## Grundlegende Leistungsdaten - WAMAK AiWa 18 EVI H Out

| | | |
|---|---|---|
| **Heizen** - EN 14511 | | |
| **Wärmeleistung** [kW] | A7 / W35 | 20.7 |
| | A2 / W35 | 17.6 |
| | A-7 / W34 | 14.8 |
| **Leistungsaufnahme** [kW] | A7 / W35 | 4.5 |
| | A2 / W35 | 4.6 |
| | A-7 / W34 | 4.4 |
| **Leistungszahl Heizen** [COP] | A7 / W35 | 4.57 |
| | A2 / W35 | 3.87 |
| | A-7 / W34 | 3.32 |
| **Jahreszeitbedingte Raumheizungs-Energieeffizienz** - SCOP EN 14825 | | |
| Klimazone Durchschnitt / Niedrigtemp. [35 °C] | SCOP | 4.37 |
| | η [ % ] | 174.8 |
| | Label | A+++ |
| | Qhe [ kWh ] | 7662.8 |
| | Pdesignh [ kW ] | 16.7 |
| | Tbivalent [ °C ] | -7 |
| **Kühlung** | | |
| **Kühlleistung** - [kW] | A35 / W23-18 | 19.9 |
| | A25 / W23-18 | 20.9 |
| | A35 / W12-7 | 14.8 |
| | A25 / W12-7 | 14.8 |
| **Jahreszeitbedingte Raumkühlungs-Energieeffizienz** - SEER EN 14825 | | |
| [ W 23 / 18 °C ] | SEER | 4.44 |
| | Qce [ kWh ] | 8880.0 |
| | ηc [ % ] | 177.4 |
| **Schall** EN 12102 | | |
| **Schallleistungspegel** - Lw | dB(A) | 66.9 |
| **Schalldruckpegel** - Lp | **1 m** dB(A) | 58.9 |
| | **5 m** dB(A) | 44.9 |
| | **10 m** dB(A) | 38.9 |
| **Mechanische und Betriebs-Informationen** | | |
| **Verdichterbauart** (3~ 400/50) | SCROLL / 1 / | Ein/Aus |
| **Kältemittel** | R410A (GWP - 2088) | 6 kg |
| **Einsatzgrenze Heizungswasser** - (min / max ) [°C] | | 25 / **65** |
| **Einsatzgrenze Wärmequelle** - (min / max ) [°C] | | **-22** / 40 |
| **Gewicht** | | 300 kg |

# Wichtigste technische Daten - WAMAK AiWa 18 EVI H Out

| Gehäuse Bezeichnung | | AiWa-O-1200 |
|---|---|---|
| **Grundlegende Abmessungen** | Hohe [mm] | 1760 |
| | Breite [mm] | 1420 |
| | Länge [mm] | 660 |
| Gewicht [kg] | | 300 |
| Gehäuse Farbe | | Grau |
| Gehäuse IP Klasse | | IP44 |
| **Kältekreis** | | |
| **Verdichter** | Bauart | Scroll |
| | Leistungstufen | 1 |
| | Ein/Aus | |
| | Leistungsfaktor Cosϕ | 0.64 |
| | Wicklungswiderstand | 1.79 Ohm |
| Kältemittel | | R410A |
| | Menge | 6 kg |
| | GWP | 2088 |
| | Sicherheitsklasse | A1 |
| Kältemittelöl | POE RL32-3MAF | |
| | Ölmenge | 1.89 L |
| Maximaler Hochdruck - Kältemittel [bar] | | 45 |
| | PED Klasse | 1 |
| EVI - Dampfeinspritzung mit Ekonomiser | | |
| APS System mit Flüssigkeitsunterkülung | | |
| Reversibler Betrieb (Kühlung) | | |
| Reversible Abtauung mit Heissgas | | |
| Plattentauscherschutz HG-BYPASS | | |
| **Daten von Elektroanschluss** | | |
| Einspeisung [#~ V/Hz] | | 3~ 400/50 |
| Strom | Nominal [A] | 9.32 |
| | Maximal [A] | 16.00 |
| | Start [A] | 18.9 |
| Sanftanlasser | | MCI 15 |
| Hauptsicherung | | C25 |
| **Steuerungssystem** | | |

| Hauptregler | SIEMENS | RVS 21 AVS 55.199 | |
|---|---|---|---|
| Erweiterungsmodul | AVS75.3xx | AVS75.3xx | AVS75.372 |
| Bus Clip-In | | LPB OCI347 | Modbus OCI353 |
| Online-Verbindung | | Web server OZW672 | ToSyMo |
| EEV Regelung | | | 1 - EEV H/C |

*** mit Zubehör

| Daten von Wärmeabgabe | | |
|---|---|---|
| Einsatzgrenze Heizungswasser | MAX [°C] | 65 |
| | MIN [°C] | 25 |
| genauer siehe Betriebsgrenzendiagramm | | |
| **Kondensator** | Anschlussdimension | 1.1/4 " |
| | Bauart | BPHE |
| | Anzahl | 1 |
| | Material | AISI 316 |
| Maximaler Überdruck - Kältemittel [bar] | | 45 |
| Maximaler Überdruck - Wasser [bar] | | 6 |
| Prüfdruck [bar] | | 70 |
| Wärmeträger | | Wasser |
| Volumenstrom @ dT 5K (nom) - Wasser [m3/h] | | 3.59 |
| Interne Druckdifferenz - Wasser [kPa] | | 15 |
| ECM Kondensator-pumpe | | UPMXL GEO 32-125 |
| Durchflusssensor Abgabe - analog | | 0..10V |
| Temperaturdifferenz | @ 35°C (nom) | 5 K |
| | @ 55°C | 8 K |
| | @ 65°C | 10 K |
| **Daten von Erneuerbarer Energiequelle** | | |
| Einsatzgrenze Wärmequelle | MIN [°C] | -22 |
| | MAX [°C] | 40 |
| genauer siehe Betriebsgrenzendiagramm | | |
| **Verdampfer** | Bauart | Cu-coil /Al-fin |
| | Anzahl | 1 |
| | Material | Cu/Al |
| Maximaler Überdruck - Kältemittel [bar] | | 28 |
| Wärmeträger | | Luft |
| Volumenstrom - Luft [m3/h] | | 6470 |
| Interne Druckdifferenz - Luft [kPa] | | 0.024 |
| Temperaturdifferenz - Luft | | 7 K |
| Anzahl von Ventilatoren | | 1 |
| Ventilatordurchmesser [mm] | | 800 |

# WAMAK AiWa 18 EVI H Out

**ErP (EU) No 811/2013: Technische Parameter für Wärmepumpen-Raumheizgeräte**

| **Modell** | **AiWa 18 EVI H Out** |
|---|---|
| Luft-Wasser-Wärmepumpe | ja |
| Sole/Wasser-Wärmepumpe | nein |
| Wasser/Wasser-Wärmepumpe | nein |
| Niedertemperatur-Wärmepumpe | nein |
| Ausgestattet mit einer Zusatzheizung | nein |
| Wärmepumpen-Kombi-Heizgerät | nein |
| Temperaturanwendung | niedrig (35°C - 30°C) |
| Klimaverhältnisse | durchschnittlich |

| Angabe | Symbol | Wert | Ein. |
|---|---|---|---|
| Nennwärmeleistung bei Tdesignh | Prated | 16.7 | kW |
| Ausgewiesene Heizleistung für Teillast bei einer Innentemperatur von 20 °C und einer Außentemperatur von Tj | | | |
| Tj = -7 °C | Pdh | 14.8 | kW |
| Tj = +2 °C | Pdh | 17.5 | kW |
| Tj = +7 °C | Pdh | 20.6 | kW |
| Tj = +12 °C | Pdh | 24.4 | kW |
| Tj = bivalente Temperatur | Pdh | 14.5 | kW |
| Tj = Betriebsgrenztemperatur | Pdh | 10.6 | kW |
| Bivalente Temperatur | Tbiv | -7 | °C |
| Stromverbrauch in anderen Modi als dem aktiven Modus | | | |
| Aus-Zustand | Poff | 0.010 | kW |
| Thermostat-Aus-Modus | Pto | 0.010 | kW |
| Standby-Betrieb | Psb | 0.010 | kW |
| Betriebsart Kurbelwannenheizung | Pck | 0.050 | kW |
| Sonstige Angaben | | | |
| Leistungsregelung | | fest | |
| Schallleistungspegel | | | |
| in Innenräumen | Lwa | --- | dB |
| im Freien | Lwa | 67 | dB |
| Jährlicher Energieverbrauch | $Q_{HE}$ | 7662.8 | kWh |

| Angabe | Symbol | Wert | Ein. |
|---|---|---|---|
| Jahreszeitbedingte Raumheizungs-Energieeffizienz | ηs | 174.8 | % |
| Deklarierte Leistungszahl oder Primärenergiekennzahl für Teillast bei einer Innentemperatur von 20 °C und einer Außentemperatur von Tj | | | |
| Tj = -7 °C | COPd | 3.32 | - |
| Tj = +2 °C | COPd | 4.3 | - |
| Tj = +7 °C | COPd | 5.5 | - |
| Tj = +12 °C | COPd | 6.8 | - |
| Tj = bivalente Temperatur | COPd | 3.2 | - |
| Tj = Betriebsgrenztemperatur | COPd | 2.4 | - |
| Tj = Betriebsgrenztemperatur | TOL | -22 | °C |
| Betriebsgrenztemperatur des Heizwassers | WTOL | 65 | °C |
| Zusatzheizung | | | |
| Nennwärmeleistung | Psup | 7.4 | kW |
| Art der Energiezufuhr | | elektrisch | |
| | | | |
| Für Luft/Wasser-Wärmepumpen: Nennluftvolumenstrom, Außenbereich | - | 6470 | m3/h |
| Für Wasser- oder Sole/Wasser-Wärmepumpen: Nenndurchfluss der Sole oder des Wassers, Wärmetauscher im Freien | - | --- | m3/h |

**Angaben zum Kontakt**: WAMAK, s.r.o., Orovnica 252, 96652, Orovnica, Slovakia, info@wamak.sk

# WAMAK AiWa 18 EVI H Out

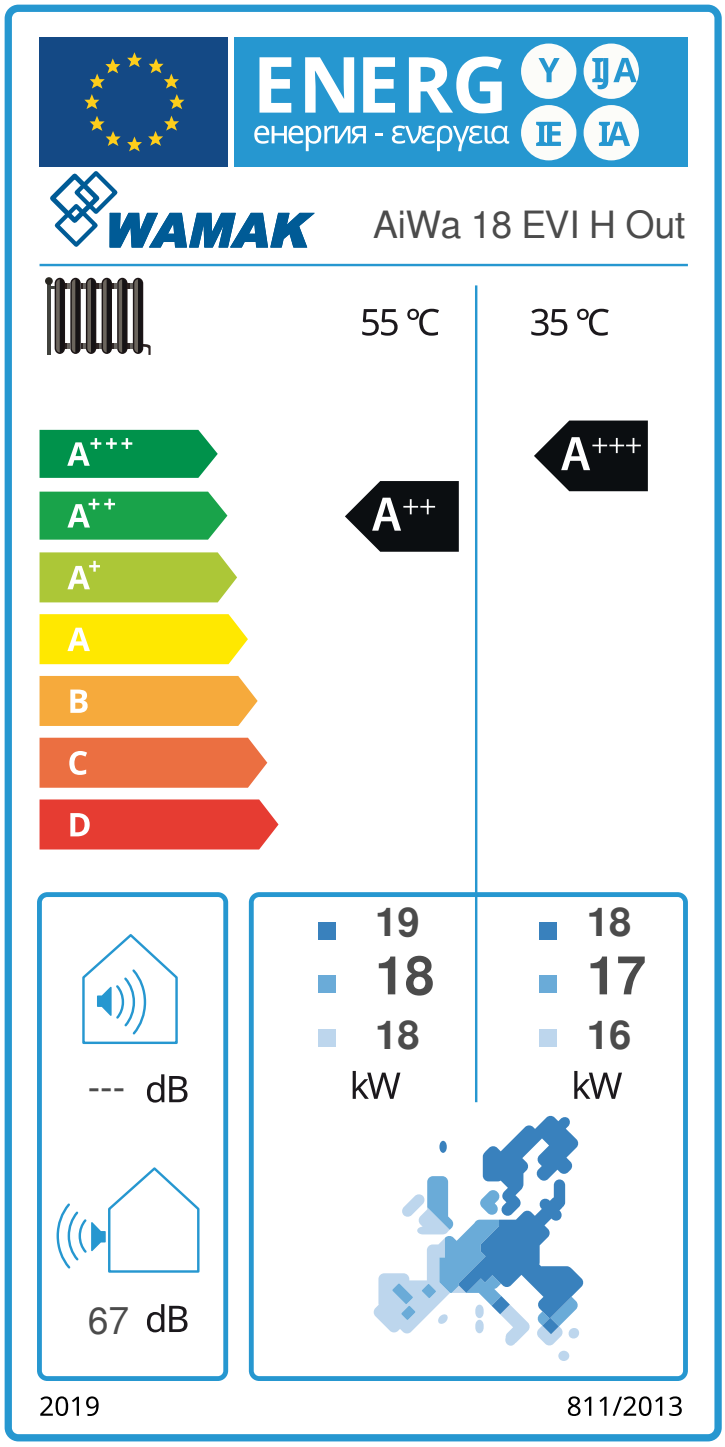
**ErP (EU) No 811/2013: Technische Parameter für Wärmepumpen-Raumheizgeräte**

| **Modell** | **AiWa 18 EVI H Out** |
|---|---|
| Luft-Wasser-Wärmepumpe | ja |
| Sole/Wasser-Wärmepumpe | nein |
| Wasser/Wasser-Wärmepumpe | nein |
| Niedertemperatur-Wärmepumpe | nein |
| Ausgestattet mit einer Zusatzheizung | nein |
| Wärmepumpen-Kombi-Heizgerät | nein |
| Temperaturanwendung | mittel (55°C - 47°C) |
| Klimaverhältnisse | durchschnittlich |

| Angabe | Symbol | Wert | Ein. |
|---|---|---|---|
| Nennwärmeleistung bei Tdesignh | Prated | 17.8 | kW |
| Ausgewiesene Heizleistung für Teillast bei einer Innentemperatur von 20 °C und einer Außentemperatur von Tj | | | |
| Tj = -7 °C | Pdh | 15.6 | kW |
| Tj = +2 °C | Pdh | 17.8 | kW |
| Tj = +7 °C | Pdh | 20.7 | kW |
| Tj = +12 °C | Pdh | 24.3 | kW |
| Tj = bivalente Temperatur | Pdh | 15.4 | kW |
| Tj = Betriebsgrenztemperatur | Pdh | 11.3 | kW |
| Bivalente Temperatur | Tbiv | -7 | °C |
| Stromverbrauch in anderen Modi als dem aktiven Modus | | | |
| Aus-Zustand | Poff | 0.010 | kW |
| Thermostat-Aus-Modus | Pto | 0.010 | kW |
| Standby-Betrieb | Psb | 0.010 | kW |
| Betriebsart Kurbelwannenheizung | Pck | 0.050 | kW |
| Sonstige Angaben | | | |
| Leistungsregelung | | fest | |
| Schallleistungspegel | | | |
| in Innenräumen | Lwa | --- | dB |
| im Freien | Lwa | 67 | dB |
| Jährlicher Energieverbrauch | $Q_{HE}$ | 10570.2 | kWh |

| Angabe | Symbol | Wert | Ein. |
|---|---|---|---|
| Jahreszeitbedingte Raumheizungs-Energieeffizienz | ηs | 136.2 | % |
| Deklarierte Leistungszahl oder Primärenergiekennzahl für Teillast bei einer Innentemperatur von 20 °C und einer Außentemperatur von Tj | | | |
| Tj = -7 °C | COPd | 2.31 | - |
| Tj = +2 °C | COPd | 3.3 | - |
| Tj = +7 °C | COPd | 4.5 | - |
| Tj = +12 °C | COPd | 6.0 | - |
| Tj = bivalente Temperatur | COPd | 2.1 | - |
| Tj = Betriebsgrenztemperatur | COPd | 1.7 | - |
| Tj = Betriebsgrenztemperatur | TOL | -22 | °C |
| Betriebsgrenztemperatur des Heizwassers | WTOL | 65 | °C |
| Zusatzheizung | | | |
| Nennwärmeleistung | Psup | 7.4 | kW |
| Art der Energiezufuhr | | elektrisch | |
| | | | |
| Für Luft/Wasser-Wärmepumpen: Nennluftvolumenstrom, Außenbereich | - | 6470 | m3/h |
| Für Wasser- oder Sole/Wasser-Wärmepumpen: Nenndurchfluss der Sole oder des Wassers, Wärmetauscher im Freien | - | --- | m3/h |

