

Basic performance data - WAMAK TBW 300 EVI HeavyDuty 2L3

Heating - EN 14511		
Heating capacity [kW]	B0 / W35 (max)	288.3 (48.1 / 288.3)
	B0 / W35 (min)	48.1 (48.1 / 288.3)
	B0 / W34	288.0 (48.0 / 288.0)
Electrical power input [kW]	B0 / W35 (max)	65.1 (10.6 / 65.1)
	B0 / W35 (min)	10.6 (10.6 / 65.1)
	B0 / W34	63.7 (10.4 / 63.7)
Heating efficiency faktor [COP]	B0 / W35 (max)	4.43
	B0 / W35 (min)	4.53
	B0 / W34	4.52
Seasonal space heating energy efficiency - SCOP EN 14825		
Average Climate / Low Temperature [35 °C]	SCOP	5.03
	η [%]	201.0
	Label	A+++
	Qhe [kWh]	118455.0
	Pdesignh [kW]	288.3
	Tbivalent [°C]	-10
Cooling		
Cooling capacity - [kW]	A35 / W23-18	290.6
	A25 / W23-18	305.4
	A35 / W12-7	290.6
	A25 / W12-7	290.6
Seasonal space cooling energy efficiency - SEER EN 14825		
[W 23 / 18 °C]	SEER	5.15
	Qce [kWh]	32032.9
	η_c [%]	205.8
Sound EN 12102		
Acoustic power - Lw	dB(A)	72.8
Acoustic pressure - Lp	1 m dB(A)	64.8
	5 m dB(A)	50.8
	10 m dB(A)	44.8
Mechanical and operational information		
Compressor type (3~ 400/50)	SCROLL / 6 /	On/Off
Refrigerant	R410A (GWP - 2088)	3 x 11.5 kg
Operating limit temperatures heating - (min / max) [°C]	25 / 65	
Operating limit temperatures source - (min / max) [°C]	-10 (7) / 30	
Weight	1860 kg	

Main technical data - WAMAK TBW 300 EVI HeavyDuty 2L3

Enclosure type			HD2L3			Heat energy rejection side data			
Basic dimensions		Height [mm]	2000		Operating limit temperatures heating	MAX [°C]	65		
		Width [mm]	2150			MIN [°C]	25		
		Length [mm]	1200		for more see operating limits diagram				
Weight [kg]			1860		Condenser	Port size	3 x VIC 2.1/2 "		
Colour			Gray			Type	BPHE		
Enclosure IP Class			IP20			Count	3		
Refrigeration cycle						Material	AISI 316		
Compressor	Type	Scroll		Maximal operating pressure - refrigerant [bar]				50	
	Number of stages	6		Maximal operating pressure - Water [bar]				6	
	On/Off			Testing pressure [bar]				70	
	Power factor Cosφ	0.64		Heat transfer medium				Water	
	Winding resistance	0.76 Ohm		Volume flow @ dT 5K (nom) - Water [m3/h]				8.30 ~ 49.82	
Refrigerant		R410A		Internal pressure drop - Water [kPa]				3 x 20	
	Volme	3 x 11.5 kg		Temperature difference	@ 35°C (nom)	5 K			
	GWP	2088			@ 55°C	8 K			
	Safety class	A1			@ 65°C	10 K			
Refrigeration oil type	POE RL32-3MAF			Renewable energy extraction side data					
	Oil volume	6 x 3.38 L		Operating limit temperatures source	MIN [°C]	-10 (7)			
Maximal pressure - refrigerant [bar]		50			MAX [°C]	30			
	PED class	2		for more see operating limits diagram					
EVI - vapour injection with economizer				Evaporator	Port size	3 x VIC 2.1/2 "			
Electrical connection data					Type	BPHE			
Line voltage [#~ V/Hz]					Count	3			
Current	nominal [A]	141.18			Material	AISI 316			
	maximal [A]	224.40		Maximal operating pressure - refrigerant [bar]				29	
	starting [A]	57.2		Heat transfer medium				Ethylenglykol	
Softstart			-		Brine proportion [%]				29
Main safety			C240		Antifreeze to [°C]				-15
Control System				Maximal operating pressure - Ethylenglykol [bar]					6
Main controller	SIEMENS	RVS 61		Volume flow - Ethylenglykol [m3/h]					8.48 ~ 50.86
Extension module	AVS75.3xx	AVS75.3xx	AVS75.372	Internal pressure drop - Ethylenglykol [kPa]					3 x 20
Bus Clip-In		LPB OCI346		Temperature difference - Ethylenglykol					4 K
		Modbus OCI352							
Online connection		Web server OZW672							
Superheat controller			SEC61						
*** with accessory									

WAMAK TBW 300 EVI HeavyDuty 2L3

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

Model	TBW 300 EVI HeavyDuty 2L3
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	288.3	kW	Seasonal space heating energy efficiency	ηs	201.0	%
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	288.0	kW	Tj = -7 °C	COPd	4.52	-
Tj = +2 °C	Pdh	286.4	kW	Tj = +2 °C	COPd	4.9	-
Tj = +7 °C	Pdh	285.1	kW	Tj = +7 °C	COPd	5.4	-
Tj = +12 °C	Pdh	283.6	kW	Tj = +12 °C	COPd	5.7	-
Tj = bivalent temperature	Pdh	288.3	kW	Tj = bivalent temperature	COPd	4.4	-
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	55.6	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	-	8.48 ~ 50.86	m3/h
indoors	Lwa	73	dB				
outdoors	Lwa	---	dB				
Annual energy consumption	QHE	118455.0	kWh				

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

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

Model	TBW 300 EVI HeavyDuty 2L3
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	294.8	kW	Seasonal space heating energy efficiency	ηs	160.8	%
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	296.7	kW	Tj = -7 °C	COPd	3.29	-
Tj = +2 °C	Pdh	296.8	kW	Tj = +2 °C	COPd	4.1	-
Tj = +7 °C	Pdh	291.6	kW	Tj = +7 °C	COPd	4.6	-
Tj = +12 °C	Pdh	290.0	kW	Tj = +12 °C	COPd	5.0	-
Tj = bivalent temperature	Pdh	294.8	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	55.6	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	-	8.48 ~ 50.86	m3/h
indoors	Lwa	73	dB				
outdoors	Lwa	---	dB				
Annual energy consumption	QHE	151433.2	kWh				

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WAMAK

TBW 300 EVI
HeavyDuty 2L3



55 °C

35 °C

A+++

A+++

A+++

A++

A+

A

B

C

D



73 dB



--- dB

■ 310
■ 295
■ 289
kW

■ 295
■ 289
■ 274
kW



2019

811/2013

TBW 300 EVI
HeavyDuty 2L3

ErP Data

55 °C

35 °C

Energy class

A+++

A+++

η [%]

160.8

201.0

P_{rated} [kW]

295

289

Q_{HE} [kWh/y]

151434

118455

SCOP [-]

4.02

5.03

$T_{bivalent}$ [°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]

ZHI46K1P-TWD_R410A_6_BWW

Operating conditions		Qh	P	COP
1	B0 / W30-35	288.3	65.1	4.43
2	B0 / W30-35 (MIN)	48.1	10.6	4.53
A	B0 / Wxx-34	288.0	63.7	4.52
B	B0 / Wxx-30	286.4	58.2	4.92
C	B0 / Wxx-27	47.5	8.9	5.36
D	B0 / Wxx-24	47.3	8.3	5.73
E	B0 / Wxx-35	288.3	65.1	4.43
F	B0 / Wxx-35	288.3	65.1	4.43

SCOP DATA EN 14825:2018	
Source - Brine [0°C] / Low Temperature [35°C]	
SCOPon	5.03
SCOPnet	5.03
SCOP	5.03
η [%]	201.03
Label	A+++
Qh [kWh]	118455
Pdesignh [kW]	288.3
Tbivalent [°C]	-10

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

Operating conditions		Qh	P	COP
1	B0 / W47-55	294.8	102.1	2.89
2	B0 / W47-55 (MIN)	49.1	16.5	2.96
A	B0 / Wxx-52	296.7	93.1	3.29
B	B0 / Wxx-42	296.8	72.7	4.13
C	B0 / Wxx-36	48.6	10.5	4.63
D	B0 / Wxx-30	48.3	9.5	5.09
E	B0 / Wxx-55	294.8	102.1	2.89
F	B0 / Wxx-54	297.0	95.3	3.12

SCOP DATA EN 14825:2018	
Source - Brine [0°C] / Medium Temperature [55°C]	
SCOPon	4.02
SCOPnet	4.02
SCOP	4.02
η [%]	160.81
Label	A+++
Qh [kWh]	151433
Pdesignh [kW]	294.8
Tbivalent [°C]	-10

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

Operating conditions		Qh	P	COP
1	W10 / W30-35	363.6	65.1	5.58
2	W10 / W30-35 (MIN)	60.6	10.6	5.71
A	W10 / Wxx-34	363.6	63.7	5.70
B	W10 / Wxx-30	363.8	58.6	6.21
C	W10 / Wxx-27	363.9	54.9	6.78
D	W10 / Wxx-24	363.8	51.5	7.23
E	W10 / Wxx-35	363.6	65.1	5.58
F	W10 / Wxx-35	363.6	65.1	5.58

SCOP DATA EN 14825:2018	
Source - Water [10°C] / Low Temperature [35°C]	
SCOPon	6.35
SCOPnet	6.35
SCOP	6.35
η [%]	253.94
Label	A+++
Qh [kWh]	118268
Pdesignh [kW]	363.6
Tbivalent [°C]	-10.00

WAMAK TBW 300 EVI HeavyDuty 2L3

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

Operating conditions		Qh	P	COP
1	W10 / W47-55	362.7	102.1	3.55
2	W10 / W47-55 (MIN)	60.5	16.6	3.64
A	W10 / Wxx-52	366.4	92.9	3.94
B	W10 / Wxx-42	367.2	72.6	5.06
C	W10 / Wxx-36	367.7	64.4	5.84
D	W10 / Wxx-30	368.1	58.6	6.43
E	W10 / Wxx-55	362.7	102.1	3.55
F	W10 / Wxx-55	362.7	102.1	3.55

SCOP DATA EN 14825:2018	
Source - Water [10°C] / Medium Temperature [55°C]	
SCOPon	4.93
SCOPnet	4.93
SCOP	4.93
η [%]	197.10
Label	A+++
Qh [kWh]	152004
Pdesignh [kW]	362.7
Tbivalent [°C]	-10.00

Low temperature cooling W 12 / 7°C

Operating conditions		Qc	P	EER
A	W30-35 / W12-7	224.3	69.6	3.22
B	W26-xx / W12-7	228.5	63.7	3.59
C	W22-xx / W12-7	232.0	58.2	3.98
D	W18-xx / W12-7	233.6	55.7	4.20

SEER DATA EN 14825:2018 [W 12 / 7°C]	
SEERon	3.86
SEER	3.86
Qc [kWh]	130980
η [%]	154.50

