

For the competent person

Installation instructions



VRT 350

VRT 350

GB, IE

Legal information

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1 Notes on the documentation

1 Notes on the documentation

1.1 Symbols and signs used

Symbols

The following symbols may appear:

	Warning symbol
	Information symbol
	Symbol for a required action.
	Symbol for the result of an action.

1.2 Observing other applicable documents

- ▶ During installation, you must observe all the installation instructions for the assemblies and components of the system.

These installation instructions are enclosed with the various system parts and supplementary components.

- ▶ Furthermore, observe all operating instructions enclosed with components of the system.

1.3 Document storage

Document handover

- ▶ Pass these instructions and all other applicable documents and, if necessary, any required tools to the system operator.

Availability of documents

The system operator is responsible for storing the documents so that they are available when required.

1.4 Applicability of the instructions

These instructions apply for the following only:

Article number

Great Britain	0020124475
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2 Safety

2.1 Required personnel qualifications

This manual is intended for persons with the following qualifications.

2.1.1 Authorised competent person

The installation, assembly and removal, start-up, maintenance, repair and decommissioning of Vaillant products and accessories must only be carried out by authorised competent persons.



Note

Each competent person is qualified for specific activities on the basis of their training. They must only work on units if they have the required qualification.

When working on the units, the competent persons must observe all applicable directives, standards, laws and other regulations.

2.2 General safety information

2.2.1 Installation by skilled tradesmen only

The unit must be installed by a qualified, skilled tradesman, who is responsible for compliance with the applicable requirements, regulations and directives.

- ▶ Read through these installation instructions carefully.
- ▶ Carry out the activities that are described in these installation instructions.
- ▶ During the installation, observe the following safety instructions and regulations.

2.2.2 Risk of death from live connections

When working in the electronics box of the boiler, there is a risk of death from electric shock. Continuous voltage is present on the mains connection terminals, even if the main switch is turned off.

- ▶ Switch the main switch off before working on the electronics box of the boiler.
- ▶ Disconnect the boiler from the power mains by disconnecting the mains plug or by de-energising the boiler via a partition with a contact opening of at least 3 mm (e. g. fuses or power switches).
- ▶ Check that the boiler is de-energised.
- ▶ Secure the power supply against being switched on again.
- ▶ Open the electronics box only when the boiler is disconnected from the power supply.

2.2.3 Material damage due to unsuitable installation room

If you are installing the controller in a moist environment, the electronics may be damaged by moisture.

- ▶ The controller should only be installed in dry rooms.



2 Safety

2.2.4 Danger due to error functions

- ▶ Ensure that the heating system is in a technically perfect condition.
- ▶ Ensure that no safety or monitoring devices have been removed, bridged or disabled.
- ▶ Immediately rectify any faults and damage that may affect safety.
- ▶ Install the controller in a location where it is not covered by furniture, curtains, or other objects.
- ▶ If thermostatic control is activated, advise the operator that, in the room where the controller is mounted, all the radiator valves must be fully open.
- ▶ Do not use the unit's free terminals as supports for other wiring.
- ▶ At lengths of over 10 m, 230 V supply cables must be laid separately from sensor or bus lines.

2.3 CE label



CE labelling shows that, based on the type overview, the appliances comply with the basic requirements of the following directives:

- Electromagnetic compatibility directive (Council Directive 2004/108/EC)
- Low voltage directive (Council Directive 2006/95/EC)

2.4 Intended use

State-of-the-art

The controller is a state-of-the-art unit manufactured in accordance with recognised safety regulations.

Even so, in the event of inappropriate or non-intended use, damage to the appliance and other property may arise.

The controller controls a heating installation with a Vaillant heater with eBUS interface in a way that is room-controlled and time-dependent.

The controller can control the hot water generation of a connected domestic hot water cylinder.

Operation is permissible with the following components and accessories:

- Domestic hot water cylinder (conventional)
- **VR 66** Control Centre

Improper use

Any other use, or use beyond that specified, shall be considered improper use. Any direct commercial or industrial use is also deemed to be improper. The manufacturer/supplier is not liable for any resulting damage. The user alone bears the risk.

Improper use of any kind is prohibited.

Other applicable documents

Intended use includes the following:



- observance of accompanying operating, installation and servicing instructions for the Vaillant product as well as for other parts and components of the system
- compliance with all inspection and maintenance conditions listed in the instructions.

