

## 2. Specification

### ■ 1 phase Inverter (5.5 ~ 9 kW)

| Nominal Capacity and Nominal Input     |         |                             |                            | FHBW056A1<br>[HM051HFS UA41] | FHBW076A1<br>[HM071HFS UA41] | FHBW096A1<br>[HM091HFS UA41] |      |      |
|--|---------|-----------------------------|----------------------------|------------------------------|------------------------------|------------------------------|------|------|
| -                                      | -       | Outdoor<br>Temp.(°C)DB / WB | Leaving Water<br>Temp.(°C) | -                            |                              |                              |      |      |
| Capacity                               | Heating | 7 / 6                       | 35                         | KW                           | 5.50                         | 7.00                         | 9.00 |      |
|  |         |                             | 55                         | KW                           | 5.50                         | 7.00                         | 8.00 |      |
|  |         | 2 / 1                       | 35                         | KW                           | 5.50                         | 6.50                         | 7.00 |      |
|  |         |                             | -7                         | 35                           | KW                           | 5.50                         | 7.00 | 9.00 |
|  |         | 55                          |                            | 35                           | KW                           | 5.50                         | 5.70 | 6.00 |
|  |         |                             | 55                         | KW                           | 5.50                         | 7.00                         | 8.00 |      |
|  | Cooling | 35 / 24                     | 18                         | KW                           | 5.50                         | 7.00                         | 8.00 |      |
|  |         |                             | 7                          | KW                           | 5.50                         | 7.00                         | 8.00 |      |
| Power Input                            | Heating | 7 / 6                       | 35                         | KW                           | 1.12                         | 1.49                         | 1.96 |      |
|  |         |                             | 35                         | KW                           | 1.86                         | 2.46                         | 2.86 |      |
|  |         | 2 / 1                       | 55                         | KW                           | 1.72                         | 2.06                         | 2.26 |      |
|  |         |                             | -7                         | 35                           | KW                           | 1.93                         | 3.41 | 4.50 |
|  |         | 55                          |                            | 35                           | KW                           | 1.93                         | 2.01 | 2.14 |
|  |         |                             | 55                         | KW                           | 2.89                         | 3.78                         | 4.44 |      |
|  | Cooling | 35 / 24                     | 18                         | KW                           | 1.12                         | 1.49                         | 1.78 |      |
|  |         |                             | 7                          | KW                           | 1.83                         | 2.41                         | 2.81 |      |
| COP                                    | Heating | 7 / 6                       | 35                         | W/W                          | 4.90                         | 4.70                         | 4.60 |      |
|  |         |                             | 55                         | W/W                          | 2.95                         | 2.85                         | 2.80 |      |
|  |         | 2 / 1                       | 35                         | W/W                          | 3.20                         | 3.15                         | 3.10 |      |
|  |         |                             | -7                         | 35                           | KW                           | 2.85                         | 2.05 | 2.00 |
|  |         | 55                          |                            | 35                           | KW                           | 2.85                         | 2.83 | 2.80 |
|  |         |                             | 55                         | KW                           | 1.90                         | 1.85                         | 1.80 |      |
| EER                                    | Cooling | 35 / 24                     | 18                         | W/W                          | 4.90                         | 4.70                         | 4.50 |      |
|  |         |                             | 7                          | W/W                          | 3.00                         | 2.90                         | 2.85 |      |
| Seasonal space heating eff. Class      |         |                             | 35                         | -                            | A+++                         | A+++                         | A+++ |      |
|  |         |                             | 55                         | -                            | A++                          | A++                          | A++  |      |
| Seasonal space heating efficiency (ηs) |         |                             | 35                         | %                            | 180                          | 187                          | 185  |      |
|  |         |                             | 55                         | %                            | 140                          | 141                          | 143  |      |
| SCOP(average climate)                  |         |                             | 35                         | W/W                          | 4.58                         | 4.75                         | 4.70 |      |
|  |         |                             | 55                         | W/W                          | 3.57                         | 3.60                         | 3.65 |      |
| Water Flow Rate                        |         |                             | Rated(at ΔT 5°C)           |                              | ℓ / min                      | 15.8                         | 20.1 | 25.9 |