Radiant cooling W 23 / 18°C

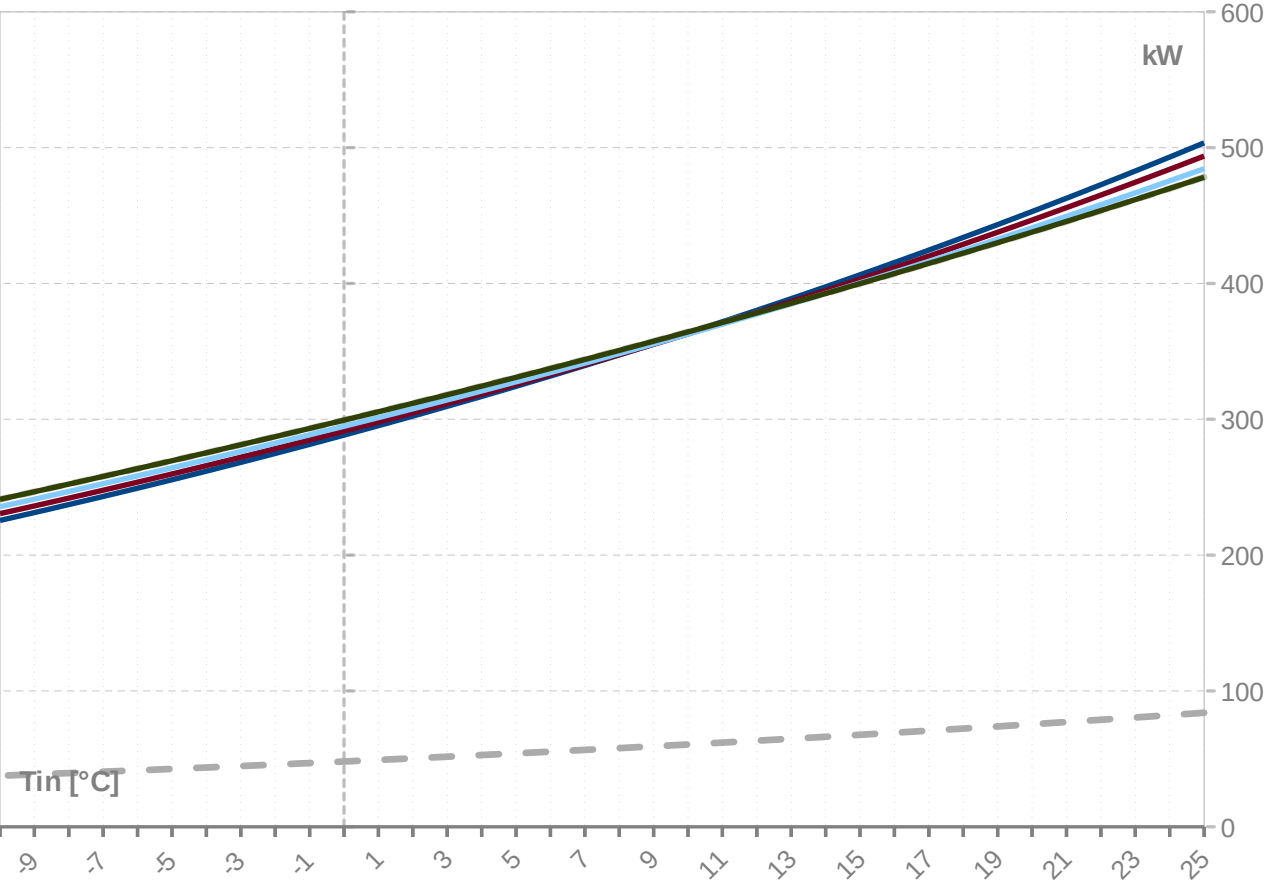
Operating conditions		Qc	P	EER
A	W50-xx / W23-18	260.6	109.4	2.38
B	W40-xx / W23-18	281.7	87.0	3.24
C	W30-35 / W23-18	298.5	69.6	4.29
D	W26-xx / W23-18	304.1	63.7	4.77

SEER DATA EN 14825:2018 [W 23 / 18°C]	
SEERon	5.15
SEER	5.15
Qc [kWh]	130980
η [%]	205.80

ZHI46K1P-TWD_R410A_6_BWW

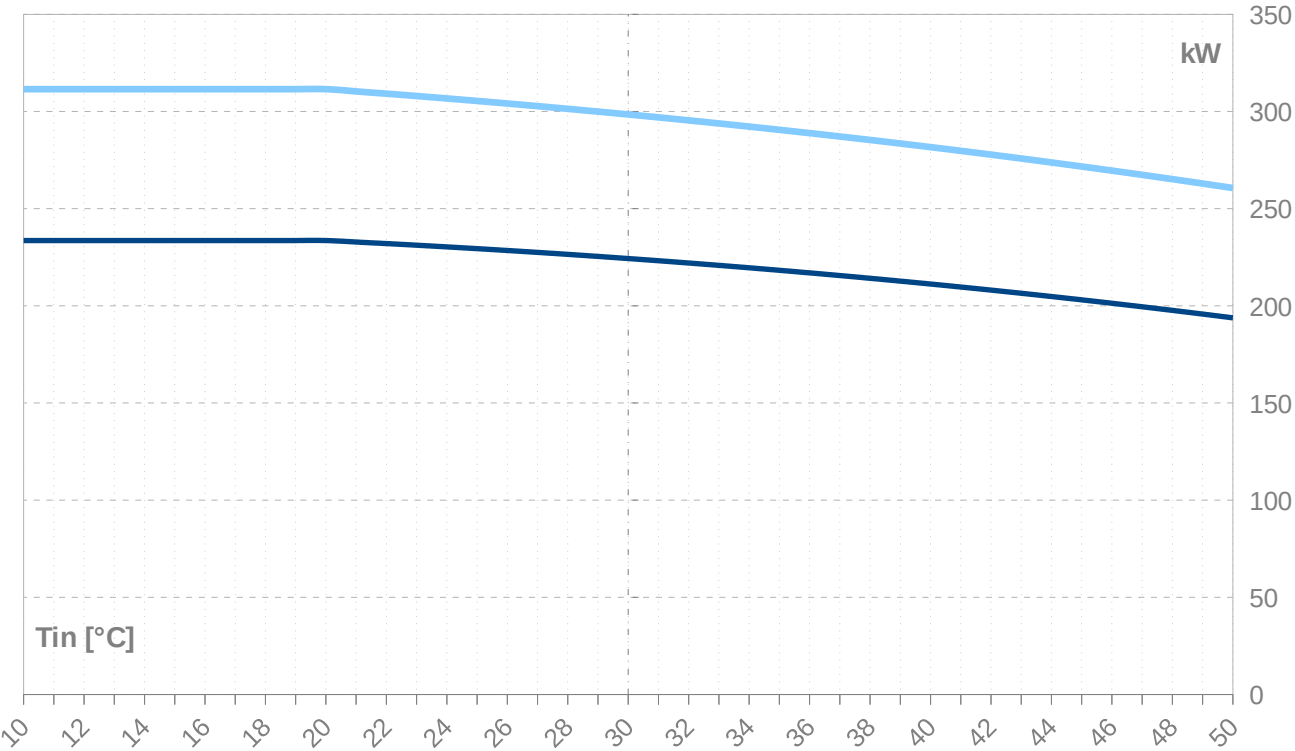
Performance lines - heating

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										
	°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	503.5	83.9	503.5	66.3	10.8	66.3	7.59	441.6	73.6	441.6	140.4
24	493.1	82.2	493.1	66.2	10.8	66.2	7.45	431.3	71.9	431.3	140.2
23	482.8	80.5	482.8	66.0	10.8	66.0	7.31	421.2	70.2	421.2	139.9
22	472.7	78.8	472.7	65.9	10.7	65.9	7.18	411.2	68.5	411.2	139.8
21	462.8	77.1	462.8	65.8	10.7	65.8	7.04	401.4	66.9	401.4	139.6
20	453.0	75.5	453.0	65.6	10.7	65.6	6.90	391.7	65.3	391.7	139.5
19	443.3	73.9	443.3	65.5	10.7	65.5	6.76	382.1	63.7	382.1	139.4
18	433.9	72.3	433.9	65.5	10.7	65.5	6.63	372.8	62.1	372.8	139.4
17	424.6	70.8	424.6	65.4	10.6	65.4	6.49	363.5	60.6	363.5	139.4
16	415.4	69.2	415.4	65.3	10.6	65.3	6.36	354.4	59.1	354.4	139.4
15	406.4	67.7	406.4	65.3	10.6	65.3	6.23	345.4	57.6	345.4	139.4
14	397.5	66.3	397.5	65.2	10.6	65.2	6.10	336.6	56.1	336.6	139.5
13	388.8	64.8	388.8	65.2	10.6	65.2	5.96	327.9	54.7	327.9	139.6
12	380.3	63.4	380.3	65.2	10.6	65.2	5.84	319.4	53.2	319.4	139.7
11	371.8	62.0	371.8	65.1	10.6	65.1	5.71	311.0	51.8	311.0	139.8
10	363.6	60.6	363.6	65.1	10.6	65.1	5.58	302.8	50.5	302.8	139.9
9	355.4	59.2	355.4	65.1	10.6	65.1	5.46	294.6	49.1	294.6	140.1
8	347.4	57.9	347.4	65.1	10.6	65.1	5.34	286.6	47.8	286.6	140.2
7	339.6	56.6	339.6	65.1	10.6	65.1	5.22	278.8	46.5	278.8	140.4
6	331.9	55.3	331.9	65.1	10.6	65.1	5.10	271.1	45.2	271.1	140.6
5	324.3	54.0	324.3	65.1	10.6	65.1	4.98	263.5	43.9	263.5	140.7
4	316.8	52.8	316.8	65.1	10.6	65.1	4.87	256.0	42.7	256.0	140.9
3	309.5	51.6	309.5	65.1	10.6	65.1	4.75	248.7	41.4	248.7	141.1
2	302.3	50.4	302.3	65.1	10.6	65.1	4.64	241.5	40.3	241.5	141.3
1	295.3	49.2	295.3	65.1	10.6	65.1	4.53	234.4	39.1	234.4	141.4
0	288.3	48.1	288.3	65.1	10.6	65.1	4.43	227.5	37.9	227.5	141.6
-1	281.5	46.9	281.5	65.1	10.6	65.1	4.32	220.7	36.8	220.7	141.8
-2	274.8	45.8	274.8	65.1	10.6	65.1	4.22	214.0	35.7	214.0	141.9
-3	268.3	44.7	268.3	65.1	10.6	65.1	4.12	207.5	34.6	207.5	142.0
-4	261.8	43.6	261.8	65.1	10.6	65.1	4.02	201.0	33.5	201.0	142.2
-5	255.5	42.6	255.5	65.1	10.6	65.1	3.93	194.7	32.5	194.7	142.3
-6	249.3	41.5	249.3	65.1	10.6	65.1	3.83	188.5	31.4	188.5	142.4
-7	243.2	40.5	243.2	65.0	10.6	65.0	3.74	182.5	30.4	182.5	142.4
-8	237.2	39.5	237.2	65.0	10.6	65.0	3.65	176.5	29.4	176.5	142.5
-9	231.3	38.6	231.3	64.9	10.6	64.9	3.56	170.7	28.4	170.7	142.5
-10	225.5	37.6	225.5	64.8	10.6	64.8	3.48	165.0	27.5	165.0	142.5
-11	219.9	36.6	219.9	64.8	10.5	64.8	3.39	159.4	26.6	159.4	142.5
-12	214.3	35.7	214.3	64.7	10.5	64.7	3.31	153.9	25.7	153.9	142.4
-13	208.9	34.8	208.9	64.6	10.5	64.6	3.23	148.6	24.8	148.6	142.3
-14	203.5	33.9	203.5	64.5	10.5	64.5	3.16	143.3	23.9	143.3	142.2
-15	198.3	33.0	198.3	64.3	10.5	64.3	3.08	138.2	23.0	138.2	142.0

