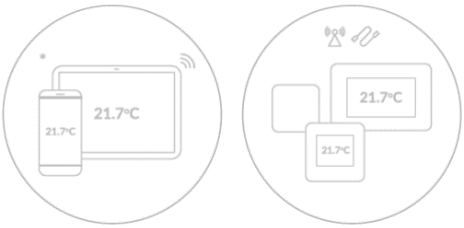
The ecoFLOOR controller for underfloor heating system

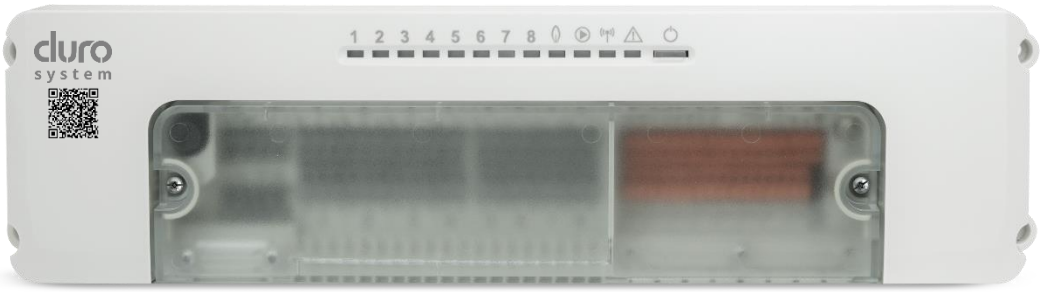
Type: L8 RF BT

Cat. No. D/S-SP-PBL-L8RF-BT

Additional equipment:

Wireless thermostat
Wired thermostat
Web module
Thermostatic actuators





OPERATING AND INSTALLATION MANUAL

ISSUE: 1.8_EN

TABLE OF CONTENTS

1 Recommendations regarding safety

- The controller can be assembled only by qualified installer and in accordance with currently valid standards and regulations.
- Before starting the assembly, repairs or maintenance and during the execution of any connection works, it is necessary to switch off the mains supply and make sure that no terminals no electrical wires are energized.
- Attention: disconnecting cable powering the controller does not guarantee complete disconnection. Apart from the power cable an additional source of hazardous voltage may be the electrical connection to the heat source.
- The electrical system in which the controller operates should be three-wired and protected with a differential-current circuit breaker and a fuse selected according to the apllied loads.
- The controller can be utilized only in accordance with its intended use.
- Use additional, independent automatics protecting the underfloor heating system against overheating.
- The controller cannot be used with damaged housing.
- Under no circumstances should you modify the design of the controller.
- The controller should be cleaned with dry and soft cloth. It is not allowed to clean the device with flammable agents or substances (e.g. benzene or any solvent), or with a wet cloth. Cleaning in this manner may damage the controller or create a fire or electric shock hazard.
- Values of programmed parameters have to be selected for a given building and type of underfloor installation.
- Only dedicated temperature sensors and thermostats produced by the controller's manufacturer should be connected to the controller.
- Prevent access to the controller for persons unfamiliar with this manual, especially children.

2 General information

The ecoFLOOR, 2 series controller supports thermoelectric actuators for eight heating zones and obtains information about the current temperature in the zones from room panels and thermostat, and temperature sensors placed in the individual zones. The controller allows for significant saving of heat energy consumption thanks to precise temperature regulation in individual rooms of heating zones of the building. Configuration and operation of the heating zones is carried out from the room panel menu or the mobile application. Basic functions:

- Support for up to 8 heating zones, expandable to 32 zones,
- Support for thermoelectric actuators,
- Smooth control of preset temperature in the heating zones based on temperature readings from temperature sensors, room panels or thermostats,
- Support for the heat source and heat source pump,
- Switching between heating and cooling mode,
- On-line support of heating zones via Web service,
- Operation of the controller from the level of the mobile application via BT.

The controller can be used within a household and industrial buildings.

3 Information about documentation

This assembly and operation manual, as well as any other applicable documentation, should be stored diligently, so that it was available at any time. In the case of removal or sale of the device, the attached documentation should be handed over to the new user.

4 Storage of documentation

This assembly and operation manual, as well as any other applicable documentation, should be stored diligently, so that it was available at any time. In the case of removal or sale of the device, the attached documentation should be handed over to the new user.

5 Applied symbols

In this manual the following symbols are used:

- useful information and tips,

- important information, failure to observe these can cause damage of property, threat for human and household animal health and life.

Caution: the symbols indicate important information, in order to make the manual more lucid. Yet, this does not exempt the user from the obligation to comply with requirements which are not marked with symbol.

6 Declaration of conformity

Purchased product complies with Directive of the European Parliament and of the Council 2014/53/EU 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 is not a source of harmful interference to radio communications for other devices in a residential area, provided that the product has been installed and used in accordance with the requirements of this manual. The full text of the Declaration of Conformity is available at the manufacturer's website: arka-instalacje.pl

7 Directive WEEE 2012/19/UE

Purchased product is designed and made of materials of highest quality.

The product meets the requirements of the **Directive 2012/19/EU of 4 July 2012 on waste electrical and electronic equipment (WEEE)**, according to which it is marked by the symbol of crossed-out wheeled bin (like below), meaning that product is subjected to separate collection.

Responsibilities after finishing a period of using product:

- dispose of the packaging and product at the end of their period of use in an appropriate recycling facility,
- do not dispose of the product with other unsorted waste,

- do not burn the product.

By adhering obligations of waste electrical and electronic equipment-controlled disposal mentioned above, you avoid harmful.

8 The controller support

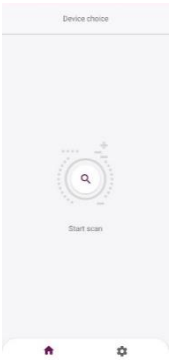
The controller is operated and configured via a BT connection (via e.system mobile application), a controller "F" function button, a ecoSTER90 EF room panel, a https://e-durosystem.pl Website.

8.1 Operation via mobile application

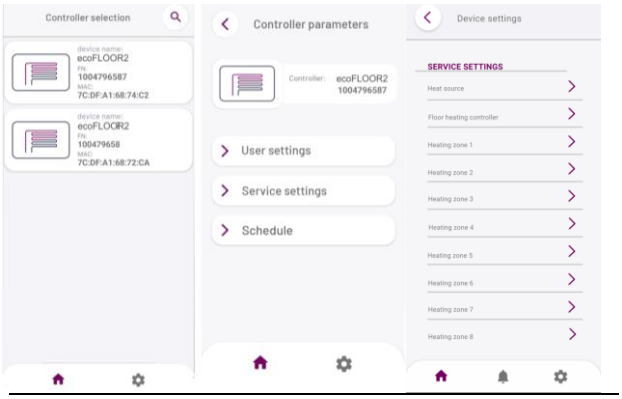
Using a BT connection, the controller works with the e.system mobile application for Android (Note: only from Android 8.0). The application enables full configuration and operation of the controller menu via a mobile device. The application is accessible from the QR code below.

https://play.google.com/store/apps/details?id=com.arka.pl.esystem

After turning on the mobile application, search for the controller by its FN factory number and confirm its selection. The controller must be connected to the mains power supply beforehand.



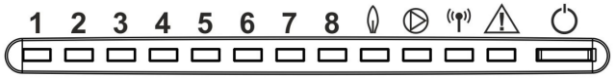
Confirmation of the selection enables support parameters of the controller's user menu, in accordance with the descriptions in section 8.3…8.8 and the service menu, in accordance with section 14.



The FN factory number can be read from the label plate of the controller or from the room panel *Information* menu.

8.2 Operation via a function key

The controller uses a function key "F" for configuring its operation and LED indicators which change its color intensity and blink depending on the activity.



Description of indicators:

▭ 1…8 – current operation status of heating zones and controller's configuration (configuration menu, address settings, pairing, restoring factory settings) according to section 15.

- heat source operation;
- pump operation;
- active radio connection;
- alarms;
- function key "F" and power indicator.

Configuration of controller and heating zones is described in section 15

8.3 Operation from the level of room panel

When configuring controller for the first time it is recommended to use System configuration wizard in the service menu, section 14

The parameters are operated and edited by touching the selected symbol on the room panel screen, where the main symbols mean:

- heating zones settings,

- heat source and heating zones schedule,

- User settings menu and Service settings menu,

, , ● ○ ○ - current screen and screen change for different heating zones,

- list of active alarms,

- active connection to the https://e-durosystem.pl Website.

- heating of the heating zone.

- cooling of the heating zone.

- if the dew point sensor detects the accumulation of excessive moisture, the heat source will be turned off. The function works only when the heat source is in cooling mode. If there is no room panel connected, the operation is performed using the function button of the controller.

8.4 Preset temperature settings

Preset temperature of selected zone is set by touching the screen with current temperature value for given zone.

Tip: color change under zone temperature value signals whether the temperature is below (blue) or above (red), or the same (green) as the preset temperature.

Preset temperature for heating zone can only be set when sensor or thermostat controlling the zone operation is assigned to a given zone - when it is not assigned then „---„ signs will be displayed on the screen in a place of current temperature value.

8.5 Heating zone settings

Touching symbol displays the parameters:

- *Zone name* – own name of the zone, e.g. "Living room".
- *Hysteresis* – when underfloor circuit reaches preset temperature, then the heating zone deactivates. When circuit temperature drops by a value of Hysteresis heating zone activates. The parameter is visible if a thermostat/sensor temp. is assigned to the zone.
- *Preset day temperature* - circuit temperature for Day mode. The parameter is visible if a thermostat/sensor temp. is assigned to the zone.
- *Preset night temperature* - circuit temperature for Night mode.
- *Antifreeze temperature* - temperature of the heating zone for the OFF mode, below which the underfloor circuit will not be turned off in order to protect the circuit against freezing.

