VITODENS 200-W
Gas condensing boiler
12.0 to 150.0 kW
As multi boiler system up to 900.0 kW

Technical guide

VITODENS 200-W  Type B2HA
Wall mounted gas condensing boiler
With modulating MatriX cylinder burner for natural gas and LPG
For open flue or room sealed operation
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Vitodens 200-W

1.1 Product description

Vitodens 200-W, 45 to 60 kW

A Inox-Radial heat exchanger made from stainless steel – for high operational reliability and a long service life. Large heating output on a very small footprint
B Modulating MatriX cylinder burner for extremely clean combustion and quiet operation
C Variable speed combustion fan for quiet and economical operation
D Gas and water connections
E Digital boiler control unit
Vitodens 200-W (cont.)

Vitodens 200-W, 80 to 100 kW

- Inox-Radial heat exchanger made from stainless steel – for high operational reliability and a long service life. Large heating output on a very small footprint.
- Modulating MatriX cylinder burner for extremely clean combustion and quiet operation.
- Variable speed combustion fan for quiet and economical operation.
- Gas and water connections.
- Digital boiler control unit.

Vitodens 200-W, 125 to 150 kW

- Inox-Radial heat exchanger made from stainless steel – for high operational reliability and a long service life. Large heating output on a very small footprint.
- Modulating MatriX cylinder burner for extremely clean combustion and quiet operation.
- Variable speed combustion fan for quiet and economical operation.
- Gas and water connections.
- Digital boiler control unit.
Vitodens 200-W wall mounted condensing boilers up to 150 kW are especially suitable for installation in apartment buildings and commercial or public buildings. For these, the Vitodens 200-W offers an affordable, space-saving solution – either as a single unit up to 150 kW or as a cascade with up to eight boilers and a heating output up to 900 kW.

The Inox-Radial heat exchanger made from stainless steel offers high output on a very small footprint. This enables particularly efficient operation with standard seasonal efficiency [to DIN] up to 98 % \((H_s)\) [gross cv] / 109 % \((H_i)\) [net cv].

The Vitotronic 300-K cascade control unit regulates up to eight Vitodens 200-W as a single heating centre. It also automatically matches the boiler output to the heat demand. This means: Subject to the prevailing demand, either one boiler modulates or all eight boilers operate concurrently. We offer the complete range of matching system components for creating cascade systems, e.g. control units with up to eight appliances, fully insulated hydraulic cascades and flue gas headers.

**Recommended applications**

High heating output from a compact, user friendly wall mounted boiler, suitable for the following applications:

- Systems with few, large-demand consumers, e.g. fan heaters in supermarkets/shopping centres, workshops and industrial premises, commercial nurseries, garages and DHW heating systems
- Systems with several heating circuits for underfloor and/or static radiators in apartment buildings, central heating plants for terraced houses, office buildings and administration premises – particularly suitable for attic heating centres
- Heating of public buildings, such as sports and multi purpose halls, schools, kindergartens
- Suitable for installation in basement boiler rooms, on intermediary floors or in the attic

**Benefits at a glance**

- Optional cascade installation with up to eight boilers and up to 900 kW rated heating output
- Standard seasonal efficiency [to DIN]: Up to 98 % \((H_s)\) [gross cv] / 109 % \((H_i)\) [net cv]
- Durable and efficient thanks to the Inox-Radial heat exchanger
- Modulating MatriX cylinder burner with a long service life thanks to stainless steel MatriX gauze – resistant to high temperature loads
- Easy-to-use Vitotronic control unit with plain text and graphic display
- The programming unit of the control unit can also be fitted on a wall mounting base (accessories)
- Lambda Pro Control combustion controller for all gas types – saves on costs, with inspection interval extended to 3 years
- Quiet operation through low fan speed

**Delivered condition**

Wall mounted gas condensing boiler with Inox-Radial heat exchanger, modulating MatriX cylinder burner for natural gas and LPG, to DVGW Code of Practice G260 [Germany], plus wall mounting bracket. Fully plumbed and wired. White epoxy-coated casing. Packed separately:

- Vitotronic 100 for constant temperature operation
- Vitotronic 200 for weather-compensated operation.

**Multi boiler systems**

Multi boiler systems for open flue operation with 2, 3, 4, 6 or 8 boilers.

**Installation with a self-supporting mounting frame in series and in block formation**

- Comprising:
  - Hydraulic cascade
  - Connection set for every boiler with: – Connection lines formed to suit – High efficiency circulation pump – Ball valves – Drain & fill valve – Check valve – Gas shut-off valve – Safety valve
  - Thermal insulation
  - Weather-compensated, digital cascade and heating circuit control unit Vitotronic 300-K
  - Cascade communication module for each boiler
  - Self-supporting mounting frame

**Note**

Order circulation pumps for heating circuits and cylinder heating separately.

**Tested quality**

- CE designation according to current EC Directives
- ÖVGW Quality Mark pursuant to quality symbol regulation 1942 DRGBi. I for gas and water products
- Meets the requirements for the “Blue Angel” eco-label RAL UZ 61.
### 1.2 Specification

**Gas boiler, type B and C, category IIbN3P**

#### Rated heating output range

- **45 and 60 kW**: Specification to EN 677.
- **80 to 150 kW**: Specification to EN 15417.

| T<sub>f</sub>/T<sub>R</sub> = 50/30 °C when operating with natural gas | kW | 12.0 - 45.0 | 10.9 - 40.7 |
| T<sub>f</sub>/T<sub>R</sub> = 80/60 °C when operating with natural gas | kW | 12.0 - 60.0 | 10.9 - 54.4 |
| T<sub>f</sub>/T<sub>R</sub> = 50/30 °C when operating with LPG P | kW | 17.0 - 45.0 | 15.4 - 40.7 |
| T<sub>f</sub>/T<sub>R</sub> = 80/60 °C when operating with LPG P | kW | 17.0 - 60.0 | 15.4 - 54.4 |

**Rated heat input when operating with natural gas**

| kW | 11.2 - 42.2 |
| kW | 11.2 - 42.2 |
| kW | 11.2 - 42.2 |
| kW | 11.2 - 42.2 |

**Rated heat input when operating with LPG P**

| kW | 16.1 - 42.2 |
| kW | 16.1 - 42.2 |
| kW | 16.1 - 42.2 |
| kW | 16.1 - 42.2 |

**Type**

B2HA

**Product ID**

CE-0085CN0050

**IP rating**

IP X4D to EN 60529

#### Gas supply pressure

- **Natural gas**
  - mbar: 20, 20, 20, 20, 20, 20
  - kPa: 2, 2, 2, 2, 2, 2

- **LPG**
  - mbar: 50, 50, 50, 50, 50, 50
  - kPa: 5, 5, 5, 5, 5, 5

**Max. permissible gas supply pressure**

- **Natural gas**
  - mbar: 25.0, 25.0, 25.0, 25.0, 25.0, 25.0
  - kPa: 2.5, 2.5, 2.5, 2.5, 2.5, 2.5

- **LPG**
  - mbar: 57.5, 57.5, 57.5, 57.5, 57.5, 57.5
  - kPa: 5.75, 5.75, 5.75, 5.75, 5.75, 5.75

**Sound power level**

- (to EN ISO 15036-1)
  - At partial load: dB(A) 39, 39, 38, 38, 40, 40
  - At rated heating output: dB(A) 56, 67, 56, 59, 57, 60

**Power consumption**

- (delivered condition)
  - W: 56, 82, 90, 175, 146, 222

**Weight**

| kg | 65 | 65 | 83 | 83 | 130 | 130 |

**Heat exchanger content**

| l | 7.0 | 7.0 | 12.8 | 12.8 | 15.0 | 15.0 |

**Max. flow rate**

| l/h | 3500 | 3500 | 5700 | 5700 | 7165 | 8600 |

**Rated circulation water volume**

At T<sub>f</sub>/T<sub>R</sub> = 80/60 °C: l/h 1748, 2336, 3118, 3909, 4900, 5850

**Permiss. operating pressure**

| bar | 4 | 4 | 4 | 4 | 6 | 6 |

**Dimensions**

- **Length**: mm 380, 380, 530, 530, 690, 690
- **Width**: mm 480, 480, 480, 480, 600, 600
- **Height**: mm 850, 850, 850, 850, 900, 900

**Gas connection**

R ¾/¾ 1 1 1 1

**Connection values**

relative to max. load with gas

- **Natural gas E**: m<sup>3</sup>/h 4.47, 5.95, 7.94, 9.93, 12.49, 15.03
- **Natural gas LL**: m<sup>3</sup>/h 5.19, 6.91, 9.23, 11.54, 14.51, 17.47
- **LPG**: kg/h 3.30, 4.39, 5.86, 7.33, 9.23, 11.10

---

*1 If the gas supply pressure is higher than the maximum permissible value, install a separate gas pressure governor upstream of the system.*
Vitodens 200-W (cont.)

Gas boiler, type B and C, category II2M3P

<table>
<thead>
<tr>
<th>Rate heating output range</th>
<th>Gas condensing boiler</th>
</tr>
</thead>
<tbody>
<tr>
<td>45 and 60 kW: Specification to EN 677.</td>
<td></td>
</tr>
<tr>
<td>80 to 150 kW: Specification to EN 15417.</td>
<td></td>
</tr>
<tr>
<td>Tør/Tkr = 50/30 °C when operating with natural gas</td>
<td>kW</td>
</tr>
<tr>
<td>12.0 - 12.0 - 20.0 - 20.0 - 32.0 - 32.0 -</td>
<td></td>
</tr>
<tr>
<td>45.0 - 60.0 - 80.0 - 100.0 - 125.0 - 150.0 -</td>
<td></td>
</tr>
<tr>
<td>Tør/Tkr = 80/60 °C when operating with natural gas</td>
<td>kW</td>
</tr>
<tr>
<td>10.9 - 10.9 - 18.1 - 18.1 - 29.0 - 29.0 -</td>
<td></td>
</tr>
<tr>
<td>20.0 - 20.0 - 80.0 - 100.0 - 125.0 - 150.0 -</td>
<td></td>
</tr>
<tr>
<td>32.0 - 32.0 - 125.0 - 150.0 - 200.0 - 250.0 -</td>
<td></td>
</tr>
</tbody>
</table>

Flue gas parameters

<table>
<thead>
<tr>
<th>Flue gas category to G 635/G 636</th>
<th>G52/G51</th>
<th>G52/G51</th>
<th>G52/G51</th>
<th>G52/G51</th>
<th>G52/G51</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature (at a return temperature of 30 °C)</td>
<td>°C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– at rated heating output</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– at partial load</td>
<td>39</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature (at a return temperature of 60 °C)</td>
<td>°C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– at rated heating output</td>
<td>75</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– at partial load</td>
<td>39</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mass flow rate

<table>
<thead>
<tr>
<th>Natural gas</th>
<th>kg/h</th>
</tr>
</thead>
<tbody>
<tr>
<td>– at rated heating output</td>
<td>78</td>
</tr>
<tr>
<td>– at partial load</td>
<td>30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LPG</th>
<th>kg/h</th>
</tr>
</thead>
<tbody>
<tr>
<td>– at rated heating output</td>
<td>74</td>
</tr>
<tr>
<td>– at partial load</td>
<td>28</td>
</tr>
</tbody>
</table>

Available draught

<table>
<thead>
<tr>
<th>Pa</th>
</tr>
</thead>
<tbody>
<tr>
<td>250</td>
</tr>
</tbody>
</table>

Standard seasonal efficiency [to DIN] at Tør/Tkr = 40/30 °C

<table>
<thead>
<tr>
<th>%</th>
<th>Up to 98 (Hs) [gross cv] / 109 (Hi) [net cv]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. amount of condensate to DWA-A 251</td>
<td>I/h</td>
</tr>
<tr>
<td>Condensate connection (hose nozzle)</td>
<td>Ø mm</td>
</tr>
<tr>
<td>Flue gas connection</td>
<td>Ø mm</td>
</tr>
<tr>
<td>Ventilation air connection</td>
<td>Ø mm</td>
</tr>
</tbody>
</table>

Multiboiler systems

For further details regarding multi boiler systems, see page 34.

---

*2 Calculation values for sizing the flue system to EN 13384.

Flue gas temperatures as actual gross values at 20 °C combustion air temperature.

The flue gas temperature at a return temperature of 30 °C is significant for the sizing of the flue system.

The flue gas temperature at a return temperature of 60 °C is used to determine the application range of flue pipes with maximum permissible operating temperatures.
Vitodens 200-W (cont.)

A Expansion vessel connection G 1
B Safety valve
C Heating flow G 1½
D Cylinder flow G 1½
E Gas connection R ¾
F Cylinder return G 1½
G Heating return G 1½
H Cable entry area at the back

K Connection sets (accessories)
L Shown without thermal insulation (standard delivery)
M Without connection sets
N With connection sets
O Recommended dimension for a single boiler system
P Recommended dimension for a multi boiler system
Q Condensate drain
R Top edge finished floor

**Note**
The heating circuit connection set **must** be ordered separately.

**Note**
Lay all required power cables on site and route them into the boiler in area (H).

Variable speed high efficiency circulation pump in the heating circuit connection set (accessories)
The highly efficient circulation pump uses significantly less power compared to conventional pumps.
Matching the pump rate of the circulation pump to the individual system conditions reduces the power consumption of the heating system.

**Circulation pump VI Para 25/1-11**

<table>
<thead>
<tr>
<th>Rated voltage</th>
<th>V~</th>
<th>Power consumption</th>
<th>W</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Max.</td>
<td>230</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Min.</td>
<td>140</td>
</tr>
</tbody>
</table>

Min.
Residual head of the circulation pump

Curve | Pump rate, circulation pump
-------|-------------------------
A      | 40 %
B      | 50 %
C      | 60 %
D      | 70 %
E      | 80 %
F      | 90 %
G      | 100 %

Pressure drop on the heating water side
For sizing an on-site circulation pump

Circulation pump in the connection set for DHW cylinders

<table>
<thead>
<tr>
<th>Pump type</th>
<th>Voltage</th>
<th>Power consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>VI Yonos Para 25/6</td>
<td>V~ 230</td>
<td>W Max. 45 Min. 3</td>
</tr>
</tbody>
</table>
Circulation pump head

![Graph showing Pump rate in l/h vs. Head in kPa with stages A, B, and C labeled.]

**Note**
When the heating circuit and circulation pumps are operated in parallel for cylinder heating (no DHW priority control), we recommend the installation of a DHW cylinder in the secondary side (downstream from the low loss header) of the heating system.
Vitodens 200-W (cont.)

Vitodens 200-W, 80 and 100 kW

Multi boiler systems
For further details regarding multi boiler systems, see page 34.

Note
The heating circuit connection set must be ordered separately.

Variable speed high efficiency circulation pump in the heating circuit connection set (accessories)
The highly efficient circulation pump uses significantly less power compared to conventional pumps. Matching the pump rate of the circulation pump to the individual system conditions reduces the power consumption of the heating system.

Circulation pump VI Para 25/1-12

| Rated voltage | V~  | 230 |
| Power consumption | W Max. | 310 |
|                | W Min. | 16  |
Residual head of the circulation pump

<table>
<thead>
<tr>
<th>Curve</th>
<th>Pump rate, circulation pump</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>40 %</td>
</tr>
<tr>
<td>B</td>
<td>50 %</td>
</tr>
<tr>
<td>C</td>
<td>60 %</td>
</tr>
<tr>
<td>D</td>
<td>70 %</td>
</tr>
<tr>
<td>E</td>
<td>80 %</td>
</tr>
<tr>
<td>F</td>
<td>90 %</td>
</tr>
<tr>
<td>G</td>
<td>100 %</td>
</tr>
</tbody>
</table>

**Note**

Observe information regarding the use of a low loss header (see page 47).

If the residual head of the circulation pump available as an accessory is insufficient to overcome the following system pressure drop values, install an additional, external circulation pump on site.

In such cases, use a low loss header.

**Pressure drop on the heating water side**

For sizing an on-site circulation pump (when connecting to a DHW cylinder connection set)

**Note**

When the heating circuit and circulation pumps are operated in parallel for cylinder heating (no DHW priority control), we recommend the installation of a DHW cylinder in the secondary side (downstream from the low loss header) of the heating system.
Vitodens 200-W, 125 and 150 kW

Multi boiler systems
For further details regarding multi boiler systems, see page 34.

The heating circuit connection set must be ordered separately.

Variable speed high efficiency circulation pump in the heating circuit connection set (accessories)
The highly efficient circulation pump uses significantly less power compared to conventional pumps.
Matching the pump rate of the circulation pump to the individual system conditions reduces the power consumption of the heating system.
Circulation pump VI Para 30/1-12

<table>
<thead>
<tr>
<th>Rated voltage</th>
<th>V~</th>
<th>230</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power consumption</td>
<td>W</td>
<td>Max. 310</td>
</tr>
<tr>
<td></td>
<td>Min. 16</td>
<td></td>
</tr>
</tbody>
</table>

Variable speed (Δp constant or Δp variable), fully wired.

