



VRC 630/3

For the operator

Operating Manual

VRC 630

Bus modular control system

for weather-controlled heating control

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1 Notes on the documentation

The following instructions are intended to guide you throughout the entire documentation. Other documents are valid in connection with this operating manual.

We accept no liability for any damage caused by non-observance of this manual.

Other applicable documents

- When operating the VRC 630 controller, always take note of all operating instructions that accompany the other components in your heating installation.

1.1 Storing the documents

Please keep this operating manual and all other applicable documents in good condition, so that they are available when required.

1.2 Symbols used

The symbols used in the text are explained below:



Symbol that denotes danger,
- Imminent danger to life
- Danger of severe personal injury
- Danger of slight personal injury



Symbol that denotes danger,
- risk of death from electric shock



Symbol that denotes danger,
- Risk of material damage
- Risk of damage to the environment



Symbol that denotes useful tips and information

- Symbol for a required action

1.3 Print styles and identifiers

Bold Bold text denotes important information, proper names and identifiers (parameters, menu names, operating modes, cross-references)
Example: Operating mode **Auto**

Highlighting A value is highlighted when it is shown in the display on a dark background.

1.4 Applicability of the manual

This operating manual applies exclusively to equipment with the following article numbers:

Type designation	Article No.	External sensor
VRC 630	0020092435 0020092436	VRC DCF
VRC 630	0020092437 0020092438 0020092439 0020092440 0020092430	VRC 693

Table 1.1 Type summary

The article number of the unit can be found on the identification plate.

1.5 Identification plate

The identification plate is readily visible on the left side of the controller base.



Fig. 1.1 Identification plate

Key

- 1 EAN code
- 2 Unit designation
- 3 Operating voltage
- 4 Power consumption
- 5 CE label

1.6 CE label



The CE mark documents compliance of the VRC 630 controller with the fundamental requirements of the relevant directives.

1.7 Name of the product

The VRC 630 controller is hereafter described as the controller.

2 Safety

2.1 Safety and warning information

- When operating the controller, take account of the general safety instructions and the warning notes that appear before all of the actions.

2.1.1 Classification of warnings

The warning notes are classified in accordance with the severity of the possible danger using the following warning signs and signal words:

Warning sign	Signal word	Explanation
	Danger!	Immediate danger to life or danger of severe personal injury
	Danger!	Danger of death from electric shock
	Warning!	Danger of minor personal injury
	Caution!	Risk of material or environmental damage

Table 2.1 Warning signs and their meanings

2.1.2 Structure of warnings

Warning signs are identified by an upper and lower separating line and are laid out according to the following basic principle:

	Signal word! Type and source of danger! Explanation of the type and source of danger ➤ Measures for averting the danger
---	--

2.2 Intended Use

The VRC 630 controller is a state-of-the-art appliance manufactured in accordance with recognised safety regulations.

Even so, in the event of inappropriate or non-intended use, impairment of the device and other material assets can arise.

The VRC 630 controller is used for weather-compensated and time-dependent control of heating installations with hot water generation.

Any other use or use beyond that specified shall be considered as improper use. The manufacturer/supplier is not liable for any resulting damage. The owner alone bears any risk.

Intended use also includes observing the operating and installation manuals and all other applicable documents.

2.3 General safety instructions

Qualification of the expert technician

The installation of the controller may only be carried out by an expert technician, approved at the time by the Health and Safety Executive. This person is also responsible for the proper installation and start-up.

Preventing illness

The controller is furnished with an anti-Legionella function to protect from infection by germs (Legionella). Your expert technician will set the anti-Legionella function when installing the controller.

- Ask your expert technician about the mode of operation of the anti-Legionella function.

Preventing the risk of scalding

There is a danger of scalding at the hot water draw-off points if the temperatures are greater than 60 °C. Young children and elderly persons are particularly at risk, even at lower temperatures.

- Select the hot water temperature so that nobody is at risk.

When the anti-Legionella function is active, the DHW cylinder is heated to over 65 °C for at least one hour.

To protect yourself from scalding,

- ask your expert technician whether the anti-Legionella function is active.
- ask your expert technician when the anti-Legionella function starts.
- ask your expert technician if he has installed a cold water mixer valve as protection from scalding.

Preventing material damage

- Never interfere or tamper with the boiler or other parts of the heating installation.
- Never attempt to carry out maintenance work on the controller yourself.
- Do not damage or remove seals on components. Only suitably qualified expert technicians or our customer service may alter sealed components.
- Always refer to a qualified expert technician in the event of error messages on the unit.

Preventing error function

- Only operate the heating installation when it is in a technically perfect condition.
- Do not remove or bridge out any safety or monitoring devices.
- Do not override any safety or monitoring devices.
- Have any faults or damage that affect safety rectified promptly by your expert technician.



When thermostat control is active, all the radiator valves in the room in which the controller is installed must be fully open.

Make sure that:

- the controller is not obstructed by furniture, curtains or other objects.
- all the radiator valves in the room in which the controller is installed are fully open.
- Ask your expert technician whether the thermostat control is active or check in Menu **C2** in the Expert Technician level (→ **Chap. 5.9**).

Preventing frost damage

If there is a power cut, or if the room temperature is set too low in individual rooms, it can not be ruled out that sections of the heating system might be damaged by frost.

- If you are going to be away during a cold period, make sure the heating installation remains in operation and that the rooms are sufficiently heated.
- Always observe the information on frost protection (→ **Chap. 5.12**).

2.4 Directives, laws and standards

Controller and controller installation

EN 60335-2-21

Safety of household and similar electrical appliances; Part 2: Particular requirements for storage water heaters (domestic hot water cylinders and hot water boilers) (IEC 335-2-21: 1989 and supplements 1; 1990 and 2; 1990, modified).

Any telecommunications equipment connected must conform to the following standards: IEC 62151, or EN 41003 and EN 60950-1: 2006 Section 6.3.

3 Description of the device

3 Description of the device

3.1 Construction and function

The controller is used for weather-controlled heating control with hot water generation.

The controller can control the following system circuits:

- one DHW cylinder,
- a maximum of two modulating boilers without eBUS or one modulating boiler with eBUS or alternatively one 2-stage boiler,
- two controlled circuits and
- one uncontrolled circuit

To expand the central heating installation, up to six additional mixer circuit modules (accessory), each with two mixer circuits, can be connected. This means: the controller can control a maximum of 15 circuits.

To operate them more conveniently, remote control devices can be connected for the first eight heating circuits.

Each mixer circuit can, as required, be switched between:

- Heating circuit (radiator circuit, underfloor circuit, etc.)
- Fixed value control
- Increase in return flow,
- Hot water circuit (in addition to the integrated hot water circuit).

Several modulating Vaillant boilers or one and two-stage heating appliances can be connected using modulating bus couplers (accessory).

The maximum number of boilers/heaters that can be connected depends on the bus coupler installed.

Bus coupler	Maximum number of boilers/heaters that can be connected
VR 30, VR 32	8
VR 31	6

Table 3.1 Maximum number of boilers/heaters that can be connected

With the remote telephone contact connection (potential-free contact input), the operating mode of the controller can be changed from any location by telephone via the teleSWITCH telephone remote control switch.

3.2 System overview

The basic configuration of the controller is delivered as a kit. This kit consists of:

Quantity	Component
1	VRC 630 controller with wall mount
4	VR 10 standard sensor
1	VRC DCF or VRC 693 external sensor depending on national variant (→ Table 1.1)

Table 3.2 Scope of delivery of the VRC 630 kit

In the basic version:

- one DHW cylinder,
- a maximum of two modulating boilers without eBUS
or
one modulating boiler with eBUS
or alternatively one 2-stage boiler,
- two controlled circuits and
- one uncontrolled circuit
can be controlled.

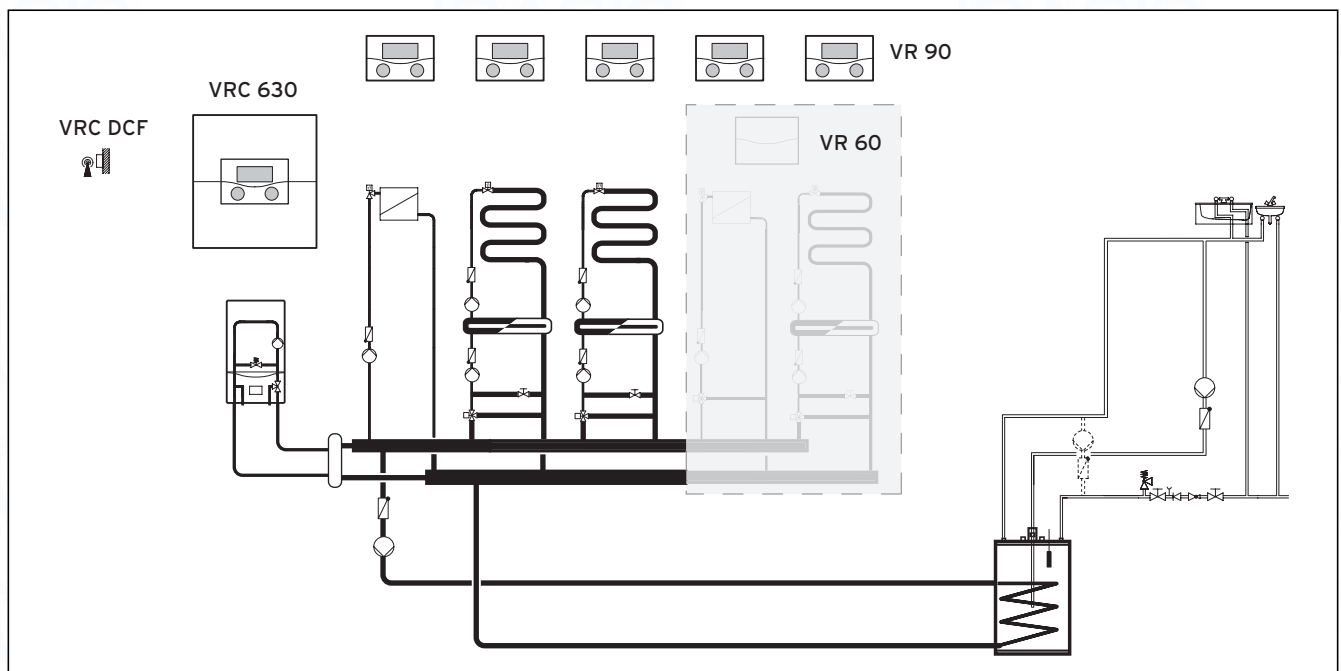


Fig. 3.1 System Overview

Key

- VR 90 remote control unit
- VR 60 mixer module
- VRC DCF external sensor

If the installation is to be expanded with, e.g., further heating circuits, then additional components can be integrated into the complex system of the heating installation (→ Fig. 3.1).

3 Description of the device

3.3 Overview of functions

The controller provides the following options for controlling your heating installation and hot water generation:

Off

Heating installation switched off or hot water generation with active frost protection

One-time Cylinder Charging

Allows the DHW cylinder to charge up once, independently of the current timer programme

Holiday function/Holiday programme

Individual control of the room temperature during your absence;
only in the **Auto** and **Eco** operating modes

Frost protection function

Protection from frost damage in the **Off** and **Eco** modes (outside the time window);
The boiler must remain switched on

Heating curve

The basis of weather compensation; improves the matching of the heating output to the outside temperatures

Advance

Allows you to continue the heating and hot water times beyond the next switch-off time up to the next heating start.

Energy saving function

Allows the target room temperature to be reduced for a set period

Weather compensation

Automatic changing of the heating water temperature (flow temperature) depending on the outside temperature by means of a heating curve

Time window

Individually settable time settings for the heating installation, the hot water generation and the operation of a circulation pump

3.4 Operating modes

By setting the operating mode, you determine the conditions under which the assigned heating circuit or hot water circuit will be controlled.

CH circuit

Operating mode	Effect
Auto	The heating circuit is operated alternately in Heating and Energy Saving mode according to a pre-set timer programme.
Eco	The heating circuit is operated alternately in Heating and Off mode according to a pre-set timer programme. The heating circuit is switched off during the set-back period if the frost protection function (depending on the outside temperature) is not activated. The frost protection is effective outside the set time window (→ Chap. 5.2).
Heating	The heating is regulated at the daytime set room temperature.
Energy save	The heating circuit is regulated at the nighttime set room temperature.
Off	The heating circuit is off if the frost protection function (depending on the external temperature) is not activated.
Symbol	Meaning
☼	If the ☼ symbol is displayed after the Eco or Auto mode, a time window is active. The heating installation is producing heat.
○	If the ○ symbol is displayed after the mode, no time window is active. The heating installation is in set-back mode.

Table 3.3 Operating modes for heating circuits

Circulation circuit and hot water circuit

Operating mode	Effect
Auto	The commands for charging the DHW cylinder or for enabling the circulation pump are given according to a preset timer programme.
On	The charging of the DHW cylinder is constantly enabled. When required, the cylinder is recharged immediately. The circulation pump is constantly in operation.
Off	No charging of the DHW cylinder takes place. The circulation pump is not operating. Exception: If the temperature in the DHW cylinder falls below 12 °C, the cylinder is reheated to 17 °C (frost protection).

Table 3.4 Operating modes for the circulation circuit and the hot water circuit



If Holiday is displayed instead of the operating mode, the holiday programme is active. When the holiday programme is active, the operating mode cannot be set. It will be necessary to end the holiday programme to do this.

3.4 Description of important functions

Time window

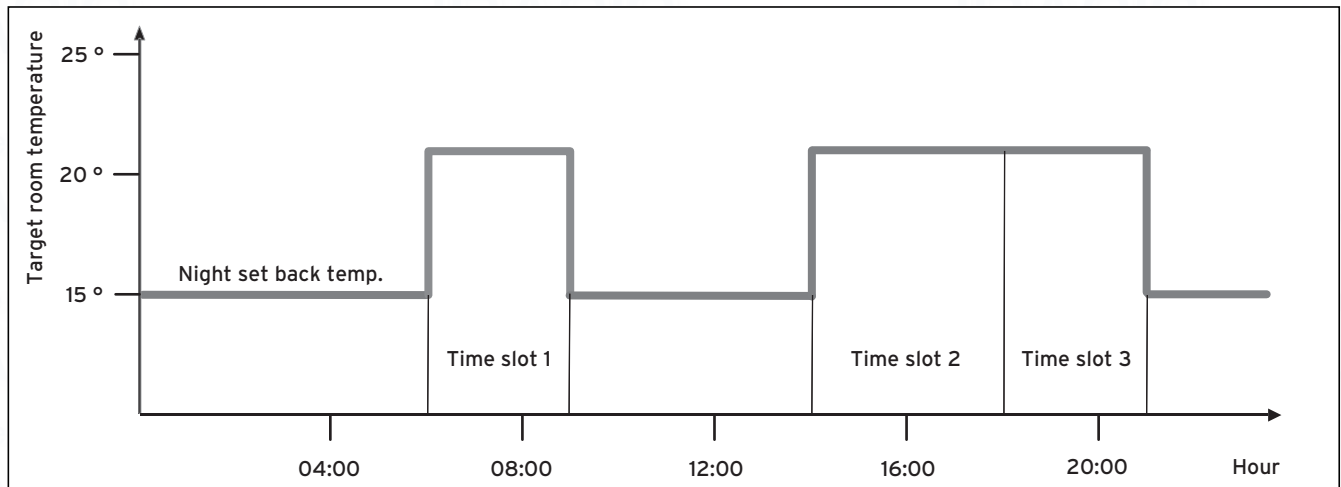


Fig. 3.2 Automatic heating operation: Example of setting the target room temperatures for different times of day

In Fig. 3.2 you can see a section from a timer programme. The time of day is given on the horizontal axis and the target room temperature is on the vertical axis. The diagram describes the following programme progression:

- 1 Until 06.00 hrs. a room temperature of 15 °C (night set back temperature) is in effect.
- 2 The first time window starts at 06.00 hrs.: From this point onwards a target room temperature of 21 °C is effective.
- 3 The first time window ends at 09.00 hrs.: From this point onwards a target room temperature of 15 °C is effective.
- 4 A further two time windows of 21 °C follow.

The way in which the time windows influence the heating control can be simply explained as follows:

When you operate your heating installation in the **Auto** mode, the controller activates the preset time windows in which your installation heats the connected rooms to a defined temperature (→ **Target room temperature**). Outside these time windows, the heating installation is controlled so that the connected rooms cool down to a defined temperature (→ **Night set back temp**). When the night set back temperature is reached, the controller ensures that the heating installation maintains this temperature until the start of the next time window. Thus any further cooling of the apartment is prevented.



Get your expert technician to advise you about the optimum setting of the heating curve, as the measured outside temperature and the preset heating curve will also affect the control of the heating.

3 Description of the device

You have two options for defining the days for which your time windows should apply:

1st option

You can enter time windows for individual days.

Example:

Mon 09.00 - 12.00 hrs.
Tue 10.00 - 12.00 hrs.

2nd option

You can combine several days into blocks.

Example:

Mon-Fri 09.00 - 12.00 hrs.
Sat-Sun 12.00 - 15.00 hrs.
Mon-Sun 10.00 - 12.00 hrs.

You can define up to three time windows for each option.

You can control the hot water temperature in a connected DHW cylinder in the same way using the controller: The time windows you define specify when the hot water at your desired temperature is available. However there is no night set back temperature for the hot water generation. Hot water generation is switched off at the end of a time window.

Heating curve

The heating temperature is controlled indirectly by means of a heating curve. The heating curve shows the relationship between the outside temperature and the flow temperature.

The flow temperature is the temperature of the heating water as it leaves the boiler.

You can set the heating curve individually for each heating circuit.

You have the option of selecting various heating curves to match the control system optimally to your apartment and to the heating installation.

Example of a heating curve

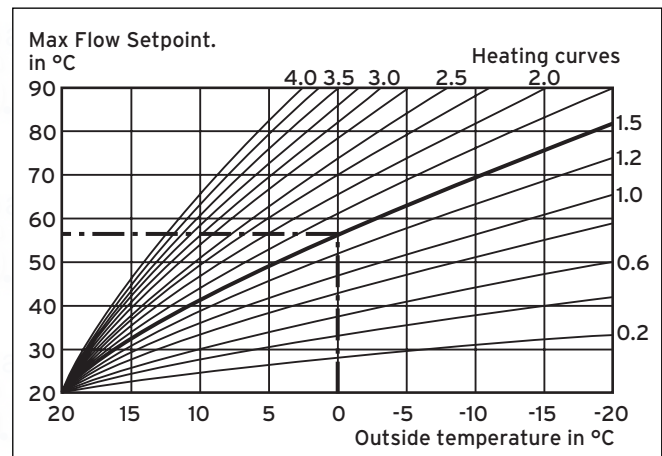


Fig. 3.3 Diagram with heating curves

Example: If heating curve 1.5 is selected, a flow temperature of 75 °C is required for an outside temperature of -15 °C.

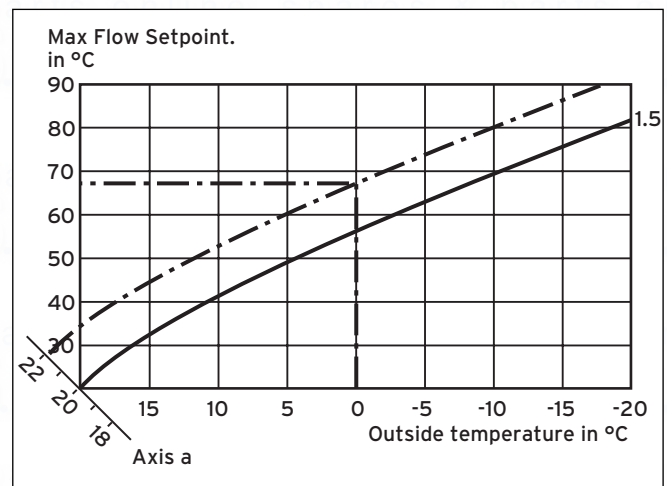


Fig. 3.4 Parallel offsetting of the heating curve

If heating curve 1.5 is selected and 22 °C rather than 20 °C is specified as the room target temperature, the heating curve is displaced as shown in **Fig. 3.4**. The heating curve is displaced in parallel along the 45° axis according to the value of the room target temperature. This means that when the outside temperature is 0 °C, the controller provides a flow temperature of 67 °C.



Your expert technician will have made the required basic setting of the heating curve while installing the heating system.

Frost protection function

The controller is equipped with a frost protection function (depends on the outside temperature). The frost protection function ensures that the heating installation is protected from frost in the **Off** and **Eco** (outside the time windows) modes.

If the **Eco** mode is set and the frost protection function (dependent on the outside temperature) is not activated, then the heating circuit will be switched off during the set-back period.

The preset (night) set back temperature is applied automatically for each heating circuit if the outside temperature falls below +3 °C.

3 Description of the device

3.6 Overview of controls

All the settings that are required for the heating installation are made on the controller. The controller is equipped with a graphic display. Plain text messages simplify operation.

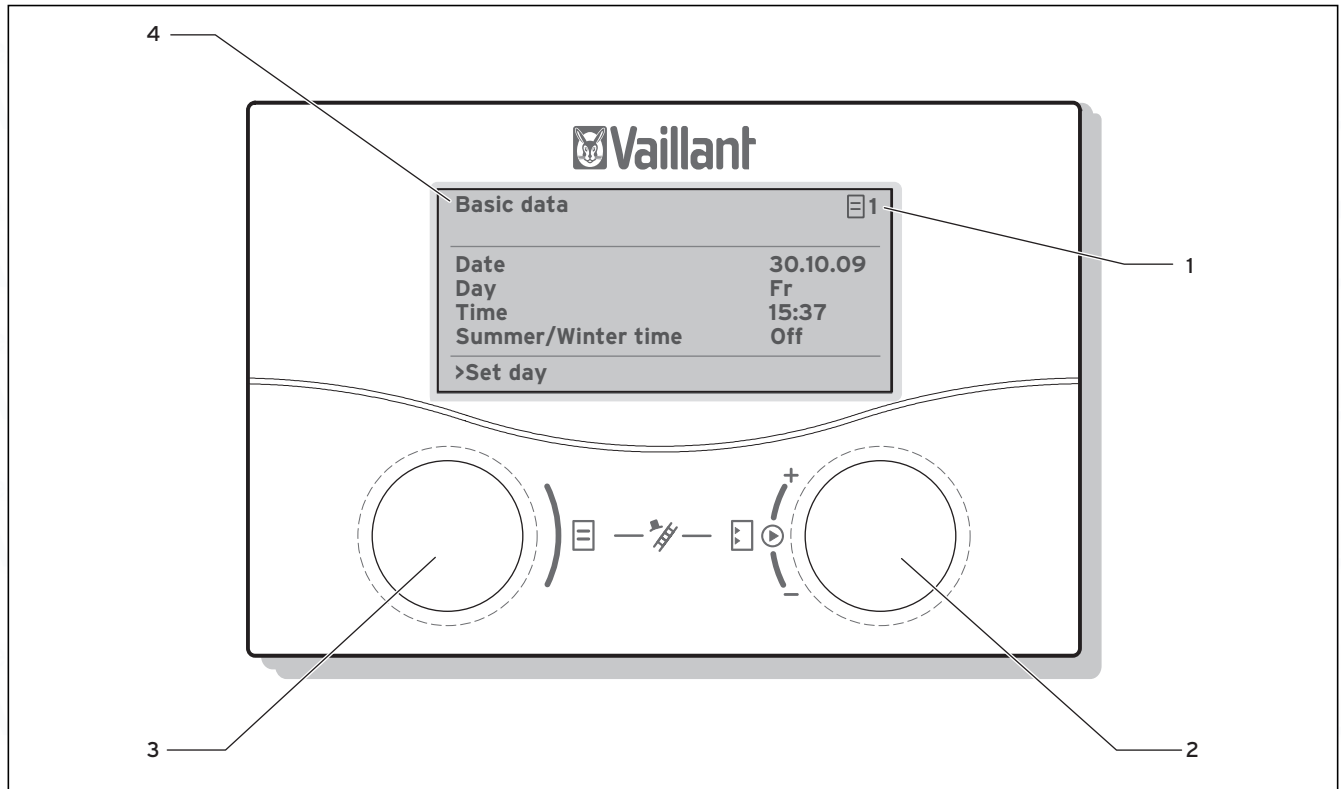


Fig. 3.5 Overview of controls

Key

- 1 Menu number
- 2 Right hand dial, Pick out a parameter (turn); Highlight the parameter (press)
- 3 Left hand dial, Select menu (turn); Activate special function (press)
- 4 Menu name

3.7 Operator guidance

You can operate the controller with the two and dials (→ Fig. 3.5):

When you press the right hand dial, you highlight or save a parameter.

When you turn the right hand dial, you pick out a parameter.

When you turn the left hand dial, you select a menu.

When you press the left hand dial, you activate the special functions (→ Chap. 5.10).

A plain text display facilitates operation for you and identifies menus and parameters clearly.

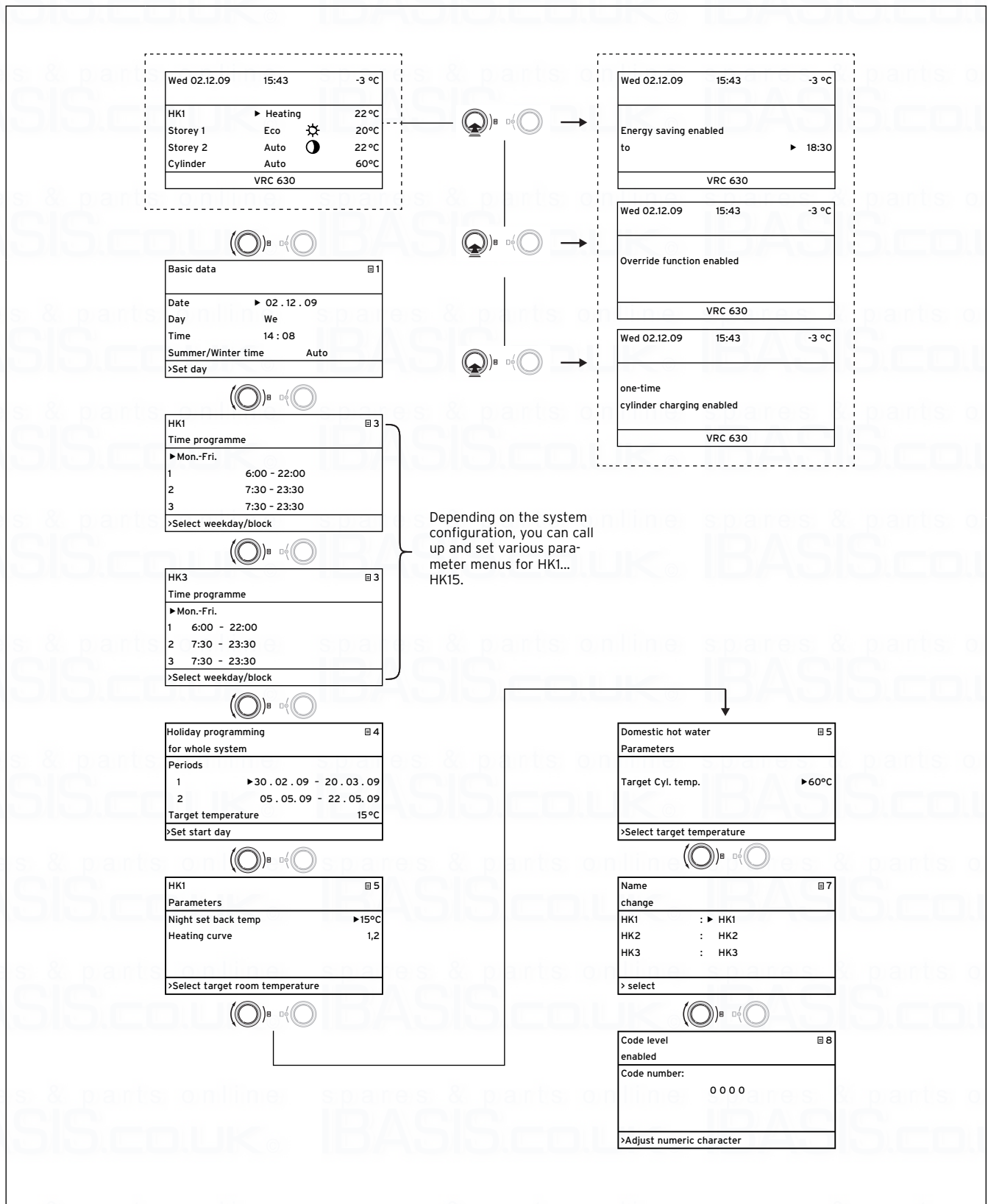


Fig. 3.6 Menu structure of Operator level

3 Description of the device

3.8 Operating levels in the controller

The controller has two operating levels: the Operator level and the Installer level. Each operating level contains several menus where the associated parameters can be displayed, set and changed.



The number of menus displayed depends on the configuration of your heating installation. For this reason it is possible that there are more menus described in this manual than your controller displays.

Operator level

The operator level is the operating level for the user and displays the basic parameters that you can adapt to your particular needs during normal operation without any special prior knowledge.

The operator level comprises the basic display, Menus **1** ... **8** and the menus for the special functions (Energy-saving function, Override function, One-time cylinder charging).

Installer level

The Installer level is the operating level for the expert technician. The system-specific parameters, with which the heating engineer configures and optimises the heating installation, are set in the Installer level. These system-specific parameters may only be set and changed by an expert technician. The Installer level is therefore protected by an access code. The system-specific parameters are thus protected from unintentional adjustment.

The Installer level comprises Menus **C1** to **C15**, the menus for the Installation Assistant (**A1** to **A8**) and the menus for the service functions (e.g. maximum output function).

3.9 Menu types

The controller has different **menu types**:

- the basic display,
- a menu in the Operator level or
- a menu in the Installer level

(Examples: → **Chap. 3.10**).

In the basic display you can view and set the current operating mode and the target room temperatures for the individual heating circuits.

The menus in the Operator level are identified with a number at the top right (e.g. **1**). This number makes it easier for you to find the menus.

In the menus in the Operator level you can, for example, set the room temperature, time windows, night set back temperatures and heating curves entirely to your individual requirements.

The menus in the Installer level are identified with a letter and a number at the top right (e.g. **C2**). You can only view the system-specific parameters in the Installer level menus. (→ **Chap. 5.9**).

3.10 Menus in different operating situations

In the Operator level				
Wed 02.12.0915:43-3 °C HK1 ► Auto ☀ 20 °C HK2 Auto ☀ 20 °C HK3 Auto ☀ 20 °C HK4 Eco ☀ 22 °C VRC 630▼				Example:Basic display The basic display shows the current operating mode and the required room temperature for each heating circuit and allows the operating mode of each heating circuit to be changed quickly. If more than two heating circuits are connected, these are displayed in sequence when you turn the right hand dial. The basic data consisting of day of the week, date, time of day and outside temperature are always shown in the upper area of the display. If an error occurs, it is displayed in plain text in the second line. Chapter 5.3 explains how to set the basic data. Special operating modes and service functions can also be called up in the basic display. The arrow ▼ at the bottom right indicates that other modules are connected to the controller. When you want to check or set the operating mode or temperature of these modules, simply turn the right hand dial to access the next display lines.
Basic data☰ 1 Date ► 02 . 12 . 09 Day We Time 14 : 08 Summer/Winter time Off >Set day				Example: Menu ☰ 1 You can make all the relevant settings for the heating installation on the Operator level in Menus (☰ 1 to ☰ 7). The menu name and the menu number (in the example ☰ 1) are displayed in the upper area. The numbers make it easier to find individual menus during programming.
Wed 02.12.0915:37- 15 °C Energy saving enabled to ► 18:30 VRC 630				Example:Special functions Special functions temporarily change the operating mode of the heating circuit and are ended automatically. Special functions can only be called up from the basic display.
In the Installer level				
HK1C2 Parameters Type of burner circuit Night set back temp► 15 °C Heating curve0.90 Max limit outside temp.20°C >Select target room temperature				Example: Menu C2 Menus C1 to C15 are where the system-specific parameters, which only the heating engineer can set, are located. These menus are identified by a 'C' and a number at the top right of the display. You can call up the menus in the Installer level and view the parameters, but you cannot alter them.

Table 3.5 Menu types

The settable parameters are displayed on a grey background.

3 Description of the device

3.11 Overview of settable parameters

Menu	Menu name	Settable operating values	Remarks	Units	Min. value	Max. value	Increment/selection option	Default setting
1	Basic data (→ Chap. 5.3)	Date Day Time	Select day, month, year; select hour, minutes					
		Summer/Winter changeover					Auto/Off	Off
3	Time programmes (→ Chap. 5.4)	Day/ block	Select weekday/block of weekdays (e.g. Mon-Fri)					
		1 Start/End time 2 3	Three time windows availa- ble per day/block of days	Hours/ minutes			10 min	
4	Holiday program- ming for whole system (→ Chap. 5.5)	Holiday period	Set start day, month, year; Set end day, month, year					
		Holiday target value for heating	Set target room tempera- ture for the holiday period	°C	5	30	1	15
5	HK1 parameters (→ Chap. 5.6)	Night set back temp	Specify set-back tempera- ture for periods between the time windows; when frost protection func- tion is set, the night set back temperature is auto- matically 5 °C; night set back temperature is not displayed	°C	5	30	1	15
		Heating curve	Control flow temperature dependent on outside tem- perature; various heating curves can be selected		0.1	4	0.05-0.1	1.2
		Domestic hot water parameters (→ Chap. 5.7)	Target hot water	°C	35	70	1.0	60
7	Changing the name (→ Chap. 5.8)	HK1	Enter any name with up to 10 characters					HK1
8	Code layer enabled (→ Chap. 5.9)	Code number	Enter code number for access to operating level for heating engineers					

Table 3.6 Settable parameters in the Operator level

4 Start-up

Commissioning may only be carried out by a competent person. This person is responsible for proper installation and the initial start-up.

4.1 Instruction by the expert technician

- Make sure that you are instructed by the expert technician in the operation of the controller and the entire heating installation, and that the appropriate manuals and documents accompanying the product are given to you.

4.2 Switching the controller On/Off



Caution!

Material damage caused by frost!

The frost protection function is only active when the controller is switched on.

- Never switch the controller off when there is a risk of frost.
- Set the main switch of the controller to the "I" position.



If the external sensor of your heating installation is unable to receive a DCF signal, you will have to set the time and date manually after switching on the controller.

- Make sure that the time and date are set correctly so that the preset timer programmes and holiday programme will work correctly and the next servicing appointment can be monitored.
- Leave the controller switched on so that you can keep the system status of the heating installation in view at all times and can quickly be made aware of any malfunctions.
- Make use of the holiday programme (→ **Chap. 5.5**) to save energy costs during your absence.

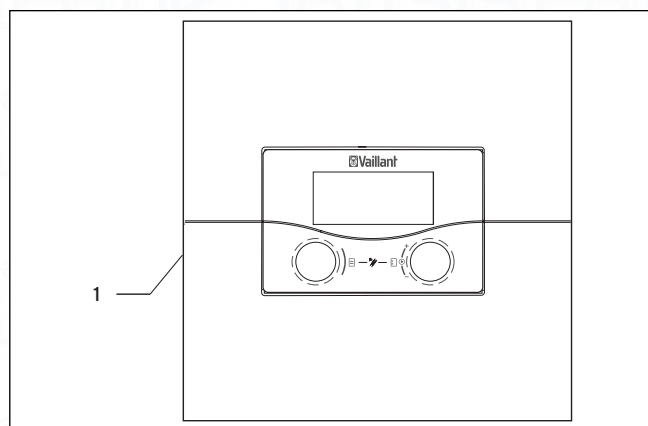


Fig. 4.1 Switching the controller On/Off

Key

- 1 Rocker switch

- Press the rocker switch (1) to switch the controller On/Off.

5 Operation

5.1 Operating the controller

You can operate the controller with the two  and  dials:

When you rotate the dials (→ **Fig. 3.5, Item 2, 3**), they can be felt clicking into the next position. One click takes you one position forwards or backwards in the menu, depending on the direction of rotation. In the parameter setting area, the value is increased or reduced depending on the step size, the range and the direction of rotation.

