TECH CONTROLLERS

USER MANUAL

EU-T-5z WiFi

EN

www.tech-controllers.com

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JG. 14.10.2023

I. SAFETY

Before operating the device, please read the following instructions carefully. Failure to observe the instructions may bring about personal injuries and damage the device. To avoid unnecessary errors and accidents, make sure that all persons operating the device have thoroughly familiarized themselves with the device operation and its safety functions. Please safeguard the manual and make sure that it remains with the device when it is transferred. As far as safety of human life, health, and property is concerned, please observe the precautions listed in operating manual, as the manufacturer will not be liable for any damages caused by negligence.

WARNING

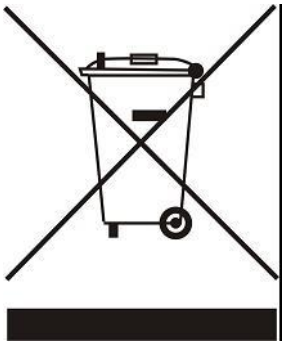
- **Live electric equipment.** Before carrying out any operations related to the power supply (connecting cables, installing the device, etc.), make sure that the device is not connected to the mains.
- Installation should be carried out by a person holding appropriate electrical qualifications.
- The device is not intended for use by children.

NOTE

- Installation should be carried out by a person holding appropriate electrical qualifications.
- The controller may not be used contrary to its intended purpose.
- Before and during the heating season, check the technical condition of the cables. Check also the installation of the controller, remove dust and other soiling.

There could be changes introduced in the products listed in the present manual, after its last revision of 14.03.2023. The manufacturer reserves the right to introduce changes in design or deviations from the established colours. Illustrations may contain optional equipment. Printing technology may affect differences in the presented colours.

Care for the natural environment is of paramount importance to us. The awareness that we manufacture electronic devices is linked with our obligation to dispose the used electronic parts and devices in a way that is safe for the environment. Therefore, the company has sought and received a registration number issued by the Polish Chief Inspector for Environmental Protection. The symbol of the crossed wheeled bin on the product indicates that the product must not be disposed of with municipal waste. By segregating waste for recycling, we help protect the environment. It is the user's responsibility to hand over used equipment to a designated collection point for recycling electrical and electronic equipment waste.



II. DEVICE DESCRIPTION

The EU-T-5z WiFi is an Internet and wireless controller for operating the STT-868/STT-869/EU-G-X electric actuators (up to 6 pcs per zone). The controller is designed to maintain a constant temperature in the room with use of the actuators. The controller also has a built-in contact for the operation (switching on/off) of the additional device (e.g. gas boiler).

Controller functions:

- Controlling all parameters using the https://emodul.eu web application
- Providing the possibility to connect wireless sensors: EU-C-8r, EU-C-mini or room controller: EU-R-8b, EU-R-8bw, EU-R-8z.
- Enabling relay output (e.g. to control the heating device, which is switched on according to the need to heat the room)
- Providing possible connection of the following to the zone:
- - up to 6 pcs of STT-868/STT-869/EU-G-X wireless electric actuators
- - up to 6 pcs of wireless EU-C-2n window sensors
- Software updates via USB port
- Providing the possibility to assign individual operating modes (constant temperature, with time limit or 6 different operating schedules) to individual zones
- Supporting the EU-C-8zr wireless external sensor
- Supporting the EU-RP-4 wireless signal amplifier
- Providing the possibility of connecting the EU-MW-1 executive module.

Controller equipment:

- Glass touch panel
- Built-in Internet module
- EU-C-mini wireless temperature sensor.

It is possible to manage the system using the https://emodul.eu web application. The eModul application is available for download from the Google Play store and the Apple Store.

WARNING

If pump manufacturer requires an external main switch, power supply fuse or additional residual current device selective for distorted currents it is recomemnded not to connect pumps directly to pump control outputs.

To avoid damaging to the device, an additional safety circuit must be used between the regulator and the pump. The manufacturer recommends the ZP-01 pump adapter, which must be purchased separately.

III. OPERATING PRINCIPLE

Based on the current temperature communicated by the temperature sensor or room controller and the individual operating algorithm, the EU-T-5z WiFi controller determines the need to heat the zone. After receiving such information, the controller switches on the voltage-free contact (or sends a signal via EU-MW-1), which can be used, for example, to operate a heating device and opens the actuators registered in the zone. The signal from the zone is transmitted to the EU-T-5z WiFi controller via a sensor or room controller. It communicates with the controller via RF frequency. In the zone, STT-868/STT-869/EU-G-X wireless valve actuators can be used, which require a registration process.

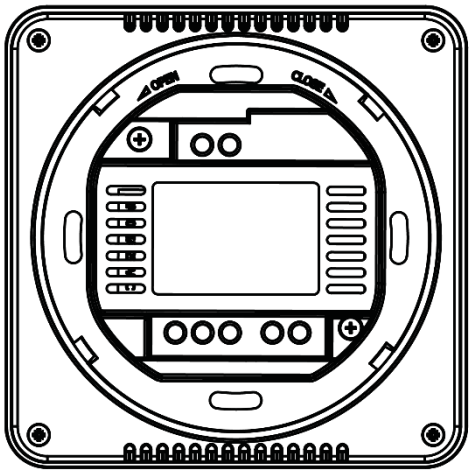
IV. INSTALLING THE CONTROLLER

The controller should be only installed by a properly qualified person.

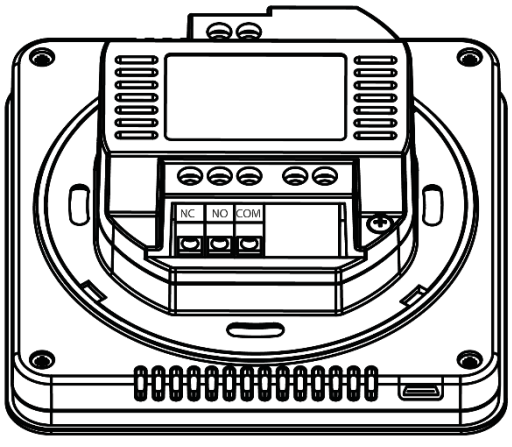
WARNING

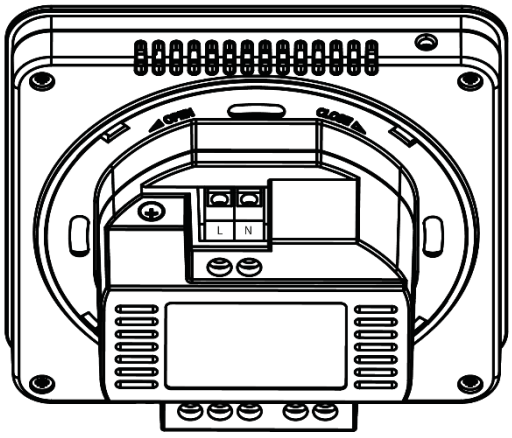
Danger of injury or death due to electric shock on live connections. Before working on the controller, disconnect its power supply and secure it against accidental switching on.

To connect the wires, remove the back cover of the controller.



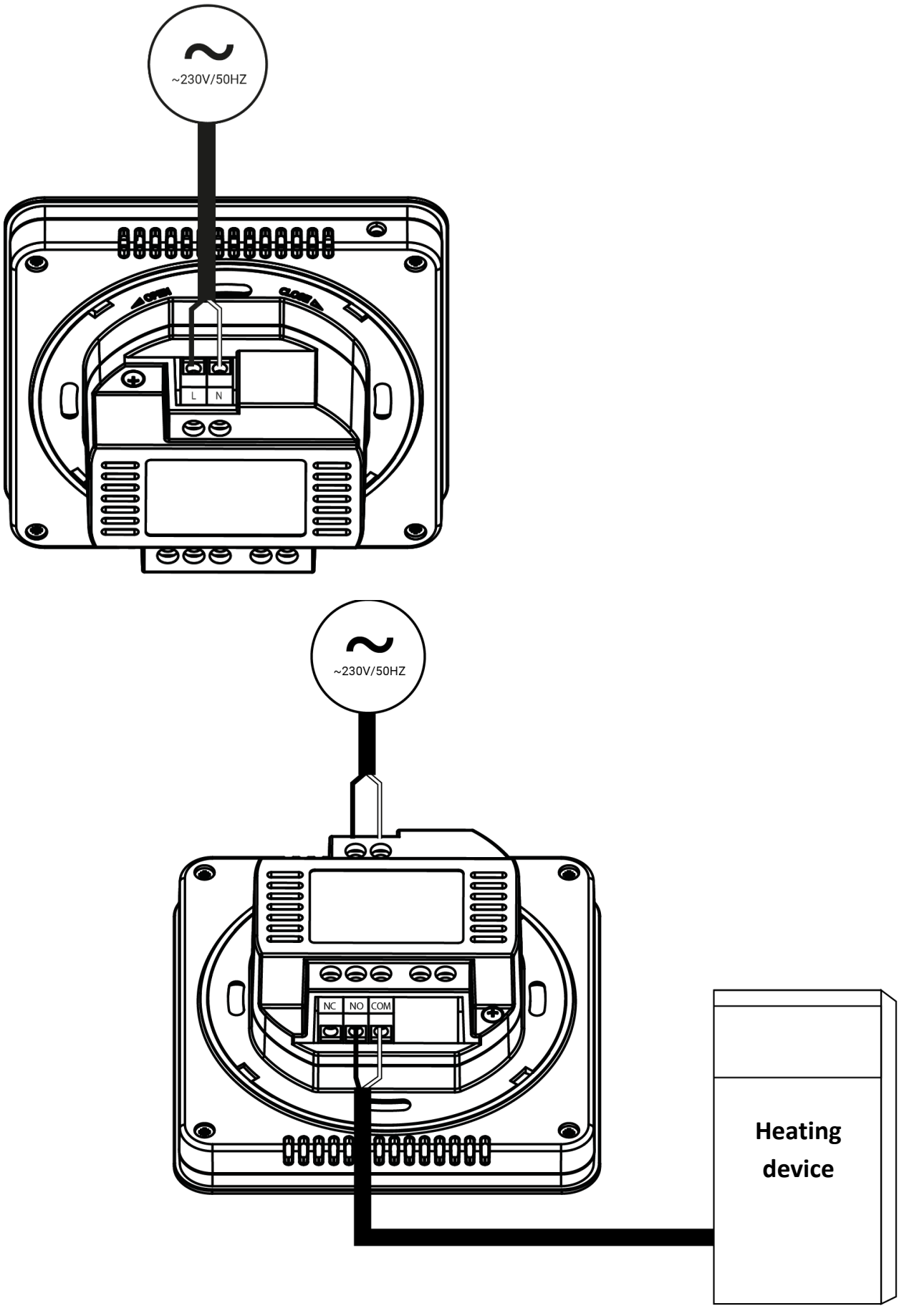
The next step is to connect the wiring – this should be done as described on the connectors and the diagrams below.