**Angaben zum Kontakt**: WAMAK, s.r.o., Orovnica 252, 96652, Orovnica, Slovakia, info@wamak.sk




AiWa 18 EVI H Out **ErP Data**

| | | 55 °C | 35 °C |
|---|---|---|---|
| Energy class | | A++ | A+++ |
| $\eta$ | [ % ] | 136.2 | 174.8 |
| $P_{rated}$ | [ kW ] | 18 | 17 |
| $Q_{HE}$ | [ kWh/y ] | 10571 | 7663 |
| SCOP | [ - ] | 3.40 | 4.37 |
| $T_{bivalent}$ | [ °C ] | -7 | -7 |

CONTROLER

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

**Heizleistung Daten** Version: v2024.010-AW

**Klimazone Durchschnitt / Niedrigtemp. [35°C]** ZHI18K1P-TFM_R410A_1_AW

| | Betriebsbedingungen | Qh | P | COP |
|---|---|---|---|---|
| 1 | A7 / W30-35 | 20.7 | 4.5 | 4.57 |
| 2 | A2 / W35 | 17.6 | 4.6 | 3.87 |
| 3 | A-22 / W35 | 10.6 | 4.4 | 2.38 |
| A | A-7 / W34 | 14.8 | 4.4 | 3.32 |
| B | A2 / W30 | 17.5 | 4.1 | 4.31 |
| C | A7 / W27 | 20.6 | 3.8 | 5.45 |
| D | A12 / W24 | 24.4 | 3.6 | 6.84 |
| E | A-10 / W35 | 14.5 | 4.5 | 3.18 |
| F | A-7 / W34 | 14.8 | 4.4 | 3.32 |

| SCOP DATA EN 14825:2018 | |
|---|---|
| **Klimazone Durchschnitt / Niedrigtemp. [35°C]** | |
| SCOPon | 4.50 |
| SCOPnet | 4.54 |
| SCOP | 4.37 |
| η [ % ] | 174.80 |
| Label | A+++ |
| Qh [ kWh ] | 7662.81 |
| Pdesignh [ kW ] | 16.7 |
| Tbivalent [ °C ] | -7.00 |

**Klimazone Durchschnitt / Mitteltemp. [55°C]**

| | Betriebsbedingungen | Qh | P | COP |
|---|---|---|---|---|
| 1 | A7 / W47-55 | 21.5 | 7.5 | 2.88 |
| 2 | A2 / W55 | 18.5 | 7.4 | 2.51 |
| 3 | A-22 / W55 | 11.3 | 6.2 | 1.69 |
| A | A-7 / W52 | 15.6 | 6.7 | 2.31 |
| B | A2 / W42 | 17.8 | 5.4 | 3.32 |
| C | A7 / W36 | 20.7 | 4.6 | 4.47 |
| D | A12 / W30 | 24.3 | 4.0 | 6.04 |
| E | A-10 / W55 | 15.4 | 7.2 | 2.14 |
| F | A-7 / W55 | 15.8 | 7.2 | 2.18 |

| SCOP DATA EN 14825:2018 | |
|---|---|
| **Klimazone Durchschnitt / Mitteltemp. [55°C]** | |
| SCOPon | 3.48 |
| SCOPnet | 3.51 |
| SCOP | 3.40 |
| η [ % ] | 136.16 |
| Label | A++ |
| Qh [ kWh ] | 10570.16 |
| Pdesignh [ kW ] | 17.8 |
| Tbivalent [ °C ] | -7.00 |

**Kühlungleistung Daten**

**Niedrigtemperatur Kühlung W 12 / 7°C**

| | Betriebsbedingungen | Qc | P | EER |
|---|---|---|---|---|
| A | A35 / W12-7 | 14.8 | 5.5 | 2.69 |
| B | A30 / W12-7 | 15.2 | 4.9 | 3.12 |
| C | A25 / W12-7 | 15.6 | 4.3 | 3.59 |
| D | A20 / W12-7 | 15.9 | 3.9 | 4.11 |

| SEER DATA EN 14825:2018 [ W 12 / 7°C ] | |
|---|---|
| SEERon | 3.50 |
| SEER | 3.36 |
| Qc [ kWh ] | 3194.80 |
| η [ % ] | 134.20 |

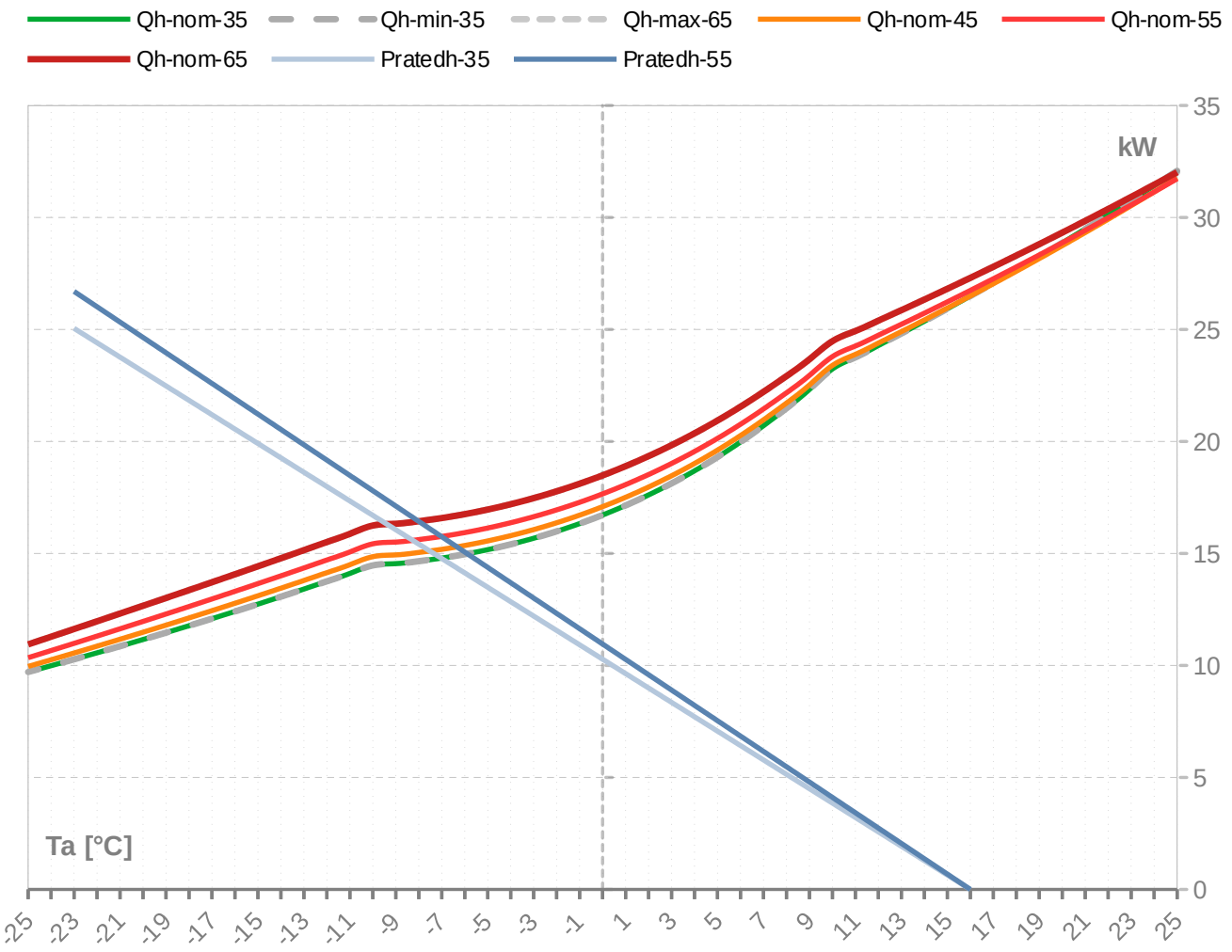
**Flächenkühlung W 23 / 18°C**

| | Betriebsbedingungen | Qc | P | EER |
|---|---|---|---|---|
| A | A35 / W23-18 | 19.9 | 5.5 | 3.61 |
| B | A30 / W23-18 | 20.4 | 4.5 | 4.18 |
| C | A25 / W23-18 | 20.9 | 4.0 | 4.82 |
| D | A20 / W23-18 | 21.3 | 3.6 | 5.51 |

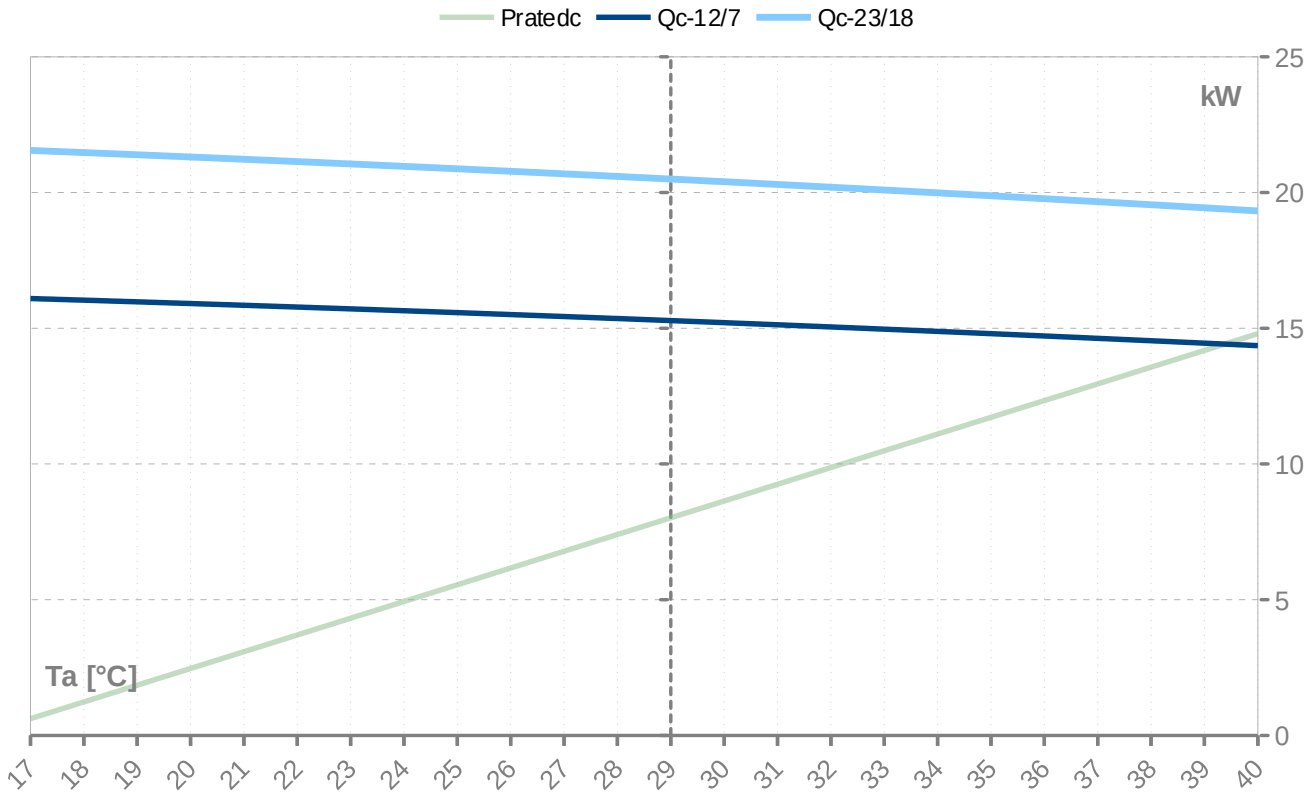
| SEER DATA EN 14825:2018 [ W 23 / 18°C ] | |
|---|---|
| SEERon | 4.69 |
| SEER | 4.44 |
| Qc [ kWh ] | 2383.20 |
| η [ % ] | 177.43 |

**Leistungslinien - Heizen**

ZHI18K1P-TFM_R410A_1_AW




**Leistungslinien - Kühlen**



| **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 | **27.1** | 27.1 | | **4.5** | 4.5 | | **6.04** | 9.3 | 9.3 | |
| 24 | **27.1** | 27.1 | | **4.5** | 4.5 | | **6.04** | 9.3 | 9.3 | |
| 23 | **27.1** | 27.1 | | **4.5** | 4.5 | | **6.04** | 9.3 | 9.3 | |
| 22 | **27.1** | 27.1 | | **4.5** | 4.5 | | **6.04** | 9.3 | 9.3 | |
| 21 | **27.1** | 27.1 | | **4.5** | 4.5 | | **6.04** | 9.3 | 9.3 | |
| 20 | **27.1** | 27.1 | | **4.5** | 4.5 | | **6.04** | 9.3 | 9.3 | |
| 19 | **27.1** | 27.1 | | **4.5** | 4.5 | | **6.04** | 9.3 | 9.3 | |
| 18 | **27.1** | 27.1 | | **4.5** | 4.5 | | **6.04** | 9.3 | 9.3 | |
| 17 | **27.1** | 27.1 | | **4.5** | 4.5 | | **6.04** | 9.3 | 9.3 | |
| 16 | **26.5** | 26.5 | 26.5 | **4.5** | 4.5 | 4.5 | **5.90** | 9.3 | 9.3 | 9.3 |
| 15 | **25.9** | 25.9 | 25.9 | **4.5** | 4.5 | 4.5 | **5.77** | 9.3 | 9.3 | 9.3 |
| 14 | **25.4** | 25.4 | 25.4 | **4.5** | 4.5 | 4.5 | **5.64** | 9.3 | 9.3 | 9.3 |
| 13 | **24.8** | 24.8 | 24.8 | **4.5** | 4.5 | 4.5 | **5.52** | 9.4 | 9.4 | 9.4 |
| 12 | **24.3** | 24.3 | 24.3 | **4.5** | 4.5 | 4.5 | **5.39** | 9.4 | 9.4 | 9.4 |
| 11 | **23.8** | 23.8 | 23.8 | **4.5** | 4.5 | 4.5 | **5.27** | 9.4 | 9.4 | 9.4 |
| 10 | **23.2** | 23.2 | 23.2 | **4.5** | 4.5 | 4.5 | **5.15** | 9.4 | 9.4 | 9.4 |
| 9 | **22.3** | 22.3 | 22.3 | **4.5** | 4.5 | 4.5 | **4.94** | 9.4 | 9.4 | 9.4 |
| 8 | **21.5** | 21.5 | 21.5 | **4.5** | 4.5 | 4.5 | **4.75** | 9.4 | 9.4 | 9.4 |
| 7 | **20.7** | 20.7 | 20.7 | **4.5** | 4.5 | 4.5 | **4.57** | 9.4 | 9.4 | 9.4 |
| 6 | **20.0** | 20.0 | 20.0 | **4.5** | 4.5 | 4.5 | **4.40** | 9.4 | 9.4 | 9.4 |
| 5 | **19.3** | 19.3 | 19.3 | **4.5** | 4.5 | 4.5 | **4.25** | 9.4 | 9.4 | 9.4 |
| 4 | **18.7** | 18.7 | 18.7 | **4.5** | 4.5 | 4.5 | **4.11** | 9.4 | 9.4 | 9.4 |
| 3 | **18.1** | 18.1 | 18.1 | **4.5** | 4.5 | 4.5 | **3.99** | 9.4 | 9.4 | 9.4 |
| 2 | **17.6** | 17.6 | 17.6 | **4.6** | 4.6 | 4.6 | **3.87** | 9.4 | 9.4 | 9.4 |
| 1 | **17.1** | 17.1 | 17.1 | **4.6** | 4.6 | 4.6 | **3.77** | 9.4 | 9.4 | 9.4 |
| 0 | **16.7** | 16.7 | 16.7 | **4.6** | 4.6 | 4.6 | **3.67** | 9.4 | 9.4 | 9.4 |
| -1 | **16.3** | 16.3 | 16.3 | **4.6** | 4.6 | 4.6 | **3.59** | 9.4 | 9.4 | 9.4 |
| -2 | **16.0** | 16.0 | 16.0 | **4.6** | 4.6 | 4.6 | **3.51** | 9.4 | 9.4 | 9.4 |
| -3 | **15.7** | 15.7 | 15.7 | **4.6** | 4.6 | 4.6 | **3.44** | 9.4 | 9.4 | 9.4 |
| -4 | **15.4** | 15.4 | 15.4 | **4.6** | 4.6 | 4.6 | **3.38** | 9.4 | 9.4 | 9.4 |
| -5 | **15.2** | 15.2 | 15.2 | **4.6** | 4.6 | 4.6 | **3.33** | 9.4 | 9.4 | 9.4 |
| -6 | **15.0** | 15.0 | 15.0 | **4.5** | 4.5 | 4.5 | **3.29** | 9.4 | 9.4 | 9.4 |
| -7 | **14.8** | 14.8 | 14.8 | **4.5** | 4.5 | 4.5 | **3.25** | 9.4 | 9.4 | 9.4 |
| -8 | **14.7** | 14.7 | 14.7 | **4.5** | 4.5 | 4.5 | **3.22** | 9.4 | 9.4 | 9.4 |
| -9 | **14.5** | 14.5 | 14.5 | **4.5** | 4.5 | 4.5 | **3.20** | 9.4 | 9.4 | 9.4 |
| -10 | **14.5** | 14.5 | 14.5 | **4.5** | 4.5 | 4.5 | **3.18** | 9.4 | 9.4 | 9.4 |
| -11 | **14.1** | 14.1 | 14.1 | **4.5** | 4.5 | 4.5 | **3.11** | 9.4 | 9.4 | 9.4 |
| -12 | **13.8** | 13.8 | 13.8 | **4.5** | 4.5 | 4.5 | **3.03** | 9.4 | 9.4 | 9.4 |
| -13 | **13.4** | 13.4 | 13.4 | **4.5** | 4.5 | 4.5 | **2.96** | 9.4 | 9.4 | 9.4 |
| -14 | **13.1** | 13.1 | 13.1 | **4.5** | 4.5 | 4.5 | **2.89** | 9.4 | 9.4 | 9.4 |
| -15 | **12.7** | 12.7 | 12.7 | **4.5** | 4.5 | 4.5 | **2.82** | 9.4 | 9.4 | 9.4 |
| -16 | **12.4** | 12.4 | 12.4 | **4.5** | 4.5 | 4.5 | **2.75** | 9.4 | 9.4 | 9.4 |
| -17 | **12.1** | 12.1 | 12.1 | **4.5** | 4.5 | 4.5 | **2.69** | 9.4 | 9.4 | 9.4 |
| -18 | **11.8** | 11.8 | 11.8 | **4.5** | 4.5 | 4.5 | **2.62** | 9.4 | 9.4 | 9.4 |
| -19 | **11.5** | 11.5 | 11.5 | **4.5** | 4.5 | 4.5 | **2.56** | 9.4 | 9.4 | 9.4 |
| -20 | **11.2** | 11.2 | 11.2 | **4.5** | 4.5 | 4.5 | **2.50** | 9.3 | 9.3 | 9.3 |
| -21 | **10.9** | 10.9 | 10.9 | **4.4** | 4.4 | 4.4 | **2.44** | 9.3 | 9.3 | 9.3 |
| -22 | **10.6** | 10.6 | 10.6 | **4.4** | 4.4 | 4.4 | **2.38** | 9.3 | 9.3 | 9.3 |
| -23 | **10.3** | 10.3 | 10.3 | **4.4** | 4.4 | 4.4 | **2.33** | 9.3 | 9.3 | 9.3 |
| -24 | **10.0** | 10.0 | 10.0 | **4.4** | 4.4 | 4.4 | **2.27** | 9.3 | 9.3 | 9.3 |
| -25 | **9.7** | 9.7 | 9.7 | **4.4** | 4.4 | 4.4 | **2.22** | 9.3 | 9.3 | 9.3 |

