

Technical guide

**VITODENS 200-W** Type B2HA, B2KA**Wall mounted gas condensing boiler**

3.2 to 35.0 kW

For natural gas and LPG

VITODENS 222-W Type B2LA**Gas condensing storage combi boiler,**

3.2 to 35.0 kW

For natural gas and LPG

VITODENS 300-W Type B3HA**Wall mounted gas condensing boiler**

1.9 to 35.0 kW

For natural gas and LPG

Index

Index

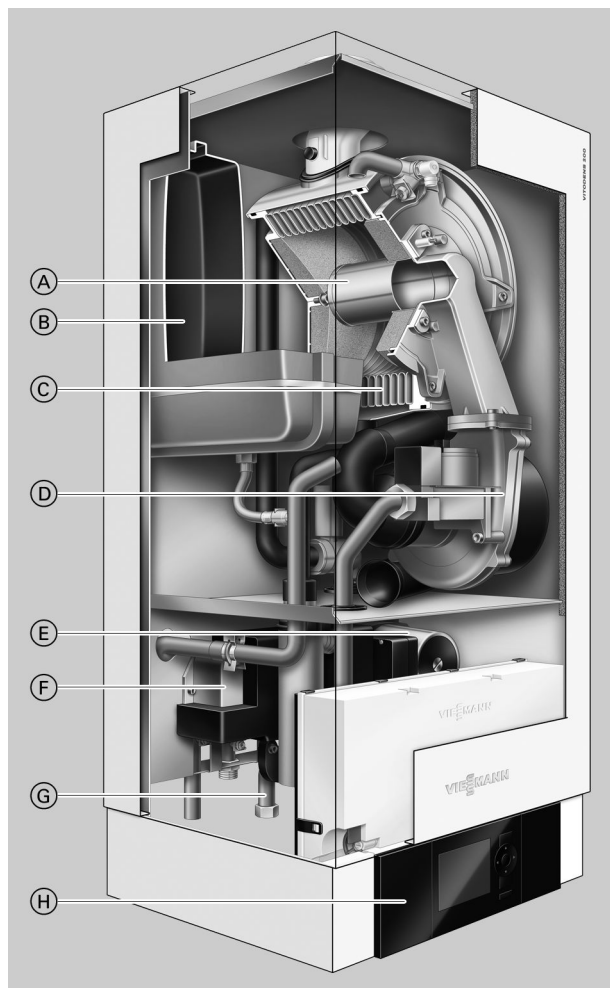
1. Vitodens 200-W	1.1 Product description	4
	1.2 Specification	6
	■ Gas condensing boiler	6
2. Vitodens 222-W	2.1 Product description	13
	2.2 Specification	15
3. Vitodens 300-W	3.1 Product description	20
	3.2 Specification	22
4. Separate DHW cylinders	4.1 Vitocell 100-W (type CUG) below the boiler, made from steel, with Ceraprotect enamel coating	29
	■ Delivered condition	31
	4.2 Vitocell 100-W adjacent to the boiler (type CVA - 160, 200 and 300 l, white finish), made from steel, with Ceraprotect enamel coating	32
	■ Delivered condition	34
	4.3 Vitocell 300-W adjacent to the boiler (type EVA – 160 and 200 litre, white finish), heated by a peripheral indirect coil, made from stainless steel	35
	■ Delivered condition	36
	4.4 Vitocell 100-W adjacent to the boiler (type CVB – 300 and 400 l white finish), made from steel with Ceraprotect enamel coating for dual mode DHW heating	37
	■ Delivered condition	39
	4.5 Vitocell 100-W adjacent to the boiler (type CVUA – 300 l, white finish), made from steel, with Ceraprotect enamel coating for dual mode DHW heating	40
	■ Delivered condition	41
5. Installation accessories	5.1 Installation accessories for Vitodens 200-W and 300-W	42
	■ Vitodens 200-W installation directly on a wall	42
	■ Installing the Vitodens 300-W directly on a wall	42
	■ Installation with a sub-mounting kit	43
	■ Installation of the Vitodens 300-W with mounting frame	45
	■ Installation with a self-supporting mounting frame	45
	■ Further accessories	46
	■ Connections between the Vitodens and the DHW cylinder	47
	5.2 Installation accessories Vitodens 222-W	49
	■ Pre-plumbing jig for finished walls	49
	■ Pre-plumbing jig for unfinished walls	49
	■ Further accessories	49
	■ Flue gas cascade (positive pressure) for multi boiler systems with Vitodens 200-W and 222-W	50
6. Design information	6.1 Positioning, installation	51
	■ Siting conditions for open flue operation (appliance type B)	51
	■ Installation conditions for balanced flue operation (appliance type C)	52
	■ Intended use	52
	■ Operation of the Vitodens in wet areas	52
	■ Electrical connection	52
	■ Gas connection	54
	■ Minimum clearances	54
	■ Pre-installation for mounting the Vitodens 200-W and 300-W directly on the wall – Installation on finished walls	54
	■ Pre-installation with the sub-mounting kit with mixer – installation on finished walls	55
	■ Pre-installation for mounting the Vitodens 200-W and 300-W directly on the wall – Installation on unfinished walls	56
	■ Pre-installation with mounting frame	57
	■ Self-supporting installation of the Vitodens 200-W and 300-W	58
	■ Pre-installation for Vitodens 222-W	59
	6.2 Replacing third party appliances with the Vitodens 200-W or 300-W	61
	■ Replacing a Ceramini-Z-SR with a Vitodens 200-W (3.2-19 kW) or a Vitodens 300-W (1.9-19 kW)	62
	■ Replacing a Cerastar-ZR/-ZWR with a Vitodens 200-W (5.2-35 kW) or a Vitodens 300-W (4.0-35 kW)	63
	■ Replacing a Thermoblock-VC110E/-VC112E with a Vitodens 200-W (3.2-19 kW) or a Vitodens 300-W (1.9-19 kW)	65
	■ Replacing a Thermoblock-VC/VCW with a Vitodens 200-W (5.2-35 kW) or a Vitodens 300-W (4.0-35 kW)	67

5822 430 GB

6.3	Decision-making aids regarding DHW heating	68
■	Information about water quality	68
■	Separate DHW cylinders	69
■	Sizing cylinders	69
■	Selection tables, DHW cylinders	70
6.4	Connections on the water side	70
■	Connections on the DHW side	70
6.5	Condensate connection	73
■	Condensate drain and neutralisation	73
6.6	Hydraulic connection	75
■	General information	75
■	Expansion vessels	76
■	Low loss header	76
6.7	Intended use	77
7.	Control units	
7.1	Vitotronic 100, type HC1B, for constant temperature operation	78
■	Layout and functions	78
■	Specification Vitotronic 100, type HC1B	79
7.2	Vitotronic 200, type HO1B, for weather-compensated operation	79
■	Specification Vitotronic 200, type HO1B	81
7.3	Vitotronic 200 RF, type HO1C, for weather-compensated operation	81
■	Specification Vitotronic 200 RF, type HO1C	84
7.4	Vitotronic accessories	84
■	Allocation to control unit types	84
■	Vitotrol 100, type UTA	85
■	Vitotrol 100, type UTDB	85
■	External extension H4	86
■	Vitotrol 100, type UTDB-RF	86
■	Notes regarding room temperature hook-up (RS function) for remote control units .	87
■	Information on the Vitotrol 200A and Vitotrol 300A	87
■	Vitotrol 200A	87
■	Vitotrol 300 A	87
■	Vitocomfort 200	88
■	Information on the Vitotrol 200 RF and Vitotrol 300 RF	88
■	Vitotrol 200 RF	88
■	Vitotrol 300 RF with table-top dock	89
■	Vitotrol 300 RF with wall mounting bracket	90
■	Wireless base station	90
■	Wireless outside temperature sensor	91
■	Wireless repeater	91
■	Room temperature sensor	92
■	Immersion temperature sensor	92
■	Immersion temperature sensor	92
■	Mounting base for programming unit	93
■	Radio clock receiver	93
■	KM BUS distributor	93
■	Mixer extension kit with integral mixer motor	93
■	Mixer extension kit for separate mixer motor	94
■	Immersion temperature controller	95
■	Contact temperature controller	95
■	Solar control module, type SM1	95
■	Internal extension H1	96
■	Internal extension H2	96
■	Extension AM1	97
■	Extension EA1	97
■	Vitocom 100, type LAN1	98
■	Vitocom 100, type GSM2	98
■	Vitocom 200	99
■	LON connecting cable for data exchange between control units	101
■	Extension of the connecting cable	101
■	Terminator (2 pce)	101
■	LON communication module	101
8.	Appendix	
8.1	Regulations / Directives	101
■	Regulations and Directives	101
9.	Keyword index	
	103

1.1 Product description

1



- (A) Modulating MatriX cylinder burner with intelligent Lambda Pro Control combustion controller for clean combustion and quiet operation
- (B) Integral diaphragm expansion vessel
- (C) Inox-Radial heat exchangers made from stainless steel - for high operational reliability, a long service life and high heating output on a very small footprint
- (D) Variable speed combustion air fan for quiet and economical operation
- (E) Integral, variable speed high efficiency circulation pump
- (F) Plate heat exchanger (for gas condensing combi boiler, 5.2 to 35 kW)
- (G) Gas and water connections
- (H) Digital boiler control unit

The Vitodens 200-W wall mounted gas condensing boiler offers high quality condensing technology with an exemplary price/performance ratio, excellent heating and DHW convenience, compact dimensions and a timeless, elegant design.

The Vitodens 200-W consumes less energy, as it also makes use of the latent heat in the flue gas. The result: standard seasonal efficiency [to DIN] of up to 98 % (H_s) [gross cv] / 109 % (H_i) [net cv]. This noticeably reduces your heating costs and also protects the environment. Both for economy and a long service life, stainless steel is a first choice material. That is why the Vitodens 200-W is equipped with a stainless steel Inox-Radial heat exchanger. It offers the required reliability and ensures permanently high condensing efficiency.

The MatriX cylinder burner, developed and produced in house, has a large modulation range of up to 1:7 (35 kW). Also integrated is the Lambda Pro Control combustion controller, which automatically matches the combustion to changing gas types. This ensures consistently high energy efficiency and offers security in liberalised gas markets and where gases of biogenic origin are mixed with natural gas. The combi versions of the Vitodens 200-W are equipped with a DHW standby function. This ensures that DHW is always available at the required temperature.

Recommended applications

- Detached and terraced houses
- Property development, either modernisation or new build (replacement of water heaters in apartment blocks or pre-fabricated houses)

Benefits at a glance

- 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
- High DHW convenience – all combi boilers include standby function
- Energy-saving high efficiency circulation pump (compliant with Energy Label A)
- Easy-to-use Vitotronic control unit with plain text and graphic display
- The programming unit of the control unit can also be fitted on a wall mounting base (accessories)
- Lambda Pro Control combustion controller for all gas types – saves on costs, with inspection interval extended to 3 years
- Quiet operation 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], aqua plate with multi connect system and variable speed high efficiency circulation pump. Fully plumbed and wired. White epoxy-coated casing. With diaphragm expansion vessel.

For combi boilers:

Plate heat exchanger with convenience function for DHW heating. Packed separately:

Vitotronic 100 for constant temperature mode

or

Vitotronic 200 for weather-compensated operation.

Vitodens 200-W (cont.)

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).

Accessories required (order separately)

Vitodens installation directly on a wall

Pre-plumbing jig:

- With fastening elements
- With valves/fittings
- With boiler drain & fill valve
- With gas shut-off valve with thermally activated safety shut-off valve

For installation either on finished or unfinished walls.

Vitodens installation in front of a wall

Self-supporting mounting frame (installed depth 110 mm):

- With fastening elements
- With valves/fittings

- With boiler drain & fill valve
- With angle gas valve with thermally activated safety shut-off valve

For installation with threaded fittings.

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 to RAL UZ 61.

1

1.2 Specification

Gas condensing boiler

Gas boiler, series B and C, Category II _{2N3P}		B2HA			
Type		Values in () when operating with LPG P			
Rated heating output range (to EN 677)					
$T_F/T_R = 50/30\text{ °C}$	kW	3.2 (4.8) - 13.0	3.2 (4.8) - 19.0	5.2 (8.8) - 26.0	5.2 (8.8) - 35.0
$T_F/T_R = 80/60\text{ °C}$	kW	2.9 (4.3) - 11.8	2.9 (4.3) - 17.2	4.7 (8.0) - 23.7	4.7 (8.0) - 31.7
Rated heating output range for DHW heating					
	kW	2.9 (4.3) - 16.0	2.9 (4.3) - 17.2	4.7 (8.0) - 23.7	4.7 (8.0) - 31.7
Rated heat input					
	kW	3.1 (4.5) - 16.7	3.1 (4.5) - 17.9	4.9 (8.3) - 24.7	4.9 (8.3) - 33.0
Product ID		CE-0085CN0050			
IP rating		IP X4D to EN 60529			
Gas supply pressure					
Natural gas	mbar	20	20	20	20
	kPa	2	2	2	2
LPG	mbar	50	50	50	50
	kPa	5	5	5	5
Max. permissible gas supply pressure^{*1}					
Natural gas	mbar	25.0	25.0	25.0	25.0
	kPa	2.5	2.5	2.5	2.5
LPG	mbar	57.5	57.5	57.5	57.5
	kPa	5.75	5.75	5.75	5.75
Power consumption					
– In delivered condition		39	53	68	89
– Max.		62	65	103	119
Weight		41	41	43	47
Heat exchanger content		1.8	1.8	2.4	2.8
Max. flow rate		1200	1200	1400	1600
(limit for the use of hydraulic separation)					
Nominal circulation water volume		507	739	1018	1361
at $T_F/T_R = 80/60\text{ °C}$					
Diaphragm expansion vessel					
Capacity	l	10	10	10	10
Pre-charge pressure	bar	0.8	0.8	0.8	0.8
	kPa	80	80	80	80
Permiss. operating pressure		3	3	3	3
	MPa	0.3	0.3	0.3	0.3
Safety valve connection		Rp	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$
Dimensions					
Length	mm	360	360	360	360
Width	mm	450	450	450	450
Height	mm	850	850	850	850
Height with flue bend	mm	1066	1066	1066	1066
Height with DHW cylinder below the boiler	mm	1925	1925	1925	1925
Gas connection		R	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
Connection values					
Relative to the max. load with gas					
Natural gas E	m ³ /h	1.77	1.89	2.61	3.49
Natural gas LL	m ³ /h	2.06	2.20	3.04	4.06
LPG P	kg/h	1.31	1.40	1.93	2.58

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

Vitodens 200-W (cont.)

Gas boiler, series B and C, Category II _{2N3P}		B2HA				
Type		Values in () when operating with LPG P				
Rated heating output range (to EN 677)						
T _F /T _R = 50/30 °C	kW	3.2 (4.8) - 13.0	3.2 (4.8) - 19.0	5.2 (8.8) - 26.0	5.2 (8.8) - 35.0	
T _F /T _R = 80/60 °C	kW	2.9 (4.3) - 11.8	2.9 (4.3) - 17.2	4.7 (8.0) - 23.7	4.7 (8.0) - 31.7	
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	
Temperature (at a return temperature of 30 °C)						
– at rated heating output (DHW heating)	°C	45	45	45	45	
– at partial load	°C	35	35	35	35	
Temperature (at a return temperature of 60 °C)	°C	68	68	70	70	
Mass flow rate						
Natural gas						
– at rated heating output (DHW heating)	kg/h	29.7	31.8	43.9	58.7	
– at partial load	kg/h	5.5	5.5	8.7	8.7	
LPG						
– at rated heating output (DHW heating)	kg/h	28.2	30.2	41.7	55.7	
– at partial load	kg/h	7.6	7.6	14.0	14.0	
Available draught	Pa	250	250	250	250	
	mbar	2.5	2.5	2.5	2.5	
Standard seasonal efficiency [to DIN] at T _F /T _R = 40/30 °C		up to 98 (H _s) [gross cv] / 109 (H _i) [net cv]				
Max. amount of condensate to DWA-A 251		l/h	2.3	2.5	3.5	4.6
Internal diameter of the pipe to the safety valve		DN	15	15	15	15
Condensate connection (hose nozzle)		Ø mm	20-24	20-24	20-24	20-24
Flue gas connection		Ø mm	60	60	60	60
Ventilation air connection		Ø mm	100	100	100	100

Gas condensing combi boiler

Gas boiler, series B and C, Category II _{2N3P}		B2KA		
Type		Values in () when operating with LPG P		
Rated heating output range (to EN 677)				
T _F /T _R = 50/30 °C	kW	5.2 (8.8) - 26.0	5.2 (8.8) - 35.0	
T _F /T _R = 80/60 °C	kW	4.7 (8.0) - 23.7	4.7 (8.0) - 31.7	
Rated heating output range for DHW heating		4.7 (8.0) - 29.3	4.7 (8.0) - 33.5	
Rated heat input		4.9 (8.3) - 30.5	4.9 (8.3) - 34.9	
Product ID		CE-0085CN0050		
IP rating		IP X4D to EN 60529		
Gas supply pressure				
Natural gas	mbar	20	20	
	kPa	2	2	
LPG	mbar	50	50	
	kPa	5	5	
Max. permissible gas supply pressure* ³				
Natural gas	mbar	25.0	25.0	
	kPa	2.5	2.5	
LPG	mbar	57.5	57.5	
	kPa	5.75	5.75	
Power consumption				
– In delivered condition	W	68	89	
– Max.	W	114	126	
Weight		kg	46	48
Heat exchanger content		l	2.4	2.8
Max. flow rate (limit for the use of hydraulic separation)		l/h	1400	1600

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

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

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

The flue gas temperature at a return temperature of 60 °C is used to determine the application range of flue pipes with maximum permissible operating temperatures.

*³ If the gas supply pressure is higher than the maximum permissible value, install a separate gas pressure governor upstream of the system.

Vitodens 200-W (cont.)