In general, the following operating steps are necessary for Menus  1 to  7:

- Select the menu (→ **Chap. 5.1.1**).
- Select and mark the parameter (→ **Chap. 5.1.2**).
- Set and save the parameter (→ **Chap. 5.1.3**).

As the special functions can only be called up from the basic display, there is a special operating sequence (→ **Chap. 5.10**).



Have your expert technician explain the initial operating steps to you. In this way you can avoid any unwanted changes to the settings.

5.1.1 Selecting the menu

An overview of all the menus can be found in Fig. 3.6. All the menus are arranged linearly and are described in this sequence.



The basic display is the controller's standard display. The controller shows the basic display automatically after a period of no operation (min. 15 minutes)



- Rotate the left hand  dial until the desired menu is displayed.

5.1.2 Selecting and marking parameters



- Rotate the right hand  dial until the cursor  points to the parameter that you wish to change.



- Press the right hand  dial. The parameter is marked and can be set.

5.1.3 Setting parameter values



You can set only one marked parameter (→ Chap. 5.1.2).



- Rotate the right hand  dial to change the value of the selected parameter.



- Press the right hand  dial to save the changed value.

How to set specific parameters is described from Chapter 5.3 onwards (→ **Chap. 5.3 to 5.8**).

5.1.4 Calling up special functions

As the special functions can only be called up from the basic display, there is a special operating sequence (→ **Chap. 5.10**).

5.2 Setting parameters in the basic display

The basic display is the controller's standard display. After an extended period without any operations, the display automatically reverts to the basic display.

Wed 02.12.09	15:43	-3 °C
Room temperature		22 °C
HK1	► Heating	22 °C
Storey 1	Eco ☼	20 °C
Storey 2	Auto ○	22 °C
Cylinder	Auto	55 °C
VRC 630		

The parameters highlighted on a grey background (operating mode, room target and cylinder temperatures) can be individually set in the basic display.

The basic data consisting of day of the week, date, time of day and outside temperature are always shown in the upper area of the display. When thermostatic control is activated, the measured room temperature is shown in the second line of the display.



If a room temperature sensor is fitted, the thermostatic control will be activated by the heating engineer when commissioning the heating installation.

You can set the day, date and time in Menu 1 (→ Chap. 5.3).

The outside temperature (-3 °C in the example) is measured by the external sensor and transmitted to the controller. The current room temperature is measured by the room temperature sensor and transmitted to the controller. The settable parameters are displayed below the basic data:

- for each heating circuit
 - the operating mode set,
 - target room temperature (for the displayed heating circuit)
- for the cylinder
 - the operating mode set,
 - target cylinder temperature (hot water temperature)



The number of heating circuits your controller displays in the basic display depends on the configuration of your heating installation.

5.2.1 Setting the operating mode

By setting the operating mode, you inform the controller about the conditions under which the assigned heating circuit or hot water circuit is to be controlled.



If Holiday is displayed instead of the operating mode, the holiday programme is active. When the holiday programme is active, the operating mode cannot be set. It will be necessary to end the holiday programme to do this.

The following operating modes are possible for:

CH circuit

Operating mode	Effect
Auto	The heating circuit is operated alternately in Heating and Energy Saving mode according to a pre-set timer programme.
Eco	The heating circuit is operated alternately in Heating and Off mode according to a pre-set timer programme. The heating circuit is switched off during the set-back period if the frost protection function (depending on the outside temperature) is not activated. The frost protection is effective outside the set time window (→ Chap. 5.2).
Heating	The heating is regulated at the daytime set room temperature.
Energy save	The heating circuit is regulated at the nighttime set room temperature.
Off	The heating circuit is off if the frost protection function (depending on the external temperature) is not activated.
Symbol	Meaning
☼	If the ☼ symbol is displayed after the Eco or Auto mode, a time slot is active. The heating installation is producing heat.
○	If the ○ symbol is displayed after the mode, no time window is active. The heating installation is in set-back mode.

Table 5.1 Operating modes for heating circuits

Circulation circuit and hot water circuit

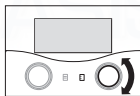
Operating mode	Effect
Auto	The commands for charging the DHW cylinder or for enabling the circulation pump are given according to a preset timer programme.
On	The charging of the DHW cylinder is constantly enabled. If required, the cylinder is recharged immediately and the circulation pump is constantly in operation.
Off	The cylinder is not charged and the circulation pump is not in operation. If the temperature in the DHW cylinder falls below 12 °C, the cylinder is reheated to 17 °C (frost protection).

Table 5.2 Operating modes for the circulation circuit and the hot water circuit

5 Operation

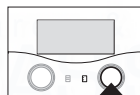
The procedure for setting the operating mode in the basic display is explained in the following, using the **cylinder** as an example.

Wed 02.12.09	15:43	-3 °C
HK1	► Heating	22 °C
storey 1	Eco ☼	20 °C
storey 2	Auto ●	15 °C
Cylinder	Auto	55 °C
VRC 630		



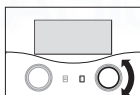
- Turn the right hand dial until the cursor ► is flashing in front of the **Auto** mode (**Cylinder** line).

Wed 02.12.09	15:43	-3 °C
HK1	Heating	22 °C
storey 1	Eco ☼	20 °C
storey 2	Auto ●	15 °C
Cylinder	► Auto	55 °C
VRC 630		



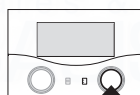
- Press the right hand dial.
The **operating mode** is marked.

Wed 02.12.09	15:43	-3 °C
HK1	Heating	22 °C
Storey 1	Eco ☼	20 °C
Storey 2	Auto ●	15 °C
Cylinder	► Off	55 °C
Select mode		



- Turn the right hand dial until the desired operating mode appears on the display.

Wed 02.12.09	15:43	-3 °C
HK1	Heating	22 °C
Storey 1	Eco ☼	20 °C
Storey 2	Auto ●	15 °C
Cylinder	► Off	55 °C
VRC 630		



- Press the right hand dial.
The operating mode is saved and takes effect.



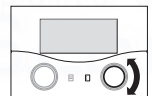
If you want to change the operating mode for further heating and circulation circuits / DHW cylinders, turn the dial until the cursor ► is positioned in the appropriate line in front of the mode to be changed. Repeat the steps described above.

5.2.2 Setting the target room temperature using heating circuit HK1 as an example

The target room temperature is used to calculate the heating curve.

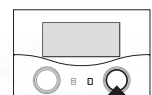
If you increase the required room temperature, the set heating curve is moved parallel to a 45° axis and correspondingly also the flow temperature to be regulated by the controller (→ Fig. 3.4).

Wed 02.12.09	15:43	-3 °C
HK1	Heating ►	22 °C
Storey 1	Eco ☼	20 °C
Storey 2	Auto ●	15 °C
Cylinder	Auto	55 °C
VRC 630		



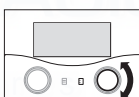
- Turn the right hand dial until the cursor ► is flashing in front of the **target room temperature** (22 °C in the example).

Wed 02.12.09	15:43	-3 °C
HK1	Heating ►	22 °C
Storey 1	Eco ☼	20 °C
Storey 2	Auto ●	15 °C
Cylinder	Auto	55 °C
>Select target room temperature		



- Press the right hand dial.
The target room temperature is marked.

Wed 02.12.09	15:43	-3 °C
HK1	Heating ▶	21 °C
Storey 1	Eco ☼	20 °C
Storey 2	Auto ●	15 °C
Cylinder	Auto	55 °C
>Select target room temperature		

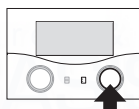


- Turn the right hand  dial until the desired target room temperature appears on the display.



Choose the target room temperature so that your heat requirements are covered exactly. You will save energy and costs this way.

Wed 02.12.09	15:43	-3 °C
HK1	Heating ▶	21 °C
Storey 1	Eco ☼	20 °C
Storey 2	Auto ●	15 °C
Cylinder	Auto	55 °C
VRC 630		



- Press the right hand  dial.
- The changed **target room temperature** is saved and takes effect.
- Repeat the steps as required.



Set the target room temperatures for the other heating circuits or the hot water temperature for the cylinder in the same way.

Length of time the changed value remains effective in the control system

If you have changed the target room temperature in the basic display, the new value takes effect in the control system.

The heating installation is controlled at the new target room temperature during all the time windows:

- immediately, if you have changed the target value during one of the time windows,
- at the start of the next time window, if you have changed the target value outside a time window.

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5.3 Setting the basic data

You can set the following basic data in Menu  1 :

- the date (setting has an effect on the holiday programme and the service appointment monitoring),
- the day of the week,
- the time (setting has an effect on the start and end of the time windows),
- Summer/Winter time.



These settings apply to all connected system components.

5.3.1 Calling up Menu 1

Basic data  1	
Date	► 02 . 12 . 09
Day	Wed
Time	14 : 08
Summer/Winter time	Off
> Set day	

- Turn the left hand  dial until Menu  1 **Basic data** appears in the display (→ Chap. 5.1.1).

5.3.2 Setting the date



If the external sensor on your heating installation is unable to receive a DCF signal, you can set the date manually if necessary.

- Make sure that the date is set correctly so that the holiday programme works correctly and the next servicing appointment can be monitored.

The date consists of three parameters (02.12.09 = Day. Month.Year).

The setting ranges are predetermined.

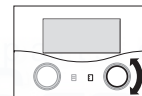


Set the month first, as the setting range for the day depends on the month.

Requirement: Menu  1 **Basic data** is displayed (→ Chap. 5.1.1).

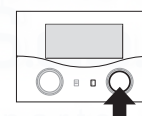
Setting the month:

Basic data  1	
Date	02 . ► 12 . 09
Day	Wed
Time	14 : 08
Summer/Winter time	Off
> Set month	



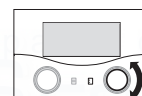
- Turn the right hand  dial until the cursor ► flashes in the **Date** line in front of the **month**.

Basic data  1	
Date	02 . ► 12 . 09
Day	Wed
Time	14:08
Summer/Winter time	Off
> Set month	



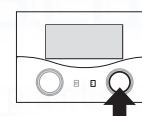
- Press the right hand  dial.
The **month** is marked.

Basic data  1	
Date	02 . ► 11 . 09
Day	Wed
Time	14:08
Summer/Winter time	Off
> Set month	



- Turn the right hand  dial until the desired value for the **month** is displayed.

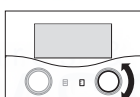
Basic data  1	
Date	02 . ► 11 . 09
Day	Wed
Time	14 : 08
Summer/Winter time	Off
> Set month	



- Press the right hand  dial.
The changed **month** is saved.

Setting the day:

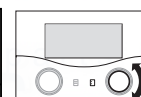
Basic data	1
Date	►02 . 11 . 09
Day	Wed
Time	14 : 08
Summer/Winter time	Off
> Set day	



- Turn the right hand dial until the cursor ► is flashing in front of the **Day**.

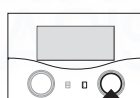
Setting the year:

Basic data	1
Date	30 . 11 . 09
Day	Wed
Time	14 : 08
Summer/Winter time	Off
> Set year	



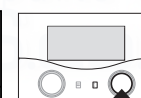
- Turn the right hand dial until the cursor ► is flashing in front of the **Year**.

Basic data	1
Date	►02 . 11 . 09
Day	Wed
Time	14 : 08
Summer/Winter time	Off
> Set day	



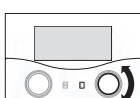
- Press the right hand dial. The **day** is marked.

Basic data	1
Date	30 . 11 . ►09
Day	Wed
Time	14 : 08
Summer/Winter time	Off
> Set year	



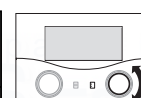
- Press the right hand dial. The **year** is marked.

Basic data	1
Date	►30 . 11 . 09
Day	Wed
Time	14 : 08
Summer/Winter time	Off
> Set day	



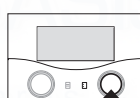
- Turn the right hand dial until the desired **Day** is displayed.

Basic data	1
Date	30 . 11 . ►10
Day	Wed
Time	14 : 08
Summer/Winter time	Off
> Set year	



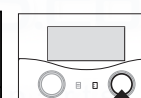
- Turn the right hand dial until the desired **Year** is displayed.

Basic data	1
Date	►30 . 11 . 09
Day	Wed
Time	14 : 08
Summer/Winter time	Off
> Set day	



- Press the right hand dial. The changed **day** is saved.

Basic data	1
Date	30 . 11 . ►10
Day	Wed
Time	14 : 08
Summer/Winter time	Off
> Set year	



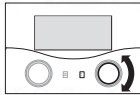
- Press the right hand dial. The changed **year** is saved.

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5.3.3 Setting the day of the week

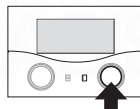
Requirement: Menu  1 **Basic data** is displayed (→ Chap. 5.1.1).

Basic data 	
Date	30 . 11 . 09
Day	► Wed
Time	14 : 08
Summer/Winter time	Off
► Set weekday	



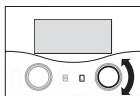
- Turn the right hand  dial until the cursor ► is flashing in front of the **Weekday**.

Basic data 	
Date	30 . 11 . 09
Day	► Wed
Time	14 : 08
Summer/Winter time	Off
► Set weekday	



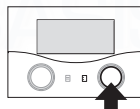
- Press the right hand  dial. The **weekday** is marked.

Basic data 	
Date	30 . 11 . 09
Day	► Mon
Time	14 : 08
Summer/Winter time	Off
► Set weekday	



- Turn the right hand  dial until the desired **Weekday** is displayed.

Basic data 	
Date	30 . 11 . 09
Day	► Mon
Time	14 : 08
Summer/Winter time	Off
► Set weekday	



- Press the right hand  dial. The changed **weekday** is saved.

5.3.4 Setting the time

The time consists of two parameters (14:08 = Hour:Minute).

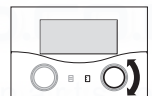


If the external sensor on your heating installation is unable to receive a DCF signal, you can set the time manually if necessary.

- Make sure that the time is set correctly so that the preset timer programmes will work correctly.

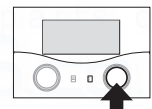
Requirement: Menu  1 **Basic data** is displayed (→ Chap. 5.1.1).

Basic data 	
Date	30 . 11 . 09
Day	Wed
Time	► 14 : 08
Summer/Winter time	Off
► Set hour	



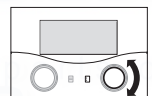
- Turn the right hand  dial until the cursor ► is flashing in front of the **Hour**.

Basic data 	
Date	30 . 11 . 09
Day	Wed
Time	► 14 : 08
Summer/Winter time	Off
► Set hour	



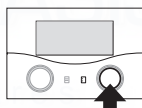
- Press the right hand  dial. The **hour** is marked.

Basic data 	
Date	30 . 11 . 09
Day	Mon
Time	► 15 : 08
Summer/Winter time	Off
► Set hour	



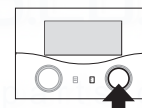
- Turn the right hand  dial until the desired **Hour** is displayed.

Basic data		1
Date	30 . 11 . 09	
Day	Mon	
Time	► 15 : 08	
Summer/Winter time	Off	
> Set hour		



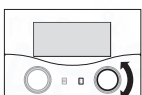
- Press the right hand dial.
The changed **hour** is saved.

Basic data		1
Date	30 . 11 . 09	
Day	Mon	
Time	15 ► 15	
Summer/Winter time	Off	
> Set minute		



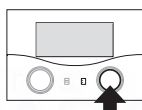
- Press the right hand dial.
The changed **minute** is saved.

Basic data		1
Date	30 . 11 . 09	
Day	Wed	
Time	15 ► 08	
Summer/Winter time	Off	
> Set minute		



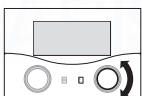
- Turn the right hand dial until the cursor ► is flashing in front of the **Minute**.

Basic data		1
Date	30 . 11 . 09	
Day	Wed	
Time	15 ► 08	
Summer/Winter time	Off	
> Set minute		



- Press the right hand dial.
The **minute** is marked.

Basic data		1
Date	30 . 11 . 09	
Day	Mon	
Time	15 ► 15	
Summer/Winter time	Off	
> Set minute		



- Turn the right hand dial until the desired **Minute** is displayed.

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5.3.5 Activating the summer/winter time changeover

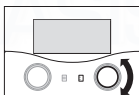


If your heating installation is fitted with a VRC DCF external sensor (→ Table 1.1, Part No.), you will not have to activate the summer/winter changeover. The unit will switch automatically between summer and winter time.

If you set the **Summer/Winter time** parameter to **Auto**, the controller can switch automatically between summer and winter time even though the external sensor has no DCF receiver.

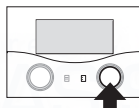
Requirement: Menu 1 **Basic data** is displayed (→ Chap. 5.1.1).

Basic data 1	
Date	30 . 11 . 09
Day	Wed
Time	15 : 15
Summer/Winter time	► Off
> Select mode	



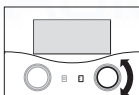
- Turn the right hand dial until the cursor ► is flashing in front of the **Summer/Winter time** parameter.

Basic data 1	
Date	30 . 11 . 09
Day	Wed
Time	15 : 15
Summer/Winter time	► Off
> Select mode	



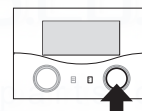
- Press the right hand dial.
- The **Summer/Winter time** parameter is marked.

Basic data 1	
Date	30 . 11 . 09
Day	Mon
Time	15 : 15
Summer/Winter time	► Auto
> Select mode	



- Turn the right hand dial until the desired **Summer/Winter time** parameter is displayed.

Basic data 1	
Date	30 . 11 . 09
Day	Mon
Time	15 : 15
Summer/Winter time	► Auto
> Select mode	



- Press the right hand dial.
- The changed **Summer/Winter time** parameter is saved.

After an extended period without any operations, the display automatically reverts to the basic display.

5.4 Setting the timer programmes

In Menu  3 you can set **timer programmes** for the heating circuits, the DHW cylinder and the circulation pumps.

You can set up to three time windows (**Start time** to **End time**) for each day or block (a block is, e.g., Mon-Fri).

Default settings for the timer programmes:

Mon - Fri 5:30 - 22:00 hrs.

Sat 7:00 - 23:30 hrs.

Sun 7:00 - 23:30 hrs.

You can adapt these timer programmes to your needs. Within a time window the heating is on. The regulation is based on the target room temperature. Outside the time window, the heating installation reduces the room temperature to the night set back temperature.

There is a full sequence of displays for the timer programmes; these are identified by  3 at the top right of the display. The second line of the display always shows **Time programme**.

The first line of the display shows what the timer programme applies to (e.g. HK1, domestic hot water, circulation pump).

HK1		 3	
Time programme			
► Mon-Fri			
1	6:00	-	9:30
2	16:30	-	21:30
3	:	-	:
>Select weekday/block			

More information regarding the settable parameters can be found in Table 3.6 (→ Chap. 3.11).

If a different time window has been programmed for one day (e.g. Wed) within a block (e.g. Mon-Fri), **Mon-Fri --:--** will be displayed for the block. In this case you must set the time windows for each day individually.

HK1		 3	
Time programme			
► Mon-Fri			
1	--:--	-	--:--
2	16:30	-	21:30
3	:	-	:
>Select weekday/block			



You can set the same time windows for the DHW cylinder and the circulation pump.

The control system operates according to the heating curve and the target room temperature.

5.4.1 Setting time windows

- Take some time beforehand to plan your individual time windows carefully.
The time windows are the time periods each day/block during which you are at home and require heat and hot water.



When you define the heating times for a block (e.g. Mon-Fri), no settings are necessary for the individual days within the block.

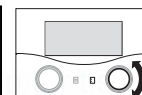
Requirement: Menu  3 **HK1 time programme** is displayed (→ Chap. 5.1.1).



If your heating installation is configured with several heating circuits, a DHW cylinder and a circulation pump, turn the left hand  dial until Menu  3 **Time programme** shows the display for the heating circuit, DHW cylinder or circulation pump for which you wish to set the time programme.

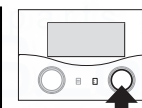
The following example describes how to set a timer programme for the weekend for heating circuit HK1.

HK1		 3	
Time programme			
► Mon-Fri			
1	6:00	-	9:30
2	16:30	-	21:30
3	:	-	:
>Select weekday/block			



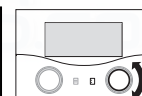
- Turn the right hand  dial until the cursor ► is flashing in front of the **time period** (Mon-Fri in the example).

HK1		 3	
Time programme			
▶ Mon-Fri.			
1	6:00	-	9:30
2	16:30	-	21:30
3	:	-	:
>Select weekday/block			



- Press the right hand  dial.
The **time period** is marked.

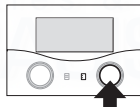
HK1		 3	
Time programme			
▶ Sat-Sun			
1	6:00	-	9:30
2	16:30	-	21:30
3	:	-	:
>Select weekday/block			



5 Operation

- Turn the right hand  dial until the **time period** Sat-Sun is displayed.

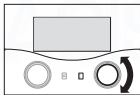
HK1	 3
Time programme	
▶ Sat-Sun	
1	6:00 - 9:30
2	16:30 - 21:30
3	: - :
> Select weekday/block	



- Press the right hand  dial.
The changed **time period** is saved.

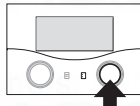
5.4.2 Setting the start and end times for time window 1

HK1	 3
Time programme	
Sat-Sun	
1	▶ 6:00 - 9:30
2	16:30 - 21:30
3	: - :
> Set start time	



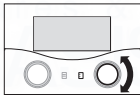
- Turn the right hand  dial until the cursor ▶ flashes in front of the **Start time** for time window 1.

HK1	 3
Time programme	
Sat-Sun	
1	▶ 6:00 - 9:30
2	16:30 - 21:30
3	: - :
> Set start time	



- Press the right hand  dial.
The **Start time** is marked.

HK1	 3
Time programme	
Sat-Sun	
1	▶ 8:00 - 9:30
2	16:30 - 21:30
3	: - :
> Set start time	

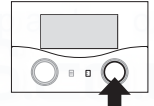


- Turn the right hand  dial until the desired **Start time** is displayed.



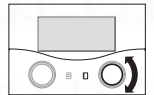
You can only set time windows within a day, i.e. in a time window from 00:00 to 24:00 hrs.
A time window from, e.g., 22:00 to 6:00 is not possible. In this case you must set two time windows, from 22:00 to 24:00 and from 00:00 to 06:00.

HK1	 3
Time programme	
Sat-Sun	
1	▶ 8:00 - 9:30
2	16:30 - 21:30
3	: - :
> Set start time	



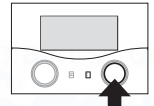
- Press the right hand  dial.
The **Start time** for time window 1 is saved.

HK1	 3
Time programme	
Sat-Sun	
1	8:00 - ▶ 9:30
2	16:30 - 21:30
3	: - :
> Set end time	



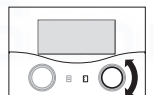
- Turn the right hand  dial until the cursor ▶ flashes in front of the **End time** for time window 2.

HK1	 3
Time programme	
Sat-Sun	
1	8:00 - ▶ 9:30
2	16:30 - 21:30
3	: - :
> Set end time	



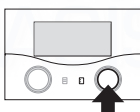
- Press the right hand  dial.
The **End time** is marked.

HK1	 3
Time programme	
Sat-Sun	
1	8:00 - ▶ 16:30
2	16:30 - 21:30
3	: - :
> Set end time	



- Turn the right hand  dial until the desired **End time** is displayed.

HK1	 3
Time programme	
Sat-Sun	
1	8:00 - ►16:30
2	16:30 - 21:30
3	: - :
> Set end time	



- Press the right hand  dial.
- The **End time** for time window **1** is saved.

The **Start time** and the **End time** for time window **1** are now set.

- Set time windows **2** and **3** as well, if required.

Setting further time windows:

- Repeat the steps for setting the **Start time** and the **End time** for other time windows in the same way as was described for time slot **1**.

If you set a continuous time window for a Monday, the end result might look like this:

HK1	 3
Time programme	
► Mon	
1	8:30 - 22:00
2	: - :
3	: - :
> Select weekday/block	

After an extended period without any operations, the display automatically reverts to the basic display.

Setting time windows for other heating circuits:

If your heating installation is configured with several heating circuits, DHW cylinders and circulation pumps, turn the left hand  dial until Menu  **3 Time programme** shows the display for the heating circuit, DHW cylinder or circulation pump for which you wish to set the time programme.

- Repeat all the steps for setting the time windows for the other heating circuits, DHW cylinders and circulation pumps.

5.5 Setting the holiday programme

For the controller and all system components connected to it, you can set:

- two holiday periods with start and end date,
- the desired night set back temperature, i.e., the value at which the heating installation is to be regulated during the absence, independently of the specified timer programme.

The holiday programme starts automatically when a preset holiday period begins. The holiday programme ends automatically after the holiday period has elapsed. The heating installation is once more regulated according to the previously set parameters and the selected operating mode.



The holiday programme can be activated only in the **Auto** and **Eco** modes.

Any connected cylinder charging circuits or circulation pump circuits are automatically switched to the Off mode during the holiday timer programme.

- Before going away, check that the mode is set to **Auto** or **Eco**.
- If this is not the case, set the mode to **Auto** or **Eco** (→ Chap. 5.2.1).

Requirement: Menu  **4 Holiday programming** is displayed (→ Chap. 5.1.1).

Holiday programming for whole system		 4
Periods		
1	► 30. 02. 09 - 20. 03. 09	
2	05. 05. 09 - 22. 05. 09	
Target temperature		15°C
> Set start day		

The parameters on a grey background can be set.

Ending the holiday programme

If you want to end the holiday programme prematurely, set the end date so that it is ahead of the current date.

5 Operation

5.5.1 Setting time periods

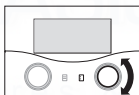
Setting a date (Day.Month.Year) has already been described at length when setting the date in the basic data (→ Chap. 5.3.2).

- Set the **Start month, Start day, Start year** and the **End month, End day** and **End year** in sequence for time period **1**, and also for time period **2** if required. Proceed exactly as was described in Chap. 5.3.2 for **month, day** and **year**.
- Always observe the information on frost protection (→ Chap. 5.12).

5.5.2 Setting the target temperature

- Always observe the information on frost protection (→ Chap. 5.12).

Holiday programming for whole system		4
Periods		
1	20. 08. 09 - 28. 08. 09	
2	05. 09. 09 - 22. 09. 09	
Target temperature		▶15°C
>Select target room temperature		



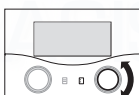
- Turn the right hand dial until the cursor ▶ is flashing in front of the **Target temperature**.

Holiday programming for whole system		4
Periods		
1	20. 08. 09 - 28. 08. 09	
2	05. 09. 09 - 22. 09. 09	
Target temperature		▶15°C
>Select target room temperature		



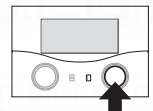
- Press the right hand dial.
- The **target temperature** is marked.

Holiday programming for whole system		4
Periods		
1	20. 08. 09 - 28. 08. 09	
2	05. 09. 09 - 22. 09. 09	
Target temperature		▶16°C
>Select target room temperature		



- Turn the right hand dial until the desired **target temperature** is displayed.

Holiday programming for whole system		4
Periods		
1	20. 08. 09 - 28. 08. 09	
2	05. 09. 09 - 22. 09. 09	
Target temperature		▶16°C
>Select target room temperature		



- Press the right hand dial.
- The **target temperature** is saved.

The room temperature will be automatically reduced to the preset target temperature during the set holiday periods.

After an extended period without any operations, the display automatically reverts to the basic display.

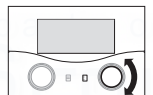
5.6 Setting the night set back temperature and the heating curve

5.6.1 Setting the night set back temperature

The set-back temperature is the temperature to which the heating is regulated during the night set back period (e.g., overnight). The night set back temperature can be set individually for each heating circuit.

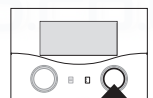
Requirement: Menu 5 HK1 parameters is displayed (→ Chap. 5.1.1).

HK1 Parameters		5
Night set back temp		
		▶ 15°C
Heating curve		1.2
>Select target room temperature		



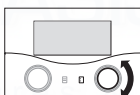
- Turn the right hand dial until the cursor ▶ is flashing in front of the **Night set back temp**.

HK1 Parameters		5
Night set back temp		
		▶ 15°C
Heating curve		1.2
>Select target room temperature		



- Press the right hand dial.
- The **Night set back temperature** is marked.

HK1	5
Parameters	
Night set back temp	▶ 16°C
Heating curve	1.2
>Select target room temperature	

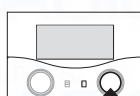


- Turn the right hand dial until the desired **Night set back temperature** is displayed.



If necessary, find out about the optimum setting from your heating engineer.

HK1	5
Parameters	
Night set back temp	▶ 16°C
Heating curve	1.2
>Select target room temperature	



- Press the right hand dial.
The **Night set back temperature** is saved.
- Always observe the information on frost protection (→ Chap. 5.12).

5.6.2 Setting the heating curve

Your selection of heating curve will influence the flow temperature of your heating.

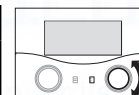


Caution!
Material damage caused by high flow temperatures with underfloor heating!
Flow temperatures above 40 °C can cause material damage with underfloor heating.
➤ Do not set the flow temperature above 40 °C if underfloor heating is in use.

The heating curve shows the relationship between the outside temperature and the flow temperature. The setting is made separately for each heating circuit (→ Chap. 3.5).

The room temperature of your heating installation depends to a great extent on the selection of the right heating curve. If the selected heating curve is too high, the temperatures in the heating installation will also be too high, resulting in higher energy consumption. If the selected heating curve is too low, the desired temperature level may only be reached after a while or not reached at all.

HK1	5
Parameters	
Night set back temp	16°C
Heating curve	▶1.2
> Select heating curve	



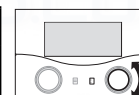
- Turn the right hand dial until the cursor ▶ is flashing in front of the **Heating curve**.

HK1	5
Parameters	
Night set back temp	16°C
Heating curve	▶1.2
> Select heating curve	



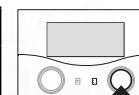
- Press the right hand dial.
The **Heating curve** is marked.

HK1	5
Parameters	
Night set back temp	16°C
Heating curve	▶1.1
> Select heating curve	



- Turn the right hand dial until the desired **heating curve** is displayed.

HK1	5
Parameters	
Night set back temp	16°C
Heating curve	▶1.1
> Select heating curve	



- Press the right hand dial.
The **heating curve** is saved.

After an extended period without any operations, the display automatically reverts to the basic display.

5 Operation

5.7 Setting the hot water temperature

You can set the target value for the hot water temperature:

- in the basic display as the temperature for the **cylinder** (→ Chap. 5.2)
- or
- in Menu **5** as the **Target cyl. temp.** parameter.



Danger!

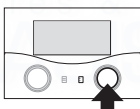
Risk of being scalded by hot water!

There is a danger of scalding at the hot water draw-off points if the temperatures are greater than 60 °C. Young children and elderly persons are particularly at risk, even at lower temperatures.

- Select the temperature so that nobody is at risk.

Requirement: Menu **5 Hot water parameters** is displayed (→ Chap. 5.1.1).

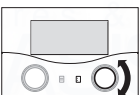
Domestic hot water Parameters	5
Target cyl. temp.	▶ 60°C
>Select target temperature	



The cursor ▶ flashes in front of the target cylinder temperature.

- Press the right hand **5** dial.
- The **target temperature** is marked.

Domestic hot water Parameters	5
Target cyl. temp.	▶ 58°C
>Select target temperature	

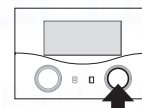


- Turn the right hand **5** dial until the desired **target temperature** is displayed.



Choose the target cylinder temperature for the hot water so that your heat requirements are covered exactly. You will save energy and costs this way.

Domestic hot water Parameters	5
Target cyl. temp.	▶ 58°C
>Select target temperature	



- Press the right hand **5** dial.
- The **target temperature** is saved.

After an extended period without any operations, the display automatically reverts to the basic display.

5.8 Changing the names of the heating circuits

To provide a better overview of your heating installation, you can change the factory-defined names for the heating circuits individually.

If your heating installation has several heating circuits and a DHW cylinder, the controller will only display the factory-set names of the heating circuits.

Name change	7
HK1	: ▶ HK 1
HK2	: HK2
> Select	

The parameters on a grey background can be changed.



The name can be a maximum of ten characters long and consist of the characters 0 ... 9, A ... Z and space.

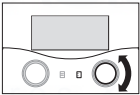


Changed names are automatically adopted and displayed in the respective menus.

This is how to change the name HK 1 to ETAGE 1:

Requirement: Menu  7 **Change name** is displayed
(→ Chap. 5.1.1).

Name change  7	
HK1	: ▶ HK 1
HK2	: HK2
> Select	

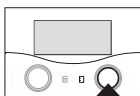


- Turn the right hand  dial until the cursor ▶ is flashing in front of the **name** (for HK1).



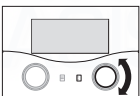
You can only ever change 1 character at a time.
If you want to change the full name, you must change each character individually and possibly add characters.
If you want to delete a character, you must overwrite the character with a space.

Name change  7	
HK1	: ▶ HK 1
HK2	: HK2
> Select	



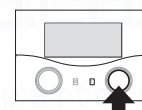
- Press the right hand  dial.
The first character of the name is marked.

Name change  7	
HK1	: ▶ EK 1
HK2	: HK2
> Select	



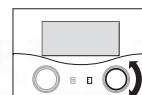
- Turn the right hand  dial until the letter **E** is displayed.

Name change  7	
HK1	: ▶ EK 1
HK2	: HK2
> Select	



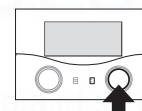
- Press the right hand  dial.
The letter **E** is saved.

Name change  7	
HK1	: ▶ K 1
HK2	: HK2
> Select	



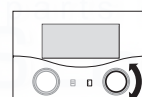
- Turn the right hand  dial until the cursor ▶ is flashing in front of the letter **K**.

Name change  7	
HK1	: ▶ K 1
HK2	: HK2
> Select	



- Press the right hand  dial.
The letter **K** is marked.

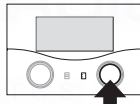
Name change  7	
HK1	: ▶ T 1
HK2	: HK2
> Select	



- Turn the right hand  dial until the letter **T** is displayed.

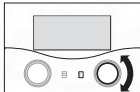
5 Operation

Name change	
HK1	: ▶ T 1
HK2	: HK2
> Select	



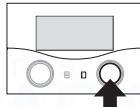
- Press the right hand dial. The letter **T** is saved.

Name change	
HK1	: E ▶ 1
HK2	: HK2
> Select	



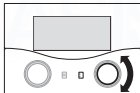
- Turn the right hand dial until the cursor ▶ is flashing in front of the space.

Name change	
HK1	: E ▶ 1
HK2	: HK2
> Select	



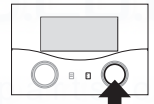
- Press the right hand dial. The space is marked.

Name change	
HK1	: E ▶ A 1
HK2	: HK2
> Select	



- Turn the right hand dial until the letter **A** is displayed.

Name change	
HK1	: E ▶ A 1
HK2	: HK2
> Select	



- Press the right hand dial. The letter **A** is saved.

- Repeat these steps for the sequence of letters **GE 1**.

The result should look like this:

Name change	
HK1	: ETAGE 1
HK2	: HK2
> Select	

The controller saves the new name and displays it in all menus henceforth.

After an extended period without any operations, the display automatically reverts to the basic display.

5.9 Viewing the parameters in the Installer level



Caution!
Inappropriate alterations can cause material damage!

Incorrectly set parameters can cause material damage to the heating installation.

Only competent persons may set the parameters in the Installer level.

- Never alter the settings in Menus **C1 ... C11** and **A1 ... A8**.

Exiting the Installer level

The Installer level is automatically disabled after approx. 60 minutes. You can view the system-specific parameters in the Installer level again at any time.