**Note**
For operation in multi boiler systems select speed control Δp constant.

Residual head of the circulation pump

<table>
<thead>
<tr>
<th>Curve</th>
<th>Pump rate, circulation pump</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>50 %</td>
</tr>
<tr>
<td>B</td>
<td>60 %</td>
</tr>
<tr>
<td>C</td>
<td>70 %</td>
</tr>
<tr>
<td>D</td>
<td>80 %</td>
</tr>
<tr>
<td>E</td>
<td>90 %</td>
</tr>
<tr>
<td>F</td>
<td>100 %</td>
</tr>
</tbody>
</table>

Vitodens 200-W (cont.)
Note
Observe information regarding the use of a low loss header (see page 47).
If the residual head of the circulation pump available as an accessory is insufficient to overcome the following system pressure drop values, install an additional, external circulation pump on site. In such cases, use a low loss header.

Pressure drop on the heating water side
For sizing an on-site circulation pump (when connecting to a DHW cylinder connection set)

Note
When the heating circuit and circulation pumps are operated in parallel for cylinder heating (no DHW priority control), we recommend the installation of a DHW cylinder in the secondary side (downstream from the low loss header) of the heating system.
2.1 Product description

Installation accessories for the Vitodens 200-W, 45 and 60 kW

Heating circuit connection set without circulation pump
Part no. 7245 738
Connections G 1½
Comprising:
■ Tee with ball valve
■ Boiler drain & fill valve
■ Safety valve
■ Gas shut-off valve with integral thermally activated safety shut-off valve
■ Connection G1 for pressure expansion vessel

---

Heating circuit connection set with variable speed high efficiency circulation pump
Part no. 7501 311
Connections G 1½
Comprising:
■ Circulation pump
■ 2 tees with ball valve
■ Non-return valve
■ 2 boiler drain & fill valves
■ Safety valve
■ Gas shut-off valve with integral thermally activated safety shut-off valve
■ Thermal insulation
■ Connection G1 for pressure expansion vessel

---

DHW cylinder connection set
Part no. ZK00 657
Connections G 1½
Comprising:
■ Circulation pump
■ 2 ball valves
■ Non-return valve
■ Cylinder temperature sensor

---

Ball valve
Part no. 7247 373
1 pce G 1¼ with gasket and union nut.
Installation accessories (cont.)

Installation accessories for the Vitodens 200-W, 80 and 100 kW

Heating circuit connection set with variable speed high efficiency circulation pump

Part no. 7501 318
Comprising:
■ Circulation pump
■ 2 ball valves with adaptors Ø 42 mm (locking ring fitting)
■ Tee with ball valve
■ Non-return valve
■ Boiler drain & fill valve
■ Safety valve
■ Gas shut-off valve with integral thermally activated safety shut-off valve
■ Thermal insulation
■ Connection G1 for pressure expansion vessel

Mounting panel for low loss header
■ For floor mounting
  Part no. 7346 787
■ For wall mounting
  Part no. 7346 788

DHW cylinder connection set
Part no. 7348 934
Connections: Ø 35 mm (locking ring fitting)
Comprising:
■ Connecting lines for flow and return
■ Fittings
■ Cylinder temperature sensor

Installation accessories for the Vitodens 200-W, 125 and 150 kW

Heating circuit connection set with variable speed high efficiency circulation pump

Part no. 7501 321
Comprising:
■ Circulation pump
■ 2 ball valves with adaptors Ø 54 mm (locking ring fitting)
■ Tee with ball valve
■ Non-return valve
■ Boiler drain & fill valve
■ Safety valve
■ Gas shut-off valve with integral thermally activated safety shut-off valve
■ Thermal insulation
■ Connection G1 for pressure expansion vessel
Installation accessories (cont.)

**Low loss header**
For flow rate up to 12.9 m³/h
Connection DN 65
Part no. ZK00 658
Comprising:
- Low loss header with integral sensor well
- Thermal insulation
- Immersion temperature sensor for low loss header
- Quick-action air vent valve
- Ball valve with hose nozzle for draining or blow-down
- 2 adaptors Ø 54 mm (locking ring fitting)

**DHW cylinder connection set**
Part no. 7501 325
Connections: Ø 42 mm (locking ring fitting)
Comprising:
- Connecting lines for flow and return
- Fittings
- Cylinder temperature sensor

**Mounting frame**
Part no. 7502 558
For self-supporting boiler installation in a room.
With adjustable feet for levelling and securing to the floor.

**Service accessories for automatic hydraulic balancing**
See separate datasheet.

**CO limiter**
Part no. 7499 330
A monitoring device that safely shuts down the boiler in the event of carbon monoxide being released.
Wall mounting in the ceiling area near the boiler.
Can be used for boilers built from 2004 onwards.
Components:
- Casing with integrated CO sensor, relay and displays for operation and alarm.
- Fixing materials.
Installation accessories (cont.)

- Power cable (2.0 m long).
- Connecting cable, relay for burner shutdown (2.0 m long).

---

### Specification

- **Rated voltage**: 230 V~
- **Rated frequency**: 50 Hz
- **Power consumption**: 3.5 W
- **Rated breaking capacity of the relay output**: 8 A 230 V~
- **Alarm threshold**: 40 ppm CO
- **Safety category**: II
- **IP rating**: IP 20 to EN 60529; ensure through design/installation
- **Permissible ambient temperature**: 70 °C

---

### Divicon heating circuit distributor

**Layout and function**

- Available with R ¾, R 1 and R 1¼ connections.
- With heating circuit pump, check valve, ball valves with integral thermometers and 3-way mixer or without mixer.
- Quick and simple installation due to pre-assembled unit and compact design.
- All-round thermal insulation shells for low radiation losses.
- High efficiency pumps and optimised mixer curve ensure low electricity costs and precise control characteristics.
- The bypass valve for hydraulic balancing of the heating system is available as an accessory and is provided as a threaded component for inserting into the prepared hole in the cast body.
- Individually wall mounted or with a double or triple manifold.
- Also available as a kit. For further details see the Viessmann pricelist.

**For part numbers in conjunction with the different circulation pumps, see the Viessmann pricelist.**

The dimensions of the heating circuit distributor are the same, with or without mixer.

---

### Divicon without mixer (wall mounting, shown without thermal insulation)

HR Heating return
HV Heating flow
A Ball valves with thermometer (as programming unit)
B Circulation pump

#### Heating circuit connection

<table>
<thead>
<tr>
<th>R</th>
<th>¾</th>
<th>1</th>
<th>1¼</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow rate (max.) m³/h</td>
<td>1.0</td>
<td>1.5</td>
<td>2.5</td>
</tr>
<tr>
<td>a (female) Rp</td>
<td>¾</td>
<td>1</td>
<td>1¼</td>
</tr>
<tr>
<td>a (male) G</td>
<td>1¼</td>
<td>1¼</td>
<td>2</td>
</tr>
</tbody>
</table>

---

Divicon with mixer (wall mounting, shown without thermal insulation or mixer drive extension kit)

HR Heating return
HV Heating flow
A Ball valves with thermometer (as programming unit)
B Circulation pump
C Ball valve

#### Heating circuit connection

<table>
<thead>
<tr>
<th>R</th>
<th>¾</th>
<th>1</th>
<th>1¼</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow rate (max.) m³/h</td>
<td>1.0</td>
<td>1.5</td>
<td>2.5</td>
</tr>
<tr>
<td>a (female) Rp</td>
<td>¾</td>
<td>1</td>
<td>1¼</td>
</tr>
<tr>
<td>a (male) G</td>
<td>1¼</td>
<td>1¼</td>
<td>2</td>
</tr>
</tbody>
</table>
Installation example: Divicon with triple manifold

Divicon with mixer-3
The operating ranges marked A to D provide optimum control characteristics with the Divicon mixer:

A Divicon with mixer-3 (R ¾)
Application range: 0 to 1.0 m³/h

B Divicon with mixer-3 (R 1)
Application range: 0 to 1.5 m³/h

C Divicon with mixer-3 (R 1¼)
Application range: 0 to 2.5 m³/h

Example:
Heating circuit for radiators with an heating output of $\dot{Q} = 11.6$ kW
Heating system temperature 75/60 °C ($\Delta T = 15$ K)

\[ c = 1.163 \text{ Wh/kg·K} \]
\[ \dot{m} = \dot{V} \cdot \rho \]

Select the smallest possible mixer within the application limit with the value $\dot{V}$. 

\[ \dot{V} = \frac{\dot{Q}}{c \cdot \Delta T} = \frac{11600 \text{ W·kg·K}}{1.163 \text{ Wh/(75-60) K}} = 665 \frac{\text{kg}}{\text{h}} \approx 665 \frac{\text{m}^3}{\text{h}} \]
Result of this example: Divicon with mixer-3 (R ¾)

Circulation pump curves and pressure drop on the heating water side

The residual pump head results from the differential between the selected pump curve and the pressure drop curve of the respective heating circuit distributor or further components (pipe assembly, distributor etc.).

The following pump graphs show the pressure drop curves of the different Divicon heating circuit distributors.

Maximum flow rate for Divicon:
- with R ¾ = 1.0 m³/h
- with R 1 = 1.5 m³/h
- with R 1¼ = 2.5 m³/h

Example:
Flow rate \( V = 0.665 \) m³/h

Selected:
- Divicon with mixer R ¾
- Wilo Yonos Para 25/6 circulation pump, variable differential pressure operating mode and set to maximum delivery head
- Pump rate 0.7 m³/h

Head of the relevant pump curve:
- Divicon pressure drop: 48 kPa
- Residual head: 48 kPa – 3.5 kPa = 44.5 kPa.

Note
For further components (pipe assembly, distributor, etc.) determine the pressure drop and deduct it from the residual head.

Differential pressure-dependent heating circuit pumps

According to the [German] Energy Saving Ordinance (EnEV), circulation pumps in central heating systems must be sized in accordance with current technical rules. Ecodesign Directive 2009/125/EC requires high efficiency circulation pumps to be used throughout Europe from 1 January 2013, if the pumps are not installed in the heat source.

Design information

The use of differential pressure-dependent heating circuit pumps requires heating circuits with variable pump rates. These include, for example, single and twin line heating systems with thermostatic valves and underfloor heating systems with thermostatic or zone valves.

Wilo Yonos Para 25/6
- Very economical HE pump (compliant with Energy Label A)

Operating mode: Constant differential pressure

Operating mode: Variable differential pressure
**Installation accessories (cont.)**

**Wilo Stratos Para 25/1-7**
- Very economical HE pump (compliant with Energy Label A)

**Operating mode: Constant differential pressure**

![Graph showing constant differential pressure for Wilo Stratos Para 25/1-7](image)

- Divicon R 1¼ with mixer
- Divicon R 1¼ without mixer

**Grundfos Alpha 2-60**
- Very economical HE pump (compliant with Energy Label A)
- With power consumption display
- With Autoadapt function (automatic matching to the pipework)
- With night setback function

**Operating mode: Variable differential pressure**

![Graph showing variable differential pressure for Grundfos Alpha 2-60](image)

- Divicon R ¾ with mixer
- Divicon R 1 with mixer
- Divicon R 1¼ with mixer
- Divicon R ¾, R 1 and R 1¼ without mixer
- Stage 1
- Stage 2
- Stage 3
- Min. proportional pressure
- Max. proportional pressure
- Min. constant pressure
- Max. constant pressure

**Bypass valve**

Part no. 7464 889
For hydraulic balancing of the heating circuit with mixer. To be inserted into the Divicon.
Installation accessories (cont.)

Manifold
With thermal insulation.
For wall mounting with separately ordered wall mounting bracket.
The connection between boiler and manifold must be made on site.

For 2 Divicon
Part no. 7460 638 for Divicon R ¾ and R 1.

For 2 Divicon
Part no. 7466 337 for Divicon R 1¼.

Pressure drop

Connection option for expansion vessel
HV Heating water flow
HR Heating water return

Part no. 7466 337 for Divicon R 1¼.

Connection option for expansion vessel
HV Heating water flow
HR Heating water return
Installation accessories (cont.)

For 3 Divicon
Part no. 7460 643 for Divicon R ¾ and R 1.

<table>
<thead>
<tr>
<th>Pressure drop</th>
<th>Flow rate in m³/h</th>
<th>0</th>
<th>0.5</th>
<th>1</th>
<th>1.5</th>
<th>2</th>
<th>2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>kPa</td>
<td>0</td>
<td>0</td>
<td>0.5</td>
<td>1</td>
<td>1.5</td>
<td>2</td>
</tr>
</tbody>
</table>

A Connection option for expansion vessel
HV Heating water flow
HR Heating water return

Part no. 7466 340 for Divicon R 1¼

A Connection option for expansion vessel
HV Heating water flow
HR Heating water return

Wall mounting bracket
Part no. 7465 894
For individual Divicon.
With screws and rawl plugs.

Part no. 7465 439
For manifold.
With screws and rawl plugs.

For Divicon
<table>
<thead>
<tr>
<th></th>
<th>With mixer</th>
<th>Without mixer</th>
</tr>
</thead>
<tbody>
<tr>
<td>a mm</td>
<td>151</td>
<td>142</td>
</tr>
</tbody>
</table>

For Divicon
<table>
<thead>
<tr>
<th></th>
<th>R ¾ and R 1</th>
<th>R 1¼</th>
</tr>
</thead>
<tbody>
<tr>
<td>a mm</td>
<td>142</td>
<td>167</td>
</tr>
</tbody>
</table>
Installation accessories (cont.)

Low loss header

Part no. 7460 649
Max. flow rate 4.5 m³/h.
With thermal insulation and integral sensor well.
The connection between boiler and low loss header must be made on site.

<table>
<thead>
<tr>
<th>Sensor well</th>
<th>Optional blow-down</th>
</tr>
</thead>
<tbody>
<tr>
<td>HV</td>
<td>HR</td>
</tr>
</tbody>
</table>

Part no. 7460 648
Max. flow rate 7.5 m³/h.
With thermal insulation and integral sensor well.
The connection between boiler and low loss header must be made on site.

Pressure drop

Installation accessories for multi boiler systems

Hydraulic cascades
See page 34.
Installation accessories (cont.)

Flue gas cascade (positive pressure)
Comprising:
- Flue gas header
- End piece with condensate drain and siphon

■ Two-boiler system installed in series
  - For the Vitodens 200-W, 45 and 60 kW: Part no. ZK00 675
  - For the Vitodens 200-W, 80 to 100 kW: Part no. ZK00 676
  - For the Vitodens 200-W, 125 to 150 kW: Part no. ZK00 677

■ Three-boiler system installed in series
  - For the Vitodens 200-W, 45 and 60 kW: Part no. ZK00 688
  - For the Vitodens 200-W, 80 to 100 kW: Part no. ZK00 689
  - For the Vitodens 200-W, 125 to 150 kW: Part no. ZK00 690

■ Four-boiler system installed in series
  - For the Vitodens 200-W, 45 and 60 kW: Part no. ZK00 691
  - For the Vitodens 200-W, 80 to 100 kW: Part no. ZK00 692

For further technical details regarding the flue gas cascades, see the technical guide to Vitodens flue systems.
3.1 Product description

For details regarding DHW cylinders, see the technical guide to the Vitodens up to 35 kW, or separate datasheets.

Design information

4.1 Positioning, installation

Siting conditions for open flue operation (appliance type B)

(Type B23 and B33)

In rooms where air contamination from halogenated hydrocarbons may occur, such as hairdressing salons, printing shops, chemical cleaners, laboratories, etc., operate the Vitodens only as a room sealed system.

If in doubt, please contact us.

Wall mounted boilers should not be installed in areas subject to very dusty conditions.

The installation location must be kept free from frost and must be adequately ventilated.

Provide a condensate drain and a discharge pipe for the safety valve in the installation room.

The maximum ambient temperature of the system should not exceed 35 °C.

If these instructions are not observed, any consequential appliance damage directly related to any of these causes is excluded from our warranty.

When installing in Austria, observe all current safety regulations as defined by ÖVGW-TR Gas (G1), ÖNORM, ÖVGW, ÖVE and locally applicable standards.

Vitodens 200-W from 60 kW and multi boiler systems

Install boilers from 50 kW in accordance with the Combustion Order (FeuVo) [Germany] [or local regulations] in a separate installation room. Fit the mains isolator outside the installation room.

Combustion air apertures

Gas equipment with a total rated heating output in excess of 50 kW must be provided with combustion air apertures leading to the outside. The cross-section should be at least 150 cm² and should be 2 cm² larger for each kW above 50 kW rated heating output. This cross-section may not be split over more than 2 apertures (observe FeuVo and TRG1 2008 point 5.5.4 [or local regulations]).

Example:

Vitodens 200-W, 3 × 60 kW
Total rated heating output 180 kW
150 cm² + 130 × 2 cm² = 410 cm² or 2 × 205 cm².

The combustion air apertures should measure at least 410 cm² or 2 × 205 cm².

Multi boiler systems with flue systems under positive pressure

The Vitodens 200-W multi boiler systems with common pressurised flue systems are designed for open flue operation (type B).

For further details, see the technical guide on flue systems for the Vitodens.

Installation room (up to 50 kW)

Permissible:

■ Boiler installation on the same floor
■ Adjacent rooms with interconnected room air supply (larders, basements, utility rooms etc.)
■ Attic rooms, but only with adequate minimum chimney height to DIN 18160 – 4 m above inlet (negative pressure operation).

Not permissible:

■ Stairwells and communal hallways; exception: Detached and two-family houses of low height (top edge of floor in the top storey < 7 m above ground level)
■ Bathrooms and toilets without outside windows with shaft ventilation
■ Rooms where explosive or flammable materials are stored
■ Rooms that are ventilated mechanically or via individual duct systems to DIN 18117-1.

Observe all local fire regulations.