* Achtung: Betriebsgrenzen beachten - nicht in Tabelle festgehalten

ZHI18K1P-TFM_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 | **31.8** | 31.8 | 31.8 | **5.7** | 5.7 | 5.7 | **5.60** | 10.5 | 10.5 | 10.5 |
| 24 | **31.1** | 31.1 | 31.1 | **5.7** | 5.7 | 5.7 | **5.48** | 10.5 | 10.5 | 10.5 |
| 23 | **30.5** | 30.5 | 30.5 | **5.7** | 5.7 | 5.7 | **5.37** | 10.5 | 10.5 | 10.5 |
| 22 | **29.9** | 29.9 | 29.9 | **5.7** | 5.7 | 5.7 | **5.26** | 10.5 | 10.5 | 10.5 |
| 21 | **29.3** | 29.3 | 29.3 | **5.7** | 5.7 | 5.7 | **5.15** | 10.5 | 10.5 | 10.5 |
| 20 | **28.7** | 28.7 | 28.7 | **5.7** | 5.7 | 5.7 | **5.04** | 10.5 | 10.5 | 10.5 |
| 19 | **28.2** | 28.2 | 28.2 | **5.7** | 5.7 | 5.7 | **4.93** | 10.5 | 10.5 | 10.5 |
| 18 | **27.6** | 27.6 | 27.6 | **5.7** | 5.7 | 5.7 | **4.82** | 10.5 | 10.5 | 10.5 |
| 17 | **27.0** | 27.0 | 27.0 | **5.7** | 5.7 | 5.7 | **4.72** | 10.5 | 10.5 | 10.5 |
| 16 | **26.5** | 26.5 | 26.5 | **5.7** | 5.7 | 5.7 | **4.62** | 10.5 | 10.5 | 10.5 |
| 15 | **26.0** | 26.0 | 26.0 | **5.7** | 5.7 | 5.7 | **4.52** | 10.5 | 10.5 | 10.5 |
| 14 | **25.4** | 25.4 | 25.4 | **5.7** | 5.7 | 5.7 | **4.42** | 10.6 | 10.6 | 10.6 |
| 13 | **24.9** | 24.9 | 24.9 | **5.8** | 5.8 | 5.8 | **4.33** | 10.6 | 10.6 | 10.6 |
| 12 | **24.4** | 24.4 | 24.4 | **5.8** | 5.8 | 5.8 | **4.24** | 10.6 | 10.6 | 10.6 |
| 11 | **23.9** | 23.9 | 23.9 | **5.8** | 5.8 | 5.8 | **4.15** | 10.6 | 10.6 | 10.6 |
| 10 | **23.4** | 23.4 | 23.4 | **5.8** | 5.8 | 5.8 | **4.06** | 10.6 | 10.6 | 10.6 |
| 9 | **22.5** | 22.5 | 22.5 | **5.8** | 5.8 | 5.8 | **3.90** | 10.6 | 10.6 | 10.6 |
| 8 | **21.7** | 21.7 | 21.7 | **5.8** | 5.8 | 5.8 | **3.76** | 10.6 | 10.6 | 10.6 |
| 7 | **21.0** | 21.0 | 21.0 | **5.8** | 5.8 | 5.8 | **3.63** | 10.6 | 10.6 | 10.6 |
| 6 | **20.3** | 20.3 | 20.3 | **5.8** | 5.8 | 5.8 | **3.50** | 10.6 | 10.6 | 10.6 |
| 5 | **19.6** | 19.6 | 19.6 | **5.8** | 5.8 | 5.8 | **3.39** | 10.6 | 10.6 | 10.6 |
| 4 | **19.0** | 19.0 | 19.0 | **5.8** | 5.8 | 5.8 | **3.29** | 10.6 | 10.6 | 10.6 |
| 3 | **18.5** | 18.5 | 18.5 | **5.8** | 5.8 | 5.8 | **3.20** | 10.6 | 10.6 | 10.6 |
| 2 | **18.0** | 18.0 | 18.0 | **5.8** | 5.8 | 5.8 | **3.11** | 10.6 | 10.6 | 10.6 |
| 1 | **17.5** | 17.5 | 17.5 | **5.8** | 5.8 | 5.8 | **3.04** | 10.6 | 10.6 | 10.6 |
| 0 | **17.1** | 17.1 | 17.1 | **5.8** | 5.8 | 5.8 | **2.97** | 10.6 | 10.6 | 10.6 |
| -1 | **16.7** | 16.7 | 16.7 | **5.8** | 5.8 | 5.8 | **2.90** | 10.6 | 10.6 | 10.6 |
| -2 | **16.4** | 16.4 | 16.4 | **5.7** | 5.7 | 5.7 | **2.85** | 10.6 | 10.6 | 10.6 |
| -3 | **16.1** | 16.1 | 16.1 | **5.7** | 5.7 | 5.7 | **2.80** | 10.6 | 10.6 | 10.6 |
| -4 | **15.8** | 15.8 | 15.8 | **5.7** | 5.7 | 5.7 | **2.76** | 10.5 | 10.5 | 10.5 |
| -5 | **15.6** | 15.6 | 15.6 | **5.7** | 5.7 | 5.7 | **2.72** | 10.5 | 10.5 | 10.5 |
| -6 | **15.4** | 15.4 | 15.4 | **5.7** | 5.7 | 5.7 | **2.68** | 10.5 | 10.5 | 10.5 |
| -7 | **15.2** | 15.2 | 15.2 | **5.7** | 5.7 | 5.7 | **2.66** | 10.5 | 10.5 | 10.5 |
| -8 | **15.0** | 15.0 | 15.0 | **5.7** | 5.7 | 5.7 | **2.64** | 10.5 | 10.5 | 10.5 |
| -9 | **14.9** | 14.9 | 14.9 | **5.7** | 5.7 | 5.7 | **2.62** | 10.5 | 10.5 | 10.5 |
| -10 | **14.9** | 14.9 | 14.9 | **5.7** | 5.7 | 5.7 | **2.61** | 10.5 | 10.5 | 10.5 |
| -11 | **14.5** | 14.5 | 14.5 | **5.7** | 5.7 | 5.7 | **2.55** | 10.5 | 10.5 | 10.5 |
| -12 | **14.1** | 14.1 | 14.1 | **5.7** | 5.7 | 5.7 | **2.49** | 10.5 | 10.5 | 10.5 |
| -13 | **13.8** | 13.8 | 13.8 | **5.7** | 5.7 | 5.7 | **2.44** | 10.5 | 10.5 | 10.5 |
| -14 | **13.4** | 13.4 | 13.4 | **5.6** | 5.6 | 5.6 | **2.39** | 10.4 | 10.4 | 10.4 |
| -15 | **13.1** | 13.1 | 13.1 | **5.6** | 5.6 | 5.6 | **2.34** | 10.4 | 10.4 | 10.4 |
| -16 | **12.8** | 12.8 | 12.8 | **5.6** | 5.6 | 5.6 | **2.29** | 10.4 | 10.4 | 10.4 |
| -17 | **12.4** | 12.4 | 12.4 | **5.6** | 5.6 | 5.6 | **2.24** | 10.4 | 10.4 | 10.4 |
| -18 | **12.1** | 12.1 | 12.1 | **5.5** | 5.5 | 5.5 | **2.19** | 10.4 | 10.4 | 10.4 |
| -19 | **11.8** | 11.8 | 11.8 | **5.5** | 5.5 | 5.5 | **2.14** | 10.3 | 10.3 | 10.3 |
| -20 | **11.5** | 11.5 | 11.5 | **5.5** | 5.5 | 5.5 | **2.09** | 10.3 | 10.3 | 10.3 |
| -21 | **11.2** | 11.2 | 11.2 | **5.5** | 5.5 | 5.5 | **2.05** | 10.3 | 10.3 | 10.3 |
| -22 | **10.9** | 10.9 | 10.9 | **5.4** | 5.4 | 5.4 | **2.00** | 10.2 | 10.2 | 10.2 |
| -23 | **10.6** | 10.6 | 10.6 | **5.4** | 5.4 | 5.4 | **1.96** | 10.2 | 10.2 | 10.2 |
| -24 | **10.3** | 10.3 | 10.3 | **5.3** | 5.3 | 5.3 | **1.92** | 10.2 | 10.2 | 10.2 |
| -25 | **10.0** | 10.0 | 10.0 | **5.3** | 5.3 | 5.3 | **1.87** | 10.1 | 10.1 | 10.1 |

* Achtung: Betriebsgrenzen beachten - nicht in Tabelle festgehalten

| **Th [°C]** | **55 °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 | **31.7** | 31.7 | 31.7 | **7.4** | 7.4 | 7.4 | **4.29** | 12.3 | 12.3 | 12.3 |
| 24 | **31.1** | 31.1 | 31.1 | **7.4** | 7.4 | 7.4 | **4.21** | 12.3 | 12.3 | 12.3 |
| 23 | **30.6** | 30.6 | 30.6 | **7.4** | 7.4 | 7.4 | **4.13** | 12.3 | 12.3 | 12.3 |
| 22 | **30.0** | 30.0 | 30.0 | **7.4** | 7.4 | 7.4 | **4.04** | 12.4 | 12.4 | 12.4 |
| 21 | **29.4** | 29.4 | 29.4 | **7.4** | 7.4 | 7.4 | **3.96** | 12.4 | 12.4 | 12.4 |
| 20 | **28.9** | 28.9 | 28.9 | **7.4** | 7.4 | 7.4 | **3.89** | 12.4 | 12.4 | 12.4 |
| 19 | **28.3** | 28.3 | 28.3 | **7.4** | 7.4 | 7.4 | **3.81** | 12.4 | 12.4 | 12.4 |
| 18 | **27.8** | 27.8 | 27.8 | **7.4** | 7.4 | 7.4 | **3.73** | 12.4 | 12.4 | 12.4 |
| 17 | **27.3** | 27.3 | 27.3 | **7.5** | 7.5 | 7.5 | **3.66** | 12.4 | 12.4 | 12.4 |
| 16 | **26.7** | 26.7 | 26.7 | **7.5** | 7.5 | 7.5 | **3.59** | 12.4 | 12.4 | 12.4 |
| 15 | **26.2** | 26.2 | 26.2 | **7.5** | 7.5 | 7.5 | **3.52** | 12.4 | 12.4 | 12.4 |
| 14 | **25.7** | 25.7 | 25.7 | **7.5** | 7.5 | 7.5 | **3.45** | 12.4 | 12.4 | 12.4 |
| 13 | **25.2** | 25.2 | 25.2 | **7.5** | 7.5 | 7.5 | **3.38** | 12.4 | 12.4 | 12.4 |
| 12 | **24.7** | 24.7 | 24.7 | **7.5** | 7.5 | 7.5 | **3.31** | 12.4 | 12.4 | 12.4 |
| 11 | **24.3** | 24.3 | 24.3 | **7.5** | 7.5 | 7.5 | **3.25** | 12.4 | 12.4 | 12.4 |
| 10 | **23.8** | 23.8 | 23.8 | **7.5** | 7.5 | 7.5 | **3.19** | 12.4 | 12.4 | 12.4 |
| 9 | **23.0** | 23.0 | 23.0 | **7.5** | 7.5 | 7.5 | **3.07** | 12.4 | 12.4 | 12.4 |
| 8 | **22.2** | 22.2 | 22.2 | **7.5** | 7.5 | 7.5 | **2.97** | 12.4 | 12.4 | 12.4 |
| 7 | **21.5** | 21.5 | 21.5 | **7.5** | 7.5 | 7.5 | **2.88** | 12.4 | 12.4 | 12.4 |
| 6 | **20.8** | 20.8 | 20.8 | **7.4** | 7.4 | 7.4 | **2.79** | 12.4 | 12.4 | 12.4 |
| 5 | **20.1** | 20.1 | 20.1 | **7.4** | 7.4 | 7.4 | **2.71** | 12.4 | 12.4 | 12.4 |
| 4 | **19.6** | 19.6 | 19.6 | **7.4** | 7.4 | 7.4 | **2.64** | 12.4 | 12.4 | 12.4 |
| 3 | **19.0** | 19.0 | 19.0 | **7.4** | 7.4 | 7.4 | **2.57** | 12.3 | 12.3 | 12.3 |
| 2 | **18.5** | 18.5 | 18.5 | **7.4** | 7.4 | 7.4 | **2.51** | 12.3 | 12.3 | 12.3 |
| 1 | **18.1** | 18.1 | 18.1 | **7.4** | 7.4 | 7.4 | **2.46** | 12.3 | 12.3 | 12.3 |
| 0 | **17.7** | 17.7 | 17.7 | **7.3** | 7.3 | 7.3 | **2.41** | 12.3 | 12.3 | 12.3 |
| -1 | **17.3** | 17.3 | 17.3 | **7.3** | 7.3 | 7.3 | **2.36** | 12.3 | 12.3 | 12.3 |
| -2 | **16.9** | 16.9 | 16.9 | **7.3** | 7.3 | 7.3 | **2.32** | 12.2 | 12.2 | 12.2 |
| -3 | **16.6** | 16.6 | 16.6 | **7.3** | 7.3 | 7.3 | **2.29** | 12.2 | 12.2 | 12.2 |
| -4 | **16.4** | 16.4 | 16.4 | **7.3** | 7.3 | 7.3 | **2.25** | 12.2 | 12.2 | 12.2 |
| -5 | **16.1** | 16.1 | 16.1 | **7.2** | 7.2 | 7.2 | **2.23** | 12.2 | 12.2 | 12.2 |
| -6 | **15.9** | 15.9 | 15.9 | **7.2** | 7.2 | 7.2 | **2.20** | 12.2 | 12.2 | 12.2 |
| -7 | **15.8** | 15.8 | 15.8 | **7.2** | 7.2 | 7.2 | **2.18** | 12.1 | 12.1 | 12.1 |
| -8 | **15.6** | 15.6 | 15.6 | **7.2** | 7.2 | 7.2 | **2.17** | 12.1 | 12.1 | 12.1 |
| -9 | **15.5** | 15.5 | 15.5 | **7.2** | 7.2 | 7.2 | **2.15** | 12.1 | 12.1 | 12.1 |
| -10 | **15.4** | 15.4 | 15.4 | **7.2** | 7.2 | 7.2 | **2.14** | 12.1 | 12.1 | 12.1 |
| -11 | **15.1** | 15.1 | 15.1 | **7.2** | 7.2 | 7.2 | **2.10** | 12.1 | 12.1 | 12.1 |
| -12 | **14.7** | 14.7 | 14.7 | **7.1** | 7.1 | 7.1 | **2.06** | 12.1 | 12.1 | 12.1 |
| -13 | **14.4** | 14.4 | 14.4 | **7.1** | 7.1 | 7.1 | **2.02** | 12.0 | 12.0 | 12.0 |
| -14 | **14.0** | 14.0 | 14.0 | **7.1** | 7.1 | 7.1 | **1.98** | 12.0 | 12.0 | 12.0 |
| -15 | **13.7** | 13.7 | 13.7 | **7.0** | 7.0 | 7.0 | **1.95** | 11.9 | 11.9 | 11.9 |
| -16 | **13.3** | 13.3 | 13.3 | **7.0** | 7.0 | 7.0 | **1.91** | 11.9 | 11.9 | 11.9 |
| -17 | **13.0** | 13.0 | 13.0 | **6.9** | 6.9 | 6.9 | **1.87** | 11.8 | 11.8 | 11.8 |
| -18 | **12.6** | 12.6 | 12.6 | **6.9** | 6.9 | 6.9 | **1.83** | 11.8 | 11.8 | 11.8 |
| -19 | **12.3** | 12.3 | 12.3 | **6.8** | 6.8 | 6.8 | **1.80** | 11.7 | 11.7 | 11.7 |
| -20 | **12.0** | 12.0 | 12.0 | **6.8** | 6.8 | 6.8 | **1.76** | 11.7 | 11.7 | 11.7 |
| -21 | **11.6** | 11.6 | 11.6 | **6.7** | 6.7 | 6.7 | **1.73** | 11.6 | 11.6 | 11.6 |
| -22 | **11.3** | 11.3 | 11.3 | **6.7** | 6.7 | 6.7 | **1.69** | 11.6 | 11.6 | 11.6 |
| -23 | **11.0** | 11.0 | 11.0 | **6.6** | 6.6 | 6.6 | **1.66** | 11.5 | 11.5 | 11.5 |
| -24 | **10.7** | 10.7 | 10.7 | **6.6** | 6.6 | 6.6 | **1.62** | 11.5 | 11.5 | 11.5 |
| -25 | **10.3** | 10.3 | 10.3 | **6.5** | 6.5 | 6.5 | **1.59** | 11.4 | 11.4 | 11.4 |

