USER MANUAL

EU L-8

TABLE OF CONTENTS

KN.17.08.22

I. SAFETY

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

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

⚠ **WARNING**

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

⚠ **WARNING**

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

Changes in the merchandise described in the manual may have been introduced subsequent to its completion on August 22th 2017. 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. DESCRIPTION OF THE DEVICE

EU L-8 external controller is intended for both wired and wireless control of the valves (see: Wireless communication). The controller enables significant energy saving due to precise temperature management in particular rooms. Due to advanced software, the controller fulfils a wide range of functions:

- possibility of controlling up to 22 thermostatic actuators via 8 room sensors (C-8r, C-mini) or room regulators R-8b and R-8z or R-8k (3 room sensors may support up to 12 actuators (the maximum of 4 actuators per one sensor); 5 room sensors may support up to 10 actuators (the maximum of 2 actuators per one sensor)
- one 230V output for a pump
- voltage-free contact (e.g. for controlling the heating device)
- Internet
- possibility of connecting M-8 wireless control panel
- possibility of controlling the mixing valve (via ST-61v4 or ST-431N valve module)
- possibility of updating the software via USB
- possibility of controlling wireless actuators STT-868 (6 per section)

10,6 cm

33,5 cm

7,2 cm
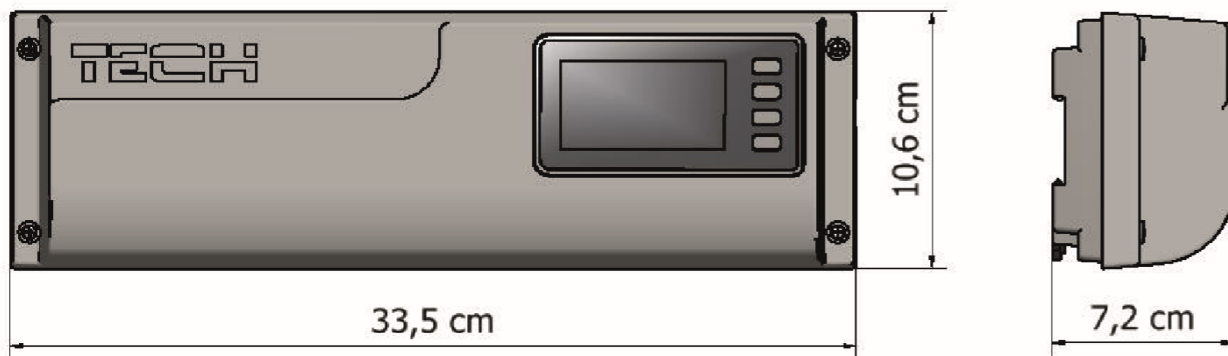
III. INSTALLATION

The controller should be installed by a qualified person. EU L-8 controller may be installed as a free-standing device or as a panel mountable on a wall.

⚠️ **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.
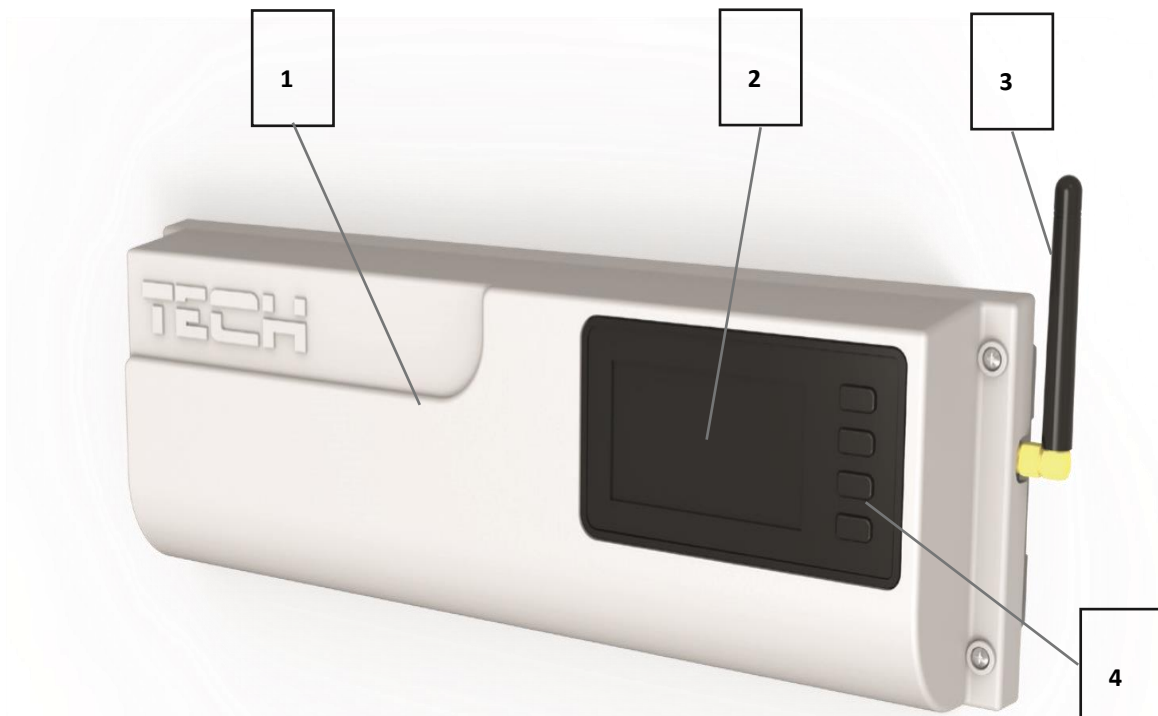
1. Cover (it should be removed to connect the devices to be controlled)
2. Display
3. Aerial – for wireless communication
4. Buttons

> ⚠ **WARNING**
>
> The controller may be installed on a DIN strip.

IV. FIRST START-UP

In order for the controller to operate correctly, the user must follow these steps when starting the device for the first time:

Step 1. Connect EU L-8 with all subordinate devices to be controlled

Remove the cover and connect the wires following the clues on the connectors and the diagrams presented below.

Follow this order while connecting:

- all the necessary valve actuators ST-230/2 (connectors 1-8)
- Internet module (using RS cable)
- Pump
- An additional device
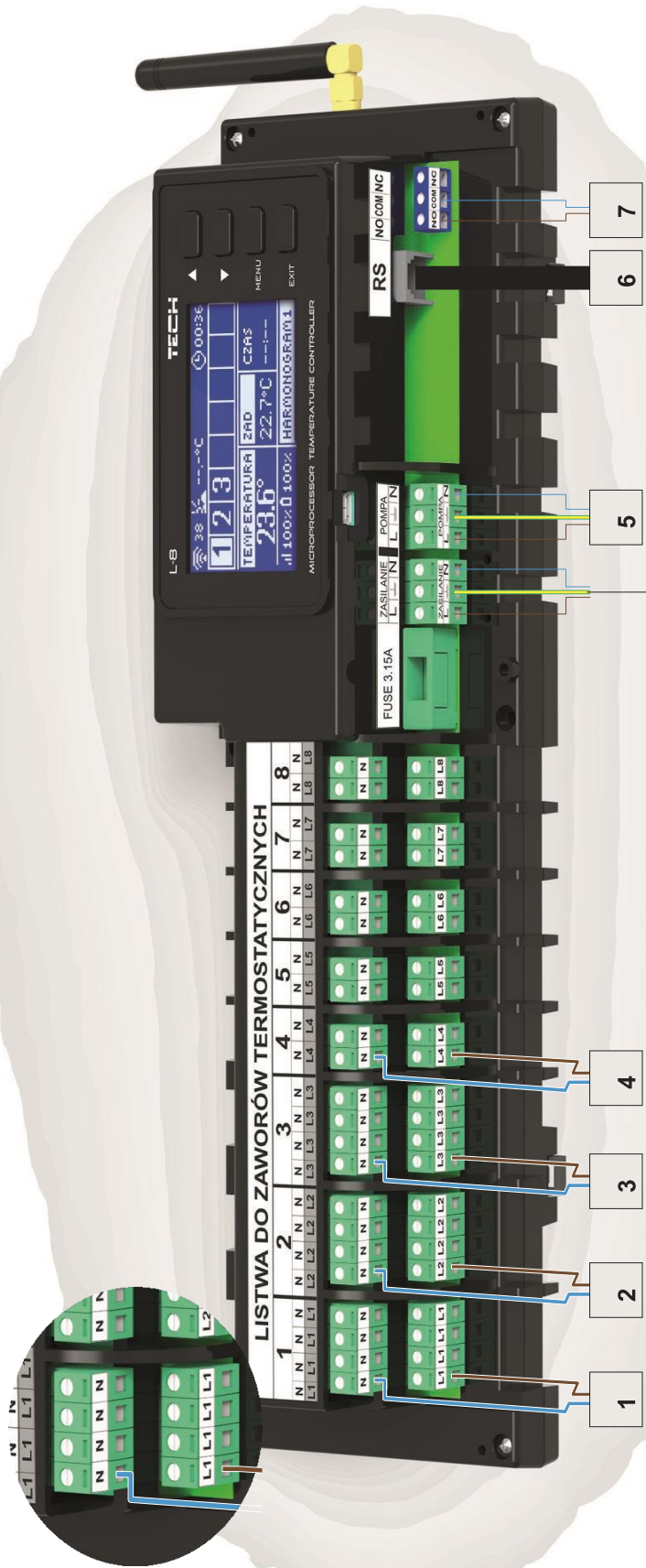
Pictorial diagram presenting wiring and communication with other devices in the system:

Step 2. Switch on the power supply and check if the devices work

After all the devices have been connected, switch on the power supply.
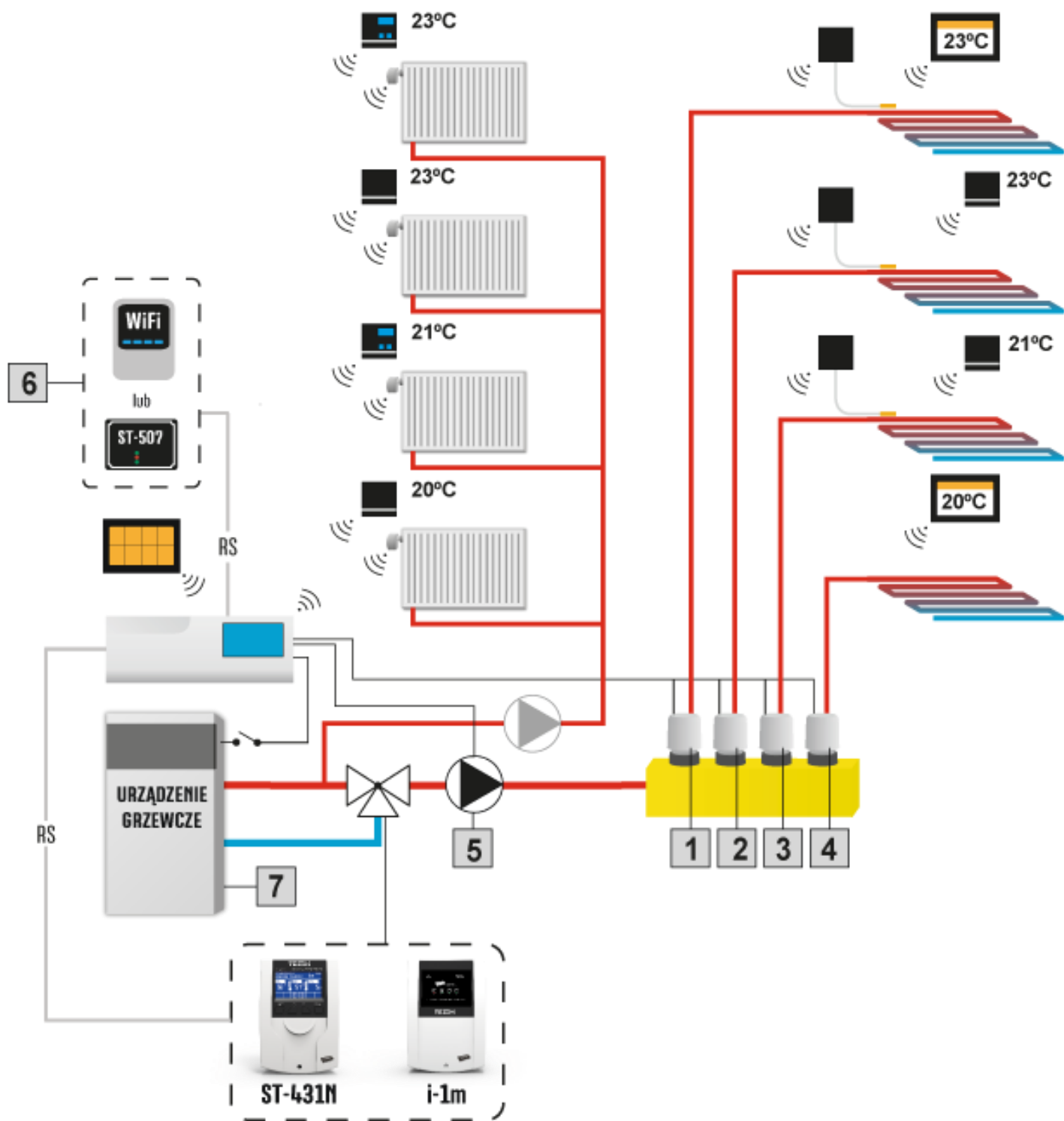
Use Manual operation function in order to check if particular devices work properly. Use ▲ and ▼ to select the device and press MENU – the device should switch on. Follow this procedure to check all the devices.

Step 3. Activate the Internet module

EU L-8 external controller is compatible with ST-507 and WiFi RS.

WiFi RS uses WiFi wireless network whereas ST-507 needs to be connected to a router with RJ45 network cable.
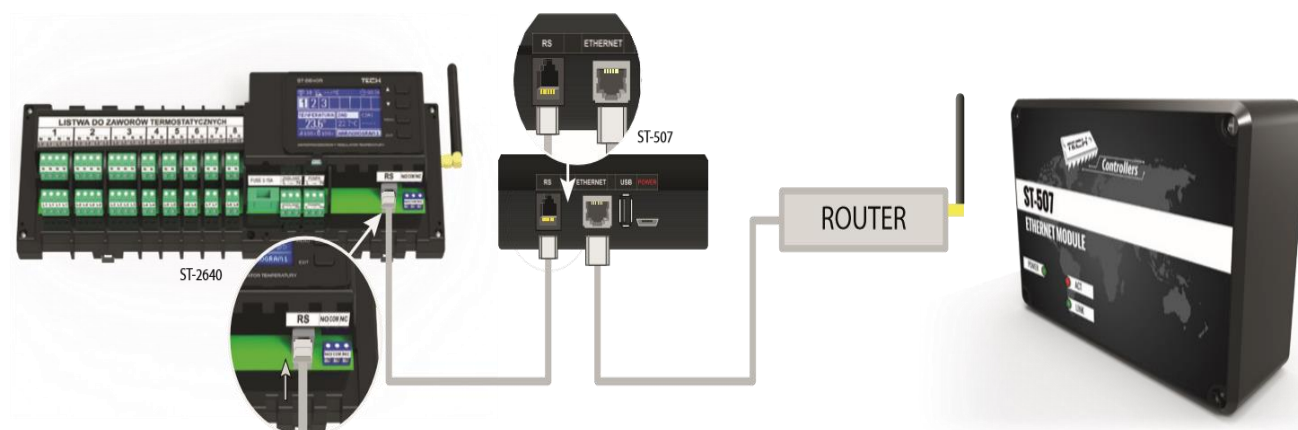
Connection diagram for ST-507 Internet module.

Connection diagram for WiFi RS.

ST-507 Internet module or WiFi RS should be connected as illustrated in the diagrams above. Next, activate the module: Main menu/Fitter's menu/Internet module/ON. Further steps are described in detail in the instruction manual for the Internet module.

⚠️ **NOTE**

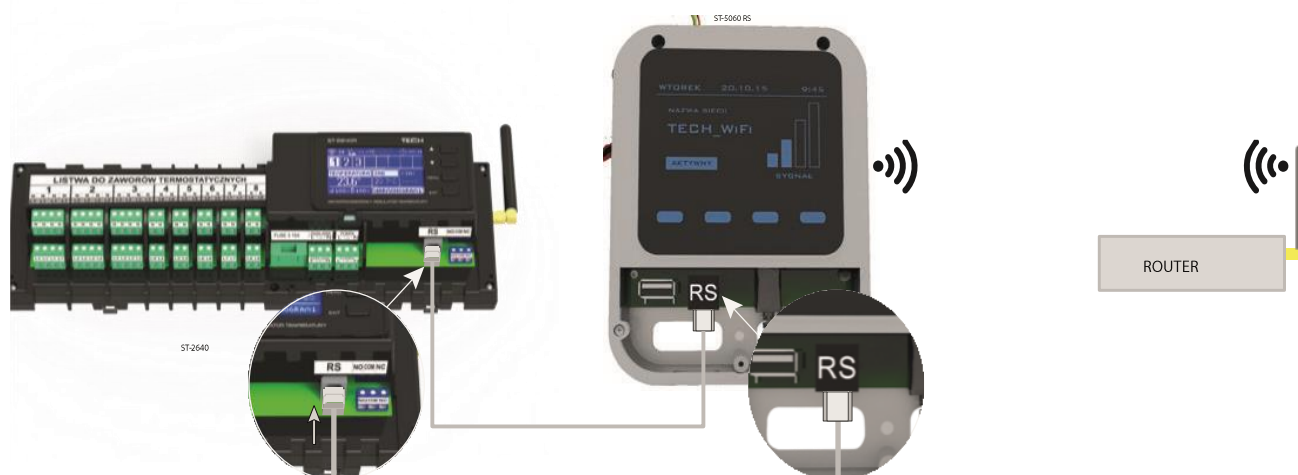The user should enable the Internet module to connect with data servers listening on TCP/2000 port. Most computer networks are protected by various software (firewalls, anti-virus software etc.) which may block data exchange with the above mentioned port. If any problems arise, contact technical support or your computer network administrator.

