

## Grundlegende Leistungsdaten - WAMAK TBW 400 EVI HeavyDuty 2L4

| Heizen - EN 14511                                                |                     |                        |
|------------------------------------------------------------------|---------------------|------------------------|
| Wärmeleistung [kW]                                               | B0 / W35 (max)      | 384.4 ( 48.1 / 384.4 ) |
|                                                                  | B0 / W35 (min)      | 48.1 ( 48.1 / 384.4 )  |
|                                                                  | B0 / W34            | 384.0 ( 48.0 / 384.0 ) |
| Leistungsaufnahme [kW]                                           | B0 / W35 (max)      | 86.8 ( 10.6 / 86.8 )   |
|                                                                  | B0 / W35 (min)      | 10.6 ( 10.6 / 86.8 )   |
|                                                                  | B0 / W34            | 84.9 ( 10.4 / 84.9 )   |
| Leistungszahl Heizen [COP]                                       | B0 / W35 (max)      | 4.43                   |
|                                                                  | B0 / W35 (min)      | 4.53                   |
|                                                                  | B0 / W34            | 4.52                   |
| Jahreszeitbedingte Raumheizungs-Energieeffizienz - SCOP EN 14825 |                     |                        |
| Klimazone Durchschnitt / Niedrigtemp.<br>[35°C]                  | SCOP                | 5.03                   |
|                                                                  | $\eta$ [ % ]        | 201.1                  |
|                                                                  | Label               | A+++                   |
|                                                                  | Qhe [ kWh ]         | 157876.1               |
|                                                                  | Pdesignh [ kW ]     | 384.4                  |
|                                                                  | Tbivalent [ °C ]    | -10                    |
| Kühlung                                                          |                     |                        |
| Kühlleistung - [kW]                                              | A35 / W23-18        | 387.4                  |
|                                                                  | A25 / W23-18        | 407.2                  |
|                                                                  | A35 / W12-7         | 387.4                  |
|                                                                  | A25 / W12-7         | 387.4                  |
| Jahreszeitbedingte Raumkühlungs-Energieeffizienz - SEER EN 14825 |                     |                        |
| [ W 23 / 18°C ]                                                  | SEER                | 5.15                   |
|                                                                  | Qce [ kWh ]         | 42700.8                |
|                                                                  | $\eta_c$ [ % ]      | 205.8                  |
| Schall EN 12102                                                  |                     |                        |
| Schallleistungspegel - Lw                                        | dB(A)               | 75.7                   |
| Schalldruckpegel - Lp                                            | 1 m dB(A)           | 67.7                   |
|                                                                  | 5 m dB(A)           | 53.7                   |
|                                                                  | 10 m dB(A)          | 47.7                   |
| Mechanische und Betriebs-Informationen                           |                     |                        |
| Verdichterbauart (3~ 400/50)                                     | SCROLL / 8 /        | Ein/Aus                |
| Kältemittel                                                      | R410A (GWP - 2088)  | 4 x 11.5 kg            |
| Einsatzgrenze Heizungswasser - (min / max ) [°C]                 | 25 / <b>65</b>      |                        |
| Einsatzgrenze Wärmequelle - (min / max ) [°C]                    | <b>-10 (7)</b> / 30 |                        |
| Gewicht                                                          | 2480 kg             |                        |

## Wichtigste technische Daten - WAMAK TBW 400 EVI HeavyDuty 2L4

| Gehäuse Bezeichnung                     |                      |           | HD2L4             |  | Daten von Wärmeabgabe                      |                    |                                              |                                           |                    |                 |
|-----------------------------------------|----------------------|-----------|-------------------|--|--------------------------------------------|--------------------|----------------------------------------------|-------------------------------------------|--------------------|-----------------|
| Grundlegende Abmessungen                | Hohe [mm]            |           | 2000              |  | Einsatzgrenze                              | MAX [°C]           | 65                                           |                                           |                    |                 |
|                                         | Breite [mm]          |           | 2800              |  | Heizungswasser                             | MIN [°C]           | 25                                           |                                           |                    |                 |
|                                         | Länge [mm]           |           | 1200              |  | genauer siehe Betriebsgrenzendigramm       |                    |                                              |                                           |                    |                 |
| Gewicht [kg]                            |                      |           | 2480              |  | Kondensator                                | Anschlussdimension | 4 x VIC 2.1/2 "                              |                                           |                    |                 |
| Gehäuse Farbe                           |                      |           | Grau              |  |                                            | Bauart             | BPHE                                         |                                           |                    |                 |
| Gehäuse IP Klasse                       |                      |           | IP20              |  |                                            | Anzahl             | 4                                            |                                           |                    |                 |
| Kältekreis                              |                      |           |                   |  |                                            | Material           | AISI 316                                     |                                           |                    |                 |
| Verdichter                              | Bauart               |           | Scroll            |  | Maximaler Überdruck - Kältemittel [bar]    |                    |                                              | 50                                        |                    |                 |
|                                         | Leistungstufen       |           | 8                 |  | Maximaler Überdruck - Wasser [bar]         |                    |                                              | 6                                         |                    |                 |
|                                         | Ein/Aus              |           |                   |  | Prüfdruck [bar]                            |                    |                                              | 70                                        |                    |                 |
|                                         | Leistungsfaktor Cosφ |           | 0.64              |  | Wärmeträger                                |                    |                                              | Wasser                                    |                    |                 |
|                                         | Wicklungswiderstand  |           | 0.76 Ohm          |  | Volumenstrom @ dT 5K (nom) - Wasser [m3/h] |                    |                                              | 8.30 ~ 66.43                              |                    |                 |
| Kältemittel                             |                      |           | R410A             |  | Interne Druckdifferenz - Wasser [kPa]      |                    |                                              | 4 x 20                                    |                    |                 |
|                                         | Menge                |           | 4 x 11.5 kg       |  | Temperaturdifferenz                        | @ 35°C (nom)       | 5 K                                          |                                           |                    |                 |
|                                         | GWP                  |           | 2088              |  |                                            | @ 55°C             | 8 K                                          |                                           |                    |                 |
|                                         | Sicherheitsklasse    |           | A1                |  |                                            | @ 65°C             | 10 K                                         |                                           |                    |                 |
| Kältemittelöl                           | POE RL32-3MAF        |           |                   |  | Daten von Erneuerbarer Energiequelle       |                    |                                              |                                           |                    |                 |
|                                         | Ölmenge              |           | 8 x 3.38 L        |  | Einsatzgrenze                              | MIN [°C]           | -10 (7)                                      |                                           |                    |                 |
| Maximaler Hochdruck - Kältemittel [bar] |                      |           | 50                |  | Wärmequelle                                | MAX [°C]           | 30                                           |                                           |                    |                 |
|                                         | PED Klasse           |           | 2                 |  | genauer siehe Betriebsgrenzendigramm       |                    |                                              |                                           |                    |                 |
| EVI - Dampfeinspritzung mit Ekonomiser  |                      |           |                   |  |                                            |                    |                                              | Verdampfer                                | Anschlussdimension | 4 x VIC 2.1/2 " |
| Daten von Elektroanschluss              |                      |           |                   |  |                                            |                    |                                              |                                           | Bauart             | BPHE            |
| Einspeisung [#~ V/Hz]                   |                      |           | 3~ 400/50         |  |                                            |                    |                                              |                                           | Anzahl             | 4               |
| Strom                                   | Nominal [A]          |           | 188.24            |  |                                            |                    |                                              |                                           | Material           | AISI 316        |
|                                         | Maximal [A]          |           | 299.20            |  |                                            |                    |                                              | Maximaler Überdruck - Kältemittel [bar]   |                    | 29              |
|                                         | Start [A]            |           | 57.2              |  |                                            |                    |                                              | Wärmeträger                               |                    | Ethylenglykol   |
| Sanftanlasser                           |                      |           | -                 |  |                                            |                    |                                              | Soleanteil [%]                            |                    | 29              |
| Hauptsicherung                          |                      |           | C300              |  |                                            |                    |                                              | Gefrierschutz bis [°C]                    |                    | -15             |
| Steuerungssystem                        |                      |           |                   |  |                                            |                    |                                              | Maximaler Überdruck - Ethylenglykol [bar] |                    | 6               |
| Hauptregler                             |                      | SIEMENS   | RVS 61            |  | Volumenstrom - Ethylenglykol [m3/h]        |                    | 8.48 ~ 67.82                                 |                                           |                    |                 |
| Erweiterungsmo dul                      |                      | AVS75.3xx | AVS75.3xx         |  | AVS75.372                                  |                    | Interne Druckdifferenz - Ethylenglykol [kPa] |                                           | 4 x 20             |                 |
| Bus Clip-In                             |                      |           | LPB OCI347        |  | Modbus OCI353                              |                    | Temperaturdifferenz - Ethylenglykol          |                                           | 4 K                |                 |
| Online-Verbindung                       |                      |           | Web server OZW672 |  | ToSyMo                                     |                    |                                              |                                           |                    |                 |
| EEV Regelung                            |                      |           | SEC61             |  |                                            |                    |                                              |                                           |                    |                 |
| *** mit Zubehör                         |                      |           |                   |  |                                            |                    |                                              |                                           |                    |                 |

# WAMAK TBW 400 EVI HeavyDuty 2L4

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

| Modell                               | TBW 400 EVI HeavyDuty 2L4 |
|--------------------------------------|---------------------------|
| Luft-Wasser-Wärmepumpe               | nein                      |
| Sole/Wasser-Wärmepumpe               | ja                        |
| 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. | Angabe                                                                                                                                 | Symbol | Wert         | Ein. |
|-------------------------------------------------------------------------------------------------------------|--------|------------|------|----------------------------------------------------------------------------------------------------------------------------------------|--------|--------------|------|
| Nennwärmeleistung bei Tdesignh                                                                              | Prated | 384.4      | kW   | Jahreszeitbedingte Raumheizungs-Energieeffizienz                                                                                       | ηs     | 201.1        | %    |
| Ausgewiesene Heizleistung für Teillast bei einer Innentemperatur von 20 °C und einer Außentemperatur von Tj |        |            |      | Deklarierte Leistungszahl oder Primärenergiekennzahl für Teillast bei einer Innentemperatur von 20 °C und einer Außentemperatur von Tj |        |              |      |
| Tj = -7 °C                                                                                                  | Pdh    | 384.0      | kW   | Tj = -7 °C                                                                                                                             | COPd   | 4.52         | -    |
| Tj = +2 °C                                                                                                  | Pdh    | 381.9      | kW   | Tj = +2 °C                                                                                                                             | COPd   | 4.9          | -    |
| Tj = +7 °C                                                                                                  | Pdh    | 380.2      | kW   | Tj = +7 °C                                                                                                                             | COPd   | 5.4          | -    |
| Tj = +12 °C                                                                                                 | Pdh    | 378.2      | kW   | Tj = +12 °C                                                                                                                            | COPd   | 5.7          | -    |
| Tj = bivalente Temperatur                                                                                   | Pdh    | 384.4      | kW   | Tj = bivalente Temperatur                                                                                                              | COPd   | 4.4          | -    |
| Tj = Betriebsgrenztemperatur                                                                                | Pdh    | ---        | kW   | Tj = Betriebsgrenztemperatur                                                                                                           | COPd   | ---          | -    |
| Bivalente Temperatur                                                                                        | Tbiv   | -10        | °C   | Tj = Betriebsgrenztemperatur                                                                                                           | TOL    | ---          | °C   |
| Stromverbrauch in anderen Modi als dem aktiven Modus                                                        |        |            |      | Betriebsgrenztemperatur des Heizwassers                                                                                                | WTOL   | 65           | °C   |
| Aus-Zustand                                                                                                 | Poff   | 0.010      | kW   | Zusatzheizung                                                                                                                          |        |              |      |
| Thermostat-Aus-Modus                                                                                        | Pto    | 0.010      | kW   | Nennwärmeleistung                                                                                                                      | Psup   | 74.1         | kW   |
| Standby-Betrieb                                                                                             | Psb    | 0.010      | kW   | Art der Energiezufuhr                                                                                                                  |        | elektrisch   |      |
| Betriebsart Kurbelwannenheizung                                                                             | Pck    | 0.000      | kW   |                                                                                                                                        |        |              |      |
| Sonstige Angaben                                                                                            |        |            |      |                                                                                                                                        |        |              |      |
| Leistungsregelung                                                                                           |        | mehrstufig |      | Für Luft/Wasser-Wärmepumpen: Nennluftvolumenstrom, Außenbereich                                                                        | -      | ---          | m3/h |
| Schalleistungspegel                                                                                         |        |            |      |                                                                                                                                        |        |              |      |
| in Innenräumen                                                                                              | Lwa    | 76         | dB   | Für Wasser- oder Sole/Wasser-Wärmepumpen: Nenndurchfluss der Sole oder des Wassers, Wärmetauscher im Freien                            | -      | 8.48 ~ 67.82 | m3/h |
| im Freien                                                                                                   | Lwa    | ---        | dB   |                                                                                                                                        |        |              |      |
| Jährlicher Energieverbrauch                                                                                 | QHE    | 157876.1   | kWh  |                                                                                                                                        |        |              |      |

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

# WAMAK TBW 400 EVI HeavyDuty 2L4

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

| Modell                               | TBW 400 EVI HeavyDuty 2L4 |
|--------------------------------------|---------------------------|
| Luft-Wasser-Wärmepumpe               | nein                      |
| Sole/Wasser-Wärmepumpe               | ja                        |
| 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. | Angabe                                                                                                                                 | Symbol     | Wert         | Ein. |
|-------------------------------------------------------------------------------------------------------------|--------|------------|------|----------------------------------------------------------------------------------------------------------------------------------------|------------|--------------|------|
| Nennwärmeleistung bei Tdesignh                                                                              | Prated | 393.1      | kW   | Jahreszeitbedingte<br>Raumheizungs-Energieeffizienz                                                                                    | ηs         | 160.8        | %    |
| Ausgewiesene Heizleistung für Teillast bei einer Innentemperatur von 20 °C und einer Außentemperatur von Tj |        |            |      | Deklarierte Leistungszahl oder Primärenergiekennzahl für Teillast bei einer Innentemperatur von 20 °C und einer Außentemperatur von Tj |            |              |      |
| Tj = -7 °C                                                                                                  | Pdh    | 395.5      | kW   | Tj = -7 °C                                                                                                                             | COPd       | 3.29         | -    |
| Tj = +2 °C                                                                                                  | Pdh    | 395.7      | kW   | Tj = +2 °C                                                                                                                             | COPd       | 4.1          | -    |
| Tj = +7 °C                                                                                                  | Pdh    | 388.8      | kW   | Tj = +7 °C                                                                                                                             | COPd       | 4.6          | -    |
| Tj = +12 °C                                                                                                 | Pdh    | 386.6      | kW   | Tj = +12 °C                                                                                                                            | COPd       | 5.0          | -    |
| Tj = bivalente Temperatur                                                                                   | Pdh    | 393.1      | kW   | Tj = bivalente Temperatur                                                                                                              | COPd       | 2.9          | -    |
| Tj = Betriebsgrenztemperatur                                                                                | Pdh    | ---        | kW   | Tj = Betriebsgrenztemperatur                                                                                                           | COPd       | ---          | -    |
| Bivalente Temperatur                                                                                        | Tbiv   | -10        | °C   | Tj = Betriebsgrenztemperatur                                                                                                           | TOL        | ---          | °C   |
| Stromverbrauch in anderen Modi als dem aktiven Modus                                                        |        |            |      | Betriebsgrenztemperatur des Heizwassers                                                                                                | WTOL       | 65           | °C   |
| Aus-Zustand                                                                                                 | Poff   | 0.010      | kW   | Zusatzheizung                                                                                                                          |            |              |      |
| Thermostat-Aus-Modus                                                                                        | Pto    | 0.010      | kW   | Nennwärmeleistung                                                                                                                      | Psup       | 74.1         | kW   |
| Standby-Betrieb                                                                                             | Psb    | 0.010      | kW   | Art der Energiezufuhr                                                                                                                  | elektrisch |              |      |
| Betriebsart Kurbelwannenheizung                                                                             | Pck    | 0.000      | kW   |                                                                                                                                        |            |              |      |
| Sonstige Angaben                                                                                            |        |            |      |                                                                                                                                        |            |              |      |
| Leistungsregelung                                                                                           |        | mehrstufig |      | Für Luft/Wasser-Wärmepumpen:<br>Nennluftvolumenstrom,<br>Außenbereich                                                                  | -          | ---          | m3/h |
| Schalleistungspegel                                                                                         |        |            |      | Für Wasser- oder Sole/Wasser-<br>Wärmepumpen: Nenndurchfluss<br>der Sole oder des Wassers,<br>Wärmetauscher im Freien                  | -          | 8.48 ~ 67.82 | m3/h |
| in Innenräumen                                                                                              | Lwa    | 76         | dB   |                                                                                                                                        |            |              |      |
| im Freien                                                                                                   | Lwa    | ---        | dB   |                                                                                                                                        |            |              |      |
| Jährlicher Energieverbrauch                                                                                 | QHE    | 201891.3   | kWh  |                                                                                                                                        |            |              |      |

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



# ENERG

енергия - ενεργεια



## WAMAK

TBW 400 EVI  
HeavyDuty 2L4



55 °C

35 °C

A+++

A+++

A+++

A++

A+

A

B

C

D



76 dB



--- dB

413  
394  
386  
kW

393  
385  
366  
kW



2019

811/2013

TBW 400 EVI  
HeavyDuty 2L4

### ErP Data

55 °C

35 °C

Energy class

A+++

A+++

$\eta$  [%]

160.8

201.1

$P_{rated}$  [kW]

394

385

$Q_{HE}$  [kWh/y]

201892

157877

SCOP [-]

4.02

5.03

$T_{bivalent}$  [°C]

