Vaillant

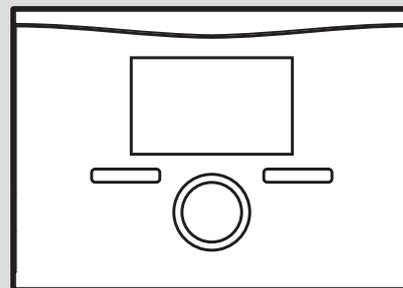# VRT 350

0020124475

en Installation instructions

Installation instructions

Contents

1 Safety

1.1 Action-related warnings

Classification of action-related warnings

The action-related warnings are classified in accordance with the severity of the possible danger using the following warning signs and signal words:

Warning symbols and signal words

Danger!
Imminent danger to life or risk of severe personal injury

Danger!
Risk of death from electric shock

Warning.
Risk of minor personal injury

Caution.
Risk of material or environmental damage

1.2 Intended use

In the event of inappropriate or improper use, damage to the product and other property may arise.

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

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

Operation is permissible with the following components and accessories:

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

Intended use includes the following:

– observance of accompanying operating, installation and maintenance instructions for the product and any other system components

– installing and setting up the product in accordance with the product and system approval
– compliance with all inspection and maintenance conditions listed in the instructions.

Intended use also covers installation in accordance with the IP code.

Any other use that is not specified in these instructions, or use beyond that specified in this document, shall be considered improper use. Any direct commercial or industrial use is also deemed to be improper.

Caution.

Improper use of any kind is prohibited.

1.3 General safety information

1.3.1 Risk caused by inadequate qualifications

The following work must only be carried out by competent persons who are sufficiently qualified to do so:

– Set-up
– Dismantling
– Installation
– Start-up
– Inspection and maintenance
– Repair
– Decommissioning

▶ Proceed in accordance with current technology.

The competent person must be approved at the time by the "Health and Safety Executive".

1.3.2 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.

1.3.3 Material damage due to unsuitable installation room

If you are installing the control in a wet room, the electronics may be damaged by moisture.

▸ The control should only be installed in dry rooms.

1.3.4 Danger due to malfunctions

▸ Ensure that the heating installation is in a technically perfect condition.
▸ Ensure that no safety or monitoring devices have been removed, bridged or decommissioned.
▸ 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 the room temperature modulation is activated, advise the end user that, in the room where the control is installed, all the radiator valves must be fully open.
▸ Do not use the unit's free terminals as supports for other wiring.
▸ Route 230 V connection cables and sensor or bus cables as of a length of 10 m separately.

1.3.5 Risk of material damage caused by using an unsuitable tool

▸ Use the correct tool.

1.4 Regulations (directives, laws, standards)

▸ Observe the national regulations, standards, directives, ordinances and laws.

2 Notes on the documentation

2.1 Observing other applicable documents

▶ Always observe all the operating and installation instructions included with the system components.

2.2 Storing documents

▶ Pass these instructions and all other applicable documents on to the end user.

2.3 Validity of the instructions

These instructions apply only to:

Article number

VRT 350	0020124475

3 Product description

3.1 Product design
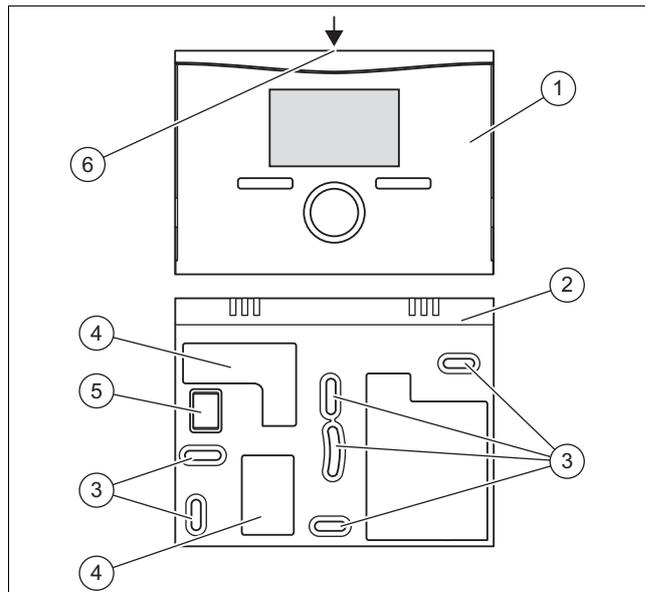
1	Control	4	Openings for grommet
2	Wall base	5	Pin header with terminals for the eBUS line
3	Mounting openings	6	Slot for screwdriver

3.2 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

3.3 CE marking

$\mathsf{C}\mathsf{E}$

The CE marking shows that the products comply with the basic requirements of the applicable directives as stated on the declaration of conformity.

The declaration of conformity can be viewed at the manufacturer's site.

