Bioeasy Micro Heater

Model: YRM-IN03

User Manual

Version: 190916

Contents

Warranty

The warranty of the instrument is valid for one year and applies for faults arising from part defects, assembly and commissioning. The company will provide replacement parts and necessary technical services free of charge. However, the following cases are excluded in the warranty:

1. The internal host is damaged as the outer box is broken during transportation.
2. The instrument is damaged as a result of nonconformity of storage conditions.
3. The accessories of the instrument are lost or damaged as a result of improper storage.
4. Faults are caused by improper use.
5. The instrument is damaged as a result of faults of other equipment around the operating area.
6. The internal electrical parts of the instrument are damaged as a result of incorrect voltage input.
7. The instrument is operated through external power input, but the power supply in the operating area is not grounded reliably for protection, resulting in protection failure and damage to the internal electrical parts in the case of sudden hazards.
8. The instrument is damaged as a result of violation of operating instructions in this manual.
9. The instrument is damaged as a result of dis-assembly without permission.
10. The instrument is damaged as a result of use of external accessories instead of special supporting accessories of the instrument.
11. The instrument is damaged as a result of use of external parts instead of special parts of the instrument during maintenance.
12. The instrument is damaged as a result of disasters beyond control.
13. The instrument is damaged as a result of noncompliance with the maintenance requirements in this manual.
14. The instrument cannot run normally as a result of repair, maintenance and change by the unauthorized person or the person without formal training.
15. The instrument is corroded as a result of use of inappropriate reagents and samples.
16. The instrument is damaged or destroyed as a result of disasters beyond control.
17. The instrument is damaged as a result of overload.
18. The instrument is beyond the warranty period.
19. The consumption and replacement of wearing parts and consumables are beyond the warranty. However, we will replace those with quality problems free of charge.

Important Notes

The operator's safety has been fully taken into account in the instrument design. Before installing and using the instrument, please read this manual carefully. Any improper operation may result in hazards. This manual is a trial version, and may contain omissions and even errors as a result of the author's limitations. All corrections will be appreciated.

The laboratory analytical instrument must not be used an in-vitro diagnostic apparatus for medical diagnosis. The company will not be liable for any problem if the user changes the instrument into a medical apparatus against the related medical equipment regulations.

1. Biosafety

The instrument is a kind of analytical equipment. The operator must have the relevant expertise, and be able to identify chemical and biological hazards of reagents and samples and deal with hazards according to the professional method and process during operation.

2. Electrical safety

The instrument, an active product, must comply with the requirements of GB4793.1 and EN61010-1. The user must operate the instrument in accordance with the general safety rules, to avoid damage.

1) Do not turn on the instrument if obvious mechanical damage is found.

2) Do not use the instrument in the humid environment.

3) If operated through external power input, the instrument must be connected to the protective ground via an appropriate power line.

4) It is safe to operate the instrument with the cover. The cover should not be opened in normal operation. It is used for protecting the user from contact with live parts, and must not be opened for maintenance purpose until the instrument is turned off.

5) Check the wiring of accessories.

3. Mechanical safety

Do not put the hands within the operating range while the instrument is running.

4. Defects and anomalies

If protective facilities are likely to be damaged, immediately stop the instrument and avoid any unconscious operation.

The protective facilities may be damaged in the following cases:

1. Visible damage;
2. Failure in expected operation;
3. Long-term storage under inappropriate conditions.

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Introduction

1.1 Structure

1) Appearance

2) Contents

Standard composition: host; EU power adapter; car charger

EU Power adapter

Car charger for 12/24V truck

1.2 Specifications and Parameters

	Name	Parameter
1	Input power	DC12V / 2A
2	Maximum power	20W
3	Average power	5W
4	Control target temperature	40℃
5	First step timing range	0 to 10 minutes
6	The second step timing range	0 to 15 minutes
7	Default Time 1	3 minutes
8	Default Time 2	5 minutes
9	Temperature control accuracy	±1℃
10	Heating time (from 20 ° C to 40 ° C)	90 seconds
11	Ambient temperature	5 ° C ~ 40 ° C
12	Dimensions (without power adapter)	60×60×76 mm
13	Net weight	about 150g (without power supply)

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Unpacking &Installation

2.1 Unpacking

1) Prior to unpacking, please check if the outer package is damaged during the transportation process. If it is damaged, please contact the local salesmen immediately.

2) Take all accessories and accompanying documents out of the packing box, and check them in terms of the packing list. If any missing or damage is found, please immediately contact the local salesmen.

3) Remove the plastic bag, and check the instrument. If the instrument is damaged or obviously defective, please immediately contact the local salesmen.

