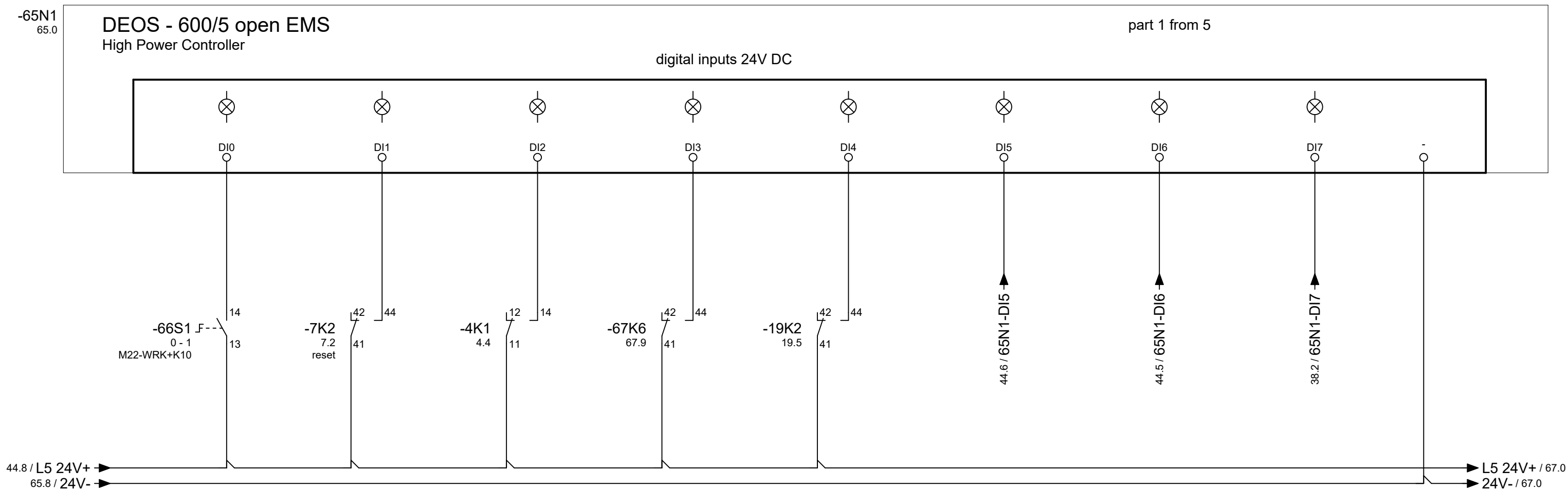
heatpump 2
Lobby
indoor unit



Anlage Allgemein

0	1	2	3	4	5	6	7	8	9
DDC									

0	1	2	3	4	5	6	7	8	9																														
-78N1 78.0 digital output module 8 x DO DS-C-DO8T DO0 ○ 78.1 flap drives Lobby DO1 ○ 78.2 supply air fan Lobby DO2 ○ 78.3 exhaust fan Lobby DO3 ○ 78.4 heatpump 1 heating Lobby DO4 ○ 78.5 heatpump 1 cooling Lobby DO5 ○ 78.6 heatpump 2 heating kitchen DO6 ○ 78.7 heatpump 2 cooling kitchen DO7 ○ 78.8 heatpump 2 heating Lobby -79N1 79.0 analog in / output module 8 x AI / 4 x AO DS-C-AI8AO4 8 analog inputs aktiv/passiv AI0 ○ 79.1 operation heatpump 2 kitchen aktiv/passiv AI1 ○ 79.2 fault heatpump 2 kitchen aktiv/passiv AI2 ○ 79.3 fault gas detector Lobby aktiv/passiv AI3 ○ 79.4 reserve aktiv/passiv AI4 ○ 79.5 reserve aktiv/passiv AI5 ○ 79.6 reserve aktiv/passiv AI6 ○ 79.7 reserve aktiv/passiv AI7 ○ 79.8 reserve 4 analog outputs 0...10V AO0 ○ 80.1 volume flow regulator 1 supply air Lobby AO1 ○ 80.3 volume flow regulator 1 exhaust air Lobby AO2 ○ 80.5 volume flow regulator 2 supply air Lobby AO3 ○ 80.7 volume flow regulator 2 exhaust air Lobby																																							
-> previous page 61 Following page -> 64 <table><tr><td></td><td></td><td></td><td>Date</td><td>17.Sep.2024</td><td rowspan="3">Mc Donald`s DK - Skjern ventilation</td><td rowspan="3"> ROX KLIMATECHNIK </td><td rowspan="3">overview occupancy board 2</td><td colspan="2">Fabr.. Nr. 7297</td><td>=</td></tr><tr><td></td><td></td><td></td><td></td><td>KW</td><td colspan="2"></td><td>+</td><td>Page 62</td></tr><tr><td>Change</td><td>Date</td><td>Name</td><td></td><td></td><td colspan="2"></td><td>Auftr. Nr. 24503</td><td>D.No.: 9805</td><td>Page 160</td></tr></table>													Date	17.Sep.2024	Mc Donald`s DK - Skjern ventilation	ROX KLIMATECHNIK	overview occupancy board 2	Fabr.. Nr. 7297		=					KW			+	Page 62	Change	Date	Name					Auftr. Nr. 24503	D.No.: 9805	Page 160
			Date	17.Sep.2024	Mc Donald`s DK - Skjern ventilation	ROX KLIMATECHNIK	overview occupancy board 2	Fabr.. Nr. 7297		=																													
				KW						+	Page 62																												
Change	Date	Name								Auftr. Nr. 24503	D.No.: 9805	Page 160																											