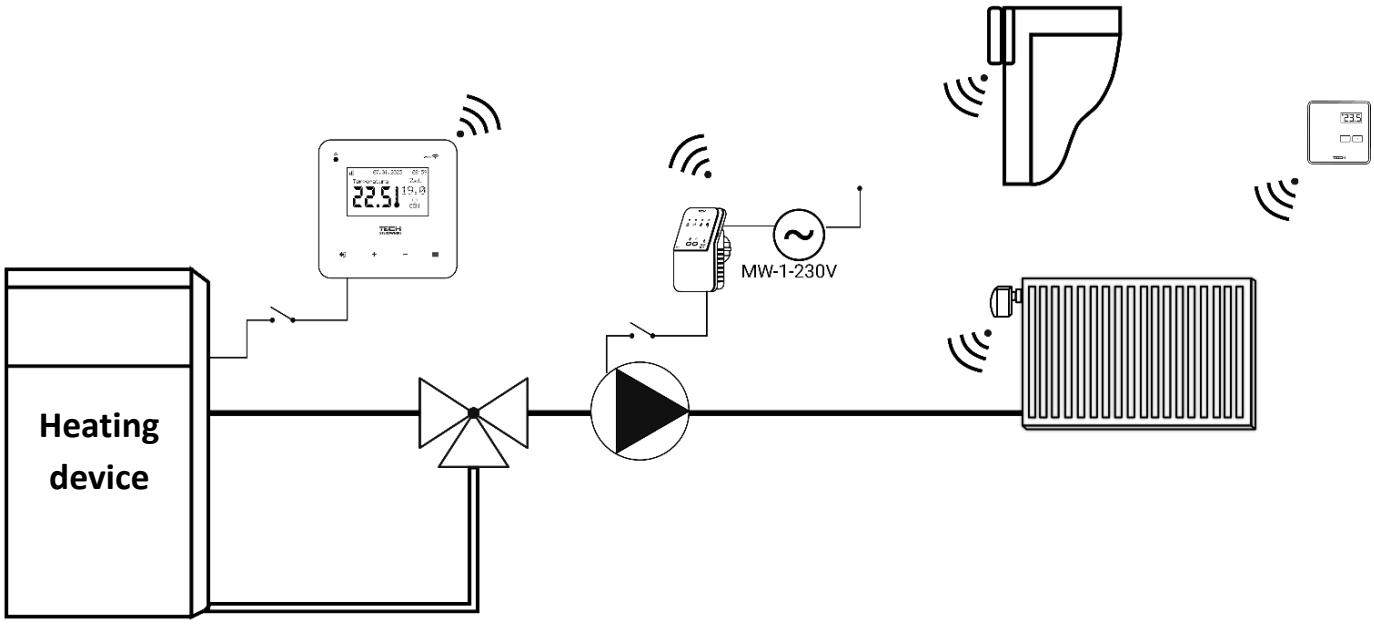


Connect in sequence:

- 230V power supply cable to the controller connector
- additional device (e.g. heating device).


~230V/50HZ
L
N
~230V/50HZ
NC
NO
COM
Heating device

Connection to the EU-MW-1 module:



V. FIRST START-UP

In order for the controller to operate correctly, the following steps must be followed for the first start-up:

1. Setting up the Internet connection
2. External sensor configuration (optional)
3. Configuration of the temperature sensor or room controller
4. Configuration of STT-868/STT-869/EU-G-X wireless thermostatic actuators
5. Window opening sensor setup.

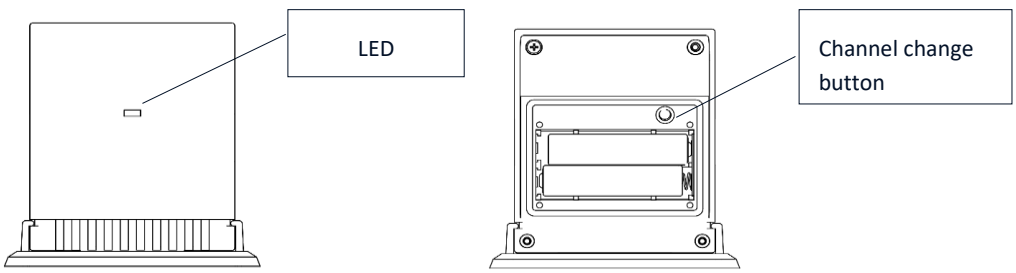
1. SETTING UP THE INTERNET CONNECTION

The EU-T-5z WiFi has a built-in Internet module, which allows you to control the installation via the Internet. First of all, you need to connect to the Internet – using the <WiFi network selection> option in the controller menu to connect to the selected WiFi network. The parameters of the Internet module such as: IP address, IP mask, Gateway address – can be set manually or the DHCP option can be enabled (option enabled by default).

You must then register your account at https://emodul.eu/. After enabling the <Registration> option in the driver menu, a code will be generated, which should be entered on the https://emodul.eu/ website in the <Settings> (Register module) tab.

2. EU-C-8ZR EXTERNAL SENSOR CONFIGURATION

The external sensor must be registered. To do this, select the <Registration> icon in the EU-T-5z WiFi controller (Main Menu > External Sensor > Registration), and then press the communication button (one short press) on the external sensor. The registration will automatically activate the external sensor. After registering, you may disconnect it at any moment by checking the <OFF> option.



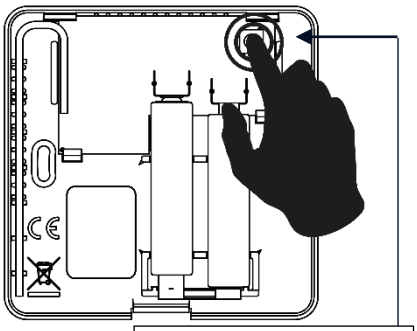
NOTE

Turning off the sensor in the controller menu will only interrupt the communication (the external temperature will not be visible on the controller screen), but will not turn off the external temperature sensor – the sensor will continue to operate until the battery is exhausted.

3. CONFIGURATION OF TEMPERATURE SENSORS, ROOM CONTROLLERS

In order for the EU-T-5z WiFi controller to operate the zone, it must receive information about its current temperature. The easiest way is to use a wireless temperature sensor, e.g. EU-C-8r or EU-C-mini. However, if we want to be able to change the temperature set point directly from the zone, we can use a wireless room controller, e.g. EU-R-8b, EU-R-8bw, EU-R-8z. Regardless of which temperature sensor/room controller we use, it should be registered in the zone in the menu of the EU-T-5z WiFi controller.

To do this, we use the parameter Registration in the submenu of the zone (Zone/Registration) - after pressing the Registration icon, press the communication button on the selected sensor/room controller located on the rear wall of the sensor/room controller (in the case of EU-C-8r, EU-R-8b, EU-R-8bw, EU-R-8z - one short press). After the registration process has been carried out correctly, a corresponding message will appear on the EU-T-5z WiFi display. If the registration process has failed, repeat the procedure.



Communication button on the EU-C-8r temp. sensor

Please note the following rules:

- A maximum of one temperature sensor can be registered in a zone.
- The registered sensor cannot be de-registered but can only be deactivated by checking the Off option in the submenu of the zone.
- Trying to register the sensor in a zone where another sensor is already registered will deregister the first one, and register the second.

You can set a pre-set temperature and a weekly schedule for the room sensor assigned to a zone. The zone temperature can be changed in the controller menu (Main Menu/Zones/Pre-set temperature). Changes to the weekly schedule settings and set points can be made via https://emodul.eu

4. CONFIGURATION OF STT-868/STT-869/EU-G-X WIRELESS THERMOSTATIC ACTUATORS

NOTE

A maximum of 6 actuators can be registered in a zone.

Registration process:

1. Install the thermostatic actuator on the radiator and wait for it to calibrate.
2. In the EU-T-5z WiFi menu, select the zone, and then select the option Actuators/ Registration.
3. Press the registration button on the actuator. This must be done within 120 seconds of pressing the Registration option – after this time the EU-T-5z WiFi controller will consider the registration process to be unsuccessful.
4. If the registration is carried out correctly, a message will appear on the display informing about the success of the process. In the event of an error in the registration process, a corresponding message will appear on the display.