Connection on the flue gas side

(For further details, see the technical guide "Flue systems for the Vitodens")

The connection piece to the chimney should be as short as possible. Therefore position the Vitodens as closely to the chimney as possible.

No special protective measures or clearances towards combustible objects, e.g. furniture, packaging or similar, need to be taken/observed.

The surface temperatures of the Vitodens and the flue system never exceed 85 °C.

Extractors

When installing appliances with extraction to the outside (cooker hoods, extractor fans etc.), ensure that air extraction will not create negative pressure inside the installation room. A return flow of flue gases could otherwise result if the ventilation system and the Vitodens are operated simultaneously. In such cases, install an interlock circuit.

For this, the internal extension H2 (accessories) can be used. This switches the extractors off when the burner is started.

Safety equipment for the installation room

Viessmann heat sources are tested and approved in accordance with all safety regulations and are therefore fail-safe. Unpredictable, external factors may, in the rarest of cases, lead to the potentially harmful escape of carbon monoxide (CO). For this case, we recommend using a CO limiter. This can be ordered as a separate accessory (part no. 7499 330).
Design information (cont.)

**Installation conditions for room sealed operation (appliance type C)**

The Vitodens can be installed as appliance type C13x, C33x, C43x, C53x, C63x, C73x or C93x, to TRGI 2008, for room sealed operation independent of the size and ventilation of the installation room.

It may, for example, be installed in recreation rooms, in other living spaces, in attic rooms without ventilation, in cupboards (open at the top) and recesses, without maintaining minimum clearances to combustible parts, as well as in attic rooms (pitched attics and long panes) where the balanced flue pipe can be routed directly through the roof. Since the flue pipe connection piece for room sealed operation is surrounded by combustion air (coaxial pipe), no clearances towards combustible parts need to be maintained (for further details, see the technical guide “Flue systems for the Vitodens”).

The installation area must be safe from the risk of frost.

Provide a condensate drain and a discharge pipe for the safety valve in the installation room.

Electrical interlocks for extractors (extractor hoods, etc.) are not required with room sealed operation.

**Vitodens 200-W from 60 kW**

In accordance with the Combustion Order (FeuVo) [Germany] boilers from 50 kW must be installed in a separate room [observe local regulations]. Fit the mains isolator outside the installation room.

**Operation of the Vitodens in wet areas**

The Vitodens is approved for installation in wet areas (IP rating: IP X 4D, splashproof)

When installing the Vitodens in wet areas, observe the safety zones and minimum wall clearances according to VDE 0100 [or local regulations]. The Vitodens 200-W may be installed in safety zone 1.

**Electrical connection**

The power supply must comply with the requirements of your local power supply utility and current VDE [or local] regulations (A: ÖVE regulations).

Protect the power cable with a fuse with a max. rating of 16 A. We recommend installing an AC/DC-sensitive RCD (RCD class B) for DC (fault) currents that can occur with energy efficient equipment.

Make the power supply (230 V~, 50 Hz) via a permanent connection. Connect the supply cables and accessories at the terminals inside the boiler.

Allow cables/leads in the shaded area to protrude at least 800 mm from the wall (see diagram):

- **A** Reference point Vitodens top edge
- **B** Area for power cables
**Design information (cont.)**

---

**Vitodens 200-W, 125 to 150 kW**

A Reference point Vitodens top edge
B Area for power cables

**Recommended leads/cables**

<table>
<thead>
<tr>
<th>NYM 3 G 1.5 mm²</th>
<th>2-core min. 0.75 mm²</th>
<th>4-core 1.5 mm² or 3-core 1.5 mm² without green/yellow wire</th>
</tr>
</thead>
<tbody>
<tr>
<td>– Power cables (also for accessories)</td>
<td>– Extension AM1 or EA1</td>
<td>– Vitotrol 100, type UTDB-RF (230 V)</td>
</tr>
<tr>
<td>– DHW circulation pump</td>
<td>– Outside temperature sensor</td>
<td>– Vitotrol 100, type UTA</td>
</tr>
<tr>
<td></td>
<td>– Vitotronic 200-H (LON)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>– Extension kit for heating circuit with mixer (KM BUS)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>– Vitotrol 100, type UTDB (230 V)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>– Vitotrol 200A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>– Vitotrol 300A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>– Vitocomfort 200</td>
<td></td>
</tr>
<tr>
<td></td>
<td>– Wireless base station</td>
<td></td>
</tr>
<tr>
<td></td>
<td>– Radio clock receiver</td>
<td></td>
</tr>
</tbody>
</table>

**Interlock switch**

Install an interlock for open flue operation if an extractor (e.g. cooker hood) is fitted any room that is part of the interconnected combustion air supply.

For this, the internal extension H2 (accessories) can be used. This switches the extractors off when the burner is started.

**Power supply for accessories**

The power supply for accessories can be provided directly at the control unit.

This connection is switched by the system ON/OFF switch. If the total system current exceeds 6 A, connect one or more extensions directly to the mains supply via an ON/OFF switch.

Where the boiler is installed in a wet area, the power supply connection of accessories must not be made at the control unit.

**Additional requirements when installing boilers operated with LPG in rooms below ground level**

According to TRF 1996 Vol. 2 – valid as of 1 September 1997 – an external safety solenoid valve is no longer required when installing the Vitodens below ground level.

However, the high safety standard derived from the use of an external safety solenoid valve has proved to be valuable. We therefore recommend the installation of an external safety solenoid valve when installing the boiler in rooms below ground level. This requires the internal H1 extension.

**Gas connection**

Gas installations must only be carried out by a registered gas fitter authorised by the relevant gas supply utility.

Connect and size the mains gas according to TRGI 2008 or TRF 1996 [or local regulations].

A Connect the mains gas according to ÖVGW-TR Gas (G1) and the regionally applicable Building Regulations.

Maximum test pressure 150 mbar (15 kPa).

We recommend installing a gas filter to DIN 3386 into the gas line.
Thermally activated safety shut-off valve
According to paragraph 4, section 5 of the FeuVo 2008 [or local regulations], thermally activated shut-off equipment that will shut off the gas supply if the external temperature exceeds 100 °C must be installed in combustion equipment or in gas lines immediately upstream of the combustion equipment. These valves must isolate the gas supply for at least 30 minutes up to a temperature of 650 °C. This is intended to prevent the formation of explosive gas mixtures in the event of a fire.

The gas shut-off valves supplied with the Vitodens are equipped with integral thermally activated safety shut-off valves.

Sizing recommendation, gas flow switch
In supply areas with $H_{IB}$ below 8.6 kWh/m$^3$ and gas appliances compliant with category I$_{2N}$, determine a fictitious rated heat input. This fictitious rated heat input results from the rated heat input ($Q_{NB}$) of the appliance, multiplied by a factor of 1.23 (ratio $H_{IB}$ 8.6/7.0). Select the gas flow switch and size the pipework to TRGI 2008 [or local regulations] using this fictitious rated heat input.

<table>
<thead>
<tr>
<th>Rated heating output range of the Vitodens kW</th>
<th>Gas flow switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.0-45.0</td>
<td>GS 10</td>
</tr>
<tr>
<td>12.0-60.0</td>
<td>GS 16</td>
</tr>
<tr>
<td>20.0-80.0</td>
<td>GS 16</td>
</tr>
<tr>
<td>20.0-100.0</td>
<td>GS 16</td>
</tr>
<tr>
<td>32.0-150.0</td>
<td>not required</td>
</tr>
</tbody>
</table>

The selection recommendation for the gas flow switch does not waive the requirement for correctly sizing the pipework, including the gas flow switch.

Minimum clearances
Maintain a clearance of 700 mm in front of the Vitodens or the DHW cylinder for maintenance purposes. No maintenance clearances are required to the left or right of the Vitodens.

Installing the Vitodens 200-W, 45 to 100 kW directly onto a wall (single boiler)
The enclosed screws and rawl plugs are only suitable for concrete. For other construction materials, use fixing materials that are suitable for 100 kg loads.
An installation template is supplied with the Vitodens 200-W to mark the position of the screws for the wall mounting bracket and the location of the flue pipe on the wall. Connection sets for the connection of the heating circuits and one DHW cylinder must be ordered separately.

**Design information (cont.)**

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

**Installation in front of a wall with a self-supporting mounting frame (single boiler)**
The Vitodens can be mounted on the self-supporting mounting frame. The mounting panel supplied with the boiler cannot then be used.

**Installing the Vitodens 200-W, 125 to 150 kW directly onto a wall (single boiler)**
The mounting frame (accessories) is recommended for installing the Vitodens (see page 34).
Connection sets for the connection of the heating circuits and one DHW cylinder must be ordered separately.

**Design information (cont.)**

- **A** Reference point Vitodens top edge
- **B** Area for power cables. Allow cables to protrude approx. 1200 mm from the wall.
- **C** Top edge finished floor
- **D** Recommended dimension: 1975 mm
- **E** Wall mounting bracket
Installation with mounting frame (single boiler)
The Vitodens can be installed freestanding in any room by using the mounting frame available as an accessory. The boiler can be levelled by means of adjustable feet.

Pre-installation, multi boiler system

Hydraulic cascade
Flow and return collectors, optionally with low loss header, for multi boiler systems of 2 to 8 boilers in series or 4 to 8 boilers arranged in a block formation. Heating circuit connections can be either on the right or left.

Mounting accessories for supporting the mounting frames against a wall or ceiling are part of the standard delivery. Order the low loss header or the heating circuit connecting kit as separate accessories.
Design information (cont.)

Hydraulic cascade with low loss header

![Hydraulic Cascade Diagram]

Shown without the thermal insulation supplied

- **A** Sensor well for flow temperature sensor
- **B** Air vent valve
- **C** Drain
- **D** Connectors for safety equipment Rp ½
- **E** Connection accessories with circulation pump
- **HV** Heating flow
- **HR** Heating return

### Boiler Connection Information

<table>
<thead>
<tr>
<th>Boiler Number</th>
<th>2x45 kW</th>
<th>2x80 kW</th>
<th>3x45 kW</th>
<th>3x80 kW</th>
<th>4x45 kW</th>
<th>4x80 kW</th>
<th>6x45 kW</th>
<th>6x80 kW</th>
<th>8x45 kW</th>
<th>8x80 kW</th>
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<tbody>
<tr>
<td>2x60 kW</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>2x100 kW</td>
<td></td>
<td></td>
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<td></td>
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</table>

<table>
<thead>
<tr>
<th>Content</th>
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### Heating circuit connection
- PN6/DN

### Boiler connection
- G

### Max. flow rate
- m³/h
  - 2x125 kW: 17.2
  - 3x125 kW: 25.8
  - 4x125 kW: 34.4
  - 6x125 kW: 51.6

### Dimensions

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### Boiler Number
- (2x2) 45 kW
- (2x2) 80 kW
- (2x3) 80 kW
- (2x4) 45 kW
- (2x4) 80 kW

### Heating circuit connection
- PN6/DN

### Boiler connection
- G

### Max. flow rate
- m³/h
  - (2x2) 45 kW: 13.8
  - (2x2) 80 kW: 24.1
  - (2x3) 80 kW: 36.2
  - (2x4) 60 kW: 27.6
  - (2x4) 100 kW: 48.2

### Dimensions

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### Installation in corners, with a low loss header

![Diagram](image_url)
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### Low loss header
- DN 65/80
- Part no. Z010 305
- DN 80/100
- Part no. Z010 306
- DN 100/100
- Part no. Z010 307
- DN 100/150
- Part no. ZK00 674

- Comprising:
  - Low loss header with integral sensor well
  - Thermal insulation
  - Connection lines for hydraulic cascades with Rp ½ connections for safety and control equipment
  - Air vent valve
  - Drain valve

### 90° pipe bend for installation in corners
For corner installation of multi boiler system and low loss header
- DN 65
- Part no. 7164 976
- DN 80
- Part no. 7164 977
- DN 100
- Part no. 7164 978

- Comprising:
  - 2 pipe bends
  - Thermal insulation
Hydraulic cascade without low loss header

A Heating circuit connecting kit
B Connectors for safety equipment Rp ⅛
C Connection accessories with circulation pump

Boiler Number 2x45 kW 2x80 kW 3x45 kW 3x80 kW 4x45 kW 6x45 kW 6x80 kW 8x45 kW 8x80 kW
2x60 kW 2x100 kW 3x60 kW 3x100 kW 4x60 kW 6x60 kW 6x100 kW 8x60 kW 8x100 kW

Heating circuit connection
- PN6/DN
- G

Max. flow rate m³/h
- 6.9 12.1 10.3 18.1 24.1 20.6 36.2 27.6 48.2

Dimensions
- a mm 343 343 343 343 343 343 343 343
- b mm 168 168 168 168 168 168 168 168
- c mm 1808 1808 2390 2390 2390 3050 4212 4212 5374 5374
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Shown without the thermal insulation supplied
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### Heating circuit connecting kit
- DN 65
  - Part no. 7453 093
- DN 80
  - Part no. 7453 094
- DN 100
  - Part no. 7453 095

Comprising:
- Connection lines for hydraulic cascades with Rp ½ connections for safety and control equipment
- Thermal insulation

Corner installation of multi boiler system and heating circuit connecting kit
## Design information (cont.)

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### Heating circuit connection

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### Dimensions

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<tr>
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<td>887</td>
<td>887</td>
<td>887</td>
<td>967</td>
<td>967</td>
<td>967</td>
</tr>
</tbody>
</table>

### 90° pipe bend for installation in corners

For corner installation of multi boiler system and heating circuit connecting kit:

- **DN 65**
  - Part no. 7164 976
- **DN 80**
  - Part no. 7164 977
- **DN 100**
  - Part no. 7164 978

Comprising:

- 2 pipe bends
- Thermal insulation
Installation in series with flue gas cascade

Shown without the thermal insulation supplied

A Flue gas cascade
B Vitodens
C Vitotronic 300-K (can be fitted either to the left or the right)

The total length of all BUS cables (on site) should not exceed 50 m.

Note
Secure the flue gas cascade with suitable means.
Suspension from the ceiling is recommended. Observe the max. distance between fixing points F.

For details regarding the flue gas cascade, see page 26 and the technical guide on flue systems. A flue gas non-return device is integrated into each boiler.
For further details regarding the hydraulic cascade, see page 34.

Number of boilers

<table>
<thead>
<tr>
<th>2x45 kW</th>
<th>2x80 kW</th>
<th>3x45 kW</th>
<th>3x80 kW</th>
<th>3x45 kW</th>
<th>3x80 kW</th>
<th>2x125 kW</th>
<th>2x150 kW</th>
<th>3x125 kW</th>
<th>3x150 kW</th>
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</thead>
<tbody>
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</tbody>
</table>

Number of boilers

<table>
<thead>
<tr>
<th>2x125 kW</th>
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<th>4x125 kW</th>
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</tr>
</thead>
<tbody>
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<td>880</td>
<td>880</td>
</tr>
<tr>
<td>mm</td>
<td>1950</td>
<td>1950</td>
<td>1950</td>
</tr>
</tbody>
</table>
Multi boiler system standard delivery
- Vitodens 200-W (2 to 8 boilers)
- Cascade control unit Vitotronic 300-K
- Cascade communication module for each boiler
- Immersion temperature sensor
- Self-supporting mounting frame
- Hydraulic cascade with thermal insulation
- Connection accessories with HE circulation pump and thermal insulation

Installation in block formation with flue gas cascade

Shown without the thermal insulation supplied

A Flue gas cascade
B Vitodens
C Vitotronic 300-K (can be fitted either to the left or the right)
The total length of all BUS cables (on site) should not exceed 50 m.

Note
Secure the flue gas cascade with suitable means.
Suspension from the ceiling is recommended. Observe the max. distance between fixing points F.

For details regarding the flue gas cascade, see page 26 and the technical guide on flue systems. A flue gas non-return device is integrated into each boiler.
For further details regarding the hydraulic cascade, see page 34.
Multi boiler system standard delivery

- Vitodens 200-W (4 to 8 boilers)
- Cascade control unit Vitotronic 300-K
- Cascade communication module for each boiler
- Immersion temperature sensor
- Hydraulic cascade with thermal insulation
- Self-supporting mounting frame
- Connection accessories with HE circulation pump and thermal insulation

Accessories (subject to order)

- Low loss header with connection lines and thermal insulation
- Heating circuit connecting kit with thermal insulation

### 4.2 Condensate connection

Route the condensate drain pipe with a constant fall. Route the condensate from the flue system (if equipped with a drain) together with the boiler condensate directly or (if installed) via a neutralising system (accessory) to the public sewage system.

**Note**

A pipe vent valve must be installed between the siphon and the neutralising system.
Condensate drain and neutralisation

Drain the condensate created during heating operation in the condensing boiler and in the flue pipe, in accordance with appropriate regulations. With gas combustion, the condensate will have a pH value between 4 and 5.

The Code of Practice DWA-A 251 on "Condensate from condensing boilers", which is generally based on the local waste water regulations [in Germany], determines conditions for draining condensate from condensing boilers into the public sewer system.

The composition of condensate drained from Vitodens condensing boilers meets the requirements specified in Code of Practice DWA-A 251.

The condensate drain pipe to the sewer connection must be freely accessible for inspection.

It must be installed with a continuous fall and must contain a stench trap. Also provide a suitable facility for extracting samples.

Condensate drain pipes must only be made from corrosion-resistant materials (e.g. reinforced hoses).