Menu  **8** is the last menu in the Operator level. The expert technician must enter a code number (access code) in order to switch to the Installer level and set the system-specific parameters. The system-specific parameters are thus protected from unintentional adjustment.

The operator can view the system-specific parameters without entering a code number, but he cannot change them.

This is how to view the system-specific parameters:

Requirement: Menu  **8 Code level enable** is displayed (→ **Chap. 5.1.1**).

Code level enabled	 8
Code number:	0 0 0 0
Standard Code:	1 0 0 0
>Adjust numeric character	

- Press the right hand  dial. You can now view all the settings in the Installer level, but you cannot alter them.



If you turn the left hand  dial, you can view all the menus in the Installer and Operator levels. You can still set all the parameters in the Operator level.

5 Operation

5.10 Using special functions

The special functions are called up from the basic display. The 3 special functions

- Energy saving function
- Override function
- One-time Cylinder Charging

are arranged one after another in the menu sequence.

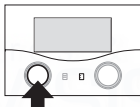


- Press (once or twice) the left hand dial until the desired special function is displayed.

5.10.1 Activating the Energy-saving function

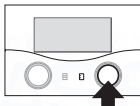
The Energy saving function allows you to regulate the heating installation at the set-back temperature up to a defined time within a time window.

Wed 02.12.09	15:43	-3 °C
HK1	► Heating	22 °C
Storey 1	Eco	18 °C
Cylinder	Auto	60 °C
VRC 630		



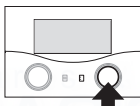
- Press the left-hand dial once.

Wed 02.12.09	15:43	-3 °C
Energy saving enabled to ► 18:30		
►Select end time		



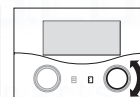
The controller shows the menu for the Energy Saving function. The cursor ► is in front of the **End of energy saving function** parameter.

Wed 02.12.09	15:43	-3 °C
Energy saving enabled to ► 18:30		
►Select end time		



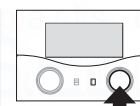
- Press the right hand dial to mark the **End of energy saving function** parameter.

Wed 02.12.09	15:43	-3 °C
Energy saving enabled to ► 18:30		
►Select end time		



- Turn the right hand dial until the time at which the Energy Saving function is to end is set.

Wed 02.12.09	15:43	-3 °C
Energy saving enabled to ► 22:30		
VRC 630		



- Press the right hand dial. The set time is saved.

When the set time is reached the Energy Saving function ends automatically and the controller switches to the basic display.

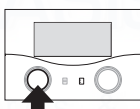
Interrupting the Energy Saving function

- Press the left-hand dial three times. The controller ends the Energy Saving function and switches to the basic display.

5.10.2 Activating the Advance function

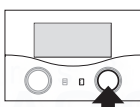
When you activate the Advance function, the heating and hot water times are extended beyond the next switch-off point to the start of the next heating period, i.e. the actual settings for the heating are temporarily overridden. The Advance function only affects those heating or hot water circuits which are set to **Auto** or **Eco** mode.

Wed 02.12.09	15:43	-3 °C
HK1	► Heating	22 °C
Storey 1	Eco ☼	18 °C
Cylinder	Auto ●	60 °C
VRC 630		



- Check that the **Auto** or **Eco** mode is set for the heating circuit and DHW cylinder.
- If this is not the case, set the mode to **Auto** or **Eco** (→ Chap. 5.2.1).
- Press the left-hand dial twice.

Wed 02.12.09	15:43	-3 °C
Room temperature		21 °C
Advance function enabled		
VRC 630		



The controller shows the menu for the Advance function. The Advance function is activated. No settings are necessary.

When the last heating circuit starts to heat again (switch from set-back to heating), the Advance function is ended automatically and the controller switches to the basic display.

Interrupting the Advance function

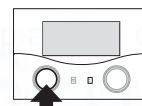
- Press the left-hand dial twice.

The controller ends the Advance function and switches to the basic display.

5.10.3 Activating the One-time cylinder charging function

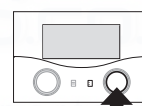
The **One-time Cylinder Charging** function allows you to charge the DHW cylinder once, regardless of the current timer programme.

Wed 02.12.09	15:43	-3 °C
HK1	► Heating	22 °C
storey 1	Eco ☼	18 °C
Cylinder	Auto ●	60 °C
VRC 630		



- Press the left-hand dial three times.

Wed 02.12.09	15:43	-3 °C
Room temperature		21 °C
One-time Cylinder Charging activated		
VRC 630		



The controller shows the menu for **One-time cylinder charging**. The **One-time cylinder charging** function is activated. No settings are necessary. When the water in the cylinder has been heated to the set temperature, the function is ended automatically and the controller switches to the basic display.



The hot water temperature is defined by the expert technician when commissioning your heating installation.

Interrupting One-time cylinder charging

- Press the left-hand dial once.

The controller ends the **One-time cylinder charging** and switches to the basic display.

5 Operation

5.11 Service functions (only for the expert technician)



The service functions are reserved for the expert technician and the district chimney sweep.

If you activate the service functions unintentionally, you can terminate them by simultaneously pressing both  and  dials as often as necessary until the display shows the basic view again.

5.12 Ensuring protection from frost



Caution!

Material damage caused by frost!

If you do not ensure adequate protection from frost for your heating installation during your absence, damage to the building and the heating installation can result.

- Make sure that adequate frost protection is guaranteed during your absence.

Your controller is equipped with a frost protection function (depends on the outside temperature). The frost protection function ensures that your heating installation is protected from frost in the **Off** and **Eco** (outside the time windows) modes.

If the **Eco** mode is set and the frost protection function (dependent on the outside temperature) is not activated, then the heating circuit will be switched off during the set-back period.

The preset (night) set-back temperature is applied automatically for each heating circuit if the outside temperature falls below +3 °C (→ **Chap. 5.6**).

Here's how to guarantee protection from frost:

- Check that your boiler is connected to the electrical mains. The boiler must not be disconnected from the mains.
- Check the mode set on the controller. Frost protection is only ensured in the **Off** and **Eco** modes.

5.13 Cleaning and caring for the controller

- Use only a damp cloth to clean the casing of the controller.
- Never use scouring or cleaning agents which could damage the operating elements or the display.

5.14 Data transfer

Data transfer only takes place if your heating installation is fitted with the VRC DCF external sensor (→ **Table 1.1**, Part No.).

Depending on the conditions on site, it can take up to 15 minutes for all the data (outside temperature, DCF, appliance status etc.) to be updated.

6 Troubleshooting

In the event of malfunctions in the heating installation, the controller displays error messages in plain text.



Caution!

Inappropriate alterations can cause material damage!

Inappropriate alterations can damage the controller or the heating installation.

- Never make changes to or tamper with the boiler or other parts of the heating installation.



Troubleshooting may only be carried out by a qualified expert technician.

- Contact your expert technician.
- Inform him of the description of the fault (error text).

6.1 Service message

The controller can display a service message in the second line of the menu:

- Service + telephone number of the expert technician

Example of a **service message**:

Sun 01.11.09	15:43	-3 °C
Service 02191 123456		
HK1	► Heating	22 °C
Storey 1	Eco ☀	18 °C
Cylinder	Auto ●	60 °C
VRC 630		

This service message alerts you to required servicing of the heating installation.

Additionally, the expert technician's telephone number appears if the engineer has programmed it in.

6.2 Error messages

If an error occurs in the heating installation, the controller displays an error message on the second line of the menu.

Example of an **error message**:

Sun 01.11.09	15:43	-3 °C
Boiler comms error		
HK1	► Heating	22 °C
Storey 1	Eco ☀	18 °C
Cylinder	Auto ●	60 °C
VRC 630		

6 Troubleshooting

Error message	Cause
VR 60 (4) comms error	There is no communication with the VR 60 mixer module at bus address 4. Information displayed: - the affected component - the unreachable address - an indication that communication is interrupted - the bus cable is not connected - no power is present, - the component is defective.
Boiler comms error	There is no communication with the boiler. This message alerts you to a boiler fault. The boiler is possibly out of operation.
Error boiler	The boiler is reporting a malfunction via the eBUS. See the manual for the boiler
VRC 630 VF1 fault	The VF1 inlet sensor is defective.
VR 60 (4) VFa fault, VIH-RL sensor T1 error, VPM W (I) sensor T1 error, ...	Information displayed: - the affected component - the affected sensor with its designation on the ProE connector strip Possible causes: - a break - a short circuit on the affected sensor.
HK1 temperature error	The target temperature for the heating circuit has not been reached after a defined time. This time is set by the expert technician in Menu C11: Parameter Temp. fault detection after ; Default: OFF). Setting range: OFF, 0 - 12 h
When combined with a VIH-RL DHW cylinder, the following errors can be displayed:	
External current anode fault	The external current anode monitoring in the VIH-RL has detected a fault.
VIH-RL Limescale in heat exch.	The VIH-RL electronics have detected that the heat exchangers need to be serviced.

Table 6.1: Error messages and causes

Further error codes and descriptions of their causes can be found in the manuals for the components of your heating installation.

6.3 Detecting and rectifying malfunctions

The display remains dark or does not respond to any operations

- If the display remains dark or you are unable to make any changes to the display using the  dials, contact your expert technician.

The controller is displaying an error message



If an error message is displayed in the 2nd line of the menu, arrange for an expert technician to rectify the fault promptly. Faults may only be rectified by a qualified expert technician.

- Information on troubleshooting can be found in the operating manual for the boiler.

7 Taking out of service

Complete decommissioning may only be carried out by a competent person. This person is responsible for proper decommissioning and disassembly.

7.1 Shutting down the heating temporarily



If you want to shut down your heating temporarily, during the holidays for example, then follow the instructions in the operating manual for your boiler.

7.2 Switching off the controller temporarily



Caution!

Material damage caused by frost!

The frost protection function is only active when the controller is switched on.

- Never switch the controller off when there is a risk of frost.
- Set the main switch of the controller to the "I" position.



If the external sensor of your heating installation is unable to receive a DCF signal, you will have to set the time and date manually after switching on the controller.

- Make sure that the time and date are set correctly so that the preset timer programmes and holiday programme will work correctly and the next servicing appointment can be monitored.
- Leave the controller switched on so that you can keep the system status of the heating installation in view at all times and can quickly be made aware of any malfunctions.
- Make use of the holiday programme (→ **Chap. 5.5**) to save energy costs during your absence.

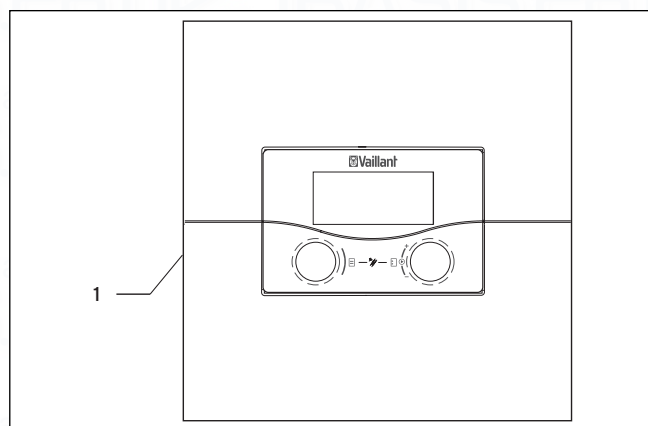


Fig. 7.1 Switching the controller On/Off

Key

1 Rocker switch

- Press the rocker switch (1) to switch the controller On/Off.

8 Recycling and disposal

8 Recycling and disposal

Both your Vaillant VRC 630 controller and its packaging are primarily made of recyclable raw materials.

Appliance

Neither your controller nor any of its accessories belong in the household waste. Make sure the old unit and any accessories present are disposed of properly.

Packaging

Please leave the disposal of the transport packaging to the expert technician company which installed the appliance.

9 Energy saving tips



Caution!

Material damage caused by frost!

If you do not ensure adequate frost protection for your heating installation in winter, this can result in damage to the building and to the heating installation.

- In winter, make sure that adequate frost protection is maintained.

Operating the heating system in set-back mode

Reduce

the room temperature at night and in your absence. The simplest and most reliable way is to reduce the room temperature by means of the controller with individually selectable timer programmes.

Target room temperature

Set the target room temperature only as high as would be necessary for your comfort level. An extra degree would mean increased energy consumption of about 6%. Adjust the room temperature according to the purpose of use of the room. For example, normally, bedrooms or seldom used rooms are heated to 20 °C.

Uniform heating

Often, in an apartment with central heating, only one room is heated. Adjacent rooms are also heated without regulation by the enclosing surfaces of the room, i.e. walls, doors, windows, roofs and floors, which means that an unwanted loss of thermal energy occurs. The capacity of the heating element of this one heated room is obviously not enough for such an operating mode. Consequently, the room can not be heated satisfactorily and an uncomfortable feeling of coolness prevails (the same effect is produced when doors between heated or unheated or slightly heated rooms remain open).

This is false economy: The heating is in operation and still the room temperature is not comfortably warm. Greater heating comfort and a more practical operating mode is achieved when all rooms in an apartment are heated uniformly and in accordance with their usage.

Thermostatic valves and room thermostats

Thermostatic valves on all radiators maintain the room temperature exactly once set. You can adjust the room temperature to suit your individual requirements and ensure economical operation of your heating installation using the thermostatic valves in combination with a weather-compensated controller.

This is how a thermostatic valve works: When the room temperature rises above the value set on the sensor head, the thermostatic valve closes automatically. When the room temperature falls below the set value, the thermostatic valve opens once more.

Do not obstruct the controller

Do not obstruct your controller with furniture, curtains or other objects. It must be able to detect the circulating room air without hindrance. Covered thermostatic valves can be fitted with remote sensors and thus continue to work.

Installation of a weather-controlled heating controller

Weather compensators regulate the heating supply temperature according to the outside temperature. Thus it is ensured that heat in excess of what is required at the moment is not generated. In addition, desired heating and set-back phases (e.g. at night) are automatically turned on and off by using integrated time programmes. Weather compensators combined with thermostat valves are the most economical form of heating regulation.

Ventilating residential spaces

During the heating period, open windows only for ventilation and not for temperature regulation. A brief, forced change of air is more effective and energy-saving than windows that are kept open for a long time. Close all the thermostatic valves in the room during ventilation.

These measures guarantee adequate air circulation without unnecessary loss of energy and cooling off.

9 Energy saving tips

How to make positive energy savings:

- Activate the energy-saving function when airing the room or during temporary absences.



Caution!

Material damage caused by freezing!

Parts of the heating installation can freeze if the frost protection is delayed for too long.

- Setting the frost protection delay is a job for the expert technician!

- Programme your holiday periods to avoid unnecessary heating during extended absences.
- Set the cylinder target temperature (for hot water) to the lowest value necessary just to cover your heat demand.
- If possible, set the Eco mode for all heating circuits and have the frost protection delay time adjusted by your heating engineer.
- The heating is completely switched off overnight in the Eco mode. If the outside temperature falls below +3 °C, the night set back temperature is invoked again after the presettable frost protection delay time.
- The frost protection delay time can be extended for houses with good thermal insulation.

Use the special one-time cylinder charging mode

The DHW cylinder can be heated once outside the time window by using the special **One-time cylinder charging** mode. Thus hot water is quickly available on demand, even outside the time window.

10 Warranty and Customer Service

10.1 Vaillant warranty

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

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

10.2 Vaillant Service

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

11 Technical data

11 Technical data

11.1 VRC 630

Parameter	Units	Value
Operating voltage	V AC/Hz	230 / 50
Controller power consumption	VA	4
Contact load of the output relays (max.)	A	2
Maximum total current	A	6.3
Shortest switching interval	min	10
Power reserve	min	15
Maximum ambient temperature	°C	40
Sensor operating voltage	V	5
Minimum cross-section		
- of the sensor lines	mm ²	0.75
- of the 230 V connection lines	mm ²	1.50
Dimensions of the wall box		
Height	mm	292
Width	mm	272
Depth	mm	74
Level of protection		IP 20
Controller protection class		I
Degree of environmental pollution		Normal

Table 11.1 Technical data for VRC 630

11.2 Default settings

The default settings can only be set, and if necessary reset, in the Installer level.

Displayed text	Adjustable parameters	Setting range	Default setting
Heating circuit parameters	Night set back temp	5 - 30 °C	15 °C
	Max limit outs.temp.	5 - 50 °C	21°C
	Pump delay time	0 - 30 min	0 min
	Minimum temperature	15 - 90 °C	15 °C
	Maximum temperature	15 - 90 °C	75 °C / 90 °C
	Max. advanced heating time	0 - 300 min	0 min
	Switch-on room temperature	none/room temp./thermostat	n/a
	Fixed value day	5 - 90 °C	65°C
	Fixed value night	5 - 90 °C	65°C
	Max limit outs.temp.	5 - 50 °C	21°C
	Return temperature	15 - 60 °C	30°C
Cylinder charging circuit parameters	Charging pump overrun	0 - 15 min	5 min
	Anti-legionella function	Off, Mon, Tue, ...Sun, Mon-Sun	Off
	Legionella protect - start	00:00 - 24:00	04:00
	Parallel charging	Off/On	Off
Overall system parameters	Max. pre-switch off	0 - 120 min	15 min
	Frost protection delay	0 - 23 h	1 h
	Continuous heating	Off, -25 ... 10°C	Off
	Fast temperature increase	0 - 15 K	0 K
Heating appliance parameters	Switching hysteresis	1 - 20 K	8 K
	Minimum temperature	15 - 90 °C	15 °C
	Cylinder starting output	1 - 2	1
Heating appliance: Cascade parameters (only for cascade systems)	Switch on delay	1 - 90 min	5 min
	Switch off delay	1 - 90 min	5 min
	Reverse boiler sequence	Off/On	Off
Special function - teleSWITCH	teleSWITCH for heat zone 1	None, heating, off, Auto, Eco, Energy sav	Energy sav.
	teleSWITCH for heat zone 2	None, heating, off, Auto, Eco, Energy sav	Energy sav.
	teleSWITCH for cylinder	None, On, Off, Auto	Off
Special function - floor drying	heat zone 2 schedule	0 - 29	0
	heat zone 3 schedule	0 - 29	0
Service	Telephone number of expert technician	0 - 9 (17 digit)	-
	Maintenance date	Date	01.01.01
	Temp. fault detection after	OFF, 0 - 12 h	Off
Tool	Temperature correction:		
	Outside temperature	-5 ... +5 K	0 K
	Current room temperature	-3 ... +3 K	0 K
	Display contrast	0 - 15	11

Table 11.2 Default settings

Glossary

Circulation pump

When you turn on the hot water tap it can take a few moments - depending upon the length of the pipe - before hot water comes out. A circulation pump pumps hot water through the pipes in the hot water circuit. This ensures that hot water is immediately available when you turn on the tap. Time windows can be programmed for the circulation pump.

Cursor

The cursor ► marks the parameter to be changed.

Cylinder charging

Cylinder charging means that the water contained in the cylinder is being heated to the desired hot water temperature.

DCF receiver

A DCF receiver receives a time signal. The time signal sets the time automatically and provides automatic switching between summer time and winter time.

eBUS

The eBUS communications protocol simplifies the control-related coupling of various system components within a heating system. It provides particular flexibility for retrofitting and expanding the system. The installation of additional boilers or the retrospective incorporation of components such as solar hot water generation is thus simplified. The eBUS provides extended possibilities for connecting external controllers and also for connecting to the vnetDIALOG Internet communications system for remote servicing and diagnostics.

Error message

An error message indicates in plain text that the controller has detected a fault in the heating installation.

Flow temperature

See Heating flow temperature.

Frost protection delay/ Heating frost protection

The heating frost protection ensures the system is protected from frost in the **Off** and **Eco** modes (outside the time windows) and applies to all connected heating circuits. To prevent the system from freezing, the required room temperature is set to the set set-back value and the heating circuit pump is switched on if the outside temperature falls below 3 °C. The frost protection function can be suppressed for a certain period of time by setting a delay time (setting range of 0 - 23 h).

Furthermore frost protection is activated regardless of the measured outside temperature if it is established that the measured room temperature is lower than the set night set back temperature with a connected remote control device.

Heating circuit

A heating circuit is a closed circulation system of pipes and heat consumers (e.g. radiators). The heated water from the boiler flows into the heating circuit and returns to the boiler as cooled water.

A heating installation usually has at least one heating circuit. However additional heating circuits can be connected, e.g. to supply several apartments or additional underfloor heating.

Heating curve

The flow temperature in heating installations, calculated as a function of the outside temperature, is known as the heating curve. The flow temperature in the heating circuit gets warmer the lower the outside temperature becomes.

Heating flow temperature

Your appliance heats water which is then pumped through your heating system. The temperature of this hot water as it leaves the boiler is referred to as the flow temperature.

Heating installation

The heating installation heats up the apartment and produces hot water.

Heating pump

A heating pump in a heating installation is a centrifugal pump which conveys the heated heating water to the radiators and house service connection stations and at the same time feeds back the cooled water from the return pipes so that the boiler can heat it up again.

HK1

HK1 is the standard name (default setting) for heating circuit 1 of your heating installation. You can change this name.

Hot water generation

Your boiler heats the water in the DHW cylinder to the selected target cylinder temperature. If the temperature in the DHW cylinder falls by a specified amount, the water is heated up again to the target cylinder temperature. You can programme time windows for heating up the cylinder contents.

Installer level

The Installer level displays the specific parameters that the expert technician can set/change. This level is reserved for the heating engineer and is therefore protected by an access code.

Legionella

Legionella are water-borne bacteria which can quickly propagate and cause serious lung diseases. They occur wherever heated water provides the optimum conditions for multiplication. Temporarily heating the water to above 65 °C kills off the legionella.

Level of protection

The level of protection indicates the suitability of electrical equipment for various ambient conditions and additionally the protection of people from potential hazards during their use.

Example:

The controller has Level of Protection IP20. The two digits are significant here.

The first digit indicates the protection of the equipment from contact, e.g. with objects or body parts, which could penetrate into dangerous areas of the equipment (2 = objects > 12.5 mm Ø).

The second digit indicates the protection of the equipment from the ingress of water (0 = no protection).

Protection class

Protection class denotes the classification and identification of electrical equipment with reference to the existing safety measures to prevent electric shocks.

Target values

Target values are desired values that you specify in the controller, e.g. the room target temperature or target cylinder temperature for water heating.

Menu

A menu displays a selection of parameters which you can alter.

Night set back temperature

The night set back temperature is the temperature to which your heating system reduces the room temperature outside of the programmed time window.

Operating mode

Using the operating modes you determine how your room heating or hot water generation is controlled.

Operator level

The Operator level displays the basic parameters which you can set/change without any special prior knowledge during normal operation. You can adapt your heating installation to your needs by setting the parameters accordingly.

Parameters

Parameters are the operating values of your heating system.

You can set these operating values by, for example, changing the **Night set back temperature** parameter from 15 °C to 12 °C.

Room temperature

The room temperature is the temperature actually measured in your apartment.

Selectors

The dials are buttons with which, by turning and pressing, you can select menus or parameters, and alter and save values.

Summer/Winter changeover

In the basic display it is possible to determine whether the changeover between summer and winter time is to take place automatically.

The default setting (as-supplied condition) is for automatic changeover not to take place.

If the controller is fitted with a VRC DCF external sensor, the summer/winter changeover takes place automatically. Switching off the automatic changeover is not possible in this case.

On the last weekend in March, the clock is put forward by one hour: from 2:00 to 3:00 hrs.

On the last weekend in October, the clock is put back by one hour: from 3:00 to 2:00 hrs.

Switch-on room temp.

Thermostatic control takes account of the room temperature when calculating the flow temperature.

Prerequisites:

- There is a temperature sensor, which measures the room temperature, fitted in the remote control or in the wall-mounted controller.
- The thermostatic control function must be activated for each heating circuit by the heating engineer (Menu **C2**).

Target room temperature

The target room temperature is the temperature that you would like in your apartment and which you specify to your controller. If the controller is installed in the living room, then the target room temperature for the room in which the controller is installed applies. If the controller is installed in the boiler, the target room temperature is applied as a reference value for controlling the flow temperature in accordance with the heating curve.

Time window

Three time windows per day can be programmed for the heating, the hot water generation and the circulation pump.

Example:

Time window 1: Mon 09.00 - 12.00 hrs.

Time window 2: Mon 15.00 - 18.30 hrs.

For hot water generation, the target hot water temperature prevails for all time windows.

The time windows specify the operating times for the circulation pump.

Weather-controlled

The outside temperature is measured by a separate sensor which is mounted in the open air, and the results are transmitted to the controller. At low outside temperatures the controller provides increased heating output; at higher outside temperatures the heating output is reduced.

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For the heating engineer

Installation Manual

VRC 630

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1 Notes on the documentation

1 Notes on the documentation

The following instructions are intended to guide you throughout the entire documentation. Other documents are valid in connection with this operating manual.

We accept no liability for any damage caused by non-observe these instructions.

Other applicable documents

- Always observe all installation instructions for structural parts and components of the system when installing the VRC 630 controller. These installation instructions are included with the individual assemblies in the system and the additional components.
- Furthermore, follow all the operating instructions that accompany the components of the system.

1.1 Storing the documents

- Pass these installation instructions and all other applicable documents and, if necessary, any required aids to the system operator, who will store them so that they are available when required.

1.2 Symbols used

The symbols used in the manual are explained below:



- Symbol that denotes danger,
- Imminent danger to life
 - Danger of severe personal injury
 - Danger of slight personal injury



- Symbol that denotes danger,
- risk of death from electric shock



- Symbol that denotes danger,
- Risk of material damage
 - Risk of damage to the environment



- Symbol that denotes useful tips and information

- Symbol for a required action

1.3 Validity of the instruction manual

This installation manual is valid exceptionally for devices with the following item numbers:

Type designation	Part No.	External sensor
VRC 630	0020092435 0020092436	VRC DCF
VRC 630	0020092437 0020092438 0020092439 0020092440 0020092430	VRC 693

Table 1.1 Type summary

The part number of the unit can be found on the identification plate.

1.4 Identification plate

The identification plate is readily visible on the left side of the controller base.



Fig. 1.1 Identification plate

Key

- 1 EAN code
- 2 Equipment designation
- 3 Operating voltage
- 4 Power consumption
- 5 CE label

1.5 CE label



CE marking shows that the appliances according to the model overview comply with the basic requirements of the following Directives of the Council:

- Directive 2006/95/EC of the Council with amendments "Directive Concerning Electrical Equipment for Use Within Specific Voltage Limits" (Low voltage directive)
- Directive 2004/108/EC of the Council with amendments "Directive Concerning Electromagnetic Compatibility"

The units comply with the following standards:

- EN 60730-1
- EN 60730-2-9

By attaching the CE label, we confirm as the equipment manufacturers that the safety requirements according to § 2, 7. GSGV have been satisfied and that production units conform to the tested type sample.

1.6 Name of the unit

The VRC 630 controller is hereafter described as the controller.

2 Safety instructions and regulations

2 Safety instructions and regulations

2.1 Safety and warning information

- When operating the controller, take account of the general safety instructions and the warning notes that appear before all of the actions.

2.1.1 Classification of warnings

The warning notes are classified in accordance with the severity of the possible danger using the following warning signs and signal words:

Warning sign	Signal word	Description
	Danger!	Immediate danger to life or danger of severe personal injury
	Danger!	Danger of death from electric shock
	Warning!	Danger of minor personal injury
	Caution!	Risk of material or environmental damage

Table 2.1 Warning signs and their meanings

2.1.2 Structure of warnings

Warning signs are identified by an upper and lower separating line and are laid out according to the following basic principle:

	Signal word! Type and source of danger! Description on the type and source of danger ➤ Measures for averting the danger
---	--

2.2 Intended Use

The VRC 630 weather compensator is a state-of-the-art appliance manufactured in accordance with recognised safety regulations.

Even so, in the event of inappropriate or non-intended use, impairment of the device and other property can arise.

The VRC 630 controller is used for weather-compensated and time-dependent control of heating installations with hot water generation.

This unit is not intended for use by persons (including children) with physical, sensory or mental impairments or who have inadequate experience and/or knowledge, unless they are supervised by a person responsible for their safety or have been given instructions by this person regarding the operation of the unit. Children must be supervised to ensure they do not play with the unit.

Any other or additional use is considered to be improper. The manufacturer/supplier is not liable for any resulting damage. The owner alone bears any risk. Intended use includes the observance of the operating and installation manuals, and all other applicable documents.

2.3 General safety instructions

- Observe the following safety instructions at all times.

Qualification of the heating engineer

The installation of the controller may only be carried out by a heating engineer, approved at the time by the Health and Safety Executive. This person is also responsible for the proper installation and initial start-up.

Installing and setting the controller

The installation, commissioning and repair of the controller may only be carried out by an accredited specialist company. The heating engineer must comply with the prevailing regulations, rules and directives when performing this work.

Using tools

Inappropriate tools and/or the improper use of tools can result in damage (e.g. damage to casing parts or cables).

- Always use suitable screwdrivers when releasing or tightening screwed connections.

Protecting from Legionella

The controller is furnished with an anti-Legionella function to protect from infection by germs (Legionella).

- Set the anti-Legionella function when installing the controller.

Preventing the risk of scalding

There is a danger of scalding at the hot water draw-off points when the target temperatures are in excess of 60 °C. Young children and elderly persons are particularly at risk, even at lower temperatures.

- Select a moderate target temperature.

When the anti-Legionella function is active, the DHW cylinder is heated to over 65°C for at least one hour.

- Inform the owner about the risk of scalding when the anti-Legionella function is active.

Protecting the controller from damage

- Make sure that the controller is protected from moisture and water splashes.

Avoiding malfunctions

- To avoid malfunctions, take care that
 - the heating installation is only operated in a technically perfect condition,
 - no safety or monitoring devices have been removed, bridged out or disabled,
 - faults and damage that affect safety are rectified immediately.
- Make the owner aware that
 - the controller must not be obstructed by furniture, curtains or other objects if it is installed in the living room,
 - all the radiator valves in the room where the controller is installed must be turned fully open.

Preventing frost damage

If there is a power cut or if the room temperature is set too low in individual rooms it can not be ruled out that sections of the heating system are damaged by frost.

- Inform the owner as to how to ensure protection from frost.

2.4 Directives, laws and standards

EN 60335-2-21

Safety of household and similar electrical appliances; Part 2: Particular requirements for storage water heaters (domestic hot water cylinders and hot water boilers)

(IEC 335-2-21: 1989 and supplements 1; 1990 and 2; 1990, modified)

Any telecommunications equipment connected must conform to the following standards: IEC 62151, or EN 41003 and EN 60950-1: 2006 Section 6.3.

- When carrying out the electrical installation, observe the regulations of the German electrical engineering association (VDE) and your power supply company (EVU).
- Use standard commercial cables for wiring.

Minimum cross-section of the conductors:

- 230 V supply cable, rigid conductor (pump or mixer connecting cable): 1.5 mm²
- Low-voltage conductors (sensor or bus lines): 0.75 mm²

The following maximum cable lengths must not be exceeded:

- Sensor lines: 50 m
- Bus lines: 300m

- At lengths of over 10 m, 230V supply cables must be laid separately from sensor or bus lines.
- Fasten the supply cables using the cable clamps in the wall mount.
- Do not use the free terminals in the unit as supports for other wiring.
- The controller should only be installed in dry rooms.

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

3 Equipment and functional description

3 Equipment and functional description

3.1 Construction and function

The controller is used for weather-compensated heating control with hot water generation.

The controller can control the following system circuits:

- one DHW cylinder,
- a maximum of two modulating boilers without eBUS
or
one modulating boiler with eBUS
or alternatively one 2-stage boiler,
- two controlled circuits and
- one uncontrolled circuit

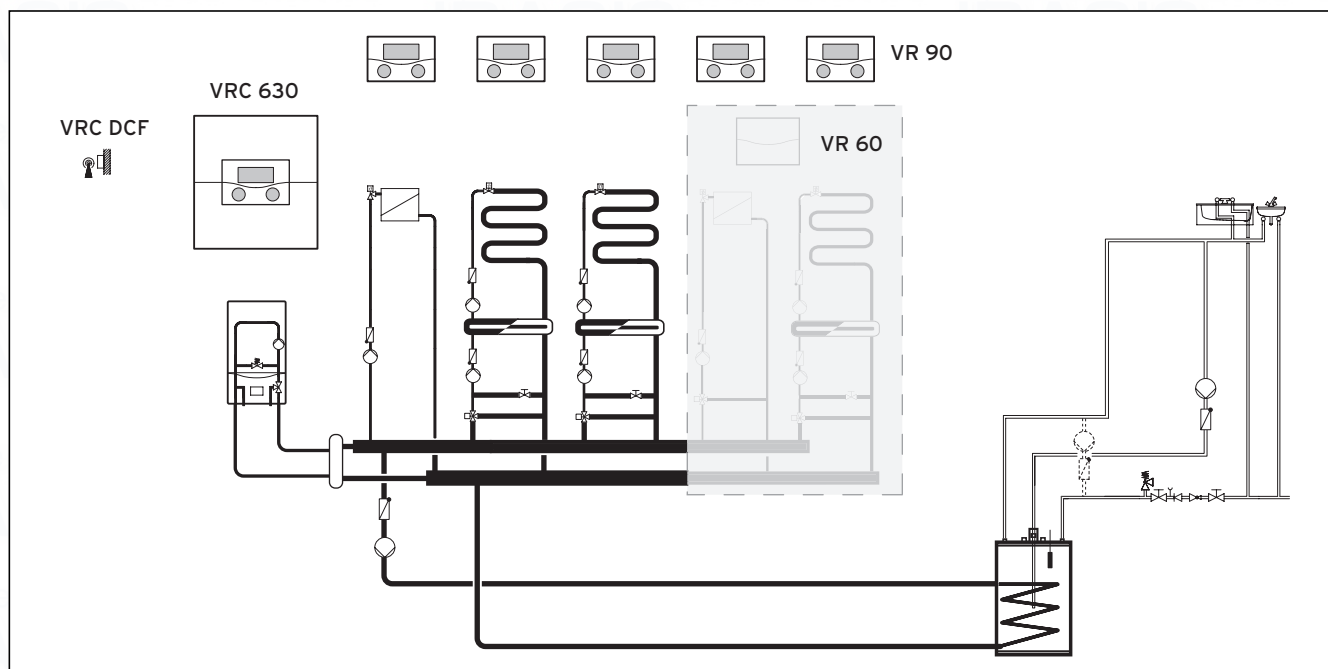


Fig. 3.1 System Overview

Key

- VR 90 Remote control unit
- VR 60 Mixer module
- VRC DCF External sensor

If the heating installation is to be expanded with, e.g., further heating circuits, additional system components can be integrated into the complex system of the installation (→ **Fig. 3.1**).

To expand the central heating installation, up to six additional mixer circuit modules (accessory), each with two mixer circuits, can be connected. This means: the controller can control a maximum of 15 circuits.

To operate them more conveniently, remote control devices can be connected for the first eight heating circuits.

Each mixer circuit can, as required, be switched between:

- Heating circuit (radiator circuit, underfloor circuit, etc.)
- Fixed value control,
- Return flow boost,
- Hot water circuit (in addition to integrated hot water circuit).

Several modulating Vaillant boilers or one and two-stage heating appliances can be connected using modulating bus couplers (accessory).

The maximum number of boilers/heating appliances that can be connected depends on the bus coupler installed.

Bus coupler	Maximum number of boilers/heating appliances that can be connected
VR 30, VR 32	8
VR 31	6

Table 3.1 Maximum number of boilers/heating appliances that can be connected

With the remote telephone contact connection (floating contact input), the operating mode of the controller can be changed from any location by telephone via the tele-SWITCH telephone remote control switch.

