



elmi Ltd.
laboratory equipment



ISO 9001:2008

Water thermostat TW-2.03



User manual

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Introduction

Dear users!

Water thermostat TW-2.03 is simple and reliable device. We ask you to consider technical requirement for exploitation to provide the use of the equipment without problems for a long period of time.

Water bath TW-2.03 is composed of the plastic water tank with the transparent lid and control block. The control block has LED displays and control buttons on top. Control block should be placed on the water tank and fixed by screw. On the bottom side of the control block heater and water pump are situated. On the back side of the control block two pipes are situated for connecting the water thermostat to an outer contour and maintaining the temperature in the outer contour same as in the tank.

The device is designed to maintain the desired temperature regime with high level of accuracy. This device is fully controlled by the microprocessor system with memory independent from the source of energy.

Technical specifications

Temperature range in the bath, °C	from room temp. to +90
Accuracy of temperature maintenance in the bath, °C	+0,1
Environmental temperature, °C	from +10 to +40
Maximal time of set temperature achievement, min	50
Minimal water capacity in tank, L	6
Maximal water capacity in tank, L	8,5
Relative moisture of atmosphere (at the temperature of 20°C):	not more than 80%
Temperature stabilization above the environmental, °C	not less than 3
Water pump productivity for external heating pipes (variable) L/min	2 – 5
Voltage and frequency:	220 V, 50 Hz
Power consumption, kW	not more then 1,5
Size of the device (length x width x height) mm:	320 x 265 x 260
Weight (without fluid), kg	4,9

Delivery package

Item	Quantity
Control block.....	1
Plastic tank.....	1
Lid.....	1
User's manual.....	1
Packaging.....	1

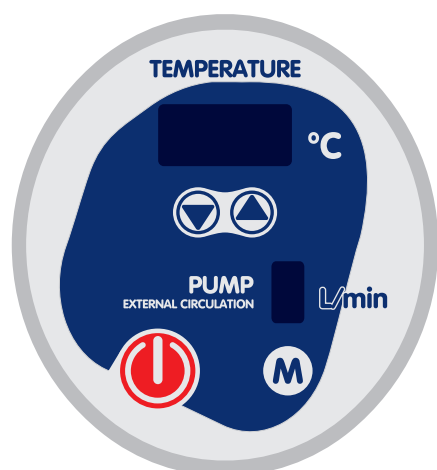
Operation

Preparation to work

- 1) Unpack the device.
- 2) Inspect all parts of the water thermostat for damage.
- 3) Put device on horizontal solid surface.
- 4) Connect the control block to the tank by fixing the screw in the back.
- 5) Fill the reservoir with 6 liters minimum of **distilled** water (do not use any electrolyte solvents).
- 6) Plug the cord into the outlet with voltage of 220 V and frequency of 50 Hz.

Control description

Water thermostat consists of a plastic tank and control block. Water tank is covered with transparent lid. The control block displays and buttons have the following functions:



TEMPERATURE



— Displays the current or set temperature.



— Buttons to adjust the temperature.



L/min

— Displays the level of water circulation in tank or water flow speed in external heating pipes.






— Buttons to adjust the level of water circulation in tank or water flow speed in external heating pipes.



— Buttons to turn on or off the device.

Operation

Turn on the device by pressing  button and set the desired temperature by   buttons. The device will start heating up immediately. The set temperature is displayed for the first 10 seconds after adjusting, after wards the actual temperature is displayed.

To check the set temperature press one time on the button for adjusting the temperature. The dot on the temperature display separating the integers from tenths of a set temperature value indicates what temperature is displayed:

- if the dot is blinking - set temperature is displayed,
- if the dot is glowing - actual temperature is displayed.

Set the desired water circulation level in tank or water flow speed in external heating pipes form 2-5 liters per minute by pressing the  button.

Troubleshooting

Error code table

Error	Cause	Solution
No display.	No main power connection. Power failure.	Plug in power cord. Check the voltage in network.
ERR-1	Failure of temperature sensor.	Replace the temperature sensor.
ERR-2	Failure of water pump.	Replace the water pump.
LEVEL	Insufficient water level.	Add water to the tank.

General information

Safety features

Service personnel are prohibited to:

- Plug the device in to a power outlet with configuration that differs from the power adapters configuration.
- Use the device with damaged power cord, water tank, control block.
- Move the device during work.

ATTENTION! Studied Samples may contain pathological material, including pathogens of serious diseases.

Disinfection and cleaning

Before you start disinfection or cleaning make sure the power cord is unplugged. It is recommended to perform cleaning with water and universal washing liquids. Afterwards the machine should be carefully dried. Do not let the water get inside the control block.

Transportation and storage

To insure safety during the transportation, transported equipment should be packed in the original manufacturers packaging or similar packaging substitute. Equipment can be transported by any kind of closed transport make sure that equipment is tightly fixed and transportation runs accordingly to regulations applied to this way of transport. Equipment should be stored in original manufacturers packaging in dry room with humidity not more than 80% and temperature range from +10°C up to +40°C. It is not recommended to store the equipment more than 36 months.

Warranty statements

- Warranty applies to 24 month period from the date of purchasing.
- Malfunctions arisen by the fault of manufacturer during warranty period, are removed free of charge.
- Warranty is not valid in the following cases:
 - If the serial number label of the manufacturer is damaged.
 - If damages appears as a result of the incorrect operation, transportation or storage.
- These documents are necessary if applying for warranty repair:
 - User manual with serial number of the machine.
 - Officially signed report, describing the reasons and conditions of equipment malfunction.
- Warranty repair could be performed only if the equipment is delivered in the original manufacturers packaging or equally safe packaging. Therefore please save the packaging after unpacking the device.
- If the above warranty requirements are disturbed, repair charges are applied to the consumer.
- For all further questions concerning exploitation and maintenance please contact manufacturer or product vendor.

General information

Certificate of approval

Water thermostat TW-2.03__ N_____ has been inspected for the technical conditions and meets all regulations necessary for such class of device.

Quality control person _____
(name) (signature)

Date of manufacture _____.

Place for stamp.

Certificate of sale

Organization _____.

Address _____.

Phone _____.

Vendor _____
(name) (signature)

Date of sale _____.

Manufacturers' address.
21-136 Aizkraukles Str., Riga LV-1006
Tel: (+371) 6755 8743
Fax: (+371) 6755 1934
E-mail: info@elmi-tech.com
WWW: www.elmi-tech.com

