



Automation - Controls - Process

# Thermo-Chiller

Circulating Fluid Temperature Controller



## Air-cooled refrigeration

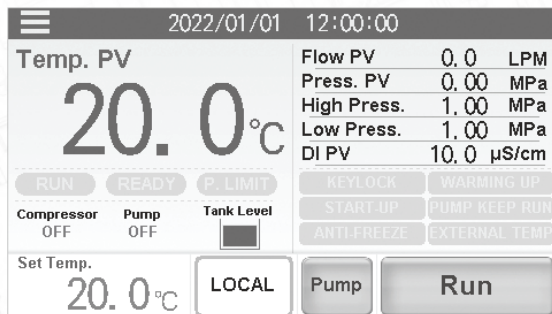
## Standard Type

- **Cooling capacity: 38 kW**
- **Power supply:**  
3-phase 380 to 415 VAC (50/60 Hz)  
3-phase 460 to 480 VAC (60 Hz)
- **Set temperature range: 5 to 35°C**
- **Max. ambient temperature: 45°C**
- **Temperature stability: ±0.1°C**
- **With heating function**
- **Immersion pump (Mechanical sealless)**
- **Waterproof specification: IPX4**

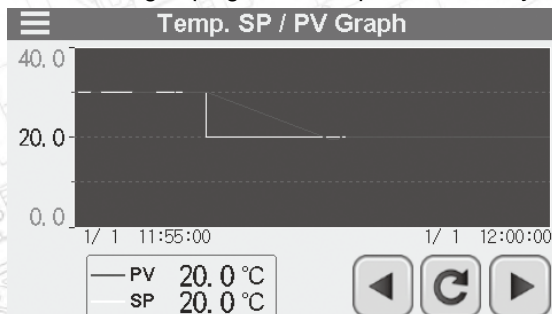


- **Touch panel, Improved usability and visibility** (For details, refer to page 5.)

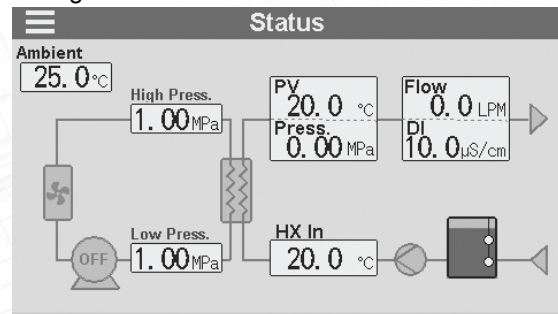
- Home screen



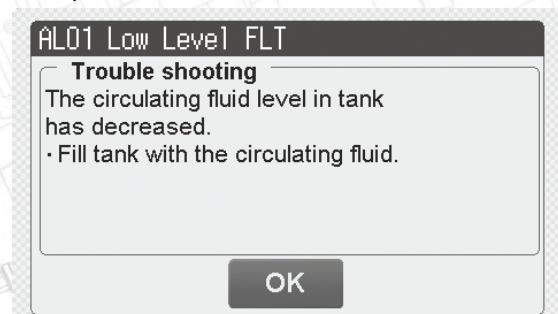
- Graphical representation of the temperature allows for grasping of the temperature history.



- Chiller operation status can be monitored on a single screen.



- Display of alarm details allows for quick response.



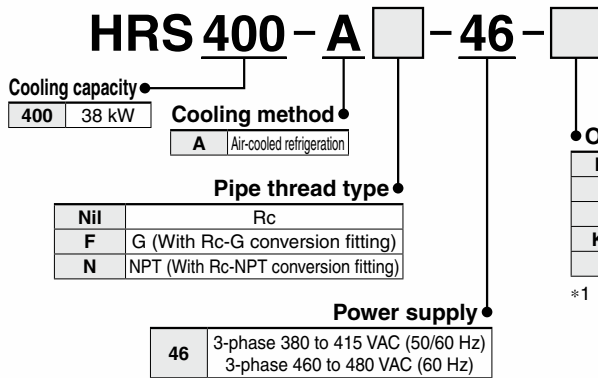
## HRS400 Series

# Thermo-chiller Standard Type

## Air-cooled 460 V Type HRS400 Series



### How to Order



\*1 This is a manual fluid fill port that is different from the automatic fluid fill port. Fluid can be supplied manually into the tank without removing the side panel. (Fluid can be supplied manually for models without option K if the side panel is removed.)

