

Technical guide

**VITODENS 200-W** Type B2HA**Wall mounted gas condensing boiler**

With modulating MatriX cylinder burner for natural gas and
LPG

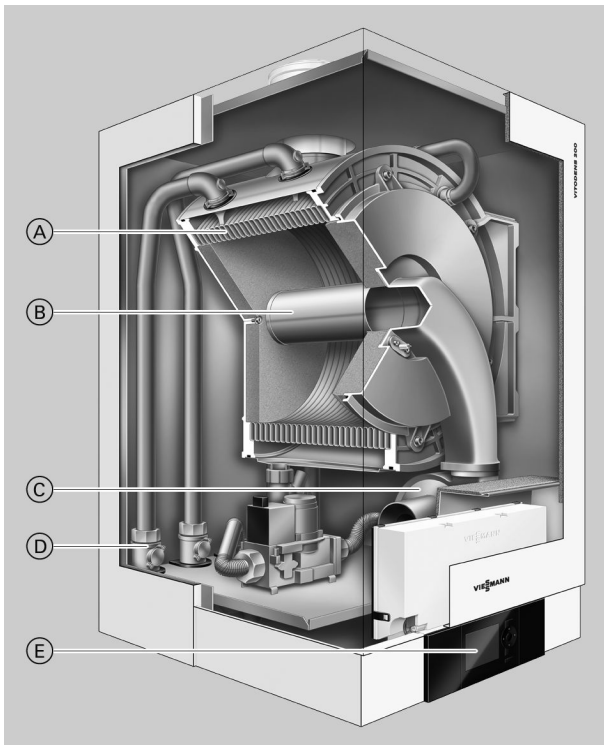
For open or balanced flue operation

Index

1. Vitodens 200-W	1.1 Product description	4
	1.2 Specification	5
	■ Vitodens 200-W, 45 and 60 kW	6
	■ Vitodens 200-W, 80 and 100 kW	9
	■ Vitodens 200-W, 125 and 150 kW	10
2. Installation accessories	2.1 Product description	14
	■ Installation accessories for the Vitodens 200-W, 45 and 60 kW	14
	■ Installation accessories for the Vitodens 200-W, 80 and 100 kW	24
	■ Installation accessories for the Vitodens 200-W, 125 and 150 kW	24
	■ Installation accessories for multi boiler systems	26
3. DHW cylinder	3.1 Product description	27
4. Design information	4.1 Positioning, installation	27
	■ Siting conditions for open flue operation (appliance type B)	27
	■ Installation conditions for balanced flue operation (appliance type C)	27
	■ Operation of the Vitodens in wet areas	28
	■ Electrical connection	28
	■ Gas connection	29
	■ Minimum clearances	29
	■ Installing the Vitodens 200-W, 45 to 100 kW directly onto a wall (single boiler)	30
	■ Installing the Vitodens 200-W, 125 to 150 kW directly onto a wall (single boiler)	31
	■ Pre-installation, multi boiler system	32
	4.2 Condensate connection	41
	■ Condensate drain and neutralisation	41
	4.3 Hydraulic connection	43
	■ General information	43
	■ Expansion vessels	44
	■ Multi boiler systems	45
	■ Low loss header	45
5. Control units	5.1 Vitotronic 100, type HC1B, for constant temperature operation	46
	■ Layout and functions	46
	■ Specification Vitotronic 100, type HC1B	47
	5.2 Vitotronic 200, type HO1B, for weather-compensated operation	48
	■ Specification Vitotronic 200, type HO1B	50
	5.3 Vitotronic 300-K, type MW2B for multi boiler systems	50
	■ Cascade control unit for the Vitodens 200-W with a Vitotronic 100	50
	■ Layout and function	50
	■ Specification, Vitotronic 300-K	52
	■ Delivered condition Vitotronic 300-K	53

5.4	Accessories for the Vitotronic	53
■	Allocation to control unit types	53
■	Vitotrol 100, type UTA	54
■	Vitotrol 100, type UTDB	54
■	External extension H4	55
■	Vitotrol 100, type UTDB-RF	55
■	Notes regarding room temperature hook-up (RS function) for remote control units ..	56
■	Information on the Vitotrol 200A and Vitotrol 300A	56
■	Vitotrol 200A	56
■	Vitotrol 300A	57
■	Information regarding the Vitotrol 200 RF and Vitotrol 300 RF	57
■	Vitotrol 200 RF	57
■	Vitotrol 300 RF with table-top dock	58
■	Vitotrol 300 RF with wall mounting bracket	58
■	Wireless base station	59
■	Wireless outside temperature sensor	60
■	Wireless repeater	60
■	Room temperature sensor	61
■	Immersion temperature sensor	61
■	Mounting base for programming unit	61
■	Radio clock receiver	62
■	KM BUS distributor	62
■	Mixer extension kit with integral mixer motor	62
■	Mixer extension kit for separate mixer motor	63
■	Vitotronic 300-K extension for heating circuits 2 and 3 with mixers	63
■	Extension kit for one heating circuit with mixer in conjunction with Divicon heating circuit distributor	64
■	Extension kit for one heating circuit with mixer for the Vitotronic 300-K	64
■	Immersion thermostat	65
■	Contact thermostat	65
■	Solar control module, type SM1	66
■	Internal extension H1	67
■	Internal extension H2	67
■	Extension AM1	67
■	Extension EA1	67
■	Vitocom 100, type LAN1	68
■	Vitocom 100, type GSM	69
■	LON connecting cable for data exchange between control units	69
■	Extension of the connecting cable	70
■	Terminator (2 pce)	70
■	LON communication module	70
6.	Appendix	
6.1	Regulations / Directives	70
■	Regulations and Directives	70
7.	Keyword index	72

1.1 Product description



- (A) Inox-Radial heat exchanger made from stainless steel – for high operational reliability and a long service life. Large heating output in the smallest of spaces
- (B) Modulating Matrix cylinder burner for extremely clean combustion and quiet operation
- (C) Variable speed combustion fan for quiet and economical operation
- (D) Gas and water connections
- (E) Digital boiler control unit

Vitodens 200-W wall mounted condensing boilers up to 150 kW are especially suitable for installation in apartment buildings and commercial or public buildings. For these, the Vitodens 200-W offers an affordable, space-saving solution – either as a single unit up to 150 kW or as a cascade with up to eight boilers and a heating output up to 900 kW.

The Inox-Radial heat exchanger made from stainless steel offers high output in the tightest of spaces. This enables particularly efficient operation with standard seasonal efficiency [to DIN] up to 98 % (H_s) [gross cv] / 109 % (H_i) [net cv].

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

For creating cascade systems, we offer perfectly matching system components, e.g. control units with up to eight appliances, fully insulated hydraulic cascades and flue gas headers.

Application recommendations

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

- Systems with few, large-demand consumers, e.g. fan heaters in supermarkets/shopping centres, workshops and industrial premises, commercial nurseries, garages and DHW heating systems
- Systems with several heating circuits for underfloor and/or static radiators in apartment buildings, central heating plants for terraced houses, office buildings and administration premises - particularly suitable for attic heating centres

- Heating of public buildings, such as sports and multi purpose halls, schools, kindergartens
- Suitable for installation in basement boiler rooms, on floors in-between or in the attic

Benefits at a glance

- Option of cascade with up to eight boilers with a rated heating output from 45 kW to 900 kW
- Standard seasonal efficiency [to DIN] up to 98 % (H_s) [gross cv] / 109 % (H_i) [net cv]
- Durable and efficient thanks to the Inox-Radial heat exchanger
- Modulating Matrix cylinder burner with a long service life thanks to stainless steel Matrix gauze – resistant to high temperature loads
- Easy-to-use Vitotronic control unit with plain text and graphic display
- The programming unit of the control unit can also be fitted on a wall mounting base (accessory)
- Lambda Pro Control combustion controller for all gas types – saves on costs due to extension of the inspection interval to 3 years
- Quiet operation thanks to low fan speed

Delivered condition

Wall mounted gas condensing boiler with Inox-Radial heat exchanger, modulating Matrix cylinder burner for natural gas and LPG, to DVGW Code of Practice G260 [Germany], plus wall mounting bracket.

Fully plumbed and wired. White epoxy-coated casing.

Packed separately:

Vitotronic 100 for constant temperature mode

or

Vitotronic 200 for weather-compensated operation.

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

Multi boiler systems

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

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

Comprising:

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

Note

Order circulation pumps for heating circuits and cylinder heating separately.

Tested quality

 CE designation according to current EC Directives



ÖVGW Quality Mark pursuant to quality symbol regulation 1942 DRGBI. I for gas and water equipment

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

1.2 Specification

Gas boiler, series B and C, category		II _{2N3P}	II _{2N3P}	II _{2N3P}	II _{2N3P}	II _{2N3P}	II _{2N3P}
Gas condensing boiler							
Rated heating output range 45 and 60 kW: Specification to EN 677 80 to 150 kW: Specification to EN 15417							
T _v /T _R = 50/30 °C	kW	17.0-45.0	17.0-60.0	30.0-80.0	30.0-100.0	32.0-125.0	32.0-150.0
T _v /T _R = 80/60 °C	kW	15.4-40.7	15.4-54.4	27.0-72.6	27.0-91.0	29.0-114.0	29.0-136.0
Rated heat input	kW	16.1-42.2	16.1-56.2	28.1-75.0	28.1-93.8	30-118	30-142
Type		B2HA	B2HA	B2HA	B2HA	B2HA	B2HA
Product ID		CE-0085CN0050					
IP rating		IP X4D to EN 60529					
Gas supply pressure							
Natural gas	mbar	20	20	20	20	20	20
LPG	mbar	50	50	50	50	50	50
Max. permissible gas supply pressure^{*1}							
Natural gas	mbar	25.0	25.0	25.0	25.0	25.0	25.0
LPG	mbar	57.5	57.5	57.5	57.5	57.5	57.5
Power consumption (delivered condition)	W	56	82	90	175	146	222
Weight	kg	65	65	83	83	130	130
Heat exchanger content	l	7.0	7.0	12.8	12.8	15.0	15.0
Max. flow rate	l/h	3500	3500	5700	5700	7165	8600
Limit for the use of hydraulic separation							
Rated circulation water volume at T_v/T_R = 80/60 °C	l/h	1748	2336	3118	3909	4900	5850
Permiss. operating pressure	bar	4	4	4	4	6	6
Dimensions							
Length	mm	380	380	530	530	690	690
Width	mm	480	480	480	480	600	600
Height	mm	850	850	850	850	900	900
Gas connection	R	¾	¾	1	1	1	1
Connection values in relation to the max. load with gas							
Natural gas	m ³ /h	4.47	5.95	7.94	9.93	12.49	15.03
E							
Natural gas	m ³ /h	5.19	6.91	9.23	11.54	14.51	17.47
LL							
LPG	kg/h	3.30	4.39	5.86	7.33	9.23	11.10
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 30 °C return temperature)							
– at rated heating output	°C	62	66	46	57	51	60
– at partial load	°C	39	39	37	37	39	39
Temperature (at 60 °C return temperature)	°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

^{*1} If the gas supply pressure is higher than the maximum permissible value, install a separate gas pressure governor upstream of the system.

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

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

The flue gas temperature at a return temperature of 30 °C is significant for sizing 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 max. permissible operating temperatures.

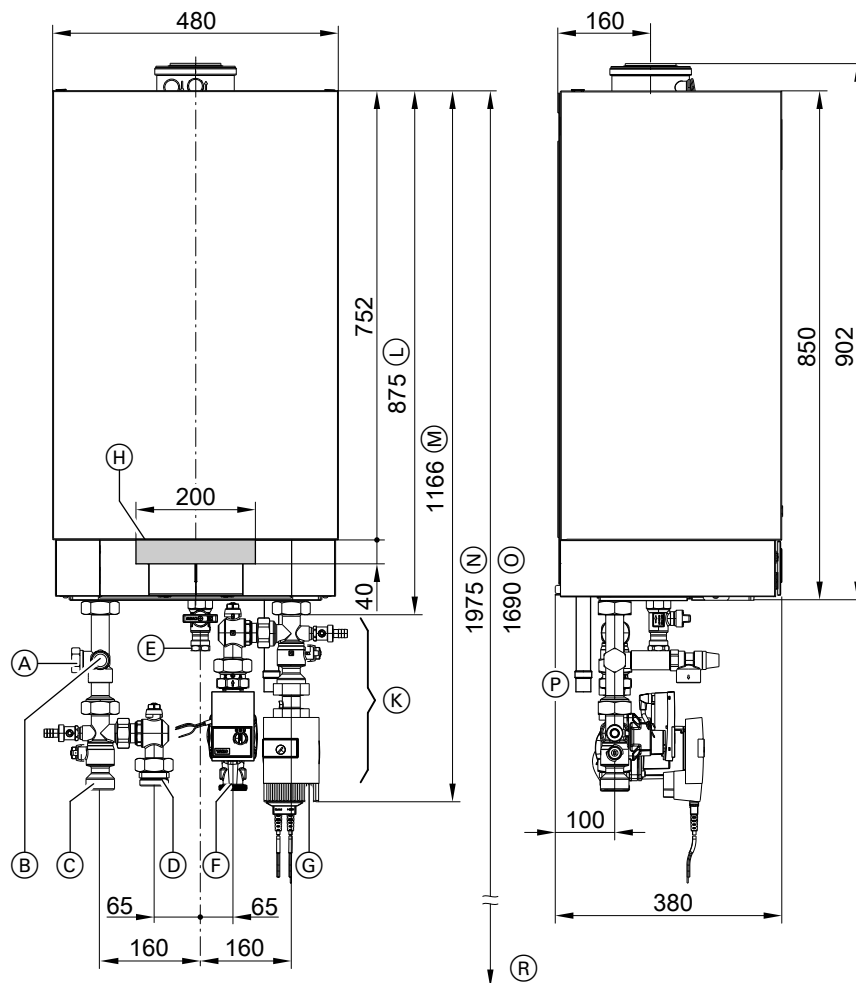
Vitodens 200-W (cont.)

Gas boiler, series B and C, category	Gas condensing boiler					
	II _{2N3P}	II _{2N3P}	II _{2N3P}	II _{2N3P}	II _{2N3P}	II _{2N3P}
Rated heating output range 45 and 60 kW: Specification to EN 677 80 to 150 kW: Specification to EN 15417						
$T_V/T_R = 50/30\text{ °C}$ kW	17.0-45.0	17.0-60.0	30.0-80.0	30.0-100.0	32.0-125.0	32.0-150.0
$T_V/T_R = 80/60\text{ °C}$ kW	15.4-40.7	15.4-54.4	27.0-72.6	27.0-91.0	29.0-114.0	29.0-136.0
Standard seasonal efficiency [to DIN] at $T_V/T_R = 40/30\text{ °C}$ %	up to 98 (H _s) [gross cv] / 109 (H _i) [net cv]					
Max. amount of condensate for natural gas and $T_V/T_R = 50/30\text{ °C}$ l/h	5.9	7.9	10.5	13.1	16.5	20.0
Internal pipe diameter to expansion vessel DN	22	22	28	28	25	25
safety valve DN	22	22	22	22	26	26
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

Vitodens 200-W, 45 and 60 kW

Multi boiler systems

For further details regarding multi boiler systems, see page 32.



- (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 (accessory)
Shown without thermal insulation (standard delivery)

Vitodens 200-W (cont.)

- (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

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

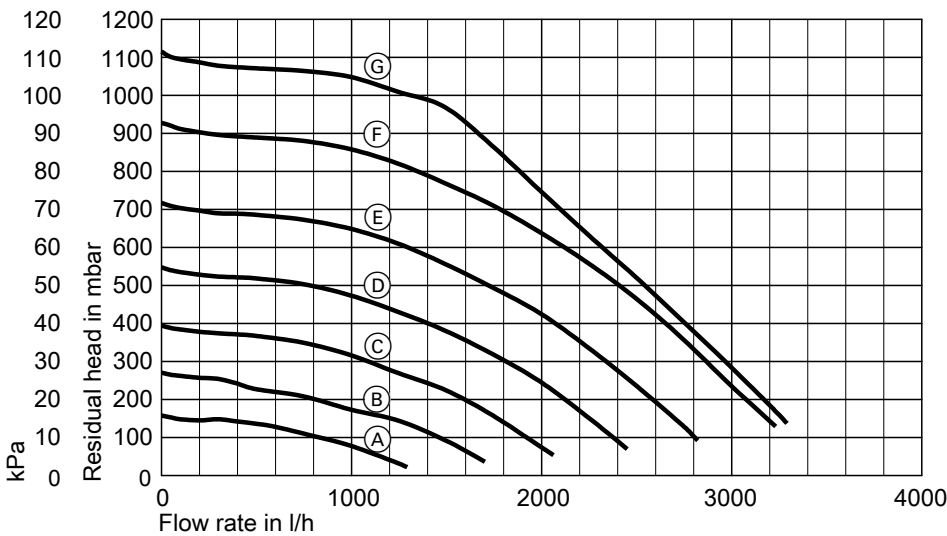
Variable speed high efficiency circulation pump in the heating circuit connection set (accessory)

The HE circulation pump features a power consumption reduced by more than 50 % compared with 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

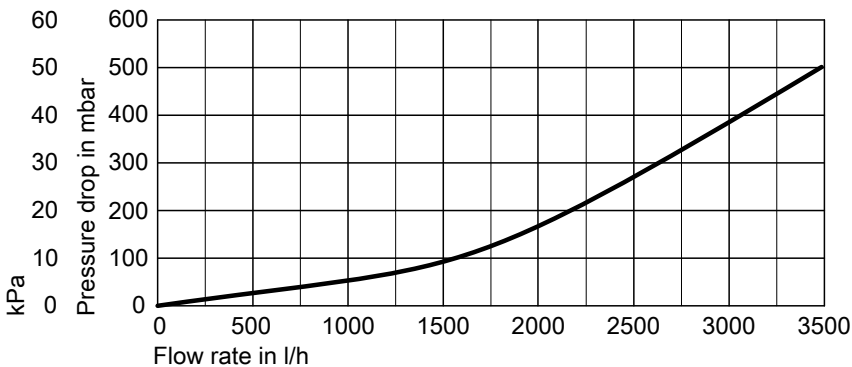
Residual head of the circulation pump



Curve	Circulation pump rate
(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

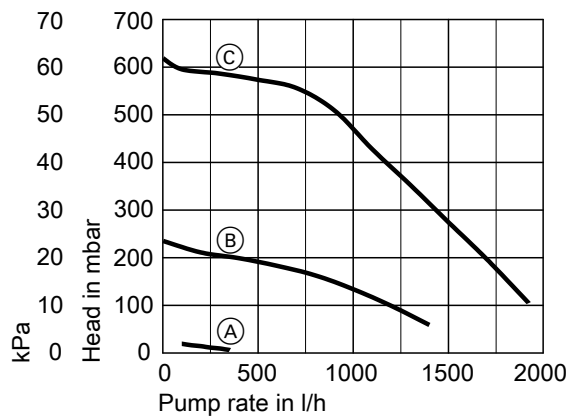


Vitodens 200-W (cont.)

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

Residual head of the circulation pump



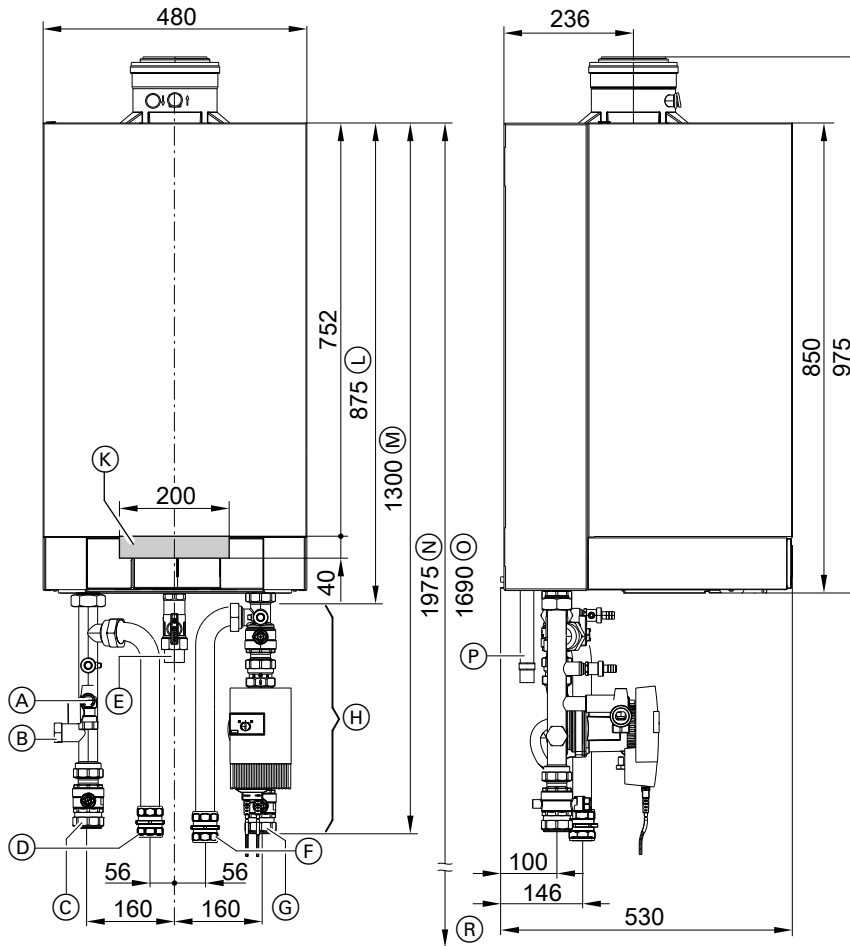
- Ⓐ Stage 1
- Ⓑ Stage 2
- Ⓒ Stage 3

Vitodens 200-W (cont.)

Vitodens 200-W, 80 and 100 kW

Multi boiler systems

For further details regarding multi boiler systems, see page 32.



- (A) Safety valve
- (B) Expansion vessel connection G1
- (C) Boiler flow \varnothing 42 mm
- (D) Cylinder flow \varnothing 35 mm
- (E) Gas connection R 1
- (F) Cylinder return \varnothing 35 mm
- (G) Boiler return \varnothing 42 mm
- (H) Connection sets (accessory)
Shown without thermal insulation (standard delivery)

- (K) Cable entry area at the back
- (L) Without connection set (accessory)
- (M) With connection set (accessory)
- (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 power cables on site and route them into the boiler in area (K).