-- attention: operating limits not reflected in performance table

ZHI46K1P-TWD_R410A_6_BWW

Th -OU	45										
Th -OU	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	493.8	82.3	493.8	79.9	13.0	79.9	6.18	419.1	69.9	419.1	158.6
24	484.1	80.7	484.1	79.9	13.0	79.9	6.06	409.5	68.2	409.5	158.5
23	474.5	79.1	474.5	79.9	13.0	79.9	5.94	399.9	66.7	399.9	158.3
22	465.1	77.5	465.1	79.9	13.0	79.9	5.82	390.5	65.1	390.5	158.2
21	455.8	76.0	455.8	79.9	13.0	79.9	5.71	381.3	63.5	381.3	158.2
20	446.7	74.4	446.7	79.9	13.0	79.9	5.59	372.1	62.0	372.1	158.1
19	437.7	73.0	437.7	79.9	13.0	79.9	5.48	363.1	60.5	363.1	158.1
18	428.9	71.5	428.9	79.9	13.0	79.9	5.37	354.3	59.0	354.3	158.0
17	420.1	70.0	420.1	79.9	13.0	79.9	5.26	345.5	57.6	345.5	158.0
16	411.6	68.6	411.6	79.9	13.0	79.9	5.15	336.9	56.2	336.9	158.1
15	403.1	67.2	403.1	80.0	13.0	80.0	5.04	328.5	54.7	328.5	158.1
14	394.8	65.8	394.8	80.0	13.0	80.0	4.94	320.1	53.4	320.1	158.1
13	386.6	64.4	386.6	80.0	13.0	80.0	4.83	311.9	52.0	311.9	158.2
12	378.6	63.1	378.6	80.1	13.0	80.1	4.73	303.8	50.6	303.8	158.3
11	370.7	61.8	370.7	80.1	13.1	80.1	4.63	295.8	49.3	295.8	158.3
10	362.9	60.5	362.9	80.2	13.1	80.2	4.53	288.0	48.0	288.0	158.4
9	355.2	59.2	355.2	80.2	13.1	80.2	4.43	280.3	46.7	280.3	158.5
8	347.6	57.9	347.6	80.2	13.1	80.2	4.33	272.7	45.4	272.7	158.5
7	340.2	56.7	340.2	80.3	13.1	80.3	4.24	265.2	44.2	265.2	158.6
6	332.9	55.5	332.9	80.3	13.1	80.3	4.14	257.9	43.0	257.9	158.7
5	325.7	54.3	325.7	80.4	13.1	80.4	4.05	250.6	41.8	250.6	158.7
4	318.6	53.1	318.6	80.4	13.1	80.4	3.96	243.5	40.6	243.5	158.8
3	311.6	51.9	311.6	80.4	13.1	80.4	3.88	236.5	39.4	236.5	158.8
2	304.8	50.8	304.8	80.4	13.1	80.4	3.79	229.7	38.3	229.7	158.9
1	298.0	49.7	298.0	80.4	13.1	80.4	3.71	222.9	37.2	222.9	158.9
0	291.4	48.6	291.4	80.4	13.1	80.4	3.62	216.3	36.0	216.3	158.9
-1	284.8	47.5	284.8	80.4	13.1	80.4	3.54	209.7	35.0	209.7	158.9
-2	278.4	46.4	278.4	80.4	13.1	80.4	3.46	203.3	33.9	203.3	158.8
-3	272.1	45.3	272.1	80.4	13.1	80.4	3.39	197.0	32.8	197.0	158.8
-4	265.9	44.3	265.9	80.3	13.1	80.3	3.31	190.8	31.8	190.8	158.7
-5	259.7	43.3	259.7	80.3	13.1	80.3	3.24	184.8	30.8	184.8	158.6
-6	253.7	42.3	253.7	80.2	13.1	80.2	3.16	178.8	29.8	178.8	158.4
-7	247.8	41.3	247.8	80.1	13.1	80.1	3.09	172.9	28.8	172.9	158.3
-8	241.9	40.3	241.9	80.0	13.0	80.0	3.02	167.2	27.9	167.2	158.1
-9	236.2	39.4	236.2	79.9	13.0	79.9	2.96	161.5	26.9	161.5	157.8
-10	230.5	38.4	230.5	79.8	13.0	79.8	2.89	156.0	26.0	156.0	157.6
-11	225.0	37.5	225.0	79.6	13.0	79.6	2.82	150.6	25.1	150.6	157.2
-12	219.5	36.6	219.5	79.5	12.9	79.5	2.76	145.3	24.2	145.3	156.9
-13	214.1	35.7	214.1	79.3	12.9	79.3	2.70	140.0	23.3	140.0	156.5
-14	208.8	34.8	208.8	79.1	12.9	79.1	2.64	134.9	22.5	134.9	156.1
-15	203.6	33.9	203.6	78.9	12.9	78.9	2.58	129.9	21.6	129.9	155.6

-- attention: operating limits not reflected in performance table

Th -OU	°C]	55									
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	484.5	80.8	484.5	101.1	16.5	101.1	4.79	390.1	65.0	390.1	183.9
24	475.5	79.3	475.5	101.1	16.5	101.1	4.70	381.1	63.5	381.1	183.8
23	466.7	77.8	466.7	101.2	16.5	101.2	4.61	372.2	62.0	372.2	183.8
22	458.0	76.3	458.0	101.3	16.5	101.3	4.52	363.5	60.6	363.5	183.9
21	449.4	74.9	449.4	101.3	16.5	101.3	4.44	354.8	59.1	354.8	183.9
20	441.0	73.5	441.0	101.4	16.5	101.4	4.35	346.3	57.7	346.3	183.9
19	432.6	72.1	432.6	101.5	16.5	101.5	4.26	337.9	56.3	337.9	184.0
18	424.4	70.7	424.4	101.6	16.5	101.6	4.18	329.6	54.9	329.6	184.0
17	416.3	69.4	416.3	101.6	16.6	101.6	4.10	321.4	53.6	321.4	184.1
16	408.3	68.1	408.3	101.7	16.6	101.7	4.01	313.3	52.2	313.3	184.2
15	400.5	66.7	400.5	101.8	16.6	101.8	3.93	305.4	50.9	305.4	184.2
14	392.7	65.4	392.7	101.9	16.6	101.9	3.86	297.6	49.6	297.6	184.3
13	385.0	64.2	385.0	101.9	16.6	101.9	3.78	289.9	48.3	289.9	184.4
12	377.5	62.9	377.5	102.0	16.6	102.0	3.70	282.3	47.0	282.3	184.4
11	370.1	61.7	370.1	102.0	16.6	102.0	3.63	274.8	45.8	274.8	184.5
10	362.7	60.5	362.7	102.1	16.6	102.1	3.55	267.4	44.6	267.4	184.5
9	355.5	59.3	355.5	102.1	16.6	102.1	3.48	260.1	43.4	260.1	184.6
8	348.4	58.1	348.4	102.2	16.6	102.2	3.41	253.0	42.2	253.0	184.6
7	341.4	56.9	341.4	102.2	16.6	102.2	3.34	245.9	41.0	245.9	184.6
6	334.4	55.7	334.4	102.2	16.6	102.2	3.27	239.0	39.8	239.0	184.6
5	327.6	54.6	327.6	102.2	16.6	102.2	3.20	232.1	38.7	232.1	184.6
4	320.9	53.5	320.9	102.2	16.6	102.2	3.14	225.4	37.6	225.4	184.6
3	314.2	52.4	314.2	102.2	16.6	102.2	3.07	218.8	36.5	218.8	184.5
2	307.7	51.3	307.7	102.2	16.6	102.2	3.01	212.3	35.4	212.3	184.4
1	301.2	50.2	301.2	102.1	16.6	102.1	2.95	205.8	34.3	205.8	184.3
0	294.8	49.1	294.8	102.1	16.6	102.1	2.89	199.5	33.3	199.5	184.2
-1	288.6	48.1	288.6	102.0	16.6	102.0	2.83	193.3	32.2	193.3	184.0
-2	282.4	47.1	282.4	101.9	16.6	101.9	2.77	187.2	31.2	187.2	183.8
-3	276.2	46.0	276.2	101.8	16.6	101.8	2.71	181.2	30.2	181.2	183.6
-4	270.2	45.0	270.2	101.7	16.6	101.7	2.66	175.2	29.2	175.2	183.3
-5	264.2	44.0	264.2	101.6	16.5	101.6	2.60	169.4	28.2	169.4	183.0
-6	258.4	43.1	258.4	101.4	16.5	101.4	2.55	163.7	27.3	163.7	182.7
-7	252.6	42.1	252.6	101.2	16.5	101.2	2.50	158.0	26.3	158.0	182.3
-8	246.8	41.1	246.8	101.0	16.5	101.0	2.44	152.5	25.4	152.5	181.9
-9	241.2	40.2	241.2	100.8	16.4	100.8	2.39	147.0	24.5	147.0	181.4
-10	235.6	39.3	235.6	100.5	16.4	100.5	2.34	141.7	23.6	141.7	180.9
-11	230.1	38.3	230.1	100.3	16.3	100.3	2.29	136.4	22.7	136.4	180.3
-12	224.6	37.4	224.6	100.0	16.3	100.0	2.25	131.2	21.9	131.2	179.7
-13	219.2	36.5	219.2	99.7	16.2	99.7	2.20	126.2	21.0	126.2	179.0
-14	213.9	35.7	213.9	99.3	16.2	99.3	2.15	121.2	20.2	121.2	178.3
-15	208.7	34.8	208.7	99.0	16.1	99.0	2.11	116.2	19.4	116.2	177.5

-- 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	478.2	79.7	478.2	128.8	21.0	128.8	3.71	358.0	59.7	358.0	216.0
24	469.9	78.3	469.9	128.9	21.0	128.9	3.65	349.6	58.3	349.6	216.1
23	461.7	77.0	461.7	129.0	21.0	129.0	3.58	341.3	56.9	341.3	216.3
22	453.7	75.6	453.7	129.1	21.0	129.1	3.51	333.1	55.5	333.1	216.5
21	445.7	74.3	445.7	129.2	21.0	129.2	3.45	325.0	54.2	325.0	216.7
20	437.8	73.0	437.8	129.3	21.1	129.3	3.39	317.1	52.8	317.1	216.8
19	430.0	71.7	430.0	129.4	21.1	129.4	3.32	309.2	51.5	309.2	217.0
18	422.4	70.4	422.4	129.5	21.1	129.5	3.26	301.5	50.2	301.5	217.2
17	414.8	69.1	414.8	129.5	21.1	129.5	3.20	293.8	49.0	293.8	217.3
16	407.3	67.9	407.3	129.6	21.1	129.6	3.14	286.3	47.7	286.3	217.5
15	399.9	66.7	399.9	129.7	21.1	129.7	3.08	278.8	46.5	278.8	217.7
14	392.6	65.4	392.6	129.7	21.1	129.7	3.03	271.5	45.3	271.5	217.8
13	385.4	64.2	385.4	129.8	21.1	129.8	2.97	264.3	44.0	264.3	217.9
12	378.3	63.1	378.3	129.8	21.1	129.8	2.92	257.1	42.9	257.1	218.0
11	371.3	61.9	371.3	129.8	21.1	129.8	2.86	250.1	41.7	250.1	218.1
10	364.4	60.7	364.4	129.8	21.1	129.8	2.81	243.1	40.5	243.1	218.2
9	357.5	59.6	357.5	129.8	21.1	129.8	2.75	236.3	39.4	236.3	218.3
8	350.7	58.5	350.7	129.8	21.1	129.8	2.70	229.5	38.3	229.5	218.3
7	344.0	57.3	344.0	129.7	21.1	129.7	2.65	222.9	37.1	222.9	218.3
6	337.4	56.2	337.4	129.7	21.1	129.7	2.60	216.3	36.1	216.3	218.3
5	330.9	55.2	330.9	129.6	21.1	129.6	2.55	209.9	35.0	209.9	218.3
4	324.4	54.1	324.4	129.5	21.1	129.5	2.50	203.5	33.9	203.5	218.2
3	318.1	53.0	318.1	129.4	21.1	129.4	2.46	197.2	32.9	197.2	218.1
2	311.8	52.0	311.8	129.3	21.1	129.3	2.41	191.0	31.8	191.0	217.9
1	305.5	50.9	305.5	129.2	21.0	129.2	2.37	184.9	30.8	184.9	217.7
0	299.3	49.9	299.3	129.0	21.0	129.0	2.32	178.9	29.8	178.9	217.5
-1	293.2	48.9	293.2	128.8	21.0	128.8	2.28	172.9	28.8	172.9	217.3
-2	287.2	47.9	287.2	128.6	21.0	128.6	2.23	167.1	27.8	167.1	217.0
-3	281.2	46.9	281.2	128.4	20.9	128.4	2.19	161.3	26.9	161.3	216.6
-4	275.3	45.9	275.3	128.2	20.9	128.2	2.15	155.6	25.9	155.6	216.2
-5	269.5	44.9	269.5	127.9	20.8	127.9	2.11	150.0	25.0	150.0	215.8
-6	263.7	43.9	263.7	127.6	20.8	127.6	2.07	144.5	24.1	144.5	215.3
-7	257.9	43.0	257.9	127.3	20.7	127.3	2.03	139.1	23.2	139.1	214.7
-8	252.3	42.0	252.3	126.9	20.7	126.9	1.99	133.8	22.3	133.8	214.1
-9	246.6	41.1	246.6	126.5	20.6	126.5	1.95	128.5	21.4	128.5	213.5
-10	241.1	40.2	241.1	126.1	20.5	126.1	1.91	123.3	20.5	123.3	212.7
-11	235.5	39.3	235.5	125.7	20.5	125.7	1.87	118.2	19.7	118.2	211.9
-12	230.1	38.3	230.1	125.2	20.4	125.2	1.84	113.1	18.9	113.1	211.1
-13	224.6	37.4	224.6	124.7	20.3	124.7	1.80	108.2	18.0	108.2	210.2
-14	219.2	36.5	219.2	124.2	20.2	124.2	1.77	103.3	17.2	103.3	209.2
-15	213.9	35.6	213.9	123.6	20.1	123.6	1.73	98.5	16.4	98.5	208.2

