

# Service instructions

for contractors

**VIESSMANN**

## **Vitodens 200-W**

Type **WB2B**, 80 and 105 kW

Wall mounted gas fired condensing boiler

Natural gas version

*For applicability, see the last page*



## **VITODENS 200-W**



## 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 designed for qualified personnel.

- Work on gas equipment must only be carried out by a qualified gas fitter.
- Work on electrical equipment must 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**

Observe the following when working on this system

- all legal instructions regarding the prevention of accidents,
- all legal instructions regarding environmental protection,

- the Code of Practice of relevant trade associations,
- all current safety regulations as defined by DIN, EN, DVGW, TRGI, TRF, VDE and all locally applicable standards.

### **If you smell gas**



#### **Danger**

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

- Never 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.
- Remove all people from the danger zone.
- Notify your gas or electricity supplier from outside the building.
- Shut off the electricity supply to the building 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 boiler room.
- Close all doors leading to the living space.

## Safety instructions (cont.)

### Working on the system

- When using gas as fuel, also close the main gas shut-off valve and safeguard against unauthorised reopening.
- Isolate the system from the power supply and check that it is no longer 'live', e.g. by removing a separate fuse or by means of a main isolator.
- Safeguard the system against unauthorised reconnection.



#### **Please note**

Electronic modules can be damaged by electro-static discharges.  
Touch earthed objects, such as heating or water pipes, to discharge static loads.

### Repair work



#### **Please note**

Repairing components which fulfil a safety function can compromise the safe operation of your heating system.  
Replace faulty components only with original Viessmann spare parts.

### Ancillary components, spare and wearing parts



#### **Please note**

Spare and wearing parts which have not been tested together with the heating system can compromise its function. Installing non-authorised components and non-approved modifications/conversion can compromise safety and may invalidate our warranty.  
For replacements, use only original spare parts from Viessmann or those which are approved by Viessmann.

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## Steps - commissioning, inspection and maintenance

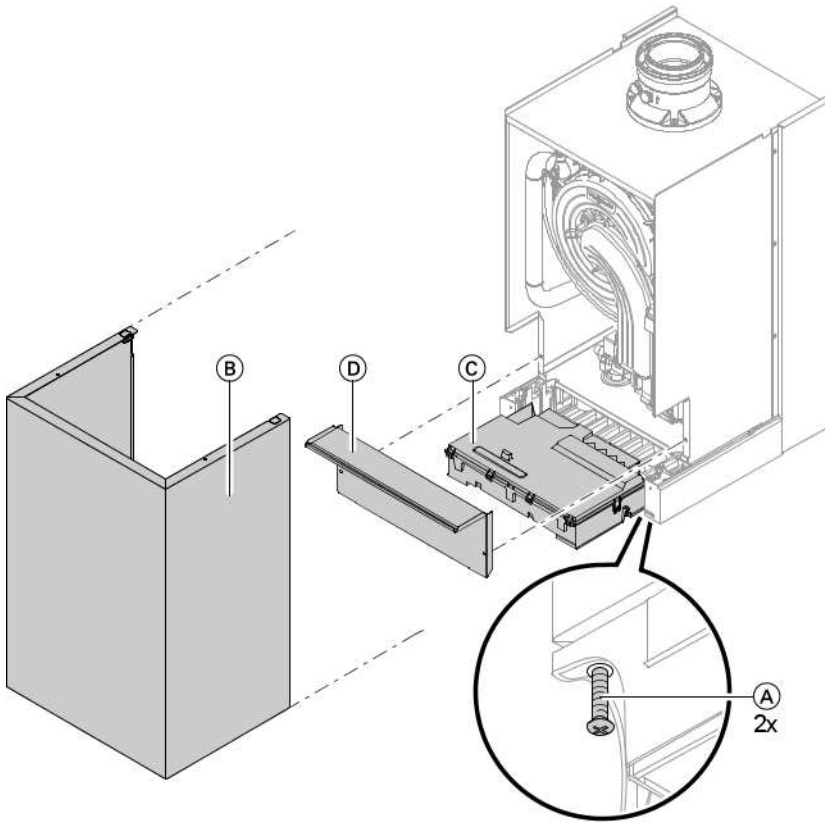
For further information regarding the individual steps, see the page indicated

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## Further details regarding the individual steps

### Opening the boiler



1. Undo screws (A) at the bottom and remove front panel (B).
2. Release the side closures and pivot control unit (C) down.
3. Undo screws and remove cover panel (D).

## Further details regarding the individual steps (cont.)

### Filling the heating system



#### Please note

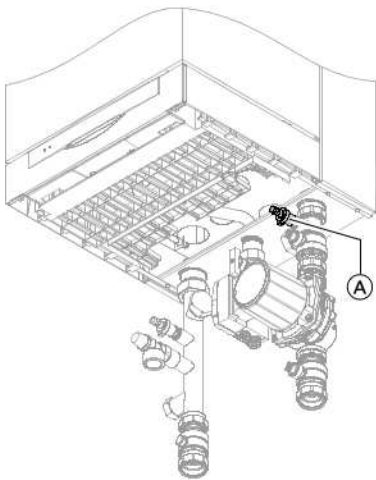
Unsuitable fill water increases the level of deposits and corrosion and may lead to boiler damage.

- Thoroughly flush the entire heating system prior to filling it with water.
- Only use fill water of potable quality.
- Soften fill water with a water hardness in excess of the following values, e.g. with a small softening system for heating water (see the Viessmann Vitoset pricelist):

Single boiler system and multi-boiler systems  $\leq 200$  kW: 11.2 °dH (2.0 mol/m<sup>3</sup>)

Multi-boiler systems  $> 200$  kW: 8.4 °dH (1.5 mol/m<sup>3</sup>)

- An antifreeze additive suitable for heating systems can be mixed with the fill water. The antifreeze manufacturer must verify its suitability.

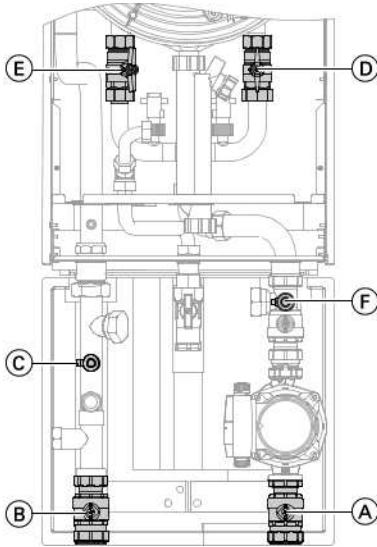


1. Check the inlet pressure of the diaphragm expansion vessel.
2. Close the gas shut-off valve.
3. Fill the heating system via boiler fill & drain valve (A). (minimum system pressure  $> 1.0$  bar).
4. Close boiler fill & drain valve (A).



## Further details regarding the individual steps (cont.)

### Venting the boiler



1. Close shut-off valves (A) and (B).
2. Connect the drain hose to drain valve (C).  
Connect the fill hose to boiler fill & drain valve (F) (if no longer connected).
3. Close shut-off valve (D).
4. Open valve (F).
5. Vent the first indirect coil through shut-off valve (E) at mains pressure until no more air noise is audible.
6. Close shut-off valve (E) and open shut-off valve (D).
7. Vent the second indirect coil through shut-off valve (D) at mains pressure until no more air noise is audible.
8. Close valves (C) and (F).
9. Open shut-off valve (E).

**Note**

*Shut-off valves (D) and (E) must be open to enable the boiler to operate.*

### Venting the heating system

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



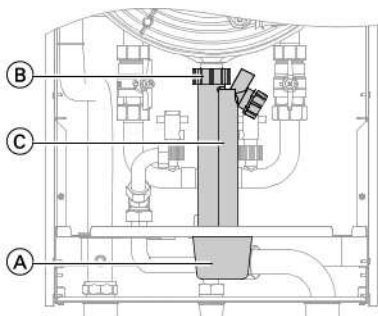
### Further details regarding the individual steps (cont.)

2. Activate the venting program via coding address "2F:1".
3. Check the system pressure.

**Note**

To call up code 1 and for setting the coding address, see page 36.  
For function and sequence of the venting program, see page 96.  
Whilst the venting program runs, the display shows **"EL"** (constant temperature control unit) or **"Entlüftung"** (Venting) (weather-compensated control unit).

### Filling the siphon with water



1. Pull off cap (A) downwards.
2. Undo union nut (B) and pull off siphon (C) downwards.
3. Fill siphon (C) with water and refit it.
4. Push on cap (A) from below.

## Further details regarding the individual steps (cont.)

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

#### Note

- During commissioning, or after a prolonged time out of use, it may be necessary to reset the time and date, if the time flashes in the display.
- When the unit is first taken into operation the display is in German (default language setting):

#### Time (see step 1)



#### Date (see step 2)



Press the following keys:

1.  $\oplus/\ominus$  for the current time.
2.  $\textcircled{\text{OK}}$  to confirm; "Datum" is displayed.
3.  $\oplus/\ominus$  for the current date.
4.  $\textcircled{\text{OK}}$  to confirm.

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

#### Note

When the unit is first taken into operation the display is in German (default language setting):

#### Select heating circuit (see step 1.)



#### Outside temperature (see step 3.)






Press the following keys:

1.  $\textcircled{i}$  "Heizkreis wählen" (select heating circuit) is displayed.
2.  $\textcircled{\text{OK}}$  to confirm; wait approx. 4 s.



**Further details regarding the individual steps (cont.)**

- 3.  press this button again, "Außentemperatur" (outside temperature) is displayed.
- 4.  for the required language.
- 5.  to confirm.

**Checking the gas type**

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

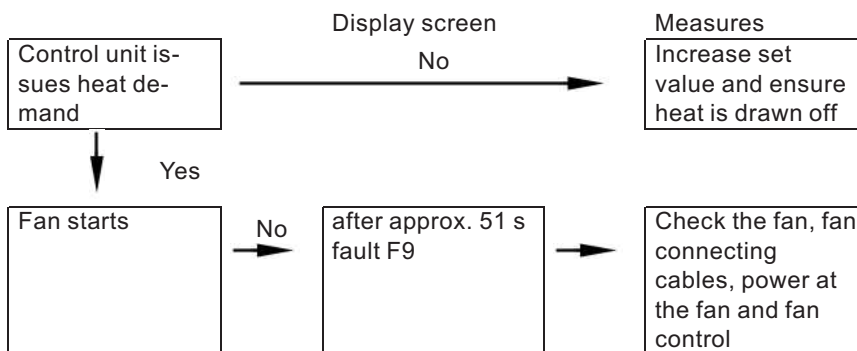
The boiler can be operated with natural gas in the Wobbe index range 10.0 to 16.1 kWh/m<sup>3</sup> (36.0 to 58.0 MJ/m<sup>3</sup>) without conversion.

- 1. Determine the gas type and Wobbe index from your gas supply utility.
- 2. Record the gas type in the service report on page 112.

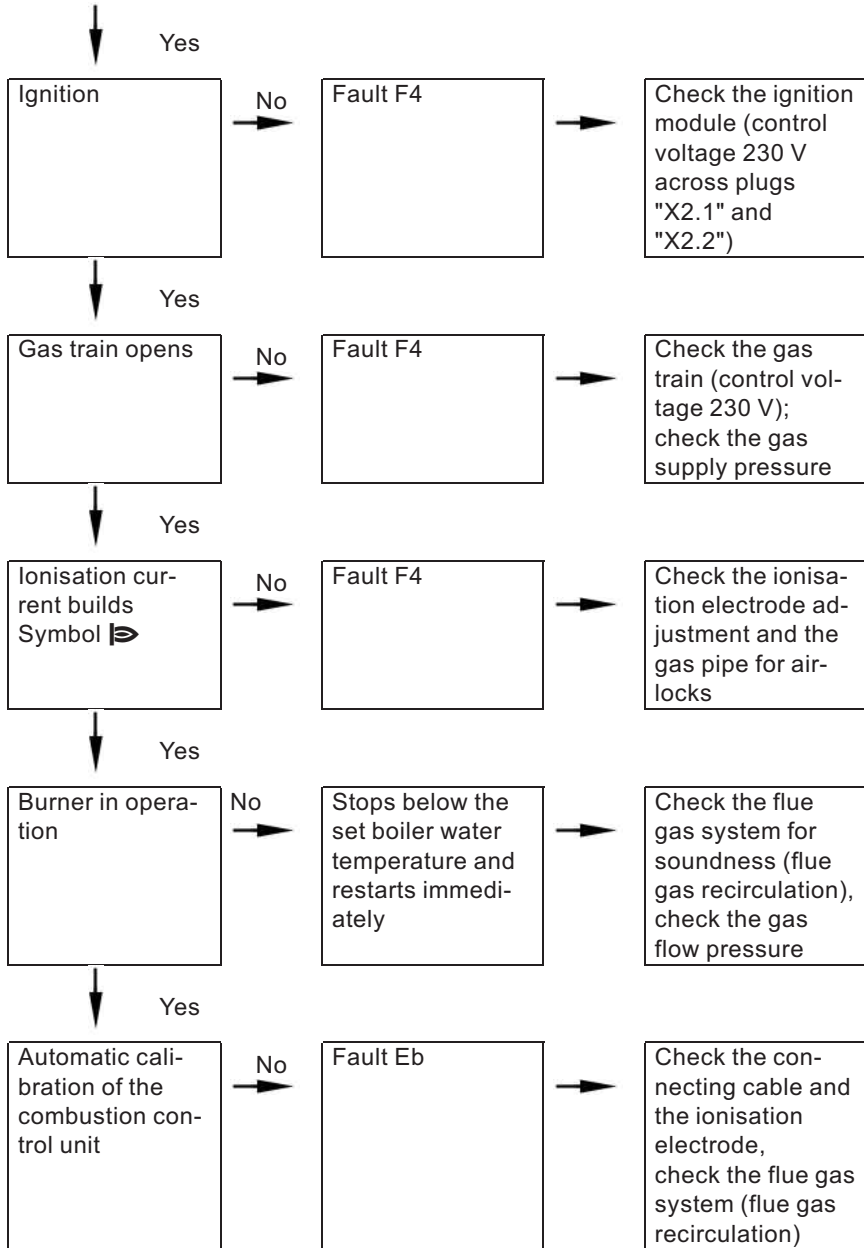
**Wobbe index ranges**

Gas type	Wobbe index range	
	kWh/m <sup>3</sup>	MJ/m <sup>3</sup>
Delivered condition Natural gas E or Natural gas LL	12.0 to 16.1	43.2 to 58.0
	10.0 to 13.1	36.0 to 47.2

**Function sequence and possible faults**



**Further details regarding the individual steps (cont.)**



## Further details regarding the individual steps (cont.)

For further details regarding faults,  
see page 70.

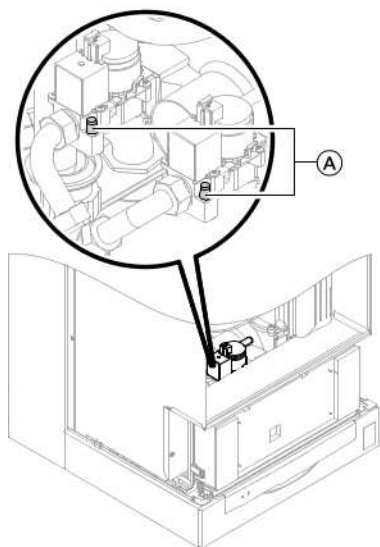
### Checking the static and supply pressure



#### **Danger**

CO build-up as a result of an incorrect burner setup can have serious health implications.

Carry out a CO test prior to and after work on gas equipment.



1. Close the gas shut-off valve.
2. Release screw (A) inside test nipple "PE" on one of the two gas trains, but do not remove it; then connect the pressure gauge.
3. Open the gas shut-off valve.
4. Measure the static pressure and record it in the service report on page 112.  
Set value: max. 57.5 mbar.
5. Start the boiler.

#### **Note**

*During commissioning, the boiler can enter a fault state because of airlocks in the gas pipe. After approx. 5 s press "⏮ RESET" to reset the burner.*


6. Check the supply (flow) pressure.  
Set value: 20 mbar.

#### **Note**

*Use suitable test equipment with a resolution of at least 0.1 mbar to measure the supply pressure.*



**Further details regarding the individual steps (cont.)**

- 7. Record the actual value in the service report.  
Take the action shown in the following table.
- 8. Shut down the boiler, close the gas shut-off valve, remove the pressure gauge and close test nipple (A) with the screw.
- 9.  **Danger**  
Gas escaping from the test nipple leads to a risk of explosions.  
Check for tightness.

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

Supply pressure (flow pressure)	Remedy
below 15 mbar	Do not commission, and notify the gas supply utility.
15 to 25 mbar	Start the boiler.
above 25 mbar	Install a separate gas pressure governor upstream of the system and set the inlet pressure to 20 mbar for natural gas. Notify your gas supply utility.

**Setting the maximum output**







**Note**

You can limit the maximum output for **heating operation**. The limit is set via the modulation range. The max. adjustable heating output is limited upwards by the boiler coding card.

- 1. Start the boiler.



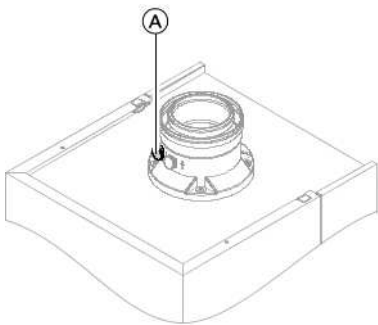
### Further details regarding the individual steps (cont.)

2. Press  and  simultaneously until a value flashes (e.g. "85") and "" appears. In the delivered condition, this value represents 100 % of rated output.  
On weather-compensated control units, the display additionally shows "**Max. output**".
3. With / select the required value in % of rated output as maximum output.
4. Confirm the set value with .
5. Record the settings for maximum output on the additional type plate included with the "technical documentation". Affix the type plate next to the original type plate on top of the boiler.

**Note**

*The output can also be limited for DHW heating. For this, change coding address "6F" in code 2.*

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



 Combustion air port

For balanced flue systems tested together with the wall mounted gas fired boiler, some authorities waive the requirement for a soundness test (overpressure test) during commissioning by the flue gas inspector.

We recommend that your heating engineer carries out a simple soundness test during the commissioning of your system. For this, it would be sufficient to check the CO<sub>2</sub> or O<sub>2</sub> concentration in the combustion air at the annular gap of the balanced flue pipe.



