oventrop

Valves, controls + systems

EN

“mote 200”
Electronic wireless thermostat
Operating instructions

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1. General information

The original operating instructions were drafted in German.

The operating instructions in other languages have been translated from German.

1.1 Validity of the operating instructions

These operating instructions are valid for the “mote 200” electronic wireless thermostat.

1.2 Type plate

The type plate is located in the battery case.

1.3 Extent of supply

Please check your delivery for any damage caused during transit and for completeness.

Items supplied:

- 1× “mote 200”
- 1× operating instructions
- 1× adapter screw
- 3× adapters (Danfoss RA, RAV, RAVL)
- 2× batteries – 1.5 V LR6/Mignon/AA

1.4 Contact

Contact address

OVENTROP GmbH & Co. KG

Paul-Oventrop-Straße 1

59939 Olsberg

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GERMANY

Technical services

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1.5 Copyright and protective rights

These operating instructions are protected by copyright. They are exclusively designed for persons involved with the product.

1.6 Declaration of conformity

Oventrop GmbH & Co. KG hereby declares that this product complies with the basic requirements and other relevant provisions of the EC Directives concerned.

The declaration of conformity can be obtained from the manufacturer.

1.7 Symbols used

	Highlights important information and further explanations.
▶	Action required
•	Enumeration
1. 2.	Fixed order. Steps 1 to X.
▷	Result of action

2. Safety-related information

2.1 Normative directives

Observe the legal requirements applicable at the installation location.

The current standards, regulations and guidelines apply.

2.2 Correct use

Operating safety is only guaranteed if the product is used correctly.

The Oventrop “mote 200” is a programmable, electric wireless thermostat designed to control radiators in enclosed spaces. Use the product in dry, dust-free environments without direct sunlight only.

Any other use of the product will be considered unintended use.

Claims of any kind against the manufacturer and/or its authorised representatives due to damage caused by incorrect use will not be accepted.

Observance of the operating instructions is part of compliance with correct use.

2.3 Modifications to the product

Modifications to the product are not permitted. In the event of modifications to the product, the warranty will become void. The manufacturer will not accept liability for damage and breakdowns caused by modifications to the product.

2.4 Warnings

Each warning contains the following elements:

Warning symbol SIGNAL WORD	
	Type and source of danger! Possible consequences if the danger occurs or the warning is ignored. ▶ Ways to avoid the danger.

The signal words identify the severity of the danger arising from a situation.

⚠ WARNING	
	Indicates a possible danger with moderate risk. The situation may lead to death or serious injury if not avoided.

NOTICE	
	Indicates a situation that may lead to damage to property if not avoided.

2.5 Safety notes

We developed this product in accordance with the current safety requirements.

Please note the following information concerning safe use.

2.5.1 Risk of injury caused by batteries

Gaseous or liquid substances may escape as a result of mechanical damage to batteries. These may be severely irritating or toxic.

An electrical fault, such as a short-circuit, may result in overheating.

External warming up, for instance caused by exposure to direct sunlight or attempts to charge the batteries, may lead to an explosion.

- ▶ Ensure that “mote 200” is sufficiently protected from mechanical and thermal influences.
- ▶ Do not use the product any longer if it shows visible signs of damage.
- ▶ Ensure that the batteries are inserted with the correct polarity (+/-).
- ▶ Do not expose the batteries to direct sunlight or naked flames.
- ▶ Do not use partially discharged batteries together with new ones.
- ▶ Do not try to charge the batteries.
- ▶ If any battery fluid leaks and comes into contact with skin, eyes or mucous membranes, rinse the affected areas immediately with plenty of clean water and seek medical attention.

2.5.2 Suffocation risk for children

Keep the “mote 200” and its packaging out of reach of children to avoid risk of ingestion and suffocation.

- ▶ Keep the “mote 200” out of reach of children.
- ▶ Seek medical attention immediately if small parts have been swallowed.

2.5.3 Availability of the operating instructions

These operating instructions must be read and applied by any person working on the product.

The operating instructions must be available at the installation location.

3. Technical description

3.1 Functional description

This product is designed to offer convenient, individual adjustment of the temperature in your rooms and can even help you to effectively lower your heating costs as a result.

