

Thermo-chiller **Fluorinated Fluid Type**

Series **HRZ**



How to Order

Fluorinated Fluid Type **HRZ** **001** - **L** - **□**

Cooling capacity

Symbol	Cooling capacity
001	1 kW
002	2 kW
004	4 kW
008	8 kW

Temperature range setting

Symbol	Temperature range setting	1 kW	2 kW	4 kW	8 kW
L	-20 to 40°C	●	●	●	●
H	20 to 90°C	●	●	●	●
W	-20 to 90°C	—	●	—	●

Option (Refer to pages 98 and 99.)

Nil	None
C	Analog communication
D	DeviceNet™ communication
N	NPT fittings
Z	Circulating fluid automatic recovery

Specifications (For details, please consult our "Product Specifications" information.)

Model	HRZ001-L	HRZ002-L	HRZ004-L	HRZ008-L	HRZ001-H	HRZ002-H	HRZ004-H	HRZ008-H	HRZ002-W	HRZ008-W	
Cooling method	Water-cooled refrigeration										
Refrigerant	R404A (HFC)										
Control system	PID control										
Ambient temp./humidity <small>Note 1)</small>	Temperature: 10 to 35°C, Humidity: 30 to 70%RH										
Circulating fluid system	Circulating fluid <small>Note 2)</small>	Fluorinert™ FC-3283/GALDEN® HT135				Fluorinert™ FC-40/GALDEN® HT200				• -20 to 40°C: Fluorinert™ FC-3283/GALDEN® HT135 • 20 to 90°C: Fluorinert™ FC-40/GALDEN® HT200	
	Temp. range setting <small>Note 1)</small> (°C)	-20 to 40				20 to 90				-20 to 90	
	Cooling capacity <small>Note 3)</small> (kW)	1.0 (at -10°C)	2.0 (at -10°C)	4.0 (at -10°C)	8.0 (at -10°C)	1.0 (at 20°C)	2.0 (at 20°C)	4.0 (at 20°C)	8.0 (at 20°C)	2.0 (at 20°C)	8.0 (at 20°C)
	Heating capacity <small>Note 3)</small> (kW)	2.8 (at -10°C)	3.2 (at -10°C)	3.6 (at -10°C)	5.9 (at -10°C)	2.3 (at 20°C)	2.6 (at 20°C)	2.8 (at 20°C)	3.0 (at 20°C)	2.3 (at 20°C)	3.3 (at 20°C)
	Temp. stability <small>Note 4)</small> (°C)	±0.1									
	Pump capacity <small>Note 5)</small> (50/60 Hz) (MPa)	0.45/0.65 (at 20 ℓ/min)			0.65/0.95 (at 30 ℓ/min)	0.40/0.60 (at 20 ℓ/min)		0.45/0.65 (at 20 ℓ/min)			
	Rated flow <small>Note 6)</small> (ℓ/min)	20			30	20					
	Main tank capacity <small>Note 7)</small> (ℓ)	Approx. 15			Approx. 22	Approx. 12		Approx. 15			
	Sub-tank capacity <small>Note 8)</small> (ℓ)	Approx. 16			Approx. 17	Approx. 15		Approx. 16			
	Port size	Rc 3/4									
Wetted parts material	Stainless steel, EPDM, Copper brazing (Heat exchanger), PPS, Silicone, Fluororesin										
Cooling water system	Temperature range (°C)	10 to 25									
	Pressure range (MPa)	0.3 to 0.7									
	Required flow <small>Note 9)</small> (50/60 Hz) (ℓ/min)	5/5	6/6	15/22	18/23	3/4	5/6	9/10	13/14	6/7	13/14
	Port size	Rc 1/2									
Wetted parts material	Stainless steel, EPDM, Copper brazing (Heat exchanger), Silicone, Brass										
Electrical system	Power supply	3-phase 200 VAC 50 Hz, 3-phase 200 to 208 VAC 60 Hz Allowable voltage fluctuation ±10%									
	Breaker capacity (A)	30			60	20		30			
	Rated current (A)	20		25	46	14		23			
	Alarm	Refer to page 94.									
	Communications	Contact input/output (D-sub 25 pin) and Serial RS-485 (D-sub 9 pin) (Refer to pages 92 and 93.)									
Mass <small>Note 10)</small> (kg)	170		175	275	145		170				
Safety standards	UL, CE marking, SEMI (S2-0703, S8-0701, F47-0200), SEMATECH (S2-93, S8-95)										

Note 1) It should have no condensation.

Note 2) Fluorinert™ is a trademark of 3M and GALDEN® is a registered trademark of Solvay Solexis, Inc. Regarding the fluid other than the above, please contact SMC.

Note 3) (1) Facility water temperature: 25°C, (2) Circulating fluid flow rate: Values at circulating fluid rated flow rate. Values common for 50/60 Hz.

Note 4) Thermo-cooler specifications do not have heating capability.

Note 5) Capacity of the Thermo-chiller outlet when the circulating fluid temperature is at 20°C.

Note 6) Required flow for cooling capacity or maintaining the temperature stability. When used below the rated flow, use the individually sold, "By-pass piping set" (Refer to page 95).

Note 7) Minimum volume required for operating only the Thermo-chiller. (Circulating fluid temperature: 20°C, including the Thermo-chiller's internal pipings or heat exchanger)

Note 8) Preliminary space volume without main tank capacity. Available for collecting the circulating fluid inside an external piping or for preliminary injection.

Note 9) Required flow when a load is applied as shown in the cooling capacity when the facility water temperature is at 25°C.

Note 10) Mass in the dry state without circulating fluids.