Gas boiler, series B and C, Category II _{2N3P}		B2KA	
Type		Values in () when operating with LPG P	
Rated heating output range (to EN 677)		5.2 (8.8) - 26.0	5.2 (8.8) - 35.0
$T_F/T_R = 50/30$ °C	kW		
$T_F/T_R = 80/60$ °C	kW	4.7 (8.0) - 23.7	4.7 (8.0) - 31.7
Nominal circulation water volume at $T_F/T_R = 80/60$ °C	l/h	1018	1361
Diaphragm expansion vessel			
Capacity	l	10	10
Pre-charge pressure	bar	0.8	0.8
	kPa	80	80
Permiss. operating pressure	bar	3	3
	MPa	0.3	0.3
Safety valve connection	Rp	¾	¾
Dimensions			
Length	mm	360	360
Width	mm	450	450
Height	mm	850	850
Height with flue bend	mm	1066	1066
Height with DHW cylinder below the boiler	mm	–	–
Gas connection	R	½	½
Standby instantaneous water heater			
Hot and cold water connections	G	½	½
Permiss. operating pressure (DHW side)	bar	10	10
	MPa	1	1
Minimum pressure, cold water connection	bar	1.0	1.0
	MPa	0.1	0.1
Outlet temperature (adjustable)	°C	30-57	30-57
Continuous DHW output	kW	29.3	33.5
Spec. flow rate at $\Delta T = 30$ K (to EN 13203)	l/min	13.9	16.7
Connection values			
Relative to the max. load with gas			
Natural gas E	m ³ /h	3.23	3.69
Natural gas LL	m ³ /h	3.75	4.30
LPG P	kg/h	2.38	2.73
Flue gas parameters*⁴			
Flue gas category to G 635/G 636		G ₅₂ /G ₅₁	G ₅₂ /G ₅₁
Temperature (at a return temperature of 30 °C)			
– at rated heating output	°C	45	45
– at partial load	°C	35	35
Temperature (at a return temperature of 60 °C)			
	°C	70	70
Mass flow rate			
Natural gas			
– at rated heating output (DHW heating)	kg/h	54.3	62.1
– at partial load	kg/h	8.7	8.7
LPG			
– at rated heating output (DHW heating)	kg/h	51.5	58.9
– at partial load	kg/h	14.0	14.0
Available draught	Pa	250	250
	mbar	2.5	2.5
Standard seasonal efficiency [to DIN] at $T_F/T_R = 40/30$ °C		up to 98 (H _s) [gross cv] / 109 (H _i) [net cv]	
Max. amount of condensate to DWA-A 251	l/h	4.3	4.9
Internal diameter of the pipe to the safety valve	DN	15	15
Condensate connection (hose nozzle)	Ø mm	20-24	20-24
Flue gas connection	Ø mm	60	60
Ventilation air connection	Ø mm	100	100

*⁴ Calculation values for sizing the flue system to EN 13384.

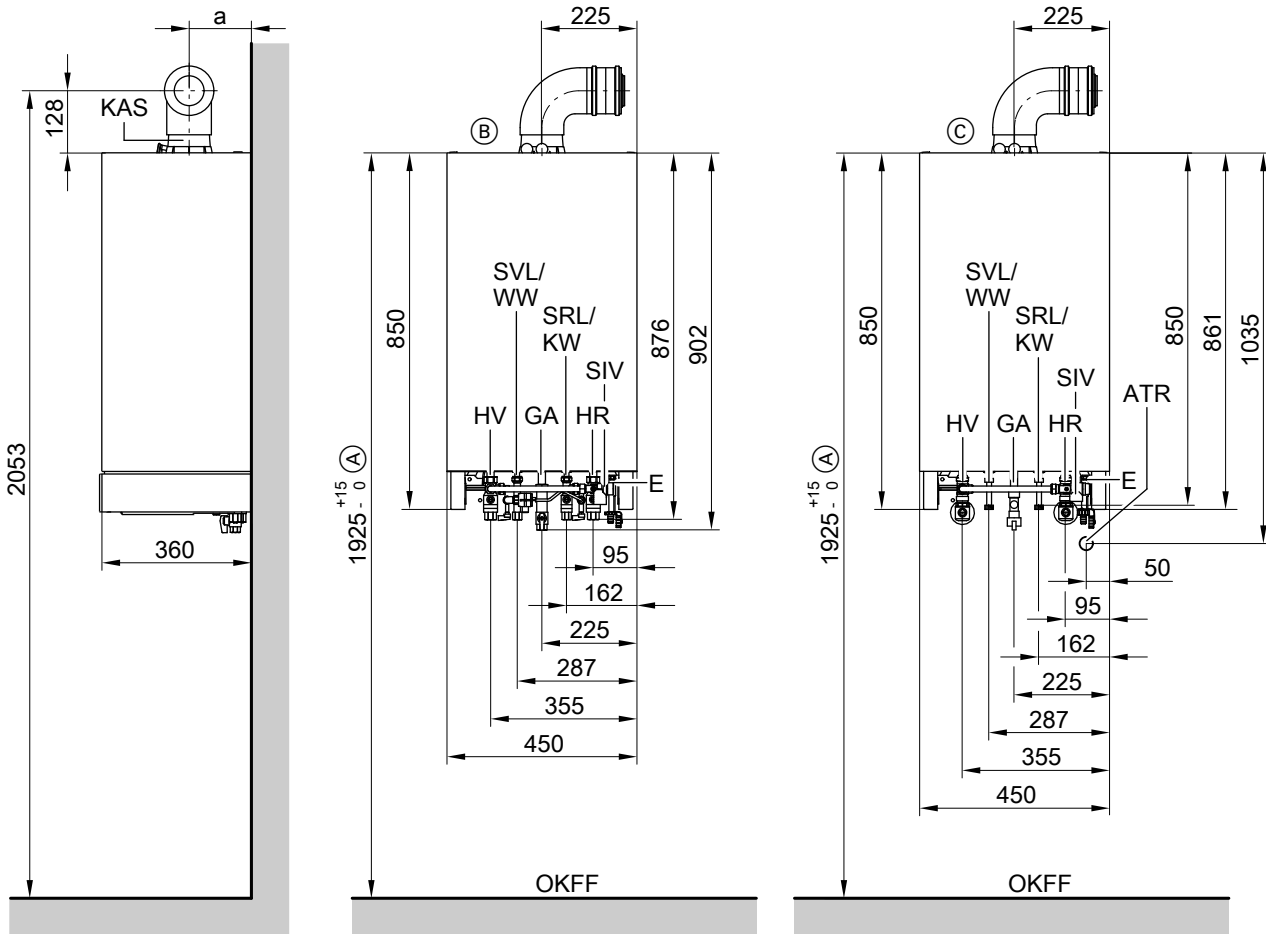
Flue gas temperatures as actual gross values at 20 °C combustion air temperature.

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

The flue gas temperature at a return temperature of 60 °C is used to determine the application range of flue pipes with maximum permissible operating temperatures.

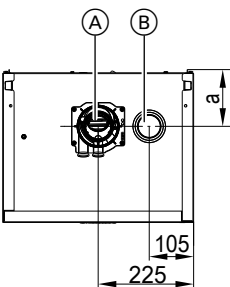
5822 430 GB

Vitodens 200-W (cont.)



- (A) Compulsory in conjunction with DHW cylinders below the boiler. Otherwise recommendation only.
- (B) Installation on finished walls
- (C) Installation on unfinished walls
- ATR Drain outlet connection
- E Drain
- GA Gas connection
- HR Heating return

- HV Heating flow
- KAS Boiler flue connection
- KW Cold water (gas condensing combi boiler)
- OKFF Top edge finished floor
- SIV Safety valve
- SRL Cylinder return (gas condensing boiler)
- SVL Cylinder flow (gas condensing boiler)
- WW DHW (gas condensing combi boiler)



Balanced flue connection

- (A) Balanced flue connection
- (B) Ventilation air connection (closed in delivered condition)

Rated heating output kW	Dim. a mm
3.2 - 13.0	136
3.2 - 19.0	136
5.2 - 26.0	158
5.2 - 35.0	158

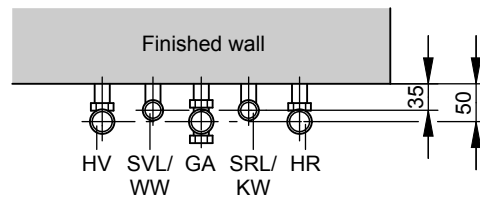
5822 430 GB

Note

For connection dimensions for installation on finished walls with pre-plumbing jig, see page 54.
For connection dimensions for installation on unfinished walls with pre-plumbing jig, see page 56.

Note

Lay all required supply cables on site and route them into the boiler at the point indicated (see page 52).



Vitodens 200-W (cont.)

Variable speed heating circuit pump in the Vitodens 200-W

The integral circulation pump is a highly efficient pump with substantially lower power consumption than conventional pumps.

The pump speed and consequently the pump rate are regulated subject to the outside temperature and the switching times for heating or reduced mode. The control unit transmits the current default settings via an internal data BUS to the circulation pump.

Individually match the minimum and maximum speeds plus the speed for reduced mode to the existing heating system using the control unit codes.

In the delivered condition, the minimum pump rate (coding address "E7") and the maximum pump rate (coding address "E6") are set to the following values:

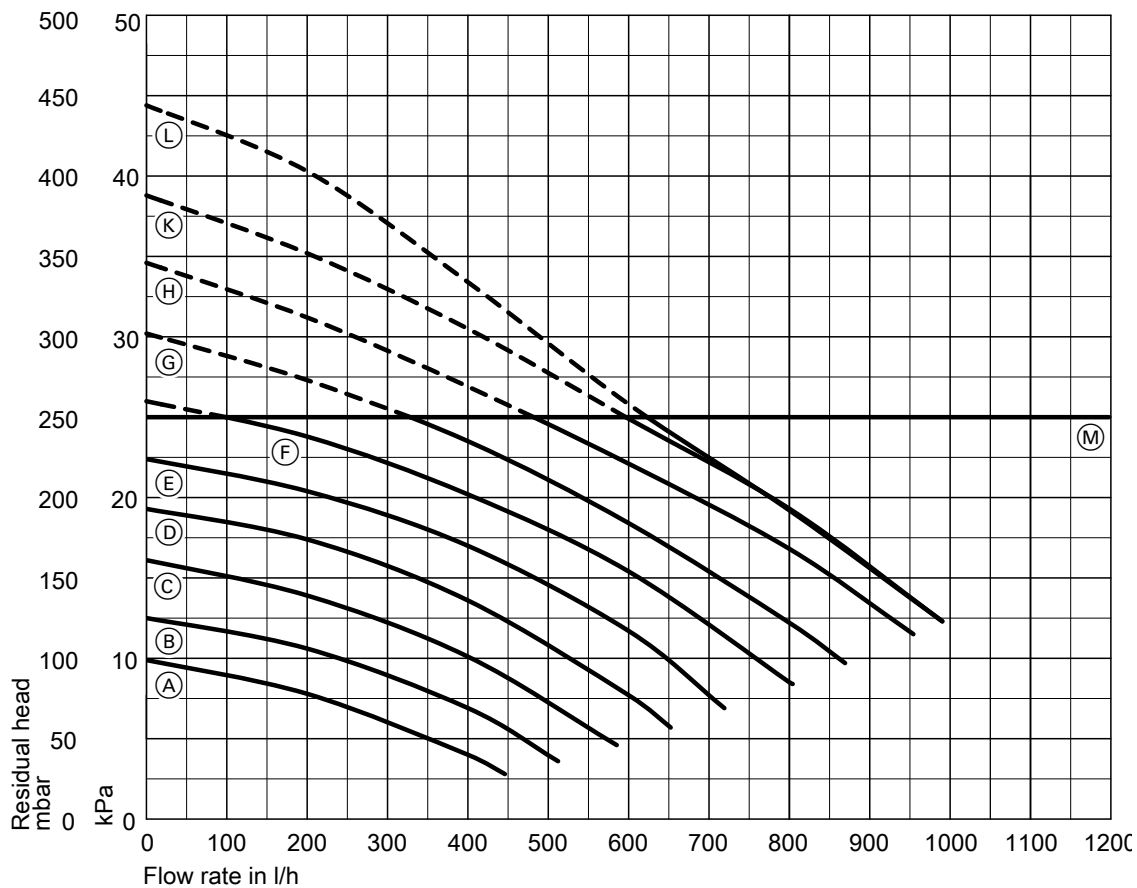
Rated heating output range in kW	Speed settings in the delivered condition in %	
	Min. pump rate	Max. pump rate
3.2-13	20	55
3.2-19	20	65
5.2-26	30	65
5.2-35	30	65

Specification – circulation pump

Rated heating output	kW	3.2-13	3.2-19	5.2-26	5.2-35
Circulation pump	Type	UPM2 15-50	UPM2 15-50	UPM2 15-70	UPM2 15-70
Rated voltage	V~	230	230	230	230
Power consumption					
– Max.	W	37	37	70	70
– Min.	W	6	6	6	6
– Delivered condition	W	20	25	35	40

Residual head of the integral circulation pump

Vitodens 200-W, 3.2-19 kW

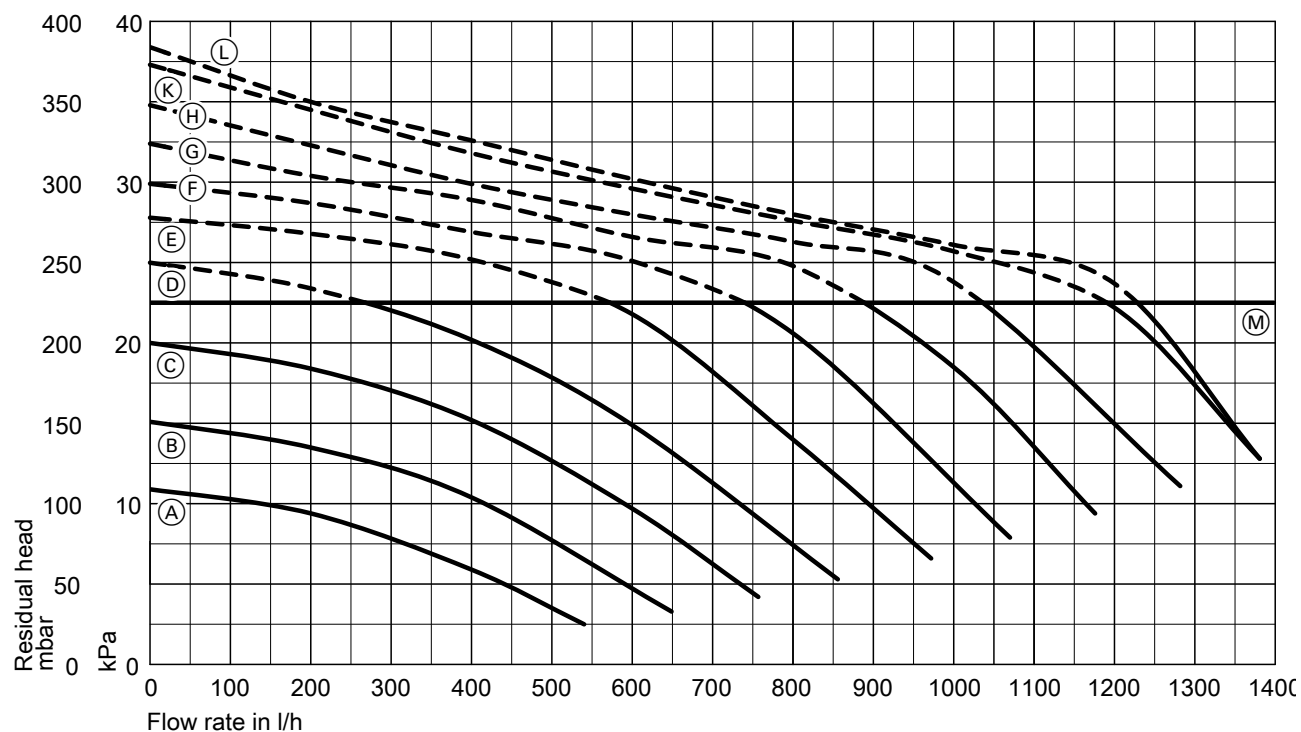


Ⓜ Upper operational limit

Vitodens 200-W (cont.)

Curve	Pump rate, circulation pump	Coding address setting "E6"
(A)	10 %	E6:010
(B)	20 %	E6:020
(C)	30 %	E6:030
(D)	40 %	E6:040
(E)	50 %	E6:050
(F)	60 %	E6:060
(G)	70 %	E6:070
(H)	80 %	E6:080
(K)	90 %	E6:090
(L)	100 %	E6:100

Vitodens 200-W, 5.2-35 kW



(M) Upper operational limit

Curve	Pump rate, circulation pump	Coding address setting "E6"
(A)	10 %	E6:010
(B)	20 %	E6:020
(C)	30 %	E6:030
(D)	40 %	E6:040
(E)	50 %	E6:050
(F)	60 %	E6:060
(G)	70 %	E6:070
(H)	80 %	E6:080
(K)	90 %	E6:090
(L)	100 %	E6:100

Instantaneous standby water heater (gas condensing combi boiler)

An instantaneous standby water heater is integrated into the Vitodens 200-W. When the convenience function is switched ON, the temperature of the instantaneous water heater will be maintained. This makes DHW at drawing temperature available from the Vitodens instantly.

Vitodens 200-W (cont.)

