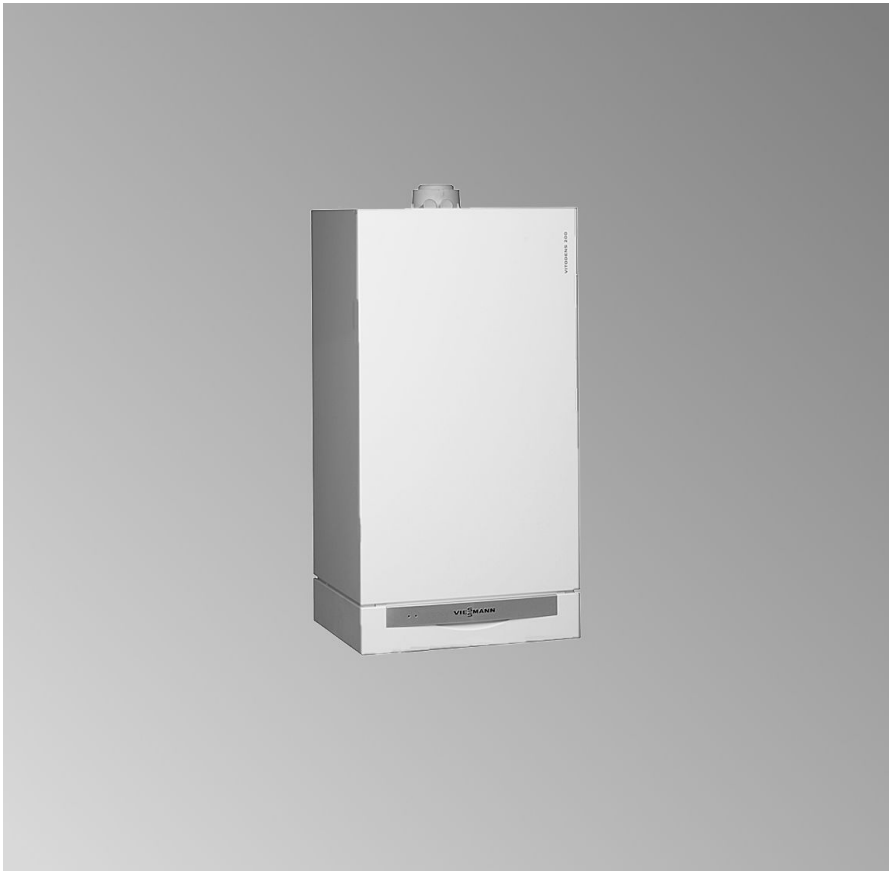
Service instructions

for contractors

Vitodens 200-W
Type WB2B, 4.8 to 35.0 kW
Wall mounted gas condensing boiler
Natural gas and LPG version

For applicability, see the last page

VITODENS 200-W



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Please keep safe.

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,
- Gas Safety (Installation & Use) Regulations
  - the appropriate Building Regulation either the Building regulations, the Building Regulation (Scotland), Building Regulations (Northern Ireland),
  - the Water Fittings Regulation or Water Bylaws in Scotland,
  - the current I.E.E. Wiring Regulations.

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).

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Safety instructions (cont.)

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.

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

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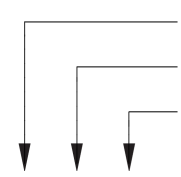
Steps - commissioning, inspection and… (cont.)



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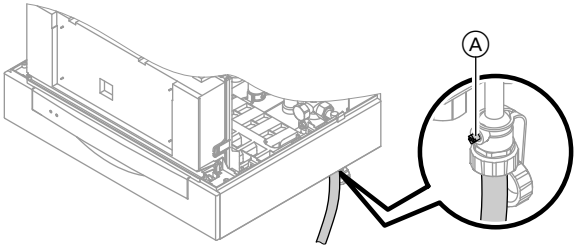
Further details regarding the individual steps

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 hardness exceeding 3.0 mol/m³, e.g. using a small softening system for heating water (see Viessmann Vitoset price list).
- An antifreeze additive suitable for heating systems can be mixed with the fill water. The antifreeze manufacturer must verify its suitability.

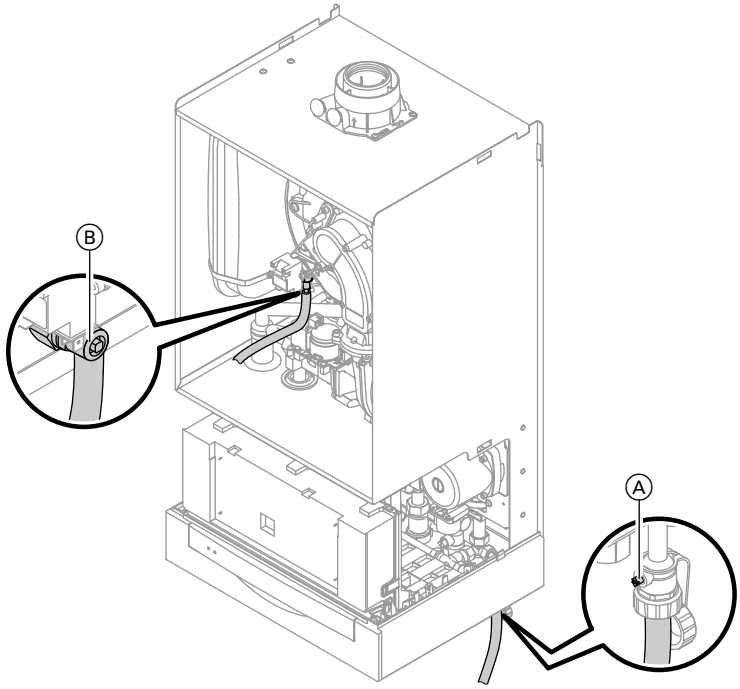


1. Check the pre-charge pressure of the diaphragm expansion vessel.
2. Close the gas shut-off valve.
3. Fill the heating system via the boiler fill & drain valve Ⓐ in the heating return (at the connection set or on site). (minimum system pressure > 1.0 bar).

   Note
   If the control unit has not been switched ON prior to filling the system, then the servomotor of the diverter valve will still be in its central position, and the system will be completely filled.
4. If the control unit had already been switched ON before filling began: Switch ON the control unit and activate the fill program via coding address "2F:2".
5. Close boiler fill & drain valve Ⓐ.

Further details regarding the individual steps (cont.)

Venting the boiler



1. Close the shut-off valves on the heating water side.
2. Connect the drain hose between top valve Ⓑ and a drain outlet.
3. Open valves Ⓐ and Ⓑ and vent using mains pressure until no more air noise is audible.
   If required, move the 3-way valve into its central position to achieve complete venting. For this, set code "2F: 2".
4. Close valves Ⓐ and Ⓑ and open the heating water shut-off valves.

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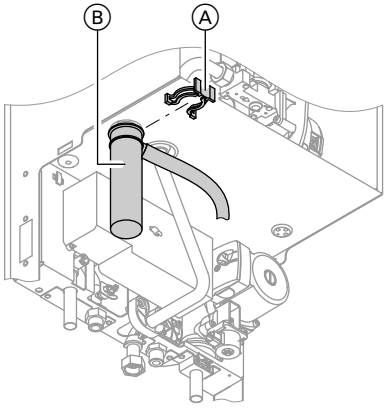
Further details regarding the individual steps (cont.)

Venting the heating system

1. Close the gas shut-off valve and switch ON the control unit.
2. Activate the venting program via coding address "2F:1" in code 1.

   Note
   To call up code 1 and for setting the coding address, see page 35.
   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 "**Venting**" (weather-compensated control unit).*
3. Check the system pressure.

Filling the siphon with water



1. Remove retaining clip Ⓐ and siphon Ⓑ.
2. Fill siphon Ⓑ with water.
3. Fit siphon Ⓑ and secure with retaining clip Ⓐ.

Further details regarding the individual steps (cont.)

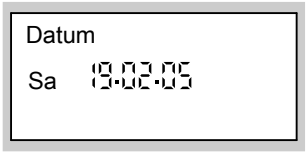
Setting the time and date (if required) – only for weather-compensated control units

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. ⊕/⊖ for the current time.

2. OK to confirm; "**Datum**" is displayed.

3. ⊕/⊖ for the current date.

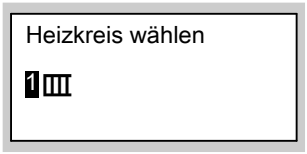
4. OK to confirm.

Further details regarding the individual steps (cont.)

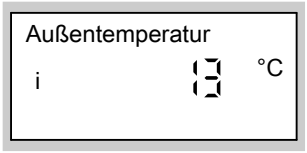
Selecting the language (if required) – only for weather-compensated control units

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. ⓘ "**Heizkreis wählen**" (select heating circuit) is displayed.
2. OK to confirm; wait approx. 4 s.
3. ⓘ press this button again, "**Außentemperatur**" (outside temperature) is displayed.
4. − for the required language.
5. OK 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/m³ (36.0 to 58.0 MJ/m³) without conversion.
- Convert the burner for operation with LPG (see "Gas type conversion" on page 12).

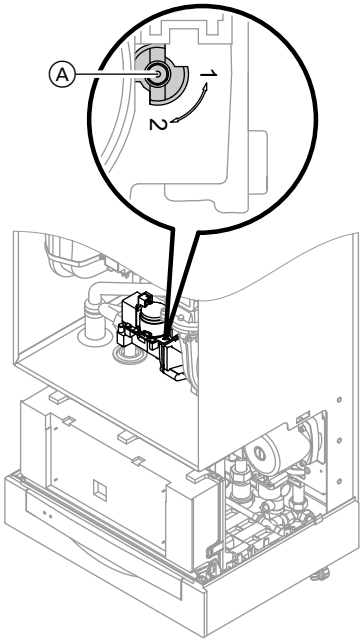
1. Determine the gas type and Wobbe index by asking your local gas supply utility or LPG supplier.
2. Convert the burner for operation with LPG (see page 12).
3. Record the gas type in the service report on page 114.

Further details regarding the individual steps (cont.)

Wobbe index ranges

Gas type	Wobbe index range kWh/m³	MJ/m³
Delivered condition		
Natural gas E	12.0 to 16.1	43.2 to 58.0
or		
Natural gas LL	10.0 to 13.1	36.0 to 47.2
After conversion		
LPG P	20.3 to 21.3	72.9 to 76.8

Gas type conversion (only for operation with LPG)



1. Set adjusting screw Ⓐ at the gas train to "2".
2. Switch ON system ON/OFF switch "⏻".
3. Select the gas type in coding address "82":
   - Call up code 2.
   - In coding address "11", select value "9".
   - In coding address "82", select value "1" (operation with LPG).
   - Set code "11" ≠ "9".
   - Terminate code 2.
4. Open the gas shut-off valve.
5. Affix label "G31" (included with the technical documentation) adjacent to the type plate on the cover panel.

Function sequence and possible faults

	Display	Measures
Control unit issues a heat demand	→ no	Increase set value and ensure heat is drawn off

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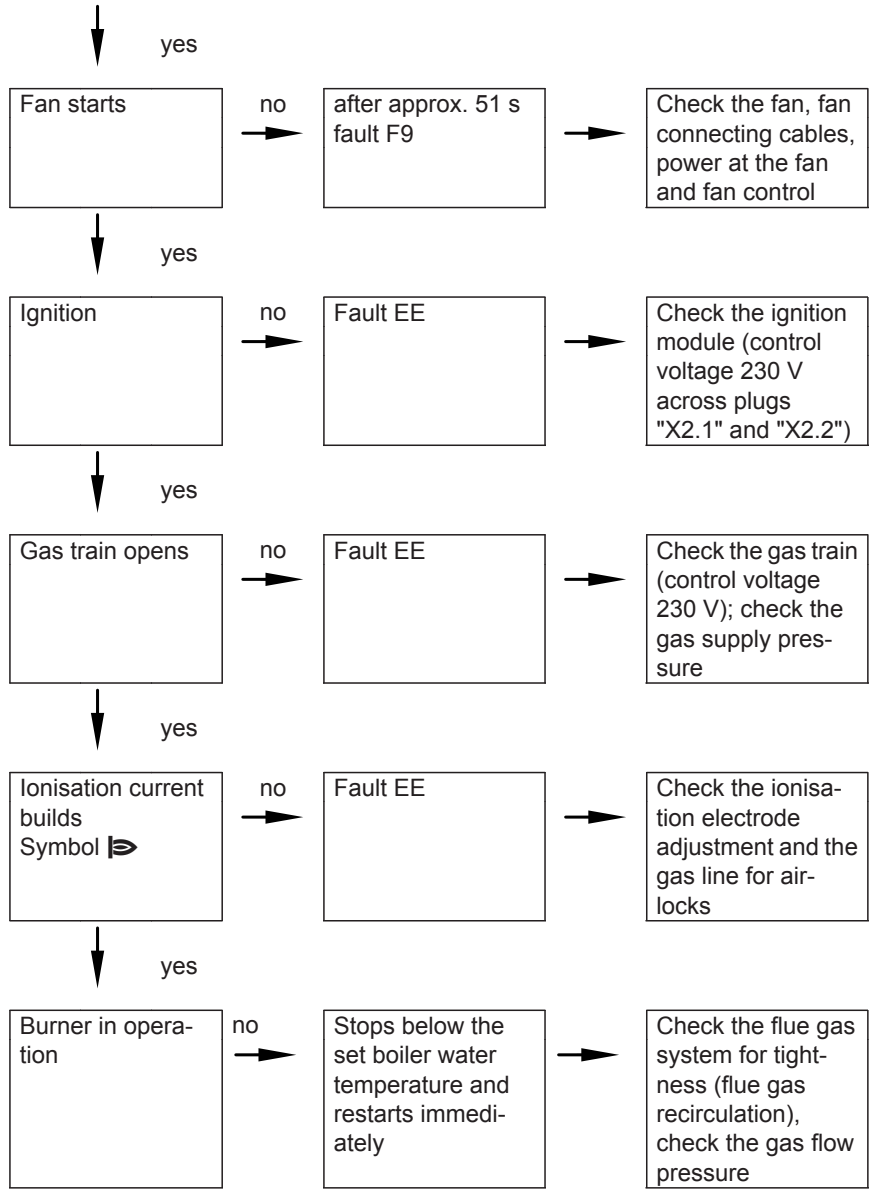
Further details regarding the individual steps (cont.)



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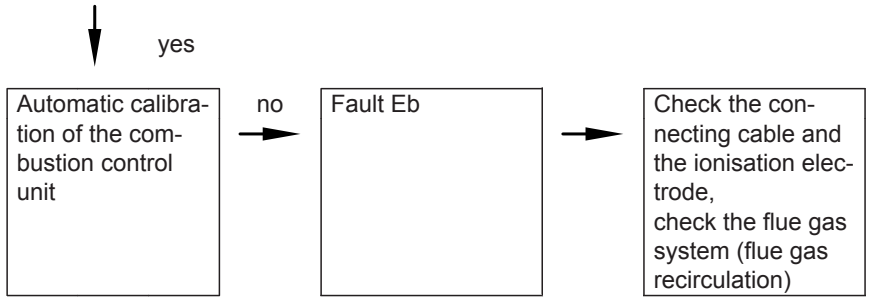
Further details regarding the individual steps (cont.)



For further details regarding faults, see page 66.

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.

Operation with LPG
Flush the LPG tank twice during commissioning/replacement. Thoroughly vent the tank and gas supply lines after flushing.

