

Basic performance data - WAMAK TBW 50 EVI

Heating - EN 14511		
Heating capacity [kW]	B0 / W35 (max)	48.3 (24.1 / 48.3)
	B0 / W35 (min)	24.1 (24.1 / 48.3)
	B0 / W34	48.2 (24.1 / 48.2)
Electrical power input [kW]	B0 / W35 (max)	11.1 (5.5 / 11.1)
	B0 / W35 (min)	5.5 (5.5 / 11.1)
	B0 / W34	10.9 (5.4 / 10.9)
Heating efficiency faktor [COP]	B0 / W35 (max)	4.33
	B0 / W35 (min)	4.39
	B0 / W34	4.42
Seasonal space heating energy efficiency - SCOP EN 14825		
Average Climate / Low Temperature [35 °C]	SCOP	4.84
	η [%]	193.6
	Label	A+++
	Qhe [kWh]	20570.9
	Pdesignh [kW]	48.3
	Tbivalent [°C]	-10
Cooling		
Cooling capacity - [kW]	A35 / W23-18	49.0
	A25 / W23-18	51.5
	A35 / W12-7	49.0
	A25 / W12-7	49.0
Seasonal space cooling energy efficiency - SEER EN 14825		
[W 23 / 18 °C]	SEER	5.02
	Qce [kWh]	5472.2
	η_c [%]	200.6
Sound EN 12102		
Acoustic power - Lw	dB(A)	57.3
Acoustic pressure - Lp	1 m dB(A)	49.3
	5 m dB(A)	35.3
	10 m dB(A)	29.3
Mechanical and operational information		
Compressor type (3~ 400/50)	SCROLL / 2 /	On/Off
Refrigerant	R410A (GWP - 2088)	6 kg
Operating limit temperatures heating - (min / max) [°C]	25 / 65	
Operating limit temperatures source - (min / max) [°C]	-10 (7) / 30	
Weight	425 kg	

WAMAK TBW 50 EVI

ErP (EU) No 811/2013: Technical parameters for heat pump space heaters

Model	TBW 50 EVI
Air-to-water heat pump	no
Brine-to-water heat pump	yes
Water-to-water heat pump	no
Low-temperature heat pump	no
Equipped with a supplementary heater	no
Heat pump combination heater	no
Temperature application	low (35 °C - 30 °C)
Climate conditions	average

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output at Tdesignh	Prated	48.3	kW	Seasonal space heating energy efficiency	ηs	193.6	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	Pdh	48.2	kW	Tj = -7 °C	COPd	4.42	-
Tj = +2 °C	Pdh	48.0	kW	Tj = +2 °C	COPd	4.8	-
Tj = +7 °C	Pdh	47.9	kW	Tj = +7 °C	COPd	5.1	-
Tj = +12 °C	Pdh	47.7	kW	Tj = +12 °C	COPd	5.4	-
Tj = bivalent temperature	Pdh	48.3	kW	Tj = bivalent temperature	COPd	4.3	-
Tj = operation limit temperature	Pdh	---	kW	Tj = operation limit temperature	COPd	---	-
Bivalent temperature	Tbiv	-10	°C	Tj = operation limit temperature	TOL	---	°C
Power consumption in modes other than active mode				Heating water operating limit temperature	WTOL	65	°C
Off mode	Poff	0.010	kW	Supplementary heater			
Thermostat-off mode	Pto	0.010	kW	Rated heat output	Psup	9.3	kW
Standby mode	Psb	0.010	kW	Type of energy input		electricity	
Crankcase heater mode	Pck	0.000	kW				
Other items							
Capacity control		multi-stage		For air-to-water heat pumps: Rated air flow rate, outdoors	-	---	m3/h
Sound power level				For water- or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	4.23 ~ 8.47	m3/h
indoors	Lwa	57	dB				
outdoors	Lwa	---	dB				
Annual energy consumption	QHE	20570.9	kWh				

Contact details: WAMAK, s.r.o., Orovnic 252, 96652, Orovnic, Slovakia, info@wamak.sk

WAMAK TBW 50 EVI

ErP (EU) No 811/2013: Technical parameters for heat pump space heaters

Model	TBW 50 EVI
Air-to-water heat pump	no
Brine-to-water heat pump	yes
Water-to-water heat pump	no
Low-temperature heat pump	no
Equipped with a supplementary heater	no
Heat pump combination heater	no
Temperature application	middle (55 °C - 47 °C)
Climate conditions	average

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output at Tdesignh	Prated	49.6	kW	Seasonal space heating energy efficiency	ηs	157.5	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	Pdh	49.8	kW	Tj = -7 °C	COPd	3.28	-
Tj = +2 °C	Pdh	49.8	kW	Tj = +2 °C	COPd	4.1	-
Tj = +7 °C	Pdh	48.9	kW	Tj = +7 °C	COPd	4.5	-
Tj = +12 °C	Pdh	48.7	kW	Tj = +12 °C	COPd	4.8	-
Tj = bivalent temperature	Pdh	49.6	kW	Tj = bivalent temperature	COPd	2.9	-
Tj = operation limit temperature	Pdh	---	kW	Tj = operation limit temperature	COPd	---	-
Bivalent temperature	Tbiv	-10	°C	Tj = operation limit temperature	TOL	---	°C
Power consumption in modes other than active mode				Heating water operating limit temperature	WTOL	65	°C
Off mode	Poff	0.010	kW	Supplementary heater			
Thermostat-off mode	Pto	0.010	kW	Rated heat output	Psup	9.3	kW
Standby mode	Psb	0.010	kW	Type of energy input		electricity	
Crankcase heater mode	Pck	0.000	kW				
Other items							
Capacity control		multi-stage		For air-to-water heat pumps: Rated air flow rate, outdoors	-	---	m3/h
Sound power level				For water- or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	4.23 ~ 8.47	m3/h
indoors	Lwa	57	dB				
outdoors	Lwa	---	dB				
Annual energy consumption	QHE	25979.8	kWh				

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ENERG

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WAMAK

TBW 50 EVI



55 °C

35 °C

A+++

A+++

A+++

A++

A+

A

B

C

D



57 dB



--- dB

■ 53
■ 50
■ 49
kW

■ 50
■ 49
■ 46
kW



2019

811/2013

TBW 50 EVI

ErP Data

	55 °C	35 °C
Energy class	A+++	A+++
η [%]	157.5	193.6
P_{rated} [kW]	50	49
Q_{HE} [kWh/y]	25980	20571
SCOP [-]	3.94	4.84
$T_{bivalent}$ [°C]	-10	-10

CONTROLLER



+ QAA55/75

class VII

3.5% ↓

- QAA55/75

class III

1.5% ↓

Heating performance data

Version: v2024.010-BW-WW

Source - Brine [0°C] / Low Temperature [35°C]

ZHI23K1P-TFM_R410A_2_BWW

Operating conditions		Qh	P	COP
1	B0 / W30-35	48.3	11.1	4.33
2	B0 / W30-35 (MIN)	24.1	5.5	4.39
A	B0 / Wxx-34	48.2	10.9	4.42
B	B0 / Wxx-30	48.0	10.1	4.77
C	B0 / Wxx-27	23.9	4.7	5.12
D	B0 / Wxx-24	23.9	4.4	5.41
E	B0 / Wxx-35	48.3	11.1	4.33
F	B0 / Wxx-35	48.3	11.1	4.33

SCOP DATA EN 14825:2018	
Source - Brine [0°C] / Low Temperature [35°C]	
SCOPon	4.85
SCOPnet	4.85
SCOP	4.84
η [%]	193.64
Label	A+++
Qh [kWh]	20571
Pdesignh [kW]	48.3
Tbivalent [°C]	-10

Source - Brine [0°C] / Medium Temperature [55°C]

Operating conditions		Qh	P	COP
1	B0 / W47-55	49.6	17.0	2.91
2	B0 / W47-55 (MIN)	24.8	8.3	2.95
A	B0 / Wxx-52	49.8	15.7	3.28
B	B0 / Wxx-42	49.8	12.4	4.05
C	B0 / Wxx-36	24.4	5.5	4.48
D	B0 / Wxx-30	24.3	5.0	4.89
E	B0 / Wxx-55	49.6	17.0	2.91
F	B0 / Wxx-54	49.9	16.0	3.12

SCOP DATA EN 14825:2018	
Source - Brine [0°C] / Medium Temperature [55°C]	
SCOPon	3.94
SCOPnet	3.94
SCOP	3.94
η [%]	157.51
Label	A+++
Qh [kWh]	25980
Pdesignh [kW]	49.6
Tbivalent [°C]	-10

Source - Water [10°C] / Low Temperature [35°C]

Operating conditions		Qh	P	COP
1	W10 / W30-35	61.7	11.5	5.38
2	W10 / W30-35 (MIN)	30.9	5.7	5.46
A	W10 / Wxx-34	61.7	11.2	5.50
B	W10 / Wxx-30	61.7	10.4	5.96
C	W10 / Wxx-27	61.7	9.8	6.42
D	W10 / Wxx-24	61.7	9.2	6.80
E	W10 / Wxx-35	61.7	11.5	5.38
F	W10 / Wxx-35	61.7	11.5	5.38

SCOP DATA EN 14825:2018	
Source - Water [10°C] / Low Temperature [35°C]	
SCOPon	6.07
SCOPnet	6.07
SCOP	6.05
η [%]	242.19
Label	A+++
Qh [kWh]	21010
Pdesignh [kW]	61.7
Tbivalent [°C]	-10.00

Source - Water [10°C] / Medium Temperature [55°C]

Operating conditions		Qh	P	COP
1	W10 / W47-55	61.8	17.6	3.51
2	W10 / W47-55 (MIN)	30.9	8.7	3.56
A	W10 / Wxx-52	62.4	16.1	3.87
B	W10 / Wxx-42	62.4	12.7	4.90
C	W10 / Wxx-36	62.5	11.4	5.57
D	W10 / Wxx-30	62.5	10.4	6.11
E	W10 / Wxx-55	61.8	17.6	3.51
F	W10 / Wxx-55	61.8	17.6	3.51

SCOP DATA EN 14825:2018
Source - Water [10°C] / Medium Temperature [55°C]

SCOPon	4.76
SCOPnet	4.76
SCOP	4.76
η [%]	190.32
Label	A+++
Qh [kWh]	26791
Pdesignh [kW]	61.8
Tbivalent [°C]	-10.00

Low temperature cooling W 12 / 7°C

Operating conditions		Qc	P	EER
A	W30-35 / W12-7	37.4	11.9	3.15
B	W26-xx / W12-7	38.0	10.9	3.48
C	W22-xx / W12-7	38.6	10.1	3.84
D	W18-xx / W12-7	38.9	9.7	4.02

SEER DATA EN 14825:2018 [W 12 / 7°C]