3.2 Overview of functions

The controller provides the following options for controlling your heating installation and hot water generation:

Off

Heating installation switched off or hot water generation with active frost protection

One-time Cylinder Charging

Allows the DHW cylinder to charge up once, independently of the current timer programme

Holiday function / Holiday programme

Independent control of the room temperature during your absence;
only in the **Auto** and **Eco** modes

Frost protection function

Protection from frost damage in the **Off** and **Eco** modes (outside the time slots);
The boiler must remain switched on

Heating curve

The basis of weather compensation; improves the matching of the heating output to the outside temperatures

Advance function

Allows you to continue the heating and hot water times beyond the next switch-off time up to the next heating start

Energy saving function

Allows the target room temperature to be reduced for a set period

Weather compensation

Automatic changing of the heating water temperature (flow temperature) depending on the outside temperature by means of a heating curve

Time slot

Individually settable time settings for the heating installation, the hot water generation and the operation of a circulation pump

3 Equipment and functional description

3.3 Operating modes

By setting the operating mode, you determine the conditions under which the assigned heating circuit or hot water circuit will be controlled.



If Holiday is displayed instead of the operating mode, the holiday programme is active. When the holiday programme is active, the operating mode cannot be set.

> It will be necessary to end the holiday programme to do this.

CH circuit

Operating mode	Effect
Auto	The operation of the heating circuits alternates between the Heating and Energy saving modes in accordance with a predetermined timer programme.
Eco	The operation of the heating circuit alternates between the "Heating" and "Off" modes in accordance with a preset timer programme. The heating circuit is switched off during the set-back period if the frost protection function (depending on the outside temperature) is not activated. The frost protection is effective outside the set time slot (→ Chap. 3.4).
Heating	The heating is regulated at the daytime set room temperature.
Energy save	The heating circuit is regulated at the night time set room temperature.
Off	The heating circuit is off if the frost protection function (depending on the external temperature) is not activated.
Symbol	Meaning
☼	If the ☼ symbol is displayed after the Eco or Auto mode, a time slot is active. The heating installation is producing heat.
○	If the ○ symbol is displayed after the mode, no time slot is active. The heating installation is in set-back mode.

Table 3.2 Operating modes for heating circuits

Circulation circuit and hot water circuit

Operating mode	Effect
Auto	The commands for charging the DHW cylinder or for enabling the circulation pump are given according to a preset timer programme.
On	The charging of the DHW cylinder is constantly enabled. When required, the cylinder is recharged immediately. The circulation pump is constantly in operation.
Off	No charging of the DHW cylinder takes place. The circulation pump is not operating. Exception: If the temperature in the DHW cylinder falls below 12 °C, the cylinder is reheated to 17 °C (frost protection).

Table 3.3 Operating modes for the circulation circuit and the hot water circuit

3.4 Description of important functions

Time slot

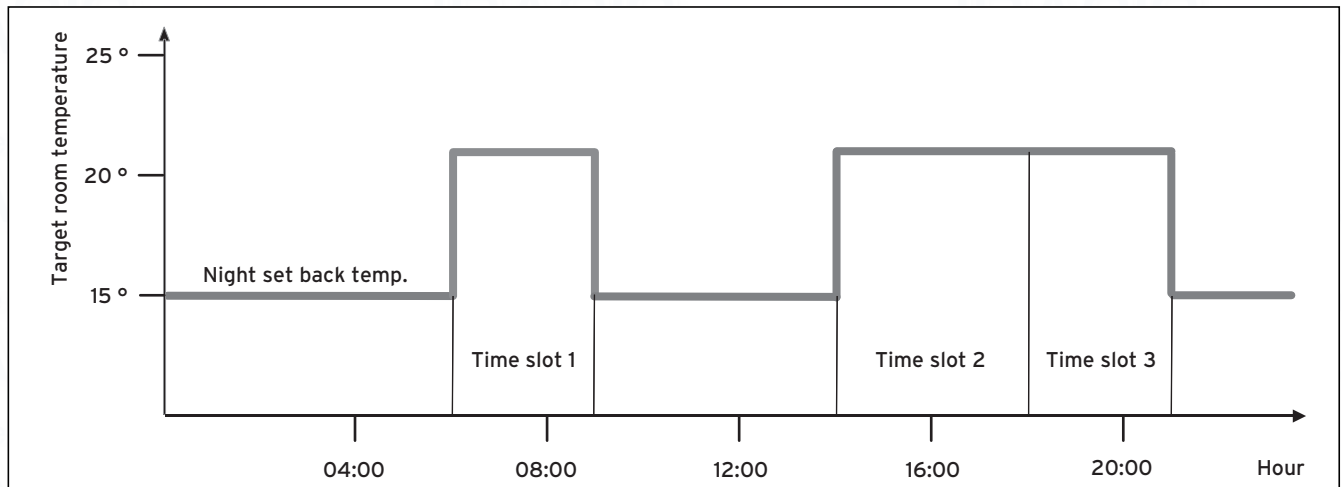


Fig. 3.2 Automatic heating operation: Example of setting the target room temperatures for different times of day

In Fig. 3.2 you can see a section from a timer programme. The time of day is given on the horizontal axis and the target room temperature is on the vertical axis. The diagram describes the following programme progression:

- 1 Until 06.00 hrs. a room temperature of 15°C (set-back temperature) is in effect.
- 2 The first time slot starts at 06.00 hrs:
From this point onwards a target room temperature of 21°C is effective.
- 3 The first time slot ends at 09.00 hrs:
From this point onwards a target room temperature of 15°C is effective.
- 4 A further two time slots of 21°C follow.

The way in which the time slots influence the heating control can be simply explained as follows:

When you operate your heating installation in the **Auto** mode, the controller activates the preset time slots in which your installation heats the connected rooms to a defined temperature (→ **Target room temperature**). Outside these time slots, the heating installation is controlled so that the connected rooms cool down to a defined temperature (→ **Set-back temperature**). When the set-back temperature is reached, the controller ensures that the heating installation maintains this temperature until the start of the next time slot. Thus any further cooling of the apartment is prevented.

- Advise the owner about the optimum setting of the heating curve, as the measured outside temperature and the preset heating curve will also affect the control of the heating.

3 Equipment and functional description

You have two options for defining the days for which your time slots should apply:

1st option

You can enter time slots for individual days.

Example:

Mon 09.00 - 12.00 hrs.

Tue 10.00 - 12.00 hrs.

2nd option

You can combine several days into blocks.

Example:

Mon-Fri 09.00 - 12.00 hrs.

Sat-Sun 12.00 - 15.00 hrs.

Mon-Sun 10.00 - 12.00 hrs.

You can define up to three time slots for each option.

You can control the hot water temperature in a connected DHW cylinder in the same way using the controller: The time slots you define specify when the hot water at your desired temperature is available. However there is no set-back temperature for hot water generation. Hot water generation is switched off at the end of a time slot.

Heating curve

The heating temperature is controlled indirectly by means of a heating curve. The heating curve shows the relationship between the outside temperature and the flow temperature.

The flow temperature is the temperature of the heating water as it leaves the boiler.

You can set the heating curve individually for each heating circuit.

You have the option of selecting various heating curves to match the control system optimally to your apartment and to the heating installation.

Example of a heating curve

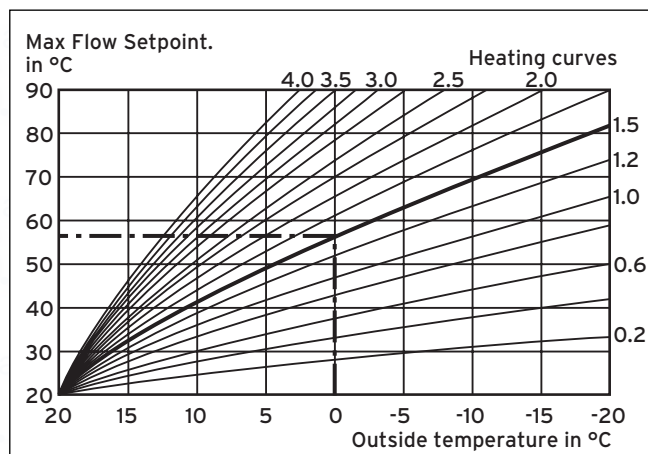


Fig. 3.3 Diagram with heating curves

Example: If heating curve 1.5 is selected, a flow temperature of 75 °C is required for an external temperature of -15 °C.

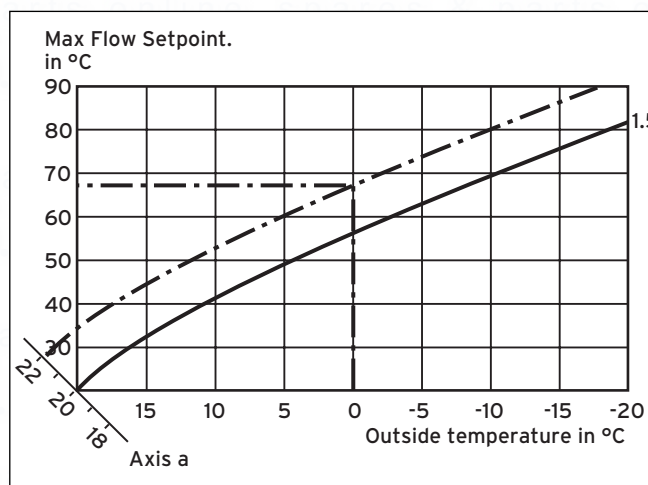


Fig. 3.4 Parallel offsetting of the heating curve

If heating curve 1.5 is selected and 22 °C rather than 20 °C is specified as the room target temperature, the heating curve is displaced as shown in Fig. 3.4. The heating curve is displaced in parallel along the 45° axis according to the value of the room target temperature. This means that when the outside temperature is 0 °C, the controller provides a flow temperature of 67 °C.



Make the required basic setting of the heating curve while installing the heating system.

Frost protection function

The controller is equipped with a frost protection function (depends on the outside temperature). The frost protection function ensures that the heating installation is protected from frost in the **Off** and **Eco** modes (outside the time slots).

If the **Eco** mode is set and the frost protection function (dependent on the outside temperature) is not activated, then the heating circuit will be switched off during the set-back period.

The preset (night) set-back temperature is applied automatically for each heating circuit if the outside temperature falls below +3°C.

3 Equipment and functional description

3.5 Overview of controls

All the settings that are required for the heating installation are made on the controller. The controller is equipped with a graphic display. Plain text messages simplify operation.

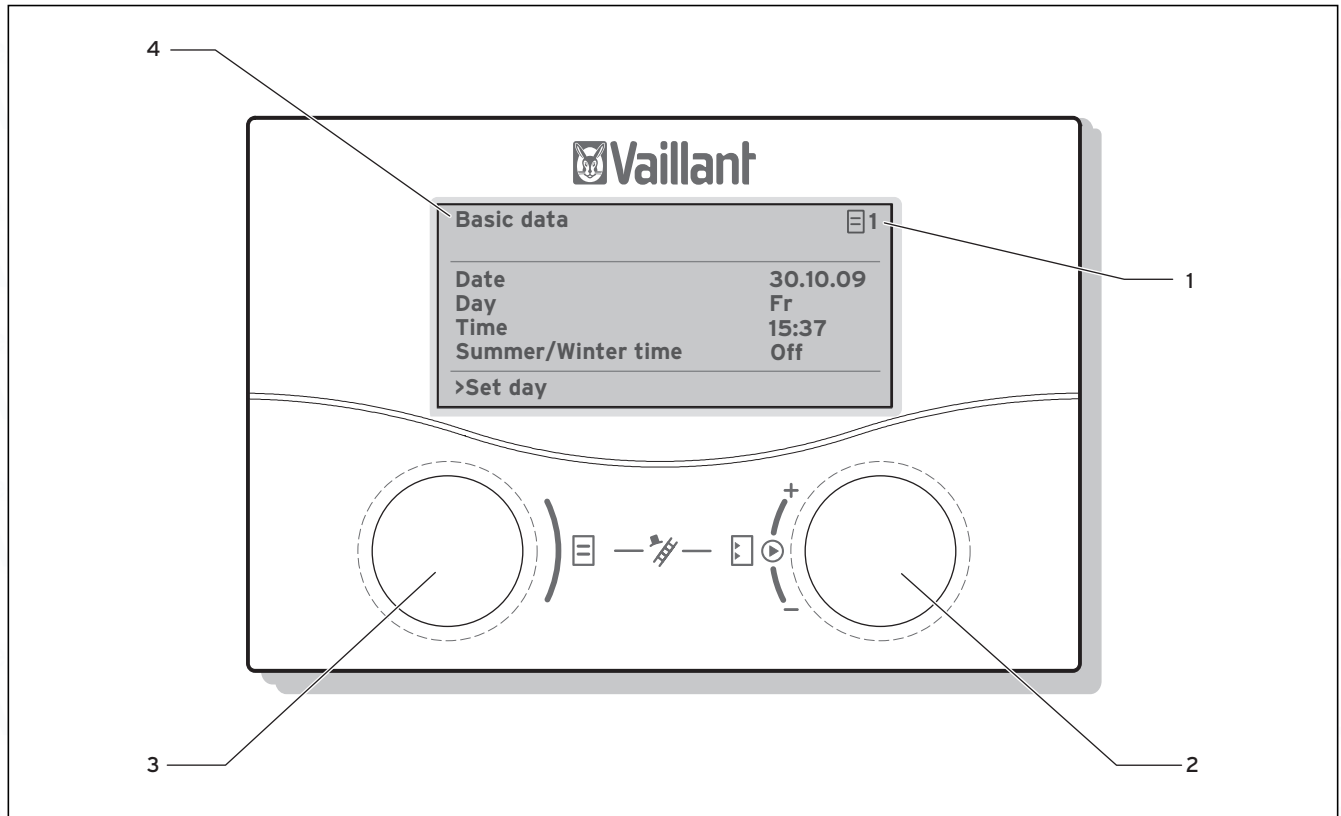


Fig. 3.5 Overview of controls

Key

- 1 Menu number
- 2 Right hand  knob,
Pick out a parameter (turn); Mark the parameter (press)
- 3 Left hand  knob,
Select menu (turn); Activate special function (press)
- 4 Menu name

3.6 Operator guidance

You can operate the controller with the two  and  knobs (→ **Fig. 3.5**):

- When you press the right hand  knob, you mark or save a parameter.
- When you turn the right hand  knob, you set a parameter.
- When you turn the left hand  knob, you select a menu.
- When you press the left hand  knob, you activate the special functions (→ **Chap. 7.7**).

A plain text display facilitates operation for you and identifies menus and parameters clearly.

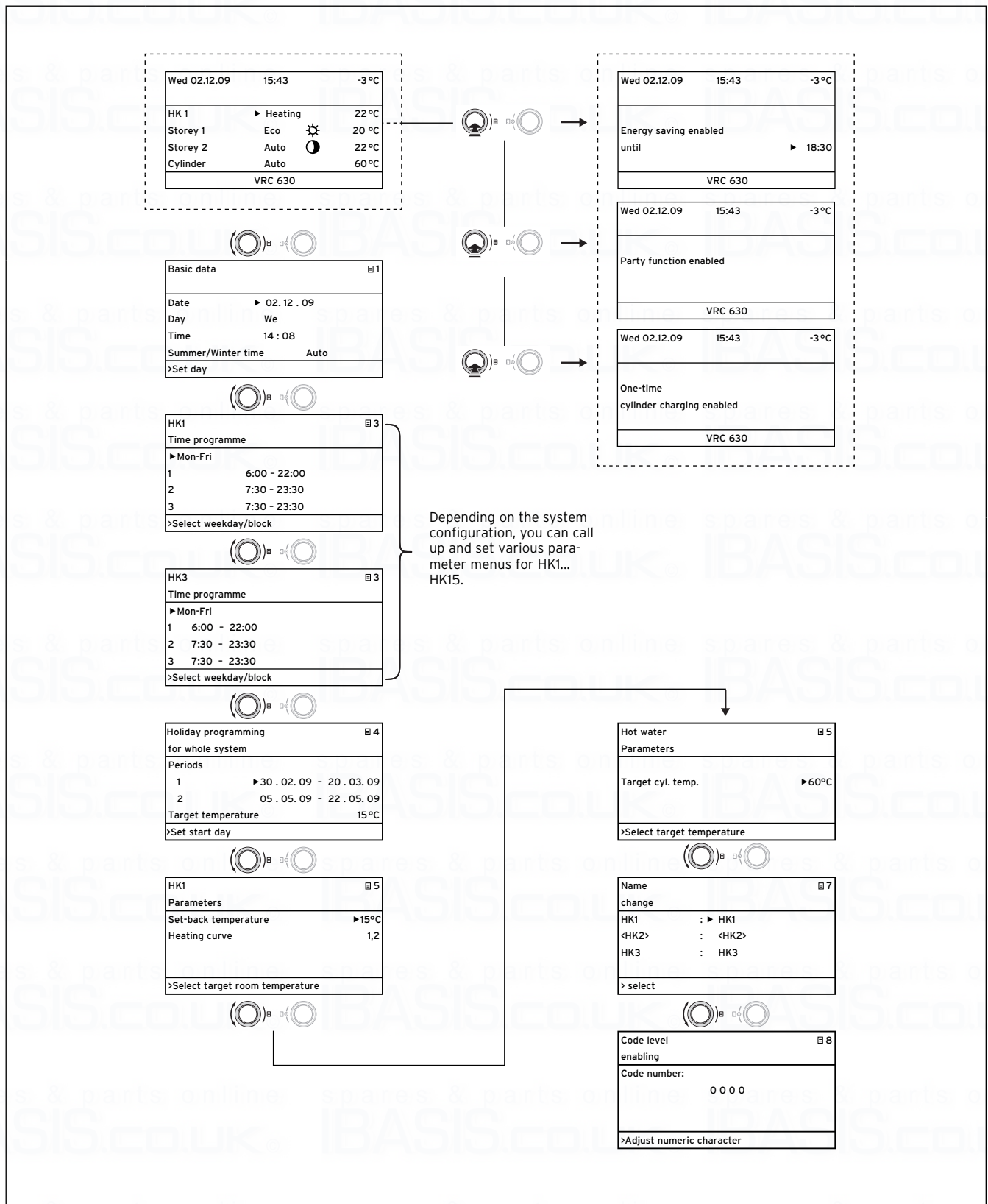


Fig. 3.6 Menu structure of Operator level

Special functions

Wed 02.12.09	15:43	-3 °C
Maximum output function activated		

Wed 02.12.09	15:43	-3 °C
Manual operation activated		

HC 1

storey 1	Eco	22 °C
storey 2	Auto	20 °C
Cylinder	Auto	
VRC 630		

Code level enabling

Code number:	0 0 0 0
Standard Code:	1 0 0 0
>Adjust numeric character	

HK1

Parameters	C2
Type	Direct circuit
Set-back temperature	►15°C
Heating curve	1.2
Max limit outs.temp.	21°C
>Select target room temperature	

HK1

Parameters	C2
Minimum temperature	►15°C
Maximum temperature	90 °C
Max. preheating	0 min
>Select flow temperature	

HK1

Parameters	C2
Switch-on room temperature	► none
>Select mode	

HK1

Information	C2
Setpoint flow temp.	90 °C
Current flow temp.	50 °C
Pump status	On

HK2 ... HK15

Parameters	C2
Type:	Mixer circuit
Set-back temperature	►15°C
Heating curve	0.90
Max limit outs.temp.	20 °C
>Select target room temperature	

HK2 ... 15

Parameters	C2
Pump delay time	►0 Min
Minimum temperature	15 °C
Maximum temperature	15 °C
Max. preheating	0 min
> Set minutes	

HK2 ... 15

Parameters	C2
Switch-on room temperature	► none
Remote control	No
>Select mode	

HK2 ... HK15

Information	C2
Setpoint flow temp.	90 °C
Current flow temp.	50 °C
Pump status	On
Mixer status	Open

Depending on the system configuration, you can call up and set various parameter menus for HK2...HK15.

Fig. 3.7 Menu structure of Installer level

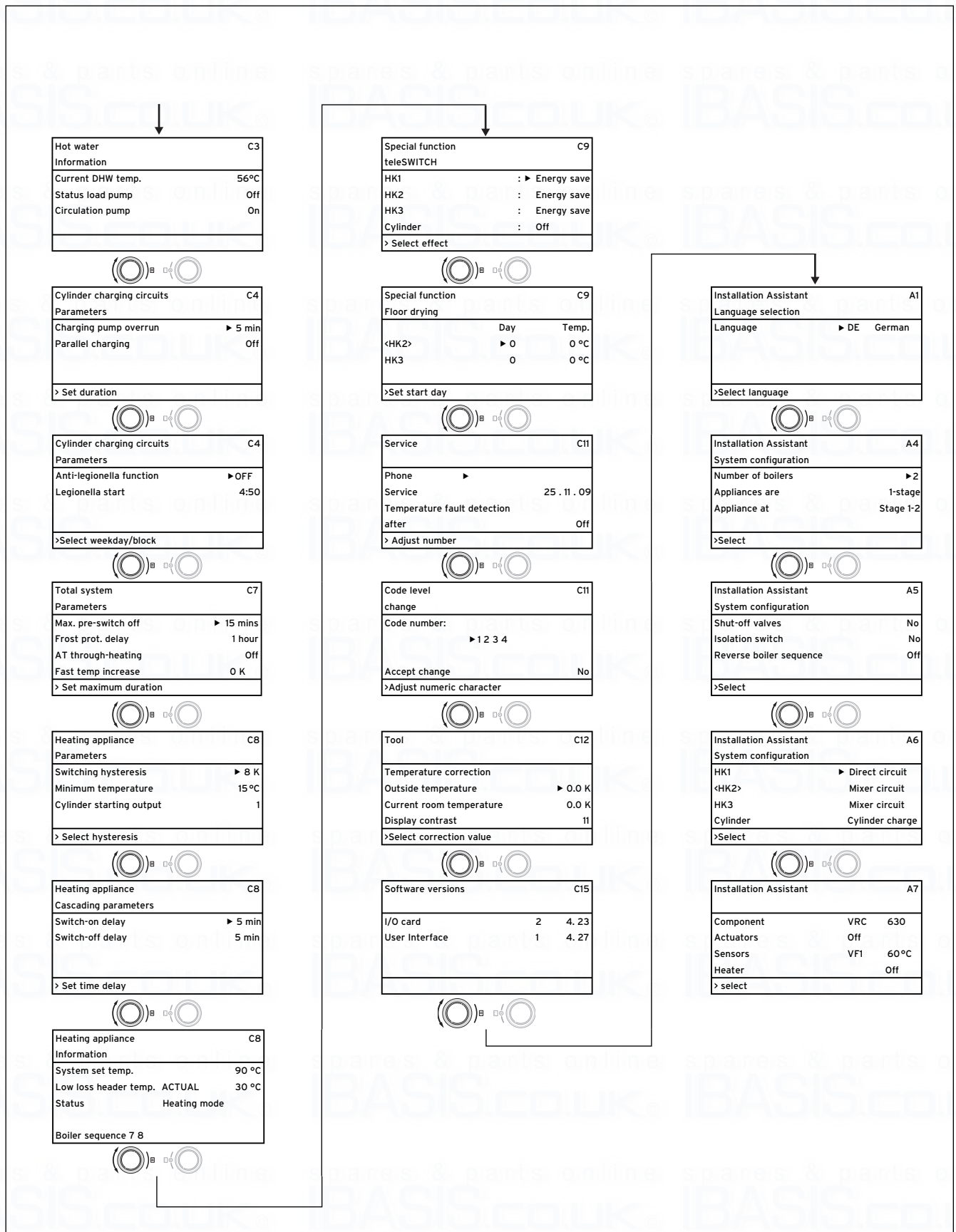


Fig. 3.7 Menu structure of Installer level (continued)

3 Equipment and functional description

3.7 Operating levels in the controller

The controller has two operating levels: the Operator level and the Installer level. Each operating level contains several display screens where the parameters can be displayed, set or changed.



The number of menus displayed depends on the configuration of the heating installation. For this reason it is possible that there are more menus described in this manual than your controller displays.

Operator level

The operator level is the operating level for the user, and displays the basic parameters that he can adapt to his particular needs during normal operation without any special prior knowledge.

The operator level comprises the basic display, Menus **1** ... **7** and the menus for the special functions (Energy-saving function, Advance function, One-time cylinder charging).

Installer level

The Installer level is the operating level for the heating engineer. The system-specific parameters, with which the heating engineer configures and optimises the heating installation, are set in the Installer level. These system-specific parameters may only be set and changed by a heating engineer. The Installer level is therefore protected by an access code. The system-specific parameters are thus protected from unintentional adjustment.

The Installer level comprises Menus **C1** to **C15**, the menus for the Installation Assistant (**A1** to **A7**) and the menus for the service functions (e.g. maximum output function).

3.8 Menu types

The controller has different **menu types**:

- the basic display,
- a menu in the Operator level or
- a menu in the Installer level

(Examples: → **Chap. 3.9**).

In the basic display you can view and set the current operating mode and the target room temperatures for the individual heating circuits.

The menus in the Operator level are identified with a number at the top right (e.g. **1**). This number makes it easier for you to find the menus.

In the menus in the Operator level you can, for example, set the room temperature, time slots, set-back temperatures and heating curves entirely to your individual requirements.

The menus in the Installer level are identified with a letter and a number at the top right (e.g. **C2**). You can only view the system-specific parameters in the Installer level menus (→ **Chap. 7.3**).

3.9 Menus in different operating situations

In the Operator level				
Wed 02.12.0915:43-3 °C HK1 ► Auto 20 °C HK2 Auto 20 °C HK3 Auto 20 °C HK4 Eco 22 °C VRC 630▼				Example: Basic display The basic display shows the current operating mode and the required room temperature for each heating circuit and allows the operating mode of each heating circuit to be changed quickly. If more than two heating circuits are connected, these are displayed in sequence when you turn the right hand knob. The basic data consisting of day of the week, date, time of day and outside temperature are always shown in the upper area of the display. If an error occurs, it is displayed in plain text in the second line. Chapter 7.2.1 explains how to set the basic data. Special operating modes and service functions can also be called up in the basic display. The arrow ▼ at the bottom right indicates that other modules are connected to the controller. When you want to check or set the operating mode or temperature of these modules, simply turn the right hand knob to access the next display lines.
Basic data 1 Date ► 02 . 12 . 09 Day We Time 14 : 08 Summer/Winter time Off >Set day				Example: Menu 1 You can make all the relevant settings for the heating installation on the Operator level in Menus (1 to 7. The menu name and the menu number (in the example 1) are displayed in the upper area. The numbers make it easier to find individual menus during programming.
Wed 02.12.0915:37- 15 °C Energy saving enabled until ► 18:30 VRC 630				Example: Special functions Special functions temporarily change the operating mode of the heating circuit and are ended automatically. Special functions can only be called up from the basic display.
In the Installer level				
HK1C2 Parameters Type Direct circuit Set-back temperature ► 15 °C Heating curve 1.20 Max limit outs.temp. 20°C >Select target room temperature				Example: Menu C2 Menus C1 to C15 are where the system-specific parameters, which only the heating engineer can set, are located. These menus are identified by a 'C' and a number at the top right of the display.

Table 3.4 Menu types

The settable parameters are displayed on a grey background.

4 Assembly

The controller can be mounted directly to the wall in the wall mount or as a remote control device with the VR 55 mounting box (accessory).

The controller is supplied with one of the following external sensors:

VRC 693: connected to the controller via a 2-core cable,
VRC DCF: connected to the controller via a 3-core cable.

4.1 Basic installation steps

1. Preparation:
 - Read the installation instructions.
 - Check the scope of delivery.
2. Installation of the controller:
 - Fit the wall mount and the central controller
 - Fit the external sensor (VRC DCF or VRC 693)
 - Carry out the electrical installation
3. Commissioning:
 - Make the basic settings on the central controller
 - Make the system-specific settings.
4. Handing over the appliance to the owner

A few comments regarding this:
The controller enables the control of heating installations with different components.
To adapt the control system to the conditions on site, you must perform the electrical installation according to the components required in the system. Further information on the electrical installation can be found in Chapter 5.

4.2 Scope of delivery

The controller is supplied as a kit.

Quantity	Component
1	VRC 630 controller with wall mount
4	VR 10 standard sensor
1	VRC DCF or VRC 693 external sensor, depending on national variant (→ Table 1.1)
1	Pack of screws/wall plugs
2	Pack of cable clamps

Table 4.1 Material supplied with VRC 630 kit

- Use Table 4.1 to check that all the components have been delivered with the controller kit.

4.3 Accessories

You can use the following accessories to extend the modular bus control system:

VR 55 mounting box

The range of accessories includes a mounting box, with which the operating unit can be used as a remote control device with the ProE terminal strips, which means regardless of where the central wall mount is installed. Communication is effected via the eBUS. A bezel is supplied with the accessories which can be plugged into the central wall mount instead of the control unit.

VR 60 mixer module

The heating system can be extended by two mixer circuits using the mixer module. A maximum of six mixer modules can be connected.

A unique bus address is set on the VR 60 using the rotary switch. The heating programmes and also all the required parameters are set via the central controller using eBUS. All heating circuit connections (sensors, pumps) are made directly to the mixer module with ProE plugs.

VR 30 modulating bus coupler

The modulating bus coupler allows the main controller to communicate with several Vaillant boilers. If more than two heaters are to be connected in cascade, a bus coupler is required for each heater to connect it to the eBus (Western socket). Up to eight VR 30 bus couplers can be connected.

The bus coupler is installed directly in the boiler's electronic box; communication with the controller is effected via the eBUS. A unique bus address is set on the VR 30 using the rotary switch. All other settings are made on the central controller.

VR 31 switching bus coupler

The VR 31 bus coupler allows the VRC 630 central controller to communicate with a switching heating appliance. With this combination, the communication between the controller and the boiler basically takes place via the eBUS. When a cascade is constructed, a separate bus coupler is required for each heater. Up to six bus couplers can be connected.

VR 32 modulating bus coupler

The VR32 modulating bus coupler allows the main controller to communicate with several Vaillant eBUS boilers. If several boilers are to be cascaded, a bus coupler is required from the 2nd boiler to establish the connection between the eBUS and the boiler (Western socket). You can connect up to eight VR 32s.

The bus coupler is installed directly in the boiler's electronic box; communication with the controller is effected via the eBUS. You set a unique bus address on the VR 32 using a rotary switch. All other settings are made on the main controller.

VR 90 Remote control unit

A separate remote control device can be connected for the first eight heating circuits (HK1 ... HK8). It allows the operating mode and target room temperature to be set, and takes into account the actual room temperature measured by the built-in room sensor, if necessary. It is also possible to adjust the parameters for the associated heating circuit (time programme, heating curve etc.) and to select the special functions (party etc.). It is also possible to query the heating circuit, and show maintenance and fault messages for the heater. Communication with the heating control unit is via the eBus.

VR 10 standard sensor

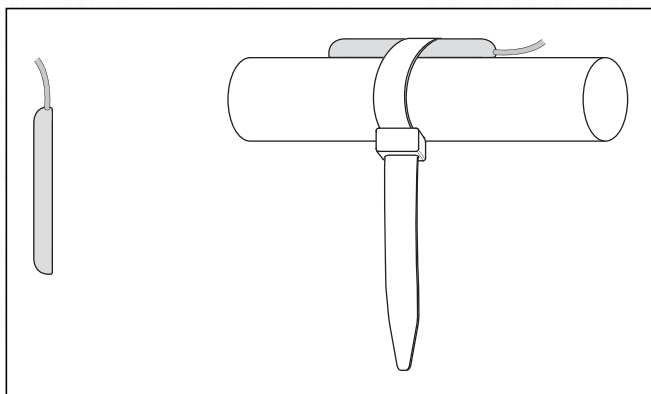


Fig. 4.1 VR 10 standard sensor

Additional sensors are required as flow, return, collector or cylinder sensors, depending on the configuration of the system. A standard sensor is available in the Vaillant accessory range to this end. The VR 10 standard sensor is so designed that it can be used as an immersion sensor, e.g. as a cylinder sensor in a cylinder sensor tube, or as a flow sensor in a hydraulic switch. Using the enclosed cable tie, the VR 10 standard sensor can also be fastened to the flow or return pipe as a contact sensor. To ensure good heat transfer, the sensor is flat on one side. We also recommend that the pipe with the sensor is insulated to ensure optimum temperature measurements.

"teleSWITCH" telephone remote switch

The teleSWITCH telephone remote switch (Part No. 300679) is connected to the telephone line. Using the telephone switch it is possible to change the operating mode of individual heating circuits or the cylinder circuit from any desired location.

4.4 Unpacking the unit

- Carefully remove the packaging, taking care not to damage any parts of the unit.

4.5 Checking the scope of delivery

- Check the material supplied for completeness (→ Table 4.1).

4.6 Dispose of the packaging

The disposal of the transport packaging is part of the installation of the controller.

- Dispose of the transport packaging in a professional manner.

4.7 Observe the requirements for the installation location

Controller

- The controller should only be installed in dry rooms.
- If you mount the controller on a wall, position it so that correct measurement of the room temperature is assured; e.g. on an internal wall of the main living room, at a height of approx. 1.5 m
- 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.

External sensor

- Make sure that the installation location:
 - is neither shielded from the wind nor particularly draughty,
 - is not in direct sunlight,
 - is facing north or north-west.
- Take care that the external sensor has a clearance of at least 1 m from any openings in the outside wall from which warm air flows constantly or occasionally.
- Make sure that, on buildings up to three storeys high, the external sensor is mounted 2/3 of the way up and on buildings with more than three storeys, the sensor is mounted between the 2nd and the 3rd. storeys.

4 Assembly

4.8 Installing the VRC 630 heating controller

4.8.1 Installing the controller with a wall mount

The material supplied includes the controller and the wall mount with the electrical connector strips. The connector strips are implemented in System ProE technology. All customer connections must be made to the connector strips.



Danger!

Danger to life from live connections!

The mains switch does not disconnect the power supply completely.

- Switch the power supply off before working on the unit.
- Secure the power supply against being switched on again.

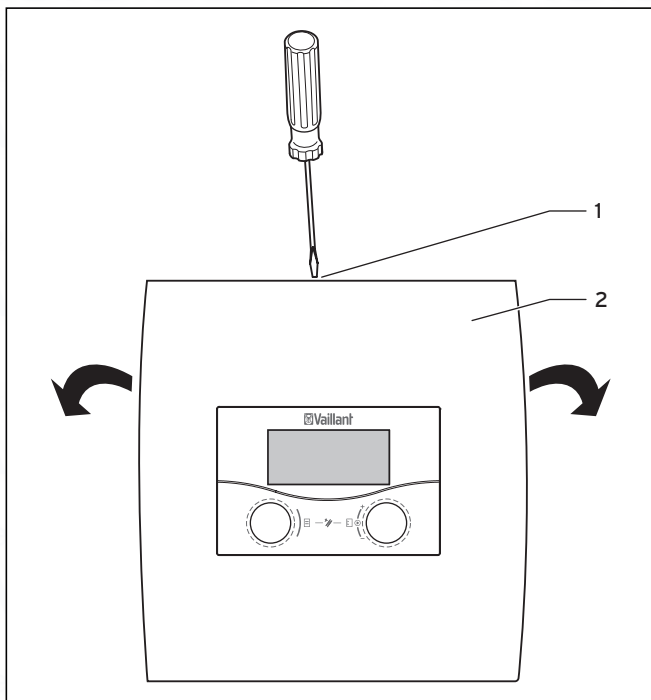


Fig. 4.2 Opening the wall mount

Key

- 1 Screw
- 2 Housing cover

The housing cover comprises a single part.

- Loosen screw (1) on the upper side of the housing.
- Flap the housing cover (2) downwards. Take the housing cover off its hinge and remove it.

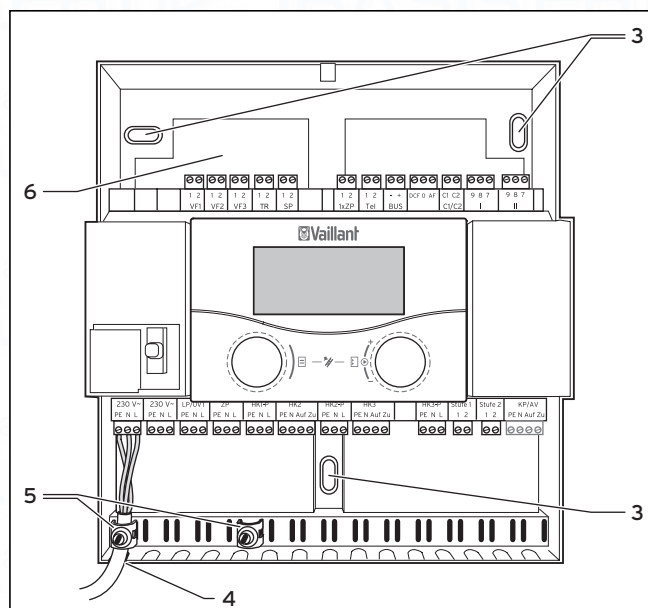


Fig. 4.3 Installation of the wall mount

Key

- 3 Fixing hole
- 4 Cable opening
- 5 Cable clamps
- 6 Cable feedthrough



Caution!

