

For the owner and heating engineer



Operating and Installation Manual

VRT 340f



Room temperature thermostat

VRT 340f

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.

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.

Symbols used

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



Danger!

Immediate risk of serious injury or death



Caution!

Potentially dangerous situation for the product and environment.



Note!
Useful information and instructions.

- Symbol for a necessary task

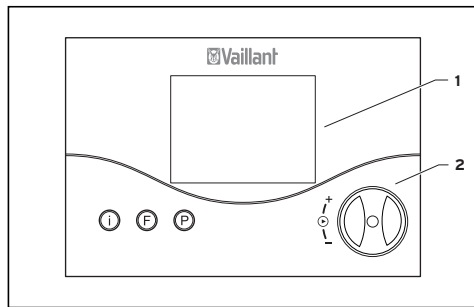
Safety

The room temperature thermostat must be installed by a suitably qualified heating engineer, who is responsible for adhering to the existing standards and regulations.

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

Operating manual

1 Overview of the equipment



Key

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

Abb. 1.1 Overview of equipment

2 Overview of the display

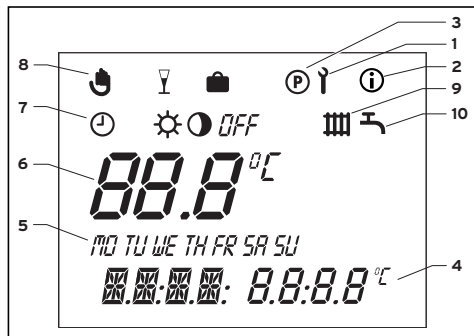


Fig. 2.1 Overview of the display

Key

- 1 Installer level and service/diagnostics level
- 2 Info level
- 3 Timer programming
- 4 Time/temperature display
- 5 Days of the week
- 6 Actual temperature
- 7 Operating modes
- 8 Special functions
- 9 Heating circuit symbol
- 10 Hot water symbol

3 Description of the appliance

The VRT 340f is a room temperature thermostat with a weekly heating program for connecting to modulating Vaillant boilers. The connection between the room temperature thermostat and the heating unit is by radio.

The VRT 340f enables you to specify the room temperature using heating programs. In addition, you can set the special functions, such as the party function, as well as the time control of a hot water storage.

4 Operation

The operating principle is based on the three buttons and an dial (Vaillant "turn and click" operating concept).

The display normally shows the current operating mode (e.g. ☀ and ⚙), or, if activated, the respective special function and the current room temperature, the day of the week, the time and the heating circuit symbol, if heating is required.




4.1 Setting the operating modes

Table 4.1 provides you with an overview of the operating modes you can select.

- When the room temperature 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 desired operating mode appears on the display.

The display switches back to normal mode after five seconds.

4 Operation

Symbol	Meaning	
	Heating	Hot water
	Automatic: The operation of the heating circuit changes between the operation modes Heating ☀ and Energy Saving 🌙 in accordance with the time programme set on the room temperature thermostat.	The operation of the hot water storage cylinder changes between heating up and OFF according to the time programme set on the regulator. The hot water symbol is displayed if the time window is active.
	Heating: The heating circuit is operated according to the room temperature, regardless of the programme set on the room temperature thermostat.	
	Energy Saving: The heating circuit is operated according to the energy saving temperature "ECO", regardless of the programme set on the room temperature thermostat.	

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

Table 4.1 Operating modes

4 Operation

4.2 Setting the current day and time

To set the current time and day of the week 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 the required hour is displayed.
- Press the dial. The minutes start flashing.
- Turn the dial until the required minutes are displayed.

The display switches back to normal mode after five seconds.

If the calendar is activated on the installer level, 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 the heating times

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

Time window	Current day / Block of days	Start time	End time
H 1	MO-FR	6:00	22:00
H 2	-	-	-
H 3	-	-	-
H 1	SA	7:30	23:30
H 2	-	-	-
H 3	-	-	-
H 1	SU	7:30	22:00
H 2	-	-	-
H 3	-	-	-

Table 4.2 Default basic programme - heating

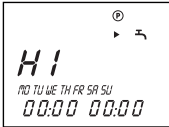

You can adapt the default basic programme to suit your needs. There are five steps to setting the times you want.

