

For the owner and the heating engineer



Operating and Installation Manual VRT 360



Programmable room thermostat with separat HW time control

GB

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Notes on the documentation

The following information is intended to help you throughout the entire documentation.

Other documents apply in combination with this installation and operation manual.

We accept no liability for any damage caused by failure to observe these instructions.

Symbols used

Please observe the safety instructions in this manual for the installation of the room thermostat.



Danger!

Immediate risk of serious injury or death.

- Symbol for a necessary task

Storage of the documents

Please pass on this operating and installation manual to the owner of the system in order for him/her to store it so that it is available whenever it is required.

Safety

The room thermostat must be installed by an authorised heating engineering company, which is responsible for compliance with the applicable standards and regulations.

We accept no liability for damage resulting from failure to observe these instructions.

Operating manual

1 Room thermostat overview

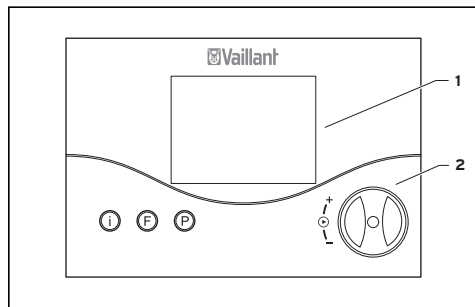


Fig. 1.1 Room thermostat overview

Key

- 1 Display
- 2 Dial (turn and click)
- I Info button
- F Special functions button
- P Programming button/installer level

2 Display overview

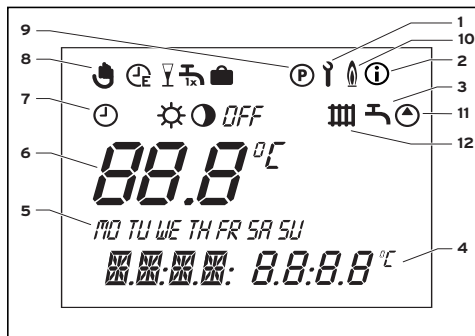


Fig. 2.1 Display overview

Key

- 1 Installer level and service/diagnosis level (see 11.1)
- 2 Info level (see 4.7)
- 3 Hot water symbol
- 4 Time / temperature display
- 5 Days of the week
- 6 Actual temperature
- 7 Operating modes (see 4.1)
- 8 Special functions (see 4.6)
- 9 Setting timer programmes (see 4.3)
- 10 Boiler operation indicator
- 11 Circulation pump symbol
- 12 Heating circuit symbol

3 Description of the room thermostat

The VRT 360 is a programmable room thermostat with a weekly programme for heating, hot water and a circulation pump for connecting to Vaillant boilers with an eBus.

The VRT 360 enables you to set the room temperature using heating programmes. In addition, you can select special functions (such as the party function), and control the timed operation of hot water and a separate circulation pump.

4 Operation

The operating principle uses three buttons and a dial (Vaillant “Turn and Click” operating concept).

The display normally shows the current operating mode (e.g. ☀ ⚙), or, if activated, the special function and the current room temperature, the day of the week, the time and the symbol for heating, hot water and/or the circulation pump, depending on which is requested.

4.1 Setting the operating modes

Table 4.1 contains an overview of the operating modes you can select. The selected operating mode affects the timer programmes both for heating and for hot water and the circulation pump.

- When the room thermostat is in normal display mode, press the dial once - the symbol for the selected mode flashes in the display.
- Turn the dial until the display shows the operating mode you want.

The display switches back to normal mode after five seconds.

