

For the owner and heating engineer



# Operating and Installation Manual VRC 400



Weather compensator

**GB**

# Contents

## **Notes on the documentation . . . . . 4**

Symbols used..... 4

## **Safety . . . . . 5**

## **Operating manual. . . . . 6**

### **1 Overview of the device. . . . . 6**

### **2 Overview of the display . . . . . 7**

### **3 Description of the device. . . . . 8**

## **4 Operation. . . . . 8**

4.1 Setting the type of operation .... 9

4.2 Setting the current day and  
time ..... 12

4.3 Setting the time programme..... 13

4.4 Setting the room temperature ... 17

4.5 Setting the hot water  
temperature ..... 21

4.6 Activating the special functions. 22

4.7 Info level..... 25

## **5 Vaillant warranty . . . . .26**

## **6 Recycling and disposal. . . . .27**

<b>Installation instructions . . . . .</b>	<b>28</b>	<b>10 Electrical installation. . . . .</b>	<b>38</b>
<b>7 Information on the installation and operation . . . . .</b>	<b>28</b>	10.1 Connecting the weather compensator . . . . .	38
7.1 CE label . . . . .	28	10.2 Connecting the outside sensor . . . . .	39
7.2 Intended use . . . . .	28	10.3 Connecting optional sensor VR 10 . . . . .	40
<b>8 Safety instructions and regulations . . . . .</b>	<b>29</b>	<b>11 Start-up. . . . .</b>	<b>40</b>
8.1 Safety instructions . . . . .	30	11.1 Installer level . . . . .	41
8.2 Regulations . . . . .	30	11.2 Service/diagnostics level . . . . .	46
<b>9 Installation . . . . .</b>	<b>31</b>	11.3 Handing over the timer to the owner . . . . .	48
9.1 Fitting the equipment . . . . .	31	<b>12 Technical data. . . . .</b>	<b>49</b>
9.2 Wall-mounting . . . . .	32	<b>13 Vaillant customer service . . . . .</b>	<b>49</b>
9.3 External sensor VRC 693 fitting . . . . .	34		

### 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 a damage caused by failure to observe these instructions.**

### Symbols used

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



**Danger!**

**Immediate risk of serious injury or death!**



**Note!**

**Useful information and instructions**

- 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.

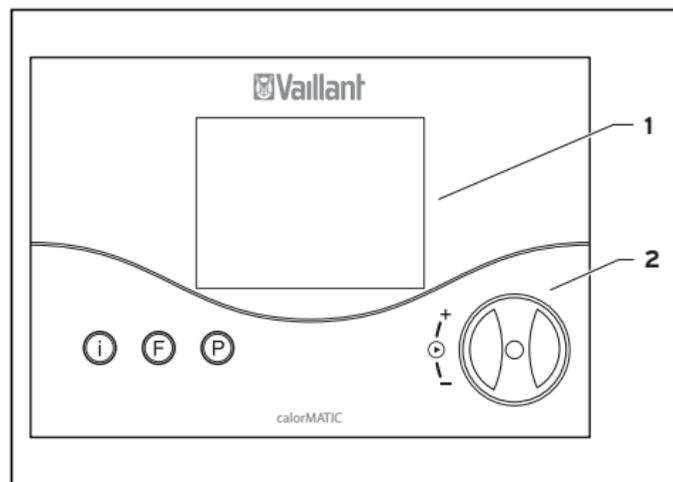
**We accept no liability for any damage caused by failure to observe these instructions.**