4 Set-up

4.1 Checking the scope of delivery

Quantity	Component
1	Control
1	Fixing material (2 screws and 2 wall plugs)
1	Operating instructions
1	Installation instructions

4.2 Installing the control in the living room

1. Mount the control on an internal wall of the main living room in a position that ensures accurate measurement of the room temperature.
   – Height: ≈ 1.5 m
2. Mark a suitable position on the wall. Take the eBUS line cable laying into account when doing so.
3. Drill two holes in line with the mounting holes **(3)**.
   – Diameter of mounting hole: 6 mm
4. Route the eBUS line through one of the grommets **(4)**.
5. Insert the wall plugs supplied.
6. Use the screws supplied to secure the wall base.
7. Connect the eBUS line to the terminal block. (→ Page 8)
8. Carefully insert the control in the wall base. Ensure that the pin header **(5)** on the wall base fits into the intended plug-in connection in the control.

9. Carefully press the control into the wall base until the locking tabs on the control are heard to latch into the sides of the wall 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.

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

1. Disconnect the power supply to the boiler.
2. Disconnect the boiler from the power grid by pulling out the mains plug or removing the power supply to the boiler using a partition with a contact gap of at least 3 mm.
3. Secure the power supply to the boiler against being switched back on again.
4. Check that there is no voltage in the boiler.
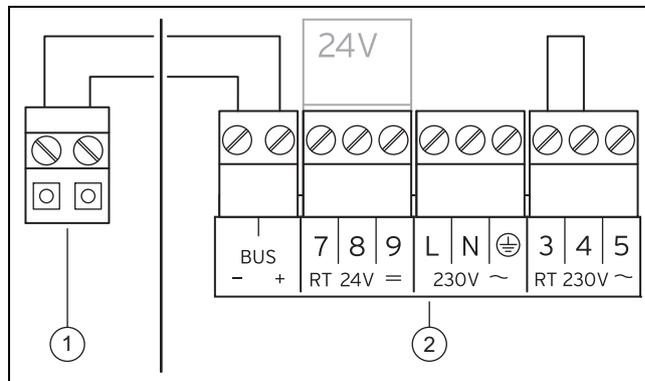
| 1 | Control terminal block | 2 | Boiler terminal block |

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

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

1. Disconnect the power supply to the boiler.
2. Disconnect the boiler from the power grid by pulling out the mains plug or removing the power supply to the boiler using a partition with a contact gap of at least 3 mm.

3. Secure the power supply to the boiler against being switched back on again.
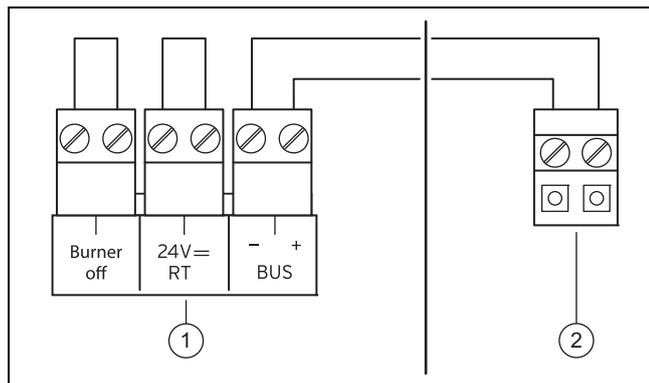4. Check that there is no voltage in the boiler.

| 1 | Boiler terminal block | 2 | Control 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. Connect the eBUS line to the terminal block **(1)** in the wall base of the control.
7. Connect the eBUS line to the terminal block of the boiler **(2)**.

6 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 this Installation assistant to make the main settings for the heating installation.

> **Note**
>
> To be able to 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.

You can use this 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 manual for the controller.

All settings that you have made using the Installation assistant can be changed again at a later time via the operating level for the system operator **Installer level**. The read-off and setting options at installer level are described in the access level for the competent person (→ Page 12).

6.1   Overview of installation assistant setting options

Setting	Values		Increment, select	Factory setting	Setting
	Min.	Max.			
Language			Languages available 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 for the main control with zone 1 selected.					

7 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.

7.1 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 12)

Setting level	Values		Unit	Increment, select	Factory setting	Setting
	Min.	Max.				
Installer level →						
Enter code	000	999		1	000	
Installer level → Service information → Enter contact details →						
Installer	*1*	*11*	*Figures*	*A to Z,* *0 to 9,* *Space*		
Phone number	*1*	*12*	*Numbers*	*0 to 9,* *Space,* *Hyphen*		
Installer level → Service information → Service date →						
Next service on			*Date*			
Installer level → System configuration →						
* If there is no fault, the status is **OK**. If there is a fault, **Not OK** appears here and you can read the fault message in the "Fault messages" section. 1) Appears only if the value **Analogue** is set for the control type. If the **VR 66** is connected, the functions marked in italics are only available for zone 1 and are also only shown in the display for the main control.						

Setting level	Values		Unit	Increment, select	Factory setting	Setting
	Min.	Max.				
System						
Status	Current value*					
Water pressure	Current value		bar			
Domestic hot water	*Current value*		℃			
Control modules	Display			Software version		
Heat generator						
Status	Current value			Off, Heating, DHW		
VF1	Current value					
HEIZKREIS1						
Auto day temp. until	Current value		hr:min			
Day temperature	5	30	℃	0.5	20	
Night temperature	5	30	℃	0.5	15	
Target flow temp.	Current value		℃			
Actual flow temperature	Current value		℃			

* If there is no fault, the status is **OK**. If there is a fault, **Not OK** appears here and you can read the fault message in the "Fault messages" section.