4 Operation




Symbol	Meaning	
	Heating	Hot water
	<p>Automatic: According to the timer programme set in the room thermostat, the heating circuit switches between heating ☀ and set-back ◐ mode. The heating circuit symbol is displayed if a heating requirement is detected.</p>	<p>The operating mode of the boiler/circulation pump switches according to the timer programme set on the room thermostat between heating/ON ☀ and OFF OFF.</p>
	<p>Heating: The heating circuit is operated according to the room temperature, regardless of the programme set on the room thermostat. The heating circuit symbol is displayed if a heating requirement is detected.</p>	<p>The hot water symbol and the circulation pump symbol appear when the time window is active. If there is a hot water request, the hot water symbol flashes.</p>
	<p>Set-back: The heating circuit is operated according to the set-back temperature "ECO", regardless of the programme set on the room thermostat. The heating circuit symbol is displayed if a heating requirement is detected.</p>	

Table 4.1 Operating modes

Symbol	Meaning	
	Heating	Hot water
<i>OFF</i>	<p>Off: The heating circuit is off, provided that the frost protection function (if the room temperature is below 5 °C) is not activated. If the frost protection function is activated, the heating circuit symbol is displayed.</p>	<p>The boiler is not heated up, regardless of the set timer programme. The circulation pump is switched off. The hot water and circulation pump symbols are not displayed.</p>

Table 4.1 Operating modes (contd.)

4 Operation

4.2 Setting the current day and time

To set the current day and time with the display in normal mode, you must perform the following steps:

- Press the dial until a day of the week starts flashing.
- Turn the dial until you see the current day of the week.

MO = Monday

TU = Tuesday

WE = Wednesday

TH = Thursday

FR = Friday

SA = Saturday

SU = Sunday

- Press the dial. The hours start flashing.
- Turn the dial until you see the current hour.
- Press the dial. The minutes start flashing.
- Turn the dial until you see the current minute.

The display switches back to normal mode after five seconds.

If the calendar is activated on the installer level (see 11.1), you can set the day, month and year in the same way after you set the time. This allows automatic switching from winter to summer time.

4.3 Setting timer programmes

The room thermostat is equipped with a basic program (see table 4.2).

Time window	Day / Block of days	Start time	End time
H1	MO-FR	6:00	22:00
H2	–	–	–
H3	–	–	–
H1	SA	7:30	23:30
H2	–	–	–
H3	–	–	–
H1	SU	7:30	22:00
H2	–	–	–
H3	–	–	–

Table 4.2 Default heating, hot water and circulation pump programmes

You can adapt the default programmes to suit your needs. There are six steps to setting the times you want.

1. Press the programming button P
2. Select the timer programme (heating, hot water or circulation pump)
3. Select the time window
4. Select the day or block of days
5. Set the start time
6. Set the end time

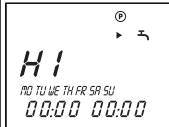
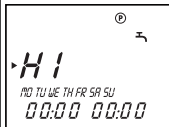
You can define three time windows for each day.

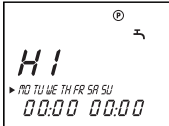
When you press the P button the display returns to basic mode.

The table below illustrates the individual steps again, using the example of the hot

4 Operation

water timer programme. If you want to change the timer programme for heating or the circulation pump, after pressing the programming button P, select the corresponding symbol (heating circuit or circulation pump) and continue as shown in the example.

Display	Required steps
 <p>The display shows 'H1' in large characters. Below it is the day of the week 'MO TU WE TH FR SA SU'. At the bottom are two time windows, each showing '00:00'. A small black triangle cursor is positioned to the right of 'H1'. A tap symbol is visible in the top right corner.</p>	<p>Press the programming button P. The cursor (black triangle) marks the value which can be changed (H1), which also flashes. Turn the dial until you see the tap symbol.</p>
 <p>The display shows 'H1' in large characters. Below it is the day of the week 'MO TU WE TH FR SA SU'. At the bottom are two time windows, each showing '00:00'. A small black triangle cursor is positioned to the left of 'H1'. A tap symbol is visible in the top right corner.</p>	<p>Press the dial. The cursor marks the adjustable value (H1), which also flashes. Select the time window by turning the dial. Settings: H1, H2, H3</p>