Never use any zinc-plated materials or those containing copper for pipes, connection pieces, etc.

A siphon is installed in the condensate drain to prevent flue gases escaping.

Local waste water regulations and/or specific technical circumstances may specify designs that vary from those described in the above Codes of Practice.

It is advisable to contact your local authority responsible for waste water management prior to installation, to find out about local regulations.

Condensate from gas combustion equipment up to 200 kW combustion output

Up to a rated heating output of 200 kW, the condensate from a gas condensing boiler can generally be introduced into the public sewage system without prior neutralisation.

Also ensure that your domestic drainage systems are made from materials that are resistant to acidic condensate.

According to Code of Practice DWA-A 251, these materials include:

- Clay pipes
- Hard PVC pipes
- PVC pipes
- PE HD pipes
- PP pipes
- ABS/ASA pipes
- Stainless steel pipes
- Borosilicate pipes

Neutralising system

The Vitodens can (if required) be supplied with a separate neutralising system (accessories). Any condensate is piped to and processed in the neutralising system.

The condensate drain pipe to the sewer connection must be accessible for inspection. Install it with a fall and a stench trap on the sewer side, and provide a suitable facility for extracting samples.

Install a condensate lifting pump if the Vitodens has been installed below the waste water anti-flooding level.

Condensate lifting pumps are available as accessories (see the Vitoset pricelist).

Since the consumption of neutralising granulate depends on the operating mode of the system, carry out regular checks during the first year of operation to determine the required top-up volume. It is feasible that one fill may last longer than one year.

Neutralising system for single boiler systems with 45 and 60 kW

Part no. 9535 742
Neutralising system for single boiler systems from 80 kW and multi boiler systems
Part no. 7441 823

Condensate lifting system
Part no. 7374 796
Automatic condensate lifting system for condensate with a pH value ≥ 2.7 from oil and gas condensing boilers.
Components:
■ Condensate container 0.5 l
■ Shaftless permanent magnet ball motor pump
■ Control unit for pump operation, display of operating conditions and fault messages
■ 2 m long power cable with plug
■ Two ø 24 mm connection apertures for condensate inlet
The standard delivery comprises:
■ 6 m long drain hose ø 14 x 2 mm
■ Non-return valve

Specification
- Rated voltage: 230 V~
- Rated frequency: 50 Hz
- Power consumption: 20 W
- IP rating: IP 44
- Protection class: F
- Permissible medium temperature: +60 °C
- Max. head: 45 kPa
- Max. capacity: 450 l/h
- Zero volt contact: N/C, breaking capacity 230 VA

Design information (cont.)
4.3 Hydraulic connection

General information

Viessmann condensing boilers can generally be installed in any fully pumped hot water heating system (sealed unvented system). Connection sets with an integral circulation pump are available as accessories.

Minimum system pressure 1.0 bar (0.1 MPa).
The boiler water temperature is limited to 82 °C.

To keep distribution losses as low as possible, we recommend sizing the heat distribution system for a maximum flow temperature of 70 °C.

Chemical anti-corrosion agents

In correctly installed and operated sealed unvented heating systems corrosion is generally avoided.

Never use chemical anti-corrosion additives.

Some manufacturers of plastic pipes recommend the use of chemical additives. In such cases, only use anti-corrosion additives offered by the heating trade that have been approved for boilers with DHW heating via single-walled heat exchangers (instantaneous water heater or DHW cylinder).

For this, observe the VDI guideline 2035 [or local regulations].

Heating circuits

For heating systems with plastic pipes, we recommend the use of impermeable pipes to prevent the diffusion of oxygen through the pipe walls.

Provide system separation in heating systems with plastic pipes that are permeable to oxygen (DIN 4726). A separate heat exchanger for this purpose is available.

Install a dirt separator in underfloor heating systems. See Viessmann Vitoset pricelist.

Install a temperature limiter in the flow of the underfloor heating circuit for this purpose.

Install a temperature limiter in the flow of the underfloor heating circuit to restrict the maximum temperature. Observe the requirements of DIN 18560-2 [or local regulations].

Plastic pipework for radiators

We also recommend the use of a temperature limiter to restrict the maximum temperature for plastic pipework in heating circuits with radiators.

Safety valve

A safety valve in accordance with TRD 721 is part of the heating circuit connection set (accessories) (opening pressure 4 bar) (0.4 MPa). Route the discharge pipe in accordance with EN 12828 into a drain outlet (drain outlet kit available as an accessory). The drain outlet incorporates a siphon as a stench trap.

Low water indicator

According to EN 12828, a low water indicator can be omitted for boilers up to 300 kW, as long as heating can be reliably prevented when there is a water shortage.

Viessmann condensing boilers are equipped with a low water indicator (boil-dry protection). Tests have verified that the burner will be automatically switched off in the event of water shortage due to a leak in the heating system and simultaneous burner operation, before the boiler or the flue system reaches unacceptably high temperatures.

Attic heating centre

The installation of a low water indicator specified as compulsory to EN 12828 is not required when installing the Vitodens in an attic heating centre.

The Vitodens condensing boilers are protected against water shortage in accordance with EN 12828.

VITODENS 200-W

General information

Chemical anti-corrosion agents

In correctly installed and operated sealed unvented heating systems corrosion is generally avoided.

Never use chemical anti-corrosion additives.

Some manufacturers of plastic pipes recommend the use of chemical additives. In such cases, only use anti-corrosion additives offered by the heating trade that have been approved for boilers with DHW heating via single-walled heat exchangers (instantaneous water heater or DHW cylinder).

For this, observe the VDI guideline 2035 [or local regulations].

Heating circuits

For heating systems with plastic pipes, we recommend the use of impermeable pipes to prevent the diffusion of oxygen through the pipe walls.

Provide system separation in heating systems with plastic pipes that are permeable to oxygen (DIN 4726). A separate heat exchanger for this purpose is available.

Install a dirt separator in underfloor heating systems. See Viessmann Vitoset pricelist.

Install a temperature limiter in the flow of the underfloor heating circuit for this purpose.

Install a temperature limiter in the flow of the underfloor heating circuit to restrict the maximum temperature. Observe the requirements of DIN 18560-2 [or local regulations].

Plastic pipework for radiators

We also recommend the use of a temperature limiter to restrict the maximum temperature for plastic pipework in heating circuits with radiators.

Safety valve

A safety valve in accordance with TRD 721 is part of the heating circuit connection set (accessories) (opening pressure 4 bar) (0.4 MPa). Route the discharge pipe in accordance with EN 12828 into a drain outlet (drain outlet kit available as an accessory). The drain outlet incorporates a siphon as a stench trap.

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The Vitodens condensing boilers are protected against water shortage in accordance with EN 12828.

VITODENS 200-W

General information

Chemical anti-corrosion agents

In correctly installed and operated sealed unvented heating systems corrosion is generally avoided.

Never use chemical anti-corrosion additives.

Some manufacturers of plastic pipes recommend the use of chemical additives. In such cases, only use anti-corrosion additives offered by the heating trade that have been approved for boilers with DHW heating via single-walled heat exchangers (instantaneous water heater or DHW cylinder).

For this, observe the VDI guideline 2035 [or local regulations].

Heating circuits

For heating systems with plastic pipes, we recommend the use of impermeable pipes to prevent the diffusion of oxygen through the pipe walls.

Provide system separation in heating systems with plastic pipes that are permeable to oxygen (DIN 4726). A separate heat exchanger for this purpose is available.

Install a dirt separator in underfloor heating systems. See Viessmann Vitoset pricelist.

Install a temperature limiter in the flow of the underfloor heating circuit for this purpose.

Install a temperature limiter in the flow of the underfloor heating circuit to restrict the maximum temperature. Observe the requirements of DIN 18560-2 [or local regulations].

Plastic pipework for radiators

We also recommend the use of a temperature limiter to restrict the maximum temperature for plastic pipework in heating circuits with radiators.

Safety valve

A safety valve in accordance with TRD 721 is part of the heating circuit connection set (accessories) (opening pressure 4 bar) (0.4 MPa). Route the discharge pipe in accordance with EN 12828 into a drain outlet (drain outlet kit available as an accessory). The drain outlet incorporates a siphon as a stench trap.

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Attic heating centre

The installation of a low water indicator specified as compulsory to EN 12828 is not required when installing the Vitodens in an attic heating centre.

The Vitodens condensing boilers are protected against water shortage in accordance with EN 12828.
**Expansion vessels**

In accordance with EN 12828, water heating systems must be equipped with a pressure expansion vessel. The size of the expansion vessel is subject to the heating system specification and should be checked in each case.

**Multi boiler systems**

We recommend the installation of a low loss header in multi boiler systems. For this, order the low loss header that is available as an accessory. See page 34 and the Viessmann pricelist. Losses resulting from the use of third party low loss headers are excluded from our liability. On-site safety equipment should comply with EN 12828.

As an alternative to the low loss header, a suitably sized plate heat exchanger may be used to provide system separation. In that case, the flow temperature sensor should be arranged on the secondary side of the plate heat exchanger. See the following system example.

**Information on the plate heat exchanger**

- Provide air vent valves (e.g. quick-action air vent valves) on the primary side (boiler side) and the secondary side (heating circuit side) of the plate heat exchanger.
- Flush existing heating systems thoroughly before fitting the plate heat exchanger. The use of a sludge separator is recommended.
- Fit the flow temperature sensor into the flow connector on the secondary side, as shown. Connection elbows with integral sensor well are available as accessories.
- Set the circulation pumps in the boiler connection sets to ΔP constant and max. pump rate.
- The connection of several plate heat exchangers is not recommended.

**Sizing the plate heat exchanger:**

- The pressure drop in the plate heat exchanger must be lower than the lowest pressure drop of connected heating circuits.
- Fit a dirt trap on the secondary side of the plate heat exchanger.
- When sizing, take the temperature differential of the plate heat exchanger into account (max. flow temperature in a multi boiler system with Vitodens 200-W: 82 °C)

**Low loss header**

**Application**

Design rules for system hydraulics:

- When balancing the low loss header, adjust the flow rate on the equipment side to approx. 10 to 30 % below the flow rate on the system side (reducing the return temperature).
- The low loss header should be sized for the max. flow rate which may occur in the overall system.

The low loss header separates the heat source (boiler circuit) from the downstream heating circuits.

Install a low loss header if the maximum flow rate in an individual system design is greater than the values shown in the table below.

<table>
<thead>
<tr>
<th>Boiler</th>
<th>Max. flow rate (l/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitodens 200-W, 45 and 60 kW</td>
<td>3500</td>
</tr>
<tr>
<td>Vitodens 200-W, 80 and 100 kW</td>
<td>5700</td>
</tr>
<tr>
<td>Vitodens 200-W, 125 kW</td>
<td>7165</td>
</tr>
<tr>
<td>Vitodens 200-W, 150 kW</td>
<td>8600</td>
</tr>
</tbody>
</table>

We recommend installing a low loss header if the minimum flow rates listed in the table below cannot be guaranteed.

<table>
<thead>
<tr>
<th>Boiler</th>
<th>Min. flow rate (l/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitodens 200-W, 45 and 60 kW</td>
<td>450</td>
</tr>
<tr>
<td>Vitodens 200-W, 80 and 100 kW</td>
<td>1300</td>
</tr>
<tr>
<td>Vitodens 200-W, 125 and 150 kW</td>
<td>3600</td>
</tr>
</tbody>
</table>
### Design information (cont.)

#### Principle of operation

![Diagram of the principle of operation]

- $T_1$: Flow temperature, boiler circuit
- $T_2$: Return temperature, boiler circuit
- $T_3$: Flow temperature, heating circuit
- $T_4$: Return temperature, heating circuit
- $V_{\text{primary}}$: Heating water volume, boiler circuit (approx. 10 - 30% less than $V_{\text{secondary}}$)
- $V_{\text{secondary}}$: Heating water volume, heating circuit
- $Q_{\text{primary}}$: Amount of heat supplied by the boiler
- $Q_{\text{secondary}}$: Amount of heat transferred by the heating circuit

**Note**

Suitable thermometers in the flow and return of the low loss header make adjustments easier.

- Low loss header in conjunction with Divicon heating circuit distributor
  - For description and specification, see page 20.
- Low loss header from the Vitoset range
  - See the “Vitoset” pricelist.

#### 4.4 Intended use

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

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

Commercial or industrial usage for a purpose other than heating the building or DHW does not comply with regulations.

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

Incorrect usage or operation of the appliance (e.g. the appliance being opened by the system user) is prohibited and results in an exclusion of liability. Incorrect usage also occurs if the components in the heating system are modified from their intended function (e.g. if the flue gas and ventilation air paths are sealed).
5.1 Vitotronic 100, type HC1B, for constant temperature operation

Layout and functions

Modular structure
The control unit is integrated into the boiler. The control unit comprises a standard unit, electronics modules and a programming unit.

Standard unit:
- ON/OFF switch
- Optolink laptop interface
- Operating and fault indicators
- Reset button
- Fuses

Programming unit:
- Easy operation through display with large font and depiction with good contrast
- Removable programming unit; can be mounted as option on the wall with separate accessory
- Menu prompts through pictograms
- Operating keys for:
  - Navigation
  - Confirmation
  - Settings/menu
- Settings:
  - Boiler water temperature
  - DHW temperature
  - Operating program
  - Codes
  - Actuator tests
  - Test mode
- Displaying:
  - Boiler water temperature
  - DHW temperature
  - Operating data
  - Diagnostic details
  - Fault messages

Functions
- Electronic boiler control unit for operation at a constant boiler water temperature
- Room temperature-dependent operation requires a Vitotrol 100, type UTA, UTDB or UTDB-RF (according to EnEV [Germany])
- Frost protection monitoring for the heating system
- Pump anti-seizing protection
- Integral diagnostic system
- Cylinder temperature controller with priority control
- Control of solar DHW heating and central heating backup in conjunction with the solar control module, type SM1
- Auxiliary function for DHW heating (short-term heating to a higher temperature)
- Maintenance display
- External starting and blocking (in conjunction with EA1 extension)
- Connection of the circulation pump for cylinder heating on the main PCB

Control characteristics
PI characteristics with modulating output.

Setting the heating programs
The heating system frost protection (see frost protection function) applies to all heating programs.

The following heating programs can be selected:
- Heating and DHW
- Only DHW
- Standby mode

Frost protection function
The frost protection function is active in all heating programs.
The burner is switched ON at a boiler water temperature of 5 ºC and will be switched OFF again at a boiler water temperature of 20 ºC.
The circulation pump will be switched ON simultaneously with the burner and switched OFF after a delay.
The DHW cylinder will be heated to approx. 20 ºC.
To protect the system against frost, the circulation pump may be started at certain intervals (up to 24 times per day) for periods of approx. 10 minutes.

Summer mode
Operating program "w"
The burner starts only when the DHW cylinder needs to be heated up.

Boiler water temperature sensor
The boiler water temperature sensor is connected to the control unit and built into the boiler.

Specification
Sensor type Viessmann NTC, 10 kΩ at 25 ºC
Permissible ambient temperature
- during operation 0 to +130 ºC
- during storage and transport −20 to +70 ºC

Cylinder temperature sensor
The standard delivery includes the DHW cylinder connection set.

Specification
Cable length 3.75 m, fully wired
IP rating IP 32
Sensor type Viessmann NTC 10 kΩ at 25 ºC
Permissible ambient temperature
- Operation 0 to +90 ºC
- Storage and transport −20 to +70 ºC
Control units (cont.)

- Operation
  0 to +40 °C
  Installation in living spaces or boiler rooms (standard ambient conditions)
- Storage and transport
  –20 to +65 °C
Electronic temperature limiter setting (heating mode)
  82 °C (change not possible)
Electronic high limit safety cut-out setting
  100 °C (change not possible)
DHW temperature setting range
  10 to 68 °C

5.2 Vitotronic 200, type HO1B, for weather-compensated operation

Layout and functions

Modular structure
The control unit is integrated into the boiler.
The control unit comprises a standard unit, electronics modules and a programming unit.

Standard unit:
- ON/OFF switch
- Optolink laptop interface
- Operating and fault indicators
- Reset button
- Fuses

Programming unit:
- Easy operation through:
  - Plain text display with graphic ability
  - Large font and black/white depiction for good contrast
  - Context-sensitive help
  - Removable programming unit; can be mounted as option on the wall with separate accessory
- With digital time switch
- Control keys for:
  - Navigation
  - Confirmation
  - Help and additional information
  - Menu
- Setting the:
  - Room temperature
  - Reduced room temperature
  - DHW temperature
  - Operating program
  - Time programs for central heating, DHW heating and DHW circulation
  - Economy mode
  - Party mode
  - Holiday program
  - Heating curves
  - Codes
  - Actuator tests
  - Test mode

Functions
- Displaying:
  - Boiler water temperature
  - DHW temperature
  - Operating data
  - Diagnostic details
  - Fault messages
- Available languages:
  - Deutsch
  - Bulgarian
  - Czech
  - Danish
  - English
  - Spanish
  - Estonian
  - French
  - Croatian
  - Italian
  - Latvian
  - Lithuanian
  - Hungarian
  - Dutch
  - Polish
  - Russian
  - Romanian
  - Slovenian
  - Finnish
  - Swedish
  - Turkish

The requirements of DIN EN 12831 for calculating the heat load are met. To reduce the heat-up output, the reduced room temperature will be raised in case of low outside temperatures. The flow temperature will be raised for a limited time to reduce the heat-up time after a set-back phase.
According to the Energy Saving Ordinance [Germany], the temperature in each room must be individually controlled, e.g. through thermostatic radiator valves.

