



TCU components

TCU is a special device for precise temperature control in the chemical and pharmaceutical industry, which is used to meet the requirements of batch reactor temperature control or continuous process of heating and cooling, constant temperature, distillation, crystallization system, especially suitable for the process control of heating and heat release in the reaction process. Specially designed units can be used for temperatures ranging from -20°C to $+300^{\circ}\text{C}$ (Heating and cooling depends on site conditions or the addition of compressors and electric heating assistance).

The system integrates high efficiency heat exchanger, circulating pump, thermometer, pressure gauge, various sensors, pipelines, valves and high and low temperature regional heating/cooling control system equipment, and installed automatic pressure relief control system, combined with the user's on-site centrifugal pump, valve and pipe flange welding work and electrical control site installation and commissioning work.

Unit operating temp. range: $-25^{\circ}\text{C} \sim 135^{\circ}\text{C}$, $-100^{\circ}\text{C} \sim 100^{\circ}\text{C}$, $-20^{\circ}\text{C} \sim 200^{\circ}\text{C}$, RT $\sim 300^{\circ}\text{C}$

Pressure range: 0-1.0MPa

Application area: It can be used in various explosion-proof and non-explosion-proof areas



Features & model description

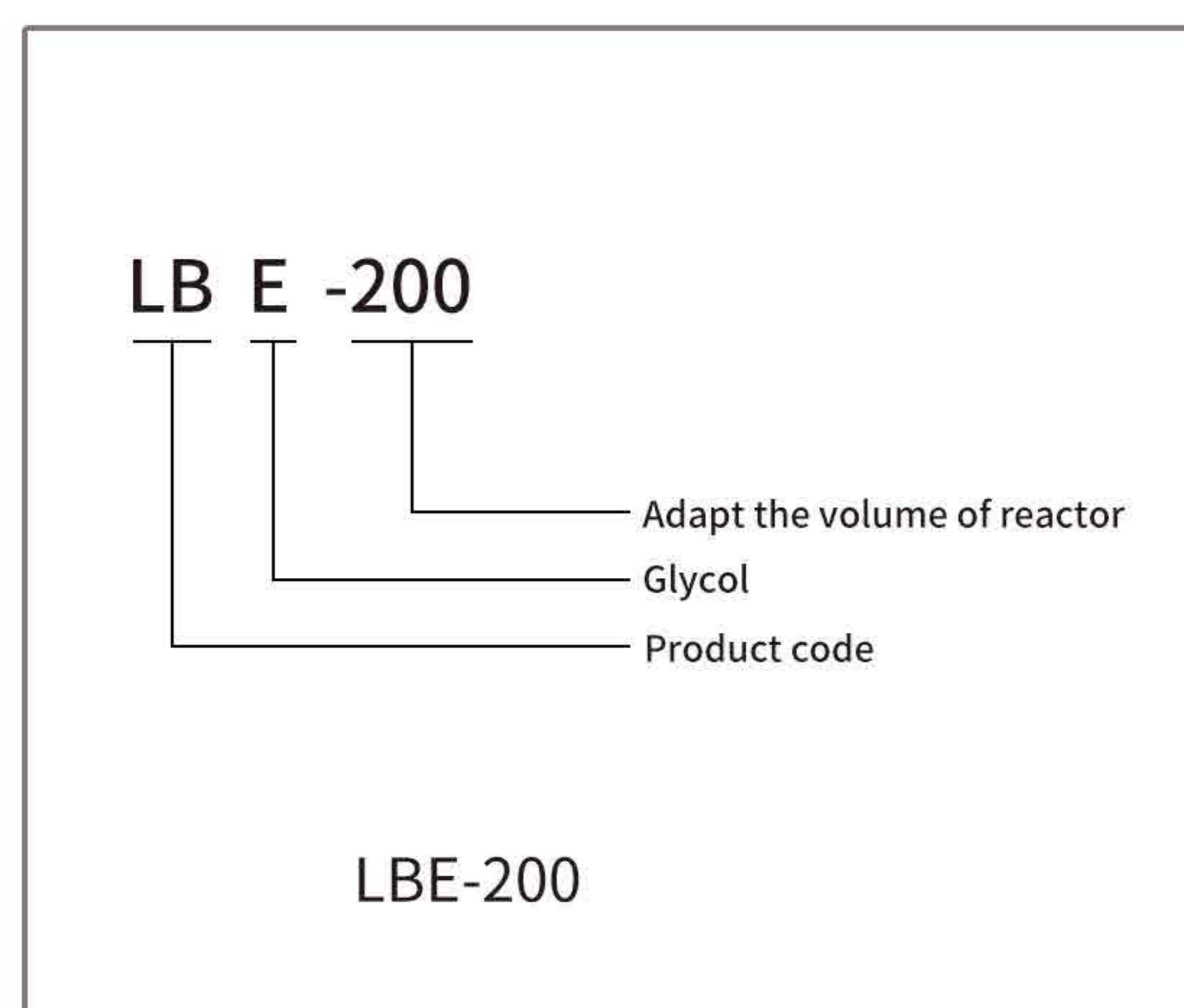
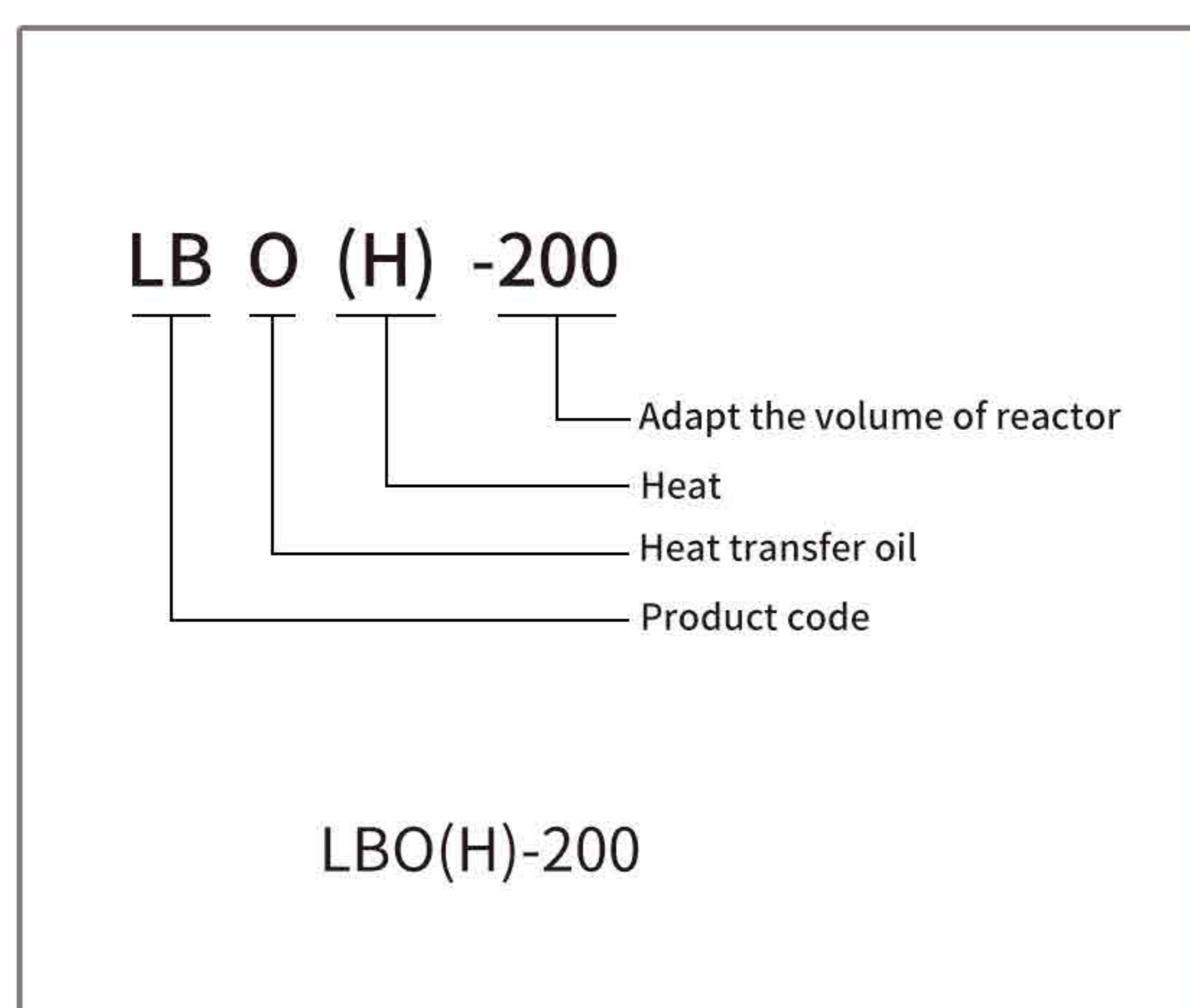
TCU Characteristics

