

Vitotronic 100

Type HC1B

Digital boiler control unit

Vitotronic 300-K

Type MW2B

Weather-compensated, digital cascade control unit

For applicability, see the last page

VITOTRONIC 100
VITOTRONIC 300-K



Vitotronic 100



Vitotronic 300-K

Safety instructions

Safety instructions



Please follow these safety instructions closely to prevent accidents and material losses.

Safety instructions explained



Danger

This symbol warns against the risk of injury.



Please note

This symbol warns against the risk of material losses and environmental pollution.

Note

Details identified by the word "Note" contain additional information.

Target group

These instructions are exclusively intended for qualified contractors.

- Work on gas installations may only be carried out by a registered gas fitter.
- Work on electrical equipment may only be carried out by a qualified electrician.
- The system must be commissioned by the system installer or a qualified person authorised by the installer.

Regulations to be observed

- National installation regulations
- Statutory regulations for the prevention of accidents
- Statutory regulations for environmental protection
- Codes of practice of the relevant trade associations
- All current safety regulations as defined by DIN, EN, DVGW, TRGI, TRF, VDE and all locally applicable standards
 - Ⓐ ÖNORM, EN, ÖVGW G K directives, ÖVGW-TRF and ÖVE
 - Ⓒ SEV, SUVA, SVGW, SVTI, SWKI, VKF and EKAS guideline 1942: LPG, part 2

Safety instructions for working on the system

Working on the system

- Where gas is used as the fuel, close the main gas shut-off valve and safeguard it against unintentional reopening.
- Isolate the system from the power supply, e.g. by removing the separate fuse or by means of a mains isolator, and check that it is no longer live.
- Safeguard the system against reconnection.
- Wear suitable personal protective equipment when carrying out any work.



Danger

Hot surfaces can cause burns.

- Before maintenance and service work, switch OFF the appliance and let it cool down.
- Never touch hot surfaces on the boiler, burner, flue system or pipework.



Please note

Electronic assemblies can be damaged by electrostatic discharge.

Prior to commencing work, touch earthed objects such as heating or water pipes to discharge static loads.

Repair work



Please note

Repairing components that fulfil a safety function can compromise the safe operation of the system.

Replace faulty components only with genuine Viessmann spare parts.

Safety instructions (cont.)**Auxiliary components, spare and wearing parts****Please note**

Spare and wearing parts that have not been tested together with the system can compromise its function. Installing non-authorized components and making non-approved modifications or conversions can compromise safety and may invalidate our warranty.

For replacements, use only original spare parts supplied or approved by Viessmann.

Safety instructions for operating the system**If you smell gas****Danger**

Escaping gas can lead to explosions which may result in serious injury.

- Do not smoke. Prevent naked flames and sparks. Never switch lights or electrical appliances on or off.
- Close the gas shut-off valve.
- Open windows and doors.
- Evacuate any people from the danger zone.
- Notify your gas or electricity supply utility from outside the building.
- Have the power supply to the building shut off from a safe place (outside the building).

If you smell flue gas**Danger**

Flue gas can lead to life threatening poisoning.

- Shut down the heating system.
- Ventilate the installation site.
- Close doors to living spaces to prevent flue gases from spreading.

What to do if water escapes from the appliance**Danger**

If water escapes from the appliance there is a risk of electrocution.

Switch OFF the heating system at the external isolator (e.g. fuse box, domestic distribution board).

**Danger**

If water escapes from the appliance there is a risk of scalding.

Never touch hot heating water.

Condensate**Danger**

Contact with condensate can be harmful to health.

Never let condensate touch your skin or eyes and do not swallow it.

Flue systems and combustion air

Ensure that flue systems are clear and cannot be sealed, for instance due to accumulation of condensate or other external causes.

Avoid continuous condensate disposal with a wind protector.

Ensure an adequate supply of combustion air.

Inform system users that subsequent modifications to the building characteristics are not permissible (e.g. cable/pipework routing, cladding or partitions).

**Danger**

Leaking or blocked flue systems, or an inadequate supply of combustion air can cause life threatening poisoning from carbon monoxide in the flue gas.

Ensure the flue system is in good working order. Vents for supplying combustion air must be non-sealable.

Extractors

Operating appliances that exhaust air to the outside (extractor hoods, extractors, air conditioning units, etc.) can create negative pressure. If the boiler is operated at the same time, this can lead to a reverse flow of flue gas.

**Danger**

The simultaneous operation of the boiler and appliances that exhausts air to the outside can result in life threatening poisoning due to a reverse flow of flue gas.

Fit an interlock circuit or take suitable steps to ensure an adequate supply of combustion air.

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Disposal of packaging










Please dispose of packaging waste in line with statutory regulations.

DE: Use the disposal system organised by Viessmann.

AT: Use the ARA statutory disposal system (Altstoff Recycling Austria AG, licence number 5766).

CH: Packaging waste is disposed of by the HVAC contractor.

Symbols

Symbol	Meaning
	Reference to other document containing further information
	Step in a diagram: The numbers correspond to the order in which the steps are carried out.
	Warning of material losses and environmental pollution
	Live electrical area
	Pay particular attention.
	<ul style="list-style-type: none"> ▪ Component must audibly click into place. or ▪ Acoustic signal
	<ul style="list-style-type: none"> ▪ Fit new component. or ▪ In conjunction with a tool: Clean the surface.
	Dispose of component correctly.
	Dispose of component at a suitable collection point. Do not dispose of component in domestic waste.

Intended use

The appliance is only intended to be installed and operated in sealed unvented heating systems that comply with EN 12828, with due attention paid to the associated installation, service and operating instructions as well as the details in the datasheet. It is only designed for the heating up of heating water.

Commercial or industrial usage for a purpose other than the heating up of heating water shall be deemed inappropriate.

Intended use presupposes that a fixed installation in conjunction with permissible components designed for this purpose has been carried out.

Information

Intended use (cont.)

Every other use will be deemed to be inappropriate. Any resulting losses are excluded from the manufacturer's liability.

Any usage beyond this must be approved by the manufacturer for the individual case.

Intended use also includes the adherence to maintenance and inspection intervals.

Product information

The **Vitotronic 300-K, type MW2B** cascade control unit for weather-compensated operation is designed for the following applications:

- Operation of max. 8 Vitodens 200-W with Vitotronic 100, type HC1B
- For heating systems with max. 2 heating circuits with mixer

System examples

Available system examples: See www.viessmann-schemen.com

Installation information for the Vitotronic 100



For installation, commissioning, maintenance and service of the Vitodens 200-W with Vitotronic 100: See separate installation instructions and service instructions.

If a DHW cylinder is to be integrated into the system, make the connection at the Vitotronic 300-K or, if installed, at the Vitotronic 200-H.

Installing a cascade communication module

The communication module is part of the standard delivery.

Opening the control unit enclosure

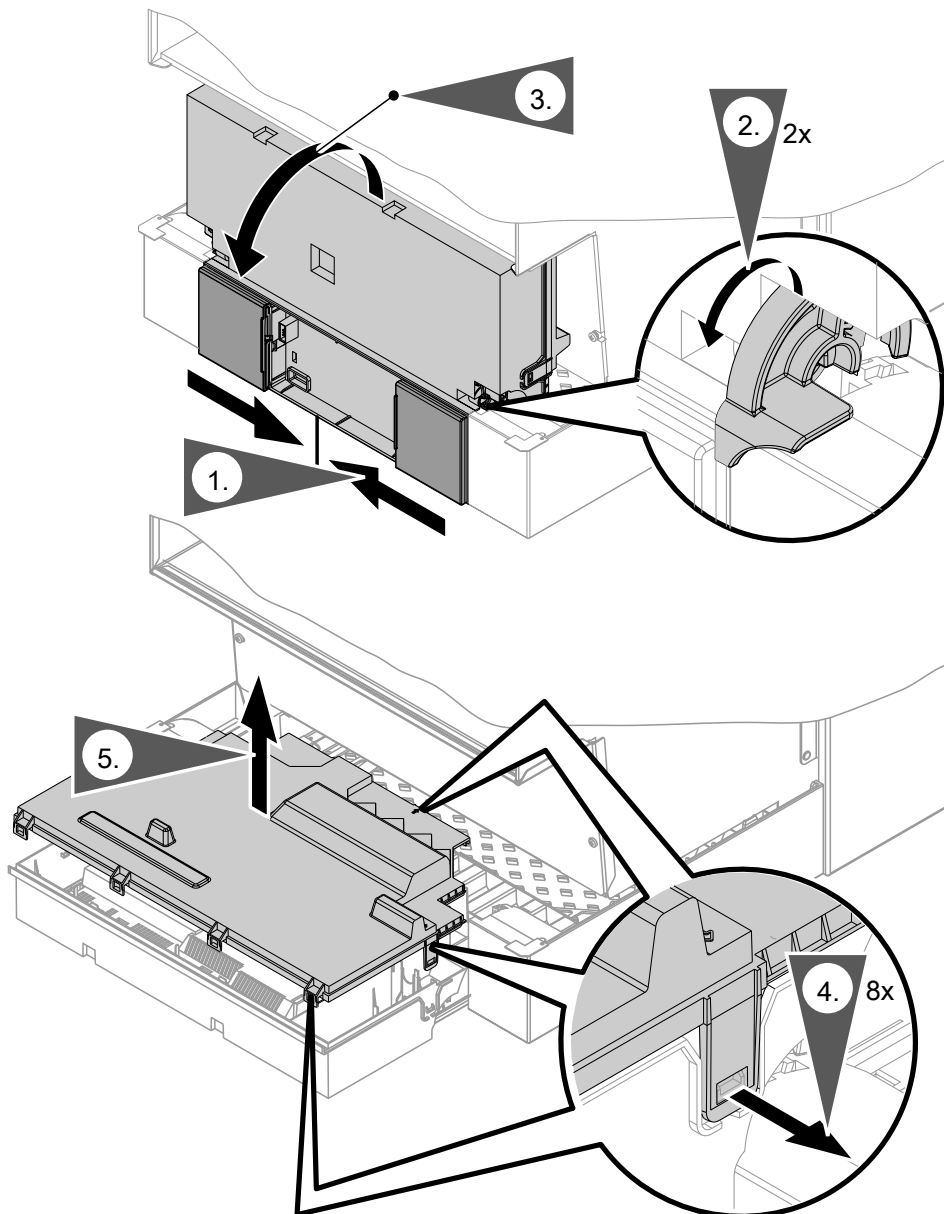


Fig. 1

Installation of the communication module

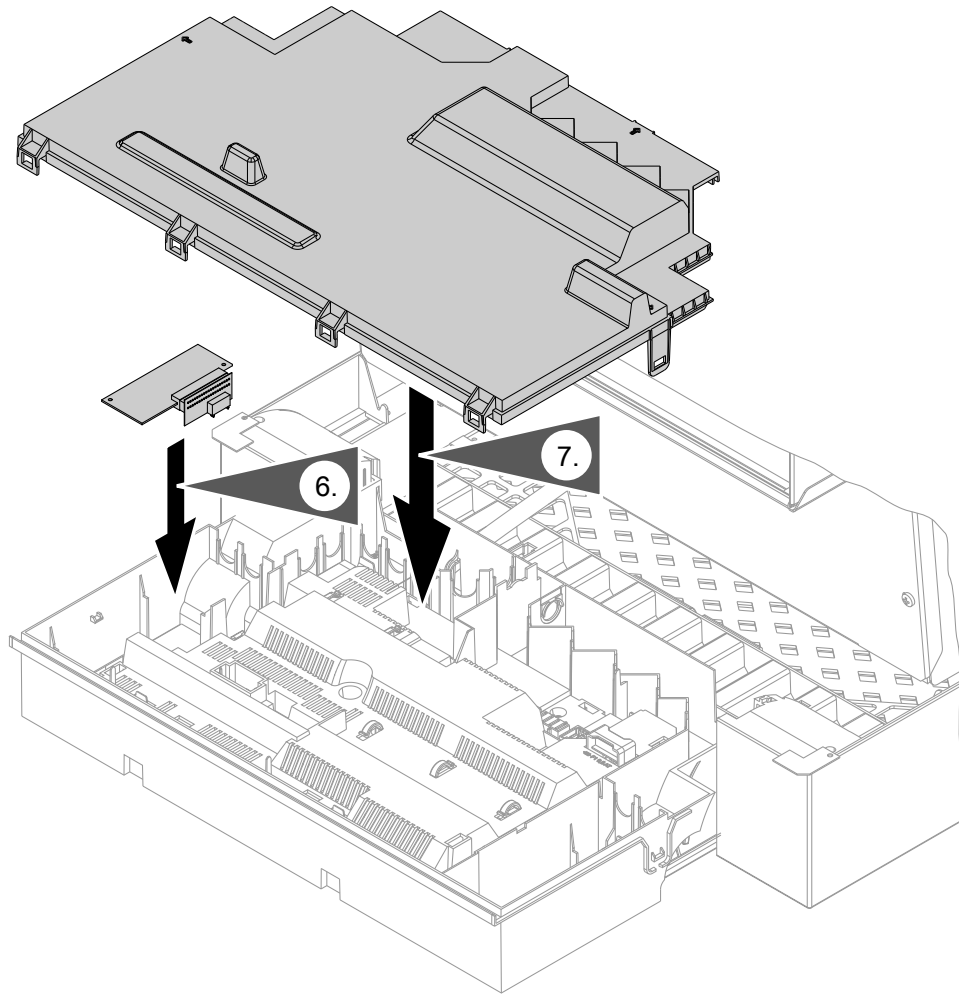


Fig. 2

Installing control unit components

Installing the mounting bracket and control unit back

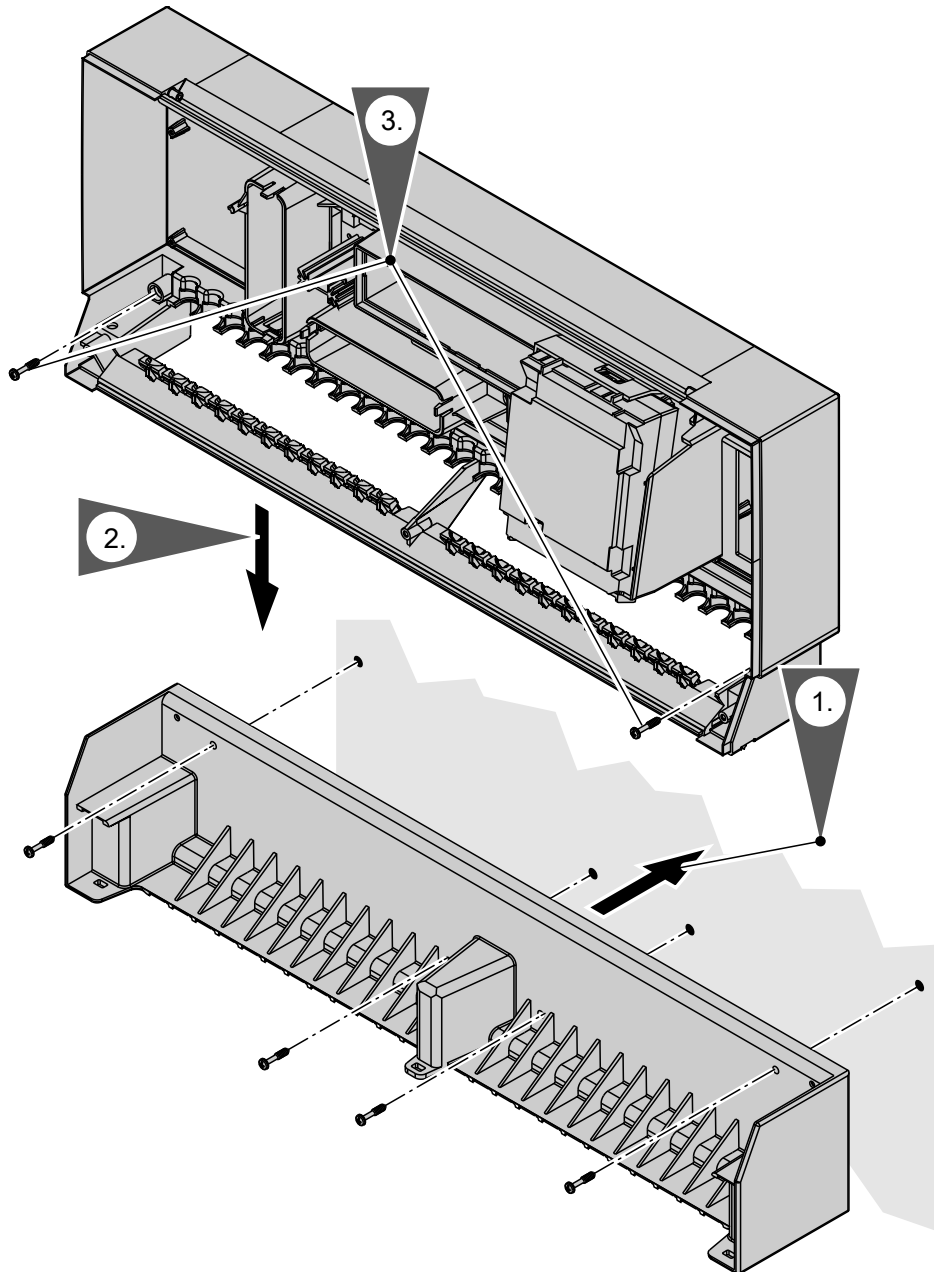


Fig. 3

Fitting the control unit front

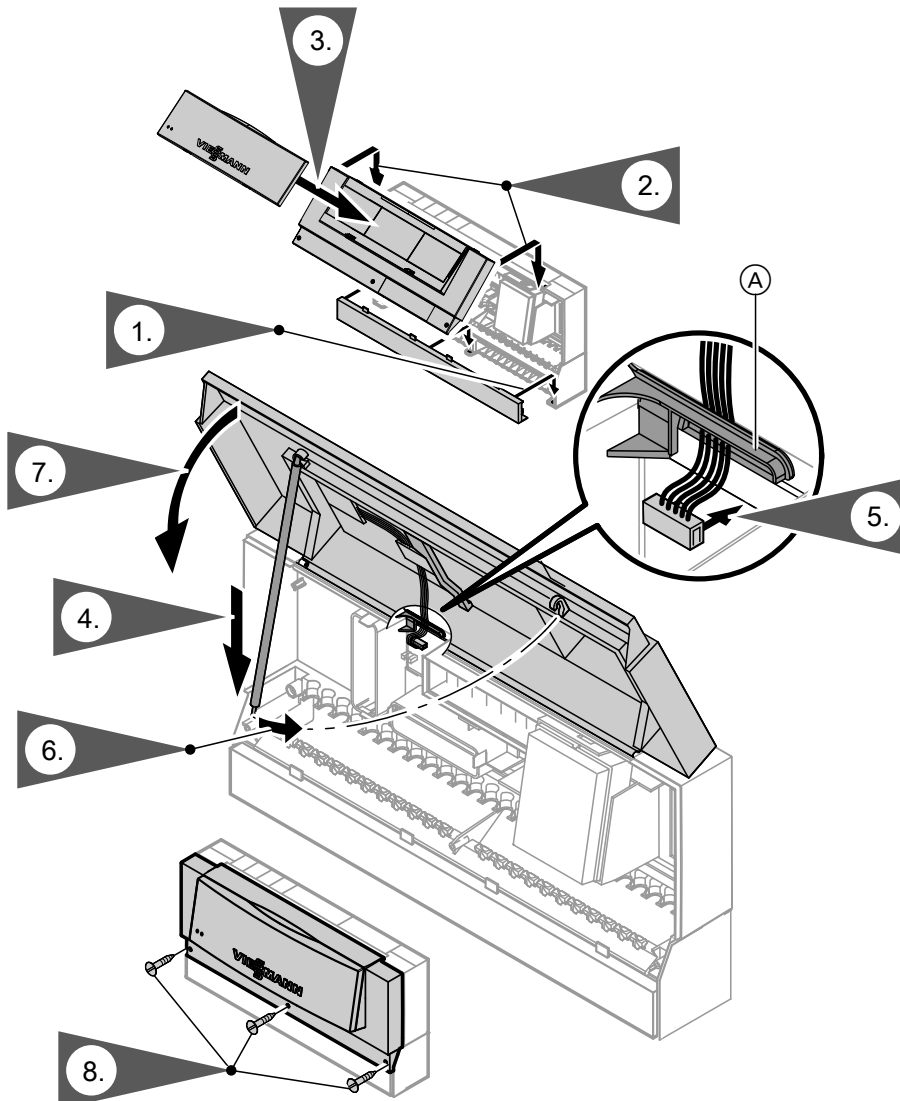



Fig. 4

Installing the extension PCB for heating circuits 2 and 3

 Separate installation instructions

Opening the control unit

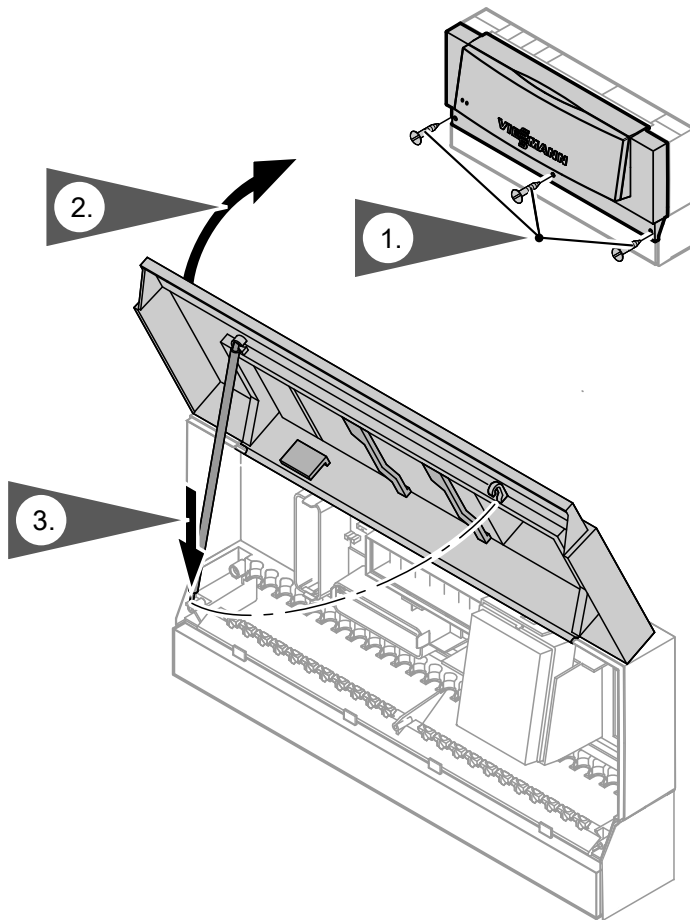


Fig. 5

Inserting cables/leads and applying strain relief

Installation

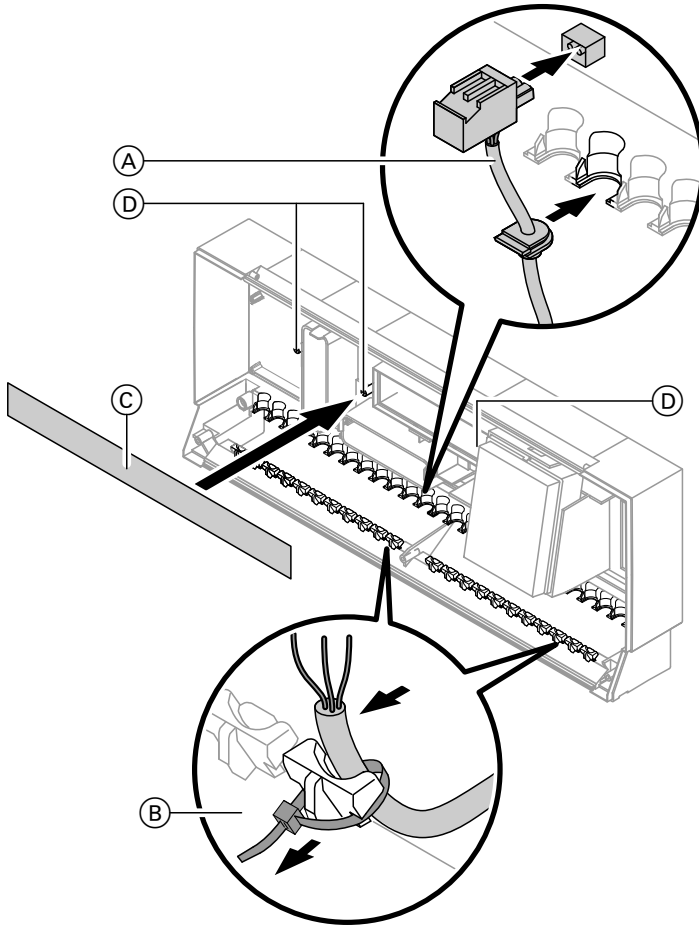


Fig. 6

- Ⓐ Cables with moulded strain relief
- Ⓑ On-site cables; strip up to 100 mm insulation.
- Ⓒ Plug-in connection diagram
- Ⓓ Fem. mouldings for plug-in connection diagram