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

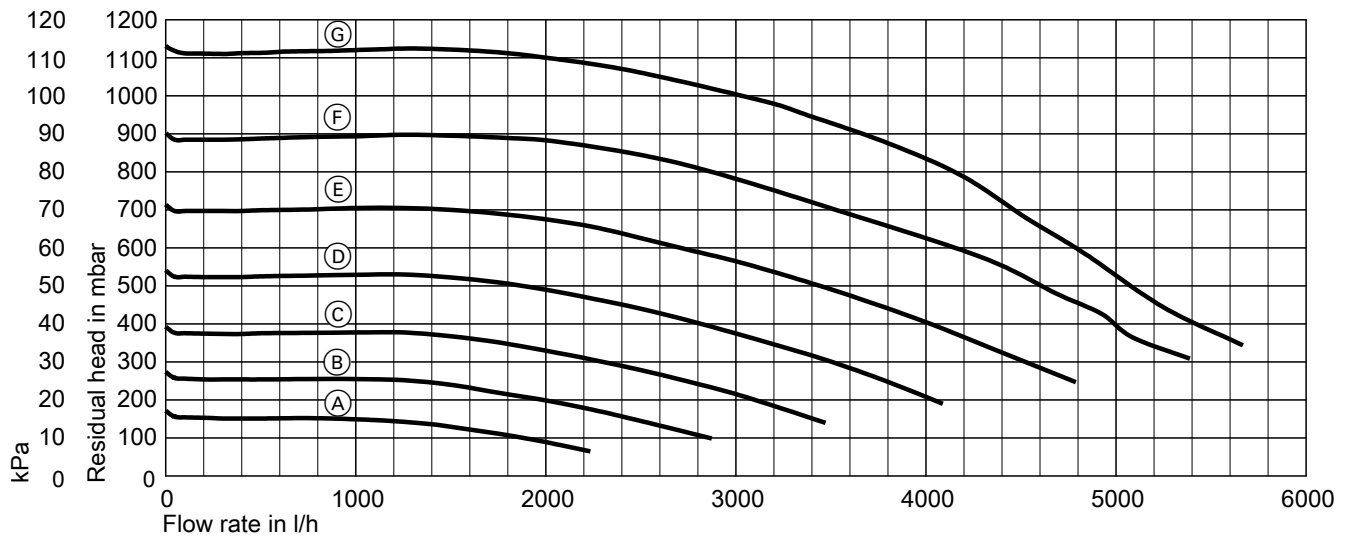
The HE circulation pump features a power consumption reduced by more than 50 % compared with conventional pumps. Matching the pump rate of the circulation pump to the individual system conditions reduces the power consumption of the heating system.

Circulation pump VI Para 25/1-12

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

Vitodens 200-W (cont.)

Residual head of the circulation pump



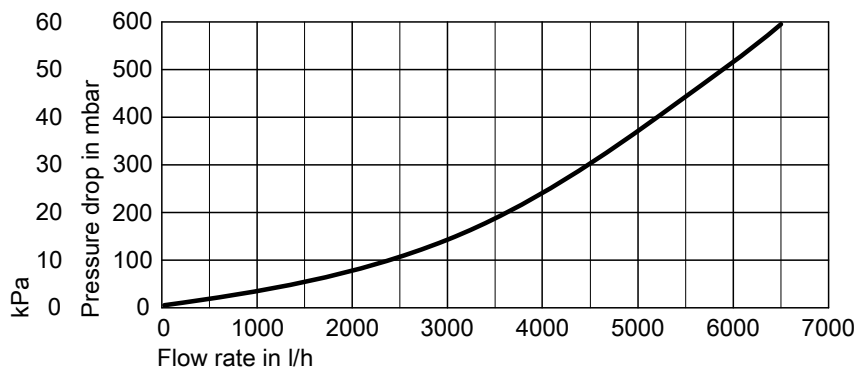
Curve	Circulation pump rate
(A)	40 %
(B)	50 %
(C)	60 %
(D)	70 %
(E)	80 %
(F)	90 %
(G)	100 %

Note

Observe further details regarding the use of a low loss header (see page 45).
 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

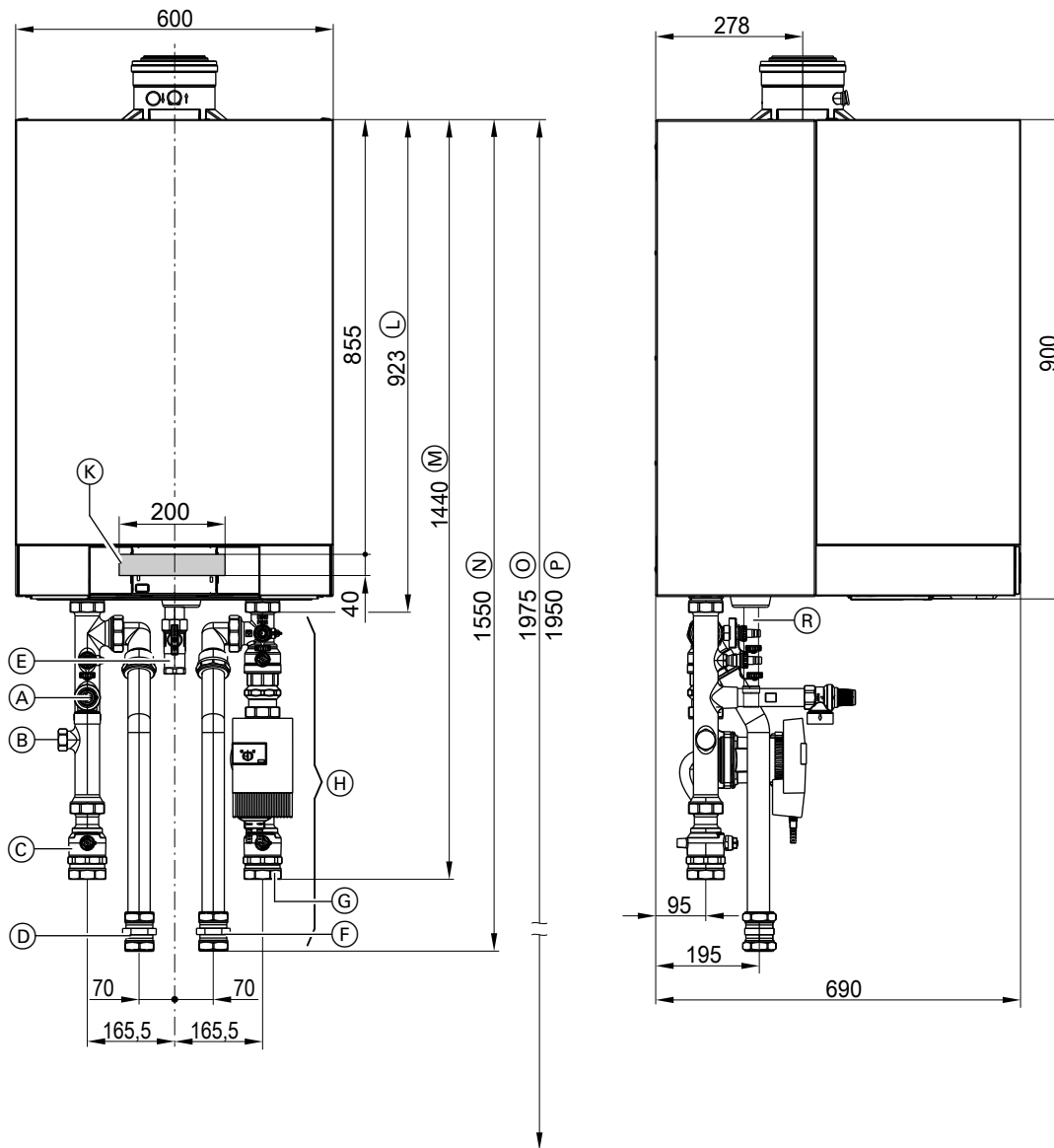
For sizing a circulation pump on site (when connecting to a DHW cylinder connection set)



Vitodens 200-W, 125 and 150 kW

Multi boiler systems

For further details regarding multi boiler systems, see page 32.



- (A) Safety valve
- (B) Expansion vessel connection G1
- (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 (accessory)
Shown without thermal insulation (standard delivery)

- (K) Cable entry area at the back
- (L) Without connection set (accessory)
- (M) With heating circuit connection set (accessory)
- (N) With DHW cylinder connection set (accessory)
- (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

Note

The heating circuit connection set must be ordered separately.

Note

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

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

The HE circulation pump features a power consumption reduced by more than 50 % compared with conventional pumps. Matching the pump rate of the circulation pump to the individual system conditions reduces the power consumption of the heating system.

Vitodens 200-W (cont.)

Circulation pump VI Para 30/1-12

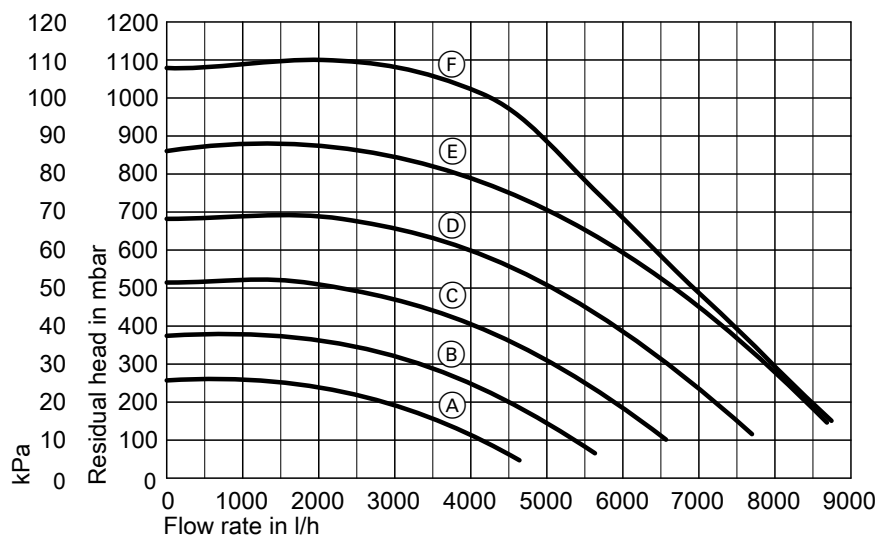
Rated voltage	V~	230
Power consumption	W	310
	Max. Min.	16

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

Note

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

Residual head of the circulation pump



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

Vitodens 200-W (cont.)

Note

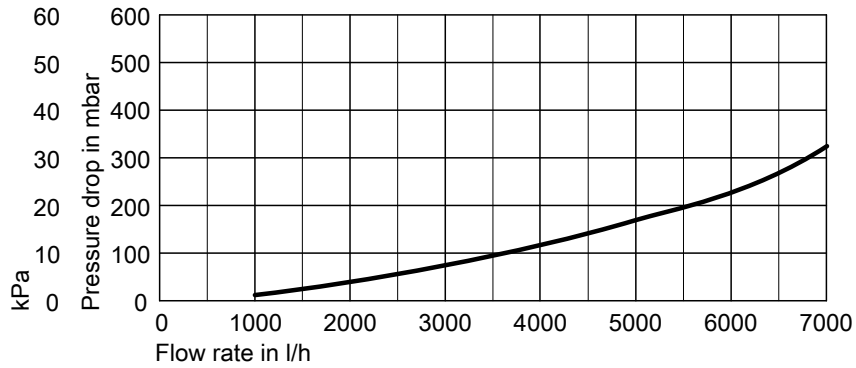
Observe further details regarding the use of a low loss header (see page 45).

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 a circulation pump on site (when connecting to a DHW cylinder connection set)



Installation accessories

2.1 Product description

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

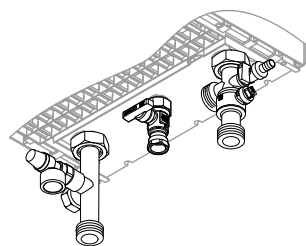
Heating circuit connection set without circulation pump

Part no. 7245 738

Connections G 1½

Comprising:

- Tee with ball valve
- Boiler drain & fill valve
- Safety valve
- Gas shut-off valve with integral thermally activated safety shut-off valve
- Connection G1 for expansion vessel



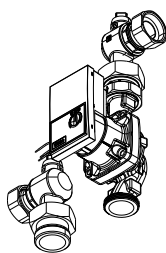
DHW cylinder connection set

Part no. ZK00 657

Connections G 1½

Comprising:

- Circulation pump
- 2 ball shut-off valves
- Non-return valve
- Cylinder temperature sensor



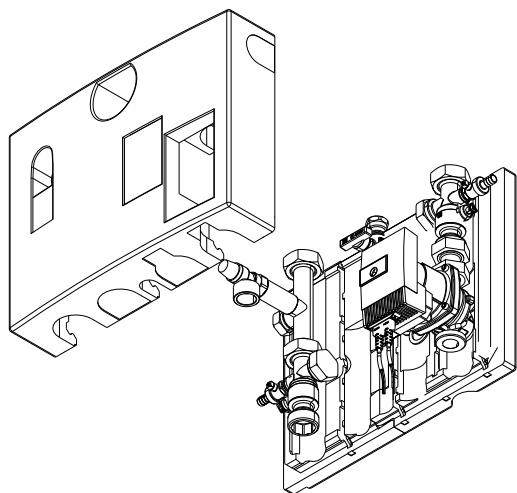
Heating circuit connection set with variable speed high efficiency circulation pump

Part no. 7501 311

Connections G 1½

Comprising:

- Circulation pump
- 2 tees with ball valve
- Non-return valve
- 2 boiler drain & fill valves
- Safety valve
- Gas shut-off valve with integral thermally activated safety shut-off valve
- Thermal insulation
- Connection G1 for expansion vessel



Ball valve

Part no. 7247 373

1 pce G 1¼ with gasket and union nut.

Divicon heating circuit distributor

Construction 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 through pre-assembled unit and compact design.
- Low radiation losses through all-round thermal insulation shells.

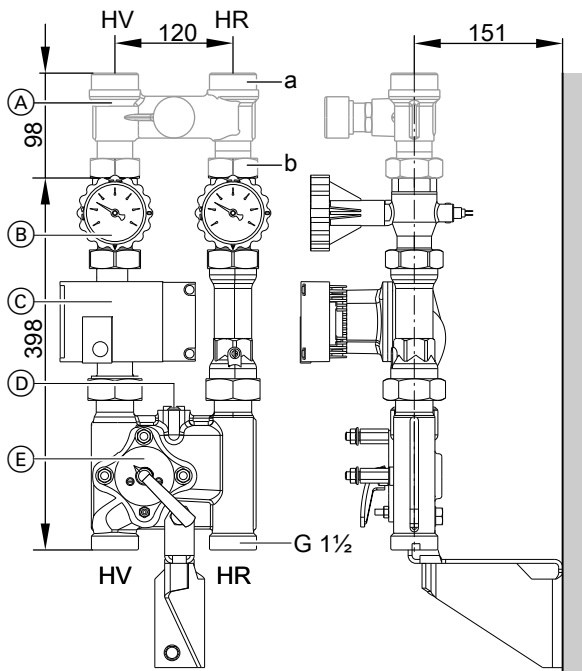


Installation accessories (cont.)

- Low electricity costs and precise control characteristics through the use of high efficiency pumps and optimised mixer curve.
- Also available with staged pumps.
- The bypass valve for hydraulic balancing of the heating system is available as an accessory as a threaded component for inserting into the prepared hole in the cast body.
- The overflow valve may be required when using staged pumps to prevent the heating system running noisily. It is mounted onto the Divicon.
- Individually wall mounted or with a double or triple manifold.
- Also available as kit. For further details, see the Viessmann pricelist.

For part no. in conjunction with the different circulation pumps, see Viessmann pricelist.

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

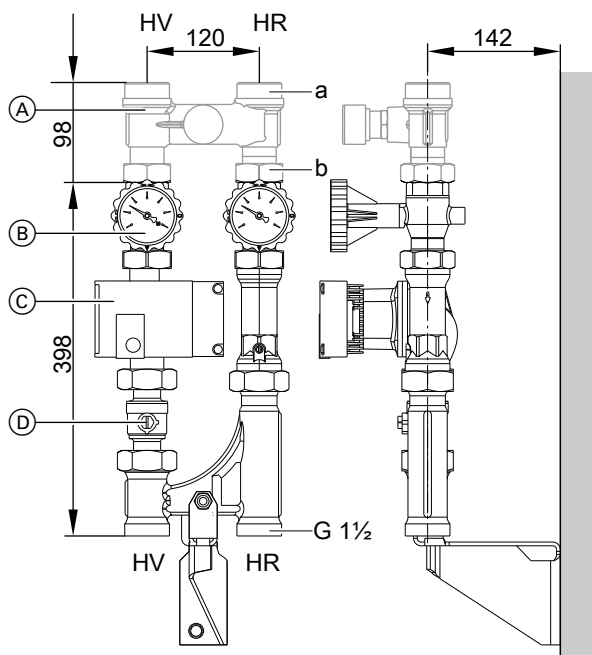


Heating circuit connection	R	¾	1	1¼
Flow rate (max.)	m ³ /h	1.0	1.5	2.5
a (female)	Rp	¾	1	1¼
a (male)	G	1¼	1½	2
b (female)	Rp	¾	1	1¼
b (male)	G	1¼	1¼	2

Divicon with mixer (wall mounting without thermal insulation and without mixer drive extension kit)

- HR Heating return
- HV Heating flow
- (A) Overflow valve (accessory for multi stage circulation pump)
- (B) Ball valves with thermometer (as programming unit)
- (C) Circulation pump
- (D) Bypass valve (accessory)
- (E) Mixer-3

Installation accessories (cont.)

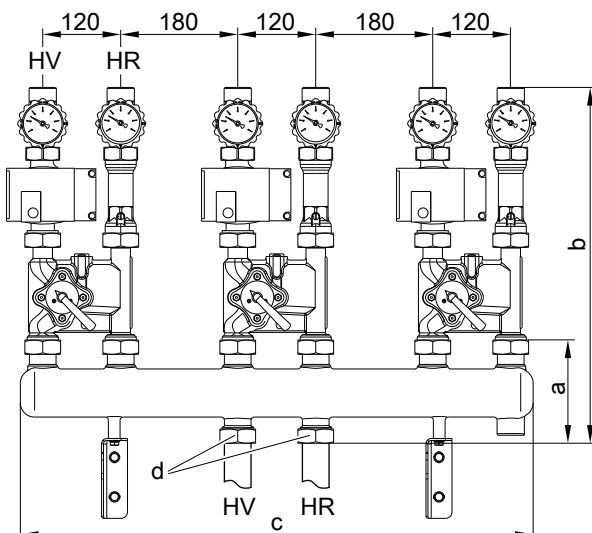


Divicon without mixer (wall mounting, shown without thermal insulation)

- HR Heating return
- HV Heating flow
- (A) Overflow valve (accessory for multi stage circulation pump)
- (B) Ball valves with thermometer (as programming unit)
- (C) Circulation pump
- (D) Ball valve

Heating circuit connection	R	¾	1	1¼
Flow rate (max.)	m ³ /h	1.0	1.5	2.5
a (female)	Rp	¾	1	1¼
a (male)	G	1¼	1½	2
b (female)	Rp	¾	1	1¼
b (male)	G	1¼	1¼	2

Installation example: Divicon with triple manifold



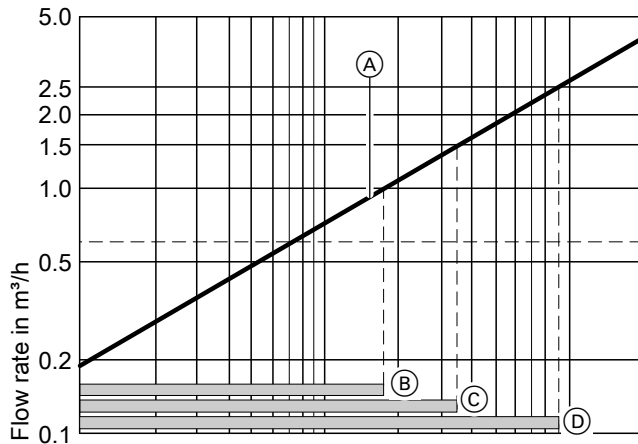
(shown without thermal insulation)

- HR Heating return
- HV Heating flow

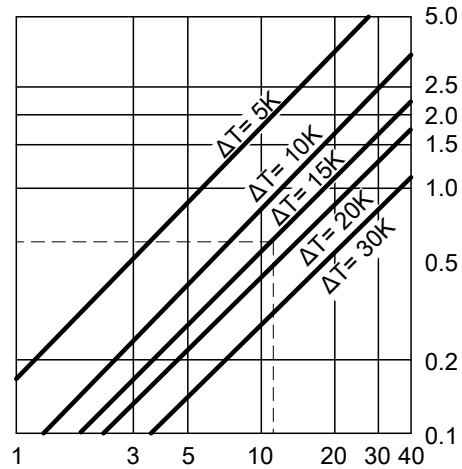
Dimensions	Manifold with heating circuit connection	
	R ¾ and R 1	R 1¼
a	135	183
b	535	583
c	784	784
d	G 1¼	G 2

Installation accessories (cont.)

Determining the required internal diameter



Mixer control characteristics



Heating circuit output in kW

- (A) Divicon with mixer-3
The identified operating ranges (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 output of $\dot{Q} = 11.6$ kW
Heating system temperature 75/60 °C ($\Delta T = 15$ K)

- c Specific heat capacity
- \dot{m} Mass flow rate
- \dot{Q} Output
- \dot{V} Flow rate

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

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

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

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

Bypass valve

Part no. 7464 889

To hydraulically balance the heating circuit with mixer. Inserted into the Divicon.

Overflow valve

Part no. 7429 738: R ¾

Part no. 7429 739: R 1

Part no. 7429 740: R 1¼

Only with manually controlled heating circuit pump. Fitted onto the Divicon.

Installation accessories (cont.)

Manifold

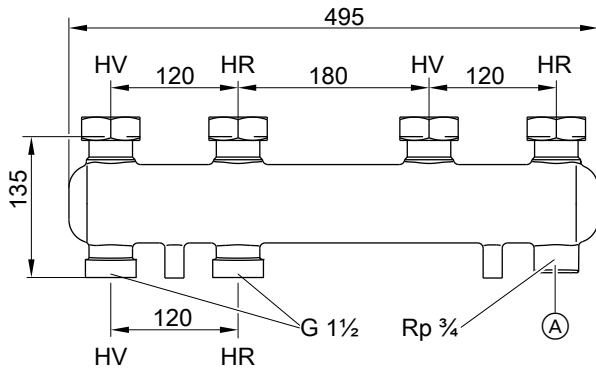
Incl. thermal insulation

Wall mounted with wall mounting bracket to be ordered separately.

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

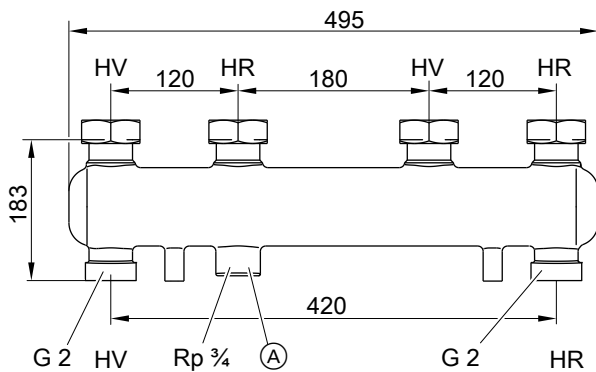


(A) Connection option for expansion vessel

HV Heating water flow

HR Heating water return

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

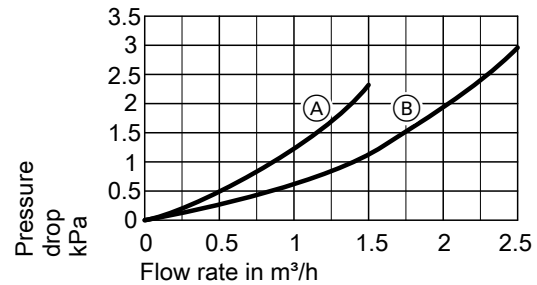


(A) Connection option for expansion vessel

HV Heating water flow

HR Heating water return

Pressure drop



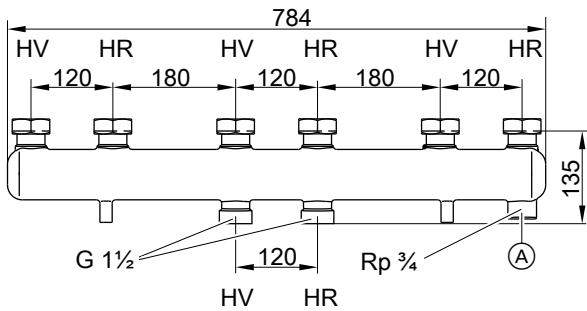
(A) Manifold for Divicon R $\frac{3}{4}$ and R 1

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

Installation accessories (cont.)

