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ENGO ECB62ZB Control Box for Underfloor Heating System

ENGO ECB62ZB Control Box for Underfloor Heating System User Guide

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ENGO ECB62ZB Control Box for Underfloor Heating System

Product Information

Technical Specifications

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

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 pump, boiler, and control box status
6. External antenna input
7. Heating device control output (voltage free)
8. Pump control output (AC 230V)
9. Ground
10. Power supply (AC230V)
11. Cartridge fuse 5 x 20 mm 10A
12. Actuators output connections (AC 230V)
13. LEDs indicating operation of zones

Product Usage Instructions

Safety Information

PLEASE NOTE: Installer is responsible for maintaining additional protection requirements for the installation.

Connection of Thermostats and Actuators

Wired thermostats and thermoelectric actuators should be connected as per the provided guidelines.

Actuator Operation

When the actuator has no power, it remains closed. Applying 230V voltage will open the actuator.

Using Multiple Actuators

The control box supports up to 6 thermoelectric actuators per zone with a power of 2W each. If using more actuators in one zone, additional relays should be used to relieve the output.

Frequently Asked Questions

- **Q: What type of thermostats are compatible with the control box?**
  - A: The control box is compatible with wired thermostats and ZigBee wireless thermostats.
- **Q: What are the dimensions of the control box?**
  - A: The dimensions of the control box are 330mm x 110mm x 36mm.
- **Q: What is the maximum load supported by the control box?**
  - A: The control box supports a total load of 10A, with specific maximum loads for pump, boiler, actuators, and thermostats.

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
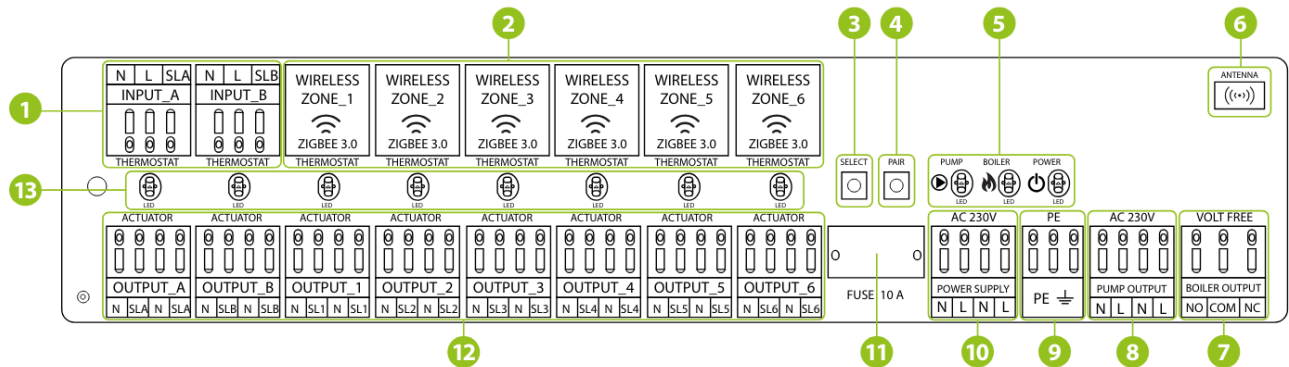
Introduction

ECB62ZB 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, e.g. E30NC230 and E28NC230. The ECB62ZB 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 EONEBAT, and EONE230 thermostats using the EGATEZB internet gateway. Additionally, the EGATEZB gateway makes it possible to control the ECB62ZB control box over 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. 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 setup and install, make sure that ECB62ZB 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 ECB62ZB 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.