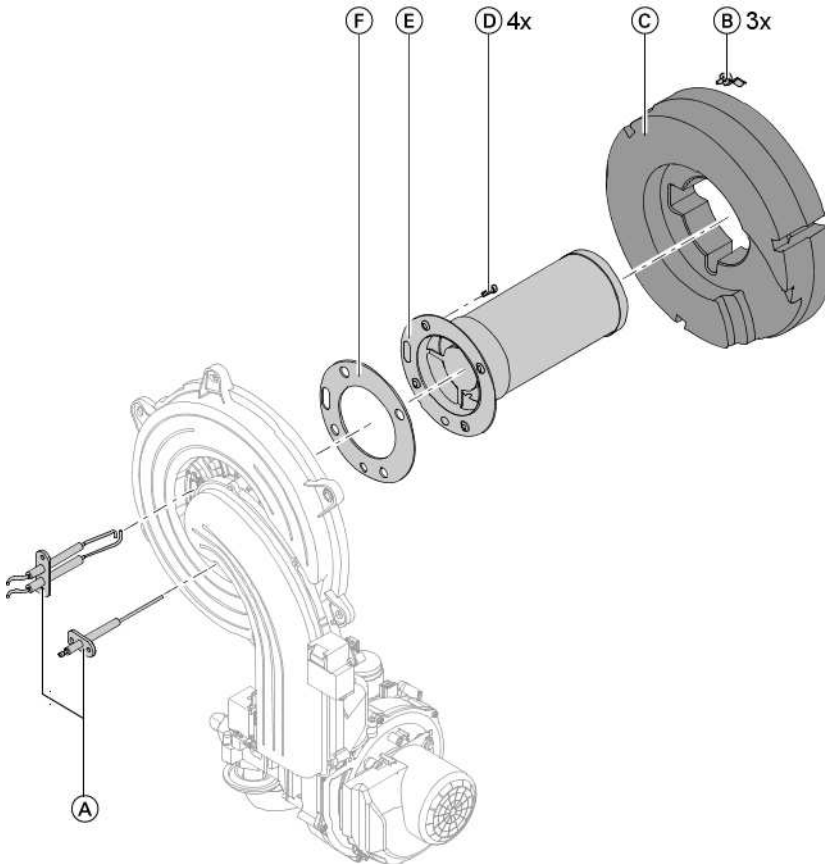


### Further details regarding the individual steps (cont.)

1. Switch OFF the main power supply and the ON/OFF switch at the control unit.
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), earth tab (F) and ionisation electrode (G).
6. Release gas supply pipe fittings (H).
7. Undo six screws (K) and remove the burner.
8. Check burner gasket (L) for damage. Replace gasket, if required.

**Further details regarding the individual steps (cont.)**

**Checking the burner gauze assembly & replacing, if required**



1. Remove electrodes (A).
2. Undo three retaining clips (B) at thermal insulation ring (C) and remove thermal insulation ring (C).
3. Release four Torx screws (D) and remove burner gauze assembly (E).
4. Remove old burner gauze assembly gasket (F).
5. Insert a new burner gauze assembly with a new gasket and secure with four Torx screws.

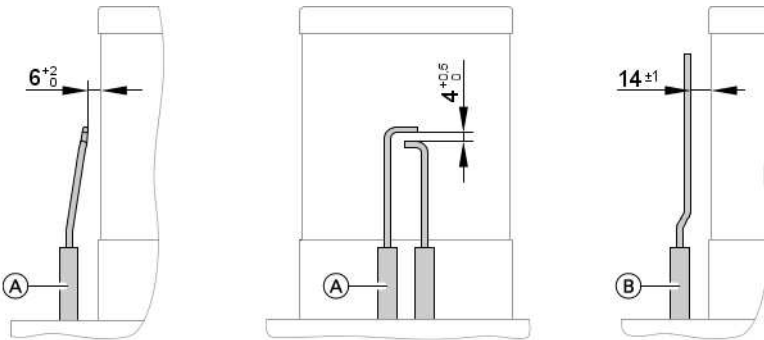
**Note**  
Torque: 4.5 Nm



### Further details regarding the individual steps (cont.)

6. Refit the thermal insulation ring (C) and electrodes (A).

### Checking and adjusting the ignition and ionisation electrodes



(A) Ignition electrodes

(B) Ionisation electrode

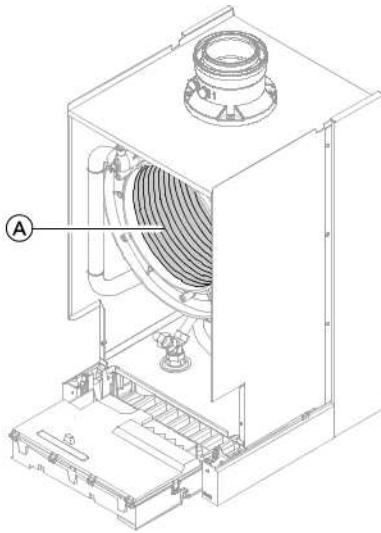
1. Check the electrodes for wear and contamination.
2. Clean the electrodes with a small brush (not with a wire brush) or emery paper.
3. Check the electrode gaps. If the gaps are not as specified or the electrodes are damaged, replace and align the electrodes together with new gaskets. Tighten the electrode fixing screws with 2 Nm.

**!** **Please note**  
Do not damage  
the wire gauze.

### Cleaning the combustion chamber/heat exchanger and installing the burner

**!** **Please note**  
Scratches on parts that are in contact with flue gases can lead to corrosion.  
**Never use brushes to clean the heating surfaces.**

### Further details regarding the individual steps (cont.)



1. Use a vacuum cleaner to remove residues from the heating surfaces (A) inside the combustion chamber.
2. If required, spray slightly acidic, chloride-free cleaning agents based on phosphoric acid (e.g. Antox 75 E) onto the heating surfaces (A) and let them soak for approx. 20 min.
3. Thoroughly flush the heating surfaces (A) with water.
4. Install the burner and torque screws diagonally with 12 Nm.
5. Fit the gas supply pipe with a new gasket. Torque fittings with 10 Nm.
6. Check the gas connections for tightness.



**Danger**

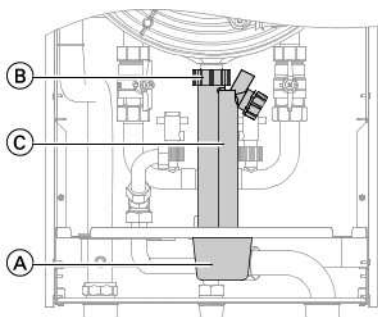
Escaping gas leads to a risk of explosion.

Check all fittings for tightness.

7. Connect the electrical cables/leads to each corresponding component.

### Further details regarding the individual steps (cont.)

#### Checking the condensate drain and cleaning the siphon



1. Pull off cap (A) downwards.
2. Undo union nut (B) and pull off siphon (C) downwards.
3. Clean siphon (C) and check that the condensate can freely drain off.
4. Fill siphon (C) with water and reassemble.
5. Push on cap (A) from below.

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

**Note**

*Carry out this test on a cold system.*

1. Drain the system, or close the cap valve on the diaphragm expansion vessel and reduce the pressure, until the pressure gauge indicates "0".
2. If the inlet pressure of the diaphragm expansion vessel is lower than the static system pressure, top up with nitrogen until the inlet pressure is raised by 0.1 to 0.2 bar.
3. Top up your heating system with water and vent until the filling pressure of a cooled system is 0.1 to 0.2 bar higher than the inlet pressure of the diaphragm expansion vessel.  
Permiss. operating pressure: 4 bar

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



**Danger**

Escaping gas leads to a risk of explosion.

Check gas equipment for tightness.

## Further details regarding the individual steps (cont.)

### Flue gas emissions test

The electronic combustion control unit automatically ensures an optimum combustion quality. Only the combustion values need to be checked during commissioning and maintenance. For this, check the CO<sub>2</sub> or O<sub>2</sub> content. For a function description of the electronic combustion control unit, see page 102.

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

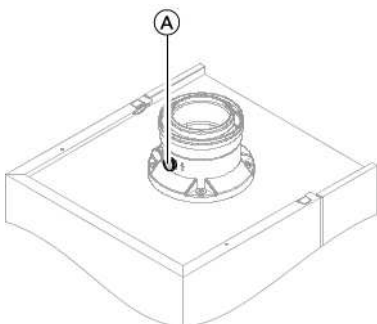
The CO<sub>2</sub> content at the upper and lower output for natural gas E and LL must in each case be within the range 7.7 to 9.2%:

For all gas types, the O<sub>2</sub> content must be between 4.4% and 6.9%.

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 16.

#### Note

*During commissioning, the combustion control unit carries out an automatic calibration. Only test the emissions approx. 30 s after the burner has started.*



1. Connect a flue gas analyser at flue gas port (A) on the boiler flue connection.
2. Open the gas shut-off valve, start the boiler and create a heat demand.

3. Adjust the lower output.

#### Constant temperature control unit:

+  press simultaneously:  
"1" is shown.

#### Weather-compensated control unit:

+  press simultaneously:  
"Relay test" and then  
"Base load" is shown.

4. Check the CO<sub>2</sub> content. Should the actual value deviate by more than 1% from the above ranges, check the balanced flue system for tightness, see page 16.
5. Enter actual values into the service report.

### Further details regarding the individual steps (cont.)

6. Adjust the upper output.

**Constant temperature control unit:**

⊕ press:  
"2" is shown.

**Weather-compensated control unit:**

⊕ press:  
"Full load" is shown.

7. Check the CO<sub>2</sub> content. Should the actual value deviate by more than 1% from the above ranges, check the balanced flue system for tightness, see page 16.

8. After testing, press **OK**.

9. Enter actual values into the service report.

## 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 adjusted automatically.

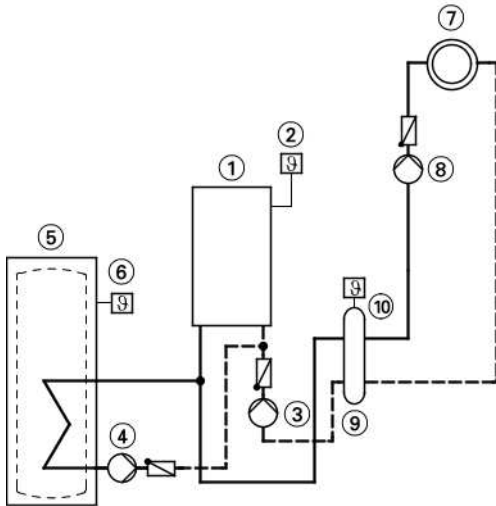
- For the selection of an appropriate design, see the following diagrams.
- For coding steps, see page 36.



**Further details regarding the individual steps (cont.)**

**System version 1**

**One heating circuit without mixer A1 (with/without DHW heating)**



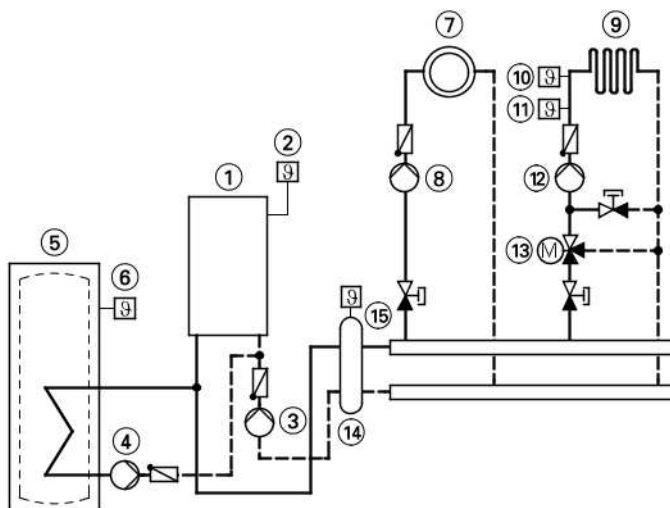
- |   |  |
|---|--|
| ① Vitodens 200-W  | ④ Cylinder primary pump                    |
| ② Outside temperature sensor (only for weather-compensated control units)<br>or<br>Vitotrol 100 (only for constant temperature control units) | ⑤ DHW cylinder                             |
| ③ Heating circuit pump  | ⑥ Cylinder temperature sensor              |
|   | ⑦ Heating circuit without mixer A1         |
|   | ⑧ Heating circuit pump A1                  |
|   | ⑨ Low loss header                          |
|   | ⑩ Flow temperature sensor, low loss header |

Required coding	Address
—	—

**Further details regarding the individual steps (cont.)**

**System version 2**

**One heating circuit without mixer A1 and one heating circuit with mixer M2, with low loss header (with/without DHW heating)**



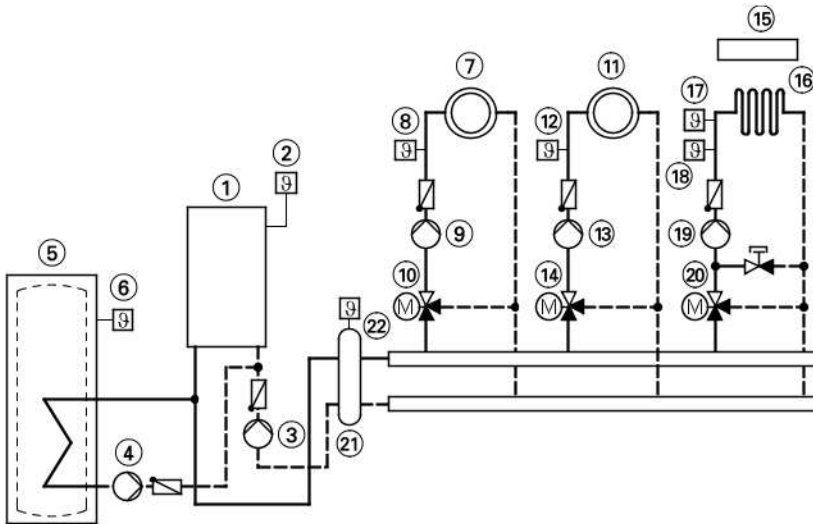
- |                                    |   |
|------------------------------------|---|
| ① Vitodens 200-W                   | ⑩ Temperature limiter for limiting the max. temp. of underfloor heating systems |
| ② Outside temperature sensor       | ⑪ Flow temperature sensor M2  |
| ③ Boiler circuit pump              | ⑫ Heating circuit pump M2   |
| ④ Cylinder primary pump            | ⑬ Extension kit for one heating circuit with mixer M2                           |
| ⑤ DHW cylinder                     | ⑭ Low loss header   |
| ⑥ Cylinder temperature sensor      | ⑮ Flow temperature sensor, low loss header                                      |
| ⑦ Heating circuit without mixer A1 |   |
| ⑧ Heating circuit pump A1          |   |
| ⑨ Heating circuit with mixer M2    |   |

Required coding	Address
Only one heating circuit with mixer	
■ with DHW cylinder	00:4
■ without DHW cylinder	00:3

**Further details regarding the individual steps (cont.)**

**System version 3**

**Three or more heating circuits with mixer and low loss header (with/without DHW heating)**



- ① Vitodens 200-W
- ② Outside temperature sensor
- ③ Boiler circuit pump
- ④ Cylinder primary pump
- ⑤ DHW cylinder
- ⑥ Cylinder temperature sensor
- ⑦ Heating circuit with mixer M1
- ⑧ Flow temperature sensor M1
- ⑨ Heating circuit pump M1
- ⑩ Extension kit for one heating circuit with mixer M1
- ⑪ Heating circuit with mixer M2
- ⑫ Flow temperature sensor M2
- ⑬ Heating circuit pump M2
- ⑭ Extension kit for one heating circuit with mixer M2
- ⑮ Vitotronic 200-H for heating circuits M1, M2 and M3
- ⑯ Heating circuit with mixer M3
- ⑰ Temperature limiter for limiting the max. temp. of underfloor heating systems
- ⑱ Flow temperature sensor M3
- ⑲ Heating circuit pump M3
- ⑳ Extension kit for one heating circuit with mixer M3
- ㉑ Low loss header
- ㉒ Flow temperature sensor, low loss header

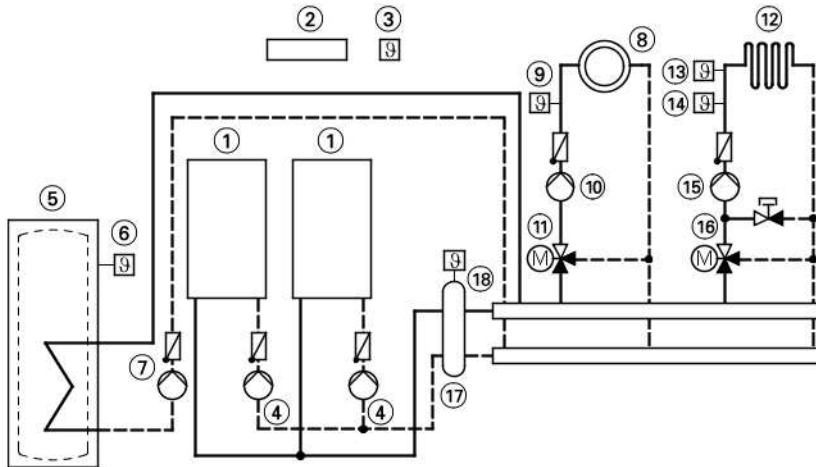
5692 761 GB

Required coding	Address
—	—

**Further details regarding the individual steps (cont.)**

**System version 4**

**Multi-boiler system with several heating circuits with mixer and low loss header (with/without DHW heating)**



- ① Vitodens 200-W
- ② Vitotronic 300-K
- ③ Outside temperature sensor
- ④ Boiler circuit pump
- ⑤ DHW cylinder
- ⑥ Cylinder temperature sensor
- ⑦ Cylinder primary pump
- ⑧ Heating circuit with mixer M2
- ⑨ Flow temperature sensor M2
- ⑩ Heating circuit pump M2
- ⑪ Extension kit for one heating circuit with mixer M2
- ⑫ Heating circuit with mixer M3
- ⑬ Temperature limiter for limiting the max. temp. of underfloor heating systems
- ⑭ Flow temperature sensor M3
- ⑮ Heating circuit pump M3
- ⑯ Extension kit for one heating circuit with mixer M3
- ⑰ Low loss header
- ⑱ Flow temperature sensor, low loss header

Required coding	Address
Multi-boiler system with Vitotronic 300-K	01:2

**Further details regarding the individual steps (cont.)**

**Note**

Codes for multi-boiler system, see Vitotronic 300-K installation and service instructions

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

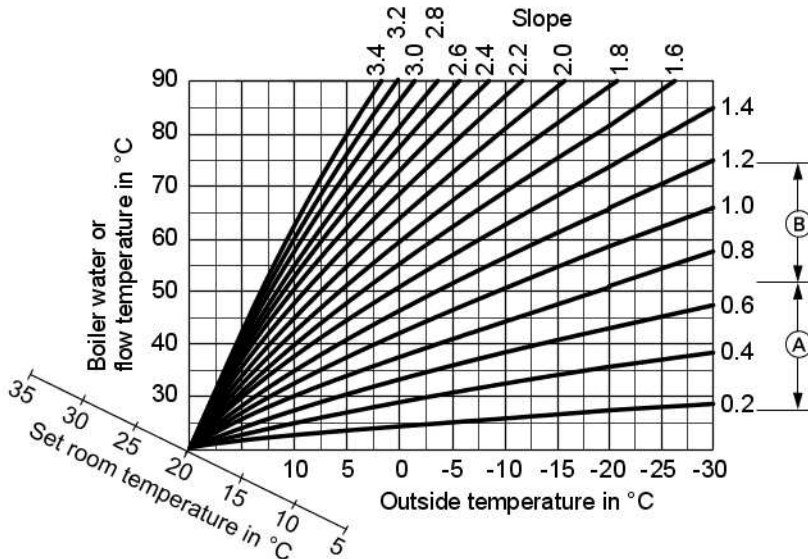
The heating curves illustrate the relationship between the outside temperature and the boiler water or flow temperature.