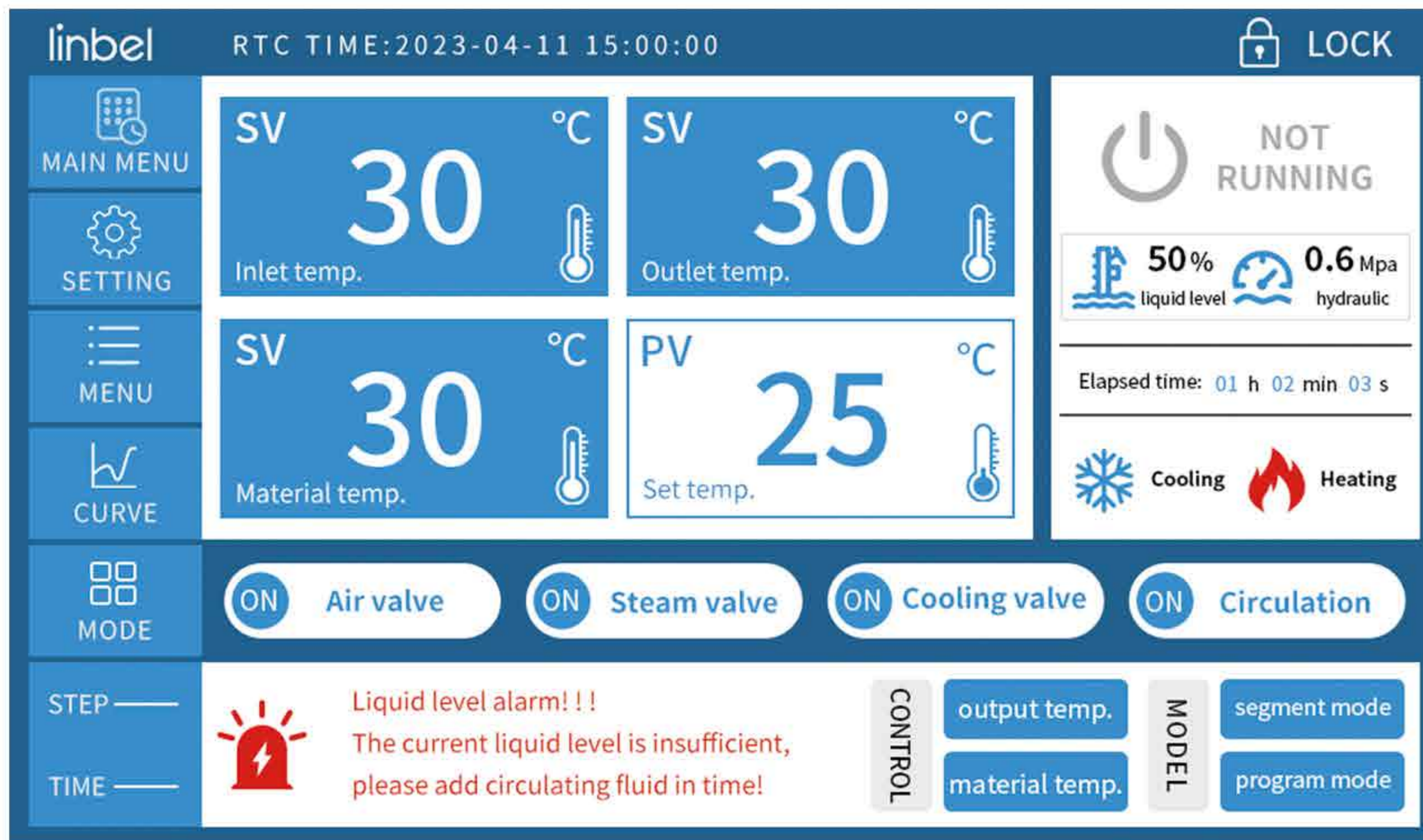
- Wide temperature range control, -120°C ~ 300°C.
- The smaller fluid volume ensures rapid response of the control loop and reduces thermal response delay- the control loop and reduces thermal response delay.
- Built-in electric heating transfer fluid auxiliary system, can automatically turn on the auxiliary heating system according to demand, reduce steam pressure.
- It saves energy by accurately matching each heat demand through fast operation.
- The temperature of the whole reaction process can be controlled by fast calculation, and the exothermic and endothermic reactions can be controlled by fast response.
- The temp. of the reaction process and the single fluid can be controlled, and the temp. difference between the reaction process and the single fluid can be set and controlled.