Risk of short circuits!

If too much insulation is removed there will be a risk of short circuits to the circuit board if the cables have not been attached properly to the plug.

- Remove a maximum of 30 mm of insulation from cables carrying 230 V for connection to the ProE plug.
- Take care to wire up correctly.

- Mark all three fixing holes (3) and drill the holes.
- Select the wall plugs according to the condition of the wall, and screw the wall mount tight.
- Next fit the external sensor and carry out the electrical installation (→ **Chap. 5**).

4.8.2 Installing the controller as a remote control device

If you want to mount the controller on the wall as a remote control unit with thermostatic control, take note of the following:

- Required accessory:

You will need the VR 55 wall mounting box (accessory, not included in kit). A cover for the wall mount is supplied together with the VR 55 mounting box.

- Installation location:

The best place for installation is usually in the main living room on an inside wall at a height of approx. 1.5 m.

- Mount the controller so that it can sample the circulating room air, unhindered by furniture, curtains or other objects.
- Choose a location where the room thermostat is not affected by draughts from doors or windows, or by heat sources such as radiators, chimney walls, television sets or direct sunlight.



All radiator valves must be fully open in the room in which the remote control device is installed if room thermostat control is activated. Point this out to the owner.



Danger!

Danger to life from live connections!

The mains switch does not disconnect the power supply completely.

- Switch the power supply off before working on the unit.
- Secure the power supply against being switched on again.

- Lay the electrical lines up to the boiler expediently before installing the controller.

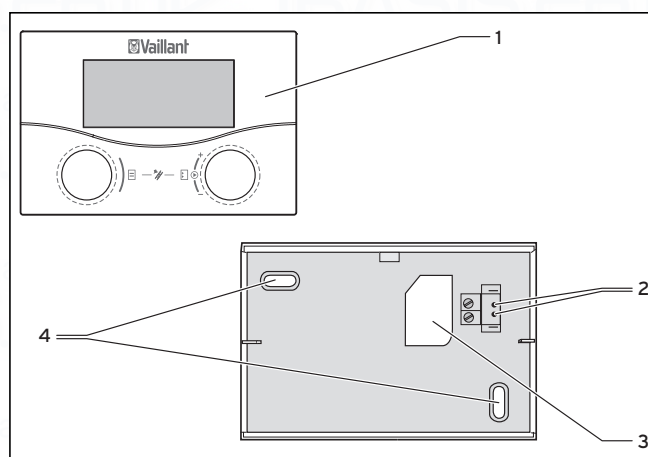


Fig. 4.4 Installation as a remote control device

Key

- 1 Controller
- 2 Receptacles
- 3 Cable feedthrough
- 4 Mounting holes

- Switch off the power.
- Secure the power supply against being switched on again.
- Open the wall mount using a screwdriver.
- Remove the housing cover.
- Take out the controller.
- Drill two 6 mm fixing holes (3) for the VR 55 mounting box (→ Fig. 4.4).
- Insert the wall plugs supplied.
- Pass the connecting cable through the duct (3).
- Attach the mounting box to the wall with the two screws provided.
- Connect the connecting cable (→ Fig. 4.3).
- Place the controller on the mounting box so that the pins on the back of the top part fit into the receptacles (2).
- Push the controller (1) on to the mounting box until it engages.
- Insert the supplied cover in the wall mount.
- Fit the cover.

4 Assembly

4.8.3 Installing the DCF receiver with integrated external sensor



Caution!

Danger of material damage as a result of incorrect fitting!

Incorrect fitting can cause damage to the unit and/or to the wall of the building, e.g. from dampness.

- Observe the cable routing described and the correct installation position of the external sensor.
- Drill the wall penetration with a slope to the outside.
- Run the connecting cable with a loop to catch drips.
- Pay attention to the sealing of the DCF receiver.

The DCF receiver with integrated external sensor may only be opened by a qualified tradesman and installed in accordance with the illustrations.

The current safety regulations must be observed as well as the installation instructions for the boiler and the heating controller.

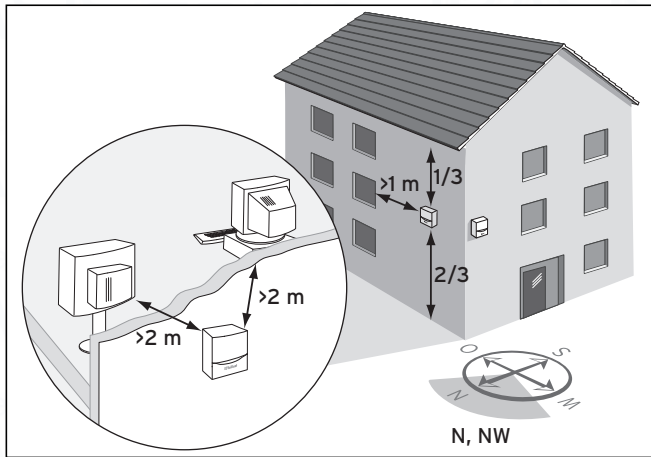


Fig. 4.5 Installation location for the DCF receiver

- Observe the requirements for the installation location (→Chap. 4.6)

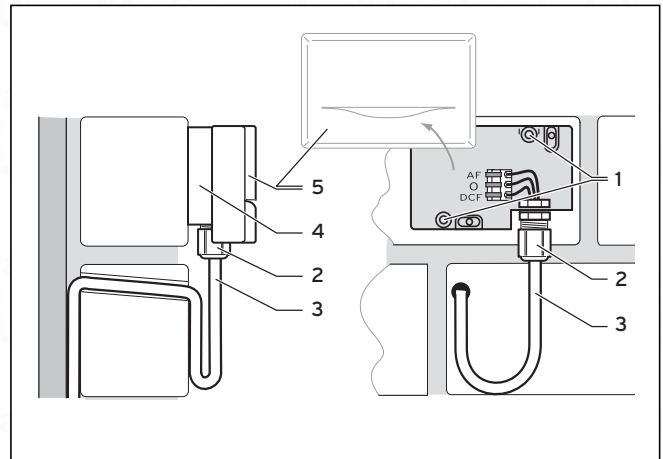


Fig. 4.6 Installation location for the DCF receiver

Key

- 1 Mounting apertures
- 2 Cap nut for cable entry point
- 3 3-core connecting cable with loop to catch drips
- 4 Wall base
- 5 Housing cover

- Carefully plan any holes required for fixing and cable routing before drilling them.
- Mark the position on the wall. Observe the cable routing for the external sensor.
- Route the connection cable (3) on the customer side with a slight incline to the outside and with a loop to catch drips.
- Remove the casing cover (5) from the external sensor.
- Drill two holes 6 mm diameter to match the fixing apertures (1).
- Insert the wall plugs supplied.
- Fix the wall socket (4) to the wall with two screws. The cable entry must point downwards.

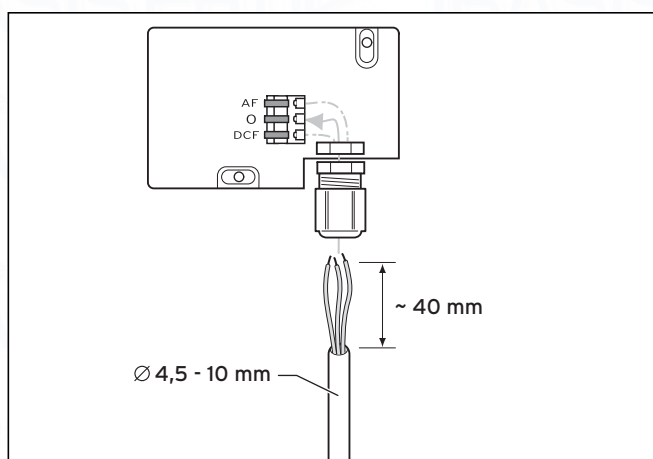


Fig. 4.7 DCF receiver cable connection

- Unfasten the cap nut (2) slightly and push the connecting cable through the cable entry from below.
- The electrical installation is carried out as described in Chapter 5.4.
- Re-tighten the cap nut (2). The packing in the cable entry is matched to the diameter of the cable used (Cable diameter: 4.5 mm to 10 mm).
- Lay the gasket between the wall socket and the housing cover.
- Push the housing cover on to the wall socket until it clicks in position.

Normally, the synchronisation time is approx. 5 minutes but, depending on the local and structural conditions as well as the weather, can take up to 20 minutes.

4.8.4 Fitting the VRC 693 external sensor

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



Caution! **Material damage caused by improper installation!**

Incorrect fitting can cause damage to the unit and/or to the wall of the building, e.g. from dampness.

- Observe the cable routing described and the correct installation position of the external sensor.
- Drill the wall penetration with a slope to the outside.
- Run the connecting cable with a loop to catch drips.
- Pay attention to the sealing of the DCF external sensor.

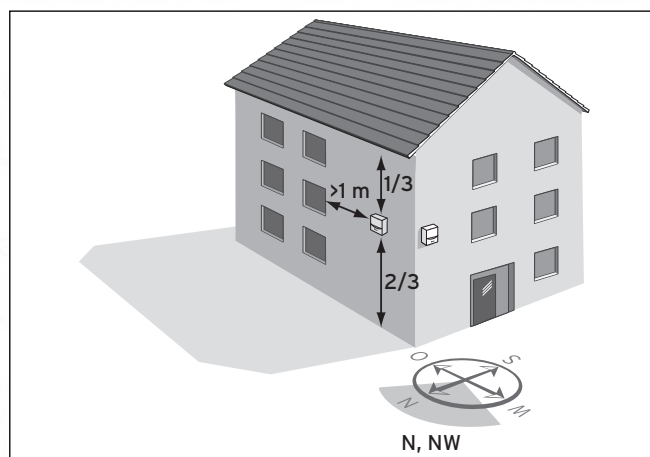


Fig. 4.8 Installation location for the VRC 693 external temperature sensor

It can be installed either in or on the wall, depending on the accessibility of the location.

4 Assembly

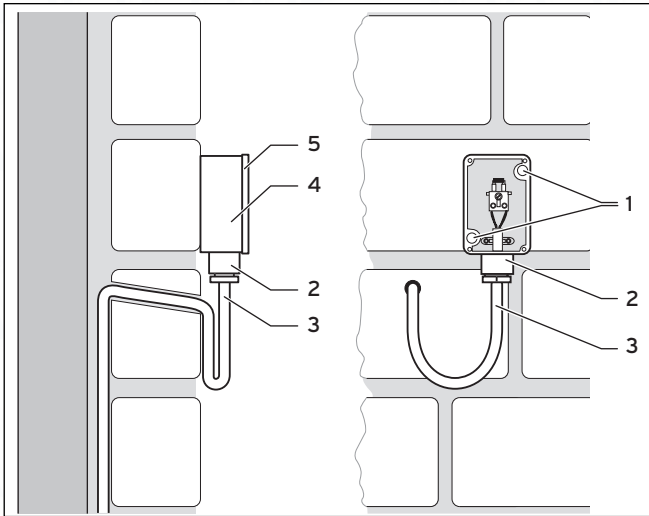


Fig. 4.9 Installation of the VRC 693 external sensor

Key

- 1 Mounting apertures
- 2 Cap nut for cable entry point
- 3 2-core connecting cable with loop to catch drips
- 4 Casing
- 5 Housing cover

- Carefully plan any holes required for fixing and cable routing before drilling them.
- Observe the requirements for the installation location (→Chap. 4.7)
- Remove the casing cover (5) from the external sensor.
- Mark the position on the wall. Observe the cable routing for the external sensor.
- Drill two holes 6 mm diameter to match the fixing apertures (1).
- Insert the wall plugs supplied.
- Route the connection cable (3) on the customer side with a slight incline to the outside and with a loop to catch drips.
- Fix the housing (4) with 2 screws through the fixing holes (1).
- Run the connecting cable on the customer side (3), using cable of at least 2 x 0.75 mm² cross-section.
- Pull the connecting cable in through the cable entry (2) from below.
- By careful work and by appropriate cable routing, ensure that the outside sensor and the building are both water-tight.
- The electrical installation is carried out as described in Chapter 5.4.
- Make sure that the seal is correctly seated in the cover of the housing (5).
- Press the cover (5) on to the housing (4).
- Fix the cover (5) to the housing (4) with the screws supplied.

5 Electrical installation



The electrical connection must be done by an accredited specialist company, which will be responsible for complying with the existing standards and guidelines.
We specifically draw your attention to VDE Regulation 0100 and the regulations of the relevant EVU.



Danger! **Danger to life from live connections!**

When working in the control cabinet of the boiler there is a danger to life from electric shock.

The mains switch does not disconnect the power supply completely.
Mains connection terminals L and N remain live even if the boiler main switch is turned off!

- Switch the power supply off before working on the unit.
- Secure the power supply against being switched on again.



Caution! **Material damage caused by short circuits!**

A maximum of 30 mm of the insulation may be removed from the ends of cables carrying mains voltage (230 V) when fitting the ProE plug. If more insulation is removed there will be a risk of short circuits on the circuit board if the cables are inadvertently connected improperly to the plug.

- Remove a maximum of 30 mm of insulation to fit the ProE plug.
- Take care to wire up correctly.



The nominal voltage of the mains must be 230 V. If the mains voltage is more than 253 V or less than 190 V, functional impairment is possible.

The unit must be connected to a permanent supply line and an isolating device with at least 3 mm contact separation (e.g. fuses, power switches).

- Observe the corresponding regulations.

5.1 Connecting a boiler without eBUS



Caution! **Malfunction caused by incorrect wiring!**

If more than two boilers without eBUS are to be connected, all the boilers must be connected via the VR 30 bus coupler. Terminals 7/8/9 are not activated.

- Connect all the boilers via a VR 30 bus coupler.

- Open the control box of the boiler as described in the installation instructions.

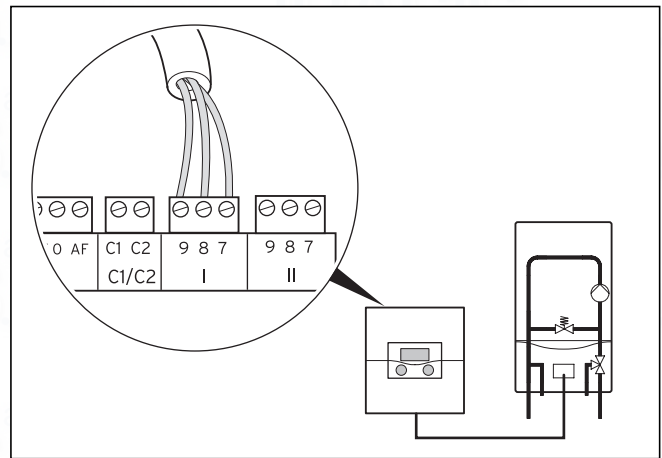


Fig. 5.1 Connecting the boiler

- Carry out the wiring of the boiler with the connecting cable (min. 3x 0.75 mm²) (→ **Fig. 5.1**).
- Connect the mains feed from the boiler to the wall mount with a mains cable.



The VRC 630 has a mains switch which can be used to switch off the internal electronics and all connected actuators (pumps, mixers) for testing or maintenance purposes.

If the maximum total current of 6.3 A or the maximum contact load of 2 A is exceeded within the system, the consumer(s) must be wired via a contactor.

5 Electrical installation

5.2 Connecting a boiler with eBUS

- Open the control box of the boiler as described in the installation instructions.

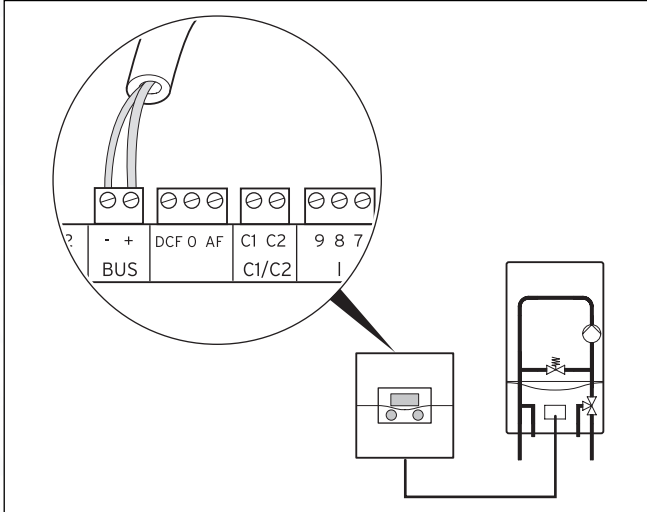


Fig. 5.2 Connecting the boiler



The controller has a mains switch which can be used to switch off the internal electronics and all connected actuators (pumps, mixers) for testing or maintenance purposes.

If the maximum total current of 6.3 A or the maximum contact load of 2 A is exceeded within the system, the consumer(s) must be wired via a contactor.

External units or units (up to six are possible) which are activated in stages can each be connected via a VR 31 bus coupler.



Caution!

Malfunction caused by incorrect wiring!

The eBUS connection must be used on boilers with eBUS, as the system will not function otherwise.

- Do not use terminals 7/8/9 in parallel with eBUS.

- With cascades, connect all the other boilers via a VR 32.
- Enter the corresponding unit number on the address switch in the VR 32 bus coupler.
 - Example: "2" for the 2nd boiler,
 - "3" for the 3rd boiler, etc.



Caution!

Malfunction caused by incorrect polarity!

Incorrect polarity prevents communication via the eBUS and can result in a short circuit. The controller will no longer be able to control the heating installation.

- Pay attention to the correct polarity.

- Wire up the connections to the boiler as shown in Fig. 5.2.
The eBUS line (at least 2x 0.75 mm²) must be supplied by the customer.

5.3 Wiring

The controller detects the sensors automatically. The connected heating appliances are configured automatically.

Any connected heating circuits must be configured manually in accordance with the system combination.

- Wire the components according to the corresponding wiring diagram.



Potential loss of comfort.
The target room temperature might not be reached.

- Connect sensor VF1 to measure the common flow temperature.
- Always connect sensor VF1 in cascade installations.

When a circulation pump is connected in a mixer circuit which has been reconfigured as a cylinder charging circuit, the circulation pump always has the same timer programme as the reconfigured mixer circuit.

Cylinder charging circuits and connected circulation pumps always have the same operating mode. That is, the operating mode which is set for the cylinder charging circuit also applies in general for the circulation pump.

When used with a VIH-RL, the VIH-RL connection terminals on the circulation pump must be used, as the VIH-RL takes over all the hot water functions.

5.3.1 Connecting a mixer circuit as a cylinder charging circuit

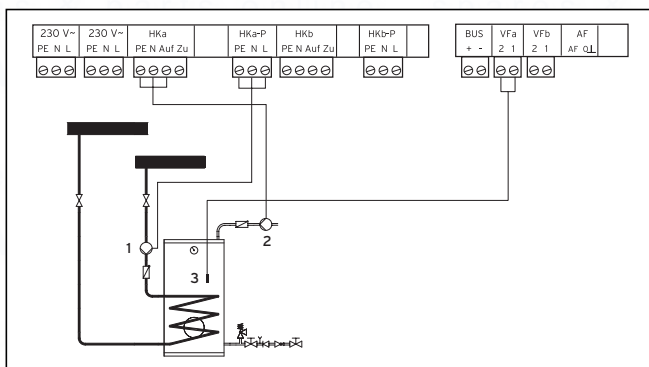


Fig. 5.3 Connecting a mixer circuit as a cylinder charging circuit

Key

- 1 Cylinder charging pump
- 2 Circulation pump
- 3 Cylinder sensor

Any mixer circuit in the system can be used alternatively as a cylinder charging circuit.

- Wire the mixer circuits as shown in Fig. 5.3.

5.3.2 Peculiarities of the circulation pump connection

The controller has a separate connection for a circulation pump. This circulation pump is assigned to the cylinder charging circuit which has not been reconfigured. A settable timer programme, independent of the cylinder charging programme, can be used for this circulation pump.

5 Electrical installation

5.3.3 Inputs for special functions

The controller has special inputs (→**Fig. 4.4**), which can be used for special functions if necessary.

Circulation pump input 1xZP

You can connect a floating pushbutton to the **1xZP** input.

When the button is operated briefly, the circulation pump is run for a fixed period of 5 minutes, independently of any set timer programme.

TEL input

You can connect a floating contact (switch) to this input.

When the switch is operated, the operating mode of the connected heating circuits, hot water circuits and the circulation pump is changed, depending on the setting in Menu **C9**.

If you connect a teleSWITCH (accessory) to this input, the operating mode of the connected heating circuits, hot water circuits and the circulation pump can be changed remotely over the telephone network, depending on the setting in Menu **C9**.

5.3.4 Connector assignment

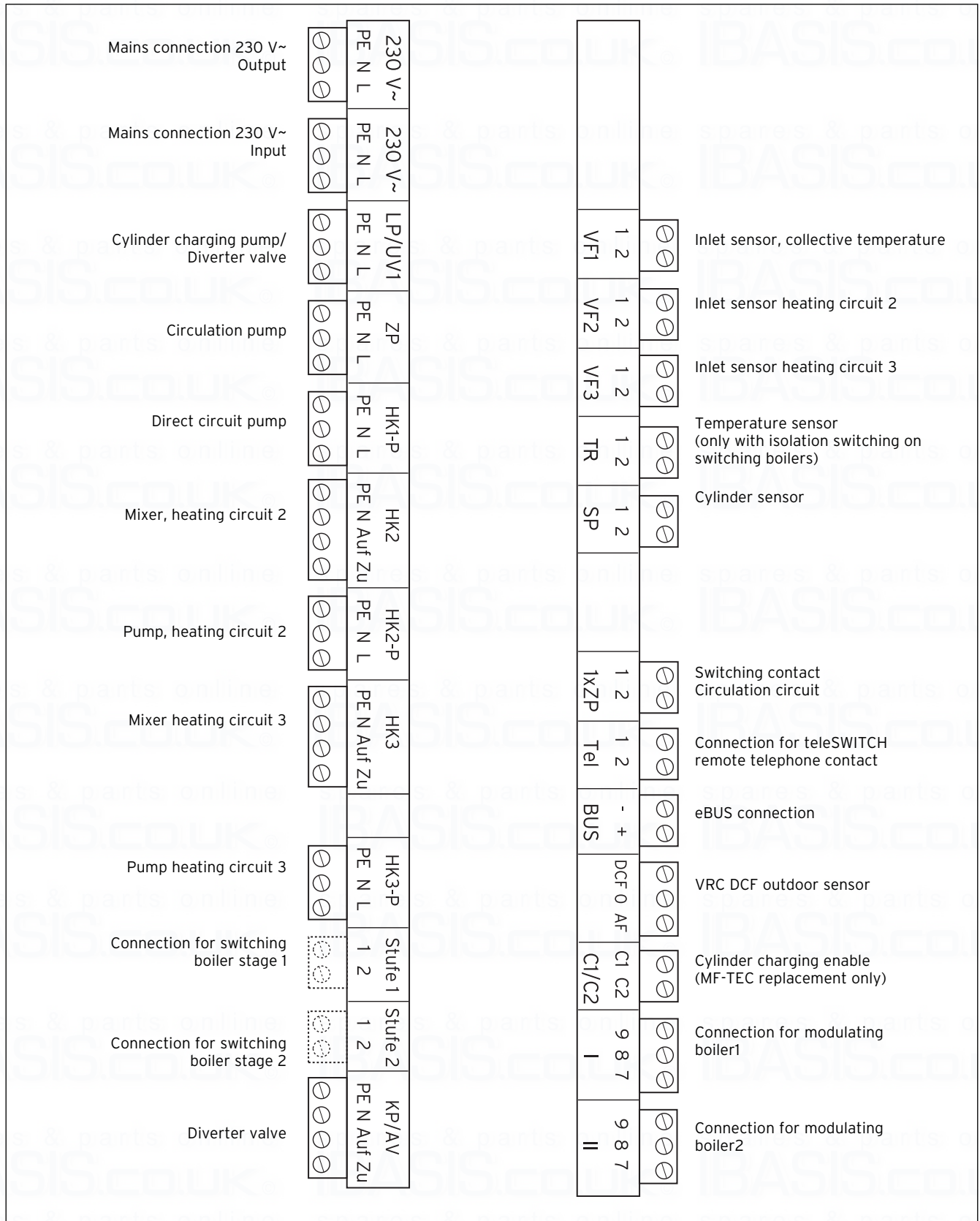


Fig. 5.4 Connector assignment

5 Electrical installation

5.3.5 Peculiarities if a domestic hot water cylinder is connected

Example 1

If a DHW cylinder is connected directly to the boiler, note that:

In Installation Assistant Menu **A5**:

- with a boiler, the **Preference** parameter or
 - with a cascade, the **Rev. seq. control** parameter
- is always set to **Yes**. Only in this way can trouble-free operation be guaranteed.

This does not apply to additional reconfigured hot water circuits which are incorporated after the low-loss header.

The heating system consists of:

- 1 heat source
(e.g. wall mounted gas boiler, connection via eBUS)
- 1 DHW cylinder
- 1 uncontrolled heating circuit
(direct circuit, control via remote control device)
- 2 controlled heating circuits
(2 underfloor circuits, control via remote control devices)

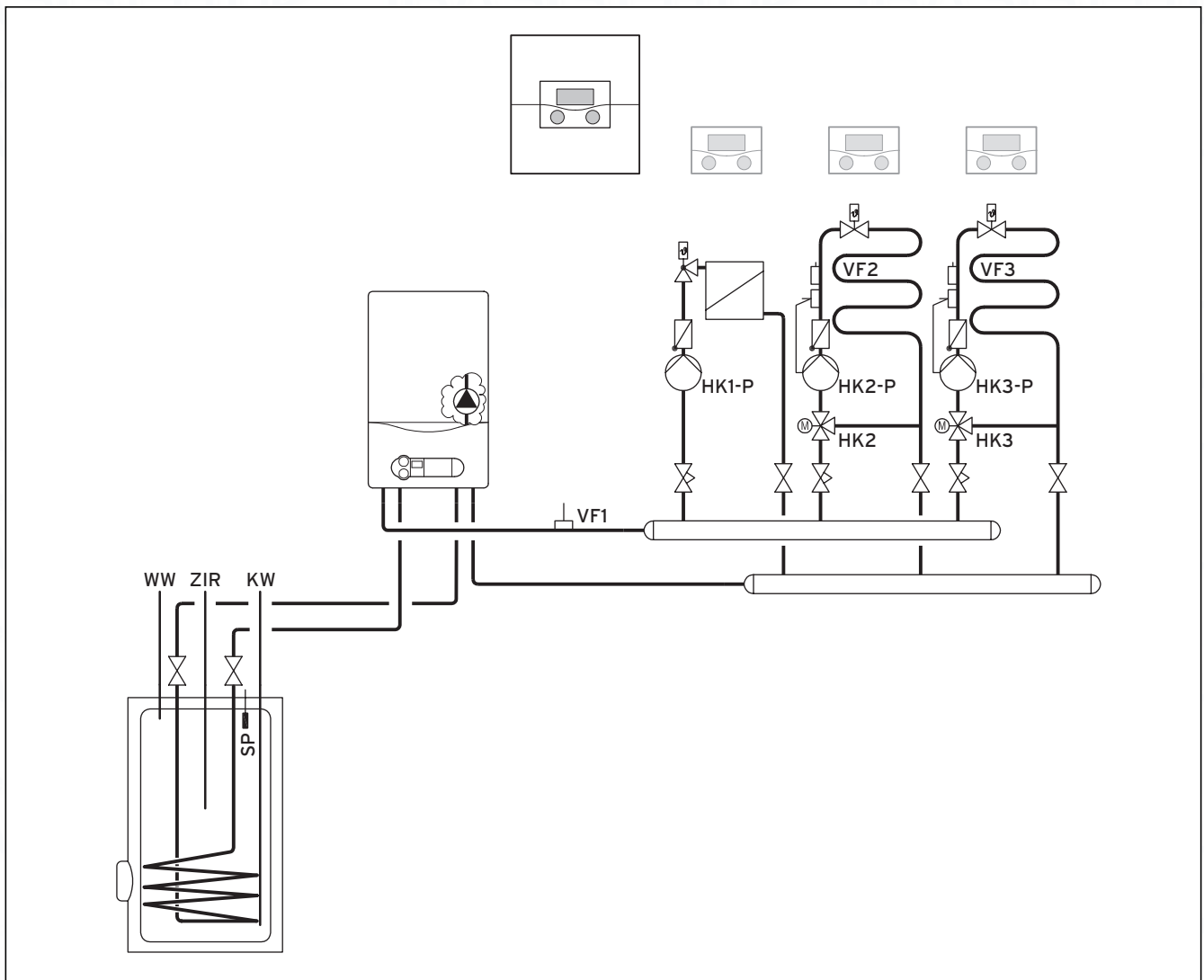


Fig. 5.5 Wall-mounted boiler with VRC 630

Key

WW	DHW cylinder
ZIR	Circulation pump
SP	Cylinder sensor
KW	Cold water
VF1	Flow sensor 1
VF2	Flow sensor 2
VF3	Flow sensor 3
HK1-P	Heating circuit pump 1
HK2-P	Heating circuit pump 2
HK3-P	Heating circuit pump 3
HK2	Mixer
HK3	Mixer



Caution - illustration shows principle only!
This system schematic does not include all the shut-off and safety devices necessary for professional assembly. System-specific planning is required!

5 Electrical installation

Example 2

If the DHW cylinder is installed downstream of the low-loss header, you will have to set the **Rev. seq. control** parameter in Installation Assistant Menu **A5** to **No**.

- On boilers with a priority switching valve for hot water generation installed, unplug the connector to the valve.

The heating system consists of:

- 4 heat sources (e.g. 4 wall mounted gas boilers, connection via eBUS)
- 1 DHW cylinder
(connected downstream of the low-loss header)
- 1 uncontrolled heating circuit
(direct circuit, control via remote control device)
- 4 controlled heating circuits (4 underfloor circuits, control via remote control devices)

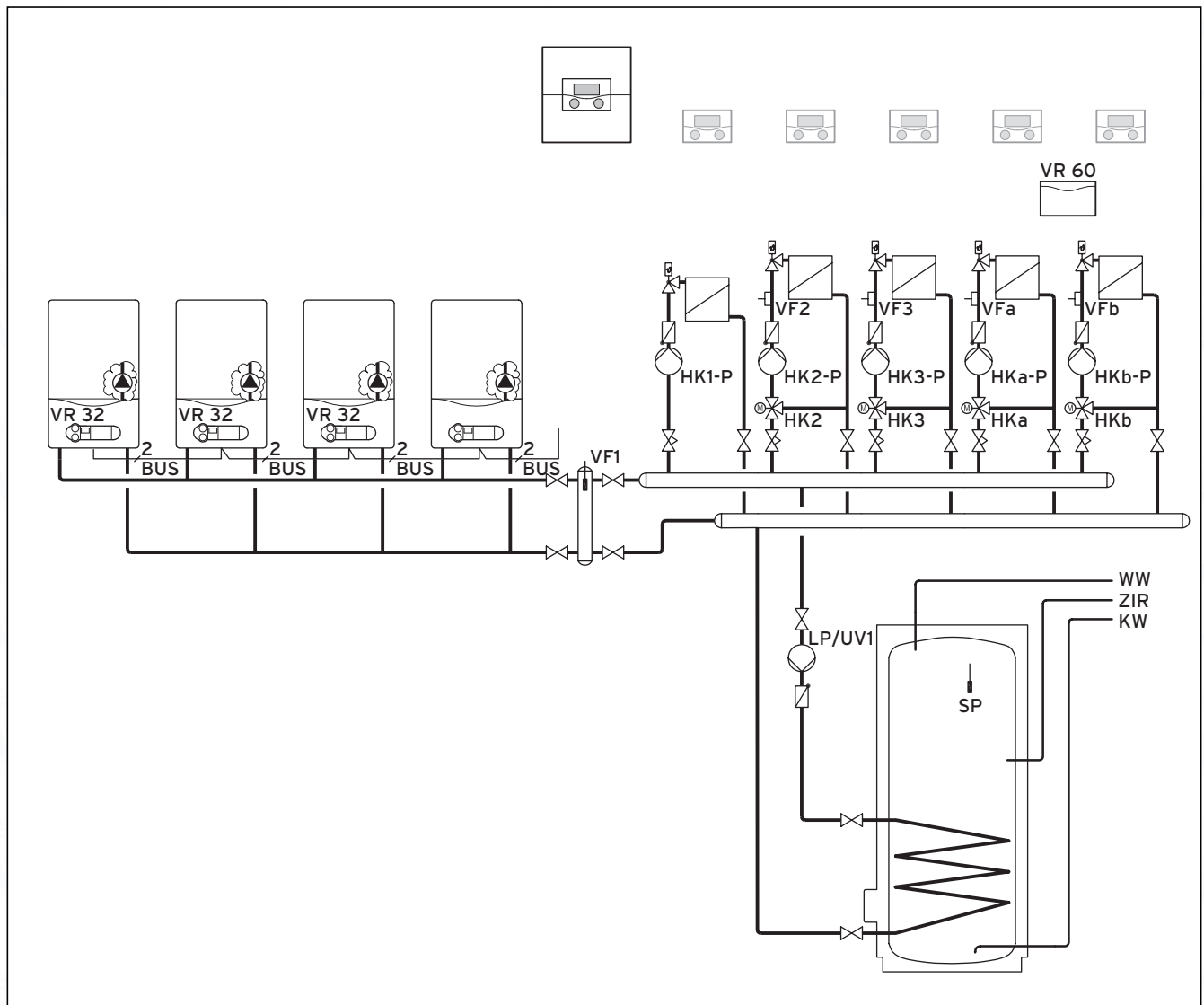


Fig. 5.6 Wall-mounted boilers with VRC 630 VIH downstream of low-loss header

Key

VR 32	VR 32 bus coupler
VR 60	VR 60 mixer module
BUS	eBUS
WW	DHW cylinder
ZIR	Circulation pump
SP	Cylinder sensor
KW	Cold water
VF1	Flow temperature sensor
VF2	Flow temperature sensor, Heating circuit 2
VF3	Flow temperature sensor, Heating circuit 3
VF a	Flow temperature sensor, Mixer circuit a
VF b	Flow temperature sensor, Mixer circuit b
HK1-P	Pump for direct circuit
HK2-P	Pump for heating circuit 2
HK3-P	Pump for heating circuit 3
HK a-P	Heating pump for mixer circuit
HK b-P	Heating pump for mixer circuit
HK 2	Mixer for heating circuit 2
HK 3	Mixer for heating circuit 3
HK a	Mixer for mixer circuit a
HK b	Mixer for mixer circuit b
LP/UV1	cylinder charging pump/Diverter valve



Caution - illustration shows principle only!
This system schematic does not include all the shut-off and safety devices necessary for professional assembly. System-specific planning is required!

You can connect the first boiler directly to the eBUS on the controller. Note the polarity when doing this.

From the second boiler onwards, a bus coupler is necessary.

