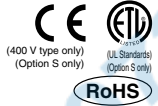


Thermo-chiller Inverter Type

Air-cooled 200 V/400 V Type

HRSH090 Series



How to Order

HRSH 090 - A □ - 20 - □

Cooling capacity
090 9.5 kW

Cooling method
A Air-cooled refrigeration

Pipe thread type

Nll	Rc
F	G (with Rc-G conversion fitting)
N	NPT (with Rc-NPT conversion fitting)

Power supply

20	3-phase 200 VAC (50 Hz) 3-phase 200 to 230 VAC (60 Hz)
40	3-phase 380 to 415 VAC (50/60 Hz)

Option

Nil	None
B <small>Note 1)</small>	With earth leakage breaker
J	With automatic fluid fill function
M	Applicable to deionized water piping
S <small>Note 2)</small>	Conforming to CE/UL standards

- When multiple options are combined, indicate symbols in alphabetical order.
- Note 1) 200 V type only.
400 V type is provided with an earth leakage breaker as standard.
- Note 2) 200 V type only. 400 V type is CE-compliant as standard. Additionally, combination with option B is not necessary. An earth leakage breaker is equipped as standard.

Specifications

Model		HRSH090-A□-20-□	HRSH090-A□-40-□	
Cooling method		Air-cooled refrigeration		
Refrigerant		R410A (HFC) (GWP1975)		
Refrigerant charge		1.32		
Control method		PID control		
Ambient temperature/humidity <small>Note 1), 9)</small>		5 to 45/30 to 70%		
Circulating fluid <small>Note 2)</small>		Tap water, 15% Ethylene glycol aqueous solution, Deionized water		
Circulating fluid system	Set temperature range <small>Note 1)</small>	5 to 40		
	Cooling capacity <small>Note 3), 9)</small>	9.5		
	Heating capacity <small>Note 4)</small>	2.5		
	Temperature stability <small>Note 5)</small>	±0.1		
	Pump capacity	Rated flow (Outlet)	45 (0.5 MPa)	
		Maximum flow rate	60	
		Maximum pump head	50	
	Settable pressure range <small>Note 6)</small>	0.1 to 0.5		
	Minimum operating flow rate <small>Note 7)</small>	L/min		
	Tank capacity	L		
Circulating fluid outlet, circulating fluid return port		Rc1 (Symbol F: G1, Symbol N: NPT1)		
Tank drain port		Rc1/4 (Symbol F: G1/4, Symbol N: NPT1/4)		
Fluid contact material		Stainless steel, Copper (Heat exchanger brazing), Brass, Bronze, Carbon, Ceramic, PE, PVC, POM, PTFE, NBR, EPDM, FKM, PP		
Electrical system	Power supply		3-phase 200 VAC (50 Hz), 3-phase 200 to 230 VAC (60 Hz) Allowable voltage range ±10% (No continuous voltage fluctuation)	
	Applicable earth leakage breaker <small>Note 8)</small>	Rated current	A	
		Sensitivity of leak current	mA	
	Rated operating current <small>Note 5)</small>		A	
	Rated power consumption <small>Note 5)</small>	kW (kVA)	4.6 (5.2)	
	Noise level (Front 1 m/Height 1 m) <small>Note 5)</small>		dB (A)	
Accessories		Alarm code list stickers 2 pcs. (English 1 pc./Japanese 1 pc.), Operation Manual (for installation/operation) 2 pcs. (English 1 pc./Japanese 1 pc.), Y-strainer (40 meshes) 25A, Barrel nipple 25A, Anchor bolt fixing brackets 2 pcs. (including 4 M10 bolts) <small>Note 10)</small>		
Weight (dry state)		kg		
		Approx. 130		

Note 1) Use a 15% ethylene glycol aqueous solution if operating in a place where the ambient temperature and/or circulating fluid temperature is 10°C or less.

Note 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 by tap water in condition above without any additives such as antiseptics.

Deionized water: Electric conductivity 1 μS/cm or higher (Electric resistivity 1 MΩ·cm or lower)

Note 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: 200/400 VAC

Note 4) ① Ambient temperature: 32°C, ② Circulating fluid: Tap water, ③ Circulating fluid flow rate: Rated flow, ④ Power supply: 200/400 VAC

Note 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: 200/400 VAC, ⑦ Piping length: Shortest

Note 6) With the pressure control mode by inverter. When the pressure control mode is not used, the pump frequency set mode can be used.

Note 7) Fluid flow rate to maintain the cooling capacity. If the actual flow rate is lower than this, install a bypass piping.

Note 8) To be prepared by user. A specified earth leakage breaker is installed for option B [With earth leakage breaker], option S [Conforming to CE/UL standards] and 400 V type.

Note 9) The product is used at altitude of 1000 m or higher, refer to "Operating Environment/Storage Environment" (page 151) Item 14** For altitude of 1000 m or higher*.

Note 10) The anchor bolt fixing brackets (including 4 M10 bolts) are used for fixing to wooden skids when packaging the thermo-chiller. No anchor bolt is included.