

Thermo-Chiller

Circulating Fluid Temperature Controller



RoHS

Air-cooled refrigeration

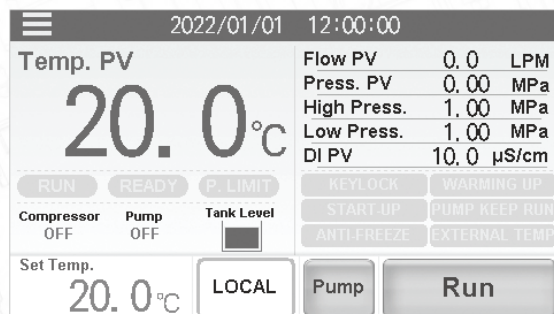
Standard Type

- **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: $\pm 0.1^\circ\text{C}$**
- **With heating function**
- **Immersion pump (Mechanical sealless)**
- **Waterproof specification: IPX4**

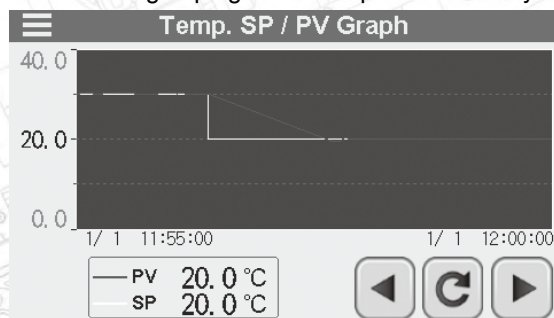


- **Touch panel, Improved usability and visibility** (For details, refer to page 5.)

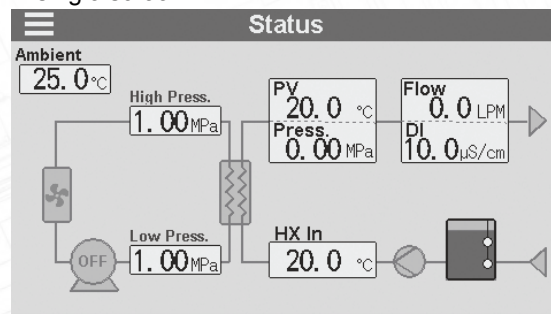
- Home screen



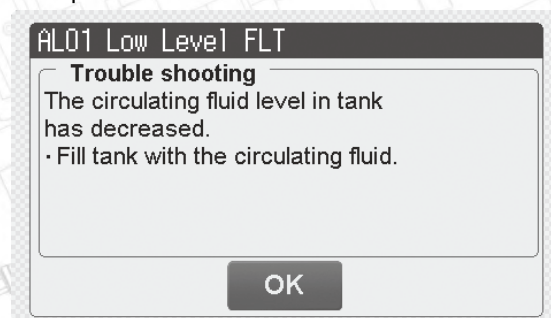
- Graphical representation of the temperature allows for grasping of the temperature history.



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



- Display of alarm details allows for quick response.



HRS400 Series

www.smcusa.com

www.smcworld.com

NF22-E780

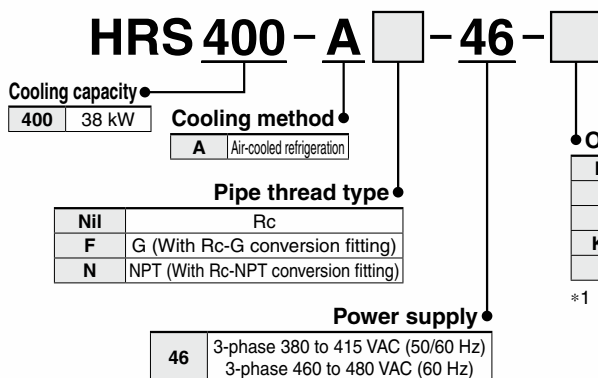
Thermo-chiller

Standard Type

Air-cooled 460 V Type *HRS400 Series*



How to Order



Option 1

Nil	None
A	With caster adjuster-foot
D	Electric conductivity control
K*1	With fluid fill port
M	Applicable to deionized water piping

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