

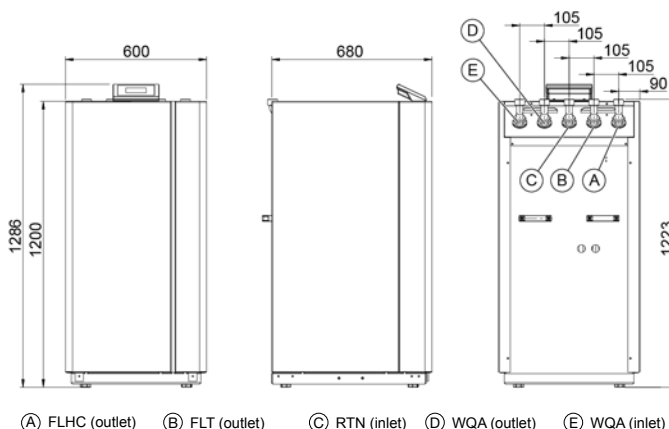
# TERRA 27 HPLA

## MONOVALENT HEATING SYSTEM WITH BRINE AS HEAT SOURCE

ORDER NUMBER: 265070

SERIES: M4

TF MAX. 68 °C



### APPLIANCE DATA

|                      |        |                  |
|----------------------|--------|------------------|
| Dimensions HxWxD     | [mm]   | 1285x600x681     |
| Hydraulic connection | [inch] | 1 1/2"           |
| Weight               | [kg]   | 250              |
| Casing colour        |        | White/anthracite |

### SPECIFICATION

|                                                          |              |                |
|----------------------------------------------------------|--------------|----------------|
| Phases/nominal voltage/frequency                         | [~]/[V]/[Hz] | 3/400/50       |
| Output factor cos φ                                      |              | 0,79           |
| Fuse protection (tripping curve "C")                     | [A]          | 25             |
| Max. operating current                                   | [A]          | 21,00          |
| Max. starting current/max. with soft start               | [A]          | 125.00 / 62.50 |
| Sound power level/sound pressure level (at 1 m distance) | [dBA]        | 60.10 / 52.10  |

### HEATING MODE PERFORMANCE FIGURES (to EN 14511)

#### Standard point B0/W35

|                                             |          |              |
|---------------------------------------------|----------|--------------|
| Heating output                              | [kW]     | 26,10        |
| Total power consumption / operating current | [kW]/[A] | 5.80 / 10.70 |
| COP                                         |          | 4,50         |

#### Operating point B0/W50

|                                             |          |              |
|---------------------------------------------|----------|--------------|
| Heating output                              | [kW]     | 23,40        |
| Total power consumption / operating current | [kW]/[A] | 7.40 / 13.60 |
| COP                                         |          | 3,20         |

#### Operating point B0/W60

|                                             |          |              |
|---------------------------------------------|----------|--------------|
| Heating output                              | [kW]     | 22,20        |
| Total power consumption / operating current | [kW]/[A] | 9.30 / 17.10 |
| COP                                         |          | 2,40         |

### CONDENSER

|                                               |                        |                       |
|-----------------------------------------------|------------------------|-----------------------|
| Type                                          | Plate heat exchanger   |                       |
| Material                                      | Stainless steel 1.4401 |                       |
| Max. refrigerant operating pressure           | [bar]                  | 45                    |
| Max. heat transfer medium operating pressure  | [bar]                  | 6                     |
| Heat transfer medium temperature differential | [K]                    | 5                     |
| Application range                             | [°C]                   | 68                    |
| Heat transfer medium                          | Water                  |                       |
| Test pressure                                 | [bar]                  | 54                    |
| Heat transfer medium flow rate                | [m³/h]                 | 4,42                  |
| Internal pressure differential                | [mbar]                 | 549                   |
| Flow meter (FM)                               | Internal               | Installed as          |
| Circulation pump heat sink (WNA)              | Internal               | Stratos Para 25/1-8   |
| Residual head I WNA external                  | [mbar]                 | 26 (M4-1), 187 (M4-4) |

### REFRIGERANT CIRCUIT

|                    |          |
|--------------------|----------|
| Refrigerant        | R410A    |
| Refrigerant charge | [kg] 4,5 |

