## Basic performance data - WAMAK AWK 40 EVI

| | | |
|---|---|---|
| **Heating** - EN 14511 | | |
| **Heating capacity** [kW] | A7 / W35 | 43.0 |
| | A2 / W35 | 36.2 |
| | A-7 / W34 | 30.1 |
| **Electrical power input** [kW] | A7 / W35 | 9.8 |
| | A2 / W35 | 9.8 |
| | A-7 / W34 | 9.5 |
| **Heating efficiency faktor** [COP] | A7 / W35 | 4.39 |
| | A2 / W35 | 3.71 |
| | A-7 / W34 | 3.16 |
| **Seasonal space heating energy efficiency** - SCOP EN 14825 | | |
| Average Climate / Low Temperature [35°C] | SCOP | 4.19 |
| | η [ % ] | 167.7 |
| | Label | A+++ |
| | Qhe [ kWh ] | 16410.6 |
| | Pdesignh [ kW ] | 34.0 |
| | Tbivalent [ °C ] | -7 |
| **Cooling** | | |
| **Cooling capacity** - [kW] | A35 / W23-18 | 42.7 |
| | A25 / W23-18 | 44.9 |
| | A35 / W12-7 | 31.4 |
| | A25 / W12-7 | 31.4 |
| **Seasonal space cooling energy efficiency** - SEER EN 14825 | | |
| [ W 23 / 18°C ] | SEER | 4.54 |
| | Qce [ kWh ] | 18840.0 |
| | ηc [ % ] | 181.5 |
| **Sound** EN 12102 | | |
| **Acoustic power** - Lw | dB(A) | 64.8 |
| **Acoustic pressure** - Lp | **1 m** dB(A) | 56.8 |
| | **5 m** dB(A) | 42.8 |
| | **10 m** dB(A) | 36.8 |
| **Mechanical and operational information** | | |
| **Compressor type** (3~ 400/50) | SCROLL / 1 / | On/Off |
| **Refrigerant** | R410A (GWP - 2088) | 8.4 kg |
| **Operating limit temperatures heating** - (min / max ) [°C] | | 25 / **65** |
| **Operating limit temperatures source** - (min / max ) [°C] | | **-22** / 40 |
| **Weight** | | 570 kg |

# Main technical data - WAMAK AWK 40 EVI

| | | |
|---|---|---|
| **Enclosure type** | | AWK-VOV900 |
| **Basic dimensions** | Height [mm] | 1250 |
| | Width [mm] | 1380 |
| | Length [mm] | 1780 |
| Weight [kg] | | 570 |
| Colour | | Inox |
| Enclousure IP Class | | IP44 |
| **Refrigeration cycle** | | |
| **Compressor** | Type | Scroll |
| | Number of stages | 1 |
| | On/Off | |
| | Power factor Cosϕ | 0.59 |
| | Winding resistance | 0.83 Ohm |
| Refrigerant | | R410A |
| | Volme | 8.4 kg |
| | GWP | 2088 |
| | Safety class | A1 |
| Refrigeration oil type | POE RL32-3MAF | |
| | Oil volume | 3.38 L |
| Maximal pressure - refrigerant [bar] | | 50 |
| | PED class | 2 |
| EVI - vapour injection with economizer | | |
| APS System of liquid subcooling | | |
| Reversible operation (cooling) | | |
| Reverse defrosting with hot gas | | |
| Plate exchanger protection HG-BYPASS | | |
| **Electrical connection data** | | |
| Line voltage [#~ V/Hz] | | 3~ 400/50 |
| Current | nominal [A] | 21.79 |
| | maximal [A] | 33.00 |
| | starting [A] | 50.47 |
| Softstart | | - |
| Main safety | | C40 |

**Control System**

| | | | |
|---|---|---|---|
| Main controller | SIEMENS | RVS 21 AVS 55.199 | |
| Extension module | AVS75.3xx | AVS75.3xx | AVS75.372 |
| Bus Clip-In | | LPB OCI346 | Modbus OCI352 |
| Online connection | | Web server OZW672 | ToSyMo |
| Superheat controller | | | 1 - EEV H/C |

*** with accessory

| | | |
|---|---|---|
| **Heat energy rejection side data** | | |
| Operating limit temperatures heating | MAX [°C] | 65 |
| | MIN [°C] | 25 |
| for more see operating limits diagram | | |
| **Condenser** | Port size | 2 " |
| | Type | BPHE |
| | Count | 1 |
| | Material | AISI 316 |
| Maximal operating pressure - refrigerant [bar] | | 50 |
| Maximal operating pressure - Water [bar] | | 6 |
| Testing pressure [bar] | | 70 |
| Heat transfer medium | | Water |
| Volume flow @ dT 5K (nom) - Water [m3/h] | | 7.41 |
| Internal pressure drop - Water [kPa] | | 15 |
| Temperature difference | @ 35°C (nom) | 5 K |
| | @ 55°C | 8 K |
| | @ 65°C | 10 K |
| **Renewable energy extraction side data** | | |
| Operating limit temperatures source | MIN [°C] | -22 |
| | MAX [°C] | 40 |
| for more see operating limits diagram | | |
| **Evaporator** | Type | Cu-coil /Al-fin |
| | Count | 1 |
| | Material | Cu/Al |
| Maximal operating pressure - refrigerant [bar] | | 29 |
| Heat transfer medium | | Air |
| Volume flow - Air [m3/h] | | 13200 |
| Internal pressure drop - Air [kPa] | | 0.024 |
| Temperature difference - Air | | 7 K |
| Number of fans | | 1 |
| Fan diameter [mm] | | 800 |

# WAMAK AWK 40 EVI

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

| **Model** | **AWK 40 EVI** |
|---|---|
| Air-to-water heat pump | yes |
| Brine-to-water heat pump | no |
| 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 |
|---|---|---|---|
| Rated heat output at Tdesignh | Prated | 34.0 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7 °C | Pdh | 30.1 | kW |
| Tj = +2 °C | Pdh | 36.1 | kW |
| Tj = +7 °C | Pdh | 43.0 | kW |
| Tj = +12 °C | Pdh | 51.1 | kW |
| Tj = bivalent temperature | Pdh | 29.4 | kW |
| Tj = operation limit temperature | Pdh | 21.1 | kW |
| Bivalent temperature | Tbiv | -7 | °C |
| Power consumption in modes other than active mode | | | |
| Off mode | Poff | 0.040 | kW |
| Thermostat-off mode | Pto | 0.010 | kW |
| Standby mode | Psb | 0.010 | kW |
| Crankcase heater mode | Pck | 0.050 | kW |
| Other items | | | |
| Capacity control | | fixed | |
| Sound power level | | | |
| indoors | Lwa | --- | dB |
| outdoors | Lwa | 65 | dB |
| Annual energy consumption | $Q_{HE}$ | 16410.6 | kWh |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | ηs | 167.7 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7 °C | COPd | 3.16 | - |
| Tj = +2 °C | COPd | 4.1 | - |
| Tj = +7 °C | COPd | 5.2 | - |
| Tj = +12 °C | COPd | 6.5 | - |
| Tj = bivalent temperature | COPd | 3.0 | - |
| Tj = operation limit temperature | COPd | 2.2 | - |
| Tj = operation limit temperature | TOL | -22 | °C |
| Heating water operating limit temperature | WTOL | 65 | °C |
| Supplementary heater | | | |
| Rated heat output | Psup | 15.2 | kW |
| Type of energy input | | electricity | |
| | | | |
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | 13200 | m3/h |
| For water- or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | --- | m3/h |

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

# WAMAK AWK 40 EVI

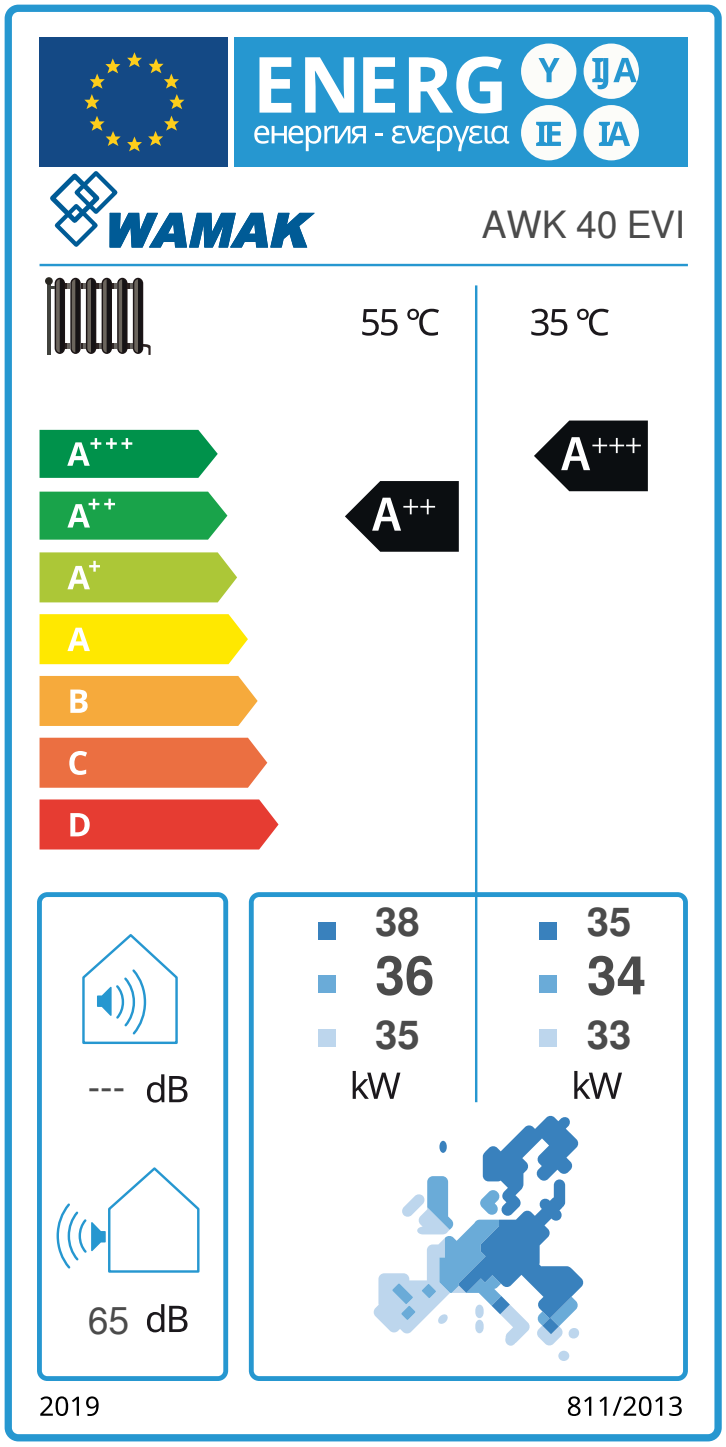
**ErP (EU) No 811/2013: Technical parameters for heat pump space heaters**

| **Model** | **AWK 40 EVI** |
|---|---|
| Air-to-water heat pump | yes |
| Brine-to-water heat pump | no |
| 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 |
|---|---|---|---|
| Rated heat output at Tdesignh | Prated | 35.7 | kW |
| Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7 °C | Pdh | 31.2 | kW |
| Tj = +2 °C | Pdh | 36.4 | kW |
| Tj = +7 °C | Pdh | 43.0 | kW |
| Tj = +12 °C | Pdh | 51.0 | kW |
| Tj = bivalent temperature | Pdh | 30.9 | kW |
| Tj = operation limit temperature | Pdh | 22.9 | kW |
| Bivalent temperature | Tbiv | -7 | °C |
| Power consumption in modes other than active mode | | | |
| Off mode | Poff | 0.040 | kW |
| Thermostat-off mode | Pto | 0.010 | kW |
| Standby mode | Psb | 0.010 | kW |
| Crankcase heater mode | Pck | 0.050 | kW |
| Other items | | | |
| Capacity control | | fixed | |
| Sound power level | | | |
| indoors | Lwa | --- | dB |
| outdoors | Lwa | 65 | dB |
| Annual energy consumption | $Q_{HE}$ | 22245.4 | kWh |

| Item | Symbol | Value | Unit |
|---|---|---|---|
| Seasonal space heating energy efficiency | ηs | 130.6 | % |
| Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj | | | |
| Tj = -7 °C | COPd | 2.18 | - |
| Tj = +2 °C | COPd | 3.2 | - |
| Tj = +7 °C | COPd | 4.3 | - |
| Tj = +12 °C | COPd | 5.7 | - |
| Tj = bivalent temperature | COPd | 2.0 | - |
| Tj = operation limit temperature | COPd | 1.5 | - |
| Tj = operation limit temperature | TOL | -22 | °C |
| Heating water operating limit temperature | WTOL | 65 | °C |
| Supplementary heater | | | |
| Rated heat output | Psup | 15.2 | kW |
| Type of energy input | | electricity | |
| | | | |
| For air-to-water heat pumps: Rated air flow rate, outdoors | - | 13200 | m3/h |
| For water- or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger | - | --- | m3/h |

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




AWK 40 EVI **ErP Data**

| | | 55 °C | 35 °C |
|---|---|---|---|
| Energy class | | A++ | A+++ |
| $\eta$ | [ % ] | 130.6 | 167.7 |
| $P_{rated}$ | [ kW ] | 36 | 34 |
| $Q_{HE}$ | [ kWh/y ] | 22246 | 16411 |
| SCOP | [ - ] | 3.26 | 4.19 |
| $T_{bivalent}$ | [ °C ] | -7 | -7 |

CONTROLER

| | | |
|---|---|---|
| + QAA55/75 | class **VII** | 3.5% ↓ |
| - QAA55/75 | class **III** | 1.5% ↓ |

**Heating performance data** Version: v2024.010-AW

**Average Climate / Low Temperature [35°C]** ZHI40K1P-TFD_R410A_1_AW

| | Operating conditions | Qh | P | COP |
|---|---|---|---|---|
| 1 | A7 / W30-35 | 43.0 | 9.8 | 4.39 |
| 2 | A2 / W35 | 36.2 | 9.8 | 3.71 |
| 3 | A-22 / W35 | 21.1 | 9.7 | 2.18 |
| A | A-7 / W34 | 30.1 | 9.5 | 3.16 |
| B | A2 / W30 | 36.1 | 8.8 | 4.11 |
| C | A7 / W27 | 43.0 | 8.3 | 5.16 |
| D | A12 / W24 | 51.1 | 7.9 | 6.46 |
| E | A-10 / W35 | 29.4 | 9.7 | 3.03 |
| F | A-7 / W34 | 30.1 | 9.5 | 3.16 |

| SCOP DATA EN 14825:2018 | |
|---|---|
| **Average Climate / Low Temperature [35°C]** | |
| SCOPon | 4.28 |
| SCOPnet | 4.32 |
| SCOP | 4.19 |
| η [ % ] | 167.70 |
| Label | A+++ |
| Qh [ kWh ] | 16410.62 |
| Pdesignh [ kW ] | 34.0 |
| Tbivalent [ °C ] | -7.00 |