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

The room temperature, again, depends on the boiler water or the flow temperature.

Settings in the delivered condition:

- Slope = 1.4
- Level = 0

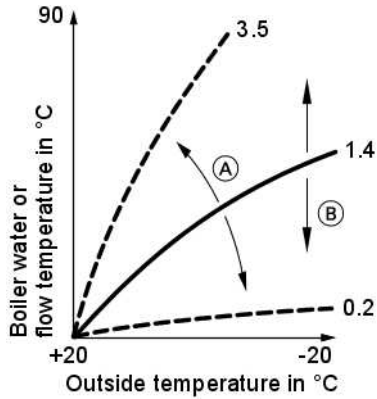


(A) Heating curve slope for underfloor heating systems

(B) Heating curve slope for low temperature heating systems (according to the Energy Savings Order [Germany])

## Further details regarding the individual steps (cont.)

### Changing the slope and level



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

#### 1. Slope:

Change with coding address "d3" in code 1.  
Setting range 2 to 35 (equals slope 0.2 to 3.5).

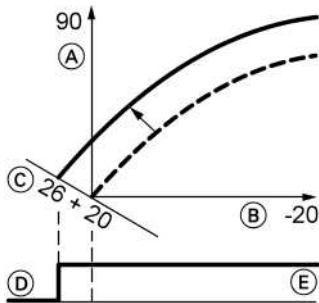
#### 2. Level:

Change with coding address "d4" in code 1.  
Setting range -13 to +40 K.

## Further details regarding the individual steps (cont.)

### Adjusting the set room temperature

#### Standard room temperature



Example 1: Adjustment of standard 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"

Press the following keys:

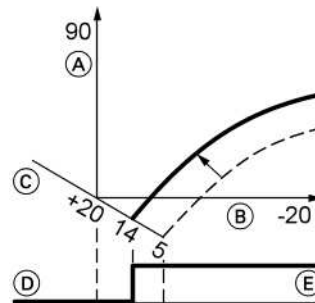
1.  $\oplus$  "1 IIII" flashes.
2.  $\otimes$  to select heating circuit A1 (heating circuit without mixer)  
or
3.  $\oplus$  "2 IIII" flashes.
4.  $\otimes$  to select heating circuit with mixer M2.

5. Adjust the set day temperature with rotary selector "☀️".

The value will be automatically accepted after approx. 2 s.

Accordingly, the heating curve is adjusted along set room temperature axis (C), which results in modified start/stop characteristics of the heating circuit pumps if heating circuit pump logic function is active.

#### Reduced room temperature



Example 2: Adjustment of reduced 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"

Press the following keys:

1.  $\oplus$  "1 IIII" flashes.



### Further details regarding the individual steps (cont.)

- |  |  |
|--|--|
| <p>2.  to select heating circuit A1 (heating circuit without mixer)<br/><b>or</b></p> <p>3.  "2 " flashes.</p> <p>4.  to select heating circuit with mixer M2.</p> | <p>5.  Call up the set night temperature.</p> <p>6.  Change the value.</p> <p>7.  Confirm the value.</p> |
|--|--|

### Connecting the control unit to the LON system (only for weather-compensated control units)

The LON communication module (accessories) must be plugged in.

**Note**

*The data transfer via LON can take several minutes.*



Installation instructions  
LON communication module

### Single boiler system with Vitotronic 200-H and Vitocom 300

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

**Note**

*In the same LON system, the same number **cannot** be allocated twice.*

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

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

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**Further details regarding the individual steps (cont.)**

Boiler control unit	Vitotronic 200-H	Vitotronic 200-H	Vitocom
Control unit transmits outside temperature <b>Set code "97:2"</b>	Control unit receives outside temperature <b>Set code "97:1"</b>	Control unit receives outside temperature <b>Set code "97:1"</b>	—
LON subscriber fault monitoring Code "9C:20"	LON subscriber fault monitoring Code "9C:20"	LON subscriber fault monitoring Code "9C:20"	—

**Updating the LON subscriber list**

Only possible if all subscribers are connected and the control unit is programmed to be fault manager (code "79:1").

2. The subscriber list is updated after approx. 2 min. The subscriber check is completed.

Press the following keys:

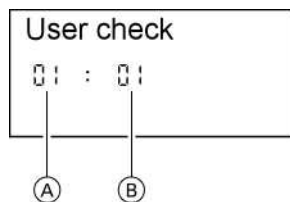
1. + simultaneously for approx. 2 s. Subscriber check initiated (see page 33).

**Carrying out a subscriber check**

Communication with the system devices connected to the fault manager is tested with a subscriber check.

Precondition:

- The control unit must be programmed as **fault manager** (code "79:1")
- The LON subscriber number must be programmed in all control units (see page 32)
- The LON subscriber list in the fault manager must be up to date (see page 32)



- (A) Consecutive number in the subscriber list
- (B) Subscriber number

### Further details regarding the individual steps (cont.)

Press the following keys:

1. + simultaneously for approx. 2 s.  
The subscriber check has been initiated.
2. for the required subscriber.
3. Check is enabled  
"Check" flashes until its completion.  
The display and all key illuminations for the selected subscriber flash for approx. 60 s.
4. "Check OK" is displayed during communication between both devices.  
or  
"Check not OK" is displayed if there is no communication between both devices. Check the LON connection.
5. Repeat points 2 and 3 to check further subscribers.
6. + simultaneously for approx. 1 s.  
The subscriber check is completed.

### Instructing the system user

The system installer must hand the operating instructions to the system user and instruct him/her in the operation of the system.

### Scanning and resetting the "Service" display

The red fault indicator flashes when the limits set via coding address "21" and "23" have been reached. The programming unit display flashes:

- On a constant temperature control unit:  
The defaulted hours run or the defaulted interval with clock symbol "⌚" (subject to setting)
- On a weather-compensated control unit:  
"Service"



#### Note

*Set code "24:1" and then code "24:0" if a service is carried out before the service display is shown; the set service parameters for hours run and interval are then reset to 0.*


Press the following keys:

1. The service scan is active.
2. Scan service messages.

### Further details regarding the individual steps (cont.)

3.  The service display will be cleared (for a weather-compensated control unit: "Acknowledge: Yes", reconfirm with ). The red fault display continues to flash.

**Note**

*An acknowledged service message can be redisplayed by pressing  (approx. 3 s).*

### After a service has been carried out

1. Reset code "24:1" to "24:0". The red fault indicator extinguishes.






**Note**

*If coding address "24" is not reset, the "Service" message reappears:*

- *On a constant temperature control unit:  
After 24 hours*
- *On a weather-compensated control unit:  
At 07:00 h on Monday*

2. Reset the burner hours run, burner starts and consumption, if required.

Press the following keys:

-  Scanning is active.
-  for the selected value.
-  The selected value will be set to "0".
-  for further scans.
-  Scanning is completed.










## Code 1

### Calling up code 1

#### Note

- *On weather-compensated control units, codes are displayed as plain text.*
- *Codes that are irrelevant due to the system equipment level or the setting of other codes will not be displayed.*
- *Heating systems with one heating circuit without mixer and one heating circuit with mixer:  
Initially, the possible coding addresses "A0" to "d4" for the heating circuit without mixer A1 are scanned; then the coding addresses for the heating circuit with mixer M2 are scanned.*

Press the following keys:

1.  +  simultaneously for approx. 2 s.
2.  for the required coding address; the address flashes.
3.  to confirm.
4.  for the selected value.
5.  to confirm; the display briefly shows "**accepted**" (weather-compensated control unit); the address flashes again.
6.  for the selection of further addresses.
7.  +  press simultaneously for approx. 1 s; code 1 is terminated.

**Code 1 (cont.)****Overview****Coding**

<b>Coding in the delivered condition</b>		<b>Possible change</b>	
<b>System design</b>			
00 :1	System version 1 and 3: 1 heating circuit without mixer A1, without DHW heating	00 :2	System version 1 and 3: 1 heating circuit without mixer A1, with DHW heating
		00 :3	System version 2: 1 heating circuit with mixer M2, without DHW heating
		00 :4	System version 2: 1 heating circuit with mixer M2, with DHW heating
		00 :5	System version 2: 1 heating circuit without mixer A1 and 1 heating circuit with mixer M2, without DHW heating
		00 :6	System version 2: 1 heating circuit without mixer A1; 1 heating circuit with mixer M2, with DHW heating
<b>Single and 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>Max. boiler water temp.</b>			
06:...	Maximum boiler water temperature limit (defaulted by the boiler coding card)	06:20 to 06:127	Maximum limit of the boiler water temperature within the ranges defaulted by the boiler
<b>Venting/filling</b>			
2F:0	Venting program/ fill program disabled	2F:1	Venting program enabled
		2F:2	Fill program enabled



**Code 1** (cont.)

<b>Coding in the delivered condition</b>		<b>Possible change</b>	
<b>Subscriber no.</b>			
77:1	LON subscriber number	77:2 to 77:99	LON subscriber number, adjustable from 1 to 99: 1 - 4 = Boiler 5 = Cascade 10 - ... = Vitotronic 200-H 99 = Vitocom  <b>Note</b> <i>Allocate each number only once.</i>
<b>DHW priority A1</b>			
A2:2	Cylinder priority to heating circuit pump	A2:0	Without cylinder priority for heating circuit pump
<b>DHW priority M2</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 A2:15	Reduced priority applied to mixer (the heating circuit receives a reduced amount of energy)
<b>Summer econ. A1/M2</b>			
A5:5	With heating circuit pump logic function (only for weather-compensated control units)	A5:0	Without heating circuit pump logic function
<b>Min. flow temp. A1/M2</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 10 to 127 °C (limited by the boiler coding card)
<b>Max. flow temp. A1/M2</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 the boiler coding card)









**Code 1 (cont.)**


Coding in the delivered condition		Possible change	
<b>Slope A1/M2</b>			
d3:14	Heating curve slope = 1.4 (only for weather-compensated control units)	d3:2 to d3:35	Heating curve slope adjustable from 0.2 to 3.5 (see page 29)
<b>Level A1/M2</b>			
d4:0	Heating curve level = 0 (only for weather-compensated control units)	d4:-13 to d4:40	Heating curve level adjustable from -13 to 40 (see page 29)


**Code 2****Calling up code 2****Note**



- *On weather-compensated control units, codes are displayed as plain text.*
- *Codes that are irrelevant due to the system equipment level or the setting of other codes will not be displayed.*

Press the following keys:


1.  +  simultaneously for approx. 2 s.
2.  to confirm.
3.  for the required coding address; the address flashes.
4.  to confirm; the value flashes.
5.  for the selected value.

6.  to confirm; the display briefly shows **"accepted"** (for weather-compensated control units); the address flashes again.

7.  for the selection of further addresses.

8.  +  press simultaneously for approx. 1 s; code 2 is terminated.

The coding addresses are grouped according to the following **function areas**. The respective function area is shown on the display.

The areas are scanned in the following sequence with :

## Coding

### Code 2 (cont.)

Function area	Coding addresses
System design	00
Boiler/burner	06 to 54
DHW	56 to 73
General	76 to 9F
Heating circuit A1 (heating circuit without mixer)	A0 to Fb
Heating circuit with mixer M2	A0 to Fb

#### Note

*Heating systems with one heating circuit without mixer and one heating circuit with mixer:*

*Initially, the possible coding addresses "A0" to "Fb" for the heating circuit without mixer A1 are scanned; then the coding addresses for the heating circuit with mixer M2 are scanned.*

## Coding

Coding in the delivered condition	Possible change
<b>System design</b>	
00 :1 System version 1 and 3: 1 heating circuit without mixer A1, without DHW heating	00 :2 System version 1 and 3: 1 heating circuit without mixer A1, with DHW heating
	00 :3 System version 2: 1 heating circuit with mixer M2, without DHW heating
	00 :4 System version 2: 1 heating circuit with mixer M2, with DHW heating
	00 :5 System version 2: 1 heating circuit without mixer A1; 1 heating circuit with mixer M2, without DHW heating
	00 :6 System version 2: 1 heating circuit without mixer A1; 1 heating circuit with mixer M2, with DHW heating



**Code 2** (cont.)

<b>Coding in the delivered condition</b>		<b>Possible change</b>	
01:1	Single boiler system (only for constant temperature control units)	01:2	Multi-boiler system with Vitotronic 300-K
<b>Boiler/burner</b>			
06:...	Maximum limit of the boiler water temperature, defaulted by the boiler coding card	06:20 to 06:127	Maximum limit of the boiler water temperature within the ranges defaulted by the boiler
07:1	Boiler number in multi-boiler systems	07:2 to 07:4	Boiler number 2 to 4 in multi-boiler systems
0d:0	Function "Emergency mode in case of insufficient system pressure" disabled	0d:1	Function "Emergency mode in case of insufficient system pressure" enabled. Minimum system pressure, see page 8. The burner starts with the lower output. The fault message "A2" will be displayed (see page 73) as long as the system operates in emergency mode.
0E:0	System pressure below maximum value.	0E:1	Max. system pressure exceeded during operation. Fault message "A4" is displayed as long as the max. system pressure is exceeded. For the max. permissible operating pressure, see the boiler type plate. After the fault has been removed, reset the coding address manually to 0.  <b>Note</b> <i>The value is set automatically.</i>



**Code 2** (cont.)

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 open to the coding addresses for the parameters of the combustion controller
21:0	No maintenance interval (operating hours) selected	21:1 to 21:9999	The number of hours run before the burner should be serviced is adjustable from 1 to 9999 h
23:0	No time interval for burner service selected	23:1 to 23:24	Interval adjustable from 1 to 24 months
24:0	The service display is reset	24:1	Service display (value displayed automatically)
25:0	①: No outside temperature sensor or remote monitoring recognised (only for constant temperature control units)	25:1	Outside temperature sensor and fault monitoring recognised
28:0	No burner interval ignition	28:1 to 28:24	Time interval adjustable from 1 to 24 h. The burner is force-started respectively for 30s.
2E:0	Without external extension	2E:1	With external extension (automatic setting on connection)
2F:0	Venting program/fill program disabled	2F:1	Venting program enabled
		2F:2	Fill program enabled
30:1	Variable speed circulation pump in the heating circuit connection set (automatic adjustment)	30:0	Circulation pump in the heating circuit connection set, without variable speed (e.g. temporarily for service)
31:...	Set speed of the circulation pump in the heating circuit connection set, when operated as boiler circuit pump in %, defaulted by the boiler coding card	31:0 to 31:100	Set speed adjustable from 0 to 100 %

**Code 2** (cont.)

Coding in the delivered condition		Possible change	
32:0	Influence of the signal "External blocking" on circulation pumps: All pumps in control function	32:1 to 32:15	Influence of the signal "External blocking" on circulation pumps: see the following table

**Note**

Generally, the burner will be blocked when signal "External blocking" is enabled.

Value address 32: ...	Circulation pump in the heating circuit connection set	Heating circuit pump Heating circuit without mixer	Heating circuit pump Heating circuit with mixer	Cylinder primary pump
0	Control funct.	Control funct.	Control funct.	Control funct.
1	Control funct.	Control funct.	Control funct.	OFF
2	Control funct.	Control funct.	OFF	Control funct.
3	Control funct.	Control funct.	OFF	OFF
4	Control funct.	OFF	Control funct.	Control funct.
5	Control funct.	OFF	Control funct.	OFF
6	Control funct.	OFF	OFF	Control funct.
7	Control funct.	OFF	OFF	OFF
8	OFF	Control funct.	Control funct.	Control funct.
9	OFF	Control funct.	Control funct.	OFF
10	OFF	Control funct.	OFF	Control funct.
11	OFF	Control funct.	OFF	OFF
12	OFF	OFF	Control funct.	Control funct.
13	OFF	OFF	Control funct.	OFF
14	OFF	OFF	OFF	Control funct.
15	OFF	OFF	OFF	OFF

Coding in the delivered condition		Possible change	
<b>Boiler/burner</b>			
34:0	Influence of the signal "External demand" on the circulation pumps: All pumps in control function	34:1 to 34:23	Influence of the signal "External demand" on the circulation pumps: see the following table

**Code 2** (cont.)

<b>Value address 34: ...</b>	<b>Circulation pump in the heating circuit connection set</b>	<b>Heating circuit pump Heating circuit without mixer</b>	<b>Heating circuit pump Heating circuit with mixer</b>	<b>Cylinder primary pump</b>
0	Control funct.	Control funct.	Control funct.	Control funct.
1	Control funct.	Control funct.	Control funct.	OFF
2	Control funct.	Control funct.	OFF	Control funct.
3	Control funct.	Control funct.	OFF	OFF
4	Control funct.	OFF	Control funct.	Control funct.
5	Control funct.	OFF	Control funct.	OFF
6	Control funct.	OFF	OFF	Control funct.
7	Control funct.	OFF	OFF	OFF
8	OFF	Control funct.	Control funct.	Control funct.
9	OFF	Control funct.	Control funct.	OFF
10	OFF	Control funct.	OFF	Control funct.
11	OFF	Control funct.	OFF	OFF
12	OFF	OFF	Control funct.	Control funct.
13	OFF	OFF	Control funct.	OFF
14	OFF	OFF	OFF	Control funct.
15	OFF	OFF	OFF	OFF
16	ON	Control funct.	Control funct.	Control funct.
17	ON	Control funct.	Control funct.	OFF
18	ON	Control funct.	OFF	Control funct.
19	ON	Control funct.	OFF	OFF

**Code 2** (cont.)

Value address 34: ...	Circulation pump in the heating circuit connection set	Heating circuit pump Heating circuit without mixer	Heating circuit pump Heating circuit with mixer	Cylinder primary pump
20	ON	OFF	Control funct.	Control funct.
21	ON	OFF	Control funct.	OFF
22	ON	OFF	OFF	Control funct.
23	ON	OFF	OFF	OFF

Coding in the delivered condition		Possible change	
<b>Boiler/burner</b>			
38:0	Status burner control unit: Operational (no fault)	38:≠0	Status fault, burner control unit
51:0	Circulation pump in the heating circuit connection set always starts when there is a heat demand	51:1	If the burner operates, the circulation pump in the heating circuit connection set will only be started when there is a heat demand. System with heating water buffer cylinder.
52:0	Without flow temperature sensor for low loss header	52:1	With flow temperature sensor for low loss header (automatic adjustment on connection)
53:1	Function connection <sup>28</sup> of the internal extension: DHW circulation pump	53:0	Function connection <sup>28</sup> : Central fault
		53:2	Function connection <sup>28</sup> : External heating circuit pump (heating circuit A1)
		53:3	Function connection <sup>28</sup> : External cylinder primary pump
54:0	Without solar control unit	54:1	With Vitosolic 100 (automatic adjustment on connection)
		54:2	With Vitosolic 200 (automatic adjustment on connection)



**Code 2** (cont.)

Coding in the delivered condition		Possible change	
<b>DHW</b>			
56:0	Set DHW temperature adjustable from 10 to 60 °C	56:1	Set DHW temperature adjustable from 10 to above 60 °C  <b>Note</b> <i>Maximum value subject to boiler coding card. Observe the max. permissible DHW temperature.</i>
58:0	Without auxiliary function for DHW heating	58:10 to 58:60	Input of a second set DHW value, adjustable from 10 to 60 °C (observe coding addresses "56" and "63")
59:0	Cylinder heating: Starting point -2.5 K Stopping point +2.5 K	59:1 to 59:10	Starting 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
60:20	During DHW heating, the boiler water temperature is max. 20 K higher than the set DHW temperature	60:5 to 60:25	The difference 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	Circulation pump without run-on
		62:1 to 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 to 63:14	Every 2 days to every 14 days
		63:15	2 x daily

**Code 2 (cont.)**

<b>Coding in the delivered condition</b>		<b>Possible change</b>	
67:40	With the Vitosolic: Third set DHW temperature = 40 °C	67:0	Without third set DHW temperature
		67:1 to 67:60	Third set DHW temperature adjustable from 1 to 60 °C (subject to the setting of coding address "56")
6F:...	Maximum output for DHW heating in %, defaulted by the boiler coding card	6F:0 to 6F:100	Max. output during DHW heating adjustable from 0 to 100 %
71:0	DHW circulation pump: "ON" in accordance with the time program (only for weather-compensated control units)	71:1	"OFF" during DHW heating to the first set value
		71:2	"ON" during DHW heating to the first set value
72:0	DHW circulation pump: "ON" in accordance with the time program (only for weather-compensated control units)	72:1	"OFF" during DHW heating to the second set value
		72:2	"ON" during DHW heating to the second set value
73:0	DHW circulation pump: "ON" in accordance with the time program (only for weather-compensated control units)	73:1 to 73:6	during the time program "ON" 1x/hour for 5 min "ON" up to 6x/hour for 5 min
		73:7	permanently "ON"
<b>General</b>			
76:0	Without LON communication module (only for weather-compensated control units)	76:1	With LON communication module; automatic recognition
		76:2	With KM BUS/cascade communication module; automatic recognition
77:1	LON subscriber number (only for weather-compensated control units)	77:2 to 77:99	LON subscriber number, adjustable from 1 to 99 (see page 32).
			<b>Note</b> Allocate each number <b>only once</b> .