start ventilation

fault
reset

phase monitoring

exhaust fan kitchen
Switch in position
manual

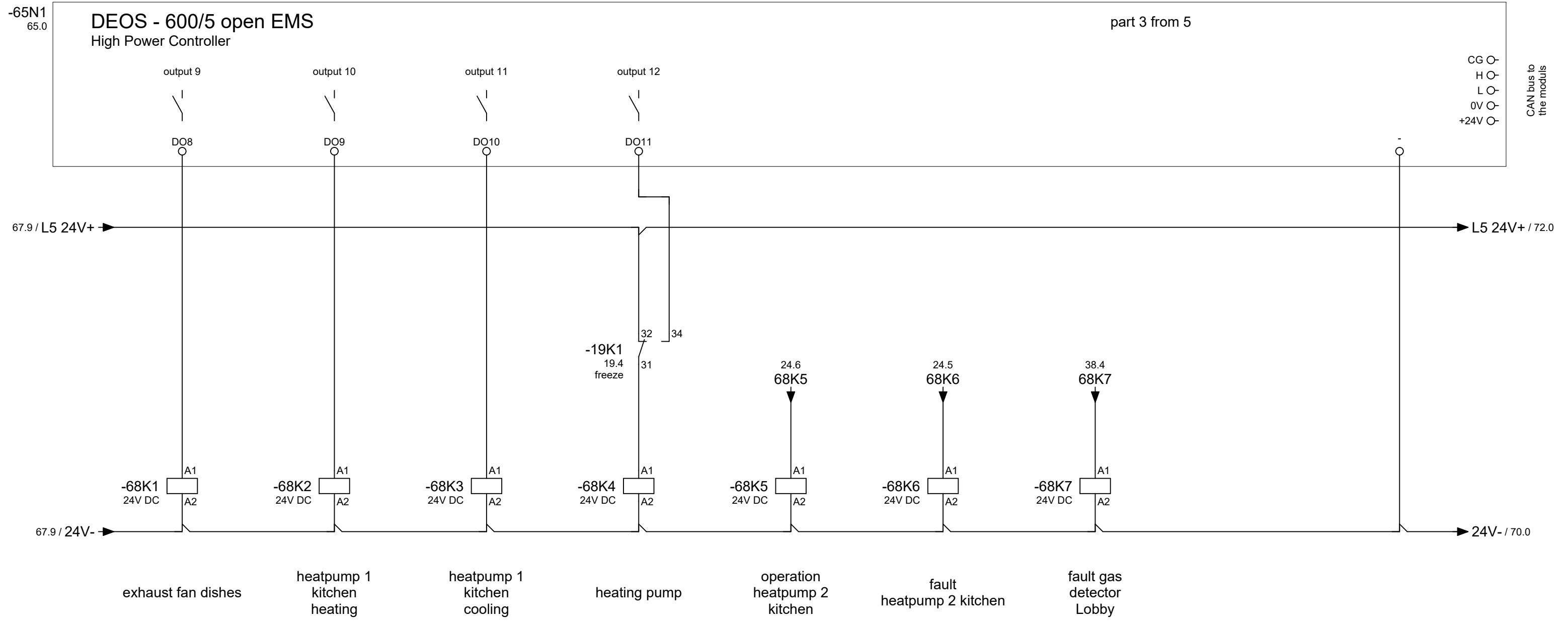
fault
antifreeze
kitchen

operation
heatpump 2
Lobby

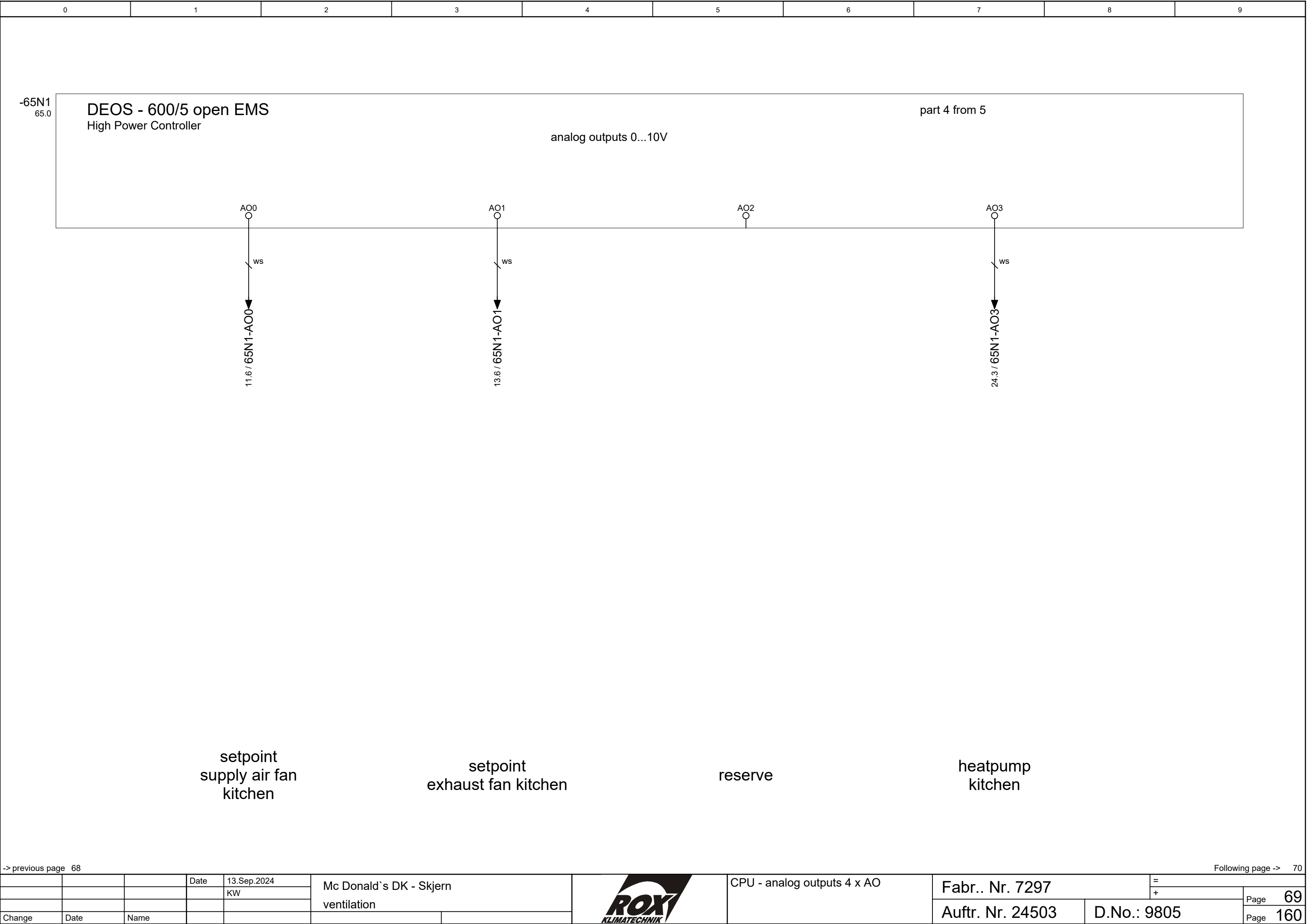
fault
heatpump 2 Lobby

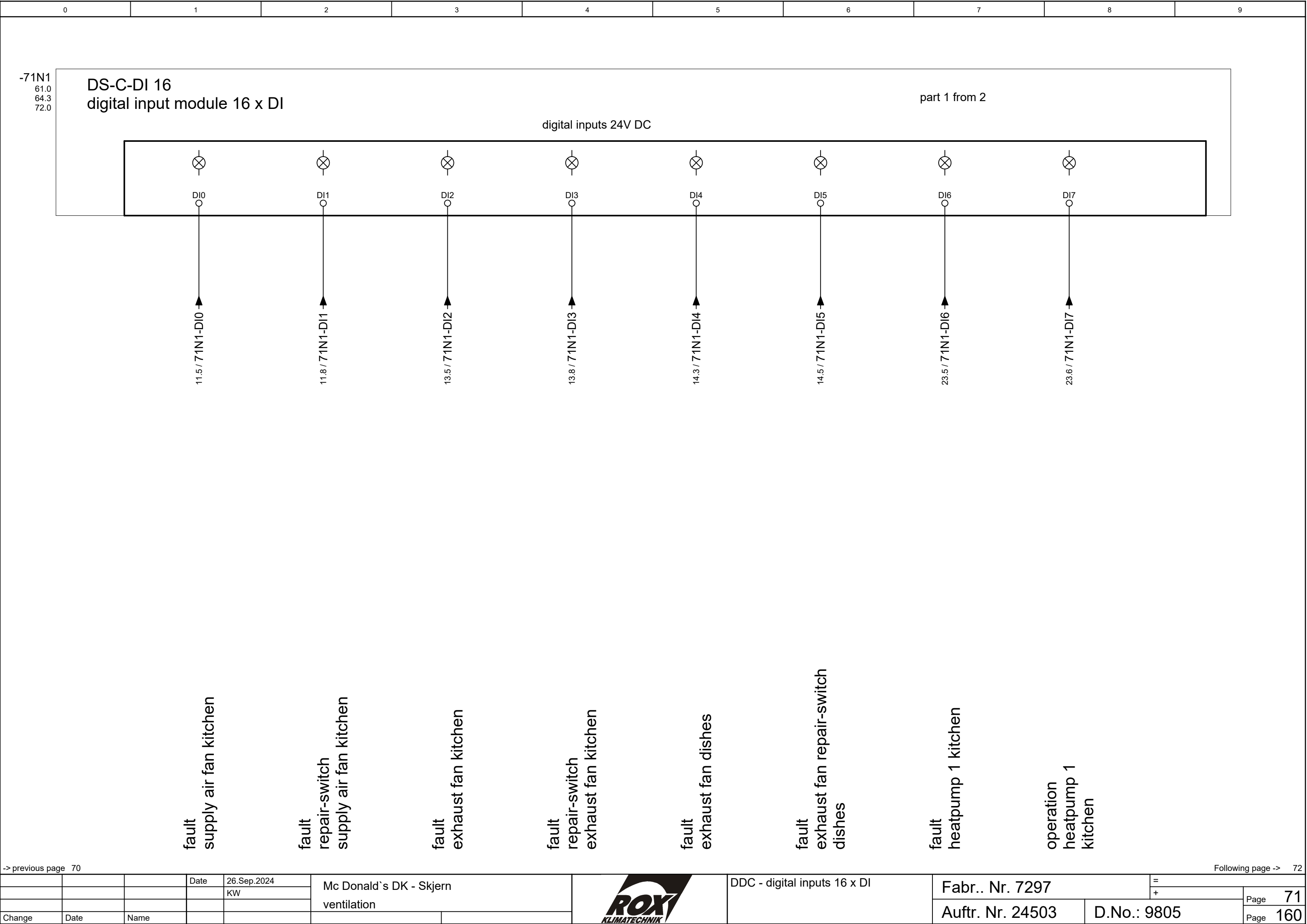
fault gas
detector
kitchen

		Date	26.Sep.2024	Mc Donald`s DK - Skjern ventilation		CPU - digital inputs 8 x DI	Fabr.. Nr. 7297		=	Page 66
			KW				+			
Change	Date	Name							Auftr. Nr. 24503	D.No.: 9805



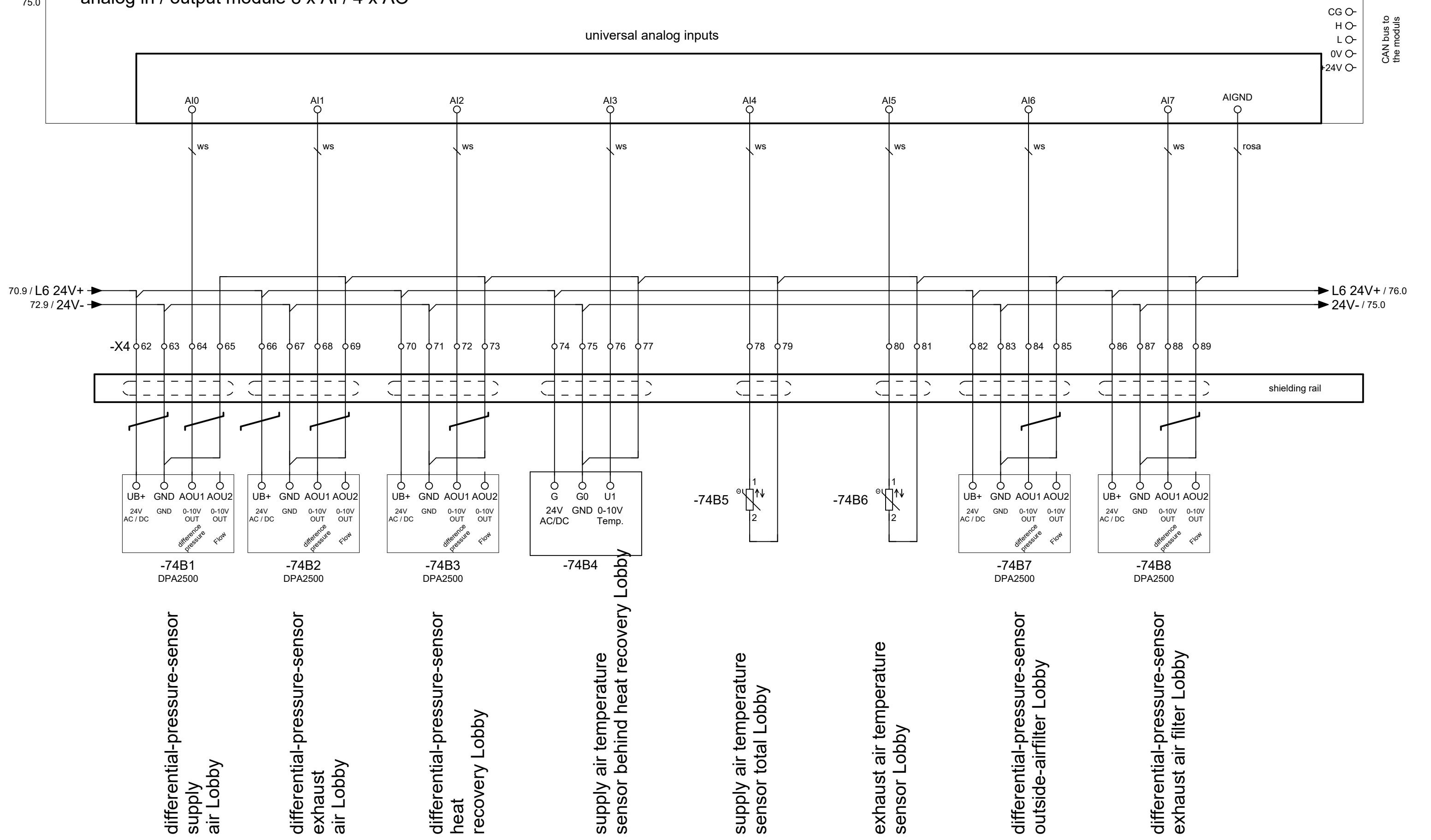
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14 ↗	14 ↗	14 ↗	14 ↗	14 ↗	14 ↗	14 ↗
12 ↘ 11 14.4	12 ↘ 11 23.4	12 ↘ 11 23.4	12 ↘ 11 20.1	12 ↘ 11 79.1	12 ↘ 11 79.2	12 ↘ 11 79.3
	24 ↗					
	22 ↘ 21 23.7					
	34 ↗					
	32 ↘ 31					
	44 ↗					
	42 ↘ 41					