**Average Climate / Medium Temperature [55°C]**

| | Operating conditions | Qh | P | COP |
|---|---|---|---|---|
| 1 | A7 / W47-55 | 43.7 | 15.5 | 2.82 |
| 2 | A2 / W55 | 37.3 | 15.4 | 2.42 |
| 3 | A-22 / W55 | 22.9 | 14.3 | 1.49 |
| A | A-7 / W52 | 31.2 | 14.3 | 2.18 |
| B | A2 / W42 | 36.4 | 11.3 | 3.21 |
| C | A7 / W36 | 43.0 | 10.0 | 4.30 |
| D | A12 / W30 | 51.0 | 8.9 | 5.72 |
| E | A-10 / W55 | 30.9 | 15.4 | 2.01 |
| F | A-7 / W55 | 31.6 | 15.4 | 2.05 |

| SCOP DATA EN 14825:2018 | |
|---|---|
| **Average Climate / Medium Temperature [55°C]** | |
| SCOPon | 3.31 |
| SCOPnet | 3.34 |
| SCOP | 3.26 |
| η [ % ] | 130.60 |
| Label | A++ |
| Qh [ kWh ] | 22245.36 |
| Pdesignh [ kW ] | 35.7 |
| Tbivalent [ °C ] | -7.00 |

**Cooling performance data**

**Low temperature cooling W 12 / 7°C**

| | Operating conditions | Qc | P | EER |
|---|---|---|---|---|
| A | A35 / W12-7 | 31.4 | 11.7 | 2.70 |
| B | A30 / W12-7 | 32.4 | 10.4 | 3.11 |
| C | A25 / W12-7 | 33.3 | 9.4 | 3.54 |
| D | A20 / W12-7 | 34.1 | 8.5 | 4.01 |

| SEER DATA EN 14825:2018 [ W 12 / 7°C ] | |
|---|---|
| SEERon | 3.46 |
| SEER | 3.39 |
| Qc [ kWh ] | 6859.80 |
| η [ % ] | 135.57 |

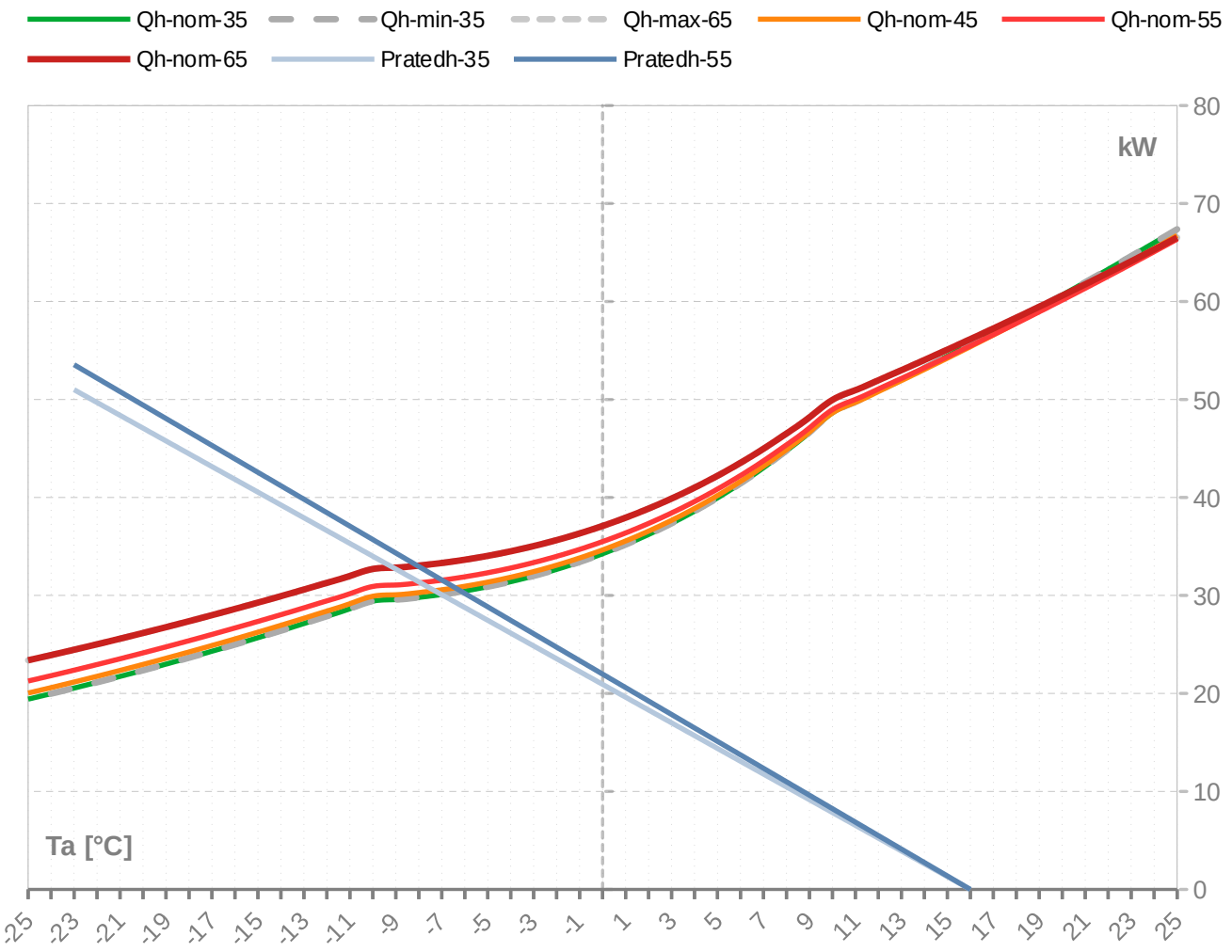
**Radiant cooling W 23 / 18°C**

| | Operating conditions | Qc | P | EER |
|---|---|---|---|---|
| A | A35 / W23-18 | 42.7 | 11.7 | 3.66 |
| B | A30 / W23-18 | 43.8 | 9.8 | 4.20 |
| C | A25 / W23-18 | 44.9 | 8.8 | 4.77 |
| D | A20 / W23-18 | 45.8 | 8.0 | 5.39 |

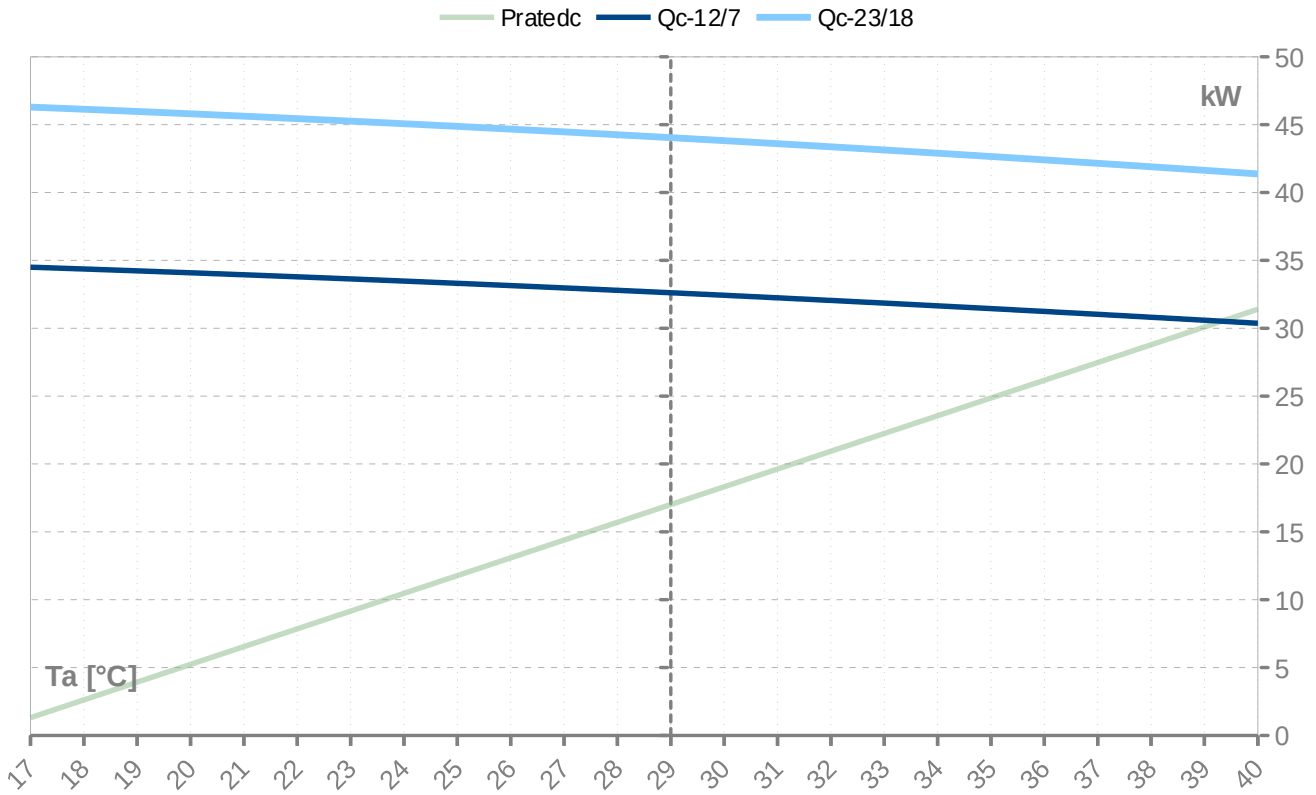
| SEER DATA EN 14825:2018 [ W 23 / 18°C ] | |
|---|---|
| SEERon | 4.66 |
| SEER | 4.54 |
| Qc [ kWh ] | 5088.13 |
| η [ % ] | 181.54 |

**Performance lines - heating**

ZHI40K1P-TFD_R410A_1_AW




**Performance lines - cooling**



| **Th [°C]** | **35 °C** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Ta [°C] | **Qh nom [kW]** | **Qh min** [kW] | **Qh max** [kW] | **Pin nom [kW]** | **Pin-min** [kW] | **Pin-max** [kW] | **COP kW / kW** | **I nom** [A] | **I min** [A] | **I max** [A] |
| 25 | **56.9** | 56.9 | | **9.9** | 9.9 | | **5.73** | 21.7 | 21.7 | |
| 24 | **56.9** | 56.9 | | **9.9** | 9.9 | | **5.73** | 21.7 | 21.7 | |
| 23 | **56.9** | 56.9 | | **9.9** | 9.9 | | **5.73** | 21.7 | 21.7 | |
| 22 | **56.9** | 56.9 | | **9.9** | 9.9 | | **5.73** | 21.7 | 21.7 | |
| 21 | **56.9** | 56.9 | | **9.9** | 9.9 | | **5.73** | 21.7 | 21.7 | |
| 20 | **56.9** | 56.9 | | **9.9** | 9.9 | | **5.73** | 21.7 | 21.7 | |
| 19 | **56.9** | 56.9 | | **9.9** | 9.9 | | **5.73** | 21.7 | 21.7 | |
| 18 | **56.9** | 56.9 | | **9.9** | 9.9 | | **5.73** | 21.7 | 21.7 | |
| 17 | **56.9** | 56.9 | | **9.9** | 9.9 | | **5.73** | 21.7 | 21.7 | |
| 16 | **55.6** | 55.6 | 55.6 | **9.9** | 9.9 | 9.9 | **5.61** | 21.7 | 21.7 | 21.7 |
| 15 | **54.4** | 54.4 | 54.4 | **9.9** | 9.9 | 9.9 | **5.50** | 21.7 | 21.7 | 21.7 |
| 14 | **53.2** | 53.2 | 53.2 | **9.9** | 9.9 | 9.9 | **5.38** | 21.8 | 21.8 | 21.8 |
| 13 | **52.1** | 52.1 | 52.1 | **9.9** | 9.9 | 9.9 | **5.27** | 21.8 | 21.8 | 21.8 |
| 12 | **50.9** | 50.9 | 50.9 | **9.9** | 9.9 | 9.9 | **5.16** | 21.8 | 21.8 | 21.8 |
| 11 | **49.8** | 49.8 | 49.8 | **9.9** | 9.9 | 9.9 | **5.04** | 21.8 | 21.8 | 21.8 |
| 10 | **48.6** | 48.6 | 48.6 | **9.9** | 9.9 | 9.9 | **4.94** | 21.8 | 21.8 | 21.8 |
| 9 | **46.6** | 46.6 | 46.6 | **9.8** | 9.8 | 9.8 | **4.74** | 21.8 | 21.8 | 21.8 |
| 8 | **44.8** | 44.8 | 44.8 | **9.8** | 9.8 | 9.8 | **4.56** | 21.8 | 21.8 | 21.8 |
| 7 | **43.0** | 43.0 | 43.0 | **9.8** | 9.8 | 9.8 | **4.39** | 21.8 | 21.8 | 21.8 |
| 6 | **41.4** | 41.4 | 41.4 | **9.8** | 9.8 | 9.8 | **4.23** | 21.8 | 21.8 | 21.8 |
| 5 | **40.0** | 40.0 | 40.0 | **9.8** | 9.8 | 9.8 | **4.08** | 21.8 | 21.8 | 21.8 |
| 4 | **38.6** | 38.6 | 38.6 | **9.8** | 9.8 | 9.8 | **3.95** | 21.8 | 21.8 | 21.8 |
| 3 | **37.4** | 37.4 | 37.4 | **9.8** | 9.8 | 9.8 | **3.83** | 21.8 | 21.8 | 21.8 |
| 2 | **36.2** | 36.2 | 36.2 | **9.8** | 9.8 | 9.8 | **3.71** | 21.8 | 21.8 | 21.8 |
| 1 | **35.2** | 35.2 | 35.2 | **9.7** | 9.7 | 9.7 | **3.61** | 21.8 | 21.8 | 21.8 |
| 0 | **34.3** | 34.3 | 34.3 | **9.7** | 9.7 | 9.7 | **3.52** | 21.8 | 21.8 | 21.8 |
| -1 | **33.4** | 33.4 | 33.4 | **9.7** | 9.7 | 9.7 | **3.43** | 21.8 | 21.8 | 21.8 |
| -2 | **32.7** | 32.7 | 32.7 | **9.7** | 9.7 | 9.7 | **3.36** | 21.8 | 21.8 | 21.8 |
| -3 | **32.0** | 32.0 | 32.0 | **9.7** | 9.7 | 9.7 | **3.29** | 21.8 | 21.8 | 21.8 |
| -4 | **31.4** | 31.4 | 31.4 | **9.7** | 9.7 | 9.7 | **3.23** | 21.7 | 21.7 | 21.7 |
| -5 | **30.9** | 30.9 | 30.9 | **9.7** | 9.7 | 9.7 | **3.18** | 21.7 | 21.7 | 21.7 |
| -6 | **30.5** | 30.5 | 30.5 | **9.7** | 9.7 | 9.7 | **3.13** | 21.7 | 21.7 | 21.7 |
| -7 | **30.1** | 30.1 | 30.1 | **9.7** | 9.7 | 9.7 | **3.10** | 21.7 | 21.7 | 21.7 |
| -8 | **29.8** | 29.8 | 29.8 | **9.7** | 9.7 | 9.7 | **3.07** | 21.7 | 21.7 | 21.7 |
| -9 | **29.6** | 29.6 | 29.6 | **9.7** | 9.7 | 9.7 | **3.05** | 21.7 | 21.7 | 21.7 |
| -10 | **29.4** | 29.4 | 29.4 | **9.7** | 9.7 | 9.7 | **3.03** | 21.7 | 21.7 | 21.7 |
| -11 | **28.6** | 28.6 | 28.6 | **9.7** | 9.7 | 9.7 | **2.95** | 21.7 | 21.7 | 21.7 |
| -12 | **27.9** | 27.9 | 27.9 | **9.7** | 9.7 | 9.7 | **2.87** | 21.7 | 21.7 | 21.7 |
| -13 | **27.1** | 27.1 | 27.1 | **9.7** | 9.7 | 9.7 | **2.80** | 21.7 | 21.7 | 21.7 |
| -14 | **26.4** | 26.4 | 26.4 | **9.7** | 9.7 | 9.7 | **2.72** | 21.7 | 21.7 | 21.7 |
| -15 | **25.7** | 25.7 | 25.7 | **9.7** | 9.7 | 9.7 | **2.65** | 21.6 | 21.6 | 21.6 |
| -16 | **25.0** | 25.0 | 25.0 | **9.7** | 9.7 | 9.7 | **2.58** | 21.6 | 21.6 | 21.6 |
| -17 | **24.3** | 24.3 | 24.3 | **9.7** | 9.7 | 9.7 | **2.51** | 21.6 | 21.6 | 21.6 |
| -18 | **23.6** | 23.6 | 23.6 | **9.7** | 9.7 | 9.7 | **2.44** | 21.6 | 21.6 | 21.6 |
| -19 | **23.0** | 23.0 | 23.0 | **9.7** | 9.7 | 9.7 | **2.37** | 21.5 | 21.5 | 21.5 |
| -20 | **22.4** | 22.4 | 22.4 | **9.7** | 9.7 | 9.7 | **2.31** | 21.5 | 21.5 | 21.5 |
| -21 | **21.7** | 21.7 | 21.7 | **9.7** | 9.7 | 9.7 | **2.24** | 21.5 | 21.5 | 21.5 |
| -22 | **21.1** | 21.1 | 21.1 | **9.7** | 9.7 | 9.7 | **2.18** | 21.4 | 21.4 | 21.4 |
| -23 | **20.5** | 20.5 | 20.5 | **9.7** | 9.7 | 9.7 | **2.12** | 21.4 | 21.4 | 21.4 |
| -24 | **20.0** | 20.0 | 20.0 | **9.7** | 9.7 | 9.7 | **2.06** | 21.4 | 21.4 | 21.4 |
| -25 | **19.4** | 19.4 | 19.4 | **9.7** | 9.7 | 9.7 | **2.00** | 21.3 | 21.3 | 21.3 |