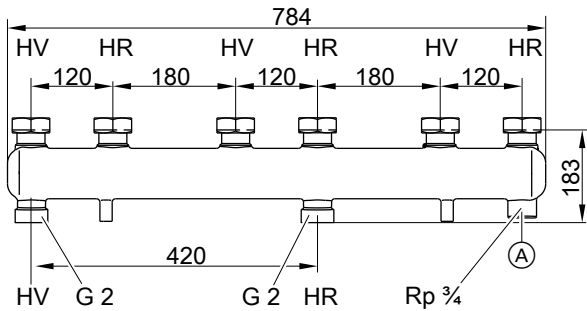
For 3 Divicon

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



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

Part no. 7466 340 for Divicon R 1¼

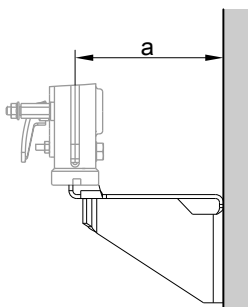


- (A) Connection option for expansion vessel
 HV Heating water flow
 HR Heating water return

Wall mounting bracket

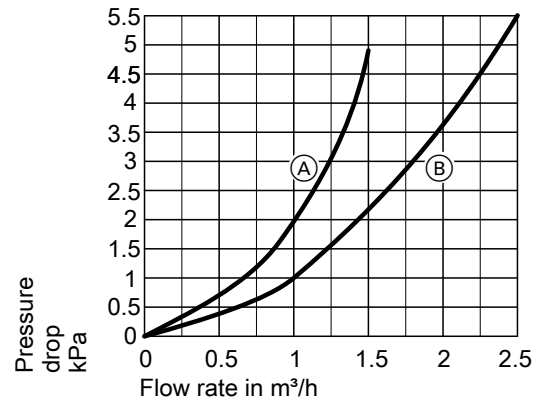
Part no. 7465 894

for individual Divicon
 With screws and dowels.



for Divicon	with mixer	without mixer
a mm	151	142

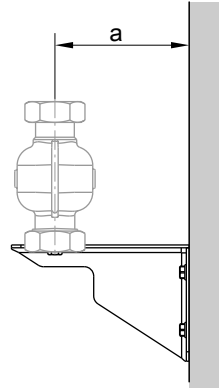
Pressure drop



- (A) Manifold for Divicon R ¾ and R 1
 (B) Manifold for Divicon R 1¼

Part no. 7465 439

for manifold
 With screws and dowels.



for Divicon	R ¾ and R 1	R 1¼
a mm	142	167

Installation accessories (cont.)

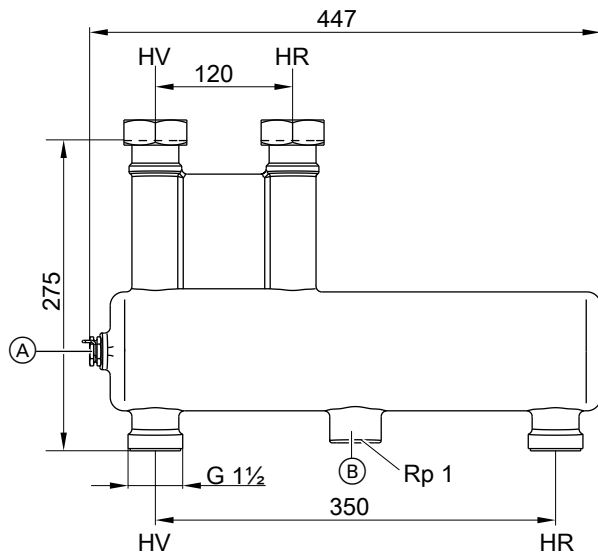
Low loss header

Part no. 7460 649

Flow rate max. 4.5 m³/h

Including thermal insulation and integral sensor well.

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



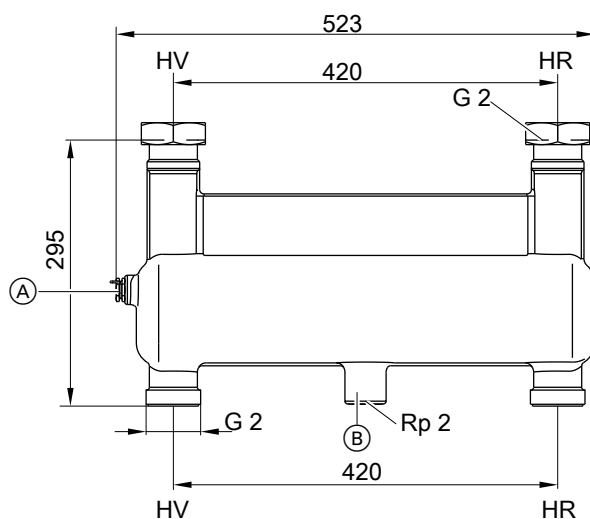
- (A) Sensor well
- (B) Optional blow-down
- HV Heating water flow
- HR Heating water return

Part no. 7460 648

Flow rate max. 7.5 m³/h

Including thermal insulation and integral sensor well.

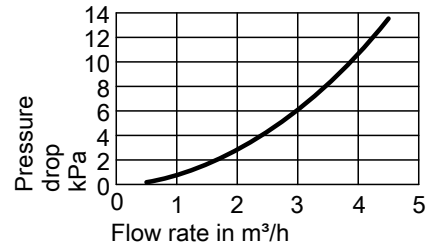
The connection between boiler and low loss header must be made on site.



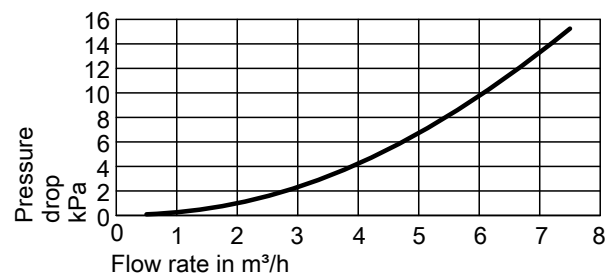
Circulation pump curves and pressure drop on the heating water side

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

Pressure drop



Pressure drop



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

Maximum flow rate for Divicon:

Installation accessories (cont.)

- 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 and circulation pump Wilo VIRS 25/4-3, pump curve 2, pump rate 0.7 m³/h

Head of the relevant pump

curve: 28 kPa

Divicon pressure drop: 3.5 kPa

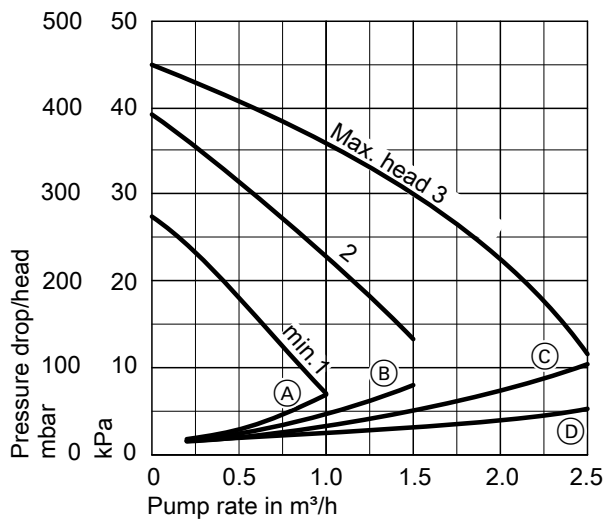
Residual head: 28 kPa – 3.5 kPa = 24.5 kPa.

Note

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

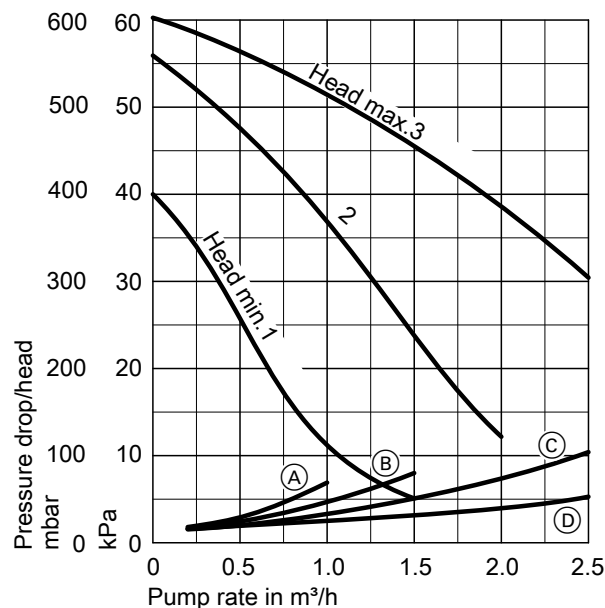
Manually controlled heating circuit pumps

Wilo VIRS 25/4-3



- (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

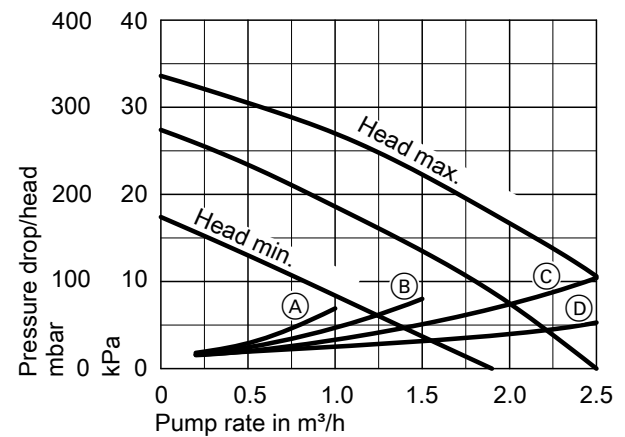
Wilo VIRS 25/6-3



- (A) Divicon R ¾ with mixer
- (B) Divicon R 1 with mixer

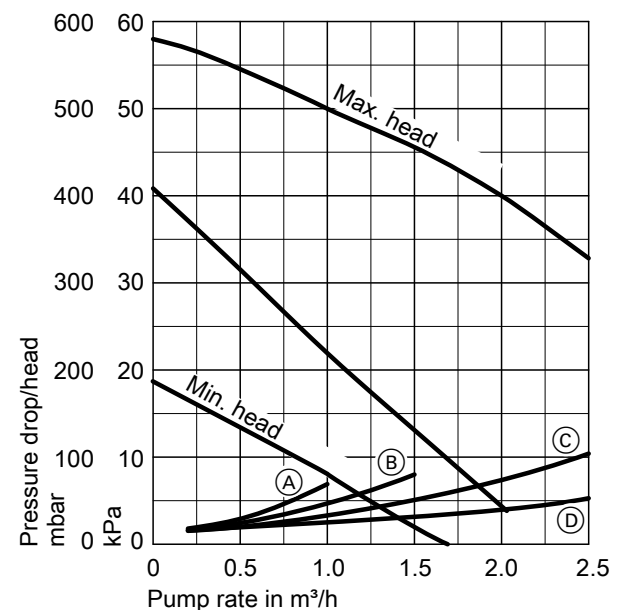
- (C) Divicon R 1¼ with mixer
- (D) Divicon R ¾, R 1 and R 1¼ without mixer

Grundfos VIUPS 25-40



- (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

Grundfos VIUPS 25-60



- (A) Divicon R ¾ with mixer
- (B) Divicon R 1 with mixer

Installation accessories (cont.)

- Ⓒ Divicon R 1¼ with mixer
- Ⓓ Divicon R ¾, R 1 and R 1¼ without mixer

Heating circuit pumps regulated by differential pressure

According to the [German] Energy Savings Order (EnEV), circulation pumps in central heating systems must be sized in accordance with current technical rules. Circulation pumps in central heating systems with rated output higher than 25 kW should be equipped and designed in such a way that the power consumption will be automatically matched to the operational (capacity) requirements in at least 3 stages, if no safety concerns relating to the boiler make demands to the contrary.

In addition to the EnEV regulations, the use of regulated pumps is also recommended for smaller capacities.

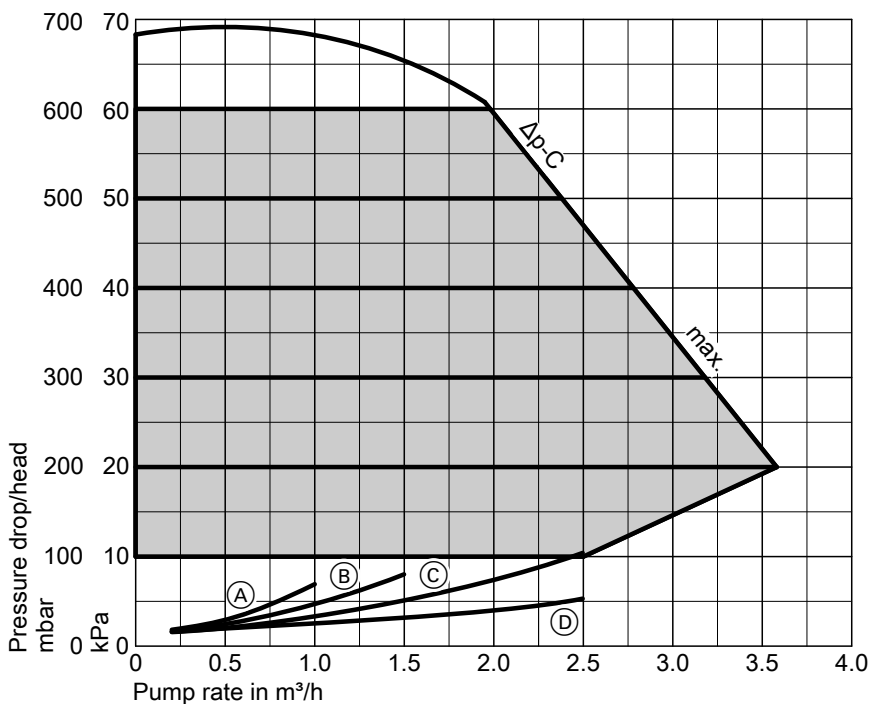
Design information

The use of differential pressure regulated heating circuit pumps requires heating circuits with variable flow rate, e.g. single line and twin-line systems with thermostatic valves, underfloor heating with thermostatic or zone valves.

Wilco Stratos Para 25/1-7

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

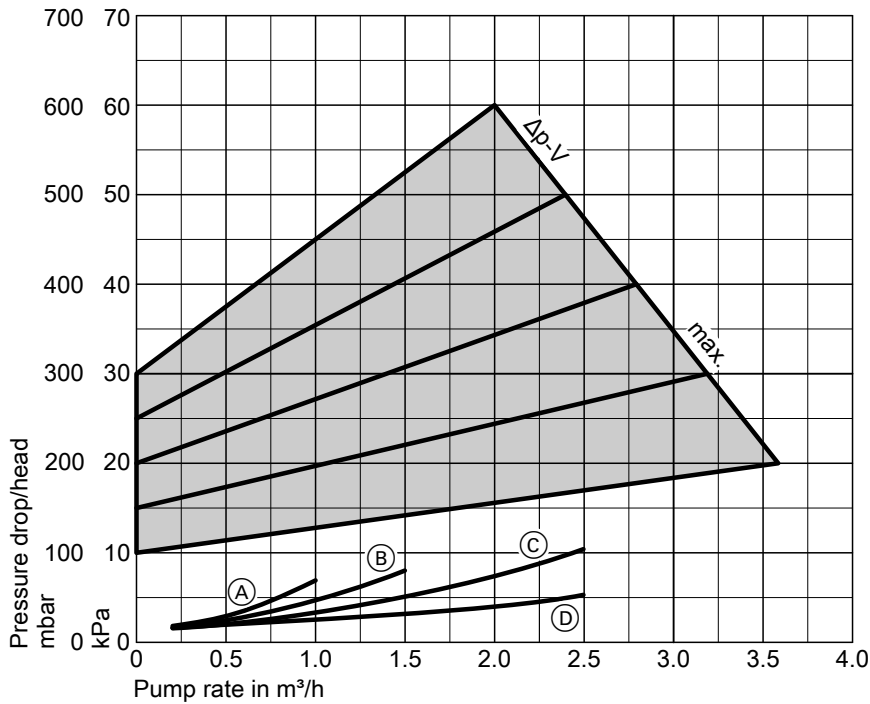
Operating mode: Constant differential pressure



- Ⓐ Divicon R ¾ with mixer
- Ⓑ Divicon R 1 with mixer
- Ⓒ Divicon R 1¼ with mixer
- Ⓓ Divicon R ¾, R 1 and R 1¼ without mixer

Installation accessories (cont.)

Operating mode: Variable differential pressure



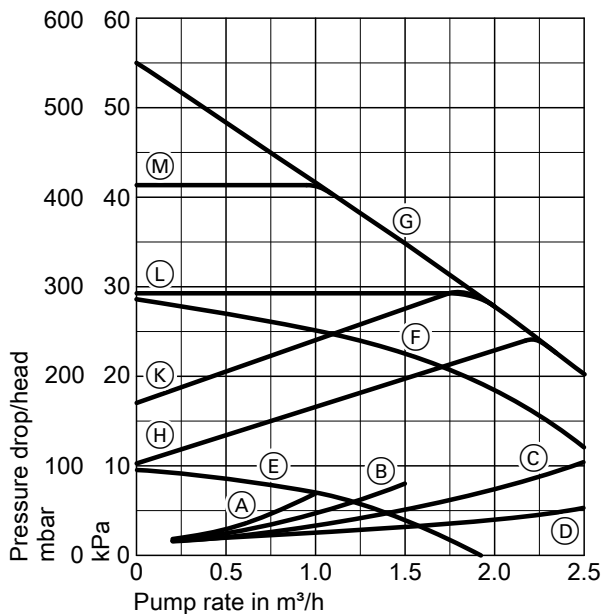
- (A) Divicon R 3/4 with mixer
- (B) Divicon R 1 with mixer

- (C) Divicon R 1 1/4 with mixer
- (D) Divicon R 3/4, R 1 and R 1 1/4 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

- (C) Divicon R 1 1/4 with mixer
- (D) Divicon R 3/4, R 1 and R 1 1/4 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



- (A) Divicon R 3/4 with mixer
- (B) Divicon R 1 with mixer

5822 432 GB

Installation accessories (cont.)

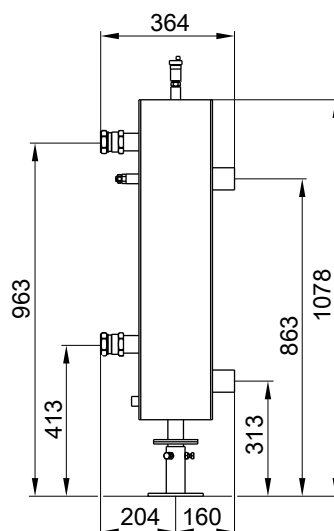
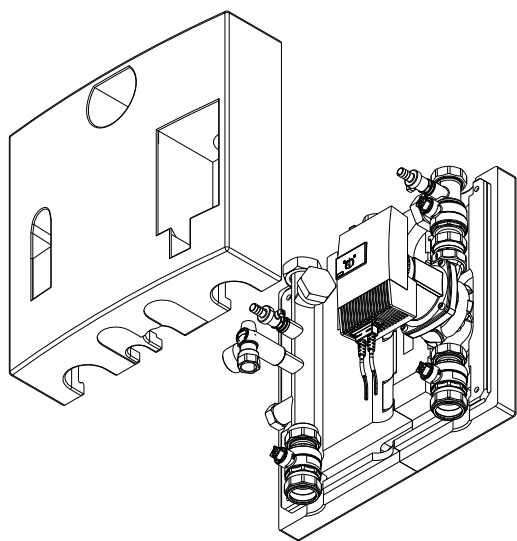
Installation accessories for the Vitodens 200-W, 80 and 100 kW

Heating circuit connection set with variable speed high efficiency circulation pump

Part no. 7501 318

Comprising:

- Circulation pump
- 2 ball valves with adaptors Ø 42 mm (locking ring fitting)
- Tee with ball valve
- Non-return valve
- Boiler drain & fill valve
- Safety valve
- Gas shut-off valve with integral thermally activated safety shut-off valve
- Thermal insulation
- Connection G1 for expansion vessel



Mounting panel for low loss header

- For floor mounting
Part no. 7346 787
- For wall mounting
Part no. 7346 788

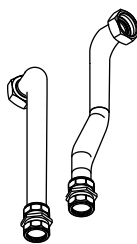
DHW cylinder connection set

Part no. 7348 934

Connections: Ø 35 mm (locking ring fitting)

Comprising:

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



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)

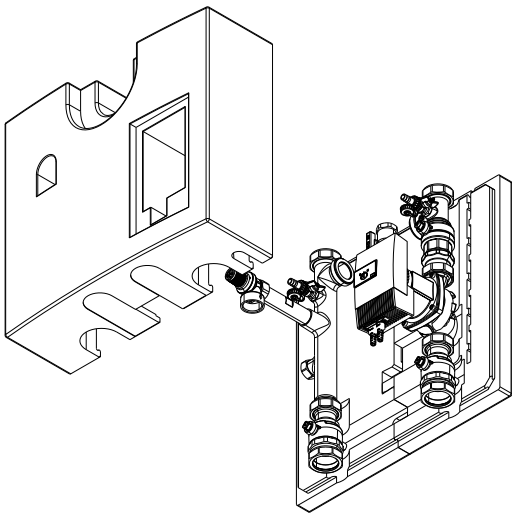
Installation accessories for the Vitodens 200-W, 125 and 150 kW

Heating circuit connection set with variable speed high efficiency circulation pump

Part no. 7501 321

Comprising:

- Circulation pump
- 2 ball valves with adaptors Ø 54 mm (locking ring fitting)
- Tee with ball valve
- Non-return valve
- Boiler drain & fill valve
- Safety valve
- Gas shut-off valve with integral thermally activated safety shut-off valve
- Thermal insulation
- Connection G1 for expansion vessel



Low loss header

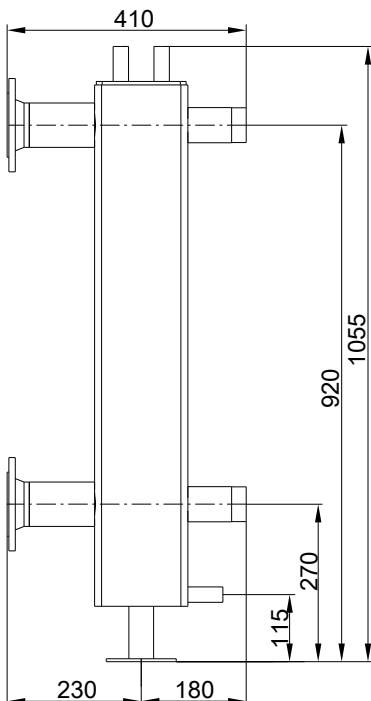
For flow rate up to 12.9 m³/h

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)



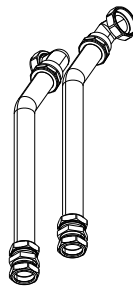
DHW cylinder connection set

Part no. 7501 325

Connections: Ø 42 mm (locking ring fitting)

Comprising:

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

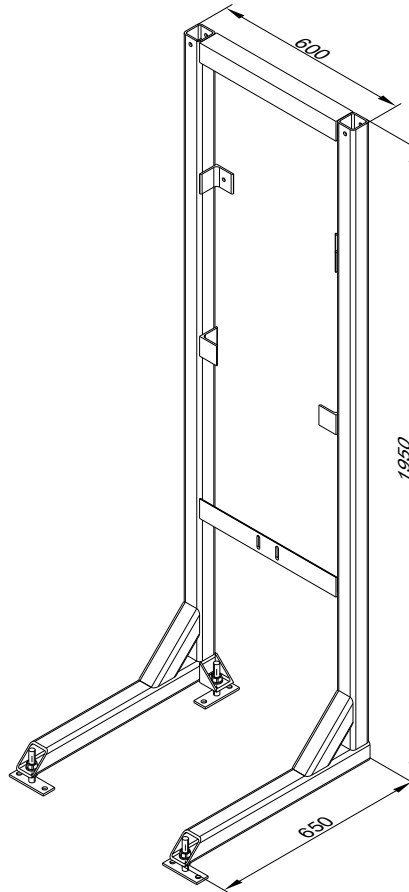


Mounting frame

Part no. 7502 558

For self-supporting boiler installation in a room.

