0	1	2	3	4	5	6	7	8	9

Customer	Rox Klimatechnik	End customer	Mc Donald´s DK - Kalundborg
Street	Langenbacher Str. 25	Street	
ZIP code / City	57586 Weitefeld	ZIP code / City	
Phone	+49 2743 807 0	Phone	
Fax	+49 2743 807 153	Fax	
E-mail	info@rox-online.de	E-mail	

Project number	4615a
Customer number	7560
Commission	Mc Donald´s DK - Kalundborg
Project description	ventilation
Created on	10.09.2025
power supply	bottom
door hinges	left and right
Cabinet size	
Edit date	24.09.2025
by (short name)	D. Preuß
Number of pages	56

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 line
X7 = external voltage
X8 = ex area

Wire colors

primary current	black
230V AC / 230V/0	red / red-white
24V AC / 24V/0	brown / brown-white
24V+ / 24V -	darkblue / darkblue-white
external voltage	Orange
DDC	brown
measuring line	white
neutral conductor	blue
others	violett

EN regulations

HD 60364
EN 61439-1

VDE

VDE 0100
VDE 0660

International IEC

IEC 60364
IEC 61439-1

Before commissioning:
Compare the circuit diagram with the data plates and on-site terminal markings,
as well as the setting values of the motor protection switches.

0	1	2	3	4	5	6	7	8	9

pnlagenbezeichnung	component type	power in kW	electricity in A	voltage in V	rotation in U/min
supply air fan kitchen	GKHM 355-CII.118.6FF IE Gen3	4,44	6,80	400	3650
exhaust fan kitchen		0,90	1,50	400	1160
exhaust fan dishes		0,14	0,89	230	1338
heatpump 1 kitchen	DVM-S, AM040DXMDNG/EU	max 3,95	max 16,10	400	----
heatpump 2 kitchen	DVM-S, AM040DXMDNG/EU	max 3,95	max 16,10	400	----
supply air fan lobby	GKHM 355-CII.118.6FF IE Gen3	4,44	6,80	400	3650
exhaust fan lobby	GKHM 355-CII.118.6FF IE Gen3	4,44	6,80	400	3650
heatpump 1 lobby	DVM-S, AM040DXMDNG/EU	max 3,95	max 16,10	400	----
heatpump 2 lobby	DVM-S, AM040DXMDNG/EU	max 3,95	max 16,10	400	----
air cooling devices		max 23,00	max 60,00	230/400	----
others kitchen		2,00	4,00	400	
others lobby		2,00	4,00	400	
total		58	156,00	400	

table of contents

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F06_001_en

page	page designation	page supplementary field	date	processed by	X
=RLT_1/1	titel page		18.09.2025	daniel.preuss	X
=RLT_1/1a	output date		18.09.2025	daniel.preuss	
=RLT_1/2	table of contents : =RLT_1/1 - =RLT_1/55		18.09.2025	daniel.preuss	X
=RLT_1/2.a	table of contents : =RLT_1/60 - =SSA/1		24.09.2025	daniel.preuss	X
=RLT_1/3	feed in		18.09.2025	daniel.preuss	
=RLT_1/4	phase monitoring		18.09.2025	daniel.preuss	
=RLT_1/5	control voltage 230V AC and 24V DC		18.09.2025	daniel.preuss	
=RLT_1/7	fault reset		18.09.2025	daniel.preuss	
=RLT_1/9	safety line		18.09.2025	daniel.preuss	
=RLT_1/10	air handling unit kitchen		18.09.2025	daniel.preuss	
=RLT_1/11	supply air fan kitchen		18.09.2025	daniel.preuss	
=RLT_1/13	exhaust fan kitchen		18.09.2025	daniel.preuss	
=RLT_1/14	exhaust fan dishes		18.09.2025	daniel.preuss	
=RLT_1/16	flap drives kitchen		18.09.2025	daniel.preuss	
=RLT_1/19	antifreeze thermostat		18.09.2025	daniel.preuss	
=RLT_1/20	heating pump heater valve kitchen		18.09.2025	daniel.preuss	
=RLT_1/21	heatpump 1 kitchen		18.09.2025	daniel.preuss	
=RLT_1/22	heatpump 2 kitchen		18.09.2025	daniel.preuss	
=RLT_1/23	heatpump 1 kitchen indoor unit		18.09.2025	daniel.preuss	
=RLT_1/24	heatpump 2 kitchen indoor unit		18.09.2025	daniel.preuss	
=RLT_1/30	air handling unit lobby		18.09.2025	daniel.preuss	
=RLT_1/31	supply air fan lobby		18.09.2025	daniel.preuss	
=RLT_1/32	exhaust fan lobby		18.09.2025	daniel.preuss	
=RLT_1/36	flap drives lobby		18.09.2025	daniel.preuss	
=RLT_1/37	volume flow regulator		18.09.2025	daniel.preuss	
=RLT_1/38	gas detector		18.09.2025	daniel.preuss	
=RLT_1/41	heatpump 1 lobby		18.09.2025	daniel.preuss	
=RLT_1/42	heatpump 2 lobby		18.09.2025	daniel.preuss	
=RLT_1/43	heatpump 1 lobby indoor unit		18.09.2025	daniel.preuss	
=RLT_1/44	heatpump 2 lobby indoor unit		18.09.2025	daniel.preuss	
=RLT_1/50	unit discription general		18.09.2025	daniel.preuss	
=RLT_1/51	release kitchen ware		18.09.2025	daniel.preuss	
=RLT_1/55	air cooling devices		18.09.2025	daniel.preuss	

table of contents

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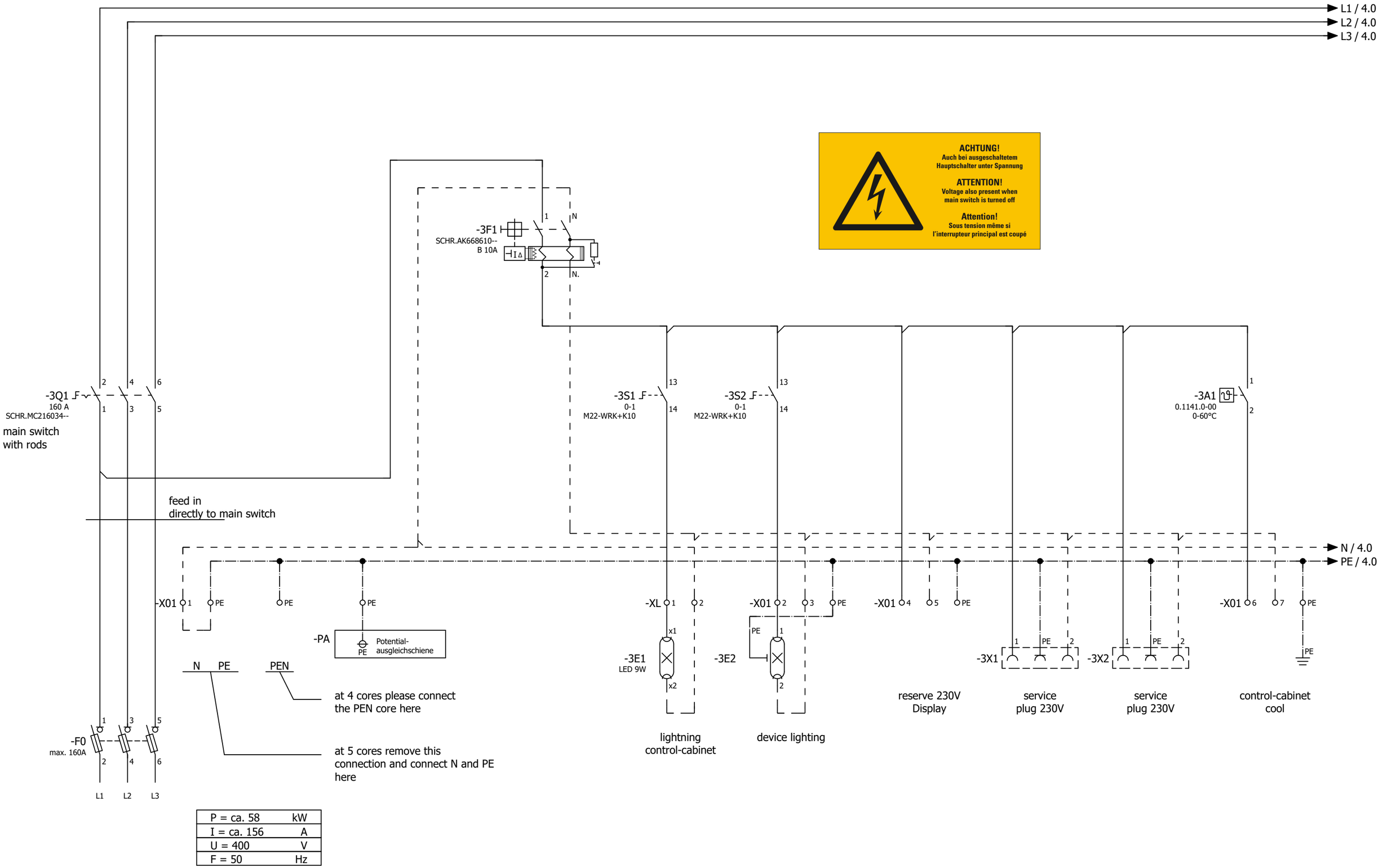
F06_001_en

page	page designation	page supplementary field	date	processed by	X
=RLT_1/60	unit discription DDC		18.09.2025	daniel.preuss	
=RLT_1/61	overview occupancy board 1		18.09.2025	daniel.preuss	
=RLT_1/62	overview occupancy board 2		18.09.2025	daniel.preuss	
=RLT_1/65	overview DEOS module		18.09.2025	daniel.preuss	
=RLT_1/66	DDC - CPU Controller		18.09.2025	daniel.preuss	
=RLT_1/67	CPU - digital inputs 8 x DI		18.09.2025	daniel.preuss	
=RLT_1/68	CPU - digital outputs 8 x DO		18.09.2025	daniel.preuss	
=RLT_1/69	CPU - digital outputs 4 x DO		18.09.2025	daniel.preuss	
=RLT_1/70	CPU - analog outputs 4 x AO		18.09.2025	daniel.preuss	
=RLT_1/71	CPU - analog inputs 8 x AI		18.09.2025	daniel.preuss	
=RLT_1/72	DDC - digital inputs 16 x DI		18.09.2025	daniel.preuss	
=RLT_1/73	DDC - digital inputs 16 x DI		18.09.2025	daniel.preuss	
=RLT_1/74	DDC - analog inputs 8 x AI		18.09.2025	daniel.preuss	
=RLT_1/75	DDC - analog outputs 4 x AO		18.09.2025	daniel.preuss	
=RLT_1/76	DDC - analog inputs 8 x AI		24.09.2025	daniel.preuss	
=RLT_1/77	DDC - analog outputs 4 x AO		18.09.2025	daniel.preuss	
=RLT_1/78	DDC - digital inputs 8 x DI		24.09.2025	daniel.preuss	
=RLT_1/79	DDC - digital outputs 8 x DO		18.09.2025	daniel.preuss	
=RLT_1/80	DDC - analog outputs 4 x AO		18.09.2025	daniel.preuss	
=KBL/1	cable overview : W-9A1 - W-32M1/3		18.09.2025	daniel.preuss	
=KBL/1.a	cable overview : W-32Q1 - W-74B6		18.09.2025	daniel.preuss	
=KBL/1.b	cable overview : W-74B7 - W-78B1		24.09.2025	daniel.preuss	
=SSA/1	cabinet view		18.09.2025	daniel.preuss	

