Operating instructions for system users



Heating systems with Vitotronic 100 control unit for constant temperature operation



VITODENS



Please keep safe

For your safety



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

Safety instructions explained



Danger

This symbol warns against the risk of injury.



Important information

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

Note

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

Target group

These operating instructions are designed for heating system users.



Danger

Incorrect work on the heating system can lead to life-threatening accidents.

- Work on gas equipment must only be carried out by a registered gas fitter.
- Electrical work must only be carried out by a qualified electrician.

If you notice a smell of gas



Danger

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

- Do not smoke. Prevent naked flames and sparks.
 Never switch electrical lights or equipment.
- Open windows and doors.
- Close the gas shut-off valve.
- Remove all personnel from the danger zone.
- Observe the safety regulations of your local gas supplier which can be found on the gas meter.
- Notify your heating contractor from outside the building.

If you smell flue gas



Danger

Flue gas may lead to life-threatening poisoning.

- Shut down the heating system
- Ventilate the boiler room.
- Close all doors leading to the living space.

For your safety (cont.)

If you notice fire



Danger

Fire causes a risk of burns and explosion.

- Shut down the heating system.
- Close the fuel line shut-off valves.
- Only use suitable approved fire extinguishers.
 Gas fired operation: Fire class C

Boiler room requirements

- Important information
 Incorrect ambient conditions
 can lead to damage to the
 heating system and put safe
 operation at risk.
 - Ensure temperatures higher than 0 °C and lower than 35 °C.
 - Prevent the air becoming contaminated by halogenated hydrocarbons (e.g. as contained in paints, solvents or cleaning fluids) and excessive dust (e.g. through grinding/polishing work).
 - Avoid continuously high humidity levels (e.g. through frequent drying of washing).
 - Never close existing ventilation apertures.

Fuels

Important information
 Using incorrect fuel can damage the heating system.
 Use only the following types of fuel:

Natural gas E and LL or LPG.

Ancillary components, spare and wearing parts

Important information
Components which are not tested with the heating system may lead to damage to the heating system or may affect their functions.
Installation or replacement must only be carried out by qualified personnel.

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Introduction

Initial start-up

The initial start-up and matching of the control unit to local conditions and the structural characteristics of the building, must be carried out by your heating contractor. As the user of new combustion equipment, you are obliged to notify the installation to your local flue gas inspector (check local regulations). Your local flue gas inspector will also inform you (where appropriate) about work he may be required to perform on your combustion equipment (e.g. regular checks, cleaning).

Your heating system is pre-set at the factory

The control unit is preset at the factory for "heating and DHW", i.e. the system delivers central heating and DHW loading (subject to a DHW cylinder being installed). Your heating system is therefore ready for use.

You may change the factory settings in accordance with personal requirements.

Note

All data is saved in case of power failure.

Summary of controls and indicators

You can change all settings for your heating system, centrally, at the control unit.

You can change the room temperature and time program settings for central heating at the remote control (see separate operating instructions), provided your system is equipped with a remote control unit.

Opening the control unit



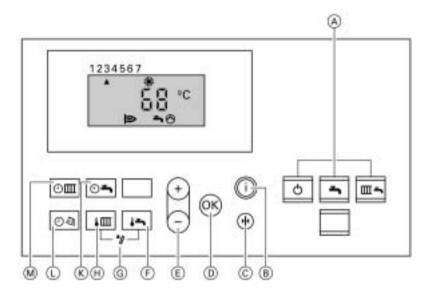
Lift up the cover (A), and pivot the control unit flap (B) down. All boiler controls are located behind the control unit flap.

On the inside of the control unit flap (B), an abridged version of these operating instructions can be found behind a further flap. You may remove the abridged operating instructions with the flap.

- (A) Cover
- B Control unit flap (open to make adjustments)

Summary of controls and indicators (cont.)

Functions



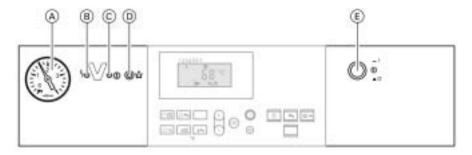
- A Heating programs (page 11)
- (B) Information (page 19)
- © Basic settings
- (D) Confirmation/acknowledgement
- (E) Setting values
- F DHW temperature (page 14)
- G Emissions test switch (only for qualified personnel)
- (H) Boiler water temperature (page 13)
- (K) Time program, DHW heating/loading (page 17) and DHW circulation (if connected to the control unit)
- L Time/date (page 21)
- (page 16) Central heating time program

Basic settings

All modified values are reset to their factory settings by pressing (*).