* attention: operating limits not reflected in performance table

ZHI40K1P-TFD_R410A_1_AW

| **Th [°C]** | **45 °C** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Ta [°C] | **Qh nom [kW]** | **Qh min** [kW] | **Qh max** [kW] | **Pin nom [kW]** | **Pin-min** [kW] | **Pin-max** [kW] | **COP kW / kW** | **I nom** [A] | **I min** [A] | **I max** [A] |
| 25 | **66.7** | 66.7 | 66.7 | **12.5** | 12.5 | 12.5 | **5.36** | 24.1 | 24.1 | 24.1 |
| 24 | **65.4** | 65.4 | 65.4 | **12.4** | 12.4 | 12.4 | **5.26** | 24.0 | 24.0 | 24.0 |
| 23 | **64.1** | 64.1 | 64.1 | **12.4** | 12.4 | 12.4 | **5.16** | 24.0 | 24.0 | 24.0 |
| 22 | **62.8** | 62.8 | 62.8 | **12.4** | 12.4 | 12.4 | **5.06** | 24.0 | 24.0 | 24.0 |
| 21 | **61.5** | 61.5 | 61.5 | **12.4** | 12.4 | 12.4 | **4.96** | 24.0 | 24.0 | 24.0 |
| 20 | **60.3** | 60.3 | 60.3 | **12.4** | 12.4 | 12.4 | **4.87** | 24.0 | 24.0 | 24.0 |
| 19 | **59.0** | 59.0 | 59.0 | **12.4** | 12.4 | 12.4 | **4.77** | 24.0 | 24.0 | 24.0 |
| 18 | **57.8** | 57.8 | 57.8 | **12.4** | 12.4 | 12.4 | **4.68** | 24.0 | 24.0 | 24.0 |
| 17 | **56.6** | 56.6 | 56.6 | **12.3** | 12.3 | 12.3 | **4.58** | 23.9 | 23.9 | 23.9 |
| 16 | **55.4** | 55.4 | 55.4 | **12.3** | 12.3 | 12.3 | **4.49** | 23.9 | 23.9 | 23.9 |
| 15 | **54.2** | 54.2 | 54.2 | **12.3** | 12.3 | 12.3 | **4.40** | 23.9 | 23.9 | 23.9 |
| 14 | **53.1** | 53.1 | 53.1 | **12.3** | 12.3 | 12.3 | **4.31** | 23.9 | 23.9 | 23.9 |
| 13 | **51.9** | 51.9 | 51.9 | **12.3** | 12.3 | 12.3 | **4.22** | 23.9 | 23.9 | 23.9 |
| 12 | **50.8** | 50.8 | 50.8 | **12.3** | 12.3 | 12.3 | **4.14** | 23.9 | 23.9 | 23.9 |
| 11 | **49.7** | 49.7 | 49.7 | **12.3** | 12.3 | 12.3 | **4.05** | 23.9 | 23.9 | 23.9 |
| 10 | **48.6** | 48.6 | 48.6 | **12.3** | 12.3 | 12.3 | **3.97** | 23.9 | 23.9 | 23.9 |
| 9 | **46.7** | 46.7 | 46.7 | **12.2** | 12.2 | 12.2 | **3.81** | 23.8 | 23.8 | 23.8 |
| 8 | **44.9** | 44.9 | 44.9 | **12.2** | 12.2 | 12.2 | **3.67** | 23.8 | 23.8 | 23.8 |
| 7 | **43.2** | 43.2 | 43.2 | **12.2** | 12.2 | 12.2 | **3.54** | 23.8 | 23.8 | 23.8 |
| 6 | **41.6** | 41.6 | 41.6 | **12.2** | 12.2 | 12.2 | **3.41** | 23.8 | 23.8 | 23.8 |
| 5 | **40.2** | 40.2 | 40.2 | **12.2** | 12.2 | 12.2 | **3.30** | 23.7 | 23.7 | 23.7 |
| 4 | **38.9** | 38.9 | 38.9 | **12.2** | 12.2 | 12.2 | **3.19** | 23.7 | 23.7 | 23.7 |
| 3 | **37.7** | 37.7 | 37.7 | **12.2** | 12.2 | 12.2 | **3.10** | 23.7 | 23.7 | 23.7 |
| 2 | **36.6** | 36.6 | 36.6 | **12.1** | 12.1 | 12.1 | **3.01** | 23.7 | 23.7 | 23.7 |
| 1 | **35.6** | 35.6 | 35.6 | **12.1** | 12.1 | 12.1 | **2.93** | 23.7 | 23.7 | 23.7 |
| 0 | **34.6** | 34.6 | 34.6 | **12.1** | 12.1 | 12.1 | **2.85** | 23.6 | 23.6 | 23.6 |
| -1 | **33.8** | 33.8 | 33.8 | **12.1** | 12.1 | 12.1 | **2.79** | 23.6 | 23.6 | 23.6 |
| -2 | **33.1** | 33.1 | 33.1 | **12.1** | 12.1 | 12.1 | **2.73** | 23.6 | 23.6 | 23.6 |
| -3 | **32.4** | 32.4 | 32.4 | **12.1** | 12.1 | 12.1 | **2.68** | 23.6 | 23.6 | 23.6 |
| -4 | **31.9** | 31.9 | 31.9 | **12.1** | 12.1 | 12.1 | **2.63** | 23.6 | 23.6 | 23.6 |
| -5 | **31.4** | 31.4 | 31.4 | **12.1** | 12.1 | 12.1 | **2.59** | 23.6 | 23.6 | 23.6 |
| -6 | **30.9** | 30.9 | 30.9 | **12.1** | 12.1 | 12.1 | **2.55** | 23.5 | 23.5 | 23.5 |
| -7 | **30.6** | 30.6 | 30.6 | **12.1** | 12.1 | 12.1 | **2.52** | 23.5 | 23.5 | 23.5 |
| -8 | **30.3** | 30.3 | 30.3 | **12.1** | 12.1 | 12.1 | **2.50** | 23.5 | 23.5 | 23.5 |
| -9 | **30.1** | 30.1 | 30.1 | **12.1** | 12.1 | 12.1 | **2.48** | 23.5 | 23.5 | 23.5 |
| -10 | **29.9** | 29.9 | 29.9 | **12.1** | 12.1 | 12.1 | **2.47** | 23.5 | 23.5 | 23.5 |
| -11 | **29.2** | 29.2 | 29.2 | **12.1** | 12.1 | 12.1 | **2.41** | 23.5 | 23.5 | 23.5 |
| -12 | **28.4** | 28.4 | 28.4 | **12.1** | 12.1 | 12.1 | **2.35** | 23.5 | 23.5 | 23.5 |
| -13 | **27.7** | 27.7 | 27.7 | **12.1** | 12.1 | 12.1 | **2.29** | 23.4 | 23.4 | 23.4 |
| -14 | **27.0** | 27.0 | 27.0 | **12.1** | 12.1 | 12.1 | **2.23** | 23.4 | 23.4 | 23.4 |
| -15 | **26.2** | 26.2 | 26.2 | **12.1** | 12.1 | 12.1 | **2.17** | 23.4 | 23.4 | 23.4 |
| -16 | **25.6** | 25.6 | 25.6 | **12.1** | 12.1 | 12.1 | **2.11** | 23.4 | 23.4 | 23.4 |
| -17 | **24.9** | 24.9 | 24.9 | **12.1** | 12.1 | 12.1 | **2.06** | 23.3 | 23.3 | 23.3 |
| -18 | **24.2** | 24.2 | 24.2 | **12.1** | 12.1 | 12.1 | **2.00** | 23.3 | 23.3 | 23.3 |
| -19 | **23.6** | 23.6 | 23.6 | **12.1** | 12.1 | 12.1 | **1.95** | 23.3 | 23.3 | 23.3 |
| -20 | **23.0** | 23.0 | 23.0 | **12.1** | 12.1 | 12.1 | **1.90** | 23.2 | 23.2 | 23.2 |
| -21 | **22.3** | 22.3 | 22.3 | **12.1** | 12.1 | 12.1 | **1.85** | 23.2 | 23.2 | 23.2 |
| -22 | **21.7** | 21.7 | 21.7 | **12.1** | 12.1 | 12.1 | **1.80** | 23.2 | 23.2 | 23.2 |
| -23 | **21.2** | 21.2 | 21.2 | **12.1** | 12.1 | 12.1 | **1.75** | 23.1 | 23.1 | 23.1 |
| -24 | **20.6** | 20.6 | 20.6 | **12.1** | 12.1 | 12.1 | **1.70** | 23.1 | 23.1 | 23.1 |
| -25 | **20.0** | 20.0 | 20.0 | **12.1** | 12.1 | 12.1 | **1.65** | 23.1 | 23.1 | 23.1 |

* attention: operating limits not reflected in performance table

| **Th [°C]** | **55 °C** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Qh nom** | **Qh min** | **Qh max** | **Pin nom** | **Pin-min** | **Pin-max** | **COP** | **I nom** | **I min** | **I max** |
| Ta [°C] | **[kW]** | [kW] | [kW] | **[kW]** | [kW] | [kW] | **kW / kW** | [A] | [A] | [A] |
| 25 | **66.4** | 66.4 | 66.4 | **15.8** | 15.8 | 15.8 | **4.21** | 27.3 | 27.3 | 27.3 |
| 24 | **65.1** | 65.1 | 65.1 | **15.8** | 15.8 | 15.8 | **4.13** | 27.3 | 27.3 | 27.3 |
| 23 | **63.8** | 63.8 | 63.8 | **15.7** | 15.7 | 15.7 | **4.05** | 27.3 | 27.3 | 27.3 |
| 22 | **62.6** | 62.6 | 62.6 | **15.7** | 15.7 | 15.7 | **3.98** | 27.2 | 27.2 | 27.2 |
| 21 | **61.3** | 61.3 | 61.3 | **15.7** | 15.7 | 15.7 | **3.90** | 27.2 | 27.2 | 27.2 |
| 20 | **60.1** | 60.1 | 60.1 | **15.7** | 15.7 | 15.7 | **3.83** | 27.2 | 27.2 | 27.2 |
| 19 | **58.9** | 58.9 | 58.9 | **15.7** | 15.7 | 15.7 | **3.76** | 27.2 | 27.2 | 27.2 |
| 18 | **57.8** | 57.8 | 57.8 | **15.7** | 15.7 | 15.7 | **3.69** | 27.2 | 27.2 | 27.2 |
| 17 | **56.6** | 56.6 | 56.6 | **15.7** | 15.7 | 15.7 | **3.62** | 27.1 | 27.1 | 27.1 |
| 16 | **55.5** | 55.5 | 55.5 | **15.6** | 15.6 | 15.6 | **3.55** | 27.1 | 27.1 | 27.1 |
| 15 | **54.3** | 54.3 | 54.3 | **15.6** | 15.6 | 15.6 | **3.48** | 27.1 | 27.1 | 27.1 |
| 14 | **53.2** | 53.2 | 53.2 | **15.6** | 15.6 | 15.6 | **3.41** | 27.1 | 27.1 | 27.1 |
| 13 | **52.1** | 52.1 | 52.1 | **15.6** | 15.6 | 15.6 | **3.34** | 27.1 | 27.1 | 27.1 |
| 12 | **51.1** | 51.1 | 51.1 | **15.6** | 15.6 | 15.6 | **3.28** | 27.0 | 27.0 | 27.0 |
| 11 | **50.0** | 50.0 | 50.0 | **15.6** | 15.6 | 15.6 | **3.21** | 27.0 | 27.0 | 27.0 |
| 10 | **49.0** | 49.0 | 49.0 | **15.6** | 15.6 | 15.6 | **3.15** | 27.0 | 27.0 | 27.0 |
| 9 | **47.1** | 47.1 | 47.1 | **15.5** | 15.5 | 15.5 | **3.03** | 27.0 | 27.0 | 27.0 |
| 8 | **45.4** | 45.4 | 45.4 | **15.5** | 15.5 | 15.5 | **2.92** | 26.9 | 26.9 | 26.9 |
| 7 | **43.7** | 43.7 | 43.7 | **15.5** | 15.5 | 15.5 | **2.82** | 26.9 | 26.9 | 26.9 |
| 6 | **42.2** | 42.2 | 42.2 | **15.5** | 15.5 | 15.5 | **2.73** | 26.9 | 26.9 | 26.9 |
| 5 | **40.9** | 40.9 | 40.9 | **15.5** | 15.5 | 15.5 | **2.64** | 26.9 | 26.9 | 26.9 |
| 4 | **39.6** | 39.6 | 39.6 | **15.5** | 15.5 | 15.5 | **2.56** | 26.9 | 26.9 | 26.9 |
| 3 | **38.4** | 38.4 | 38.4 | **15.4** | 15.4 | 15.4 | **2.49** | 26.8 | 26.8 | 26.8 |
| 2 | **37.3** | 37.3 | 37.3 | **15.4** | 15.4 | 15.4 | **2.42** | 26.8 | 26.8 | 26.8 |
| 1 | **36.4** | 36.4 | 36.4 | **15.4** | 15.4 | 15.4 | **2.36** | 26.8 | 26.8 | 26.8 |
| 0 | **35.5** | 35.5 | 35.5 | **15.4** | 15.4 | 15.4 | **2.30** | 26.8 | 26.8 | 26.8 |
| -1 | **34.7** | 34.7 | 34.7 | **15.4** | 15.4 | 15.4 | **2.25** | 26.8 | 26.8 | 26.8 |
| -2 | **34.0** | 34.0 | 34.0 | **15.4** | 15.4 | 15.4 | **2.21** | 26.8 | 26.8 | 26.8 |
| -3 | **33.4** | 33.4 | 33.4 | **15.4** | 15.4 | 15.4 | **2.16** | 26.7 | 26.7 | 26.7 |
| -4 | **32.8** | 32.8 | 32.8 | **15.4** | 15.4 | 15.4 | **2.13** | 26.7 | 26.7 | 26.7 |
| -5 | **32.3** | 32.3 | 32.3 | **15.4** | 15.4 | 15.4 | **2.10** | 26.7 | 26.7 | 26.7 |
| -6 | **31.9** | 31.9 | 31.9 | **15.4** | 15.4 | 15.4 | **2.07** | 26.7 | 26.7 | 26.7 |
| -7 | **31.6** | 31.6 | 31.6 | **15.4** | 15.4 | 15.4 | **2.05** | 26.7 | 26.7 | 26.7 |
| -8 | **31.3** | 31.3 | 31.3 | **15.4** | 15.4 | 15.4 | **2.03** | 26.7 | 26.7 | 26.7 |
| -9 | **31.1** | 31.1 | 31.1 | **15.4** | 15.4 | 15.4 | **2.02** | 26.7 | 26.7 | 26.7 |
| -10 | **30.9** | 30.9 | 30.9 | **15.4** | 15.4 | 15.4 | **2.01** | 26.7 | 26.7 | 26.7 |
| -11 | **30.2** | 30.2 | 30.2 | **15.4** | 15.4 | 15.4 | **1.96** | 26.7 | 26.7 | 26.7 |
| -12 | **29.4** | 29.4 | 29.4 | **15.4** | 15.4 | 15.4 | **1.91** | 26.7 | 26.7 | 26.7 |
| -13 | **28.7** | 28.7 | 28.7 | **15.4** | 15.4 | 15.4 | **1.87** | 26.6 | 26.6 | 26.6 |
| -14 | **28.0** | 28.0 | 28.0 | **15.4** | 15.4 | 15.4 | **1.82** | 26.6 | 26.6 | 26.6 |
| -15 | **27.3** | 27.3 | 27.3 | **15.4** | 15.4 | 15.4 | **1.78** | 26.6 | 26.6 | 26.6 |
| -16 | **26.7** | 26.7 | 26.7 | **15.4** | 15.4 | 15.4 | **1.73** | 26.6 | 26.6 | 26.6 |
| -17 | **26.0** | 26.0 | 26.0 | **15.4** | 15.4 | 15.4 | **1.69** | 26.6 | 26.6 | 26.6 |
| -18 | **25.4** | 25.4 | 25.4 | **15.4** | 15.4 | 15.4 | **1.65** | 26.5 | 26.5 | 26.5 |
| -19 | **24.7** | 24.7 | 24.7 | **15.4** | 15.4 | 15.4 | **1.61** | 26.5 | 26.5 | 26.5 |
| -20 | **24.1** | 24.1 | 24.1 | **15.4** | 15.4 | 15.4 | **1.57** | 26.5 | 26.5 | 26.5 |
| -21 | **23.5** | 23.5 | 23.5 | **15.4** | 15.4 | 15.4 | **1.53** | 26.5 | 26.5 | 26.5 |
| -22 | **22.9** | 22.9 | 22.9 | **15.4** | 15.4 | 15.4 | **1.49** | 26.5 | 26.5 | 26.5 |
| -23 | **22.4** | 22.4 | 22.4 | **15.4** | 15.4 | 15.4 | **1.45** | 26.4 | 26.4 | 26.4 |
| -24 | **21.8** | 21.8 | 21.8 | **15.4** | 15.4 | 15.4 | **1.41** | 26.4 | 26.4 | 26.4 |
| -25 | **21.3** | 21.3 | 21.3 | **15.5** | 15.5 | 15.5 | **1.38** | 26.4 | 26.4 | 26.4 |

