

# Installation and service instructions for contractors

**VIESSMANN**

**Vitodens 200-W**  
**Type B2HA**, 120 and 150 kW  
Wall mounted gas condensing boiler  
Natural gas and LPG version



## **VITODENS 200-W**



## 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:<br>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"> <li>▪ Component must audibly click into place.</li> <li>or</li> <li>▪ Acoustic signal</li> </ul>          |
|  | <ul style="list-style-type: none"> <li>▪ Fit new component.</li> <li>or</li> <li>▪ In conjunction with a tool: Clean the surface.</li> </ul> |
|  | Dispose of component correctly.  |
|  | Dispose of component at a suitable collection point. Do <b>not</b> dispose of component in domestic waste.                                   |

The steps in connection with commissioning, inspection and maintenance are found in the "Commissioning, inspection and maintenance" section and identified as follows:

| Symbol  | Meaning                             |
|---|-------------------------------------|
|  | Steps required during commissioning |
|  | Not required during commissioning   |

| Symbol  | Meaning                           |
|---|-----------------------------------|
|  | Steps required during inspection  |
|  | Not required during inspection    |
|  | Steps required during maintenance |
|  | Not required during maintenance   |

## Intended use

The appliance is intended solely for installation and operation in sealed unvented heating systems that comply with EN 12828, with due attention paid to the associated installation, service and operating instructions. It is only designed for heating up heating water that is of potable water quality.

Intended use presupposes that a fixed installation in conjunction with permissible, system-specific components has been carried out.

Commercial or industrial usage for a purpose other than heating the building or DHW shall be deemed inappropriate.

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

Incorrect usage or operation of the appliance (e.g. the appliance being opened by the system user) is prohibited and will result in an exclusion of liability. Incorrect usage also occurs if the components in the heating system are modified from their intended use (e.g. if the flue gas and ventilation air paths are sealed).

## Product information

### Vitodens 200-W, type B2HA

Preset for operation with natural gas E and LL. For conversion to LPG P (without conversion kit), see "Commissioning, inspection and maintenance".

The **Vitodens 200-W** may generally only be delivered to countries listed on the type plate. For deliveries to other countries, approved contractors must arrange individual approval on their own initiative and in accordance with the law of the country in question.

### Multi boiler system

For the installation of a multi boiler system, observe the installation instructions for the multi boiler system accessories.

## Preparing for installation

### Dimensions and connections

- ! Please note**  
To prevent appliance damage, connect all pipework free of load and torque stress.

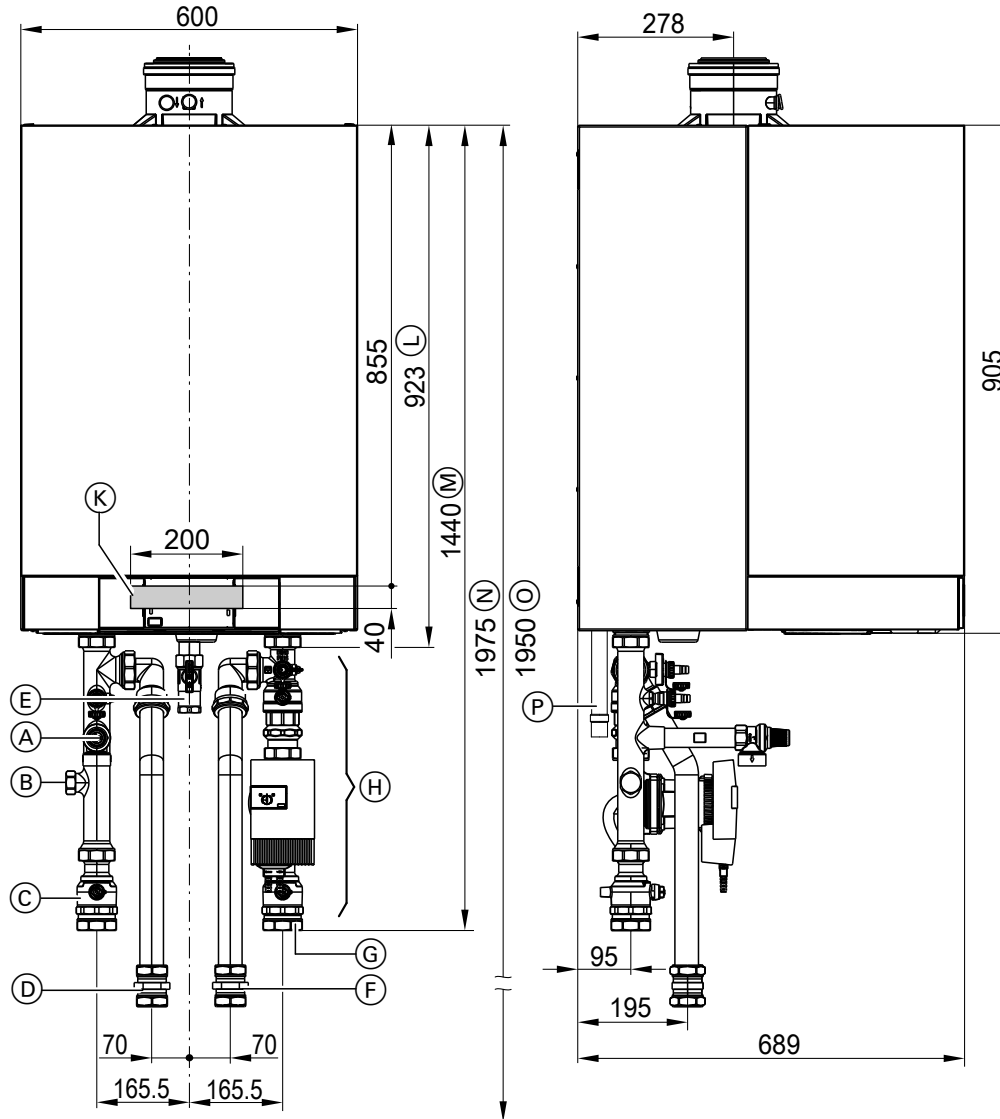


Fig. 1

- |  |  |
|--|--|
| (A) Safety valve   | (K) Cable entry area at the back   |
| (B) Expansion vessel connection G 1  | (L) Without connection set (accessories)   |
| (C) Boiler flow $\varnothing$ 54 mm  | (M) With connection set (accessories)  |
| (D) Cylinder flow $\varnothing$ 42 mm  | (N) Recommended dimension (single boiler system without mounting frame)                      |
| (E) Gas connection R 1   | (O) Recommended dimension (multi boiler system and single boiler system with mounting frame) |
| (F) Cylinder return $\varnothing$ 42 mm  | (P) Condensate drain   |
| (G) Boiler return $\varnothing$ 54 mm  |  |
| (H) Connection sets (accessories, shown without the thermal insulation supplied) |  |



**Preparing for installation** (cont.)**Preparing for boiler installation****Note**

*This boiler (IP rating: IP X4 D) is approved for installation in wet rooms inside safety zone 1, to DIN VDE 0100, providing water jets can be ruled out. Observe DIN VDE 0100.*

1. Prepare the water connections. Thoroughly flush the heating system.
2. Prepare gas connection to TRGI [or local regulations].
3. Prepare the electrical connections.
  - Power cable: Flexible cable 3 x 1.5 mm<sup>2</sup>. Leave the earth conductor (PE) longer than the live conductors L1 and N. Max. fuse rating 16 A, 230 V~.
  - Accessory cables: 0.75 mm<sup>2</sup> flexible PVC cable with required number of cores for external connections.
  - Allow all cables in area "Ⓚ" to protrude 1400 mm from the wall.

Removing the boiler from the packaging and levelling

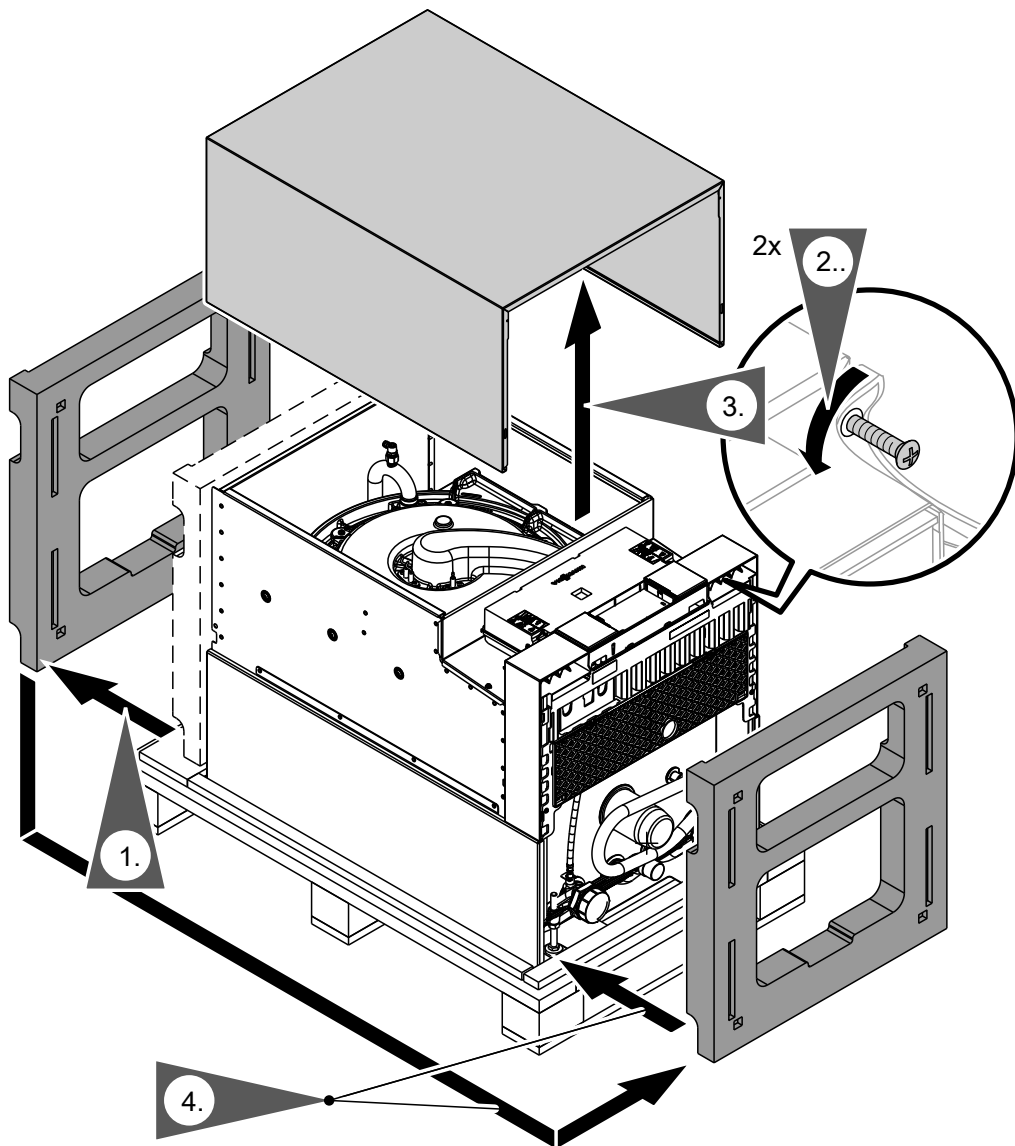


Fig. 2

1. Remove packing cushions and keep them safe. They are used as a support during levelling.
2. Undo 2 screws on the underside.
3. Remove front panel.
4. Push packing cushions onto the underside of the boiler.

## Mounting the boiler and making connections (cont.)

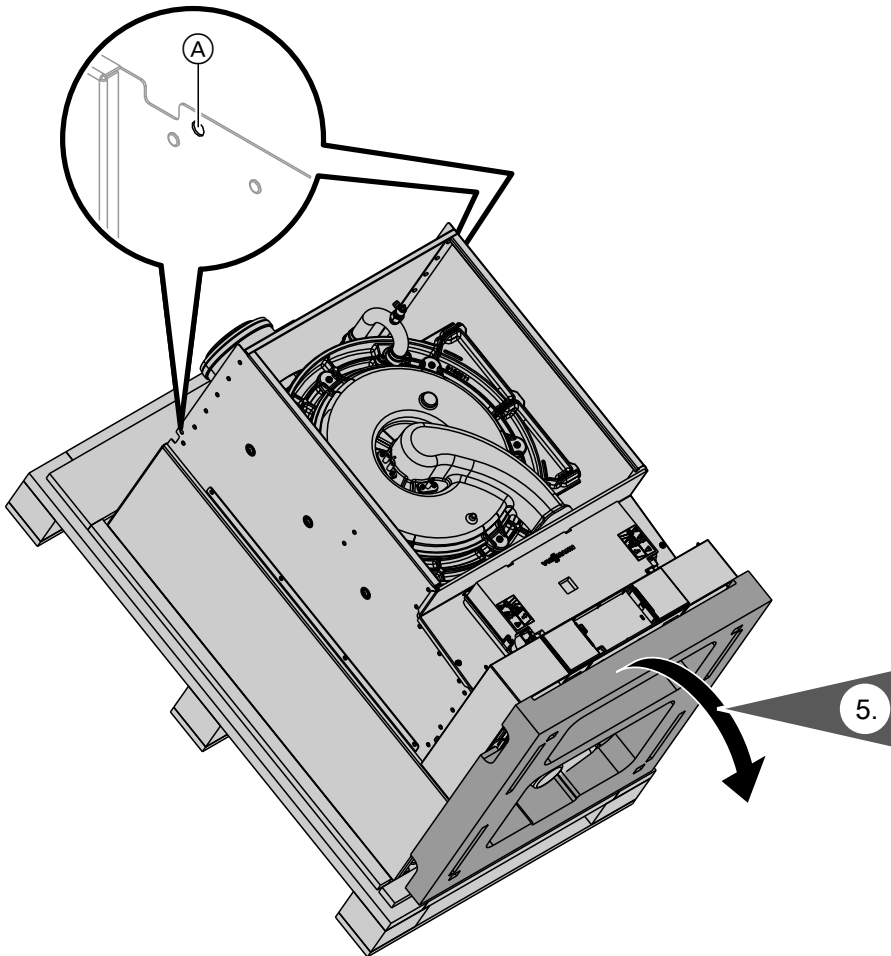


Fig. 3

Ⓐ ∅ 9 mm drilled holes for attaching lifting gear

5. **!** **Please note**  
To prevent damage,  
do not level boiler without packing cushions.

Level boiler with pallet.

### Fitting the wall mounting bracket

**Note**

The enclosed screws and rawl plugs are only suitable for concrete. For other construction materials, use fixing materials that are suitable for 145 kg loads.

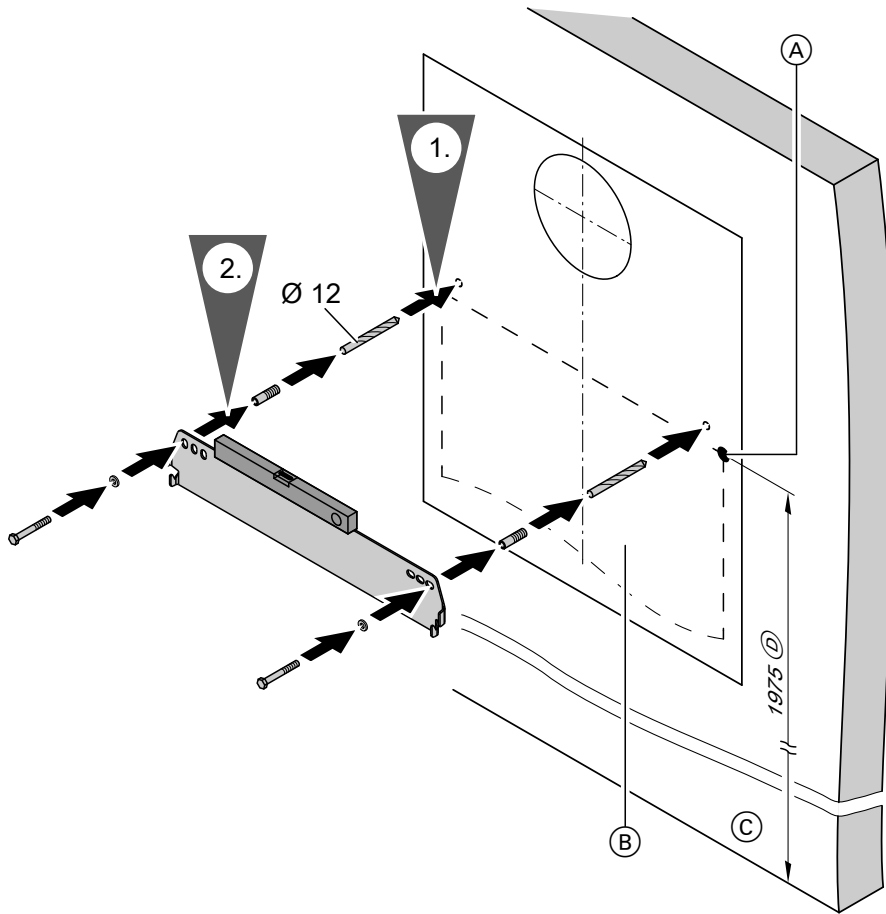


Fig. 4

- Ⓐ Reference point, boiler top edge
- Ⓑ Installation template (included with the boiler)
- Ⓒ Top edge, finished floor
- Ⓓ Recommendation

**Mounting the boiler and making connections (cont.)**

**Hooking the boiler onto the wall mounting bracket and aligning it**

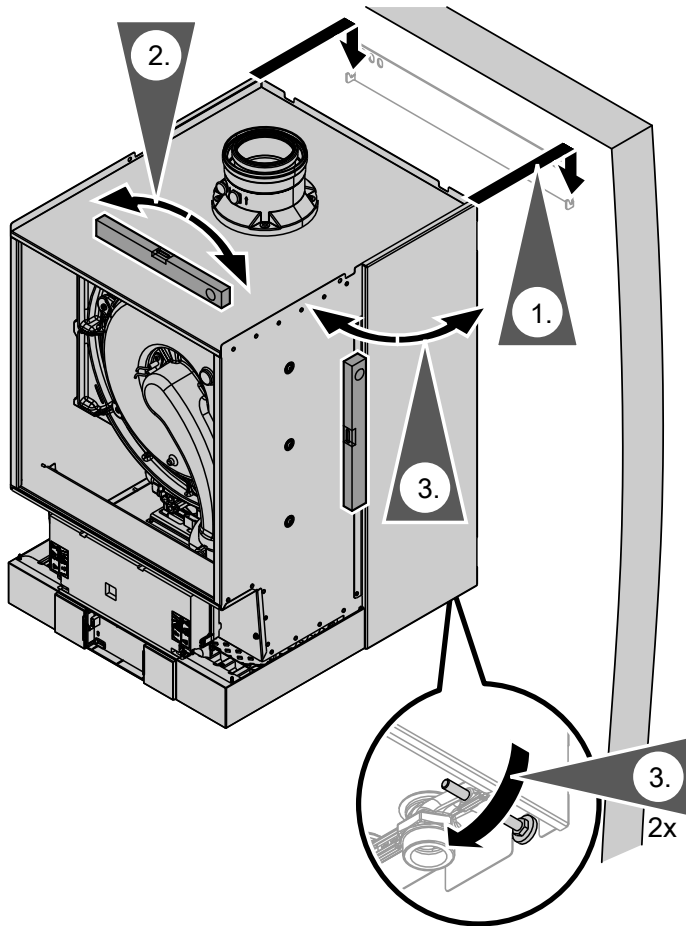


Fig. 5

**Connection on the heating water side**

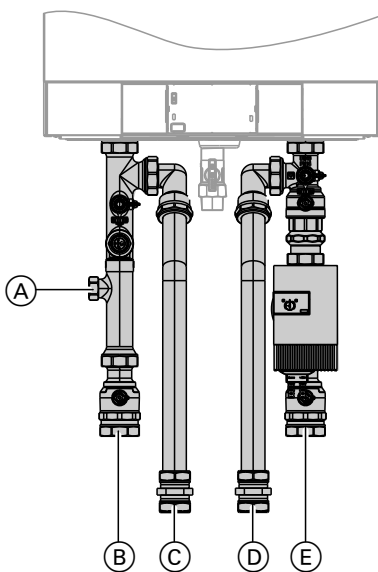


Fig. 6

- (A) Expansion vessel connection
- (B) Boiler flow
- (C) Cylinder flow

- (D) Cylinder return
- (E) Boiler return

## Installation sequence

### Connection on the heating water side (cont.)

#### Note

Residual water may escape when undoing the locking caps.

### Flue gas connection

#### Note

The "System certification" and "Skoberne GmbH flue system" labels enclosed with the technical documentation may only be used in conjunction with the Viessmann flue system made by Skoberne.

Do not carry out **commissioning** until the following conditions are met:

- Free passage through the flue gas pipes.
- Flue system with positive pressure is gas-tight.
- Inspection port covers checked for secure and tight seating.
- Apertures for ensuring sufficient combustion air supply are open and cannot be closed off.
- Applicable regulations on installing and commissioning flue systems have been followed.



#### Danger

Leaking or blocked flue systems or an insufficient supply of combustion air cause life threatening poisoning due to carbon monoxide in the flue gas.

Ensure the flue system functions correctly. Apertures for combustion air supply must not be able to be closed off.

Prevent condensate drainage via a wind protector.

1. Only for **open** flue operation:  
Remove outer gasket (A) (ventilation air).
2. Connect flue pipe or balanced flue pipe.

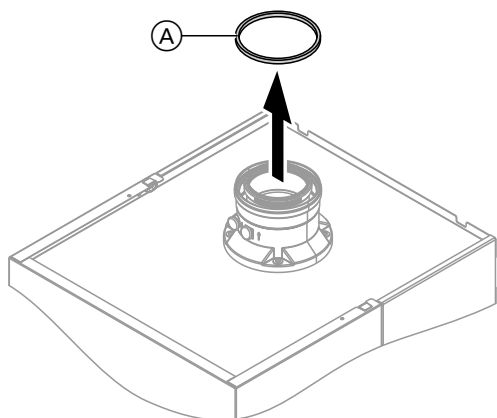


Fig. 7



Flue system installation instructions

### Condensate connection

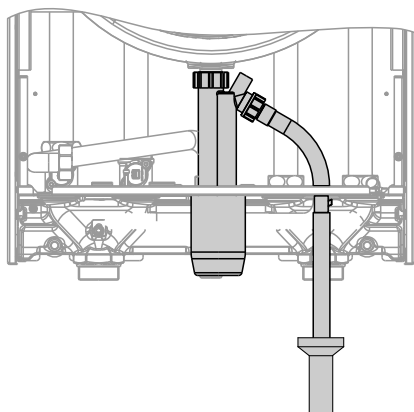


Fig. 8

Connect the condensate hose with a constant fall and a pipe vent to the drain network or to a neutralising system.

## Gas connection

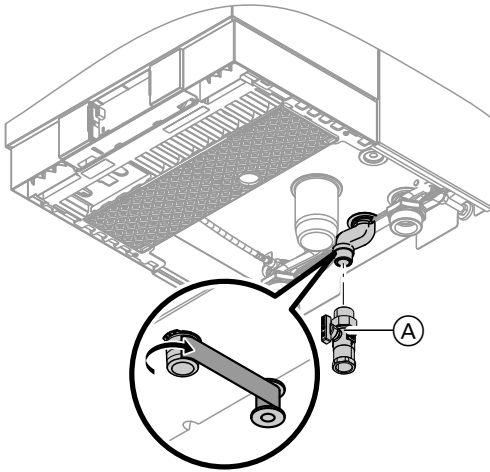


Fig. 9

### Information on operation with LPG

When installing the boiler in rooms below ground level we recommend fitting an external safety solenoid valve.

1. Seal gas shut-off valve (A) into the gas connection.

2. Carry out a tightness test.

#### Note

Only use suitable and approved leak detection agents (EN 14291) and devices for the tightness test. Leak detection agents with unsuitable constituents (e.g. nitrides, sulphides) can cause material damage.

Remove residues of the leak detection agent after testing.



#### Please note

Excessive test pressure will damage the boiler and the gas train.

Max. test pressure 150 mbar. Where higher pressure is required for tightness tests, disconnect the boiler and the gas train from the main supply pipe (undo the fitting).

3. Purge the gas line.



Conversion to alternative gas types:  
Service instructions

## Opening the control unit enclosure



#### Please note

Electronic assemblies can be damaged by electrostatic discharge.

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

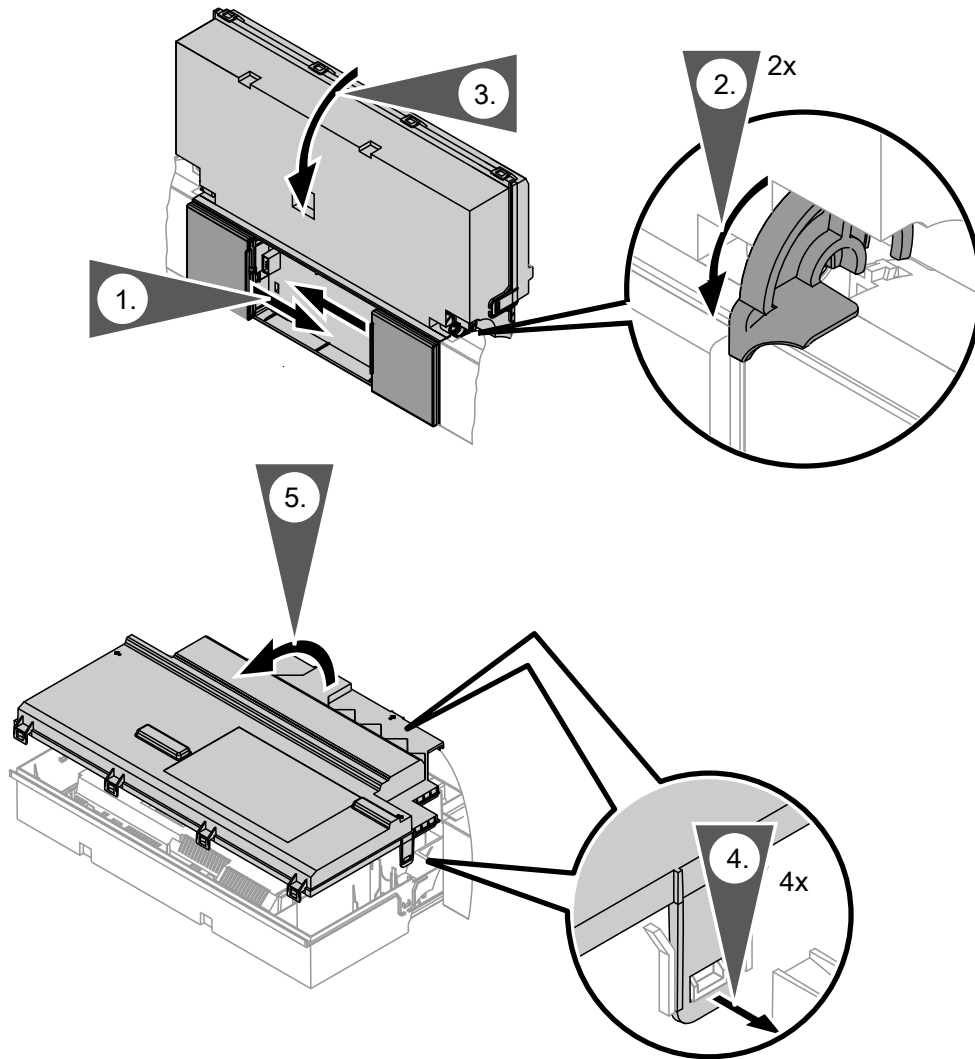


Fig. 10



Electrical connections

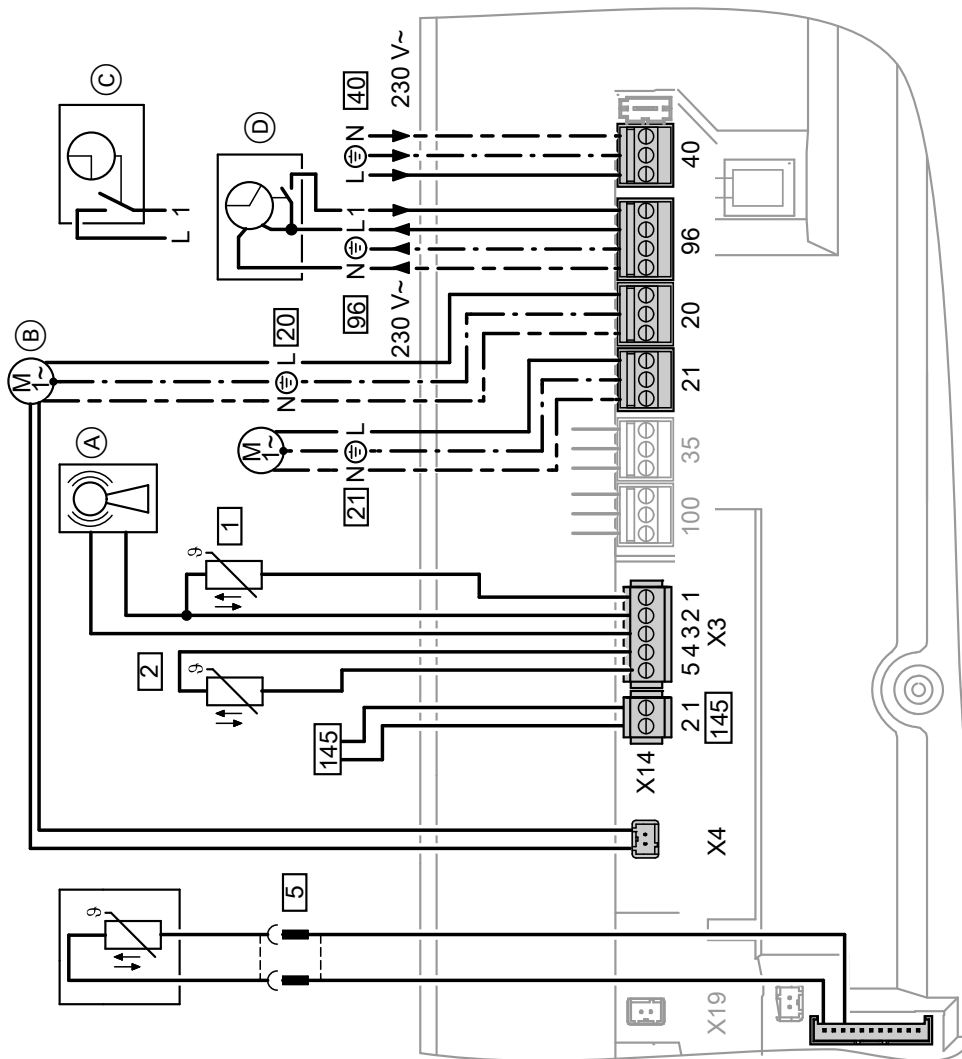


Fig. 11

- (A) Radio clock receiver
- (B) Heating circuit pump or boiler circuit pump

- (C) Vitotrol 100 UTDB (only for constant temperature control units)  
When making this connection, remove jumper between "1" and "L".
- (D) Vitotrol 100 UTA (only for constant temperature control units)  
or  
Vitotrol 100 UTDB-RF wireless receiver  
When making this connection, remove jumper between "1" and "L".

Connections to 230 V~ plugs

- [20] Boiler circuit pump or heating circuit pump, variable speed with 0 - 10 V connection
- [21] Circulation pump, connection options:
  - DHW circulation pump
  - External heating circuit pump
  - Circulation pump for cylinder heating
- [40] Power supply
  - Power supply for accessories
  - External demand/blocking
  - Vitotrol 100 UTA
  - Vitotrol 100 UTDB
  - Vitotrol 100 UTDB-RF
- [96]
  - Power supply for accessories
  - External demand/blocking
  - Vitotrol 100 UTA
  - Vitotrol 100 UTDB
  - Vitotrol 100 UTDB-RF

Connections to LV plugs

- [1] Outside temperature sensor
- [2] Flow temperature sensor for low loss header (accessories)

**Electrical connections** (cont.)

- 5 Cylinder temperature sensor (supplied with DHW cylinder connection set)
- 145 KM-BUS subscriber (accessories)
  - Vitotrol 200-A or 300-A remote control
  - Vitocom 100
  - Mixer extension kit
  - Solar control module, type SM1
  - Vitosolic
  - AM1 extension
  - EA1 extension
  - Wireless base station



**Information on connecting accessories**  
When connecting accessories observe the separate installation instructions provided with them.

**Circulation pump at plug 20**

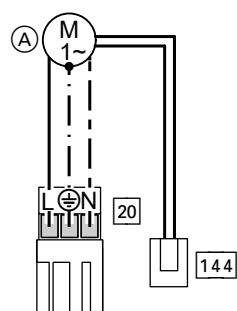


Fig. 12

Insert plug 144 (0 - 10 V connection) at X4.

Rated current 2(1) A~  
Rated voltage 230 V ~

- (A) High-efficiency circulation pump, speed-controlled via 0 - 10 V control voltage

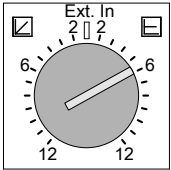


**Circulation pump VI Para 30/1-12**

|                   |        |     |
|-------------------|--------|-----|
| Rated voltage     | V~     | 230 |
| Power consumption | W max. | 310 |
|                   | min.   | 16  |

**Adjusting the function of the circulation pump**

| Hydraulic connection/connection requirements   | Control unit setting<br>Coding address/group  | Circulation pump setting   |
|--|---|--|
| Single boiler system with: <ul style="list-style-type: none"> <li>▪ Heating circuit without mixer</li> <li>▪ Connection without low loss header and without heating water buffer cylinder</li> </ul> | <ul style="list-style-type: none"> <li>▪ Max. pump speed: E6: ... /heating circuit</li> <li>▪ Min. pump speed: E7: ... /heating circuit</li> </ul> For further details, see following diagram and chapter "Heating circuit ..." under code 2. | Ext. In<br>  |
| Single boiler system with heating circuits connected to low loss header or heating water buffer cylinder   | 30:0/boiler/2   | <br>Recommended for $\Delta t = 15$ K <ul style="list-style-type: none"> <li>▪ 120 kW:  = <math>3 \pm 6.87</math> m<sup>3</sup>/h</li> <li>▪ 150 kW:  = <math>6 \pm 8.60</math> m<sup>3</sup>/h</li> </ul> |

**Electrical connections** (cont.)

| Hydraulic connection/connection requirements | Control unit setting<br>Coding address/group | Circulation pump setting   |
|--|--|--|
| Multi boiler system                          | 30:0/boiler/2                                |  <p>Recommended for <math>\Delta t = 15 \text{ K}</math></p> <ul style="list-style-type: none"> <li>120 kW:  = <math>3 \pm 6.87 \text{ m}^3/\text{h}</math></li> <li>150 kW:  = <math>6 \pm 8.60 \text{ m}^3/\text{h}</math></li> </ul> |
| Multi stage circulation pump (on site)       | 30:0/boiler/2                                |  |

**Residual head of circulation pump (coding address E6 and E7)**

When connecting a heating circuit without mixer and without low loss header or heating water buffer cylinder, the circulation pump is controlled subject to the outside temperature. The min. and max. speeds of the circulation pump are limited by the settings for coding addresses E6 and E7.

