Labotronics

CONSTANT TEMPERATURE CIRCULATING WATER BATH
LB-12CCB

info@labotronics.com

www.labotronics.com

Index

1. Safety measures

- When opening the package, kindly check whether there is any damage to the equipment's appearance.
- After the equipment has been placed in the right position, it should be leveled, with its rear side 300mm (at least) away from the wall and with good ventilation around it.
- If the environmental temperature is too high, the indoor air-conditioner should be used to improve the environmental temperature.
- When the temperature of the chamber is approaching the preset temperature, the heating indicator flashes several times, and this is a normal phenomenon.
- When the chamber temperature is higher than the preset temperature, the heating indicator should be off.
- Pay attention to the liquid medium of the chamber.
- Different liquid mediums must be filled according to different operating temperatures.

2. Introduction

Constant temperature circulating water bath LB-12CCB is a unit with a pressure suction pump that allows constant temperature supply to the external tank. Safety alarm indicates deviation from set temperature and liquid level thus ensuring sample protection

3. Features

- Microprocessor controlled
- Environmentally safe refrigeration
- Audio-visual alarm
- Digital display of temperatures

4. Specifications

Model No.	**LB-12CCB**
Inner dimension	330 × 300 × 150 mm
Temperature range	5 °C – 100 °C
Capacity	22.5 L
Pump (flux)	4 L/min
Power	2000 W
Temperature tolerance	± 0.1 °C
Time setting	0 – 9999 min
Voltage	220V, 50 Hz
External dimension	540 × 340 × 340 mm
Weight	11 kg

5. Applications

Used in research laboratories for enzymatic, serologic experiments and Industrial applications.

6. Operations

1. TEMP: Showing measured temperature
2. SET: Showing set temperature
3. RUN: When working it lights up, then stop it off
4. Heating indicator: It lights up when the heating outputs.
5. Cooling indicator: It lights up when the cooling output
6. Water level indicator: Indicating high and low water level
7. Alarm indicator: It lights up when it alarms
8. Mute indicator: It is an alarm; it lights up when the buzzer has been silenced
9. TIME Zone: Display operation time or parameter value

5.1 Description of keys

1. **MODE key**: Used for modifying setting value; bring up the parameter, confirm the modification of the parameters.
2. **Shift key**: In setting mode, press it could move the digits.
3. **Decrease key:** In setting mode, press the number minus one, and press it for a long time the number will decrease continuously.
4. **Add key:** In setting mode, press the number increase one, press it for a long time the number will continuously increment.
5. Press it no release more than 4 seconds, to control the START/STOP of the program.

5.2 Operation Steps

a) Timing function

1. Press the "Mode" key, when time is set as 0, the timing function will be canceled, if time is not set as 0, the controller will perform the timing function.
2. Press the "MODE" key, "TIME" value will flash, indicating temperature can be set as required.
3. Using the add key, decrease key, and shift key, set the required temperature.
4. When the set time is up, "END" will be displayed on the TIME screen and the buzzer sound can be silenced by pressing any key.

b) Temperature setting

1. Pressing the MODE key once again, the "TEMP SET" value flashes indicating temperature can be set as required.
2. Using the add key, decrease key, and shift key, set the required temperature.
3. Press MODE once more, and it will back to standard display mode.

c) Setting of upper deviation alarm

1. A good setting of upper deviation can protect the system from out-of-tolerance temperature control or loss control and must be put into use when the instrument works.
2. Example: If AL=3.0 when the product leaves the factory, this means the alarm temperature is (set temperature value +AL).

5.3 Calibration of temperature control accuracy

1. The 0.1℃-graduation mercury thermometer or a digital thermometer with a resolution of 0.1℃） is placed in the working chamber of the product.
2. The mercury temperature-sensing head of the thermometer should be in the geometrical center of active space in the working chamber.
3. Any point within the scope of temperature control of the product is chosen when the measured temperature value is equal to the set value, keep it thermostatic for another hour and make sure the difference between the measured value from the mercury thermometer and that shown in the temperature controller should be ≤±0.5℃.

7. Troubleshooting

Symptoms	Possible Causes	Remedies
No power supply after starting (the indicator is not ON).	No voltage on the power supply socket or bad contact with the plug or socket.	Plug again or repair.
	The incoming feeder broke or the power switch was damaged.	Replacement or repair.
	The fuse blows up.	If the fuse blows up again after being replaced, it is necessary to check the instrument, pump, heater, refrigerating unit and lamps. Only after repair, then you can start the equipment.
No display from the instrument.	The power supply transformer of the instrument is damaged or the wiring terminal is loosened.	Replace the instrument or reconnect the incoming feeder again.
PV screen displays.	Sensor Pt100 is damaged or something is wrong with the instrument input.	Replace Pt100 or instrument.
	Wrong setting of instrument full measuring range, the measured value out of Range.	Set again.
	Instrument failure or conductive controlled silicon and the uncontrollable temperature out of range	Replace the instrument or BTA16-controlled silicon.
No heating	The heat lamp on the thermostat is not ON with Failure.	Replace instrument
	HEAT lamp is ON, flip-flop or controlled silicon is damaged.	Check optical-coupler 3041 or BTA16.
	T1 (timing) ≠ 0, after timing, heating is stopped.	Reset T1=0.
Alarm lamp AL1 is ON	Liquid medium in the chamber is not enough.	Fill liquid medium.

An error in the control temperature is too big.	Pt is not connected correctly and the error is too big.	Replace
	Correct parameters SL and HL (too big an error).	
	Adjust parameters such as PID (steady-state error).	
The liquid medium is not circulating.	A booster pump is damaged.	Replace