

# TECH

## CONTROLLERS

# USER MANUAL

## WIFI 85 MINI

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 put in a different place, make sure that the user's manual is stored 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

- **A live electrical device!** 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.



### 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.

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Changes in the merchandise described in the manual may have been introduced subsequent to its completion on May 12th 2020. The manufacturer retains the right to introduce changes to the structure or colours. The illustrations may include additional equipment. Print technology may result in differences in the 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 waste 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 WiFi 8s mini controller is an online wireless device for controlling electric actuators STT-868/STT-869 (up to 6 actuators per zone). Its main task is to maintain stable temperature in the rooms with the use of actuators for 8 heating zones. The controller is equipped with an additional contact for switching on/off an additional device (e.g. a gas boiler).

Controller functions:

- Controlling all parameters via a web application <https://emodul.eu>
- Controlling up to 8 zones with the use of:
  - possibility of connecting 8 wireless sensors C-8r, C-mini or room regulators R-8b, R-8bw, R-8z.
- NO/NC relay output (e.g. for controlling the heating device which is activated when the room temperature is too low)
- Possibility of connecting in each zone:
  - up to 6 wireless electric actuators STT-868/STT-869
  - up to 6 wireless window sensors C-2n
- Software update via USB port
- Each zone may be assigned an individual operation mode (constant temperature, time limit or 6 operation schedules)
- Compatible with wireless external sensor C-8zr
- Compatible with wireless repeater RP-4
- Possibility of connecting an executive module MW-1

Controller equipment:

- Built-in internet module
- 5V in-wall power supply
- Wireless temperature sensor C-mini

The heating system may be managed via a web application at [www.emodul.eu](http://www.emodul.eu). The eModul application may be downloaded from the Google Play or Apple store.

## III. PRINCIPLE OF OPERATION

The WiFi 8s mini controller decides if a given zone needs to be heated on the basis of current temperature value sent by the room sensor or the room regulator, as well as the individual operation algorithm of the zone. If heating is necessary, the controller activates the voltage-free contact (or sends a signal via MW-1) which may be used e.g. for controlling the heating device, and opens the actuators registered in a given zone. The signal from each zone is transmitted to the WiFi 8s controller via room regulators or room sensors. They communicate with the controller via radio signal. Each zone may be assigned wireless valve actuators STT-868/STT-869 (registration is necessary).

## IV. HOW TO INSTALL THE CONTROLLER

The controller should be installed by a qualified person.

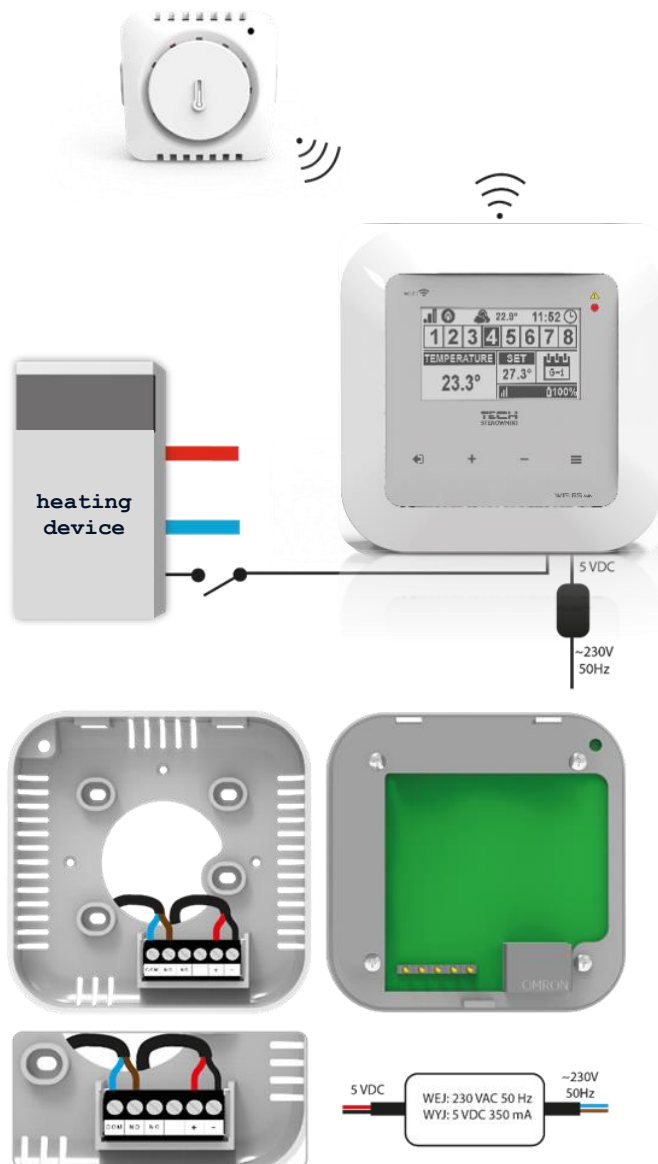


### WARNING

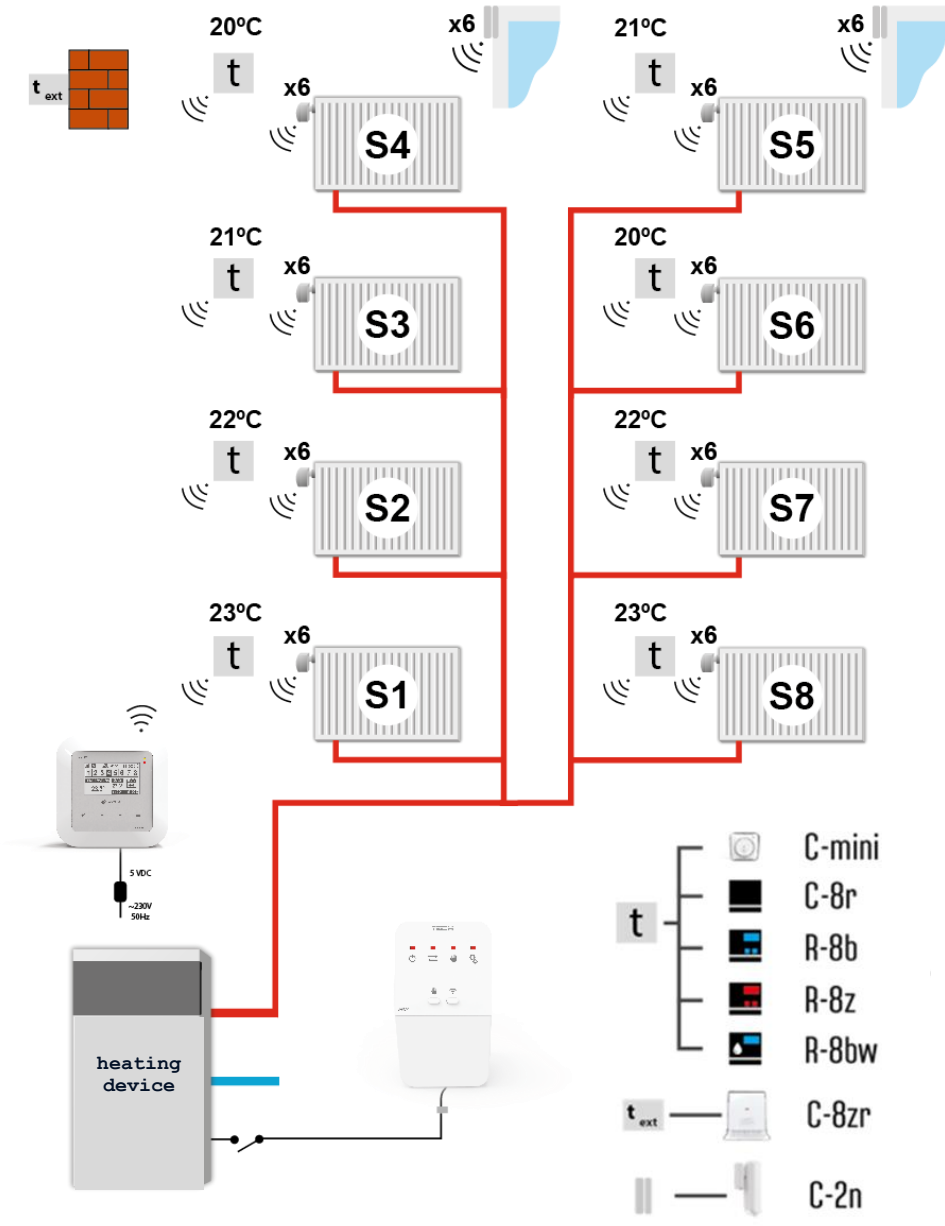
Risk of fatal electric shock from touching live connections. Before working on the controller switch off the power supply and prevent it from being accidentally switched on.

Remove the controller cover and connect the wires following the diagrams below and the connector labels. Keep the following order:

- 5V DC supply cable to the controller connector and the part behind the power supply to a 230V socket
- additional device (e.g. a heating device)



Connection with the MW-1 module:



## V. FIRST START-UP

In order for the controller to work properly, follow these steps while starting it for the first time:

1. Configure the Internet connection
2. Configure the external sensor (optional)
3. Configure the room sensors, room regulators
4. Configure wireless thermostatic actuators STT-868/STT-869
5. Configure window sensors (optional)

### 1. HOW TO CONFIGURE INTERNET CONNECTION

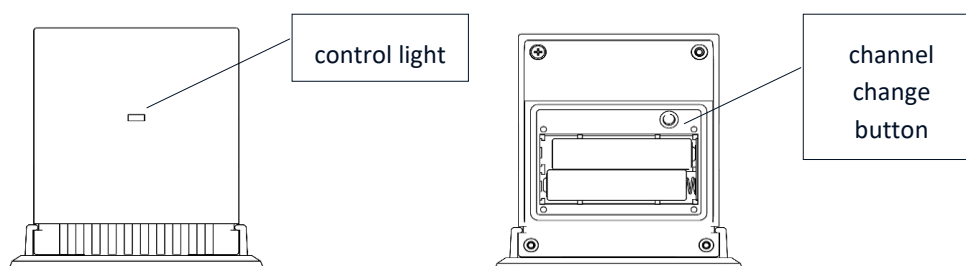
WiFi 8s mini has a built-in Internet module, which enables the user to control the heating system via the Internet. First, connect to the Internet by selecting your WiFi network in Menu > WiFi network selection. Such parameters as IP Address, IP Mask, Gate Address may be set manually or it is possible to activate DHCP option (enabled by default).