With adjustable feet for levelling and securing to the floor.



CO limiter

Part no. 7499 330

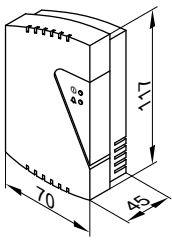
Monitoring device for the safety shutdown of the boiler if carbon monoxide escapes.

Wall mounting in the ceiling area near to the boiler.

Components:

- Casing with integral CO sensor, relay and operation and alarm indicators.
- Fixing materials.
- Power cable (2.0 m long).
- Relay connecting cable 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

2

Installation accessories for multi boiler systems

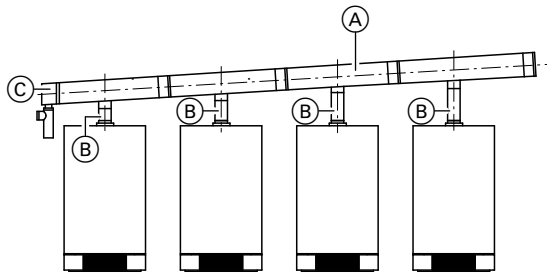
Hydraulic cascades

See page 32.

Flue gas cascade (positive pressure)

Comprising:

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



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

■ 2-boiler system installed in series

- For the Vitodens 200-W, 45 and 60 kW: **Part no. ZK00 675**
- For the Vitodens 200-W, 80 to 100 kW: **Part no. ZK00 676**
- For the Vitodens 200-W, 125 to 150 kW: **Part no. ZK00 677**

■ 3-boiler system installed in series

- For the Vitodens 200-W, 45 and 60 kW: **Part no. ZK00 678**
- For the Vitodens 200-W, 80 to 100 kW: **Part no. ZK00 679**
- For the Vitodens 200-W, 125 to 150 kW: **Part no. ZK00 680**

■ 4-boiler system installed in series

- For the Vitodens 200-W, 45 and 60 kW: **Part no. ZK00 681**
- For the Vitodens 200-W, 80 to 100 kW: **Part no. ZK00 682**
- For the Vitodens 200-W, 125 to 150 kW: **Part no. ZK00 683**

■ 6-boiler system installed in series

- For the Vitodens 200-W, 45 and 60 kW: **Part no. ZK00 684**
- For the Vitodens 200-W, 80 to 100 kW: **Part no. ZK00 685**
- For the Vitodens 200-W, 125 to 150 kW: **Part no. ZK00 686**

■ 8-boiler system installed in series

- For the Vitodens 200-W, 45 and 60 kW: **Part no. ZK00 687**
- For the Vitodens 200-W, 80 to 100 kW: **Part no. ZK00 688**

■ 4-boiler system installed in block formation

- For the Vitodens 200-W, 45 and 60 kW: **Part no. ZK00 689**
- For the Vitodens 200-W, 80 to 100 kW: **Part no. ZK00 690**

■ 6-boiler system installed in block formation

- For the Vitodens 200-W, 45 and 60 kW: **Part no. ZK00 691**
- For the Vitodens 200-W, 80 to 100 kW: **Part no. ZK00 692**

■ 8-boiler system installed in block formation

- For the Vitodens 200-W, 45 and 60 kW: **Part no. ZK00 693**
- For the Vitodens 200-W, 80 to 100 kW: **Part no. ZK00 694**

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

3.1 Product description

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

Design information

4.1 Positioning, installation

Siting conditions for open flue operation (appliance type B)

(Type B₂₃ and B₃₃)

In rooms where **air contamination through halogenated hydrocarbons** can occur, such as hairdressing salons, printing shops, dry cleaners, laboratories, etc., install the Vitodens only as a balanced flue 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 loss directly related to any of these causes is excluded from our warranty.

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

Vitodens 200-W from 60 kW and multi boiler systems

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

Combustion air apertures

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

Example:

Vitodens 200-W, 3 × 60 kW

Total rated heating output 180 kW

150 cm² + 130 × 2 cm² = 410 cm² or 2 × 205 cm².

The combustion air apertures should be 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 conditions for balanced flue operation (appliance type C)

The Vitodens can be installed as appliance type C_{13x}, C_{33x}, C_{43x}, C_{53x}, C_{63x} or C_{83x} to TRGI 2008, for **balanced** flue operation **independent** of the size and ventilation of the installation room.

Installation room (up to 50 kW)

Permissible:

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

Not permissible:

- Stair wells and common 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 ventilated mechanically or via individual shaft systems to DIN 18117-1.

Observe all local fire regulations.

Connection on the flue gas side

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

The connection piece to the chimney should be as short as possible. Therefore position the Vitodens as close to the chimney as possible. No special protective measures or clearances towards combustible objects, e.g. furniture, cartons or similar, need to be taken/observed. The surface temperatures of the Vitodens and the flue system never exceed 85 °C anywhere.

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 were to operate simultaneously. In such cases, install an **interlock circuit**. For this, the internal extension H2 (accessory) can be used. This switches the extractors off when the burner is started.

Safety equipment for the installation room

Viessmann boilers are tested and approved in accordance with all safety specifications, and are therefore fail-safe. Unforeseeable external influences may very occasionally lead to harmful carbon monoxide (CO) escaping. In this instance, we recommend using a CO limiter. This can be ordered as a separate accessory (part no. 7499 330).

It may, for example, be installed in recreation rooms, in other living spaces, in ancillary 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 directly routed through the roof. Since the flue pipe connection for balanced flue operation is surrounded by combustion air (coaxial pipe), no clearances towards combustible parts need to be maintained (for further details, see the technical guide "Flue systems for the Vitodens").

Design information (cont.)

The installation location must be safe from the risk of frost.
Provide a condensate drain and a discharge pipe for the safety valve in the installation room.
Electrical interlocks for extractors (extractor hoods, etc.) are not required with balanced flue operation.

Vitodens 200-W from 60 kW

Install boilers from 50 kW in a separate room in accordance with the Combustion Order (FeuVo) [Germany] [or 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).

Operation of the Vitodens in wet areas

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

Installation in a garage

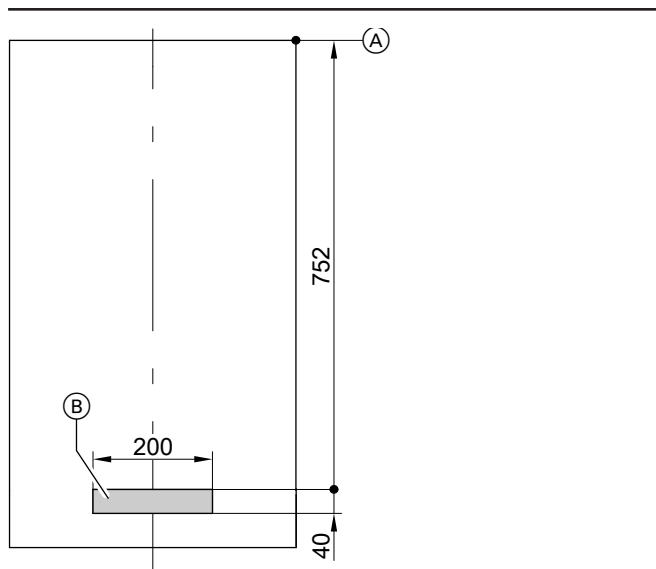
Tests carried out by the Gaswärme-Institut e.V., Essen, have confirmed that the Vitodens is suitable for installation in garages.
When installing this boiler in garages, maintain a clearance between the floor and the burner of at least 500 mm. Secure the boiler on site with a bracket or deflector against mechanical damage.

Safety equipment for the installation room

Viessmann boilers are tested and approved in accordance with all safety specifications, and are therefore fail-safe. Unforeseeable external influences may very occasionally lead to harmful carbon monoxide (CO) escaping. In this instance, we recommend using a CO limiter. This can be ordered as a separate accessory (part no. 7499 330).

Electrical connection

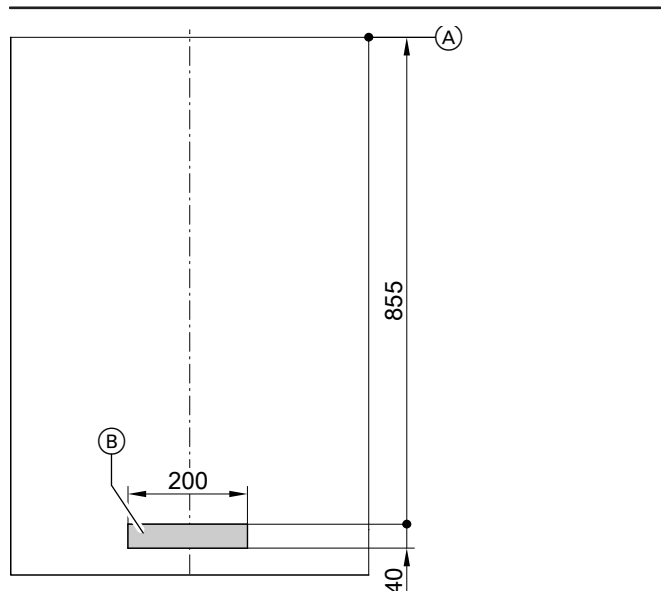
The power supply must comply with the requirements of your local power supply utility and current VDE [or local] regulations (Ⓐ: ÖVE regulations).
Protect the power cable with a fuse with a max. rating of 16 A.
We recommend installing an AC/DC-sensitive RCD (RCD class B) for DC (fault) currents that 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, 45 to 100 kW

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

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



Vitodens 200-W, 125 to 150 kW

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

Design information (cont.)

Recommended leads/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
<ul style="list-style-type: none"> - Power cables (also for accessories) - DHW circulation pump 	<ul style="list-style-type: none"> - Extension AM1 or EA1 - Outside temperature sensor - Vitotronic 200-H (LON) - Extension kit for heating circuit with mixer (KM BUS) - Vitotrol 100, type UTDB (230 V) - Vitotrol 200A - Vitotrol 300A - Vitohome 300 - Wireless base station - Radio clock receiver 	<ul style="list-style-type: none"> - Vitotrol 100, type UTDB-RF (230 V) - Vitotrol 100, type UTA

Interlock switch

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

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

Power supply for accessories

The power supply for accessories can be connected directly to 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 via an ON/OFF switch directly to the mains supply.

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

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

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

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

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.

We recommend the installation of a gas filter to DIN 3386 into the gas supply line.

Thermally activated safety shut-off valve

According to paragraph 4, section 5 of the FeuVo 2008 [or local regulations], thermally activated shut-off equipment that will shut off the gas supply if the external temperature exceeds 100 °C must be installed in combustion equipment or in gas lines immediately upstream of the combustion equipment. These valves must isolate the gas supply for at least 30 minutes up to a temperature of 650 °C. This should prevent the formation of explosive gas mixtures in the event of a fire. The gas shut-off valves supplied with the Vitodens are equipped with integral thermally activated safety shut-off valves.

Sizing recommendation, gas flow switch

In supply areas with H_{IB} below 8.6 kWh/m³ and gas appliances compliant with category I_{2N}, determine a fictitious rated heat input. This fictitious rated heat input results from the rated heat input (Q_{NB}) of the appliance, multiplied by a factor of 1.23 (ratio H_{IB} 8.6/7.0). Select the gas flow switch and size the pipework in accordance with the TRGI 2008 [or local regulations] using this fictitious rated heat input.

Rated heating output range of the Vitodens kW	Gas flow switch
17.0-45.0	GS 10
17.0-60.0	GS 16
30.0-80.0	GS 16
30.0-100.0	GS 16
32.0-150.0	GS 16

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

Minimum clearances

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

Maintenance clearances to the l.h. or r.h. side of the Vitodens are not required.

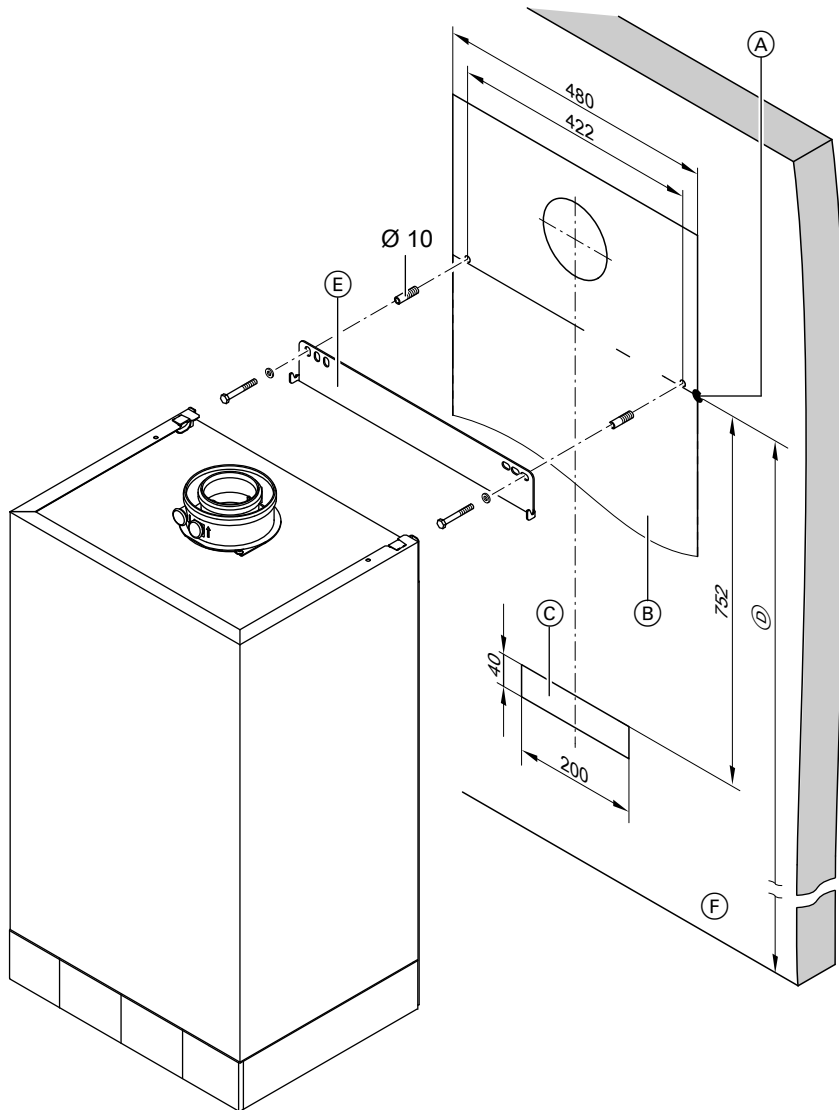
Design information (cont.)

Installing the Vitodens 200-W, 45 to 100 kW directly onto a wall (single boiler)

The enclosed screws and rawl plugs are only suitable for concrete. For other construction materials, use fixing materials that are suitable for 100 kg loads.

An installation template is supplied with the Vitodens 200-W to mark the position of the screws for the wall mounting bracket and the location of the flue pipe on the wall.

Order connection sets separately for the connection of the heating circuits and one DHW cylinder.



- (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: 1975 mm
- (E) Wall mounting bracket
- (F) Top edge finished floor

Installation in front of a wall with a self-supporting mounting frame (single boiler)

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

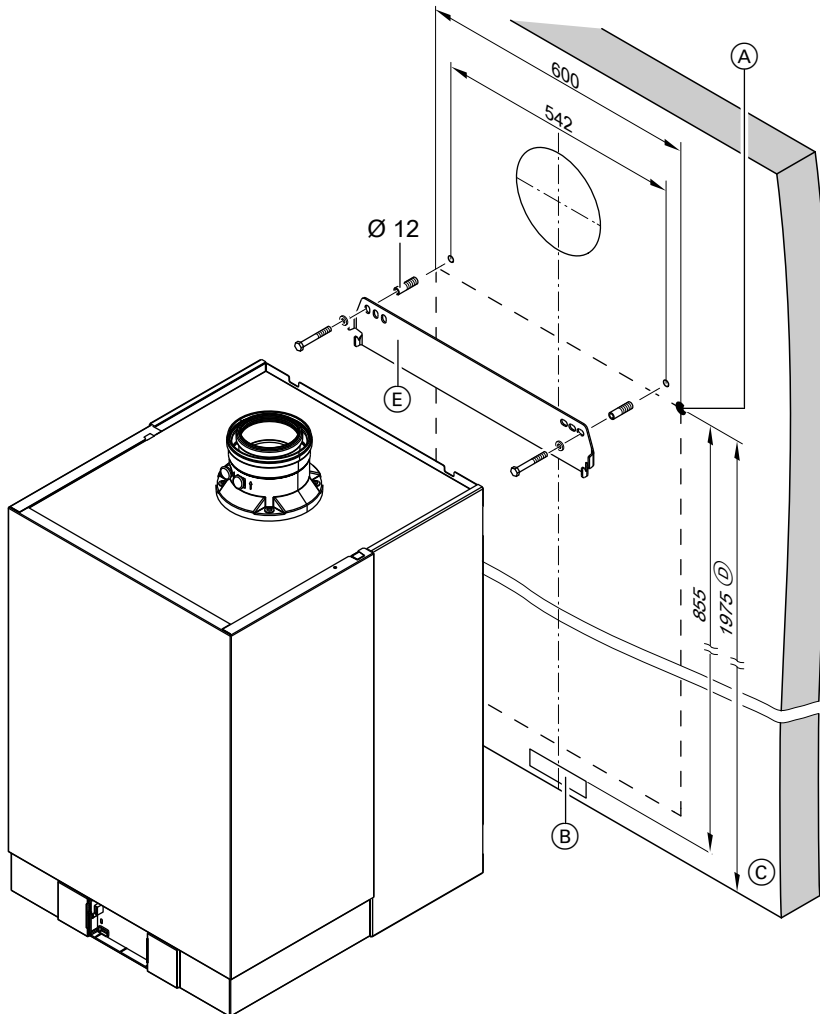
The mounting panel supplied with the boiler cannot then be used.

Design information (cont.)

Installing the Vitodens 200-W, 125 to 150 kW directly onto a wall (single boiler)

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

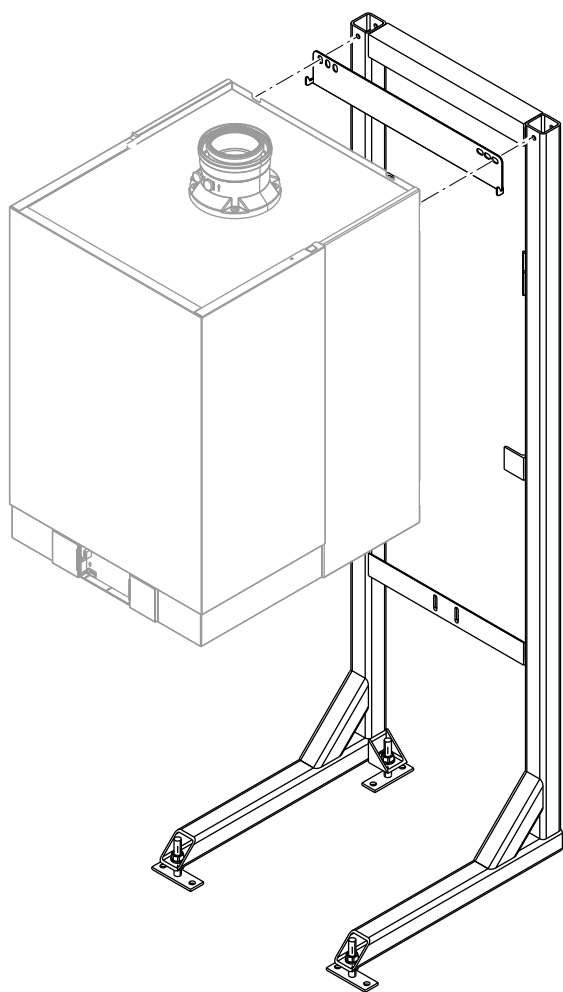
Order connection sets separately for the connection of the heating circuits and one DHW cylinder.



- (A) Reference point Vitodens top edge
- (B) Area for power cables.
Allow cables to protrude approx. 1200 mm from the wall.
- (C) Top edge finished floor
- (D) Recommended dimension: 1975 mm
- (E) Wall mounting bracket

Installation with mounting frame (single boiler)

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



4

Pre-installation, multi boiler system

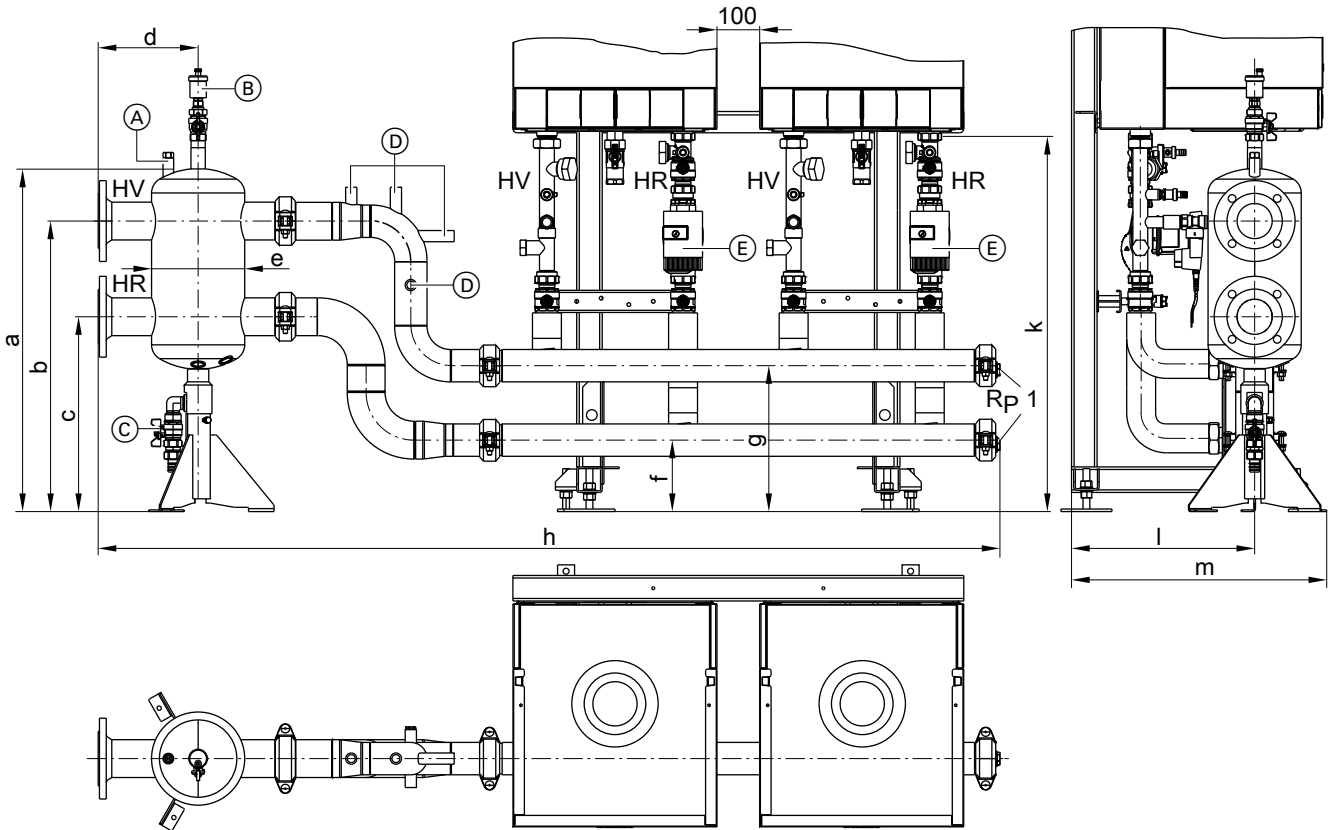
Hydraulic cascade

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

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

Design information (cont.)

