

HeatSensor Thermostat HS-00642


HeatSensor



*Operating Manual
Specifications
Certificate*

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For any questions please make request at :

info@unisensor.be

or call + 32 42 52 66 02

or fax + 32 42 52 90 55

1. Safety precautions

The following symbols mean:



Caution: Read these operating instructions fully before use and pay particular attention to sections containing this symbol



Caution: Surfaces can become hot during use.

- Use only as specified by the operating instructions, or the intrinsic protection may be impaired.
- After transport or storage in humid conditions, dry out the unit before connecting it to the supply voltage. During drying out the intrinsic protection may be impaired.
- Connect only to a power supply with a voltage corresponding to that on the serial number label.
- Connect only to a power supply which provides a safety earth (ground) terminal.
- Ensure that the mains switch and isolating device (power supply connector) are easily accessible during use..
- Before moving, disconnect at the power supply socket.
- Do not operate the unit outside the laboratory premises.
- Do not operate the unit in premises with aggressive or explosive chemical mixtures.
- Before using any cleaning or decontamination method except those recommended by the manufacturer, user should check with the manufacturer that the proposed method will not damage the equipment.
- During operation:
 - use only standard and good quality tubes;
 - remember that thin-walls tubes have a higher thermoconducting factor;
 - don't heat the tubes over the melting point of the material they are made of /use thermoresisting polypropylene tubes/;
 - do not fill tubes more than 3-5 mm over the level they are immersed in the thermoblock;
 - do not touch surfaces which become hot during high temperature operation.

2. General Information

HeatSensor is a compact easy-to-use thermostat for microtest tubes. It is specially designed for long incubation at different temperatures.

Universal aluminum block accommodates 1 type of tubes (5 x 8 μ wells/strips).

The device is applicable in:

- *molecular and gene engineering, cell biology*: for temperature stabilisation in reactions of restriction and DNA denaturation;
- *biochemistry*: for the enzyme processes analysis;
- *microbiology*: for the anaerobic micro-organism cultivation,
- *chemistry*: for the preliminary heating of reagents in chromatography /especially when analysing chemical and biological components of the fat acids, condensing on the cold micro syringes/.

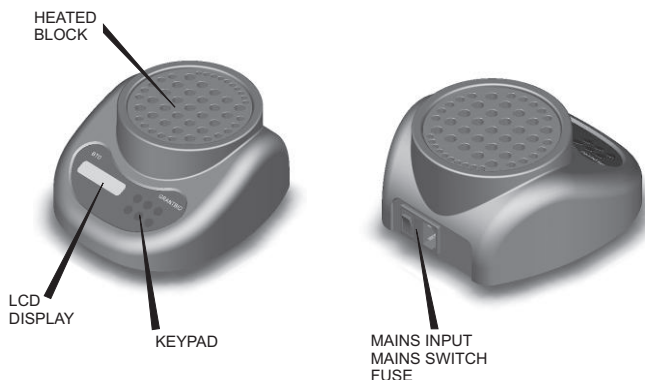


Fig.1

3. Getting started

3.1. Unpacking.

Remove packing materials carefully and retain for future shipment or storage of the unit.

3.2. Complete set.

HeatSensor set includes:

- Dry Block Thermostat HS-00642 1 pce.
- A spare fuse 1 pce.
- Specifications, Operating manual, Certificate 1 pce.

3.3. Plug the mains cable into the socket on the rear, and position the thermostat so that there is easy access to the power switch and connector.

4. Operation of Thermostat

- 4.1. Switch Thermostat to the mains.
- 4.2. Switch ON the power switch located on the rear panel of the thermostat.
- 4.3. The thermostat turns on and the display shows the following readouts:
 - previously set time and temperature in the first line;
 - timer indication *STOP* and current temperature in the second line.
- 4.4. *Temperature setting.* Use the ▲ and ▼ **Temp.** buttons (Fig.2/6) to set the necessary temperature, using as a guide the set temperature readouts shown in the first line of the display (Fig.2/3) (when the button is pressed down for longer time the increment becomes bigger).
- 4.5. The thermostat starts heating and the current temperature is displayed in the second line of the display (Fig.2/4).
- 4.6. When the necessary temperature is reached place tubes into the block sockets.
- 4.7. *Timer setting.* The thermostat is equipped with an independent timer for convenient control over the samples heating time.
- 4.8. Use the ▲ and ▼ **Time** buttons (Fig.2/5) to set the necessary time in hours and minutes (hr:min), using as a guide the set time readouts shown in the first line of the display (Fig.2/2) (when the button is pressed down for longer time the increment becomes bigger).
- 4.9. Press **Run** button (Fig.2/7) to start the timer. The elapsed time is indicated in the second line of the display (Fig.2/1).