Overview of electrical connections on the Vitotronic 300-K

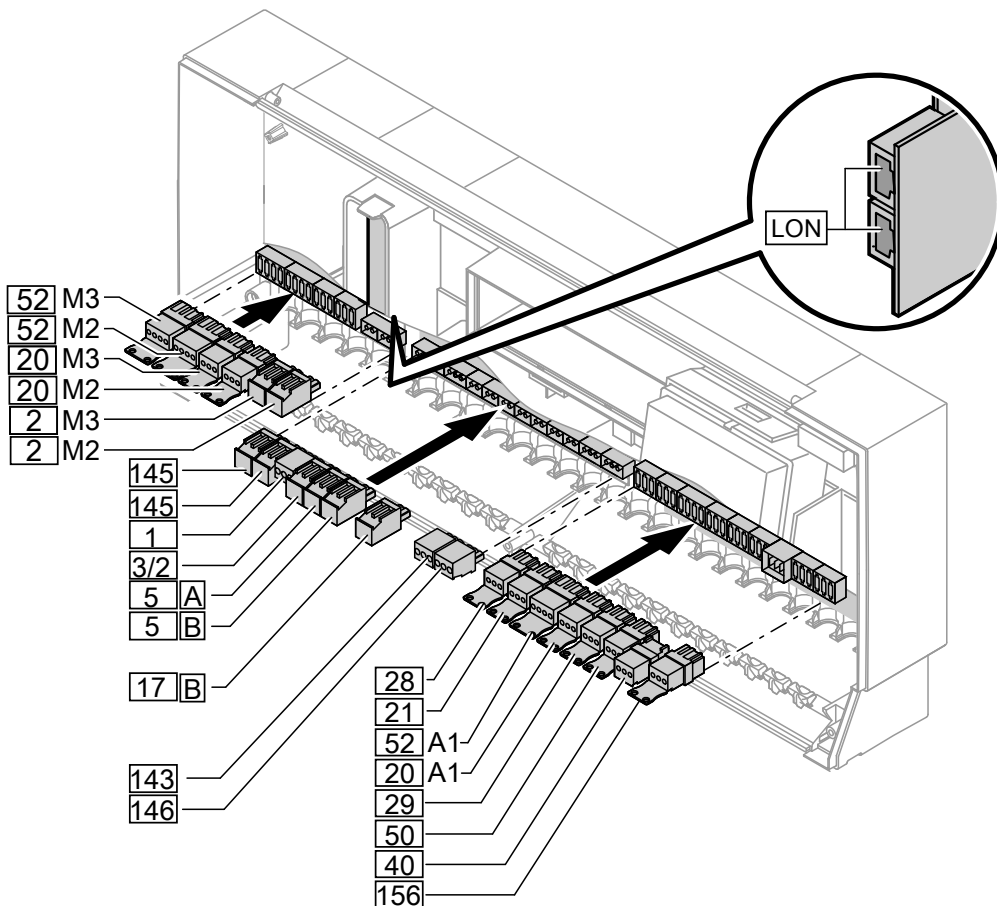


Fig. 7

PCB, extension for heating circuits 2 and 3 (accessories)

- [2] M2/M3 Flow temperature sensor
- [20] M2/M3 Heating circuit pump
- [52] M2/M3 Mixer motor

Main circuit board, LV

- [1] Outside temperature sensor
- [3]/[2] Flow temperature sensor, common heating flow/low loss header
- [5] A Cylinder temperature sensor
- [5] B Cylinder temperature sensor 2 for cylinder loading system (accessories)
- [17] B Temperature sensor, cylinder loading system (accessories)
- [143] External hook-ups
- [145] KM-BUS subscriber (Vitotronic 100 and accessories, e.g. Vitotrol remote controls)
- [146] External hook-ups
- LON LON BUS, connecting cable for data exchange with the Vitotronic 200-H and the Vitocom

Main PCB 230 V~

- [20] A1 Heating circuit pump
or
Primary cylinder loading pump, cylinder loading system
- [21] Circulation pump for cylinder heating (accessories)

- [28] DHW circulation pump (on site)
- [29] Distribution pump
- [40] Power supply
- [50] Central fault message
- [52] A1 Motor for 3-way mixing valve, cylinder loading system
- [156] Internal power supply for mixer extension PCB

- When connecting external switching contacts or components to the safety LV of the control unit ([143] and [146]), observe the requirements of protection class II, i.e. 8.0 mm air and creep path or 2.0 mm insulation thickness from 'live' components.
- Ensure the safe electrical separation of all on-site components (incl. PC/laptops) in accordance with EN 60 335 and IEC 65.
- When connecting plugs, [21], [28], [20] M2/M3, [2] M2/M3, [143] and [146], bundle the cable cores close to the terminals.
This ensures that, in the event of a fault, e.g. if a wire becomes detached, the wires cannot drift into the adjacent voltage area.

Electrical connections

Making the connections to the Vitotronic 100

The cascade communication module must be fitted into every Vitotronic 100 (see page 9).

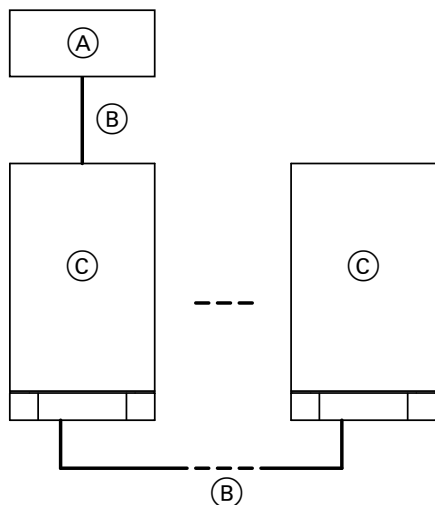


Fig. 8

- (A) Vitotronic 300-K
- (B) 2-core cable (cross-section $2 \times 0.5 \text{ mm}^2$, total length 50 m)
- (C) Boiler with Vitotronic 100

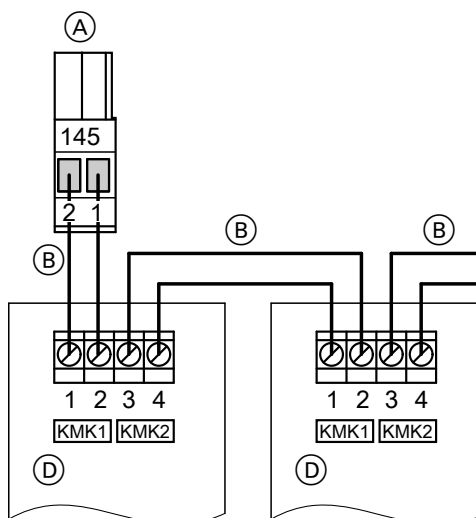


Fig. 9

- (A) Plug 145 to the Vitotronic 300-K
- (B) 2-core cable (cross-section $2 \times 0.5 \text{ mm}^2$, total length 50 m)
- (D) Terminal strip on the cascade communication module in the Vitotronic 100

Connecting the sensors

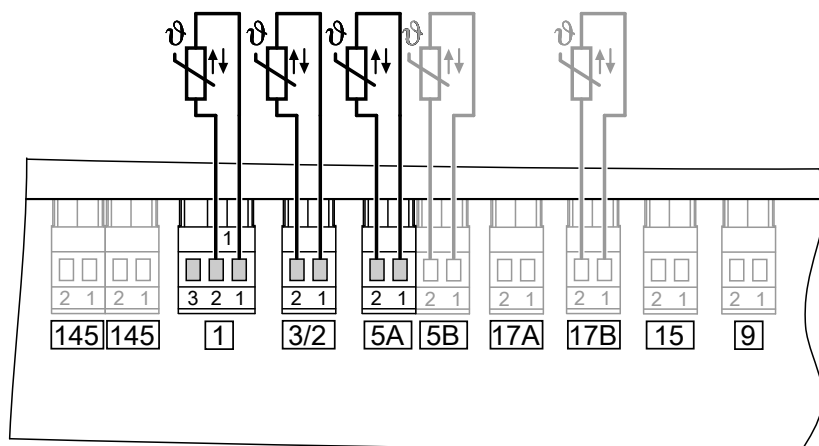


Fig. 10

- 1 Outside temperature sensor
- 3/2 Flow temperature sensor common flow/low loss header
- 5A Cylinder temperature sensor 1
- 5B Cylinder temperature sensor 2 for cylinder loading system (accessories)
- 17B Temperature sensor, cylinder loading system (accessories)

Fitting location for outside temperature sensor

- North or north-westerly wall, 2 to 2.5 m above ground level; in multi storey buildings, in the upper half of the second floor.
- Not above windows, doors or ventilation outlets.
- Not immediately below balconies or gutters.
- Never render over.

Connecting the sensors (cont.)

Outside temperature sensor connection

2-core lead, length up to 35 m with a cross-section of 1.5 mm²



Wireless base station installation and service instructions

Wireless outside temperature sensor

Wireless subscriber. Only in conjunction with the wireless base station (KM-BUS subscriber) that is connected to the Vitotronic control unit.

Connecting pumps

Available pump connections

- 20/A1 Heating circuit pump
or
Primary cylinder loading pump, cylinder loading system
- 21 Circulation pump for cylinder heating
- 28 DHW circulation pump
- 29 Distribution pump

Pumps 230 V~



Fig. 11

- (A) Pump
- (B) To the control unit

Rated current	4 (2) A~
Recommended connecting cable	H05VV-F3G 0.75 mm ² or H05RN-F3G 0.75 mm ²

Connecting pumps (cont.)

Pumps with power consumption greater than 2 A

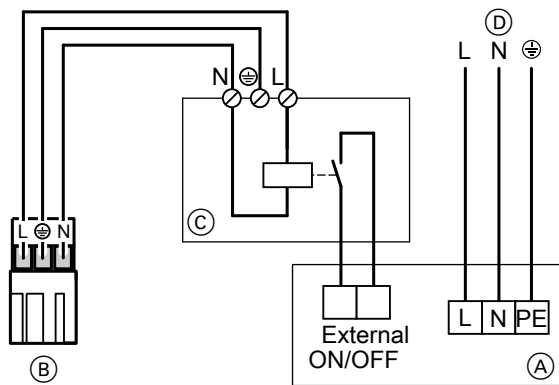


Fig. 12

- (A) Pump
- (B) To the control unit
- (C) Contactor
- (D) Separate mains connection (observe manufacturer's instructions)

Pumps 400 V~

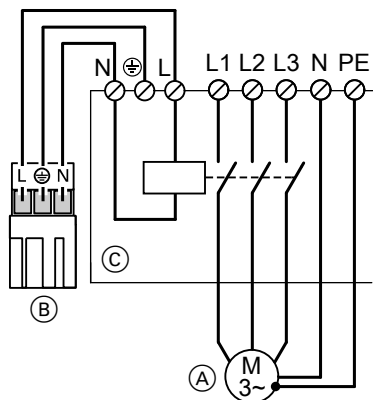


Fig. 13

- (A) Pump
- (B) To the control unit
- (C) Contactor

For switching the contactor

Rated current	4 (2) A~
Recommended connecting cable	H05VV-F3G 0.75 mm ² or H05RN-F3G 0.75 mm ²

Connecting pumps (cont.)

Pumps in the underfloor heating circuit

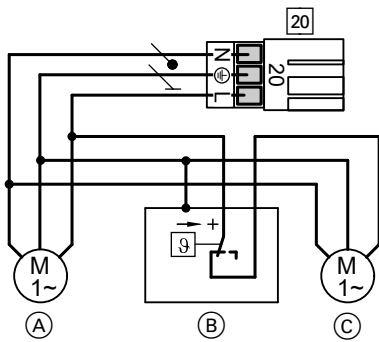


Fig. 14

- 20 To the control unit
- A Primary cylinder loading pump
- B Temperature limiter
- C Secondary pump

Connecting servomotors

Available connections

- 52 A1 Motor for 3-way mixing valve, cylinder loading system

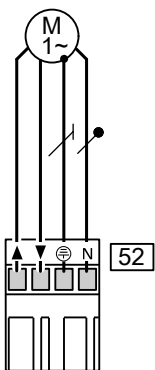


Fig. 15

- ▲ Open
- ▼ Close

Rated voltage	230 V~
Rated current	Max. 0.2 (0.1) A~
Recommended connecting cable	H05VV-F4G 0.75 mm ² or H05RN-F4G 0.75 mm ²
Runtime	5 to 199 s, adjustable via coding address "C3"

Connecting the central fault message facility

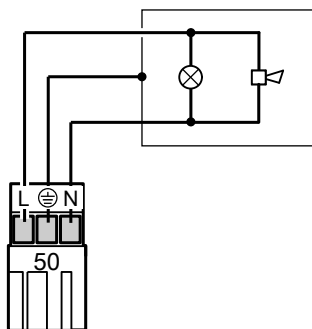


Fig. 16

Note

All heating system faults are transferred. This includes also faults on a Vitotronic 100 for example.

Rated voltage	230 V~
Rated current	Max. 4 (2) A~
Recommended connecting cable	H05VV-F3G 0.75 mm ² or H05RN-F3G 0.75 mm ²

Installation

External demand via switching contact

Connection options:

- Plug 146
- EA1 extension (accessories, see page 91)

Connection

! Please note
 Live contacts lead to short circuits or phase failure.
 The external connection **must be potential-free**.

Plug 146	EA1 extension
<p>(A) Floating contact (B) Plug 146 of the control unit</p>	<p>(A) Floating contact (B) EA1 extension</p>

With the contact closed, the boiler burners are started subject to load. They heat to the set flow temperature selected in **coding address "9b"** in the **"General"** group. The temperature is limited by this set value and the electronic maximum flow temperature limit (coding address "37" in the **"Cascade"** group).

Codes

Plug 146	EA1 extension
No coding required	In the "General" group set "5d", "5E" or "5F" to 2.

External demand via 0-10 V input

Connection at input 0–10 V to **EA1 extension** (see page 91).

Note

Ensure galvanic separation between the earth conductor and the negative pole of the on-site power source.

0 to 1 V	No default for set system flow temperature value
1 V	Set value 10 °C
10 V	Set value 100 °C

Note coding address "1E" in the **"General"** group.

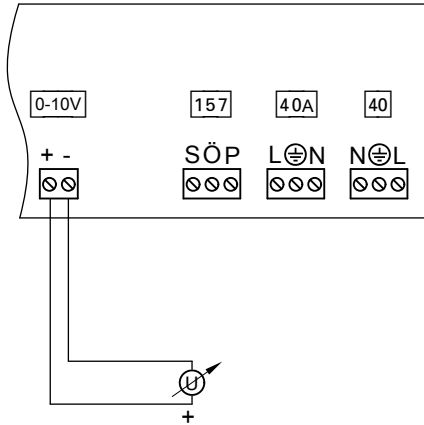


Fig. 17

External blocking via switching contact

Connection options:

- Plug 143
- EA1 extension (accessories, see page 91)

Connection

! Please note
 Live contacts lead to short circuits or phase failure.
 The external connection **must be potential-free**.

Plug 143	EA1 extension
<p>(A) Floating contact (B) Plug 143 of the control unit</p>	<p>(A) Floating contact (B) EA1 extension</p>

With the contact closed, the burners of **all** boilers will be subject to a controlled shutdown. The boiler circuit pumps are switched off.

External blocking via switching contact (cont.)

- ! **Please note**
During the block, there is **no frost protection** of the heating system.

Codes

Plug 143	EA1 extension
Set coding address "99" in the "General" group.	Set "5d", "5E" or "5F" in the "General" group to 3 or 4.

External "Mixer close"/"Mixer open"

Connection at plug 143

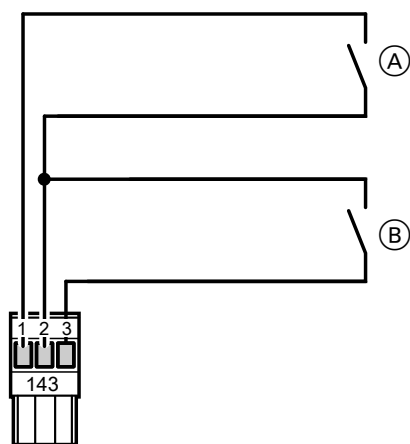


Fig. 18

- (A) External "Mixer open" (floating contact)
- (B) External "Mixer closed" (floating contact)

- ! **Please note**
'Live' contacts lead to short circuits or phase failure. The external connection **must be floating**.

Codes

External "Mixer open"	External "Mixer closed"
This function is assigned to the heating circuits via coding address "9A" in the "General" group.	This function is assigned to the heating circuits via coding address "99" in the "General" group.

External heating program changeover

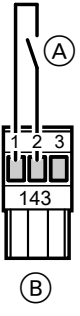
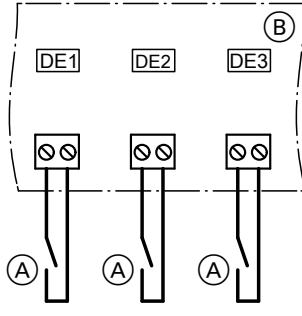
Optional connections:




- Plug 143
- Extension EA1 (accessory, see chapter "Components")

Connection

- ! **Please note**
'Live' contacts lead to short circuits or phase failure. The external connection **must be potential-free**.

External heating program changeover (cont.)

Plug 143	Extension EA1
 <p>(A) Floating contact (B) Plug 143 on control unit</p>	<p>The changeover can be achieved separately for heating circuits 1 to 3.</p>  <p>(A) Floating contact (B) Extension EA1</p>

Preselected heating program (Contact open)	Code	Changed heating program (Contact closed)
 Central heating OFF/DHW OFF	"d5:0" in the "Heating circuit ..." group (Delivered condition)	Constant operation with reduced room temperature/DHW heating OFF
or  Central heating OFF/ DHW heating ON	"d5:1" in the "Heating circuit ..." group	Constant operation with standard room temperature, DHW heating in accordance with coding address "64" in the "DHW" group
or  Central heating ON/DHW heating ON		

Codes

Plug 143	Extension EA1
Via coding address "91" in the "General" group, the function can be assigned to the heating circuits.	Set "5d" (DE1), "5E" (DE2) or "5F" (DE3) in group "General" to 1. Via coding address "d8" in the "Heating circuit..." group, the function can be assigned to the heating circuits.

Making the LON connection

The Viessmann LON is designed for "line" bus topology with a terminator at both ends (accessories). The transfer distances for LON are subject to the electrical properties of the relevant cable. For this reason, only use the specified cable types. Use only one cable type within each LON.

Cable types (on site):

- 2-core cable, CAT5, screened
- JY(St)Y 2 x 2 x 0.8 mm (telephone cable)

Observe the requirements for cabling and operation of the LON interface FTT 10-A.

All Viessmann appliances are connected with RJ45 connectors. The Viessmann LON always requires cores "1" and "2" plus the screen. The cores are interchangeable.

Note

When connecting external switching contacts and on-site components, observe the insulation requirements of IEC/EN 60335-1.

Making the LON connection (cont.)

Connection with Viessmann LON cable

Installation spacing ≤ 7 m

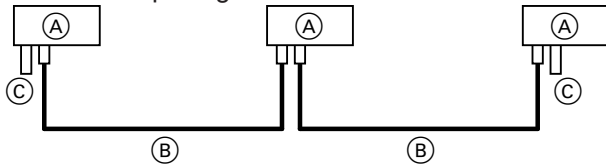


Fig. 19

- (A) Control unit or Vitocom
- (B) LON cable, 7 m long
- (C) Terminator

Connection with Viessmann LON cable and coupling

Installation spacing 7 to 21 m

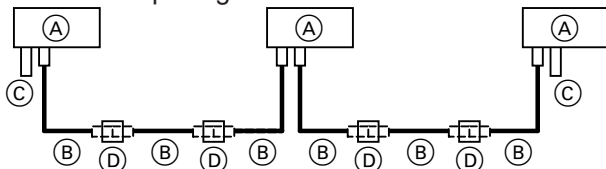


Fig. 20

- (A) Control unit or Vitocom
- (B) LON cable, 7 m long
Max. 3 cables between 2 devices
- (C) Terminator
- (D) LON coupling

Connection with on-site cable and LON plug

Installation spacing ≤ 900 m (with LON plug)

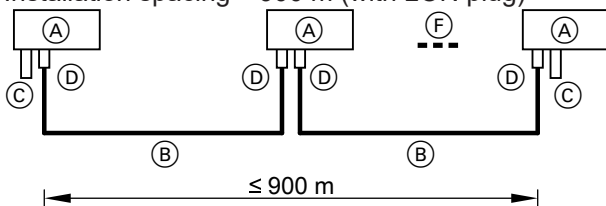


Fig. 21

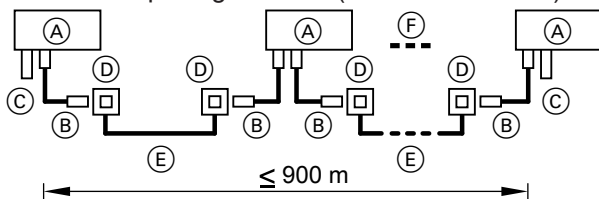
- (A) Control unit or Vitocom
- (B) On-site cable

- (C) Terminator
- (D) LON plug
- (F) Up to 30 subscribers

Making the LON connection (cont.)

Connection with LON cable, on-site cable and LON socket

Installation spacing ≤ 900 m (with LON sockets)



- (C) Terminator
- (D) LON sockets
- (E) On-site cable
- (F) Up to 30 subscribers

Fig. 22

- (A) Control unit or Vitocom
- (B) LON cable, 7 m long


Power supply

Directives

Regulations

Carry out the power supply connection and all earthing measures (i.e. RCD circuit) in accordance with IEC 60364, the requirements of your local power supply utility, and VDE or national regulations. Protect the power cable to the control unit with an appropriate fuse/MCB.

For oil and gas combustion equipment over 100 kW, according to the Sample Combustion Ordinance "FeuVO", an "emergency shutdown" must be installed on site outside the installation room. The national combustion equipment ordinance for your local region must be observed. For combustion equipment to EN 50156-1, the "emergency shutdown" installed on site must comply with the requirements of EN 50156-1.

Install the "emergency shutdown" outside the installation room; it must be able to separate **all** non-earthed conductors simultaneously with a gap of 3 mm at least. We additionally recommend installing an AC/DC-sensitive RCD (RCD class B ) for DC (fault) currents that can occur with energy-efficient equipment.

Recommended power cable

3-core cable selected from the following options:

- H05VV-F3G 1.5 mm²
- H05RN-F3G 1.5 mm²

Power supply (cont.)

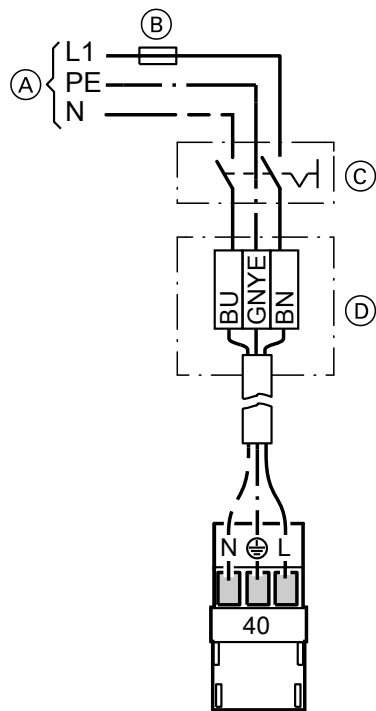


Fig. 23

- (A) Power supply 230 V~
- (B) Fuse
- (C) Mains isolator, two-pole (on-site)
- (D) Junction box (on site)

! **Please note**
 Incorrect phase sequence can cause damage to the appliance.
 Check for phase equality with the Vitotronic 100 power supply.

1. Check whether the power cable to the control unit has appropriate fuse protection.
2. Connect the power cable at the junction box and plug 40 (on-site).



Danger

Incorrect core allocation can cause severe injury and can damage the appliance. Take care not to interchange wires "L1" and "N":

- L1 BN (brown)
- N BU (blue)
- PE GNYE (green/yellow)

3. Insert plug 40 into the control unit.

Changing the language

The following is displayed during commissioning (delivered condition German).

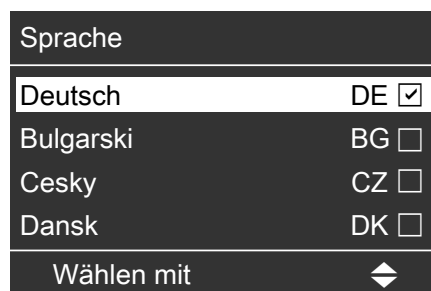


Fig. 24

Setting the date and time

The time and date need to be reset during commissioning or after a prolonged time out of use.

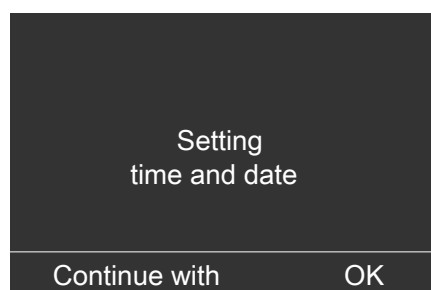


Fig. 25

Matching coding addresses to the system version

Check all addresses in **Code 1**. Adjust if necessary.

Check and adjust the following coding addresses in **Code 2**:

	Group	Function
"39"	"Cascade"	Permanent lead boiler
"3A"	"Cascade"	Permanent last boiler
"4C"	"General"	Plug [20] function
"55"	"DHW"	Cylinder temperature control function
"77"	"General"	LON subscriber number
"7A"	"General"	Central control
"98"	"General"	Viessmann system number
"9C"	"General"	Monitoring LON subscribers

Selecting the boiler sequence (if required)

Subject to the codes set in the **"Cascade"** group and internal control calculations, the control unit offers various boiler sequences. Coding addresses that influence the boiler sequence:

"38"	Changing the lead boiler and the boiler sequence
"39"	Permanent lead boiler
"3A"	Permanent last boiler
"41" to "44"	ECO thresholds
"65", "6F"	ECO thresholds
"74", "7d"	ECO thresholds

- Every boiler can be blocked or enabled subject to outside temperature by means of the ECO threshold.
- The ECO threshold is disabled if the boiler is required to achieve the set flow temperature in the case of enabled boilers failing.
- At least the lead boiler remains in operation when all boilers in a system would otherwise be blocked via the ECO threshold.