Display	Required steps
 <p>The display shows 'HI' in large digits. Above it are a circled 'P' and a symbol resembling a lambda. Below 'HI' is a row of day abbreviations: 'MO TU WE TH FR SA SU'. A right-pointing arrow cursor is positioned under 'MO'. At the bottom, two time displays show '00:00 00:00'.</p>	<p>Press the dial. The cursor marks the days of week display, which also flashes. Select a block of days or a single day of the week by turning the dial.</p> <p>Settings: MO - SU MO - FR SA - SU MO = Monday TU = Tuesday WE = Wednesday TH = Thursday FR = Friday SA = Saturday SU = Sunday</p>

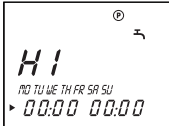
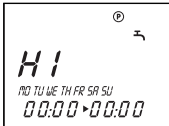
Display	Required steps
 <p>The display shows 'HI' in large digits. Above it are a circled 'P' and a symbol resembling a lambda. Below 'HI' is a row of day abbreviations: 'MO TU WE TH FR SA SU'. A right-pointing arrow cursor is positioned under 'MO'. At the bottom, two time displays show '00:00 00:00'.</p>	<p>Press the dial. The cursor marks the start time and the hour display flashes. Select the start time by turning the dial. Press the dial again to set the minutes.</p>
 <p>The display shows 'HI' in large digits. Above it are a circled 'P' and a symbol resembling a lambda. Below 'HI' is a row of day abbreviations: 'MO TU WE TH FR SA SU'. A right-pointing arrow cursor is positioned under 'SU'. At the bottom, two time displays show '00:00 00:00'.</p>	<p>Press the dial. The cursor marks the end time and the hour display flashes. Select the end time by turning the dial. Press the dial again to set the minutes.</p>

Table 4.3 Setting time windows

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If necessary, you can switch the room thermostat from the week programme to a daily programme.

- With the display in normal mode, press the F button for 10 seconds.

When you programme time windows, days of the week will no longer be displayed.

4.4 Setting the room temperature

The basic display shows the current room temperature.

You can set the room temperature directly from the basic display.

If the temperature level function is activated in the installer level (setting different temperatures for each time window,

see 11.1), the room temperature which is currently set appears in the display (T-H1, T-H2, T-H3).

Setting the required room temperature directly

- Turn the dial (with the display in basic mode).

The current temperature display disappears, the sun symbol is displayed on the mode level and the required room temperature is shown (e.g. TEMP 20.0 °C).

- By turning the dial you can set the required room temperature directly (after 1 second).

The display switches back to normal mode after five seconds.

Setting the room temperature for time windows

(only possible if the temperature level function is activated on the installer level - see 11.1). In this case, you can set different room temperatures for each time window.

- Press the dial several times until TH-1 appears in the display along with a set value. The set value flashes.
- Turn the dial until you see the room temperature you want for the time

window H1. The new room temperature is assigned to all time windows with H1.

- Press the dial. T-H2 is displayed along with a set value. The set value flashes.
- Turn the dial until you see the room temperature you want for the time window H2. The new room temperature is assigned to all time windows with H2.
- Press the dial. T-H3 is displayed along with a set value. The set value flashes.
- Turn the dial until you see the room temperature you want for the time window H3. The new room temperature is assigned to all time windows with H3.

4 Operation

The display switches back to normal mode after five seconds.

Setting the set-back temperature "ECO"

- Keep pressing the dial until ECO appears in the display.
The set-back temperature is displayed and starts flashing.
- Turn the dial until the required set-back temperature is displayed (e.g. ECO 15 °C).

The display switches back to normal mode after five seconds.

4.5 Setting the hot water temperature

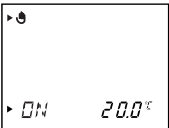
You can set the hot water temperature from the basic display. Please note the set maximum hot water temperature on the boiler.

- Press the dial several times until DHW appears in the display. The set value flashes.
- Turn the dial until the required hot water temperature is displayed (e.g. DHW 60 °C).


The display switches back to normal mode after five seconds.