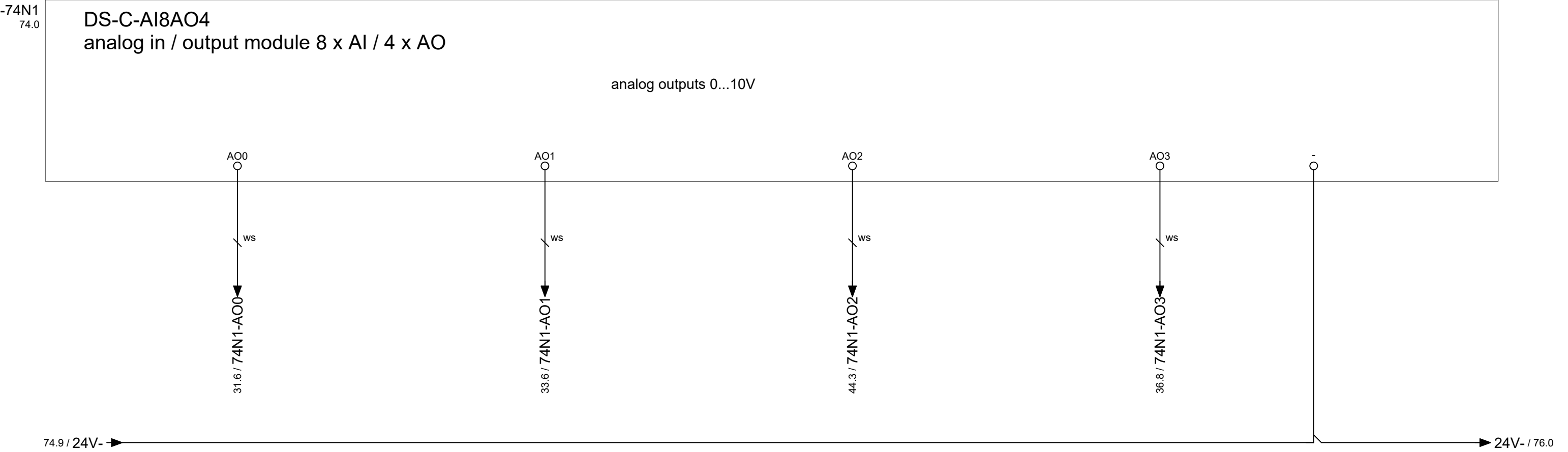




-74N1
61.3
64.4
75.0

DS-C-AI8AO4
analog in / output module 8 x AI / 4 x AO





setpoint
supply air fan Lobby

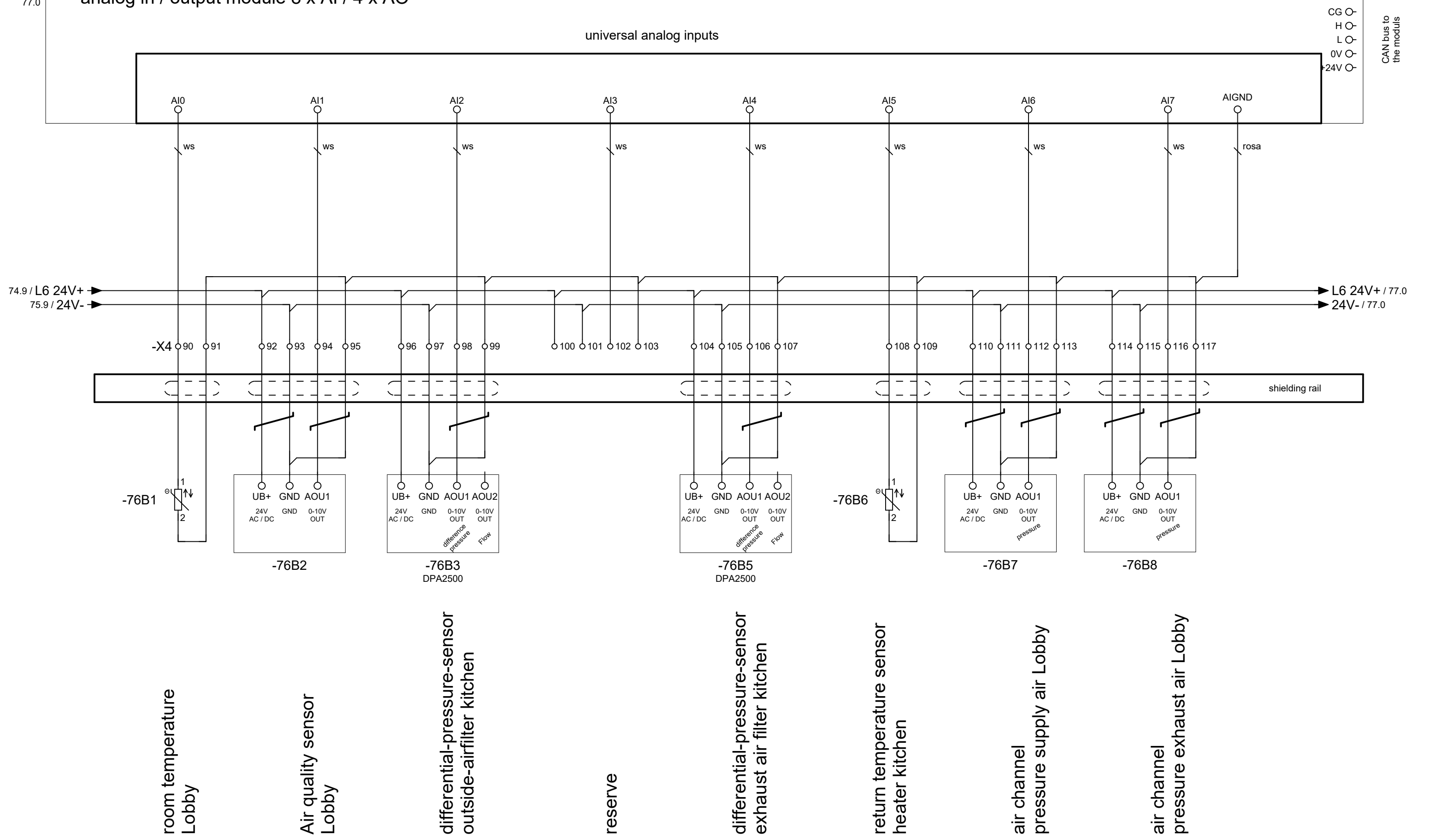
setpoint
exhaust fan Lobby

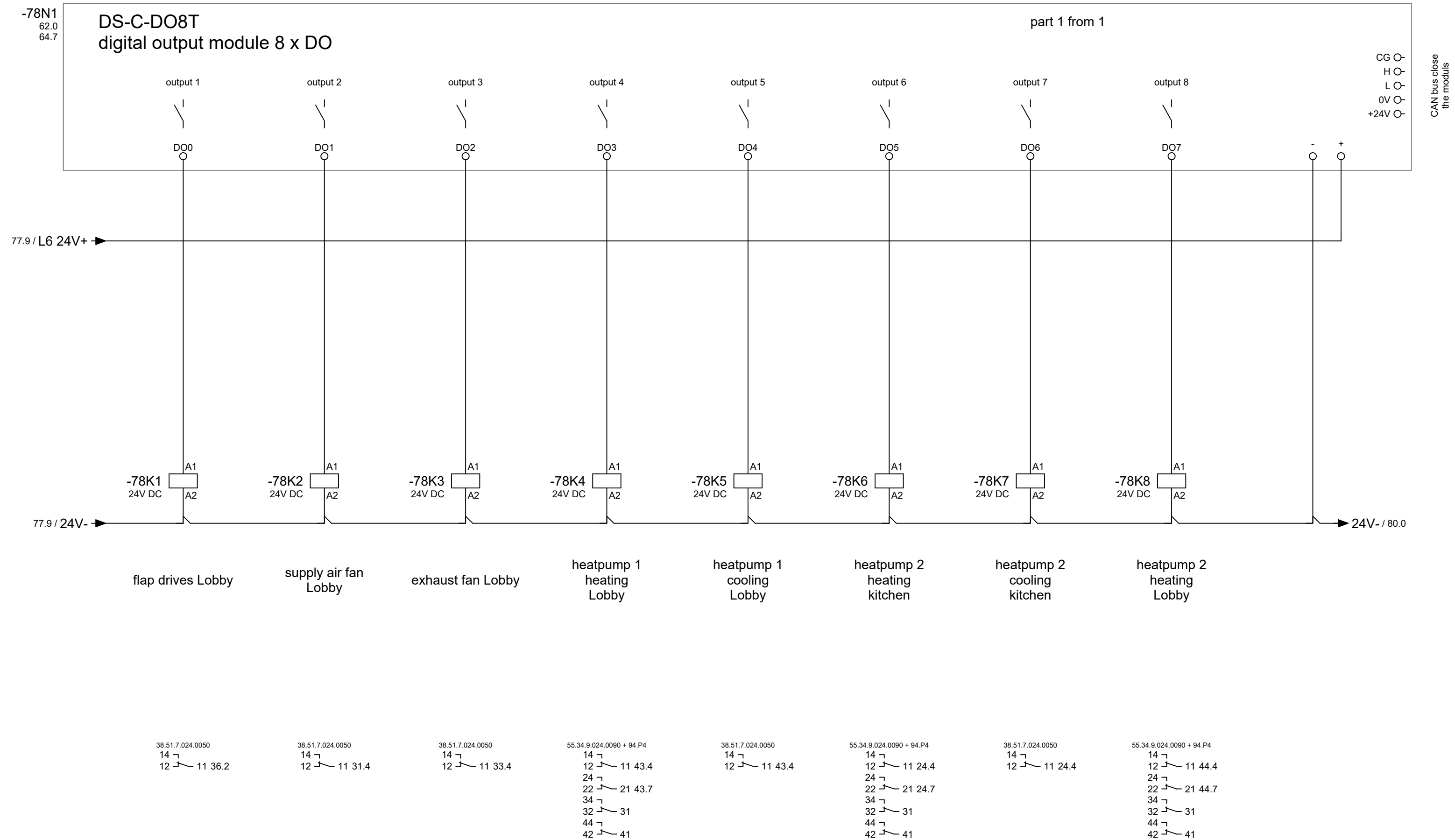
setpoint
heatpump
Lobby

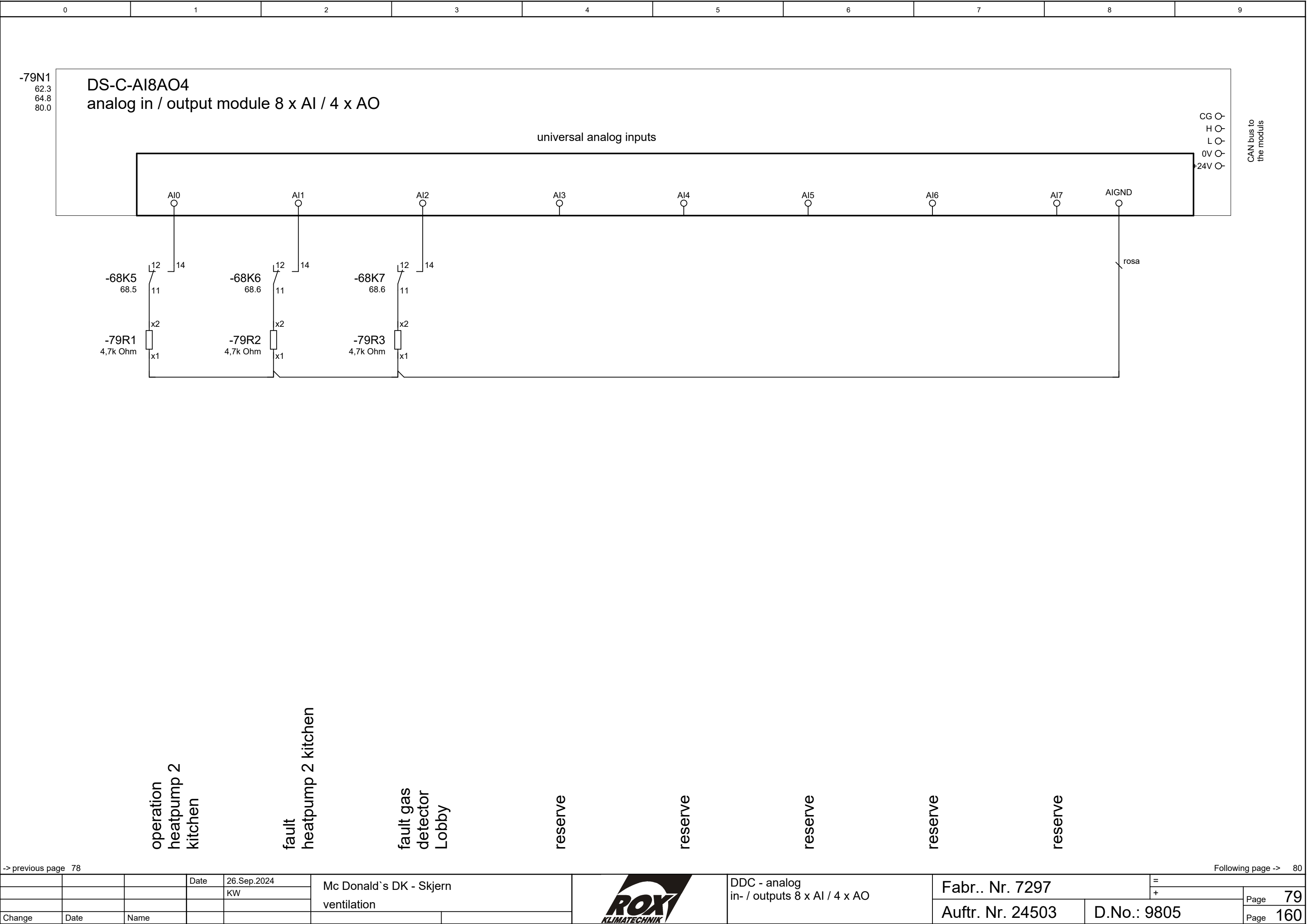
setpoint
actuator heat
recovery Lobby

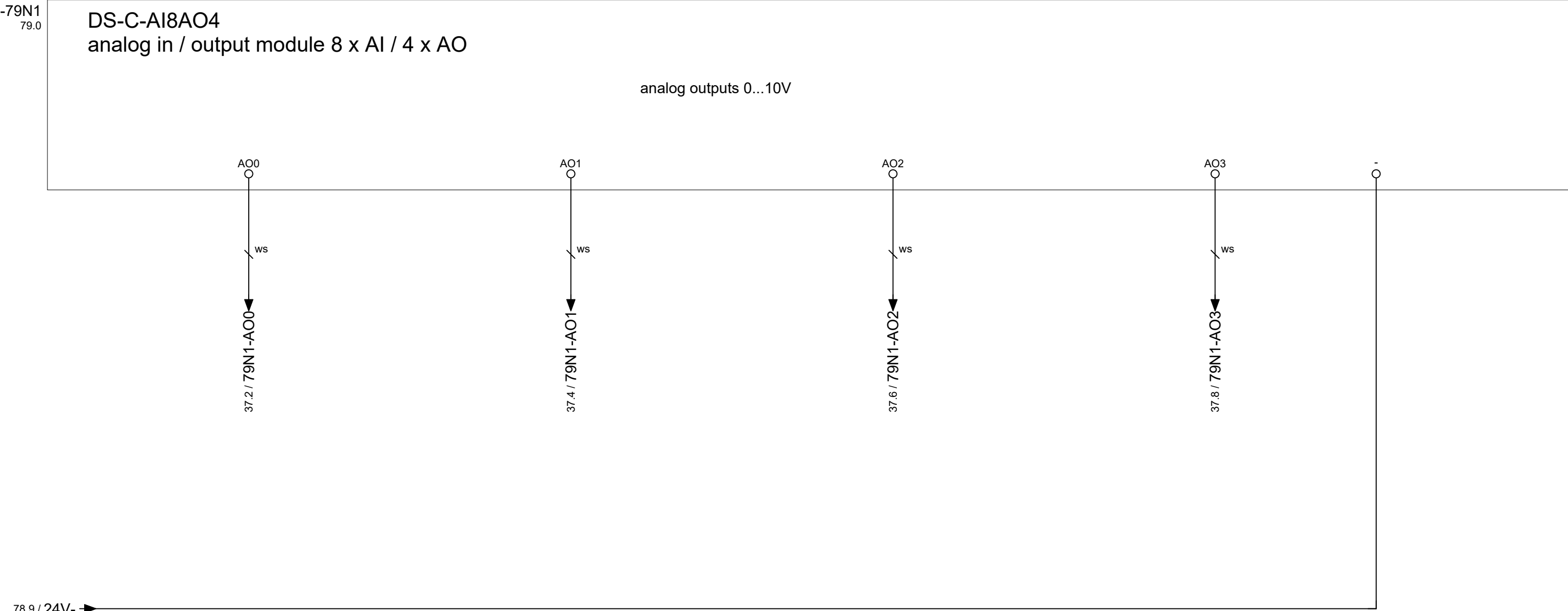
-76N1
61.6
64.6
77.0

DS-C-AI8AO4
analog in / output module 8 x AI / 4 x AO









volume flow regulator
1 supply
air Lobby

volume flow regulator
1 exhaust
air Lobby

volume flow regulator
2 supply
air Lobby

volume flow regulator
2 exhaust
air Lobby

Terminal layout

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				ÖLFLEX CLASSIC 110 4G4 4x4 mm²	OELFLEX 110 3G1,5 3x1,5 qmm	NYM-J 5x1,5 qmm	OELFLEX 110 4G1,5 4x1,5 qmm	OELFLEX 110 4G1,5 4x1,5 qmm		Strip X1 X1 = terminal strip Primary current										
										Finish	Connection	Terminal	Jumper	Finish	Connection	Cable				Page
lighting control-cabinet												1		3B1	14					3.8
=												2								3.8
=												3								3.8
supply air fan kitchen								1		11Q1	1	4		11F1	2					11.1
=								2		11Q1	3	5		11F1	4					11.2
=								3		11Q1	5	6		11F1	6					11.2
=							gnge			11Q1	PE	7			PE					11.2
exhaust fan kitchen							1			13Q1	1	8		13F1	2					13.1
=							2			13Q1	3	9		13F1	4					13.2
=							3			13Q1	5	10		13F1	6					13.2
=							gnge			13Q1	PE	11			PE					13.2
exhaust fan dishes						br				14Q1	1	12		14K1	2					14.2
=						sw				14Q1	5	13		7K2	A2					14.2
=						gn/ge				14Q1	PE	14								14.2
heating pump					1					20M1	L	15		68K4	14					20.2
=					2					20M1	N	16								20.2
=					gnge					20M1	PE	17			PE					20.2
heatpump 1 kitchen outdoor unit				1						21A1	L	18		21F1	2					21.1

Terminal layout

Mueller

				OELFLEX 110 3G1,5 3x1,5 qmm	ÖLFLEX CLASSIC 4x4 mm² 110 4G4	OELFLEX 110 3G1,5 3x1,5 qmm	ÖLFLEX CLASSIC 4x4 mm² 110 4G4	OELFLEX 110 4G1,5 4x1,5 qmm	Cable	Strip X1 X1 = terminal strip Primary current						Cable					Page
				W-42A2/1	W-42A1/1	W-41A2/1	W-41A1/1	W-33M1/1		Finish	Connection	Terminal	Jumper	Finish	Connection						
exhaust fan Lobby								gnge		33Q1	PE	37			PE						33.2
heatpump 1 Lobby outdoor unit							1			41A1	L	38		41F1	2						41.1
=							2			41A1	N	39									41.2
=							GNYE			41A1	PE	40									41.2
heatpump 1 Lobby indoor unit						1				41A2	L	41		41F2	2						41.4
=						2				41A2	N	42									41.4
=						PE				41A2	PE	43									41.4
heatpump 2 Lobby outdoor unit					1					42A1	L	44		42F1	2						42.1
=					2					42A1	N	45									42.2
=					GNYE					42A1	PE	46									42.2
heatpump 2 Lobby indoor unit					1					42A2	L	47		42F2	2						42.4
=					2					42A2	N	48									42.4
=					PE					42A2	PE	49									42.4

Terminal layout

Mueller

			NYM-J 5x1,5 qmm	OELFLEX 110 2X1 2x1 qmm	OELFLEX 110 4X1 4x1 qmm	OELFLEX 110 2X1 2x1 qmm	OELFLEX 110 4X1 4x1 qmm	J-Y(ST)-Y 4x2x0,8 qmm		Strip X3 X3 = terminal strip low voltage											
			W-14M1	W-13Q1	W-13M1/2	W-11Q1	W-11M1/2	W-9A1	Cable	Finish	Connection	Terminal	Jumper	Finish	Connection	Cable					
Fire emergency shutdown									rtbl	9A1		1		5F2	2;11						9.1
=									wsge	9A1		2		7K1	21						9.1
=									ws	9A1		3		9K1	14						9.2
=									gn	9A1		4		9K1	12						9.2
=									ws	9A1		5		9K1	A2						9.3
