

Technical guide



VITODENS 200-W Type B2HA

Wall mounted gas condensing boiler

With modulating MatriX cylinder burner for natural gas and
LPG

For room sealed or open flue operation

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1.1 Product description

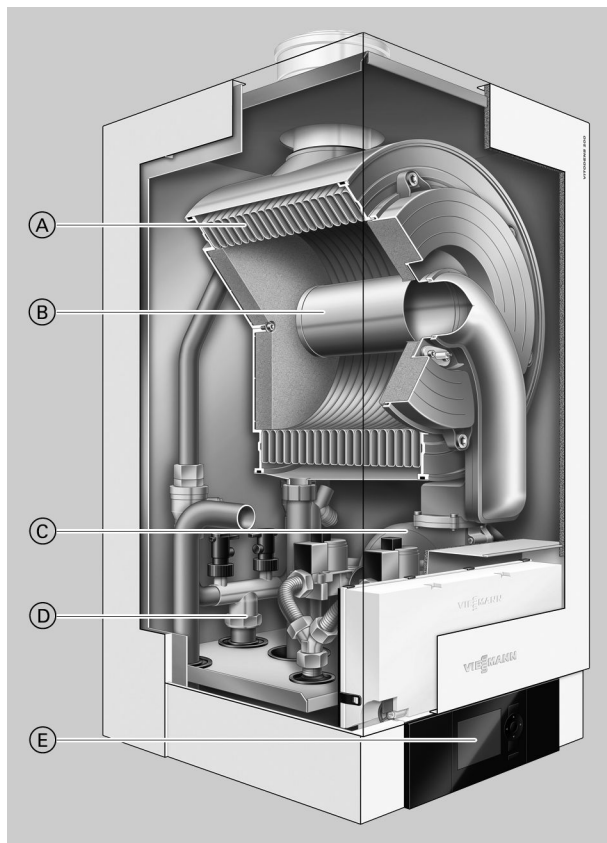
Vitodens 200-W, 49 to 60 kW



- Ⓐ Inox-Radial heat exchanger made from stainless steel – for high operational reliability and a long service life. High 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

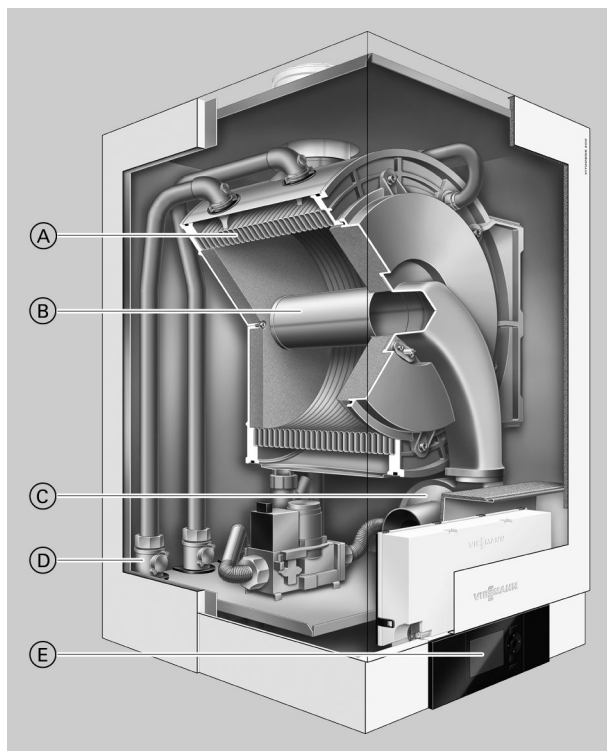
Vitodens 200-W (cont.)

Vitodens 200-W, 80 to 99 kW



- Ⓐ Inox-Radial heat exchanger made from stainless steel – for high operational reliability and a long service life. High 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, 120 to 150 kW



- Ⓐ Inox-Radial heat exchanger made from stainless steel – for high operational reliability and a long service life. High 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 such cases, 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 6 boilers and a heating output up to 594 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] of up to 98 % (H_s) [gross cv] / 109 % (H_i) [net cv].

The Vitotronic 300-K cascade control unit regulates up to 6 Vitodens 200-W as a single heating centre. It also automatically matches the boiler output to the heat demand. This means: Subject to heat demand, either one boiler modulates or all 6 boilers operate concurrently.

We offer the complete range of matching system components for creating cascade systems: control units, 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 heating and/or static heating surfaces 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 6 boilers and up to 594 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 operate 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 – saving fees by extending the inspection interval to 3 years [Germany]
- Quiet operation thanks to low fan speed

Factory setting

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 or

Vitotronic 200 for weather-compensated operation.

Preset for operation with natural gas. Conversion within gas groups E/LL is not required. The conversion to LPG is made at the gas train (a conversion kit is not required).

Multi boiler systems

Multi boiler systems for open flue operation with 2, 3, 4, 5 or 6 boilers.

Installation in series with a pre-plumbing jig (wall mounted)

Comprising:

- Cascade module for each boiler with:

- High efficiency circulation pump
- Ball valves
- Drain & fill 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

- Pre-plumbing jig

Installation in series and in block formation with a mounting frame

Comprising:

- Cascade module for each boiler with:

- High efficiency circulation pump
- Ball valves
- Drain & fill 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

- 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 for gas and water equipment

Meets the requirements for the "Blue Angel" eco-label RAL UZ 61.

1.2 Specification

Gas boiler, type B and C, category II _{2N3P}		Gas condensing boiler					
Rated heating output range							
49 and 60 kW: Details to EN 15502-1.							
80 to 150 kW: Details to EN 15417.							
$T_F/T_R = 50/30$ °C when operating with natural gas	kW	12.0 - 49.0	12.0 - 60.0	20.0 - 80.0	20.0 - 99.0	32.0 - 120.0	32.0 - 150.0
$T_F/T_R = 80/60$ °C when operating with natural gas	kW	10.9 - 45.0	10.9 - 55.2	18.2 - 74.1	18.2 - 90.9	29.1 - 110.9	29.0 - 136.0
$T_F/T_R = 50/30$ °C when operating with LPG P	kW	17.0 - 49.0	17.0 - 60.0	30.0 - 80.0	30.0 - 99.0	32.0 - 120.0	32.0 - 150.0
$T_F/T_R = 80/60$ °C when operating with LPG P	kW	15.5 - 45.0	15.5 - 55.2	27.3 - 74.1	27.3 - 90.9	29.1 - 110.9	29.0 - 136.0
Rated heat input when operating with natural gas	kW	11.2 - 45.7	11.2 - 56.2	18.8 - 75.0	18.8 - 92.9	30.0 - 113.3	30.0 - 142.0
Rated heat input when operating with LPG P	kW	16.1 - 45.7	16.1 - 56.2	28.1 - 75.0	28.1 - 92.9	30.0 - 113.3	30.0 - 142.0
Type		B2HA	B2HA	B2HA	B2HA	B2HA	B2HA
Product ID		CE-0085CN0050					
IP rating		IP X4 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 ^{*1}							
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							
(Details to EN ISO 15036-1)							
At partial load	dB(A)	39	39	38	38	40	40
At rated heating output	dB(A)	58	67	56	59	54	60
Power consumption (delivered condition)	W	56	82	126	175	146	222
Weight	kg	65	65	83	83	130	130
Heat exchanger capacity	l	7.0	7.0	12.8	12.8	15.0	15.0
Max. flow temperature	°C	76	76	76	76	82	82
Max. flow rate	l/h	3500	3500	5700	5700	7165	8600
Limit for the use of hydraulic separation							
Nominal circulation water volume at $T_F/T_R = 80/60$ °C	l/h	1748	2336	3118	3909	4900	5850
Permiss. operating pressure							
	bar	4	4	4	4	6	6
	MPa	0.4	0.4	0.4	0.4	0.6	0.6
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	m³/h	4.47	5.95	7.94	9.93	12.49	15.03
Natural gas LL	m³/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.

Gas boiler, type B and C, category II _{2N3P}		Gas condensing boiler					
Rated heating output range							
49 and 60 kW: Details to EN 15502-1.							
80 to 150 kW: Details to EN 15417.							
$T_F/T_R = 50/30\text{ °C}$ when operating with natural gas	kW	12.0 -	12.0 -	20.0 -	20.0 -	32.0 -	32.0 -
		49.0	60.0	80.0	99.0	120.0	150.0
$T_F/T_R = 80/60\text{ °C}$ when operating with natural gas	kW	10.9 -	10.9 -	18.2 -	18.2 -	29.1 -	29.0 -
		45.0	55.2	74.1	90.9	110.9	136.0
Flue gas parameters^{*2}							
Flue gas category to G 635/G 636		G ₅₂ /G ₅₁	G ₅₂ /G ₅₁	G ₅₂ /G ₅₁	G ₅₂ /G ₅₁	G ₅₂ /G ₅₁	G ₅₂ /G ₅₁
Temperature (at a return temperature of 30 °C)							
– At rated heating output	°C	62	66	46	57	51	60
– At partial load	°C	39	39	37	37	39	39
Temperature (at a return temperature of 60 °C)	°C	75	80	68	72	70	74
Mass flow rate							
Natural gas							
– At rated heating output	kg/h	78	104	139	174	210	253
– At partial load	kg/h	30	30	52	52	53	53
LPG							
– At rated heating output	kg/h	74	99	132	165	231	278
– At partial load	kg/h	28	28	49	49	59	59
Available draught							
	Pa	250	250	250	250	250	250
	mbar	2.5	2.5	2.5	2.5	2.5	2.5
Max. amount of condensate							
To DWA-A 251	l/h	6.3	8.4	11.2	14.0	17.5	21.0
Condensate connection (hose nozzle)	Ø mm	20-24	20-24	20-24	20-24	20-24	20-24
Flue gas connection	Ø mm	80	80	100	100	100	100
Ventilation air connection	Ø mm	125	125	150	150	150	150
Standard seasonal efficiency [to DIN] at							
$T_F/T_R = 40/30\text{ °C}$	%	Up to 98 (H _s) [gross cv] / 109 (H _i) [net cv]					
Energy efficiency class		A	A	–	–	–	–

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

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

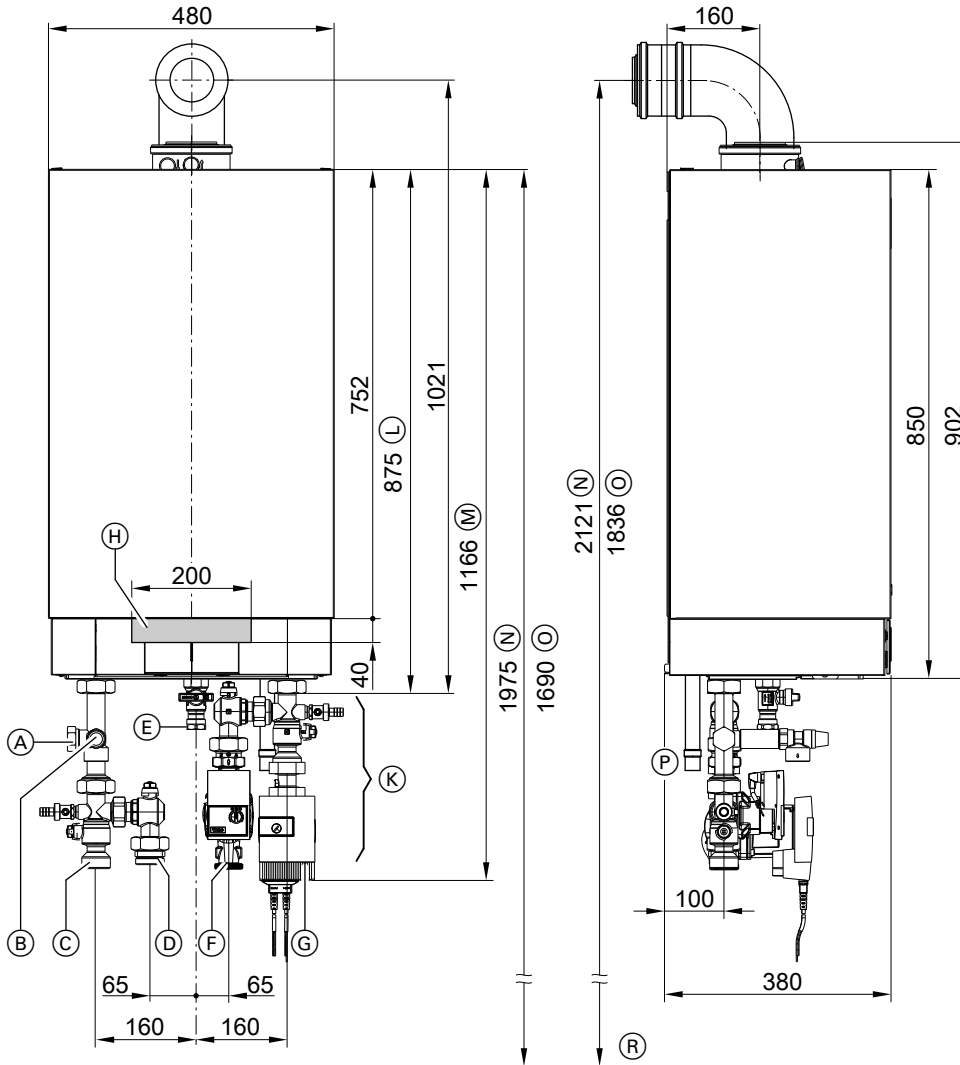
The flue gas temperature at a return temperature of 30 °C is significant for the sizing of the flue system.

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, 49 and 60 kW

Multi boiler systems

For further details regarding multi boiler systems, see page 35.



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

Note

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

Note

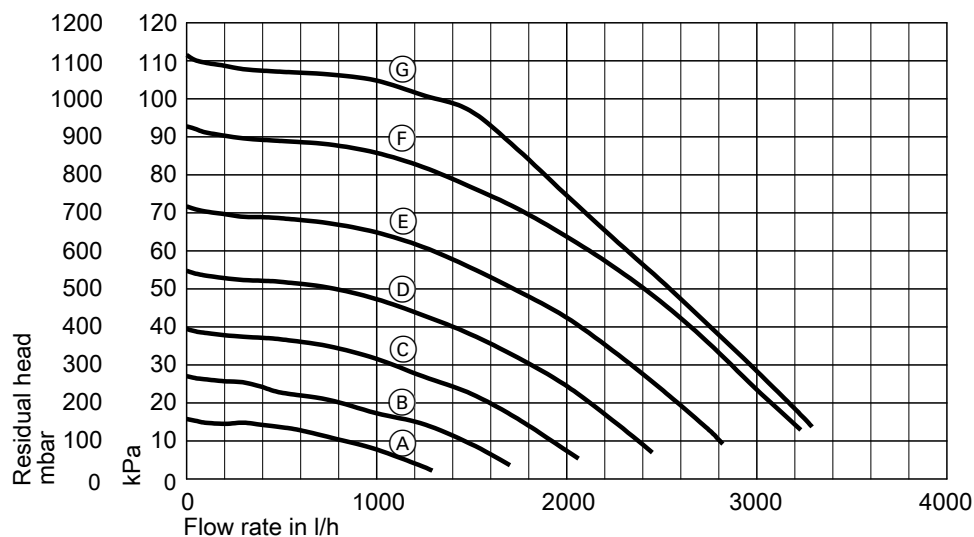
Lay all required supply cables on site and route them into the boiler in the specified area.

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

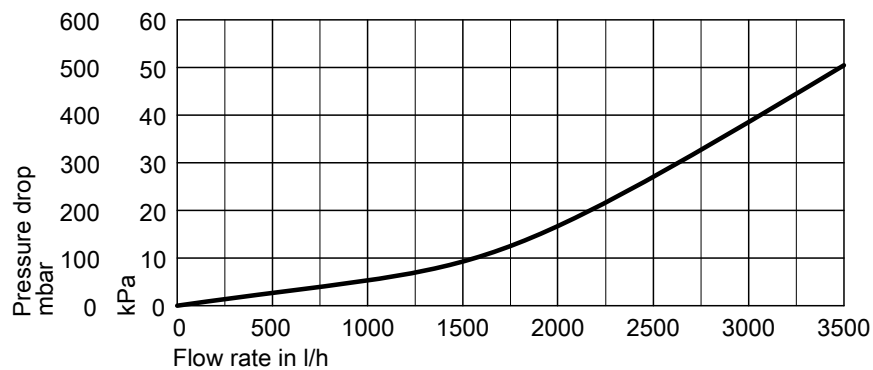
Rated voltage	V~	230
Power consumption	W	Max. 140
		Min. 8

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 %

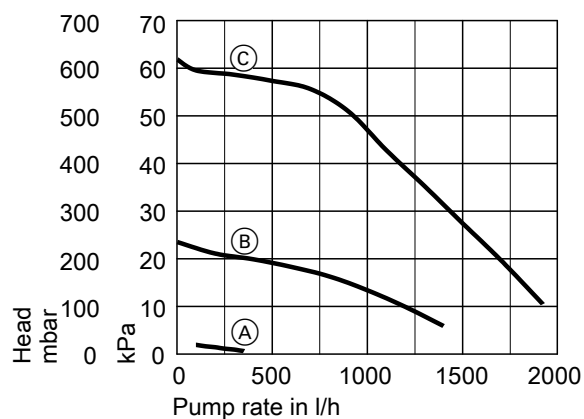
Pressure drop on the heating water side

For sizing an on-site circulation pump


Circulation pump in the connection set for DHW cylinders

Pump type	VI Yonos Para 25/6		
Voltage	V~		230
Power consumption	W	Max.	45
		Min.	3

Circulation pump head



- (A) Stage 1
- (B) Stage 2
- (C) Stage 3

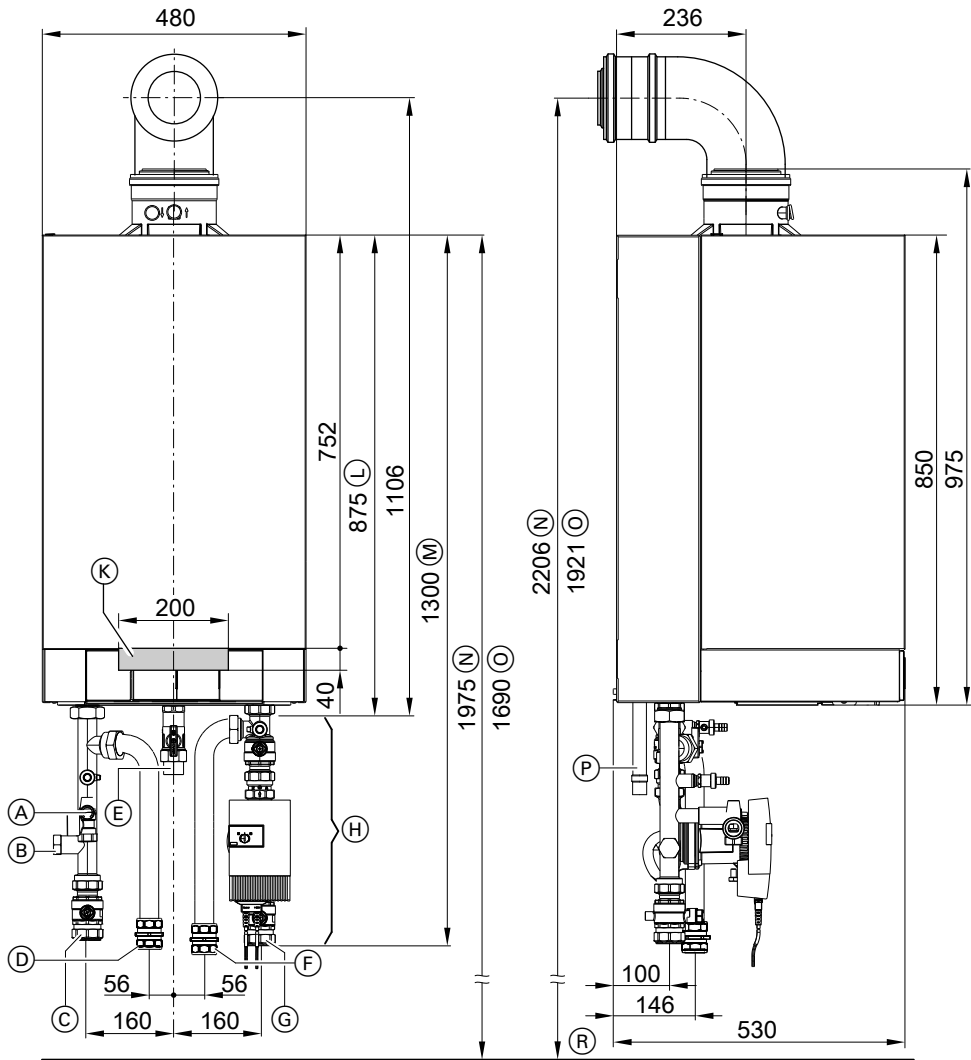
Note

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

Vitodens 200-W (cont.)

Vitodens 200-W, 80 and 99 kW

Multi boiler systems
For further details regarding multi boiler systems, see page 35.



- (A) Safety valve
- (B) Expansion vessel connection G 1
- (C) Boiler flow Ø 42 mm
- (D) Cylinder flow Ø 35 mm
- (E) Gas connection R 1
- (F) Cylinder return Ø 35 mm
- (G) Boiler return Ø 42 mm
- (H) Connection sets (accessories)
Shown without thermal insulation (standard delivery)
- (K) Cable entry area at the back
- (L) Without connection set (accessories)
- (M) With connection set (accessories)
- (N) Recommended dimension (single boiler system)
- (O) Recommended dimension (multi boiler system)
- (P) Condensate drain
- (R) Top edge finished floor

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

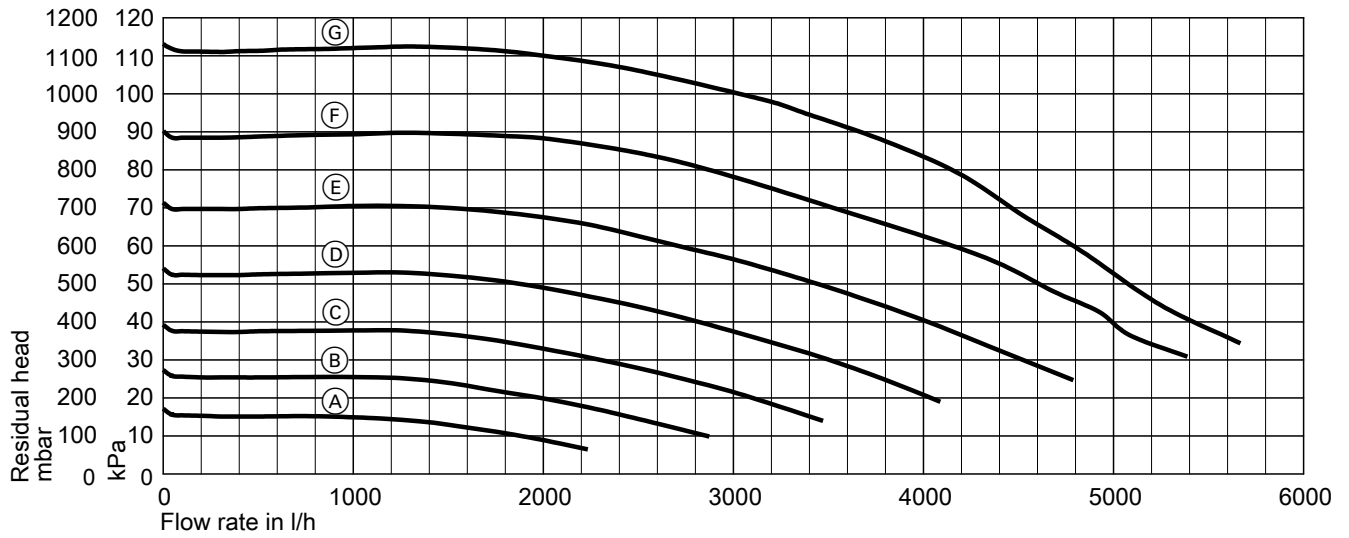
Note
Lay all required supply cables on site and route them into the boiler in the specified area.