-- 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	211.2	35.2	211.2	87.0	14.2	87.0	2.43	292.5	48.7	292.5	166.4
39	212.7	35.5	212.7	85.1	13.9	85.1	2.50	292.1	48.7	292.1	164.2
38	214.2	35.7	214.2	83.2	13.5	83.2	2.58	291.8	48.6	291.8	162.0
37	215.6	35.9	215.6	81.3	13.2	81.3	2.65	291.5	48.6	291.5	159.9
36	217.0	36.2	217.0	79.5	13.0	79.5	2.73	291.2	48.5	291.2	157.9
35	218.3	36.4	218.3	77.8	12.7	77.8	2.81	290.9	48.5	290.9	155.9
34	219.6	36.6	219.6	76.1	12.4	76.1	2.89	290.6	48.4	290.6	153.9
33	220.8	36.8	220.8	74.4	12.1	74.4	2.97	290.3	48.4	290.3	152.0
32	222.0	37.0	222.0	72.8	11.9	72.8	3.05	290.0	48.3	290.0	150.2
31	223.2	37.2	223.2	71.2	11.6	71.2	3.14	289.7	48.3	289.7	148.4
30	224.3	37.4	224.3	69.6	11.3	69.6	3.22	289.3	48.2	289.3	146.7
29	225.4	37.6	225.4	68.1	11.1	68.1	3.31	289.0	48.2	289.0	144.9
28	226.5	37.7	226.5	66.6	10.8	66.6	3.40	288.7	48.1	288.7	143.2
27	227.5	37.9	227.5	65.1	10.6	65.1	3.49	288.3	48.1	288.3	141.6
26	228.5	38.1	228.5	63.7	10.4	63.7	3.59	288.0	48.0	288.0	140.0
25	229.4	38.2	229.4	62.3	10.1	62.3	3.68	287.6	47.9	287.6	138.4
24	230.3	38.4	230.3	60.9	9.9	60.9	3.78	287.2	47.9	287.2	136.8
23	231.2	38.5	231.2	59.6	9.7	59.6	3.88	286.8	47.8	286.8	135.2
22	232.0	38.7	232.0	58.2	9.5	58.2	3.98	286.4	47.7	286.4	133.7
21	232.8	38.8	232.8	56.9	9.3	56.9	4.09	286.0	47.7	286.0	132.2
20	233.6	38.9	233.6	55.7	9.1	55.7	4.20	285.6	47.6	285.6	130.7

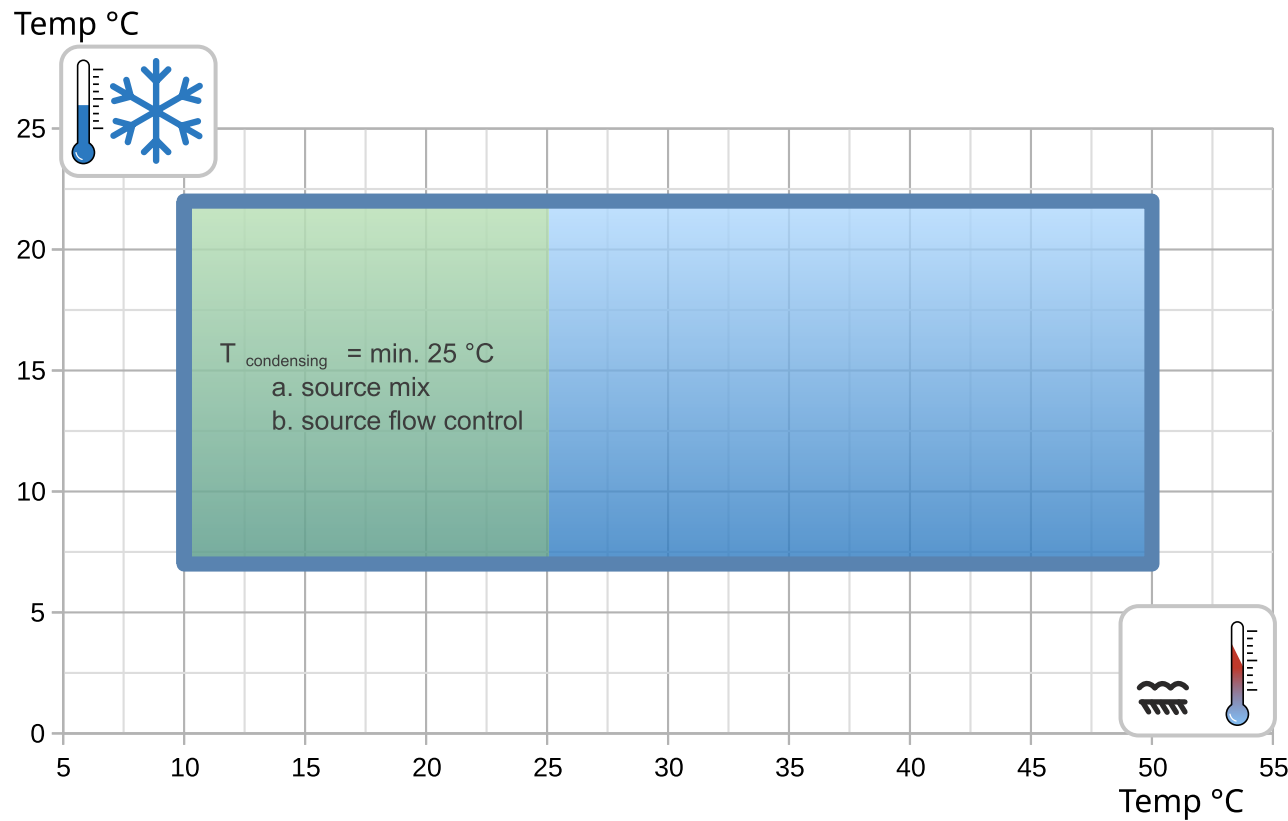
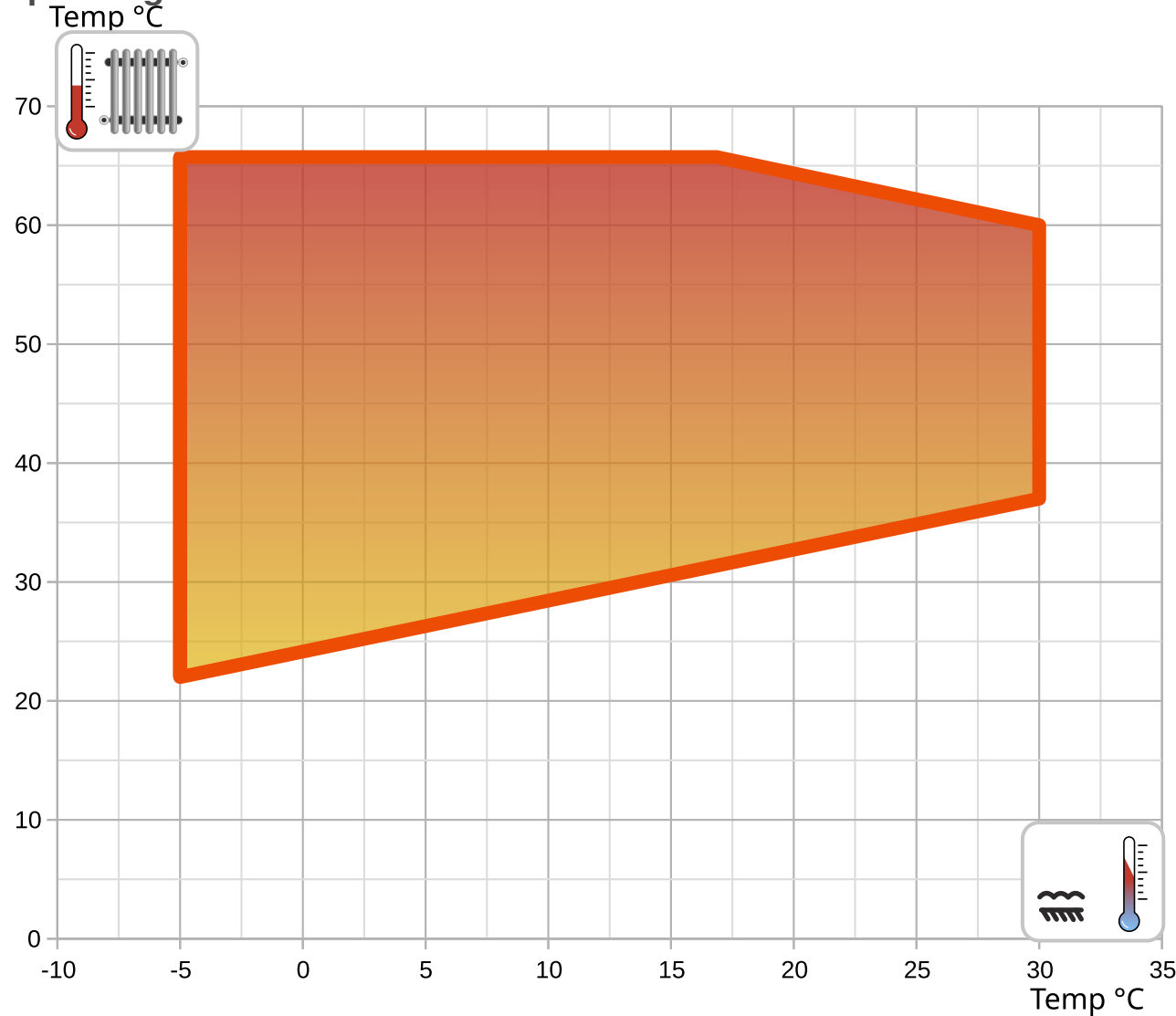
Tc [°C]		W 23 / 18 °C									
0	Qc nom	Qc min	Qc max	Pin nom	Pin min	Pin max	EER	Qh nom	Qh min	Qh max	I nom
[°C]	[kW]	[kW]	[kW]	[kW]	[kW]	[kW]	kW / kW	[kW]	[kW]	[kW]	[A]
40	281.7	46.9	281.7	87.0	14.2	87.0	3.24	362.7	60.4	363.0	166.3
39	283.5	47.3	283.5	85.1	13.9	85.1	3.33	362.7	60.5	362.9	164.0
38	285.3	47.6	285.3	83.2	13.5	83.2	3.43	362.8	60.5	362.8	161.7
37	287.1	47.9	287.1	81.3	13.2	81.3	3.53	362.8	60.5	362.7	159.5
36	288.9	48.1	288.9	79.5	13.0	79.5	3.63	362.9	60.5	362.7	157.3
35	290.6	48.4	290.6	77.8	12.7	77.8	3.74	363.0	60.5	362.7	155.2
34	292.2	48.7	292.2	76.1	12.4	76.1	3.84	363.0	60.5	362.6	153.2
33	293.8	49.0	293.8	74.4	12.1	74.4	3.95	363.1	60.5	362.6	151.2
32	295.4	49.2	295.4	72.8	11.9	72.8	4.06	363.2	60.5	362.6	149.2
31	297.0	49.5	297.0	71.2	11.6	71.2	4.17	363.3	60.5	362.7	147.3
30	298.5	49.7	298.5	69.6	11.3	69.6	4.29	363.3	60.6	362.7	145.4
29	299.9	50.0	299.9	68.1	11.1	68.1	4.41	363.4	60.6	362.7	143.6
28	301.4	50.2	301.4	66.6	10.8	66.6	4.53	363.5	60.6	362.8	141.7
27	302.8	50.5	302.8	65.1	10.6	65.1	4.65	363.6	60.6	362.8	139.9
26	304.1	50.7	304.1	63.7	10.4	63.7	4.77	363.6	60.6	362.9	138.2
25	305.4	50.9	305.4	62.3	10.1	62.3	4.90	363.7	60.6	363.0	136.4
24	306.7	51.1	306.7	60.9	9.9	60.9	5.03	363.8	60.6	363.0	134.7
23	308.0	51.3	308.0	59.6	9.7	59.6	5.17	363.8	60.6	363.1	133.0
22	309.2	51.5	309.2	58.2	9.5	58.2	5.31	363.8	60.6	363.2	131.3
21	310.3	51.7	310.3	56.9	9.3	56.9	5.45	363.9	60.6	363.3	129.6
20	311.5	51.9	311.5	55.7	9.1	55.7	5.60	363.9	60.6	363.3	127.9