2.2 Installation

2.2.1 Connection Connect the adapter cable to the instrument

2.2.2 Start up Place the product on a stable work surface at least 10 cm from the edge of the table.Turn on the power, turn on the power switch (1-start; 0-shutdown) to start.

2.2.3 Precautions

- Do not use the instrument in strong sunlight or near the electric heater or other heat sources.
- Keep the instrument away from disturbance of the electromagnetic field.
- Keep the instrument stable and avoid violent shaking in manual operation.

2.3 Initial Start up

Connect the adapter cable to the instrument and turn on the switch (rear side of the instrument)

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Start-up

Warning

The power supply of the instrument must not be turned on until all shells are installed before operation. Removal of any shell may result in severe harm and even threatening to the life.

Potential risks:

1) The operator may be injured seriously and even die in the case of electric shock;

2) If the instrument is started suddenly, the operator may be injured by mechanical components;

3) The instrument will be damaged seriously if electrical parts are short-circuited;

4) If the instrument is started suddenly and foreign matters are jammed in moving parts, moving parts will be damaged seriously;

5) If the power supply is turned on while the instrument is exposed, surrounding equipment may be damaged;

6) Risks threatening people and equipment may be caused.

3.1 Operating Environment

□ Ambient temperature: 10-30℃

□ Power voltage: 220±22V;

□ Frequency: 50±1Hz

3.2 Reagents & Reaction

If the instrument is used in clinical testing, the reagents used must meet the needs of clinical testing and must obtain the necessary certification and permission.

3.1.1 Reagents

Reagents must be stored and used in accordance with reagent requirements.

The operation procedures and safety precautions should be strictly observed during the operation.

3.1.2 Reaction

The settings of all parameters should meet the requirements of the reagents.

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Operation

After the product is turned on, the product starts working. You can use and set the product through the 2 buttons on the front panel. The details are as follows:

4.1 Start-up

1) After turning on the power adapter, turn on the power switch, and after seeing the screen display, release the button.

2) After the normal start, you can hear the beep (“Di”) and the logo appears on the screen.

3) After the startup is completed, the display will show the current temperature of the current metal bath and start the heating process.

4) When the temperature reaches the preset value, it can be used.

4.2 Test

1) Press the “Timer” button to start the first step countdown.

2) When the timer reaches the preset time, there will be a prompt tone ("Di~Di~Di~"), indicating that the time has elapsed, you can start the next step.

3) Press the “Timer” button again to start the second step countdown.

4) When the timing reaches the preset time, there will be a prompt tone ("Di~Di~Di~"), the prompt time has expired, and the two-step test is completed.

5) Press the “Timer” button again at this time, the display will return to the current temperature display.

6) If you want to start the test again, repeat steps 1~5.

4.3 Setting the timing preset value

1) When not testing, that is, when the display shows the current temperature, press the “Set” button to enter the setup menu.

2) After entering the setup menu, switch the setting items through the “Settings” button, including: the time of the first step, the time of the second step, and the exit menu.

3) After entering the setup menu, change the setting items through the “Timer” button, including: increasing the time and confirming the exit.

4) After exiting the setting, the display will return to the current temperature .At this point, you can start the test according to the method in Section 4.3.

Note: The setting value will be saved automatically. After the next power-on, the default setting value will be used.

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Maintenance

5.1 Cleaning and Disinfection

1) We recommend operator to regularly clean the instrument housing to maintain a good appearance. When cleaning, use a clean soft cloth dampened with anhydrous alcohol to ensure deep contact between the test tube and the cone wall. After cleaning, dry with a dry cloth. If reagents and samples are spilled on the instrument, they should be wiped off immediately with clean water.

2) We recommend you to regularly disinfect the instrument in strict accordance with the standard disinfection procedures of the laboratory. Preferably, neutral disinfectant should be used. The instrument must be disinfected in the following cases:

- Before transportation or handling into another place.
- Before long-term outage.
- Before transfer to another person.
- After any special abnormal sample is found.

3) Always turn off the power switch and unplug the power adapter before cleaning. Do not pour the cleaning solution into the holes of the module during cleaning. Both the module and the enclosure are not allowed to be cleaned with a corrosive cleaning solution.

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Troubleshooting

See the following table for general fault judgment and troubleshooting:

Item	Fault	Fault Judgment	Troubleshooting
1	Display: none	❖ The power supply is not turned on; ❖ The power supply is broken ❖ Control chip is broken	Turn on the power supply; Check the connecting wires; If the fault still exists, contact us.
2	No beep.	❖ Buzzer damage	Contact us.
3	Module does not heat up	❖ Heater is broken	Contact us.
4	Button does not response	❖ Button is broken	Contact us.

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