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
		Min.	16

Residual head of the circulation pump



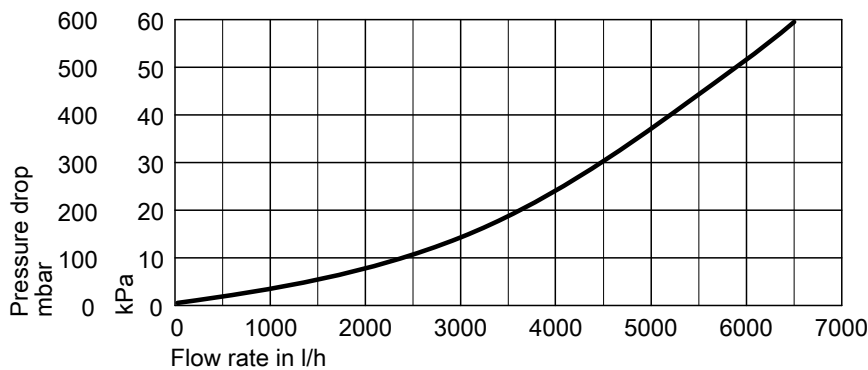
Curve	Pump rate, circulation pump
(A)	40 %
(B)	50 %
(C)	60 %
(D)	70 %
(E)	80 %
(F)	90 %
(G)	100 %

Note

Observe information regarding the use of a low loss header (see page 54).
 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)



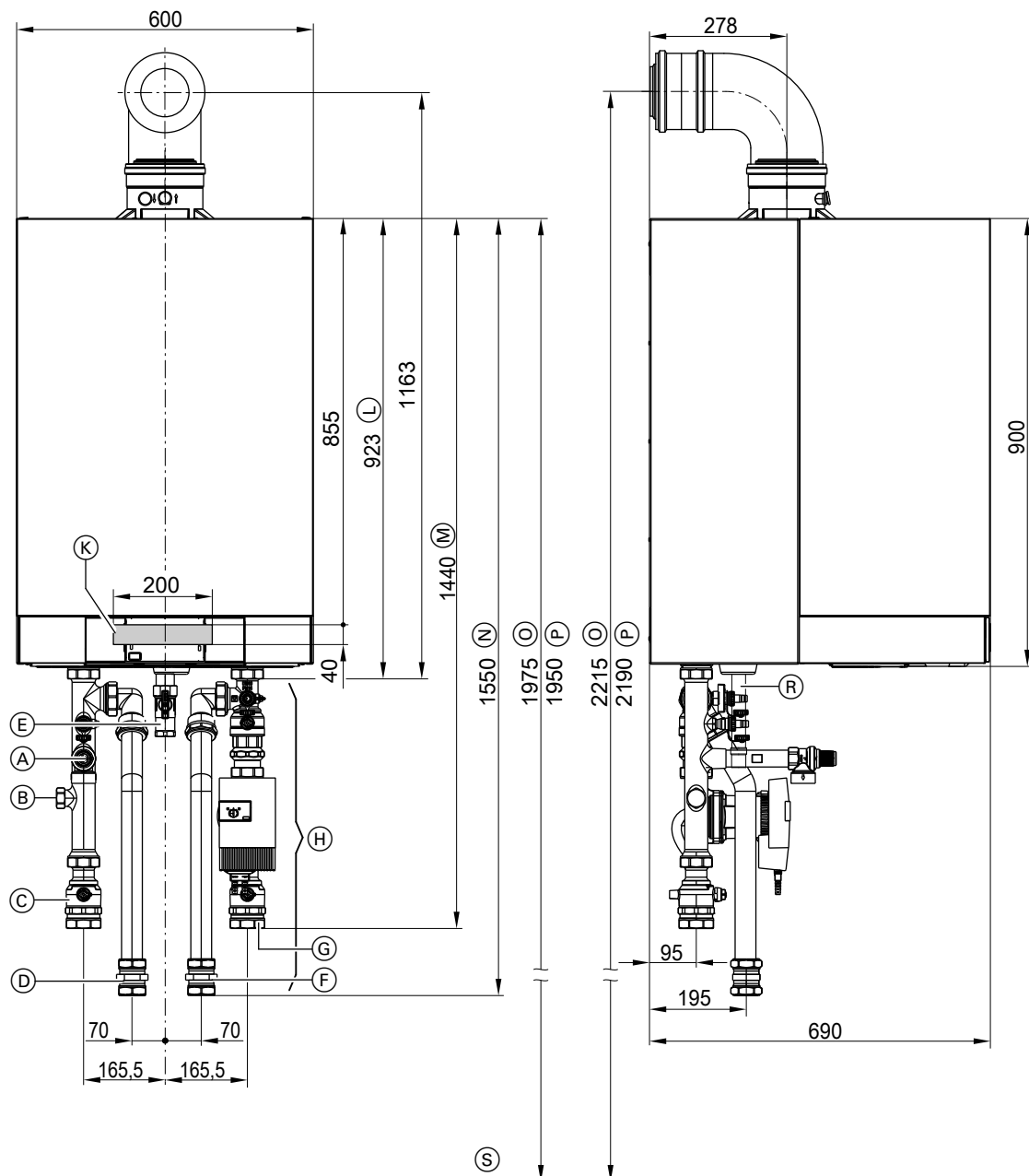
Note

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

Vitodens 200-W, 120 and 150 kW

Multi boiler systems

For further details regarding multi boiler systems, see page 35.



- (A) Safety valve
- (B) Expansion vessel connection G 1
- (C) Boiler flow $\varnothing$ 54 mm
- (D) Cylinder flow $\varnothing$ 42 mm
- (E) Gas connection R 1
- (F) Cylinder return $\varnothing$ 42 mm
- (G) Boiler return $\varnothing$ 54 mm
- (H) Connection sets (accessories)
Shown without thermal insulation (standard delivery)
- (K) Cable entry area at the back

Note

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

- (L) Without connection set (accessories)
- (M) With heating circuit connection set (accessories)
- (N) With DHW cylinder connection set (accessories)
- (O) Recommended dimension (single boiler system without mounting frame)
- (P) Recommended dimension (multi boiler system or single boiler system with mounting frame)
- (R) Condensate drain
- (S) Top edge finished floor

Note

Lay all required supply cables on site and route them into the boiler in the specified area.

Vitodens 200-W (cont.)

Variable speed high efficiency circulation pump in the heating circuit connection set (accessories)

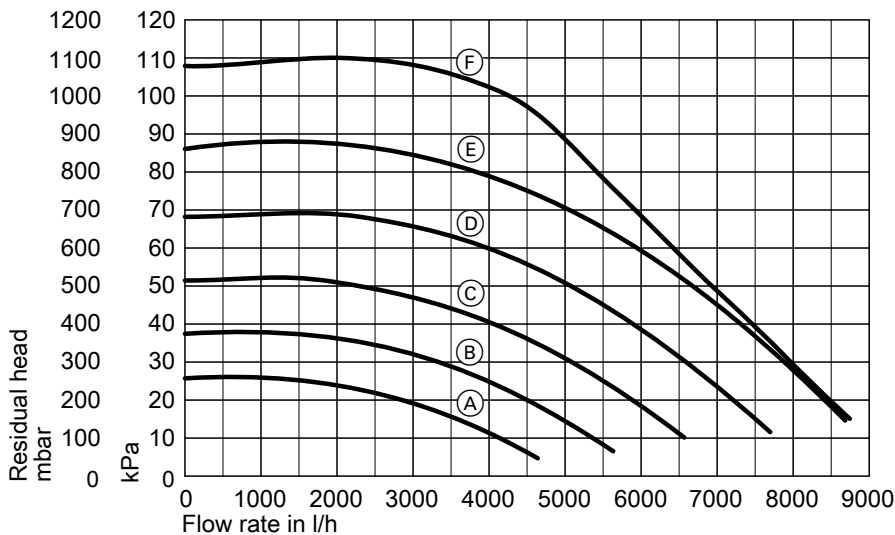
The highly efficient circulation pump uses significantly less power compared to conventional pumps.
Matching the pump rate of the circulation pump to the individual system conditions reduces the power consumption of the heating system.

Circulation pump VI Para 30/1-12

Rated voltage	V~	230
Power consumption	W	Max. 310 Min. 16

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

Residual head of the circulation pump



Curve	Pump rate, circulation pump
(A)	50 %
(B)	60 %
(C)	70 %
(D)	80 %
(E)	90 %
(F)	100 %

Note

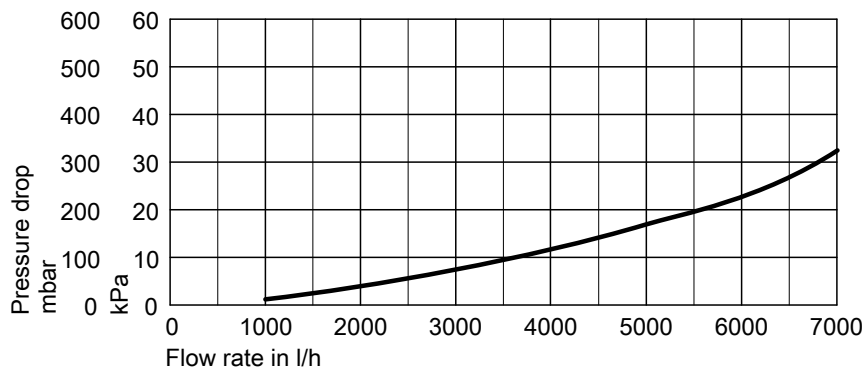
Observe information regarding the use of a low loss header (see page 54).

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 pump and circulation pump for cylinder heating are operated in parallel mode (no DHW priority control), we recommend the installation of a DHW cylinder in the secondary side (downstream of the low loss header) of the heating system.

2.1 Product description

Installation accessories for Vitodens 200-W, 49 and 60 kW

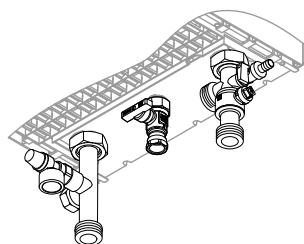
Heating circuit connection set without circulation pump

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



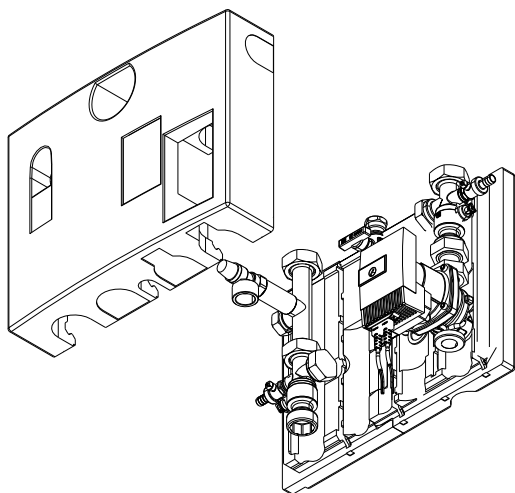
Heating circuit connection set with variable speed high efficiency circulation pump

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 4 bar
- Gas shut-off valve with integral thermally activated safety shut-off valve
- Thermal insulation
- Connection G1 for pressure expansion vessel



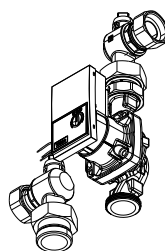
DHW cylinder connection set

Part no. ZK00 657

Connections G 1½

Comprising:

- High efficiency circulation pump for cylinder heating
- 2 ball valves
- Non-return valve
- Cylinder temperature sensor



Ball valve

Part no. 7247 373

1 pce G 1½ with gasket and union nut.

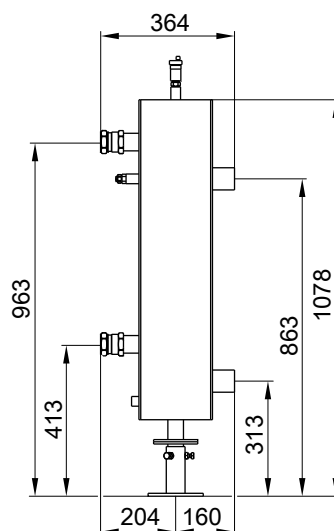
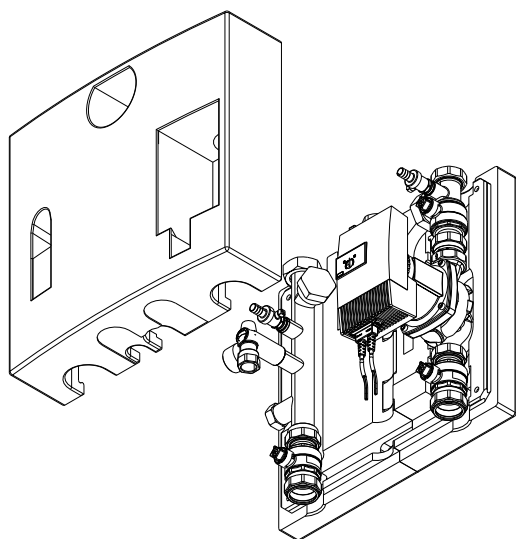
Installation accessories for Vitodens 200-W, 80 and 99 kW

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 4 bar
- Gas shut-off valve with integral thermally activated safety shut-off valve
- Thermal insulation
- Connection G1 for pressure expansion vessel



Mounting bracket for low loss header

- For floorstanding installation

Part no. 7346 787

- For wall mounting

Part no. 7346 788

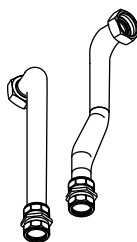
DHW cylinder connection set

Part no. 7348 934

Connections: Ø 35 mm (locking ring fitting)

Comprising:

- Connection lines for flow and return
- Fittings
- Cylinder temperature sensor



Low loss header

For flow rate up to 8 m³/h

Part no. Z007 743

Comprising:

- Low loss header with integral sensor well (50 mm long)
- Thermal insulation
- Immersion temperature sensor for low loss header
- Quick-action air vent valve
- 2 adaptors Ø 42 mm (locking ring fitting)

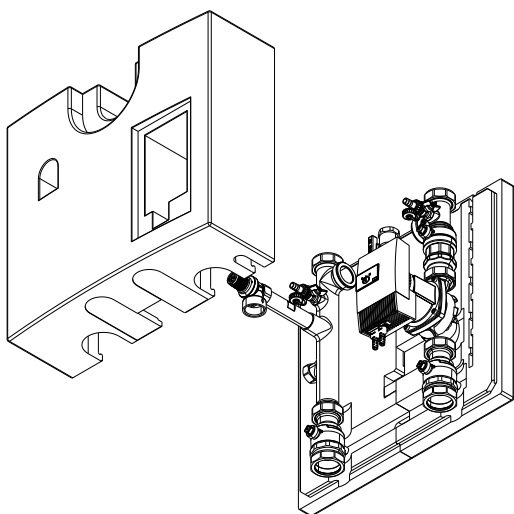
Installation accessories for Vitodens 200-W, 120 and 150 kW

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 6 bar
- Gas shut-off valve with integral thermally activated safety shut-off valve
- Thermal insulation
- Connection G1 for pressure expansion vessel



Low loss header

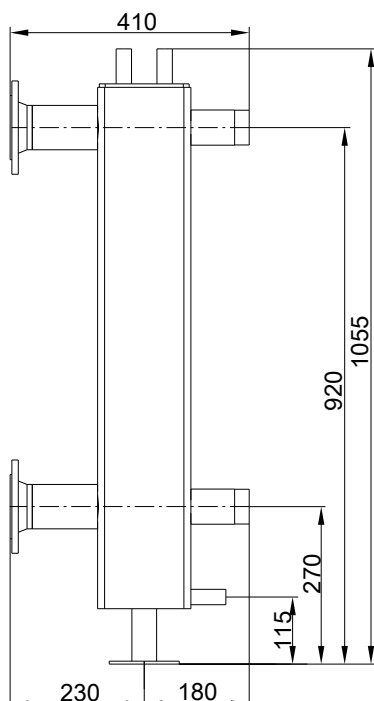
For flow rate up to 12.9 m³/h

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)



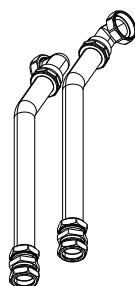
DHW cylinder connection set

Part no. 7501 325

Connections: Ø 42 mm (locking ring fitting)

Comprising:

- Connection lines for flow and return
- Fittings
- Cylinder temperature sensor

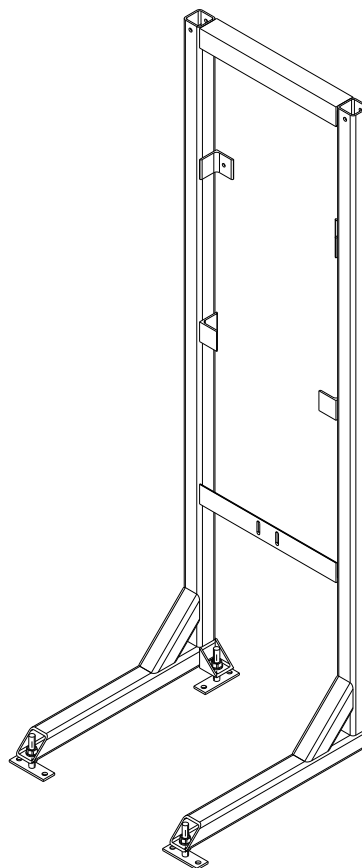


Mounting frame

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 automated hydronic balancing

See separate datasheet.

CO limiter

Part no. 7499 330

Monitoring device, for safety shut down of the boiler in the event of escaping carbon monoxide.

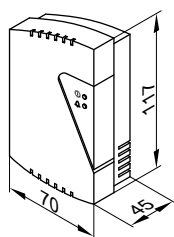
Wall mounting in the ceiling area near the boiler.

Can be used for boilers built from 2004 onwards.

Components:

- Casing with integrated CO sensor, relay and displays for operation and alarm
- Fixing materials
- Power cable (2.0 m long)
- Connecting cable – relay for burner shutdown (2.0 m long)

Installation accessories (cont.)



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

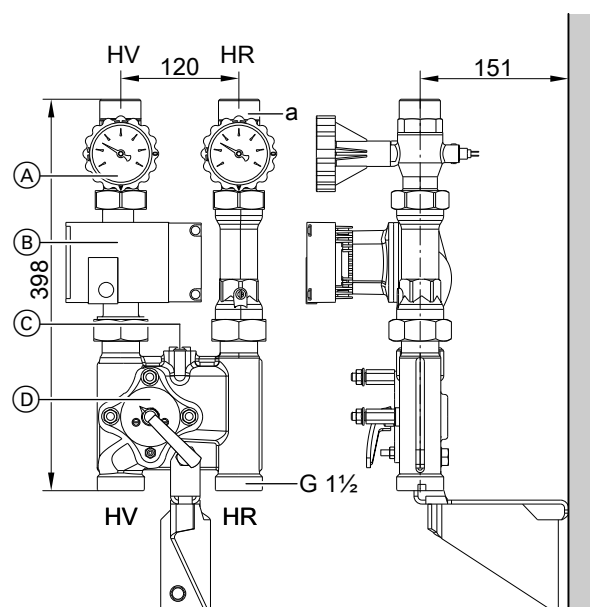
- Available with R ¾, R 1 and R 1¼ connections.
- With heating circuit pump, check valve, ball valves with integral thermometers and 3-way mixer or without mixer.
- Quick and simple installation due to pre-assembled unit and compact design.
- All-round thermal insulation shells for low radiation losses.
- 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.

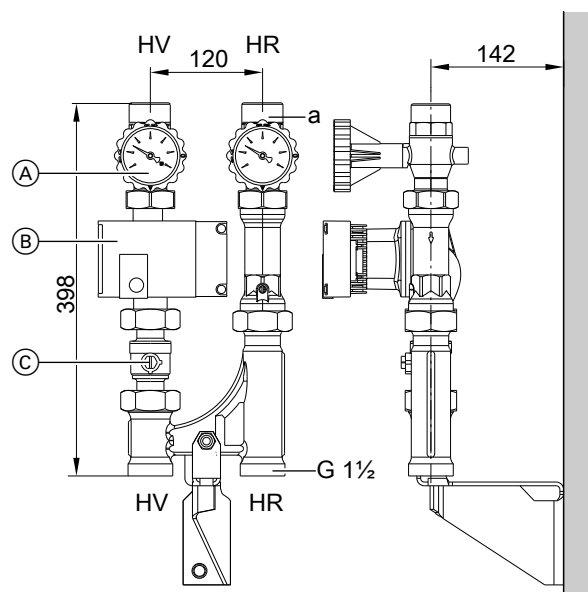
- (B) Circulation pump
- (C) Bypass valve (accessories)
- (D) Mixer-3

Heating circuit connection	R	¾	1	1¼
Flow rate (max.)	m³/h	1.0	1.5	2.5
a (female)	Rp	¾	1	1¼
a (male)	G	1¼	1¼	2



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)



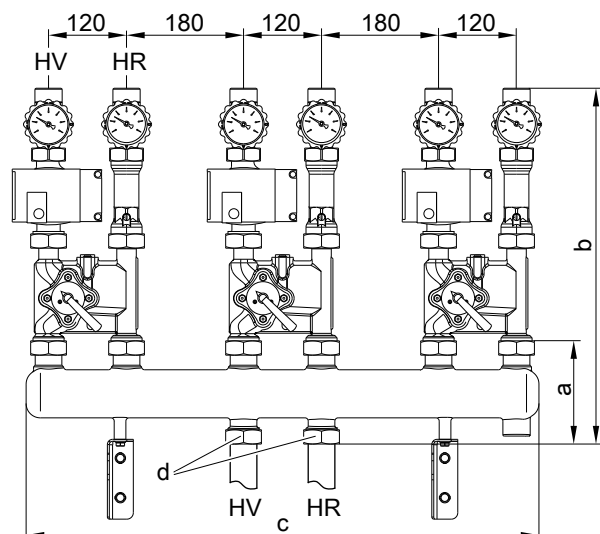
Divicon without mixer (wall mounting, shown without thermal insulation)

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

Heating circuit connection	R	¾	1	1¼
Flow rate (max.)	m³/h	1.0	1.5	2.5
a (female)	Rp	¾	1	1¼
a (male)	G	1¼	1¼	2

Installation accessories (cont.)

Installation example: Divicon with triple manifold

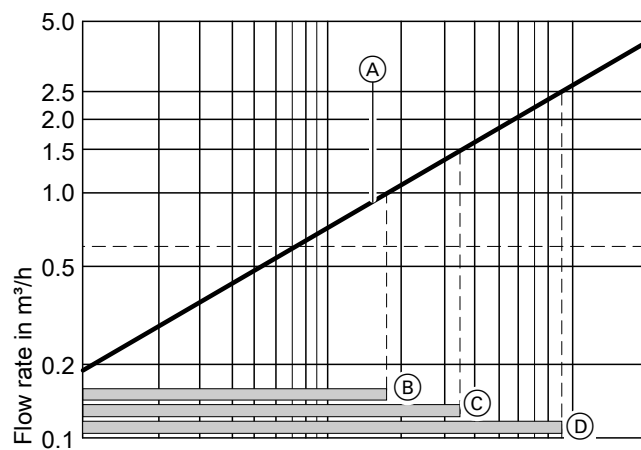


(shown without thermal insulation)

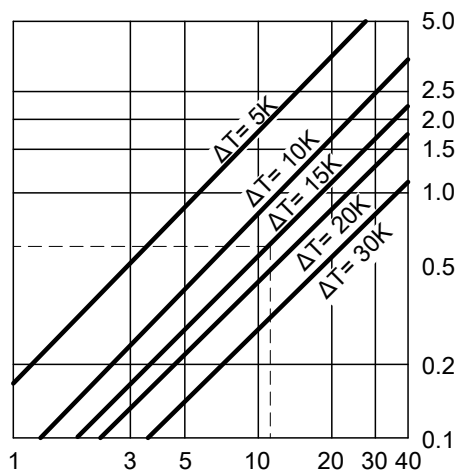
HR Heating return
HV Heating flow

Dimensions	Manifold with heating circuit connection	
	R ¾ and R 1	R 1¼
a	135	183
b	535	583
c	784	784
d	G 1¼	G 2

Determining the required nominal diameter



Mixer control characteristics



Heating circuit output
in kW

- (A) Divicon with mixer-3
The operating ranges marked (B) to (D) provide optimum control characteristics with the Divicon mixer:
- (B) Divicon with mixer-3 (R ¾)
Application range: 0 to 1.0 m³/h

- (C) Divicon with mixer-3 (R 1)
Application range: 0 to 1.5 m³/h
- (D) 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 Specific thermal capacity
 $\dot{m}$ Mass flow rate
 $\dot{Q}$ Heating output
 $\dot{V}$ Flow rate

$$\dot{Q} = \dot{m} \cdot c \cdot \Delta T \quad c = 1.163 \frac{\text{Wh}}{\text{kg} \cdot \text{K}} \quad \dot{m} \triangleq \dot{V} \quad (1 \text{ kg} \approx 1 \text{ dm}^3)$$

$$\dot{V} = \frac{\dot{Q}}{c \cdot \Delta T} = \frac{11600 \text{ W} \cdot \text{kg} \cdot \text{K}}{1.163 \text{ Wh} \cdot (75-60) \text{ K}} = 665 \frac{\text{kg}}{\text{h}} \triangleq 0.665 \frac{\text{m}^3}{\text{h}}$$

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

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 $\dot{V} = 0.665 \text{ m}^3/\text{h}$

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: 48 kPa
Divicon pressure drop: 3.5 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

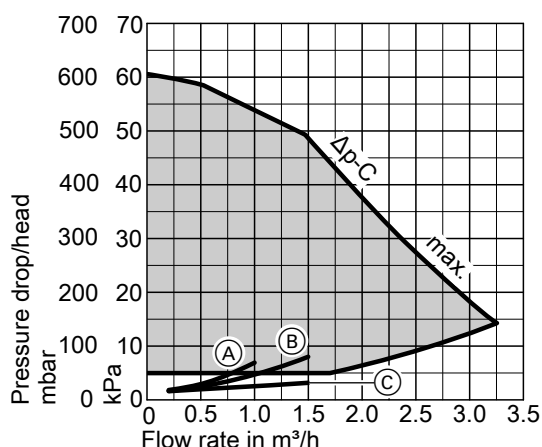
The use of differential pressure-dependent heating circuit pumps requires heating circuits with variable pump rates. These include, for example, single and twin line heating systems with thermostatic valves and underfloor heating systems with thermostatic or zone valves.