In the period of frost risk, do not disconnect the controller from the mains supply.

Preset day temperature	Optimal temperature in the room that provides the best thermal comfort for the user, e.g. during the day.
Preset night temperature	The temperature to which the room temperature will be reduced, e.g. at night or when the user leaves the room.

Pressing the symbol allows to Select zone thermostat. Available selection: *None, Control panel, Temperature sensor, eSTER_x20 (wireless), eSTER_x40 (wireless), xTherm30r (wireless), xTherm60p, xTherm60r (wireless).*

8.6 Operation modes settings

Operation mode of the heating zone, which will suit the user's preferences, is selected by the symbol on the screen in the place where the preset temperature of the zone is

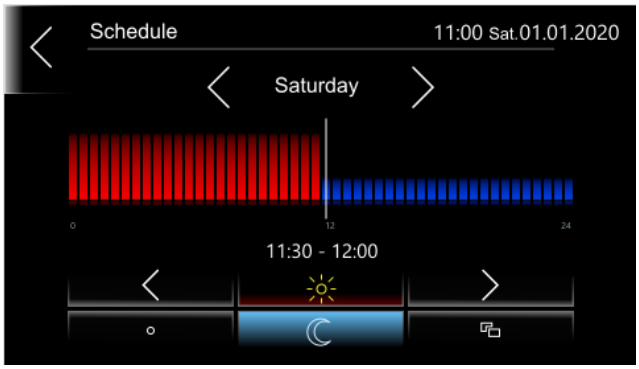
changed. Operation mode can be selected separately for each zone.

Operation mode	
Day	Preset room temperature is constant and corresponds to the entered *Preset day temperature* value.
Day schedule	Preset room temperature is maintained at the same set time periods as the *Preset day temperature*.
Night	Preset room temperature is constant and corresponds to the entered *Preset night temperature* value.
Night schedule	Preset room temperature is maintained at the set time periods as the *Preset night temperature*.
Off	The relevant heating zone is switched off. In this mode, Antifreeze works, where the default value of the preset temperature is 9°C. The value of the preset temperature for antifreeze can be changed on the screen for setting the heating zones.
Auto	Preset room temperature is switched between *Preset day temperature* and *Preset night temperature* depending on clock indications and defined time programs for particular days of the week.

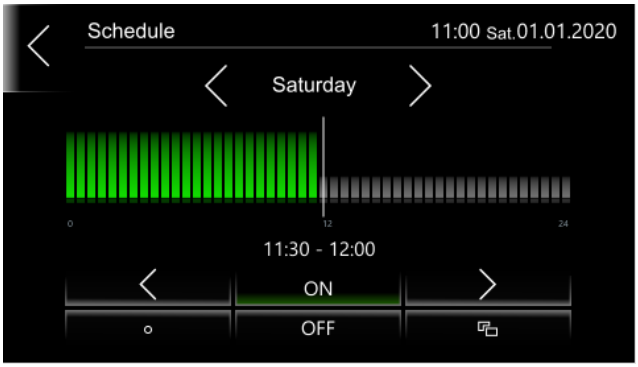
8.7 Time schedules

The controller includes a function of programming time schedules. In the situation when user is out of the home or at night, the controller can decrease the amount of supplied heat/electric energy what affects fuel consumption.

Time schedules for decrease preset temperature are defined separately for circuits and circulation pump. Time schedules can be set separately for each day of the week.



The ON/OFF time schedule is defined separately for main heat source. Time schedule can be set separately for each day of the week.



Symbols meaning:

- selection of the day of the week

- selection of the time period. The daily interval is set every 30 minutes.

- *copying the currently set time period to any day of the week.*

- for the heating zone, the preset room temperature is set to the *Preset night temperature* value.

OFF - the heat source is turned off.

- for the heating zone, the preset room temperature is set to the *Preset day temperature* value.

ON - the heat source is turned on.

The time schedule works only with the *Auto* mode on.

8.8 User settings

The controller settings, according to user preference.

Pressing  displays parameters:

- *Hour* – setting time. Time synchronization function with other connected room panels was applied.

Time synchronization will occur at the time difference between the room panel and the controller min. 10 sec.

- *Date* – setting date.
- *Panel address* – enables setting individual room panel address for controller's bus in case of connecting more room panels to the controller.

For the controller to work properly, individual room panels must have different and subsequent addresses from the 100…107 pool set. Only the panel with the address 100 will be the control panel, the rest will work as a normal room thermostat.

- *Language* – menu language selection.
- *Parental lock* - settings of parental control. The lock activates automatically after 5 minutes of inactivity. Unlocking the screen is possible after pressing the screen (about 4 sec., open padlock animation).
- *Alarm list* - a list of alarms reported by the controller.
- *Screen brightness* – screen brightness intensity.
- *Screen saver* - screen saver selection: None, Empty screen, Clock, Clock and temperature.
- *Time to screen saver* – time to start the screen saver after the time of inactivity.
- *Brightness of the screen saver* – screen brightness when the screen saver is active.
- *Alarm sound* – turn on or off the alarm sound.
- *Key sound* - turning on or off sound of keys when pressed on the screen.
- *Panel temperature correction* - correction of the room temperature value measured by the room panel. The temperature in the room should be measured with an additional temperature sensor and the difference between this measurement and the temperature value displayed by the room panel should be entered into the value of this parameter.

Pressing the  symbol displays: Diagnostic info about the operation of the controller, Alarms list, Software version. Selecting Software update allows to update the controller's software.

8.9 Alarms

The controller reports alarms on the main screen with the  symbol. Pressing the symbol will display the list of active alarms. Alarms are also signaled on LED indicators. If there is an alarm of any of the sensors, the red exclamation mark on the controller and the number of the zone (green) to which the given thermostat / sensor is assigned flashes.

8.10 Cooperation with the Web module

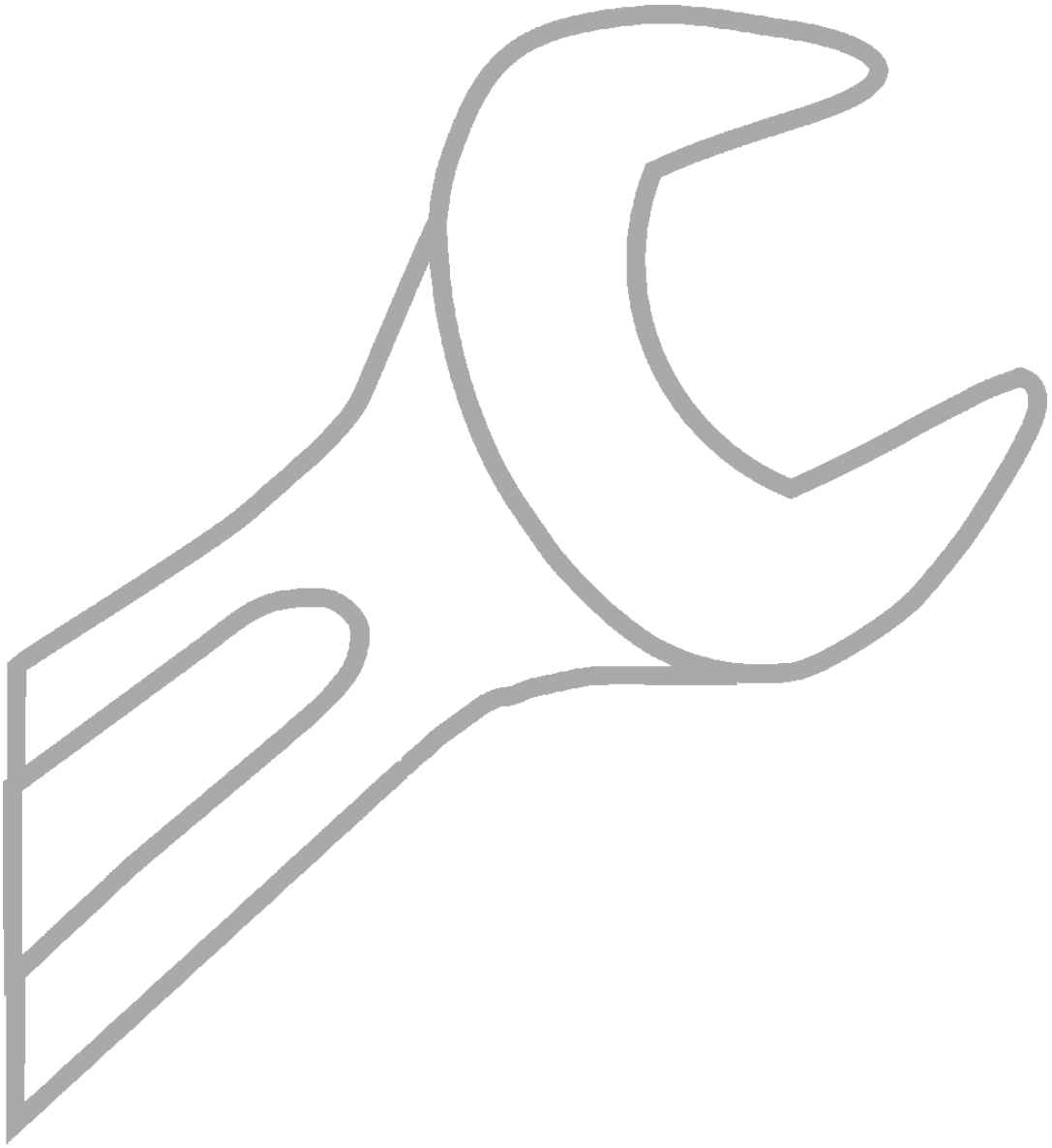
The controller cooperates with xCLOUD web module, which enables view and on-line maintenance of the controller via Wi-Fi and through **https://e-durosystem.pl** Website. Description of module connection is described in section 13.6