## **Safety**

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

## Operating manual

### 1 Overview of the device



#### Key

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

Abb. 1.1 Overview of the device

## 2 Overview of the display

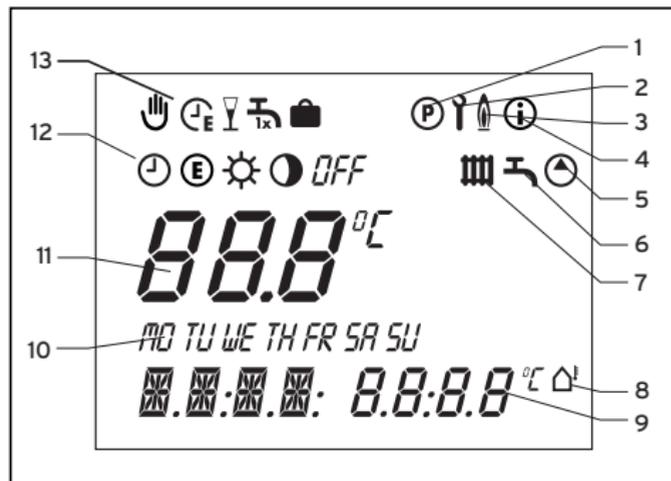


Fig. 2.1 Overview of the display

### Key

- 1 Setting timer programmes (see 4.3)
- 2 Installer level and service/diagnostics level (see 11.1)
- 3 Boiler operation indicator
- 4 Info level (see 4.7)
- 5 Circulation pump symbol
- 6 Hot water symbol
- 7 Heating cycle symbol
- 8 External temperature symbol
- 9 Multi-function display
- 10 Work days
- 11 Actual temperature
- 12 Operating modes (see 4.1)
- 13 Special functions (see 4.6)

### **3 Description of the device**

The VRC 400 is a weather compensator with a weekly programme for heating, hot water preparation and circulation pump for connection to Vaillant boilers with eBus.

The VRC 400 enables you to set heating programmes depending on the outside temperature. In addition, you can select special functions such as the party function, and control the timed operation of a boiler and a circulation pump.

### **4 Operation**

The operating principle uses three buttons and an 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, the outside temperature, and the symbol for heating, hot water and/or the circulation pump, depending on which is requested.

#### 4.1 Setting the type of operation

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 weather compensator 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 5 seconds.

## 4 Operation

Symbol	Significance Heating	Significance Hot water/circulation pump
	<p><b>Automatic:</b> 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 thermostat. The heating circuit symbol is displayed if a heating requirement is detected.</p>	<p>The operation of the hot water storage cylinder/circulation pump changes between heating/ON and OFF depending upon the time programme set on the room thermostat. The hot water symbol and the circulation pump symbol are displayed if the time window is active. If there is a hot water request, the hot water symbol flashes.</p>
	<p><b>Heating:</b> 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><b>Energy Saving:</b> The heating circuit is operated according to the energy saving temperature "ECO", regardless of the programme set on the room thermostat. The heating circuit symbol is displayed if a heating requirement is detected.</p>	

Symbol	Significance Heating	Significance Hot water/circulation pump
	<p><b>ECO:</b> According to the timer programmes set in the controller, the heating circuit switches between heating mode and OFF ☼. The heating circuit is switched off in set-back mode, provided the anti-frost function (activated when the outside temperature is below 3°C) is not active. The heating circuit symbol is displayed if a heating requirement is detected or the anti-frost function is active.</p>	<p>The operation of the hot water storage cylinder/circulation pump changes between heating/ON and OFF depending upon the time programme set on the room thermostat. The hot water symbol and the circulation pump symbol are displayed if the time window is active. If there is a hot water request, the hot water symbol flashes.</p>
	<p><b>Off:</b> The heating circuit is off, provided that the frost protection function (if the outside temperature is below 3°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**

## 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 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 5 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. This allows automatic switching from winter to summer time.

### 4.3 Setting the time programme

The controller is equipped with a basic program (Table 4.2).

Time window	Day of week / Week block	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 Works programme for heating, hot water storage and circulation pump**

## 4 Operation

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 current day or week block
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 water timer programme.

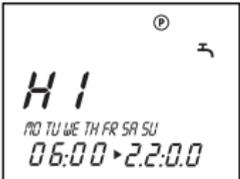
If you want to change the timer programme for heating or the circulation pump, after pressing the programming button P, select the corresponding symbol (heating circuit or circulation pump) and continue as shown in the example.

Display	Required steps
 <p>The display shows 'HI' in large characters. Below it, the days of the week are abbreviated: 'MO TU WE TH FR SA SU'. At the bottom, two time windows are shown as '00:00 00:00'. A small circle with a 'P' is in the top right, and a right-pointing arrow is in the top left. A black triangle cursor points to the first digit of the first '00:00'.</p>	<p>Press the programming button P. The cursor (black triangle) marks the value which can be changed <b>HI</b>, which also flashes. Turn the dial until you see the hot water symbol.</p>
 <p>The display shows 'HI' in large characters. Below it, the days of the week are abbreviated: 'MO TU WE TH FR SA SU'. At the bottom, two time windows are shown as '00:00 00:00'. A small circle with a 'P' is in the top right, and a right-pointing arrow is in the top left. A black triangle cursor points to the first digit of the first '00:00'.</p>	<p>Press the dial. The cursor marks the adjustable value (H1), which also flashes. Select the desired time window by turning the dial. Settings: H1, H2, H3</p>

Display	Required steps
 <p>The display shows 'HI' in large characters. Below it, the days of the week are abbreviated: 'MO TU WE TH FR SA SU'. At the bottom, two time windows are shown as '00:00 00:00'. A small circle with a 'P' is in the top right, and a right-pointing arrow is in the top left. A black triangle cursor points to the first digit of the first '00:00'.</p>	<p>Press the dial. The cursor marks the days of the week, which also flash. Select a block program or a 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>

## 4 Operation

Display	Required steps
 <p>The display shows 'HI' at the top. Below it, the days of the week 'MO TU WE TH FR SA SU' are listed. At the bottom, the time '06:00 22:00' is shown. A small cursor is positioned over the first zero of the start time '06:00'.</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.