* attention: operating limits not reflected in performance table

| **Th [°C]** | **T-Max @ 65 °C** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Qh nom** | **Qh min** | **Qh max** | **Pin nom** | **Pin-min** | **Pin-max** | **COP** | **I nom** | **I min** | **I max** |
| Ta [°C] | **[kW]** | [kW] | [kW] | **[kW]** | [kW] | [kW] | **kW / kW** | [A] | [A] | [A] |
| 25 | **66.5** | 66.5 | 66.5 | **20.3** | 20.3 | 20.3 | **3.28** | 32.7 | 32.7 | 32.7 |
| 24 | **65.3** | 65.3 | 65.3 | **20.2** | 20.2 | 20.2 | **3.23** | 32.7 | 32.7 | 32.7 |
| 23 | **64.1** | 64.1 | 64.1 | **20.2** | 20.2 | 20.2 | **3.17** | 32.7 | 32.7 | 32.7 |
| 22 | **62.9** | 62.9 | 62.9 | **20.2** | 20.2 | 20.2 | **3.11** | 32.7 | 32.7 | 32.7 |
| 21 | **61.8** | 61.8 | 61.8 | **20.2** | 20.2 | 20.2 | **3.06** | 32.7 | 32.7 | 32.7 |
| 20 | **60.6** | 60.6 | 60.6 | **20.2** | 20.2 | 20.2 | **3.00** | 32.7 | 32.7 | 32.7 |
| 19 | **59.5** | 59.5 | 59.5 | **20.2** | 20.2 | 20.2 | **2.95** | 32.6 | 32.6 | 32.6 |
| 18 | **58.3** | 58.3 | 58.3 | **20.1** | 20.1 | 20.1 | **2.90** | 32.6 | 32.6 | 32.6 |
| 17 | **57.2** | 57.2 | 57.2 | **20.1** | 20.1 | 20.1 | **2.85** | 32.6 | 32.6 | 32.6 |
| 16 | **56.2** | 56.2 | 56.2 | **20.1** | 20.1 | 20.1 | **2.79** | 32.6 | 32.6 | 32.6 |
| 15 | **55.1** | 55.1 | 55.1 | **20.1** | 20.1 | 20.1 | **2.74** | 32.6 | 32.6 | 32.6 |
| 14 | **54.0** | 54.0 | 54.0 | **20.1** | 20.1 | 20.1 | **2.69** | 32.6 | 32.6 | 32.6 |
| 13 | **53.0** | 53.0 | 53.0 | **20.1** | 20.1 | 20.1 | **2.64** | 32.6 | 32.6 | 32.6 |
| 12 | **52.0** | 52.0 | 52.0 | **20.0** | 20.0 | 20.0 | **2.59** | 32.6 | 32.6 | 32.6 |
| 11 | **51.0** | 51.0 | 51.0 | **20.0** | 20.0 | 20.0 | **2.54** | 32.6 | 32.6 | 32.6 |
| 10 | **50.0** | 50.0 | 50.0 | **20.0** | 20.0 | 20.0 | **2.50** | 32.6 | 32.6 | 32.6 |
| 9 | **48.2** | 48.2 | 48.2 | **20.0** | 20.0 | 20.0 | **2.41** | 32.5 | 32.5 | 32.5 |
| 8 | **46.5** | 46.5 | 46.5 | **20.0** | 20.0 | 20.0 | **2.33** | 32.5 | 32.5 | 32.5 |
| 7 | **45.0** | 45.0 | 45.0 | **20.0** | 20.0 | 20.0 | **2.25** | 32.5 | 32.5 | 32.5 |
| 6 | **43.5** | 43.5 | 43.5 | **19.9** | 19.9 | 19.9 | **2.18** | 32.5 | 32.5 | 32.5 |
| 5 | **42.2** | 42.2 | 42.2 | **19.9** | 19.9 | 19.9 | **2.12** | 32.5 | 32.5 | 32.5 |
| 4 | **41.0** | 41.0 | 41.0 | **19.9** | 19.9 | 19.9 | **2.06** | 32.5 | 32.5 | 32.5 |
| 3 | **39.9** | 39.9 | 39.9 | **19.9** | 19.9 | 19.9 | **2.00** | 32.5 | 32.5 | 32.5 |
| 2 | **38.9** | 38.9 | 38.9 | **19.9** | 19.9 | 19.9 | **1.95** | 32.5 | 32.5 | 32.5 |
| 1 | **37.9** | 37.9 | 37.9 | **19.9** | 19.9 | 19.9 | **1.91** | 32.5 | 32.5 | 32.5 |
| 0 | **37.1** | 37.1 | 37.1 | **19.9** | 19.9 | 19.9 | **1.87** | 32.5 | 32.5 | 32.5 |
| -1 | **36.3** | 36.3 | 36.3 | **19.9** | 19.9 | 19.9 | **1.83** | 32.5 | 32.5 | 32.5 |
| -2 | **35.6** | 35.6 | 35.6 | **19.9** | 19.9 | 19.9 | **1.79** | 32.6 | 32.6 | 32.6 |
| -3 | **35.0** | 35.0 | 35.0 | **19.9** | 19.9 | 19.9 | **1.76** | 32.6 | 32.6 | 32.6 |
| -4 | **34.5** | 34.5 | 34.5 | **19.9** | 19.9 | 19.9 | **1.74** | 32.6 | 32.6 | 32.6 |
| -5 | **34.0** | 34.0 | 34.0 | **19.9** | 19.9 | 19.9 | **1.71** | 32.6 | 32.6 | 32.6 |
| -6 | **33.6** | 33.6 | 33.6 | **19.9** | 19.9 | 19.9 | **1.69** | 32.6 | 32.6 | 32.6 |
| -7 | **33.3** | 33.3 | 33.3 | **19.9** | 19.9 | 19.9 | **1.68** | 32.6 | 32.6 | 32.6 |
| -8 | **33.0** | 33.0 | 33.0 | **19.9** | 19.9 | 19.9 | **1.66** | 32.6 | 32.6 | 32.6 |
| -9 | **32.8** | 32.8 | 32.8 | **19.9** | 19.9 | 19.9 | **1.65** | 32.6 | 32.6 | 32.6 |
| -10 | **32.7** | 32.7 | 32.7 | **19.9** | 19.9 | 19.9 | **1.65** | 32.6 | 32.6 | 32.6 |
| -11 | **32.0** | 32.0 | 32.0 | **19.9** | 19.9 | 19.9 | **1.61** | 32.6 | 32.6 | 32.6 |
| -12 | **31.3** | 31.3 | 31.3 | **19.9** | 19.9 | 19.9 | **1.57** | 32.6 | 32.6 | 32.6 |
| -13 | **30.6** | 30.6 | 30.6 | **19.9** | 19.9 | 19.9 | **1.54** | 32.6 | 32.6 | 32.6 |
| -14 | **29.9** | 29.9 | 29.9 | **19.9** | 19.9 | 19.9 | **1.51** | 32.6 | 32.6 | 32.6 |
| -15 | **29.3** | 29.3 | 29.3 | **19.9** | 19.9 | 19.9 | **1.47** | 32.6 | 32.6 | 32.6 |
| -16 | | | | | | | | | | |
| -17 | | | | | | | | | | |
| -18 | | | | | | | | | | |
| -19 | | | | | | | | | | |
| -20 | | | | | | | | | | |
| -21 | | | | | | | | | | |
| -22 | | | | | | | | | | |
| -23 | | | | | | | | | | |
| -24 | | | | | | | | | | |
| -25 | | | | | | | | | | |

* attention: operating limits not reflected in performance table

| Tc [°C] | W 12 / 7 °C | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Qc nom** | **Qc min** | **Qc max** | **Pin** | **Pin min** | **Pin max** | **EER** | **I nom** | **I min** | **I max** |
| Ta [°C] | **[kW]** | [kW] | [kW] | **[kW]** | [kW] | [kW] | **kW / kW** | [A] | [A] | [A] |
| 40 | **30.4** | 30.4 | 30.4 | **13.1** | 13.1 | 13.1 | **2.32** | 24.5 | 24.5 | 24.5 |
| 39 | **30.6** | 30.6 | 30.6 | **12.8** | 12.8 | 12.8 | **2.40** | 24.3 | 24.3 | 24.3 |
| 38 | **30.8** | 30.8 | 30.8 | **12.5** | 12.5 | 12.5 | **2.47** | 24.0 | 24.0 | 24.0 |
| 37 | **31.0** | 31.0 | 31.0 | **12.2** | 12.2 | 12.2 | **2.54** | 23.8 | 23.8 | 23.8 |
| 36 | **31.2** | 31.2 | 31.2 | **11.9** | 11.9 | 11.9 | **2.62** | 23.5 | 23.5 | 23.5 |
| 35 | **31.4** | 31.4 | 31.4 | **11.7** | 11.7 | 11.7 | **2.70** | 23.3 | 23.3 | 23.3 |
| 34 | **31.7** | 31.7 | 31.7 | **11.4** | 11.4 | 11.4 | **2.78** | 23.1 | 23.1 | 23.1 |
| 33 | **31.9** | 31.9 | 31.9 | **11.1** | 11.1 | 11.1 | **2.86** | 22.9 | 22.9 | 22.9 |
| 32 | **32.0** | 32.0 | 32.0 | **10.9** | 10.9 | 10.9 | **2.94** | 22.7 | 22.7 | 22.7 |
| 31 | **32.2** | 32.2 | 32.2 | **10.7** | 10.7 | 10.7 | **3.02** | 22.5 | 22.5 | 22.5 |
| 30 | **32.4** | 32.4 | 32.4 | **10.4** | 10.4 | 10.4 | **3.11** | 22.3 | 22.3 | 22.3 |
| 29 | **32.6** | 32.6 | 32.6 | **10.2** | 10.2 | 10.2 | **3.19** | 22.2 | 22.2 | 22.2 |
| 28 | **32.8** | 32.8 | 32.8 | **10.0** | 10.0 | 10.0 | **3.28** | 22.0 | 22.0 | 22.0 |
| 27 | **33.0** | 33.0 | 33.0 | **9.8** | 9.8 | 9.8 | **3.37** | 21.8 | 21.8 | 21.8 |
| 26 | **33.1** | 33.1 | 33.1 | **9.6** | 9.6 | 9.6 | **3.45** | 21.6 | 21.6 | 21.6 |
| 25 | **33.3** | 33.3 | 33.3 | **9.4** | 9.4 | 9.4 | **3.54** | 21.4 | 21.4 | 21.4 |
| 24 | **33.5** | 33.5 | 33.5 | **9.2** | 9.2 | 9.2 | **3.64** | 21.2 | 21.2 | 21.2 |
| 23 | **33.6** | 33.6 | 33.6 | **9.0** | 9.0 | 9.0 | **3.73** | 21.0 | 21.0 | 21.0 |
| 22 | **33.8** | 33.8 | 33.8 | **8.8** | 8.8 | 8.8 | **3.82** | 20.8 | 20.8 | 20.8 |
| 21 | **33.9** | 33.9 | 33.9 | **8.7** | 8.7 | 8.7 | **3.92** | 20.6 | 20.6 | 20.6 |
| 20 | **34.1** | 34.1 | 34.1 | **8.5** | 8.5 | 8.5 | **4.01** | 20.4 | 20.4 | 20.4 |
| 19 | **34.2** | 34.2 | 34.2 | **8.3** | 8.3 | 8.3 | **4.11** | 20.2 | 20.2 | 20.2 |
| 18 | **34.4** | 34.4 | 34.4 | **8.2** | 8.2 | 8.2 | **4.21** | 19.9 | 19.9 | 19.9 |
| 17 | **34.5** | 34.5 | 34.5 | **8.0** | 8.0 | 8.0 | **4.31** | 19.7 | 19.7 | 19.7 |