-10

-10

CONTROLLER



+ QAA55/75

class VII

3.5% ↓

- QAA55/75

class III

1.5% ↓

## Heizleistung Daten

Version: v2024.010-BW-WW

## Quelle - Sole [0°C] / Niedrigtemp. [35°C]

ZHI46K1P-TWD\_R410A\_8\_BWW

| Betriebsbedingungen   | Qh    | P    | COP  |
|-----------------------|-------|------|------|
| 1 B0 / W30-35         | 384.4 | 86.8 | 4.43 |
| 2 B0 / W30-35 ( MIN ) | 48.1  | 10.6 | 4.53 |
| A B0 / Wxx-34         | 384.0 | 84.9 | 4.52 |
| B B0 / Wxx-30         | 381.9 | 77.7 | 4.92 |
| C B0 / Wxx-27         | 47.5  | 8.8  | 5.37 |
| D B0 / Wxx-24         | 47.3  | 8.2  | 5.73 |
| E B0 / Wxx-35         | 384.4 | 86.8 | 4.43 |
| F B0 / Wxx-35         | 384.4 | 86.8 | 4.43 |

| SCOP DATA EN 14825:2018                   |        |
|-------------------------------------------|--------|
| Quelle - Sole [0°C] / Niedrigtemp. [35°C] |        |
| SCOPon                                    | 5.03   |
| SCOPnet                                   | 5.03   |
| SCOP                                      | 5.03   |
| η [ % ]                                   | 201.13 |
| Label                                     | A+++   |
| Qh [ kWh ]                                | 157876 |
| Pdesignh [ kW ]                           | 384.4  |
| Tbivalent [ °C ]                          | -10    |

## Quelle - Sole [0°C] / Mitteltemp.. [55°C]

| Betriebsbedingungen   | Qh    | P     | COP  |
|-----------------------|-------|-------|------|
| 1 B0 / W47-55         | 393.1 | 136.1 | 2.89 |
| 2 B0 / W47-55 ( MIN ) | 49.1  | 16.5  | 2.96 |
| A B0 / Wxx-52         | 395.5 | 124.2 | 3.29 |
| B B0 / Wxx-42         | 395.7 | 97.0  | 4.13 |
| C B0 / Wxx-36         | 48.6  | 10.5  | 4.64 |
| D B0 / Wxx-30         | 48.3  | 9.5   | 5.10 |
| E B0 / Wxx-55         | 393.1 | 136.1 | 2.89 |
| F B0 / Wxx-54         | 396.0 | 127.1 | 3.12 |

| SCOP DATA EN 14825:2018                   |        |
|-------------------------------------------|--------|
| Quelle - Sole [0°C] / Mitteltemp.. [55°C] |        |
| SCOPon                                    | 4.02   |
| SCOPnet                                   | 4.02   |
| SCOP                                      | 4.02   |
| η [ % ]                                   | 160.85 |
| Label                                     | A+++   |
| Qh [ kWh ]                                | 201891 |
| Pdesignh [ kW ]                           | 393.1  |
| Tbivalent [ °C ]                          | -10    |

## Quelle - Wasser [10°C] / Niedrigtemp. [35°C]

| Betriebsbedingungen    | Qh    | P    | COP  |
|------------------------|-------|------|------|
| 1 W10 / W30-35         | 484.8 | 86.8 | 5.58 |
| 2 W10 / W30-35 ( MIN ) | 60.6  | 10.6 | 5.72 |
| A W10 / Wxx-34         | 484.8 | 85.0 | 5.70 |
| B W10 / Wxx-30         | 485.1 | 78.1 | 6.21 |
| C W10 / Wxx-27         | 485.2 | 73.2 | 6.79 |
| D W10 / Wxx-24         | 485.1 | 68.7 | 7.24 |
| E W10 / Wxx-35         | 484.8 | 86.8 | 5.58 |
| F W10 / Wxx-35         | 484.8 | 86.8 | 5.58 |

| SCOP DATA EN 14825:2018                      |        |
|----------------------------------------------|--------|
| Quelle - Wasser [10°C] / Niedrigtemp. [35°C] |        |
| SCOPon                                       | 6.35   |
| SCOPnet                                      | 6.35   |
| SCOP                                         | 6.35   |
| η [ % ]                                      | 254.06 |
| Label                                        | A+++   |
| Qh [ kWh ]                                   | 157627 |
| Pdesignh [ kW ]                              | 484.8  |
| Tbivalent [ °C ]                             | -10.00 |

## WAMAK TBW 400 EVI HeavyDuty 2L4

### Quelle - Wasser [10°C] / Mitteltemp. [55°C]

| Betriebsbedingungen |                      | Qh    | P     | COP  |
|---------------------|----------------------|-------|-------|------|
| 1                   | W10 / W47-55         | 483.6 | 136.1 | 3.55 |
| 2                   | W10 / W47-55 ( MIN ) | 60.5  | 16.6  | 3.64 |
| A                   | W10 / Wxx-52         | 488.5 | 123.9 | 3.94 |
| B                   | W10 / Wxx-42         | 489.6 | 96.7  | 5.06 |
| C                   | W10 / Wxx-36         | 490.3 | 85.9  | 5.85 |
| D                   | W10 / Wxx-30         | 490.8 | 78.1  | 6.44 |
| E                   | W10 / Wxx-55         | 483.6 | 136.1 | 3.55 |
| F                   | W10 / Wxx-55         | 483.6 | 136.1 | 3.55 |

| SCOP DATA EN 14825:2018                     |        |
|---------------------------------------------|--------|
| Quelle - Wasser [10°C] / Mitteltemp. [55°C] |        |
| SCOPon                                      | 4.93   |
| SCOPnet                                     | 4.93   |
| SCOP                                        | 4.93   |
| η [ % ]                                     | 197.19 |
| Label                                       | A+++   |
| Qh [ kWh ]                                  | 202591 |
| Pdesignh [ kW ]                             | 483.6  |
| Tbivalent [ °C ]                            | -10.00 |

### Niedrigtemperatur Kühlung W 12 / 7°C

| Betriebsbedingungen |                | Qc    | P    | EER  |
|---------------------|----------------|-------|------|------|
| A                   | W30-35 / W12-7 | 299.1 | 92.8 | 3.22 |
| B                   | W26-xx / W12-7 | 304.6 | 84.9 | 3.59 |
| C                   | W22-xx / W12-7 | 309.4 | 77.7 | 3.98 |
| D                   | W18-xx / W12-7 | 311.5 | 74.2 | 4.20 |

| SEER DATA EN 14825:2018 [ W 12 / 7°C ] |        |
|----------------------------------------|--------|
| SEERon                                 | 3.86   |
| SEER                                   | 3.86   |
| Qc [ kWh ]                             | 174600 |
| η [ % ]                                | 154.51 |

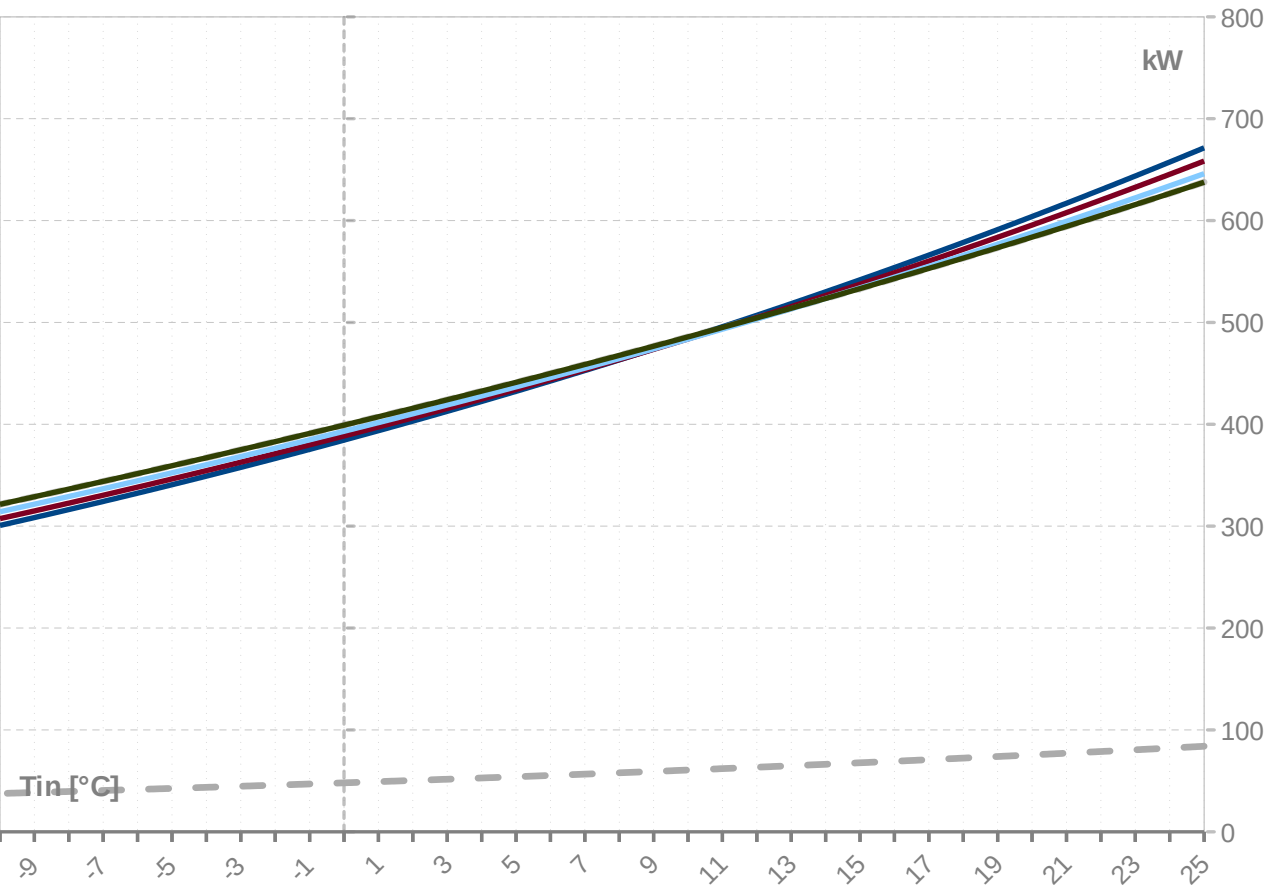
### Flächenkühlung W 23 / 18°C

| Betriebsbedingungen |                 | Qc    | P     | EER  |
|---------------------|-----------------|-------|-------|------|
| A                   | W50-xx / W23-18 | 347.5 | 145.9 | 2.38 |
| B                   | W40-xx / W23-18 | 375.5 | 116.0 | 3.24 |
| C                   | W30-35 / W23-18 | 398.0 | 92.8  | 4.29 |
| D                   | W26-xx / W23-18 | 405.5 | 84.9  | 4.77 |

| SEER DATA EN 14825:2018 [ W 23 / 18°C ] |        |
|-----------------------------------------|--------|
| SEERon                                  | 5.15   |
| SEER                                    | 5.15   |
| Qc [ kWh ]                              | 174600 |
| η [ % ]                                 | 205.81 |