**Control characteristics**

PI characteristics with modulating output.

**Time switch**

Digital time switch (integrated into the programming unit)
- Individual day and seven-day program
- Automatic summer/wintertime changeover
- Automatic function for DHW heating and DHW circulation pump
- Time, day and standard switching times for central heating, DHW heating and the DHW circulation pump are factory-set
- Switching times are individually programmable, i.e. up to four switching periods per day
- Shortest switching interval: 10 minutes
- Power reserve: 14 days

**Setting the operating programs**

The heating system frost protection (see frost protection function) applies to all heating programs.

The following heating programs can be selected:
- Heating and DHW
- Only DHW
- Standby mode

External heating program changeover in conjunction with EA1 extension.

**Frost protection function**

- The frost protection function will be started when the outside temperature drops below approx. +1 °C.
- With frost protection, the heating circuit pump is switched ON and the boiler water is maintained at a lower temperature of approx. 20 °C.
- The DHW cylinder will be heated to approx. 20 °C.
- The frost protection function will be stopped when the outside temperature rises above approx. +3 °C.

**Summer mode**

Operating program "w"
The burner starts only when the DHW cylinder needs to be heated up.

**Adjusting the heating curves (slope and level)**

The Vitotronic 200 controls the boiler water temperature (= flow temperature of the heating circuit without mixer) and the flow temperature of the heating circuits with mixer (in conjunction with the extension kit for one heating circuit with mixer) in weather-compensated mode. The boiler water temperature is automatically boosted by between 0 and 40 K higher than the currently required set flow temperature (delivered condition 8 K).

The flow temperature required to reach a specific room temperature depends on the heating system and the thermal insulation of the building to be heated.

Adjusting the heating curves matches the boiler water temperature and the flow temperature to these operating conditions.

**Heating systems with low loss header**

When using hydraulic separation (low loss header), connect a temperature sensor for use in the low loss header.

**Boiler water temperature sensor**

The boiler water temperature sensor is connected to the control unit and built into the boiler.

**Specification**

Sensor type: Viessmann NTC, 10 kΩ at 25 °C
Permissible ambient temperature:
- During operation: 0 to +130 °C
- During storage and transport: −20 to +70 °C

**Cylinder temperature sensor**

The standard delivery includes the DHW cylinder connection set.

**Specification**

Cable length: 3.75 m, fully wired
IP rating: IP 32
Sensor type: Viessmann NTC 10 kΩ at 25 °C
Permissible ambient temperature:
- Operation: 0 to +90 °C
- Storage and transport: −20 to +70 °C

**Outside temperature sensor**

Installation site:
- North or north-west facing wall of the building
- 2 to 2.5 m above the ground, for multi storey buildings in the upper half of the second floor

Connection:
- 2-core lead, length max. 35 m with a cross-section of 1.5 mm² copper.
- Never route this lead immediately next to 230/400 V cables
Control units (cont.)

Specification
IP rating
IP 43 to EN 60529; ensure through design/installation

Sensor type
Viessmann NTC 10 kΩ, at 25 °C

Permissible ambient temperature during operation, storage and transport
−40 to +70 °C

Specification Vitotronic 200, type HO1B

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage</td>
<td>230 V~</td>
</tr>
<tr>
<td>Rated frequency</td>
<td>50 Hz</td>
</tr>
<tr>
<td>Rated current</td>
<td>6 A</td>
</tr>
<tr>
<td>Safety category</td>
<td>I</td>
</tr>
<tr>
<td>Permissible ambient temperature</td>
<td>−40 to +70 °C</td>
</tr>
</tbody>
</table>

- Operation
  - 0 to +40 °C
  - Installation in living spaces or boiler rooms (standard ambient conditions)

- Storage and transport
  - −20 to +65 °C

Electronic temperature limiter setting (heating mode)
- 82 °C (no change possible)

Electronic high limit safety cut-out setting
- 100 °C (no change possible)

DHW temperature setting range
- 10 to 68 °C

Heating curve setting range
- Slope
  - 0.2 to 3.5
- Level
  - −13 to 40 K

5.3 Vitotronic 300-K, type MW2B for multi boiler systems

Cascade control unit for the Vitodens 200-W with a Vitotronic 100

Weather-compensated, digital cascade and heating circuit control unit
- For multi boiler systems with Vitodens 200-W
- With boiler sequence strategy
- For up to two heating circuits with mixers (extension for heating circuits 2 and 3 required as accessory).
  - Up to a further 32 Vitotronic 200-H heating circuit control units can be connected via the LON BUS (LON communication module required; accessory)
- For modulating operation in conjunction with the Vitotronic 100, type HC1B
  - With cylinder temperature controller or control unit of a primary store system with mixer assembly
  - Capable of communicating via LON BUS (LON communication module and terminators available as accessories)
  - With integral diagnostic system

Note
To improve the resilience against interference/faults, the components of a control unit should be connected to the same phase.

Design and function

Modular design
The control unit comprises a standard unit, electronics modules and a programming unit.

Standard unit:
- ON/OFF switch
- Emissions test switch
- Optolink laptop interface
- Operating and fault display

Plug connection chamber
- Connection of external equipment via system plug
- Connectors are plugged directly into the front of the open control unit
- Connection of three-phase consumers via additional contactors

Programming unit:
- Easy operation thanks to:
  - Plain text display with graphic ability
  - Large font and black/white depiction for good contrast
  - Context-sensitive help
- With digital time switch
- Operating keys for:
  - Navigation
  - Confirmation
  - Help and additional information
  - Extended menu

Adjustment of:
- Room temperature
- Reduced room temperature
- DHW temperature
- Heating program
- Time programs for central heating, DHW heating and DHW circulation
- Economy mode
- Party mode
- Holiday program
- Heating curves
- Codes
- Actuator tests
- Test mode
Control units (cont.)

- Display of:
  - Flow temperature
  - DHW temperature
  - Information
  - Operating data
  - Diagnostic details
  - Fault messages

- Available languages:
  - German
  - Bulgarian
  - Czech
  - Danish
  - English
  - Spanish
  - Estonian
  - French
  - Croatian
  - Italian
  - Latvian
  - Lithuanian
  - Hungarian
  - Dutch
  - Polish
  - Russian
  - Romanian
  - Slovenian
  - Finnish
  - Swedish
  - Turkish

Functions
- Weather-compensated control of the system/boiler water temperature in a multi boiler system with Vitodens 200-W with Vitotronic 100, type HC1B (modulating) and the flow temperature of the heating circuits with mixers
- Control of boilers (with a Vitotronic 100, type HC1B) in accordance with a freely selectable boiler sequence strategy
- Electronic maximum temperature limit
- Demand-dependent heating circuit pump shutdown
- Adjustment of a variable heating limit
- Pump anti-seizing protection
- Central fault message
- Integral diagnostic system
- Adaptive cylinder temperature control with priority control (heating circuit pump off, mixer closed)
- Auxiliary function for DHW heating (short-term heating to a higher temperature)
- Control of a primary store system with a regulated 3-way mixing valve
- Screed drying, for underfloor heating systems

The requirements of DIN EN 12831 for calculating the heat load are met. To reduce the heat-up output, the reduced room temperature will be raised in case of low outside temperatures. The flow temperature will be raised for a limited time to reduce the heat-up time after a setback phase.

According to the Energy Saving Ordinance [Germany], the temperature in each room must be individually controlled, e.g. through thermostatic radiator valves.

DHW heating in a multi boiler system

---

Control characteristics
- PI characteristics with three-point output
- Setting range for heating curves:
  - Slope: 0.2 to 3.5
  - Level: –13 to 40 K
  - Max. limit: 1 to 127 °C
  - Min. limit: 1 to 127 °C
  - Differential temperature for a heating circuit with mixer: 0 to 40 K
- Set DHW temperature setting range:
  Between 10 and 60 °C, adjustable to between 10 and 95 °C (available temperature limited by the max. boiler flow temperature).

Time switch
Digital time switch (integrated into the programming unit)
- Individual day and 7-day program, annual calendar
- Automatic summer/wintertime changeover
- Automatic function for DHW heating and DHW circulation pump
- Time, day and standard switching times for central heating, DHW heating and the DHW circulation pump are factory-set
- Switching times are individually programmable, i.e. up to four switching periods per day

Shortest switching interval: 10 min
Power reserve: 14 days

Setting the operating programs
Frost protection monitoring (see frost protection function) for the heating system is enabled in all operating programs. You can select the following operating programs with the program selectors:
- Heating and DHW
- DHW only
- Standby mode
Optional external changeover of operating program for all heating circuits together or for selected heating circuits only.
**Frost protection function**

- The frost protection function will be started when the outside temperature drops below approx. +1 °C.
- With frost protection, the heating circuit pump is switched ON and the boiler water is maintained at a lower temperature of approx. 20 °C. The DHW cylinder will be heated to approx. 20°C.

- The frost protection function will be stopped when the outside temperature rises above approx. +3 °C.

**Summer mode**

("DHW only")

One or more burners start when the DHW cylinder needs to be heated up (controlled by the cylinder temperature controller).

**Heating curve setting (slope and level)**

Subject to heating system:

- The Vitotronic controls the flow temperature of up to 2 heating circuits with mixers in weather-compensated mode.
- The Vitotronic automatically regulates the system/flow temperature to 0 to 40 K (delivered condition 8 K) higher than the currently highest set flow temperature.

The flow temperature required to reach a specific room temperature depends on the heating system and the thermal insulation of the building to be heated. Adjusting the heating curves matches the system flow temperature and the heating circuit flow temperature to these operating conditions.

---

**Connection:**

- 2-core lead, length max. 35 m with a cross-section of 1.5 mm² copper.
- Never route this lead immediately next to 230/400 V cables.

---

**Specification, Vitotronic 300-K**

- **Rated voltage:** 230 V ~
- **Rated current:** 6 A
- **Power consumption:** 10 W
- **Safety category:** I
- **IP rating:** IP 20 D to EN 60529, ensure through design/installation
- **Function:** Type 1B to EN 60730-1
- **Permissible ambient temperature:** 0 to +40 °C for use in the living space or boiler room (standard ambient conditions)
- **Rated relay output breaking capacity:** 4(2) A, 230 V~
- **Operation:** 0 to +40 °C
- **Storage and transport:** –20 to +65 °C

---

**Outside temperature sensor**

**Installation site:**

- North or north-west facing wall of the building
- 2 to 2.5 m above the ground, for multi storey buildings in the upper half of the second floor

---

**Specification**

- **IP rating:** IP 43 to EN 60529; ensure through design/installation
- **Sensor type:** Viessmann NTC 10 kΩ, at 25 °C
- **Permissible ambient temperature during operation, storage and transport:** −40 to +70 °C

---

**Immersion temperature sensor**

To capture the common flow temperature of the multi boiler system. Inserted into the sensor well of the low loss header or secured with a tie.

**Specification**

- **Cable length:** 5.8 m, fully wired
- **IP rating:** IP 32 to EN 60529
- **Sensor type:** Viessmann NTC 10 kΩ at 25 °C
- **Permissible ambient temperature during operation:** 0 to +90 °C
- **Permissible ambient temperature during storage and transport:** −20 to +70 °C

---

**Cylinder temperature sensor**

**Specification**

- **Cable length:** 5.8 m, fully wired
- **IP rating:** IP 32 to EN 60529
- **Sensor type:** Viessmann NTC 10 kΩ at 25 °C
- **Permissible ambient temperature during operation:** 0 to +90 °C
- **Permissible ambient temperature during storage and transport:** −20 to +70 °C

---

**Heating curve slope**

- **Outside temperature in °C**
  - 20
  - 15
  - 10
  - 5
  - 0
  - -5
  - -10
  - -15
  - -20
- **Heating curve slope**
  - 1.0
  - 0.8
  - 0.6
  - 0.4
  - 0.2

---

The upper flow temperature is limited by the temperature controller "Q" and the electronically set maximum temperature of the Vitotronic 100 boiler control units, type HC1B.

---

**Outside temperature sensor**

**Installation site:**

- North or north-west facing wall of the building
- 2 to 2.5 m above the ground, for multi storey buildings in the upper half of the second floor
Control units (cont.)

- DHW circulation pump \( \text{SK} \): 4(2) A, 230 V~
- Distribution pump \( \text{SL} \): 4(2) A, 230 V~
- Central fault message \( \text{SG} \): 4(2) A, 230 V~
- Motor, 3-way mixing valve, cylinder loading system or Mixer motor \( \text{gS} \): 0.2(0.1) A, 230 V~
- Overall max. 6 A 230 V~

Dimensions

![Diagram]

Delivered condition Vitotronic 300-K

- Programming unit with backlit display and plain text prompts
- Cascade communication module (corresponding to the number of Vitodens)
- Outside temperature sensor
- Flow temperature sensor
- Cylinder temperature sensor
- Mounting bracket

The control unit is fitted to the wall with a mounting panel.
To control the heating circuits with mixers, the extension for heating circuits 2 and 3 is required (accessories).

5.4 Accessories for the Vitotronic

Allocation to control unit types

<table>
<thead>
<tr>
<th>Vitotronic Type</th>
<th>100</th>
<th>200</th>
<th>300-K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessory</td>
<td>HC1B</td>
<td>HO1B</td>
<td>MW2B</td>
</tr>
<tr>
<td>Vitotrol 100, type UTA</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vitotrol 100, type UTDB</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>External extension H4</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vitotrol 100, type UTDB-RF</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vitotrol 200A</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vitotrol 300A</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vitotrol 200 RF</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vitotrol 300 RF</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wireless base station</td>
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<td></td>
</tr>
<tr>
<td>Wireless outside temperature sensor</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wireless repeater</td>
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<td></td>
<td></td>
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<tr>
<td>Room temperature sensor for Vitotrol 300A</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immersion temperature sensor</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mounting base for programming unit</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radio clock receiver</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>KM BUS distributor</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extension kit for one heating circuit with mixer with integral mixer motor</td>
<td>x</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

An extension kit (accessories) is required for each heating circuit with mixer.
The LON communication module and BUS terminators are available as accessories to enable communication.

Heating system with DHW cylinder
Order the circulation pump with check valve or the Vitotrans 222 cylinder loading system separately.
Control units (cont.)

<table>
<thead>
<tr>
<th>Accessories</th>
<th>100</th>
<th>200</th>
<th>300-K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extension kit for one heating circuit with mixer for separate mixer motor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixer motor</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extension for heating circuits 2 and 3 with mixer</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Extension kit for one heating circuit with mixer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immersion thermostat</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Contact thermostat</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Solar control module, type SM1</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Internal H1 extension</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal H2 extension</td>
<td>x</td>
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<tr>
<td>AM1 extension</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>EA1 extension</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Vitocom 100, type LAN1, in conjunction with Vitodata 100 and Vitotrol app</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Vitocom 100, type LAN1, in conjunction with Vitodata 100</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vitocom 100, type GSM2</td>
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<tr>
<td>LON cable</td>
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<td></td>
</tr>
<tr>
<td>LON coupling</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>LON plug-in connector</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LON socket</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Terminator</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LON communication module</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Vitotronic 100, type UTA

Part no. 7170 149

Room thermostat
- With switching output (two-point output)
- With analogue time switch
- With adjustable individual day program
- Standard switching times are factory-set (individually programmable)
- Shortest switching interval 15 minutes

Install the Vitotrol 100 in the main living room on an internal wall opposite radiators, but not inside shelf units, recesses, immediately by a door or a heat source (e.g. direct sunlight, fireplace, TV set, etc.).

Control unit connection:
3-core cable with a cross-section of 1.5 mm² (without green/yellow) for 230 V~.

Vitotrol 100, type UTDB

Part no. Z007 691

Room temperature controller
- With switching output (two-point output)
- With digital time switch
- With individual and 7-day programs

Operation with user prompts:
- 3 preselected time programs, individually adjustable
- Constant manual mode with adjustable set room temperature
- Frost protection mode
- Holiday program
- With selector keys for party and economy mode

Specification
- Rated voltage: 230 V/50 Hz
- Rated breaking capacity of the contact: 6(1) A 250 V~
- IP rating: IP 20 to EN 60529
- Permissible ambient temperature:
  - during operation: 0 to +40 °C
  - during storage and transport: -20 to +60 °C
- Set value setting range for standard mode and reduced mode: 10 to 30 °C
- Set room temperature in standby mode: 6 °C
Installation in the main living room on an internal wall opposite radiators. Never install inside shelving units, in recesses, or immediately by a door or heat source (e.g. direct sunlight, fireplace, TV set, etc.). Operation independent of mains power supply (two 1.5 V round alkaline batteries, type LR6/AA, which run for approx.1.5 years). Control unit connection:

- 2-core lead with a cross-section of 0.75 mm² for 230 V~.

