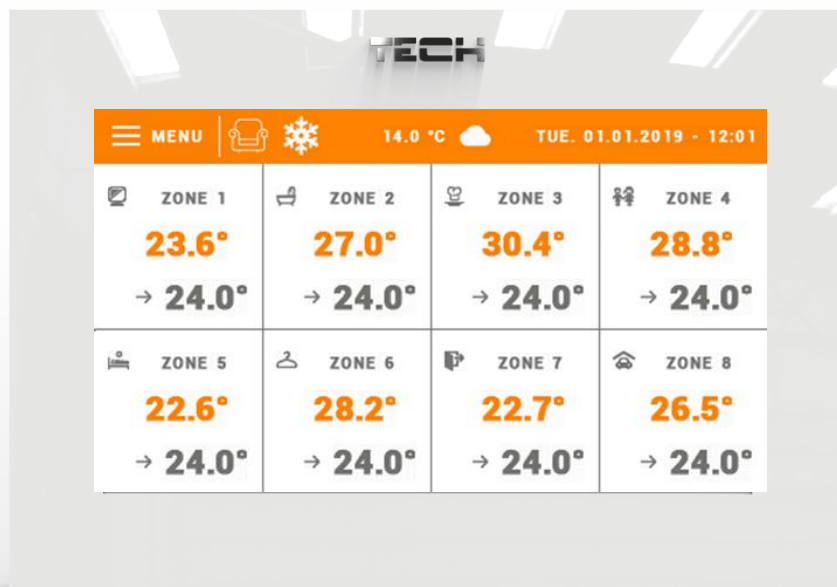


# TECH TECH CONTROLLERS

USER MANUAL

EU-M-8e

EN





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KN.20.02.26

## I. 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.



### 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.



### NOTE

- 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.

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Changes in the merchandise described in the manual may have been introduced subsequent to its completion on 26.02.2020. The manufacturer retains the right to introduce changes to the structure. The illustrations may include additional equipment. Print technology may result in differences in colours shown.

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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.



## II. DEVICE DESCRIPTION

EU-M-8e room regulator is intended to be used with L-8e external controller. It is designed to control subordinate room regulators. EU-M-8e room regulator should be installed in a heating zone. It sends current temperature readings from a given zone. Based on the data, the external controller manages the thermostatic valves (opening them when the temperature is too low and closing them when the pre-set temperature has been reached).

EU-M-8e room regulator may be used to adjust the settings in other zones - pre-set temperature, floor heating.



### NOTE

Only one EU-M-8 room regulator may be used in a heating system.

### Functions fulfilled by the regulator:

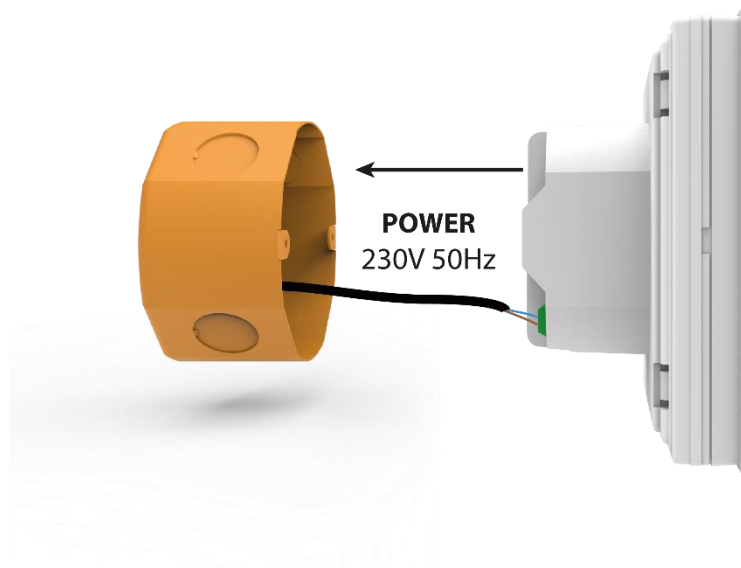
- Wireless communication with L-8
- Controlling room temperature
- Displaying settings: temperature, date, time
- Parental lock
- Alarm lock
- Screensaver – possibility of uploading photos, a slide show
- Software update via USB
- Controlling the settings of other zones e.g. the pre-set temperature, schedules, names etc.
- Possibility of configuring global schedule settings

### Controller equipment:

- Front panel made of 2 mm glass
- Wireless communication
- Large, easy-to-read, colour touchscreen
- Built-in temperature sensor
- Flush-mountable

### III. INSTALLATION

The controller is flush-mountable in an electrical box.



