TECH CONTROLLERS

USER MANUAL

WIFI OT

EN

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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

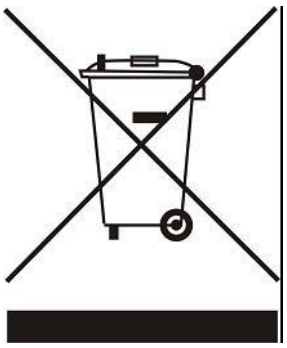
- High voltage! Make sure the regulator is disconnected from the mains before performing any activities involving the power supply (plugging cables, installing the device etc.).
- The device should be installed by a qualified electrician.
- The regulator should not be operated by children.

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.

Changes in the merchandise described in the manual may have been introduced subsequent to its completion on October 04th 2019. 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.

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

The regulator is intended for controlling the heating device. Its main task is to maintain the pre-set temperature in the zone by sending a signal to the heating device when the zone needs heating to reach the desired temperature.

Controller functions:

- Built-in temperature sensor
- Built-in WiFi module
- Possibility of setting a weekly operation schedule
- Controlling room temperature with the use of pre-configured heating curve

It is also possible to control the heating system via a web app https://emodul.eu .

III. FIRST START-UP

It is necessary to follow these steps while starting the controller for the first time so that the controller works properly:

1. Configure the internet connection
2. Configure the external sensor (optional)
3. Configure the room sensors / room regulators

1. HOW TO CONFIGURE INTERNET CONNECTION

The regulator has a built-in Internet module which enables the user to monitor the heating system online. First, connect to the Internet selecting the WiFi network in <WiFi network selection> in the controller menu. Internet module parameters such as IP address, IP mask, Gate address may be set manually or by activating DHCP option (default ON).

Next, go to emodul.eu and register your account. Select <Registration> in the controller menu - the controller will generate a code which needs to be entered at emodul.eu in <Settings> tab (Register module).

2. HOW TO CONFIGURE EXTERNAL SENSOR

The user may choose the type of external sensor used (Main menu > Heating > Floor sensor). It is necessary to register wireless sensors by selecting <*Registration*> in the main controller and pressing the communication button on the external sensor (one quick press).

Conducting registration enables the external sensor automatically.

NOTE

Deactivating the sensor in the controller menu only interrupts the communication (the external temperature is no longer displayed on the controller screen). It does not disable the external sensor itself – it remains active until the batter is flat.

3. HOW TO CONFIGURE ROOM SENSORS/ROOM REGULATORS

To enable the device to control a given zone, it is necessary to provide it with current temperature value. The easiest way is to use a temperature sensor. If the user wants to be able to change the pre-set temperature value directly from the zone, it is advisable to use a room regulator.

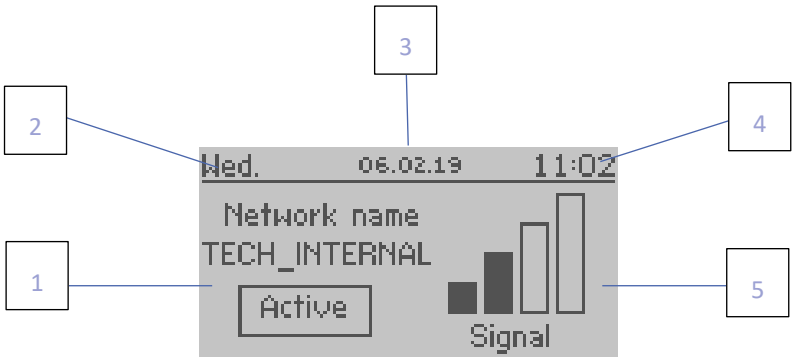
Regardless of the type of temperature sensor / room regulator chosen, it must be registered in a particular zone in the controller menu. The user may choose the type of room sensor (Main menu > Heating > Room sensor). While selecting the room sensor/regulator, it is necessary to register it.

In order to register the sensor/room regulator, go to the main menu and select <Registration>. Next, press the communication button on the selected temperature sensor or select *Registration* in the room regulator.

IV. MAIN SCREEN DESCRIPTION

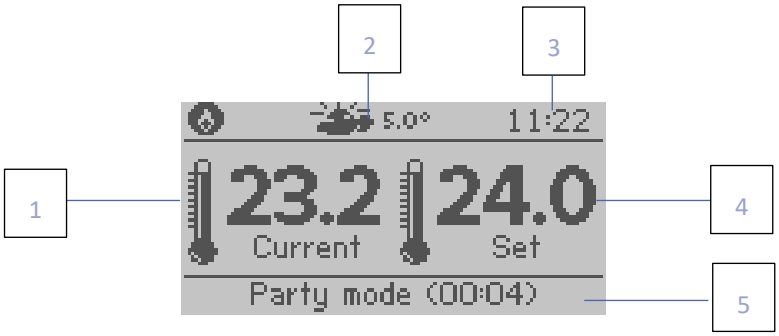
The user may change the screen view using <*Screen view*> option in *Settings* > *Screen settings* or by pressing EXIT button in the main screen view.

