



BOSCH

LET'S GET
STARTED

Room thermostat for underfloor heating

User manual (230V and 24V)





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Dear customer,

Congratulations on purchasing your Bosch Smart Home Room Thermostat for underfloor heating. It will help you to make your home even smarter and more energy-efficient.

Thanks to the Bosch Smart Home App, you can select the room temperature of your choice not only at home, but from anywhere and also set a separate schedule for each room. Scenarios let you control several rooms at the same time, whereas automations help you to smartly connect your room thermostat to other components in your Smart Home System (IF ... THEN rules).

We hope you enjoy your product, Yours,
The Bosch Smart Home Team

1 PRODUCT DESCRIPTION

The Bosch Smart Home Room Thermostat for underfloor heating (hereinafter "room thermostat") is wired directly to the actuators on the underfloor heating manifold.

You can replace an existing device with the room thermostat without no need for rewiring. A standard in-wall socket is required for installation. Although frames are supplied, in many cases you can also keep the frames of the existing switch series. Additional information and instructions can be found on the Bosch Smart Home GmbH website or in the Bosch Smart Home App.

1.1. Intended use

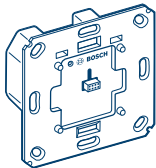
The product is solely intended for indoor use, permanently installed inside in-wall sockets with a minimum depth of 50 mm. The device may only be operated with attached control element.

In order to function properly, the product must be used together with the Bosch Smart Home Controller.

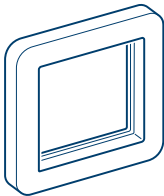
- ▶ Please follow the safety instructions and the directions in this manual and the Bosch Smart Home App to ensure correct setup
- ▶ Please note the details in the Technical Data (see section 9.1)
- ▶ Avoid dust, moisture and sunlight

- ▶ The room thermostat is solely designed for controlling actuators with a maximum current of 1 ampere (equivalent to 230W switching power on 230V products or 24W for 24V products). Any use other than that described in this manual shall be deemed contrary to the intended purpose and shall result in the exclusion of warranty and liability
- ▶ The control was designed for water-based underfloor heating systems. Operation with other system types (electrical, for instance) has not been tested

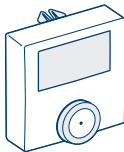
2 BOX CONTENTS



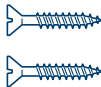
1 in-wall unit



1 interchangeable
frame



1 control unit
(thermostat function)



2 mounting screws
3.2 x 25 mm

Figure 1: Box contents



2 mounting screws
3.2 x 15 mm



1 enclosed
QR code sticker



user manuals

3 GENERAL INFORMATION AND DANGERS

Please read the manual carefully before using the room thermostat. Keep the manual for later reference.

If you let other persons use the device, please also give them this manual.

3.1. Legend



Warning.
This alerts you to danger.



Info.
Indicates important information.







Specific information on the 230V version

or



Specific information on the 24V version

3.2. Safety instructions

-  Do not use the product if it has visible signs of damage e.g. on the housing, controls or connector sockets. If in doubt, have a qualified person check the device or contact our service hotline.
-  Do not open the device. Unauthorised conversions or changes to the device are not permissible for safety reasons.
-  Only operate the device indoors in dry and dust-free surroundings. Do not expose the device to constant sunlight or heat, extreme moisture, cold or mechanical strains.
-  The device is not a toy. Do not let children play with it. Do not leave packaging material lying around carelessly. Plastic film and small parts can become a dangerous toy for children.



Bosch Smart Home GmbH declines all liability for property damage or human injury caused by incorrect handling or disregard of the danger warnings. Warranty claims are voided in such cases.



The device may only be used for fixed installations and must be mounted securely inside a permanent installation.



This product may only be installed by people legally qualified to install devices. If in doubt, check the statutory regulations that apply in your country.