8.11 Cooperation with additional devices

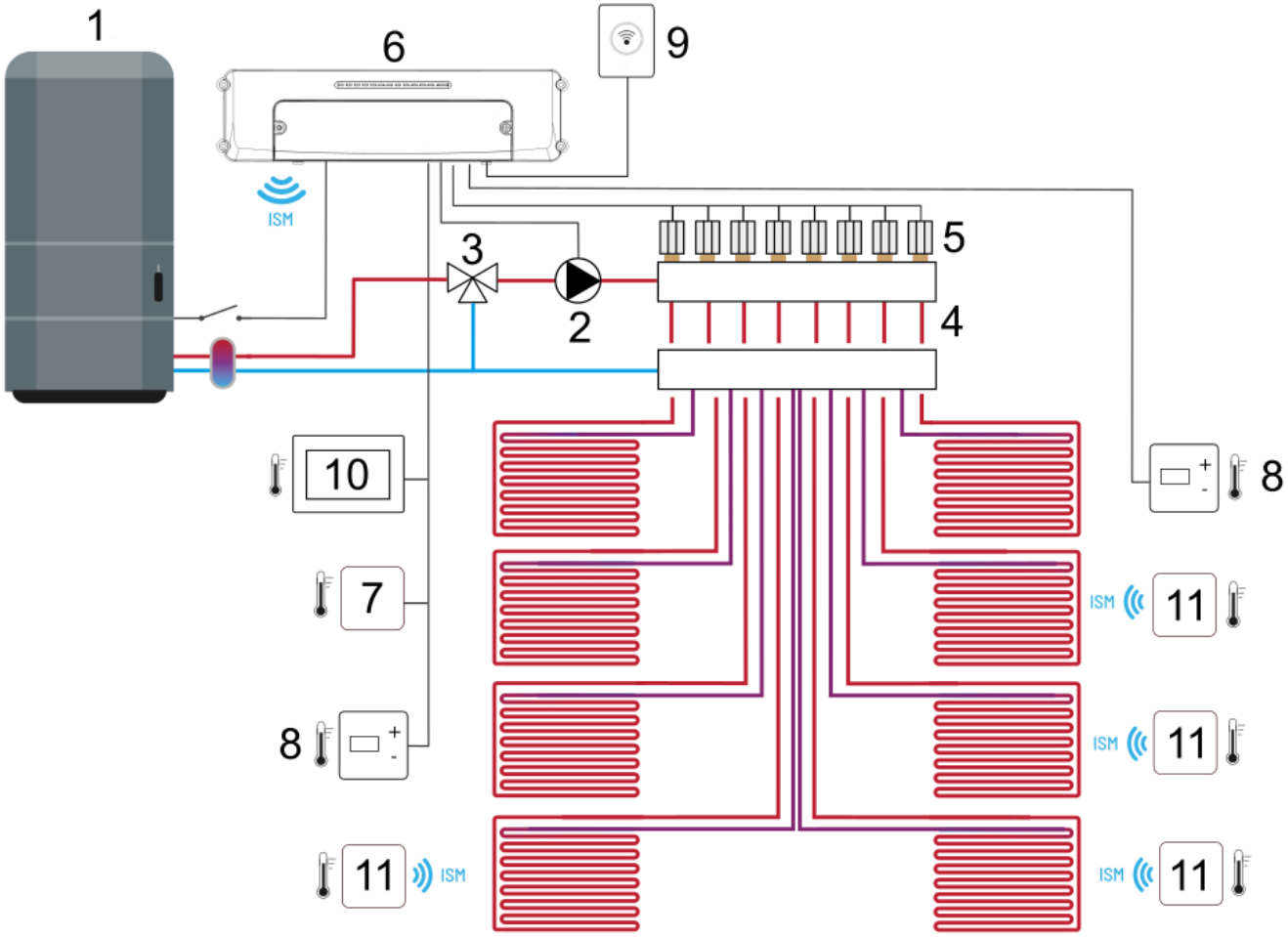
The controller cooperates with additional system devices, which are optionally offered by the controller manufacturer.

	TTO_230 Actuator: - M 30x1,5 mm, pitch: 4 mm, - supply: 230 VAC, 50 Hz, - power consumption: 2 W, - protection level: class II / IP 54, - operating temperature: -25ºC…+60ºC
	xTherm60p - wired room thermostat. xTHERM60r - wireless room thermostat.
	eSTER_x40 - wireless room thermostat.

	xTherm30p - wired room temperature sensor. xTherm30r – wireless room temperature sensor.
	ST EX1 - wired room temperature sensor. eSTER_x20 – wireless room temperature sensor.
	ecoSTER90 EF - wired room panel with the function of a room thermostat and the function of a panel controlling the entire controller or a system of controllers.
	xCLOUD – Web module: https://e-durosystem.pl



9 Hydraulic scheme



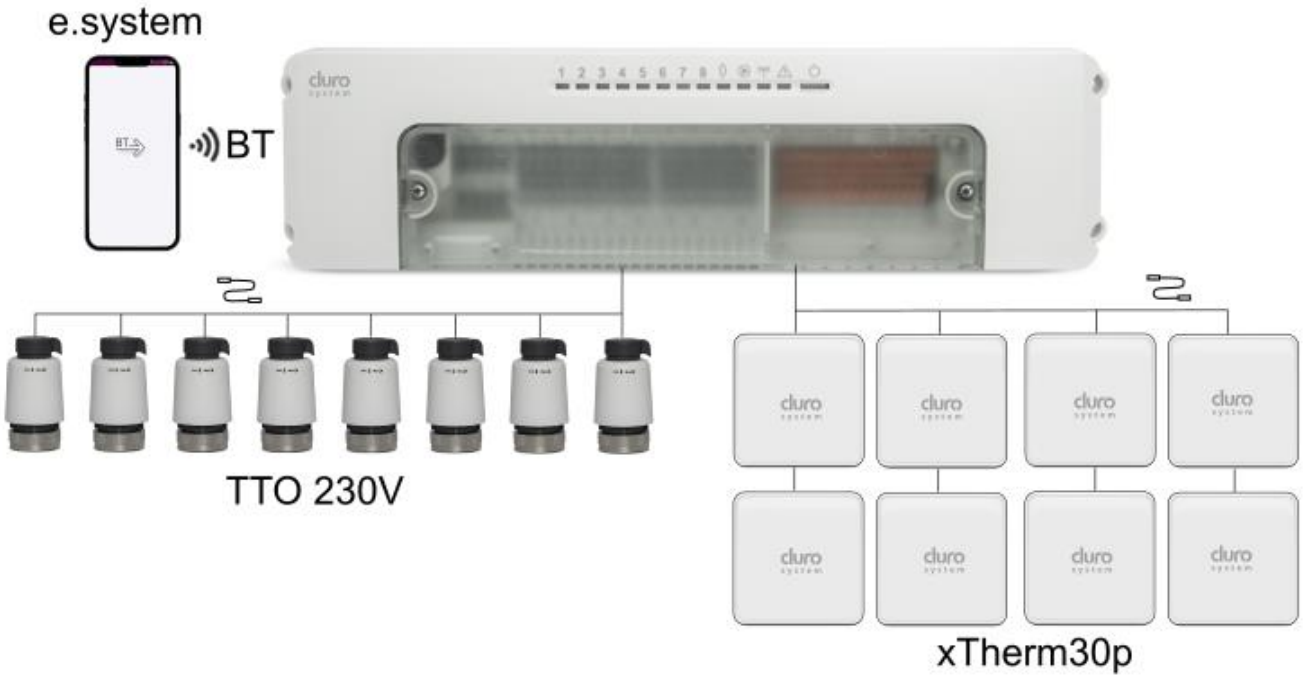
Underfloor heating system scheme for 8 heating zones[1]: 1 – heat source (e.g. heat pump, boiler), 2 – manifold pump, 3 – three-way valve controlled mechanically, 4 – manifold, 5 – actuators, 6 – controller, 7 – wired temperature sensor, 8 – wired room thermostat, 9 – Web module, 10 – room panel with thermostat function, 11 – wireless temperature sensor.