There are two possible causes of error:
- Attempt to register more than six actuators.
- There is no signal from the valve actuator within 120 seconds.

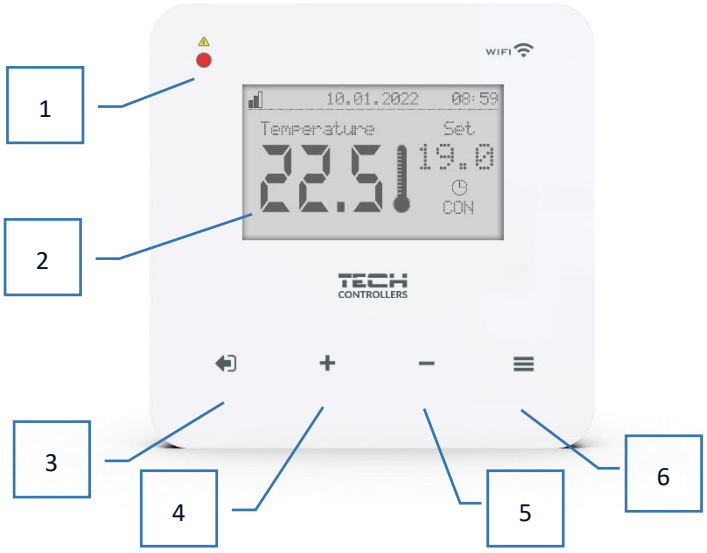
5. WINDOW OPENING SENSOR SETUP

To register the window opening sensor, select the zone in the EU-T-5z WiFi menu, then the Window Sensors/Registration option, then briefly press the communication button on the window sensor.

After releasing the button, observe the indicator LED:

- - double blinking of the indicator LED – correct communication
- - indicator LED is on with a continuous light – no communication with the main controller.

VI. MAIN SCREEN DESCRIPTION

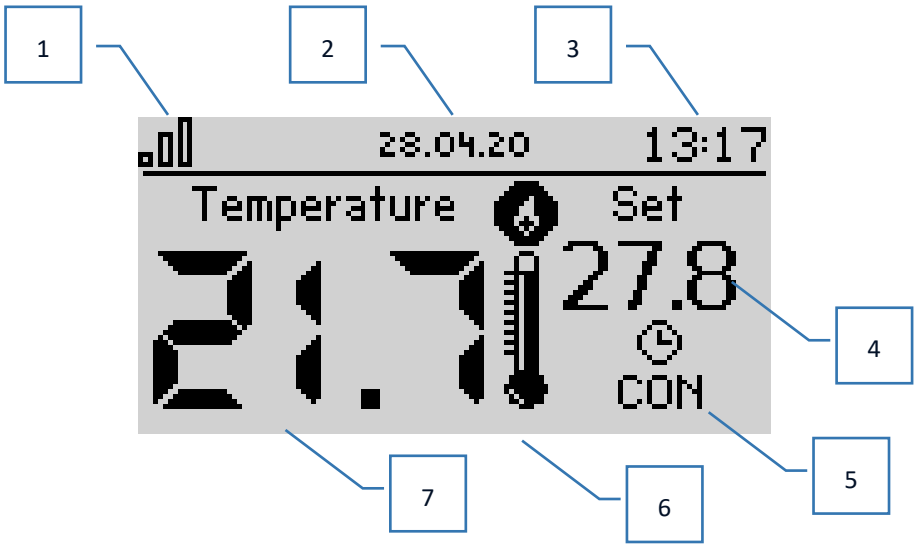


1. LED
2. Controller display
3. EXIT button. From the home screen position, pressing this button will bring up a submenu to select the home screen view (Wi-Fi screen or Zone screen). After entering the controller menu, it is used to cancel the settings, or exit the submenu.
4. PLUS button - After entering the controller menu, it is used to browse functions, or increase the setting values.
5. MINUS button - When entering the controller menu, it is used to browse functions, or decrease the setting values.
6. MENU button. Entering the controller menu, confirming the settings.

NOTE

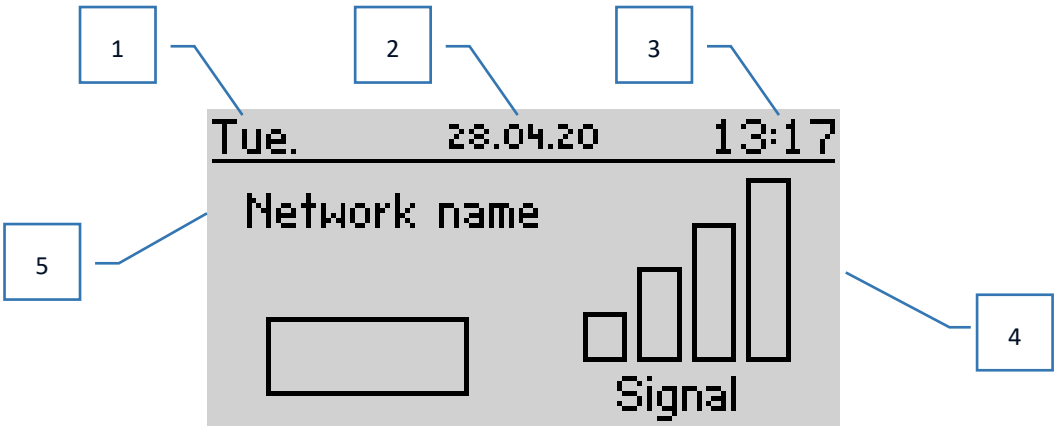
The controller has a motion detection function. When motion is detected at a distance of approximately 2 cm from the touch buttons, the controller display will illuminate.

➢ **MAIN SCREEN DESCRIPTION - ZONE 1 SCREEN**



1. WiFi signal range
2. Current date
3. Current time
4. Pre-set temperature in the given zone
5. Duration of the pre-set temperature (time overlay)
6. Additional device icon – If visible, this means that the device is switched on
7. Current room temperature.

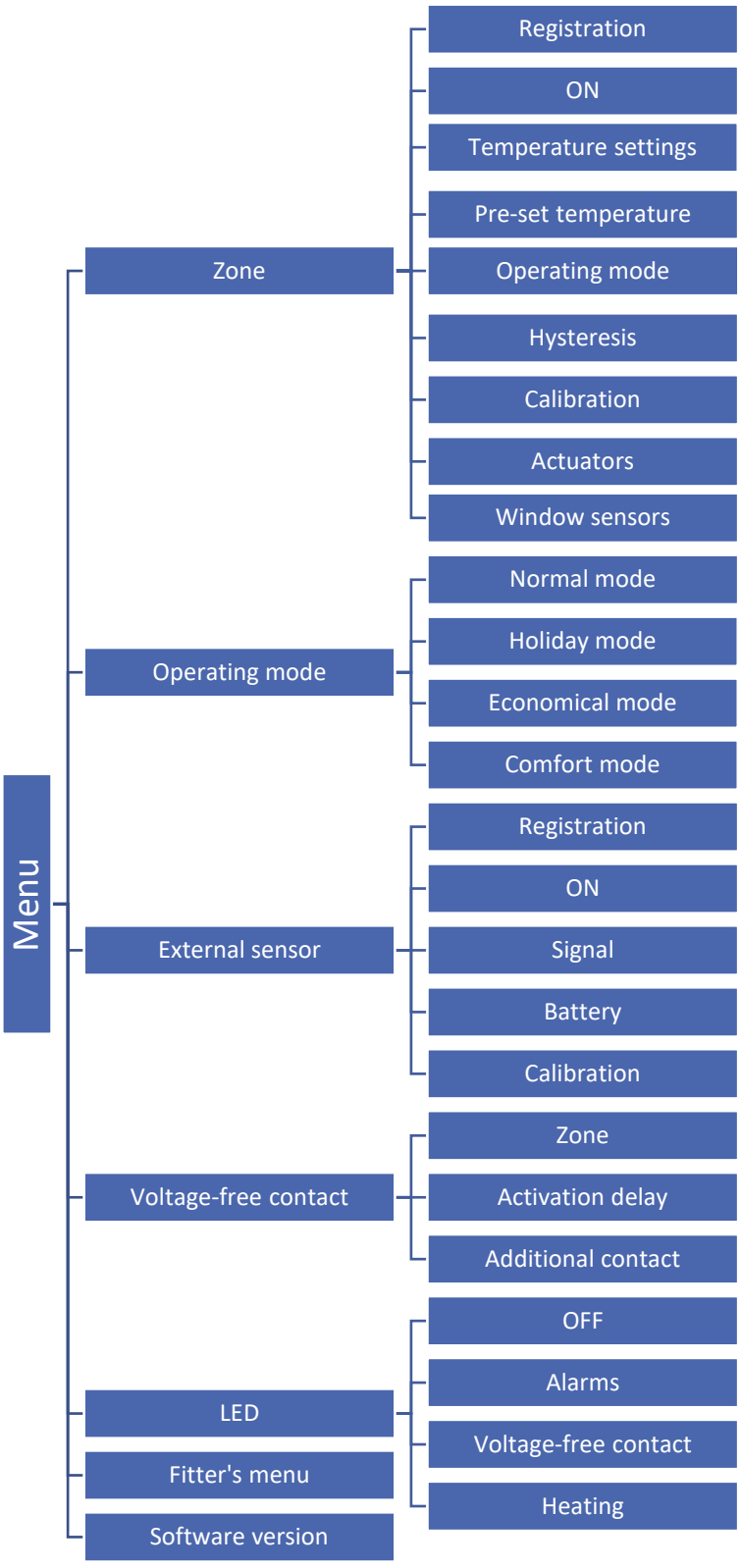
➢ **MAIN SCREEN DESCRIPTION – WIFI SCREEN VIEW**



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

VII. CONTROLLER FUNCTIONS

1. CONTROLLER MENU BLOCK DIAGRAM



2. ZONE

This submenu allows you to set the operating parameters of the zone.