Result of this example: Divicon with mixer-3 (R ¾)

Wilo Yonos Para 25/6

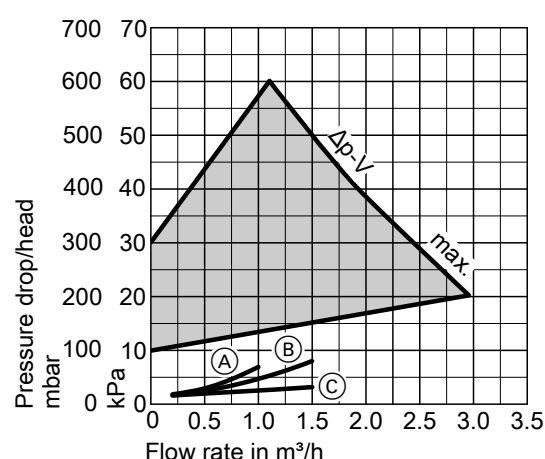
- Very economical HE pump (in accordance with Energy Label A)

Operating mode: Constant differential pressure



- (A) Divicon R ¾ with mixer
- (B) Divicon R 1 with mixer
- (C) Divicon R ¾ and R 1 without mixer

Operating mode: Variable differential pressure



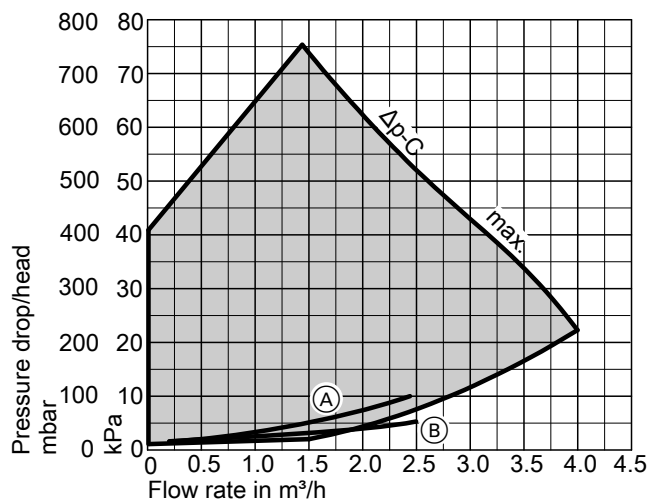
- (A) Divicon R ¾ with mixer
- (B) Divicon R 1 with mixer
- (C) Divicon R ¾ and R 1 without mixer

Installation accessories (cont.)

Wilco Stratos Para 25/7.5

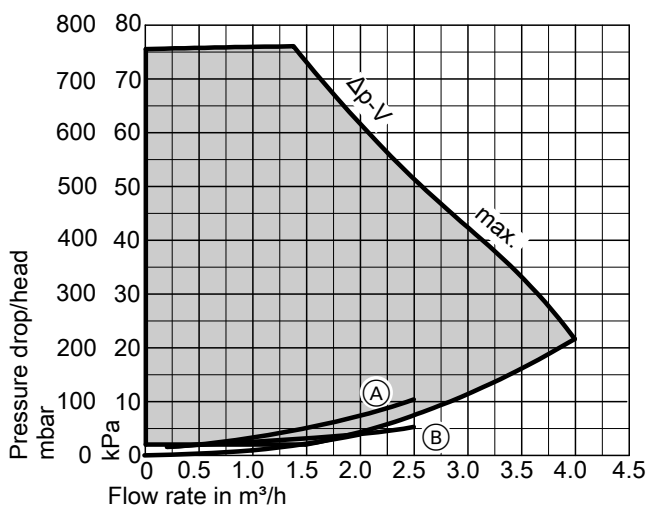
- Very economical HE pump (in accordance with Energy Label A)

Operating mode: Constant differential pressure



- (A) Divicon R 1¼ with mixer
- (B) Divicon R 1¼ without mixer

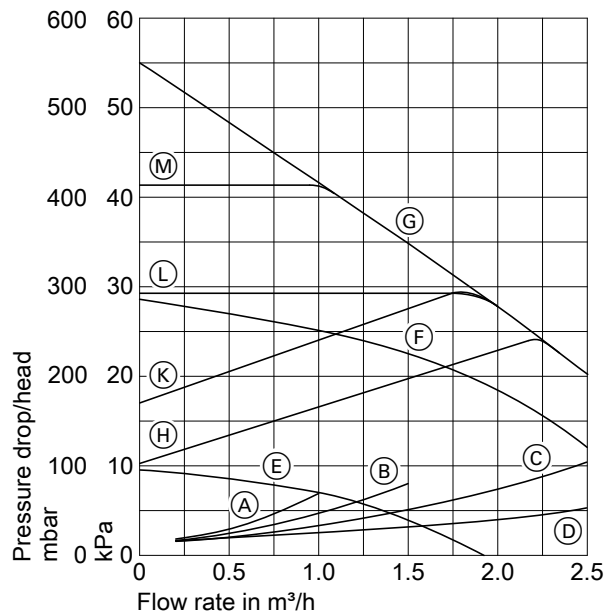
Operating mode: Variable differential pressure



- (A) Divicon R 1¼ with mixer
- (B) Divicon R 1¼ without mixer

Grundfos Alpha 2-60

- Very economical HE pump (in accordance with Energy Label A)
- with power consumption indication
- with Autoadapt function (automatic matching to the pipework)
- with night setback function



- (A) Divicon R ¾ with mixer
- (B) Divicon R 1 with mixer
- (C) Divicon R 1¼ with mixer
- (D) Divicon R ¾, R 1 and R 1¼ without mixer
- (E) Stage 1
- (F) Stage 2
- (G) Stage 3
- (H) Min. proportional pressure
- (K) Max. proportional pressure
- (L) Min. constant pressure
- (M) 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

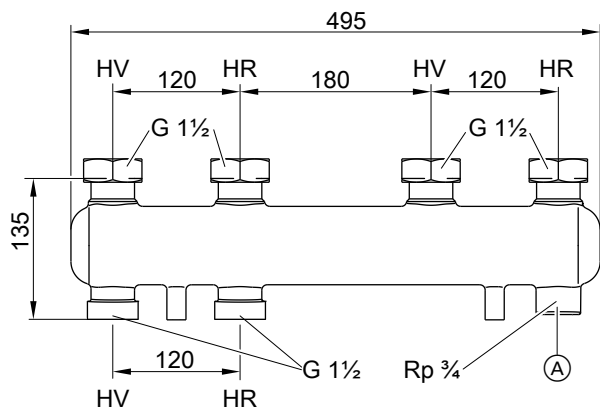
With thermal insulation.

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 $\frac{3}{4}$ and R 1.

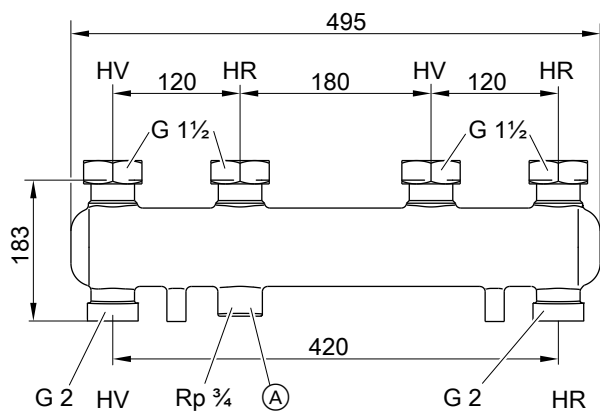


(A) Connection option for expansion vessel

HV Heating water flow

HR Heating water return

Part no. **7466 337** for Divicon R $1\frac{1}{4}$.

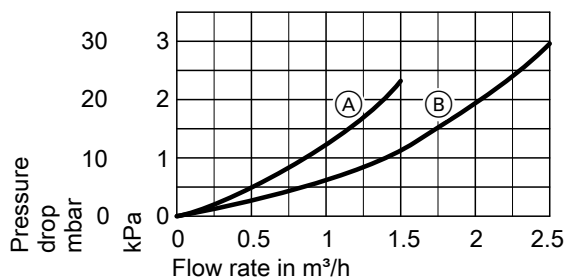


(A) Connection option for expansion vessel

HV Heating water flow

HR Heating water return

Pressure drop



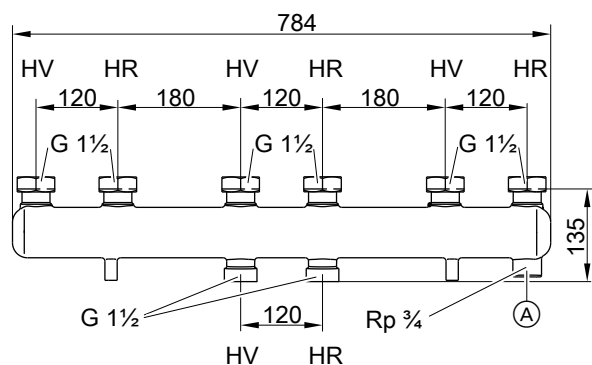
(A) Manifold for Divicon R $\frac{3}{4}$ and R 1

(B) Manifold for Divicon R $1\frac{1}{4}$

Installation accessories (cont.)

For 3 Divicon

Part no. 7460 643 for Divicon R $\frac{3}{4}$ and R 1.

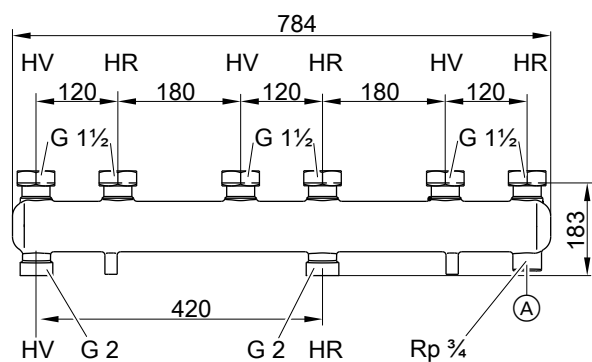


(A) Connection option for expansion vessel

HV Heating water flow

HR Heating water return

Part no. 7466 340 for Divicon R $1\frac{1}{4}$



(A) Connection option for expansion vessel

HV Heating water flow

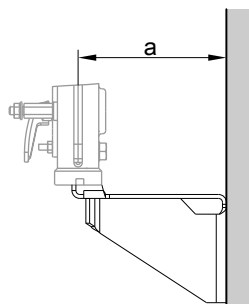
HR Heating water return

Wall mounting bracket

Part no. 7465 894

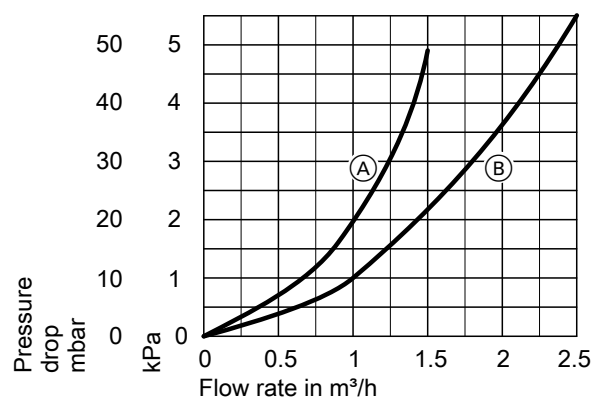
For individual Divicon.

With screws and rawl plugs.



For Divicon	With mixer	Without mixer
a mm	151	142

Pressure drop



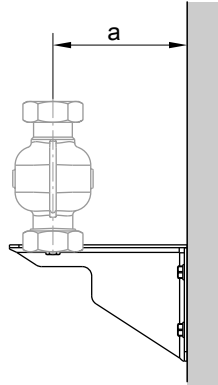
(A) Manifold for Divicon R $\frac{3}{4}$ and R 1

(B) Manifold for Divicon R $1\frac{1}{4}$

Part no. 7465 439

For manifold.

With screws and rawl plugs.



For Divicon	R $\frac{3}{4}$ and R 1	R $1\frac{1}{4}$
a mm	142	167

Installation accessories (cont.)

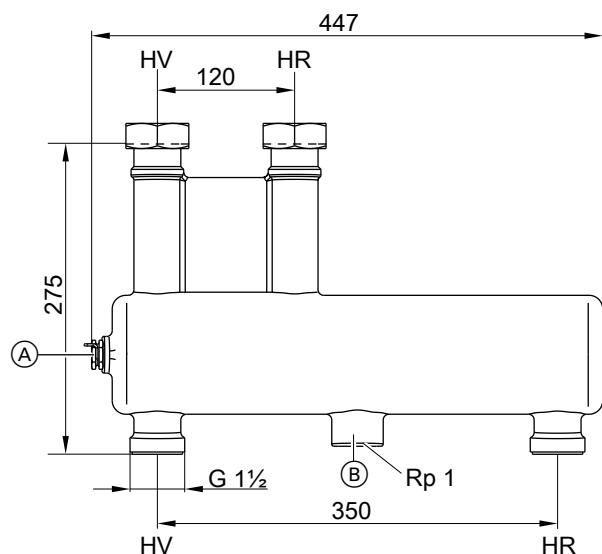
Low loss header

Part no. 7460 649

Max. flow rate 4.5 m³/h.

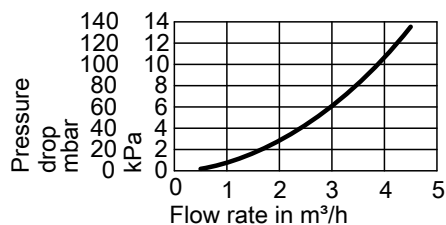
With thermal insulation and integral sensor well.

The connection between boiler and low loss header must be made on site.



- (A) Sensor well
- (B) Optional blow-down
- HV Heating water flow
- HR Heating water return

Pressure drop

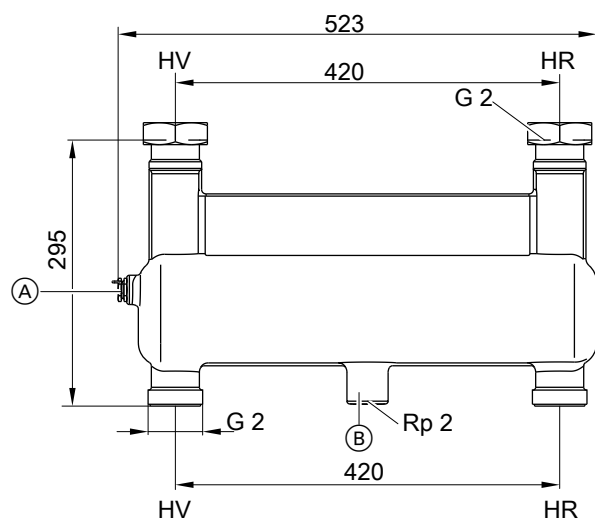


Part no. 7460 648

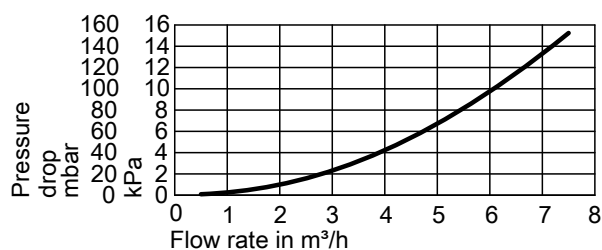
Max. flow rate 7.5 m³/h.

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

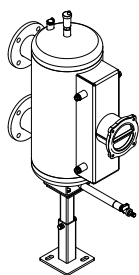
Low loss header DN 80

Can be used up to a total heating output of 594 kW

Part no. ZK02 627

Comprising:

- Low loss header with integral sensor well
- Thermal insulation
- Quick-action air vent valve
- Ball valve with hose nozzle for draining or blow-down
- Floor bracket



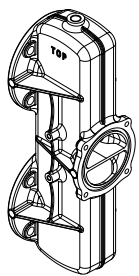
Cascade module adaptor DN 100

For connecting consumers if a low loss header is not used.

Part no. ZK02 628

Comprising:

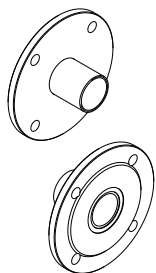
- Adaptor with connections for heating water flow and return
- Thermal insulation
- Quick-action air vent valve
- Ball valve with hose nozzle for draining or blow-down
- Retaining bracket



Adaptor flanges DN 80 to R 2

Can be used up to a total heating output of 200 kW in conjunction with a low loss header

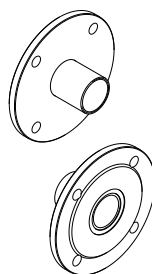
Part no. 7456 326



Adaptor flanges DN 100 to R 2

Can be used up to a total heating output of 200 kW in conjunction with a cascade module adaptor

Part no. ZK02 629



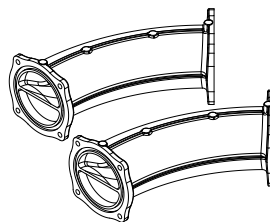
Pipe bends 90°

For corner installation, multi boiler system

Part no. ZK02 630

Comprising:

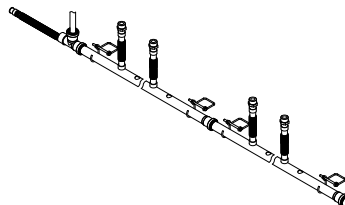
- 2 pipe bends
- Thermal insulation
- Support



Condensate headers

Comprising:

- Condensate header with tee and brackets
- Drain hose for connecting to the drainage system
- Connection hose for condensate drain from trap
- Connection hose for draining the safety valve for each boiler

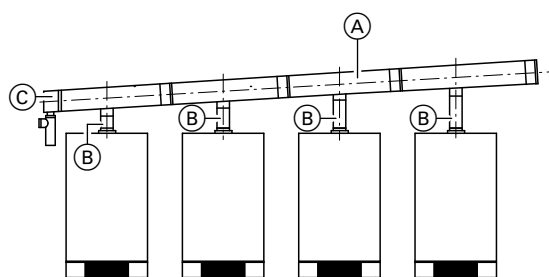


- 2-boiler system: **Part no. ZK02 631**
- 3-boiler system: **Part no. ZK02 632**
- 4-boiler system: **Part no. ZK02 633** (installation in block formation or in series)
- 5-boiler system: **Part no. ZK02 634**
- 6-boiler system: **Part no. ZK02 635** (installation in block formation or in series)

Flue gas cascades (positive pressure)

Comprising:

- Flue gas header
- End piece with condensate drain and trap



- (A) Flue gas header
 (B) End piece with trap

■ 2-boiler system installed in series

- For Vitodens 200-W, 49 and 60 kW: **Part no. ZK00 675**
- For Vitodens 200-W, 69 to 99 kW: **Part no. ZK00 676**

■ 3-boiler system installed in series

- For Vitodens 200-W, 49 and 60 kW: **Part no. ZK00 678**
- For Vitodens 200-W, 69 to 99 kW: **Part no. ZK00 679**

■ 4-boiler system installed in series

- For Vitodens 200-W, 49 and 60 kW: **Part no. ZK00 681**
- For Vitodens 200-W, 69 to 99 kW: **Part no. ZK00 682**

■ 5-boiler system installed in series

- For Vitodens 200-W, 49 and 60 kW: **Part no. ZK02 636**
- For Vitodens 200-W, 69 to 99 kW: **Part no. ZK02 637**

■ 6-boiler system installed in series

- For Vitodens 200-W, 49 and 60 kW: **Part no. ZK00 684**
- For Vitodens 200-W, 69 to 99 kW: **Part no. ZK00 685**

■ 4-boiler system installed in block formation

- For Vitodens 200-W, 49 and 60 kW: **Part no. ZK00 689**
- For Vitodens 200-W, 69 to 99 kW: **Part no. ZK00 690**

■ 6-boiler system installed in block formation

- For Vitodens 200-W, 49 and 60 kW: **Part no. ZK00 691**
- For Vitodens 200-W, 69 to 99 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 Siting, 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 German Combustion Order (FeuVo) [check 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 vents (observe FeuVo and TRGI 2008 point 5.5.4 [check local fire 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 flue systems under positive pressure 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, acc. 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 shaft systems to DIN 18117-1.

Observe all local fire regulations.

Connection on the flue gas side

The connection piece to the chimney should be as short as possible. Therefore position the Vitodens as close to the chimney as possible. The flue should be as straight as possible. If diversions are unavoidable, do not arrange these one after the other. The entire flue gas path must be able to be checked and cleaned as required.

No special protective measures or clearances towards combustible objects, such as furniture, packaging or similar, need to be taken/observed. The surface temperatures of the Vitodens and the flue system do not exceed 85 °C at any point.

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

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 result if the ventilation system and the Vitodens are operated simultaneously. In such cases, install an **interlock circuit**. For this, the internal H2 extension (accessories) can be used. This switches the extractors off when the burner is started.

Safety equipment for the installation room

Viessmann heat generators 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.

Siting conditions for room sealed operation (appliance type C)

The Vitodens can be installed as equipment type C_{13x}, C_{33x}, C_{53x}, C_{63x}, C_{83x} or C_{93x} to TRGI 2008, for **room sealed operation independent** of the size and ventilation of the installation room.

Installation room

It may, for example, be installed in recreation rooms, in other living spaces, in adjacent 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.

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 German Combustion Order (FeuVo), boilers from 50 kW must be installed in a separate room [check local regulations]. Fit the mains isolator outside the installation room.

Appropriate ventilation air and extract air apertures are required in accordance with TRGI (see the technical guide on flue systems for the Vitodens).

Connection on the flue gas side

The flue pipe should be designed to be as short and straight as possible.

If bends are unavoidable, do not install them directly one after another. The entire flue gas path must be able to be checked and cleaned as required.

Since the flue pipe connection for room sealed operation is surrounded by combustion air (coaxial pipe), no clearances towards combustible materials need be maintained.

Shafts that were previously connected to oil or solid fuel boilers must be thoroughly cleaned by a chimney sweep. Loose deposits comprising sulphur and soot must not remain on the inside of the chimney. Running a balanced flue pipe through the shaft is then not required. If thorough cleaning is impossible, chloride deposits are present or the shaft is silted up, a separate balanced flue pipe can be used inside the shaft. Close off and seal any other connection apertures with appropriate materials. This does not apply to any cleaning or inspection apertures that are provided with chimney cleaning covers and that are identified with an appropriate test mark. For further details, see the technical guide on flue systems for the Vitodens.

Installation in a garage

Tests carried out by the Gaswärme-Institut e.V., Essen, have confirmed that the Vitodens is suitable for installation in garages.

When installing this boiler in a garage, maintain a clearance between the floor and the burner of at least 500 mm. Install a frame or deflector (provided on site) to protect the boiler against mechanical damage.

Safety equipment for the installation room

Viessmann heat generators 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.

Operation of the Vitodens in wet rooms

■ Room sealed operation:

The Vitodens is approved for installation in wet rooms (IP rating: IP X4, splashproof).

The boiler may be installed in safety zone 1 if hosed water (e.g. from massage showers) is prevented.

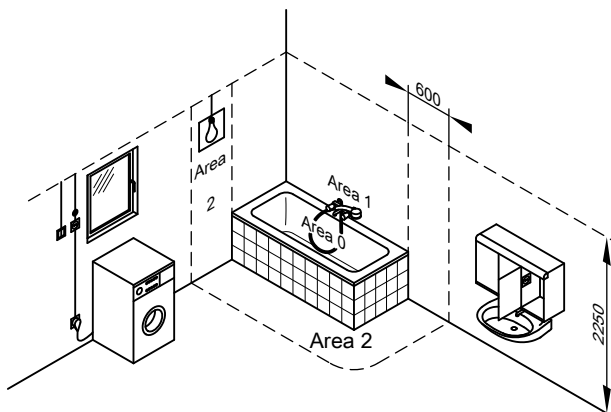
■ Open flue operation:

The Vitodens must not be installed in safety zone 1 or safety zone 2.

When installing the Vitodens in wet rooms, observe the safety zones and minimum wall clearances according to VDE 0100 [or local regulations] (see also "Electrical safety zone").

Electrical equipment in rooms containing a bathtub or a shower must be installed in such a way that users cannot be exposed to dangerous body currents. VDE 0100 specifies that cables supplying permanently installed consumers in zones 1 and 2 should only be run vertically and routed into the equipment from the back.

Electrical safety zone



Design information (cont.)

Electrical connection

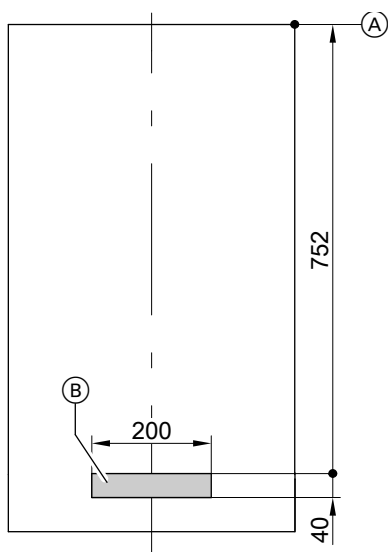
The power supply must comply with the requirements of your local power supply utility and current VDE [or local] regulations (Ⓐ: ÖVE regulations).

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.

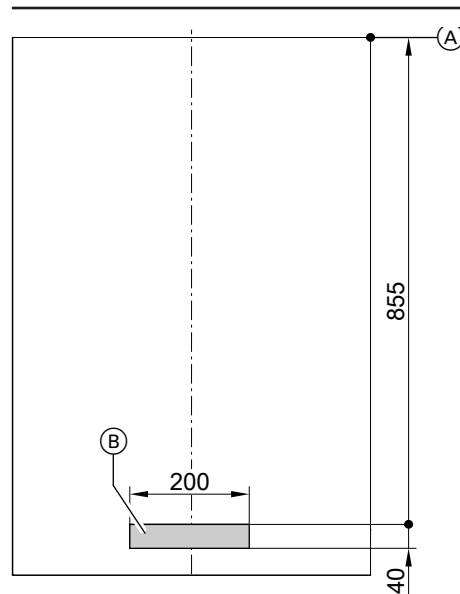
Make the power supply (230 V~, 50 Hz) via a permanent connection. Connect the supply cables and accessories at the terminals inside the boiler.