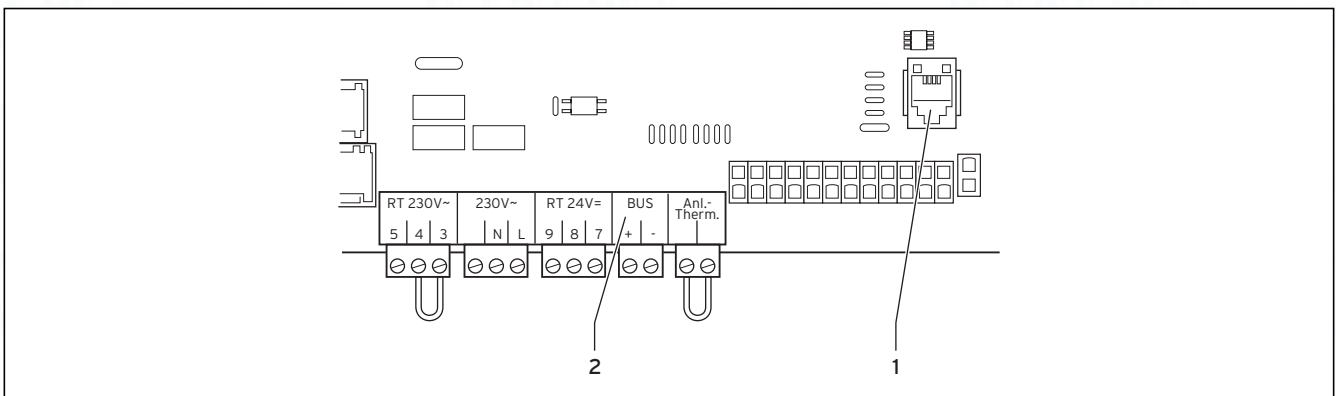


Fig. 5.7 E-box for connecting the VR 32 bus coupler

Key

- 1 eBUS interface to the VR 32 bus coupler
- 2 eBUS (only use without the VR 32 for the first boiler)

► Take note of the VR 32 bus coupler manual.

5 Electrical installation

Example 3

The heating system consists of:

- 1 heat source (e.g. 2 icoVIT floor standing boilers, connection via eBUS)
- 1 domestic hot water cylinder
- 1 uncontrolled heating circuit (direct circuit, control via remote control device)
- 2 controlled heating circuits (2 radiator circuits, control via remote control devices)

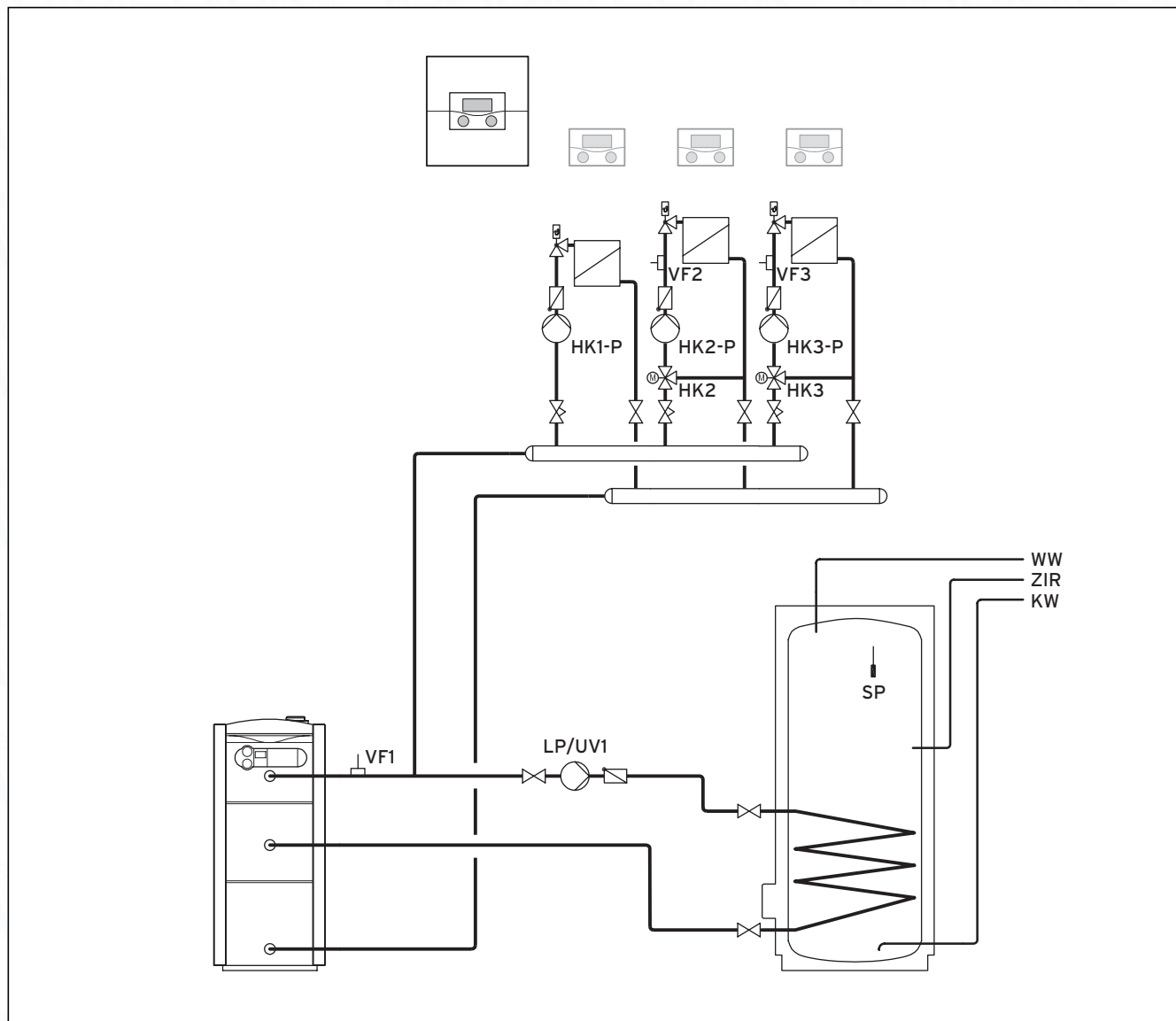


Fig. 5.8 VRC 630 floor-standing unit 1

Key

WW	DHW cylinder
ZIR	Circulation pump
SP	Cylinder sensor
KW	Cold water
VF 1	Flow temperature sensor
VF 2	Flow temperature sensor, Heating circuit 2
VF 3	Flow temperature sensor, Heating circuit 3
HK1-P	Pump for direct circuit
HK2-P	Pump for heating circuit 2
HK3-P	Pump for heating circuit 3
HK2	Mixer for heating circuit 2
HK3	Mixer for heating circuit 3
LP/UV1	cylinder charging pump/Diverter valve



Caution - illustration shows principle only!
This system schematic does not include all
the shut-off and safety devices necessary for
professional assembly. System-specific plan-
ning is required!

5 Electrical installation

Example 4

The heating system consists of:

- 1 heat source
(e.g. 1 ecoCRAFT floor-standing unit)
- 1 DHW cylinder
- 1 uncontrolled heating circuit (direct circuit, control via remote control device)
- 1 controlled heating circuit (1 radiator circuit, control via remote control device)

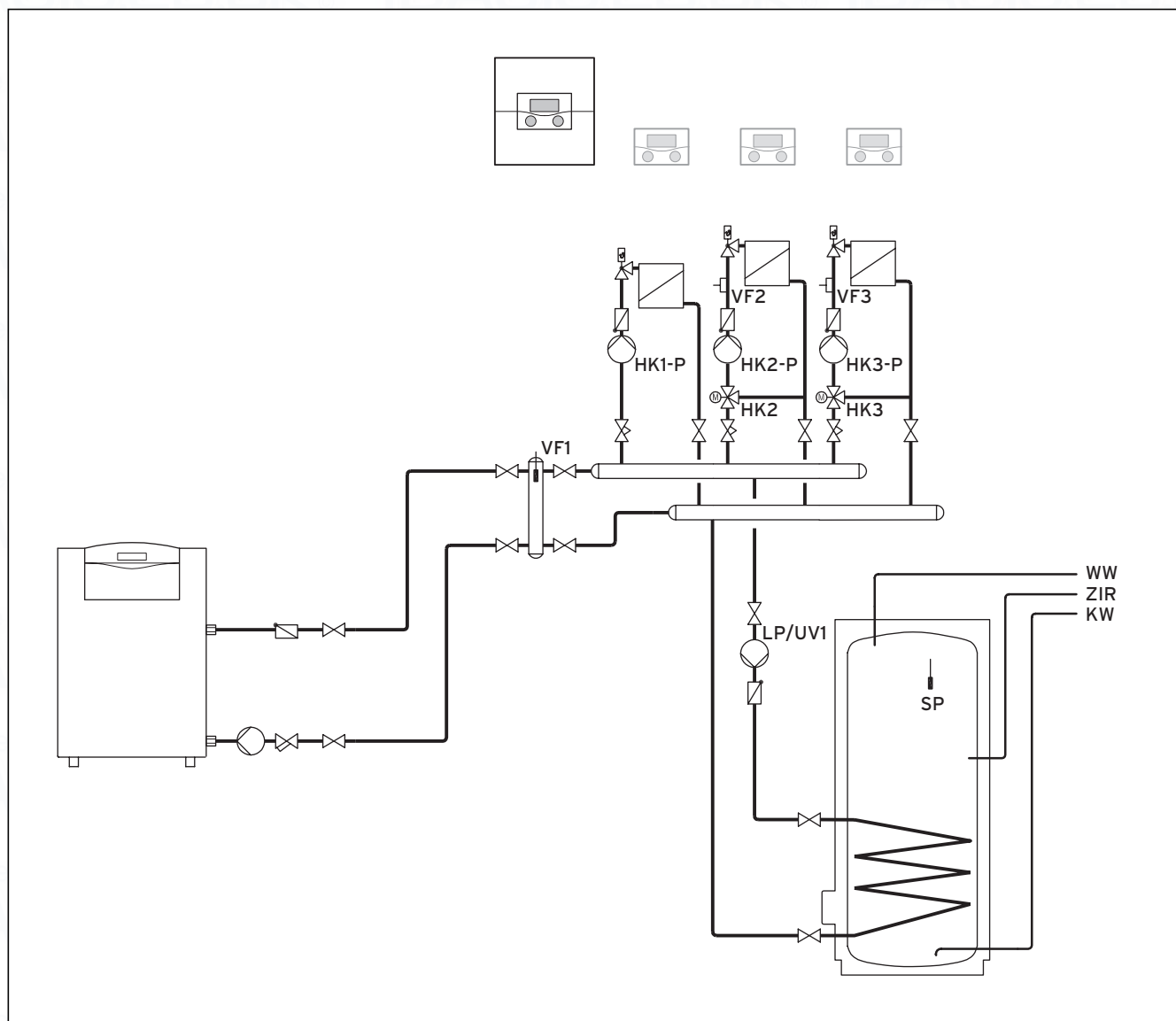


Fig. 5.9 VRC 630 with an ecoCRAFT

Key

WW	DHW cylinder
ZIR	Circulation pump
SP	Cylinder sensor
KW	Cold water
VF 1	Flow temperature sensor
VF 2	Flow temperature sensor, Heating circuit 2
VF 3	Flow temperature sensor, Heating circuit 3
HK1-P	Pump for direct circuit
HK2-P	Pump for heating circuit 2
HK3-P	Pump for heating circuit 3
HK2	Mixer for heating circuit 2
HK3	Mixer for heating circuit 3
LP/UV1	cylinder charging pump/Diverter valve



Caution - illustration shows principle only!
This system schematic does not include all
the shut-off and safety devices necessary for
professional assembly. System-specific plan-
ning is required!

5 Electrical installation

Example 5

The heating system consists of:

- 2 heat sources (e.g. ecoCRAFT)
- 1 VR 60 mixer circuit module
- 1 DHW cylinder
- 1 uncontrolled heating circuit (direct circuit, control via remote control device)
- 2 regulated heating circuits (1 floor circuit, 1 radiator circuit, control via remote control device)

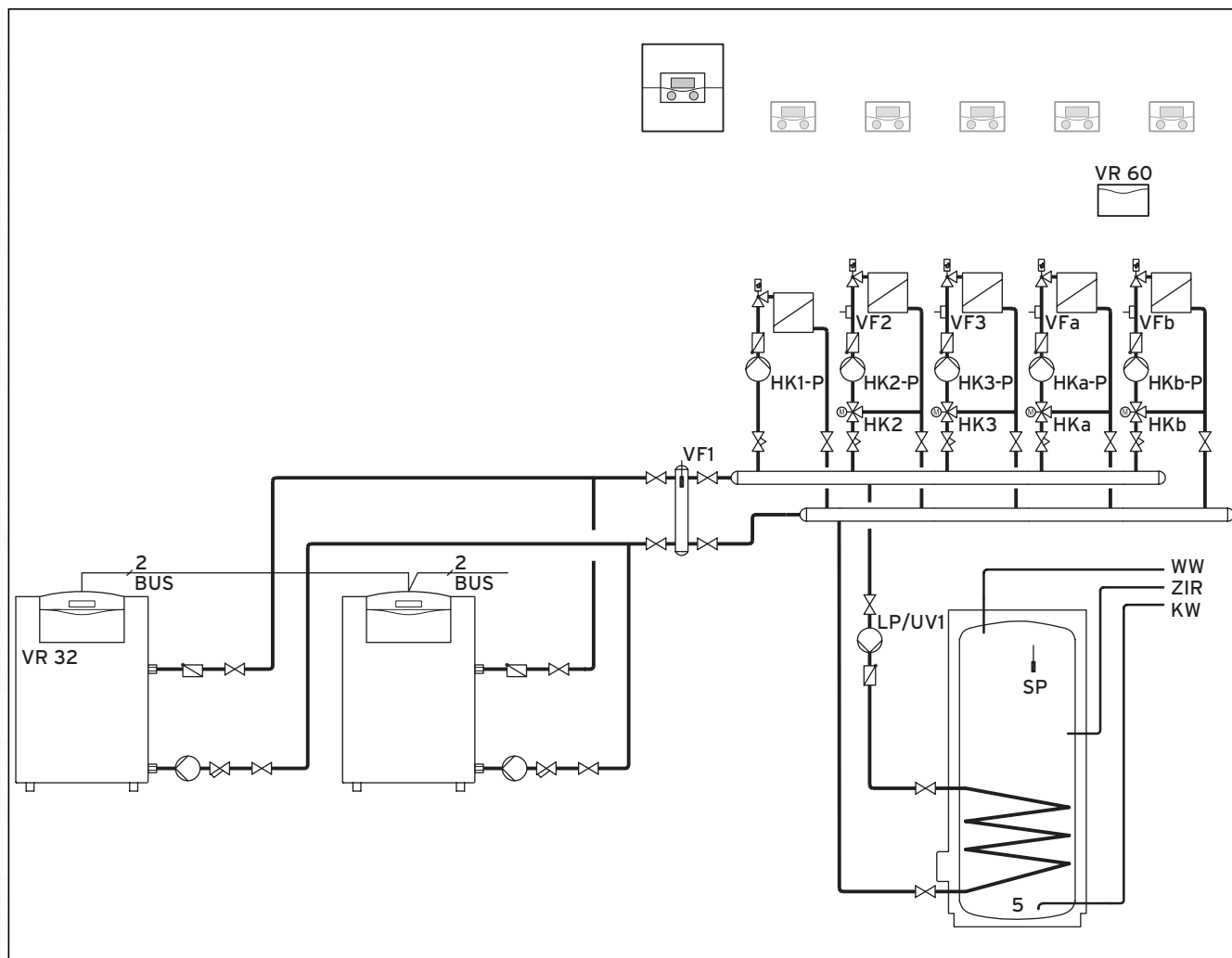


Fig. 5.10 VRC 630 with two ecoCRAFTs

Key

VR 32	VR 32 bus coupler
VR 60	VR 60 mixer module
BUS	eBUS
WW	DHW cylinder
ZIR	Circulation pump
SP	Cylinder sensor
KW	Cold water
VF 1	Flow temperature sensor
VF 2	Flow temperature sensor, Heating circuit 2
VF 3	Flow temperature sensor, Heating circuit 3
VF a	Flow temperature sensor, Mixer circuit a
VF b	Flow temperature sensor, Mixer circuit b
HK1-P	Pump for direct circuit
HK2-P	Pump for heating circuit 2
HK3-P	Pump for heating circuit 3
HK a-P	Heating pump for mixer circuit
HK b-P	Heating pump for mixer circuit
HK 2	Mixer for heating circuit 2
HK 3	Mixer for heating circuit 3
HK a	Mixer for mixer circuit a
HK b	Mixer for mixer circuit b
LP/UV1	cylinder charging pump/Diverter valve



Caution - illustration shows principle only!
This system schematic does not include all the shut-off and safety devices necessary for professional assembly. System-specific planning is required!

5.4 Connecting the DCF receiver



Caution! Malfunctions caused by incorrect installation!

Any external sensor connected to the boiler will be ignored.

- Connect the external sensor to the controller.

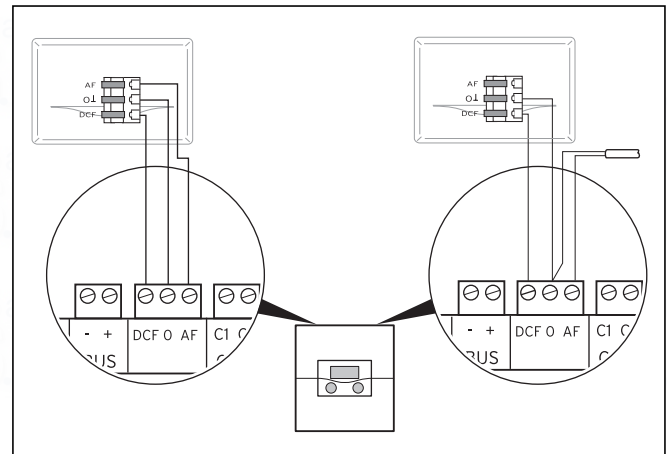


Abb. 5.11 Connecting the DCF receiver

left: with the external sensor (VRC DCF) supplied,
right: special solution with the VRC 693 external sensor

If no radio signal can be received at the location where the external sensor is installed, a solution using the VRC 693 external sensor is required.

- Connect the external sensor to the controller.
- Wire the DCF receiver as shown in Fig. 5.11.

If you have fitted the VRC DCF external sensor, note that:

- Normally, the synchronisation time for radio reception is approx. 5 minutes but, depending on the local and structural conditions as well as the weather, can take up to 20 minutes.

5 Electrical installation

5.5 Connecting accessories

The following accessories can be connected:

- Up to eight remote control devices to control the first eight heating circuits.
- Up to six mixer modules to extend the system by 12 system circuits (factory pre-set as mixer circuits).

5.5.1 Connecting the remote control device

The remote control devices communicate with the heating controller via eBus. They can be connected to any interface in the system. It simply has to be ensured that the bus interfaces are eventually connected to the central controller.

The structure of the Vaillant system allows you to run the eBus from component to component (→**Fig. 5.8**). This means that the cables can be interchanged without impairing communication.

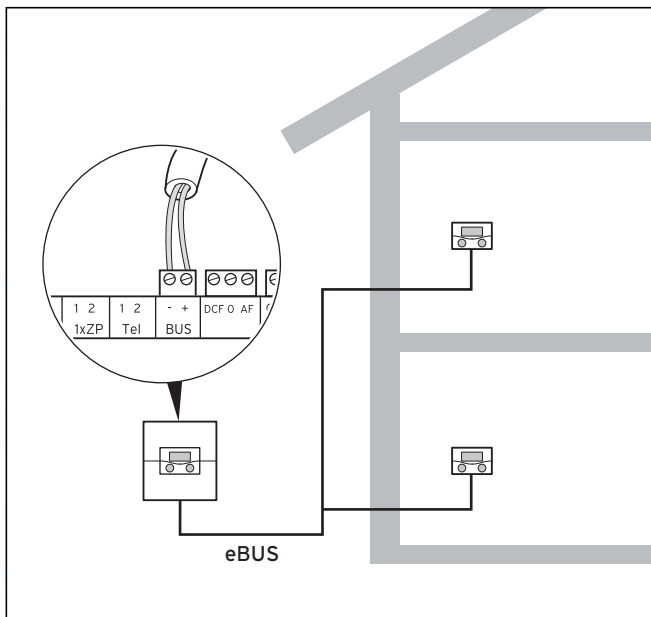


Fig. 5.12 Connecting remote control devices

All eBus connector plugs are designed to allow you to wire at least 2 x 0.75 mm² per connection lead. We therefore recommend using 2 x 0.75 mm² for the eBus lines.

5.5.2 Connecting further mixer circuits

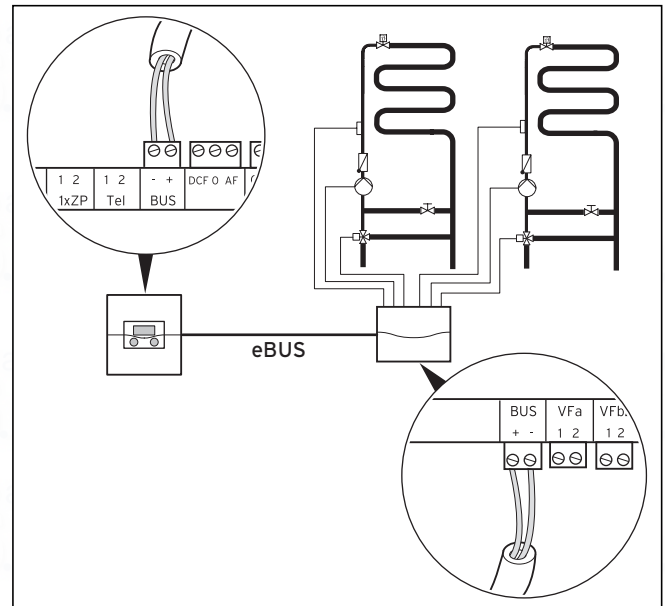


Fig. 5.13 Connecting further mixer circuits

Even the communication with the mixer modules takes place only via the eBUS. The system structure is shown in Fig. 5.13.

- When installing, observe the same procedure as for connecting the remote control units.

5.6 Connecting several heaters (cascade)

The control system permits a cascade connection of up to:

- 8 boilers via VR 30 or VR 32 bus couplers
or
- 6 boilers via VR 31 bus couplers
within a system.

5.6.1 Connecting modulating heating appliances without eBUS

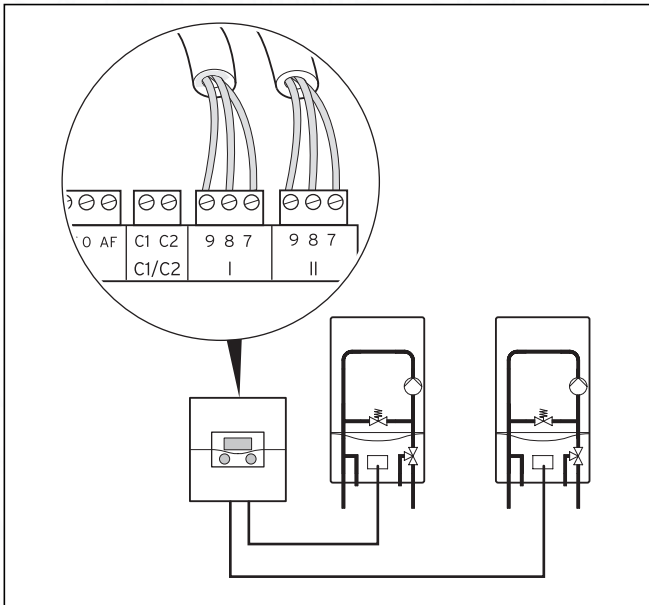


Fig. 5.14 Connecting a double cascade

If three or more boilers are to be connected, the use of VR 30 modulating bus couplers is required.

- Connect a double cascade directly to the wall mount (→Fig. 5.14).

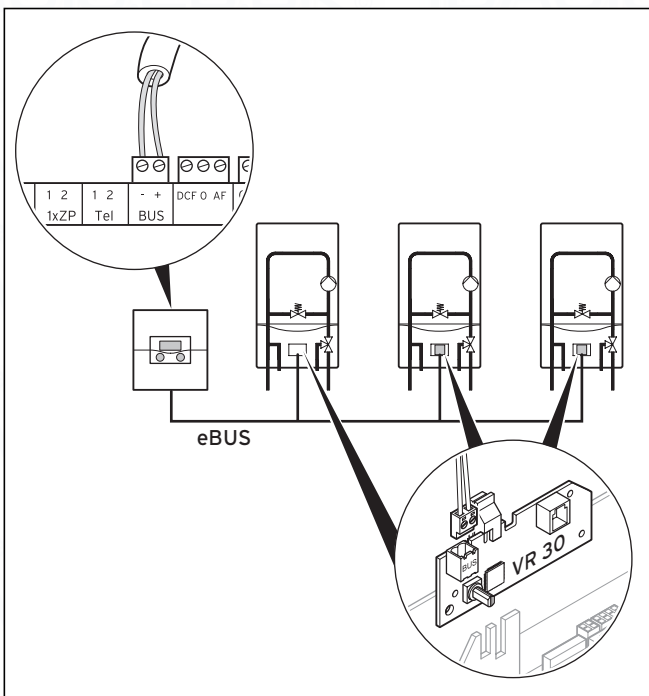


Fig. 5.15 Connecting more than 2 heaters in cascade

If more than two boilers are to be connected in a cascade, a VR 30 modulating bus coupler (accessory) is required for each boiler.

Install the bus coupler directly into the boiler (following the instructions enclosed with the coupler).

5.6.2 Connecting several modulating heating appliances with eBUS

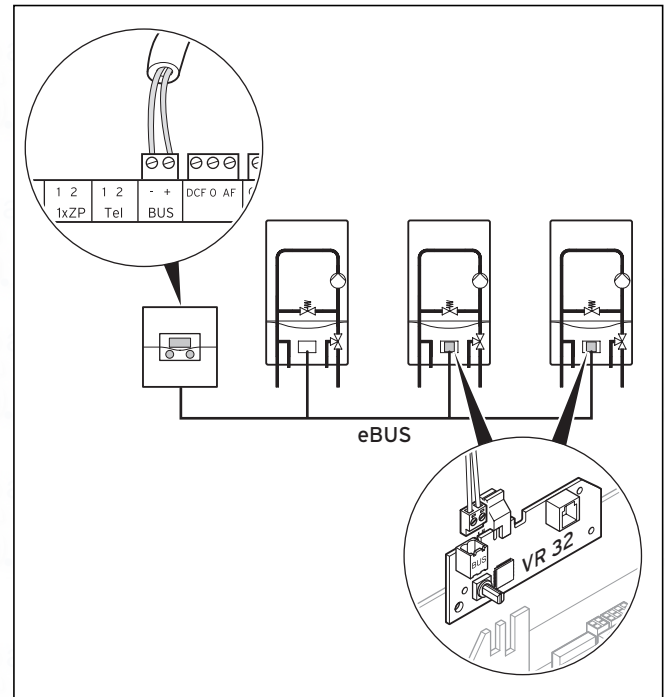


Fig. 5.16 Connecting more than 2 boilers in cascade

- Connect the first boiler directly via eBUS.
- Pay attention to the correct polarity.
- From the 2nd eBUS boiler onwards, use a VR 32 modulating bus coupler for the connection.



VR 31, VR 32 and VR 30 bus couplers cannot be mixed in use.

- Use either VR 31 or VR 32 or VR 30 bus couplers throughout.
- Make sure that terminals 7/8/9 on the controller are not connected to anything.

5 Electrical installation

5.6.3 One and two stage heating appliances

VR 31 switching bus couplers must be used if more than one one-stage or two-stage heating appliance is connected. One bus coupler is required for each of the appliances to be connected.

- Fit the bus coupler to the boiler connecting block.

If this is not possible:

- Install a wall mounting box.
The wall mounting box must be provided by the customer.
- Fit the bus coupler in the wall mounting box.

Up to six
VR 31 modules can be used.

5.7 Completing the electrical installation of the controller

- Pass the cables carrying low voltage (e.g. sensor lines) behind the wall mount and through the upper cable aperture (→ **Fig. 4.3, (6)**).
- Pass the cables carrying mains voltage (230 V) through the lower cable duct (→ **Fig. 4.3, (4)**).
- Fix all cables with the accompanying cable clamps (→ **Fig. 4.3, (5)**).
- Fit the housing cover (→ **Fig. 4.2, (2)**).
- Connect the controller to the power supply.

6 Start-Up



Take note of the manuals for the boilers during commissioning.

- Note that during commissioning, the first thing the controller does is to perform an automatic system configuration. All the connected system components, including the heat sources, are activated sequentially and automatically detected.

Preparatory steps

You must carry out the following steps so that the controller can detect all the connected system components, including the heat sources, and perform a full system configuration:

- Start up the heat source(s) and all the system components (e.g. VR 60 mixer modules).

The following does not apply if atmoVIT, atmoCRAFT, iroVIT or ecoVIT are in use:

- On boilers with an integral pump, set the Charge Pump Overrun to the maximum value by setting diagnostic point **d.1** on the boiler to "-".

The following applies only to cascade systems but not where atmoVIT, atmoCRAFT, iroVIT or ecoVIT are in use:

- Set the maximum burner anti-cycling time by setting diagnostic point **d.2** on the boiler to 5 minutes.
- If diagnostic point **d.14** is available (depends on the boiler variant):
Select an uncontrolled pump characteristic which corresponds to the heating installation at boiler diagnostic point **d.14**.

6.1 Switching on the controller



Caution!

Material damage caused by frost!

The frost protection function is only active when the controller is switched on.

- Never switch the controller off when there is a risk of frost.
- Set the main switch on the controller to the "I" position.



If the external sensor on the heating installation is unable to receive a DCF signal, you will have to set the time and date manually after switching on the controller.

- Make sure that the time and date are set correctly so that the preset timer programmes and holiday programme will work correctly and the next servicing appointment can be monitored.

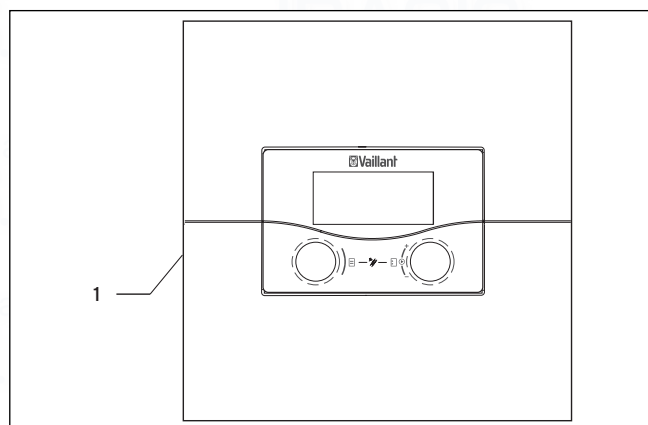


Fig. 6.1 Switching the controller on/off

Key

- 1 Rocker switch

- Press the rocker switch (1) to switch the controller on/off.

6 Start-up

6.2 Automatic initial start-up

When the controller is switched on, the Installation Assistant starts automatically, analyses the system configuration and displays Menu **A1** for language selection (→ Chap. 7.4.1).

- Check and, if necessary, change the language setting in Menu **A1** (→ Chap. 7.4.1).

Configuration of the heating installation

- Check and, if necessary, change the system configuration in Menu **A4** (→ Chap. 7.4.2).

Setting the number and type of boilers (→ Chap. 7.4.2)

Installation Assistant	A4
System configuration	
Number of boilers	▶ 1
Boilers are	modulated
Boilers on	7-8-9
>Select	

Adjustable Parameters	Remarks	Setting range
Number of boilers	(only if no bus coupler has been detected)	1 or 2
Boilers are	(only if VR 31 detected)	1-stage or 2-stage
Boilers on		Stage 1-2 or 7, 8, 9

Table 6.1 Boiler configuration

- Turn the left hand  knob until Menu **A4** is displayed.
- If the automatic system configuration does not automatically detect the connected heat sources and the number of stages in a cascade system, then set the parameters manually.

Setting the preference

- Check and, if necessary, change the system configuration in Menu **A5** (→ Chap. 7.4.3).

Installation Assistant	A5
System configuration	
Preference	▶ No
> Select	

- Turn the left hand  knob until Menu **A5** is displayed.
- Make all the necessary settings.

Determining the type of use of the heating circuits (→ Chap. 7.4.4)

- Check and, if necessary, change the type of use of the heating circuits in Menu **A6** (→ Chap. 7.4.4).

Installation Assistant	A6
System configuration	
HK1	▶ Direct circuit
HK2	Mixer circuit
HK3	Mixer circuit
Cylinder	Cyl. charging circuit
>Select	

Adjustable Parameters	Remarks	Setting range
HK1		Direct circuit, disabled
HK1	detected by the automatic system configuration, setting can be changed	Direct circuit or mixer circuit/fixed value/return boost/cylinder charging circuit/disabled
Cylinder		cylinder charging circuit, disabled

Table 6.2 Type of use

- Turn the left hand  knob until Menu **A6** is displayed.
- Disable all the circuits that are not in use.
- Set the heating circuit type for the connected circuits.

Depending on this setting for each heating circuit, only the values and parameters that are of significance for the selected circuit type will be displayed in all the menus.

- Check in Menu **A7** (→ **Chap. 7.4.4**) that all the actuators and sensors are connected properly and are working correctly.

Installation Assistant		A7
Component	► VRC 630	
Actuators	Off	
Sensors	VF1	60°C
Heater	Off	
> Select		

- Turn the left hand  knob until Menu **A7** is displayed.
- At **Component**, select in sequence all the connected modules that permit an actuator/sensor test.
- At **Actuators**, activate the actuators directly. You can, for example:
drive a mixer in the **OPEN** direction and check that it is connected the right way round or
activate a pump and check that it starts up.
- Only the activated actuator is active; all the other actuators are "switched off" at this time.
-
- At **Sensors** you can read the measured values from individual components and check whether the sensor is providing the expected value (temperature, pressure, flow rate ...).
- At **Heating Appliance** you can start up the individual boilers in the cascade and check that the components are wired correctly.
- If all the heating circuits and cylinders are fully present and the parameters correctly set, confirm the **Installation completed?** parameter in Menu **A8** with **Yes**.



Menu **A8** only appears during the initial start-up.

If further settings are required for the system configurations, then:

- Turn the left hand  knob until Menu **8** is displayed.
- In Menu **8**, enter the access code to enable the Installer level.

If you now wish to check, set or optimise other parameters, then note the following:

- Information about operating controls, operating concept, menu types, etc. can be found in Chapter 3.
- The parameters you can set and optimise in the Operator level are described in Chapter 7.1. An overview of these parameters can be found in the appendix (→ **Table 13.5**).
- The parameters you can set and optimise in the Installer level are described in Chapter 7.3. An overview of these parameters can be found in the appendix (→ **Table 13.4**).

6.3 Protecting the Installer level from unauthorised access



Caution!

Material damage caused by inappropriate changes!

Incorrectly set parameters can cause material damage to the heating installation. Only competent persons may set the parameters in the Installer level.

- After the initial installation, set an access code to protect the Installer level from unauthorised enabling.

Code level enabling	 8
Code number:	0 0 0 0
Standard Code:	1 0 0 0
>Adjust numeric character	

Menu **8** completes the Operator level.



When the standard code is displayed, the operator can enable the Installer level after entering the standard code - 1000 - and change the system-specific parameters.

- After the initial installation, set a new access code in Menu **C11** so that the standard code will no longer be effective.
- Make a note of the new access code before you save it.

After the access code has been saved in Menu **C11**, the standard code will no longer be displayed in Menu **8**. The Installer level is permanently protected from unauthorised access.

6.4 Data transfer

Data transfer only takes place if the heating installation is fitted with the VRC DCF external sensor (→ **Table 1.1**, Part No.).

Depending on the conditions on site, it can take up to 15 minutes for all the data (outside temperature, DCF, appliance status etc.) to be updated.

7 Operating the controller

7 Operating the controller

7.1 Basics of operation

7.1.1 Operating the controller

You can operate the controller with the two  and  knobs:

When you rotate the knobs (→ **Fig. 3.5, Item 2, 3**) they can be felt clicking into the next position. One click takes you one position forwards or backwards in the menu, depending on the direction of rotation. In the parameter setting area, the value is increased or reduced depending on the step size, the range and the direction of rotation.