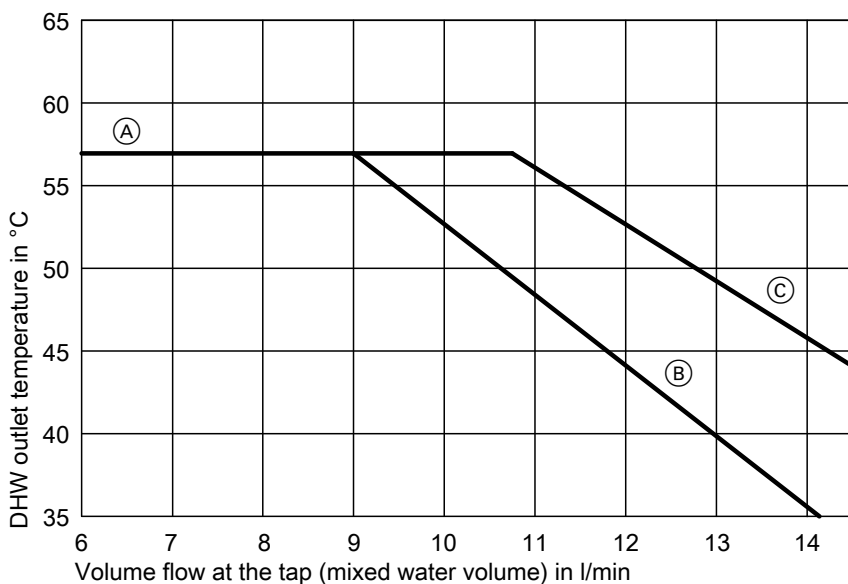
Specification, instantaneous standby water heater

Capacity			
- DHW side	l		1.0
- Heating water side	l		0.7
Connections		G	½
Hot and cold water			
Max. operating pressure		bar	10
		MPa	1.0

Output

Rated heating output range of the gas combi boiler	kW	5.2-26.0	5.2-35.0
Continuous DHW output for DHW heating from 10 to 45 °C	kW l/h	29.3 720	33.5 825
Draw-off rate	l/min	3-12	3-14
Outlet temperature, adjustable	°C	30-57	30-57

DHW temperature subject to flow rate



- (A) DHW outlet temperature at the mixer tap
- (B) Vitodens 200-W, 5.2 to 26 kW
- (C) Vitodens 200-W, 5.2 to 35 kW

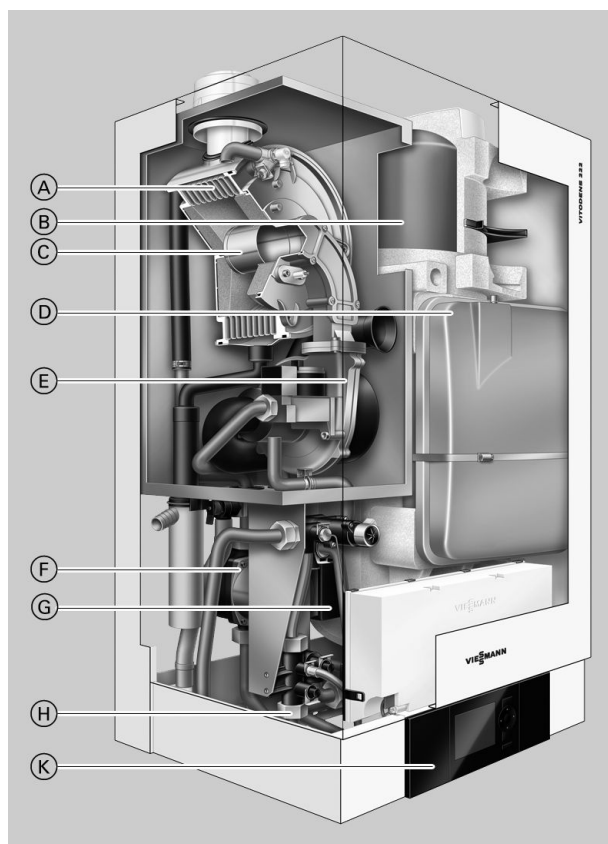
The diagram illustrates the changes in the outlet temperature, subject to the flow rate at the draw-off point.

If a greater volume of water is required, cold water needs to be admixed, which reduces the outlet temperature.

The illustrated outlet temperature characteristics are based on a cold water inlet temperature of 10 °C.

Vitodens 222-W

2.1 Product description



- (A) Inox-Radial heat exchangers made from stainless steel - for high operational reliability, a long service life and high heating output on a very small footprint
- (B) Loading cylinder made from stainless steel
- (C) Modulating MatriX cylinder burner with intelligent Lambda Pro Control combustion controller for clean combustion and quiet operation
- (D) Integral diaphragm expansion vessel
- (E) Variable speed combustion air fan for quiet and economical operation
- (F) Integral, variable speed high efficiency circulation pump
- (G) Plate heat exchanger
- (H) Gas and water connections
- (K) Digital boiler control unit

2

The Vitodens 222-W is a particularly space-efficient, wall mounted, gas condensing storage combi boiler for high DHW demands. The heat cell is comprised of the proven stainless steel Inox-Radial heat exchanger, the modulating MatriX cylinder burner and the automatic Lambda Pro Control combustion controller.

The integral 46 litre stainless steel loading cylinder offers the same DHW convenience as a separate 150 litre DHW cylinder with internal indirect coils. DHW is available immediately at the required temperature and with high consistency, even simultaneously at different draw-off points. Apart from the loading cylinder, nearly all vital system components such as heating water expansion vessels, pumps and safety valves are integrated and fully fitted. All that with a total weight of only 60 kg (3.2 to 19.0 kW) and in a casing that fits into a standard kitchen unit width of 600 mm.

The Vitodens 222-W is the ideal product, particularly in new build, as it can be installed before the screed is put down.

Recommended applications

- Detached and terraced houses
- New build (e.g. pre-fabricated houses and housing association projects): installation in utility rooms and attics
- Modernisation: Replacement of system boilers, floorstanding atmospheric gas boilers and oil/gas boilers with DHW cylinders below.

Benefits at a glance

- 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
- High DHW convenience: NL (performance factor) up to 1.5 (corresponds to a separate DHW cylinder with approx. 150 litre capacity)
- Energy-saving high efficiency circulation pump (compliant with Energy Label A)
- Easy-to-use Vitotronic control unit with plain text and graphic display

- The programming unit of the control unit can also be fitted on a wall mounting base (accessories)
- Lambda Pro Control combustion controller for all gas types – saves on costs, with inspection interval extended to 3 years
- All system components, such as loading cylinder, (heating water) expansion vessel, pumps and safety valves are fully fitted.

Delivered condition

Wall mounted gas condensing boiler with Inox-Radial heat exchanger, integral loading cylinder made from stainless steel, modulating MatriX cylinder burner for natural gas and LPG to DVGW Code of Practice G260 [Germany], AquaBloc with multi connect system, and variable speed high efficiency circulation pump.

With diaphragm expansion vessel for heating water.

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).

Accessories required (order separately)

Installation aid with:

- Fixings
- Valves/fittings
- DHW safety valve
- Boiler drain & fill valve
- Gas shut-off valve with thermally activated safety shut-off valve

For installation either on finished or unfinished walls.

5822 430 GB

Vitodens 222-W (cont.)

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 to RAL UZ 61.

2.2 Specification

Gas boiler, series B and C, Category II _{2N3P}		Values in () when operating with LPG P			
Rated heating output range (to EN 677)					
$T_F/T_R = 50/30\text{ °C}$	kW	3.2 (4.8) - 13.0	3.2 (4.8) - 19.0	5.2 (8.8) - 26.0	5.2 (8.8) - 35.0
$T_F/T_R = 80/60\text{ °C}$	kW	2.9 (4.3) - 11.8	2.9 (4.3) - 17.2	4.7 (8.0) - 23.7	4.7 (8.0) - 31.7
Rated heating output range for DHW heating					
	kW	2.9 (4.3) - 17.2	2.9 (4.3) - 17.2	4.7 (8.0) - 29.3	4.7 (8.0) - 33.5
Rated heat input					
	kW	3.1 (4.5) - 17.9	3.1 (4.5) - 17.9	4.9 (8.3) - 30.5	4.9 (8.3) - 34.9
Product ID		CE-0085CN0050			
IP rating		IP X4D to EN 60529			
Gas supply pressure					
Natural gas	mbar	20	20	20	20
	kPa	2	2	2	2
LPG	mbar	50	50	50	50
	kPa	5	5	5	5
Max. permissible gas supply pressure^{*5}					
Natural gas	mbar	25.0	25.0	25.0	25.0
	kPa	2.5	2.5	2.5	2.5
LPG	mbar	57.5	57.5	57.5	57.5
	kPa	5.75	5.75	5.75	5.75
Power consumption					
– In delivered condition	W	39	53	68	89
– Max.	W	102	105	154	166
Weight					
	kg	60	60	63	67
Heat exchanger content					
	l	1.8	1.8	2.4	2.8
Max. flow rate					
(limit for the use of hydraulic separation)		l/h	1200	1200	1400
Nominal circulation water volume					
at $\Delta T = 20\text{ K}$		l/h	537	739	1018
Diaphragm expansion vessel					
Capacity	l	10	10	10	10
Pre-charge pressure	bar	0.8	0.8	0.8	0.8
	kPa	80	80	80	80
Permiss. operating pressure					
	bar	3	3	3	3
	MPa	0.3	0.3	0.3	0.3
Connections					
Boiler flow and return	G	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$
Cold water and DHW	G	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
Dimensions					
Length	mm	480	480	480	480
Width	mm	600	600	600	600
Height	mm	900	900	900	900
Height with flue bend	mm	1028	1028	1028	1028
Gas connection (with connection accessories)					
	R	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
DHW loading cylinder					
Capacity	l	46	46	46	46
Permiss. operating pressure (DHW side)	bar	10	10	10	10
	MPa	1.0	1.0	1.0	1.0
	kW	17.2	17.2	29.3	33.5
Continuous DHW output	l/10 min	135	135	180	200
for DHW heating from 10 to 45 °C					
Performance factor N_L ^{*6}		1.0	1.0	1.3	1.5
Connection values					
Relative to the max. load with gas					
Natural gas E	m ³ /h	1.89	1.89	3.23	3.69
Natural gas LL	m ³ /h	2.20	2.20	3.75	4.30
LPG P	kg/h	1.40	1.40	2.38	2.73

^{*5} If the gas supply pressure is higher than the maximum permissible value, install a separate gas pressure governor upstream of the system.

^{*6} At 70 °C average boiler water temperature and cylinder storage temperature $T_{sp} = 60\text{ °C}$.

The DHW performance factor N_L depends on the cylinder storage temperature T_{cyl} .

Standard values: $T_{sp} = 60\text{ °C} \rightarrow 1.0 \times N_L$ $T_{sp} = 55\text{ °C} \rightarrow 0.75 \times N_L$ $T_{sp} = 50\text{ °C} \rightarrow 0.55 \times N_L$ $T_{sp} = 45\text{ °C} \rightarrow 0.3 \times N_L$.

Vitodens 222-W (cont.)

Gas boiler, series B and C, Category II _{2N3P}		Values in () when operating with LPG P			
Rated heating output range (to EN 677)					
$T_F/T_R = 50/30$ °C	kW	3.2 (4.8) - 13.0	3.2 (4.8) - 19.0	5.2 (8.8) - 26.0	5.2 (8.8) - 35.0
$T_F/T_R = 80/60$ °C	kW	2.9 (4.3) - 11.8	2.9 (4.3) - 17.2	4.7 (8.0) - 23.7	4.7 (8.0) - 31.7
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
Temperature (at a return temperature of 30 °C)					
– at rated heating output	°C	45	45	45	45
– at partial load	°C	35	35	35	35
Temperature (at a return temperature of 60 °C)					
– at rated heating output	°C	68	68	70	70
Mass flow rate					
Natural gas					
– at rated heating output (DHW heating)	kg/h	31.8	31.8	54.3	62.1
– at partial load	kg/h	5.5	5.5	8.7	8.7
LPG					
– at rated heating output (DHW heating)	kg/h	30.2	30.2	51.5	58.9
– at partial load	kg/h	7.6	7.6	14.0	14.0
Available draught					
	Pa	250	250	250	250
	mbar	2.5	2.5	2.5	2.5
Standard seasonal efficiency [to DIN]					
at $T_F/T_R = 40/30$ °C	%	up to 98 (H _s) [gross cv] / 109 (H _i) [net cv]			
Max. amount of condensate to DWA-A 251	l/h	2.3	2.5	4.3	4.9
Internal diameter of the pipe to the safety valve	DN	15	15	15	15
Condensate connection (hose nozzle)	Ø mm	20-24	20-24	20-24	20-24
Flue gas connection	Ø mm	60	60	60	60
Ventilation air connection	Ø mm	100	100	100	100

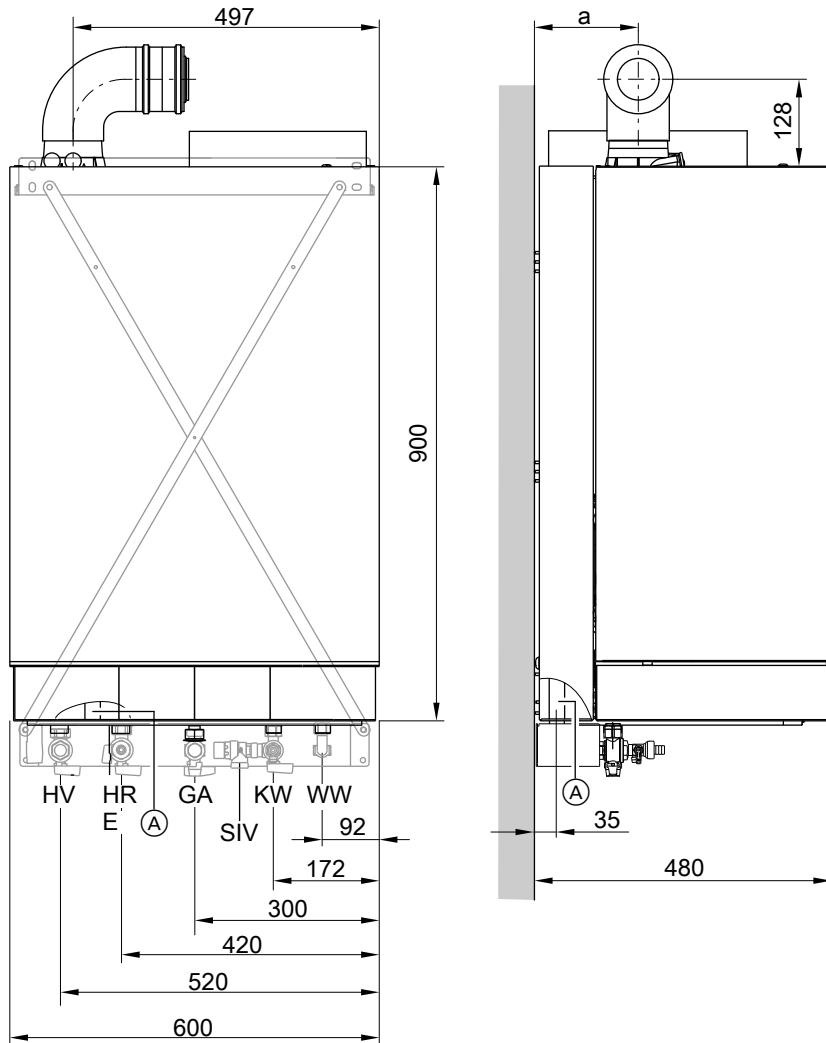
^{*2} Calculation values for sizing the flue system to EN 13384.

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

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

The flue gas temperature at a return temperature of 60 °C is used to determine the application range of flue pipes with maximum permissible operating temperatures.

Vitodens 222-W (cont.)



2

- Ⓐ Condensate drain
- E Drain
- GA Gas connection
- HR Heating return

- HV Heating flow
- KW Cold water
- SIV Safety valve on the DHW side
- WW DHW

Rated heating output kW	Dim. a mm
3.2 - 19.0	143
5.2 - 35.0	168

Note

For connection dimensions for installation on finished walls with pre-plumbing jig, see page 59.

For connection dimensions for installation on unfinished walls with pre-plumbing jig, see page 60.

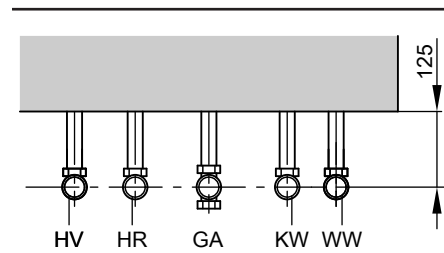
Note

Lay all required supply cables on site and route them into the boiler at the point indicated (see page 52).

Variable speed heating circuit pump in the Vitodens 222-W

The integral circulation pump is a highly efficient pump with substantially lower power consumption than conventional pumps.

The pump speed and consequently the pump rate are regulated subject to the outside temperature and the switching times for heating or reduced mode. The control unit transmits the current default settings via an internal data BUS to the circulation pump.



Individually match the minimum and maximum speeds plus the speed for reduced mode to the existing heating system using the control unit codes.

In the delivered condition, the minimum pump rate (coding address "E7") and the maximum pump rate (coding address "E6") are set to the following values:

5822 430 GB

Vitodens 222-W (cont.)

Rated heating output range in kW	Speed settings in the delivered condition in %	
	Min. pump rate	Max. pump rate
3.2-13	20	55
3.2-19	20	65
5.2-26	30	65
5.2-35	30	65

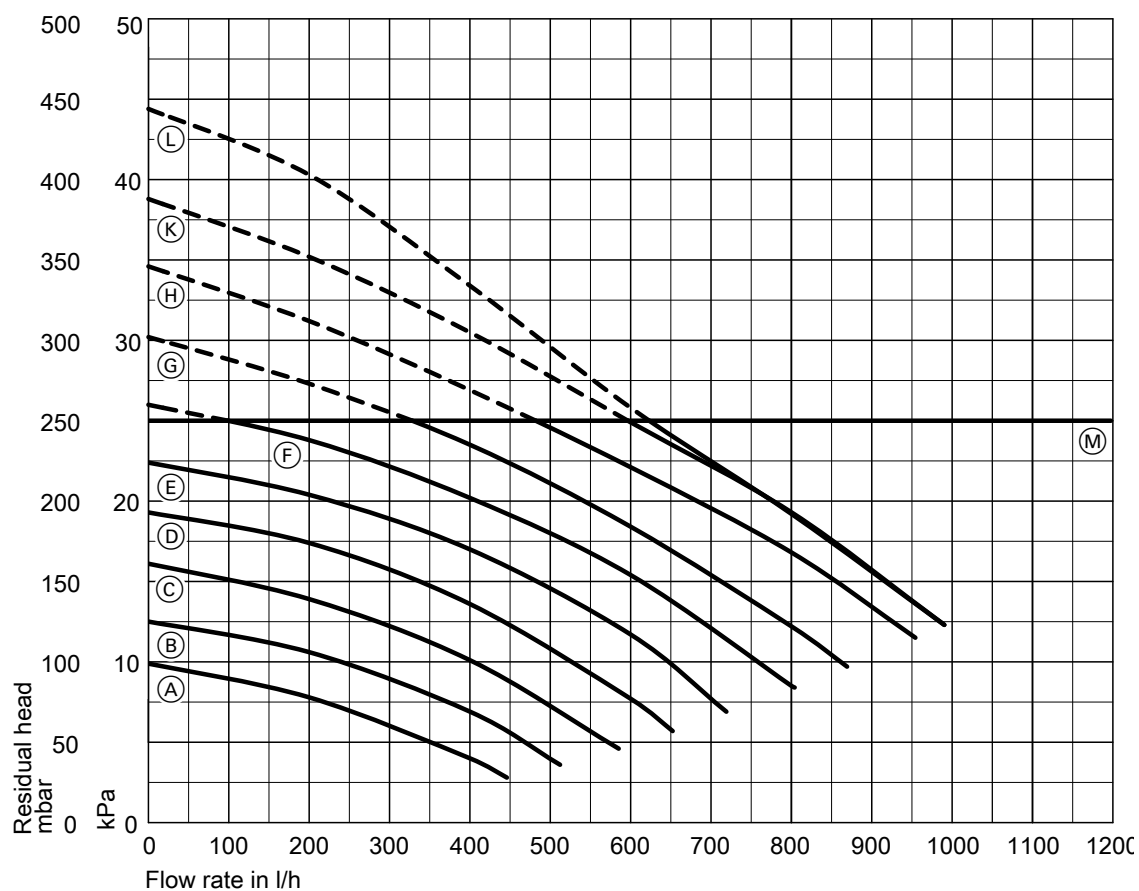
Specification – circulation pump

Rated heating output	kW	3.2-13	3.2-19	5.2-26	5.2-35
Circulation pump	Type	UPM2 15-50	UPM2 15-50	UPM2 15-70	UPM2 15-70
Rated voltage	V~	230	230	230	230
Power consumption					
– Max.	W	37	37	70	70
– Min.	W	6	6	6	6
– Delivered condition	W	20	25	35	40