SEERon	3.73
SEER	3.72
Qc [kWh]	21840
η [%]	148.95

Radiant cooling W 23 / 18°C

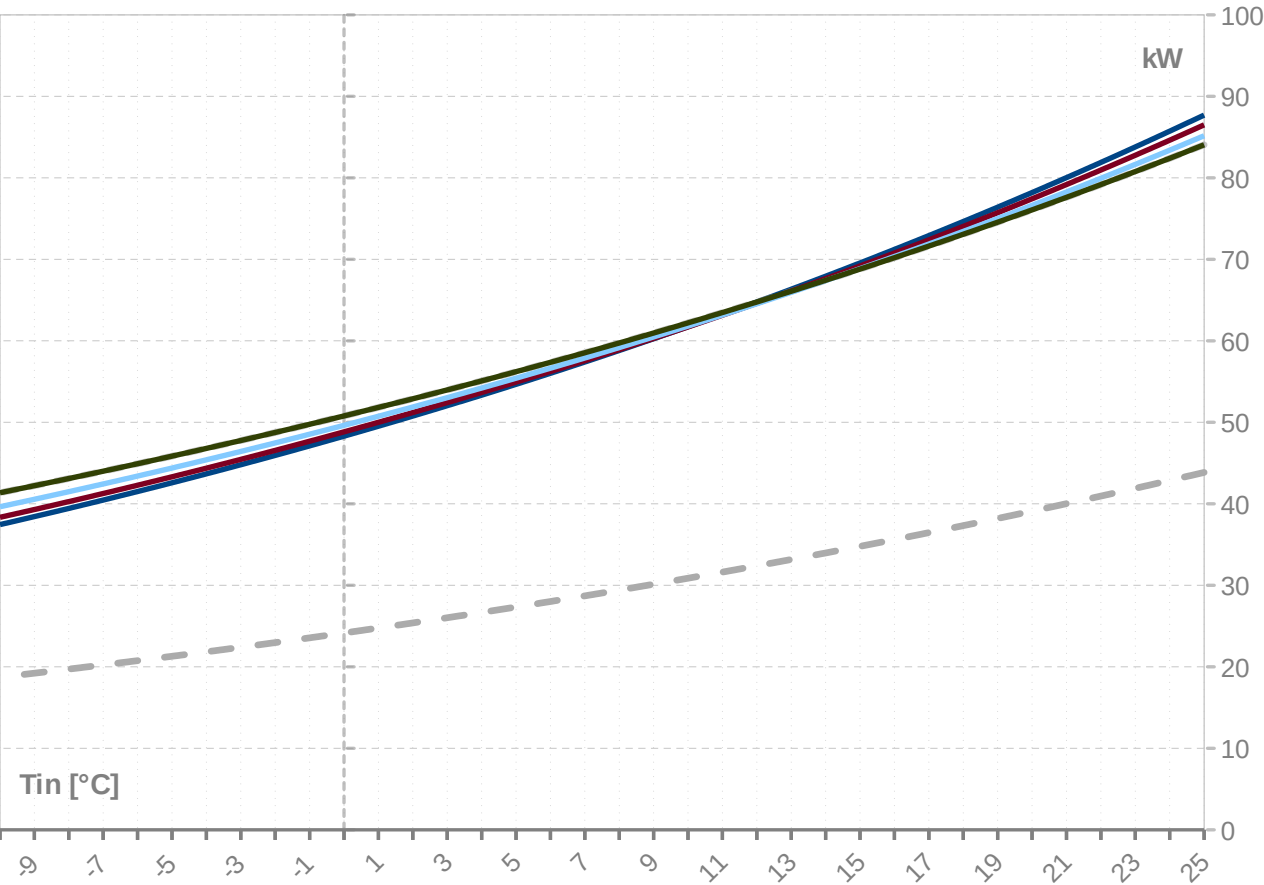
Operating conditions		Qc	P	EER
A	W50-xx / W23-18	44.3	18.2	2.44
B	W40-xx / W23-18	47.6	14.7	3.25
C	W30-35 / W23-18	50.3	11.9	4.24
D	W26-xx / W23-18	51.2	10.9	4.69

SEER DATA EN 14825:2018 [W 23 / 18°C]

SEERon	5.02
SEER	5.02
Qc [kWh]	21840
η [%]	200.63

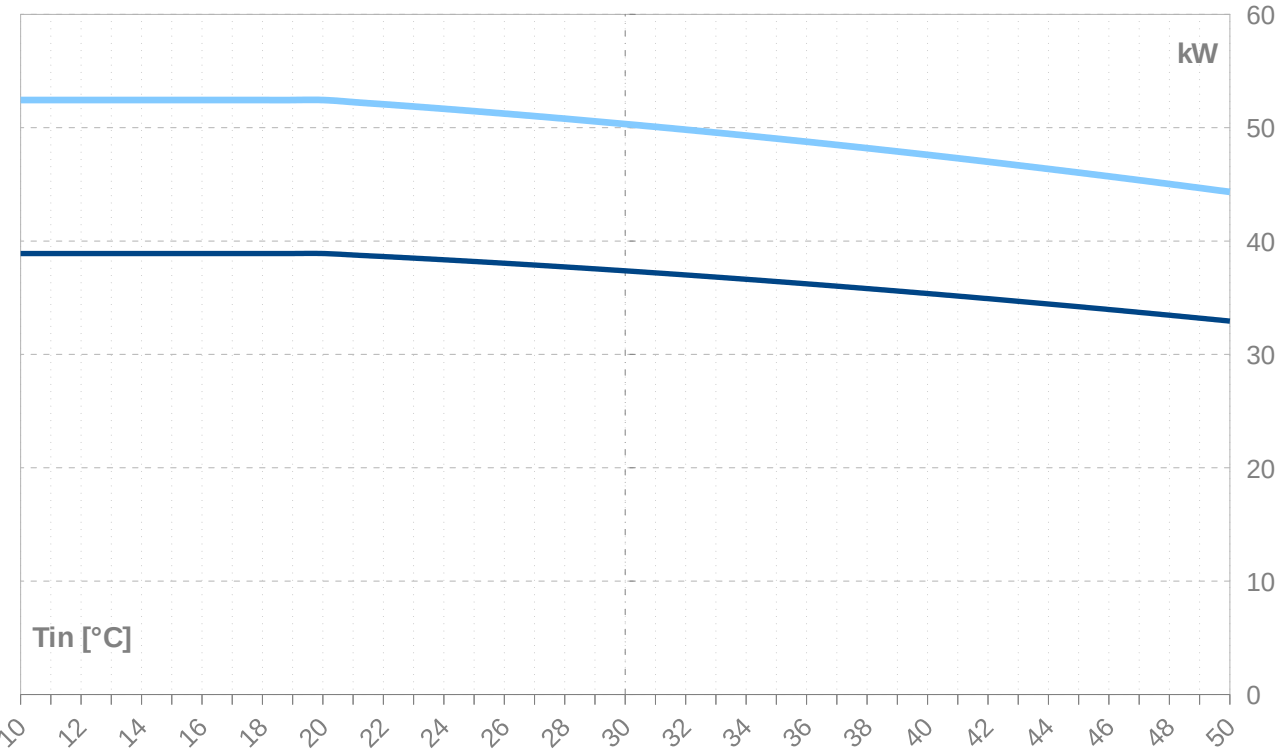
Performance lines - heating

Qh-nom-35 Qh-min-35 Qh-max-65 Qh-nom-45 Qh-nom-55
Qh-nom-65



Performance lines - cooling

Qc-nom-12-7 Qc-nom-23-18



Th -OU	35										
Ts -IN	Qh nom	Qh min	Qh max	Pin nom	Pin min	Pin max	COP nom	Qc nom	Qc min	Qc max	I nom
[°C]	[kW]	[kW]	[kW]	[kW]	[kW]	[kW]	kW / kW	[kW]	[kW]	[kW]	[A]
25	87.7	43.8	87.7	11.8	5.8	11.8	7.41	76.6	38.3	76.6	24.3
24	85.7	42.9	85.7	11.8	5.8	11.8	7.25	74.7	37.3	74.7	24.2
23	83.8	41.9	83.8	11.8	5.8	11.8	7.10	72.8	36.4	72.8	24.2
22	81.9	40.9	81.9	11.8	5.8	11.8	6.96	70.9	35.4	70.9	24.2
21	80.0	40.0	80.0	11.7	5.8	11.7	6.81	69.1	34.5	69.1	24.2
20	78.2	39.1	78.2	11.7	5.8	11.7	6.67	67.2	33.6	67.2	24.1
19	76.4	38.2	76.4	11.7	5.8	11.7	6.53	65.5	32.7	65.5	24.1
18	74.6	37.3	74.6	11.7	5.8	11.7	6.39	63.7	31.9	63.7	24.1
17	72.9	36.5	72.9	11.7	5.7	11.7	6.26	62.0	31.0	62.0	24.1
16	71.2	35.6	71.2	11.6	5.7	11.6	6.13	60.4	30.2	60.4	24.1
15	69.6	34.8	69.6	11.6	5.7	11.6	6.00	58.7	29.4	58.7	24.0
14	67.9	34.0	67.9	11.6	5.7	11.6	5.87	57.1	28.6	57.1	24.0
13	66.3	33.2	66.3	11.5	5.7	11.5	5.74	55.5	27.8	55.5	24.0
12	64.8	32.4	64.8	11.5	5.7	11.5	5.62	54.0	27.0	54.0	24.0
11	63.2	31.6	63.2	11.5	5.7	11.5	5.50	52.5	26.2	52.5	23.9
10	61.7	30.9	61.7	11.5	5.7	11.5	5.38	51.0	25.5	51.0	23.9
9	60.3	30.1	60.3	11.4	5.6	11.4	5.27	49.6	24.8	49.6	23.9
8	58.8	29.4	58.8	11.4	5.6	11.4	5.16	48.2	24.1	48.2	23.9
7	57.4	28.7	57.4	11.4	5.6	11.4	5.04	46.8	23.4	46.8	23.8
6	56.0	28.0	56.0	11.3	5.6	11.3	4.94	45.4	22.7	45.4	23.8
5	54.7	27.3	54.7	11.3	5.6	11.3	4.83	44.1	22.0	44.1	23.8
4	53.3	26.7	53.3	11.3	5.6	11.3	4.73	42.8	21.4	42.8	23.8
3	52.0	26.0	52.0	11.3	5.5	11.3	4.62	41.5	20.8	41.5	23.7
2	50.8	25.4	50.8	11.2	5.5	11.2	4.52	40.3	20.1	40.3	23.7
1	49.5	24.8	49.5	11.2	5.5	11.2	4.43	39.1	19.5	39.1	23.7
0	48.3	24.1	48.3	11.1	5.5	11.1	4.33	37.9	18.9	37.9	23.7
-1	47.1	23.6	47.1	11.1	5.5	11.1	4.24	36.7	18.4	36.7	23.6
-2	45.9	23.0	45.9	11.1	5.5	11.1	4.15	35.6	17.8	35.6	23.6
-3	44.8	22.4	44.8	11.0	5.4	11.0	4.06	34.5	17.2	34.5	23.6
-4	43.7	21.8	43.7	11.0	5.4	11.0	3.97	33.4	16.7	33.4	23.5
-5	42.6	21.3	42.6	11.0	5.4	11.0	3.89	32.3	16.2	32.3	23.5
-6	41.5	20.8	41.5	10.9	5.4	10.9	3.80	31.3	15.7	31.3	23.5
-7	40.5	20.2	40.5	10.9	5.4	10.9	3.72	30.3	15.1	30.3	23.4
-8	39.4	19.7	39.4	10.8	5.3	10.8	3.64	29.3	14.7	29.3	23.4
-9	38.4	19.2	38.4	10.8	5.3	10.8	3.56	28.4	14.2	28.4	23.3
-10	37.4	18.7	37.4	10.7	5.3	10.7	3.49	27.4	13.7	27.4	23.3
-11	36.5	18.2	36.5	10.7	5.3	10.7	3.41	26.5	13.2	26.5	23.3
-12	35.5	17.8	35.5	10.6	5.2	10.6	3.34	25.6	12.8	25.6	23.2
-13	34.6	17.3	34.6	10.6	5.2	10.6	3.27	24.7	12.4	24.7	23.2
-14	33.7	16.9	33.7	10.5	5.2	10.5	3.20	23.9	11.9	23.9	23.1
-15	32.8	16.4	32.8	10.5	5.2	10.5	3.13	23.0	11.5	23.0	23.1

