ENGO CONTROLS ECB62-ZB Control Box for Underfloor Heating System User Guide

Contents

ENGO CONTROLS ECB62-ZB Control Box for Underfloor Heating System

Product Information

Specifications:

- Model: ECB62-ZB
- Type: Control Box for Underfloor Heating System, ZigBee
- Release Date: VII 2024
- Software Versions: ZigBee v1.0.9, MCU v2.3.0
- Producer: ENGO Controls sp. z o.o. sp. k.
- Dimensions: 330 x 110 x 36 mm
- Power Supply: 230 V AC 50 Hz
- Total Load: 10 A
- Max Pump Load: 3 A
- Max Boiler Load: 6 A
- Max Actuator Load: 2 A
- Max Thermostat Load: 1 A

Product Description:

The control box is designed for underfloor heating systems and utilizes ZigBee technology for wireless communication. It features various inputs and outputs for connecting thermostats, actuators, pumps, and boilers.

Product Usage Instructions

Installation:

Ensure the power supply is disconnected before installation. Connect the wired and wireless thermostats to the designated input zones on the control box.

Connecting Actuators:

Plug in the wires of the thermoelectric actuators into the removable connectors in the appropriate zones. Each zone can support up to 6 actuators with a power of 2 W. If using more actuators in one zone, use an additional relay to distribute the load.

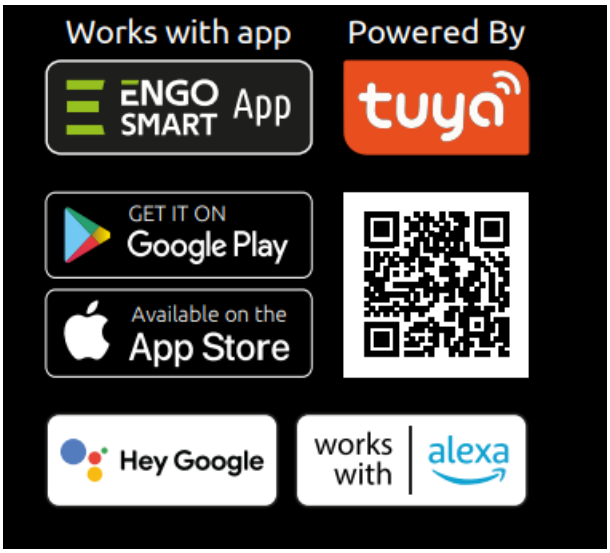
Boiler Connection:

Connect the boiler to the designated output connections on the control box. Ensure proper wiring following the provided instructions. When the actuator has no power, it is closed; applying 230V will open it.

Frequently Asked Questions

- **What are the compliance standards for this product?**
  - The product complies with EU Directives including EMC 2014/30/EU, Low Voltage Directive LVD 2014/35/EU, and RoHS directive 2011/65/EU.
- **How many actuators can be connected to one zone?**
  - Each zone can support a maximum of 6 thermoelectric actuators with a power of 2 W each.
- **Can the control box work with NC-type actuators?**
  - Yes, the control box is designed to work with NC-type actuators (normally closed).

Quick Guide



Introduction

Control box is the main element of the underfloor heating control system. It is equipped with 230V voltage connectors for the thermostats, pump, and thermoelectric actuators. It allows for the control of 8 heating zones in a combination of connections – 2 wired and 6 wireless thermostats. It works with NC-type thermoelectric actuators. The control box has a built-in control module for heating devices, e.g. gas boiler (voltage-free output). Wired control is done by directly connecting the thermostat to the control box by wires. The applied thermostats can be battery-powered or powered by 230V AC voltage. Wireless communication is over ZigBee 3.0 technology. The “ENGO binding” function provides wireless and direct control to dedicated EONE-BAT, and EONE-230 thermostats using the EGATEZB internet gateway. Additionally, EGATEZB gateway makes it possible to control the box over the Internet by ENGO Smart/TUYA Smart mobile applications.