### COMPRESSOR

|                   |                 |
|-------------------|-----------------|
| Type              | Scroll          |
| Output levels     | 1               |
| Speed             | [rpm] 2900      |
| Voltage/frequency | [V]/[Hz] 400/50 |

### EVAPORATOR

|                                               |                        |                      |
|-----------------------------------------------|------------------------|----------------------|
| Type                                          | Plate heat exchanger   |                      |
| Material                                      | Stainless steel 1.4401 |                      |
| Number                                        | [pce]                  | 1                    |
| Max. heat transfer medium operating pressure  | [bar]                  | 6                    |
| Max. refrigerant operating pressure           | [bar]                  | 12                   |
| Heat transfer medium temperature differential | [K]                    | 3                    |
| Application range                             | [°C]                   | -6/+20               |
| Heat transfer medium                          | Brine max. 30%         |                      |
| Test pressure                                 | [bar]                  | 54                   |
| Heat transfer medium flow rate                | [m³/h]                 | 6,38                 |
| Internal pressure differential                | [mbar]                 | -                    |
| Flow meter (FM)                               | Internal               | Installed as         |
| Circulation pump heat source (WQA)            | Internal               | Stratos Para 25/1-12 |
| Residual head I WQA external                  | [mbar]                 | 240                  |

| Hydraulic version |      |    | Electric immersion heater |          | 3-way switching module |          |
|-------------------|------|----|---------------------------|----------|------------------------|----------|
|                   |      |    | Internal                  | external | Internal               | external |
| M2-1              | M4-1 |    | x                         |          | x                      |          |
| M2-2              | M4-2 |    |                           | x        | x                      |          |
| M2-3              | M4-3 |    | x                         |          |                        | x        |
| M2-4              | M4-4 | M6 |                           | x        |                        | x        |

## RECOMMENDED ACCESSORIES

|                                                            | Order no./type     | Description              | Pressure loss                                    |
|------------------------------------------------------------|--------------------|--------------------------|--------------------------------------------------|
| Heat pump separating cylinders                             | min. PU800         | min. PU800               | –                                                |
| DHW tank                                                   | SP750              | 30 l/kW at B0/W25        | –                                                |
| External plate heat exchanger (DHW heating)                | 911252<br>PHE 5007 | Prim.: 1 1/4" Sec.: 1"   | Prim.: 65 mbar<br>Sec.: 90 mbar                  |
| 3-way switching module internal                            | 980191             | –                        | 32 mbar                                          |
| 3-way switching module external                            | 290341             | DN40 (1 1/2"). kvs 25    | 32 mbar                                          |
| Electric immersion heater internal                         | 980190             | 8.8 kW (2.6 / 3.0 / 3.2) | 136 mbar                                         |
| External electric immersion heater (heat pump buffer tank) | 922509             | 9 kW                     | –                                                |
| Brine collector set (shallow laying)                       | 290506             | ESK 14                   | Pressure loss<br>80 mbar incl. brine distributor |

## EXTRACTION CAPACITY ACC. TO VDI 4640

### FOR SHALLOW LAYING

| Soil conditions                       | Max. spec. extraction capacity at 1800 h/a | Max. spec. extraction capacity at 2400 h/a |
|---------------------------------------|--------------------------------------------|--------------------------------------------|
| Dry, non-cohesive soil                | 10 W/m <sup>2</sup>                        | 8 W/m <sup>2</sup>                         |
| Cohesive soil, moist                  | 25 W/m <sup>2</sup>                        | 20 W/m <sup>2</sup>                        |
| Water-saturated soil with sand/gravel | 40 W/m <sup>2</sup>                        | 32 W/m <sup>2</sup>                        |

### FOR DEEP TRENCH LAYING

| Soil conditions      | Max. spec. extraction capacity at 1800 h/a |
|----------------------|--------------------------------------------|
| Cohesive soil, moist | 100 W/m deep trench                        |
| Water-saturated soil | 125 W/m deep trench                        |