Step 4. Activate the external sensor

The external sensor should be registered by selecting Registration (in the controller's menu) and pressing communication button on the external sensor. Completing the registration procedure activates the sensor automatically. It may be switched off at any time by selecting OFF option.

Communication button

⚠️ **NOTE**

Deactivating the sensor in the controller menu only interrupts communication (the external temperature is no longer displayed on the controller screen) but it does not disable the external temperature sensor. The sensor remains active until the battery gets empty.

Step 5. Set current time and date

Set current time and date in the fitter's menu.

Step 6. Configure the settings for wireless thermostatic actuators STT-868

If you also use wireless actuators STT-868, it is necessary to register each actuator in a zone.

⚠ **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 controller menu, select the number of zone in which the actuator is to be registered and select Registration/Register valve.
3. Press the registration button on the actuator within 120 seconds from selecting Register valve option. After this time EU L-8 considers the registration attempt as unsuccessful.
4. If the registration process has been completed successfully, the display shows an appropriate message and informs about the number of valves registered. In the case of any errors, the display shows appropriate message. There are 3 possible causes of errors in the registration process:

   - An attempt to register more than 6 actuators.
   - An attempt to register the actuator which has already been assigned to a different zone.
   - No signal from the valve actuator within the period of 120 seconds.

Step 7. Configure the settings for the temperature sensors and the room regulators

To enable EU L-8 external controller 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, R-8z or R-8k room regulators (an additional advantage of using R-8k is the possibility of setting a weekly schedule of the pre-set temperaturę).

The user may also choose M-8 room regulator which offers additional functionalities apart from sending the current temperature readings. It serves as a master controller enabling the user to change the pre-set zone temperatures, adjust the local and global weekly schedules etc. Only one room regulator of this type may be installed in the heating system.

Regardless of the type of temperature sensor / room regulator chosen, it must be registered in a particular zone in EU L-8 controller menu.

V. WIRELESS COMMUNICATION

EU L-8 external controller may communicate with certain devices using radio signal:

		Function	Configuration
	C-8-r – room temperature sensor	sending current room temperature data	The sensor should be registered in the external controller
	C- mini - room temperature sensor	sending current room temperature data	The sensor should be registered in the external controller
	R-8b - two-state room regulator; power supply: 2xAAA 1,5V	- sending current zone temperature data - adjusting pre-set temperature directly from the zone	The room regulator should be registered in the external controller
	R-8z - 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 the external controller
	R-8k – room regulator	- sending current zone temperature data - adjusting pre-set temperature and schedule settings directly from the zone	The room regulator should be registered in the external controller

	M-8 - master room regulator (control panel)	- sending current zone temperature data - adjusting pre-set temperature and schedule settings directly from the zone - adjusting settings for different zones	The room regulator should be registered in the external controller
	C-8zr – external temperature sensor	monitoring external temperature value	The sensor should be registered in the external controller
	STT-868* - wireless thermostatic actuator	opening/closing the valve in order to maintain desired temperature value	The actuator should be registered in the external controller

● Room temperature sensor C-8r, C-mini, room regulator R-8k, M-8 - In order to register, go to *Registration* in the submenu of a given zone (*Zones / Zone 1-8 / Room sensor / Registration*) and press the communication button on the sensor to register the sensor in the controller.

If the process has been completed successfully, EU L-8 external controller display and the room regulator display will show an appropriate message. Otherwise, the process must be conducted again.

Communication button in C-8r room temperature sensor
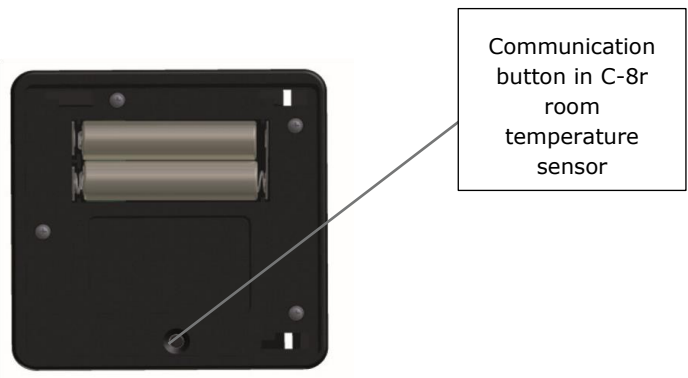
NOTE

In some versions of room regulators there is no communication button at the back of the device - then you should use PLUS button in the registration procedure. Only one regulator may be assigned to one zone.

The following rules must be kept in mind:

- The maximum of one temperature sensor may be assigned to 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 second 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 new one.

It is possible to set individual pre-set temperature value and weekly schedule for each room sensor assigned to a given zone. The settings may be configured both in the controller menu and via www.emodul.eu (using ST-507 module or WIFI RS).

VI. MAIN SCREEN VIEW AND DESCRIPTION

The user navigates in the menu structure using the buttons located next to the display.
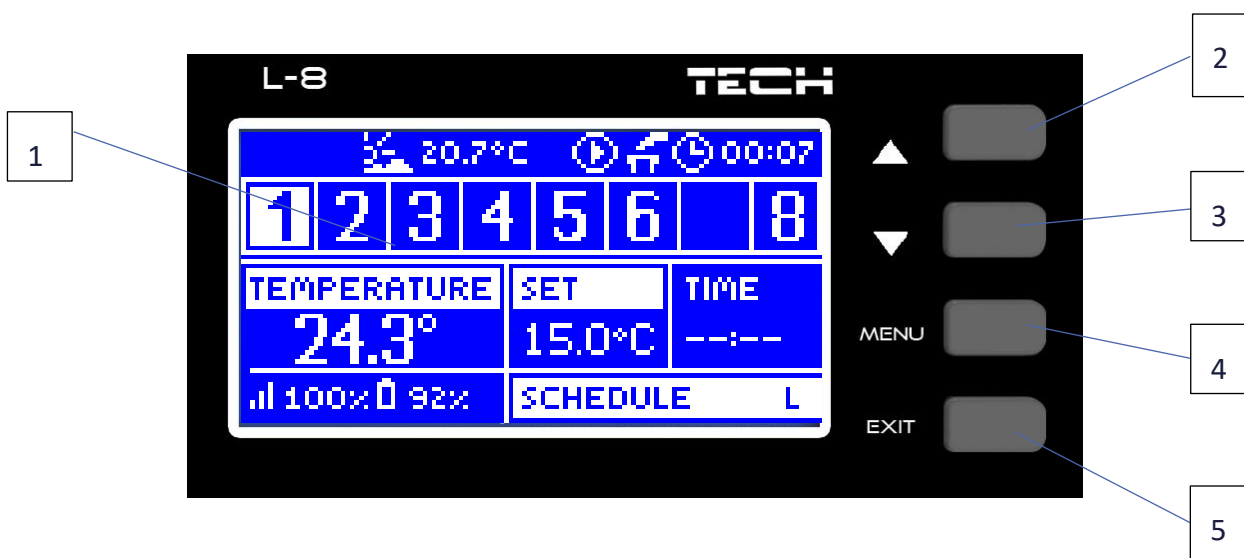
1. Display.

2. ▲ - „up" „plus" – it is used to view the menu options and increase the value while editing parameters. During standard operation the button is used to switch between different zones parameters.

3. ▼ - „down" „minus" - it is used to view the menu options and decrease the value while editing parameters. During standard operation the button is used to switch between different zones parameters.