3 Overview of the equipment

3 Overview of the equipment

3.1 Identification plate

The identification plate is located on the rear of the controller's electronics module (PCB) and is no longer accessible from the outside after it has been installed on a wall in the living area.

The identification plate contains the following information:

Information on the identification plate	Meaning
Serial number	For identification
VRT XXX	Unit designation
V	Operating voltage
mA	Current consumption
CE label	Unit complies with European standards and directives
Waste container	Proper disposal of the unit

3.2 Scope of delivery

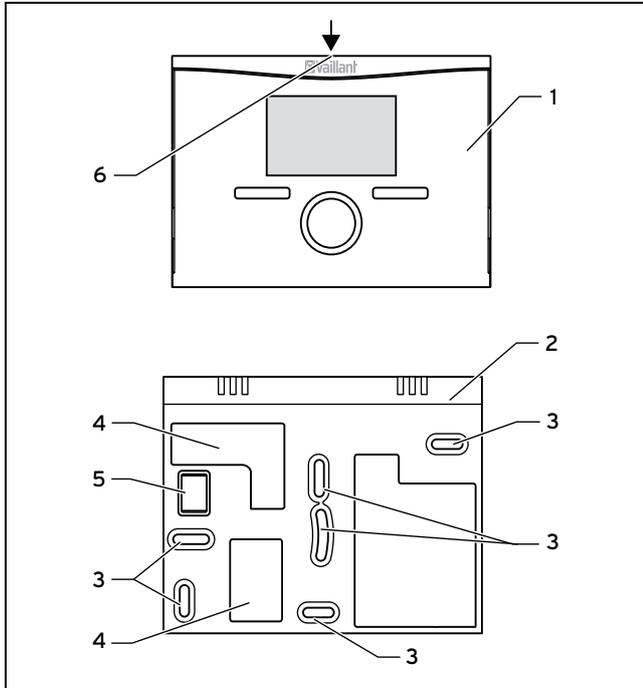
Quantity	Component
1	Controller
1	Fastening material (2 bolts and 2 wall plugs)
1	Operating instructions

Quantity	Component
1	Installation instructions

4 Installation

4.1 Fitting the controller in the living room

1. Fit the controller on an interior wall of the main living room in such a way that perfect recording of the room temperature is ensured.
 - Height: ≈ 1.5 m



- | | |
|----------------------|---|
| 1 Controller | 4 Openings for cable duct |
| 2 Wall-mounting base | 5 Pin header with terminals for the eBUS line |
| 3 Mounting holes | 6 Slot for screwdriver |

2. Mark the position on the wall. Take the eBUS line route into account when doing so.

3. Drill two holes matching the positions of the mounting holes (3).
 - Diameter of mounting hole: 6 mm
4. Insert the eBUS line through one of the cable ducts (4).
5. Insert the wall plugs supplied.
6. Use the screws supplied to secure the wall-mounting base.
7. Connect the eBUS line to the terminal block. (→ Page 10)
8. Carefully insert the controller in the wall mounting base. Ensure that the pin header (5) on the wall-mounting base fits into the controller connector provided.
9. Carefully press the controller into the wall-mounting base until the locking tabs on the controller are heard to latch into the sides of the wall-mounting base.

5 Electrical installation

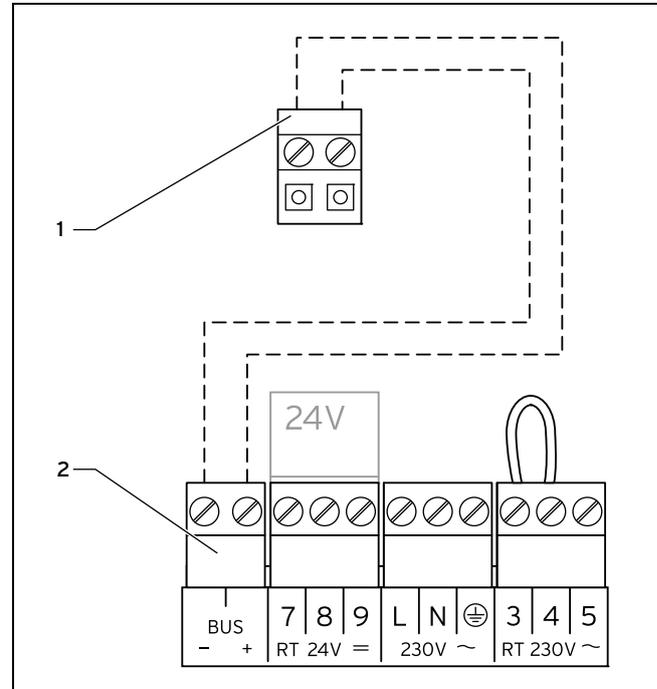
When connecting the eBUS line, there is no need to pay attention to the polarity. If the two connections are switched around, communication is not affected.