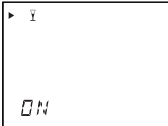
4.6 Activating special functions

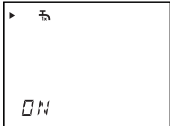
Press the F button to access the special functions. You can activate the following functions:


Display	Required steps
 <p>The screenshot shows a digital display with a small icon of a circle with a diagonal slash (the quick veto symbol) in the top left corner. Below it, the text 'ON' is displayed, followed by '20.0°C' on the right side of the display.</p>	<p>Quick veto</p> <p>The quick veto function allows you to adjust the room temperature for a short time (until the next time window). Press the special function button F - the quick veto symbol appears in the display along with the quick veto room temperature, which also flashes.</p> <p>Turn the dial until the required quick veto room temperature appears in the display. The display switches back to basic mode after 10 seconds and the function is activated. To deactivate the function, all you need to do is press the F button.</p>

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Display	Required steps
	<p>Energy-saving function</p> <p>The energy-saving function lets you lower the heating for an adjustable period regardless of the set heating programme. Press the special function button twice and the energy-saving symbol appears on the display. You will also see the time flashing. By turning the dial you can set the end time, up to which the heating is set to lowering mode. The display switches back to basic mode after 10 seconds and the function is activated. To deactivate the function early, all you need to do is press the F button.</p>

Display	Required steps
	<p>Party function</p> <p>When you activate the party function the heating phase is continued beyond the next lowering phase. This also applies to the hot water and circulation pump programmes. Press the special function button three times. The party symbol appears in the display and the function is activated after ten seconds. The function is deactivated automatically on reaching the next heating phase. If you want to deactivate the function early, just press the F button. This function can only be activated in automatic mode ⌚.</p>

Display	Required steps
	<p>One-time recharging / Cylinder Boost</p> <p>This function allows you to fill the cylinder, regardless of the set timer programme. Press the special function button four times. The once-only cylinder filling symbol appears in the display and the function is activated after ten seconds.</p> <p>If you want to deactivate the function early, just press the F button.</p>

Display	Required steps
	<p>Holiday function</p> <p>The holiday function deactivates the room thermostat, but not the frost protection function. The hot water and circulation pump are also deactivated. Press the special function button five times - the holiday function symbol flashes in the display.</p> <p>The set value for the number of days' holiday also flashes. Turn the dial until the required number of days' holiday appears. After 10 seconds the function is activated and the mode is set to OFF for the selected period (see 4.1). →</p>

4 Operation

Display	Required steps
	<p>→ Holiday function</p> <p>If you want to deactivate the function early, just press the F button. If the anti-legionnaire's disease function is activated, it is performed on the last day of the holiday.</p>

Table 4.4 Special functions

4.7 Info level

Press the info button to access the info level. The info symbol appears in the display as soon as you open the info level. Each time you press the button, different information is displayed:

- The name of the room thermostat (VRT 360)
- The quick veto room temperature (if active)
- The set room temperature T-H1 (if activated - e.g. T-H1 20.0 °C)
- The set room temperature T-H2 (if activated - e.g. T-H2 23.0 °C)
- The set room temperature T-H3 (if activated - e.g. T-H3 18.0 °C)
- The set room temperature if the temperature level function is not activated (e.g. TEMP 20.0 °C)

- The current set-back temperature (e.g. ECO 15.0 °C)
- The set hot water temperature (e.g. DHW 60 °C)
- The day/month/year (if the calendar is activated)
- Set timer programmes for heating (every single time window per day)
- Set timer programmes for hot water (every single time window per day)
- Set timer programmes for the circulation pump (every single time window per day)

5 Vaillant warranty

We only grant a Vaillant manufacturer's warranty if a suitably qualified engineer has installed the system in accordance with Vaillant instructions.

The system owner will be granted a warranty in accordance with the Vaillant terms and conditions. All requests for work during the guarantee period must be made to Vaillant service (0870 6060 777).

6 Recycling and disposal

Neither your room thermostat or any of its accessories belong in the household waste. Make sure the old room thermostat and any accessories are disposed of properly.

Installation manual

7 Information on installation and operation

The assembly, electrical connection, room thermostat settings and commissioning may only be carried out by an approved company specialising in heating engineering.