Hydraulic cascade with low loss header



Shown without the thermal insulation supplied

- (A) Sensor well for flow temperature sensor
- (B) Air vent valve
- (C) Drain
- (D) Connectors for safety equipment Rp 1/2
- (E) Connection accessories with circulation pump
- HR Heating return
- HV Heating flow

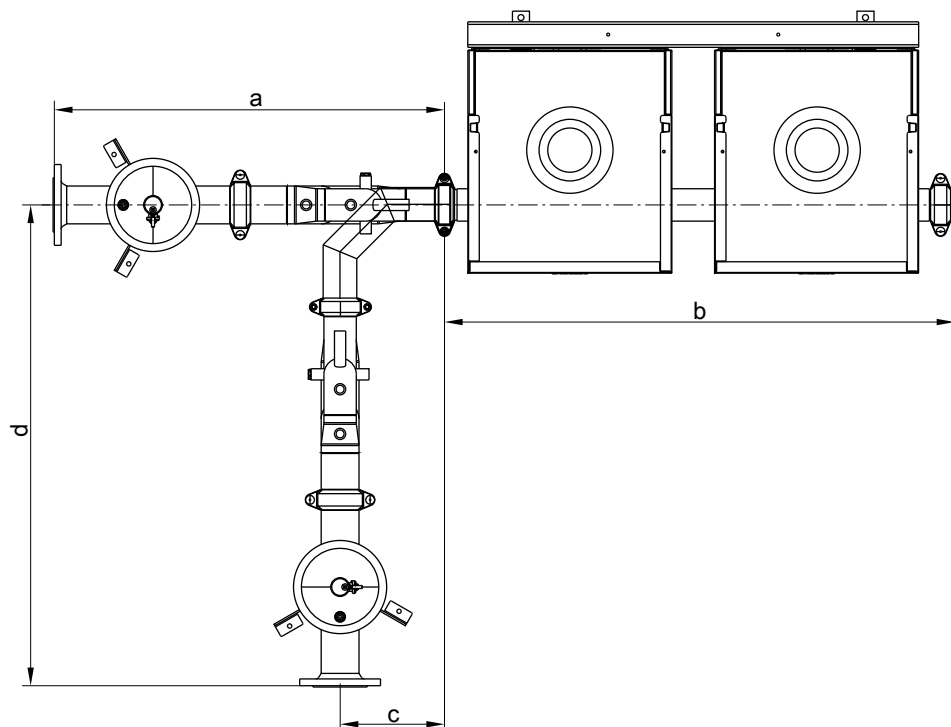
Boiler	Number	2x45 kW	2x80 kW	3x45 kW	3x80 kW	4x45 kW	6x45 kW	6x80 kW	8x45 kW	8x80 kW
		2x60 kW	2x100 kW	3x60 kW	3x100 kW	4x60 kW 4x80 kW 4x100 kW	6x60 kW	6x100 kW	8x60 kW	8x100 kW
Heating circuit connection	PN6/DN	80	80	80	80	100	100	100	100	100
Boiler connection	G	1½	1½	1½	1½	1½	1½	1½	1½	1½
Max. flow rate	m³/h	6.9	12.1	10.3	18.1	24.1	20.6	36.2	27.6	48.2
Dimensions	a mm	805	805	805	805	1044	1044	1044	1044	1044
	b mm	688	688	688	688	860	860	860	860	860
	c mm	460	460	460	460	520	520	520	520	520
	d mm	235	235	235	235	250	250	250	250	250
	e mm	219	219	219	219	300	300	300	300	300
	f mm	168	168	168	168	168	168	168	168	168
	g mm	343	343	343	343	343	343	343	343	343
	h mm	2125	2125	2707	2707	3382	4544	4659	5706	5821
	k mm	882	882	882	882	882	882	882	882	882
	l mm	430	430	430	430	430	430	430	430	430
m mm	595	595	595	595	595	595	595	595	595	

Design information (cont.)

Boiler	Number	2x125 kW 2x150 kW	3x125 kW 3x150 kW	4x125 kW 4x150 kW	6x125 kW 6x150 kW
Heating circuit connection	PN6/DN	100	100	150	150
Boiler connection	G	2	2	2	2
Max. flow rate	m ³ /h	17.2	25.8	34.4	51.6
Dimensions	a mm	1218	1218	1218	1218
	b mm	972	972	972	972
	c mm	520	520	520	520
	d mm	380	380	380	380
	e mm	419	419	419	419
	f mm	168	168	168	168
	g mm	343	343	343	343
	h mm	2461	3159	3974	5372
	k mm	1025	1025	1025	1025
l mm	520	520	520	520	
m mm	710	710	710	710	

Boiler	Number	(2x2) 45 kW	(2x2) 80 kW	(2x3) 80 kW	(2x4) 45 kW	(2x4) 80 kW
		(2x2) 60 kW	(2x2) 100 kW	(2x3) 100 kW	(2x4) 60 kW	(2x4) 100 kW
Heating circuit connection	PN6/ DN	80	100	100	100	100
Boiler connection	G	1½	1½	1½	1½	1½
Max. flow rate	m ³ /h	13.8	24.1	36.2	27.6	48.2
Dimensions	a mm	805	1044	1044	1044	1044
	b mm	683	860	860	860	860
	c mm	458	520	520	520	520
	d mm	235	250	250	250	250
	e mm	219	300	300	300	300
	f mm	168	168	168	168	168
	g mm	343	343	343	343	343
	h mm	2220	2335	2917	3382	3497
	k mm	882	882	882	882	882
	l mm	–	–	–	–	–
	m mm	–	–	–	–	–

Installation in corners, with a low loss header



Design information (cont.)

Boiler	Num-ber	2x45 kW	2x80 kW	3x45 kW	3x80 kW	4x45 kW	6x45 kW	6x80 kW	8x45 kW	8x80 kW
		2x60 kW	2x100 kW	3x60 kW	3x100 kW	4x60 kW 4x80 kW 4x100 kW	6x60 kW	6x100 kW	8x60 kW	8x100 kW
Heating circuit connection	PN6/DN	65	65	65	65	100	100	100	100	100
Dimensions	a mm	927	927	927	927	1022	1022	1137	1022	1137
	b mm	1198	1198	1780	1780	2360	3522	3522	4684	4684
	c mm	277	277	277	277	277	277	277	277	277
	d mm	1204	1204	1204	1204	1299	1299	1414	1414	1414

Low loss header

- DN 65/80
Part no. Z010 305
- DN 80/100
Part no. Z010 306
- DN 100/100
Part no. Z010 307
- DN 100/150
Part no. ZK00 674

Comprising:

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

90° pipe bend for installation in corners

For installation in corners, multi boiler system and low loss header

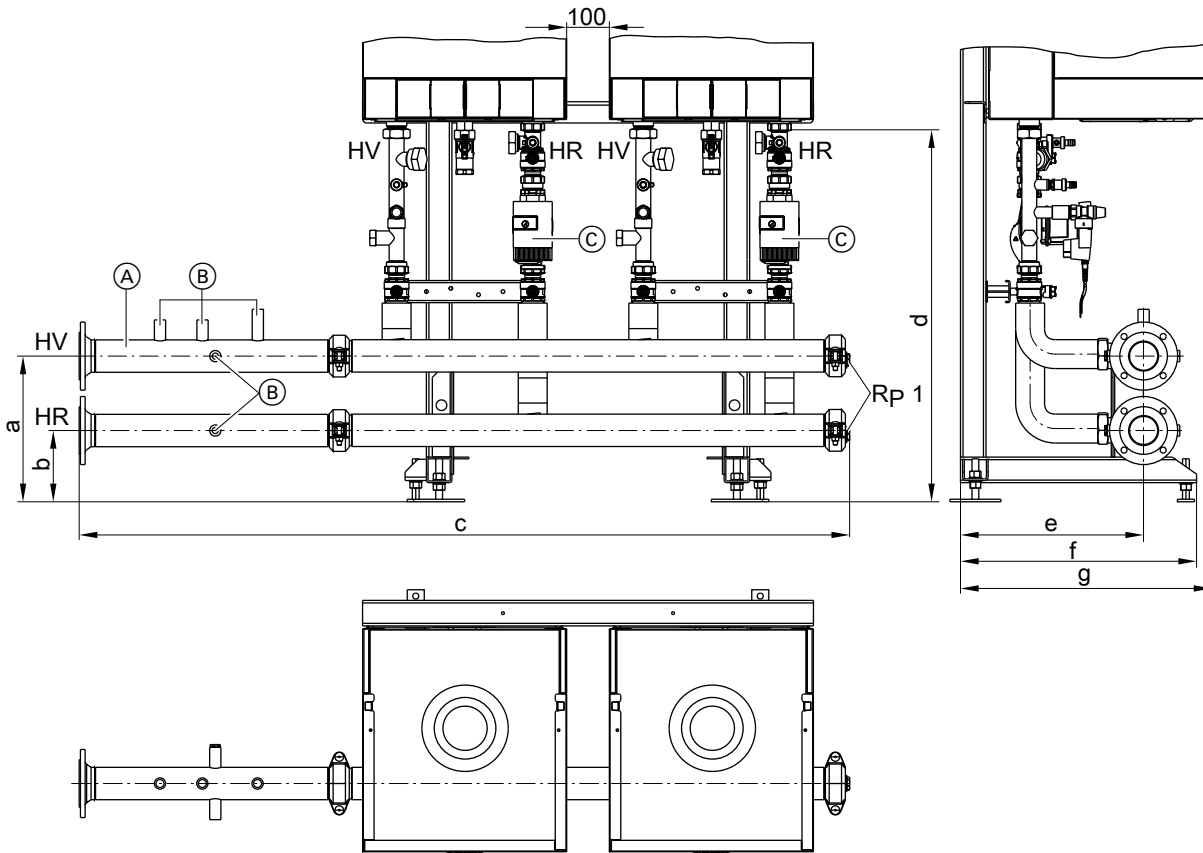
- DN 65
Part no. 7164 976
- DN 80
Part no. 7164 977
- DN 100
Part no. 7164 978

Comprising:

- 2 pipe bends
- Thermal insulation

Design information (cont.)

Hydraulic cascade without low loss header



Shown without the thermal insulation supplied

- (A) Heating circuit connecting kit
 - (B) Connectors for safety equipment Rp 1/2
 - (C) Connection accessories with circulation pump
- HR Heating return
HV Heating flow

Boiler	Number	2x45 kW	2x80 kW	3x45 kW	3x80 kW	4x45 kW	6x45 kW	6x80 kW	8x45 kW	8x80 kW
		2x60 kW	2x100 kW	3x60 kW	3x100 kW	4x60 kW 4x80 kW 4x100 kW	6x60 kW	6x100 kW	8x60 kW	8x100 kW
Heating circuit connection	PN6/DN	65	65	65	65	80	80	100	80	100
Boiler connection	G	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
Max. flow rate	m ³ /h	6.9	12.1	10.3	18.1	24.1	20.6	36.2	27.6	48.2
Dimensions	a mm	343	343	343	343	343	343	343	343	343
	b mm	168	168	168	168	168	168	168	168	168
	c mm	1808	1808	2390	2390	3050	4212	4212	5374	5374
	d mm	882	882	882	882	882	882	882	882	882
	e mm	430	430	430	430	430	430	430	430	430
	f mm	555	555	555	555	555	555	555	555	555
	g mm	440	590	440	590	590	590	590	590	590

Design information (cont.)

Boiler	Number	2x125 kW 2x150 kW	3x125 kW 3x150 kW	4x125 kW 4x150 kW	6x125 kW 6x150 kW
Heating circuit connection	PN6/DN	80	80	100	100
Boiler connection	G	2	2	2	2
Max. flow rate	m ³ /h	17.2	25.8	34.4	51.6
Dimensions	a mm	343	343	343	343
	b mm	168	168	168	168
	c mm	2129	2827	3527	4925
	d mm	1025	1025	1025	1025
	e mm	520	520	520	520
	f mm	710	710	710	710
	g mm	755	755	755	755

Boiler	Number	(2x2) 45 kW (2x2) 60 kW	(2x2) 80 kW (2x2) 100 kW	(2x3) 80 kW (2x3) 100 kW	(2x4) 45 kW (2x4) 60 kW	(2x4) 80 kW (2x4) 100 kW
Heating circuit connection	PN6/DN	80	100	100	100	100
Boiler connection	G	1½	1½	1½	1½	1½
Max. flow rate	m ³ /h	13.8	24.1	36.2	27.6	48.2
Dimensions	a mm	343	343	343	343	343
	b mm	168	168	168	168	168
	c mm	1888	1888	2470	3050	3050
	d mm	882	882	882	882	882
	e mm	–	–	–	–	–
	f mm	–	–	–	–	–
	g mm	–	–	–	–	–

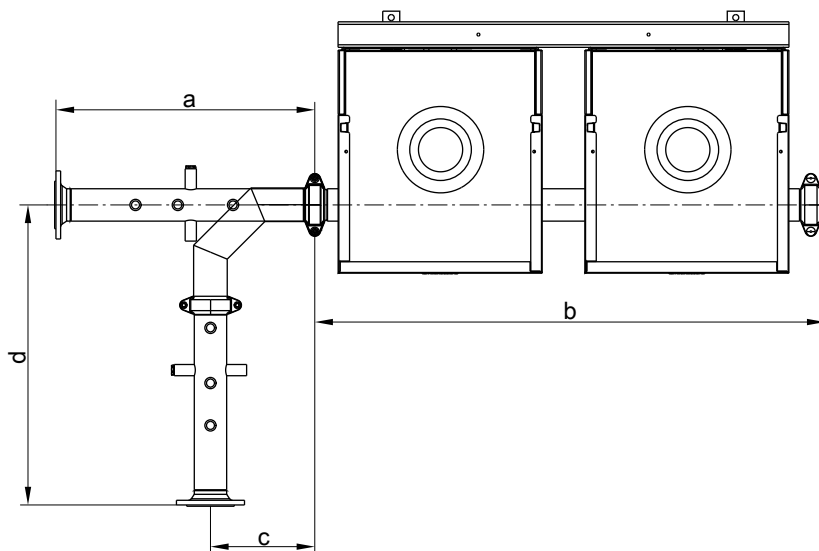
Heating circuit connecting kit

- DN 65
Part no. 7453 093
- DN 80
Part no. 7453 094
- DN 100
Part no. 7453 095

Comprising:

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

Installation in corners, multi boiler system and heating circuit connecting kit



Design information (cont.)

Boiler	Number	2x45 kW	2x80 kW	3x45 kW	3x80 kW	4x45 kW	6x45 kW	8x45 kW
		2x60 kW	2x100 kW	3x60 kW	3x100 kW	4x60 kW 4x80 kW 4x100 kW	6x60 kW 6x80 kW 6x100 kW	8x60 kW 8x80 kW 8x100 kW
Heating circuit connection	PN6/DN	65	65	65	65	80	100	100
Dimensions	a mm	610	610	610	610	690	690	690
	b mm	1198	1198	1780	1780	2360	3522	4684
	c mm	277	277	277	277	277	277	277
	d mm	887	887	887	887	967	967	967

90° pipe bend for installation in corners

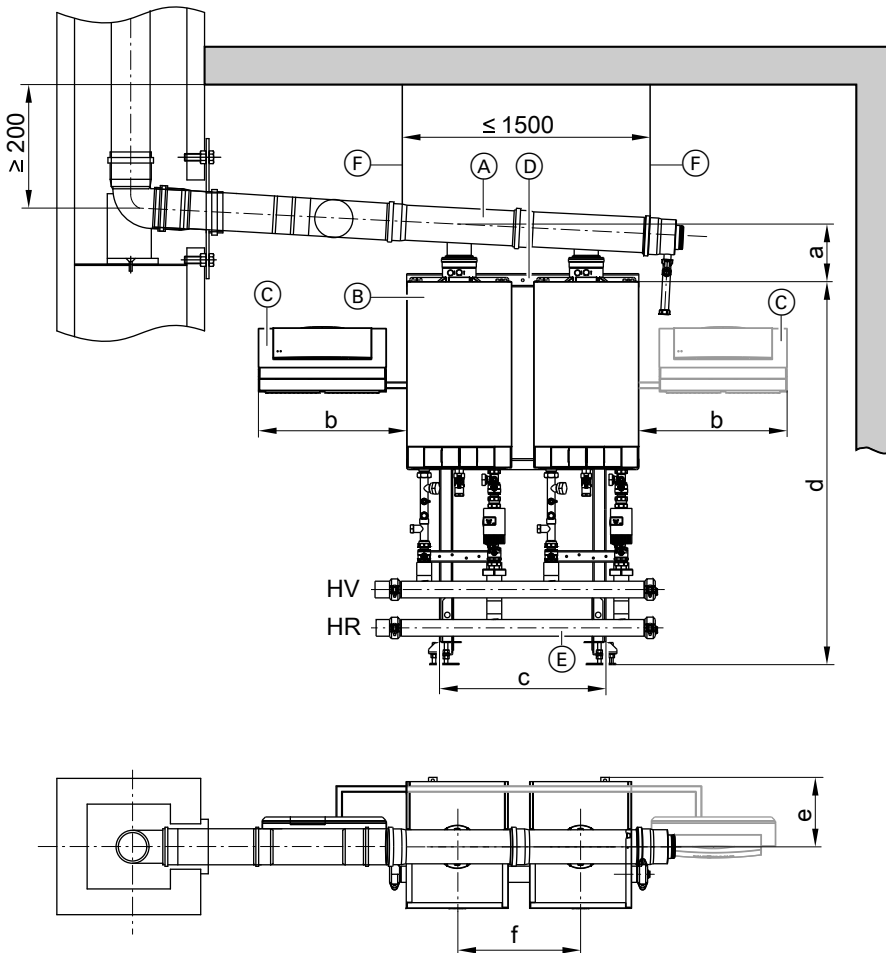
Installation in corners, multi boiler system and heating circuit connecting kit

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

Comprising:

- 2 pipe bends
- Thermal insulation

Installation in series with flue gas cascade



Shown without the thermal insulation supplied

- | | |
|---|---|
| (A) Flue gas cascade | (D) Self-supporting mounting frame |
| (B) Vitodens | (E) Hydraulic cascade |
| (C) Vitotronic 300-K (to be fitted to the wall either to the left or the right)
The total length of all BUS cables (on site) should not exceed 50 m. | (F) Ceiling mounting for flue gas cascade |
| | HR Heating return |
| | HV Heating flow |

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 26 and the technical guide on flue systems. A flue gas non-return device is integrated into each boiler.

For further details regarding the hydraulic cascade, see page 32.

Number of boilers		2x45 kW 2x60 kW	2x80 kW 2x100 kW	3x45 kW 3x60 kW	3x80 kW 3x100 kW	4x45 kW 4x60 kW	4x80 kW 4x100 kW	6x45 kW 6x60 kW	6x80 kW 6x100 kW	8x45 kW 8x60 kW	8x80 kW 8x100 kW
a	mm	176	176	207	207	237	237	387	387	447	447
b	mm	678	678	678	678	678	678	678	678	678	678
c	mm	760	760	760	760	760	760	760	760	760	760
d	mm	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
e	mm	220	302	220	302	220	302	220	302	220	302
f	mm	580	580	580	580	580	580	580	580	580	580

Number of boilers		2x125 kW 2x150 kW	3x125 kW 3x150 kW	4x125 kW 4x150 kW	6x125 kW 6x150 kW
a	mm	331	367	403	474
b	mm	617	617	617	617
c	mm	880	880	880	880
d	mm	1950	1950	1950	1950
e	mm	343	343	343	343
f	mm	520	520	520	520
g	mm	700	700	700	700

Multi boiler system standard delivery

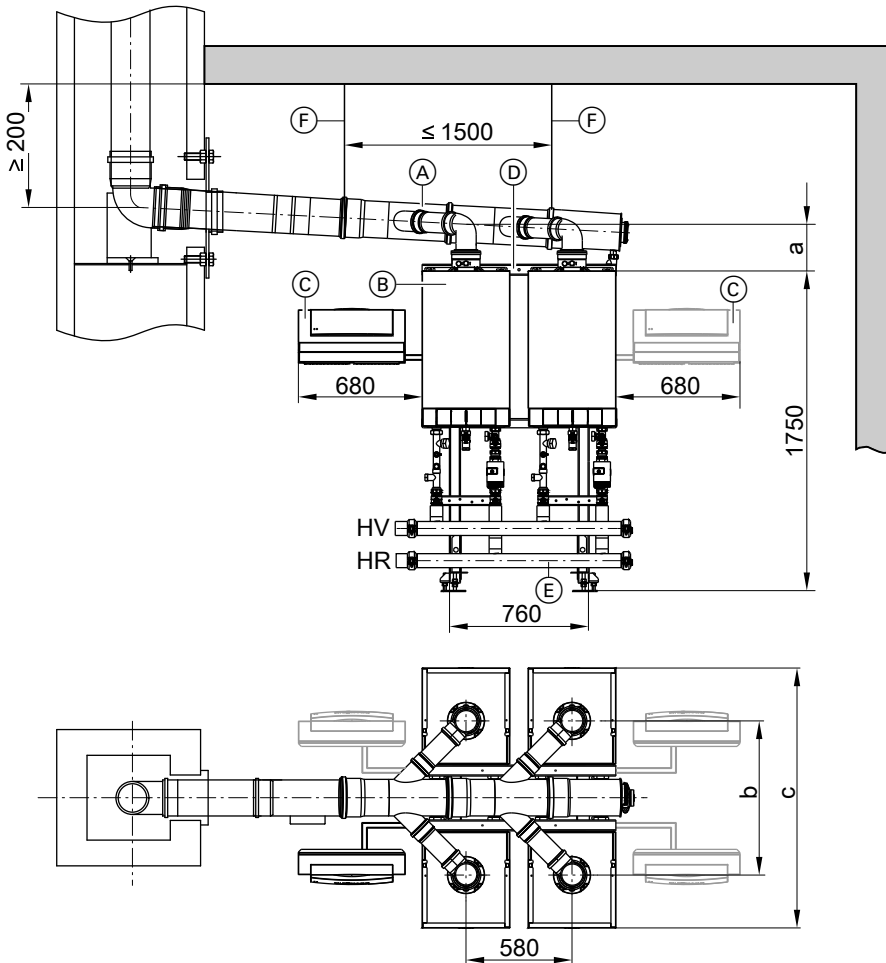
- Vitodens 200-W (2 to 8 boilers)
- Cascade control unit Vitotronic 300-K
- Cascade communication module for each boiler
- Immersion temperature sensor
- Self-supporting mounting frame
- Hydraulic cascade with thermal insulation
- Connection accessories with HE circulation pump and thermal insulation

Accessories (subject to order)

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

Design information (cont.)