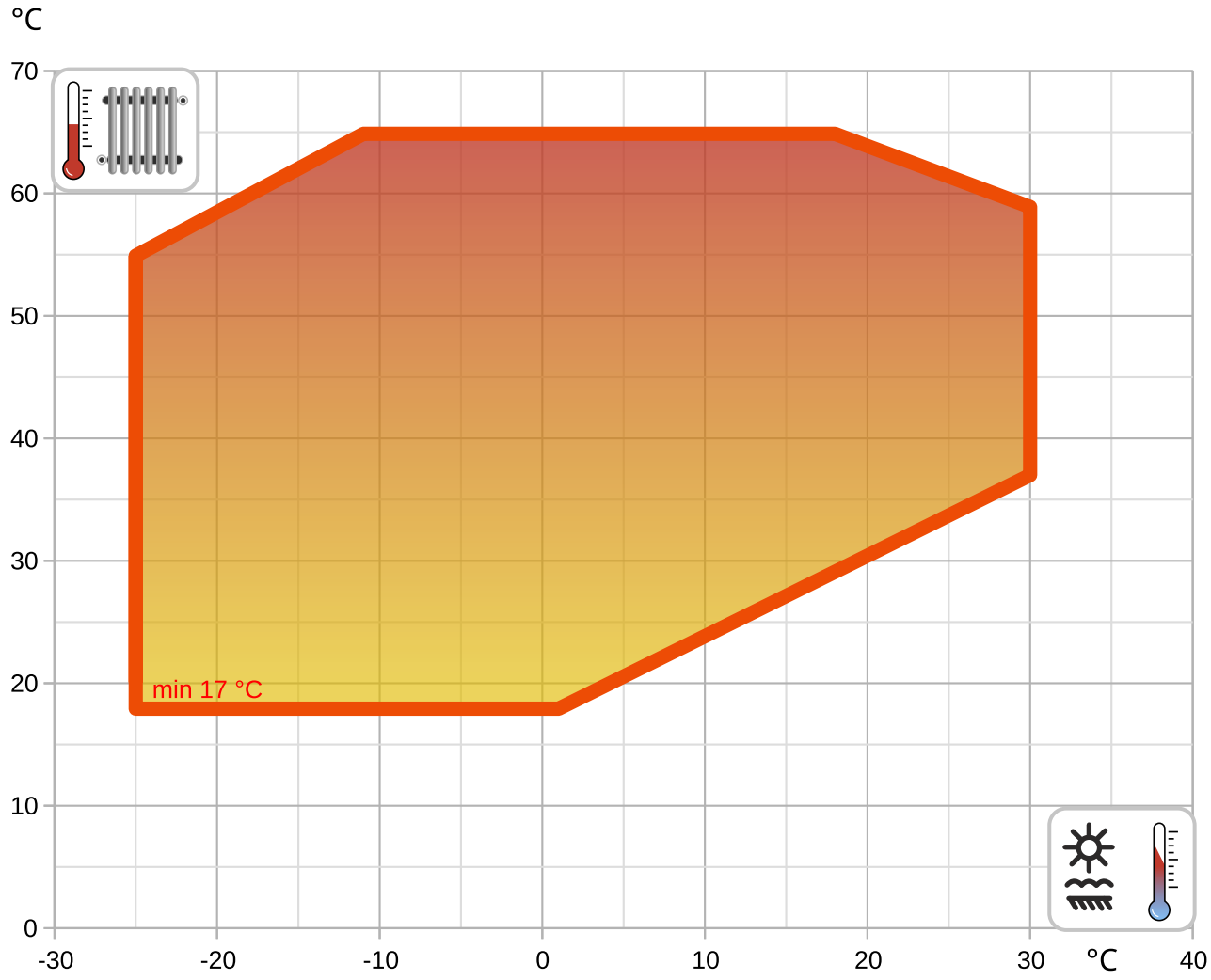
| Tc [°C] | W 23 / 18 °C | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Qc** | **Qh-min** | **Qh-max** | **Pin** | **Pin-min** | **Pin-max** | **EER** | **I** | **I-min** | **I-max** |
| Ta [°C] | **[kW]** | [kW] | [kW] | **[kW]** | [kW] | [kW] | **kW / kW** | [A] | [A] | [A] |
| 40 | **41.4** | 41.4 | 41.4 | **13.1** | 13.1 | 13.1 | **3.16** | 24.7 | 24.7 | 24.7 |
| 39 | **41.6** | 41.6 | 41.6 | **12.8** | 12.8 | 12.8 | **3.26** | 24.4 | 24.4 | 24.4 |
| 38 | **41.9** | 41.9 | 41.9 | **12.5** | 12.5 | 12.5 | **3.36** | 24.2 | 24.2 | 24.2 |
| 37 | **42.2** | 42.2 | 42.2 | **12.2** | 12.2 | 12.2 | **3.46** | 23.9 | 23.9 | 23.9 |
| 36 | **42.4** | 42.4 | 42.4 | **11.9** | 11.9 | 11.9 | **3.56** | 23.7 | 23.7 | 23.7 |
| 35 | **42.7** | 42.7 | 42.7 | **11.7** | 11.7 | 11.7 | **3.66** | 23.4 | 23.4 | 23.4 |
| 34 | **42.9** | 42.9 | 42.9 | **11.4** | 11.4 | 11.4 | **3.76** | 23.2 | 23.2 | 23.2 |
| 33 | **43.1** | 43.1 | 43.1 | **11.1** | 11.1 | 11.1 | **3.87** | 23.0 | 23.0 | 23.0 |
| 32 | **43.4** | 43.4 | 43.4 | **10.9** | 10.9 | 10.9 | **3.98** | 22.8 | 22.8 | 22.8 |
| 31 | **43.6** | 43.6 | 43.6 | **10.7** | 10.7 | 10.7 | **4.09** | 22.6 | 22.6 | 22.6 |
| 30 | **43.8** | 43.8 | 43.8 | **10.4** | 10.4 | 10.4 | **4.20** | 22.4 | 22.4 | 22.4 |
| 29 | **44.0** | 44.0 | 44.0 | **10.2** | 10.2 | 10.2 | **4.31** | 22.2 | 22.2 | 22.2 |
| 28 | **44.3** | 44.3 | 44.3 | **10.0** | 10.0 | 10.0 | **4.42** | 22.0 | 22.0 | 22.0 |
| 27 | **44.5** | 44.5 | 44.5 | **9.8** | 9.8 | 9.8 | **4.54** | 21.8 | 21.8 | 21.8 |
| 26 | **44.7** | 44.7 | 44.7 | **9.6** | 9.6 | 9.6 | **4.66** | 21.5 | 21.5 | 21.5 |
| 25 | **44.9** | 44.9 | 44.9 | **9.4** | 9.4 | 9.4 | **4.77** | 21.3 | 21.3 | 21.3 |
| 24 | **45.1** | 45.1 | 45.1 | **9.2** | 9.2 | 9.2 | **4.89** | 21.1 | 21.1 | 21.1 |
| 23 | **45.3** | 45.3 | 45.3 | **9.0** | 9.0 | 9.0 | **5.02** | 20.9 | 20.9 | 20.9 |
| 22 | **45.4** | 45.4 | 45.4 | **8.8** | 8.8 | 8.8 | **5.14** | 20.6 | 20.6 | 20.6 |
| 21 | **45.6** | 45.6 | 45.6 | **8.7** | 8.7 | 8.7 | **5.26** | 20.4 | 20.4 | 20.4 |
| 20 | **45.8** | 45.8 | 45.8 | **8.5** | 8.5 | 8.5 | **5.39** | 20.1 | 20.1 | 20.1 |
| 19 | **46.0** | 46.0 | 46.0 | **8.3** | 8.3 | 8.3 | **5.52** | 19.9 | 19.9 | 19.9 |
| 18 | **46.1** | 46.1 | 46.1 | **8.2** | 8.2 | 8.2 | **5.65** | 19.6 | 19.6 | 19.6 |
| 17 | **46.3** | 46.3 | 46.3 | **8.0** | 8.0 | 8.0 | **5.78** | 19.3 | 19.3 | 19.3 |

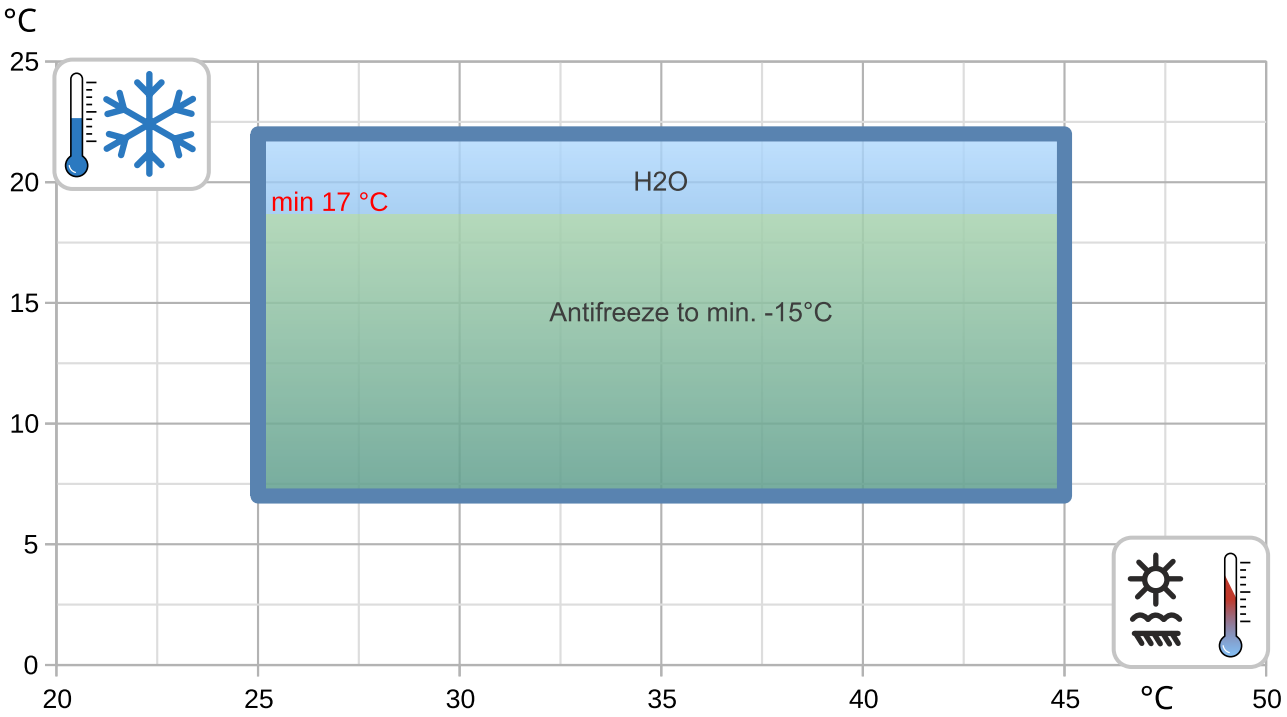
* attention: operating limits not reflected in performance table

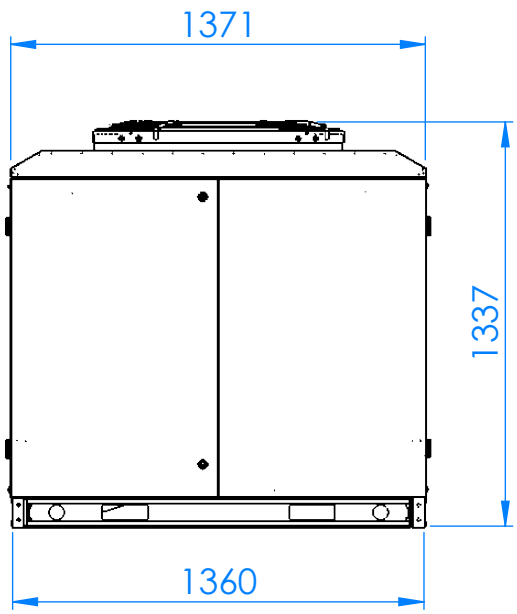
LEGENDE:

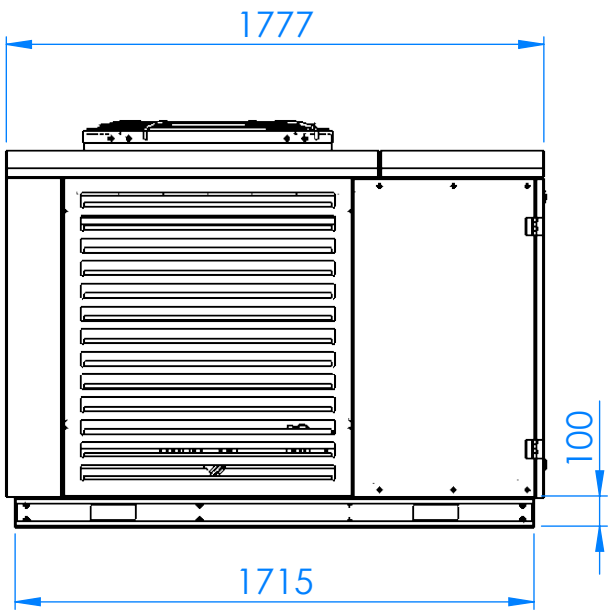
Ts-IN: Temperature renewable source - inlet [°C]
Th-OU: Temperature heating - outlet (flow) [°C]
Tc-OU: Temperature cooling - outlet (flow) [°C]
Qh nom: Heating capacity nominal
Qh min: Heating capacity minimal
Qh max: Heating capacity maximal
Pin nom: Power input at nominal heating capacity
Pin min: 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