-- attention: operating limits not reflected in performance table

ZHI23K1P-TFM_R410A_2_BWW

Th -OU	45										
Ts -IN	Qh nom	Qh min	Qh max	Pin nom	Pin min	Pin max	COP nom	Qc nom	Qc min	Qc max	I nom
[°C]	[kW]	[kW]	[kW]	[kW]	[kW]	[kW]	kW / kW	[kW]	[kW]	[kW]	[A]
25	86.5	43.2	86.5	14.5	7.1	14.5	5.98	73.0	36.5	73.0	26.9
24	84.6	42.3	84.6	14.4	7.1	14.4	5.86	71.1	35.6	71.1	26.9
23	82.8	41.4	82.8	14.4	7.1	14.4	5.74	69.3	34.7	69.3	26.9
22	81.0	40.5	81.0	14.4	7.1	14.4	5.63	67.5	33.8	67.5	26.8
21	79.2	39.6	79.2	14.4	7.1	14.4	5.51	65.8	32.9	65.8	26.8
20	77.4	38.7	77.4	14.3	7.1	14.3	5.40	64.0	32.0	64.0	26.8
19	75.7	37.9	75.7	14.3	7.1	14.3	5.29	62.4	31.2	62.4	26.8
18	74.0	37.0	74.0	14.3	7.0	14.3	5.19	60.7	30.4	60.7	26.7
17	72.4	36.2	72.4	14.2	7.0	14.2	5.08	59.1	29.5	59.1	26.7
16	70.8	35.4	70.8	14.2	7.0	14.2	4.98	57.5	28.7	57.5	26.7
15	69.2	34.6	69.2	14.2	7.0	14.2	4.88	55.9	28.0	55.9	26.6
14	67.6	33.8	67.6	14.1	7.0	14.1	4.78	54.4	27.2	54.4	26.6
13	66.1	33.1	66.1	14.1	7.0	14.1	4.68	52.9	26.5	52.9	26.6
12	64.6	32.3	64.6	14.1	6.9	14.1	4.59	51.5	25.7	51.5	26.5
11	63.1	31.6	63.1	14.0	6.9	14.0	4.50	50.0	25.0	50.0	26.5
10	61.7	30.9	61.7	14.0	6.9	14.0	4.40	48.6	24.3	48.6	26.5
9	60.3	30.1	60.3	14.0	6.9	14.0	4.32	47.2	23.6	47.2	26.4
8	58.9	29.5	58.9	13.9	6.9	13.9	4.23	45.9	23.0	45.9	26.4
7	57.6	28.8	57.6	13.9	6.9	13.9	4.14	44.6	22.3	44.6	26.3
6	56.2	28.1	56.2	13.9	6.8	13.9	4.06	43.3	21.6	43.3	26.3
5	54.9	27.5	54.9	13.8	6.8	13.8	3.98	42.0	21.0	42.0	26.3
4	53.7	26.8	53.7	13.8	6.8	13.8	3.90	40.8	20.4	40.8	26.2
3	52.4	26.2	52.4	13.7	6.8	13.7	3.82	39.6	19.8	39.6	26.2
2	51.2	25.6	51.2	13.7	6.8	13.7	3.74	38.4	19.2	38.4	26.1
1	50.0	25.0	50.0	13.6	6.7	13.6	3.66	37.3	18.6	37.3	26.1
0	48.8	24.4	48.8	13.6	6.7	13.6	3.59	36.1	18.1	36.1	26.0
-1	47.7	23.8	47.7	13.6	6.7	13.6	3.52	35.0	17.5	35.0	26.0
-2	46.5	23.3	46.5	13.5	6.7	13.5	3.45	33.9	17.0	33.9	25.9
-3	45.4	22.7	45.4	13.5	6.6	13.5	3.38	32.9	16.4	32.9	25.9
-4	44.4	22.2	44.4	13.4	6.6	13.4	3.31	31.9	15.9	31.9	25.8
-5	43.3	21.7	43.3	13.3	6.6	13.3	3.24	30.8	15.4	30.8	25.8
-6	42.3	21.1	42.3	13.3	6.6	13.3	3.18	29.9	14.9	29.9	25.7
-7	41.3	20.6	41.3	13.2	6.5	13.2	3.12	28.9	14.4	28.9	25.7
-8	40.3	20.1	40.3	13.2	6.5	13.2	3.05	28.0	14.0	28.0	25.6
-9	39.3	19.6	39.3	13.1	6.5	13.1	2.99	27.0	13.5	27.0	25.6
-10	38.3	19.2	38.3	13.1	6.4	13.1	2.93	26.1	13.1	26.1	25.5
-11	37.4	18.7	37.4	13.0	6.4	13.0	2.88	25.3	12.6	25.3	25.5
-12	36.5	18.2	36.5	12.9	6.4	12.9	2.82	24.4	12.2	24.4	25.4
-13	35.6	17.8	35.6	12.9	6.3	12.9	2.76	23.6	11.8	23.6	25.3
-14	34.7	17.4	34.7	12.8	6.3	12.8	2.71	22.8	11.4	22.8	25.3
-15	33.9	16.9	33.9	12.7	6.3	12.7	2.66	22.0	11.0	22.0	25.2

-- attention: operating limits not reflected in performance table

Th -OU	55										
	[°C]										
Ts -IN	Qh nom	Qh min	Qh max	Pin nom	Pin min	Pin max	COP nom	Qc nom	Qc min	Qc max	I nom
[°C]	[kW]	[kW]	[kW]	[kW]	[kW]	[kW]	kW / kW	[kW]	[kW]	[kW]	[A]
25	85.2	42.6	85.2	18.2	9.0	18.2	4.68	68.2	34.1	68.2	31.3
24	83.4	41.7	83.4	18.2	9.0	18.2	4.59	66.4	33.2	66.4	31.2
23	81.6	40.8	81.6	18.1	8.9	18.1	4.50	64.7	32.4	64.7	31.2
22	79.9	40.0	79.9	18.1	8.9	18.1	4.42	63.0	31.5	63.0	31.2
21	78.3	39.1	78.3	18.1	8.9	18.1	4.33	61.4	30.7	61.4	31.1
20	76.6	38.3	76.6	18.0	8.9	18.0	4.25	59.8	29.9	59.8	31.1
19	75.0	37.5	75.0	18.0	8.9	18.0	4.17	58.2	29.1	58.2	31.0
18	73.4	36.7	73.4	18.0	8.9	18.0	4.09	56.7	28.3	56.7	31.0
17	71.9	35.9	71.9	17.9	8.8	17.9	4.01	55.1	27.6	55.1	30.9
16	70.4	35.2	70.4	17.9	8.8	17.9	3.94	53.7	26.8	53.7	30.9
15	68.9	34.4	68.9	17.8	8.8	17.8	3.86	52.2	26.1	52.2	30.8
14	67.4	33.7	67.4	17.8	8.8	17.8	3.79	50.8	25.4	50.8	30.8
13	66.0	33.0	66.0	17.7	8.7	17.7	3.72	49.4	24.7	49.4	30.7
12	64.5	32.3	64.5	17.7	8.7	17.7	3.65	48.0	24.0	48.0	30.7
11	63.2	31.6	63.2	17.6	8.7	17.6	3.58	46.7	23.3	46.7	30.6
10	61.8	30.9	61.8	17.6	8.7	17.6	3.51	45.4	22.7	45.4	30.6
9	60.5	30.2	60.5	17.5	8.7	17.5	3.45	44.1	22.0	44.1	30.5
8	59.2	29.6	59.2	17.5	8.6	17.5	3.38	42.8	21.4	42.8	30.4
7	57.9	28.9	57.9	17.4	8.6	17.4	3.32	41.6	20.8	41.6	30.4
6	56.6	28.3	56.6	17.4	8.6	17.4	3.26	40.4	20.2	40.4	30.3
5	55.4	27.7	55.4	17.3	8.6	17.3	3.20	39.2	19.6	39.2	30.3
4	54.2	27.1	54.2	17.3	8.5	17.3	3.14	38.1	19.0	38.1	30.2
3	53.0	26.5	53.0	17.2	8.5	17.2	3.08	36.9	18.5	36.9	30.1
2	51.9	25.9	51.9	17.2	8.5	17.2	3.02	35.8	17.9	35.8	30.1
1	50.7	25.4	50.7	17.1	8.4	17.1	2.97	34.8	17.4	34.8	30.0
0	49.6	24.8	49.6	17.0	8.4	17.0	2.91	33.7	16.9	33.7	29.9
-1	48.5	24.3	48.5	17.0	8.4	17.0	2.86	32.7	16.3	32.7	29.8
-2	47.5	23.7	47.5	16.9	8.3	16.9	2.81	31.7	15.8	31.7	29.8
-3	46.4	23.2	46.4	16.8	8.3	16.8	2.76	30.7	15.3	30.7	29.7
-4	45.4	22.7	45.4	16.8	8.3	16.8	2.71	29.7	14.9	29.7	29.6
-5	44.4	22.2	44.4	16.7	8.2	16.7	2.66	28.8	14.4	28.8	29.5
-6	43.4	21.7	43.4	16.6	8.2	16.6	2.61	27.9	13.9	27.9	29.4
-7	42.4	21.2	42.4	16.6	8.2	16.6	2.56	27.0	13.5	27.0	29.4
-8	41.5	20.7	41.5	16.5	8.1	16.5	2.52	26.1	13.0	26.1	29.3
-9	40.5	20.3	40.5	16.4	8.1	16.4	2.47	25.2	12.6	25.2	29.2
-10	39.6	19.8	39.6	16.3	8.1	16.3	2.43	24.4	12.2	24.4	29.1
-11	38.7	19.4	38.7	16.2	8.0	16.2	2.39	23.6	11.8	23.6	29.0
-12	37.9	18.9	37.9	16.2	8.0	16.2	2.34	22.8	11.4	22.8	28.9
-13	37.0	18.5	37.0	16.1	7.9	16.1	2.30	22.0	11.0	22.0	28.8
-14	36.2	18.1	36.2	16.0	7.9	16.0	2.26	21.2	10.6	21.2	28.7
-15	35.3	17.7	35.3	15.9	7.8	15.9	2.22	20.5	10.2	20.5	28.6