After the set time is reached the timer gives a sound signal and the blinking indication *STOP* is shown on the display. Press **Stop** button (Fig.2/8) to stop the signal.

Attention! Timer does not stop the heating / temperature maintenance process.
- 4.10. If necessary the timer can be stopped before the set time is reached by pressing **Stop** button. When **Run** button is pressed again, the timer starts counting up the time from zero.
- 4.11. Note that it is possible to change the set time in the real time, i.e. it is not necessary to stop the timer to make these changes.
- 4.12. At the end of work turn OFF the thermostat with power switch at the rear panel.

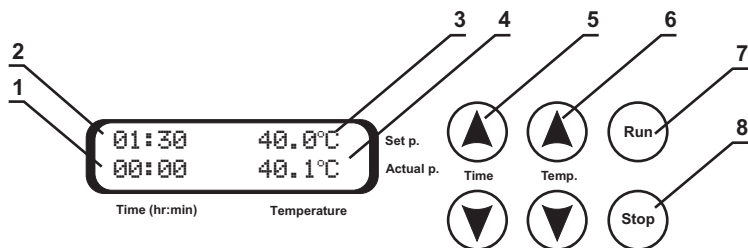


Fig.2 Control panel

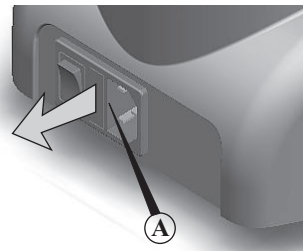
5. Specification:

- 5.1. Temperature regulation range..... +25° C to 100° C
(Thermostat provides stable thermoregulation when the set temperature is at least 5°C higher than the ambient temperature)
- 5.2. Setting resolution 0.1° C
- 5.3. Temperature accuracy ± 0.5° C
- 5.4. Uniformity ± 0.2° C
- 5.5. Over temperature protection internal thermal fuse
- 5.6. Independent timer with sound signal 1 min - 96 hr
- 5.7. Display LCD
- 5.8. Dimensions 210x230x110 mm
- 5.9. Working voltage 230V; 50/60Hz
115V; 50/60Hz
- 5.10. Consumed power 200 W
- 5.11. Weight, not more 3.1 kg
- 5.12. Block capacity 5 x 8 μwells/strip

6. Technical Maintenance

- 6.1. It is allowed to perform the maintenance and all types of repair operations only to the persons who have done a special training.
- 6.2. Cleaning liquids that do not contain concentrate organic solvents, alkali or acid can be used for device cleaning.
- 6.3. Standard ethanol (75%) can be used for disinfection.
- 6.4. *Replacement of fuses*

Disconnect from the power supply socket.
Remove the IEC power plug from the rear of the unit. Pull out the fuse drawer by applying leverage in recess (A). Remove the fuse from the holder. Check and replace with the correct fuse if necessary (230V - F2A, 115V - F3.15A).



7. Acceptance Certificate

- 7.1. The HeatSensor HS-00642 manufacturing number meets the technical requirements TN LV 000307246 - 02 - 98 and is considered to be fit for service.

7.2. Date of sale " ____ " _____ 20

8. Warranty. Reclamation information

The Manufacturer warrants the compliance of the thermostat with the requirements of Specifications provided the consumer follows the operation, storage and transportation requirements.

The warranted service life of Thermostat from the date of delivery to the customer is 24 months.

If any manufacturing defects are discovered by the customer, an unsatisfactory - equipment report shall be compiled, certified and sent to the manufacturer at your local dealer (distributor) address.

9. CE Marking

The CE marking affixed to the equipment indicates that the equipment meets the requirements of the following Directive(s):

Council Directive 89/336/EEC “ELECTROMAGNETIC COMPATIBILITY”

Applied standards:

EN 61326 Electrical equipment for measurement, control and laboratory use EMC requirements

Part 1 - General requirements

Council Directive 73/23/EEC “ELECTRICAL EQUIPMENT DESIGNED FOR USE WITHIN CERTAIN VOLTAGE LIMITS”

Applied standards:

EN 61010 Safety requirements for electrical equipment for measurement, control and laboratory use

Part 1 - General requirements

Part 2 - 10 - Equipment for heating of materials

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