0	1	2	3	4	5	6	7	8	9

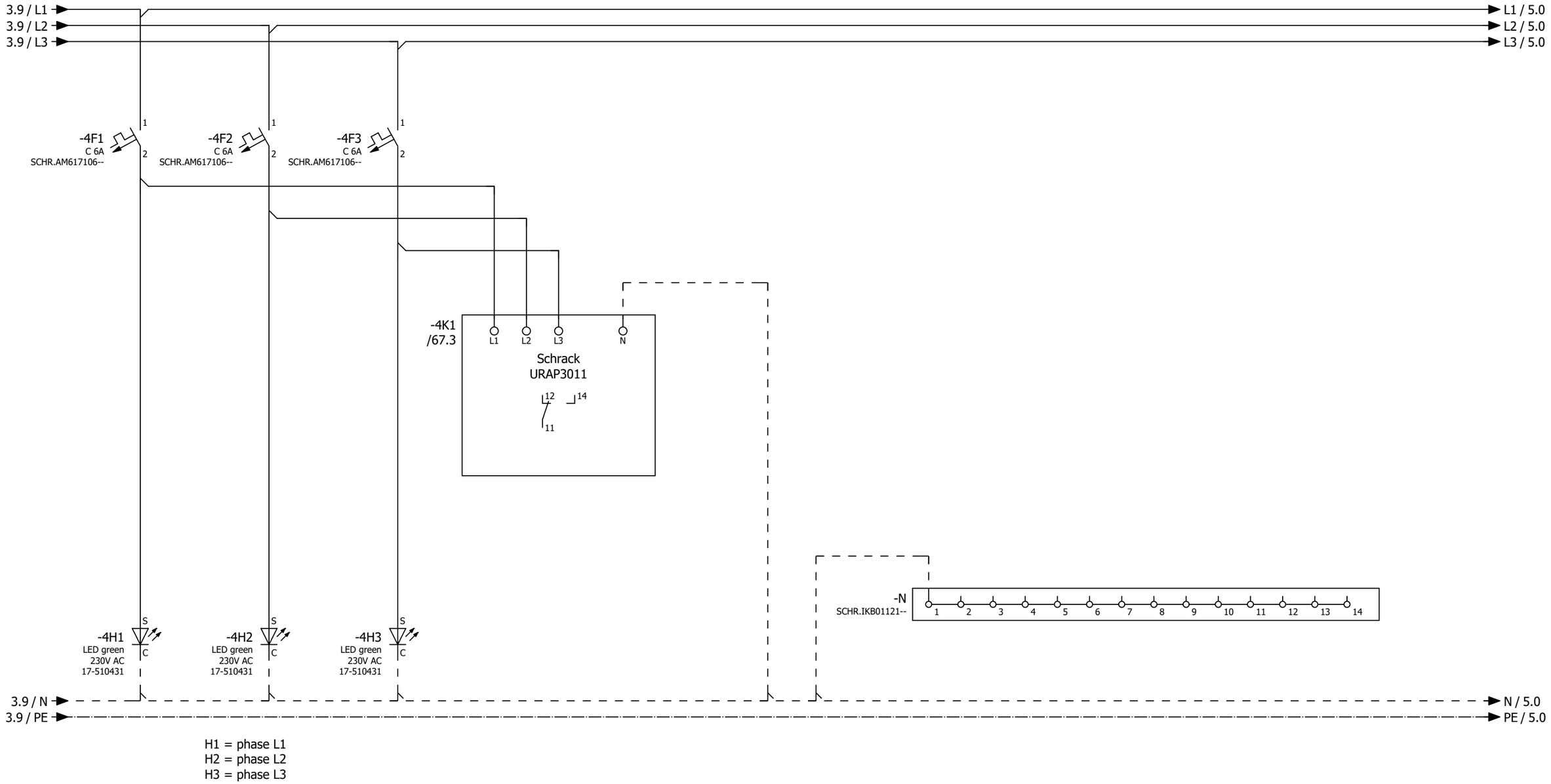


P = ca. 58	kW
I = ca. 156	A
U = 400	V
F = 50	Hz

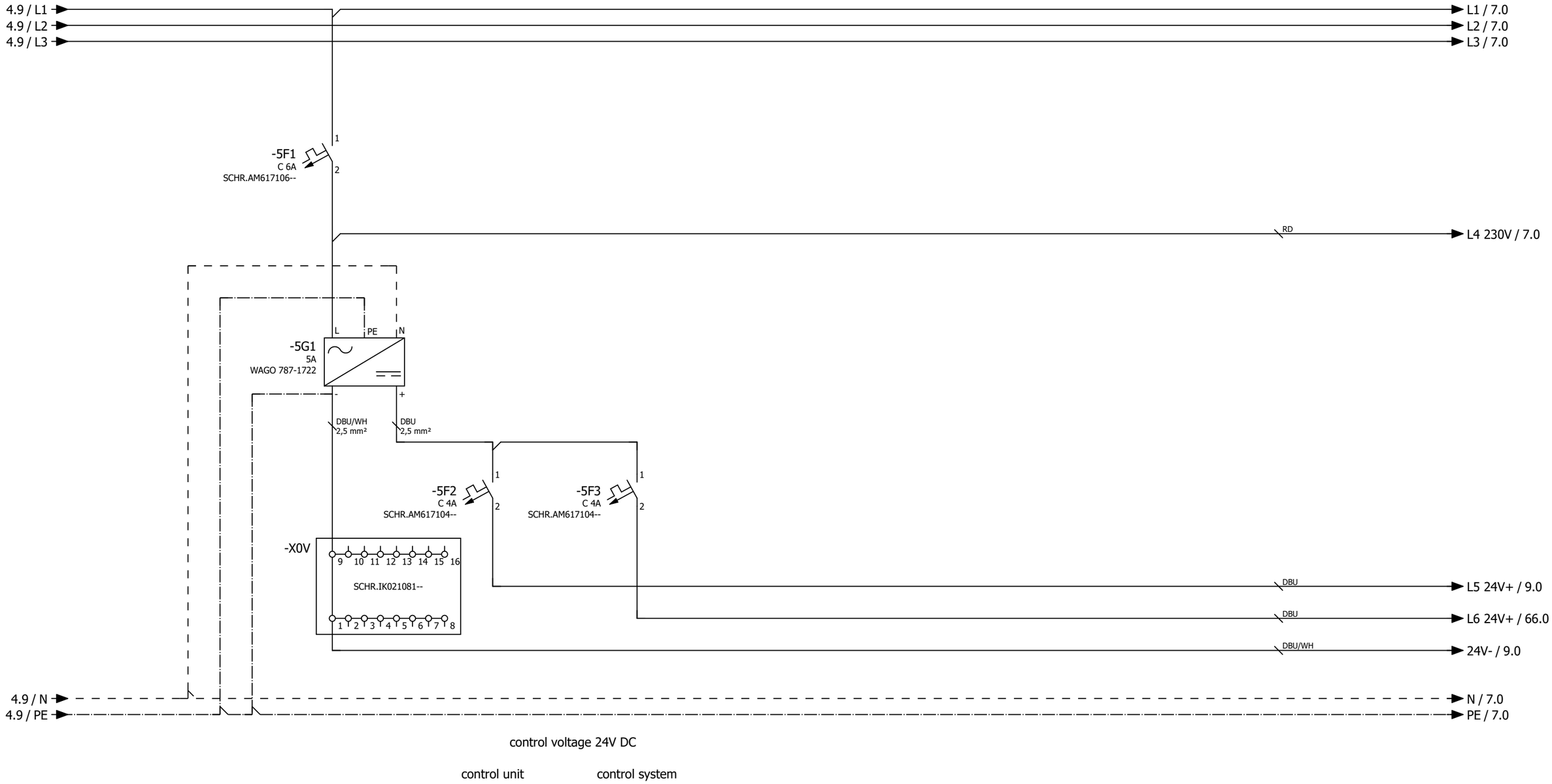
2.a

4

			date	18.09.2025	Mc Donald´s DK - Kalundborg		feed in	= RLT_1	
			edited	daniel.preuss				+	page 3
			checked	M. Wagner	ventilation			custom no: 7560	4615a	page 5/ 56
change	date	name	origin		replacement for	replaced by				



			date	18.09.2025	Mc Donald´s DK - Kalundborg		phase monitoring	= RLT_1	
			edited	daniel.preuss				+	page 4
			checked	M. Wagner	ventilation			custom no: 7560 4615a	page 6/ 56
change	date	name	origin		replacement for	replaced by			



			date	18.09.2025	Mc Donald´s DK - Kalundborg		control voltage 230V AC and 24V DC	= RLT_1	
			edited	daniel.preuss				+	page 5
			checked	M. Wagner	ventilation			custom no: 7560 4615a	page 7/ 56
change	date	name	origin		replacement for	replaced by			

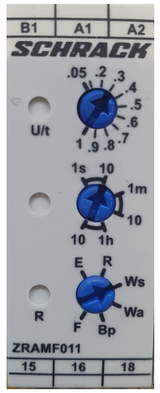
5.9 / L1 → L1 / 9.0
5.9 / L2 → L2 / 9.0
5.9 / L3 → L3 / 9.0
5.9 / L4 230V → L4 230V /

-7K1
pules relay
Schrack
ZRAMF011

-7S1
M22-D-S+K01
11
12

-68K1
/68.4
11
12
14

A2 A1 B1 25 15 16 18



-7K2
SCHR.PT570730--
230VAC
A1
A2

5.9 / N → N / 9.0
5.9 / PE → PE / 9.0

14
12 — 11 /9.4
24
22 — 21 /19.4
34
32 — 31
44
42 — 41 /67.2

5 9

			date	18.09.2025	Mc Donald´s DK - Kalundborg		fault reset		= RLT_1	
			edited	daniel.preuss					+	page 7
			checked	M. Wagner	ventilation			custom no: 7560	4615a	page 8/ 56
change	date	name	origin		replacement for	replaced by				

7.9 / L1 → L1 / 11.0
7.9 / L2 → L2 / 11.0
7.9 / L3 → L3 / 11.0

5.9 / L5 24V+ → L5 24V+ / 11.0

-9K1 /9.4 (11, 12, 14)

-7K2 /7.3 (11, 12, 14)
-9K1 /9.4 (21, 22, 24)

-9K1 24VDC SCHR.PT570024-- (A1, A2)
-9K2 24VDC SCHR.PT570024-- (A1, A2)
-9K3 24VDC SCHR.PT570024-- (A1, A2)

5.9 / 24V- → 24V- / 11.0
7.9 / N → N / 11.0
7.9 / PE → PE / 11.0

safety line kitchen
safety line lobby

-X3 (1, 2, 3, 4, 5)

-W-9A1
J-Y(ST)Y
4x2x0,8
RD/BU | WH/YE | WH | GN | WH/BN

-9A1
-S (1, 2)
-H1 (x1, x2)
-H2 (x1, x2)

unit off | unit ok | unit is off

fire emergency shutdown

14 / 12 — 11 /9.2
24 / 22 — 21 /9.4
34 / 32 — 31
44 / 42 — 41 /78.5

14 / 12 — 11 /11.3
24 / 22 — 21 /13.3
34 / 32 — 31 /14.4
44 / 42 — 41

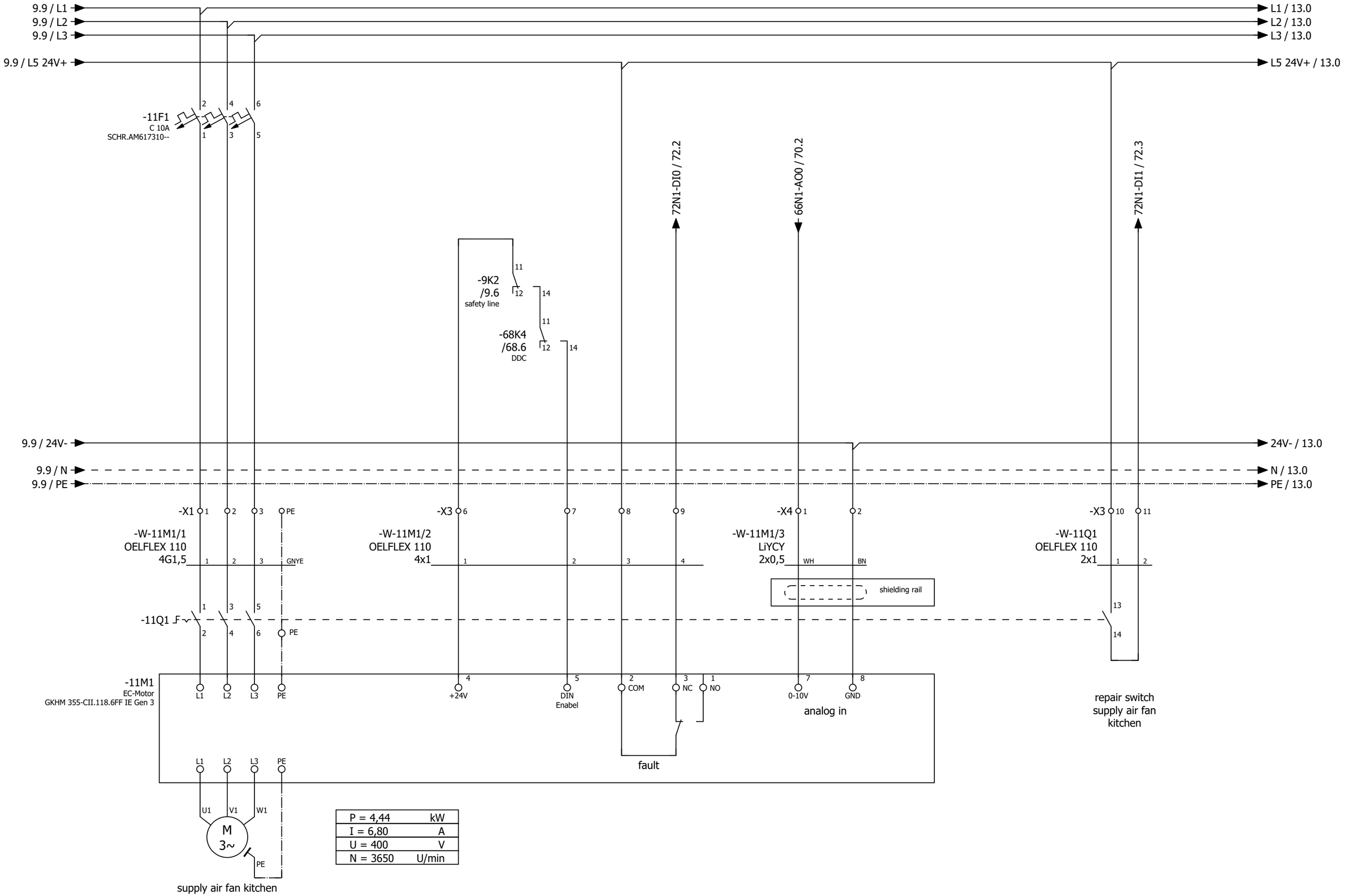
14 / 12 — 11 /31.3
24 / 22 — 21 /32.3
34 / 32 — 31
44 / 42 — 41

7 | 10

			date	18.09.2025	Mc Donald´s DK - Kalundborg		safety line	= RLT_1	
			edited	daniel.preuss				+	page 9
			checked	M. Wagner	ventilation			custom no: 7560	4615a	page 9/ 56
change	date	name	origin		replacement for	replaced by			

AHU
KITCHEN

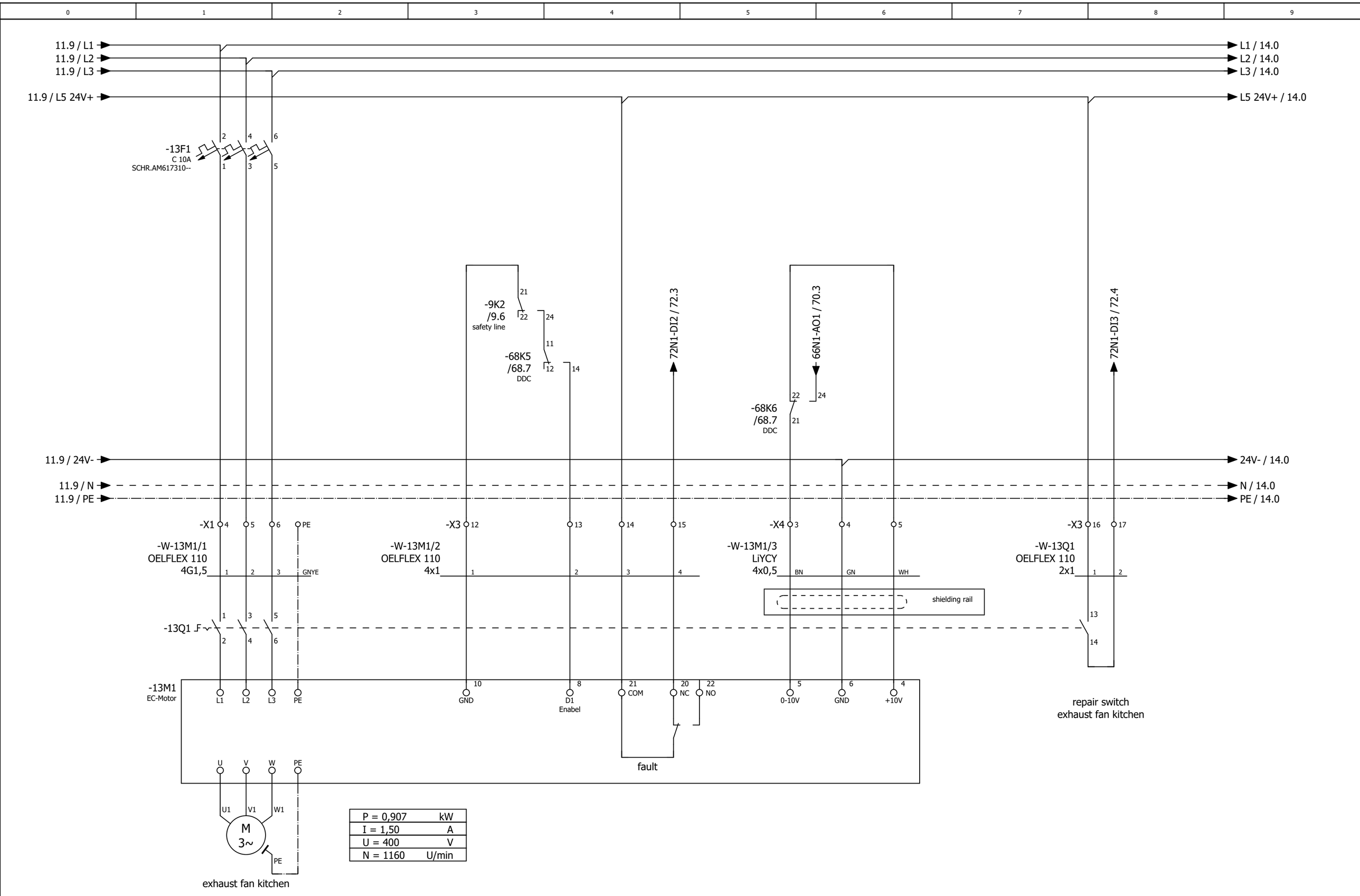
			date	18.09.2025	Mc Donald´s DK - Kalundborg		air handling unit kitchen	= RLT_1	
			edited	daniel.preuss				+	page **10**
			checked	M. Wagner	ventilation			custom no: 7560 4615a	page **10/ 56**
change	date	name	origin		replacement for	replaced by			



P = 4,44	kW
I = 6,80	A
U = 400	V
N = 3650	U/min

10 13

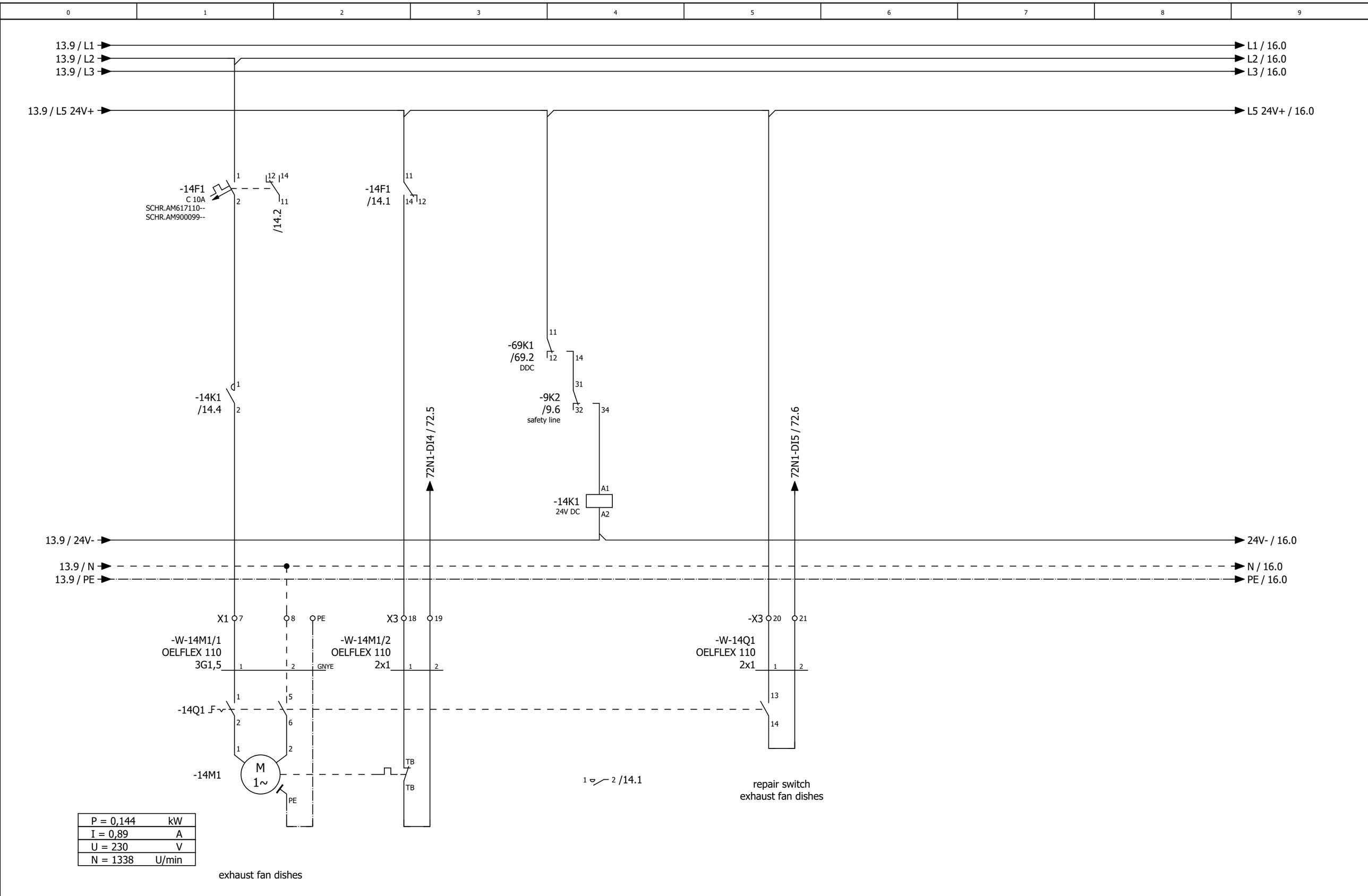
			date	18.09.2025	Mc Donald´s DK - Kalundborg	ROX KLIMATECHNIK	supply air fan kitchen	= RLT_1	
			edited	daniel.preuss	ventilation			+	page 11
			checked	M. Wagner			custom no: 7560	4615a	page 11/ 56
change	date	name	origin		replacement for	replaced by			