1) Appears only if the value **Analogue** is set for the control type.

If the **VR 66** is connected, the functions marked in italics are only available for zone 1 and are also only shown in the display for the main control.

Setting level	Values		Unit	Increment, select	Factory setting	Setting
	Min.	Max.				
Special function	Current function			Cylinder boost, Party, Days away from home	None	
DHW circuit						
Cylinder	*Inactive*	*Active*		*Active, Inactive*	*Active*	
Target cylinder temperature	*35*	*70*	℃	*1*	*60*	
Actual cylinder temperature	*Current value*		℃			
System						
Control type	Current value			2-point, analogue	2-point	
Plug adjustment[1]	-5	+5		1	0	
Installer level → Change code →						
New code	000	999		1	000	

* If there is no fault, the status is **OK**. If there is a fault, **Not OK** appears here and you can read the fault message in the "Fault messages" section.

1) Appears only if the value **Analogue** is set for the control type.

If the **VR 66** is connected, the functions marked in italics are only available for zone 1 and are also only shown in the display for the main control.

8 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 structure level 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.

You can find which functions are available for zone 2 via the auxiliary control in the "Overview of operating levels" table.

8.1 Service information

8.1.1 Enter contact details

Menu →Installer level → Service information → Enter contact details

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

8.1.2 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.

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

8.2 System configuration: System

8.2.1 Reading the system status

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

– This function allows you to read the status of the heating installation. If there is no fault, the message "**OK**" appears here. If there is a fault, the status "**Not OK**" is displayed. If you press the right-hand selection button, the list of Fault messages (→ Page 19) is displayed.

8.2.2 Reading the water pressure of the heating installation

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

– You can use this function to read the water pressure of the heating installation.

8.2.3 Reading the domestic hot water generation status

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

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

8.2.4 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.

8.2.5 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

8.2.6 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

8.3 Heat generator system configuration

8.3.1 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**.

8.3.2 Reading the value for the VF1 temperature sensor

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

– You can use this function to read the current value for the VF1 temperature sensor.

8.4 Heating circuit system configuration

8.4.1 Reading the end of the current time period

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

– You can use this function to 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 control must be in "**Automatic mode**". The information is specified in hr:min.

8.4.2 Setting the day temperature

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

– You can use this function to set the desired day temperature for the heating circuit.

8.4.3 Setting the set-back temperature

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

– You can use this function 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).

8.4.4 Reading the target flow temperature

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

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

8.4.5 Reading the actual flow temperature

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

– You can use this function to read the actual flow temperature for the heating circuit.

8.4.6 Reading the status of special operating modes

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

– You can use this function to define whether a special operating mode (special function), such as **Party** etc. is currently active for a heating circuit.

8.5 System configuration: Domestic hot water circuit

8.5.1 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

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

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

– You can use this function to define the target temperature for a connected domestic hot water cylinder (**desired domestic hot water temperature**). Set the target temperature on the control in such a way that the heat demand of the end user is covered.

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

8.5.3 Reading the actual 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.

8.6 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 control to the factory setting in order to obtain access to Installer level again.

9 Eliminating faults

9.1 Fault messages

If a fault occurs in the heating installation, an error message will appear in the control display instead of the basic display. You can access the basic display again by pressing the **Back** selection button.

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

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

– If there is a fault, the status **"Not OK"** is displayed. In this case, the right-hand selection button has the function **Display**. Press the right-hand selection button to display a list of fault messages.

	Note
i	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

9.2 Faults

Fault	Cause	Remedy
Display is dark	Unit fault	– 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	– The power is switched off/on at the heater

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

10 Decommissioning

10.1 Replacing the control

1. If you want to replace the control, you must disconnect all of the connected modules from the power supply. Observe the relevant instructions.

⚡ **Danger!**
Risk of death from live connections!

When working in the electronic 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 electronic box of the boiler.

▶ Disconnect the boiler from the power mains by disconnecting the mains plug or by de-energising the boiler via an isolating device with a contact opening of at least 3 mm (e. g. fuses or power switches).

▶ Secure the power supply against being switched on again.

▶ Open the electronic box only when the boiler is disconnected from the power source.

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2. If you want to replace the control, first shut down the heating installation.
3. To do this, follow the instructions for decommissioning in the boiler instructions.
4. Ensure that the boiler is disconnected from the power source.

10.1.1 Removing from the wall

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

10.2 Recycling and disposal

Disposing of the packaging

▶ Dispose of the packaging correctly.

▶ Observe all relevant regulations.

▶ For detailed information refer to www.vaillant.co.uk.

11 Customer service

For contact details for our customer service department, you can write to the address that is provided on the back page, or you can visit www.vaillant.co.uk.
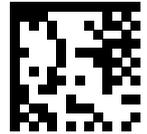
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