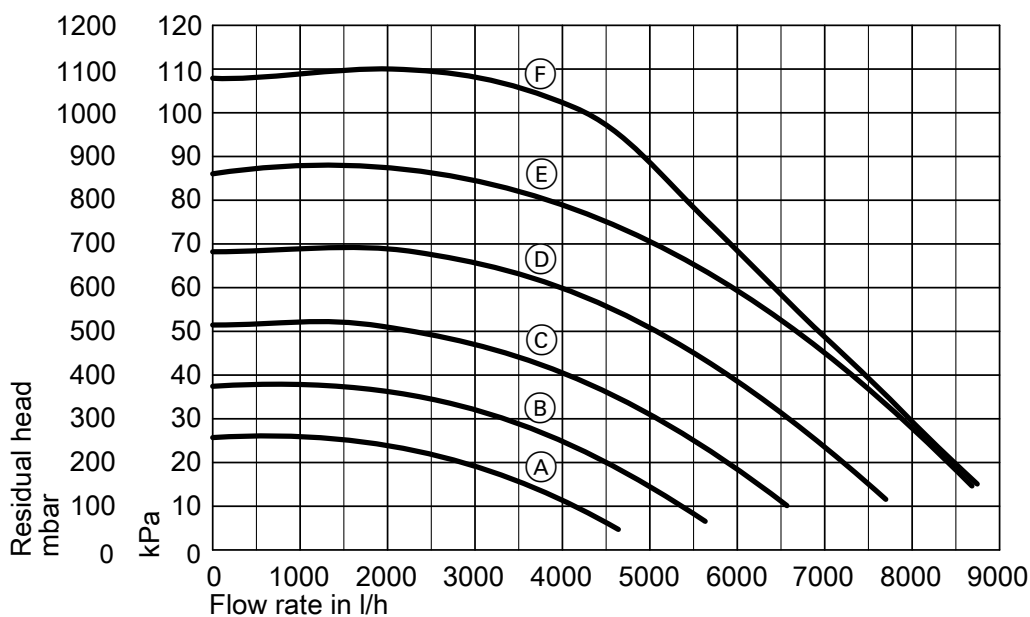


Fig. 13

**Setting for coding addresses E6, E7**

| Curve | Coding address value | Pump rate, circulation pump |
|-------|----------------------|-----------------------------|
| (B)   | 50                   | 50 %                        |
| (C)   | 60                   | 60 %                        |
| (D)   | 70                   | 70 %                        |
| (E)   | 80                   | 80 %                        |
| (F)   | 90                   | 90 %                        |
| (G)   | 100                  | 100 %                       |

**Circulation pump at plug 21**

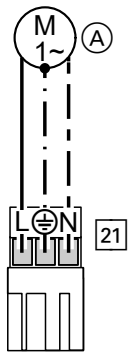


Fig. 14

Ⓐ Circulation pump

Rated current 2(1) A~  
 Rated voltage 230 V ~

**Set function of connected component in coding address "39"**

| Function  | Code |
|---|------|
| DHW circulation pump  | 39:0 |
| Heating circuit pump for heating circuit without mixer A1   | 39:1 |
| Circulation pump for cylinder heating (delivered condition) | 39:2 |

**Note**

Connect DHW circulation pumps with standalone functions directly to the 230 V ~ supply.

**External demand via switching contact**

Connection options:

- EA1 extension (accessory, see separate installation instructions)
- Plug 96

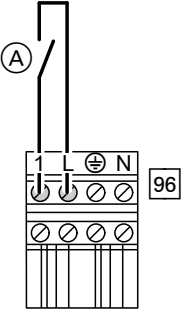
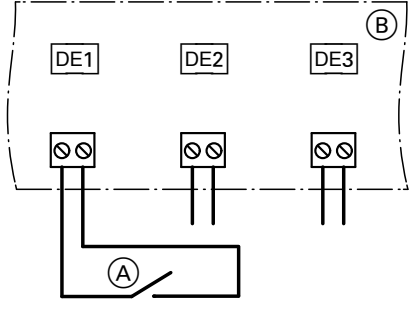
When the contact is closed, burner operation is load-dependent. The boiler water is heated to the set value selected in parameter/coding address "9b" in the "General"/1 group. The boiler water temperature is limited by this set value and by the electronic maximum limit (coding address "06" in the "Boiler"/2 group).



**Please note**

Live contacts lead to short circuits or phase failure. The external connection **must be floating** and meet the requirements of protection class II.

**Electrical connections** (cont.)

| Plug 96  | EA1 extension   |
|--|---|
|  <p>(A) Floating contact (when connecting, remove jumper between L and 1)</p>   |  <p>(A) Floating contact<br/>(B) EA1 extension</p>  |
| <p><b>Parameters/codes</b></p> <ul style="list-style-type: none"> <li>▪ "4b:1" in the <b>"General"/1</b> group</li> <li>▪ Effect of the function on the relevant heating circuit pump:<br/>Parameter/coding address "d7" in the <b>"Heating circuit"</b> group (only for weather-compensated control units)</li> <li>▪ Effect of the function on the circulation pump for cylinder heating:<br/>Parameter/coding address "5F" in the <b>"DHW"/3</b> group</li> </ul> | <p><b>Parameters/codes</b></p> <ul style="list-style-type: none"> <li>▪ Set "3A" (DE1), "3b" (DE2) or "3C" (DE3) to 2 in the <b>"General"/1</b> group</li> <li>▪ Effect of the function on the relevant heating circuit pump:<br/>Parameter/coding address "d7" in the <b>"Heating circuit"</b> group (only for weather-compensated control units)</li> <li>▪ Effect of the function on the circulation pump for cylinder heating:<br/>Parameter/coding address "5F" in the <b>"DHW"/3</b> group</li> </ul> |

**External demand via 0 – 10 V input**

Connection at 0 – 10 V input at **EA1 extension**. Ensure DC separation between the earth conductor and the negative pole of the on-site power source.

|          |   |
|----------|---|
| 0 to 1 V | No specification for set boiler water temperature |
| 1 V      | Set value 10 °C                                   |
| 10 V     | Set value 100 °C                                  |

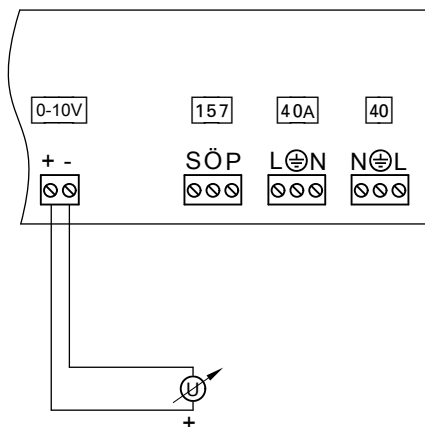


Fig. 15

**External blocking via switching contact**

Connection options:

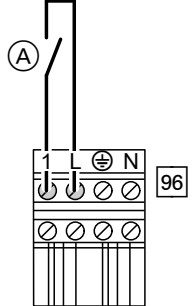
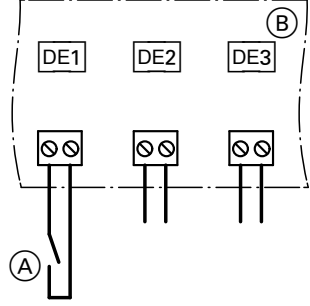
- Plug 96
- EA1 extension (accessory, see separate installation instructions)

When the contact is closed, the burner is switched off. The heating circuit pump and (if installed) the circulation pump for cylinder heating are switched according to the set parameter/code (see the following table "Parameters/codes").

## Installation sequence

### Electrical connections (cont.)

- ! Please note**
- Live contacts lead to short circuits or phase failure.
  - The external connection **must be floating** and meet the requirements of protection class II.

| Plug 96   | EA1 extension   |
|---|---|
|  <p>(A) Floating contact (when connecting, remove jumper between L and 1)</p>  |  <p>(A) Floating contact<br/>(B) EA1 extension</p>  |
| <p><b>Parameters/codes</b></p> <ul style="list-style-type: none"> <li>"4b:2" in the <b>"General"/1</b> group</li> <li>Effect of the function on the heating circuit pump: Parameter/coding address "d6" in the <b>"Heating circuit"</b> group (only for weather-compensated control units)</li> <li>Effect of the function on the circulation pump for cylinder heating: Parameter/coding address "5E" in the <b>"DHW"/3</b> group</li> </ul> | <p><b>Parameters/codes</b></p> <ul style="list-style-type: none"> <li>Set "3A" (DE1), "3b" (DE2) or "3C" (DE3) to 3 or 4 in the <b>"General"/1</b> group</li> <li>Effect of the function on the heating circuit pump: Parameter/coding address "d6" in the <b>"Heating circuit"</b> group (only for weather-compensated control units)</li> <li>Effect of the function on the circulation pump for cylinder heating: Parameter/coding address "5E" in the <b>"DHW"/3</b> group</li> </ul> |

### Outside temperature sensor 1

Fitting outside temperature sensor RF (wireless accessory):



Wireless base station

#### 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 top half of the second floor
- Not above windows, doors or vents

- Not immediately below balconies or gutters
- Never render over

#### Outside temperature sensor connection

2-core lead, length up to 35 m with a cross-section of 1.5 mm<sup>2</sup>

### Power supply for accessories at plug 96

230 V ~

Where the boiler is sited in a wet room, accessories outside the wet area must not be connected to the power supply at the control unit. If the boiler is not sited in a wet room, the power supply for accessories can be connected at the control unit. This connection is switched directly with the ON/OFF switch of the control unit.

If the total system current exceeds 6 A, connect one or more extensions directly to the mains supply via an ON/OFF switch (see next chapter).

**Electrical connections** (cont.)

**Power supply and KM BUS connection of accessories**

Power supply to all accessories via heat source control unit

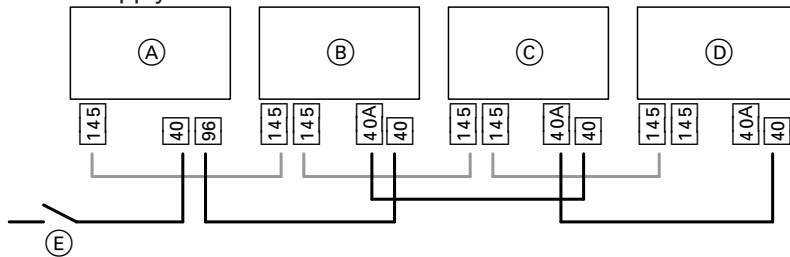


Fig. 16

Some accessories with direct power supply

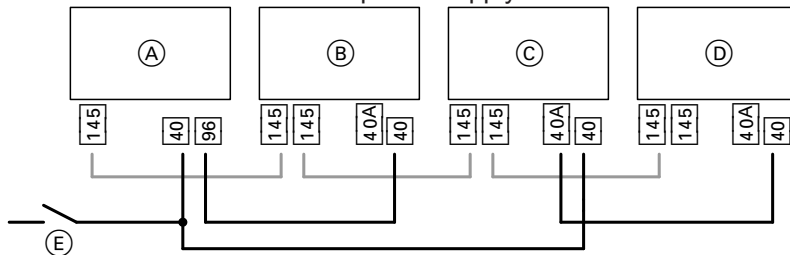


Fig. 17

- (A) Heat source control unit
- (B) Extension kit for heating circuit with mixer M2
- (C) Extension kit for heating circuit with mixer M3
- (D) AM1 extension, EA1 extension and/or solar control module, type SM1
- (E) ON/OFF switch
- 40 Mains input
- 40A Power outlet
- 96 Control unit power outlet
- 145 KM BUS connection

If the current flowing to the connected working parts (e.g. circulation pumps) is higher than the fuse rating of the respective accessory: Only use the output concerned to control an on-site relay.

| Accessories                                  | Internal fuse protection |
|--|--------------------------|
| Extension kit for heating circuit with mixer | 2 A                      |
| AM1 extension                                | 4 A                      |
| EA1 extension                                | 2 A                      |
| Solar control module, type SM1               | 2 A                      |

**Power supply** 40

**Danger**  
 Incorrect core allocation can result in serious injury and damage to the appliance. Take care not to interchange wires "L1" and "N".

- Install an isolator in the power cable which simultaneously separates all non-earthed conductors from the mains with contact separation of at least 3 mm. Furthermore, we recommend installing an AC/DC-sensitive RCD (RCD class B ) for DC (fault) currents that can occur with energy efficient equipment.
- Max. fuse rating 16 A.

**Routing connecting cables/leads**

**! Please note**  
 If connecting cables/leads come into contact with hot components, they will be damaged. When routing and securing connecting cables on site, ensure that the maximum permissible temperatures for these cables are not exceeded.

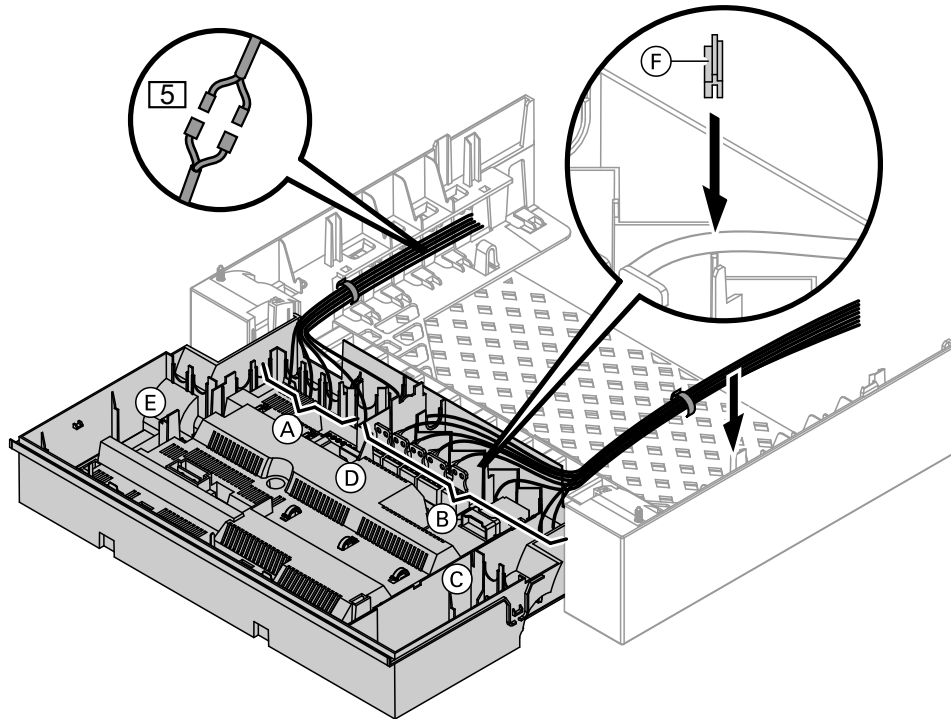


Fig. 18

- (A) LV connections
- (B) 230 V terminals
- (C) Internal extension
- (D) Main PCB
- (E) Communication module
- (F) Cable grommet for power cable
- (5) Plugs for connecting the cylinder temperature sensor to the cable harness

Remove the existing cable grommet if using cables with a larger cross-section (up to  $\varnothing$  14 mm). Secure the cable with cable grommet (F) integrated into the casing base (black).



Closing the control unit enclosure and inserting the programming unit

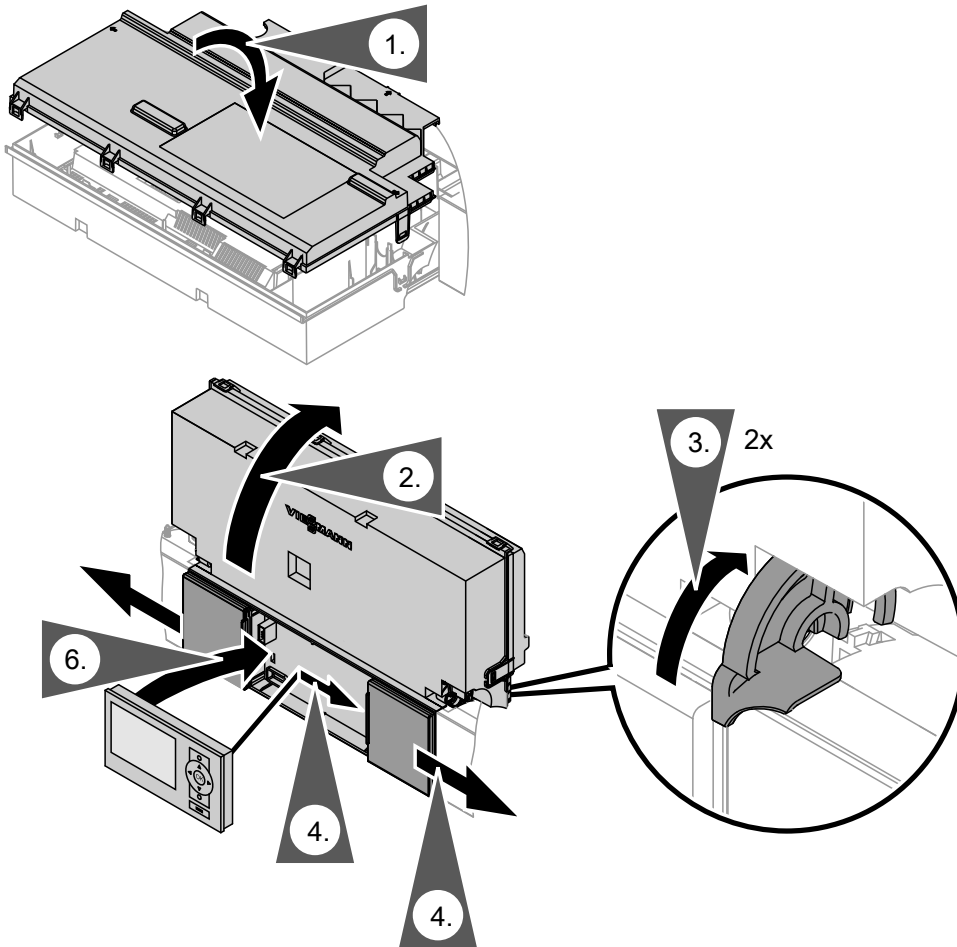



Fig. 19

Insert the programming unit (packed separately) into the control unit support.

**Note**

*The programming unit can also be inserted into a wall mounting base (accessories) near the boiler.*

 Wall mounting base installation instructions



|   |   |   | Page  |
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| • |   |   | 2. Filling the heating system..... 27   |
| • |   |   | 3. Selecting the language (if required) – only for weather-compensated control units.. 28       |
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Opening the boiler

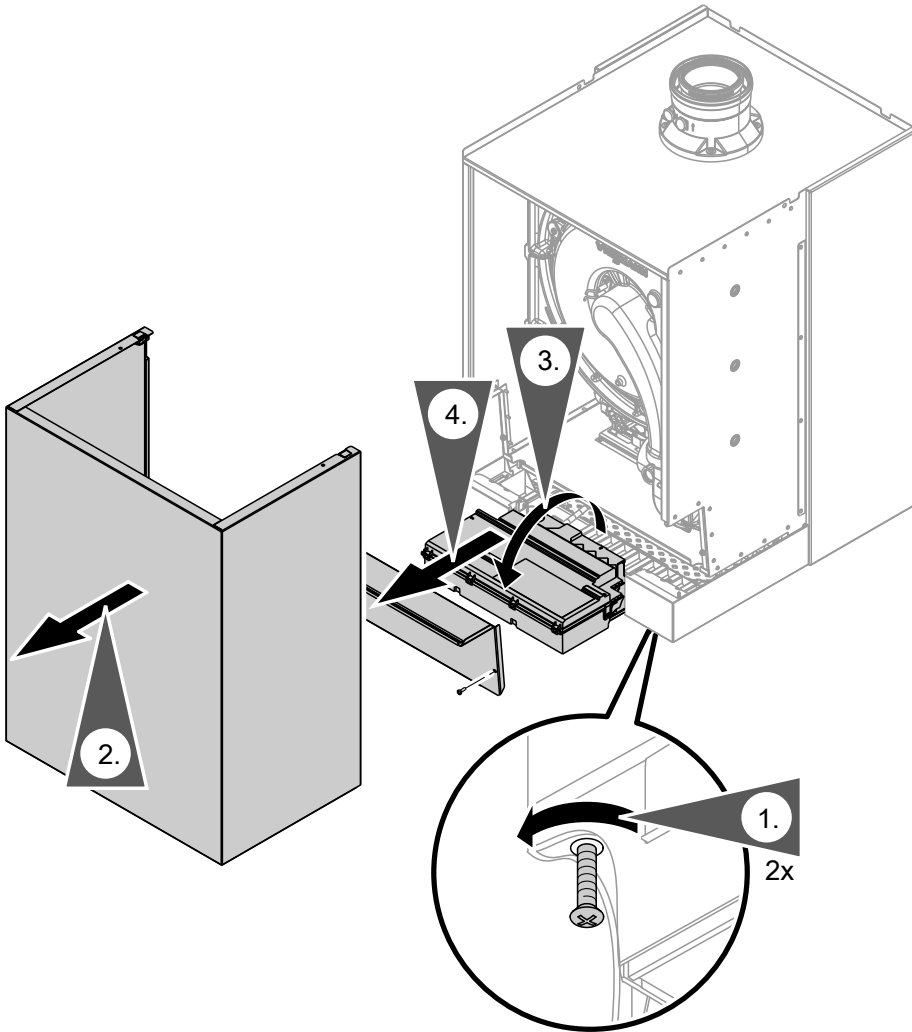


Fig. 20



Filling the heating system

Fill water

According to EN 1717 with DIN 1988-100, as a heat transfer medium for DHW heating, the heating water must meet fluid category  $\leq 3$ . This requirement is met if water of potable quality is used as heating water. For example, if additives are used, the additive manufacturer must specify which category the treated heating water comes under.



Please note

- Unsuitable fill water increases the level of deposits and corrosion and may lead to appliance damage.
  - Flush the heating system thoroughly before filling.
  - Only use fill water of potable water quality.
  - Special antifreeze suitable for heating systems can be added to the fill water. The antifreeze manufacturer must verify its suitability.
  - Fill and top-up water with a water hardness in excess of the following values must be softened, e.g. with a small softening system for heating water.

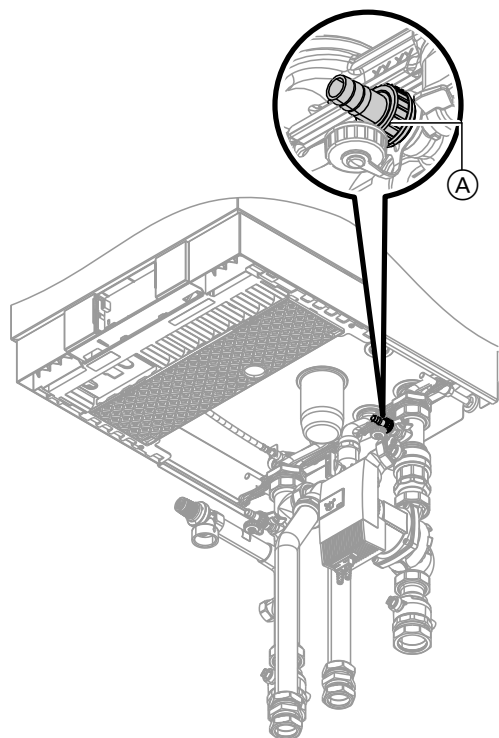
Total permissible hardness of the fill and top-up water

| Total heating output<br>kW | Specific system volume              |                                     |                                      |
|----------------------------|-------------------------------------|-------------------------------------|--------------------------------------|
|                            | < 20 l/kW                           | ≥ 20 l/kW to < 50 l/kW              | ≥ 50 l/kW                            |
| ≤ 50                       | ≤ 3.0 mol/m <sup>3</sup> (16.8 °dH) | ≤ 2.0 mol/m <sup>3</sup> (11.2 °dH) | < 0.02 mol/m <sup>3</sup> (0.11 °dH) |
| > 50 to ≤ 200              | ≤ 2.0 mol/m <sup>3</sup> (11.2 °dH) | ≤ 1.5 mol/m <sup>3</sup> (8.4 °dH)  | < 0.02 mol/m <sup>3</sup> (0.11 °dH) |



   **Filling the heating system (cont.)**

| Total heating output | Specific system volume               |                                      |                                      |
|----------------------|--------------------------------------|--------------------------------------|--------------------------------------|
|                      | < 20 l/kW                            | ≥ 20 l/kW to < 50 l/kW               | ≥ 50 l/kW                            |
| > 200 to ≤ 600       | ≤ 1.5 mol/m <sup>3</sup> (8.4 °dH)   | ≤ 0.02 mol/m <sup>3</sup> (0.11 °dH) | < 0.02 mol/m <sup>3</sup> (0.11 °dH) |
| > 600                | < 0.02 mol/m <sup>3</sup> (0.11 °dH) | < 0.02 mol/m <sup>3</sup> (0.11 °dH) | < 0.02 mol/m <sup>3</sup> (0.11 °dH) |



1. Check the pre-charge pressure of the diaphragm expansion vessel.
2. Close the gas shut-off valve.
3. Connect the supply hose to boiler drain & fill valve (A).
4. Fill the heating system via boiler drain & fill valve (A). (Minimum system pressure > 1.0 bar.)  
Permiss. operating pressure: 6 bar.
5. Close boiler drain & fill valve (A).

Fig. 21

   **Selecting the language (if required) – only for weather-compensated control units**

At the commissioning stage, the display is in German (factory setting).

Extended menu:




1. 
2. "Einstellungen"
3. "Sprache"
4. Select the required language with ▲/▼.



Fig. 22

   **Setting the time and date (if required) – only for weather-compensated control units**

The time and date need to be reset during commissioning or after a prolonged time out of use (approx. 18 days).

Extended menu:

1. 
2. "Settings"
3. "Time / Date"
4. Set current time and date.



## Setting the time and date (if required) – only... (cont.)

### Note

When time and date have been set, the control unit automatically checks the function of the flue gas temperature sensor. The display shows: **"Testing, flue gas temperature sensor"** and **"Enabled"**.

For further details regarding the flue gas temperature sensor test, see page 91.



## Venting the boiler

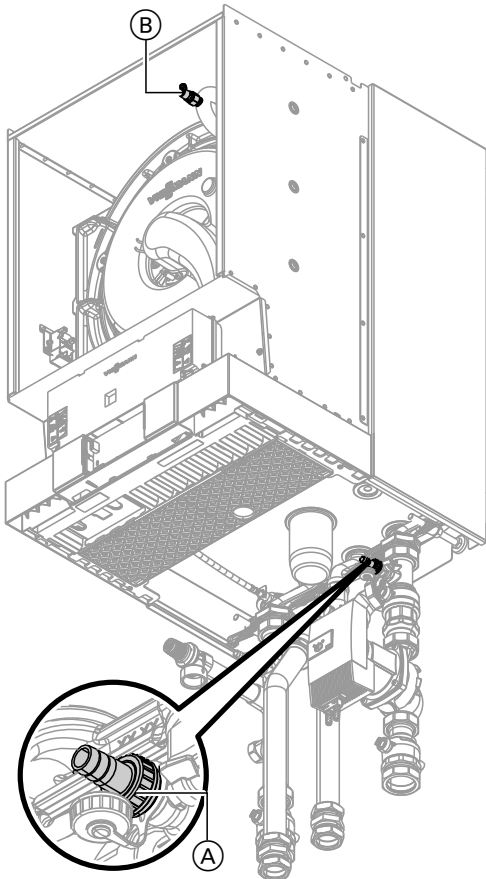


Fig. 23

1. Close the shut-off valves on the heating water side.
2. Connect the supply hose to boiler drain & fill valve (A).
3. Plug the drain hose onto top tap (B) and connect to a drain.
4. Open valves (A) and (B) and vent at mains pressure (purge) until no sound of escaping air can be heard and no more air bubbles are visible.
5. Close valves (A) and (B); open the shut-off valves on the heating water side.
6. Remove hoses again.



## Venting the heating system

1. Close the gas shut-off valve and switch the control unit ON.

   **Venting the heating system** (cont.)

2. Activate the venting program (see following steps).
3. Check the system pressure.



**Note**

For function and sequence of the venting program, see page 117.

**Activating the venting function**




**Weather-compensated control unit**

Service menu

1. Press **OK** and  simultaneously for approx. 4 s.
2. **"Service functions"**
3. **"Venting"**  
Venting function is enabled.
4. Ending venting function:  
Press **OK** or .

**Constant temperature control unit**

Service menu

1. Press **OK** and  simultaneously for approx. 4 s.
2. Select **"5"** with  and confirm with **OK**.  
**"ON"** flashes.
3. Activate the venting function with **OK**.  
**"EL on"** is shown constantly.
4. Ending venting function:  
Press .

   **Filling the trap with water**

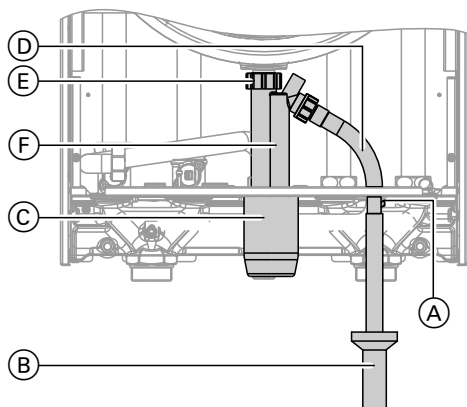


Fig. 24

1. Pull off cap **(C)** downwards.
2. Undo hose **(D)**.
3. Undo union nut **(E)** and pull off trap **(F)** downwards.
4. Fill trap **(F)** with water and refit.
5. Refit hose **(D)**.
6. Push on cap **(C)** from below.

   **Checking all connections on the heating water and DHW sides for leaks**

   **Checking the power supply**

   **Designating heating circuits – only for weather-compensated control units**

In the delivered condition, the heating circuits are designated "Heating circuit 1", "Heating circuit 2" and "Heating circuit 3" (if installed).

If the system user prefers, the heating circuits can be renamed to suit the specific system.  
To enter names for heating circuits:



## Designating heating circuits – only for... (cont.)



Operating instructions



## Checking the gas type

The boiler is equipped with an electronic combustion controller that adjusts the burner for optimum combustion in accordance with the prevailing gas quality.

- For operation with natural gas, no adjustment is therefore required across the entire Wobbe index range.

The boiler can be operated in the Wobbe index range 9.5 to 15.2 kWh/m<sup>3</sup> (34.2 to 54.7 MJ/m<sup>3</sup>).

- For operation with LPG, the burner must be converted (see "Converting the gas type" on page 31).

1. Determine the gas type and Wobbe index by asking your local gas supply utility or LPG supplier.
2. For operation with LPG, convert the burner (see page 31).
3. Record the gas type in the report on page 124.



## Converting the gas type (only for operation with LPG)

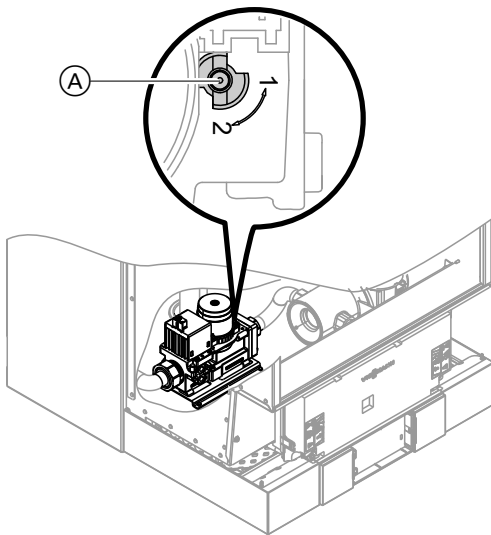
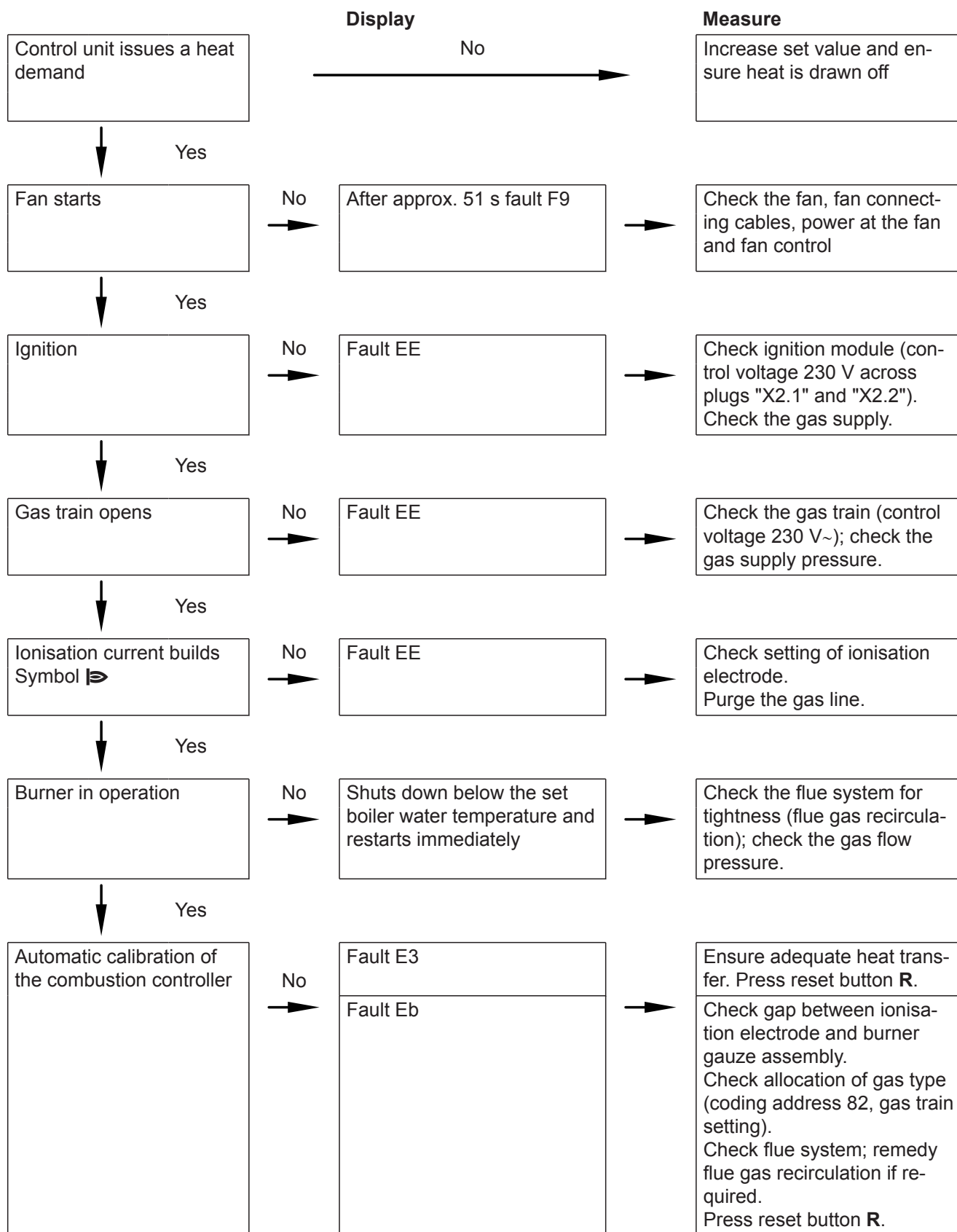


Fig. 25

1. Set adjusting screw (A) on the gas train to "2".
2. Turn ON/OFF switch "N" to ON.
3. Select the gas type in coding address "82":
  - Calling up code 2
  - Call up **"General"** (weather-compensated control units) or Group **"1"** (constant temperature control units)
    - In coding address "11", select value "9"
    - In coding address "82", select value "1" (LPG operation)
    - In code "11", select value ≠ "9".
    - End service functions.
4. Open the gas shut-off valve.
5. Affix label "G 31" (included with the technical documentation) in a clearly visible position near the gas train on the cover panel.