Summary of controls and indicators (cont.)

Further displays and controls



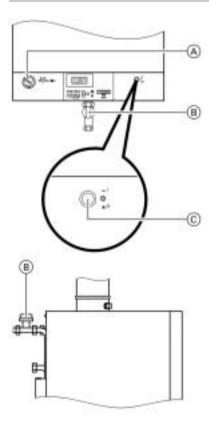
- (A) Pressure gauge
- B Fault indicator (red)
- © ON/OFF indicator (green)
- D Burner fault reset
- (E) ON/OFF switch

Symbols in the display

These symbols are not permanently displayed, but appear subject to the system version and the operating state. Flashing displays indicate that modifications can be made.

- Central heating or "Boiler enable" in a multi-boiler system
- → DHW loading enabled
- Circulation pump running
- ♥ O DHW loading through a solar heating system
- **▶** Burner "ON"
- Emissions test "ON"
- ம Burner fault
- ነ Fault message

Heating system start-up



Position of the gas shut-off valve for Vitodens 333

1. Check the heating system pressure on the pressure gauge (A): The system pressure is too low if the needle indicates below 0.8 bar. In that case, top up with water or contact your local heating contractor.

2. For open flue operation:

The combustion air is drawn from the boiler room.

Check whether the ventilation/ exhaust apertures in the boiler room are open and unobstructed.

- 3. Open the gas shut-off valve (B).
- **4.** Switch ON the mains power supply; e.g. at a separate fuse or a mains electrical isolator.
- **5.** ON/OFF switch "**(**(C): standby mode is then shown to be running by the green indicator (ON indicator); after a short time the boiler temperature will be displayed. Your heating system and, if installed, your remote control unit are now ready for use.

Heating system shutdown

If you temporarily have no need of your heating system, e.g. during a summer holiday, switch the system to "standby mode" (see page 12).

Note

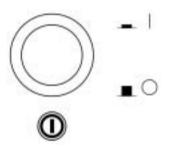
The circulation pump will be started for short periods at regular intervals to prevent it from seizing up. These intervals can be modified by your heating contractor. tor.

Heating system shutdown (cont.)

Shut down your heating system if you do not intend using it for longer periods (several months).

Before you shut down your heating system for short or longer periods, it would be advisable to contact your local heating contractor.

Your heating contractor can then take any necessary measures, subject to requirements, e.g. for frost protection of the system or to preserve the heating surfaces.



- ON/OFF switch "①".
 The green indicator (ON/OFF indicator) extinguishes.
- 2. Close the gas shut-off valve.
- Switch OFF the mains power supply; e.g. at a separate fuse or a mains electrical isolator.
 As the system is now at zero volt, the heating system has no frost protection.

Note

All settings remain intact.

Starting a heating circuit and DHW heating/loading

Press = .

Central heating and DHW:

- Central heating active.
- DHW will be loaded (subject to a DHW cylinder or instantaneous water heater being installed).
- Frost protection for the boiler and the DHW cylinder is active.

Starting DHW only

Press 🔁.

Only DHW:

- No central heating.
- DHW will be loaded (subject to a DHW cylinder or instantaneous water heater being installed).
- Frost protection for the boiler and the DHW cylinder is active.

Shutting down a heating circuit and DHW heating/loading

Press 🐧.

Standby mode:

- No central heating.
- No DHW heating.
- Frost protection for boiler and DHW cylinder.

Note

The circulation pump will be started for short periods at regular intervals to prevent it from seizing up. These intervals can be modified by your heating contractor.

Room temperature

In addition to the boiler control unit, a separate room temperature controller (e. g. Vitotrol 100) must be installed in one of the living rooms, if the heating system is to be regulated in accordance with the required room temperature.

Make adjustments using the appropriate operating instructions.

Please also note:

- The heating program selector of the boiler control unit must be set to "□="."
- Set the boiler water temperature high enough.
- All thermostatic radiator valves in the room where the controller is installed must be fully open.

Adjusting the boiler water temperature

If a remote control unit is connected:

Set the room temperature on the remote control unit.

Set the boiler water temperature high enough to be able to achieve the required room temperature.

Press the following keys:

im for "set boiler water temperature"; the current temperature will flash.