3.1.1 Basic functions

The Oventrop “mote 200” offers program-controlled temperature regulation of rooms containing radiators. You can programme the time-controlled regulation of the radiators via a smartphone. The connection between the “mote 200” and your smartphone is established via Bluetooth. The power for the “mote 200” is supplied by two batteries.

3.1.2 Open-window recognition

If you open a window and the temperature drops strongly as a result, the “mote 200” closes the radiator valve automatically to save energy. The LED for open-window recognition illuminates when this feature is active. The LED remains illuminated until the set time has elapsed and the wireless thermostat switches back to control operation.

3.1.3 Key lock

When the key lock is active, the settings of the “mote 200” cannot be changed. (see Section 8.1.2 on page 10).

3.1.4 Frost protection function

If the temperature drops below 7 °C, the “mote 200” keeps the valve open until the temperature rises to above 7 °C again. This will prevent the radiators from freezing.

3.1.5 Anti-scaling function

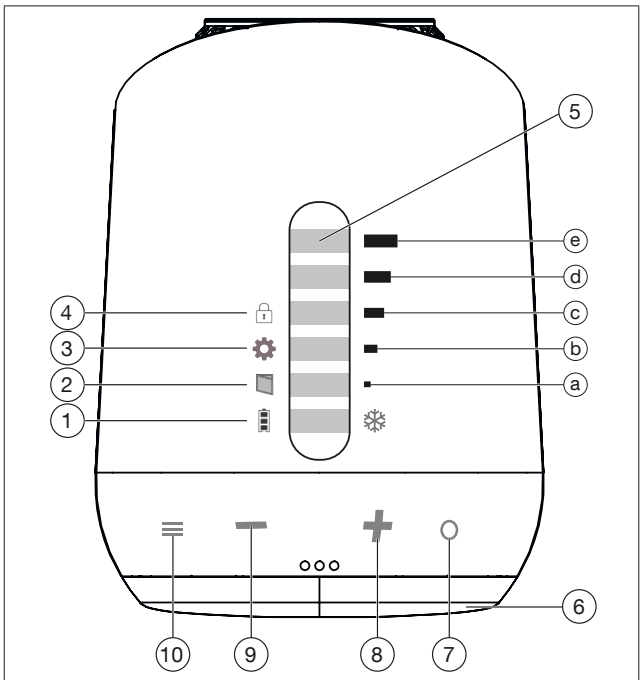
If required, the “mote 200” performs an anti-limescale run to prevent the radiator valves from calcifying.

3.1.6 Control operation and menu mode

- The menu mode serves to activate the “Installation/Removal” function ⚙ and the key lock.
- During control operation, you may set the desired temperature by using the “PLUS”+ and “MINUS” − buttons.

3.2 Operating elements and indicators

3.2.1 Summary



Illust. 1: Operating and indicator elements

(1)	🔋	Battery status
(2)	▯	Open-window recognition
(3)	⚙	Installation/Removal
(4)	🔒	Key lock
(5)	❄, a to e	LED display (see Section 3.2.2 on page 7)
(6)		Battery case cover
(7)	○	OK/SET (confirm)
(8)	+	PLUS (increase temperature)
(9)	−	MINUS (reduce temperature)
(10)	≡	MENU

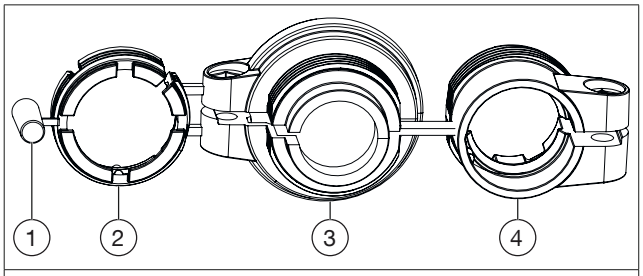
3.2.2 LED display for temperature levels

❄ **to (e) ON**	=	28 °C
❄ **to (d) ON, (e) flashes**	=	26 °C
❄ **to (d) ON**	=	24 °C
❄ **to (c) ON, (d) flashes**	=	22 °C
❄ **to (c) ON**	=	21 °C
❄ **to (b) ON, (c) flashes**	=	**20 °C**
❄ **to (b) ON**	=	19 °C
❄ **to (a) ON, (b) flashes**	=	18 °C
❄ **to (a) ON**	=	16 °C
❄ **ON, (a) flashes**	=	12 °C
❄ **ON**	=	7 °C frost protection

