

ZigBee/868MHz Smart Thermostat



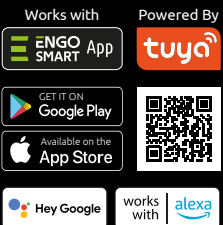
E25-BATW

E25-BATB

Quick Guide



Ver. 2.3  
Release date: X 2025  
Soft:  
ZigBee: v1.0.8  
MCU v1.3.2



**Producer:**  
Engo Controls sp. z o. o. sp. k.  
Rolna 4 St.  
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Poland

www.engocontrols.com

Product Compliance

This product complies with the following EU Directives: 2014/30/EU, 2014/35/EU, 2014/53/EU, 2011/65/EU

SAFETY INFORMATION:

Use in accordance with national and EU regulations. Use the device only as intended, keeping it in a dry condition. The product is for indoor use only. Please read the entire manual, before installation or use.

Installation

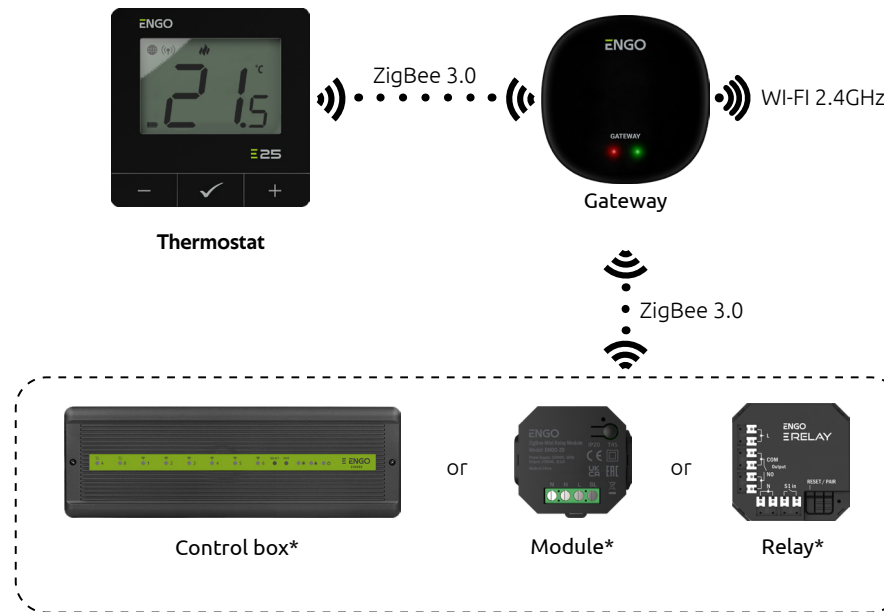
Installation must be performed by a qualified person with appropriate electrical qualifications, in accordance with the standards and regulations in force in a given country and in the EU. The manufacturer is not responsible for non compliance with the instructions.



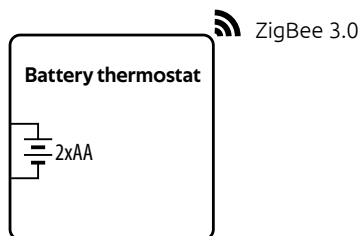
ATTENTION:

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

Wireless communication diagram



Connection description



\* Products sold separately

Legend:

- Battery power supply
- Connection with ZigBee 3.0 network
- Connection with WiFi 2.4GHz network

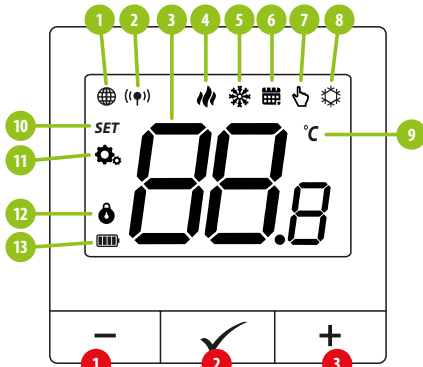
INTRODUCTION:

Internet controlled thermostat with surface-mounted design (battery-powered 2xAA). The product is based on a ZigBee/868MHz wireless communication technology. It is designed for radiator or floor heating. It works with electronic wireless heads. It can control up to 6 radiator heads in one room. Thermostat sends temperature measurements to the heads for better control accuracy - it will ensure also comfort and savings. A unique feature of this thermostat is the ability to control devices WIRELESSLY (ENGO binding function). The "ENGO binding" function makes thermostat to communicate directly with receivers, e.g. a wireless control box or relay module (devices with "BIND" function). ZigBee binding can only be performed using the Internet gateway (sold separately). If thermostat is used with an internet gateway connected to the internet, it has the ability to be controlled wirelessly via the ENGO Smart mobile app. When added to the mobile app, thermostat gets additional functions, e.g. time schedules or push notifications. Thermostat has also a key lock function, possibility of setting a minimum and maximum temperature setpoint limits and the ability to operate in heating or cooling mode.