Coding

**Code 2** (cont.)

<b>Coding in the delivered condition</b>		<b>Possible change</b>	
79:1	With LON communication module: Control unit is fault manager (only for weather-compensated control units)	79:0	Control unit is not fault manager
7b:1	With LON communication module: The control unit transmits the time (only for weather-compensated control units)	7b:0	Do not transmit time
7F:1	Detached house (only for weather-compensated control units)	7F:0	Apartment block Separate adjustment of holiday program and time program for DHW heating, as option
80:1	A fault message is displayed, providing a fault is active for at least 5 s	80:0	Immediate fault message
		80:2 to 80:199	The fault message is issued after a delay that is adjustable from 10 s to 995 s; 1 step = 5 s
81:1	Automatic summer/winter time changeover	81:0	Manual summer/winter time changeover
		81:2	Radio clock module is automatically detected
		81:3	With LON communication module: The control unit receives the time
82:0	Operation with natural gas	82:–	Never adjust





## Code 2 (cont.)

Coding in the delivered condition		Possible change	
85:0	Standard mode	85:1	<p>Manual calibration of the combustion controller (only adjustable if coding address 11:9 has been set). The red fault indicator also flashes during calibration. The process has terminated when the red fault indicator no longer flashes (after approx. 1 min).</p> <p><b>Note</b> <i>Heat must be drawn off during manual calibration.</i></p>
88:0	Temperature displayed in °C (Celsius)	88:1	Temperature displayed in °F (Fahrenheit)
8A:175	Never adjust		
90:128	Time constant for calculating the adjusted outside temperature 21.3 hours	90:0 to 90:199	Fast (low values) or slow (high values) matching of the flow temperature, subject to the set value when the outside temperature changes; 1 step = 10 min.
91:0	No external heating program changeover via external extension (only for weather-compensated control units)	91:1	The external heating program changeover affects the heating circuit without mixer
		91:2	The external heating program changeover affects the heating circuit with mixer
		91:3	The external heating program changeover affects the heating circuit without mixer and the heating circuit with mixer



Coding

**Code 2** (cont.)

<b>Coding in the delivered condition</b>		<b>Possible change</b>	
95:0	Without Vitocom 100 communication interface	95:1	With the Vitocom 100 communication interface; automatic recognition
97:0	With LON communication module: The outside temperature of the sensor connected to the control unit is utilised internally (only for weather-compensated control units)	97:1	The control unit receives the outside temperature
		97:2	Control unit transmits outside temperature
98:1	Viessmann system number (in conjunction with monitoring several systems via Vitocom 300)	98:2	System number adjustable from 2 to 5
		98:5	
9b:70	Minimum set boiler water temperature in case of external demand	9b:1 to 9b:127	Minimum set boiler water temperature adjustable from 1 to 127 °C (limited by the boiler coding card)
9C:20	Monitoring LON subscribers When there is no response from a subscriber, values defaulted by the control unit are used after 20 min and a fault message is 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 the mixer circuit (only for weather-compensated control units)	9F:0 to 9F:40	Differential temperature adjustable from 0 to 40 K
<b>Boiler circuit, mixer circuit</b>			
A0:0	Without remote control (only for weather-compensated control units)	A0:1	With Vitotrol 200 (automatic recognition)
		A0:2	With Vitotrol 300 (automatic recognition)



**Code 2** (cont.)

Coding in the delivered condition		Possible change	
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 applies only to the mixers. The mixer is closed whilst the cylinder is being heated; the heating circuit pump runs.
		A2:3 to A2:15	Reduced priority applied to mixer (the heating circuit receives a reduced amount of energy)
A3:2	Outside temperature below 1 °C: Heating circuit pump "ON" Outside temperature above 3 °C: Heating circuit pump "OFF"	A3:-9 to A3:15	Heating circuit pump "ON/OFF" (see the following table)

**Please note**

When selecting a value below 1 °C, there is a risk of pipes outside the thermal envelope of the building being damaged by frost.

The standby mode, in particular, should be taken into consideration, e.g. during holidays.

Parameter Address A3:...	Heating circuit pump	
	"ON" at	"OFF" at
-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



**Code 2** (cont.)

Parameter Address A3:...	Heating circuit pump	
	"ON" at	"OFF" at
2	1 °C	3 °C
to	to	
15	14 °C	16 °C

Coding in the delivered condition		Possible change	
Boiler circuit, mixer circuit			
A4:0	With frost protection (only for weather-compensated control units)	A4:1	No frost protection, adjustment only possible if coding address "A3: -9" has been selected.  <b>Note</b> Observe the note for code "A3"
A5:5	With heating circuit pump logic function (economy circuit): Heating circuit pump "OFF" if the outside temperature (AT) is 1 K higher than the set room temperature (RT <sub>set</sub> ) AT > RT <sub>set</sub> + 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", if (see the following table)

Parameter address A5:...	With heating circuit pump logic function: Heating circuit pump OFF, if
1	AT > RT <sub>set</sub> + 5 K
2	AT > RT <sub>set</sub> + 4 K
3	AT > RT <sub>set</sub> + 3 K
4	AT > RT <sub>set</sub> + 2 K
5	AT > RT <sub>set</sub> + 1 K
6	AT > RT <sub>set</sub>
7	AT > RT <sub>set</sub> - 1 K
to	
15	AT > RT <sub>set</sub> - 9 K

## Code 2 (cont.)

Coding in the delivered condition		Possible change	
Boiler circuit, mixer circuit			
A6:36	Extended economy function <b>disabled</b> (only for weather-compensated control units)	A6:5 to A6:35	Extended economy mode is enabled, i.e. the burner and heating circuit pump are switched OFF and the mixer will be closed at a variable value that is adjustable between 5 and 35 °C plus 1 °C. This value is based on the adjusted outside temperature, comprising the actual outside temperature and a time constant that takes the cooling down of an average building into consideration.
A7:0	Without mixer economy function (only for weather-compensated control units)	A7:1	With mixer economy function (extended heating circuit pump logic): Heating circuit pump also "OFF" if the mixer was closed longer than 20 min. Heating pump "ON": <ul style="list-style-type: none"> <li>■ If the mixer changes to control mode or</li> <li>■ After cylinder heating (for 20 min) or</li> <li>■ If there is a risk of frost</li> </ul>
A8:1	Heating circuit with mixer M2 creates a demand for the circulation pump in the heating circuit connection set (only for weather-compensated control units)	A8:0	Heating circuit with mixer M2 creates no demand for the circulation pump in the heating circuit connection set



**Code 2** (cont.)

<b>Coding in the delivered condition</b>		<b>Possible change</b>	
A9:7	With pump idle time: Heating circuit pump "OFF" if the set value changes 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
b0:0	With remote control: Heating mode/reduced mode: weather-compensated (only for weather-compensated control units; change the coding only for the heating circuit with mixer M2)	b0:1	Heating mode: weather-compensated Reduced mode: with room temperature hook-up
		b0:2	Heating mode: with room temperature hook-up Reduced mode: weather-compensated
		b0:3	Heating mode/reduced mode: with room temperature hook-up
b2:8	Heating with room temperature hook-up must be programmed for remote control and for the heating circuit: Room influence factor 8 (only for weather-compensated control units; change the coding only for the heating circuit with mixer M2)	b2:0	Without room influence
		b2:1 to b2:64	Room influence factor adjustable from 1 to 64
b5:0	With remote control: No room temperature-compensated heating circuit pump logic function (only for weather-compensated control units; change the coding only for the heating circuit with mixer M2)	b5:1 to b5:8	Heating circuit pump logic function; see the following table

**Code 2 (cont.)**

Parameter address b5:...	With heating circuit pump logic function: Heating circuit pump OFF, if
1:	enabled $RT_{actual} > RT_{set} + 5 \text{ K}$ ; disabled $RT_{actual} < RT_{set} + 4 \text{ K}$
2:	enabled $RT_{actual} > RT_{set} + 4 \text{ K}$ ; disabled $RT_{actual} < RT_{set} + 3 \text{ K}$
3:	enabled $RT_{actual} > RT_{set} + 3 \text{ K}$ ; disabled $RT_{actual} < RT_{set} + 2 \text{ K}$
4:	enabled $RT_{actual} > RT_{set} + 2 \text{ K}$ ; disabled $RT_{actual} < RT_{set} + 1 \text{ K}$
5:	enabled $RT_{actual} > RT_{set} + 1 \text{ K}$ ; disabled $RT_{actual} < RT_{set}$
6:	enabled $RT_{actual} > RT_{set}$ ; disabled $RT_{actual} < RT_{set} - 1 \text{ K}$
7:	enabled $RT_{actual} > RT_{set} - 1 \text{ K}$ ; disabled $RT_{actual} < RT_{set} - 2 \text{ K}$
8:	enabled $RT_{actual} > RT_{set} - 2 \text{ K}$ ; disabled $RT_{actual} < RT_{set} - 3 \text{ K}$

Coding in the delivered condition		Possible change	
<b>Boiler circuit, mixer circuit</b>			
C5:20	Electronic minimum flow temperature limit 20 °C (only for weather-compensated control units)	C5:1 to C5:127	Minimum temperature limit adjustable from 1 to 127 °C (limited by the boiler coding card)
C6:74	Electronic maximum flow temperature limit 74 °C (only for weather-compensated control units)	C6:10 to C6:127	Maximum temperature limit adjustable from 10 to 127 °C (limited by the boiler coding card)
d3:14	Heating curve slope = 1.4 (only for weather-compensated control units)	d3:2 to d3:35	Heating curve slope adjustable from 0.2 to 3.5 (see page 29)
d4:0	Heating curve level = 0 (only for weather-compensated control units)	d4:-13 to d4:40	Heating curve level adjustable from -13 to 40 (see page 29)
d5:0	The external heating program changeover alters the heating program to "Constant operation with reduced room temperature" (only for weather-compensated control units)	d5:1	The external operating mode changeover alters to "Constant central heating with standard room temperature"



**Code 2** (cont.)

<b>Coding in the delivered condition</b>		<b>Possible change</b>	
E1:1	With remote control: The set day temperature is adjustable at the remote control unit from 10 to 30 °C (only for weather-compensated control units)	E1:0	Set day temperature adjustable from 3 to 23 °C
		E1:2	Set day temperature adjustable from 17 to 37 °C
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 to Display correction -0.1 K
		E2:51 to E2:99	Display correction +0.1 K to Display correction +4.9 K
E5:0	Without variable speed heating circuit pump (only for weather-compensated control units)	E5:1	With variable speed heating circuit pump; will be recognised automatically
E6:65	Maximum speed of the variable speed heating circuit pump 65 % of the max. speed in standard mode (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 max. speed
E8:1	Minimum speed in operation with reduced room temperature subject to the setting in coding address "E9" (only for weather-compensated control units)	E8:0	Speed subject to the setting in coding address "E7"





## Code 2 (cont.)

Coding in the delivered condition		Possible change	
E9:45	Speed of the external variable speed heating circuit pump 45 % of the max. speed during operation with reduced room temperature (only for weather-compensated control units)	E9:0 to E9:100	Speed adjustable from 0 to 100 % of the maximum speed during operation with reduced room temperature
F1:0	Screed drying function disabled (only for weather-compensated control units).	F1:1 to F1:6	Screed drying function adjustable in accordance with 6 optional temperature/time profiles (see page 97)
		F1:15	Constant flow temperature 20 °C
F2:8	Time limit for party mode 8 hours or external heating program changeover via the keyboard (only for weather-compensated control units) *1	F2:0	No time limit for party mode
		F2:1 to F2:12	Time limit adjustable from 1 to 12 hours *1
F5:12	Run-on time of the circulation pump in the heating circuit connection set in heating mode 12 min (only for constant temperature control units)	F5:0	No run-on time for the circulation pump in the heating circuit connection set
		F5:1 to F5:20	Run-on time of the circulation pump in the heating circuit connection set adjustable from 1 to 20 min



\*1 Party mode ends **automatically** in heating program "III ➔" when the system changes over to operation with standard room temperature.

Coding

**Code 2** (cont.)

<b>Coding in the delivered condition</b>		<b>Possible change</b>	
F6:25	In the "DHW only" operating mode, the circulation pump in the heating circuit connection set is permanently ON (only for constant temperature control units)	F6:0	In the "DHW only" operating mode, the circulation pump in the heating circuit connection set is permanently OFF
		F6:1 F6:24	In the "DHW only" operating mode, the circulation pump in the heating circuit connection set will be started 1 to 24 times per day for 10 min respectively.
F7:25	In the "Standby" operating mode, the circulation pump in the heating circuit connection set is permanently ON (only for constant temperature control units)	F7:0	In the "Standby" operating mode, the circulation pump in the heating circuit connection set is permanently OFF
		F7:1 F7:24	In the "Standby" operating mode, the circulation pump in the heating circuit connection set will be started 1 to 24 times per day for 10 min respectively.
F8:-5	Temperature limit for terminating the reduced mode -5 °C, see example on page 99. Observe the setting of coding address "A3". (only for weather-compensated control units)	F8:+10 F8:-60	Temperature limit adjustable from +10 to -60 °C
		F8:-61	Function disabled
F9:-14	Temperature limit for raising the reduced set room temp. -14 °C, see example on page 99. (only for weather-compensated control units)	F9:+10 F9:-60	Temperature limit adjustable from +10 to -60 °C





**Code 2 (cont.)**

Coding in the delivered condition		Possible change	
FA:20	Raising the set boiler water temperature or the set flow temperature when changing from operation with reduced room temperature to operation with standard room temperature, by 20 %. See example on page 100 (only for weather-compensated control units).	FA:0 to FA:50	Temperature rise adjustable from 0 to 50 %
Fb:30	Duration for raising the set boiler water temperature or the set flow temperature (see coding address "FA") 60 min. See example on page 100 (only for weather-compensated control units).	Fb:0 to Fb:150	Duration adjustable from 0 to 300 min; 1 step $\triangleq$ 2 min



**Resetting codes to their delivered condition**

Constant temperature control unit:

1.  +  simultaneously for approx. 2 s.

2.  press.

Weather-compensated control unit:

1.  +  simultaneously for approx. 2 s.

2. 

**"Factory set? Yes"**  
appears.

3. 

to confirm  
or



to select **"Factory set? No"**.

### Service level overview

Function	Key combination	Exit	Page
Temperatures, boiler coding card and brief scans	Press  and  simultaneously for approx. 2 s	Press	61
Relay test	Press  and  simultaneously for approx. 2 s	Press	64
Max. output (heating mode)	Press  and  simultaneously for approx. 2 s	Press	15
Operating conditions and sensors	Press	Press	65
Service scan	(if "Service" flashes)	Press	34
Adjusting the display contrast	Press  and  simultaneously; the display darkens	–	–
	Press  and  simultaneously; the display becomes lighter	–	–
Calling up acknowledged fault messages	Press  for approx. 3 s		69
Fault history	Press  and  simultaneously for approx. 2 s	Press	70
Subscriber check (in conjunction with LON)	Press  and  simultaneously for approx. 2 s	Press  and  simultaneously	33
Emissions test function "A/B"	Weather-compensated control unit: Press  and  for approx. 2 s simultaneously Constant temperature control unit: Press  and  for approx. 2 s simultaneously	and  or  and  simultaneously for approx. 1 s, alternatively automatic after 30 min	–
Coding level 1 Plain text display	Press  and  simultaneously for approx. 2 s	Press  and  simultaneously for approx. 1 s	36
Coding level 2 Numerical display	Press  and  simultaneously for approx. 2 s	Press  and  simultaneously for approx. 1 s	39



### Service level overview (cont.)

Function	Key combination	Exit	Page
Resetting codes to their delivered condition	Press  and  simultaneously for approx. 2 s; then	–	59

### Temperatures, boiler coding card and brief scans

#### Weather-compensated control unit

Press the following keys:

- + simultaneously for approx. 2 s.
- for the required scan.
- Scanning is completed.