Installation in block formation with a flue gas cascade



Shown without the thermal insulation supplied

- | | |
|---|---|
| (A) Flue gas cascade | (D) Self-supporting mounting frame |
| (B) Vitodens | (E) Hydraulic cascade |
| (C) Vitotronic 300-K (to be fitted to the wall either to the left or the right)
The total length of all BUS cables (on site) should not exceed 50 m. | (F) Ceiling mounting for flue gas cascade |
| | HR Heating return |
| | HV Heating flow |

Note

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

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

For further details regarding the hydraulic cascade, see page 32.

Boiler		(2x2) 45 kW (2x2) 60 kW	(2x2) 80 kW (2x2) 100 kW	(2x3) 80 kW (2x3) 100 kW	(2x4) 45 kW (2x4) 60 kW	(2x4) 80 kW (2x4) 100 kW
a	mm	176	176	207	176	237
b	mm	680	843	843	680	843
c	mm	1350	1422	1422	1350	1422

Multi boiler system standard delivery

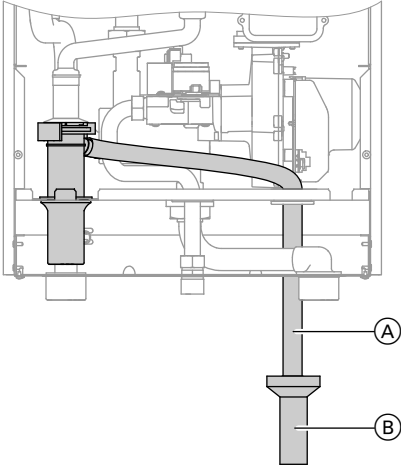
- Vitodens 200-W (4 to 8 boilers)
- Cascade control unit Vitotronic 300-K
- Cascade communication module for each boiler
- Immersion temperature sensor
- Hydraulic cascade with thermal insulation
- Self-supporting mounting frame
- Connection accessories with HE circulation pump and thermal insulation

Accessories (subject to order)

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

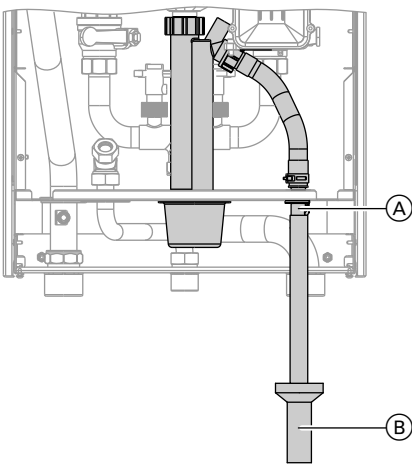
4.2 Condensate connection

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



Vitodens 200-W, 45 and 60 kW

- (A) Drain hose (standard delivery for the Vitodens)
- (B) Drain outlet kit (accessory)



Vitodens 200-W, 80 and 100 kW

- (A) Drain hose (standard delivery for the Vitodens)
- (B) Drain outlet kit (accessory)

Condensate drain and neutralisation

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

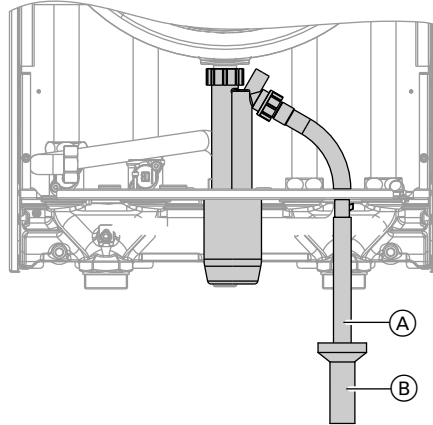
The Code of Practice DWA-A 251 on "Condensate from condensing boilers", which is generally based on the local waste water regulations [in Germany], determines conditions for draining condensate from condensing boilers into the public sewer system.

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

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

Note

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



Vitodens 200-W, 125 and 150 kW

- (A) Drain hose (standard delivery for the Vitodens)
- (B) Drain outlet kit (accessory)

Design information (cont.)

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

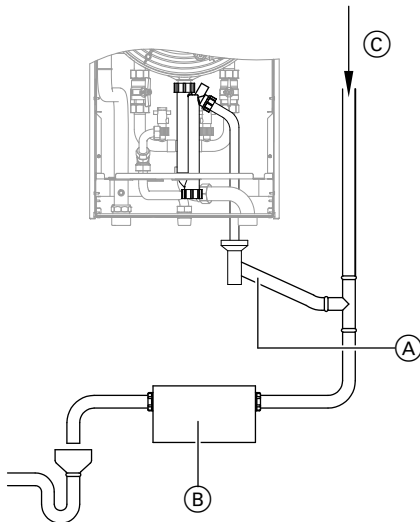
Up to a rated heating output of 200 kW, the condensate from a gas condensing boiler can generally be introduced into the public sewage system without prior neutralisation.

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

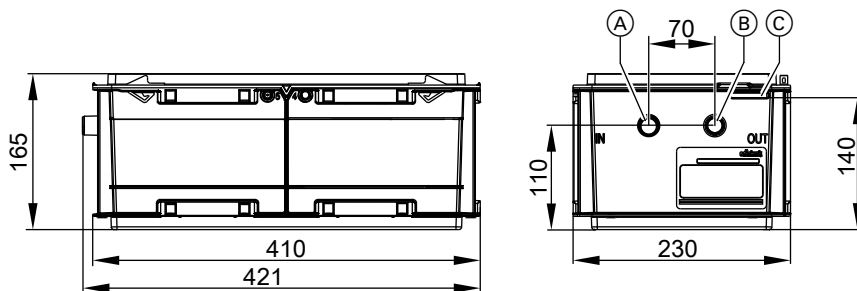
Neutralising system



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

Neutralising system for single boiler systems from 80 kW and multi boiler systems

Part no. 7441 823



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

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

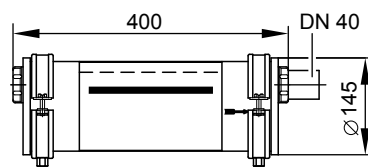
The condensate drain pipe to the sewer connection must be accessible for inspection. Install it with a fall and a stench trap on the sewer side, and provide a suitable facility for extracting samples.

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

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

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

Neutralising system for single boiler systems with 45 and 60 kW Part no. 9535 742



Design information (cont.)

Condensate lifting system

Part no. 7374 796

Automatic condensate lifting system for condensate with a pH value ≥ 2.7 from oil and gas condensing boilers.

Components:

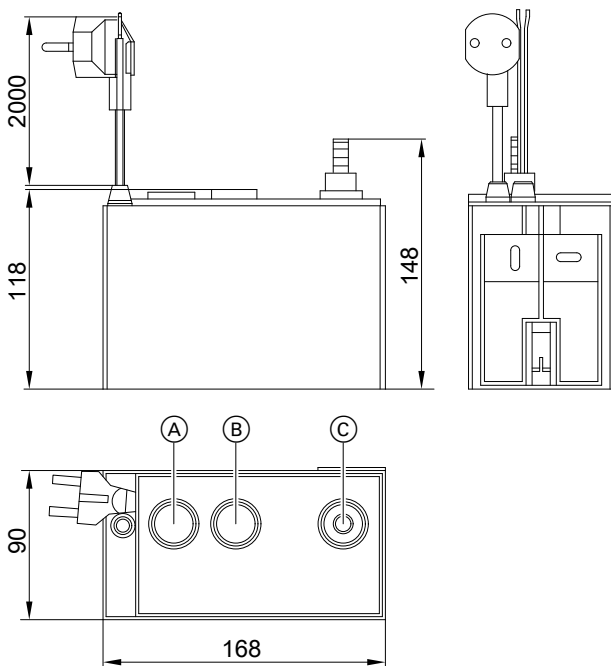
- Condensate container 0.5 l
- Shaftless permanent magnet ball motor pump
- Control unit for pump operation, display of operating conditions and fault messages
- 2 m long power cable with plug
- Two $\varnothing 24$ mm connection apertures for condensate inlet

The standard delivery comprises:

- 6 m long drain hose $\varnothing 14 \times 2$ mm
- Non-return valve

Specification

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



- (A) Condensate inlet
- (B) Condensate inlet with drain plug
- (C) Condensate drain

4.3 Hydraulic connection

General information

System design

Viessmann condensing boilers can generally be installed in any 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.

The boiler water temperature is limited to 82 °C.

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

Chemical anti-corrosion agents

Corrosion is generally avoided in correctly installed and operated sealed unvented heating systems.

Never use chemical anti-corrosion additives.

Some manufacturers of plastic pipes recommend the use of chemical additives. In such cases, only use anti-corrosion agents 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 Directive 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 (DIN 4726) that are permeable to oxygen. We supply a separate heat exchanger for this purpose.

Install a sludge separator in underfloor heating systems and systems with a large water content; see the Viessmann Vitoset pricelist.

Design information (cont.)

Even with condensing boilers, connect underfloor heating systems and heating circuits with a very large water content (> 15 l/kW) to the 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 installation of a temperature limiter to restrict the maximum temperature of plastic pipes in heating circuits with radiators.

Safety valve

A safety valve in accordance with TRD 721 is part of the heating circuit connection set (accessory) (opening pressure 4 bar).

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 Vitodens 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 reach unacceptably high temperatures.

Attic heating centre

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

The Viessmann 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 quality and amount of heating water, incl. 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)

Expansion vessels

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

- For systems with a specific system volume in excess of 20 litres/kW heating output, use the output of the smallest boiler in multi boiler systems.
- An antifreeze additive 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 noise during heating operation. Viessmann accepts no liability for resulting damage or consequential losses.

When engineering the system, observe the following:

- Install shut-off valves in the different sections. 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 the fill and top-up water. Record the amount of water filled into the system and the water hardness.

Operating information:

- Commission the system step by step, starting with the lowest boiler output and a high heating water flow rate. This prevents a localised concentration of limescale deposits on the boiler heating surfaces.
- In multi boiler systems, start all boilers simultaneously to prevent the entire limescale deposit settling in the heat transfer area of just one boiler.
- During extension or repair work, only drain the necessary pipework 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. after repairs or after system expansion, and for all amounts of top-up water.
- Check, clean and activate filters, dirt traps and other blow-down or separating facilities in the heating water circuit more frequently after commissioning or new installations, later on do so subject to requirements in line with the water treatment applied (e.g. water softening).

Installation examples

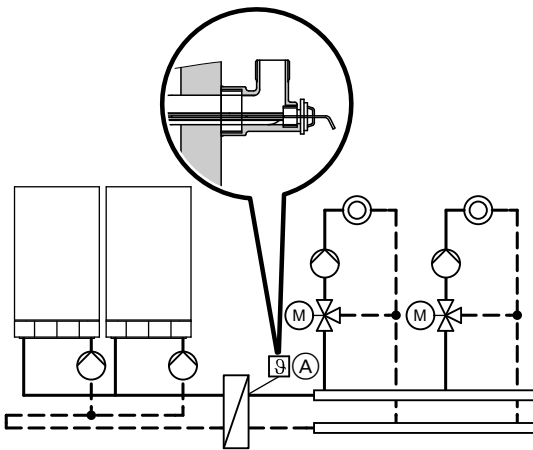
For installation examples for the Vitodens 200-W, see "System examples".

The size of the expansion vessel is subject to the heating system specification and should be checked in each case.

Multi boiler systems

We recommend the installation of a low loss header in multi boiler systems. For this, order the low loss header that is available as an accessory. See page 32 and the Viessmann pricelist. Losses resulting from the use of third party low loss headers are excluded from our liability. On-site safety equipment should comply with EN 12828.

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



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

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

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

Boiler	Max. flow rate l/h
Vitodens 200-W, 45 and 60 kW	3500
Vitodens 200-W, 80 and 100 kW	5700
Vitodens 200-W, 125 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, 45 and 60 kW	450
Vitodens 200-W, 80 and 100 kW	1300
Vitodens 200-W, 125 and 150 kW	3600

For installation schemes in conjunction with low loss headers, see the relevant sample application in the "System examples" document.

Information on the plate heat exchanger

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

Sizing the plate heat exchanger:

- The pressure drop in the plate heat exchanger must be lower than the lowest pressure drop of connected heating circuits.
- Fit a dirt trap on the secondary side of the plate heat exchanger.
- When sizing, take the temperature differential of the plate heat exchanger into account (max. flow temperature in a multi boiler system with Vitodens 200-W: 76 °C)

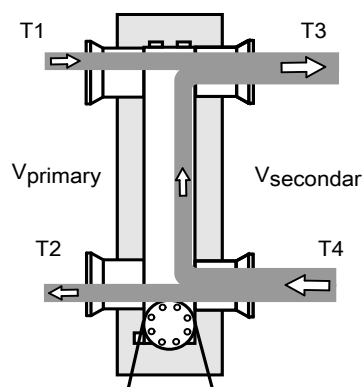
Boiler circuit

The circulation pump in the Vitodens must be able to supply the required water volume against the (mostly low) pressure drop of the boiler circuit; the pressure drop of the low loss header is negligible. Subject to the water volume circulating in the boiler 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



Design information (cont.)

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

V_{primary}	< $V_{\text{secondary}}$
T_1	> T_3
T_2	≈ T_4
Q_{primary}	= $Q_{\text{secondary}}$

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 15.

Low loss header from the Vitoset range

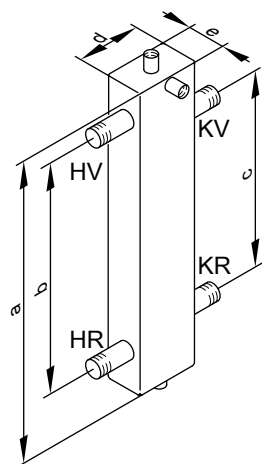
See the "Vitoset" pricelist.

KR Boiler return
KV Boiler flow

Flow rate	m ³ /h	4	4	8	10	18	
Max.							
Connections							
- Female thread	Rp	1					
- Male thread	R		1¼	2			
- Flange	DN				65	80	
Di- men- sions	a	mm	500	500	800	1400	1450
	b	mm	360	360	650	1000	1000
	c	mm	270	270	550	1000	1000
	d	mm	80	80	120	160	200
	e	mm	50	50	80	80	120

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

For description and specification, see page 32.



HR Heating return
HV Heating flow

Control units

5.1 Vitotronic 100, type HC1B, for constant temperature operation

Layout and functions

Modular structure

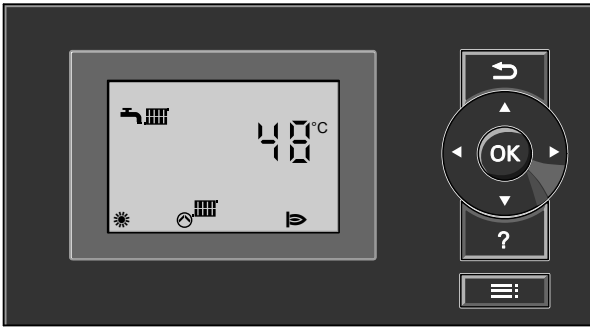
The control unit is integrated into the boiler.

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

Standard unit:

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

Control units (cont.)



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])
- Heating system frost protection
- Pump anti-seizing protection
- Integral diagnostic system
- Cylinder temperature controller with priority control
- Control of solar DHW heating and central heating backup in conjunction with the solar control module, type SM1
- Auxiliary function for DHW heating (short-term heating to a higher temperature)
- Maintenance display

- External starting and blocking (in conjunction with extension EA1)
- 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.

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 again.

Boiler water temperature sensor

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

Specification

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

Cylinder temperature sensor

The standard delivery includes the DHW cylinder connection set.

Specification

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~	– during storage and transport	–20 to +65 °C
Rated frequency	50 Hz	Electronic temperature controller setting (heating mode)	82 °C (no change possible)
Rated current	6 A	Electronic high limit safety cut-out setting	100 °C (no change possible)
Safety category	I	DHW temperature setting range	10 to 68 °C
Function	Type 1 B to EN 60730-1		
Permissible ambient temperature			
– during operation	0 to +40 °C		
	Installation in living spaces and boiler rooms (standard ambient conditions)		

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

Layout and functions

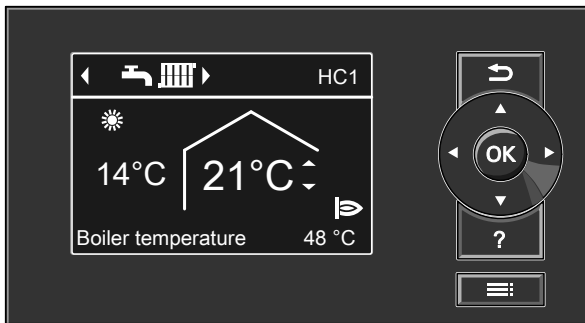
Modular structure

The control unit is integrated into the boiler.

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

Standard unit:

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



Programming unit:

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

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

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
- Heating system frost protection
- Integral diagnostic system
- Maintenance display
- Cylinder temperature controller with priority control
- Control of solar DHW heating and central heating backup in conjunction with the solar control module, type SM1
- Display 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 extension EA1)
- Connection of the circulation pump for cylinder heating on the main PCB

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

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

Control characteristics

PI characteristics with modulating output.

Time switch

Digital time switch (integrated into the programming unit)

- Individual day and seven-day program
- Automatic summer/wintertime changeover

Control units (cont.)

- Automatic function for DHW heating and DHW circulation pump
- Time, day and standard switching times for central heating, DHW heating and the DHW circulation pump are factory-set
- Switching times are individually programmable, i.e. up to four switching periods per day

Shortest switching interval: 10 minutes

Power reserve: 14 days

Setting the operating programs

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

The following heating programs can be selected:

- Heating and DHW
- Only DHW
- Standby mode

External heating program changeover in conjunction with EA1 extension.

Frost protection function

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

Summer mode

Operating program "☀"

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

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).

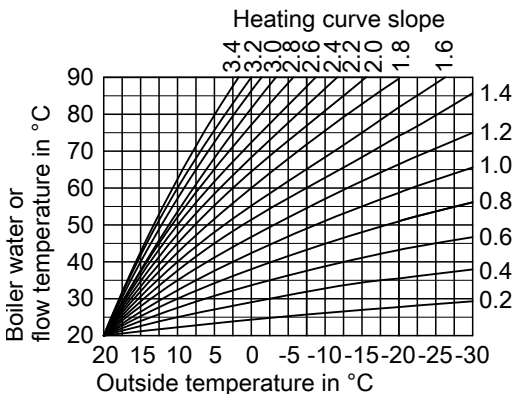
The flow temperature required to reach a specific room temperature depends on the heating system and the thermal insulation of the building to be heated.

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.

Boiler water temperature sensor

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

Specification

Sensor type Viessmann NTC, 10 kΩ at 25 °C

Permissible ambient temperature

- during operation 0 to +130 °C
- during storage and transport –20 to +70 °C

Cylinder temperature sensor

The standard delivery includes the DHW cylinder connection set.

Specification

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

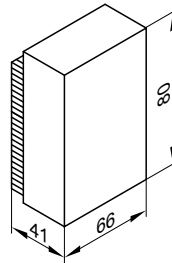
Outside temperature sensor

Installation site:

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

Connection:

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



Specification

IP rating IP 43 to EN 60529 ensure through appropriate 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~	Electronic temperature controller setting (heating mode)	82 °C (no change possible)
Rated frequency	50 Hz	Electronic high limit safety cut-out setting	100 °C (no change possible)
Rated current	6 A	DHW temperature setting range	10 to 68 °C
Safety category	I	Heating curve setting range	
Permissible ambient temperature		Slope	0.2 to 3.5
– during operation	0 to +40 °C	Level	–13 to 40 K
	Installation in living spaces or boiler rooms (standard ambient conditions)		
– during storage and transport	–20 to +65 °C		

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

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

Weather-compensated, digital cascade and heating circuit control unit

- For multi boiler systems with Vitodens 200-W
- With boiler sequence strategy
- For up to two heating circuits with mixers (extension for heating circuits 2 and 3 required as accessory).
Up to a further 32 Vitotronic 200-H heating circuit control units can be connected via the LON BUS (LON module required; accessory)
- For modulating operation in conjunction with the Vitotronic 100, type HC1B

- With cylinder temperature controller or control unit of a primary store system with mixer assembly
- Capable of communicating via LON BUS (LON communication module and terminators available as accessories)
- With integral diagnostic system

Note

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

Layout and function

Modular design

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

Standard unit:

- ON/OFF switch
- Emissions test switch
- Optolink laptop interface
- Operating and fault display
- Plug connection chamber
 - Connection of external equipment via system plug
 - Connectors are plugged directly into the front of the open control unit
 - Connection of three-phase consumers via additional contactors

Programming unit:

- Easy operation thanks to:
 - Plain text display with graphic ability
 - Large font and black/white depiction for good contrast
 - Context-sensitive help
- With digital time switch
- Operating keys for:
 - Navigation
 - Confirmation
 - Help and additional information
 - Extended menu
- Adjustment of:
 - Room temperature
 - Reduced room temperature
 - DHW temperature
 - 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 mixers
- Control of boilers (with a Vitotronic 100, type HC1B) in accordance with a freely selectable boiler sequence strategy
- Electronic maximum temperature limit
- Demand-dependent heating circuit pump shutdown

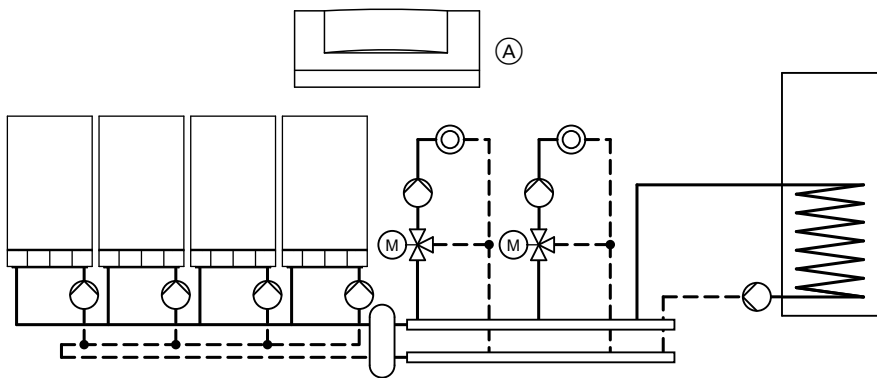
Control units (cont.)