1 Shown hydraulic scheme does not replace a central heating system and can be used only for demonstrative purposes!

9.1 Example underfloor heating system applications

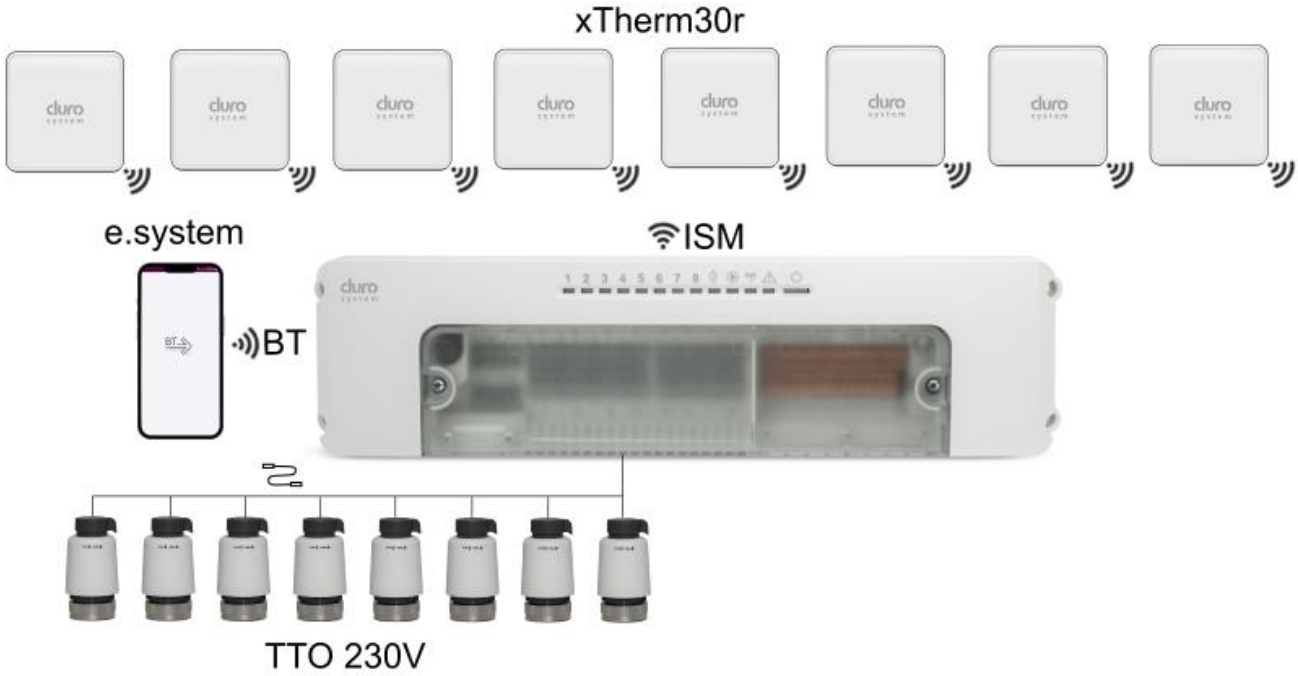
- Wired system - simple configuration of 8 zones.

Configuration off-line via ecoNEXT mobile application via BT wireless connection (local only).



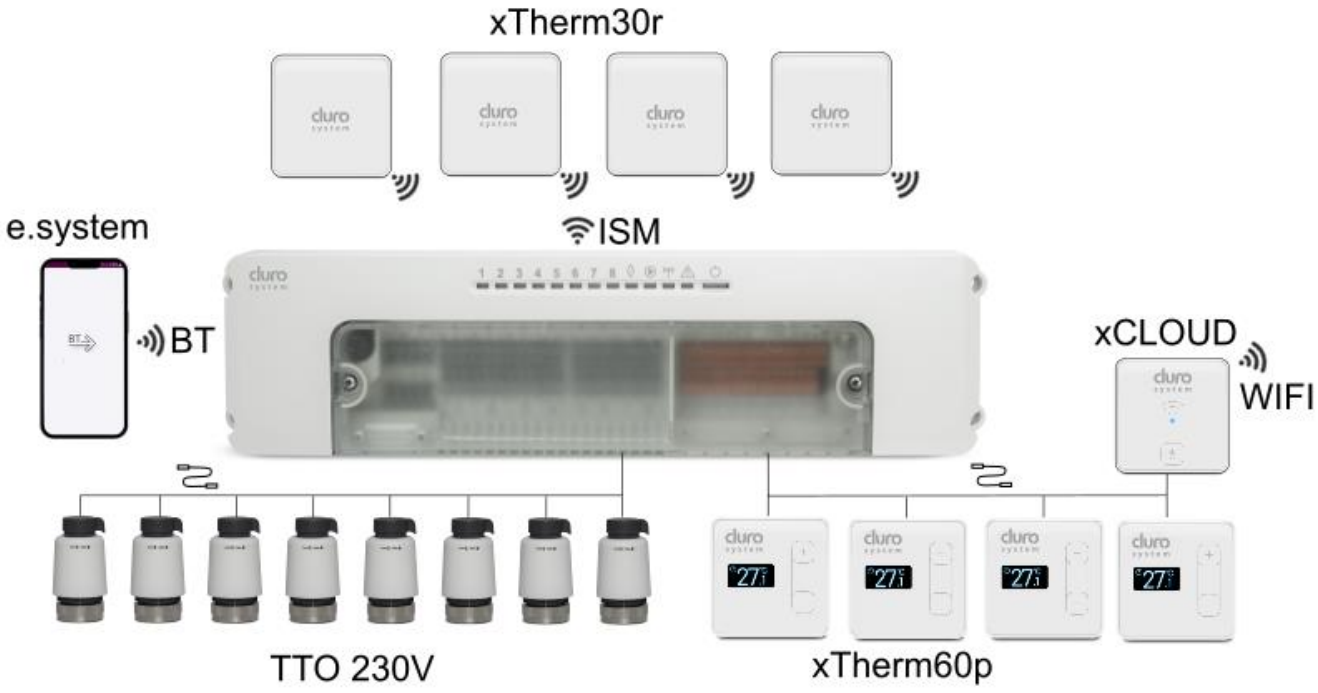
- Wireless system - simple configuration of 8 zones.

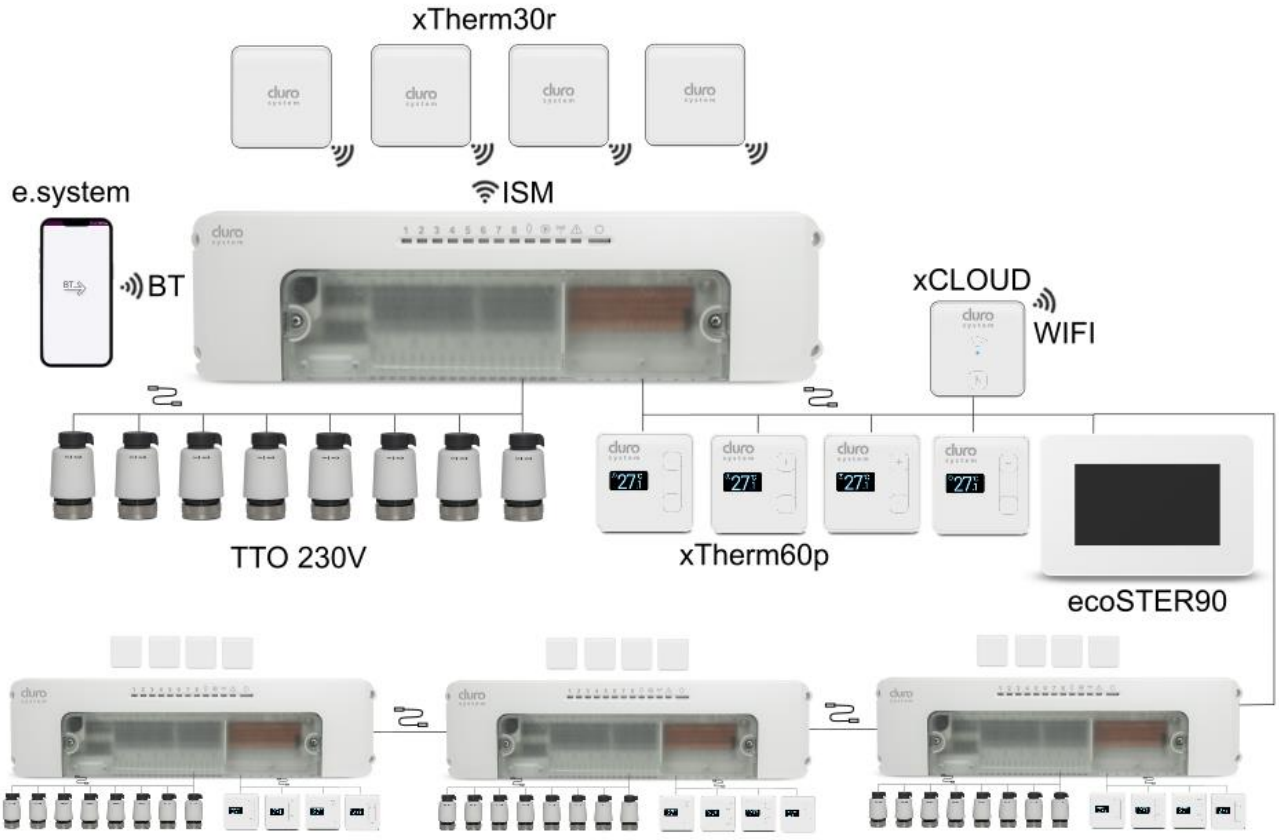
Configuration off-line via ecoNEXT mobile application via BT wireless connection (local only).



- Wired and wireless system - configuration of 8 zones.

Configuration off-line via ecoNEXT mobile application via BT wireless connection (local only) or on-line via xCLOUD module via WIFI (global) or via room panel (local only).





10 Dane techniczne

Controller	
Power supply	230 VAC, 50 Hz
Power consumption	0.04 A[2]
Maximum rated current	5.5 (5.5) A
Protection level	IP 20
Ambient temperature	0...50°C
Storage temperature	-10...+65°C
Relative humidity	5…85%, without condensation.
Communication	- 2 x RS485, - Two-way radio communication - BT v5
Radio transmission band	ISM 868 MHz, (band 865…868 MHz)
Transmission power of thermostat and module	20 mW (+13 dBm)
Dimensions	330 mm x 90 mm x 50 mm
Weight	0.8 kg
Standards	EN 60730-2-9 EN 60730-1
Software class	A, by EN 60730-1
Protection class	Class I
Degree of microenvironmental pollution	2nd degree by EN 60730-2-9
Installation method	Secton 12
Radio network topology	One module and several slave thermostats
Indicators	LED
Screw terminals	230 VAC: 0.75…2.5 mm^2 – wire, 0.75…2.5 mm^2 - multi-stranded wire with ferrule end sleeve Stripping length:11 mm
Zaciski bezśrubowe (sprężynowe)	230 VAC: 0.75…1.5 mm^2 – wire, 0.75…1.0 mm^2 - multi-stranded wire with ferrule end sleeve Stripping length:10 mm
	< 15 VDC: 0.25…1,0 mm^2- wire, 0.25…0.75 mm^2 – multi-stranded wire with ferrule end sleeve Stripping length: 8…10 mm
Control panel	
Power supply	12 VDC
Current consumption (at a supply voltage of 12 VDC)	0.15A
Display	Colorful, graphic 480x272 pix., With a touch screen
Protection level	IP 20
Ambient temperature	0...50°C
Storage temperature	0...65°C
Relative humidity	5…85%, without condensation.
Terminals	0.15…1.15 mm^2- wire, Stripping length: 7 mm
Dimensions	144 mm x97 mm x20 mm
Weight	0.2 kg
Standards	EN 60730-2-9 EN 60730-1
Software class	A, by EN 60730-1
Installation method	On the wall

11 Transport and storage conditions

The controller cannot be exposed to direct weather conditions, i.e. rain or sunshine. During the transport the controller cannot be exposed to vibrations greater than typical conditions of wheeled transport.