2.1. REGISTRATION

After switching on the room sensor and registering it in the zone, it will be used by the EU-T-5z WiFi controller.

2.2. ON

After switching on the room sensor, it will be used by the EU-T-5z WiFi controller. However, you can disable this sensor by unchecking the ON option.

2.3. TEMPERATURE SETTINGS

The function allows you to set the temperature for: holiday, economical and comfort modes, which will be valid after switching on a given mode in *Menu > Operating modes*.

2.4. PRE-SET TEMPERATURE

The pre-set temperature in the zone depends on the settings of the selected weekly schedule. However, the Pre-set Temperature function allows you to set a separate setpoint - you will then need to turn off the schedule. It is possible to set the temperature permanently or for a certain period of time.

2.5. OPERATING MODE

- **Local schedule** – weekly schedule assigned to the zone.
- **Global Schedule 1-5** – the ability to set several schedules in the zone.
- **Constant temperature** – the function allows you to set a separate setpoint, which will be valid in the zone regardless of the time of day
- **With time limit –** the function allows you to set a separate temperature, which will be valid only for a specific period of time. After this time, the temperature will result from the previously applicable mode (schedule or constant temperature).

The above modes can be edited freely.

2.6. HYSTERESIS

The hysteresis introduces a tolerance for the pre-set temperature to prevent undesirable oscillations with minimum temperature variations (in the range of 0.1 ÷ 10^{o}C) with a step of 0.1°C.

Example: when the setpoint temperature is 23°C and the hysteresis is set to 0.5°C, the zone will be assigned an underheat status only after the room temperature drops to 22.5°C.

2.7. CALIBRATION

The room sensor shall be calibrated during installation or after prolonged use of the controller if the displayed temperature of the zone deviates from the actual temperature. Adjustment range: -10 to +10°C with a step of 0.1°C.

2.8. ACTUATORS

The Actuators submenu is used to program the operation of the STT-868/STT-869/EU-G-X thermostatic actuators. We can register up to 6 STT-868/STT-869/EU-G-X actuators in a zone. The registration process is described in detail in the *First start-up* section or in the actuator manual. If you want to deregister all actuators from the zone, just select the option **Delete actuators**.

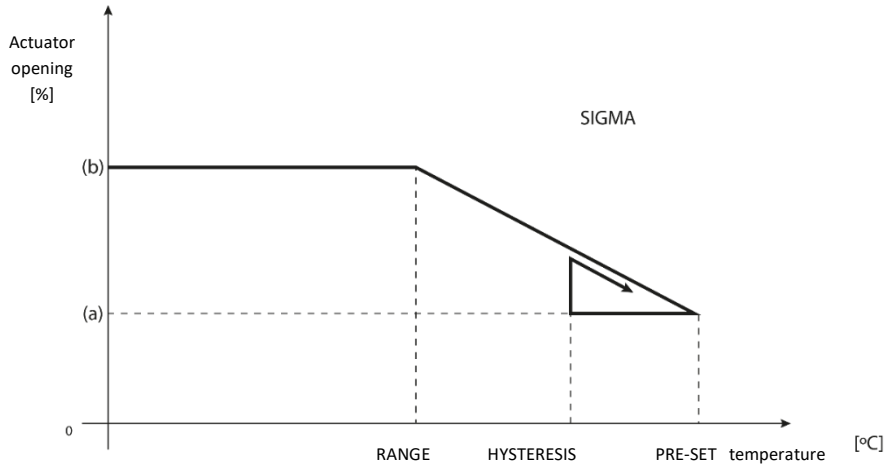
Since the version 1.1.0 of the actuator software, it is possible to separately identify, check the status or delete the actuators. To do this, hold the button on the actuator for approx. 2 seconds, then the information screen will appear on the EU-T-5z WiFi screen.

Information – this option is only available when the actuator is registered. With this option, the user can view all actuators – range information, actuator battery status, percentage of opening.

In the **Settings** submenu, we have the possibility to program the operation of thermostatic actuators. In this menu, we can declare the value of the **maximum and minimum opening of the actuator** - the degree of opening and closing of the valve will never exceed these values.

The SIGMA function enables smooth control of the thermostatic valve head. After activating this option, we also have the option to set the minimum and maximum valve closure.

In addition, the **Range** parameter allows you to determine at what room temperature the valve will initiate to close or open.



(a) – minimum opening
(b) – Actuator opening
PRESET – pre-set temperature

Example:
Zone pre-set temperature: 23˚C
Minimum opening: 30%
Maximum opening: 90%
Range: 5˚C
Hysteresis: 2˚C

With the above settings, the thermostatic valve will start to close if the temperature in the zone reaches 18˚C (setpoint reduced by the range value: 23-5). The minimum opening will occur when the zone temperature reaches the set point.

Once the set point is reached, the temperature in the zone will start to drop. When it reaches 21˚C (set point minus hysteresis: 23-2), the valve will start to open, reaching the maximum opening when the temperature in the zone reaches 18˚C.

Protection - If the pre-set temperature is exceeded by the number of degrees in the <Range> parameter, all actuators in the given zone will be closed (0% open). This function only works with the SIGMA function enabled.

Emergency mode – The function allows you to set the opening of the actuators, which will occur when an alarm occurs in a given zone (sensor failure, communication error). The emergency mode of the thermostatic actuators is activated in the absence of power supply to the EU-T-5z controller.

2.9. WINDOW SENSORS

- **Registration** – To register a sensor, select the "Registration" option, and then briefly press the communication button on the window sensor. After releasing the button, observe the indicator LED:

  - double blinking of the indicator light – correct communication

  - indicator light is on with a continuous light – no communication with the main controller.

- **Sensor removal** – with this function, the user has the option to delete the sensors in the zone.

- **Information** – this option is only available when the sensor is registered. With this option, the user can view information about sensor range and battery status.

- **Settings** – the function allows you to set the delay time. After the preset delay time, the main controller sends information to the actuators about the need to close them. Time range 0 - 30 min.

Example: The delay time is set to 10 min. Once the window is opened, the sensor sends information to the main controller about opening of the window. The sensor confirms the current state of the window from time to time. If after 10 minutes the window remains open, the main controller will close the actuator and switch on the overheating of the zone.

NOTE

If the delay time is set to 0, then the signal to the actuator to close will be transmitted immediately.

3. OPERATING MODE

3.1. NORMAL MODE

The pre-set temperature depends on the set mode of operation in the zone.

3.2. HOLIDAY MODE

The pre-set temperature depends on the setting in the "Temperature settings" function (Menu > Zones > Temperature settings > Holiday mode).

3.3. ECONOMICAL MODE

The pre-set temperature depends on the setting in the "Temperature settings" function (Menu > Zones > Temperature settings > Economical mode).

3.4. COMFORT MODE

The pre-set temperature depends on the setting in the "Temperature settings" function (Menu > Zones > Temperature settings > Comfort mode).

4. EXTERNAL SENSOR

You can connect an external temperature sensor to the controller, which allows you to view the current temperature on the main screen and in the https://emodul.eu app

After installing the external sensor, register it in the EU-T-5z WiFi controller - The registration process is described in detail in the First start-up section.

After registering the sensor, the user can view current battery status and signal strength, and also has the option to calibrate the sensor. The external sensor is not involved in the control process.

5. VOLTAGE-FREE CONTACT

5.1. ZONE

When the zone is not selected, the controller ignores its status and does not switch on the contact when it requires reheating.

5.2. ACTIVATION DELAY

The user has the option to set the delay time for switching on the contact. When the zone is underheated, the controller will wait for a specified time before switching the contact on.

5.3. ADDITIONAL CONTACT

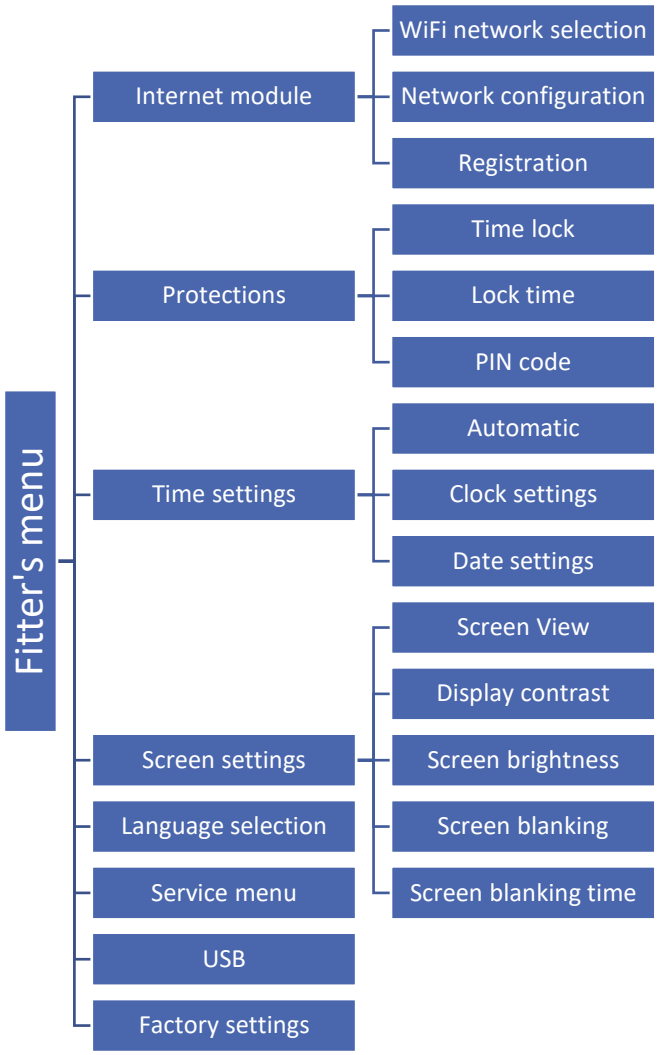
The user has the possibility to register an additional contact (EU-MW-1 module), which works analogously to the built-in contact.