Product Compliance

This product complies with the essential requirements and other relevant provisions of the following EU Directives: EMC 2014/30/EU, Low Voltage Directive LVD 2014/35/EU, RoHS directive 2011/65/EU

Safety information

Use in accordance with national and EU regulations. The device is intended for indoor use only in dry conditions. Product for indoor use only. Installation must be carried out by a qualified person in accordance to national and EU

regulations. Before attempting to set up and install, make sure that ECB62-ZB is not connected to any power source. Installation must be carried out by a qualified person. Incorrect installation may cause damage to the wiring centre. The ECB62-ZB should not be installed in areas where it may be exposed to water or damp conditions

PLEASE NOTE

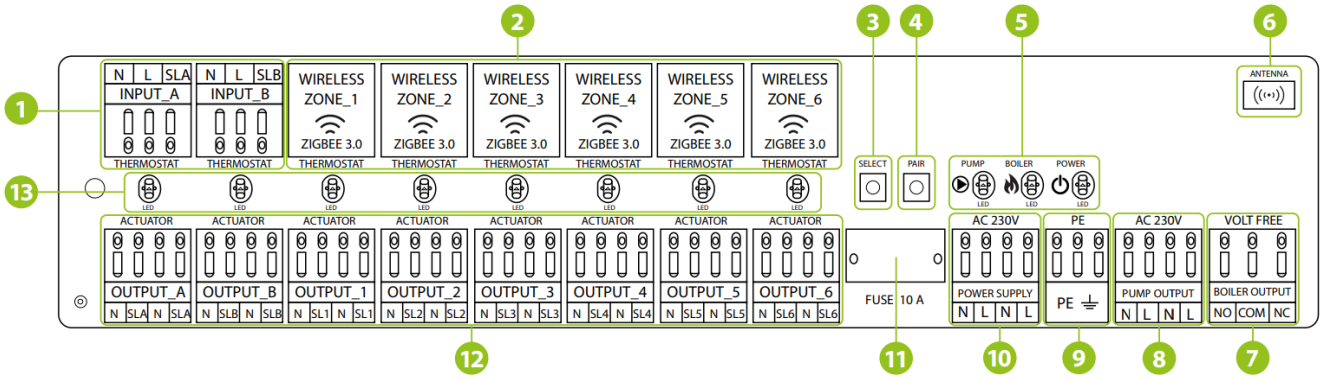
For the entire installation, there may be additional protection requirements, which the installer is responsible for maintaining.