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



Vitodens 200-W, 49 to 99 kW

- Ⓐ Reference point Vitodens top edge
- Ⓑ Area for power cables



Vitodens 200-W, 120 to 150 kW

- Ⓐ Reference point Vitodens top edge
- Ⓑ Area for power cables

Recommended cables

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

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 H2 extension (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 sited in a wet room, the power supply connection of accessories must not be made at the control unit.

Design information (cont.)

Additional requirements when siting 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 continued installation of an external safety solenoid valve when installing the Vitodens 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].

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

Max. test pressure 150 mbar (15 kPa).

We recommend installing a gas filter to DIN 3386 in the gas line.

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 gas appliance, multiplied by a factor of 1.14 (ratio $H_{IB} 8.60/7.55$). Use this fictitious rated heat input to select the gas flow switch and design the pipework to TRGI 2008 [check local regulations].

Vitodens rated heating output kW	Gas flow switch
49	GS 10
60	GS 10
80	GS 16
99	GS 16
120 - 150	not required

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

Thermally activated safety shut-off valve

According to paragraph 4, section 5 of the FeuVo 2008 [check local regulations], thermally actuated gas shut-off devices that shut off the gas supply if the external temperature exceeds 100°C must be installed in combustion equipment or in gas supply 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.

Minimum clearances

Maintain a clearance of 700 mm in front of the Vitodens or the DHW cylinder for maintenance purposes.

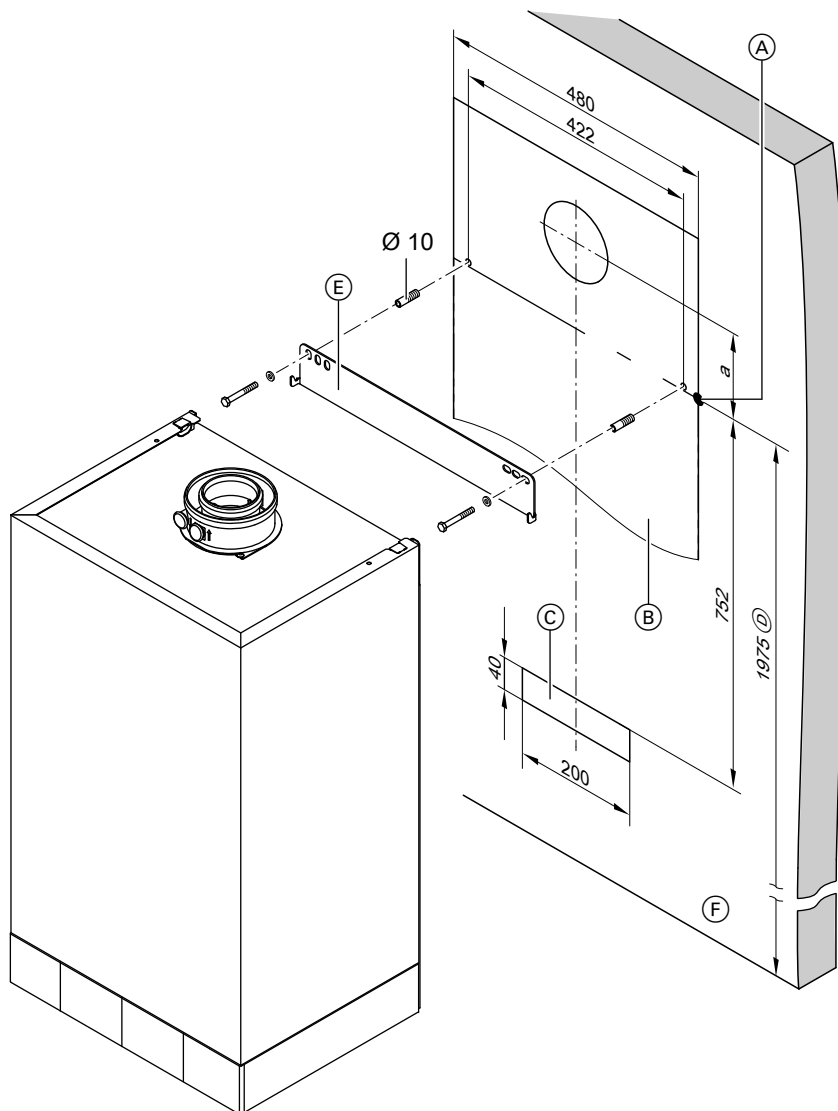
No maintenance clearances are required to the left or right of the Vitodens.

Installing the Vitodens 200-W, 49 to 99 kW directly on the 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.

Design information (cont.)

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 a DHW cylinder must be ordered separately.



(A) Reference point Vitodens top edge

(B) Vitodens installation template

(C) Area for power cables

Allow cables to protrude approx. 1200 mm from the wall.

(D) Recommended dimension for a single boiler system

(E) Wall mounting bracket

(F) Top edge finished floor

Boiler		49 - 60 kW	80 - 99 kW
a	mm	146	231

The mounting bracket supplied with the boiler cannot then be used.

Self-supporting installation with a self-supporting mounting frame (single boiler)

The Vitodens can be mounted on the self-supporting mounting frame.

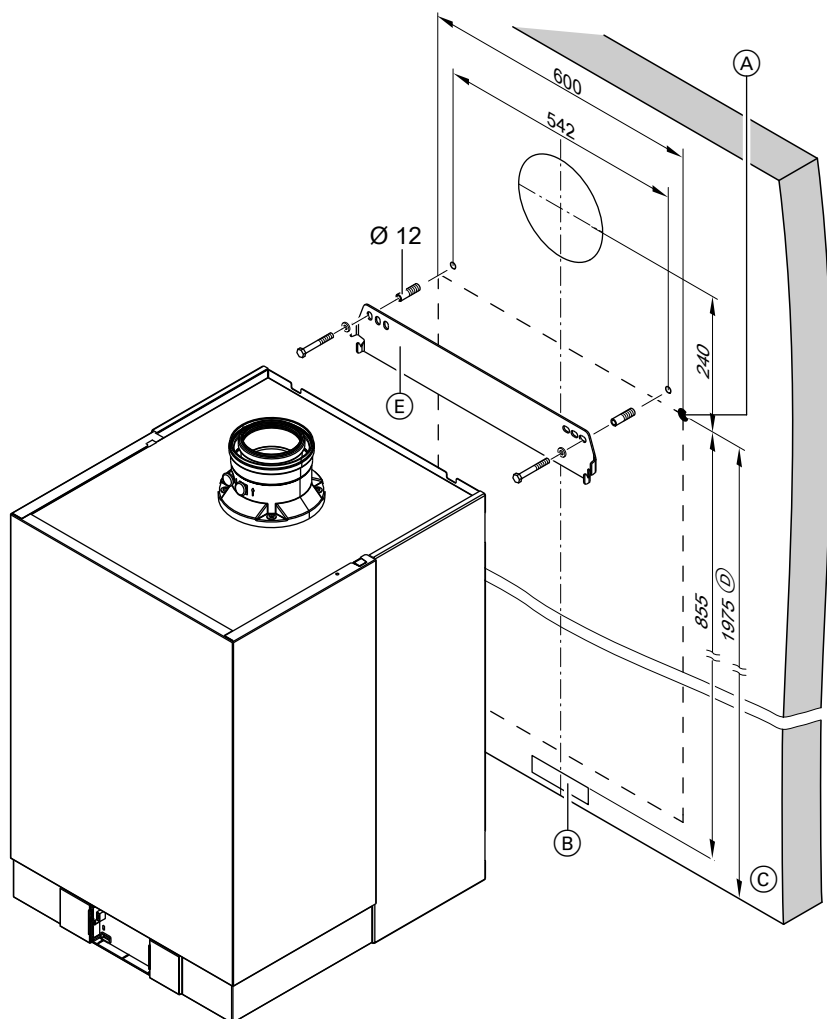
Installing the Vitodens 200-W, 120 to 150 kW directly on the wall (single boiler)

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

The mounting frame (accessories) is recommended for installing the Vitodens (see page 35).

Design information (cont.)

Connection sets for the connection of the heating circuits and a DHW cylinder must be ordered separately.



(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

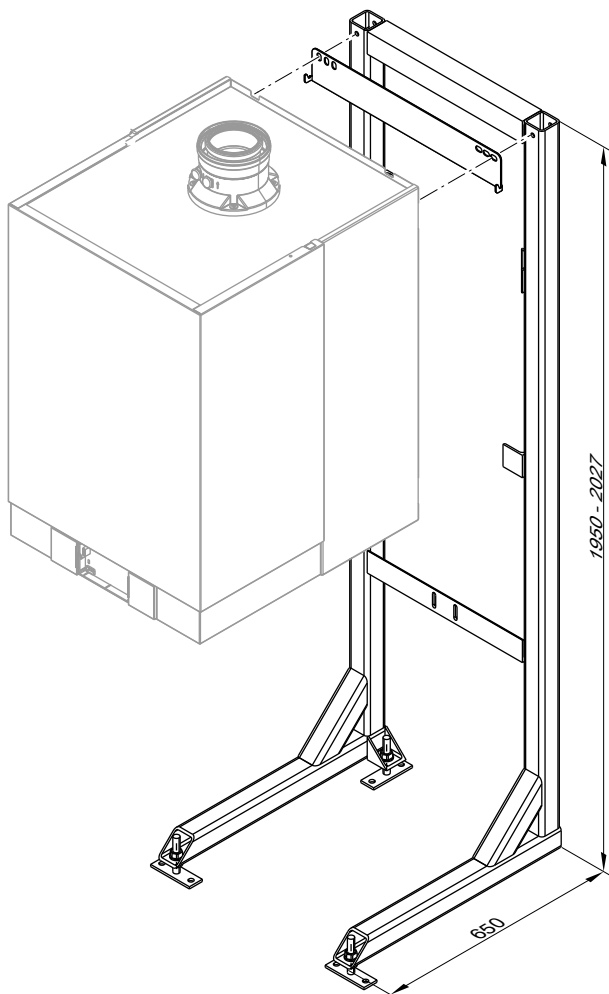
(D) Recommended dimension for a single boiler system

(E) Wall mounting bracket

Design information (cont.)

Installation with mounting frame (single boiler)

The Vitodens can be installed freestanding in the room by using the mounting frame available as an accessory. The boiler can be levelled by means of adjustable feet.



Multi boiler system

Hydraulic cascade

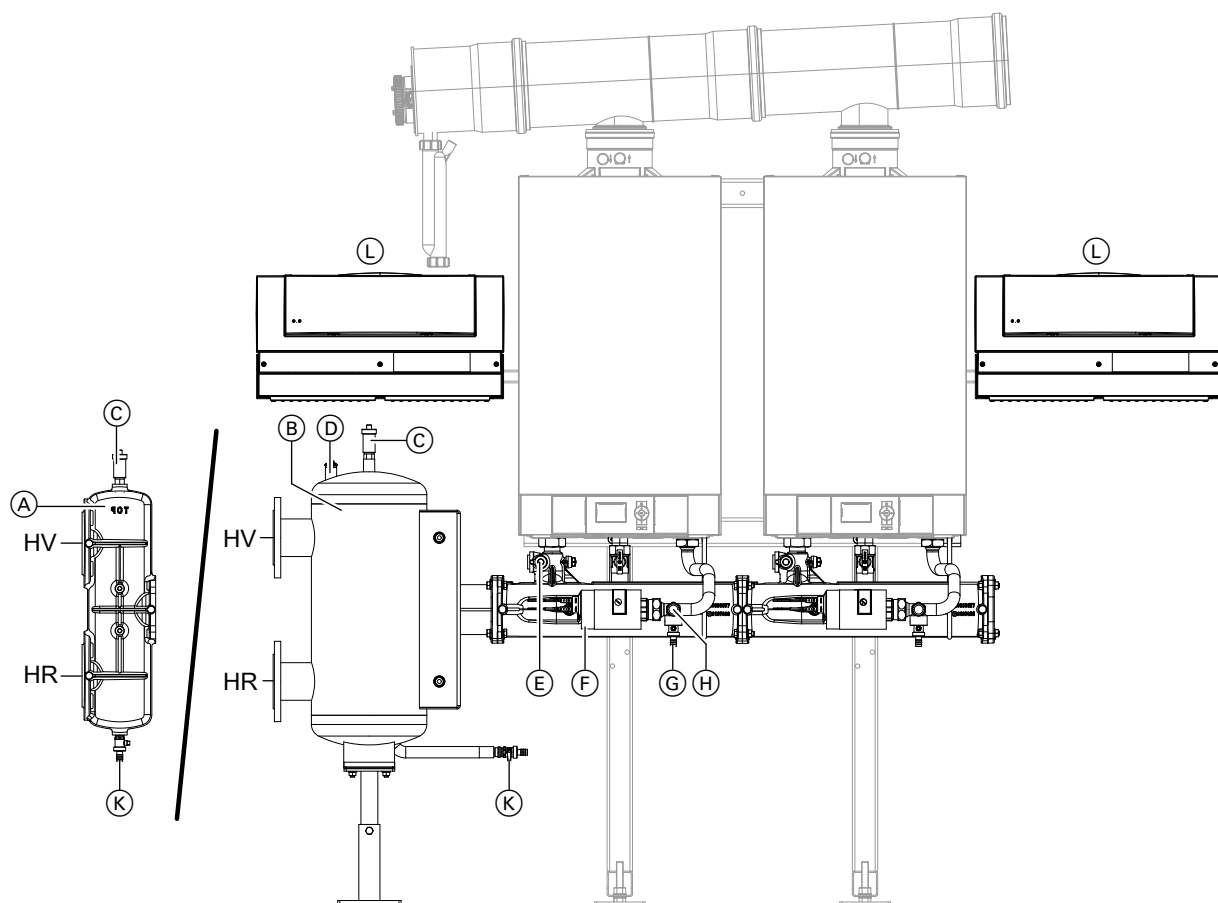
Flow and return manifold for multi boiler systems with:

- 2 to 6 boilers mounted on a wall
- 2 to 6 boilers installed in series
- 4 or 6 boilers installed in block formation

Optionally with a low loss header or cascade module adaptor for connecting the heating circuits. Must be ordered separately as an accessory.

Heating circuit connections can be either on the right or left.

Specification



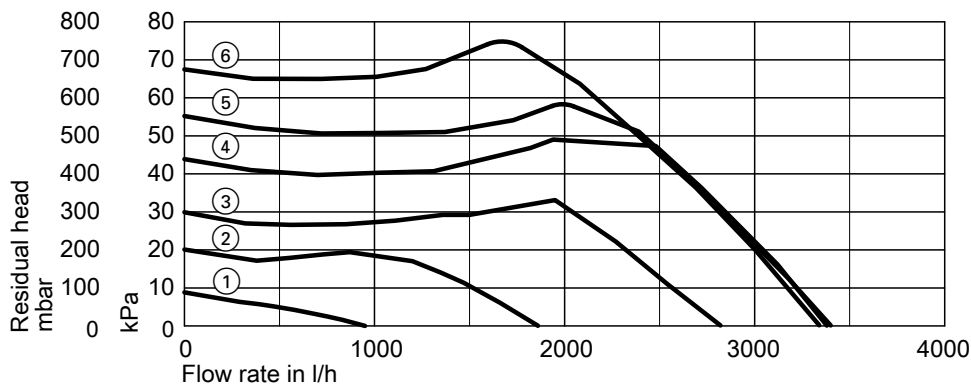
Shown without the thermal insulation supplied

- | | |
|---|--|
| (A) Cascade module adaptor | (H) Safety valve |
| (B) Low loss header | (K) Drain outlet |
| (C) Air vent valve | (L) Vitotronic 300-K (can be fitted either to the left or the right) |
| (D) Sensor well for flow temperature sensor | The total length of all BUS cables (on site) should not exceed 50 m. |
| (E) Boiler drain & fill valve | HR Heating water return |
| (F) High efficiency circulation pump | HV Heating water flow |
| (G) Boiler drain & fill valve | |

Number of boilers			2	3	4/2 x 2	5	6/2 x 3
Heating circuit connection							
– Low loss header	PN6/DN		80	80	80	80	80
– Cascade module adaptor	PN6/DN		100	100	100	100	100
Boiler connection							
	G		1½	1½	1½	1½	1½
Max. flow rate	Δt						
– 49 kW	15 K	m³/h	5.6	8.4	11.2	14.0	16.8
– 60 kW	15 K	m³/h	6.9	10.3	13.8	17.2	20.6
– 69 kW	20 K	m³/h	5.9	8.9	11.8	14.8	17.5
– 80 kW	20 K	m³/h	6.9	10.3	13.7	17.2	20.6
– 99 kW	20 K	m³/h	8.5	12.8	17.0	21.3	25.5
Circulation pump	Type		Vi Para 25/1-11				
Rated voltage	V~		230				
Max. power consumption	W		140				
Min. power consumption	W		8				

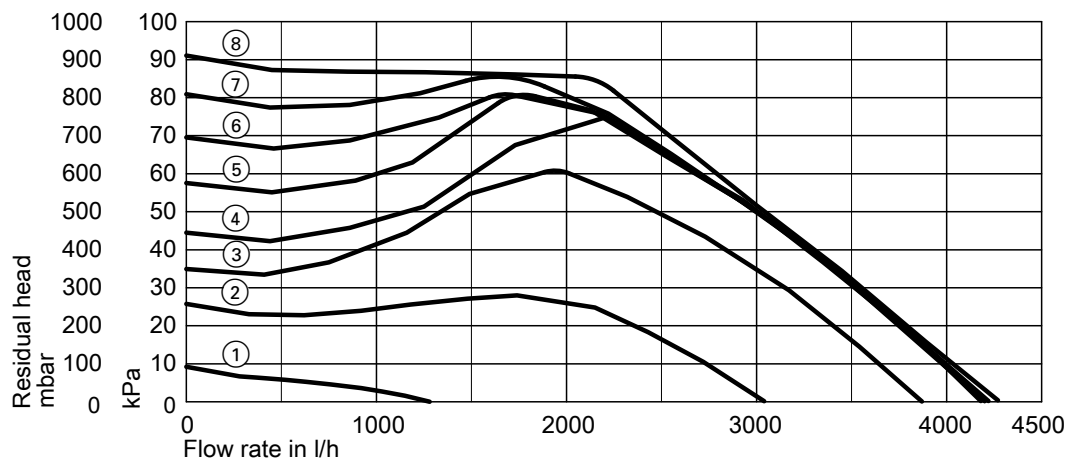
Design information (cont.)

Residual head of the integral circulation pump at 49 - 60 kW



① to ⑥ Pump stage setting

Residual head of the integral circulation pump at 69 - 99 kW



① to ⑧ Pump stage setting

Multi boiler system standard delivery

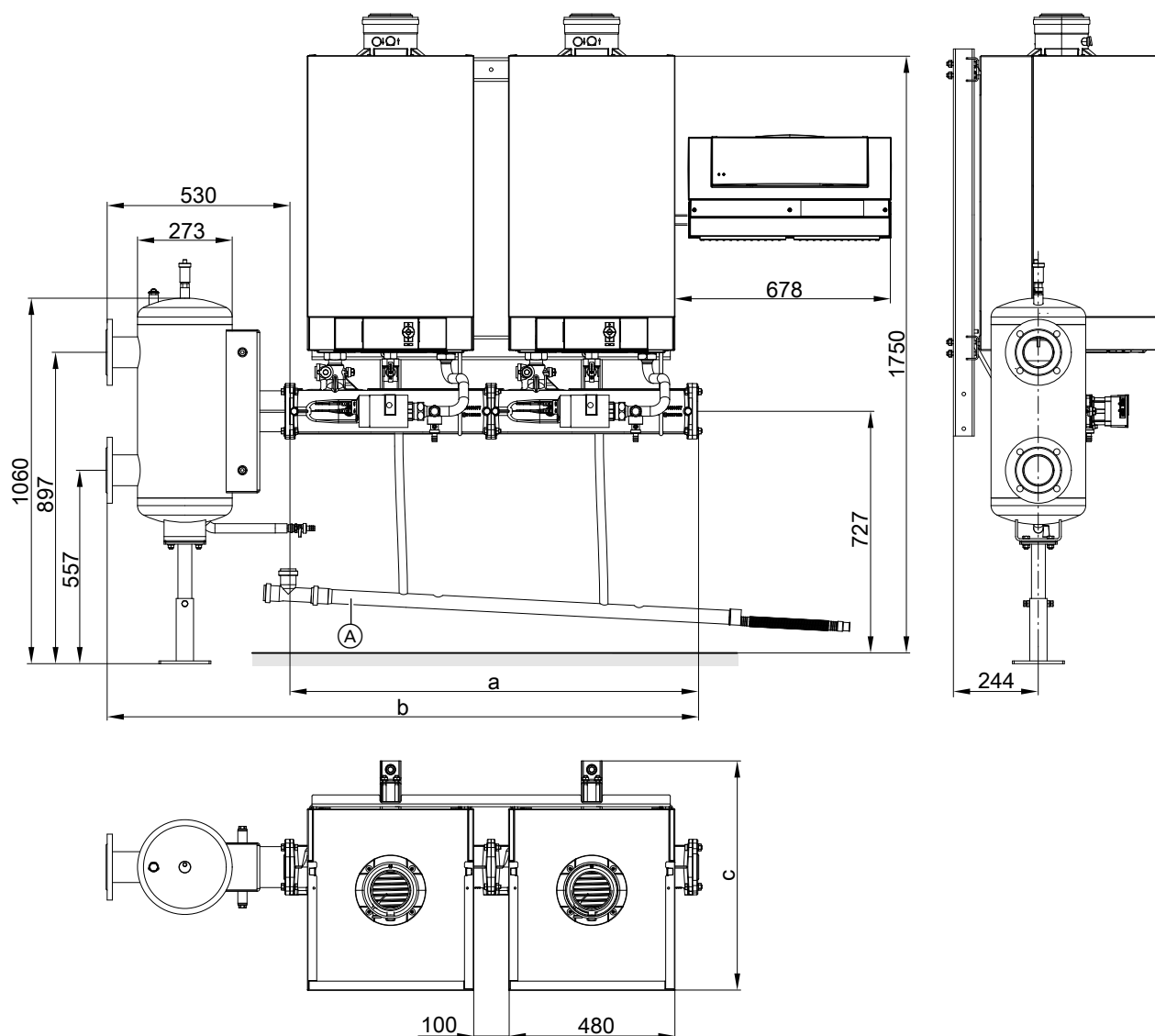
- Vitodens 200-W (2 to 6 boilers)
- Vitotronic 300-K cascade control unit
- Cascade communication module for each boiler
- Immersion temperature sensor
- Mounting frame or pre-plumbing jig for wall mounting
- Hydraulic cascade with high efficiency circulation pump and thermal insulation

Accessories (subject to order)

- Flue gas cascade
- Low loss header with connection lines and thermal insulation or
- Cascade module adaptor with thermal insulation
- Pipe bends for corner installation with thermal insulation

Design information (cont.)

Wall mounting with low loss header



Shown without the thermal insulation supplied

(A) Condensate header (accessories)

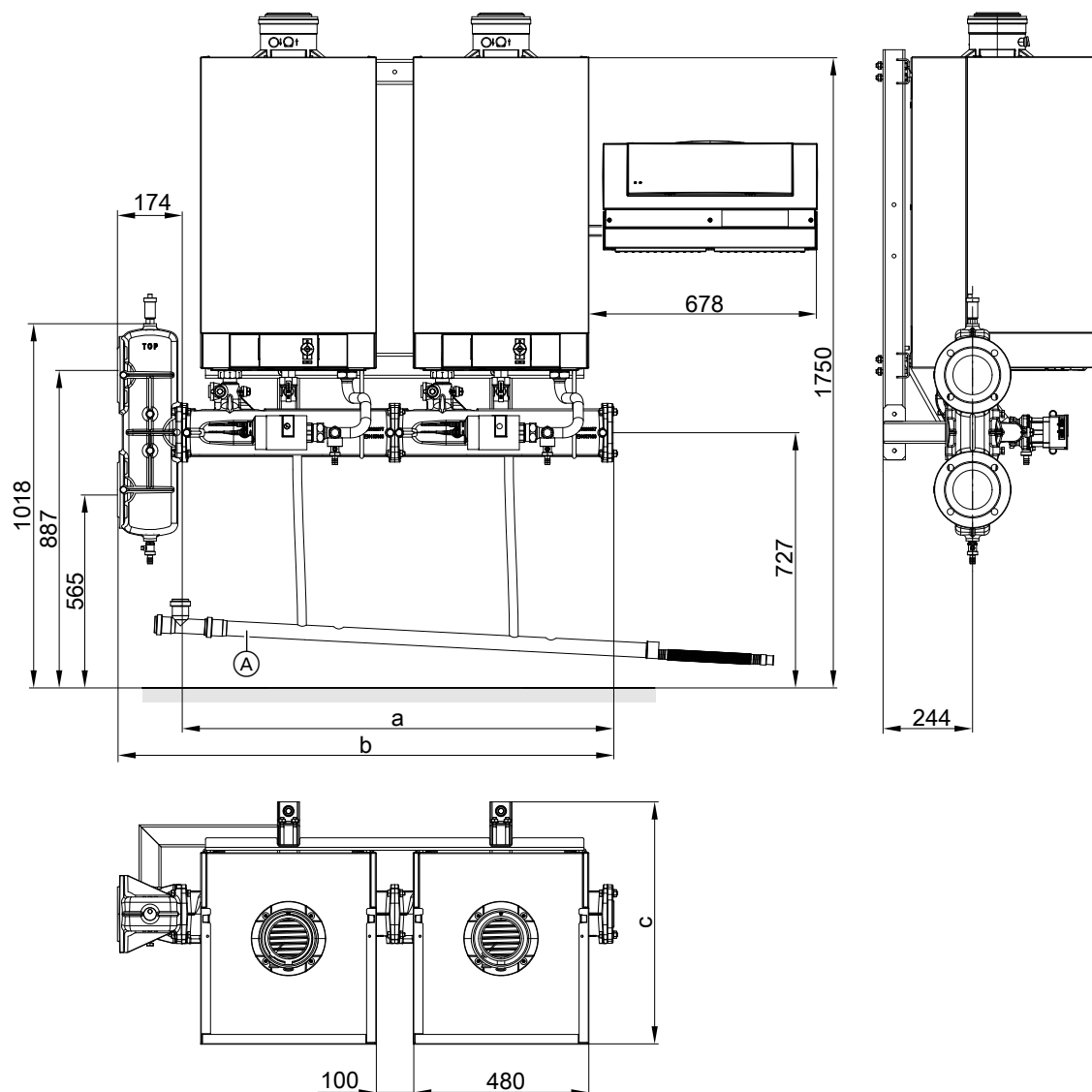
Number of boilers		2		3		4		5		6	
Rated heating output	kW	49 - 60	69 - 99	49 - 60	69 - 99	49 - 60	69 - 99	49 - 60	69 - 99	49 - 60	69 - 99
a	mm	1720	1720	2300	2300	2880	2880	3460	3460	4040	4040
b	mm	2250	2250	2830	2830	3410	3410	3990	3990	4570	4570
c	mm	511	661	511	661	511	661	511	661	511	661

Note

The height dimensions can be reduced by max. 150 mm. In this case, the fixing profiles must be installed accordingly.