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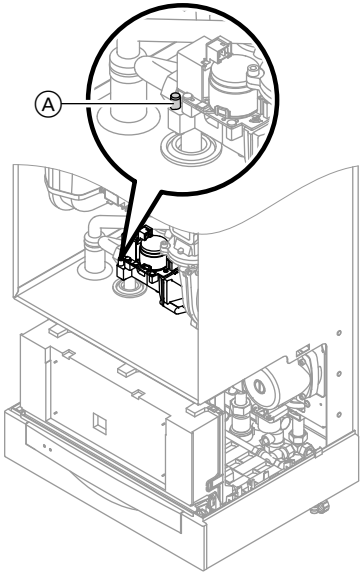
Further details regarding the individual steps (cont.)



1. Close the gas shut-off valve.
2. Undo the screw inside test connector "IN" Ⓐ on the gas train, but do not remove, then connect the pressure gauge.
3. Open the gas shut-off valve.
4. Measure the static pressure and record it in the service report.
   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 line. After approx. 5 s, press "↺ RESET" to reset the burner.

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

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

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 Ⓐ with the screw.

Further details regarding the individual steps (cont.)

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 Ⓐ.

Supply pressure (flow pressure)		Measures
for natural gas	**for LPG**	
below 17.4 mbar	below 42.5 mbar	Do not start the boiler. Notify your mains gas or LPG supplier.
17.4 to 25 mbar	42.5 to 57.5 mbar	Start the boiler.
above 25 mbar	above 57.5 mbar	Install a separate gas pressure governor upstream of the system and regulate the pre-charge pressure to 20 mbar for natural gas or 50 mbar for LPG. Notify your mains gas or LPG supplier.

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.

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.

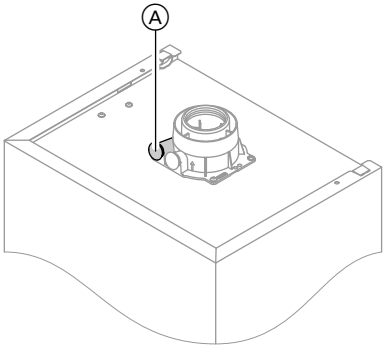
4. Confirm the set value with OK.

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.

Further details regarding the individual steps (cont.)

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



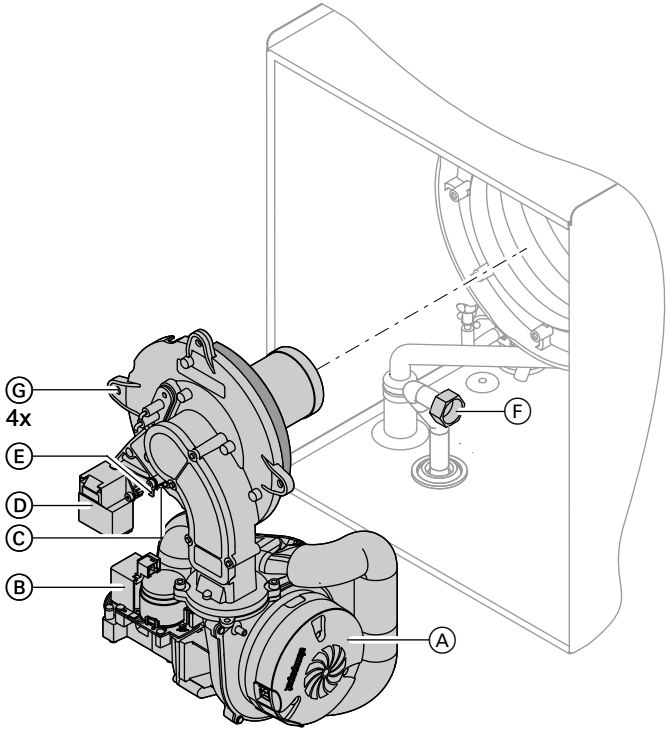
Ⓐ Combustion air port

For balanced flue systems tested together with the wall mounted gas fired boiler, the requirement for a tightness test during commissioning by the flue gas inspector is not applicable.

We recommend that your heating engineer carries out a simple leak/tightness test during the commissioning of your system. For this, it would be sufficient to check the CO_2 or O_2 concentration in the combustion air at the annular gap of the balanced flue pipe.
The flue pipe is deemed to be gas-tight if the CO_2 concentration in the combustion air is no higher than 0.2 % or the O_2 concentration is at least 20.6 %.
If actual CO_2 values are higher or O_2 values are lower, then pressure test the flue pipe with a static pressure of 200 Pa.

Further details regarding the individual steps (cont.)

Burner removal



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. Pull cables from fan motor Ⓐ, gas train Ⓑ, ionisation electrode Ⓒ, ignition unit Ⓓ and earth tab Ⓔ.
4. Release gas supply pipe Ⓕ fitting.
5. Undo four screws Ⓖ and remove the burner.

! **Please note**
To prevent damage, never rest the burner on the gauze assembly.

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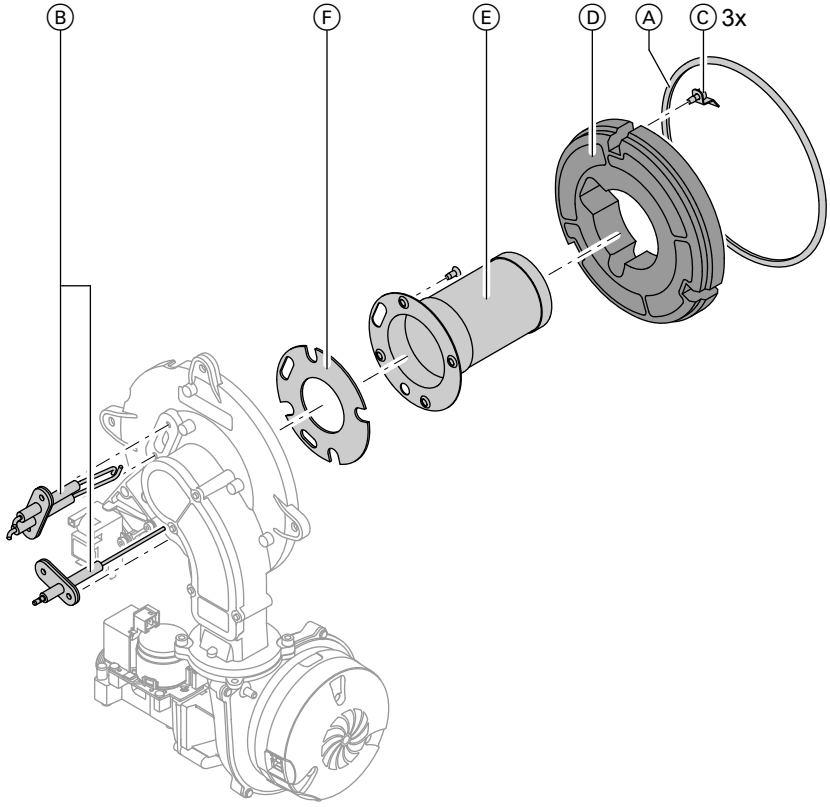
Further details regarding the individual steps (cont.)

Checking the burner gasket and the burner gauze assembly

Check burner gasket Ⓐ and burner gauze assembly Ⓔ for damage and replace, if required.
Generally replace the burner gasket **every 2 years**.



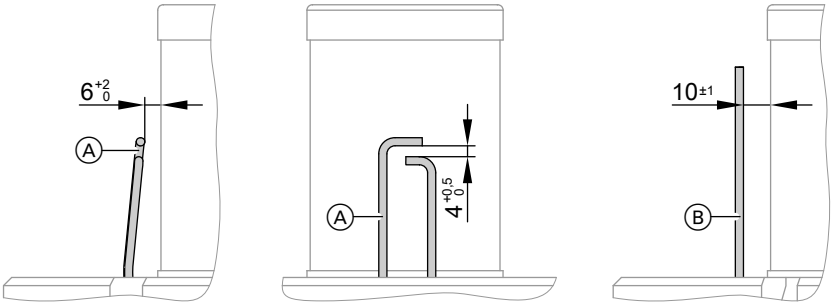
1. Remove electrodes Ⓑ.
2. Undo three retaining clips Ⓒ at thermal insulation ring Ⓓ and remove thermal insulation ring Ⓓ.
3. Undo four Torx screws and remove burner gauze assembly Ⓔ with its gasket Ⓕ.
4. Insert and secure a new burner gauze assembly Ⓔ with a new gasket Ⓕ.
   Torque: 3.5 Nm.

Further details regarding the individual steps (cont.)

5. Refit thermal insulation ring Ⓓ.

6. Refit electrodes Ⓑ.
Torque: 2.5 Nm.

Checking and adjusting the ignition and ionisation electrodes



Ⓐ Ignition electrodes

Ⓑ Ionisation electrode

1. Check the electrodes for wear and contamination.

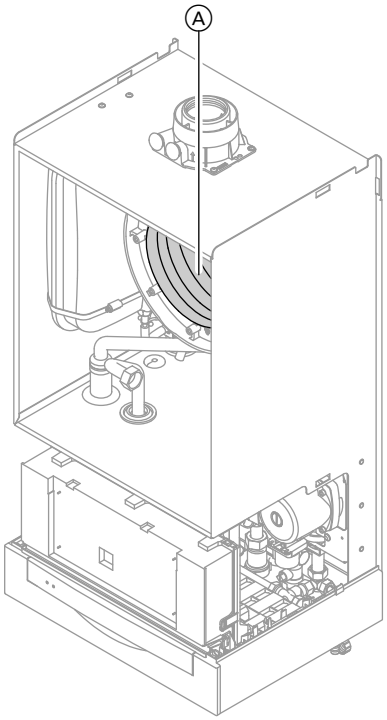
2. Clean the electrodes with a small brush (not with a wire brush) or sand paper.

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 2.5 Nm.

Cleaning the heating surfaces and installing the burner

! **Please note**
Scratches on parts that are in contact with flue gas can lead to corrosion.
Never use brushes to clean the heat exchanger.

Further details regarding the individual steps (cont.)



1. Use a vacuum cleaner to remove residues from the heat exchanger Ⓐ 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 heat exchanger Ⓐ and let the solution soak in for approx. 20 min.

3. Thoroughly flush the heat exchanger Ⓐ with water.

4. Install the burner and torque the screws diagonally with 4 Nm.

5. Fit the gas supply pipe with a new gasket.

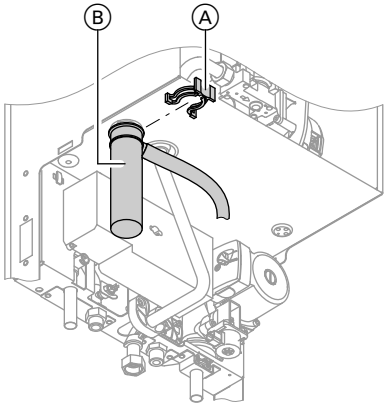
6. Check the gas connections for tightness.

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

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

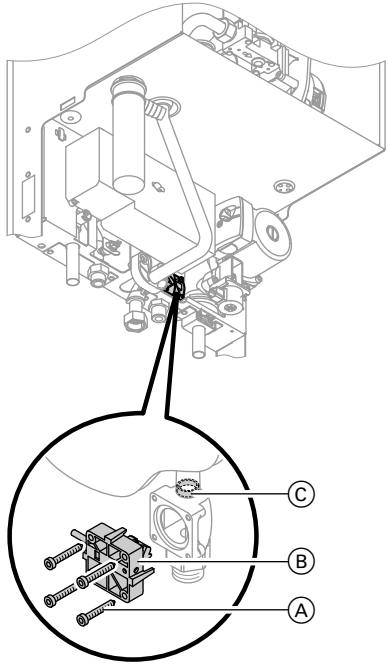
Further details regarding the individual steps (cont.)

Checking the condensate drain and cleaning the siphon



1. Check that the condensate can drain freely at the siphon.
2. Remove retaining clip Ⓐ and siphon Ⓑ.
3. Clean siphon Ⓑ.
4. Fill siphon Ⓑ with water, fit it and secure with retaining clip Ⓐ.

Flow limiter (only for gas combi boilers)



1. Switch OFF the control unit, shut off the cold water line and drain the DHW side of the boiler.
2. Undo Allen screws Ⓐ.

   Note
   Residual water may escape during dismantling.
3. Remove flow switch Ⓑ and remove flow limiter Ⓒ downwards.
4. Check flow limiter Ⓒ; replace in case of excessive scaling or damage. Secure flow switch Ⓑ.

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Further details regarding the individual steps (cont.)

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

3. Top up with water until the filling pressure of the cooled system is min. 1.0 bar and 0.1 to 0.2 bar higher than the pre-charge pressure of the expansion vessel.
   Permiss. operating pressure: 3 bar

Checking all gas equipment for tightness at operating pressure

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

Note
For the tightness test, use only suitable and approved leak detecting agents (EN 14291) and devices. Leak detecting agents with unsuitable constituents (e.g. nitrites, sulphides) can lead to material damage.
Remove residues of the leak detecting agent after testing.

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_2 or O_2 content. For a function description of the electronic combustion control unit, see page 102.

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

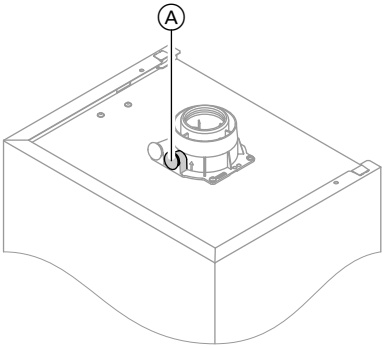
CO_2 or O_2 content
The CO_2 content must be within the following ranges (upper and lower output):

Further details regarding the individual steps (cont.)

- 7.7 to 9.2% for natural gas E and LL
- 9.3 to 10.9% for LPG P

For all gas types, the O_2 content must be between 4.4% and 6.9%.
If the actual CO_2 or O_2 values lie outside their respective ranges, check the balanced flue system for tightness.

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 test port Ⓐ (on the boiler flue outlet).
2. Open the gas shut-off valve, start the boiler and create a heat demand.
3. Adjust the lower output.

   Constant temperature control unit:
   ⏻ + OK press simultaneously:
   "**1**" is shown.

   Weather-compensated control unit:
   ⏻ + OK press simultaneously:
   "**Relay test**" and then
   "**Base load**" is shown.
4. Check the CO_2 content. Should the actual value deviate from the above ranges by more than 1 %, implement steps from page 23.
5. Enter actual values into the service report.
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_2 content. Should the actual value deviate from the above ranges by more than 1 %, implement steps from page 23.
8. After testing, press OK.
9. Enter actual values into the service report.

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Further details regarding the individual steps (cont.)

Matching the control unit to the heating system

Note

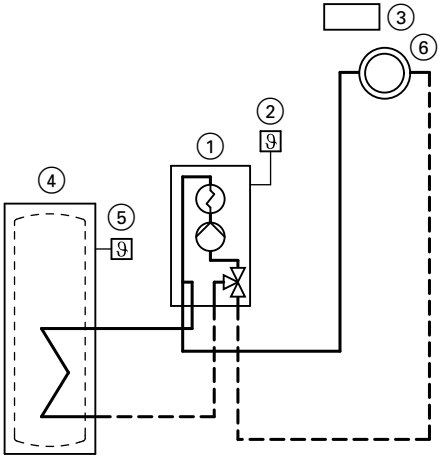
Subject to the equipment level, the control unit must be matched to the system. Various system components are recognised automatically by the control unit and the relevant codes are adjusted automatically.