2

Residual head of the integral circulation pump

Vitodens 222-W, 3.2-19 kW



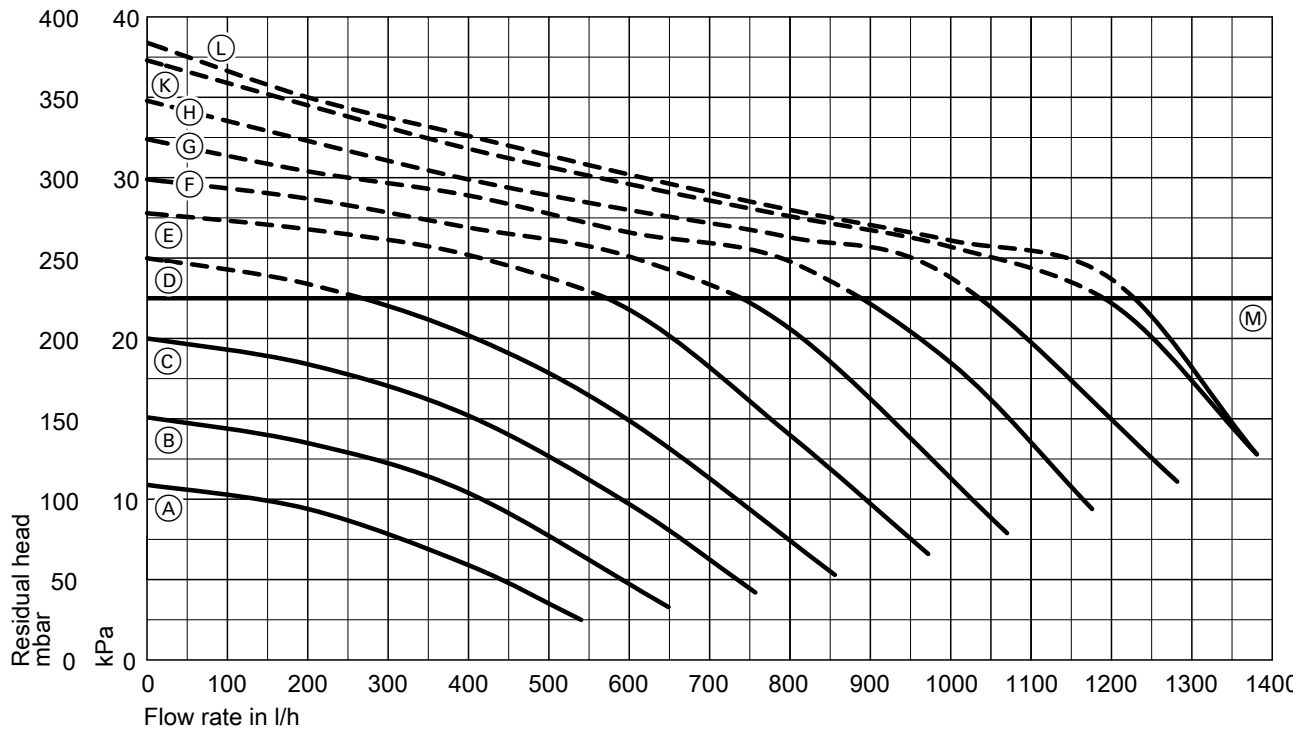
Ⓜ Upper operational limit

Curve	Pump rate, circulation	Coding address setting "E6"
Ⓐ	10 %	E6:010
Ⓑ	20 %	E6:020
Ⓒ	30 %	E6:030
Ⓓ	40 %	E6:040
Ⓔ	50 %	E6:050
Ⓕ	60 %	E6:060
Ⓖ	70 %	E6:070
Ⓗ	80 %	E6:080
Ⓚ	90 %	E6:090
Ⓛ	100 %	E6:100

5822 430 GB

Vitodens 222-W (cont.)

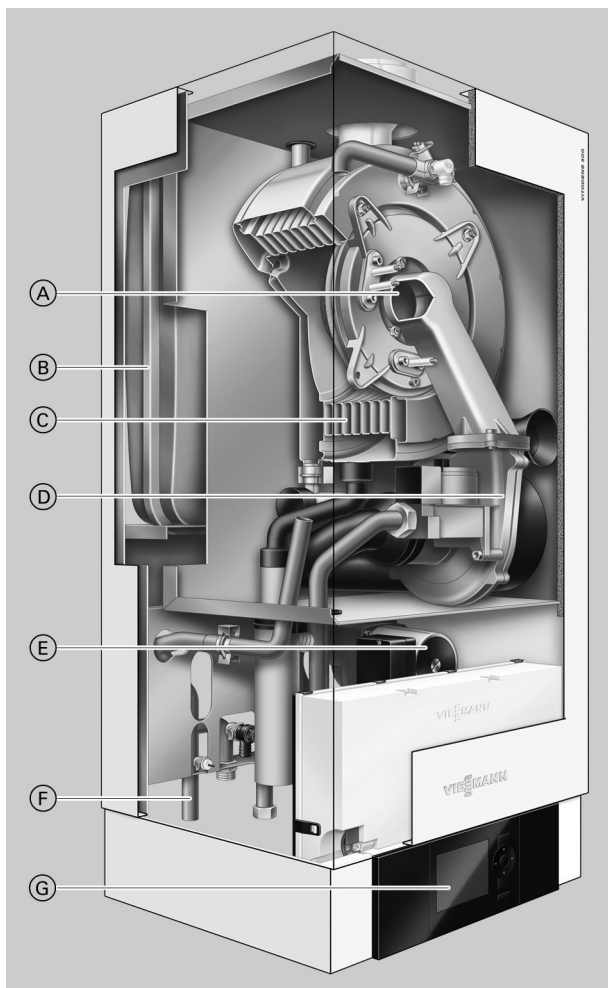
Vitodens 222-W, 5.2-35 kW



(K) Upper operational limit

Curve	Pump rate, circulation pump	Coding address setting "E6"
(A)	10 %	E6:010
(B)	20 %	E6:020
(C)	30 %	E6:030
(D)	40 %	E6:040
(E)	50 %	E6:050
(F)	60 %	E6:060
(G)	70 %	E6:070
(H)	80 %	E6:080
(K)	90 %	E6:090
(L)	100 %	E6:100

3.1 Product description



- Ⓐ Modulating MatriX gas burner with intelligent Lambda Pro Control combustion controller for extremely clean combustion and quiet operation
- Ⓑ Integral diaphragm expansion vessel (Vitodens 300-W, up to 19 kW)
- Ⓒ Inox-Radial heat exchangers made from stainless steel - for high operational reliability, a long service life and high heating output on a very small footprint
- Ⓓ Variable speed combustion air fan for quiet and economical operation
- Ⓔ Integral, variable speed high efficiency circulation pump
- Ⓕ Gas and water connections
- Ⓖ Digital boiler control unit

3

The top model among the wall mounted gas condensing boilers is the Vitodens 300-W. The MatriX gas burner and Inox Radial heat exchanger made of stainless steel are a combination that guarantees high efficiency and high long-term heating convenience.

All Vitodens 300-W models are now equipped with the automatic Lambda Pro Control combustion controller. Modulation range up to 1:10 (19 kW).

The integral variable speed high efficiency circulation pump reduces power consumption by up to 70 %.

The Vitodens 300-W is equipped with integral sensor technology that enables operation without additional measures to ensure a minimum flow rate. The integral flow rate sensor allows hydraulic balancing with minimum effort (eligible for KfW subsidies [in Germany]).

Recommended applications

- Modernisation of heating systems on single floors or in detached houses with high demands for central heating and DHW convenience
- Systems with little space available for the boiler or tight (flexible) installation locations (e.g. attic or inside furniture)
- Replacement of existing floorstanding boilers in various systems, also with several heating circuits and underfloor heating

Benefits at a glance

- Standard seasonal efficiency [to DIN]: up to 98 % (H_s) [gross cv]/ 109 % (H_i) [net cv]
- Low cycle frequency, even with low heat demand, through optimised pauses and wider modulation range of up to 1:10 (19 kW)

- Durable and efficient through the Inox-Radial heat exchanger with water-cooled front and back panel, plus venting function
- MatriX gas burner (spherical burner) with Lambda Pro Control combustion controller for permanently high efficiency and clean combustion.
- Energy-saving high efficiency circulation pump (compliant with Energy Label A)
- Easy to operate Vitotronic control unit with plain text and graphic display, as well as integral wireless and communication interface, can be operated alternatively via a smartphone app
- Easy hydraulic connections: no overflow valve required
- Diffusion-proof expansion vessel with a high-quality butyl diaphragm
- Set up for automated hydraulic balancing

Delivered condition

Wall mounted gas condensing boiler with Inox-Radial heat exchanger, modulating MatriX gas burner for natural gas and LPG to DVGW Code of Practice G260 [Germany], aqua plate with multi connect system and variable speed high efficiency circulation pump.

Vitotronic 200 RF for weather-compensated operation with radio interface and integral LON communication module with communication interface.

Fully plumbed and wired. White epoxy-coated casing.

For Vitodens 300-W, 1.9 to 19 kW: Integral diaphragm expansion vessel (10 litre capacity).

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).

5822 430 GB

Vitodens 300-W (cont.)

Accessories required (order separately)

Vitodens installation directly on a wall

Pre-plumbing jig:

- With fastening elements
- With valves/fittings
- With boiler drain & fill valve
- With gas shut-off valve with thermally activated safety shut-off valve

For installation either on finished or unfinished walls.

Mounting frame (not for Vitodens 300-W, 1.9 to 19 kW):

- With diaphragm expansion vessel (18 litre capacity)
- With fastening elements
- With valves/fittings
- With boiler drain & fill valve
- With angle gas valve with thermally activated safety shut-off valve.

For installation on finished or unfinished walls with threaded fittings.

Vitodens installation in front of a wall

Self-supporting mounting frame (installed depth 110 mm):

- With fastening elements
- With valves/fittings
- With boiler drain & fill valve
- With angle gas valve with thermally activated safety shut-off valve

For installation with threaded fittings.

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 to RAL UZ 61.

3.2 Specification

Gas boiler, types B and C, category II _{2N3P}		Gas condensing boiler				
Rated heating output range (to EN 677)						
$T_F/T_R = 50/30\text{ °C}$	kW	1.9 - 11.0	1.9 - 19.0	4.0 - 26.0	4.0 - 35.0	
$T_F/T_R = 80/60\text{ °C}$	kW	1.7 - 10.1	1.7 - 17.2	3.6 - 23.7	3.6 - 31.7	
Rated heating output for DHW heating		kW	1.7 - 16.0	1.7 - 17.2	3.6 - 23.7	3.6 - 31.7
Rated heat input		kW	1.8 - 16.7	1.8 - 17.9	3.8 - 24.7	3.8 - 33.3
Product ID		CE-0085CM0463				
IP rating		IP X4D to EN 60529				
Gas supply pressure						
Natural gas	mbar	20	20	20	20	
	kPa	2	2	2	2	
LPG	mbar	50	50	50	50	
	kPa	5	5	5	5	
Max. permissible gas supply pressure ^{*7}						
Natural gas	mbar	25.0	25.0	25.0	25.0	
	kPa	2.5	2.5	2.5	2.5	
LPG	mbar	57.5	57.5	57.5	57.5	
	kPa	5.75	5.75	5.75	5.75	
Power consumption (in the delivered condition)		W	35	58	76	122
Weight		kg	50	50	48	50
Heat exchanger content		l	3.8	3.8	5.6	5.6
Max. flow rate (limit for the use of hydraulic separation)		l/h	1000	1200	1400	1600
Nominal circulation water volume at $T_F/T_R = 80/60\text{ °C}$		l/h	434	739	1018	1376
Diaphragm expansion vessel						
Capacity	l	10	10	—	—	
Pre-charge pressure	bar	0.75	0.75	—	—	
	kPa	75	75	—	—	
Permiss. operating pressure		bar	3	3	3	3
	MPa	0.3	0.3	0.3	0.3	
Safety valve connection		Rp	¾	¾	¾	¾
Dimensions						
Length	mm	360	360	380	380	
Width	mm	450	450	480	480	
Height	mm	850	850	850	850	
Height with flue bend	mm	1053	1053	1066	1066	
Height with DHW cylinder below the boiler	mm	1925	1925	1925	1925	
Gas connection		R	½	½	½	½
Connection values						
Relative to the max. load with gas						
Natural gas E	m ³ /h	1.77	1.89	2.61	3.52	
Natural gas LL	m ³ /h	2.05	2.20	3.04	4.10	
LPG P	kg/h	1.31	1.40	1.93	2.60	
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	
Temperature (at a return temperature of 30 °C)						
– at rated heating output	°C	45	45	45	45	
– at partial load	°C	35	35	35	35	
Temperature (at a return temperature of 60 °C)						
	°C	68	68	70	70	
Mass flow rate						
Natural gas						
– at rated heating output	kg/h	29.7	31.8	43.9	59.2	
– at partial load	kg/h	3.2	3.2	6.8	6.8	
LPG						
– at rated heating output	kg/h	28.2	30.3	41.7	56.3	
– at partial load	kg/h	3.0	3.0	6.4	6.4	
Available draught						
	Pa	250	250	250	250	
	mbar	2.5	2.5	2.5	2.5	

^{*7} If the gas supply pressure is higher than the maximum permissible value, install a separate gas pressure governor upstream of the system.

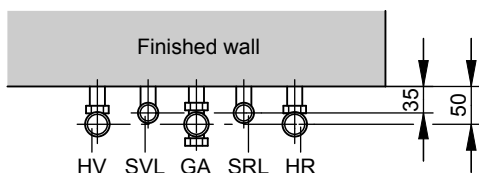
^{*2} Calculation values for sizing the flue system to EN 13384.

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

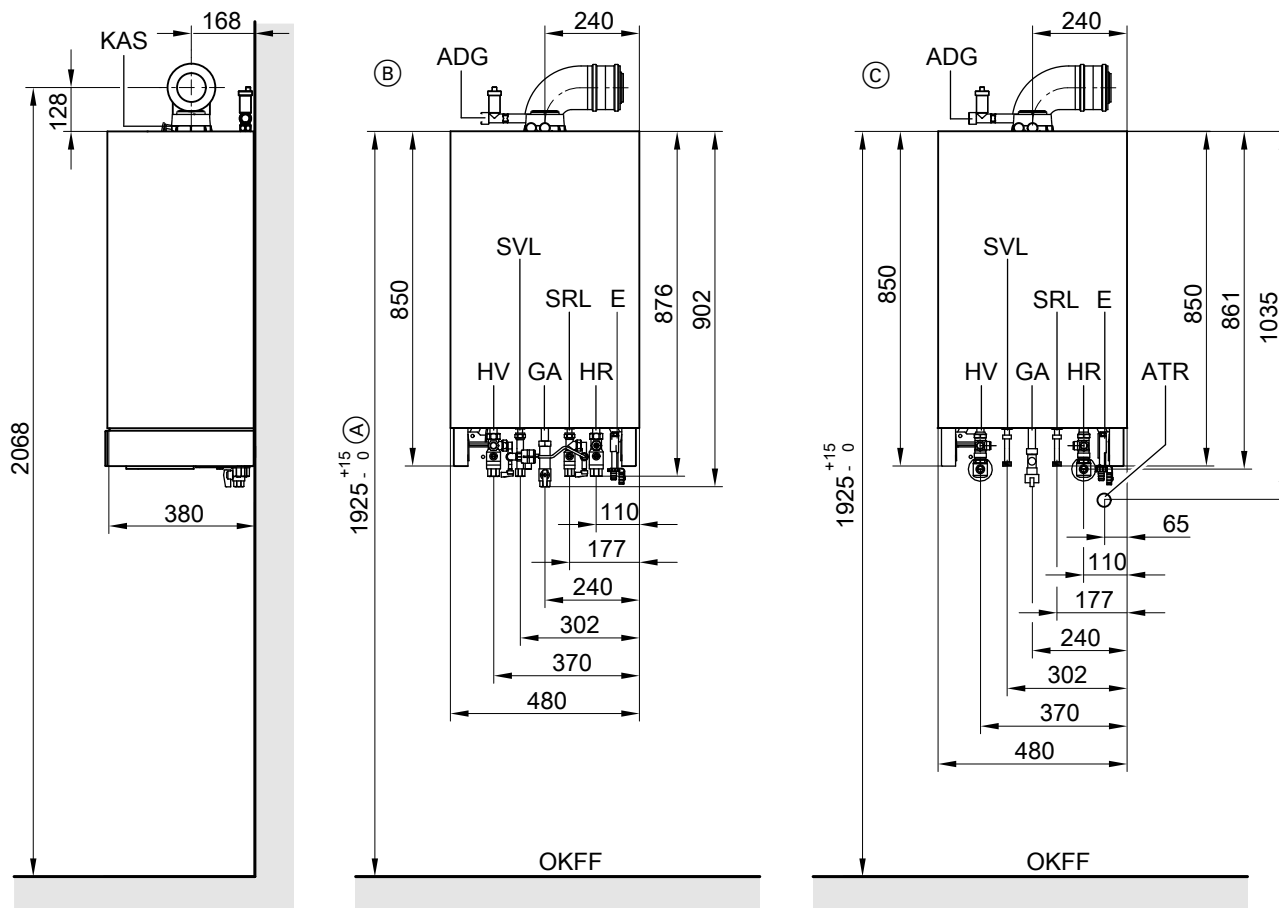
The flue gas temperature at a return temperature of 30 °C is significant for the sizing of the flue system.

The flue gas temperature at a return temperature of 60 °C is used to determine the application range of flue pipes with maximum permissible operating temperatures.

Vitodens 300-W (cont.)