To register an additional contact:
- press the registration button on the module
- select the "Registration" option in the EU-T-5z WiFi controller.

6. LED

- **Alarms** – when an alarm occurs in the controller, the led flashes.
- **Voltage-free contact** – when the contact is shorted, the led flashes. When the contact is open, the diode lights up continuously.
- **Heating** – when a zone requires additional heating – the led flashes. When the zone is heated up – the diode lights up continuously.

7. FITTER'S MENU



7.1. INTERNET MODULE

Required network settings

For the Internet module to work properly, it is necessary to connect the module to the network with a DHCP server and an open port 2000.

After connecting the Internet module to the network, go to the module settings menu (in the master controller).

If the network does not have a DHCP server, the Internet module should be configured by its administrator by entering appropriate parameters (DHCP, IP address, Gateway address, Subnet mask, DNS address).

1. Go to the Internet module settings menu.
2. Select "*ON*".
3. Check if the "*DHCP*" option is selected.
4. Go to "WIFI network selection"
5. Select your WIFI network and enter the password.
6. Wait for a while (approx. 1 min) and check if an IP address has been assigned. Go to the "*IP address*" tab and check if the value is different from 0.0.0.0 / -.-.-.-.

a) If the value is still 0.0.0.0 / -.-.-.-.- , check the network settings or the Ethernet connection between the Internet module and the device.

7. After the IP address has been assigned, start the module registration in order to generate a code which must be assigned to the account in the application.

- WIFI NETWORK SELECTION

Once you enter this submenu, the controller displays the list of available networks. After selecting the network to connect to, accept the selection by pressing the MENU button. If the network is secured, it is necessary to enter a password – use the "+" and "-" buttons to select the next letters of the password. Once the password is typed in, press EXIT.

- NETWORK CONFIGURATION

The standard network configuration runs automatically. However, if the user wishes to manually configure the network, they can do so using the following sub-menu options: DHCP, IP address, Subnet mask, Gateway address, DNS address, and MAC address.

- REGISTRATION

By running the Registration option, we generate the code required to register the EU-T-5z WiFi at https://emodul.eu - please refer to the First start-up section.

7.2. PROTECTIONS

This function is used to change the settings of the parental lock. When the “Time Lock” function is activated, the screen will lock after the time set in the “Lock Time” option. The user can set their access PIN to the controller menu.

NOTE

The factory default PIN is '0000'.

7.3. TIME SETTINGS

The current time and date are automatically downloaded from the network. The user can set the date and time manually.

7.4. SCREEN SETTINGS

The parameters of this submenu allow you to adjust the appearance of the main screen of the controller to individual needs. The user can change the data displayed on the controller screen: Wi-Fi (the screen displays the name of the connected network and signal strength) or Zone (current and set values in the zone).

You can also adjust the contrast and brightness of the display. Thanks to the Screen blanking function, it is possible to set the screen brightness during fading. The Screen blanking time option allows you to set the idle time, after which the controller will go into the screen blanking state.

7.5. LANGUAGE SELECTION

The function allows you to change the controller language version.

7.6. SERVICE MENU

The parameters of this submenu are intended for people with appropriate qualifications and are protected by a code.

7.7. USB

- Save – saves device addresses, zone data and schedules
- Load – loads previously saved parameters from the connected flash drive.

7.8. FACTORY SETTINGS

The function allows you to restore the factory settings – it applies to the parameters located directly in the main menu of the controller (but does not apply to the service menu).

NOTE

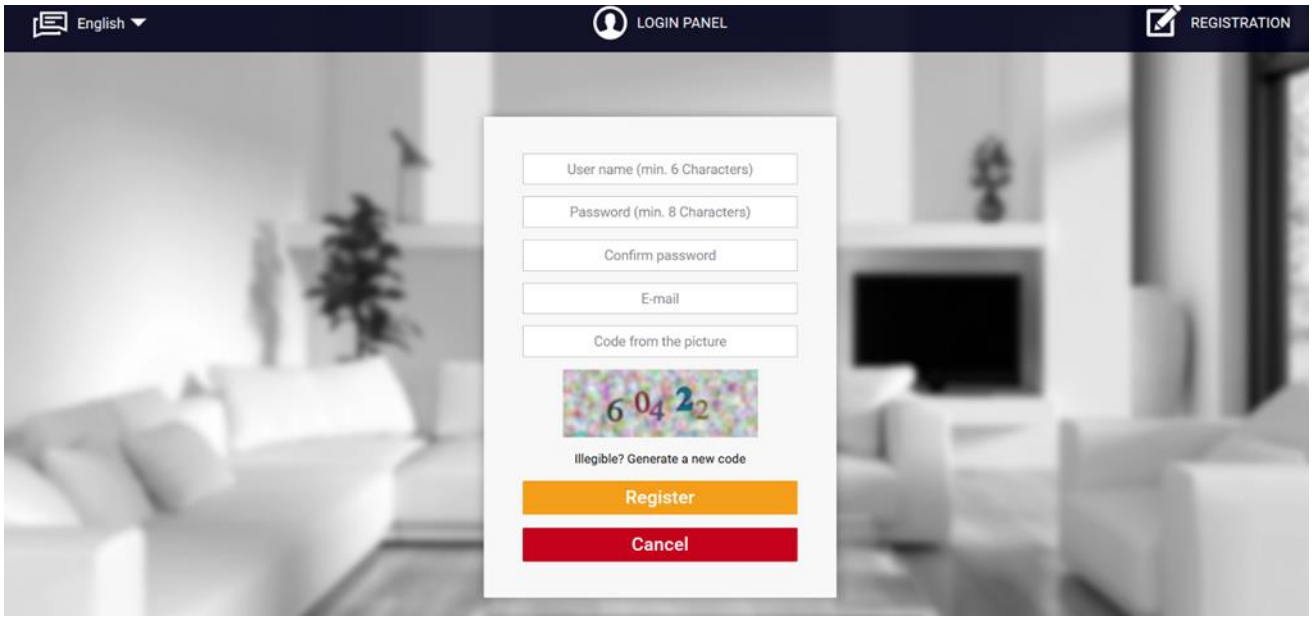
After selecting this function, it will be necessary to configure the Internet connection again. The function deletes all registered devices.

8. SOFTWARE VERSION

The function allows you to preview the current software version of the controller.

VIII. CHECKING THE INSTALLATION VIA THE WEBSITE

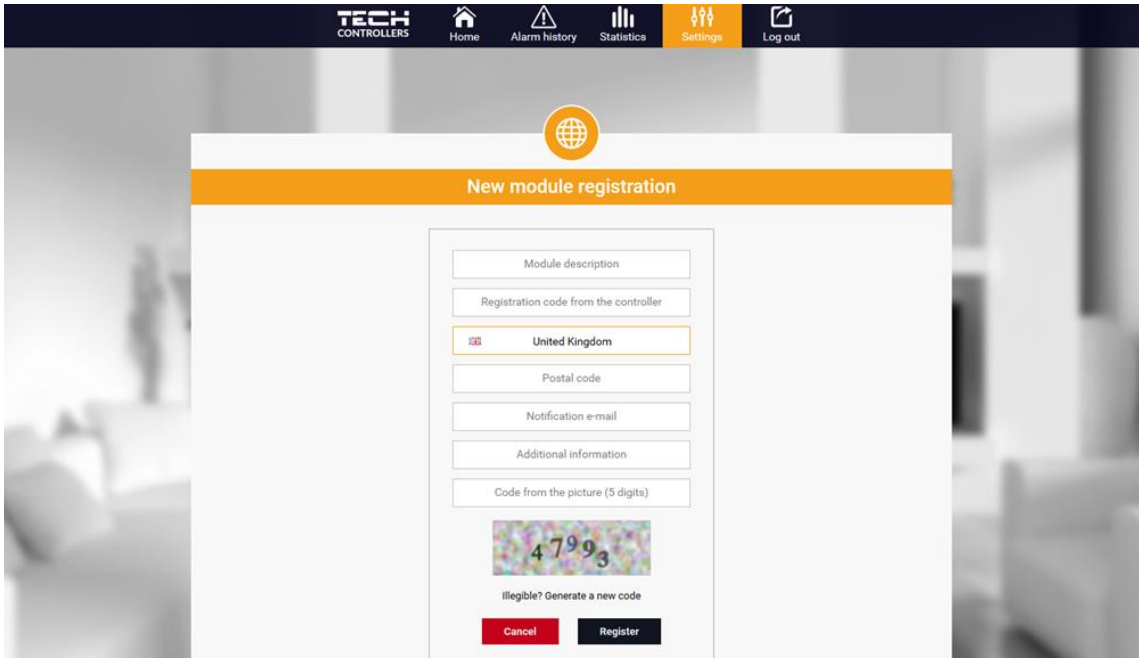
The https://emodul.eu website enables controlling of numerous aspects of the operation of the installation. To take full advantage of it, you need to first setup an individual account:



New account registration panel at https://emodul.eu

After logging in to your account in the Settings tab, activate the Register module option, and then enter the code generated by the controller (the code is generated by selecting the Registration option in the EU-T-5z WiFi controller menu).