Next, go to <https://emodul.eu/> and create your account. After selecting <Registration> in the controller menu, the system generates a code which must be entered in <Settings> tab of the emodul.eu website (Register module).

### 2. HOW TO CONFIGURE THE EXTERNAL SENSOR C-8ZR

It is necessary to register the external sensor by selecting <Registration> in the WiFi 8s mini controller ( Main menu > External sensor > Registration) and pressing the communication button on the external sensor (press the button briefly once).

The registration process enables the external sensor automatically. Once registered, the sensor may be switched off at any time by selecting <OFF> .



#### NOTE

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

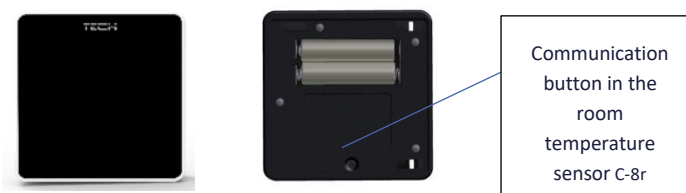
### 3. HOW TO CONFIGURE TEMPERATURE SENSOR AND ROOM REGULATORS

To enable WiFi 8s mini to control a given zone, it is necessary to provide it with current temperature value. The easiest way is to use C-8r 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 R-8B or R-8bw or R-8z room regulator. Regardless of the type of temperature sensor / room regulator chosen, it must be registered in a particular zone in the WiFi 8s mini controller menu.

In order to register the sensor/room regulator, go to the submenu of a given zone and select Registration (Zone / Registration). Next, press the communication button which can be found on the back of the selected temperature sensor/room regulator (in the case of C-8r, R-8b, R-8bw, R-8z, press the button once briefly). If the process has been



completed successfully, the WiFi 8s mini controller display shows an appropriate message. Otherwise, the process must be conducted again.



The following rules must be kept in mind:

- Only one temperature sensor may be registered in each zone.
- Once registered, the sensor cannot be unregistered, but only switched off in the submenu of a given zone.
- If the user attempts to assign a sensor to the zone to which other sensor has already been assigned, the first sensor becomes unregistered and it is replaced by the other one.
- If the user attempts to assign a sensor which has already been assigned to a different zone, the sensor is unregistered from the first zone and registered in the other one.

It is possible to set individual pre-set temperature value and a weekly schedule for each room sensor assigned to a given zone. The pre-set zone temperature may be adjusted in the controller menu (Main menu / Zones). Weekly schedule settings and the pre-set values may be configured via <https://emodul.eu>.

#### 4. HOW TO CONFIGURE WIRELESS THERMOSTATIC ACTUATORS STT-868/STT-869



##### NOTE

The maximum of 6 actuators may be registered in each zone.

Registration process:

1. Install the thermostatic actuator on the radiator and wait until it calibrates.
2. Go to the WiFi 8s mini menu, select the zone number where the actuator is to be registered and select Actuators / Registration.
3. Press the registration button on the actuator within 120 seconds from selecting Registration option. After this time the registration attempt will be considered unsuccessful.
4. If the registration process has been completed successfully, the display shows an appropriate message. In case of any errors, the display shows an appropriate message.

There are 2 possible causes of errors in the registration process:

- an attempt to register more than 6 actuators
- no signal from the valve actuator within the period of 120 seconds









#### 5. HOW TO CONFIGURE WINDOW SENSOR


In order to register the sensor, go to WiFi 8s mini menu and select the number of zone where the sensor is to be registered. Next, select Window sensors/Registration and press quickly the communication button on the window sensor. Release the button and watch the control light:

- control light flashes twice - proper communication established
- control light lights up continuously - no communication with the main controller

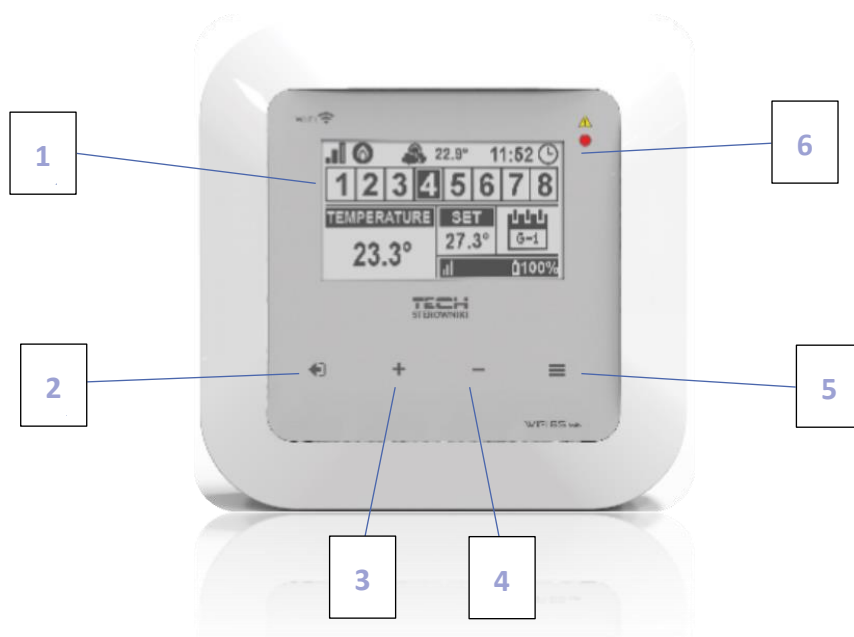
## VI. WIRELESS COMMUNICATION

The WiFi 8s mini controller may communicate wirelessly with certain devices:

	Device	Function	Configuration
	<b>C-8r</b> room temperature sensor	- sending current room temperature readings	The sensor should be registered in a given zone.
	<b>R-8b, R-8bw</b> a two-state room regulator power supply: 2xAAA 1,5V	- sending current zone temperature data  - adjusting pre-set temperature directly from the zone  - air humidity measurement (R-8bw)	The room regulator should be registered in a given zone.
	<b>R-8z</b> a two-state room regulator power supply: 230V 50Hz	- sending current zone temperature data  - adjusting pre-set temperature directly from the zone	The room regulator should be registered in a given zone.
	<b>C-8zr</b> external temperature sensor	- sending current external temperature data to WiFi 8s mini controller	The sensor should be registered in WiFi 8s mini controller.
	<b>STT-868</b> wireless thermostatic actuator	opening/closing the valve in order to maintain desired temperature value	The actuator should be registered in a given zone.
	<b>STT-869</b> wireless thermostatic actuator	opening/closing the valve in order to maintain desired temperature value	The actuator should be registered in a given zone.
	<b>C-2n</b> window sensor	- sending a signal to the main controller informing about window opening/closing.	Install the sensor on a window and register it in the zone.
	<b>RP-3</b> wireless repeater	- increasing wireless coverage between devices	The repeater should be registered in the controller.

	<b>MW-1</b> executive module	- offers the possibility of establishing wireless communication with the main controller or temperature sensor.	The module should be registered in the controller.
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## VII. MAIN SCREEN DESCRIPTION



1. Display

2. EXIT – in the main screen view it is used to open up the screen view selection submenu (WiFi or Zones). In the controller menu it is used to cancel the settings and exit the submenu.

1. PLUS – in the main screen view it is used to view the status of the next zone. In the controller menu it is used to view the controller functions and increase the value while editing parameters.

2. MINUS - in the main screen view it is used to view the status of the previous zone. In the controller menu it is used to view the controller functions and decrease the value while editing parameters.