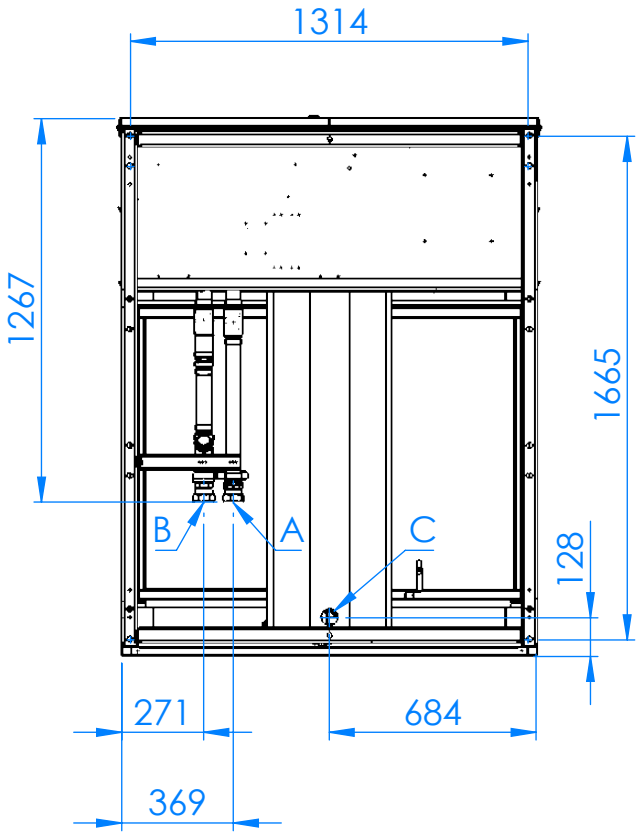
## Operating limits

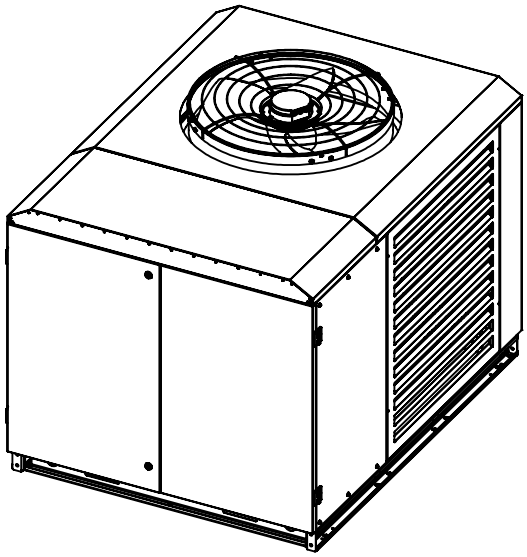


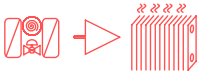



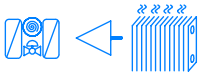

1371
1337
1360


1777
100
1715

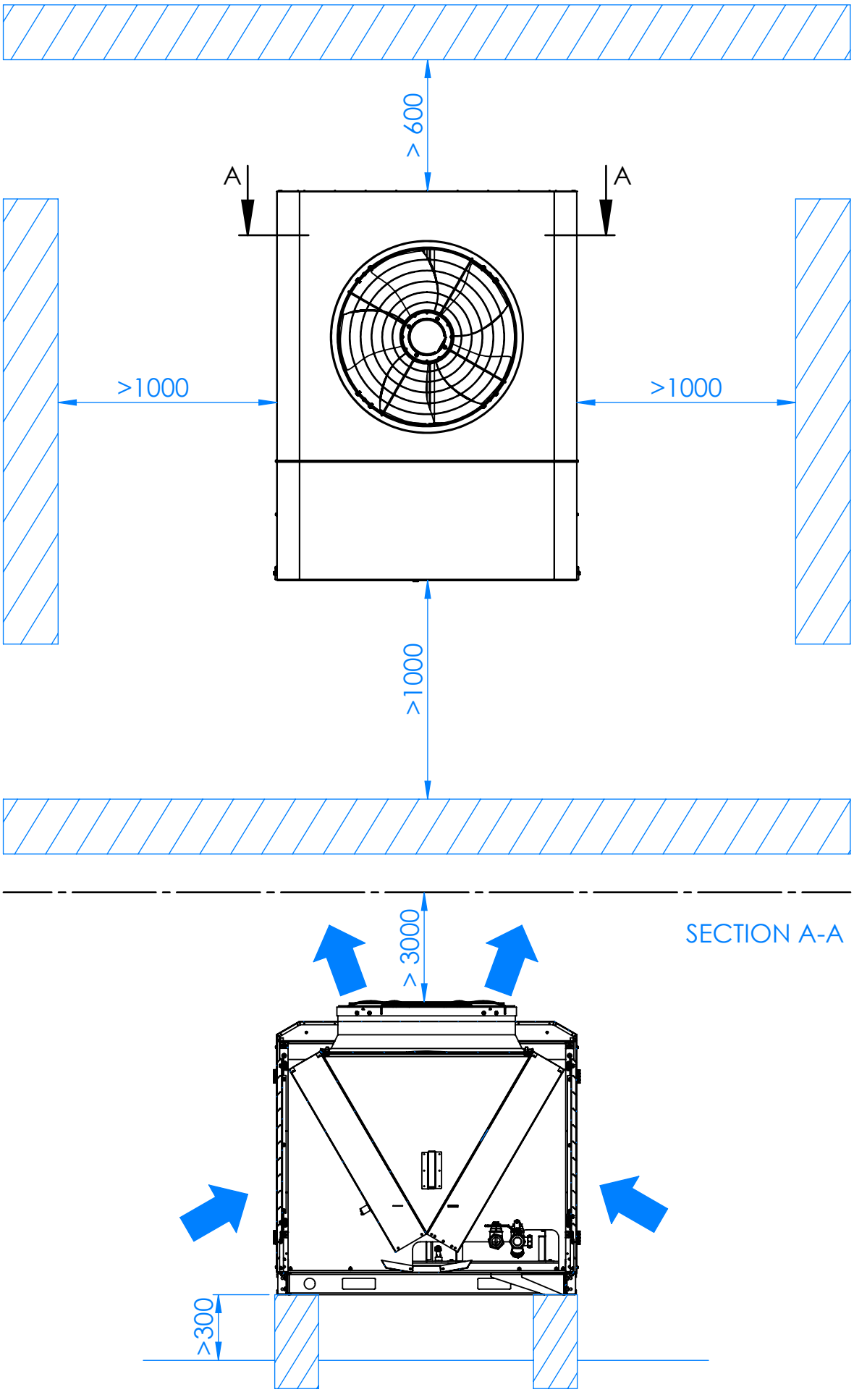

1314
1267
1665
B
A
C
128
271
684
369

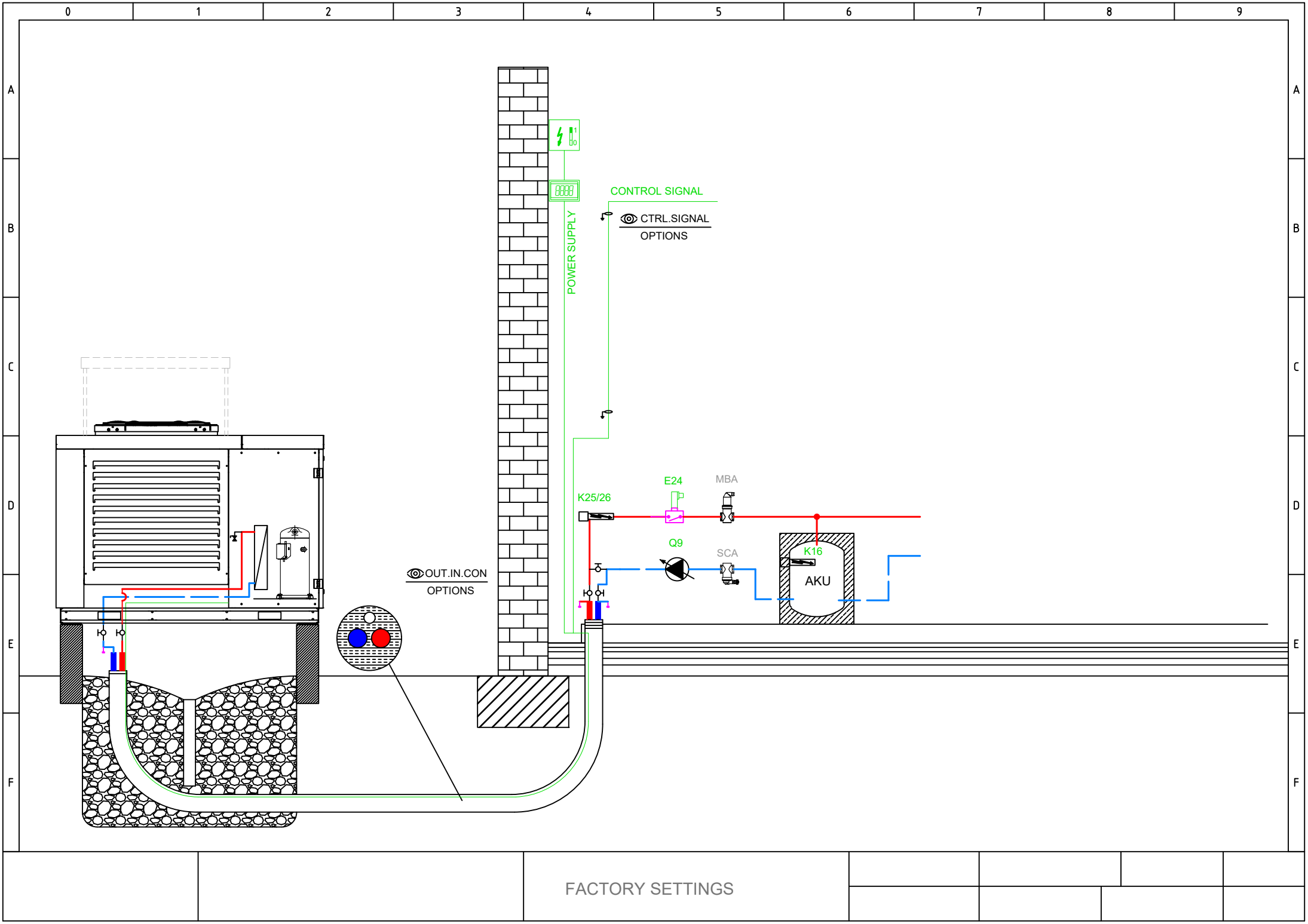


A - 

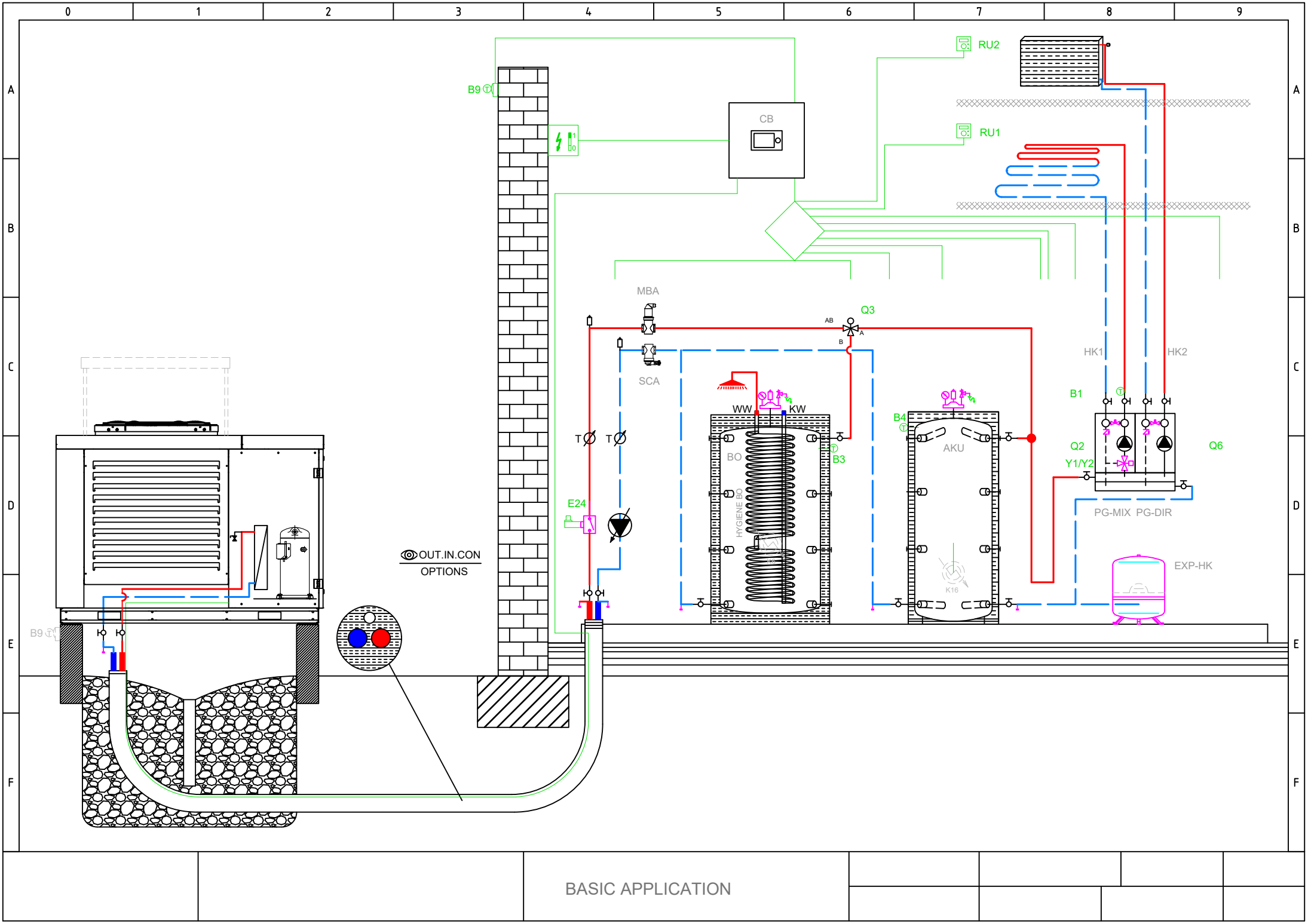
B - 

C - Condens

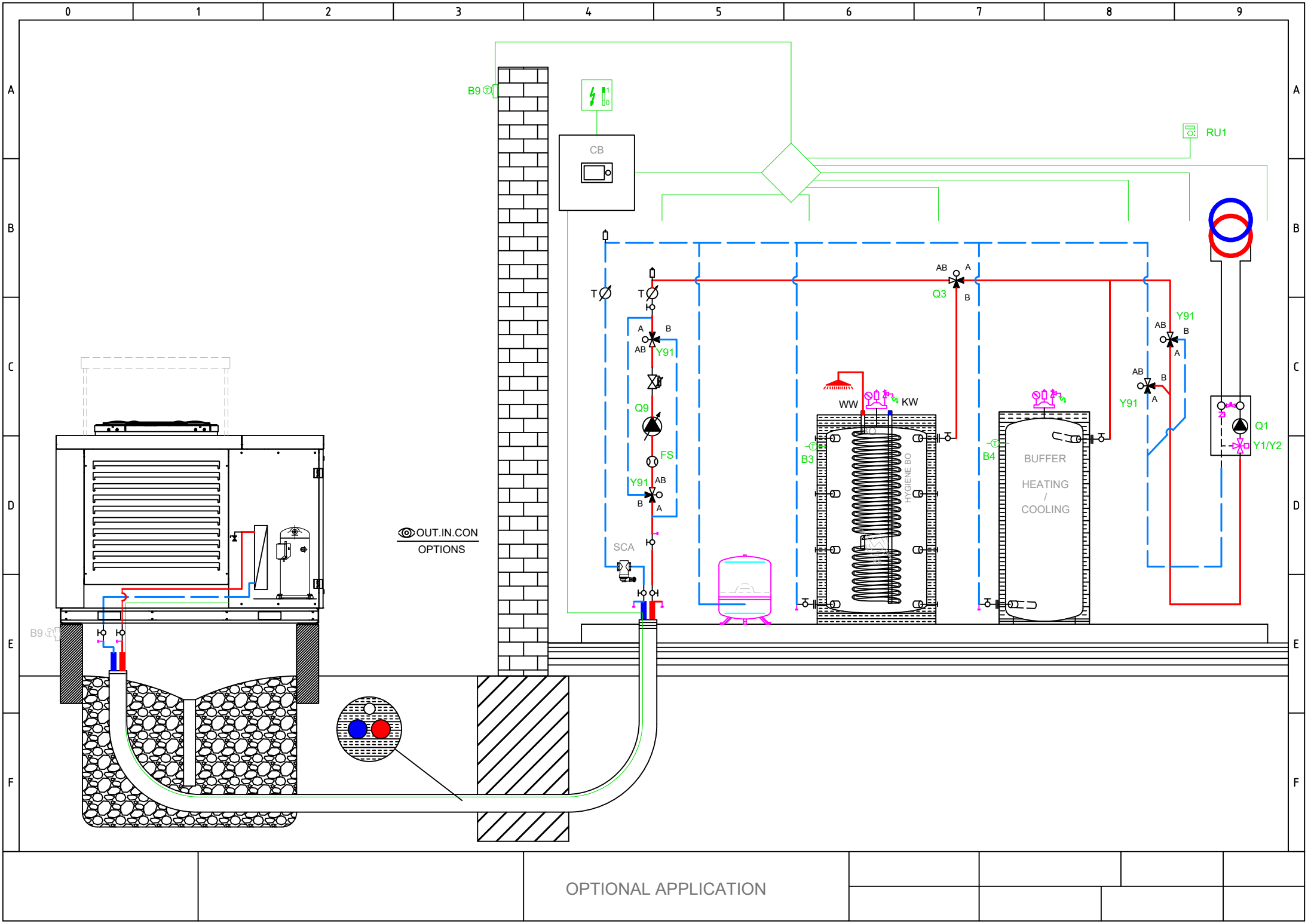

> 600
A
A
>1000
>1000
>1000
SECTION A-A
> 3000
>300




FACTORY SETTINGS




BASIC APPLICATION


B9
CB
RU1
T
T
A
B
AB
Y91
Q9
FS
Y91
AB
B
A
SCA
AB
A
Q3
B
Y91
AB
B
A
AB
B
A
Y91
WW
KW
B3
HYGIENE BO
B4
BUFFER
HEATING
/
COOLING
Q1
Y1/Y2
B9
OUT.IN.CON
OPTIONS
OPTIONAL APPLICATION