1. Press

Selecting the boiler sequence (if required) (cont.)

2. "Boiler sequence"

3. Select the required boiler sequence and confirm with "OK".

Connecting the control unit to the LON

- Vitotronic 300-K and 200-H:
The LON communication module (accessory) must be fitted.
 - Within one LON, the system number (coding address "98" in the "General" group) must always be the same.
 - **Only one Vitotronic** may be programmed as fault manager.
 - The data transfer via LON can take several minutes.
- Installation and service instructions
Vitotronic 200-H
- Within one LON, the same subscriber number must **not** be allocated twice.

Example of a multi boiler system

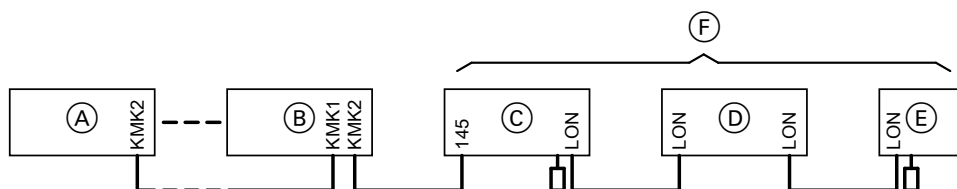


Fig. 26

- Ⓐ Vitotronic 100
- Ⓑ Vitotronic 100
- Ⓒ Vitotronic 300-K
- Ⓓ Vitotronic 200-H
- Ⓔ Vitocom
- Ⓕ LON

Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
Multi boiler system. Set code "01:2" in group 2 " Boiler ".	Multi boiler system. Set code "01:2" in group 2 " Boiler ".	—	—	—
Boiler number 1. Code "07:1" in group 2 " Boiler " (delivered condition).	Boiler number 2 to ... Set code "07:2 to ..." in group 2 " Boiler ".	—	—	—
With cascade communication module. Code "76:2" in group 1 " General "; automatic recognition.	With cascade communication module. Code "76:2" in group 1 " General "; automatic recognition.	With LON communication module. Code "76:1" in the " General " group; automatic recognition.	With LON communication module. Code "76:1" in the " General " group; automatic recognition.	—
—	—	Number of connected boilers. Set codes "35:1" to "35:8" in the " Cascade " group.	—	—
—	—	Subscriber no. 5. Code "77:5" in the " General " group.	Subscriber no. 10. Code "77:10" in the " General " group.	Subscriber no. 99.
—	—	Control unit is fault manager Code "79:1" in the " General " group.	Control unit is not fault manager Code "79:0" in the " General " group.	Device is fault manager.

Connecting the control unit to the LON (cont.)

A	B	C	D	E
—	—	Control unit transmits the time Code "7b:1" in the "General" group.	Control unit receives the time Set code "81:3" in the "General" group.	Device receives the time.
—	—	Flue gas cascade with positive pressure. Set code "7E:1" in the "General" group.	—	—
—	—	Control unit transmits outside temperature Code "97:2" in the "General" group.	Control unit receives outside temperature Set code "97:1" in the "General" group.	—
—	—	LON subscriber remote monitoring. Code "9C:20" in the "General" group.	LON subscriber remote monitoring. Code "9C:20" in the "General" group.	—


Carrying out the LON subscriber check

The subscriber check is used to test communication with the system devices connected to the fault manager.

Preconditions:

- The control unit must be programmed as **fault manager** (code "79:1").
- The LON subscriber number must be programmed in all control units.
- The LON subscriber list in the fault manager must be up to date.

Carry out subscriber check:

1. Press **OK** and  simultaneously for approx. 4 s.
2. "Service functions"
3. "Subscriber check"

4. Select subscriber (e.g. subscriber 10).
The subscriber check for the selected subscriber is initiated.
 - Successfully tested subscribers are designated with **"OK"**.
 - Unsuccessfully tested subscribers are designated with **"Not OK"**.

Note







To carry out a new subscriber check, create a new subscriber list with **"Delete list?"** (subscriber list is updated).

Information regarding Vitotronic 200-H

During the subscriber check, the display for the relevant subscriber shows the subscriber no. and **"Wink"** for approx. 1 min.

Testing actuators on the Vitotronic 100

Carrying out relay test

1. Press **OK** and  simultaneously for approx. 4 s.
 flashes on the display.
2. With  select  and confirm with **OK**.
3. Select required actuator (output) with / (see the following table).
4. Confirm selected actuator with **OK**.
The display shows the number for the activated actuator and **"ON"**.

Testing actuators on the Vitotronic 100 (cont.)

5. Exit the Service menu (see page 60).

The following actuators can be switched subject to system equipment level:

Display	Explanation
0	All actuators have been switched off.
1	Burner operates at min. output.
2	Burner operates at max. output.
3	Internal output 20 is enabled.

Testing actuators and sensors on the Vitotronic 300-K

Carrying out relay test

1. Press **OK** and  simultaneously for approx. 4 s. 2. **"Actuator test"**

The following actuators can be switched subject to system equipment level:

Display		Explanation
"All actuators"	OFF	All actuators are off.
"Output 20"	ON	Output 20 active
"Output 52"	Open	
"Output 52"	Neutr.	
"Output 52"	Close	
"Cylinder prim pump"	ON	Output circulation pump for cylinder heating active
"DHW circ pump"	ON	Output DHW circulation pump active
"Output 29"	ON	Output 29 active
"Central fault mess."	ON	
"Htg circ pump HC2"	ON	Output heating circuit pump active (heating circuit with mixer M2)
"Mixer HC2"	Open	Output "Mixer open" active (heating circuit with mixer M2)
"Mixer HC2"	Close	Output "Mixer close" active (heating circuit with mixer M2)
"Htg circ pump HC3"	ON	Output heating circuit pump active (heating circuit with mixer M3)
"Mixer HC3"	Open	Output "Mixer open" active (heating circuit with mixer M3)
"Mixer HC3"	Close	Output "Mixer close" active (heating circuit with mixer M3)
"EA1 output 1"	ON	Contact "P - S" on plug 157 of EA1 extension closed
"AM1 output 1"	ON	Output 1 active
"AM1 output 2"	ON	Output 2 active
"Solar circuit pump"	ON	Output for solar circuit pump 24 on solar control module, type SM1 active
"Solar circ pmp min"	ON	Output for solar circuit pump 24 on solar control module, type SM1, switched to minimum speed
"Solar circ pmp max"	ON	Output for solar circuit pump 24 on solar control module, type SM1, switched to maximum speed
"SM1 output 22"	ON	Output 22 on solar control module, type SM1 active

Information regarding the mixer motor rotational direction

The flow temperature must rise when the mixer opens.
If the temperature drops, the motor is turning in the wrong direction or the mixer set is incorrectly fitted (observe the mixer installation instructions).

Testing actuators and sensors on the Vitotronic... (cont.)

Checking sensors

1. Press **OK** and **≡** simultaneously for approx. 4 s.
2. "Diagnosis"
3. Select group (see page 62).
4. Scan actual temperature of the relevant sensor.

Adjusting the heating curve

The heating curves illustrate the relationship between the outside temperature and the boiler water or flow temperature.

To put it simply, the lower the outside temperature, the higher the boiler water or flow temperature.

The boiler water or flow temperature in turn affects the room temperature.

Settings in the delivered condition:

- Slope = 1.4
- Level = 0

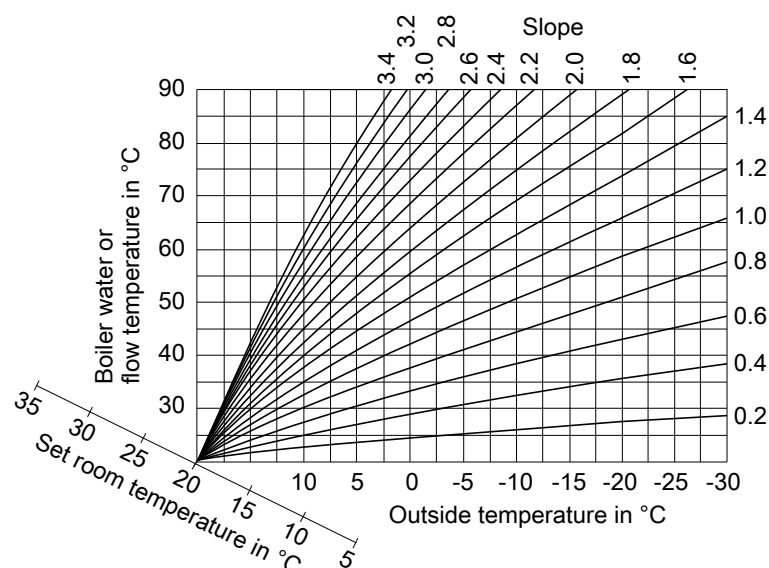


Fig. 27

Slope setting ranges:

- Underfloor heating systems: 0.2 to 0.8
- Low temperature heating systems: 0.8 to 1.6

Selecting the set room temperature

Individually adjustable for each heating circuit.

The heating curve is offset along the axis of the set room temperature. With the heating circuit pump logic function enabled, the curve modifies the starting and stopping characteristics of the heating circuit pump.

Note

If the heating system includes heating circuits with mixers, then the flow temperature of the heating circuit without mixer is higher by a selected differential (8 K in the delivered condition) than the flow temperature of the heating circuits with mixers.

The differential temperature is adjustable via coding address "9F" in the "General" group.

Standard set room temperature

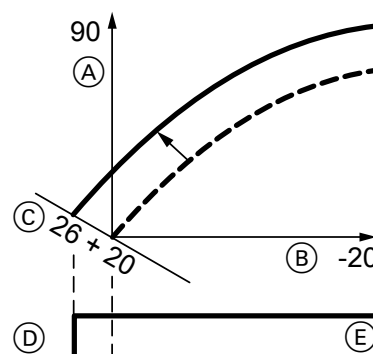


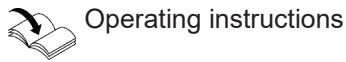
Fig. 28 Example 1: Adjustment of the standard set room temperature from 20 to 26 °C

- (A) Boiler water temperature or flow temperature in °C
- (B) Outside temperature in °C

Adjusting the heating curve (cont.)

- Ⓒ Set room temperature in °C
- Ⓓ Heating circuit pump "OFF"
- Ⓔ Heating circuit pump "ON"

Changing the standard set room temperature



Reduced set room temperature

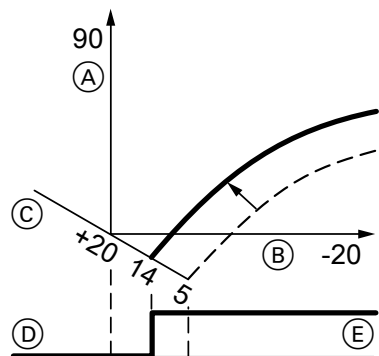
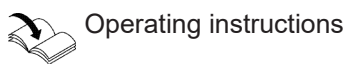


Fig. 29 Example 2: Adjustment of the reduced set room temperature from 5 °C to 14 °C

- Ⓐ Boiler water temperature or flow temperature in °C
- Ⓑ Outside temperature in °C
- Ⓒ Set room temperature in °C
- Ⓓ Heating circuit pump "OFF"
- Ⓔ Heating circuit pump "ON"

Changing the reduced set room temperature



Changing the slope and level

Individually adjustable for each heating circuit.

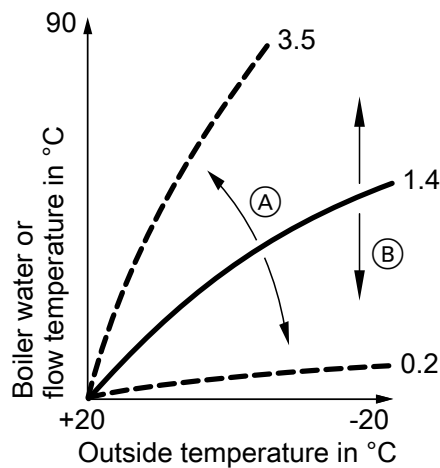


Fig. 30

- Ⓐ Changing the slope
- Ⓑ Changing the level (vertical parallel offset of the heating curve)

Extended menu:

- 1.
2. **"Heating"**
3. Select heating circuit.
4. **"Heating curve"**
5. **"Slope"** or **"Level"**
6. Select heating curve according to the system requirements.

Codes for Vitotronic 100



Boiler service instructions

Codes for Vitotronic 300-K

Note

- On Vitotronic 300-K units, codes are displayed as plain text.
- Codes that are not assigned, due to the heating system equipment level or the setting of other codes, are not displayed.
- Heating systems with one heating circuit without mixer and one or 2 heating circuits with mixer:
Below, the heating circuit without mixer is designated "**Heating circuit 1**" and the heating circuits with mixer as "**Heating circuit 2**" or "**Heating circuit 3**".
If the heating circuits were given individual designations, the selected designation and "**HC1**", "**HC2**" or "**HC3**" appear instead.

Calling up coding levels

Coding level 1

1. Press **OK** and simultaneously for approx. 4 s.
2. "**Coding level 1**"
3. Select group of required coding address:
 - "**General**"
 - "**Cascade**"
 - "**DHW**"
 - "**Solar**"
 - "**Heating circuit 1/2/3**"
 - "**All codes std device**"

In this group, all coding addresses from coding level 1 (except the coding addresses from the "**Solar**" group) are displayed in ascending order.
4. Select coding address.
5. Set value according to the following tables. Confirm with **OK**.

Coding level 2

Note

At coding level 2, all codes are accessible, including the codes at coding level 1.

1. Press **OK** and simultaneously for approx. 4 s.
2. Press **OK** and simultaneously for approx. 4 s.
3. "**Coding level 2**"
4. Select group of required coding address:
 - "**General**"
 - "**Cascade**"
 - "**DHW**"
 - "**Solar**"
 - "**Heating circuit 1/2/3**"
 - "**All codes std device**"

In this group, all coding addresses (except the coding addresses from the "**Solar**" group) are displayed in ascending order.
5. Select coding address.
6. Set value according to the following tables. Confirm with **OK**.

Resetting codes to their delivered condition

Select "**Standard setting**" in the respective coding level.

Note

This also resets codes in the other coding level.

"General" group**Coding**

Coding in the delivered condition		Possible change	
System design			
00:1	System version 1: One heating circuit without mixer A1 (heating circuit 1), without DHW heating	00:2 to 00:10	For system schemes, see the following table:

Value, address 00: ...	Description
2	One heating circuit without mixer A1 (heating circuit 1), with DHW heating; automatic recognition.
3	One heating circuit with mixer M2 (heating circuit 2), without DHW heating
4	One heating circuit with mixer (heating circuit 2), with DHW heating
5	One heating circuit without mixer A1 (heating circuit 1), one heating circuit with mixer M2 (heating circuit 2), without DHW heating; recognised automatically.
6	One heating circuit without mixer A1 (heating circuit 1), one heating circuit with mixer M2 (heating circuit 2), with DHW heating; recognised automatically.
7	2 heating circuits with mixer M2 (heating circuit 2) and M3 (heating circuit 3), without DHW heating
8	2 heating circuits with mixer M2 (heating circuit 2) and M3 (heating circuit 3), with DHW heating
9	One heating circuit without mixer A1 (heating circuit 1), 2 heating circuits with mixer M2 (heating circuit 2) and M3 (heating circuit 3), without DHW heating; recognised automatically.
10	One heating circuit without mixer A1 (heating circuit 1), 2 heating circuits with mixer M2 (heating circuit 2) and M3 (heating circuit 3), with DHW heating; recognised automatically.

Coding in the delivered condition		Possible change	
Subscriber no.			
77:5	LON subscriber number.	77:2 to 77:99	LON subscriber number, adjustable from 1 to 99: 1 - 4 = Boiler 5 = Cascade 10 - 97 = Vitotronic 200-H 98 = Vitogate 99 = Vitocom

Detached house/apartment building

7F:1	Detached house.	7F:0	Apartment building Holiday program and time program for DHW heating can be set separately.
------	-----------------	------	---

Lock out controls

8F:0	Operation enabled in standard menu and extended menu. Note <i>The relevant code is only activated if you exit the Service menu (see page 62).</i>	8F:1	Operation locked out in standard menu and extended menu.
		8F:2	Operation enabled in standard menu, but locked out in extended menu.

"General" group (cont.)

Coding in the delivered condition		Possible change	
Set flow temperature for external demand			
9b:70	Set flow temperature for external demand 70 °C.	9b:0 to 9b:127	Set flow temperature for external demand adjustable from 0 to 127 °C (limited by boiler-specific parameters).

"Cascade" group**Coding**

Coding in the delivered condition		Possible change	
Number of boilers in cascade			
35:4	4 boilers connected to the Vitotronic 300-K.	35:1 to 35:8	1 to 8 boilers connected to the Vitotronic 300-K.
Min. system flow temperature			
36:0	Electronic minimum system flow temperature limit set to 0 °C.	36:1 to 36:127	Minimum limit adjustable from 0 to 127 °C.
Max. system flow temperature			
37:80	Electronic maximum system flow temperature limit set to 80 °C. Note <i>Value must not be greater than the lowest value of coding address "06" in group 1 of every Vitotronic 100.</i>	37:20 to 37:127	Maximum limit adjustable from 20 to 127 °C.
Control type			
3b:1	Standalone parallel boiler connection with flow temperature sensor.	3b:0	Standalone parallel boiler connection without flow temperature sensor.
Control strategy			
3C:0	Condensing strategy (see page 75).	3C:1	Conventional boiler strategy 1 (see page 75).
		3C:2	Conventional boiler strategy 2 (see page 75).

"DHW" group**Coding**

Coding in the delivered condition		Possible change	
Set DHW temperature reheating suppression			
67:40	For solar DHW heating: Set DHW temperature 40 °C. Above the selected set temperature reheating is suppressed (DHW heating by the boiler is blocked).	67:0 to 67:95	Set DHW temperature adjustable from 0 to 95 °C (limited by boiler-specific parameters).

"DHW" group (cont.)

Coding in the delivered condition		Possible change	
Enable DHW circulation pump			
73:0	DHW circulation pump: "ON" according to time program.	73:1 to 73:6	"ON" from once per hour for 5 min up to 6 times per hour for 5 min during the time program.
		73:7	Constantly "ON".

"Solar" group**Note**

The solar group is only displayed if a solar control module, type SM1, is connected.

Coding

Coding in the delivered condition		Possible change	
Speed control solar circuit pump			
02:...	Data dependent on the software version of solar control module SM1	02:0	Solar circuit pump is not speed-controlled
		02:1	With wave packet control function Never adjust
		02:2	Solar circuit pump is speed-controlled with PWM control
Maximum cylinder temperature			
08:60	Set DHW temperature (maximum cylinder temperature) 60 °C.	08:10 to 08:90	Set DHW temperature adjustable from 10 to 90 °C.
Stagnation time reduction			
0A:5	Temperature differential for stagnation time reduction (reduction in the speed of the solar circuit pump to protect system components and heat transfer medium) 5 K.	0A:0	Stagnation time reduction not active.
		0A:1 to 0A:40	Temperature differential adjustable from 1 to 40 K.
Flow rate solar circuit			
0F:70	Solar circuit flow rate at the maximum pump speed 7 l/min.	0F:1 to 0F:255	Flow rate adjustable from 0.1 to 25.5 l/min, 1 step \approx 0.1 l/min.

"Solar" group (cont.)

Coding in the delivered condition		Possible change	
Extended solar control functions			
20:0	No extended control function enabled	20:1	Auxiliary function for DHW heating
		20:2	Differential temperature control 2.
		20:3	Differential temperature control 2 and auxiliary function.
		20:4	Differential temperature control 2 for central heating backup.
		20:5	Thermostat function
		20:6	Thermostat function and auxiliary function
		20:7	Solar heating via external heat exchanger without additional temperature sensor
		20:8	Solar heating via external heat exchanger with additional temperature sensor
		20:9	Solar heating of 2 DHW cylinders

"Heating circuit 1", "Heating circuit 2", "Heating circuit 3" group**Coding**

Coding in the delivered condition		Possible change	
Priority DHW heating			
A2:2	Storage tank priority control for heating circuit pump and mixer.	A2:0	Without cylinder priority applicable to heating circuit pump and mixer.
		A2:1	Cylinder priority applies only to mixers.
		A2:3 to A2:15	No function.
Economy function outside temperature			
A5:5	With heating circuit pump logic function (economy mode): Heating circuit pump "OFF" if the outside temperature (OT) is 1 K higher than the set room temp. (RT_{set}) $OT > RT_{set} + 1 K$	A5:0	Without heating circuit pump logic function.
		A5:1 to A5:15	With heating circuit pump logic function: Heating circuit pump "OFF" (see the following table).

Parameter address A5:...	With heating circuit pump logic function: Heating circuit pump "OFF"
1	$OT > RT_{set} + 5 K$
2	$OT > RT_{set} + 4 K$
3	$OT > RT_{set} + 3 K$
4	$OT > RT_{set} + 2 K$
5	$OT > RT_{set} + 1 K$
6	$OT > RT_{set}$
7	$OT > RT_{set} - 1 K$
to	
15	$OT > RT_{set} - 9 K$

"Heating circuit 1", "Heating circuit 2", "Heating circuit 3" group (cont.)

Coding in the delivered condition		Possible change	
Extended economy function mixer			
A7:0	Without mixer economy function.	A7:1	With mixer economy function (extended heating circuit pump logic): Heating circuit pump also "OFF": ▪ If the mixer has been trying to close for longer than 20 min. Heating circuit pump "ON": ▪ If the mixer changes to control function. ▪ If there is a risk of frost.
Pump idle time, transition reduced mode			
A9:7	With pump idle time: Heating circuit pump "OFF" (see function description, page 78).	A9:0	Without pump idle time.
		A9:1 to A9:15	With pump idle time, adjustable from 1 to 15: 1: Short idle time 15: Long idle time Max. idle time 10 h.
Weather-compensated/room temperature hook-up			
b0:0	With remote control: Heating mode/reduced mode: Weather-compensated.	b0:1	Heating mode: Weather-compensated Reduced mode: With room temperature hook-up
		b0:2	Heating mode: With room temperature hook-up Reduced mode: Weather-compensated
		b0:3	Heating mode/red. mode: With room temperature hook-up
Economy function room temperature			
b5:0	With remote control: No room temperature-dependent heating circuit pump logic function.	b5:1 to b5:8	Heating circuit pump logic function, see the following table.
Parameter address b5:...	With heating circuit pump logic function:		
	Heating circuit pump "OFF"	Heating circuit pump "ON"	
1	$RT_{actual} > RT_{set} + 5\text{ K}$	$RT_{actual} < RT_{set} + 4\text{ K}$	
2	$RT_{actual} > RT_{set} + 4\text{ K}$	$RT_{actual} < RT_{set} + 3\text{ K}$	
3	$RT_{actual} > RT_{set} + 3\text{ K}$	$RT_{actual} < RT_{set} + 2\text{ K}$	
4	$RT_{actual} > RT_{set} + 2\text{ K}$	$RT_{actual} < RT_{set} + 1\text{ K}$	
5	$RT_{actual} > RT_{set} + 1\text{ K}$	$RT_{actual} < RT_{set}$	
6	$RT_{actual} > RT_{set}$	$RT_{actual} < RT_{set} - 1\text{ K}$	
7	$RT_{actual} > RT_{set} - 1\text{ K}$	$RT_{actual} < RT_{set} - 2\text{ K}$	
8	$RT_{actual} > RT_{set} - 2\text{ K}$	$RT_{actual} < RT_{set} - 3\text{ K}$	
Coding in the delivered condition		Possible change	
Min. flow temperature heating circuit			
C5:20	Electronic minimum flow temperature limit 20 °C (only in operation with standard room temperature).	C5:1 to C5:127	Minimum limit adjustable from 1 to 127 °C (limited by boiler-specific parameters).

* Change code only for the heating circuits with mixer.

"Heating circuit 1", "Heating circuit 2", "Heating circuit 3" group (cont.)

Coding in the delivered condition		Possible change	
Max. flow temperature heating circuit			
C6:75	Electronic maximum flow temperature limit set to 75 °C.	C6:10 to C6:127	Maximum limit adjustable from 10 to 127 °C (limited by boiler-specific parameters).
Operating program changeover			
d5:0	With external operating program changeover (observe setting of coding address "5d", "5E" and "5F" and "91" in the "General" group): Operating program switches to "Constant central heating with reduced room temperature" or "Standby mode" (subject to the value selected for the set reduced room temperature).	d5:1	Operating program switches to "Constant operation with standard room temperature".
Ext. operating program changeover to heating circuit			
d8:0	No operating program changeover via EA1 extension.	d8:1	Operating program changeover via input DE1 at EA1 extension.
		d8:2	Operating program changeover via input DE2 at EA1 extension.
		d8:3	Operating program changeover via input DE3 at EA1 extension.
Screed drying			
F1:0	Screed drying not active.	F1:1 to F1:6	Only for heating circuits with mixer: Screed drying adjustable, with choice of 6 temperature/time profiles (see page 78).
		F1:15	Constant flow temperature 20 °C (see page 78).
Party mode time limit			
F2:8	Time limit for party mode or external operating program changeover via pushbutton: 8 h * Note Observe settings of coding addresses "5d", "5E", "5F" in the "General" group, as well as "d5" and "d8" in the "Heating circuit..." group.	F2:0	No time limit for party mode.
		F2:1 to F2:12	Time limit adjustable from 1 to 12 h.
Start temperature raising			
F8:-5	Temperature limit for terminating reduced mode -5 °C; see example on page 80. Observe setting of coding address "A3" in the "Heating circuit..." group.	F8:+10 to F8:-60	Temperature limit adjustable from +10 to -60 °C.
		F8:-61	Function disabled.

"Heating circuit 1", "Heating circuit 2", "Heating circuit 3" group (cont.)