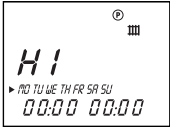
1. Press the programming button P
2. Select the timer programme (heating or hot water).
3. Select the time window
4. Select the current day or week block
5. Set the start time.
6. Set the end time.

You can define three time windows for each day.

4 Operation

For clarification, the individual steps are shown again in the following table:

Display	Required steps
	<p>Press the programming button P. The cursor (black triangle) marks the value which can be changed (H1), which also flashes.</p> <p>Turn the dial until the tap symbol appears.</p>
	<p>Press the dial. The cursor marks the value which can be changed (H1), which also flashes.</p> <p>Select the desired time window by turning the dial. Settings: H1, H2, H3</p>

Display	Required steps
	<p>Press the dial. The cursor marks the week block display, which also flashes. Select a block programme 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>

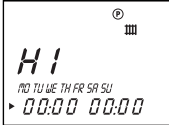
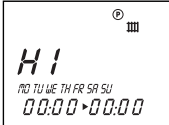
Display	Required steps
 <p>The display shows 'HI' at the top. Below it is a row of day abbreviations: 'MO TU WE TH FR SA SU'. At the bottom, there are two time windows: '00:00' and '00:00'. A small vertical bar (the cursor) is positioned to the left of the first '0' in the first time window.</p>	<p>Press 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' at the top. Below it is a row of day abbreviations: 'MO TU WE TH FR SA SU'. At the bottom, there are two time windows: '00:00' and '00:00'. A small vertical bar (the cursor) is positioned to the left of the second '0' in the second time window.</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

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

- With the display in normal mode, press the F button for about 10 seconds. When you programme time windows, days of the week will no longer be displayed.

4.4 Setting the room temperature

The current room temperature is shown in the basic display.

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

You can also set or change the set-back temperature "ECO" in the basic display.

4 Operation

Setting the required room temperature directly

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

The set temperature display disappears, the sun symbol is displayed in the operating mode level and the set room temperature is displayed in the multifunction level (e.g. TEMP 20 °C).

- You can set the required room temperature directly (after about 1 second) to the desired value by turning the dial.

The display switches back to normal mode after five seconds.

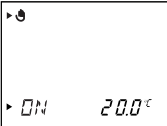
Setting the set-back temperature "ECO"

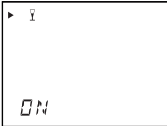
- Press the dial several times until ECO appears in the multifunction display along with a set value. The set-back temperature is displayed and starts flashing.
- Turn the dial until the required set-back temperature is displayed (e.g. ECO 15,0 °C).

The display switches back to normal mode after five seconds.

4.5 Activating special functions

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

Display	Required steps
	<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.</p> <p>Turn the dial until the quick veto temperature you want is displayed. 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>

Display	Required steps
	<p>Party function</p> <p>When you activate the party function the heating phase is continued beyond the next set-back phase. Press the special function button three times - the party symbol flashes in the display for ten seconds and the function is activated.</p> <p>The function is deactivated automatically by reaching the next heating phase.</p> <p>If you want to deactivate the function before, just press the F button. This function can only be activated in automatic mode ⌚.</p>


Display	Required steps
	<p>Holiday function</p> <p>The holiday function deactivates the controller, but not the frost protection function. Press the special function button three times - the holiday function symbol flashes in the display. Turn the dial until the required number of day's holiday appears. After 10 seconds the function is activated and the mode is set to OFF for the selected period (see 4.1). If you want to deactivate the function before, just press the F button.</p>

Table 4.4 Special functions

4.6 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 temperature thermostat (VRT 340f)
- The quick veto room temperature (if active)
- The required room temperature (e.g. TEMP 20.0 °C)
- The current set-back temperature (e.g. ECO 15.0 °C)

- The day/month/year (if the calendar is activated)
- The timer programmes set for heating (every single time window per day)
- Carefully push the locking hook to the side using a screwdriver (Fig. 4.1) and pull the regulator off towards the front.