In general, the following operating steps are necessary for Menus  1 to  7:

- Select the menu (→ **Chap. 7.1.2**).
- Select and mark the parameter (→ **Chap. 7.1.3**).
- Set and save the parameter (→ **Chap. 7.1.4**).

As the special functions can only be called up from the basic display, there is a special operating sequence (→ **Chap. 7.7**).

7.1.2 Selecting a menu

An overview of all the menus can be found in Figs. 3.6 and 3.7.

All the menus are arranged linearly and are described in this sequence.



The basic display is the controller's standard display. The controller shows the basic display automatically after a period of no operation (min. 15 minutes).



- Turn the left hand  knob until the desired menu is displayed.

7.1.3 Selecting and marking parameters



- Turn the right hand  knob until the cursor  is pointing to the parameter that you wish to change.



- Press the right hand  knob. The parameter is marked and can be set.

7.1.4 Setting parameter values



You can only set a parameter that has been marked (→ Chap. 7.1.3).



- Turn the right hand  knob to change the value of the selected parameter.



- Press the right hand  knob to save the changed value.

How to set specific parameters is described from Chapter 7.2 onwards (→ **Chap. 7.2 to 7.4**).

7.1.5 Calling up special functions

As the special functions can only be called up from the basic display, there is a special operating sequence (→ **Chap. 7.7**).

7.2 Setting and optimising parameters in the Operating level

7.2.1 Setting the operating mode and the target room temperature



Danger!

Risk of being scalded by hot water!

There is a danger of scalding at the hot water draw-off points when the temperatures are in excess of 60 °C. Young children and elderly persons are particularly at risk, even at lower temperatures.

- Select the temperature so that nobody is at risk.

The basic display is the controller's standard display. After an extended period without any operations, the display reverts automatically to the basic view. In the basic display you can set the operating modes and the target room temperature individually.

Wed 02.12.09	15:43	-3 °C
Room temperature		22 °C
HK1	► Heating	22 °C
HK2	Eco ☼	20 °C
HK3	Auto ●	22 °C
Cylinder	Auto	60 °C
VRC 630		

The basic data of Weekday, Date and Time can be set in Menu  1. The outside temperature is measured by the external sensor and transmitted to the controller. When thermostatic control is activated, the measured room temperature is shown in the second line of the display.

Settable parameters	Description	Setting range	Factory setting
HK1, HK2, HK3	Operating mode for the heating circuits (→ Chap. 3.3). - displays Holiday when the Holiday function is active	Auto, Eco, Energy sav, Heating, Off	Auto
Cylinder	Operating mode for the DHW cylinder (→ Chap. 3.3). - displays Holiday when the Holiday function is active	Auto, On, Off	Auto
Target room temperature	Choose the target room temperature so that the heat requirements are covered exactly. The owner will save energy and costs this way. The heating installation is controlled at the new target room temperature during all the time slots: - immediately, if you have changed the target value during one of the time slots, - at the start of the next time slot, if you have changed the target value outside one of the time slots.	5 °C ... 30 °C	20 °C
Target temperature	Target temperature for the DHW cylinder	35 °C ... 70 °C	60 °C

Table 7.1 Operating modes and target temperatures

7 Operating the controller

7.2.2 Menu 1: Setting the basic data



If the external sensor of the heating installation is unable to receive a DCF signal, the basic data will have to be set manually, if necessary.

- Make sure that the basic data are set correctly so that the timer programmes and holiday programme will work correctly and the next servicing appointment can be monitored.



These settings apply to all connected system components.

Basic data 	
Date	► 02. 12 . 09
Day	We
Time	14 : 08
Summer/Winter time	Off
>Set day	

Settable parameters	Description	Setting range	Factory setting
Date	- the current date; - important, as it monitors the holiday programme and the service appointment, for example - consists of the parameters Day, Month and Year ► enter the month first, as the setting range for the day depends on the month.	01.01.00 ... 31.12.99	01.01.07
Day	- the current day of the week	Mon ... Sun	Mon
Time	- the current time of day - If the VRC DCF Signal external sensor has been installed, the time is set automatically. - important, as it monitors the timer programmes - the time consists of 2 parameters (hh:mm) ► if no DCF reception is possible, set both parameters.	00:00 ... 23:59	
Summer/Winter time	- If the heating installation is fitted with a VRC DCF external sensor (→ Table 1.1), you will not have to activate the changeover between summer time and winter time. The change between summer time and winter time takes place automatically. - If you set the Summer/Winter time parameter to Auto, the controller can switch between summer and winter time automatically, even though the external sensor has no DCF receiver.	Auto, Off	Off

Table 7.2 Basic data

7.2.3 Menu 3: Setting time slots

In Menu  **3 Time programmes**, you can set time slots for the heating circuits, the DHW cylinders and the circulation pumps.

You can set up to three time slots (**Start time** to **End time**) for each day or block (e.g., Mon-Fri).

Factory setting for the timer programmes:

Mon - Fri	5:30 - 22:00 hrs.
Sat	7:00 - 23:30
Sun	7:00 - 23:30

Within a time slot the heating is on. The regulation is based on the target room temperature. Outside the time slot, the heating installation reduces the room temperature to the set-back temperature (→ Menu 5).

There is a full sequence of displays for the timer programmes; these are identified by  **3** at the top right of the display. The first line of the display shows what the timer programme applies to (e.g. HK1, hot water, circulation pump). The second line of the display always shows **Time programme**.

HK1	 3
Time programme	
► Mon-Fri	
1	6:00 - 9:30
2	16:30 - 21:30
3	: - :
>Select weekday/block	

Settable parameters	Description	Setting range	Factory setting
1	- First time slot (earliest start: 00:00)	00:00 - 24:00	dependent on circuit (heating/hot water) and day of week: Mon - Fri 5:30 - 22:00 hrs. Sat 7:00 - 23:30 hrs. Sun 7:00 - 23:30 hrs.
2	- Second time slot		
3	- Third time slot (latest finish: 24:00)		

Table 7.3 Time slots

HK1	 3
Time programme	
► Mon-Fri	
1	--:-- - --:--
2	16:30 - 21:30
3	: - :
>Select weekday/block	

If a different time slot has been programmed for one day (e.g. Wed) within a block (e.g. Mon-Fri), **Mon-Fri --:-** will be displayed for the block. In this case you must set the time slots for each day individually.

7 Operating the controller

7.2.4 Menu 4: Holiday programming

In Menu  4 you can set for the controller and all system components connected to it:

- two holiday periods with start and end dates,
- the desired set-back temperature, i.e., the value at which the heating installation is to be regulated during the absence, independently of the specified timer programme.

The holiday programme starts automatically when a preset holiday period begins. The holiday programme ends automatically after the holiday period has elapsed. The heating installation is once more regulated according to the previously set parameters and the selected operating mode.



The holiday programme can be activated only in the **Auto** and **Eco** modes.

Connected cylinder charging circuits or circulation pump circuits are automatically switched to the Off mode during the holiday time program.

Holiday programming for whole system 	
Periods	
1	► 30. 02. 09 - 20 . 03. 09
2	05. 05. 09 - 22 . 05. 09
Target temperature	15 °C
► Set start day	

Settable parameters	Description	Setting range	Factory setting
1	- 1st period of extended absence (e.g. holiday) - 2nd period of extended absence (e.g. holiday) - Each date consists of 3 parameters (Day, Month, Year) ► Set the month first, as the setting range for the day depends on the month. ► Then set the day and the year. ► Set the start and end dates. The holiday programme is active when the current date reaches the set period. In the basic display, Holiday is displayed instead of the operating mode for the set period.	01.01.00 ... 31.12.99	01.01.07 ... 01.01.07
2			
Target temperature	- During the set periods, the room temperature is reduced to the preset target temperature. ► Set the target temperature to the value at which the heating is to operate during the absences. ► Observe the information on frost protection (→ Chap. 3.4).	5 °C ... 30 °C	15 °C

Table 7.4 Holiday programme

7.2.5 Menu 5: Setting the set-back temperature, heating curve and hot water temperature (cylinder target)

Set the set-back temperature, heating curve and hot water temperature in Menu  5.

Setting the set-back temperature and the heating curve

HK1	 5
Parameters	
Set-back temperature	► 15°C
Heating curve	1,2
>Select target room temperature	

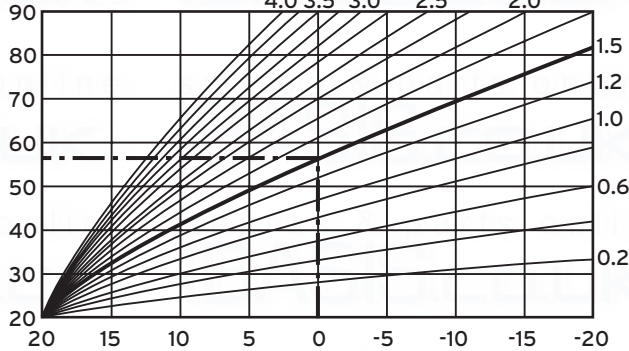
Settable parameters	Description	Setting range	Factory setting
Set-back temperature	- Temperature to which the heating is regulated during the set-back period (e.g., overnight) - Can be set separately for each heating circuit	5°C ... 30°C	15°C
Heating curve	- The heating curve represents the relationship between external temperature and the flow temperature. Max Flow Setpoint. in °C  Heating curves Outside temperature in °C (→ Chap. 3.4). - Setting is made separately for each heating circuit. - The room temperature of your heating installation depends to a great extent on the selection of the right heating curve. If the selected heating curve is too high, the temperatures in the heating installation will also be too high, resulting in higher energy consumption. - If the selected heating curve is too low, the desired temperature level may only be reached after a while or not reached at all.	0.1 ... 4.0	1.2

Table 7.5 Set-back temperature and heating curve

- Inform the owner about the optimum settings.

7 Operating the controller

Setting the target cylinder temperature (hot water temperature)

You can set the target value for the hot water temperature:

- in the basic display as the temperature for cylinders (→ **Chap. 7.2.5**) or
- set the **Target cyl. temp.** parameter in Menu **5**.



Danger!

Risk of being scalded by hot water!

There is a danger of scalding at the hot water draw-off points when the temperatures are in excess of 60 °C. Young children and elderly persons are particularly at risk, even at lower temperatures.

- Select the temperature so that nobody is at risk.

Hot water Parameters	5
Target Cyl. temp.	▶ 60°C
>Select set target temperature	

Settable parameters	Description	Setting range	Factory setting
Target Cyl. temp.	- Hot water temperature ➤ Select the target cylinder temperature for the hot water so that the owner's heat requirement is just covered. The owner will save energy and costs as a result.	35°C ... 70°C	60°C

Table 7.6 Target cylinder temperature

7.2.6 Menu 7: Changing names

During commissioning, the controller displays only the factory-set names for the heating circuits and the DHW cylinder.

In Menu  7, you can change the factory-specified names of the heating circuits to provide the owner with a better overview of the installation.

Name change  7	
HK1	: ►HK1
HK2	: HK2
HK3	HK3
> Select	

Settable parameters	Description	Setting range	Factory setting
HK1	- Name of the heating circuit	max. 10-digit A ... Z, 0 ... 9 Space	HK1
HK2 ... HK15			

Table 7.7 Changing names



Changed names are automatically adopted and displayed in the respective menus.



You can only ever change 1 character at a time.

- If you want to change the full name, you must change each character individually and possibly add characters.
- If you want to delete characters at the end of the name, you must overwrite the characters with spaces.

The controller saves the new name and displays it in all menus henceforth.

After an extended period without any operations, the display automatically reverts to the basic display.

The end result might look like this:

Name change  7	
HK1	: ►Floor1
HK2	: Bathroom
HK3	HK3
> Select	

7 Operating the controller

7.2.7 Menu 7: Enabling the Installer level

Access code for the Installer level

- The Installer level is protected against unauthorised access and is enabled for only 60 minutes after correctly entering the access code.

Code level enabling	8
Code number:	0 0 0 0
Standard Code:	1 0 0 0
>Adjust numeric character	

The access code must be changed during commissioning (→ **Chap. 6.3**). After that, the access code can be changed again in Menu **C11**.

Settable parameters	Description	Setting range	Factory setting
Code Number	- The access code consists of four digits which are set independently of one another. - If no code number is entered, none of the parameters in the Installer level may be set. ➤ Set the access code preferably during commissioning in Menu C11, to protect the system-specific parameters from unauthorised changes.	0000 ... 9999	0000
Standard Code:	- Cannot be set - You can enable the Installer level using the standard code until the access code has been changed (→ Menu C11). - After a new access code has been entered, the standard code will no longer be displayed in Menu 8.		1000

Table 7.8 Target cylinder temperature

7.3 Setting and optimising parameters in the Installer level

The system parameters are set in the Installer level. You can also call up various system values here. The Installer level is protected against unauthorised access by an access code and is enabled for 60 minutes after the code has been entered correctly.

You can access the Installer level by turning the left hand  knob until Menu **C1** is reached.

- Enter the access code which will allow the system-specific parameters to be altered in future.

If you do not enter any access code, the parameters in the subsequent menus are displayed after pressing the  knob once, but cannot be changed.

The default access code is 1 0 0 0. You can change the code in Menu **C1**.

The Installer level is operated in the same way as the Operator level. The parameters are selected likewise by turning and pressing the  knob. All the accessible menus and their parameters can be found in the appendix in the tables "Settings in the Installer level" and "Settings in the Installation Assistant".

Furthermore you can check that all the sensors, pumps and mixers are working properly using the manual mode in the Installer level.

All menus which can be accessed in the Installer level, together with the parameters and displayed values, are listed in the following tables.

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7.3.1 Menu C2: Setting the parameters for HK1... HK15



Caution!

Material damage caused by high flow temperatures with underfloor heating!

Flow temperatures above 40 °C can cause material damage with underfloor heating.

- Do not set the flow temperature above 40 °C if underfloor heating is in use.

The parameters for each heating circuit are set in Menu **C2**.

A maximum of 15 heating circuits can be configured for the heating installation.

All connected heating circuits can be configured in the Installation Assistant (→ Menu **A6**) according to how they are used. Due to the configuration, only those values and parameters which are relevant to the selected type of use for the heating circuit are displayed.

Types of use for:

HK1

- Direct circuit/disabled

Mixer circuits

- Direct/mixer circuit (underfloor or radiator circuit as mixer circuit)
- Fixed value (i.e. the mixer circuit is controlled at a fixed value)
- Return flow boost (for conventional heating appliances and systems with a large water content as protection against corrosion in the heating boiler caused by prolonged periods below the dew point).
- Cylinder charging circuit
- Disabled, if a heating circuit is not required, so that:
 - the parameters in the display are blanked
 - no target flow temperature is calculated for the circuit.

Cylinder

- Cylinder charging circuit/disabled

Examples of Menu **C2**

HK1	C2
Parameters	
Type:	Direct circuit
Set-back temperature	► 15 °C
Heating curve	1,2
Max limit outs.temp.	21 °C
>Select target room temperature	

HK2 ... HK15	C2
Parameters	
Type:	Fixed value
Fixed value day	► 65 °C
Fixed value night	65 °C
Max limit outs.temp.	20 °C
>Select target room temperature	

HK2 ... HK15	C2
Parameters	
Type:	Mixer circuit
Set-back temperature	► 15 °C
Heating curve	0,90
Max limit outs.temp.	20 °C
>Select target room temperature	

HK2 ... HK15	C2
Parameters	
Type:	Cylinder charging circuit
Cylinder ACT	56 °C
Status load pump	Off

HK2 ... HK15	C2
Parameters	
Type:	ret.temp incr.
Return temperature	► 30 °C
Return temperature ACT	25 °C
> Select return temperature	

Many parameters are held in Menu **C2**. They cannot all be displayed on a single screen.

- Turn the left hand knob to display more parameters.

Settable parameters	Description	Setting range	Factory setting
Set-back temperature	- Temperature to which the heating is to be reduced at times of low heat demand (e.g. overnight).	5 ...30° C	15°C
Heating curve	- The basic setting of the heating curve is already made during the installation of the system. - If this setting is not sufficient to control the temperature in the living space to the owner's wishes, the heating curve can be adjusted.	0.1 ... 4	1.2
Max limit outs.temp.	- Outside temperature above which the requirement-dependent heating switch-off (automatic summer switch-off) is effective. - Can be set separately for each heating circuit. - If the target room temperature is changed in the basic display, the switch-off temperature must be changed at the same time where appropriate (at least 1°C higher than the target room temperature).	5 ...50° C	21°C
Minimum temp.	- Minimum flow temperature	15 ...90° C	15°C
Maximum temp.	- Maximum flow temperature	15 ...90° C	90°C for direct circuit otherwise 75°C
Max. pre-heat	- Enables activation of the heating circuit before the first time slot so that the target room temperature will already have been reached at the start of the time slot - Only possible for the first heating slot of the day - The start of the heating is determined as a function of the outside temperature (OT): - $OT \leq -20^\circ\text{C}$: preset duration of the pre-heat time - $OT \geq +20^\circ\text{C}$: no pre-heat time - The duration of the pre-heat time is interpolated linearly between these two values. - Once preheating has been started, it is only ended at the start of the first time slot (not ended if the outside temperature rises in the meantime).	0 ... 300 min.	0

Table 7.9 Settable parameters in Menu C2

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Settable parameters	Description	Setting range	Default setting
Room thermostat control	- Requirement: the controller is wall-mounted or the VR 90 remote control unit is connected - Determines whether the temperature sensor in the controller or in the remote control unit is used. - None - Temperature sensor is not used for control - Thermostatic control - The built-in temperature sensor measures the current room temperature in the reference room. This value is compared with the target room temperature and, if there is a difference, results in adjustment of the heating flow temperature by means of the so-called "Effective target room temperature". Effective target room temperature = set target room temp. + (set target room temp - measured room temp.) The effective target room temperature is then used for controlling instead of the set target room temperature. - Thermostat - Same as thermostatic control, however the heating circuit is also switched off when the measured room temperature is greater than the set target room temperature + 3/16°C. - When the room temperature falls 4/16°C below the set target room temperature again, the heating circuit is switched on again. - The use of room thermostat control, in combination with careful selection of the heating curve, leads to optimum control of the heating installation.	none/ room temp./ thermostat	n/a
Remote control	- Indicates whether a remote control unit is configured - Cannot be set	Yes/No	-
Target flow temp.	- Displays the flow temperature for the heating circuit calculated by the controller on the basis of the specified parameters	-	-
Current flow temp.	- Displays the actual flow temperature of the heating circuit	-	-
Fixed value day	- Mixer circuit is controlled at the daytime fixed value	5 ...90° C	65°C
Fixed value night	- Mixer circuit is controlled at the night time fixed value	5 ...90° C	65°C
Pump delay time	- Every 15 minutes, each circuit is checked to see whether the measured flow temperature is 2K above the calculated target value. If this happens three times in succession, the pump in the affected circuit is switched for the set time. The mixer remains in its current position	0 ... 30 min	0 min
Cylinder ACT	- Displays the current cylinder temperature (hot water temperature); (cannot be set)		
Status load pump	- Status of the charging pump (cannot be set)	On/Off	
Return temperature	- Target temperature of the mixer circuit when used for return temperature control	15 ...60° C	30 °C
Return temperature ACTUAL	- Measured return temperature		

Table 7.9 Settable parameters in Menu C2 (continued)

To conclude, the controller displays an information screen for each heating circuit, in which the target and actual values for the flow temperature and the status of each pump are displayed.

Example of information display for HK1:

HK1	C2
Information	
Setpoint flow temp.	90°C
Current flow temp.	50°C
Pump status	On
	Open

Information	Description
Target flow temp.	- Displays the target flow temperature
Current flow temp.	- Displays the currently measured flow temperature
Pump status	- Indicates whether the pump is switched on or off (ON/OFF)
Mixer status	- Indicates whether and in which direction the mixer is currently set (OFF/OPEN/CLOSED)

Table 7.10 Displayed information for HK1

7.3.2 Menu C3

Menu **C3** is an information menu which displays the current cylinder temperature and the status of the charging and circulation pumps. You are not able to make any settings.

Hot water	C3
Information	
Current DHW temp.	56°C
Status load pump	Off
Circulation pump	On

Information	Description
Current DHW temp.	- Displays the currently measured cylinder temperature
Status load pump	- Indicates whether the charging pump is switched on or off (ON/OFF)
Circulation pump	- Indicates whether the circulation pump is switched on or off (ON/OFF)

Table 7.11 Displayed information for the DHW cylinder

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7.3.3 Menu C4: Setting the parameters for the cylinder charging circuit



Danger!

Risk of being scalded by hot water!

There is a danger of scalding at the hot water draw-off points when the temperatures are in excess of 60 °C. Young children and elderly persons are particularly at risk, even at lower temperatures. When the anti-Legionella function is active, the DHW cylinder is heated to over 65 °C for at least one hour.

- Make the owner aware that the anti-Legionella function is active.

Cylinder charging circuits	C4
Parameters	
Load pump overrun	► 5 mins
Parallel charging	Off
► Set duration	

Settable parameters	Description	Setting range	Factory setting
Charging pump overrun (overrun not available in conjunction with VIH-RL)	- The high flow temperatures required for cylinder charging continue to be delivered to the cylinder as far as possible by means of the charging pump overrun before the heating circuits, the direct circuit in particular, are enabled again. - The boiler switches off when cylinder charging ends (hot water temperature reached). The cylinder charging pump overrun begins and switches off again automatically after the set time.	0 ... 15 min	5 min
Parallel charging	- Parallel charging is applicable to all connected mixer circuits. - When parallel charging is enabled, the mixer circuit continues to be supplied while the cylinder is being heated. This means: As long as there is still a heat demand in the particular heating circuits, the pumps in the mixer circuits will not be switched off. - HK1 is always switched off during cylinder charging. - The target flow temperature of the system corresponds to the highest target flow temperature of all the circuits. If, for example, a fixed-value circuit at 90 °C is active during cylinder charging, the target flow temperature is 90 °C.	OFF/ON	Off

Table 7.12 Settable parameters in Menu C4

Settable parameters	Description	Setting range	Factory setting
Anti-legionella function	- The anti-Legionella function can only be activated globally for all cylinder charging circuits. - When the anti-Legionella function is enabled, the respective cylinder and the corresponding hot water pipes are heated up to a temperature of 70 °C at the set time. To this end the respective target cylinder temperature is automatically raised to 70 °C (with 5 K hysteresis). The corresponding circulation pump is switched on. - The function is terminated automatically when the cylinder sensor measures a temperature ≥ 60 °C for longer than 60 mins, or after a period of 90 mins has elapsed (to avoid getting "stuck" in this function if water is drawn simultaneously). Default setting = Off means: no anti-Legionella function (due to danger of scalding).	Off, Mon, Tue, Wed, Thu, Fri, Sat, Sun, Mon-Sun	Off
Legionella protect - start	- The anti-Legionella function starts automatically when the set time is reached. ➤ Agree with the owner a suitable time for the anti-Legionella function, to avoid scalding.	00:00 ... 23:50	4:00

Table 7.12 Settable parameters in Menu C4 (continued)

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7.3.4 Menu C7: Setting the parameters for the entire system

In Menu **C7** is for setting the global parameters which ensure optimum operation of the heating installation.

Total system Parameters	C7
Max. pre-switch off	► 15 mins
Frost prot. delay	1 hour
Continuous heating	Off
Fast temp increase	0 K
> Set maximum duration	

Settable parameters	Description	Setting range	Factory setting
Max. pre-switch off	- The pre-switch off prevents unnecessary heating of the installation immediately before a defined set-back point. - The controller calculates the actual period independently of the outside temperature. ► Set the maximum period desired by the owner here. - If the outside temperature is at -20 °C, no pre-switch off occurs. - If the outside temperature is +20 °C, the maximum pre-switch off is in effect. - At temperatures in the range -20 °C ... +20 °C, the controller computes a value corresponding to a linear interpolation between -20 °C and +20 °C.	0 ... 120 min	15 mins
Frost prot. delay	- The frost protection function ensures protection from frost in the Off and Eco modes (outside the programmed time slots) globally in the heating installation for all connected heating circuits. - If the outside temperature falls below 3 °C, the set-back temperature is applied as the target room temperature. The heating circuit pump is switched on. - If you set a delay time, the frost protection function is inhibited for this period (setting range 0 - 23 h). - If the measured room temperature is lower than the preset set-back temperature, the frost protection is also activated (regardless of the measured outside temperature).	0 ... 23 h	1 h

Table 7.13 Settable parameters in Menu C7

Settable parameters	Description	Setting range	Factory setting
Continuous heating	- Outside temperature below which heating using the target room temperature/heating curve assigned to the heating circuit is continuous outside the programmed time slot. - A night time reduction or total switch-off no longer takes place if the temperature reaches or falls below the set value.	OFF/ -25 ... 10 °C	Off
Fast temp increase	- Global for all mixer circuits: - in the case of mixer circuits with a fixed admixture, allows the target mixer value (also at target heater temperature) to be reached during the morning heating-up operation, even though the fixed admixture greatly reduces the mixer circuit temperature, - allows an optimum control range for operating the mixer, (stable operation is only possible if the mixer only occasionally has to hit the end stop. This ensures improved quality of control.) - For this reason you can set a common boiler temperature excess for all mixer circuits. The boiler temperature excess will increase the current heating circuit target value by the amount set.	0 ... 15 K	0 K

Table 7.13 Settable parameters in Menu C7 (continued)

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7.3.5 Menu C8: Setting the minimum temperature

Heating appliance Parameters	C8
Switching hysteresis	8 K
Minimum temperature	►15°C
Cylinder starting output	1
>Select temperature	

Settable parameters	Description	Setting range	Factory setting
Switching hysteresis	Only with switching boilers or cascades (switching or modulating) The boiler or cascade is: - switched on when the low-loss header temperature is 1/3 of the hysteresis below the calculated target flow temperature - switched off when the low-loss header temperature is 2/3 of the hysteresis above the calculated target flow temperature Too small a hysteresis can result in constant cycling of the boiler.	1..20 K	8 K
Minimum temp.	To protect the boiler from, e.g., corrosion Corrosion is to be expected if the boiler is permanently operated in the condensate range, e.g. due to high water contents	15 ...65° C	15°C
Cylinder starting output	Only for cascades Aim of this function is to provide the cylinder charging output quickly. Defines the number of boiler stages or heating appliances which will be used to start the cylinder charging	1 ... number of boilers	1

Table 7.14 Settable parameters in Menu C8

Heater	C8
Cascading parameters	
Switch-on delay	► 5 min
Switch-off delay	5 mins
> Set time delay	

Information	Description	Setting range	Factory setting
Switch-on delay Switch-off delay	Only for cascades With switch-on delay: Waiting time after switching on a stage or unit until the next stage is switched on With switch-off delay: Waiting time after switching off a stage until the next stage is switched off Longer waiting times give the system more time to stabilise If the waiting time is too short, this leads to over or undershooting of the flow temperature and to continuous cycling of the units in the cascade.	1 ... 90 Min	5 mins

Table 7.14 Settable parameters in Menu C8 (continued)

Heater	C8
Information	
System set temp.	90°C
Low loss header temp. ACTUAL	30°C
heating mode status	
Boiler sequence 1 2 3 4	

Information	Description
System set temp.	Displays the current system target temperature
Low loss header temp. ACTUAL	Displays the temperature of sensor VF1 (in the low-loss header)
Status	Displays the current status of the heating installation (e.g. heating mode)
Boiler seq	Only for cascades Displays the current sequence in which the boilers are switched on

Table 7.14 Settable parameters in Menu C8 (continued)

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7.3.6 Menu C9: Setting the special functions

7.3.6.1 Special function - teleSWITCH

If a teleSWITCH remote telephone contact (floating contact input) is connected to the heating installation, the operating mode of the connected heating circuits, hot water circuits and the circulation pump can be changed remotely from any location over the telephone network by means of the teleSWITCH remote telephone switch (accessory).

Special function	C9
teleSWITCH	
HK1	: ►Energy sav
HK2	: Energy sav
HK3	: Energy sav
Cylinder	: Off
> Select effect	

Settable parameters	Description	Setting range	Factory setting
teleSWITCH	Operating mode for the teleSWITCH remote telephone switch for HK1 ... HK15	None, Heating, Off, Auto, Eco, Energy sav	Energy save
teleSWITCH for cylinders	Operating mode for the teleSWITCH remote telephone switch for cylinders	None, On, Off, Auto	Off

Table 7.15 Settable parameters in Menu C9

Operating mode	Effect of the remote telephone switch
None	Telephone contact has no effect
Heating, Auto, Eco, Energy sav., On, Off	When the telephone contact is closed, the remote telephone switch switches from the active operating mode to the mode set here.

Table 7.16 Effect of the set operating mode

7.3.6.2 Special function - screed floor drying

Special function		C9
Floor drying		
	Day	Temp.
HK2	► 0	0°C
HK3	0	0°C
►Set start day		

- Activate the **floor-drying** function to "heat dry" a freshly-laid screed floor according to building regulations.

Settable parameters	Description	Setting range	Factory setting
HK2 ... HK15	Time schedule for the particular heating circuit	0-29	0

Table 7.17 Settable parameters for floor drying

When floor drying is activated, all the selected operating modes are interrupted.

The boiler controls the flow temperature of the heating circuit according to a pre-set program regardless of the outside temperature.

Target flow temperature on starting day 1: 25°C

Days after starting the function	Target flow temperature for this day [°C]
1	25
2	30
3	35
4	40
5	45
6-12	45
13	40
14	35
15	30
16	25
17-23	10 (frost protection function, pump in operation)
24	30
25	35
26	40
27	45
28	35
29	25

Table 7.18 Temperature profile for floor drying

In Menu **C9** the controller displays the operating mode for floor drying together with the current day and the associated target flow temperature.

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This is how to start the floor drying

- Enter the start day **Day** for the appropriate heating circuit to start the floor drying.

When the function is started, the boiler saves the current time of the start. The day is changed exactly at this time.

The **Temp.** parameter is determined by an internally specified temperature profile (→ **Table 7.18**). You cannot set the **Temp.** parameter manually.

In the basic display of the controller, **Floor drying** is displayed for the corresponding heating circuit, instead of the operating mode.

Wed 02.12.09	15:43	-3 °C
HK1	► Heating	22.0°C
HK2	Floor drying	
HK3	Eco ☀	18.0°C
Cylinder	Auto 🌙	60.0°C
VRC 630		

Ending floor drying

The function ends:

- automatically when the last day of the temperature profile has passed (**Day** = 29)
- or
- if you set the start day for the corresponding heating circuit to 0 (**Day** = 0) in Menu **C9**.

7.3.7 Menu C11: Setting the service dates and access code

Setting the service dates

Service	C11
Telephone ► :	
Service	01 . 10 . 10
Temperature fault detection after	Off
> Adjust number	

Settable parameters	Description	Setting range	Factory setting
Phone	► Enter your telephone number When the date for the next service appointment is reached, this telephone number will be displayed in the 2nd line of the basic display. ► You must set each digit of the telephone number separately. A maximum of 17 digits is possible.	0 ... 9, -, Space (17-digit)	-
Service	The heating installation must be serviced regularly. ► Set the month, day and year for the next service appointment. When the date for the next service appointment is reached, Service will be displayed in the 2nd line of the basic display.	Day: 1 ... max. 31 (depends on month) Month: 1 ... 12 Year: 00 ... 99	01.01.01
Temperature fault detection after	If the flow temperature remains 20% below the calculated target value for the specified time interval, an error message will be displayed for the affected heating circuit. You activate the temperature fault detection when you set a time interval.	OFF, 0 ... 12 h	Off

Table 7.19 Settable parameters in Menu C11

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Setting the access code



Caution

Material damage caused by incorrectly set system parameters!

The standard code 1000 is set after the initial installation of the heating system. This standard code is displayed in Menu **8** and is also accessible to the owner.

- Enter an access code in Menu **C11** to prevent the owner from altering the system parameters.
- Make a note of the access code you have set, because it will be needed in future to enable the Installer level.

Code level enabling	C11
Code number:	1 2 3 4
Accept change	▶ No
>Select	

Settable parameters	Description	Setting range	Factory setting
Code Number	- Access code for the Installer level - The Installer level is protected against unauthorised access and is enabled for only 60 minutes after correctly entering the access code. - The access code consists of four digits which are set independently of one another.	0000 ... 9999	1 0 0 0
Accept change	- Query as to whether the access code is to be saved	Yes/No	No

Table 7.20 Access code



If you save the new code number (accept = YES), it will only be possible to enable the Installer level in future using this new access code.

- Enter a new access code.
- Make a note of the access code.
- Set the **accept** parameter to **YES**.

The new access code will be saved.



If you do not know the access code, you can:

- reinstate the standard code 1000 by means of a controller reset or
- read out the access code with vrDIALOG 810.

7.3.8 Menu C12: Setting the temperature correction and the display contrast

In Menu **C12** you optimise the display of temperatures and the display contrast.

Tool	C12
Temperature correction	
Outside temperature	► 0.0 K
Current room temperature	0.0 K
Display contrast	11

Settable parameters	Description	Setting range	Factory setting
Outside temperature	- Correction value for the measured outside temperature	-5.0 ... +5.0 K	0.0 K
Current room temperature	- Correction value for the measured room temperature	-3.0 ... +3.0 K	0.0 K
Display contrast	- Adjustable contrast for good legibility	0 ... 15	11

Table 7.21 Settable parameters in Menu C12

If there is a constant difference between the displayed and the actually measured temperature because of the installation location, this deviation can be compensated for by using the correction value.

Example using outside temperature:

Outside temperature displayed on the controller: +5°C;

Measured outside temperature: + 7°C;

- Set the correction value +2.0 K.
- Proceed in the same way for deviations between the actually measured and the displayed room temperature.

7.3.9 Menu C15: Checking software versions

Menu C12 is an information menu in which the software versions of the I/O card and the User Interface are displayed.

Entries are not possible. The version numbers are automatically detected and displayed during commissioning.

Software versions	C15
I/O card	2 4.23
User Interface	1 4.27

Menus **A1** to **A7** of the Installation Assistant are connected to Menu **C12**.

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7.4 Parameters in the Installation Assistant

Menus **A1 ... A7** of the Installation Assistant are located in the Installer level behind Menu **C15** and can also be called up at any time after the initial start-up.

► Check the presets in Menus

A1 ... A7 of the Installation Assistant diligently.

7.4.1 Menu A1: Setting the language

The language for the menu texts is set in this menu.

Installation Assistant	A1
Language selection	
Language	► EN English
►Select language	

► Set the language.

7.4.2 Menu A4: Configuring boilers

You configure the heating installation in Menu **A4**.

If the automatic system configuration does not detect

- the connected heating appliances and
- the number of stages in a cascade system

then set the parameters in Menu **A4** manually.

Installation Assistant	A4
System configuration	
Number of boilers	► 1
Appliance are	modulated
Boilers on	7-8-9
►Select	

Settable parameters	Description	Setting range	Factory setting
Number of boilers	- Number of boilers (can be set if no bus coupler or directly connected eBUS boiler has been detected)	1 or 2	1
Boilers are	- Boilers are (only if boilers which are activated in stages have been detected: e.g. via a VR 31 or eBUS boilers)	1-stage or 2-stage	1-stage
Boilers on	- Boilers on (only appears if no bus coupler or directly connected eBUS boiler has been detected)	Stage 1-2 or 7, 8, 9	7, 8, 9

Table 7.22 Settable parameters in Menu A4

7.4.3 Menu A5: Setting priority and cascade parameters

In Menu **A5** you determine whether hot water generation or heating has priority.