Function sequence and possible faults







## Function sequence and possible faults (cont.)

For further details regarding faults, see page 79.



## Checking the static pressure and supply pressure



### Danger

CO formation as a result of incorrect burner adjustment can have serious health implications. Always carry out a CO test before and after work on gas appliances.

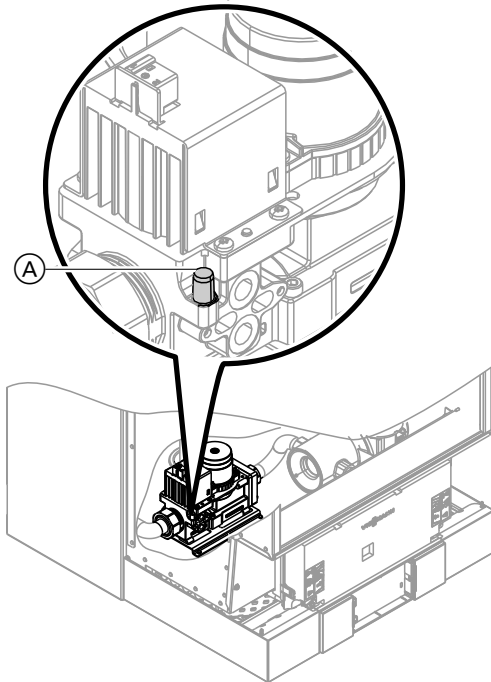


Fig. 26

### Operation with LPG

*Purge the LPG tank twice on commissioning/replacement. Vent the tank and gas connection line thoroughly after purging.*

1. Close the gas shut-off valve.
2. Undo screw (A) inside test connector "PE" on the gas train, but do not remove it, and connect the pressure gauge.
3. Open the gas shut-off valve.
4. Check the static pressure and record the actual value in the report on page 124.  
Set value: Max. 57.5 mbar.
5. Start the boiler.


### Note

*During commissioning, the appliance can enter a fault state because of airlocks in the gas line. After approx. 5 s, press R to reset the burner.*

6. Check the supply (flow) pressure. Set values:
  - Natural gas 20 mbar
  - LPG 50 mbar

### Note

*Use a suitable measuring device with a resolution of at least 0.1 mbar to check the supply pressure.*

7. Record the actual value in the report. Implement measures as indicated in the table below.
8. Shut down the boiler. Close the gas shut-off valve, remove the pressure gauge and close test connector (A) with the screw.
9.  **Danger**  
Gas escaping from the test connector leads to a risk of explosion. Check for gas tightness.

Open the gas shut-off valve, start the boiler and check for tightness at test connector (A).



### Checking the static pressure and supply pressure (cont.)

| Supply (flow) pressure for natural gas | Supply (flow) pressure for LPG | Measures   |
|--|--------------------------------|--|
| Below 17.4 mbar                        | Below 42.5 mbar                | Do not commission the boiler. Notify the gas supply utility or LPG supplier.   |
| 17.4 to 25 mbar                        | 42.5 to 57.5 mbar              | Start the boiler.  |
| Above 25 mbar                          | Above 57.5 mbar                | Connect a separate gas pressure governor upstream of the system and regulate the pre-charge pressure to 20 mbar for natural gas or 50 mbar for LPG. Notify the gas supply utility or LPG supplier. |



### Setting the max. heating output

A limit can be set on the maximum heating output for **heating mode**. The limit is set via the modulation range. The upper limit of the max. adjustable heating output is set by the coding card.





## Setting the max. heating output (cont.)

### Weather-compensated control unit

#### Service menu

1. Press **OK** and **≡** simultaneously for approx. 4 s.
2. **"Service functions"**
3. **"Max. output"**
4. **"Change?"** Select **"Yes"**.  
A value is shown on the display (e.g. **"85"**). In the delivered condition, this value corresponds to 100 % of the rated heating output.
5. Set the desired value.

### Constant temperature control unit

#### Service menu

1. Press **OK** and **≡** simultaneously for approx. 4 s.
2. Select **"③"** with **▶** and confirm with **OK**.  
The display shows **"FL"** and **"ON"** flashes.
3. Confirm with **OK** and ensure the flow rate is sufficient.  
While flow rate measuring is active, **"FL"** flashes on the display and **"ON"** is shown.
4. When the required flow rate is reached, the set heating output (e.g. **"85"**) flashes on the display and **"▶"** is shown. In the delivered condition, this value represents 100 % of the rated heating output.
5. Set the desired value and confirm with **OK**.



## Checking the balanced flue system for tightness (annular gap test)

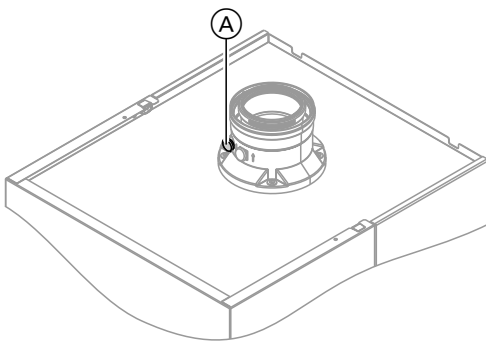


Fig. 27

Ⓐ Combustion air aperture

For balanced flue systems tested together with the heat source, there is no requirement for a tightness test (overpressure test) during commissioning by the flue gas inspector.

In this case, we recommend that your heating contractor carries out a simple tightness test during the commissioning of your system. For this it would be sufficient to check the  $\text{CO}_2$  or  $\text{O}_2$  concentration in the combustion air at the annular gap of the balanced flue pipe.

If the  $\text{CO}_2$  concentration is less than 0.2 % or the  $\text{O}_2$  concentration is greater than 20.6 %, the flue pipe is deemed to be sufficiently gas tight.





**Checking the balanced flue system for tightness... (cont.)**

If actual CO<sub>2</sub> values are higher or actual O<sub>2</sub> values are lower, a pressure test with a static pressure of 200 Pa will need to be carried out on the flue pipe.



**Removing the burner and checking the burner gasket**

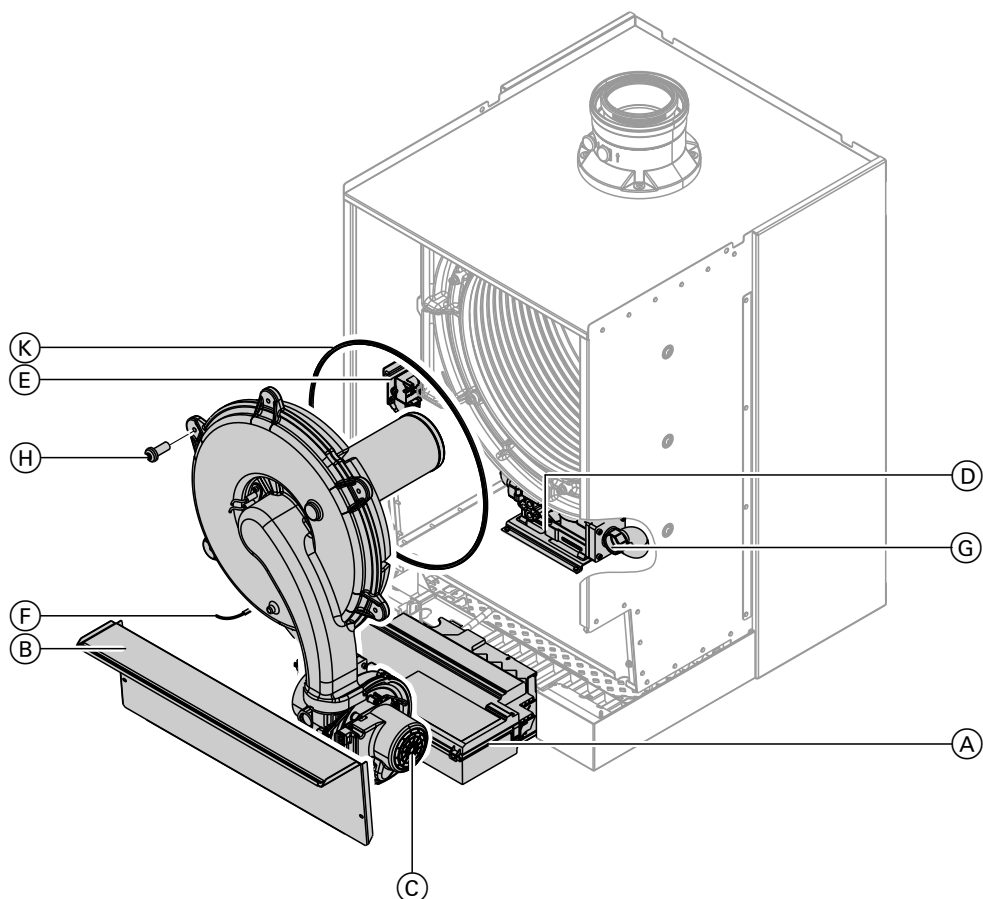


Fig. 28

1. Turn off the ON/OFF switch on the control unit and the power supply.
2. Close the gas shut-off valve and safeguard against reopening.
3. Unlock control unit (A) and pivot forwards.
4. Remove cover panel (B).
5. Pull cables from fan motor (C), gas train (D), ignition unit (E) and ionisation electrode (F).

6. Undo gas supply pipe fitting (G).

7. Undo 6 screws (H) and remove the burner.

**!** **Please note**  
To prevent damage,  
Never touch the mesh of the burner gauze  
assembly.

8. Check burner gasket (K) for damage. Replace gas-ket if required.



## Checking the burner gauze assembly and replacing it if required

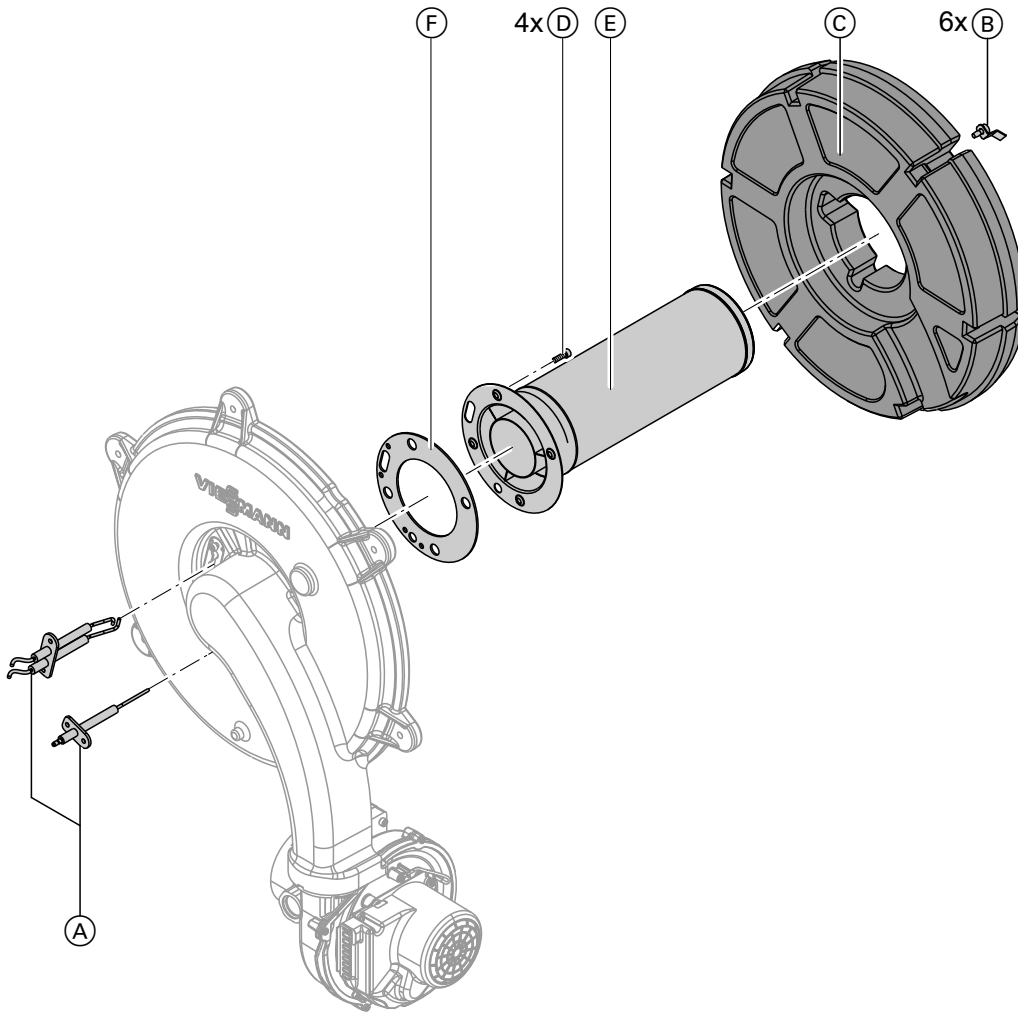


Fig. 29

1. Remove electrodes (A).
2. Undo 6 retaining clips (B) on thermal insulation ring (C) and remove thermal insulation ring (C).
3. Undo 4 Torx screws (D) and remove burner gauze assembly (E) with burner gauze assembly gasket (F).
4. Insert new burner gauze assembly (E) with new gasket (F) and secure with 4 Torx screws.  
Torque: 3.0 Nm
5. Refit thermal insulation ring (C) and electrodes (A).



Checking the burner gauze assembly and... (cont.)

**Note**

Tightening torque for screws of electrodes (A) and retaining clips (B): 3.0 Nm.



Checking the back draught safety device

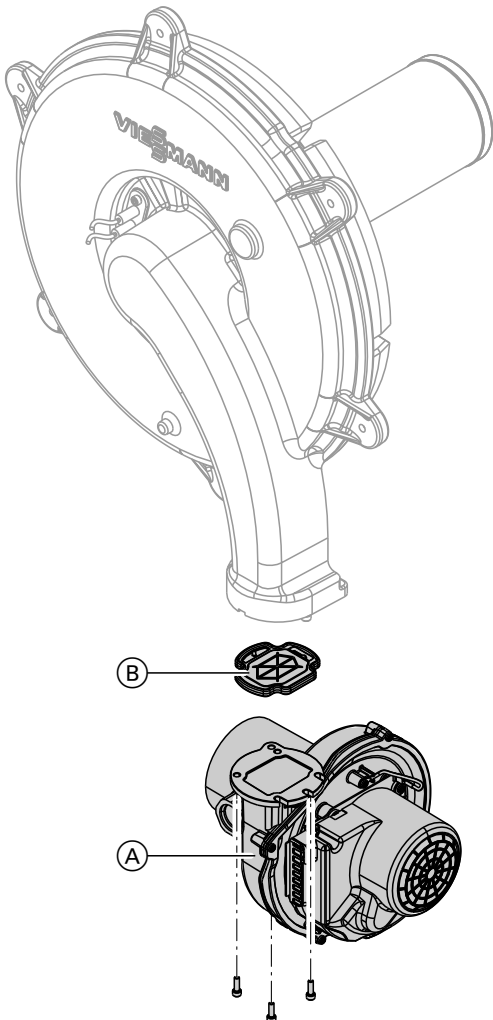


Fig. 30

1. Undo 3 screws and remove fan (A).
2. Remove back draught safety device (B).
3. Check the damper and gasket for dirt and damage. Replace if necessary.
4. Refit back draught safety device (B).
5. Refit fan (A) and secure with 3 screws. Torque: 3.0 Nm.



## Checking and adjusting the ignition and ionisation electrodes

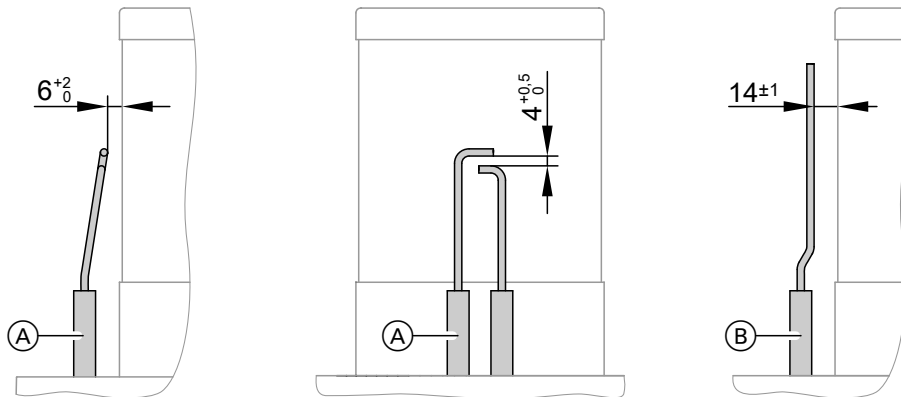


Fig. 31

- (A) Ignition electrodes
- (B) Ionisation electrode

1. Check the electrodes for wear and contamination.
2. Clean the electrodes with a small brush (not a wire brush) or sandpaper.
3. Check the electrode gaps. If the gaps are not as specified or the electrodes are damaged, replace the electrodes and gaskets and adjust them as required. Tighten the electrode fixing screws with a torque of 3 Nm.

**!** **Please note**  
Burner gauze assembly mesh:  
Do not damage.



## Cleaning the heating surfaces

**!** **Please note**  
Scratches to the surfaces of the heat exchanger that come into contact with hot gas can result in corrosion damage.  
**Never use brushes to clean the heating surfaces.**

**!** **Please note**  
Brushing can cause deposits to become lodged in the gaps between the coils.  
**Never use brushes to clean the heating surfaces.**

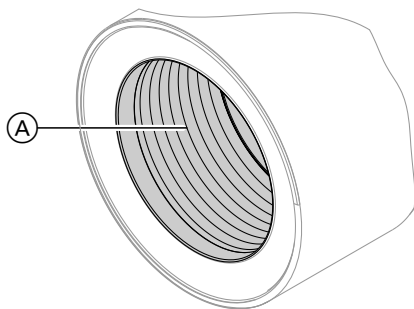


Fig. 32

**Note**  
*Discolouration on the heat exchanger surface is a normal sign of use. It has no bearing on the function and service life of the heat exchanger.  
The use of chemical cleaning agents is not required.*

1. Use a vacuum cleaner to remove combustion residues from heating surface (A) of the heat exchanger.
2. Flush heating surface (A) with water.
3. Check condensate drain and clean trap. See the following chapter.

   **Cleaning the heating surfaces** (cont.)

4. Flush the heating surface again with water. This will also fill the trap with water.

   **Installing the burner**

1. Insert the burner and tighten the screws diagonally. Torque: 8.5 Nm
2. Install the gas supply pipe with a new gasket and tighten the fitting. Torque: 15 Nm

3. Check the gas connections for tightness.



**Danger**

Escaping gas leads to a risk of explosion. Check the fitting for gas tightness.

4. Connect the electrical cables to the corresponding components.

   **Checking the condensate drain and cleaning the trap**

**Note**

If condensate escapes at vent aperture (A) or (B), clean or (if necessary) replace the following drain line.

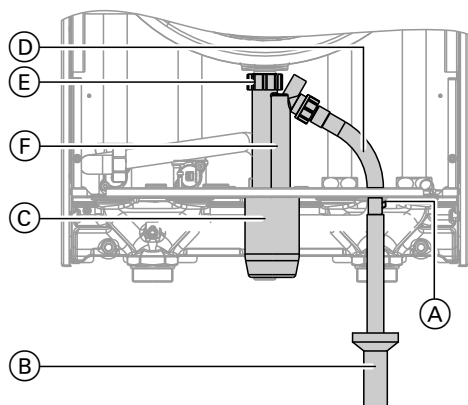


Fig. 33

1. Pull off cap (C) downwards.
2. Undo hose (D).
3. Undo union nut (E) and pull trap downwards.
4. Clean trap (F).
5. Check that the condensate can drain freely to the public sewage system.
6. Fill trap (F) with water and reassemble.
7. Refit hose (D).
8. Push on cap (C) from below.

**On multi boiler systems:**

Clean the trap in the flue gas header as well.

   **Checking the neutralising system (if installed)**

   **Checking the diaphragm expansion vessel and system pressure**

**Note**

Carry out this test on a cold system.

1. Drain the system until the pressure gauge indicates "0" or close the cap valve on the expansion vessel and reduce the pressure at the cap valve.

2. If the pre-charge pressure of the expansion vessel is lower than the static system pressure, top up with nitrogen until the pre-charge pressure is 0.1 to 0.2 bar higher.





### Checking the diaphragm expansion vessel and... (cont.)

- Top up with water until the charge pressure of the cooled system is 0.1 to 0.2 bar higher than the pre-charge pressure of the expansion vessel.  
Permiss. operating pressure: 6 bar.



### Checking the safety valve function



### Checking the firm seating of electrical connections



### Checking all gas equipment for tightness at operating pressure



#### Danger

Escaping gas leads to a risk of explosion.  
Check all gas equipment for tightness.

#### Note

Only use suitable and approved leak detection agents (EN 14291) and devices for the tightness test. Leak detection agents with unsuitable constituents (e.g. nitrides, sulphides) can cause material damage. Remove residues of the leak detection agent after testing.



### Checking the combustion quality

The electronic combustion controller automatically ensures optimum combustion quality. During commissioning/maintenance, only the combustion values need to be checked. For this, measure the CO content plus the CO<sub>2</sub> or O<sub>2</sub> content. For a description of the electronic combustion controller functions, see page 121.

#### Note

Operate the appliance with uncontaminated combustion air to prevent operating faults and damage.

#### CO content

- The CO content must be < 1000 ppm for all gas types.

#### CO<sub>2</sub> or O<sub>2</sub> content

- The CO<sub>2</sub> content must be within the following limits for the lower and upper heating output respectively:
  - 7.5 to 9.6 % for natural gas E and LL
  - 9.0 to 11.3 % for LPG P
- The O<sub>2</sub> content must be between 3.8 and 7.3 % for all gas types.

If the actual CO<sub>2</sub> or O<sub>2</sub> values lie outside their respective ranges, check the balanced flue system for tightness, see page 35.

#### Note

During commissioning, the combustion controller carries out an automatic calibration. Allow approx. 30 s after the burner has started before testing the emissions.

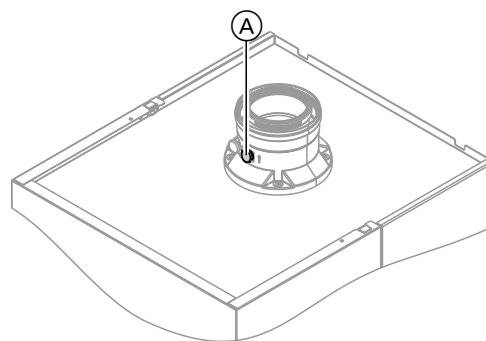


Fig. 34

- Connect a flue gas analyser at flue gas port (A) on the boiler flue connection.
- Open the gas shut-off valve, start the boiler and create a heat demand.
- Set the lower heating output (see page 42).



## Checking the combustion quality (cont.)

- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>4. Check the CO<sub>2</sub> content. Should the actual value deviate from the aforementioned ranges by more than 1 %, implement measures detailed on page 41.</li> <li>5. Enter the actual value into the report.</li> <li>6. Set the upper heating output (see page 42).</li> </ol> | <ol style="list-style-type: none"> <li>7. Check the CO<sub>2</sub> content. Should the actual value deviate from the aforementioned ranges by more than 1 %, implement measures detailed on page 41.</li> <li>8. After testing, press <b>OK</b>.</li> <li>9. Enter the actual value into the report.</li> </ol> |
|---|---|

## Select higher/lower heating output

### Weather-compensated control unit

Service menu

1. Press **OK** and **≡** simultaneously for approx. 4 s.
2. **"Actuator test"**
3. Select the lower heating output:  
Select **"Base load OFF"**. Then **"Base load ON"** appears and the burner operates at its lower heating output.
4. Select the upper heating output:  
Select **"Full load OFF"**. Then **"Full load ON"** appears and the burner operates at its upper heating output.
5. Ending output selection:  
Press ↵.

### Constant temperature control unit

Service menu

1. Press **OK** and **≡** simultaneously for approx. 4 s.
2. Select **"⌂"** with **▶** and confirm with **OK**.  
The display shows **"I"** and **"ON"** flashes.
3. Select the lower heating output:  
Press **OK**, **"ON"** will be displayed constantly.
4. Select the upper heating output:  
Press ↵.
5. Select **"2"** with **▶**; **"ON"** flashes.
6. Press **OK**, **"ON"** will be displayed constantly.
7. Ending output selection:  
Press ↵.



## Checking the flue system for unrestricted flow and tightness



## Checking the external LPG safety valve (if installed)



## Matching the control unit to the heating system

The control unit must be matched to the equipment level of the system. Various system components are recognised automatically by the control unit and the relevant codes are set automatically.

For individual coding steps, see page 48.



## Adjusting the heating curves (only for weather-compensated control units)

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

### 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.*



Adjusting the heating curves (only for... (cont.))

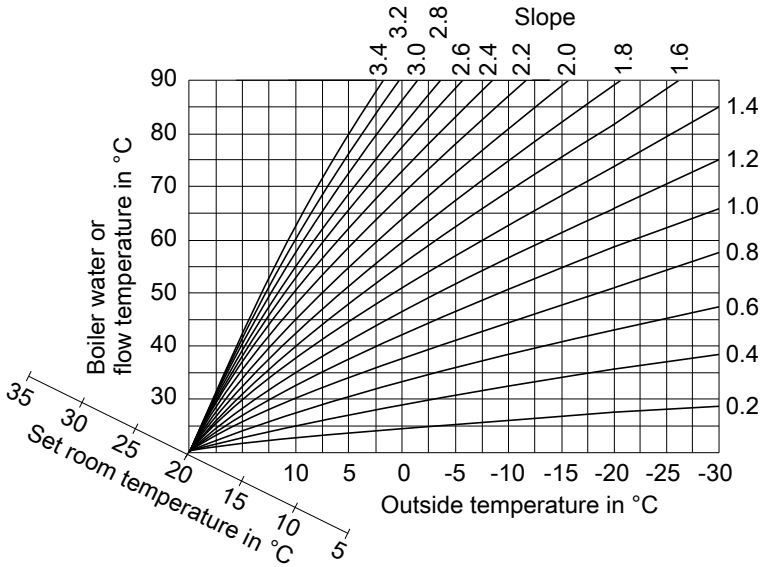


Fig. 35

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.

Standard set room temperature

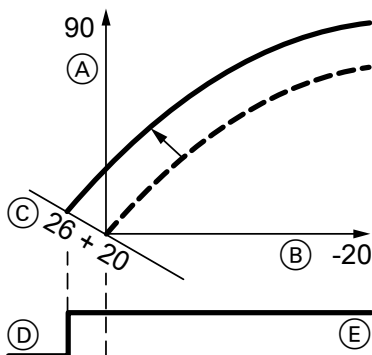


Fig. 36 Example 1: Adjustment of the standard set room temperature from 20 to 26 °C

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

Changing the standard set room temperature

Operating instructions

Reduced set room temperature

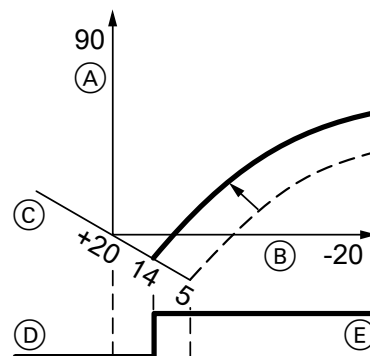


Fig. 37 Example 2: Adjustment of the reduced set room temperature from 5 °C to 14 °C

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

Changing the reduced set room temperature

Operating instructions

Changing the slope and level

Individually adjustable for each heating circuit.



## Adjusting the heating curves (only for... (cont.)

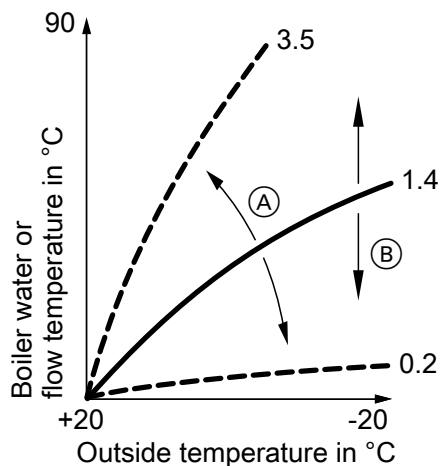


Fig. 38

- Ⓐ 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.



## Connecting the control unit to the LON

The LON communication module must be plugged in.

### Note

The data transfer via LON can take several minutes.

### Example: Single boiler system with Vitotronic 200-H and Vitocom 200

Set the LON subscriber numbers and further functions via code 2 (see the following table).

### Note

The same subscriber number must **not** be allocated twice within the LON.

**Only one Vitotronic** may be programmed as fault manager.

All coding addresses in the table are listed in the "General" group.

| Boiler control unit  | Vitotronic 200-H  | Vitotronic 200-H  | Vitocom                   |
|--|---|---|---------------------------|
|  |   |   |                           |
| Subscriber no. 1<br>Code "77:1"                                    | Subscriber no. 10<br>Code "77:10"                                     | Subscriber no. 11<br><b>Set</b> code "77:11".                         | Subscriber no. 99         |
| Control unit is fault manager.<br>Code "79:1"                      | Control unit is not fault manager.<br>Code "79:0"                     | Control unit is not fault manager.<br>Code "79:0"                     | Device is fault manager.  |
| Control unit transmits the time.<br>Code "7b:1"                    | Control unit receives the time.<br><b>Set</b> code "81:3".            | Control unit receives the time.<br><b>Set</b> code "81:3".            | Device receives the time. |
| Control unit sends outside temperature.<br><b>Set</b> code "97:2". | Control unit receives outside temperature.<br><b>Set</b> code "97:1". | Control unit receives outside temperature.<br><b>Set</b> code "97:1". | —                         |



## Connecting the control unit to the LON (cont.)

| Boiler control unit                              | Vitotronic 200-H                                 | Vitotronic 200-H                                 | Vitocom |
|--|--|--|---------|
| Viessmann system number.<br>Code "98:1"          | Viessmann system number.<br>Code "98:1"          | Viessmann system number.<br>Code "98:1"          | —       |
| LON subscriber fault monitoring.<br>Code "9C:20" | LON subscriber fault monitoring.<br>Code "9C:20" | LON subscriber fault monitoring.<br>Code "9C:20" | —       |

### Carrying out a LON subscriber check

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

Requirements:

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

Service menu:

1. Press **OK** and **≡**: simultaneously for approx. 4 s.
2. **"Service functions"**

### 3. "Subscriber check"

4. Select subscriber (e.g. subscriber 10).
5. Start the subscriber check with **"OK"**.

- Successfully tested subscribers are designated with **"OK"**.
- Unsuccessfully tested subscribers are identified with **"Not OK"**.

#### Note

*To perform another subscriber check:  
Create a new subscriber list with **"Delete list?"** (subscriber list is updated).*

#### Note

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



## Calling up and resetting the "Service" display

The red fault indicator flashes when the limits set in coding addresses "21" and "23" have been reached. (Coding address in group **"Boiler"** (weather-compensated control unit) or group 2 (constant temperature control unit).)

### Weather-compensated control unit

### Constant temperature control unit

#### Display

**"Service"** and **"🔧"**

The specified hours run or the specified interval with calendar symbol **"📅"** (subject to setting) and **"🔧"**

#### Acknowledging a service

Press **OK**.  
Service the appliance.

Press **OK**.  
Service the appliance.

#### Note

*An acknowledged service message that was not reset appears again the following Monday.*

#### Note

*An acknowledged service message that was not reset appears again after 7 days.*





## Calling up and resetting the "Service" display (cont.)

### Weather-compensated control unit

### Constant temperature control unit

#### After the service has been carried out: Reset the codes

Service menu:

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

#### Note

The selected service parameters for hours run and interval restart at **"0"**.

Reset code "24:1" in group 2 to "24:0".

#### Note

The selected service parameters for hours run and interval restart at **"0"**.



## Fitting the front panel

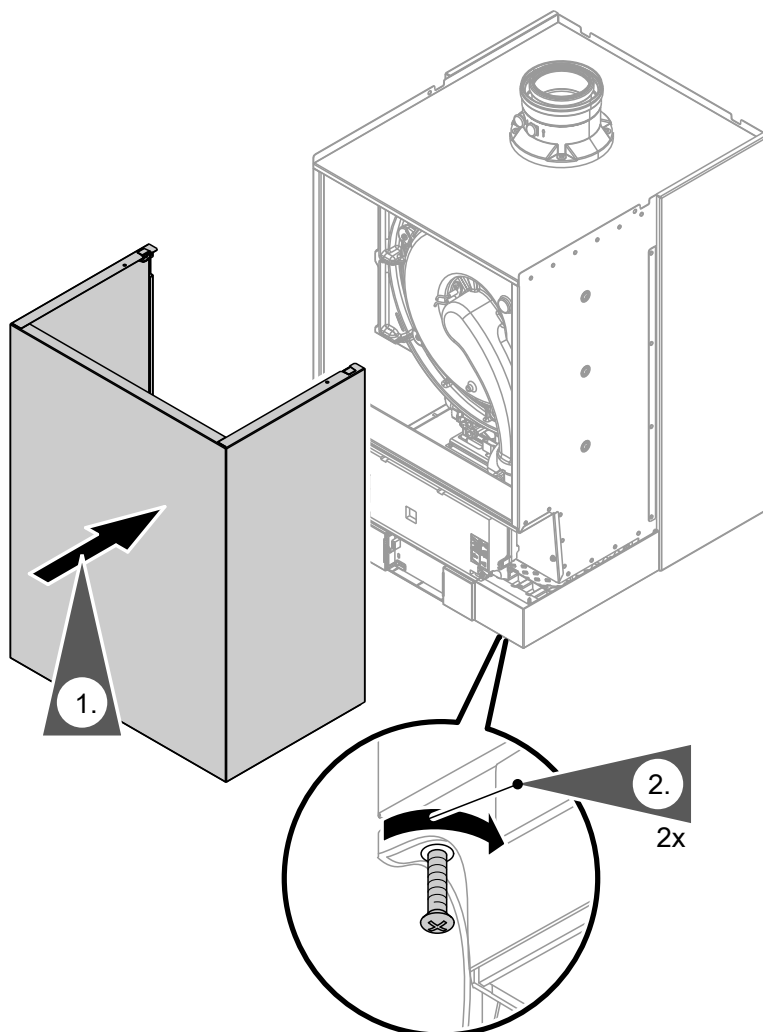


Fig. 39



## Fitting the front panel (cont.)

### Note

*Ensure the locking screws are fitted before operating the appliance.*



## Instructing the system user

The system installer should hand the operating instructions to the system user and instruct the user in operating the system.



## Calling up coding level 1

- On weather-compensated control 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 two heating circuits with mixer: 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.


### Weather-compensated control unit

#### The codes are divided into groups

- **"General"**
- **"Boiler"**
- **"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.
- **"Standard setting"**

#### Call up code 1

Service menu:

1. Press **OK** and  simultaneously for approx. 4 s.
2. **"Coding level 1"**
3. Select group of required coding address.
4. Select coding address.
5. Select value according to the following tables and confirm with **OK**.

