

Thermo-chiller Inverter Type

Air-cooled 400 V Type

HRSH Series



How to Order

HRSH 250 - A - 40 -

Cooling capacity

100	10.5 kW
150	15.7 kW
200	20.5 kW
250	25 kW
300	28 kW

Cooling method

A Air-cooled refrigeration

Pipe thread type

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

Power supply

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

Option

Nil (Note 1)	None
A	With caster adjuster-foot
K (Note 2)	With fluid fill port

Note 1) 400 V type is provided with an earth leakage breaker with handle (-B1) as standard.

Note 2) 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			HRSH100-A-40-□	HRSH150-A-40-□	HRSH200-A-40-□	HRSH250-A-40-□	HRSH300-A-40-□	
Cooling method	Air-cooled refrigeration							
Refrigerant	R410A (HFC)							
Refrigerant charge	kg	1.27	2.1	2.1	2.8	2.8		
Control method	PID control							
Ambient temperature/Altitude	Note 1), 8)	Temperature: -20 to 45, Altitude: less than 3000 m						
Circulating fluid	Note 1), 2)	Tap water, 15 to 40% Ethylene glycol aqueous solution, Deionized water						
Set temperature range	Note 1)	5 to 35						
Cooling capacity	Note 3), 8)	kW	10.5	15.7	20.5	25	28	
Heating capacity	Note 4)	kW	2.5	3	5.5	7.5		
Temperature stability	Note 5)	°C	±0.1					
Circulating fluid system	Pump capacity	Rated flow (Outlet)	L/min	45 (0.43 MPa)	45 (0.45 MPa)	125 (0.5 MPa)		
		Maximum flow rate	L/min	120	130	180		
		Maximum pump head	m		50	80		
	Settable pressure range	Note 6)	MPa		0.1 to 0.5	0.1 to 0.8		
	Minimum operating flow rate	Note 7)	L/min	20	25	40		
	Tank capacity	L	25		42	60		
	Circulating fluid outlet, circulating fluid return port		Rc1 (Symbol F: G1, Symbol N: NPT1)					
	Tank drain port		Rc3/4 (Symbol F: G3/4, Symbol N: NPT3/4)					
	Automatic fluid fill system	Supply side pressure range	MPa	0.2 to 0.5				
		Supply side fluid temperature	°C	5 to 35				
Fluid contact material	Automatic fluid fill port	Rc1/2 (Symbol F: G1/2, Symbol N: NPT1/2)						
	Overflow port	Rc1 (Symbol F: G1, Symbol N: NPT1)						
		Stainless steel, Copper (Heat exchanger brazing), Brass, Bronze						
		Metal	PTFE, PU, FKM, EPDM, PVC, NBR, POM, PE, NR					
		Resin						
Electrical system	Power supply		3-phase 380 to 415 VAC (50/60 Hz)					
			Allowable voltage range ±10% (No continuous voltage fluctuation)					
	Earth leakage breaker (Standard)	Rated current	A	20	30			
		Sensitivity of leak current	mA					
	Rated operating current	Note 5)	A	7.4	9.3	12.8	16	
	Rated power consumption	Note 5)	kW (kVA)	4.6 (5.1)	5.8 (6.4)	8.2 (8.9)	10.1 (11.1)	
	Noise level (Front 1 m/Height 1 m)	Note 5)	dB (A)	68			71	
Waterproof specification		IPX4						
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 6 M8 bolts) Note 9)						
Weight (dry state)		kg	Approx. 180		Approx. 215		Approx. 280	
CE marking	EMC Directive	2004/108/EC						
	Machinery Directive	2006/42/EC						

Note 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 186-1).
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 to 40% ethylene glycol aqueous solution: Diluted with clean water, without any additives such as antiseptics. (Refer to "Operation at low ambient temperature or low circulating fluid temperature" (page 186-1) for the concentration of the ethylene glycol aqueous solution.)
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: 400 VAC
Note 4) ① Ambient temperature: 32°C, ② Circulating fluid: Tap water, ③ Circulating fluid flow rate: Rated flow, ④ Power supply: 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: 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 power frequency set mode can be used.

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

Note 8) If the product is used at altitude of 1000 m or higher, refer to "Operating Environment/Storage Environment" (page 186) Item 13 "For altitude of 1000 m or higher".

Note 9) 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.