Reserve standardized interfaces for adding heat transfer modules based on actual requirements.

- With fully closed pipe design, manage formula, record the production process.
- Each temperature control module uses a separate set of PLC system to control the temperature of the reactor. The temperature control module is installed in an explosion-proof area (explosion-proof requirements for electrical, instrumentation, etc. Exd IIBT4/Exd IICT4).

Model Description





Display and Settings

1. Complete data operation inspection, which can detect the operation status of all parts;
2. Simple and efficient HCI, easy to operate;
3. Program heating and cooling;
4. Perfect alarm information, timely feedback and timely correction;
5. Free switching between material and outlet temperature control.

Interior details



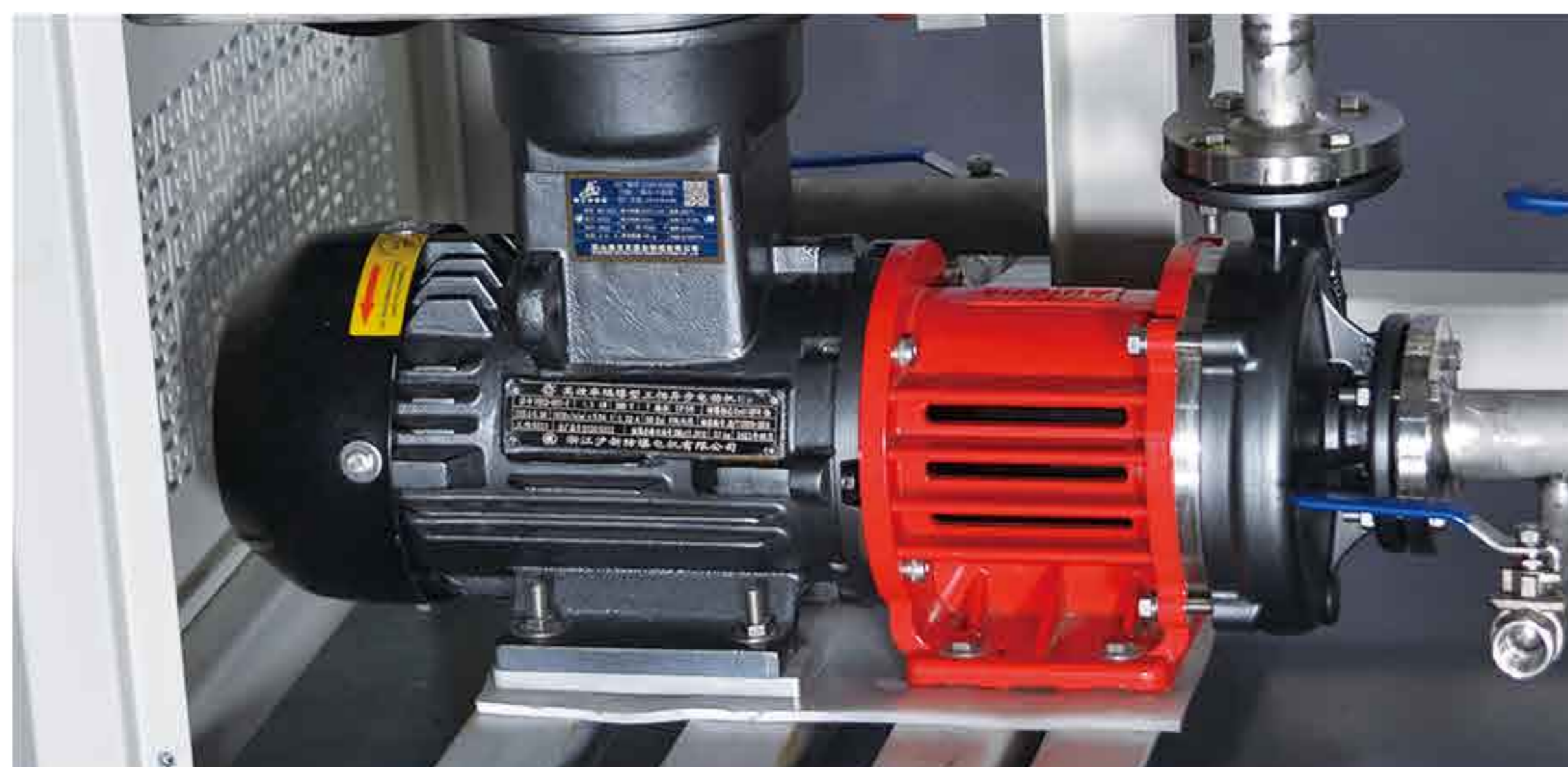
Using well-known brands such as Himile for heat exchangers