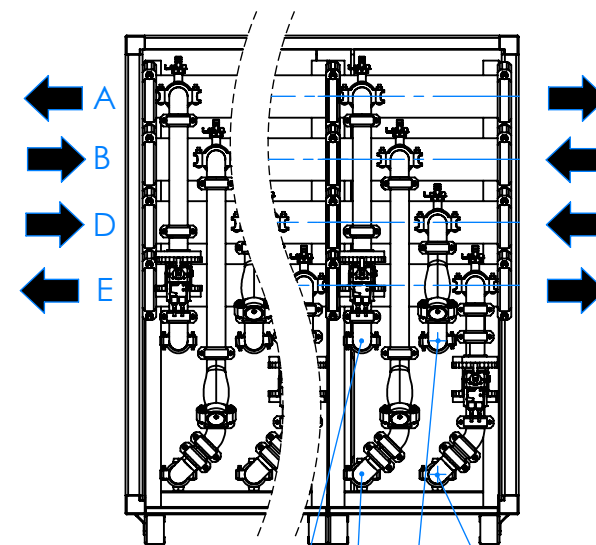
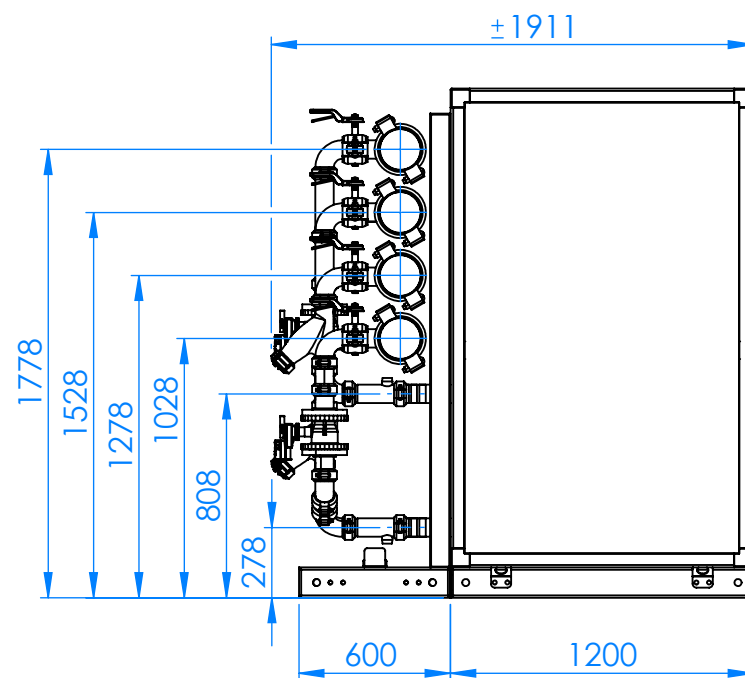
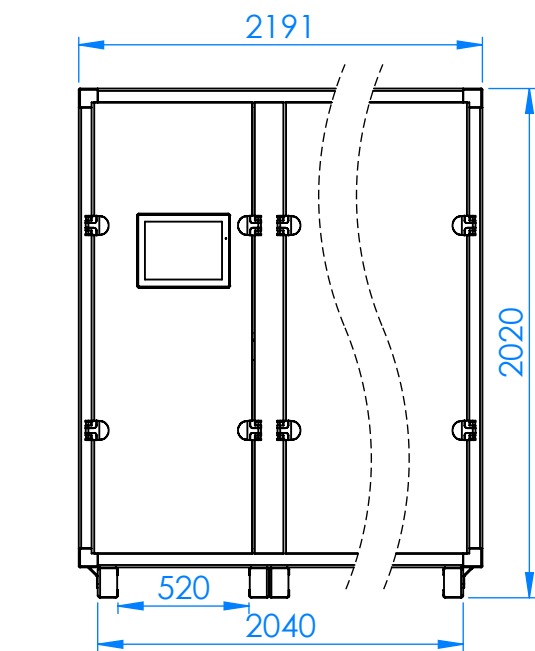
-- attention: operating limits not reflected in performance table

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

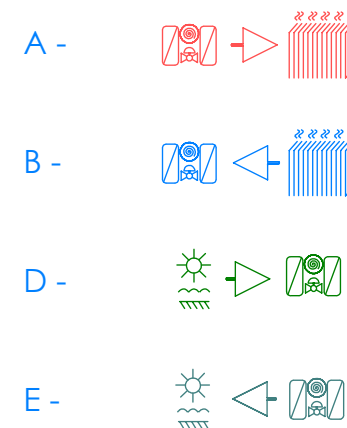
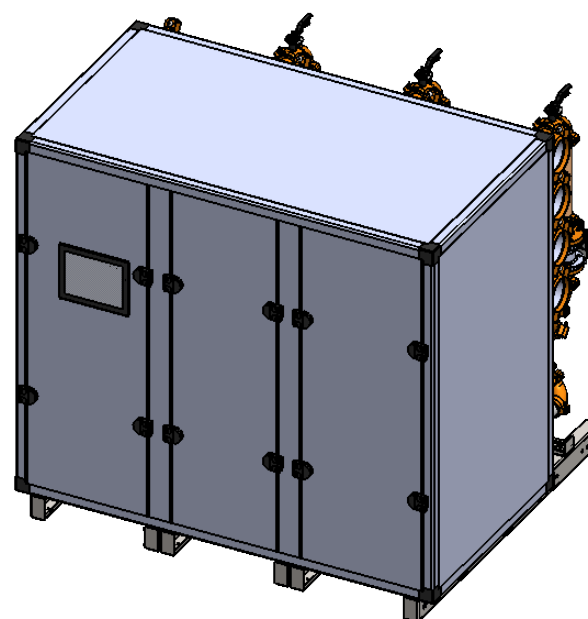
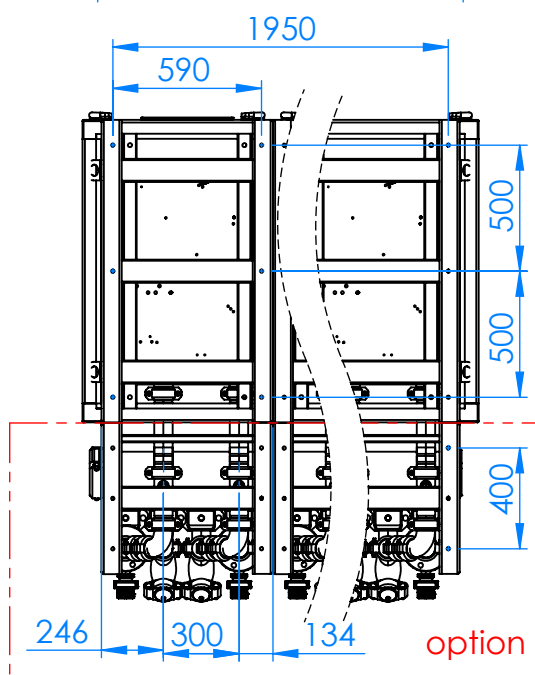
Operating limits