12 Installation description

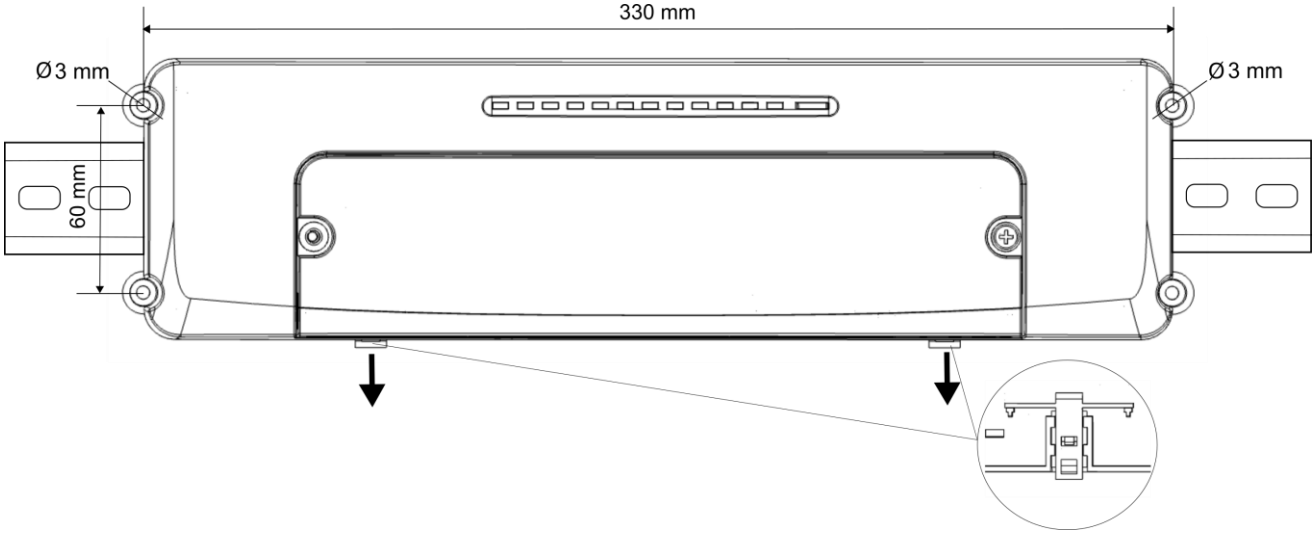
12.1 General requirements

The controller should be installed in accordance with applicable standards and regulations. The manufacturer is not responsible for damages resulting from not following this manual.

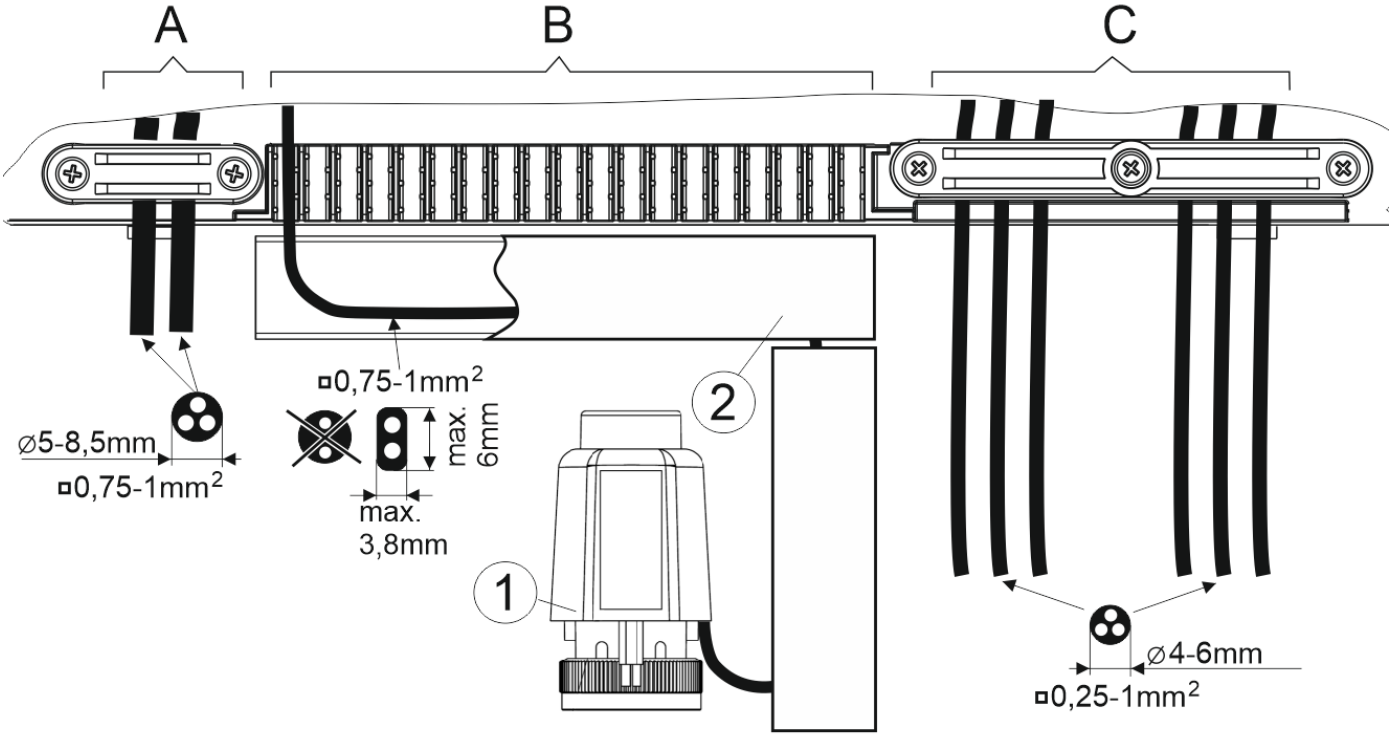
2 This the current consumed by the controller itself. Total power consumption depends on devices connected to the controller.

12.2 Controller installation

The controller is intended for independent installation on flat surface or DIN TS35 bus.



Actuator cables (1) passing through the cable holders (B) must be protected against pulling out from terminals or enclosed in a way to prevent mechanical stresses to occur to them, e.g. by routing them in cable trays (2). Cables passing thought cable holders (B) do not need to be secured if the entire controller is in protective housing. Cables passing thought cable holders (A) and (C) do not require enclosing.

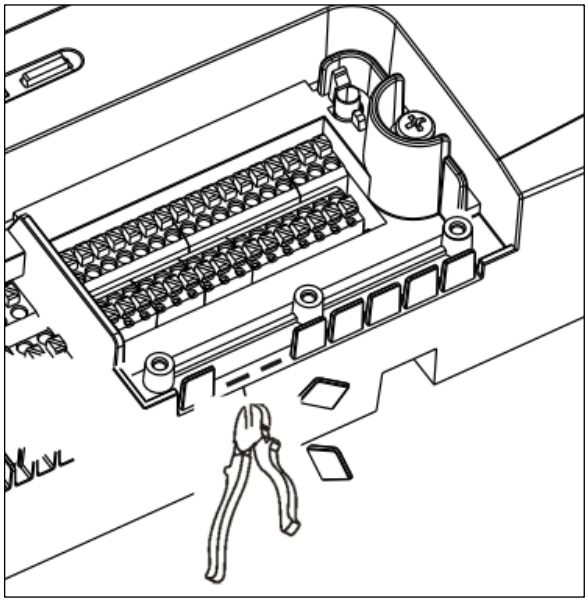


Cables lead: 1 – thermoelectric actuator (with CE declaration only), 2 – wiring duct A, B, C – external wires.

Controller housing does not provide protection against dust and water. To protect it against those factors the controller has to be enclosed.

The ambient temperature of the controller and installation surface should not exceed the range of 0…50ºC. Maximum screw tightening torque is 1Nm.

The end of pump supply cord is factory insulated. Do not remove the insulation if the pump is not connected.



To route signal cables break out the weakened elements in the housing.

13 Electrical connection

The controller is adapted to be supplied with voltage of 230 VAC, 50 Hz. The electrical system should be:

- three-wire, with PE protective cable,
- made in accordance with applicable regulations,
- equipped with differential circuit breaker with tripping current IΔn≤ 30 mA protecting against electric shock and limiting the device damage, including protection against fire.

Before starting installation work, it is essential to disconnect the mains supply and make sure that there is no dangerous voltage on the terminals and wires. Attention: disconnecting the power supply cable does not guarantee complete disconnection. Apart from the power cable, an additional source of dangerous voltage may be an electrical connection to a heat source (contact S1).