supply air fan kitchen							1			11M1	+24V	6		9K2	11						11.4
=							2			11M1	DIN	7		67K4	14						11.4
=							3			11M1	COM	8		9K1	11					11.5	
=							4			11M1	NC	9		71N1							11.5
repair-switch supply air fan kitchen						1				11Q1	13	10									11.8
=						2				11Q1	14	11		71N1							11.8
exhaust fan kitchen					1					13M1	GND	12		9K2	21						13.4
=					2					13M1	D1	13		67K5	14					13.4	
=					3					13M1	COM	14								13.5	
=					4					13M1	NC	15		71N1						13.5	
repair-switch exhaust fan kitchen				1						13Q1	13	16		14F1	13					13.8	
=				2						13Q1	14	17		71N1						13.8	
exhaust fan dishes			gr							14M1	TB	18		14F1	14					14.3	

			Date	27.Sep.2024	Mc Donald`s DK - Skjern ventilation		terminal layout X3	Fabr.. Nr. 7297		=	Page 106	
				KW				+	Auftr. Nr. 24503	D.No.: 9805		Page 160
Change	Date	Name										

Terminal layout

Mueller

			OELFLEX 110 4X1 4x1 qmm	OELFLEX 110 3X1 3x1 qmm	OELFLEX 110 3X1 3x1 qmm	OELFLEX 110 3X1 3x1 qmm	OELFLEX 110 2X1 2x1 qmm	NYM-J 5x1,5 qmm	Cable	Strip X3 X3 = terminal strip low voltage					Cable						Page
			W-19B1	W-16Y3	W-16Y2	W-16Y1	W-14Q1	W-14M1		Finish	Connection	Terminal	Jumper	Finish	Connection	Cable					
exhaust fan dishes								bl		14M1	TB	19		71N1							14.3
repair-switch exhaust fan dishes							1			14Q1	13	20	┌	68K1	11						14.5
=							2			14Q1	14	21	└	71N1							14.5
outside air damper kitchen						1				16Y1	2	22	┌	67K3	11						16.1
=						2				16Y1	1	23	┌	14K1	A2						16.1
=						3				16Y1	3	24	┌	67K3	14;12						16.2
exhaust air flap kitchen					1					16Y2	2	25	┌	67K3	11;14						16.3
=					2					16Y2	1	26	┌								16.3
=					3					16Y2	3	27	┌	67K6	11						16.3
exhaust air flap dishes				1						16Y3	2	28	┌	67K6	14						16.4
=				2						16Y3	1	29	┌	19K1	A2						16.4
=				3						16Y3	3	30	┌	67K6	12						16.5
antifreeze thermostat on pre heater			1							19B1	1	31	┌								19.2
=			2							19B1	2	32	┌	7K2	21						19.2
=			3							19B1	1	33	┌	20F1	13						19.3
=			4							19B1	2	34	┌	19K1	A1						19.3
heating pump												35	┌	20F1	14						20.3
=												36	┌	71N1							20.3

Terminal layout

Mueller

		OELFLEX 110 3X1	OELFLEX 110 3X1	OELFLEX 110 2X1	OELFLEX 110 4X1	OELFLEX 110 2X1	OELFLEX 110 4X1	OELFLEX 110 10X1		Strip X3 X3 = terminal strip low voltage												
		W-36Y2	W-36Y1	W-33Q1	W-33M1/2	W-31Q1	W-31M1/2	W-22A2/3		Finish	Connection	Terminal	Jumper	Finish	Connection							Page
heatpump 2 kitchen indoor unit								9		22A2	TR	55		23R1	6							24.7
=								10		22A2	F2	56										24.7
supply air fan Lobby							1			31M1	+24V	57		9K3	11							31.4
=							2			31M1	DIN	58		78K2	14							31.4
=							3			31M1	COM	59										31.5
=							4			31M1	NC	60										31.5
repair-switch supply air fan Lobby						1				31Q1	13	61										31.8
=						2				31Q1	14	62		71N1								31.8
exhaust fan Lobby					1					33M1	+24V	63		9K3	21							33.4
=					2					33M1	DIN	64		78K3	14							33.4
=					3					33M1	COM	65										33.5
=					4					33M1	NC	66										33.5
repair-switch exhaust fan Lobby				1						33Q1	13	67										33.8
=				2						33Q1	14	68		71N1								33.8
outside air damper Lobby			1							36Y1	2	69		78K1	11							36.2
=			2							36Y1	1	70		X4	13							36.2
=			3							36Y1	3	71		78K1	14							36.2
exhaust air flap Lobby		1								36Y2	2	72		78K1	11;14							36.3