Vitodens 300-W, 4.0 to 35 kW



- (A) Compulsory in conjunction with DHW cylinders below the boiler. Otherwise recommendation only.
 (B) Installation on finished walls
 (C) Installation on unfinished walls
 ADG Expansion vessel connection G 3/4
 ATR Drain outlet connection
 E Drain

- GA Gas connection
 HR Heating return
 HV Heating flow
 KAS Boiler flue connection
 OKFF Top edge finished floor
 SRL Cylinder return
 SVL Cylinder flow

Note

For connection dimensions for installation on finished walls with pre-plumbing jig, see page 54.

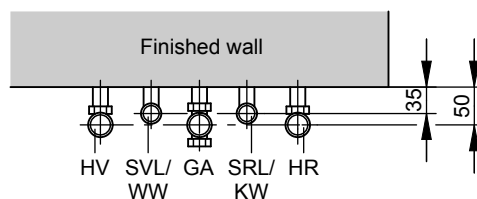
For connection dimensions for installation on unfinished walls with pre-plumbing jig, see page 57.

For connection dimensions for installation with a mounting frame, see page 58.

Note

Prepare all connections on site before commencing the boiler installation.

Lay all required supply cables on site and route them into the boiler at the point indicated (see page 52).



Vitodens 300-W (cont.)

Variable speed heating circuit pump in the Vitodens 300-W

3

Vitodens 300-W (cont.)

The integral circulation pump is a highly efficient pump with substantially lower power consumption than conventional pumps.

The pump speed and consequently the pump rate are regulated subject to the outside temperature and the switching times for heating or reduced mode. The control unit transmits the current default settings via an internal data BUS to the circulation pump.

Individually match the minimum and maximum speeds plus the speed for reduced mode to the existing heating system using the control unit codes.

In the delivered condition, the minimum pump rate (coding address "E7") is set to 10 %. The maximum pump rate (coding address "E6") is set to the following values:

Rated heating output range in kW	Speed settings in the delivered condition in %
1.9-11	45
1.9-19	65
4.0-26	65
4.0-35	80

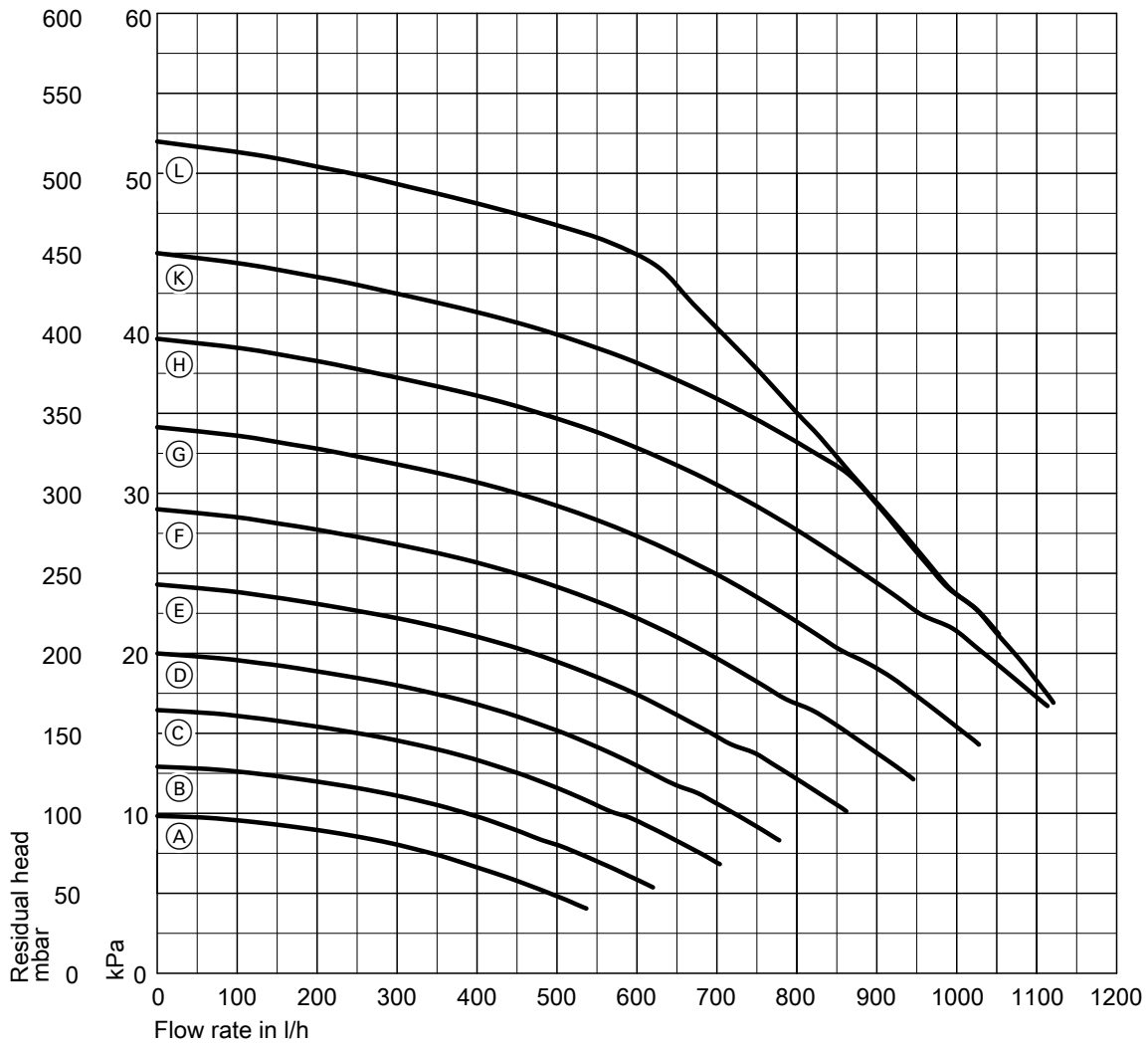
Specification – circulation pump

Rated heating output	kW	1.9-11	1.9-19	4.0-26	4.0-35
Circulation pump	Type	UPM2 15-50	UPM2 15-50	UPM2 15-70	UPM2 15-70
Rated voltage	V~	230	230	230	230
Power consumption					
– Max.	W	37	37	70	70
– Min.	W	5	5	5	5
– Delivered condition	W	14	24	39	60

Vitodens 300-W (cont.)

Residual head of the integral circulation pump

Vitodens 300-W, 1.9-19 kW

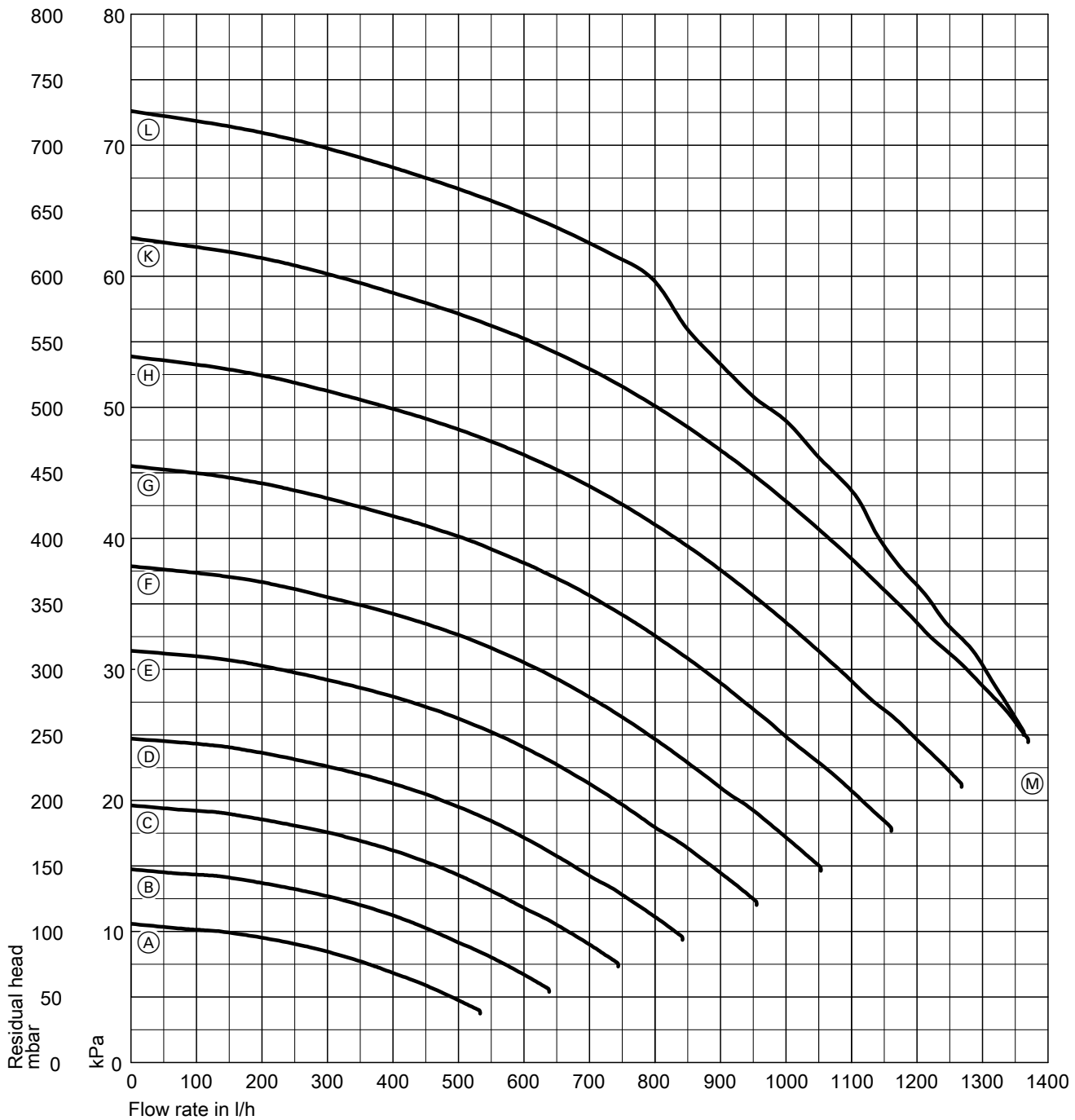


Curve	Pump rate, circulation pump	Coding address setting "E6"
(A)	10 %	E6:010
(B)	20 %	E6:020
(C)	30 %	E6:030
(D)	40 %	E6:040
(E)	50 %	E6:050
(F)	60 %	E6:060
(G)	70 %	E6:070
(H)	80 %	E6:080
(K)	90 %	E6:090
(L)	100 %	E6:100

Vitodens 300-W (cont.)

Vitodens 300-W, 4.0-35 kW

3



Curve	Pump rate, circulation pump	Coding address setting "E6"
(A)	10 %	E6:010
(B)	20 %	E6:020
(C)	30 %	E6:030
(D)	40 %	E6:040
(E)	50 %	E6:050
(F)	60 %	E6:060
(G)	70 %	E6:070
(H)	80 %	E6:080
(K)	90 %	E6:090
(L)	100 %	E6:100

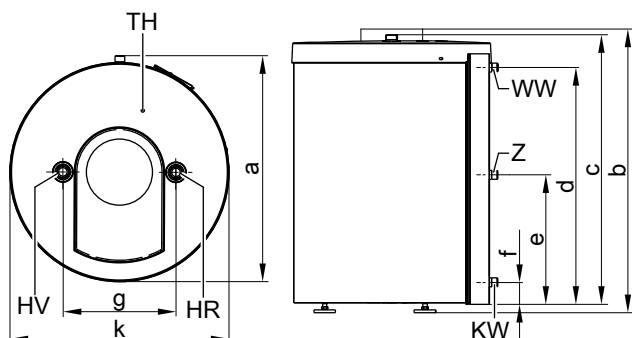
5822 430 GB

Separate DHW cylinders

4.1 Vitocell 100-W (type CUG) below the boiler, made from steel, with Ceraprotect enamel coating

- Installed below the boiler
- With internal indirect coils, made from steel, with Ceraprotect enamel coating

Capacity	I	100	120	150
DIN register no.		9W245/11-13 MC/E		
			With casing for connecting pipes	With casing for connecting pipes
Connections (male thread)				
Heating water flow and return	R	1	1	1
Hot and cold water	R	¾	¾	¾
DHW circulation	R	¾	¾	¾
Permiss. operating pressure				
Heating water and DHW sides	bar	10	10	10
	MPa	1	1	1
Permiss. temperatures				
– Heating water side	°C	160	160	160
– DHW side	°C	95	95	95
Standby heat loss q_{BS} at 45 K temp. differential (standard parameter to DIN V 18599)	kWh/24 h	1.49	1.60	1.60
Dimensions				
Length a	mm	624	618	623
Width k	mm	∅ 614	∅ 553	564
Height b	mm	850	904	1055
Total height	mm	-	1925 ^{+15/-0}	1925 ^{+15/-0}
Weight	kg	57	72	75
Heating surface	m ²	0.9	1.0	1.0



Vitocell 100-W (type CUG, 100 l)

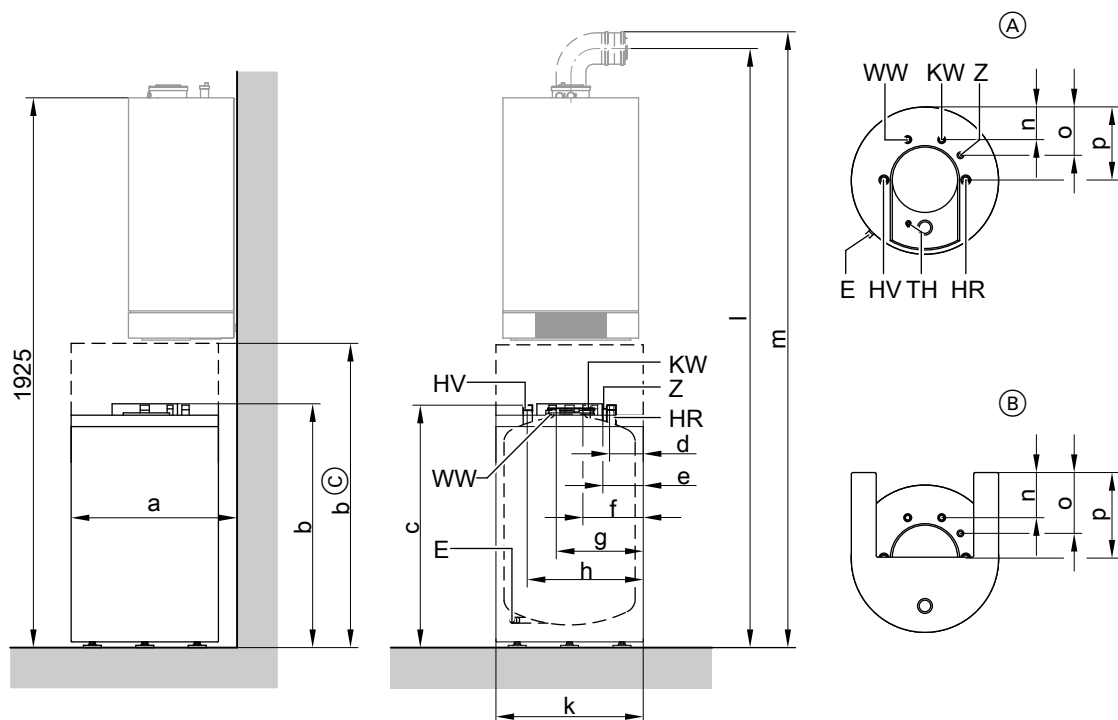
HR Heating return
 HV Heating flow
 KW Cold water

WW DHW
 TH Sensor well for cylinder temperature sensor
 Z DHW circulation

Dimensions		
a	mm	624
b	mm	850
c	mm	831
d	mm	733

Dimensions		
e	mm	412
f	mm	91
g	mm	308
k	mm	614

Separate DHW cylinders (cont.)



4

Vitocell 100-W (type CUG, 120 and 150 l)

- (A) View from above
- (B) View from above with casing for connecting pipes
- (C) Height with casing for connecting pipes
- E Drain
- HR Heating return

- HV Heating flow
- KW Cold water
- WW DHW
- TH Sensor well for cylinder temperature sensor
- Z DHW circulation

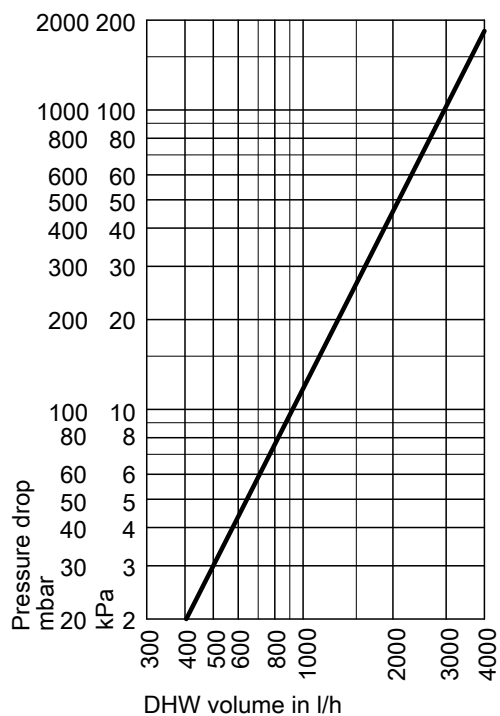
Dimensions

Capacity	120 l		150 l	
	Without casing for connecting pipes	With casing for connecting pipes	Without casing for connecting pipes	With casing for connecting pipes
a mm	618	623	661	667
b mm	904	1055	932	1055
c mm	875	875	902	902
d mm	122	128	144	150
e mm	143	149	165	171
f mm	214	220	235	241
g mm	339	345	360	366
h mm	430	436	452	458
k mm	Ø 553	564	Ø 596	607
l mm	2079	2079	2079	2079
m mm	2149	2149	2149	2149
n mm	126	191	148	213
o mm	183	248	205	270
p mm	276	341	298	363

5822 430 GB

Separate DHW cylinders (cont.)

Pressure drop on the DHW side



DHW output data at rated heating output

Rated heating output for DHW heating	kW	16	17	24	32
Continuous DHW output for DHW heating from 10 to 45 °C and an average boiler water temperature of 78 °C					
Cylinder capacity 100 l	kW	16	17	22	22
	l/h	390	415	540	540
Cylinder capacity 120 and 150 l	kW	16	17	24	24
	l/h	390	415	590	590
Performance factor N_L to DIN 4708					
Cylinder capacity 100 l		1.0	1.0	1.0	1.0
Cylinder capacity 120 l		1.2	1.2	1.2	1.2
Cylinder capacity 150 l		1.6	1.6	1.6	1.6
Peak output over a 10 minute period					
Cylinder capacity 100 l	l/10 min	143	143	143	143
Cylinder capacity 120 l	l/10 min	153	153	153	153
Cylinder capacity 150 l	l/10 min	173	173	173	173

Delivered condition

Vitocell 100-W, type CUG

100 litre capacity

DHW cylinder made from steel with Ceraprotect enamel coating.