The following values can be scanned, subject to the actual system equipment level:

Display screen	Explanation	
Slope A1 – level A1	The adjusted outside temperature can be reset to the actual outside temperature with .	
Slope M2 – level M2		
Outside temp. adj.		
Outside temp. actual		
Boiler temp. set		
Boiler temp. actual		
DHW temp. set		
DHW temp. actual		
DHW outlet temp. actual		Only for combi boilers
DHW outlet temp. set		Only for combi boilers
Flow temp. set		Heating circuit with mixer
Flow temp. actual		Heating circuit with mixer
Mixed flow temp. set		Low loss header
Mixed flow temp. actual		Low loss header
Boiler coding card		
Brief scan 1 to 8		

Brief scan	Display screen					
1	Software version		Equipment version		Burner control unit version	
	Control unit					

Service scans

**Temperatures, boiler coding card and brief . . . (cont.)**

Brief scan	Display screen					
	0	0	0	0	0	0
2	System designs 01 to 06		Number of KM BUS subscribers	Maximum demand temperature		
3	0	Software version Programming unit	Software version Mixer extension 0: no mixer extension	Software version Solar control unit 0: no solar control unit	Software version LON module 0: no LON module	Software version External extension 0: no external extension
4	Software version Burner control unit		Type Burner control unit	Equipment type		
5	0: no external demand 1: external demand	0: no external blocking 1: external blocking	0	External 0 to 10 V hook-up Display in °C 0: no external hook-up		
6	Number of LON subscribers		Check digit	Max. output Details in %		
	<b>Boiler</b>		<b>Heating circuit A1 (without mixer)</b>		<b>Heating circuit M2 (with mixer)</b>	
7	0	0	Remote control 0: w/o 1: Vitotrol 200 2: Vitotrol 300	Software version Remote control 0: no remote control	Remote control 0: w/o 1: Vitotrol 200 2: Vitotrol 300	Software version Remote control 0: no remote control

### Temperatures, boiler coding card and brief . . . (cont.)

Brief scan	Display screen					
	0	0	0	0	0	0
	<b>Circulation pump in the heating circuit connection set</b>			<b>Heating circuit pump to connection extension</b>		
8	Variable speed pump 0: w/o 1: Wilo 2: Grundfos	Software version variable speed pump 0: no variable speed pump	Variable speed pump 0: w/o 1: Wilo 2: Grundfos	Software version variable speed pump 0: no variable speed pump	Variable speed pump 0: w/o 1: Wilo 2: Grundfos	Software version variable speed pump 0: no variable speed pump

### Constant temperature control unit

Press the following keys:

2.  $\oplus/\ominus$  for the required scan.

1.  $\odot$  +  $\square$  simultaneously for approx. 2 s.

3.  $\odot$  Scanning is completed.

The following values can be scanned, subject to the actual system equipment level:

Brief scan	Display screen				
	0	0	0	0	0
0	0	System designs 1 to 6	Software version Control unit		Software version Programming unit
1	Software version Solar control unit 0: no solar control unit	Software version Burner control unit		Software version External extension 0: no external extension	0



## Temperatures, boiler coding card and brief . . . (cont.)

Brief scan	Display screen				
0	0	0	0	0	0
E	0: no external demand 1: external demand	0: no external blocking 1: external blocking	External 0 to 10 V hook-up Display in °C 0: no external hook-up		
3	0	0	Set boiler water temperature		
A	0	0	Highest demand temperature		
4	0	Burner control unit type		Equipment type	
5	0	0	Set cylinder temperature		
b	0	0	Max. output in %		
C	0	Boiler coding card (hexadecimal)			
c	0	Version Equipment		Version Burner control unit	
d	0	0	0	Variable speed pump 0 w/o 1 Wilo 2 Grundfos	Software version variable speed pump 0: no variable speed pump

## Checking outputs (relay test)

### Weather-compensated control unit

Press the following keys:

1. + simultaneously for approx. 2 s.
2. for the required relay output.
3. Relay test is completed.

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

Display screen	Explanation
Base load	Burner modulation base load
Full load	Burner modulation full load
Int. pump ON	Int. output 20
Heating circuit pump	Mixer extension
M2 ON	



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

Display screen	Explanation
Mixer OPEN	Mixer extension
Mixer CLOSE	Mixer extension
Output int. ON	Output [28] internal extension
Heating circuit pump A1 ON	External extension H1
Cylinder pump ON	External extension H1
DHW circ. pump ON	External extension H1
Central fault ON	External extension H1

### Constant temperature control unit

- Press the following keys:
1. + simultaneously for approx. 2 s.
  2. for the required relay output.
  3. Relay test is completed.

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

Display screen	Explanation
1	Burner modulation base load
2	Burner modulation full load
3	Internal pump / output 20 "ON"
10	Output [28] internal extension
11	Heating circuit pump A1 External extension H1
12	Cylinder primary pump External extension H1
14	Central fault message External extension H1

### Scanning operating conditions and sensors

#### Weather-compensated control unit

- Press the following keys:
1. "Select heating circuit" is displayed.
  2. to confirm; wait approx. 4 s.
  3. press again.
  4. for the required operating condition.
  5. Scanning is completed.

## Scanning operating conditions and sensors (cont.)

The following operating conditions can be scanned, subject to the actual system equipment level for heating circuit A1 and heating circuit with mixer M2:


Display screen	Explanation
Participant no.	Programmed subscriber no. in the LON system
Holiday program	If a holiday program has been entered
Departure date	Date
Return date	Date
Outdoor temp., ... °C	Actual value
Boiler temp., ... °C	Actual value
Supply temp., ... °C	Actual value (only for mixer circuit M2)
Normal	Set value
room temp., ... °C	
Room temperature, ... °C	Actual value
Ext. room t.setpt, ... °C	For external hook-up
DHW temp., ... °C	Actual DHW temperature
Solar DHW temp. ... °C	Actual value
Collector temp., ... °C	Actual value
Com. supply temp., ... °C	Actual value, only with low loss header
Burner, ...h	Actual hours run
Burner cycles, ...	Hours run and burner starts (reset after maintenance with $\odot$ to "0").
Solar energy, ... kW/h	
Time	
Date	
Burner OFF/ON	
Intern. pump OFF/ON	Output 20
Intern. output OFF/ON	Output 28, if an internal extension is installed
Htg. circ. pump OFF/ON	If an external extension or extension kit for one heating circuit with mixer is installed
DHW pump OFF/ON	If an external extension is installed
Recirc. pump OFF/ON	If an external extension is installed
Centr. fault ind. OFF/ON	If an external extension is installed
Mix. valve OPEN/CLOSE	If an extension kit for one heating circuit with mixer is installed
Solar pump OFF/ON	If a Vitosolic is installed
Solar pump, ...h	Actual hours run
Various languages	The respective languages can be selected as permanent display language with $\odot$

## Scanning operating conditions and sensors (cont.)

### Constant temperature control unit



Press the following keys:

1.  press.

2.  for the required operating condition.

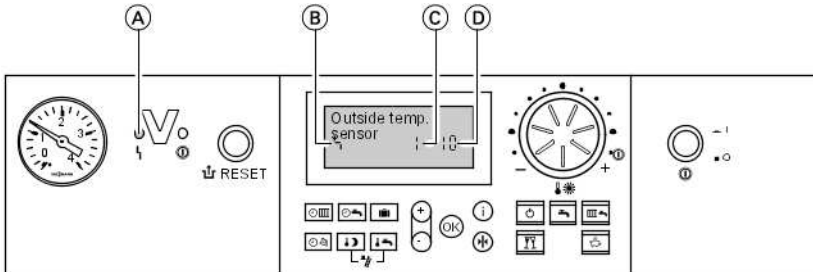
3.  Scanning is completed.

The following operating conditions can be scanned, subject to the actual system equipment level:

Display screen	Explanation
1 15 °C/°F	Actual outside temperature
3 65 °C/°F	Actual boiler water temperature
5 50 °C/°F	Actual cylinder temperature (if a cylinder temperature sensor is installed)
5□ 45 °C/°F	Solar - actual DHW temperature
6 70 °C/°F	Actual collector temperature
▲ 263572 h	Burner hours run (after a service, reset with  to "0")
▲▲▲ 030529	Burner starts (after a service, reset with  to "0")
▲▲▲▲▲ 001417 h	Solar circuit pump hours run
▲▲▲▲▲▲ 002850	Solar energy in kWh

## Fault display

### Fault display layout



- (A) Fault display
- (B) Fault symbol
- (C) Fault number
- (D) Fault code

The red fault indicator flashes for every fault.

A fault in the burner control unit causes the display to show "⚡".

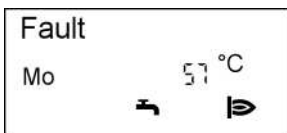
### Constant temperature control unit

In case of a fault, the fault code and fault symbol is displayed at the programming unit



### Weather-compensated control unit

The display flashes "Fault" if a fault message is issued



Plain text fault displays:

- Burner module
- Outdoor sensor
- Supply sensor
- Boiler sensor
- Com.supply sens.
- DHW sensor
- Flue gas sensor
- DHW outlet sensor
- Room sensor



## Fault display (cont.)

- Collector sensor
- Solar DHW sensor
- Remote control
- Fault participant

## Checking and acknowledging faults

### Note

*If an acknowledged fault is not removed, the fault message will be re-displayed:*

- *With a constant temperature control unit after 24 h*
- *With a weather-compensated control unit at 7:00 h the next day*

### Constant temperature control unit

#### Press the following keys:

1.  $\oplus/\ominus$  for further fault codes.
2.  $\textcircled{\text{OK}}$  All fault messages are acknowledged simultaneously, the fault display will be deleted and the red fault indicator continues to flash.

### Weather-compensated control unit

#### Press the following keys:

1.  $\textcircled{\text{i}}$  for the current fault.
2.  $\oplus/\ominus$  for further fault messages.
3.  $\textcircled{\text{OK}}$  All fault messages are acknowledged simultaneously, the fault display will be deleted and the red fault indicator continues to flash.

## Calling up acknowledged fault messages

#### Press the following keys:

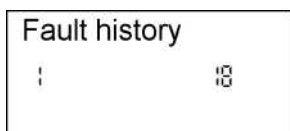
1.  $\textcircled{\text{OK}}$  for approx. 3 s.
2.  $\oplus/\ominus$  for the acknowledged fault.

## Fault display (cont.)

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

The 10 most recent faults are saved and may be scanned.

The faults are ordered by date, thus the most recent fault is fault number 1.



Press the following keys:

1. + simultaneously for approx. 2 s.
2. for individual fault codes.
3. **Note**  
*All saved fault codes can be deleted with .*
4. Scanning is completed.

## Fault codes

Fault code on the display	Const.	Weath.-comp.	System characteristics	Cause	Measures
0F	X	X	Control mode	Service	Service the equipment. After the service, set coding address "24:0".
10		X	Regulates as if the outside temperature was 0 °C	Outside temperature sensor shorted out	Check the outside temperature sensor (see page 81).
18		X	Regulates as if the outside temperature was 0 °C	Outside temperature sensor lead broken	Check the outside temperature sensor (see page 81).
20		X	Regulates without flow temperature sensor (low loss header)	System flow temperature sensor shorted out	Check the low loss header sensor (see page 82).



**Fault codes** (cont.)

<b>Fault code on the display</b>	<b>Const.</b>	<b>Weath.-comp.</b>	<b>System characteristics</b>	<b>Cause</b>	<b>Measures</b>
28		X	Regulates without flow temperature sensor (low loss header)	System flow temperature sensor lead broken	Check the low loss header sensor (see page 82).
30	X	X	Burner blocked	Boiler water temperature sensor shorted out	Check the boiler water temperature sensor (see page 82).
38	X	X	Burner blocked	Boiler water temperature sensor lead broken	Check the boiler water temperature sensor (see page 82).
40		X	Mixer closes	Heating circuit with mixer M2 flow temperature sensor shorted out	Check the flow temperature sensor.
48		X	Mixer closes	Heating circuit M2 flow temperature sensor lead broken	Check the flow temperature sensor.
50	X	X	No DHW heating	Cylinder temperature sensor shorted out	Check the sensor (see page 82).
58	X	X	No DHW heating	Cylinder temperature sensor lead broken	Check the sensor (see page 82).



**Fault codes** (cont.)

<b>Fault code on the display</b>	<b>Const.</b>	<b>Weath.-comp.</b>	<b>System characteristics</b>	<b>Cause</b>	<b>Measures</b>
92	X	X	Control mode	Collector temperature sensor shorted out; connects to the Vitosolic at S1	Check the sensor at the Vitosolic.
93	X	X	Control mode	Cylinder temperature sensor shorted out; connects to the Vitosolic at S3	Check the sensor at the Vitosolic.
94	X	X	Control mode	Temperature sensor shorted out; connects to the Vitosolic at S2	Check the sensor at the Vitosolic.
9A	X	X	Control mode	Collector temperature sensor lead broken; connects to the Vitosolic at S1	Check the sensor at the Vitosolic.
9b	X	X	Control mode	Cylinder temperature sensor lead broken; connects to the Vitosolic at S3	Check the sensor at the Vitosolic.





**Fault codes** (cont.)

<b>Fault code on the display</b>	<b>Const.</b>	<b>Weath.-comp.</b>	<b>System characteristics</b>	<b>Cause</b>	<b>Measures</b>
9C	X	X	Control mode	Temperature sensor lead broken; connects to the Vitosolic at S2	Check the sensor at the Vitosolic.
9F	X	X	Control mode	Solar control unit fault; displayed if a fault without fault code occurs at the solar control unit	Check the solar control unit (see solar control unit service instructions).
A2		X	Emergency mode with insufficient system pressure, triggered by code "0d" (see page 41)	System pressure too low	Top up with water
A4		X	Control mode	Max. system pressure exceeded	Check system pressure. Check the function and sizing of the diaphragm expansion vessel. Vent the heating system. Code "0E" is set to 1 to document the fault. After the fault has been removed, reset manually to 0.
A7		X	Control mode as per delivered condition	Faulty programming unit.	Replace the programming unit.

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**Fault codes** (cont.)

<b>Fault code on the display</b>	<b>Const.</b>	<b>Weath.-comp.</b>	<b>System characteristics</b>	<b>Cause</b>	<b>Measures</b>
b1	X	X	Control mode as per delivered condition	Communication fault; programming unit (internal)	Check connections and replace the programming unit if required.
b4	X	X	Regulates as if the outside temperature was 0 °C	Internal fault	Replace the control unit.
b5	X	X	Control mode as per delivered condition	Internal fault	Replace the control unit.
b7	X	X	Burner blocked	Boiler coding card missing, faulty or incorrect boiler coding card	Plug in boiler coding card or replace it, if faulty.
bA		X	Mixer M2 regulates to a flow temperature of 20 °C.	Communication fault – extension kit for heating circuit M2	Check the extension kit connections and coding. Start the extension kit.
bC		X	Control mode without remote control	Communication fault – Vitotrol remote control, heating circuit A1	Check connections, cable, coding address "A0" and remote control DIP switches (see page 101).
bd		X	Control mode without remote control	Communication fault, Vitotrol remote control, heating circuit M2	Check connections, cable, coding address "A0" and remote control DIP switches (see page 101).
bE		X	Control mode	Vitotrol remote control incorrectly programmed	Check remote control DIP switch settings (see page 101).



**Fault codes** (cont.)

<b>Fault code on the display</b>	<b>Const.</b>	<b>Weath.-comp.</b>	<b>System characteristics</b>	<b>Cause</b>	<b>Measures</b>
bF		X	Control mode	Incorrect LON communication module	Replace the LON communication module.
C2	X	X	Control mode	Communication fault, solar control unit	Check connections and coding address "54".
C5	X	X	Control mode, max. pump speed	Communication fault, variable speed circulation pump in the heating circuit connection set	Check the setting of coding address "30"
C6		X	Control mode, max. pump speed	Communication fault, variable speed circulation pump, heating circuit M2	Check setting of coding address "E5"
C7	X	X	Control mode, max. pump speed	Communication fault, variable speed circulation pump, heating circuit A1	Check setting of coding address "E5"
Cd	X	X	Control mode	Communication fault Vitocom 100 (KM BUS)	Check connections and the Vitocom 100.
CE	X	X	Control mode	Communication fault – ext. extension	Check connections and settings of coding address "2E".

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**Fault codes** (cont.)

<b>Fault code on the display</b>	<b>Const.</b>	<b>Weath.-comp.</b>	<b>System characteristics</b>	<b>Cause</b>	<b>Measures</b>
CF		X	Control mode	Communication fault, LON communication module	Replace the LON communication module.
dA		X	Control mode without room influence	Room temperature sensor, heating circuit A1 shorted out	Check the room temperature sensor, heating circuit A1.
db		X	Control mode without room influence	Room temperature sensor, heating circuit with mixer M2 shorted out	Check the room temperature sensor, heating circuit with mixer M2.
dd		X	Control mode without room influence	Room temperature sensor, heating circuit A1 lead broken	Check the room temperature sensor, heating circuit A1 and the remote control DIP switch settings (see page 101).
dE		X	Control mode without room influence	Room temperature sensor, heating circuit with mixer M2 lead broken	Check the room temperature sensor, heating circuit with mixer M2 and the remote control DIP switch settings (see page 101).
E4	X	X	Burner blocked	Supply voltage fault	Replace the control unit.



**Fault codes** (cont.)

<b>Fault code on the display</b>	<b>Const.</b>	<b>Weath.-comp.</b>	<b>System characteristics</b>	<b>Cause</b>	<b>Measures</b>
E5	X	X	Burner blocked	Internal fault	Check the ionisation electrode and cables. Check the flue gas system for tightness. Press "↑ RESET".
E6	X	X	Burner blocked	System pressure too low Minimum system pressure, see page 8.	Top up with water.
E8	X	X	Burner in a fault state	The ionisation current lies outside the permissible range	Check the ionisation electrode and cable. Press "↑ RESET".
E9	X	X	Burner in a fault state	The ionisation current lies outside the permissible range during calibration	Check the ionisation electrode and cable. Check the flue gas system for tightness. Press "↑ RESET".
EA	X	X	Burner in a fault state	The ionisation current lies outside the permissible range during calibration	Check the ionisation electrode and cable. Press "↑ RESET".







**Fault codes** (cont.)

<b>Fault code on the display</b>	<b>Const.</b>	<b>Weath.-comp.</b>	<b>System characteristics</b>	<b>Cause</b>	<b>Measures</b>
Eb	X	X	Burner in a fault state	Heat draw-off repeatedly too low during calibration	Initiate a heat draw-off. Switch the boiler OFF and ON again. Press "↑ RESET".
EC	X	X	Burner in a fault state	The ionisation current lies outside the permissible range during calibration	Check the ionisation electrode and cable. Press "↑ RESET".
Ed	X	X	Burner in a fault state	Internal fault	Replace the control unit.
F0	X	X	Burner blocked.	Internal fault	Replace the control unit.
F2	X	X	Burner in a fault state	The temperature limiter has responded.	Check the heating system fill level. Check the circulation pump. Check the temperature limiter and connecting cables. Vent the system. Press "↑ RESET".
F3	X	X	Burner in a fault state	Flame signal is already present at burner start.	Check the ionisation electrode and connecting cable. Press "↑ RESET".