- **2.** \oplus / \bigcirc for the required temperature.
- 3. (a) to confirm; the temperature no longer flashes and is now saved.

Setting the DHW temperature

Press the following keys:

1. for "set DHW temperature"; the current temperature will flash.



- **2.** \oplus / \bigcirc for the required temperature.
- 3. (a) to confirm; the temperature no longer flashes and is now saved.

General notes

You can set time programs for central heating and DHW loading with DHW circulation (subject to a DHW cylinder or an instantaneous water heater being installed).

The time program comprises four time phases, i.e.

- for central heating, up to four changes per day between standard room temperature and reduced room temperature can be programmed.
- DHW heating and DHW circulation pump (if connected to the control unit) can be activated/deactivated up to four times per day.

At the factory, time phase 1 is set for all weekdays. During that time

- rooms will be heated with standard room temperature, and
- DHW will be loaded and the DHW circulation pump started (if connected to the control unit).

The following keys are allocated to the time programs:

Key	Time program for	Basic factory settings
© III	Central heating	Standard room temperature 6:00 to 22:00 h
<u>•</u>	DHW loading and DHW circulation pump (if con- nected to the control unit)	ON: 05:30 to 22:00 h

You can select identical time programs for all weekdays or individual programs for each day. Take the response time of your heating system into consideration when adjusting the time programs. Select correspondingly earlier start-up and shutdown times.

Central heating

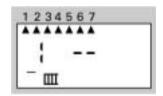
Press the following keys:

1. for central heating time program.

Note

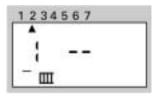
If you want to terminate the time program adjustment prematurely, press om again.

2. (+)(-) until the arrows flash below all days (1 to 7), if you want to set the same time phases for every day



or

3. (+)/— until one arrow flashes below the required day (2 equals Tuesday), if you want to set alternative time phases for the marked day.



Note

If different time phases are set for individual days and you want to set up identical time phases for all days again press when the arrows flash below all days. **All** time phases will then be returned to their original condition.

- 4. (a) to confirm; time phase "1" will then be displayed.

 Press (+) if you want to skip a time phase.
- 5. OK to confirm; the time phase start point will then be displayed.
- **6.** \oplus / \bigcirc for time phase start point.
- 7. (ix) to confirm; the time phase end point then flashes.
- **8.** \oplus / \bigcirc for time phase end point.
- 9. (0K) to confirm; the next time phase is then displayed.



Central heating (cont.)

10. For setting the start and end of time phases 2 to 4, proceed as under points 6 to 9.

Scan time phases

Proceed as per page 16, but without pressing (+) and (-).

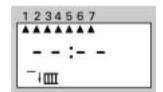
Time phase deletion

You want to heat for the whole day with a reduced room temperature.

Press the following keys:

1. om for central heating time program.

- 2. (S) until the time phase end point to be deleted flashes.
- 3. until the display "- -:- -" is shown for the end point.



4. OK to confirm, until the basic display is shown.

DHW heating

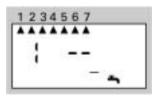
Press the following keys:

1. on for DHW loading time program.

Note

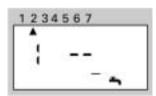
If you want to terminate the time program adjustment prematurely, press [○➡] again.

2. (+)(-) until the arrows flash below all days (1 to 7), if you want to set the same time phases for all days



or

3. ⊕/─ until one arrow flashes below the required day (2 equals Tuesday), if you want to set alternative time phases for the marked day.



Note

If different time phases are set for individual days, and you want to set up identical time phases for all days again, press ® when the arrows flash below every day. All time phases will then be returned to their original condition.



Modifying and scanning time programs

DHW heating (cont.)

- 4. OK to confirm; time phase "1" will then be displayed.

 Press + if you want to skip a time phase.
- 5. ©K to confirm; the time phase start point will then be displayed.
- **6.** \oplus / \bigcirc for time phase start point.
- 7. (a) to confirm; the time phase end point then flashes.
- **8.** \oplus / \bigcirc for time phase end point.
- **9.** (ix) to confirm; the next time phase is then displayed.
- **10.** For setting the start and end of time phases 2 to 4, proceed as under points 6 to 9.

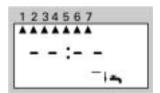
Scan time phases

Proceed as per page 17, but without pressing (+) and (-).

