Peltier-Type Thermoelectric Bath

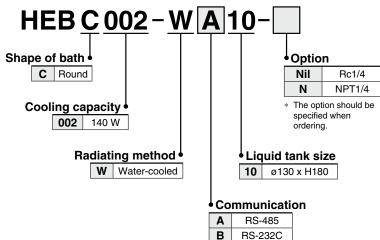




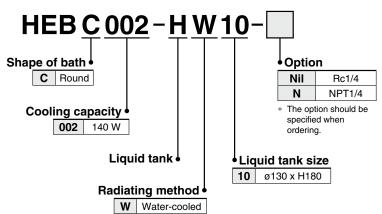


How to Order

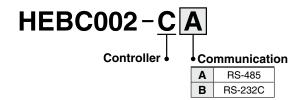
Combination (Controller + Liquid Tank)



Liquid Tank



Controller



Specifications (For details, please refer to our "Product Specifications" information.)

Model		HEBC002-WA10	HEBC002-WB10
Cooling method		Peltier device (Thermo-module, Thermoelectric device)	
Radiating method		Liquid tank: Water-cooled, Controller: Forcible air-cooled	
Control method		Cooling/Heating automatic shift PID control	
Ambient temperature/humidity		10 to 35°C, 35 to 80%RH	
	Application fluid*1	Tap water, Fluorinated liquid (Fluorinert [™] FC-3283, GALDEN [®] HT135, HT200), 30% ethylene glycol aqueous solution	
_ E	Set temperature range*1,5	−15.0 to 60.0°C (5 to 60°C for water)	
Circulating fluid system	Cooling capacity*2	140 W (Water)	
sys	Heating capacity*2	300 W (Water)	
[뜻물	Temperature stability*3	±0.01°C	
□ = [Temperature distribution*3	±0.02°C	
	Tank dimensions	Internal diameter ø130 x Liquid level 188 mm	
ē	Temperature	10 to 35°C (no condensation)	
yat	Pressure range	Within 0.5 MPa	
sility wa	Flow rate*4	3 to 5 L/min	
Facility water system	Port size	IN/OUT: Rc1/4	
щ	Fluid contact material	Stainless steel 303, Stainless steel 304, FEP, A6063 (anodized)	
	Power supply	Single-phase 100 to 240 VAC, 50/60 Hz	
- -	Overcurrent protector	10 A	
tric	Current consumption	4 A (100 VAC) to 2 A (240 VAC)	
Electrical system	Alarm (With alarm output connector)	 Overheating of liquid tank (which activates the thermostat) Controller output voltage reduction Controller fan rotation stopped 	
Communications		RS-485	RS-232C
Weight		Liquid tank: Approx. 8.5 kg Controller: Approx. 6.5 kg	
Accessories		Power cable (2 m), DC cable, Signal cable (3 m each)	
Safety standards		CE/UKCA marking, UL (NRTL) standard	

HRSH090 HRS200 HRS HRS090 HRS-R

HRSE

HRR

HRW

HECR

HEC



^{*1} GALDEN® is a registered trademark, belonging to the Solvay Group or its corresponding owner. Fluorinert™ is a trademark of 3M. For other fluids, please contact SMC.
*2 Determined under the following conditions: water as the recirculating fluid, set temperature 25°C, facility water temperature 25°C, flow rate 3 L/min, ambient temperature 25°C, and sealed from outside air with a lid.

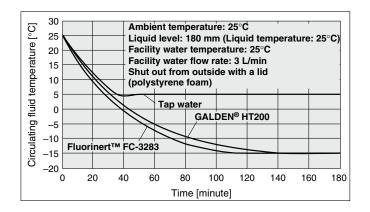
^{*3} Differs depending on the operating conditions.

^{*4} An appropriate range is from 3 to 5 L/min. To prevent damage to the radiating system, do not supply a flow over the maximum flow rate of 8 L/min.

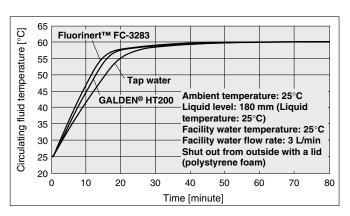
*5 When the temperature is set high, the liquid temperature inside of the liquid tank and the temperature inside of the thermostat could differ greatly depending on the heating mode at start-up, and the thermostat could then begin operating and stop the output. Confirm that there is no problem by carrying out an operating test beforehand.

HEB Series

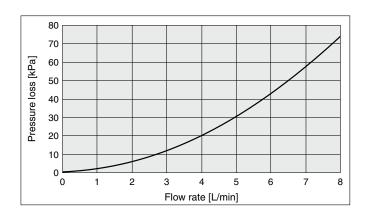
Cooling Capacity



Heating Capacity

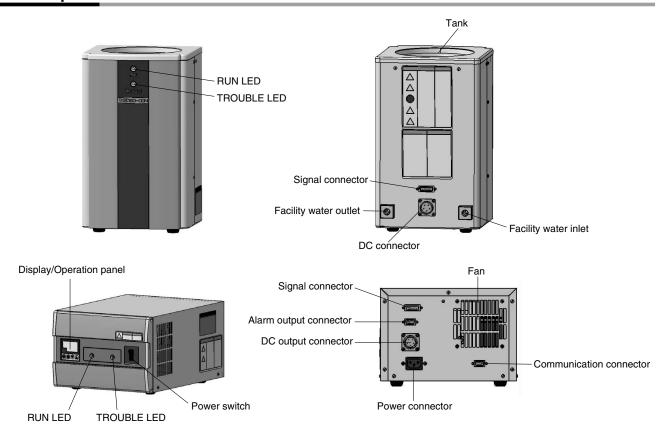


Pressure Loss in Facility Water Circuit



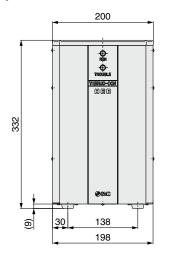
The values shown on the performance chart are not guaranteed, but typical. Allow margins for safety when selecting the model.