3. MENU – it is used to enter the controller menu and confirm the new settings

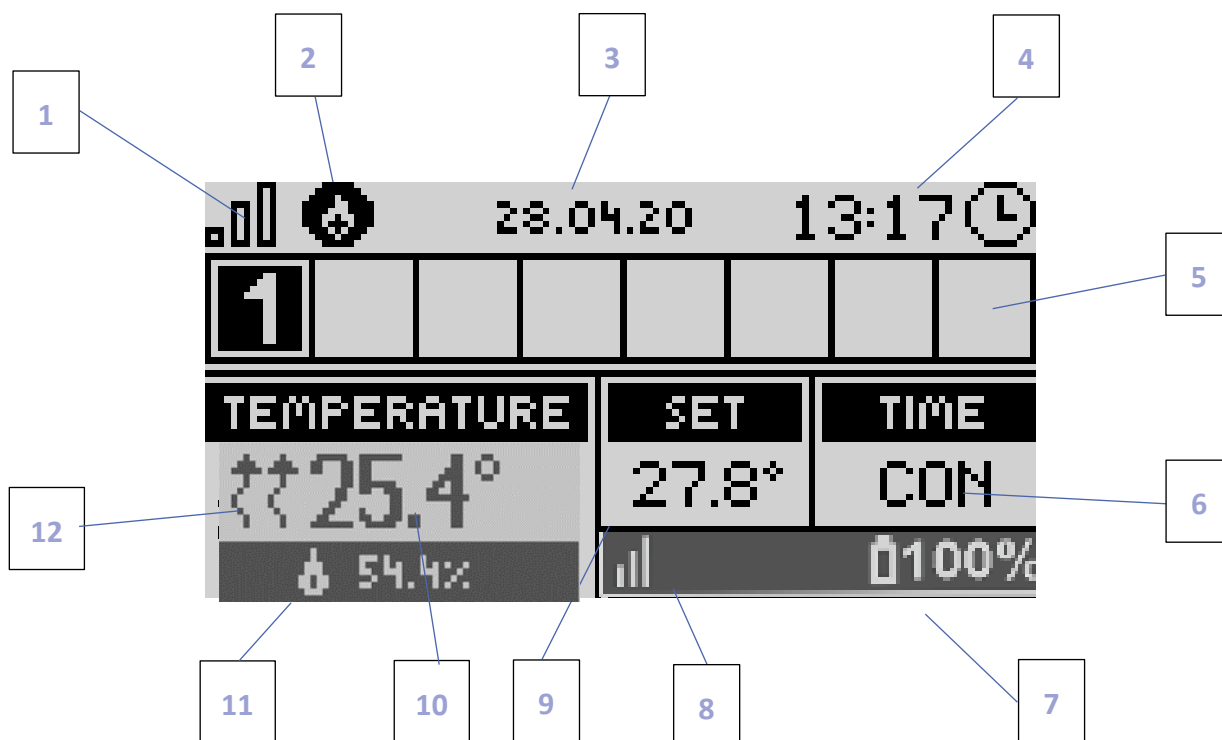
4. LED



### NOTE

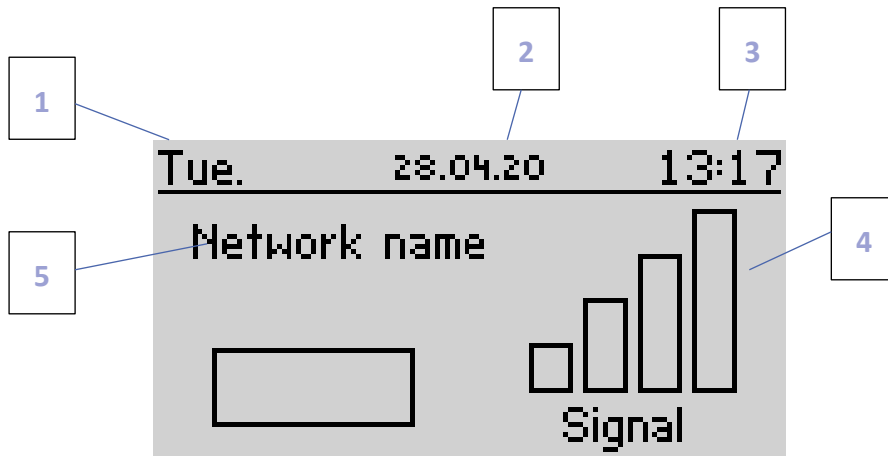
The controller has a motion detection function. When motion is detected within a distance of about 2 cm from the touch buttons, the controller display will light up.

➤ MAIN SCREEN DESCRIPTION – ZONES



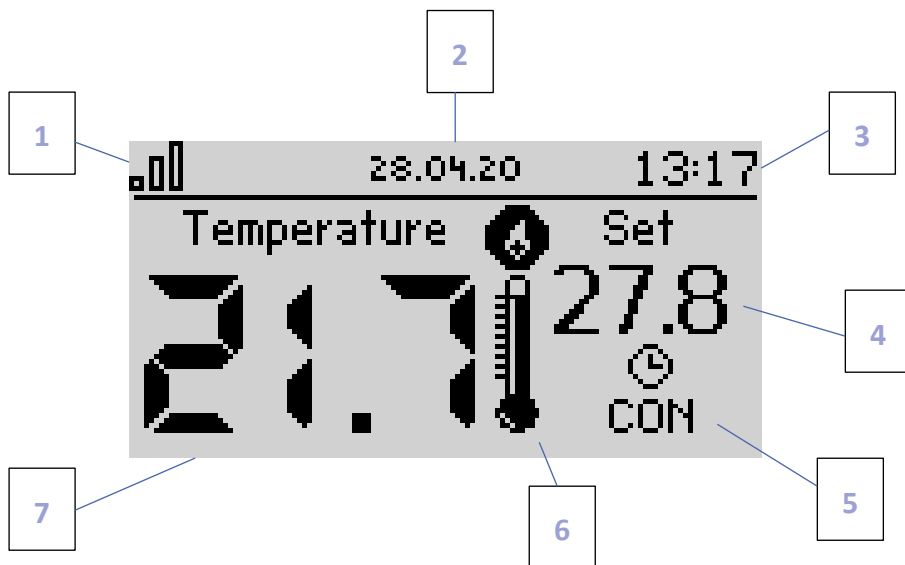
1. WiFi signal strength
2. Additional device icon – displayed when the device is switched on.
3. External temperature
4. Current time
5. Zone information:
  - The displayed digit represents the room sensor sending current temperature readings from a given zone. In case of an alarm in a given zone, the screen displays an appropriate message. If the digit is flashing, the corresponding zone needs heating.
  - In order to view current operating parameters of a given zone, highlight its number using PLUS or MINUS buttons.
  - If a window icon is displayed instead of a digit, it means that a window in the zone is open and the heating is disabled.
6. The type of current weekly schedule or Time left before the next change of manually-set zone temperature
7. Level of battery in the C8-r room sensor or in the room regulator (e.g. R-8b) in a given zone (highlighted number in the zone information bar – see: description no 5).
8. Signal strength of the C8-r room sensor or the room regulator (e.g. R-8b) in a given zone (highlighted number in the zone information bar – see: description no 5).
9. Pre-set zone temperature (highlighted number in the zone information bar – see: description no 5).
10. Current zone temperature (highlighted number in the zone information bar – see: description no 5).
11. Air humidity
12. An icon indicating that heating is enabled in a given zone (highlighted number in the zone information bar – see: description no 5).

➤ MAIN SCREEN DESCRIPTION – WIFI



1. Day of the week
2. Current date
3. Current time
4. Signal strength
5. WiFi network name

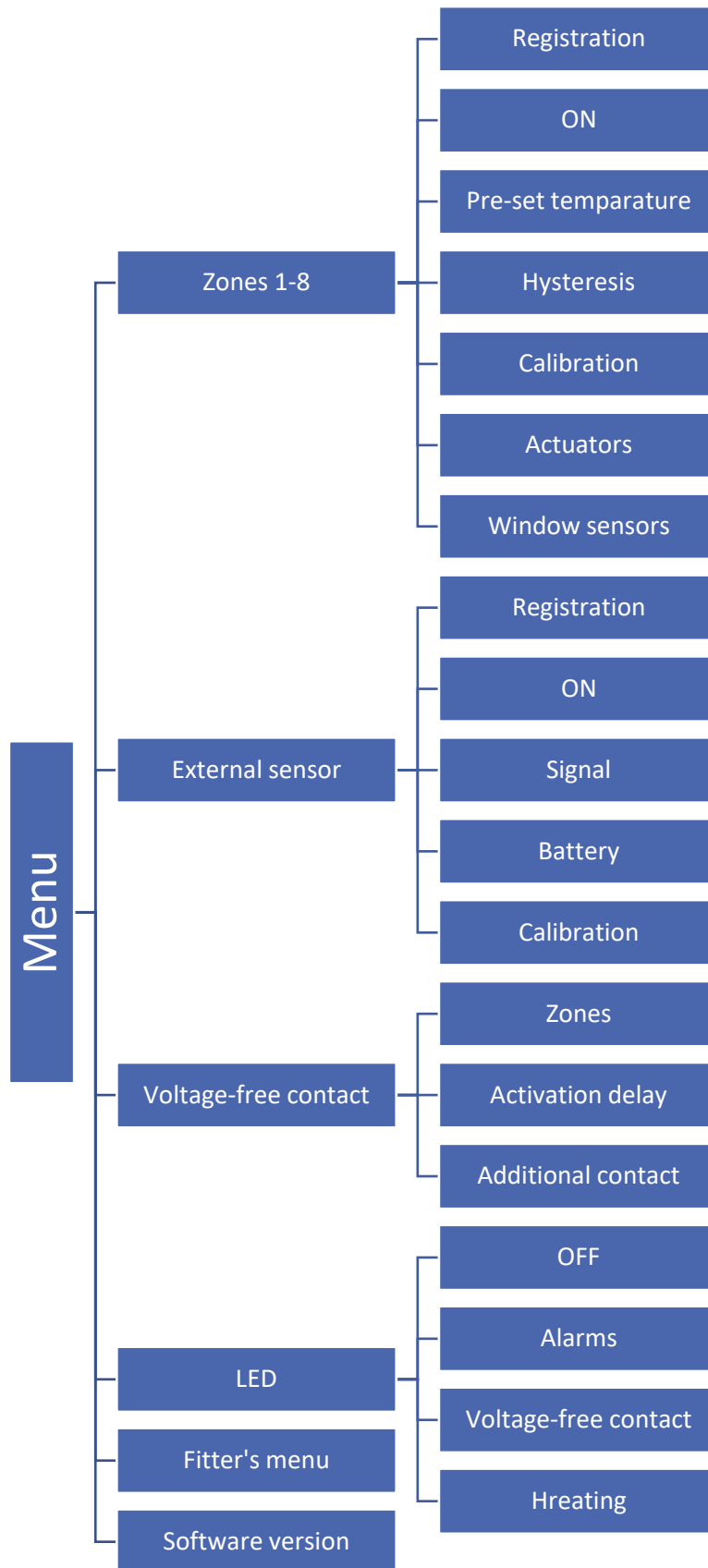
➤ MAIN SCREEN DESCRIPTION - ZONE 1



1. WiFi signal strength
2. Current time
3. Current date
4. Pre-set zone temperature
5. Time left before the next change of the pre-set temperature
6. Additional device icon – displayed when the device is switched on.
7. Current room temperature

# VIII. CONTROLLER FUNCTIONS

## 1. BLOCK DIAGRAM - MAIN MENU



## 2. ZONES 1-8

This submenu enables the user to configure operation parameters for particular zones.