P = 0,907	kW
I = 1,50	A
U = 400	V
N = 1160	U/min

11 14

			date	18.09.2025	Mc Donald´s DK - Kalundborg	ROX KLIMATECHNIK	exhaust fan kitchen	= RLT_1	
			edited	daniel.preuss	ventilation			+	page 13
			checked	M. Wagner				custom no: 7560 4615a	page 12/ 56
change	date	name	origin		replacement for	replaced by			



P = 0,144	kW
I = 0,89	A
U = 230	V
N = 1338	U/min

13

16

			date	18.09.2025	Mc Donald´s DK - Kalundborg	ROX KLIMATECHNIK	exhaust fan dishes	= RLT_1	
			edited	daniel.preuss	ventilation			+	page 14
			checked	M. Wagner				custom no: 7560	4615a
change	date	name	origin		replacement for	replaced by			page 13/ 56

14.9 / L1 → L1 / 19.0
14.9 / L2 → L2 / 19.0
14.9 / L3 → L3 / 19.0

14.9 / L5 24V+ → L5 24V+ / 19.0

-68K3
/68.5
DDC
11
12
14

-68K6
/68.7
DDC
12
14
11

14.9 / 24V- → 24V- / 19.0
14.9 / N → N / 19.0
14.9 / PE → PE / 19.0

-X3 22 23 24 | 25 26 27 | 28 29 30

-W-16Y1
OELFLEX 110
3x1
1 2 3

-W-16Y2
OELFLEX 110
3x1
1 2 3

-W-16Y3
OELFLEX 110
3x1
1 2 3

-16Y1
2 1 2
24V 0V Auf-Zu
Drehsinn 0 1
SMA24A

-16Y2
2 1 2
24V 0V Auf-Zu
Drehsinn 0 1
SMA24A

-16Y3
2 1 2
24V 0V Auf-Zu
Drehsinn 0 1
SMA24A

outside air damper
kitchen

exhaust air flap
kitchen
(option)

exhaust air flap
dishes
(option)

14 19

			date	18.09.2025	Mc Donald´s DK - Kalundborg		flap drives kitchen	= RLT_1	
			edited	daniel.preuss				+	page 16
			checked	M. Wagner	ventilation			custom no: 7560 4615a	page 14/ 56
change	date	name	origin		replacement for	replaced by			

16.9 / L1 → L1 / 20.0
16.9 / L2 → L2 / 20.0
16.9 / L3 → L3 / 20.0

16.9 / L5 24V+ → L5 24V+ / 20.0

-7K2 /7.3: 21 / 22 / 24
-19K2 /19.4: 21 / 22 / 24

-19K1 24VDC SCHR.PT570024--: A1 / A2
-19K2 24VDC SCHR.PT570024--: A1 / A2

16.9 / 24V- → 24V- / 20.0
16.9 / N → N / 20.0
16.9 / PE → PE / 20.0

X3: 31 | 32 | 33 | 34

-W-19B1
OELFLEX 110
4x1
1 | 2 | 3 | 4

-19B1
1 | 2 | 3 | 1 | 2 | 3
5°C
7°C
ST2
ST1
JTF21

14 / 12 / 11 /20.2
24 / 22 / 21 /20.5
34 / 32 / 31
44 / 42 / 41 /67.5

14 / 12 / 11
24 / 22 / 21 /19.5
34 / 32 / 31
44 / 42 / 41

antifreeze thermostat

16 20

			date	18.09.2025	Mc Donald´s DK - Kalundborg		antifreeze thermostat	= RLT_1	
			edited	daniel.preuss				+	page 19
			checked	M. Wagner	ventilation			custom no: 7560	4615a	page 15/ 56
change	date	name	origin		replacement for	replaced by			

19.9 / L1 → L1 / 21.0
19.9 / L2 → L2 / 21.0
19.9 / L3 → L3 / 21.0
19.9 / L5 24V+ → L5 24V+ / 21.0

-20F1
C 10A
SCHR.AM617110--
SCHR.AM900099--
1 | 12 | 14
2 | 11
/20.2

-20F1
/20.1
11
14 | 12

-20A1
A1
KMA-F8
A2 | Y | YR | B1 | B2

-69K4
/69.4
DDC
11
14 | 12

-19K1
/19.4
11
14 | 12

72N1-DI9 / 73.3

76N1-AO0 / 77.2

-19K1
/19.4
22 | 24
21

19.9 / 24V- → 24V- / 21.0
19.9 / N → N / 21.0
19.9 / PE → PE / 21.0

X1 | 9 | 10 | PE
-W-20M1
OELFLEX 110
3G1,5
1 | 2 | GNYE

X3 | 35 | 36

-20M1
1 | 2
M
1~
PE

heating pump
kitchen

X4 | 6 | 7 | 8 | 9
-W-20Y1
LiYCY
4x1
BN | GN | WH | YE

shielding rail

-20Y1
01 | MM | 03 | 05
G | G0 | Y | U

Frakta VA500C.1

heater valve
kitchen

			date	18.09.2025	Mc Donald´s DK - Kalundborg	ROX KLIMATECHNIK	heating pump heater valve kitchen	= RLT_1
			edited	daniel.preuss				+
			checked	M. Wagner	ventilation			page 20
change	date	name	origin		replacement for	replaced by	custom no: 7560 4615a	page 16/ 56

20.9 / L1 → L1 / 22.0
20.9 / L2 → L2 / 22.0
20.9 / L3 → L3 / 22.0
20.9 / L5 24V+ → L5 24V+ / 22.0

-21F1
C 20A
SCHR.AM617320--
2 4 6
1 3 5

-21F2
C 10A
SCHR.AM617110--
1
2

WH → F1-1 / 23.0
VT → F2-1 / 23.0

20.9 / 24V- → 24V- / 22.0
20.9 / N → N / 22.0
20.9 / PE → PE / 22.0

X1 11 12 13 14 PE
-W-21A1/1
OELFLEX 110
5G2,5
1 2 3 4 GNYE

-X6 1 2
-X7 1 2
-W-21A1/2
LiYCY
4x1
BN GN WH YE
shielding rail

-X1 15 16 PE
-W-21A2/1
OELFLEX
3G1,5
1 2 GNYE

-21A1
heatpump
DVM-S, AM040DXMDNG/EU
L1 L2 L3 N PE F1 F2 5 6
MIM-B14
performance reduction

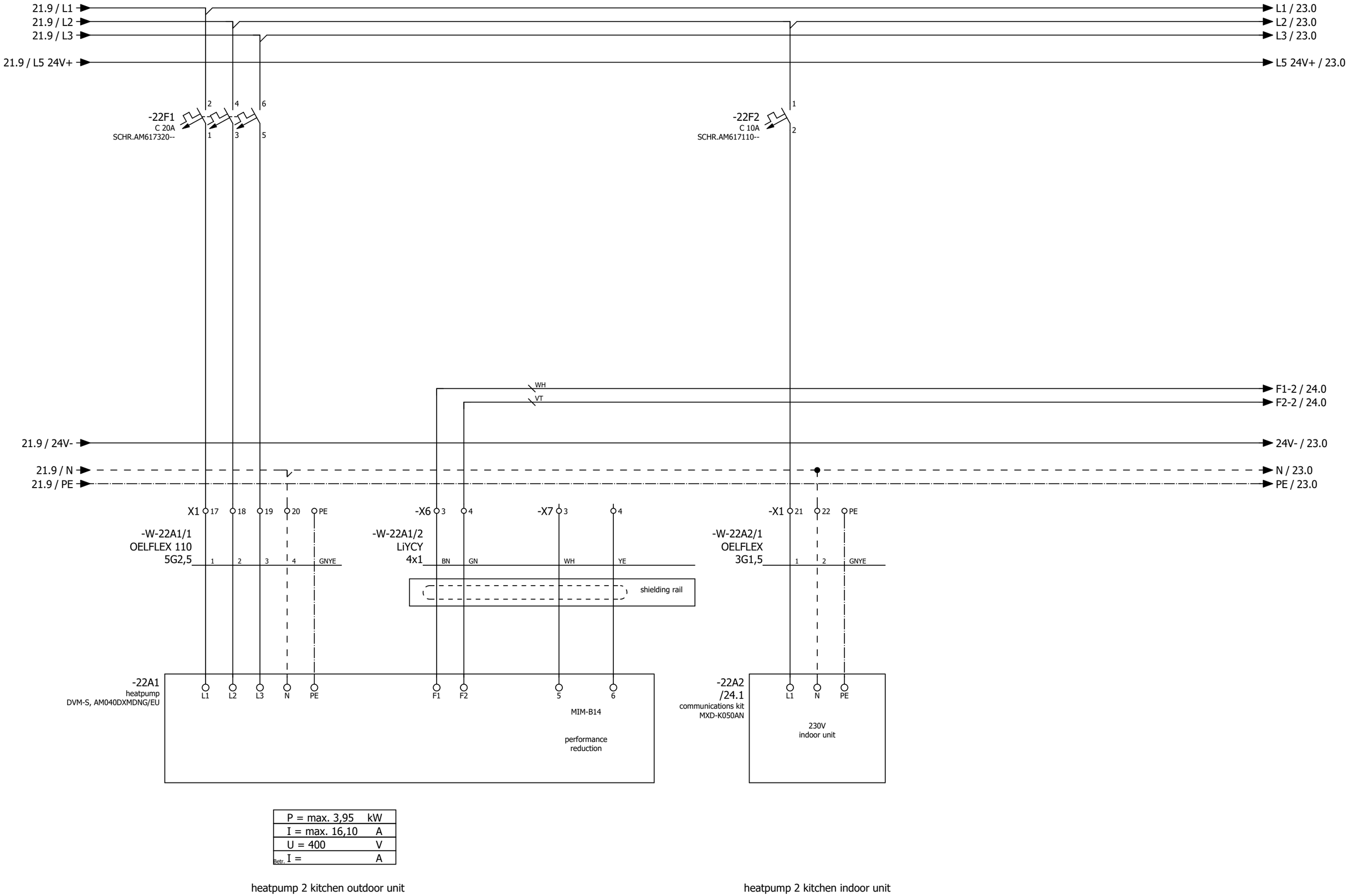
-21A2
/23.1
communications kit
MXD-K050AN
L1 N PE
230V
indoor unit

P = max. 3,95	kW
I = max. 16,10	A
U = 400	V
Betr. I =	A

heatpump 1 kitchen outdoor unit

heatpump 1 kitchen indoor unit

			date	18.09.2025	Mc Donald´s DK - Kalundborg		heatpump 1 kitchen	= RLT_1
			edited	daniel.preuss				+
			checked	M. Wagner	ventilation			custom no: 7560 4615a
change	date	name	origin		replacement for	replaced by		page 21 / page 17/ 56



P = max. 3,95	kW
I = max. 16,10	A
U = 400	V
Betr. I =	A

heatpump 2 kitchen outdoor unit

heatpump 2 kitchen indoor unit

21

23

			date	18.09.2025	Mc Donald´s DK - Kalundborg		heatpump 2 kitchen	= RLT_1	
			edited	daniel.preuss				+	page 22
			checked	M. Wagner	ventilation			custom no: 7560	4615a	page 18/ 56
change	date	name	origin		replacement for	replaced by				

22.9 / L1
22.9 / L2
22.9 / L3
L1 / 24.0
L2 / 24.0
L3 / 24.0

22.9 / L5 24V+
L5 24V+ / 24.0

66N1-AO3 / 24.0

-69K3 /69.3 DDC
-69K2 /69.3 DDC
72N1-DI6 / 72.6
72N1-DI7 / 72.7
-69K2 /69.3 DDC
-23R1 /24.6
8,2k
18K
-23K1 SCHR.PT570730--230VAC

21.9 / F1-1
21.9 / F2-1
22.9 / 24V-
22.9 / N
22.9 / PE
24V- / 24.0
N / 24.0
PE / 24.0

X6 5 6 | X4 10 11 | X3 37 38 39 | 40 41 42 43 44 | X2 1 2 PE

-W-21A2/2
LiYCY
12x0,5
VT PK | BN WH | BK RD BU | GY GY/PK RD/BU GN YE

-W-21A2/3
OELFLEX
3G1,5
1 2 GNYE

shielding rail

-21A2
/21.5
communications kit

F1 F2 | Av1 Av2 | COM HEAT COOL | 1 2 3 4 TR TR F2 | VD VD PE

Bus
Temperatur setpoint
MIM-B14
fault
operation
defrost

F3 F4
23A1
electrical cabinet

14 12 11
24 22 21
34 32 31
44 42 41 /73.2

Samsung Display

heatpump 1 kitchen indoor unit

22 24

			date	18.09.2025	Mc Donald´s DK - Kalundborg	ROX KLIMATECHNIK	heatpump 1 kitchen indoor unit	= RLT_1
			edited	daniel.preuss	ventilation			+ page 23
			checked	M. Wagner			custom no: 7560	4615a page 19/ 56
change	date	name	origin		replacement for	replaced by		

23.9 / L1
23.9 / L2
23.9 / L3
23.9 / L5 24V+
23.9 / 66N1-AO3
22.9 / F1-2
22.9 / F2-2
23.9 / 24V-
23.9 / N
23.9 / PE

L1 / 31.0
L2 / 31.0
L3 / 31.0
L5 24V+ / 31.0
66N1-AO3 / 70.6
24V- / 31.0
N / 31.0
PE / 31.0

66N1-DI5 / 67.6
66N1-DI6 / 67.6

-79K7 /79.6 DDC
-79K6 /79.6 DDC
-79K6 /79.6 DDC
-23R1 /23.6 8,2k 18K
-24K1 SCHR.PT570730--230VAC

-W-22A2/2 LiYCY 12x0,5
VT PK BN WH BK RD BU GY GY/PK RD/BU GN YE
shielding rail

-W-22A2/3 OELFLEX 3G1,5
1 2 GNYE

-22A2 /22.5 communications kit
F1 F2 Av1 Av2 COM HEAT COOL
1 2 3 4 TR TR F2 VD VD PE