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

5. EXIT button – it is used to exit the menu and cancel the settings.
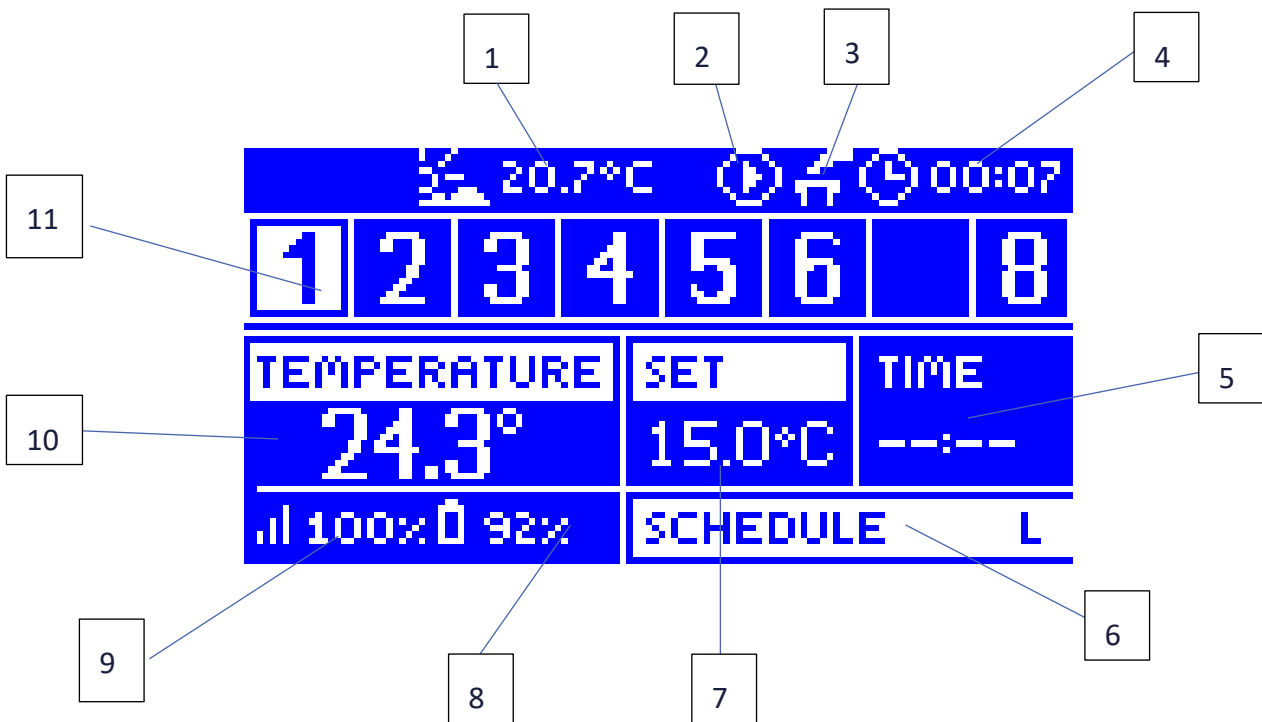
1. External temperature

2. An icon indicating pump operation

3. An icon indicating that the additional contact is switched on

4. Current time

5. Time left until the manually set temperature in a given zone changes

6. Information about the type of current weekly schedule

7. Pre-set temperature in a given zone (backlit number in the zone bar – see: description no. 12)

8. C-8-r sensor battery level in a given zone (backlit number in the zone bar – see: description no. 12)

9. C-8-r sensor signal strength in a given zone (backlit number in the zone bar – see: description no. 12)

10. Current temperature of C-8-r sensor in a given zone (backlit number in the zone bar – see: description no. 12)

11. Zone information:

12. The digit displayed indicates that the corresponding room sensor is connected and sends current temperature information. If the zone temperature is too low, the digit flashes. In the event of a zone alarm, an exclamation mark is displayed instead of the digit.

13. In order to view the operation parameters of a given zone, select its number using ▲ or ▼.
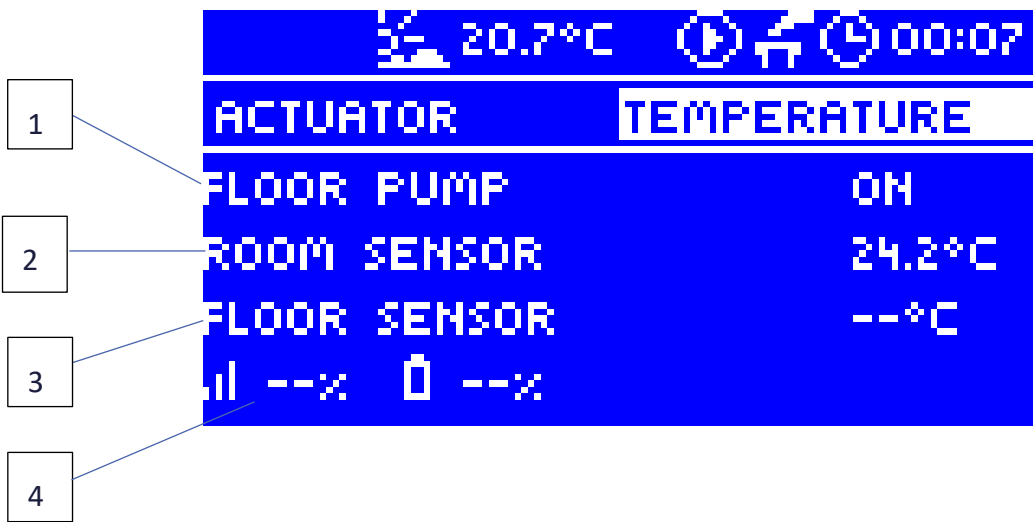
1. Floor pump ON/OFF. The floor pump is enabled when:
   - ON is selected in a given zone
   - the temperature in a given zone is too low

2. Room sensor, current temperature provided by room sensor
3. Floor sensor, current temperature provided by floor sensor
4. Signal strength and battery level of floor sensor
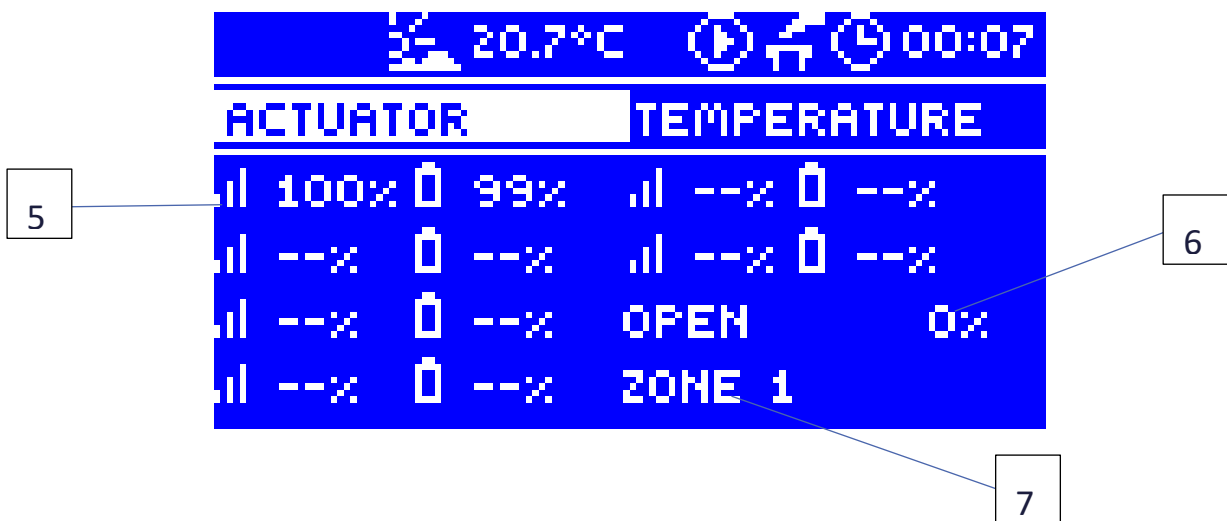
5. Signal strength and battery level
6. % of valve opening
7. Zone