Connection of thermostats and thermoelectric actuators (AC 230V)
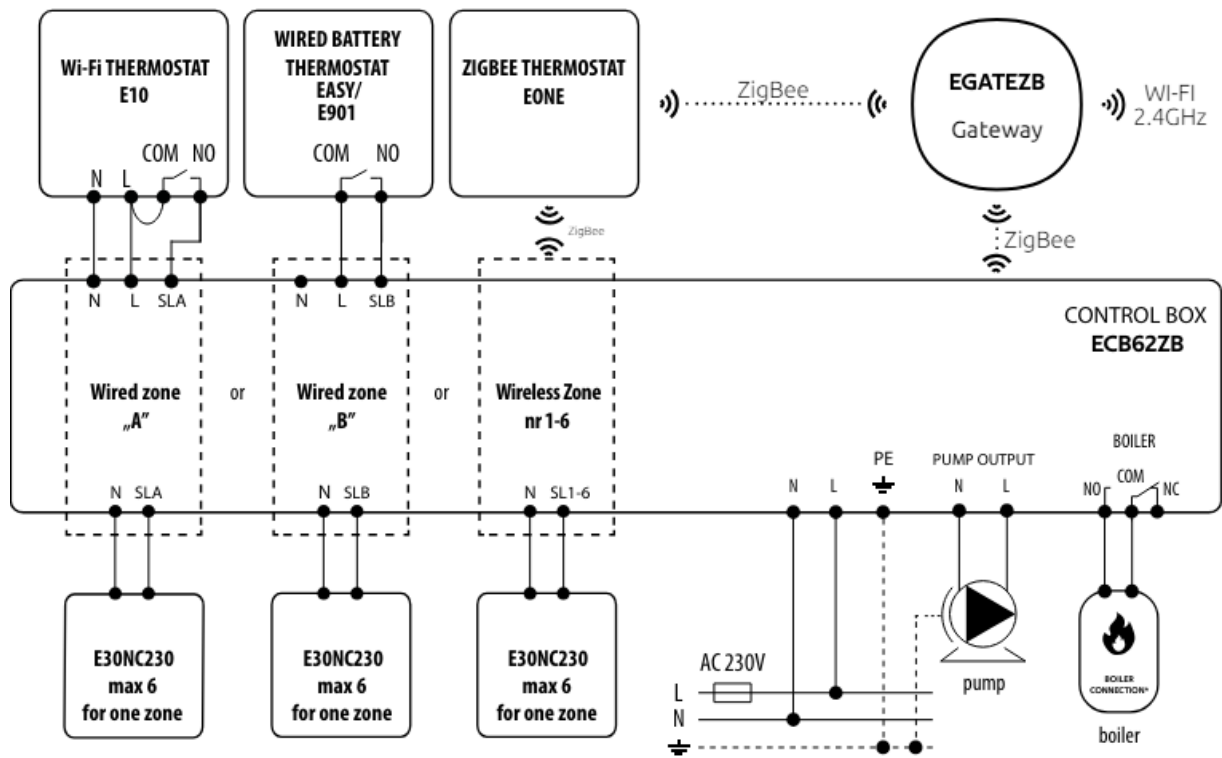
The control box is adapted to work with NC type actuators (normal closed). The wires of the thermoelectric actuators should be plugged in removable connectors in the appropriate zones. The current load of each zone is adapted to support up to 6 thermoelectric actuators with a power of 2 W. With more actuators in one zone, use an additional relay to relieve the output of this zone
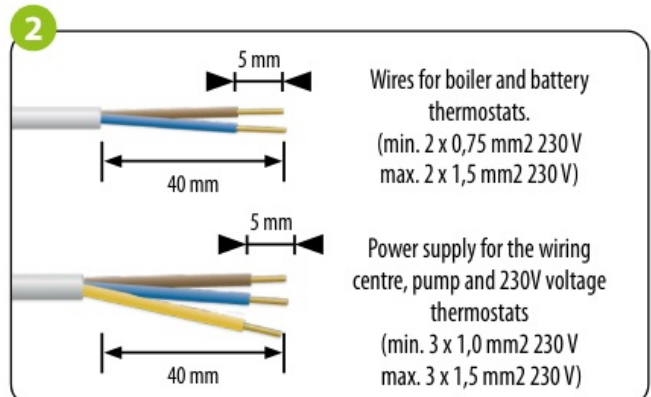

When the actuator has no power, it is closed.
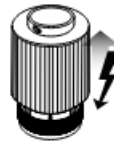
After applying 230V voltage, the actuator will open.