230V

The power circuit to which the device and load are connected must be protected by a circuit breaker in line with EN60898-1 (triggering characteristic B or C, max. 16A rated current, min. 6 kA breaking capacity, energy limiting class 3). Installation regulations to HD384 or IEC 60364 as well as other national specifications such as VDE 0100 must be observed. The circuit breaker must be easily accessible to the users and labelled as such for the device.



The supply of the device must be a safety extra-low voltage (SELV) power source.

24V



Please make sure that you are using approved wiring and wiring cross sections when connecting to the device terminals.



Consumers connected to the relay outputs must be sufficiently insulated.



Before connecting a consumer, observe the technical data, in particular the maximum permissible switching capacity of the relay and the type of consumer to be connected. All load specifications refer to resistive loads. Load the actuator only up to the specified power limit.



Overloading may result in device destruction, fire or electric shock.



The device is not suitable for disconnecting.



When controlling a device remotely or using automated control, external circumstances (such as the radio connection to the Smart Home Controller being interrupted) mean it cannot always be guaranteed that commands will actually be carried out or that the correct status of the device will be displayed in the app and on other Smart Home display devices (e.g. a Twist). This may result in damage to property and/or injury.

Therefore:

► Please ensure as far as possible that no-one is at risk during remote operation or automated control.

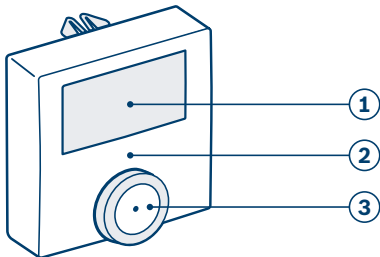
► Please exercise particular caution when setting up or adjusting remote or automated control and regularly check the desired functionality.



Any other use to that described in this user manual or in the Bosch Smart Home App shall be deemed as contrary to the intended purpose. No liability is accepted for any consequential damage.

4 PRODUCT OVERVIEW

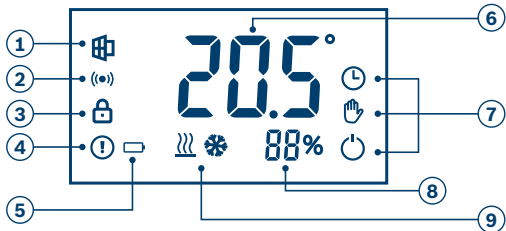
4.1. Indicators and controls



	Description	Explanation
1	LCD display	Indication of values, settings and faults
2	Status LED	Display for device status and error codes
3	Rotary-push knob	Use it to set and select temperature, room control mode, menu functions ...

Figure 2: Overview of controls

Figure 3: Display description



	Description	Explanation
1	Open window	The system has detected an open window in the room
2	Radio status	Radio connection to Controller is active

	Description	Explanation
3	Child lock	Device locked
4	Fault indication	Device has a fault
5	Power supply status	Indicated in the event of power failure
6	Value indication	Actual and target temperature, menu entries, other text information
7	Manual/Automatic/Off operating mode	Indicates the room control operating mode.
8	Humidity	Indicates the current measurement value for relative humidity in %
9	Operating mode heating/cooling	Displays the operating mode of the central heat or cooling generator

5 MOUNTING



Please note the safety instructions during mounting and installation (see section 3)



Installation may only be performed by persons with the relevant electrical knowledge and experience! *)

Incorrect installation may result in danger to:

- ▶ your own life
- ▶ the lives of the users of the electrical system


Incorrect installation bears the risk of serious material damage caused by fire, for instance. You risk personal liability for human injury and material damage. **Seek the services of an electrician!**

***) Specialist knowledge required for installation**

In particular, the following specialist knowledge is required for installation:

- ▶ The "five safety rules" that must be carried out: activate; secure against switching on unintentionally; check that the power is off; earth and short-circuit the device; cover or block adjacent live parts

- ▶ Selection of suitable tools, measuring equipment and if necessary, personal protection equipment
- ▶ Evaluation of the measurement results
- ▶ Selection of electrical installation material to ensure compliance with shutdown conditions
- ▶ IP protection classes
- ▶ Mounting of electrical installation material;
- ▶ Type of supply network (TN system, IT system, TT system) and the resulting connection conditions (conventional earthing, protective earthing, necessary additional measures etc.)