* Achtung: Betriebsgrenzen beachten - nicht in Tabelle festgehalten

| 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 | **32.0** | 32.0 | 32.0 | **9.7** | 9.7 | 9.7 | **3.30** | 15.1 | 15.1 | 15.1 |
| 24 | **31.5** | 31.5 | 31.5 | **9.7** | 9.7 | 9.7 | **3.24** | 15.1 | 15.1 | 15.1 |
| 23 | **30.9** | 30.9 | 30.9 | **9.7** | 9.7 | 9.7 | **3.18** | 15.1 | 15.1 | 15.1 |
| 22 | **30.4** | 30.4 | 30.4 | **9.7** | 9.7 | 9.7 | **3.13** | 15.1 | 15.1 | 15.1 |
| 21 | **29.8** | 29.8 | 29.8 | **9.7** | 9.7 | 9.7 | **3.07** | 15.1 | 15.1 | 15.1 |
| 20 | **29.3** | 29.3 | 29.3 | **9.7** | 9.7 | 9.7 | **3.02** | 15.1 | 15.1 | 15.1 |
| 19 | **28.8** | 28.8 | 28.8 | **9.7** | 9.7 | 9.7 | **2.96** | 15.1 | 15.1 | 15.1 |
| 18 | **28.3** | 28.3 | 28.3 | **9.7** | 9.7 | 9.7 | **2.91** | 15.1 | 15.1 | 15.1 |
| 17 | **27.8** | 27.8 | 27.8 | **9.7** | 9.7 | 9.7 | **2.86** | 15.1 | 15.1 | 15.1 |
| 16 | **27.3** | 27.3 | 27.3 | **9.7** | 9.7 | 9.7 | **2.81** | 15.1 | 15.1 | 15.1 |
| 15 | **26.8** | 26.8 | 26.8 | **9.7** | 9.7 | 9.7 | **2.76** | 15.1 | 15.1 | 15.1 |
| 14 | **26.3** | 26.3 | 26.3 | **9.7** | 9.7 | 9.7 | **2.71** | 15.1 | 15.1 | 15.1 |
| 13 | **25.9** | 25.9 | 25.9 | **9.7** | 9.7 | 9.7 | **2.66** | 15.1 | 15.1 | 15.1 |
| 12 | **25.4** | 25.4 | 25.4 | **9.7** | 9.7 | 9.7 | **2.62** | 15.1 | 15.1 | 15.1 |
| 11 | **24.9** | 24.9 | 24.9 | **9.7** | 9.7 | 9.7 | **2.57** | 15.1 | 15.1 | 15.1 |
| 10 | **24.5** | 24.5 | 24.5 | **9.7** | 9.7 | 9.7 | **2.53** | 15.1 | 15.1 | 15.1 |
| 9 | **23.7** | 23.7 | 23.7 | **9.7** | 9.7 | 9.7 | **2.45** | 15.0 | 15.0 | 15.0 |
| 8 | **22.9** | 22.9 | 22.9 | **9.6** | 9.6 | 9.6 | **2.38** | 15.0 | 15.0 | 15.0 |
| 7 | **22.2** | 22.2 | 22.2 | **9.6** | 9.6 | 9.6 | **2.31** | 15.0 | 15.0 | 15.0 |
| 6 | **21.6** | 21.6 | 21.6 | **9.6** | 9.6 | 9.6 | **2.25** | 14.9 | 14.9 | 14.9 |
| 5 | **20.9** | 20.9 | 20.9 | **9.5** | 9.5 | 9.5 | **2.19** | 14.9 | 14.9 | 14.9 |
| 4 | **20.4** | 20.4 | 20.4 | **9.5** | 9.5 | 9.5 | **2.14** | 14.9 | 14.9 | 14.9 |
| 3 | **19.8** | 19.8 | 19.8 | **9.5** | 9.5 | 9.5 | **2.10** | 14.8 | 14.8 | 14.8 |
| 2 | **19.3** | 19.3 | 19.3 | **9.4** | 9.4 | 9.4 | **2.05** | 14.8 | 14.8 | 14.8 |
| 1 | **18.9** | 18.9 | 18.9 | **9.4** | 9.4 | 9.4 | **2.01** | 14.7 | 14.7 | 14.7 |
| 0 | **18.5** | 18.5 | 18.5 | **9.4** | 9.4 | 9.4 | **1.98** | 14.7 | 14.7 | 14.7 |
| -1 | **18.1** | 18.1 | 18.1 | **9.3** | 9.3 | 9.3 | **1.94** | 14.7 | 14.7 | 14.7 |
| -2 | **17.8** | 17.8 | 17.8 | **9.3** | 9.3 | 9.3 | **1.92** | 14.6 | 14.6 | 14.6 |
| -3 | **17.5** | 17.5 | 17.5 | **9.2** | 9.2 | 9.2 | **1.89** | 14.6 | 14.6 | 14.6 |
| -4 | **17.2** | 17.2 | 17.2 | **9.2** | 9.2 | 9.2 | **1.87** | 14.5 | 14.5 | 14.5 |
| -5 | **17.0** | 17.0 | 17.0 | **9.2** | 9.2 | 9.2 | **1.85** | 14.5 | 14.5 | 14.5 |
| -6 | **16.8** | 16.8 | 16.8 | **9.2** | 9.2 | 9.2 | **1.83** | 14.5 | 14.5 | 14.5 |
| -7 | **16.6** | 16.6 | 16.6 | **9.1** | 9.1 | 9.1 | **1.81** | 14.5 | 14.5 | 14.5 |
| -8 | **16.4** | 16.4 | 16.4 | **9.1** | 9.1 | 9.1 | **1.80** | 14.4 | 14.4 | 14.4 |
| -9 | **16.3** | 16.3 | 16.3 | **9.1** | 9.1 | 9.1 | **1.79** | 14.4 | 14.4 | 14.4 |
| -10 | **16.2** | 16.2 | 16.2 | **9.1** | 9.1 | 9.1 | **1.79** | 14.4 | 14.4 | 14.4 |
| -11 | **15.9** | 15.9 | 15.9 | **9.0** | 9.0 | 9.0 | **1.76** | 14.4 | 14.4 | 14.4 |
| -12 | **15.5** | 15.5 | 15.5 | **9.0** | 9.0 | 9.0 | **1.73** | 14.3 | 14.3 | 14.3 |
| -13 | **15.1** | 15.1 | 15.1 | **8.9** | 8.9 | 8.9 | **1.70** | 14.2 | 14.2 | 14.2 |
| -14 | **14.8** | 14.8 | 14.8 | **8.9** | 8.9 | 8.9 | **1.67** | 14.2 | 14.2 | 14.2 |
| -15 | **14.4** | 14.4 | 14.4 | **8.8** | 8.8 | 8.8 | **1.64** | 14.1 | 14.1 | 14.1 |
| -16 | | | | | | | | | | |
| -17 | | | | | | | | | | |
| -18 | | | | | | | | | | |
| -19 | | | | | | | | | | |
| -20 | | | | | | | | | | |
| -21 | | | | | | | | | | |
| -22 | | | | | | | | | | |
| -23 | | | | | | | | | | |
| -24 | | | | | | | | | | |
| -25 | | | | | | | | | | |

* Achtung: Betriebsgrenzen beachten - nicht in Tabelle festgehalten

| 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 | **14.4** | 14.4 | 14.4 | **6.2** | 6.2 | 6.2 | **2.30** | 11.1 | 11.1 | 11.1 |
| 39 | **14.5** | 14.5 | 14.5 | **6.1** | 6.1 | 6.1 | **2.38** | 10.9 | 10.9 | 10.9 |
| 38 | **14.5** | 14.5 | 14.5 | **5.9** | 5.9 | 5.9 | **2.45** | 10.7 | 10.7 | 10.7 |
| 37 | **14.6** | 14.6 | 14.6 | **5.8** | 5.8 | 5.8 | **2.53** | 10.6 | 10.6 | 10.6 |
| 36 | **14.7** | 14.7 | 14.7 | **5.6** | 5.6 | 5.6 | **2.61** | 10.5 | 10.5 | 10.5 |
| 35 | **14.8** | 14.8 | 14.8 | **5.5** | 5.5 | 5.5 | **2.69** | 10.3 | 10.3 | 10.3 |
| 34 | **14.9** | 14.9 | 14.9 | **5.4** | 5.4 | 5.4 | **2.77** | 10.2 | 10.2 | 10.2 |
| 33 | **15.0** | 15.0 | 15.0 | **5.2** | 5.2 | 5.2 | **2.86** | 10.1 | 10.1 | 10.1 |
| 32 | **15.0** | 15.0 | 15.0 | **5.1** | 5.1 | 5.1 | **2.94** | 9.9 | 9.9 | 9.9 |
| 31 | **15.1** | 15.1 | 15.1 | **5.0** | 5.0 | 5.0 | **3.03** | 9.8 | 9.8 | 9.8 |
| 30 | **15.2** | 15.2 | 15.2 | **4.9** | 4.9 | 4.9 | **3.12** | 9.7 | 9.7 | 9.7 |
| 29 | **15.3** | 15.3 | 15.3 | **4.8** | 4.8 | 4.8 | **3.21** | 9.6 | 9.6 | 9.6 |
| 28 | **15.4** | 15.4 | 15.4 | **4.6** | 4.6 | 4.6 | **3.30** | 9.5 | 9.5 | 9.5 |
| 27 | **15.4** | 15.4 | 15.4 | **4.5** | 4.5 | 4.5 | **3.40** | 9.4 | 9.4 | 9.4 |
| 26 | **15.5** | 15.5 | 15.5 | **4.4** | 4.4 | 4.4 | **3.50** | 9.3 | 9.3 | 9.3 |
| 25 | **15.6** | 15.6 | 15.6 | **4.3** | 4.3 | 4.3 | **3.59** | 9.2 | 9.2 | 9.2 |
| 24 | **15.6** | 15.6 | 15.6 | **4.2** | 4.2 | 4.2 | **3.69** | 9.1 | 9.1 | 9.1 |
| 23 | **15.7** | 15.7 | 15.7 | **4.1** | 4.1 | 4.1 | **3.80** | 9.0 | 9.0 | 9.0 |
| 22 | **15.8** | 15.8 | 15.8 | **4.0** | 4.0 | 4.0 | **3.90** | 8.9 | 8.9 | 8.9 |
| 21 | **15.8** | 15.8 | 15.8 | **4.0** | 4.0 | 4.0 | **4.00** | 8.9 | 8.9 | 8.9 |
| 20 | **15.9** | 15.9 | 15.9 | **3.9** | 3.9 | 3.9 | **4.11** | 8.8 | 8.8 | 8.8 |
| 19 | **16.0** | 16.0 | 16.0 | **3.8** | 3.8 | 3.8 | **4.22** | 8.7 | 8.7 | 8.7 |
| 18 | **16.0** | 16.0 | 16.0 | **3.7** | 3.7 | 3.7 | **4.33** | 8.6 | 8.6 | 8.6 |
| 17 | **16.1** | 16.1 | 16.1 | **3.6** | 3.6 | 3.6 | **4.44** | 8.6 | 8.6 | 8.6 |