Display	Required steps
 <p>The display shows 'HI' at the top. Below it, the days of the week 'MO TU WE TH FR SA SU' are listed. At the bottom, the time '06:00 22:00' is shown. A small cursor is positioned over the second zero of the end time '22:00'.</p>	Press the dial. The cursor marks the end time and the hour display flashes. Select the end time by turning the dial. Click the dial again to set the minutes.

**Table 4.3 Setting time windows**

If necessary, you can switch the weather compensator 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**

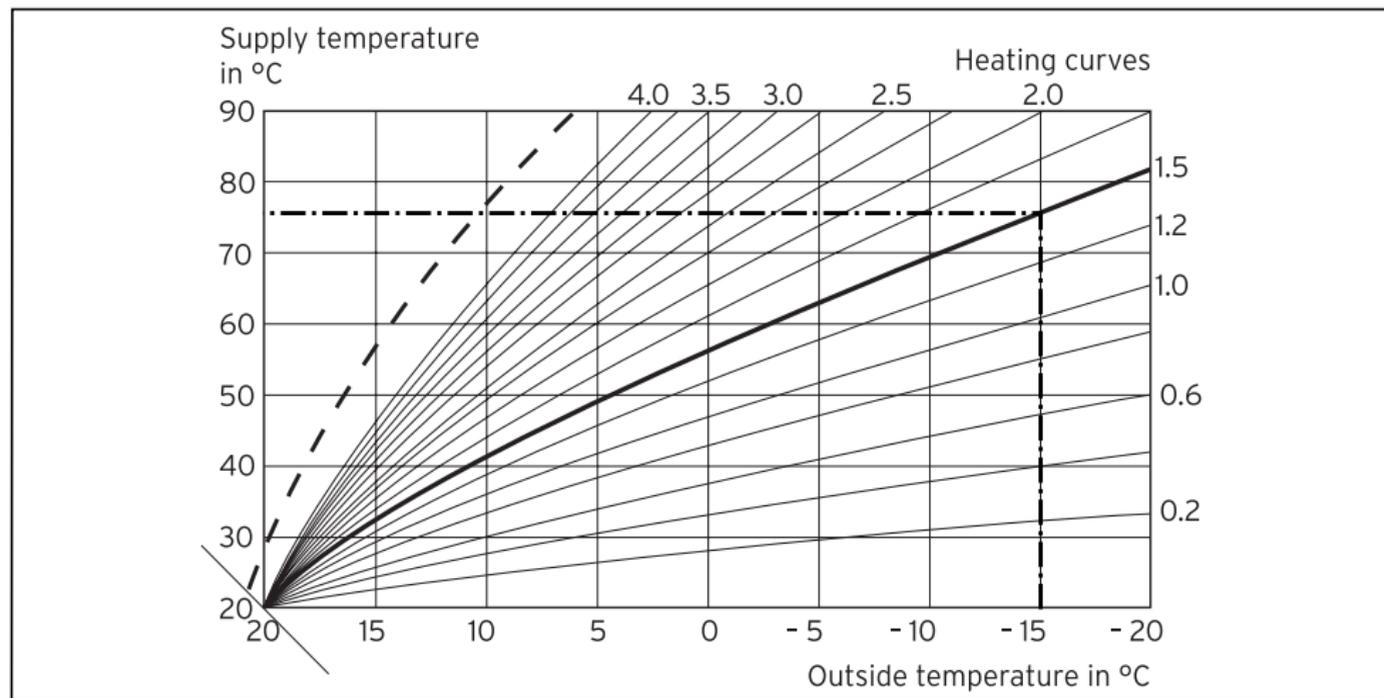
If the controller is installed in the boiler, basic display shows the set room temperature, from which the required supply temperature for the set heating curve is calculated.

You can set the room temperature directly from the basic display. If the temperature level function is activated on the installer level (different temperature settings for each heating window, see 11.1),

the display shows the currently set room temperature (T-H1, T-H2, T-H3).