- **WiFi**



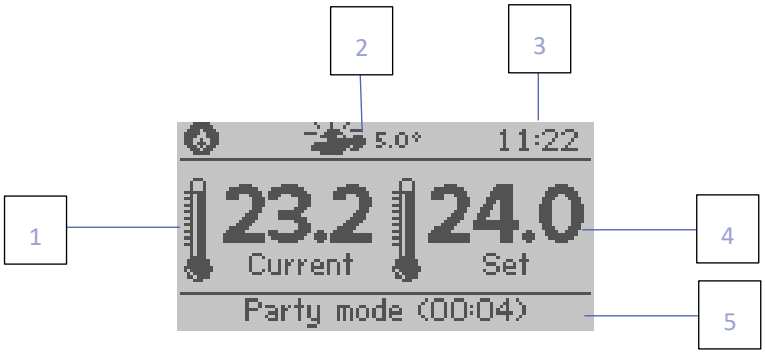
1. Active WiFi network
2. Current day of the week
3. Current date
4. Current time
5. WiFi signal strength

- **Room sensor**



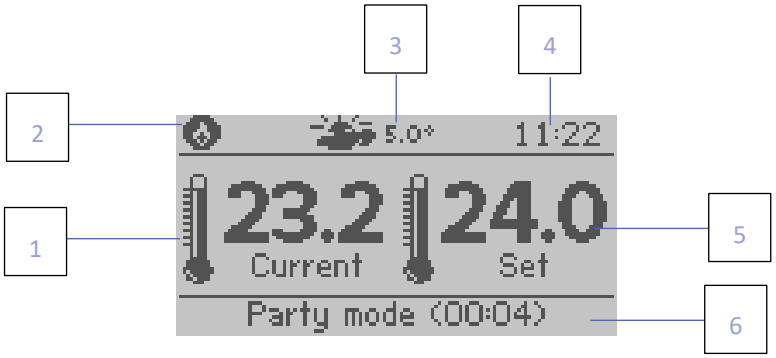
1. Current room temperature
2. Current external temperature
3. Current time
4. Pre-set room temperature
5. Active time heating program

- **Heating**



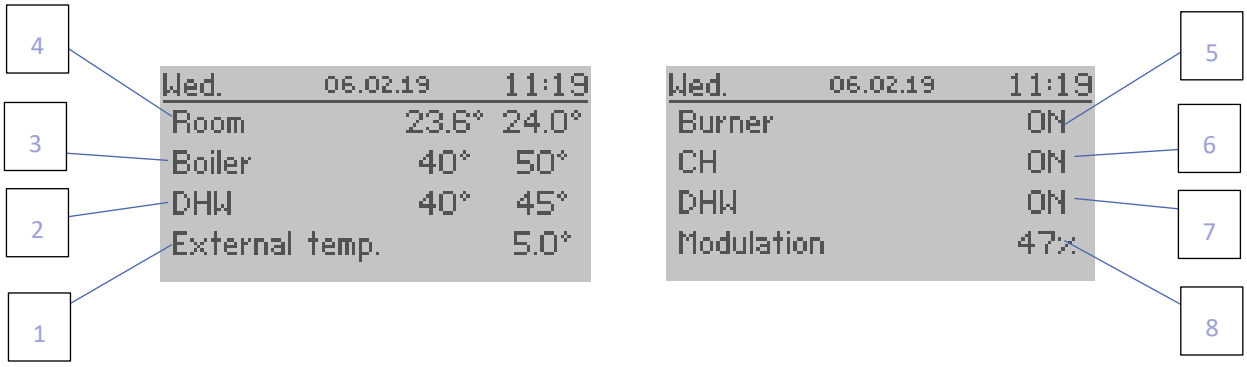
1. Current CH boiler temperature
2. Current external temperature
3. Current time
4. Pre-set CH boiler temperature
5. Active time heating program

- **Domestic hot water**



1. Current DHW temperature
2. Icon indicating DHW heating
3. Current external temperature
4. Current time
5. Pre-set DHW temperature
6. Active time heating program