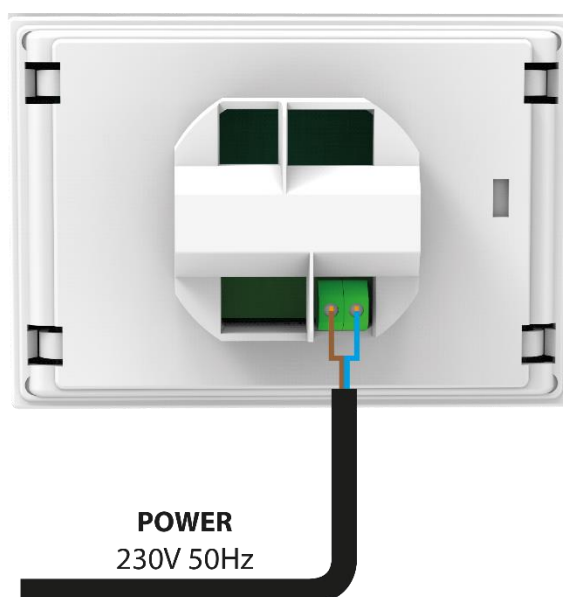
#### WARNING

Risk of fatal electric shock from touching live connections. Before working on the controller switch off the power supply and prevent it from being accidentally switched on.



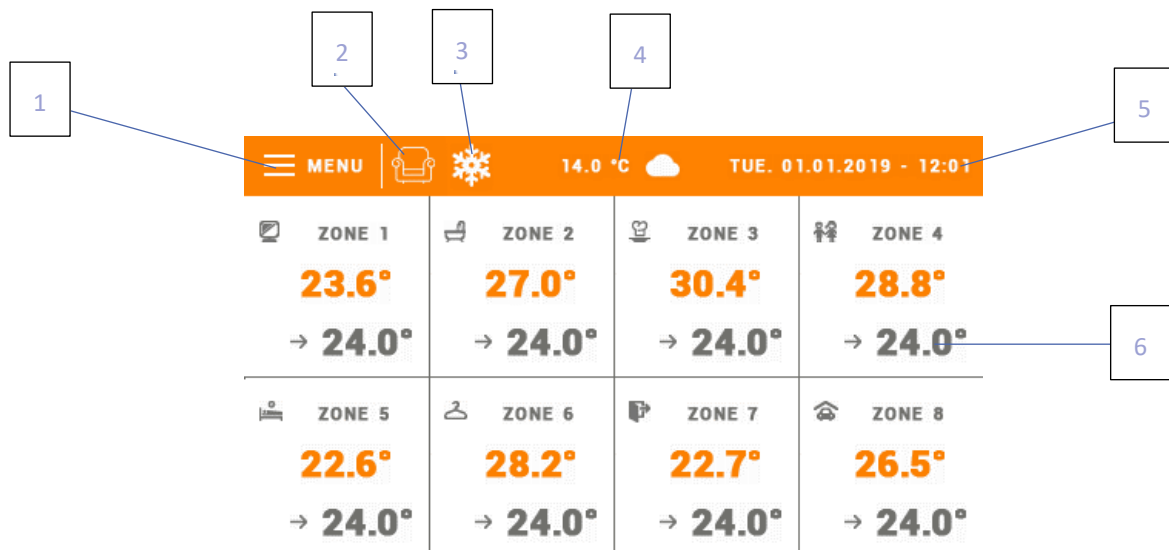
#### NOTE

Incorrect connection of the wires may damage the controller.