Equipped with Anhui Tiankang magnetic flap level gauge



Using drain valves from well-known manufacturers such as SpiraxSarco



Paired with Aulank magnetic pump



High standard welding finished products



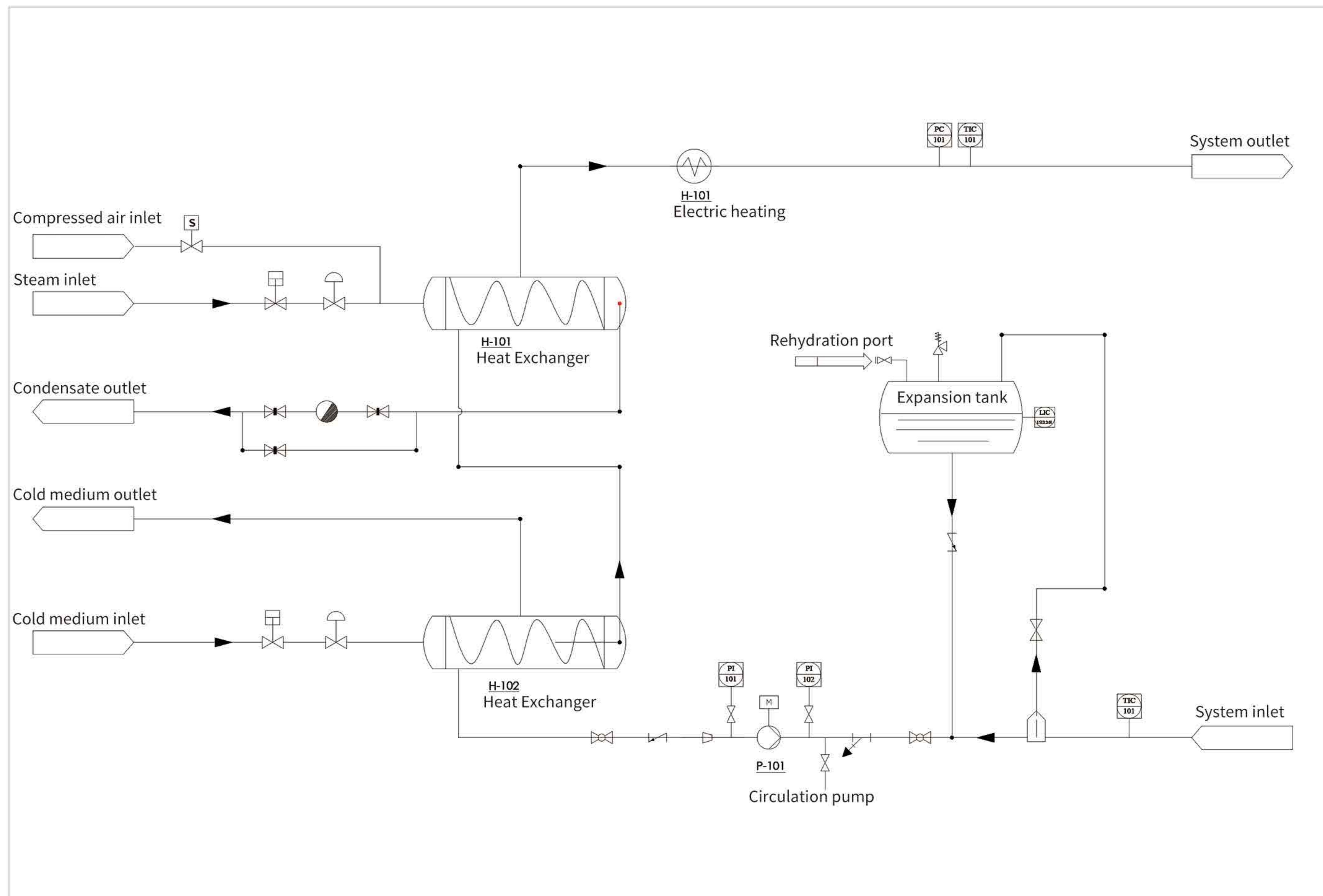
Famous brand regulating valve (optional)