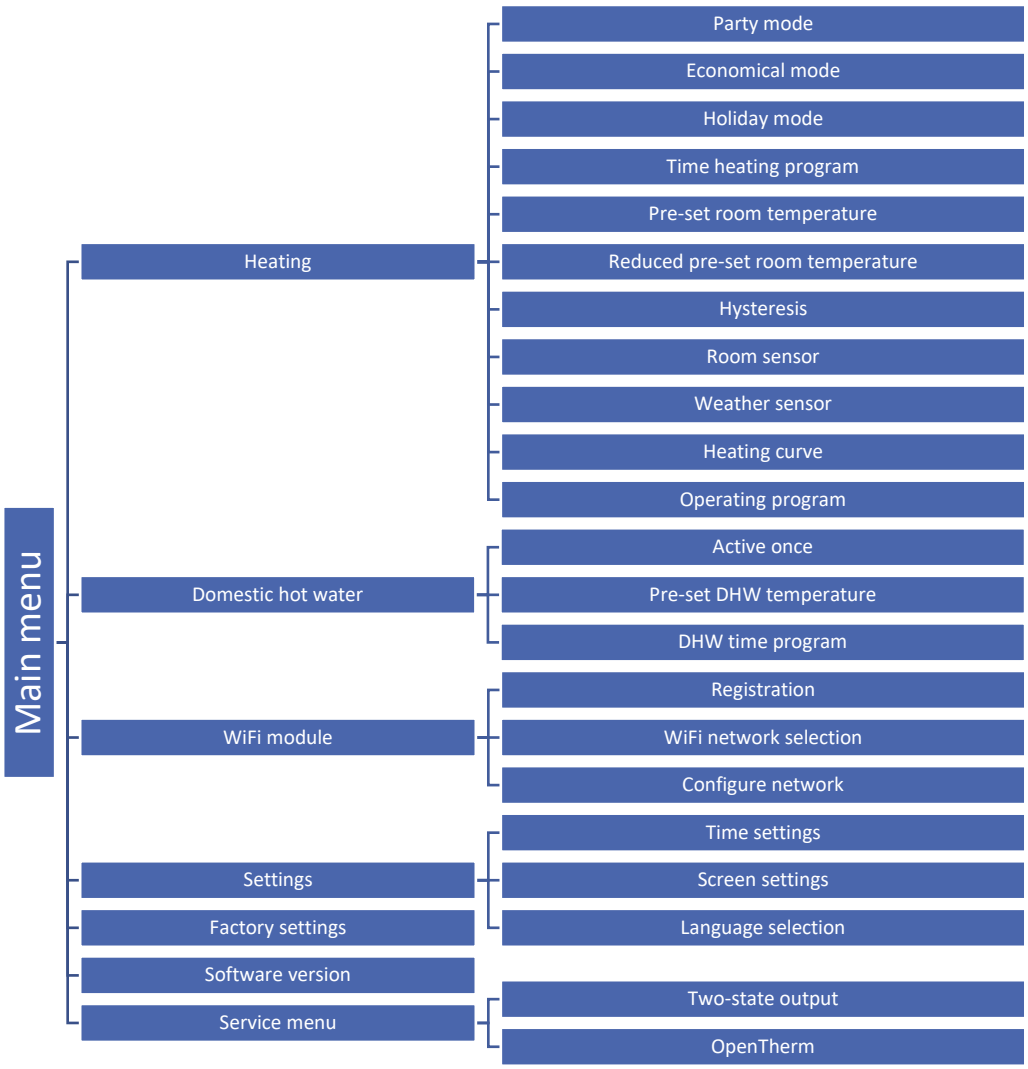
- **Information**



1. Current external temperature
2. Current and pre-set DHW temperature
3. Current and pre-set CH boiler temperature
4. Current and pre-set room temperature
5. Current burner status
6. Current CH status
7. Current DHW status
8. CH boiler/burner operating power (%)

V. CONTROLLER FUNCTIONS

1. BLOCK DIAGRAM – CONTROLLER MENU



2. HEATING

2.1. PARTY MODE

Once this function has been activated, the user sets the desired temperature that needs to be reached in the room within the pre-set time. The setting range is 1 min to 24 hours. You can also set the party mode for an indefinite period (CON) after increasing the time above 24 hours. To turn off party mode you must manually change the mode or set party mode duration to 0 hours and 0 minutes.

2.2. ECONOMICAL MODE

When this function is active, the room temperature depends on <Reduced pre-set room temperature> parameter.

2.3. HOLIDAY MODE

Once this function has been activated, the user sets the day of departure and the day of return. Within the pre-set time period the room temperature depends on <Reduced pre-set room temperature>.

2.4. TIME HEATING PROGRAM

This program is used to define the time periods when the <Pre-set room temperature> will apply. The user may copy the settings into other days of the week.

NOTE

The user may set 4 time periods for one day. Outside these periods <Reduced pre-set room temperature> will apply.

Example:

In order to set the temperature of 22°C from 14:00 to 22:00 and 19°C from 22:00 do 6:00, follow these steps:

- Go to <Pre-set room temperature> and set 22°C.
- Go to <Reduced pre-set room temperature> and set 19°C.
- Go to <Time heating program> and select the day of the week when the schedule will apply.
- Use MENU button to highlight the first parameter and set the starting time (14:00) using +/- buttons.
- Use MENU button to highlight the second parameter and set the finishing time (22:00) using +/- buttons.
- Use EXIT button to confirm or copy the settings.

2.5. PRE-SET ROOM TEMPERATURE

This parameter defines the desired temperature which needs to be reached in the room. This setting is used in time heating program – it applies within the time periods defined in the program. The settings range is 5°C to 35°C.

2.6. REDUCED PRE-SET ROOM TEMPERATURE

This parameter defines the desired room temperature which needs to be reached in economical and holiday mode. The setting range is 5°C to 35°C.

2.7. 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 (within the range 0,2 - 10^{o}C).

Example:

If the pre-set temperature is 22^{o}C and the hysteresis is 2^{o}C, the zone temperature is considered too low when it drops to 20^{o}C. When the temperature drops to 20°C, the controller takes actions to restore the pre-set temperature.