VII. CONTROLLER FUNCTION

1.   BLOCK DIAGRAM – MAIN MENU

Main menu
- Screen view
  - Main screen
  - Mixing valve screen
- Manual mode
  - Pump
  - Voltage-free contact
- Zones
  - Valve 1-8
- External sensor
  - ON
  - Registration
  - External sensor correction
  - Sensor info
- Pump
  - Delay
- Language
- Display contrast
- Fitter's menu
  - Valve
  - Internet module
  - Clock
  - Set date
- Service menu
- Software version
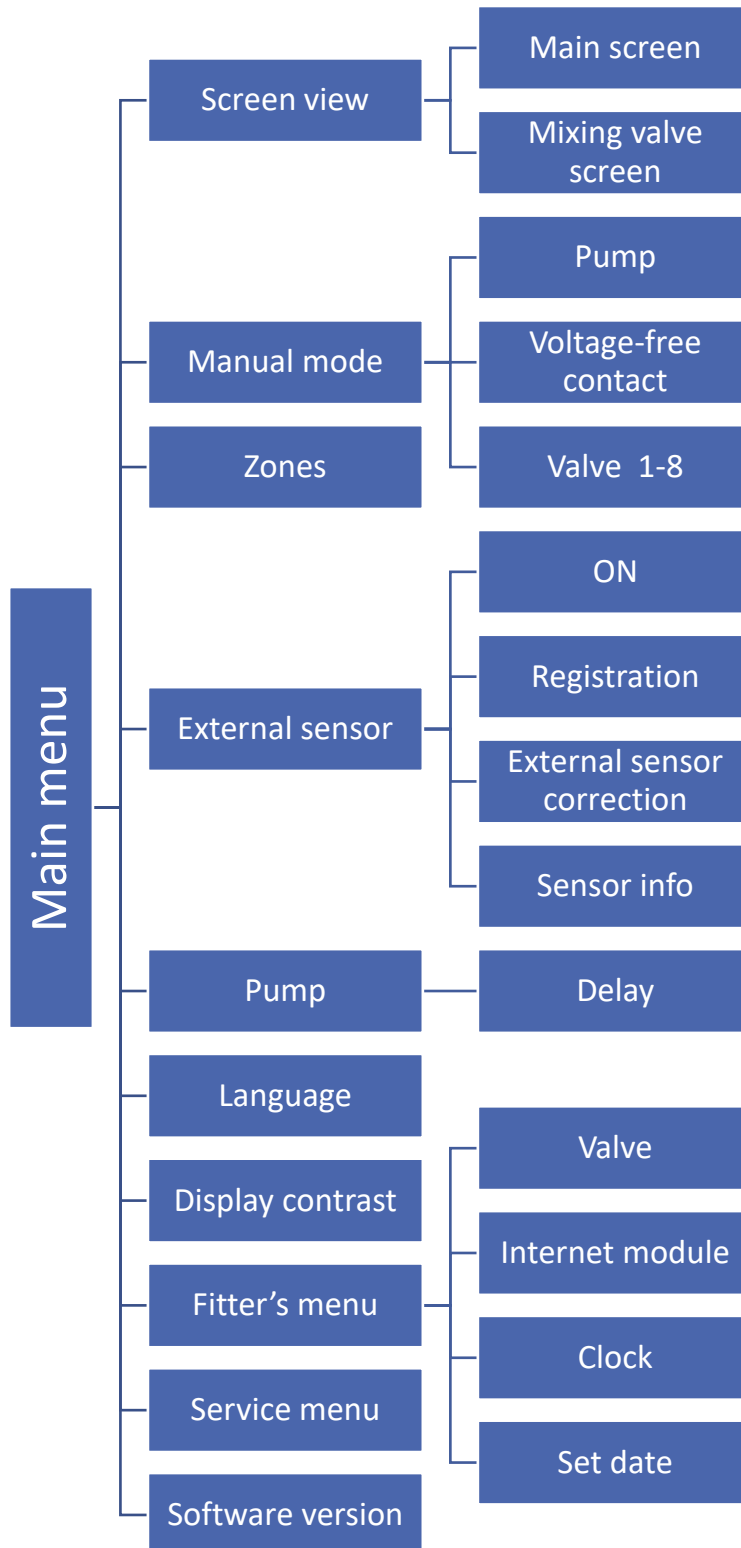
2. SCREEN VIEW

In this submenu the user may adjust the main screen view:

- Main screen – including particular zones parameters e.g. pre-set temperature, current temperature etc.
- Mixing valve screen – including mixing valve operation parameters.

Description of mixing valve screen:
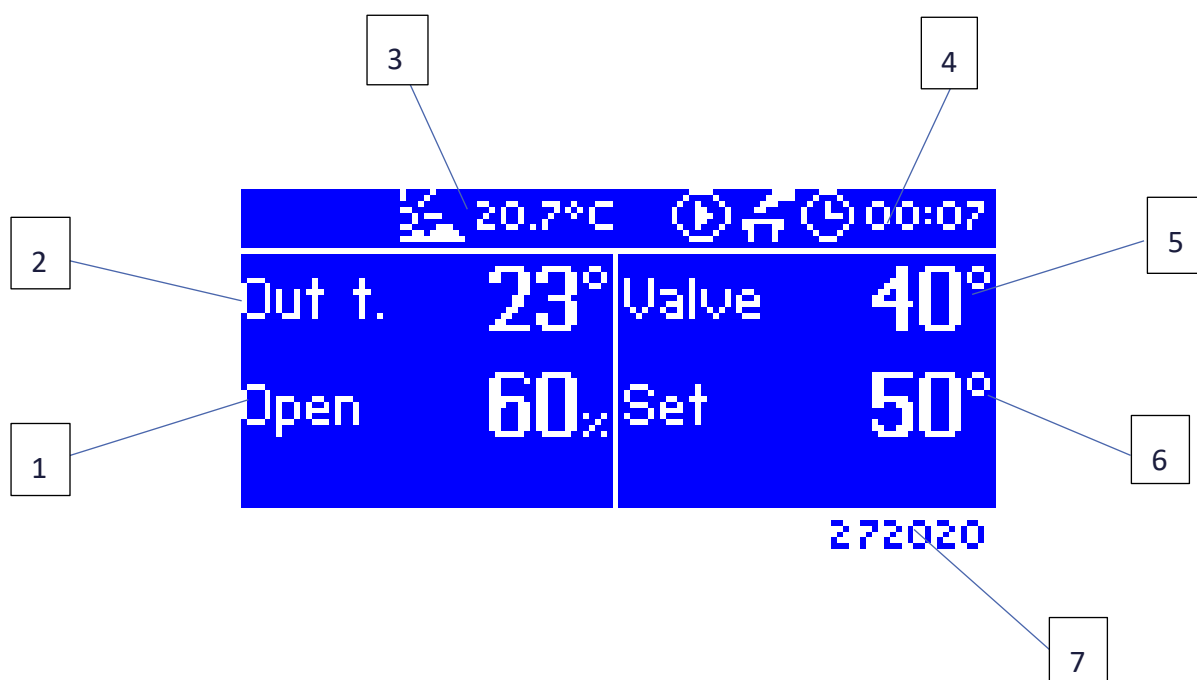
1. Valve opening
2. External temperature rounded to the nearest whole degree
3. External temperature
4. Current time
5. Current valve temperature
6. Pre-set valve temperature
7. Individual valve address (used for registration purpose)

3. MANUAL OPERATION

This function enables the user to activate particular devices (pump, voltage-free contact and valve actuators) independently of the others in order to check if they operate properly. It is advisable to check the devices using this procedure at the first start-up.

4. ZONES

This menu is described in section VIII.

5. EXTERNAL SENSOR

It is possible to connect an external temperature sensor which enables the user to view the current temperature value on the main screen.

After the external sensor has been installed, it is necessary to select Wireless in the controller menu, and register it. The registration process is described in detail in Installation section.

6. PUMP

EU L-8 controls the pump operation by activating it (after the delay time) if the temperature in any of the zones is too low. If the pre-set temperature of each zone is reached, the controller disables the pump.

Delay function enables the user to define the activation delay time after the temperature of any zone drops below the pre-set value. Activation delay is used to ensure enough time for the valve to open.

7. LANGUAGE

This option is used to select the language version.

8. DISPLAY CONTRAST

This option is used to adjust the display contras to individual user's needs.

9. FITTER'S MENU

This menu is described in section IX.

10. SERVICE MENU

In order to activate service options, it is necessary to enter a 4-digit code provided by TECH company.

11. SOFTWARE VERSION

When this option is selected, the display shows the logo of the CH boiler manufacturer and the controller software version.

VIII. ZONES

12. BLOCK DIAGRAM OF ZONES MENU

```
Zone 1-8
├── OFF
├── ON
├── Pre-set temp.
├── Weekly control
│   ├── Own
│   └── Schedule 1-5
├── Room sensor
│   ├── Calibration
│   ├── Hysteresis
│   └── Registration
├── Floor heating
│   ├── Floor sensor
│   │   ├── Calibration
│   │   ├── Hysteresis
│   │   └── Registration
│   ├── OFF
│   ├── Floor protection
│   ├── Sustain
│   ├── Min. temperature
│   └── Max. temperature
├── Actuator
│   ├── Sigma
│   │   ├── ON
│   │   ├── Minimum opening
│   │   ├── Maximum opening
│   │   └── Range
│   ├── 0 register valve
│   ├── Vakve removal
│   └── Protection
│       ├── ON
│       └── Range
└── Floor pump
    ├── ON
    └── OFF
```

This submenu enables the user to configure operation parameters for particular zones. When the pre-set temperature value in a zone is reached, EU L-8 controller labels the zone as sufficiently heated and the status remains unchanged until the temperature drops below the pre-set temperature by hysteresis value. When the temperature in all the zones is sufficient, the controller disables both the pump and the voltage-free contact.

13. OFF/ON

After the room sensor has been connected and registered in a given zone, it is used by EU L-8 controller. <OFF> is the default setting for this option. It may be activated when the room sensor is registered.

14. PRE-SET TEMP.

The pre-set zone temperature depends on the weekly schedule settings. However, this function enables the user to change this value separately.

After the value has been set, the user defines how long the temperature should apply. When the time elapses, the pre-set temperature depends on the weekly schedule again. After pressing MENU button in this submenu, the display shows application time screen (permanent, temporary). If the user sets 00:00 as the time, the temperature will apply for indefinite period of time.

The main screen displays current pre-set temperature value and the time left (see: Main screen description).

15. WEEKLY CONTROL

EU L-8 controller offers two types of weekly schedules:

Own – local schedule

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

1..5 schedules – global schedule

These schedules have universal settings for all zones and they cannot be edited in the external controller (to introduce changes it is necessary to connect to the Internet via the Internet module).

In order to assign a schedule to a given zone, choose Select option.

In order to adjust the global schedule as the current schedule in a given zone, choose Edit option. After the schedule has been modified and saved, it is overwritten as a local schedule.

The type of weekly schedule assigned to a given zone is displayed in the main screen (See: Main screen description – screen area no. 6).