3.3 Technical data

Transmitting power	+0 dBm at 3.0 V
Frequency	2.4 GHz
Battery	2× 1.5 V LR6/Mignon/AA
Connection thread	M30 x 1.5 mm
Operation mode	Type 1
Size (W x H x D)	56 x 68 x 89 mm
Weight	150 g (incl. batteries)
Protection	IP20
Degree of contamination	2

4. Accessories



Illust. 2: Adapter

(1)	RAV pin for extending the valve stem when using the RAV adapter.
(2)	RAVL
(3)	RAV
(4)	RA

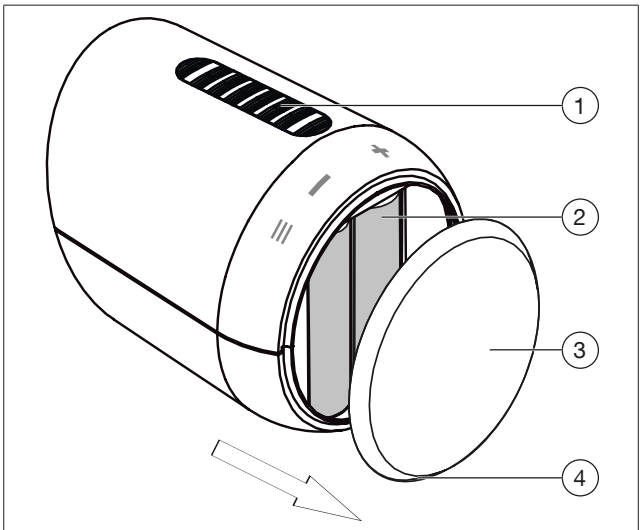
5. Transport and storage

Remove the batteries if you are not going to use the appliance for an extended period. Store the appliance in a dry, dust-free place.

6. Installation

6.1 Inserting the batteries

The configuration is maintained when replacing the batteries.



Illust. 3: Removing the battery case cover

(1)	LED display
(2)	Battery case
(3)	Battery case cover
(4)	Notch

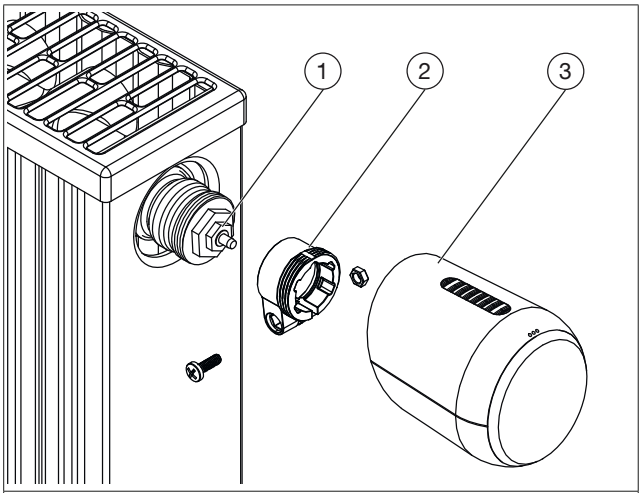
1. Remove the battery case cover by pulling it off at the notch.
2. Now insert the batteries. Observe the correct polarity! Do not use rechargeable batteries!

- The “mote 200” only opens in menu mode once you have inserted the batteries during initial commissioning and after having been restored to the factory settings (see 8.5 on page 13). The “Installation/Removal” ⚙ menu option flashes.
- When replacing the batteries, this step is skipped and the adaptation run is carried out automatically.

3. Refit the battery case cover by pushing it down until it engages with an audible click.

6.2 Installation on the radiator

The “mote 200” can be fitted to any valve body with an M 30 x 1.5 connection thread.



Illust. 4: Fitting the “mote 200”

(1)	Valve
(2)	Adapter **(OPTIONAL!)**
(3)	“mote 200”

1. Turn the old radiator thermostat to fully open position.
2. Loosen the fixing device and remove the old radiator thermostat from the valve.
3. If required, select a suitable adapter for the “mote 200” (see Illust. 2 on page 8 and Illust. 4) and fit it to the radiator.
4. Fit the “mote 200” to the valve and/or adapter by turning the collar nut clockwise..

