

Circulating Fluid Temperature Controller



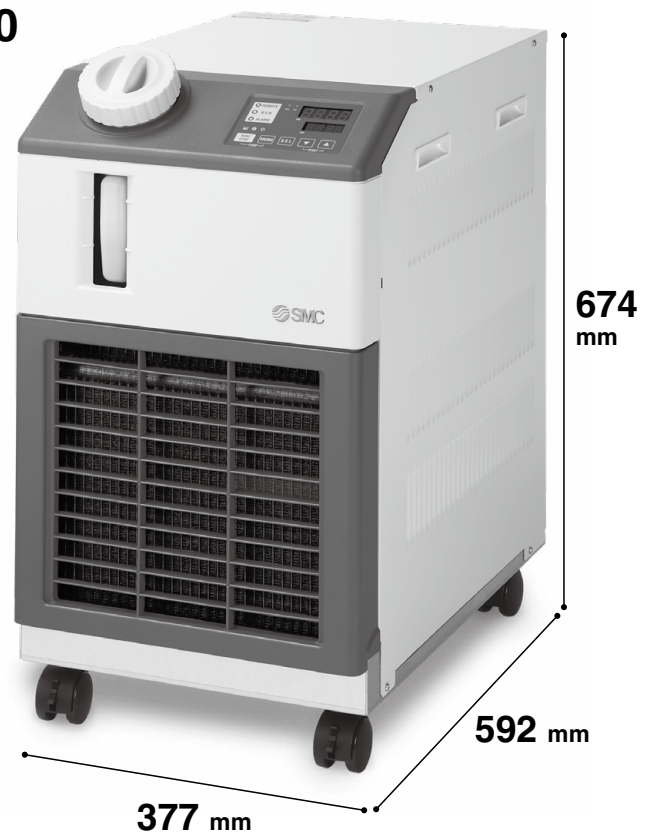
# Thermo-chiller **Low-temperature Type**



## Supports low temperatures of up to $-10^{\circ}\text{C}$

- **Compact:**  
Equivalent in size to the HRS040
- **Cooling capacity: 1 kW\*1**  
\*1 At  $-10^{\circ}\text{C}$
- **Temperature stability:  $\pm 0.1^{\circ}\text{C}$**
- **Set temperature range:**  
 $-10^{\circ}\text{C}$  to  $40^{\circ}\text{C}$

**Air-cooled refrigeration**



### How to Order

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

● **Cooling method**

<b>A</b>	Air-cooled refrigeration
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● **UL standards**

Symbol	UL standards
<b>X158</b>	Compliant
<b>X164</b>	Not compliant

● **Power supply**

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

# 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

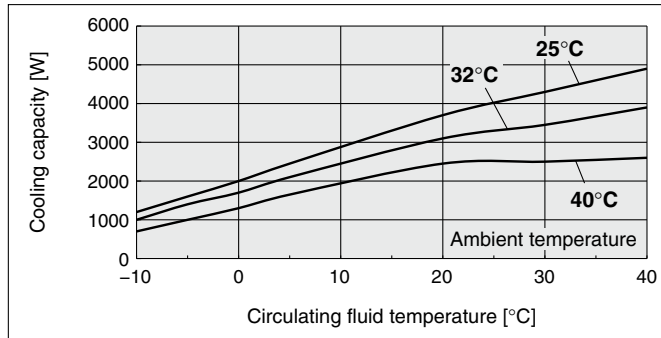
\*6 The required flow rate for maintaining the cooling capacity or temperature stability.

The cooling capacity and the temperature stability specifications may not be satisfied if the flow rate is lower than the rated flow.

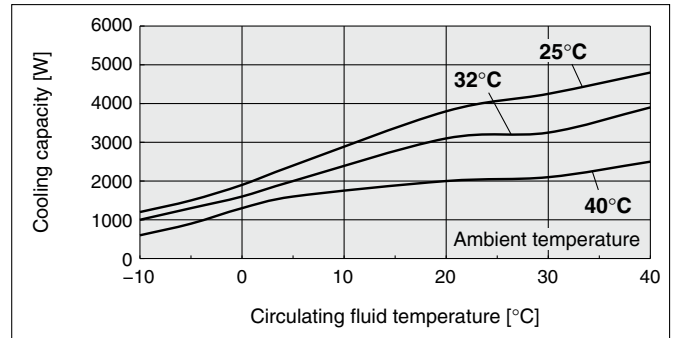
\*7 Use an earth leakage breaker with a sensitivity of 30 mA and a 200 V power supply (to be prepared by the customer).