Please note:

Depending on the thermostat heating state – 230 V AC may appear on the output of the actuator
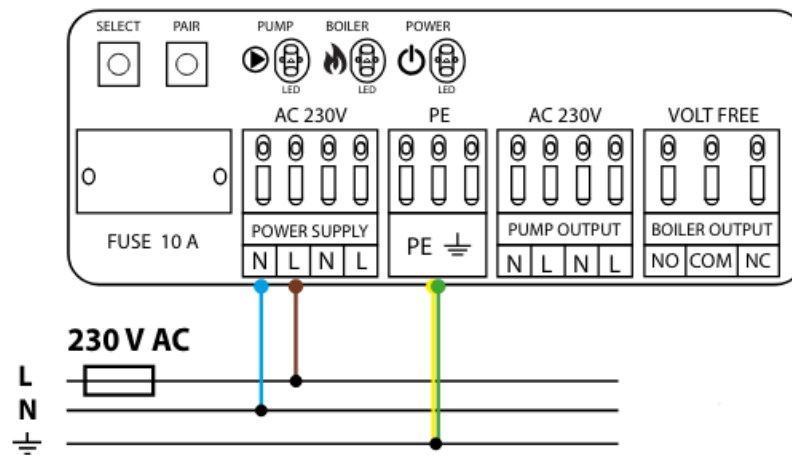
INSTALLATION

1. Remove the top cover of the control box
2. Remove the appropriate piece of insulation from the wires

5 mm

Wires for boiler and battery thermostats.
(min. 2 x 0,75 mm2 230 V max. 2 x 1,5 mm2 230 V)

40 mm

5 mm

Power supply for the wiring centre, pump and 230V voltage thermostats
(min. 3 x 1,0 mm2 230 V max. 3 x 1,5 mm2 230 V)

40 mm

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 centre 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 centre. The output is turned off (the pump stops) as soon as the last thermostat stops reporting heat demand.
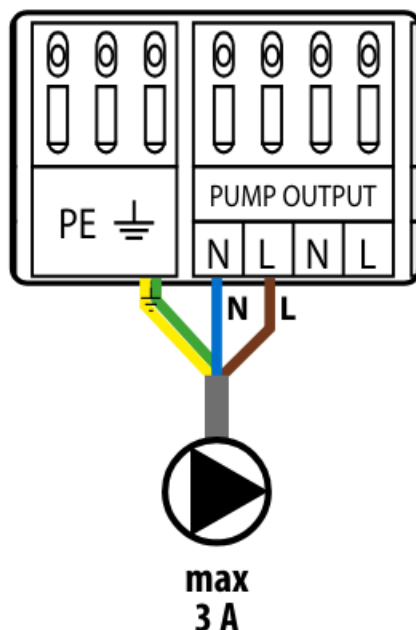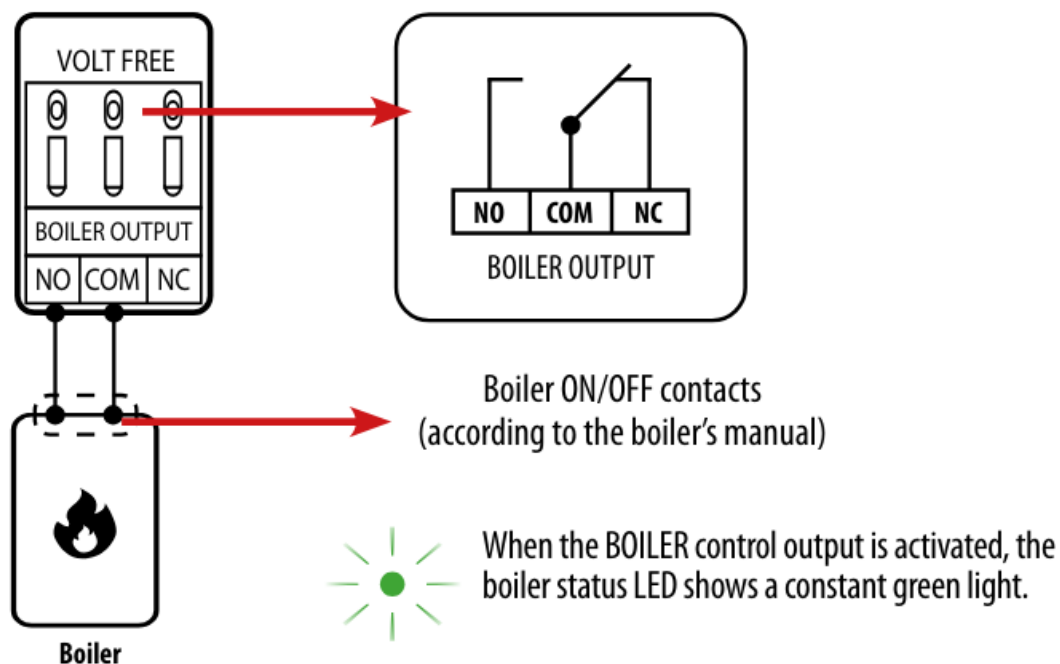