#### Resetting all codes to their delivered condition

Select **"Standard setting"**.









#### Note


*This also resets codes at coding level 2.*

### Constant temperature control unit

- 1: **"General"**
- 2: **"Boiler"**
- 3: **"DHW"**
- 4: **"Solar"**
- 5: **"Heating circuit 1"**
- 6: **"All codes std device"**  
In this group, all coding addresses are displayed in ascending order.
- 7: **"Standard setting"**

Service menu:

1. Press **OK** and  simultaneously for approx. 4 s.
2. Select **"①"** with  for coding level 1 and confirm with **OK**.
3. **"I"** flashes on the display for the coding addresses in group 1.
4. Select the group of the required coding address with / and confirm with **OK**.
5. Select coding address with /.
6. Set value according to the following tables with / and confirm with **OK**.

Select **"7"** with  and confirm with **OK**.  
When **"\*"** flashes, confirm with **OK**.

#### Note

*This also resets codes at coding level 2.*

## General/group "1"

Select **"General"** for weather-compensated control units (see page 48).

Select **"1"** for constant temperature control units (see page 48).



## General/group "1" (cont.)

### Coding

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

| Value, address 00: ... | System version | Description  |
|------------------------|----------------|--|
| 2                      | 1              | One heating circuit without mixer A1 (heating circuit 1), with DHW heating (code is set automatically)   |
| 3                      | 2, 3           | One heating circuit with mixer M2 (heating circuit 2), without DHW heating   |
| 4                      | 2, 3           | One heating circuit with mixer (heating circuit 2), with DHW heating   |
| 5                      | 4              | One heating circuit without mixer A1 (heating circuit 1) and one heating circuit with mixer M2 (heating circuit 2), without DHW heating (code is set automatically)  |
| 6                      | 4              | One heating circuit without mixer A1 (heating circuit 1) and one heating circuit with mixer M2 (heating circuit 2), with DHW heating (code is set automatically)   |
| 7                      | 4              | One heating circuit with mixer M2 (heating circuit 2) and one heating circuit with mixer M3 (heating circuit 3), without DHW heating   |
| 8                      | 4              | One heating circuit with mixer M2 (heating circuit 2) and one heating circuit with mixer M3 (heating circuit 3), with DHW heating  |
| 9                      | 4              | One heating circuit without mixer A1 (heating circuit 1), one heating circuit with mixer M2 (heating circuit 2) and one heating circuit with mixer M3 (heating circuit 3), without DHW heating (code is set automatically) |
| 10                     | 4              | One heating circuit without mixer A1 (heating circuit 1), one heating circuit with mixer M2 (heating circuit 2) and one heating circuit with mixer M3 (heating circuit 3), with DHW heating (code is set automatically)    |

| Coding in the delivered condition         |   | Possible change |  |
|---|---|-----------------|--|
| <b>Internal circulation pump function</b> |   |                 |  |
| 51:0                                      | System with low loss header:<br>The internal circulation pump is always started when there is a heat demand | 51:1            | System with low loss header:<br>The internal circulation pump is only started when there is a heat demand if the burner is running.<br>The circulation pump stops when the run-on time ends.               |
|   |   | 51:2            | System with heating water buffer cylinder:<br>The internal circulation pump is only started when there is a heat demand if the burner is running.<br>The circulation pump stops when the run-on time ends. |

**General/group "1"** (cont.)

| Coding in the delivered condition               |  | Possible change      |   |
|---|--|----------------------|---|
| <b>Subscriber no.</b>                           |  |                      |   |
| 77:1  | LON subscriber number (only for weather-compensated control units)   | 77:2<br>to<br>77:99  | LON subscriber number, adjustable from 1 to 99:<br>1 - 4 = Boiler<br>5 = Cascade<br>10 - 97 = Vitotronic 200-H<br>98 = Vitogate<br>99 = Vitocom<br><br><b>Note</b><br><i>Allocate each number <b>only</b> once.</i> |
| <b>Detached house/multi family house</b>        |  |                      |   |
| 7F:1  | Detached house (only for weather-compensated control units)  | 7F:0                 | Apartment building<br>Holiday program and time program for DHW heating can be set separately.   |
| <b>Lock out controls</b>                        |  |                      |   |
| 8F:0  | Operation enabled in standard menu and extended menu.<br><br><b>Note</b><br><i>The relevant code is only activated when you exit the service menu.</i> | 8F:1                 | Operation locked out in standard menu <b>and</b> extended menu. Emissions test mode can be activated.   |
|   |  | 8F:2                 | Operation enabled in standard menu, but locked out in extended menu. Emissions test mode can be activated.  |
| <b>Set flow temperature for external demand</b> |  |                      |   |
| 9b:70   | Set flow temperature for external demand 70 °C   | 9b:0<br>to<br>9b:127 | Set flow temperature for external demand adjustable from 0 to 127 °C (limited by boiler-specific parameters)  |

**Boiler/group "2"**

Select **"Boiler"** for weather-compensated control units (see page 48).

Select **"2"** for constant temperature control units (see page 48).

**Coding**

| Coding in the delivered condition |   | Possible change    |  |
|-----------------------------------|---|--------------------|--|
| <b>Single/multi-boiler system</b> |   |                    |  |
| 01:1                              | Single boiler system (only for constant temperature control units)                  | 01:2               | Multi boiler system with Vitotronic 300-K    |
| <b>Boiler number</b>              |   |                    |  |
| 07:1                              | Boiler number in multi boiler systems (only for constant temperature control units) | 07:2<br>to<br>07:8 | Boiler number 2 to 8 in multi boiler systems |

**Boiler/group "2"** (cont.)

| Coding in the delivered condition  |  | Possible change      |  |
|------------------------------------|--|----------------------|--|
| <b>Burner service in 100 hours</b> |  |                      |  |
| 21:0                               | No service interval set (in hours run)   | 21:1<br>to<br>21:100 | The number of hours run before the burner should be serviced is adjustable from 100 to 10,000 h<br>One step $\hat{=}$ 100 h      |
| <b>Service interval in months</b>  |  |                      |  |
| 23:0                               | No time set for burner service interval  | 23:1<br>to<br>23:24  | Interval adjustable from 1 to 24 months  |
| <b>Service status</b>              |  |                      |  |
| 24:0                               | "Service" not shown on the display       | 24:1                 | "Service" is shown on the display (address is automatically set and must be manually reset after a service has been carried out) |
| <b>Filling/venting</b>             |  |                      |  |
| 2F:0                               | Venting program/filling program inactive | 2F:1                 | Venting program active   |
|                                    |  | 2F:2                 | Filling program active   |

**DHW/group "3"**

Select **"DHW"** for weather-compensated control units (see page 48).

Select **"3"** for constant temperature control units (see page 48).

**Coding**

| Coding in the delivered condition                |   | Possible change     |  |
|--|---|---------------------|--|
| <b>Set DHW temperature reheating suppression</b> |   |                     |  |
| 67:40  | For solar DHW heating: Set DHW temperature 40 °C Reheating is suppressed above the selected set temperature (boiler only starts as backup if the rise in the cylinder temperature is too low).<br>Cannot be adjusted on gas condensing combi boilers. | 67:0<br>to<br>67:95 | Set DHW temperature adjustable from 0 to 95 °C (limited by boiler-specific parameters)     |
| <b>Enable DHW circulation pump</b>               |   |                     |  |
| 73:0   | DHW circulation pump: "ON" according to time program (only for weather-compensated control unit)  | 73:1<br>to<br>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 "4"**

Select **"Solar"** for weather-compensated control units (see page 48).

Select **"4"** for constant temperature control units (see page 48).

**Note**

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

**Solar/group "4"** (cont.)**Coding**

| Coding in the delivered condition       |  | Possible change |   |
|---|--|-----------------|---|
| <b>Speed control solar circuit pump</b> |  |                 |   |
| 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<br>Never adjust                               |
|   |  | 02:2            | Solar circuit pump is speed-controlled with PWM control                         |
| <b>Maximum cylinder temperature</b>     |  |                 |   |
| 08:60                                   | Set DHW temperature (maximum cylinder temperature) 60 °C.  | 08:10 to 08:90  | Set DHW temperature adjustable from 10 to 90 °C.                                |
| <b>Stagnation time reduction</b>        |  |                 |   |
| 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.                             |
| <b>Flow rate solar circuit</b>          |  |                 |   |
| 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,<br>1 step $\approx$ 0.1 l/min.     |
| <b>Extended solar control functions</b> |  |                 |   |
| 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 "5"**

Select **"Heating circuit ..."** for weather-compensated control units (see page 48).

Select **"5"** for constant temperature control units (see page 48).

## Heating circuit 1, heating circuit 2, heating... (cont.)

### Coding

| Coding in the delivered condition |  | Possible change |  |
|-----------------------------------|--|-----------------|--|
| <b>Priority DHW heating</b>       |  |                 |  |
| A2:2                              | Cylinder priority applicable to heating circuit pump and mixer | A2:0            | Without cylinder priority applicable to heating circuit pump and mixer                         |
|                                   |  | A2:1            | Cylinder priority only applicable to mixer   |
|                                   |  | A2:3 to A2:15   | Reduced priority applicable to mixer (the heating circuit receives a reduced amount of energy) |

### Economy function outside temperature

|      |  |               |  |
|------|--|---------------|--|
| A5:5 | With heating circuit pump logic function (economy mode): Heating circuit pump "OFF" if outside temperature (OT) is 1 K higher than the set room temperature ( $RT_{set}$ )<br>$OT > RT_{set} + 1$ K (only for weather-compensated control units) | 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  |
| up to 15                 | $OT > RT_{set} - 9$ K  |

| Coding in the delivered condition                             |  | Possible change |   |
|---|--|-----------------|---|
| <b>Extended economy function adjusted outside temperature</b> |  |                 |   |
| A6:36   | Extended economy mode <b>disabled</b> (only for weather-compensated control units) | A6:5 to A6:35   | Extended economy mode enabled, i.e. the burner and heating circuit pump stop and the mixer closes 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. |

### Extended economy function mixer

|      |   |      |  |
|------|---|------|--|
| A7:0 | Without mixer economy function (only for weather-compensated control units and heating circuits with mixer) | A7:1 | With mixer economy function (extended heating circuit pump logic): Heating circuit pump also "OFF": <ul style="list-style-type: none"> <li>▪ If the mixer has been attempting to close for longer than 20 min.</li> </ul> Heating circuit pump "ON": <ul style="list-style-type: none"> <li>▪ If the mixer changes to control function</li> <li>▪ If there is a risk of frost</li> </ul> |
|------|---|------|--|

## Heating circuit 1, heating circuit 2, heating... (cont.)

| Coding in the delivered condition              |   | Possible change       |  |
|--|---|-----------------------|--|
| <b>Pump idle time, transition reduced mode</b> |   |                       |  |
| A9:7   | With pump idle time: Heating circuit pump "OFF" if the set value is altered through a change in operating mode or through a change in the set room temperature (only for weather-compensated control units) | A9:0<br>A9:1 to A9:15 | Without pump idle time<br>With pump idle time, adjustable from 1 to 15. The higher the value, the longer the pump idle time. |

| <b>Weather-compensated/room temperature hook-up</b> |   |      |  |
|---|---|------|--|
| b0:0  | With remote control: Heating mode/reduced mode: Weather-compensated (only for weather-compensated control units; only change the code for the heating circuit with mixer) | b0:1 | Heating mode: Weather-compensated<br>Reduced mode: With room temperature hook-up |
|   |   | b0:2 | Heating mode: With room temperature hook-up<br>Reduced mode: Weather-compensated |
|   |   | b0:3 | Heating mode/red. mode: With room temperature hook-up                            |

| <b>Economy function room temperature</b> |  |              |   |
|--|--|--------------|---|
| b5:0                                     | With remote control: No room temperature-dependent heating circuit pump logic function (only for weather-compensated control units; only change the code for the heating circuit with mixer) | b5:1 to b5:8 | For heating circuit pump logic function, see the following table: |

| Parameter address<br>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 |  |
|--|--|-----------------|--|
| <b>Min. flow temperature heating circuit</b> |  |                 |  |
| C5:20  | Electronic minimum flow temperature limit 20 °C (only for weather-compensated control units) | C5:1 to C5:127  | Minimum limit adjustable from 1 to 127 °C (limited by boiler-specific parameters)  |
| <b>Max. flow temperature heating circuit</b> |  |                 |  |
| C6:74  | Electronic maximum flow temperature limit 74 °C (only for weather-compensated control units) | C6:10 to C6:127 | Maximum limit adjustable from 10 to 127 °C (limited by boiler-specific parameters) |

## Heating circuit 1, heating circuit 2, heating... (cont.)

| Coding in the delivered condition                         |   | Possible change  |   |
|---|---|------------------|---|
| <b>Heating program changeover</b>                         |   |                  |   |
| d5:0  | The external heating program changeover switches the operating program to "Continuous operation with reduced room temperature" or "Standby mode" (only for weather-compensated control units) | d5:1             | The external heating program changeover switches to "Continuous operation at standard room temperature" (subject to coding address 3A, 3b and 3C) |
| <b>Ext. heating program changeover to heating circuit</b> |   |                  |   |
| 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   |
| <b>Screed function</b>                                    |   |                  |   |
| F1:0  | Screed drying disabled (only for weather-compensated control units).  | F1:1 to F1:6     | Screed drying can be set with 6 adjustable temperature/time profiles (see page 117)   |
|   |   | F1:15            | Constant flow temperature 20 °C   |
|   |   |                  |   |
| <b>Party mode time limit</b>                              |   |                  |   |
| F2:8  | Time limit for party mode or external operating program changeover via pushbutton: 8 h (only for weather-compensated control units) <sup>*1</sup>   | F2:0             | No time limit for party mode <sup>*1</sup>  |
|   |   | F2:1 to F2:12    | Time limit adjustable from 1 to 12 h <sup>*1</sup>  |
|   |   |                  |   |
| <b>Pump control in "Only DHW"</b>                         |   |                  |   |
| F6:25   | In "Only DHW" operating mode, the circulation pump in the heating circuit connection set is constantly on (only for constant temperature control units)                                       | F6:0             | In "Only DHW" operating mode, the circulation pump in the heating circuit connection set is constantly off  |
|   |   | F6:1 to F6:24    | In "Only DHW" operating mode, the circulation pump in the heating circuit connection set is started 1 to 24 times per day for 10 min each time.   |
| <b>Pump control in "Standby mode"</b>                     |   |                  |   |
| F7:25   | In "Standby mode", the circulation pump in the heating circuit connection set is constantly on (only for constant temperature control units)  | F7:0             | In "Standby mode", the circulation pump in the heating circuit connection set is constantly off   |
|   |   | F7:1 to F7:24    | In "Standby mode", the circulation pump in the heating circuit connection set is started 1 to 24 times per day for 10 min each time.              |
| <b>Start temperature raising</b>                          |   |                  |   |
| F8:-5   | Temperature limit for terminating reduced mode -5 °C, see example on page 119. Observe setting for coding address "A3". (only for weather-compensated control units)                          | F8:+10 to F8:-60 | Temperature limit adjustable from +10 to -60 °C   |
|   |   | F8:-61           | Function disabled   |

<sup>\*1</sup> In the "Heating and DHW" program, party mode ends **automatically** when the system changes over to operation at standard room temperature.

## Heating circuit 1, heating circuit 2, heating... (cont.)

| Coding in the delivered condition             |  | Possible change        |  |
|---|--|------------------------|--|
| <b>End temperature raising</b>                |  |                        |  |
| F9:-14  | Temperature limit for raising reduced set room temperature -14 °C; see example on page 119. (only for weather-compensated control units)   | F9:+10<br>to<br>F9:-60 | Temperature limit for raising the set room temperature to the value selected for standard mode adjustable from +10 to -60 °C |
| <b>Set flow temperature increase</b>          |  |                        |  |
| FA:20   | Raising the set boiler water temperature or set flow temperature by 20 % when changing from operation with reduced room temperature to operation with standard room temperature. See example on page 119 (only for weather-compensated control units). | FA:0<br>to<br>FA:50    | Temperature rise adjustable from 0 to 50 %   |
| <b>Duration set flow temperature increase</b> |  |                        |  |
| Fb:60   | Duration for raising the set boiler water temperature or set flow temperature (see coding address "FA") is 60 min. See example on page 119 (only for weather-compensated control units).   | Fb:0<br>to<br>Fb:240   | Duration adjustable from 0 to 240 min  |



## Calling up coding level 2

- All codes are accessible in coding level 2.
- Codes that are not assigned due to the heating system equipment level or the setting of other codes are not displayed.
- 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.

### Weather-compensated control unit

#### The codes are divided into groups



- **"General"**
- **"Boiler"**
- **"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.
- **"Standard setting"**

### Constant temperature control unit










- 1: **"General"**
- 2: **"Boiler"**
- 3: **"DHW"**
- 4: **"Solar"**
- 5: **"Heating circuit 1"**
- 6: **"All codes std device"**  
In this group, all coding addresses are displayed in ascending order.
- 7: **"Standard setting"**

#### Call up code 2

Service menu:

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.
5. Select coding address.
6. Select value according to the following tables and confirm with **OK**.

Service menu:


1. Press **OK** and  simultaneously for approx. 4 s.
2. Press **OK** and  simultaneously for approx. 4 s.
3. Select **"2"** with  for coding level 2 and confirm with **OK**.
4. **"I"** flashes on the display for the coding addresses in group 1.
5. Select the group of the required coding address with / and confirm with **OK**.
6. Select coding address with /.
7. Set value according to the following tables with / and confirm with **OK**.

#### Resetting all codes to their delivered condition

Select **"Standard setting"**.

#### Note

*This also resets codes at coding level 1.*

Select **"7"** with  and confirm with **OK**.  
When **"I"** flashes, confirm with **OK**.

#### Note

*This also resets codes at coding level 1.*

## General/group "1"

Select **"General"** for weather-compensated control units (see page 57).

Select **"1"** for constant temperature control units (see page 57).

#### Coding

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

## General/group "1" (cont.)

| Value, address 00: ... | System version | Description  |
|------------------------|----------------|--|
| 2                      | 1              | One heating circuit without mixer A1 (heating circuit 1), with DHW heating (code is set automatically)   |
| 3                      | 2, 3           | One heating circuit with mixer M2 (heating circuit 2), without DHW heating   |
| 4                      | 2, 3           | One heating circuit with mixer (heating circuit 2), with DHW heating   |
| 5                      | 4              | One heating circuit without mixer A1 (heating circuit 1) and one heating circuit with mixer M2 (heating circuit 2), without DHW heating (code is set automatically)  |
| 6                      | 4              | One heating circuit without mixer A1 (heating circuit 1) and one heating circuit with mixer M2 (heating circuit 2), with DHW heating (code is set automatically)   |
| 7                      | 4              | One heating circuit with mixer M2 (heating circuit 2) and one heating circuit with mixer M3 (heating circuit 3), without DHW heating   |
| 8                      | 4              | One heating circuit with mixer M2 (heating circuit 2) and one heating circuit with mixer M3 (heating circuit 3), with DHW heating  |
| 9                      | 4              | One heating circuit without mixer A1 (heating circuit 1), one heating circuit with mixer M2 (heating circuit 2) and one heating circuit with mixer M3 (heating circuit 3), without DHW heating (code is set automatically) |
| 10                     | 4              | One heating circuit without mixer A1 (heating circuit 1), one heating circuit with mixer M2 (heating circuit 2) and one heating circuit with mixer M3 (heating circuit 3), with DHW heating (code is set automatically)    |

| Coding in the delivered condition |   | Possible change |   |
|-----------------------------------|---|-----------------|---|
| 11:≠9                             | No access to the coding addresses for the parameters of the combustion controller   | 11:9            | Access to the coding addresses for the parameters of the combustion controller open                         |
| 25:0                              | Without outside temperature sensor (for constant temperature control units)   | 25:1            | With outside temperature sensor (automatic recognition)   |
| 2A:0                              | Without wireless outside temperature sensor   | 2A:1            | With wireless outside temperature sensor (automatic recognition)  |
|                                   |   | 2A:2            | Wireless outside temperature sensor not used  |
| 2d:1                              | With flow sensors (do not adjust)   |                 |   |
| 32:0                              | Without AM1 extension   | 32:1            | With AM1 extension (automatic recognition)  |
| 33:1                              | Function of output A1 at AM1 extension: Heating circuit pump  | 33:0            | Function of output A1: DHW circulation pump   |
|                                   |   | 33:2            | Function of output A1: Circulation pump for cylinder heating  |
| 34:0                              | Function of output A2 at AM1 extension: DHW circulation pump  | 34:1            | Function of output A2: Heating circuit pump   |
|                                   |   | 34:2            | Function of output A2: Circulation pump for cylinder heating  |
| 35:0                              | Without EA1 extension   | 35:1            | With EA1 extension (automatic recognition)  |
| 36:0                              | Function of output <span style="border: 1px solid black; padding: 0 2px;">157</span> at EA1 extension: Fault message        | 36:1            | Function of output <span style="border: 1px solid black; padding: 0 2px;">157</span> : Feed pump            |
|                                   |   | 36:2            | Function of output <span style="border: 1px solid black; padding: 0 2px;">157</span> : DHW circulation pump |
| 39:2                              | Function of output <span style="border: 1px solid black; padding: 0 2px;">21</span> : Circulation pump for cylinder heating | 39:0            | Function of output <span style="border: 1px solid black; padding: 0 2px;">21</span> : DHW circulation pump  |
|                                   |   | 39:1            | Function of output <span style="border: 1px solid black; padding: 0 2px;">21</span> : Heating circuit pump  |

## General/group "1" (cont.)

| Coding in the delivered condition |  | Possible change |  |
|-----------------------------------|--|-----------------|--|
| 3A:0                              | Function of input DE1 at EA1 extension: Not assigned | 3A:1            | Function of input DE1: Operating program changeover  |
|                                   |  | 3A:2            | Function of input DE1: External demand with set flow temperature. Set flow temperature setting: Coding address 9b. Internal circulation pump function: Coding address 3F |
|                                   |  | 3A:3            | Function of input DE1: External blocking. Function of internal circulation pump: Coding address 3E   |
|                                   |  | 3A:4            | Function of input DE1: External blocking with fault message input. Function of internal circulation pump: Coding address 3E  |
|                                   |  | 3A:5            | Function of input DE1: Fault message input   |
|                                   |  | 3A:6            | Function of input DE1: Brief operation of the DHW circulation pump (pushbutton function). DHW circulation pump runtime setting: Coding address 3d                        |
| 3b:0                              | Function of input DE2 at EA1 extension: Not assigned | 3b:1            | Function of input DE2: Operating program changeover  |
|                                   |  | 3b:2            | Function of input DE2: External demand with set flow temperature. Set flow temperature setting: Coding address 9b. Internal circulation pump function: Coding address 3F |
|                                   |  | 3b:3            | Function of input DE2: External blocking. Function of internal circulation pump: Coding address 3E   |
|                                   |  | 3b:4            | Function of input DE2: External blocking with fault message input. Function of internal circulation pump: Coding address 3E  |
|                                   |  | 3b:5            | Function of input DE2: Fault message input   |
|                                   |  | 3b:6            | Function of input DE2: Brief operation of the DHW circulation pump (pushbutton function). DHW circulation pump runtime setting: Coding address 3d                        |
| 3C:0                              | Function of input DE3 at EA1 extension: Not assigned | 3C:1            | Function of input DE3: Operating program changeover  |
|                                   |  | 3C:2            | Function of input DE3: External demand with set flow temperature. Set flow temperature setting: Coding address 9b. Internal circulation pump function: Coding address 3F |

## General/group "1" (cont.)

| Coding in the delivered condition |   | Possible change |  |
|-----------------------------------|---|-----------------|--|
|                                   |   | 3C:3            | Function of input DE3: External blocking.<br>Function of internal circulation pump: Coding address 3E  |
|                                   |   | 3C:4            | Function of input DE3: External blocking with fault message input<br>Function of internal circulation pump: Coding address 3E  |
|                                   |   | 3C:5            | Function of input DE3: Fault message input   |
|                                   |   | 3C:6            | Function of input DE3: Brief operation of the DHW circulation pump (pushbutton function).<br>DHW circulation pump runtime setting: Coding address 3d   |
| 3d:5                              | DHW circulation pump runtime for brief operation: 5 min   | 3d:1 to 3d:60   | DHW circulation pump runtime adjustable from 1 to 60 min   |
| 3E:0                              | Boiler circuit pump remains in control mode at "External blocking" signal.  | 3E:1            | Boiler circuit pump is stopped at "External blocking" signal.  |
|                                   |   | 3E:2            | Boiler circuit pump is started at "External blocking" signal.  |
| 3F:0                              | Boiler circuit pump remains in control mode at "External demand" signal.  | 3F:1            | Boiler circuit pump is stopped at "External demand" signal.  |
|                                   |   | 3F:2            | Boiler circuit pump is started at "External demand" signal.  |
| 4b:0                              | Function of input <input type="checkbox"/> : Room thermostat (Vitolot 100) for constant temperature control units | 4b:1            | External demand  |
|                                   |   | 4b:2            | External blocking  |
| 51:0                              | System with low loss header:<br>The boiler circuit pump is always started when there is a heat demand.            | 51:1            | System with low loss header:<br>The boiler circuit pump is only started when there is a heat demand if the burner is running.<br>The circulation pump stops when the run-on time ends.               |
|                                   |   | 51:2            | System with heating water buffer cylinder:<br>The boiler circuit pump is only started when there is a heat demand if the burner is running.<br>The circulation pump stops when the run-on time ends. |
| 52:0                              | Without flow temperature sensor for low loss header   | 52:1            | With flow temperature sensor for low loss header (automatic recognition)   |
| 53:1                              | Function of terminal <input type="checkbox"/> of internal extension: DHW circulation pump                         | 53:0            | Function of terminal <input type="checkbox"/> : Central fault  |
|                                   |   | 53:2            | Function of terminal <input type="checkbox"/> : External heating circuit pump (heating circuit 1)  |
|                                   |   | 53:3            | Function of terminal <input type="checkbox"/> : External circulation pump for cylinder heating   |
| 54:0                              | Without solar thermal system  | 54:1            | With Vitosolic 100 (automatic recognition)   |

## General/group "1" (cont.)

| Coding in the delivered condition |  | Possible change |   |
|-----------------------------------|--|-----------------|---|
|                                   |  | 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 SM1 with auxiliary function, e.g. central heating backup (automatic recognition)  |
| 6E:50                             | No correction of measured outside temperature  | 6E:0 to 6E:100  | Outside temperature correction in 0.1 K steps<br>0 to 49 = -5 K to -0.1 K<br>51 to 100 = 0.1 K to 5 K   |
| 76:0                              | Without communication module   | 76:1            | With LON communication module (automatic recognition; only for weather-compensated control units)   |
|                                   |  | 76:2            | With cascade communication module (automatic recognition; only for constant temperature control units)  |
| 77:1                              | LON subscriber number (only for weather-compensated control units)   | 77:2 to 77:99   | LON subscriber number, adjustable from 1 to 99:<br>1 - 4 = Boiler<br>5 = Cascade<br>10 - 97 = Vitotronic 200-H<br>98 = Vitogate<br>99 = Vitocom<br><br><b>Note</b><br><i>Allocate each number <b>only once</b>.</i> |
| 79:1                              | With LON communication module: Control unit is fault manager (only for control unit for weather-compensated operation)   | 79:0            | Control unit is not fault manager   |
| 7b:1                              | With LON communication module: Control unit transmits the time (only for control unit for weather-compensated operation) | 7b:0            | No time transmission  |
| 7F:1                              | Detached house (only for weather-compensated control units)  | 7F:0            | Apartment building<br>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   |
|                                   |  | 80:2 to 80:199  | Minimum fault duration until fault message occurs, adjustable from 10 s to 995 s; 1 step $\cong$ 5 s  |
| 81:1                              | Automatic summer/wintertime changeover   | 81:0            | Manual summer/wintertime changeover   |
|                                   |  | 81:2            | Use of the radio clock receiver (automatic recognition)   |
|                                   |  | 81:3            | With LON communication module: Control unit receives the time   |
| 82:0                              | Operation with natural gas   | 82:1            | Operation with LPG (only adjustable if coding address 11:9 has been set)  |

**General/group "1"** (cont.)

| Coding in the delivered condition |   | Possible change |   |
|-----------------------------------|---|-----------------|---|
| 88:0                              | Temperature display in °C (Celsius)   | 88:1            | Temperature display in °F (Fahrenheit)  |
| 8A:175                            | Do not adjust.  |                 |   |
| 8F:0                              | Control in standard menu and extended menu enabled<br><br><b>Note</b><br><i>The relevant code is only activated when you exit the service menu.</i>   | 8F:1            | Operation locked out in standard menu <b>and</b> extended menu. Emissions test mode can be activated.   |
|                                   |   | 8F:2            | Operation enabled in standard menu, but locked out in extended menu. Emissions test mode can be activated.  |
| 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 (low values) or slowly (high values) when the outside temperature changes; 1 step $\pm$ 10 min |
| 94:0                              | Without OpenTherm extension   | 94:1            | With OpenTherm extension (automatic recognition)  |
| 95:0                              | Without Vitocom 100 communication interface   | 95:1            | With Vitocom 100 communication interface (automatic recognition)  |
| 97:0                              | With LON communication module: Outside temperature of the sensor connected to the control unit is utilised internally (only for weather-compensated control units)  | 97:1            | Control unit receives outside temperature   |
|                                   |   | 97:2            | The control unit transmits the outside temperature to the Vitotronic 200-H  |
| 98:1                              | Viessmann system number (in conjunction with monitoring of several systems via Vitocom 300)   | 98:1 to 98:5    | System no. adjustable from 1 to 5   |
| 99:0                              | Do not adjust   |                 |   |
| 9A:0                              | Do not adjust   |                 |   |
| 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)  |
| 9C:20                             | Monitoring LON subscribers. If a subscriber fails to respond, the control unit's default values will be used after 20 min. Only then will a fault message be issued. (only for weather-compensated control units) | 9C:0            | No monitoring   |
|                                   |   | 9C:5 to 9C:60   | Time adjustable from 5 to 60 min  |
| 9F:8                              | Differential temperature 8 K; only in conjunction with heating circuit with mixer (only for weather-compensated control units)  | 9F:0 to 9F:40   | Differential temperature adjustable from 0 to 40 K  |

**Boiler/group "2"**

Select **"Boiler"** for weather-compensated control units (see page 57).

Select **"2"** for constant temperature control units (see page 57).

## Boiler/group "2" (cont.)

## Coding

| Coding in the delivered condition |   | Possible change |   |
|-----------------------------------|---|-----------------|---|
| 01:1                              | Single boiler system (only for constant temperature control units)  | 01:2            | Multi boiler system with Vitotronic 300-K   |
| 04:1                              | Minimum burner pause time subject to boiler load (specified by boiler coding card)                        | 04:0            | Minimum burner pause time set permanently (specified by boiler coding card)   |
| 06:...                            | Maximum limit of the boiler water temperature, specified in °C by the boiler coding card                  | 06:20 to 06:127 | Maximum limit of boiler water temperature within the ranges specified by the boiler   |
| 07:1                              | Boiler number in multi boiler systems (only for constant temperature control units)                       | 07:2 to 07:8    | Boiler number 2 to 8 in multi boiler systems  |
| 08:...                            | Maximum burner heating output in kW, in multi boiler systems  | 08:0 to 08:199  | Maximum burner heating output adjustable in 1 kW increments, from 0 to 199 kW (limited by boiler-specific parameters)   |
| 0d:0                              | Do not adjust   |                 |   |
| 0E:0                              | Do not adjust   |                 |   |
| 13:1                              | Do not adjust   |                 |   |
| 14:1                              | Do not adjust   |                 |   |
| 15:1                              | Do not adjust   |                 |   |
| 21:0                              | No service interval set (in hours run)  | 21:1 to 21:100  | The number of hours run before the burner should be serviced is adjustable from 100 to 10,000 h<br>One step $\hat{=}$ 100 h   |
| 23:0                              | No time set for burner service interval   | 23:1 to 23:24   | Interval adjustable from 1 to 24 months   |
| 24:0                              | "Service" not shown on the display  | 24:1            | "Service" is shown on the display (address is automatically set and must be manually reset after a service has been carried out)  |
| 28:0                              | No burner interval ignition   | 28:1 to 28:24   | Interval adjustable from 1 h to 24 h. The burner is force-started for 30 s (only when operating with LPG).  |
| 2E:0                              | Do not adjust   |                 |   |
| 2F:0                              | Venting program/filling program inactive  | 2F:1            | Venting program active  |
|                                   |   | 2F:2            | Filling program active  |
| 30:3                              | Boiler circuit pump variable speed via 0-10 V interface   | 30:0            | <ul style="list-style-type: none"> <li>▪ Connection of multi stage boiler circuit pump</li> <li>▪ Operation with low loss header (single or multi boiler system)</li> </ul> |
|                                   |   | 30:1            | Boiler circuit pump speed-controlled  |
|                                   |   | 30:2            | Boiler circuit pump speed-controlled with flow rate   |
| 31:...                            | Set speed in % of the circulation pump when operated as boiler circuit pump, specified by the coding card | 31:0 to 31:100  | Set speed adjustable from 0 to 100 %  |
| 38:0                              | Burner control unit status: Operational (no fault)  | 38:≠0           | Burner control unit status: Fault   |

**DHW/group "3"**

Select **"DHW"** for weather-compensated control units (see page 57).

Select **"3"** for constant temperature control units (see page 57).

**Coding**

| Coding in the delivered condition |   | Possible change      |  |
|-----------------------------------|---|----------------------|--|
| 56:0                              | Set DHW temperature adjustable from 10 to 60 °C   | 56:1                 | Set DHW temperature adjustable from 10 to over 60 °C<br><br><b>Note</b><br>Max. value subject to boiler coding card.<br>Observe the maximum permissible DHW temperature. |
| 58:0                              | Without auxiliary function for DHW heating  | 58:10<br>to<br>58:60 | Input of a second set DHW temperature; adjustable from 10 to 60 °C (observe coding addresses "56" and "63")  |
| 59:0                              | Cylinder heating:<br>Start point -2.5 K<br>Stop point +2.5 K  | 59:1<br>to<br>59:10  | Start point adjustable from 1 to 10 K below the set value  |
| 5b:0                              | DHW cylinder directly connected to the boiler   | 5b:1                 | DHW cylinder connected downstream of the low loss header   |
| 5E:0                              | Circulation pump for cylinder heating remains in control mode at "External blocking" signal.  | 5E:1                 | Circulation pump for cylinder heating stops at "External blocking" signal.   |
|                                   |   | 5E:2                 | Circulation pump for cylinder heating starts at "External blocking" signal.  |
| 5F:0                              | Circulation pump for cylinder heating remains in control mode at "External demand" signal.  | 5F:1                 | Circulation pump for cylinder heating stops at "External demand" signal.   |
|                                   |   | 5F:2                 | Circulation pump for cylinder heating starts at "External demand" signal.  |
| 60:20                             | During DHW heating, the boiler water temperature is max. 20 K higher than the set DHW temperature.  | 60:5<br>to<br>60:25  | The differential between the boiler water temperature and the set DHW temperature is adjustable from 5 to 25 K   |
| 62:2                              | Circulation pump with 2 min run-on time after cylinder heating  | 62:0                 | No circulation pump run-on   |
|                                   |   | 62:1<br>to<br>62:15  | Run-on time adjustable from 1 to 15 min  |
| 63:0                              | Without auxiliary function for DHW heating (only for constant temperature control units)  | 63:1                 | Auxiliary function: 1 x daily  |
|                                   |   | 63:2<br>to<br>63:14  | Every 2 days to every 14 days  |
|                                   |   | 63:15                | 2 x daily  |
| 65:0                              | Do not adjust.  |                      |  |
| 67:40                             | For solar DHW heating: Set DHW temperature 40 °C. Reheating is suppressed above the selected set temperature (boiler only starts as backup if the rise in the cylinder temperature is too low). | 67:0<br>to<br>67:95  | Set DHW temperature adjustable from 0 to 95°C (limited by boiler-specific parameters)  |
| 6F:...                            | Max. heating output for DHW heating in %; specified by boiler coding card   | 6F:0<br>to<br>6F:100 | Max. heating output for DHW heating adjustable from min. heating output to 100 %   |



## DHW/group "3" (cont.)

| Coding in the delivered condition |  | Possible change |  |
|-----------------------------------|--|-----------------|--|
| 71:0                              | DHW circulation pump: "ON" according to time program (only for weather-compensated control unit) | 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 (only for weather-compensated control unit) | 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 (only for weather-compensated control unit) | 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 "4"

Select **"Solar"** for weather-compensated control units (see page 57).