Time phase deletion

Press the following keys:

- 1. for DHW loading time program.
- 2. until the time phase end point to be deleted flashes.
- 3. until the display "- -:- -" is shown for the end point.



4. (S) to confirm, until the basic display is shown.

Scanning information

Subject to connected components, you can scan current temperatures and operating conditions.

Press the following keys:

- **2.** \oplus / \bigcirc for additional scans.
- **1.** (i) for boiler water temperature.
- 3. OK to end scanning.



Display indication		Explanation	Notes
1	20°C	Outside tempera- ture	Display only if an outside temperature sensor is connected.
3	65°C	Boiler water tem- perature	_
5	50°C	DHW temperature	Display only if a DHW cylinder is installed.
16:35 🕘		Time	
2004		Year	
:08		Month	
23:		Day	With the arrow on the current day.
5□	45°C	DHW temperature for solar operation	Display only if a solar heating system is connected.
6	70°C	Collector tempera- ture	Display only if a solar heating system is connected.
▲ 003572 h		Burner hours run	The hours run can be reset to "0" by pressing (*). The hours run displayed are only approximate values.
▲ ▲ ▲ 030417		Burner starts	The number of burner starts can be reset to "0" by pressing .

Scanning options

Scanning information (cont.)

Display indication	Explanation	Notes
▲ ▲ ▲ ▲ 000850 h	Hours run - solar circuit pump	The hours run can be reset to "0" on the Vitosolic solar control unit. The hours run displayed are only approximate values.
A A A A A A O 002850	Solar energy in kWh	The solar energy display can be reset to "0" on the Vitosolic solar control unit.

Time and date

Date and time are factory-set and may be changed manually.

Press the following keys:

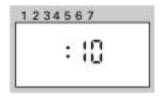
- 1. 🔯 for the time.
- **2.** +/- for the required time.



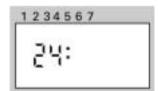
- 3. (ix) to confirm; the year will then be displayed.
- **4.** (+)/(-) for the required year.



- **5.** (OK) for the month.
- **6.** \oplus / \bigcirc for the required month.



- 7. (%) to confirm; the day will then be displayed.
- **8.** (+)/(-) for the required day.



9. (OK) to confirm.

Maintenance display

If your heating contractor has entered a maintenance interval into the control unit, a message will appear on the display that period has expired.

Maintenance display after a given number of hours run (flashing display):



Maintenance display according to a time interval (flashing display), e.g. maintenance after 12 months:

Special displays

Maintenance display (cont.)



... rooms are too cold?

Cause	Remedy
The heating system is switched OFF. The ON/OFF indicator ① (green) is OFF.	 Switch ON the ON/OFF switch "①" (see page 8). Switch ON mains electrical isolator, if installed (outside the boiler room). Check the circuit breaker inside power distribution (main domestic circuit breaker) and reset it, if required.
The control unit or the remote control unit is incorrectly adjusted.	Adjust the heating program "===="".
Only when operating with DHW loading: DHW priority (♣♦ in the display).	Wait until the DHW cylinder has been heated up or, if an instantaneous water heater is installed, until no more DHW is being drawn (♠ extinguishes in the display).
No fuel.	LPG: Check fuel level and, if necessary, reorder fuel. Natural gas: Open the gas shut-off valve and check with your gas supplier, if required.
Control unit fault: "\"is displayed and the red fault indicator flashes.	Check the fault code on the display (see page 25) and notify your local heating contractor.
Burner fault: "1 is displayed and the red fault indicator on the control unit flashes.	Press burner fault reset "1r" – if that attempt to start also fails, notify your heating contractor.
Heating water temperature or required room temperature too low.	Raise the heating water temperature or the required room temperature (see remote control operating instructions).
Remote control fault.	Notify your local heating contractor.

What to do if ...

rooms are too hot?			
Cause	Remedy		
The control unit or the remote control unit is incorrectly adjusted.	Check the room temperature setting and correct, if required.		
Control unit fault: "\" is displayed and the red fault indicator flashes.	Check the type of fault (see page 25) and notify your heating contractor.		

... no DHW is available?