If you want to use a **VR 66**, observe the installation instructions for the **VR 66** Control Centre.

5 Electrical installation

5.1 Connect the controller to the boiler with a "3-4-5 Terminal"

1. Disconnect the power supply to the boiler.
2. Disconnect the boiler from the power mains by pulling out the mains plug or de-energising the boiler using a partition with a contact opening of at least 3 mm.
3. Secure the power supply to the boiler against being switched on again.
4. Check that there is no voltage in the boiler.



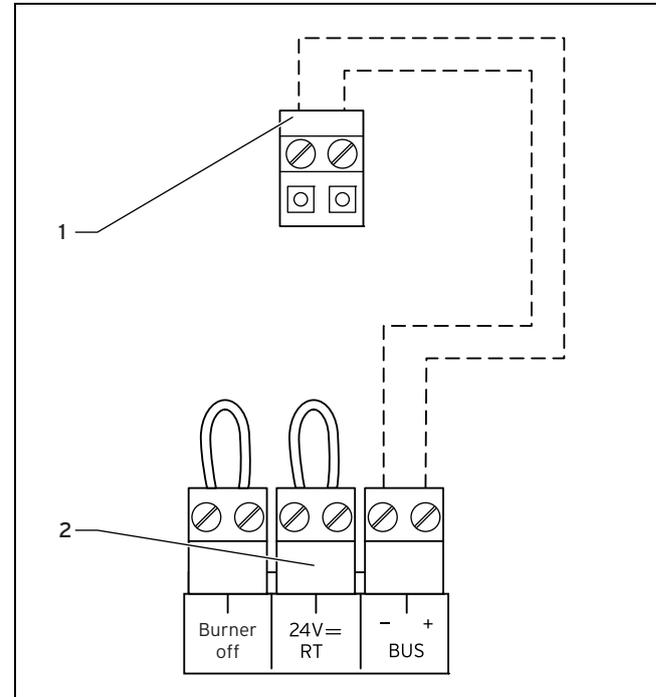
1 Controller terminal block 2 Boiler terminal block

5. Check whether the bridge is installed between terminals 3 and 4 on the PCB of the electronics box and, if required, install the bridge between terminals 3 and 4.
6. Connect the eBUS line to the terminal block (1) in the wall-mounting base of the controller.

7. Connect the eBUS line to the terminal block of the boiler (2).

5.2 Connect the controller to the boiler with a "24V=RT terminal"

1. Disconnect the power supply to the boiler.
2. Disconnect the boiler from the power mains by pulling out the mains plug or de-energising the boiler using a partition with a contact opening of at least 3 mm.
3. Secure the power supply to the boiler against being switched on again.
4. Check that there is no voltage in the boiler.



1 Controller terminal block 2 Boiler terminal block

5. Check whether the bridge is installed between the 24 V=RT terminals on the PCB of the electronics box and, if required, install the bridge between the 24 V=RT terminals.