-- attention: operating limits not reflected in performance table

Th -OU	65 (T-max)										
Ts -IN	Qh nom	Qh min	Qh max	Pin nom	Pin min	Pin max	COP nom	Qc nom	Qc min	Qc max	I nom
[°C]	[kW]	[kW]	[kW]	[kW]	[kW]	[kW]	kW / kW	[kW]	[kW]	[kW]	[A]
25	84.1	42.0	84.1	22.7	11.2	22.7	3.70	62.8	31.4	62.8	37.1
24	82.4	41.2	82.4	22.7	11.2	22.7	3.63	61.2	30.6	61.2	37.0
23	80.8	40.4	80.8	22.6	11.2	22.6	3.57	59.6	29.8	59.6	36.9
22	79.2	39.6	79.2	22.6	11.1	22.6	3.51	58.1	29.0	58.1	36.9
21	77.6	38.8	77.6	22.5	11.1	22.5	3.44	56.6	28.3	56.6	36.8
20	76.1	38.0	76.1	22.5	11.1	22.5	3.38	55.1	27.5	55.1	36.8
19	74.6	37.3	74.6	22.4	11.1	22.4	3.32	53.6	26.8	53.6	36.7
18	73.1	36.5	73.1	22.4	11.0	22.4	3.26	52.2	26.1	52.2	36.6
17	71.6	35.8	71.6	22.3	11.0	22.3	3.21	50.8	25.4	50.8	36.5
16	70.2	35.1	70.2	22.3	11.0	22.3	3.15	49.4	24.7	49.4	36.5
15	68.8	34.4	68.8	22.2	11.0	22.2	3.10	48.1	24.0	48.1	36.4
14	67.4	33.7	67.4	22.2	10.9	22.2	3.04	46.7	23.4	46.7	36.3
13	66.1	33.0	66.1	22.1	10.9	22.1	2.99	45.4	22.7	45.4	36.2
12	64.8	32.4	64.8	22.0	10.9	22.0	2.94	44.2	22.1	44.2	36.2
11	63.5	31.7	63.5	22.0	10.8	22.0	2.89	42.9	21.5	42.9	36.1
10	62.2	31.1	62.2	21.9	10.8	21.9	2.84	41.7	20.9	41.7	36.0
9	61.0	30.5	61.0	21.8	10.8	21.8	2.79	40.6	20.3	40.6	35.9
8	59.7	29.9	59.7	21.8	10.7	21.8	2.74	39.4	19.7	39.4	35.8
7	58.5	29.3	58.5	21.7	10.7	21.7	2.70	38.3	19.1	38.3	35.7
6	57.4	28.7	57.4	21.6	10.7	21.6	2.65	37.2	18.6	37.2	35.6
5	56.2	28.1	56.2	21.6	10.6	21.6	2.61	36.1	18.0	36.1	35.6
4	55.1	27.5	55.1	21.5	10.6	21.5	2.56	35.0	17.5	35.0	35.5
3	54.0	27.0	54.0	21.4	10.6	21.4	2.52	34.0	17.0	34.0	35.4
2	52.9	26.4	52.9	21.3	10.5	21.3	2.48	33.0	16.5	33.0	35.3
1	51.8	25.9	51.8	21.3	10.5	21.3	2.44	32.0	16.0	32.0	35.2
0	50.8	25.4	50.8	21.2	10.4	21.2	2.40	31.0	15.5	31.0	35.1
-1	49.8	24.9	49.8	21.1	10.4	21.1	2.36	30.1	15.0	30.1	35.0
-2	48.7	24.4	48.7	21.0	10.4	21.0	2.32	29.1	14.6	29.1	34.8
-3	47.8	23.9	47.8	20.9	10.3	20.9	2.28	28.2	14.1	28.2	34.7
-4	46.8	23.4	46.8	20.8	10.3	20.8	2.25	27.3	13.7	27.3	34.6
-5	45.8	22.9	45.8	20.7	10.2	20.7	2.21	26.5	13.2	26.5	34.5
-6	44.9	22.5	44.9	20.6	10.2	20.6	2.18	25.6	12.8	25.6	34.4
-7	44.0	22.0	44.0	20.5	10.1	20.5	2.14	24.8	12.4	24.8	34.3
-8	43.1	21.5	43.1	20.4	10.1	20.4	2.11	24.0	12.0	24.0	34.1
-9	42.2	21.1	42.2	20.3	10.0	20.3	2.08	23.2	11.6	23.2	34.0
-10	41.4	20.7	41.4	20.2	10.0	20.2	2.04	22.4	11.2	22.4	33.9
-11	40.5	20.3	40.5	20.1	9.9	20.1	2.01	21.7	10.8	21.7	33.8
-12	39.7	19.8	39.7	20.0	9.9	20.0	1.98	21.0	10.5	21.0	33.6
-13	38.8	19.4	38.8	19.9	9.8	19.9	1.95	20.2	10.1	20.2	33.5
-14	38.0	19.0	38.0	19.8	9.8	19.8	1.92	19.5	9.8	19.5	33.4
-15	37.2	18.6	37.2	19.7	9.7	19.7	1.89	18.9	9.4	18.9	33.2

-- attention: operating limits not reflected in performance table

Tc -OU	W 12 / 7 °C										
Ts -IN	Qc nom	Qc min	Qc max	Pin nom	Pin min	Pin max	EER	Qh nom	Qh min	Qh max	I nom
[°C]	[kW]	[kW]	[kW]	[kW]	[kW]	[kW]	kW / kW	[kW]	[kW]	[kW]	[A]
40	35.4	17.7	35.4	14.7	7.2	14.7	2.41	49.1	24.5	49.1	27.2
39	35.6	17.8	35.6	14.3	7.1	14.3	2.48	49.0	24.5	49.0	26.8
38	35.8	17.9	35.8	14.0	6.9	14.0	2.55	48.9	24.5	48.9	26.5
37	36.0	18.0	36.0	13.7	6.8	13.7	2.62	48.9	24.4	48.9	26.2
36	36.2	18.1	36.2	13.5	6.6	13.5	2.69	48.8	24.4	48.8	25.9
35	36.4	18.2	36.4	13.2	6.5	13.2	2.77	48.7	24.4	48.7	25.6
34	36.6	18.3	36.6	12.9	6.4	12.9	2.84	48.7	24.3	48.7	25.3
33	36.8	18.4	36.8	12.6	6.2	12.6	2.92	48.6	24.3	48.6	25.1
32	37.0	18.5	37.0	12.4	6.1	12.4	2.99	48.6	24.3	48.6	24.8
31	37.2	18.6	37.2	12.1	6.0	12.1	3.07	48.5	24.3	48.5	24.5
30	37.4	18.7	37.4	11.9	5.9	11.9	3.15	48.5	24.2	48.5	24.3
29	37.5	18.8	37.5	11.6	5.7	11.6	3.23	48.4	24.2	48.4	24.1
28	37.7	18.9	37.7	11.4	5.6	11.4	3.31	48.3	24.2	48.3	23.9
27	37.9	18.9	37.9	11.1	5.5	11.1	3.40	48.3	24.1	48.3	23.7
26	38.0	19.0	38.0	10.9	5.4	10.9	3.48	48.2	24.1	48.2	23.4
25	38.2	19.1	38.2	10.7	5.3	10.7	3.57	48.2	24.1	48.2	23.3
24	38.3	19.2	38.3	10.5	5.2	10.5	3.66	48.1	24.1	48.1	23.1
23	38.5	19.2	38.5	10.3	5.1	10.3	3.75	48.1	24.0	48.1	22.9
22	38.6	19.3	38.6	10.1	5.0	10.1	3.84	48.0	24.0	48.0	22.7
21	38.8	19.4	38.8	9.9	4.9	9.9	3.93	48.0	24.0	48.0	22.6
20	38.9	19.4	38.9	9.7	4.8	9.7	4.02	47.9	24.0	47.9	22.4

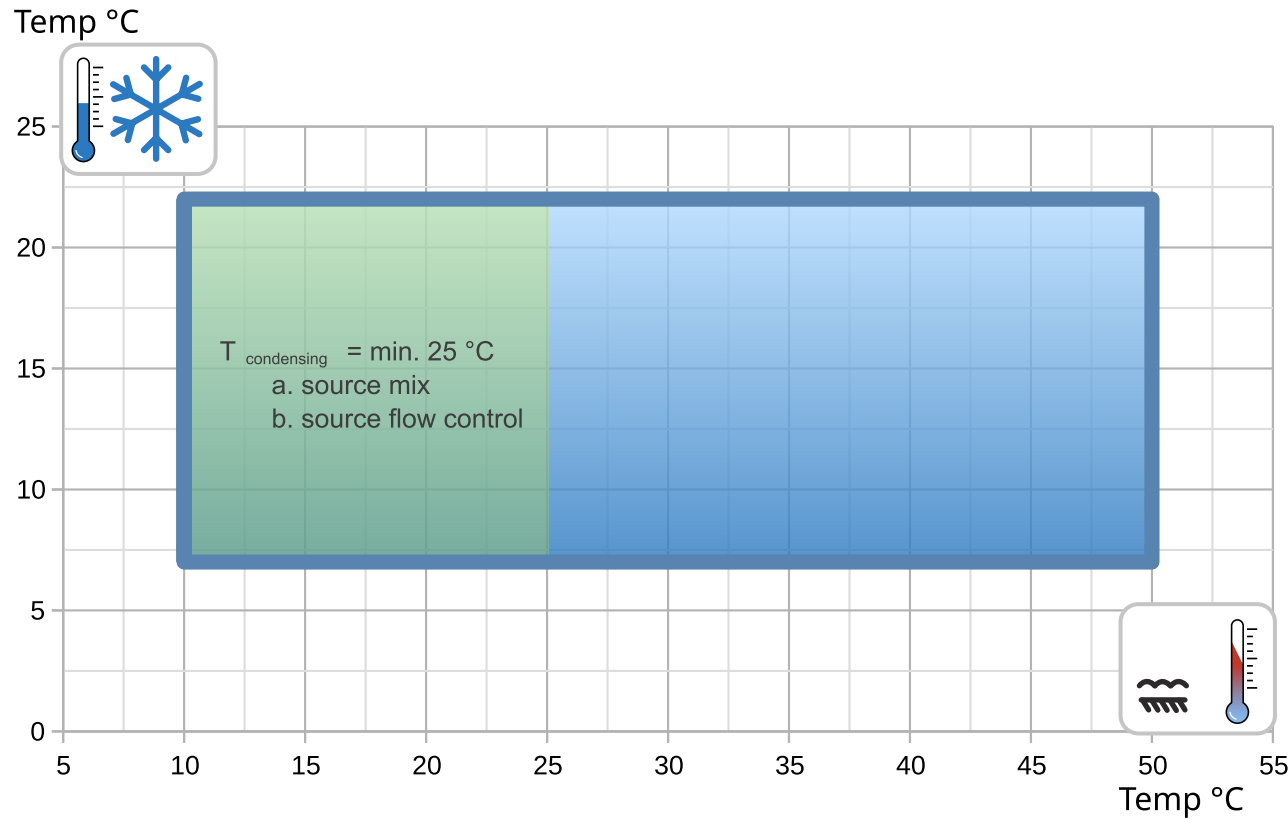
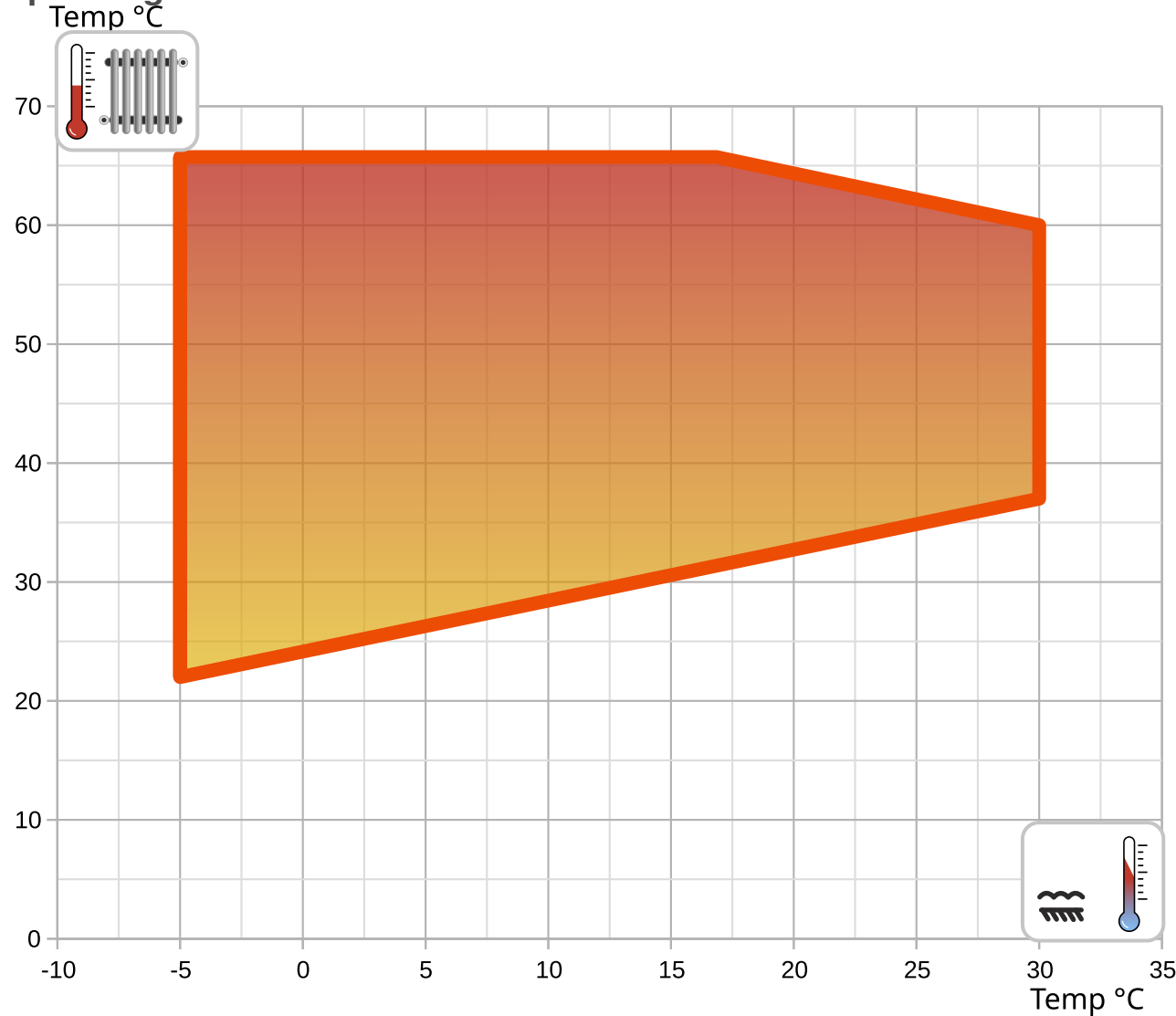
Tc [°C]	W 23 / 18 °C										
0	Qc nom	Qc min	Qc max	Pin nom	Pin min	Pin max	EER	Qh nom	Qh min	Qh max	I nom
[°C]	[kW]	[kW]	[kW]	[kW]	[kW]	[kW]	kW / kW	[kW]	[kW]	[kW]	[A]
40	47.6	23.8	47.6	14.7	7.2	14.7	3.25	61.7	30.9	61.9	27.7
39	47.9	24.0	47.9	14.3	7.1	14.3	3.34	61.7	30.9	61.9	27.3
38	48.2	24.1	48.2	14.0	6.9	14.0	3.43	61.7	30.9	61.8	27.0
37	48.5	24.2	48.5	13.7	6.8	13.7	3.53	61.7	30.9	61.8	26.6
36	48.8	24.4	48.8	13.5	6.6	13.5	3.62	61.7	30.9	61.8	26.3
35	49.0	24.5	49.0	13.2	6.5	13.2	3.72	61.7	30.9	61.8	26.0
34	49.3	24.7	49.3	12.9	6.4	12.9	3.82	61.7	30.9	61.8	25.7
33	49.6	24.8	49.6	12.6	6.2	12.6	3.92	61.7	30.9	61.7	25.4
32	49.8	24.9	49.8	12.4	6.1	12.4	4.03	61.7	30.9	61.7	25.1
31	50.1	25.0	50.1	12.1	6.0	12.1	4.13	61.7	30.9	61.7	24.9
30	50.3	25.2	50.3	11.9	5.9	11.9	4.24	61.7	30.9	61.7	24.6
29	50.6	25.3	50.6	11.6	5.7	11.6	4.35	61.7	30.9	61.7	24.4
28	50.8	25.4	50.8	11.4	5.6	11.4	4.46	61.7	30.9	61.7	24.1
27	51.0	25.5	51.0	11.1	5.5	11.1	4.58	61.7	30.9	61.7	23.9
26	51.2	25.6	51.2	10.9	5.4	10.9	4.69	61.7	30.9	61.7	23.7
25	51.5	25.7	51.5	10.7	5.3	10.7	4.81	61.7	30.9	61.7	23.5
24	51.7	25.8	51.7	10.5	5.2	10.5	4.93	61.7	30.9	61.7	23.3
23	51.9	25.9	51.9	10.3	5.1	10.3	5.05	61.7	30.9	61.7	23.1
22	52.1	26.0	52.1	10.1	5.0	10.1	5.17	61.7	30.9	61.7	23.0
21	52.3	26.1	52.3	9.9	4.9	9.9	5.29	61.7	30.9	61.7	22.8
20	52.4	26.2	52.4	9.7	4.8	9.7	5.42	61.7	30.9	61.7	22.6

