



EN

EU-21
USER'S MANUAL

TECH
CONTROLLERS

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WARRANTY CARD

TECH company ensures to the Buyer proper operation of the device for the period of 24 months from the date of sale. The Guarantor undertakes to repair the device free of charge if the defects occurred through the manufacturer's fault. The device should be delivered to its manufacturer. Principles of conduct in the case of a complaint are determined by the Act on specific terms and conditions of consumer sale and amendments of the Civil Code (Journal of Laws of 5 September 2002).

CAUTION! THE TEMPERATURE SENSOR CANNOT BE IMMERSSED IN ANY LIQUID (OIL ETC). THIS MAY RESULT IN DAMAGING THE CONTROLLER AND LOSS OF WARRANTY! THE ACCEPTABLE RELATIVE HUMIDITY OF THE CONTROLLER'S ENVIRONMENT IS 5÷85% REL.H. WITHOUT THE STEAM CONDENSATION EFFECT. THE DEVICE IS NOT INTENDED TO BE OPERATED BY CHILDREN.

Activities related to setting and regulation of the controller parameters described in the Instruction Manual and parts wearing out during normal operation, such as fuses, are not covered by warranty repairs. The warranty does not cover damages arising as a result of improper operation or through the user's fault, mechanical damage or damage created as a result of fire, flood, atmospheric discharges, overvoltage or short-circuit. The interference of an unauthorized service, wilful repairs, modifications and construction changes cause the loss of Warranty. TECH controllers have protective seals. Removing a seal results in the loss of Warranty.

The costs of unjustifiable service call to a defect will be borne exclusively by the buyer. The unjustifiable service call is defined as a call to remove damages not resulting from the Guarantor's fault as well as a call considered unjustifiable by the service after diagnosing the device (e.g. damage of the equipment through the fault of the client or not subject to Warranty), or if the device defect occurred for reasons lying beyond the device.

In order to execute the rights arising from this Warranty, the user is obliged, at his own cost and risk, deliver the device to the Guarantor along with a correctly filled-in warranty card (containing in particular the sale date, the seller's signature and a description of the defect) and sales proof (receipt, VAT invoice, etc.). The Warranty Card is the only basis for repair free of charge. The complaint repair time is 14 days.

When the Warranty Card is lost or damaged, the manufacturer does not issue a duplicate.

.....
seller's stamp

.....
date of sale

Safety

Before using the device for the first time the user should read the following regulations carefully. Not obeying the rules included in this manual may lead to personal injuries or controller damage. The user's manual should be stored in a safe place for further reference. In order to avoid accidents and errors it should be ensured that every person using the device has familiarized themselves with the principle of operation as well as security functions of the controller. If the device is to be sold or put in a different place, make sure that the user's manual is there with the device so that any potential user has access to essential information about the device.

The manufacturer does not accept responsibility for any injuries or damage resulting from negligence; therefore, users are obliged to take the necessary safety measures listed in this manual to protect their lives and property.

We are committed to protecting the environment. Manufacturing electronic devices imposes an obligation of providing for environmentally safe disposal of used electronic components and devices. Hence, we have been entered into a register kept by the Inspection For Environmental Protection. The crossed-out bin symbol on a product means that the product may not be disposed of to household waste containers. Recycling of wastes helps to protect the environment. The user is obliged to transfer their used equipment to a collection point where all electric and electronic components will be recycled.

WARNING

- High voltage! Make sure the regulator is disconnected from the mains before performing any activities involving the power supply (plugging cables, installing the device etc.)
- The device should be installed by a qualified electrician.
- Before starting the controller, the user should measure earthing resistance of the electric motors as well as the insulation resistance of the cables.
- The regulator should not be operated by children..

WARNING

- The device may be damaged if struck by a lightning. Make sure the plug is disconnected from the power supply during storm.
- Any use other than specified by the manufacturer is forbidden.
- Before and during the heating season, the controller should be checked for condition of its cables. The user should also check if the controller is properly mounted and clean it if dusty or dirty.



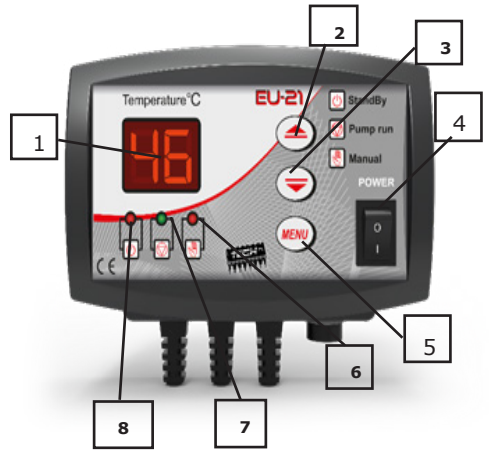
Controller description

The **EU-21** regulator is intended for controlling CH pump.

- Controller functions:
- controlling CH pump
 - thermostat function
 - anti-stop function
 - anti-freeze function

- Controller equipment:
- CH temperature sensor
 - LED display

1. Controller display - during standard operation current temperature is displayed.
2. PLUS button
3. MINUS button
4. Power switch
5. MENU button - enter the controller menu, confirm the settings
6. Control light indicating manual mode
7. Control light indicating pump operation
8. Control light indicating power supply



Principle of operation

EU-21 is intended for controlling the central heating pump (CH). The main task of the controller is to activate the pump when the pre-set temperature value is exceeded and deactivate it when the CH boiler cools down (due to damping). Such characteristics prevent unnecessary pump operation, which saves electricity (up to 60% depending on the CH boiler use) and extends the life of the pump. It also enhances its reliability and reduces the maintenance costs.