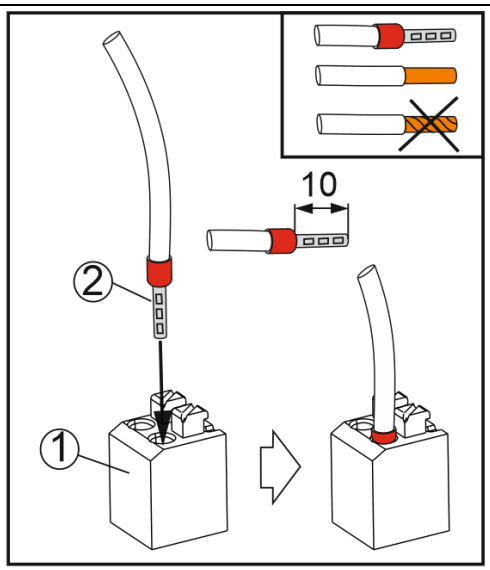
The connection of any peripherals can only be done by qualified installer in accordance with applicable regulations.

Due to safety reasons the controller has to be connected to the 230 VAC mains using the L and N wires in the correct order. Make sure that the L and N wires are not swapped within the electrical installation of the building, e.g. in electrical socket or distribution box.

13.1 Supporting screwless connectors

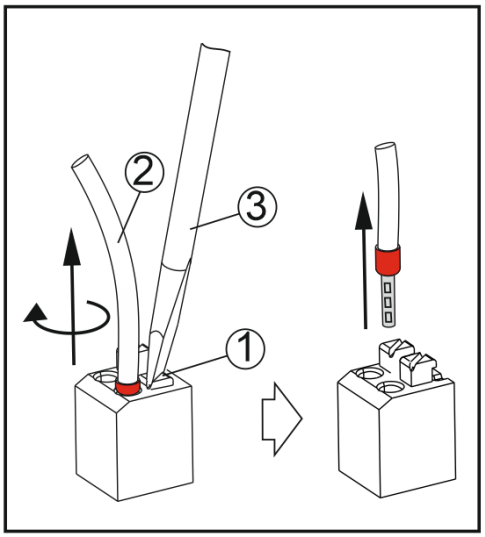
- Installation

Multi-stranded wires require the use of a ferrule end sleeve.

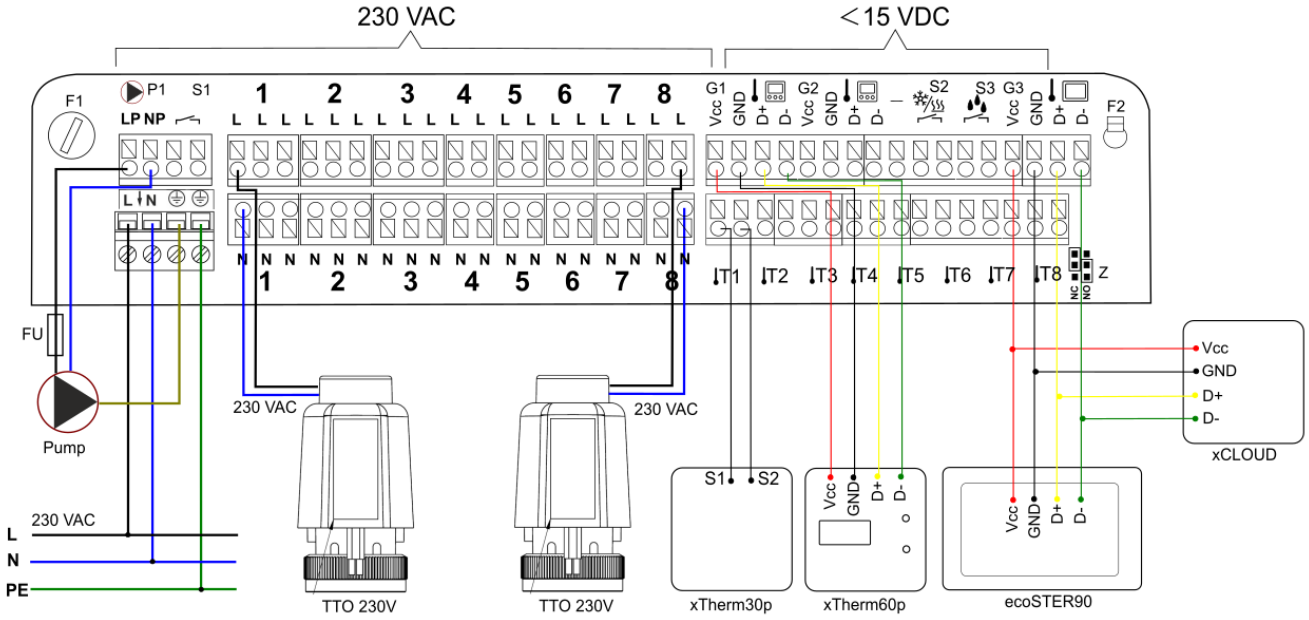


Disassembly

Disassembly requires the cable to be rotated as it is pulled out while the button is pressed.



13.2 Electrical scheme



L ↓ N – mains supply (rated voltage 230 VAC/50 Hz).

F1 – fast-acting fuse 2.5A/250 VAC, protects circuits 1,2,3,4,5,6,7,8.

F1 fuse does not protect pump circuit P1 and heat source S1.

F2 – backup fuse in case of F1 fuse replacement,

P1 – circuit pump connection. Rated voltage 230 VAC, maximum load 3(3) A. Circuit P1 is not protected by F1 fuse - use an appropriately sized external fuse.

S1 – output controlling heat source (potential-free contact type NO). Only circuits with rated voltage 230 VAC and maximum load 3(3)A can be connected to S1 output. S1 circuit is not protected by F1 fuse - use an appropriately sized external fuse.

1...8 – outputs for connecting thermoelectric actuators. Rated voltage 230 VAC. Maximum load of single output is 0.3(0.3) A. 1…8 circuits are protected by F1 fuse. Tip: supported actuator type NO or NC, has to be set with jumper **Z**.

S2 – contact input for heat source to switching between heating and cooling function (contact open = heating, contact closed = cooling). Only the heat source decides about switching between this functions.

S3 – dew point sensor input. The sensor is used when the cooling function is active and protects the underfloor system against excessive moisture condensation (contact closed = no alarm, contact open = alarm).

G1, G2 – communication ports for wired connection of room thermostats, point 13.4

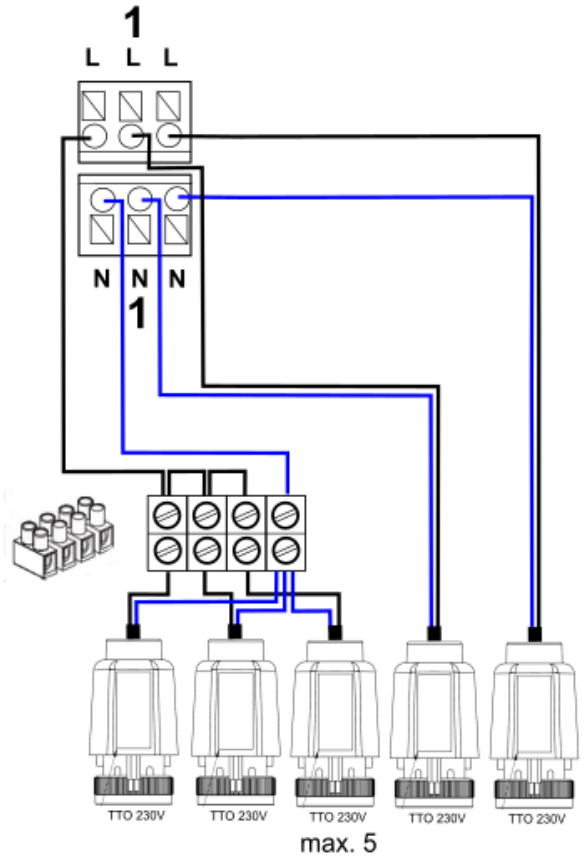
G3 – socket for connecting room panel and Web module, point 13.4, point 13.6

T1…**T8** – inputs for wired temperature sensors - wires polarity is not important.

13.3 Connecting actuators

The controller cooperates with thermoelectric actuators 230 VAC, which have to be connected in accordance with electrical diagram. Type NO or NC of the actuators used should be set using NC/NO jumper. Heating zones can be connected together by software according to section 14, without the necessity of electrical switching.

If more actuators are connected to one output, e.g. output 1 – 5 actuators connected, it is necessary to use an electric cube.



Up to 5 actuators can be connected to a single controller output due to its current capacity, provided that the total capacity specified on the controller nameplate is not exceeded.

13.4 Wired room temperature measurement

Room temperature measurement can be done by:

- ST EX1, xTherm30p, temperature sensors**,**
- xTherm60p room thermostat,
- ecoSTER90 EF room panel.

To one heating zone only one of the abovementioned devices can be assigned.

The room panel serves as the panel managing with operation of the controller. It can be used to set preset temperature, separately for all heating zones. After connecting additional panels they can also serve to manage with operation of the controller.

The wires cross-section to connect the room panel should be at least 0.5 mm^2. With cross-section 0.5 mm^2 the permissible cable length is max. 30 m. When selecting the cable, the resistance of one wire should not exceed 8 Ω and the total length of the cable should not exceed 100 m. With greater cable length its cross-section should also increase.

A maximum of 8 wired temperature sensors can be connected.

Due to the current capacity outputs G1 and G2 a limited number of wired thermostats and room panels can be connected to the controller.

The maximum current carrying capacity of the G1 and G2 circuit is 200 mA in total.

If more thermostats, sensors or panels are connected to one G input, it is necessary to use an electrical distributor/cube, e.g. the "WAGO" type, so as not to connect several wires to one controller socket.