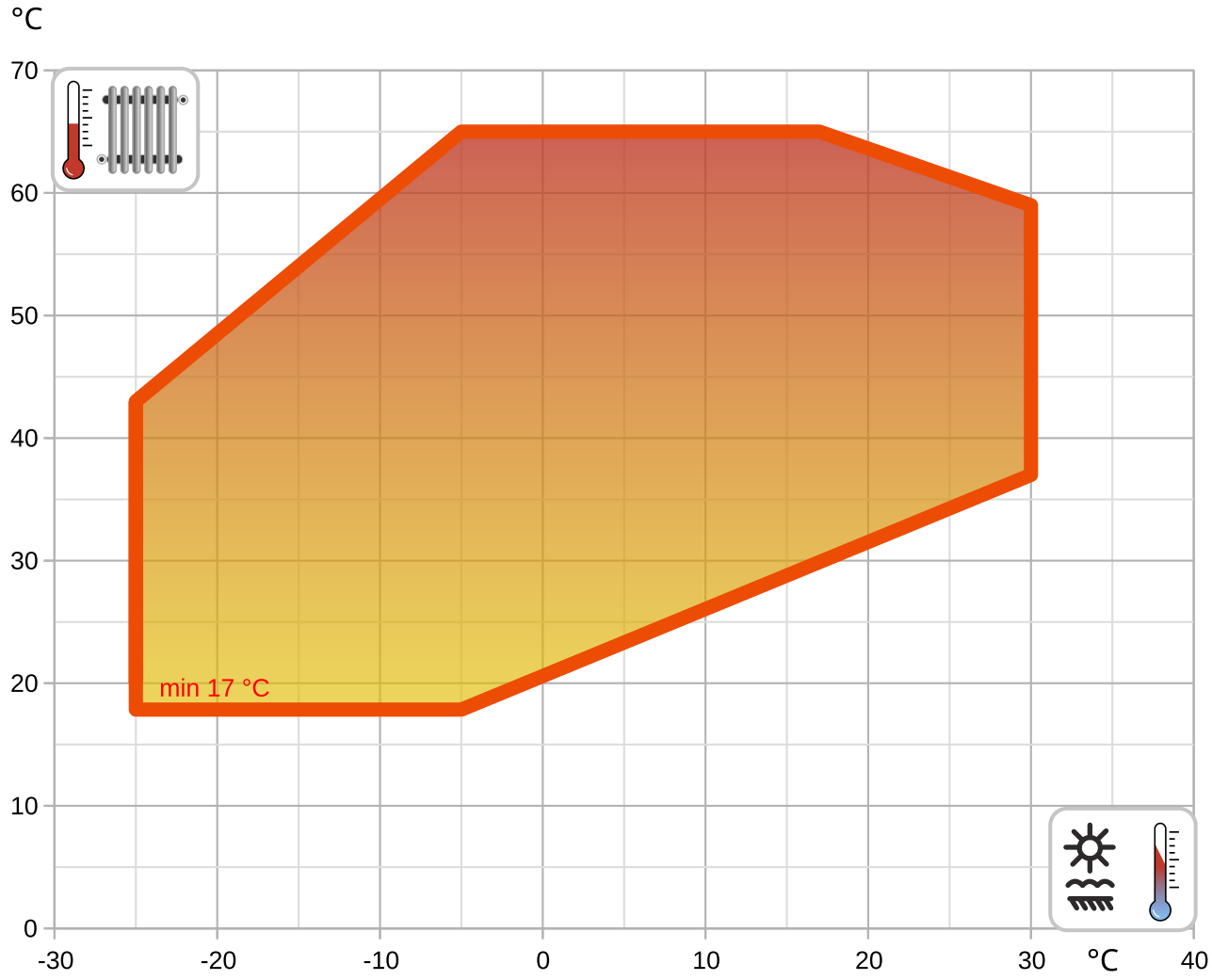
| Tc [°C] | W 23 / 18 °C | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Qc** | **Qh-min** | **Qh-max** | **Pin** | **Pin-min** | **Pin-max** | **EER** | **I** | **I-min** | **I-max** |
| Ta [°C] | **[kW]** | [kW] | [kW] | **[kW]** | [kW] | [kW] | **kW / kW** | [A] | [A] | [A] |
| 40 | **19.3** | 19.3 | 19.3 | **6.2** | 6.2 | 6.2 | **3.10** | 11.0 | 11.0 | 11.0 |
| 39 | **19.4** | 19.4 | 19.4 | **6.1** | 6.1 | 6.1 | **3.20** | 10.9 | 10.9 | 10.9 |
| 38 | **19.6** | 19.6 | 19.6 | **5.9** | 5.9 | 5.9 | **3.30** | 10.7 | 10.7 | 10.7 |
| 37 | **19.7** | 19.7 | 19.7 | **5.8** | 5.8 | 5.8 | **3.40** | 10.6 | 10.6 | 10.6 |
| 36 | **19.8** | 19.8 | 19.8 | **5.6** | 5.6 | 5.6 | **3.50** | 10.4 | 10.4 | 10.4 |
| 35 | **19.9** | 19.9 | 19.9 | **5.5** | 5.5 | 5.5 | **3.61** | 10.3 | 10.3 | 10.3 |
| 34 | **20.0** | 20.0 | 20.0 | **5.4** | 5.4 | 5.4 | **3.72** | 10.1 | 10.1 | 10.1 |
| 33 | **20.1** | 20.1 | 20.1 | **5.2** | 5.2 | 5.2 | **3.83** | 10.0 | 10.0 | 10.0 |
| 32 | **20.2** | 20.2 | 20.2 | **5.1** | 5.1 | 5.1 | **3.95** | 9.9 | 9.9 | 9.9 |
| 31 | **20.3** | 20.3 | 20.3 | **5.0** | 5.0 | 5.0 | **4.06** | 9.8 | 9.8 | 9.8 |
| 30 | **20.4** | 20.4 | 20.4 | **4.9** | 4.9 | 4.9 | **4.18** | 9.7 | 9.7 | 9.7 |
| 29 | **20.5** | 20.5 | 20.5 | **4.8** | 4.8 | 4.8 | **4.31** | 9.6 | 9.6 | 9.6 |
| 28 | **20.6** | 20.6 | 20.6 | **4.6** | 4.6 | 4.6 | **4.43** | 9.5 | 9.5 | 9.5 |
| 27 | **20.7** | 20.7 | 20.7 | **4.5** | 4.5 | 4.5 | **4.56** | 9.4 | 9.4 | 9.4 |
| 26 | **20.8** | 20.8 | 20.8 | **4.4** | 4.4 | 4.4 | **4.69** | 9.3 | 9.3 | 9.3 |
| 25 | **20.9** | 20.9 | 20.9 | **4.3** | 4.3 | 4.3 | **4.82** | 9.2 | 9.2 | 9.2 |
| 24 | **21.0** | 21.0 | 21.0 | **4.2** | 4.2 | 4.2 | **4.95** | 9.1 | 9.1 | 9.1 |
| 23 | **21.1** | 21.1 | 21.1 | **4.1** | 4.1 | 4.1 | **5.09** | 9.0 | 9.0 | 9.0 |
| 22 | **21.1** | 21.1 | 21.1 | **4.0** | 4.0 | 4.0 | **5.22** | 8.9 | 8.9 | 8.9 |
| 21 | **21.2** | 21.2 | 21.2 | **4.0** | 4.0 | 4.0 | **5.36** | 8.9 | 8.9 | 8.9 |
| 20 | **21.3** | 21.3 | 21.3 | **3.9** | 3.9 | 3.9 | **5.51** | 8.8 | 8.8 | 8.8 |
| 19 | **21.4** | 21.4 | 21.4 | **3.8** | 3.8 | 3.8 | **5.65** | 8.7 | 8.7 | 8.7 |
| 18 | **21.5** | 21.5 | 21.5 | **3.7** | 3.7 | 3.7 | **5.79** | 8.6 | 8.6 | 8.6 |
| 17 | **21.6** | 21.6 | 21.6 | **3.6** | 3.6 | 3.6 | **5.94** | 8.6 | 8.6 | 8.6 |

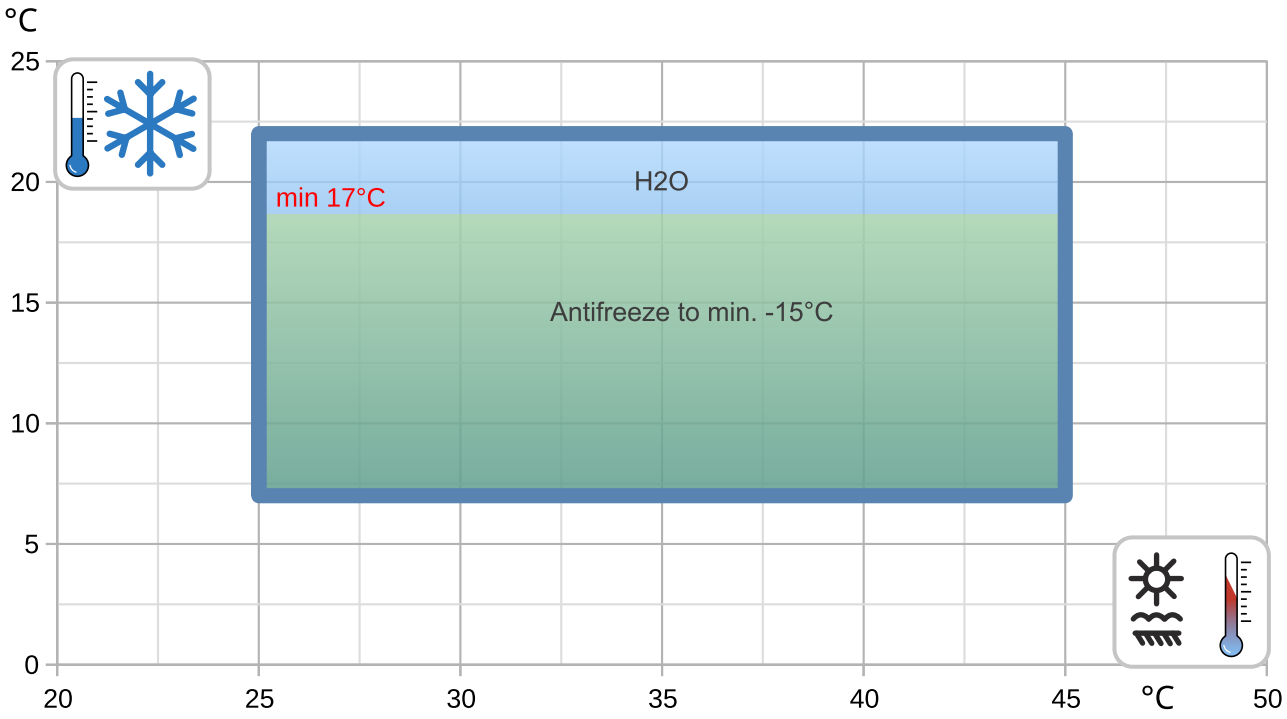
* Achtung: Betriebsgrenzen beachten - nicht in Tabelle festgehalten

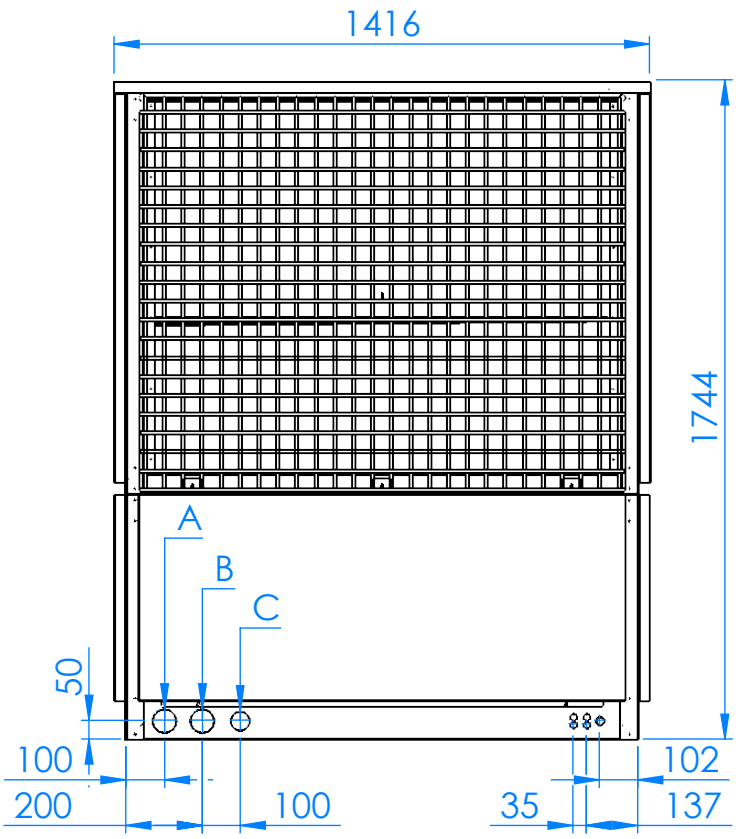
LEGENDE:

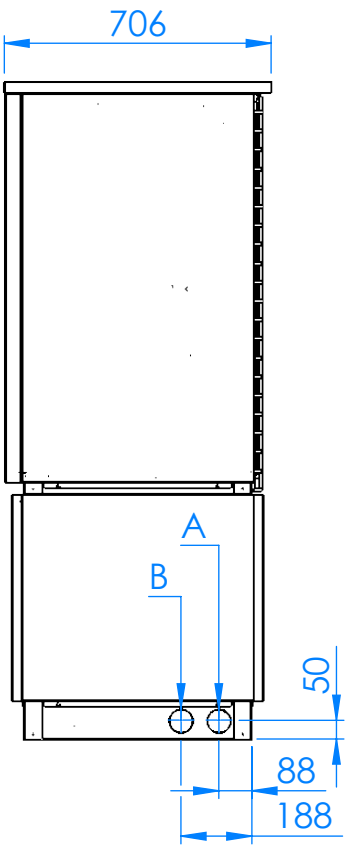
Twq-RL: Temperatur Wärmequelle - Eintritt [°C]
Tws-VL: Temperatur Wärmesenke - Vorlauf [°C]
Tk-VL: Temperatur Kältesenke - Vorlauf [°C]
Qh nom: Heizleistung nominal
Qh min: Heizleistung minimal
Qh max: Heizleistung maximal
Pin nom: Aufnahme bei nominaler Heizleistung
Pin min: Aufnahme bei minimaler Heizleistung
Pin max: Aufnahme bei maximaler Heizleistung
COP nom: Arbeitszahl bei nominaler Heizleistung
Qc nom: Kälteleistung/Energieentnahme bei nominaler Heizleistung
Qc min: Kälteleistung/Energieentnahme bei minimaler Heizleistung
Qc max: Kälteleistung/Energieentnahme bei maximaler Heizleistung
I nom: Stromaufnahme bei nominaler Heizleistung
EER: Arbeitszahl bei nominaler Kälteleistung