If the controller is installed outside the boiler in a wall mounting box, the basic display shows the room temperature currently measured.

## 4 Operation



**Fig. 4.1 Diagram Room Temperature Setting**

The diagram in fig. 4.1 shows you the relationship between the required room temperature and the heating curve. If you increase the required room temperature, move the set heating curve parallel on a 45° axis and the flow temperature to be regulated by the controller accordingly.

**Note!**

The heating curve must be set correctly to match the design requirements of the heating system. e.g. 80°C flow, 60°C return at -1°C outside temperature, the heat curve parameter should be set around 2.6 to 2.8 to satisfy the heating demand.

**Setting the required room temperature directly**

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

The actual temperature display disappears, the sun symbol is displayed in the operating mode level and the set

## 4 Operation

room temperature is displayed in the multi-function level (e. g. TEMP 20.0°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 5 seconds.

### **Setting the room temperature for separate time windows**

(Only possible if the temperature level function is set on the expert level, see 11.1). You can set a room temperature for each time window.

- Press the dial several times until T-H1 appears in the multifunction 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.

The display switches back to normal mode after 5 seconds.

#### **Setting the set-back temperature "ECO"**

- Press the dial several times until ECO appears in the multifunction display along with a target 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 5 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 multifunction display along with a set value. The set value flashes.

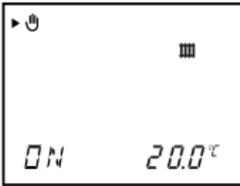
## 4 Operation

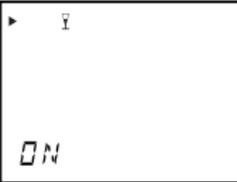
- Turn the dial until the required hot water temperature is displayed (e. g. DHW 60°C).

The display switches back to normal mode after 5 seconds.

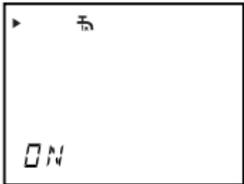
### 4.6 Activating the special functions

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

Display	Required steps
	<b>Quick veto</b> 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. 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 early, just press the F button.

Display	Required steps	Display	Required steps
 <p>▶ </p> <p>▶ 01:10</p>	<p><b>Energy-saving function</b></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. Now turn the dial to set the end time up to which the heating is operated in set-back mode. The display switches back to basic mode after 10 seconds and the function is activated. To deactivate the function early, just press the F button.</p>	 <p>▶ </p> <p>0N</p>	<p><b>Party function</b></p> <p>When you activate the party function the heating phase is continued beyond the next set-back phase. This also applies to the hot water and circulation pump programmes. Press the special function button F three times. The party symbol appears in the display and the function is activated after 10 seconds. The function is deactivated automatically by reaching the next heating phase. If you want to deactivate the function before, just press the F button. This function can only be activated in "Auto"  or "Eco" .</p>

## 4 Operation

Display	Required steps
	<p><b>Once-only cylinder filling</b></p> <p>The once-only cylinder filling 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 approx. 10 seconds. If you want to deactivate the function early, just press the F button.</p>

Display	Required steps
	<p><b>Holiday function</b></p> <p>The holiday function deactivates the controller, but not the frost protection function. The hot water and circulation pump are also deactivated. Push the special function button F five times - the holiday function appears in the display along with set value of the number of days' holiday, which then flashes. 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>

Display	Required steps
	<p>→ <b>Holiday function</b>            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 info button, different information is displayed:

- The weather compensator designation (VRC 400)

- The quick veto set room temperature (if active)
- The set room temperature T-H1 (if activated - e.g. T-H1 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 20.0 °C)
- The set room temperature if the temperature level function is not activated (e.g. TEMP 21.5 °C)
- The set set-back temperature (e.g. ECO 15.0 °C)

## 4 Operation, 5 Vaillant warranty

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

## 5 Vaillant warranty

Vaillant provide a full parts and labour warranty for this appliance. The appliance must be installed by a suitably competent person in accordance with the Gas Safety (Installation and Use) Regulations 1998, and the manufacturer's instructions. In the UK 'CORGI' registered installers undertake the work in compliance with safe and satisfactory standards.

All unvented domestic hot water cylinders must be installed by a competent person to the prevailing building regulations at the time of installation (G3).

Terms and conditions apply to the warranty, details of which can be found on the warranty registration card included with this appliance. Failure to install and commission this appliance in compliance with the manufacturer's instructions may invalidate the warranty (this does not affect the customer's statutory rights).