16. ROOM SENSOR

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

- **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 $0 \div 5^{\circ}C$) with the accuracy of $0,1°C$.

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

- **Registration -** C-8-r temperature sensor should be registered in each zone. In order to register, go to Zones->Zone 1-8 -> Room sensor -> Registration and press the communication button on the temperature sensor.

17. FLOOR HEATING

- **Floor sensor**

  Room sensor calibration should be performed while mounting or after it has been used for a long time, if the temperature displayed by the floor sensor differs from the actual temperature. Calibration setting range is from -10°C to +10°C with the accuracy of 0,1^{O}C.

  Hysteresis - this function is used to define tolerance of the threshold temperature (minimum or maximum - depending on selected option) in order to prevent undesired oscillation in case of small temperature fluctuation (within the range 0 ÷ 5°C) with the accuracy of 0,1°C.

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

  Registration - Temperature sensor should be registered in each zone. In order to register floor sensor, go to Zones-> Zone 1-8 -> Floor heating -> Floor sensor -> Registration.

- **OFF** – Once this option is selected, floor heating function will remain in standard floor heating mode (heating the room until the pre-set temperature of the room sensor is reached).

- **Floor protection** – Once this option is selected, EU L-8 external controller will check if the temperature detected by the floor sensor is not higher than the pre-set maximum temperature. When this value is reached, STT-230 actuators will switch off closing the circulation in a given zone.

- **Sustain** – Once this option is selected, EU L-8 external controller will check if the temperature detected by the floor sensor is not higher than the pre-set maximum temperature. When this value is exceeded, STT-230 actuators will switch off closing the circulation in a given zone. When the temperature is lower than the pre-set minimum temperature, the external controller will activate STT-230 actuators in order to increase the floor temperature.

- **Min. temperature** – this parameter is used to define the threshold temperature protecting against cooling down of the floor.

- **Max. temperature** – this parameter is used to define the temperature threshold protecting against floor overheating.

18. ACTUATOR

- **Sigma -** SIGMA function enables smooth control of the thermostatic actuator. The user may define the maximum and minimum valve opening – the level of valve opening and closing will never exceed these values.

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

⚠ **NOTE**

SIGMA function is available only with STT-868 actuators.
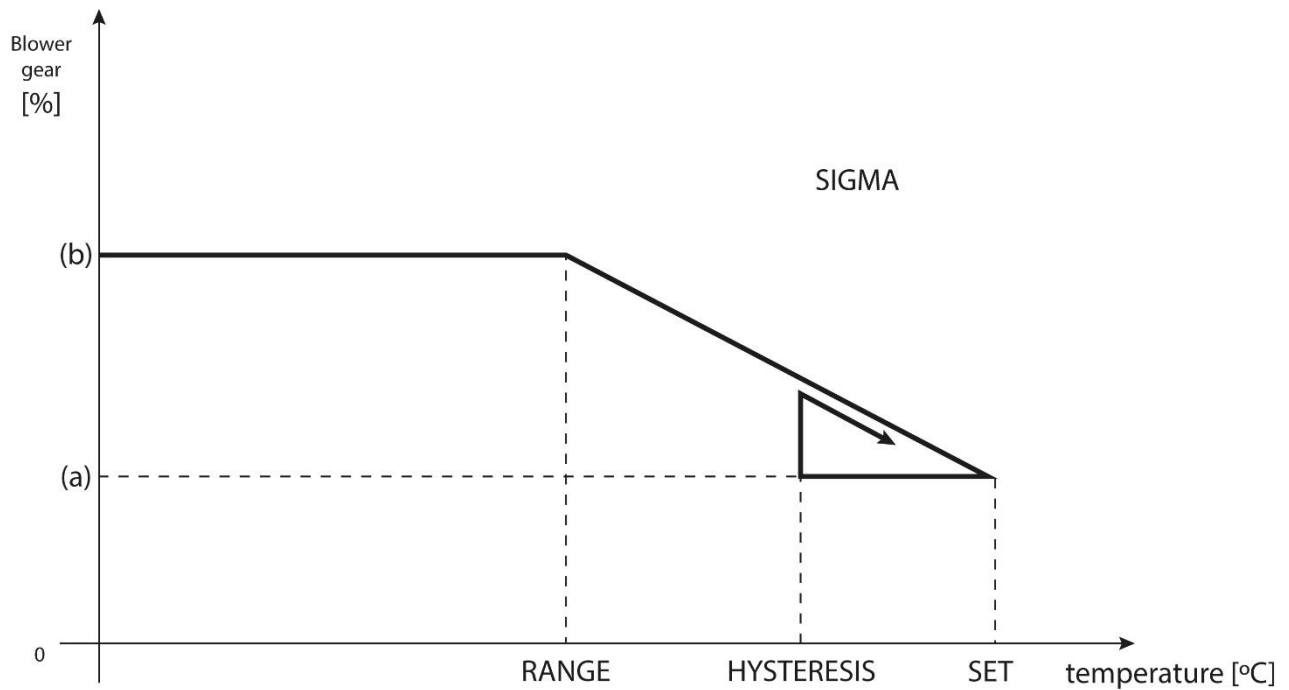
(a) - min. opening
(b) - Actuator opening
ZAD - set temperature

Example:

Pre-set zone temperature: 23˚C

Minimum opening: 30%

Maximum opening: 90%

Range: 5˚C

Hysteresis: 2˚C

With the above settings, the valve starts closing if the zone temperature reaches 18˚C (the pre-set value minus range: 23-5). The minimum opening is reached when the zone temperature reaches the pre-set value.

After the pre-set value has been reached, the zone temperature starts falling. When it reaches 21˚C (pre-set value minus hysteresis: 23-2) the valve starts opening. It reaches the maximum opening when the zone temperature is 18˚C.

- **(0) Register valve** – This option concerns wireless thermostatic actuators STT-868 – the registration process is described in detail in First start-up.

  The number of registered valves is displayed next to *Register valve* icon (max. 6).
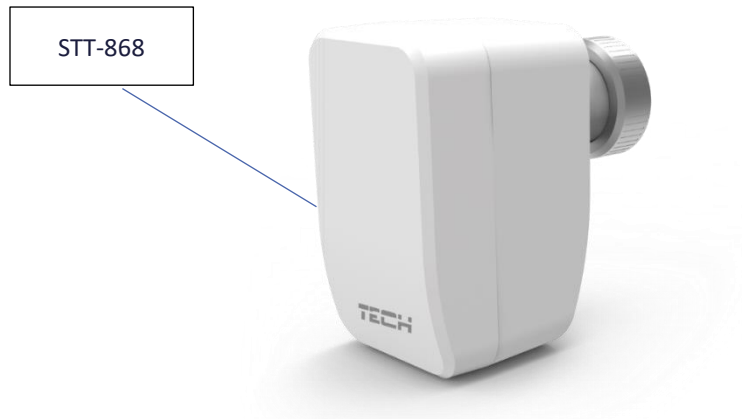
STT-868

- **Remove valve** – This option is used to remove all previously registered wireless thermostatic actuators STT-868 from the external controller memory.