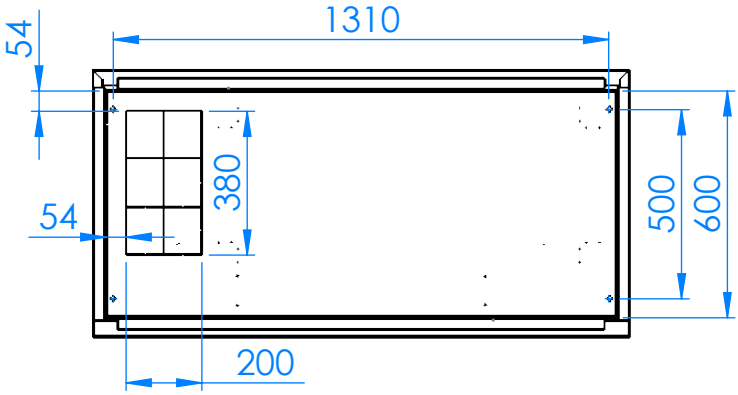
## Betriebsgrenzen

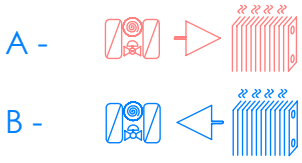


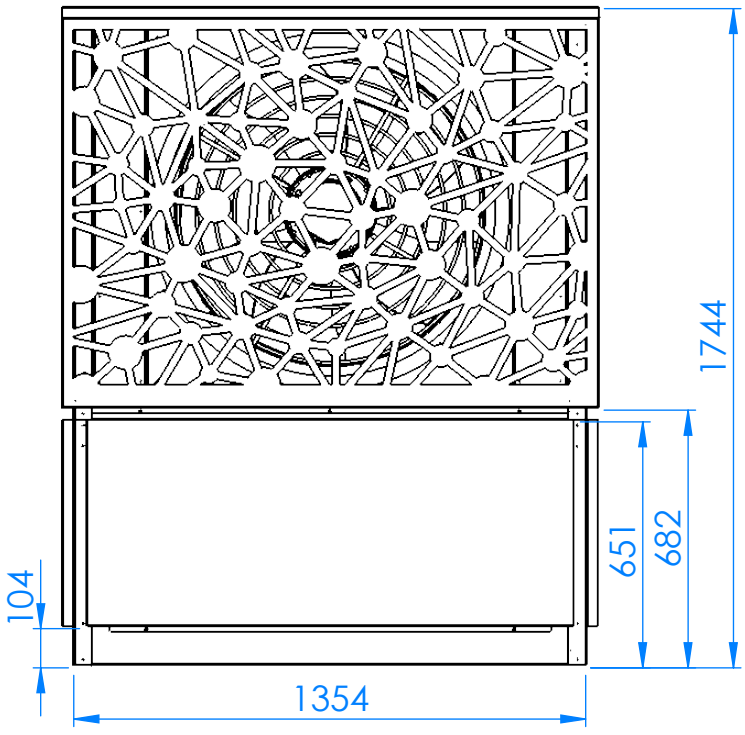

1416
1744
A
B
C
50
100
200
100
102
35
137

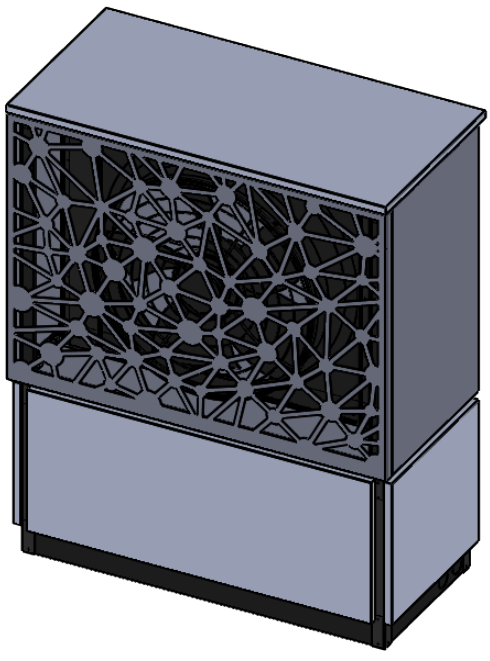

706
A
B
50
88
188

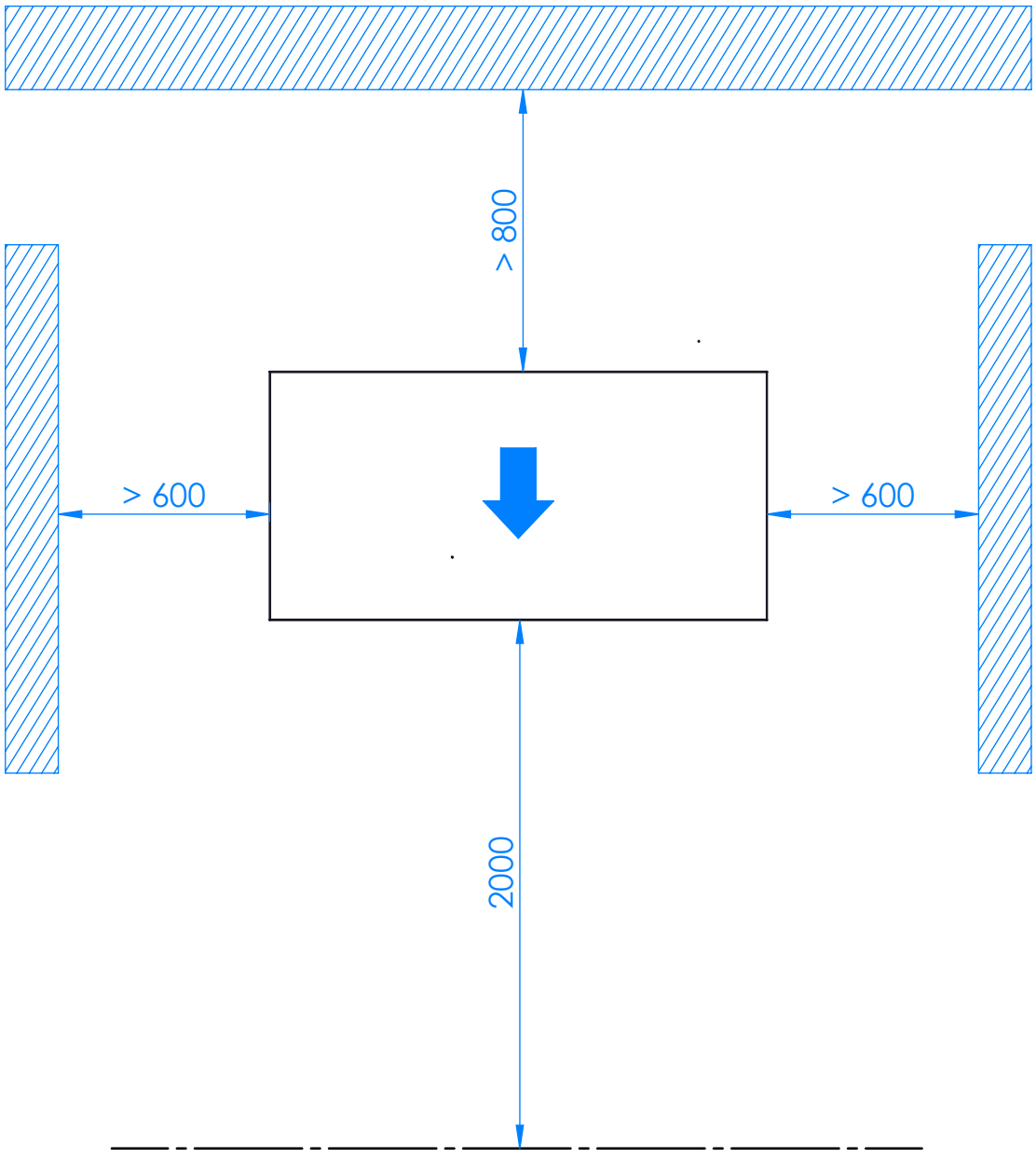

1310
54
54
380
500
600
200

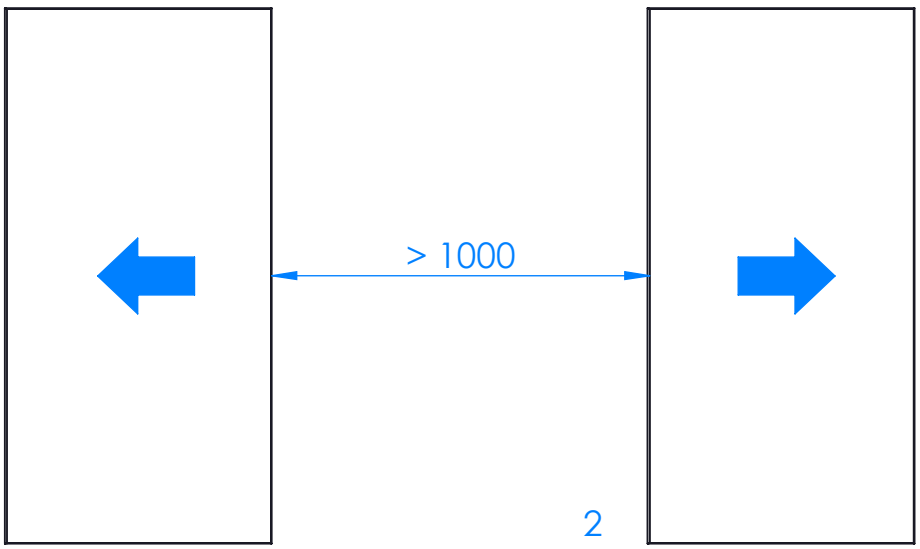

A -
B -

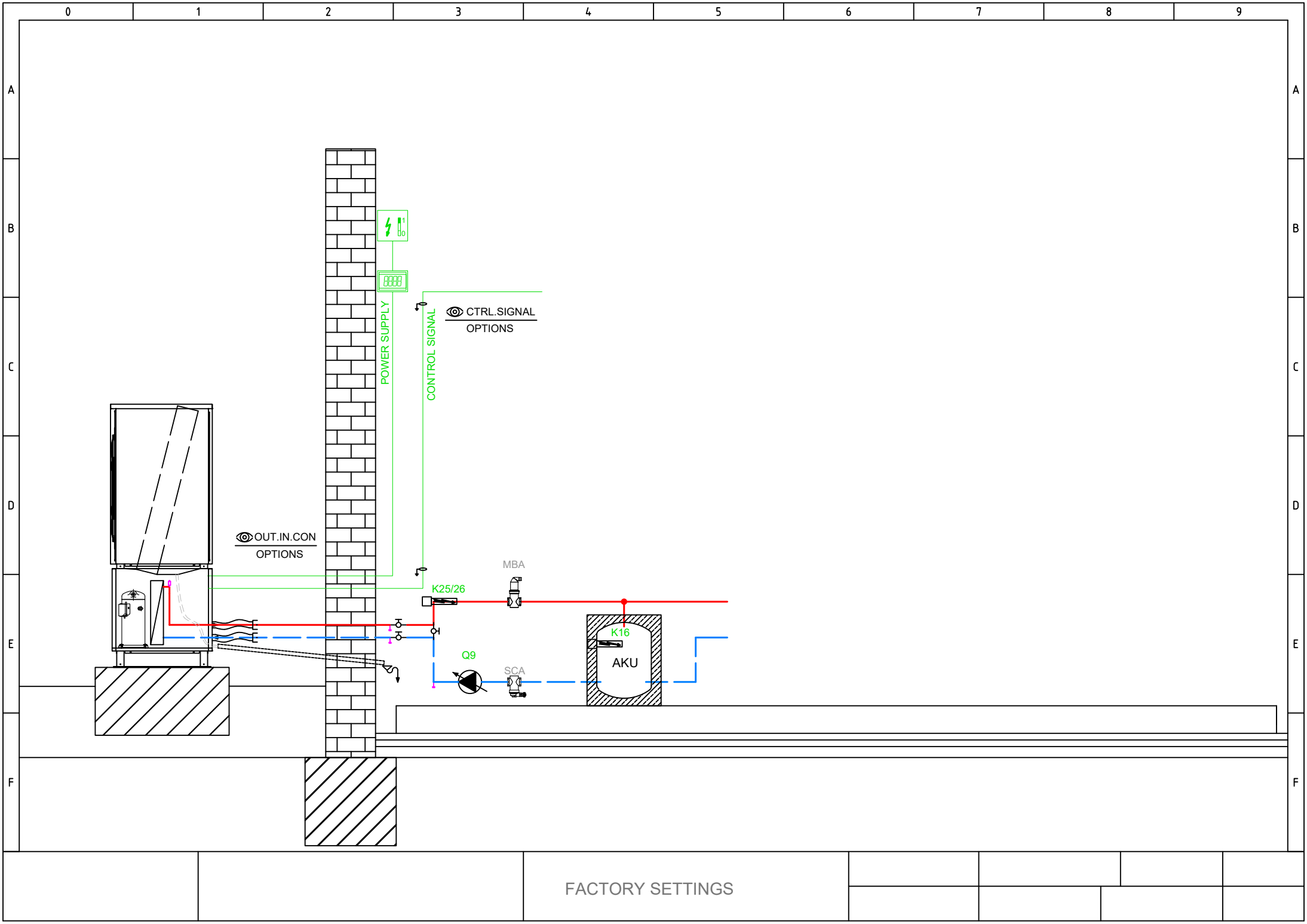
C - condens


1744
651
682
104
1354

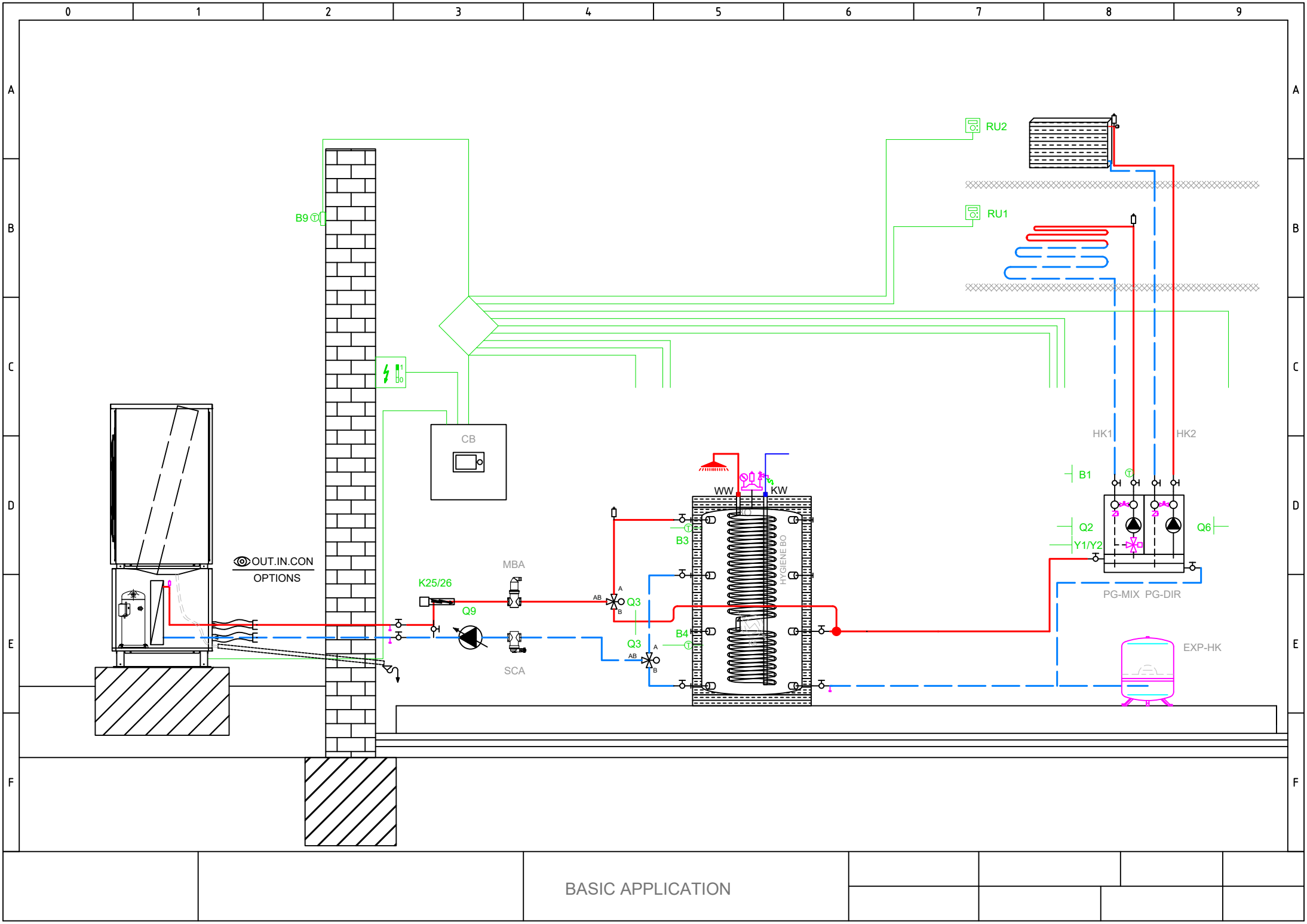



> 800
> 600
> 600
2000

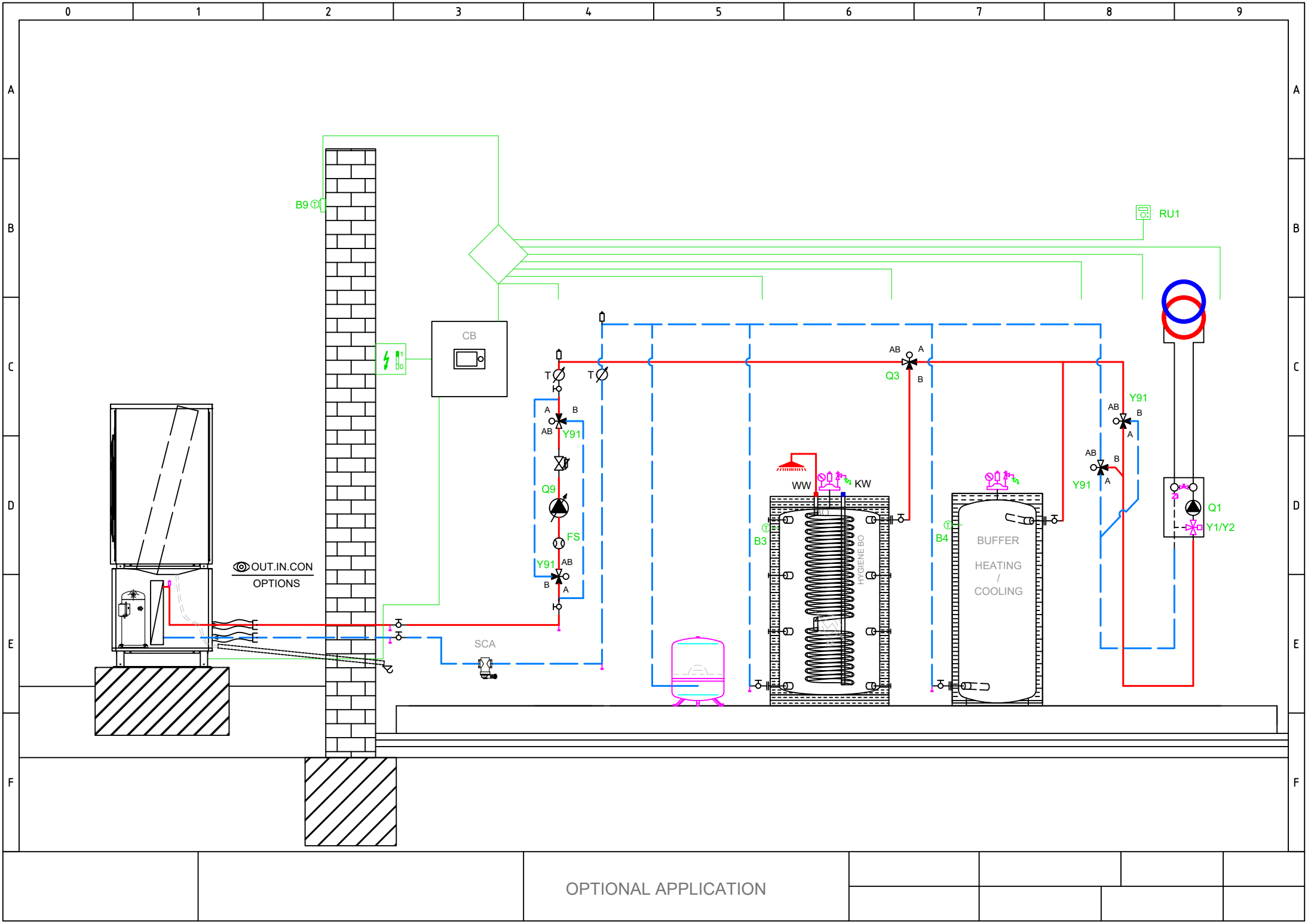

> 1000




FACTORY SETTINGS




BASIC APPLICATION




OPTIONAL APPLICATION

# AiWa - AWK v052024 Config FactorySet v24.9.1

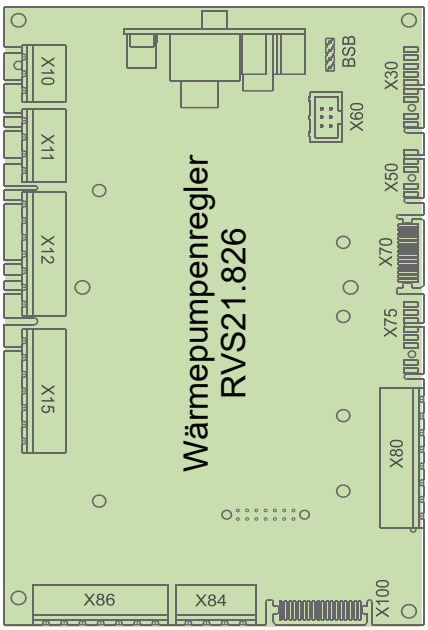
Wärmepumpenregelung - Konfigurationsvoreinstellung, Verkabelung der Ein-Ausgänge

