Operation Manual

BIFG-302

Fungal Growth Incubator

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

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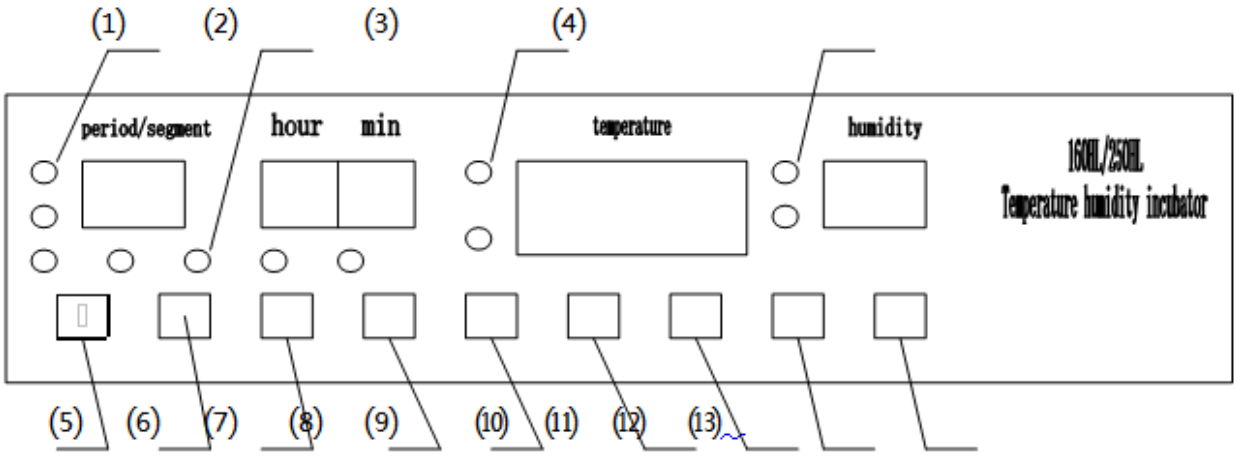
01 Scope Of Applications

This instrument is an ideal device for the incubation of mould, cells & tissues, seeds germination, seedlings and insects as well as the culturing for antibiotics of microorganisms. It is especially fit for use in biological engineering, medical research, agriculture, aquaculture and animal husbandry. It is a device for thermostatic and moisture-constant experiments and culturing in production and scientific research.

02 Technical Data

Model		BIFG-302
Capacity		250L
Temperature range	5 ~ 50℃	
Temperature accuracy	±1℃	
Humidity range	50~95%RH	
Humidity accuracy	±5%RH	
Heating power		400W
Humidity power	35W	
Compressor power		190W
Ultraviolet sterilization		
Power supply	220V 50Hz	

03 Panel Sketch



1. Indicator (period and segment)
2. Indicator (SET, query, light, alarm, low temperature)
3. Indicator (heat and cool)
4. Indicator (humidify/dehumidify)
5. Period/segment
6. Set/query
7. Decease
8. Increase
9. Return
10. Temperature/Parameter
11. Humidity/Parameter
12. Light
13. Power

04 Operational Instruction

1). Period and segment: press the key to see current period or segment. Press it for 2 seconds to enter into setting status, another press of 2 seconds will exit the setting.
2). Set/query key: press it to query status, to see current segment, time, temperature and humidity, another press to exit. Press it for 2 seconds to segment status, after choose segment, press the key again to enter each segment's setting status, another press for 2 seconds to exit the setting. When period is set to be 0 and the first time is 0, then the machines always runs under the first program.
3). Decrease key: for decreasing parameters.
4). Increase key: for increasing parameters.
5). Return key: to return to previous parameter(of the same segment). To shut the beeps when the beeper emits. Under stop status, pressing for 4 seconds could restart the machines to run from the first segment.
6). Temperature/parameter key: pressing it for 2 seconds to set the temperature, another 2 second's pressing will exit.
7). Humidity/parameter key: pressing it for 2 seconds to set the humidity, another 2 second's pressing will exit.
8). Light key: to control the lighting.
9). Power: power switch for the machine.

Under each setting status, if there is no pressing of any keys, the program will exit for normal operation.

05 Parameter Instruction

1). Setting for each segment's parameters.
Pressing for 2 seconds to see "cH_ _". Choose the desired segment, press the key to enter into the setting status. The parameter's range is as follows.

Hour	0 ~ 99hour
Min	0 ~ 59min
Temperature	0 ~ 50℃
Humidity	0 ~ 95%RH

2). Setting for temperature for 2 seconds to get inner parameter, input password LC=3.
Pressing for 2 seconds to exit. The parameter code is as follows.

Value	Value's name	Parameter function	Range(default)
AL	Over temperature alarm	When PV > SP+AL, cooling starts.	0.0 ~ 60.0(1.5)℃
ct	compressor start delay	Compressor delay protection time, 2 start's time > =cT min	0 ~ 10(3)Min
Pb	zero position regulation	To regulate the error caused by sensor's measuring	-99.9 ~ 60.0(0)℃
PK	satisfaction regulation	When deviation caused, it could be regulated. PK=1000*(value of mercury thermostat-current temperature value)/current measured temperature value	-999 ~ 999(0)
rP	**rT+5** function	rP is current indoor temperature. If SP < = rP+5℃, the control will automatically choose continuous running of compressor. If the other way around, the compressor won't be running.	0.0 ~ 60.0(20.0)

3) humidity setting

Pressing humidity key for 2 seconds to set it, input password LC=3. Another pressing of 2 seconds to exit. The parameter code is as follows.