Technical specifications

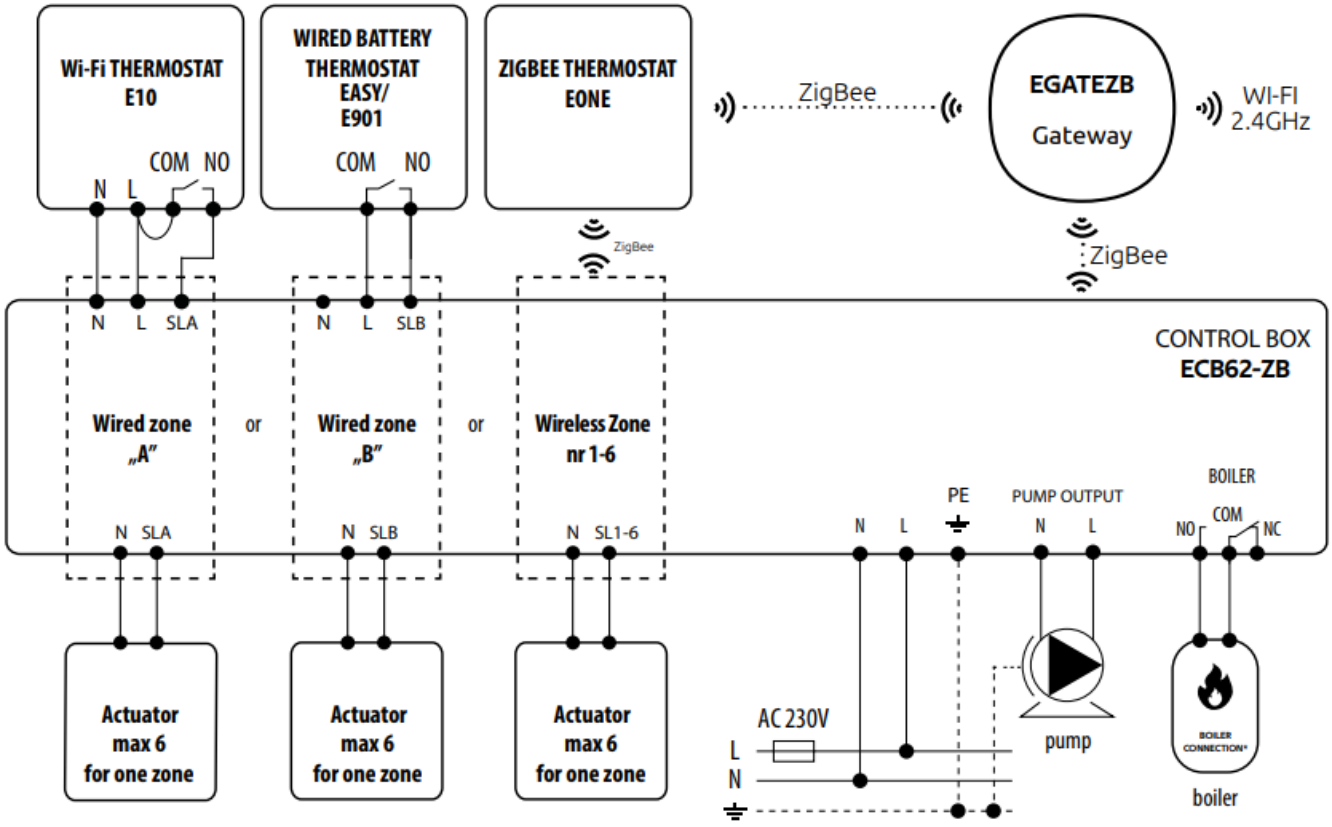
- Power supply 230 V AC 50 Hz
- Total Load Max 10 A
- Pump Load Max 3A
- Boiler Load Max 6A
- Actuator Load Max 2A
- Thermostat Load Max 1A
- Outputs Boiler control (NO/COM/NC)
- Pump control (AC 230V)
- Terminals for actuators (AC 230V)
- Dimensions [mm] 330 x 110 x 36

Control box description

1. Inputs for wired thermostats
2. Connection zones for ZigBee wireless thermostats
3. “Select” Button
4. “Pair” Button
5. LED diodes indicators for the operation status of the pump, boiler and control box power supply connection
6. External antenna input
7. Heating device control output, e.g. gas boiler (voltage-free)
8. Pump control output (AC 230V)
9. Ground
10. Power supply (AC230V)
11. Cartridge fuse 5 x 20 mm 10A
12. Actuator output connections (AC 230V)
13. LEDs 1 to 8 informing about the operation of zones



Connection of thermostats and thermoelectric actuators (AC 230V)



The control box is adapted to work with NC-type actuators (normally closed). The wires of the thermoelectric actuators should be plugged in removable connectors in the appropriate zones. The current load of each zone is adapted to support up to 6 thermoelectric actuators with a power of 2 W. With more actuators in one zone, use an additional relay to relieve the output of this zone

When the actuator has no power, it is closed.