- When the Pump/Valve control output is activated, the pump status LED shows a constant green light.

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.

VOLT FREE
BOILER OUTPUT
NO COM NC

Boiler

NO COM NC
BOILER OUTPUT

Boiler ON/OFF contacts
(according to the boiler's manual)

When the BOILER control output is activated, the boiler status LED shows a constant green light.

UWAGA:

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 of ECB62ZB 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 ECB62ZB WIRELESS CONTROL BOX the pairing time of the device.
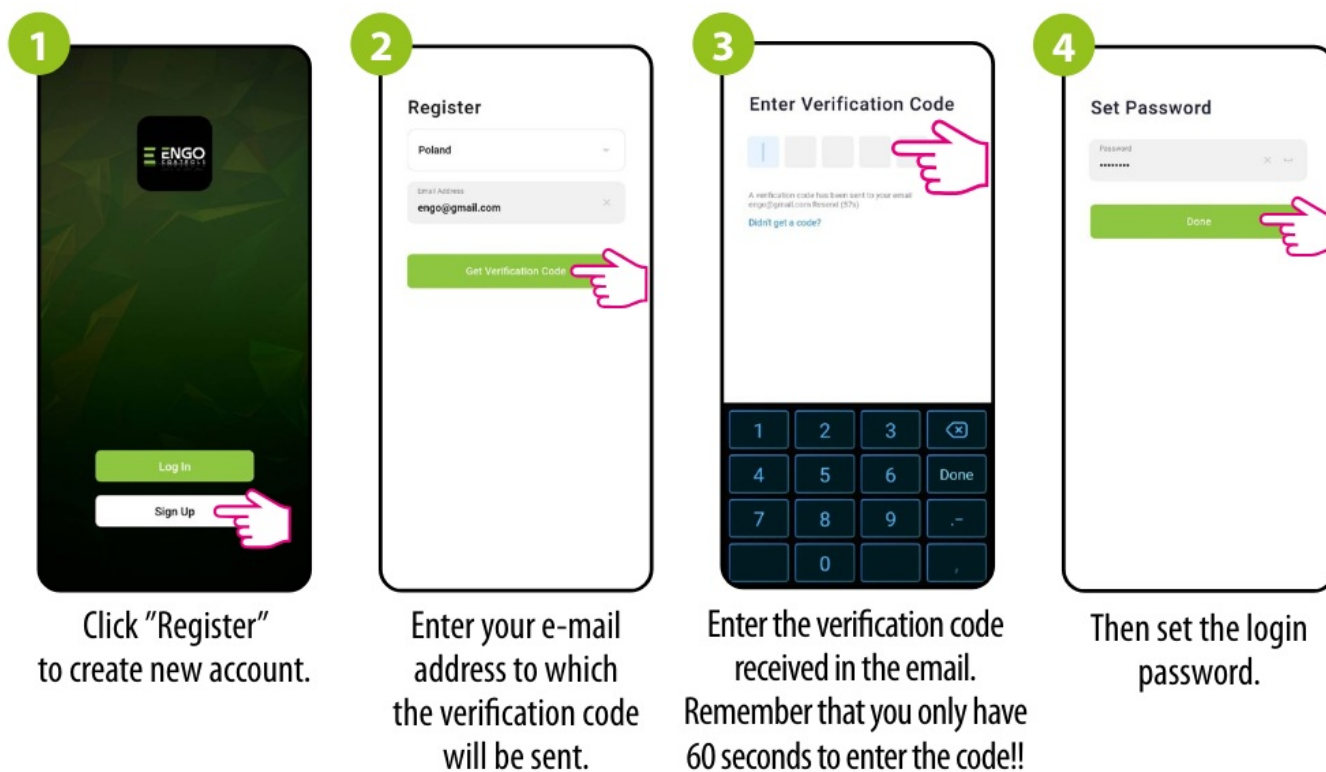
STEP 1 – DOWNLOAD ENGO SMART APP