Select **"4"** for constant temperature control units (see page 57).

**Note**

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

**Coding**

| Coding in the delivered condition |  | Possible change |  |
|-----------------------------------|--|-----------------|--|
| 00:8                              | Start temperature differential for solar circuit pump 8 K.           | 00:2 to 00:30   | Start temperature differential adjustable from 2 to 30 K.  |
| 01:4                              | Stop temperature differential for solar circuit pump 4 K.            | 01:1 to 01:29   | Stop temperature differential adjustable from 1 to 29 K.   |
| 02:0                              | Solar circuit pump is not speed controlled.                          | 02:1            | Solar circuit pump is speed controlled with wave packet control.   |
|                                   |  | 02:2            | Solar circuit pump is speed controlled with PWM switching.   |
| 03:10                             | Temperature differential for the start of the speed control 10 K.    | 03:5 to 03:20   | Temperature differential 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 the solar circuit pump is adjustable from 2 to 100 %.  |
| 06:75                             | Max. speed of solar circuit pump 75 % of the maximum possible speed. | 06:1 to 06:100  | Max. speed of the solar circuit pump is 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.<br>To capture the collector temperature more accurately, the solar circuit pump periodically starts for a short duration. |

**Solar/group "4"** (cont.)

| Coding in the delivered condition |   | Possible change       |   |
|-----------------------------------|---|-----------------------|---|
| 08:60                             | Set DHW temperature (maximum cylinder temperature) 60 °C.   | 08:10<br>to<br>08:90  | Set DHW temperature adjustable from 10 to 90 °C.  |
| 09:130                            | Maximum collector temperature (to protect system components) 130 °C.  | 09:20<br>to<br>09:200 | Temperature adjustable from 20 to 200 °C.   |
| 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 is inactive.  |
|                                   |   | 0A:1<br>to<br>0A:40   | Temperature differential 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. No flow rate captured in the solar circuit, or flow rate too low.   | 0C:0                  | Delta T monitoring switched off.  |
| 0d:1                              | Night DHW circulation monitoring switched on. Unintentional flow in the solar circuit is captured (e.g. at night).  | 0d:0                  | Night DHW circulation monitoring switched off.  |
| 0E:1                              | Heat statement in conjunction with Viessmann heat transfer medium.  | 0E:2                  | Do not adjust.  |
|                                   |   | 0E:0                  | No heat statement.  |
| 0F:70                             | Solar circuit flow rate at max. pump speed 7 l/min.   | 0F:1<br>to<br>0F:255  | Flow rate adjustable from 0.1 to 25.5 l/min.<br>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.<br><ul style="list-style-type: none"> <li>▪ Target temperature control switched on (code "10:1"): Temperature at which the solar heated water is to be stratified into the DHW cylinder.</li> <li>▪ If code "20:9" (heating of two DHW cylinders) is set: When one DHW cylinder reaches its set DHW temperature, the second DHW cylinder is heated.</li> </ul> | 11:10<br>to<br>11:90  | The set solar DHW temperature is adjustable from 10 to 90 °C.   |
| 12:10                             | Minimum collector temperature (minimum start temperature for the solar circuit pump) 20 °C.   | 12:0                  | No minimum limit active.  |
|                                   |   | 12:1<br>to<br>12:90   | Minimum collector temperature adjustable from 1 to 90 °C.   |
| 20:0                              | No extended control function active.  | 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  |

## Solar/group "4" (cont.)

| Coding in the delivered condition |  | Possible change |  |
|-----------------------------------|--|-----------------|--|
|                                   |  | 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 with central heating backup (code "20:4" must be set) 8 K.  | 22:2 to 22:30   | Start temperature differential adjustable from 2 to 30 K.                        |
| 23:4                              | Stop temperature differential with central heating backup (code "20:4" must be set) 4 K.   | 23:2 to 23:30   | Stop temperature differential adjustable from 1 to 29 K.                         |
| 24:40                             | Start temperature for thermostat function (code "20:5" or "20:6" must be selected) 40 °C.  | 24:0 to 24:100  | Start temperature for thermostat function adjustable from 0 to 100 K.            |
| 25:50                             | Stop temperature for thermostat function (code "20:5" or "20:6" must be selected) 50 °C.   | 25:0 to 25:100  | Stop temperature for thermostat function adjustable from 0 to 100 K.             |
| 26:1                              | Priority for DHW cylinder 1 <b>with</b> cyclical heating.<br>(Code "20:9" must be set).  | 26:0            | Priority for DHW cylinder 1 <b>without</b> cyclical heating.                     |
|                                   |  | 26:2            | Priority for DHW cylinder 2 <b>without</b> cyclical heating.                     |
|                                   |  | 26:3            | Priority for DHW cylinder 2 <b>with</b> cyclical heating.                        |
|                                   |  | 26:4            | Cyclical heating without priority for either DHW cylinder.                       |
| 27:15                             | Cyclical heating time 15 min.<br>Once the DHW cylinder with priority is 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   | The cyclical heating time is adjustable from 5 to 60 min.                        |
| 28:3                              | Cyclical pause time 3 min.<br>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 is adjustable from 1 to 60 min.                              |

## Heating circuit 1, heating circuit 2, heating circuit 3/group "5"

Select **"Heating circuit ..."** for weather-compensated control units (see page 57).

Select **"5"** for constant temperature control units (see page 57).

## Heating circuit 1, heating circuit 2, heating... (cont.)

## Coding

| Coding in the delivered condition |   | Possible change |  |
|-----------------------------------|---|-----------------|--|
| A0:0                              | Without remote control  | A0:1            | With Vitotrol 200-A/200-RF (automatic recognition)   |
|                                   |   | A0:2            | With Vitotrol 300-A/300-RF or Vitocomfort 200 (automatic recognition)                          |
| A1:0                              | All possible settings at the remote control can be accessed   | A1:1            | Only party mode can be set at the remote control (only for Vitotrol 200-A/200-RF)              |
| A2:2                              | Cylinder priority applicable to heating circuit pump and mixer  | A2:0            | Without cylinder priority applicable to heating circuit pump and mixer                         |
|                                   |   | A2:1            | Cylinder priority only applicable to mixer   |
|                                   |   | A2:3 to A2:15   | Reduced priority applicable to mixer (the heating circuit receives a reduced amount of energy) |
| A3:2                              | Outside temperature below 1 °C: Heating circuit pump "ON"<br>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**  
When selecting a value below 1 °C, there is a risk of pipes outside the thermal envelope of the building freezing up.  
Standby mode in particular should 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            |
| -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 up to 15               | 1 °C up to 14 °C     | 3 °C up to 16 °C |

| Coding in the delivered condition |   | Possible change |   |
|-----------------------------------|---|-----------------|---|
| A4:0                              | With frost protection (only for weather-compensated control units). | A4:1            | No frost protection; this setting is only possible if code "A3:-9" has been selected. |

## Heating circuit 1, heating circuit 2, heating... (cont.)

| Coding in the delivered condition |  | Possible change |  |
|-----------------------------------|--|-----------------|--|
|                                   |  |                 | <b>Note</b><br>"Important", observe for code "A3".   |
| A5:5                              | With heating circuit pump logic function (economy mode): Heating circuit pump "OFF" if outside temperature (OT) is 1 K higher than the set room temperature ( $RT_{set}$ )<br>$OT > RT_{set} + 1$ K (only for weather-compensated control units) | 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  |
| up to 15                 | $OT > RT_{set} - 9$ K  |

| Coding in the delivered condition |   | Possible change |   |
|-----------------------------------|---|-----------------|---|
| A6:36                             | Extended economy mode <b>disabled</b> (only for weather-compensated control units)  | A6:5 to A6:35   | Extended economy mode enabled, i.e. the burner and heating circuit pump stop and the mixer closes 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                              | Without mixer economy function (only for weather-compensated control units and heating circuits with mixer)   | A7:1            | With mixer economy function (extended heating circuit pump logic):<br>Heating circuit pump also "OFF": <ul style="list-style-type: none"> <li>▪ If the mixer has been attempting to close for longer than 20 min.</li> </ul> Heating circuit pump "ON": <ul style="list-style-type: none"> <li>▪ If the mixer changes to control function</li> <li>▪ If there is a risk of frost</li> </ul> |
| A8:1                              | Heating circuit with mixer creates a demand for the boiler circuit pump (only for weather-compensated control units)  | A8:0            | Heating circuit with mixer creates no demand for the boiler circuit pump.   |
| A9:7                              | With pump idle time: Heating circuit pump "OFF" if the set value is altered through a change in operating mode or through a change in the set room temperature (only for weather-compensated control units) | A9:0            | Without pump idle time  |
|                                   |   | A9:1 to A9:15   | With pump idle time, adjustable from 1 to 15. The higher the value, the longer the pump idle time.  |

## Heating circuit 1, heating circuit 2, heating... (cont.)

| Coding in the delivered condition |  | Possible change |  |
|-----------------------------------|--|-----------------|--|
| b0:0                              | With remote control: Heating mode/reduced mode: Weather-compensated (only for weather-compensated control units; only change the code for the heating circuit with mixer)  | b0:1            | Heating mode: Weather-compensated<br>Reduced mode: With room temperature hook-up                     |
|                                   |  | b0:2            | Heating mode: With room temperature hook-up<br>Reduced mode: Weather-compensated                     |
|                                   |  | b0:3            | Heating mode/red. mode: With room temperature hook-up  |
| b2:8                              | With remote control and for the heating circuit, operation with room temperature hook-up must be programmed: Room influence factor 8 (only for weather-compensated control units; only change the code for the heating circuit with mixer) | b2:0            | Without room influence   |
|                                   |  | b2:1 to b2:64   | Room influence factor adjustable from 1 to 64. The higher the value, the greater the room influence. |
| b5:0                              | With remote control: No room temperature-dependent heating circuit pump logic function (only for weather-compensated control units; only change the code for the heating circuit with mixer)   | b5:1 to b5:8    | For heating circuit pump logic function, see the following table:                                    |

| Parameter address<br>b5:... | With heating circuit pump logic function:            |  |
|-----------------------------|--|--|
|                             | Heating circuit pump "OFF"                           | Heating circuit pump "ON"                            |
| 1                           | $RT_{\text{actual}} > RT_{\text{set}} + 5 \text{ K}$ | $RT_{\text{actual}} < RT_{\text{set}} + 4 \text{ K}$ |
| 2                           | $RT_{\text{actual}} > RT_{\text{set}} + 4 \text{ K}$ | $RT_{\text{actual}} < RT_{\text{set}} + 3 \text{ K}$ |
| 3                           | $RT_{\text{actual}} > RT_{\text{set}} + 3 \text{ K}$ | $RT_{\text{actual}} < RT_{\text{set}} + 2 \text{ K}$ |
| 4                           | $RT_{\text{actual}} > RT_{\text{set}} + 2 \text{ K}$ | $RT_{\text{actual}} < RT_{\text{set}} + 1 \text{ K}$ |
| 5                           | $RT_{\text{actual}} > RT_{\text{set}} + 1 \text{ K}$ | $RT_{\text{actual}} < RT_{\text{set}}$               |
| 6                           | $RT_{\text{actual}} > RT_{\text{set}}$               | $RT_{\text{actual}} < RT_{\text{set}} - 1 \text{ K}$ |
| 7                           | $RT_{\text{actual}} > RT_{\text{set}} - 1 \text{ K}$ | $RT_{\text{actual}} < RT_{\text{set}} - 2 \text{ K}$ |
| 8                           | $RT_{\text{actual}} > RT_{\text{set}} - 2 \text{ K}$ | $RT_{\text{actual}} < RT_{\text{set}} - 3 \text{ K}$ |

| Coding in the delivered condition |  | Possible change |  |
|-----------------------------------|--|-----------------|--|
| C5:20                             | Electronic minimum flow temperature limit 20 °C (only for weather-compensated control units) | C5:1 to C5:127  | Minimum limit adjustable from 1 to 127 °C (limited by boiler-specific parameters)  |
| C6:74                             | Electronic maximum flow temperature limit 74 °C (only for weather-compensated control units) | C6:10 to C6:127 | Maximum limit adjustable from 10 to 127 °C (limited by boiler-specific parameters) |
| d3:14                             | Heating curve slope = 1.4  | d3:2 to d3:35   | The heating curve slope is adjustable from 0.2 to 3.5 (see page 42)                |
| d4:0                              | Heating curve level = 0  | d4:-13 to d4:40 | The heating curve level is adjustable from -13 to 40 (see page 42)                 |

## Heating circuit 1, heating circuit 2, heating... (cont.)

| Coding in the delivered condition |  | Possible change |   |
|-----------------------------------|--|-----------------|---|
| d5:0                              | The external operating program changeover switches the operating program to "Continuous operation with reduced room temperature" or "Standby mode" (only for weather-compensated control units)  | d5:1            | The external operating program changeover switches to "Continuous operation at standard room temperature" (subject to coding address 3A, 3b and 3C) |
| d6:0                              | Heating circuit pump remains in control mode at "External blocking" signal   | d6:1            | Heating circuit pump stops at "External blocking" signal (subject to coding addresses 3A, 3b and 3C)  |
|                                   |  | d6:2            | Heating circuit pump starts at "External blocking" signal (subject to coding addresses 3A, 3b and 3C)   |
| d7:0                              | Heating circuit pump remains in control mode at "External demand" signal   | d7:1            | Heating circuit pump stops at "External demand" signal (subject to coding addresses 3A, 3b and 3C)  |
|                                   |  | d7:2            | Heating circuit pump starts at "External demand" signal (subject to coding addresses 3A, 3b and 3C)   |
| 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                              | Do not adjust  |                 |   |
| E2:50                             | With remote control: No display correction for the actual room temperature (only for weather-compensated control units)  | E2:0 to E2:49   | Display correction -5 K up to Display correction -0.1 K   |
|                                   |  | E2:51 to E2:99  | Display correction +0.1 K up to Display correction +4.9 K   |
|                                   |  |                 |   |
| E5:0                              | Do not adjust  |                 |   |
| E6:...                            | Maximum speed of the variable speed heating circuit pump in % of the max. speed in standard mode. Value is specified by boiler-specific parameters (only for weather-compensated control units). | E6:0 to E6:100  | Maximum speed adjustable from 0 to 100 %  |
| E7:30                             | Minimum speed of the variable speed heating circuit pump: 30 % of the max. speed (only for weather-compensated control units)  | E7:0 to E7:100  | Minimum speed adjustable from 0 to 100 % of maximum speed   |
| F1:0                              | Screed drying disabled (only for weather-compensated control units).   | F1:1 to F1:6    | Screed drying adjustable, with choice of 6 temperature/time profiles (see page 117)   |
|                                   |  | F1:15           | Constant flow temperature 20 °C   |
| F2:8                              | Time limit for party mode or external operating program changeover via pushbutton: 8 h (only for weather-compensated control units) <sup>*1</sup>  | F2:0            | No time limit for party mode <sup>*1</sup>  |
|                                   |  | F2:1 to F2:12   | Time limit adjustable from 1 to 12 h <sup>*1</sup>  |

<sup>\*1</sup> In the "Heating and DHW" program, party mode ends **automatically** when the system changes over to operation at standard room temperature.

## Heating circuit 1, heating circuit 2, heating... (cont.)

| Coding in the delivered condition |  | Possible change  |  |
|-----------------------------------|--|------------------|--|
| F5:12                             | Run-on time of the boiler circuit pump in heating mode: 12 min (only for constant temperature control units)   | F5:0             | No boiler circuit pump run-on time   |
|                                   |  | F5:1 to F5:20    | Boiler circuit pump run-on time adjustable from 1 to 20 min  |
| F6:25                             | In "Only DHW" mode, the boiler circuit pump is constantly on (only for constant temperature control units)   | F6:0             | In "Only DHW" mode, the boiler circuit pump is constantly off  |
|                                   |  | F6:1 to F6:24    | In "Only DHW" mode, the boiler circuit pump is started 1 to 24 times per day for 10 min each time.                           |
| F7:25                             | In "Standby mode", the boiler circuit pump is constantly on (only for constant temperature control units)  | F7:0             | In "Standby mode", the boiler circuit pump is constantly off   |
|                                   |  | F7:1 to F7:24    | In "Standby mode", the boiler circuit pump is started 1 to 24 times per day for 10 min each time.                            |
| F8:-5                             | Temperature limit for terminating reduced mode -5 °C, see example on page 119.<br>Observe setting for coding address "A3". (only for weather-compensated control units)  | F8:+10 to F8:-60 | Temperature limit adjustable from +10 to -60 °C  |
|                                   |  | F8:-61           | Function disabled  |
| F9:-14                            | Temperature limit for raising reduced set room temp -14 °C; see example on page 119 (only for weather-compensated control units).  | F9:+10 to F9:-60 | Temperature 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 119 (only for weather-compensated control units). | FA:0 to FA:50    | Temperature rise adjustable from 0 to 50 %   |
| Fb:60                             | Duration for raising the set boiler water temperature or set flow temperature (see coding address "FA") is 60 min. See example on page 119 (only for weather-compensated control units).   | Fb:0 to Fb:240   | Duration adjustable from 0 to 240 min  |



**Service level**

**Weather-compensated control unit**

**Constant temperature control unit**

**Calling up the service level**

Service menu:  
 1. Press **OK** and **≡** simultaneously for approx. 4 s.  
 2. Select required menu. See the following diagram.

Service menu:  
 1. Press **OK** and **≡** simultaneously for approx. 4 s.  
 "P" flashes on the display.  
 2. Select required function. See the following pages.

**Exiting the service level**

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

Service menu:  
 1. Select **"Serv"** ⑦ with **▶**.  
 2. Confirm with **OK**.  
 "OFF" flashes.  
 3. Confirm with **OK**.

**Note**

*The system exits the service level automatically after 30 min.*

**Note**

*The system exits the service level automatically after 30 min.*

Overview of service menu for weather-compensated mode

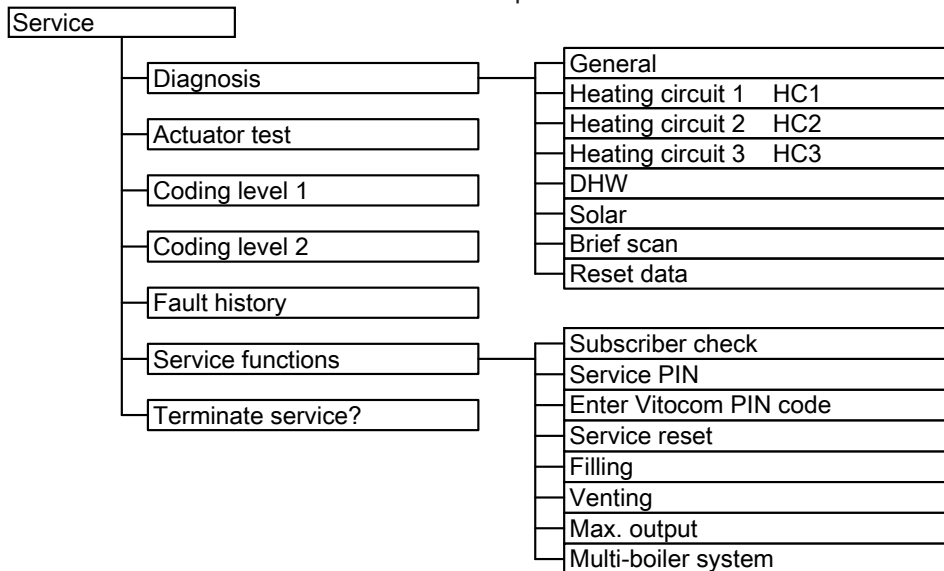


Fig. 40

**Note**

*Do not adjust menu item "Multi-boiler system".  
 The menu item turns a weather-compensated control unit into a constant temperature control unit.*

**Diagnosis**

**Operating data**

**Weather-compensated control unit**

**Constant temperature control unit**


**Calling up operating data**

- Operating data can be scanned in six areas. See "**Diagnosis**" in the service menu overview.
- Operating data on heating circuits with mixers and solar can only be called up if the components are installed in the system.
- For further information on operating data, see chapter "Brief scan".

- Operating data can be called up in the "i" menu.
- For further information on operating data, see chapter "Brief scan".

**Calling up operating data**




Service menu:

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

**Note**

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

Service menu:

1. Press **OK** and  simultaneously for approx. 4 s.
2. Select required information with /.

**Note**


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

**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.

Service menu:

1. Press **OK** and  simultaneously for approx. 4 s.
2. "**Diagnosis**"
3. "**Reset data**"
4. Select required value (e.g. "**Burner starts**") or "**All details**".

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

Service menu:


1. Press **OK** and  simultaneously for approx. 4 s.
2. Select required information with /.
3. Confirm with **OK**; "⚡" flashes.
4. Confirm with **OK**; the value is reset.

**Brief scan**

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

4. Press **OK**.  
The display shows 9 rows with 6 fields each.

**Weather-compensated control unit**

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

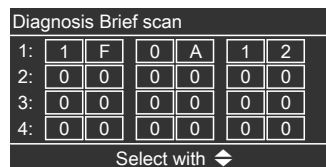


Fig. 41

For an explanation of the relevant values in the individual rows and fields, see the following table:




| Row (brief scan) | Field                  |   |                               |   |  |   |
|------------------|------------------------|---|-------------------------------|---|--|---|
|                  | 1                      | 2 | 3                             | 4 | 5  | 6 |
| 1:               | System scheme 01 to 10 |   | Software version Control unit |   | Software version Programming unit          |   |
| 2:               | 0                      | 0 | Appliance version             |   | Appliance ID CU-ID                         |   |
| 3:               | 0                      |   | Number of KM-BUS subscribers  |   | Software version, solar control module SM1 |   |

**Diagnosis** (cont.)







| Row (brief scan)                           | Field   |   |  |  |  |                                 |
|--|---|---|--|--|--|---------------------------------|
|  | 1   | 2   | 3  | 4  | 5  | 6                               |
| 4:   | Software version<br>Burner control unit   |   | Type<br>Burner control unit  |  | Version, burner control unit   |                                 |
| 5:   | Internal details for calibration  |   |  | 0  | Software version, AM1 extension  | Software version, EA1 extension |
| 6:   | 0   | 0   | 0  | Switching state, flow sensor<br>1: Flow rate too low or no volumetric flow | 0  | 0                               |
| 7:   | LON Subnet address/system number  |   | LON Node address   |  | 0  |                                 |
| 8:   | LON SBVT configuration  | LON Software version, communication coprocessor | LON Neuron chip software version   |  | Number of LON subscribers  |                                 |
| 9:   | <b>Heating circuit A1 (without mixer)</b><br>Remote control<br>0: Without<br>1: Vitotrol 200/<br>200-A/<br>200-RF<br>2: Vitotrol 300/<br>300-A/<br>300-RF<br>or<br>Vitohome |   | <b>Heating circuit M2 (with mixer)</b><br>Remote control<br>0: Without<br>1: Vitotrol 200/<br>200-A/<br>200-RF<br>2: Vitotrol 300/<br>300-A/<br>300-RF<br>or<br>Vitohome |  | <b>Heating circuit M3 (with mixer)</b><br>Remote control<br>0: Without<br>1: Vitotrol 200/<br>200-A/<br>200-RF<br>2: Vitotrol 300/<br>300-A/<br>300-RF<br>or<br>Vitohome |                                 |
| 10:<br>(Only for KM-BUS circulation pumps) | <b>Internal circulation pump</b><br>Variable speed pump<br>0: Without<br>1: Wilo<br>2: Grundfos   |   | <b>Heating circuit pump, heating circuit M2</b><br>Variable speed pump<br>0: Without<br>1: Wilo<br>2: Grundfos   |  | <b>Heating circuit pump, heating circuit M3</b><br>Variable speed pump<br>0: Without<br>1: Wilo<br>2: Grundfos   |                                 |
| 11:  | 0   | 0   | Software version<br>Mixer extension, heating circuit M2<br>0: No mixer extension   | 0  | Software version<br>Mixer extension, heating circuit M3<br>0: No mixer extension   | 0                               |

**Diagnosis** (cont.)

**Constant temperature control unit**

1. Press **OK** and  simultaneously for approx. 4 s. "P" flashes on the display.
2. Confirm with **OK**.
3. Select the required scan with /. For example, "b" for "Max. output" (see following table):
4. Confirm selected scan with **OK**.

For explanations of individual scans, see the following table:

| Brief scan  | Display  |   |   |   |   |
|---|--|---|---|---|---|
|  |                 |  |  |  |  |
| 0   |  | System scheme 1 to 2  | Software version Control unit   | Software version Programming unit   |   |
| 1   |  |   | Adjusted outside temperature  |   |   |
| 3   |  |   | Set boiler water temperature  |   |   |
| 4   |  |   | Common demand temperature   |   |   |
| 5   |  |   | Set cylinder temperature  |   |   |
| 6   |  | Number of KM-BUS subscribers  | Number of LON subscribers   |   |   |
| 7   | SNVT configuration<br>0: Auto<br>1: Tool   | Software version Communication coprocessor  | Software version LON module   |   |   |
| 8   |  | Subnet address/system number  | Node address  |   |   |
| 9   |  | Combustion controller type  | Appliance type  |   |   |
| A   | Diverter valve status<br>0: Not installed<br>1: Heating<br>2: Central position<br>3: DHW heating | Flow rate<br>1: Flow rate too low or no volumetric flow                           | Max. heating output in %  |   |   |
| b   |  | Boiler coding card (hexadecimal)  |   |   |   |
| c   |  | Flow rate (specified in l/h)  |   |   |   |
| C   |  | Version Appliance   | Version Burner control unit   |   |   |
| d   |  |   |   | 0   | 0   |
| E<br>①  | Software version Solar control module, type SM1  | Software version Burner control unit  |   |   | Software version Cascade module   |
| F<br>①  | Code 53 setting  | Internal details for calibration  |   |   |   |
|   | <b>AM1 extension</b>   |   |   |   |   |
| F<br>②  | Software version   | Output A1 configuration (value corresponds to code 33 setting)                    | Output A1 switching state<br>0: OFF<br>1: ON                                      | Output A2 configuration (value corresponds to code 34 setting)                      | Output A2 switching state<br>0: OFF<br>1: ON  |
|   | <b>EA1 extension</b>   |   |   |   |   |

**Diagnosis** (cont.)

| Brief scan                                | Display   |   |   |   |   |
|---|---|---|---|---|---|
| F<br>③                                    | Output 157 configuration (value corresponds to setting of code 36 in Group 1 "General") | Output 157 switching state<br>0: OFF<br>1: ON | Input DE1 switching state<br>0: Open<br>1: Closed | Input DE2 switching state<br>0: Open<br>1: Closed         | Input DE3 switching state<br>0: Open<br>1: Closed |
| F<br>④                                    | Software version  |   | External hook-up 0-10 V<br>Display in %           |   |   |
| <b>Solar control module SM1</b>           |   |   |   |   |   |
| F<br>⑤                                    | Stagnation time of the solar thermal system in h  |   |   |   |   |
| F<br>⑥                                    | Night DHW circulation, solar thermal system (number)                                    |   |   |   |   |
| F<br>⑦                                    | Differential temperature monitoring   |   |   |   |   |
| F<br>⑧                                    |   |   |   | Solar central heating backup<br>0: Disabled<br>1: Enabled | Output 22 switching state<br>0: OFF<br>1: ON      |
| <b>OpenTherm extension (if installed)</b> |   |   |   |   |   |
| F<br>⑨                                    | Software version  | DHW heating status                            | External hook-up 0-10 V<br>Display in %           |   |   |

**Checking outputs (relay test)**

**Weather-compensated control unit**

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

The following relay outputs can be controlled subject to system design:





| Display               |       | Explanation  |
|-----------------------|-------|--|
| All actuators         | Off   | All actuators are off  |
| Base load             | On    | Burner operated at minimum output; circulation pump is started   |
| Full load             | On    | Burner operated at maximum output; circulation pump is started   |
| Output, internal      | On    | Output <span style="border: 1px solid black; padding: 0 2px;">20</span> active (boiler circuit pump)                   |
| Output 21/28          | On    | Output <span style="border: 1px solid black; padding: 0 2px;">21</span> active (circulation pump for cylinder heating) |
| Heating circ pump HC2 | On    | Heating circuit pump output enabled (extension to heating circuit with mixer)  |
| Mixer HC2             | Open  | "Mixer open" output enabled (extension to heating circuit with mixer)  |
| Mixer HC2             | Close | "Mixer close" output enabled (extension to heating circuit with mixer)   |
| Heating circ pump HC3 | On    | Heating circuit pump output enabled (extension to heating circuit with mixer)  |
| Mixer HC3             | Open  | "Mixer open" output enabled (extension to heating circuit with mixer)  |
| Mixer HC3             | Close | "Mixer close" output enabled (extension to heating circuit with mixer)   |
| Outp. int. exten. H1  | On    | Output at internal extension enabled   |
| AM1 output 1          | On    | Output A1 at extension AM1 enabled   |
| AM1 output 2          | On    | Output A2 at extension AM1 enabled   |
| EA1 output 1          | On    | Contact P - S at plug <span style="border: 1px solid black; padding: 0 2px;">157</span> of extension EA1 closed        |



**Checking outputs (relay test)** (cont.)

| Display            |    | Explanation   |
|--------------------|----|---|
| Solar circuit pump | On | Solar circuit pump output [24] on solar control module SM1 active               |
| Solar circ pmp min | On | Solar circuit pump output on solar control module SM1 switched to minimum speed |
| Solar circ pmp max | On | Solar circuit pump output on solar control module SM1 switched to maximum speed |
| SM1 output 22      | On | Output [22] on solar control module SM1 active                                  |

**Constant temperature control unit**

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

The following actuators (relay outputs) can be controlled subject to system design:

| Display | Explanation   |
|---------|---|
| 0       | All actuators are off   |
| 1       | Burner operated at minimum output; circulation pump is started                  |
| 2       | Burner operated at maximum output; circulation pump is started                  |
| 3       | Output [20] active (boiler circuit pump)  |
| 10      | Internal extension output enabled   |
| 15      | Solar circuit pump output [24] on solar control module SM1 active               |
| 16      | Solar circuit pump output on solar control module SM1 switched to minimum speed |
| 17      | Solar circuit pump output on solar control module SM1 switched to maximum speed |
| 18      | Output [22] on solar control module SM1 active                                  |
| 19      | Contact P - S at plug [157] of extension EA1 closed                             |
| 20      | Output A1 at extension AM1 enabled  |
| 21      | Output A2 at extension AM1 enabled  |
| 22      | Output [21] active (circulation pump for cylinder heating)                      |

## Fault display

### Weather-compensated control unit

In the event of a fault, red fault indicator (A) flashes. "▲" flashes on the display and "Fault" is shown.

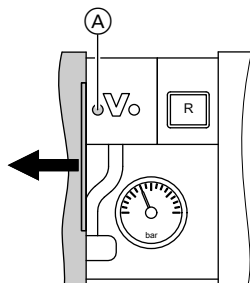


Fig. 42

Press **OK** to display the fault code. For an explanation of the fault code, see the following pages. For some faults, the type of fault is also displayed in plain text.

#### Acknowledging a fault

Follow the instructions on the display.

#### Note

- The fault message is transferred to the standard 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.

### Constant temperature control unit

In the event of a fault, red fault indicator (A) flashes. The 2-digit fault code and (subject to the type of fault) "▲" or "▲" flash on the programming unit display.

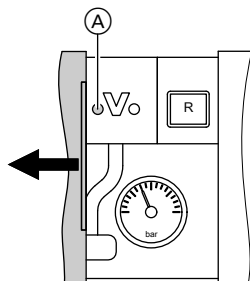


Fig. 43

Other current faults can be displayed with ▲/▼. For an explanation of the fault codes, see the following pages.

#### Calling up acknowledged faults

Select **"Fault"** in the standard menu. Current faults will be listed.

#### 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.

1. Press **OK** and **≡**: simultaneously for approx. 4 s.
2. **"Fault history"**
3. **"Display?"**

#### Deleting the fault history

1. Press **OK** and **≡**: simultaneously for approx. 4 s.
2. **"Fault history"**
3. **"Delete?"**

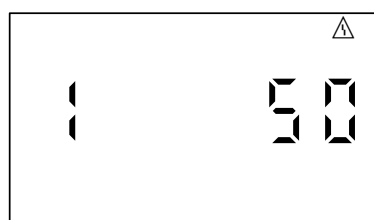


Fig. 44 Example: Fault message "50"

#### Acknowledging a fault

Press **OK**. The default display reappears on the display screen.

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.





## Fault display (cont.)

### Calling up acknowledged faults


Hold down **OK** for approx. 4 s.  
The 10 most recent faults (including those remedied) are saved and can be called up.

### 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.

1. Press **OK** and  simultaneously for approx. 4 s.
2. Select "" and enable fault history with **OK**.
3. Select fault messages with /.

### Deleting the fault history

While the list is displayed, press **OK** until  flashes.  
Confirm with **OK**.

