Thermo-chiller Standard Type
Single-phase 200 to 230 VAC
HRS Series

(UL Standards)

RoHS

How to Order

Air-cooled refrigeration **HRS 018 – A □ – 20 – □**

Cooling capacity

012	Cooling capacity 1100/1300 W (50/60 Hz)
018	Cooling capacity 1700/1900 W (50/60 Hz)
024	Cooling capacity 2100/2400 W (50/60 Hz)
030	Cooling capacity 2600/3200 W (50/60 Hz)
050	Cooling capacity 4700/5100 W (50/60 Hz)
060	Cooling capacity 4900/5900 W (50/60 Hz)

Note) UL Standards: Applicable to only 60 Hz
The pump of 050 and 060 have a mechanical seal and leakage could occur depending on circulating fluid quality. We recommend you to use Particle Filter Kit, HRS-PF004, as a preventive measure.

Cooling method

A	Air-cooled refrigeration

Pipe thread type

Nil	Rc
F	G (with PT-G conversion fitting set)
N	NPT (with PT-NPT conversion fitting set)

Option

Symbol	Option	Applicable model
Nil	None	HRS012/018/024 030/050/060
B	With earth leakage breaker	
J	With automatic fluid fill function	
M	Applicable to deionized water piping	
T	High pressure pump mounted Note)	HRS012/018/024/030
G	High temperature environment specification	HRS012/018/024

- When multiple options are combined, indicate symbols in alphabetical order.

Note) The cooling capacity will decrease by about 300 W from the value in the catalog.
The pump has a mechanical seal in it and leakage could occur depending on circulating fluid quality. We recommend you to use Particle Filter Kit, HRS-PF003, as a preventive measure.

Power supply Note)

Symbol	Power supply
20	Single-phase 200 to 230 VAC (50/60 Hz)

Note) UL Standards: Applicable to only 60 Hz

Specifications

* There are different values from standard specifications. Refer to pages 42 to 44 for details.

Model			HRS012-A□-20	HRS018-A□-20	HRS024-A□-20	HRS030-A□-20	HRS050-A□-20	HRS060-A□-20
Cooling method			Air-cooled refrigeration					
Refrigerant			R407C (HFC)				R410A (HFC)	
Refrigerant charge		kg	0.35	0.36	0.36	0.57	0.65	0.85
Control method			PID control					
Ambient temperature/Humidity/Altitude Note 1) 12)			Temperature: 5 to 40°C, High temperature environment specification (option): 5 to 45°C, Humidity: 30 to 70%, Altitude: less than 3000 m					
Circulating fluid system	**Circulating fluid** Note 2)		Tap water, 15% ethylene glycol aqueous solution Note 4)					
	Set temperature range Note 1)	°C	5 to 40					
	Cooling capacity (50/60 Hz) Note 3)	W	1100/1300	1700/1900	2100/2400	2600/3200	4700/5100	4900/5900
	Heating capacity (50/60 Hz) Note 3)	W	530/650			600/640	1100/1400	1000/1300
	Temperature stability Note 5)	°C	±0.1					
	Pump **Rated flow (50/60 Hz)** Note 6) 7)	L/min	7 (0.13 MPa)/7 (0.18 MPa)				23 (0.24 MPa)/28 (0.32 MPa)	23 (0.21 MPa)/28 (0.29 MPa)
	Pump **Maximum flow rate (50/60 Hz)**	L/min	27/29			34/40	31/42	29/38
	Pump **Maximum pump head (50/60 Hz)**	m	14/19				50	
	Pump **Output**	W	200				550	
	Tank capacity	L	Approx. 5					
	Port size		Rc1/2					
	Fluid contact material		Stainless steel, Copper (Heat exchanger brazing), Bronze, Alumina ceramic, Carbon, PP, PE, POM, FKM, EPDM, PVC					
Electrical system	**Power supply**		Single-phase 200 to 230 VAC (50/60 Hz) Allowable voltage range ±10%					
	Circuit protector	A	10				20	30
	Applicable earth leakage breaker capacity Note 8)	A	10				20	30
	Rated operating current	A	4.6/5.1	4.7/5.2	5.1/5.9	5.2/6.0	8/11	8.9/11.5
	Rated power consumption (50/60 Hz) Note 3)	kVA	0.9/1.0	0.9/1.0	1.0/1.2	1.0/1.2	1.7/2.2	1.8/2.3
Noise level (50/60 Hz) Note 9)		dB	60/61			62/65	65/68	66/68
Accessories			Fitting (for drain outlet) 1 pc. Note 11), Input/output signal connector 1 pc., Power supply connector 1 pc. Note 11), Operation Manual (for installation/operation) 1, Quick Manual (with a clear case) 1 Note 11), Alarm code list sticker 1, Ferrite core (for communication) 1 pc., Power supply cable: Option (sold separately) to be ordered or prepared by user.					
Weight Note 10)		kg	43			47	69	73

Note 1) It should have no condensation.
Note 2) If tap water is used, use water that conforms to Water Quality Standards of the Japan Refrigeration and Air Conditioning Industry Association (JRA GL-02-1994 cooling water system - circulating type - make-up water).
Note 3) ① Ambient temperature: 25°C, ② Circulating fluid temperature: 20°C, ③ Circulating fluid rated flow, ④ Circulating fluid: Tap water
Refer to the cooling capacity graph on pages 32 and 33 for details.
Note 4) Use a 15% ethylene glycol aqueous solution if operating in a place where the circulating fluid temperature is 10°C or less.
Note 5) Outlet temperature when the circulating fluid flow is rated flow, and the circulating fluid outlet and return port are directly connected. Installation environment and the power supply are within specification range and stable.
Note 6) The capacity at the thermo-chiller outlet when the circulating fluid temperature is 20°C.
Note 7) Required minimum flow rate for cooling capacity or maintaining the temperature stability. The specification of the cooling capacity and the temperature stability may not be satisfied if the flow rate is lower than the rated flow. (In such a case, use a bypass piping set (sold separately).)
Note 8) Purchase an earth leakage breaker with current sensitivity of 30 mA separately. (A product with an optional earth leakage breaker (option B) is also available.)
Note 9) Front: 1 m, height: 1 m, stable with no load, Other conditions → Note 3)
Note 10) Weight in the dry state without circulating fluids
Note 11) It is not provided for the HRS050/060.
Note 12) If the product is used at altitude of 1000 m or higher, refer to "Operating Environment/Storage Environment" (page 62) Item 14 "* For altitude of 1000 m or higher".