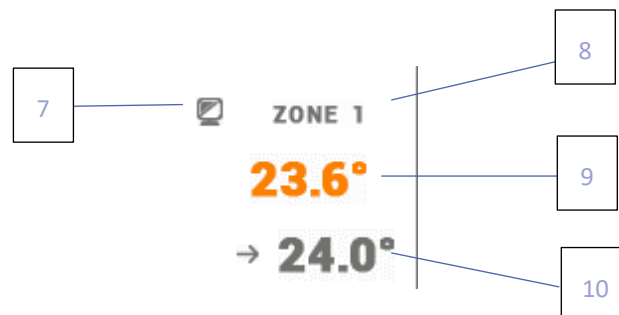


## IV. MAIN SCREEN DESCRIPTION

The device is controlled using the buttons next to the display.



1. Enter controller menu
2. Current operation mode (armchair icon – comfort mode)
3. Cooling - active
4. External temperature
5. Current date and time
6. Zone parameters:

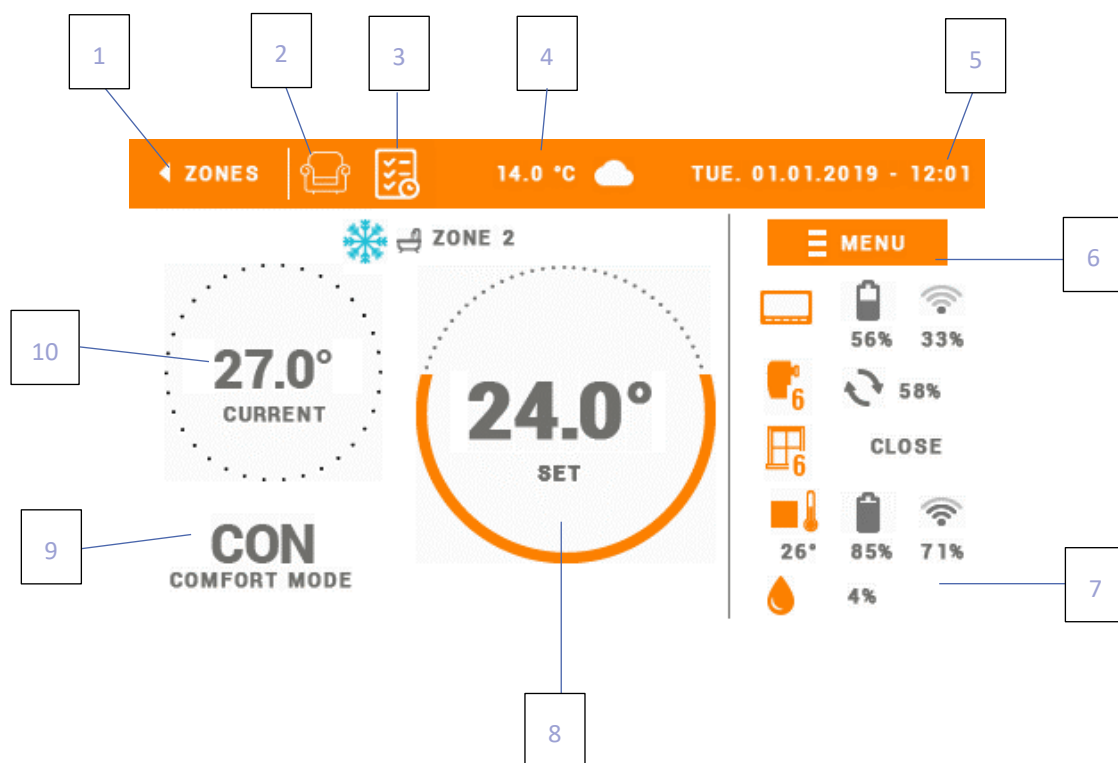


7. Zone icon
8. Zone name
9. Current zone temperature
10. Pre-set zone temperature

EU-M-8e control panel is a master room regulator, which enables the user to change the pre-set zone parameters regardless of the regulator or room sensor used in the zone.