Design information (cont.)

Wall mounting with a cascade module adaptor



Shown without the thermal insulation supplied

(A) Condensate header (accessories)

Number of boilers		2		3		4		5		6	
Rated heating output	kW	49 - 60	69 - 99	49 - 60	69 - 99	49 - 60	69 - 99	49 - 60	69 - 99	49 - 60	69 - 99
a	mm	1720	1720	2300	2300	2880	2880	3460	3460	4040	4040
b	mm	1894	1894	2474	2474	3054	3054	3634	3634	4214	4214
c	mm	511	661	511	661	511	661	511	661	511	661

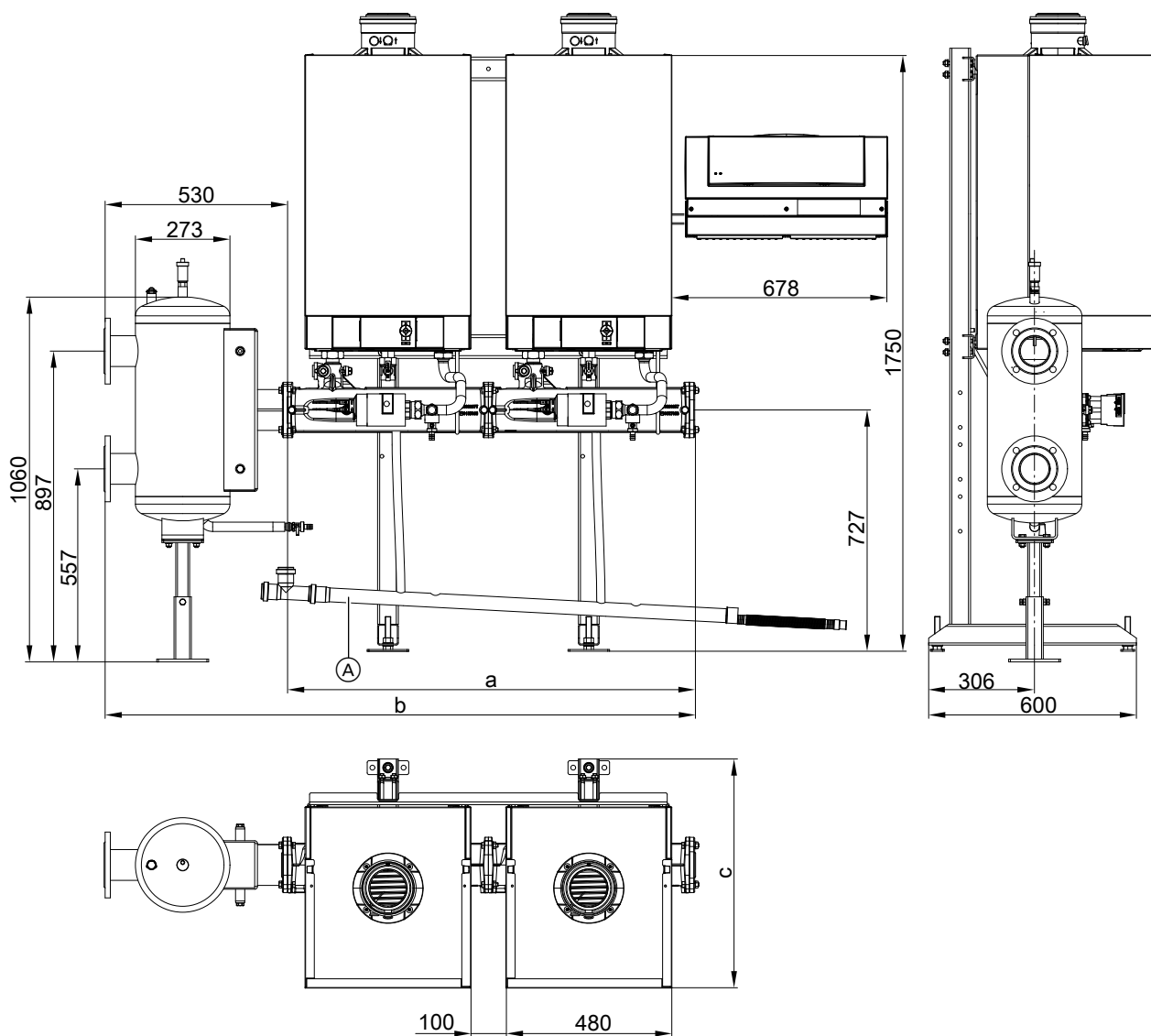
Note

The height dimensions can be reduced by max. 300 mm. In this case, the fixing profiles must be installed accordingly.

Design information (cont.)

Installation in series and in block formation with a mounting frame

Installation in series with a low loss header



Shown without the thermal insulation supplied

(A) Condensate header (accessories)

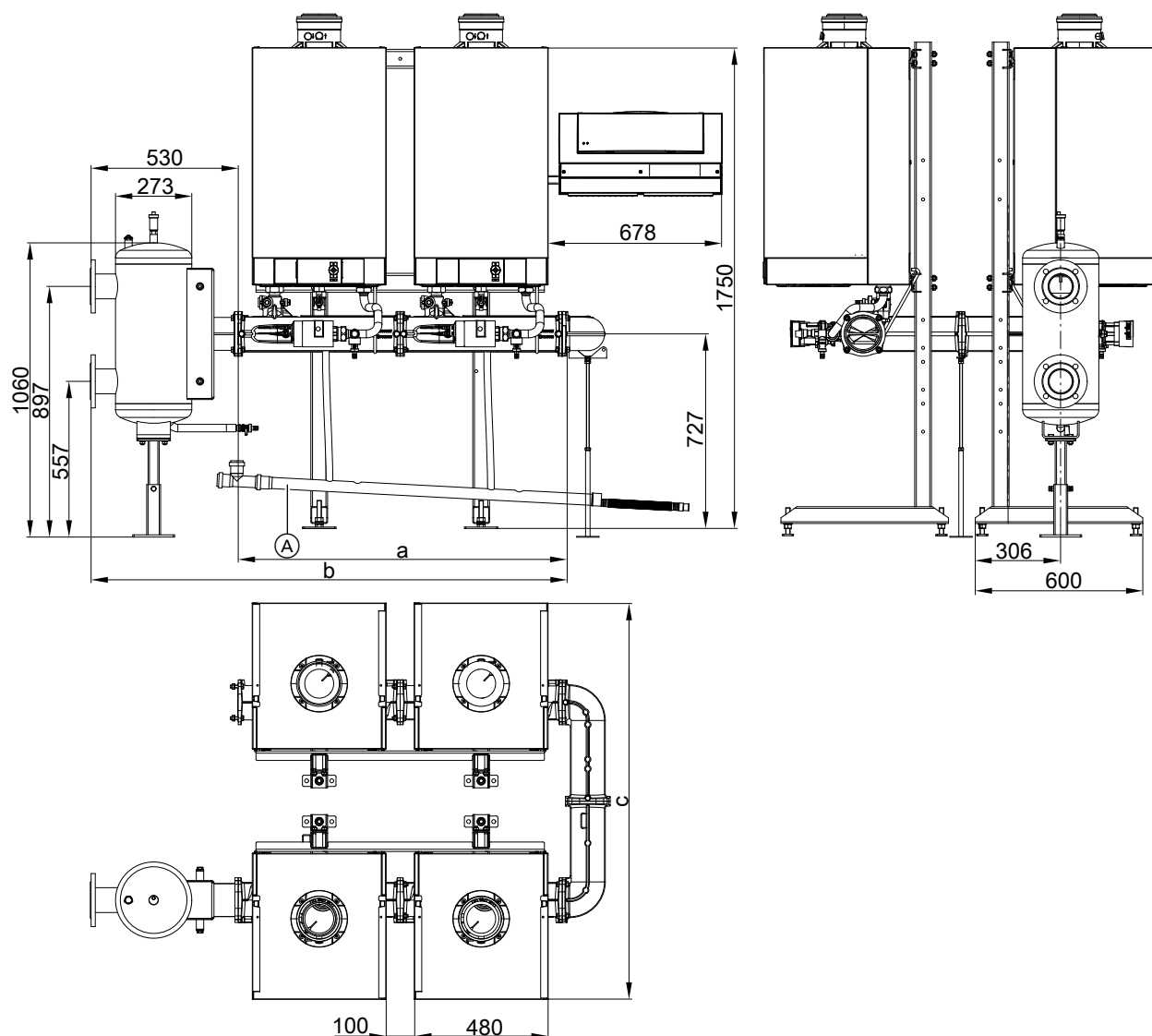
Number of boilers		2		3		4		5		6	
Rated heating output	kW	49 - 60	69 - 99	49 - 60	69 - 99	49 - 60	69 - 99	49 - 60	69 - 99	49 - 60	69 - 99
a	mm	1720	1720	2300	2300	2880	2880	3460	3460	4040	4040
b	mm	2250	2250	2830	2830	3410	3410	3990	3990	4570	4570
c	mm	511	661	511	661	511	661	511	661	511	661

Note

The height dimensions can be reduced by 150 mm if using a mounting frame for installation. In this case, the fixing profiles must be installed accordingly.

Design information (cont.)

Installation in block formation with a low loss header



Shown without the thermal insulation supplied

(A) Condensate header (accessories)

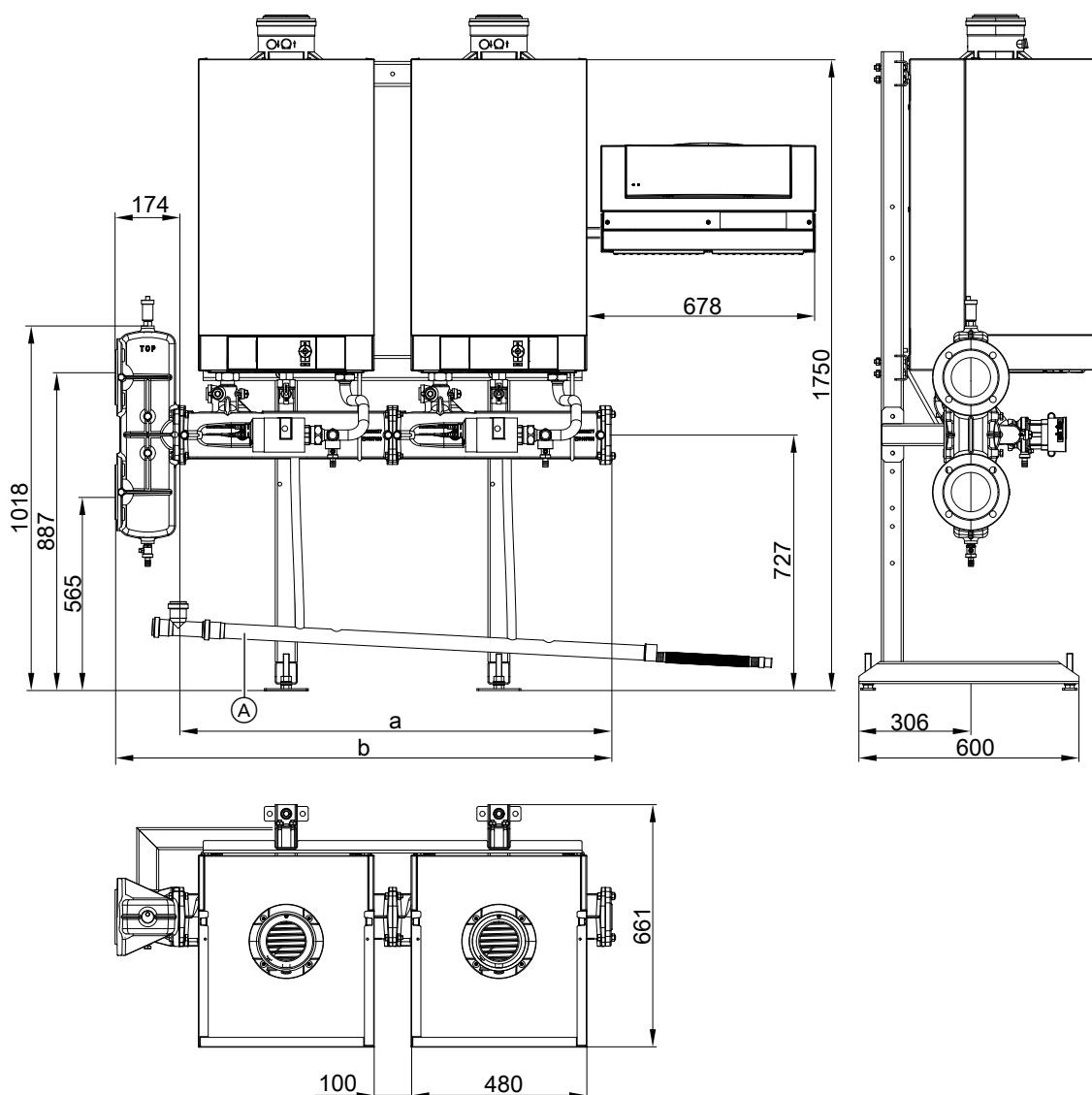
Number of boilers		2 x 2 49 - 60 kW	2 x 2 69 - 99 kW	2 x 3 49 - 60 kW	2 x 3 69 - 99 kW
a	mm	1690	1690	2270	2270
b	mm	1907	1907	2487	2487
c	mm	1350	1422	1350	1422

Note

The height dimensions can be reduced by 150 mm if using a mounting frame for installation. In this case, the fixing profiles must be installed accordingly.

Design information (cont.)

Installation in series with a cascade module adaptor



Shown without the thermal insulation supplied

(A) Condensate header (accessories)

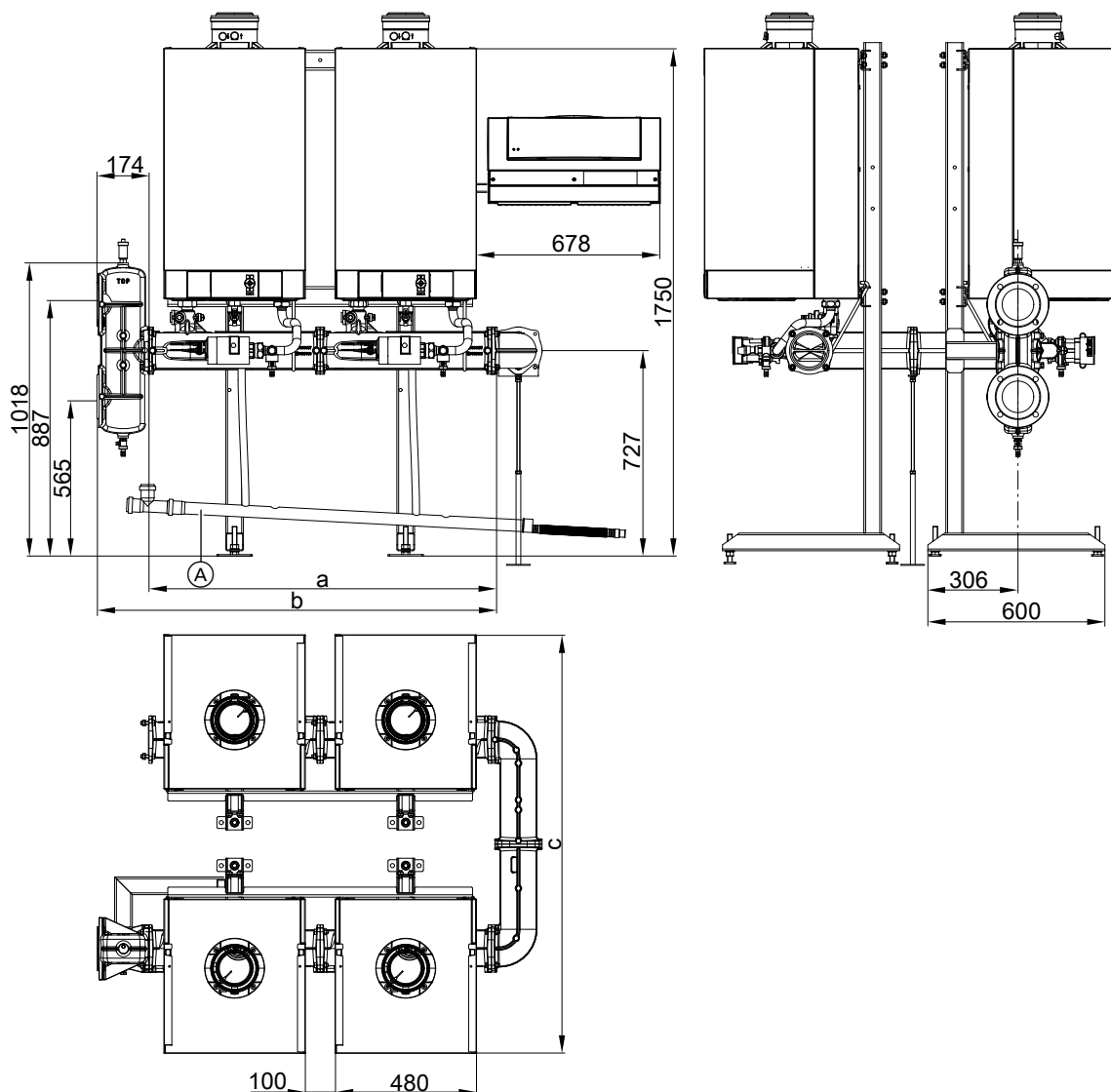
Number of boilers		2		3		4		5		6	
Rated heating output	kW	49 - 60	69 - 99	49 - 60	69 - 99	49 - 60	69 - 99	49 - 60	69 - 99	49 - 60	69 - 99
a	mm	1720	1720	2300	2300	2880	2880	3460	3460	4040	4040
b	mm	1894	1894	2474	2474	3054	3054	3634	3634	4214	4214
c	mm	511	661	511	661	511	661	511	661	511	661

Note

The height dimensions can be reduced by 150 or 300 mm if using a mounting frame for installation. In this case, the fixing profiles must be installed accordingly.

Design information (cont.)

Installation in block formation with a cascade module adaptor



Shown without the thermal insulation supplied

(A) Condensate header (accessories)

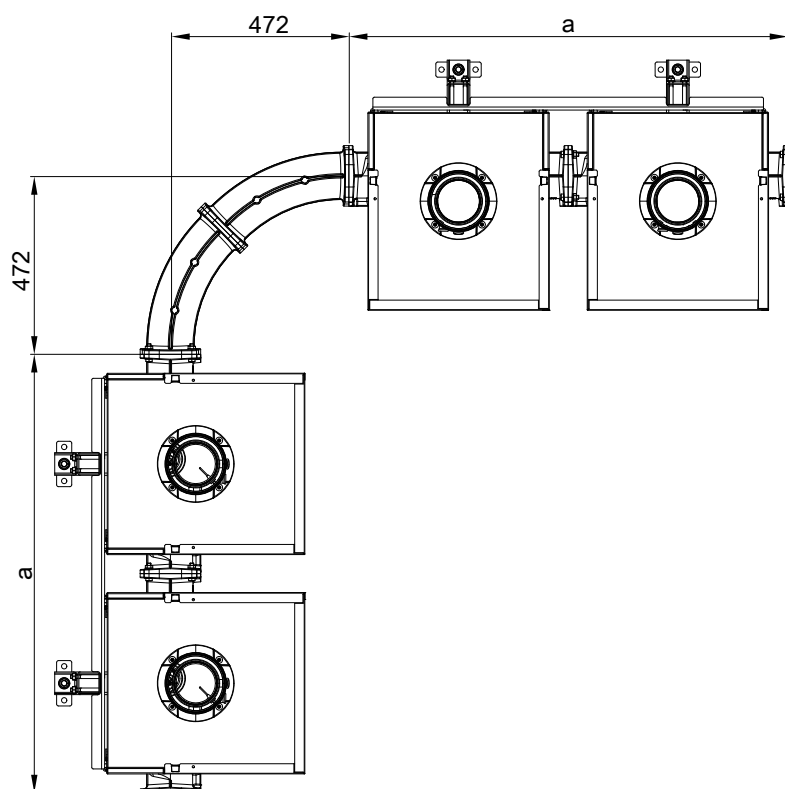
Number of boilers		2 x 2 49 - 60 kW	2 x 2 69 - 99 kW	2 x 3 49 - 60 kW	2 x 3 69 - 99 kW
a	mm	1690	1690	2444	2444
b	mm	1864	1864	2131	2131
c	mm	1350	1422	1350	1422

Note

The height dimensions can be reduced by 150 or 300 mm if using a mounting frame for installation. In this case, the fixing profiles must be installed accordingly.

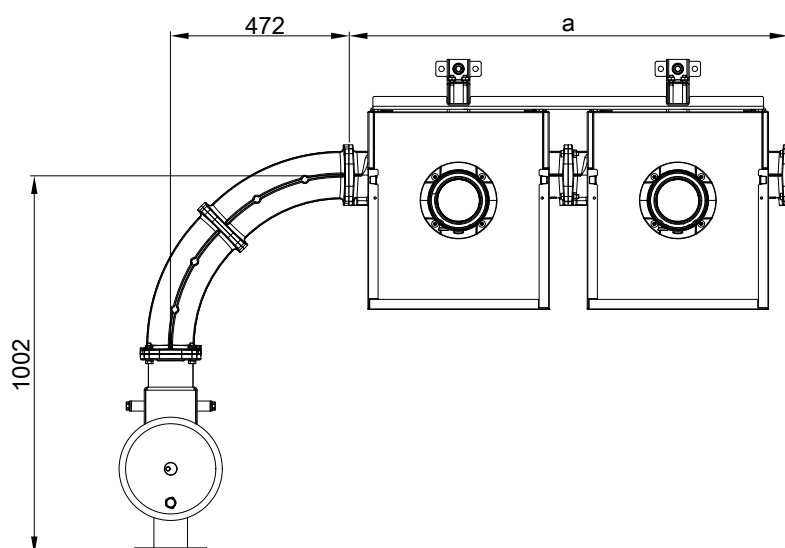
Design information (cont.)

Corner installation, multi boiler system



Number of boilers	2 x 49 - 99 kW	3 x 49 - 99 kW	4 x 49 - 99 kW	5 x 49 - 99 kW	6 x 49 - 99 kW
a mm	1690	2270	2850	3430	4010

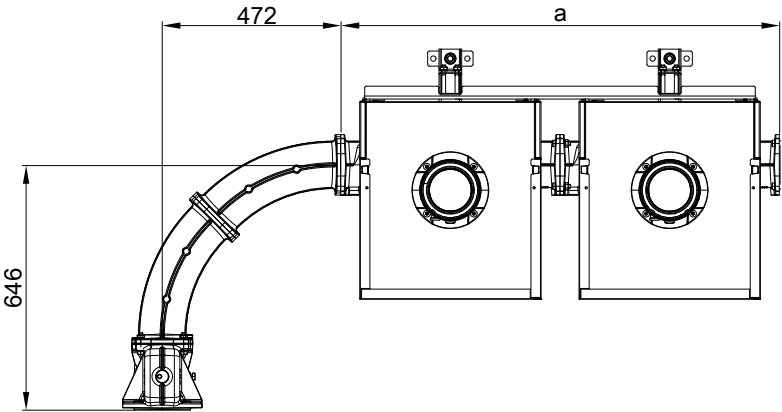
Corner installation, low loss header in a multi boiler system



Number of boilers	2 x 49 - 99 kW	3 x 49 - 99 kW	4 x 49 - 99 kW	5 x 49 - 99 kW	6 x 49 - 99 kW
a mm	1690	2270	2850	3430	4010

Design information (cont.)