Download the ENGO Smart app from Google Play or Apple App Store and install it on your smartphone

ENGO SMART

STEP 2 – REGISTER THE NEW ACCOUNT

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

Click "Register"
to create new account.

Enter your e-mail
address to which
the verification code
will be sent.

Enter the verification code
received in the email.
Remember that you only have
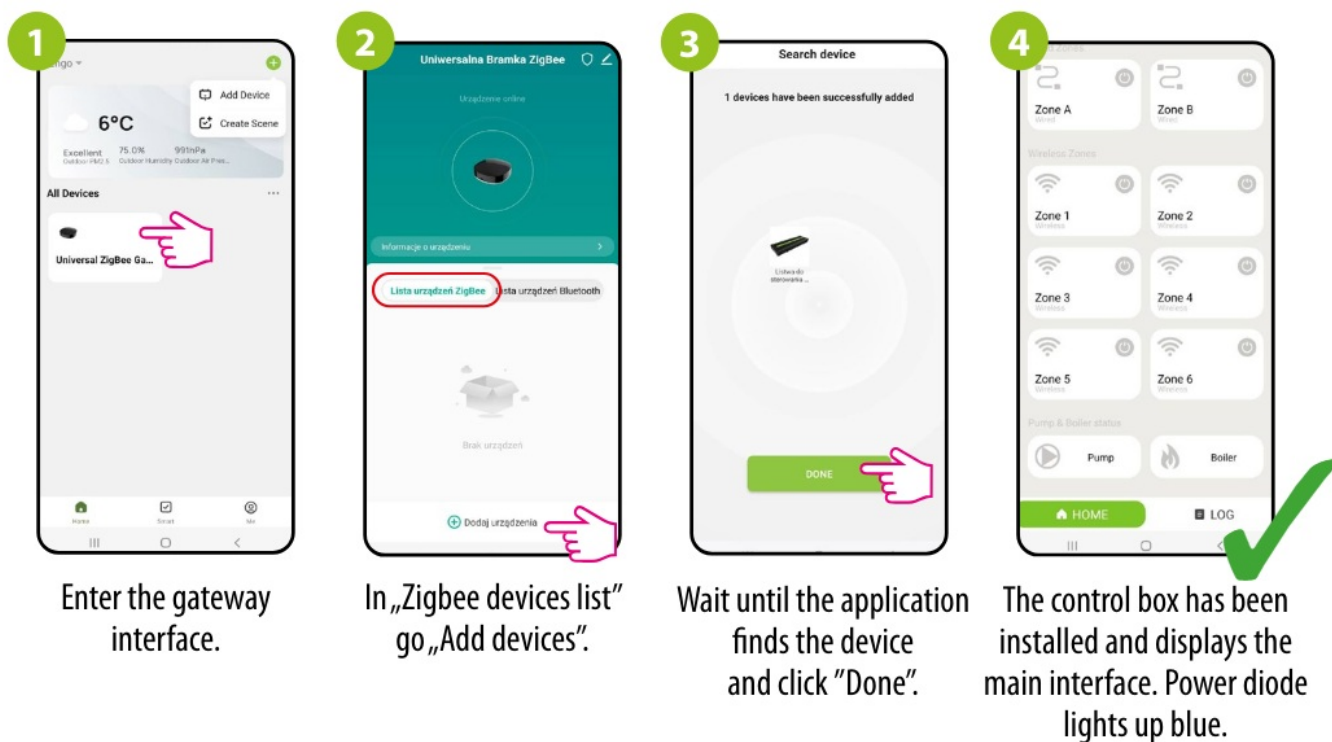60 seconds to enter the code!!