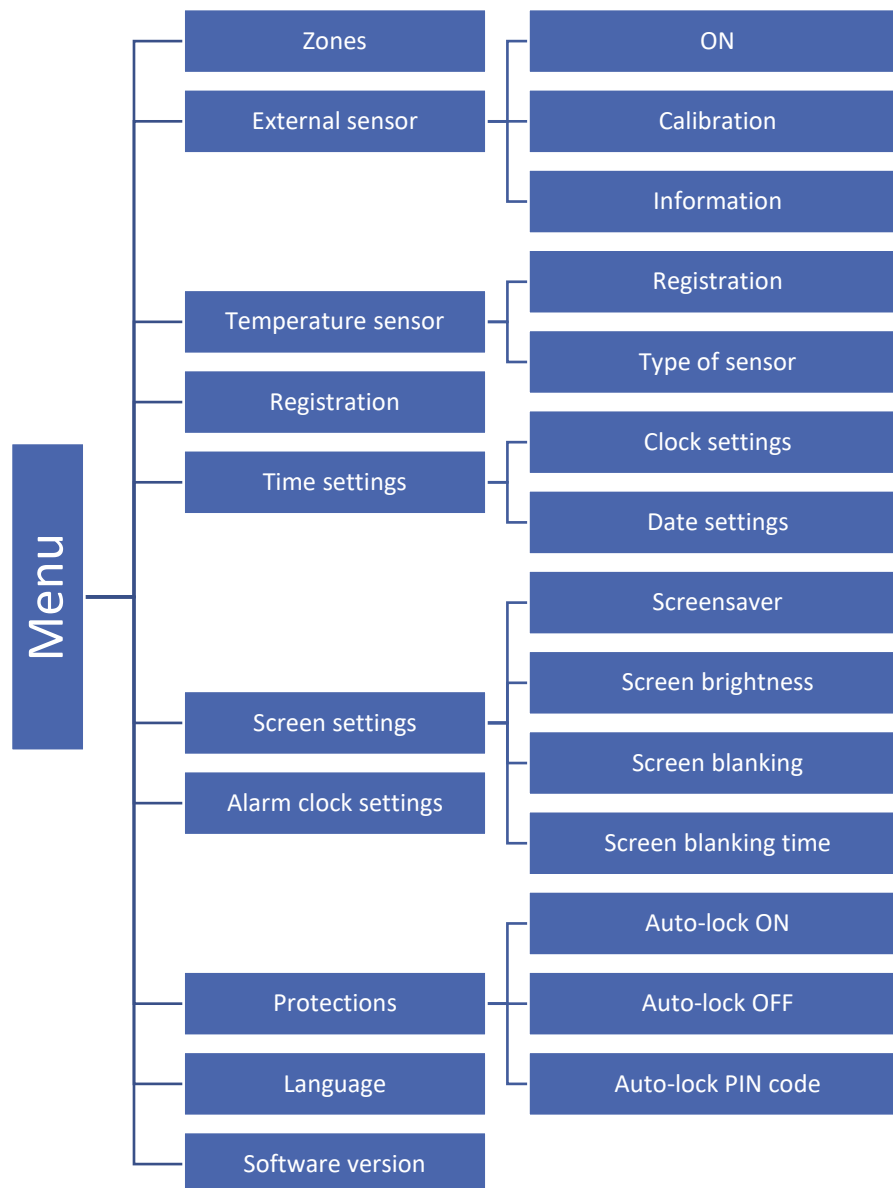
In order to enter the settings of a given zone, tap in the area of the screen informing about the zone status. The screen will show basic zone editing screen:



1. Return to main screen
2. Current operation mode (armchair icon – comfort mode)
3. Change of current schedule
4. External temperature
5. Current time and date
6. Enter zone menu
7. Change of parameter e.g. name, icon, hysteresis
8. Pre-set zone temperature
9. Current schedule or constant temperature
10. Current zone temperature

## V. CONTROLLER FUNCTIONS

### 1. BLOCK DIAGRAM – CONTROLLER MENU



### 2. ZONES

Zones menu is described in detail in section VI.

### 3. EXTERNAL SENSOR

#### 3.1. CALIBRATION

External sensor calibration should be performed while mounting or after the regulator has been used for a long time, if the external temperature displayed differs from the actual temperature. Calibration setting range is from  $-10^{\circ}\text{C}$  to  $+10^{\circ}\text{C}$  with the accuracy of  $0,1^{\circ}\text{C}$ .

#### 3.2. INFORMATION

Once this function has been activated, the display shows information about the range and external sensor battery level.

## 4. TEMPERATURE SENSOR

This function enables the user to register the temperature sensor C-8r or C-mini. In order to register:

- Select registration option in EU-M-8 (Menu > Temperature sensor > Registration)
- Hold the registration button on C-8r or C-mini.