Installation Assistant	A5
System configuration	
Preference	► No
>Select	

With cascades the display shows the following parameters:

Installation Assistant	A5
System configuration	
Stop valve	► No
Isolation switch	No
Reverse boiler sequence	Off
>Select	

Settable parameters	Description	Setting range	Factory setting
Preference	Preference works like an isolating circuit for an individual boiler. The cylinder is directly connected hydraulically to the boiler. In the case of an individual boiler, the cylinder can also be directly connected hydraulically to the boiler. Cylinder charging has priority over heating; the requirements of the heating circuits cannot be covered at this time. During cylinder charging, the internal 3-way valve or the charging pump in the boiler is activated. This parameter only appears if no cascade has been detected.	Yes/No	No
Stop valve	A low-loss header is not needed for boilers with a large water capacity. In cascades, the boilers that are not active are isolated from the active boilers by means of a stop valve. The valve is connected to the boiler pump in the boiler electronics. The valve in the lead boiler will always be activated in this case, as otherwise the heat consumer pumps will be working against the pumps.	Yes/No	No
Isolation switch	Is set to YES if in a cascade the cylinder is directly connected hydraulically to the last boiler in the cascade and not to the collector downstream of the low-loss header. The unit is then "isolated" from the cascade during cylinder charging and charges the cylinder, while the remaining units in the cascade can continue to service the heating circuits. During cylinder charging, the internal 3-way valve or the charging pump in the boiler is activated. This parameter only appears with a cascade.	Yes/No	No
Reverse boiler sequence	When several boilers of the same type are cascaded, the operating times of the units should be evenly distributed by means of this function. The controller sums the time for which it has activated each boiler (the activation hours). Daily at midnight the controller checks whether the difference in activation hours > 100 and re-sorts the boilers if this is the case.	ON/OFF	Off

Table 7.23 Settable parameters in Menu A5

- Set the parameters according to the heating installation.

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7.4.4 Menu A6: Setting the type of use

In Menu **A6**, all the connected heating circuits can be configured according to how they are used.

Installation Assistant	A6
System configuration	
HK1	► Direct circuit
HK2	Mixer circuit
HK3	Mixer circuit
Cylinder	Cylinder charge
>Select	

Settable parameters	Description	Setting range	Factory setting
HK1	- Type of use for HK1	Direct circuit, disabled	Direct circuit
HK2 ... HK15	- Type of use for HK2 ... HK15	Direct circuit or mixer circuit/ fixed value/return flow boost/ Cylinder charging circuit/disabled	Mixer circuit
Cylinder	- Type of use for cylinders	Cylinder charging circuit, disabled	Cylinder charging circuit

Table 7.24 Settable parameters in Menu A6

Depending on the type of use for the heating circuits, only the values and parameters that are of significance for the selected circuit type will be displayed in the menus.

The following settings are possible for mixer circuits:

- **Mixer circuit:**
Underfloor or radiator circuit as a mixer circuit,
- **Fixed value:**
Mixer circuit is controlled at a fixed value,
- **Return flow boost:**
to protect against corrosion in the heating boiler caused by prolonged periods below the dew point (for conventional heating appliances and systems with large water capacities),
- **Cylinder charging circuit:**
Control of an additional DHW cylinder
- **disabled:**
when this circuit is not being used.
 - blanks the parameters for the circuit
 - no target flow temperature is determined for the circuit.

7.4.5 Menu A7: Testing actuators and sensors

In Menu **A7** you can test the actuators and sensors for the selected component.

Installation Assistant		A7
Component	► VRC 630	
Actuators	Off	
Sensors	VF1	60°C
Heater	Off	
> select		

Settable parameters	Description	Setting range
Component	► Select one of the connected components to perform an actuator/sensor test on it. - Displays the selected component	VRC 630, VR 60, VR 31, VIH-RL, VPM S, VMS, VM W ... (depending on component connected)
Actuators	- Open and close valves ► Control the actuators on the selected component directly, in order e.g.: - to drive a mixer in the OPEN direction and to check that it is connected the right way round, - to activate a pump and check that it starts up... Only the activated actuator is active; all the other actuators are "switched off" at this time.	OFF, LP/UV1, ZP, HK1-P, HK2 OPEN, HK2 CLOSED, HK2-P, HK3 OPEN, HK3 CLOSED, HK3-P, KP/AV, C1/C2 ... (depending on the selected component)
Sensors	- Displays the measured value on the right next to the selected sensor - Measured values cannot be set ► For the selected component, read the measured values from the sensors and check whether the sensor is providing the expected value (temperature, pressure, flow rate ...).	VF1, VF2, VF3, TR, SP, AF ... (depending on the selected component)
Heating appliance	- Selection of heating appliances ► Start up the individual boilers in the cascade and check that the components are wired correctly.	OFF, HA 1 - 8

Table 7.25 Settable parameters in Menu A7

7 Operating the controller

7.5 Exiting the Installer level

The Installer level is automatically disabled after approx. 60 minutes. You can view the system-specific parameters in the Installer level at any time again.

7.6 Service functions

7.6.1 Operating sequence for service functions

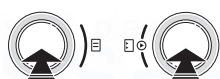
The service functions are reserved for the heating engineer.

You can call up the service functions from any of the displays at any time.

When you call up the service functions, you must always follow a linear operating sequence:



- Activate the maximum output function by simultaneously pressing the  and  knobs once



- Activate the manual mode by simultaneously pressing the  and  knobs once



- End the service functions by simultaneously pressing the  and  knobs once

7.6.2 Maximum output operation

The maximum output function is necessary for emissions measurement.

Wed 02.12.09	15:43	-3 °C
Maximum output function activated		
Heating appliance		►1



The selection of heating appliances (shown in grey) is only possible with switching boilers.



The method for activating and terminating the **maximum output function** is described in the Operating Sequence for Service Functions.

- Activate maximum output operation by activating the maximum output function.
- Follow the operating sequence for service functions when doing this (→ **Chap. 7.6.1**)

The system is put into operation for a period of 20 minutes regardless of the set timer programme and the outside temperature.

The boilers are activated depending on the heating appliance used.

With modulating heating appliances, all connected heaters are switched off by the controller and must be directly put into operation at the heater (with the available switch for chimney sweeper operation mode).

- Observe the manuals for the boilers.

With switching boilers, select from the menu the boiler for which the emissions measurement is to be carried out. All remaining units are switched off in the meantime.

In maximum output mode the controller automatically starts up the connected heating circuits. The controller starts with the heating circuit with the highest maximum temperature set. A further heating circuit is activated, depending on the heat consumption. The switch-on criterion is the flow temperature.

If the flow sensor at the collector sensor exceeds 80 °C, the next heating circuit is switched on to ensure the heat consumption.

7.6.3 Manual operation

Manual operation is required for functional testing of the system.

Wed 02.12.09	15:43	-3 °C
Manual operation activated		



The method for activating and terminating the manual mode is described in the Operating Sequence for Service Functions.

This function actuates all pumps of the system and the heaters. The mixers remain in their last position.

7.7 Activating the special functions

Special functions are called up from the basic display.

Wed 02.12.09	15:43	-3 °C
HK1	► Heating	22 °C
storey 1	Eco ☼	18 °C
Cylinder	Auto ●	60 °C
VRC 630		

The three special functions, **Energy saving**, **Advance** and **One-time cylinder charging** are arranged one after the other in a menu sequence.



- Press (one to three times) the left hand  knob until the desired special function is displayed.

Energy saving function:

The Energy saving function is enabled when the menu is displayed.

Wed 02.12.09	15:43	-3 °C
Energy saving enabled		
until	► 18:30	
VRC 630		

Settable parameters	Description	Setting range	Factory setting
Energy saving enabled	The Energy saving function allows you to operate the heating installation at the set-back temperature up to a defined time. Only works on the heating or DHW cylinder circuits which are set to the Auto or ECO mode.	-	-
until	Time at which the Energy saving function is to end ► Enter the time at which the Energy saving function should end.	Next full hour	Current time rounded up to the next 10 min

Table 7.26 Energy saving function

When the set time is reached, the Energy saving function ends automatically and the controller reverts to the basic display.

Aborting the Energy saving function

- Press the left hand  knob three times.
The controller ends the Energy saving function and changes back to the basic display.

7 Operating the controller

Advance function:

Wed 02.12.09	15:43	-3 °C
Room temperature		21°C
Advance function enabled		
VRC 630		

The Advance function is enabled when the menu is displayed.

- No settings are possible

The heating and hot water times are extended beyond the next switch-off point to the start of the next heating period, i.e. the actual settings for the heating are temporarily overridden.

The Advance function only affects those heating or DHW cylinder circuits which are set to **Auto** or **Eco**.

- Check that the heating circuit and DHW cylinder are set to the **Auto** or **Eco** mode.

If this is not the case, set them to **Auto** or **Eco** (→ Chap. 7.2.1).

When the last heating circuit starts to heat again (change from set-back to heating), the Advance function is automatically ended and the controller reverts to the basic display.

Aborting the Advance function

- Press the left hand  knob twice.

The controller ends the Advance function and changes back to the basic display.

One-time Cylinder Charging

Wed 02.12.09	15:43	-3 °C
Room temperature		21°C
One-time Cylinder Charging activated		
VRC 630		

The **One-time cylinder charging** function is enabled when the menu is displayed.

- Enables the DHW cylinder to charge up once, independently of the current timer programme
- No settings are possible

When the water in the cylinder has been heated to the set temperature, the function is ended automatically and the controller reverts to the basic display.



The hot water temperature is defined by the heating engineer when commissioning the heating installation.

Aborting One-time cylinder charging

- Press the left hand  knob once.

The controller ends the **One-time cylinder charging** function and changes back to the basic display.

8 Hand-over to the owner

The user must be trained in the handling and function of his controller.

- Hand over the manuals intended for the owner as well as the documents of the appliance.
- Go through the operating manual with the owner and answer all his questions.
- Draw special attention to the safety instructions, which the owner must follow.
- Make the operator aware of the need to keep the instruction manuals within reach of the controller.
- If the room temperature incorporation is activated, advise the owner that, in the room where the controller is mounted, all the radiator valves must be fully open.
- Inform the owner about the measures for Legionella and frost protection.

9 Troubleshooting



Caution!

Material damage caused by inappropriate modifications!

Improper modifications can damage the controller or the heating installation.

- Modifications or repairs to the controller or other parts of the heating installation may only be carried out by an accredited heating engineer.

9.1 Fault memory

The last 10 faults are recorded in a fault memory. You can read out the fault memory with vrDIALOG 810.

9.2 Service message

A service message alerts the owner to required servicing of his heating installation.



If you enter the service telephone number and the date of the next service in Menu **C11**, then Service and the telephone number will be displayed in the line for the menu name in the event of a service message.

Wed 02.12.09	15:43	-3 °C
Service		
HK1	► Heating	22.0°C
storey 1	Eco ☼	18.0°C
Cylinder	Auto ●	60.0°C
VRC 630		

9.3 Error messages

The controller can display certain error messages. These include:

- Reports of faulty communication with individual components in the system,
- Service notes for the heating appliances,
- Sensor defects, and also a
- message if the target value is not reached after a defined period of time.

Error messages always have the highest priority. When a malfunction occurs in the heating installation, the controller automatically displays an appropriate error message in plain text.

Wed 02.12.09	15:43	-3 °C
Com. Error boiler		
HK1	► Heating	22.0°C
Storey 1	Eco ☼	18.0°C
Cylinder	Auto ●	60.0°C
VRC 630		

The error message will be displayed until the error is cleared.

- Observe the diagnostic notes in the manual for the heating appliance.
- Use the vrDIALOG 810 software to view the fault history.



When there are several messages, the display steps on to the next message every 2 seconds.

9.4 Overview of error codes

Example of an error message:

Wed 02.12.09	15:43	-3 °C
Com. Error boiler		
HK1	► Heating	22.0°C
Storey 1	Eco ☼	18.0°C
Cylinder	Auto ●	60.0°C
VRC 630		

Error message	Cause
VR 60 (4) comms error or boiler connection missing	There is no communication with the VR 60 mixer module at bus address 4. Information displayed: - the affected component - the unreachable address - an indication that communication is interrupted - the bus cable is not connected - no power is present, - the component is defective.
Boiler fault	A boiler is reporting a malfunction via the eBUS See the manual for the boiler
VRC 630 VF1 fault VR60 (4) VFa fault, VIH-RL sensor T1 error, VPM W (1) sensor T1 error, ...	The VF1 inlet sensor is defective. Information displayed: - the affected component - the affected sensor with its designation on the ProE connector strip Possible causes: - a break ??? - a short circuit on the affected sensor.
HK2 temperature error	The target temperature for heating circuit HK2 has not been reached after a defined time. This time is set in Menu C11: Parameter "Temp. fault detection after"; Setting range: OFF, 0 - 12 h Default setting: OFF.
When combined with a VIH-RL, the following errors can be displayed:	
External current anode fault	The external current anode monitoring in the VIH-RL has detected a fault.
VIH-RL Limescale in heat exch.	The VIH-RL electronics have detected that the heat exchangers need to be serviced.

Table 9.1: Error codes and causes

Further error codes and descriptions of their causes and remedies can be found in the manuals for the components of the heating installation.

10 De-commissioning

10.1 Shutting down the controller temporarily

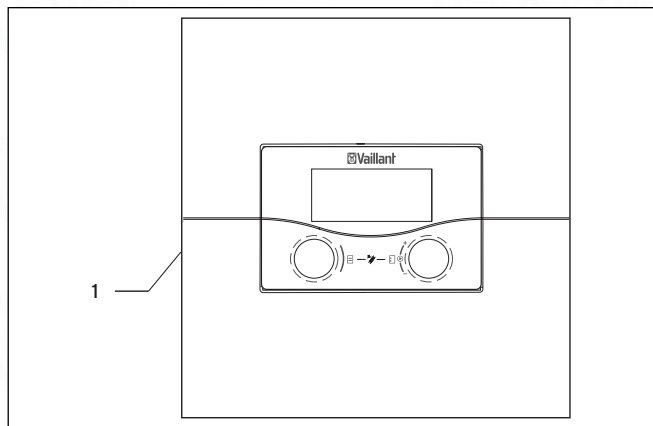


Fig. 10.1 Switching the controller on/off

Key

1 Rocker switch

- Press the rocker switch (1) to position **O**, to switch the controller Off.



If the external sensor on the heating installation is unable to receive a DCF signal, you will have to set the time and date manually after switching on the controller.

- Make sure that the time and date are set correctly so that the preset timer programmes and holiday programme will work correctly and the next servicing appointment can be monitored.

10.2 De-commissioning the controller



Danger!

Danger to life from live connections!

The mains switch does not disconnect the power supply completely.

- Switch the power supply off before working on the unit.
- Secure the power supply against being switched on again.



Caution!

Material damage caused by frost!

The frost protection function is only active when the controller is switched on.

- Make sure that decommissioning the controller will not cause any material damage to the heating installation.

Before you switch off the controller:



When you are taking the heating installation out of service, take heed of what is written in the manuals for the boilers and components.

- Shut down the heating installation.
- Disconnect the power supply to the boiler.
- Secure the power supply against being switched on again.

Switching off the controller

- Press the rocker switch (1) to position **O** to switch the controller Off (→ **Fig. 10.1**).
- Disconnect the controller from the mains.
- Secure the power supply against being switched on again.

The rest of the procedure depends on where the controller is installed.

If the controller is mounted on the wall:**Danger!****Danger to life from live connections!**

The mains switch does not disconnect the power supply completely.

- Switch the power supply off before working on the unit.
- Secure the power supply against being switched on again.

If the controller is fitted in the remote control unit:

- Remove the housing cover from the remote control unit.
- Carefully remove the controller from the wall base.
- Remove the connecting cable.
- Remove the wall base if necessary.
- Plug the holes in the wall if necessary.

10.3 Disposing of the controller

Neither the controller or any of its accessories belong in the household waste.

Dispose of the old unit and any accessories professionally.

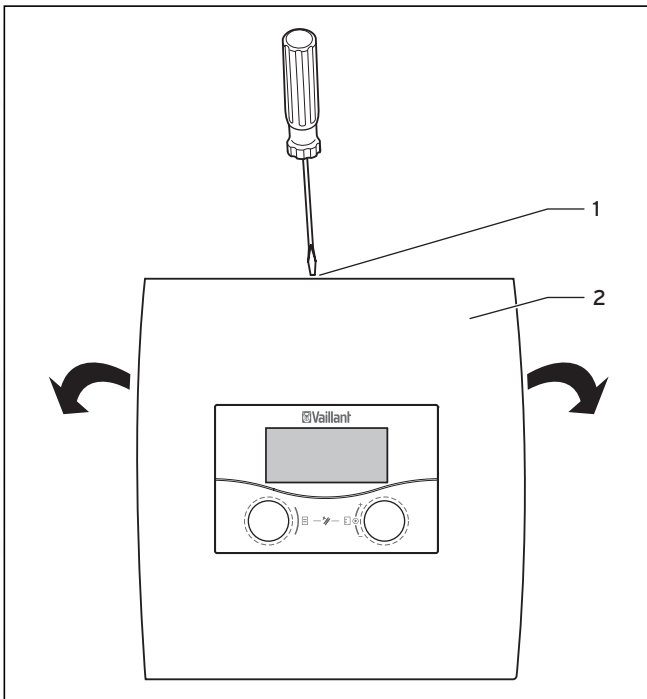


Fig. 10.2 Opening the wall mount

Key

- 1 Screw
- 2 Housing cover

The housing cover comprises a single part.

- Loosen the screw (1) on the upper side of the wall mount.
- Flap the housing cover (2) downwards. Take the housing cover off its hinge and remove it.
- Pull the controller (1) from the wall mount (2). Insert a screwdriver into the two retainer straps to do this (→ Fig. 10.2).
- Unfasten and remove the eBUS cable from the terminal strip on the controller.
- Unfasten and remove the cable for the external sensor.
- Unscrew the wall mount from the wall.
- Plug the holes in the wall if necessary.

11 Recycling and disposal

11 Recycling and disposal

Both your Vaillant VRC 630 controller and its packaging are primarily made of recyclable raw materials.

Disposing of the controller

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.

Disposing of the packaging

Please leave the disposal of the transport packaging to the expert technician company which installed the appliance.

12 Warranty and customer service

12.1 Vaillant warranty

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

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

12.2 Vaillant Service

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

13 Technical data

13 Technical data

13.1 Technical data for the VRC 630

Parameter	Units	Control- ler
Operating voltage	V AC/Hz	230 / 50
Power consumption of controller	VA	4
Contact load of the output relays (max.)	A	2
Maximum total current	A	6.3
Shortest switching interval	min	10
Power reserve	min	15
Maximum ambient temperature	°C	40
Sensor operating voltage	V	5
Minimum cross-section		
- of the sensor lines	mm ²	0.75
- of the 230 V connection lines	mm ²	1.50
Dimensions of the wall box		
Height	mm	292
Width	mm	272
Depth	mm	74
Level of protection		IP 20
Protection class of controller		I
Degree of ambient pollution		Normal

Table 13.1 Technical data for the VRC 630

13.2 Sensor characteristics

VR 10 sensor characteristics (Flow, Return, Cylinder and Yield sensors)

Temperature in °C	R in kOhm
10	5.363
15	4.238
20	3.372
25	2.700
30	2.176
35	1.764
40	1.439
45	1.180
50	0.973
55	0.806
60	0.671
65	0.562
70	0.473
75	0.399
80	0.339
85	0.288
90	0.247

Table 13.2 VR 10 sensor characteristics

Characteristics of external sensor

Temperature in °C	R in kOhm
-25	2.167
-20	2.076
-15	1.976
-10	1.862
-5	1.745
0	1.619
5	1.494
10	1.387
15	1.246
20	1.128
25	1.02
30	0.92
35	0.831
40	0.74

Table 13.3 Characteristics of external sensor

13.3 Factory settings

The factory settings can only be set, and if necessary reset, in the Installer level.

Menu	Displayed text	Settable parameters *)	Setting range	Factory setting
C2	Heating circuit parameters (→ Chap. 7.3.1)	Set-back temperature Heating curve Max limit outs.temp. Pump delay time Minimum temperature Maximum temperature Max. pre-heat time Switch-on room temperature Fixed value day Fixed value night Max limit outs.temp. Return temperature	5 - 30 °C 0.1 - 4 5 - 50 °C 0 - 30 min 15 - 90 °C 15 - 90 °C 0 - 300 min None/Room temp./Thermostat 5 - 90 °C 5 - 90 °C 5 - 50 °C 15 - 60 °C	15 °C 1.2 21 °C 0 min 15 °C 75 °C/ 90 °C 0 min None 65 °C 65 °C 21 °C 30 °C
C4	Cylinder charging circuit parameters (→ Chap. 7.3.3)	Charging pump overrun Parallel charging Anti-legionella function Legionella protect - start	0 - 15 min Off/On Off, Mon, Tue, ...Sum, Mon-Sun 00:00 - 24:00	5 min Off Off 04:00
C7	Overall system parameters (→ Chap. 7.3.4)	Max. pre-switch off Frost protection delay Continuous heating Fast temperature increase	0 - 120 min 0 - 23 h OFF, -25 ... 10 °C 0 - 15 K	15 min 1 h OFF 0 K
C8	Heating appliance parameters (→ Chap. 7.3.5)	Switching hysteresis Minimum temperature Cylinder starting output	1 - 20 K 15 - 90 °C 1 - 8	8 K 15 °C 1
C8	Heating appliance: Cascade parameters (only for cascade systems) (→ Chap. 7.3.5)	Switch on delay Switch off delay Reverse boiler sequence	1 - 60 min 1 - 60 min Off/On	5 min 5 min Off
C9	Special function - teleSWITCH (→ Chap. 7.3.6.1)	teleSWITCH for HK1 ... HK15 teleSWITCH for cylinders	None, Heating, Off, Auto, Eco, Energy sav. None, On, Off, Auto	Energy sav. Off
C9	Special function - floor drying (→ Chap. 7.3.6.2)	Schedule HK2 ... HK15	0 - 29	0
C11	Service (→ Chap. 7.3.7)	Telephone number of service co. Service date Temp. fault detection after	0 - 9 (17-digit) Date Off, 0 - 12 h	- 1.1.2003 Off
C11	Changing the code level (→ Chap. 7.3.7)	Code Number	0000 ... 9999	
C12	Tools (→ Chap. 7.3.8)	Temperature correction: Outside temperature Current room temperature Display contrast	-5 ... +5 K -3 ... +3 K 0 - 16	0 K 0 K 11
A1	Installation Assistant A1 Language selection (→ Chap. 7.4.1)	Language		
A4	Installation Assistant System configuration (→ Chap. 7.4.2)	Number of boilers Boilers are Boilers at	1 or 2 1-stage or 2-stage Stage 1-2 or 7, 8, 9	1 1-stage 7, 8, 9
A5	Installation Assistant System configuration (→ Chap. 7.4.3)	Preference Stop valves Rev. seq control Reverse boiler oeq.	YES/NO YES/NO YES/NO OFF/ON	NO NO NO OFF
A6	Installation Assistant System configuration (→ Chap. 7.4.4)	HK1 HK2 ... HK15 Cylinder	Direct circuit, disabled Direct or mixer circuit/Fixed value/ Return flow boost/Cylinder charging circuit/disabled Cylinder charging circuit/, disabled	Direct circuit Mixer circuit Cylinder charging circuit

Table 13.4 Factory settings

*) Which parameters are actually displayed in the menu depends on the components connected and the settings.

13 Technical data

Overview: Settable parameters in the Operator level

Menu	Menu name	Settable operating values	Remarks	Units	Min. value	Max. value	Increment/selection option	Factory setting
1	Basic data (→ Chap. 7.2.2)	Date Day Time	Select day, month, year; Select hours, minutes					
		Summer/Winter changeover					Auto/Off	Off
3	Time pro- grammes (→ Chap. 7.2.1)	Day/ block	Select weekday/block of days (e.g. Mon-Fri)					
		1 Start/End time 2 3	Three time slots available per day or block of days	Hours/ Minutes			10 min	
4	Holiday program- ming of the entire system (→ Chap. 7.2.4)	Holiday period	Set Start day, month, year; Set End day, month, year					
		Holiday target value for heating	Set target room tempera- ture for holiday period	°C	5	30	1	15
5	HC1 parameters (→ Chap. 7.2.5)	Set-back tempera- ture	Define set-back tempera- ture for periods between the time slots; when the frost protection function is set, the set-back temperature is automati- cally 5 °C; Set-back temperature is not displayed	°C	5	30	1	15
		Heating curve	Control the flow tempera- ture as a function of the outside temperature; various heating curves can be selected		0,1	4	0,05-0,1	1,2
	Hot water para- meters (→ Chap. 7.2.5)	Hot water target temperature	Set target temperature for hot water generation	°C	35	70	1,0	60
7	Change names (→ Chap. 7.2.6)	HK1	Enter any name with up to 10 characters					HK1
8	Enable Code level (→ Chap. 7.2.7)	Code number	Enter code number for access to operating level for heating engineers					

Table 13.5 Settable parameters in the Operator level

Declaration of conformity



EG-Konformitätserklärung

Name und Anschrift des
Herstellers:

Vaillant GmbH
Berghauser Str. 40
42859 Remscheid

Produktbezeichnung:

**Busmodulares Regelsystem für die witterungsgeführte
Heizungsregelung**

Typenbezeichnung:

VRC 630/3

Der Regler mit der genannten Typbezeichnung genügt den geltenden grundlegenden Anforderungen der Richtlinien des Rates:

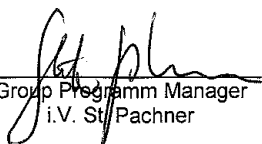
2006/95/EWG mit Änderungen
"Richtlinie über elektrische Betriebsmittel zur
Verwendung innerhalb bestimmter Spannungsgrenzen"

Der Regler entspricht folgender Norm:
EN 60730

2004/108/EWG mit Änderungen
"Richtlinie über elektromagnetische
Verträglichkeit"

Bei eigenmächtigen Änderungen an den gelieferten Produkten und / oder nicht bestimmungsgemäßer Verwendung erlischt die Gültigkeit dieser Konformitätserklärung.

Remscheid, 16.11.2009
(Ort, Datum)


Group Programm Manager
i.V. St. Pachner


Certification Group Manager
i.V. A. Nunn

Vaillant 0512009

Vaillant GmbH
Berghauser Str. 40 ■ 42859 Remscheid ■ Telefon 0 21 91/18-0 ■ Telefax 0 21 91/18-28 10
Gesellschaft mit beschränkter Haftung ■ Sitz: Remscheid ■ Registergericht: Amtsgericht Wuppertal HRB 11775
Geschäftsführer: Claes Göransson, Ralf-Otto Limbach, Dieter Müller ■ Vorsitzender des Aufsichtsrates: Dr. Matthias Blaum
Bankverbindung: Commerzbank Remscheid Bankleitzahl 340 400 49 Konto-Nummer 621 833 300 ■ USt.-Ident.-Nr. DE 811142240
P:\01 approval projects\Components and Accessories\Electronic_Center\controls_approval_data\Vaillant\VRS 630BMR V3.0\11 Declaration of conformity\VRC630_cent_20091116.docx13.12.2001nhr

Fig. A.1 Declaration of conformity

Glossary

AT continuous heating

Outside temperature below which heating using the target room temperature/heating curve assigned to the heating circuit is continuous outside the programmed time slot.

A night time reduction or total switch-off no longer takes place if the temperature reaches or falls below the set value.

Circulation pump

When you turn on the hot water tap it can take a few moments - depending upon the length of the pipe - before hot water comes out. A circulation pump pumps hot water through the pipes in the hot water circuit. This ensures that hot water is immediately available when you turn on the tap. Time windows can be programmed for the circulation pump.

Cylinder charging

Cylinder charging means that the water contained in the cylinder is being heated to the desired hot water temperature.

Fast temperature increase

This function is used for mixer heating circuits

- a) to allow the mixer to reach its target value at target boiler temperature shortly before the boiler is switched on again despite being fully open,
- b) to allow, in the event of mixer circuits with a fixed admixture, the target mixer value (also at target heater temperature) to be reached during the morning heating-up operation even though the fixed admixture reduces the mixer circuit temperature too far,
- c) in order to facilitate an optimum control range for the operation of the mixer. (Reliable operation is only possible if the mixer only rarely needs to move to the "open" stop, thus ensuring a better quality of control).

For this reason you can set a common boiler temperature excess for all mixer circuits. This will increase the current heating circuit target value by the value set.

Floor drying

The floor-drying function is used to "heat dry" a freshly-laid heating layer according to instructions. All operating modes, including those selected by telephone, are interrupted if this function is activated. The flow temperature of the controlled heating circuit is controlled according to a pre-set program regardless of the outside temperature.

Starting temperature: 25°C

The operating mode is displayed together with the current day and the target inlet temperature. The current day can be set manually.

When the function is started, the current time of the start is saved. The change of day takes place in each case exactly at this time.

After a mains off/on, the floor-drying begins with the last active day.

Flow temperature

See Heating flow temperature.

Frost protection delay/ Heating frost protection

The heating frost protection function ensures protection from frost in the **Off** and **Eco** modes (outside the time slots) in the heating installation and applies to all connected heating circuits. To prevent the system from freezing, the required room temperature is set to the set set-back value and the heating circuit pump is switched on if the outside temperature falls below 3 °C. The frost protection function can be suppressed for a certain period of time by setting a delay time (setting range of 0 - 23 h).

Furthermore frost protection is activated regardless of the measured outside temperature if it is established that the measured room temperature is lower than the set set-back temperature with a connected remote control device.

Heating circuit

A heating circuit is a closed circulation system of pipes and heat consumers (e.g. radiators). The heated water from the boiler flows into the heating circuit and returns to the boiler as cooled water.

A heating installation usually has at least one heating circuit. However additional heating circuits can be connected, e.g. to supply several apartments or additional underfloor heating.

Heating curve

The flow temperature in heating installations, calculated as a function of the outside temperature, is known as the heating curve. The flow temperature in the heating circuit gets warmer the lower the outside temperature becomes.

Heating flow temperature

Your boiler heats water which is then pumped through your heating system. The temperature of this hot water as it leaves the boiler is referred to as the flow temperature.

Heating installation

The heating installation heats up the apartment and produces hot water.

Heating pump

A heating pump in a heating installation is a centrifugal pump which conveys the heated heating water to the radiators and house service connection stations and at the same time feeds back the cooled water from the return pipes so that the boiler can heat it up again.

HK1

HK1 is the standard name (factory setting) for heating circuit 1 of your heating installation. You can change this name.

Hot water generation

Your boiler heats the water in the DHW cylinder to the selected target cylinder temperature. If the temperature in the DHW cylinder falls by specific amount, the water is heated up again to the target cylinder temperature. You can programme time slots for heating up the contents of the cylinder.

Installer level

The Installer level displays the specific parameters that the heating engineer can set/change. This level is reserved for the expert technician and is therefore protected by an access code.

Legionella

Legionella are water-borne bacteria which can quickly propagate and cause serious lung diseases. They occur wherever heated water provides the optimum conditions for multiplication. Temporarily heating the water to above 65 °C kills off the legionella.

Level of protection

The level of protection indicates the suitability of electrical equipment for various ambient conditions and additionally the protection of people from potential hazards during their use.

Example:

The controller has Level of Protection IP20. The two digits are significant here.

The first digit indicates the protection of the equipment from contact, e.g. with objects or body parts, which could penetrate into dangerous areas of the equipment (2 = objects > 12.5 mm Ø).

The second digit indicates the protection of the equipment from the ingress of water (0 = no protection).

Manual operation

In manual mode you can actuate every single sensor, pump and mixer in the heating circuit separately and check its functionality.

Maximum limit outside temperature

The maximum limit outside temperature is the outside temperature at which the demand-dependent heating shutdown (automatic shutdown in summer) takes effect. The maximum outside temperature limit can be set separately for each heating circuit within a range of 5 to 50 °C. The default setting is 21 °C. The required room temperature is set to 20 °C for each heating circuit (default setting). If the required room temperature is to be changed in the basic menu, the maximum limit for the outside temperature must also be changed (at least 1 °C higher than the required room temperature).

Maximum pre-heating (heating)

With this function, activation of the heating circuit before the time slot is enabled, with the aim of achieving the set day value at the beginning of the time slot. The function is only performed for the first time slot of the day. The beginning of heating is established, depending on the outside temperature.

Influence of outside temperature:

OT ≤ -20 °C : set preheating period

OT ≥ +20 °C : no preheating period

Operator level

The Operator level displays the basic parameters which you can set/change without any special prior knowledge during normal operation. You can adapt your heating installation to your needs by setting the parameters accordingly.

Outside temperature correction

The sensor value of the outdoor sensor which is connected to the solar system controller can be changed by a value of +/- 5 °C to compensate external influences. This means that the measured external temperature is changed to the set value.

Setting range: -5 K ... +5 K,

Basic setting: 0 K

Preference

Preference works like an isolating circuit for only one individual boiler. The cylinder is directly connected hydraulically to the boiler.

All the pumps in the heating circuits continue to run during cylinder charging.

Protection class

Protection class denotes the classification and identification of electrical equipment with reference to the existing safety measures to prevent electric shocks.

Reversal boiler sequence (only for cascades)

The aim of the reversal of boiler sequence is an equal operating time for all connected appliances.

The boiler sequence is changed if:

- 1st The reversal of boiler sequence has been enabled in the menu and
2. Reversal of boiler sequence is possible in the selected hydraulic plan
3. Difference in the duration of activation between first and last boiler is 100 hours.
 - In this case, sorting is in rising order of activation hours.
 - An internal value for the activation hours is used; the boiler operating hours are not read back.

Remarks:

With different heating appliances with different outputs, it does not make sense to reverse the boiler sequence.

Basic setting: no reversal of boiler sequence

Room temperature

The room temperature is the temperature actually measured in the apartment.

Set-back temperature

The set-back temperature is the temperature to which your heating system reduces the room temperature outside of the programmed time slot.

Special operating modes:

If the Auto mode has been selected for the cylinder circuit, the following special operating modes will influence the reheating:

Advance: Cylinder charging until the falling edge of the next time slot

Holiday: Cylinder charging deactivated

One-time charging: The cylinder is charged once to the preset target temperature

Summer/Winter changeover

In the basic display it is possible to determine whether the changeover between summer and winter time is to take place automatically.

The factory setting (as-supplied condition) is for automatic changeover not to take place.

If the controller is fitted with a VRC DCF external sensor, the summer/winter changeover takes place automatically. Switching off the automatic changeover is not possible in this case.

On the last weekend in March, the clock is put forward by one hour: from 2:00 to 3:00 hrs.

On the last weekend in October, the clock is put back by one hour: from 3:00 to 2:00 hrs.

Switch-off delay (only for cascades)

At the end of the switch-off delay, the next stage to be switched off is only actually switched off if the shut-down temperature is still exceeded.

Switch-on room temperature

Room temperature control incorporates the room temperature into the calculation of the flow temperature.

Prerequisites:

- There is a temperature sensor, which measures the room temperature, fitted in the remote control or in the wall-mounted controller.
- The room temperature control function must be activated for each heating circuit by the heating engineer (Menu **C2**).

Target room temperature

The target room temperature is the temperature that you would like in the apartment and which is specified to the controller. If the controller is installed in the living room, then the target room temperature for the room in which the controller is installed applies. If the controller is installed in the boiler, the target room temperature is applied as a reference value for controlling the flow temperature in accordance with the heating curve.

Target values

Target values are desired values that the operator specifies in the controller, e.g. the room target temperature or target cylinder temperature for water heating.

teleSWITCH

Vaillant teleSWITCH remote telephone switch for remote control of the heating by telephone.

Temperature correction for actual room temperature

You can shift the displayed value for the room temperature up or down within a range of ± 3 °C as required.

Temperature fault detection

With this function it is possible to detect faults regarding the setting or layout in a heating circuit.

If the specified target temperature is still not reached after a longer time period (parameters available: OFF, between 1 and 12 hours), an error message appears for the circuit in question.

Default setting: Off

Time slot

Three time slots per day can be programmed for the heating, the hot water generation and the circulation pump.

Example:

Time slot 1: Mon 09.00 - 12.00 hrs.

Time slot 2: Mon 15.00 - 18.30 hrs.

For hot water generation, the target hot water temperature prevails for all time slots.

The time windows specify the time for the circulation pump.

Weather-compensated

The outside temperature is measured by a separate sensor which is mounted in the open air, and the results are transmitted to the controller. At low outside temperatures the controller provides increased heating output; at higher outside temperatures the heating output is reduced.

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Vaillant Ltd

Vaillant House ■ Medway City Estate ■ Trident Close ■ Rochester ■ Kent ME2 4EZ

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

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