Circulating Fluid Temperature Controller

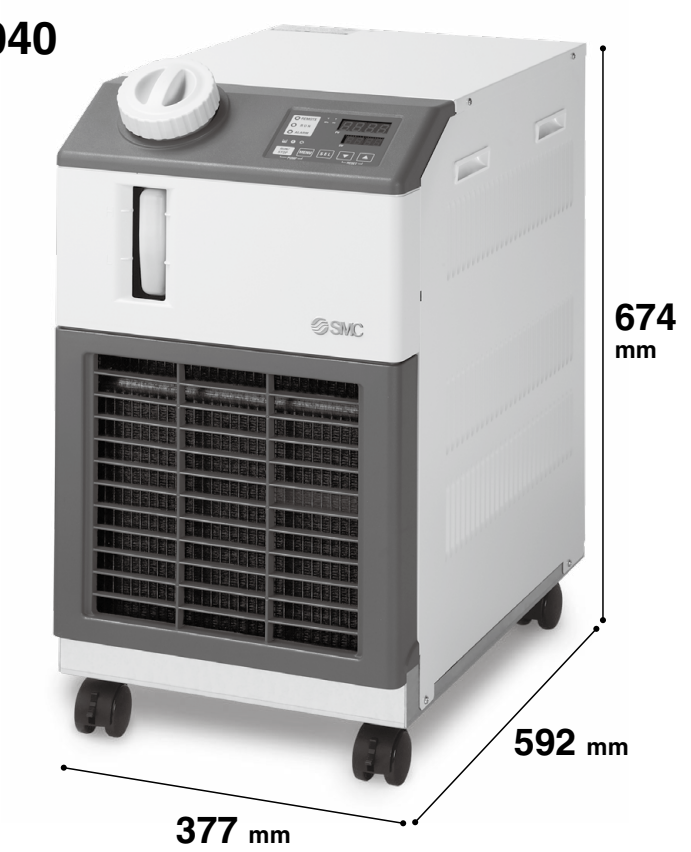
Thermo-chiller Low-temperature Type

(UL Standards)

Supports low temperatures of up to –10°C

Air-cooled refrigeration

- **Compact:**
  Equivalent in size to the HRS040
- **Cooling capacity: 1 kW**∗1
  ∗1 At –10°C
- **Temperature stability: ±0.1°C**
- **Set temperature range:**
  –10°C to 40°C