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### 2.1. REGISTRATION

The Registration function is available for zones 1-8.

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### 2.2. ON

Once the room sensor has been switched on and registered in a given zone, its readings are used by the WiFi 8s mini controller. The sensor may be disabled by deselecting ON.

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### 2.3. PRE-SET TEMPERATURE

The pre-set zone temperature depends on the weekly schedule settings. However, this function enables the user to change this value separately - it is necessary to deactivate the schedule. The user may set constant temperature or for a pre-defined period of time.

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### 2.4. 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  $0,1 \div 10^{\circ}\text{C}$ ) with the accuracy of  $0,1^{\circ}\text{C}$ .

Example: if the pre-set temperature is  $23^{\circ}\text{C}$  and the hysteresis is  $0,5^{\circ}\text{C}$ , the zone temperature is considered too low when it drops to  $22,5^{\circ}\text{C}$ .

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### 2.5. 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  $-10^{\circ}\text{C}$  to  $+10^{\circ}\text{C}$  with the accuracy of  $0,1^{\circ}\text{C}$ .

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### 2.6. ACTUATORS

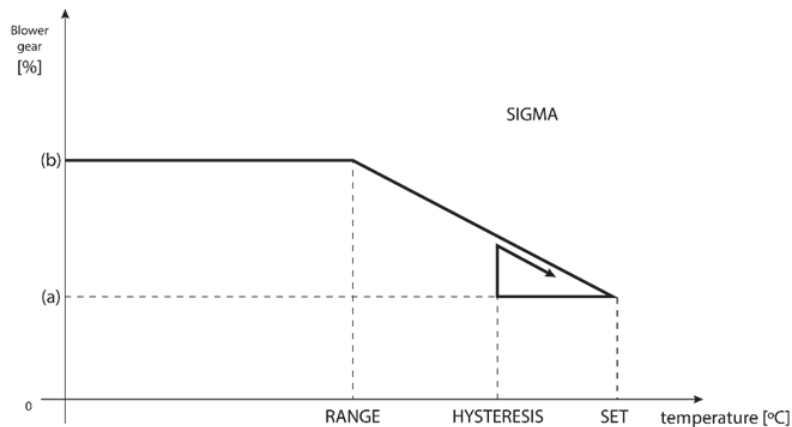
This submenu is used to configure the operation of STT-868/STT-869 thermostatic actuators. It is possible to register up to 6 actuators in each zone. The registration process is described in detail in First start-up section. In order to unregister all actuators from a given zone, select Actuator removal function.

From 1.1.0 actuator software version on, it is possible to identify, monitor status or remove single actuators. In order to do it, press the button on the actuator and hold it for about 2 seconds until WiFi 8s mini display shows an information panel.

The Settings submenu enables the user to configure the operation of thermostatic actuators. It is possible to define the maximum and minimum actuator opening – these levels of valve opening and closing will never be exceeded.

SIGMA function allows for smooth control of the thermostatic valve. Once the function has been activated, the user may also define the minimum and maximum level of valve closing.

Moreover, the user adjusts the Range parameter which specifies the room temperature at which the valve starts opening and closing.



(a) - min. opening  
 (b) - Actuator opening  
 ZAD - set temperature

Example:

Pre-set zone temperature: 23°C

Minimum opening: 30%

Maximum opening: 90%

Range: 5°C

Hysteresis: 2°C

In the above example, the thermostatic valve starts closing at the temperature of 18°C (pre-set value minus Range: 23-5). The minimum opening is reached when the zone temperature reaches the pre-set value.

After reaching the pre-set value, the temperature starts falling. At the temperature of 21°C (pre-set value minus hysteresis: 23-2) the valve starts opening. The maximum opening is reached at the temperature of 18°C.

## 2.7. WINDOW SENSORS

- **Registration** – In order to register the sensor, select 'Registration' and press quickly the communication button on the window sensor. Release the button and watch the control light:
  - the control light flashes twice - proper communication established
  - the control light lights up continuously - no communication with the main controller
- **Sensor removal** – this function is used to remove the sensors in a given zone
- **Information** – this option is available only when the sensor is registered. It enables the user to view all the sensors and check their range and battery level.
- **Settings** – This function is used to set the delay time. When the pre-set delay time is over, the main controller sends the information to the actuators forcing them to close. The time setting range is 0-30 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 and disable the heating in the given zone.



### NOTE

If the delay time is set at 0 minutes, the message forcing the actuators to close will be sent immediately.



### 3. EXTERNAL SENSOR

It is possible to connect an external temperature sensor to the controller. The device enables the user to monitor current temperature on the main screen as well as via <https://emodul.eu>.

Once the external sensor has been installed, it must be registered in the WiFi 8s mini controller – the registration process is described in detail in First start-up section.

After registering the sensor, the user may check the battery level and signal strength as well as calibrate the sensor. The external sensor is not involved in the control process.

### 4. VOLTAGE-FREE CONTACT

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#### 4.1. ZONES

This menu enables the user to select the zone which will influence the operation of the built-in voltage-free contact. If a given zone is not selected, its status is ignored by the controller and the voltage-free contact is not activated if the temperature in this zone is too low.

---

#### 4.2. ACTIVATION DELAY

The user may also set the contact activation delay time. If a given zone needs heating, the contact will be enabled only after the pre-set delay time.

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#### 4.3. ADDITIONAL CONTACT

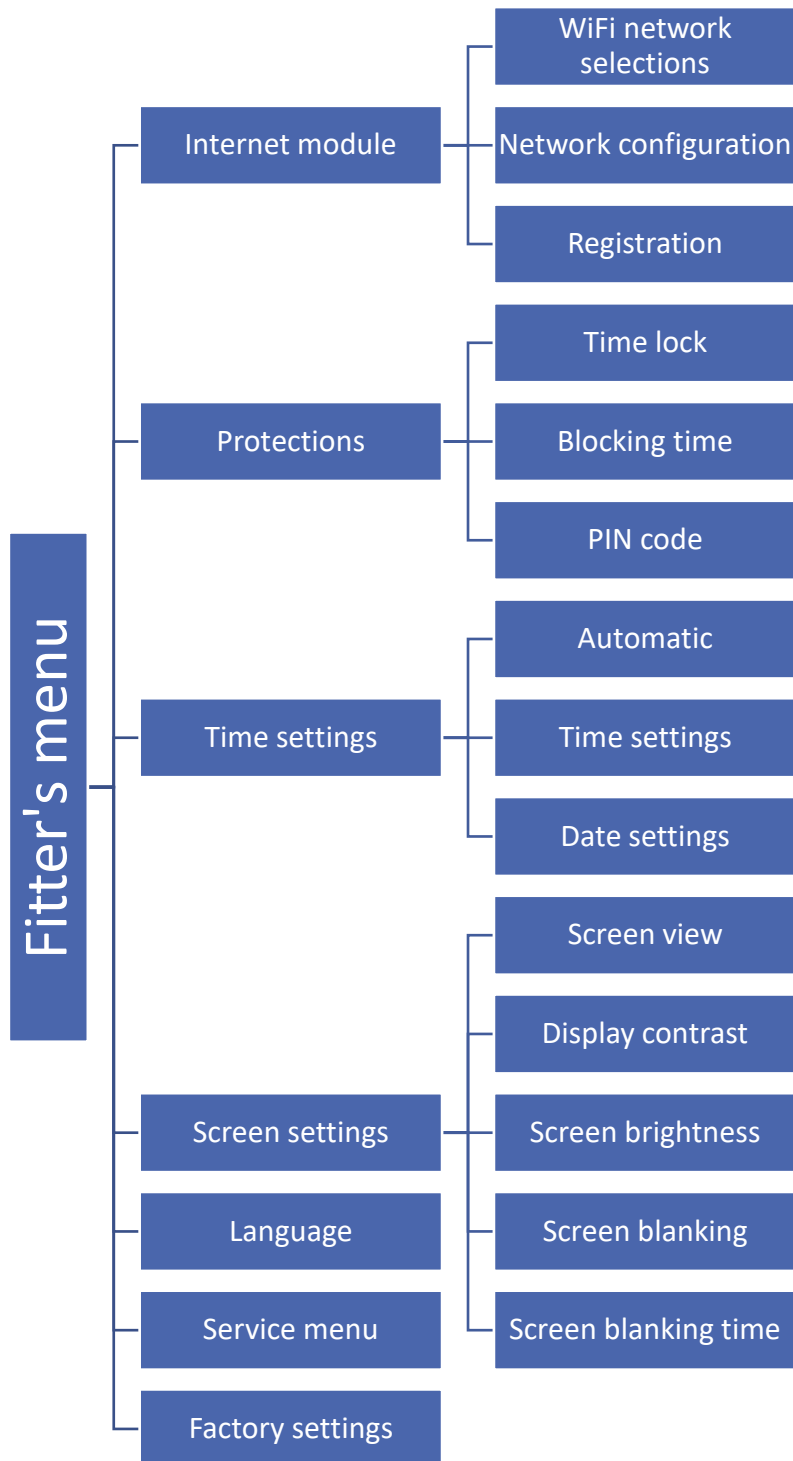
It is also possible to register an additional contact (the MW-1 module), which works similarly to the built-in contact.