## Cooling Capacity

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

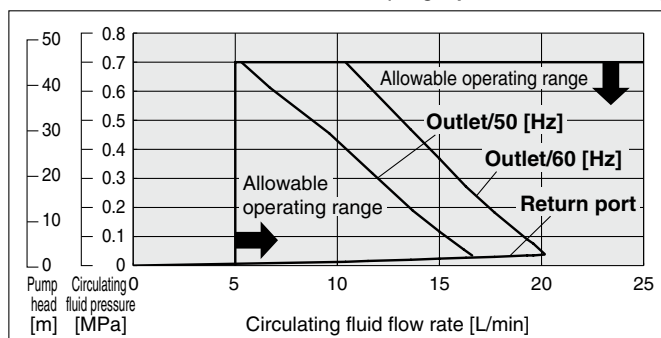


[60 Hz]



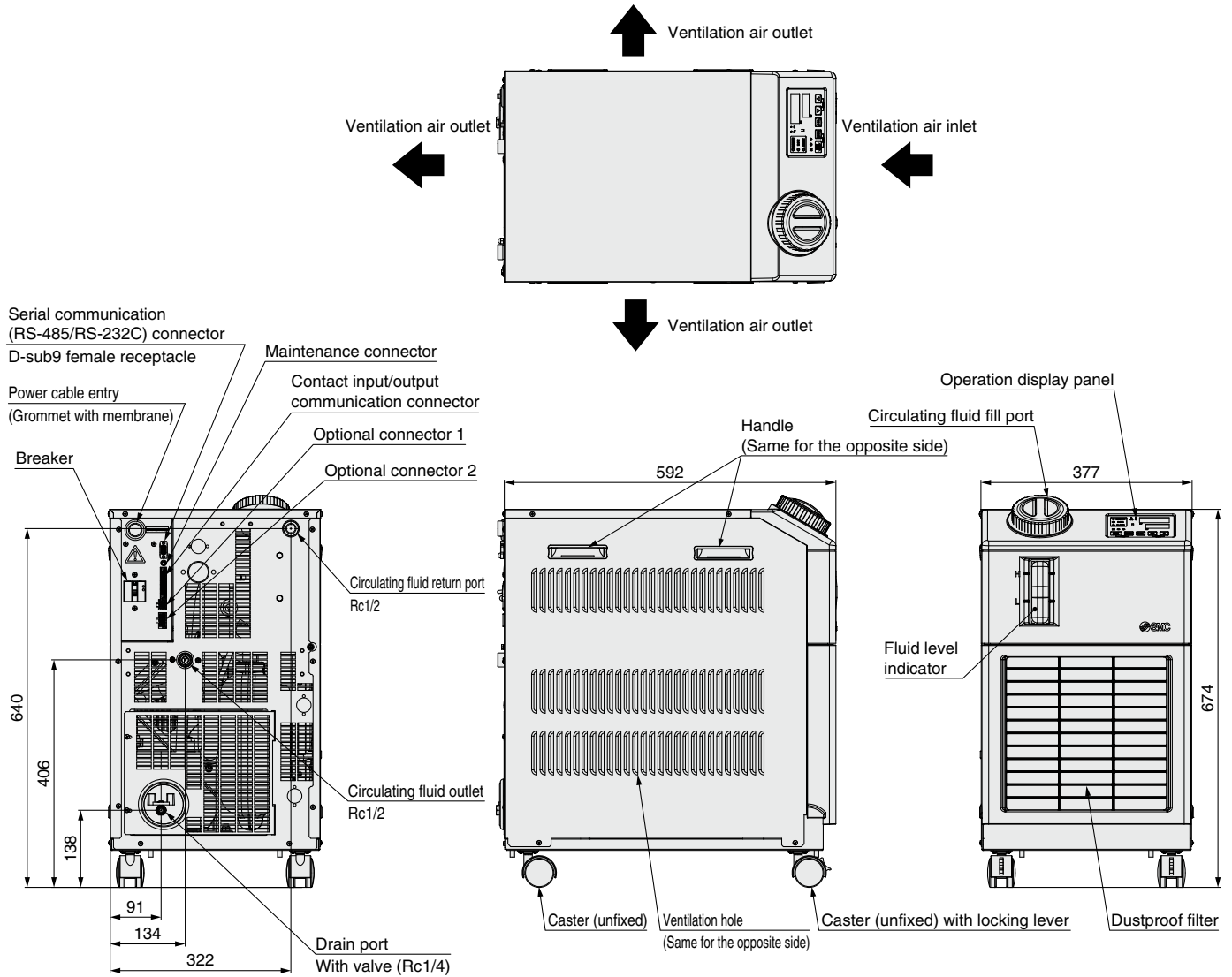
## Pump Capacity

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
<b>HRS040-A-20-T1-X158/164</b>	Single-phase 200 to 230 VAC (50/60 Hz)	20 A	M4	3 cores x 3.5 mm <sup>2</sup> (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.

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