Coding in the delivered condition		Possible change	
End temperature raising			
F9:-14	Temperature limit for raising the reduced set room temp. -14 °C; see example on page 80.	F9:+10 to F9:-60	Limit for raising the set room temperature to the value selected for standard mode, adjustable from +10 to -60 °C.
Set flow temperature increase			
FA:20	The set boiler water or flow temperature is raised by 20 % when changing from operation with reduced room temperature to operation with standard room temperature. See example on page 81.	FA:0 to FA:50	Temperature increase adjustable from 0 to 50 %.
Duration set flow temperature increase			
Fb:30	Duration for raising the set boiler water temperature or the set flow temperature (see coding address "FA" in the " Heating circuit ... " group) 60 min. See example on page 81.	Fb:0 to Fb:150	Duration adjustable from 0 to 300 min; 1 step \triangleq 2 min.

"General" group**Coding**

Coding in the delivered condition		Possible change	
00:1	System version 1: One heating circuit without mixer A1 (heating circuit 1), without DHW heating	00:2 to 00:10	For system schemes, see the following table:

Value, address 00: ...	Description
2	One heating circuit without mixer A1 (heating circuit 1), with DHW heating; automatic recognition.
3	One heating circuit with mixer M2 (heating circuit 2), without DHW heating
4	One heating circuit with mixer (heating circuit 2), with DHW heating
5	One heating circuit without mixer A1 (heating circuit 1), one heating circuit with mixer M2 (heating circuit 2), without DHW heating; recognised automatically.
6	One heating circuit without mixer A1 (heating circuit 1), one heating circuit with mixer M2 (heating circuit 2), with DHW heating; recognised automatically.
7	2 heating circuits with mixer M2 (heating circuit 2) and M3 (heating circuit 3), without DHW heating
8	2 heating circuits with mixer M2 (heating circuit 2) and M3 (heating circuit 3), with DHW heating
9	One heating circuit without mixer A1 (heating circuit 1), 2 heating circuits with mixer M2 (heating circuit 2) and M3 (heating circuit 3), without DHW heating; recognised automatically.
10	One heating circuit without mixer A1 (heating circuit 1), 2 heating circuits with mixer M2 (heating circuit 2) and M3 (heating circuit 3), with DHW heating; recognised automatically.

Coding in the delivered condition		Possible change	
12:5	With EA1 extension: DHW circulation pump runtime for brief operation: 5 min.	12:1 to 12:60	Runtime adjustable from 1 to 60 min.
1E:0	With EA1 extension (analogue input 0-10 V): Temperature demand from 0 to 100 °C: 1 V \triangleq 10 °C 10 V \triangleq 100 °C	1E:1	Temperature demand from 30 to 120 °C: 1 V \triangleq 30 °C 10 V \triangleq 120 °C
2E:0	Without outside temperature sensor RF.	2E:1	With outside temperature sensor RF; automatic recognition.
		2E:2	Outside temperature sensor RF is not used.
2F:0	Never adjust		
4A:0	Never adjust		
4b:0	Sensor \square_{17} B not fitted.	4b:1	Sensor \square_{17} B installed (e.g. temperature sensor T2); automatic recognition.
4C:0	Connection on plug \square_{20} A1: Heating circuit pump.	4C:1	Primary cylinder loading pump, cylinder loading system.
4F:5	Distribution pump run-on time 5 min.	4F:0	No pump run-on.
		4F:1 to 4F:60	Run-on time adjustable from 1 to 60 min.

"General" group (cont.)

Coding in the delivered condition		Possible change	
50:10	Start integral threshold value of external heat source set to 10 K x min.	50:1 to 50:255	Start integral threshold value of external heat source adjustable from 1 to 255 K x min.
51:255	Shutdown integral threshold value of external heat source set to 255 K x min.	51:1 to 51:255	Shutdown integral threshold value of external heat source adjustable from 1 to 255 K x min.
54:0	Without solar thermal system.	54:1	With Vitosolic 100; automatic recognition.
		54:2	With Vitosolic 200; automatic recognition.
		54:3	With solar control module SM1, without auxiliary function; automatic recognition.
		54:4	With solar control module, type SM1, with auxiliary function, e.g. central heating backup; automatic recognition.
5b:0	Without EA1 extension.	5b:1	With EA1 extension; automatic recognition.
5C:0	Function of output 157 at EA1 extension: Central fault message.	5C:1	Feed pump.
		5C:2	No function.
		5C:3	Heating circuit pump A1 is switched to low speed (reduced mode).
		5C:4	Heating circuit pump M2 is switched to low speed (reduced mode).
		5C:5	Heating circuit pump M3 is switched to low speed (reduced mode).
5d:0	Function of input DE1 at EA1 extension: No function.	5d:1	Operating program changeover.
		5d:2	External demand with minimum set flow temperature. Selection of set value in coding address "9b" in the "General" group.
		5d:3	External blocking.
		5d:4	External blocking with fault message.
		5d:5	Fault message input.
		5d:6	Brief operation, DHW circulation pump (pushbutton function). DHW circulation pump runtime setting in coding address "12" in the "General" group.
5E:0	Function of input DE2 at EA1 extension: No function.	5E:1	Operating program changeover.
		5E:2	External demand with minimum set flow temperature. Selection of set value in coding address "9b" in the "General" group
		5E:3	External blocking.
		5E:4	External blocking with fault message.
		5E:5	Fault message input.
		5E:6	Brief operation, DHW circulation pump (pushbutton function).


"General" group (cont.)

Coding in the delivered condition		Possible change	
			DHW circulation pump runtime setting in coding address "12" in the "General" group.
5F:0	Function of input DE3 at EA1 extension: No function.	5F:1	Operating program changeover.
		5F:2	External demand with minimum set flow temperature. Selection of set value in coding address "9b" in the "General" group.
		5F:3	External blocking.
		5F:4	External blocking with fault message.
		5F:5	Fault message input.
		5F:6	Brief operation, DHW circulation pump (pushbutton function). DHW circulation pump runtime setting in coding address "12" in the "General" group.
6E:50	No display correction for outside temperature.	6E:0 to 6E:49	Display correction -5 K to Display correction -0.1 K
		6E:51 to 6E:99	Display correction +0.1 K to Display correction +4.9 K
76:0	Without communication module.	76:1	With LON communication module; automatic recognition. If no LON communication module is installed, set code "76:0" in "General" group.
77:5	LON subscriber number.	77:2 to 77:99	LON subscriber number, adjustable from 1 to 99: 1 - 4 = Boiler 5 = Cascade 10 - 97 = Vitotronic 200-H 98: Vitogate 99 = Vitocom
78:1	LON communication enabled.	78:0	LON communication disabled.
79:1	With LON communication module: Control unit is fault manager.	79:0	Control unit is not fault manager.
7A:0	Without central control of heating circuits.	7A:1	With central control (see page 79) Heating circuit without mixer A1 (heating circuit 1).
		7A:2	Heating circuit with mixer M2 (heating circuit M2).
		7A:3	Heating circuit with mixer M3 (heating circuit M3).
7b:1	With LON communication module: Control unit transmits the time.	7b:0	No time transmission.
7F:1	Detached house.	7F:0	Apartment building. Holiday program and time program for DHW heating can be set separately.
80:6	A fault message is issued if a fault is present for at least 30 s.	80:0	Immediate fault message.


"General" group (cont.)

Coding in the delivered condition		Possible change	
		80:2 to 80:199	Minimum fault duration before a fault message is issued, adjustable from 10 to 995 s. 1 step \cong 5 s.
81:1	Automatic summer/wintertime changeover.	81:0	Manual summer/wintertime changeover.
		81:2	Use of radio clock receiver; automatic recognition.
		81:3	With LON communication module: Control unit receives the time.
82:3	Summertime starts: March.	82:1 to 82:12	January to December.
83:5	Summertime starts: Week 5 of the selected month.	83:1 to 83:5	Week 1 to week 5 of the selected month.
84:7	Summertime starts: Last Sunday of the selected month.	84:1 to 84:7	Monday to Sunday.
85:10	Wintertime starts: October.	85:1 to 85:12	January to December.
86:5	Wintertime starts: Week 5 of the selected month.	86:1 to 86:5	Week 1 to week 5 of the selected month.
87:7	Wintertime starts: Last Sunday of the selected month.	87:1 to 87:7	Monday to Sunday.
88:0	Temperature unit °C (Celsius).	88:1	Temperature unit °F (Fahrenheit).
89:...	Never adjust		
8A:175	Never adjust		
8F:0	Operation enabled in standard menu and extended menu. Note <i>The relevant code is only activated when you exit the service menu (see page 62).</i>	8F:1	Operation locked out in standard menu and extended menu.
		8F:2	Operation enabled in standard menu, but locked out in extended menu.
90:128	Time constant for calculating adjusted outside temperature 21.3 h.	90:1 to 90:199	Subject to the set value, the flow temperature is adjusted quickly (lower values) or slowly (higher values) when the outside temperature changes. 1 step \cong 10 min.
91:0	Connection at terminals 1 and 2 in plug 143 disabled (external operating program changeover) (see page 22).	91:1	Contact affects the following heating circuits: Heating circuit without mixer A1 (heating circuit 1).
		91:2	Heating circuit with mixer M2 (heating circuit 2).

"General" group (cont.)

Coding in the delivered condition		Possible change	
		91:3	Heating circuit without mixer A1 (heating circuit 1) and heating circuit with mixer M2 (heating circuit 2).
		91:4	Heating circuit with mixer M3 (heating circuit 3).
		91:5	Heating circuit without mixer A1 (heating circuit 1) and heating circuit with mixer M3 (heating circuit 3).
		91:6	Heating circuits with mixer M2 (heating circuit 2) and M3 (heating circuit 3).
		91:7	Heating circuit without mixer A1 (heating circuit 1) and heating circuits with mixer M2 (heating circuit 2) and M3 (heating circuit 3).
92:186	Never adjust Will only be displayed if "8A:176" is programmed.		
96:0	Without extension PCB for heating circuits 2 and 3.	96:1	With extension PCB for heating circuits 2 and 3; automatic recognition.
97:2	With LON communication module: Control unit transmits outside temperature to Vitotronic 200-H.	97:0	The outside temperature of the sensor connected to the control unit is only utilised internally.
		97:1	The control unit receives the outside temperature from the Vitotronic 200-H.
98:1	Viessmann system number (in conjunction with monitoring several systems within one LON system with Vitocom 300).	98:1 to 98:5	System number adjustable from 1 to 5.
99:0	Connection at terminals 2 and 3 in plug  disabled (external blocking/external "mixer close") (see page 22).	99:1	No function.
		99:2	External "Mixer close" Heating circuit with mixer M2 (heating circuit 2).
		99:3	No function.
		99:4	External "Mixer close" Heating circuit with mixer M3 (heating circuit 3).
		99:5	No function.
		99:6	External "Mixer close" Heating circuits with mixer M2 (heating circuit 2) and M3 (heating circuit 3).
		99:7	No function.
		99:8	External blocking.
		99:9	No function.
		99:10	External blocking/External "Mixer close" Heating circuits with mixer M2 (heating circuit 2).
		99:11	No function.

"General" group (cont.)

Coding in the delivered condition		Possible change	
		99:12	External blocking/External "Mixer close" Heating circuit with mixer M3 (heating circuit 3).
		99:13	No function.
		99:14	External blocking/External "Mixer close" Heating circuits with mixer M2 (heating circuit 2) and M3 (heating circuit 3).
		99:15	No function.
9A:0	Connection at terminals 1 and 2 in plug  disabled (external "mixer open") (see page 22).	9A:1	No function.
		9A:2	External "Mixer open" Heating circuit with mixer M2 (heating circuit 2).
		9A:3	No function.
		9A:4	External "Mixer open" Heating circuit with mixer M3 (heating circuit 3).
		9A:5	No function.
		9A:6	External "Mixer open" Heating circuits with mixer M2 (heating circuit 2) and M3 (heating circuit 3).
		9A:7	No function.
9b:70	Set flow temperature for external demand 70 °C.	9b:0 to 9b:127	Set value adjustable from 0 to 127 °C.
9C:20	With LON communication module: Monitoring LON subscribers. If there is no response from a subscriber for 20 min, the values specified in the control unit are used. Only then will a fault message be issued.	9C:0	No monitoring.
		9C:5 to 9C:60	Time adjustable from 5 to 60 min.
9F:8	Differential temperature 8 K, only in connection with heating circuit with mixer M2 (heating circuit 2) and M3 (heating circuit 3).	9F:0 to 9F:40	Differential temperature adjustable from 0 to 40 K.

"Cascade" group

Coding

Coding in the delivered condition		Possible change	
35:4	4 boilers connected to the Vitotronic 300-K.	35:1 to 35:8	1 to 8 boilers connected to the Vitotronic 300-K.
36:0	Electronic minimum system flow temperature limit set to 0 °C.	36:1 to 36:127	Minimum limit adjustable from 0 to 127 °C.

"Cascade" group (cont.)

Coding in the delivered condition		Possible change	
37:80	Electronic maximum system flow temperature limit set to 80 °C.	37:20 to 37:127	Maximum limit adjustable from 20 to 127 °C. Note Value must not be higher than the lowest value of coding address "06" in the "Boiler" group of every Vitotronic 100.
38:0	No lead boiler or boiler sequence changeover, see function description in chapter "Cascade control unit".	38:1	Lead boiler changeover: Every first day of the month, the boiler with the shortest number of hours run by its burner becomes the lead boiler.
		38:2 to 38:200	Lead boiler changeover after 200 to 20,000 hours run; 1 step \pm 100 hours run.
39:0	No permanent lead boiler.	39:1 to 39:8	Permanent lead boiler is boiler ...
3A:0	No permanent last boiler.	3A:1 to 3A:8	Permanent last boiler is boiler ...
3b:1	Standalone parallel boiler circuit: With flow temperature sensor (see page 75).	3b:0	Standalone parallel boiler circuit: Without flow temperature sensor (see page 75).
		3b:2	Standalone serial boiler circuit: Without flow temperature sensor (see page 75).
3C:0	Condensing strategy (see page 76).	3C:1	Conventional boiler strategy 1 (see page 76).
		3C:2	Conventional boiler strategy 2 (see page 77).
3d:1	Output statement for condensing strategy and conventional boiler strategy 1.	3d:0	No output statement. Note Vitotronic 300-K regulates only according to conventional boiler strategy 2.
3E:0	Distribution pump will only run if there is a heat demand.	3E:1	Distribution pump always runs; shutdown through "External blocking" signal.
3F:0	Without cylinder priority control for distribution pump.	3F:1	With cylinder priority control for distribution pump.
41:31	No ECO threshold boiler 1.	41:-30 to 41:+30	ECO threshold boiler 1; adjustable from -30 to +30 °C.
42:31	No ECO threshold boiler 2.	42:-30 to 42:+30	ECO threshold boiler 2 adjustable from -30 to +30 °C.
43:31	No ECO threshold boiler 3.	43:-30 to 43:+30	ECO threshold boiler 3; adjustable from -30 to +30 °C.

"Cascade" group (cont.)

Coding in the delivered condition		Possible change	
44:31	No ECO threshold boiler 4.	44:-30 to 44:+30	ECO threshold boiler 4 adjustable from -30 to +30 °C.
45:60	Start integral threshold set to 60 K x min.	45:1 to 45:255	Start integral threshold adjustable from 1 to 255 K x min. Note <i>If the threshold is exceeded, one boiler or one burner stage is switched on.</i>
46:10	Shutdown integral threshold set to 10 K x min.	46:1 to 46:255	Shutdown integral threshold adjustable from 1 to 255 K x min. Note <i>If the threshold is exceeded, one boiler or one burner stage is switched off.</i>
47:15	Stop differential set to 15 K.	47:2 to 47:30	Stop differential adjustable from 2 to 30 K. Note <i>One boiler will be switched off if the actual flow temperature exceeds the set flow temperature by this value.</i>
48:35	Never adjust		
49:40	Never adjust		
65:31	No ECO threshold boiler 5.	65:-30 to 65:+30	ECO threshold boiler 5; adjustable from -30 to +30 °C.
6F:31	No ECO threshold boiler 6.	6F:-30 to 6F:+30	ECO threshold boiler 6 adjustable from -30 to +30 °C.
74:31	No ECO threshold boiler 7.	74:-30 to 74:+30	ECO threshold boiler 7 adjustable from -30 to +30 °C.
7d:31	No ECO threshold boiler 8.	7d:-30 to 7d:+30	ECO threshold boiler 8 adjustable from -30 to +30 °C.

"DHW" group**Coding**

Coding in the delivered condition		Possible change	
55:0	Cylinder heating, hysteresis \pm 2.5 K.	55:1	Adaptive cylinder heating enabled (see page 84).
		55:2	Cylinder temperature control with two temperature sensors (see page 84).

"DHW" group (cont.)

Coding in the delivered condition		Possible change	
		55:3	Cylinder temperature control, cylinder loading system (see page 84).
56:0	Set DHW temperature adjustable from 10 to 60 °C.	56:1	Set DHW temperature adjustable from 10 to above 60 °C. Note <i>Observe the maximum permissible DHW temperature.</i>
58:0	Without auxiliary function for DHW heating.	58:10 to 58:60	Input of a second set DHW temperature, adjustable from 10 to 95 °C (observe coding address "56").
59:0	Cylinder heating: Set start point –2.5 K Set stop point +2.5 K	59:1 to 59:10	Start point adjustable from 1 to 10 K below set value.
5A:0	For DHW heating: The set flow temperature is determined by the highest system flow temperature demand. Scan the temperature in the " Diagnosis " menu, " General " (" Common dem. temp "); see page 62.	5A:1	For DHW heating: The set flow temperature is determined by the cylinder flow temperature demand. Scan the temperature in the " Diagnosis " menu, " General " (" Common dem. temp "); see page 62.
60:20	During DHW heating, the boiler water temperature is up to 20 K higher than the set DHW temperature.	60:10 to 60:50	The differential between the common flow temperature and the set DHW temperature is adjustable from 10 to 50 K.
62:10	Circulation pump with a run-on time of up to 10 min after cylinder heating.	62:0	No circulation pump run-on.
		62:1 to 62:15	Run-on time adjustable from 1 to 15 min.
64:2	In party mode and after external changeover to constant operation with the standard room temperature: Enable constant DHW heating and DHW circulation pump "ON".	64:0	No DHW heating; DHW circulation pump "OFF".
		64:1	DHW heating and DHW circulation pump "ON" according to time program.
66:4	Input of the set DHW temperature: At the programming unit of the control unit and all installed Vitotrol 300-A remote control units.	66:0	At the programming unit of the control unit.
		66:1	At the programming unit of the control unit and remote control unit of the heating circuit without mixer A1 (heating circuit 1).
		66:2	At the programming unit of the control unit and remote control unit of the heating circuit with mixer M2 (heating circuit 2).
		66:3	At the programming unit of the control unit and remote control unit of the heating circuit with mixer M3 (heating circuit 3).
		66:5	At the remote control of the heating circuit without mixer A1 (heating circuit 1).

"DHW" group (cont.)

Coding in the delivered condition		Possible change	
		66:6	At the remote control of the heating circuit with mixer M2 (heating circuit 2).
		66:7	At the remote control of the heating circuit with mixer M3 (heating circuit 3).
67:40	For solar DHW heating: Set DHW temperature 40 °C. Re-heating is suppressed above the selected set temperature (DHW heating by the boiler only if solar energy is insufficient).	67:0	No set value 3.
		67:10 to 67:95	Set DHW temperature adjustable from 10 to 95 °C (limited by boiler-specific parameters). Observe setting for coding address "56".
68:8	With 2 cylinder temperature sensors (code "55:2"): Cylinder heating stop point at set value x 0.8.	68:2 to 68:10	Factor adjustable from 0.2 to 1: 1 step \triangleq 0.1.
69:7	With 2 cylinder temperature sensors (code "55:2"): Cylinder heating start point at set value x 0.7.	69:1 to 69:9	Factor adjustable from 0.1 to 0.9: 1 step \triangleq 0.1.
6A:75	Runtime, servomotor, mixing valve, heat exchanger set, Vitotrans 222, (80 and 120 kW): 75 s.	6A:10 to 6A:255	For heat exchanger set Vitotrans 222 (240 kW): Set 113 s. Runtime adjustable from 10 to 255 s.
70:0	DHW circulation pump "ON" according to time program when DHW heating is enabled.	70:1	DHW circulation pump "ON" according to time program.
71:0	DHW circulation pump: "ON" according to time program.	71:1	"OFF" during DHW heating to set value 1.
		71:2	"ON" during DHW heating to set value 1.
72:0	DHW circulation pump: "ON" according to time program.	72:1	"OFF" during DHW heating to set value 2.
		72:2	"ON" during DHW heating to set value 2.
73:0	DHW circulation pump: "ON" according to time program.	73:1 to 73:6	"ON" from once per hour for 5 min up to 6 times per hour for 5 min during the time program.
		73:7	Constantly "ON".
75:0	DHW circulation pump "ON" during economy mode according to time program.	75:1	DHW circulation pump "OFF" during economy mode.

"Solar" group

Only in conjunction with solar control module, type SM1.

"Solar" group (cont.)**Coding**

Coding in the delivered condition		Possible change	
00:8	The solar circuit pump starts if the collector temperature exceeds the actual DHW temperature by 8 K.	00:2 to 00:30	The differential between the actual DHW temperature and the start point for the solar circuit pump is adjustable from 2 to 30 K.
01:4	The solar circuit pump is switched off if the differential between the collector temperature and the actual DHW temp. is less than 4 K.	01:1 to 01:29	The differential between the actual DHW temperature and the stop point for the solar circuit pump is adjustable from 1 to 29 K.
02:0	Solar circuit pump (multi stage) without speed control by solar control module SM1.	02:1	Solar circuit pump (multi stage) is speed-controlled with wave packet control.
		02:2	Solar circuit pump is speed-controlled with PWM control.
03:10	The temperature differential between the collector temperature and actual DHW temperature is regulated to 10 K.	03:5 to 03:20	The differential temperature control between collector temperature and actual DHW temperature is adjustable from 5 to 20 K.
04:4	Controller amplification of variable speed control 4 %/K.	04:1 to 04:10	Controller amplification adjustable from 1 to 10 %/K.
05:10	Min. speed of solar circuit pump 10 % of maximum speed.	05:2 to 05:100	Min. speed of solar circuit pump adjustable from 2 to 100 %.
06:75	Max. speed of the solar circuit pump 75 % of the max. possible speed.	06:1 to 06:100	Max. speed of solar circuit pump adjustable from 1 to 100 %.
07:0	Interval function of solar circuit pump switched off.	07:1	Interval function of solar circuit pump switched on. To capture the collector temperature more accurately, the solar circuit pump periodically starts for a short duration.
08:60	The solar circuit pump stops when the actual DHW temperature reaches the maximum cylinder temperature (60 °C).	08:10 to 08:90	The maximum cylinder temperature is adjustable from 10 to 90 °C.
09:130	The solar circuit pump stops if the collector temperature reaches 130 °C (maximum collector temperature to protect the system components).	09:20 to 09:200	The temperature is adjustable from 20 to 200 °C.
0A:5	To protect system components and heat transfer medium: The speed of the solar circuit pump is reduced if the actual cylinder temperature is 5 K below the maximum cylinder temperature.	0A:0	Stagnation time reduction is inactive.
		0A:1 to 0A:40	Value for stagnation time reduction is adjustable from 1 to 40 K.
0b:0	Frost protection function for solar circuit switched off.	0b:1	Frost protection function for solar circuit switched on (not required with Viessmann heat transfer medium).
0C:1	Delta T monitoring switched on.	0C:0	Delta T monitoring switched off.

"Solar" group (cont.)

Coding in the delivered condition		Possible change	
	No flow rate captured in the solar circuit, or flow rate too low.		
0d:1	Night-time DHW circulation monitoring switched on. Unintentional flow rate in the solar circuit (e.g. at night) is captured.	0d:0	Night-time DHW circulation monitoring switched off.
0E:1	Calculation of solar yield with Viessmann heat transfer medium.	0E:2	Calculation of solar yield with water as heat transfer medium (do not set, as only operation with Viessmann heat transfer medium is possible).
		0E:0	Calculation of solar yield switched off.
0F:70	Solar circuit flow rate at max. pump speed 7 l/min.	0F:1 to 0F:255	Flow rate adjustable from 0.1 to 25.5 l/min. 1 step \approx 0.1 l/min
10:0	Target temperature control switched off (see coding address "11").	10:1	Target temperature control switched on.
11:50	Set solar DHW temperature 50 °C. <ul style="list-style-type: none"> ▪ Target temperature control switched on (code "10:1"): Temperature at which the solar heated water is to be stratified into the DHW cylinder. ▪ Extended control functions set to heat 2 DHW cylinders (code "20:8"): When the set DHW temperature is achieved in one DHW cylinder, the 2nd DHW cylinder is heated. 	11:10 to 11:90	The set solar DHW temperature is adjustable from 10 to 90 °C.
12:10	Minimum collector temp. 10 °C. The solar circuit pump will only start if the set minimum collector temperature is exceeded.	12:0	Minimum collector temperature function switched off.
		12:1 to 12:90	The minimum collector temperature is adjustable from 1 to 90 °C.
20:0	No extended control function active.	20:1	Additional function for DHW heating.
		20:2	Differential temperature control 2.
		20:3	Differential temperature control 2 and auxiliary function.
		20:4	Differential temperature control 2 for central heating backup.
		20:5	Thermostat function.
		20:6	Thermostat function and auxiliary function.
		20:7	Solar heating via external heat exchanger without additional temperature sensor.
		20:8	Solar heating via external heat exchanger with additional temperature sensor.
20:9	Solar heating of two DHW cylinders.		
22:8	Start temperature differential for central heating backup: 8 K.	22:2 to 22:30	Start temperature differential for central heating backup is adjustable from 2 to 30 K.