2.8. ROOM SENSOR

- **Calibration** – Room sensor calibration is performed while mounting or after it has been used for a long time, if the zone temperature displayed differs from the actual temperature. Calibration range is from -10^{o}C to +10^{o}C with the accuracy of 0,1^{o}C.

- **Type of sensor** – the user chooses the type of sensor which will measure the room temperature (built-in sensor, wireless sensor, room regulator).

2.9. WEATHER SENSOR

- **Calibration** – Room sensor calibration is performed while mounting or after it has been used for a long time, if the zone temperature displayed differs from the actual temperature. Calibration range is from -10°C to +10°C with the accuracy of 0,1°C.

- **Type of sensor** – the user chooses the type of sensor which will measure the external temperature (built-in sensor, wireless sensor, external sensor).

2.10. HEATING CURVE

The heating curve is used to calculate the pre-set temperature. The user may adjust certain parameters of this function. <Maximum CH boiler temperature> and <Minimum CH boiler temperature> parameters enable the user to define threshold values of the temperature calculated on the basis of the heating curve. <Slope> and <Level> parameters enable the user to modify the whole curve.

2.11. OPERATING PROGRAM

This function enables the user to choose operating program between:

- Heating and DHW
- Only DHW

3. DOMESTIC HOT WATER

3.1. ACTIVE ONCE

Once this function has been activated, the controller starts a one-off procedure of heating domestic hot water to the pre-set temperature. This feature is available only with DHW tank.

3.2. PRE-SET DHW TEMPERATURE

This parameter is used to set the temperature of domestic hot water which needs to be reached. The setting is used in DHW time program - it applies in hours defines in this program.

3.3. DHW TIME PROGRAM

This program is used to define the time periods when <Pre-set DHW temperature> will apply. The user may copy the settings into other days of the week. This feature is available only with DHW tank.

4. WIFI MODULE

4.1. REGISTRATION

Select *Registration* to generate the code necessary to register the controller at https://emodul.eu - see: First start-up.

4.2. WIFI NETWORK SELECTION

This submenu presents a list of available networks. Select the network and confirm by pressing MENU. If the network is secured, it is necessary to enter the password. Use + and – to select each letter of the password and press EXIT to complete the procedure.

4.3. CONFIGURE NETWORK

Normally, the network is configured automatically. The user may also conduct it manually using the following parameters of this submenu: DHCP, IP address, Subnet mask, Gate address, DNS address and MAC address.

5. SETTINGS

5.1. TIME SETTINGS

The controller downloads current time and date from the network. The user may set the time and date manually.

5.2. SCREEN SETTINGS

Parameters available in this submenu enable the user to customize the main screen view. It is possible to select the parameters to be displayed.

The user may also adjust the display contrast as well as the screen brightness. *Screen blanking* function enables the user to adjust the brightness of a blank screen. *Screen blanking time* defines the time of inactivity after which the screen goes blank.

5.3. LANGUAGE SELECTION

This function enables the user to choose the language version.

6. FACTORY SETTINGS

This function is used to restore factory settings of the parameters in the main menu (excluding the service menu).

7. SOFTWARE VERSION

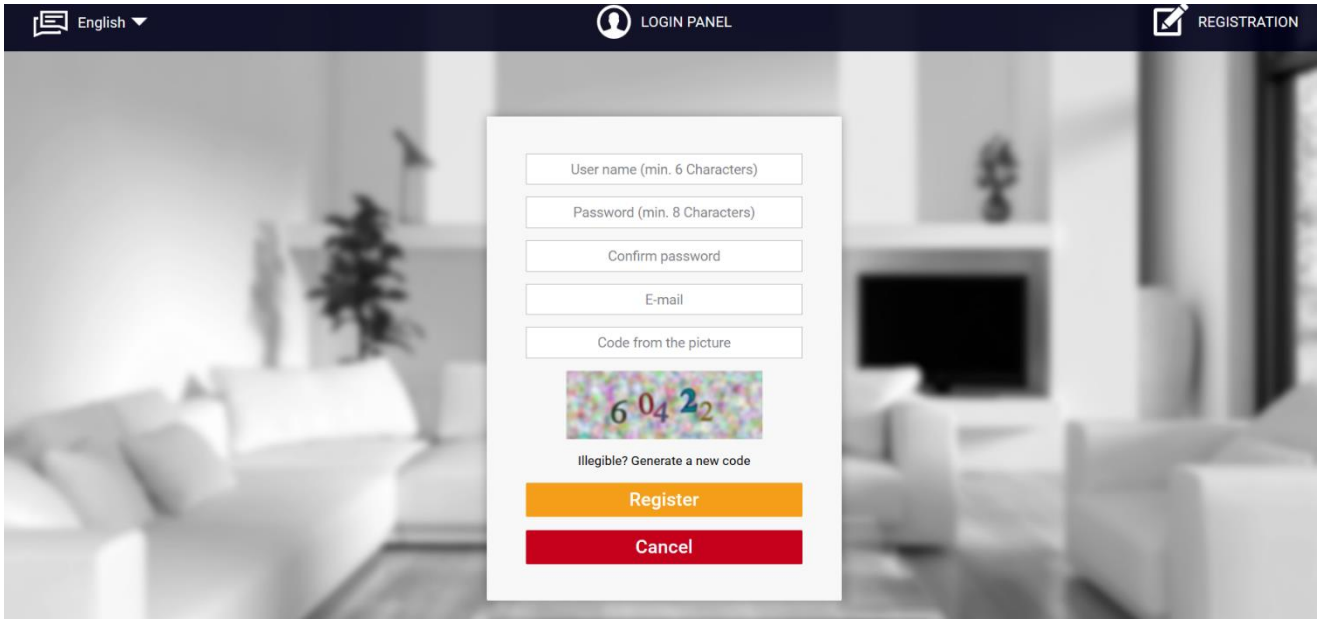
This function is used to view the software version.

