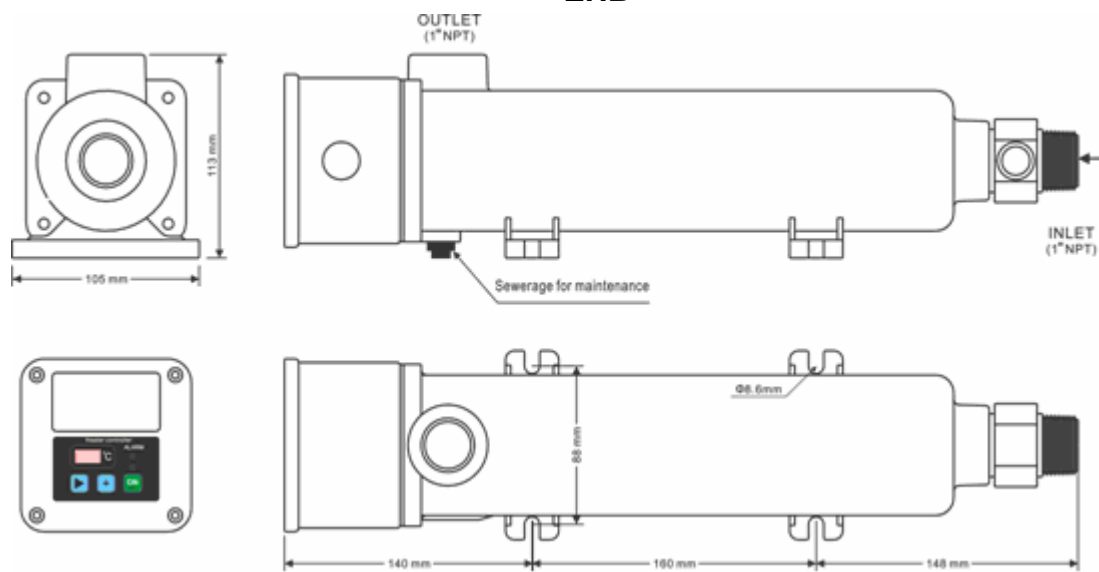# 1   Introduction：

   EHB/EHC water-jacket heater is consists of heating element and temperature switches, is suitable for all water-cooled engines. After installed heater, the engine starting ability will upgrade, reducing startup losses, reduce wear and save fuel. Feature：
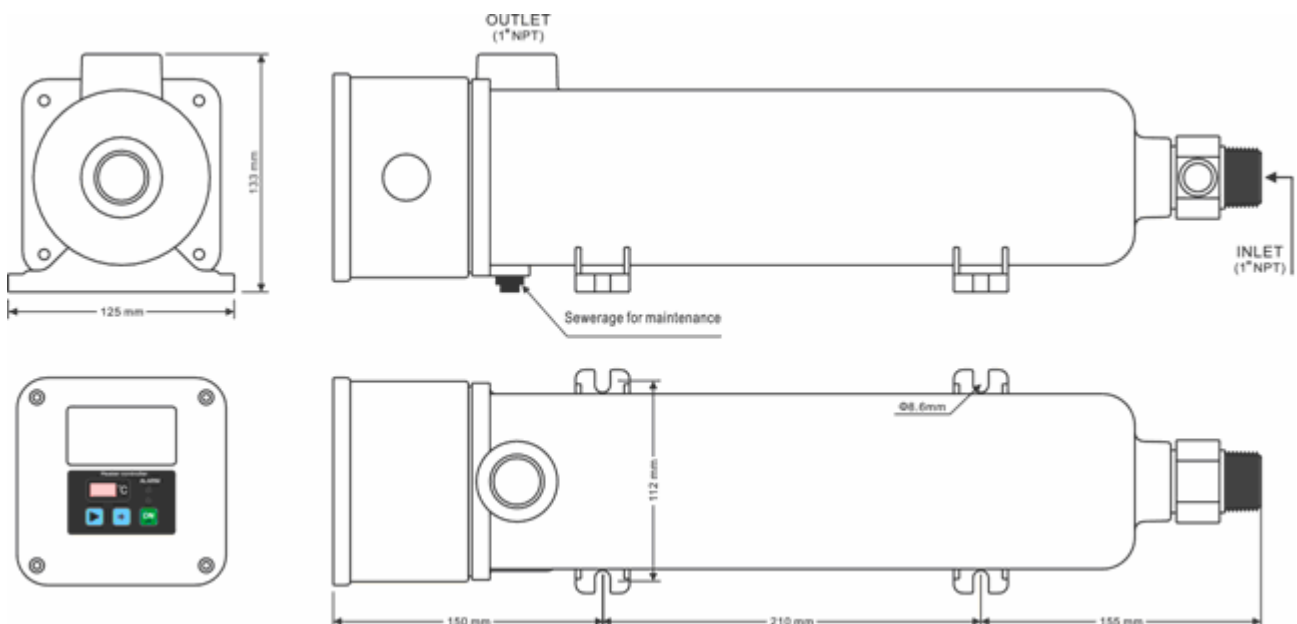
   l   Computer thermostatic control
   l   Set any temperature at the scene
   l   Digital display temperature and LED indicator shows the working status
   l   The operation panel to open/stop heating
   l   Precision die-cast aluminum water jacket case.
   l   Additional rubber sleeve to reduce thermal losses
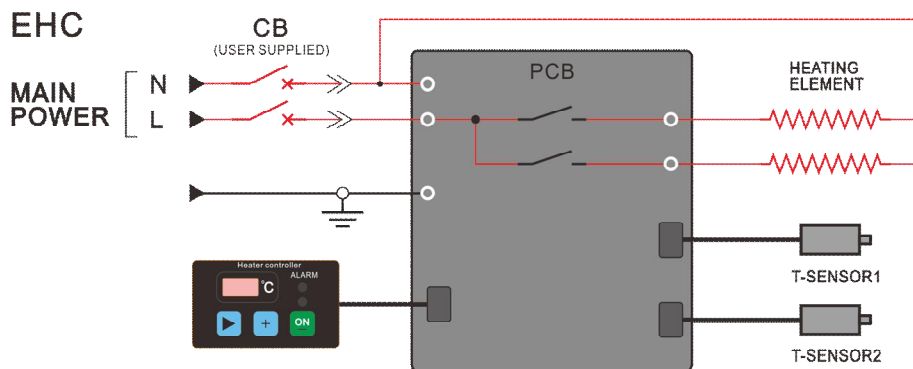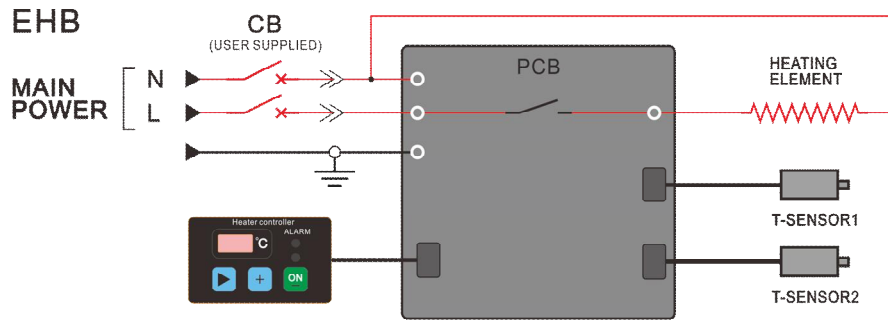
2   Shape and installation dimensions:

EHB

EHC

3   Wiring and electrical schematics：

4   Installation

Installed correctly is very important for the normal work of the heater, otherwise it will damage the heater.

Position：

I   Mounting feet horizontal installation.

I   Isolation the engine vibration.

I   The heater water-jacket is setting in low position as far as possible below the engine cooling fluid.

Electrical connections：

I   Refer to the above wiring diagram.

I   Must provide the good ground to ensure that the heater effectively grounding protection.

I   User according to the power of the heater, select the appropriate main power circuit breaker to ensure the effective heater overcurrent protection.

Warning：

I   Heater installation and maintenance must be disconnected from the main power supply.

I   Must be installed and maintained by qualified engineers.

I   During transport and parking, if the ambient temperature causes the coolant in the heater water jacket to solidify, the maintenance drain must be drained prior to use.

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5 Specifications：

Model	EHB1020	EHB1025	EHC1030	EHC1040	EHC1050
Voltage	240V（1P2W）				
Power	2000W	2500W	3000W	4000W	5000W
Current	8.3	10.4A	12.5A	16.7A	20.8A
Suitable coolant volume	10L	13L	16.5L	20.5L	25L
Insulation resistance	10MΩ				
Voltage strength	1800V				
Pressure test	≥0.5Mpa				
Protection level	IP65				
Operating temperature range	-20 to 70℃				
Storage temperature range	-30 to 80℃				

6 Operating instructions

Operating buttons and LED

Functional Description	Name
Setting Continuous press this button 2 seconds to enter / exit parameter setting menu.	▶
Value Increase When in parameters setting mode, this button is used to increase value.	+
START / LED When the preheater switch on power, press the start button,the indicate lights is on, the preheater into the automatic heating and protection of the work process. Cycled state is holding. When in parameters setting mode, this button is used to decrease value.	ON
Alarm (FAILURE) LED When the preheater is detected any one of the pump failure, sensor failure, high temperature failure, the indicator light flashes.	● ALARM

Protective function：

Sensor failure: If detected the sensors open or short circuit, after delay confirmation, fault indicator flashing, heating pipe work power relay disconnect, the digital display fault Code: A-02.

Temperature fault: Any time the controller detects that the temperature sensor reaches 95 ℃, fault indicator flashing, heating pipe work power relay disconnect, digital display fault code: A-03. Failure is not locked until the temperature is below the **low limit temperature**, the fault indicator is off, continue to automatic control process。

Setting parameters： （**Please enter the password first**）

Low limit temperature：**Used to setting the temperature setting limits for starting heating.** $L88$

High limit temperature：**Used to set setting stop heating limit temperature.** $H88$

(Factory default heating temperature control range is 38 ℃ to 49 ℃)

Setting：

Example $h88$ high limit temperature is 65 ℃

Operation	Description
Press and hold [▶] 2 seconds to enter into the parameter setting menu, then displays the **low temperature limit**：	$L40$
Tap [▶] scrolls to $h60$ **high limit temperature**：	$h60$
Press [+] modify then PASS prompted for a password： enter 2213 （[+] [+] [▶] [ON−]）	PAS
Press [+] or [ON−] can modify the parameters, then displays：	$h65$
Then press and hold [▶] confirm and exit the modification	