"Solar" group (cont.)

Coding in the delivered condition		Possible change	
	Switching output [22] is switched on if the temperature at sensor [7] exceeds the temperature at sensor [10] by the selected value.		
23:4	Stop temperature differential for central heating backup: 4 K. Switching output [22] is switched off if the temperature at sensor [7] undershoots the stop point. The stop point is the sum of the temperature at sensor [10] and the value selected as stop temperature differential.	23:2 to 23:30	Stop temperature differential for central heating backup is adjustable from 1 to 29 K.
24:40	Start temperature for the thermostat function 40 °C. Start temperature for thermostat function \leq stop temperature for thermostat function: Thermostat function e.g. for re-heating. Switching output [22] is switched on if the temperature at sensor [7] undershoots the start temperature for the thermostat function. Start temperature for thermostat function $>$ stop temperature for thermostat function: Thermostat function e.g. for utilising excess heat. Switching output [22] is switched on if the temperature at sensor [7] exceeds the start temperature for the thermostat function.	24:0 to 24:100	Start temperature for thermostat function is adjustable from 0 to 100 K.
25:50	Stop temperature for the thermostat function 50 °C. Start temperature for thermostat function \leq stop temperature for thermostat function: Thermostat function e.g. for re-heating. Switching output [22] is switched off if the temperature at sensor [7] exceeds the start temperature for the thermostat function. Start temperature for thermostat function $>$ stop temperature for thermostat function: Thermostat function e.g. for utilising excess heat. Switching output [22] is switched off if the temperature at sensor [7] undershoots the start temperature for the thermostat function.	25:0 to 25:100	Stop temperature for thermostat function is adjustable from 0 to 100 K.
26:1	Priority for DHW cylinder 1 – with alternate heating. Only when setting code "20:8".	26:0 26:2	Priority for DHW cylinder 1 – without alternate heating. Priority for DHW cylinder 2 – without alternate heating.

"Solar" group (cont.)

Coding in the delivered condition		Possible change	
		26:3	Priority for DHW cylinder 2 – with alternate heating.
		26:4	Cyclical heating without priority for either DHW cylinder.
27:15	Cyclical heating time 15 min. If the DHW cylinder with priority has been heated up, the DHW cylinder without priority is heated for a maximum duration equal to the set cyclical heating time.	27:5 to 27:60	Cyclical heating time is adjustable from 5 to 60 min.
28:3	Cyclical pause time 3 min. After the set cyclical heating time for the DHW cylinder without priority has expired, the rise in collector temperature is captured during the cyclical pause time.	28:1 to 28:60	Cyclical pause time adjustable from 1 to 60 min.

"Heating circuit 1", "Heating circuit 2", "Heating circuit 3" group

Coding

Coding in the delivered condition		Possible change	
A0:0	Without remote control.	A0:1	With Vitotrol 200-A or Vitotrol 200-RF; automatic recognition.
		A0:2	With Vitotrol 300-A or Vitohome 300; recognised automatically.
A1:0	Only with Vitotrol 200-A or Vitotrol 200-RF: All settings available on the remote control can be carried out.	A1:1	Only party mode can be set at the remote control.
A2:2	Cylinder priority for heating circuit pump and mixer.	A2:0	Without cylinder priority applicable to heating circuit pump and mixer.
		A2:1	Cylinder priority applies only to mixers.
A3:2	Outside temperature below 1 °C: Heating circuit pump "ON". Outside temperature above 3 °C: Heating circuit pump "OFF".	A3:-9 to A3:15	Heating circuit pump "ON/OFF" (see the following table).

- !** **Please note**
With settings below 1 °C there is a risk that pipes outside the thermal envelope of the building could freeze up.
Standby mode in particular must be taken into consideration, e.g. during holidays.

Parameter address A3:...	Heating circuit pump	
	"ON"	"OFF"
-9	-10 °C	-8 °C
-8	-9 °C	-7 °C
-7	-8 °C	-6 °C
-6	-7 °C	-5 °C
-5	-6 °C	-4 °C

"Heating circuit 1", "Heating circuit 2", "Heating circuit 3" group (cont.)

Parameter address A3:...	Heating circuit pump	
	"ON"	"OFF"
-4	-5 °C	-3 °C
-3	-4 °C	-2 °C
-2	-3 °C	-1 °C
-1	-2 °C	0 °C
0	-1 °C	1 °C
1	0 °C	2 °C
2	1 °C	3 °C
to	to	to
15	14 °C	16 °C

Coding in the delivered condition		Possible change	
A4:0	With frost protection.	A4:1	No frost protection; this setting is only possible if code "A3:-9" has been set. ! Please note Observe information on coding address "A3".
A5:5	With heating circuit pump logic function (economy mode): Heating circuit pump "OFF" when the outside temperature (OT) is 1 K higher than the set room temperature (RT_{set}) $OT > RT_{set} + 1 K$.	A5:0	Without heating circuit pump logic function.
		A5:1 to A5:15	With heating circuit pump logic function: Heating circuit pump "OFF"; see the following table.

Parameter address A5:...	With heating circuit pump logic function: Heating circuit pump "OFF"
1	$OT > RT_{set} + 5 K$
2	$OT > RT_{set} + 4 K$
3	$OT > RT_{set} + 3 K$
4	$OT > RT_{set} + 2 K$
5	$OT > RT_{set} + 1 K$
6	$OT > RT_{set}$
7	$OT > RT_{set} - 1 K$
to	
15	$OT > RT_{set} - 9 K$

"Heating circuit 1", "Heating circuit 2", "Heating circuit 3" group (cont.)

Coding in the delivered condition		Possible change	
A6:36	Extended economy mode disabled .	A6:5 to A6:35	Extended economy mode active, i.e. the burner and heating circuit pump will stop and the mixer will be closed at a variable value, adjustable between 5 and 35 °C plus 1 °C. The basis for this is the adjusted outside temperature. This is composed of the actual outside temperature and a time constant that takes account of the way an average building cools down.
A7:0	Only for heating circuits with mixer: Without mixer economy function.	A7:1	With mixer economy function (extended heating circuit pump logic): Heating circuit pump also "OFF": <ul style="list-style-type: none"> ▪ If the mixer has been trying to close for longer than 12 min. Heating circuit pump "ON": <ul style="list-style-type: none"> ▪ If the mixer changes to control function. ▪ If there is a risk of frost.
A9:7	With pump idle time (heating circuit pump "OFF") (see function description on page 78).	A9:0	Without pump idle time.
		A9:1 to A9:15	With pump idle time, adjustable from 1 to 15. 1: Short idle time 15: Long idle time Max. idle time 10 h.
AA:2	Never adjust		
b0:0	With remote control: Heating mode/reduced mode: Weather-compensated.	b0:1	Heating mode: Weather-compensated Reduced mode: With room temperature hook-up
		b0:2	Heating mode: With room temperature hook-up Reduced mode: Weather-compensated
		b0:3	Heating mode/red. mode: With room temperature hook-up
b2:8	With remote control; and operation with room temperature hook-up must be programmed for the heating circuit: Room influence factor 8.	b2:0	Without room influence.
		b2:1 to b2:64	Room influence factor adjustable from 1 to 64.
b5:0	With remote control: No room temperature-dependent heating circuit pump logic function.	b5:1 to b5:8	Heating circuit pump logic function, see the following table.

Parameter address b5:...	With heating circuit pump logic function:	
	Heating circuit pump "OFF"	Heating circuit pump "ON"
1	$RT_{actual} > RT_{set} + 5 \text{ K}$	$RT_{actual} < RT_{set} + 4 \text{ K}$
2	$RT_{actual} > RT_{set} + 4 \text{ K}$	$RT_{actual} < RT_{set} + 3 \text{ K}$
3	$RT_{actual} > RT_{set} + 3 \text{ K}$	$RT_{actual} < RT_{set} + 2 \text{ K}$
4	$RT_{actual} > RT_{set} + 2 \text{ K}$	$RT_{actual} < RT_{set} + 1 \text{ K}$
5	$RT_{actual} > RT_{set} + 1 \text{ K}$	$RT_{actual} < RT_{set}$

"Heating circuit 1", "Heating circuit 2", "Heating circuit 3" group (cont.)

Parameter address b5:...	With heating circuit pump logic function:	
	Heating circuit pump "OFF"	Heating circuit pump "ON"
6	$RT_{actual} > RT_{set}$	$RT_{actual} < RT_{set} - 1\text{ K}$
7	$RT_{actual} > RT_{set} - 1\text{ K}$	$RT_{actual} < RT_{set} - 2\text{ K}$
8	$RT_{actual} > RT_{set} - 2\text{ K}$	$RT_{actual} < RT_{set} - 3\text{ K}$

Coding in the delivered condition		Possible change	
b6:0	With remote control: Without quick heat-up/quick setback.	b6:1	With quick heat-up/quick setback (see function description on page 78)
b7:0	With remote control; and operation with room temperature hook-up must be programmed for the heating circuit: Without start optimisation.	b7:1	With start optimisation, maximum heat-up time offset 2 h 30 min.
		b7:2	With start optimisation, maximum heat-up time offset 15 h 50 min.
b8:10	With remote control; and operation with room temperature hook-up must be programmed for the heating circuit: Heat-up gradient start optimisation 10 min/K.	b8:11 to b8:255	Heat-up gradient adjustable from 11 to 255 min/K.
b9:0	With remote control; and operation with room temperature hook-up must be programmed for the heating circuit: Without learning start optimisation.	b9:1	With learning start optimisation.
C0:0	With remote control: Without stop optimisation.	C0:1	With stop optimisation, maximum setback time offset 1 h.
		C0:2	With stop optimisation, maximum setback time offset 2 h.
C1:0	With remote control: Without stop optimisation.	C1:1 to C1:12	With stop optimisation of setback time offset, adjustable from 10 to 120 min; 1 step $\hat{=}$ 10 min.
C2:0	With remote control: Without learning stop optimisation.	C2:1	With learning stop optimisation.
C3:125	Only for heating circuits with mixer: Mixer runtime 125 s.	C3:10 to C3:255	Runtime adjustable from 10 to 255 s.
C4:1	System dynamics: Mixer control characteristics	C4:0 to C4:3	Controller responds too quickly (cycles between "Open" and "Close"): Set a lower value. Controller responds too slowly (temperature is not held sufficiently): Set a higher value.
C5:20	Electronic minimum flow temperature limit 20 °C (only in operation with standard room temperature).	C5:1 to C5:127	Minimum limit adjustable from 1 to 127 °C.
C6:74	Electronic maximum flow temperature limit set to 75 °C.	C6:10 to C6:127	Maximum limit adjustable from 10 to 127 °C.

"Heating circuit 1", "Heating circuit 2", "Heating circuit 3" group (cont.)



Coding in the delivered condition		Possible change	
C8:31	With remote control; and operation with room temperature hook-up must be programmed for the heating circuit: No room influence limit.	C8:1 to C8:30	Room influence limit adjustable from 1 to 30 K.
d5:0	With external operating program changeover (observe setting of coding address "5d", "5E" and "5F" and "91" in the "General" group): Operating program switches to "Constant central heating with reduced room temperature" or "Standby mode" (subject to the value selected for the set reduced room temperature).	d5:1	Operating program switches to "Constant operation with standard room temperature".
d8:0	No operating program changeover via EA1 extension.	d8:1	Operating program changeover via input DE1 at EA1 extension.
		d8:2	Operating program changeover via input DE2 at EA1 extension.
		d8:3	Operating program changeover via input DE3 at EA1 extension.
E1:1	With remote control Vitotrol 200 and 300: Day temperature target adjustable at the remote control unit from 10 to 30 °C.	E1:0	Day temperature target adjustable from 3 to 23 °C.
		E1:2	Day temperature target adjustable from 17 to 37 °C.
E2:50	With remote control: No display correction of the actual room temperature.	E2:0 to E2:49	Display correction -5 K to Display correction -0.1 K
		E2:51 to E2:99	Display correction +0.1 K to Display correction +4.9 K
F1:0	Screed drying not active.	F1:1 to F1:6	Only for heating circuits with mixer: Screed drying adjustable in accordance with 6 selectable temperature:time profiles (see page 78).
		F1:15	Constant flow temperature 20 °C (see page 78).
F2:8	Time limit for party mode or external operating program changeover via pushbutton: 8 h. Note <i>Observe settings of coding addresses "5d", "5E", "5F" in the "General" group, as well as "d5" and "d8" in the "Heating circuit..." group.</i>	F2:0	No time limit.
		F2:1 to F2:12	Time limit adjustable from 1 to 12 h.
F8:-5	Temperature limit for terminating reduced mode -5 °C; see example on page 80. Observe setting for coding address "A3".	F8:+10 to F8:-60	Temperature limit adjustable from +10 to -60 °C.
		F8:-61	Function disabled.

"Heating circuit 1", "Heating circuit 2", "Heating circuit 3" group (cont.)


Coding in the delivered condition		Possible change	
F9:-14	Temperature limit for raising the reduced set room temp. -14 °C; see example on page 80.	F9:+10 to F9:-60	Limit for raising the set room temperature to the value selected for standard mode, adjustable from +10 to -60 °C.
FA:20	The set boiler water or flow temperature is raised by 20 % when changing from operation with reduced room temperature to operation with standard room temperature. See example on page 81.	FA:0 to FA:50	Temperature increase adjustable from 0 to 50 %.
Fb:30	Duration for raising the set boiler water temperature or set flow temperature (see coding address "FA") 60 min. See example on page 81.	Fb:0 to Fb:150	Duration adjustable from 0 to 300 min: 1 step \pm 2 min.

Service menu

Calling up the Service menu

1. Press **OK** and  simultaneously for approx. 4 s.  flashes on the display.
2. Select required function, e.g. relay test.

Exiting the Service menu

1. With  select .
2. Confirm with **OK**.
"OFF" flashes.
3. Confirm with **OK**.

Note

The system exits the service menu automatically after 30 min.





Scanning operating data

Operating data can be called up in the "i" menu.










Operating instructions







Brief scan

1. Press **OK** and  simultaneously for approx. 4 s.  flashes on the display.
2. Confirm with **OK**.
3. Use / to select the required scan. For example, "b" for "Boiler coding card" (see following table).
4. Confirm selected scan with **OK**.

For explanations of individual scans, see the following table:

Brief scan	Display				
					
0		System scheme	Software version Control unit		Software version Programming unit
1		Software version Burner control unit			Software version Cascade commu- nication module
3			Set boiler water temperature		
A			Common demand temperature		
4		Burner control unit type		Appliance type	
b			Max. heating output in %		
C		Boiler coding card (hexadecimal)			
c		Version Appliance		Version Burner control unit	
d				Variable speed pump 0 None 1 Wilo 2 Grundfos	Software version Variable speed pump 0: No variable speed pump
F 	Configuration of output 28 (value corresponds to setting of cod- ing address "53" in group 1 "General")	Internal details for calibration			

Brief scan (cont.)

Brief scan	Display				
					
EA1 extension					
F ③	Configuration of output 157 (value corresponds to setting of coding address "36" in group 1 " General ")	Output 157 switching state 0: OFF 1: ON	Input DE1 switching state 0: Open 1: Closed	Input DE2 switching state 0: Open 1: Closed	Input DE3 switching state 0: Open 1: Closed
F ④	Software version	External hook-up 0-10 V Display in %			

Service menu

Calling up the Service menu

Press **OK** and **≡** simultaneously for approx. 4 s.

Service menu overview

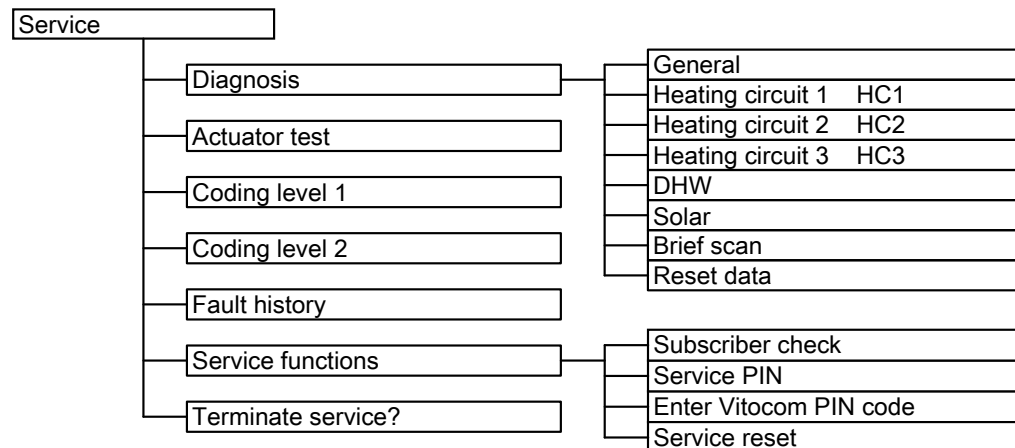


Fig. 31

"Coding level 2" is only displayed if this level has been enabled:

Press **OK** and **↶** simultaneously for approx. 4 s.

Exit service

1. Select "**Terminate service?**".
2. Select "**Yes**".
3. Confirm with **OK**.

Note

The system exits the service menu automatically after 30 min.

Scanning operating data

Operating data can be scanned in 6 areas (see "**Diagnosis**" in the "Service menu" overview).

Operating data on heating circuits with mixer or solar thermal systems can only be called up if such components are installed in the system.

For further information on operating data, see chapter "Brief scan".

Note

"- - -" appears on the display if a scanned sensor is faulty.

Calling up operating data

1. Press **OK** and **≡** simultaneously for approx. 4 s.
2. "**Diagnosis**"
3. Select the required group, e.g. "**General**".

Resetting operating data

Saved operating data (e.g. hours run) can be reset to 0.

The value "Adjusted outside temp" is reset to the actual value.

1. Press **OK** and **≡** simultaneously for approx. 4 s.

2. "**Diagnosis**"
3. "**Reset data**"
4. Select required value or "**All details**".

Brief scan

In the brief scan, you can call up temperatures, software versions and connected components, for example.

1. Press **OK** and **≡** simultaneously for approx. 4 s.
2. "Diagnosis"
3. "Brief scan".

4. Press **OK**.
The display shows 11 rows with 6 fields each.



Fig. 32

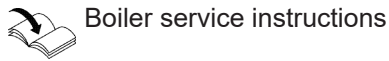
For an explanation of the relevant values in the individual lines, see the following table:

Row (brief scan)	Field					
	1	2	3	4	5	6
1:	System schemes 01 to 10		Software version, control unit		Software version, programming unit	
2:	0	0	0	0	Appliance ID CU-ID	
3:	0	0	Number of KM-BUS subscribers		Software version Solar control module, type SM1	
4:	0	0	0	0	0	0
5:	0	0	0	0	Software version, AM1 extension	Software version, EA1 extension
6:	0	0	0	0	0	0
7:	Subnet address/system number		Node address		0	0
8:	SNVT config. 0: Auto 1: Tool	Software version Communic. coproc.	Software version Neuron chip		Number of LON subscribers	
	Heating circuit HC1		Heating circuit HC2		Heating circuit HC3	
9:	Remote control 0: None 1: Vitotrol 200-A or Vitotrol 200-RF 2: Vitotrol 300-A or Vitohome 300	Software version Remote control	Remote control 0: None 1: Vitotrol 200-A or Vitotrol 200-RF 2: Vitotrol 300-A or Vitohome 300	Software version Remote control	Remote control 0: None 1: Vitotrol 200-A or Vitotrol 200-RF 2: Vitotrol 300-A or Vitohome 300	Software version Remote control
10:	0	0	0	0	0	0
11:	0	0	Software version, extension for heating circuits 2 and 3 with mixer	0	Software version, extension for heating circuits 2 and 3 with mixer	0

Note
The displays in fields 3 and 5 are **identical**.

Fault indicator

Fault display on the Vitotronic 100:



In the event of a fault, the red fault indicator on the control unit flashes. "Fault" is shown on the display and Δ flashes. Press **OK** to display the fault code.

Note
If a central fault message facility is connected, this is switched on.

For an explanation of the fault code, see chapter "Fault codes".
For some faults, the type of fault is also displayed in plain text.

Acknowledging faults

Follow the instructions on the display.

Note
The fault message is transferred to the menu.
Any fault message facility connected will be switched off.
If an acknowledged fault is not remedied, the fault message will be redisplayed the following day and the fault message facility restarted.

Calling up acknowledged fault messages

- Extended menu:
1. \equiv
2. "Fault"

Calling up fault codes from the fault memory (fault history)

The 10 most recent faults (including those remedied) are saved and can be called up. Faults are sorted by date.

Note
The list can be deleted.

Service menu:
Press **OK** and \equiv ; simultaneously for approx. 4 s.

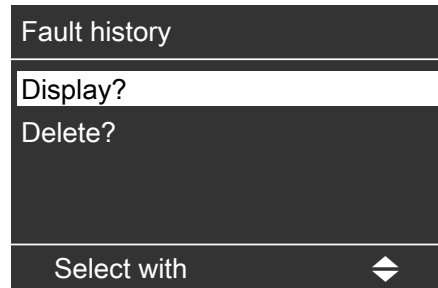


Fig. 33

Fault codes

Displayed fault code	System characteristics	Cause	Measures
10	Operates as if the outside temperature was 0 °C.	Short circuit, outside temperature sensor	Check outside temperature sensor (see page 85).
18	Operates as if the outside temperature was 0 °C.	Lead break, outside temperature sensor	Check outside temperature sensor (see page 85)
19	Operates as if the outside temperature was 0 °C.	Communication fault, outside temperature sensor RF	Check wireless connection (place outside temperature sensor RF close to the wireless base station). Forget outside temperature sensor, then pair again. Replace if necessary (see separate installation and service instructions).
20	Standalone control unit without flow temperature sensor (poss. flow temperature not high enough).	Short circuit, common flow temperature sensor/low loss header temperature sensor	Check sensor (see page 85).











Fault codes (cont.)

Displayed fault code	System characteristics	Cause	Measures
28	Standalone control unit without flow temperature sensor (poss. flow temperature not high enough).	Lead break, common flow temperature sensor/low loss header temperature sensor	Check sensor (see page 85).
40	Mixer is being closed.	Short circuit, flow temperature sensor, heating circuit with mixer M2 (heating circuit 2)	Check flow temperature sensor (see page 85).
44	Mixer is being closed.	Short circuit, flow temperature sensor, heating circuit with mixer M3 (heating circuit 3)	Check flow temperature sensor (see page 85).
48	Mixer is being closed.	Lead break, flow temperature sensor, heating circuit with mixer M2 (heating circuit 2)	Check flow temperature sensor (see page 85).
4C	Mixer is being closed.	Lead break, flow temperature sensor, heating circuit with mixer M3 (heating circuit 3)	Check flow temperature sensor (see page 85).
50	Cylinder loading pump "ON": DHW temperature target = set flow temperature Priority control is cancelled. or With cylinder loading system: Cylinder heating is started and stopped via cylinder temperature sensor 2.	Short circuit, cylinder temperature sensor 1	Check cylinder temperature sensor (see page 85).
51	With cylinder loading system: Cylinder heating is started and stopped via cylinder temperature sensor 1.	Short circuit, cylinder temperature sensor 2	Check cylinder temperature sensor (see page 85).
54	Control mode.	Service or fault on the Vitotronic 100 of boiler 5.	Check maintenance display or fault code on the respective Vitotronic 100.
55	Control mode.	Service or fault on the Vitotronic 100 of boiler 6.	Check maintenance display or fault code on the respective Vitotronic 100.
56	Control mode.	Service or fault on the Vitotronic 100 of boiler 7.	Check maintenance display or fault code on the respective Vitotronic 100.
57	Control mode.	Service or fault on the Vitotronic 100 of boiler 8.	Check maintenance display or fault code on the respective Vitotronic 100.
58	Cylinder loading pump "ON": DHW temperature target = set flow temperature Priority control is cancelled. or With cylinder loading system: Cylinder heating is started and stopped via cylinder temperature sensor 2.	Lead break, cylinder temperature sensor 1	Check cylinder temperature sensor (see page 85).

Fault codes (cont.)

Displayed fault code	System characteristics	Cause	Measures
59	With cylinder loading system: Cylinder heating is started and stopped via cylinder temperature sensor 1.	Lead break, cylinder temperature sensor 2	Check cylinder temperature sensor (see page 85).
5C	Control mode.	Communication error, Vitotronic 100 of boiler 5	Check and possibly replace cascade communication module and connecting cable.
5d	Control mode.	Communication error, Vitotronic 100 of boiler 6	Check and possibly replace cascade communication module and connecting cable.
5E	Control mode.	Communication error, Vitotronic 100 of boiler 7	Check and possibly replace cascade communication module and connecting cable.
5F	Control mode.	Communication error, Vitotronic 100 of boiler 8	Check and possibly replace cascade communication module and connecting cable.
70	With cylinder loading system: 3-way mixing valve "Closed"; no DHW heating.	Short circuit, temperature sensor 17 B	Check temperature sensor (see page 85).
78	With cylinder loading system: 3-way mixing valve "Closed"; no DHW heating.	Lead break, temperature sensor 17 A	Check temperature sensor (see page 85). Without temperature sensor: set code "4b:0" in the "General" group.
84	Control mode.	Service or fault on the Vitotronic 100 of boiler 1	Check maintenance display or fault code on the respective Vitotronic 100.
85	Control mode.	Service or fault on the Vitotronic 100 of boiler 2	Check maintenance display or fault code on the respective Vitotronic 100.
86	Control mode.	Service or fault on the Vitotronic 100 of boiler 3	Check maintenance display or fault code on the respective Vitotronic 100.
87	Control mode.	Service or fault on the Vitotronic 100 of boiler 4	Check maintenance display or fault code on the respective Vitotronic 100.
8C	Control mode.	Communication error, Vitotronic 100 of boiler 1	Check and possibly replace cascade communication module and connecting cable.
8d	Control mode.	Communication error, Vitotronic 100 of boiler 2	Check and possibly replace cascade communication module and connecting cable.
8E	Control mode.	Communication error, Vitotronic 100 of boiler 3	Check and possibly replace cascade communication module and connecting cable.
8F	Control mode.	Communication error, Vitotronic 100 of boiler 4	Check and possibly replace cascade communication module and connecting cable.
90	Control mode.	Short circuit, temperature sensor 7 , connection at solar control module.	Check temperature sensor 7 (see separate installation and service instructions).