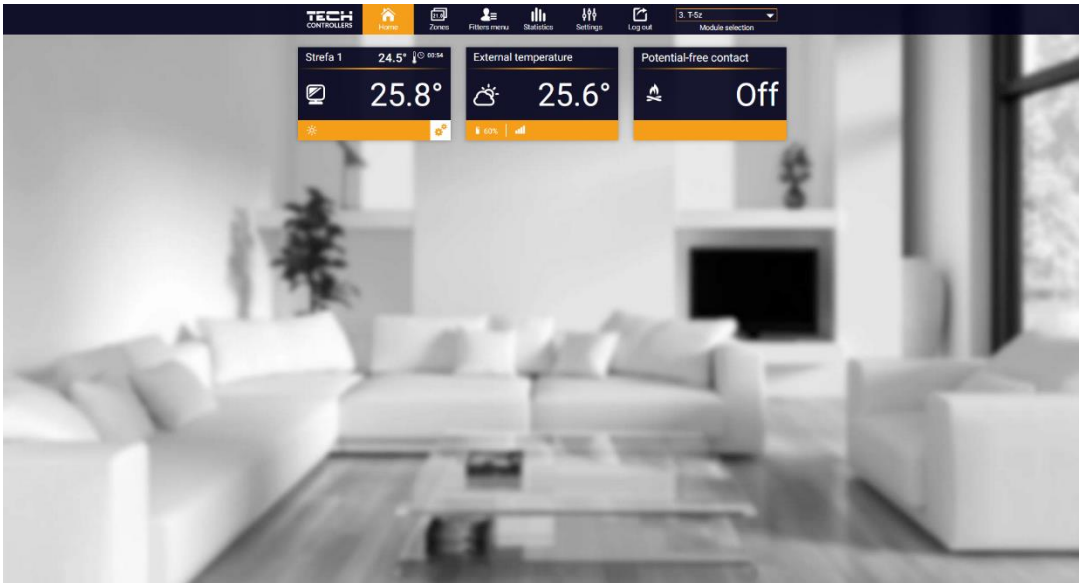
You can assign any name to the module (under Module description):



New module registration panel

1. HOME TAB

The Home tab displays the home page with tiles showing the current status of individual devices in the installation. By clicking on them, we can change the operating settings:

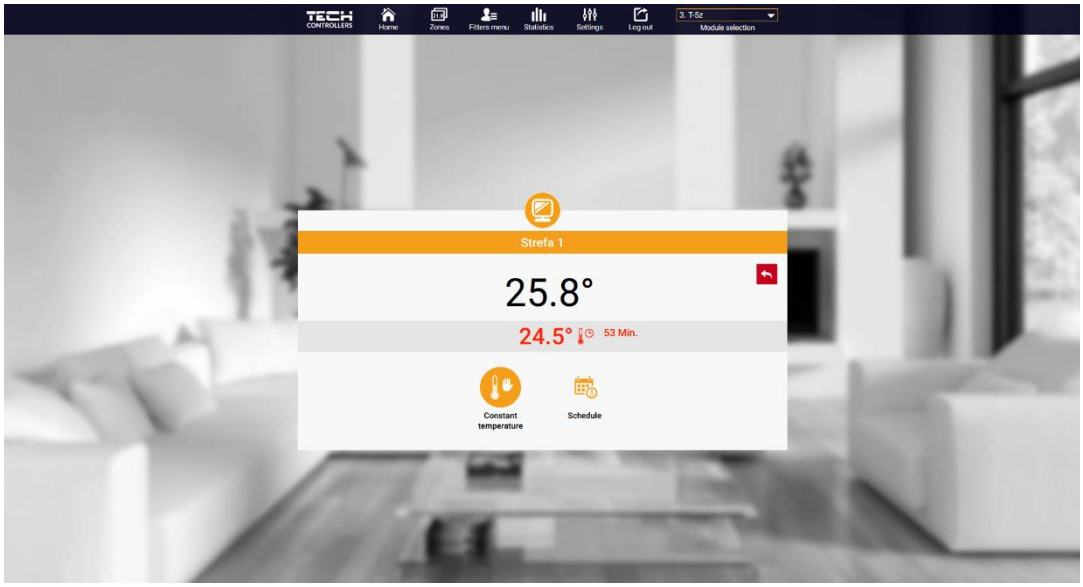


HOME tab view

NOTE

The message "No communication" means interruption of communication with the temperature sensor in the zone. The most common cause of this condition is a depleted battery – it should be replaced.

Clicking in the area of the zone tile, we proceed to the editing of the pre-set temperature:



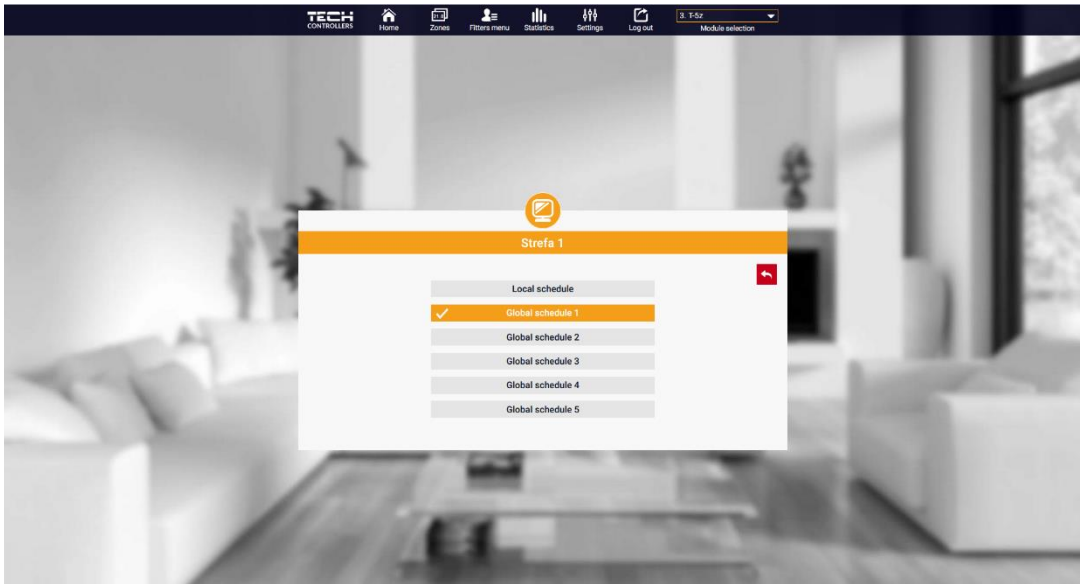
Set point temperature edit screen

The upper value indicates the current temperature of the zone, while the lower value indicates the pre-set temperature.

As default option, the pre-set temperature in the zone will depend on the settings of the selected weekly schedule. However, the Constant Temperature mode allows you to set a separate set point that will apply to the zone regardless of the time of day.

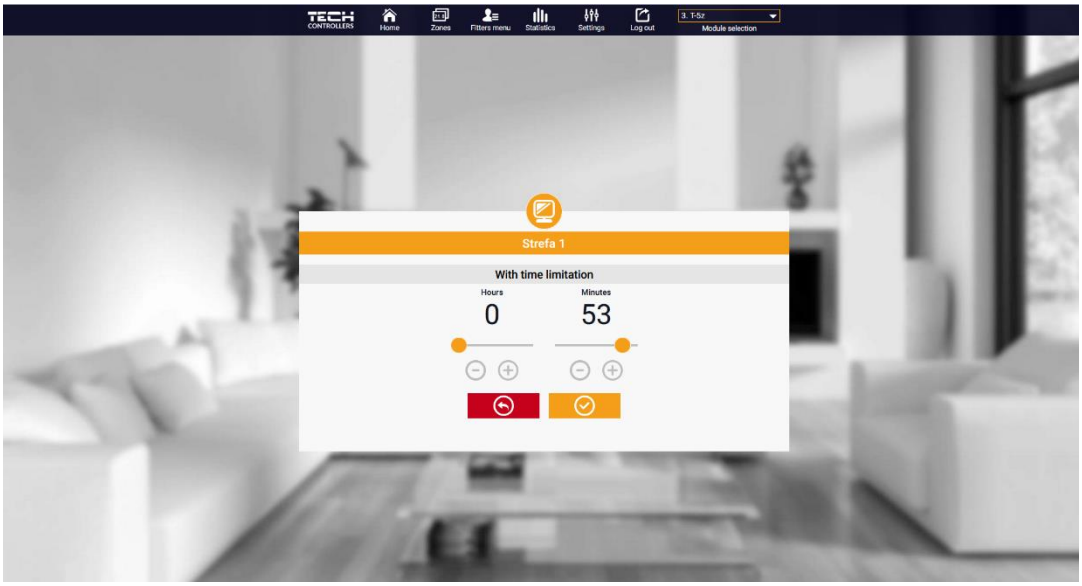
By selecting the Constant temperature icon, we can activate the temperature function with a time limit.