8. SERVICE MENU

Functions available in the service menu should be configured only by qualified fitters and access to this menu is secured with a code.

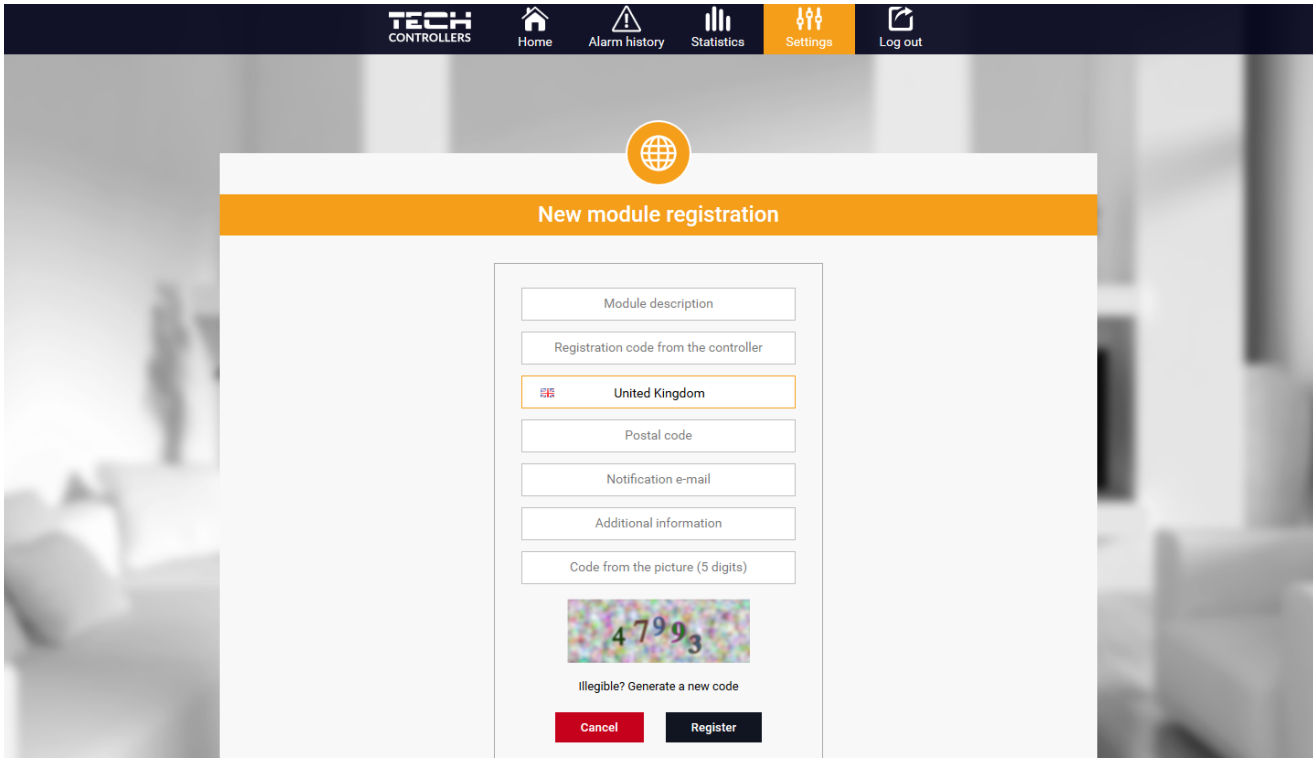
VI. CONTROLLING HEATING SYSTEM VIA WEBSITE

The website https://emodul.eu offers a variety of ways to control the heating system operation. It is necessary to create user's account in order to be able to use all these functions:



Creating a new account at emodul.eu

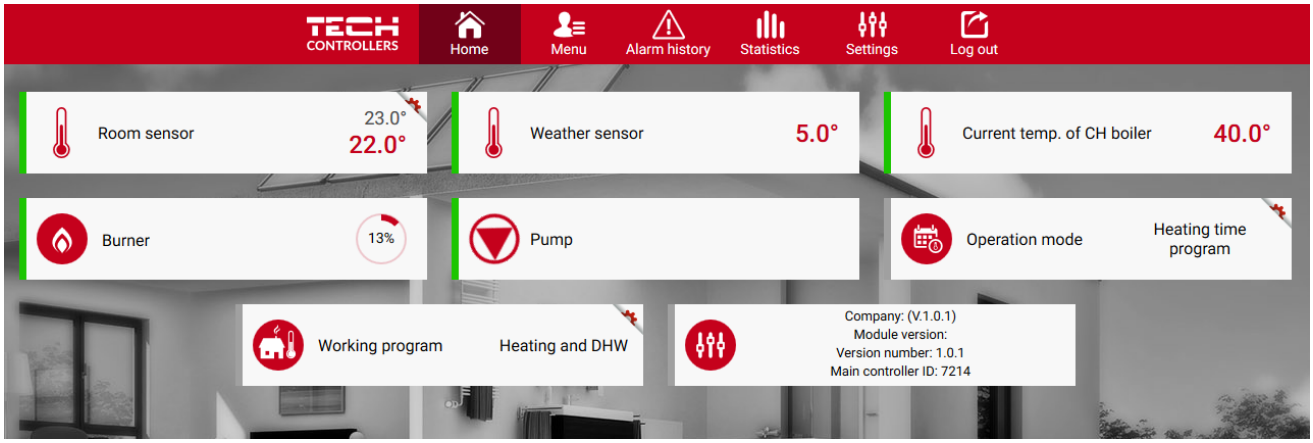
Once logged in, go to *Settings* tab and select *Register module.* Next, enter the code generated by the controller (to generate the code, select *Registration* in Menu > WiFi module > Registration). The module may be assigned a name (in the space labelled *Module description*):



Registering a new module

1. HOME TAB

Home tab displays the main screen with tiles illustrating the current status of particular heating system devices (burner, pump), current CH boiler temperature, alarm (the tile is not displayed if there are no active alarms in the controller) as well as manufacturer and software details. The user may change the operating program, select the operation mode and change the sensor temperatures.



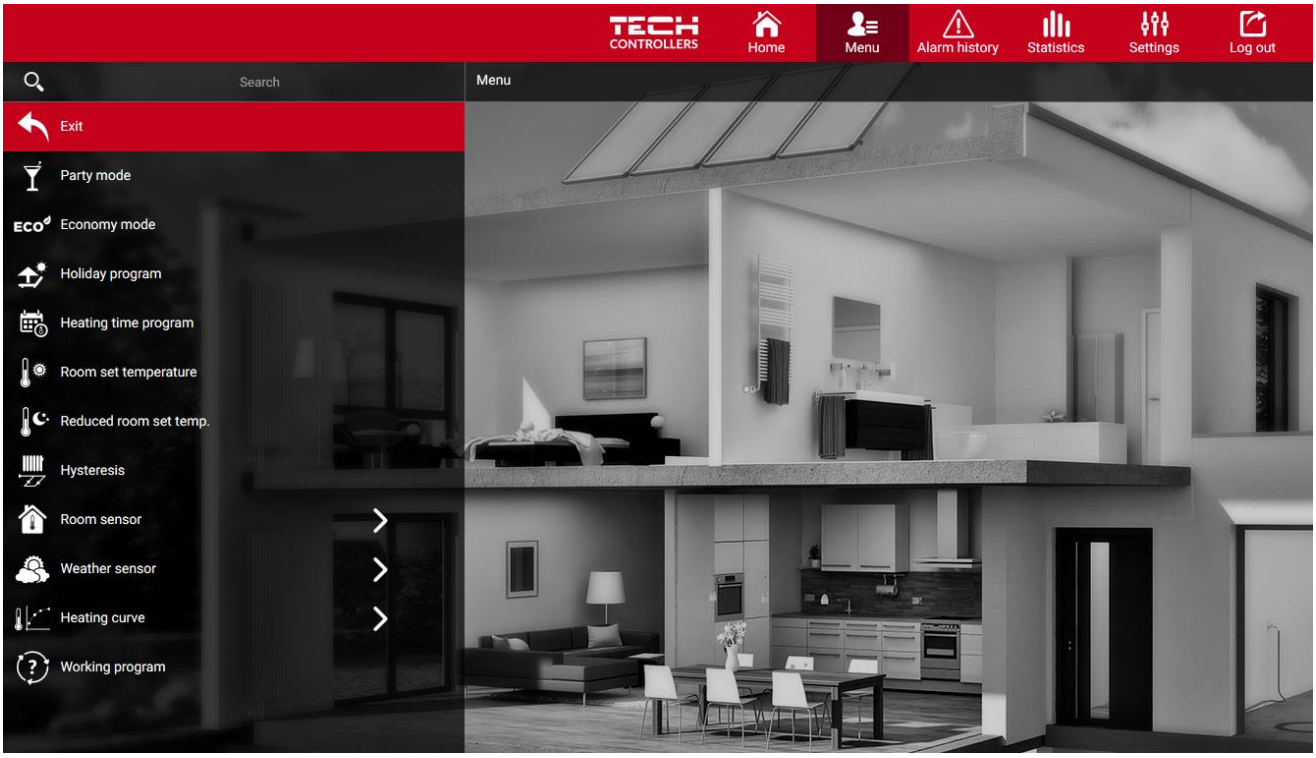
HOME tab view

NOTE

„No communication" message means that the communication with the temperature sensor in a given zone has been interrupted. The most common cause is the flat battery which needs replacing.