Corner installation, cascade module adaptor in a multi boiler system



Number of boilers	2 x 49 - 99 kW	3 x 49 - 99 kW	4 x 49 - 99 kW	5 x 49 - 99 kW	6 x 49 - 99 kW
a mm	1690	2270	2850	3430	4010



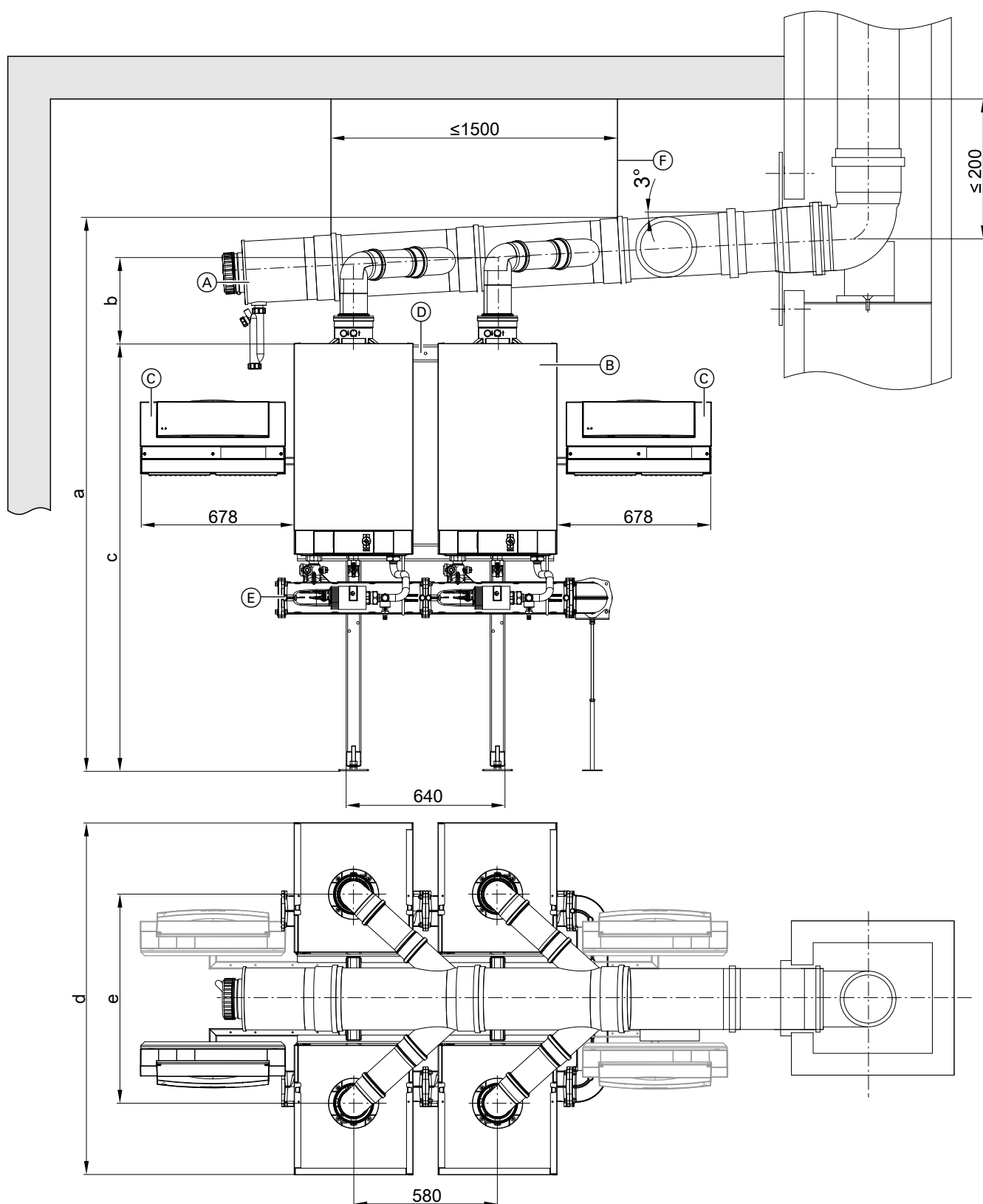
Design information (cont.)

Number of boilers		2x49 kW 2x60 kW	2x80 kW 2x99 kW	3x49 kW 3x60 kW	3x80 kW 3x99 kW	4x49 kW 4x60 kW	4x80 kW 4x99 kW	5x49 kW 5x60 kW	5x80 kW 5x99 kW	6x49 kW 6x60 kW	6x80 kW 6x99 kW
a	mm	2111	2136	2141	2166	2196	2196	2251	2251	2281	2281
b	mm	231	256	261	286	316	316	371	371	401	401
c	mm	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
d	mm	291	373	291	373	291	373	291	373	291	373

Note

Height dimension "c" can be reduced by 150 mm in conjunction with a low loss header and by 300 mm in conjunction with a cascade module adaptor. In this case, the fixing profiles must be installed accordingly. For installation directly onto a wall, these dimensions should also be adhered to.

Block formation



Shown without the thermal insulation supplied

- | | |
|--|---|
| (A) Flue gas cascade | (D) Mounting frame or pre-plumbing jig |
| (B) Vitodens | (E) Hydraulic cascade |
| (C) Vitotronic 300-K (can be fitted either to the left or the right) | (F) Ceiling mounting for flue gas cascade |

Design information (cont.)

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 27 and the technical guide on flue systems. A flue gas back draught safety device is integrated into each boiler.

For further details regarding the hydraulic cascade, see page 35.

Boiler		(2x2) 49 kW (2x2) 60 kW	(2x2) 80 kW (2x2) 99 kW	(2x3) 49 kW (2x3) 60 kW	(2x3) 80 kW (2x3) 99 kW
a	mm	2111	2136	2141	2166
b	mm	176	207	176	207
c	mm	1750	1750	1750	1750
d	mm	1350	1422	1350	1422
e	mm	680	843	680	843

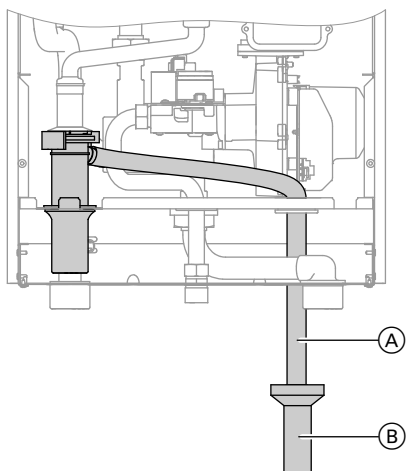
Note

Height dimension "c" can be reduced by 150 mm in conjunction with a low loss header and by 300 mm in conjunction with a cascade module adaptor. In this case, the fixing profiles must be installed accordingly.

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 (accessories) to the public sewage system.

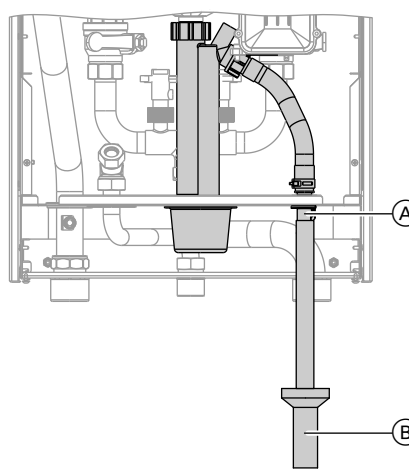


Vitodens 200-W, 49 and 60 kW

- (A) Drain hose (Vitodens standard delivery)
- (B) Drain outlet kit (accessories)

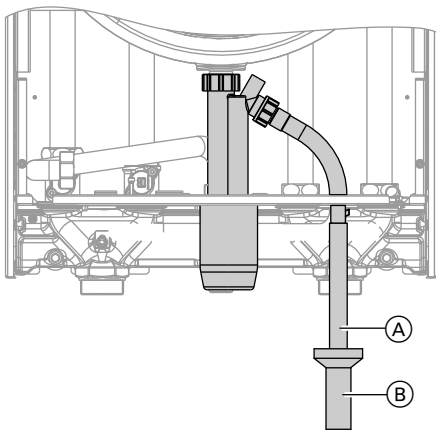
Note

A pipe vent valve **must** be installed between the trap and the neutralising system.



Vitodens 200-W, 80 and 99 kW

- (A) Drain hose (Vitodens standard delivery)
- (B) Drain outlet kit (accessories)



Vitodens 200-W, 120 and 150 kW

- (A) Drain hose (Vitodens standard delivery)
- (B) Drain outlet kit (accessories)

Condensate drain pipe and neutralisation

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

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 sampling.

Condensate drains 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 water regulations and/or specific technical circumstances may prescribe designs which 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

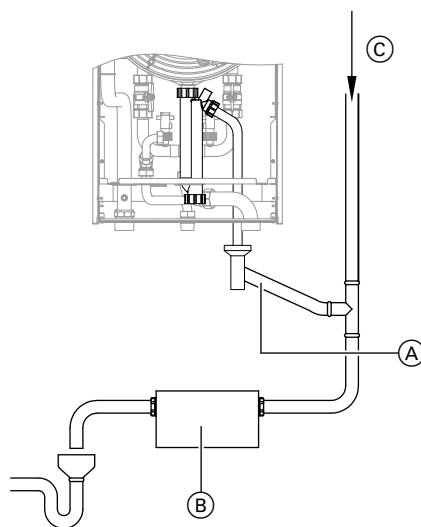
Up to a rated heating output of 200 kW, the condensate from a gas condensing boiler can generally be introduced into the public sewage system without prior neutralisation.

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



- (A) Condensate drain
- (B) Neutralising system
- (C) Ventilation via the roof

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.

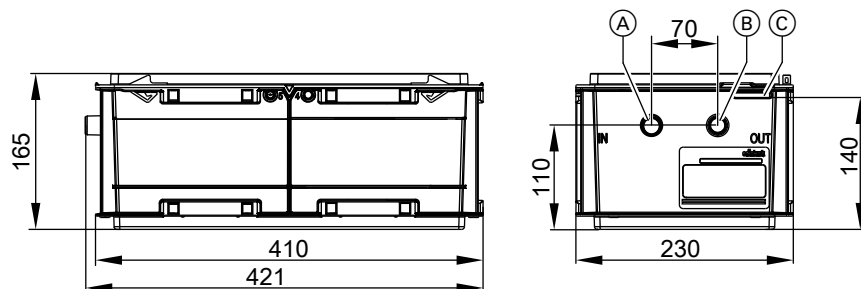
Condensate lifting pumps are available as accessories (see Vitotest pricelist).

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.

Design information (cont.)

Neutralising system for single boiler systems from 80 kW and multi boiler systems up to 500 kW

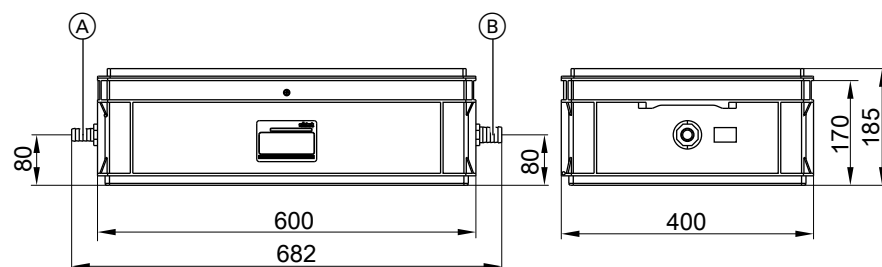
Part no. 7441 823



- (A) Inlet (DN 20)
- (B) Drain (DN 20)
- (C) Overflow aperture

Neutralising system for multi boiler systems above 500 kW

Part no. 7437 829



- (A) Inlet (DN 20)
- (B) Drain (DN 25)

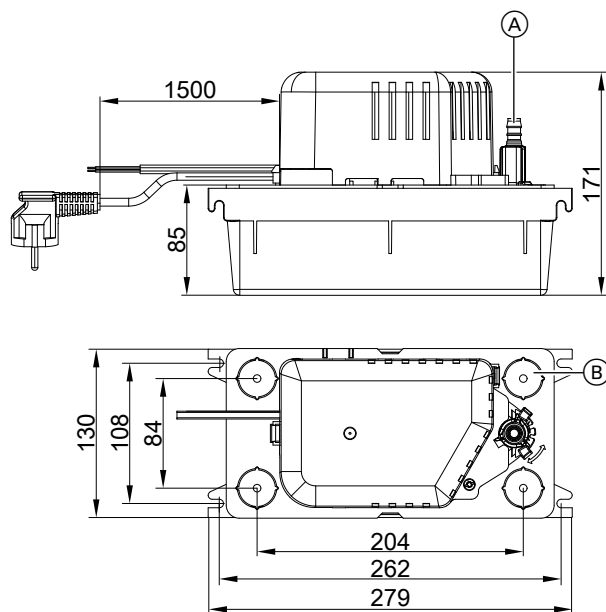
Condensate lifting system

Part no. ZK02 486

Automatic condensate lifting system for condensate with a pH value ≥ 2.5 from oil and gas condensing boilers

Components:

- Condensate container 2.0 l
- Centrifugal pump
- Non-return valve
- Connecting cable (1.5 m long) for fault messaging
- Power cable (1.5 m long) with plug
- 4 connection apertures $\varnothing$ 30 mm for condensate inlet with connector $\varnothing$ max. 40 mm
- Drain hose $\varnothing$ 10 mm (5 m long)



- (A) Condensate drain
- (B) 4 x condensate inlet with plug

Design information (cont.)

Specification

Rated voltage	230 V~
Rated frequency	50 Hz
Power consumption	70 W
IP rating	IP 20

Permissible medium temperature	+65 °C
Max. head	50 kPa
Max. pump rate	500 l/h
Alarm contact	Changeover contact (floating), breaking capacity 250 V/4 A

4.3 Hydraulic connection

General information

System design

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 minimise distribution losses, we recommend sizing the heat distribution system to a max. flow temperature of 70 °C.

The heat generator must be correctly sized and selected.

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.

Underfloor heating systems and heating circuits with very large water content (>15 l/kW) should be connected to the condensing boiler via a 3-way mixer. See technical guide "Control of underfloor heating systems" or the relevant sample applications.

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.

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

Water quality/frost protection

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

Observe VDI 2035 regarding the quality and volume of heating water, including fill and top-up water.

- Flush the heating system thoroughly before filling.
- Only fill with water of potable quality.
- Fill and top-up water with a water hardness in excess of the following values must be softened, e.g. with the small softening system for heating water (see the Viessmann Vitoset pricelist):

Total permissible hardness of the fill and top-up water

Total heating output kW	Specific system volume		
	< 20 l/kW	≥ 20 l/kW to < 50 l/kW	≥ 50 l/kW
≤ 50	≤ 3.0 mol/m ³ (16.8 °dH)	≤ 2.0 mol/m ³ (11.2 °dH)	< 0.02 mol/m ³ (0.11 °dH)
> 50 to ≤ 200	≤ 2.0 mol/m ³ (11.2 °dH)	≤ 1.5 mol/m ³ (8.4 °dH)	< 0.02 mol/m ³ (0.11 °dH)
> 200 to ≤ 600	≤ 1.5 mol/m ³ (8.4 °dH)	≤ 0.02 mol/m ³ (0.11 °dH)	< 0.02 mol/m ³ (0.11 °dH)
> 600	< 0.02 mol/m ³ (0.11 °dH)	< 0.02 mol/m ³ (0.11 °dH)	< 0.02 mol/m ³ (0.11 °dH)

- For systems with a specific system volume in excess of 20 l/kW heating output, use the output of the smallest boiler in multi boiler systems.
- Special antifreeze suitable for heating systems can be added to the fill water. The antifreeze manufacturer must verify its suitability, since otherwise damage to gaskets and diaphragms can occur as well as noisy heating operation. Viessmann accepts no liability for any resulting damage or consequential losses.

When designing the system, observe the following:

- Install shut-off valves in each section. This prevents the need for draining all the heating water in the case of repairs or system expansion.
- In systems > 50 kW, install a water meter to record the volume of fill and top-up water. Record the amount of water added to the system and the water hardness.

Design information (cont.)

Operating information:

- Commission the system step by step, starting with the lowest boiler output and a high heating water flow rate. This prevents localised concentration of limescale deposits on the boiler heating surfaces.
- In multi boiler systems, start all boilers simultaneously to prevent the total amount of limescale deposits settling in the heat exchanger of just one boiler.
- During expansion or repair work, only drain the necessary pipe-work sections.
- Where water treatment is required, treat even the first fill of the heating system prior to commissioning. This also applies to any subsequent filling, e.g. when adding top-up water or after a repair, or for any system expansion.
- Check, clean and activate filters, dirt traps and other blow-down or separating facilities in the heating water circuit more frequently after commissioning and in new installations. Later on this can be carried out subject to the requirements of the water treatment applied (e.g. water softening).

DHW heating

When operating a DHW cylinder, ensure that the heating output of the heat generator can be transferred to the DHW cylinder as continuously as possible. In borderline situations, we recommend operating the DHW cylinder in parallel mode with the heating circuit pump and circulation pump for cylinder heating (no cylinder priority).

Expansion vessels

In accordance with EN 12828, water heating systems must be equipped with a pressure expansion vessel.

If the cylinder capacity is below the following values, we recommend connecting the DHW cylinder downstream of the low loss header in the secondary side of the heating system.

Rated boiler heating output	DHW cylinder capacity
49 to 80 kW	< 350 l
99 kW	< 400 l
120 and 150 kW	< 500 l

In conjunction with multi boiler systems, the DHW cylinder must be connected downstream of the low loss header on the secondary side of the heating system.

Installation examples

Installation examples for Vitodens 200-W: See www.viessmann-schemen.com.

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 35 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.

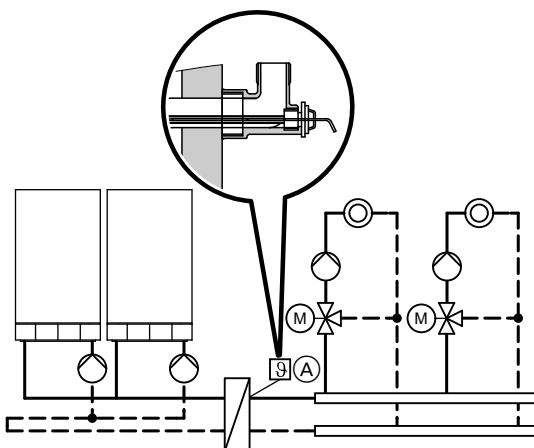
As an alternative to the low loss header, a suitably sized plate heat exchanger may be used to provide system separation. In this case, the flow temperature sensor should be arranged on the secondary side of the plate heat exchanger. See the following system example.

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 connection on the secondary side, as shown in the diagram. 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.



(A) Flow temperature sensor

Low loss header

Application

Design rules for system hydraulics:

- When balancing the low loss header, adjust the flow rate on the boiler side to approx. 10 to 30 % lower than 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 generator circuit (boiler circuit) from the downstream heating circuits.

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

Boiler	Max. flow rate l/h
Vitodens 200-W, 49 and 60 kW	3500
Vitodens 200-W, 80 and 99 kW	5700
Vitodens 200-W, 120 kW	7165
Vitodens 200-W, 150 kW	8600

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

Boiler	Min. flow rate l/h
Vitodens 200-W, 49 and 60 kW	450
Vitodens 200-W, 80 and 99 kW	1300
Vitodens 200-W, 120 and 150 kW	3600

For installation schemes in conjunction with low loss headers: See www.viessmann-schemen.com.

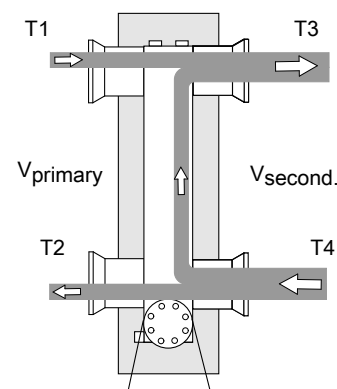
Heat generator circuit

The circulation pump in the Vitodens must be able to supply the required water volume against the (mostly low) pressure drop of the heat generator circuit; the pressure drop of the low loss header is negligible. Subject to the water volume circulating in the heat generator circuit, the respective residual head may be determined for sizing the internal pipe diameters using the pump diagram; alternatively the variable speed pump can be adjusted accordingly.

Heating circuit

The heating circuit pumps to be installed on site must be able to deliver the water volume in the heating circuits against their pressure drop, and must be sized accordingly.

Principle of operation



$V_{primary}$ Heating water volume, heat generator circuit (approx. 10 - 30 % less than $V_{secondary}$)

$V_{secondary}$ Heating water volume, heating circuit

T_1 Flow temperature, heat generator circuit

T_2 Return temperature, heat generator circuit

T_3 Flow temperature, heating circuit

T_4 Return temperature, heating circuit

$Q_{primary}$ Amount of heat supplied by the heat generator

$Q_{secondary}$ Amount of heat transferred by the heating circuit

$V_{primary} < V_{secondary}$

$T_1 > T_3$

$T_2 \approx T_4$

$Q_{primary} = Q_{secondary}$

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 "Vitoset" pricelist.

Low loss header with distributor/manifold for multi boiler systems with Vitodens 200-W

For description and specification, see page 35.

4.4 Intended use

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

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

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

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

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

Control units

5.1 Vitotronic 100, type HC1B, for constant temperature operation

Structure and functions

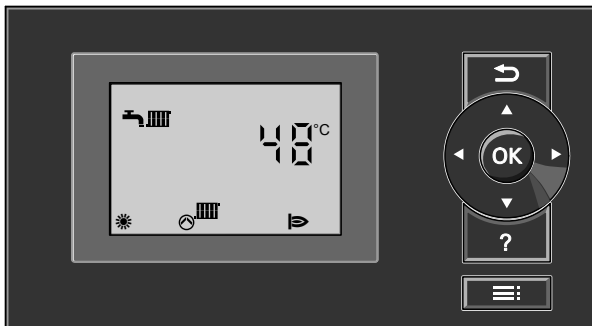
Modular structure

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 solar control module, type SM1
- Auxiliary function for DHW heating (short term heating to a higher temperature)
- Service indicator
- 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 °C and will be switched OFF again at a boiler water temperature of 20 °C.

Control units (cont.)

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 °C.

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 "☀"

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 °C
Permissible ambient temperature	
– Operation	0 to +130 °C
– Storage and transport	–20 to +70 °C

Cylinder temperature sensor

The standard delivery includes the DHW cylinder connection set.

Specification

Lead length	3.75 m, fully wired
IP rating	IP 32
Sensor type	Viessmann NTC 10 kΩ at 25 °C
Permissible ambient temperature	
– During operation	0 to +90 °C
– During storage and transport	–20 to +70 °C

Specification Vitotronic 100, type HC1B

Rated voltage	230 V~
Rated frequency	50 Hz
Rated current	6 A
Protection class	I
Function type	Type 1 B to EN 60730-1
Permissible ambient temperature	
– During operation	0 to +40 °C
	Installation in living spaces or boiler rooms (standard ambient conditions)

– During 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

Structure and functions

Modular design

The control unit is integrated into the boiler.

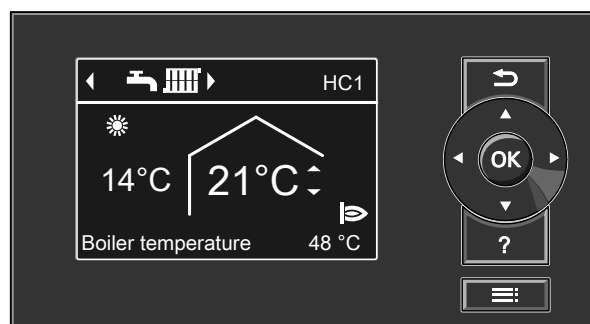
The control unit comprises a standard unit, electronics modules and a programming unit.

Standard unit:

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

Programming unit:

- Easy operation thanks to:
 - 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
- Operating keys:
 - Navigation
 - Confirmation
 - Help and additional information
 - Menu
- Attitude:
 - 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



Control units (cont.)

- Display:
 - Boiler water temperature
 - DHW temperature
 - 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 boiler water and/or flow temperature
- Control of one heating circuit without mixer and two heating circuits with mixer
- Electronic maximum and minimum temperature limit
- Demand-dependent heating circuit pump and burner shutdown control
- Adjustment of a variable heating limit
- Pump anti-seizing protection
- Frost protection monitoring for the heating system
- Integral diagnostic system
- Service indicator
- Cylinder temperature controller with priority control
- In conjunction with solar control module, type SM1:
 - Control of solar DHW heating and central heating backup
 - Graphic representation of the solar energy yield
- Auxiliary function for DHW heating (short term heating to a higher temperature)
- Screed drying program
- External starting and blocking (in conjunction with EA1 extension)
- Connection of the circulation pump for cylinder heating on the main PCB

To reduce the heat-up output, the reduced room temperature is raised when outside temperatures are low. To shorten the heat-up time after a setback phase the flow temperature is raised for a limited time.

According to the German Energy Saving Ordinance, the temperature in each room must be individually controlled, e.g. by means of thermostatic 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. $+1\text{ }^{\circ}\text{C}$.

With frost protection, the heating circuit pump is switched ON and the boiler water is maintained at a lower temperature of approx. $20\text{ }^{\circ}\text{C}$.

The DHW cylinder will be heated to approx. $20\text{ }^{\circ}\text{C}$.

- The frost protection function will be stopped when the outside temperature rises above approx. $+3\text{ }^{\circ}\text{C}$.

Summer mode

Operating program "☀"

The burner starts only when the DHW cylinder needs to be heated up.

Adjusting the heating curves (slope and level)

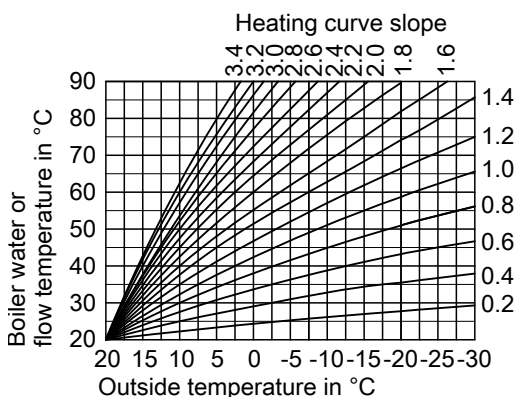
The Vitotronic 200 controls the boiler water temperature (= flow temperature of the heating circuit without mixer) **and** the flow temperature of the heating circuits with mixer (in conjunction with the extension kit for one heating circuit with mixer) in weather-compensated mode. The boiler water temperature 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 curves:

The upper boiler water temperature is limited by the temperature limiter and the temperature set at the electronic maximum thermostat. The flow temperature cannot exceed the boiler water temperature.