Technical data

|                        |                                                                            |
|------------------------|----------------------------------------------------------------------------|
| Power supply           | 2xAA battery                                                               |
| Temp. setpoint range   | 5,0°C to 45,0°C                                                            |
| Display temp. Accuracy | 0,5°C                                                                      |
| Control algorithm      | TPI<br>Hysteresis ( $\pm 0.1^{\circ}\text{C}$ to $\pm 2^{\circ}\text{C}$ ) |
| Communication          | ZigBee 3.0<br>RF 868MHz                                                    |
| Dimensions [mm]        | 80 x 80 x 23                                                               |

LCD Icon Description + Button Description



- "Down" Button -
- "OK" Button OK
- "Up" Button +

- ZigBee network connection indicator
- Receiver binding indicator
- Current/Setpoint temperature
- Heating indicator (icon is animating when there is heating demand)
- Cooling indicator (icon is animating when there is cooling demand)
- Schedule mode icon
- Temporary override mode
- Frost protection mode
- Temperature unit
- Settings icon / temperature settings
- Settings icon
- Button lock
- Battery indicator

Button description

|       |                                                                                                                                                      |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| +     | Change the parameter value up                                                                                                                        |
| -     | Change the parameter value down                                                                                                                      |
| ✓     | Manual/Schedule mode - short button press (Online mode)<br>Enter the installer parameters- hold 3 seconds<br>Turn OFF/ON thermostat - hold 5 seconds |
| + & - | Enter the pairing mode - hold 5 seconds<br>Enter Sync / Binding mode - hold 5 seconds<br>Factory reset - hold until the FA message appears           |
| + & ✓ | Lock/Unlock thermostat keys - hold 3 seconds                                                                                                         |
| - & ✓ | Heating/Cooling mode change - hold 3seconds                                                                                                          |

Installation thermostat in the app

Make sure your router is within range of your smartphone. Make sure you are connected to the Internet. This will reduce 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.



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 - CONNECT THE THERMOSTAT TO ZigBee

- Make sure ZigBee Gateway has been added to the Engo Smart app. Press and hold the - and + buttons on the thermostat until the display shows „PA“. Then release the keys. The pairing mode will be started up.
- Thermostat counts the time back (180s).
- Enter the gateway interface.
- In „Zigbee devices list“ go „Add devices“.
- Wait for the message "End" to appear on the thermostat screen.

6

Dodaj urządzenie

1 dodano pomysłów

E20 ZigBee 230V Thermo...

Dodano pomysły

Done

Name the device and click „Done”.

7

22.0°C

Current temperature 23.5°C

-

+

The thermostat has been installed and displays the main interface.

8

21.5°C

-

✓

+

On the controller screen globe icon appeared stating that he has been he added to the ZigBee network.

## Synchronization with head

An internet gateway is not mandatory to synchronize thermostat with head. Make sure head is installed and adapted to valve insert (see head manual). If thermostat is connected to a wireless control box or relay module, synchronization with head cannot be activated.

1

ENG0

3s

After successful adaptation process, press&hold head button for 3 seconds. The LED will start flashing blue.

2

21.5°C

545

-

✓

+

Hold simultaneously – and + buttons on thermostat until the “SY” function appears.

3

SY

-

✓

+

Release buttons, SYNC function will be active (synchronization with head).

4

ENG0

10 sec

After successful synchronization, LED diode will indicate blue light for 10 seconds.

5

SY

-

✓

+

Thermostat will indicate how many heads are synchronized.

6

End

-

✓

+

“END” message will appear after successful synchronization.

7

21.5°C

-

✓

+

The devices are synchronized and ready to work.

ATTENTION:

The synchronization should be performed for each head separately. One thermostat can control up to 6 heads within one room.

## Binding thermostat with the wireless control box

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

1

2

1

In order to correctly link 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 PAIR button (2). The LED (2) will flash green with the previously selected zone - binding process has started, it is active for 10 minutes and during this time you can link thermostat with the selected zone.

or

5x

5x

To properly link thermostat with the module/relay first click quickly the button on the device 5 times. The LED diode will start flashing slowly on red, which means the device is in binding mode.

2

21.5°C

-

✓

+

On the thermostat, hold – and + buttons until the “bind” message appears.

3

005

-

✓

+

Release the keys, binding function process of linking thermostat is active.

4

300

-

✓

+

The “binding” process takes up to 300 seconds.

5

End

-

✓

+

After successful binding operation „End” message will be displayed.