13.5 Wireless room temperature measurement

Wireless room temperature measurement can be done by:

- eSTER_x20, xTherm30r, wireless temperature sensors,
- xTherm60r wireless room thermostat,

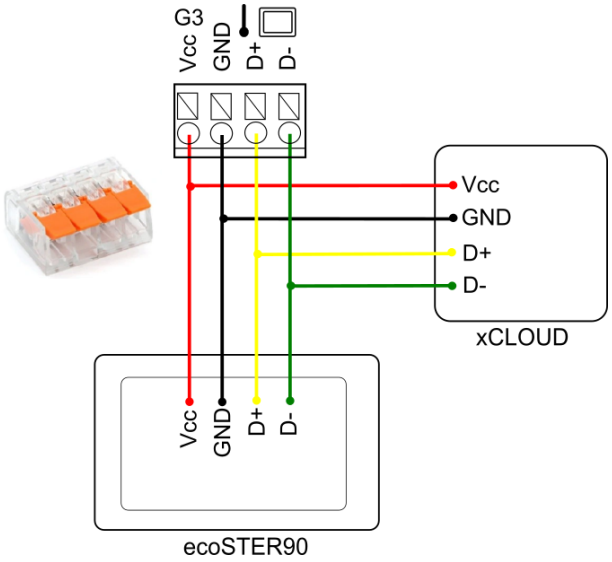
Pairing controller with individual radio devices must be done.

Maximum up to 8 radio thermostats can be connected.

13.6 Connecting web module

The xCLOUD module should be connected to the regulator and connected via Wi-Fi to the service https://e-durosystem.pl by

configuring the regulator using the mobile application as described in the xCLOUD module manual.

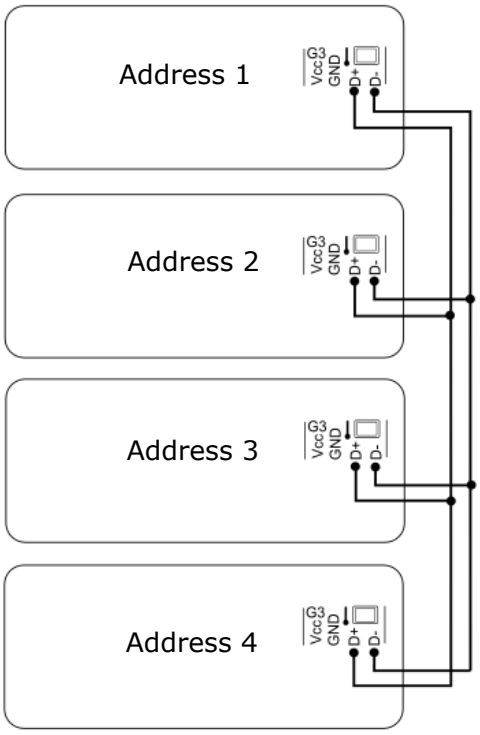


When extending the support for heating zones, the xCLOUD module should be connected only to the regulator whose address is programmed to "1".

When the ecoSTER90 EF panel is connected, it is necessary to set its address to other than "100", e.g. "101", but free from the pool of addresses assigned to other system devices. If the address is set by default, as in the factory, to "100", it may lead to instability in the controller's operation.

13.7 Expanding heating zones support

By connecting together with wires maximum 4 controllers up to 32 heating zones can be supported. Wired connection of the controllers is done by connecting together only G3 sockets in parallel.



It should be connected with three wires. Do not connect with four wires as this may damage the controller.

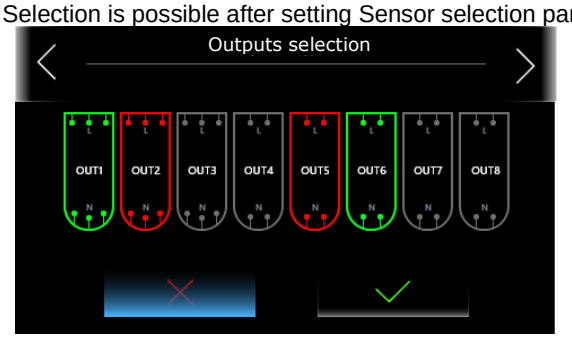
After connecting controllers together an individual address for each of them must be set. When addresses are set to e.g. "1", then the controllers will not cooperate with such setting.

When selecting the cable, the resistance of one wire should not exceed 8 Ω and the total length of the cable should not exceed 100 m. With greater cable length its cross-section should also increase.

14 Service menu

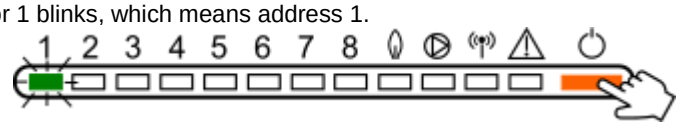
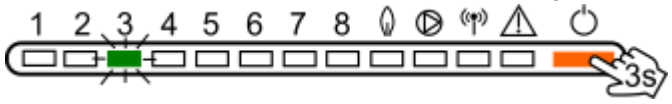
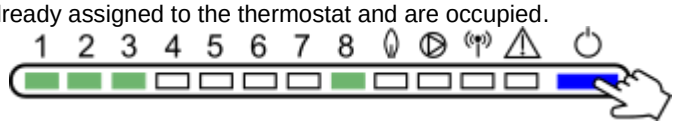
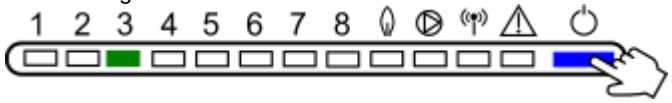
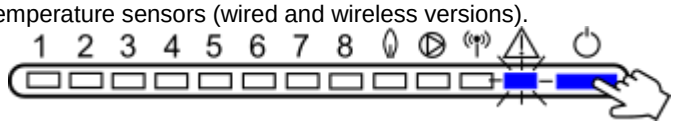
Menu is available only from the level of room panel. Entering the menu requires providing a service password [0000].

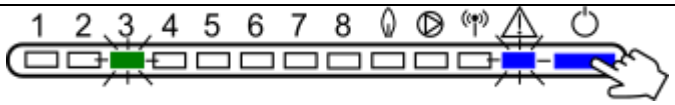
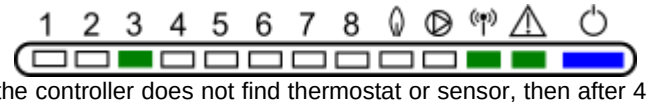
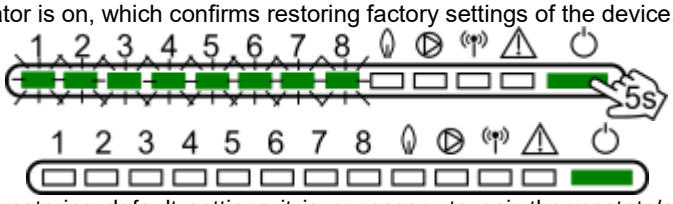
On first configuration of heating zones it is recommended to use *System configuration wizard*, which is available after turning on the controller.

Parameters	Description
System configuration wizard	The wizard allows to configure the controller parameters during its first start and connection to the underfloor installation system. Parameters to be set during configuration are displayed in form of questions. Depending on the selected answer to current question subsequent questions about parameters may vary. Attention: if wizard parameters configuration will be interrupted, then after each entering into the wizard a selection for previous parameters has to be confirmed. Tip: all parameters concluded in system configuration wizard are available in the service menu.
Heat source	The menu contains settings related to the main heat source. • *Heat source support* – enabling or disabling heat source support. With activated support the controller enables or disables main heat source depending on the heat demand. • *Source deactivation delay* – time after which the heat source disables then heating zone will not report heating demand. • *Source activation delay* – time after which the heat source enables when heating zone will report heating demand. It is a time by which only heat source pump will be operating to force water flow in heat source circuit.
Weather controller	
• Manual control	The menu allows to enable individual heating systems separately and to perform operation validity tests for selected device. Enabling or disabling selected device is done by touching symbol on the screen. Attention: the controller does not verify the logic protecting automatics elements, so this menu has to be used with caution and awareness of switching on outputs in such a way not to damage the controller and the devices connected to its terminals. Long-term and uncontrolled leaving the devices switched on, e.g. pumps, may result in damaging them.
• Pump settings	The menu contains settings related to the main heat source. • Pump activation delay – time after which source pump activates after main heat source activates, when heating zone reports demand for heating. It is a time by which heat source will operate only for heating purpose. • Pump deactivation delay – time after which source pump deactivates after main heat source deactivates, when heating zone will not report demand for heating. It is a time by which only source pump will operate to receive heat from heat source.
• Heating zones settings	The menu allows configuration of available heating zones and creating new zone (maximum 8 heating zones). • Add new heating zone – adding new heating zone. • Zone function – heating/cooling. • Zone support – enabling or disabling zone support. When zone support is disabled or there is no zone sensor selection, zone settings will not be visible for user. • Zone name – changing name for already created zone. • Sensor selection – temperature sensor selection that is assigned to the zone, where: None – no support for temperature sensor, Control panel – room panel (panel address is set by default to 100), Wired thermostat – wired room thermostat (thermostat address is set by default to T1), Wireless thermostat – wireless room thermostat (thermostat address is set by default to T1), CT12 sensor – temperature sensor ST EX1, Wireless sensor – temperature sensor eSTER_x20. If no sensor is selected or None setting is selected, it will not be possible to set preset zone temperature for user. • Circuits - OUT1…OUT8 outputs selection to operate actuators, which will be assigned to configured zone. Selection is possible after setting Sensor selection parameter.  • Delete zone – deletes zone name, temperature sensor assigned to it and actuators outputs for circuits. To configured heating zone 1-8 actuators can be assigned to selected outputs.

	Tip: If a given output is set for zone 1, then it will be impossible to set the same output for zone 2 etc.