Parameter instruction	Parameter name	Parameter function instruction	Range(default)
P2	proportion band	Proportion function regulation. When P2 is bigger, the proportion function is smaller, the system gain is smaller. Then only humidity is working. When under high temperature and humidity, P should be lowered appropriately, for example, P=3～5%RH。	0～99 (5) %RH
cS	dehumidification difference	When humidity is higher(set value+cS) than %RH, and delay time is more than ct, compressor dehumidification is working, with dehumidification and cooling light on. This function is only activated only when SP ﹥ rP+5℃.	0～99 (5) %RH
dS	dehumidification off	When humidity(set value+dS) is lower than %RH, compressor dehumidification is off, with dehumidification light off. This function is activated only when SP ﹥ rP+5℃.	-5～5 (1) %RH
rc	Dehumidification temperature compensation factor	For compensation of temperature when dehumidificating. It could go with default values. This function is only activated when SP ﹥ rP+5℃.	0.0～60.0(2.0)
rt	Correction of temperature sensor	For correcting the error caused by sensor measuring. Temperature measured value+rt=actual measured value	-20～99(0)%RH
AS	Low temperature protect	When measured temperature is lower than AS, humidification and dehumidification is off. Only temperature control available.	0～60.0(10.0)℃

06 Operation Procedure

Question: It needs working 10 periods, 2 segments for each period, the first segment needs working 12 hours, with temperature of 30℃, and humidity 60%RH, the second segment needs 12 hours, temperature 10℃ and humidity of 50%RH.

Answer: Press period key for 2 seconds, entering into setting status with period light flashing. Using increase and decrease keys to set period to "10", then press period to complete. And, press set/query key 2 seconds to set segment, with set key indicator on. Period window shows "cH", hours window flashing, using increase or decrease key to set the segment to "2". Press again the "set/query" to set the parameters of each segment. The period window shows the first segment is "0`", hour window shows the set time of the segment, using increase/decrease keys to set the first segment time to "12" hours, then press "set/query" to set minute to "0"min, and then press "set/query" to set the first segment temperature to 30℃. Now press again "set/query" to set the first segment humidity to 60%RH with increase/decrease keys. Press again "set/query" to set the second segment's parameters, time to 12 hours, minutes to 0 min, temperature to 10℃, humidity to 50%RH. Press again "set/query" after setting the second segments temperature to return to the first segment setting status. Press "set/query" for 2 seconds to exit.

After operation, each window shows corresponded values. After the first segment running is over, it switches to the second automatically. So it is period. After the all periods is finished, the program stops automatically with temperature window shows "END", buzzers buzzing for 30 seconds, the operation stops. If re-operation needed, press "return" for 4 seconds, or use power supply switch.

The choose of parameter: the controller chooses "rT+5" automatically according to rP value(when set temperature is lower than ambient+5℃, choose compressor to continuous work). For example, if ambient temp is 25℃, set temp is 30℃, then the compressor is working continuously. Uses need input the correct indoor temp value. The compressor power has to match with heating power, 250L model needs heating power of 500W and cooling of 180W.

07 Notes

It's normal that the humidity is a little big low in a restart of machine after running(the humidity then is more than dew point, i.e, more than 100%, overflow) , the solution to which is open the door for 5 1o 10 min and then restart.
Temperature upper window shows "□□□" when temp sensor mal-functions, or measured temp is more than 60℃ or open circuit. When humidity mal-functions, its window shows "□□". In this case, check the connections, if connections is ok, replace the sensor.

Troubleshooting

fault	**causes**	**solution**
indicator not flashing	power plug loose	Check power plug
	power switch off	power it on
	burnt fuse	Replace fuse
peculiar smell in chamber	Normal for new machines	Open chamber door for 10 hours
no humidity	Switch off	Switch on
no heating	Damaged heating tube	Replace heating tube

08 Precautions

(1) The equipment shall not be kept upside down or inclined more than 45 degree in handling.

(2) The temperature setting shall not be changed frequently in order to avoid frequent start-up of the compressor, which may lead to overload, shortening the life span of the compressor.

(3) This instrument is fitted with thermal resistor short circuit protection and broken circuit protection. In case of thermal resistor short circuit or broken circuit, the temperature indicator will show "En". In such case, heating or refrigeration will stop automatically.

(4) This instrument has the device to prevent freezing. When the temperature is lower than 10°C, the incubator will stop heating automatically.

(5) There should be not too many items kept in the incubator. Reasonable clearance should be maintained in favor of air flow in the box.

(6) Never touch or impact the temperature probe in order to avoid damage, which many lead to the machine out of control.

(7) Never clean the surface with acid, alkaline or other corrosive liquid. Clean the surface with a piece of wet cloth. When the instrument is to be kept idle, the inner side of the incubator should be kept clean; and the incubator shall be disconnected from the power supply with all the switches set to “0” position.

(8) This instrument should be operated and maintained by specialists. Only specialist electricians are qualified to repair the instrument. No repair is allowed when the instrument is live.

(9) Please read the operating instructions carefully before operating this instrument.

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