## 5. REGISTRATION

This function enables the user to register EU-M-8e room regulator in L-8e main controller. In order to register:

- Select *Registration* in EU-M-8 (Menu > Registration)
- Select *Registration* in L-8e controller menu (Menu > Zones 1-8 > Registration)

## 6. TIME SETTINGS

This function enables the user to set current date and time which will be displayed in the main screen.

## 7. SCREEN SETTINGS

This function enables the user to adjust the screen parameters to individual needs.

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### 7.1. SCREENSAVER

- **Screensaver** - The user may activate a screensaver which will appear after a pre-defined time of inactivity. In order to return to the main screen view, tap on the screen. The following screensaver settings may be configured by the user:
  - Slide show – (this option may be activated if the photos have been uploaded first). The screen displays the photos at a user-defined frequency.
  - Clock – the screen displays the clock.
  - Blank – after the pre-defined time of inactivity the screen goes blank.
- **Pictures import** – Before importing the photos to the controller memory they must be processed using ImageClip (the software may be downloaded from [www.techsterowniki.pl](http://www.techsterowniki.pl)). After the software has been installed and started, load the photos. Select the area of the photo which will be displayed on the screen. The photo may be rotated. After one photo has been edited, load the next one. When all the photos are ready, save them in the main folder of the memory stick. Next, insert the memory stick into the USB port and activate Photo upload function in the controller menu.
- **Idle time** – This function is used to define the time after which the screensaver is activated.
- **Slide show frequency** – This option is used to set the frequency at which the photos are displayed on the screen if the Slide show is activated.

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### 7.2. SCREEN BRIGHTNESS

This function is used to set the screen brightness during operation.

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### 7.3. SCREEN BLANKING

This function is used to set the brightness of the screen after it goes blank.

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#### 7.4. SCREEN BLANKING TIME

This parameter specifies the time after which the screen will go blank.

#### 8. ALARM CLOCK SETTINGS

This submenu is used to activate and edit the alarm clock function. The alarm clock may be activated once or on selected days of the week – select the days in Alarm day option.

#### 9. PROTECTIONS

Tapping on Protections icon in the main menu opens up a screen enabling the user to configure the parental lock function. When this function is activated by selecting Automatic blockade on, the user may set the PIN code necessary to access to the controller menu.



#### NOTE

0000 is the default PIN code.

#### 10. LANGUAGE

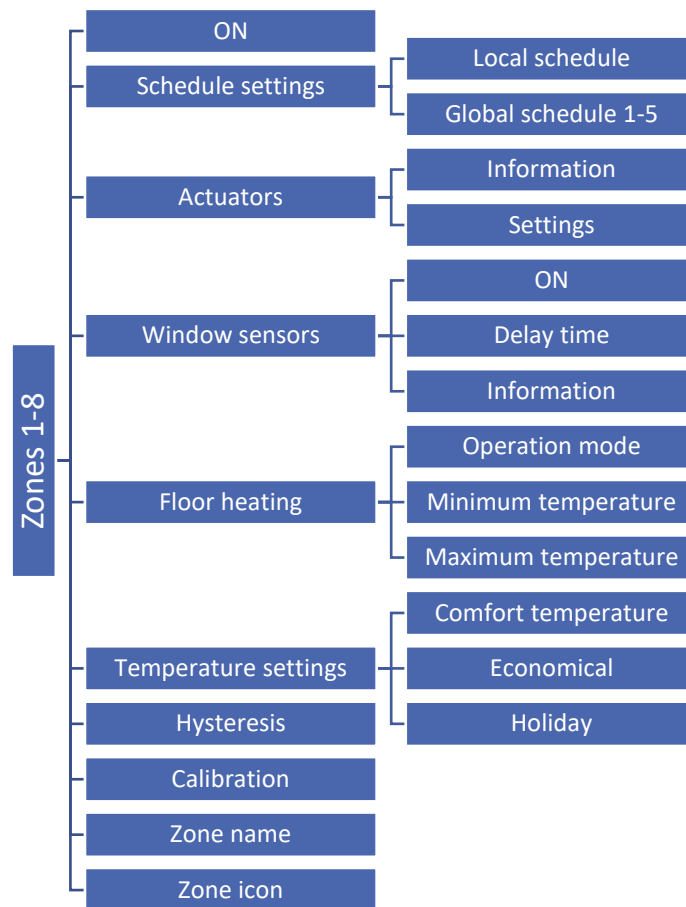
This function is used to select the language version.