- **Protection** – Once this option is selected, the external controller will monitor the temperature. If the pre-set temperature is exceeded by the number of degrees defined in *<Range>* parameter, all actuators in a given zone will be closed (0% opening). This function may be active only when sigma function has been activated.
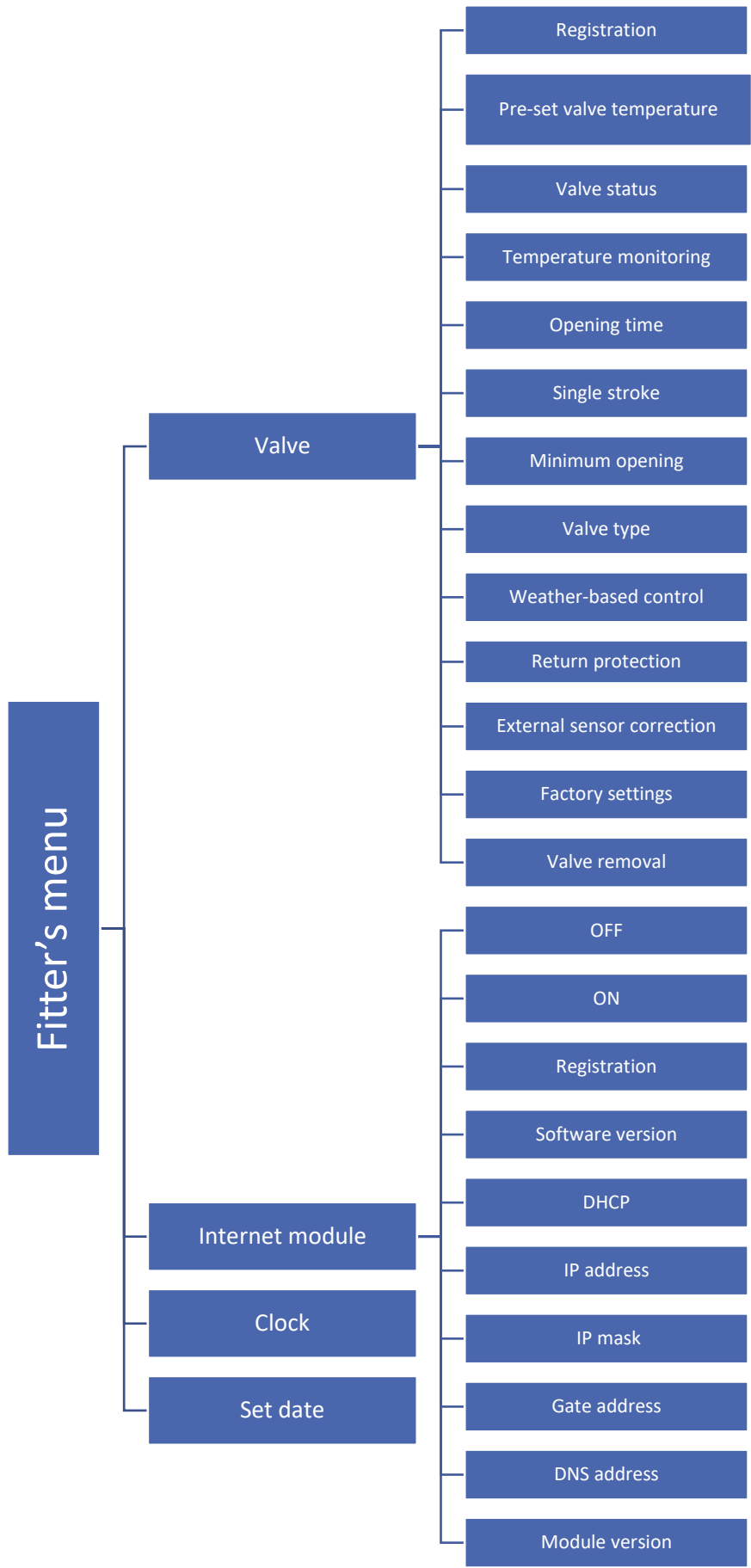
19.   FLOOR PUMP

This function is used to disable the floor pump temporarily.

IX. FITTER'S MENU

20.   BLOCK DIAGRAM - FITTER'S MENU

```
Fitter's menu
├── Valve
│   ├── Registration
│   ├── Pre-set valve temperature
│   ├── Valve status
│   ├── Temperature monitoring
│   ├── Opening time
│   ├── Single stroke
│   ├── Minimum opening
│   ├── Valve type
│   ├── Weather-based control
│   ├── Return protection
│   ├── External sensor correction
│   ├── Factory settings
│   └── Valve removal
├── Internet module
│   ├── OFF
│   ├── ON
│   ├── Registration
│   ├── Software version
│   ├── DHCP
│   ├── IP address
│   ├── IP mask
│   ├── Gate address
│   ├── DNS address
│   └── Module version
├── Clock
└── Set date
```

21. VALVE

EU L-8 external controller may control an additional valve via valve module (e.g. ST-431N). The devices communicate using RS communication but it is necessary to register first.

There is a range of parameters to configure valve operation and adjust it to individual needs.

> ➢ **Registration -** Configuring particular parameters of additional valve is possible only after it has been properly registered by entering the module number (the number may be found at the back of the control module cover or in Software version submenu).

> ➢ **Pre-set valve temperature** - This function is used to define the pre-set valve temperature measured by the valve sensor.

> ➢ **Valve status -** This function is used to deactivate the valve temporarily. The valve may be activated again without the need to register it again.

> ➢ **Temperature monitoring -** This parameter determines the frequency of water temperature measurement (control) behind the CH valve. If the sensor indicates a change in temperature (deviation from the pre-set value), the electric valve will open or close by the pre-set stroke, in order to return to the pre-set temperature.

> ➢ **Opening time -** This parameter defines the time needed for the valve actuator to open the valve from 0% to 100% position. This value should be adjusted to the value given on the actuator rating plate.

> ➢ **Single stroke -** This is the maximum single stroke (opening or closing) that the valve may make during one temperature sampling. The smaller the single stroke, the more precisely the set temperature can be achieved. However, it takes longer for the set temperature to be reached.

> ➢ **Minimum opening-** The parameter determines the smallest valve opening. Thanks to this parameter, the valve may be opened minimally, to maintain the smallest flow.

> ➢ **Valve type -** this option is used to select the valve type:

> - CH - select this option if you want to control CH circulation temperature.

> - FLOOR - select this option if you want to control the floor heating temperature. It protects the underfloor heating installation against dangerous temperature. If the user selects CH as the valve type and connects it to the underfloor heating system, the fragile floor installation may be damaged.

> ➢ **Weather-based control -** For the function of weather control to be active, the external sensor mustn't be exposed to sunlight or influenced by the weather conditions. After it is installed in an appropriate place, weather control function needs to be activated in the controller menu.

In order for the valve to operate correctly, the user defines the pre-set temperature (behind the valve) for 4 intermediate external temperatures: -20ºC, -10ºC, 0ºC and 10ºC. In order to configure the pre-set temperature value, use arrows UP and DOWN to select particular external temperature and use arrows UP and DOWN to set desired temperature value.

Heating curve – it is a curve according to which the pre-set controller temperature is determined, on the basis of external temperature. In our controller, this curve is constructed on the basis of four pre-set temperatures for respective values of external temperatures.

The more points constructing the curve, the greater its accuracy, which allows its flexible shaping. In our opinion, four points seem a very good compromise ensuring decent accuracy and easiness of setting the course of this curve.

⚠ **NOTE**

Once weather-based control is active, *Pre-set valve temperature* parameter is not available (Main menu --> Fitter's menu --> Valve --> Pre-set valve temperature).

➢ **Return protection -** This function enables the user to set boiler protection against too cool water returning from the main circulation, which could cause low-temperature boiler corrosion. The return protection involves closing the valve when the temperature is too low, until the short circulation of the boiler reaches an appropriate temperature level. Once it is activated, the user presets the minimum acceptable return temperature.

➢ **External sensor correction** - External sensor correction should be performed during installation or after a longer period of using the regulator when the temperature measured by the sensor is different from actual temperature. Range of regulation is -10 to +10 ºC with the accuracy of 0,1ºC.

➢ **Factory settings** - This parameter is used to restore the factory settings of a given valve.

➢ **Valve removal -** This option is used to remove the valve from the controller memory. Valve removal is used e.g. at disassembling the valve or module replacement (re-registration of a new module is necessary).

22.   INTERNET MODULE

The Internet module may be connected to EU L-8 via RS cable. After it has been connected, select Registration. The controller generates a code which the user should enter on the Internet website. Detailed description of the procedure is available in the Internet module instruction manual.

Internet module is a device enabling the user remote control of the regulator via the Internet. The user controls the status of all valves on the home computer screen.

After switching the module on and selecting DHCP option, the controller automatically downloads such parameters as IP address, IP mask, gateway address and DNS address from the local network. If any problems arise when downloading the network parameters, they may be set manually. The procedure of obtaining these parameters is described in detail in the instruction manual of the Internet Module

```
INSTALLER MENU
Valve
Internet module
Timer
Set date
```

```
INTERNET MODULE
• Disabled
  Enabled
  Registration
  Program info
```
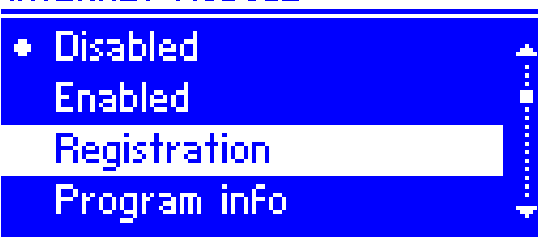
NOTE

EU L-8 controller may cooperate with the Internet module, which enables the user to view and adjust certain parameters via the Internet. Such online control is possible only after purchasing and connecting an additional module ST-507 or WiFi RS.
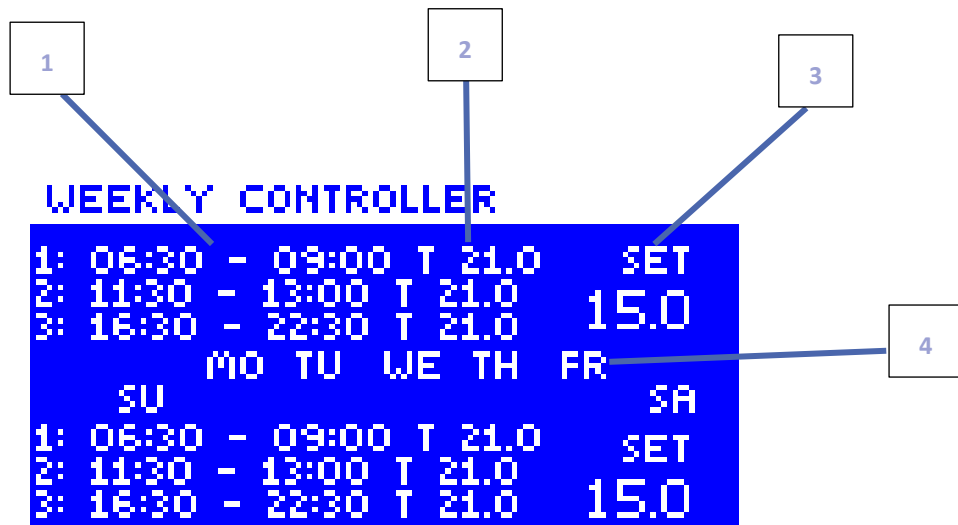
23. TIME

This function is used to set current time.