- Adjustment of a variable heating limit
- Pump anti-seizing protection
- Central fault message
- Integral diagnostic system
- Adaptive cylinder temperature control with priority control (heating circuit pump off, mixer closed)
- Auxiliary function for DHW heating (short-term heating to a higher temperature)
- Control of a primary store system with a regulated 3-way mixing valve
- Screed drying, for underfloor heating systems

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

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

DHW heating in a multi boiler system



Ⓐ 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 a heating circuit with mixer: 0 to 40 K
- Set DHW temperature setting range:
 - Between 10 and 60 °C, adjustable to between 10 and 95 °C (available temperature limited by the max. boiler flow temperature).

Time switch

Digital time switch (integrated into the programming unit)

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

Shortest switching interval: 10 min

Power reserve: 14 days

Setting the operating programs

Frost protection monitoring (see frost protection function) for the heating system is enabled in all operating programs.

You can select the following operating programs with the program selectors:

- Heating and DHW
- Only DHW
- Standby mode

Optional external changeover of operating program for all heating circuits together or for selected heating circuits only.

Frost protection function

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

Summer mode

("DHW only")

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

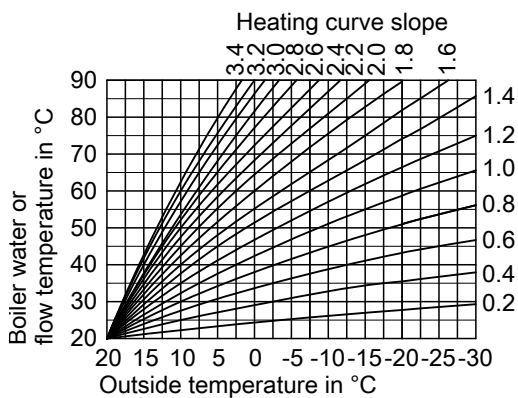
Heating curve setting (slope and level)

Subject to heating system:

- The Vitotronic controls the flow temperature of up to 2 heating circuits with mixers in weather-compensated mode
- The Vitotronic automatically regulates the system/flow temperature to between 0 and 40 K (delivered condition 8 K) higher than the highest current 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 the temperature controller "⊕" and the electronically set maximum temperature of the Vitotronic 100 boiler control units, type HC1B.

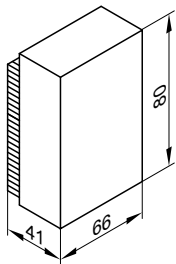
Outside temperature sensor

Installation site:

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

Connection:

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



Specification

IP rating	IP 43 to EN 60529 ensure through appropriate 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

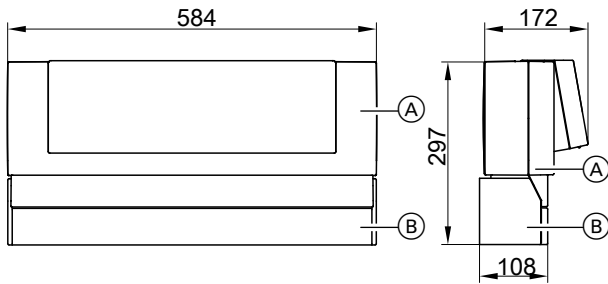
Lead length	5.8 m, fully wired
IP rating	IP 32 to EN 60529
Sensor type	Viessmann NTC 10 kΩ at 25 °C
Permissible ambient temperature – during operation	0 to +90 °C
– during storage and transport	-20 to +70 °C

Specification, Vitotronic 300-K

Rated voltage:	230 V ~	– during storage and transport:	-20 to +65 °C
Rated frequency:	50 Hz	Rated relay output breaking capacity:	
Rated current:	6 A	– Heating circuit pumps or heat exchanger set [20]:	4(2) A 230 V~
Power consumption:	10 W	– Circulation pump for cylinder heating [21]:	4(2) A 230 V~
Safety category:	I	– DHW circulation pump [28]:	4(2) A 230 V~
IP rating:	IP 20 D to EN 60529, ensure through design/installation	– Distribution pump [29]:	4(2) A 230 V~
Function:	Type 1B to EN 60730-1	– Central fault message [50]:	4(2) A 230 V~
Permissible ambient temperature – during operation:	0 to +40 °C for use in the living space or boiler room (standard ambient conditions)	– Motor, 3-way mixing valve, primary store system or Mixer motor [52]:	0.2(0.1) A 230 V~
		– Overall max.	6 A 230 V~

Control units (cont.)

Dimensions



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

Delivered condition Vitotronic 300-K

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

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

An extension kit (accessory) 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 primary store system separately.

5.4 Accessories for the 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 extension H4	x		
Vitotrol 100, type UTDB-RF	x		
Vitotrol 200A		x	x
Vitotrol 300A		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 300A		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 for one heating circuit with mixer with integral mixer motor		x	
Extension kit for one heating circuit with mixer for separate mixer motor		x	
Mixer motor		x	x
Extension for heating circuits 2 and 3 with mixer			x
Extension kit for one heating circuit with mixer			x
Immersion thermostat		x	x
Contact thermostat		x	x
Solar control module, type SM1	x	x	x
Internal extension H1	x	x	
Internal extension H2	x	x	
Extension AM1	x	x	

Control units (cont.)

Vitotronic	100	200	300-K
Type	HC1B	HO1B	MW2B
Accessories			
Extension EA1	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 GSM	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

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

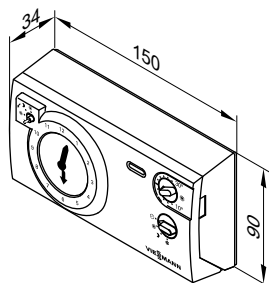
Install the Vitotrol 100 in the main living room on an internal wall opposite radiators, but not inside shelf units, recesses, immediately by a door or a heat source (e.g. direct sunlight, fireplace, TV set, etc.).

Control unit connection:

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

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 appropriate design/installation
Permissible ambient temperature	
– during operation	0 to +40 °C
– during storage and transport	–20 to +60 °C
Set value setting range for standard mode and reduced mode	10 to 30 °C
Set room temperature in standby mode	6 °C



Vitotrol 100, type UTDB

Part no. Z007 691

Room temperature controller

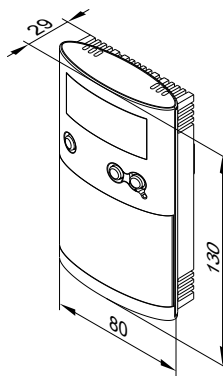
- With switching output (two-point output)
- With digital time switch
- With individual and 7-day programs
- Operation with user prompts:
 - 3 preselected time programs, individually adjustable
 - Constant manual mode with adjustable set room temperature
 - Frost protection mode
 - Holiday program
-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

Installation in the main living room on an internal wall opposite radiators. Never install inside shelving units, in recesses, or immediately by a door or heat source (e.g. direct sunlight, fireplace, TV set, etc.).

Operation independent of mains power supply (two 1.5 V round alkaline batteries, type LR6/AA, which run for approx. 1.5 years).

Control unit connection:

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



Control units (cont.)

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 appropriate design/installation

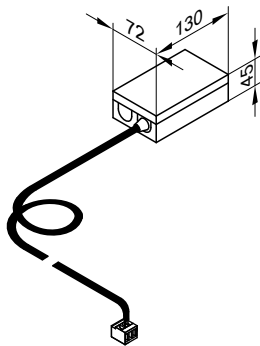
Function

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

External extension H4

Part no. 7197 227

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



Specification

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

Vitotrol 100, type UTDB-RF

Part no. Z007 692

Room temperature controller with integral wireless transmitter and one receiver

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

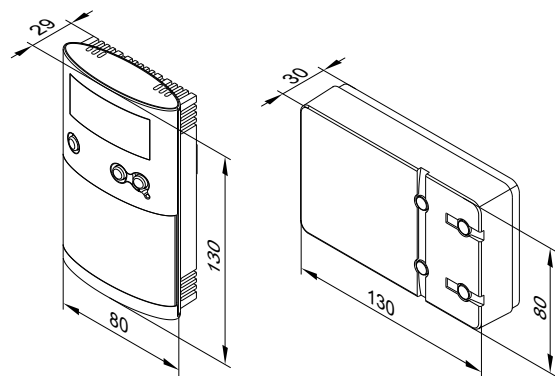
Installation in the main living room on an internal wall opposite radiators. Never install inside shelving units, in recesses, or immediately by a door or heat source (e.g. direct sunlight, fireplace, TV set, etc.).

Room temperature controller operation independent of mains power supply (two 1.5 V round alkaline batteries, type LR6/AA, which run for approx. 1.5 years).

Receiver with relay state indication.

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

- 4-core cable with a cross-section of 1.5 mm² for 230 V–
or
- 3-core cable without green/yellow core 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 appropriate design/installation
Function	RS Type 1B to EN 60730-1
Permissible ambient temperature	
– during operation	0 to +40 °C
– during storage and transport	–25 to +65 °C

Control units (cont.)

Setting range		IP rating	IP 20 to EN 60529
– Comfort temperature	10 to 40 °C		ensure through appropriate design/installation
– Setback temperature	10 to 40 °C	Safety category	II to EN 60730-1 subject to correct installation
– Frost protection temperature	5 °C		
Power reserve during battery change	3 min	Permissible ambient temperature	
		– during operation	0 to +40 °C
		– during storage and transport	–25 to +65 °C
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–		

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

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

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

Information on the Vitotrol 200A and Vitotrol 300A

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

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

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

Note

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

Vitotrol 200A

Part no. Z008 341

KM BUS subscriber

■ Indications:

- Room temperature
- Outside temperature
- Operating condition

■ Settings:

- Set room temperature for standard mode (day temperature)

Note

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

- Operating program

■ Party and economy mode can be enabled via keys

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

Installation site:

■ Weather-compensated mode:

Installation anywhere in the building.

■ Room temperature hook-up:

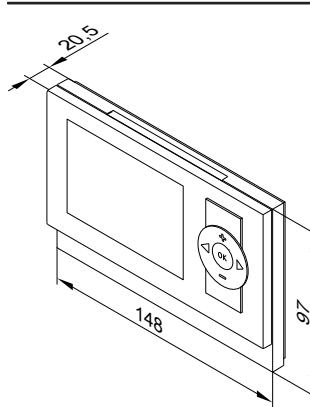
The integral room temperature sensor captures the actual room temperature and corrects the flow temperature if necessary.

The captured room temperature is dependent on the installation site:

- Main living room on an internal wall opposite radiators.
- Not on shelves or in recesses.
- Never install immediately by a door or heat source (e.g. direct sunlight, fireplace, TV set, etc.).

Connection:

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



Specification

Power supply via KM BUS	
Power consumption	0.2 W
Safety category	III
IP rating	IP 30 to EN 60529
	Ensure through design/installation
Permissible ambient temperature	
– during operation	0 to +40 °C
– during storage and transportation	–20 to +65 °C
Setting range of the set room temperature for standard mode	3 to 37 °C

Control units (cont.)

Vitotrol 300A

Part no. Z008 342

KM BUS subscriber

■ Indications:

- Room temperature
- Outside temperature
- Operating program
- Operating condition
- Solar yield as graphic display

■ Settings:

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

■ Party and economy mode can be enabled via the menu

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

Installation site:

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

■ Room temperature hook-up:

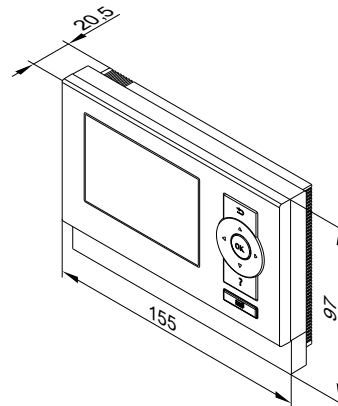
The integral room temperature sensor captures the actual room temperature and corrects the flow temperature if necessary.

The captured room temperature is dependent on the installation site:

- Main living room on an internal wall opposite radiators.
- Not on shelves or in recesses.
- Never install immediately by a door or heat source (e.g. direct sunlight, fireplace, TV set, etc.).

Connection:

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



Specification

Power supply via KM BUS

Power consumption

0.5 W

Safety category

III

IP rating

IP 30 to EN 60529

Ensure through design/installation

Permissible ambient temperature

– during operation

0 to +40 °C

– during storage and transportation

–20 to +65 °C

Setting range of the set room temperature

3 to 37 °C

Information regarding the Vitotrol 200 RF and Vitotrol 300 RF

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

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

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

Up to three wireless remote controls can be connected to the control unit.

Note

The wireless remote controls **cannot** be combined with wired remote controls.

Vitotrol 200 RF

Part no. Z011 219

Wireless subscriber

■ Indications:

- Room temperature
- Outside temperature
- Operating condition

■ Settings:

- Set room temperature for standard mode (day temperature)

Note

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

- Operating program

■ Party and economy mode can be enabled via keys

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

Installation site:

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

■ Room temperature hook-up:

The integral room temperature sensor captures the actual room temperature and corrects the flow temperature if necessary.

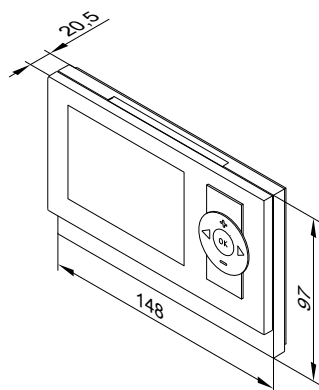
The captured room temperature is dependent on the installation site:

- Main living room on an internal wall opposite radiators.
- Not on shelves or in recesses.
- Never install immediately by a door or heat source (e.g. direct sunlight, fireplace, TV set, etc.).

Note

Refer to "Wireless accessories" technical guide.

Control units (cont.)



Specification

Power supply via 2 AA batteries 3 V	
Wireless frequency	868.3 MHz
Wireless protocol	EnOcean
Wireless range	See "Wireless accessories" technical guide
Safety category	III
IP rating	IP 30 to EN 60529
	Ensure through design/installation
Permissible ambient temperature	
– during operation	0 to +40 °C
– during storage and transportation	-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

■ Indications:

- Room temperature
- Outside temperature
- Operating condition
- Solar yield as graphic display

■ Settings:

- Set room temperatures for standard mode (day temperature) and reduced mode (night temperature)
- Set DHW temperature
- Heating 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

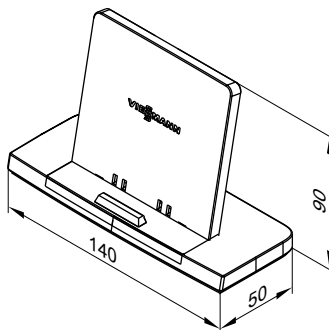


Table-top dock

Note

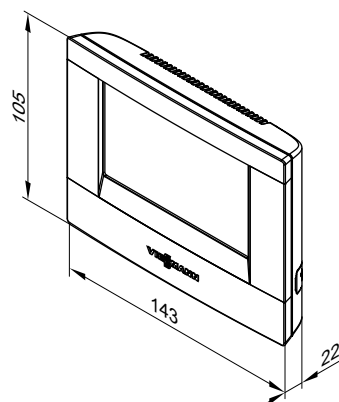
Observe the "Wireless accessories" technical guide.

Standard delivery:

- Vitotrol 300 RF
- Table-top dock
- Plug-in power supply unit
- Two NiMH batteries for operating outside the table-top dock

Specification

Power supply via plug-in power supply unit 230 V~/5 V-	
Power consumption	2.4 W
Radio frequency	868.3 MHz
Wireless protocol	EnOcean
Wireless range	See "Wireless accessories" technical guide
Safety category	II
IP rating	IP 30 to EN 60529
	Ensure through assembly/installation
Permissible ambient temperature	
– During operation	0 to +40 °C
– During storage and transport	-25 to +60 °C
Range of the set room temperature	3 to 37 °C



Vitotrol 300 RF

Vitotrol 300 RF with wall mounting bracket

Part no. Z011 412

Wireless subscriber

■ Indications:

- Room temperature
- Outside temperature

Control units (cont.)

- Operating condition
- Solar yield as graphic display
- Settings:
 - Set room temperatures for standard mode (day temperature) and reduced mode (night temperature)
 - Set DHW temperature
 - Heating 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 affects any necessary correction of the flow temperature.

The captured room temperature is dependent on the installation location:

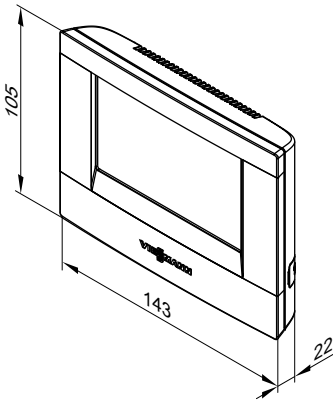
- Main living room on an internal wall opposite radiators.
- Not on shelves, in recesses.
- Never immediately by a door or heat source (e.g. direct sunlight, fireplace, TV set, etc.).

Note

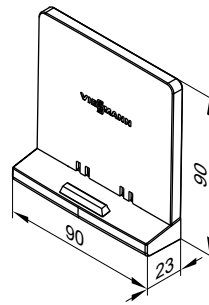
Observe the "Wireless accessories" technical guide.

Standard delivery:

- Vitotrol 300 RF
- Wall mounting bracket
- Power supply unit for installation into a plaster box
- Two NiMH batteries for operating outside the wall mounting bracket



Vitotrol 300 RF



Wall mounting bracket

Specification

Power supply via power supply unit
230 V~/4 V

for installation into a plaster box

Power consumption

2.4 W

Radio frequency

868.3 MHz

Wireless protocol

EnOcean

Wireless range

See "Wireless accessories" technical guide

Safety category

II

IP rating

IP 30 to EN 60529

Ensure through assembly/installation

Permissible ambient temperature

- During operation

0 to +40 °C

- During storage and transport

-25 to +60 °C

Range of the room temperature

3 to 37 °C

Wireless base station

Part no. Z011 413

KM BUS subscriber.

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

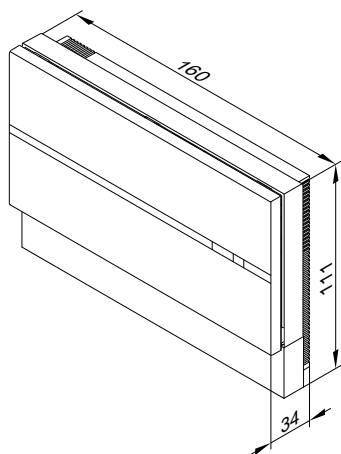
- Vitotrol 200 RF wireless remote control
- Vitotrol 300 RF wireless remote control
- Wireless outside temperature sensor

For up to 3 wireless remote control units. 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	868.3 MHz
Wireless protocol	EnOcean
Safety category	III
IP rating	IP 20 to EN 60721
	Ensure through design/installation
Permissible ambient temperature	
– during operation	0 to +40 °C
– during storage and transport	-20 to +65 °C

Wireless outside temperature sensor

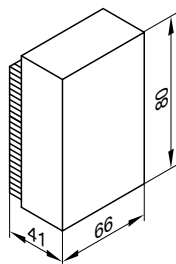
Part no. 7455 213

Wireless subscriber.

Wireless, light activated outside temperature sensor with integral wireless transmitter for operation with a wireless base station and the Vitotronic control unit.

Installation site:

- North or north-western 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

PV cells and an energy store provide the power supply	
Radio frequency	868.3 MHz
Wireless protocol	EnOcean
Wireless range	See "Wireless accessories" technical guide
IP rating	IP 43 acc. to EN 60529
	ensure through appropriate design/installation
Permissible ambient temperature during operation, storage and transport	-40 to +60 °C

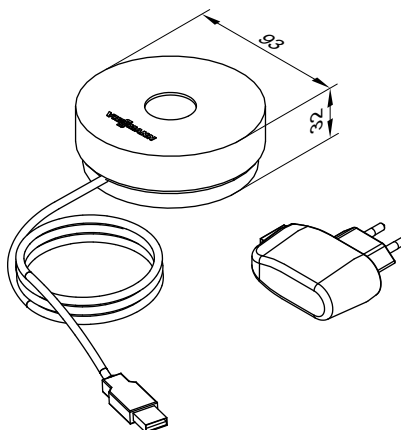
Wireless repeater

Part no. 7456 538

Mains operated repeater to increase the wireless range and for use in areas where wireless communication is difficult. Refer to "Wireless accessories" technical guide.

Max. one wireless repeater per Vitotronic control unit.

- Avoid over-diagonal angle of penetration of the radio signals through iron reinforced concrete ceilings and/or through multiple walls.
- Avoid large metallic objects between the wireless components.



Control units (cont.)

Specification

Power supply via plug-in power supply unit	230 V~/5 V-
Power consumption	0.25 W
Wireless frequency	868.3 MHz
Wireless protocol	EnOcean
Lead length	1.1 m with plug

Safety category
IP rating

II
IP 20 acc. to EN 60529
Ensure through design/installation

Permissible ambient temperature
– during operation
– during storage and transportation

0 to +55 °C
–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 where the unit could capture and adjust the temperature.

Installation in the main living room on an internal wall opposite radiators. Never install inside shelving units, in recesses, or immediately by a door or heat source (e.g. direct sunlight, fireplace, TV set, etc.). Connect the room temperature sensor to the Vitotrol 300A.

Connection:

- 2-core lead with a cross-section of 1.5 mm² (copper)
- Lead length from the remote control up to 30 m
- Never route this lead immediately next to 230/400 V cables

Specification

Safety category
IP rating

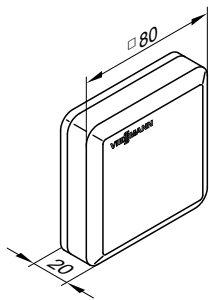
III
IP 30 acc. to EN 60529
Ensure through design/installation

Sensor type

Viessmann NTC 10 kΩ at 25 °C

Permissible ambient temperature
– during operation
– during storage and transportation

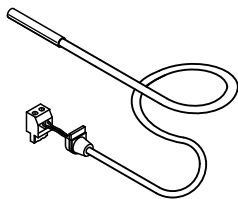
0 to +40 °C
–20 to +65 °C



Immersion temperature sensor

Part no. 7438 702

To capture a temperature in a sensor well.



Specification

Lead length
IP rating

5.8 m, fully wired
IP 32 to EN 60529; ensure through design/installation
Viessmann NTC 10 kΩ, at 25 °C

Sensor type

Permissible ambient temperature
– during operation
– during storage and transport

0 to +90 °C
–20 to +70 °C

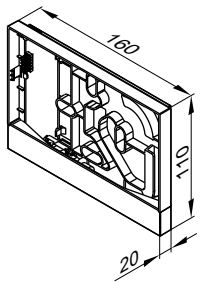
Mounting base for programming unit

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.

Control units (cont.)



Comprising:

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

Radio clock receiver

Part no. 7450 563

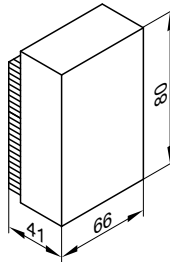
For receiving the DCF 77 time signal (location: Mainflingen near Frankfurt/Main).

Radio controlled setting of time and date.

Install on an outside wall, facing the transmitter. The reception may be reduced by metallic elements in the building structure, e.g. steel reinforced concrete, neighbouring buildings and sources of electro-magnetic interference, e.g. HV and public transport lines.