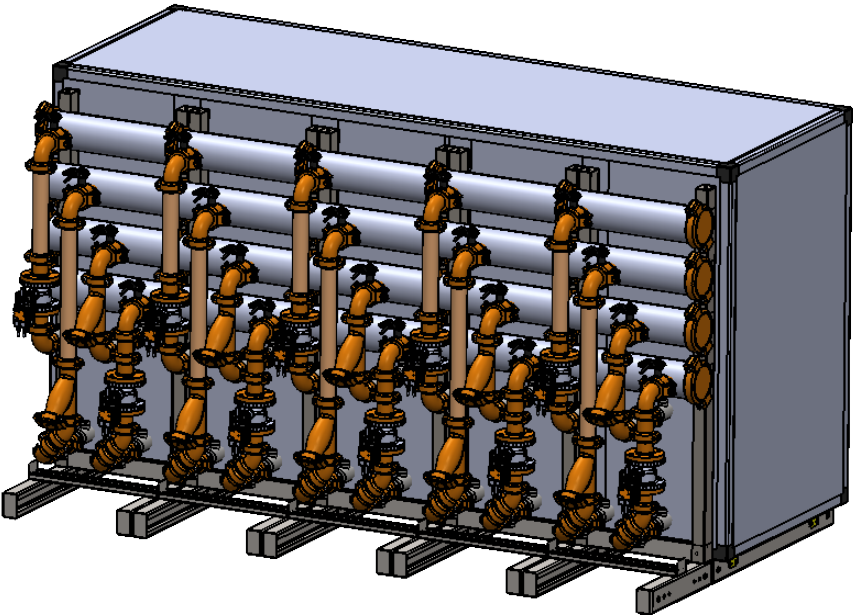
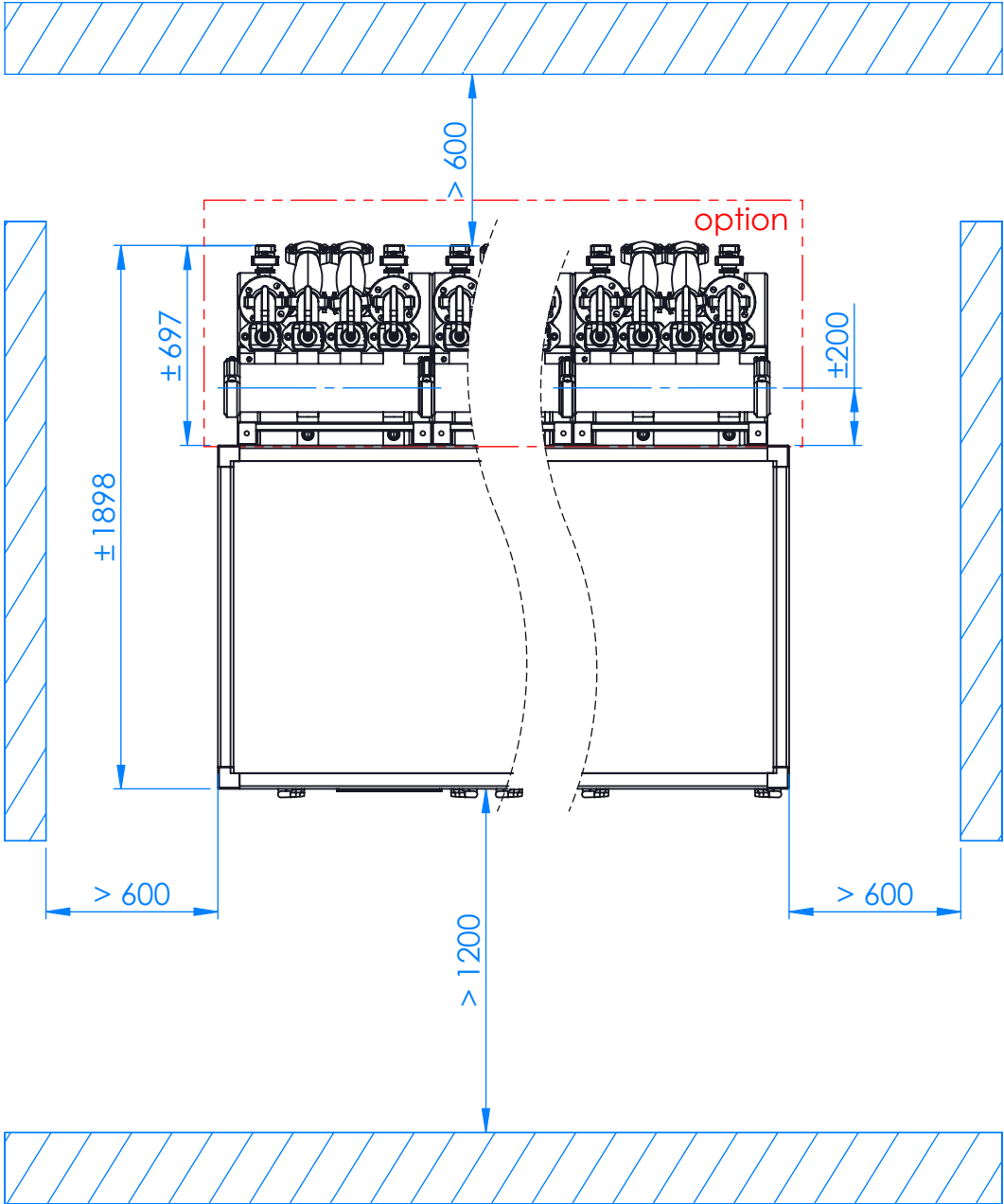