Bus
Temperatur setpoint
MIM-B14
fault
operation
defrost

heatpump 2 kitchen indoor unit

F3 F4
-24A1 electrical cabinet
Samsung Display

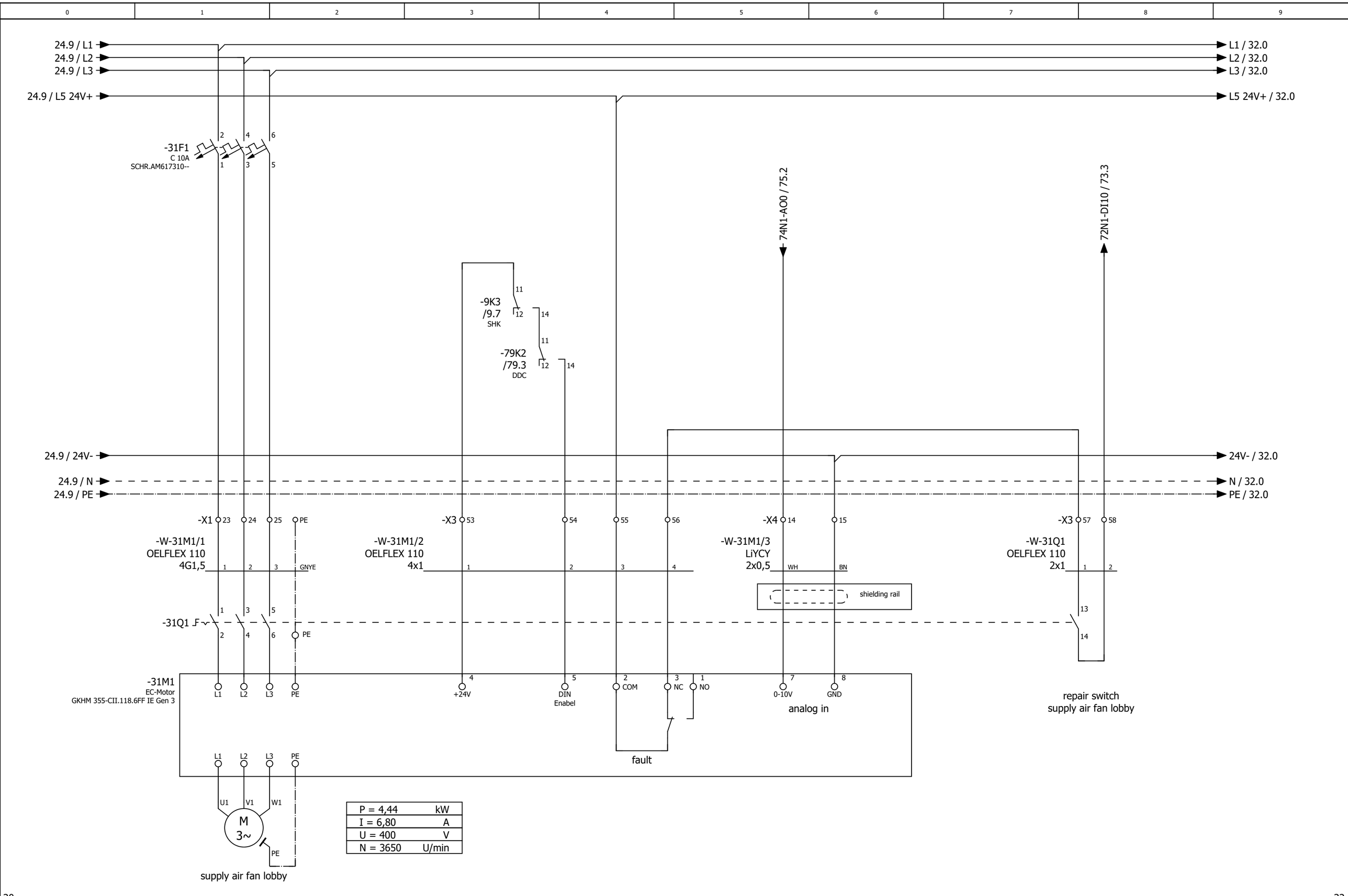
14 12 11
24 22 21
34 32 31
44 42 41 /73.2

23 30

			date	18.09.2025	Mc Donald´s DK - Kalundborg	ROX KLIMATECHNIK	heatpump 2 kitchen indoor unit	= RLT_1	
			edited	daniel.preuss				+	page 24
			checked	M. Wagner	ventilation			custom no: 7560 4615a	page 20/ 56
change	date	name	origin		replacement for	replaced by			

AHU
LOBBY

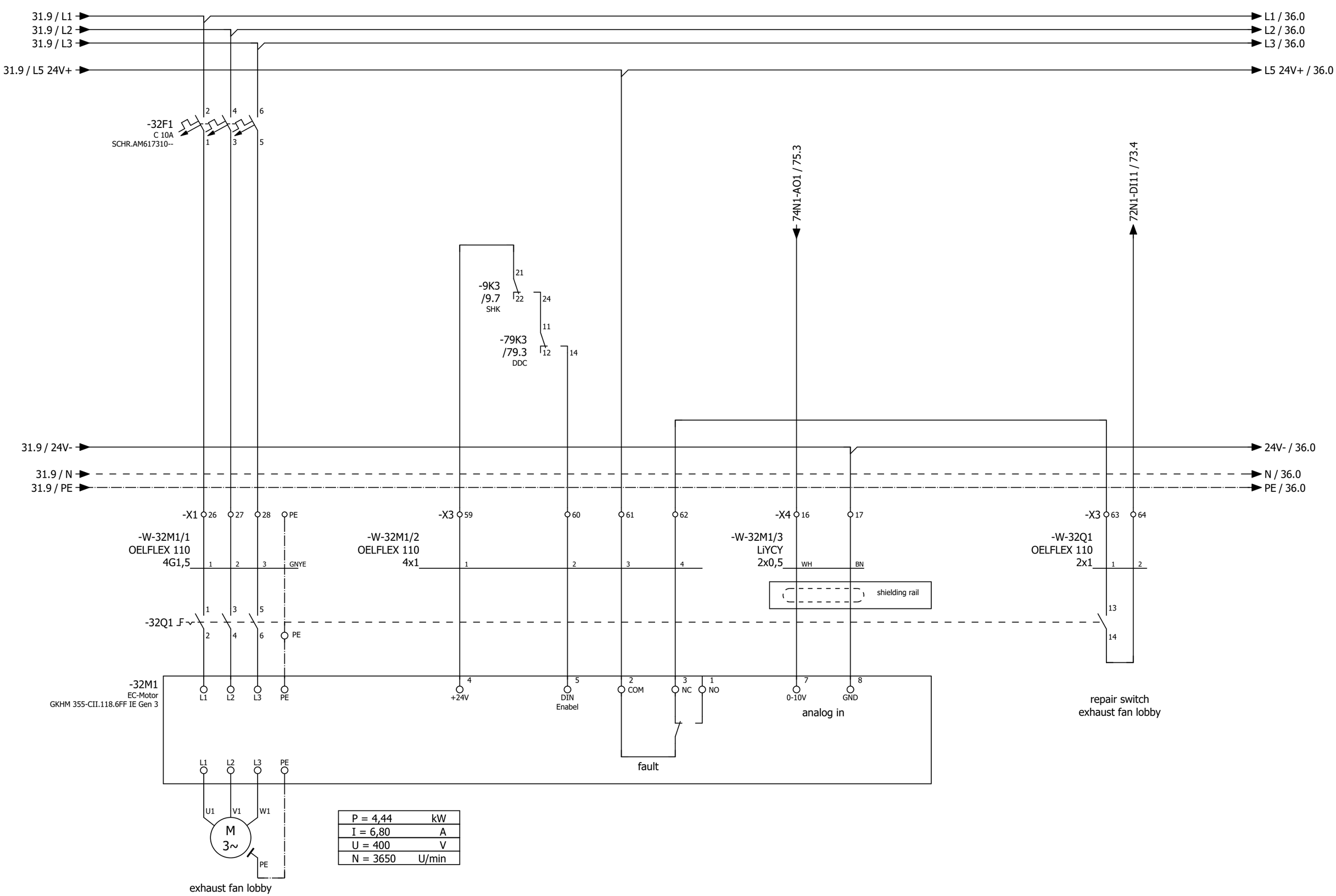
			date	18.09.2025	Mc Donald´s DK - Kalundborg		air handling unit lobby	= RLT_1	
			edited	daniel.preuss				+	page **30**
			checked	M. Wagner	ventilation			custom no: 7560 4615a	page **21/ 56**
change	date	name	origin		replacement for	replaced by			



			date	18.09.2025	Mc Donald´s DK - Kalundborg		supply air fan lobby		= RLT_1
			edited	daniel.preuss	ventilation				+
			checked	M. Wagner				custom no: 7560	4615a
change	date	name	origin		replacement for	replaced by			

page 31

page 22/ 56



31

36

			date	18.09.2025	Mc Donald´s DK - Kalundborg	ROX KLIMATECHNIK	exhaust fan lobby	= RLT_1	
			edited	daniel.preuss				+	page 32
			checked	M. Wagner	ventilation			custom no: 7560 4615a	page 23/ 56
change	date	name	origin		replacement for	replaced by			

32.9 / L1 → L1 / 37.0
32.9 / L2 → L2 / 37.0
32.9 / L3 → L3 / 37.0

32.9 / L5 24V+ → L5 24V+ / 37.0

-79K1
/79.2
DDC
11
12
14

74N1-AO3 / 75.6

32.9 / 24V- → 24V- / 37.0
32.9 / N → N / 37.0
32.9 / PE → PE / 37.0

X3 65 66 67

-W-36Y1
OELFLEX 110
3x1
1 2 3

-36Y1
2 1 2
24V 0V Auf-Zu
Drehsinn 0 1
NMA24A

outside air damper
lobby

68 69 70

-W-36Y2
OELFLEX 110
3x1
1 2 3

-36Y2
2 1 2
24V 0V Auf-Zu
Drehsinn 0 1
NMA24A

exhaust air flap
lobby

-X4 18 19 20 21

-W-36Y3
LiYCY
4x1
BN GN WH YE

shielding rail

-36Y3
1 2 8 9
G G0 Y U
SM24A-SR

actuator plate
heat exchanger lobby

32 37

			date	18.09.2025	Mc Donald´s DK - Kalundborg		flap drives lobby		= RLT_1	
			edited	daniel.preuss					+	page 36
			checked	M. Wagner	ventilation			custom no: 7560	4615a	page 24/ 56
change	date	name	origin		replacement for	replaced by				

36.9 / L1 → L1 / 38.0
36.9 / L2 → L2 / 38.0
36.9 / L3 → L3 / 38.0

36.9 / L5 24V+ → L5 24V+ / 38.0

36.9 / 24V- → 24V- / 38.0
36.9 / N → N / 38.0
36.9 / PE → PE / 38.0

80N1-AO0 / 80.2
80N1-AO1 / 80.3
80N1-AO2 / 80.5
80N1-AO3 / 80.6

X4 22 23 24 25

-W-37Y1 LiYCY 4x1 BN GN WH YE
-W-37Y2 LiYCY 4x1 BN GN WH YE
-W-37Y3 LiYCY 4x1 BN GN WH YE
-W-37Y4 LiYCY 4x1 BN GN WH YE

26 27 28 29
30 31 32 33
34 35 36 37

shielding rail

-37Y1 -37Y2 -37Y3 -37Y4

+ - w u
2 1 3 4

24V AC/DC
0...10V IN
0...10V OUT

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

			date	18.09.2025	Mc Donald´s DK - Kalundborg		volume flow regulator	= RLT_1	
			edited	daniel.preuss				+	page 37
			checked	M. Wagner	ventilation			custom no: 7560 4615a	page 25/ 56
change	date	name	origin		replacement for	replaced by			

37.9 / L1 → L1 / 41.0
37.9 / L2 → L2 / 41.0
37.9 / L3 → L3 / 41.0

37.9 / L5 24V+ → L5 24V+ / 41.0

37.9 / 24V- → 24V- / 41.0
37.9 / N → N / 41.0
37.9 / PE → PE / 41.0

67.7
66N1-DI7

78.3
78N1-DI2

X3 71 72 73 74

-W-38A1
OELFLEX 110
4x1

1 2 3 4

-38A1

+ - B A GND SH AN+ GND COM NC NO

24V AC/DC | Modbus | Analog

Alarm

MSA MGS-400

gas detector
kitchen

X3 75 76 77 78

-W-38A2
OELFLEX 110
4x1

1 2 3 4

-38A2

+ - B A GND SH AN+ GND COM NC NO

24V AC/DC | Modbus | Analog

Alarm

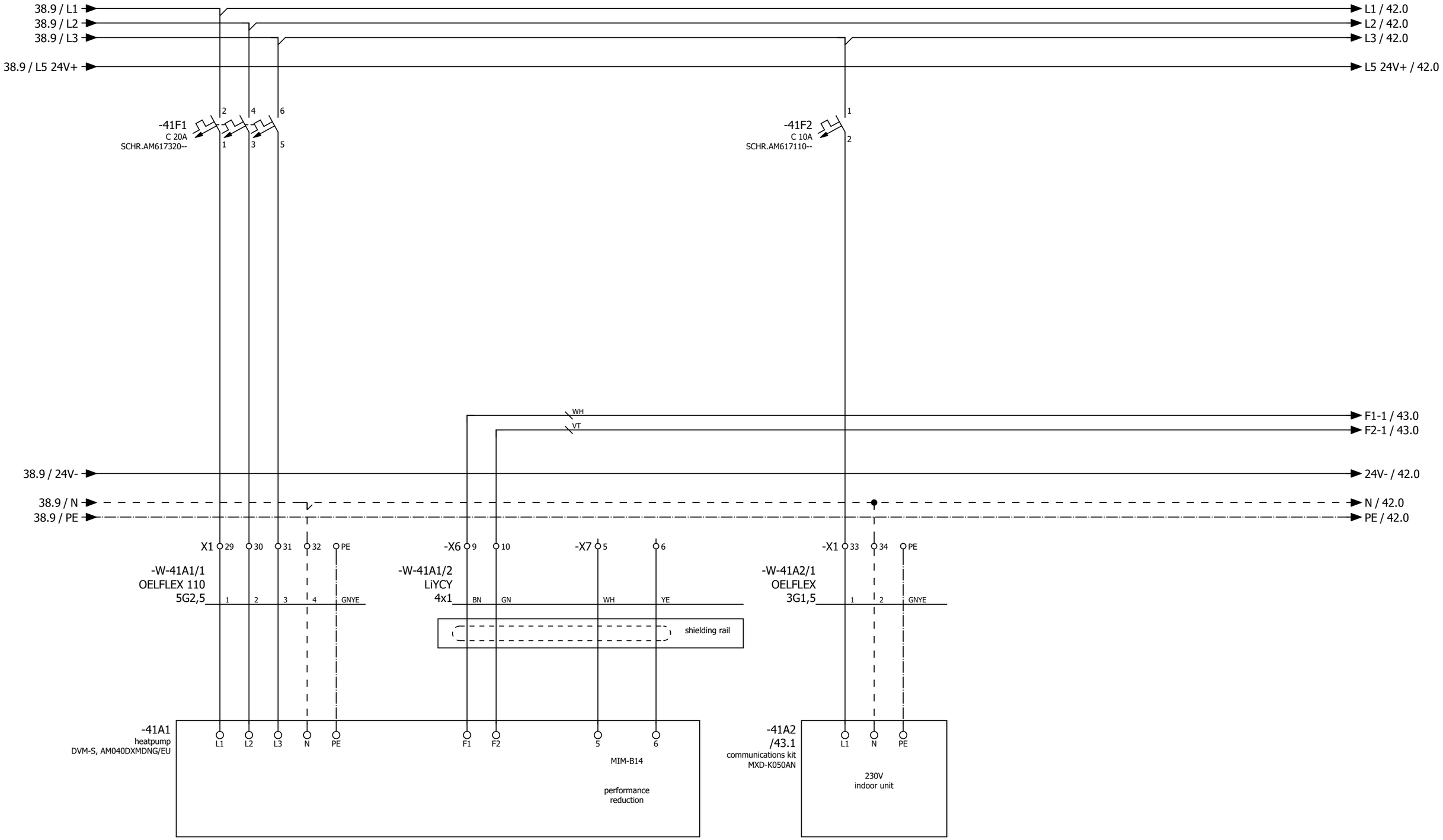
MSA MGS-400

gas detector
lobby

37

41

			date	18.09.2025	Mc Donald´s DK - Kalundborg		gas detector	= RLT_1	
			edited	daniel.preuss				+	page **38**
			checked	M. Wagner	ventilation			custom no: 7560 4615a	page **26/ 56**
change	date	name	origin		replacement for	replaced by			



P = max. 3,95	kW
I = max. 16,10	A
U = 400	V
Betr. I =	A

heatpump 1 lobby outdoor unit

heatpump 1 kitchen indoor unit

			date	18.09.2025	Mc Donald´s DK - Kalundborg		heatpump 1 lobby		= RLT_1
			edited	daniel.preuss					+
			checked	M. Wagner	ventilation			custom no: 7560	4615a
change	date	name	origin		replacement for	replaced by			

41.9 / L1 → L1 / 43.0
41.9 / L2 → L2 / 43.0
41.9 / L3 → L3 / 43.0
41.9 / L5 24V+ → L5 24V+ / 43.0

-42F1
C 20A
SCHR.AM617320--
2 4 6
1 3 5

-42F2
C 10A
SCHR.AM617110--
1
2

WH → F1-2 / 44.0
VT → F2-2 / 44.0

41.9 / 24V- → 24V- / 43.0
41.9 / N → N / 43.0
41.9 / PE → PE / 43.0

-W-42A1/1
OELFLEX 110
5G2,5
X1 35 36 37 38 PE
1 2 3 4 GNYE

-W-42A1/2
LiYCY
4x1
-X6 11 12
-X7 7 8
BN GN WH YE
shielding rail

-W-42A2/1
OELFLEX
3G1,5
-X1 39 40 PE
1 2 GNYE

-42A1
heatpump
DVM-S, AM040DXMDNG/EU
L1 L2 L3 N PE
F1 F2
5 6
MIM-B14
performance reduction

-42A2
/44.1
communications kit
MXD-K050AN
L1 N PE
230V
indoor unit

P = max. 3,95	kW
I = max. 16,10	A
U = 400	V
Betr. I =	A

heatpump 2 kitchen outdoor unit

heatpump 2 kitchen indoor unit

			date	18.09.2025	Mc Donald´s DK - Kalundborg		heatpump 2 lobby	= RLT_1	
			edited	daniel.preuss				+	page 42
			checked	M. Wagner	ventilation			custom no: 7560 4615a	page 28/ 56
change	date	name	origin		replacement for	replaced by			