- Welded sensor well for cylinder temperature sensor
- Threaded adjustable feet
- Protective magnesium anode
- Fitted thermal insulation (removable)

The colour of the plastic-coated thermal insulation is white.

120 and 150 litre capacity

DHW cylinder made from steel with Ceraprotect enamel coating.

- Welded sensor well for cylinder temperature sensor
- Threaded adjustable feet
- Protective magnesium anode
- Fitted thermal insulation

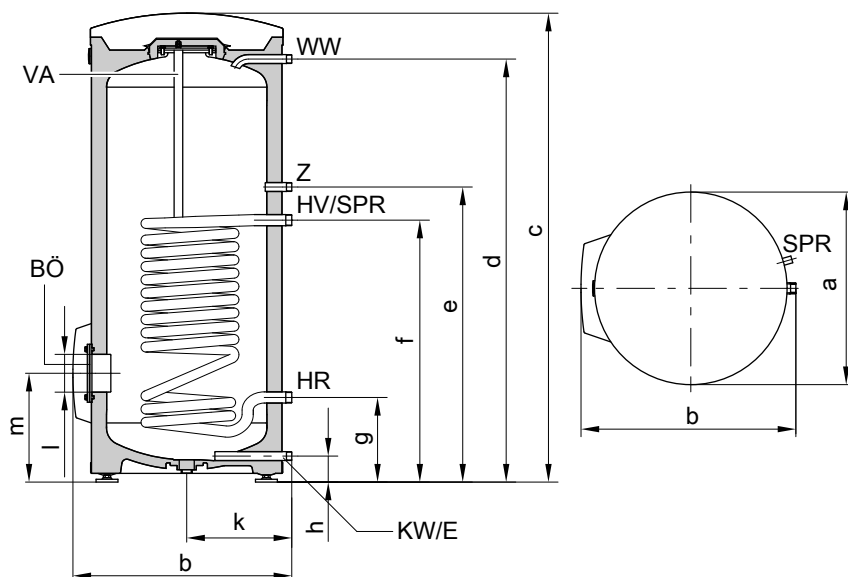
The colour of the epoxy-coated sheet steel casing is white.

Separate DHW cylinders (cont.)

4.2 Vitocell 100-W adjacent to the boiler (type CVA - 160, 200 and 300 l, white finish), made from steel, with Ceraprotect enamel coating

- Installed adjacent to the boiler
 - With internal indirect coils, made from steel, with Ceraprotect enamel coating
- (For further technical details, see the separate datasheet for the Vitocell 100-V)

Capacity	l	160	200	300
DIN register no.		9W241/11-13 MC/E		
Connections (male thread)				
Heating water flow and return	R	1	1	1
Hot and cold water	R	¾	¾	1
DHW circulation	R	¾	¾	1
Permiss. operating pressure				
– Heating water side	bar	25	25	25
	MPa	2.5	2.5	2.5
– DHW side	bar	10	10	10
	MPa	1	1	1
Permiss. temperatures				
– Heating water side	°C	160	160	160
– DHW side	°C	95	95	95
Standby heat loss q_{BS} at 45 K temp. differential (actual values to DIN 4753-8)	kWh/24 h	1.50	1.70	2.20
Dimensions				
Length a (∅)	mm	581	581	633
Width b	mm	608	608	705
Height c	mm	1189	1409	1746
Weight	kg	86	97	151



BÖ Inspection port/cleaning aperture only with 300 litre capacity.
 E Drain
 HR Heating return
 HV Heating flow
 KW Cold water

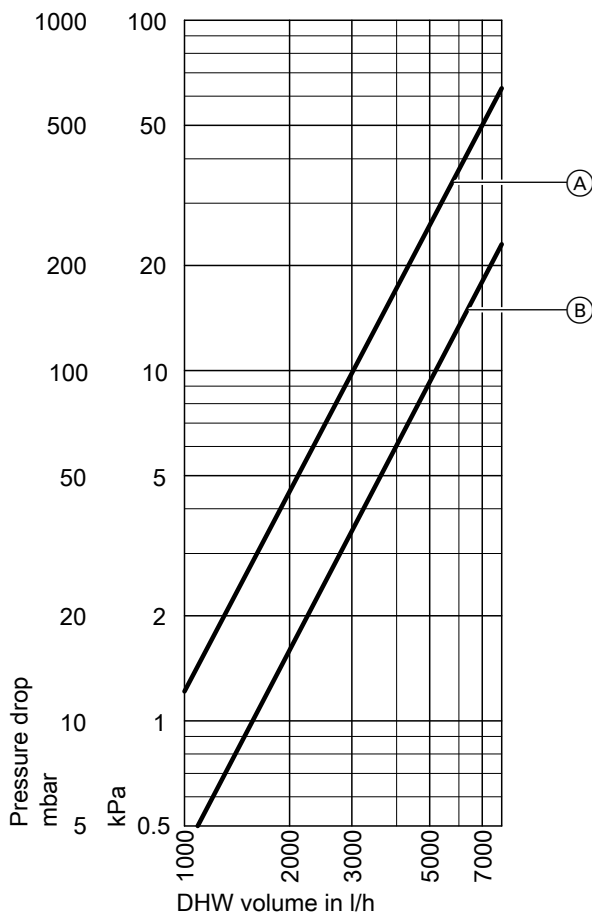
SPR Sensor well for cylinder temperature sensor or thermostat
 VA Protective magnesium anode
 WW DHW
 Z DHW circulation

Separate DHW cylinders (cont.)

Dimensions

Cylinder capacity	l	160	200	300
a	mm	∅ 581	∅ 581	∅ 633
b	mm	608	608	705
c	mm	1189	1409	1746
d	mm	1050	1270	1600
e	mm	884	884	1115
f	mm	634	634	875
g	mm	249	249	260
h	mm	72	72	76
k	mm	317	317	343
l	mm	–	–	∅ 100
m	mm	–	–	333

Pressure drop on the DHW side



- (A) 160 and 200 litres
 (B) 300 litres

DHW output data at rated heating output

Rated heating output for DHW heating	kW	16	17	24	32
Continuous DHW output					
when heating DHW from 10 to 45 °C and with an average boiler water temperature of 78 °C					
Cylinder capacity 160 and 200 l	kW	16	17	24	26
	l/h	390	415	590	638
Cylinder capacity 300 l	kW	16	17	24	32
	l/h	390	415	590	786

5822 430 GB

Separate DHW cylinders (cont.)

Rated heating output for DHW heating	kW	16	17	24	32
Performance factor N_L					
to DIN 4708					
Cylinder capacity 160 l		1.6	2.0	2.2	2.2
Cylinder capacity 200 l		2.6	3.0	3.2	3.2
Cylinder capacity 300 l		7.5	7.5	8.0	8.0
Peak output					
over a 10 minute period					
Cylinder capacity 160 l	l/10 min	173	190	199	199
Cylinder capacity 200 l	l/10 min	214	230	236	236
Cylinder capacity 300 l	l/10 min	357	357	368	368

Delivered condition

Vitocell 100-W, type CVA

160 to 300 litre capacity

DHW cylinder made from steel with Ceraprotect enamel coating.

- Welded-in sensor well for cylinder temperature sensor or thermostat
- Threaded adjustable feet

- Protective magnesium anode

- Fitted thermal insulation

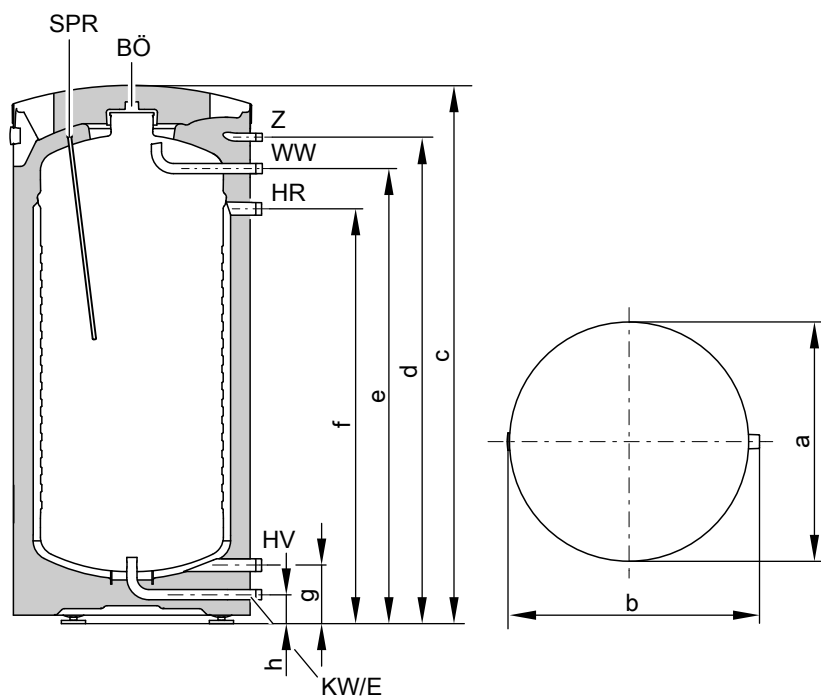
The colour of the epoxy-coated sheet steel casing is white.

Separate DHW cylinders (cont.)

4.3 Vitocell 300-W adjacent to the boiler (type EVA – 160 and 200 litre, white finish), heated by a peripheral indirect coil, made from stainless steel

- Installed adjacent to the boiler
 - Heated by a peripheral indirect coil, stainless steel
- (For further technical details, see the separate datasheet for the Vitocell 300-V)

Capacity		160	200
DIN register no.		0166/04-10 MC	
Connections (male thread)			
Heating water flow and return	R	1	1
Hot and cold water	R	¾	¾
DHW circulation	R	½	½
Permiss. operating pressure			
– Heating water side	bar	3	3
	MPa	0.3	0.3
– DHW side	bar	10	10
	MPa	1	1
Permiss. temperatures			
– Heating water side	°C	110	110
– DHW side	°C	95	95
Standby heat loss q_{BS} at 45 K temp. differential (actual values to DIN 4753-8)	kWh/24 h	1.40	1.60
Dimensions			
Length a (∅)	mm	633	633
Width b	mm	667	667
Height c	mm	1203	1423
Weight	kg	84	98



BÖ Inspection and cleaning aperture
 E Drain
 HR Heating return
 HV Heating flow

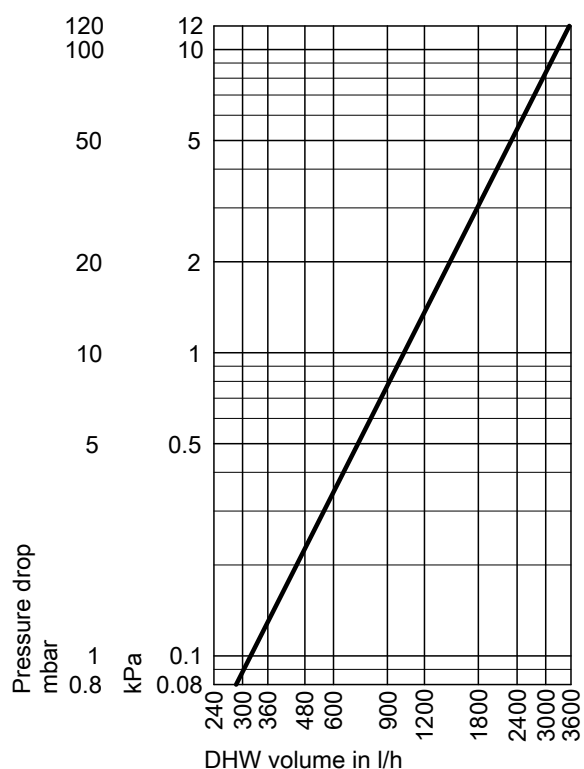
KW Cold water
 SPR Sensor well for cylinder temperature sensor or thermostat
 WW DHW
 Z DHW circulation

Separate DHW cylinders (cont.)

Dimensions

Cylinder capacity	l	160	200
a	mm	∅ 633	∅ 633
b	mm	667	667
c	mm	1203	1423
d	mm	1067	1287
e	mm	984	1204
g	mm	877	1097
g	mm	155	155
h	mm	77	77

Pressure drop on the DHW side



DHW output data at rated heating output

Rated heating output for DHW heating	kW	16	17	24	32
Continuous DHW output					
when heating DHW from 10 to 45 °C and with an average boiler water temperature of 70 °C					
Cylinder capacity 160 l	kW	16	17	24	24
	l/h	390	415	590	590
Cylinder capacity 200 l	kW	16	17	24	32
	l/h	390	415	590	786
Performance factor N_L					
to DIN 4708					
Cylinder capacity 160 l		1.6	1.7	1.7	1.7
Cylinder capacity 200 l		2.8	2.9	2.9	2.9
Peak output					
over a 10 minute period					
Cylinder capacity 160 l	l/10 min	173	177	177	177
Cylinder capacity 200 l	l/10 min	222	226	226	226

Delivered condition

Vitocell 300-W type EVA, peripheral indirect coil 160 to 200 litre capacity

DHW cylinders made from stainless steel.

- Welded sensor well for cylinder temperature sensor or thermostat
- Integral thermometer

- Threaded adjustable feet
 - Fitted thermal insulation
- White epoxy-coated sheet steel casing.

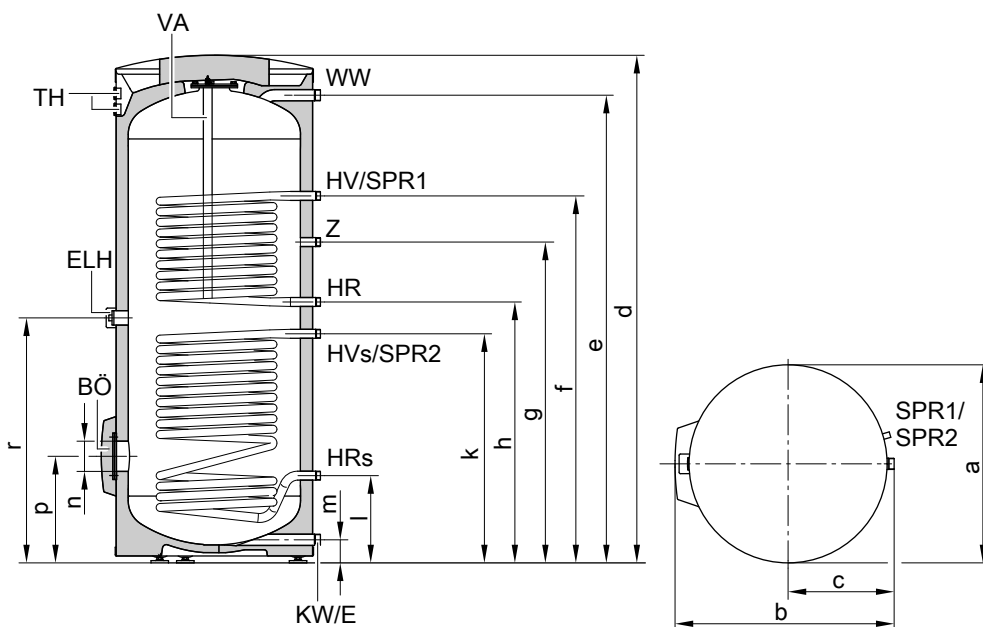
Separate DHW cylinders (cont.)

4.4 Vitocell 100-W adjacent to the boiler (type CVB – 300 and 400 l white finish), made from steel with Ceraprotect enamel coating for dual mode DHW heating

- Installed adjacent to the boiler
- With internal indirect coils, made from steel, with Ceraprotect enamel coating
- For dual mode DHW heating

For further technical details, see separate datasheet for the Vitocell 100-B.

Capacity	l	300	400
DIN register no.		9W242/11-13 MC/E	
Connections (male thread)			
Heating water flow and return	R	1	1
Hot and cold water	R	1	1¼
DHW circulation	R	1	1
Permiss. operating pressure			
Heating water, solar and DHW sides	bar MPa	10 1	10 1
Permiss. temperatures			
– Heating water side	°C	160	160
– Solar side	°C	160	160
– DHW side	°C	95	95
Standby heat loss q_{BS} at 45 K temp. differential (standard parameter)	kWh/24 h	1.00	1.08
Dimensions			
Length a (∅)	mm	633	859
Width b	mm	705	923
Height d	mm	1746	1624
Weight	kg	160	167



E Drain
 ELH Connector for immersion heater
 HR Heating water return of the boiler
 HR_S Heating water return, solar
 HV Heating water flow of the boiler
 HV_S Heating water flow, solar
 KW Cold water

BÖ Inspection and cleaning aperture
 SPR1 Sensor well for cylinder temperature sensor or thermostat
 SPR2 Temperature sensors/thermometers
 TH Thermometer
 VA Protective magnesium anode
 WW DHW
 Z DHW circulation

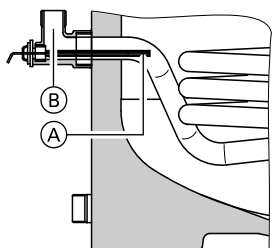
5822 430 GB

Separate DHW cylinders (cont.)

Dimensions

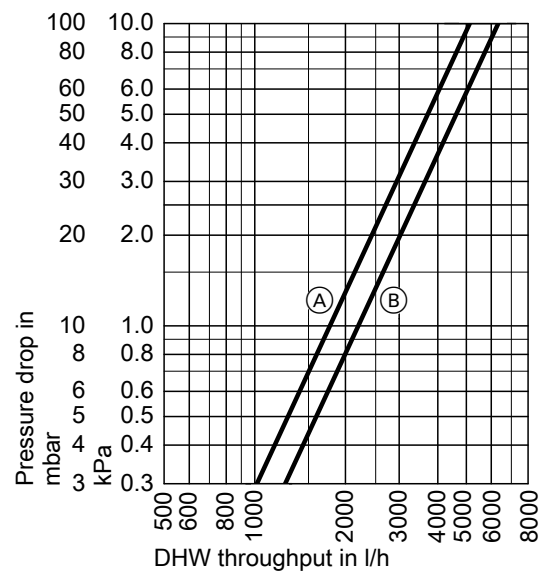
Cylinder capacity	l	300	400
a	mm	∅ 633	∅ 859
b	mm	705	923
c	mm	343	455
d	mm	1746	1624
e	mm	1600	1458
f	mm	1355	1204
g	mm	1115	1044
h	mm	995	924
k	mm	875	804
l	mm	260	349
m	mm	76	107
n	mm	∅ 100	∅ 100
p	mm	333	422
r	mm	935	864

Recommended positioning of the cylinder temperature sensor for solar operation



- Ⓐ Cylinder temperature sensor (solar control unit)
- Ⓑ Threaded elbow with sensor well (standard delivery)

Pressure drop on the DHW side



- Ⓐ 300 litre capacity
- Ⓑ 400 litre capacity

Separate DHW cylinders (cont.)