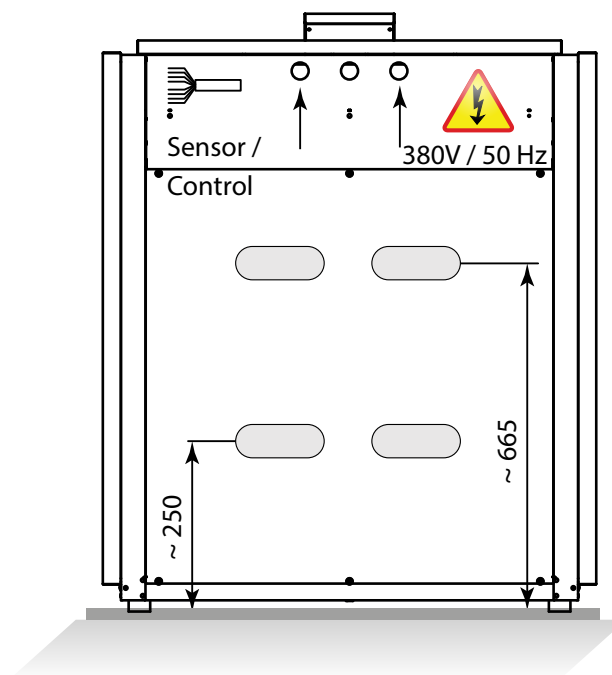
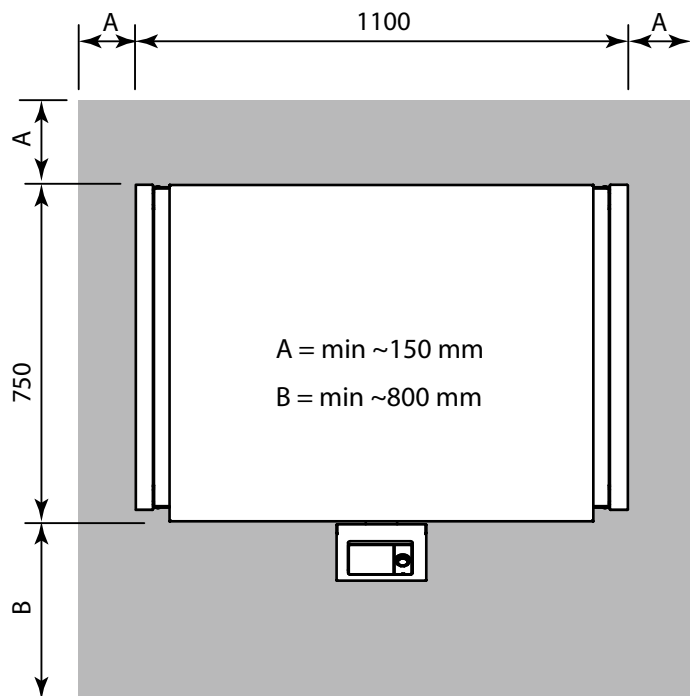
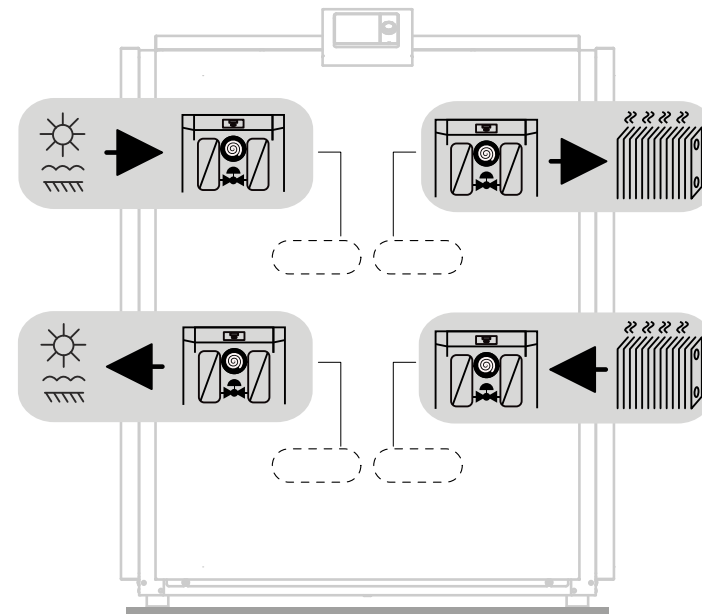
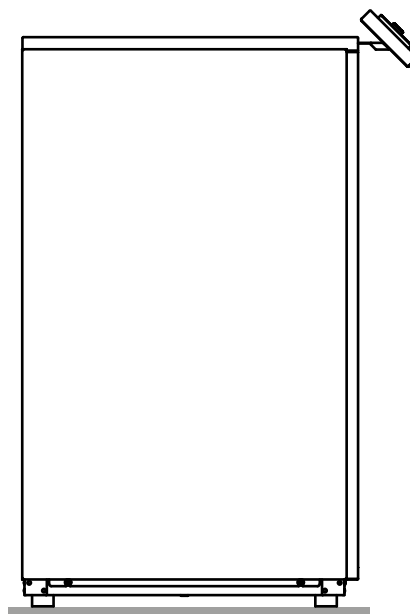
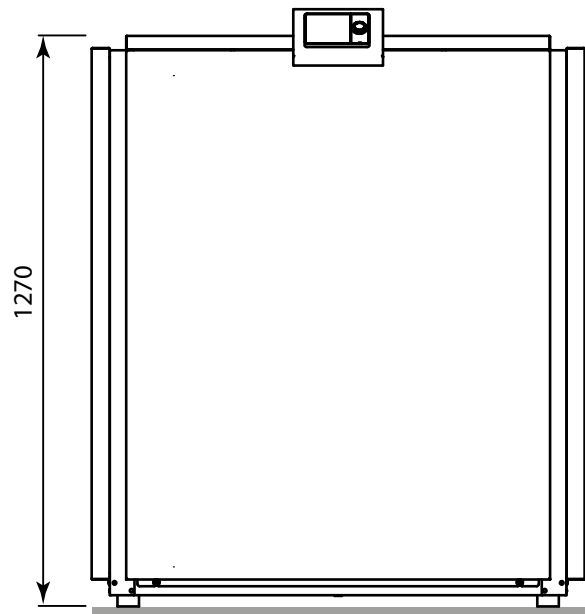
-- attention: operating limits not reflected in performance table

LEGEND:

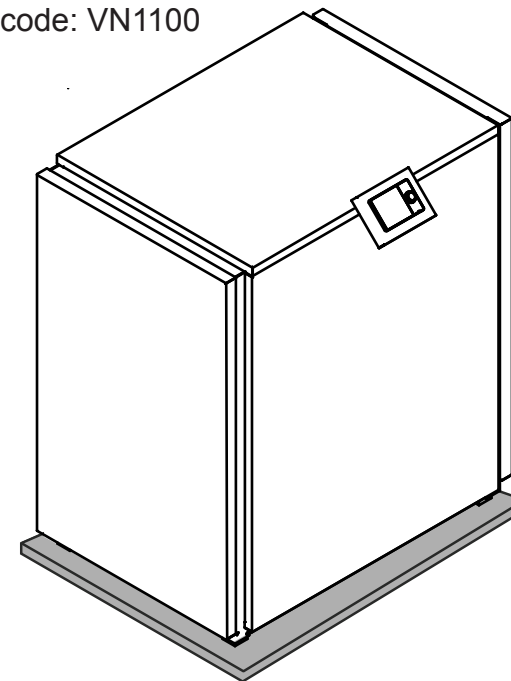
Ts-IN: Temperature renewable source - inlet [°C]
Th-OU: Temperature heating - outlet (flow) [°C]
Tc-OU: Temperature cooling - outlet (flow) [°C]
Qh nom: Heating capacity nominal
Qh min: Heating capacity minimal
Qh max: Heating capacity maximal
Pin nom: Power input at nominal heating capacity
Pin min: Power input at minimal heating capacity
Pin max: Power input at maximal heating capacity
COP nom: coefficient of performance at nominal heating capacity
Qc nom: cooling / heat extraction capacity at nominal heating capacity
Qc min: cooling / heat extraction at minimal heating capacity
Qc max: cooling / heat extraction at maximal heating capacity
I nom: Current at nominal heating capacity
EER: energy efficiency ratio at nominal cooling capacity