Shock-resistant pressure gauge with good shock resistance

TCU parameters

LBOH-PID:

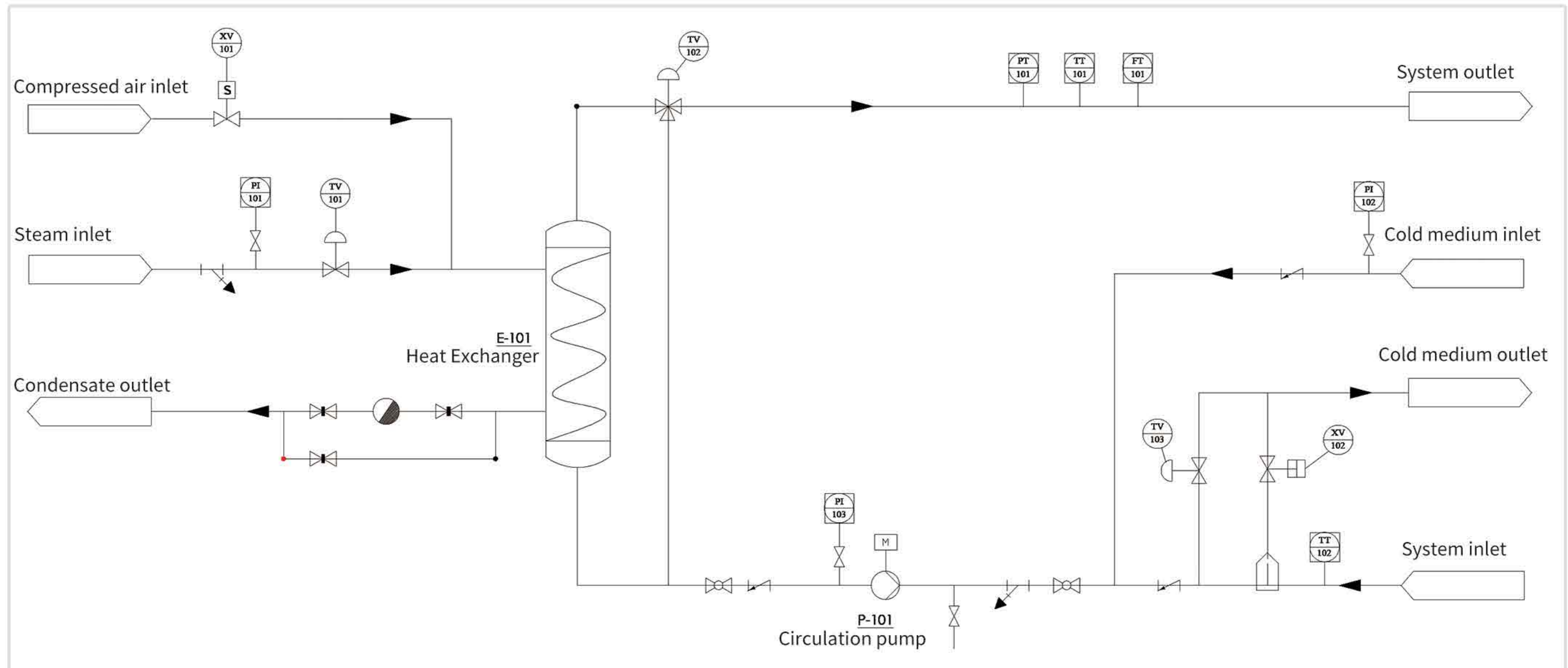


-20°C~200°C (LBOH-series)

Model	LBO(H)-200	LBO(H)-500	LBO(H)-1000	LBO(H)-1500	LBO(H)-2000	LBO(H)-3000	LBO(H)-5000	LBO(H)-8000
Temperature range	(-20°C~200°C)							
Pumping flow	3.5 m ³ /h	6 m ³ /h	10 m ³ /h	15 m ³ /h	20 m ³ /h	30 m ³ /h	35 m ³ /h	50 m ³ /h
Precision	±1°C							
Steam heating power	30 kW	60 kW	90 kW	120 kW	180 kW	250 kW	300 kW	350 kW
Cooling power	25 kW	45 kW	65 kW	100 kW	150 kW	210 kW	260 kW	300 kW
Steam interface size	DN20	DN25	DN25	DN32	DN40	DN40	DN40	DN50
Inlet & outlet	DN25	DN32	DN40	DN40	DN50	DN65	DN65	DN80
Electric heating power (H)	15 kW	25 kW	30 kW	45 kW	60 kW	75 kW	90 kW	98 kW



LBE-PID:



-20°C~135°C (LBE-series)

Model	LBE-200	LBE-500	LBE-1000	LBE-1500	LBE-2000	LBE-3000	LBE-5000	LBE-10000
Temperature range	(-20°C~135°C)							
Pumping flow	3.5 m ³ /h	6 m ³ /h	10 m ³ /h	15 m ³ /h	20 m ³ /h	30 m ³ /h	35 m ³ /h	50 m ³ /h
Precision	±1°C							
Steam heating power	30 kW	60 kW	90 kW	120 kW	180 kW	250 kW	300 kW	350 kW
Cooling power	25 kW	45 kW	65 kW	100 kW	150 kW	210 kW	260 kW	300 kW
Steam interface size	DN20	DN25	DN25	DN32	DN40	DN40	DN40	DN50
Inlet & outlet	DN25	DN32	DN40	DN40	DN50	DN65	DN65	DN80
Electric heating power (H)	N/A							
Control system	PLC controller							
Operation panel	7-inch colorful touch screen (screen size optional)							
Control model	The material temperature and equipment outlet temperature can be switched independently							
Communication protocol	MODBUS RTU protocol RS485 interface (optional RS232/Ethernet)							
Data export	Support for USB data export, can export temperature data in TXT format							
Protect	Multiple safety protection functions such as self diagnosis, overvoltage, delay, overcurrent, overheating, low liquid level, etc							
Explosion proof requirements	Non explosion-proof/explosion-proof (optional)							
Pipe materials	SUS304							
Shell material	Cold Rolled Plate Spray/SUS304							
Utility requirements	Power supply	Chilled water	Saturated steam	Compressed air				
	220/380V 50/60Hz	P=0.2~0.3MPa T≤-25°C	P=0.4~0.6MPa T=143~158°C	P≥0.5Mpa RT				