In the following system designs, DHW heating is illustrated with a separate DHW cylinder. The designs also apply to systems where DHW is heated by an integral instantaneous water heater.

- *For the selection of an appropriate design, see the following diagrams.*
- *For coding steps, see page 35.*

System version 1

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



① Vitodens 200-W
② Outside temperature sensor (only for weather-compensated control units)
③ Vitotrol 100 (only for constant temperature control units)
④ DHW cylinder
⑤ Cylinder temperature sensor
⑥ Heating circuit without mixer A1

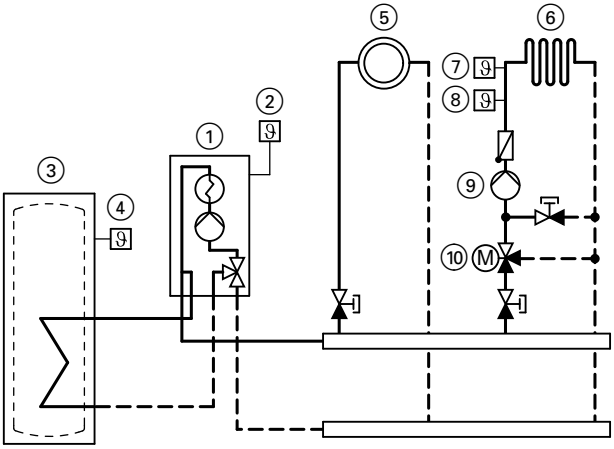
Required coding	Address
Operation with LPG	82:1

Further details regarding the individual steps (cont.)

System version 2

One heating circuit without mixer A1 and one heating circuit with mixer M2 (with/without DHW heating)

Note
The volume flow of the heating circuit without mixer must be at least 30% greater than the volume flow of the heating circuit with mixer.



① Vitodens 200-W
② Outside temperature sensor
③ DHW cylinder
④ Cylinder temperature sensor
⑤ Heating circuit without mixer A1
⑥ Heating circuit with mixer M2
⑦ Temperature limiter for limiting the maximum temperature of underfloor heating systems
⑧ Flow temperature sensor M2
⑨ Heating circuit pump M2
⑩ Extension kit for one heating circuit with mixer M2

Required coding	Address
Operation with LPG	82:1
System with only one heating circuit with mixer	
■ with DHW heating	00:4
■ without DHW heating	00:3

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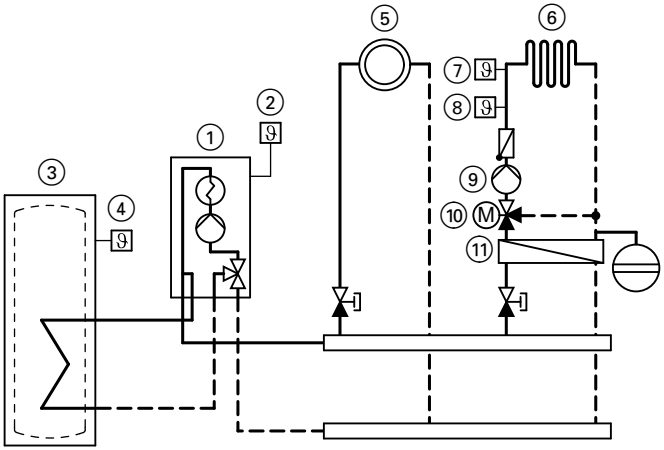
Further details regarding the individual steps (cont.)

System version 3

One heating circuit without mixer A1 and one heating circuit with mixer M2 with system separation (with/without DHW heating)



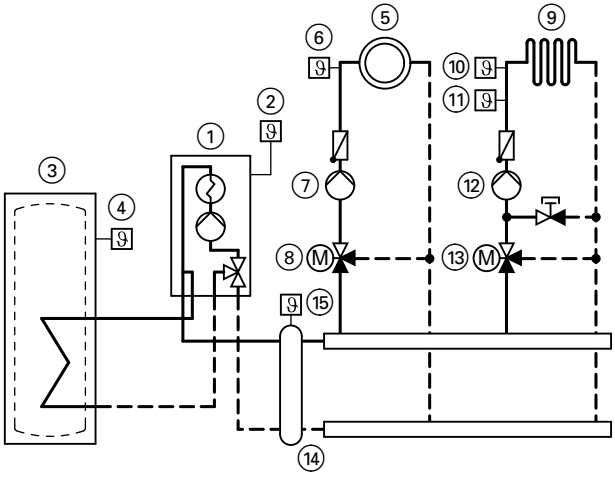
① Vitodens 200-W
② Outside temperature sensor
③ DHW cylinder
④ Cylinder temperature sensor
⑤ Heating circuit without mixer A1
⑥ Heating circuit with mixer M2
⑦ Temperature limiter for limiting the maximum temperature of underfloor heating systems
⑧ Flow temperature sensor M2
⑨ Heating circuit pump M2
⑩ Extension kit for one heating circuit with mixer M2
⑪ Heat exchanger for system separation

Required coding	Address
Operation with LPG	82:1

Further details regarding the individual steps (cont.)

System version 4

One heating circuit with mixer M1 (with Vitotronic 200-H), one heating circuit with mixer M2 (with extension kit) and low loss header (with/without DHW heating)



① Vitodens 200-W
② Outside temperature sensor
③ DHW cylinder
④ Cylinder temperature sensor
⑤ Heating circuit with mixer M1
⑥ Flow temperature sensor M1
⑦ Heating circuit pump M1
⑧ Vitotronic 200-H
⑨ Heating circuit with mixer M2
⑩ Temperature limiter for limiting the maximum temperature of underfloor heating systems
⑪ Flow temperature sensor M2
⑫ Heating circuit pump M2
⑬ Extension kit for one heating circuit with mixer M2
⑭ Low loss header
⑮ Flow temperature sensor, low loss header

Required coding	Address
Operation with LPG	82:1
One heating circuit with mixer with extension kit for mixer and one heating circuit with mixer with Vitotronic 200-H	

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Further details regarding the individual steps (cont.)

Required coding	Address
■ with DHW heating	00:4
■ without DHW heating	00:3

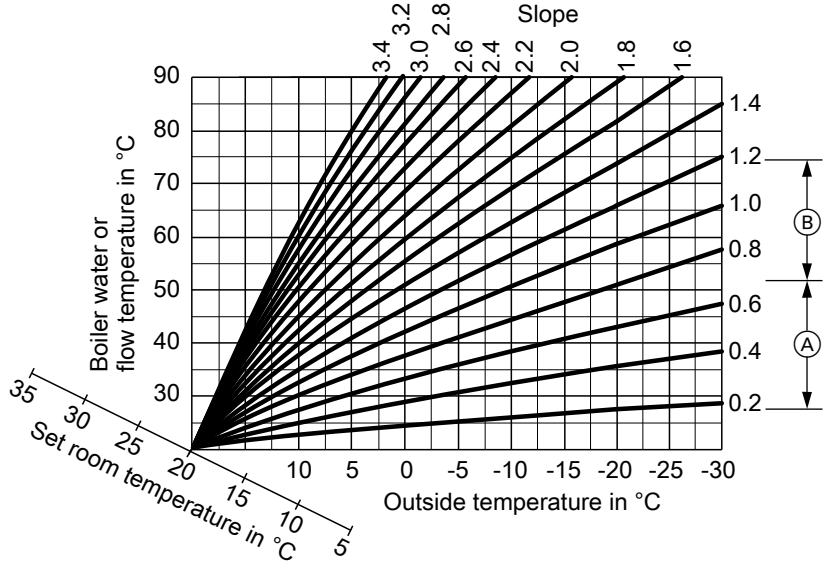
Make the LON connection to the Vitotronic 200-H, see page 31.

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



Ⓐ Heating curve slope for underfloor heating systems

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

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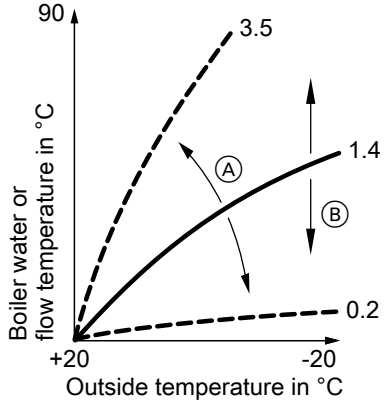
Further details regarding the individual steps (cont.)

Changing the slope and level



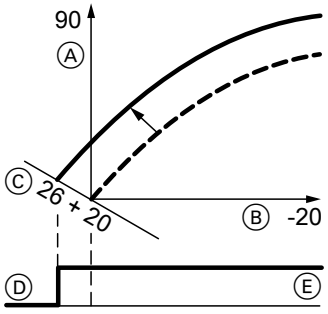
Ⓐ Changing the slope
Ⓑ Changing the level (vertical parallel offset of the heating curve)

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.

Adjusting the set room temperature

Standard room temperature



Example 1: Adjustment of standard room temperature from 20 to 26 °C

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

Press the following keys:

1. ⊕ "1 III" flashes.

2. OK to select heating circuit A1 (heating circuit without mixer)
   or

3. ⊕ "2 III" flashes.

4. OK to select heating circuit with mixer M2.

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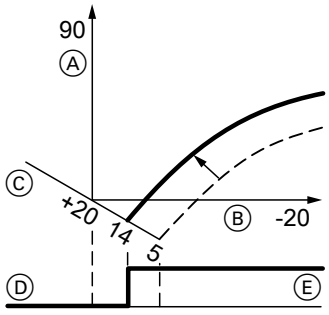
Further details regarding the individual steps (cont.)

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 Ⓒ, 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

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

Press the following keys:

1. ⊕ "1" flashes.

2. OK to select heating circuit A1 (heating circuit without mixer)
or

3. ⊕ "2" flashes.

4. OK to select heating circuit with mixer M2.

5. Call up the set night temperature.

6. ⊕/⊖ Change the value.

7. OK Confirm the value.

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

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

Installation instructions LON communication module

Note
The data transfer via LON can take several minutes.

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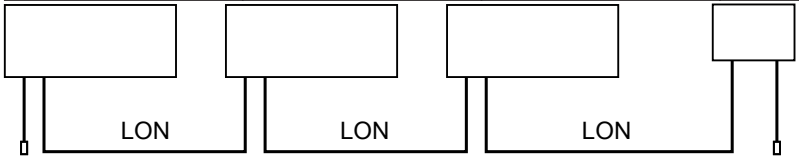
Further details regarding the individual steps (cont.)

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 **Set** 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 **Set** code "81:3"	Control unit receives the time **Set** code "81:3"	Device receives the time
Control unit transmits outside temperature **Set** code "97:2"	Control unit receives outside temperature **Set** code "97:1"	Control unit receives outside temperature **Set** code "97:1"	—
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").

Press the following keys:

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

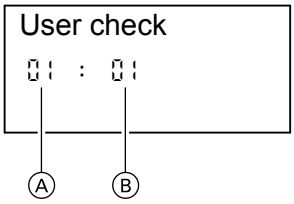
2. ⊕ The subscriber list is updated after approx. 2 min. The subscriber check is completed.

Further details regarding the individual steps (cont.)

Carrying out a subscriber check

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

Preconditions:
- 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)



Ⓐ Consecutive number in the subscriber list
Ⓑ Subscriber number

Press the following keys:

1. ⌂ + OK — simultaneously for approx. 2 s. The subscriber check has been initiated.

2. ⊕/⊖ — for the required subscriber.

3. OK — 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. ⌂ + OK — 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.

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Further details regarding the individual steps (cont.)

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.

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

Note
An acknowledged service message can be redisplayed by pressing OK (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.
OK Scanning is completed.

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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. OK to confirm.

4. ⊕/⊖ for the selected value.

5. OK 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

Coding in the delivered condition		Possible change	
System design			
00 :1	System version 1: 1 heating circuit without mixer A1, without DHW heating	00 :2	System version 1: 1 heating circuit without mixer A1, with DHW heating
		00 :3	System version 4: 1 heating circuit with mixer M2, without DHW heating
		00 :4	System version 4: 1 heating circuit with mixer M2, with DHW heating
		00 :5	System version 2, 3: 1 heating circuit without mixer A1 and 1 heating circuit with mixer M2, without DHW heating
		00 :6	System version 2, 3: 1 heating circuit without mixer A1; 1 heating circuit with mixer M2, with DHW heating
Max. boiler water temp.			
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 specified by the boiler
Venting/filling			
2F:0	Venting program/fill program disabled	2F:1	Venting program enabled
		2F:2	Fill program enabled

Code 1 (cont.)

Coding in the delivered condition		Possible change	
User no.			
77:1	LON user 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 ***Note*** *Allocate each number only* ***once.***
Summer econ. A1/M2			
A5:5	With heating circuit pump logic function (only for weather-compensated control units)	A5:0	Without heating circuit pump logic function
Min. flow temp. A1/M2			
C5:20	Electronic minimum flow temperature limit 20 °C (only for weather-compensated control units)	C5:1 to C5:127	Minimum limit adjustable from 1 to 127 °C (limited by the boiler coding card)
Max. flow temp. A1/M2			
C6:75	Electronic maximum flow temperature limit 75 °C (only for weather-compensated control units)	C6:10 to C6:127	Maximum limit adjustable from 10 to 127 °C
Slope A1/M2			
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)
Level A1/M2			
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)

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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. OK to confirm.

3. ⊕/⊖ for the required coding address; the address flashes.

4. OK to confirm; the value flashes.

5. ⊕/⊖ for the selected value.

6. OK 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 ⊕/⊖:

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.

Code 2 (cont.)

Codes

Coding

Coding in the delivered condition		Possible change	
System design			
00 :1	System version 1: 1 heating circuit without mixer A1, without DHW heating	00 :2	System version 1: 1 heating circuit without mixer A1, with DHW heating
		00 :3	System version 4: 1 heating circuit with mixer M2, without DHW heating
		00 :4	System version 4: 1 heating circuit with mixer M2, with DHW heating
		00 :5	System version 2, 3: 1 heating circuit without mixer A1; 1 heating circuit with mixer M2, without DHW heating
		00 :6	System version 2, 3: 1 heating circuit without mixer A1; 1 heating circuit with mixer M2, with DHW heating
Boiler/burner			
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 specified by the boiler
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
12:0	Special OFF function	12:1	Special ON function: During calibration, heat is transferred into the heating circuit (adjust if fault "Eb" occurs)

Code 2 (cont.)

Coding in the delivered condition		Possible change	
21:0	No maintenance interval (hours run) selected	21:1 to 21:100	The number of hours run before the burner should be serviced is adjustable from 100 to 10 000 h one step ≙ 100 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 (the value is automatically set and must be manually reset after a service has been carried out)
25:0	With outside temperature sensor for constant temperature control units: No recognition of outside temperature sensor or fault monitoring	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 once every 30 s (only when operating with LPG)
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
30:0	Internal fixed speed circulation pump (automatic adjustment, do not modify)		
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.

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Code 2 (cont.)

Value address 32: ...	Internal circulation pump	Heating circuit pump Heating circuit without mixer	Heating circuit pump Heating circuit with mixer	Circulation pump for cylinder heating
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	
Boiler/burner			
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

Value address 34: ...	Internal circulation pump	Heating circuit pump Heating circuit without mixer	Heating circuit pump Heating circuit with mixer	Circulation pump for cylinder heating
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

Code 2 (cont.)