Then set the login
password.

STEP 3 – INSTALLATION OF ECB62ZB IN THE APP

- Make sure the 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 flashes red. The control box will go into pairing mode

Enter the gateway interface.

In „Zigbee devices list" go „Add devices".

Wait until the application finds the device and click "Done".

The control box has been installed and displays the main interface. Power diode lights up blue.

BINDING THERMOSTAT WITH THE ECB62ZB WIRELESS CONTROL BOX

1. Make sure that the ECB62ZB 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
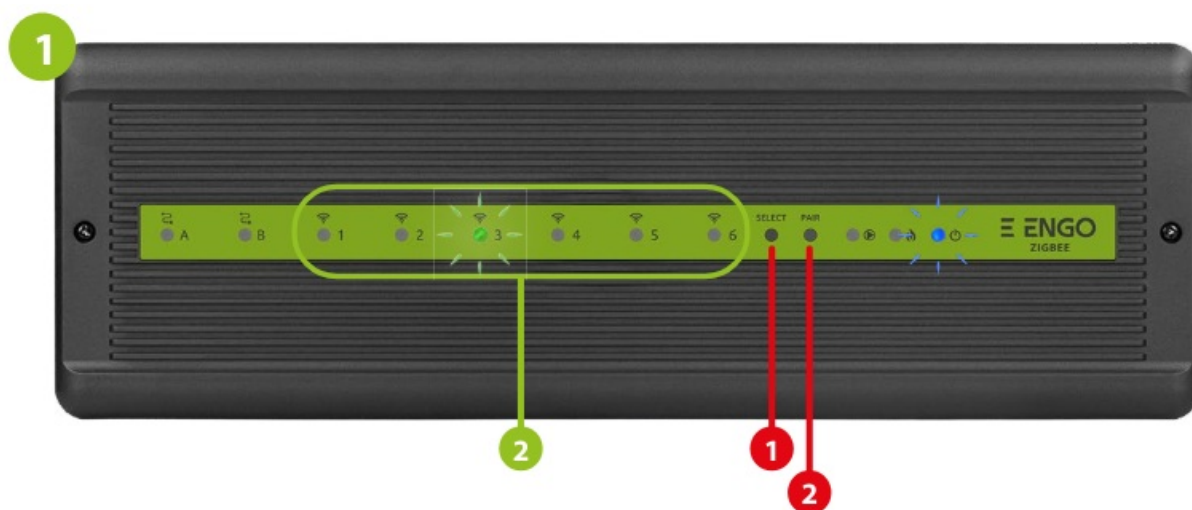