7. Commissioning

You may start the adaptation run once installation of the wireless thermostat has been completed.

7.1 Adaptation

Initially calibrate the valve stroke in the “mote 200”. To this end, it is essential to launch an adaptation process after installation.

	Ensure that the “Installation/Removal” function is active (☼ flashes).

- ▶ Press and hold the “OK/SET” ○ key for approx. 3 seconds.
- ▷ The adaptation process starts. The “mote 200” adapts to the stroke of your valve. The LEDs flash in sequence.
  Once the adaptation process is complete, the product switches to control operation. The LEDs indicate the nominal temperature.
  After approx. 5 seconds, the “mote 200” switches to standby mode. All LEDs are switched off in standby mode.

7.2 Installing the app

To enter time profiles, connect the “mote 200” using a smartphone via the Bluetooth interface.

Apps for iOS and Android operating systems are available in the relevant app stores (iTunes, Google Play).

- ▶ Install the appropriate “mote 200” app for the operating system you are using. Follow the information in the applicable installation guide.

	- Activate the location request for the „mote 200“ app. - The connection via app can be established when all LEDs at the „mote 200“ are off.

8. Operation

8.1 Manual operation

8.1.1 Setting the temperature manually

Control operation is where you can set the temperature using the “PLUS” + and “MINUS” – keys. The “mote 200” switches back to the values from the set heating program at the next switching point.

- ▶ Press the “PLUS” + key to increase the set temperature.
- ▶ Press the “MINUS” – key to lower the set temperature.
- ▷ After 5 seconds, the display goes blank and the set value is adopted.

8.1.2 Key lock

8.1.2.1 Activation

- ▶ Press the “MENU” ≡ key.
- ▷ The “Installation/Removal” LED ⚙ illuminates.
- ▶ Use the “PLUS” + and “MINUS” – keys to select the “Key lock” 🔒 display.
- ▶ Press the “OK/SET” ○ key.
- ▷ The key lock is activated.

8.1.2.2 Deactivation

- ▶ Press and hold the “MENU” ≡ and “OK/SET” ○ keys at the same time for at least 10 seconds.
- ▷ The key lock is deactivated. The set nominal temperature is displayed.

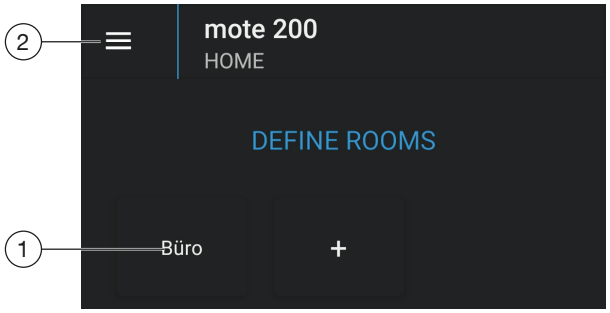
ℹ	The key lock can also be activated or deactivated via the app.

8.2 Operating and programming via app

8.2.1 Creating a room

ℹ	- You may create up to 12 rooms. - You can allocate up to 5 thermostats „mote 200“ to each room.

- ▶ Open the app.
- ▷ The “mote 200 HOME” window appears.



Illust. 5: mote 200 HOME

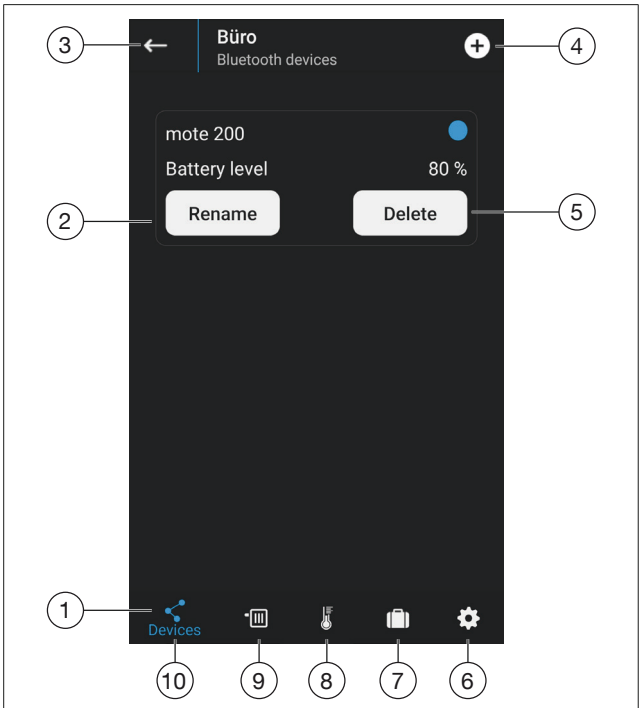
(1)	Adding rooms
(2)	Drop-down menu with additional information