This allows you to set a specific pre-set temperature, which will only be valid for a certain period of time. After this time, the temperature will result from the previously applicable mode (schedule or constant without time limit).



Temperature settings with time limit

Clicking in the Schedule icon area, we go to the weekly schedule selection screen:



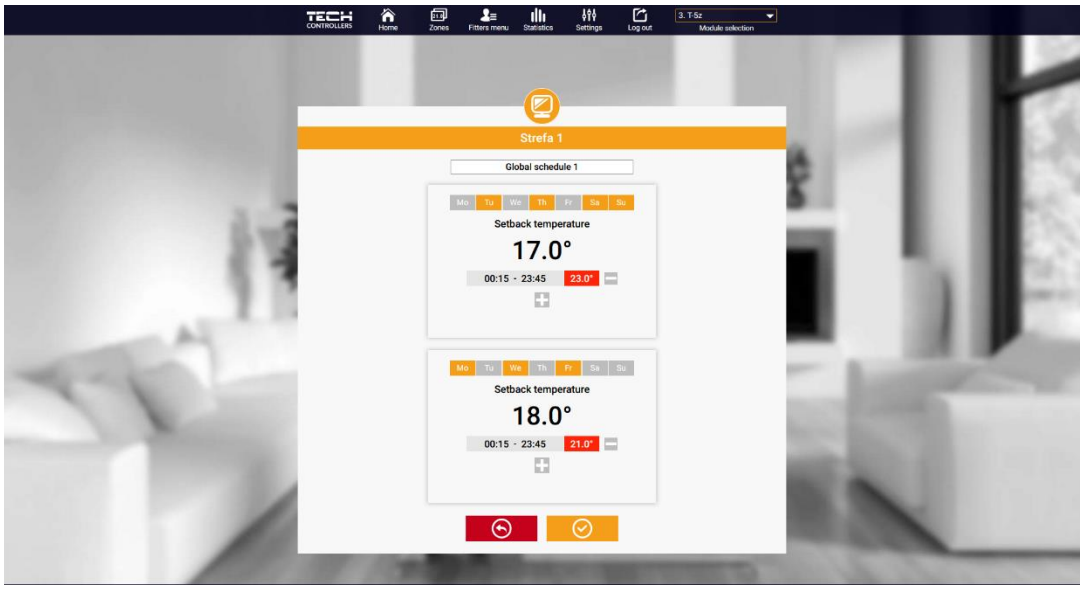
Weekly schedule selection screen

There are two types of weekly schedules in the EU-T-5z WiFi controller:

1. Local schedule
This is a weekly schedule default assigned to the zone. When a room sensor is detected by the EU-T-5z WiFi controller, it is automatically assigned as valid in the zone. It can be edited at will.

2. Global Schedule (Schedule 1…5)
This is a weekly schedule assigned to the zone. It is possible to create a several different schedules for the zone, from which we can choose only one.

After selecting the schedule and clicking OK, we go to the Edit weekly schedule settings screen:

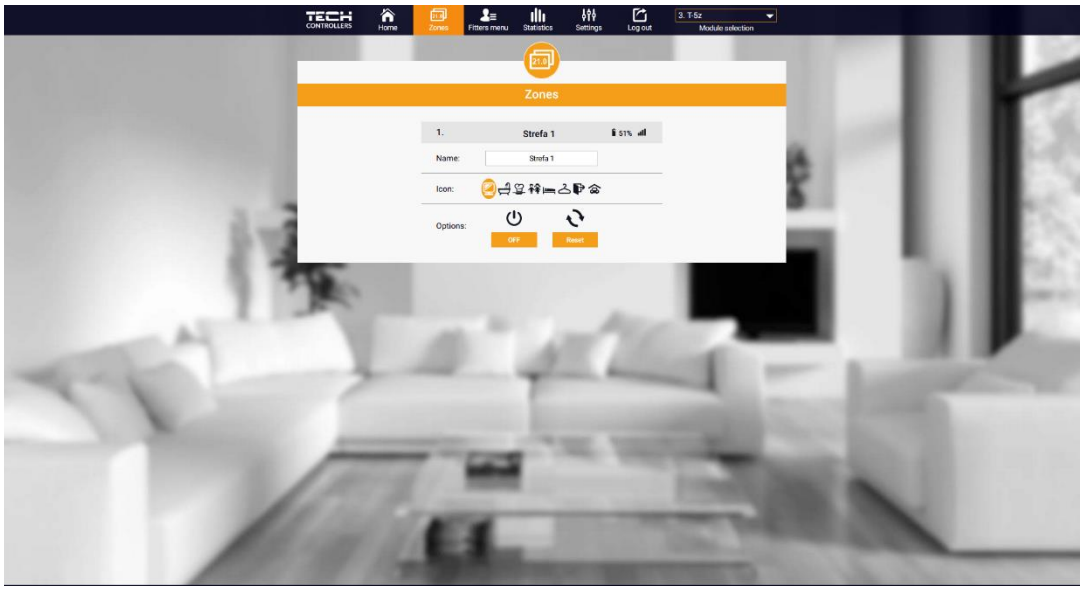


Weekly schedule edit screen

Editing each schedule allows you to define two setting programs and select the days on which these programs will apply (e.g. Monday to Friday and weekend). The starting point of each program is the pre-set temperature. In each of the programs, the user can define up to three time intervals in which the temperature will be different from the pre-set temperature. The boundaries of these intervals must not overlap. The pre-set temperature will be valid for these hours for which the intervals have not been defined. Time intervals can be set to within 15 minutes.

2. ZONES TAB

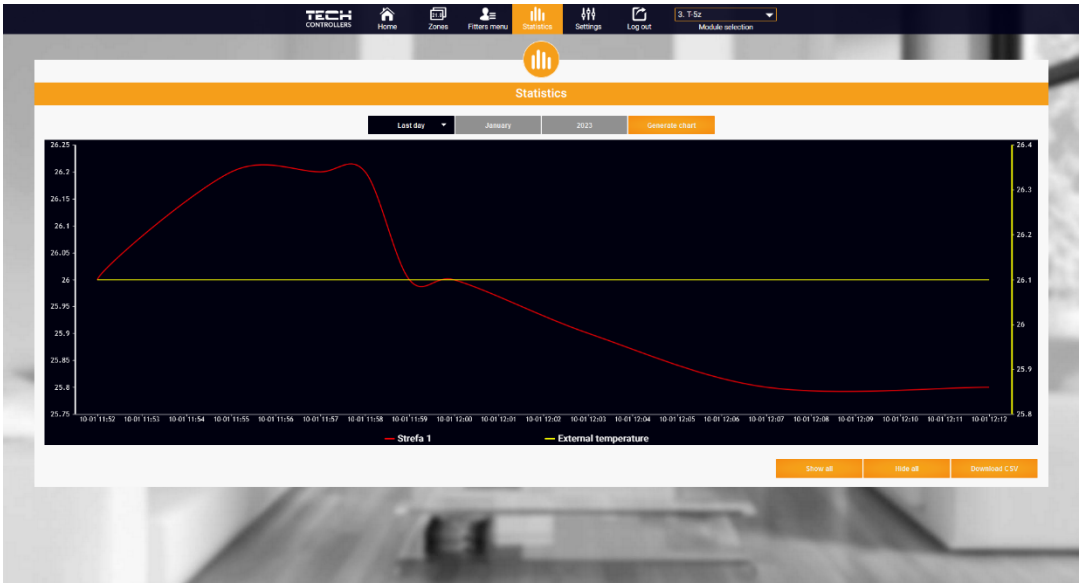
We can adjust the appearance of the homepage to your needs by changing the name and symbol of the zone. These changes can be made in the Zones tab.



Zones tab view

3. STATISTICS TAB

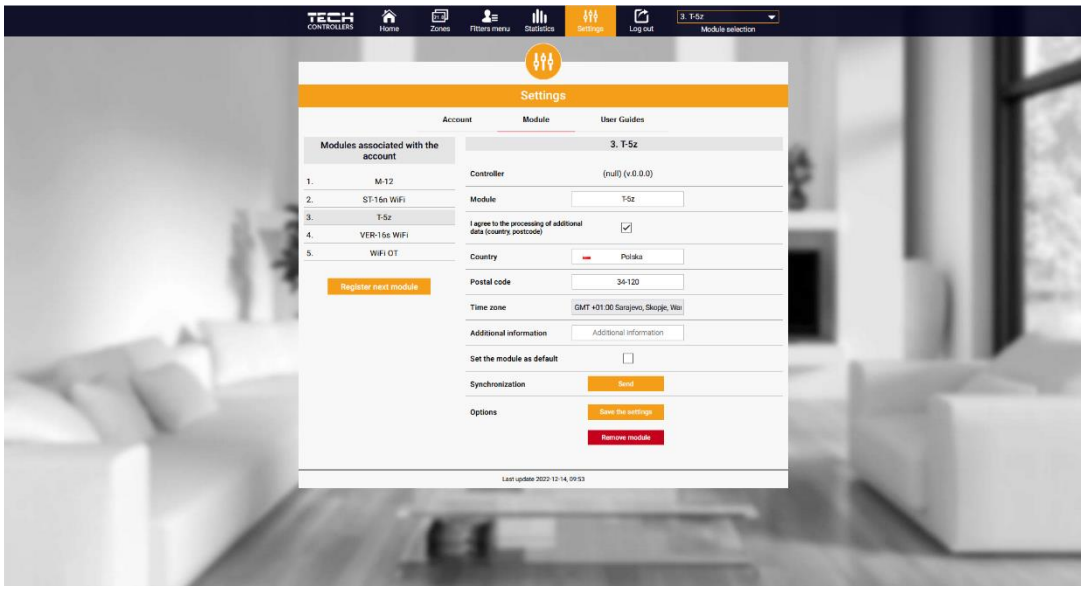
In the Statistics tab, you can view temperature charts from different time ranges: day, week or month, as well as statistics from previous months:



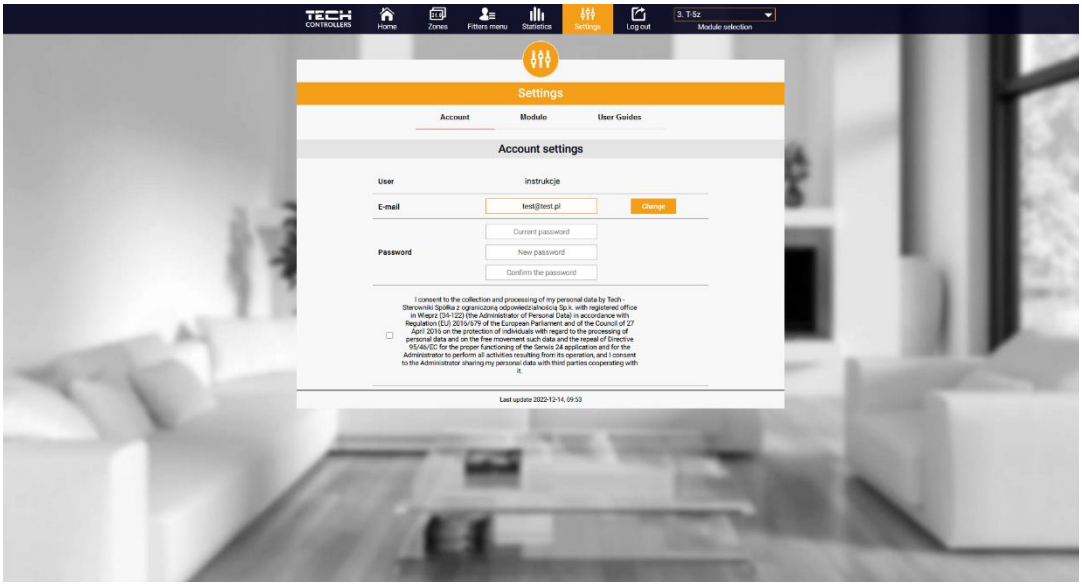
Example of a graph

4. SETTINGS TAB

The Settings tab allows you to register a new module, change your email address and change your account password:



Settings/Module Tab View



Settings/Account Tab View

IX. SOFTWARE UPDATE

NOTE
The process of uploading new software to the controller may only be carried out by a qualified installer. After changing the software, it will not be possible to restore all previous settings, but only registered devices and schedules.

To upload new software, disconnect the controller from the network. Insert the USB flash drive containing the new software into the USB port. You then turn on the controller. Once the task is completed, the controller will restart.

NOTE
Do not turn off the controller while updating the software.

X. TECHNICAL DATA

Specification	Value
Power supply	230V +/-10% / 50Hz
Operation temperature	5÷50°C
Max. power consumption	1.5W
Potential-free cont. nom. out. load	230V AC / 0,5A (AC1) * 24V DC / 0,5A (DC1) **
Frequency	868MHz
Tranmission	IEEE 802.11 b/g/n

* AC1 load category: single-phase, resistive or slightly inductive AC load.
** DC1 load category: DC, resistive or slightly inductive load.

XI. PROTECTIONS AND ALARMS

The device handles the following cases within a zone:

Alarm	Possible cause	How to fix it
Lack of communication with wireless sensor/room controller Alarm	- No signal - No battery - Battery depleted	- Move the sensor/room controller to another location - Insert the batteries into the sensor/room controller The alarm is cleared automatically after successful communication is established
STT-868 actuator alarms		
Head alarm ERROR #0 battery low	Head battery low	Replace the batteries
Head alarm ERROR #1 – likely damage to mechanical or electronic components	Damage to components	Call service
Head alarm – ERROR #2 – the actuator head has exceeded the maximum piston offset range	- Lack of valve control piston - Valve stroke (offset) too large - The head is incorrectly installed on the	- Fit the control piston to the head - Check valve stroke - Install the head correctly

	radiator - Wrong valve on the radiator	- Replace the valve on the radiator
Head alarm ERROR #3 – piston offset too small	- Valve jam - Wrong valve on the radiator - Valve stroke (offset) too small	- Check the operation of the valve in the radiator - Replace the valve on the radiator - Check valve stroke
Head alarm ERROR #4 – no return communication (to the head)	- No signal - No battery	- The controller is not able to operate the head located at too great a distance. - Insert the batteries into the head The alarm is cleared automatically after successful communication is established.
STT-869 actuator alarms		
Error #1 – Calibration error 1 – Screw retraction to mounting position took too long	- Limit sensor defective	- Re-calibrate by holding down the registration button until the LED flashes 3 times. - Call service
Error #2 – Calibration error 2 – Screw is fully extended – no resistance during extension	- The actuator was not screwed on the valve or it is not fully screwed on - The valve stroke is too large or the valve has non-standard dimensions - Damaged actuator current measurement system	- Check the correctness of the actuator installation - Replace the batteries - Re-calibrate by holding down the registration button until the LED flashes 3 times. - Call service
Error #3 – Calibration error 3 – screw extension too short – screw resistance encountered too early	- The valve stroke is too small or the valve has non-standard dimensions - Damaged actuator current measurement system - Battery weak	- Replace the batteries - Re-calibrate by holding down the registration button until the LED flashes 3 times. - Call service
Error #4 – Lack of feedback communication	- Master controller disabled - Poor signal or no signal to master controller - Defective RF module in actuator	- Check if the master controller is operating - Reduce the distance from the master controller - Call service
Error #5 – Low battery	- Battery low	Replace the batteries
Error #6 – Locked encoder	- Damage to the encoder	- Re-calibrate by holding down the registration button until the LED flashes 3 times. - Call service
Error #7 – Current too high	- Unevenness, e.g. on the screw, thread, causing high movement resistance - High transmission or motor resistance - Faulty current measurement system	
Error #8 – Limit switch error	- Faulty limit switch system	
EU-G-X actuator alarms		
ERROR #1 - Calibration error 1	Bolt retraction to mounting position took too long.	Locked/damaged actuator piston. Check the assembly and recalibrate the actuator.
ERROR #2 - Calibration error 2	Bolt maximally extended as it did not meet any resistance during extension.	- actuator was not screwed properly onto the valve - the actuator was not fully tightened onto the valve - actuator movement was excessive, or non-standard valve encountered - motor load measurement failure occurred Check the assembly and recalibrate the actuator.

ERROR #3 - Calibration error 3	Bolt extension too short. The bolt met resistance too early during the calibration process.	- valve movement was too small, or a non-standard valve encountered - motor load measurement failure - motor load measurement inaccurate due to low battery charge Check the assembly and recalibrate the actuator.
ERROR #4 - Actuator feedback communication error.	For the last x minutes, the actuator did not receive a data package via wireless communication. After this error is triggered, the actuator will set itself to 50% opening. The error will reset after a data package is received.	- master controller disabled - poor signal or no signal originating from the master controller - defective RC module in the actuator
ERROR #5 - Battery low	The actuator will detect battery replacement after voltage rises and launch calibration	- battery depleted
ERROR #6	-	-
ERROR #7 - Actuator blocked		- while changing the opening of the valve, excessive load was encountered Recalibrate the actuator.

TECH CONTROLLERS

EU Declaration of Conformity

The TECH STEROWNIKI II Sp. z o.o. company, with registered office in Wieprz (34-122), Poland, at ul. Biała Droga 31, declares under its sole responsibility that the **EU-T-5z** we manufacture meets the requirements of 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 (recast) and the REGULATION of the POLISH MINISTER OF ENTREPRENEURSHIP and TECHNOLOGY of 24 June 2019 amending the Regulation on the essential requirements for the restriction and use of certain hazardous substances in electrical and electronic equipment, implementing 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 (Official J. EU L 305 of 21.11.2017, p. 8).

The harmonized standards applied for conformity assessment were:

PN-EN IEC 60730-2-9 :2019-06 art. 3.1a - operational safety,
PN-EN IEC 62368-1:2020-11 art. 3.1 a - operational safety,
PN-EN 62479:2011 art. 3.1 a - assessment of the compliance of low power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (from 10 MHz to 300 GHz)
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 301 489-17 V3.2.4 (2020-09) Art.3.1b - electromagnetic compatibility,
ETSI EN 300 328 V2.2.2 (2019-07) art.3.2 - the efficient use of radio spectrum,
ETSI EN 300 220-2 V3.2.1 (2018-06) art.3.2 - the efficient use of radio spectrum,
ETSI EN 300 220-1 V3.1.1 (2017-02) art.3.2 - the efficient use of radio spectrum,
PN EN IEC 63000:2019-01 RoHS.

Wieprz, 14.03.2023

Pawel Jura Janusz Master

Prezesi firmy

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CONTROLLERS

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