7.1 CE label

The CE label shows that the VRT 360 room thermostat, when connected to Vaillant boilers, meets the basic requirements of the Council of Europe's directive 89/336/EEC on electromagnetic

compatibility and the low voltage directive 73/23/EEC.

7.2 Intended use

The VRT 360 room thermostat is a state-of-the-art room thermostat which has been constructed in accordance with recognised safety regulations. Nevertheless, there is a risk of death or serious injury to the user or others, and the room thermostat or other property may be damaged in the event of improper use or use for which it is not intended.

The VRT 360 room thermostat is designed to control a heating system with or without a hot water system or circulation pump according to time and

location, in connection with a Vaillant boiler with an eBus interface.

Any other use or extended use is considered to be improper. The manufacturer or supplier is not liable for any resulting damage. The user alone bears any risk. Intended use includes the observance of the operating and installation manual.

8 Safety instructions and regulations

The room thermostat must be installed by an approved company specialised in heating engineering, which is responsible for compliance with applicable standards and regulations. We accept no liability for any damage caused by failure to observe these instructions.

8.1 Safety instructions



Danger!

Risk of fatal electric shock from touching live connections.

Before working on the room thermostat, switch off the power supply and prevent it from being switched on again.

Only remove the room thermostat from its wall mounting or base when it is not live.

8.2 Regulations

All wiring must be in accordance with Building Regulations Part P, current IEE regulations, and all other relevant regulations and guidelines, and must be carried out by a suitably qualified person.

Use standard commercial cables for the wiring.

- Minimum wire cross section:
0.75 mm²

Do not exceed following maximum wire lengths:

- Bus wires: 300 m

Connections with 230 V and bus wires must be laid separately when longer than 10 m.

The room thermostat may only be installed in dry rooms.

9 Installation

9.1 Place of installation

Install the room thermostat so that it can properly measure the room temperature (avoid heat traps, cold walls etc.). The best place to install it is in the main living area on an interior wall at a height of around 1.5 m. There, the room thermostat should be able to record the circulating air, unhindered by furniture, curtains or other objects. Choose a location where the room thermostat is not affect-

ed by draughts from doors or windows, or by heat sources such as radiators, chimney walls, televisions and direct sunlight. All the radiator valves in the room where the room thermostat is installed must be fully open.

9.2 Mounting the room thermostat

The connection to the boiler is a 2-core bus cable (eBus).

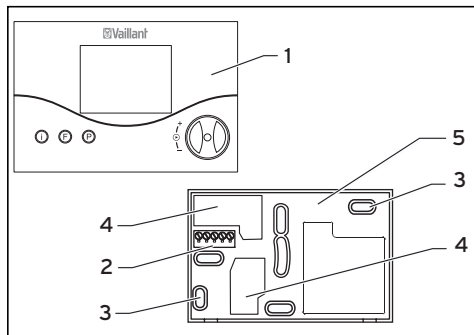


Fig. 9.1 Mounting the room thermostat

- Pull the room thermostat (1) out of the mounting box (5).
- Drill two holes (3) of 6 mm diameter (as shown in fig. 9.1) and put in the supplied wall plugs.
- Guide the connection cable through the duct (4).
- Fix the mounting box to the wall with the two screws provided.
- Connect the lead as described in section 10.
- Place the room thermostat (1) on the mounting box (5) so that the pins on the back of the upper section fit into the recesses (2).
- Push the room thermostat onto the mounting box until it catches.

10 Electrical installation

The electrical connection may only be carried out by a suitably qualified engineer.



Danger!

Risk of fatal electric shock from touching live connections. Before working on the room thermostat, turn off the power supply and secure against restart.

10.1 Connecting the room thermostat

Communication to the boiler takes place using a 2-core bus cable (eBus). All eBus connector plugs are designed to allow at least $2 \times 0.75 \text{ mm}^2$ (recommended) per connection terminal. This means that the wires can be swapped without impairing communication (fig. 10.1). Also follow the instructions for the boiler. Do not remove the jumper between terminals 3 and 4 on the boiler.