# AiWa - AWK v052024 Config FactorySet v24.9.1

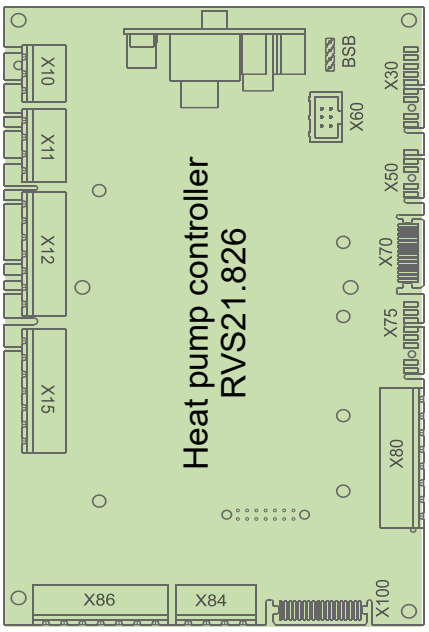
Heat pump controller preconfiguration and standard wiring of inputs and outputs

EN

Main power supply 230V / 50 Hz
Ground
Neutral conductor

| | | | |
|---|---|---|---|
| E10 | High-pressure switch E10 | X10 1 | L |
| E11 | Overload compressor 1 E11 | | PE |
| E14 | Overload source E14 | | N |
| E24 | Flow switch consumers E24 | X11 1 | EX1 |
| K82 | Valve EVI K82 | | EX2 |
| | | | EX3 |
| K40 | Crankcase heater K40 | | EX4 |
| | | X12 1 | QX1 |
| L | Phase 230V | | N |
| K1 | Compressor stage 1 K1 | | QX2 |
| Y22 | Process revers valve Y22 | | QX2i |
| | | | N |
| | | | FX3 |
| Q9 | Condenser pump Q9 | | QX3 |
| | | X15 1 | QX4 |
| | | | QX4i |
| | | | N |
| | | | QX5 |
| | | | N |
| | | | ZX6 |
| | | | N |
| | | X86 1 | GX1 |
| | | | H3 |
| | | | M |
| | | | H1 |
| | | | G+ |
| | | | M |
| | | | BSB |

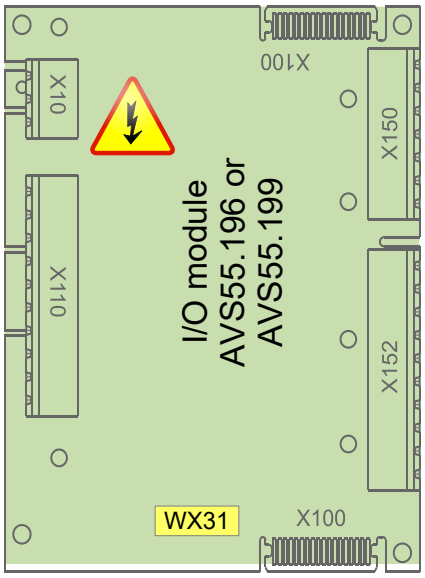
Total: max 6A
1 x QX..: max 2A




| | | | |
|---|---|---|---|
| BSB | | | Connection service tool (OCI700) |
| X30 | | | Operating unit (HMI) AVS37.xxx |
| X60 | | | Modbus clip-in OCI351.01 |
| X50 | | | Extension module AVS75.xxx |
| X70 | | | LPB clip-in |
| D1 | | D1 | Digital output 1 Heating |
| D2 | | D2 | Digital output 2 Cooling |
| D3 | | D3 | Digital output 3 HP On/Off |
| UX3 | | | |
| M | X75 | | |
| DI6 | | DI6 | Digital input 6 Defrosting |
| DI7 | | DI7 | Digital input 7 Alarm |
| M | 1 | | |
| BX1 | | B91 | Source inlet sensor B91 |
| M | | | |
| BX2 | | B84 | Source outl sens B92/B84 |
| M | | | |
| UX1 | X80 | K19 | Fan K19 |
| M | | | 0..10 V Signal |
| UX2 | | Q9 | Condenser pump Q9 |
| M | 1 | | PWM Signal |
| BX3 | | B71 | HP return sensor B71 |
| M | | | |
| BX4 | X84 | B9 | Outside sensor B9 |
| M | 1 | | |

Main power supply 230V / 50 Hz
Ground
Neutral conductor

| | | | |
|---|---|---|---|
| | | X10 1 | L |
| | | | PE |
| | | | N |
| | | X110 1 | QX31 |
| | | | QX32 |
| | | | N |
| | | | QX33 |
| | | | N |
| | | | ZX34 |
| | | | N |
| K10 | Alarm output K10 | X115 1 | QX35 |
| | | | QX35i |
| | | | N |
| V81 | EEV evaporator V81 | WX31 | |




| | | | |
|---|---|---|---|
| BSB | | | |
| M | | | |
| G+ | X150 | | 5 V/12 V for active sensors |
| H31 | | | Flow measurement 10V |
| M | | | |
| H32 | | | Low pressure 0..10V |
| GX1 | 1 | | 5 V/12 V for active sensors |
| H33 | | | High pressure 0..10V |
| M | | | |
| BX31 | | B21 | HP flow sensor B21 |
| M | | | |
| BX32 | X152 | B81 | Hot-gas sensor B81 |
| M | | | |
| BX33 | | B85 | Suction gas sensor B85 |
| M | | | |
| BX34 | | B83 | Refrig sensor liquid B83 |
| M | 1 | | |

# AiWa - AWK v052024 Config FactorySet v24.9.1

Heat pump controller preconfiguration and standard wiring of inputs and outputs

EN

AVS75.390
AVS75.391
AVS75.370

Main power supply 230V / 50 Hz
Ground
Neutral conductor

L
PE
N
T QX21
N
PE
QX22
S N
PE
QX23
C L
FX23
EX21




X50
X50
CL+ b
CL-
G+
UX21 e
M
UX22
BX21 e
M
BX22
GX21 g
H21
H22
M

Operating unit (HMI) AVS37.xxx
Extension module AVS75.xxx
Room unit QAA...
Room unit QAA...



Main power supply 230V / 50 Hz
Ground
Neutral conductor

L
PE
N
T QX21
N
PE
QX22
S N
PE
QX23
C L
FX23
EX21



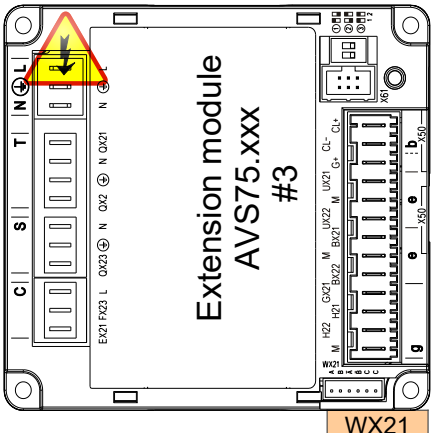

X50
X50
CL+ b
CL-
G+
UX21 e
M
UX22
BX21 e
M
BX22
GX21 g
H21
H22
M

Operating unit (HMI) AVS37.xxx
Extension module AVS75.xxx
Room unit QAA...
Room unit QAA...

Multifunktional

Main power supply 230V / 50 Hz
Ground
Neutral conductor

L
PE
N
T QX21
N
PE
QX22
S N
PE
QX23
C L
FX23
EX21




X50
X50
CL+ b
CL-
G+
UX21 e
M
UX22
BX21 e
M
BX22
GX21 g
H21
H22
M

Operating unit (HMI) AVS37.xxx
Extension module AVS75.xxx
Room unit QAA...
Room unit QAA...

B86 Suction gas sensor EVI B86

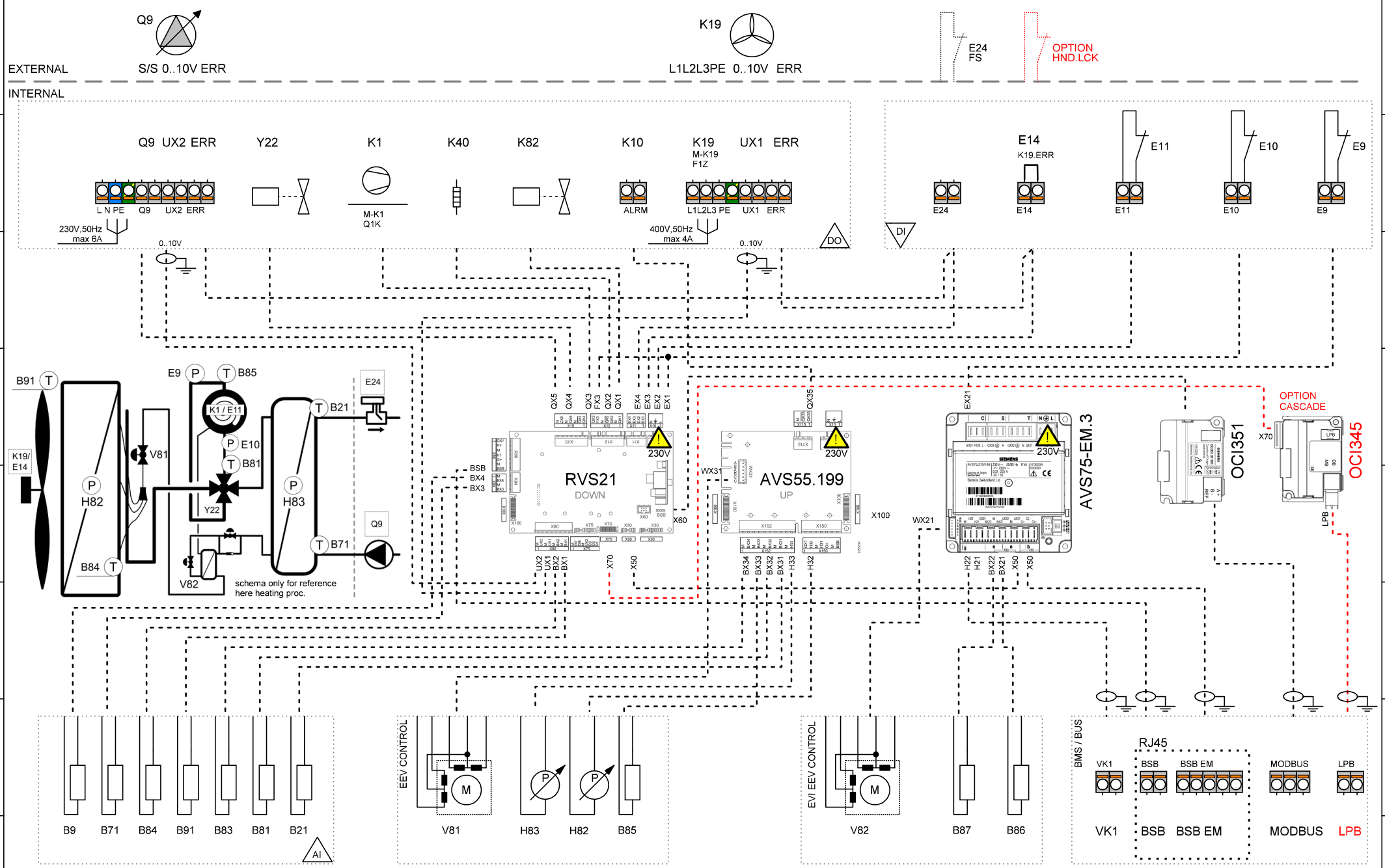
B87 Evaporation sensor EVI B87

E9 Low-pressure switch E9

V82 EEV EVI V82

WX21

WX21


Q9
S/S 0..10V ERR
K19
L1L2L3PE 0..10V ERR
E24
FS
OPTION
HND.LCK
EXTERNAL
INTERNAL
Q9 UX2 ERR
Y22
K1
K40
K82
K10
K19 UX1 ERR
M-K19
F1Z
L N PE Q9 UX2 ERR
230V,50Hz
max 6A
M-K1
Q1K
ALRM
L1L2L3 PE UX1 ERR
400V,50Hz
max 4A
0..10V
DO
DI
E14
K19.ERR
E24
E14
E11
E10
E9
B91
E9
B85
E24
K1 / E11
B21
K19/
E14
V81
P
H82
E10
B81
Y22
P
H83
Q9
B84
B71
V82
schema only for reference
here heating proc.
QX5
QX4
QX3
FX3
QX2
QX1
EX4
EX3
EX2
EX1
230V
RVS21
DOWN
BSB
BX4
BX3
X60
X100
WX31
AVS55.199
UP
QX35
EX21
AVS75-EM.3
WX21
OCI351
OPTION
CASCADE
OCI345
X70
LPB
UX2
UX1
BX2
BX1
X70
X50
BX34
BX33
BX32
BX31
H33
H32
H22
H21
BX22
BX21
X50
X50
B9
B71
B84
B91
B83
B81
B21
AI
EEV CONTROL
V81
H83
H82
B85
EVI EEV CONTROL
V82
B87
B86
BMS / BUS
RJ45
VK1
BSB
BSB EM
MODBUS
LPB
VK1
BSB
BSB EM
MODBUS
LPB
PWR SPLY: ..... 3~ 400V, 50 Hz
CTRL: ..... 1~ 230V, 50 HZ
Company
Title
AW(K)
Version / Note
05/2024
Number
Created by
Date
Page
1