In order to correctly link the thermostat with the control box, first select the zone in the control box with the SELECT button (1) (zone which you want to link with thermostat). The LED (2) will flash 3 times for the selected zone. Confirm your selection by clicking the PAIR button (2). The LED (2) 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.
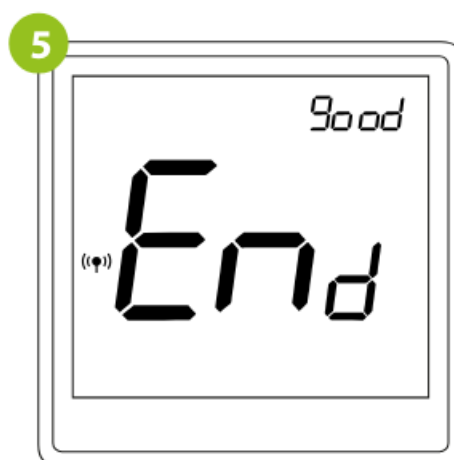
2. On the EONE thermostat, hold ▲ and ▼ buttons until the "bind" message appears.
3. Release the keys, binding function process of linking thermostat with control box is active.
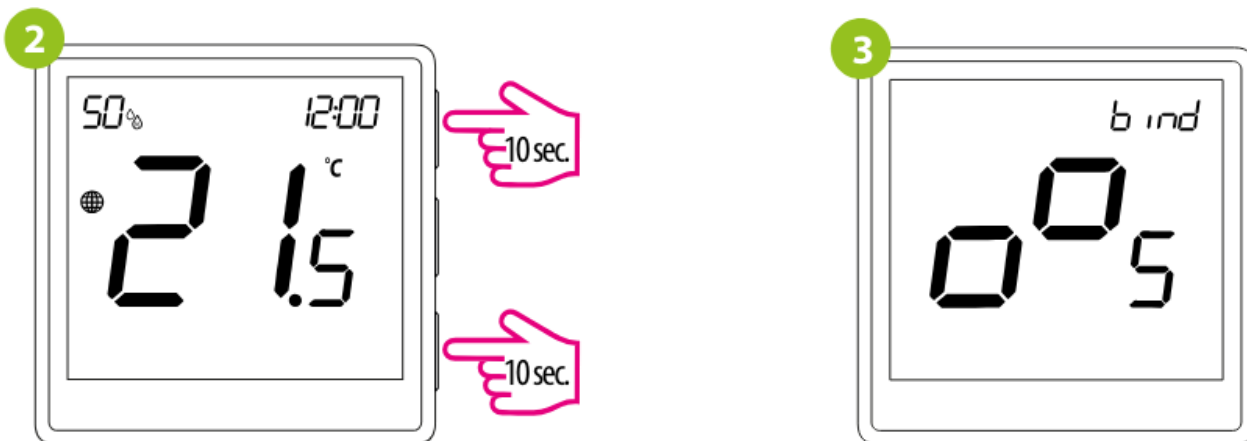
4. The "binding" process takes up to 300 seconds
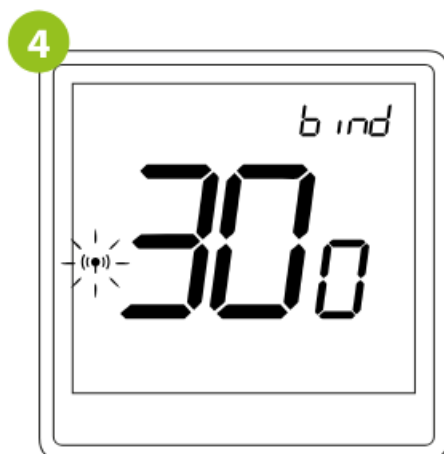
5. After successfull binding operation "End" message will be displayed.

6. Both devices have been successfully linked. The thermostat displays the main screen, the icon " ((●)) " appears on the screen indicating connection with the receiver (ECB62ZB in this case).
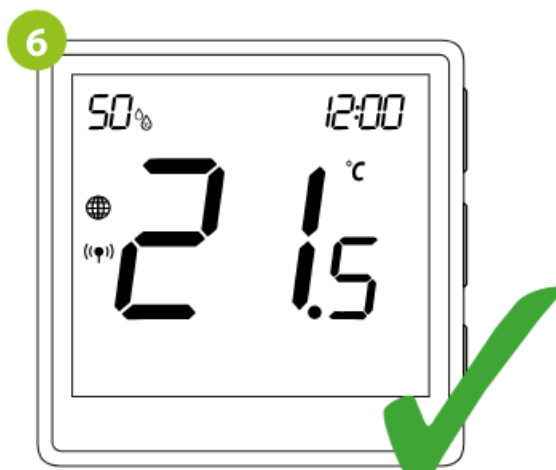
ATTENTION:

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.

Factory reset

To restore the factory settings, press and hold the PAIR button for 10 seconds, red LED diode will starts flashes 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 ECB62ZB in the app).

Documents / Resources
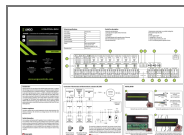
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ECB62ZB Control Box for Underfloor Heating System, ECB62ZB, Control Box for Underfloor Heating System, Box for Underfloor Heating System, Underfloor Heating System, Heating System, System

References

- ☰ **ENGO Controls - Sterowanie ogrzewaniem**
- **User Manual**