### Specification

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage</td>
<td>3 V~</td>
</tr>
<tr>
<td>Battery LR6/AA</td>
<td></td>
</tr>
<tr>
<td>Rated breaking capacity of the floating contact</td>
<td></td>
</tr>
<tr>
<td>– max. 6(1) A, 230 V~</td>
<td></td>
</tr>
<tr>
<td>– min. 1 mA, 5 V~</td>
<td></td>
</tr>
<tr>
<td>IP rating</td>
<td>IP 20 to EN 60529</td>
</tr>
<tr>
<td>Function</td>
<td>RS Type 1B to EN 60730-1</td>
</tr>
<tr>
<td>Permissible ambient temperature</td>
<td>0 to +40 °C</td>
</tr>
<tr>
<td>– during operation</td>
<td></td>
</tr>
<tr>
<td>– during storage and transport</td>
<td>–25 to +65 °C</td>
</tr>
<tr>
<td>Setting range</td>
<td></td>
</tr>
<tr>
<td>– Comfort temperature</td>
<td>10 to 40 °C</td>
</tr>
<tr>
<td>– Setback temperature</td>
<td>10 to 40 °C</td>
</tr>
<tr>
<td>– Frost protection temperature</td>
<td>5 °C</td>
</tr>
<tr>
<td>Power reserve during battery change</td>
<td>3 min</td>
</tr>
</tbody>
</table>

### External extension H4

**Part no. 7197 227**

- Connection extension for connecting the Vitotrol 100, type UTDB or 24 V clock thermostats via a LV lead
- With cable (0.5 m long) and plug for the connection to the control unit

### Specification

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage</td>
<td>230 V~</td>
</tr>
<tr>
<td>Output voltage</td>
<td>24 V~</td>
</tr>
<tr>
<td>Rated frequency</td>
<td>50 Hz</td>
</tr>
<tr>
<td>Power consumption</td>
<td>2.5 W</td>
</tr>
<tr>
<td>Load 24 V~ (max.)</td>
<td>10 W</td>
</tr>
<tr>
<td>Safety category</td>
<td>I</td>
</tr>
<tr>
<td>IP rating</td>
<td>IP 41</td>
</tr>
<tr>
<td>Permissible ambient temperature</td>
<td>0 to +40 °C</td>
</tr>
<tr>
<td>– Operation</td>
<td></td>
</tr>
<tr>
<td>– Storage and transport</td>
<td>–20 to +65 °C</td>
</tr>
</tbody>
</table>

### Vitotrol 100, type UTDB-RF

**Part no. Z007 692**

Room temperature controller with integral wireless transmitter and one receiver

- With digital time switch
- With individual and 7-day programs
- Operation with user prompts:
  - 3 preselected time programs, individually adjustable
  - Constant manual mode with adjustable set room temperature
  - Frost protection mode
  - Holiday program
- With selector keys for party and economy mode

Installation in the main living room on an internal wall opposite radiators. Never install inside shelving units, in recesses, or immediately by a door or heat source (e.g. direct sunlight, fireplace, TV set, etc.). Room temperature controller operation independent of mains power supply (two 1.5 V round alkaline batteries, type LR6/AA, which run for approx.1.5 years). Receiver with relay state indication.

Connection of the receiver to the control unit (subject to control unit type):

- 4-core cable with a cross-section of 1.5 mm² for 230 V~
- 3-core cable without green/yellow core for 230 V~
- 2-core lead with a cross-section of 0.75 mm² for LV for the connection to the control unit, plus an additional 2-core cable for the 230 V~ power supply
### Specification, room temperature controller

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage</td>
<td>3 V–</td>
</tr>
<tr>
<td>Transmission frequency</td>
<td>868 MHz</td>
</tr>
<tr>
<td>Transmission</td>
<td>&lt; 10 mW</td>
</tr>
<tr>
<td>Range</td>
<td>Approx. 25 to 30 m inside buildings, subject to construction</td>
</tr>
<tr>
<td>IP rating</td>
<td>IP 20 to EN 60529</td>
</tr>
</tbody>
</table>

**Function**
- RS Type 1B to EN 60730-1
- Permissible ambient temperature
  - during operation: 0 to +40 °C
  - during storage and transport: −25 to +65 °C
- Setting range
  - Comfort temperature: 10 to 40 °C
  - Setback temperature: 10 to 40 °C
  - Frost protection temperature: 5 °C
- Power reserve during battery change: 3 min

**Specification, receiver**
- Operating voltage: 230 V~ ± 10 % 50 Hz
- Rated breaking capacity of the floating contact
  - max.: 6(1) A, 230 V~
  - min.: 1 mA, 5 V~
- IP rating: IP 20 to EN 60529 ensure through appropriate design/installation

**Safety category**
- II to EN 60730-1 subject to correct installation

**Permissible ambient temperature**
- during operation: 0 to +40 °C
- during storage and transport: −25 to +65 °C

---

**Notes regarding room temperature hook-up (RS function) for remote control units**

Never activate the RS function for underfloor heating circuits (inertia).

In heating systems with a heating circuit without mixer and heating circuits with mixer, the RS function must only affect the heating circuit with mixer.

---

**Information on the Vitotrol 200A and Vitotrol 300A**

One Vitotrol 200A or one Vitotrol 300A can be used for every heating circuit in a heating system.

The Vitotrol 200A can regulate one heating circuit; the Vitotrol 300A up to three heating circuits.

Up to two remote controls may be connected to the control unit.

**Note**

Hardwired remote control units cannot be combined with the wireless base station.

---

**Vitotrol 200A**

**Part no. Z008 341**

KM BUS subscriber

- **Indicators:**
  - Room temperature
  - Outside temperature
  - Operating condition

- **Settings:**
  - Set room temperature for standard mode (normal room temperature)

**Note**

The set room temperature for reduced mode (reduced room temperature) is set at the control unit.

- Operating program
  - Party and economy mode can be enabled via keys
  - Integral room temperature sensor for room temperature hook-up (only for one heating circuit with mixer)

**Installation site:**

- Weather-compensated mode:
  - Installation anywhere in the building
- Room temperature hook-up:
  - The integral room temperature sensor captures the actual room temperature and effects any necessary correction of the flow temperature.

  The captured room temperature depends on the installation site:
  - Main living room on an internal wall opposite radiators
  - Not on shelves or in recesses
  - Never in the immediate vicinity of doors or close to heat sources (e.g. direct sunlight, fireplace, TV set, etc.)

**Connection:**

- 2-core lead, length max. 50 m (even if connecting several remote control units)
- Never route this lead immediately next to 230/400 V cables
- LV plug as standard delivery
Control units (cont.)

**Vitotrol 300A**

Part no. Z008 342  
KM BUS subscriber

- **Indicators:**  
  - Room temperature  
  - Outside temperature  
  - Operating program  
  - Operating condition  
  - Graphic illustration of the solar energy yield in conjunction with the solar control module, type SM1

- **Settings:**  
  - Set room temperature for standard mode (normal room temperature) and reduced mode (reduced room temperature)  
  - Set DHW temperature  
  - Operating program, switching times for heating circuits, DHW heating and DHW circulation pump plus further settings via plain text menu on the display

- **Party and economy mode can be enabled via the menu**

- **Integral room temperature sensor for room temperature hook-up** (only for one heating circuit with mixer)

**Installation site:**

- Weather-compensated mode:
  - Installation anywhere in the building

- Room temperature hook-up:
  - The integral room temperature sensor captures the actual room temperature and effects any necessary correction of the flow temperature.

  The captured room temperature depends on the installation site:  
  - Main living room on an internal wall opposite radiators  
  - Not on shelves or in recesses  
  - Never in the immediate vicinity of doors or close to heat sources (e.g. direct sunlight, fireplace, TV set, etc.)

**Connection:**

- 2-core lead, length max. 50 m (even if connecting several remote control units)  
- Never route this lead immediately next to 230/400 V cables  
- LV plug as standard delivery

**Information on the Vitotrol 200 RF and Vitotrol 300 RF**

Wireless remote control units with integral wireless transmitter for operation with the wireless base station.

One Vitotrol 200 RF or one Vitotrol 300 RF can be used for every heating circuit in a heating system.

The Vitotrol 200 RF can regulate one heating circuit; the Vitotrol 300 RF up to 3 heating circuits.

Up to 3 wireless remote control units can be connected to the control unit.

**Note**  
The wireless remote controls cannot be combined with hardwired remote control units.
Control units (cont.)

Vitotrol 200 RF

Part no. Z011 219
Wireless subscriber
- Indicators:
  - Room temperature
  - Outside temperature
  - Operating condition
  - Wireless signal reception quality
- Settings:
  - Set room temperature for standard mode (normal room temperature)

Note
The set room temperature for reduced mode (reduced room temperature) is set at the control unit.

- Operating program
  - Party and economy mode can be enabled via keys
  - Integral room temperature sensor for room temperature hook-up (only for one heating circuit with mixer)

Installation site:
- Weather-compensated mode:
  Installation anywhere in the building
- Room temperature hook-up:
  The integral room temperature sensor captures the actual room temperature and effects any necessary correction of the flow temperature.

The captured room temperature depends on the installation site:
- Main living room on an internal wall opposite radiators
- Not on shelves or in recesses
- Never in the immediate vicinity of doors or close to heat sources (e.g. direct sunlight, fireplace, TV set, etc.)

Note
Observe the "Wireless accessories" technical guide.

Vitotrol 300 RF with table-top dock

Part no. Z011 410
Wireless subscriber
- Indicators:
  - Room temperature
  - Outside temperature
  - Operating condition
  - Graphic illustration of solar yield in conjunction with the solar control module, type SM1
  - Wireless signal reception quality
- Settings:
  - Set room temperature for standard mode (normal room temperature) and reduced mode (reduced room temperature)
  - Set DHW temperature
  - Operating program, switching times for heating circuits, DHW heating and DHW circulation pump plus further settings via plain text menu on the display
  - Party and economy mode can be enabled via keys
- Integral room temperature sensor

Note
Observe the "Wireless accessories" technical guide.

Standard delivery:
- Vitotrol 300 RF
- Table-top dock
- Plug-in power supply unit
- 2 rechargeable NiMH batteries for operating outside the table-top dock
Control units (cont.)

Table-top dock

Vitotrol 300 RF with wall mounting bracket

Part no. Z011 412
Wireless subscriber

- Indicators:
  - Room temperature
  - Outside temperature
  - Operating condition
  - Graphic illustration of solar yield in conjunction with the solar control module, type SM1
  - Wireless signal reception quality

- Settings:
  - Set room temperature for standard mode (normal room temperature) and reduced mode (reduced room temperature)
  - Set DHW temperature
  - Operating program, switching times for heating circuits, DHW heating and DHW circulation pump plus further settings via plain text menu on the display
  - Party and economy mode can be enabled via the menu

- Integral room temperature sensor for room temperature hook-up (only for one heating circuit with mixer)

Installation site:
- Weather-compensated mode:
  Installation anywhere in the building
- Room temperature hook-up:
  The integral room temperature sensor captures the actual room temperature and affects any necessary correction of the flow temperature.

  The captured room temperature depends on the installation site:
  - Main living room on an internal wall opposite radiators
  - Not on shelves or in recesses
  - Never in the immediate vicinity of doors or close to heat sources (e.g. direct sunlight, fireplace, TV set, etc.)

Note
Observe the "Wireless accessories" technical guide.

Standard delivery:
- Vitotrol 300 RF
- Wall mounting bracket
- Power supply unit for fitting into a plaster box
- 2 rechargeable NiMH batteries for operating outside the wall mounting bracket

Specifications:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply via power supply unit</td>
<td>230 V~/5 V~</td>
</tr>
<tr>
<td>Power consumption</td>
<td>2.4 W</td>
</tr>
<tr>
<td>Radio frequency</td>
<td>868 MHz</td>
</tr>
<tr>
<td>Wireless range</td>
<td>See &quot;Wireless accessories&quot; technical guide</td>
</tr>
<tr>
<td>Safety category</td>
<td>II</td>
</tr>
<tr>
<td>IP rating</td>
<td>IP 30 to EN 60529; ensure through design/installation</td>
</tr>
<tr>
<td>Permissible ambient temperature</td>
<td></td>
</tr>
<tr>
<td>- Operation</td>
<td>0 to +40 °C</td>
</tr>
<tr>
<td>- Storage and transport</td>
<td>-25 to +60 °C</td>
</tr>
<tr>
<td>Setting range for set room temperature</td>
<td>3 to 37 °C</td>
</tr>
</tbody>
</table>

Vitotrol 300 RF

Wall mounting bracket

Specifications:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply via power supply unit for installation in a plaster box</td>
<td>230 V~/4 V</td>
</tr>
<tr>
<td>Power consumption</td>
<td>2.4 W</td>
</tr>
<tr>
<td>Radio frequency</td>
<td>868 MHz</td>
</tr>
<tr>
<td>Wireless range</td>
<td>See &quot;Wireless accessories&quot; technical guide</td>
</tr>
<tr>
<td>Safety category</td>
<td>II</td>
</tr>
<tr>
<td>IP rating</td>
<td>IP 30 to EN 60529; ensure through design/installation</td>
</tr>
<tr>
<td>Permissible ambient temperature</td>
<td></td>
</tr>
<tr>
<td>- Operation</td>
<td>0 to +40 °C</td>
</tr>
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<td>- Storage and transport</td>
<td>-25 to +60 °C</td>
</tr>
<tr>
<td>Setting range for set room temperature</td>
<td>3 to 37 °C</td>
</tr>
</tbody>
</table>
Control units (cont.)

Vitocomfort 200

Part no. 7172 642
Wireless domestic control centre with mains power operation for regulating single rooms.
- Optimum room ambience by means of regulating the temperature and relative humidity in combination with a commercially available humidifier or dehumidifier
- Saving heating and power costs
- Enhanced security due to display of windows/doors (open/closed) and motion detectors
- Intuitive operation and monitoring at home or away by means of the Vitocomfort app
- Straight forward commissioning and easy retrofitting thanks to wireless components
- Full control over central heating and domestic hot water heating

Note
The data exchange between the domestic control centre and the Vitotronic control unit requires a wireless base station (accessory) or the integral wireless interface.

Wireless base station

Part no. Z011 413
KM BUS subscriber.

For communication between the Vitotronic control unit and the following wireless components:
- Vitotrol 200 RF wireless remote control
- Vitotrol 300 RF wireless remote control
- Wireless outside temperature sensor
- Vitocomfort 200 home automation

For up to 3 wireless remote control units or 3 Vitocomfort 200. Not in conjunction with a hardwired remote control unit.

Connection:
- 2-core lead, length up to 50 m (even when connecting several KM BUS subscribers).
- Never route this cable immediately next to 230/400 V cables.

Wireless outside temperature sensor

Part no. 7455 213
Wireless subscriber
Wireless, light-activated outside temperature sensor with integral wireless transmitter for operation with the wireless base station and the Vitotronic control unit.

Installation site:
- North or north-west facing wall of the building
- 2 to 2.5 m above the ground, for multi storey buildings in the upper half of the second floor
Control units (cont.)

**Wireless repeater**

Part no. 7456 538
Mains operated wireless repeater to increase the wireless range and for use in areas where wireless communication is difficult. Observe the "Wireless accessories" technical guide.
Do not use more than one wireless repeater per Vitotronic control unit.
- To prevent the need for radio signals to penetrate steel reinforced concrete ceilings/floors and/or multiple walls at a strongly diagonal angle.
- For circumventing large metallic objects situated between the wireless components.

**Room temperature sensor**

Part no. 7438 537
Separate room temperature sensor as supplement to the Vitotrol 300A; to be used if the Vitotrol 300A cannot be installed inside the main living room or in a suitable position where the unit could capture and adjust the temperature.
Installation in the main living room on an internal wall, opposite radiators. Never install inside shelving units, in recesses, or immediately by a door or heat source (e.g. direct sunlight, fireplace, TV set, etc.).
Connect the room temperature sensor to the Vitotrol 300A.
Connection:
- 2-core lead with a cross-section of 1.5 mm² (copper)
- Lead length from the remote control up to 30 m
- Never route this lead immediately next to 230/400 V cables

**Specification**

- Power supply via PV cells and energy store
- Radio frequency: 868 MHz
- Wireless range: See "Wireless accessories" technical guide
- IP rating: IP 43 to EN 60529; ensure through design/installation
- Permissible ambient temperature during operation, storage and transport: −40 to +60 °C

- Power supply: 230 V~/5 V− via plug-in power supply unit
- Power consumption: 0.25 W
- Radio frequency: 868 MHz
- Cable length: 1.1 m with plug
- Safety category: II
- IP rating: IP 20 to EN 60529; ensure through design/installation
- Permissible ambient temperature
  - Operation: 0 to +55 °C
  - Storage and transport: −20 to +75 °C

- Safety category: III
- IP rating: IP 30 to EN 60529; ensure through design/installation
- Sensor type: Viessmann NTC 10 kΩ at 25 °C
- Permissible ambient temperature
  - Operation: 0 to +40 °C
  - Storage and transport: −20 to +65 °C
Immersion temperature sensor

Part no. 7438 702
To capture the temperature in a sensor well.

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable length</td>
<td>5.8 m, fully wired</td>
</tr>
<tr>
<td>IP rating</td>
<td>IP 32 to EN 60529; ensure through design/installation</td>
</tr>
<tr>
<td>Sensor type</td>
<td>Viessmann NTC 10 kΩ, at 25 °C</td>
</tr>
<tr>
<td>Permissible ambient temperature</td>
<td>– Operation: 0 to +90 °C</td>
</tr>
<tr>
<td></td>
<td>– Storage and transport: –20 to +70 °C</td>
</tr>
</tbody>
</table>

Mounting base for programming unit

Part no. 7299 408
To be able to freely position the programming unit of the control unit anywhere outside the appliance.

To be fitted directly to the wall or a surface box.
Distance from the boiler: Observe the lead length incl. plugs of 5 m.