| Electrical Specifications    |  |                 | FHBW056A1<br>[HM051HFS UA41] | FHBW076A1<br>[HM071HFS UA41] | FHBW096A1<br>[HM091HFS UA41] |
|------------------------------|--|-----------------|------------------------------|------------------------------|------------------------------|
| Power Supply                 |  | V,∅,Hz          | 220-240,1,50                 | 220-240,1,50                 | 220-240,1,50                 |
| Peak Control Running Current | Heating  | A               | 15                           | 18                           | 20                           |
|                              | Cooling  | A               | 9                            | 11                           | 13                           |
| Rated Running Current        | Heating  | A               | 4.9                          | 6.5                          | 8.5                          |
|                              | Cooling  | A               | 4.9                          | 6.5                          | 7.7                          |
| Circuit breaker              |  | A               | 20                           | 25                           | 25                           |
| Wiring Connections           | Power Supply Cable<br>(included Earth,H07RN-F) | mm <sup>2</sup> | 4.0 x 3C                     | 4.0 x 3C                     | 4.0 x 3C                     |

| Technical Specifications |                          |              |       | FHBW056A1<br>[HM051HFS UA41] | FHBW076A1<br>[HM071HFS UA41] | FHBW096A1<br>[HM091HFS UA41] |
|--------------------------|--------------------------|--------------|-------|------------------------------|------------------------------|------------------------------|
| Sound pressure level     | Heatng(rated,@5m)        |              | dB(A) | 31                           | 32                           | 34                           |
| Sound power level        | Heating                  | Low noise    | dB(A) | 52                           | 53                           | 55                           |
|                          |                          | Rated        | dB(A) | 53                           | 54                           | 56                           |
|                          |                          | Daytime max. | dB(A) | 61                           | 63                           | 64                           |
| Dimensions               | Unit                     | W x H x D    | mm    | 1,242 x 853 x 391            | 1,242 x 853 x 391            | 1,242 x 853 x 391            |
|                          | Packed Unit              | W x H x D    | mm    | 1,330 x 1,017 x 480          | 1,330 x 1,017 x 480          | 1,330 x 1,017 x 480          |
| Weight                   | Unit                     |              | kg    | 102                          | 102                          | 102                          |
|                          | Packed Unit              |              | kg    | 115.5                        | 115.5                        | 115.5                        |
| Exterior                 | Color                    | -            |       | Black STS silver solid       | Black STS silver solid       | Black STS silver solid       |
|                          | RAL Code                 | -            |       | -                            | -                            | -                            |
|                          | Color of Front Grille    | -            |       | Light Graphite               | Light Graphite               | Light Graphite               |
|                          | RAL Code of Front Grille | -            |       | -                            | -                            | -                            |