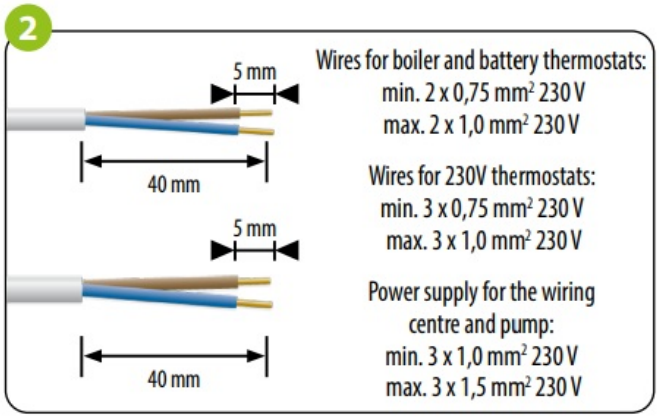
After applying 230V voltage, the actuator will open.

Please note:

- Depends on the thermostat heating state – 230 V AC may appear on the output of the actuator

INSTALLATION

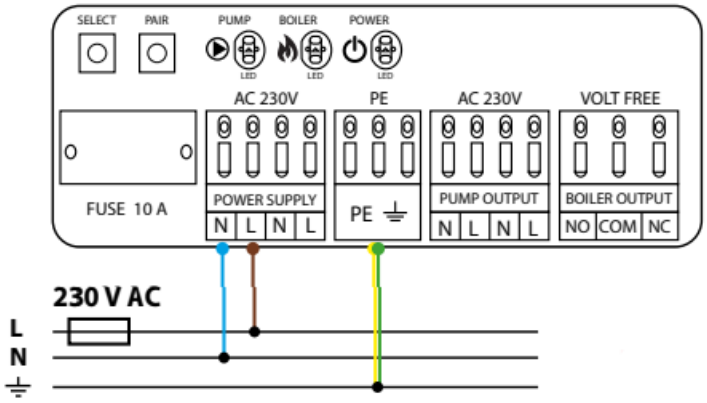
Remove the top cover of the control box



Remove the appropriate piece of insulation from the wires

- 3 Connect the wires in accordance with the connection description.Refer to the sticker under the top cover.
- 4 After making sure all wires are properly connected, mount the top cover and plug the wiring centre to the 230 V power supply – the red “Power” diode will light up.

Power supply



The power supply for the wiring center is 230 V ~ 50Hz.

Installation features:

- three-wire,
- made in accordance with applicable regulations.

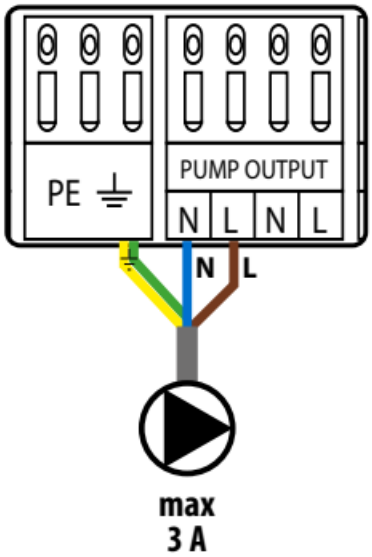
 The red LED indicates that the wiring centre is connected to the power supply.

Fuse

Please note:

- Replacement of the fuse to be carried out only when the control box is disconnected from power supply (230 V ~). Main fuse is located under the housing cover next to power supply terminals and secures the control box and the devices connected to it. Use slow-blow tubular fuses with nominal current 10A burnout. To replace fuse remove the fuse holder with a flat screwdriver and pull out the fuse.

Pump control output (AC 230V)



The PUMP OUTPUT is used to power the circulation pump in the heating system. It is a 230V AC voltage output with a maximum load capacity of 3A. The pump is connected directly to the contacts. The output is turned on (the pump starts) always after 3 minutes from the moment of receiving a heating signal from any thermostat connected to the wiring center. The output is turned off (the pump stops) as soon as the last thermostat stops reporting heat demand.