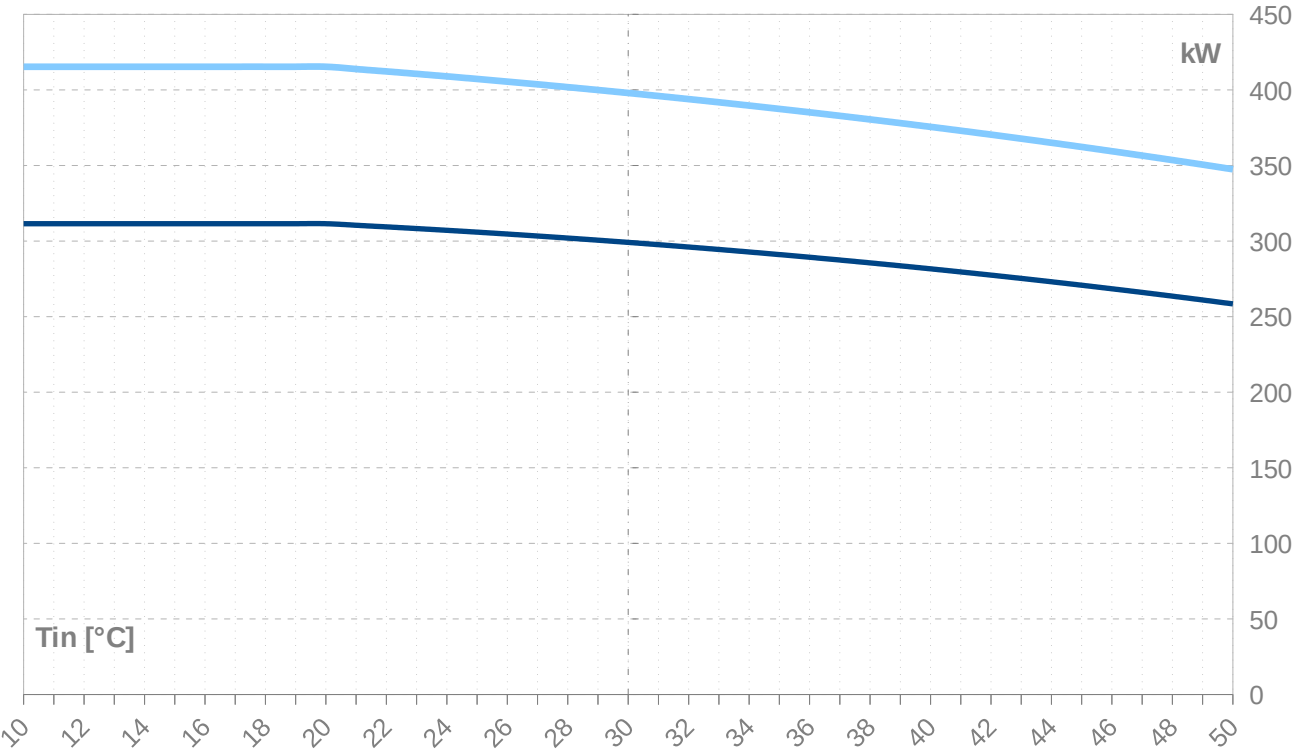
Leistungslinien - Heizen

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



Leistungslinien - Kühlen

Qc-nom-12-7    Qc-nom-23-18



| Tws<br>-VL |  | 35           |           |           |             |            |            |             |           |           |           |          |
|------------|--|--------------|-----------|-----------|-------------|------------|------------|-------------|-----------|-----------|-----------|----------|
| [°C]       |  | Qh<br>nom    | Qh<br>min | Qh<br>max | Pin<br>nom  | Pin<br>min | Pin<br>max | COP<br>nom  | Qc<br>nom | Qc<br>min | Qc<br>max | I<br>nom |
| [°C]       |  | [kW]         | [kW]      | [kW]      | [kW]        | [kW]       | [kW]       | kW / kW     | [kW]      | [kW]      | [kW]      | [A]      |
| 25         |  | <b>671.4</b> | 83.9      | 671.4     | <b>88.5</b> | 10.8       | 88.5       | <b>7.59</b> | 588.7     | 73.6      | 588.7     | 187.2    |
| 24         |  | <b>657.4</b> | 82.2      | 657.4     | <b>88.2</b> | 10.8       | 88.2       | <b>7.45</b> | 575.0     | 71.9      | 575.0     | 186.9    |
| 23         |  | <b>643.7</b> | 80.5      | 643.7     | <b>88.0</b> | 10.7       | 88.0       | <b>7.31</b> | 561.5     | 70.2      | 561.5     | 186.6    |
| 22         |  | <b>630.3</b> | 78.8      | 630.3     | <b>87.8</b> | 10.7       | 87.8       | <b>7.18</b> | 548.2     | 68.5      | 548.2     | 186.4    |
| 21         |  | <b>617.0</b> | 77.1      | 617.0     | <b>87.7</b> | 10.7       | 87.7       | <b>7.04</b> | 535.1     | 66.9      | 535.1     | 186.2    |
| 20         |  | <b>604.0</b> | 75.5      | 604.0     | <b>87.5</b> | 10.7       | 87.5       | <b>6.90</b> | 522.2     | 65.3      | 522.2     | 186.0    |
| 19         |  | <b>591.1</b> | 73.9      | 591.1     | <b>87.4</b> | 10.7       | 87.4       | <b>6.76</b> | 509.5     | 63.7      | 509.5     | 185.9    |
| 18         |  | <b>578.5</b> | 72.3      | 578.5     | <b>87.3</b> | 10.6       | 87.3       | <b>6.63</b> | 497.0     | 62.1      | 497.0     | 185.9    |
| 17         |  | <b>566.1</b> | 70.8      | 566.1     | <b>87.2</b> | 10.6       | 87.2       | <b>6.49</b> | 484.7     | 60.6      | 484.7     | 185.9    |
| 16         |  | <b>553.9</b> | 69.2      | 553.9     | <b>87.1</b> | 10.6       | 87.1       | <b>6.36</b> | 472.5     | 59.1      | 472.5     | 185.9    |
| 15         |  | <b>541.9</b> | 67.7      | 541.9     | <b>87.0</b> | 10.6       | 87.0       | <b>6.23</b> | 460.6     | 57.6      | 460.6     | 185.9    |
| 14         |  | <b>530.0</b> | 66.3      | 530.0     | <b>87.0</b> | 10.6       | 87.0       | <b>6.10</b> | 448.8     | 56.1      | 448.8     | 186.0    |
| 13         |  | <b>518.4</b> | 64.8      | 518.4     | <b>86.9</b> | 10.6       | 86.9       | <b>5.96</b> | 437.3     | 54.7      | 437.3     | 186.1    |
| 12         |  | <b>507.0</b> | 63.4      | 507.0     | <b>86.9</b> | 10.6       | 86.9       | <b>5.84</b> | 425.9     | 53.2      | 425.9     | 186.3    |
| 11         |  | <b>495.8</b> | 62.0      | 495.8     | <b>86.9</b> | 10.6       | 86.9       | <b>5.71</b> | 414.7     | 51.8      | 414.7     | 186.4    |
| 10         |  | <b>484.8</b> | 60.6      | 484.8     | <b>86.8</b> | 10.6       | 86.8       | <b>5.58</b> | 403.7     | 50.5      | 403.7     | 186.6    |
| 9          |  | <b>473.9</b> | 59.2      | 473.9     | <b>86.8</b> | 10.6       | 86.8       | <b>5.46</b> | 392.8     | 49.1      | 392.8     | 186.8    |
| 8          |  | <b>463.3</b> | 57.9      | 463.3     | <b>86.8</b> | 10.6       | 86.8       | <b>5.34</b> | 382.2     | 47.8      | 382.2     | 187.0    |
| 7          |  | <b>452.8</b> | 56.6      | 452.8     | <b>86.8</b> | 10.6       | 86.8       | <b>5.22</b> | 371.7     | 46.5      | 371.7     | 187.2    |
| 6          |  | <b>442.5</b> | 55.3      | 442.5     | <b>86.8</b> | 10.6       | 86.8       | <b>5.10</b> | 361.4     | 45.2      | 361.4     | 187.4    |
| 5          |  | <b>432.4</b> | 54.0      | 432.4     | <b>86.8</b> | 10.6       | 86.8       | <b>4.98</b> | 351.3     | 43.9      | 351.3     | 187.7    |
| 4          |  | <b>422.4</b> | 52.8      | 422.4     | <b>86.8</b> | 10.6       | 86.8       | <b>4.87</b> | 341.4     | 42.7      | 341.4     | 187.9    |
| 3          |  | <b>412.7</b> | 51.6      | 412.7     | <b>86.8</b> | 10.6       | 86.8       | <b>4.75</b> | 331.6     | 41.4      | 331.6     | 188.1    |
| 2          |  | <b>403.1</b> | 50.4      | 403.1     | <b>86.8</b> | 10.6       | 86.8       | <b>4.64</b> | 322.0     | 40.3      | 322.0     | 188.3    |
| 1          |  | <b>393.7</b> | 49.2      | 393.7     | <b>86.8</b> | 10.6       | 86.8       | <b>4.53</b> | 312.6     | 39.1      | 312.6     | 188.6    |
| 0          |  | <b>384.4</b> | 48.1      | 384.4     | <b>86.8</b> | 10.6       | 86.8       | <b>4.43</b> | 303.3     | 37.9      | 303.3     | 188.8    |
| -1         |  | <b>375.4</b> | 46.9      | 375.4     | <b>86.8</b> | 10.6       | 86.8       | <b>4.32</b> | 294.3     | 36.8      | 294.3     | 189.0    |
| -2         |  | <b>366.4</b> | 45.8      | 366.4     | <b>86.8</b> | 10.6       | 86.8       | <b>4.22</b> | 285.3     | 35.7      | 285.3     | 189.2    |
| -3         |  | <b>357.7</b> | 44.7      | 357.7     | <b>86.8</b> | 10.6       | 86.8       | <b>4.12</b> | 276.6     | 34.6      | 276.6     | 189.4    |
| -4         |  | <b>349.1</b> | 43.6      | 349.1     | <b>86.8</b> | 10.6       | 86.8       | <b>4.02</b> | 268.0     | 33.5      | 268.0     | 189.5    |
| -5         |  | <b>340.6</b> | 42.6      | 340.6     | <b>86.8</b> | 10.6       | 86.8       | <b>3.93</b> | 259.6     | 32.5      | 259.6     | 189.7    |
| -6         |  | <b>332.4</b> | 41.5      | 332.4     | <b>86.7</b> | 10.6       | 86.7       | <b>3.83</b> | 251.4     | 31.4      | 251.4     | 189.8    |
| -7         |  | <b>324.2</b> | 40.5      | 324.2     | <b>86.7</b> | 10.6       | 86.7       | <b>3.74</b> | 243.3     | 30.4      | 243.3     | 189.9    |
| -8         |  | <b>316.2</b> | 39.5      | 316.2     | <b>86.6</b> | 10.6       | 86.6       | <b>3.65</b> | 235.3     | 29.4      | 235.3     | 190.0    |
| -9         |  | <b>308.4</b> | 38.6      | 308.4     | <b>86.6</b> | 10.6       | 86.6       | <b>3.56</b> | 227.6     | 28.4      | 227.6     | 190.0    |
| -10        |  | <b>300.7</b> | 37.6      | 300.7     | <b>86.5</b> | 10.6       | 86.5       | <b>3.48</b> | 220.0     | 27.5      | 220.0     | 190.0    |
| -11        |  | <b>293.2</b> | 36.6      | 293.2     | <b>86.4</b> | 10.5       | 86.4       | <b>3.39</b> | 212.5     | 26.6      | 212.5     | 189.9    |
| -12        |  | <b>285.8</b> | 35.7      | 285.8     | <b>86.2</b> | 10.5       | 86.2       | <b>3.31</b> | 205.2     | 25.7      | 205.2     | 189.9    |
| -13        |  | <b>278.5</b> | 34.8      | 278.5     | <b>86.1</b> | 10.5       | 86.1       | <b>3.23</b> | 198.1     | 24.8      | 198.1     | 189.7    |
| -14        |  | <b>271.4</b> | 33.9      | 271.4     | <b>86.0</b> | 10.5       | 86.0       | <b>3.16</b> | 191.1     | 23.9      | 191.1     | 189.6    |
| -15        |  | <b>264.4</b> | 33.0      | 264.4     | <b>85.8</b> | 10.5       | 85.8       | <b>3.08</b> | 184.3     | 23.0      | 184.3     | 189.3    |

-- Achtung: Betriebsgrenzen beachten - nicht in Tabelle festgehalten

ZHI46K1P-TWD\_R410A\_8\_BWW

| <b>Tws<br/>-VL</b> | <b>[°C]</b>       | <b>45</b>         |                   |                    |                    |                    |                    |                   |                   |                   |                  |
|--------------------|-------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|-------------------|-------------------|-------------------|------------------|
| <b>Twq<br/>-RL</b> | <b>Qh<br/>nom</b> | <b>Qh<br/>min</b> | <b>Qh<br/>max</b> | <b>Pin<br/>nom</b> | <b>Pin<br/>min</b> | <b>Pin<br/>max</b> | <b>COP<br/>nom</b> | <b>Qc<br/>nom</b> | <b>Qc<br/>min</b> | <b>Qc<br/>max</b> | <b>I<br/>nom</b> |
| [°C]               | [kW]              | [kW]              | [kW]              | [kW]               | [kW]               | [kW]               | kW / kW            | [kW]              | [kW]              | [kW]              | [A]              |
| 25                 | <b>658.4</b>      | 82.3              | 658.4             | <b>106.6</b>       | 13.0               | 106.6              | <b>6.18</b>        | 558.8             | 69.9              | 558.8             | 211.5            |
| 24                 | <b>645.4</b>      | 80.7              | 645.4             | <b>106.5</b>       | 13.0               | 106.5              | <b>6.06</b>        | 545.9             | 68.2              | 545.9             | 211.3            |
| 23                 | <b>632.7</b>      | 79.1              | 632.7             | <b>106.5</b>       | 13.0               | 106.5              | <b>5.94</b>        | 533.2             | 66.7              | 533.2             | 211.1            |
| 22                 | <b>620.1</b>      | 77.5              | 620.1             | <b>106.5</b>       | 13.0               | 106.5              | <b>5.82</b>        | 520.7             | 65.1              | 520.7             | 211.0            |
| 21                 | <b>607.8</b>      | 76.0              | 607.8             | <b>106.5</b>       | 13.0               | 106.5              | <b>5.71</b>        | 508.3             | 63.5              | 508.3             | 210.9            |
| 20                 | <b>595.6</b>      | 74.4              | 595.6             | <b>106.5</b>       | 13.0               | 106.5              | <b>5.59</b>        | 496.2             | 62.0              | 496.2             | 210.8            |
| 19                 | <b>583.6</b>      | 73.0              | 583.6             | <b>106.5</b>       | 13.0               | 106.5              | <b>5.48</b>        | 484.2             | 60.5              | 484.2             | 210.8            |
| 18                 | <b>571.8</b>      | 71.5              | 571.8             | <b>106.5</b>       | 13.0               | 106.5              | <b>5.37</b>        | 472.3             | 59.0              | 472.3             | 210.7            |
| 17                 | <b>560.2</b>      | 70.0              | 560.2             | <b>106.5</b>       | 13.0               | 106.5              | <b>5.26</b>        | 460.7             | 57.6              | 460.7             | 210.7            |
| 16                 | <b>548.8</b>      | 68.6              | 548.8             | <b>106.6</b>       | 13.0               | 106.6              | <b>5.15</b>        | 449.2             | 56.2              | 449.2             | 210.8            |
| 15                 | <b>537.5</b>      | 67.2              | 537.5             | <b>106.6</b>       | 13.0               | 106.6              | <b>5.04</b>        | 437.9             | 54.7              | 437.9             | 210.8            |
| 14                 | <b>526.4</b>      | 65.8              | 526.4             | <b>106.7</b>       | 13.0               | 106.7              | <b>4.94</b>        | 426.8             | 53.4              | 426.8             | 210.9            |
| 13                 | <b>515.5</b>      | 64.4              | 515.5             | <b>106.7</b>       | 13.0               | 106.7              | <b>4.83</b>        | 415.9             | 52.0              | 415.9             | 210.9            |
| 12                 | <b>504.8</b>      | 63.1              | 504.8             | <b>106.8</b>       | 13.0               | 106.8              | <b>4.73</b>        | 405.1             | 50.6              | 405.1             | 211.0            |
| 11                 | <b>494.2</b>      | 61.8              | 494.2             | <b>106.8</b>       | 13.0               | 106.8              | <b>4.63</b>        | 394.5             | 49.3              | 394.5             | 211.1            |
| 10                 | <b>483.8</b>      | 60.5              | 483.8             | <b>106.9</b>       | 13.0               | 106.9              | <b>4.53</b>        | 384.0             | 48.0              | 384.0             | 211.2            |
| 9                  | <b>473.6</b>      | 59.2              | 473.6             | <b>106.9</b>       | 13.0               | 106.9              | <b>4.43</b>        | 373.7             | 46.7              | 373.7             | 211.3            |
| 8                  | <b>463.5</b>      | 57.9              | 463.5             | <b>107.0</b>       | 13.1               | 107.0              | <b>4.33</b>        | 363.6             | 45.4              | 363.6             | 211.4            |
| 7                  | <b>453.6</b>      | 56.7              | 453.6             | <b>107.0</b>       | 13.1               | 107.0              | <b>4.24</b>        | 353.6             | 44.2              | 353.6             | 211.5            |
| 6                  | <b>443.8</b>      | 55.5              | 443.8             | <b>107.1</b>       | 13.1               | 107.1              | <b>4.14</b>        | 343.8             | 43.0              | 343.8             | 211.6            |
| 5                  | <b>434.2</b>      | 54.3              | 434.2             | <b>107.1</b>       | 13.1               | 107.1              | <b>4.05</b>        | 334.2             | 41.8              | 334.2             | 211.7            |
| 4                  | <b>424.8</b>      | 53.1              | 424.8             | <b>107.2</b>       | 13.1               | 107.2              | <b>3.96</b>        | 324.7             | 40.6              | 324.7             | 211.7            |
| 3                  | <b>415.5</b>      | 51.9              | 415.5             | <b>107.2</b>       | 13.1               | 107.2              | <b>3.88</b>        | 315.4             | 39.4              | 315.4             | 211.8            |
| 2                  | <b>406.4</b>      | 50.8              | 406.4             | <b>107.2</b>       | 13.1               | 107.2              | <b>3.79</b>        | 306.2             | 38.3              | 306.2             | 211.8            |
| 1                  | <b>397.4</b>      | 49.7              | 397.4             | <b>107.2</b>       | 13.1               | 107.2              | <b>3.71</b>        | 297.2             | 37.2              | 297.2             | 211.9            |
| 0                  | <b>388.5</b>      | 48.6              | 388.5             | <b>107.2</b>       | 13.1               | 107.2              | <b>3.62</b>        | 288.4             | 36.0              | 288.4             | 211.9            |
| -1                 | <b>379.8</b>      | 47.5              | 379.8             | <b>107.2</b>       | 13.1               | 107.2              | <b>3.54</b>        | 279.7             | 35.0              | 279.7             | 211.8            |
| -2                 | <b>371.2</b>      | 46.4              | 371.2             | <b>107.2</b>       | 13.1               | 107.2              | <b>3.46</b>        | 271.1             | 33.9              | 271.1             | 211.8            |
| -3                 | <b>362.8</b>      | 45.3              | 362.8             | <b>107.1</b>       | 13.1               | 107.1              | <b>3.39</b>        | 262.7             | 32.8              | 262.7             | 211.7            |
| -4                 | <b>354.5</b>      | 44.3              | 354.5             | <b>107.1</b>       | 13.1               | 107.1              | <b>3.31</b>        | 254.5             | 31.8              | 254.5             | 211.6            |
| -5                 | <b>346.3</b>      | 43.3              | 346.3             | <b>107.0</b>       | 13.1               | 107.0              | <b>3.24</b>        | 246.4             | 30.8              | 246.4             | 211.4            |
| -6                 | <b>338.3</b>      | 42.3              | 338.3             | <b>106.9</b>       | 13.0               | 106.9              | <b>3.16</b>        | 238.4             | 29.8              | 238.4             | 211.2            |
| -7                 | <b>330.4</b>      | 41.3              | 330.4             | <b>106.8</b>       | 13.0               | 106.8              | <b>3.09</b>        | 230.6             | 28.8              | 230.6             | 211.0            |
| -8                 | <b>322.6</b>      | 40.3              | 322.6             | <b>106.7</b>       | 13.0               | 106.7              | <b>3.02</b>        | 222.9             | 27.9              | 222.9             | 210.8            |
| -9                 | <b>314.9</b>      | 39.4              | 314.9             | <b>106.6</b>       | 13.0               | 106.6              | <b>2.96</b>        | 215.4             | 26.9              | 215.4             | 210.4            |
| -10                | <b>307.4</b>      | 38.4              | 307.4             | <b>106.4</b>       | 13.0               | 106.4              | <b>2.89</b>        | 208.0             | 26.0              | 208.0             | 210.1            |
| -11                | <b>299.9</b>      | 37.5              | 299.9             | <b>106.2</b>       | 13.0               | 106.2              | <b>2.82</b>        | 200.8             | 25.1              | 200.8             | 209.7            |
| -12                | <b>292.6</b>      | 36.6              | 292.6             | <b>106.0</b>       | 12.9               | 106.0              | <b>2.76</b>        | 193.7             | 24.2              | 193.7             | 209.2            |
| -13                | <b>285.5</b>      | 35.7              | 285.5             | <b>105.7</b>       | 12.9               | 105.7              | <b>2.70</b>        | 186.7             | 23.3              | 186.7             | 208.7            |
| -14                | <b>278.4</b>      | 34.8              | 278.4             | <b>105.5</b>       | 12.9               | 105.5              | <b>2.64</b>        | 179.9             | 22.5              | 179.9             | 208.1            |
| -15                | <b>271.4</b>      | 33.9              | 271.4             | <b>105.2</b>       | 12.8               | 105.2              | <b>2.58</b>        | 173.2             | 21.6              | 173.2             | 207.4            |