- ▶ Tap the “+” to define a room.
- ▷ The “Create mote 200 room” window appears.
- ▶ Enter the necessary data and confirm with “Save”.
- ▷ The “Search for devices” menu appears. A list of available appliances appears.
- ▶ Add the room to your “mote 200” by tapping on the list.
- ▶ Confirm the details you have entered with “Finished”.
- ▷ The “mote 200 HOME” menu appears. The room you defined appears in the list.

8.2.2 Renaming the “mote 200”

ℹ	If you are using the app to control several “mote 200” devices, it is useful to assign unique names to each of the wireless thermostats.

- ▶ Tap the name of the room you have created in the “mote 200 HOME” menu.
- ▷ The “Devices” menu opens with a summary of the devices assigned to this room.



Illust. 6: “Devices”

(1)	Menu bar
(2)	Rename thermostat.
(3)	Open “mote 200 HOME” menu.
(4)	Create another “mote 200”.
(5)	Delete thermostat/room assignment.
(6)	Open “Setting” menu.
(7)	Open “holiday profile” menu.
(8)	Open “Heating profile” menu.
(9)	Open “Temperature” menu.
(10)	Open “Devices” menu.

▷ The app connects to the thermostats assigned to this room.

▶ Tap the “Rename” key for the respective thermostat.

▷ The “Rename” submenu appears.

▶ Rename your “mote 200” as required and confirm with “Rename”.

8.2.3 Creating a heating profile

	You can create a heating profile for each of the rooms you have created. Tapping on the relevant room in the “mote 200 HOME” menu opens another menu that displays the appliances assigned to this room (“Devices” menu). By using the menu bar (item 1 in Illust. 6 on page 11) you can access the “Devices”, “Temperature”, “Heating profile”, “holiday profile” and “Setting” menus.

“Devices” menu (item 10 in Illust. 6 on page 11)

▶ Tap the name of the room you have created in the “mote 200 HOME” menu.

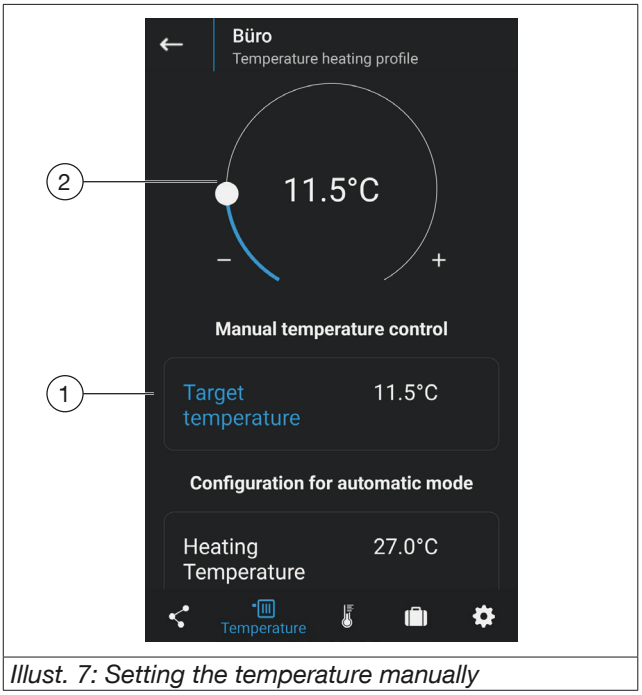
▷ Another menu opens with a summary of the appliances assigned to this room.

▷ The app connects to the thermostats assigned to this room.

▷ If the connection can be established, the battery charging status of the thermostats is displayed.