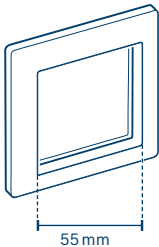
 Please refer to our website for an explanatory video on how to install the Bosch Smart Home Room Thermostat at: www.bosch-smarthome.com/installation

Approved wire cross sections for room thermostat connection:

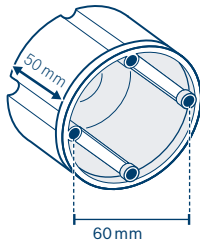
	Rigid cable [mm²]	Flexible cable [mm²]
230V	0.75 – 1.50	0.75 – 1.50
24V	0.75 – 1.50	0.75 – 1.50

5.1. Mounting instructions

- ▶ The room thermostat can be combined with many alternative frames from manufacturers, who offer products with an internal dimension of 55 mm



- ▶ Junction boxes with a depth of 50 mm and screw spacing of 60 mm are required for mounting



► Depending on the version, you will need:

230V two power lines with a phase conductor and neutral conductor.
An additional third line for the actuator on the heating system manifold.

24V Two power lines and a further two lines for supplying the 24V actuator

5.2. Mounting the in-wall unit



Before you begin: you must turn off the circuit breaker!

Follow the steps below to mount the room thermostat:

► Remove the cover and undo the fasteners on your existing thermostat



Tip: Before detaching the wires, to be on the safe side, take a photo of the wiring on the existing device and if necessary, colour code the wires if this has not already been done during installation.

Undo the wiring and remove the old device.

i Tip: Use a small screwdriver to press the white pusher at the respective clamping point when connecting and undoing the wires.

► Now take the in-wall unit of the Bosch Smart Home Room Thermostat

230V

- Connect the phase conductor to terminal L
- Connect the neutral conductor to terminal N
- Connect the actuator (valve) line to terminal 1

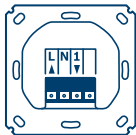


Figure 4:
230V in-wall unit

24V

- ▶ Connect the 24 V power supply to the terminals labelled "Supply"
- ▶ Connect the 2-wire line of the valve actuator to the terminals labelled "Valve"



Figure 5:
24V in-wall unit

- ▶ Mount the in-wall unit on the junction box using the enclosed screws. Make sure it is positioned correctly (label readable)



Do not switch the circuit back on yet.

Now follow the setup steps described in the next section with or without the Smart Home App (section 6.1 and 6.2).

6 SETUP AND INSTALLATION

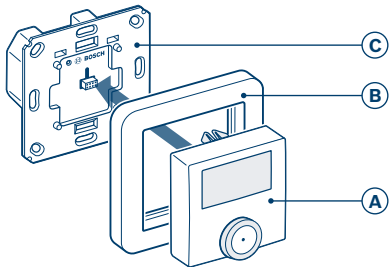
6.1. Fix control unit and putting into service



The room thermostat can be operated on its own without being connected to the Smart Home System. In this case, function is mainly limited to displaying the room temperature and controlling the actuator on your heating system manifold to the specified target temperature in operating mode manual (without time program). You can connect the room thermostat to the Smart Home System later at any time (see section 6.2).

To put the device into operation, insert the control unit **"A"** into the frame **"B"** as shown in Figure 6 and gently press it onto the flush-mounted unit **"C"** until the frame is firmly seated.

Insert the control unit as parallel as possible to the wall surface and use the guide elements (including the notch above the socket) to do so. Take particular care of the metal pins on the back of the control unit to avoid any damage to the device.