-- Achtung: Betriebsgrenzen beachten - nicht in Tabelle festgehalten

| Tws<br>-VL |  | 55           |           |           |              |            |            |             |           |           |           |          |
|------------|--|--------------|-----------|-----------|--------------|------------|------------|-------------|-----------|-----------|-----------|----------|
| [°C]       |  | Qh<br>nom    | Qh<br>min | Qh<br>max | Pin<br>nom   | Pin<br>min | Pin<br>max | COP<br>nom  | Qc<br>nom | Qc<br>min | Qc<br>max | I<br>nom |
| [°C]       |  | [kW]         | [kW]      | [kW]      | [kW]         | [kW]       | [kW]       | kW / kW     | [kW]      | [kW]      | [kW]      | [A]      |
| 25         |  | <b>646.0</b> | 80.8      | 646.0     | <b>134.7</b> | 16.4       | 134.7      | <b>4.79</b> | 520.2     | 65.0      | 520.2     | 245.2    |
| 24         |  | <b>634.1</b> | 79.3      | 634.1     | <b>134.8</b> | 16.5       | 134.8      | <b>4.70</b> | 508.1     | 63.5      | 508.1     | 245.1    |
| 23         |  | <b>622.3</b> | 77.8      | 622.3     | <b>134.9</b> | 16.5       | 134.9      | <b>4.61</b> | 496.3     | 62.0      | 496.3     | 245.1    |
| 22         |  | <b>610.7</b> | 76.3      | 610.7     | <b>135.0</b> | 16.5       | 135.0      | <b>4.52</b> | 484.6     | 60.6      | 484.6     | 245.1    |
| 21         |  | <b>599.2</b> | 74.9      | 599.2     | <b>135.1</b> | 16.5       | 135.1      | <b>4.44</b> | 473.1     | 59.1      | 473.1     | 245.2    |
| 20         |  | <b>588.0</b> | 73.5      | 588.0     | <b>135.2</b> | 16.5       | 135.2      | <b>4.35</b> | 461.7     | 57.7      | 461.7     | 245.2    |
| 19         |  | <b>576.8</b> | 72.1      | 576.8     | <b>135.3</b> | 16.5       | 135.3      | <b>4.26</b> | 450.5     | 56.3      | 450.5     | 245.3    |
| 18         |  | <b>565.9</b> | 70.7      | 565.9     | <b>135.4</b> | 16.5       | 135.4      | <b>4.18</b> | 439.4     | 54.9      | 439.4     | 245.4    |
| 17         |  | <b>555.1</b> | 69.4      | 555.1     | <b>135.5</b> | 16.5       | 135.5      | <b>4.10</b> | 428.5     | 53.6      | 428.5     | 245.5    |
| 16         |  | <b>544.4</b> | 68.1      | 544.4     | <b>135.6</b> | 16.5       | 135.6      | <b>4.01</b> | 417.8     | 52.2      | 417.8     | 245.5    |
| 15         |  | <b>533.9</b> | 66.7      | 533.9     | <b>135.7</b> | 16.6       | 135.7      | <b>3.93</b> | 407.2     | 50.9      | 407.2     | 245.6    |
| 14         |  | <b>523.6</b> | 65.4      | 523.6     | <b>135.8</b> | 16.6       | 135.8      | <b>3.86</b> | 396.8     | 49.6      | 396.8     | 245.7    |
| 13         |  | <b>513.4</b> | 64.2      | 513.4     | <b>135.9</b> | 16.6       | 135.9      | <b>3.78</b> | 386.5     | 48.3      | 386.5     | 245.8    |
| 12         |  | <b>503.3</b> | 62.9      | 503.3     | <b>136.0</b> | 16.6       | 136.0      | <b>3.70</b> | 376.4     | 47.0      | 376.4     | 245.9    |
| 11         |  | <b>493.4</b> | 61.7      | 493.4     | <b>136.0</b> | 16.6       | 136.0      | <b>3.63</b> | 366.4     | 45.8      | 366.4     | 246.0    |
| 10         |  | <b>483.6</b> | 60.5      | 483.6     | <b>136.1</b> | 16.6       | 136.1      | <b>3.55</b> | 356.5     | 44.6      | 356.5     | 246.1    |
| 9          |  | <b>474.0</b> | 59.3      | 474.0     | <b>136.2</b> | 16.6       | 136.2      | <b>3.48</b> | 346.8     | 43.4      | 346.8     | 246.1    |
| 8          |  | <b>464.5</b> | 58.1      | 464.5     | <b>136.2</b> | 16.6       | 136.2      | <b>3.41</b> | 337.3     | 42.2      | 337.3     | 246.2    |
| 7          |  | <b>455.1</b> | 56.9      | 455.1     | <b>136.3</b> | 16.6       | 136.3      | <b>3.34</b> | 327.9     | 41.0      | 327.9     | 246.2    |
| 6          |  | <b>445.9</b> | 55.7      | 445.9     | <b>136.3</b> | 16.6       | 136.3      | <b>3.27</b> | 318.6     | 39.8      | 318.6     | 246.2    |
| 5          |  | <b>436.8</b> | 54.6      | 436.8     | <b>136.3</b> | 16.6       | 136.3      | <b>3.20</b> | 309.5     | 38.7      | 309.5     | 246.2    |
| 4          |  | <b>427.8</b> | 53.5      | 427.8     | <b>136.3</b> | 16.6       | 136.3      | <b>3.14</b> | 300.5     | 37.6      | 300.5     | 246.1    |
| 3          |  | <b>419.0</b> | 52.4      | 419.0     | <b>136.3</b> | 16.6       | 136.3      | <b>3.07</b> | 291.7     | 36.5      | 291.7     | 246.0    |
| 2          |  | <b>410.2</b> | 51.3      | 410.2     | <b>136.2</b> | 16.6       | 136.2      | <b>3.01</b> | 283.0     | 35.4      | 283.0     | 245.9    |
| 1          |  | <b>401.6</b> | 50.2      | 401.6     | <b>136.2</b> | 16.6       | 136.2      | <b>2.95</b> | 274.5     | 34.3      | 274.5     | 245.8    |
| 0          |  | <b>393.1</b> | 49.1      | 393.1     | <b>136.1</b> | 16.6       | 136.1      | <b>2.89</b> | 266.0     | 33.3      | 266.0     | 245.6    |
| -1         |  | <b>384.7</b> | 48.1      | 384.7     | <b>136.0</b> | 16.6       | 136.0      | <b>2.83</b> | 257.7     | 32.2      | 257.7     | 245.4    |
| -2         |  | <b>376.5</b> | 47.1      | 376.5     | <b>135.9</b> | 16.6       | 135.9      | <b>2.77</b> | 249.6     | 31.2      | 249.6     | 245.1    |
| -3         |  | <b>368.3</b> | 46.0      | 368.3     | <b>135.7</b> | 16.6       | 135.7      | <b>2.71</b> | 241.5     | 30.2      | 241.5     | 244.8    |
| -4         |  | <b>360.3</b> | 45.0      | 360.3     | <b>135.6</b> | 16.5       | 135.6      | <b>2.66</b> | 233.6     | 29.2      | 233.6     | 244.4    |
| -5         |  | <b>352.3</b> | 44.0      | 352.3     | <b>135.4</b> | 16.5       | 135.4      | <b>2.60</b> | 225.9     | 28.2      | 225.9     | 244.0    |
| -6         |  | <b>344.5</b> | 43.1      | 344.5     | <b>135.2</b> | 16.5       | 135.2      | <b>2.55</b> | 218.2     | 27.3      | 218.2     | 243.6    |
| -7         |  | <b>336.7</b> | 42.1      | 336.7     | <b>134.9</b> | 16.5       | 134.9      | <b>2.50</b> | 210.7     | 26.3      | 210.7     | 243.1    |
| -8         |  | <b>329.1</b> | 41.1      | 329.1     | <b>134.7</b> | 16.4       | 134.7      | <b>2.44</b> | 203.3     | 25.4      | 203.3     | 242.5    |
| -9         |  | <b>321.6</b> | 40.2      | 321.6     | <b>134.4</b> | 16.4       | 134.4      | <b>2.39</b> | 196.1     | 24.5      | 196.1     | 241.9    |
| -10        |  | <b>314.1</b> | 39.3      | 314.1     | <b>134.1</b> | 16.4       | 134.1      | <b>2.34</b> | 188.9     | 23.6      | 188.9     | 241.2    |
| -11        |  | <b>306.7</b> | 38.3      | 306.7     | <b>133.7</b> | 16.3       | 133.7      | <b>2.29</b> | 181.9     | 22.7      | 181.9     | 240.4    |
| -12        |  | <b>299.5</b> | 37.4      | 299.5     | <b>133.3</b> | 16.3       | 133.3      | <b>2.25</b> | 175.0     | 21.9      | 175.0     | 239.6    |
| -13        |  | <b>292.3</b> | 36.5      | 292.3     | <b>132.9</b> | 16.2       | 132.9      | <b>2.20</b> | 168.2     | 21.0      | 168.2     | 238.7    |
| -14        |  | <b>285.2</b> | 35.7      | 285.2     | <b>132.4</b> | 16.2       | 132.4      | <b>2.15</b> | 161.5     | 20.2      | 161.5     | 237.7    |
| -15        |  | <b>278.2</b> | 34.8      | 278.2     | <b>131.9</b> | 16.1       | 131.9      | <b>2.11</b> | 155.0     | 19.4      | 155.0     | 236.6    |

-- Achtung: Betriebsgrenzen beachten - nicht in Tabelle festgehalten

| <b>Tws<br/>-VL</b> | <b>[°C]</b>       | <b>65 (T-max)</b> |                   |                    |                    |                    |                    |                   |                   |                   |                  |
|--------------------|-------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|-------------------|-------------------|-------------------|------------------|
| <b>Twq<br/>-RL</b> | <b>Qh<br/>nom</b> | <b>Qh<br/>min</b> | <b>Qh<br/>max</b> | <b>Pin<br/>nom</b> | <b>Pin<br/>min</b> | <b>Pin<br/>max</b> | <b>COP<br/>nom</b> | <b>Qc<br/>nom</b> | <b>Qc<br/>min</b> | <b>Qc<br/>max</b> | <b>I<br/>nom</b> |
| [°C]               | [kW]              | [kW]              | [kW]              | [kW]               | [kW]               | [kW]               | kW / kW            | [kW]              | [kW]              | [kW]              | [A]              |
| 25                 | <b>637.6</b>      | 79.7              | 637.6             | <b>171.7</b>       | 21.0               | 171.7              | <b>3.71</b>        | 477.3             | 59.7              | 477.3             | 288.0            |
| 24                 | <b>626.6</b>      | 78.3              | 626.6             | <b>171.9</b>       | 21.0               | 171.9              | <b>3.65</b>        | 466.1             | 58.3              | 466.1             | 288.2            |
| 23                 | <b>615.7</b>      | 77.0              | 615.7             | <b>172.0</b>       | 21.0               | 172.0              | <b>3.58</b>        | 455.0             | 56.9              | 455.0             | 288.4            |
| 22                 | <b>604.9</b>      | 75.6              | 604.9             | <b>172.1</b>       | 21.0               | 172.1              | <b>3.51</b>        | 444.1             | 55.5              | 444.1             | 288.6            |
| 21                 | <b>594.2</b>      | 74.3              | 594.2             | <b>172.3</b>       | 21.0               | 172.3              | <b>3.45</b>        | 433.4             | 54.2              | 433.4             | 288.9            |
| 20                 | <b>583.7</b>      | 73.0              | 583.7             | <b>172.4</b>       | 21.0               | 172.4              | <b>3.39</b>        | 422.8             | 52.8              | 422.8             | 289.1            |
| 19                 | <b>573.4</b>      | 71.7              | 573.4             | <b>172.5</b>       | 21.0               | 172.5              | <b>3.32</b>        | 412.3             | 51.5              | 412.3             | 289.3            |
| 18                 | <b>563.2</b>      | 70.4              | 563.2             | <b>172.6</b>       | 21.1               | 172.6              | <b>3.26</b>        | 402.0             | 50.2              | 402.0             | 289.6            |
| 17                 | <b>553.1</b>      | 69.1              | 553.1             | <b>172.7</b>       | 21.1               | 172.7              | <b>3.20</b>        | 391.8             | 49.0              | 391.8             | 289.8            |
| 16                 | <b>543.1</b>      | 67.9              | 543.1             | <b>172.8</b>       | 21.1               | 172.8              | <b>3.14</b>        | 381.7             | 47.7              | 381.7             | 290.0            |
| 15                 | <b>533.2</b>      | 66.7              | 533.2             | <b>172.9</b>       | 21.1               | 172.9              | <b>3.08</b>        | 371.8             | 46.5              | 371.8             | 290.2            |
| 14                 | <b>523.5</b>      | 65.4              | 523.5             | <b>172.9</b>       | 21.1               | 172.9              | <b>3.03</b>        | 362.0             | 45.3              | 362.0             | 290.4            |
| 13                 | <b>513.9</b>      | 64.2              | 513.9             | <b>173.0</b>       | 21.1               | 173.0              | <b>2.97</b>        | 352.4             | 44.0              | 352.4             | 290.6            |
| 12                 | <b>504.4</b>      | 63.1              | 504.4             | <b>173.0</b>       | 21.1               | 173.0              | <b>2.92</b>        | 342.8             | 42.9              | 342.8             | 290.7            |
| 11                 | <b>495.1</b>      | 61.9              | 495.1             | <b>173.1</b>       | 21.1               | 173.1              | <b>2.86</b>        | 333.4             | 41.7              | 333.4             | 290.8            |
| 10                 | <b>485.8</b>      | 60.7              | 485.8             | <b>173.1</b>       | 21.1               | 173.1              | <b>2.81</b>        | 324.2             | 40.5              | 324.2             | 291.0            |
| 9                  | <b>476.7</b>      | 59.6              | 476.7             | <b>173.1</b>       | 21.1               | 173.1              | <b>2.75</b>        | 315.1             | 39.4              | 315.1             | 291.0            |
| 8                  | <b>467.7</b>      | 58.5              | 467.7             | <b>173.0</b>       | 21.1               | 173.0              | <b>2.70</b>        | 306.1             | 38.3              | 306.1             | 291.1            |
| 7                  | <b>458.7</b>      | 57.3              | 458.7             | <b>173.0</b>       | 21.1               | 173.0              | <b>2.65</b>        | 297.2             | 37.1              | 297.2             | 291.1            |
| 6                  | <b>449.9</b>      | 56.2              | 449.9             | <b>172.9</b>       | 21.1               | 172.9              | <b>2.60</b>        | 288.4             | 36.1              | 288.4             | 291.1            |
| 5                  | <b>441.2</b>      | 55.2              | 441.2             | <b>172.8</b>       | 21.1               | 172.8              | <b>2.55</b>        | 279.8             | 35.0              | 279.8             | 291.0            |
| 4                  | <b>432.6</b>      | 54.1              | 432.6             | <b>172.7</b>       | 21.1               | 172.7              | <b>2.50</b>        | 271.3             | 33.9              | 271.3             | 290.9            |
| 3                  | <b>424.1</b>      | 53.0              | 424.1             | <b>172.6</b>       | 21.1               | 172.6              | <b>2.46</b>        | 262.9             | 32.9              | 262.9             | 290.8            |
| 2                  | <b>415.7</b>      | 52.0              | 415.7             | <b>172.4</b>       | 21.0               | 172.4              | <b>2.41</b>        | 254.7             | 31.8              | 254.7             | 290.6            |
| 1                  | <b>407.4</b>      | 50.9              | 407.4             | <b>172.2</b>       | 21.0               | 172.2              | <b>2.37</b>        | 246.5             | 30.8              | 246.5             | 290.3            |
| 0                  | <b>399.1</b>      | 49.9              | 399.1             | <b>172.0</b>       | 21.0               | 172.0              | <b>2.32</b>        | 238.5             | 29.8              | 238.5             | 290.0            |
| -1                 | <b>391.0</b>      | 48.9              | 391.0             | <b>171.8</b>       | 21.0               | 171.8              | <b>2.28</b>        | 230.6             | 28.8              | 230.6             | 289.7            |
| -2                 | <b>382.9</b>      | 47.9              | 382.9             | <b>171.5</b>       | 20.9               | 171.5              | <b>2.23</b>        | 222.8             | 27.8              | 222.8             | 289.3            |
| -3                 | <b>375.0</b>      | 46.9              | 375.0             | <b>171.2</b>       | 20.9               | 171.2              | <b>2.19</b>        | 215.1             | 26.9              | 215.1             | 288.8            |
| -4                 | <b>367.1</b>      | 45.9              | 367.1             | <b>170.9</b>       | 20.9               | 170.9              | <b>2.15</b>        | 207.5             | 25.9              | 207.5             | 288.3            |
| -5                 | <b>359.3</b>      | 44.9              | 359.3             | <b>170.5</b>       | 20.8               | 170.5              | <b>2.11</b>        | 200.1             | 25.0              | 200.1             | 287.7            |
| -6                 | <b>351.6</b>      | 43.9              | 351.6             | <b>170.1</b>       | 20.8               | 170.1              | <b>2.07</b>        | 192.7             | 24.1              | 192.7             | 287.0            |
| -7                 | <b>343.9</b>      | 43.0              | 343.9             | <b>169.7</b>       | 20.7               | 169.7              | <b>2.03</b>        | 185.5             | 23.2              | 185.5             | 286.3            |
| -8                 | <b>336.3</b>      | 42.0              | 336.3             | <b>169.2</b>       | 20.6               | 169.2              | <b>1.99</b>        | 178.3             | 22.3              | 178.3             | 285.5            |
| -9                 | <b>328.8</b>      | 41.1              | 328.8             | <b>168.7</b>       | 20.6               | 168.7              | <b>1.95</b>        | 171.3             | 21.4              | 171.3             | 284.6            |
| -10                | <b>321.4</b>      | 40.2              | 321.4             | <b>168.1</b>       | 20.5               | 168.1              | <b>1.91</b>        | 164.4             | 20.5              | 164.4             | 283.6            |
| -11                | <b>314.0</b>      | 39.3              | 314.0             | <b>167.6</b>       | 20.4               | 167.6              | <b>1.87</b>        | 157.6             | 19.7              | 157.6             | 282.6            |
| -12                | <b>306.7</b>      | 38.3              | 306.7             | <b>166.9</b>       | 20.4               | 166.9              | <b>1.84</b>        | 150.9             | 18.9              | 150.9             | 281.5            |
| -13                | <b>299.5</b>      | 37.4              | 299.5             | <b>166.3</b>       | 20.3               | 166.3              | <b>1.80</b>        | 144.2             | 18.0              | 144.2             | 280.3            |
| -14                | <b>292.3</b>      | 36.5              | 292.3             | <b>165.5</b>       | 20.2               | 165.5              | <b>1.77</b>        | 137.7             | 17.2              | 137.7             | 279.0            |
| -15                | <b>285.2</b>      | 35.6              | 285.2             | <b>164.8</b>       | 20.1               | 164.8              | <b>1.73</b>        | 131.3             | 16.4              | 131.3             | 277.6            |