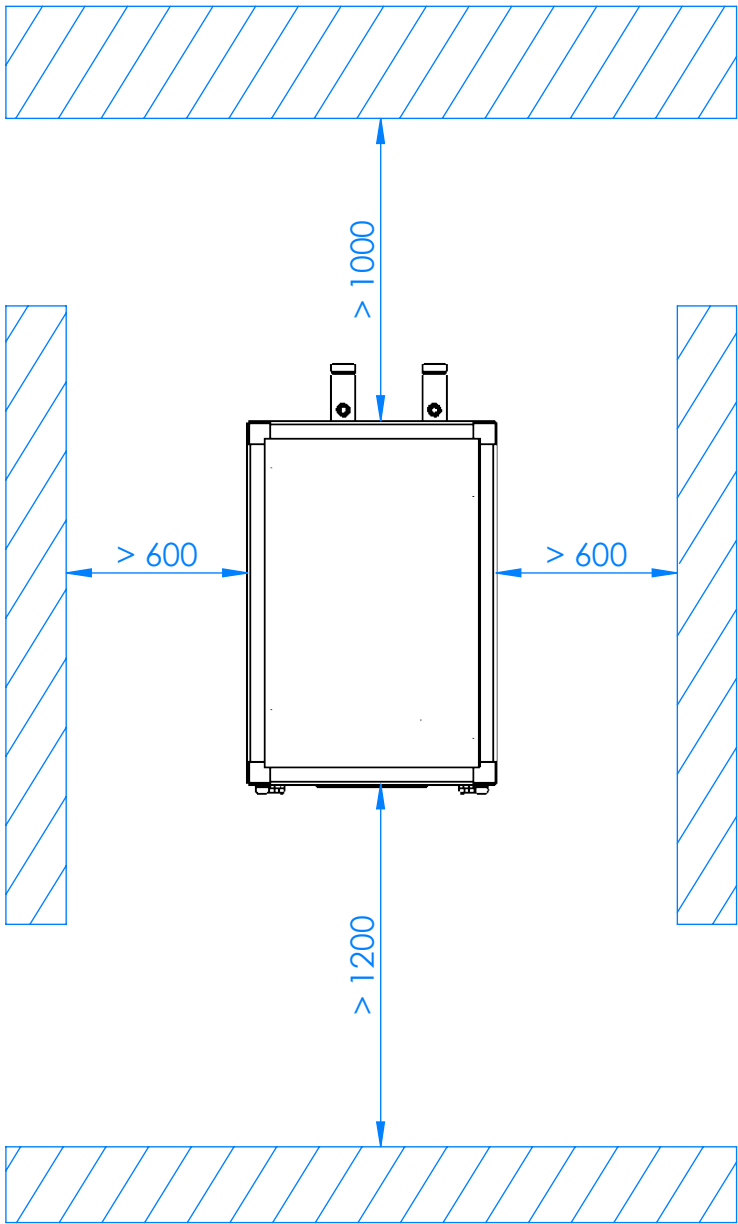


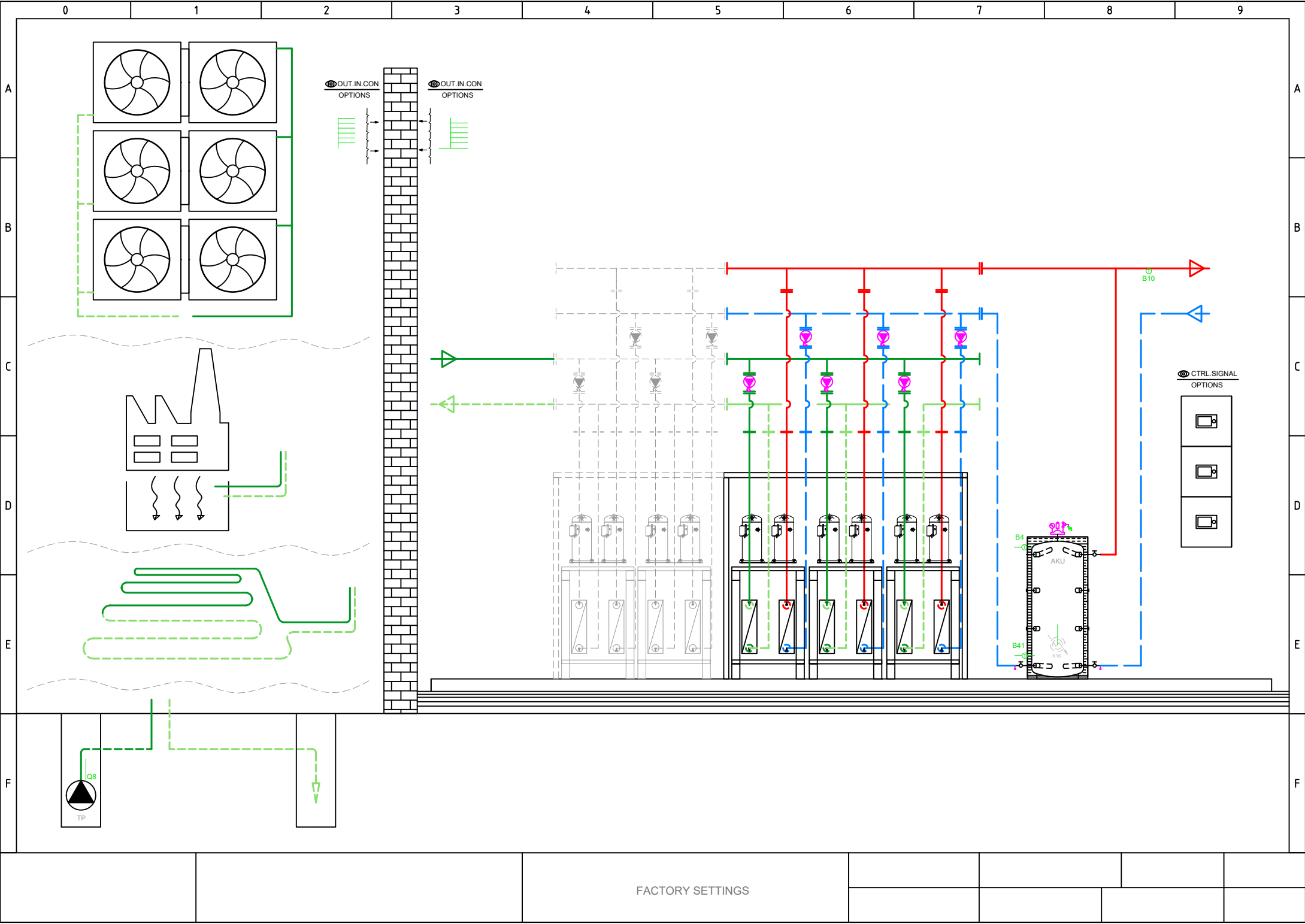
3xHD

HD-M1









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

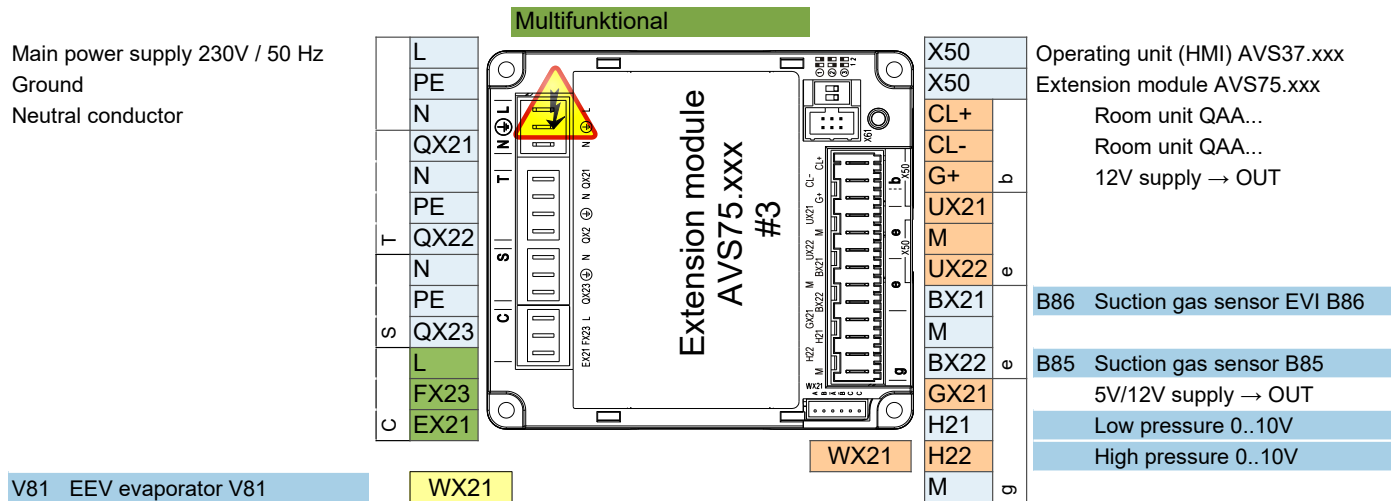
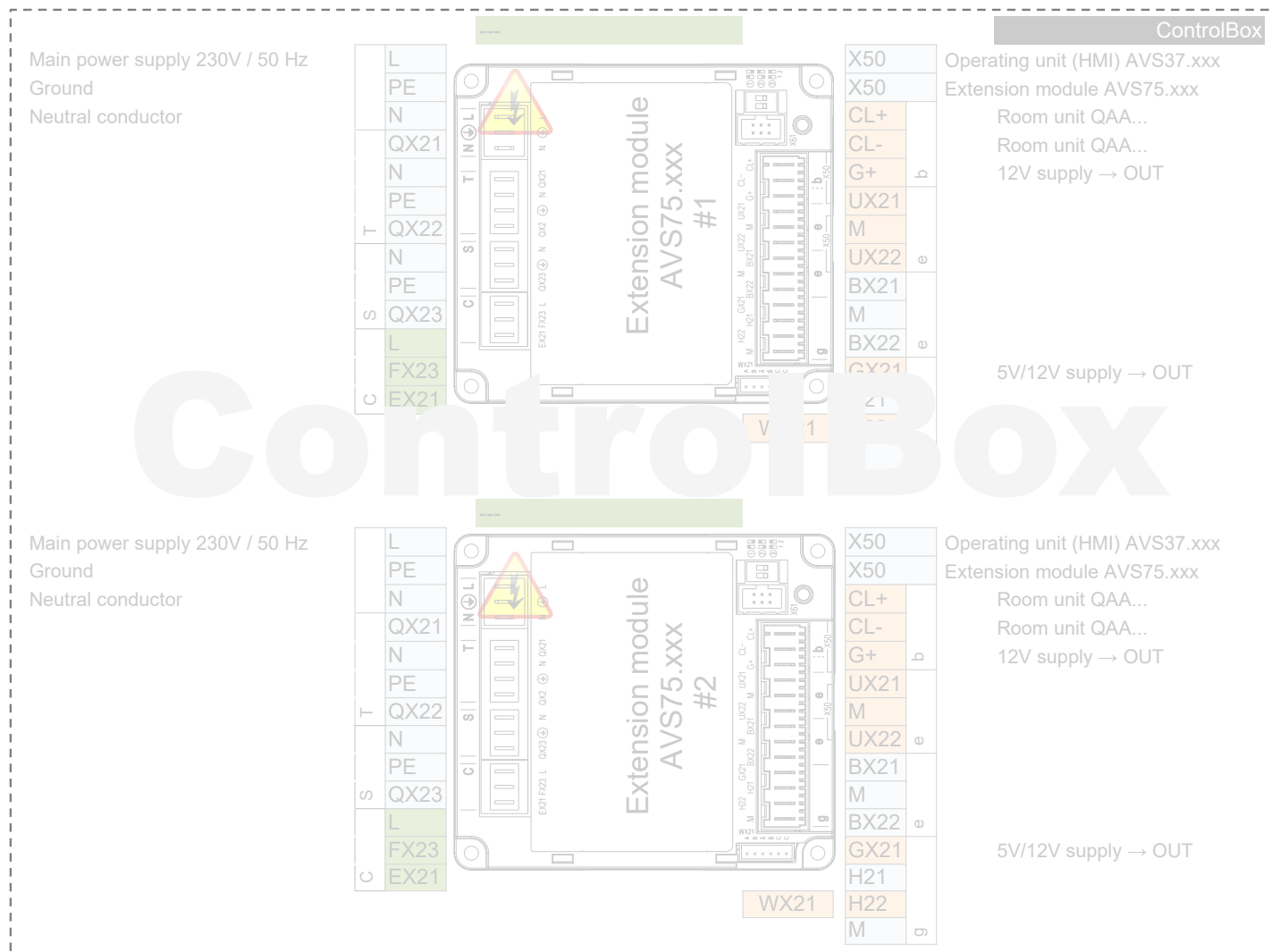
K2 Compressor stage 2 K2