#### 11. SOFTWARE VERSION

When this option is selected, the screen displays the controller manufacturer's logo and the current software version.

## VI. ZONES

### 1. BLOCK DIAGRAM – ZONE MENU



### 2. ON

After the room sensor has been activated and registered in a given zone, it is used by L-8e controller. The function is inactive by default, but it may be activated when the room sensor has been register.

### 3. SCHEDULE SETTINGS

#### 3.1. LOCAL SCHEDULE

This weekly schedule is assigned to a given zone only. After the room sensor has been detected by the main controller, the schedule is activated automatically in this zone and may be adjusted by the user to individual needs.

#### 3.2. GLOBAL SCHEDULE 1-5

Global schedules may be assigned to many zones at the same time. Changes introduced in global schedule may apply in many zones at the same time.

### 4. ACTUATORS

#### 4.1. INFORMATION

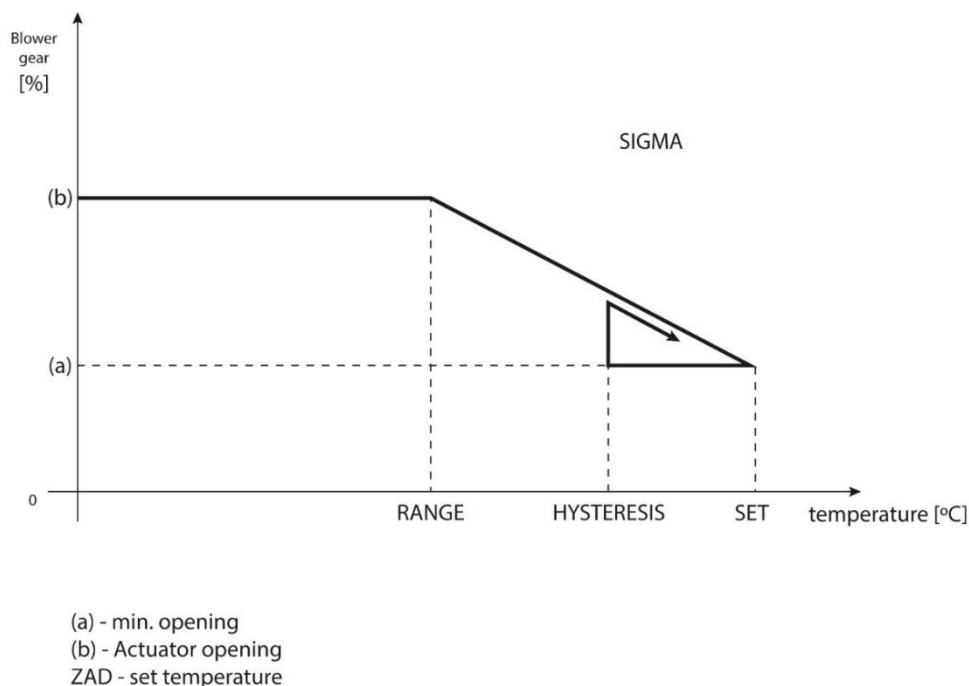
Select this option to view all actuators.

## 4.2. SETTINGS

This submenu enables the user to configure the operation of thermoelectric actuators. The user may define the maximum and minimum valve closing – the level of valve opening and closing will never exceed these values.

SIGMA function enables smooth control of thermostatic valve. After activating this function, the user may set the minimum and the maximum level of valve closing.

Moreover, the user configures *Range* parameter which defines the room temperature at which the valve starts closing and opening.



### Example:

Pre-set zone temperature: 23°C

Minimum opening: 30%

Maximum opening: 90%

Range: 5°C

Hysteresis: 2°C

With the above settings, the valve starts closing when the zone temperature reaches 18°C (pre-set temperature minus *Range* value). The minimum opening is achieved when the pre-set temperature is reached. Afterwards the temperature starts falling. When it drops to 21°C (pre-set temperature minus hysteresis value), the valve starts opening. It achieves the maximum opening when the temperature reaches 18°C.