4.7 Changing the battery

The regulator checks the battery condition itself, and the normal working life of the battery is approx. 1.5 years. Approx. 4 weeks before the battery is fully discharged BATT appears in the multifunction display of the basic display. The battery chamber is located on the back of the regulator.

The regulator must be taken off the wall plinth to change the battery.

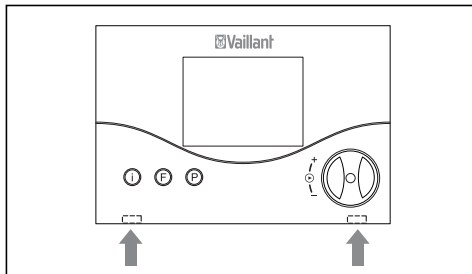


Fig. 4.1 Releasing the locking hook

4 Operation, 5 Works guarantee and liability

- The batteries can now be changed (2x AAA-LR03; Fig. 4.2). Make sure that the polarity of the batteries is correct.

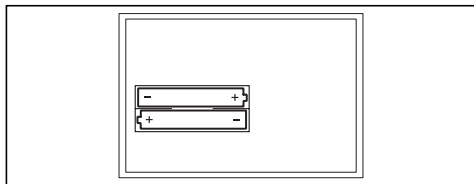


Fig. 4.2 Changing the batteries

If the batteries are not changed in time, the regulator switches over to operating mode "Heating" ☀, to prevent the installation from freezing up.

5 Manufacturer's warranty and liability

Vaillant warranty

We only grant a Vaillant manufacturers 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 Solutions (0870 060 777).

6 Recycling and disposal

Both your Valliant room temperature thermostat VRT 340f and its packaging consist mainly of recyclable raw materials.

Appliance

Do not dispose of your Valliant room temperature thermostat or any of its accessories with the household waste. Make sure the old appliance and any accessories are disposed of properly.

Packaging

Please leave the disposal of the transport packaging to the qualified servicing company which installed the appliance.

Installation instructions

7 Notes on the installation and operation

The assembly, electrical connection and the settings in the device as well as the commissioning must be carried out only by a suitably qualified heating engineer. Check the site of installation before fitting the unit with regard to possible radio interference by electrical equipment or building influences which may affect the functioning. If the radio signal route is compromised then an alternative installation site must be chosen.

7.1 CE label

The CE label shows that the VRT 340f room temperature 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 340f room temperature thermostat is a state-of-the-art appliance which has been constructed in accordance with recognised safety regulations. Nevertheless, there is still a risk of death or serious injury to the user or others or of damage to the device and other property in the event of improper use or use for which it is not intended. The VRT 340f room temperature 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 Vaillant modulating heating equipment.

The connection between the room temperature thermostat and the heating unit is by radio.

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 the risk.

Use includes observance of the operating and installation manuals and all other applicable documents, as well as adherence to the maintenance and inspection conditions.



Caution!

Any improper use is forbidden.

8 Safety instructions and regulations

8 Safety instructions and regulations

The unit must be installed by a suitably qualified heating engineer, who is responsible for adhering to the existing 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 appliance, turn off the power supply and secure against restart. Only remove the room temperature thermostat from the wall mounting or from the plinth when it is potential free.

8.2 Regulations

Use standard commercial cables for wiring.

- Minimum cross-section of the wires:
0.75 mm²

The room temperature thermostat may only be installed in dry rooms.

All wiring must be in accordance with Building Regulations Part P and BS 7671 (IEE Wiring Regulations), and must be carried out by a suitably qualified person.

9 Installation

9.1 Place of installation

The room temperature thermostat must be installed to ensure that it can properly record the room temperature (away from heat traps, not mounted on cold walls etc.).