42.9 / L1 → L1 / 44.0
42.9 / L2 → L2 / 44.0
42.9 / L3 → L3 / 44.0
42.9 / L5 24V+ → L5 24V+ / 44.0
74N1-AO2 / 44.0

-79K5 /79.5 DDC: 11 / 12 / 14
-79K4 /79.4 DDC: 11 / 12 / 14

72N1-DI13 / 73.6
72N1-DI12 / 73.5

-79K4 /79.4 DDC: 21 / 22 / 24
-43R1 /44.6: 1 / 3 / 8,2k / 18K / 2 / 4

-43K1 SCHR.PT570730--230VAC: A1 / A2

41.9 / F1-1
41.9 / F2-1
42.9 / 24V- → 24V- / 44.0
42.9 / N → N / 44.0
42.9 / PE → PE / 44.0

X6 13 14 | X4 38 39 | X3 79 80 81 | 82 83 84 85 86 | X2 5 6 PE

-W-41A2/2 LiYCY 12x0,5: VT PK BN WH BK RD BU GY GY/PK RD/BU GN YE
-W-41A2/3 OELFLEX 3G1,5: 1 2 GNYE

shielding rail

-41A2 /41.5 communications kit
F1 F2 Av1 Av2 COM HEAT COOL | 1 2 3 4 TR TR F2 | VD VD PE

Bus
Temperatur setpoint
MIM-B14
fault
operation
defrost

heatpump 1 lobby indoor unit

-43A1 electrical cabinet: F3 F4

Samsung Display

14 12 11
24 22 21
34 32 31
44 42 41 /73.6

			date	18.09.2025	Mc Donald´s DK - Kalundborg	ROX KLIMATECHNIK	heatpump 1 lobby indoor unit	= RLT_1
			edited	daniel.preuss	ventilation			+ page 43
			checked	M. Wagner			custom no: 7560	4615a page 29/ 56
change	date	name	origin		replacement for	replaced by		

43.9 / L1
43.9 / L2
43.9 / L3
43.9 / L5 24V+
43.9 / 74N1-AO2
42.9 / F1-2
42.9 / F2-2
43.9 / 24V-
43.9 / N
43.9 / PE

L1 / 51.0
L2 / 51.0
L3 / 51.0
L5 24V+ / 51.0
74N1-AO2 / 75.5
24V- / 51.0
N / 51.0
PE / 51.0

-68K2 /68.4 DDC
-79K8 /79.7 DDC
78N1-DI1 / 78.3
78N1-DI0 / 78.2
-79K8 /79.7 DDC
-43R1 /43.6 8,2k 18K
-44K1 SCHR.PT570730--230VAC

X6 15 16 | X4 40 41 | X3 87 88 89 | 90 91 92 93 94 | X2 7 8 PE

-W-42A2/2 LiYCY 12x0,5 — VT PK BN WH BK RD BU GY GY/PK RD/BU GN YE — shielding rail

-W-42A2/3 OELFLEX 3G1,5 — 1 2 GNYE

-42A2 /42.5 communications kit

F1 F2 — Av1 Av2 — COM HEAT COOL — 1 2 3 4 TR TR F2 — VD VD PE

Bus | Temperatur setpoint | MIM-B14

fault | operation | defrost

F3 F4

-44A1 electrical cabinet

Samsung Display

14 12 11 24 22 21 34 32 31 44 42 41 /73.7

heatpump 2 lobby indoor unit

			date	18.09.2025	Mc Donald´s DK - Kalundborg	ROX KLIMATECHNIK	heatpump 2 lobby indoor unit	= RLT_1
			edited	daniel.preuss	ventilation			+ page 44
			checked	M. Wagner			custom no: 7560	4615a page 30/ 56
change	date	name	origin		replacement for	replaced by		

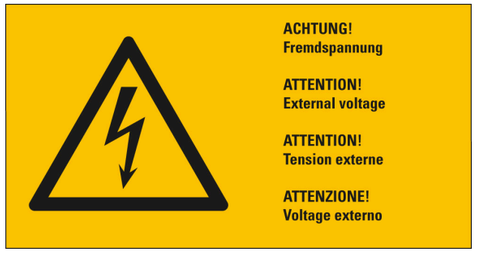
unit discription
general

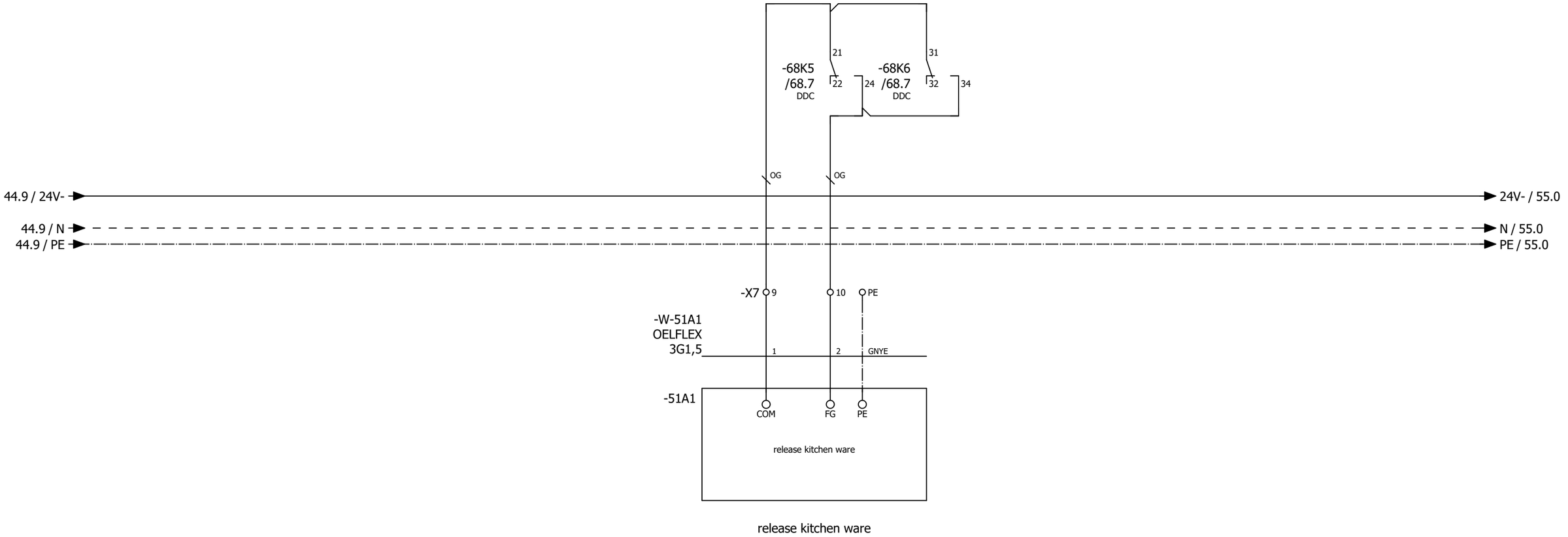
			date	18.09.2025	Mc Donald´s DK - Kalundborg		unit discription general	= RLT_1	
			edited	daniel.preuss				+	page **50**
			checked	M. Wagner	ventilation			custom no: 7560 4615a	page **31/ 56**
change	date	name	origin		replacement for	replaced by			

0	1	2	3	4	5	6	7	8	9

44.9 / L1 → L1 / 55.0
44.9 / L2 → L2 / 55.0
44.9 / L3 → L3 / 55.0

44.9 / L5 24V+ → L5 24V+ / 55.0





release kitchen ware

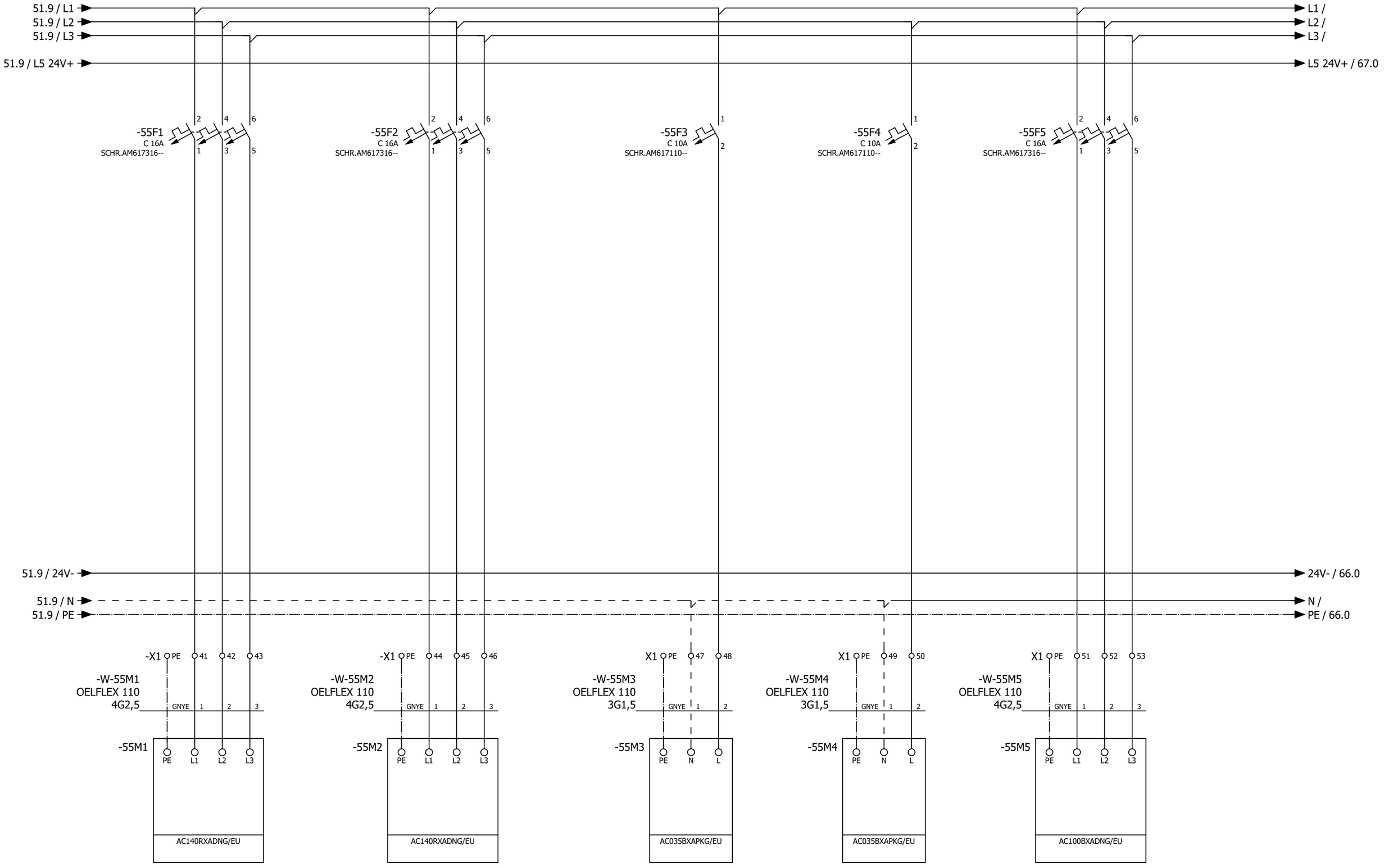
50

55

			date	18.09.2025	Mc Donald´s DK - Kalundborg		release kitchen ware		= RLT_1
			edited	daniel.preuss					+
			checked	M. Wagner	ventilation			custom no: 7560	4615a
change	date	name	origin		replacement for	replaced by			

page **51**

page **32/ 56**



air cooling device
BC + backroom

air cooling device
kitchen

air cooling device
technical room

air cooling device
playground

air cooling device
lobby

51

60

			date	18.09.2025	Mc Donald´s DK - Kalundborg		air cooling devices	= RLT_1	
			edited	daniel.preuss				+	page **55**
			checked	M. Wagner	ventilation			custom no: 7560	4615a	page **33/ 56**
change	date	name	origin		replacement for	replaced by			

unit discription
DDC

			date	18.09.2025	Mc Donald´s DK - Kalundborg		unit discription DDC	= RLT_1	
			edited	daniel.preuss				+	page **60**
			checked	M. Wagner	ventilation			custom no: 7560 4615a	page **34/ 56**
change	date	name	origin		replacement for	replaced by			

-66N1
/66.0

DEOS -600/5 OPEN
High Power Controller

DI0	/67.2	start ventilation
DI1	/67.3	fault reset
DI2	/67.3	phase monitoring
DI3	/67.4	exhaust fan kitchen switch in position manual
DI4	/67.5	fault antifreeze kitchen
DI5	/67.6	operation heatpump 2 kitchen
DI6	/67.6	fault heatpump 2 kitchen
DI7	/67.7	fault gas detector kitchen

DO0	/68.1	report AHU running
DO1	/68.2	report AHU fault
DO2	/68.3	report AHU maintenance
DO3	/68.4	fault reset
DO4	/68.4	heatpump 2 cooling lobby
DO5	/68.5	flap drives kitchen
DO6	/68.6	supply air fan kitchen
DO7	/68.7	exhaust fan kitchen
DO8	/69.2	exhaust fan dishes
DO9	/69.3	heatpump 1 kitchen heating
DO10	/69.3	heatpump 1 kitchen cooling
DO11	/69.4	heating pump

AI0	/71.1	differntial pressire sensor supply air kitchen
AI1	/71.2	reserve
AI2	/71.3	reserve
AI3	/71.4	outside temperature sensor kitchen
AI4	/71.5	supply air temperature sensor behind heater kitchen
AI5	/71.6	supply air temperature sensor total
AI6	/71.7	exhaust air temperature sensor kitchen (option)
AI7	/71.8	room temperature sensor kitchen

AO0	/70.2	setpoint supply air fan kitchen
AO1	/70.3	setpoint exhaust fan kitchen
AO2	/70.5	reserve
AO3	/70.6	KVS Ventil Küche

-72N1
/72.1

DS-C-DI16
digital inputs modul 16 x DI

DI0	/72.2	fault supply air fan kitchen
DI1	/72.3	fault repair switch supply air fan kitchen
DI2	/72.3	fault exhaust fan kitchen
DI3	/72.4	fault repair switch exhaust fan kitchen
DI4	/72.5	fault exhaust fan dishes
DI5	/72.6	fault repair switch exhaust fan dishes
DI6	/72.6	fault heatpump 1 kitchen
DI7	/72.7	operation heatpump 1 kitchen
DI8	/73.2	defrosting reverse cycle Heating systems 1+2 kitchen
DI9	/73.3	fault heating pump kitchen
DI10	/73.3	fault supply air fan/repair switch lobby
DI11	/73.4	fault exhaust fan/repair switch lobby
DI12	/73.5	operation heatpump 1 lobby
DI13	/73.6	fault heatpump 1 lobby
DI14	/73.6	defrosting reverse cycle Heating systems 1+2 lobby
DI15	/73.7	term extension

-74N1
/74.0

DS-C-AI8AO4
analog in / outputs modul 8 x AI / 4 x AO

AI0	/74.1	differntial pressire sensor supply air lobby
AI1	/74.2	differntial pressire sensor exhaust air lobby
AI2	/74.3	differntial pressire sensor heat recovery lobby
AI3	/74.4	supply air temperature sensor behind heat recovery lobby
AI4	/74.5	supply air temperature sensor total lobby
AI5	/74.6	exhaust air temperature sensor lobby
AI6	/74.7	differntial pressire sensor outside airfilter lobby
AI7	/74.8	differntial pressire sensor exhaust airfilter lobby

AO0	/75.2	setpoint supply air fan lobby
AO1	/75.3	setpoint exhaust fan lobby
AO2	/75.5	setpoint heatpumpe lobby
AO3	/75.6	setpoint actuator heat recovery lobby

-76N1
/76.0

DS-C-AI8AO4
analog in / outputs modul 8 x AI / 4 x AO

AI0	/76.1	room sensor temperature lobby
AI1	/76.1	room sensor CO^2 lobby
AI2	/76.3	differntial pressire sensor outside airfilter kitchen
AI3	/76.4	reserve
AI4	/76.5	reserve
AI5	/76.6	return tempeature sensor heater kitchen
AI6	/76.7	air channel pressure supply air lobby
AI7	/76.8	air channel pressure exhaust air lobby

AO0	/77.2	heater valve kitchen
AO1	/77.3	reserve
AO2	/77.5	reserve
AO3	/77.6	reserve

			date	18.09.2025	Mc Donald´s DK - Kalundborg	ROX KLIMATECHNIK	overview occupancy board 1	= RLT_1	
			edited	daniel.preuss				+	page 61
			checked	M. Wagner	ventilation			custom no: 7560	4615a page 35/ 56
change	date	name	origin		replacement for	replaced by			