6 Electrical installation

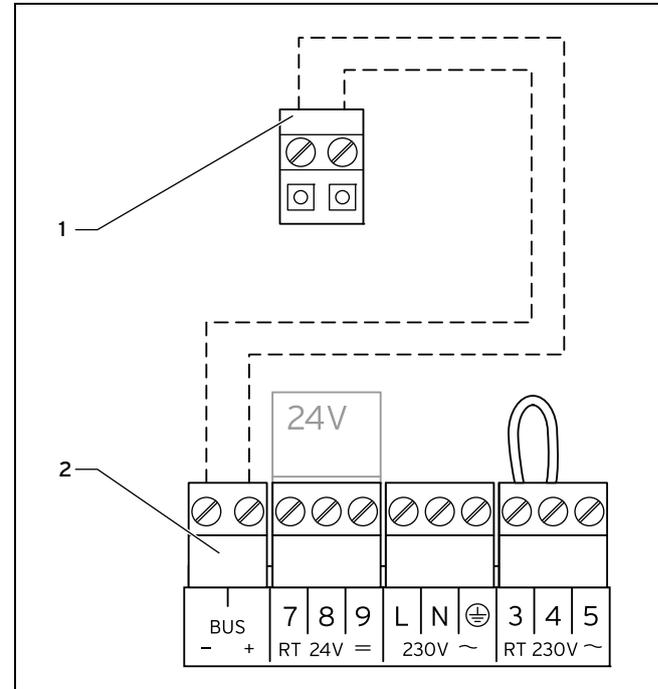
6. Connect the eBUS line to the terminal block **(1)** in the wall-mounting base of the controller.
7. Connect the eBUS line to the terminal block of the boiler **(2)**.

6 Electrical installation

When connecting the eBUS line, there is no need to pay attention to the polarity. If the two connections are switched around, communication is not affected.

6.1 Connect the controller to the boiler with a "3-4-5 Terminal"

1. Disconnect the power supply to the boiler.
2. Disconnect the boiler from the power mains by pulling out the mains plug or de-energising the boiler using a partition with a contact opening of at least 3 mm.
3. Secure the power supply to the boiler against being switched on again.
4. Check that there is no voltage in the boiler.



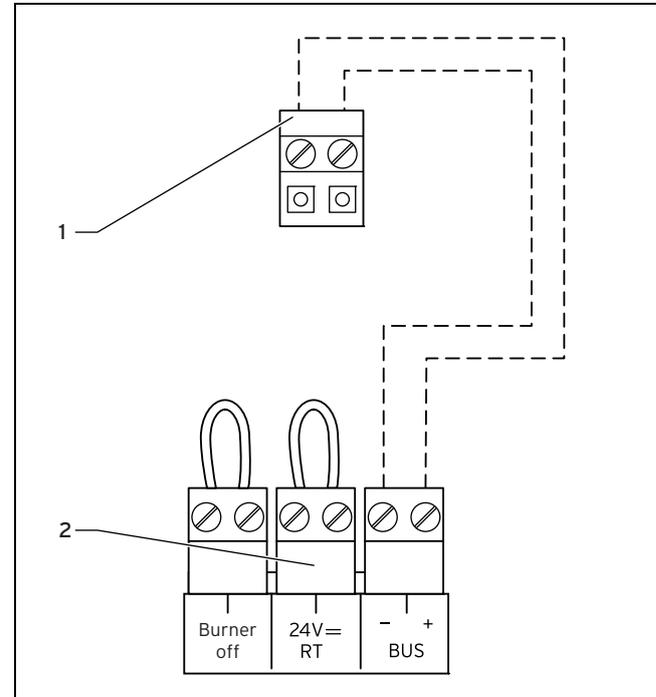
1 Controller terminal block 2 Boiler terminal block

5. Check whether the bridge is installed between terminals 3 and 4 on the PCB of the electronics box and, if required, install the bridge between terminals 3 and 4.
6. Connect the eBUS line to the terminal block **(1)** in the wall-mounting base of the controller.

7. Connect the eBUS line to the terminal block of the boiler (2).

6.2 Connect the controller to the boiler with a "24V=RT terminal"

1. Disconnect the power supply to the boiler.
2. Disconnect the boiler from the power mains by pulling out the mains plug or de-energising the boiler using a partition with a contact opening of at least 3 mm.
3. Secure the power supply to the boiler against being switched on again.
4. Check that there is no voltage in the boiler.



1 Controller terminal block 2 Boiler terminal block

5. Check whether the bridge is installed between the 24 V=RT terminals on the PCB of the electronics box and, if required, install the bridge between the 24 V=RT terminals.

7 Start-up

6. Connect the eBUS line to the terminal block **(1)** in the wall-mounting base of the controller.
7. Connect the eBUS line to the terminal block of the boiler **(2)**.

tings options for the installer level are described in the Access level for the competent person (→ Page 17).

7 Start-up

When you start the controller for the first time after electrical installation or after replacement, the installation assistant starts automatically. You can use the installation assistant to make the main settings for the heating installation.