Terminal layout

Mueller

				OELFLEX 110 10X1 10x1 qmm	OELFLEX 110 4X1 4x1 qmm	OELFLEX 110 4X1 4x1 qmm	OELFLEX 110 3X1 3x1 qmm	Strip X3 X3 = terminal strip low voltage								Page
				W-41A2/3	W-38A2	W-38A1	W-36Y2	Cable	Finish	Connection	Terminal	Jumper	Finish	Connection	Cable	
exhaust air flap Lobby							2		36Y2	1	73		X4	15		36.4
=							3		36Y2	3	74					36.4
gas detector kitchen						1			38A1	24V+	75		X4	30		38.1
=						2			38A1	24V-	76		X4	31		38.2
=						3			38A1		77					38.2
=						4			38A1		78		65N1			38.2
gas detector Lobby					1				38A2	24V+	79					38.3
=					2				38A2	24V-	80		X4	35		38.3
=					3				38A2		81					38.4
=					4				38A2		82		68K7	A1		38.4
heatpump 1 Lobby indoor unit				1					41A2	COM	83		78K5	11		43.4
=				2					41A2	HEAT	84		78K4	14		43.4
=				3					41A2	COOL	85		78K5	14		43.4
=				4					41A2	1	86					43.5
=				5					41A2	2	87		71N1			43.5
=				6					41A2	3	88					43.6
=				7					41A2	4	89		71N1			43.6
=				8					41A2	TR	90		78K4	21		43.6

Terminal layout

Mueller

										Strip X3 X3 = terminal strip low voltage											Page
						J-Y(ST)-Y 4x2x0.8 qmm W-65A1	OELFLEX 110 10X1 W-42A2/3	OELFLEX 110 10X1 W-41A2/3	Cable	Finish	Connection	Terminal	Jumper	Finish	Connection	Cable					
heatpump 1 Lobby indoor unit								9		41A2	TR	91		23R1	10						43.7
=								10		41A2	F2	92									43.7
heatpump 2 Lobby indoor unit							1			42A2	COM	93		67K2	11						44.4
=							2			42A2	HEAT	94		78K8	14						44.4
=							3			42A2	COOL	95		67K2	14						44.4
=							4			42A2	1	96									44.5
=							5			42A2	2	97		65N1							44.5
=							6			42A2	3	98		66S1	13						44.6
=							7			42A2	4	99		65N1							44.6
=							8			42A2	TR	100		78K8	21						44.6
=							9			42A2	TR	101		23R1	14						44.7
=							10			42A2	F2	102									44.7
operating panel						rt				65A1	24V+	103		65F1	1;+						65.4
=						bl				65A1	24V-	104		65N1	0V						65.4
=						ws				65A1-65H1	+	105		65N1	DI						65.5
=						ge				65A1-65H1	-	106									65.5
=						ws				65A1-65H2	+	107		65N1							65.5
=						gn				65A1-65H2	-	108		XR	-						65.5

Terminal layout

Mueller

	4x2x0.8 qmm	4x0.5 qmm	2x0.5 qmm	2x0.5 qmm	4x0.5 qmm	4x0.5 qmm	3x0.5 qmm	2x0.5 qmm	Cable	Strip X4 X4 = terminal strip signals						Cable					Page
	J-Y(ST)-Y W-37Y1	LIYCY W-36Y3	LIYCY W-33M1/3	LIYCY W-31M1/3	LIYCY W-22A2/2	LIYCY W-21A2/2	LIYCY W-13M1/3	LIYCY W-11M1/3		Finish	Connection	Terminal	Jumper	Finish	Connection	Cable					
supply air fan kitchen							ws			11M1		1		65N1							11.6
=							br			11M1	GND	2	┌	9K3	A2						11.7
exhaust fan kitchen							ws			13M1		3	└	67K6	21						13.6
=							br			13M1	GND	4	┌	14K1	A2						13.7
=							gn			13M1		5		67K6	24						13.7
heatpump 1 kitchen indoor unit						ws				21A2	Av1	6	┌								23.2
=						br				21A2	Av2	7	┌	19K2	A2						23.3
heatpump 2 kitchen indoor unit					ws					22A2	Av1	8	└	65N1							24.2
=					br					22A2	Av2	9	┌								24.3
supply air fan Lobby				ws						31M1		10		74N1							31.6
=				br						31M1	GND	11	┌								31.7
exhaust fan Lobby			ws							33M1		12		74N1							33.6
=			br							33M1	GND	13	└	X3	70						33.7
actuator plate heat exchanger Lobby		ws								36Y3	1	14	┌	X3	72						36.7
=		br								36Y3	2	15	┌	X3	73						36.7
=		gn								36Y3	8	16		74N1							36.8
=		ge								36Y3	9	17									36.8
volume flow regulator 1 supply air Lobby	rtbl									37Y1	2	18	┌								37.2

Terminal layout

Mueller

			4x0,5 qmm	4x0,5 qmm	4x2x0,8 qmm	4x2x0,8 qmm	4x2x0,8 qmm	4x2x0,8 qmm		Strip X4 X4 = terminal strip signals												
			L1YCY	L1YCY	J-Y(ST)-Y	J-Y(ST)-Y	J-Y(ST)-Y	J-Y(ST)-Y		Finish	Connection	Terminal	Jumper	Finish	Connection							Cable
			W-42A2/2	W-41A2/2	W-37Y4	W-37Y3	W-37Y2	W-37Y1	Cable											Page		
volume flow regulator 1 supply air Lobby								wsge		37Y1	1	19								37.2		
=								wsgn		37Y1	3	20		79N1							37.2	
=								wsbn		37Y1	4	21									37.2	
volume flow regulator 1 exhaust air Lobby							rtbl			37Y2	2	22								37.3		
=							wsge			37Y2	1	23									37.4	
=							wsgn			37Y2	3	24		79N1							37.4	
=							wsbn			37Y2	4	25									37.4	
volume flow regulator 2 supply air Lobby						rtbl				37Y3	2	26								37.5		
=						wsge				37Y3	1	27									37.6	
=						wsgn				37Y3	3	28		79N1							37.6	
=						wsbn				37Y3	4	29									37.6	
volume flow regulator 2 exhaust air Lobby					rtbl					37Y4	2	30		X3	75						37.7	
=					wsge				37Y4	1	31		X3	76						37.8		
=					wsgn					37Y4	3	32		79N1						37.8		
=					wsbn					37Y4	4	33									37.8	
heatpump 1 Lobby indoor unit				ws						41A2	Av1	34									43.2	
=				br						41A2	Av2	35		X3	80							43.3
heatpump 2 Lobby indoor unit			ws							42A2	Av1	36		74N1								44.2

Terminal layout

Mueller

					4x0,5 qmm LIYC	2x0,5 qmm LIYC	2x2x0,75 qmm LIYC-TP	4x0,5 qmm LIYC		Strip X4 X4 = terminal strip signals											Page
					W-70B5	W-70B4	W-70B1	W-42A2/2	Cable	Finish	Connection	Terminal	Jumper	Finish	Connection	Cable					
heatpump 2 Lobby indoor unit								br		42A2	Av2	37		65N1	0V					44.3	
differential-pressure-sensor supply air kitchen							ws			70B1	UB+	38							70.1		
=							br			70B1	GND	39							70.1		
=							gn			70B1	AOU1	40		65N1						70.1	
=							ge			70B1	GND	41							70.1		
reserve												42							70.2		
=												43							70.2		
reserve												44		65N1						70.2	
=												45								70.2	
reserve												46								70.2	
=												47							70.3		
reserve												48		65N1						70.3	
=												49								70.3	
outside temperature sensor kitchen						ws					70B4	1	50		65N1						
=						br			70B4		2	51								70.4	
supply air temperature sensor behind heater kitchen							ws		70B5		G	52								70.4	
=							br		70B5		G0	53								70.5	
supply air temperature sensor behind heater kitchen							gn		70B5		U1	54		65N1							70.5

Terminal layout

Mueller

		2x2x0,75 qmm	2x2x0,75 qmm	2x2x0,75 qmm	2x0,5 qmm	2x0,5 qmm	2x0,5 qmm	4x0,5 qmm		Strip X4 X4 = terminal strip signals												Page
		LIYCY-TP	LIYCY-TP	LIYCY-TP	LIYCY	LIYCY	LIYCY	LIYCY		Finish	Connection	Terminal	Jumper	Finish	Connection							
		W-74B3	W-74B2	W-74B1	W-70B8	W-70B7	W-70B6	W-70B5	Cable													
supply air temperature sensor behind heater kitchen								ge		70B5	G0	55										70.5
supply air temperature sensor total							ws			70B6	1	56		65N1								70.6
=							br			70B6	2	57										70.6
exhaust air temperature sensor kitchen (option)						ws				70B7	1	58		65N1								70.7
=						br				70B7	2	59										70.7
room temperature sensor kitchen					ws					70B8	1	60		65N1								70.8
=					br					70B8	2	61		65N1	AIGND							70.8
differential-pressure-sensor supply air Lobby				ws						74B1	UB+	62										74.1
=				br						74B1	GND	63										74.1
=				gn						74B1	AOU1	64		74N1								74.1
=				ge						74B1	GND	65										74.1
differential-pressure-sensor exhaust air Lobby			ws							74B2	UB+	66										74.1
=			br							74B2	GND	67										74.2
=			gn							74B2	AOU1	68		74N1								74.2
=			ge							74B2	GND	69										74.2
differential-pressure-sensor heat recovery Lobby	ws									74B3	UB+	70										74.2
=		br								74B3	GND	71										74.3
=		gn								74B3	AOU1	72		74N1								74.3

Terminal layout

Mueller

	LIYC	4x0,5 qmm	LIYC	4x0,5 qmm	LIYC	2x0,5 qmm	LIYC	2x0,5 qmm	LIYC	4x0,5 qmm	LIYC	4x0,5 qmm	LIYC	2x0,5 qmm	LIYC	2x0,5 qmm		Strip X6 X6 = terminal strip bus cable											Page
	W-42A2/2	W-41A2/2	W-42A1/2	W-41A1/2	W-22A2/2	W-21A2/2	W-22A1/2	W-21A1/2	Cable	Finish	Connection	Terminal	Jumper	Finish	Connection	Cable													
heatpump 1 kitchen outdoor unit									ws		21A1	F1	1												21.2				
=								br	21A1		F2	2				21.3													
heatpump 2 kitchen outdoor unit								ws			22A1	F1	3												22.2				
=								br		22A1	F2	4												22.3					
heatpump 1 kitchen indoor unit							gn			21A2	F1	5												23.1					
=							ge			21A2	F2	6												23.1					
heatpump 2 kitchen indoor unit						gn				22A2	F1	7												24.1					
=						ge				22A2	F2	8												24.1					
heatpump 1 Lobby outdoor unit					ws					41A1	F1	9												41.2					
=					br					41A1	F2	10												41.3					
heatpump 2 Lobby outdoor unit				ws						42A1	F1	11												42.2					
=				br						42A1	F2	12												42.3					
heatpump 1 Lobby indoor unit			gn							41A2	F1	13												43.1					
=			ge							41A2	F2	14												43.1					
heatpump 2 Lobby indoor unit		gn								42A2	F1	15												44.1					
=		ge								42A2	F2	16												44.1					
Modbus												17	'	65N1	A+									65.8					
=												18	'	65N1	B-									65.8					

Terminal layout

Mueller

										Cable	Strip X6 X6 = terminal strip bus cable					Cable					Page	
											Finish	Connection	Terminal	Jumper	Finish							Connection
Modbus													19	.	65N1	SG				65.8		
																</						