Fault codes (cont.)

Displayed fault code	System characteristics	Cause	Measures
91	Control mode.	Short circuit, temperature sensor  , connection at solar control module.	Check temperature sensor  (see separate installation and service instructions).
92	No solar DHW heating.	Short circuit, collector temperature sensor, connection of temperature sensor  at solar control module or sensor at S1 of the Vitosolic.	Check sensor at the solar control unit (see separate installation and service instructions).
93	Control mode.	Short circuit, temperature sensor, connection at S3 of the Vitosolic.	Check sensor at the solar control unit (see separate installation and service instructions).
94	No solar DHW heating.	Short circuit, cylinder temperature sensor, connection of temperature sensor  at solar control module or sensor at S2 of the Vitosolic.	Check sensor at the solar control unit (see separate installation and service instructions).
98	Control mode.	Lead break, temperature sensor  , connection at solar control module.	Check temperature sensor  (see separate installation and service instructions). Check coding address "20" in the "Solar" group.
99	Control mode.	Lead break, temperature sensor  , connection at solar control module.	Check temperature sensor  (see separate installation and service instructions). Check coding address "20" in the "Solar" group.
9A	No solar DHW heating.	Lead break, collector temperature sensor, connection of temperature sensor  at solar control module or sensor at S1 of the Vitosolic.	Check sensor at the solar control unit (see separate installation and service instructions).
9b	Control mode.	Lead break, temperature sensor, connection at S3 of the Vitosolic.	Check sensor at the solar control unit (see separate installation and service instructions).
9C	No solar DHW heating.	Lead break, cylinder temperature sensor, connection of temperature sensor  at solar control module or sensor at S2 of the Vitosolic.	Check sensor at the solar control unit (see separate installation and service instructions).
9E	Control mode.	No flow rate in solar circuit or flow rate too low, or temperature limiter has responded.	Check solar circuit. Acknowledge fault message (see separate installation and service instructions).

Fault codes (cont.)

Displayed fault code	System characteristics	Cause	Measures
9F	Control mode.	Solar control module or Vitosolic fault. Displayed if a fault occurs at these devices that has no fault code in the Vitotronic.	Check solar control unit (see separate installation and service instructions).
Ab	Control mode, DHW cylinder may be cold.	Cylinder loading system configuration fault: Code "55:3" has been set in the " DHW " group, but plug [17]B is not plugged in and/or codes "4C:1" and "4E:2" in the " General " group have not been set.	Insert plug [17]B and check codes.
b1	Control mode.	Communication error, programming unit	Check connections; replace programming unit if necessary.
b5	Control mode.	Internal fault	Check PCB is plugged in correctly.
b6	Constant mode.	Invalid hardware recognition	Check coding address "92" in the " General " group; "92:187" must be set. Note <i>Code "8A:176" must be selected so that coding address "92" is displayed.</i>
bA	Mixer "close".	Communication error, PCB extension for heating circuits 2 and 3 with mixer	Check that the PCB and ribbon cable are plugged in correctly, and replace PCB if required.
bC	Control mode without remote control.	Communication error, Vitotrol remote control unit, heating circuit without mixer A1 (heating circuit 1)	Check connections, cable (see separate installation and service instructions) and coding address "A0" in the " Heating circuit... " group. With wireless remote control: Place the remote control near the wireless base station and check connection.
bd	Control mode without remote control.	Communication error, Vitotrol remote control unit, heating circuit with mixer M2 (heating circuit 2)	Check connections, cable (see separate installation and service instructions) and coding address "A0" in the " Heating circuit... " group. With wireless remote control: Place the remote control near the wireless base station and check connection.

Fault codes (cont.)

Displayed fault code	System characteristics	Cause	Measures
bE	Control mode without remote control.	Communication error, Vitotrol remote control unit, heating circuit with mixer M3 (heating circuit 3)	Check connections, cable (see separate installation and service instructions) and coding address "A0" in the "Heating circuit..." group. With wireless remote control: Place the remote control near the wireless base station and check connection.
bF	Control mode. No communication via LON.	Incorrect LON communication module	Replace LON communication module.
C2	Control mode.	Lead break, KM-BUS to solar control module or to Vitosolic	Check KM-BUS cable and appliance. Without solar control unit: Set code "54:0" in the "General" group.
CF	Control mode. No communication via LON.	Communication error, LON communication module of the control unit	Check LON communication module and replace if required. If no LON communication module is installed, set code "76:0" in "General" group.
d3	Control mode.	Communication error, EA1 extension	Check connections (see page 91). Without EA1 extension: Set code "5b:0" in "General" group.
d5	Boiler ramps to the electronic maximum boiler water temperature limit.	Boiler does not log in at the cascade control unit	Check communication via subscriber check, leads/cables to the Vitotronic 100 and codes.
d6	Control mode.	Input DE1 at EA1 extension reports a fault	Remedy fault at appliance concerned.
d7	Control mode.	Input DE2 at EA1 extension reports a fault	Remedy fault at appliance concerned.
d8	Control mode.	Input DE3 at EA1 extension reports a fault	Remedy fault at appliance concerned.
dA	Control mode without room influence.	Short circuit, room temperature sensor, heating circuit without mixer A1 (heating circuit 1)	Check room temperature sensor (see page 85).
db	Control mode without room influence.	Short circuit, room temperature sensor, heating circuit with mixer M2 (heating circuit 2)	Check room temperature sensor (see page 85).
dC	Control mode without room influence.	Short circuit, room temperature sensor, heating circuit with mixer M3 (heating circuit 3)	Check room temperature sensor (see page 85).
dd	Control mode without room influence.	Lead break, room temperature sensor, heating circuit without mixer A1 (heating circuit 1)	Check room temperature sensor (see page 85) and remote control settings (see separate installation and service instructions).

Fault codes (cont.)

Displayed fault code	System characteristics	Cause	Measures
dE	Control mode without room influence.	Lead break, room temperature sensor, heating circuit with mixer M2 (heating circuit 2)	Check room temperature sensor (see page 85) and remote control settings (see separate installation and service instructions).
dF	Control mode without room influence.	Lead break, room temperature sensor, heating circuit with mixer M3 (heating circuit 3)	Check room temperature sensor (see page 85) and remote control settings (see separate installation and service instructions).

Note

If subscriber faults occur, "**Subscriber fault ...**" is displayed.

Ordering parts

The following details are required when ordering parts:

- Serial no. (see type plate (A))
- Position number of the part (from this parts list)

Parts list Vitotronic 100



Boiler service instructions

Parts list Vitotronic 300-K

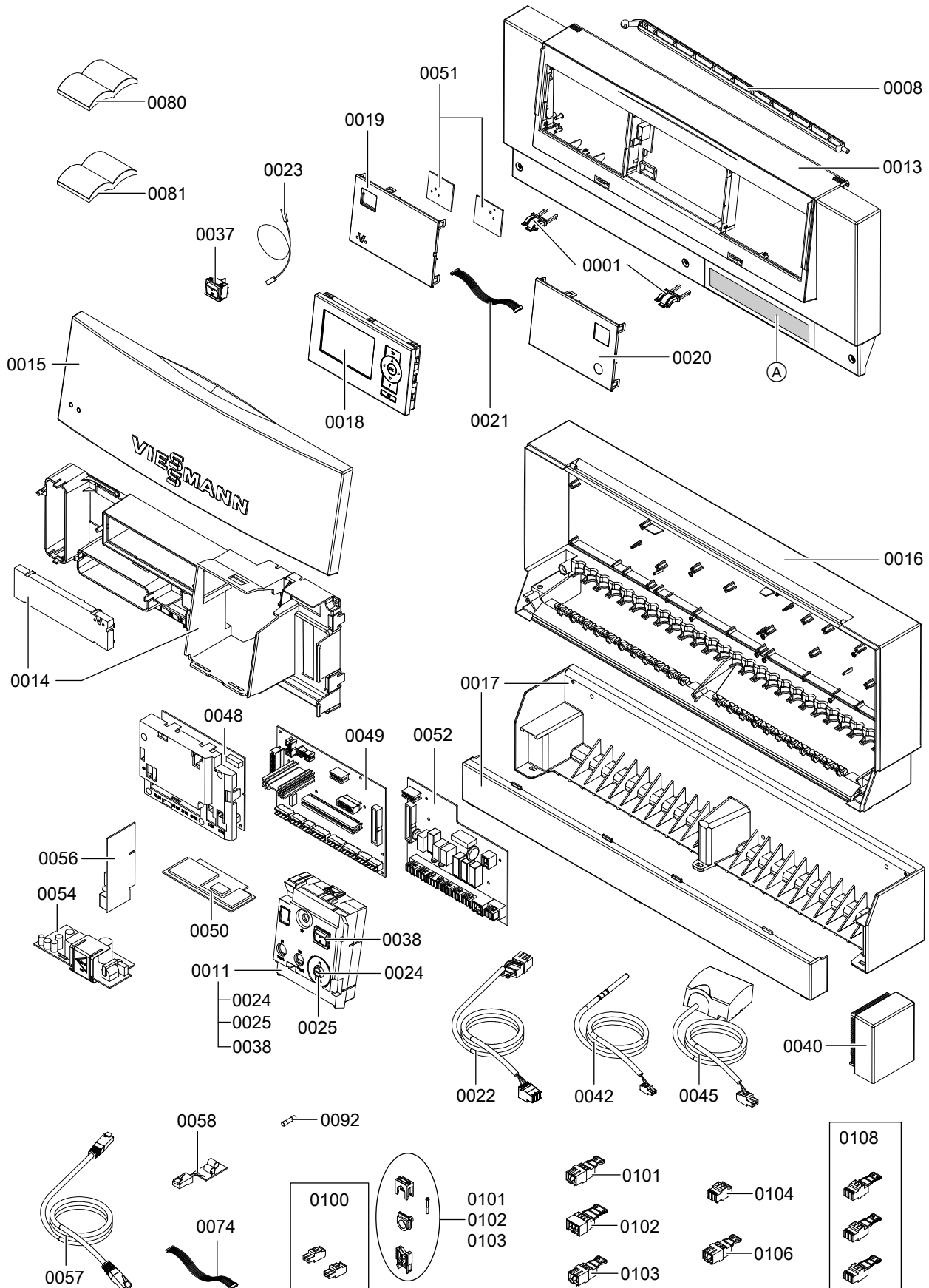


Fig. 34

Parts list Vitotronic 300-K (cont.)

Pos.	Part
0001	Hinges
0008	Supporting stay
0011	Programming unit ON/OFF switch
0013	Casing front
0014	PCB cover
0015	Front flap
0016	Casing base
0017	Wall mounting bracket
0018	Programming unit
0019	Fascia, left
0020	Fascia, right
0021	Ribbon cable, 10-pole
0022	Connecting cable, mixer extension PCB
0023	Connecting cable, emissions test switch
0024	Fuse holder cap for control fuse
0025	Fuse holder for control fuse
0037	Emissions test switch, single pole
0038	2-pole switch (ON/OFF switch)
0040	Outside temperature sensor 1
0042	Immersion temperature sensor (boiler water temperature sensor, cylinder temperature sensor, flow temperature sensor for low loss header)
0045	Contact temperature sensor (flow temperature sensor)
0048	PCB, extension heating circuits 2 and 3 with cover
0049	Main PCB low voltage
0050	PCB
0051	Optolink PCB/emissions test switch
0052	Main PCB 230 V~
0054	Power supply unit PCB
0056	LON communication module
0057	LON cable
0058	LON terminator
0074	Connecting cable, 16-pole
0080	Installation and service instructions
0081	Operating instructions
0092	Fuse T 6.3 A/250 V~
0100	Plugs for sensors (7 pce)
0101	Plug for pumps (3 pce)
0102	Plug 52 (3 pce)
0103	Mains outlet plug 156 (3 pce)
0104	Power plug 40 (3 pce)
0106	Plug 50 (3 pce)
0108	Plug 143 , 145 , 146

Boiler water temperature control of the Vitotronic 100

Brief description

- The boiler water temperature is regulated by switching the modulating burner.
- The set boiler water temperature is specified by the Vitotronic 300-K.

Functions

The boiler water temperature is recorded separately:

- Temperature limiter
- Boiler water temperature sensor

Upper control range limits

Electronic maximum boiler water temperature limit:

- Setting range: 20 °C to boiler coding card default
- Changed via coding address "06" in group 2

Control sequence

The boiler goes cold:

- The burner start signal is set at the set boiler water temperature – 4 K. The burner starts its own monitoring program.
- You can delay the burner start by several minutes.

Boiler heats up:

- The burner stop point is determined by the shutdown differential of 8 K.

Cascade control of the Vitotronic 300-K

Brief description

- The flow temperature is regulated by starting or stopping the burner or by modulating the individual burners.
- The boilers will be regulated to the set boiler water temperature specified by the cascade control unit (standalone control).
- Subject to the system design, you may select between one condensing strategy and two conventional boiler strategies.
- The boiler sequence (see page 27) can be determined via code 2 and the boiler sequence selection control.
- **Coding addresses** that influence the cascade control: **"Cascade"** group.
For a description, see codes overview.

Set flow temperature

The set flow temperature is determined from the following parameters:

- Set flow temperatures of the heating circuit without mixer A1 and the heating circuits with mixer M2 and M3 (if installed)
- Set flow temperature of other consumers (specified by the Vitotronic 200-H, for example).
- Set DHW temperature
- External demands (the set flow temperature specified by coding address "9b" or via input "0 to 10 V" of the EA1 extension, for example)

Upper control range limits

- Maximum limit of the system flow temperature (coding address "37" in the **"Cascade"** group).

Lower control range limits

- Minimum limit of the system flow temperature (coding address "36" in the **"Cascade"** group).

Cascade control of the Vitotronic 300-K (cont.)**Standalone control****Boilers connected in parallel**

- Without and with flow temperature sensor.
 - **With flow temperature sensor:**
Set code "3b:1" in the "**Cascade**" group.
The control deviation is calculated from the set flow temperature and the actual flow temperature to determine the start and shutdown criteria.
 - **Without flow temperature sensor:**
Set code "3b:0" in the "**Cascade**" group.
To determine the start and shutdown criteria, the control deviation is calculated from the set boiler water temperature and the estimated average actual boiler water temperature of the currently active boilers.
- The cascade control specifies the set boiler water temperature for all currently active boilers. Every boiler control unit regulates to the specified set value.

The following control strategies are available:

- Condensing strategy (see page 75)
- Conventional boiler strategy 1 (see page 75)
- Conventional boiler strategy 2 (see page 75)

Operation with positive pressure flue gas cascade

Code "7E:1" in the "**General**" group.
When each additional boiler starts, all currently active burners are briefly ramped up higher than 80 %.

Control strategies**Condensing strategy**

Advantage:

Optimum utilisation of the condensing effect and long burner runtimes.

Set code "3C:0" in the "**Cascade**" group.

It is the aim of the condensing strategy to operate as many boilers as possible at the lowest output level.

- **Starting criterion:**
Boilers are started via an output statement (code "3d:1" in the "**Cascade**" group).
An additional boiler will start if the currently required output can also be achieved by the currently active boilers plus the next boiler in the boiler sequence (see page 27).
- **Shutdown criterion:**
The boilers are shut down via a shutdown integral. The shutdown criterion is met if the shutdown integral exceeds a limit set at coding address "46" in the "**Cascade**" group and the boiler started last will be shut down.

Conventional boiler strategy 1

Advantage:

As few boilers as possible are active.

Set code "3C:1" in the "**Cascade**" group.

With this strategy, an additional boiler will only be started if the maximum output of all currently active burners is insufficient to achieve the set flow temperature. A boiler will be shut down when the remaining boilers can achieve the required output on their own.

- **Starting criterion:**
The boilers are started via a starting integral. The next boiler in the boiler sequence will be started if the value set in coding address "45" in the "**Cascade**" group is exceeded (see page 27).
- **Shutdown criterion:**
Boilers are switched off via an output statement (code "3d:1" in the "**Cascade**" group). A boiler is shut down if the currently required output can be achieved without the boiler that was started last.

Conventional boiler strategy 2

Advantage:

Long burner runtimes.

Code "3C:2" in the "**Cascade**" group (delivered condition).

An additional boiler will only be started if the maximum output of all currently active burners is insufficient to achieve the set flow temperature.

A boiler will be shut down if the burners were returned to their minimum output because of a large negative control deviation and the output is still too high.

- **Starting criterion:**
The boilers are started via a starting integral. The next boiler in the boiler sequence will be started if the value set in coding address "45" in the "**Cascade**" group is exceeded (see page 27).
- **Shutdown criterion:**
The boilers are shut down via a shutdown integral. The shutdown criterion is met if the shutdown integral exceeds a limit set at coding address "46" in the "**Cascade**" group and the boiler started last will be shut down.

Cascade control of the Vitotronic 300-K (cont.)

Examples of the various control strategies

System with 2 Vitodens 200-W.

Condensing strategy (code "3C:0" in the "Cascade" group)

Start-up

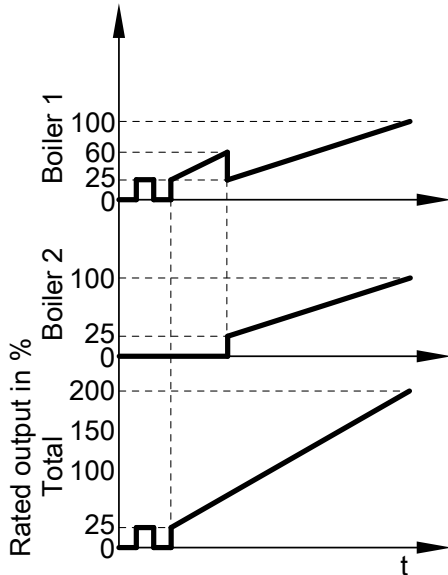


Fig. 35

Shutdown

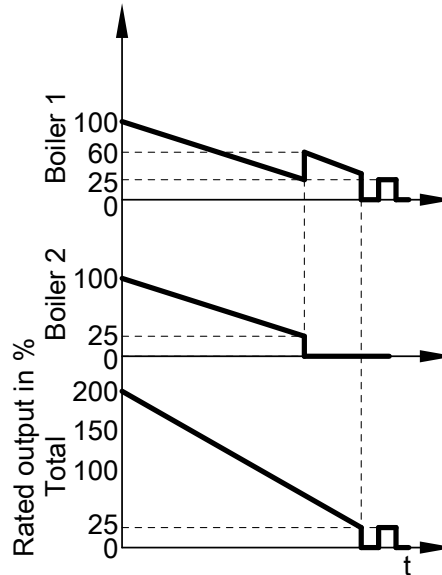


Fig. 36

Conventional boiler strategy 1 (code "3C:1" in the "Cascade" group)

Start-up

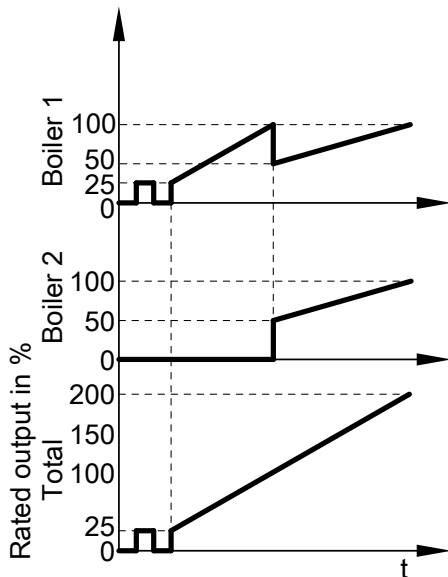


Fig. 37

Shutdown

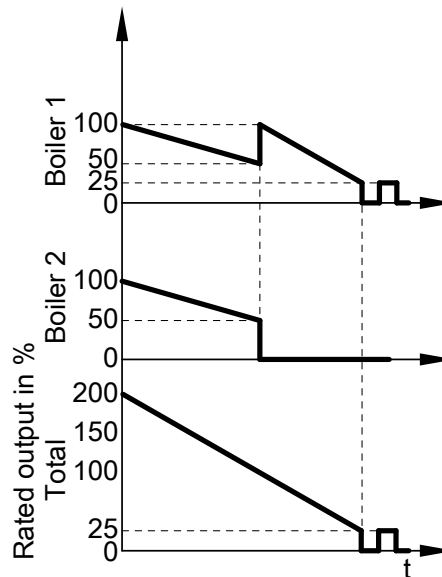


Fig. 38

Cascade control of the Vitotronic 300-K (cont.)

Conventional boiler strategy 2 (code "3C:2" in the "Cascade" group)

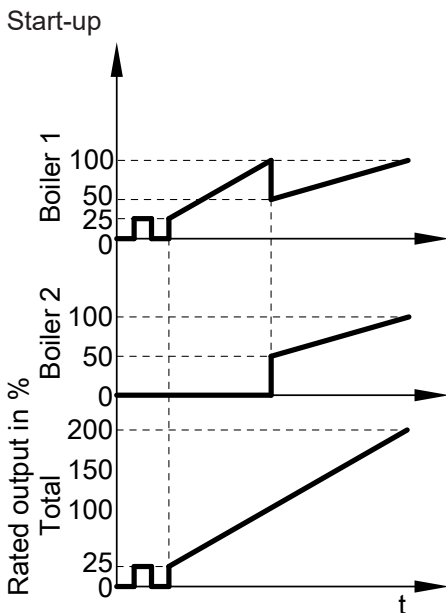


Fig. 39

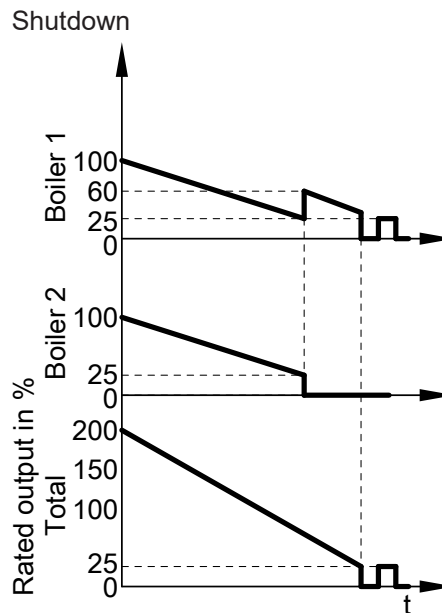


Fig. 40

Heating circuit control unit of the Vitotronic 300-K

Brief description

- The control unit features control circuits for one heating circuit without mixer A1 (heating circuit 1) and two heating circuits with mixer M2 (heating circuit 2) and M3 (heating circuit 3).
- The set flow temperature of each heating circuit is determined from the following parameters:
 - Outside temperature
 - Set room temperature
 - Operating mode
 - Heating curve slope and level
- The flow temperature of the heating circuit without mixer corresponds to the common system flow temperature.
- The flow temperature of the heating circuits with mixer is regulated by the stepped opening or closing of the mixers. The mixer motor control changes the actuating and pause times subject to the control differential (control deviation).

Functions

The heating circuit without mixer is subject to the common flow temperature and its control range limits. The heating circuit pump is the only actuator. The flow temperature of the heating circuits with mixer is captured by the flow temperature sensor of the relevant heating circuit.

- Upper control limit:
Electronic maximum flow temperature limit
Coding address "C6" in the "**Heating circuit...**" group.
- Lower control range limit:
Electronic minimum flow temperature limit
Coding address "C5" in the "**Heating circuit...**" group.

Time program

The control unit switches between "Central heating with standard room temperature" and "Central heating with reduced room temperature" in line with the time program in the "**Heating and DHW**" operating program.

Every operating mode has its own set level. 4 time phases per day can be selected.

Outside temperature

A heating curve must be set to adjust the control unit to the building and the heating system.

Heating circuit control unit of the Vitotronic... (cont.)

The heating curve characteristics determine the set boiler water temperature subject to outside temperature. The control unit regulates in line with an average outside temperature. This is composed of the actual and the adjusted outside temperature.

Room temperature

In conjunction with a remote control and room temperature hook-up (coding address "b0" in the **"Heating circuit..."** group):

Compared with the outside temperature, the room temperature has a greater influence on the set flow temperature (changed via coding address "b2" in the **"Heating circuit..."** group).

In conjunction with heating circuits with mixer:

For control differentials (actual value deviation) above 2 K room temperature, the influence can be increased again (coding address "b6" in the **"Heating circuit..."** group):

- Quick heat-up
 - The set room temperature must be raised by at least 2 K by the following measures:
 - Activating party mode
 - Changing from central heating with reduced temperature to central heating with standard temperature
 - Start optimisation (coding address "b7" in the **"Heating circuit..."** group)
 - Quick heat-up will stop when the set room temperature has been reached.
- Quick setback
 - The set room temperature must be reduced by at least 2 K by the following measures:
 - Activating economy mode
 - Changing from central heating with standard temperature to central heating with reduced temperature
 - Stop optimisation (coding address "C1" in the **"Heating circuit..."** group)
 - Quick setback ends when the set room temperature has been reached.