## 2. Specification

| Technical Specifications (Water side)    |                              |   |        | FHBW056A1<br>[HM051HFS UA41] | FHBW076A1<br>[HM071HFS UA41] | FHBW096A1<br>[HM091HFS UA41] |
|--|------------------------------|---|--------|------------------------------|------------------------------|------------------------------|
| Operation Range<br>(Leaving Water Temp.) | Cooling                      | Min.~ Max.  | °C     | 5 ~ 27                       | 5 ~ 27                       | 5 ~ 27                       |
|  | Heating                      | Min.~ Max.  | °C     | 15 ~ 75                      | 15 ~ 75                      | 15 ~ 75                      |
|  | DHW*                         | Min.~ Max.  | °C     | 15 ~ 55(80*)                 | 15 ~ 55(80*)                 | 15 ~ 55(80*)                 |
| Water Pump***                            | Type                         | Canned type for hot water circulation                     |        |                              |                              |                              |
|  | Model                        | OH SUNG, ODM-061P   |        |                              |                              |                              |
|  | Model Type                   | BLDC  |        |                              |                              |                              |
|  | Steps of Pumping Performance | Variable speed 10% to 100%                                |        |                              |                              |                              |
|  | Power input (100% Capacity)  | Min. / Rated  | W      | 17 / 110                     | 17 / 110                     | 17 / 110                     |
|  | Water Flow Rate              | Min. / Rated  | ℓ /min | 5 / 15.8                     | 5 / 20.1                     | 5 / 25.9                     |
| Water Pump_2***                          | Type                         | Canned type for hot water circulation                     |        |                              |                              |                              |
|  | Model                        | GRUNDFOS, UPM3K 20-75 CHBL                                |        |                              |                              |                              |
|  | Motor Type                   | BLDC  |        |                              |                              |                              |
|  | Steps of Pumping Performance | Variable speed 10% to 100%                                |        |                              |                              |                              |
|  | Power input (100% Capacity)  | Min. / Rated  | W      | 3 / 60                       | 3 / 60                       | 3 / 60                       |
|  | Water Flow Rate              | Min. / Rated  | ℓ /min | 5 / 15.8                     | 5 / 20.1                     | 5 / 25.9                     |
| Heat Exchanger                           | Type                         | Brazed Plate HEX  |        |                              |                              |                              |
|  | Quantity                     | 1   |        |                              |                              |                              |
|  | Number of Plate              | EA 52   |        |                              |                              |                              |
|  | Water Volume                 | ℓ 0.7   |        |                              |                              |                              |
| Expansion Vessel                         | Volume                       | Max.  | ℓ      | 8                            | 8                            | 8                            |
|  | Water pressure               | Max.  | bar    | 3.2                          | 3.2                          | 3.2                          |
|  |                              | Pre-charged   | bar    | 1                            | 1                            | 1                            |
| Flow Sensor****                          | Model                        | SIKA VVX20  |        |                              |                              |                              |
|  | Measuring range              | Min.~Max.   | ℓ /min | 5 ~ 80                       | 5 ~ 80                       | 5 ~ 80                       |
|  | Flow (Trigger point)         | Min.  | ℓ /min | 5                            | 5                            | 5                            |
| Flow Sensor_2****                        | Model                        | SEBALGF-080-C20-E-C0.5V                                   |        |                              |                              |                              |
|  | Measuring range              | Min.~Max.   | ℓ /min | 5 ~ 80                       | 5 ~ 80                       | 5 ~ 80                       |
|  | Flow (Trigger point)         | Min.  | ℓ /min | 5                            | 5                            | 5                            |
| Water Pressure sensor                    | Model                        | Sensata OFM(2HMP)   |        |                              |                              |                              |
|  | Measuring range              | Min.~Max.   | bar(G) | 0 ~ 20                       | 0 ~ 20                       | 0 ~ 20                       |
| Piping Connections                       | Inlet                        | inch Male PT 1" according to 1S0 7-1 Capered pipe threads |        |                              |                              |                              |
|  | Outlet                       | inch Male PT 1" according to 1S0 7-1 Capered pipe threads |        |                              |                              |                              |
| Water strainer                           | Supply type                  | Loose supply(externally installed)                        |        |                              |                              |                              |
|  | Mesh size                    | 30 mesh   |        |                              |                              |                              |
|  | Max. particle size           | mm -  |        |                              |                              |                              |
|  | Material                     | Stainless Steel   |        |                              |                              |                              |
| Relief Valve                             | Pressure Limit               | Upper Limit   | bar    | 3.0                          | 3.0                          | 3.0                          |

### Note

- Due to our policy of innovation, some specifications may be changed without notification.
- Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" chapter should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
- Sound power level is measured in accordance with EN 12102-1 and ISO 9614.
  - Rated : This mode is measured on the rated condition in the semi-anechoic rooms. Therefore, these values may vary depending on operation conditions.
  - Daytime max : This mode is measured based on max. fan RPM and max. compressor Hz. that can be reached under outdoor air temperature 2°C.
  - Low noise : This mode lowers noise by limiting the compressor Hz. and fan RPM, and thus the performance may be limited.
- Performances are accordance with EN14511 and reflect ErP testing conditions. The values indicated above are the declared values at rated conditions acc. ErP regulation. For max. capacities, please refer to Performance Data.
- This product contains Fluorinated greenhouse gases.
- SCOP is in accordance with EN14825.
- Rated running currents are based on the declared values under the following conditions.
  - Heating : Outdoor Temp. 7°CDB / 6°CWB, Leaving Water Temp. 35°C
  - Cooling : Outdoor Temp. 35°C(DB) / 24°C(WB), Leaving Water Temp. 18°C
- All installation sites must be equipped with an earth leakage circuit breaker (ELCB).
  - \* DHW 55~80°C Operating is available only when the booster heater is operating.
  - \*\* This is the power input i accordance with the 80% pump capacity setting at rated water flow rate. When the OH SUNG pump is set as 80% capacity, it's head is similar to that of the GRUNDFOS pump at rated water flow rate.
  - \*\*\* In the case of integrated water pump, either water pump or water pump 2 will be applied.
  - \*\*\*\* In the case of integrated flow sensor, either flow sensor or flow sensor 2 will be applied.