-- Achtung: Betriebsgrenzen beachten - nicht in Tabelle festgehalten

| Tk<br>-VL | W 12 / 7 °C       |                   |                   |                    |                    |                    |                |                   |                   |                   |                 |
|-----------|-------------------|-------------------|-------------------|--------------------|--------------------|--------------------|----------------|-------------------|-------------------|-------------------|-----------------|
| [°C]      | Qc<br>nom<br>[kW] | Qc<br>min<br>[kW] | Qc<br>max<br>[kW] | Pin<br>nom<br>[kW] | Pin<br>min<br>[kW] | Pin<br>max<br>[kW] | EER<br>kW / kW | Qh<br>nom<br>[kW] | Qh<br>min<br>[kW] | Qh<br>max<br>[kW] | I<br>nom<br>[A] |
| 40        | <b>281.6</b>      | 35.2              | 281.6             | <b>116.0</b>       | 14.2               | 116.0              | <b>2.43</b>    | 389.9             | 48.7              | 389.9             | 221.9           |
| 39        | <b>283.6</b>      | 35.5              | 283.6             | <b>113.4</b>       | 13.8               | 113.4              | <b>2.50</b>    | 389.5             | 48.7              | 389.5             | 218.9           |
| 38        | <b>285.6</b>      | 35.7              | 285.6             | <b>110.9</b>       | 13.5               | 110.9              | <b>2.58</b>    | 389.1             | 48.6              | 389.1             | 216.0           |
| 37        | <b>287.4</b>      | 35.9              | 287.4             | <b>108.4</b>       | 13.2               | 108.4              | <b>2.65</b>    | 388.7             | 48.6              | 388.7             | 213.2           |
| 36        | <b>289.3</b>      | 36.2              | 289.3             | <b>106.0</b>       | 12.9               | 106.0              | <b>2.73</b>    | 388.3             | 48.5              | 388.3             | 210.5           |
| 35        | <b>291.0</b>      | 36.4              | 291.0             | <b>103.7</b>       | 12.7               | 103.7              | <b>2.81</b>    | 387.9             | 48.5              | 387.9             | 207.8           |
| 34        | <b>292.8</b>      | 36.6              | 292.8             | <b>101.4</b>       | 12.4               | 101.4              | <b>2.89</b>    | 387.5             | 48.4              | 387.5             | 205.3           |
| 33        | <b>294.4</b>      | 36.8              | 294.4             | <b>99.2</b>        | 12.1               | 99.2               | <b>2.97</b>    | 387.1             | 48.4              | 387.1             | 202.7           |
| 32        | <b>296.0</b>      | 37.0              | 296.0             | <b>97.0</b>        | 11.8               | 97.0               | <b>3.05</b>    | 386.6             | 48.3              | 386.6             | 200.3           |
| 31        | <b>297.6</b>      | 37.2              | 297.6             | <b>94.9</b>        | 11.6               | 94.9               | <b>3.14</b>    | 386.2             | 48.3              | 386.2             | 197.9           |
| 30        | <b>299.1</b>      | 37.4              | 299.1             | <b>92.8</b>        | 11.3               | 92.8               | <b>3.22</b>    | 385.8             | 48.2              | 385.8             | 195.5           |
| 29        | <b>300.6</b>      | 37.6              | 300.6             | <b>90.8</b>        | 11.1               | 90.8               | <b>3.31</b>    | 385.3             | 48.2              | 385.3             | 193.2           |
| 28        | <b>302.0</b>      | 37.7              | 302.0             | <b>88.8</b>        | 10.8               | 88.8               | <b>3.40</b>    | 384.9             | 48.1              | 384.9             | 191.0           |
| 27        | <b>303.3</b>      | 37.9              | 303.3             | <b>86.8</b>        | 10.6               | 86.8               | <b>3.49</b>    | 384.4             | 48.1              | 384.4             | 188.8           |
| 26        | <b>304.6</b>      | 38.1              | 304.6             | <b>84.9</b>        | 10.4               | 84.9               | <b>3.59</b>    | 384.0             | 48.0              | 384.0             | 186.6           |
| 25        | <b>305.9</b>      | 38.2              | 305.9             | <b>83.1</b>        | 10.1               | 83.1               | <b>3.68</b>    | 383.5             | 47.9              | 383.5             | 184.5           |
| 24        | <b>307.1</b>      | 38.4              | 307.1             | <b>81.2</b>        | 9.9                | 81.2               | <b>3.78</b>    | 383.0             | 47.9              | 383.0             | 182.4           |
| 23        | <b>308.3</b>      | 38.5              | 308.3             | <b>79.4</b>        | 9.7                | 79.4               | <b>3.88</b>    | 382.4             | 47.8              | 382.4             | 180.3           |
| 22        | <b>309.4</b>      | 38.7              | 309.4             | <b>77.7</b>        | 9.5                | 77.7               | <b>3.98</b>    | 381.9             | 47.7              | 381.9             | 178.3           |
| 21        | <b>310.4</b>      | 38.8              | 310.4             | <b>75.9</b>        | 9.3                | 75.9               | <b>4.09</b>    | 381.3             | 47.7              | 381.3             | 176.2           |
| 20        | <b>311.5</b>      | 38.9              | 311.5             | <b>74.2</b>        | 9.1                | 74.2               | <b>4.20</b>    | 380.8             | 47.6              | 380.8             | 174.2           |

| Tc [°C]   | W 23 / 18 °C      |                   |                   |                    |                    |                    |                |                   |                   |                   |                 |
|-----------|-------------------|-------------------|-------------------|--------------------|--------------------|--------------------|----------------|-------------------|-------------------|-------------------|-----------------|
| 0<br>[°C] | Qc<br>nom<br>[kW] | Qc<br>min<br>[kW] | Qc<br>max<br>[kW] | Pin<br>nom<br>[kW] | Pin<br>min<br>[kW] | Pin<br>max<br>[kW] | EER<br>kW / kW | Qh<br>nom<br>[kW] | Qh<br>min<br>[kW] | Qh<br>max<br>[kW] | I<br>nom<br>[A] |
| 40        | <b>375.5</b>      | 46.9              | 375.5             | <b>116.0</b>       | 14.2               | 116.0              | <b>3.24</b>    | 483.6             | 60.4              | 484.0             | 221.7           |
| 39        | <b>378.0</b>      | 47.3              | 378.0             | <b>113.4</b>       | 13.8               | 113.4              | <b>3.33</b>    | 483.6             | 60.5              | 483.8             | 218.6           |
| 38        | <b>380.5</b>      | 47.6              | 380.5             | <b>110.9</b>       | 13.5               | 110.9              | <b>3.43</b>    | 483.7             | 60.5              | 483.7             | 215.6           |
| 37        | <b>382.8</b>      | 47.9              | 382.8             | <b>108.4</b>       | 13.2               | 108.4              | <b>3.53</b>    | 483.8             | 60.5              | 483.6             | 212.6           |
| 36        | <b>385.2</b>      | 48.1              | 385.2             | <b>106.0</b>       | 12.9               | 106.0              | <b>3.63</b>    | 483.9             | 60.5              | 483.6             | 209.8           |
| 35        | <b>387.4</b>      | 48.4              | 387.4             | <b>103.7</b>       | 12.7               | 103.7              | <b>3.74</b>    | 484.0             | 60.5              | 483.5             | 207.0           |
| 34        | <b>389.6</b>      | 48.7              | 389.6             | <b>101.4</b>       | 12.4               | 101.4              | <b>3.84</b>    | 484.0             | 60.5              | 483.5             | 204.2           |
| 33        | <b>391.8</b>      | 49.0              | 391.8             | <b>99.2</b>        | 12.1               | 99.2               | <b>3.95</b>    | 484.1             | 60.5              | 483.5             | 201.6           |
| 32        | <b>393.9</b>      | 49.2              | 393.9             | <b>97.0</b>        | 11.8               | 97.0               | <b>4.06</b>    | 484.3             | 60.5              | 483.5             | 199.0           |
| 31        | <b>396.0</b>      | 49.5              | 396.0             | <b>94.9</b>        | 11.6               | 94.9               | <b>4.17</b>    | 484.4             | 60.5              | 483.5             | 196.4           |
| 30        | <b>398.0</b>      | 49.7              | 398.0             | <b>92.8</b>        | 11.3               | 92.8               | <b>4.29</b>    | 484.5             | 60.6              | 483.6             | 193.9           |
| 29        | <b>399.9</b>      | 50.0              | 399.9             | <b>90.8</b>        | 11.1               | 90.8               | <b>4.41</b>    | 484.6             | 60.6              | 483.6             | 191.4           |
| 28        | <b>401.8</b>      | 50.2              | 401.8             | <b>88.8</b>        | 10.8               | 88.8               | <b>4.53</b>    | 484.7             | 60.6              | 483.7             | 189.0           |
| 27        | <b>403.7</b>      | 50.5              | 403.7             | <b>86.8</b>        | 10.6               | 86.8               | <b>4.65</b>    | 484.8             | 60.6              | 483.8             | 186.6           |
| 26        | <b>405.5</b>      | 50.7              | 405.5             | <b>84.9</b>        | 10.4               | 84.9               | <b>4.77</b>    | 484.8             | 60.6              | 483.9             | 184.2           |
| 25        | <b>407.2</b>      | 50.9              | 407.2             | <b>83.1</b>        | 10.1               | 83.1               | <b>4.90</b>    | 484.9             | 60.6              | 484.0             | 181.9           |
| 24        | <b>408.9</b>      | 51.1              | 408.9             | <b>81.2</b>        | 9.9                | 81.2               | <b>5.03</b>    | 485.0             | 60.6              | 484.0             | 179.6           |
| 23        | <b>410.6</b>      | 51.3              | 410.6             | <b>79.4</b>        | 9.7                | 79.4               | <b>5.17</b>    | 485.1             | 60.6              | 484.1             | 177.3           |
| 22        | <b>412.2</b>      | 51.5              | 412.2             | <b>77.7</b>        | 9.5                | 77.7               | <b>5.31</b>    | 485.1             | 60.6              | 484.3             | 175.0           |
| 21        | <b>413.8</b>      | 51.7              | 413.8             | <b>75.9</b>        | 9.3                | 75.9               | <b>5.45</b>    | 485.2             | 60.6              | 484.4             | 172.8           |
| 20        | <b>415.3</b>      | 51.9              | 415.3             | <b>74.2</b>        | 9.1                | 74.2               | <b>5.60</b>    | 485.2             | 60.6              | 484.5             | 170.5           |

-- 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

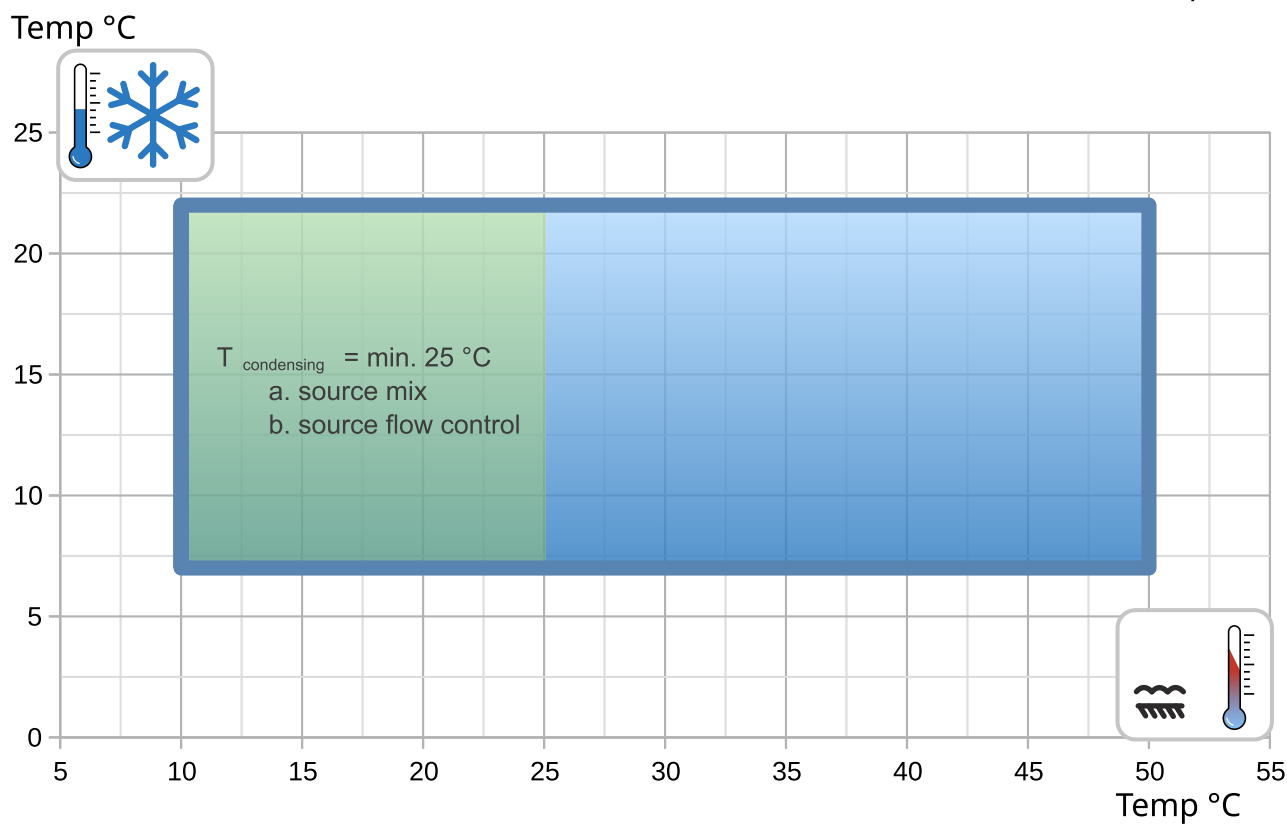
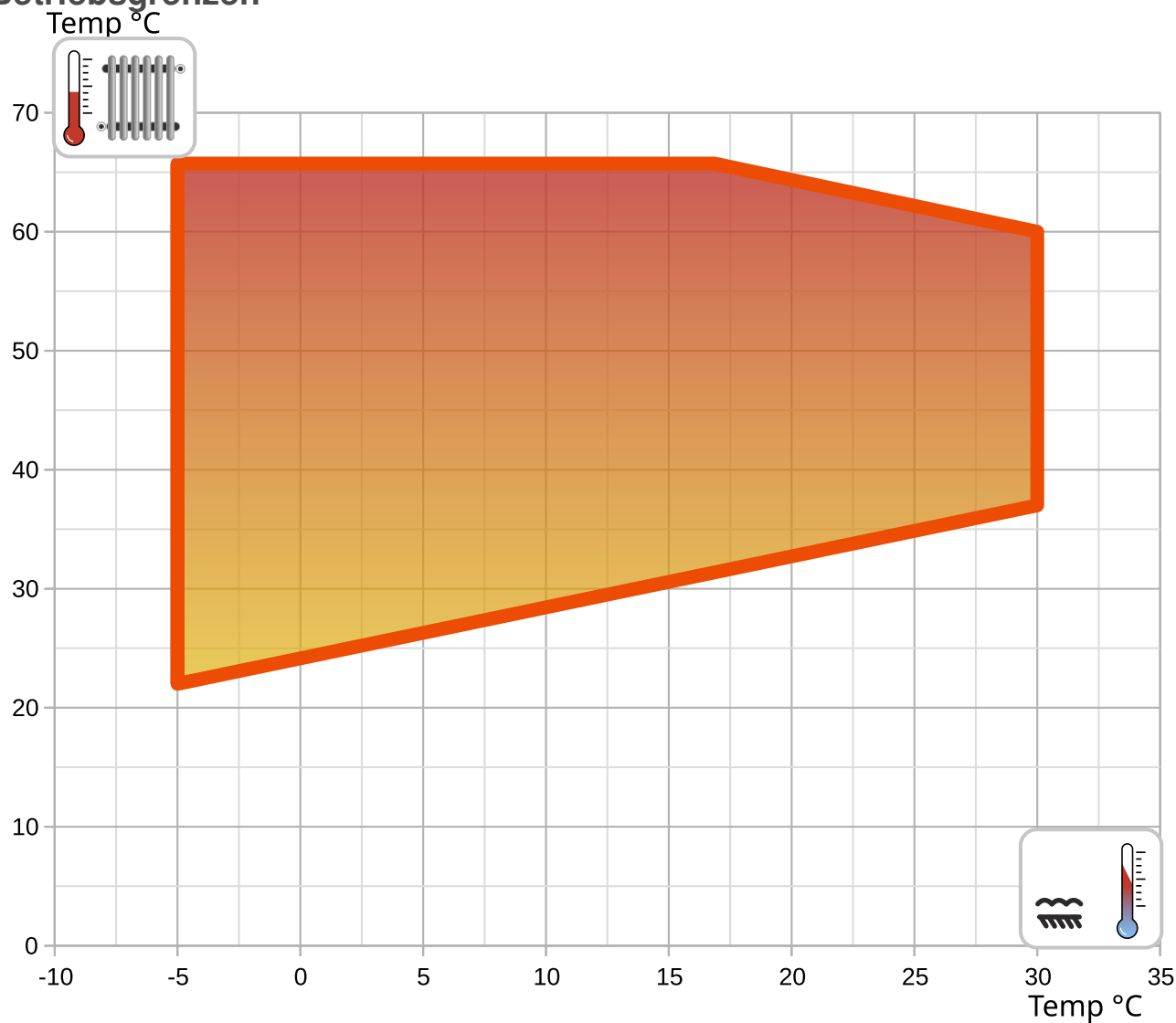
Qc min: Kälteleistung/Energieentnahme bei minimaler Heizleistung