DHW temperature**Priority control**

- With priority control: (code "A2:2" in the **"Heating circuit..."** group):
 - The set flow temperature will be adjusted to 0 °C during cylinder heating.
 - The mixer closes and the heating circuit pump is switched off.
- Without priority control:
 - The heating circuit control unit continues to operate with the same set value.

Heating circuit pump logic (economy mode)

The heating circuit pump is switched off (set flow temperature set to 0 °C) if the outside temperature exceeds the value selected via coding address "A5" in the **"Heating circuit..."** group.

Extended economy mode

The heating circuit pump is switched off (set flow temperature set to 0 °C) if one of the following criteria is met:

- The adjusted outside temperature exceeds the value selected via coding address "A6" in the **"Heating circuit..."** group.
 - The heating circuit pump can be switched off for a time calculated by the control unit when changing over from heating mode to reduced mode.
 - Requirement:
 - There is no risk of frost.
 - Coding address "b0" in the **"Heating circuit..."** group must be set to 0.
 - The idle period can be individually adjusted via coding address "A9" in the **"Heating circuit..."** group.
- Note**
If, during the pump idle period, the system is switched over to heating mode or the set room temperature is increased, the heating circuit pump is switched on, even if the period has not yet expired.
- The actual room temperature exceeds the value selected via coding address "b5" in the **"Heating circuit..."** group.
 - The mixer has been closed for 12 min. (mixer economy function, coding address "A7" in the **"Heating circuit..."** group).

Screed drying

- In conjunction with a heating circuit with mixer.
- For drying screeds, always observe the information provided by the screed manufacturer.
- The heating circuit pump of the heating circuit with mixer is switched on and the flow temperature is maintained in accordance with the selected profile.
- After completion (30 days), the mixer circuit will automatically be regulated via the set parameters again.
- Observe EN 1264.
- The report to be provided by the heating contractor must contain the following details regarding heat-up:
 - Heat-up data with the relevant flow temperatures
 - Max. flow temperature achieved
 - Operating state and outside temperature at time of heating system handover

Heating circuit control unit of the Vitotronic... (cont.)

- The various temperature profiles are adjustable via coding address "F1" in the "Heating circuit..." group.
- The function continues after a power failure or after the control unit has been switched off. When the screed drying function ends or code "F1:0" is set manually, the "Heating and DHW" operating program is activated.

Temperature profile 1: (EN 1264-4) code "F1:1"

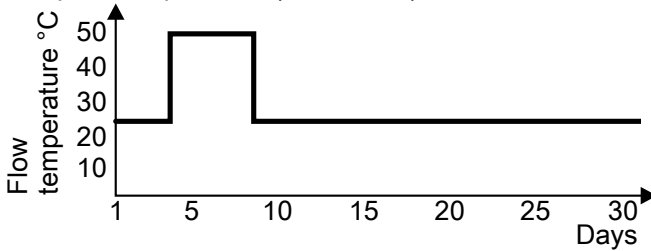


Fig. 41

Temperature profile 2: (ZV parquet and flooring technology) code "F1:2"

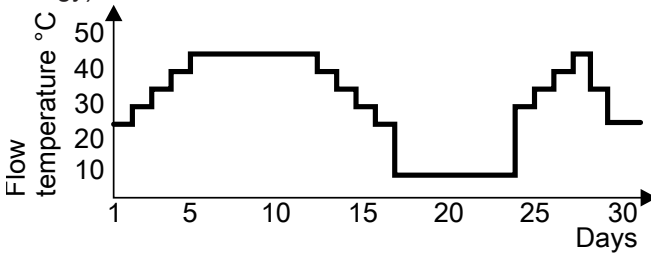


Fig. 42

Temperature profile 3: code "F1:3"

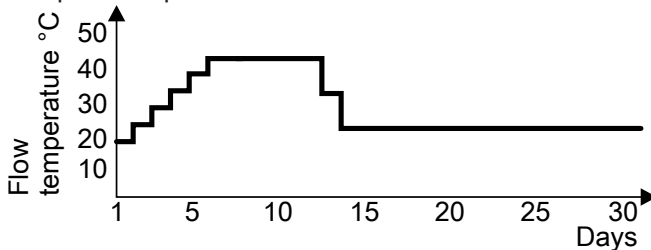


Fig. 43

Temperature profile 4: code "F1:4"

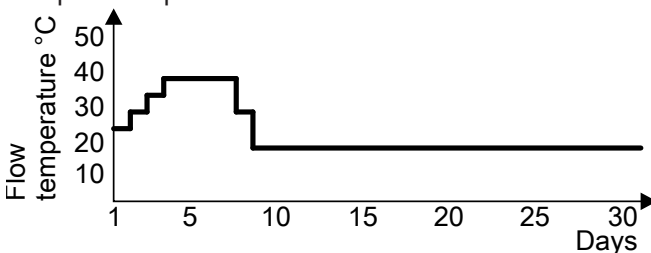


Fig. 44

Temperature profile 5: code "F1:5"

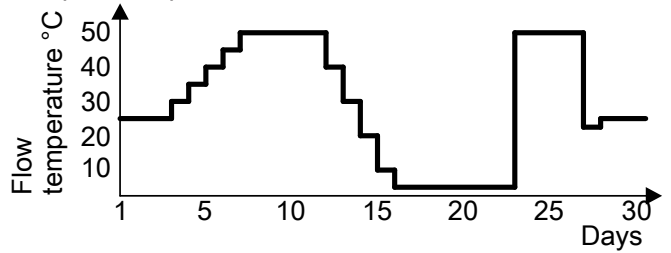


Fig. 45

Temperature profile 6: code "F1:6"

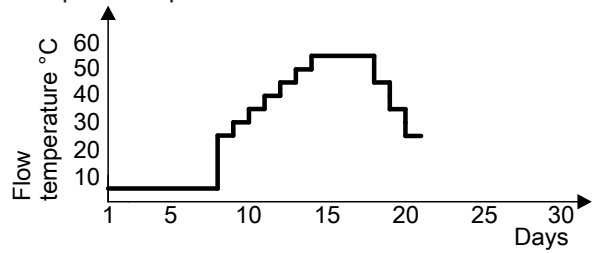


Fig. 46

Temperature profile 7: code "F1:15"

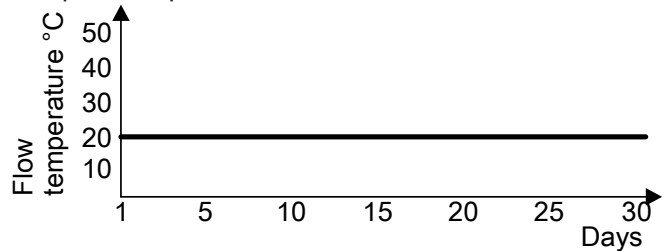


Fig. 47

System dynamics

You can influence the control characteristics of the mixers at coding address "C4" in the "Heating circuit..." group.

Central control

Central control for a heating circuit can be programmed via coding address "7A" in the "General" group. The heating and holiday program then applies to **all** additional heating circuits of the system. For these heating circuits, when the heating and holiday program is enabled, "Central control" is displayed. Any holiday programs that may have been set will be deleted. Party and economy modes cannot be enabled on **all** control units.

Heating circuit control unit of the Vitotronic... (cont.)

Frost protection

The flow temperature is maintained in accordance with the heating curve for the reduced set room temperature, but at min. 10 °C.

A variable frost limit can be set in accordance with coding address "A3" in the "Heating circuit..." group.

Flow temperature control

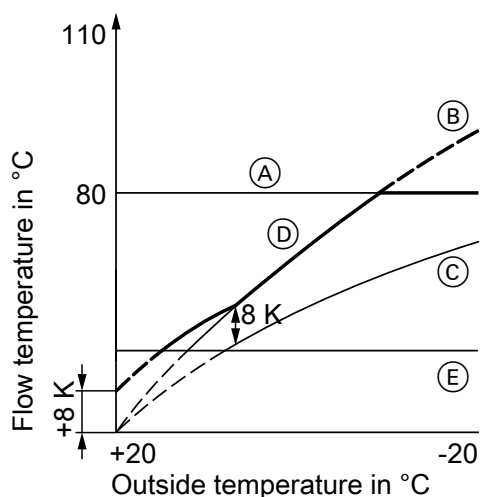


Fig. 48

- (A) Maximum flow temperature limit (coding address "37" in the "Cascade" group)
- (B) Slope = 1.8 for heating circuit without mixer
- (C) Slope = 1.2 for heating circuit with mixer
- (D) Common flow temperature (at a differential temperature = 8 K)
- (E) Lower common flow temperature

Differential temperature:

The differential temperature can be adjusted via coding address "9F" in the "General" group.

Delivered condition 8 K.

The differential temperature is the value by which the common flow temperature should be higher than the highest currently required flow temperature of the heating circuit with mixer.

- System with only one heating circuit with mixer:
The common set flow temperature is regulated automatically to 8 K above the set flow temperature of the heating circuit with mixer.
- System with heating circuit without mixer and heating circuits with mixer:
The common set flow temperature operates in accordance with its own heating curve. The differential temperature of 8 K towards the set flow temperature of the heating circuits with mixer is set at the factory.

Raising the reduced room temperature

During operation with reduced room temperature, the reduced set room temperature can be automatically raised subject to the outside temperature. The temperature is raised in accordance with the selected heating curve, but **no higher** than the set standard room temperature.

Heating circuit control unit of the Vitotronic... (cont.)

Example using the settings in the delivered condition

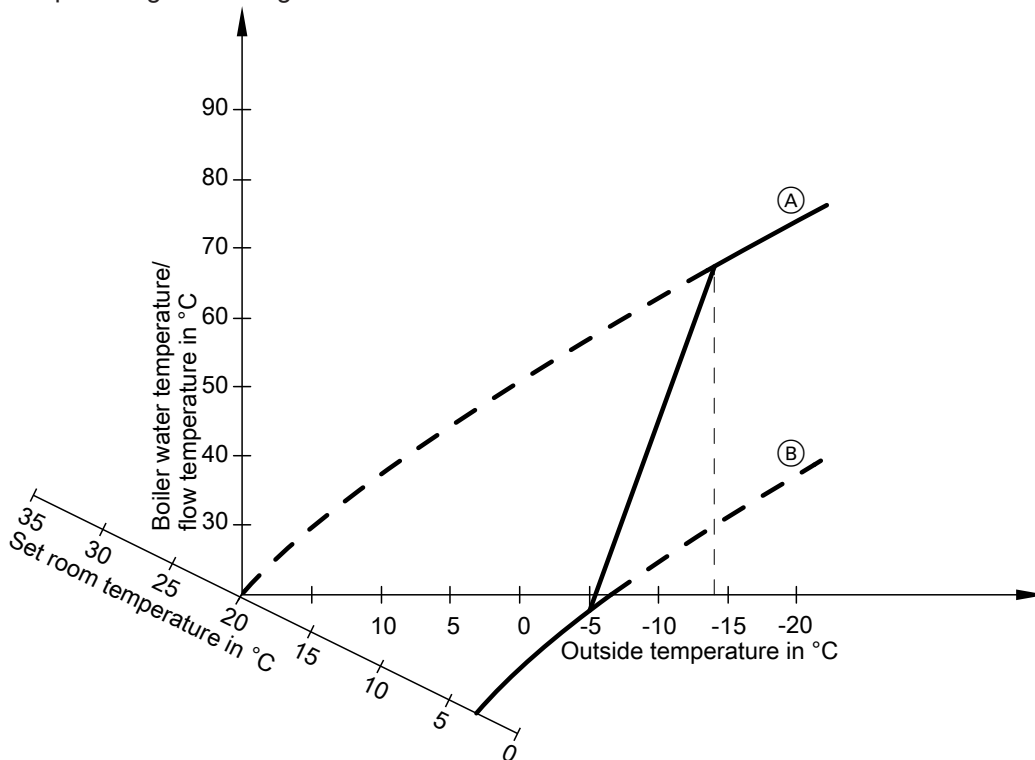


Fig. 49

- Ⓐ Heating curve for operation with standard room temperature
- Ⓑ Heating curve for operation with reduced room temperature

Reducing the heat-up time

During the transition from operation with reduced room temperature to operation with standard room temperature, the boiler water or flow temperature will be raised in accordance with the selected heating curve. This boiler water temperature/flow temperature increase can be initiated automatically.

The value and duration of the additional increase of the set boiler water or flow temperature can be adjusted in coding addresses "FA" and "Fb".

Heating circuit control unit of the Vitotronic... (cont.)

Example using the settings in the delivered condition

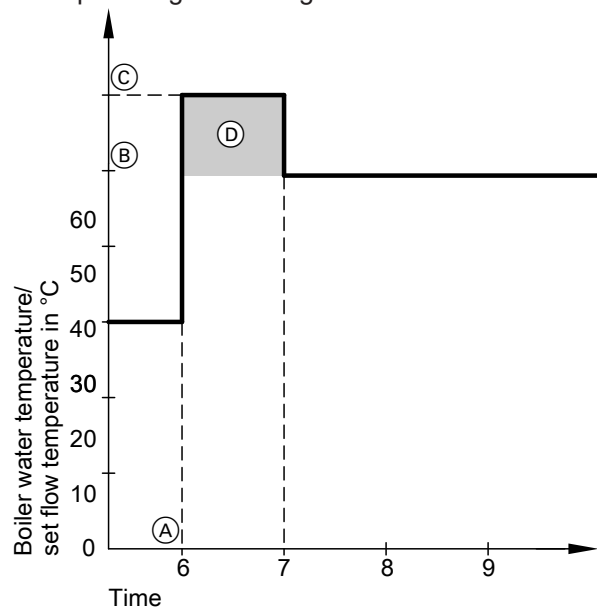


Fig. 50

- (A) Start of operation with standard room temperature
- (B) Set boiler water/flow temperature in accordance with the selected heating curve
- (C) Set boiler water/flow temperature in accordance with coding address "FA":
50 °C + 20 % = 60 °C
- (D) Duration of operation with raised set boiler water/flow temperature in accordance with coding address "Fb":
60 min

Control sequence

Mixer circuit

The mixer motor will not be controlled within the "neutral zone" (± 1 K).

Flow temperature drops

(Set value -1 K)

The mixer motor receives the signal "Mixer open". The signal duration lengthens with an increasing control differential. The duration of pauses reduces with an increasing control differential.

Flow temperature rises

(Set value +1 K)

The mixer motor receives the signal "Mixer close". The signal duration lengthens with an increasing control differential. The duration of pauses reduces with an increasing control differential.

Cylinder temperature control

Brief description

- Cylinder temperature control is a constant temperature control. It operates by starting and stopping the circulation pump for cylinder heating. The switching differential is ± 2.5 K.
- When the DHW cylinder is heated, a set flow temperature is specified that is 20 K higher than the set DHW temperature (adjustable at coding address "60" in the "DHW" group).

Cylinder temperature control (cont.)**Functions****Time program**

An automatic or an individual time program may be selected for DHW heating and the DHW circulation pump.

Compared with the heating circuit heat-up phase, DHW heating starts 30 min earlier in automatic mode. The individual time program enables up to 4 time phases per day to be set for DHW heating and the DHW circulation pump for every day of the week.

All cylinder heating sequences will be completed independently of the time program.

In conjunction with coding address "7F" in the "General" group

- Detached house
Code "7F:1":
 - Automatic mode
The heating times for heating circuit 1 are applied to systems with two or three heating circuits.
 - Individual time program
The time phases for DHW heating and the DHW circulation pump have the same effect on all heating circuits.
- Apartment building
Code "7F:0":
 - Automatic mode
For systems with two or three heating circuits, the heating times for the relevant heating circuit will be applied.
 - Individual time program
The time phases for DHW heating and the DHW circulation pump can be adjusted **individually for each heating circuit**.

Priority control

- With priority control: (code "A2:2" in the "**Heating circuit...**" group):
The set flow temperature will be adjusted to 0 °C during cylinder heating.
The mixer closes and the heating circuit pump is switched off.
- Without priority control:
The heating circuit control unit continues to operate with the same set value.

Frost protection function

The DHW cylinder will be heated to 20 °C if the DHW temperature falls below 5 °C.

Auxiliary function for DHW heating

Select a second set DHW temperature in coding address "58" in the "**DHW**" group. This function is enabled by setting the fourth DHW time phase for DHW heating.



Operating instructions

Set DHW temperature

The set DHW temperature can be adjusted between 10 and 60 °C.

The set range can be extended up to 95 °C via coding address "56" in the "**DHW**" group.

The set default value of the programming unit and/or the Vitotrol 300-A remote control units can be assigned at coding address "66" in the "**DHW**" group.

DHW circulation pump

This delivers hot water to the draw-off points at adjustable times.

Four time phases can be selected at the control unit for every day.

Auxiliary circuits

DHW heating in conjunction with the heating circuits can be blocked or enabled by changing over the operating program (see code "d5" in the "**Heating circuit...**" group).

System with cylinder loading system

The above functions also apply in conjunction with cylinder loading systems.

Set the following codes:

"55:3" in the "**DHW**" group; "4C:1", "4E:2" in the "**General**" group.

System with solar control unit

A third set DHW temperature can be specified in coding address "67" in the "**DHW**" group.

The DHW cylinder is only reheated by the boiler if the temperature falls below this value.

Cylinder temperature control (cont.)

Control sequence

Code "55:0" in the "DHW" group, cylinder heating

The DHW cylinder goes cold (set value -2.5 K; change via coding address "59"):

- The common set flow temperature is set 20 K higher than the set DHW temperature (change via coding address "60").

The DHW cylinder is hot (set value $+2.5$ K):

- The common set flow temperature is returned to the set weather-compensated value.
- Pump run-on:
 - The circulation pump runs on after cylinder heating until one of the following criteria is met:
 - The weather-compensated set flow temperature has been reached.
 - The set DHW temperature is exceeded by 5 K.
 - The set max. run-on time is reached (coding address "62").
- Without pump run-on (code "62:0")

Code "55:1" in the "DHW" group, adaptive cylinder heating

With adaptive cylinder heating, the speed of the temperature rise during DHW heating is taken into account.

The DHW cylinder goes cold (set value -2.5 K; change via coding address "59"):

- The common set flow temperature is set 20 K higher than the set DHW temperature (change via coding address "60").

The DHW cylinder is hot:

- The control unit checks whether the boiler will be required to supply heating energy after the cylinder has been heated up or whether residual boiler heat should be transferred to the DHW cylinder. Accordingly, the control unit determines the burner and circulation pump stop times to prevent the set DHW temperature being substantially exceeded after the cylinder has been heated up.

Code "55:2" in the "DHW" group, cylinder temperature control with 2 cylinder temperature sensors

Cylinder temperature sensor 1 enables the circulation pump for cylinder heating and is evaluated for stop conditions during the pump run-on time.

Cylinder temperature sensor 2:

Cylinder heating will start early if a lot of hot water is drawn off. Cylinder heating will terminate early if no hot water is drawn off.

DHW cylinder goes cold:

- Set value -2.5 K, adjustable via coding address "59" or
- Actual DHW temperature at sensor 2 $<$ set DHW temperature \times factor for start time (adjustment at coding address "69")

The DHW cylinder is hot:

- Set value $+2.5$ K and
- Actual DHW temperature at sensor 2 $>$ set DHW temperature \times factor for stop time (adjustment at coding address "68")

Code "55:3" in the "DHW" group, cylinder temperature control, cylinder loading system

The DHW cylinder goes cold (set value -2.5 K; change via coding address "59"):

- The common set flow temperature is set 20 K higher than the set DHW temperature (change via coding address "60").
- The primary cylinder loading pump for the cylinder loading system switches on.
- The 3-way mixing valve opens and then regulates to the specified set value.
- The circulation pump for cylinder heating cycles (briefly switches on and off) until the set flow temperature has been reached (set DHW temperature $+ 5$ K). It then runs constantly.

If, during heating, the actual value falls below the required set temperature, the circulation pump for cylinder heating will temporarily cycle again.

The DHW cylinder is hot:

- (Cylinder temperature sensor 1: Actual value \geq set value and
Cylinder temperature sensor 2: Actual value $>$ set value -1.5 K):
- The common set flow temperature is returned to the set weather-compensated value.
- The circulation pump for cylinder heating stops immediately when the 3-way mixing valve is fully opened.
- or
- The circulation pump for cylinder heating stops after expiry of the run-on time that is set at code "62".

Sensors

Cylinder, flow and room temperature sensor

Note

- The flow temperature sensor can be used as a contact or immersion temperature sensor.
- The flow temperature sensor of the mixer extension kit is a contact temperature sensor.
- The room temperature sensor is connected at terminals 3 and 4 in the Vitotrol 300-A.



Vitotrol 300-A installation and service instructions

Viessmann NTC 10 k Ω (blue identification)

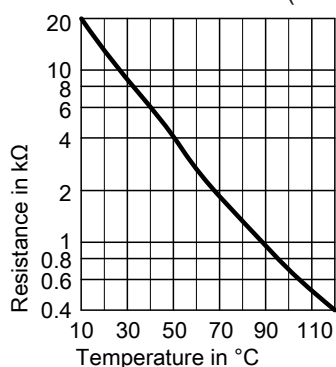


Fig. 51

1. Pull out corresponding plug.
2. Check the sensor resistance and compare it with the curve.
3. If there is considerable deviation, check the installation. Replace sensor if required.

Outside temperature sensor

Viessmann NTC 10 k Ω

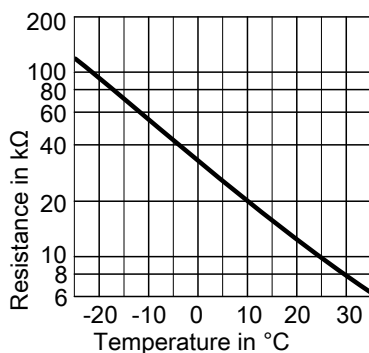


Fig. 52

1. Pull out plug 1.
2. Check the sensor resistance across plug terminals "1" and "2" and compare with the curve.
3. If the results are very different from the curve, disconnect the wires from the sensor and repeat the test on the sensor.
4. Depending on the result, replace the lead or the outside temperature sensor.

Radio clock receiver

The time at the control unit and any remote control that may be connected is automatically set via the radio clock receiver.

Components

Radio clock receiver (cont.)

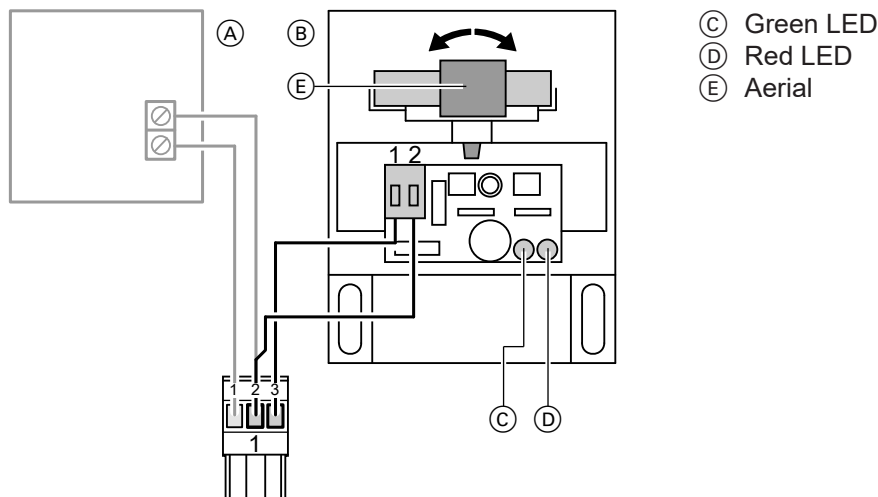


Fig. 53

- (A) Outside temperature sensor
- (B) Radio clock receiver

Connection

2-core lead, length max. 35 m with a cross-section of 1.5 mm².

Checking the reception

During reception, the green LED on the radio clock receiver flashes.
The red LED illuminates:

Rotate the aerial until reception is confirmed by the flashing of the green LED.

Specification

IP rating	IP 43
Permissible ambient temperature during operation, storage and transport	-40 to +70 °C

Mixer extension kit

Components:

- Mixer motor, with 4.0 m connecting cable (not for flanged mixer)
- Plug for connecting the heating circuit pump
- Flow temperature sensor as contact temperature sensor for capturing the flow temperature, with 5.8 m long lead.

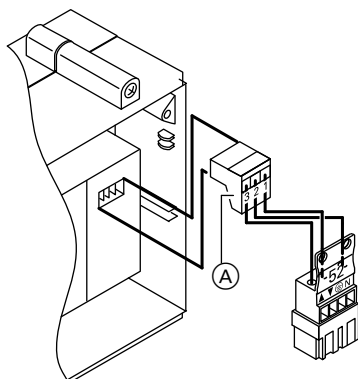
Mixer extension kit (cont.)**Changing the rotational direction (if required)**

Fig. 54

1. Pull 3-pole plug (A) from mixer motor, turn 180° and refit.
2. Check the rotational direction.

- ▲ Mixer "open"
- ▼ Mixer "close"

Manual mixer adjustment

Lift the motor lever, unhook the mixer handle and pull plug (A).