## 2. Specification

| Technical Specifications (Refrigerant side) |                                |                       |             | FHBW056A1<br>[HM051HFS UA41] | FHBW076A1<br>[HM071HFS UA41] | FHBW096A1<br>[HM091HFS UA41] |
|---|--------------------------------|-----------------------|-------------|------------------------------|------------------------------|------------------------------|
| Operation Range<br>(Outdoor Temp.)          | Cooling#                       | Min.~ Max.            | °C DB       | 5 ~ 48                       | 5 ~ 48                       | 5 ~ 48                       |
|   | Heating                        | Min.~ Max.            | °C DB       | -25 ~ 35                     | -25 ~ 35                     | -25 ~ 35                     |
| Compressor                                  | Type                           |                       |             | Twin Rotary                  |                              |                              |
|   | Model                          | Model x No.           |             | EDTF420D×1                   |                              |                              |
|   | Motor Type                     |                       |             | BLDC                         |                              |                              |
|   | Displacement                   | cm <sup>3</sup> /Rev. |             | 41.5                         | 41.5                         | 41.5                         |
| Refrigerant                                 | Type                           |                       |             | R290                         | R290                         | R290                         |
|   | GWP (Global Warming Potential) |                       |             | 0.02                         | 0.02                         | 0.02                         |
|   | Precharged Amount              | g                     |             | 700                          | 700                          | 700                          |
|   | t-CO2 eq.                      |                       |             | 0.000014                     | 0.000014                     | 0.000014                     |
|   | Control                        |                       |             | Electronic Expansion Valve   |                              |                              |
| Refrigerant Oil                             | Type                           |                       |             | PAG VG60                     |                              |                              |
|   | Charged Volume                 | CC x No.              |             | 830                          | 830                          | 830                          |
| Heat Exchanger                              | Type                           |                       |             | Corrugate                    | Corrugate                    | Corrugate                    |
|   | Quantity                       |                       |             | 1                            | 1                            | 1                            |
|   | Specification                  | Row                   | EA          | 2                            | 2                            | 2                            |
|   |                                | Column                | EA          | 38                           | 38                           | 38                           |
|   | FPI                            | EA                    | 18          | 18                           | 18                           |                              |
| Fan   | Type                           |                       |             | Propeller                    |                              |                              |
|   | Air Flow Rate                  | Rated                 | m/min x No. | 60.0×1                       | 60.0×1                       | 60.0×1                       |
| Fan Motor                                   | Type                           |                       |             | BLDC                         |                              |                              |
|   | Output                         | W x No.               |             | 124×1                        | 124×1                        | 124×1                        |