Value address 34: ...	Internal circulation pump	Heating circuit pump Heating circuit without mixer	Heating circuit pump Heating circuit with mixer	Circulation pump for cylinder heating
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
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	
Boiler/burner			
38:0	Status burner control unit: Operational (no fault)	38:≠0	Fault burner control unit
51:0	Internal circulation pump is always started when there is a heat demand	51:1	When there is a heat demand, the internal circulation pump will only be started when the burner is operational. System with heating water buffer cylinder.

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Code 2 (cont.)

Coding in the delivered condition		Possible change	
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 [28] of the internal extension: DHW circulation pump	53:0	Function connection [28]: Central fault
		53:2	Function connection [28]: External heating circuit pump (heating circuit A1)
		53:3	Function connection [28]: External circulation pump for cylinder heating
54:0	Without solar control unit	54:1	With Vitosolic 100 (automatic adjustment on connection)
		54:2	With Vitosolic 200 (automatic adjustment on connection)
DHW			
56:0	Set DHW temperature adjustable from 10 to 60 °C	56:1	Set DHW temperature adjustable from 10 to above 60 °C ***Note*** *Maximum value subject to boiler coding card. Observe the max. permissible DHW temperature.*
58:0	Without auxiliary function for DHW heating	58:10 to 58:60	Entry of a second set DHW temperature, adjustable from 10 to 60 °C (observe coding addresses "56" and "63")
59:0	Cylinder heating: Start point -2.5 K Stop point +2.5 K	59:1 to 59:10	Start point adjustable from 1 to 10 K below set value
5b:0	DHW cylinder directly connected to the boiler	5b:1	DHW cylinder connected downstream of the low loss header

Code 2 (cont.)

Coding in the delivered condition		Possible change	
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
65:...	Information regarding the type of diverter valve (not adjustable)	65:0	Without diverter valve
		65:1	Viessmann diverter valve
		65:2	Wilo diverter valve
		65:3	Grundfos diverter valve
67:40	With 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 (depending on 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

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Code 2 (cont.)

Coding in the delivered condition		Possible change	
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/h for 5 min "ON" up to 6x/h for 5 min
		73:7	Permanently "ON"
General			
76:0	Without LON communication module (only for weather-compensated control units)	76:1	With LON 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: 1 - 4 = Boiler 5 = Cascade 10 - 98 = Vitotronic 200-H 99 = Vitocom ***Note*** *Allocate each number only* ***once.***
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	Does not transmit time
7F:1	Detached house (only for weather-compensated control units)	7F:0	Apartment building Separate adjustment of holiday program and time program for DHW heating, as option
80:1	If a fault occurs for at least 5 s, a fault message is displayed	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; one step ≙ 5 s

Code 2 (cont.)

Coding in the delivered condition		Possible change	
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	82:1	Operation with LPG (only adjustable if coding address 11:9 has been set)
85:0	Standard mode	85:1	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). ***Note*** *Heat must be drawn off during manual calibration.*
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; one step ≙ 10 min.

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Code 2 (cont.)

Coding in the delivered condition		Possible change	
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
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	The control unit sends the outside temperature to the Vitotronic 200-H
98:1	Viessmann system number (in conjunction with monitoring several systems via Vitocom 300)	98:1 to 98:5	System number adjustable from 1 to 5
9b:0	No minimum set boiler water temperature for external demand	9b:1 to 9b:127	Minimum set boiler water temperature adjustable from 1 to 127 °C (limited by boiler-specific parameters)
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

Code 2 (cont.)

Coding in the delivered condition		Possible change	
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
Boiler circuit, mixer circuit			
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)
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**
If a value below 1 °C is selected, there is a risk that pipes outside the thermal insulation of the house could freeze up.
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
2 to 15	1 °C to 14 °C	3 °C to 16 °C

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Code 2 (cont.)

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. ***Note*** *Observe the note for code "A3"*
A5:5	With heating circuit pump logic function (economy circuit): Heating circuit pump "OFF" when the outside temperature (AT) is 1 K higher than set room temperature (RT_{set}) AT > RT_{set} + 1 K (only for weather-compensated control units)	A5:0	Without heating circuit pump logic function
		A5:1 to A5:15	With heating circuit pump logic function: Heating circuit pump "OFF", if (see the following table)

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

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Code 2 (cont.)

Coding in the delivered condition		Possible change	
Boiler circuit, mixer circuit			
A6:36	Extended economy function **disabled** (only for weather-compensated control units)	A6:5 to A6:35	Extended economy mode is enabled, i.e. the burner and heating circuit pump will be 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": ■ If the mixer changes to control mode or ■ If there is a risk of frost
A8:1	Heating circuit with mixer M2 creates a demand for the internal circulation pump (only for weather-compensated control units)	A8:0	Heating circuit with mixer M2 creates no demand for the internal circulation pump

Code 2 (cont.)

Coding in the delivered condition		Possible change	
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 Reduc. mode: With room temperature hook-up
		b0:2	Heating mode: With room temperature hook-up Reduc. mode: Weather-compensated
		b0:3	Heating mode/reduced mode: With room temperature hook-up
b2:8	With remote control and for the heating circuit, operation with room temperature hook-up must be programmed: Room influence factor 8 (only for weather-compensated control units; 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 $RT_{actual} > RT_{set} + 5$ K; disabled $RT_{actual} < RT_{set} + 4$ K
2:	enabled $RT_{actual} > RT_{set} + 4$ K; disabled $RT_{actual} < RT_{set} + 3$ K
3:	enabled $RT_{actual} > RT_{set} + 3$ K; disabled $RT_{actual} < RT_{set} + 2$ K
4:	enabled $RT_{actual} > RT_{set} + 2$ K; disabled $RT_{actual} < RT_{set} + 1$ K
5:	enabled $RT_{actual} > RT_{set} + 1$ K; disabled $RT_{actual} < RT_{set}$
6:	enabled $RT_{actual} > RT_{set}$; disabled $RT_{actual} < RT_{set} - 1$ K
7:	enabled $RT_{actual} > RT_{set} - 1$ K; disabled $RT_{actual} < RT_{set} - 2$ K
8:	enabled $RT_{actual} > RT_{set} - 2$ K; disabled $RT_{actual} < RT_{set} - 3$ K

Coding in the delivered condition		Possible change	
Boiler circuit, mixer circuit			
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 boiler-specific parameters)
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 boiler-specific parameters)
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 changes the heating program to "Constant operation with reduced room temperature" (only for weather-compensated control units)	d5:1	The external heating program changeover changes the heating program to "Constant central heating with standard room temperature"

Code 2 (cont.)

Coding in the delivered condition		Possible change	
E1:1	With remote control: The set day temperature can be adjusted 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
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 or external heating program changeover via key: 8 hours (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 internal circulation pump in heating mode 12 min (only for constant temperature control units)	F5:0	No run-on time for the internal circulation pump
		F5:1 to F5:20	Run-on time of the internal circulation pump adjustable from 1 to 20 min

▶▶

*1 *In the "Heating and DHW" program, party mode ends **automatically** when the system changes over to operation with standard room temperature.*

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Code 2 (cont.)

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

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Code 2 (cont.)

Coding in the delivered condition		Possible change	
FA:20	Raising the set boiler water temperature or the set flow temperature by 10 % when changing from operation with reduced room temperature to operation with standard room temperature. 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; one step ≙ 2 min

Resetting codes to their delivered condition

Constant temperature control unit:

1. ⌂ + ⌂ simultaneously for approx. 2 s.

2. ⊕ press.

3. OK to confirm
or
⊕/⊖ to select "**Factory set? No**".

Weather-compensated control unit:

1. ⌂ + ⌂ simultaneously for approx. 2 s.

2. ⊕ "**Factory set? Yes**" appears.

Service level overview

Function	Key combination	Exit	Page
Temperatures, boiler coding card and brief scans	Press ⏻ and 🌡 simultaneously for approx. 2 s	Press OK	57
Relay test	Press ⏻ and OK simultaneously for approx. 2 s	Press OK	60
Max. output (heating mode)	Press ⏻ and 🌡 simultaneously for approx. 2 s	Press OK	16
Operating conditions and sensors	Press i	Press OK	61
Service scan	i (if "Service" flashes)	Press OK	34
Adjusting the display contrast	Press OK and + simultaneously; the display darkens	–	–
	Press OK and − simultaneously; the display becomes lighter	–	–
Calling up acknowledged fault messages	Press OK for approx. 3 s		65
Fault history	Press 🌡 and OK simultaneously for approx. 2 s	Press OK	65
Subscriber check (in conjunction with LON)	Press 🛁 and OK simultaneously for approx. 2 s	Press 🛁 and OK simultaneously	33
Emissions test function "🧹"	Weather-compensated control unit: Press 🌡 and 🌙 simultaneously for approx. 2 s Constant temperature control unit: Press 🌡 and 🌡 simultaneously for approx. 2 s	Press 🌡 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	35
Coding level 2 Numerical display	Press 🛁 and 🌡 simultaneously for approx. 2 s	Press 🛁 and 🌡 simultaneously for approx. 1 s	38
Resetting codes to their delivered condition	Press 🛁 and 🌡 simultaneously for approx. 2 s; then ✳	–	55

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Temperatures, boiler coding card and brief scans

Weather-compensated control unit

Press the following keys:

1. ⏻ + 🛁 simultaneously for approx. 2 s.

2. ⊕/⊖ for the required scan.

3. OK Scanning is completed.

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

Display screen	Explanation
Slope A1 – level A1	
Slope M2 – level M2	
Outside temp. adj.	The adjusted outside temperature can be reset to the actual outside temperature with ⊕.
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					
	8	8	8	8	8	8
1	Software version Control unit		Equipment version		Burner control unit version	
2	System designs 01 to 06		Number of KM BUS users	Maximum demand temperature		

▶▶

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

Brief scan	Display					
	8	8	8	8	8	8
3	Flow switch position	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		Appliance 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 %		
	Boiler		**Heating circuit A1 (without mixer)**		**Heating circuit with mixer M2**	
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
	Internal circulation pump		**Heating circuit pump to connection extension**			
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

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

Constant temperature control unit

Press the following keys:

1. ⏻ + 🛁 simultaneously for approx. 2 s.

2. ⊕/⊖ for the required scan.

3. OK Scanning is completed.

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

Brief scan	Display				
0	0	0	0	0	0
0	Flow switch position	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
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		Appliance type	
5	0	0	Set cylinder temperature		
b	0	0	Max. output in %		
C	0	Boiler coding card (hexadecimal)			

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

Brief scan	Display				
d	0	0	0	0	0
c	0	Version Appliance		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. ⏻ + OK simultaneously for approx. 2 s.

2. ⊕/⊖ for the required relay output.

3. OK 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
Intern.pump On	Int. output 20
Htg. system valve	Diverter valve set to heating mode
Valve in middle pos.	Diverter valve in central position (filling/draining)
DHW valve	Diverter valve set to DHW mode
Htg.cir.pump M2 On	Mixer extension
Mix.valve open	Mixer extension
Mix.valve closed	Mixer extension
Intern.output On	Output 28 internal extension
Htg.cir.pump A1 On	External extension H1
DHW pump On	External extension H1
Recirc.pump On	External extension H1
Centr.fault ind.On	External extension H1

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Checking outputs (relay test) (cont.)

Constant temperature control unit

Press the following keys:

1. ⏻ + OK simultaneously for approx. 2 s.

2. ⊕/⊖ for the required relay output.

3. OK 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"
4	Diverter valve set to heating mode
5	Diverter valve in central position (filling/draining)
6	Diverter valve set to DHW mode
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. OK to confirm; wait approx. 4 s.

3. ⓘ press again.

4. ⊕/⊖ for the required operating condition.

5. OK Scanning is completed.

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

Scanning operating conditions and sensors (cont.)

Display screen	Explanation
Boiler temp., ... °C	Actual value
Supply temp., ... °C	Actual value (only for mixer circuit M2)
Normal room temp., ... °C	Set value
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 ⊕ 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 OK

Constant temperature control unit

Press the following keys:

1. ⓘ press.

2. ⊕/⊖ for the required operating condition.

3. OK Scanning is completed.

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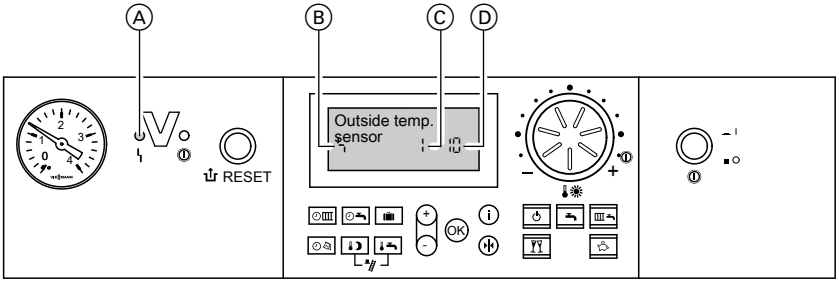
Scanning operating conditions and sensors (cont.)

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



Ⓐ Fault display
Ⓑ Fault symbol
Ⓒ Fault number
Ⓓ Fault code

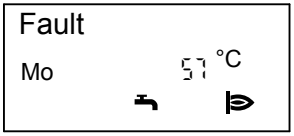
The red fault indicator flashes for every fault.
A fault in the burner control unit causes the display to show "⇫".

Constant temperature control unit

In case of a fault, the fault code and fault symbol are 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
- Collector sensor
- Solar DHW sensor
- Remote control
- Fault participant

Fault display (cont.)

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. ⊕/⊖ for further fault codes.

2. 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. ⓘ for the current fault.

2. ⊕/⊖ for further fault messages.

3. 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

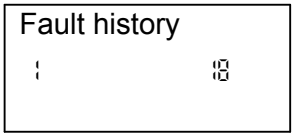
Press the following keys:

1. OK for approx. 3 s

2. ⊕/⊖ for the acknowledged fault.

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. ⚙ + OK simultaneously for approx. 2 s.

2. ⊕/⊖ for individual fault codes.

3. ***Note***
All saved fault codes can be deleted with ⚡.

Fault display (cont.)

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 appliance. After servicing, set coding address "24:0"
10		X	Controls as if the outside temperature were 0 °C	Short circuit, outside temperature sensor	Check the outside temperature sensor (see page 76).
18		X	Controls as if the outside temperature were 0 °C	Lead break, outside temperature sensor	Check the outside temperature sensor (see page 76).
20		X	Regulates without flow temperature sensor (low loss header)	Short circuit, system flow temperature sensor	Check the low loss header sensor (see page 78).
28		X	Regulates without flow temperature sensor (low loss header)	Lead break, system flow temperature sensor	Check the low loss header sensor (see page 78).
30	X	X	Burner blocked	Short circuit, boiler water temperature sensor	Check the boiler water temperature sensor (see page 78).
38	X	X	Burner blocked	Lead break, boiler water temperature sensor	Check the boiler water temperature sensor (see page 78).

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Fault codes (cont.)

Fault code on the display	Const.	Weath.-comp.	System characteristics	Cause	Measures
40		X	Mixer closes	Short circuit, flow temperature sensor in heating circuit with mixer M2	Check the flow temperature sensor.
48		X	Mixer closes	Lead break, flow temperature sensor in heating circuit with mixer M2	Check the flow temperature sensor.
50	X	X	No DHW heating	Short circuit, cylinder temperature sensor or comfort sensor	Check the cylinder temperature sensor (see page 78). Check the comfort sensor (see page 79).
51	X	X	No DHW heating	Short circuit, outlet temperature sensor	Check the sensor (see page 79).
58	X	X	No DHW heating	Lead break, cylinder temperature sensor or comfort sensor	Check the cylinder temperature sensor (see page 78). Check the comfort sensor (see page 79).
59	X	X	No DHW heating	Lead break, outlet temperature sensor	Check the sensor (see page 79).