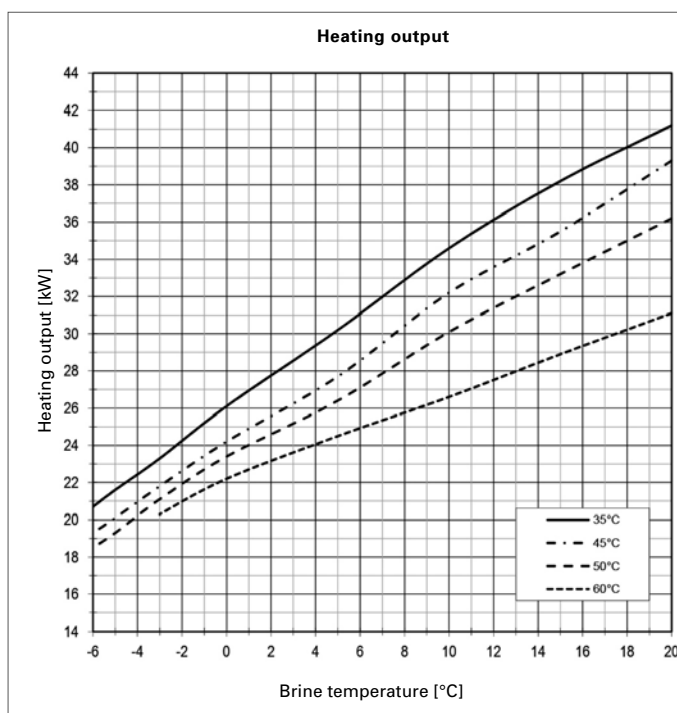
### FOR GEOTHERMAL PROBES

| Soil conditions                          | Spec. extraction capacity at 1800 h/a | Max. spec. extraction capacity at 2400 h/a |
|------------------------------------------|---------------------------------------|--------------------------------------------|
| Dry sediment                             | 25 W/m                                | 20 W/m                                     |
| Shale, slate                             | 45 W/m                                | 35 W/m                                     |
| Firm rock with high thermal conductivity | 84 W/m                                | 70 W/m                                     |
| Substratum with high groundwater flow    | 65-80 W/m                             | 55-65 W/m                                  |

## SIZING RECOMMENDATION WITH BRINE AS HEAT SOURCE

|                                                                    |               |
|--------------------------------------------------------------------|---------------|
| Pressure loss in connection line, incl. individual losses          | Max. 100 mbar |
| Pressure loss in brine circuits or probes, incl. brine distributor | Max. 300 mbar |

## PERFORMANCE CURVES TERRA 27 HPLA



## PRODUCT DATA ErP: TERRA 27 HPLA

|                                              |         | COLDER       | MEAN                        | HOTTER |
|----------------------------------------------|---------|--------------|-----------------------------|--------|
| <b>LOW TEMPERATURE</b>                       |         | <b>A++</b>   |                             |        |
|                                              |         | <b>35°C</b>  |                             |        |
| η <sub>s</sub>                               |         | 190          | 184                         | 186    |
| Energy consumption                           | [kWh]   | 12794        | 11034                       | 7088   |
| P rated                                      | [kW]    | 26           | 26                          | 26     |
| SCOP                                         |         | 4,95         | 4,81                        | 4,84   |
| <b>MEDIUM TEMPERATURE</b>                    |         | <b>A++</b>   |                             |        |
|                                              |         | <b>55°C</b>  |                             |        |
| η <sub>s</sub>                               |         | 130          | 127                         | 128    |
| Energy consumption                           | [kWh]   | 16235        | 13947                       | 8995   |
| P rated                                      | [kW]    | 23           | 23                          | 23     |
| SCOP                                         |         | 3,46         | 3,38                        | 3,39   |
| <b>DHW</b>                                   |         | <b>A</b>     |                             |        |
|                                              |         | <b>SP500</b> |                             |        |
| η <sub>WH</sub>                              |         | 84           | 84                          | 84     |
| Energy consumption                           | [kWh]   | 1651         | 1651                        | 1651   |
| Draw-off profile                             |         | <b>XL</b>    |                             |        |
| Tank losses                                  | [W]     | <b>117</b>   |                             |        |
|                                              |         | indoor       | outdoor                     |        |
| Sound power level                            | [dB(A)] | 60,1         | -                           |        |
| Controller class with room remote control    |         | VII          | Controller contribution [%] | 3,5    |
| Controller class without room remote control |         | III          | Controller contribution [%] | 1,5    |