Terminal layout

Mueller

								OELFLEX 3x1,5 qmm 110 3G1,5		Strip X7 X7 = terminal-strip external voltage											
								W-51A1	Cable	Finish	Connection	Terminal	Jumper	Finish	Connection	Cable					
release kitchen ware								1	Cable	51A1		1		67K5	21	Cable					51.4
=								2		51A1		2		67K5	24						51.4
=								gnge		51A1	PE	3									51.5
									Cable							Cable					
									Cable							Cable					
									Cable							Cable					

Terminal layout

Mueller

										Strip XR XR = terminal strip Router											Page
									Cable	Finish	Connection	Terminal	Jumper	Finish	Connection	Cable					
Router (option)										65U1	+	+	'	X3	103					65.7	
=										65U1	-	-	'	X3	108					65.7	
=										65U1	DI	DI	'	X3	105					65.7	

Cable overview

Mueller

Cable	Source from	Finish to	Cable	Quantity cores	Cross-section	Remark
W-3W1	X01	-PA	NYM-J	1	16 qmm	equipotential busbar
W-9A1	X3	9A1	J-Y(ST)-Y	4x2x	0,8 qmm	Fire emergency shutdown
W-11M1/1	X1	11Q1	OELFLEX 110 4G1,5	4	1,5 qmm	supply air fan kitchen
W-11M1/2	X3	11M1	OELFLEX 110 4X1	4	1 qmm	=
W-11M1/3	X4	11M1	LIYCY	2	0,5 qmm	=
W-11Q1	X3	11Q1	OELFLEX 110 2X1	2	1 qmm	repair-switch supply air fan kitchen
W-13M1/1	X1	13Q1	OELFLEX 110 4G1,5	4	1,5 qmm	exhaust fan kitchen
W-13M1/2	X3	13M1	OELFLEX 110 4X1	4	1 qmm	=
W-13M1/3	X4	13M1	LIYCY	3	0,5 qmm	=
W-13Q1	X3	13Q1	OELFLEX 110 2X1	2	1 qmm	repair-switch exhaust fan kitchen
W-14M1	X1	14Q1	NYM-J	5	1,5 qmm	exhaust fan dishes
W-14Q1	X3	14Q1	OELFLEX 110 2X1	2	1 qmm	repair-switch exhaust fan dishes
W-16Y1	X3	16Y1	OELFLEX 110 3X1	3	1 qmm	outside air damper kitchen
W-16Y2	X3	16Y2	OELFLEX 110 3X1	3	1 qmm	exhaust air flap kitchen
W-16Y3	X3	16Y3	OELFLEX 110 3X1	3	1 qmm	exhaust air flap dishes
W-19B1	X3	19B1	OELFLEX 110 4X1	4	1 qmm	antifreeze thermostat
W-20M1	X1	20M1	OELFLEX 110 3G1,5	3	1,5 qmm	heating pump
W-21A1/1	X1	21A1	ÖLFLEX CLASSIC 110 4G4	4	4 mm²	heatpump 1 kitchen outdoor unit
W-21A1/2	X6	21A1	LIYCY	2	0,5 qmm	=
W-21A2/1	X1	21A2	OELFLEX 110 3G1,5	3	1,5 qmm	heatpump 1 kitchen indoor unit
W-21A2/2	X4	21A2	LIYCY	4	0,5 qmm	=
W-21A2/3	X3	21A2	OELFLEX 110 10X1	10	1 qmm	=
W-21A2/4	X2	21A2	OELFLEX 110 3G1,5	3	1,5 qmm	=

1. the quality and the requirements for the cable must be requested from the client or the construction site supervision. (e.g. halogen-free, etc.)

Cable overview

Mueller

Cable	Source from	Finish to	Cable	Quantity cores	Cross-section	Remark
W-22A1/1	X1	22A1	ÖLFLEX CLASSIC 110 4G4	4	4 mm²	heatpump 2 kitchen outdoor unit
W-22A1/2	X6	22A1	LIYCY	2	0,5 qmm	=
W-22A2/1	X1	22A2	OELFLEX 110 3G1,5	3	1,5 qmm	heatpump 2 kitchen indoor unit
W-22A2/2	X4	22A2	LIYCY	4	0,5 qmm	=
W-22A2/3	X3	22A2	OELFLEX 110 10X1	10	1 qmm	=
W-22A2/4	X2	22A2	OELFLEX 110 3G1,5	3	1,5 qmm	=
W-31M1/1	X1	31Q1	OELFLEX 110 4G1,5	4	1,5 qmm	supply air fan Lobby
W-31M1/2	X3	31M1	OELFLEX 110 4X1	4	1 qmm	=
W-31M1/3	X4	31M1	LIYCY	2	0,5 qmm	=
W-31Q1	X3	31Q1	OELFLEX 110 2X1	2	1 qmm	repair-switch supply air fan Lobby
W-33M1/1	X1	33Q1	OELFLEX 110 4G1,5	4	1,5 qmm	exhaust fan Lobby
W-33M1/2	X3	33M1	OELFLEX 110 4X1	4	1 qmm	=
W-33M1/3	X4	33M1	LIYCY	2	0,5 qmm	=
W-33Q1	X3	33Q1	OELFLEX 110 2X1	2	1 qmm	repair-switch exhaust fan Lobby
W-36Y1	X3	36Y1	OELFLEX 110 3X1	3	1 qmm	outside air damper Lobby
W-36Y2	X3	36Y2	OELFLEX 110 3X1	3	1 qmm	exhaust air flap Lobby
W-36Y3	X4	36Y3	LIYCY	4	0,5 qmm	actuator plate heat exchanger Lobby
W-37Y1	X4	37Y1	J-Y(ST)-Y	4x2x	0,8 qmm	volume flow regulator 1 supply air Lobby
W-37Y2	X4	37Y2	J-Y(ST)-Y	4x2x	0,8 qmm	volume flow regulator 1 exhaust air Lobby
W-37Y3	X4	37Y3	J-Y(ST)-Y	4x2x	0,8 qmm	volume flow regulator 2 supply air Lobby
W-37Y4	X4	37Y4	J-Y(ST)-Y	4x2x	0,8 qmm	volume flow regulator 2 exhaust air Lobby
W-38A1	X3	38A1	OELFLEX 110 4X1	4	1 qmm	gas detector kitchen
W-38A2	X3	38A2	OELFLEX 110 4X1	4	1 qmm	gas detector Lobby

1. the quality and the requirements for the cable must be requested from the client or the construction site supervision. (e.g. halogen-free, etc.)

Cable overview

Mueller

Cable	Source from	Finish to	Cable	Quantity cores	Cross-section	Remark
W-41A1/1	X1	41A1	ÖLFLEX CLASSIC 110 4G4	4	4 mm²	heatpump 1 Lobby outdoor unit
W-41A1/2	X6	41A1	LIYCY	2	0,5 qmm	=
W-41A2/1	X1	41A2	OELFLEX 110 3G1,5	3	1,5 qmm	heatpump 1 Lobby indoor unit
W-41A2/2	X4	41A2	LIYCY	4	0,5 qmm	=
W-41A2/3	X3	41A2	OELFLEX 110 10X1	10	1 qmm	=
W-41A2/4	X2	41A2	OELFLEX 110 3G1,5	3	1,5 qmm	=
W-42A1/1	X1	42A1	ÖLFLEX CLASSIC 110 4G4	4	4 mm²	heatpump 2 Lobby outdoor unit
W-42A1/2	X6	42A1	LIYCY	2	0,5 qmm	=
W-42A2/1	X1	42A2	OELFLEX 110 3G1,5	3	1,5 qmm	heatpump 2 Lobby indoor unit
W-42A2/2	X4	42A2	LIYCY	4	0,5 qmm	=
W-42A2/3	X3	42A2	OELFLEX 110 10X1	10	1 qmm	=
W-42A2/4	X2	42A2	OELFLEX 110 3G1,5	3	1,5 qmm	=
W-51A1	X7	51A1	OELFLEX 110 3G1,5	3	1,5 qmm	release kitchen ware
W-55Y1	X4	77Y1	LIYCY	4	0,5 qmm	heater valve kitchen
W-65A1	X3	65A1	J-Y(ST)-Y	4x2x	0,8 qmm	operating panel
W-70B1	X4	70B1	LIYCY-TP	2x2x	0,75 qmm	differential-pressure-sensor supply air kitchen
W-70B4	X4	70B4	LIYCY	2	0,5 qmm	outside temperature sensor kitchen
W-70B5	X4	70B5	LIYCY	4	0,5 qmm	supply air temperature sensor behind heater kitchen
W-70B6	X4	70B6	LIYCY	2	0,5 qmm	supply air temperature sensor total
W-70B7	X4	70B7	LIYCY	2	0,5 qmm	exhaust air temperature sensor kitchen (option)
W-70B8	X4	70B8	LIYCY	2	0,5 qmm	room temperature sensor kitchen
W-74B1	X4	74B1	LIYCY-TP	2x2x	0,75 qmm	differential-pressure-sensor supply air Lobby
W-74B2	X4	74B2	LIYCY-TP	2x2x	0,75 qmm	differential-pressure-sensor exhaust air Lobby

1. the quality and the requirements for the cable must be requested from the client or the construction site supervision. (e.g. halogen-free, etc.)

-> previous page

131

Following page ->

133

Cable overview

Mueller

Cable	Source from	Finish to	Cable	Quantity cores	Cross-section	Remark
W-74B3	X4	74B3	LIYCY-TP	2x2x	0,75 qmm	differential-pressure-sensor heat recovery Lobby
W-74B4	X4	74B4	LIYCY	4	0,5 qmm	supply air temperature sensor behind heat recovery Lobby
W-74B5	X4	74B5	LIYCY	2	0,5 qmm	supply air temperature sensor total Lobby
W-74B6	X4	74B6	LIYCY	2	0,5 qmm	exhaust air temperature sensor Lobby
W-74B7	X4	74B7	LIYCY-TP	2x2x	0,75 qmm	differential-pressure-sensor outside-airfilter Lobby
W-74B8	X4	74B8	LIYCY-TP	2x2x	0,75 qmm	differential-pressure-sensor exhaust air filter Lobby
W-76B1	X4	76B1	LIYCY	2	0,5 qmm	room temperature Lobby
W-76B2	X4	76B2	LIYCY-TP	2x2x	0,75 qmm	Air quality sensor Lobby
W-76B3	X4	76B3	LIYCY-TP	2x2x	0,75 qmm	differential-pressure-sensor outside-airfilter kitchen
W-76B5	X4	76B5	LIYCY-TP	2x2x	0,75 qmm	differential-pressure-sensor exhaust air filter kitchen
W-76B6	X4	76B6	LIYCY	2	0,5 qmm	return temperature sensor heater kitchen
W-76B7	X4	76B7	LIYCY-TP	2x2x	0,75 qmm	air channel pressure supply air Lobby
W-76B8	X4	76B8	LIYCY-TP	2x2x	0,75 qmm	air channel pressure exhaust air Lobby

1. the quality and the requirements for the cable must be requested from the client or the construction site supervision. (e.g. halogen-free, etc.)