Cause	Remedy
The heating system is switched OFF. The ON/OFF indicator ① (green) is OFF.	 Switch ON the ON/OFF switch "①" (see page 10). Switch ON the mains electrical isolator, if installed (outside the boiler room). Check the circuit breaker inside power distribution (main domestic circuit breaker) and reset it, if required.
Control unit incorrectly adjusted.	Check settings and correct if required: DHW loading must be switched ON (see page 11) DHW temperature (see page 14)
No fuel.	LPG: Check fuel level and re-order fuel, if required. Natural gas: Open the gas shut-off valve and check with your gas supplier, if required.
Control unit fault: "\" is displayed and the red fault indicator flashes.	Check the type of fault (see page 25) and notify your heating contractor.
Burner fault: The red fault indicator of the control unit flashes and "ப்" is displayed.	Press burner fault reset "1" – if that attempt to start also fails, notify your heating contractor.

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... the DHW is too hot?

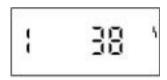
Cause	Remedy
Control unit incorrectly adjusted.	Check and, if required, correct the DHW temperature (see page 14).
Sensor fault.	Notify your local heating contractor.

Scanning fault display

If your heating system has developed a fault, it will be displayed and indicated through the flashing red fault indicator (see page 8).

You can check the fault code on the display and then notify your heating contractor accordingly. This allows the heating contractor to better prepare for the service call and may save additional travelling costs.

Checking and acknowledging fault codes



Press the following keys:

1. (+)/— to display further fault codes, if several faults are active.

2. (K) to acknowledge the fault.

Note

The fault message will again be displayed the following day, if the fault has not been rectified.

The red fault indicator flashes until the fault has been rectified.

Calling up acknowledged fault messages

Press the following keys:

- **1. (K)** for approx. two seconds.
- 2. ① to display further fault codes, if several faults are active.
- **3. (K)** to terminate.

Repairs

Cleaning

All devices may be cleaned with a commercially available domestic cleaning agent (non-scouring).

Inspection and maintenance

The inspection and maintenance of your heating system is prescribed by the Energy Savings Order [Germany] and the standards DIN 4755 and DIN 1988-8 (check local regulations).

Regular maintenance ensures trouble-free, energy-efficient and environmentally responsible heating operation. For this, we strongly advise you to arrange an inspection and maintenance contract with your local heating contractor.

Boiler

Increasing boiler contamination raises the flue gas temperature and thereby increases energy losses. For that reason, all boilers should be cleaned annually.

DHW cylinder

DIN 1988-8 and EN 806 prescribe that maintenance and cleaning should be carried out no later than two years after commissioning and, thereafter, as required. Only a recognised heating contractor should clean the inside of a DHW cylinder including the DHW connections.

Refill any water treatment equipment (e.g. a lock or injection equipment) in good time, if such equipment is installed in the cold water supply of the DHW cylinder. Observe the manufacturer's details.

In addition, for Vitocell 100: We recommend that the correct function of the sacrificial anode is checked annually by your heating contractor. The anode function can be checked without interrupting the system operation. The heating contractor will check the earth current with an anode tester.

Inspection and maintenance (cont.)

Safety valve (DHW cylinder)

Check the safety valve function every six months by venting, or have it checked by your heating contractor. There is a risk of the valve seat becoming contaminated (see the valve manufacturer's instructions).

DHW filter (if installed)

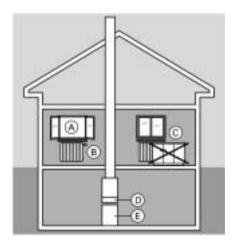
Replace the filter element

- on non-back-flushing filters, replace the filter element every six months (visual inspection every two months),
- on back-flushing filters, back-flush every two months.

Energy saving tips

Along with using a modern heating system, you can save additional energy by your own actions.

For this, the following measures will help you:



- Correct ventilation
 Briefly open windows (A) fully, and at the same time close thermostatic radiator valves (B).
- Do not overheat.

 Endeavour to reach a room temperature of 20 °C; every degree of room temperature reduction saves up to 6% of your heating bills.
- Close roller shutters (where installed) at dusk.
- Adjust thermostatic radiator valves
 © correctly.
- Do not cover radiators © or thermostatic radiator valves (B).
- Make full use of the setting options offered by the control unit D, e.g. "standard room temperature" alternating with "reduced room temperature".
- Set the DHW temperature in the DHW cylinder (E) on the control unit (D).
- Only activate the DHW circulation pump, if DHW is being drawn.
- Controlled DHW consumption: A shower generally uses less energy than a full bath.

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Subject to technical modifications

Your contact

Contact your local heating contractor if you have any questions regarding the maintenance and repair of your heating system. You may, for example, find local heating contractors on the internet under www.viessmann.de.