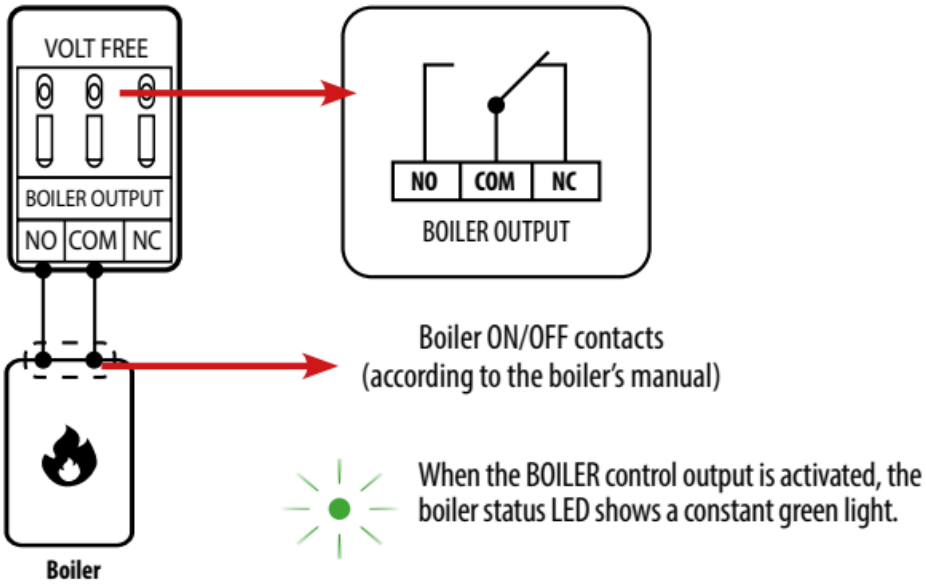
-  When the Pump/Valve control output is activated, the pump status LED shows a constant green light

PLEASE NOTE

- Before starting the installation, disconnect the 230V power supply!

Boiler control output (volt free)

The boiler control output is supported by a relay with voltage-free contacts (NO / COM / NC output). The boiler must be connected to the COM-NO or COM-NC contacts. It is a typical two-state relay. If the thermostats connected to the wiring centre send a signal for heating, the BOILER output contacts activate the relay with a 3-minute delay, allowing the boiler to be turned on. The boiler is turned off immediately, when none of the zones sends a signal for heating.



PLEASE NOTE:

The shutdown delay time of the circulating pump output and heat source output is editable in the range of 0, 3, 5 or 15 minutes (see the full device manual for details).