Note

To be able use the controller to set the temperature for the hot water generation and heating circuit, you must set the maximum value for the temperatures on the boiler. To do this, turn the boiler's rotary knobs as far as they go in a clockwise direction.

You can use the installation assistant to make the main settings for the heating installation.

The operating concept, an operation example, and the menu structure are all contained in the operating instructions of the controller.

All settings that you have made using the installation assistant can be changed again at a later time via the access level for the system operator **Installer level**. The read-out and set-

7.1 Overview of installation assistant set-up options

Setting	Values		Increment/Select	Factory preset	Setting
	Min.	Max.			
Language			Languages for selection	English	
Zone ²⁾			None, 1, 2	0	
Control strategy ³⁾			Two point, analogue	Two point	
Route adjustment ¹⁾	-5	+5	1	0	
Cylinder ³⁾			Active, Inactive	Active	

1) Appears only if the value **Analogue** is set for the control strategy.
2) Appears only if a **VR 66** is connected.
3) Appears only in the display of the main controller with Zone 1 selected.

8 Operating

8 Operating

The controller has two operating levels, the access level for the operator and the access levels for the competent person.

The setting and read-out options for the operator, the operating concept and an operating example are described in the operating instructions for the controller.

8.1 Installer level overview

You can use the left-hand selection button **Menu** and the list entry **Installer level** to access the setting and read-out options.

Installer level (→ Page 17)

Setting level	Values		Unit	Increment/Select	Factory reset	Setting
	min.	max.				
Installer level →						
Enter code	000	999		1	000	
Installer level → Service information → Enter contact details →						
<i>Installer</i>	1	11	<i>Figures</i>	<i>A to Z, 0 to 9, Space</i>		
<i>Phone</i>	1	12	<i>Numbers</i>	<i>0 to 9, Space, Hyphen</i>		
Installer level → Service information → Service date →						
Next service on			<i>Date</i>			
<p>* If there is no fault, the status is OK. If there is a fault, Fault appears here and you can read the fault message in the Fault messages section.</p> <p>1) Appears only if the value Analogue is set for the control type.</p> <p>If the VR 66 is connected, the functions shown in italics are only available for Zone 1 and these are only shown in the display for the main controller.</p>						

8 Operating

Setting level	Values		Unit	Increment/Select	Factory reset	Setting
	min.	max.				
Installer level → System configuration →						
System						
Status	Current value*					
Water pressure	Current value		bar			
Hot water	<i>Current value</i>		°C			
Controller modules	List			Software version		
Heat generator						
Status	Current value			Off, Heating, DHW		
VF1	Current value					
HEATING 1						
Auto day temp until	Current value		hr:min			
Day temperature	5	30	°C	0.5	20	
Set-back temperature	5	30	°C	0.5	15	
Flow temp. target.	Current value		°C			
Flow temp. current	Current value		°C			
<p>* If there is no fault, the status is OK. If there is a fault, Fault appears here and you can read the fault message in the Fault messages section.</p> <p>1) Appears only if the value Analogue is set for the control type.</p> <p>If the VR 66 is connected, the functions shown in italics are only available for Zone 1 and these are only shown in the display for the main controller.</p>						

Setting level	Values		Unit	Increment/Select	Factory reset	Setting
	min.	max.				
Special function	Current function			Cylinder boost, Party function, Away	None	
Hot water circuit						
<i>Cylinder</i>	<i>Inactive</i>	<i>Active</i>		<i>Active, Inactive</i>	<i>Active</i>	
<i>Target cylinder temperature</i>	35	70	°C	1	60	
<i>Current cylinder temperature</i>	<i>Current value</i>		°C			
System						
Control type	Current value			2-point, analogue	2-point	
Distance Adjustment¹⁾	-5	+5		1	0	
Installer level → Change code →						
New code	000	999		1	000	
<p>* If there is no fault, the status is OK. If there is a fault, Fault appears here and you can read the fault message in the Fault messages section.</p> <p>1) Appears only if the value Analogue is set for the control type.</p> <p>If the VR 66 is connected, the functions shown in italics are only available for Zone 1 and these are only shown in the display for the main controller.</p>						

9 Operating and display functions

9 Operating and display functions

The path details given at the start of each function description indicate how you reach this function in the menu structure.