Comprising:
■ Wall mounting base with fixing materials
■ 5 m long cable with plugs
■ Cover for the control unit aperture on the boiler

Radio clock receiver

Part no. 7450 563
For receiving the DCF 77 time signal (location: Mainflingen near Frankfurt/Main).
Radio controlled setting of time and date.
Install on an outside wall, facing the transmitter. The reception may be reduced by metallic elements in the building structure, e.g. steel reinforced concrete, neighbouring buildings and sources of electro-magnetic interference, e.g. HV and public transport lines.

Connection:
■ 2-core lead, length up to 35 m with a cross-section of 1.5 mm² (copper)
■ Never route this lead immediately next to 230/400 V cables

KM BUS distributor

Part no. 7415 028
For the connection of 2 to 9 devices to the Vitotronic KM BUS.

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead length</td>
<td>3.0 m, fully wired</td>
</tr>
<tr>
<td>Protection</td>
<td>IP 32 to EN 60529; safeguard through appropriate design and installation</td>
</tr>
<tr>
<td>Permissible ambient temperature</td>
<td>– during operation: 0 to +40 °C</td>
</tr>
<tr>
<td></td>
<td>– during storage and transport: -20 to +65 °C</td>
</tr>
</tbody>
</table>
Mixer extension kit with integral mixer motor

Part no. 7301 063
KM BUS subscriber

Components:
- Mixer PCB with mixer motor for Viessmann mixer DN 20 to 50 and R ¾ to 1¼
- Flow temperature sensor (contact temperature sensor)
- Plug for connecting the heating circuit pump
- Power cable (3.0 m long) with plug
- BUS cable (3.0 m long) with plug

The mixer motor is mounted directly onto the Viessmann mixer DN 20 to 50 and R ¾ to 1¼.

Mixer PCB with mixer motor

![Mixer PCB diagram]

**Specification**
- Rated voltage: 230 V~
- Rated frequency: 50 Hz
- Rated current: 2 A
- Power consumption: 5.5 W

Flow temperature sensor (contact temperature sensor)

Secured with a tie.

**Specification**
- Lead length: 2.0 m, fully wired
- IP rating: IP 32D to EN 60529
- Sensor type: Viessmann NTC, 10 kΩ at 25 °C
- Permissible ambient temperature:
  - during operation: 0 to +120 °C
  - during storage and transport: −20 to +70 °C

Mixer extension kit for separate mixer motor

Part no. 7301 062
KM BUS subscriber

For the connection of a separate mixer motor.

Components:
- Mixer PCB for the connection of a separate mixer motor
- Flow temperature sensor (contact temperature sensor)
- Plug for connecting the heating circuit pump and the mixer motor
- Power cable (3.0 m long) with plug
- BUS cable (3.0 m long) with plug

Mixer PCB

![Mixer PCB diagram]

**Specification**
- Rated voltage: 230 V~
- Rated frequency: 50 Hz
- Rated current: 2 A
- Power consumption: 1.5 W
- IP rating: IP 20D to EN 60529
- Safety category: I
- Permissible ambient temperature:
  - During operation: 0 to +40 °C
  - During storage and transport: −20 to +65 °C
- Required runtime of the mixer motor for 90 °<
  - approx. 120 s
Flow temperature sensor (contact temperature sensor)

- Secured with a tie.

**Specification**
- **Cable length**: 5.8 m, fully wired
- **IP rating**: IP 32D to EN 60529
- **Sensor type**: Viessmann NTC 10 kΩ at 25 °C
- **Permissible ambient temperature**
  - During operation: 0 to +120 °C
  - During storage and transport: −20 to +70 °C

Vitotronic 300-K extension for heating circuits 2 and 3 with mixers

**Part no. 7164 403**
PCB for installation in the Vitotronic 300-K, type MW2B.
For controlling two heating circuits with mixer.

- With connections for mixer motors, flow temperature sensors (NTC 10 kΩ) and heating circuit pumps.
- Plug for mixer motor and heating circuit pump for each heating circuit.

**Extension kit for one heating circuit with mixer in conjunction with Divicon heating circuit distributor**

**Part no. 7424 958**
Components:
- Mixer PCB with mixer motor
- Flow temperature sensor (immersion sensor for installation in the Divicon)
- Connection plug for heating circuit pump, power supply, flow temperature sensor and KM BUS connection

**Mixer PCB**

**Specification**
- **Rated voltage**: 230 V~
- **Rated frequency**: 50 Hz
- **Rated current**: 2 A
- **Power consumption**: 5.5 W
- **IP rating**: IP 32D to EN 60529, ensure through appropriate design/installation

**Flow temperature sensor (immersion sensor)**

- **Lead length**: 0.9 m, fully wired
- **IP rating**: IP 32 to EN 60529; ensure through appropriate design and installation
- **Sensor type**: Viessmann NTC, 10 kΩ at 25 °C
- **Permissible ambient temperature**
  - During operation: 0 to +40 °C
  - During storage and transport: −20 to +65 °C
- **Rated relay output breaking capacity**
  - **Heating circuit pump**: 2(1) A 230 V~
  - **Runtime for 90 °<**: approx. 120 s

**Extension kit for one heating circuit with mixer for the Vitotronic 300-K**

**Part no. 7441 998**
Components:
- Mixer motor
- Flow temperature sensor (contact temperature sensor), lead length 5.8 m, fully wired
- Plug for connecting the heating circuit pump
- Terminals for connecting the mixer motor
- Connecting cable (4.0 m long)

- The mixer motor is mounted directly onto the mixer DN 20 to 50 or R ½ to 1¼.
Control units (cont.)

Mixer motor

![Mixer motor diagram]

**Specification, extension kit**
- **Rated voltage**: 230 V~
- **Rated frequency**: 50 Hz
- **Power consumption**: 2.5 W
- **Safety category**: I
- **IP rating**: IP 32D to EN 60529; ensure through design/installation
- **Permissible ambient temperature**
  - Operation: 0 to +40 °C
  - Storage and transport: −20 to +65 °C

**Flow temperature sensor (contact sensor)**

![Flow temperature sensor diagram]

- Secured with a tie.

**Specification**
- **IP rating**: IP 32D to EN 60529
- **Sensor type**: Viessmann NTC 10 kΩ at 25 °C
- **Permissible ambient temperature**
  - Operation: 0 to +120 °C
  - Storage and transport: −20 to +70 °C

**Mixer motors**
See datasheet "Control unit accessories".

Immersion temperature controller

**Part no. 7151 728**
May be used as a maximum temperature limiter for underfloor heating systems.
The temperature limiter is installed into the heating flow and switches the heating circuit pump OFF if the flow temperature is too high.

![Immersion temperature controller diagram]

**Specification**
- **Cable length**: 4.2 m, fully wired
- **Setting range**: 30 to 80 °C
- **Switching differential**: max. 11 K
- **Breaking capacity**: 6(1.5) A 250 V~
- **Setting scale**: inside the casing
- **Stainless steel sensor well**: R ½ x 200 mm
- **DIN reg. no.**: DIN TR 1168

Contact temperature controller

**Part no. 7151 729**
May be used as a maximum temperature limiter for underfloor heating systems (only in conjunction with metal pipes).
The temperature limiter is installed into the heating flow and switches the heating circuit pump OFF if the flow temperature is too high.
Solar control module, type SM1

Part no. 7429 073

Specification

Functions
- With output statement and diagnostic system
- Operation and display via the Vitotronic control unit
- Heating of 2 consumers via a collector array
- 2nd temperature differential control
- Thermostat function for reheating or utilising excess heat
- Solar circuit pump speed control via pulse pack control or solar circuit pump with PWM input (make: Grundfos)
- DHW cylinder reheating by the heat source is suppressed subject to solar yield.
- Suppression of reheating for central heating by the heat source in the case of central heating backup
- Heat-up of the solar preheating stage (with DHW cylinders from 400 l capacity)

To implement the following functions, also order immersion temperature sensor, part no. 7438 702:
- For DHW circulation diversion in systems with 2 DHW cylinders
- For return changeover between the heat source and the heating water buffer cylinder
- For heating additional consumers

Design

The solar control module contains:
- PCB
- Terminals:
  - 4 sensors
  - Solar circuit pump
  - KM BUS
  - Power supply (on-site ON/OFF switch)
  - PWM output for switching the solar circuit pump
  - 1 relay for switching one pump or one valve

Collector temperature sensor
For connection inside the appliance

On-site extension of the connecting lead:
- 2-core lead, length up to 60 m with a cross-section of 1.5 mm² (copper)
- Never route this lead immediately next to 230/400 V cables

Cable length 3.75 m
IP rating IP 32 to EN 60529; ensure through design/installation
Sensor type Viessmann NTC 10 kΩ at 25 °C
Permissible ambient temperature
- Operation 0 to +90 °C
- Storage and transport −20 to +70 °C

For systems with Viessmann DHW cylinders, the cylinder temperature sensor is installed in the threaded elbow (standard delivery or accessory for the respective DHW cylinder) in the heating water return.

Specification

Rated voltage 230 V~
Rated frequency 50 Hz
Rated current 2 A
Power consumption 1.5 W
Safety category I
IP rating IP 20 to EN 60529; ensure through design/installation
Mode of operation Type 1B to EN 60730-1
Control units (cont.)

- Operation
  0 to +40 °C use in the living space or boiler room (standard ambient conditions)
- Storage and transport
  -20 to +65 °C

Rated relay output breaking capacity

<table>
<thead>
<tr>
<th>Function</th>
<th>Rated breaking capacity of the relay output</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Connection of an external safety solenoid valve (LPG)</td>
<td>1(0.5) A, 250 V~</td>
</tr>
<tr>
<td>And one of the following functions:</td>
<td></td>
</tr>
<tr>
<td>- Connection of a heating circuit pump (multi stage) for a directly connected heating circuit</td>
<td>2(1) A, 250 V~</td>
</tr>
<tr>
<td>- Connection of a central fault message</td>
<td></td>
</tr>
<tr>
<td>- Only with the Vitotronic 200, type HO1B:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Connection of a DHW circulation pump</td>
</tr>
</tbody>
</table>

Specification

Rated voltage 230 V~
Rated frequency 50 Hz

Internal extension H1

Part no. 7498 513
PCB for installation in the control unit.

Using the extension enables the following functions to be achieved:

Function | Rated breaking capacity of the relay output |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Connection of an external safety solenoid valve (LPG)</td>
<td>1(0.5) A, 250 V~</td>
</tr>
<tr>
<td>And one of the following functions:</td>
<td></td>
</tr>
<tr>
<td>- Connection of a heating circuit pump (multi stage) for a directly connected heating circuit</td>
<td>2(1) A, 250 V~</td>
</tr>
<tr>
<td>- Connection of a central fault message</td>
<td></td>
</tr>
<tr>
<td>- Only with the Vitotronic 200, type HO1B:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Connection of a DHW circulation pump</td>
</tr>
</tbody>
</table>

Specification

Rated voltage 230 V~
Rated frequency 50 Hz

Internal extension H2

Part no. 7498 514
PCB for installation in the control unit.

Using the extension enables the following functions to be achieved:

Function | Rated breaking capacity of the relay output |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>- External extractor interlock</td>
<td>6(3) A, 250 V~</td>
</tr>
<tr>
<td>And one of the following functions:</td>
<td></td>
</tr>
<tr>
<td>- Connection of a heating circuit pump (multi stage) for a directly connected heating circuit</td>
<td>2(1) A, 250 V~</td>
</tr>
<tr>
<td>- Connection of a central fault message</td>
<td></td>
</tr>
<tr>
<td>- Only with the Vitotronic 200, type HO1B:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Connection of a DHW circulation pump</td>
</tr>
</tbody>
</table>

Specification

Rated voltage 230 V~
Rated frequency 50 Hz

AM1 extension

Part no. 7452 092
Function extension inside enclosure for wall mounting.

Using the extension enables up to two of the following functions to be achieved:

- Switching the DHW circulation pump (only with the Vitotronic 200, type HO1B)
- Switching the heating circuit pump for a directly connected heating circuit

Specification

Rated voltage 230 V~
Rated frequency 50 Hz
Rated current 4 A
Power consumption 4 W
Rated relay output breaking capacity 2(1) A, 250 V~ each, total max. 4 A~
Safety category I
Control units (cont.)

<table>
<thead>
<tr>
<th>IP rating</th>
<th>IP 20 D to EN 60529, ensure through design/installation</th>
<th>Permissible ambient temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>– Operation 0 to +40 °C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Installation in living spaces or boiler rooms (standard ambient conditions)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– Storage and transport −20 to +65 °C</td>
</tr>
</tbody>
</table>

EA1 extension

Part no. 7452 091
Function extension inside enclosure for wall mounting.

Using the inputs and outputs allows up to 5 functions to be achieved:

1 switching output (floating changeover contact)
   ■ Central fault message issue (only with the Vitotronic 100, type HC1B and Vitotronic 200, type HO1B)
   ■ Switching a feed pump to a substation
   ■ Switching the DHW circulation pump (only with the Vitotronic 200, type HO1B)

1 analogue input (0 to 10 V)
   ■ Specifying set boiler water temperature

3 digital inputs
   ■ External heating program changeover for 1 to 3 heating circuits (only with the Vitotronic 200, type HO1B, and the Vitotronic 300-K, type MW2B)
   ■ External blocking
   ■ External blocking with central fault message
   ■ Minimum boiler water temperature demand
   ■ Fault messages
   ■ Short term operation DHW circulation pump (only with the Vitotronic 200, type HO1B, and Vitotronic 300-K, type MW2B)
   ■ Signalling reduced operation for one heating circuit (only for the Vitotronic 300-K, type MW2B)

Specification

<table>
<thead>
<tr>
<th>Rated voltage</th>
<th>230 V~</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated frequency</td>
<td>50 Hz</td>
</tr>
<tr>
<td>Rated current</td>
<td>2 A</td>
</tr>
<tr>
<td>Power consumption</td>
<td>4 W</td>
</tr>
<tr>
<td>Rated breaking capacity of the relay output</td>
<td>2(1) A, 250 V~</td>
</tr>
<tr>
<td>Safety category</td>
<td>I</td>
</tr>
<tr>
<td>IP rating</td>
<td>IP 20 D to EN 60529, ensure through design/installation</td>
</tr>
</tbody>
</table>

Permissible ambient temperature

– Operation 0 to +40 °C
Installation in living spaces or boiler rooms (standard ambient conditions)
– Storage and transport −20 to +65 °C

Vitocom 100, type LAN1

Part no. Z011 224
■ With communication module
■ For remote control of a heating system via internet and IP networks (LAN) with DSL router
■ Compact device for wall mounting
■ For system operation with the Vitotrol app or Vitodata 100

Functions when operating with Vitotrol app:
■ Remote control of up to 3 heating circuits in one heating system
■ Setting of operating programs, set values and time programs.
■ Scanning system information
■ Displaying messages on the Vitotrol app user interface

The Vitotrol app supports the following end devices:
■ Terminal devices with Apple iOS operating system version 6.0
■ Terminal devices with Google Android operating system Version 4.0 or higher

Note
For more information, see www.vitotrol-app.info.
Functions when operating with Vitodata 100:

For all heating circuits in a heating system:

- **Remote monitoring:**
  - Forwarding messages via email to terminal devices with email client function
  - Forwarding messages via SMS to mobile phone/smartphone or fax (via chargeable internet service Vitodata 100 fault management).

- **Remote control:**
  Selecting operating programs, set values, time programs and heating curves.

*Note*
For more information, see [www.vitodata.info](http://www.vitodata.info).

**Configuration:**
Configuration takes place automatically. When the DHCP service is enabled, no adjustments have to be made on the DSL router.

**Standard delivery:**
- Vitocom 100, type LAN1 with LAN socket
- LON communication module for installation in the Vitotronic control unit
- Connecting cables for LAN and communication module LON
- Power cable with plug-in power supply unit
- Vitodata 100 fault management for a duration of 3 years

**On-site requirements:**
- The LON communication module must be installed in the control unit.
- Before commissioning, check the system requirements for communication via the IP networks (LAN).
- Internet connection with flat rate data (without time or volume restrictions).
- DSL router with dynamic IP addressing (DHCP).

*Note*
For information on registering and using the Vitotrol app and Vitodata 100, see [www.vitodata.info](http://www.vitodata.info).

**Vitocom 100, type GSM2**

**Part no.:** See current pricelist

For remote monitoring and remote control of a heating system via mobile phone networks

For the transmission of messages and settings for operating programs by means of SMS

Compact device for wall mounting

**Functions:**
- Remote monitoring via SMS to 1 or 2 mobile phones
- Remote monitoring of additional systems via digital input (floating contact)
- Remote setup with mobile phone via SMS
- Operation with mobile phone via SMS

*Note*
For more information, see [www.vitocom.info](http://www.vitocom.info).

**Configuration:**
Mobile phones via SMS

**Standard delivery:**
- Vitocom 100 with integral mobile phone modem
- Connecting cable with Rast 5 system connectors for connection to the control unit KM BUS
- Mobile aerial (3.0 m long), magnetic base and adhesive pad
- Power cable with plug-in power supply unit (2.0 m long)

**On-site requirements:**
- Good reception for GSM communication with the selected mobile phone operator
- Total length of all KM BUS subscriber cables up to 50 m

**Specification**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply via plug-in power supply unit</td>
<td>230 V~/5 V–</td>
</tr>
<tr>
<td>Rated current</td>
<td>250 mA</td>
</tr>
<tr>
<td>Power consumption</td>
<td>8 W</td>
</tr>
<tr>
<td>Safety category</td>
<td>II</td>
</tr>
<tr>
<td>IP rating</td>
<td>IP 30 to EN 60529; ensure through design/installation</td>
</tr>
<tr>
<td>Permissible ambient temperature (Operation)</td>
<td>0 to +55 °C</td>
</tr>
<tr>
<td>Permissible ambient temperature (Storage and transport)</td>
<td>–20 to +85 °C</td>
</tr>
</tbody>
</table>
### Control units (cont.)