In order to register a module, follow these steps:

- press the registration button on the module
- select 'Registration' in the WiFi 8s mini controller

### 5. LED

- **Alarms** – in case of an alarm the LED starts flashing.
- **Voltage-free contact** – when the contact is closed, the LED is flashing. When the contact opens, the LED lights up continuously.
- **Heating** – if a given zone needs heating, the LED starts flashing. When the pre-set zone temperature has been reached, the LED lights up continuously.



### 6.1. INTERNET MODULE

- WIFI NETWORK SELECTION

This submenu offers 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.

- NETWORK CONFIGURATION

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.

- REGISTRATION

Select Registration in order to generate the code necessary to register the WiFi 8s mini controller at <https://emodul.eu> – see: First start-up.

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## 6.2. PROTECTIONS

This function is used to change the parental lock settings. After activating the 'Time lock' function, the screen will lock after the time set in the 'Lock time' parameter. The user can set a PIN code which will be requested before entering the controller menu.



### NOTE

Default PIN code is 0000.

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## 6.3. TIME SETTINGS

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

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## 6.4. SCREEN SETTINGS

The parameters available in this submenu enable the user to customize the main screen view. It is possible to select the parameters to be displayed: WiFi (the screen displays the network name and signal strength) or Zones (the screen displays current and pre-set values in particular zones).

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

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## 6.5. LANGUAGE

This function is used to select the language version of the controller menu.

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## 6.6. SERVICE MENU

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

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## 6.7. FACTORY SETTINGS

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



### NOTE

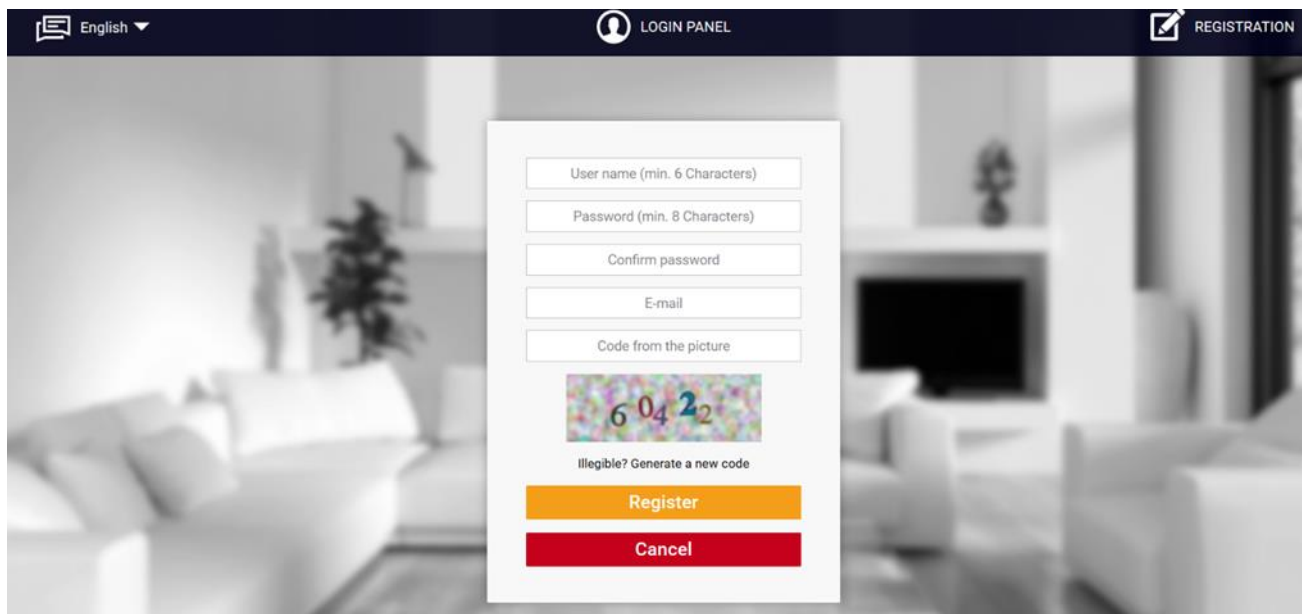
After selecting this function it will be necessary to configure the internet connection. If this function has been activated, all registered devices are removed from the device memory.

## 7. SOFTWARE VERSION

This function is used to view the controller software version.

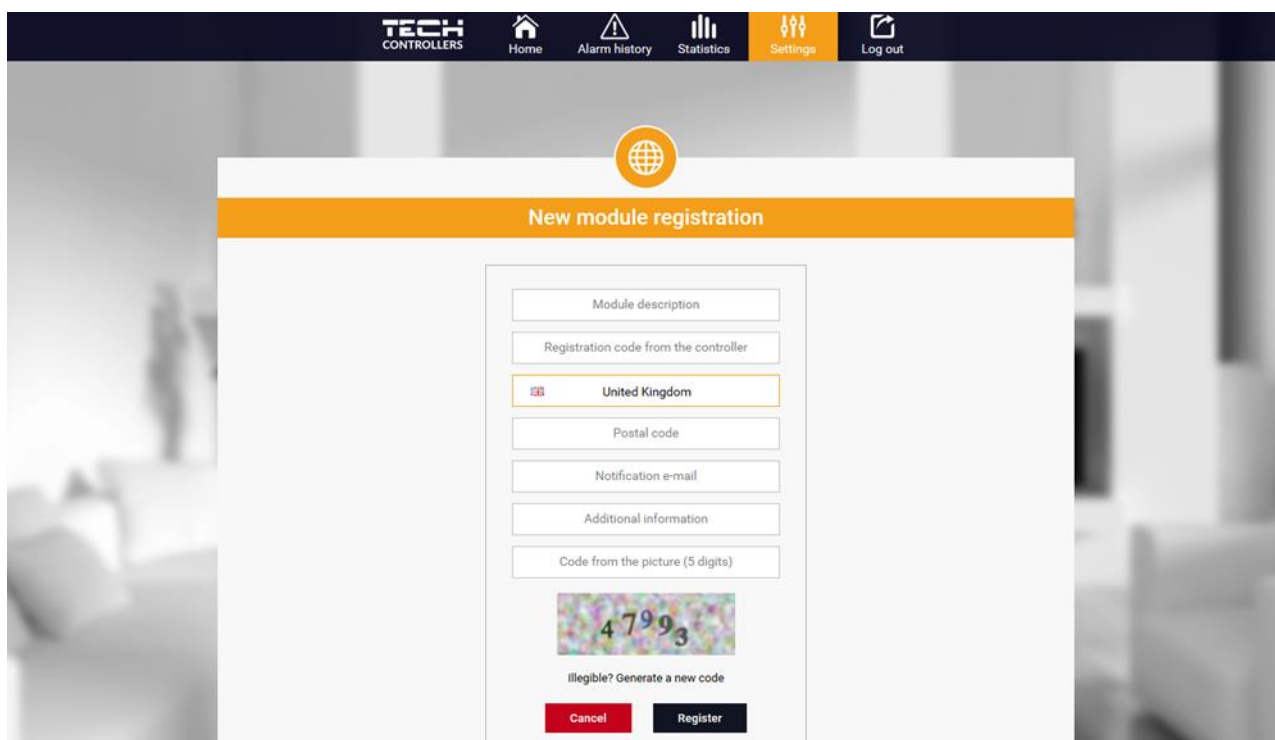
## IX. HOW TO CONTROL THE HEATING SYSTEM ONLINE

The web application at <https://emodul.eu> offers multiple tools for controlling your heating system. In order to take full advantage of the technology, create your own account:



The screenshot shows the registration form on the emodul.eu website. The form is centered on a blurred background of a living room. At the top, there is a dark navigation bar with 'English' on the left, a 'LOGIN PANEL' icon in the center, and a 'REGISTRATION' icon on the right. The registration form itself is a white box with the following fields: 'User name (min. 6 Characters)', 'Password (min. 8 Characters)', 'Confirm password', 'E-mail', and 'Code from the picture'. Below the 'Code from the picture' field is a CAPTCHA image showing the numbers '6 0 4 2 2'. Underneath the CAPTCHA is the text 'Illegible? Generate a new code'. At the bottom of the form are two buttons: an orange 'Register' button and a red 'Cancel' button.