## **6 Recycling and disposal**

Neither the controller or any of its accessories belong in the household waste. Make sure the old appliance and any accessories are disposed of properly.

### Installation instructions

#### 7 Information 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.

##### 7.1 CE label

The CE label shows that the VRC 400 weather compensator, 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 VRC 400 weather compensator is a state-of-the-art appliance 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 control or other property may be damaged in the event of improper use or use for which it is not intended.

The VRC 400 room thermostat is designed for weather compensation of 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 use other than intended. The manufacturer or supplier is not liable for any resulting damage.

The owner alone bears any risk. Intended use includes the observance of the operating and installation manual.

## **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 Safety instructions and regulations

### 8.1 Safety instructions

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#### **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 controller from the wall mounting or from the plinth when it is potential free.**

### 8.2 Regulations

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.

Use standard commercial cables for wiring.

- Minimum cross-section of the wires:  
0.75 mm<sup>2</sup>

The following line lengths may not be exceeded:

- Bus lines: 300 m

Connection lines at 230V and bus wires must be laid separately when longer than 10 m.

The controller may only be installed in dry rooms.

## 9 Installation

The weather compensator can be alternately integrated in the boiler or e.g. can be installed on the wall in the living area with the wall socket provided with the appliance. It is connected to the boiler merely with a 2-core connection cable.

### 9.1 Fitting the equipment

To install the weather compensator directly in the front screen of the boiler, you only need to remove the front screen and to push the controller into the supplied plug-in connection with a pin bar.

## 9 Installation

### 9.2 Wall-mounting

The VRC 400 weather compensator is designed so that it can be used as a remote-control appliance with or without room modulation. The controller must be installed to ensure that it can properly record the room temperature (away from heat traps, not mounted on cold walls etc.).

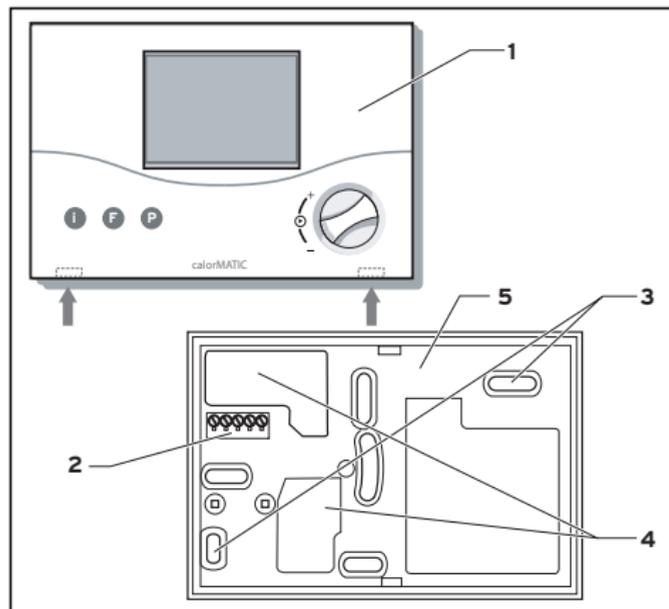
The best place of installation is mostly in the main living room on an inside wall at approx. 1.5m height. There, the controller will be able to record the circulating air, unhindered by furniture, curtains or other objects. In the room where the controller is installed, all

radiator valves must be fully open when using room modulation.

The connection to the boiler is a 2-core bus cable (eBus), see fig. 10.1.

- Pull the room thermostat **(1)** off the wall plinth **(5)**.
- Drill two holes **(3)** of 6mm diameter (as shown in fig. 9.1) and put in the supplied wall plugs.
- Guide the connection cable through the duct **(4)**.

- Attach the wall plinth to the wall with the two screws provided.
- Connect the cable as described in Chapter 10.



**Fig. 9.1 Mounting the room thermostat**

## 9 Installation

- Place the controller (1) on the mounting box (5) so that the pins on the back of the upper section fit into the recesses (2).
- Push the controller onto the mounting box until it clicks in position.