The best place for installation is usually in the main living room on an inside wall at approx. 1.5 m height. There, the room temperature thermostat should be able to record the circulating air, unhindered by furniture, curtains or other objects. Choose a location where the room temperature thermostat is not affected 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 thermostat is installed must be fully open.

9.2 Fitting the receiver

The connection of the receiver with the heating unit is by a plug connector having four connections.

- Remove the blanking plate (1) in the front of the switchgear cabinet and insert the receiver (2) into the chute which is revealed so that the pins on the back of the upper section fit into the receptacles.

- Push the receiver into the chute until it clicks in position.

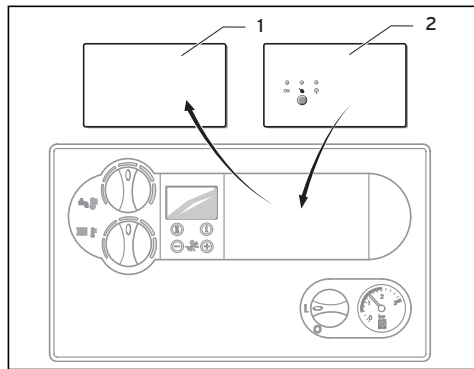


Fig. 9.1 Heating unit and fitting the receiver in the switchgear box

9.3 Mounting the room temperature thermostat

Check the site of installation before fitting the unit with regard to possible radio interference by electrical equipment or building influences which may affect the functioning. If the radio signal route is compromised then an alternative installation site must be chosen.

- Pull the room temperature thermostat **(1)** off the wall plinth **(3)**.
- Drill two holes **(2)** of 6 mm diameter (as shown in fig. 9.2) and put in the supplied wall plugs.
- Attach the wall plinth to the wall with the two screws provided.

- Insert the batteries supplied into the battery compartment at the back of the regulator (Fig. 9.2, Item 4). Make sure that the polarity of the batteries is correct.

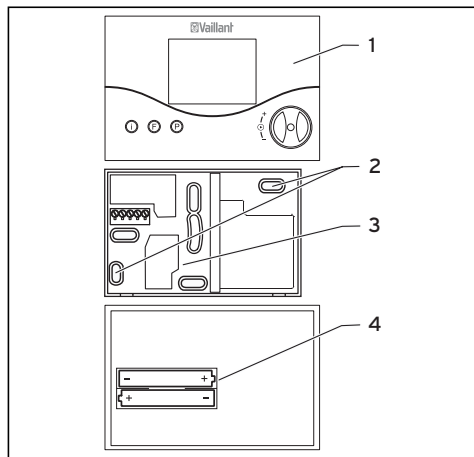


Fig. 9.2 Mounting the room temperature thermostat

10 Electrical installation

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



Danger!

Risk of fatal electric shock from touching live connections. Before carrying out work on the controller, switch off the power supply and secure it against being switched on again.

10.1 Connecting the receiver

The boiler is controlled via a four-core connecting cable.

After correct insertion of the receiver into the front of the switchgear box, the room temperature thermostat is ready for operation.

Also follow the instructions for the boiler.

Do not remove the jumper between terminals 3 and 4 on the boiler.

11 Start-up

Certain system parameters have to be set in order for them to comply with the prevailing conditions.

These system parameters are all together on one operating level and should only be set by the heating engineer.

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

The receiver is fitted with three status LEDs which provides the following information to the system:

11 Start-up




LED	Display	Condition	Function
green	OK	ON	normal function
		off	Fault (e.g. no power supply or fault see red LED) no radio signal
		flashing	No radio connection with the sender for more than one hour (e.g. poor connection, weak battery in the sender...) Operation in frost protection function: - Hot water function switched on: - Setting point for heating mode: 50 °C
red		off	normal function
		flashing	Manual mode: - Hot water function switched on - Setting point for heating mode: 50 °C (the manual mode automatically switches to normal mode if a correct radio connection is made with the sender.
yellow		flashing	Radio connection is made with the sender

Table 11.1 Status display of the receiver

Use the button  to switch from automatic to manual operation in the event of a fault. The hot water system is released and the feed temperature set value for the heating is 50 °C. Manual operation mode is retained until the next time the radio signal is received.