How to Order

Air-cooled refrigeration **HRS 040 – A – 20 – T1 – X158**

Cooling method

A	Air-cooled refrigeration

Power supply

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

Symbol	UL standards
X158	Compliant
X164	Not compliant

HRS040-A-20-T1-X158/X164

HRS040-A-20-T1-X158/X164

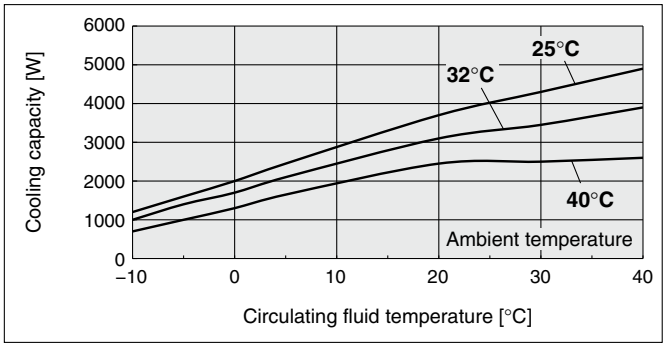
Specifications

Model			X158	X164
Cooling method			Air-cooled refrigeration	
Temperature control method			PID control	
Set temperature range/Temperature stability		°C	–10 to 40/±0.1*1, *4	
Cooling capacity (50/60 Hz)		W	1000/1000*3	
Installation environment	Ambient temperature	°C	5 to 40*1	
	Ambient humidity	%RH	30 to 70 (No condensation)*1	
	Altitude	m	1000 or less	
	Atmosphere		No corrosive or flammable gases For other precautions, refer to the catalog and operation manual.	
Refrigerant			R410A (HFC), 0.53 kg	
Circulating fluid	Fluid type		50% ethylene glycol aqueous solution*2	
	Pump capacity (50/60 Hz)	MPa	0.11 (15 L/min)/0.36 (15 L/min)*5	
	Rated flow (50/60 Hz)	L/min	15/15*5, *6	
Tank capacity		L	Approx. 5	
Operation display panel			7-segment digital display	
Communication functions			Contact input/output, Serial RS-485/RS-232C (D-sub9 female)	
Power supply	Voltage	V	Single-phase 200 to 230 VAC (50/60 Hz) Allowable voltage range ±10 [%]	
	Breaker	A	20	
	Rated operating current	A	8.8/11.2*3	
	Applicable earth leakage breaker capacity	A	20*7	
	Rated power consumption	kVA	1.7/2.2*3	
Circulating fluid contact material			Stainless steel, Copper brazing (Heat exchanger), Brass, Carbon, SiC PP, PE, POM, FKM, EPDM, PVC, NBR	
Weight (dry state)		kg	64	65
Coating color			White	
UL standard			Compliant	Not compliant

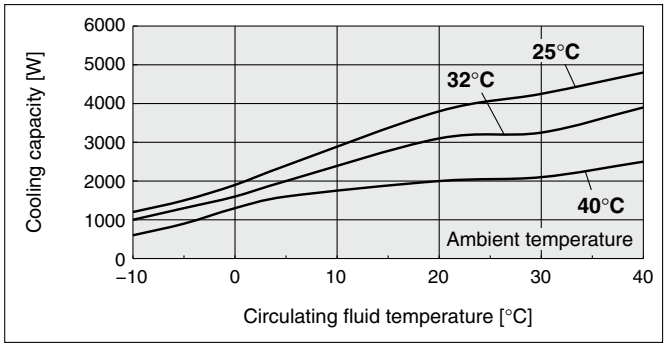
∗1 No condensation should be present.
∗2 Dilute pure ethylene glycol with tap water to create the solution. Additives such as preservatives cannot be used.
∗3 ① Ambient temperature: 32°C, ② Circulating fluid temperature: –10°C, ③ Circulating fluid at the rated flow, ④ Circulating fluid: 50% ethylene glycol aqueous solution
∗4 The temperature at the thermo-chiller outlet when the circulating fluid flow is at the rated flow and the circulating fluid outlet and return port are directly connected
When the installation environment and power supply are within the specification range and stable
∗5 The capacity at the circulating fluid outlet when the circulating fluid temperature is –10°C
∗6 The required flow rate for maintaining the cooling capacity or temperature stability.
The cooling capacity and the temperature stability specifications may not be satisfied if the flow rate is lower than the rated flow.
∗7 Use an earth leakage breaker with a sensitivity of 30 mA and a 200 V power supply (to be prepared by the customer).

Cooling Capacity

HRS040-A-20-T1-X158/X164 (Single-phase 200 to 230 VAC) [50 Hz]

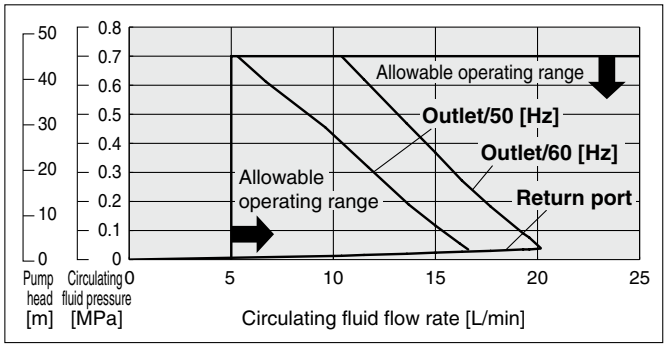


[60 Hz]