### 9.3 External sensor VRC 693 fitting

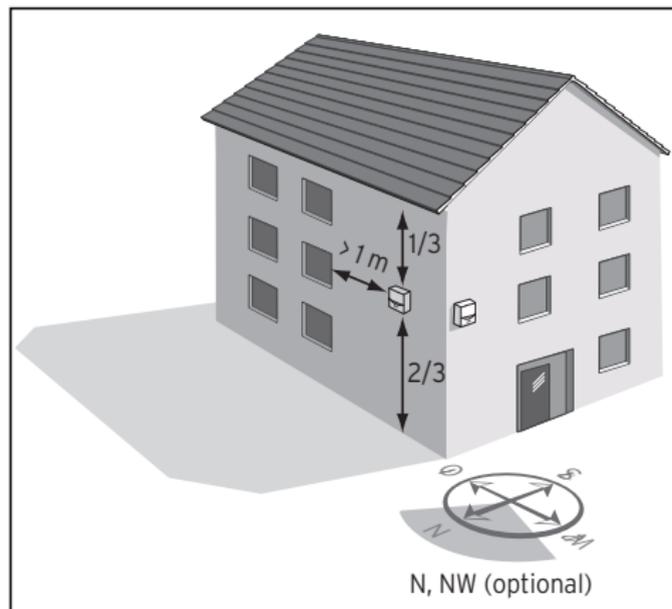
This equipment may only be opened by a suitably qualified heating engineer and installed as shown in the diagram. The current safety regulations must be observed as well as the installation instructions for the boiler and the heating controller.

### Place of installation

The outdoor sensor should be installed on the side of the house where the most frequented rooms are located. If this side cannot be clearly identified, install the outdoor sensor on the north or north-west side of the house.

To ideally measure the outside temperature on houses of up to 3 storeys, the device should be fitted about two thirds of the way up the wall. For taller buildings, installation is recommended between the second and third floor.

The location should not be protected from nor particularly exposed to wind and should not be exposed to direct sunlight. The device must be at least 1 m away from any openings in the outer wall, from which warm air can either continuously or occasionally escape. It can be installed either in or on the wall, depending on the accessibility of the location.



**Fig. 9.2: Installation location of the VRC 693 outdoor sensor**



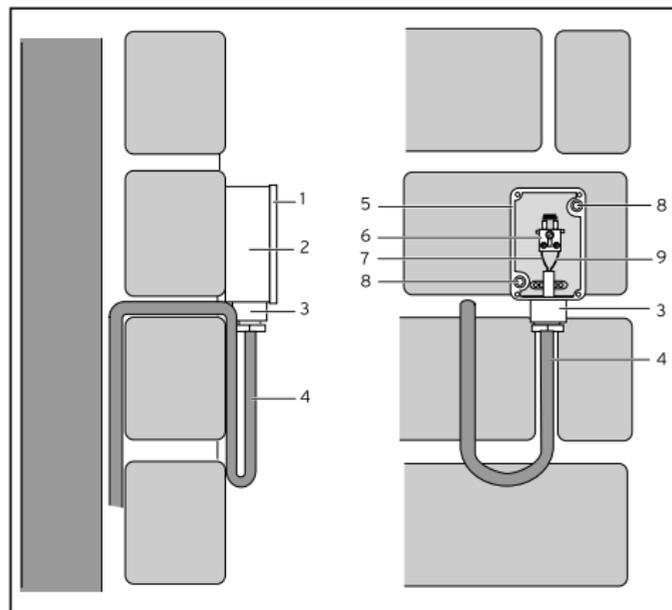
### Caution!

**Danger from moisture to wall and equipment.**

**By careful work and by appropriate cable routing, ensure that the outside sensor and the building are both water-tight.**

**The equipment must be fixed to the wall as shown in fig. 9.3.**

**The cable entry (3, fig. 9.3) must point downwards.**



**Fig. 9.3: Fitting and positioning the outdoor sensor**

- Remove the cover (**1**) of the housing and fix the housing to the wall, with 2 screws through the fixing holes (**8**).
- Install the connection cable (**4**) with at least  $2 \times 0.75 \text{ mm}^2$  on site, and pull it through the cable entry (**3**), from below.  
By careful work and by appropriate cable routing, ensure that the sensor and the building are both water-tight.
- Wire up the terminals as shown in the diagram in fig. 10.1.
- Make sure the housing seal is correctly fixed in the top section of the housing (**1**) and push the top section onto the housing.
- Fix the top of the housing (**1**) to the bottom (**2**), with the screws supplied.

# 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 weather compensator

If the controller is integrated directly in the boiler, the electrical connection is directly through the pin bars that are introduced in the connecting plug in the boiler.

With wall mounting, communication with the boiler is via the eBus. All eBus connection plugs are laid out so that you can connect 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.

## 10.2 Connecting the outside sensor

The external probe is connected directly on the boiler. Please observe the boiler manual while connecting the appliance.