6

21.5°C

-

✓

+

Both devices have been successfully linked. Thermostat displays the main screen, icon (☀) appeared on the screen indicating connection with the receiver.

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 zone , the zone will turn off after 50 minutes, if the communication between the devices is lost.

## Installer settings

To enter installer parameters press and hold ✓ button for 3 seconds.

1

21.5°C

-

✓

+

Use – or + button to move between parameters. Enter the parameter by ✓. Edit the parameter using – or + Confirm the new parameter value with the ✓ button.

2

PO1

-

✓

+

## Installer parameters

| Pxx | Function                                                                  | Value            | Description                                                                                                                                                              | Default value                              |
|-----|---------------------------------------------------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| P01 | Heating/Cooling Selection                                                 | ☀                | Heating                                                                                                                                                                  | ☀                                          |
|     |                                                                           | ❄                | Cooling                                                                                                                                                                  |                                            |
| P02 | Control algorithm                                                         | TPI UFH          | TPI for Underfloor Heating                                                                                                                                               | TPI UFH for heating<br>HIS 0.4 for cooling |
|     |                                                                           | TPI RAD          | TPI for Radiators                                                                                                                                                        |                                            |
|     |                                                                           | TPI ELE          | TPI for Electrical Heating                                                                                                                                               |                                            |
|     |                                                                           | HIS 0.4          | SPAN +/-0,2°C                                                                                                                                                            |                                            |
|     |                                                                           | HIS 0.8          | SPAN +/-0,4°C                                                                                                                                                            |                                            |
|     |                                                                           | HIS 1.2          | SPAN +/-0,6°C                                                                                                                                                            |                                            |
|     |                                                                           | HIS 1.6          | SPAN +/-0,8°C                                                                                                                                                            |                                            |
|     |                                                                           | HIS 2.0          | SPAN +/-1,0°C                                                                                                                                                            |                                            |
|     |                                                                           | HIS 3.0          | SPAN +/-1,5°C                                                                                                                                                            |                                            |
|     |                                                                           | HIS 4.0          | SPAN +/-2,0°C                                                                                                                                                            |                                            |
| P03 | Offset temperature                                                        | -3.0°C do +3.0°C | If the thermostat indicates wrong temperature, you can correct it by max ± 3.0°C                                                                                         | 0°C                                        |
| P04 | “Minimum setpoint”                                                        | 5°C - 45°C       | Minimum heating / cooling temperature that can be set                                                                                                                    | 5°C                                        |
| P05 | “Maximum setpoint”                                                        | 5°C - 45°C       | Maximum heating / cooling temperature that can be set                                                                                                                    | 35°C                                       |
| P06 | Backlight brightness                                                      | 10% - 100%       | Adjustable in the range from 10 to 100%                                                                                                                                  | 50%                                        |
| P07 | PIN Code for settings access                                              | NO               | Function disabled                                                                                                                                                        | NO                                         |
|     |                                                                           | PIN              | Function enabled                                                                                                                                                         |                                            |
| P08 | PIN code value                                                            | 000-xxx          | user PIN                                                                                                                                                                 | 000                                        |
| P09 | Require a PIN to unlock the keys every time (function active when P8=PIN) | NO               | Function disabled                                                                                                                                                        | NO                                         |
|     |                                                                           | YES              | Function enabled                                                                                                                                                         |                                            |
| P10 | Valve protection                                                          | ON               | Function enabled                                                                                                                                                         | OFF                                        |
|     |                                                                           | OFF              | Function disabled                                                                                                                                                        |                                            |
| P11 | Latest available firmware for heads                                       | xxx              | Firmware version available to update heads                                                                                                                               | Read only                                  |
| P12 | Current firmware installed in heads                                       | null - xxx       | null - firmware in the heads is latest possible. xxx - a newer version is available, press the button to update the heads                                                | -                                          |
| P13 | Delta RCWC algorithm (only for heads)                                     | 0.5°C to 5.0°C   | In case of room temperature change, head opens proportionally to the size of the delta RCWC parameter. The smaller delta RCWC is, the faster the valve response will be. | 2.0                                        |
| CLR | Clear settings factory reset                                              | NO               | No action                                                                                                                                                                | NO                                         |
|     |                                                                           | YES              | Factory Reset                                                                                                                                                            |                                            |

## Factory reset

To RESET Thermostat to factory settings, hold down the – and + buttons until the FA message appears. Then release the keys. Then use the - or + button to change “NO” to YES” and confirm with ✓ button. Thermostat will restart, will restore the default factory settings and display the main screen. If the thermostat was added to the gate and the ZigBee network, it will be removed from it and you will need to add / pair it again.

1

21.5°C

-

✓

+

2

FA5

-

✓

+

3

NO

-

✓

+

4

YES

-

✓

+