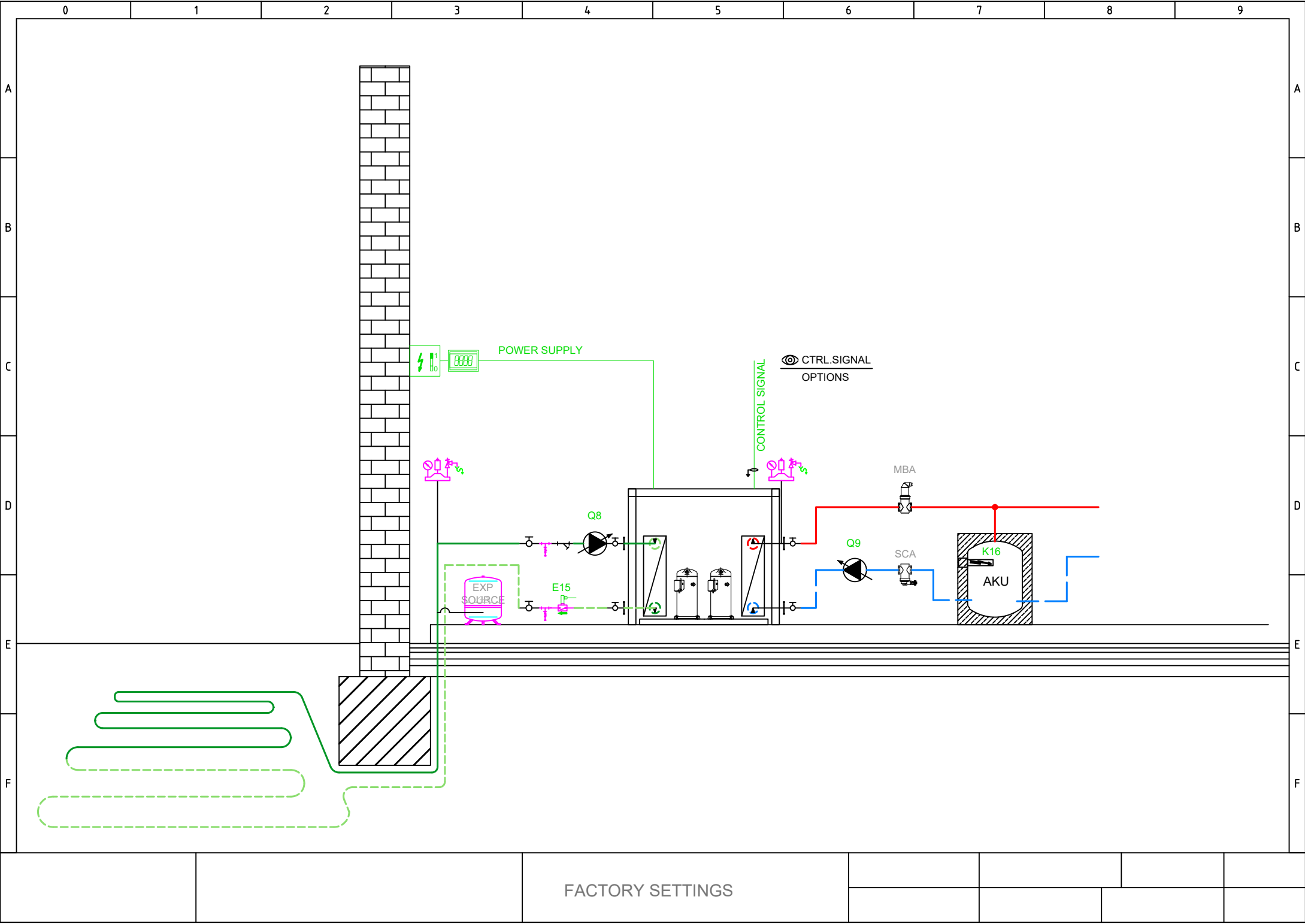
Operating limits

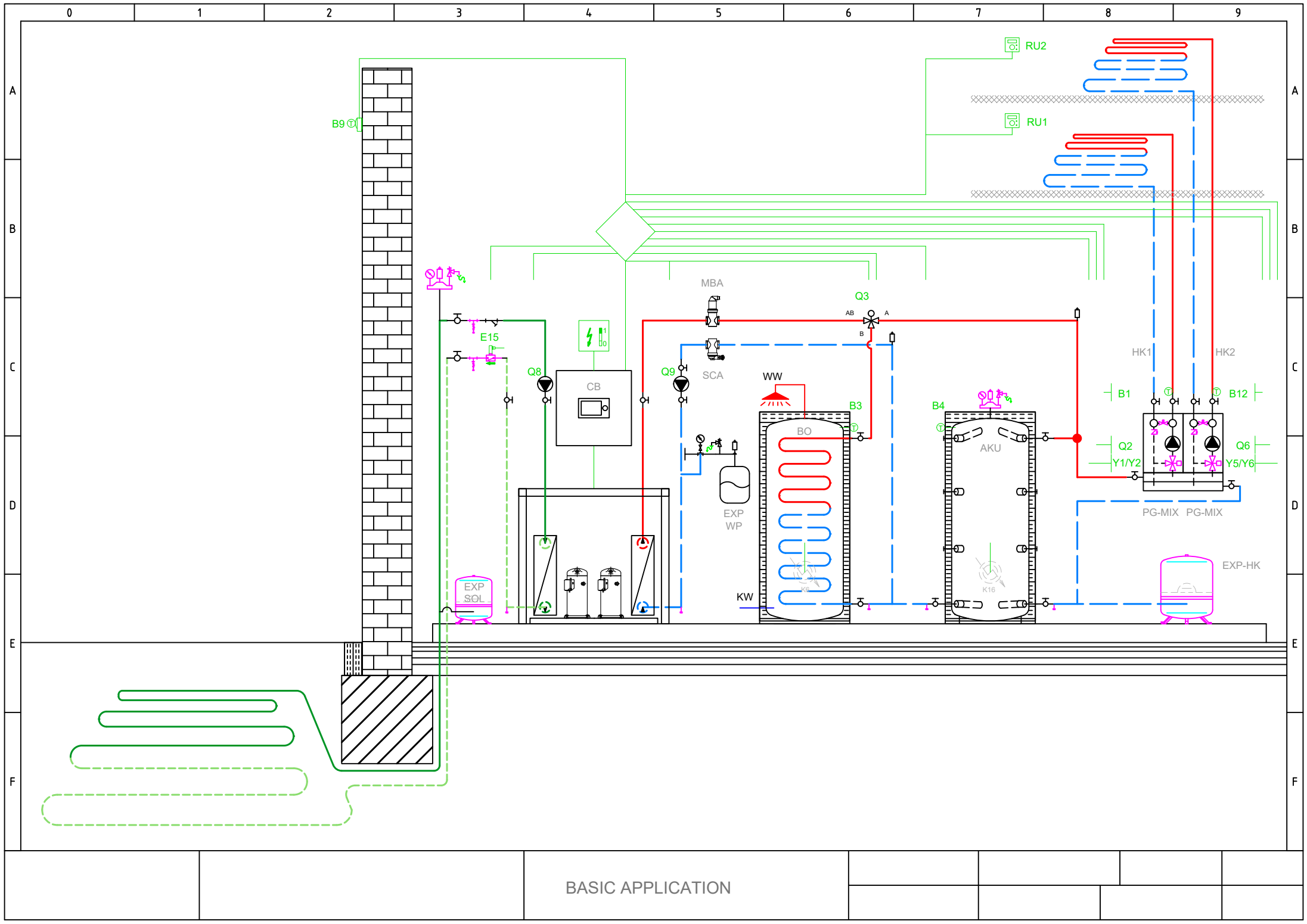


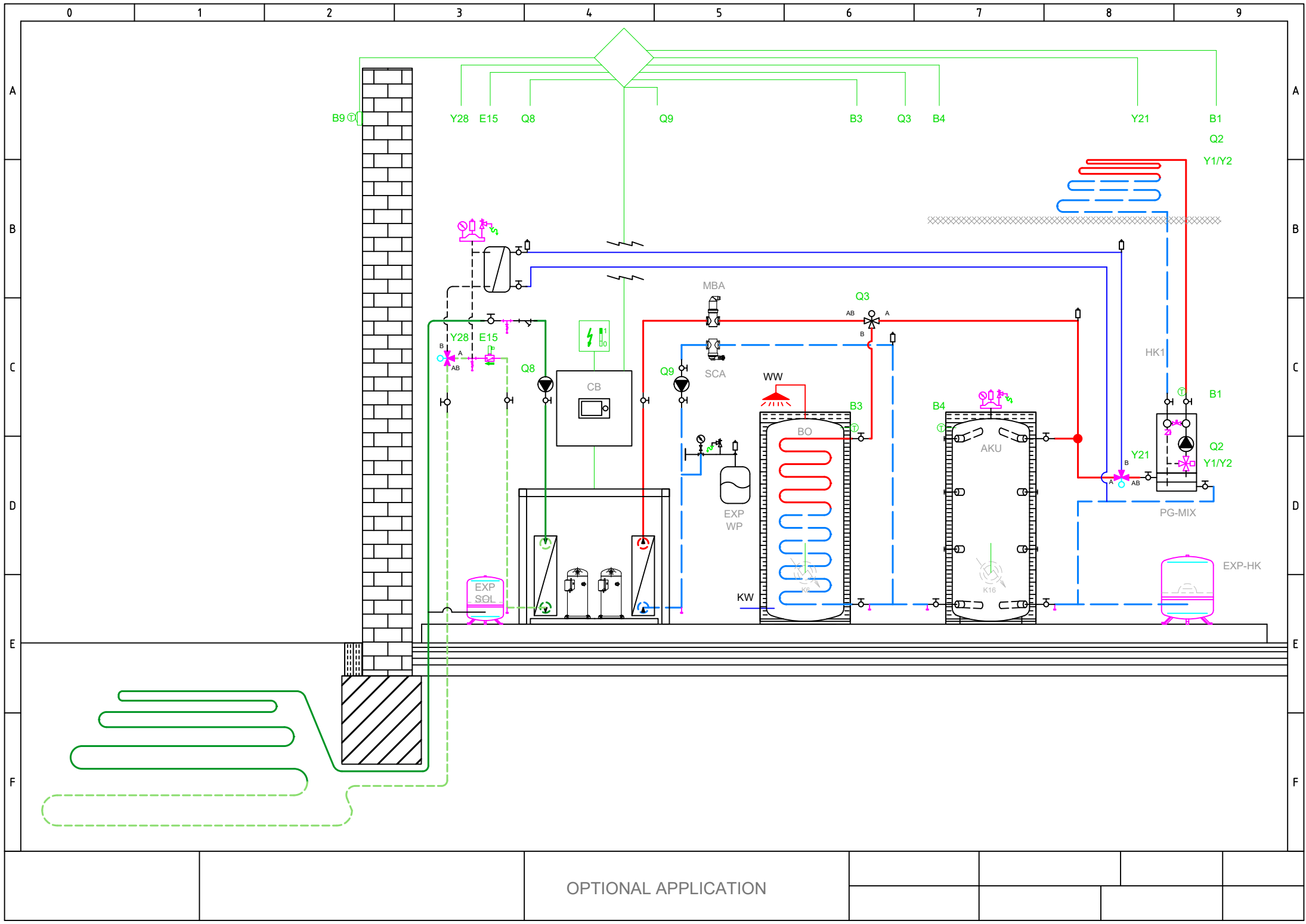


int. code: VN1100









Total: max 6A
1 x QX...: max 2A

Main power supply 230V / 50 Hz
Ground
Neutral conductor

E9 Low-pressure switch E9

E10 High-pressure switch E10

E15 Flow switch source E15

E24 Flow switch consumers E24

E6 Electrical utility lock E6

E12 Overload compressor 2 E12

E21 Mains supervision E21

E22 Mains supervision E22

E23 Mains supervision E23

E11 Overload compressor 1 E11

K1 Compressor stage 1 K1

Q8 Source pump Q8

Q9 Condenser pump Q9

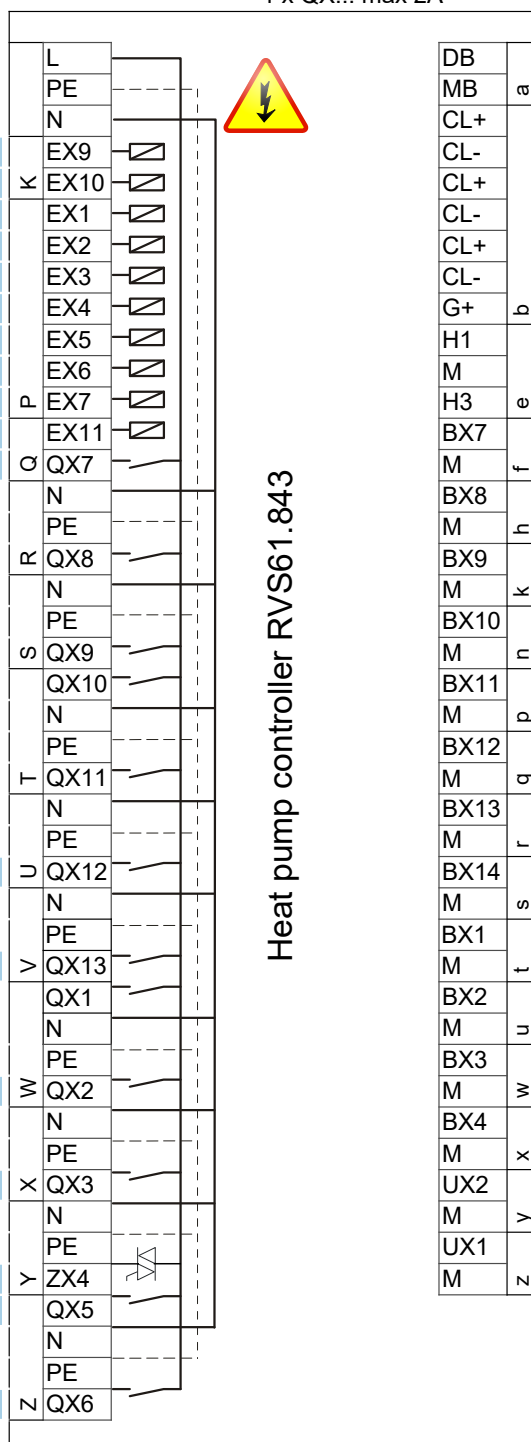
K10 Alarm output K10

K40 Crankcase heater K40

K81 Valve evaporator K81

K82 Valve EVI K82

K2 Compressor stage 2 K2



LPB Bus data

LPB Bus GND

Room unit QAA...

Room unit QAA...

Room unit QAA... 2.

Room unit QAA... 2.

Room unit QAA... 3.

Room unit QAA... 3.