- A. Control unit with thermostat function
- B. Interchangeable frame – (can be replaced by other 55 mm frames)
- C. In-wall housing with power supply and switching relay (for 230V or 24V power supply depending on the version)

Now you can switch the circuit back on.

The device runs a function check to start with and then indicates the room temperature and other display elements. You will also notice the status LED flashing orange to indicate that pairing mode for linking to the Smart Home Controller has been launched automatically. This mode terminates automatically after around 6 seconds if no pairing takes place.

Figure 6: Mounting the control unit



In the first 10 minutes after switching on the power, the room thermostat is in start mode and the relay is permanently activated. For the next 20 minutes, the relay is operated via a 2-point control at which the relay is switched on or off accordingly when the temperature falls below or exceeds the target value. In the subsequent regular operation, the relay is regulated by a PID controller with PWM output.

The valve type can be set when the device is used for the first time or when the factory settings are restored (section 6.5). To do this, press and hold down the rotary-push knob for at least 5 seconds until the configuration menu is displayed. You can now turn the control from valve type "nO" (= normally open) to "nC" (= normally closed). Acknowledge your selection by briefly pressing the rotary-push knob. The menu display goes out automatically after a short time once the rotary-push knob is no longer actuated.

Should you realise that you have selected the wrong valve type, simply re-access the configuration menu.





Figure 7: Display screen when selecting the valve type (nO=normally open)

Once the room thermostat is paired to the Smart Home System, this menu is no longer available. In this case, you can adjust the valve type via the device settings in the Smart Home App.

i In order to simplify device setup via the Smart Home App later on, attach the enclosed QR code sticker to the device or keep it with the documentation. This saves having to remove and replace the control unit again when the thermostat has to be configured for the Smart Home System at a later stage.

6.2. Pairing the device with the Smart Home System

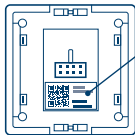
-  Before you begin, please ensure that you have a Bosch Smart Home Controller and have successfully set up the Bosch Smart Home App.
-  Use the explanatory video on our website to help you easily install your Bosch Smart Home Room Thermostat:
www.bosch-smarthome.com/installation

You need the identification code (SGTIN), which is illustrated as the QR code on the enclosed sticker, to pair the room thermostat via the Smart Home App.

You can also find the QR code on the back of the control unit. Should it already be mounted, you can carefully pull and wiggle it slightly to the side to remove it from the in-wall unit and scan the QR code on the back.



Enclosed QR code sticker



SGTIN: 2345
Key: xxx

Figure 8: QR code on the back of the control unit



Since the control unit is supplied via the in-wall unit with a low voltage only, it can be safely removed and replaced even when the power is switched on. However, for increased safety, you can also briefly interrupt the power circuit.

Briefly press the rotary-push knob on the control unit to start the pairing mode. Pairing active for 3 minutes (status LED flashes orange). If the time lapses before you were able to configure the device in the app, simply press the knob on the control unit again to restart the mode.

The room thermostat LED indicates the status of the pairing attempt via the following flash codes.

LED display	Explanation
Flashes orange (every 10 seconds)	Searching for system controller
Flashes green once	Successful pairing attempt
Flashes red once	Unsuccessful pairing attempt




Launch the Bosch Smart Home App and select "Add device". The app will prompt you to scan the QR code.



From this point, the app guides you through the installation process.

7 TROUBLESHOOTING

7.1. Error and flash codes on the device

Display	Meaning	Solution
Antenna icon flashes 	Communication fault with the controller	Check the function of your controller. If the problem persists, please contact the customer service department.
Battery icon 	Power supply interrupted (power failure)	Check the fuse in your distribution box. Check the power adapter on 24V systems.
Key icon 	Operation lock active	Switch off the child lock again in the app device settings.

