Operation Manual

BBWA-100

Water Bath

Thank you very much for Choosing Biolab products. Please read the "Operating Instructions" and "Warranty" before operating this unit to assure proper operation.

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01 Summary

BBWA 100 Series Water Bath is applicable for distillation, concentration, drying and thermostatic heating of medical units, universities and colleges, scientific research units and laboratories of industrial and mining enterprises like chemical printing and dyeing enterprises and pharmaceutical enterprises.

02 Structure features

1. The enclosure of the product is formed and machined by using high-quality steel plate. Static electric spraying process is adopted on the surface, which is sturdy and durable.

2. The liner and upper cover are made of high-quality stainless steel plate, featuring strong corrosion resistance.

3. U-shaped heating pipe is adopted for direct heating in water. The temperature rise is quick and the thermal loss is small.

4. Single-row digital display or intelligent temperature controller boasts simple operation and favorable application effect.

03 Main technical parameters

Model	BBWA-101	BBWA-102	BBWA-103	BBWA-104	BBWA-105	BBWA-106	BBWA-107
voltage	220-240V/50-60Hz						
Temp. Range	Room temperature +5°C~100°C						
Temp. fluctuation	±0.5°C						
Specification	1 hole	1 row 2 holes	1 row 4 holes	1 row 6 holes	2 rows 4 holes	2 rows 6 holes	2 rows 8 holes
Power (w)	400	500	1000	1500	1000	1500	2000
Inner Chamber Size (mm)	168x168x120	325×168×120	653×168×120	945×168×120	325×325×120	480×325×120	635×325×120

04 Working Conditions

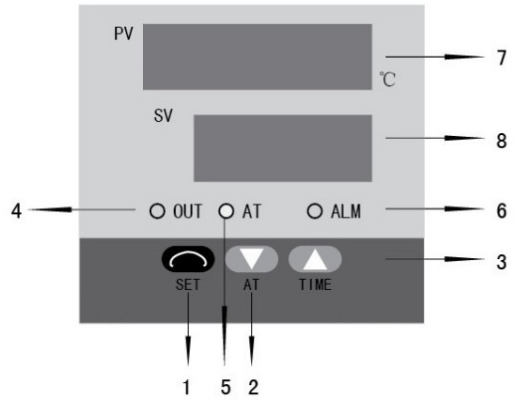
1. Temperature ranges between 5~40°C;
2. Relative humidity less than 85% RH;
3. Power: voltage 220-240v, frequency 50-60Hz;
4. No violent vibration and corrosive gas surround the equipment.

05 Attentions

1. Before use, add water 50mm until the water reaches above the clapboard, then connect to power supply and heat. It is not allowed to heat with insufficient water.
2. During use, do not touch the heating pipe by your hands to avoid being scalded.
3. After use, timely discharge the water, dry it and keep it clean in order to extend the service life.

06 Temperature Controller Operation

i. Meter panel instruction



1. Function key
2. Decrease key-Automatic tuning
3. Add key-Power-on duration
4. Master control output indicator light
5. Automatic tuning indicator light
6. Upper limit alarm indicator light
7. Measured value display window
8. Set value display window

ii. Instrument automatic tuning function

Press ▼ for 5 seconds and the automatic tuning AT light starts flashing automatically. After the automatic tuning process is completed, AT light is off and a group of PID parameters overcoming overheating is obtained. During the automatic tuning process, press ▼ for 5 seconds and AT light is off. Then, the automatic tuning process is stopped. The instrument will control according to the original PID parameters. If you feel the temperature rise is too slow, you may adopt the automatically tuned parameter with the temperature several degrees higher to control the required time and speed.

iii. Time function

Press ▲ for 10 seconds and the total power-on duration is displayed in minutes. It will be automatically recovered after 5 seconds.

iv. Timing setting function

Set the time minutes according to in the second menu of Parameter Setting Table When the time required by the instrument reaches the rear lower row, the display is off and the output function stops.

If the set control time is to be recovered, the product shall be shut down first and then powered on and started again. When the setting is 0, the instrument will cancel the timing function and output continuously.

Parameter Setting Table 1:

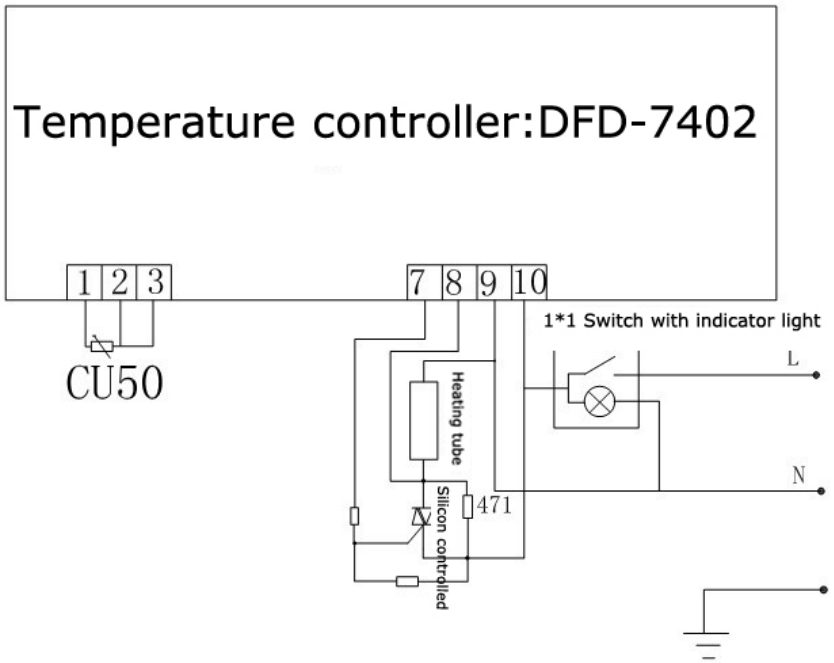
	Prompt	Name	Setting range	Description	Factory value
First menu	SO	Master control setting	Full range		Random
Second Manual					
No.	Prompt	Name	Setting range	Description	Factory value
1	SHP	Alarm	999°C		2
2	⌜ ⌝	Set value timing	0-9999	Timing when the temperature reaches the set value	
3	P	Proportional band	0-9999		10
4	⌝	Integral	0-9999	Used to eliminate static error	200
5	d	Differential	0-9999	Used to beforehand adjustment	60
6	⌜	Cycle	99s	The output time after power on is cycle seconds	10
7	⌝⌜	Overshoot control	0-100%	Proportion resetting (required for correction (proportional range P)	100
8	SC	Correction sensor			0
9	SC2	Slope correction	±100	Formula: 3 degrees 300 degrees 70 degrees =12.86 correction Error X range ÷ Set value	0
10	LoC	Electronic lock	0 1 2	0 No lock 1 Second menu locked 2 Both first and second menu locked	0

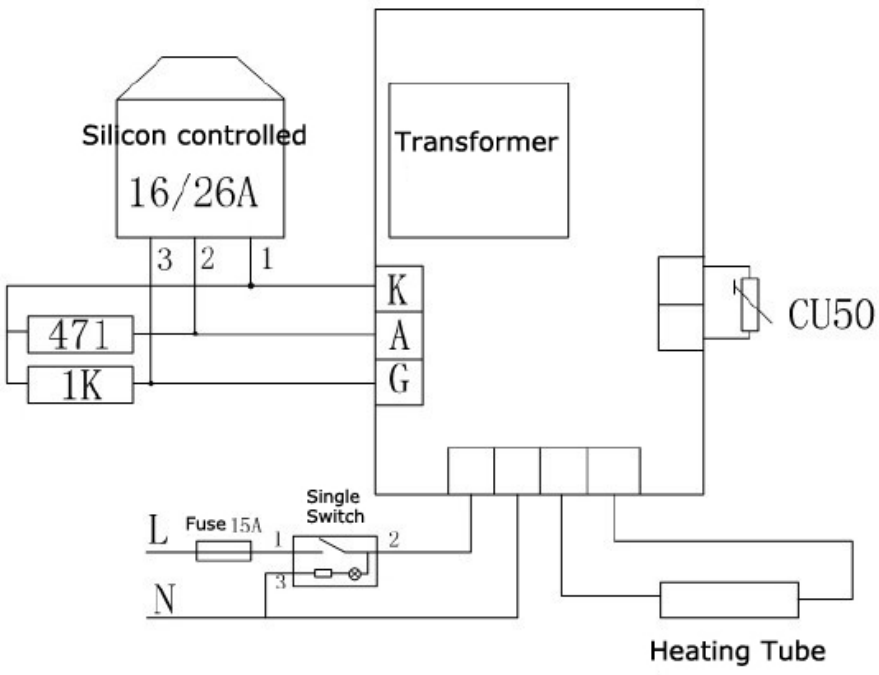
If LLL is displayed, it indicates that the sensor is short-circuited or the temperature is lower than the measured lower limit.

If HHH is displayed, it indicates that the sensor is open-circuited or the temperature is greater than

the measured upper limit. Note: when time function is used, pay attention to power failure. If power failure already exists, the previous timing becomes invalid. When the power supply is recovered, the timing is restarted from zero.

07 Wiring





08 Operation

1. The water bath shall be placed on a stable platform.

2. Add water to 50mm above the clapboard before use.

3. Connect to a power supply consistent with the requirement of this instrument and reliably ground the grounding terminals of the socket of power supply used.

4. Open the power switch and the power supply indicator light is on. Set the required temperature, and the temperature controller begins to display the temperature inside the working chamber.

Refer to the instructions of temperature controller for digital temperature controller and intelligent temperature controller.

After the set temperature is reached and it is automatically put under a constant temperature for half an hour, it will be put in the sample tube. The experiment is completed. Then, close the power switch and take out the sample tube.

09 Fault analysis

Failure	Cause	Handling method
No power supply	1. Bad contact between plug and socket 2. The fuse is burnt.	1. Replace the plug or socket tube. 2. Replace the fuse with same specification.
No temp. rise	1. The temp. Controller is broken 2. The sensor is broken 3. The set temperature is lower than water temperature 4. The heating pipe is burnt	1. Replace the instrument 2. Replace the sensor 3. Reset the temperature 4. Replace the heating pipe
The big difference between display temp. and actual temp.	1. The temp. controller 2. The temp. sensor is broken.	1. Replace the temp. controller 2. Replace the temp. sensor.

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