The square brackets contain the level of detail to which the function belongs.

You can use the left-hand selection button **Menu** and the list entry **Installer level** to set the operating and display functions.

The table "Overview of operating levels" shows you which functions are available for Zone 2 via the auxiliary controller.

9.1 Service information

9.1.1 Entering contact details

Menu → **Installer level** → **Service information** → **Enter contact data**

- You can enter your contact details (company name and phone number) in the controller.
- As soon as the date of the next service appointment is reached, the operator can view these contact details in the display of the controller.

9.1.2 Entering the service date

Menu → **Installer level** → **Service information** → **Service date**

- In the controller, you can save a date (day, month, year) for the next regular service.

When the date for the next service date is reached, the message **Service heater 1** is displayed in the basic display of the controller.

If a service date is saved in the heater, the message **Service heater 1** appears on the heater when this date is reached.

The message is switched off if:

- the date is in the future.
- the initial date 01.01.2011 is set.



Note

To find out which service date to enter, refer to the instructions for your heater unit.

9.2 System configuration, system

9.2.1 Reading the system status

Menu → **Installer level** → **System configuration [System ---]** → **Status**

- This function allows you to read the status of the heating system. If there is no fault, the message "**OK**" appears here. If there is a fault, the status "**Fault**" is displayed. If you press the right selector button the list of error messages (→ Page 24) is displayed.

9.2.2 Reading the water pressure of the heating system

Menu → Installer level → System configuration [System ---] → **Water pressure**

- This function allows you to read the water pressure of the heating system.

9.2.3 Reading the hot water generation status

Menu → Installer level → System configuration [System ---] → **Domestic hot water**

- You can use this function to read the hot water generation status (**Charged, Not charged**).

9.2.4 Reading the software version

Menu → Installer level → System configuration [System ---] → **Control modules**

- You can use this function to read the software version of the display and the heater.

9.2.5 Setting the control type

Menu → Installer level → System configuration [System ---] → **Control type**

- Select this function to set the type of room temperature control:
- Two-point corresponds to an On/Off control system
- Analogue corresponds to a modulating control system

9.2.6 Setting the distance adjustment

Menu → Installer level → System configuration [System ---] → **Distance adjustment**

- This function allows you to optimally adjust the switching behaviour of the controller to the room size or the radiator layout:
- Positive values: slower controller switching behaviour
- Negative values: faster controller switching behaviour

The **Distance adjustment** function is only available if you have set **Analogue** under the **Control strategy** function

9.3 System configuration, heater

9.3.1 Reading the status of the heater

Menu → Installer level → System configuration [Heater 1 --] → **Status**

- This function allows you to read the current status of the heater (boiler). **Off, Heating** (heating mode), **hot water generation**.

9.3.2 Reading the value of temperature sensor VF1

Menu → Installer level → System configuration [Heater 1 --] → **VF1**

- This function allows you to read the current value of temperature sensor VF1.

9 Operating and display functions

9.4 System configuration, heating circuit

9.4.1 Reading the end of the current time period

Menu → **Installer level** → **System configuration [HEATING 1 ----]** → **Auto day temp until**

- With this function, you can stipulate whether or not a set time period is active for the **Automatic** mode and how much of the period is still remaining. To do this, the controller must be in "**Automatic mode**". The information is specified in hr:min.

9.4.2 Setting the day temperature

Menu → **Installer level** → **System configuration [HEATING 1 ----]** → **Day temperature**

- This function allows you to set the desired day temperature for the heating circuit.

9.4.3 Setting the set-back temperature

Menu → **Installer level** → **System configuration [HEATING 1 ----]** → **Set-back temperature**

- This function allows you to set the desired set-back temperature for the heating circuit.

The set-back temperature is the temperature to which the heating is to be reduced at times of low heat demand (e.g. overnight).

9.4.4 Reading the target flow temperature

Menu → **Installer level** → **System configuration [HEATING 1 ----]** → **Flow temp. target**

- You use this function to read the target flow temperature for the heating circuit.

9.4.5 Reading the current flow temperature

Menu → **Installer level** → **System configuration [HEATING 1 ----]** → **Flow temp. current**

- You use this function to read the current flow temperature for the heating circuit.