**Fault codes** (cont.)

<b>Fault code on the display</b>	<b>Const.</b>	<b>Weath.-comp.</b>	<b>System characteristics</b>	<b>Cause</b>	<b>Measures</b>
F4	X	X	Burner in a fault state	No flame signal.	Check the ionisation electrode and cable, measure the ionisation current, check the gas pressure, check the gas train, ignition, ignition module, ignition electrodes and the condensate drain. Press "  RESET".
F7	X	X	Burner blocked	Short circuit or water pressure sensor lead broken	Check the water pressure sensor and the interconnecting cable.
F8	X	X	Burner in a fault state	The fuel valve closes too late.	Check the gas train. Check both control paths. Press "  RESET".
F9	X	X	Burner in a fault state	Fan speed too low during the burner start	Check the fan, check the fan cables and supply; check the fan control. Press "  RESET".
FA	X	X	Burner in a fault state	Fan not at standstill	Check the fan, fan connecting cables and fan control. Press "  RESET".



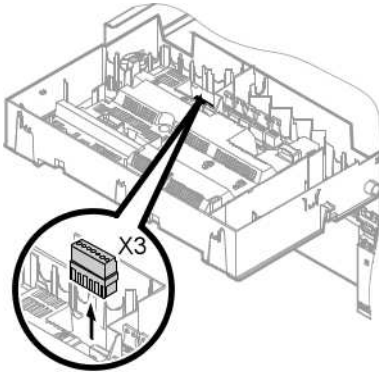
**Fault codes (cont.)**

<b>Fault code on the display</b>	<b>Const.</b>	<b>Weath.-comp.</b>	<b>System characteristics</b>	<b>Cause</b>	<b>Measures</b>
FC	X	X	Burner in a fault state	Gas train faulty or faulty modulation valve control; or flue gas path blocked	Check the gas train. Check the flue gas system. Press "  RESET".
Fd	X	X	Burner blocked	Fault at the burner control unit	Check ignition electrodes and connecting cables. Check the boiler coding card. Check whether a strong interference (EMC) field exists near the equipment. Confirm "  RESET" : Replace control unit if the fault persists.
FE	X	X	Burner blocked or in a fault state	Strong interference (EMC) field nearby or faulty main PCB	Start the equipment again. Replace the control unit if the equipment will not restart.
FF	X	X	Burner blocked or in a fault state	Internal fault or "  RESET" key blocked.	Start the equipment again. Replace the control unit if the equipment will not restart.

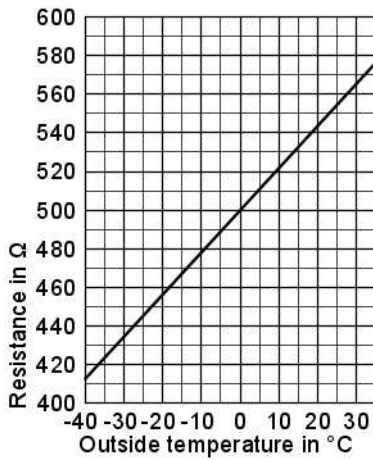


## Repairs

### Checking the outside temperature sensor (weather-compensated control unit)

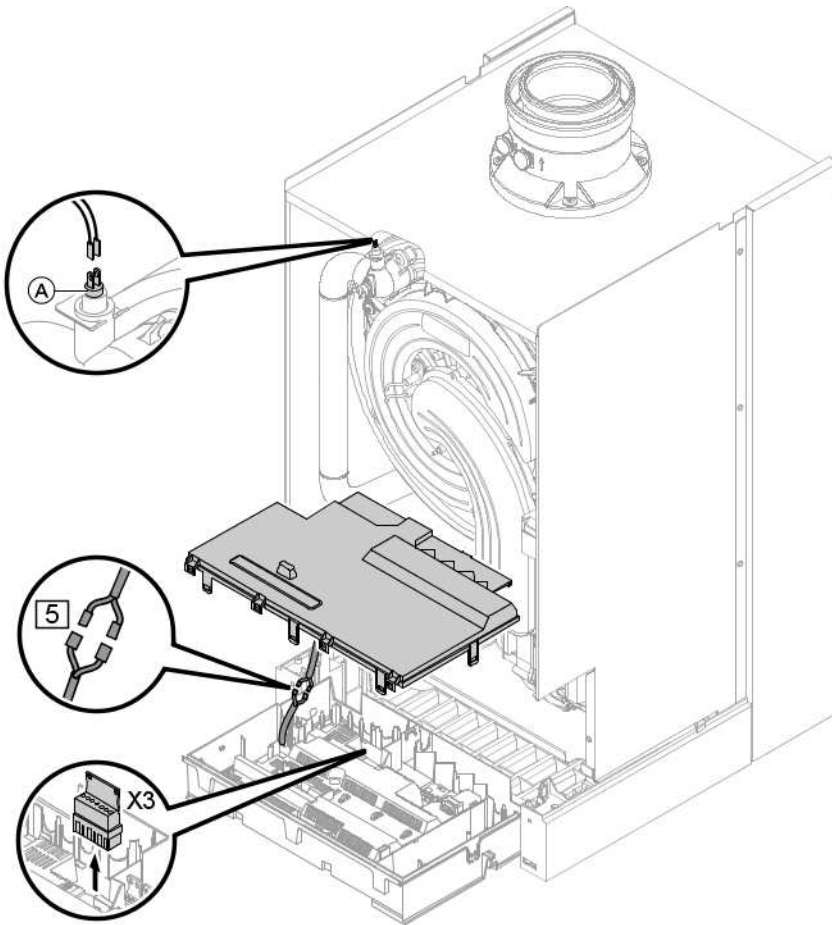


1. Pull plug "X3" from the control unit.
2. Test the resistance of the outside temperature sensor across terminals "X3.1" and "X3.2" on the disconnected plug and compare it with the curve.
3. Where actual values strongly deviate from the curve values, disconnect the wires at the sensor and repeat test immediately at the sensor.
4. Subject to result, replace the lead or the outside temperature sensor.



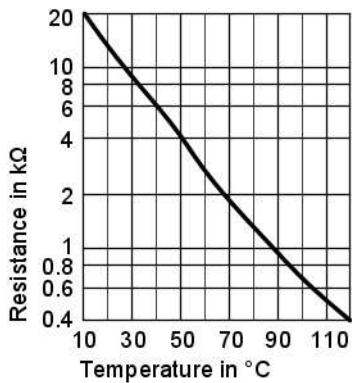
**Repairs** (cont.)

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



## Repairs (cont.)

1. ■ Boiler water temperature sensor: Pull the leads from boiler water temperature sensor (A) and check the resistance.
- Cylinder temperature sensor: Pull plug [5] from the cable harness at the control unit and check the resistance.
- Flow temperature sensor: Pull plug "X3" from the control unit and check the resistance across terminals "X3.4" and "X3.5".



2. Check the sensor resistance and compare the actual values with the curve.
3. Replace the sensor in case of severe deviation.



### Danger

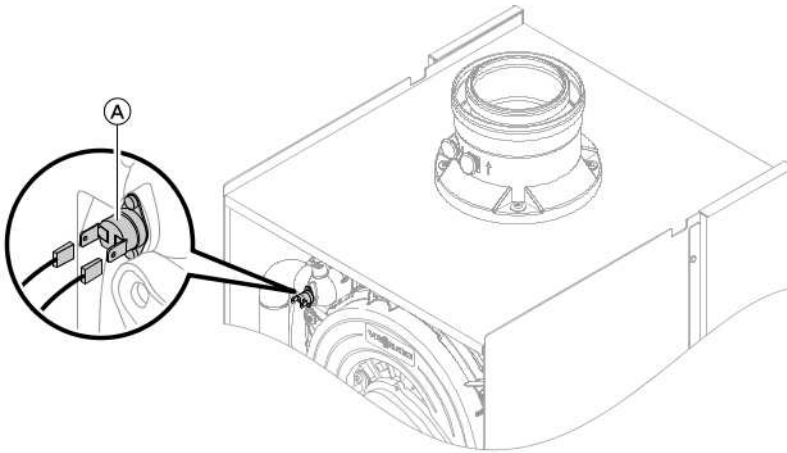
The boiler water temperature sensor is immersed in the heating water (risk of scalding).

Drain the boiler before replacing the sensor.

## Checking the temperature limiter

Check the temperature limiter, if the burner control unit cannot be reset after a fault shutdown, although the boiler water temperature is below approx. 75 °C.

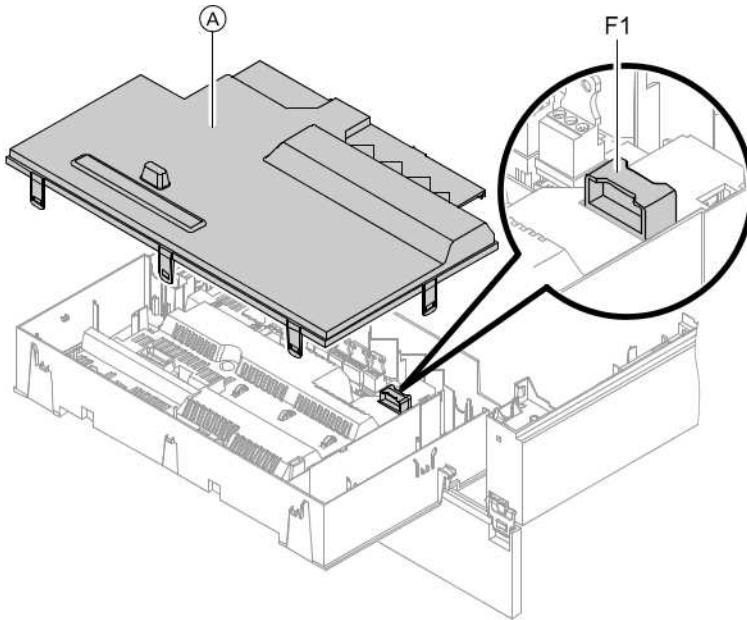
**Repairs** (cont.)



1. Pull the leads from temperature limiter **A**.
2. Check the continuity of the temperature limiter with a multimeter.
3. Remove the faulty temperature limiter.
4. Install a new temperature limiter.
5. After commissioning, press reset button "⏮ RESET" at the control unit.

## Repairs (cont.)

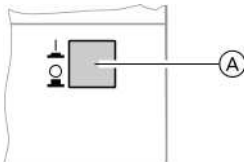
### Checking the fuse



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).

### Extension kit for heating circuit with mixer

#### Checking the rotational direction of the mixer motor



1. Switch ON/OFF switch (A) at the extension kit first OFF and then ON again. The device will carry out the following self-test:
  - Mixer "Close" (150 s)
  - Pump "ON" (10 s)
  - Mixer "Open" (10 s)
  - Mixer "Close" (10 s)




## Repairs (cont.)

Then standard control mode resumes.

2. Note the rotational direction of the mixer motor during its self-test. Then set the mixer manually to "Open" again.

### Note

*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 set is incorrectly fitted.*

 Mixer installation instructions

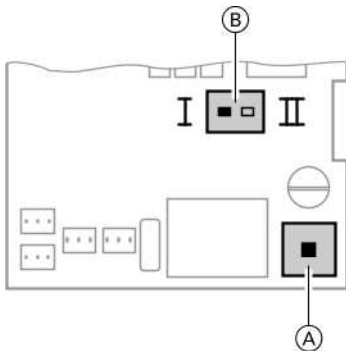
## Changing the rotational direction of the mixer motor (if required)



### Danger


An electric shock can be life-threatening.

Before opening the equipment, switch OFF the ON/OFF switch and mains voltage, for example at the fuse or the main isolator.



- (A) ON/OFF switch
- (B) Rotational direction switch

1. Remove the lower and upper housing cover of the extension kit.

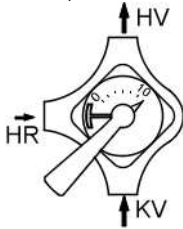
 Extension kit installation instructions



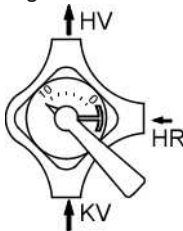
## Repairs (cont.)

### 2. Change over the rotational direction switch:

Switch position I for central heating return from the left (delivered condition).



Switch position II for central heating return from the right.

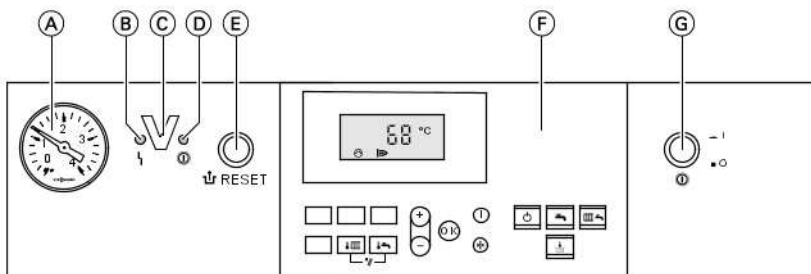


### Checking the Vitotronic 200-H (accessories)

The Vitotronic 200-H is connected to the control unit via the LON. To test the connection, carry out a subscriber check at the boiler control unit (see page 33).

## Constant temperature control unit

### Control and display elements



- (A) Pressure gauge
- (B) Fault indicator (red)
- (C) Optolink interface only in conjunction with the diagnostic adaptor (accessory) and Vitosoft (accessory)
- (D) ON indicator (green)
- (E) Reset button
- (F) User interface
- (G) ON/OFF switch

#### Keys at the user interface:

- |  |                              |  |                           |
|--|------------------------------|--|---------------------------|
|  | Set boiler water temperature |  | Heating and DHW           |
|  | Set DHW temperature          |  | No function               |
|  | Emissions test function      |  | Setting values            |
|  | Standby mode                 |  | Confirmation              |
|  | DHW only                     |  | Information               |
|  |                              |  | Standard settings (Reset) |

### Heating operation

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 to 82 °C. Flow temperature setting range: 40 to 74 °C.



## Constant temperature control unit (cont.)

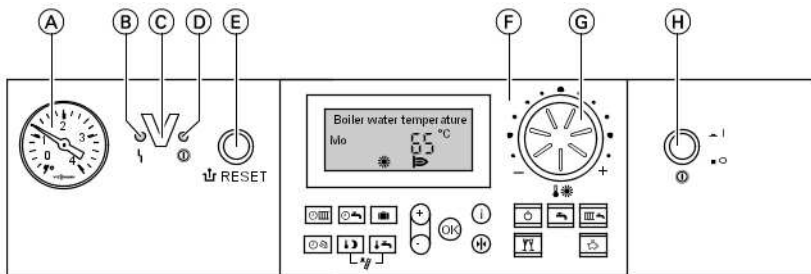
### DHW heating

The burner and the cylinder primary pump 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"). The burner will be switched OFF and the circulation pump run-on time will begin, if the actual cylinder temperature exceeds the set cylinder temperature by 2.5 K.

## Weather-compensated control unit

### Control and display elements



















- |  |   |
|--|---|
| Ⓐ Pressure gauge   | Ⓓ ON indicator (green)                          |
| Ⓑ Fault indicator (red)  | Ⓔ Reset button                                  |
| Ⓒ Optolink interface<br>only in conjunction with the diagnostic adaptor (accessory) and Vitosoft (accessory) | Ⓕ User interface                                |
|  | Ⓖ Rotary selector for standard room temperature |
|  | Ⓗ ON/OFF switch                                 |

## Function description

### Weather-compensated control unit (cont.)

#### Keys at the user interface:

	Central heating time program		Emissions test function
	DHW heating and DHW circulation pump time programs (if connected to the control unit)		Standby mode
	Holiday program		DHW only
	Time/date		Heating and DHW
	Reduced room temperature		Party mode
	Set DHW temperature		Economy mode
			Setting values
			Confirmation
			Information
			Standard settings (Reset)

## Heating operation

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 to 82 °C.

## DHW heating

The burner and the cylinder primary pump 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"). The burner will be switched OFF and the circulation pump run-on time will begin, if the actual cylinder temperature exceeds the set cylinder temperature by 2.5 K.

## Weather-compensated control unit (cont.)

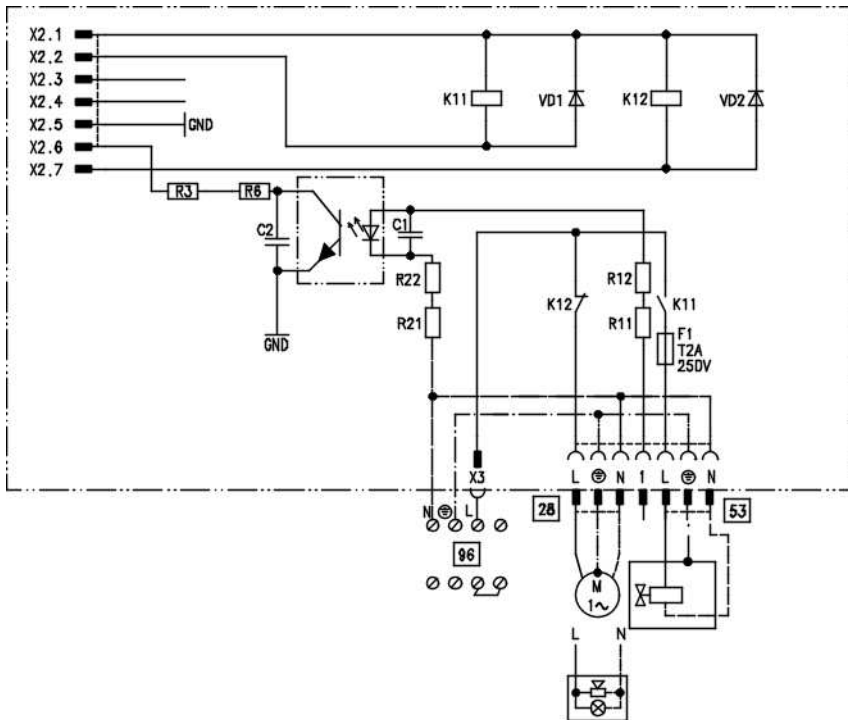
### Boosting DHW heating

The booster heating function is activated if a switching period is selected for the fourth time phase.

The set temperature value for the heating boost is adjustable in coding address "58".