### Specifications

| Model                                       |  | HRS400-A-46   |   |  |
|---|--|---|---|--|
| <b>Cooling method</b>                       |  | Air-cooled refrigeration  |   |  |
| <b>Refrigerant</b>                          |  | R410A (HFC)   |   |  |
| <b>Refrigerant charge</b>                   | kg   | 3.7   |   |  |
| <b>Control method</b>                       |  | PID control   |   |  |
| <b>Ambient temperature/Altitude*1, 7, 9</b> |  | °C Temperature: -5 to 45, Altitude: less than 3000 m  |   |  |
| <b>Circulating fluid system</b>             | <b>Circulating fluid*1, 2</b>                                  | Tap water, 15% Ethylene glycol aqueous solution, Deionized water  |   |  |
|   | <b>Set temperature range*1</b>                                 | °C 5 to 35  |   |  |
|   | <b>Cooling capacity*3, 7</b>                                   | kW 38   |   |  |
|   | <b>Heating capacity*4</b>                                      | kW 8  |   |  |
|   | <b>Temperature stability*5</b>                                 | °C ±0.1   |   |  |
|   | <b>Pump capacity</b>   | <b>Rated flow (Outlet)</b>  | L/min 125 (0.45 MPa)  |  |
|   |  | <b>Maximum flow rate</b>  | L/min 180   |  |
|   | 50/60 Hz   | <b>Maximum pump head</b>  | m 68  |  |
|   |  | <b>Minimum operating flow rate*6</b>  | L/min 40  |  |
|   | <b>Tank capacity</b>   | L 60  |   |  |
|   | <b>Circulating fluid outlet, circulating fluid return port</b> |   | Rc1 (Symbol F: G1, Symbol N: NPTG1)   |  |
|   | <b>Tank drain port</b>   |   | Rc3/4 (Symbol F: G3/4, Symbol N: NPTG3/4)   |  |
|   | <b>Automatic fluid fill system (Standard)</b>                  | <b>Supply side pressure range</b>   | MPa 0.2 to 0.5  |  |
|   |  | <b>Supply side fluid temperature</b>  | °C 5 to 35  |  |
| <b>Automatic fluid fill port</b>            |  | Rc1/2 (Symbol F: G1/2, Symbol N: NPTG1/2)   |   |  |
| <b>Overflow port</b>                        |  | Rc1 (Symbol F: G1, Symbol N: NPTG1)   |   |  |
| <b>Fluid contact material</b>               |  | <b>Metal</b>  | Stainless steel, Copper (Heat exchanger brazing), Brass, Bronze   |  |
|   |  | <b>Resin</b>  | PTFE, PU, FKM, EPDM, PVC, NBR, POM, PE, NR, PBT   |  |
| <b>Electrical system</b>                    | <b>Power supply</b>  |   | 3-phase 380 to 415 VAC (50/60 Hz)<br>Allowable voltage range ±10% (No continuous voltage fluctuation)<br>3-phase 460 to 480 VAC (60 Hz)<br>Allowable voltage range ±4%, -10% (Max. voltage less than 500 V and no continuous voltage fluctuation) |  |
|   | Applicable earth leakage breaker (Standard)                    | <b>Rated current</b>  | A 40  |  |
|   |  | <b>Sensitivity of leak current</b>  | mA 30   |  |
|   | <b>Rated operating current*5</b>                               |   | A 22  |  |
|   | <b>Rated power consumption*5</b>                               |   | kW(kVA) 14.3 (15.2)   |  |
| <b>Noise level (Front 1 m/Height 1 m)*5</b> |  | dB(A) 71  |   |  |
| <b>Waterproof specification</b>             |  | IPX4  |   |  |
| <b>Accessories</b>                          |  | Operation Manual (for installation/operation) 1 pc. (English),<br>Y-strainer (40 meshes) 25A, Barrel nipple 25A,<br>Anchor bolt fixing brackets 2 pcs. (including 6 M8 bolts) |   |  |
| <b>Weight (dry state)</b>                   |  | kg Approx. 340  |   |  |

- \*1 When the ambient temperature or circulating fluid temperature is 10°C or below, refer to "Operation at low ambient temperature or low circulating fluid temperature" (page 15).
- \*2 Use fluid in condition below as the circulating fluid. Tap water: Standard of The Japan Refrigeration And Air Conditioning Industry Association (JRA GL-02-1994)  
15% ethylene glycol aqueous solution: Diluted with clean water, without any additives such as antiseptics.  
Deionized water: Electric conductivity 1 μS/cm or higher (Electric resistivity 1 MΩ·cm or lower)
- \*3 ① Ambient temperature: 32°C, ② Circulating fluid: Tap water, ③ Circulating fluid temperature: 20°C, ④ Circulating fluid flow rate: Rated flow, ⑤ Power supply: 400 VAC
- \*4 ① Ambient temperature: 32°C, ② Circulating fluid: Tap water, ③ Circulating fluid flow rate: Rated flow, ④ Power supply: 400 VAC
- \*5 ① Ambient temperature: 32°C, ② Circulating fluid: Tap water, ③ Circulating fluid temperature: 20°C, ④ Load: Same as the cooling capacity, ⑤ Circulating fluid flow rate: Rated flow, ⑥ Power supply: 400 VAC, ⑦ Piping length: Shortest
- \*6 Fluid flow rate to maintain the cooling capacity. If the actual flow rate is lower than this, install a bypass piping.
- \*7 If the product is used at an altitude of 1000 m or higher, refer to "Operating Environment/Storage Environment" (page 14) Item 13 "For altitudes of 1000 m or higher."
- \*8 The anchor bolt fixing brackets (including 6 M8 bolts) are used for fixing to wooden skids when packaging the thermo-chiller. No anchor bolt is included.
- \*9 For the product operation in the UL compliant conditions, refer to "Operating Environment/Storage Environment" (page 14).



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