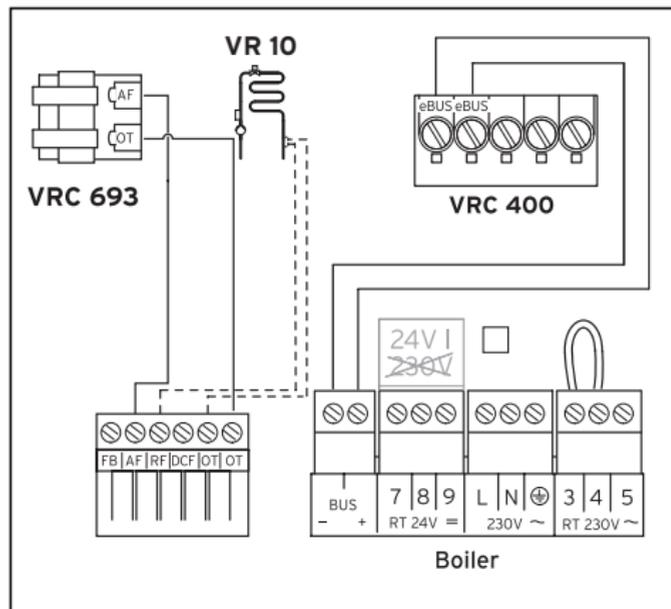


Fig. 10.1 Electrical connection

### **10.3 Connecting optional sensor VR 10**

When combined with floor heating, it is possible to connect an optional sensor for return flow temperature regulation. If there is a hydraulic diverter point in the installation then this sensor is imperative.

The VR 10 sensor is connected directly at the boiler (see Fig. 10.1).

Please observe the boiler manual while connecting the appliance.

## **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.

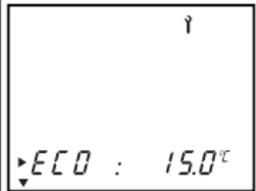
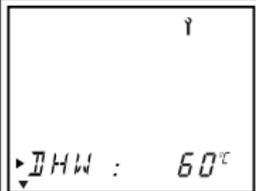
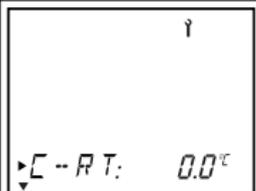
The service/diagnostics level is also intended for the engineer and is designed to help during servicing.

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

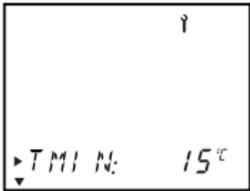
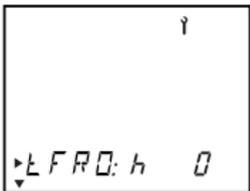
You can select and change the following parameters:

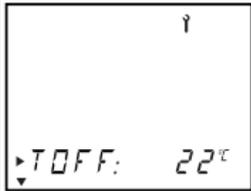
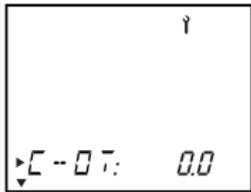
Display	Setting by turning the dial
 <p>ECO : 15.0°C</p>	<b>Set-back temperature</b> Factory setting: 15 °C Setting range: 5 ...30 °C
 <p>DHW : 60°C</p>	<b>Set hot water temperature</b> Factory setting: 60 °C Setting range 35 ... 70 °C
 <p>CRT : 0.0°C</p>	<b>Actual room temperature correction</b> (Adjustment of the displayed value in the range of max. +/- 3°C) Factory setting 0 °C

## 11 Start-up

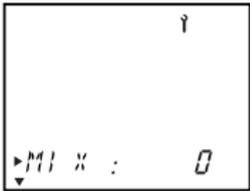
Display	Setting by turning the dial
<p>The LCD display shows the text 'Anti-Leg' on the left and the number '0' on the right. Above the text is a small upward-pointing arrow, and below the text is a small downward-pointing arrow.</p>	<p><b>Anti-legionella function</b>            1 = Activate the anti-legionnaire's disease function.            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 for at least 30 minutes.            Default setting = 0 (off)</p>