Fault codes (cont.)

Fault code on the display	Const.	Weath.-comp.	System characteristics	Cause	Measures
92	X	X	Control mode	Short circuit, collector temperature sensor; connects to the Vitosolic at S1	Check the sensor at the Vitosolic.
93	X	X	Control mode	Short circuit, cylinder temperature sensor; connects to the Vitosolic at S3	Check the sensor at the Vitosolic.
94	X	X	Control mode	Short circuit, temperature sensor; connects to the Vitosolic at S2	Check the sensor at the Vitosolic.
9A	X	X	Control mode	Lead break, collector temperature sensor; connects to the Vitosolic at S1	Check the sensor at the Vitosolic.
9b	X	X	Control mode	Lead break, cylinder temperature sensor; connects to the Vitosolic at S3	Check the sensor at the Vitosolic.

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Fault codes (cont.)

Fault code on the display	Const.	Weath.-comp.	System characteristics	Cause	Measures
9C	X	X	Control mode	Lead break, temperature sensor; 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).
A7		X	Control mode as per delivered condition	Faulty programming unit	Replace the programming unit.
b0	X	X	Burner blocked	Short circuit, flue gas temperature sensor	Check the flue gas temperature sensor (see page 82).
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	Controls as if the outside temperature were 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.

Fault codes (cont.)

Fault code on the display	Const.	Weath.-comp.	System characteristics	Cause	Measures
b8	X	X	Burner blocked	Lead break, flue gas temperature sensor	Check the flue gas temperature sensor (see page 82).
bA		X	Mixer M2 regulates to 20 °C flow temperature	Communication fault, extension kit for heating circuit with mixer M2	Check extension kit connections and code. 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 with mixer 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).
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".

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Fault codes (cont.)

Fault code on the display	Const.	Weath.-comp.	System characteristics	Cause	Measures
C6		X	Control mode, max. pump speed	Communication fault, external variable speed heating circuit pump, heating circuit with mixer M2	Check setting of coding address "E5".
C7	X	X	Control mode, max. pump speed	Communication fault, external variable speed heating circuit pump, heating circuit A1	Check setting of coding address "E5".
Cd	X	X	Control mode	Communication fault, Vitocom 100 (KM BUS)	Check connections, Vitocom 100 and coding address "95".
CE	X	X	Control mode	Communication fault, ext. extension	Check connections and coding address "2E".
CF		X	Control mode	Communication fault, LON communication module	Replace the LON communication module.
dA		X	Control mode without room influence	Short circuit, room temperature sensor, heating circuit A1	Check the room temperature sensor, heating circuit A1.
db		X	Control mode without room influence	Short circuit, room temperature sensor, heating circuit with mixer M2	Check the room temperature sensor, heating circuit with mixer M2.

Fault codes (cont.)

Fault code on the display	Const.	Weath.-comp.	System characteristics	Cause	Measures
dd		X	Control mode without room influence	Lead break, room temperature sensor, heating circuit A1	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	Lead break, room temperature sensor, heating circuit with mixer M2	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	Fault, supply voltage 24 V	Replace the control unit.
E5	X	X	Burner blocked	Fault, flame amplifier	Replace the control unit.
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".

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Fault codes (cont.)

Fault code on the display	Const.	Weath.-comp.	System characteristics	Cause	Measures
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". Set coding address 12:1. This special function leads to heat being transferred to the heating circuit during calibration.
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.
EE	X	X	Burner in a fault state	Flame signal is not present or too weak at burner start.	Check the ionisation electrode and connecting cable, measure the ionisation current, check the gas supply (gas pressure and gas flow limiter), check the gas train, ignition, ignition module, ignition electrodes and the condensate drain. Press reset button **R**.

Fault codes (cont.)

Fault code on the display	Const.	Weath.-comp.	System characteristics	Cause	Measures
EF	X	X	Burner in a fault state	The flame extinguishes immediately after formation (during the safety time).	Check the gas supply (gas pressure and gas flow limiter), check the flue gas/ventilation air system for flue gas recirculation, check the ionisation electrode (replace if required). Press reset button **R**.
F0	X	X	Burner blocked	Internal fault	Replace the control unit.
F1	X	X	Burner in a fault state	The flue gas temperature limiter has responded	Check the heating system fill level. Vent the system. Press "↑ RESET" after the flue gas system has cooled down.
F2	X	X	Burner in a fault state	The temperature limiter has responded	Check the heating system fill level. Check the circulation pump. Vent the system. Check the temperature limiter and connecting cables. 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".

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Fault codes (cont.)

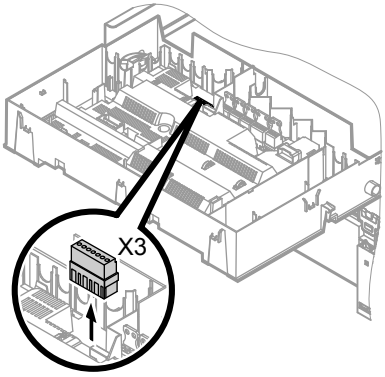
Fault code on the display	Const.	Weath.-comp.	System characteristics	Cause	Measures
F8	X	X	Burner in a fault state	Fuel valve closes too late	Check the gas train. Check both control paths. Press "↑ RESET".
F9	X	X	Burner in a fault state	Fan speed too low during the burner start	Check the fan, check the fan connecting cables and power 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".
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 flue gas system. Press "↑ RESET".
Fd	X	X	Burner in a fault state	Fault, combustion controller	Check ignition electrodes and connecting cables. Check whether a strong interference (EMC) field exists near the equipment. Press "↑ RESET". Replace control unit if the fault persists.

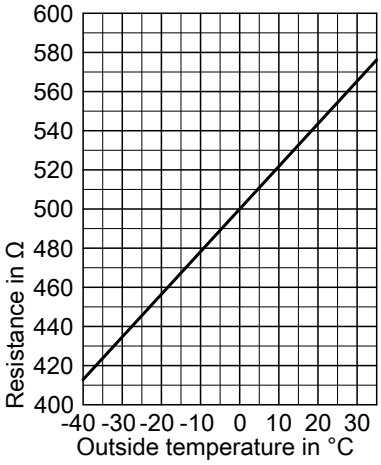
Fault codes (cont.)

Fault code on the display	Const.	Weath.-comp.	System characteristics	Cause	Measures
FE	X	X	Burner blocked or in a fault state	Boiler coding card or main PCB faulty	Press "↑ RESET". Replace boiler coding card or control unit if the fault persists
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.

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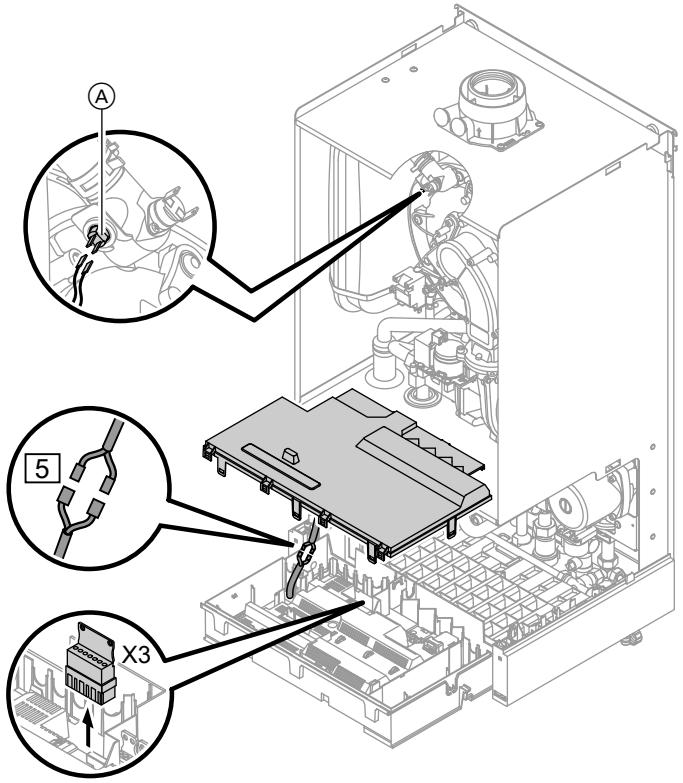
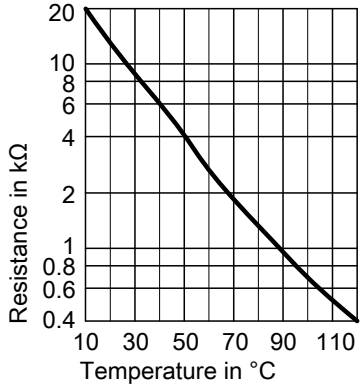
Repairs (cont.)

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.

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



Repairs (cont.)



1. ■ Boiler water temperature sensor: Pull the leads from boiler water temperature sensor Ⓐ 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".

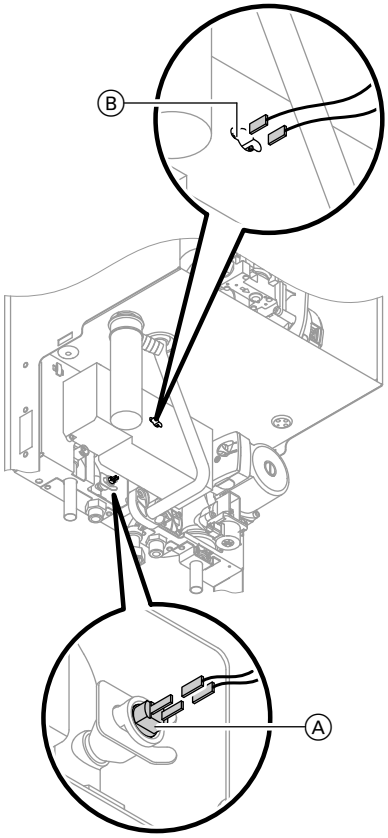
2. Check the sensor resistance and compare the actual values with the curve.

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.

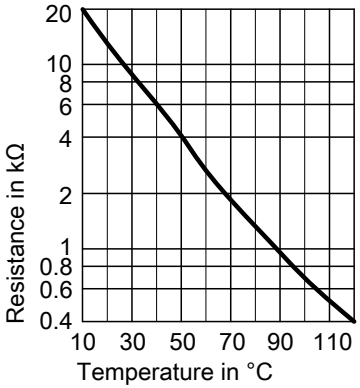
Repairs (cont.)

Check the outlet temperature sensor or comfort sensor (gas combi boilers only)



1. Disconnect the leads from outlet temperature sensor Ⓐ or comfort sensor Ⓑ.
2. Check the sensor resistance and compare it with the curve.

Repairs (cont.)

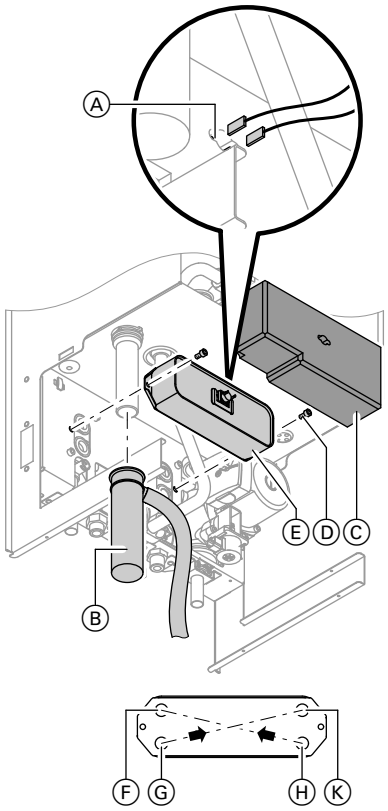


3. Replace the sensor in case of severe deviation.

Note
Water can leak when replacing the outlet temperature sensor. Close the cold water shut-off valve. Drain the DHW line and the plate heat exchanger (DHW side).

Repairs (cont.)

Checking the plate heat exchanger



Ⓕ Heating return
Ⓖ Cold water
Ⓗ Heating flow
Ⓚ DHW

1. Shut off and drain the boiler on its heating water and DHW side.
2. Release the side closures and pivot the control unit forward.
3. Pull the leads from comfort sensor Ⓐ.
4. Remove the retaining clip and siphon Ⓑ.
5. Remove thermal insulation Ⓒ.
6. Undo screws Ⓓ and remove plate heat exchanger Ⓔ through the front.

   Note
   During removal, small amounts of water may trickle out and escape from the plate heat exchanger.
7. Check the DHW side for scaling and, if required, clean or replace the plate heat exchanger.
8. Check the heating water side for contamination and, if required, clean or replace the plate heat exchanger.
9. Install in reverse order with new gaskets.
10. ⚠ **Danger**
    Escaping gas leads to a risk of explosion.
    Check gas equipment for tightness.

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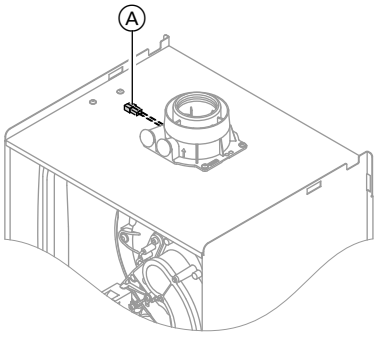
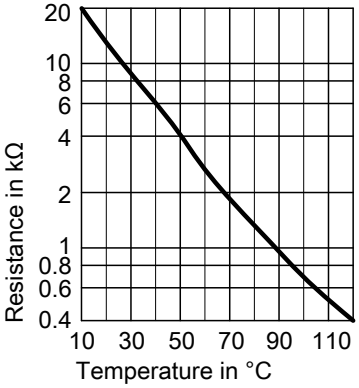
Repairs (cont.)

Checking the flue gas temperature sensor

The flue gas temperature sensor locks out the boiler when the permissible flue gas temperature is exceeded. Reset the interlock after the flue gas system has cooled down by pressing "↑ RESET".



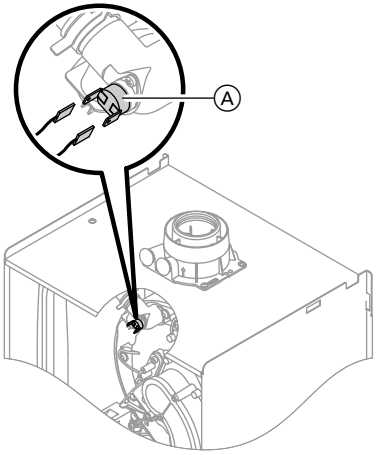
1. Pull the leads from flue gas temperature sensor Ⓐ.
2. Check the sensor resistance and compare it with the curve.



3. Replace the sensor in case of severe deviation.

Repairs (cont.)