12V supply → OUT

Consumer request VK1

B81 Hot-gas sensor K1 B81

B21 HP flow sensor B21

B71 HP return sensor B71

B91 Source inlet sensor B91

B84 Source outl sens B92/B84

B83 Refrig sensor liquid B83

B82 Hot-gas sensor K2 B82

Condenser pump Q9

0..10 V Signal

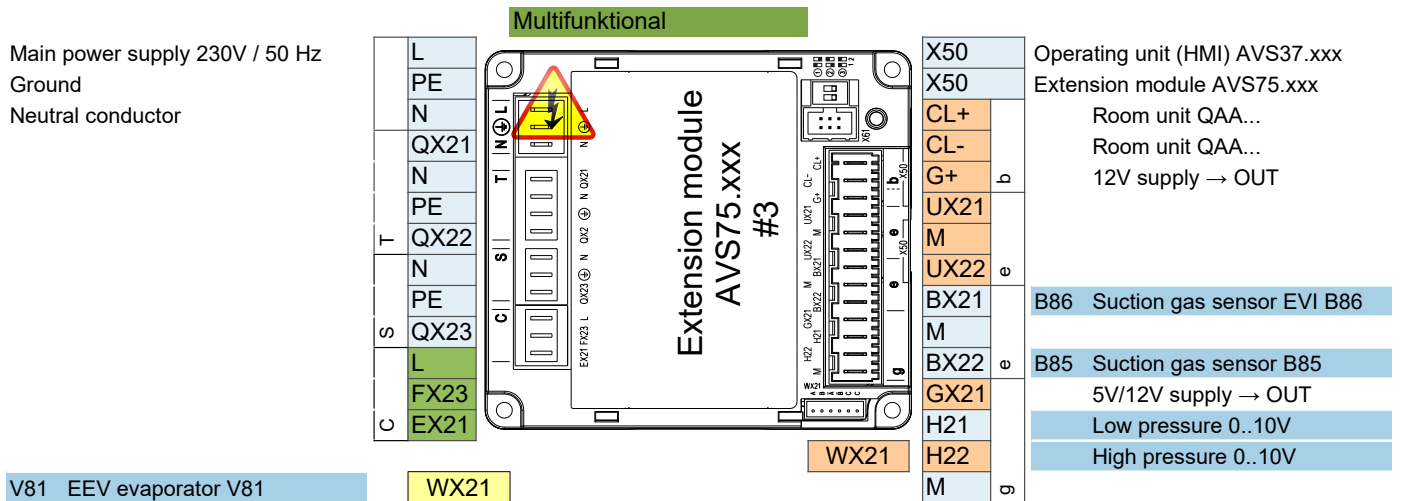
Source pump Q8

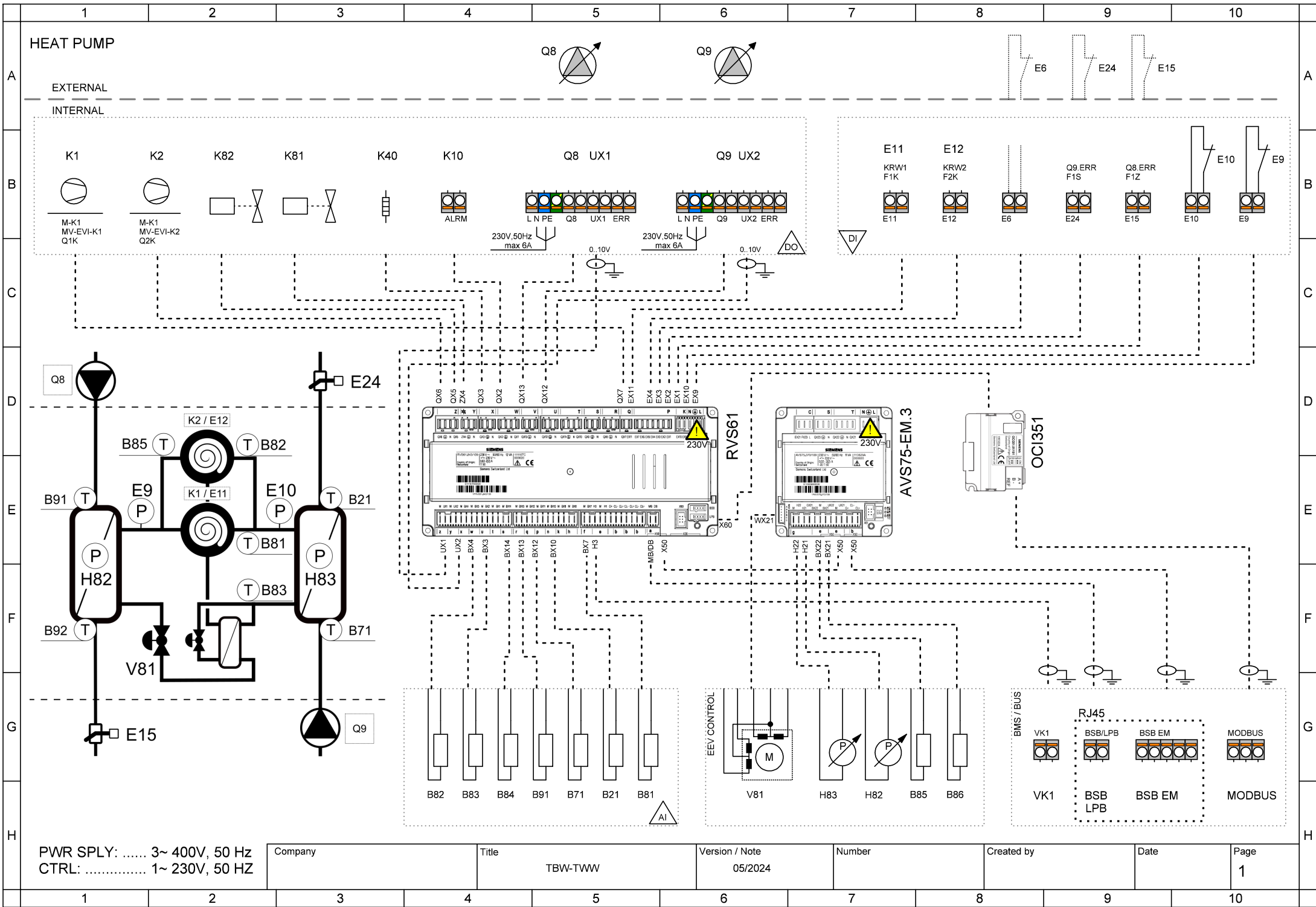
0..10 V Signal

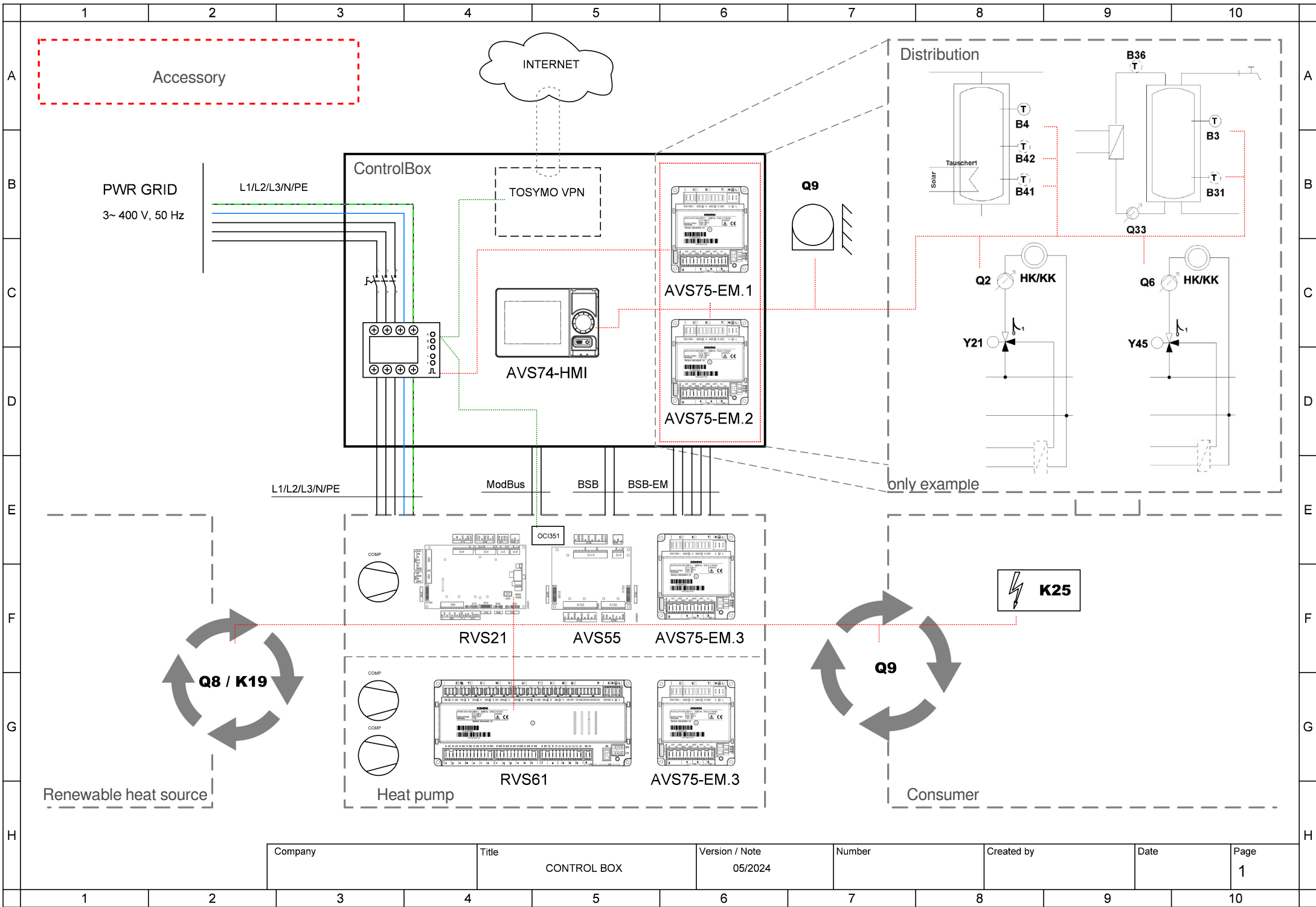
AVS75.390

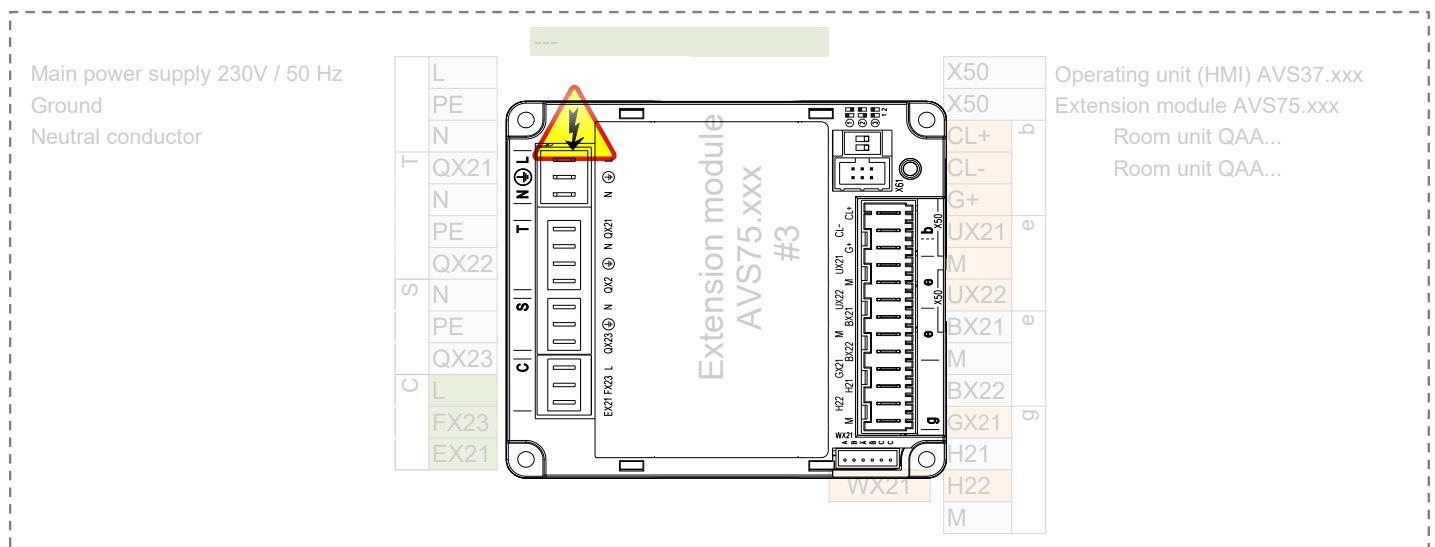
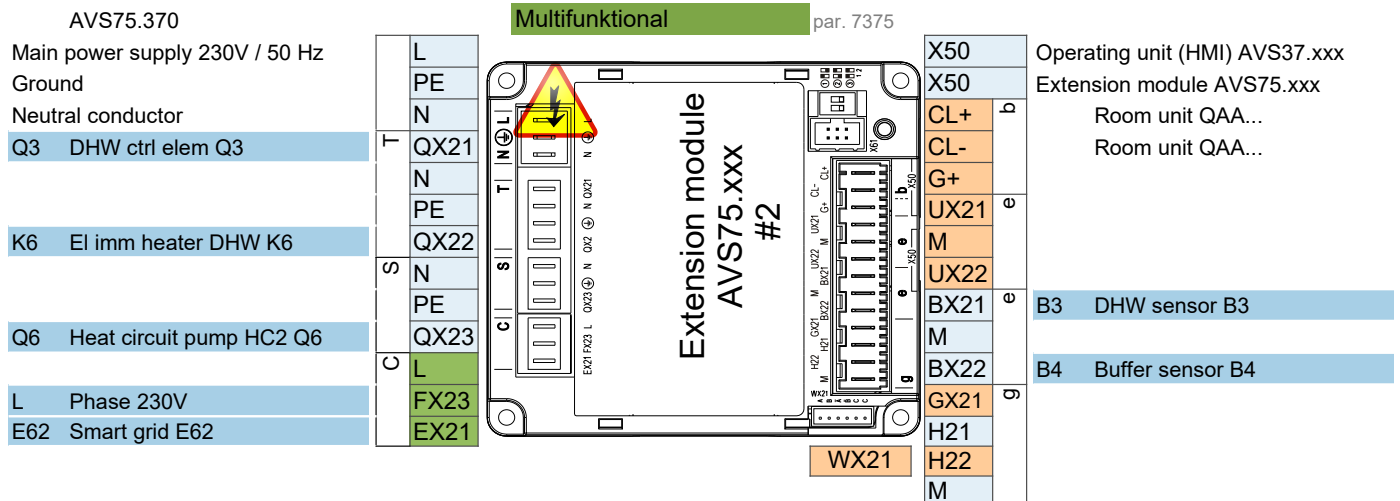
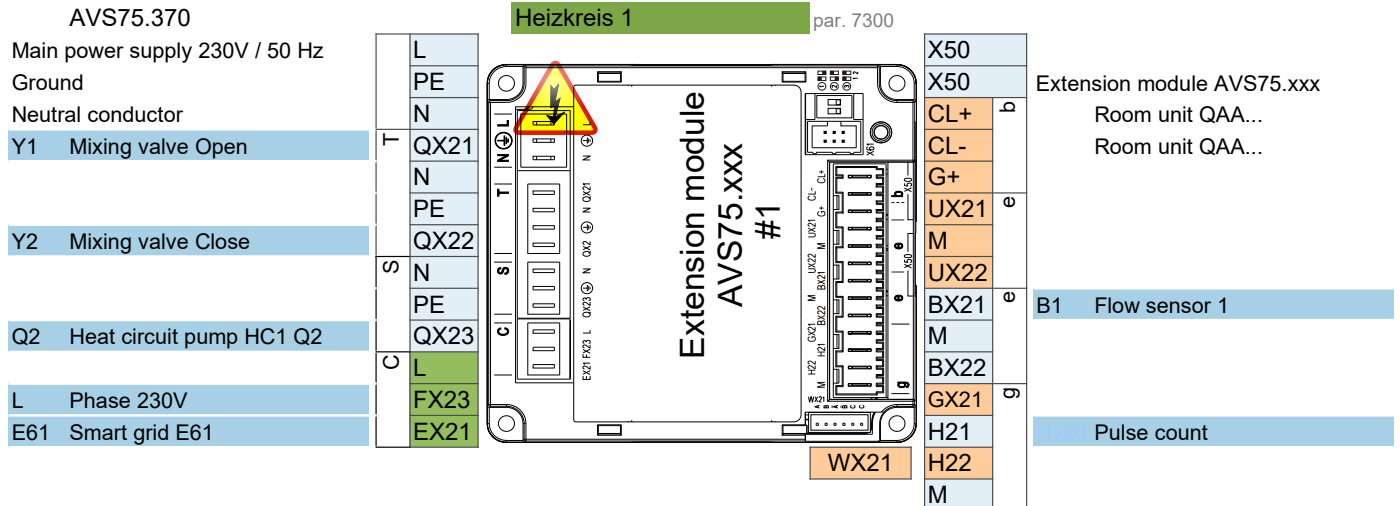
AVS75.391

AVS75.370









Attention: Extension module 3 is inside the heat pump

Control connection options

1 ControlBox

ControlBox, with two built-in extension modules, enables numerous options for application control on the consumer side behind the heat pump. For more, see the ControlBox schematic and the application diagrams sheet.

2 Fix flow temperature setpoint - On / Off dry (potential free) contact

2 wire shielded cable 2 x 0.5 mm² - Setpoint = 45°C (editable by param. 1859)

Connection terminal - see wiring diagram

3 Analog 0..10V flow temperature setpoint control

2 wire shielded cable 2 x 0.5 mm² - Setpoint: 0V = 16°C ~ 10V = 60°C (editable in parameter set)

Connection terminal - see wiring diagram

4 ModBus RTU communication command

3 wire shielded cable min. 3 x 0.25mm²

For ModBus mapping table contact technical support

5 MQTT IoT communication protocol

For more information contact technical support