Display	Meaning	Solution
Brief orange flashing	Transmission attempt or data transfer	Wait until transfer is complete.
Brief orange flashing (every 10 s)	Pairing mode active	Follow the instructions in the app
Sustained green light	Process successful	Not necessary.
Sustained red light	Process failed	Please try again. Otherwise please contact the customer service department.
Red flashing 6 times	Device defective	Follow the instructions in the app or contact the customer service department.

7.2. Restoring factory settings (reset)

Follow the steps below to restore the device's factory settings:

- ▶ Remove the control unit from the in-wall unit
- ▶ While inserting the control unit again, hold down the rotary push knob for several seconds until the status LED flashes orange and the word "res" is indicated on the display
- ▶ Release the knob and then press it again for several seconds until the LED lights up green
- ▶ Release the knob again. The device now restarts with the factory settings

8 MAINTENANCE AND CLEANING

The product is maintenance-free. Repairs should only be performed by qualified persons. Clean the product with a soft, clean, dry and lint-free cloth. Do not use cleaning agents containing solvents.



Incorrect handling (see section 1.1) or disregard of the danger warnings may compromise the protection afforded by the device.

9 PRODUCT DETAILS

9.1. Technical Data

	230 V version	24 V version
Device type name	THIW230 AA	THIW24 AA
Article number	8-750-001-003	8-750-001-004
Supply voltage	230 V / 50 Hz	24 V / 50 Hz
Type of protection	IP20	
Current consumption / max. switching power	Max. 1 A / 230 Watt	Max. 1 A / 24 Watt
Load type	Ohmic load	
Switching output	Relay: Normally open, 1-pole, μ -contact	Triac
Cable type and cross section	Rigid and flexible cable 0.75 – 1.5 mm ²	
Installation	Only in junction boxes according to DIN 49073-1 or equivalent local legislation	

	230 V version	24 V version
Ambient temperature (operation)	0 to 50 °C	
Dimensions (W x H x D)	55 x 55 x 54 mm (without frame)	
Weight, with / without frame	102 g / 125 g	87 g / 110 g
Radio frequency band	868,0–868,6 MHz / 869,4–869,65 MHz	
Max. transmission power / typ. free-field range	10 dBm / >100 m	
Duty cycle	< 1 % per h / < 10 % per h	
Construction of regulating & control unit (RCU)	Independently mounted electronic RCU	
Method of operation	Type 1.B	Type 1.Y
Software class	A	
Pollution degree	2	
Withstand voltage	4000 V	330 V
Temperature of ball pressure test	125 °C	

9.2. Declaration of conformity

Robert Bosch Smart Home GmbH hereby declares that the Bosch Smart Home Room Thermostat complies with Directive 2014/53/EU and is designed for use in all countries of the European Union.

You can download the full text of the declaration of conformity at:

www.bosch-smarthome.com/conformity



9.3. Faults in radio operation

Faults in radio operation (e.g. due to electric motors or defective electrical devices) cannot be ruled out. The radio range inside buildings may differ greatly from the radio range in free-field conditions. Apart from the transmission power and the receiver characteristics, environmental influences such as humidity and structural characteristics may also influence radio operation.

9.4. Open Source software

This Bosch Smart Home product uses open-source software. Below you will find the license information for the components used.

core_cm3.h

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9.5. Environmental protection and disposal

Electrical and electronic equipment that is no longer usable and defective or used batteries must be separated from other waste and recycled in an environmentally friendly manner (European Directive on waste electrical and electronic equipment).

For the disposal of electrical and electronic equipment or batteries, use your country-specific return and collection systems.



10 MORE INFORMATION

You can find more information about the operation and care of the room thermostat in the online FAQs at www.bosch-smarthome.com/service

You will also find all contact details on the rear side of this document.

All manufacturer and product names mentioned in this user manual are solely for the purpose of product identification and may be registered tradenames or trademarks of the respective manufacturers.



Sale and transfer

Before you transfer or sell your device, remove the device via the settings in the Smart Home App. Please also restore the device to its factory settings (see section 7.2 and the online FAQs).

#BeSmarter



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