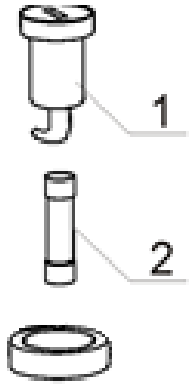
15 Configuration by LED indicators

Parameters	Description
Indicators status	In default operation of the controller the “F” indicator lights up green, the indicators of currently enabled zones 1-8 and , indicators (with pump and heat zone support is enabled).
Menu	After pressing "F" button once the main menu becomes visible, which consists of three positions (three indicators light up): 1 – addresses of the controllers, 2 - adding zones and pairing with thermostats, 3 – restoring factory settings. 
Controller addressing	The „F” indicator lights up green. The address of the strip is changed using „F” button. To enter address change selection press shortly „F” button (the indicator color changes to orange) then the current controller address is shown on one blinking indicator 1, 2, 3, or 4. By default indicator 1 blinks, which means address 1.  When in address view menu hold the “F” function button for around 3 sec. then let it go.  By pressing short the “F” button the address on indicators from 1 to 4 can be changed now. The selection is confirmed by again short pressing of the “F” button for around 3 sec., then indicator will light up green for a short time and the controller will switch to default operation (“F” indicator lights up green).  To exit menu without selecting the address is done by going through all addresses, so by pressing “F” three times, which means going from address 1 to 4, then indicator lights up red and holding “F” exits menu without saving the address. If within 30 sec. no action will be performed on “F” button, then the controller will return to the default operation mode (“F” indicator lights up green) in which outputs status is signaled.
Pairing the wireless device	Enter pairing menu in the main menu (hold “F” button when it lights up blue), then indicators 1-8 (are dimmed by 50%) display circuits which can be assigned to the thermostat and those which are not lit are already assigned to the thermostat and are occupied.  Attention: when pairing the newly connected controller for the first time all 1-8 indicators light up. In next step, when available circuits are visible, select circuits from 1 to 8, which will be assigned to the heating zone. The selection is done by holding “F” button on the selected circuit, then the indicator changes its backlight from 50% to 100%.  When the circuits are selected go with “F” button beyond indicator 8, the indicator lights up red. If we press and hold “F” button, then we will exit without save. If we hold “F” button shortly (indicator starts to light up blue) we will go to pairing thermostats (wired and wireless versions) and temperature sensors (wired and wireless versions).  Press and hold “F” button – the pairing process will start (indicator lights up blue and selected circuits light up green).

	 In thermostats (wired and wireless versions) select pairing mode from the menu and in wireless sensor with a sensor button. Attention: information on pairing function in thermostats and sensors is available in manuals for these devices. When thermostat/sensor is paired, circuit indicator, indicator and indicator light up green for around 3 sec.  If during pairing the controller does not find thermostat or sensor, then after 4 min. it will signal this fact with red diodes and go to main menu. Tip: thermostat/sensor addresses will be assigned automatically during pairing with the controller.
Restoring factory settings	First enter restore default settings menu from the level of main menu. Next press and hold “F” button for 5 sec. Then all indicators 1-8 will start flashing green briefly and then are switched off – only “F” indicator is on, which confirms restoring factory settings of the device.  Attention: after restoring default settings it is necessary to pair thermostats/sensors with the controller again and assign circuits to heating zones.

16 Mains fuse replacement

The F1 fuse protects the circuits of 1…8 actuators. Use only quick break, fast-acting fuse 5x20 mm, with 250 VAC voltage and rated current 2.5 A.



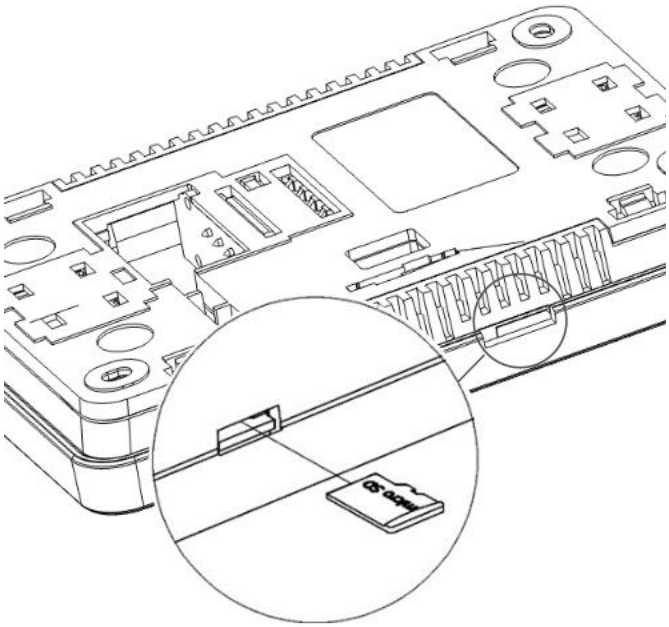
Fuse replacement: 1 – fuse holder 2 - fuse.

To remove F1 fuse press the fuse holder with a flat screwdriver and twist it counterclockwise. Backup fuse F2 is placed near low-voltage terminals.

17 Software update

Exchange via control panel

The controller software update can be done only using room panel and microSD HC memory card (max. 32 GB, FAT32 file format) inserted into slot of this room panel. In order to replace the software, disconnect the power supply to the controller and then insert the memory card into the indicated socket of the panel.



The memory card should contain new software in *.pfc file format for the panel and in *.pfi format for the module. Place new software directly on memory card, do not save it in a folder. Next, connect the power supply to the controller and enter into menu **User settings** or **Service settings** and start replacement/update software first in the controller module and then in the panel and other devices connected to the controller module.

Exchange via mobile application.

Software exchange can be done via the mobile application.

To update the controller and control panel software, select the ⚙ upper symbol for advanced settings and enter the software update password. The new software should already be saved in the local memory of the mobile device in the *.pfc file format for the panel and *.pfi for the controller module. After entering the update menu, select and add the update file from the memory of the mobile device in the first place for the controller module and confirm the start of the update, then do the same for the control panel file and other devices connected to the controller module.

After the process of sending the software update file is completed, the mobile application turns off the wireless connection with the controller.

Tip: Before adding the update file, you must authorize the mobile app to access the file explorer in the Android configuration. The mobile application allows you to add files from the local storage of your mobile device, but also allows you to directly add files straight from the cloud, e.g. Google Drive (internet connection required).

After selecting the correct software update file and checking its compatibility, it is added to the list of available update files. All files are stored in the application's local data. If the list of available files includes outdated or no longer needed update files, it is possible to go to file deletion by means of which you can remove selected update files.

☞ After updating the software, it is necessary to restore the controller's service settings and check them. In

case of software's, it is recommended to restore the default/factory settings.

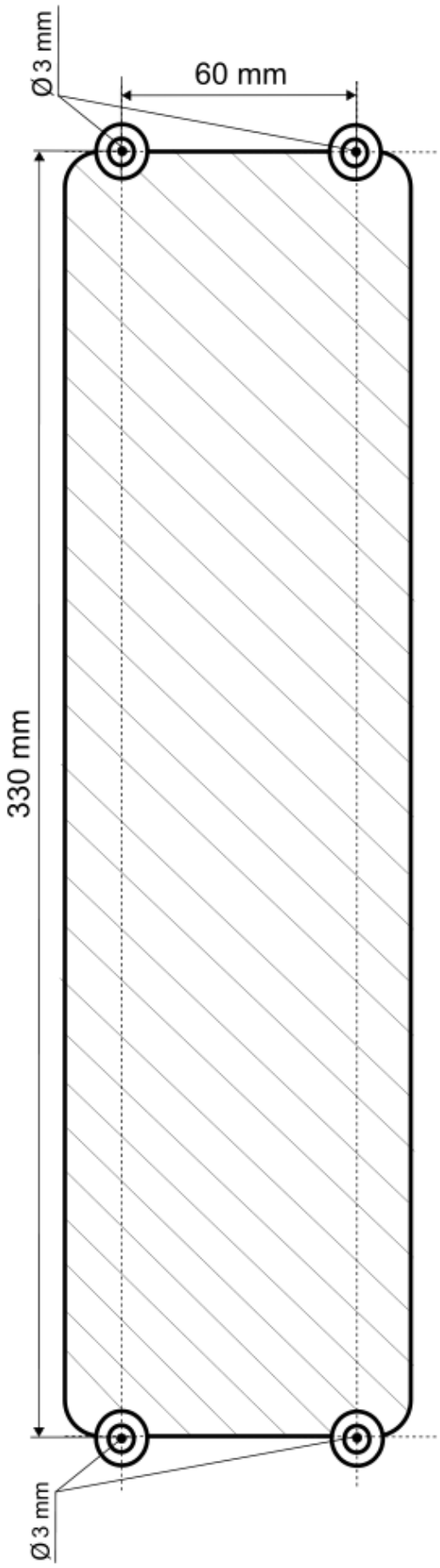
The incompatibility of the controller software and the control panel software may cause unforeseen errors. The manufacturer is not responsible for failures resulting from the use of incompatible software's by the end customer.

Configuration saving/loading

It is also possible to dump/load the configuration of the controller parameters to the memory of the mobile device after entering the password for the parameter level of the manufacturer or installer.

Changes record:

The manufacturer reserves a right to make improvements and modifications of the products.


Ø 3 mm
60 mm
330 mm
Ø 3 mm

Manufacturer:
PLUM Sp. z o.o.
ul. Wspólna 19, Ignatki , 16-001 Kleosin, Poland
plum.pl
National Waste Database No. 000009381

Manufacturer's authorized representative:
ARKA Sp. z o.o.
ul. Ogrodowa 5, 76-004 Sianów, Poland
+48 94 341 77 19
arka-instalacje.pl