Turn the dial to set the values you want. When you press the P button the display returns to basic mode.

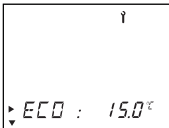
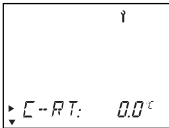
11.1 Installer level

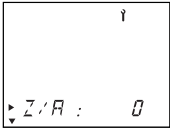
Press the P button to access the installer level.

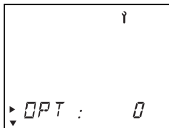
- Press the P button for approx. 10 seconds.
The spanner symbol and the first parameter appear in the display.
- Press the dial. You can select all the system parameters in turn.

11 Start-up

You can select and change the following parameters:

Display	Set by turning the dial
	Set-back temperature Factory setting: 15 °C Setting range: 5 ... 30° C
	Correction of current room temperature Adjustment of the displayed value by up to max. +/- 3 °C Factory setting: 0 °C

Display	Set by turning the dial
	Two-point/analogue operation 2-point/analogue mode change-over. The room temperature thermostat is set in the factory as a 2-point regulation system (set value 0). You can set it to analogue mode by changing the parameter to 1.

Display	Set by turning the dial
	<p>Control characteristics/ route adjustment</p> <p>For optimum adaptation to the room size or radiator configuration</p> <p>Factory setting: 0</p> <p>Adjustment range: -5 ... +5 (positive values: slow reaction speed of the room temperature thermostat; negative values: faster reaction speed of the room temperature thermostat)</p>

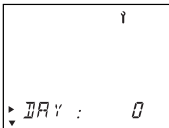
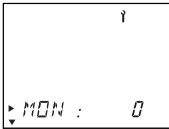

Display	Set by turning the dial
	<p>Day setting</p> <p>For activation of the calendar</p>
	<p>Month setting</p> <p>For activation of the calendar</p>
	<p>Year setting</p> <p>For activation of the calendar</p>

Table 11.2 System parameters

11.2 Service/diagnostics level

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

- Press the P button and the dial simultaneously for approx. 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 or rotating the dial. 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 for 3 seconds.	Heating request	A preset value 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).
Press	Radio route	Display RF On
Press	Display test	All display elements are displayed.
Press	Software version	The software version is displayed.

Table 11.3 Service/diagnostic level

Restoring the default settings

- To restore the controller to its default condition, press the P button for 15 seconds.

11.3 Handing over the appliance to the owner

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

- Hand over the manuals intended for the owner as well as the documents of the appliance.
- Go through the operating manual with him and answer his questions.

- Draw special attention to the safety instructions which the owner must follow.
- Tell the owner to keep the manuals near the room temperature thermostat.

12 Troubleshooting

The room temperature thermostat signals the following fault conditions:

Fault signal	Meaning	Troubleshooting
RF Err	No radio connection to the radio receiver on the heating unit	Check the site of installation
BATT	low battery condition, replacement required	Replace the batteries.

Table 12.1 Fault signals

13 Technical data

Description	Unit	Sender	Receiver
Operating voltage	V	3V (2xAAA)	24
Maximum permissible ambient temperature	°C	50	50
Battery working life	Months	approx. 18	
Transmission frequency	MHz	868,35	868,35
Transmission capacity	mW	0,5	
Current consumption	mA	≤ 1 (readiness)	≤ 15 (readiness)
Minimum cross-section of the connection lines	mm ²	0,75	
Level of protection		IP 20	IP 20
Protection rating for regulator		III	III
Dimensions			
Height/width/depth	mm	97/146/27	85/148/30

Table 13.1 Technical data

14 Vaillant Service

Vaillant Service

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

Vaillant Ltd

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Telephone 01634 292300 ■ Fax 01634 290166 ■ www.vaillant.co.uk ■ info@vaillant.co.uk

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