Checking 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, check the following:

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

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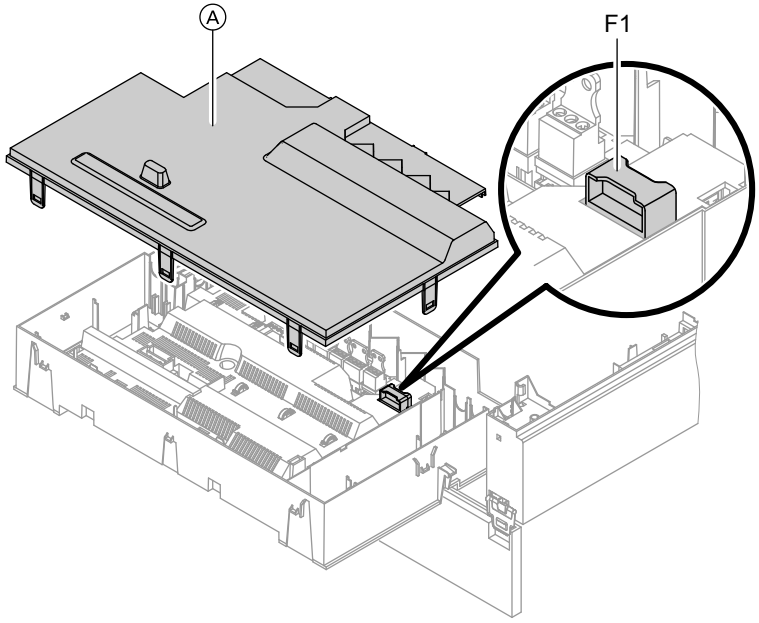
Repairs (cont.)

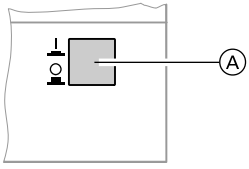
Checking the fuse



1. Switch OFF the power.
2. Release the side closures and pivot the control unit down.
3. Remove cover Ⓐ.
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 Ⓐ 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)

   Then standard control mode resumes.

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Repairs (cont.)

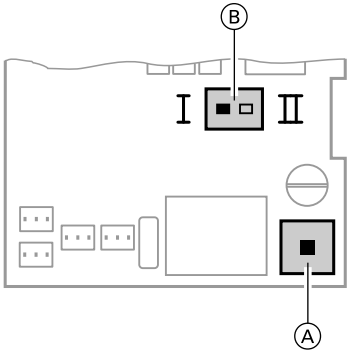
2. Note the rotational direction of the mixer motor during its self-test. Then set the mixer manually to "Open" again.

   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.

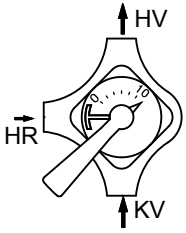


Ⓐ ON/OFF switch
Ⓑ Rotational direction switch

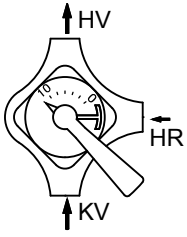
1. Remove the lower and upper housing cover of the extension kit.

Extension kit installation instructions

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.



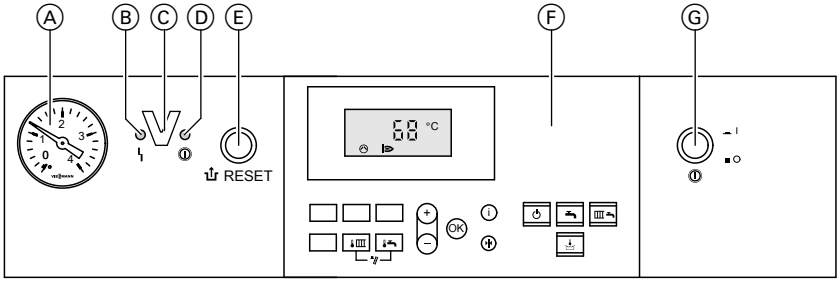
Repairs (cont.)

Checking the Vitotronic 200-H (accessories)

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

Constant temperature control unit

Control and display elements



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

Keys at the user interface:

- Set boiler water temperature
- Set DHW temperature
- \+ Emissions test function
- Standby mode
- DHW only
- Heating and DHW
- Comfort mode
- ⊖/⊕ Setting values
- OK Confirmation
- ⓘ 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 with gas fired combi boilers

If the flow switch detects that hot water is being extracted (> 3 l/min) then the burner, circulation pump and 3-way valve are switched on or changed over. The burner modulates according to the DHW outlet temperature and is limited by the temperature limiter (82 °C) on the boiler side.

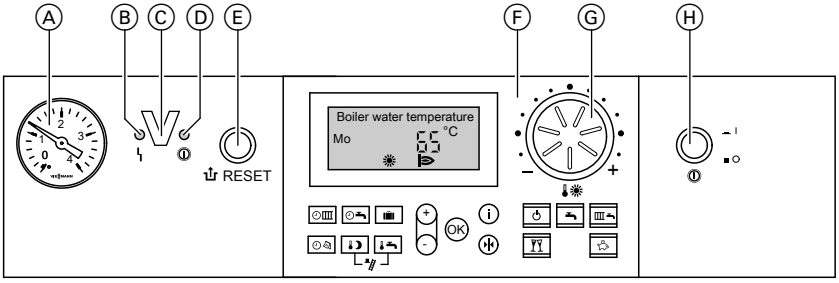
DHW heating with a gas fired boiler

The burner, the circulation pump and the three-way valve are started or changed over 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
Ⓑ Fault indicator (red)
Ⓒ Optolink interface
only in conjunction with the diagnostic adaptor (accessory) and Vitosoft (accessory)

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Weather-compensated control unit (cont.)

Ⓓ ON indicator (green)
Ⓔ Reset button
Ⓕ User interface
Ⓖ Rotary selector for standard room temperature
Ⓗ ON/OFF switch

Keys at the user interface:

- Central heating time program
- DHW heating and DHW circulation pump time programs (if connected to the control unit)
- Holiday program
- Time/date
- Reduced room temperature
- Set DHW temperature
- Emissions test function
- Standby mode
- DHW only
- Heating and DHW
- Party mode
- Economy mode
- ⊖/⊕ Setting values
- OK 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 with gas fired combi boilers

If the flow switch detects that hot water is being extracted (> 3 l/min) then the burner, circulation pump and 3-way valve are switched on or changed over. The burner modulates according to the DHW outlet temperature and is limited by the temperature limiter (82 °C) on the boiler side.

Weather-compensated control unit (cont.)

DHW heating with a gas fired boiler

The burner, the circulation pump and the three-way valve are started or changed over 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.

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".

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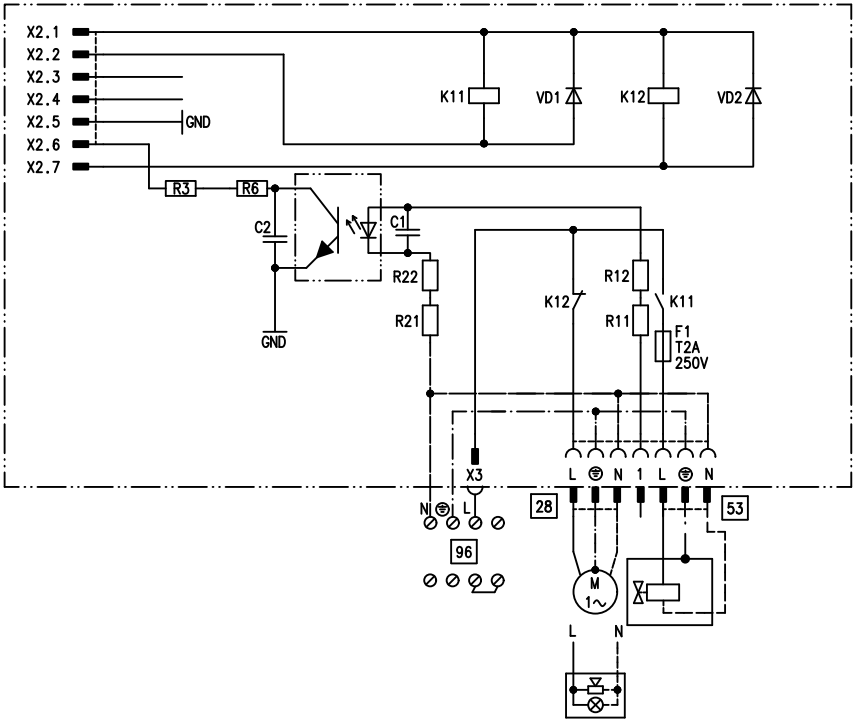
Extensions for external connections (accessories)

Internal extension H1



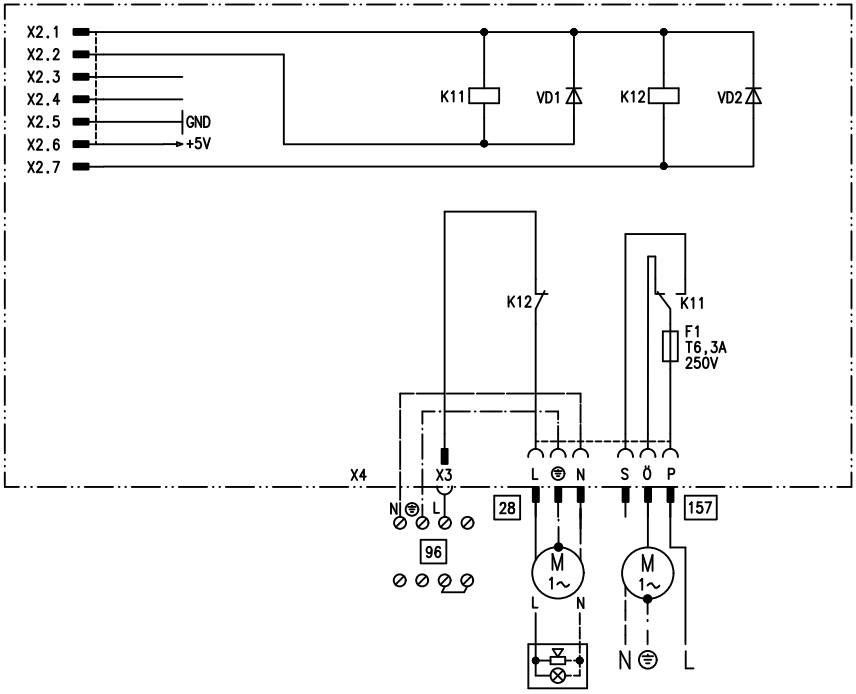
The internal extension is integrated into the control unit housing. The following alternative functions can be connected to relay output [28]. The function is allocated via coding address "53":

- 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")
- Circulation pump for cylinder heating (coding address "53:3")

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

Extensions for external connections… (cont.)

Internal extension H2



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")
- Circulation pump for cylinder heating (coding address "53:3")

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

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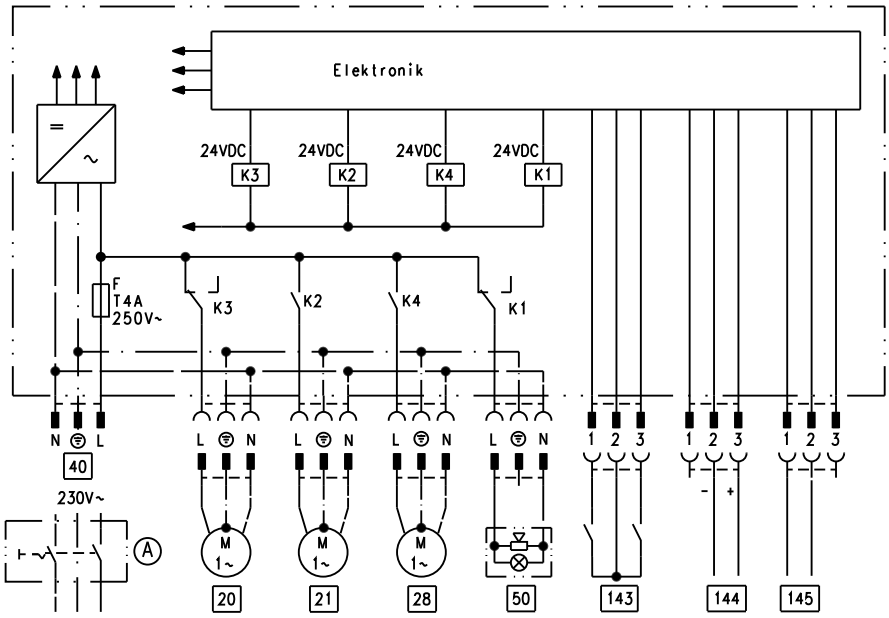
Extensions for external connections… (cont.)

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:

Ⓐ ON/OFF switch (on site)

20 Heating circuit pump for the heating circuit without mixer

21 Circulation pump for cylinder heating

28 DHW circulation pump (only for weather-compensated operation)

40 Power supply

50 Central fault message

143
- External blocking (terminals 2 - 3)
- External demand (terminals 1 - 2)
- External heating program changeover (terminals 1 - 2) (only for weather-compensated operation)

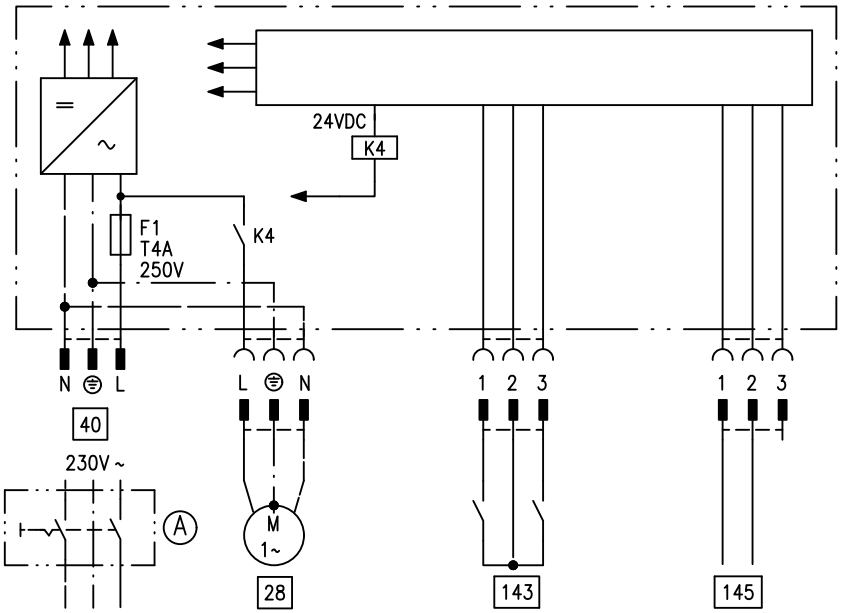
  The allocation of function "External heating program changeover" is set via coding address "91"

144 External set value 0 to 10 V

145 KM BUS

Extensions for external connections… (cont.)

External extension H2



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".

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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 in which direction the heating program changes over 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

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

Control functions (cont.)

External blocking

The "External blocking" function is connected via 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 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.
For a certain period, the diverter valve is alternately set towards heating and DHW heating. 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".

Fill program

In the delivered condition, the diverter valve is set to its central position, enabling the system to be filled completely.
After switching ON the control unit, the diverter valve no longer goes into its central position.
Afterwards, the diverter valve can be moved via code "2F:2" into the central position. In this position, the control unit can be switched OFF, and the system can be filled completely.

Filling with the control unit switched ON

If the system is to be filled with the control unit switched ON, the diverter valve will be moved to its central position via code "2F:2" and the pump will be started.
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".

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Control functions (cont.)