## Fault codes

| Displayed fault code | Const. | Weather-comp. | System characteristics                                      | Cause  | Measures  |
|----------------------|--------|---------------|---|--|---|
| 10                   | X      | X             | Regulates as if the outside temperature were 0 °C.          | Short circuit, outside temp sensor   | Check outside temperature sensor (see page 88)  |
| 18                   | X      | X             | Regulates as if the outside temperature were 0 °C.          | Lead break, outside temp sensor  | Check outside temperature sensor (see page 88)  |
| 19                   | X      | X             | Regulates as if the outside temperature were 0 °C.          | Communication interruption, outside temperature sensor RF (outside temperature sensor RF, KM-BUS to wireless base station, wireless base station or wireless repeater faulty or defective) | <p>Check wireless connection (place outside temperature sensor RF and wireless repeater close to the boiler).<br/>Check KM-BUS to wireless base station.<br/>Log off outside temperature sensor and wireless repeater, then log them on again.</p> <p> Wireless base station</p> <p>Replace outside temperature sensor RF.<br/>Replace wireless repeater.<br/>Replace wireless base station.</p> |
| 1A                   | X      | X             | Burner blocked  | Flow sensor 1, left (plug 163) faulty  | Replace sensor (see page 90)  |
| 1b                   | X      | X             | Burner blocked  | Flow sensor 2, right (plug 163A) faulty  | Replace sensor (see page 90)  |
| 1F                   | X      | X             | Burner blocked  | Differential flow rate too large   | Clean heat exchanger by flushing.   |
| 20                   | X      | X             | Regulates without flow temperature sensor (low loss header) | Short circuit, system flow temperature sensor  | Check low loss header sensor (see page 89)  |



**Fault codes** (cont.)

| Displayed fault code | Const. | Weather-comp. | System characteristics                                      | Cause  | Measures   |
|----------------------|--------|---------------|---|--|--|
| 28                   | X      | X             | Regulates without flow temperature sensor (low loss header) | Lead break, system flow temperature sensor   | Check low loss header sensor (see page 89)<br>If no low loss header sensor is connected, set code 52:0.  |
| 30                   | X      | X             | Burner blocked  | Short circuit, boiler water temp sensor  | Check boiler water temperature sensors (see page 89)   |
| 38                   | X      | X             | Burner blocked  | Lead break, boiler water temp sensor   | Check boiler water temperature sensors (see page 89)   |
| 40                   |        | X             | Mixer is being closed.                                      | Short circuit, flow temperature sensor, heating circuit 2 (with mixer)                             | Check flow temperature sensor (see page 93)  |
| 44                   |        | X             | Mixer is being closed.                                      | Short circuit, flow temperature sensor, heating circuit 3 (with mixer)                             | Check flow temperature sensor (see page 93)  |
| 48                   |        | X             | Mixer is being closed.                                      | Lead break, flow temperature sensor, heating circuit 2 (with mixer)                                | Check flow temperature sensor (see page 93)  |
| 4C                   |        | X             | Mixer is being closed.                                      | Lead break, flow temperature sensor, heating circuit 3 (with mixer)                                | Check flow temperature sensor (see page 93)  |
| 50                   | X      | X             | No DHW heating by the boiler                                | Short circuit, cylinder temp sensor  | Check cylinder temperature sensor (see page 89)  |
| 58                   | X      | X             | No DHW heating  | No DHW heating by the boiler   | Check cylinder temperature sensor (see page 89)  |
| 90                   | X      | X             | Control mode  | Short circuit, temperature sensor <span style="border: 1px solid black; padding: 0 2px;">7</span>  | Check sensor <span style="border: 1px solid black; padding: 0 2px;">7</span> on the solar control module.  |
| 91                   | X      | X             | Control mode  | Short circuit, temperature sensor <span style="border: 1px solid black; padding: 0 2px;">10</span> | Check sensor <span style="border: 1px solid black; padding: 0 2px;">10</span> on the solar control module.   |
| 92                   | X      | X             | No solar DHW heating  | Short circuit, collector temperature sensor  | Check temperature sensor <span style="border: 1px solid black; padding: 0 2px;">6</span> on the solar control module or the sensor on the Vitosolic. |
| 93                   | X      | X             | Control mode  | Short circuit, collector return temperature sensor   | Check temperature sensor at terminal S3 on the Vitosolic.  |
| 94                   | X      | X             | No solar DHW heating  | Short circuit, cylinder temp sensor  | Check temperature sensor <span style="border: 1px solid black; padding: 0 2px;">5</span> on the solar control module or the sensor on the Vitosolic. |
| 98                   | X      | X             | Control mode  | Lead break, temperature sensor <span style="border: 1px solid black; padding: 0 2px;">7</span>     | Check sensor <span style="border: 1px solid black; padding: 0 2px;">7</span> on the solar control module.  |
| 99                   | X      | X             | Control mode  | Lead break, temperature sensor <span style="border: 1px solid black; padding: 0 2px;">10</span>    | Check sensor <span style="border: 1px solid black; padding: 0 2px;">10</span> on the solar control module.   |



**Fault codes** (cont.)

| Displayed fault code | Const. | Weather-comp. | System characteristics                     | Cause   | Measures  |
|----------------------|--------|---------------|--|---|---|
| 9A                   | X      | X             | No solar DHW heating                       | Lead break, collector temperature sensor  | Check temperature sensor [6] on the solar control module or the sensor on the Vitosolic.  |
| 9b                   | X      | X             | Control mode                               | Lead break, collector return temperature sensor   | Check temperature sensor at terminal S3 on the Vitosolic.   |
| 9C                   | X      | X             | No solar DHW heating                       | Lead break, cylinder temp sensor  | Check temperature sensor [5] on the solar control module or the sensor on the Vitosolic.  |
| 9E                   | X      | X             | Control mode                               | No flow rate or flow rate too low in the solar circuit, or temperature limiter has responded. | Check solar circuit pump and solar circuit. Acknowledge fault message.  |
| 9F                   | X      | X             | Control mode                               | Solar control module or Vitosolic fault   | Replace solar control module or Vitosolic.  |
| A3                   |        | X             | Burner blocked.                            | Flue gas temperature sensor incorrectly positioned.   | Fit flue gas temperature sensor correctly (see page 91).  |
| A4                   |        | X             | Control mode                               | Max. system pressure exceeded   | Check system pressure (max. system pressure 6 bar).<br>Check the function and sizing of the diaphragm expansion vessel.<br>Vent the heating system. |
| A7                   |        | X             | Control mode as per delivered condition    | Programming unit faulty   | Replace the programming unit.   |
| b0                   | X      | X             | Burner blocked                             | Short circuit, flue gas temp sensor   | Check flue gas temperature sensor.  |
| b1                   | X      | X             | Control mode as per delivered condition    | Communication error, programming unit   | Check connections and replace programming unit if required.   |
| b5                   | X      | X             | Control mode as per delivered condition    | Internal error  | Replace control unit.   |
| b7                   | X      | X             | Burner blocked                             | Boiler coding card fault  | Plug in boiler coding card or replace if faulty.  |
| b8                   | X      | X             | Burner blocked                             | Lead break, flue gas temp sensor  | Check flue gas temperature sensor.  |
| bA                   |        | X             | Mixer regulates to 20 °C flow temperature. | Communication error, extension kit for heating circuit 2 (with mixer)                         | Check extension kit connections and code.   |
| bb                   |        | X             | Mixer regulates to 20 °C flow temperature. | Communication error, extension kit for heating circuit 3 (with mixer)                         | Check extension kit connections and code.   |

**Fault codes** (cont.)

| Displayed fault code | Const. | Weather-comp. | System characteristics              | Cause   | Measures  |
|----------------------|--------|---------------|-------------------------------------|---|---|
| bC                   |        | X             | Control mode without remote control | Communication error, Vitotrol remote control, heating circuit 1 (without mixer) | Check connections, cable, coding address "A0" in <b>"Heating circuit"</b> group and remote control DIP switches (see page 120).<br>With wireless remote controls: Check transmission path connections; place remote control and wireless repeater close to the boiler. Check KM-BUS connection to wireless base station. Replace the wireless components. |
| bd                   |        | X             | Control mode without remote control | Communication error, Vitotrol remote control, heating circuit 2 (with mixer)    | Check connections, cable, coding address "A0" in the <b>"Heating circuit"</b> group and remote control settings (see page 120).<br>With wireless remote controls: Check transmission path connections; place remote control and wireless repeater close to the boiler. Check KM-BUS connection to wireless base station. Replace the wireless components. |
| bE                   |        | X             | Control mode without remote control | Communication error, Vitotrol remote control, heating circuit 3 (with mixer)    | Check connections, cable, coding address "A0" in the <b>"Heating circuit"</b> group and remote control settings (see page 120).<br>With wireless remote controls: Check transmission path connections; place remote control and wireless repeater close to the boiler. Check KM-BUS connection to wireless base station. Replace the wireless components. |
| bF                   |        | X             | Control mode                        | Incorrect LON communication module  | Replace LON communication module.   |
| C1                   | X      | X             | Control mode                        | Communication error, EA1 extension  | Check connections.  |
| C2                   | X      | X             | Control mode                        | Communication error, solar control module or Vitosolic                          | Check solar control module or Vitosolic.  |
| C3                   | X      | X             | Control mode                        | Communication error, AM1 extension  | Check connections.  |



**Fault codes** (cont.)

| Displayed fault code | Const. | Weather-comp. | System characteristics              | Cause   | Measures  |
|----------------------|--------|---------------|-------------------------------------|---|---|
| C4                   | X      | X             | Control mode                        | Communication error, OpenTherm extension                                  | Check OpenTherm extension.  |
| C5                   | X      | X             | Control mode, max. pump speed       | Communication error, variable speed pump                                  | Check pump KM-BUS.  |
| Cd                   | X      | X             | Control mode                        | Communication error, Vitocom 100 (KM-BUS)                                 | Check connections, Vitocom 100 and coding address "95" in group <b>"General"/1</b>          |
| CF                   |        | X             | Control mode                        | Communication error, LON communication module                             | Replace LON communication module.   |
| d6                   | X      | X             | Control mode                        | Input DE1 at EA1 extension reports a fault.                               | Remedy fault at appliance concerned.  |
| d7                   | X      | X             | Control mode                        | Input DE2 at EA1 extension reports a fault.                               | Remedy fault at appliance concerned.  |
| d8                   | X      | X             | Control mode                        | Input DE3 at EA1 extension reports a fault.                               | Remedy fault at appliance concerned.  |
| dA                   |        | X             | Control mode without room influence | Short circuit, room temperature sensor, heating circuit 1 (without mixer) | Check room temperature sensor, heating circuit 1.   |
| db                   |        | X             | Control mode without room influence | Short circuit, room temperature sensor, heating circuit 2 (with mixer)    | Check room temperature sensor, heating circuit 2.   |
| dC                   |        | X             | Control mode without room influence | Short circuit, room temperature sensor, heating circuit 3 (with mixer)    | Check room temperature sensor, heating circuit 3.   |
| dd                   |        | X             | Control mode without room influence | Lead break, room temperature sensor, heating circuit 1 (without mixer)    | Check room temperature sensor, heating circuit 1 and remote control settings (see page 110) |
| dE                   |        | X             | Control mode without room influence | Lead break, room temperature sensor, heating circuit 2 (with mixer)       | Check room temperature sensor, heating circuit 2 and remote control settings (see page 110) |
| dF                   |        | X             | Control mode without room influence | Lead break, room temperature sensor, heating circuit 3 (with mixer)       | Check room temperature sensor, heating circuit 3 and remote control settings (see page 110) |
| E0                   |        | X             | Control mode                        | External LON subscriber error   | Check connections and LON subscribers.  |

**Fault codes** (cont.)

| Displayed fault code | Const. | Weather-comp. | System characteristics  | Cause   | Measures   |
|----------------------|--------|---------------|-------------------------|---|--|
| E1                   | X      | X             | Burner in a fault state | Ionisation current too high during calibration                                    | Check gap between ionisation electrode and burner gauze assembly (see page 39).<br>In open flue operation, prevent high levels of dust in the combustion air.<br>Press reset button <b>R</b> .   |
| E2                   | X      | X             | Burner in a fault state | Heating water flow rate too low during calibration. Flow switch caused shutdown.  | Ensure adequate circulation volume.<br>Check flow switch.<br>Remove scaling and blockages.<br>Press reset button <b>R</b> .  |
| E3                   | X      | X             | Burner in a fault state | Heat transfer too low during calibration.<br>Temperature limiter caused shutdown. | Ensure adequate heat transfer.<br>Press reset button <b>R</b> .  |
| E4                   | X      | X             | Burner blocked          | Fault, supply voltage 24 V  | Replace control unit.  |
| E5                   | X      | X             | Burner blocked          | Flame amplifier fault   | Replace control unit.  |
| E7                   | X      | X             | Burner in a fault state | Ionisation current too low during calibration                                     | Check ionisation electrode for the following: <ul style="list-style-type: none"> <li>▪ Distance to burner gauze assembly (see page 39)</li> <li>▪ Contamination on electrode</li> <li>▪ Connecting cable and plug-in connections</li> </ul> Check flue system; remove flue gas recirculation if required.<br>Press reset button <b>R</b> .                       |
| E8                   | X      | X             | Burner in a fault state | Ionisation current lies outside the permissible range                             | Check gas supply (gas pressure and gas flow switch), gas train and connecting cable.<br>Check assignment of gas type (see page 31).<br><br>Check ionisation electrode for the following: <ul style="list-style-type: none"> <li>▪ Distance to burner gauze assembly (see page 39)</li> <li>▪ Contamination on electrode</li> </ul> Press reset button <b>R</b> . |



**Fault codes** (cont.)

| Displayed fault code | Const. | Weather-comp. | System characteristics  | Cause  | Measures  |
|----------------------|--------|---------------|-------------------------|--|---|
| EA                   | X      | X             | Burner in a fault state | Ionisation current not within permissible range during calibration (excessive deviation from previous level) | Check flue system; remove flue gas recirculation if required.<br>In open flue operation, prevent high levels of dust in the combustion air.<br>Press reset button <b>R</b> .<br>Following several unsuccessful reset attempts, replace the boiler coding card and press reset button <b>R</b> .   |
| Eb                   | X      | X             | Burner in a fault state | Repeated flame loss during calibration   | Check gap between ionisation electrode and burner gauze assembly (see page 39).<br>Check assignment of gas type (see page 31).<br>Check flue system; remove flue gas recirculation if required.<br>Press reset button <b>R</b> .  |
| EC                   | X      | X             | Burner in a fault state | Parameter error during calibration   | Press reset button <b>R</b> .<br>or<br>Replace boiler coding card and press reset button <b>R</b> .   |
| Ed                   | X      | X             | Burner in a fault state | Internal error   | Replace control unit.   |
| EE                   | X      | X             | Burner in a fault state | Flame signal is not present or insufficient at burner start.   | Check gas supply (gas pressure and gas flow switch).<br>Check gas train.<br>Check ionisation electrode and connecting cable.<br><br>Check ignition: <ul style="list-style-type: none"> <li>▪ Connecting cables to ignition module and ignition electrode</li> <li>▪ Ignition electrode gap and contamination (see page 39).</li> </ul> Check condensate drain.<br>Press reset button <b>R</b> . |

**Fault codes** (cont.)

| Displayed fault code | Const. | Weather-comp. | System characteristics  | Cause  | Measures  |
|----------------------|--------|---------------|-------------------------|--|---|
| EF                   | X      | X             | Burner in a fault state | Flame is lost immediately after it has formed (during safety time).                          | <p>Check gas supply (gas pressure and gas flow switch).<br/>Check balanced flue system for flue gas recirculation.</p> <p>Check ionisation electrode (replace if required):</p> <ul style="list-style-type: none"> <li>▪ Distance to burner gauze assembly (see page 39)</li> <li>▪ Contamination on electrode</li> </ul> <p>Press reset button <b>R</b>.</p> |
| F0                   | X      | X             | Burner blocked          | Internal error   | Replace control unit.   |
| F1                   | X      | X             | Burner in a fault state | Flue gas temperature has exceeded limit.   | Check heating system fill level. Vent the system. Press reset button <b>R</b> after flue system has cooled down.  |
| F2                   | X      | X             | Burner in a fault state | Boiler water temperature sensor has responded.   | Check heating system fill level. Check circulation pump. Vent the system. Check boiler water temperature sensor and connecting cables. Press reset button <b>R</b> .  |
| F3                   | X      | X             | Burner in a fault state | Flame signal is already present at burner start.   | Check ionisation electrode and connecting cable. Press reset button <b>R</b> .  |
| F6                   | X      | X             | Burner in a fault state | Temperature values of the boiler water temperature sensors vary too widely from one another. | Replace the boiler water temperature sensors.   |
| F8                   | X      | X             | Burner in a fault state | Fuel valve closes too late.  | Check gas train. Check both control paths. Press reset button <b>R</b> .  |
| F9                   | X      | X             | Burner in a fault state | Fan speed too low at burner start  | Check the fan, fan connecting cables, fan power supply and fan control. Press reset button <b>R</b> .   |
| FA                   | X      | X             | Burner in a fault state | Fan idle state not reached   | Check the fan, fan connecting cables and fan control. Press reset button <b>R</b> .   |
| FC                   | X      | X             | Burner in a fault state | Gas train faulty, modulation valve control faulty or flue gas path blocked                   | Check gas train. Check flue system. Press reset button <b>R</b> .   |



**Fault codes** (cont.)

| Displayed fault code | Const. | Weather-comp. | System characteristics  | Cause  | Measures   |
|----------------------|--------|---------------|---|--|--|
| Fd                   | X      | X             | Burner in a fault state and additional fault b7 is displayed. | Boiler coding card missing   | Insert the boiler coding card.<br>Press reset button <b>R</b> .<br>Replace control unit if fault persists.   |
| Fd                   | X      | X             | Burner in a fault state                                       | Burner control unit fault  | Check ignition electrodes and connecting cables.<br>Check whether a strong interference (EMC) field exists near the appliance.<br>Press reset button <b>R</b> .<br>Replace control unit if fault persists. |
| FE                   | X      | X             | Burner blocked or in a fault state                            | Boiler coding card or main PCB faulty, or incorrect boiler coding card | Press reset button <b>R</b> . If the fault persists, check the boiler coding card and replace boiler coding card or control unit if necessary.   |
| FF                   | X      | X             | Burner blocked or in a fault state                            | Internal fault or reset button <b>R</b> disabled                       | Restart the appliance. Replace the control unit if the appliance will not restart.   |

**Repairs**

**Checking the outside temperature sensor (weather-compensated control units)**

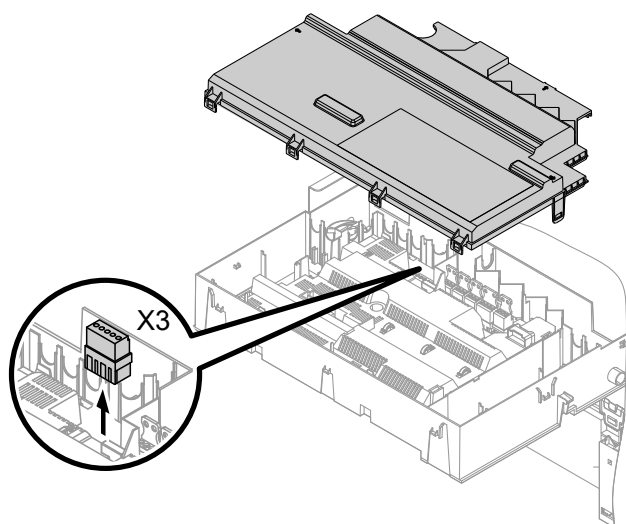


Fig. 45



Repairs (cont.)

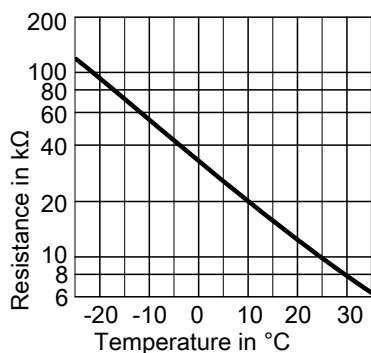


Fig. 46 Sensor type: NTC 10 kΩ

1. Disconnect plug "X3" from the control unit.
2. Test the resistance of the outside temperature sensor across terminals "X3.1" and "X3.2" on the disconnected plug and compare it with the curve.
3. In the event of severe deviation from the curve, disconnect the wires at the sensor and repeat the test on the sensor itself.
4. Depending on the test result, replace the lead or the outside temperature sensor.

Checking the boiler water temperature sensors, cylinder temperature sensor or flow temperature sensor for the low loss header

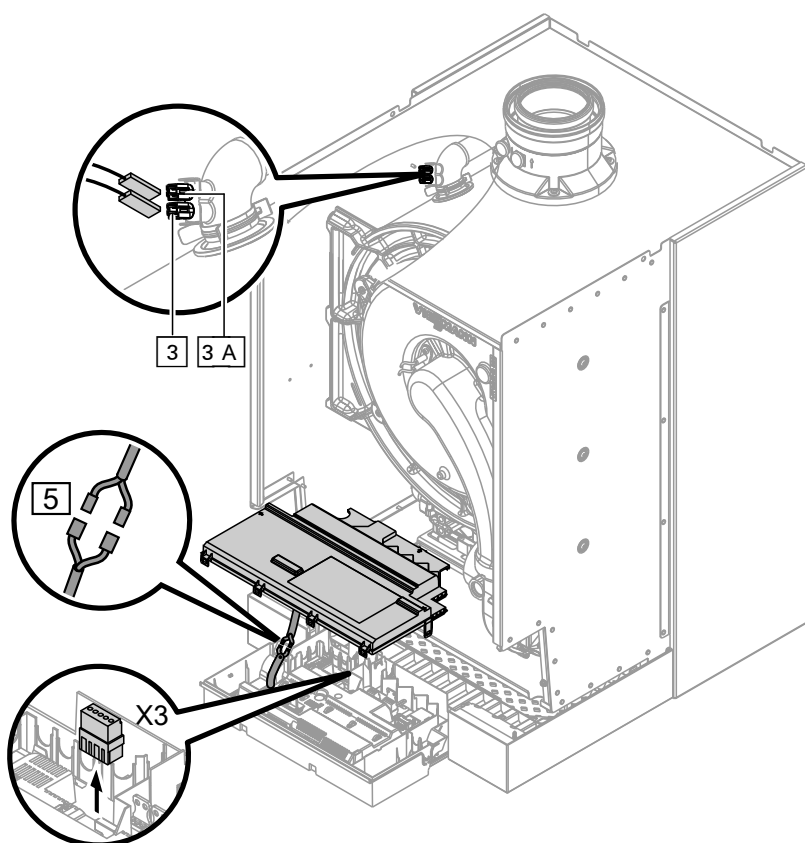


Fig. 47

1.
  - **Boiler water temperature sensors**  
Remove lead to boiler water temp sensor [3] or [3]A and check the resistance.
  - **Cylinder temperature sensor**  
Disconnect plug [5] from the cable harness at the control unit and check the resistance.
  - **Flow temperature sensor**  
Disconnect plug "X3" at the control unit and check the resistance across terminals "X3.4" and "X3.5".

## Repairs (cont.)

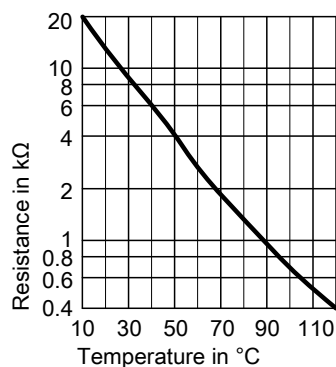


Fig. 48 Sensor type: NTC 10 kΩ

2. Check the sensor resistance and compare it with the curve.
3. In the event of severe deviation replace the sensor.



### Danger

The boiler water temperature sensors are immersed in the heating water (risk of scalding).

Drain the boiler before replacing the sensor.

## Replacing the flow sensor

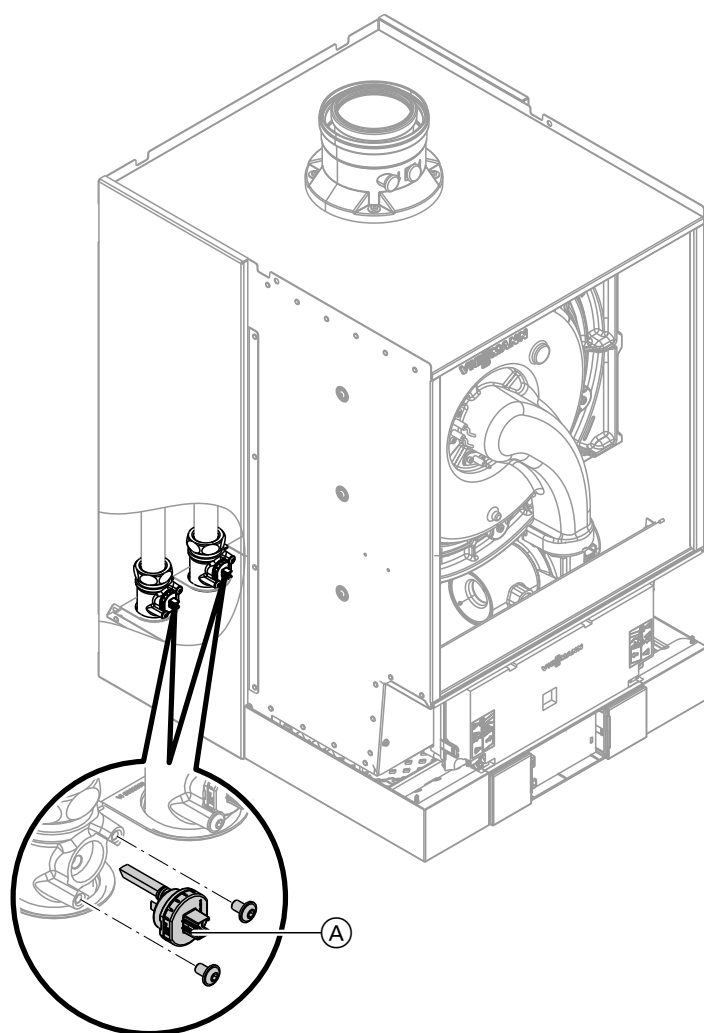


Fig. 49

### Note

In the event of a fault, both sensors need to be replaced.

1. Drain the boiler on the heating water side.
2. Pull leads from flow sensor (A).

3. Undo screws and remove faulty flow sensor (A).
4. Install new flow sensor (A) and secure with the screws.

**Repairs** (cont.)

**Checking the flue gas temperature sensor**

The flue gas temperature sensor locks out the boiler if the permissible flue gas temperature is exceeded. After the flue system has cooled down, press reset button **R** to cancel the lock.

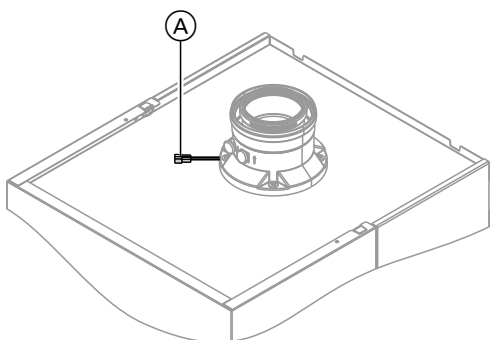


Fig. 50

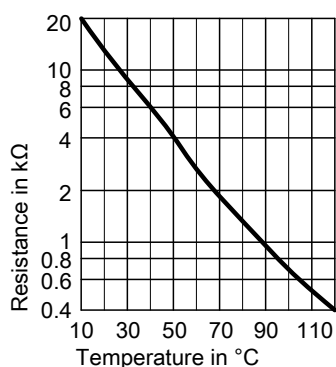


Fig. 51 Sensor type: NTC 10 kΩ

**Fault during commissioning (fault A3)**

During commissioning, the control unit checks for correct placement of the flue gas temperature sensor. If commissioning is terminated and fault message A3 is displayed:

1. Check whether the flue gas temperature sensor is correctly inserted. See previous diagram.

1. Disconnect the leads from flue gas temperature sensor (A).

2. Check the sensor resistance and compare it to the curve.

3. In the event of severe deviation replace the sensor.

2. If necessary, correct the position of the flue gas temperature sensor or replace the faulty flue gas temperature sensor.

3. Press reset button **R** and repeat commissioning. The check is repeated until it is completed successfully.

Check the fuse

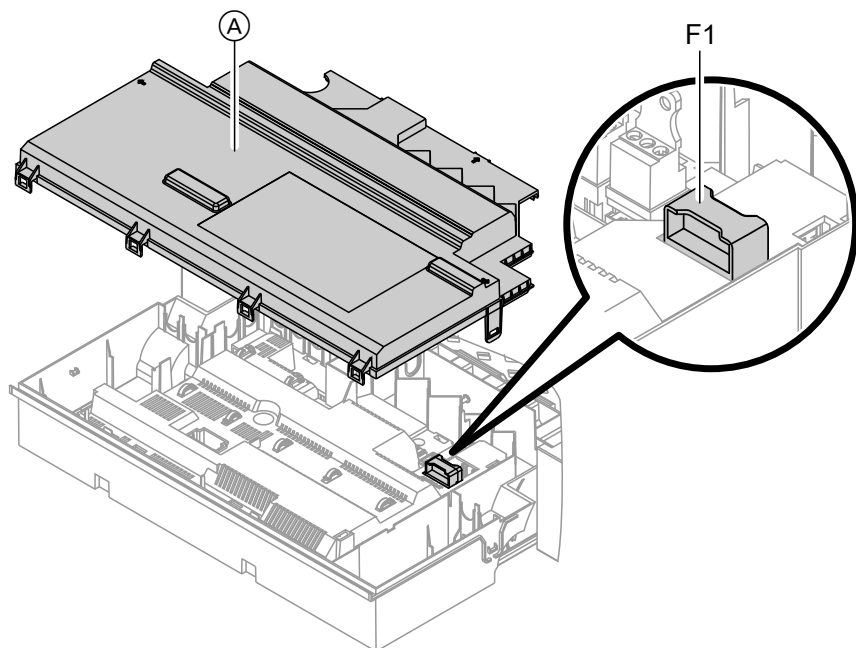




Fig. 52

1. Switch off the power.
2. Release the side closures and pivot the control unit down.
3. Remove cover (A).
4. Check fuse F1 (see connection and wiring diagram).

Mixer extension kit

Checking the setting of rotary selector S1

The rotary selector on the PCB of the extension kit defines the assignment to the relevant heating circuit.

| Heating circuit                                   | Rotary selector S1 setting  |
|---|---|
| Heating circuit with mixer M2 (heating circuit 2) | 2  |
| Heating circuit with mixer M3 (heating circuit 3) | 4  |

Checking the rotational direction of the mixer motor

After being switched on, the boiler implements a self-test. During this, the mixer is opened and closed again.

Note

The mixer motor can also be started via the actuator test (see chapter "Checking outputs").

Observe the rotational direction of the mixer motor during its self-test. Then manually set the mixer back to "Open". The flow temperature sensor must now capture a higher temperature. If the temperature drops, either the motor is turning in the wrong direction or the mixer insert is incorrectly fitted.



Mixer installation instructions

Repairs (cont.)

Changing the rotational direction of the mixer motor (if required)

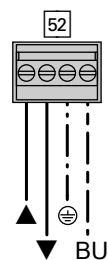


Fig. 53

1. Remove the upper casing cover of the extension kit.



**Danger**

An electric shock can be life-threatening. Before opening the boiler, disconnect it from the mains voltage, e.g. at the fuse or mains isolator.

2. At plug 52, swap the cores at terminals "▲" and "▼".
3. Refit the casing cover.

Check flow temperature sensor

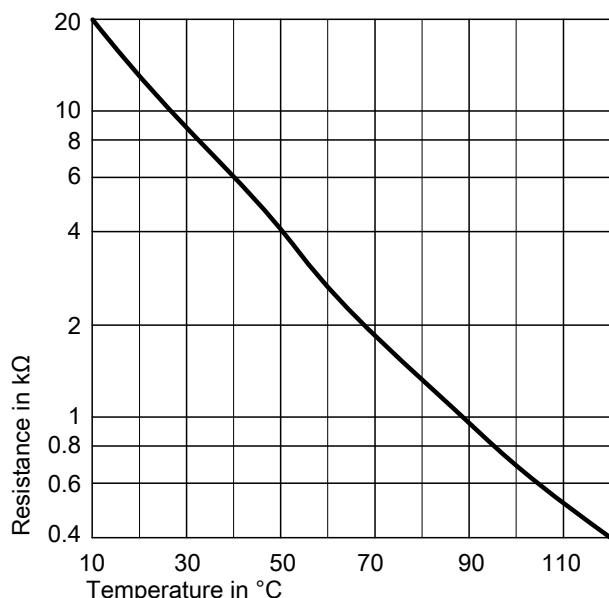


Fig. 54 Sensor type: NTC 10 kΩ

1. Disconnect plug 2 (flow temperature sensor).
2. Check the sensor resistance and compare it to the curve. In the event of severe deviation replace the sensor.

Checking the Vitotronic 200-H (accessories)

The Vitotronic 200-H is connected to the control unit via the LON system. To test the connection, carry out a subscriber check at the boiler control unit (page 45).

## Overview of assemblies

**The following details are required when ordering parts:**

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

Standard parts are available from your local supplier.

**Overview of assemblies** (cont.)

Overview of assemblies (cont.)