Bill of material

Mueller

Component designation	Wiring diagram position	Qty.	Manufacturer's designation	Manufacturer's type No.	Manufacturer	Pos
X1		4	Installation level terminal block	PTI 2,5-L/L	Phoenix Contact	
X1		2	Installation ground terminal block	PTI 2,5-PE/L/L	Phoenix Contact	
X1		6	Three-tier terminal L / N / PE	PTI 2,5-PE/L/NT	Phoenix Contact	
X1		4	Installation terminal block	PTI 16/S	Phoenix Contact	
X1		4	N disconnect terminal block	PTN 16/S	Phoenix Contact	
X1		4	Installation ground terminal block	PTI 16/S-PE	Phoenix Contact	
X1		1	Installation terminal block	PTI 2,5	Phoenix Contact	
X1		1	Installation terminal block	PTI 2,5 BU	Phoenix Contact	
X1		1	Installation ground terminal block	PTI 2,5-PE	Phoenix Contact	
X01		1	High-current terminal block	UKH 50 BU	Phoenix Contact	
X01		2	PE - Terminal 50 qmm	USLKG 50	Phoenix Contact	
X01		1	Ground modular terminal block	USLKG 16	Phoenix Contact	
X2		4	Installation terminal block	PTI 2,5	Phoenix Contact	
X2		4	Installation terminal block	PTI 2,5 BU	Phoenix Contact	
X2		4	Installation ground terminal block	PTI 2,5-PE	Phoenix Contact	
X3		110	Installation terminal block	PTI 2,5	Phoenix Contact	
X4		61	Two-tier terminal 2,5 qmm	PTTBS 2,5	Phoenix Contact	
X6		10	Two-tier terminal 2,5 qmm	PTTBS 2,5	Phoenix Contact	
XL		1	Installation terminal block	PTI 2,5	Phoenix Contact	

Bill of material

Mueller

Component designation	Wiring diagram position	Qty.	Manufacturer´s designation	Manufacturer´s type No.	Manufacturer	Pos
XL		1	Installation terminal block	PTI 2,5 BU	Phoenix Contact	
XR		3	Installation terminal block	PTI 2,5	Phoenix Contact	
3B1	3.8	1	cabinet temperature sensor cooling	7T.81.0.000.2303	Finder Relais	
3F1	3.3	1	FI / LS - Switch 30 mA - B10	5SU1 356-6KK10	Siemens	
3Q1	3.0	1	main switch 100 A 3 pole	PN1-100	Eaton Electric Gmbh	
3Q1	3.0	1	turning handle red - yellow for NZMN 1	NZM1-XTVDVR	Eaton Electric Gmbh	
3Q1	3.0	1	finger protection for NZM 1	NZM1-XIPK	Eaton Electric Gmbh	
3Q1	3.0	1	cover screw	NZM1-XKSA	Eaton Electric Gmbh	
3S1	3.4	1	Selector switch, 1N/O, 2 positions, front mount	M22-WRK+K10	Eaton Electric Gmbh	
3X1	3.4	1	plug socket 230V / 10 A grey	7U.00.8.230.0010	Finder Relais	
3X2	3.5	1	plug socket 230V / 10 A grey	7U.00.8.230.0010	Finder Relais	
Schrank	3.4	1	subplate / door	MONTAGEPLATTE	Rox Klimatechnik	
Schrank	3.4	1	operating panel 250 x 180 mm	Schaltpanel	Mueller Schaltanlagen GmbH	
Schrank	3.4	5	Feed-through terminal	PT 2,5-QUATTRO	Phoenix Contact	
Schrank	3.4	9	Feed-through terminal	PT 2,5-QUATTRO BU	Phoenix Contact	
Schrank	3.4	1	Installation ground terminal block	PTI 16/S-PE	Phoenix Contact	
4F1	4.3	1	Automatic circuit breaker B - 6A 1 pole 10 KA	FAZ-B6/1	Eaton Electric Gmbh	
4F2	4.4	1	Automatic circuit breaker B - 6A 1 pole 10 KA	FAZ-B6/1	Eaton Electric Gmbh	
4F3	4.4	1	Automatic circuit breaker B - 6A 1 pole 10 KA	FAZ-B6/1	Eaton Electric Gmbh	

Bill of material

Mueller

Component designation	Wiring diagram position	Qty.	Manufacturer´s designation	Manufacturer´s type No.	Manufacturer	Pos
4H1	4.5	1	Indicator light white 230V	M22-L-W+M22-A+LED230-W	Eaton Electric Gmbh	
4H2	4.6	1	Indicator light white 230V	M22-L-W+M22-A+LED230-W	Eaton Electric Gmbh	
4H3	4.7	1	Indicator light white 230V	M22-L-W+M22-A+LED230-W	Eaton Electric Gmbh	
4K1	4.3	1	Phase monitoring, 2 changeover contacts	PFD2-E12	BTR Metz Connect GMBH	
5F1	5.2	1	Automatic circuit breaker B - 6A 1 pole 10 KA	FAZ-B6/1	Eaton Electric Gmbh	
5F2	5.3	1	Automatic circuit breaker C - 4A 1 pole 10 kA	FAZ-C4/1	Eaton Electric Gmbh	
5F3	5.4	1	Automatic circuit breaker C - 4A 1 pole 10 kA	FAZ-C4/1	Eaton Electric Gmbh	
5G1	5.2	1	power adapter 230V AC / 24V DC - 10A	NDR-240-24	MeanWell	
7K1	7.1	1	timing relays 230V AC 4 changeover contact	85.04.8.240.0000 + 94.P4	Finder Relais	
7K2	7.2	1	Relay 4 changeover contact 230 V AC	55.34.8.230.0040 + 94.P4	Finder Relais	
7S1	7.1	1	push button black with 1 Ö	M22-D-S+K01	Eaton Electric Gmbh	
9K1	9.4	1	Relay 4 changeover contact 24 V DC	55.34.9.024.0090 + 94.P4	Finder Relais	
9K2	9.6	1	Relay 4 changeover contact 24 V DC	55.34.9.024.0090 + 94.P4	Finder Relais	
9K3	9.8	1	Relay 4 changeover contact 24 V DC	55.34.9.024.0090 + 94.P4	Finder Relais	
11F1	11.1	1	Automatic circuit breaker B - 10A 3 pole 10 kA	FAZ-B10/3	Eaton Electric Gmbh	
13F1	13.1	1	Automatic circuit breaker B - 10A 3 pole 10 kA	FAZ-B10/3	Eaton Electric Gmbh	
14F1	14.2	1	Automatic circuit breaker B - 6A 1 pole 10 KA	FAZ-B6/1	Eaton Electric Gmbh	
14F1	14.2	1	Auxiliary contact, for FAZ, PKNM, 1N/O+1N/C, 0.5HP	FAZ-XHIN11	Eaton Electric Gmbh	
14K1	14.4	1	contactor 4kW 24V DC 1S	DIL M9-10 (24VDC)-PI	Eaton Electric Gmbh	43

Bill of material

Mueller

Component designation	Wiring diagram position	Qty.	Manufacturer´s designation	Manufacturer´s type No.	Manufacturer	Pos
19K1	19.4	1	Relay 4 changeover contact 24 V DC	55.34.9.024.0090 + 94.P4	Finder Relais	
19K2	19.5	1	Relay 4 changeover contact 24 V DC	55.34.9.024.0090 + 94.P4	Finder Relais	
20F1	20.1	1	Automatic circuit breaker B - 6A 1 pole 10 KA	FAZ-B6/1	Eaton Electric Gmbh	
20F1	20.1	1	Auxiliary contact, for FAZ, PKNM, 1N/O+1N/C, 0.5HP	FAZ-XHIN11	Eaton Electric Gmbh	
21F1	21.1	1	Automatic circuit breaker C - 32A 1 pole 10 kA	FAZ-C32/1	Eaton Electric Gmbh	
21F2	21.4	1	Automatic circuit breaker B - 10A 1 pole 10 kA	FAZ-B10/1	Eaton Electric Gmbh	
22F1	22.1	1	Automatic circuit breaker C - 32A 1 pole 10 kA	FAZ-C32/1	Eaton Electric Gmbh	
22F2	22.4	1	Automatic circuit breaker B - 10A 1 pole 10 kA	FAZ-B10/1	Eaton Electric Gmbh	
23K1	23.8	1	Relay 4 changeover contact 230 V AC	55.34.8.230.0040 + 94.P4	Finder Relais	
23R1	23.7	1	subplate with 16 solder points	MP 16	Murr Elektronik	
24K1	24.8	1	Relay 4 changeover contact 230 V AC	55.34.8.230.0040 + 94.P4	Finder Relais	
31F1	31.1	1	Automatic circuit breaker B - 10A 3 pole 10 kA	FAZ-B10/3	Eaton Electric Gmbh	
33F1	33.1	1	Automatic circuit breaker B - 10A 3 pole 10 kA	FAZ-B10/3	Eaton Electric Gmbh	
41F1	41.1	1	Automatic circuit breaker C - 32A 1 pole 10 kA	FAZ-C32/1	Eaton Electric Gmbh	
41F2	41.4	1	Automatic circuit breaker B - 10A 1 pole 10 kA	FAZ-B10/1	Eaton Electric Gmbh	
42F1	42.1	1	Automatic circuit breaker C - 32A 1 pole 10 kA	FAZ-C32/1	Eaton Electric Gmbh	
42F2	42.4	1	Automatic circuit breaker B - 10A 1 pole 10 kA	FAZ-B10/1	Eaton Electric Gmbh	
43K1	43.8	1	Relay 4 changeover contact 230 V AC	55.34.8.230.0040 + 94.P4	Finder Relais	
44K1	44.8	1	Relay 4 changeover contact 230 V AC	55.34.8.230.0040 + 94.P4	Finder Relais	

Bill of material

Mueller

Component designation	Wiring diagram position	Qty.	Manufacturer´s designation	Manufacturer´s type No.	Manufacturer	Pos
65F1	65.1	1	Fuse modular terminal block	USIG + ST-SI	Phoenix Contact	
65N1	65.0	1	High Power Controller	DEOS - 600/5 open EMS	DEOS AG	
65N2	65.7	1	power supply module 24V and Bus	PKM	DEOS AG	
65U1	65.6	1	IXrouter3 Ethernet	IX2400	IXON	
66S1	66.1	1	Selector switch, 1N/O, 2 positions, front mount	M22-WRK+K10	Eaton Electric Gmbh	
67H1	67.1	1	indicator light green 24V	M22-L-G+M22-A+LED-W	Eaton Electric Gmbh	
67H2	67.1	1	indicator light red 24V	M22-L-R+M22-A+LED-W	Eaton Electric Gmbh	
67H3	67.2	1	indicator light yellow 24V	M22-L-Y+M22-A+LED-W	Eaton Electric Gmbh	
67K1	67.4	1	Coupling relay 24V DC 1W with led	38.51.7.024.0050	Finder Relais	
67K2	67.5	1	Coupling relay 24V DC 1W with led	38.51.7.024.0050	Finder Relais	
67K3	67.6	1	Coupling relay 24V DC 1W with led	38.51.7.024.0050	Finder Relais	
67K4	67.6	1	Coupling relay 24V DC 1W with led	38.51.7.024.0050	Finder Relais	
67K5	67.7	1	Relay 2 changeover contact 24 V DC	46.52.9.024.0074 + 97.P2	Finder Relais	
67K6	67.9	1	Relay 4 changeover contact 24 V DC	55.34.9.024.0090 + 94.P4	Finder Relais	
67S1	67.7	1	Selector switch, toggle, 3 positions, black, maintained	M22-WRK3+K10+K10	Eaton Electric Gmbh	
67S1	67.7	1	Contact element, 1N/O, front mount, 6. contact, screw connection	M22-K10	Eaton Electric Gmbh	
68K1	68.1	1	Coupling relay 24V DC 1W with led	38.51.7.024.0050	Finder Relais	
68K2	68.2	1	Relay 4 changeover contact 24 V DC	55.34.9.024.0090 + 94.P4	Finder Relais	
68K3	68.3	1	Coupling relay 24V DC 1W with led	38.51.7.024.0050	Finder Relais	