2. MENU TAB

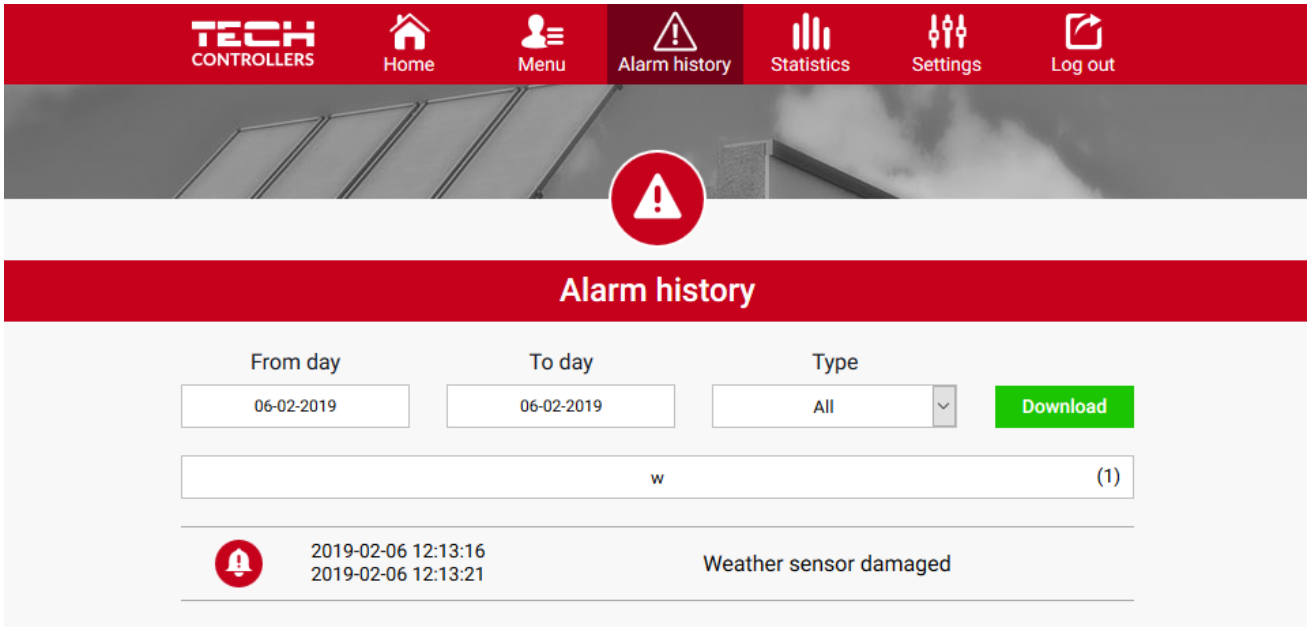
Menu tab enables the user to adjust particular heating parameters. Menu tab includes features which correspond to the options available in the controller menu (Menu > Heating).



Menu tab view

3. ALARM LOG TAB

Alarm log tab enables the user to view the alarms which occurred in the controller in a given period of time.



Alarm log view

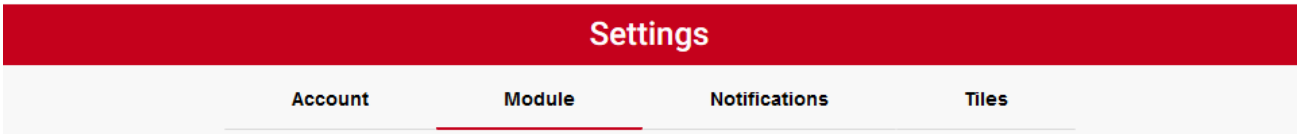
4. STATISTICS TAB

Statistics tab enables the user to view the temperature values for different time periods e.g. 24h, a week or a month. It is also possible to view the statistics for the previous months:

Example chart

5. SETTINGS TAB

While editing the settings, the user may select the following tabs: Account, Module, Notifications and Tiles.