DHW output data at rated heating output

Rated heating output for DHW heating	kW	16	17	24	32
Continuous DHW output					
when heating DHW from 10 to 45 °C and with an average boiler water tempera- ture of 78 °C	kW l/h	16 390	17 415	24 590	26 638
Performance factor N_L^{*8} to DIN 4708		1.3	1.4	1.4	1.4
Peak output over a 10 minute period	l/10 min	159	164	164	164

Delivered condition

Vitocell 100-W, type CVB, 300 litre capacity

DHW cylinder made from steel with Ceraprotect enamel coating.

- 2 welded sensor wells for cylinder temperature sensor or thermostat
- Threaded elbow with sensor well
- Female connection R 1½ for the installation of an immersion heater and plug R 1½
- Adjustable feet
- Protective magnesium anode
- Fitted thermal insulation

White epoxy-coated sheet steel casing.

Vitocell 100-W, type CVB, 400 litre capacity

DHW cylinder made from steel with Ceraprotect enamel coating.

- 2 welded sensor wells for cylinder temperature sensor or thermostat
- Threaded elbow with sensor well
- Female connection R 1½ for the installation of an immersion heater and plug R 1½
- Adjustable feet
- Protective magnesium anode
- Thermal insulation packed separately

White plastic-coated thermal insulation.

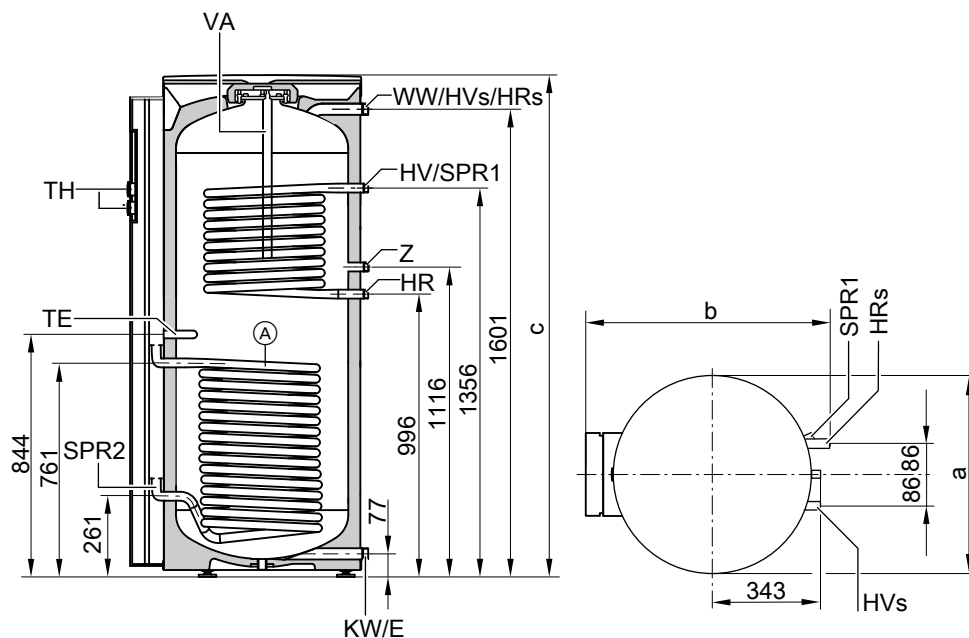
Separate DHW cylinders (cont.)

4.5 Vitocell 100-W adjacent to the boiler (type CVUA – 300 I, white finish), made from steel, with Ceraprotect enamel coating for dual mode DHW heating

- Installed adjacent to the boiler
- With internal indirect coils, made from steel, with Ceraprotect enamel coating
- For dual mode DHW heating
- With Solar-Divicon, integral pipework and solar control module, type SM1.

For further technical details, see separate datasheet for the Vitocell 100-U.

Capacity	I	300
DIN register no.		0266/07-13 MC/E
Connections		
Heating water flow and return	R	1
Hot and cold water	R	1
DHW circulation	R	1
Permiss. operating pressure		
– Heating water, solar and DHW sides	bar	10
Permiss. temperatures		
– Heating water side	°C	160
– Solar side	°C	110
– DHW side	°C	95
Standby heat loss (standard parameter) q_{BS} at 45 K temp. differential	kWh/24 h	1.00
Dimensions		
Length (∅)	mm	631
Width	mm	780
Height	mm	1705
Height when tilted	mm	1790
Weight incl. thermal insulation	kg	179
Total weight in operation	kg	481



E	Drain
HR	Heating water return (upper indirect coil)
HRs	Heating water return, solar (lower indirect coil; fit the cylinder temperature sensor into the solar heating water return (HRs) using the threaded elbow with sensor well SPR2 from the standard delivery)
HV	Heating water flow (upper indirect coil)
HVs	Heating water flow, solar (lower indirect coil)
KW	Cold water

SPR1	Cylinder temperature sensor of the cylinder temperature controller
SPR2	Cylinder temperature sensor of the solar thermal system
TE	Sensor well for lower thermometer
TH	Thermometer
VA	Protective magnesium anode
WW	DHW to the pipework

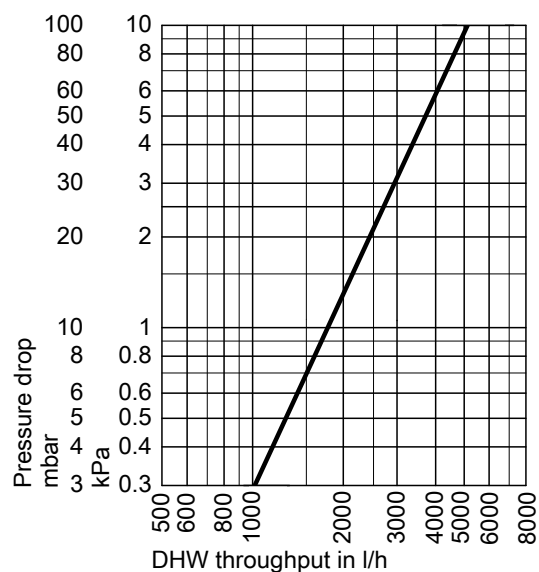
Separate DHW cylinders (cont.)

- Z DHW circulation
 (A) Lower indirect coil (solar)
 The connections HVs and HRs are located at the top of the DHW cylinder

Dimensions

Dimensions	Dimensions in mm
a	631
b	780
c	1705

Pressure drop on the DHW side



DHW output data at rated heating output

Rated heating output for DHW heating	kW	16	17	24	32
Continuous DHW output					
when heating DHW from 10 to 45 °C and with an average boiler water temperature of 78 °C	kW l/h	16 390	17 415	26 638	26 638
Performance factor N_L^{*9} to DIN 4708		1.3	1.4	1.4	1.4
Peak output over a 10 minute period	l/10 min	159	164	164	164

Delivered condition

Dual mode DHW cylinder made from steel with Ceraprotect enamel coating and Solar-Set.

- Solar-Set, comprising:
 - Solar circuit pump (variable speed high efficiency circulation pump)
 - 2 thermometers
 - 2 ball valves with check valve
 - Flow meter
 - Pressure gauge
 - Safety valve 6 bar
 - Fill valve
 - Air separator
 - Solar control module, type SM1 with electronic temperature differential control
 - Cylinder temperature sensor
 - Collector temperature sensor
- 2 welded sensor wells for cylinder temperature sensor or thermostat

- Threaded elbow with sensor well
 - Adjustable feet
 - Protective magnesium anode
 - Thermal insulation made from rigid PUR foam
- White epoxy-coated sheet steel casing.

5822 430 GB

*9 Values for the upper internal indirect coil

Installation accessories

5.1 Installation accessories for Vitodens 200-W and 300-W

Vitodens 200-W installation directly on a wall

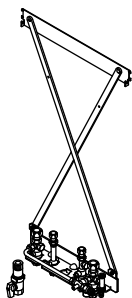
Gas condensing combi boiler

Pre-plumbing jig for finished walls

Part no. Z002 350

Comprising:

- Fixings
- Valves/fittings
- Straight-through gas valve Rp ½ with thermally activated safety shut-off valve



Gas condensing boiler

Pre-plumbing jig for finished walls

Part no. Z002 337

Comprising:

- Fixings
- Valves/fittings
- Straight-through gas valve Rp ½ with thermally activated safety shut-off valve

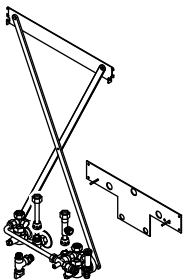


Pre-plumbing jig for unfinished walls

Part no. Z002 349

Comprising:

- Fixings
- Valves/fittings
- Gas angle valve R ½ with thermally activated safety shut-off valve

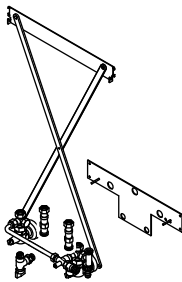


Pre-plumbing jig for unfinished walls

Part no. Z002 348

Comprising:

- Fixings
- Valves/fittings
- Gas angle valve R ½ with thermally activated safety shut-off valve



5

Installing the Vitodens 300-W directly on a wall

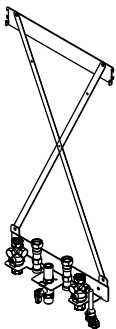
Gas condensing boiler

Pre-plumbing jig for finished walls

Part no. ZK00 023

Comprising:

- Fixings
- Valves/fittings
- Straight-through gas valve Rp ½ with thermally activated safety shut-off valve



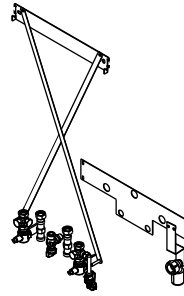
Pre-plumbing jig for unfinished walls

Part no. ZK00 024

Comprising:

Installation accessories (cont.)

- Fixings
- Valves/fittings
- Gas angle valve R ½ with thermally activated safety shut-off valve



Installation with a sub-mounting kit

Installation on finished walls with gas condensing boiler or gas condensing combi boiler (for Vitodens 200-W and Vitodens 300-W only).

Note

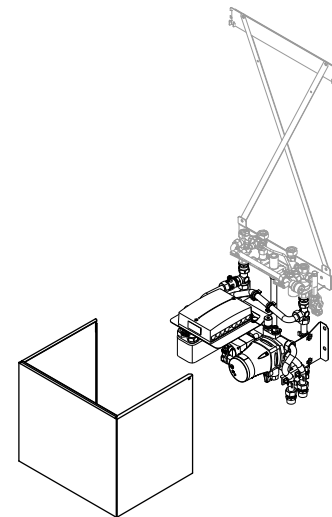
Order a pre-plumbing jig for installation on finished walls with the sub-mounting kit.

Sub-mounting kit

- For Vitodens 200-W up to 35 kW and Vitodens 300-W, 11 - 19 kW
Part no. 7438 923
- For Vitodens 300-W, 26 - 35 kW
Part no. 7438 922

Comprising:

- Plate heat exchanger for system separation of the heating circuit with mixer
- Variable speed high efficiency circulation pump for the heating circuit with mixer
- 3-way mixer with mixer motor
- Valve for regulating the flow rate of both heating circuits
- Adjustable bypass
- Mixer PCB, capable of communicating with the Vitotronic 200 via KM BUS
- Flow temperature sensor
- Cover, in same design as the wall mounted boiler
- Installation template for rapid and easy installation



Specification, sub-mounting kit with mixer

Assembly for heat distribution via a heating circuit with mixer and one heating circuit without mixer, as wall mounted version. For installation below the boiler.

Comprising:

The heating circuit without mixer is supplied by the integral circulation pump of the Vitodens 200-W or 300-W. For the installation scheme regarding operation with the sub-mounting kit, see "System examples".

Sub-mounting kit accessories

Flow indicator

Part no. 7438 927

To display the flow rate in the unregulated heating circuit when hydraulically balancing the heating circuits.

Contact temperature limiter

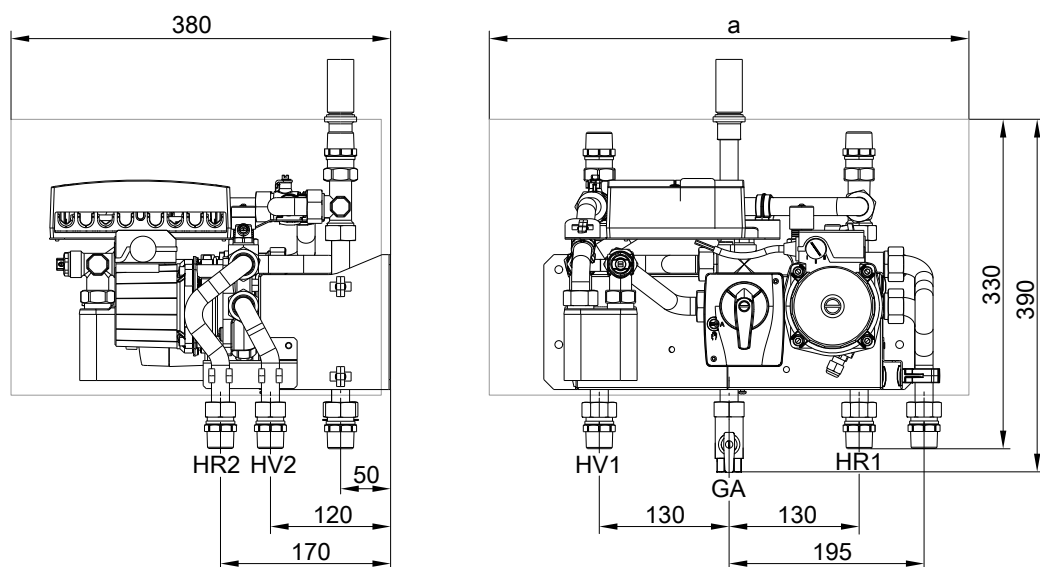
Part no. 7425 493

Maximum temperature limiter for underfloor heating circuits. With connecting cable 1.5 m long.

The sub-mounting kit can only be used in conjunction with the Vitotronic 200 and the pre-plumbing jig for installation on finished walls.

Not in conjunction with the Vitocell 100-W DHW cylinder below the boiler, type CUG.

Installation accessories (cont.)



GA Gas connection Rp ½

HR1 Heating return, heating circuit without mixer R ¾

HR2 Heating return, heating circuit with mixer R ¾

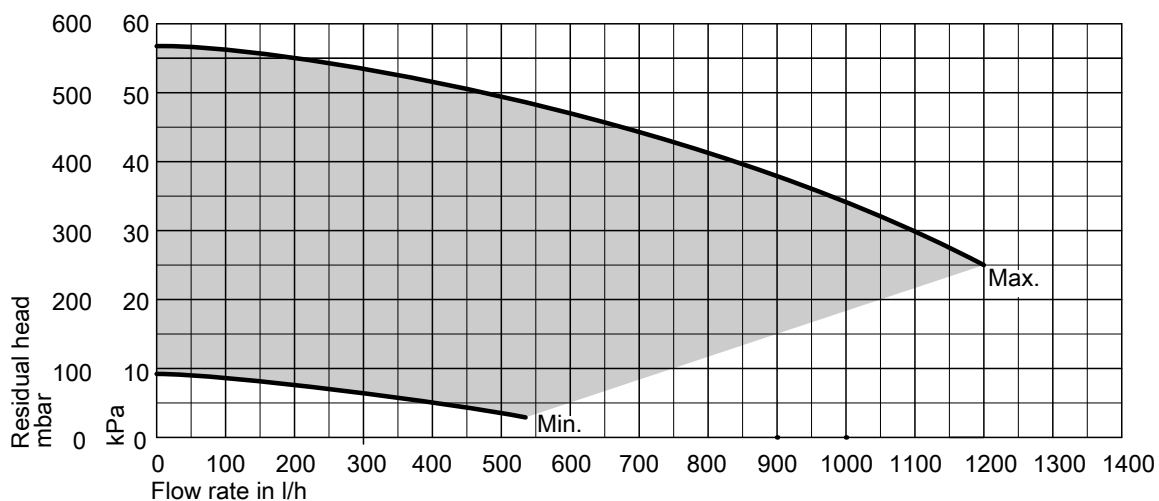
HV1 Heating flow, heating circuit without mixer R ¾

HV2 Heating flow, heating circuit with mixer R ¾

Max. transferable heating output of the heating circuit with mixer (ΔT 10 K)	kW	14
Max. flow rate of the heating circuit with mixer (ΔT 10 K)	l/h	1200
Permiss. operating pressure	bar	3
	MPa	0.3
Max. power consumption (total)	W	48
Dim. a		
– Vitodens 200-W up to 35 kW and 300-W up to 19 kW	mm	450
– Vitodens 300-W, 26 and 35 kW	mm	480
Weight (incl. packaging)	kg	17

5

Residual head of the integral circulation pump for the heating circuit with mixer



Calculating the transferable heating output (examples)

The sub-mounting kit is equipped with an integral balancing valve. This allows the flow rate via the plate heat exchanger to the regulated heating circuit to be restricted as required.

The maximum heating output that can be transferred via the plate heat exchanger of the sub-mounting kit is 14 kW. For balanced flow rates between the regulated heating circuit (sub-mounting kit) and the unregulated heating circuit (radiator heating circuit), the pressure drop in the sub-mounting kit must be increased. The integral balancing valve is used for this purpose.

5822 430 GB

Installation accessories (cont.)

For accurate adjustment of the flow rates, a flow indicator (available as an accessory) can be fitted into the flow line of the unregulated heating circuit. The rated circulation water volume of the boiler (see specification), minus the flow rate through the plate heat exchanger of the sub-mounting kit, results in the flow rate of the unregulated heating circuit.