EU-21 controller offers anti-stop function which prevents CH pump stagnation. The pump is activated every 10 days for 1 minute. Additionally, every hour the time data is saved in non-volatile memory (EEPROM), which ensures that the timing is continued even in the event of voltage failure.

Apart from that, the controller offers anti-freeze option protecting against water freezing. When the sensor temperature drops below 5°C, the CH pump is enabled permanently.

Both functions are active by default but it is possible to deactivate them in the service menu

Controller EU-21 performs thermostat functions. Detailed parameter specification can be found in EU-21 manual, on the TECH website www.techsterowniki.pl.

How to use the controller

Use PLUS and MINUS buttons to adjust the pre-set temperature within the range of 5 to 98°C. The change is saved after a few seconds (flashing) and current sensor temperature appears. Press MENU to access two functions:

• Manual mode

Once manual mode has been selected by pressing MENU button, the corresponding control light goes on. In this mode, use PLUS button to enable the pump and MINUS button to disable it. This function enables the user to check if the pump works properly.

o1

• Hysteresis

This option is used to set the hysteresis of the pump operation. It is the difference between entering operation mode (activation threshold) and the temperature of returning to pause mode.

o2

Example:

the pre-set temperature is 60°C, the hysteresis is 3°C - entering operation mode takes place at the temperature of 60°C, return to pause mode takes place when the temperature drops to 57°C.

Service settings

In order to access the service settings, put the power switch in 0 position, press MENU and holding it all the time move the switch to 1. Release MENU button after a few seconds (b1 appears on the screen). Use PLUS and MINUS buttons to move to the next functions:

• Pump/thermostat

The regulator may serve as a pump or a thermostat.

Use MENU button to select the operation mode:

0 - as a pump (the controlled device is enabled at the pre-set temperature and it is disabled when the temperature drops to the pre-set temperature minus hysteresis)

1 - as a thermostat (the controlled device operates from the controller activation until reaching the pre-set temperature; it is enabled again when the temperature drops below the pre-set value by the hysteresis).

b1

• Anti-freeze

This function is used to enable/disable the anti-freeze function:

0 - OFF,

1 - ON

b2

• Anti-stop

This function is used to enable/disable the anti-stop function:

0 - OFF,

1 - ON

b3

• Minimum pump activation threshold

This option is available only if thermostat function has been selected. The settings range is 0÷70°C

b4

Notifications

BL +E5 (alternately) - sensor failure

A5 -anti-stop active

A2 - anti-freeze active

Technical data

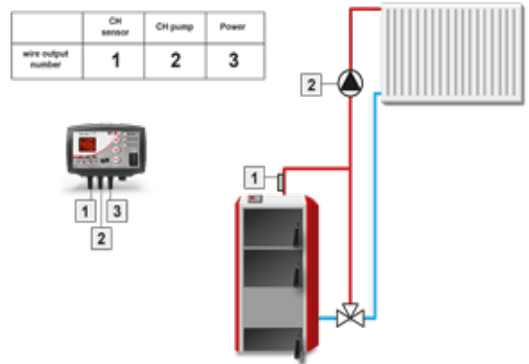
NO.	SPECIFIKATION	
1.	Power supply	230V ±10% /50Hz
2.	Maximum power consumption	2W
3.	Ambient temperature	5÷50
4.	Pump max. output load	0,5A
5.	Temperature measurement accuracy	1°C
6.	Sensor thermal resistance	-30÷99°C
7.	Fuse	1,6A

How to install

The sensor should be installed on the CH boiler output with the use of a cable tie and protected from the influence of external factors with the use of an insulating tape (it cannot be dipped in any liquid).

The pump power cord should be connected in the following way: blue and brown:230V, yellow-green (protective) should be earthed.

The distance between the mounting holes is 110mm.



EU Declaration of conformity

Hereby, we declare under our sole responsibility that **EU-21** manufactured by TECH, headquartered in Wieprz Biała Droga 31, 34-122 Wieprz, is compliant with:

- Directive 2014/35/EU of the European Parliament and of the Council of February 26, 2014 on the harmonisation of the laws of Member States relating to **the making available on the market of electrical equipment designed for use within certain voltage limits (EU Journal of Laws L 96, of 29.03.2014, p. 357)**,
- Directive 2014/30/EU of the European Parliament and of the Council of February 26, 2014 on the harmonisation of the laws of Member States relating to electromagnetic compatibility (EU Journal of Laws L 96 of 29.03.2014, p.79),
- Directive 2009/125/EC establishing a framework for the setting of ecodesign requirements for energy-related products,
- the regulation by the Ministry of Economy of May 8, 2013 concerning the essential requirements as regards the restriction of the use of certain hazardous substances in electrical and electronic equipment, implementing provisions of RoHS directive 2011/65/EU.

For compliance assessment, harmonized standards were used: PN-EN 60730-2-9:2011, PN-EN 60730-1:2016-10.

Wieprz, 06.05.2019

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