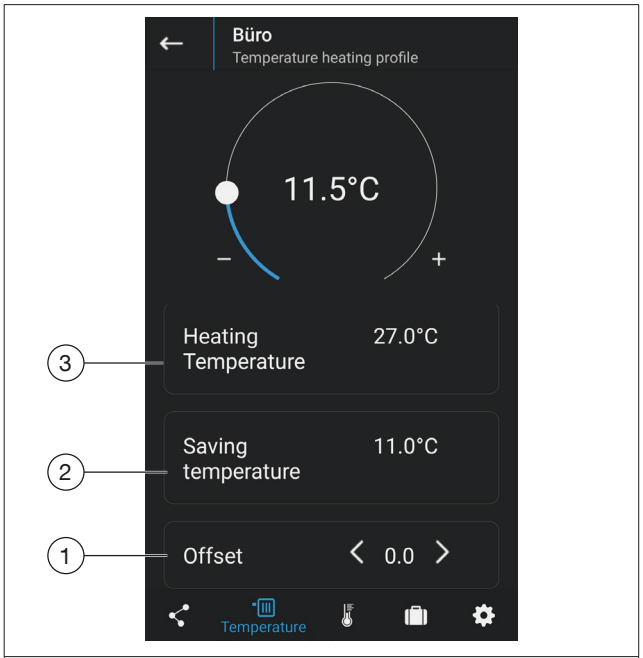
8.2.3.1 “Temperature” menu (item 9 in Illust. 6)

You have the option here to set three temperature types and an offset. You can even adjust the temperature manually to suit your current needs or define temperatures for automatic mode.



Illust. 7: Setting the temperature manually

(1)	**Nominal temperature**	This is the temperature that is currently selected in the “mote 200” or on the mode dial in the app. This setting is used for short-term selection of a temperature that differs from the heating profile.
(2)	**Mode dial**	



Illust. 8: Setting temperatures for automatic mode

(1)	**Offset**	In the event of unfavourable spatial conditions, the temperatures measured on the thermostat may deviate from the overall room temperature. The offset setting serves to balance out this discrepancy. The offset can be set between -5 and +5.
(2)	**Economy temperature**	The economy temperature is the temperature that should apply during the periods when you would like to lower the temperature.
(3)	**Comfort temperature**	The comfort temperature is the temperature that you personally find most comfortable. You can set when this temperature should apply in your heating profiles (see Section 8.2.4 on page 12).

- ▶ Tap on the corresponding temperature type.
- ▶ Set the required temperature using the mode dial, or adjust the offset using the arrow keys next to the value.
- ▷ The chosen settings are automatically adopted.

8.2.4 “Heating profile” menu (item 8 in Illust. 6 on page 11)

This page allows you to select the time periods in which the comfort temperature should be active within the relevant room.

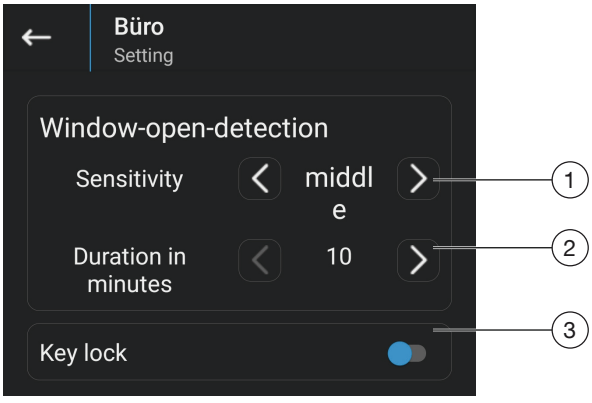
	Four periods can be defined in which the comfort temperature should apply. Economy temperature will be applied for the rest of the time.

- ▶ Set the time periods in which the comfort temperature should apply within the relevant room.
- ▶ Transfer your settings to the “mote 200” by tapping on the “Transfer heating times and exit” button.

8.2.5 “Hde” menu (item 7 in Illust. 6)

Settings for the holiday profile.

8.2.6 “Setting” menu (item 6 in Illust. 6)



Illust. 9: “Setting”

(1)	Sensitivity of the open-window recognition.
(2)	Time frame during which the valve remains closed once an open window has been detected.
(3)	Activate key lock/child-proof lock. This locks manual operation of the controller.