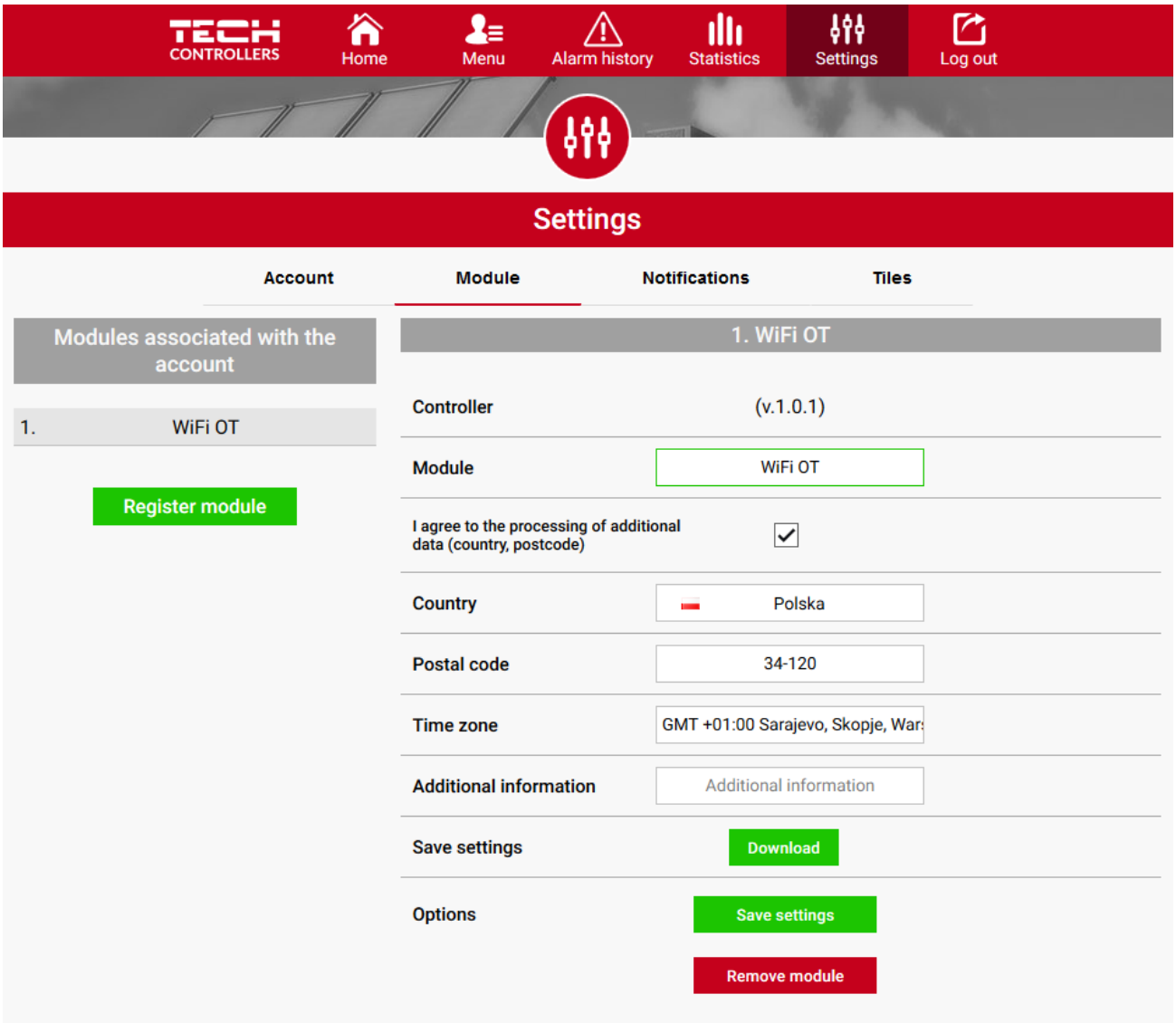


Account tab enables the user to change the e-mail address and the account password.

Module tab enables the user to register a new module, change the module name, country, postcode and time zone. It is possible to download current settings.

Notifications tab enables the user to edit the time range when the notifications are sent (errors, warning, information) and provide the e-mail address and/or phone number to which the notifications will be sent.

Tiles tab enables the user to select the tiles to be displayed in Home tab.



Settings tab view

VII. SOFTWARE UPDATE

NOTE

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 memory stick with the new software into the USB port. Connect the controller to the power supply.

NOTE

Do not switch the controller off while updating the software.

VIII. TECHNICAL DATA

Power supply	5V DC
Operation temperature	5°C ÷ 50°C
Max. Power consumption	2 W
NTC temperature sensor	10 kΩ
Potential – free contact max. Output load	1 A
Frequency	868 MHz
Transmission	IEEE 802.11 b/g/n

IX. PROTECTIONS AND ALARMS

The following event may occur in a zone:

Alarm	Possible cause	Solution
Damaged sensor alarm (in the case of internal sensor damage)	Internal sensor in the controller has been damaged	Call the service staff
No communication with the sensor/wireless regulator	- No range - No batteries - The batteries are flat	- Place the sensor/regulator in a different place - Insert batteries to the sensor/regulator The alarm is deactivated automatically when the communication is established

EU Declaration of Conformity

Hereby, we declare under our sole responsibility that **WiFi OT** manufactured by TECH, headquartered 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 and repealing Directive 1999/5/EC (EU Journal of Laws L 153 of 22.05.2014, p.62), Directive 2009/125/EC of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products (EU Journal of Laws L 2009.285.10 as amended) and 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:

EN 60950-1:2007+A11:2009+A1:2011+A12:2011+ A2:2014 par. 3.1a Safety of use

ETSI EN 301 489-17 V3.1.1 (2017-02) par.3.1b Electromagnetic compatibility

ETSI EN 301 489-1 V2.1.1 (2017-02) par.3.1 b Electromagnetic compatibility

ETSI EN 300 328 V2.1.1 (2016-11) par.3.2 Effective and coherent use of radio spectrum

ETSI EN 300 220-2 V3.1.1 (2017-02) art.3.2 Effective and coherent use of radio spectrum

PAWEŁ JURA JANUSZ MASTER

WŁAŚCICIELE TECH SPÓŁKA Z OGRANICZONĄ ODPOWIEDZIALNOŚCIĄ SP. K.

Wieprz, 04.10.2019

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