**Note**

# This operation range includes not only the continuous operation range but also operative range.

## 2. Specification

### ■ 3 phase Inverter (7 ~ 9 kW)

| Nominal Capacity and Nominal Input     |         |                             |                            |         | FHBW078A1<br>[HM073HFS UA41] | FHBW098A1<br>[HM093HFS UA41] |      |
|--|---------|-----------------------------|----------------------------|---------|------------------------------|------------------------------|------|
| -                                      | -       | Outdoor<br>Temp.(°C)DB / WB | Leaving Water<br>Temp.(°C) | -       |                              |                              |      |
| Capacity                               | Heating | 7 / 6                       | 35                         | KW      | 7.00                         | 9.00                         |      |
|  |         |                             | 55                         | KW      | 7.00                         | 8.00                         |      |
|  |         | 2 / 1                       | 35                         | KW      | 6.50                         | 7.00                         |      |
|  |         |                             | -7                         | 35      | KW                           | 7.00                         | 9.00 |
|  |         | 55                          |                            | 35      | KW                           | 5.70                         | 6.00 |
|  |         |                             | 55                         | KW      | 7.00                         | 8.00                         |      |
|  | Cooling | 35 / 24                     | 18                         | KW      | 7.00                         | 8.00                         |      |
|  |         |                             | 7                          | KW      | 7.00                         | 8.00                         |      |
| Power Input                            | Heating | 7 / 6                       | 35                         | KW      | 1.49                         | 1.96                         |      |
|  |         |                             | 35                         | KW      | 2.46                         | 2.86                         |      |
|  |         | 2 / 1                       | 55                         | KW      | 2.06                         | 2.26                         |      |
|  |         |                             | -7                         | 35      | KW                           | 3.41                         | 4.50 |
|  |         | 55                          |                            | 35      | KW                           | 2.01                         | 2.14 |
|  |         |                             | 55                         | KW      | 3.78                         | 4.44                         |      |
|  | Cooling | 35 / 24                     | 18                         | KW      | 1.49                         | 1.78                         |      |
|  |         |                             | 7                          | KW      | 2.41                         | 2.81                         |      |
|  | COP     | Heating                     | 7 / 6                      | 35      | W/W                          | 4.70                         | 4.60 |
|  |         |                             |                            | 55      | W/W                          | 2.85                         | 2.80 |
| 2 / 1                                  |         |                             | 35                         | W/W     | 3.15                         | 3.10                         |      |
|  |         |                             | -7                         | 35      | KW                           | 2.05                         | 2.00 |
| 55                                     |         |                             |                            | 35      | KW                           | 2.83                         | 2.80 |
|  |         |                             | 55                         | KW      | 1.85                         | 1.80                         |      |
| Cooling                                |         | 35 / 24                     | 18                         | W/W     | 4.70                         | 4.50                         |      |
|  |         |                             | 7                          | W/W     | 2.90                         | 2.85                         |      |
| EER                                    | Cooling | 35 / 24                     | 18                         | W/W     | 4.70                         | 4.50                         |      |
|  |         |                             | 7                          | W/W     | 2.90                         | 2.85                         |      |
| Seasonal space heating eff. Class      |         |                             | 35                         | -       | A+++                         | A+++                         |      |
|  |         |                             | 55                         | -       | A++                          | A++                          |      |
| Seasonal space heating efficiency (ηs) |         |                             | 35                         | %       | 187                          | 185                          |      |
|  |         |                             | 55                         | %       | 141                          | 143                          |      |
| SCOP(average climate)                  |         |                             | 35                         | W/W     | 4.75                         | 4.70                         |      |
|  |         |                             | 55                         | W/W     | 3.60                         | 3.65                         |      |
| Water Flow Rate                        |         |                             | Rated(at ΔT 5°C)           | ℓ / min | 20.1                         | 25.9                         |      |

| Electrical Specifications    |  |  |                 | FHBW078A1<br>[HM073HFS UA41] | FHBW098A1<br>[HM093HFS UA41] |
|------------------------------|--|--|-----------------|------------------------------|------------------------------|
| Power Supply                 |  |  | V,∅,Hz          | 380-415,3,50                 | 380-415,3,50                 |
| Peak Control Running Current | Heating  |  | A               | 7                            | 8                            |
|                              | Cooling  |  | A               | 7                            | 8                            |
| Rated Running Current        | Heating  |  | A               | 2.1                          | 2.8                          |
|                              | Cooling  |  | A               | 3.5                          | 4.1                          |
| Circuit breaker              |  |  | A               | 16                           | 16                           |
| Wiring Connections           | Power Supply Cable<br>(included Earth,H07RN-F) |  | mm <sup>2</sup> | 4.0 x 5C                     | 4.0 x 5C                     |

| Technical Specifications |                          |              |       | FHBW078A1<br>[HM073HFS UA41] | FHBW098A1<br>[HM093HFS UA41] |
|--------------------------|--------------------------|--------------|-------|------------------------------|------------------------------|
| Sound pressure level     | Heatng(rated,@5m)        |              | dB(A) | 32                           | 34                           |
| Sound power level        | Heating                  | Low noise    | dB(A) | 53                           | 55                           |
|                          |                          | Rated        | dB(A) | 54                           | 56                           |
|                          |                          | Daytime max. | dB(A) | 63                           | 64                           |
| Dimensions               | Unit                     | W x H x D    | mm    | 1,242 x 853 x 391            | 1,242 x 853 x 391            |
|                          | Packed Unit              | W x H x D    | mm    | 1,330 x 1,017 x 480          | 1,330 x 1,017 x 480          |
| Weight                   | Unit                     |              | kg    | 103                          | 103                          |
|                          | Packed Unit              |              | kg    | 115                          | 115                          |
| Exterior                 | Color                    |              | -     | Black STS silver solid       | Black STS silver solid       |
|                          | RAL Code                 |              | -     | -                            | -                            |
|                          | Color of Front Grille    |              | -     | Light Graphite               | Light Graphite               |
|                          | RAL Code of Front Grille |              | -     | -                            | -                            |