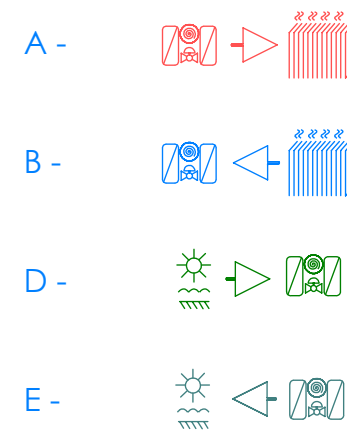
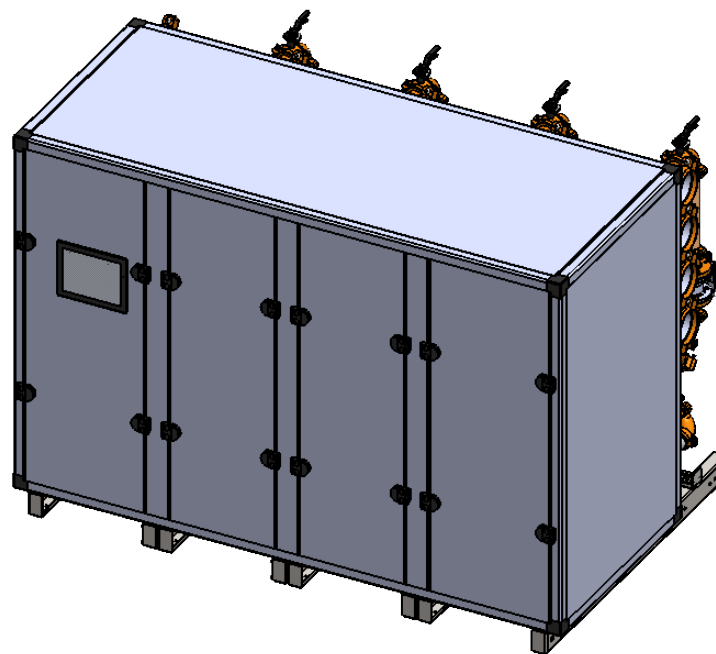
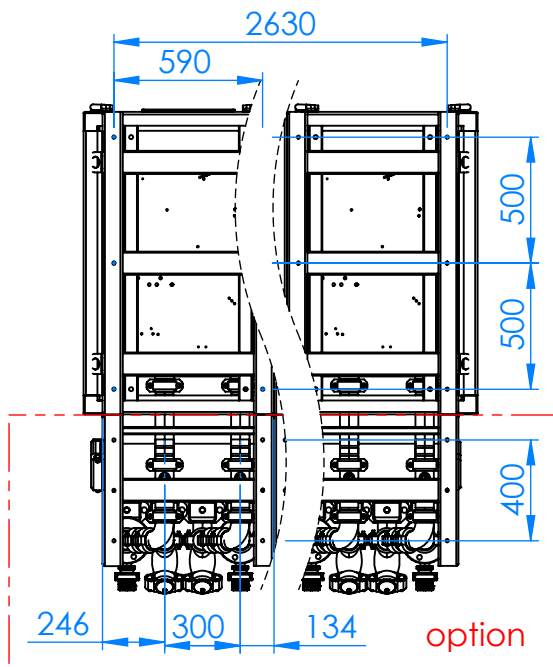
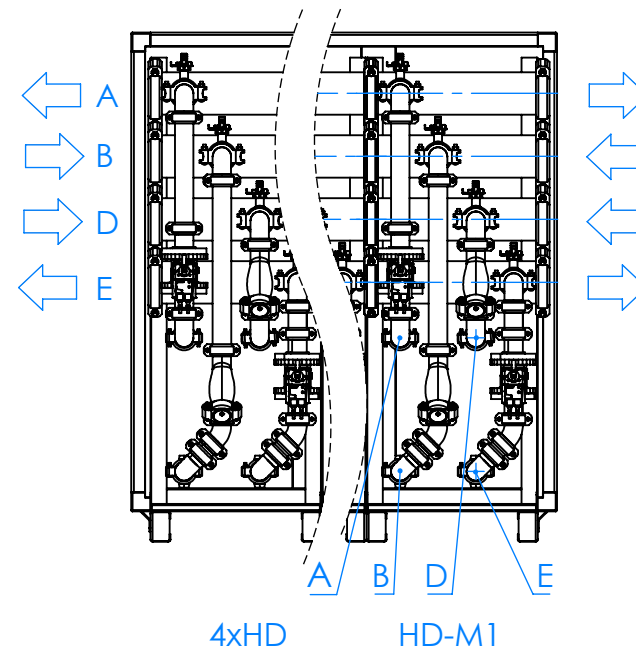
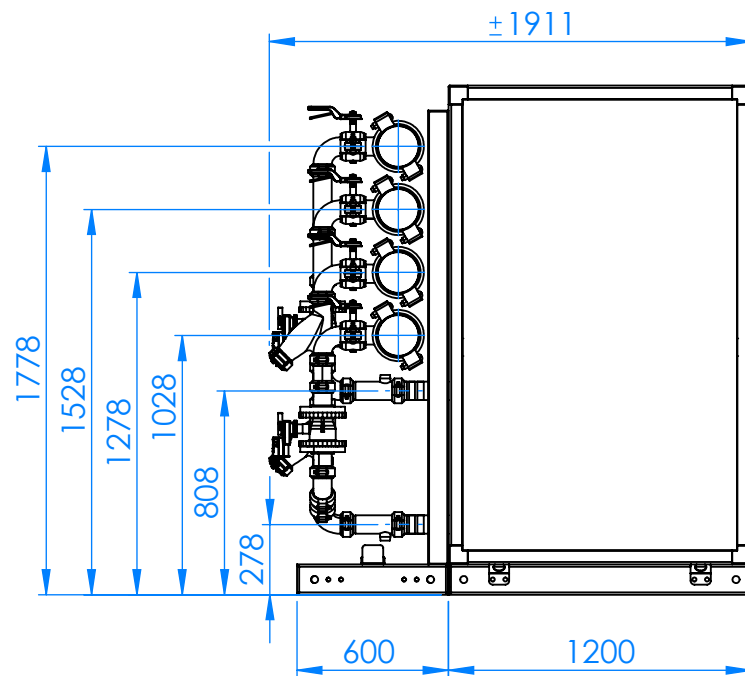
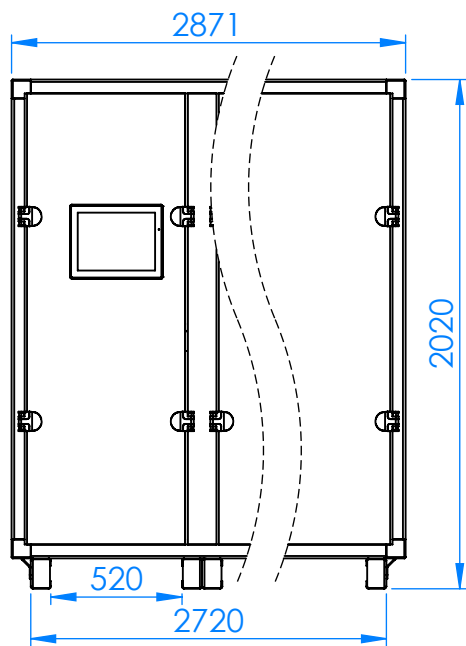
Qc max: Kälteleistung/Energieentnahme bei maximaler Heizleistung

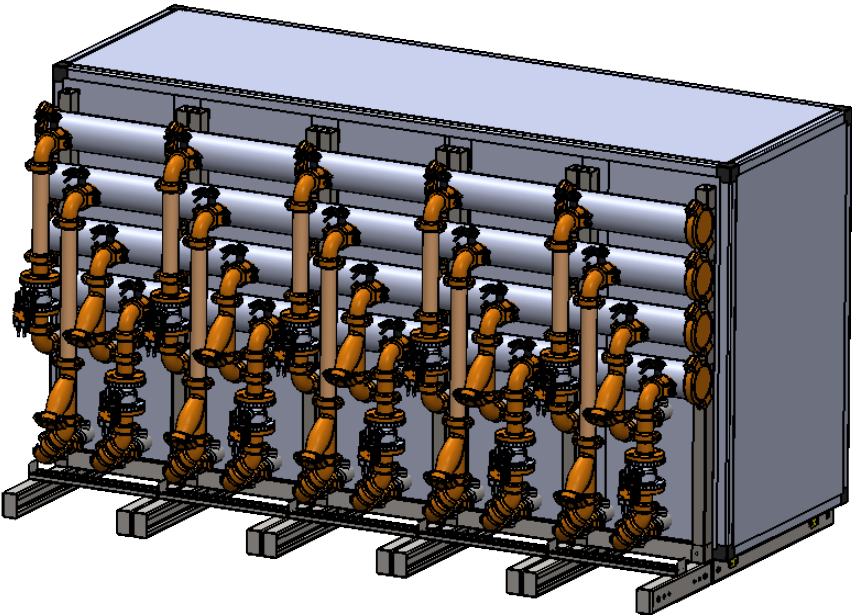
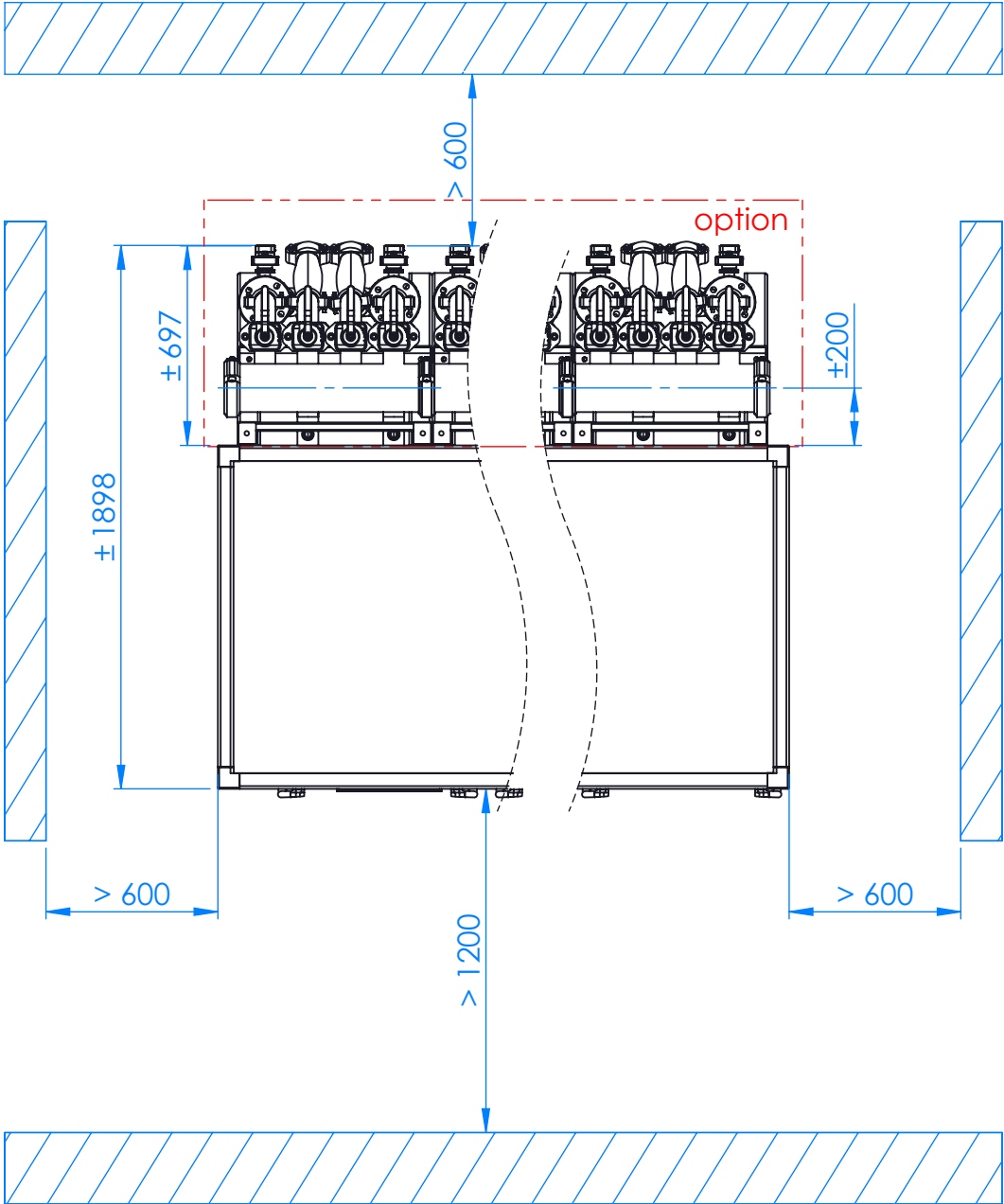
I nom: Stromaufnahme bei nominaler Heizleistung

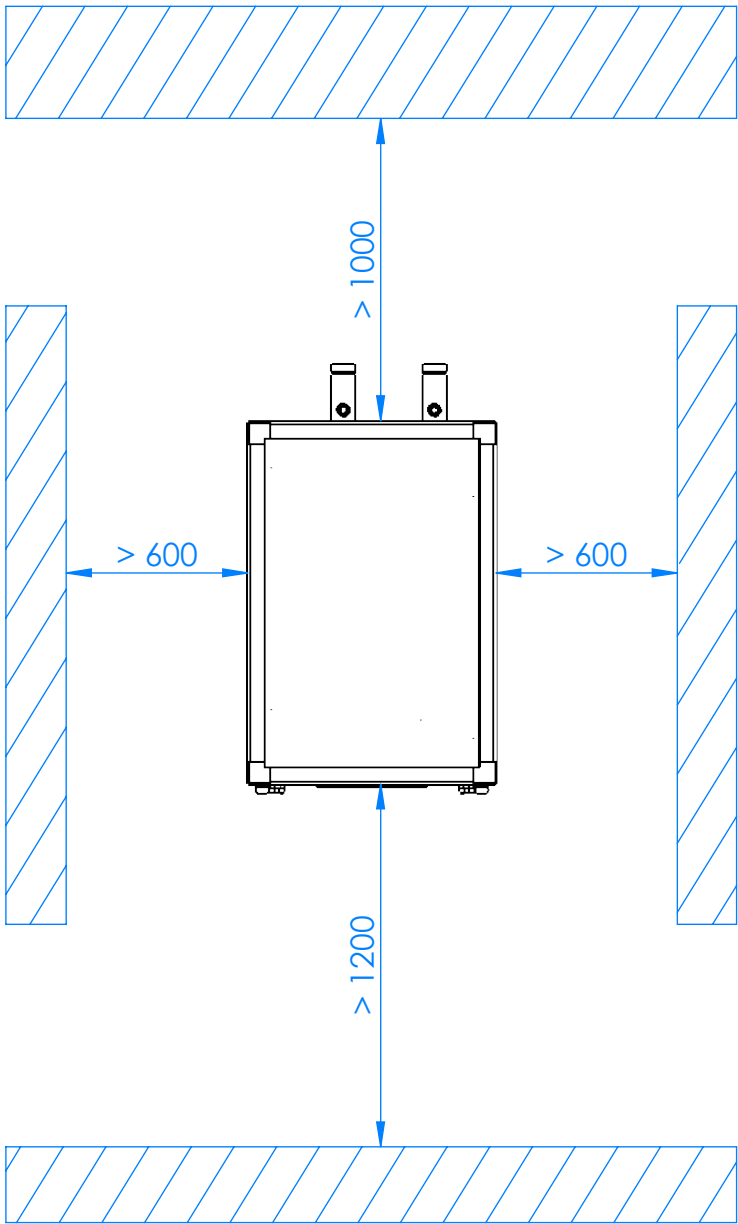
EER: Arbeitszahl bei nominaler Kälteleistung