-78N1
/78.1

DS-C-DI8DO8T

digital in / outputs modul 8 x DI / 8 x DO

DI0	/78.2	operation heatpump 2 lobby
DI1	/78.3	fault heatpump 2 lobby
DI2	/78.3	fault gas detector lobby
DI3	/78.4	pressure switch
DI4	/78.5	cleaning mode
DI5	/78.6	fault fire emergency shutdown
DI6	/78.6	reserve
DI7	/78.7	reserve
DO0	/79.2	flap drives lobby
DO1	/79.3	supply air fan lobby
DO2	/79.3	exhaust fan lobby
DO3	/79.4	heatpump 1 heating lobby
DO4	/79.5	heatpump 1 cooling lobby
DO5	/79.6	heatpump 2 heating kitchen
DO6	/79.6	heatpump 2 cooling kitchen
DO7	/79.7	heatpump 2 heating lobby

-80N1
/80.1

DS-C-AO4

analog outputs modul 4 x AO

AO0	/80.2	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	/80.6	volume flow regulator 2 exhaust air lobby

61 65

			date	18.09.2025	Mc Donald´s DK - Kalundborg		overview occupancy board 2		= RLT_1	
			edited	daniel.preuss					+	page **62**
			checked	M. Wagner	ventilation			custom no: 7560	4615a	page **36/ 56**
change	date	name	origin		replacement for	replaced by				

0	1	2	3	4	5	6	7	8	9

66N1
/66.0

-72N1
/72.1

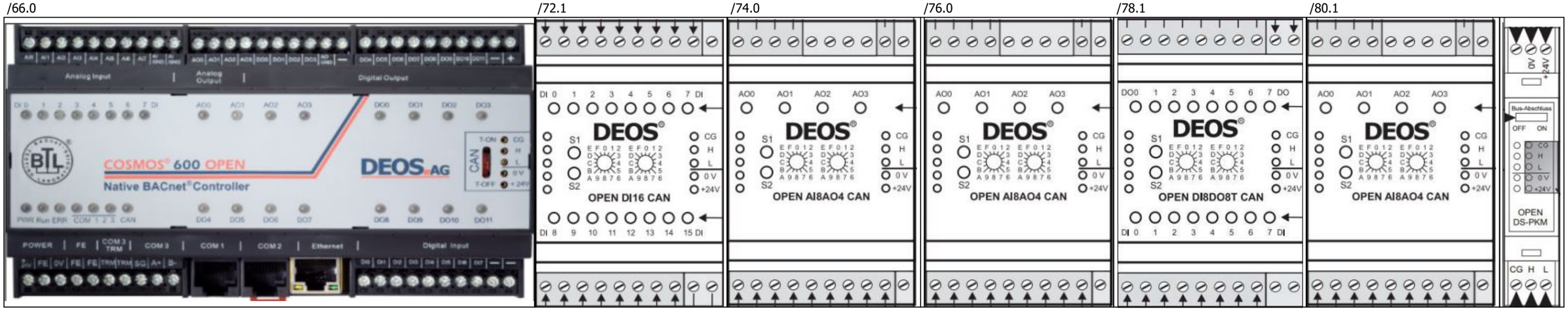
-74N1
/74.0

-76N1
/76.0

-78N1
/78.1

-80N1
/80.1

-66N3



62

66

			date	18.09.2025	Mc Donald´s DK - Kalundborg		overview DEOS module	= RLT_1	
			edited	daniel.preuss				+	page **65**
			checked	M. Wagner	ventilation			custom no: 7560	4615a	page **37/ 56**
change	date	name	origin		replacement for	replaced by			

-66N1
/65.0
/67.1
/68.1
/69.1
/70.1
/71.0
/61.0

DEOS -600/5 OPEN
High Power Controller

COM 1 | COM 2 | ETHERNET

24V DC
+24V | 0V | FE

RS485
A+ | B- | SG

CAN Bus zu den Modulen
CG | H | L | 0V | +24V

-66N2
PKM
CG | H | L | 0V | +24V
CG | H | L | 0V | +24V
+24V | 0V | CG | CH | CL

5.9 / L6 24V+
55.9 / 24V-
55.9 / PE

-66F1
2A MT
1
2

68.2
66N1-DO1
68.3
66N1-DO2

L6 24V+ / 68.0
24V- / 67.0

X3 95 | 96 | 97 | 98 | 99 | 100

-W-66A1
J-Y(ST)Y
4x2x0,8
RD | BU | WH | YE | WH | GN

-XR DI | + | -

-X6 17 | 18 | 19

-66A1
Tablet
extern

24V+ | 24V-

-66H1 x1 x2
-66H2 x1 x2

unit fault
maintenance take through

operating panel

-66U1
IXrouter3
DI | + | -

Router
(Option)

65 67

			date	18.09.2025	Mc Donald´s DK - Kalundborg		DDC - CPU Controller	= RLT_1	
			edited	daniel.preuss				+	page 66
			checked	M. Wagner	ventilation			custom no: 7560	4615a	page 38/ 56
change	date	name	origin		replacement for	replaced by			

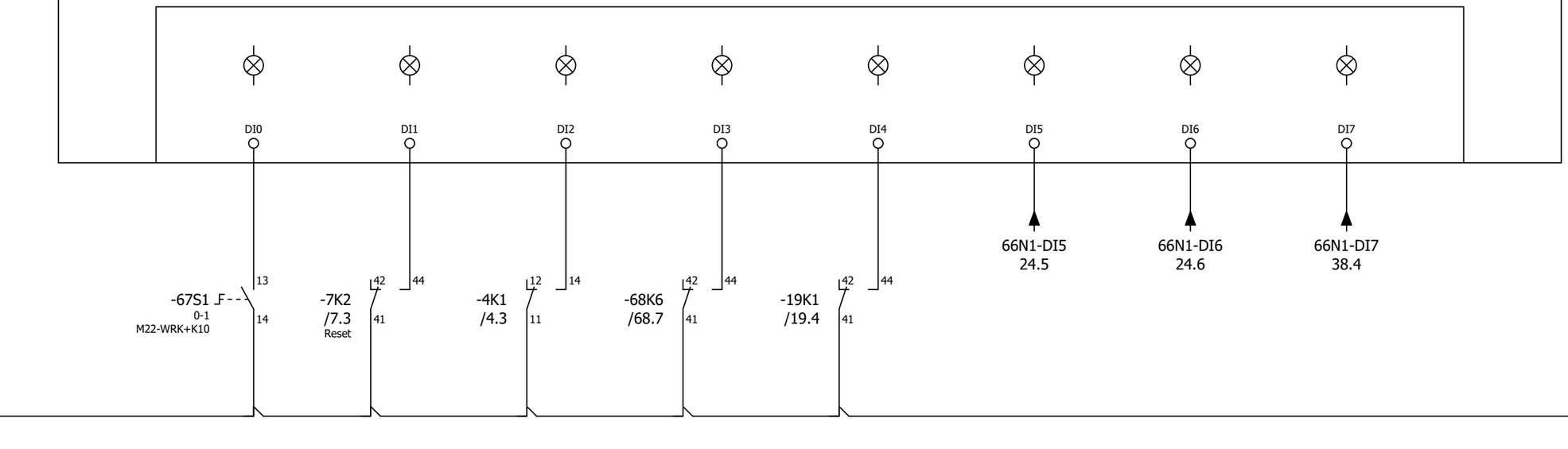
-66N1
/66.0

DEOS -600/5 OPEN

High Power Controller

Teil 1 von 5

digital inputs 24V DC



55.9 / L5 24V+ → L5 24V+ / 68.0

66.9 / 24V- → 24V- / 68.0

start ventilation

fault reset

phase monitoring

exhaust fan kitchen switch in position manual

fault antifreeze kitchen

operation heatpump 2 kitchen

fault heatpump 2 kitchen

fault gas detector kitchen

66

68

			date	18.09.2025	Mc Donald´s DK - Kalundborg		CPU - digital inputs 8 x DI		= RLT_1
			edited	daniel.preuss					+
			checked	M. Wagner	ventilation			custom no: 7560	4615a
change	date	name	origin		replacement for	replaced by			

page 67

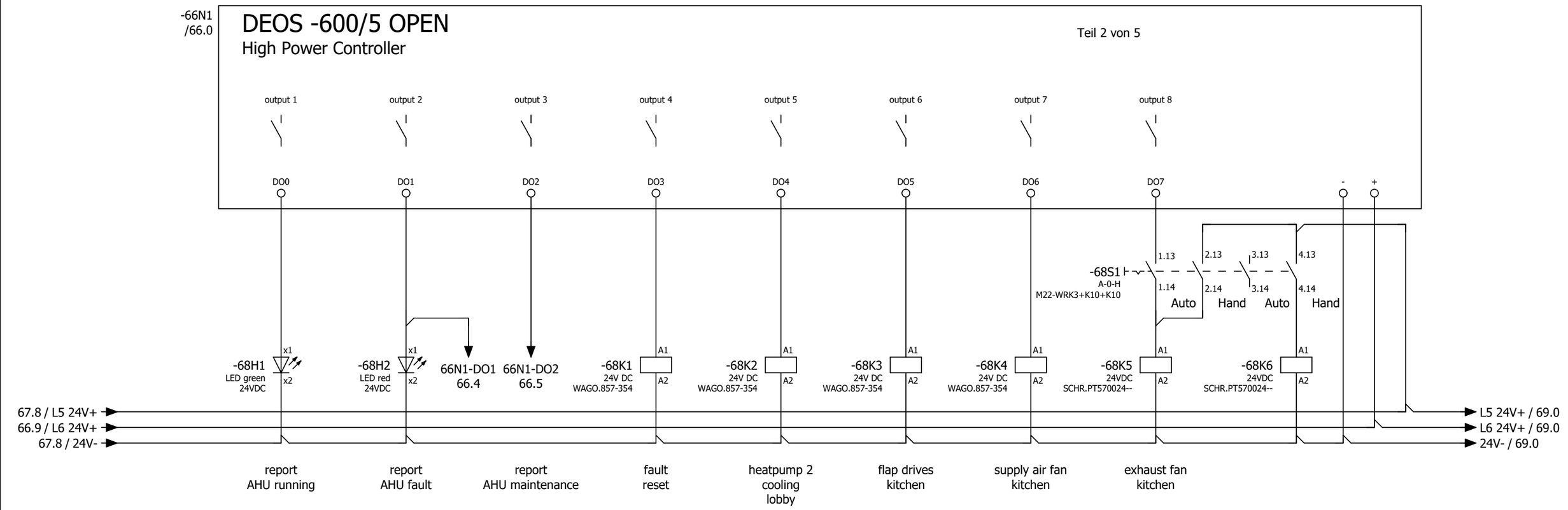
page 39/ 56

-66N1
/66.0

DEOS -600/5 OPEN

High Power Controller

Teil 2 von 5



report AHU running	report AHU fault	report AHU maintenance	fault reset	heatpump 2 cooling lobby	flap drives kitchen	supply air fan kitchen	exhaust fan kitchen
			14 12 11 /7.1	14 12 11 /44.3	14 12 11 /16.1	14 12 11 /11.4	14 12 11 /13.4 24 22 21 /51.5 34 32 31 44 42 41

14 12 11 /16.2
24 22 21 /13.5
34 32 31 /51.5
44 42 41 /67.4

67

69

			date	18.09.2025	Mc Donald´s DK - Kalundborg	ROX KLIMATECHNIK	CPU - digital outputs 8 x DO	= RLT_1
			edited	daniel.preuss				+
			checked	M. Wagner	ventilation			custom no: 7560 4615a
change	date	name	origin		replacement for	replaced by		

-66N1
/66.0

DEOS -600/5 OPEN

High Power Controller

Teil 3 von 5

output 9 | output 10 | output 11 | output 12

DO8 | DO9 | DO10 | DO11 | -

-69K1 24V DC WAGO.857-354 — A1 / A2
-69K2 24VDC SCHR.PT570024-- — A1 / A2
-69K3 24V DC WAGO.857-354 — A1 / A2
-69K4 24V DC WAGO.857-354 — A1 / A2

68.8 / L5 24V+ → L5 24V+ / 72.0
68.8 / L6 24V+ → L6 24V+ / 70.0
68.8 / 24V- → 24V- / 70.0

exhaust fan dishes	heatpump 1 kitchen heating	heatpump 1 kitchen cooling	heating pump
14 / 12 — 11 /14.4	14 / 12 — 11 /23.3 24 / 22 — 21 /23.6 34 / 32 — 31 44 / 42 — 41	14 / 12 — 11 /23.3	14 / 12 — 11 /20.1

			date	18.09.2025	Mc Donald´s DK - Kalundborg	ROX KLIMATECHNIK	CPU - digital outputs 4 x DO	= RLT_1	
			edited	daniel.preuss				+	page 69
			checked	M. Wagner	ventilation			custom no: 7560	4615a	page 41/ 56
change	date	name	origin		replacement for	replaced by			

-66N1
/66.0

DEOS -600/5 OPEN

High Power Controller

Teil 4 von 5

analog outputs 0...10V

69.8 / L6 24V+ → L6 24V+ / 71.0
69.8 / 24V- → 24V- / 71.0

AO0	AO1	AO2	AO3
setpoint supply air fan kitchen	setpoint exhaust fan kitchen	reserve	heatpump kitchen

69

71

			date	18.09.2025	Mc Donald´s DK - Kalundborg		CPU - analog outputs 4 x AO		= RLT_1		
			edited	daniel.preuss					+	page	**70**
			checked	M. Wagner	ventilation			custom no: 7560	4615a	page	**42/ 56**
change	date	name	origin		replacement for	replaced by					

66N1
/66.0

DEOS -600/5 OPEN

High Power Controller

Teil 5 von 5

universal analog inputs

CG
H
L
0V
+24V
CAN Bus zu den Modulen

AI0 AI1 AI2 AI3 AI4 AI5 AI6 AI7 AIGND

WH WH WH WH WH WH WH WH VT

70.8 / L6 24V+ → L6 24V+ / 74.0
70.8 / 24V- → 24V- / 72.0

-X4 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65

-W-71B1 LiYCY-TP 4x0,5 — BN GN WH YE
-W-71B4 OELFLEX 110 2x1 — 1 2
-W-71B5 LiYCY-TP 4x0,5 — BN GN WH YE
-W-71B6 OELFLEX 110 2x1 — 1 2
-W-71B7 OELFLEX 110 2x1 — 1 2
-W-71B8 OELFLEX 110 2x1 — 1 2

Schirmschiene

-71B1
UB+ GND AOU1 AOU2
24V AC/DC | GND | 0-10V OUT
Differenzdruck
Volumenstrom
DPA 2500
mit Display

-71B4

-71B5
G G0 U1
24V AC/DC | GND | 0-10V OUT

-71B6

-71B7

-71B8

differntial pressire sensor supply air kitchen	reserve	reserve	outside temperature sensor kitchen	supply air temperature sensor behind heater kitchen	supply air temperature sensor total	exhaust air temperature sensor kitchen (option)	room temperature sensor kitchen

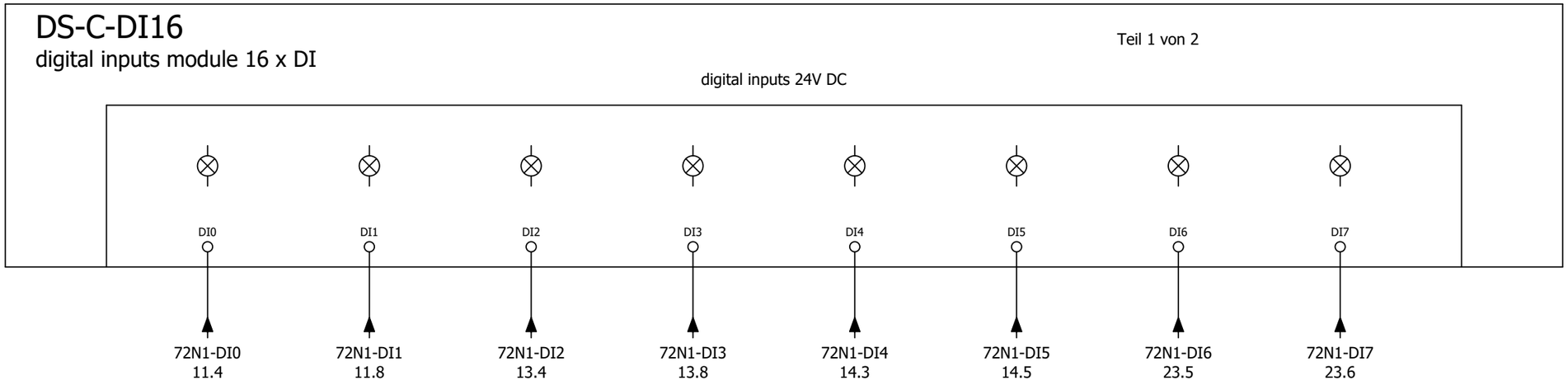
			date	18.09.2025	Mc Donald´s DK - Kalundborg	CPU - analog inputs 8 x AI	= RLT_1	
			edited	daniel.preuss			+	page 71
			checked	M. Wagner	ventilation		custom no: 7560	4615a	page 43/ 56
change	date	name	origin		replacement for	replaced by			