Heating systems with low loss header

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

Control units (cont.)

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	
– Operation	0 to +130 °C
– Storage and transport	–20 to +70 °C

Cylinder temperature sensor

The standard delivery includes the DHW cylinder connection set.

Specification

Lead length	3.75 m, fully wired
IP rating	IP 32
Sensor type	Viessmann NTC 10 kΩ at 25 °C
Permissible ambient temperature	
– During operation	0 to +90 °C
– During storage and transport	–20 to +70 °C

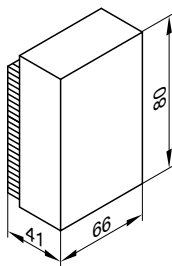
Outside temperature sensor

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 up to 35 m with a cross-section of 1.5 mm² (copper)
- Never route this lead immediately next to 230/400 V cables.



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

Rated voltage	230 V~
Rated frequency	50 Hz
Rated current	6 A
Protection class	I
Permissible ambient temperature	
– During operation	0 to +40 °C Installation in living spaces or boiler rooms (standard ambient conditions)
– During 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
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 Vitodens 200-W with 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 mixer (extension for heating circuits 2 and 3 required as accessories).
Up to a further 32 Vitotronic 200-H heating circuit control units can be connected via the LON BUS (LON communication module required; accessories)
- For modulating operation in conjunction with Vitotronic 100, type HC1B

- With cylinder temperature controller or control of a cylinder loading 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 to interference/faults, the components of a control unit should be connected to the same phase.

Structure and function

Modular structure

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 wiring chamber
 - Connection of external equipment via system plugs
 - Plugs are inserted 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
 - 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
- 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 mixer
- Control of the Vitotronic 100, type HC1B in boilers 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 close)
- Auxiliary function for DHW heating (short term heating to a higher temperature)
- Control of a cylinder loading system with a regulated 3-way mixing valve
- Screed drying for underfloor heating systems

To reduce the heat-up output, the reduced room temperature is raised when outside temperatures are low. To shorten the heat-up time after a setback phase the flow temperature is raised for a limited time.

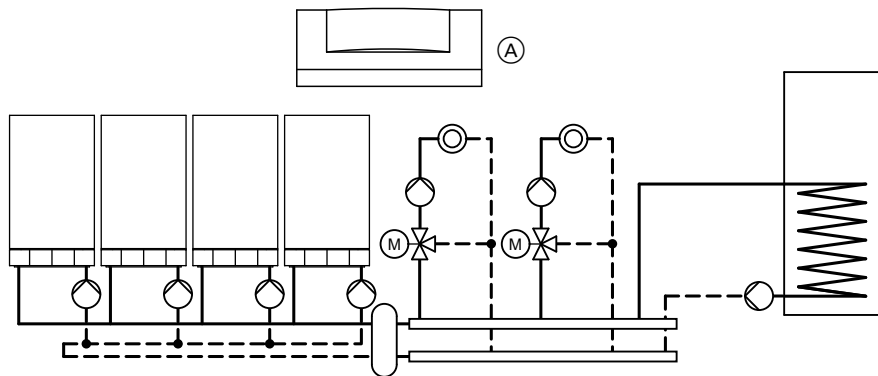
According to the German Energy Saving Ordinance, the temperature in each room must be individually controlled, e.g. by means of thermostatic valves.

Connectivity

Vitoconnect 100, type OPTO1 (accessories):

WLAN interface for remote control of the heating system using the Vitotrol Plus or the ViCare app. For further information, see the data communication technical guide.

DHW heating in a multi boiler system



(A) Vitotronic 300-K

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 heating circuits with mixer: 0 to 40 K
- Setting range of the set DHW temperature:
 - 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
- Only DHW
- Standby mode

External changeover of operating program possible 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

("Only DHW")

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

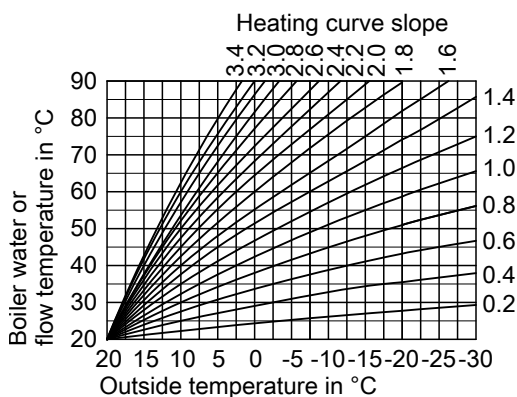
Heating curve setting (slope and level)

Subject to heating system:

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



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

Outside temperature sensor

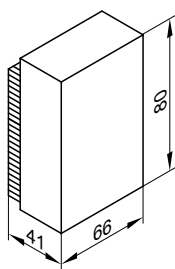
Installation site:

- 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

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.

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

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

Lead 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
– During storage and transport	–20 to +70 °C

Cylinder temperature sensor

Specification

Lead 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
– During storage and transport	–20 to +70 °C

Specification Vitotronic 300-K

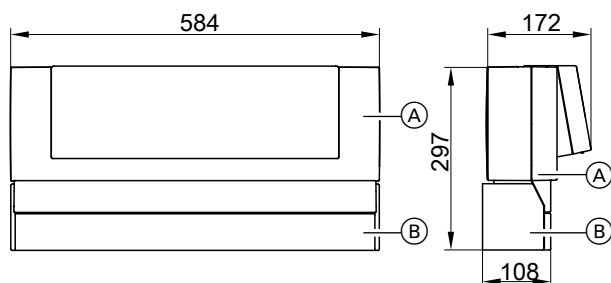
Rated voltage:	230 V ~
Rated frequency:	50 Hz
Rated current:	6 A
Power consumption:	10 W
Protection class:	I
IP rating:	IP 20 D to EN 60529; ensure through design/installation
Function type:	Type 1B to EN 60730-1
Permissible ambient temperature	
– During operation:	0 to +40 °C for use in the living space or boiler room (standard ambient conditions)
– During storage and transport:	–20 to +65 °C
Rated relay output breaking capacity:	
– Heating circuit pumps or heat exchanger set [20]:	4(2) A 230 V~

– Circulation pump for cylinder heating [21]:	4(2) A 230 V~
– DHW circulation pump [28]:	4(2) A 230 V~
– Distribution pump [29]:	4(2) A 230 V~
– Central fault message [50]:	4(2) A 230 V~
– Motor, 3-way mixing valve, cylinder loading system or Mixer motor [52]:	0.2(0.1) A 230 V~
– Overall max.	6 A 230 V~

Power supply for DHW circulation pump

DHW circulation pumps with their own internal control unit must be connected to a separate power supply. Mains connection via the Vitotronic control unit or Vitotronic accessories is **not** permissible.

Dimensions



- (A) Vitotronic 300-K
- (B) Mounting bracket

Delivered condition Vitotronic 300-K

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

Control units (cont.)

- Cylinder temperature sensor
- Mounting bracket

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

5.4 Accessories for Vitotronic

Allocation to control unit types

Vitotronic	100	200	300-K
Type	HC1B	HO1B	MW2B
Accessories			
Vitotrol 100, type UTA	x		
Vitotrol 100, type UTDB	x		
External H4 extension	x		
Vitotrol 100, type UTDB-RF	x		
Vitotrol 200-A		x	x
Vitotrol 300-A		x	x
Vitotrol 200-RF		x	x
Vitotrol 300-RF		x	x
Wireless base station		x	x
Wireless outside temperature sensor		x	x
Wireless repeater		x	x
Room temperature sensor for Vitotrol 300-A		x	x
Immersion temperature sensor	x	x	x
Mounting base for programming unit	x	x	
Radio clock receiver		x	x
KM BUS distributor	x	x	x
Extension kit, mixer with integral mixer motor		x	
Extension kit, mixer for separate mixer motor		x	
Mixer motor		x	x
Extension for heating circuits 2 and 3 with mixer			x
Mixer extension kit			x
Immersion thermostat		x	x
Contact thermostat		x	x
Solar control module, type SM1	x	x	x
Internal H1 extension	x	x	
Internal H2 extension	x	x	
AM1 extension	x	x	
EA1 extension	x	x	x
Vitocom 100, type LAN1, in conjunction with Vitodata 100 and Vitotrol app		x	
Vitocom 100, type LAN1, in conjunction with Vitodata 100		x	x
Vitocom 100, type GSM2	x	x	x
LON cable		x	x
LON coupling		x	x
LON plug-in connector		x	x
LON socket		x	x
Terminator		x	x
LON communication module		x	x
Vitoconnect 100, type OPTO1 (in conjunction with single appliances)		x	

Vitotrol 100, type UTA

Part no. 7170 149

Room thermostat

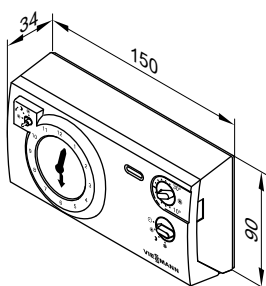
- With switching output (two-point output)
- With analogue time switch
- With adjustable individual day program
- Standard switching times are factory-set (individually programmable)
- Shortest switching interval 15 minutes

The Vitotrol 100 is installed in the main living room on an internal wall opposite radiators, although never inside shelving units, in recesses, or immediately by a door or heat source (e.g. direct sunlight, fireplace, TV set, etc.).

Control unit connection:

3-core cable with a cross-section of 1.5 mm² (no green/yellow wire) for 230 V~.

Control units (cont.)



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 Ensure through design/installation
Permissible ambient temperature	
– Operation	0 to +40 °C
– 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

Vitotrol 100, type UTDB

Part no. Z007 691

Room temperature controller

- With switching output (two-point output)
- With digital time switch
- With individual day and seven-day program
- 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

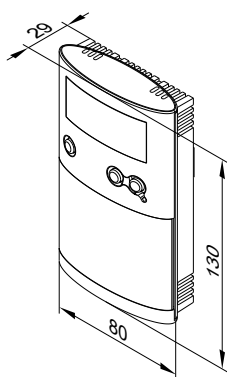
Installation in the main living room on an internal wall opposite radiators. Never install inside shelving units, in recesses, or immediately by a door or heat source (e.g. direct sunlight, fireplace, TV set, etc.). Operation independent of mains power supply (two 1.5 V round alkaline cells, type LR6/AA, battery life approx. 1.5 years).

Control unit connection:

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

Specification

Rated voltage	3 V– Battery LR6/AA
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 design/installation
Function type	RS type 1B to EN 60730-1
Permissible ambient temperature	
– Operation	0 to +40 °C
– 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

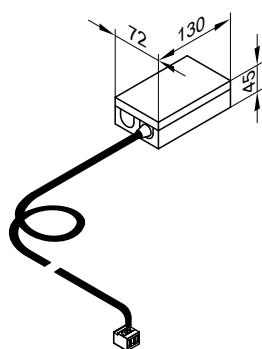


External H4 extension

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

Control units (cont.)



Specification

Rated voltage	230 V~
Output voltage	24 V~
Rated frequency	50 Hz
Power consumption	2.5 W
Load 24 V~ (max.)	10 W
Safety category	I
IP rating	IP 41
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

Vitotrol 100, type UTDB-RF

Part no. Z007 692

Room temperature controller with integral wireless transmitter and receiver

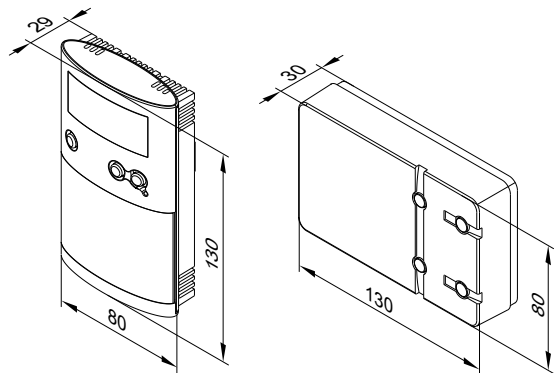
- With digital time switch
- With individual day and seven-day program
- Operation with user prompts:
 - 3 preselected time programs, individually adjustable
 - Constant manual mode with adjustable set room temperature
 - Frost protection mode
 - Holiday program
- With selector keys for party and economy 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 cells, type LR6/AA, battery life 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~ or
- 3-core cable without green/yellow wire for 230 V~ or
- 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

Rated voltage	3 V–
Transmission frequency	868 MHz
Transmission	< 10 mW
Range	approx. 25 to 30 m inside buildings, subject to construction
IP rating	IP 20 to EN 60529 Ensure through design/installation
Function type	RS type 1B to EN 60730-1
Permissible ambient temperature	
– Operation	0 to +40 °C
– 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 design/installation
Safety category	II to EN 60730-1 subject to correct installation
Permissible ambient temperature	
– Operation	0 to +40 °C
– 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.

Control units (cont.)

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

For every heating circuit in a heating system, a Vitotrol 200-A or Vitotrol 300-A can be used.

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

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

Note

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

Vitotrol 200-A

Part no. Z008 341

KM BUS subscriber

■ Displays:

- 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 location:

■ 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:

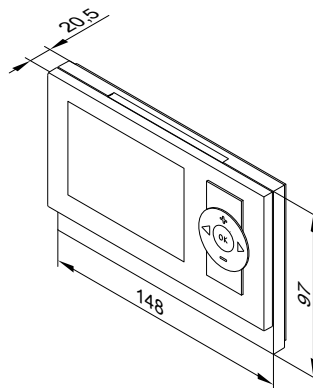
- Main living room on an internal wall opposite radiators
- Not on shelves or in recesses
- Never in the immediate vicinity of doors or close to heat sources (e.g. direct insolation, fireplace, TV set, etc.).

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



Specification

Power supply	Via KM BUS
Power consumption	0.2 W
Protection class	III
IP rating	IP 30 to EN 60529; ensure through design/installation
Permissible ambient temperature	
– Operation	0 to +40 °C
– Storage and transport	–20 to +65 °C
Setting range of the set room temperature for standard mode	3 to 37 °C

Notes

■ If the Vitotrol 200-A is to be used for room temperature hook-up, site the device in a main living room (lead room).

■ Connect a maximum of 2 Vitotrol 200-A units to the control unit.

Vitotrol 300-A

Part no. Z008 342

KM BUS subscriber

■ Displays:

- 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 location:

■ 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 insolation, fireplace, TV set, etc.).

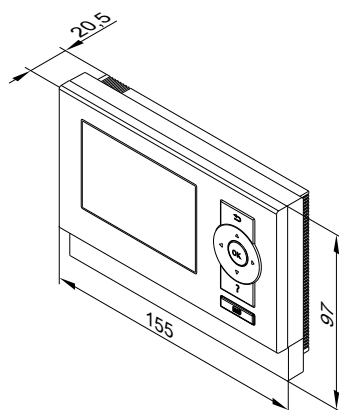
Connection:

■ 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.)



Specification

Power supply via KM BUS	
Power consumption	0.5 W
Protection class	III
IP rating	IP 30 to EN 60529; ensure through design/installation
Permissible ambient temperature	
– Operation	0 to +40 °C
– Storage and transport	–20 to +65 °C
Setting range for set room temperature	
	3 to 37 °C

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.

A Vitotrol 200-RF or Vitotrol 300-RF can be used for each heating circuit within 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.

Vitotrol 200 RF

Part no. Z011 219

Wireless subscriber

■ Displays:

- 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 location:

■ Weather-compensated mode:

Installation anywhere in the building

■ Room temperature hook-up:

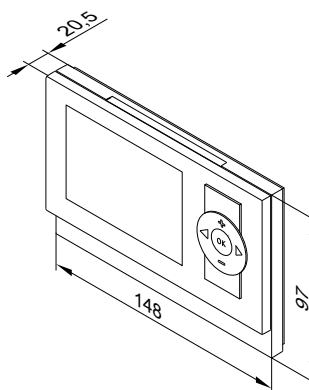
The integral room temperature sensor captures the room temperature and effects any necessary correction of the flow temperature.

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 insolation, fireplace, TV set, etc.)

Note

Observe the "Wireless accessories" technical guide.



Specification

Power supply	2 AA batteries 3 V
Radio frequency	868 MHz
Wireless range	See "Wireless accessories" technical guide
Protection class	III
IP rating	IP 30 to EN 60529; ensure through design/installation
Permissible ambient temperature	
– Operation	0 to +40 °C
– Storage and transport	–20 to +65 °C
Setting range of the set room temperature for standard mode	
	3 to 37 °C

Vitotrol 300-RF with table-top dock

Part no. Z011 410

Wireless subscriber

■ Displays:

- Room temperature
- Outside temperature

Control units (cont.)

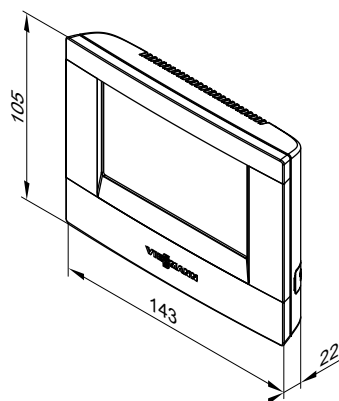
- Operating condition
- Graphic illustration of solar yield in conjunction with the solar control module, type SM1
- Wireless signal reception quality
- Settings:
 - Set room temperature for standard mode (normal room temperature) and reduced mode (reduced room temperature)
 - Set DHW temperature
 - 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



Vitotrol 300-RF

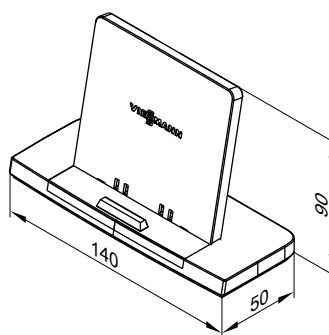


Table-top dock

Specification

Power supply via plug-in power supply unit	230 V~ / 5 V-
Power consumption	2.4 W
Radio frequency	868 MHz
Wireless range	See "Wireless accessories" technical guide
Protection class	II
IP rating	IP 30 to EN 60529; ensure through design/installation
Permissible ambient temperature	
– Operation	0 to +40 °C
– Storage and transport	–25 to +60 °C
Setting range for set room temperature	3 to 37 °C

Vitotrol 300-RF with wall mounting bracket

Part no. Z011 412

Wireless subscriber

- Displays:
 - 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 location:

- 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 insolation, fireplace, TV set, etc.).

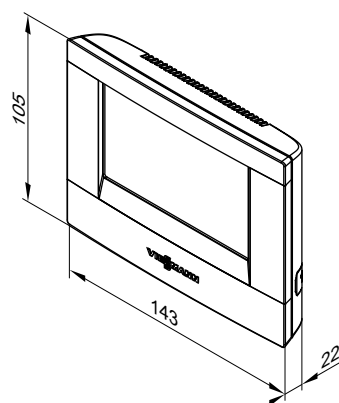
Note

Observe the "Wireless accessories" technical guide.

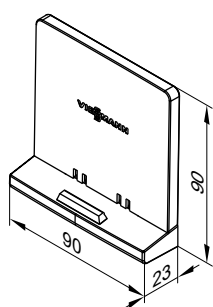
Standard delivery:

- Vitotrol 300-RF
- Wall mounting bracket
- Power supply unit for fitting into a plaster box
- 2 rechargeable NiMH batteries for use out of wall mounting bracket

Control units (cont.)



Vitotrol 300-RF



Wall mounting bracket

Specification

Power supply via power supply unit for installation in a plaster box	230 V~4 V
Power consumption	2.4 W
Radio frequency	868 MHz
Wireless range	See "Wireless accessories" technical guide
Protection class	II
IP rating	IP 30 to EN 60529; ensure through design/installation
Permissible ambient temperature	
– Operation	0 to +40 °C
– Storage and transport	–25 to +60 °C
Setting range for set room temperature	3 to 37 °C

Vitocomfort 200

Part no. Z013 768

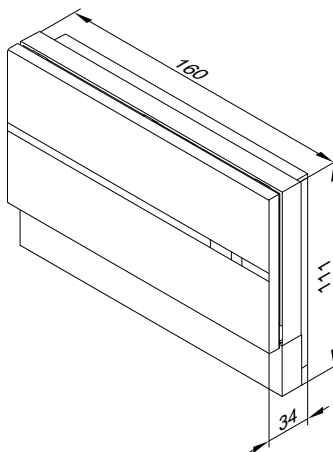
KM BUS subscriber or wireless subscriber

The Vitocomfort 200 combines heating and photovoltaics for integrated energy management, supplemented by shade, light and security functions to create a complete smart home system.

The Vitocomfort 200 is suitable for use in any application area.

- The automated individual room controls regulate room temperatures according to demand and reduce energy consumption.
- The system is self-learning with regard to building engineering physics, resulting in optimised flow temperatures and cost savings.
- DHW heating can be automated with time programs as required and can be requested directly as needed.
- A display of solar yield ensures optimum transparency and gives the user an insight into the energy flows.
- An automatic "open window detected" function saves energy costs when windows/doors are open.
- Suitable for radiators and underfloor heating systems
- Display of boiler messages

For further information, see the "Vitocomfort 200" technical guide.



Wireless base station

Part no. Z011 413

KM BUS subscriber

For communication between the Vitotronic control unit and the following wireless components:

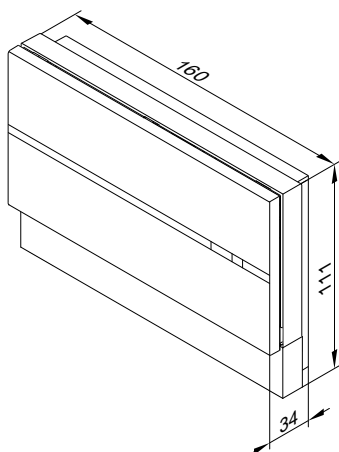
- Wireless remote control Vitotrol 200-RF
- Wireless remote control Vitotrol 300-RF
- Wireless outside temperature sensor
- Vitocomfort 200 control centre

For up to 3 wireless remote control units or 3 Vitocomfort 200 control centres. 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.

Control units (cont.)



Specification

Power supply via KM BUS

Power consumption	1 W
Radio frequency	868 MHz
Protection class	III
IP rating	IP 20 to EN 60529; ensure through design/installation.

Permissible ambient temperature

– Operation	0 to +40 °C
– Storage and transport	–20 to +65 °C

Wireless outside temperature sensor

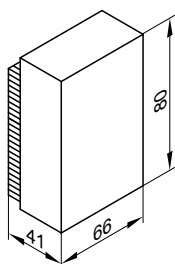
Part no. 7455 213

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



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

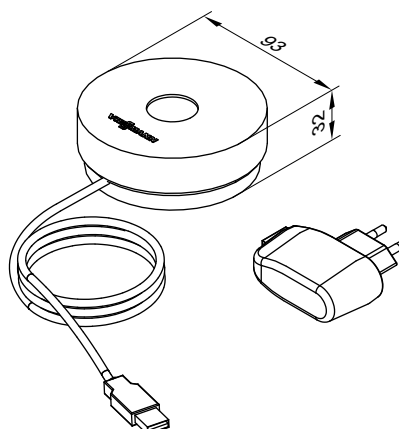
Wireless repeater

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.

- For preventing strongly diagonal angles of penetration of the radio signals through steel reinforced concrete ceilings/floors and/or multiple walls
- For circumventing large metallic objects situated between the wireless components.



Control units (cont.)

Specification

Power supply	230 V~/5 V– via plug-in power supply unit
Power consumption	0.25 W
Radio frequency	868 MHz
Lead 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

Room temperature sensor

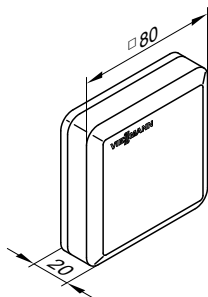
Part no. 7438 537

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 for temperature capture and adjustment.

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 insolation, 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)
- Max. lead length from the remote control: 30 m
- Never route this lead immediately next to 230/400 V cables



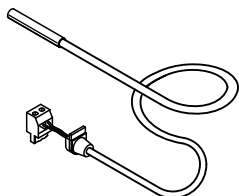
Specification

Protection class	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 a temperature in a sensor well



Specification

Lead length	5.8 m, fully wired
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

Immersion temperature sensor

Part no. 7179 488

To capture the low loss header temperature

Specification

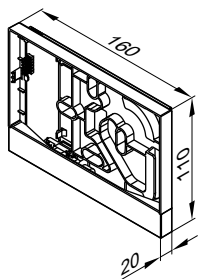
Lead length	3.75 m, fully wired
IP rating	IP 32 to EN 60529; ensure through design/installation
Sensor type	Viessmann NTC 10 kΩ at 25 °C
Permissible ambient temperature	
– Operation	0 to +90 °C
– Storage and transport	–20 to +70 °C

Control units (cont.)

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

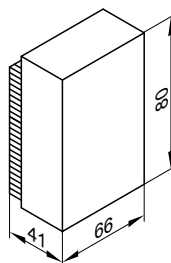
For receiving the DCF 77 time signal (location: Mainflingen near Frankfurt/Main).

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 electromagnetic interference, e.g. HV and public transport lines.