Connection:

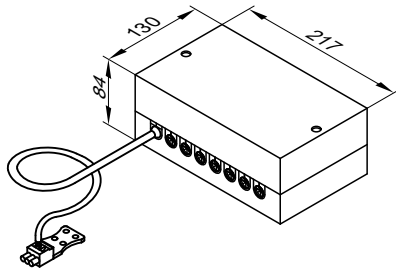
- 2-core lead, length up to 35 m with a cross-section of 1.5 mm²(copper)
- Never route this lead immediately next to 230/400 V cables.



KM BUS distributor

Part no. 7415 028

For the connection of 2 to 9 devices to the Vitotronic KM BUS.



Specification

Lead length
Protection

3.0 m, fully wired
IP 32 to EN 60529;
safeguard through appropriate design and installation

Permissible ambient temperature
– during operation
– during storage and transport

0 to +40 °C
-20 to +65 °C

Mixer extension kit with integral mixer motor

Part no. 7301 063

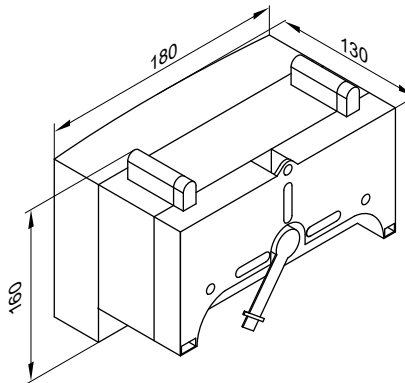
KM BUS subscriber

Components:

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

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

Mixer PCB with mixer motor



Specification

Rated voltage
Rated frequency

230 V~
50 Hz

Control units (cont.)

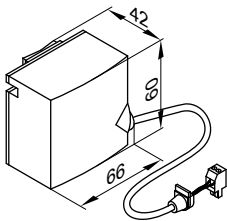
Rated current	2 A
Power consumption	5.5 W
IP rating	IP 32D to EN 60529 ensure through appropriate design/installation
Safety category	I
Permissible ambient temperature	
– during operation	0 to +40 °C
– during storage and transport	–20 to +65 °C
Rated breaking capacity of the relay output for heating circuit pump [20]	2(1) A 230 V~
Torque	3 Nm
Runtime for 90 ° <	120 s

Secured with a tie.

Specification

Lead length	2.0 m, fully wired
IP rating	IP 32D to EN 60529 ensure through appropriate 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

Flow temperature sensor (contact temperature sensor)



Mixer extension kit for separate mixer motor

Part no. 7301 062

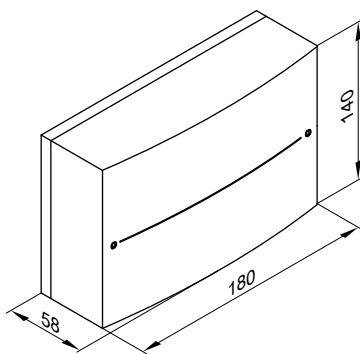
KM BUS subscriber

For the connection of a separate mixer motor.

Components:

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

Mixer PCB

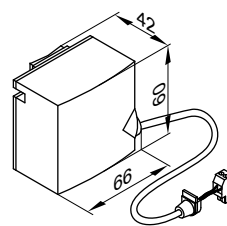


Specification

Rated voltage	230 V~
Rated frequency	50 Hz
Rated current	2 A
Power consumption	1.5 W
IP rating	IP 20D to EN 60529 ensure through appropriate design/installation

Safety category	I
Permissible ambient temperature	
– during operation	0 to +40 °C
– during storage and transport	–20 to +65 °C
Rated relay output breaking capacity Heating circuit pump [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.

Specification

Lead length	5.8 m, fully wired
IP rating	IP 32D to EN 60529 ensure through appropriate 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

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

Part no. 7164 403

PCB for installation in the Vitotronic 300-K, type MW2B.

For controlling two heating circuits with mixer.

Control units (cont.)

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

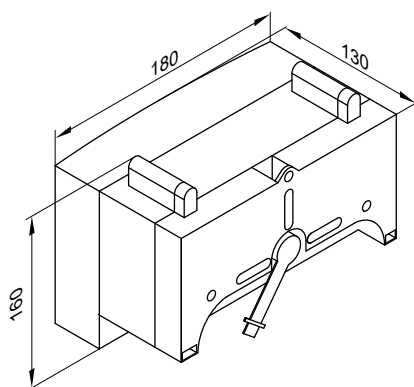
Extension kit for one heating circuit with mixer in conjunction with Divicon heating circuit distributor

Part no. 7424 958

Components:

- Mixer PCB with mixer motor
- Flow temperature sensor (immersion sensor for installation in the Divicon)
- Connection plug for heating circuit pump, power supply, flow temperature sensor and KM BUS connection

Mixer PCB

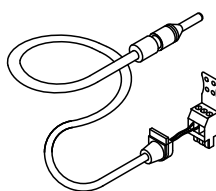


Specification

Rated voltage	230 V~
Rated frequency	50 Hz
Rated current	2 A
Power consumption	5.5 W
IP rating	IP 32 D to EN 60 529, ensure through appropriate design/installation

Protection class	I
Permissible ambient temperature	
– during operation	0 to +40 °C
– during storage and transport	-20 to +65 °C
Rated relay output breaking capacity	
Heating circuit pump [20]	2(1) A 230 V~
Runtime for 90 ° <	approx. 120 s

Flow temperature sensor (immersion sensor)



Specification

Lead length	0.9 m, fully wired
IP rating	IP 32 to EN 60529; ensure through appropriate design and installation
Sensor type	Viessmann NTC, 10 k Ω at 25 °C
Permissible ambient temperature	
– during operation	0 to +120 °C
– during storage and transport	-20 to +70 °C

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

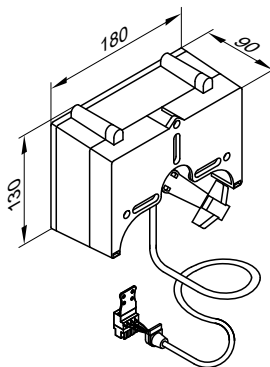
Part no. 7441 998

Components:

- Mixer motor
- Flow temperature sensor (contact temperature sensor), lead length 5.8 m, fully wired
- Plug for connecting the heating circuit pump
- Terminals for connecting the mixer motor
- Connecting cable (4.0 m long)

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

Mixer motor



Specification, extension kit

Rated voltage	230 V~
Rated frequency	50 Hz
Power consumption	2.5 W
Safety category	I

Control units (cont.)

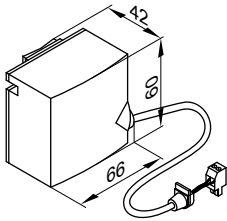
IP rating	IP 32D to EN 60529; ensure through design/installation
Permissible ambient temperature	
– during operation	0 to +40 °C
– during storage and transport	–20 to +65 °C
Torque	3 Nm
Runtime for 90 ° <	120 s

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

Flow temperature sensor (contact sensor)



Mixer motors

See datasheet "Control unit accessories".

Immersion thermostat

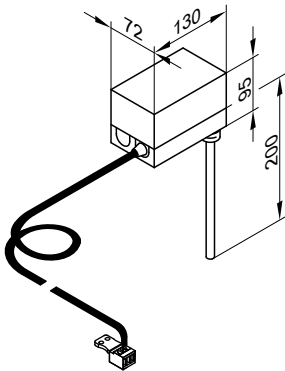
Part no. 7151 728

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 116807 or DIN TR 96808



Contact thermostat

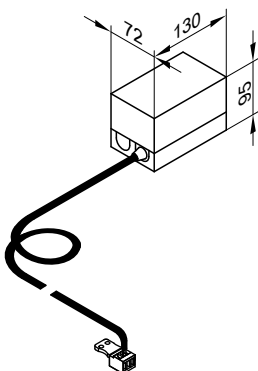
Part no. 7151 729

May be used as a maximum temperature limiter for underfloor heating systems (only in conjunction with metallic pipes).

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. 14 K
Breaking capacity	6(1.5) A 250V~
Setting scale	inside the casing
DIN reg. no.	DIN TR 116807 or DIN TR 96808



5822 432 GB

Solar control module, type SM1

Part no. 7429 073

Specification

Construction

The solar control module contains:

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

Collector temperature sensor

For connection inside the appliance.

On-site extension of the connecting lead:

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

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	
– during operation	–20 to +200 °C
– during 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 max. 60 m with a cross-section of 1.5 mm² (copper)
- Never route this lead immediately next to 230/400 V cables

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	
– during operation	0 to +90 °C
– during storage and transport	–20 to +70 °C

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

Functions

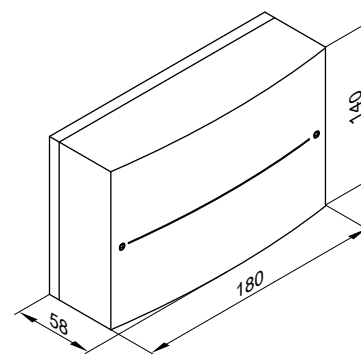
- Switching the solar circuit pump
- Solar circuit pump speed control via wave packet control or solar circuit pump with PWM input (Grundfos)

- Electronic limiter for the temperature in the DHW cylinder (safety shutdown at 90 °C)
- Collector safety shutdown
- Switching an additional pump or valve via relay
- Central heating backup is controlled in conjunction with a multi mode heating water buffer cylinder
- Second differential temperature control, thermostat function or auxiliary function for DHW heating
- Suppression of DHW cylinder reheating by the boiler
- Suppression of reheating by the boiler with central heating backup
- Output statement and diagnostic system

The immersion temperature sensor, part no. 7438 702 is required if the following functions should be realised:

- Transfer for systems with two DHW cylinders or
- Return changeover between the boiler and the heating water buffer cylinder

Specification



Rated voltage	230 V~
Rated frequency	50 Hz
Rated current	2 A
Power consumption	1.5 W
Safety category	I
IP rating	IP 20 to EN 60529; ensure through design/installation
Function	Type 1 B to EN 60730-1
Permissible ambient temperature	
– during operation	0 to +40 °C use in the living space or boiler room (standard ambient conditions)
– during 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

Control units (cont.)

Internal extension H1

Part no. 7498 513

PCB for installation in the control unit.

Using the extension enables the following functions to be achieved:

Function	Rated breaking capacity of the relay output
– 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 (multi stage) for a directly connected heating circuit	
– Connection of a central fault message	
– Only with the Vitotronic 200, type HO1B: Connection of a DHW circulation pump	

Specification

Rated voltage 230 V~
Rated frequency 50 Hz

Internal extension H2

Part no. 7498 514

PCB for installation in the control unit.

Using the extension enables the following functions to be achieved:

Function	Rated breaking capacity of the relay output
– 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 (multi stage) for a directly connected heating circuit	
– Connection of a central fault message	
– Only with the Vitotronic 200, type HO1B: Connection of a DHW circulation pump	

Specification

Rated voltage 230 V~
Rated frequency 50 Hz

Extension AM1

Part no. 7452 092

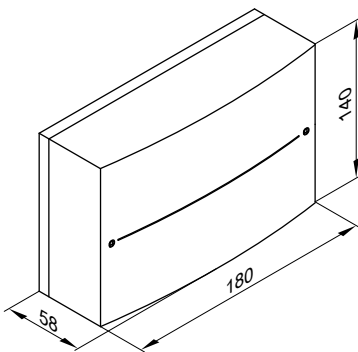
Function extension inside enclosure for wall mounting.

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

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

Specification

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



Extension EA1

Part no. 7452 091

Function extension inside enclosure for wall mounting.

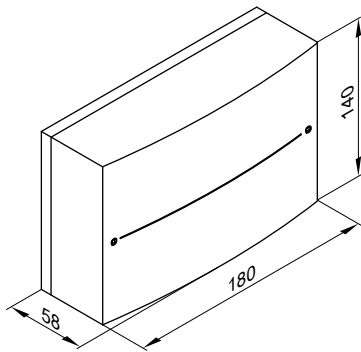
Control units (cont.)

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

- 1 switching output (floating changeover contact)
 - Central fault message issue (only with the Vitotronic 100, type HC1B and Vitotronic 200, type HO1B)
 - Switching a feed pump to a substation
 - Switching the DHW circulation pump (only with the Vitotronic 200, type HO1B)
- 1 analogue input (0 to 10 V)
 - Specifying set boiler water temperature
- 3 digital inputs
 - External operating mode changeover for 1 to 3 heating circuits (only with the Vitotronic 200, type HO1B, and the Vitotronic 300-K, type MW2B)
 - External blocking
 - External blocking with central fault message
 - Minimum boiler water temperature demand
 - Fault messages
 - Short term operation DHW circulation pump (only with the Vitotronic 200, type HO1B, and Vitotronic 300-K, type MW2B)
 - Signalling reduced operation for one heating circuit (only for the Vitotronic 300-K, type MW2B)

Specification

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 appropriate design/installation
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



Vitocom 100, type LAN1

- Without communication module
Part no. Z011 389
- With communication module
Part no. Z011 224

For remote control of heating systems via internet and IP networks (LAN) with DSL router.

Storage combi boiler for wall mounting.

For system operation with **Vitotrol app** or **Vitodata 100**.

Functions when operating with Vitotrol app:

- Remote control of up to three heating circuits of a heating system
- Setting operating programs, set values and time programs via iPhone, iPad or iPod with Retina display, with operating system iOS 4.3/5
- Scanning system information
- Displaying messages on the Vitotrol app user interface

Note

For further information see "www.vitotrol-App.info".

Functions when operating with Vitodata 100:

Remote monitoring of all heating circuits in a heating system:

- Forwarding messages via email to PC/smartphone (email client function required)
- Forwarding messages via SMS to mobile phone/smartphone or fax (via chargeable internet service Vitodata 100 fault management)

Remote control:

Setting operating programs, set values, time programs and heating curves

Configuration:

Configuration is automatic.

If the DHCP service is enabled, no settings are required at the DSL router.

Standard delivery:

- Vitocom 100, type LAN1 with LAN connection
- Connecting cables for LAN and communication module
- Power cable with plug-in power supply unit
- Vitodata 100 fault management for a duration of three years

On-site requirements:

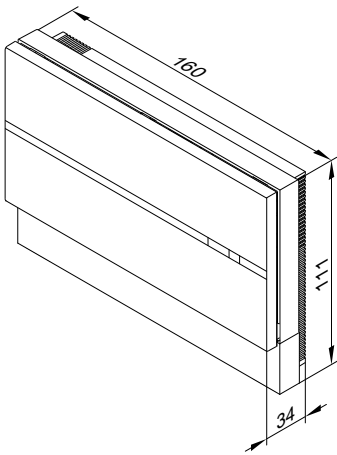
The communication module must be installed in the control unit. Before commissioning, check the system requirements for communication via the IP networks (LAN).

Internet connection with data flat rate (flat rate **independent** of time and volume).

Note

For information on registering and using the Vitotrol app and Vitodata 100, see "www.vitodata.info".

Control units (cont.)



Specification

Power supply via plug-in power supply unit 230 V~ / 5 V-

Rated current	1.6 A
Power consumption	8 W
Safety category	II
IP rating	IP 30 to EN 60529, ensure through design/installation
Permissible ambient temperature	0 to +55 °C
– During operation	Use in the living space and in boiler rooms (standard ambient conditions)
– During storage and transport	-20 to +85 °C

Vitocom 100, type GSM

- Without SIM card
Part no. Z004594
- With contract SIM card for the operation of the Vitocom 100 via mobile phone
Part no. Z004615

Note

For information regarding terms of contract, see "www.viessmann.de/vitocom-100".

Functions:

- Remote switching via GSM mobile phone networks
- Remote scanning via GSM mobile phone networks
- Remote monitoring via SMS to 1 or 2 mobile phones
- Remote monitoring of additional systems via digital input (230 V)

Configuration:

Mobile phones via SMS

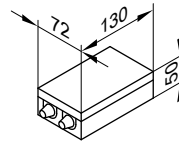
Standard delivery:

- Vitocom 100 (subject to order with or without SIM card)
- Power cable with standard Euro plug (2.0 m long)
- GSM aerial (3.0 m long), magnetic foot and adhesive pad
- KM BUS cable (3.0 m long)

On-site requirements:

Good reception for GSM communication with the selected mobile phone operator.

Total length of all KM BUS subscriber cables up to 50 m.



Specification

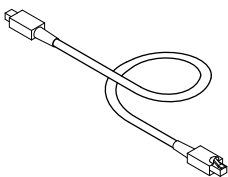
Rated voltage	230 V ~
Rated frequency	50 Hz
Rated current	15 mA
Power consumption	4 W
Safety category	II
IP rating	IP 41 to EN 60529; ensure through design/installation
Function	Type 1B to EN 60 730-1
Permissible ambient temperature	0 to +55 °C
– during operation	Installation in living spaces or boiler rooms (standard ambient conditions)
– during storage and transport	-20 to +85 °C
On-site connection	
Fault input DE 1	230 V ~

LON connecting cable for data exchange between control units

Vitotronic 300-K for the Vitotronic 200-H

Cable length 7 m, fully wired.

Part no. 7143 495



Extension of the connecting cable

- Installation spacing 7 to 14 m:
 - 2 connecting cables (7.0 m long)
Part no. 7143 495
 - 1 LON coupling RJ45
Part no. 7143 496
- Installation distance 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 - 0.32 mm²,
 - Conductor AWG 26-22 / 0.14 mm² - 0.36 mm²
 - ∅ 4.5 mm - 8 mm
- on-site**
 - Installation distance 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 - 0.32 mm²,
 - Conductor AWG 26-22 / 0.14 mm² - 0.36 mm²
 - ∅ 4.5 mm - 8 mm
 - on-site**
 - 2 LON sockets RJ45, CAT6
Part no. 7171 784

Terminator (2 pce)

Part no. 7143 497

For terminating the LON BUS at the first and last control unit.

LON communication module

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

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

Appendix

6.1 Regulations / Directives

Regulations and Directives

The design and operational characteristics of the Vitodens gas condensing boilers from Viessmann meet the requirements of EN 297. They are CE-designated.

They may be installed in sealed unvented heating systems with permissible flow temperatures (= safety temperatures) up to 100 °C to EN 12828. The maximum achievable flow temperature is approx. 15 K below the safety temperature.

Observe all 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 connection on the flue gas side, the commissioning and the electrical connection as well as general maintenance and repair work.

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

In some regions, permits may be required for the flue system and condensate drain into the public sewage system.

In some countries, the relevant flue gas inspector and water authorities must be informed prior to commencing the installation.

We recommend that you carry out maintenance and cleaning procedures 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 authorised contractors may convert this boiler for use in countries other than those stated on the type plate. That contractor must also arrange the acceptance in accordance with the statutes of the relevant country.

EnEV
1st BImSchV

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

Energy Saving Ordinance
First regulation for the implementation of the German Immissions Act (regulation regarding small and medium-sized combustion equipment)
Fire Regulations of the German Federal States
Drainage system materials
DHW pipe systems for properties
Water heaters and DHW systems for DHW and process water
Domestic chimneys
Heating systems and central DHW heating systems (VOB)
Electrical equipment for combustion systems
Gas condensing boilers
Heating systems in buildings – design of hot water heating systems
Heating systems in buildings – process for calculating the standard heat load
Flue systems – thermal and flow technical calculations
Introduction of condensate from gas and oil combustion systems [into public sewers]
Gas condition
Technical rules for gas installations (TRGI)
Gas consumption equipment, condensing technology

Appendix (cont.)

DVGW/DVFG	Technical rules for LPG (TRF)
DVGW VP 113	Systems comprising combustion equipment and flues
VDI 2035	Prevention of damage in water heating installations - Scale formation in DHW supply installations and water heating installations
VdTÜV 1466	Water quality datasheet
VDE regulations and the special regulations of local power supply utilities.	

Keyword index

A	
Accessories	
■ For control units	53
Anti-corrosion agents	43
Antifreeze	44
B	
Balanced flue operation	27
Boiler water temperature sensor	47, 49
C	
Carbon monoxide	25, 27, 28
Cascade control unit	50
CO limiter	25, 27, 28
Combustion air supply	27
Condensate	42
Condensate connection	41
Constant temperature control unit	
■ Frost protection function	47
■ Functions	46, 47
■ Heating programs	47
■ Layout	46
■ Programming unit	47
■ Standard unit	46
Contact thermostat	65
Control unit	
■ For constant temperature operation	46
■ For weather-compensated operation	48
D	
Distributor with low loss header	46
E	
Electrical connection	28
EnEV	48, 51
Expansion vessel	44
Extension	
■ Internal H1	67
■ Internal H2	67
Extension AM1	67
Extension EA1	67
F	
Fill water	44
Frost protection function	47, 49, 51
G	
Gas connection	29
H	
Heating curve adjustment	49
Hydraulic connection	43
I	
Immersion thermostat	65
Initial heat-up	44
Installation room	27
Interlock circuit	27
Interlock switch	29
Internal extension H1	67
Internal extension H2	67
K	
KM BUS distributor	62
L	
Leads/cables	29
Level	49
LON communication module	70
Low loss header	45
Low loss headers	45
Low water indicator	44
M	
Mixer extension	
■ Integral mixer motor	62, 64
■ Separate mixer motor	63
Mixer extension kit	
■ Integral mixer motor	62, 64
■ Separate mixer motor	63
Mounting base for programming unit	61
N	
Neutralisation	41
Neutralising system	42
O	
Open flue operation	27
Outside temperature sensor	49, 52
P	
Protection	28
R	
Room temperature controller	54, 55
Room temperature sensor	61
Room thermostat	54, 55
S	
Safety equipment	44
Safety valve	44
Siting conditions	27
Slope	49
Solar control module	
■ Specification	66
Specification	
■ Solar control module	66
Standard unit	48
System design	43
T	
Temperature sensor	
■ Room temperature sensor	61
■ Wireless outside temperature sensor	60
Temperature sensors	
■ Boiler water temperature sensor	47, 49
■ Outside temperature sensor	49, 52
Thermally activated safety shut-off valve	29
Thermostat	
■ Contact temperature	65
■ Immersion temperature	65
Time switch	48, 51

Keyword index

V

Vitocom	
■ 100, type GSM.....	69
■ 100, type LAN1.....	68
Vitotrol	
■ 200A.....	56
■ 200 RF.....	57
■ 300A.....	57
■ 300 RF with table-top dock.....	58
■ 300 RF with wall mounting bracket.....	58
Vitotrol 100	
■ UTA.....	54
■ UTDB.....	54
■ UTDB-RF.....	55

W

Water quality.....	44
Weather-compensated control	
■ Operating programs.....	49
Weather-compensated control unit	
■ Frost protection function.....	49, 51
■ Functions.....	48
■ Layout.....	48
■ Programming unit.....	48
■ Standard unit.....	48
Wet area.....	28
Wireless components	
■ Wireless base station.....	59
■ Wireless outside temperature sensor.....	60
■ Wireless remote control.....	57, 58
■ Wireless repeater.....	60





Subject to technical modifications.

Viessmann Werke GmbH&Co KG
D-35107 Allendorf
Telephone: +49 6452 70-0
Fax: +49 6452 70-2780
www.viessmann.com

Viessmann Limited
Hortonwood 30, Telford
Shropshire, TF1 7YP, GB
Telephone: +44 1952 675000
Fax: +44 1952 675040
E-mail: info-uk@viessmann.com

5822 432 GB