Registering a new account at <https://emodul.eu>



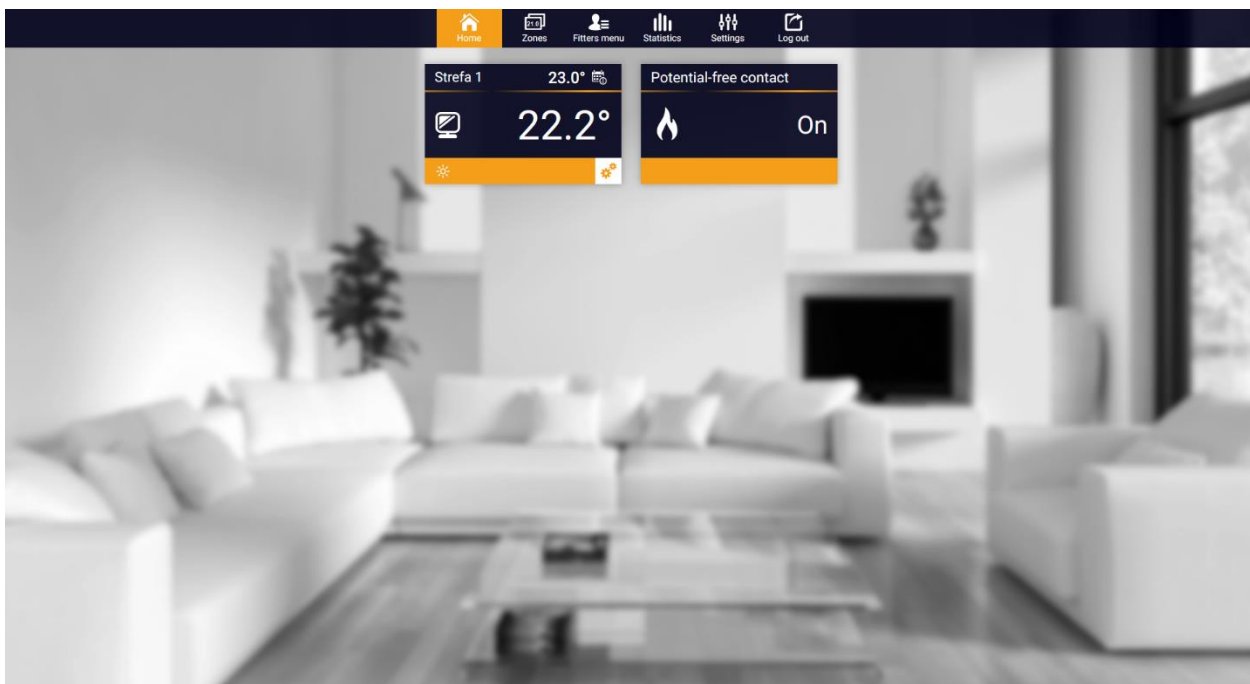
The screenshot shows the 'New module registration' form on the emodul.eu website. The form is centered on a blurred background of a living room. At the top, there is a dark navigation bar with the 'TECH CONTROLLERS' logo on the left, and icons for 'Home', 'Alarm history', 'Statistics', 'Settings', and 'Log out' on the right. The 'Settings' icon is highlighted in orange. Below the navigation bar is a white box with an orange header that says 'New module registration'. The form contains the following fields: 'Module description', 'Registration code from the controller', a dropdown menu for 'United Kingdom' (with a UK flag icon), 'Postal code', 'Notification e-mail', 'Additional information', and 'Code from the picture (5 digits)'. Below the 'Code from the picture' field is a CAPTCHA image showing the numbers '4 7 9 9 3'. Underneath the CAPTCHA is the text 'Illegible? Generate a new code'. At the bottom of the form are two buttons: a red 'Cancel' button and a dark blue 'Register' button.

Registering a new module

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 the WiFi 8s mini controller menu). The module may be assigned a name (in the field labelled *Module description*).

## 1. HOME TAB

Home tab displays the main screen with tiles illustrating the current status of particular heating system devices. Tap on the tile to adjust the operation parameters:

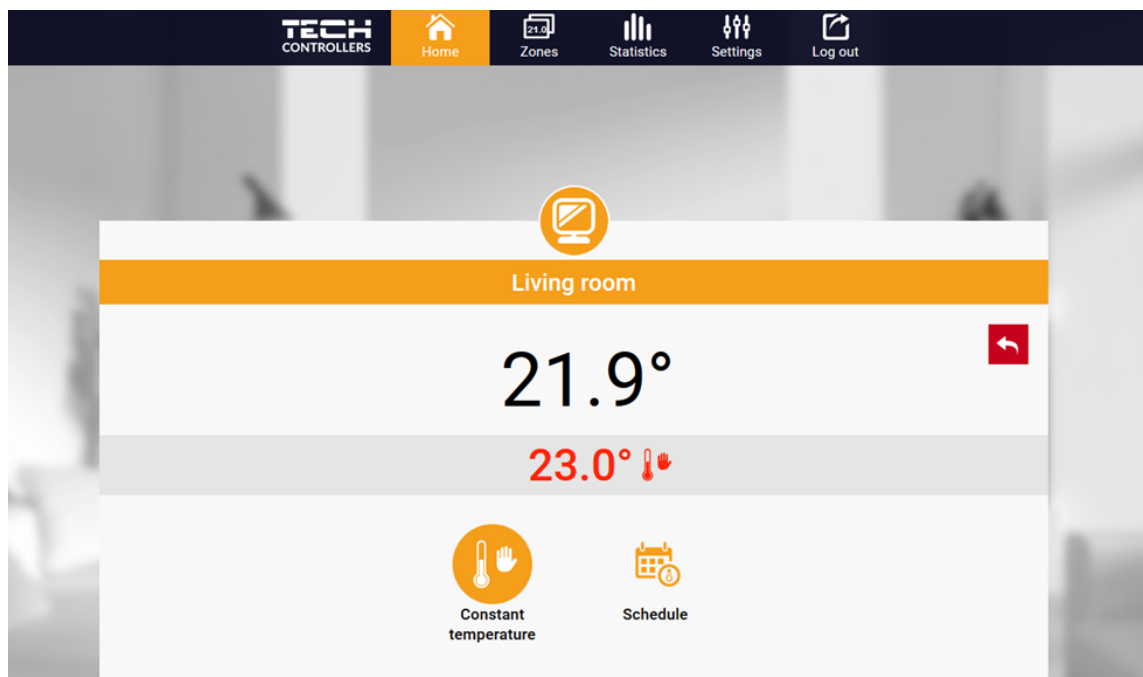


HOME tab



### 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.



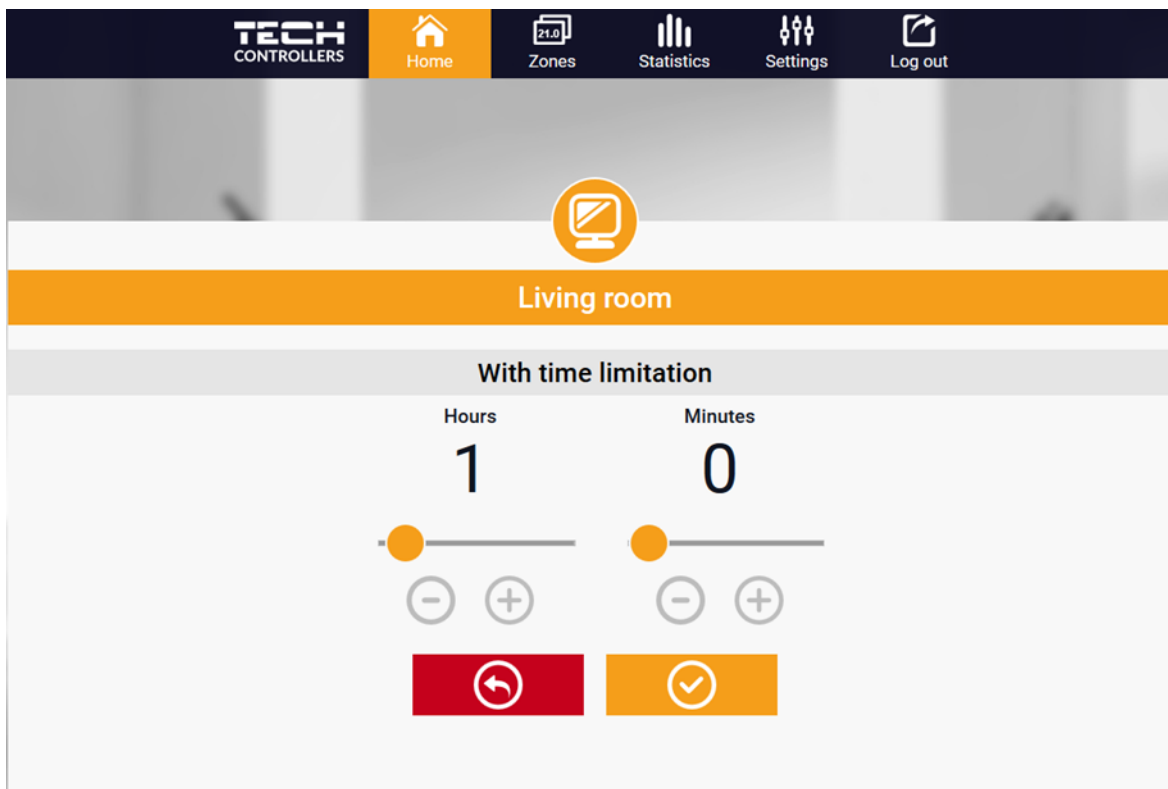
Editing the pre-set temperature

Tap on the tile corresponding to a given zone to edit its pre-set temperature

The upper value is the current zone temperature whereas the bottom value is the pre-set temperature. The pre-set zone temperature depends by default on the weekly schedule settings. Constant temperature mode enables the user to set a separate pre-set temperature value which will apply in the zone regardless of the time.