DE

Netzanschluss 230V / 50 Hz
Erde
Nullleiter

| | | | |
|---|---|---|---|
| E10 | Hochdruckwächter E10 | X10 1 | L |
| E11 | Überlast Verdichter 1 E11 | | PE |
| E14 | Überlast Quelle E14 | | N |
| E24 | Ström'wächter Verbrau E24 | X11 1 | EX1 |
| K82 | Ventil EVI K82 | | EX2 |
| | | | EX3 |
| K40 | Ölsumpfheizung K40 | | EX4 |
| | | X12 1 | QX1 |
| | | | N |
| L | Faze 230V | | QX2 |
| K1 | Verdichterstufe 1 K1 | | QX2i |
| Y22 | Prozessumkehrventil Y22 | | N |
| | | | FX3 |
| | | | QX3 |
| Q9 | Kondensatorpumpe Q9 | 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 | | Anschluss Servicetool (OCI700) |
| X30 | | Bediengerät (HMI) AVS37.xxx |
| X60 | | Modbus-Clip-In OCI351.01 |
| X50 | | Erweiterungsmodul AVS75.xxx |
| X70 | | LPB clip-in |

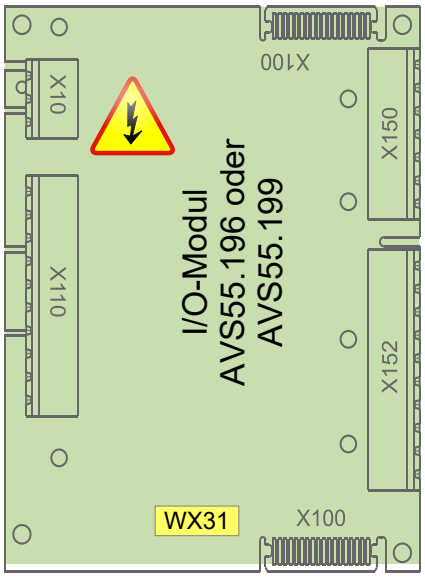
| | | | |
|---|---|---|---|
| D1 | X75 | D1 | Digi Ausgang 1 Heizen |
| D2 | | D2 | Digi Ausgang 2 Kühlung |
| D3 | | D3 | Digi Ausgang 3 WP Ein/Aus |
| UX3 | | | |
| M | | | |
| DI6 | | DI6 | Digi Eingang 6 Abtauen |
| DI7 | | DI7 | Digi Eingang 7 Alarm |
| M 1 | | | |

| | | | |
|---|---|---|---|
| BX1 | X80 | B91 | Quelleneintrittfühler B91 |
| M | | | |
| BX2 | | B84 | Quellenaust'fühler B92/B84 |
| M | | | |
| UX1 | | K19 | Ventilator K19 |
| M | | | 0..10V Analogsignal |
| UX2 | | Q9 | Kondensatorpumpe Q9 |
| M 1 | | | PWM Signal |

| | | | |
|---|---|---|---|
| BX3 | X84 | B71 | WP Rücklauffühler B71 |
| M | | | |
| BX4 | | B9 | Aussentemperaturfühler B9 |
| M 1 | | | |

Netzanschluss 230V / 50 Hz
Erde
Nullleiter

| | | | |
|---|---|---|---|
| | X10 1 | L | |
| | | PE | |
| | | N | |
| | X110 1 | QX31 | |
| | | QX32 | |
| | | N | |
| | | QX33 | |
| | | N | |
| | | ZX34 | |
| | | N | |
| K10 Alarmausgang K10 | X115 1 | QX35 | |
| | | QX35i | |
| | | N | |
| V81 EEV Verdampfer V81 | WX31 | | |




| | | | |
|---|---|---|---|
| BSB | X150 | | |
| M | | | |
| G+ | | | 5V/12V für aktive Fühler |
| H31 | | | Durchflussmessung 10V |
| M | | | |
| H32 | | | Niederdruck 0..10V |
| GX1 1 | | | 5V/12V für aktive Fühler |
| H33 | X152 | | Hochdruck 0..10V |
| M | | | |
| BX31 | | B21 | WP Vorlauffühler B21 |
| M | | | |
| BX32 | | B81 | Heissgasfühler B81 |
| M | | | |
| BX33 | | B85 | Sauggasfühler B85 |
| M | | | |
| BX34 | | B83 | Kältemittelfühler flüssig B83 |
| M 1 | | | |

# AiWa - AWK v052024 Config FactorySet v24.9.1

Wärmepumpenregelung - Konfigurationsvoreinstellung, Verkabelung der Ein-Ausgänge

DE

AVS75.390
AVS75.391
AVS75.370

Netzanschluss 230V / 50 Hz
Erde
Nullleiter

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

Bediengerät (HMI) AVS37.xxx
Erweiterungsmodul AVS75.xxx
Raumgerät QAA...
Raumgerät QAA...



Netzanschluss 230V / 50 Hz
Erde
Nullleiter

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



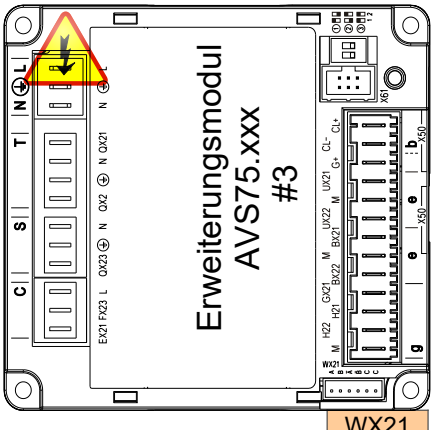

X50
X50
CL+ b
CL-
G+
UX21 e
M
UX22
BX21 e
M
BX22
GX21 g
H21
H22
M

Bediengerät (HMI) AVS37.xxx
Erweiterungsmodul AVS75.xxx
Raumgerät QAA...
Raumgerät QAA...

Multifunktional

Netzanschluss 230V / 50 Hz
Erde
Nullleiter

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




WX21

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

Bediengerät (HMI) AVS37.xxx
Erweiterungsmodul AVS75.xxx
Raumgerät QAA...
Raumgerät QAA...