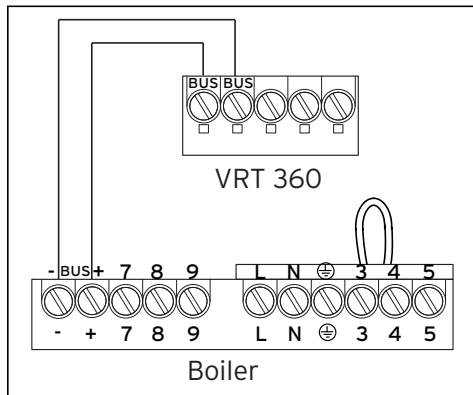


Fig. 10.1 Electrical connection

11 Start-up

Some system parameters have to be set in order for them to best suit the actual conditions. These system parameters are all together in the installer level and should only be set by the heating engineer.

The service/diagnostic level is also intended for the engineer and is designed to help during servicing.

11 Start-up

11.1 Installer level

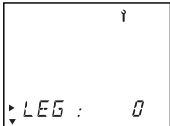
Press the P button to access the installer level.

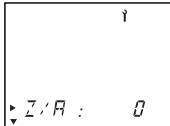
- Press the P button for 10 seconds. The spanner symbol and the first parameter appear in the display.
- Press the dial. You can select all the system parameters in turn.
- Turn the dial to set the values you want.

When you press the P button the display returns to basic mode.

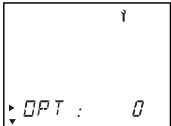
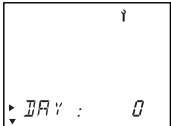
You can select and change the following parameters:

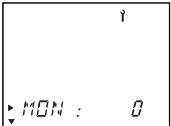
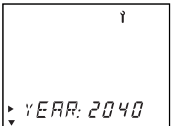
Display	Set by turning the dial
	Set-back temperature Default setting: 15 °C Adjustment range: 5 ... 30 °C
	Set hot water temperature Default setting: 60 °C Adjustment range: 35 ... 70 °C
	Correction of actual room temperature Adjustment of the displayed value by up to +/- 3 °C Default setting: 0 °C

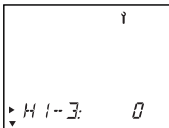
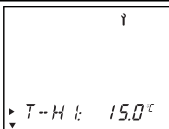
Display	Set by turning the dial
	<p>Anti-legionnaire's disease system</p> <p>1 = Activate the anti-legionnaire's disease programme. Every Wednesday, one hour before the first time window, a connected hot water cylinder is heated to 70 °C, and the circulation pump is switched on and operated at 70 °C for at least 30 minutes.</p> <p>Default setting: 0 (off)</p>

Display	Set by turning the dial
	<p>Two-point/analogue operation</p> <p>Switching to two-point/analogue operation. The room thermostat is supplied with two-point control (set value 0). You can set it to analogue mode by changing the parameter to 1.</p>

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Display	Set by turning the dial
 <p>▶ OPT : 0</p>	<p>Control characteristics/ route adjustment</p> <p>For optimum adaptation to the room size or radiator configuration.</p> <p>Default setting: 0</p> <p>Adjustment range: -5 ... +5 (Positive values: room thermostat switches more slowly; negative values: room thermostat switches more quickly)</p>
 <p>▶ DAY : 0</p>	<p>Day setting</p> <p>For activation of the calendar</p>

Display	Set by turning the dial
 <p>▶ MON : 0</p>	<p>Month setting</p> <p>For activation of the calendar</p>
 <p>▶ YEAR: 2040</p>	<p>Year setting</p> <p>For activation of the calendar</p>

Display	Set by turning the dial
	Temperature level Activate the setting for different temperatures for each time window. 0 = Temperature level off 1 = Temperature level on Default setting: 0
	Temperature level time window H1 (only when temperature levels are activated)

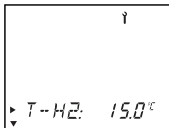
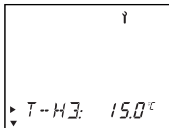
Display	Set by turning the dial
	Temperature level time window H2 (only when temperature levels are activated)
	Temperature level time window H3 (only when temperature levels are activated)

Table 11.1 System parameters

11 Start-up

11.2 Service/diagnostic level

Access the service/diagnostic level by pressing the P button and the dial.