Bill of material

Mueller

Component designation	Wiring diagram position	Qty.	Manufacturer´s designation	Manufacturer´s type No.	Manufacturer	Pos
68K4	68.4	1	Coupling relay 24V DC 1W with led	38.51.7.024.0050	Finder Relais	
68K5	68.5	1	Coupling relay 24V DC 1W with led	38.51.7.024.0050	Finder Relais	
68K6	68.6	1	Coupling relay 24V DC 1W with led	38.51.7.024.0050	Finder Relais	
68K7	68.6	1	Coupling relay 24V DC 1W with led	38.51.7.024.0050	Finder Relais	
71N1	71.0	1	digital input module 16 x DI	DS-C-DI 16	DEOS AG	
74N1	74.0	1	analog in / output module 8 x AI / 4 x AO	DS-C-AI8AO4	DEOS AG	
76N1	76.0	1	analog in / output module 8 x AI / 4 x AO	DS-C-AI8AO4	DEOS AG	
77N1	77.2	1	signal transmitter	MV-REF 10V	RINCK	
78K1	78.1	1	Coupling relay 24V DC 1W with led	38.51.7.024.0050	Finder Relais	
78K2	78.2	1	Coupling relay 24V DC 1W with led	38.51.7.024.0050	Finder Relais	
78K3	78.3	1	Coupling relay 24V DC 1W with led	38.51.7.024.0050	Finder Relais	
78K4	78.4	1	Relay 4 changeover contact 24 V DC	55.34.9.024.0090 + 94.P4	Finder Relais	
78K5	78.5	1	Coupling relay 24V DC 1W with led	38.51.7.024.0050	Finder Relais	
78K6	78.6	1	Relay 4 changeover contact 24 V DC	55.34.9.024.0090 + 94.P4	Finder Relais	
78K7	78.7	1	Coupling relay 24V DC 1W with led	38.51.7.024.0050	Finder Relais	
78K8	78.8	1	Relay 4 changeover contact 24 V DC	55.34.9.024.0090 + 94.P4	Finder Relais	
78N1	78.0	1	digital output module 8 x DO	DS-C-DO8T	DEOS AG	
79N1	79.0	1	analog in / output module 8 x AI / 4 x AO	DS-C-AI8AO4	DEOS AG	
79R1	79.1	1	Disconnect Terminal with resistance 0,5 W	P-CO	Phoenix Contact	

Summarized parts list

Mueller

supplier	Order number	designation	Type number	Quantity	unit price	total price
BTR Metz Connect GMBH						
	110292032215	Phase monitoring, 2 changeover contacts	PFD2-E12	1		
DEOS AG						
		High Power Controller	DEOS - 600/5 open EMS	1		
		power supply module 24V and Bus	PKM	1		
		digital input module 16 x DI	DS-C-DI 16	1		
		analog in / output module 8 x AI / 4 x AO	DS-C-AI8AO4	3		
		digital output module 8 x DO	DS-C-DO8T	1		
Eaton Electric Gmbh						
	278529	Automatic circuit breaker B - 6A 1 pole 10 KA	FAZ-B6/1	6		
	278553	Automatic circuit breaker C - 4A 1 pole 10 kA	FAZ-C4/1	2		
	278843	Sicherungsautomat B - 10A 3 polig 10 kA	FAZ-B10/3	4		
	286054	Auxiliary contact, for FAZ, PKNM, 1N/O+1N/C, 0.5HP	FAZ-XHIN11	2		
	278564	Sicherungsautomat C - 32A 1 polig 10 kA	FAZ-C32/1	4		
	278531	Automatic circuit breaker B - 10A 1 pole 10 kA	FAZ-B10/1	4		
		Indicator light white 230V	M22-L-W+M22-A+LED230-W	3		
		indicator light green 24V	M22-L-G+M22-A+LED-W	1		
		indicator light red 24V	M22-L-R+M22-A+LED-W	1		
		indicator light yellow 24V	M22-L-Y+M22-A+LED-W	1		
	199233	contactor 4kW 24V DC 1S	DIL M9-10 (24VDC)-PI	1		
	259141	Hauptschalter 100 A 3 polig	PN1-100	1		
		turning handle red - yellow for NZMN 1	NZM1-XTVDVR	1		
		finger protection for NZM 1	NZM1-XIPK	1		
		cover screw	NZM1-XKSA	1		
	216518	Selector switch, 1N/O, 2 positions, front mount	M22-WRK+K10	2		
		push button black with 1 Ö	M22-D-S+K01	1		
	216872	Selector switch, toggle, 3 positions, black, maintained	M22-WRK3+K10+K10	1		
216376	Contact element, 1N/O, front mount, 6. contact, screw connection	M22-K10	1			

			Date	27.Sep.2024	Mc Donald`s DK - Skjern ventilation		Summarized parts list	Fabr.. Nr. 7297		=	Page 150		
				KW				+		Auftr. Nr. 24503		D.No.: 9805	Page 160
Change	Date	Name											

Summarized parts list

Mueller

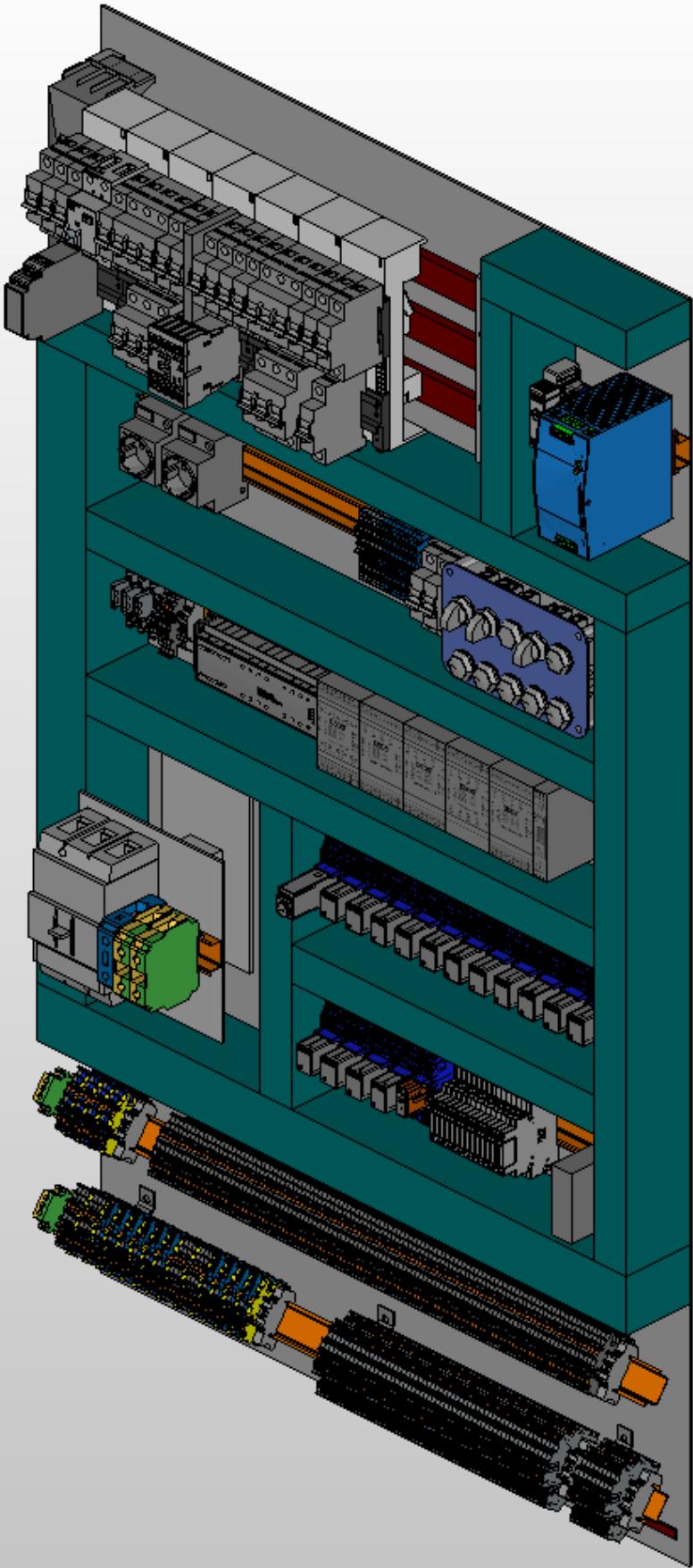
supplier	Order number	designation	Type number	Quantity	unit price	total price
Finder Relais						
	7T.81.0.000.2303	cabinet temperature sensor cooling	7T.81.0.000.2303	1		
	85.04.8.240.0000	Miniature Plug-in timer, Multi-function (AI, DI, GI, SW) - 4 pole, 7 A - AC (50/60Hz) - 230...240 V	85.04.8.240.0000 + 94.P4	1		
	55.34.8.230.0040	Relay 4 changeover contact 230 V AC	55.34.8.230.0040 + 94.P4	5		
	55.34.9.024.0090	Relay 4 changeover contact 24 V DC	55.34.9.024.0090 + 94.P4	10		
	38.51.7.024.0050	Koppelrelais 24V DC 1W mit LED	38.51.7.024.0050	15		
	46.52.9.024.0074	Relay 2 changeover contact 24 V DC	46.52.9.024.0074 + 97.P2	1		
	7U.00.8.230.0010	plug socket 230V / 10 A grey	7U.00.8.230.0010	2		
	IX2400	IXrouter3 Ethernet	IX2400	1		
MeanWell						
	NDR-240-24	power adapter 230V AC / 24V DC - 10A	NDR-240-24	1		
Mueller Schaltanlagen GmbH						
		operating panel 250 x 180 mm	Schaltpanel	1		
Murr Electronik						
		subplate with 16 solder points	MP 16	1		
Phoenix Contact						
	0920083	Fuse modular terminal block	USIG + ST-SI	1		
		Disconnect Terminal with resistance 0,5 W	P-CO	3		
	3210185	Disconnect and test disconnect rail-mount terminal block	PT 2,5-TG	3		
	3209578	Feed-through terminal	PT 2,5-QUATTRO	5		
	3209581	Feed-through terminal	PT 2,5-QUATTRO BU	9		
	3214024	Installation ground terminal block	PTI 16/S-PE	5		
	3213953	Installation level terminal block	PTI 2,5-L/L	4		
	3213949	Installation ground terminal block	PTI 2,5-PE/L/L	2		
	32 13 946	Three-tier terminal L / N / PE	PTI 2,5-PE/L/NT	6		
	3214029	Installation terminal block	PTI 16/S	4		
	3214025	N disconnect terminal block	PTN 16/S	4		

			Date	27.Sep.2024	Mc Donald`s DK - Skjern ventilation		Summarized parts list	Fabr.. Nr. 7297		=		Page 150.a
				KW						+		
Change	Date	Name								Auftr. Nr. 24503	D.No.: 9805	

Summarized parts list

Mueller

supplier	Order number	designation	Type number	Quantity	unit price	total price
Phoenix Contact						
	3213968	Installation terminal block	PTI 2,5	119		
	3213969	Installation terminal block	PTI 2,5 BU	6		
	3213962	Installation ground terminal block	PTI 2,5-PE	5		
	3009105	High-current terminal block	UKH 50 BU	1		
	0443049	PE - Terminal 50 qmm	USLKG 50	2		
	0443010	Ground modular terminal block	USLKG 16	1		
	3209604	Two-tier terminal 2,5 qmm	PTTBS 2,5	71		
RINCK						
		signal transmitter	MV-REF 10V	1		
Rox Klimatechnik						
		subplate / door	MONTAGEPLATTE	1		
Siemens						
	5SU1356-6KK10	FI / LS - Switch 30 mA - B10	5SU1 356-6KK10	1		



1300 mm