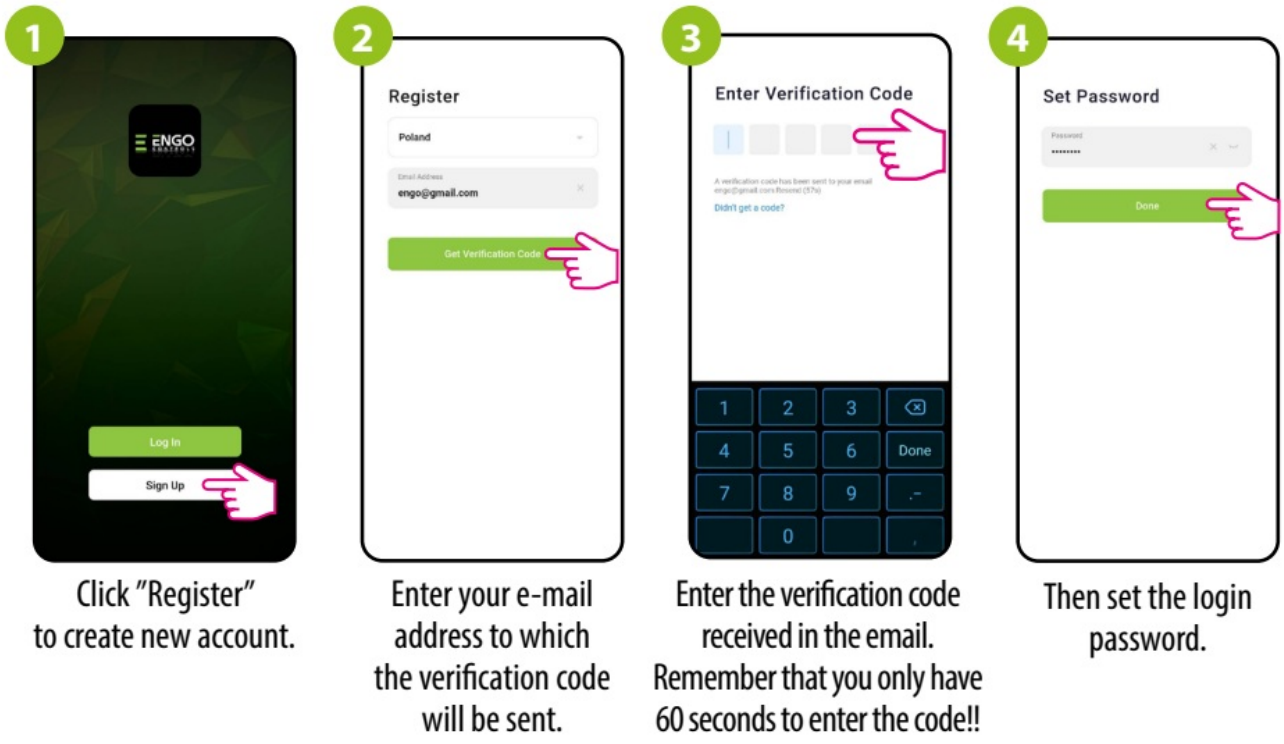
Installation ECB62-ZB in the app

- Make sure your router is within range of your smartphone. Make sure you are connected to the Internet. This will reduce BINDING THERMOSTAT WITH THE ECB62-ZB WIRELESS CONTROL BOX the pairing time of the device.

STEP 1 – DOWNLOAD ENGO SMART APP

STEP 2 – REGISTER THE NEW ACCOUNT

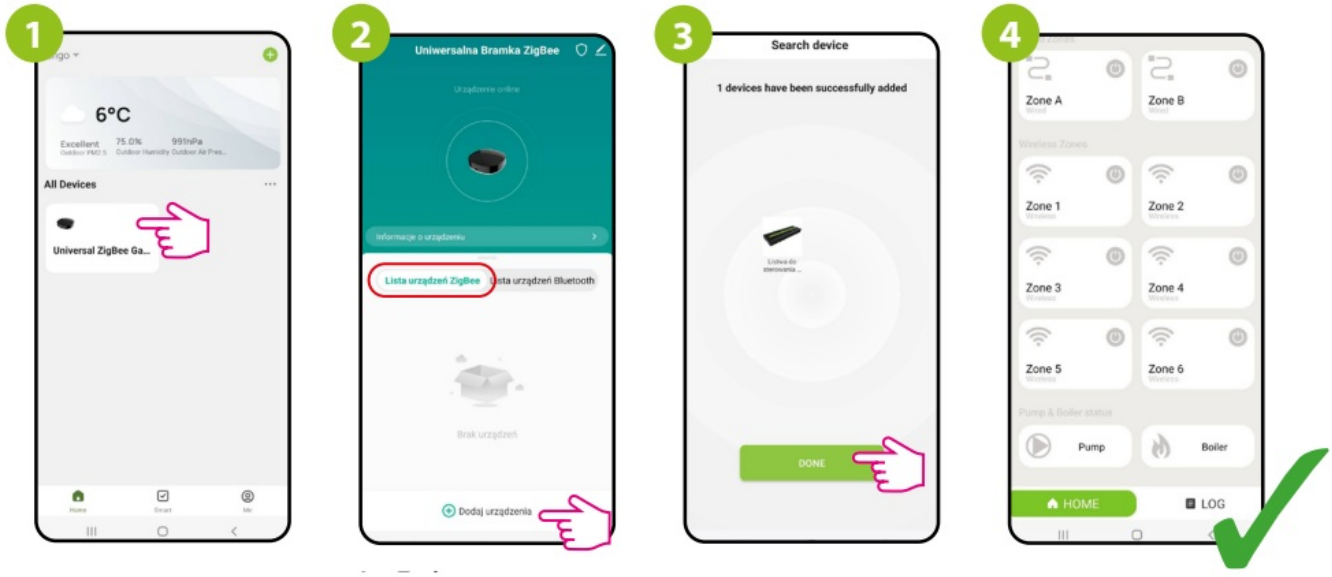
To register a new account, please follow the steps below:



STEP 3 – INSTALLATION ECB62-ZB IN THE APP

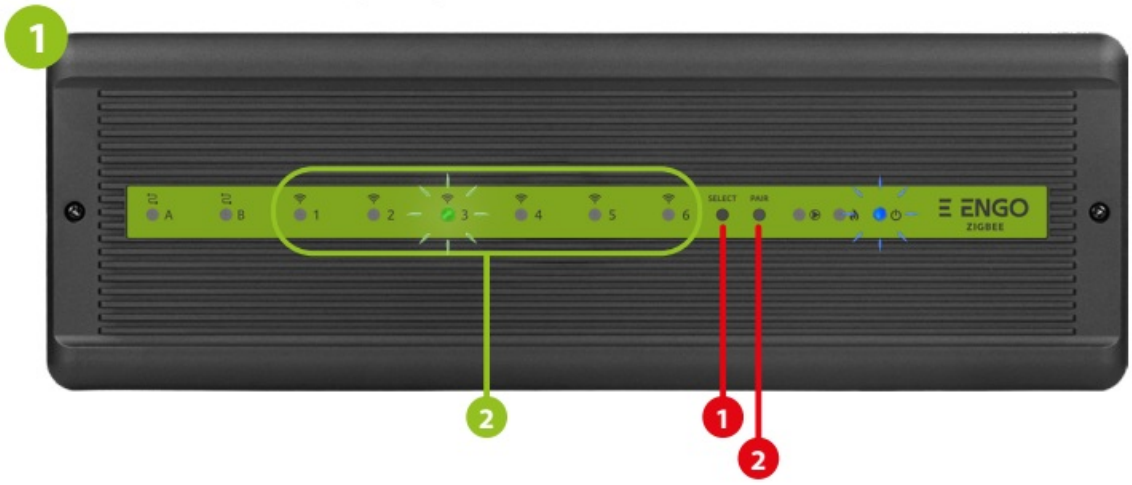
- Make sure ZigBee gateway has been added to the Engo Smart app
- Make sure that the control box is connected to the power supply. Press and hold the PAIR button for 10 seconds, red LED diode will starts flashing red. The control box will go into pairing mode

1. Enter the gateway interface.
2. In „Zigbee devices list" go „Add devices".
3. Wait until the application finds the device and click "Done".
4. The control box has been installed and displays the main interface. Power diode lights up blue.