#### Specification

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply via plug-in power supply unit</td>
<td>230 V~/5 V–</td>
</tr>
<tr>
<td>Rated current</td>
<td>1.6 A</td>
</tr>
<tr>
<td>Power consumption</td>
<td>5 W</td>
</tr>
<tr>
<td>Safety category</td>
<td>II</td>
</tr>
<tr>
<td>IP rating</td>
<td>IP 30 to EN 60529; ensure through design/installation Type 1B to EN 60730-1</td>
</tr>
<tr>
<td>Mode of operation</td>
<td>Operation</td>
</tr>
<tr>
<td>Permissible ambient temperature</td>
<td>0 to +50 °C</td>
</tr>
<tr>
<td>Installation in living spaces or boiler rooms (standard ambient conditions)</td>
<td>Storage and transport</td>
</tr>
<tr>
<td>On-site connection</td>
<td>Digital input: Floating contact</td>
</tr>
</tbody>
</table>

#### Vitocom 200, type LAN2

**Part no.:** See current pricelist

For remote monitoring, remote control and remote setup of all heating circuits in a heating system via IP networks (LAN) As an internet data transfer establishes a permanent connection ("always online"), access to the heating system is particularly fast.

Compact device for wall mounting

For system operation with Vitotrol app, Vitodata 100 or Vitodata 300

**Functions when operating with Vitotrol app:**
- Remote control of up to 3 heating circuits in one heating system
- Setting of operating programs, set values and time programs
- Scanning system information
- Displaying messages on the Vitotrol app user interface

The Vitotrol app supports the following end devices:
- Terminal devices with Apple iOS operating system version 6.0
- Terminal devices with Google Android operating system Version 4.0 or higher

**Note**

For more information, see [www.vitotrol-app.info](http://www.vitotrol-app.info).

**Functions when operating with Vitodata 100:**

For all heating circuits in a heating system:

- **Remote monitoring:**
  - Forwarding of messages by SMS to mobile phone/smartphone, by email to end devices with email client functionality or by fax to fax machines
  - Monitoring additional devices via the inputs and output of the Vitocom 200

- **Remote control:**
  - Adjusting operating programs, set values, time programs and heating curves

**Note**

Alongside the data transfer telecommunication costs, usage charges have to be taken into account for Vitodata 300.

For more information, see [www.vitodata.info](http://www.vitodata.info).

**Configuration**

- In the case of dynamic IP addressing (DHCP), the Vitocom 200 is configured automatically
- No adjustments have to be made on the DSL router
- Observe the network settings of the DSL router
- The Vitocom 200 inputs are configured via the Vitodata 100 or Vitodata 300 user interface
- The Vitocom 200 is connected to the Vitotronic control unit via LON
- The Vitocom 200 does not need to be configured for the LON.
Control units (cont.)

On-site requirements:

■ DSL router with free LAN socket and dynamic IP addressing (DHCP)
■ Internet connection with flat rate data (without time or volume restrictions)
■ LON communication module must be installed in the Vitotronic.

Note
For more information, see www.vitocom.info.

Standard delivery:

■ Vitocom 200, type LAN2 with LAN socket
■ LON communication module for installation in the Vitotronic control unit
■ Connecting cables for LAN and communication module
■ Power cable with plug-in power supply unit (2.0 m long)
■ Vitodata 100 fault management for a duration of 3 years

Note
For standard delivery of packs with Vitocom, see pricelist.

Accessories:

EM201 extension module

Part no.: Z012 116
■ 1 relay output for actuating external devices (contact load 230 V~, max. 2 A)
■ Max. 1 x EM201 extension module per Vitocom 200

Specification:

Vitocom 300, type LAN3

Part no.: See current pricelist

For remote monitoring, telecontrol and remote setting of heating systems via IP networks (LAN).
As an internet data transfer establishes a permanent connection ("always online"), access to the heating system is particularly fast.

For heating systems with one or more heat sources, with or without heating circuits downstream
For system operation with Vitodata 100 or Vitodata 300

Functions when operating with Vitodata 100:

For all heating circuits in a heating system:

■ Remote monitoring:
Control units (cont.)

– Forwarding messages via email to terminal devices with email client function
– Forwarding messages via SMS to mobile phone/smartphone or fax (via chargeable internet service Vitadata 100 fault management)
– Monitoring of additional devices via the inputs and outputs of the Vitocom and EM301 extension modules

Remote control:
Selecting operating programs, set values, time programs and heating curves

Note
■ Telecommunication costs for data transfer are not included in the device price.
■ For more information, see www.vitodata.info.

Functions when operating with Vitodata 300:

For all heating circuits in a heating system:

Remote monitoring:
– Forwarding of messages via SMS to mobile phone/smartphone, via email to end devices with email client functionality or via fax to fax machines
– Monitoring of additional devices via the inputs and outputs of the Vitocom 300

Remote control:
– Selecting operating programs, set values, time programs and heating curves
– Recording trends via datalogger
– Recording of energy consumption through integration of M BUS heat meters

Remote setup:
– Configuring Vitocom 300 parameters
– Remote setup of Vitotronic control parameters via coding addresses

Note
■ Alongside the data transfer telecommunication costs, usage charges have to be taken into account for Vitodata 300.
■ For more information, see www.vitodata.info.

Configuration

■ In the case of dynamic IP addressing (DHCP), the IP configuration of the Vitocom 300 occurs automatically.
■ No adjustments have to be made on the DSL router.
■ Observe the network settings of the DSL router.
■ The outputs and inputs of the Vitocom 300 and EM301 extension module are configured using the Vitodata 300 user interface.
■ The Vitocom 300 is connected to the Vitotronic control unit via LON. The Vitocom 300 does not need to be configured for the LON.

Fault messages

Fault messages are reported to the Vitodata server. These messages are transmitted via the following communication services from the Vitodata server to the configured recipients:

■ Fax
■ SMS to mobile phones
■ Email to PC/laptop

On-site requirements:

■ DSL router with free LAN socket and dynamic IP addressing (DHCP)
■ Internet connection with flat rate data (without time or volume restrictions)
■ LON communication module must be installed in the Vitotronic appliance

Note
For more information, see www.vitocom.info.

Standard delivery:
■ Vitocom 300, type LAN3 with LAN socket
– Mounting rail installation TS35 to EN 50022, 35 x 15 and 35 x 7.5
– 2 digital inputs
– 1 digital output
– 1 relay output
– 1 M BUS interface
– 1 EM interface
– 2 LON connections
■ LAN cable, RJ45, 2 m long
■ LON communication module
■ LON cable, RJ45 – RJ45, 7 m long, for data exchange between the Vitotronic control unit and the Vitocom 300
■ Power supply unit for top-hat rail, mounting rail installation TS35 to EN 50022, 35 x 15 and 35 x 7.5
■ Vitodata 100 fault management for a duration of 3 years

Note
For standard delivery of packs with Vitocom, see pricelist.

Accessories:

<table>
<thead>
<tr>
<th>Accessories</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wall mounting enclosure for installation of the Vitocom 300 and accessories if no control panel or electrical distribution panel is available.</td>
<td>7143 434</td>
</tr>
<tr>
<td>2 rows</td>
<td>7143 434</td>
</tr>
<tr>
<td>3 rows</td>
<td>7143 435</td>
</tr>
<tr>
<td>EM301 extension module</td>
<td>Z012 117</td>
</tr>
<tr>
<td>– Mounting rail installation TS35 to EN 50022, 35 x 15 and 35 x 7.5.</td>
<td></td>
</tr>
<tr>
<td>– 8 analogue inputs:</td>
<td></td>
</tr>
<tr>
<td>– 0 – 10 V–</td>
<td></td>
</tr>
<tr>
<td>– 4 – 20 mA</td>
<td></td>
</tr>
<tr>
<td>– Viessmann temperature sensors NTC 10 kΩ, NTC 20 kΩ, Ni500 or Pt500</td>
<td></td>
</tr>
<tr>
<td>– Pulse counter</td>
<td></td>
</tr>
<tr>
<td>– 8 digital inputs:</td>
<td></td>
</tr>
<tr>
<td>– For hooking up signals via floating contacts</td>
<td></td>
</tr>
<tr>
<td>– 2-pole</td>
<td></td>
</tr>
<tr>
<td>– Breaking capacity of the external contact 24 V–, 7 mA</td>
<td></td>
</tr>
<tr>
<td>– With LED indicator</td>
<td></td>
</tr>
<tr>
<td>– N/C or N/O contact</td>
<td></td>
</tr>
<tr>
<td>– N/C or N/O alarm contact</td>
<td></td>
</tr>
<tr>
<td>– Pulse counter</td>
<td></td>
</tr>
<tr>
<td>– 2 digital outputs:</td>
<td></td>
</tr>
<tr>
<td>– Floating relay contacts</td>
<td></td>
</tr>
<tr>
<td>– 3-pole changeover contact</td>
<td></td>
</tr>
<tr>
<td>– Max. 2 A, 230 V–</td>
<td></td>
</tr>
<tr>
<td>– With LED indicator</td>
<td></td>
</tr>
<tr>
<td>Max. 3 x EM301 extension modules per Vitocom 300</td>
<td></td>
</tr>
<tr>
<td>Uninterrupted power supply unit (UPS)</td>
<td>7143 432</td>
</tr>
<tr>
<td>Mounting rail installation TS35 to EN 50022, 35 x 15 and 35 x 7.5</td>
<td></td>
</tr>
<tr>
<td>Additional rechargeable battery pack for UPS</td>
<td>7143 436</td>
</tr>
<tr>
<td>– Mounting rail installation TS35 to EN 50022, 35 x 15 and 35 x 7.5</td>
<td></td>
</tr>
<tr>
<td>– Recommended with 1 Vitocom 300, 1 extension module and all inputs allocated</td>
<td></td>
</tr>
<tr>
<td>– Required from 1 Vitocom 300 and 2 extension modules</td>
<td></td>
</tr>
</tbody>
</table>
## Control units (cont.)

### Accessories

<table>
<thead>
<tr>
<th>Description</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extension of the connecting cable</td>
<td>7143 495</td>
</tr>
<tr>
<td>Installation spacing 7 to 14 m</td>
<td>7143 496</td>
</tr>
<tr>
<td>– 1 connecting cable (7 m long)</td>
<td></td>
</tr>
<tr>
<td>and</td>
<td></td>
</tr>
<tr>
<td>1 LON coupling RJ45</td>
<td></td>
</tr>
<tr>
<td><strong>Installation spacing 14 to 900 m with plug-in connector</strong></td>
<td></td>
</tr>
<tr>
<td>– 2 LON plug-in connectors RJ45</td>
<td>7199 251</td>
</tr>
<tr>
<td>and</td>
<td>7171 784</td>
</tr>
<tr>
<td>– 2-core cable, CAT5, screened, solid cable,</td>
<td></td>
</tr>
<tr>
<td>AWG 26-22, 0.13 to 0.32 mm², external diameter, 4.5 to 8 mm</td>
<td>On site</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>2-core cable, CAT5, screened, flexible cable,</td>
<td></td>
</tr>
<tr>
<td>AWG 26-22, 0.14 to 0.36 mm², external diameter, 4.5 to 8 mm</td>
<td></td>
</tr>
<tr>
<td><strong>Installation spacing 14 to 900 m with socket</strong></td>
<td></td>
</tr>
<tr>
<td>– 2 connecting cables (7 m long)</td>
<td></td>
</tr>
<tr>
<td>and</td>
<td></td>
</tr>
<tr>
<td>2 LON sockets RJ45, CAT6</td>
<td></td>
</tr>
<tr>
<td>– 2-core cable, CAT5, screened</td>
<td></td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>JY(St) Y 2 x 2 x 0.8</td>
<td></td>
</tr>
</tbody>
</table>

### Vitocom 300 specification (standard delivery):

![Vitocom 300 diagram]

- **Rated voltage**: 24 V–
- **Rated current**: 710 mA
- **Rated output**: 17 W
- **Safety category**: II to EN 61140
- **IP rating**: IP 30 to EN 60529; ensure through design/installation
- **Mode of operation**: Type 1B to EN 60730-1
- **Permissible ambient temperature**
  - **Operation**: 0 to +50 °C
  - **Storage and transport**: −20 to +85 °C

### Specification, power supply unit (standard delivery):

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rated voltage</strong></td>
<td>100 to 240 V–</td>
</tr>
<tr>
<td><strong>Rated frequency</strong></td>
<td>50/60 Hz</td>
</tr>
<tr>
<td><strong>Rated current</strong></td>
<td>0.8 to 0.4 A</td>
</tr>
<tr>
<td><strong>Output voltage</strong></td>
<td>24 V–</td>
</tr>
<tr>
<td><strong>Max. output current</strong></td>
<td>2 A</td>
</tr>
<tr>
<td><strong>Safety category</strong></td>
<td>II to EN 61140</td>
</tr>
<tr>
<td><strong>IP rating</strong></td>
<td>IP 20 to EN 60529; ensure through design/installation</td>
</tr>
<tr>
<td><strong>Potential separation</strong></td>
<td>SELV to EN 60950</td>
</tr>
<tr>
<td><strong>Electrical safety</strong></td>
<td>EN 60335</td>
</tr>
</tbody>
</table>
| **Permissible ambient temperature**
  - **Operation**: −20 to +55 °C
  - **Storage and transport**: −25 to +85 °C

### LON connecting cable for data exchange between control units

- **Vitotronic 300-K for the Vitotronic 200-H**
- **Cable length**: 7 m, fully wired.

- **Part no.**: 7143 495
Extension of the connecting cable

■ Installation spacing 7 to 14 m:
  – 2 connecting cables (7.0 m long)
  Part no. 7143 495
  – 1 LON coupling RJ45
  Part no. 7143 496

■ Installation spacing 14 to 900 m with plug-in connectors:
  – 2 LON plug-in connectors
  Part no. 7199 251
  – 2-core cable:
  CAT5, screened
  or
  Solid conductor AWG 26-22/0.13 mm² to 0.32 mm²,
  conductor AWG 26-22/0.14 mm² to 0.36 mm²
  ↗ 4.5 mm - 8 mm
  on site

■ Installation spacing 14 to 900 m with junction boxes:
  – 2 connecting cables (7.0 m long)
  Part no. 7143 495
  – 2-core cable:
  CAT5, screened
  or
  Solid conductor AWG 26-22/0.13 mm² to 0.32 mm²,
  conductor AWG 26-22/0.14 mm² to 0.36 mm²
  ↗ 4.5 mm to 8 mm
  on site

  – 2 LON sockets RJ45, CAT6
  Part no. 7171 784

Terminator (2 pce)
Part no. 7143 497
For terminating the LON BUS at the first and last control unit.

LON communication module
PCB for exchanging data with the Vitotronic 200-H, Vitocom 100 type LAN1, Vitocom 200 and for connecting to a higher ranking building management system.

■ For installation in the Vitotronic 200
  Part no. 7179 113
■ For installation in the Vitotronic 300-K
  Part no. 7172 174

Appendix

6.1 Regulations / Directives

Regulations and Directives

The design and operational characteristics of the Vitodens gas condensing boilers from Viessmann meet the requirements of EN 297. They are CE-designated. They may be installed in sealed unvented heating systems with permissible flow temperatures (= safety temperatures) up to 100 °C to EN 12828. The maximum achievable flow temperature is approx. 15 K below the safety temperature. Observe all engineering standards and statutory requirements applicable to the installation and operation of this system in your country. Only qualified contractors should carry out the installation, the mains gas connection and the connection on the flue gas side, the commissioning and the electrical connection as well as general maintenance and repair work.

The installation of a condensing boiler may need to be notified to and approved by your local gas supply utility.

In some regions, permits may be required for the flue system and condensate drain into the public sewage system. In some countries, the relevant flue gas inspector and water authorities must be informed prior to commencing the installation. We recommend that maintenance and cleaning procedures are performed annually. As part of the maintenance procedure, check the correct function of the entire system. Remedy any faults. Condensing boilers must only be operated with specially designed, tested and approved flue pipes. Only an authorised contractor may convert this boiler for use in countries other than those stated on the type plate. That contractor must also arrange the acceptance in accordance with the statutes of the relevant country.

EnEV
1st BImSchV
FeuVo
DIN 1986
DIN 1988
DIN 4753
DIN 18160
DIN 18380
DIN 57116
EN 677
EN 12828
EN 12831
EN 13384
DWA-A 251
DVGW G 260
DVGW G 600
DVGW G 688

Energy Saving Ordinance
First regulation for the implementation of the German Immissions Act (regulation regarding small and medium-sized combustion equipment)
Fire Regulations of the German Federal States
Drainage system materials
DHW pipe systems for properties
Water heaters and DHW systems for DHW and process water
Domestic chimneys
Heating systems and central DHW heating systems (VOB)
Electrical equipment for combustion systems
Gas condensing boiler
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