24. SET DATE

This function is used to set current date.

X. OWN SCHEDULE SETTINGS

Once the schedule has been selected (Menu -> Zones -> Zone 1-8 -> Weekly control), the user may select, view and edit a given schedule.

Schedule view screen:

1. Time periods
2. Pre-set temperaturę for time periods
3. Pre-set temperaturę outside time periods
4. Days when the above settings will apply

NOTE

The user may program 3 different time periods in a given schedule (with the accuracy of 15 minutes).

Follow these steps to configure the schedule:

- Use arrows UP and DOWN to set the starting time for the first time period. Press MENU to confirm.

- Use arrows UP and DOWN to set the finishing time for the first time period. Press MENU to confirm.

- Use arrows UP and DOWN to define the pre-set temperature for the first time period. Press MENU to confirm.

- Once the time periods are ready, use arrows UP and DOWN to define the pre-set temperature which will apply outside these periods. Press MENU to confirm.

- Select the days when a given schedule will apply. Use UP arrow to switch between days and DOWN arrow to select the days. Selected days will be highlighted in white. Press MENU to confirm.

When the schedules for all days are ready, confirm the settings by pressing MENU. Active option will be highlighted in white.

XI. UNREGISTER A SINGLE ACTUATOR

The user may unregister a single actuator by forcing communication. In order to do it, press the communication button on a given actuator and hold it until the control light flashes twice. The following screen will appear on EU L-8 display:
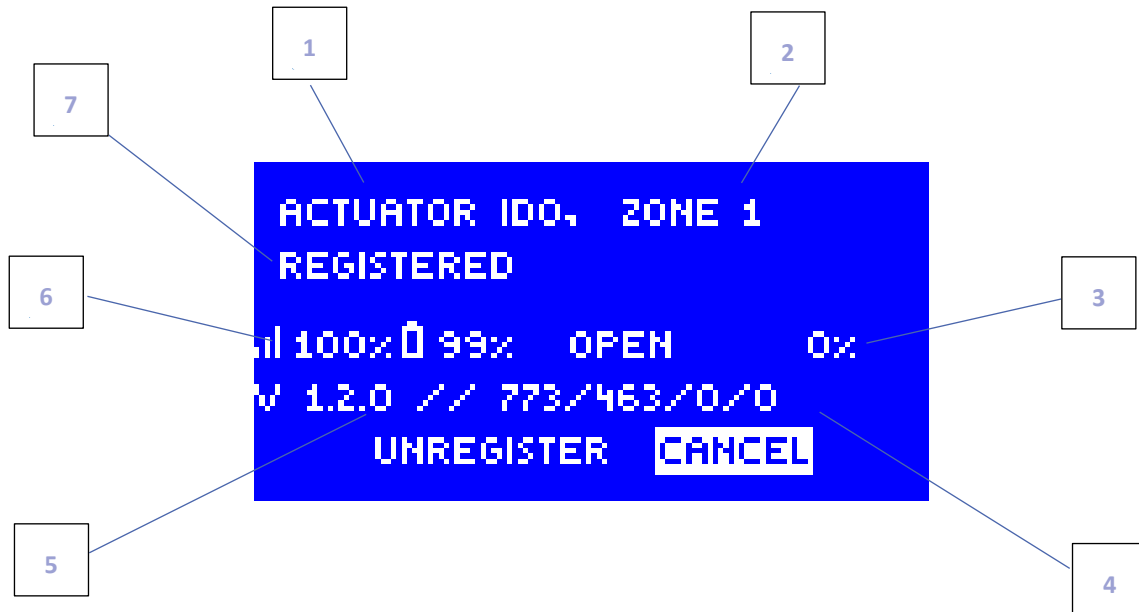
1. Actuator ID
2. Actuator zone
3. % opening actuators
4. Service details
5. Actuator software version
6. Range and battery level
7. Actuator status info

In order to unregister a given actuator, use ▲ or ▼ to select <Unregister> and confirm by pressing MENU button.

XII. PROTECTIONS AND ALARMS

In order to ensure safe and failure-free operation, the regulator has been equipped with a range of protections. In case of an alarm, a sound signal is activated and the display shows a message informing about the detected problem.

Alarm type	Possible cause	Solution
Actuator alarm – ERROR #0	Actuator batteries are flat	Replace the batteries
Actuator alarm – ERROR #1	Damage of mechanical or electronic parts	Call for the service staff
Actuator alarm – ERROR #2	- No piston controlling the valve - Too big stroke (movement) of the valve - The actuator has been incorrectly mounted on the radiator - Inappropriate valve in the radiator	- Install a piston controlling the actuator - Check the valve stroke - Install the actuator correctly - Replace the valve on the radiator
Actuator alarm – ERROR#3	- The valve got stuck - Inappropriate valve on the radiator - Too little stroke (movement) of the valve	- Inspect the valve operation on the radiator - Replace the valve on the radiator - Check the valve stroke
Actuator alarm – ERROR #4	- Out of range - No batteries	- The actuator is too far from the controller - Insert batteries into the actuator After the communication is reestalished, the alarm is deactivated automatically

Automatic sensor control

In the event of temperature sensor damage or external sensor damage, an alarm is activated informing the user about the type of failure e.g. 'Alarm. No communication'.

The alarm remains active until the problem is solved (inserting new batteries or replacing the sensor) and the alarm is deleted from the external controller level.

<u>How to delete the alarm in the external controller</u>

Select the zone where the alarm has occurred (an exclamation mark is displayed instead of the external controller number). Press EXIT - the screen will display two options: Reset.

The external controller will attempt to communicate with the sensor for a few minutes. The valve remains in alarm position (closed - pre-set zone temperature reached) until the communication is established. If the communication attempt is not successful, the alarm will be activated again.

OFF

This function is used to deactivate the zone. The zone may be activated again with ON option - Main menu / Sensors / Zone 1...8.

This alarm may also be deleted via the website. If the alarm has been caused by flat batteries, it will be deactivated automatically when the batteries are replaced.

Fuse

The regulator has a WT 6,3A tube fuse-link (5x20mm) protecting the network.

NOTE

Higher amperage fuse should not be used as it may damage the controller.

XIII. SOFTWARE UPDATE

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 at the same time holding EXIT button. It is necessary to hold EXIT button until a single sound signal is heard – it signalises that the software update process has been initiated. After it has been completed, the controller restarts automatically.

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.
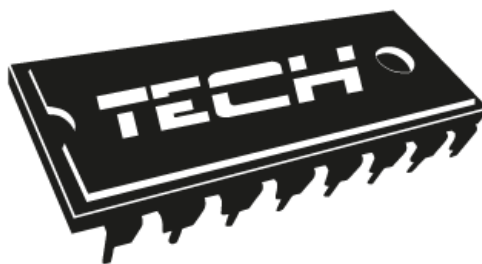
NOTE

Do not switch the controller off while updating the software.

EU Declaration of Conformity

Hereby, we declare under our sole responsibility that ST-294 room regulator 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;

- Directive **2009/125/EC** establishing a framework for the setting of ecodesign requirements for energy-related products;

- the regulation by the Ministry of Economy of May 8, 2013 'concerning the essential requirements as regards the restriction of the use of certain hazardous substances in electrical and electronic equipment', implementing provisions of **ROHS** directive **2011/65/EU.**

For compliance assessment, harmonized standards were used:

PN-EN 60730-2-9 :2011 par. 3.1a Safety of use

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

ETSI EN 301 489-3 V2.1.1 (2017-03) par.3.1 b Electromagnetic compatibility

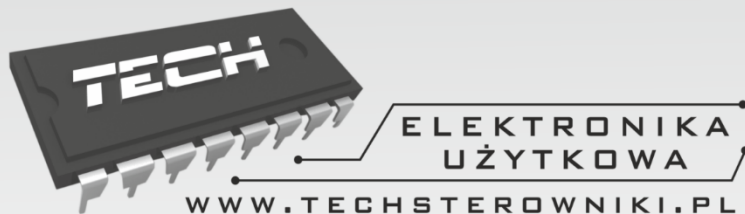ETSI EN 300 220-2 V3.1.1 (2017-02) par.3.2 Effective and coherent use of radio spectrum

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

PAWEŁ JURA   JANUSZ MASTER
WŁAŚCICIELE TECH SPÓŁKA Z OGRANICZONĄ ODPOWIEDZIALNOŚCIĄ SP. K.

Wieprz, 22.08.2017