## Extensions for external connections (accessories)

### Internal extension H1



## Function description

### Extensions for external connections . . . (cont.)

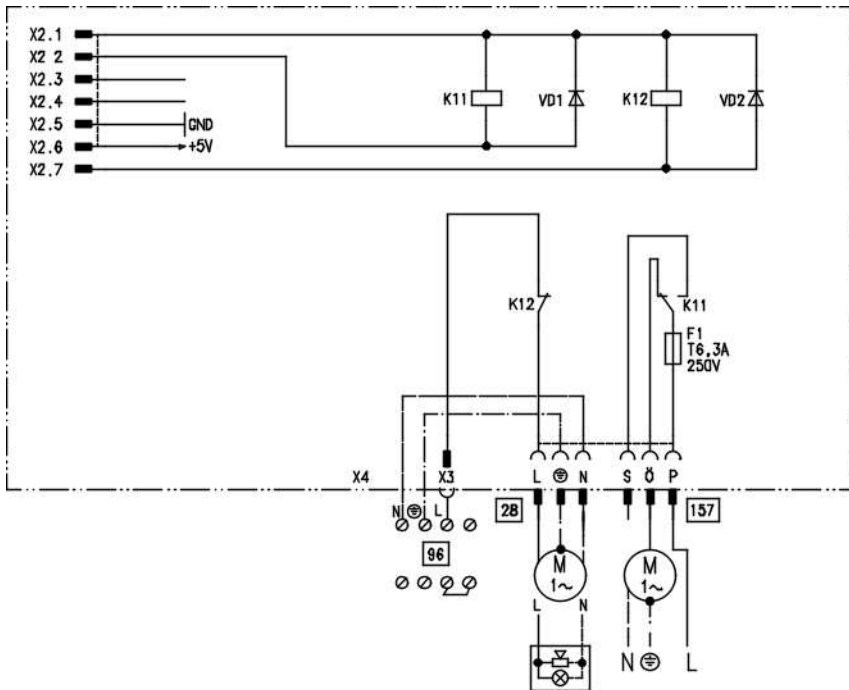
The internal extension is integrated into the control unit housing. The following alternative functions can be connected to relay output [28]. The function is allocated via coding address "53":

- Central fault message (coding address "53:0")
- DHW circulation pump (coding address "53:1") (only for weather-compensated operation)

- Heating circuit pump for a heating circuit without mixer (coding address "53:2")
- Cylinder primary pump (coding address "53:3")

An external safety valve can be connected to [53].

### Internal extension H2



## Extensions for external connections . . . (cont.)

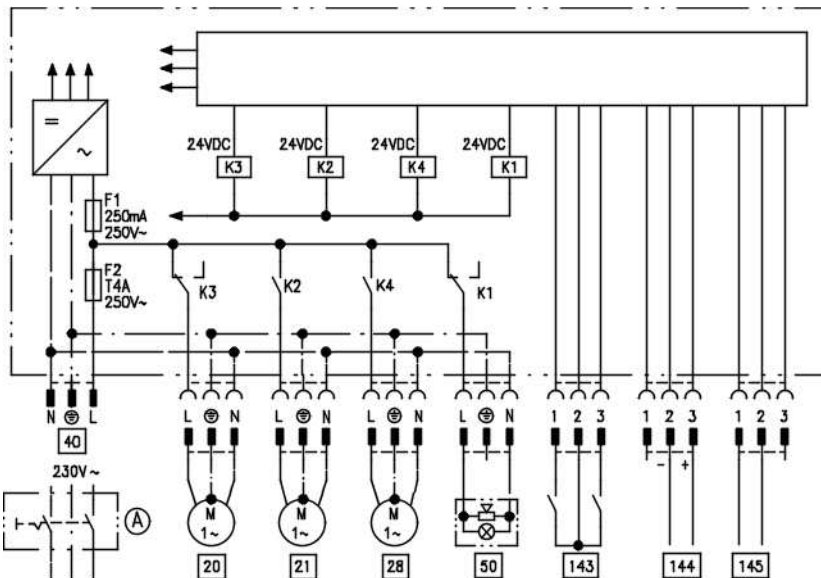
The internal extension is integrated into the control unit housing. The following alternative functions can be connected to relay output [28]. The function is allocated via coding address "53":

- Central fault message (coding address "53:0")
- DHW circulation pump (coding address "53:1") (only for weather-compensated operation)

- Heating circuit pump for heating circuit without mixer (coding address "53:2")
- Cylinder primary pump (coding address "53:3")

An extractor can be switched OFF via connection [157] when the burner starts.

## External extension H1



The external extension is connected to the boiler control unit via the KM BUS. The following functions can be controlled or processed simultaneously via the extension:

- (A) ON/OFF switch (on site)
- [20] Heating circuit pump for the heating circuit without mixer
- [21] Cylinder primary pump
- [28] DHW circulation pump (only for weather-compensated operation)

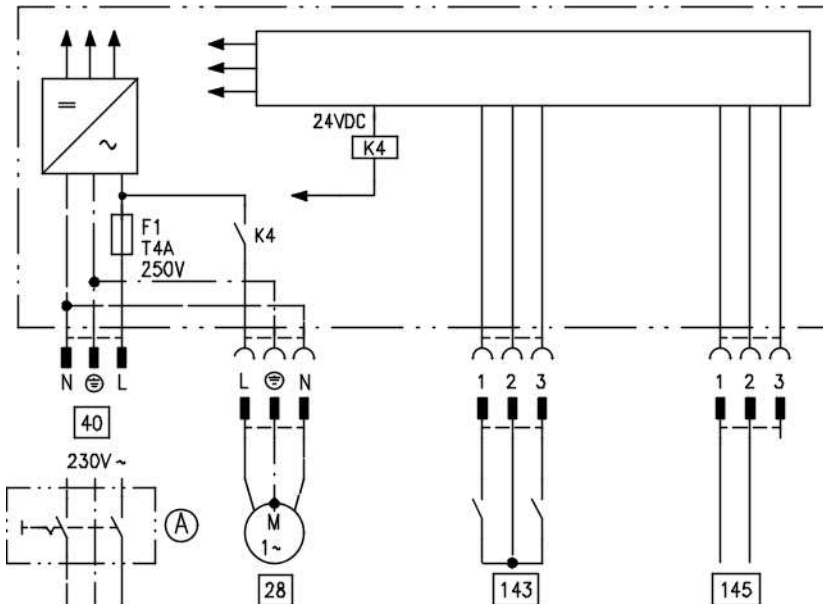


## Function description

### Extensions for external connections . . . (cont.)

- |   |   |
|---|---|
| <p><b>40</b> Power supply</p> <p><b>50</b> Central fault message</p> <p><b>143</b> ■ External blocking (terminals 2 - 3)</p> <p>■ External demand (terminals 1 - 2)</p> <p>■ External heating program changeover (terminals 1 - 2) (only for weather-compensated operation)</p> <p>The allocation of the function "External heating program changeover" is set via coding address "91".</p> | <p><b>144</b> External set value 0 to 10 V</p> <p><b>145</b> KM BUS</p> |
|---|---|

### External extension H2



## Extensions for external connections . . . (cont.)

The external extension is connected to the boiler control unit via the KM BUS. The following functions can be controlled or processed simultaneously via the extension:

- Ⓐ ON/OFF switch (on site)
- 28 DHW circulation pump (only for weather-compensated operation)
- 40 Power supply

- 143 ■ External blocking (terminals 2 - 3)
- External demand (terminals 1 - 2)
- External heating program changeover (terminals 1 - 2) (only for weather-compensated operation)  
The allocation of the function "External heating program changeover" is set via coding address "91".
- 145 KM BUS

## Control functions

### External heating program changeover

The "External heating program changeover" function is connected via external extension input "143". You can select which heating circuits the heating program changeover affects in coding address "91":

Heating program changeover	Coding
No changeover	91:0
Heating circuit without mixer A1	91:1
Heating circuit with mixer M2	91:2
Heating circuit without mixer and heating circuit with mixer	91:3

You can select which direction the heating program changeover takes in coding address "d5":

Heating program changeover	Coding
Changeover towards "Permanently reduced" or "Permanent standby" mode (subject to the selected set value)	d5:0
Changeover towards "Constant heating mode"	d5:1

## Function description

### Control functions (cont.)

The duration of the heating program changeover can be adjusted in coding address "F2":

Heating program changeover	Coding
No heating program changeover	F2:0
Duration of the heating program changeover 1 to 12 hours	F2:1 to F2:12

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

## External blocking

The "External blocking" function is connected via the external extension input "143".

In coding address "32", you can select the influence the "Ext. blocking" signal should have on the connected circulation pumps.

## External demand

The "External demand" function is connected via the external extension input "143".

In coding address "34" you can select the influence the "Ext. demand" signal should have on the connected circulation pumps.

The minimum set boiler water temperature in case of external demand is selected in coding address "9b".

## Venting program

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

The burner is switched OFF during the venting program.

The venting program is activated via code "2F:1". The program is automatically disabled after 20 min, and coding address "2F" is set to "0".



## Control functions (cont.)

### Filling with the control unit switched ON

If the system is to be filled with the control unit switched ON, code "2F:2" starts the pump.

The burner shuts down if this function is enabled via coding address "2F". The program is automatically disabled after 20 min, and coding address "2F" is set to "0".

### Screed drying function

The screed function enables screeds to be dried. For this, always observe the details specified by the screed manufacturer.

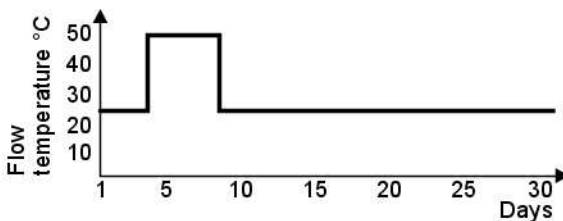
When the screed drying function is activated, the heating circuit pump of the mixer circuit is switched ON and the flow temperature will be held at the selected profile. After completion (30 days), the mixer circuit will again be regulated automatically via the set parameters.

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 condition and outside temperature during handover

The various temperature profiles are adjustable via coding address "F1". The function continues after power failure or after the control unit has been switched OFF. "Heating and DHW" will be started after the screed drying function has been terminated or if code "F1:0" is manually adjusted.

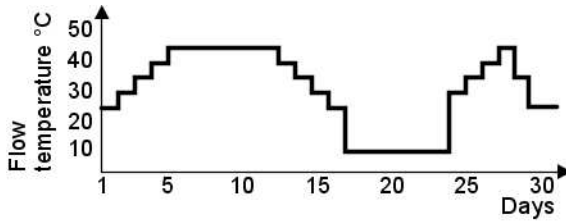
#### Temperature profile 1: (EN 1264-4) code "F1:1"



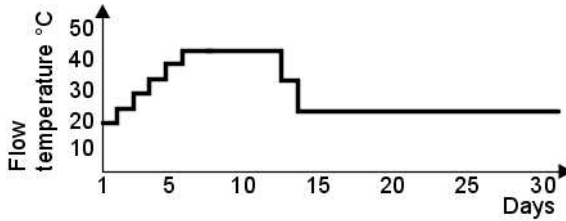
Function description

### Control functions (cont.)

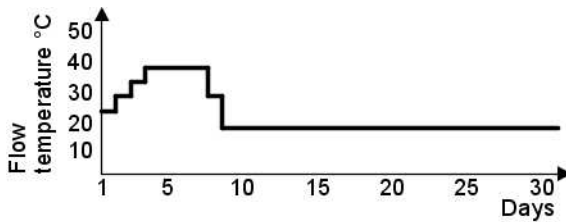
Temperature profile 2: (ZV parquet and flooring technology) code "F1:2"



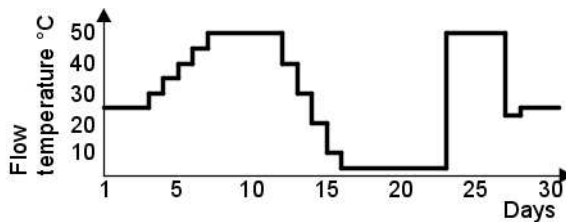
Temperature profile 3: Code "F1:3"



Temperature profile 4: Code "F1:4"

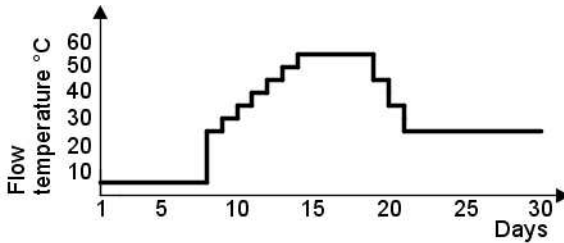


Temperature profile 5: Code "F1:5"

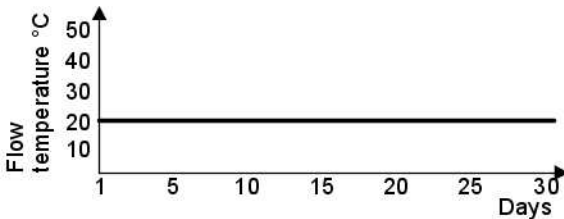


## Control functions (cont.)

### Temperature profile 6: Code "F1:6"



### Temperature profile 7: Code "F1:15"



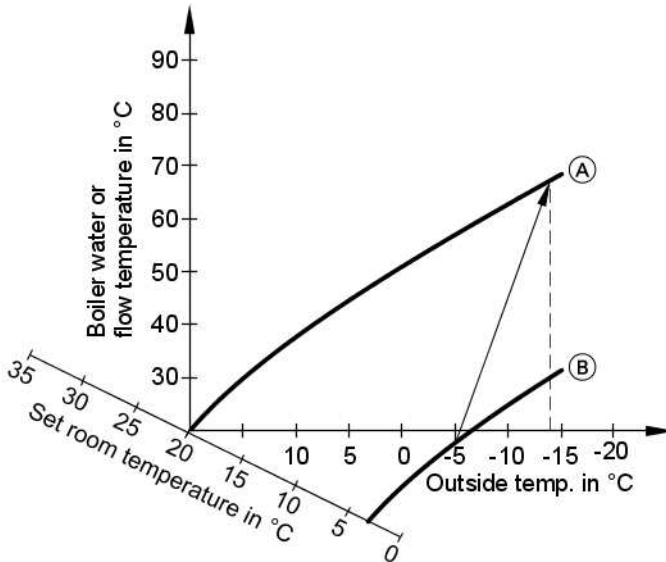
## Raising the reduced room temperature

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 the temperature raising can be adjusted via coding addresses "F8" and "F9".

## Control functions (cont.)

### Example using the settings in the delivered condition



Ⓐ Heating curve for operation with standard room temperature

Ⓑ Heating curve for operation with reduced room temperature

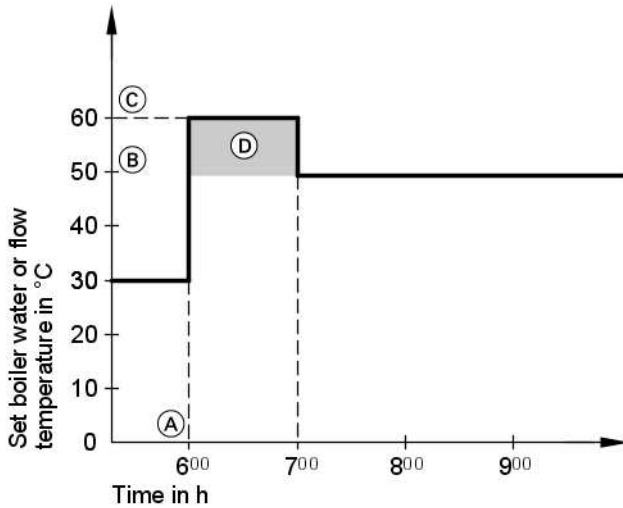
## Reducing the heat-up time

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

## Control functions (cont.)

### Example using the settings in the delivered condition






- (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

## Remote control DIP switches

The DIP switches are located on the PCB in the top part of the casing.

## Function description

### Remote control DIP switches (cont.)

Remote control	DIP switch setting
The remote control affects the heating circuit without mixer A1	ON 
The remote control affects the heating circuit with mixer M2	ON 
When connecting a separate room temperature sensor, set DIP switch "3" to "ON".	ON 

### Electronic combustion control unit

The electronic combustion controller utilises the physical correlation between the level of the ionisation current and the air factor  $\lambda$ . For all gas qualities, the maximum ionisation current results with air factor 1.

The ionisation signal is evaluated by the combustion control unit, and the air factor is adjusted to 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 actual values enable the prevailing air factor to be determined. The relationship between the CO<sub>2</sub> or O<sub>2</sub> content and air factor  $\lambda$  is illustrated in the following table.

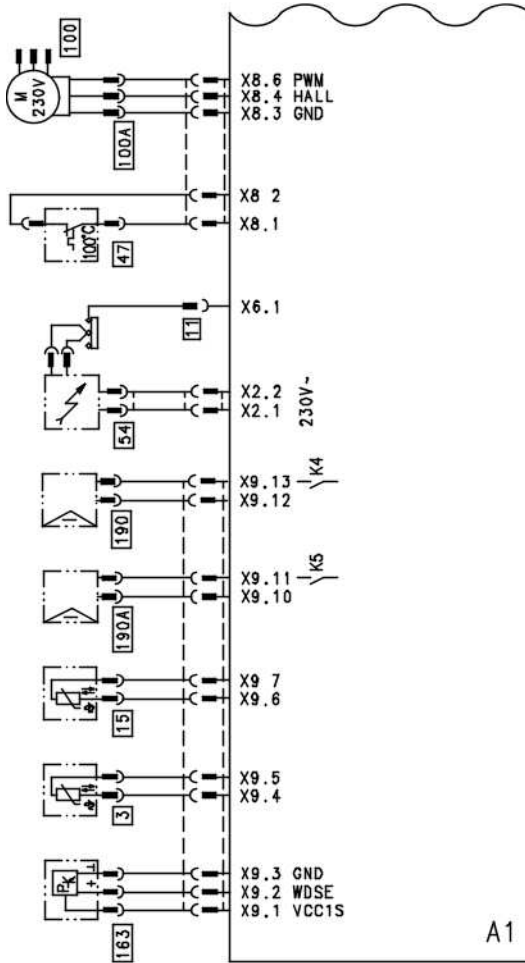
**Electronic combustion control unit (cont.)****Air factor  $\lambda$  – CO<sub>2</sub> /O<sub>2</sub> content**

Air factor $\lambda$	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
1.24	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

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 (equals air factor  $\lambda=1$ ). The automatic calibration is carried out shortly after the burner start and lasts approx. 5 s. During the calibration, higher than normal CO emissions may occur briefly.

The combustion control unit can also be calibrated manually. e.g. after maintenance or service work (coding address "85").