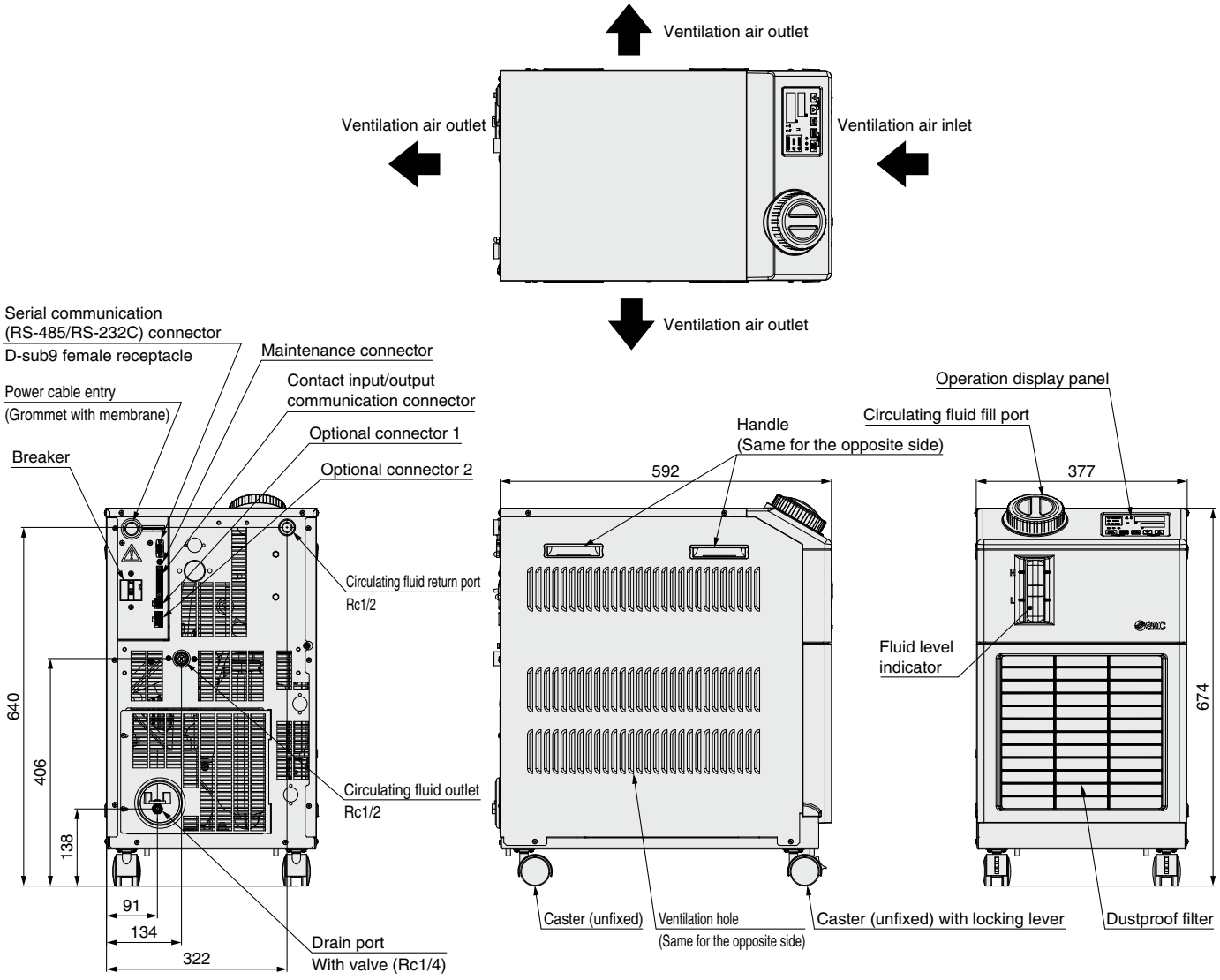
Pump Capacity

HRS040-A-20-T1-X158/X164 (Single-phase 200 to 230 VAC)



Dimensions

HRS040-A-20-T1-X158/X164



Power Cable Specifications

Applicable model	Rated value for thermo-chiller			Power cable examples		
	Power supply	Applicable breaker rated current	Terminal block screw diameter	Cable size	Recommended crimped terminal	Optional accessories
HRS040-A-20-T1-X158/164	Single-phase 200 to 230 VAC (50/60 Hz)	20 A	M4	3 cores x 3.5 mm^2 (3 cores x AWG12) ∗ Including grounding cable	R5.5.4	HRS-CA004

⚠ **Safety Instructions**	Be sure to read the “Handling Precautions for SMC Products” (M-E03-3) and “Operation Manual” before use.

SMC Corporation

Akihabara UDX 15F,
4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101-0021, JAPAN
Phone: 03-5207-8249 Fax: 03-5298-5362
https://www.smcworld.com