8.3 Changing batteries

When the battery status is low, the LED next to the battery status display flashes.

1. Remove the battery case cover (see Illust. 3 on page 8).
2. Remove the used batteries and insert new ones.

WARNING

Personal injury and property damage caused by batteries

Defective or improperly used batteries can cause chemical burns and explosions.

- ▶ Do not use partially discharged batteries together with new ones.
- ▶ Do not try to charge the batteries.
- ▶ Do not expose the batteries to direct sunlight or naked flames.
- ▶ If any battery fluid leaks and comes into contact with skin, eyes or mucous membranes, rinse the affected areas immediately with plenty of clean water and seek medical attention.
- ▶ Ensure that the batteries are inserted with the correct polarity (+/-).

▷ The “mote 200” automatically performs an adaptation process.

3. Refit the battery case cover by pushing it down until it engages with an audible click.

8.4 Reinstalling the “mote 200”

Only fit or remove the “mote 200” once you have opened the “Installation/Removal” ⚙ valve completely (see Section 11.1 on page 14).

- ▶ Remove the “mote 200” as described in Section 11.1 on page 14.
- ▶ If you would like to delete the programming, proceed as described in Section 8.5. When putting the device back into operation, proceed as described in Sections 6 on page 8 and 7.
- ▶ If you would like to retain the programming, remove the batteries and start by fitting the “mote 200” to the radiator (see Section 6.2 on page 9). Only then you should reinsert the batteries. The “mote 200” performs an adaptation process immediately if the programming has been saved.

8.5 Restoring the “mote 200” to factory settings

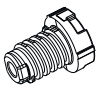
- ▶ Press and hold the “PLUS” + and “MINUS” − keys at the same time for at least 10 seconds.

▷ The LEDs flash in sequence.

▷ If your appliance has been successfully restored to factory settings, the LED for “Installation/Removal” ⚙ flashes.

9. Troubleshooting

9.1 Troubleshooting table

MALFUNCTION	CAUSE	REMEDY
The battery status LED flashes permanently.	The batteries are low.	Insert new batteries.
The radiator does not heat up.	The valve has calcified (for example, after the heating has not been in use over summer).	- Remove the “mote 200” and move the valve tappet several times manually. - Replace the valve if necessary.
	The central heating is defective.	Have the heating repaired.
The radiator does not cool down.	The valve does not close fully.	- Remove the “mote 200” and move the valve tappet several times manually. - Repeat the adaptation process. - Replace the valve if necessary.
The thrust piece falls out. 	The thrust piece may fall out if the wireless thermostat has not been attached to a valve.	Reinsert the thrust piece. Repeat the adaptation process.

MALFUNCTION	CAUSE	REMEDY
The “Installation/ Removal” LED ☼ flashes permanently (adaptation process failed).	Fitting error, adaptation not possible. - The “mote 200” has not been fitted to the radiator. - The valve lift is too short. - No valve movement possible.	Fit the “mote 200” correctly to a radiator.

10. Maintenance

NOTICE	
	Damage to surfaces caused by aggressive detergents ▶ Do not use any hard or sharp objects, abrasive powders or detergents that dissolve plastic when cleaning. ▶ If required, clean surfaces with a soft cloth. When dealing with more severe dirt, moisten the cloth **slightly** with water or use a mild detergent. Do not exert any pressure on the LED display.

11. Removal and disposal

11.1 Removal

▶ Open the menu by pressing “MENU” ≡ briefly once.
▶ Use the “PLUS” + and “MINUS” − keys to select the “Installation/Removal” ☼ function.
▶ Confirm by pressing “OK/Set” ○ briefly once.
▷ The LEDs flash in sequence.
▶ Wait until the LED for the “Installation/Removal” ☼ function flashes.
▶ You can now remove the “mote 200” by loosening the collar nut.

11.2 Disposal

Directive 2012/19/EU WEEE:

Old appliances must not be disposed of with standard waste, but must be dropped off at a collection point for the recycling of electrical and electronic appliances.

Directive 2006/66/EC:

Do not dispose of batteries or rechargeable batteries with standard waste.

The following symbols may be listed below the symbol for separate collection:

- Cd = contains more than 0.002% cadmium by weight
- Hg = contains more than 0.005% mercury by weight
- Pb = contains more than 0.004% lead by weight.

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