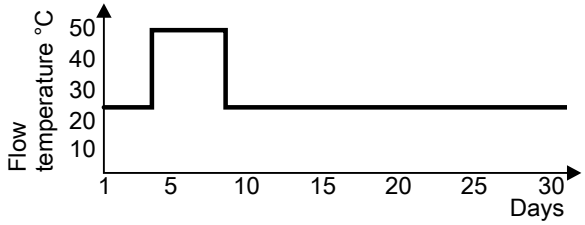
Screed drying function

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:

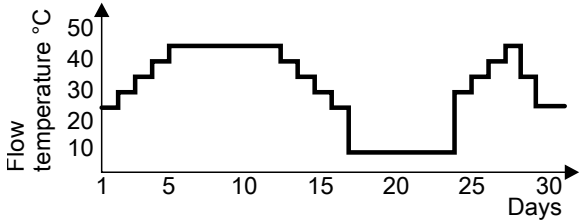
- Heat-up data with respective flow temperatures
- Max. flow temperature achieved
- Operating condition and outside temperature during handover

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"



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



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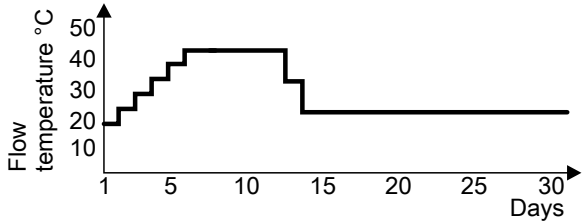
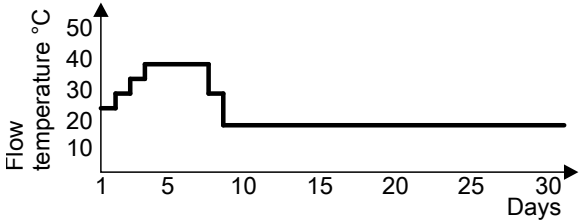
Control functions (cont.)

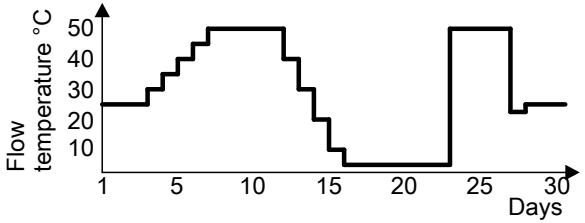
Temperature profile 3: Code "F1:3"



Temperature profile 4: Code "F1:4"



Temperature profile 5: Code "F1:5"



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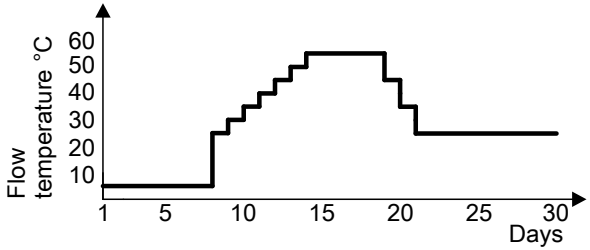
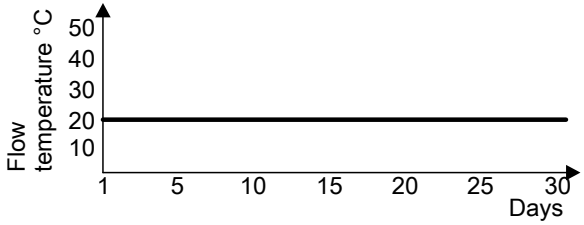
Control functions (cont.)

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".

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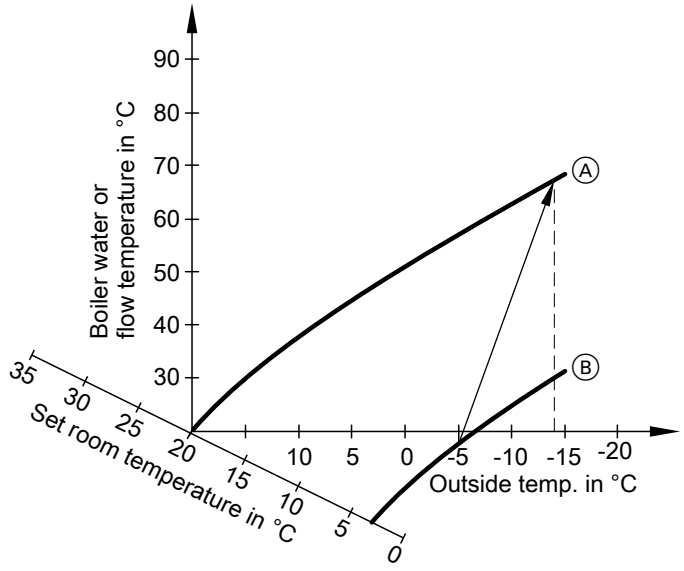
Control functions (cont.)

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 or flow temperature can be adjusted in coding addresses "FA" and "Fb".

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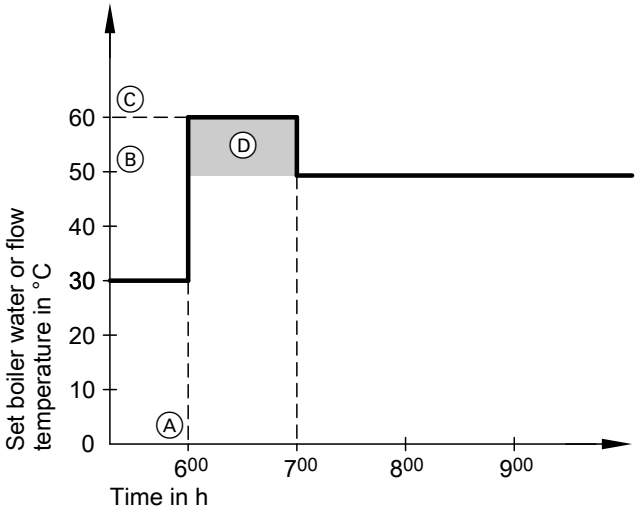
Control functions (cont.)

Example using the settings in the delivered condition



Ⓐ Start of operation with standard room temperature
Ⓑ Set boiler water or flow temperature in accordance with the selected heating curve
Ⓒ Set boiler water or flow temperature in accordance with coding address "FA":
50 °C + 20 % = 60 °C
Ⓓ 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.

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Remote control DIP switches (cont.)

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

Electronic combustion controller

The electronic combustion controller utilises the physical correlation between the level of the ionisation current and the air factor λ. For all gas qualities, the maximum ionisation current results with air factor 1.
The ionisation signal is evaluated by the combustion controller, and the air factor is adjusted to between λ=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_2 content or the O_2 content of the flue gas is measured. The actual values enable the prevailing air factor to be determined. The relationship between the CO_2 or O_2 content and air factor λ is illustrated in the following table.

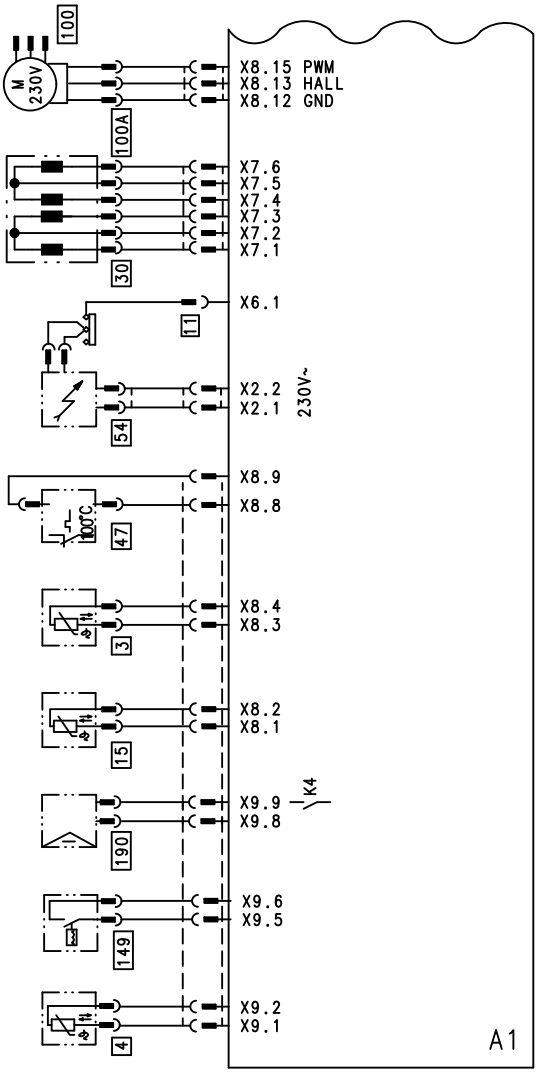
Electronic combustion controller (cont.)

Air factor λ – CO_2/O_2 content

Air factor λ	O_2 content (%)	CO_2 content (%) for natural gas E	CO_2 content (%) for natural gas LL	CO_2 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
1.34	**5.7**	**8.5**	**8.4**	**10.0**
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 λ=1). The automatic calibration is carried out shortly after the burner start and lasts approx. 5 s. During calibration, higher than normal CO emissions may occur briefly.

Connection and wiring diagram – internal connections



A1	Main PCB	11	Ionisation electrode
X...	Electrical interface	15	Flue gas temperature sensor
3	Boiler water temperature sensor	30	Stepper motor for diverter valve
4	Outlet temperature sensor (gas condensing combi boiler)	47	Temperature limiter
		54	Ignition unit

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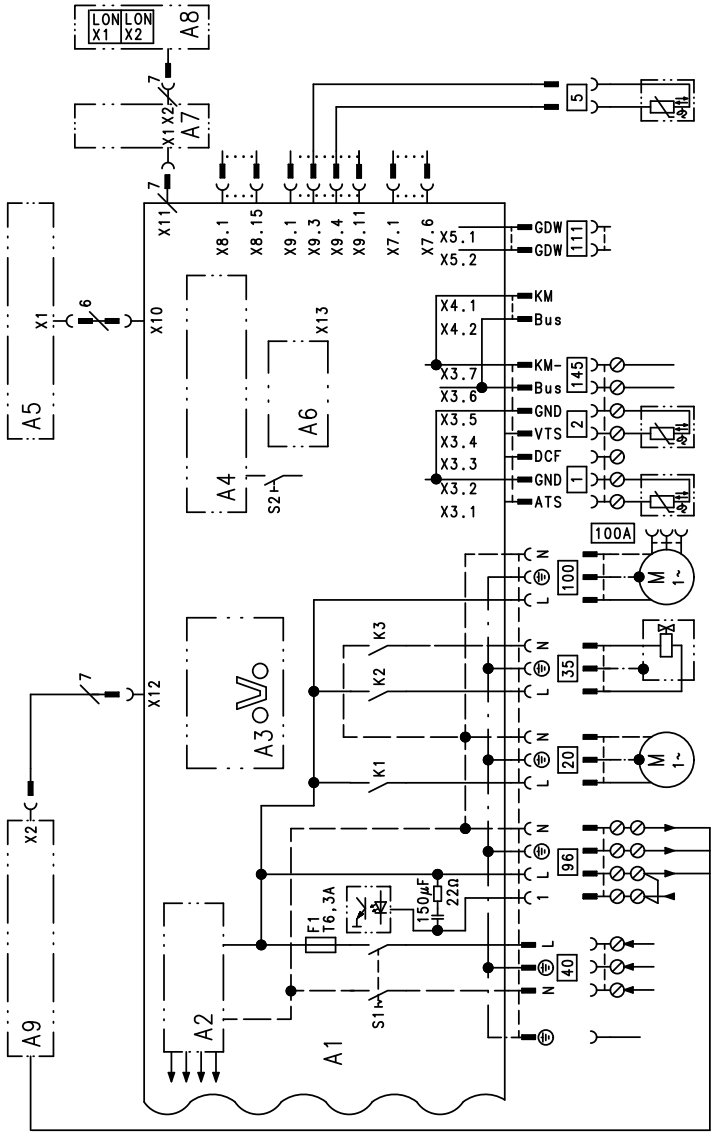
Connection and wiring diagram – internal… (cont.)

100 Fan motor
100A Fan motor control
149 Flow switch
(gas condensing combi boiler)
190 Modulation coil

Connection and wiring diagram – external connections



A1	Main PCB	A4	Combustion controller
A2	Power supply unit	A5	Programming unit
A3	Optolink	A6	Coding card

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Connection and wiring diagram – external… (cont.)

A7 Connection adaptor
A8 LON communication module (Vitotronic 200)
A9 Internal extension H1 or H2
S1 ON/OFF switch
S2 Reset button
X... Electrical interface
[1] Outside temperature sensor
[2] Flow temperature sensor, low loss header
[5] Cylinder temperature sensor (gas condensing boiler)
or
Comfort sensor (gas condensing combi boiler)
(plug on the cable harness)
[20] Internal circulation pump
[35] Gas solenoid valve
[40] Power supply [terminals]
[96] Power supply accessories and Vitotrol 100
[100] Fan motor
[100]A Fan motor control
[111] Gas pressure limiter
[145] 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 Quick-action air vent valve
002 Heating water flow connection pipe
003 Moulded hose heating water flow
006 Heating water return connection elbow
007 Heating water flow connection elbow
009 Safety spring
010 Pump motor
013 Siphon
014 Heat exchanger
015 Entry grommets (set)
017 Condensate hose
018 Condensate hose
019 Boiler flue connection plug
020 Heat exchanger gasket set[*2]
021 Plate heat exchanger[*2]
022 Pressure gauge
023 Flow switch [*2]
024 Flow limiter [*2]
025 Linear stepper motor
026 Boiler flue connection (with pos. 019 and 036)
027 Drain valve
030 Thermal insulation block
031 Thermal insulation, plate heat exchanger[*2]
033 Gas supply pipe
034 Heating water return connection pipe
036 Flue gas gasket
037 Diaphragm expansion vessel
038 Connection line for the diaphragm expansion vessel
052 Burner gauze assembly
053 Burner gauze assembly gasket
058 Burner door gasket
059 Fan
061 Gas train
062 Burner door
063 Ignition unit
070 Ionisation electrode gasket
071 Ignition electrode gasket
072 Gasket A 17x24x2
074 Venturi extension
080 Vitodens control unit
081 Back cover
082 Locking clips (10 pce)
083 Support
084 Damper
085 Pressure gauge retainer
086 Clip
087 Hinge
088 Coding card
089 Fuse (10 pce)
090 Programming unit for constant temperature mode
091 Programming unit for weather-compensated mode
092 Internal extension H1
093 LON communication module (accessories)
094 PCB adaptor, LON module (accessories)
095 Fuse holder
106 Access guard
150 Outside temperature sensor
151 Flue gas temperature sensor
152 Temperature limiter
153 Temperature sensor
154 Comfort sensor[*2]
200 Front panel (with pos. 201)
201 Fixing clip

Wearing parts
050 Burner gasket
051 Insulation ring

[*2] *Only for serial no. 7194 475 ... and 7194 477 ...*

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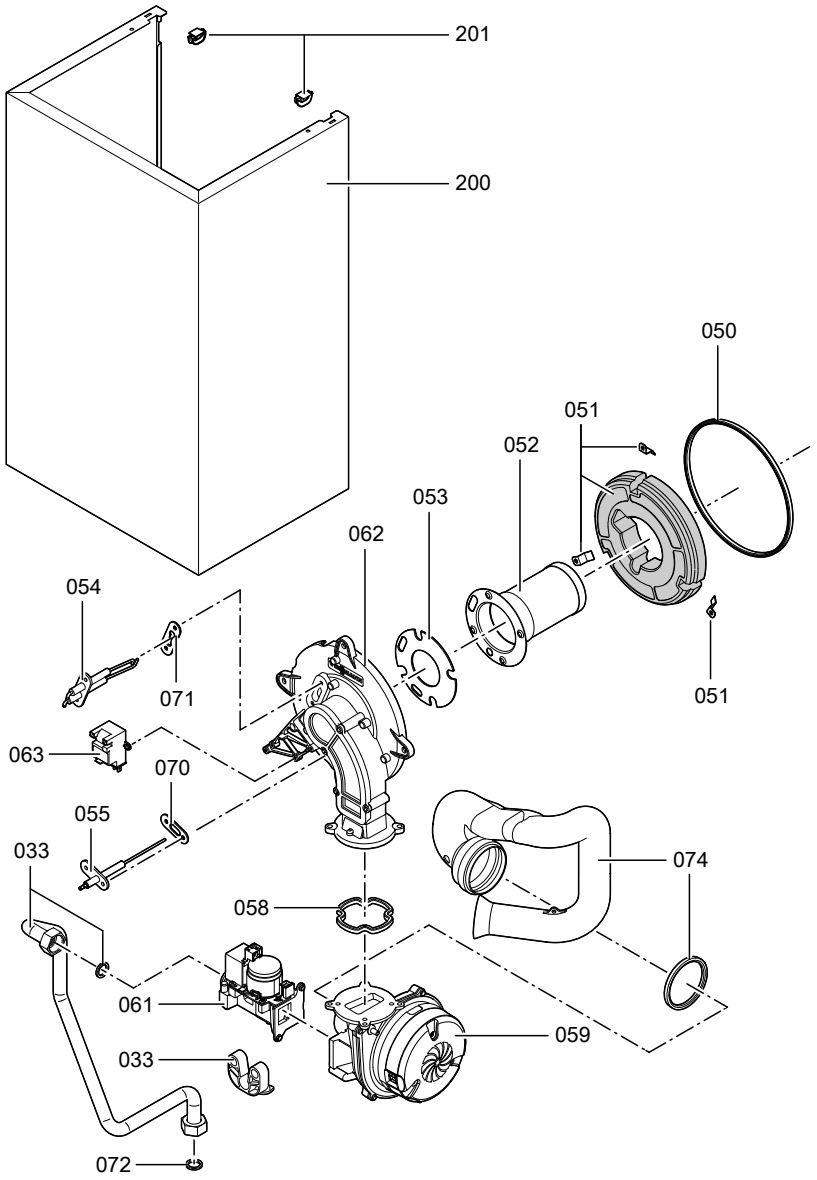
Parts lists (cont.)