-72N1
/65.3
/73.1
/61.0

DS-C-DI16

digital inputs module 16 x DI

Teil 1 von 2



69.8 / L5 24V+ → L5 24V+ / 73.0

71.8 / 24V- → 24V- / 73.0

fault supply air fan kitchen

fault repair switch supply air fan kitchen

fault exhaust fan kitchen

fault repair switch exhaust fan kitchen

fault exhaust fan dishes

fault repair switch exhaust fan dishes

fault heatpump 1 kitchen

operation heatpump 1 kitchen

71

73

			date	18.09.2025	Mc Donald´s DK - Kalundborg		DDC - digital inputs 16 x DI	= RLT_1	
			edited	daniel.preuss				+	page **72**
			checked	M. Wagner	ventilation			custom no: 7560 4615a	page **44/ 56**
change	date	name	origin		replacement for	replaced by			

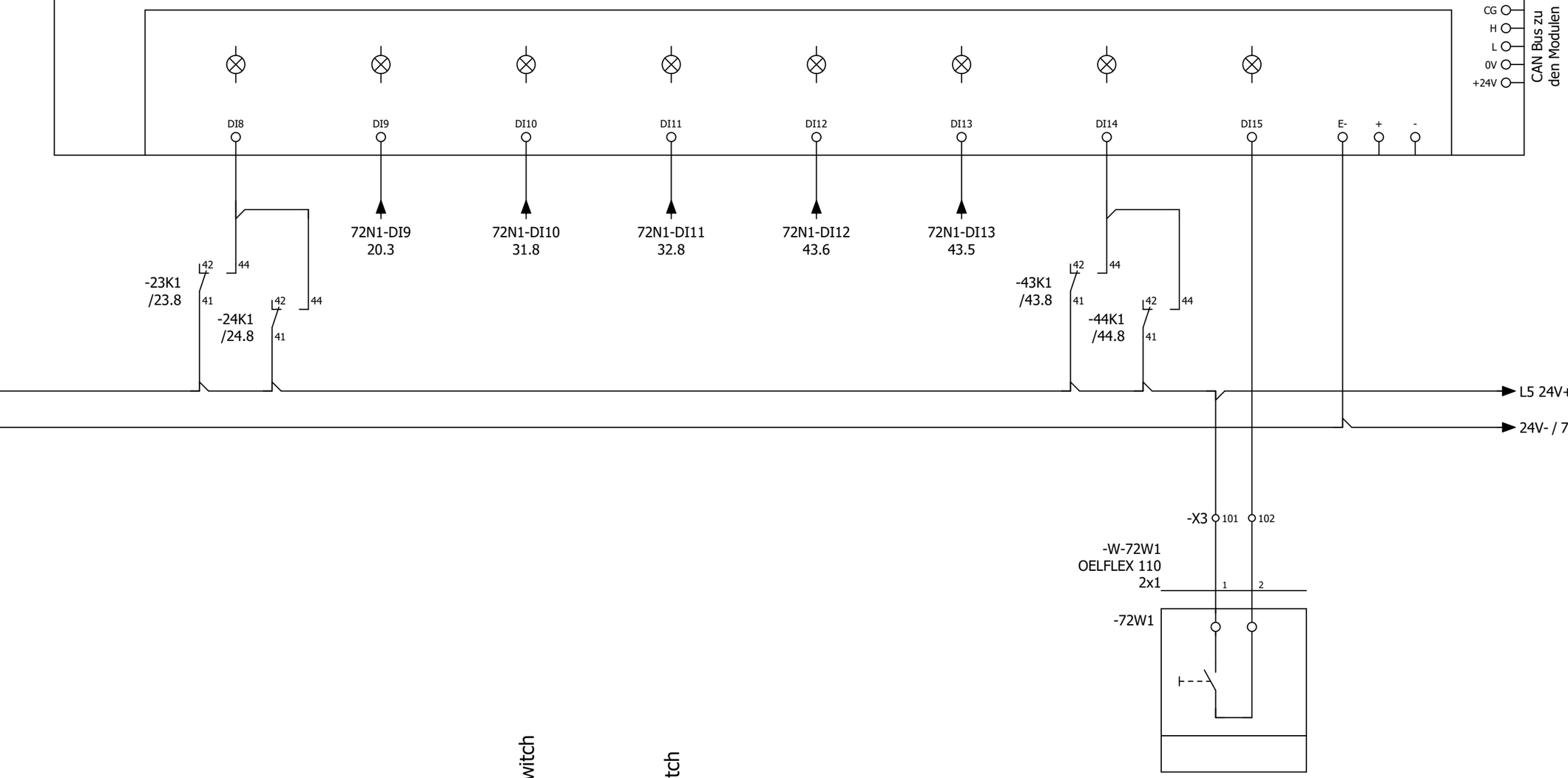
-72N1
/72.1

DS-C-DI16

digital inputs module 16 x DI

Teil 2 von 2

digital inputs 24V DC



defrosting reverse cycle Heating systems 1+2 kitchen

fault heating pump kitchen

fault supply air fan/repair switch lobby

fault exhaust fan/repair switch lobby

operation heatpump 1 lobby

fault heatpump 1 lobby

defrosting reverse cycle Heating systems 1+2 lobby

term extension

72 74

			date	18.09.2025	Mc Donald´s DK - Kalundborg	ROX KLIMATECHNIK	DDC - digital inputs 16 x DI	= RLT_1
			edited	daniel.preuss				+
			checked	M. Wagner	ventilation			page 73
change	date	name	origin		replacement for	replaced by	custom no: 7560 4615a	page 45/ 56

-74N1
/65.4
/75.1
/61.3

DS-C-AI8AO4

analog in / outputs module 8 x AI / 4 x AO

Teil 1 von 2

universal analoge inputs

AI0 AI1 AI2 AI3 AI4 AI5 AI6 AI7 AIGND

WH WH WH WH WH WH WH WH VT

71.8 / L6 24V+
73.8 / 24V-

L6 24V+ / 75.0
24V- / 75.0

X4 66 67 68 69 | 70 71 72 73 | 74 75 76 77 | 78 79 80 81 | 82 83 | 84 85 | 86 87 88 89 | 90 91 92 93

-W-74B1 LiYCY-TP 4x0,5 BN GN WH YE
-W-74B2 LiYCY-TP 4x0,5 BN GN WH YE
-W-74B3 LiYCY-TP 4x0,5 BN GN WH YE
-W-74B4 LiYCY-TP 4x0,5 BN GN WH YE
-W-74B5 OELFLEX 110 2x1 1 2
-W-74B6 OELFLEX 110 2x1 1 2
-W-74B7 LiYCY-TP 4x0,5 BN GN WH YE
-W-74B8 LiYCY-TP 4x0,5 BN GN WH YE

shielding rail

-74B1 UB+ GND AOU1 AOU2 — 24V AC/DC, GND, 0-10V OUT, diff pressure, flow — DPA 2500
differntial pressire sensor supply air lobby

-74B2 UB+ GND AOU1 AOU2 — 24V AC/DC, GND, 0-10V OUT, diff pressure, flow — DPA 2500
differntial pressire sensor exhaust air lobby

-74B3 UB+ GND AOU1 AOU2 — 24V AC/DC, GND, 0-10V OUT, diff pressure, flow — DPA 2500
differntial pressire sensor heat recovery lobby

-74B4 G G0 U1 — 24V AC/DC, GND, 0-10V OUT
supply air temperature sensor behind heat recovery lobby

-74B5
supply air temperature sensor total lobby

-74B6
exhaust air temperature sensor lobby

-74B7 UB+ GND AOU1 AOU2 — 24V AC/DC, GND, 0-10V OUT, diff pressure, flow — DPA 2500 mit Display
differntial pressire sensor outside airfilter lobby

-74B8 UB+ GND AOU1 AOU2 — 24V AC/DC, GND, 0-10V OUT, diff pressure, flow — DPA 2500 mit Display
differntial pressire sensor exhaust airfilter lobby

			date	18.09.2025	Mc Donald´s DK - Kalundborg	DDC - analog inputs 8 x AI	= RLT_1
			edited	daniel.preuss			+
			checked	M. Wagner	ventilation		page 74
change	date	name	origin		replacement for	replaced by	custom no: 7560 / 4615a / page 46/ 56

ROX KLIMATECHNIK

-74N1
/74.0

DS-C-AI8AO4

analog in / outputs module 8 x AI / 4 x AO

Teil 2 von 2

analog outputs 0...10V

CG
H
L
0V
+24V
CAN Bus zu den Modulen

AO0 — WH — 74N1-AO0 31.5

AO1 — WH — 74N1-AO1 32.5

AO2 — WH — 74N1-AO2 44.9

AO3 — WH — 74N1-AO3 36.5

AOGND

74.9 / L6 24V+ → L6 24V+ / 76.0

74.9 / 24V- → 24V- / 76.0

setpoint supply air fan lobby

setpoint exhaust fan lobby

setpoint heatpumpe lobby

setpoint actuator heat recovery lobby

74

76

			date	18.09.2025	Mc Donald´s DK - Kalundborg		DDC - analog outputs 4 x AO	= RLT_1	
			edited	daniel.preuss				+	page **75**
			checked	M. Wagner	ventilation			custom no: 7560 4615a	page **47/ 56**
change	date	name	origin		replacement for	replaced by			

-76N1
/65.5
/77.1
/61.6

DS-C-AI8AO4

analog in / outputs module 8 x AI / 4 x AO

Teil 1 von 2

universal analog inputs

CG
H
L
0V
+24V
CAN Bus zu den Modulen

AI0 AI1 AI2 AI3 AI4 AI5 AI6 AI7 AIGND

WH WH WH WH WH WH WH WH VT

75.8 / L6 24V+ → L6 24V+ / 77.0
75.8 / 24V- → 24V- / 77.0

-X4 94 95 96 97 98 100 101 102 103 105 107 109 110 111 112 113 114 115 116 117 118 119 120 121

-W-76B1
J-Y(ST)Y
4x2x0,8
RD/BU WH/YE WH/GN WH BN

-W-76B2
LiYCY-TP
4x0,5
BN GN WH YE

-W-76B5
OELFLEX 110
2x1
1 2

-W-76B6
LiYCY-TP
4x0,5
BN GN WH YE

-W-76B7
LiYCY-TP
4x0,5
BN GN WH YE

Schirmschiene

-76B1
UB+ GND OUT1 OUT2
24V AC/DC | GND | 0-10V OUT (Temp) | 0-10V OUT (CO²)

-76B2
UB+ GND AOU1 AOU2
24V AC/DC | GND | 0-10V OUT (diff pressure) | (flow)
DPA 2500
mit Display

-76B5

-76B6
G G0 U1
24V AC/DC | GND | 0-10V OUT

-76B7
G G0 U1
24V AC/DC | GND | 0-10V OUT

room sensor
temperature / CO²
lobby

differntial pressire sensor
outside airfilter kitchen

reserve

reserve

return
tempeature sensor heater
kitchen

air channel pressure
supply air
lobby

air channel pressure
exhaust air
lobby

			date	24.09.2025	Mc Donald´s DK - Kalundborg	DDC - analog inputs 8 x AI	= RLT_1
			edited	daniel.preuss			+
			checked	M. Wagner	ventilation		page 76
change	date	name	origin		replacement for	replaced by	custom no: 7560 4615a page 48/ 56

ROX KLIMATECHNIK

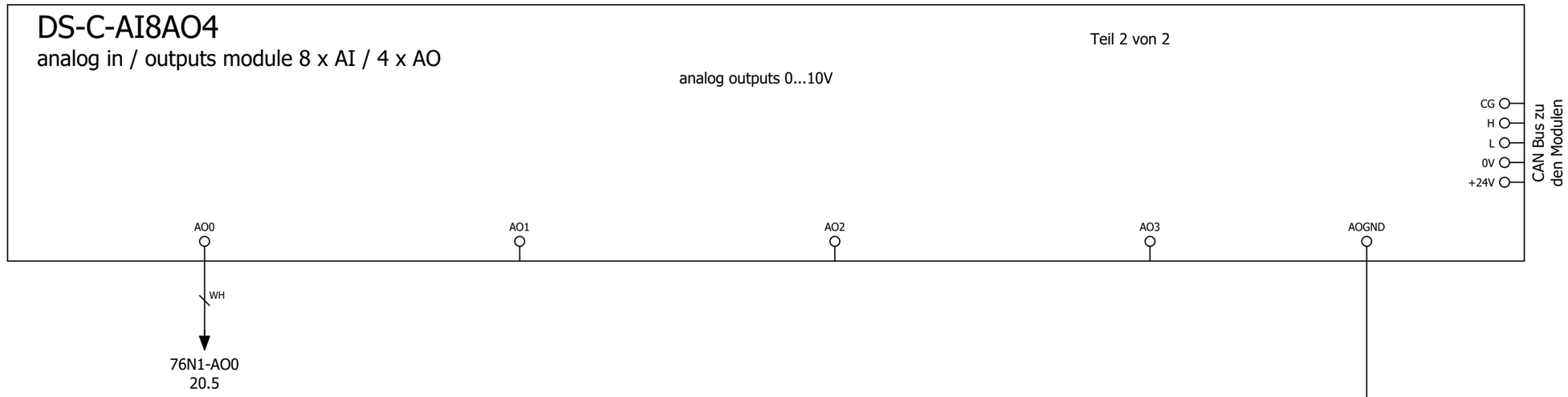
-76N1
/76.0

DS-C-AI8AO4

analog in / outputs module 8 x AI / 4 x AO

Teil 2 von 2

analog outputs 0...10V



76.8 / L6 24V+ → L6 24V+ / 79.0

76.8 / 24V- → 24V- / 78.0

heater valve kitchen	reserve	reserve	reserve

76

78

			date	18.09.2025	Mc Donald´s DK - Kalundborg		DDC - analog outputs 4 x AO	= RLT_1	
			edited	daniel.preuss				+	page **77**
			checked	M. Wagner	ventilation			custom no: 7560 4615a	page **49/ 56**
change	date	name	origin		replacement for	replaced by			

-78N1
/65.6
/79.1
/62.0

DS-C-DI8DO8T

Digital Ein- / Ausgangsmodul 8 x DI / 8 x DO

Teil 1 von 2

digital inputs 24V DC

DI0 DI1 DI2 DI3 DI4 DI5 DI6 DI7

78N1-DI0
44.6

78N1-DI1
44.5

78N1-DI2
38.7

-9K1
/9.4
42
41
44

73.8 / L5 24V+ → L5 24V+ /

77.8 / 24V- → 24V- / 79.0

-X4 106 108 99 104

-W-78B1
OELFLEX 110
2x1 1 2

-W-78A1
OELFLEX 110
2x1 1 2

-78A1

-78B1 P 13 14

operation heatpump 2 lobby

fault heatpump 2 lobby

fault gas detector lobby

pressure switch

cleaning mode

fault fire emergency shutdown

reserve

reserve

77

79

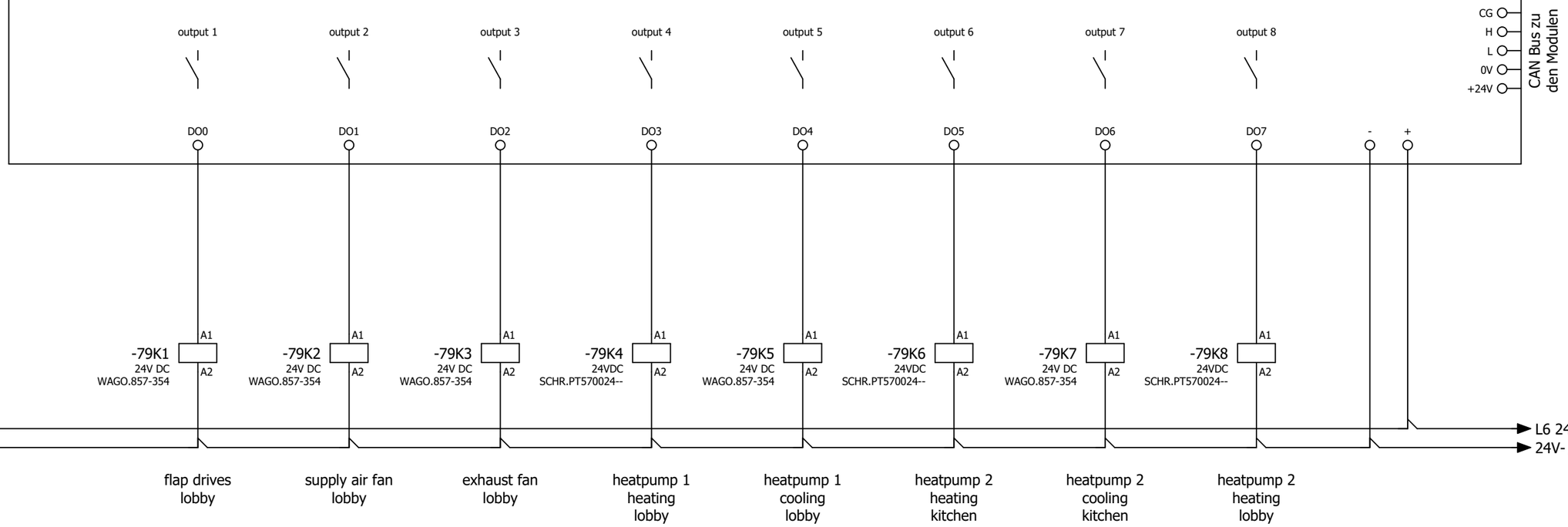
			date	24.09.2025	Mc Donald´s DK - Kalundborg		DDC - digital inputs 8 x DI	= RLT_1	
			edited	daniel.preuss				+	page **78**
			checked	M. Wagner	ventilation			custom no: 7560 4615a	page **50**/ **56**
change	date	name	origin		replacement for	replaced by			