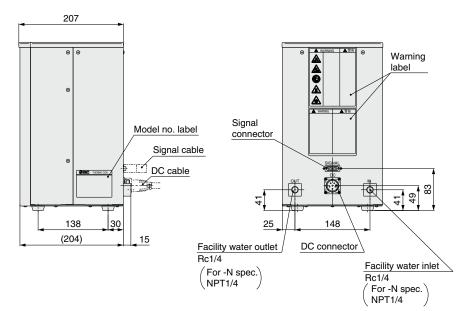
Parts Description



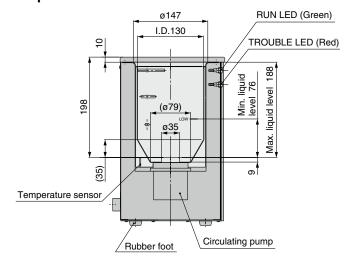
Dimensions

Liquid Tank

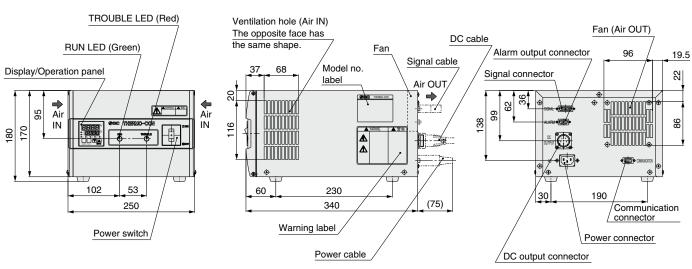




Internal Dimensions of Liquid Tank



Controller



SMC

HRS-R

HRS 100/150 HRS090

HRS200

HRSH090

HRSH

HRSE

HRR

HRZ

HRZD

HRW

HECR

HEC

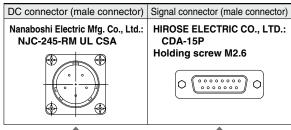
Technical Data

HEB Series

Connectors

Water Bath and Controller Connection

■ Connector for water baths

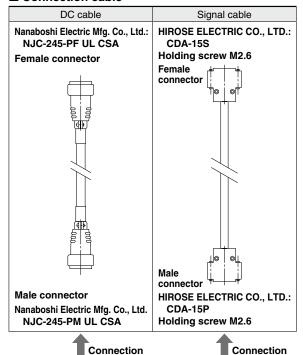




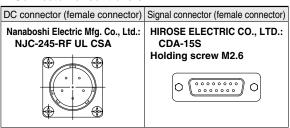


Connection

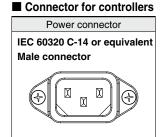
■ Connection cable



■ Connector for controllers

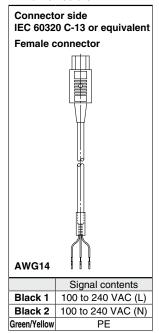


Power Cable Connection





■ Power cable

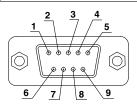


Connector for External Equipment

Connectors that fit with a communication connector and an alarm output connector should be prepared by user.

■ Alarm output connector HIROSE ELECTRIC CO., LTD.: CDE-9P Holding screw M2.6 Fitting connector: CDE-9S or equivalent

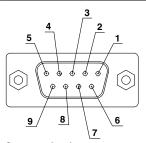
Pin No.	Signal contents	
1	Contact for upper/lower temperature limit deviation alarm (open when alarm occurs)	
2	Upper/lower temperature limit deviation alarm common	
3-4	Unused	
5	Contact for output cut-off alarm (open when alarm occurs)	
6	Common for output cut-off alarm	
7-9	Unused	



Alarm output connector D-sub 9 pin (male type)

■ Communication connector HIROSE ELECTRIC CO., LTD.: CDE-9S Holding screw M2.6 Fitting connector: CDE-9P or equivalent

Din No	Signal contents		
PIII NO.	HEBC002-WA10	HEBC002-WB10	
1	RS-485 T/R (A) Unused		
2	RS-485 T/R (B)	RS-232C RX	
3	Unused	RS-232C TX	
4	Unused	Unused	
5	Unused	RS-232C SG	
6-9	Unused	Unused	



Communication connector D-sub 9 pin (female type)

Maintenance

Maintenance of this unit is performed only in the form of return to and repair at SMC's site. As a rule, SMC will not conduct on-site maintenance. Separately, the following parts have a limited life and need to be replaced before the life ends.

Parts Life Expectation

Description	Expected life	Possible failure
		The circulating fluid cannot be fed due to worn bearing and/or insufficient capacity of electrolytic capacitor, which results in temperature controlling failure.
		The capacity of the fan lowers due to the end of lubricating performance of the bearing, which results in increase of internal temperature of the controller. The overheat protective function at the inside of the power supply starts, the output stops and the display goes off.
DC power supply	5 to 10 years	Abnormal voltage is generated and the display goes off due to insufficient capacity of electrolytic capacitor.