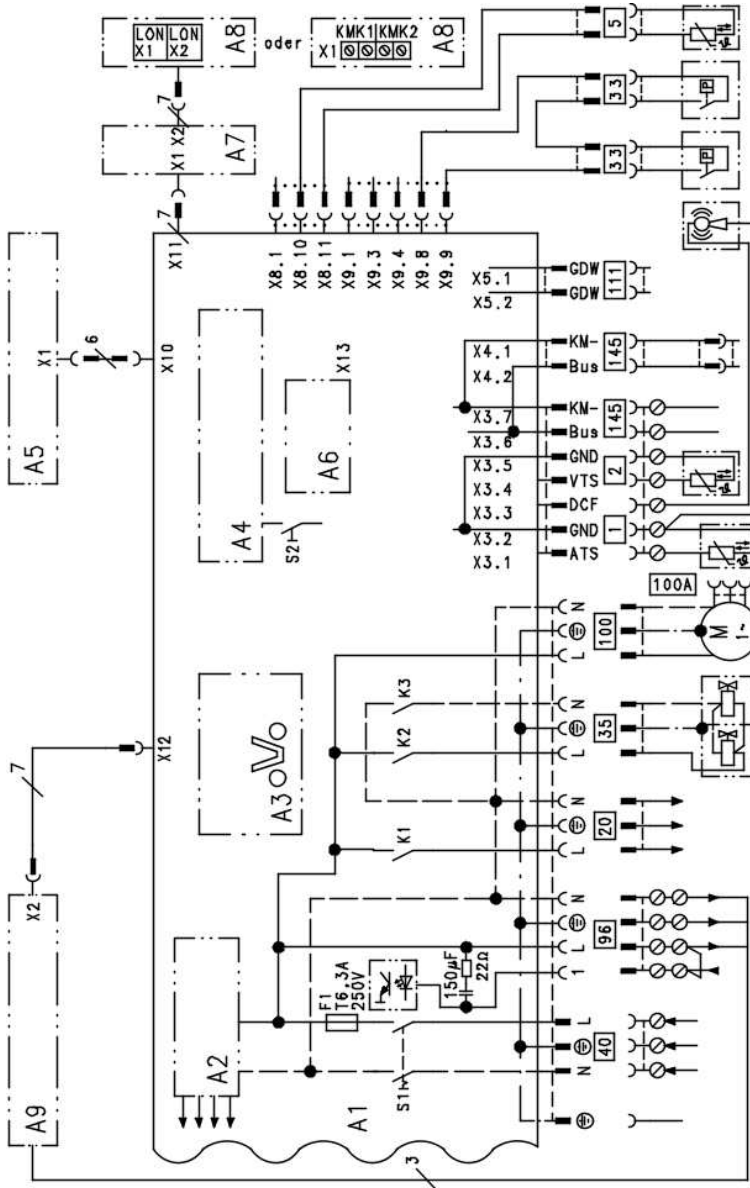
## Connection and wiring diagram – internal connections



A1	Main PCB	47	Temperature limiter
X...	Electrical interfaces	54	Ignition unit
3	Boiler water temperature sensor	100	Fan motor
11	Ionisation electrode	100A	Fan motor control
15	Flue gas temperature sensor	163	Water pressure sensor
		190 (A)	Modulation coil



### Connection and wiring diagram – external connections



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A1 Main PCB

A2 Power supply unit



## Designs

### Connection and wiring diagram – external . . . (cont.)

A3	Optolink	<span style="border: 1px solid black; padding: 0 2px;">2</span>	Flow temperature sensor, low loss header
A4	Burner control unit		
A5	Programming unit	<span style="border: 1px solid black; padding: 0 2px;">5</span>	Cylinder temperature sensor (plug on the cable harness)
A6	Coding card		
A7	Connection adaptor	<span style="border: 1px solid black; padding: 0 2px;">20</span>	Boiler circuit pump
A8	LON communication module or cascade communication module	<span style="border: 1px solid black; padding: 0 2px;">33</span>	Flow switch
		<span style="border: 1px solid black; padding: 0 2px;">35</span>	Gas solenoid valve
		<span style="border: 1px solid black; padding: 0 2px;">40</span>	Power supply
		<span style="border: 1px solid black; padding: 0 2px;">96</span>	Power supply accessories and Vitotrol 100
A9	Internal extension (accessories)		
S1	ON/OFF switch	<span style="border: 1px solid black; padding: 0 2px;">100</span>	Fan motor
S2	Reset button	<span style="border: 1px solid black; padding: 0 2px;">100</span> A	Fan motor control
X...	Electrical interfaces	<span style="border: 1px solid black; padding: 0 2px;">111</span>	Gas pressure limiter
<span style="border: 1px solid black; padding: 0 2px;">1</span>	Outside temperature sensor	<span style="border: 1px solid black; padding: 0 2px;">145</span>	KM BUS

## Parts lists

### Spare parts information

Quote the part and serial no. (see type plate) and the item number of the required part (as per this parts list).

Obtain standard parts from your local supplier.

- |  |   |
|--|---|
| 001 Lip seal Ø 110                               | 061 Gasket, ionisation electrode (5 pce.)               |
| 002 Lip seal Ø 150                               | 062 Gasket, ignition electrode (5 pce.)                 |
| 003 Boiler flue connection                       | 063 Gas nozzle  |
| 004 Condensate hose                              | 100 Control unit  |
| 005 Pressure gauge                               | 101 Back cover  |
| 006 Heat exchanger                               | 102 Locking clips (10 pcs.)                             |
| 007 Thermal insulation block                     | 103 Support   |
| 008 Gas distributor                              | 104 Flap  |
| 009 Gas pipe                                     | 105 Pressure gauge retainer                             |
| 010 Entry grommets (set)                         | 106 Clip (10 pce.)                                      |
| 011 Gasket set, hydraulics                       | 107 Hinge (10 pce.)                                     |
| 012 Gasket 20x24x2.3 (4 pce.)                    | 108 Coding card   |
| 013 Flue gas gasket                              | 109 Fuse 6.3 A slow                                     |
| 014 Flow control switch                          | 110 Vitotronic 100 HC1 (constant temperature operation) |
| 015 Boiler flue connection plug                  | 111 Vitotronic 200 HO1 (weather-compensated operation)  |
| 016 Siphon                                       | 115 LON module  |
| 017 Heating water flow connection pipe           | 116 PCB adaptor, LON module (accessories)               |
| 018 Threaded fitting                             | 117 Fuse holder   |
| 019 Heating water return connection pipe         | 150 Outside temperature sensor                          |
| 020 Ball valve                                   | 151 Locking spring (5 pce.)                             |
| 021 Wall mounting bracket                        | 152 Thermocouple  |
| 022 Cover  | 153 Temperature sensor                                  |
| 023 Flue gas temperature sensor                  | 200 Front panel   |
| 024 Connection pipes, heating water return (set) | 201 Fixing clip   |
| 050 Burner profile packing                       |   |
| 051 Burner insulation ring                       |   |
| 052 Cylinder burner gauze assembly               |   |
| 053 Burner gauze assembly gasket                 |   |
| 056 Burner flange gasket                         |   |
| 057 Radial fan                                   |   |
| 058 Gas train                                    |   |
| 059 Burner door                                  |   |
| 060 Ignition unit                                |   |

### Wearing parts

- 054 Ignition electrode
- 055 Ionisation electrode

### Parts not shown

- 112 Cable harness "X8/X9/Ionisation"
- 113 Cable harness, earth 100/35/54
- 118 Mating plug
- 119 Cable ties (10 pce.)
- 202 Spray paint, Vitowhite
- 203 Touch-up paint stick, Vitowhite
- 300 Installation instructions



Parts lists

**Parts lists** (cont.)

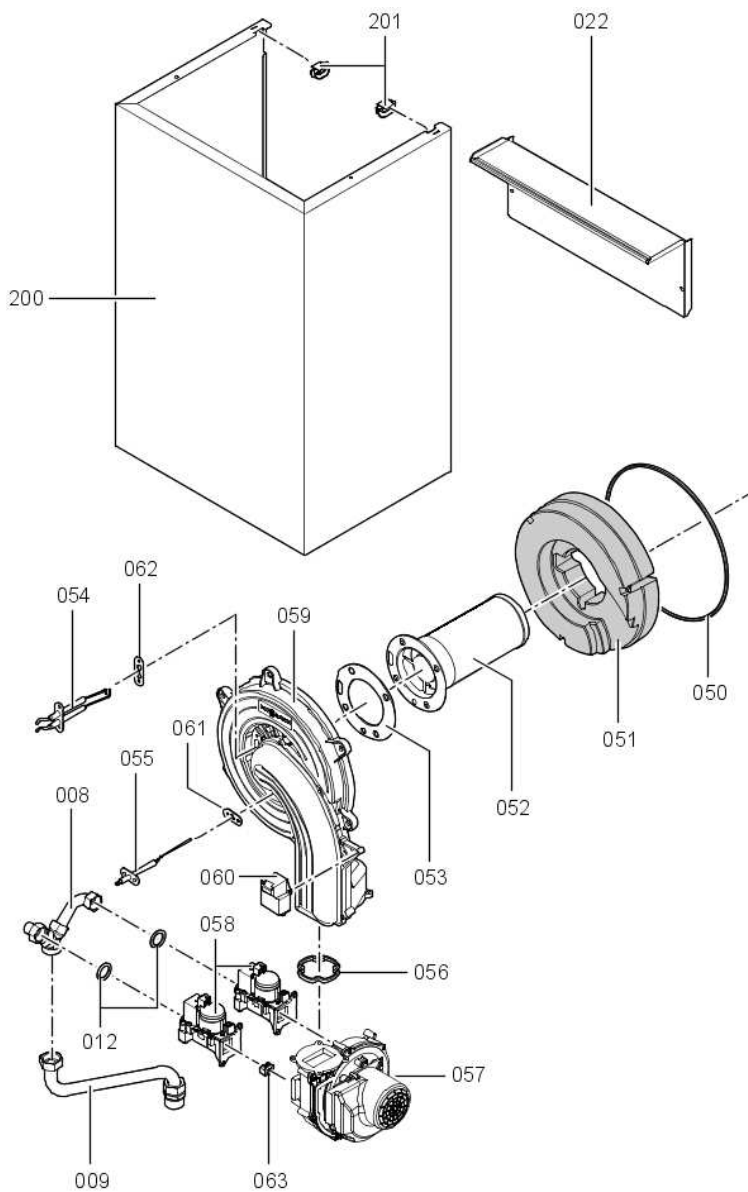
301 Service instructions

302 Operating instructions for constant temperature mode

303 Operating instructions for weather-compensated mode

Ⓐ Type plate

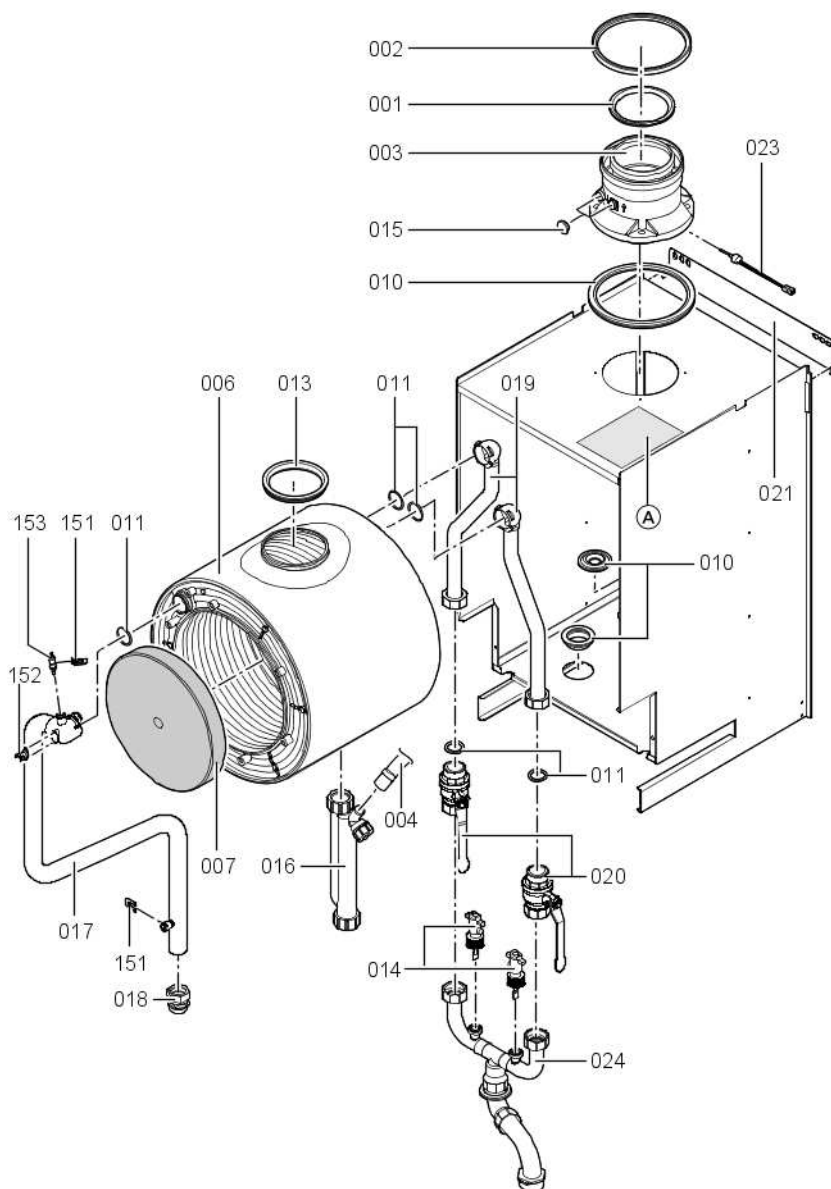
**Parts lists (cont.)**



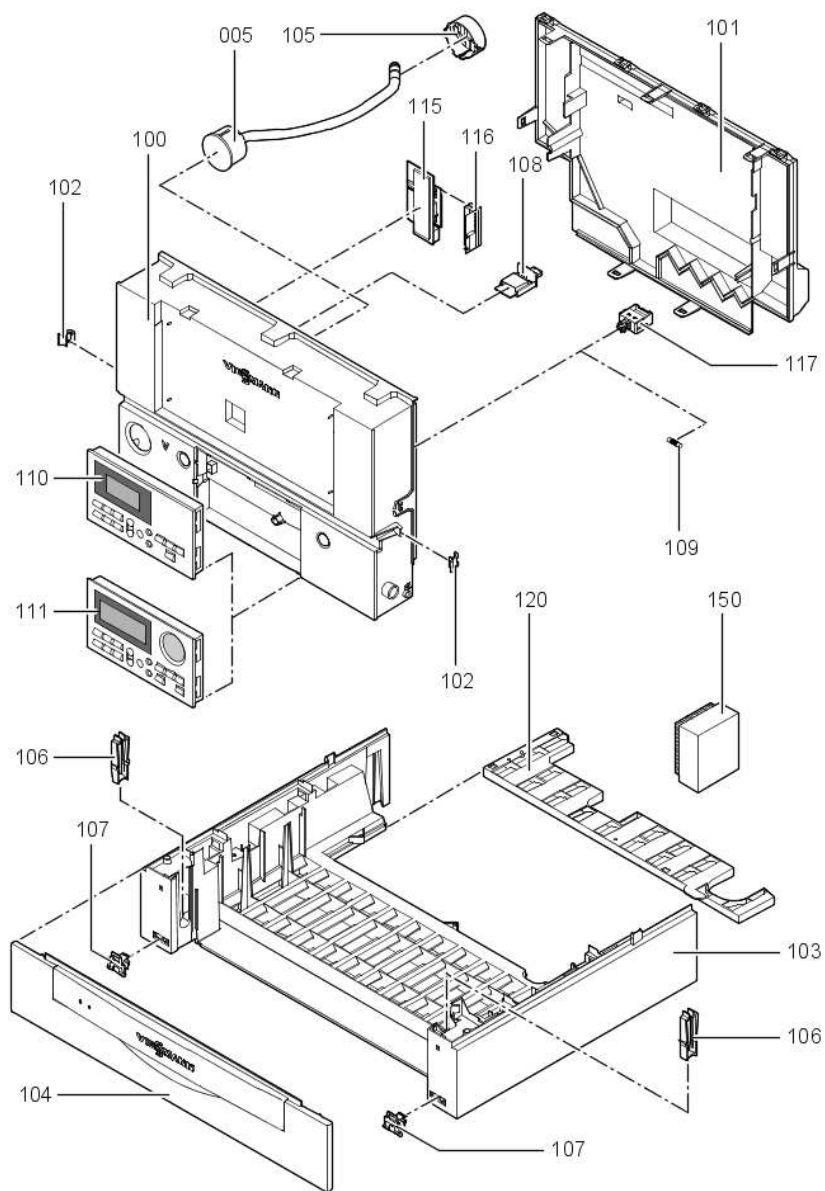
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Parts lists

**Parts lists** (cont.)



**Parts lists (cont.)**



Commissioning/service reports



Setting and test values	Date: By:	Set value	Commissioning	Service
<b>Static pressure</b>	<i>mbar</i>	max. 57.5 mbar		
<b>Supply pressure (flow pressure)</b>				
<input type="checkbox"/> for natural gas E	<i>mbar</i>	15-25 mbar		
<input type="checkbox"/> for natural gas LL	<i>mbar</i>	15-25 mbar		
<i>Tick gas type</i>				
<b>Carbon dioxide content CO<sub>2</sub></b>				
■ at lower output	<i>% vol.</i>			
■ at upper output	<i>% vol.</i>			
<b>Oxygen content O<sub>2</sub></b>				
■ at lower output	<i>% vol.</i>			
■ at upper output	<i>% vol.</i>			
<b>Carbon monoxide content CO</b>				
■ at lower output	<i>ppm</i>			
■ at upper output	<i>ppm</i>			



## Specification

Rated voltage:	230 V~	Permissible ambient temperature	
Rated frequency:	50 Hz	■ during operation:	0 to +40 °C
Rated current:	6.0 A	■ during storage	
Safety class:	I	and transport:	-20 to +65 °C
	IP X 4 D to		
Protection:	EN 60529	Electronic tempera- ture limiter setting:	82 °C (fixed)
		Temperature limiter setting:	100 °C (fixed)
		Line fuse (mains):	max. 16 A

### Gas fired boiler, category I 2N

Rated output range $T_v/T_R$ 50/ 30 °C	kW	30 - 80	30 - 105
Rated thermal load range	kW	28.1 - 75.0	28.1 - 98.5
Power consumption (max.)	W	105	150
<b>Connection values</b>			
in relation to the max. load with			
Natural gas E	m <sup>3</sup> /h	7.94	10.42
Natural gas LL	m <sup>3</sup> /h	9.23	12.12
<b>Product ID</b>		CE-0085 BR 0432	

### Note

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

Certificates

## Declaration of conformity

### Declaration of conformity for the Vitodens 200-W

We, Viessmann Werke GmbH&Co KG, D-35107 Allendorf, confirm as sole responsible body that the product **Vitodens 200-W** complies with the following standards:

EN 15 417  
EN 50 165  
EN 55 014

EN 60 335  
EN 61 000-3-2  
EN 61 000-3-3

In accordance with the following Directives, this product is designated with **CE-0085**:

90/396/EEC  
92/42/EEC

2004/108/EC  
2006/ 95/EC

This product meets the requirements of the Efficiency Directive (92/42/EEC) for **condensing boilers**.

The product characteristics determined as system values for the **Vitodens 200-W as part of EC type testing according to the Efficiency Directive** (see specification table) can be used for the energy assessment of heating and ventilation equipment to DIN V 4701-10.

Allendorf, 2 January 2008

Viessmann Werke GmbH&Co KG



pp. Manfred Sommer

**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 7 (2) [Germany].

Allendorf, 2 January 2008

Viessmann Werke GmbH&Co KG

A handwritten signature in black ink, appearing to read 'M. Sommer', written in a cursive style.

pp. Manfred Sommer

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## Applicability

### **Vitodens 200-W, type WB2B**

**30 to 80 kW**

from serial no.

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**30 to 105 kW**

from serial no.

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