Connection:

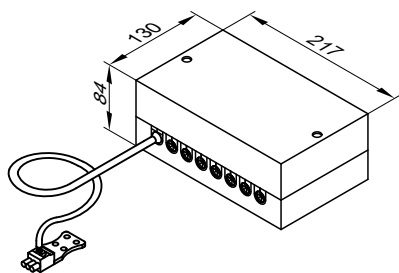
- 2-core lead, length up to 35 m with a cross-section of 1.5 mm² (copper)
- Never route this lead immediately next to 230/400 V cables



KM BUS distributor

Part no. 7415 028

For the connection of 2 to 9 devices to the control unit KM BUS.



Specification

Lead length	3.0 m, fully wired
IP rating	IP 32 to EN 60529; ensure through design/installation
Permissible ambient temperature	
– Operation	0 to +40 °C
– Storage and transport	–20 to +65 °C

Mixer extension kit with integral mixer motor

Part no. 7301 063

KM BUS subscriber

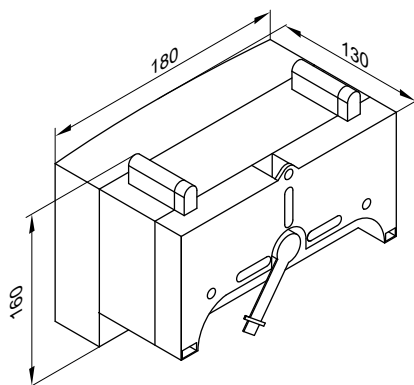
Components:

- Mixer PCB with mixer motor for Viessmann mixer DN 20 to DN 50 and R ½ to R 1¼
- Flow temperature sensor (contact temperature sensor)
- Plug for connecting the heating circuit pump
- 3.0 m long power cable with plug
- BUS connecting cable (3.0 m long) with plug

The mixer motor is mounted directly onto the Viessmann mixer DN 20 to DN 50 and R ½ to R 1¼.

Control units (cont.)

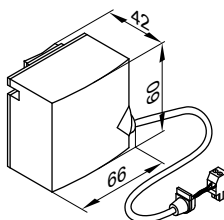
Mixer PCB with mixer motor



Specification, mixer PCB with mixer motor

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 design/installation
Safety category	I
Permissible ambient temperature	
– Operation	0 to +40 °C
– Storage and transport	–20 to +65 °C
Rated breaking capacity of the relay output for heating circuit pump [20]	2(1) A, 230 V~
Torque	3 Nm
Runtime for 90° <	120 s

Flow temperature sensor (contact temperature sensor)



Secured with a tie.

Specification, flow temperature sensor

Lead length	2.0 m, fully wired
IP rating	IP 32D to EN 60529; ensure through design/installation
Sensor type	Viessmann NTC 10 kΩ at 25 °C
Permissible ambient temperature	
– Operation	0 to +120 °C
– Storage and transport	–20 to +70 °C

5

Mixer extension kit for separate mixer motor

Part no. 7301 062

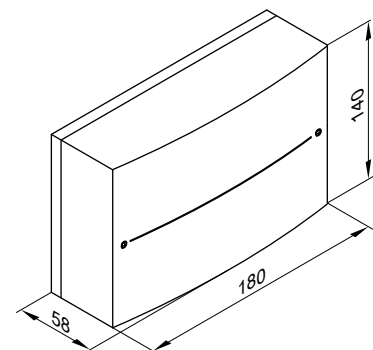
KM BUS subscriber

For connecting a separate mixer motor

Components:

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

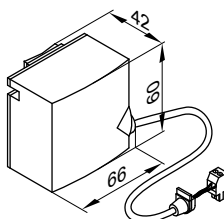
Mixer PCB



Specification, mixer PCB

Rated voltage	230 V~
Rated frequency	50 Hz
Rated current	2 A
Power consumption	1.5 W
IP rating	IP 20D to EN 60529, ensure through design/installation
Safety category	I
Permissible ambient temperature	
– Operation	0 to +40 °C
– Storage and transport	–20 to +65 °C
Rated relay output breaking capacity	
– Heating circuit pump [20]	2(1) A, 230 V~
– Mixer motor	0.1 A, 230 V~
Required runtime of the mixer motor for 90° <	approx. 120 s

Flow temperature sensor (contact temperature sensor)



Secured with a tie.

Control units (cont.)

Specification, flow temperature sensor

Lead length	5.8 m, fully wired
IP rating	IP 32D to EN 60529; ensure through design/installation
Sensor type	Viessmann NTC 10 kΩ at 25 °C
Permissible ambient temperature	
– Operation	0 to +120 °C
– Storage and transport	–20 to +70 °C

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

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.

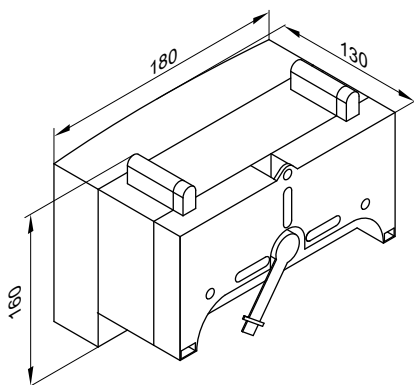
Mixer extension kit in conjunction with Divicon heating circuit distributor

Part no. 7424 958

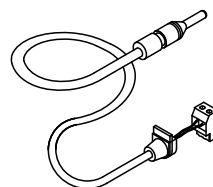
Components:

- 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



Flow temperature sensor (immersion sensor)



Specification, flow temperature sensor

Lead length	0.9 m, fully wired
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 +120 °C
– Storage and transport	–20 to +70 °C

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 design/installation
Safety category	I
Permissible ambient temperature	
– Operation	0 to +40 °C
– Storage and transport	–20 to +65 °C
Rated relay output breaking capacity for heating circuit pump ^[20]	2(1) A, 230 V~
Runtime for 90° <	Approx. 120 s

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

Part no. 7441 998

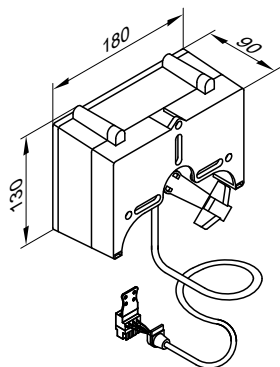
Components:

- 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

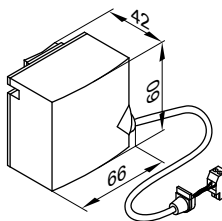


Specification extension kit

Rated voltage	230 V~
Rated frequency	50 Hz
Power consumption	2.5 W
Protection class	I
IP rating	IP 32D to EN 60529; ensure through design/installation
Permissible ambient temperature	
– During operation	0 to +40 °C
– During storage and transport	–20 to +65 °C

Torque	3 Nm
Runtime for 90 ° <	120 s

Flow temperature sensor (contact sensor)



Secured with a tie.

Specification

IP rating	IP 32D to EN 60529 Ensure through design/installation
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 motors

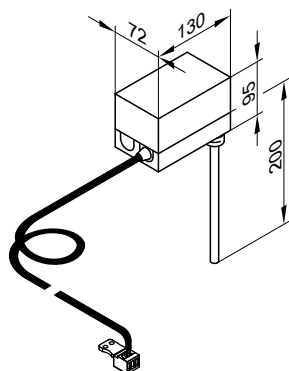
See datasheet "Control unit accessories".

Immersion thermostat

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.



Specification

Lead 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

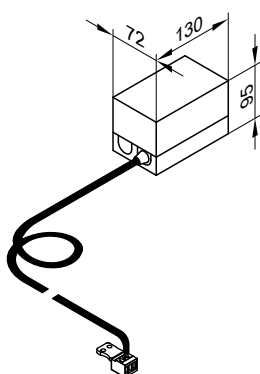
Contact thermostat

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 integrated into the heating flow. If the flow temperature is too high, the temperature limiter switches off the heating circuit pump.

Control units (cont.)



Specification

Lead length	4.2 m, fully wired
Setting range	30 to 80 °C
Switching differential	Max. 14 K
Breaking capacity	6(1.5) A, 250 V~
Setting scale	Inside the casing
DIN reg. no.	DIN TR 1168

Solar control module, type SM1

Part no. Z014 470

Specification

Functions

- Output statement and diagnostic system
- Operation and display via Vitotronic control unit
- Switching the solar circuit pump
- Heating of 2 consumers via a collector array
- 2nd temperature differential control
- Thermostat function for reheating or utilising excess heat
- Speed control for solar circuit pump via PWM input (make: Grundfos and Wilo)
- Suppression of DHW cylinder reheating by the heat generator subject to solar yield
- Suppression of reheating for heating by the heat generator with central heating backup
- Heat-up of the solar preheating stage (with 400 l DHW cylinders or larger)
- Collector safety shutdown
- Electronic temperature limitation in the DHW cylinder
- Switching of an additional pump or valve via relay

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 generator and the heating water buffer cylinder
- For return changeover between the heat generator and the primary heat store
- For heating additional consumers

Structure

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 V/400 V cables

Collector temperature sensor specification

Lead length	2.5 m
IP rating	IP 32 to EN 60529; ensure through design/installation
Sensor type	Viessmann NTC 20 kΩ at 25 °C
Permissible ambient temperature	
– Operation	–20 to +200 °C
– Storage and transport	–20 to +70 °C

Cylinder temperature sensor

For connection inside the appliance

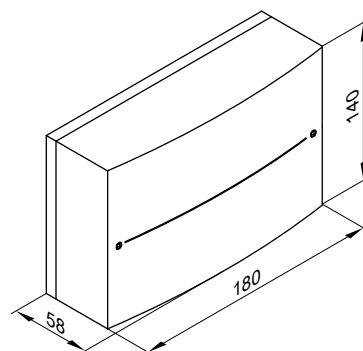
On-site extension of the connecting lead:

- 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

Cylinder temperature sensor specification

Lead 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 in the heating water return (standard delivery or accessory for the relevant DHW cylinder).



Control units (cont.)

Solar control module specification

Rated voltage	230 V~
Rated frequency	50 Hz
Rated current	2 A
Power consumption	1.5 W
Protection class	I
IP rating	IP 20 to EN 60529; ensure through design/installation
Function type	Type 1B to EN 60730-1

Permissible ambient temperature

– 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

– Semi-conductor relay 1	1 (1) A, 230 V~
– Relay 2	1 (1) A, 230 V~
– Total	Max. 2 A

Internal H1 extension

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
– Connection of an external safety solenoid valve (LPG)	1(0.5) A 250 V~
And one of the following functions:	2(1) A 250 V~
– Connection of a heating circuit pump for a directly connected heating circuit	
– Connection of a central fault message	
– Only with Vitotronic 200, type HO1B: Connection of a DHW circulation pump	

Power supply for DHW circulation pump

DHW circulation pumps with their own internal control unit must be connected to a separate power supply. Mains connection via the Vitotronic control unit or Vitotronic accessories is **not** permissible.

Specification

Rated voltage	230 V~
Rated frequency	50 Hz

Internal H2 extension

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
– External extractor interlock	6(3) A 250 V~
And one of the following functions:	2(1) A 250 V~
– Connection of a heating circuit pump for a directly connected heating circuit	
– Connection of a central fault message	
– Only with Vitotronic 200, type HO1B: Connection of a DHW circulation pump	

Power supply for DHW circulation pump

DHW circulation pumps with their own internal control unit must be connected to a separate power supply. Mains connection via the Vitotronic control unit or Vitotronic accessories is **not** permissible.

Specification

Rated voltage	230 V~
Rated frequency	50 Hz

AM1 extension

Part no. 7452 092

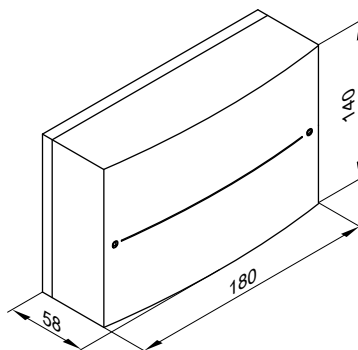
Function extension inside enclosure for wall mounting.

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

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

Power supply for DHW circulation pump

DHW circulation pumps with their own internal control unit must be connected to a separate power supply. Mains connection via the Vitotronic control unit or Vitotronic accessories is **not** permissible.



Control units (cont.)

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
IP rating	IP 20 D to EN 60529, ensure through design/installation
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

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:

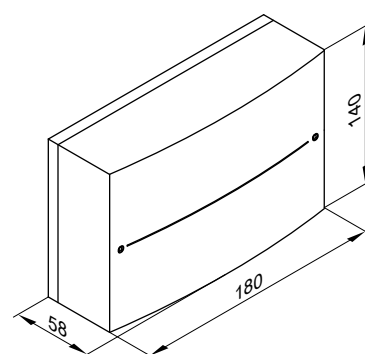
- 1 switching output (floating changeover contact)
 - Central fault message output (only with Vitotronic 100, type HC1B and Vitotronic 200, type HO1B)
 - Switching the feed pump to a substation
 - Switching the DHW circulation pump (only with Vitotronic 200, type HO1B)
- 1 analogue input (0 to 10 V)
 - Specifying the set boiler water temperature

3 digital inputs

- External operating program changeover for 1 to 3 heating circuits (only with Vitotronic 200, type HO1B, and 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 Vitotronic 200, type HO1B, and Vitotronic 300-K, type MW2B)
- Signalling reduced operation for one heating circuit (only for Vitotronic 300-K, type MW2B)

Power supply for DHW circulation pump

DHW circulation pumps with their own internal control unit must be connected to a separate power supply. Mains connection via the Vitotronic control unit or Vitotronic accessories is **not** permissible.



Specification

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

Control units (cont.)

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.

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

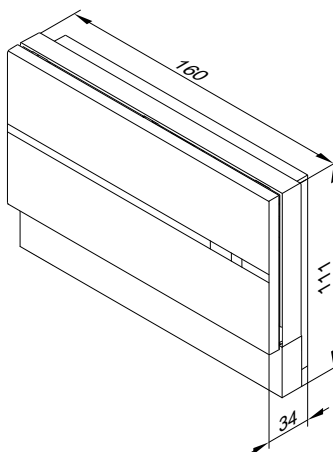
On-site requirements

- 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.

Specification



Specification

Power supply via plug-in power supply unit	230 V~ / 5 V–
Rated current	250 mA
Power consumption	8 W
Safety category	II
IP rating	IP 30 to EN 60529; ensure through design/installation
Permissible ambient temperature	
– Operation	0 to +55 °C Installation in living spaces or installation rooms (standard ambient conditions)
– Storage and transport	–20 to +85 °C

Vitocom 100, type GSM2

Part no.: See current pricelist

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

For transferring messages and setting operating programs via 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.

Configuration

Mobile phones via SMS

Standard delivery

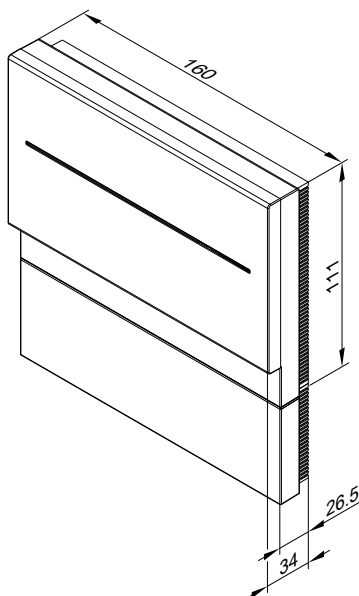
- Vitocom 100 with integral GSM modem
- Connecting cable with Rast 5 system plugs for connection to the control unit KM BUS
- Mobile aerial (3.0 m long), magnetic base and adhesive pad
- Power cable with plug-in power supply unit (2.0 m long)

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

Control units (cont.)

Specification



Specification

Power supply via plug-in power supply unit	230 V~/5 V–
Rated current	1.6 A
Power consumption	5 W
Protection class	II
IP rating	IP 30 to EN 60529; ensure through design/installation
Function type	Type 1B to EN 60730-1
Permissible ambient temperature	
– Operation	0 to +50 °C Installation in living spaces or boiler rooms (standard ambient conditions)
– Storage and transport	–20 to +85 °C
On-site connection	Digital input: Floating contact

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.

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)
 - 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

■ *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 messages via SMS to mobile phone/smartphone, via email to end devices with email client functionality or via 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
- **Remote setup:**
 - Configuring Vitocom 200 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 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*.

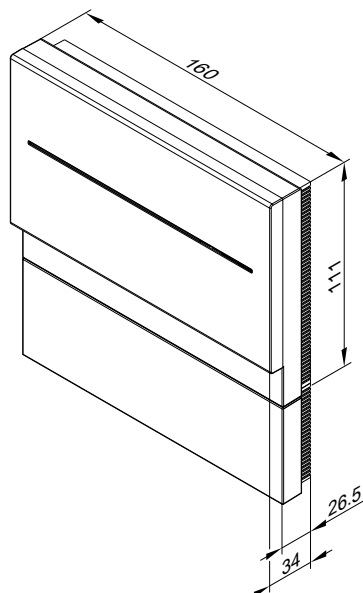
Accessories

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



Specification

Power supply via plug-in power supply unit	230 V~/5 V–
Rated frequency	50 Hz
Rated current	250 mA
Power consumption	5 W
Safety category	III
IP rating	IP 30 to EN 60529; ensure through design/installation
Permissible ambient temperature	
– Operation	0 to +50 °C Installation in living spaces or installation rooms (standard ambient conditions)
– Storage and transport	–20 to +85 °C
On-site connections	
– 2 digital inputs DI1 and DI2	Floating contacts, contact load 24 V–, 7 mA
– 1 digital output DO1	5 V–, 100 mA, for connecting the EM201 extension module

For further specifications and accessories: See "Data communication" technical guide.

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**

Control units (cont.)

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)
- Monitoring of additional devices via the inputs and outputs of the Vitocom and EM301 extension modules

■ Telecontrol:

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

■ Telecontrol:

- Selecting operating programs, set values, time programs and heating curves
- Recording trends via datalogger
- Recording 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 in packs with Vitocom, see [pricelist](#).

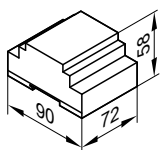
Accessories

Accessories	Part no.
Wall mounting enclosure for installation of the Vitocom 300 and accessories if no control panel or electrical distribution panel is available.	
2 rows	7143 434
3 rows	7143 435
EM301 extension module	
– Mounting rail installation TS35 to EN 50022, 35 x 15 and 35 x 7.5	
– 8 analogue inputs:	
– 0 – 10 V–	
– 4 – 20 mA	
– Viessmann temperature sensors NTC 10 kΩ, NTC 20 kΩ, Ni500 or Pt500	
– Pulse counter	
– 8 digital inputs:	
– For hooking up signals via floating contacts	
– 2-pole	
– Breaking capacity of the external contact 24 V–, 7 mA	
– With LED indicator	
– N/C or N/O contact	
– N/C or N/O alarm contact	
– Pulse counter	
– 2 digital outputs:	
– Floating relay contacts	
– 3-pole changeover contact	
– Max. 2 A, 230 V~	
– With LED indicator	
Max. 3 x EM301 extension modules per Vitocom 300	
Uninterrupted power supply module (UPS)	
Mounting rail installation TS35 to EN 50022, 35 x 15 and 35 x 7.5	7143 432

Control units (cont.)

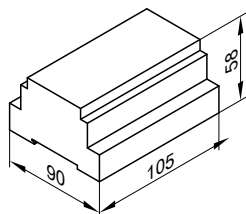
Accessories	Part no.
Additional rechargeable battery pack for UPS – Mounting rail installation TS35 to EN 50022, 35 x 15 and 35 x 7.5 – Recommended with 1 Vitocom 300 and 1 extension module where all inputs are allocated – Required with 1 or more Vitocom 300 and 2 extension modules	7143 436
Connecting cable extension Installation spacing 7 to 14 m – 1 connecting cable (7 m long) and 1 LON coupling RJ45 Installation spacing 14 to 900 m with plug-in connector – 2 LON plug-in connectors RJ45 and – 2-core cable, CAT5, screened, solid wire, AWG 26-22, 0.13 to 0.32 mm ² , external diameter 4.5 to 8 mm or 2-core cable, CAT5, screened, stranded wire, AWG 26-22, 0.14 to 0.36 mm ² , external diameter 4.5 to 8 mm.	7143 495 and 7143 496 7199 251 and On site
Installation spacing 14 to 900 m with socket – 2 connecting cables (7 m long) and – 2 LON sockets RJ45, CAT6 – 2-core cable, CAT5, screened or JY(St) Y 2 x 2 x 0.8	7143 495 and 7171 784 On site

Specification, power supply unit (standard delivery):



Rated voltage	100 to 240 V~
Rated frequency	50/60 Hz
Rated current	0.8 to 0.4 A
Output voltage	24 V–
Max. output current	2 A
Protection class	II to EN 61140
IP rating	IP 20 to EN 60529; ensure through design/installation
Primary/secondary earth separation	SELV to EN 60950
Electrical safety	EN 60335
Permissible ambient temperature	
– Operation	–20 to +55 °C Installation in living spaces or installation rooms (standard ambient conditions)
– Storage and transport	–25 to +85 °C

Vitocom 300 specification (standard delivery)



Specification

Rated voltage	24 V–
Rated current	710 mA
Rated output	17 W
Protection class	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 Installation in living spaces or installation rooms (standard ambient conditions)
– Storage and transport	–20 to +85 °C
On-site connections	
– 2 digital inputs DI1 and DI2	Floating contacts, contact breaking capacity 24 V–, 7 mA, for monitoring additional devices and third party systems, with LED indicator
– 1 digital output DO	Relay, contact breaking capacity 24 V–, max. 2 A, changeover contact
– 1 M BUS interface	For connecting heat meters with M BUS interface to EN 1434-3
– 1 EM interface	For connecting up to 3 x EM301 extension modules, with LED indicator

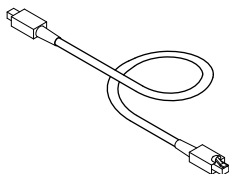
Control units (cont.)

LON connecting cable for data exchange between control units

Vitotronic 300-K to 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
Ø 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
Ø 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 Vitotronic 200-H, Vitocom 100 type LAN1, Vitocom 200 and for connection to a higher level building management system.

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

Vitoconnect 100, type OPTO1

Part no. Z014494

- For remote control of a heating system with 1 heat generator via internet and WLAN with DSL router
- Compact device for wall mounting
- For system operation with **Vitotrol Plus app**, **ViCare app** and/or **Vitoguide Connect**

Functions when operating with the Vitotrol Plus app

- For remote control of all heating circuits in a heating system
- Setting of operating programs, set values and time programs
- Scanning system information
- Displaying messages on the Vitotrol Plus app user interface
- Displaying consumption data

The Vitotrol Plus app supports the following end devices:

- End devices with Apple iOS operating system version 8 or higher
- End devices with Google Android operating system version 4.0 or higher

Note

For more information, see www.vitotrol.info.

Functions when operating with the ViCare app

- Remote control of heating systems with one heating circuit
- Selecting operating programs, set values and time programs with switching time assistants
- Scanning system information
- Fault messages by push notification

The ViCare app supports the following end devices:

- End devices with Apple iOS operating system version 8 or higher
- End devices with Google Android operating system version 4.0 or higher

Note

For more information, see www.vicare.info.

Functions when operating with Vitoguide Connect

- Central point of access for the Viessmann online software
- System registration for monitoring heating systems
- Access to operating programs, set values and time programs
- Scanning system information for all connected heating systems
- Display and forwarding of fault messages in plain text
- Sizing and design

Control units (cont.)

Vitoguide Connect supports the following end devices:

- End devices with a screen size of 8 inches or larger

Note

For more information, see www.vitoguide.info.

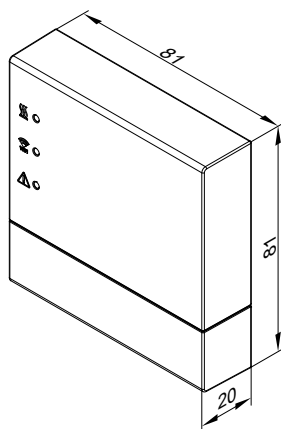
Standard delivery

- WLAN module for connection with the DSL router, for wall mounting
- Connection line with Optolink/USB (WLAN module/boiler control unit, 3 m long)
- Power cable with plug-in power supply unit (1 m long)

On-site requirements

- Heating system with Vitoconnect 100, type OPTO1
- Before commissioning, check the system requirements for communication via local IP networks/WLAN.
- Internet connection with flat rate data (**without time or volume restrictions**)

Specification



Specification

Power supply via plug-in power supply unit	230 V~/5 V–
Rated current	1 A
Power consumption	5 W
Protection class	II
IP rating	IP30 to EN 60529; ensure through design/installation
Permissible ambient temperature	
– Operation	–5 to +40 °C Installation in living spaces or installation rooms (standard ambient conditions)
– Storage and transport	–20 to +60 °C
WLAN frequency	2.4 GHz

Appendix

6.1 Regulations / Directives

Regulations and directives

We, Viessmann Werke GmbH & Co. KG, declare that the Vitodens gas condensing boilers have been tested and approved in accordance with currently applicable directives/regulations, standards and technical rules.

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 and flue gas connections, commissioning, 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 appliance for use in countries other than those stated on the type plate. The contractor must also arrange the acceptance in accordance with the statutes of the relevant country.

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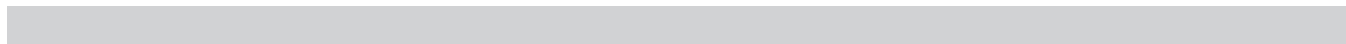
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Subject to technical modifications.

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