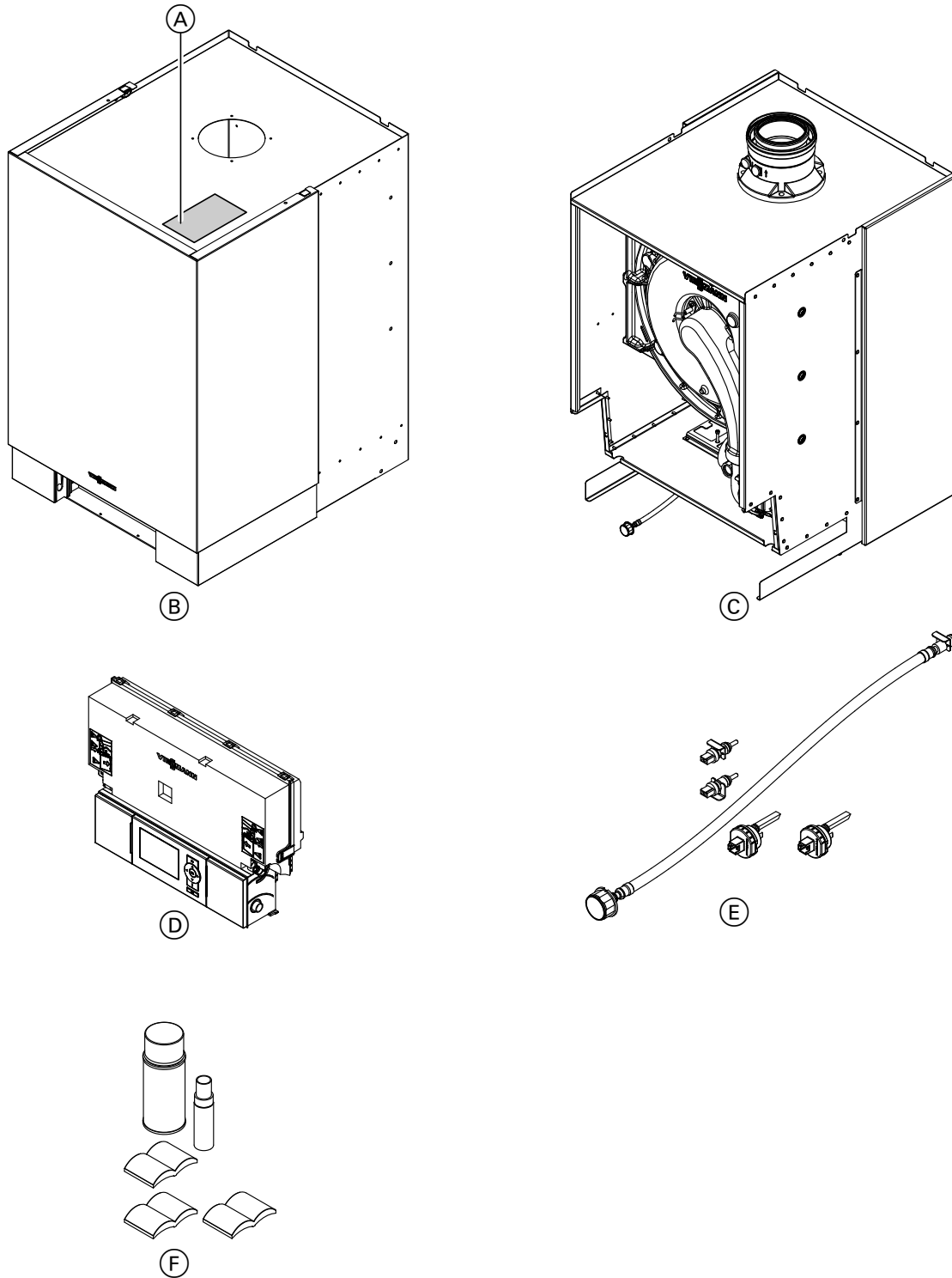


Fig. 55

- (A) Type plate
- (B) Casing assembly
- (C) Heat cell assembly with burner
- (D) Control unit assembly
- (E) Hydraulic assembly
- (F) Miscellaneous



**Overview of assemblies** (cont.)

Casing assembly

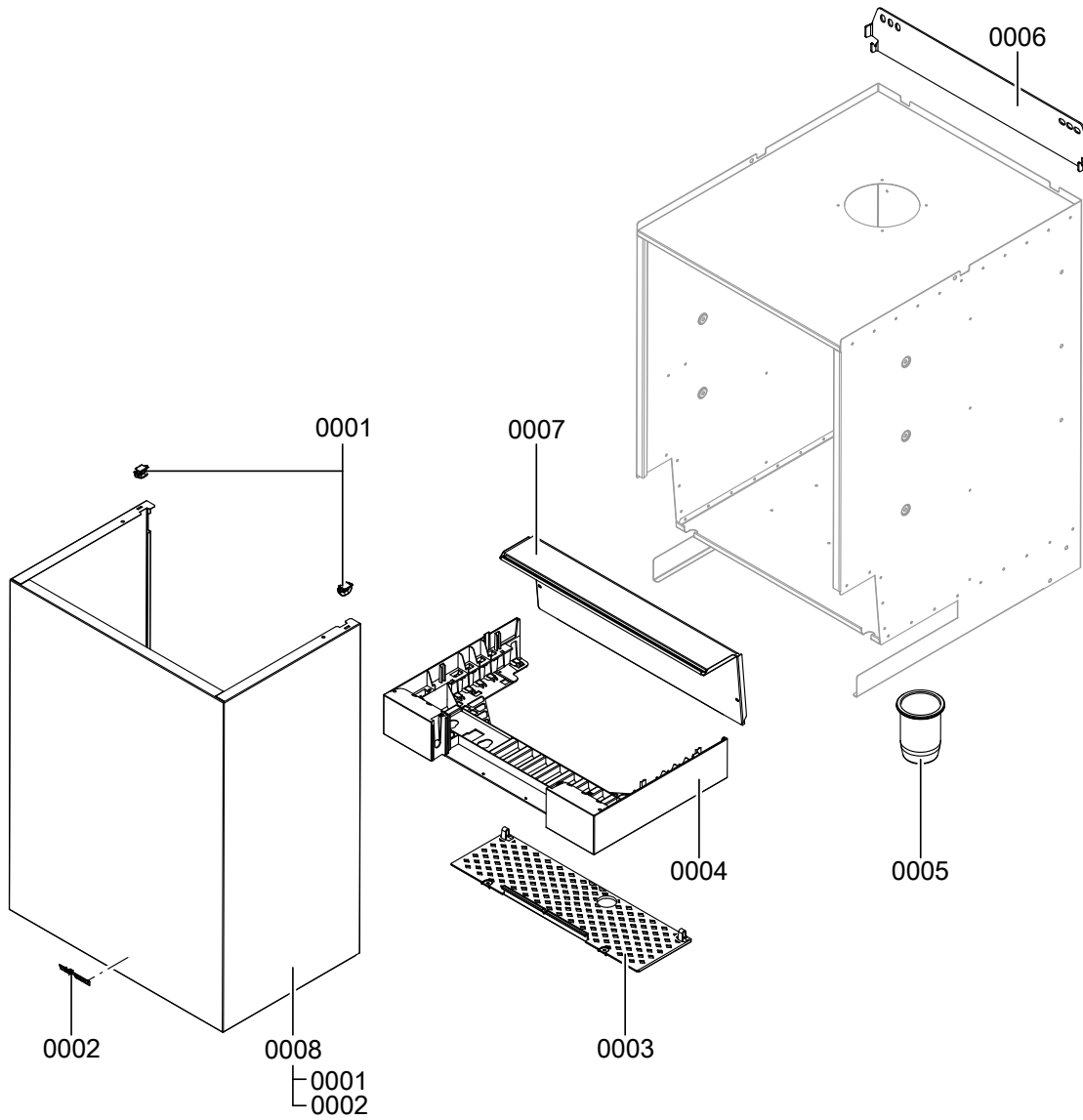


Fig. 56

**Casing assembly** (cont.)

| <b>Pos.</b> | <b>Part</b>           |
|-------------|-----------------------|
| 0001        | Fixing clip (2 pce)   |
| 0002        | Logo                  |
| 0003        | Contact guard         |
| 0004        | Control unit support  |
| 0005        | Trap grommet          |
| 0006        | Wall mounting bracket |
| 0007        | Cover panel           |
| 0008        | Front panel           |

Heat cell assembly

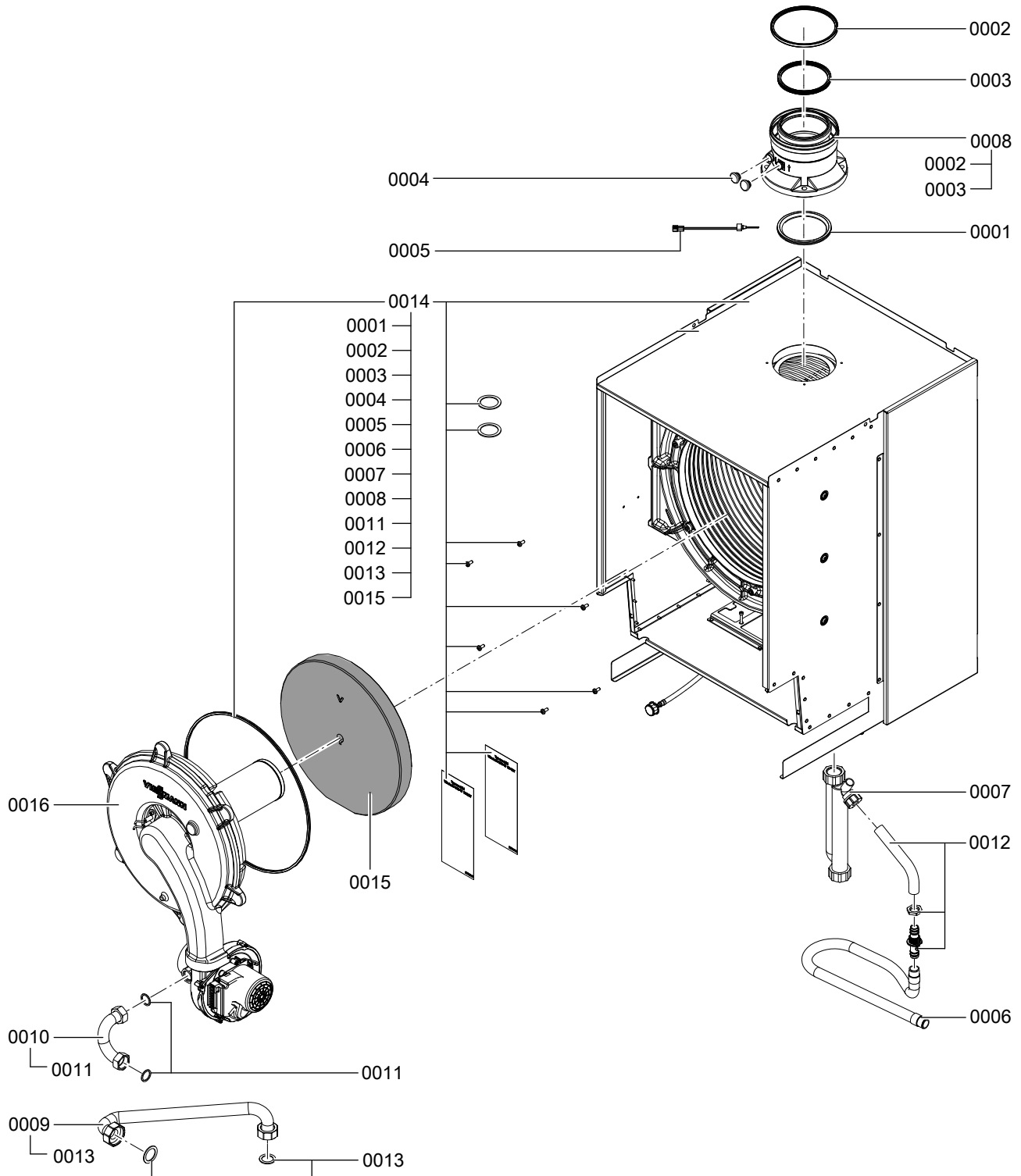


Fig. 57

**Heat cell assembly** (cont.)

| <b>Pos.</b> | <b>Part</b>                    |
|-------------|--------------------------------|
| 0001        | Diaphragm grommet Ø 110        |
| 0002        | Lip seal Ø 150                 |
| 0003        | Flue gasket Ø 100              |
| 0004        | Boiler flue connection plug    |
| 0005        | Flue gas temperature sensor    |
| 0006        | Condensate hose                |
| 0007        | Trap                           |
| 0008        | Boiler flue connection         |
| 0009        | Gas supply pipe                |
| 0010        | Connection pipe                |
| 0011        | Gasket G 1 (5 pce)             |
| 0012        | Condensate drain pipe set      |
| 0013        | Gasket G 1¼ and G 1½           |
| 0014        | Heat exchanger with hydraulics |
| 0015        | Thermal insulation block       |
| 0016        | Burner                         |

**Burner assembly**

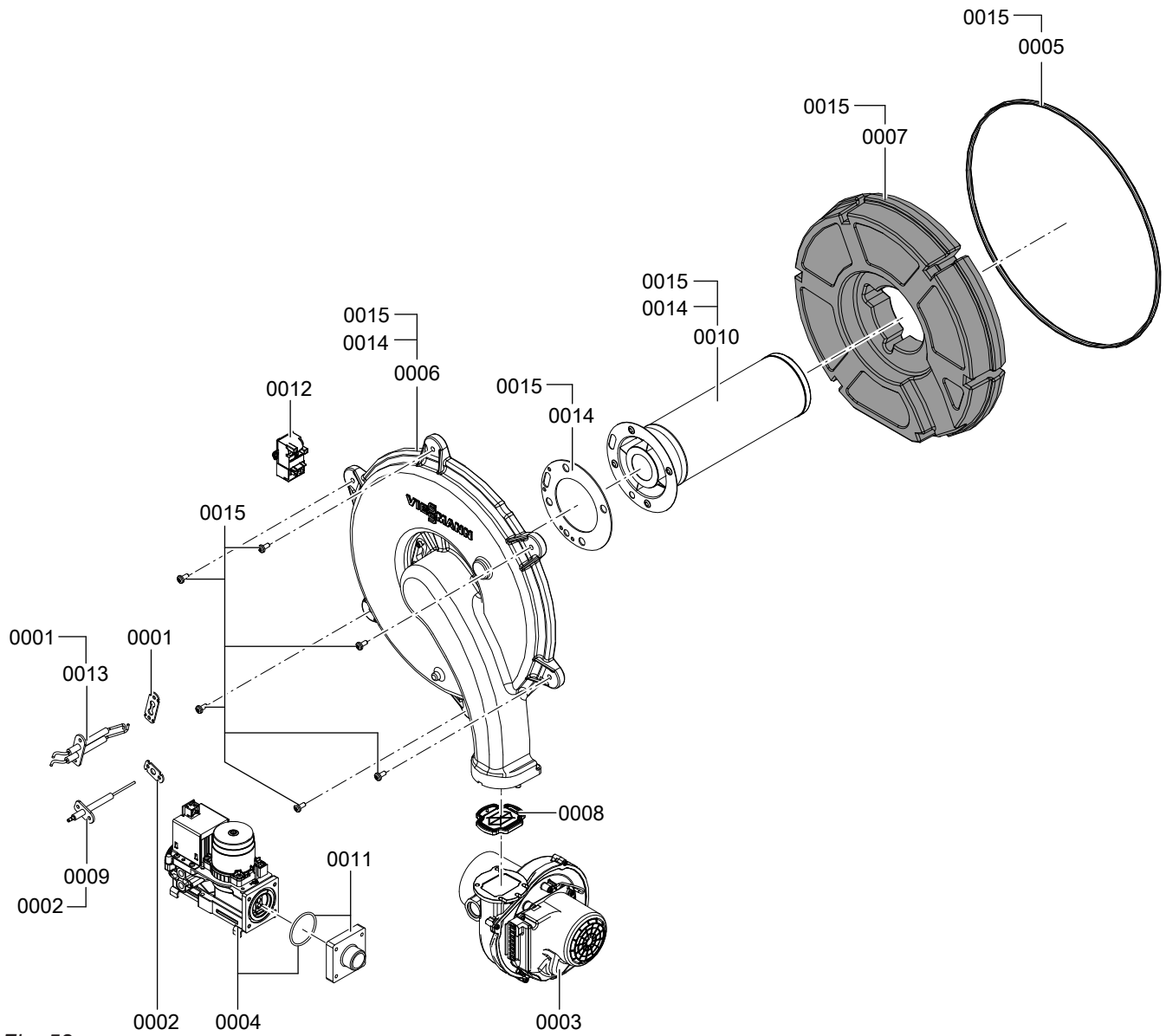


Fig. 58

**Burner assembly** (cont.)

| <b>Pos.</b> | <b>Part</b>                          |
|-------------|--------------------------------------|
| 0001        | Gasket, ignition electrode (5 pce)   |
| 0002        | Gasket, ionisation electrode (5 pce) |
| 0003        | Radial fan                           |
| 0004        | Gas train                            |
| 0005        | Burner gasket                        |
| 0006        | Burner door                          |
| 0007        | Thermal insulation ring              |
| 0008        | Back draught safety device           |
| 0009        | Ionisation electrode                 |
| 0010        | Cylinder burner gauze assembly       |
| 0011        | Adaptor flange                       |
| 0012        | Ignition unit                        |
| 0013        | Ignition electrode block             |
| 0014        | Burner gauze assembly gasket         |
| 0015        | Door screws (set)                    |

### Hydraulic assembly

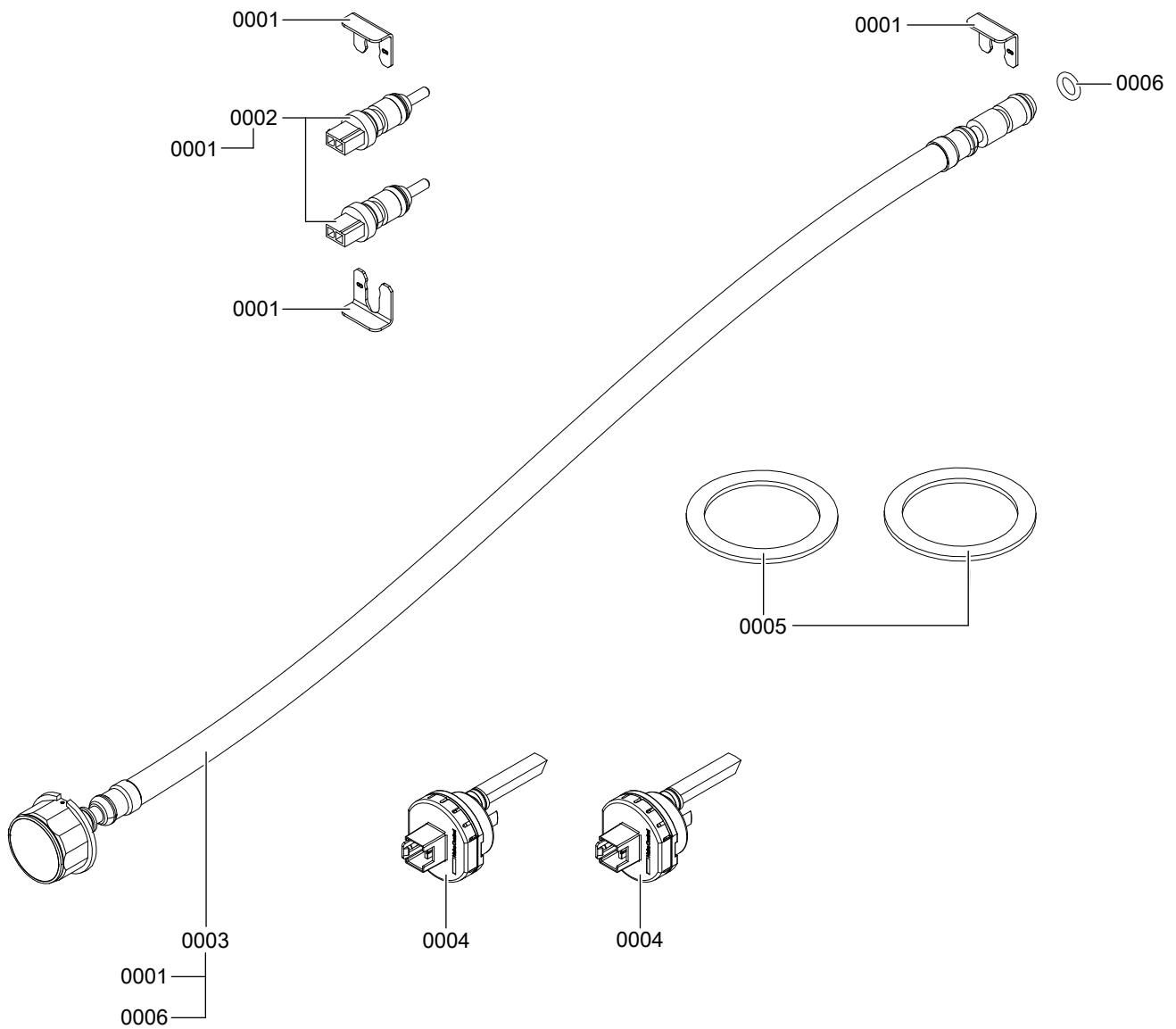


Fig. 59



**Hydraulic assembly** (cont.)

| <b>Pos.</b> | <b>Part</b>                        |
|-------------|------------------------------------|
| 0001        | Clip Ø 8 (5 pce)                   |
| 0002        | Temperature sensor (2 pce)         |
| 0003        | Pressure gauge                     |
| 0004        | Flow sensor                        |
| 0005        | Gasket G 2 (2 pce)                 |
| 0006        | Circular seal washer 8 x 2 (5 pce) |

**Control unit assembly**

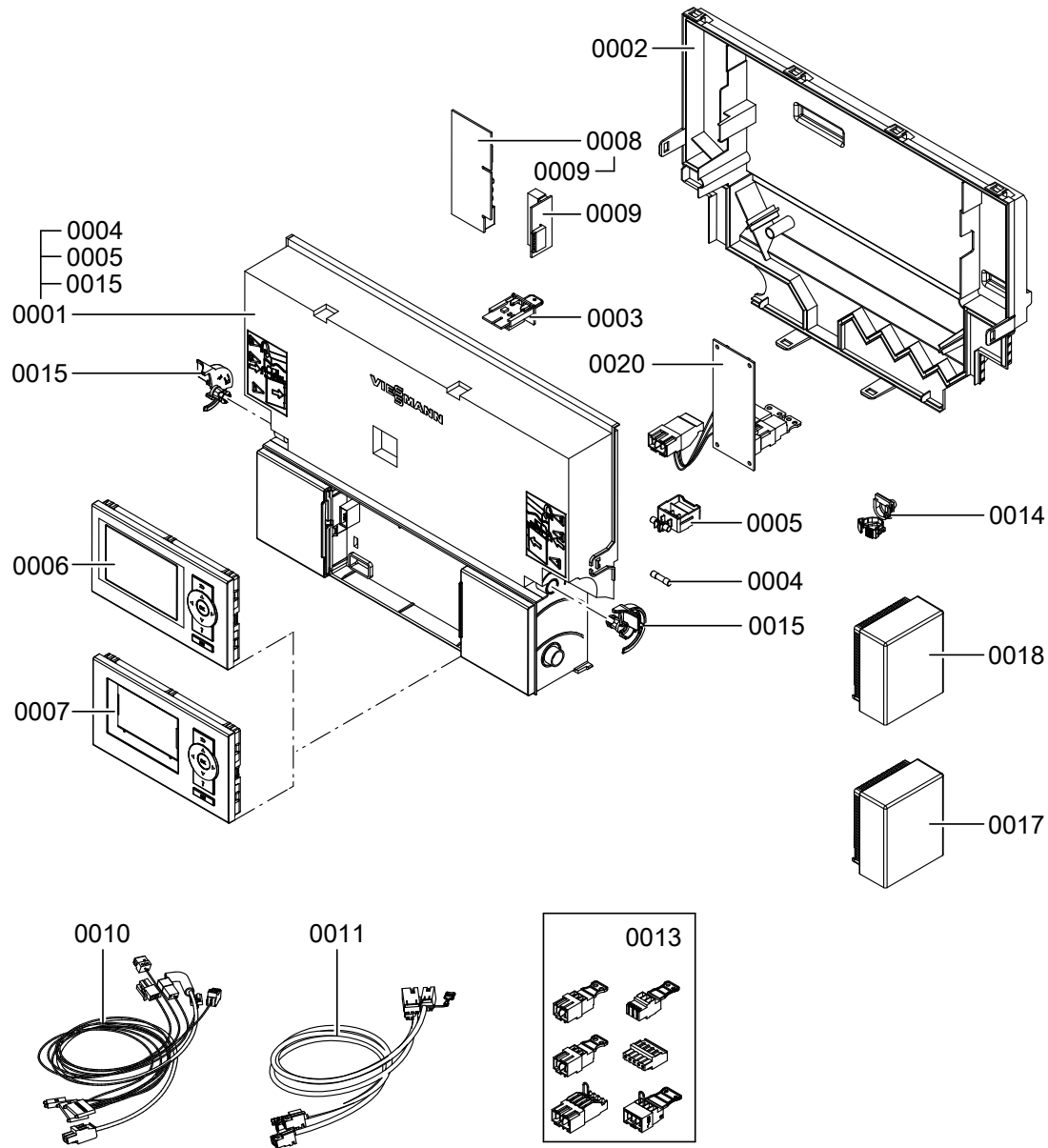


Fig. 60

**Control unit assembly** (cont.)

| <b>Pos.</b> | <b>Part</b>                                    |
|-------------|--|
| 0001        | Control unit                                   |
| 0002        | Casing back panel                              |
| 0003        | Coding card                                    |
| 0004        | Fuse 6.3 A slow (10 pce)                       |
| 0005        | Fuse holder 6.3 A (slow)                       |
| 0006        | Programming unit for weather-compensated mode  |
| 0007        | Programming unit for constant temperature mode |
| 0008        | LON communication module                       |
| 0009        | PCB adaptor                                    |
| 0010        | Cable harness X8/X9/ionisation                 |
| 0011        | Cable harness 100/35/54/earth                  |
| 0013        | Mating plug                                    |
| 0014        | Cable fixing (10 pce)                          |
| 0015        | Locking bolts, left and right                  |
| 0017        | Outside temperature sensor RF                  |
| 0018        | Outside temperature sensor NTC                 |
| 0020        | Internal H1 extension                          |

Miscellaneous assembly

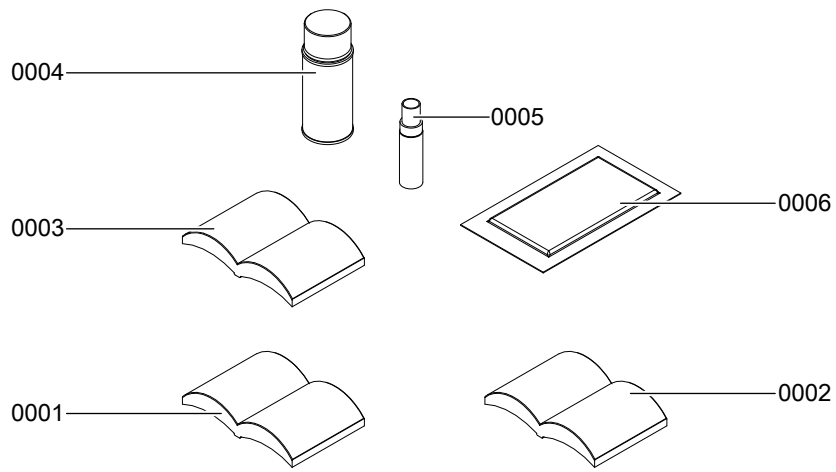


Fig. 61

**Miscellaneous assembly** (cont.)

| <b>Pos.</b> | <b>Part</b>  |
|-------------|--|
| 0001        | Operating instructions for weather-compensated mode  |
| 0002        | Operating instructions for constant temperature mode |
| 0003        | Installation and service instructions                |
| 0004        | Touch-up spray paint, white                          |
| 0005        | Touch-up paint stick, white                          |
| 0006        | Special grease                                       |

**Constant temperature control unit**

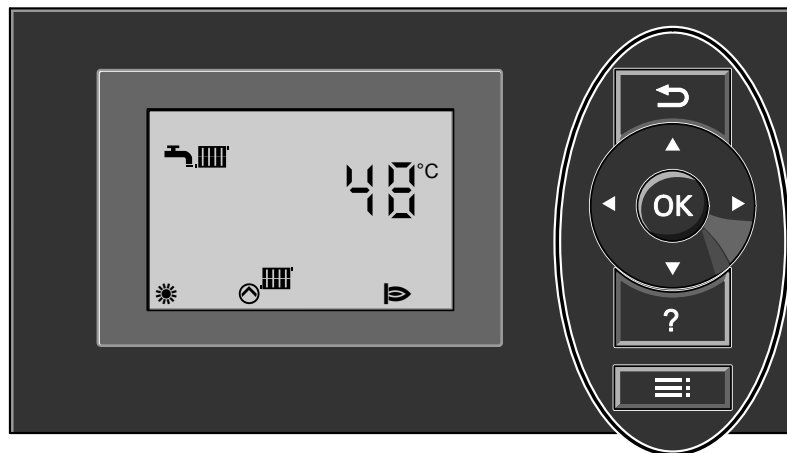


Fig. 62

**Heating mode**

The selected set boiler water temperature will be maintained when a demand is being raised by the room thermostat and the heating program is set to DHW and central heating "☀️🏠".

The boiler water temperature will be maintained at the default frost protection temperature when there is no demand.

The electronic temperature limiter inside the burner control unit limits the boiler water temperature. Flow temperature setting range: 20 to 74 °C.

**DHW heating**

The burner and the circulation pump for cylinder heating are started if the cylinder temperature lies 2.5 K below the set cylinder temperature.

In the delivered condition, the set boiler water temperature is 20 K higher than the set DHW temperature (adjustable via coding address "60"). If the actual cylinder temperature exceeds the set cylinder temperature by 2.5 K, the burner is switched off and circulation pump run-on begins.

**Weather-compensated control unit**

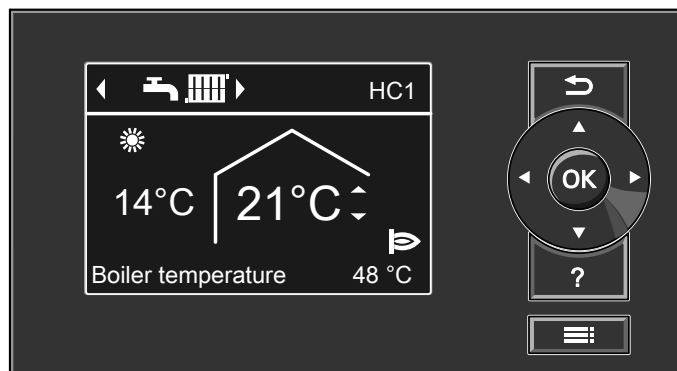


Fig. 63

## Weather-compensated control unit (cont.)

### Heating mode

The control unit determines a set boiler water temperature subject to outside temperature or room temperature (if a room temperature-dependent remote control is connected) and to the slope/level of the heating curve.

The determined set boiler water temperature is transferred to the burner control unit. From the set and actual boiler water temperatures, the burner control unit calculates the modulation level and regulates the burner accordingly.

The electronic temperature limiter inside the burner control unit limits the boiler water temperature.

### DHW heating

The burner and the circulation pump for cylinder heating are started if the cylinder temperature lies 2.5 K below the set cylinder temperature.

In the delivered condition, the set boiler water temperature is 20 K higher than the set DHW temperature (adjustable via coding address "60" in group "DHW"/3). If the actual cylinder temperature exceeds the set cylinder temperature by 2.5 K, the burner is switched off and circulation pump run-on begins.

### Boosting DHW heating

This function is activated by specifying a second set DHW temperature via parameter/coding address 58 in the "DHW" group and activating the fourth DHW time phase for DHW heating.

Heating is boosted during the periods selected in this time phase.

## Internal extensions (accessories)

### Internal H1 extension

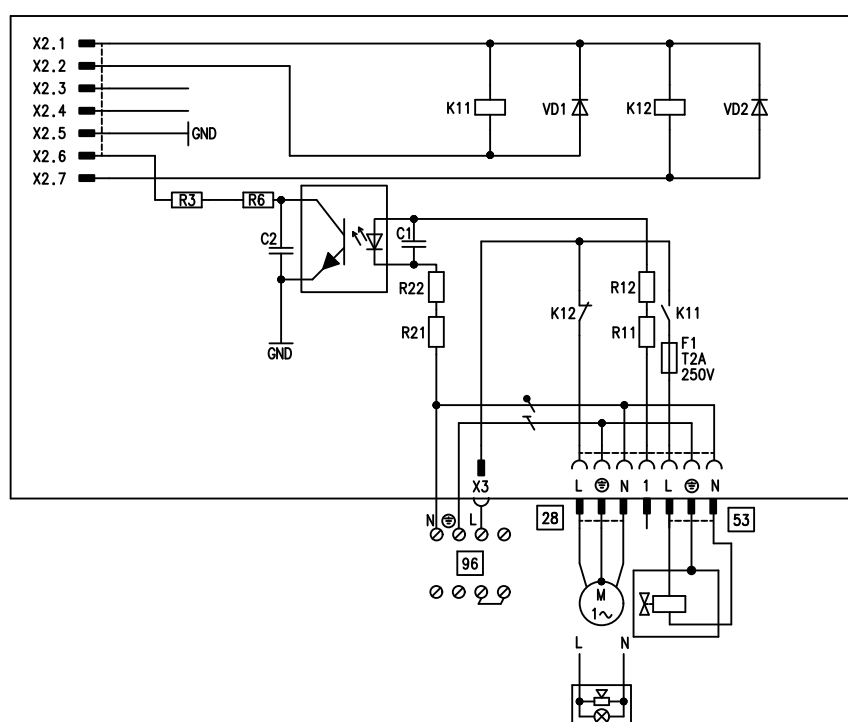


Fig. 64

## Function description

### Internal extensions (accessories) (cont.)

The internal extension is integrated into the control unit enclosure. The following alternative functions can be connected to relay output **28**. The function is assigned via parameter/coding address "53" in the **"General"** group:

- Central fault message (parameter/code "53:0")
- DHW circulation pump (parameter/code "53:1") (only for weather-compensated operation)  
Connect DHW circulation pumps with standalone functions directly to the 230 V ~ supply.

- Heating circuit pump for heating circuit without mixer (parameter/code "53:2")
- Circulation pump for cylinder heating (parameter/code "53:3")

An external safety valve can be linked to connection **53**.

### Internal H2 extension

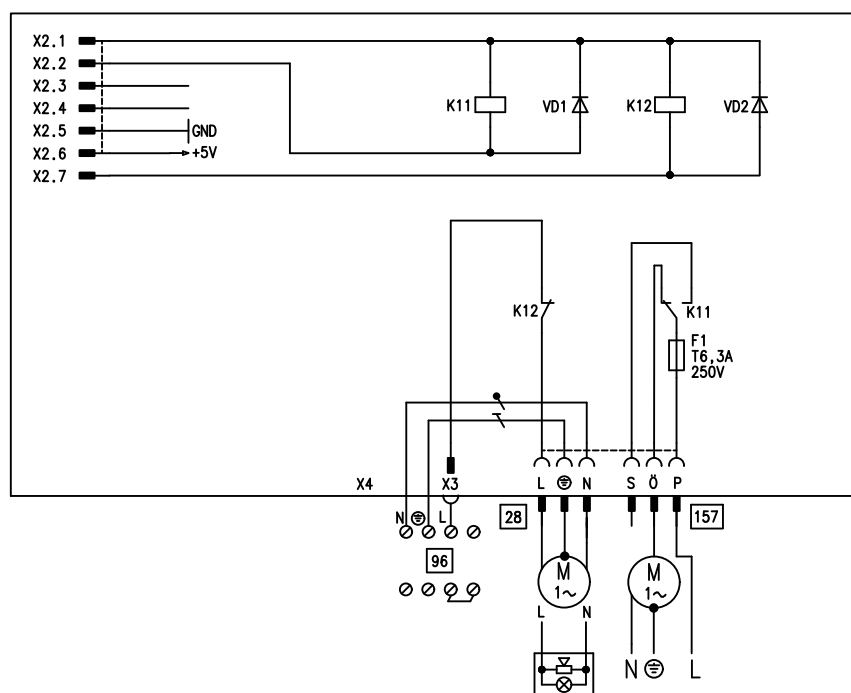


Fig. 65

The internal extension is integrated into the control unit enclosure. The following alternative functions can be connected to relay output **28**. The function is assigned via parameter/coding address "53" in the **"General"** group:

- Central fault message (parameter/code "53:0")
- DHW circulation pump (parameter/code "53:1") (only for weather-compensated operation)  
Connect DHW circulation pumps with standalone functions directly to the 230 V ~ supply.

- Heating circuit pump for heating circuit without mixer (parameter/code "53:2")
- Circulation pump for cylinder heating (parameter/code "53:3")

An extractor fan can be switched off via connection **157** when the burner starts.