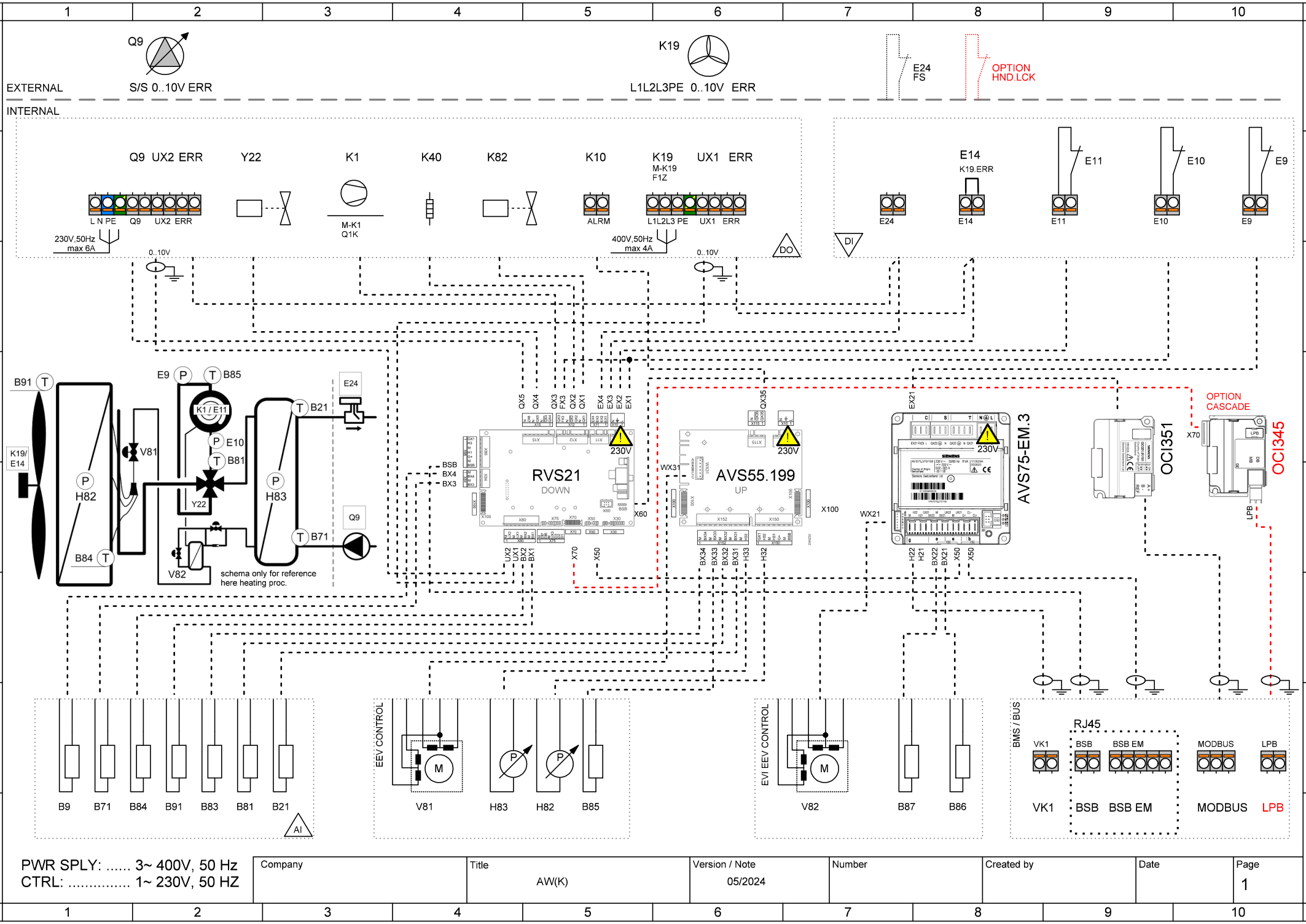
B86 Sauggasfühler EVI B86

B87 Verdampfungsfühler EVI B87

E9 Niederdruckwächter E9

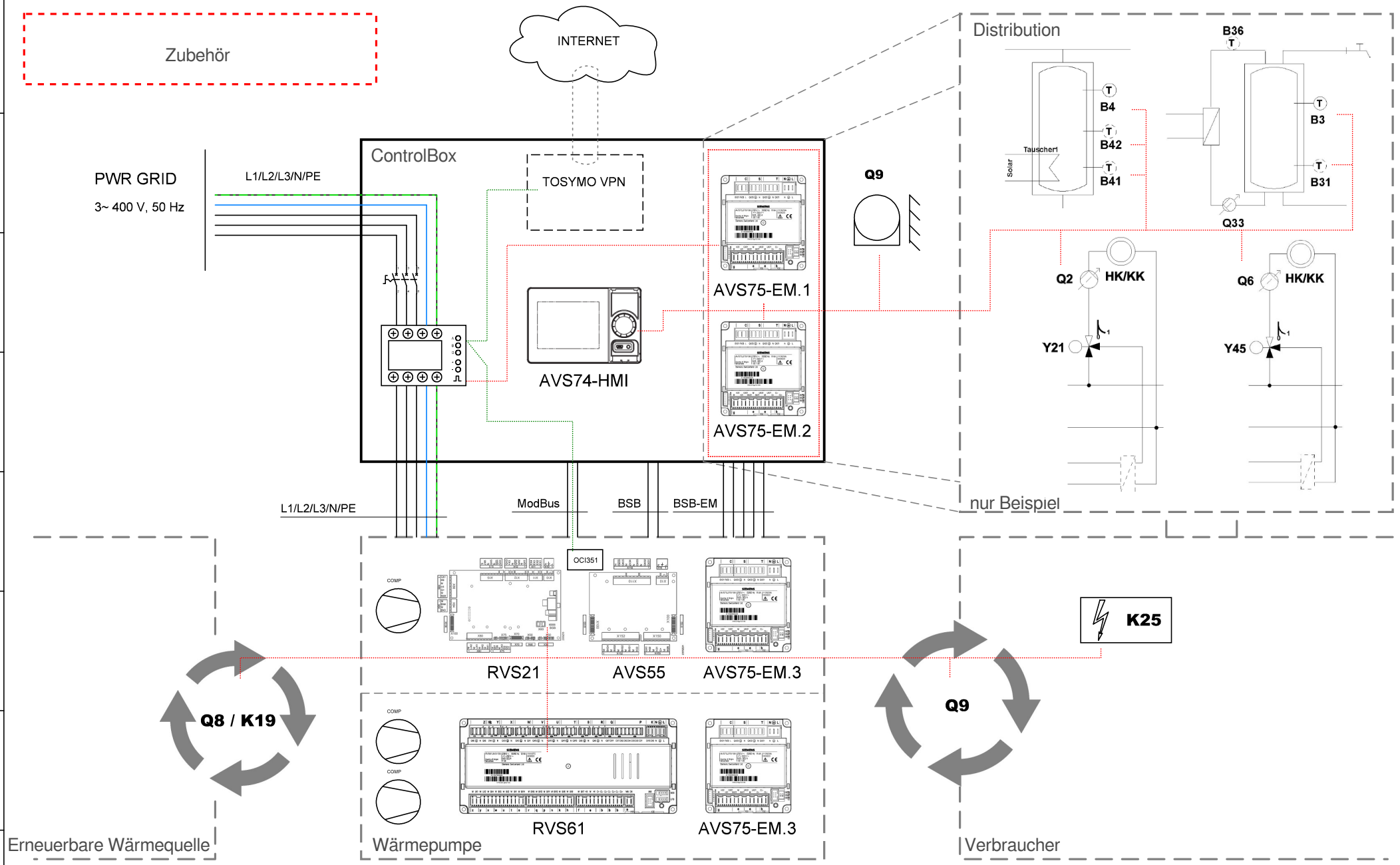
V82 EEV EVI V82

WX21

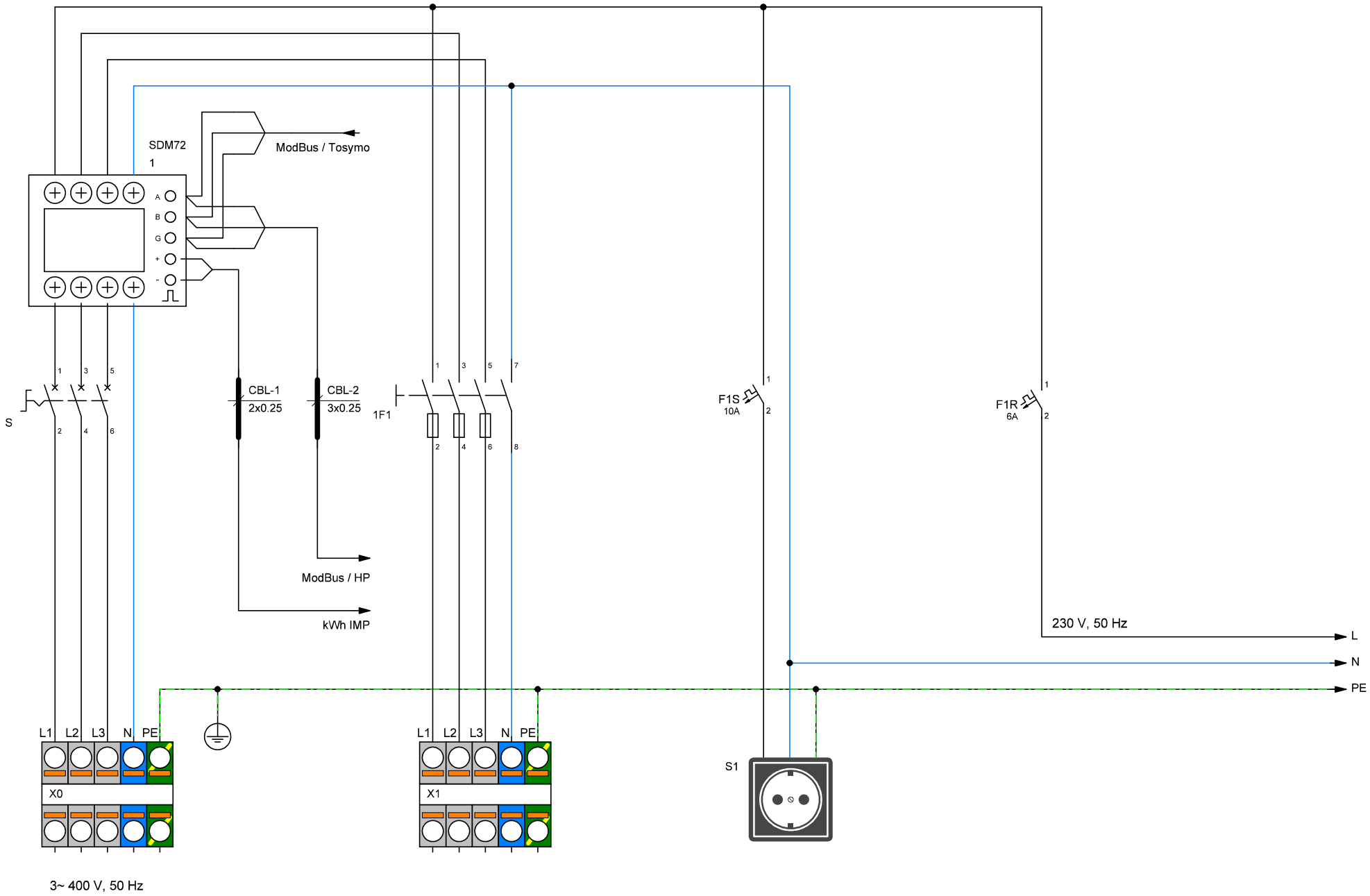



PWR SPLY: ..... 3~ 400V, 50 Hz
CTRL: ..... 1~ 230V, 50 HZ

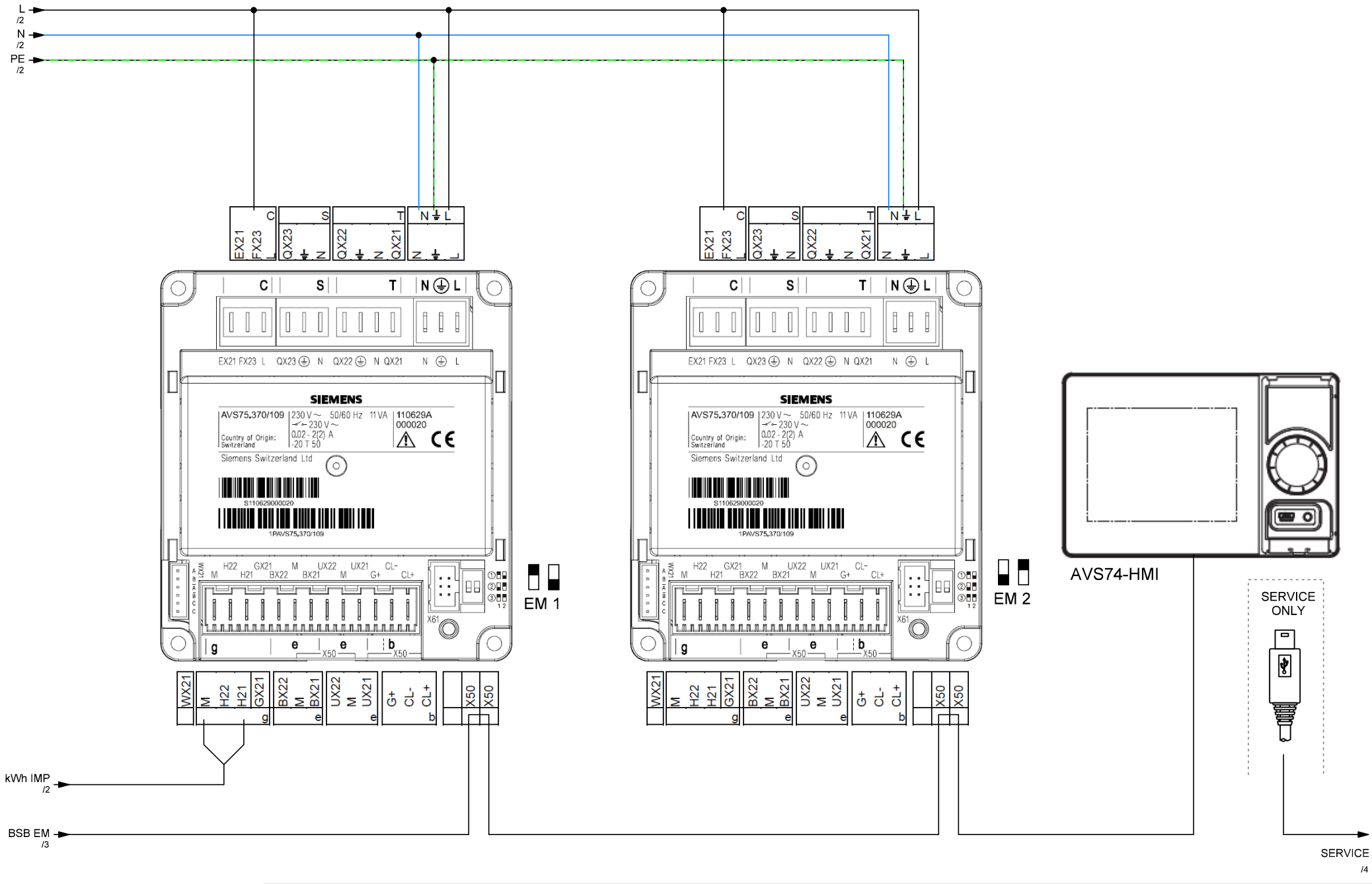
| Company | Title | Version / Note | Number | Created by | Date | Page |
|---|---|---|---|---|---|---|
| | AW(K) | 05/2024 | | | | 1 |



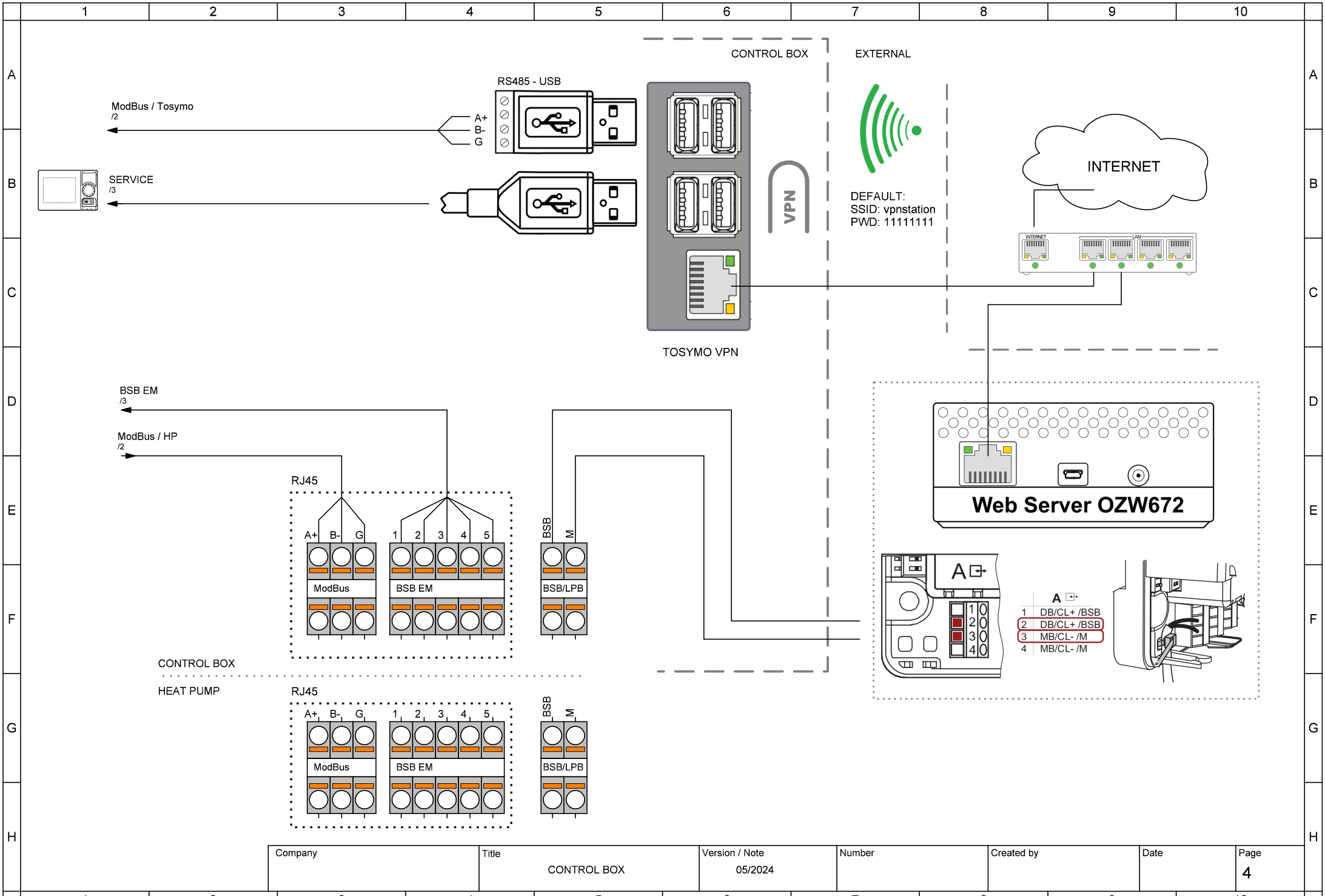

| Company | Title | Version / Note | Number | Created by | Date | Page |
|---|---|---|---|---|---|---|
| | CONTROL BOX | 05/2024 | | | | 1 |




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




| Company | Title | Version / Note | Number | Created by | Date | Page |
|---|---|---|---|---|---|---|
| | CONTROL BOX | 05/2024 | | | | 3 |




| Company | Title | Version / Note | Number | Created by | Date | Page |
|---|---|---|---|---|---|---|
| | CONTROL BOX | 05/2024 | | | | 4 |

ControlBox v052024

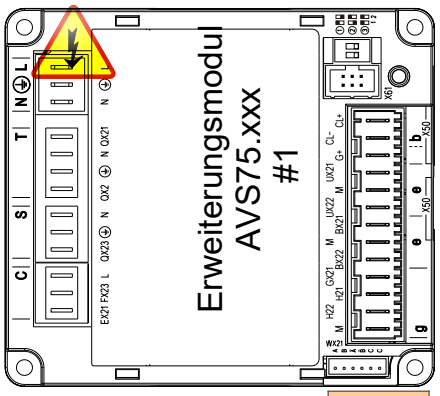
Erweiterungsmodule - Konfigurationsvoreinstellung, Verkabelung der Ein-Ausgänge

DE

AVS75.390
AVS75.391
AVS75.370

AVS75.370
Netzanschluss 230V / 50 Hz
Erde
Nullleiter
Y1 Mischer Auf
Y2 Mischer Zu
Q2 Heizkreispumpe HK1 Q2
L Faze 230V
E61 Smart Grid E61

Heizkreis 1 par. 7300

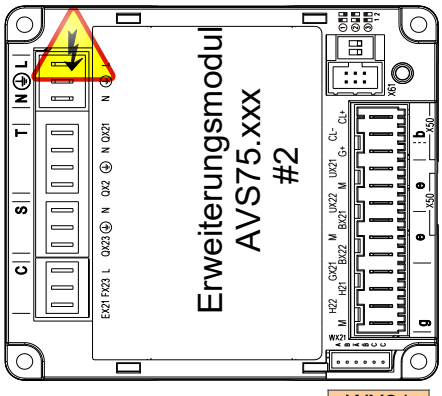



L, PE, N, T: QX21, N, PE, QX22, S: N, PE, QX23, C: L, FX23, EX21
X50, X50, CL+, CL-, G+, UX21, M, UX22, BX21, M, BX22, GX21, H21, H22, M
WX21

Erweiterungsmodul AVS75.xxx
Raumgerät QAA...
Raumgerät QAA...
B1 Vorlauffühler 1
Impulszählung

AVS75.370
Netzanschluss 230V / 50 Hz
Erde
Nullleiter
Q3 Trinkwasserstellglied Q3
K6 Elektroeinsatz TWW K6
Q6 Heizkreispumpe HK2 Q6
L Faze 230V
E62 Smart Grid E62

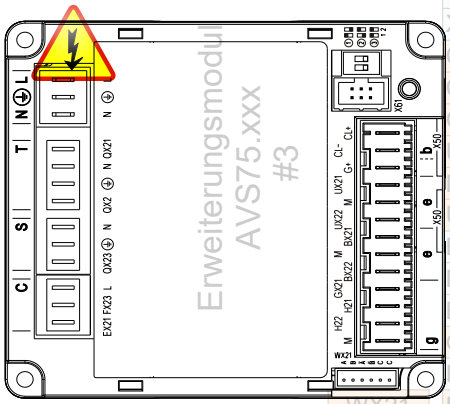
Multifunktional par. 7375




L, PE, N, T: QX21, N, PE, QX22, S: N, PE, QX23, C: L, FX23, EX21
X50, X50, CL+, CL-, G+, UX21, M, UX22, BX21, M, BX22, GX21, H21, H22, M
WX21

Bediengerät (HMI) AVS37.xxx
Erweiterungsmodul AVS75.xxx
Raumgerät QAA...
Raumgerät QAA...
B3 Trinkwasserfühler B3
B4 Pufferspeicherfühler B4

Netzanschluss 230V / 50 Hz
Erde
Nullleiter




Bediengerät (HMI) AVS37.xxx
Erweiterungsmodul AVS75.xxx
Raumgerät QAA...
Raumgerät QAA...

Vorsicht: Erweiterungsmodul 3 ist in der Wärmepumpe

## Anschlussmöglichkeiten für die Steuerung

### 1 ControlBox

ControlBox, mit zwei eingebauten Erweiterungsmodulen, ermöglicht zahlreiche Optionen für die Anwendungssteuerung auf der Verbraucherseite hinter der Wärmepumpe. Weitere Informationen finden Sie im Schaltplan der ControlBox und im Blatt mit den Anwendungsdiagrammen.

### 2 Fixer Sollwert Vorlauftemperatur - Ein / Aus potentialfreier Kontakt

2-adriges abgeschirmtes Kabel 2 x 0,5 mm2 - Sollwert = 45°C (editierbar über Parameter 1859)

Anschlussklemme - siehe Schaltplan

### 3 Analog 0..10V Vorlauftemperatur-Sollwertregelung

2 Adern geschirmtes Kabel 2 x 0,5 mm2 - Sollwert: 0V = 16°C ~ 10V = 60°C ( editierbar im Parametersatz )

Anschlussklemme - siehe Schaltplan

### 4 ModBus RTU-Kommunikationsbefehl

3-adriges abgeschirmtes Kabel min. 3 x 0,25mm2

Für die ModBus-Zuordnungstabelle wenden Sie sich bitte an den technischen Support

### 5 MQTT IoT-Kommunikationsprotokoll

Für weitere Informationen wenden Sie sich bitte an den technischen Support