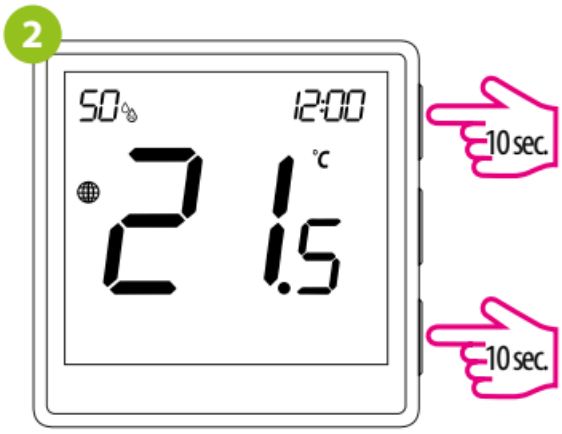


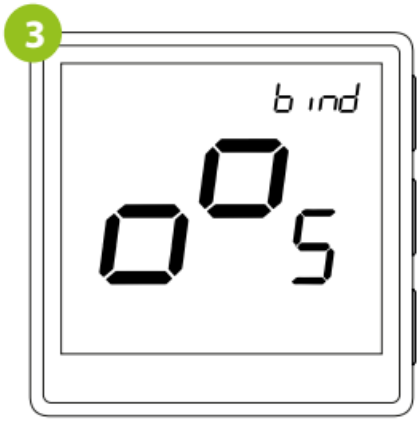
BINDING THERMOSTAT WITH THE ECB62-ZB WIRELESS CONTROL BOX

Make sure that the ECB62-ZB control box and thermostat are in the same ZigBee network (they are added to the same gateway EGATEZB) and the POWER LED lights up blue.



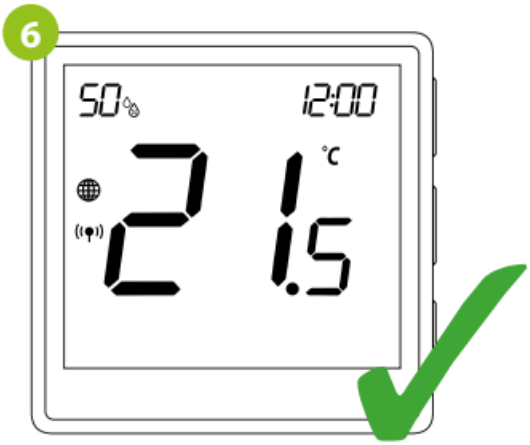
1. In order to correctly link the thermostat with the control box, first select the zone in the control box with the SELECT button (1) (zone which you want to link with the thermostat). The LED (2) will flash 3 times for the selected zone. Confirm your selection by clicking PAIR button (2) The LED (2) will flash green with the previously selected zone – the binding process has started, it is active for 10 minutes and during this time you can link the thermostat with the selected zone.
2. On the EONE thermostat, hold ▲ and ▼ buttons until the ”bind” message appears
3. Release the keys, binding function process of linking thermostat with control box is active





4. The ”binding” process takes up to 300 seconds.
5. After successfull binding operation”End” message will be displayed.

6. Both devices have been successfully linked. Thermostat displays the main screen, icon ” ” appeared on the screen indicating a connection with the receiver (ECB62-ZB in this case).



ATTENTION

If the binding process fails, it must be repeated taking into account the distances between devices, obstacles and local radio signal interferences.

Remember:

Radio range can be increased by Engo ZigBee repeaters.

ATTENTION

When the thermostat is binded with the module, the relay will turn off after 50 minutes, if the communication between the devices is lost.

Factory reset

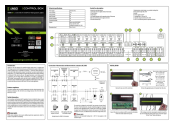
To restore the factory settings, press and hold the PAIR button for 10 seconds, red LED diode will starts flashing red. The control box will be cleared from the ZigBee network and gateway memory and enters the pairing mode. You can add it back to the ZigBee network (see STEP 3 – Installation ECB62-ZB in the app).

Producer:

ENGO Controls sp. z o.o. sp. k. Rolna 443-262 Kobielice Poland

- www.engocontrols.com

Documents / Resources

	ENGO CONTROLS ECB62-ZB Control Box for Underfloor Heating System [pdf] User Guide ECB62-ZB, ECB62-ZB Control Box for Underfloor Heating System, ECB62-ZB, Control Box for Underfloor Heating System, Underfloor Heating System, Heating System, System

References

- ENGO Controls - Sterowanie ogrzewaniem
- User Manual