9.4.6 Reading the status of advanced functions

Menu → **Installer level** → **System configuration [HEATING 1 ----]** → **Advanced functions**

- With this function, you can define whether a special operating mode (advanced function), such as **Party function** etc. is currently active for a heating circuit.

9.5 System configuration, hot water circuit

9.5.1 Activating the cylinder

Menu → **Installer level** → **System configuration [Domestic hot water ----]** → **Cylinder**

- Select this function to specify whether a cylinder is connected:

Active: Cylinder connected

Inactive: No cylinder connected

9.5.2 Setting the target temperature for domestic hot water cylinder (desired hot water temperature)

Menu → **Installer level** → **System configuration [Domestic hot water ----]** → **Cylinder temp. target**

- This function allows you to define the set target temperature for a connected domestic hot water cylinder (**desired hot water temperature**). Set the set target temperature on the controller in such a way that the heat demand of the operator is covered.

The temperature for the domestic hot water cylinder must be set to the maximum value in the boiler.

9.5.3 Reading the current temperature of the domestic hot water cylinder

Menu → **Installer level** → **System configuration [Domestic hot water ----]** → **Cyl. temp. current**

- You can use this function to read the measured cylinder temperature.

9.6 Changing the code for Installer level

Menu → **Installer level** → **Change code**

- This function allows you to change the access code for the "**Installer level**" operating level.

If the code is no longer available, you must reset the controller to the factory setting in order to obtain access to Installer level again.

10 Rectifying faults

10 Rectifying faults

10.1 Error messages

If a fault occurs in the heating system, an error message will appear in the controller display instead of the basic display. You can access the basic display again by pressing function key "**Back**".

You can also read all current error messages under the following menu point:

Menu → **Information** → **System status** → **Status** [Fault]

- If there is a fault, the status "**Fault**" is displayed. In this case, the right-hand selector button has the function **Display**. Press the right-hand selector button to display a list of fault messages.



Note

Not all error messages in the list appear automatically on the display.

Display	Meaning	Connected units	Cause
Fault, Heater 1	Fault in Heater 1	Heat generator 1	See heater instructions
Heater 1 connection is missing	Connection fault, Heater 1	Heat generator 1	Cable defective, plug connection not correct

10.2 Faults

Fault	Cause	Remedy
Display is dark	Unit fault	<ul style="list-style-type: none">– The power is switched off/on at the heater– Check the power supply for the heater
No changes in the display via the rotary knob	Unit fault	<ul style="list-style-type: none">– The power is switched off/on at the heater

Rectifying faults 10

Fault	Cause	Remedy
No changes in the display via the selector buttons	Unit fault	– The power is switched off/on at the heater

11 Decommissioning

11 Decommissioning

11.1 Replacing the controller

1. If you want to replace the controller, disconnect all of the connected modules from the power supply. Observe the relevant instructions.
2. If you want to replace the controller, first shut down the heating installation.
3. To do this, follow the instructions for shutting down in the boiler instructions.
4. Disconnect the power supply to the boiler.
5. Disconnect the boiler from the power mains by pulling out the mains plug or de-energising the boiler using a partition with a contact opening of at least 3 mm.
6. Secure the power supply to the boiler against being switched on again.
7. Check that there is no voltage in the boiler.

11.1.1 Removing from the wall

1. Insert the screwdriver into the slot on the wall-mounting base .
2. Carefully lever the controller off the wall mounting base .
3. Unfasten the eBUS line from the pin header on the controller and from the terminal block on the boiler.
4. Unscrew the wall-mounting base from the wall.

11.2 Recycling and disposal

The controller and the associated transport packaging consist largely of recyclable materials.

Unit



If your Vaillant unit is identified with this symbol, it does not belong with your household waste at the end of its useful life.

- ▶ In this case, make sure that the Vaillant unit and any accessories are properly disposed of at the end of their useful life.

As this Vaillant unit is covered by the law regarding the marketing, return and environmentally friendly disposal of electrical and electronic equipment (ElektroG in Germany), the unit can be disposed of free of charge at a municipal collection point.

Packaging

The approved qualified servicing company that installed the unit will dispose of the transport packaging.

12 Customer service

To ensure regular servicing, it is strongly recommended that arrangements are made for a Maintenance Agreement.

Please contact Vaillant Service Solutions for further details:
+44 80 70 606 07 77

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