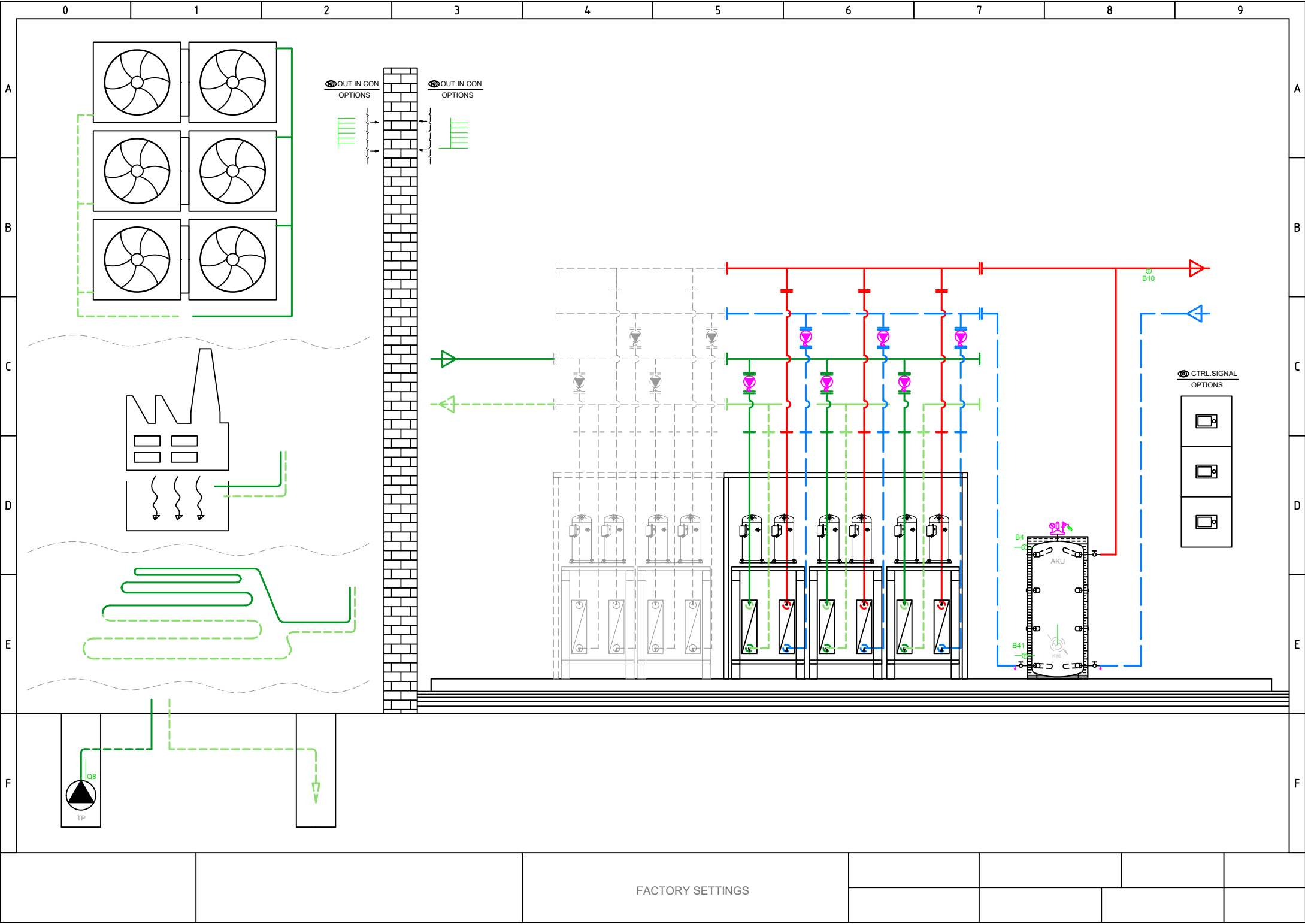
Betriebsgrenzen











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

Netzanschluss 230V / 50 Hz

Erde

Nullleiter

E9 Niederdruckwächter E9

E10 Hochdruckwächter E10

E15 Ström'wächter Quelle E15

E24 Ström'wächter Verbrau E24

E6 EW Sperre E6

E12 Überlast Verdichter 2 E12

E21 Drehstrom E21

E22 Drehstrom E22

E23 Drehstrom E23

E11 Überlast Verdichter 1 E11

K1 Verdichterstufe 1 K1

Q8 Quell'pumpe Q8

Q9 Kondensatorpumpe Q9

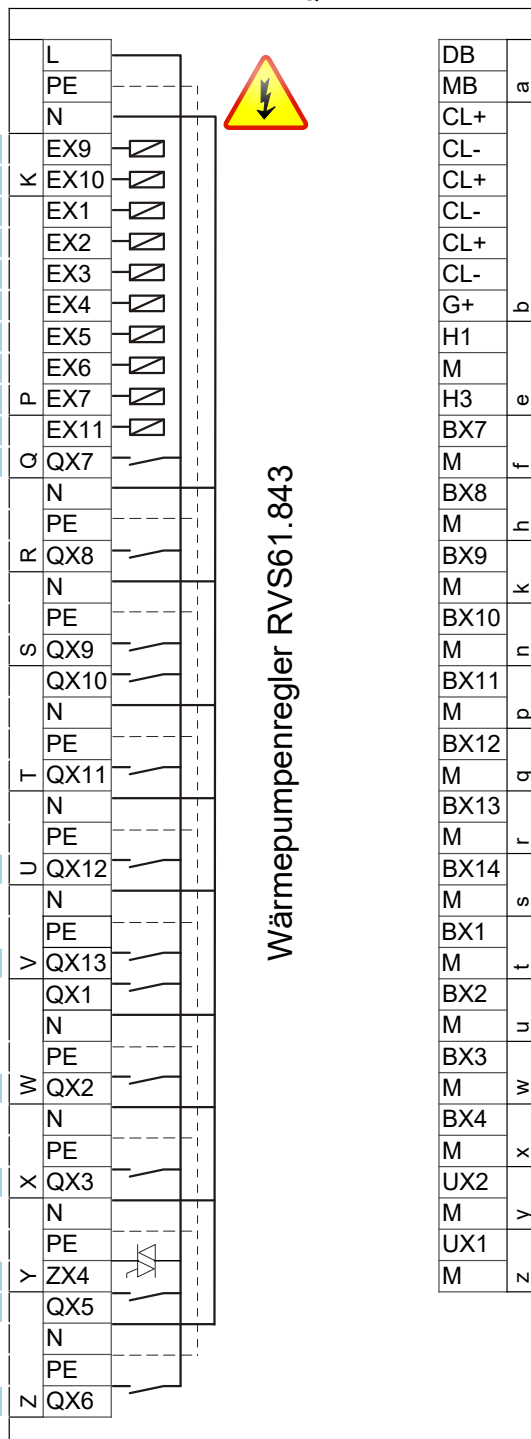
K10 Alarmausgang K10

K40 Ölsumpfheizung K40

K81 Ventil Verdampfer K81

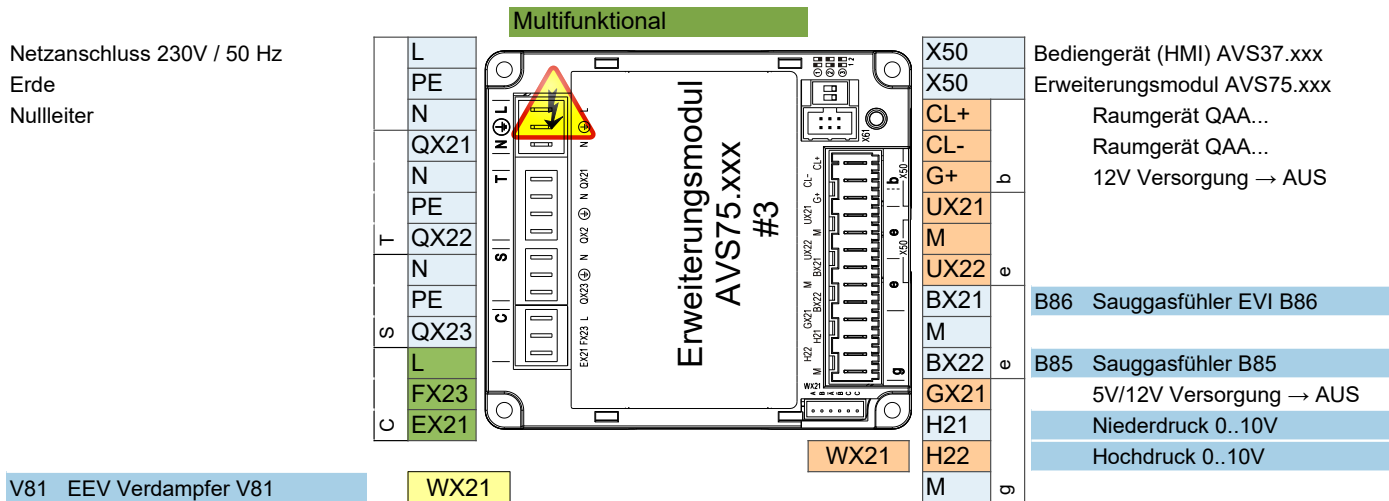
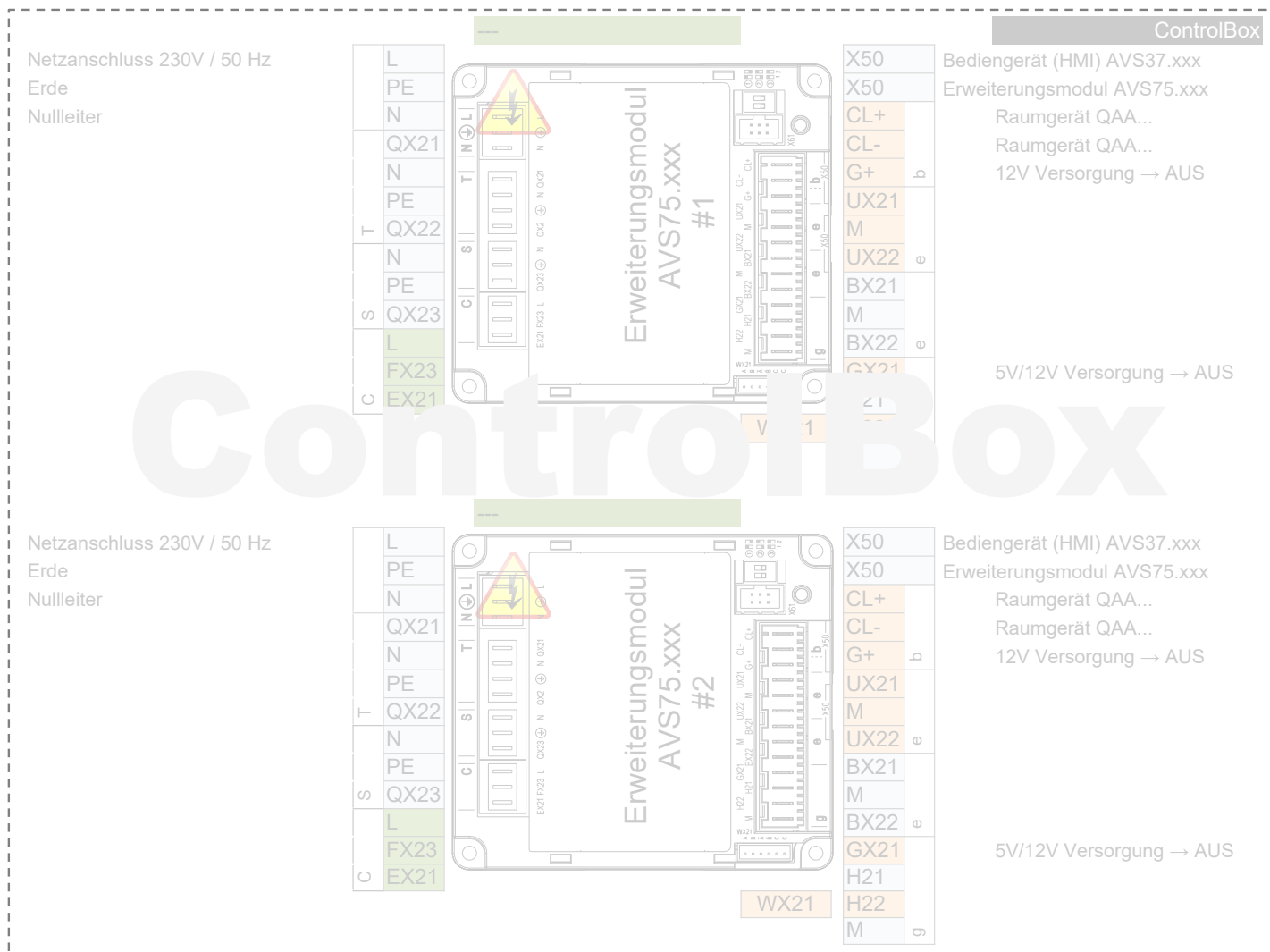
K82 Ventil EVI K82