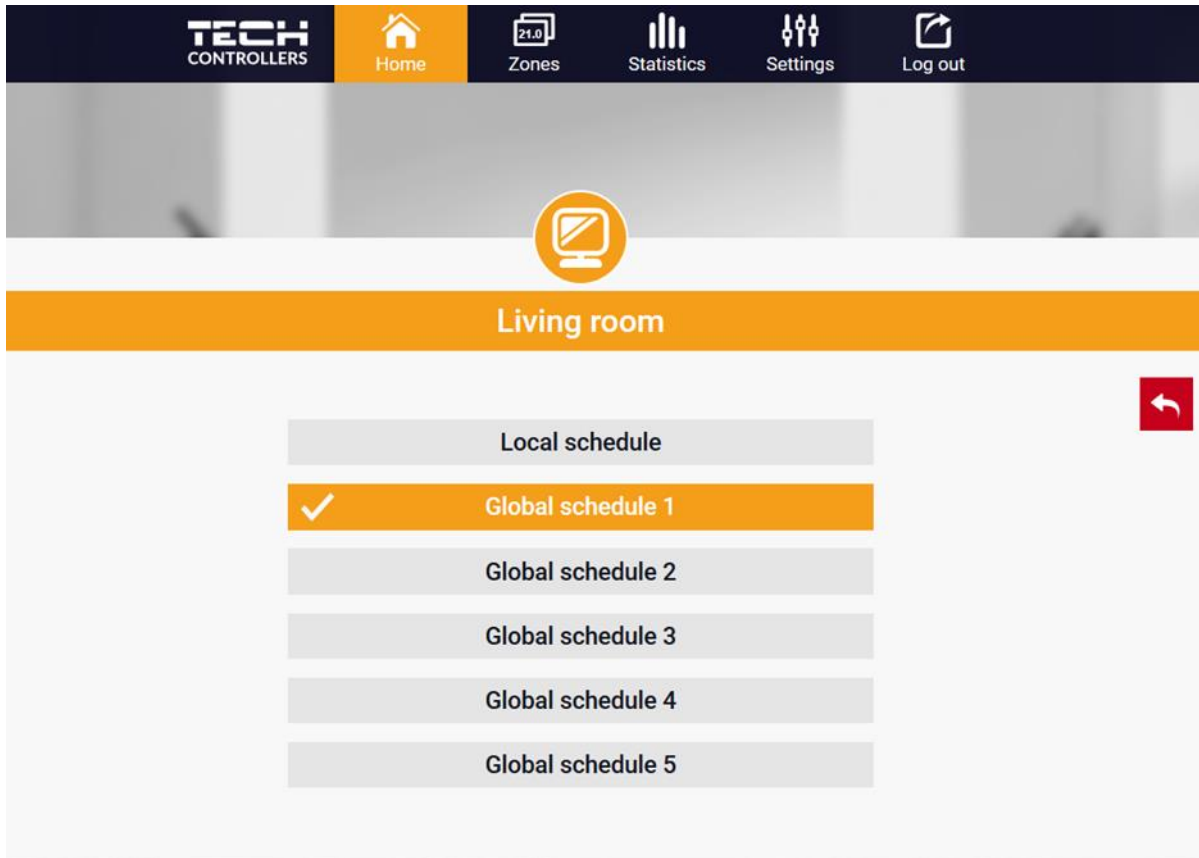
Selecting constant temperature it is possible to set time limits.

This mode enables the user to set the temperature value which will apply only within a pre-defined period of time. When the period is over, again the pre-set temperature depends on the weekly schedule settings (schedule or constant temperature without time limit).



*Pre-set temperature with time limits*

Tap on *Schedule* icon to open up the schedule selection screen:



*Selecting a weekly schedule*

Two types of weekly schedules are available in the WiFi 8s mini controller:

1. Local schedule

It is a weekly schedule assigned to a particular zone. Once the WiFi 8s mini controller detects the room sensor, the schedule is assigned automatically to the zone. It may be edited by the user.

2. Global schedule (Schedule 1..5)

Global schedule may be assigned to any number of zones. The changes introduced in the global schedule apply to all zones where the global schedule has been activated.

After selecting the schedule tap on OK and move on to edit the weekly schedule settings:

TECH CONTROLLERS Home Zones Statistics Settings Log out

## Living room

Local schedule

Mo Tu We Th Fr Sa Su

Setback temperature

23.0°

00:00 - 06:00	20.0°	=
08:00 - 16:00	18.5°	=
23:00 - 00:00	20.0°	=

Mo Tu We Th Fr Sa Su

Set temperature

23.0°

00:00 - 07:00	20.0°	=
23:00 - 00:00	20.0°	=

+

⏪ ⏩

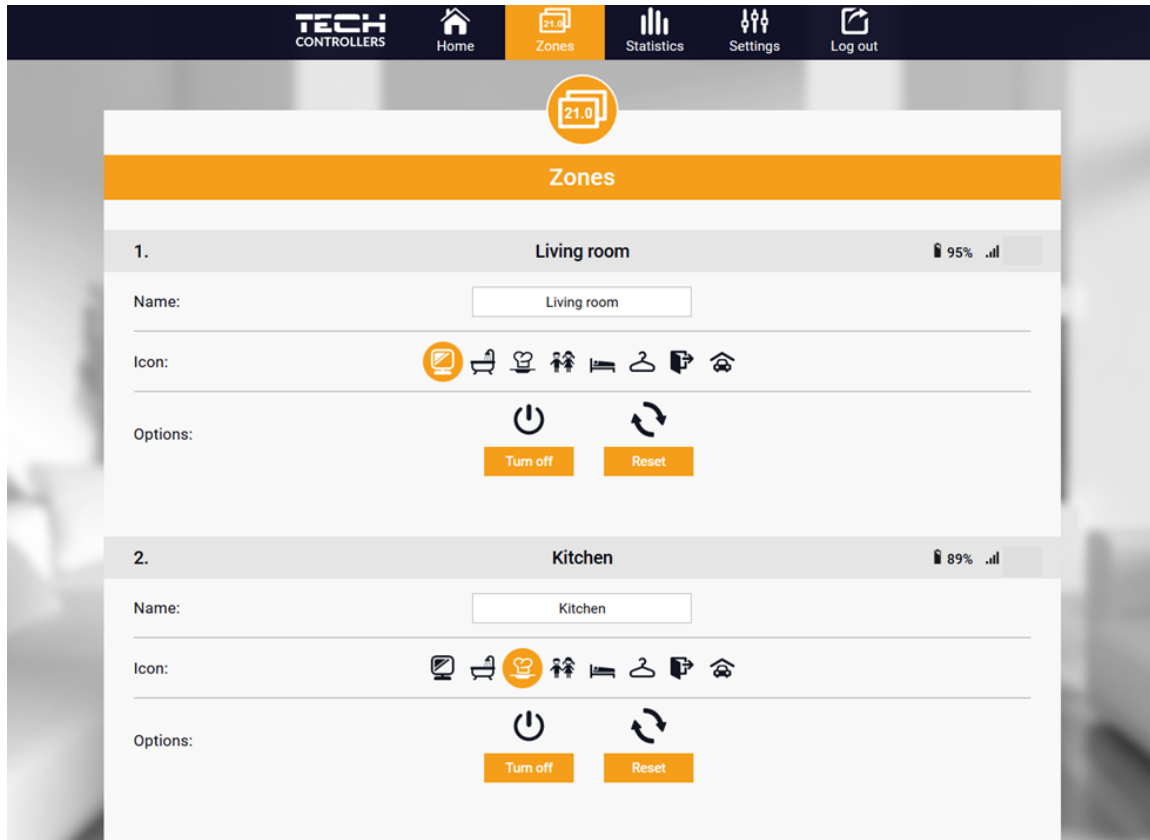
*Editing a weekly schedule*

Editing enables the user to define two programs and select the days when the programs will be active (e.g. from Monday to Friday and the weekend). The starting point for each program is the pre-set temperature value. For each program the user may define up to 3 time periods when the temperature will be different from the pre-set value. The time periods must not overlap. Outside these time periods the pre-set temperature will apply. The accuracy of defining the time period is 15 minutes.



## 2. ZONES TAB

The user may customize the home page view by changing the zone names and the corresponding icons. In order to do it, go to Zones tab.



Zones tab

## 3. STATISTICS TAB

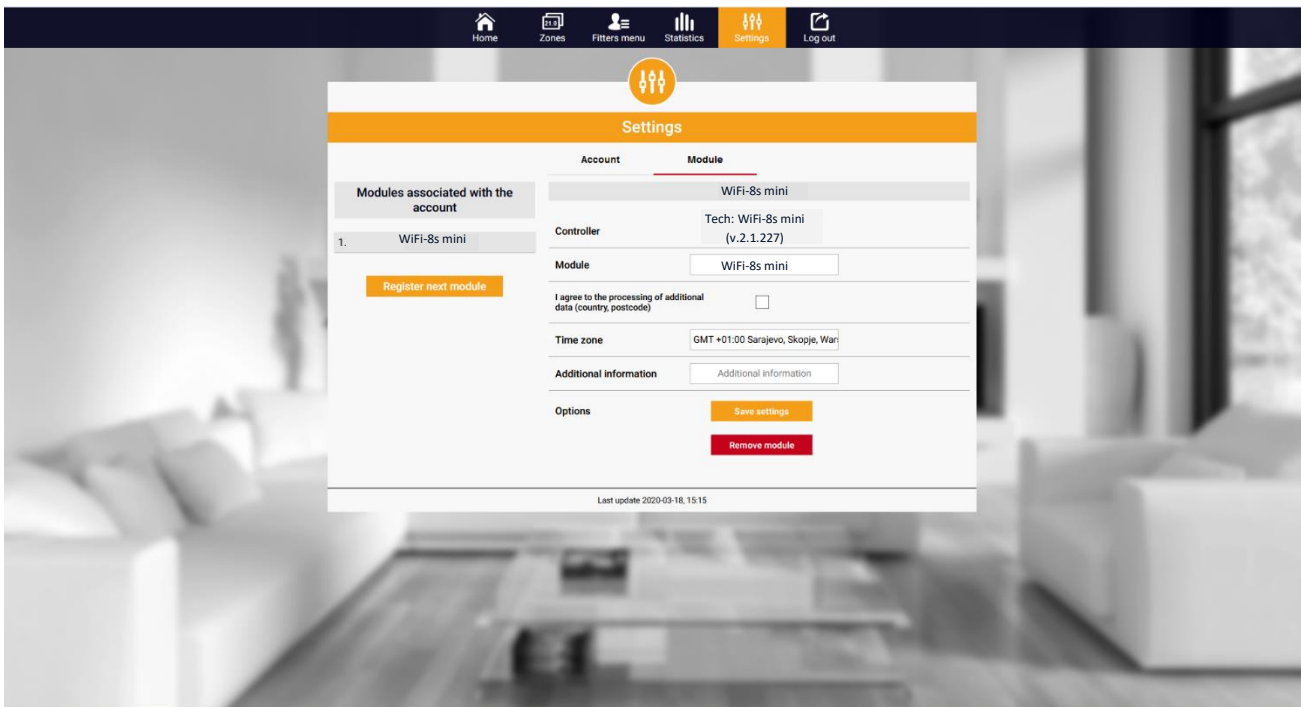
The Statistics tab enables the user to view the temperature charts for different time periods e.g. 24h, a week or a month. It is also possible to view the statistics for the previous months:



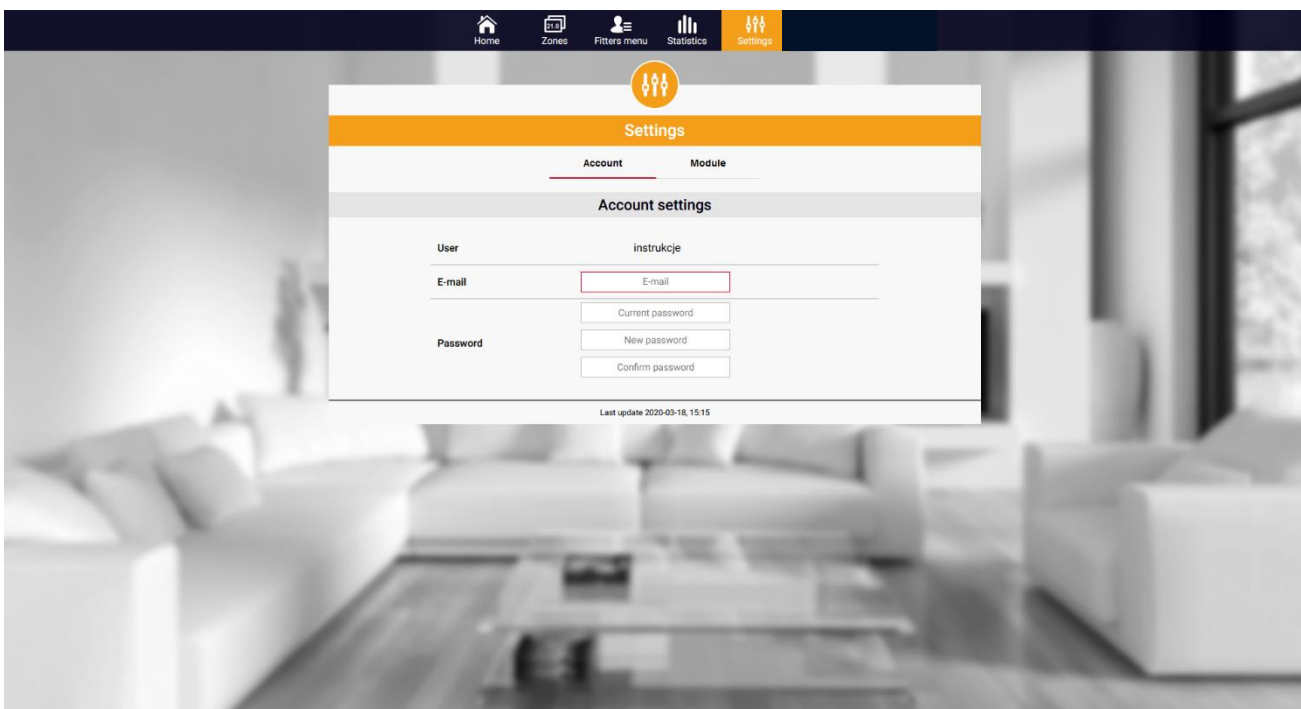
An example chart

#### 4. SETTINGS TAB

The *Settings* tab enables the user to register a new module and change the e-mail address or the password:



*Settings/Module tab*



*Settings/Account tab*

## X. 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 flash drive with the new software into the USB port. Switch the controller on. After the software update has been completed, the controller restarts automatically.



### NOTE

Do not switch the controller off while updating the software.

## XI. TECHNICAL DATA

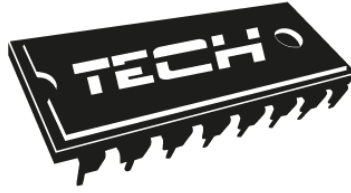
Specification	Value
Supply voltage	6V DC max
Operation temperature	5-50°C
Maximum power consumption	1W
Maximum load of voltage-free contact	1A
Frequency	868MHz
Transmission	IEEE 802.11 b/g/n

## XII. PROTECTIONS AND ALARMS

The device supports the following cases within a zone:

Alarm	Possible cause	How to fix it
No communication with the sensor/wireless regulator	<ul style="list-style-type: none"> <li>- No range</li> <li>- No batteries</li> <li>- The batteries are flat</li> </ul>	<ul style="list-style-type: none"> <li>- Place the sensor/regulator in a different place</li> <li>- Insert batteries to the sensor/regulator</li> </ul> <p>The alarm is deactivated automatically when the communication is established.</p>
<b>ST-868 actuator alarms</b>		
Actuator alarm – ERROR #0 – low battery	<ul style="list-style-type: none"> <li>- The actuator battery is flat.</li> </ul>	<ul style="list-style-type: none"> <li>- Replace the batteries</li> </ul>
Actuator alarm - ERROR #1 – possible damage of mechanical or electronic parts	<ul style="list-style-type: none"> <li>Some parts have been damaged</li> </ul>	<ul style="list-style-type: none"> <li>Call the service staff</li> </ul>
Actuator alarm - ERROR#2 – the maximum actuator stroke has been exceeded	<ul style="list-style-type: none"> <li>- No piston controlling the valve</li> <li>- Too big stroke (movement) of the valve</li> <li>- The actuator has been incorrectly mounted on the radiator</li> <li>- Inappropriate valve on the radiator</li> </ul>	<ul style="list-style-type: none"> <li>- Install a piston controlling the actuator</li> <li>- Check the valve stroke</li> <li>- Install the actuator correctly</li> <li>- Replace the valve on the radiator</li> </ul>
Actuator alarm - ERROR#3 – too little piston movement	<ul style="list-style-type: none"> <li>- The valve got stuck</li> <li>- Inappropriate valve on the radiator</li> <li>- Too little stroke (movement) of the valve</li> </ul>	<ul style="list-style-type: none"> <li>- Inspect the valve operation</li> <li>- Replace the valve on the radiator</li> <li>- Check the valve stroke</li> </ul>
Actuator alarm - ERROR #4 – no return communication (to the actuator)	<ul style="list-style-type: none"> <li>- Out of range</li> <li>- No batteries</li> </ul>	<ul style="list-style-type: none"> <li>- The actuator is too far from the controller</li> <li>- Insert batteries into the actuator</li> </ul> <p>After the communication is re-established, the alarm is deactivated automatically.</p>
<b>ST-869 actuator alarms</b>		
Error #1 - Calibration error 1 – Moving the screw to the mounting position took too much time	<ul style="list-style-type: none"> <li>- The limit switch sensor is damaged</li> </ul>	<ul style="list-style-type: none"> <li>- Call the service staff</li> </ul>
Error #2 - Calibration error 2 – The screw is maximally pulled out. No resistance while pulling out	<ul style="list-style-type: none"> <li>- The actuator has not been screwed to the valve or has not been screwed completely</li> <li>- The valve stroke is too big or the valve dimensions are not typical</li> <li>- Actuator current sensor is damaged</li> </ul>	<ul style="list-style-type: none"> <li>- Check if the controller has been installed properly</li> <li>- Replace the batteries</li> <li>- Call the service staff</li> </ul>

Error #3 - Calibration error 3 - The screw has not been pulled out enough - the screw meets resistance too early	<ul style="list-style-type: none"> <li>- The valve stroke is too small or the valve dimensions are not typical</li> <li>- Actuator current sensor is damaged</li> <li>- Low battery level</li> </ul>	<ul style="list-style-type: none"> <li>- Replace the batteries</li> <li>- Call the service staff</li> </ul>
Error #4 - No feedback	<ul style="list-style-type: none"> <li>- The master controller is switched off</li> <li>- Poor range or no range in the master controller</li> <li>- Radio module in the actuator is damaged</li> </ul>	<ul style="list-style-type: none"> <li>- Turn on the master controller</li> <li>- Reduce the distance from the master controller</li> <li>- Call the service staff</li> </ul>
Error #5 - Low battery level	The battery is flat	Replace the batteries
Error #6 - Encoder is locked	The encoder is damaged	Call the service staff
Error #7 - To high voltage	<ul style="list-style-type: none"> <li>- Unevenness of the screw, the thread etc. may cause excessive resistance</li> <li>- Too high resistance of gear or motor</li> <li>- Current sensor is damaged</li> </ul>	Call the service staff
Error #8 - Limit switch sensor error	Limit switch sensor damaged	Call the service staff



## EU declaration of conformity

Hereby, we declare under our sole responsibility that **WiFi 8s mini** manufactured by TECH, 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 and repealing Directive 1999/5/EC (EU OJ 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 OJ L 2009.285.10 as amended) 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 62368-1:2015-03 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. 3.1b 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) par. 3.2 Effective and coherent use of radio spectrum

Wieprz, 12.05.2020

  
**PAWEŁ JURA**

  
**JANUSZ MASTER**

WŁAŚCICIELE TECH SPÓŁKA Z OGRANICZONĄ ODPOWIEDZIALNOŚCIĄ SP. K.



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**Monday - Friday**

**7:00 - 16:00**

**Saturday**

**9:00 - 12:00**