- Press the P button and the dial simultaneously for 3 seconds.

First, a heating request for 50 °C is triggered to test communication with the boiler.

Then you can select all the test options by pressing the dial (see table 11.2).

When you press the P button the display returns to basic mode.

You can select the following tests:

Dial	Test	Test procedure
Press and push P button 3 seconds	Heating request	A heating request of 50 °C is simulated. The burner on the boiler starts up and the pump starts (only up to the maximum supply temperature of the boiler).
Turn	Hot water request	A hot water request is triggered. The charging pump starts up and all other elements are switched off.

Dial	Test	Test procedure
Turn	Circulation pump	The circulation pump is activated. All other elements are switched off.
Press	Display test	All display elements are displayed.
Press	Software version	The software version is displayed.

Table 11.2 Service/diagnostic level

Restoring the default settings

- To return the room thermostat to its default settings, press the P button for 15 seconds.
As soon as the display lights up twice, the room thermostat has been reset.

This means that you will have to perform all individual settings again.

11.3 Handing over to the owner

The owner of the room thermostat must be instructed about its functions and how to operate it.

- Hand over any instructions intended for the owner as well as the room thermostat documents.
- Go through the operating manual with the owner and answer any questions.
- Draw special attention to the safety instructions which the owner must follow.
- Tell the owner to keep the instruction manuals near the room thermostat.

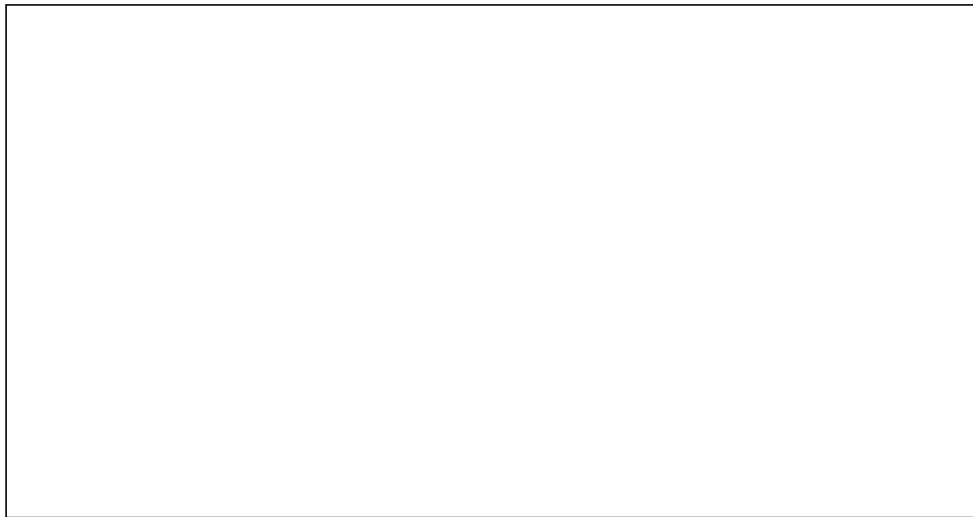
12 Technical data

Description	Unit	
Operating voltage U_{\max}	V	24
Maximum ambient temperature	°C	50
Current consumption	mA	≤ 17
Minimum cross-section of wires	mm ²	0.75
Level of protection		IP 20
Protection class		III
Dimensions		
Height	mm	97
Width	mm	146
Depth	mm	27

Table 12.1 Technical data

13 Vaillant customer service

To ensure regular servicing, it is strongly recommended that arrangements are made for a Maintenance Agreement. Please contact Vaillant service (0870 6060 777) for further details.



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