## 2. Specification

| Technical Specifications (Water side)    |                              |   |        | FHBW078A1<br>[HM073HFS UA41] | FHBW098A1<br>[HM093HFS UA41] |
|--|------------------------------|---|--------|------------------------------|------------------------------|
| Operation Range<br>(Leaving Water Temp.) | Cooling                      | Min.~ Max.  | °C     | 5 ~ 27                       | 5 ~ 27                       |
|  | Heating                      | Min.~ Max.  | °C     | 15 ~ 75                      | 15 ~ 75                      |
|  | DHW*                         | Min.~ Max.  | °C     | 15 ~ 55(80*)                 | 15 ~ 55(80*)                 |
| Water Pump***                            | Type                         | Canned typr for hot water circulation                     |        |                              |                              |
|  | Model                        | OH SUNG, ODM-061P   |        |                              |                              |
|  | Model Type                   | BLDC  |        |                              |                              |
|  | Steps of Pumping Performance | Variable speed 10% to 100%                                |        |                              |                              |
|  | Power input (100% Capacity)  | Min. / Rated  | W      | 17 / 110                     | 17 / 110                     |
|  | Water Flow Rate              | Min. / Rated  | ℓ /min | 5 / 20.1                     | 5 / 25.9                     |
| Water Pump_2***                          | Type                         | Canned typr for hot water circulation                     |        |                              |                              |
|  | Model                        | GRUNDFOS, UPM3K 20-75 CHBL                                |        |                              |                              |
|  | Motor Type                   | BLDC  |        |                              |                              |
|  | Steps of Pumping Performance | Variable speed 10% to 100%                                |        |                              |                              |
|  | Power input (100% Capacity)  | Min. / Rated  | W      | 3 / 60                       | 3 / 60                       |
|  | Water Flow Rate              | Min. / Rated  | ℓ /min | 5 / 20.1                     | 5 / 25.9                     |
| Heat Exchanger                           | Type                         | Braze Plate HEX   |        |                              |                              |
|  | Quantity                     | 1   |        |                              |                              |
|  | Number of Plate              | EA 52   |        |                              |                              |
|  | Water Volume                 | ℓ 0.7   |        |                              |                              |
| Expansion Vessel                         | Volume                       | Max.  | ℓ      | 8                            | 8                            |
|  | Water pressure               | Max.  | bar    | 3.2                          | 3.2                          |
|  |                              | Pre-charged   | bar    | 1                            | 1                            |
| Flow Sensor****                          | Model                        | SIKA VVX20  |        |                              |                              |
|  | Measuring range              | Min.~Max.   | ℓ /min | 5 ~ 80                       | 5 ~ 80                       |
|  | Flow (Trigger point)         | Min.  | ℓ /min | 5                            | 5                            |
| Flow Sensor_2****                        | Model                        | SEBALGF-080-C20-E-C0.5V                                   |        |                              |                              |
|  | Measuring range              | Min.~Max.   | ℓ /min | 5 ~ 80                       | 5 ~ 80                       |
|  | Flow (Trigger point)         | Min.  | ℓ /min | 5                            | 5                            |
| Water Pressure sensor                    | Model                        | Sensata OFM(2HMP)   |        |                              |                              |
|  | Measuring range              | Min.~Max.   | bar(G) | 0 ~ 20                       | 0 ~ 20                       |
| Piping Connections                       | Inlet                        | inch Male PT 1" according to 1S0 7-1 Capered pipe threads |        |                              |                              |
|  | Outlet                       | inch Male PT 1" according to 1S0 7-1 Capered pipe threads |        |                              |                              |
| Water strainer                           | Supply type                  | Loose supply(externally installed)                        |        |                              |                              |
|  | Mesh size                    | 30 mesh   |        |                              |                              |
|  | Max. particle size           | mm -  |        |                              |                              |
|  | Material                     | Stainless Steel   |        |                              |                              |
| Relief Valve                             | Pressure Limit               | Upper Limit   | bar    | 3.0                          | 3.0                          |