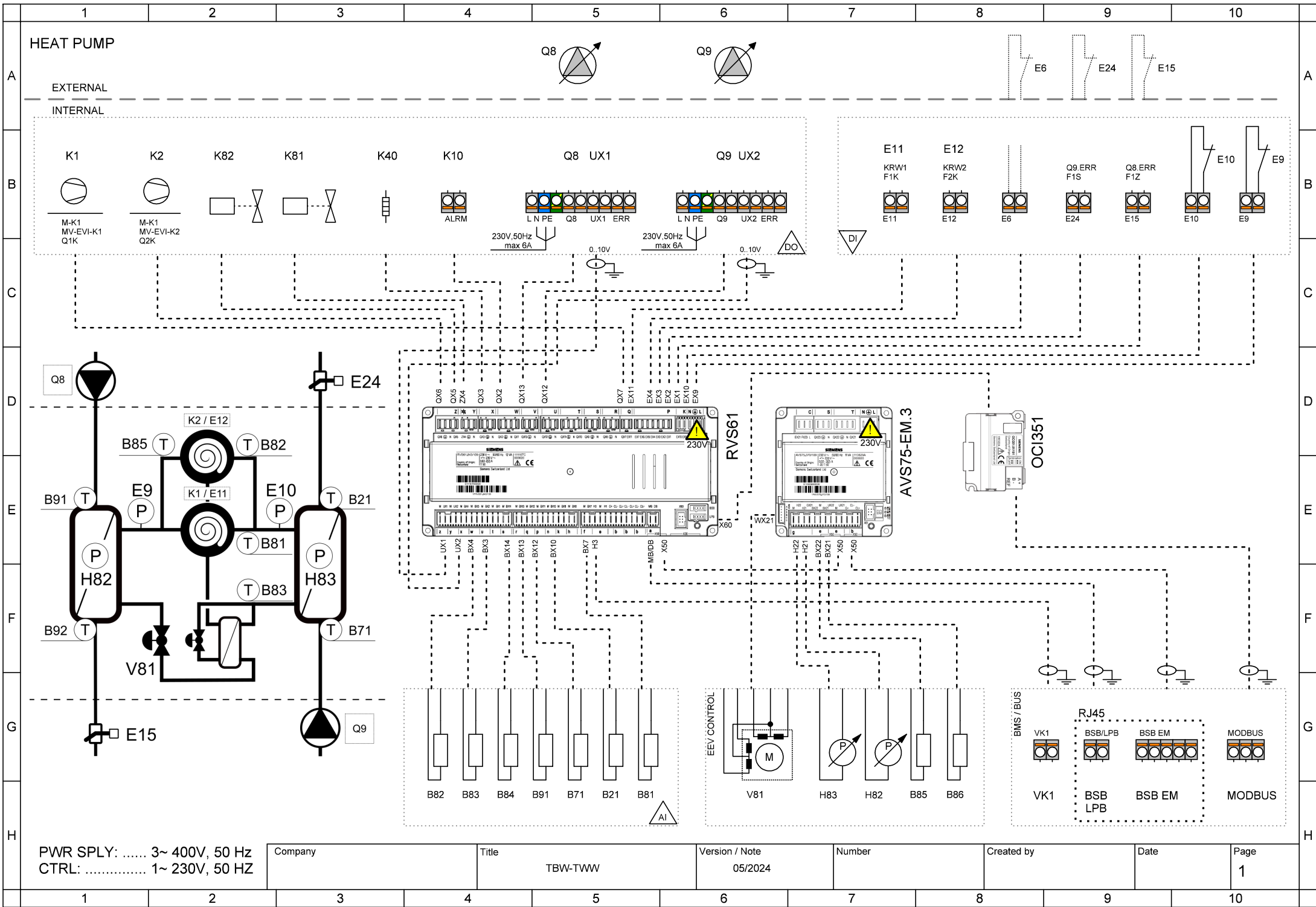
K2 Verdichterstufe 2 K2

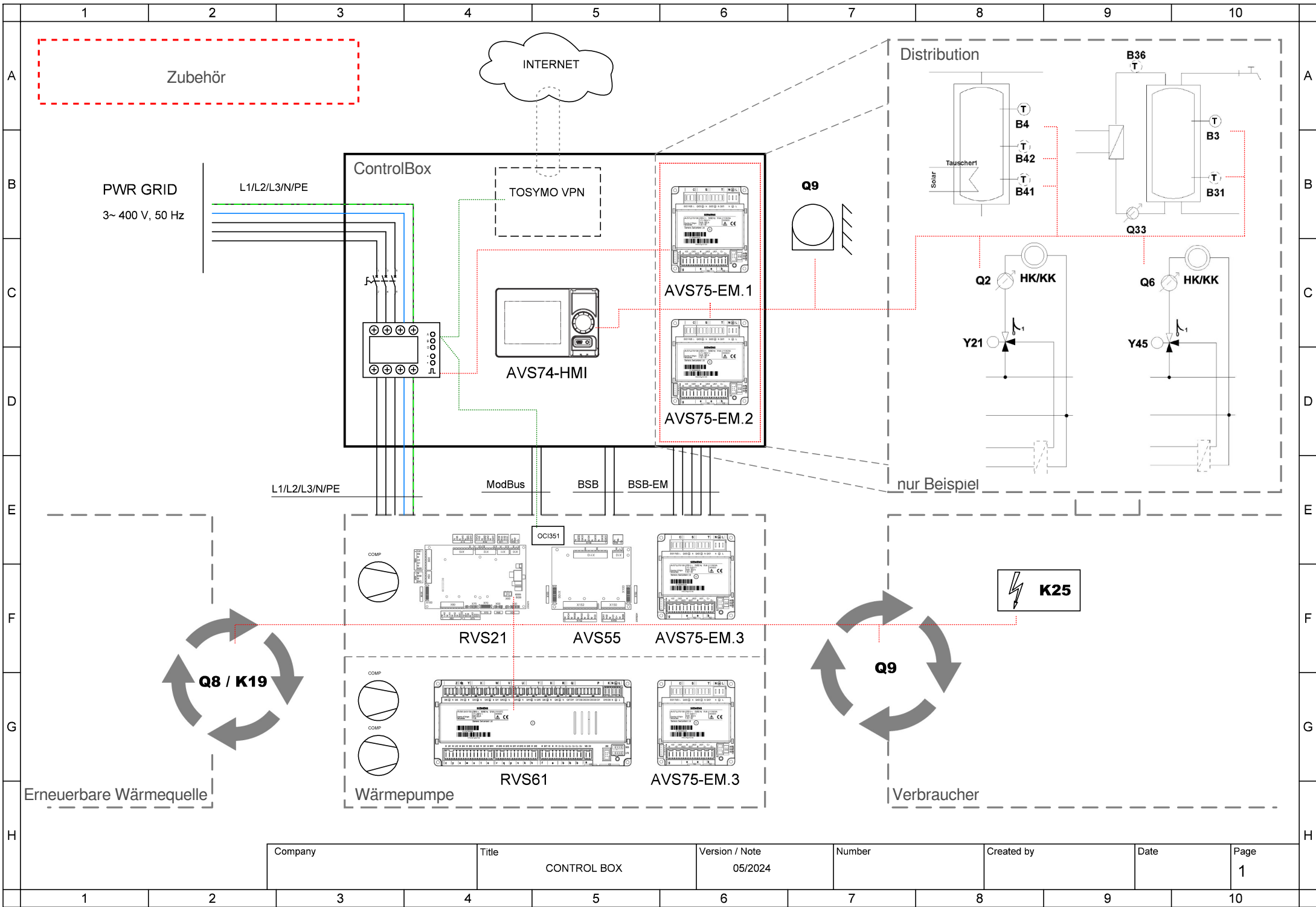


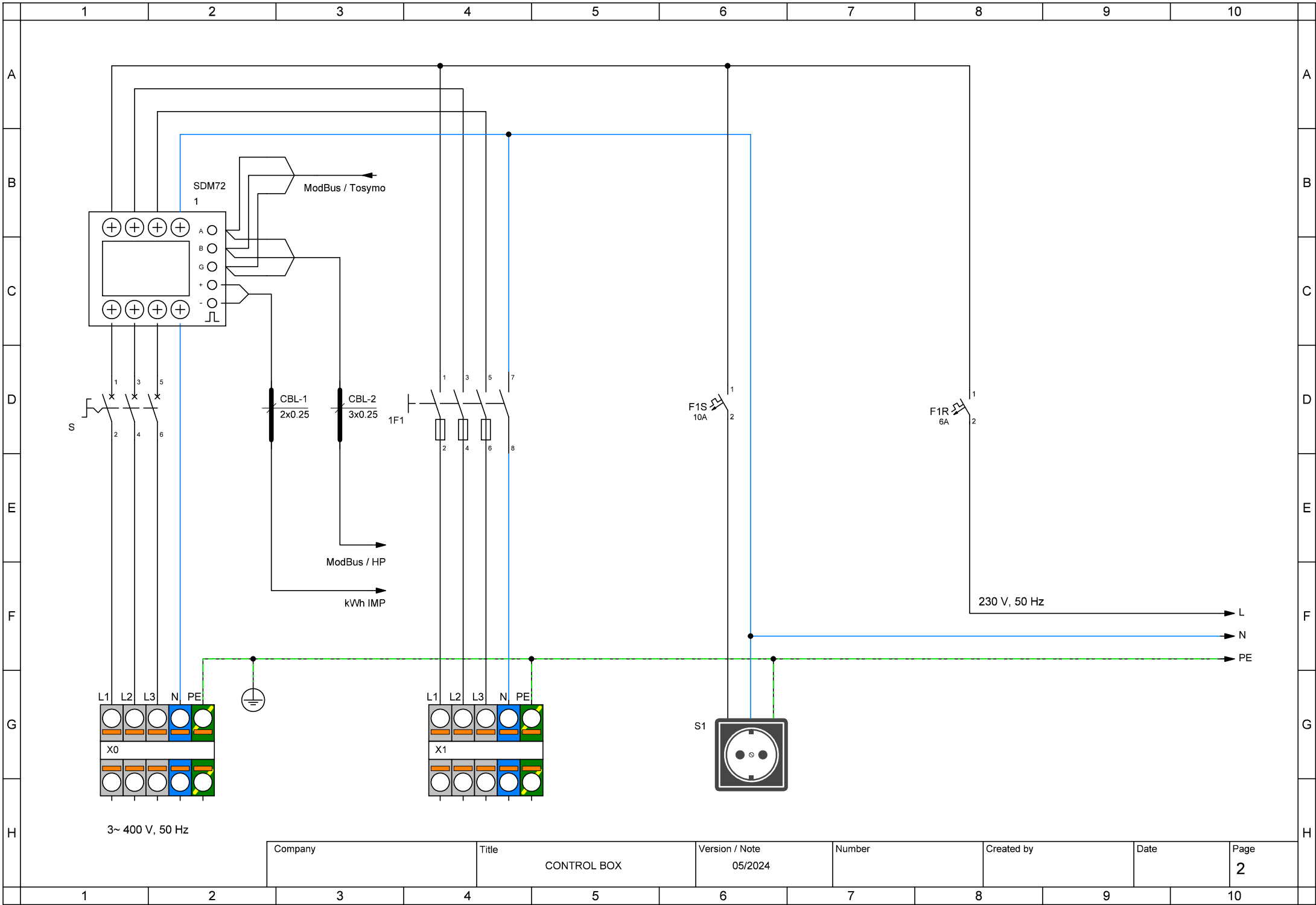
|      |   |                                   |
|------|---|-----------------------------------|
| DB   |   | LPB Bus Data                      |
| MB   | a | LPB Bus Masse                     |
| CL+  |   | Raumgerät QAA...                  |
| CL-  |   | Raumgerät QAA...                  |
| CL+  |   | Raumgerät QAA... 2.               |
| CL-  |   | Raumgerät QAA... 2.               |
| CL+  |   | Raumgerät QAA... 3.               |
| CL-  |   | Raumgerät QAA... 3.               |
| G+   | b | 12V Versorgung → AUS              |
| H1   |   |                                   |
| M    |   |                                   |
| H3   | e | Verbr'anforderung VK1             |
| BX7  |   | B81 Heissgasfühler K1 B81         |
| M    | f |                                   |
| BX8  |   |                                   |
| M    | h |                                   |
| BX9  |   |                                   |
| M    | k | B21 WP Vorlauffühler B21          |
| BX10 |   |                                   |
| M    | n |                                   |
| BX11 |   |                                   |
| M    | p | B71 WP Rücklauffühler B71         |
| BX12 |   |                                   |
| M    | q | B91 Quelleneintrittfühler B91     |
| BX13 |   |                                   |
| M    | r | B84 Quellenaust'fühler B92/B84    |
| BX14 |   |                                   |
| M    | s |                                   |
| BX1  |   |                                   |
| M    | t |                                   |
| BX2  |   |                                   |
| M    | u | B83 Kältemittelfühler flüssig B83 |
| BX3  |   |                                   |
| M    | w | B82 Heissgasfühler K2 B82         |
| BX4  |   |                                   |
| M    | x |                                   |
| UX2  |   | Kondensatorpumpe Q9               |
| M    | y | 0..10V Analogsignal               |
| UX1  |   | Quell'pumpe Q8                    |
| M    | z | 0..10V Analogsignal               |

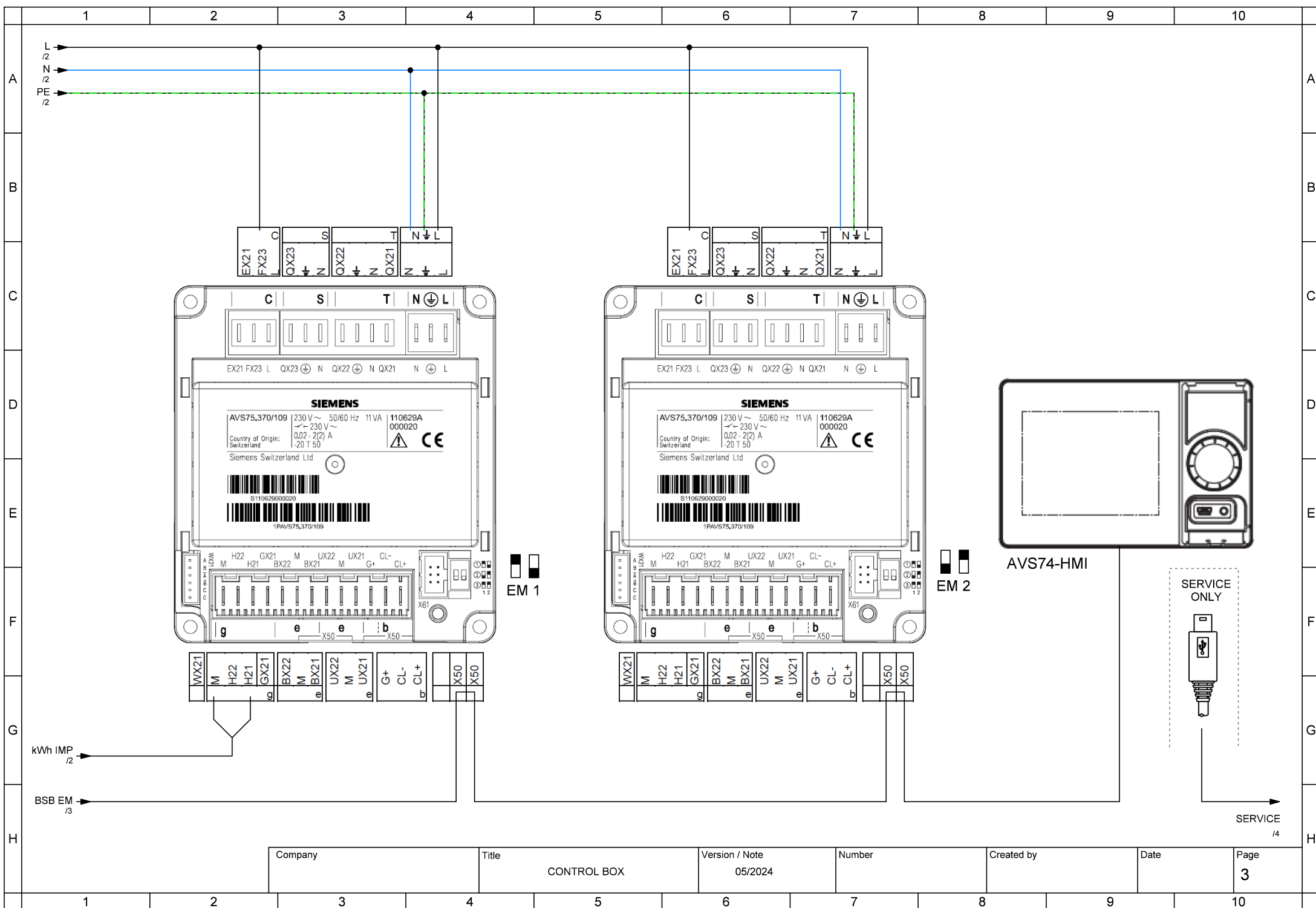
|  |           |
|--|-----------|
|  | AVS75.390 |
|  | AVS75.391 |
|  | AVS75.370 |

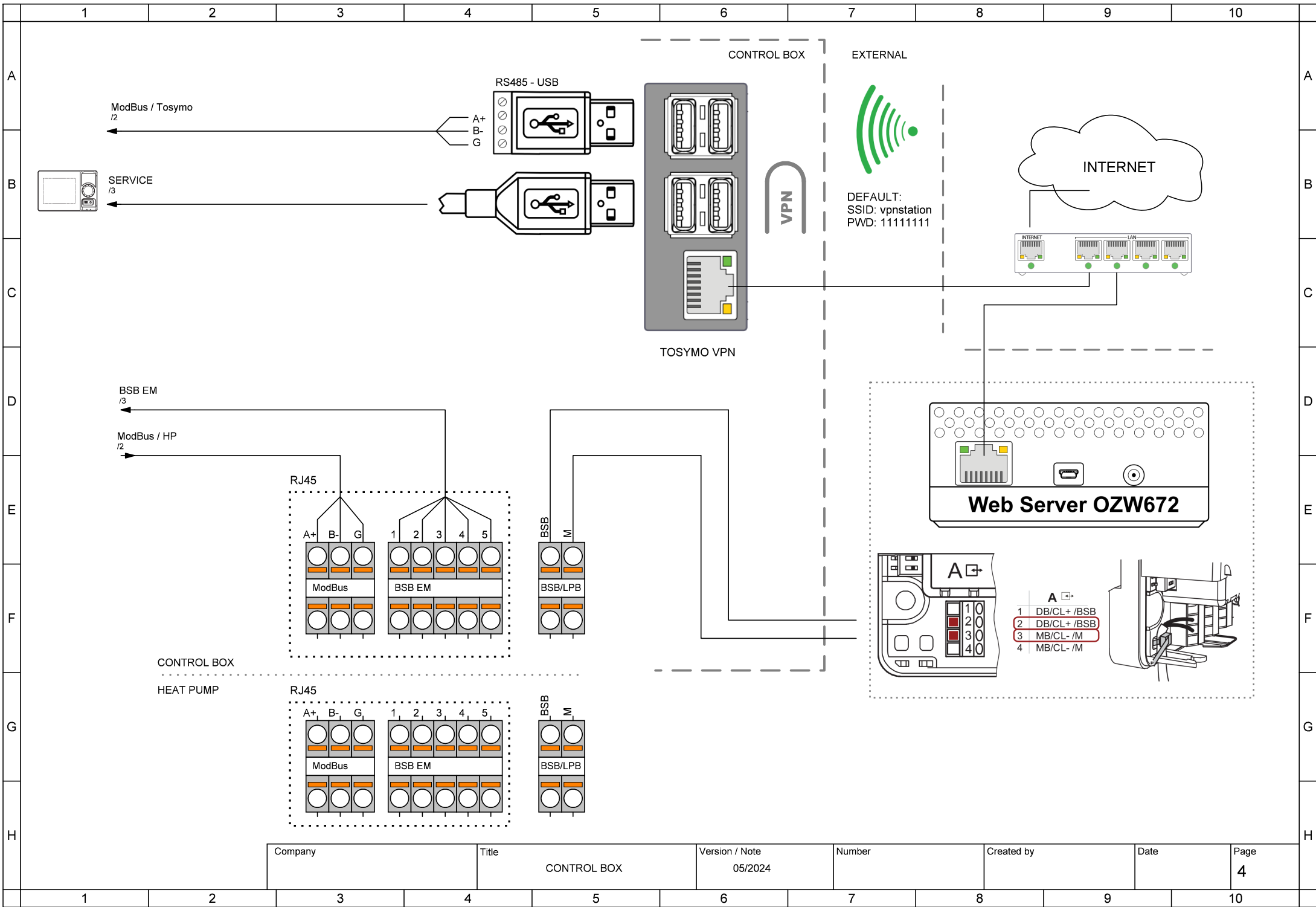












|  |           |
|--|-----------|
|  | AVS75.390 |
|  | AVS75.391 |
|  | AVS75.370 |

## AVS75.370

Netzanschluss 230V / 50 Hz

Erde

Nullleiter

Y1 Mischer Auf

Y2 Mischer Zu

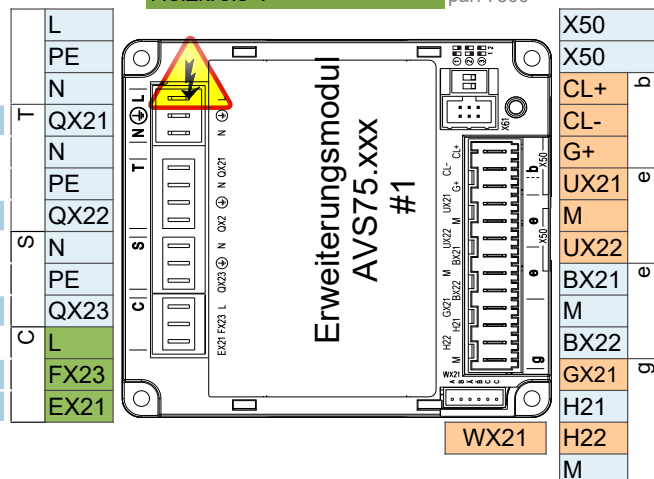
Q2 Heizkreispumpe HK1 Q2

L Faze 230V

E61 Smart Grid E61

## Heizkreis 1

par. 7300



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

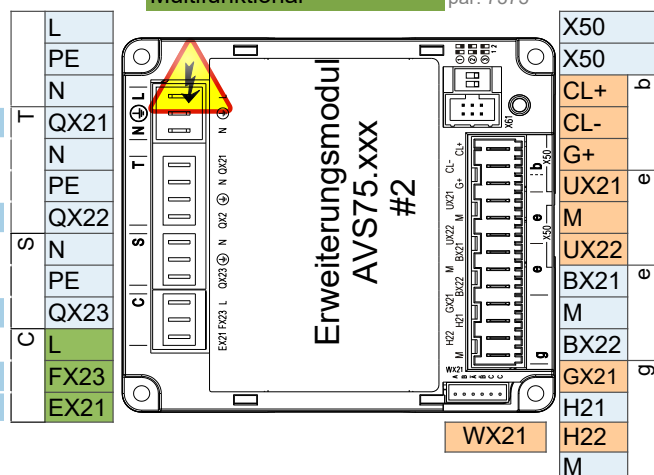
Q6 Heizkreispumpe HK2 Q6

L Faze 230V

E62 Smart Grid E62

## Multifunktional

par. 7375



Bediengerät (HMI) AVS37.xxx

Erweiterungsmodul AVS75.xxx

Raumgerät QAA...

Raumgerät QAA...

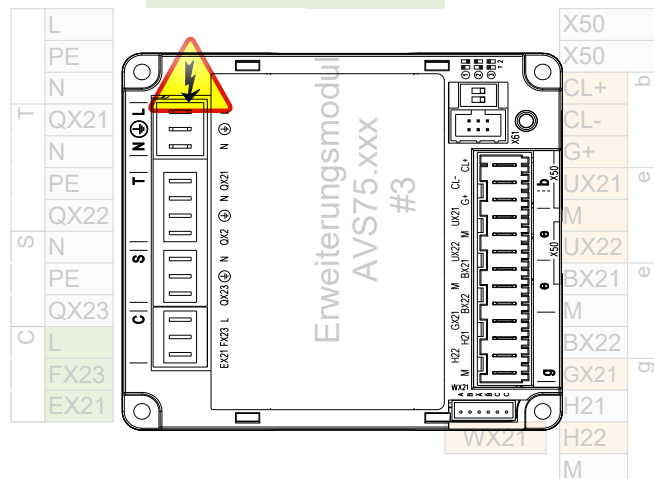
B3 Trinkwasserfühler B3

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

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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

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2-adriges abgeschirmtes Kabel 2 x 0,5 mm<sup>2</sup> - Sollwert = 45°C (editierbar über Parameter 1859)

Anschlussklemme - siehe Schaltplan

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

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

Anschlussklemme - siehe Schaltplan

### 4 ModBus RTU-Kommunikationsbefehl

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3-adriges abgeschirmtes Kabel min. 3 x 0,25mm<sup>2</sup>

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

### 5 MQTT IoT-Kommunikationsprotokoll

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Für weitere Informationen wenden Sie sich bitte an den technischen Support