Accessory

INTERNET

PWR GRID

3~ 400 V, 50 Hz

L1/L2/L3/N/PE

ControlBox

TOSYMO VPN

AVS74-HMI

AVS75-EM.1

AVS75-EM.2

Q9

Distribution

B36

B4

B42

B41

B3

B31

Q33

Tauscher1

Solar

Q2 HK/KK

Y21

Q6 HK/KK

Y45

only example

L1/L2/L3/N/PE

ModBus

BSB

BSB-EM

OCI351

RVS21

AVS55

AVS75-EM.3

K25

Q8 / K19

Q9

RVS61

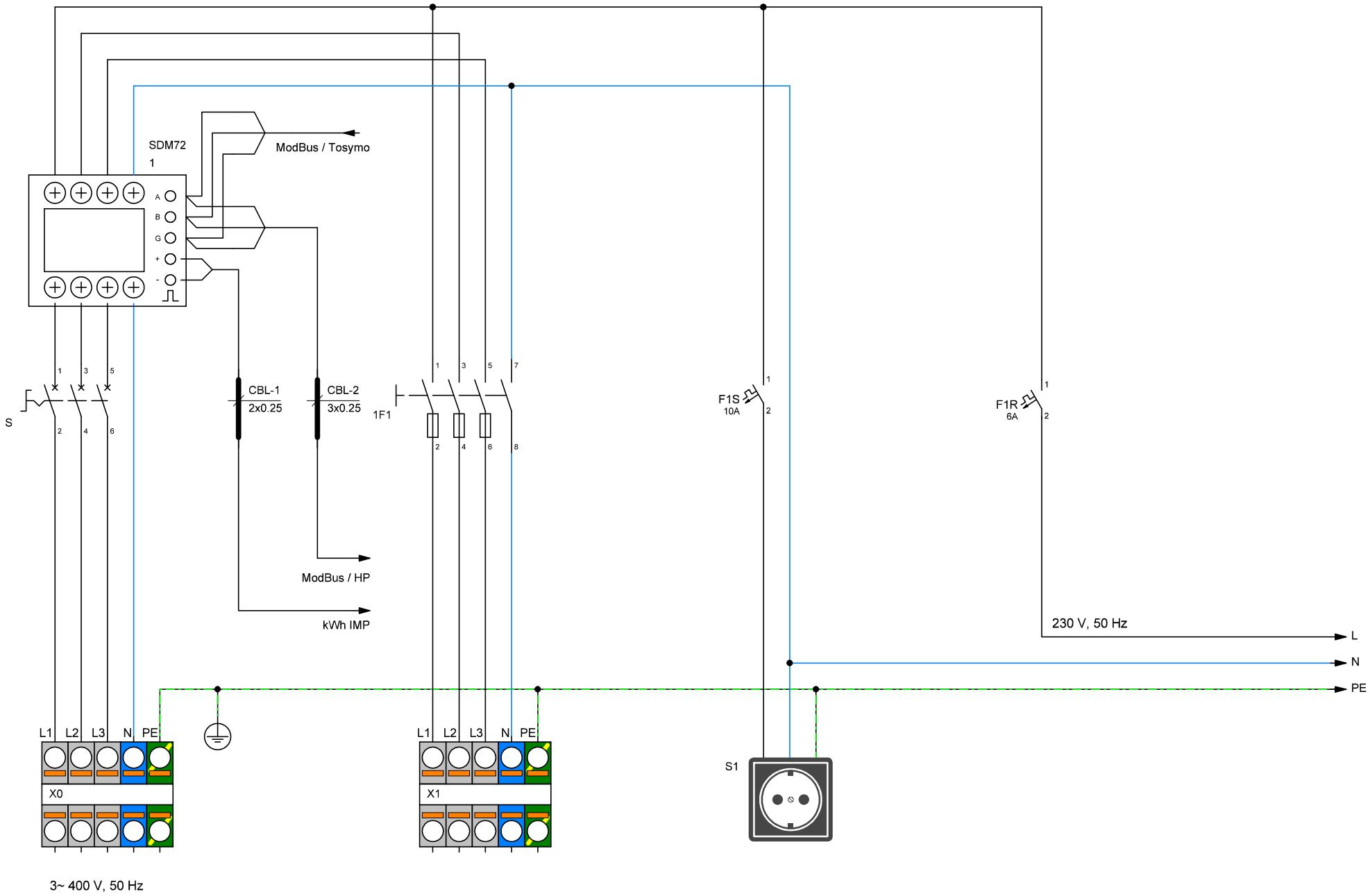
AVS75-EM.3

Renewable heat source

Heat pump

Consumer

| Company | Title | Version / Note | Number | Created by | Date | Page |
|---|---|---|---|---|---|---|
| | CONTROL BOX | 05/2024 | | | | 1 |




| Company | Title | Version / Note | Number | Created by | Date | Page |
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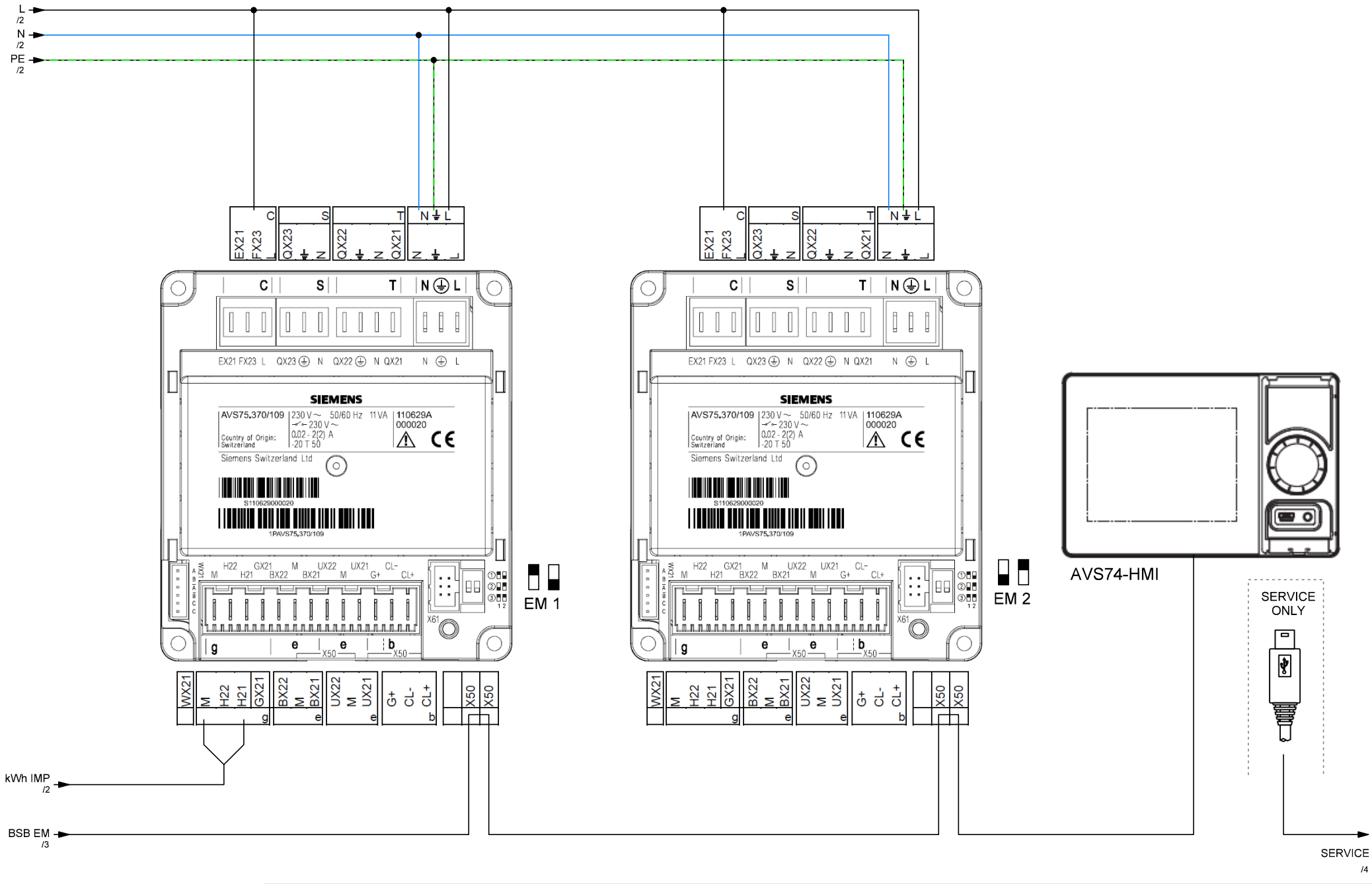
| | CONTROL BOX | 05/2024 | | | | 2 |

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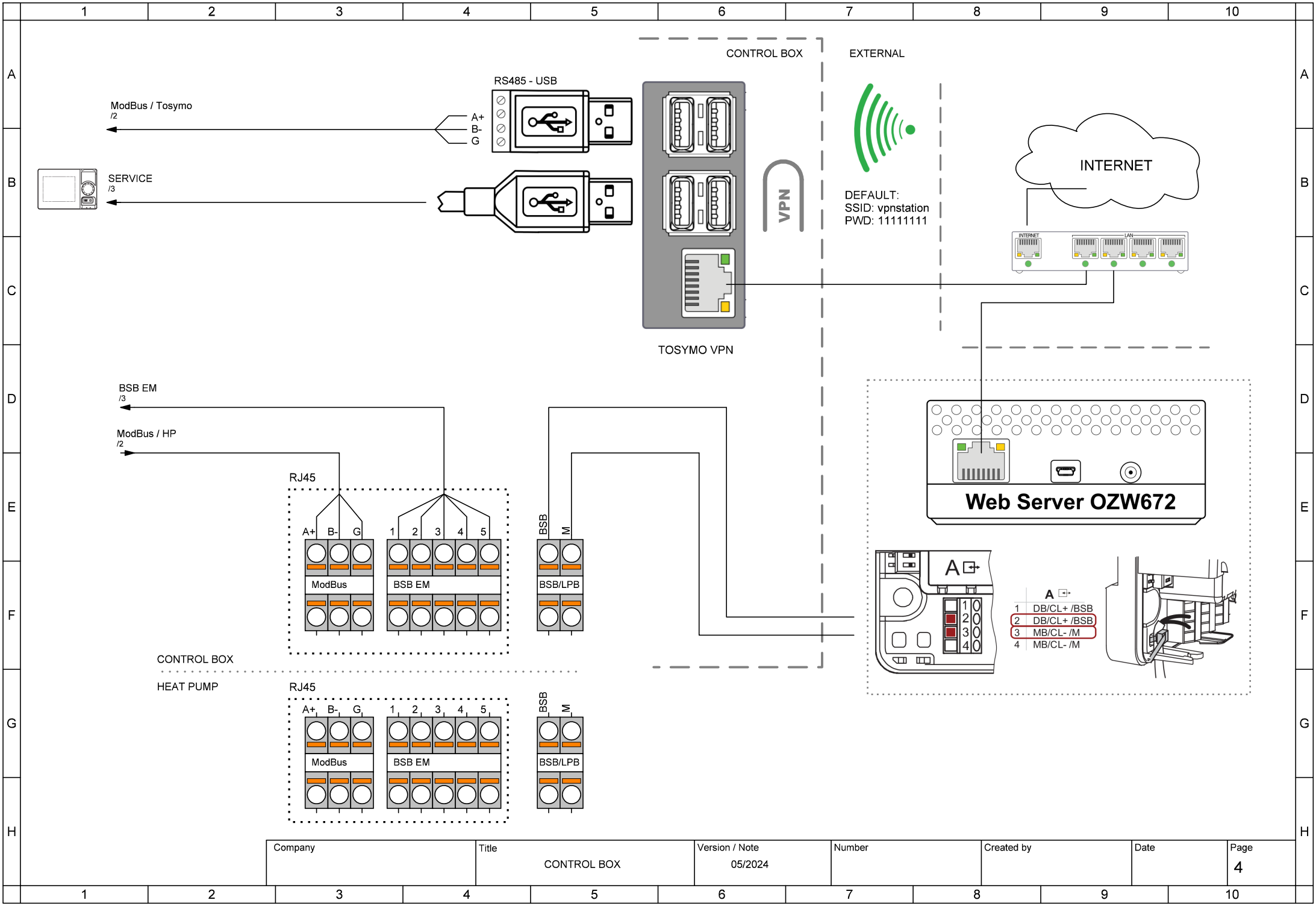
| | CONTROL BOX | 05/2024 | | | | 3 |

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| | CONTROL BOX | 05/2024 | | | | 4 |

# ControlBox v052024

Extension modules preconfiguration and standard wiring of inputs and outputs

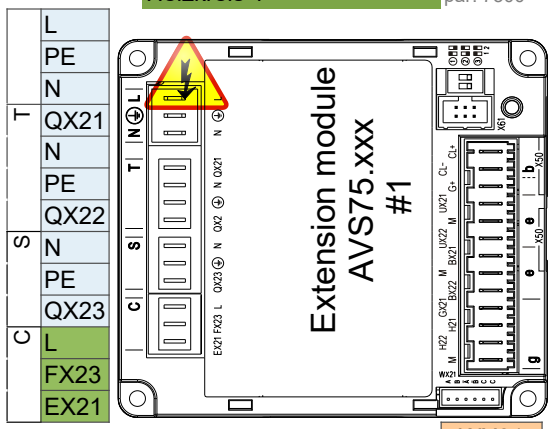
EN

AVS75.390
AVS75.391
AVS75.370

## AVS75.370

Heizkreis 1 par. 7300

Main power supply 230V / 50 Hz
Ground
Neutral conductor
Y1 Mixing valve Open
Y2 Mixing valve Close
Q2 Heat circuit pump HC1 Q2
L Phase 230V
E61 Smart grid E61

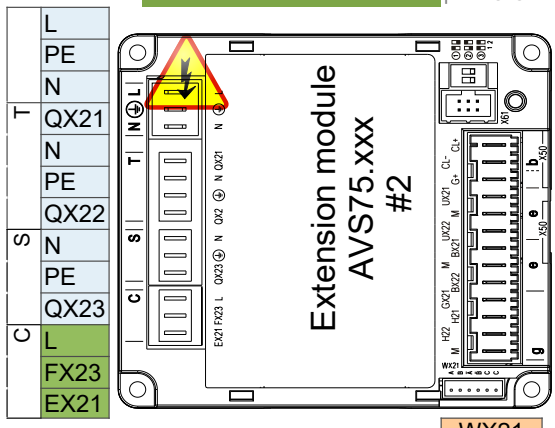



Extension module AVS75.xxx
Room unit QAA...
Room unit QAA...
B1 Flow sensor 1
Pulse count

## AVS75.370

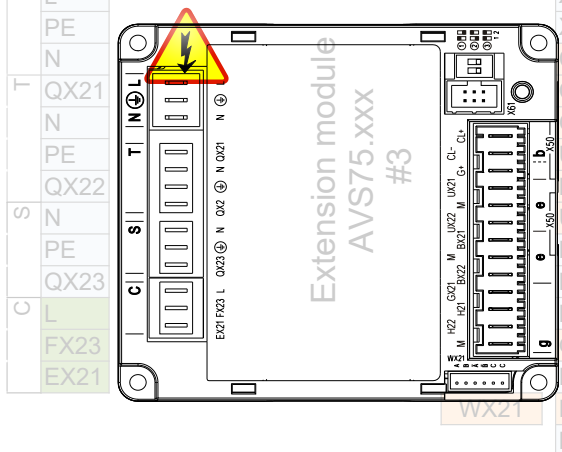
Multifunktional par. 7375

Main power supply 230V / 50 Hz
Ground
Neutral conductor
Q3 DHW ctrl elem Q3
K6 El imm heater DHW K6
Q6 Heat circuit pump HC2 Q6
L Phase 230V
E62 Smart grid E62




Operating unit (HMI) AVS37.xxx
Extension module AVS75.xxx
Room unit QAA...
Room unit QAA...
B3 DHW sensor B3
B4 Buffer sensor B4

Main power supply 230V / 50 Hz
Ground
Neutral conductor




Operating unit (HMI) AVS37.xxx
Extension module AVS75.xxx
Room unit QAA...
Room unit QAA...

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 conntact technical support

### 5 MQTT IoT communication protocol

For more information contact technical support