- **Protection profile** – once this function has been activated, the external controller checks the temperature. If the pre-set value is exceeded by the number of degrees defined in <Adjustment range> parameter, all the actuators in the zone will be closed. This function works only when sigma function is active.

## 5. WINDOW SENSORS

### 5.1. DELAY TIME

This function enables the user to set the delay time after which the main controller sends a signal to close the contacts. Settings range :00:00 – 00:30 minutes.

Example: Delay time is set at 10 minutes. When the window is opened, the sensor sends the information to the main controller. If the sensor sends another information that the window is open after 10 minutes, the main controller will force the actuators to close.

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## 5.2. INFORMATION

Select this option to view all sensors.

## 6. FLOOR HEATING

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### 6.1. OPERATION MODE

- **Protection** – This function is used to maintain the floor temperature below the maximum temperature value in order to protect the heating system against overheating. When the temperature reaches the maximum value, the zone heating is disabled.
- **Comfort** – This function involves monitoring the floor temperature to maintain comfort temperature. When the temperature reaches the maximum value, the zone heating will be disabled (in order to protect the system against overheating). When the temperature drops below the minimum value, the zone heating will be enabled.

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### 6.2. MINIMUM TEMPERATURE

This function is used to set the temperature below which floor heating in a given zone is enabled.

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### 6.3. MAXIMUM TEMPERATURE

This function is used to set the temperature above which floor heating in a given zone is disabled.

## 7. TEMPERATURE SETTINGS

This function is used to define the pre-set temperature for particular operation modes.

## 8. HYSTERESIS

This function is used to define tolerance of the pre-set temperature in order to prevent undesired oscillation in case of small temperature fluctuation. The setting range is 0,1 - 10°C with the accuracy of 0,1°C.

## 9. CALIBRATION

Calibration should be performed while mounting or after the regulator has been used for a long time, if the room temperature measured by the sensor differs from the actual temperature. Calibration setting range is from -10°C to +10°C with the accuracy of 0,1°C.

## 10. ZONE NAME

This function enables the user to assign a name to a given zone.

## 11. ZONE ICON

This function enables the user to select the icon which will be displayed next to the zone name.

## VII. SOFTWARE UPDATE



### WARNING

Software update shall be conducted only by a qualified fitter. After the software has been updated, it is not possible to restore previous settings.

In order to install new software, the controller must be unplugged from the power supply. Next, insert the flash drive with the new software into the USB port. Connect the controller to the power supply. A single sound signalizes that the software update process has been initiated.

## VIII. TECHNICAL DATA

Room temperature adjustment range	5°C÷40°C
Power supply	230V
Max. power consumption	1,3W
Measurement error	+/-0,5°C
Operation temperature	5°C÷50°C
Frequency	868MHz



# TECH TECH CONTROLLERS

## EU Declaration of Conformity

Hereby, we declare under our sole responsibility that **EU-M-8e** manufactured by TECH STEROWNIKI, head-quartered in Wieprz, Biała Droga 31, 34-122 Wieprz, is compliant with Directive **2014/53/EU** of the European parliament and of the Council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment, Directive **2009/125/EC** establishing a framework for the setting of ecodesign requirements for energy-related products as well as the regulation by the MINISTRY OF ENTREPRENEURSHIP AND TECHNOLOGY of 24 June 2019 amending the regulation concerning the essential requirements as regards the restriction of the use of certain hazardous substances in electrical and electronic equipment, implementing provisions of Directive (EU) 2017/2102 of the European Parliament and of the Council of 15 November 2017 amending Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (OJ L 305, 21.11.2017, p. 8).

For compliance assessment, harmonized standards were used:

PN-EN IEC 60730-2-9 :2019-06 art. 3.1a Safety of use

ETSI EN 301 489-1 V2.2.3 (2019-11) art.3.1b Electromagnetic compatibility

ETSI EN 301 489-3 V2.1.1:2019-03 art.3.1 b Electromagnetic compatibility

ETSI EN 300 220-2 V3.2.1 (2018-06) art.3.2 Effective and coherent use of radio spectrum

ETSI EN 300 220-1 V3.1.1 (2017-02) art.3.2 Effective and coherent use of radio spectrum

  
PAWEŁ JURA

  
JANUSZ MASTER

Wieprz, 26.02.2020





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