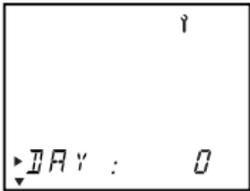
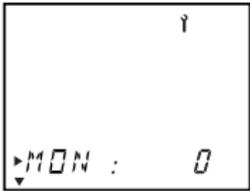
Display	Setting by turning the dial
<p>The LCD display shows the text 'HC' on the left and the number '1.2' on the right. Above the text is a small upward-pointing arrow, and below the text is a small downward-pointing arrow.</p>	<p><b>Heating curve</b>            The heating curve represents the relation between the outside temperature and target flow temperature.            Factory setting: 1.2</p>
<p>The LCD display shows the text 'RT' on the left and the number '0' on the right. Above the text is a small upward-pointing arrow, and below the text is a small downward-pointing arrow.</p>	<p><b>Room temperature modulation (wall installation only)</b>            1 = Room temperature modulation (including the room temperature in the supply temperature calculation)            2 = Thermostat function (switching off the heating when the required room temperature is reached)            Factory setting: 0 = No room modulation</p>

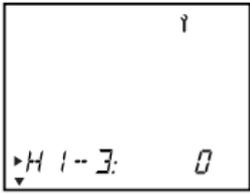
Display	Setting by turning the dial
	<p><b>Minimum temperature (foot point)</b> This is the minimum central heating flow temperature that the boiler will provide when the outdoor temperature is below 20 °C. Setting range 15 ... 90 °C Factory setting: 15 °C</p>
	<p><b>Frost protection delay</b> Timed suppression of anti-frost function (activated at outside temperatures below 3 °C) Setting range: 0 ... 12 h Factory setting: 0 h</p>

Display	Setting by turning the dial
	<p><b>Outside temperature shutdown threshold</b> Shutdown temperature for demand-based deactivation of heating Setting range: 5 ...50 °C Factory setting: 22 °C</p>
	<p><b>Outside temperature correction</b> Corrects the temperature currently measured by the set value to compensate for outside influences Setting range: -5 ...+5 °C Factory setting: 0 °C</p>

## 11 Start-up

Display	Setting by turning the dial
 <p>The LCD display shows the text 'M1' followed by a colon and the number '0'. A vertical cursor is positioned to the right of the '0'. A small downward-pointing arrow is visible at the bottom left of the display area.</p>	<p><b>Hydraulic switch</b></p> <p><b>mit</b> VR 10:            0 = Return temperature control            1 = Feed temperature control with hydraulic diverting point</p> <p><b>without</b> VR 10:            Setting has no effect</p> <p>Default setting = 0 off</p>

Display	Setting by turning the dial
 <p>The LCD display shows the text 'DAY' followed by a colon and the number '0'. A vertical cursor is positioned to the right of the '0'. A small downward-pointing arrow is visible at the bottom left of the display area.</p>	<p><b>Day setting</b>            For activation of the calendar</p>
 <p>The LCD display shows the text 'MON' followed by a colon and the number '0'. A vertical cursor is positioned to the right of the '0'. A small downward-pointing arrow is visible at the bottom left of the display area.</p>	<p><b>Month setting</b>            For activation of the calendar</p>

Display	Setting by turning the dial
	<b>Year setting</b> For activation of the calendar
	<b>Temperature level</b> Activate the setting for different temperatures for each time window. 0 = Temperature level off 1 = Temperature level on, default setting: 0

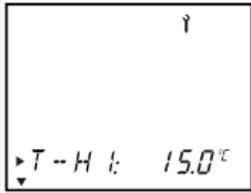
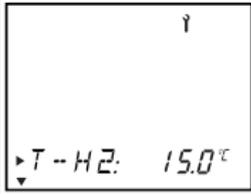
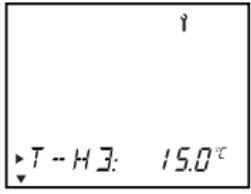
Display	Setting by turning the dial
	<b>Temperature level time window H1</b> (only when temperature levels are activated)
	<b>Temperature level time window H2</b> (only when temperature levels are activated)
	<b>Temperature level time window H3</b> (only when temperature levels are activated)

Table 11.1 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 turning 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 for 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 activated, charging pump starts working, all other zone valves are turned off
Turn	Circulation pump	The circulation pump is activated (if connected). 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 Test sequence**

### **Restoring the default settings**

- To return the controller to its default settings, press the P button for 15 seconds. As soon as the display lights up twice, the controller has been reset. This means that you will have to perform all individual settings again.

### **11.3 Handing over the timer to the owner**

The owner of the weather compensator 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 nearby the controller.

## 12 Technical data

Description	Unit	
Operating voltage U <sub>max</sub>	V	24
Maximum permissible ambient temperature	°C	50
Current consumption	mA	< 17
Minimum cross-section of the connection lines	mm <sup>2</sup>	0.75
Level of protection		IP 20
Protection rating for regulator		III
Dimensions		
Height	mm	97
Width	mm	146
Depth	mm	40

**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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