External extensions (accessories)

AM1 extension

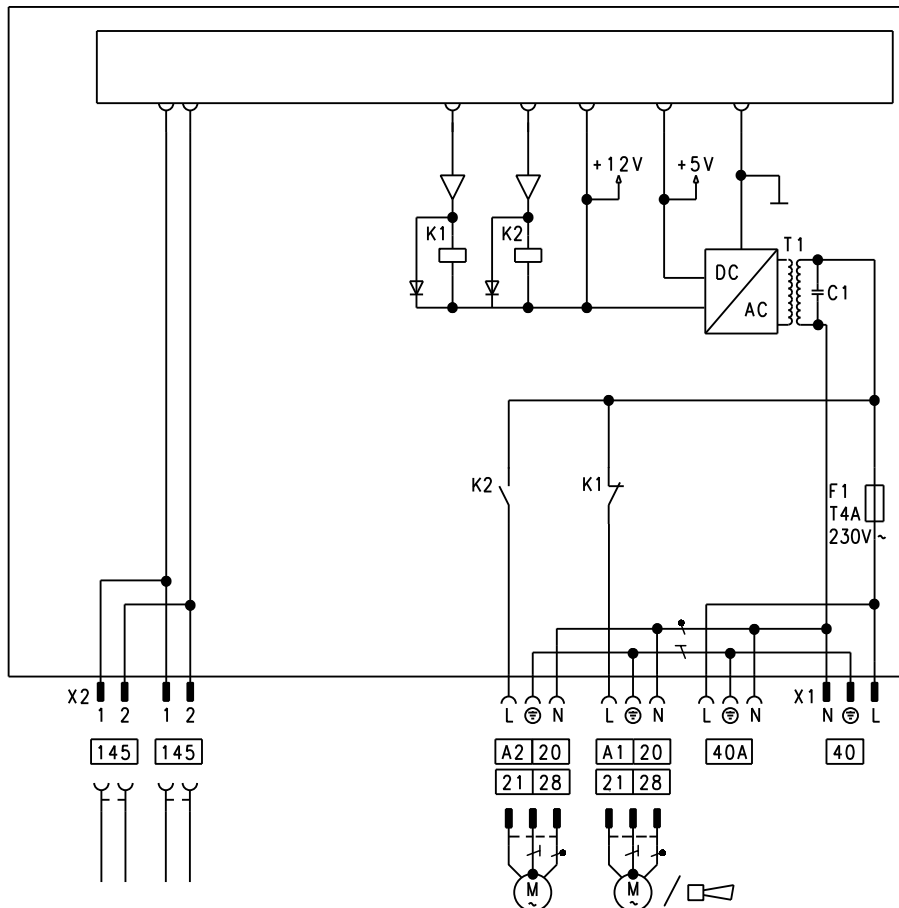


Fig. 66

- A1 Circulation pump
- A2 Circulation pump
- 40 Power supply

- 40 A Power supply for additional accessories
- 145 KM-BUS

Functions

One of the following circulation pumps can be connected to each of connections A1 and A2:

- Heating circuit pump for heating circuit without mixer
- Circulation pump for cylinder heating
- DHW circulation pump (only for weather-compensated control units)

Connect DHW circulation pumps with standalone functions directly to the 230 V ~ supply.

Select the output functions via parameter changes/codes at the boiler control unit.

Function assignment

| Function                                 | Parameter/code ("General" group) |                            |
|--|----------------------------------|----------------------------|
|  | Output A1                        | Output A2                  |
| DHW circulation pump 28                  | 33:0                             | 34:0 (delivered condition) |
| Heating circuit pump 20                  | 33:1 (delivered condition)       | 34:1                       |
| Circulation pump for cylinder heating 21 | 33:2                             | 34:2                       |

EA1 extension

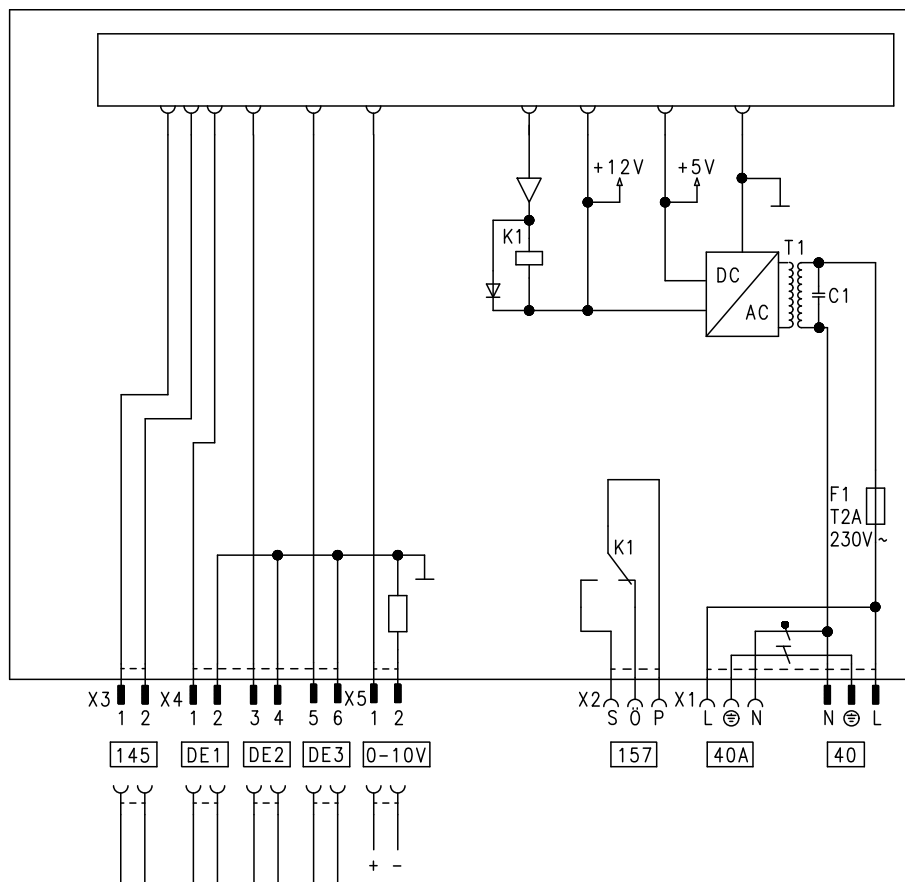


Fig. 67

- F1 Fuse
- DE1 Digital input 1
- DE2 Digital input 2
- DE3 Digital input 3
- 0-10 V 0 – 10 V input
- 40 Power supply

- 40 A Power supply for additional accessories
- 157 Central fault message/feed pump/DHW circulation pump (potential-free)  
Connect DHW circulation pumps with stand-alone functions directly to the 230 V ~ supply.
- 145 KM-BUS

Digital data inputs DE1 to DE3

The following functions can alternatively be connected:

- External operating program changeover for each heating circuit
- External blocking
- External blocking with fault message input
- External demand with minimum boiler water temperature
- Fault message input
- Brief operation of the DHW circulation pump

External contacts must be floating. When connecting external contacts, observe the requirements of protection class II: 8.0 mm air and creep path or 2.0 mm insulation thickness to live parts.

Input function assignment

Select the input functions via the parameter changes/codes in the "General" group at the boiler control unit:

- DE1: Parameter/coding address 3A
- DE2: Parameter/coding address 3b
- DE3: Parameter/coding address 3C

Assigning the operating program changeover function to the heating circuits

Select the operating program changeover function for the relevant heating circuit via parameter/coding address d8 in the "Heating circuit" group at the boiler control unit:

- Changeover via input DE1: Parameter/code d8:1
- Changeover via input DE2: Parameter/code d8:2
- Changeover via input DE3: Parameter/code d8:3

**External extensions (accessories)** (cont.)

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

The duration of the changeover is set via parameter/coding address F2 in the **"Heating circuit"** group.

**Effect of external blocking function on the pumps**

The effect on the internal circulation pump is selected via parameter/coding address 3E in the **"General"** group.

The effect on the relevant heating circuit pump is selected via parameter/coding address d6 in the **"Heating circuit"** group.

The effect on a circulation pump for cylinder heating is selected via parameter/coding address 5E in the **"DHW"** group.

**Effect of the external demand function on the pumps**

The effect on the internal circulation pump is selected via parameter/coding address 3F in the **"General"** group.

The effect on the relevant heating circuit pump is selected via parameter/coding address d7 in the **"Heating circuit"** group.

The effect on a circulation pump for cylinder heating is selected via parameter/coding address 5F in the **"DHW"** group.

**DHW circulation pump runtime for brief operation**

The DHW circulation pump is started by closing the contact at DE1, DE2 or DE3 by means of a pushbutton. The runtime is set via parameter/coding address "3d" in the **"General"** group.

**Analogue input 0 – 10 V**

The 0 – 10 V hook-up provides an additional set boiler water temperature:

0 – 1 V is taken as "No specification for set boiler water temperature".

1 V  $\triangleq$  Set value 10 °C

10 V  $\triangleq$  Set value 100 °C

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

**Output** 157

The following functions can be connected to output 157:

- Feed pump to substation  
or
- DHW circulation pump  
or
- Fault message facility

**Information regarding the feed pump**

*Function only possible in conjunction with a heating circuit control unit connected via LON.*

**Information on DHW circulation pumps**

*Connect DHW circulation pumps with standalone functions directly to the 230 V ~ supply.*

**Function assignment**

Select the function of output 157 via coding address "36" in the **"General"** group at the boiler control unit.

**Control functions****External operating program changeover**

The "External operating program changeover" function is implemented via the EA1 extension. There are 3 inputs available at the EA1 extension (DE1 to DE3).

The function is selected via the following coding addresses in the **"General"** group:

| Heating program changeover | Code |
|----------------------------|------|
| Input DE1                  | 3A:1 |
| Input DE2                  | 3b:1 |
| Input DE3                  | 3C:1 |

Select the operating program changeover function for the respective heating circuit via coding address "d8" in the **"Heating circuit"** group at the boiler control unit:

## Function description

### Control functions (cont.)

| Heating program changeover | Code |
|----------------------------|------|
| Changeover via input DE1   | d8:1 |
| Changeover via input DE2   | d8:2 |
| Changeover via input DE3   | d8:3 |

You can select the direction of the operating program changeover in coding address "d5" in the **"Heating circuit"** group:

| Heating program changeover   | Code |
|--|------|
| Changeover towards "Constantly reduced" or "Constant standby mode" (subject to the selected set value) | d5:0 |
| Changeover towards "Constant heating mode"   | d5:1 |

The duration of the operating program changeover is set in coding address "F2" in the **"Heating circuit"** group:

| Heating program changeover                                 | Code             |
|--|------------------|
| No operating program changeover                            | F2:0             |
| Duration of the operating program changeover 1 to 12 hours | F2:1 to<br>F2:12 |

The operating program changeover stays enabled for as long as the contact remains closed, but at least as long as the duration selected in coding address "F2".

### External blocking

The functions "External blocking" and "External blocking with fault message input" are implemented via the EA1 extension. There are 3 inputs available at the EA1 extension (DE1 to DE3).

The function is selected via the following coding addresses in the **"General"** group:

| External blocking | Code |
|-------------------|------|
| Input DE1         | 3A:3 |
| Input DE2         | 3b:3 |
| Input DE3         | 3C:3 |

| External blocking and fault message input | Code |
|---|------|
| Input DE1                                 | 3A:4 |
| Input DE2                                 | 3b:4 |
| Input DE3                                 | 3C:4 |

The effect on the internal circulation pump is selected in coding address "3E" in the **"General"** group.

The effect on the relevant heating circuit pump is selected in coding address "d6" in the **"Heating circuit"** group.

### External demand

The "External demand" function is implemented via the EA1 extension. There are 3 inputs available at the EA1 extension (DE1 to DE3).

The function is selected via the following coding addresses in the **"General"** group:

**Control functions** (cont.)

| External demand | Code |
|-----------------|------|
| Input DE1       | 3A:2 |
| Input DE2       | 3b:2 |
| Input DE3       | 3C:2 |

The effect on the internal circulation pump is selected in coding address "3F" in the **"General"** group.  
The effect on the relevant heating circuit pump is selected in coding address "d7" in the **"Heating circuit"** group.

The set minimum boiler water temperature for external demand is selected in coding address "9b" in the **"General"** group.

**Venting program**

During the venting program, the circulation pump will be alternately switched on and off for 30 s over a period of 20 min.

The burner is switched off during the venting program. Activating the venting program: See "Venting the heating system".

**Screed drying**

When activating screed drying, observe the information provided by the screed manufacturer.  
When screed drying is activated, the heating circuit pump for the heating circuit with mixer starts and the flow temperature is maintained in accordance with the selected profile. On completion (30 days), the heating circuit with mixer is controlled automatically according to the set parameters.  
Observe EN 1264. The report to be provided by the heating contractor must contain the following heat-up details:

- Heat-up data with respective flow temperatures
- Max. flow temperature achieved
- Operating state and outside temperature during handover

Various temperature profiles can be set 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. "Heating and DHW" is started when screed drying is finished or if code "F1:0" is set manually.

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

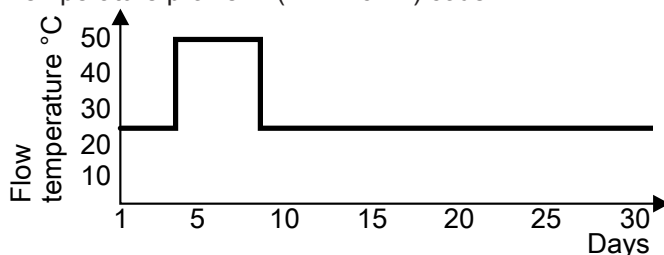


Fig. 68

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

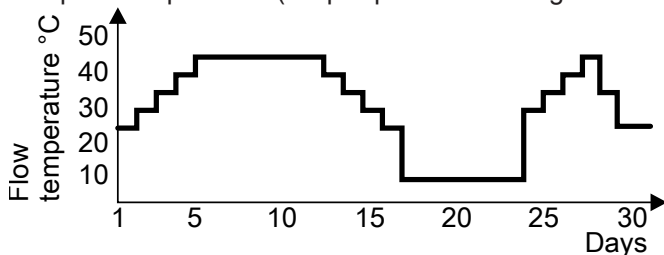


Fig. 69

## Function description

### Control functions (cont.)

Temperature profile 3: Code "F1:3"

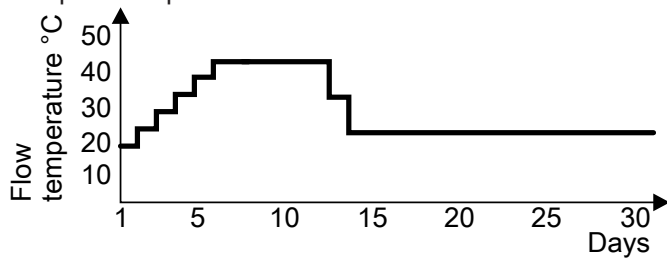


Fig. 70

Temperature profile 4: Code "F1:4"

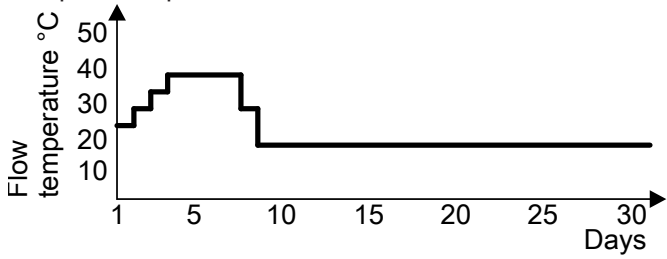


Fig. 71

Temperature profile 5: Code "F1:5"

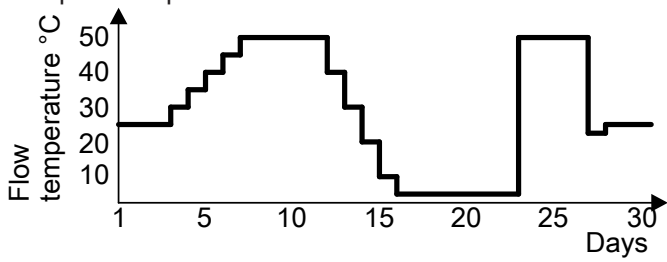


Fig. 72

Temperature profile 6: Code "F1:6"

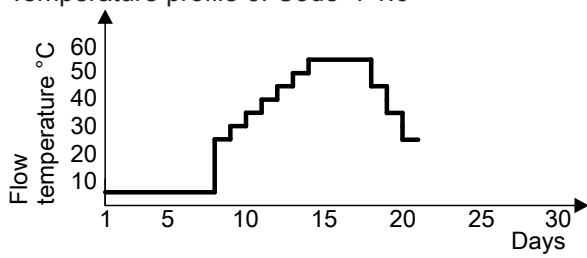


Fig. 73

Temperature profile 7: Code "F1:15"

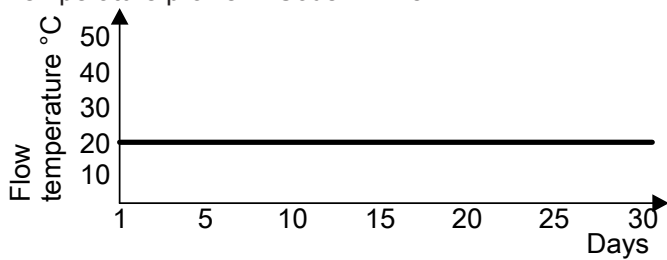


Fig. 74

## Control functions (cont.)

## 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.

The outside temperature limits for the start and end of temperature raising can be set in coding addresses "F8" and "F9" in the "Heating circuit" group.

Example using the settings in the delivered condition

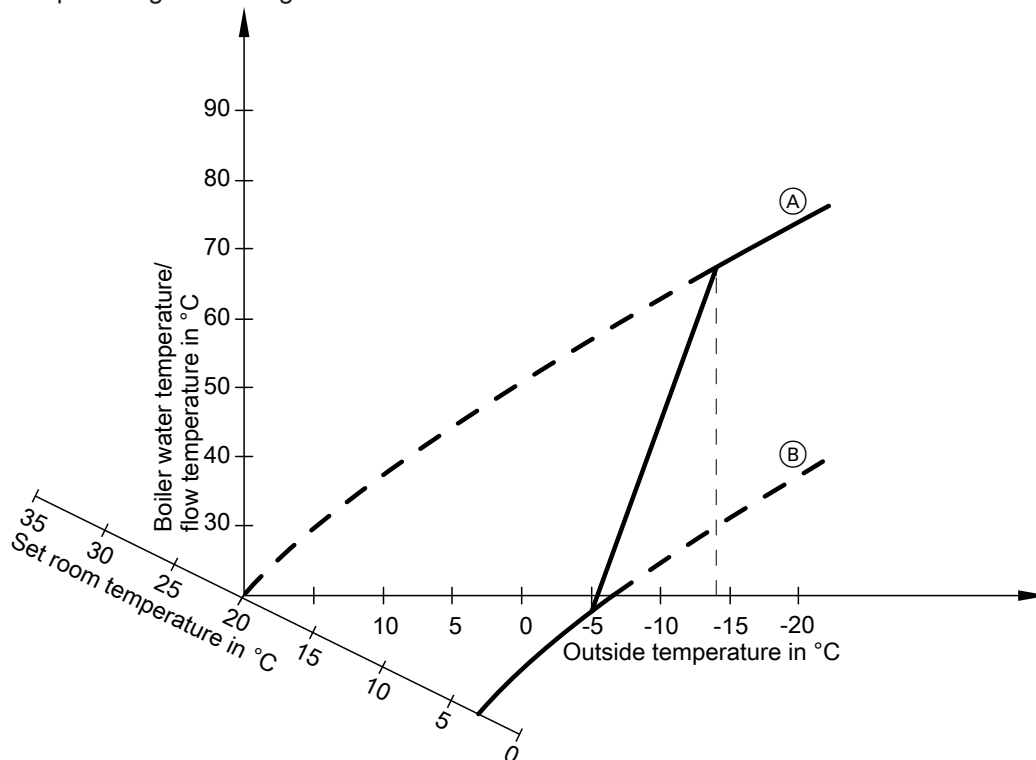


Fig. 75

- Ⓐ 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. The boiler water or flow temperature can be automatically increased.

The value and duration for the additional raising of the set boiler water temperature or set flow temperature can be set in coding addresses "FA" and "Fb" in the "Heating circuit" group.

## Function description

### Control functions (cont.)

Example using the settings in the delivered condition

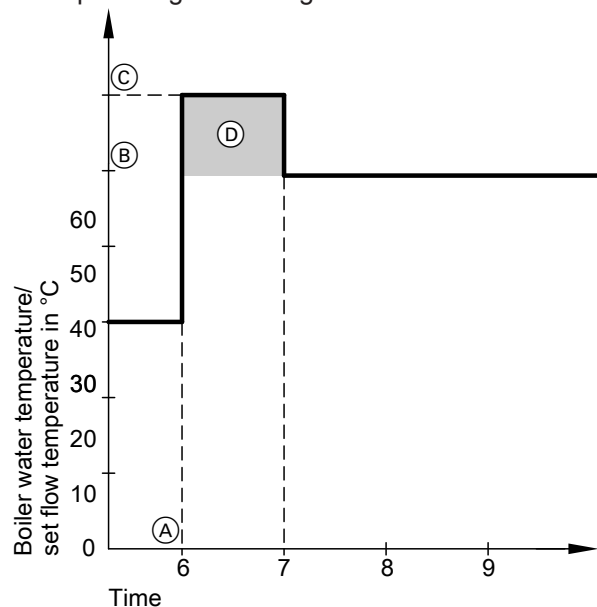


Fig. 76

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

## Assigning heating circuits to the remote control

The assignment of heating circuits must be configured during remote control commissioning.

| Remote control affects the following heating circuit | Configuration                    |                                  |
|--|----------------------------------|----------------------------------|
|  | Vitotrol 200A<br>Vitotrol 200 RF | Vitotrol 300A<br>Vitotrol 300 RF |
| Heating circuit without mixer A1                     | H 1                              | Heating circuit 1                |
| Heating circuit with mixer M2                        | H 2                              | Heating circuit 2                |
| Heating circuit with mixer M3                        | H 3                              | Heating circuit 3                |

### Note

One heating circuit can be assigned to the Vitotrol 200A and 200 RF.

Up to three heating circuits can be assigned to the Vitotrol 300A and 300 RF.

A maximum of 2 hardwired remote control units or 3 wireless remote controls may be connected to the control unit.

If the assignment of a heating circuit is later cancelled, reset coding address "A0" in the "Heating circuit" group for this heating circuit to 0 (fault message bC, bd, bE).



## Electronic combustion control unit

The electronic combustion controller utilises the physical correlation between the level of the ionisation current and the air ratio  $\lambda$ . The maximum ionisation current is achieved at an air ratio of 1 for all gas qualities. The ionisation signal is evaluated by the combustion controller and the air ratio is adjusted to a value between  $\lambda=1.24$  and 1.44. This range provides for an optimum combustion quality. Thereafter, the electronic gas valve regulates the required gas volume subject to the prevailing gas quality.

To check the combustion quality, the CO<sub>2</sub> content or the O<sub>2</sub> content of the flue gas is measured. The prevailing air ratio is determined with the measured values. The relationship between the CO<sub>2</sub> or O<sub>2</sub> content and air ratio  $\lambda$  is illustrated in the following table.

### Air ratio $\lambda$ – CO<sub>2</sub>/O<sub>2</sub> content

| Air ratio $\lambda$ | O <sub>2</sub> content (%) | CO <sub>2</sub> content (%) for natural gas E | CO <sub>2</sub> content (%) for natural gas LL | CO <sub>2</sub> content (%) for LPG P |
|---------------------|----------------------------|---|--|---------------------------------------|
| 1.20                | 3.8                        | 9.6   | 9.2  | 11.3                                  |
| 1.24                | 4.4                        | 9.2   | 9.1  | 10.9                                  |
| 1.27                | 4.9                        | 9.0   | 8.9  | 10.6                                  |
| 1.30                | 5.3                        | 8.7   | 8.6  | 10.3                                  |
| <b>1.34</b>         | <b>5.7</b>                 | <b>8.5</b>                                    | <b>8.4</b>                                     | <b>10.0</b>                           |
| 1.37                | 6.1                        | 8.3   | 8.2  | 9.8                                   |
| 1.40                | 6.5                        | 8.1   | 8.0  | 9.6                                   |
| 1.44                | 6.9                        | 7.8   | 7.7  | 9.3                                   |
| 1.48                | 7.3                        | 7.6   | 7.5  | 9.0                                   |

To achieve an optimum combustion control, the system regularly carries out an automatic self-calibration; also after a power failure (shutdown). For this, the combustion is briefly regulated to max. ionisation current (corresponding to air ratio  $\lambda=1$ ). Automatic calibration is carried out shortly after the burner start and lasts approx. 5 s. During calibration, higher than normal CO emissions may occur briefly.

Connection and wiring diagram – internal connections

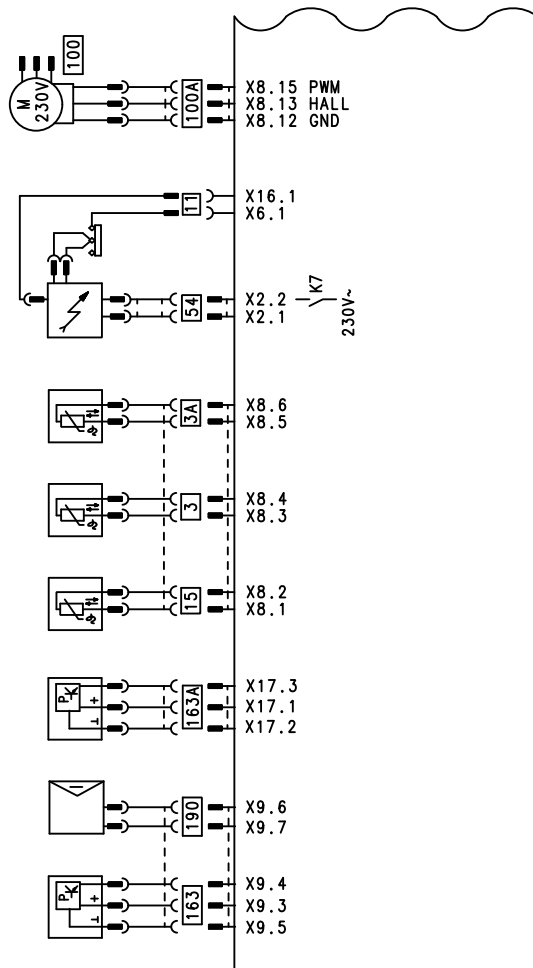


Fig. 77

- |      |                                 |       |                   |
|------|---------------------------------|-------|-------------------|
| X... | Electrical interfaces           | 100   | Fan motor         |
| 3    | Boiler water temperature sensor | 100 A | Fan motor control |
| 3 A  | Boiler water temperature sensor | 190   | Modulation coil   |
| 11   | Ionisation electrode            | 163 A | Flow sensor       |
| 15   | Flue gas temperature sensor     | 163   | Flow sensor       |
| 54   | Ignition unit                   |       |                   |

Connection and wiring diagram – external connections

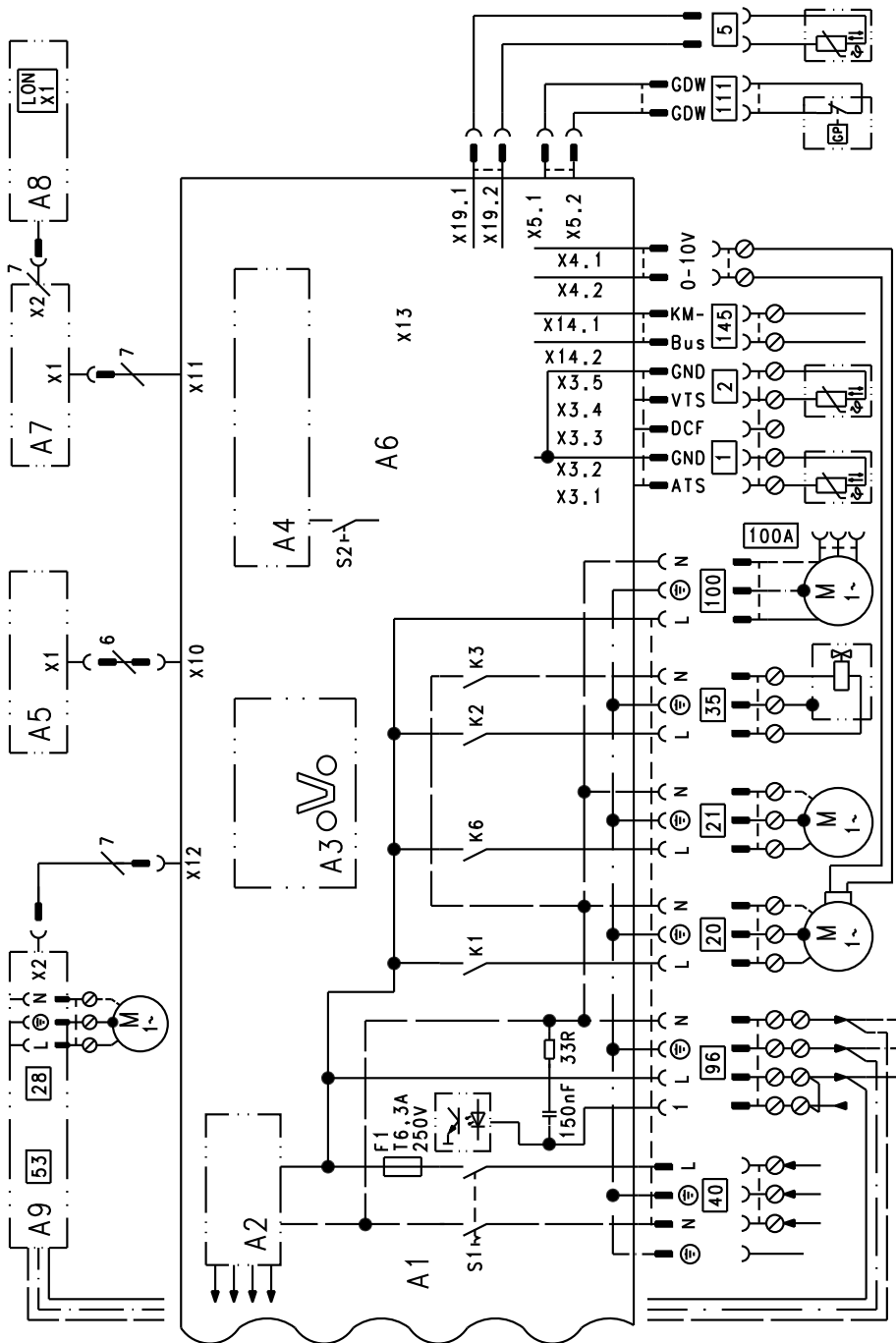


Fig. 78

- |      |  |     |   |
|------|--|-----|---|
| A1   | Main PCB   | 1   | Outside temperature sensor                              |
| A2   | Switching mode power supply                              | 2   | Flow temperature sensor, low loss header                |
| A3   | Optolink   | 5   | Cylinder temperature sensor (plug on the cable harness) |
| A4   | Burner control unit                                      | 20  | Heating circuit pump or boiler circuit pump             |
| A5   | Programming unit   | 21  | Circulation pump for cylinder heating                   |
| A6   | Coding card  | 28  | DHW circulation pump                                    |
| A7   | Connection adaptor                                       | 35  | Gas solenoid valve                                      |
| A8   | LON communication module or cascade communication module | 40  | Power supply  |
| A9   | Internal extension (accessories)                         | 96  | Power supply for accessories and Vitotrol 100           |
| S1   | ON/OFF switch  | 100 | Fan motor   |
| S2   | Reset button   | 111 | Gas pressure switch                                     |
| X... | Electrical interfaces                                    | 145 | KM-BUS  |

# Commissioning/service reports

| Settings and test values                     |                  | Set value | Commissioning | Maintenance/<br>service |
|--|------------------|-----------|---------------|-------------------------|
|  | <b>Date</b>      |           |               |                         |
|  | <b>Signature</b> |           |               |                         |
| <b>Static pressure</b>                       | <i>mbar</i>      | ≤ 57.5    |               |                         |
|  | <i>kPa</i>       | ≤ 5.75    |               |                         |
| <b>Supply pressure (flow pressure)</b>       |                  |           |               |                         |
| <input type="checkbox"/> for natural gas E   | <i>mbar</i>      | 17-25     |               |                         |
|  | <i>kPa</i>       | 1.70-2.5  |               |                         |
| <input type="checkbox"/> for natural gas LL  | <i>mbar</i>      | 17-25     |               |                         |
|  | <i>kPa</i>       | 1.70-2.5  |               |                         |
| <input type="checkbox"/> for LPG             | <i>mbar</i>      | 42.5-57.5 |               |                         |
|  | <i>kPa</i>       | 4.25-5.75 |               |                         |
| <i>Tick gas type</i>                         |                  |           |               |                         |
| <b>Carbon dioxide content CO<sub>2</sub></b> |                  |           |               |                         |
| For natural gas                              |                  |           |               |                         |
| ▪ At lower heating output                    | <i>% by vol.</i> | 7.5-9.5   |               |                         |
| ▪ At upper heating output                    | <i>% by vol.</i> | 7.5-9.5   |               |                         |
| For LPG                                      |                  |           |               |                         |
| ▪ At lower heating output                    | <i>% by vol.</i> | 8.8-11.1  |               |                         |
| ▪ At upper heating output                    | <i>% by vol.</i> | 8.8-11.1  |               |                         |
| <b>Oxygen content O<sub>2</sub></b>          |                  |           |               |                         |
| ▪ At lower heating output                    | <i>% by vol.</i> | 4.0-7.6   |               |                         |
| ▪ At upper heating output                    | <i>% by vol.</i> | 4.0-7.6   |               |                         |
| <b>Carbon monoxide content CO</b>            |                  |           |               |                         |
| ▪ At lower heating output                    | <i>ppm</i>       | < 1000    |               |                         |
| ▪ At upper heating output                    | <i>ppm</i>       | < 1000    |               |                         |

## Specification

Gas boiler, category II <sub>2N3P</sub>

|   |                   |               |            |
|---|-------------------|---------------|------------|
| Rated heating output range <sup>*2</sup><br>T <sub>F</sub> /T <sub>R</sub> 50/30 °C | kW                | 32 - 120      | 32 - 150   |
| Rated heating input range   | kW                | 30 - 113.3    | 30 - 142.0 |
| Rated voltage   | V                 | 230           |            |
| Rated frequency   | Hz                | 50            |            |
| Rated current   | A                 | 6             |            |
| Backup fuse (power supply)  | A                 | 16            |            |
| Power consumption in the delivered condition  | W                 | 146           | 222        |
| Electronic temperature limiter setting (fixed)                                      | °C                | 82            |            |
| Temperature limiter setting (fixed)   | °C                | 100           |            |
| <b>Connection values</b><br>relative to max. load<br>with                           |                   |               |            |
| Natural gas E   | m <sup>3</sup> /h | 11.99         | 15.03      |
| Natural gas LL  | m <sup>3</sup> /h | 13.94         | 17.47      |
| LPG   | kg/h              | 8.86          | 11.10      |
| <b>Permissible ambient temperature</b>  |                   |               |            |
| ▪ During operation:   | °C                | 0 to +40 °C   |            |
| ▪ During storage and transport:   | °C                | -20 to +65 °C |            |
| <b>Protection class</b>   |                   |               |            |
| I   |                   |               |            |
| <b>IP rating</b>  |                   |               |            |
| IP X 4 D to EN 60529  |                   |               |            |
| Weight  | kg                | 130           | 130        |
| <b>Product ID</b>   |                   |               |            |
| CE-0085CN0050   |                   |               |            |

**Note**

The supply values are only for reference (e.g. in the gas contract application) or for a supplementary, rough estimate to check the volumetric settings. Due to factory settings, the gas pressure must not be altered from these values. Reference: 15 °C, 1013 mbar.

## Certificates

### Declaration of conformity

Using the serial number, the Declaration of Conformity can be found on the following website: [www.viessmann.co.uk/eu-conformity](http://www.viessmann.co.uk/eu-conformity)

### Manufacturer's certificate according to the 1st BImSchV [Germany]

We, Viessmann Werke GmbH & Co. KG, D-35107 Allendorf, confirm that the product **Vitodens 200-W** complies with the NO<sub>x</sub> limits specified by the 1st BImSchV, paragraph 6 [Germany].

Allendorf, 1 February 2018

Viessmann Werke GmbH & Co. KG



Authorised signatory Reiner Jansen  
Head of Strategic Quality Management

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