Mixer motor specification

Rated voltage	230 V~
Rated frequency	50 Hz
Power consumption	4 W
Protection class	II
IP rating	IP 42 to EN 60 529, ensure through design/installation
Permissible ambient temperature	
▪ Operation	0 to +40 °C
▪ Storage and transport	-20 to +65 °C

Components

Mixer motor

For heating mixers DN 40 and 50

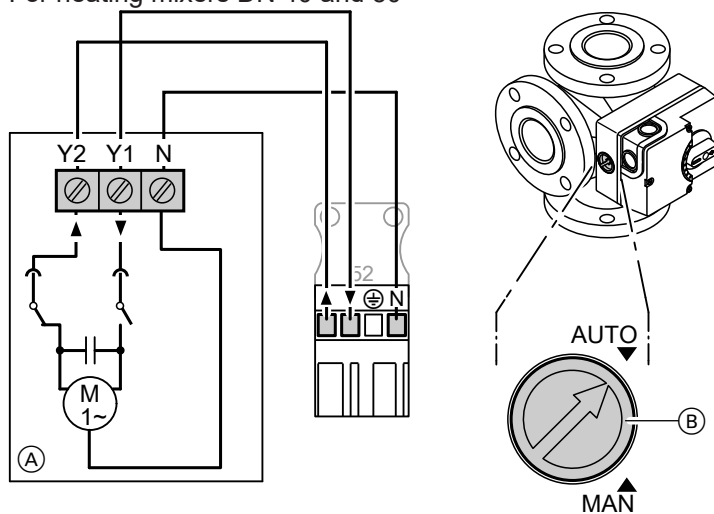


Fig. 55

- Ⓐ Mixer motor
- Ⓑ Linked switch

- ▲ Mixer open
- ▼ Mixer close

Changing the rotational direction

Interchange cores at terminals "Y1" and "Y2".

Checking the rotational direction

The control unit relay test moves the mixer to "Open" and "Close".

Manual mixer adjustment

Linked switch Ⓑ in "MAN" setting

Specification

Rated voltage	230 V~
Rated frequency	50 Hz
Power consumption	3 W
IP rating	IP 42
Torque	5 Nm
Runtime for 90° <	135 s

Mixer motor

For heating mixers DN 65 and 100

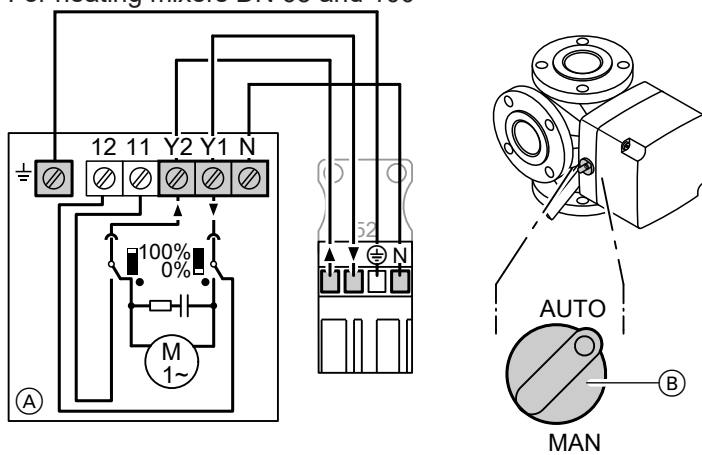


Fig. 56

- Ⓐ Mixer motor
- Ⓑ Linked switch

- ▲ Mixer open
- ▼ Mixer "close"

Changing the rotational direction

Interchange cores at terminals "Y1" and "Y2".

Checking the rotational direction

The control unit relay test moves the mixer to "Open" and "Close".

Manual mixer adjustment

Linked switch Ⓑ in "MAN" setting

Specification

Rated voltage	230 V~
Rated frequency	50 Hz
Power consumption	4 W
IP rating	IP 42
Torque	12 Nm
Runtime for 90° <	125 s

Temperature limiter for restricting the maximum temperature

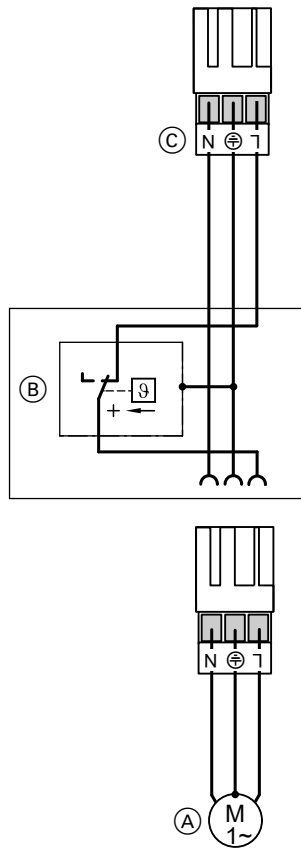


Fig. 57

- Ⓐ Heating circuit pump
- Ⓑ Temperature controller/temperature limiter
- Ⓒ Plug 20 of the temperature controller/temperature limiter to the control unit

Electromechanical temperature limiter according to the liquid expansion principle

Switches the heating circuit pump off when the set value has been exceeded.

The flow temperature is only slowly reduced in this situation, i.e. it may be several hours before the system restarts again automatically.

Connection: Screw terminals for 1.5 mm²

Specification

Setting range	30 to 80 °C
Switching differential	
▪ Immersion thermostat	Max. 11 K
▪ Contact thermostat	Max. 14 K

Extension EA1, part no. 7452 091

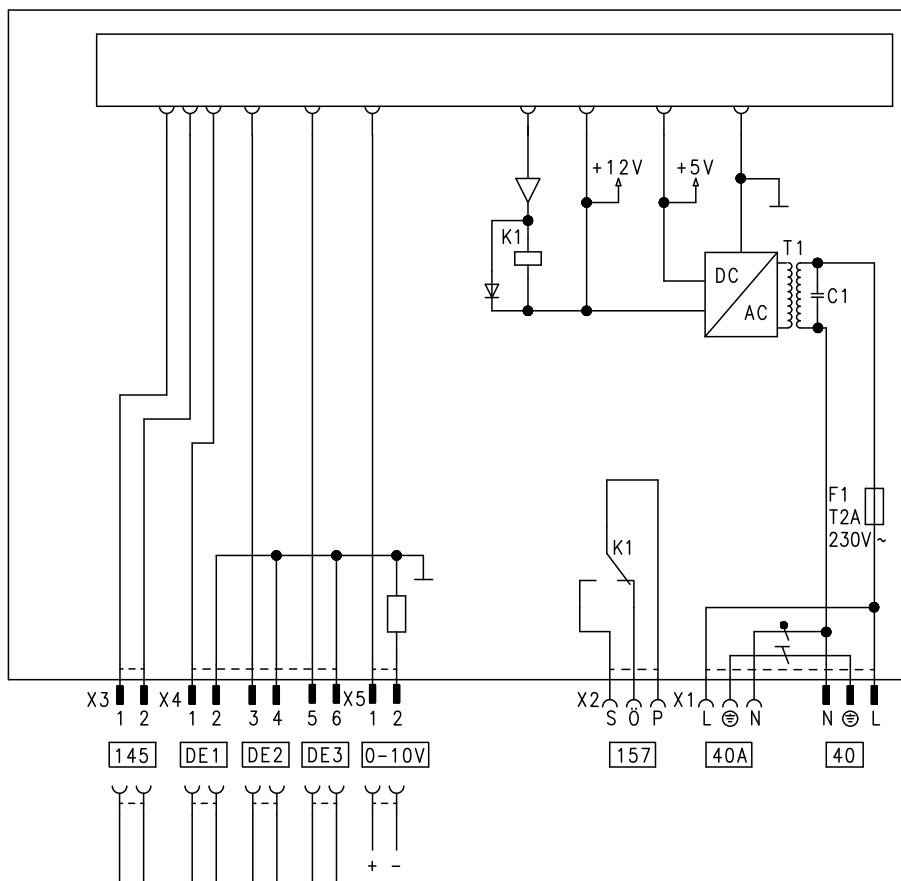


Fig. 58

- DE1 Digital input 1
- DE2 Digital input 2
- DE3 Digital input 3
- 0-10 V 0 to 10 V input

- 40 Power supply
- 40 A Power supply for additional accessories
- 157 Switching output (floating)
- 145 KM BUS

Digital data inputs DE1 to DE3

Functions:

- External operating program changeover, separate for heating circuits 1 to 3
- External blocking
- External blocking with fault message input
- External demand with minimum system flow temperature
- Fault message input
- Brief operation of the DHW circulation pump

When connecting external contacts, observe the requirements of protection class II, i.e. 8.0 mm air and creep path or maintain a 2.0 mm insulation thickness against 'live' parts.

Input function assignment

Select the input functions by means of the following codes in the "General" group at the boiler control unit:

- DE1: Coding address "5d"
- DE2: Coding address "5E"
- DE3: Coding address "5F"

Assigning the operating program changeover function to the heating circuits

The allocation of the operating program changeover to the relevant heating circuit is selected via coding address "d8" in the "Heating circuit..." group:

- Code "d8:1": Changeover via input DE1
- Code "d8:2": Changeover via input DE2
- Code "d8:3": Changeover via input DE3

The effect of the operating program changeover is selected via coding address "d5" in the "Heating circuit..." group.

Duration of the changeover

- Contact constantly closed:
The changeover is enabled as long as the contact is closed.
- Contact only closed briefly via pushbutton:
The changeover is enabled for the time selected in coding address "F2" in the "Heating circuit..." group.

Extension EA1, part no. 7452 091 (cont.)

DHW circulation pump runtime for brief operation

The runtime is adjusted via coding address "12" in the "General" group.

Analogue input 0 - 10 V

The 0 - 10 V hook-up provides an additional set flow temperature:

0 - 1 V is seen as "no set flow temperature".

Note

Ensure galvanic separation between the earth conductor and the negative pole of the on-site power source.

Coding address "1E" in the "General" group:


- "1E:0" \triangleq temperature demand adjustable in the range from 0 to 100 °C
 - 1 V \triangleq 10 °C set value change
 - 10 V \triangleq 100 °C set value change
- "1E:1" \triangleq temperature demand adjustable in the range from 30 to 120 °C
 - 1 V \triangleq 30 °C set value change
 - 10 V \triangleq 120 °C set value change

Output 157

Connection of a central fault message facility or signaling reduced mode (reduction of the heating circuit pump speed).

Select the function of output 157 via coding address "5C" in the "General" group.

Connection and wiring diagram for the Vitotronic 100

 For the Vitotronic 100, see boiler service instructions

Connection and wiring diagram for the Vitotronic 300-K

Overview

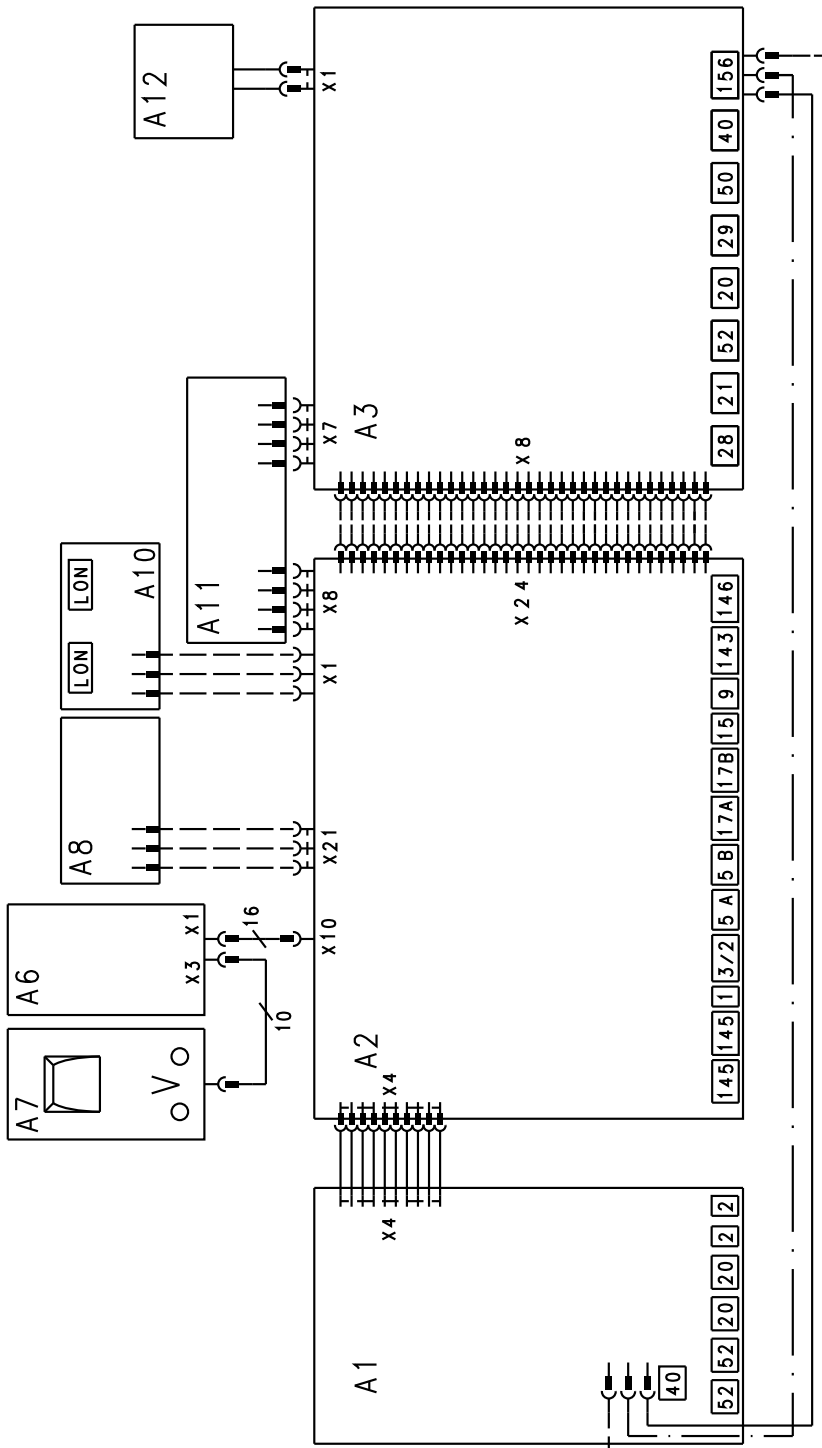


Fig. 59

- | | | | |
|----|--|-----|--|
| A1 | Extension PCB heating circuits 2 and 3 (accessories) | A6 | Programming unit |
| A2 | PCB, low voltage | A7 | Optolink PCB/emissions test switch |
| A3 | PCB 230 V~ | A8 | PCB |
| | | A10 | LON communication module (accessories) |



Connection and wiring diagram for the... (cont.)

A11 Power supply unit PCB
 A12 Programming unit ON/OFF switch
 X... Electrical interfaces

PCB 230 V~

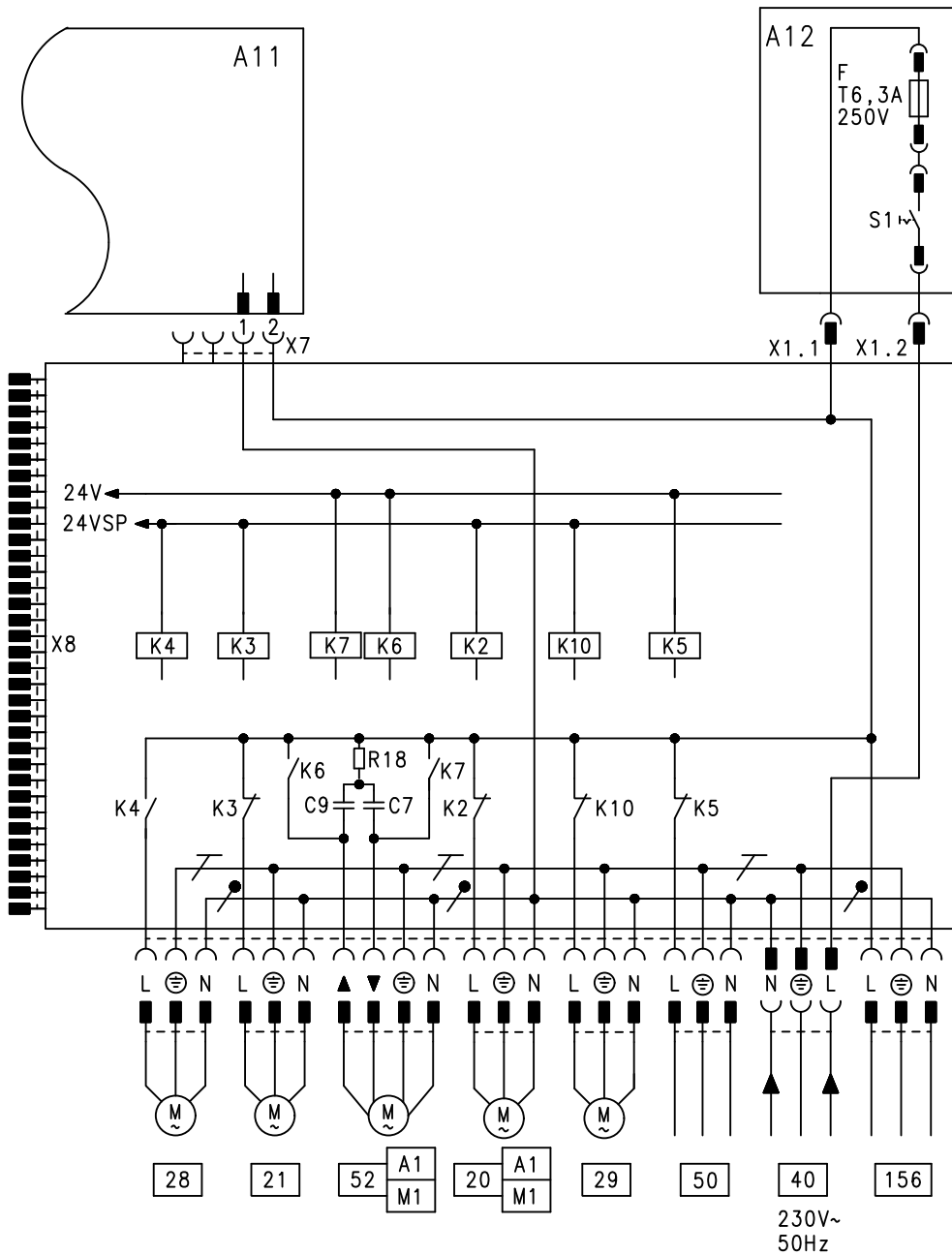


Fig. 60

- | | |
|---|---|
| <ul style="list-style-type: none"> 20 Heating circuit pump
or
Primary cylinder loading pump, cylinder loading system 21 Circulation pump for cylinder heating (accessories) 28 DHW circulation pump (accessories) 29 Distribution pump 40 Power supply 230 V/50 Hz | <ul style="list-style-type: none"> 50 Central fault message output (on site) 52 Motor for 3-way mixing valve, cylinder loading system 156 Mains connection for accessories F Fuse K2-K10 Relay S1 ON/OFF switch X... Electrical interfaces |
|---|---|

Connection and wiring diagram for the... (cont.)

LV PCB

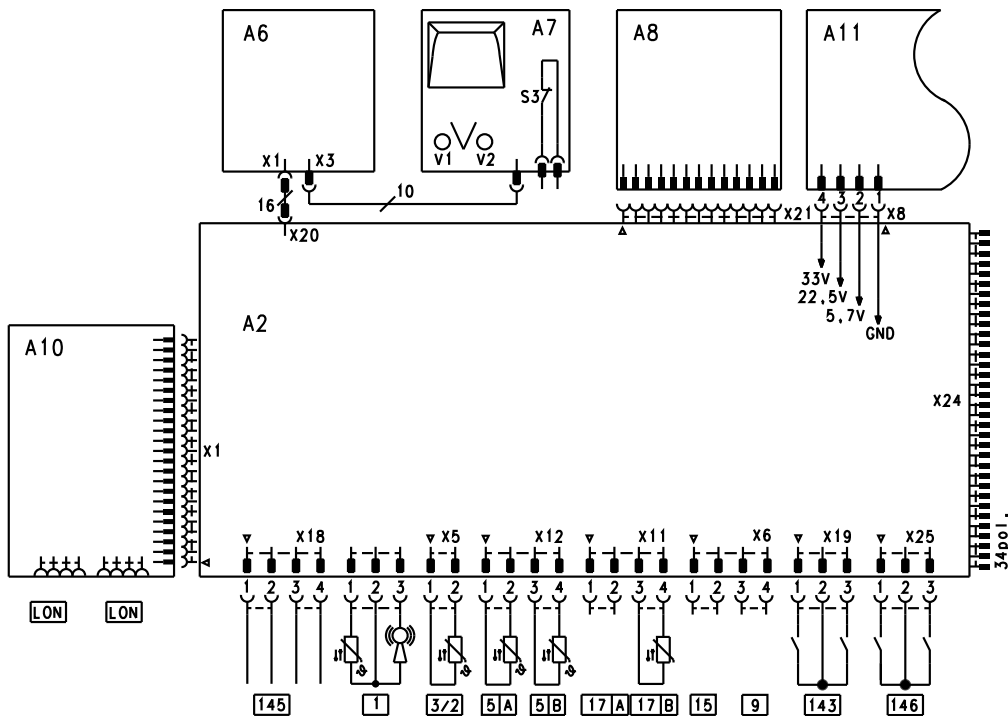


Fig. 61

- | | |
|--|--|
| 1 Outside temperature sensor/radio clock receiver (accessories) | 143 External hook-up |
| 3/2 Common flow temperature sensor | 145 KM-BUS subscriber (accessories) |
| 5A Cylinder temperature sensor | 146 External hook-up |
| 5B Cylinder temperature sensor 2 (accessories) | LON Cable for data exchange between control units (accessories) |
| 9 No function | S3 Emissions test switch |
| 15 No function | V1 Fault indicator (red) |
| 17A No function | V2 ON indicator (green) |
| 17B Temperature sensor cylinder loading system | X... Electrical interfaces |

PCB, extension for heating circuits 2 and 3 with mixer

For the connection of 2 mixer extension kits.

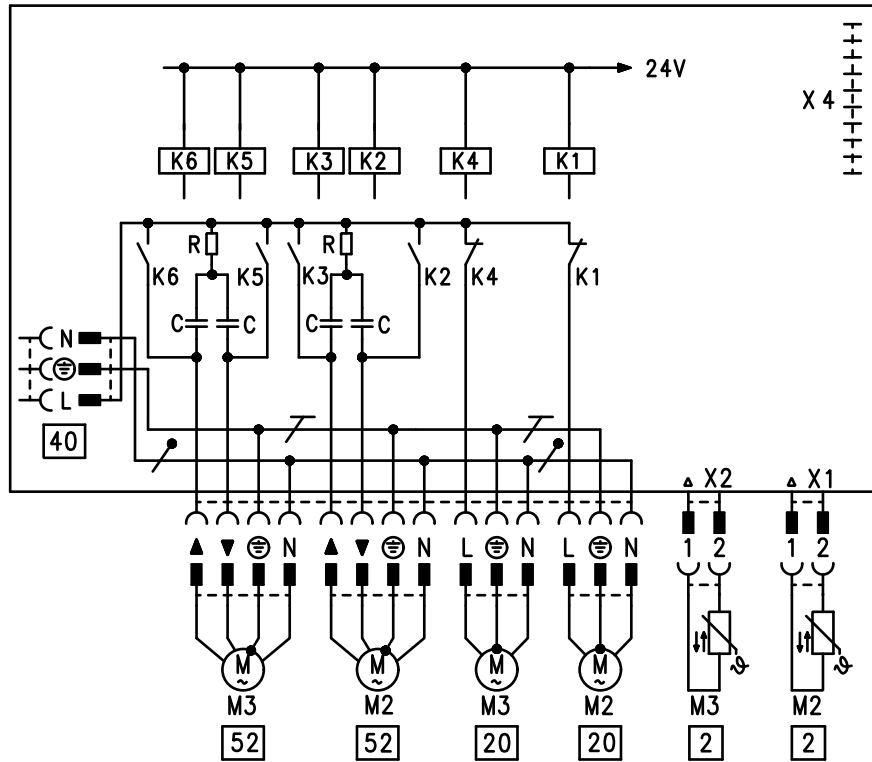


Fig. 62

- | | | | |
|--|--------------------------|--|-----------------------|
| 2 | Flow temperature sensors | 52 | Mixer motors |
| 20 | Heating circuit pumps | K1-K6 | Relay |
| 40 | Power supply | X | Electrical interfaces |

Specification Vitotronic 100



See boiler service instructions

Specification Vitotronic 300-K

Rated voltage	230 V~
Rated frequency	50 Hz
Rated current	6 A ~
Power consumption	10 W
Protection class	I
IP rating	IP 20D to EN 60529; ensure through design/installation
Function type	Type 1 B to EN 60730-1
Permissible ambient temperature	
▪ Operation	0 to +40 °C Installation in living spaces or boiler rooms (standard ambient conditions)
▪ Storage and transport	-20 to +65 °C
Rated relay output breaking capacity at 230 V~	
[20] Heating circuit pump or Primary cylinder loading pump, cylinder loading system	4 (2) A~ ^{*3}
[21] Circulation pump for cylinder heating	4 (2) A~ ^{*3}
[28] DHW circulation pump	4 (2) A~ ^{*3}
[29] Distribution pump	4 (2) A~ ^{*3}
[50] Output for central fault message	4 (2) A~ ^{*3}
[52] Mixer motor or Motor, 3-way mixing valve, cylinder loading system	0.2 (0.1) A~ ^{*3}

Declaration of conformity

Vitotronic 300-K, type MW2B

We, Viessmann Werke GmbH & Co. KG, D-35107 Allendorf, declare as sole responsible body that the named product complies with the provisions of the following directives and regulations:

2014/35/EU	Low Voltage Directive
2014/30/EU	EMC Directive
2011/65/EU	RoHS II

Applied standards:

EN 60730-1:2011
EN 60730-2-9:2010
EN 60335-1:2010, Section 30

In accordance with the listed directives, this product is designated with **CE**.

Allendorf, 20 July 2017

Viessmann Werke GmbH & Co. KG



Authorised signatory Reiner Jansen
Head of Strategic Quality Management

Keyword index

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Applicability

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7498907



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