054 Ignition electrode block
055 Ionisation electrode

Parts not shown
016 Special grease
028 Plug-in connector retainers (set)
041 Plug-in connector gaskets (set)
042 Fixing parts (set)
073 Gas nozzle
096 Mating plug
097 Cable fixing
100 Cable harness X8/X9
101 Fan connecting cable 100
102 Gas solenoid valve connecting cable 35
103 Power cable, stepper motor
104 Ionisation cable
105 Earth/ignition module cable harness
202 Spray paint, Vitowhite
203 Touch-up paint stick, Vitowhite
300 Installation instructions
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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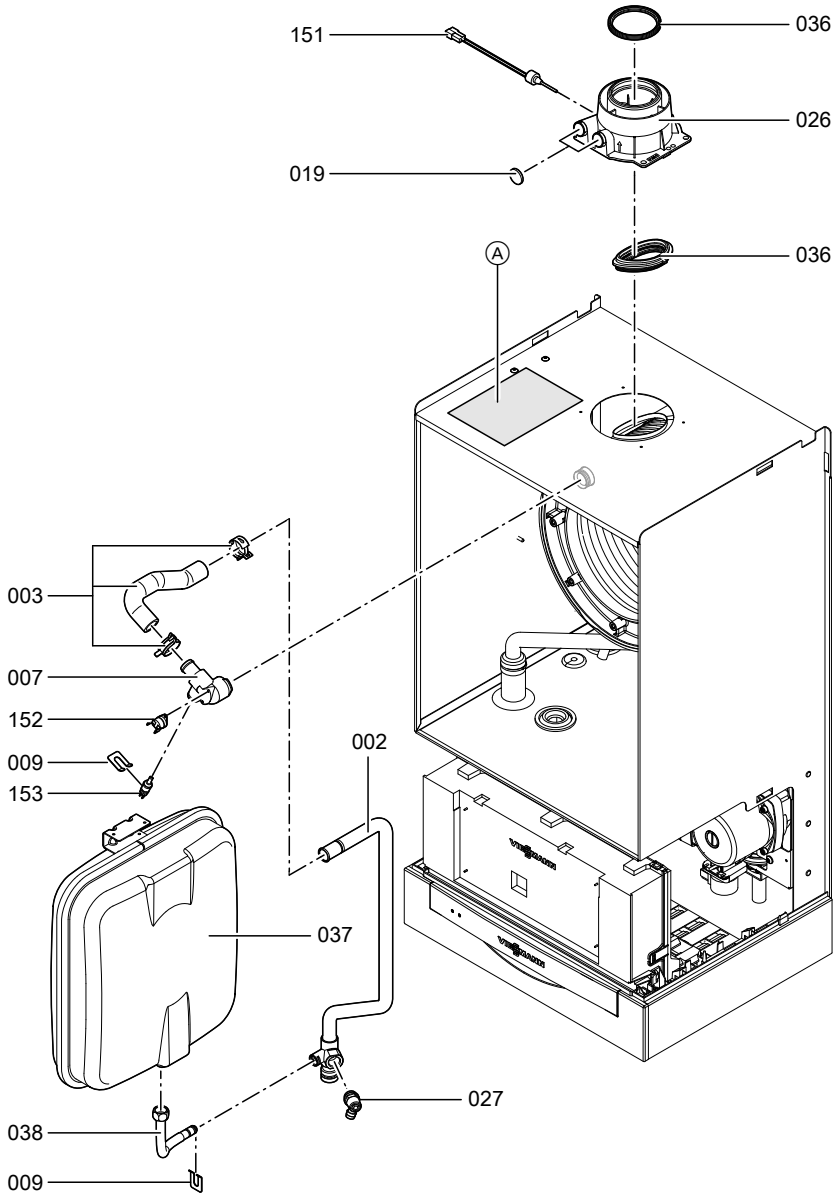
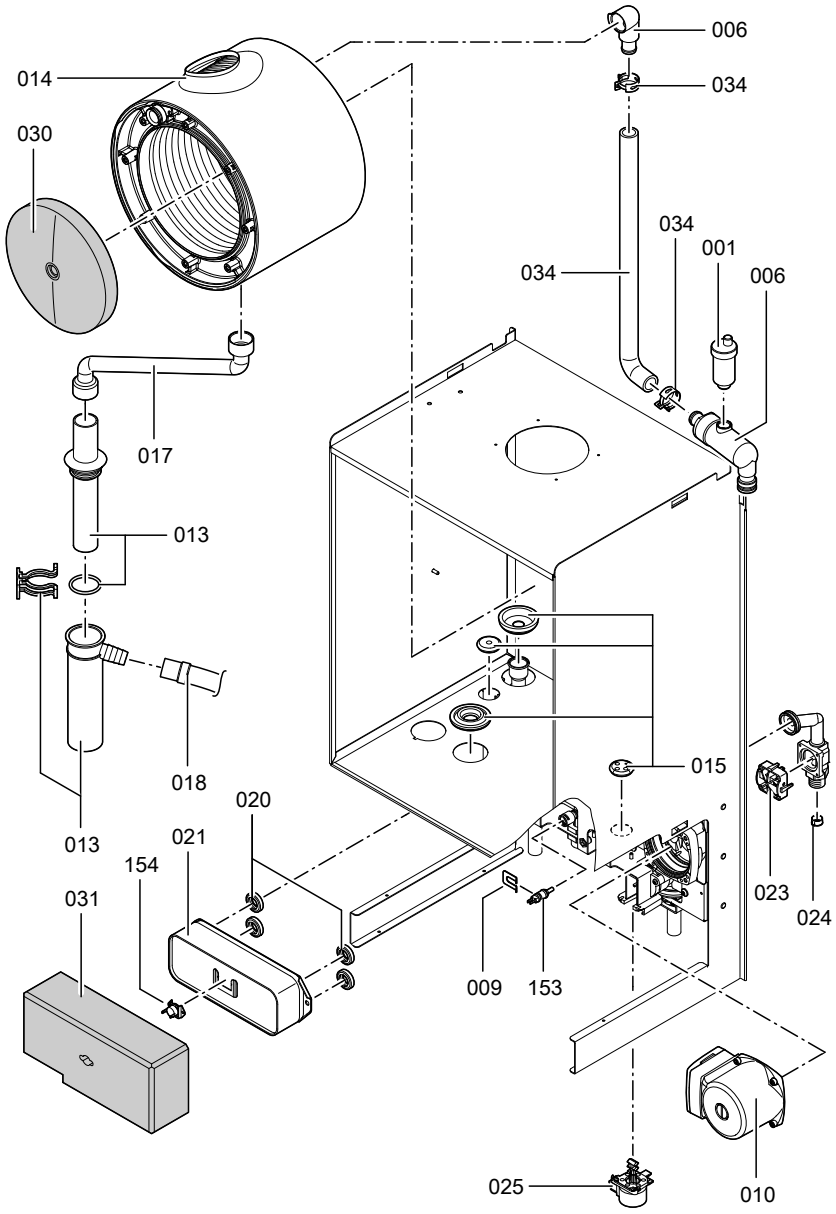
Parts lists (cont.)



Parts lists (cont.)



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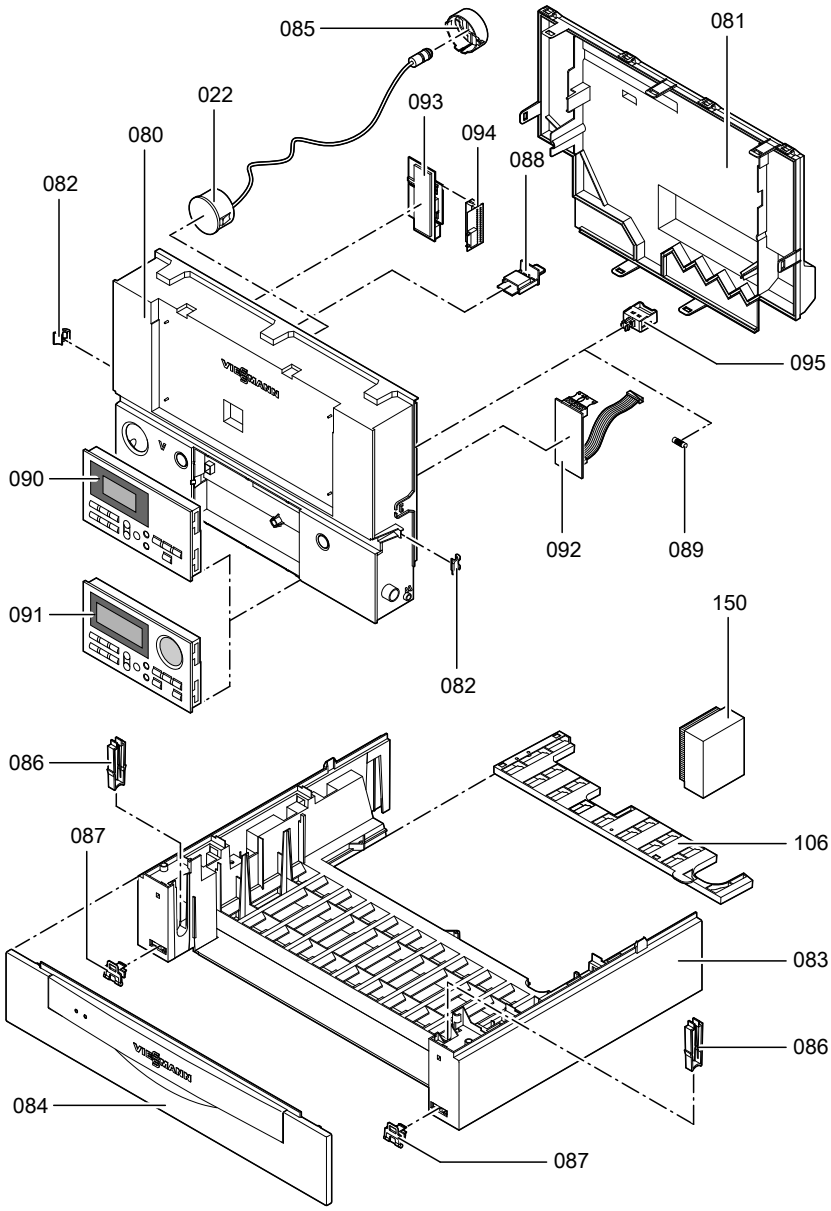
Parts lists (cont.)



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Commissioning/service reports

Setting and test values Date: By:		Set value	Commissioning	Service
Static pressure	*mbar*	max. 57.5 mbar		
Supply pressure (flow pressure)				
☐ for natural gas E	*mbar*	17.4-25 mbar		
☐ for natural gas LL	*mbar*	17.4-25 mbar		
☐ for LPG *Tick gas type*	*mbar*	42.5-57.5 mbar		
Carbon dioxide content CO_2				
■ at lower output	*% by vol.*			
■ at upper output	*% by vol.*			
Oxygen content O_2				
■ at lower output	*% by vol.*			
■ at upper output	*% by vol.*			
Carbon monoxide content CO				
■ at lower output	*ppm*			
■ at upper output	*ppm*			

Specification

Rated voltage:	230 V~		
Rated frequency:	50 Hz	Electronic temperature limiter setting:	82 °C (fixed)
Rated current:	6 A	Temperature limiter setting:	100 °C (fixed)
Safety class:	I		
Protection:	IP X 4 D to EN 60529	Line fuse (mains):	max. 16 A

Permissible ambient temperature
- during operation: +2 to +45 °C
- during storage and transport: -20 to +65 °C

Rated output range T_V/T_R 50/30 °C	**kW**	**4.8 - 19**	**6.5 - 26**	**8.8 - 35**
Rated output range for DHW heating Gas condensing combi boiler	**kW**	**–**	**5.9 - 29.3**	**7.9 - 35**
Rated thermal load range				
■ Gas condensing boiler	kW	4.5 - 17.9	6.2 - 24.7	8.3 - 33.0
■ Gas condensing combi boiler	kW	–	6.2 - 30.5	8.3 - 36.5
Connection values in relation to the max. load with				
Natural gas E	m^3/h	1.89	3.23	3.86
Natural gas LL	m^3/h	2.20	3.75	4.49
LPG	kg/h	1.40	2.38	2.85
Product ID		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.

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Declaration of conformity

Declaration of conformity for the Vitodens 200-W

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

EN 483
EN 625
EN 677
EN 13 203
EN 50 165
EN 55 014
EN 60 335
EN 61 000-3-2
EN 61 000-3-3

This product is designated **CE-0085** in accordance with the following directives:

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**.

Allendorf, 1 December 2006 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_x limits specified by the 1st BImSchV paragraph 7 (2) [Germany].

Allendorf, 1. December 2006 Viessmann Werke GmbH&Co KG

pp. Manfred Sommer

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Keyword index

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Keyword index (cont.)

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Applicability

Gas condensing boiler
Type WB2B
4.8 to 19.0 kW
from serial no.
7419 979 9 00001 ...
6.5 to 26.0 kW
from serial no.
7194 474 7 00001 ...
8.8 to 35.0 kW
from serial no.
7194 476 7 00001 ...

Gas condensing combi boiler
Type WB2B
6.5 to 26.0 kW
from serial no.
7194 475 7 00001 ...
8.8 to 35.0 kW
from serial no.
7194 477 7 00001 ...

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