-78N1
/78.1

DS-C-DI8DO8T

Digital Ein- / Ausgangsmodul 8 x DI / 8 x DO

Teil 2 von 2



flap drives lobby	supply air fan lobby	exhaust fan lobby	heatpump 1 heating lobby	heatpump 1 cooling lobby	heatpump 2 heating kitchen	heatpump 2 cooling kitchen	heatpump 2 heating lobby
14 12 11 /36.1	14 12 11 /31.4	14 12 11 /32.4	14 12 11 /43.3 24 22 21 /43.6 34 32 31 44 42 41	14 12 11 /43.3	14 12 11 /24.3 24 22 21 /24.6 34 32 31 44 42 41	14 12 11 /24.3	14 12 11 /44.3 24 22 21 /44.6 34 32 31 44 42 41

78

80

			date	18.09.2025	Mc Donald´s DK - Kalundborg	ROX KLIMATECHNIK	DDC - digital outputs 8 x DO	= RLT_1	
			edited	daniel.preuss				+	page **79**
			checked	M. Wagner	ventilation			custom no: 7560 4615a	page **51/ 56**
change	date	name	origin		replacement for	replaced by			

-80N1
/65.7
/62.3

DS-C-AO4

analog outputs module 4 x AO

analog outputs 0...10V

CG
H
L
0V
+24V
CAN Bus zu den Modulen

AO0 — WH — 80N1-AO0 37.2
AO1 — WH — 80N1-AO1 37.3
AO2 — WH — 80N1-AO2 37.5
AO3 — WH — 80N1-AO3 37.6
AOGND

79.8 / L6 24V+ → L6 24V+ /
79.8 / 24V- → 24V- /

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

			date	18.09.2025	Mc Donald´s DK - Kalundborg	ROX KLIMATECHNIK	DDC - analog outputs 4 x AO	= RLT_1
			edited	daniel.preuss				+
			checked	M. Wagner	ventilation			page 80
change	date	name	origin		replacement for	replaced by	custom no: 7560 4615a	page 52/ 56

Kabelübersicht

F10_001

Kabelname	Quelle (von)	Ziel (bis)	Kabeltyp	alle Adern	verwendete Adern	Querschnitt [mm]	Länge [m]	Funktionstext	Grafikseite des Kabelplans
W-9A1	X3	9A1	J-Y(ST)Y	4x2	5	0,8		fire emergency shutdown	
W-11M1/1	X1		OELFLEX 110	4G	4	1,5		supply air fan kitchen	
		11Q1							
W-11M1/2	X3	11M1	OELFLEX 110	4	4	1		supply air fan kitchen	
W-11M1/3	X4	11M1	LiYCY	2	2	0,5		=	
W-11Q1	X3	11Q1	OELFLEX 110	2	2	1		repair switch supply air fan kitchen	
W-13M1/1	X1	13M1	OELFLEX 110	4G	4	1,5		exhaust fan kitchen	
		13Q1							
W-13M1/2	X3	13M1	OELFLEX 110	4	4	1		exhaust fan kitchen	
W-13M1/3	X4	13M1	LiYCY	4	3	0,5		=	
W-13Q1	X3	13Q1	OELFLEX 110	2	2	1		repair switch exhaust fan kitchen	
W-14M1/1	X1	14M1	OELFLEX 110	3G	3	1,5		exhaust fan dishes	
		14Q1							
W-14M1/2	X3	14M1	OELFLEX 110	2	2	1		exhaust fan dishes	
W-14Q1	X3	14Q1	OELFLEX 110	2	2	1		repair switch exhaust fan dishes	
W-16Y1	X3	16Y1	OELFLEX 110	3	3	1		outside air damper kitchen	
W-16Y2	X3	16Y2	OELFLEX 110	3	3	1		exhaust air flap kitchen (option)	
W-16Y3	X3	16Y3	OELFLEX 110	3	3	1		exhaust air flap dishes (option)	
W-19B1	X3	19B1	OELFLEX 110	4	4	1		antifreeze thermostat	
W-20M1	X1	20M1	OELFLEX 110	3G	3	1,5		heating pump kitchen	
W-20Y1	X4	20Y1	LiYCY	4	4	1		heater valve kitchen	
W-21A1/1	X1	21A1	OELFLEX 110	5G	5	2,5		heatpump 1 kitchen outdoor unit	
W-21A1/2	X6	21A1	LiYCY	4	4	1		=	
	X7								
W-21A2/1	X1	21A2	OELFLEX	3G	3	1,5		heatpump 1 kitchen indoor unit	
W-22A1/1	X1	22A1	OELFLEX 110	5G	5	2,5		heatpump 2 kitchen outdoor unit	
W-22A1/2	X6	22A1	LiYCY	4	4	1		=	
	X7								
W-22A2/1	X1	22A2	OELFLEX	3G	3	1,5		heatpump 2 kitchen indoor unit	
W-21A2/2	X3	21A2	LiYCY	12	12	0,5		heatpump 1 kitchen indoor unit	
	X4								
	X6								
W-21A2/3	X2	21A2	OELFLEX	3G	3	1,5		heatpump 1 kitchen indoor unit	
W-22A2/2	X3	22A2	LiYCY	12	12	0,5		heatpump 2 kitchen indoor unit	
	X4								
	X6								
W-22A2/3	X2	22A2	OELFLEX	3G	3	1,5		heatpump 2 kitchen indoor unit	
W-31M1/1	X1		OELFLEX 110	4G	4	1,5		supply air fan lobby	
		31Q1							
W-31M1/2	X3	31M1	OELFLEX 110	4	4	1		supply air fan lobby	
W-31M1/3	X4	31M1	LiYCY	2	2	0,5		=	
W-31Q1	X3	31Q1	OELFLEX 110	2	2	1		repair switch supply air fan lobby	
W-32M1/1	X1		OELFLEX 110	4G	4	1,5		exhaust fan lobby	
		32Q1							
W-32M1/2	X3	32M1	OELFLEX 110	4	4	1		exhaust fan lobby	
W-32M1/3	X4	32M1	LiYCY	2	2	0,5		=	

Kabelübersicht

F10_001

Kabelname	Quelle (von)	Ziel (bis)	Kabeltyp	alle Adern	verwendete Adern	Querschnitt [mm]	Länge [m]	Funktionstext	Grafikseite des Kabelplans
W-32Q1	X3	32Q1	OELFLEX 110	2	2	1		repair switch exhaust fan lobby	
W-36Y1	X3	36Y1	OELFLEX 110	3	3	1		outside air damper lobby	
W-36Y2	X3	36Y2	OELFLEX 110	3	3	1		exhaust air flap lobby	
W-36Y3	X4	36Y3	LiYCY	4	4	1		actuator plate heat exchanger lobby	
W-37Y1	X4	37Y1	LiYCY	4	4	1		volume flow regulator 1 supply air lobby	
W-37Y2	X4	37Y2	LiYCY	4	4	1		volume flow regulator 1 exhaust air lobby	
W-37Y3	X4	37Y3	LiYCY	4	4	1		volume flow regulator 2 supply air lobby	
W-37Y4	X4	37Y4	LiYCY	4	4	1		volume flow regulator 2 exhaust air lobby	
W-38A1	X3	38A1	OELFLEX 110	4	4	1		gas detector kitchen	
W-38A2	X3	38A2	OELFLEX 110	4	4	1		gas detector lobby	
W-41A1/1	X1	41A1	OELFLEX 110	5G	5	2,5		heatpump 1 lobby outdoor unit	
W-41A1/2	X6	41A1	LiYCY	4	4	1		=	
	X7								
W-41A2/1	X1	41A2	OELFLEX	3G	3	1,5		heatpump 1 lobby indoor unit	
W-42A1/1	X1	42A1	OELFLEX 110	5G	5	2,5		heatpump 2 lobby outdoor unit	
W-42A1/2	X6	42A1	LiYCY	4	4	1		=	
	X7								
W-42A2/1	X1	42A2	OELFLEX	3G	3	1,5		heatpump 2 lobby indoor unit	
W-41A2/2	X3	41A2	LiYCY	12	12	0,5		heatpump 1 lobby indoor unit	
	X4								
	X6								
W-41A2/3	X2	41A2	OELFLEX	3G	3	1,5		heatpump 1 lobby indoor unit	
W-42A2/2	X3	42A2	LiYCY	12	12	0,5		heatpump 2 lobby indoor unit	
	X4								
	X6								
W-42A2/3	X2	42A2	OELFLEX	3G	3	1,5		heatpump 2 lobby indoor unit	
W-51A1	X7	51A1	OELFLEX	3G	3	1,5		release kitchen ware	
W-55M1	X1	55M1	OELFLEX 110	4G	4	2,5		air cooling device BC+ backroom	
W-55M2	X1	55M2	OELFLEX 110	4G	4	2,5		air cooling device kitchen	
W-55M3	X1	55M3	OELFLEX 110	3G	3	1,5		air cooling device technical room	
W-55M4	X1	55M4	OELFLEX 110	3G	3	1,5		air cooling device playground	
W-55M5	X1	55M5	OELFLEX 110	4G	4	2,5		air cooling device lobby	
W-66A1	X3	66A1	J-Y(ST)Y	4x2	6	0,8		operating panel	
W-71B1	X4	71B1	LiYCY-TP	4	4	0,5		differntial pressire sensor supply air kitchen	
W-71B4	X4	71B4	OELFLEX 110	2	2	1		outside temperature sensor kitchen	
W-71B5	X4	71B5	LiYCY-TP	4	4	0,5		supply air temperature sensor behind heater kitchen	
W-71B6	X4	71B6	OELFLEX 110	2	2	1		supply air temperature sensor total	
W-71B7	X4	71B7	OELFLEX 110	2	2	1		exhaust air temperatur sensor kitchen (option)	
W-71B8	X4	71B8	OELFLEX 110	2	2	1		room temperature sensor kitchen	
W-72W1	X3	72W1	OELFLEX 110	2	2	1		term extension	
W-74B1	X4	74B1	LiYCY-TP	4	4	0,5		differntial pressire sensor supply air lobby	
W-74B2	X4	74B2	LiYCY-TP	4	4	0,5		differntial pressire sensor exhaust air lobby	
W-74B3	X4	74B3	LiYCY-TP	4	4	0,5		differntial pressire sensor heat recovery lobby	
W-74B4	X4	74B4	LiYCY-TP	4	4	0,5		supply air temperature sensor behind heat recovery lobby	
W-74B5	X4	74B5	OELFLEX 110	2	2	1		supply air temperature sensor total lobby	
W-74B6	X4	74B6	OELFLEX 110	2	2	1		exhaust air temperature sensor lobby	

Kabelübersicht

F10_001

Kabelname	Quelle (von)	Ziel (bis)	Kabeltyp	alle Adern	verwendete Adern	Querschnitt [mm]	Länge [m]	Funktionstext	Grafikseite des Kabelplans
W-74B7	X4	74B7	LiYCY-TP	4	4	0,5		differntial pressire sensor outside airfilter lobby	
W-74B8	X4	74B8	LiYCY-TP	4	4	0,5		differntial pressire sensor exhaust airfilter lobby	
W-76B1	X4	76B1	J-Y(ST)Y	4x2	5	0,8		room sensor temperatur/CO^2 lobby	
W-76B2	X4	76B2	LiYCY-TP	4	4	0,5		differntial pressire sensor outside airfilter kitchen	
W-76B5	X4	76B5	OELFLEX 110	2	2	1		return temperature sensor heater kitchen	
W-76B6	X4	76B6	LiYCY-TP	4	4	0,5		air channel pressure supply air lobby	
W-76B7	X4	76B7	LiYCY-TP	4	4	0,5		air channel pressure exhaust air lobby	
W-78A1	X4	78A1	OELFLEX 110	2	2	1		cleaning mode	
W-78B1	X4	78B1	OELFLEX 110	2	2	1		pressure switch	

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			date	24.09.2025	Mc Donald´s DK - Kalundborg	ROX KLIMATECHNIK	cable overview : W-74B7 - W-78B1	= KBL	
			edited	daniel.preuss				+	page **1.b**
			checked	M. Wagner	ventilation			custom no: 7560	4615a	page **55/ 56**
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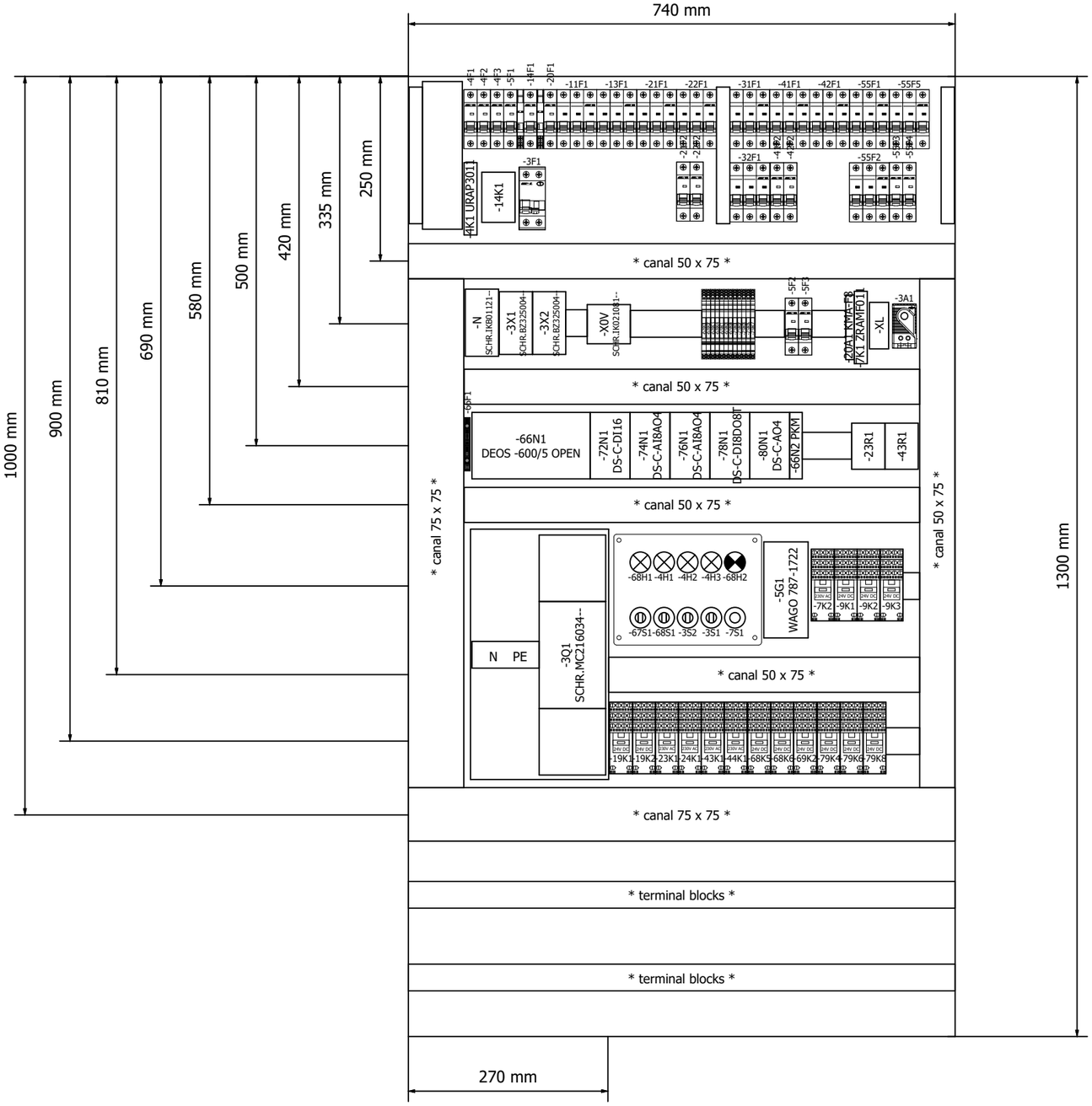

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			date	18.09.2025	Mc Donald´s DK - Kalundborg		cabinet view	= SSA	
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			checked	M. Wagner				custom no: 7560 4615a	page 56/ 56
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