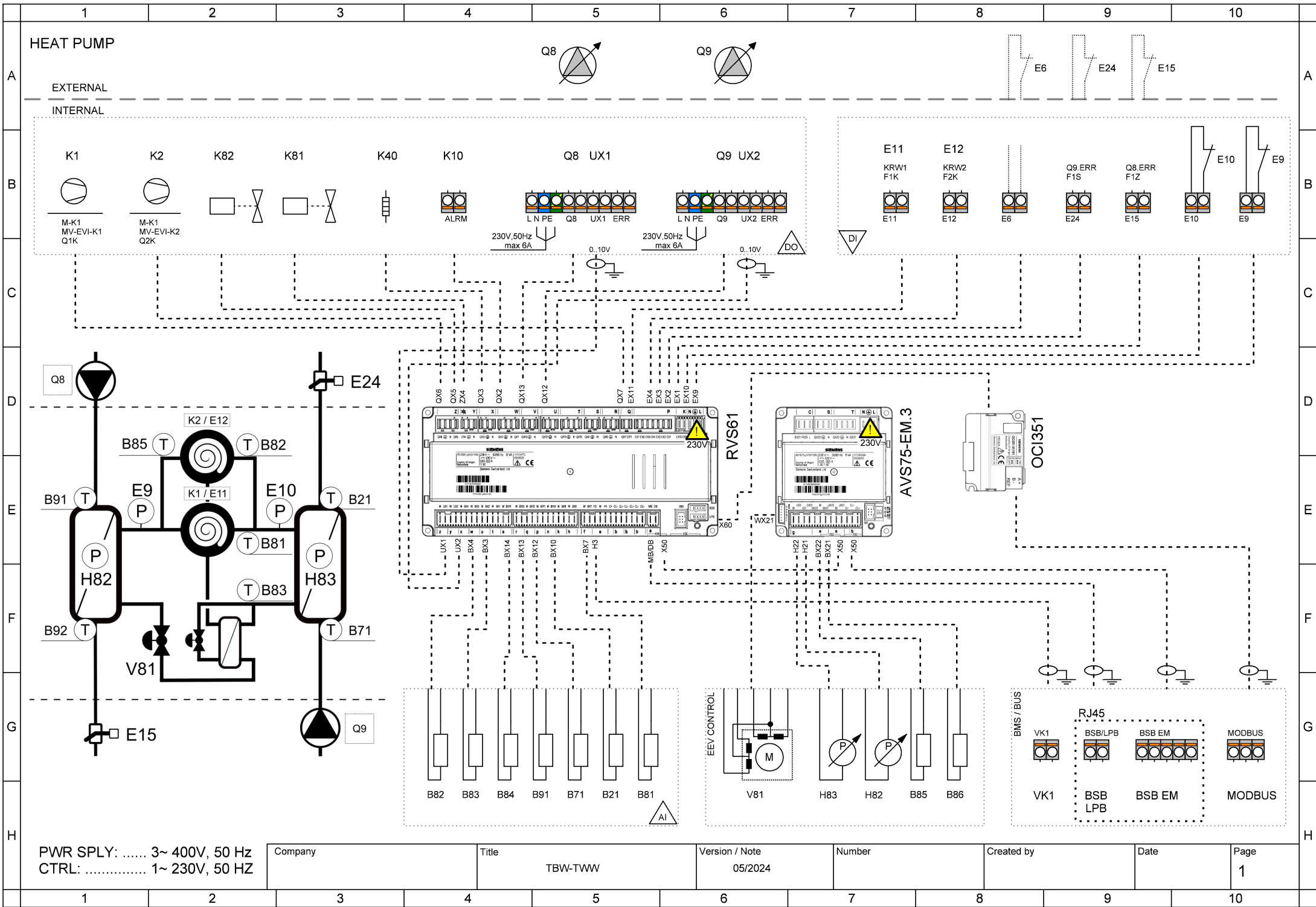


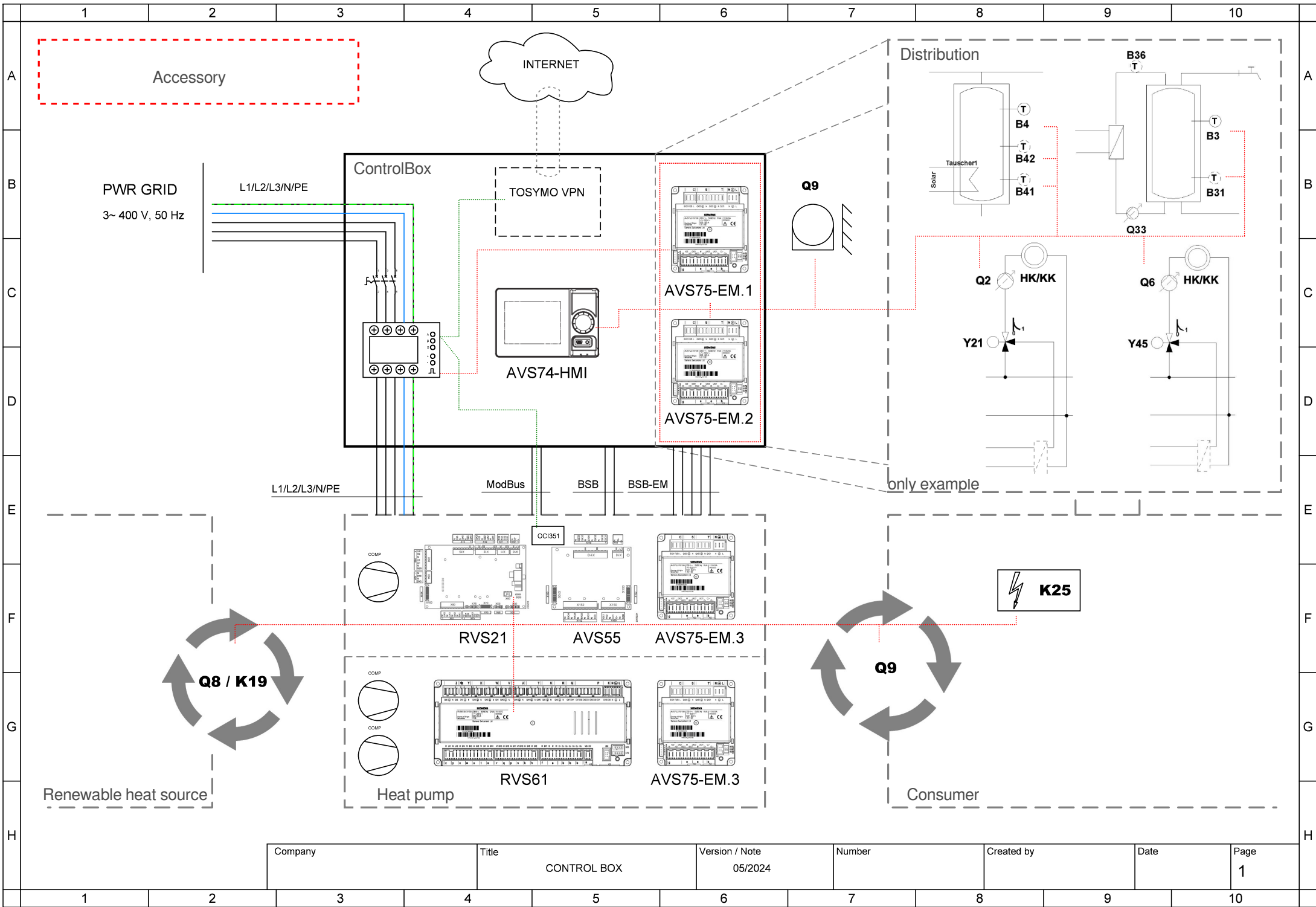
Heat pump controller RVS61.843

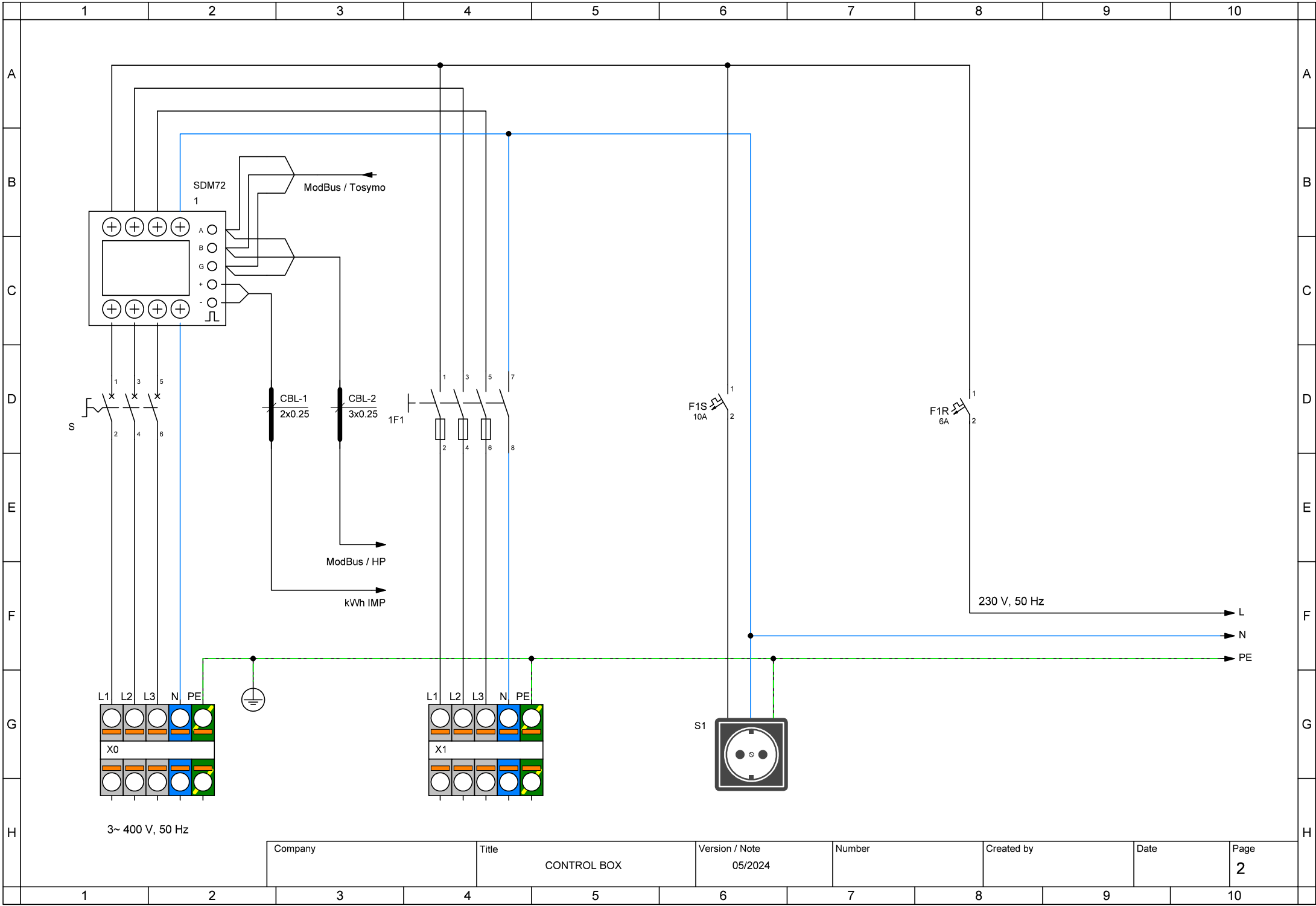
DB		LPB Bus data
MB	a	LPB Bus GND
CL+		Room unit QAA...
CL-		Room unit QAA...
CL+		Room unit QAA... 2.
CL-		Room unit QAA... 2.
CL+		Room unit QAA... 3.
CL-		Room unit QAA... 3.
G+	b	12V supply → OUT
H1		
M		
H3	e	Consumer request VK1
BX7		B81 Hot-gas sensor K1 B81
M	f	
BX8		
M	h	
BX9		
M	k	
BX10		B21 HP flow sensor B21
M	n	
BX11		
M	p	
BX12		B71 HP return sensor B71
M	q	
BX13		B91 Source inlet sensor B91
M	r	
BX14		B84 Source outl sens B92/B84
M	s	
BX1		
M	t	
BX2		
M	u	
BX3		B83 Refrig sensor liquid B83
M	w	
BX4		B82 Hot-gas sensor K2 B82
M	x	
UX2		Condenser pump Q9
M	y	0..10 V Signal
UX1		Source pump Q8
M	z	0..10 V Signal

	AVS75.390
	AVS75.391
	AVS75.370









Company

Title

CONTROL BOX

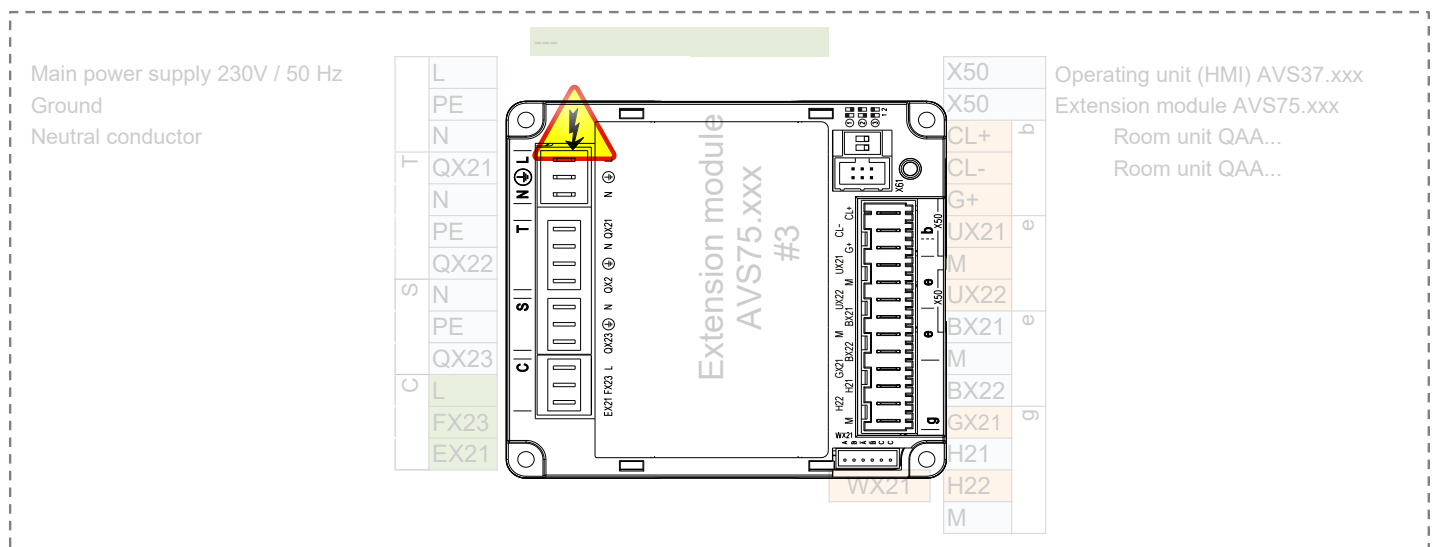
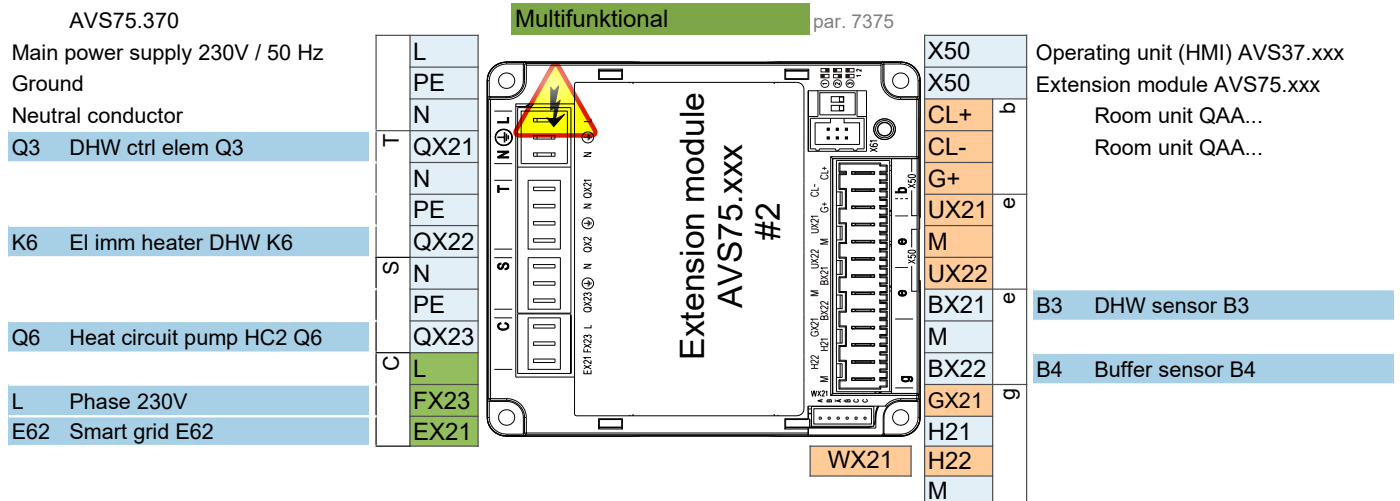
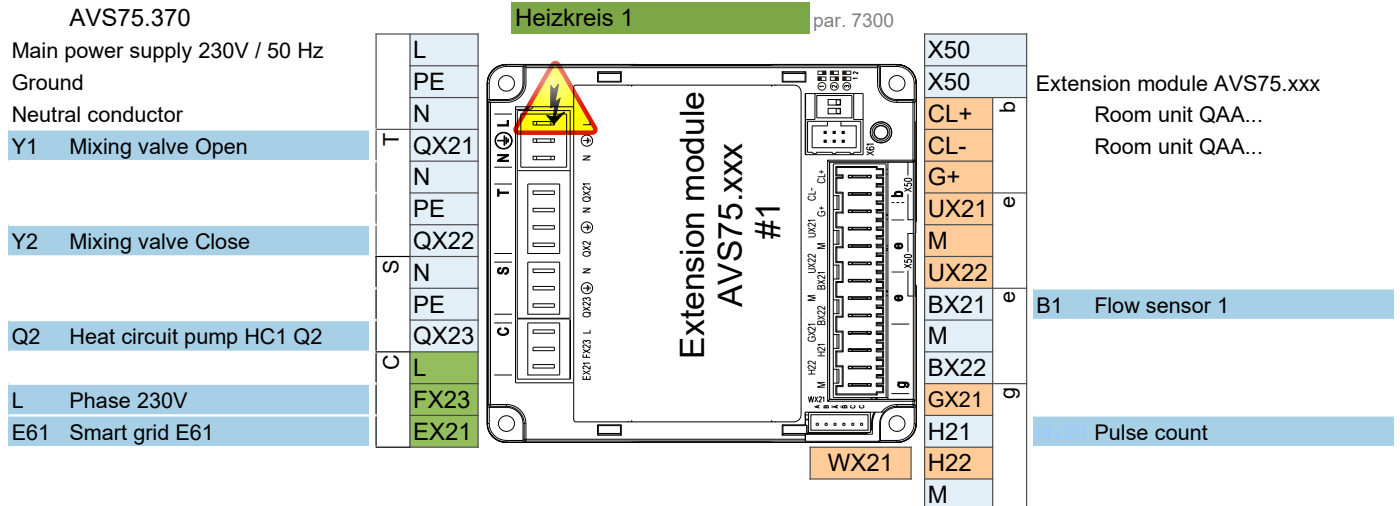
Version / Note
05/2024

Number

Created by

Date

Page
2



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