**Note**

- Due to our policy of innovation, some specifications may be changed without notification.
- Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" chapter should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
- Sound power level is measured in accordance with EN 12102-1 and ISO 9614.
  - Rated : This mode is measured on the rated condition in the semi-anechoic rooms. Therefore, these values may vary depending on operation conditions.
  - Daytime max : This mode is measured based on max. fan RPM and max. compressor Hz. that can be reached under outdoor air temperature 2°C.
  - Low noise : This mode lowers noise by limiting the compressor Hz. and fan RPM, and thus the performance may be limited.
- Performances are accordance with EN14511 and reflect ErP testing conditions. The values indicated above are the declared values at rated conditions acc. ErP regulation. For max. capacities, please refer to Performance Data.
- This product contains Fluorinated greenhouse gases.
- SCOP is in accordance with EN14825.
- Rated running currents are based on the declared values under the following conditions.
  - Heating : Outdoor Temp. 7°CDB / 6°CWB, Leaving Water Temp. 35°C
  - Cooling : Outdoor Temp. 35°C(DB) / 24°C(WB), Leaving Water Temp. 18°C
- All installation sites must be equipped with an earth leakage circuit breaker (ELCB).
  - \* DHW 55~80°C Operating is available only when the booster heater is operating.
  - \*\* This is the power input i accordance with the 80% pump capacity setting at rated water flow rate. When the OH SUNG pump is set as 80% capacity, it's head is similar to that of the GRUNDFOS pump at rated water flow rate.
  - \*\*\* In the case of integrated water pump, either water pump or water pump 2 will be applied.
  - \*\*\*\* In the case of integrated flow sensor, either flow sensor or flow sensor 2 will be applied.

## 2. Specification

| Technical Specifications (Refrigerant side) |                                |                            |             | FHBW078A1<br>[HM073HFS UA41] | FHBW098A1<br>[HM093HFS UA41] |  |
|---|--------------------------------|----------------------------|-------------|------------------------------|------------------------------|--|
| Operation Range<br>(Outdoor Temp.)          | Cooling <sup>#</sup>           | Min.~ Max.                 | °C DB       | 5 ~ 48                       | 5 ~ 48                       |  |
|   | Heating                        | Min.~ Max.                 | °C DB       | -25 ~ 35                     | -25 ~ 35                     |  |
| Compressor                                  | Type                           | -                          |             |                              |                              |  |
|   | Model                          | Twin Rotary                |             |                              |                              |  |
|   | Motor Type                     | EDTF420D×1                 |             |                              |                              |  |
|   | Displacement                   | cm <sup>3</sup> /Rev.      | BLDC        |                              |                              |  |
| Refrigerant                                 | Type                           | -                          |             |                              |                              |  |
|   | GWP (Global Warming Potential) | -                          |             |                              |                              |  |
|   | Precharged Amount              | g                          | 41.5        |                              |                              |  |
|   | t-CO2 eq.                      | -                          |             |                              |                              |  |
|   | Control                        | Electronic Expansion Valve |             |                              |                              |  |
| Refrigerant Oil                             | Type                           | -                          |             |                              |                              |  |
|   | Charged Volume                 | CC x No.                   | -           |                              |                              |  |
| Heat Exchanger                              | Type                           | Corrugate                  |             |                              |                              |  |
|   | Quantity                       | 1                          |             |                              |                              |  |
|   | Specification                  | Row                        | EA          | 2                            |                              |  |
|   |                                | Column                     | EA          | 38                           |                              |  |
| FPI   |                                | EA                         | 18          |                              |                              |  |
| Fan   | Type                           | -                          |             |                              |                              |  |
|   | Air Flow Rate                  | Rated                      | m/min x No. | Propeller                    |                              |  |
| Fan Motor                                   | Type                           | -                          |             |                              |                              |  |
|   | Output                         | W x No.                    | BLDC        |                              |                              |  |

**Note**

# This operation range includes not only the continuous operation range but also operative range.