Example:

Vitodens 300-W, 4.0 -26 kW

- Rated circulation water volume at ΔT 20 K: 1018 l/h
- Heating output for regulated heating circuit (assumed): 13 kW

- Resulting flow rate, primary side, plate heat exchanger at ΔT 20 K: 560 l/h
- Flow rate of unregulated heating circuit (to be adjusted via the balancing valve): $1018 \text{ l/h} - 560 \text{ l/h} = 458 \text{ l/h}$

Installation of the Vitodens 300-W with mounting frame

Mounting frame consisting of:

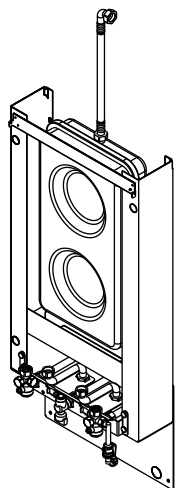
- Diaphragm expansion vessel, rated capacity 18 l
- Fittings on the heating water and DHW side
- Boiler drain & fill valve
- Gas angle valve R $\frac{1}{2}$ with integral thermally activated safety shut-off valve
- Flexible connection line for the diaphragm expansion vessel

All fittings are located under the boiler covers.

Mounting frame

Only for Vitodens 300-W, 26 and 35 kW.

- For installation on finished walls with threaded fittings
Part no. ZK00 277
- For installation on unfinished walls
Part no. ZK00 278

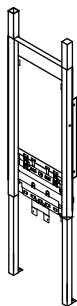


Installation with a self-supporting mounting frame

Self-supporting mounting frame

With valves and gas angle valve G $\frac{3}{4}$ with thermally activated safety shut-off valve

- For Vitodens 200-W gas condensing combi boiler with threaded fitting
Part no. Z002 352
- For Vitodens 200-W gas condensing boiler with threaded fitting
Part no. Z002 354
- For Vitodens 300-W gas condensing boiler with threaded fitting
Part no. ZK00 025



Ceiling extension for self-supporting mounting frame Part no. 7329 151

For "self-supporting" installation in a room.

Installation accessories (cont.)

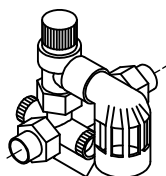


Further accessories

Safety assembly to DIN 1988

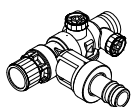
Comprising:

- Shut-off valve
- Non-return valve and test nipple
- Pressure gauge connector
- Diaphragm safety valve
 - 10 bar (1 MPa)
 - DN 15, up to 200 litre cylinder capacity
Part no. 7219 722
 - DN 20, for 300 litre cylinder capacity
Part no. 7180 662
 - (A) 6 bar (0.6 MPa)
 - DN 15, up to 200 litre cylinder capacity
Part no. 7265 023
 - DN 20, for 300 litre cylinder capacity
Part no. 7179 666



For Vitocell 100-W below the boiler

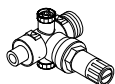
- 10 bar (1 MPa), DN 15, right angle version
Part no. 7180 097
- (A) 6 bar (0.6 MPa), DN 15, right angle version
Part no. 7179 457



Pressure reducer (DN 15)

Part no. 7180 148

To match the right angle version of the safety assembly.

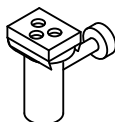


Drain outlet kit

Part no. 7459 591

Drain outlet with siphon and rose for connecting the drain lines of the safety valves and condensate drain.

Drain connection G1



Valve/fittings cover

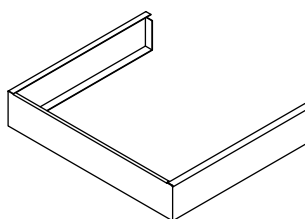
- For the Vitodens 200-W and Vitodens 300-W, 1.9 to 19 kW

Part no. 7438 096

- For the Vitodens 300-W, 4.0 to 35 kW

Part no. 7438 094

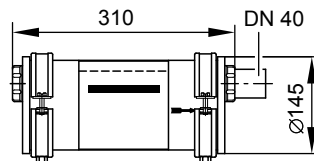
Cannot be used in conjunction with DHW cylinders installed below the boiler.



Neutralising system

Part no. 7252 666

With neutralising granulate



Neutralising granulate

Part no. 9524 670

(2 × 1.3 kg)

Condensate lifting system

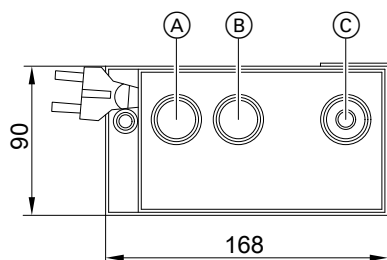
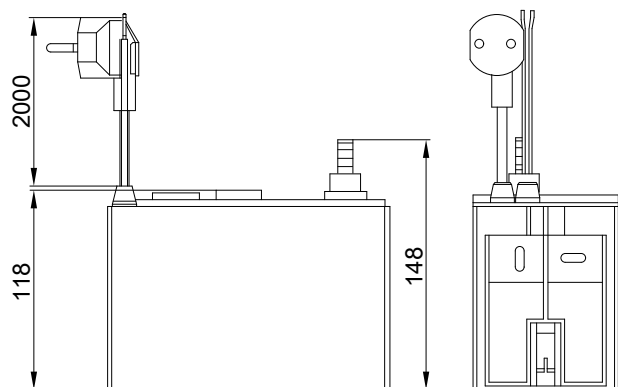
Part no. 7374 796

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

Installation accessories (cont.)



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

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

Service accessories for automatic hydraulic balancing

See pricelist.

Plate heat exchanger flushing system

Part no. 7373 005
For Vitodens 200-W.

Small softening system for heating water

For filling heating circuits.
See Vitoset pricelist.

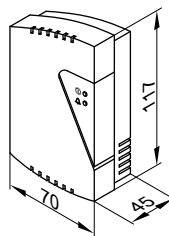
CO limiter

Part no. 7499 330

A monitoring device that safely shuts down the boiler in the event of carbon monoxide being released.
Wall mounting in the ceiling area near the boiler.
Can be used for boilers built from 2004 onwards.

Components:

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



Specification

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

Connections between the Vitodens and the DHW cylinder

Connection set with connecting pipes, for Vitocell 100-W DHW cylinder installed below the boiler (type CUG)

Part no. 7178 347

Comprising:

- Cylinder temperature sensor
- Heating water connecting pipes
- DHW connecting pipes

Installation on finished or unfinished walls

Casing for connecting pipes

With thermometer for the Vitocell 100, type CUG.

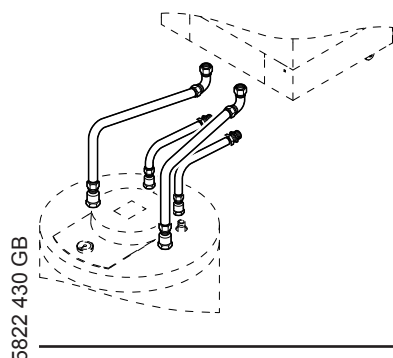
- For DHW cylinder with 120 litre capacity
Part no. 7179 030
- For DHW cylinder with 150 litre capacity
Part no. 7179 031

Connection set for Vitocell 100-W and 300-W DHW cylinders installed adjacent to the boiler

Comprising:

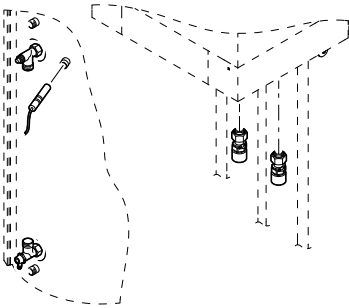
- Cylinder temperature sensor
- Connection fittings

DHW cylinder adjacent to the Vitodens, either on the left or right.



Installation accessories (cont.)

- Threaded fitting version
Part no. 7178 349
- Solder version
Part no. 7178 348



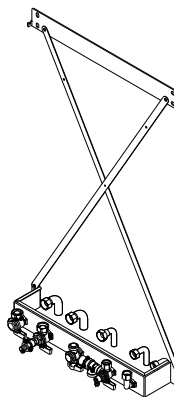
5.2 Installation accessories Vitodens 222-W

Pre-plumbing jig for finished walls

- Diaphragm safety valve 10 bar (1 MPa)
Part no. 7248 408
- (A) Diaphragm safety valve 6 bar (0.6 MPa)
Part no. 7248 406

Comprising:

- Fixings
- Valves/fittings
- Gas angle valve R ½ with thermally activated safety shut-off valve
- Safety valve on the DHW side
- Pipe bends

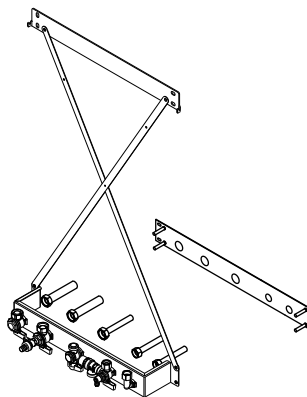


Pre-plumbing jig for unfinished walls

- Diaphragm safety valve 10 bar (1 MPa)
Part no. 7248 401
- (A) Diaphragm safety valve 6 bar (0.6 MPa)
Part no. 7248 400

Comprising:

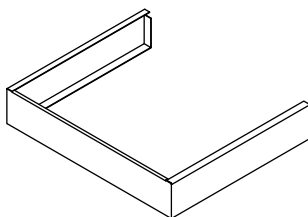
- Fixings
- Valves/fittings
- Gas angle valve R ½ with thermally activated safety shut-off valve
- Safety valve on the DHW side
- Connection pieces



Further accessories

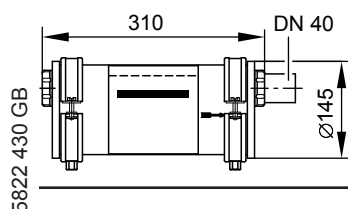
Valve/fittings cover

Part no. 7438 340



Neutralising system

Part no. 7252 666
With neutralising granulate



5822 430 GB

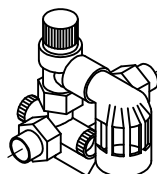
Neutralising granulate

Part no. 9524 670
(2 × 1.3 kg)

Safety assembly to DIN 1988

Comprising:

- Shut-off valve
- Non-return valve and test nipple
- Pressure gauge connector
- Diaphragm safety valve



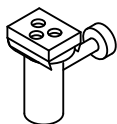
- 10 bar (1 MPa), DN 15
Part no. 7219 722
- (A) 6 bar (0.6 MPa), DN 15
Part no. 7265 023

Installation accessories (cont.)

Drain outlet kit

Part no. 7459 591

Drain outlet with siphon and rose.



For connecting the drain lines of the safety valves and condensate drain.

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:

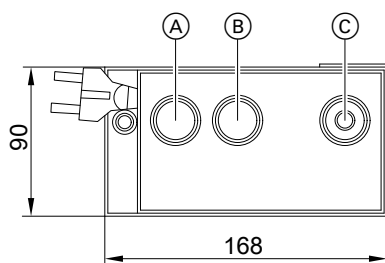
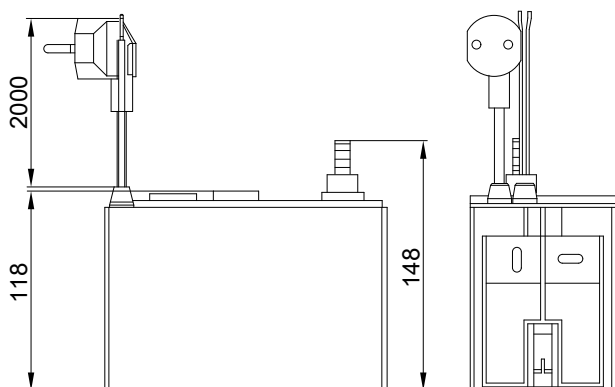
- Condensate container 0.5 l
- Shaftless permanent magnet ball motor pump
- Control unit for pump operation, display of operating conditions and fault messages

■ 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



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

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

Service accessories for automatic hydraulic balancing

See pricelist.

Plate heat exchanger flushing system

Part no. 7373 005

Small softening system for heating water

For filling heating circuits.

See Vitoset pricelist.

CO limiter

Part no. 7499 330

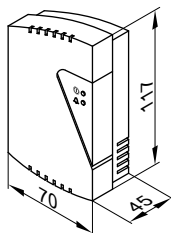
A monitoring device that safely shuts down the boiler in the event of carbon monoxide being released.

Wall mounting in the ceiling area near the boiler.

Can be used for boilers built from 2004 onwards.

Components:

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



Specification

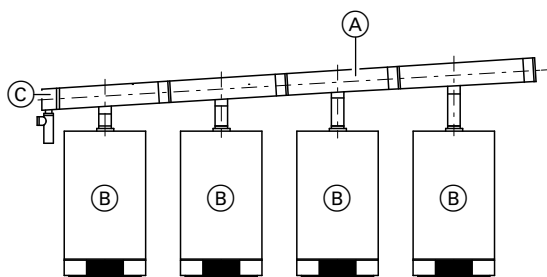
Rated voltage	230 V~
Rated frequency	50 Hz
Power consumption	3.5 W
Rated breaking capacity of the relay output	8 A 230 V~
Alarm threshold	40 ppm CO
Safety category	II
IP rating	IP 20 to EN 60529; ensure through design/installation
Permissible ambient temperature	70 °C

Flue gas cascade (positive pressure) for multi boiler systems with Vitodens 200-W and 222-W

Comprising:

- Flue gas non-return device for each boiler
- Flue gas header
- End piece with condensate drain and siphon

Installation accessories (cont.)



- (A) Flue gas header
- (B) Flue gas non-return device (for installation in the Vitodens)
- (C) End piece with siphon

- 2-boiler system
– Part no. Z008 385
- 3-boiler system
– Part no. Z008 386
- 4-boiler system
– Part no. Z008 387

Design information

6.1 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, chemical 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 at the system should not exceed 35 °C.

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

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

Multi boiler systems with flue systems under positive or negative pressure

Systems with several Vitodens with separate hydraulic connections require a flue gas cascade suitable for positive or negative pressure (see technical guide "Flue systems for the Vitodens") or individual flue gas routing for each boiler.

Installation room

Permissible:

- Gas appliance installation on the same floor
- Living space with interconnected room air supply
- Adjacent rooms with interconnected room air supply (larders, basements, utility rooms, etc.)
- Utility rooms with vents to the outside (ventilation air/extract air 150 cm² or 2 × 75 cm² each at the top and bottom of the same wall, up to 35 kW)
- Attic rooms, but only with adequate minimum chimney height to DIN 18160 – 4 m above inlet (negative pressure operation).

Not permissible:

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

Observe all local fire regulations.

Connection on the flue gas side

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

The connection piece to the chimney should be as short as possible.

Therefore position the Vitodens as close to the chimney as possible.

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

The surface temperatures of the Vitodens and the flue system do not exceed 85 °C at any point.

Extractors

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

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).

Design information (cont.)

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}, C_{83x} or C_{93x} to TRGI 2008, for **balanced** flue operation **independent** of the size and ventilation of the installation room.

It may, for example, be installed in recreation rooms, in other living spaces, in 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 routed directly 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").

The installation room 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.

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. Install a frame or deflector (provided on site) to protect the boiler 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).

Intended use

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

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

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

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

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

Operation of the Vitodens in wet areas

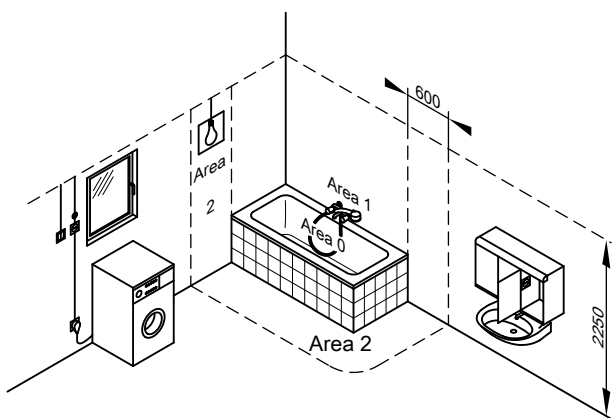
The Vitodens is approved for installation in wet areas (e.g. bath or shower rooms) (protection IP X4 D, splashproof).

When installing the Vitodens in wet areas, observe the safety zones and minimum wall clearances according to VDE 0100 [or local regulations] (see also "Electrical safety area"). The Vitodens may be installed **in safety area 1** if hosed water (e.g. from massage showers) is prevented.

Electrical equipment in rooms containing a bathtub or a shower must be installed in such a way that users cannot be exposed to dangerous body currents.

The VDE 0100 specifies that cables supplying permanently installed consumers in areas 1 and 2 should only be run vertically and routed into the equipment from the back.

Electrical safety area



Electrical connection

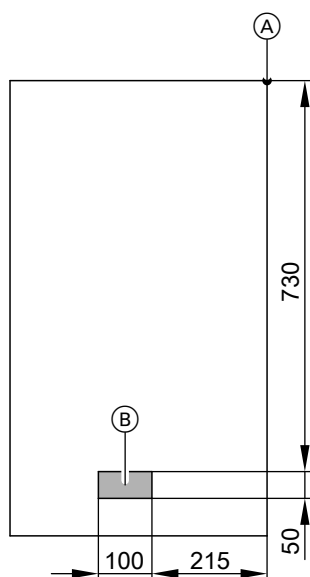
The power supply must comply with the requirements of your local power supply utility and current VDE [or local] regulations (Ⓐ: ÖVE regulations).

Protect the power cable with a fuse with a maximum 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.

Design information (cont.)

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 and 300-W

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

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 - Vitocomfort 200 - 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 any room that is part of the interconnected combustion air supply.

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

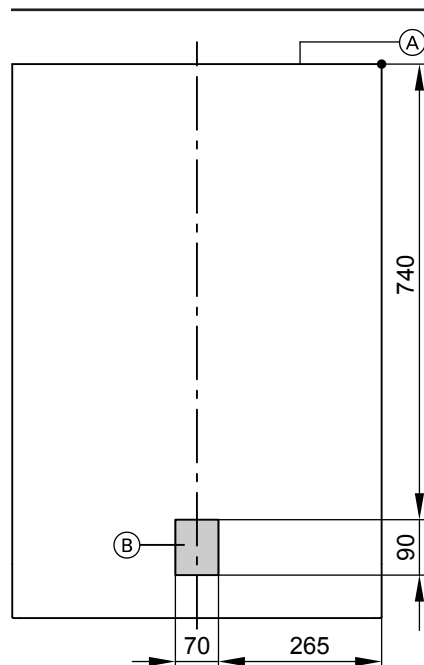
Power supply for accessories

The power supply for accessories can be 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.



Vitodens 222-W

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

Design information (cont.)

Gas connection

Gas installations must only be carried out by a registered gas fitter authorised by the relevant gas supply utility. Connect and size the mains gas according to TRGI 2008 or TRF 1996 [or local regulations].

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

Max. test pressure 150 mbar (15 kPa).

We recommend 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, 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 supply lines immediately upstream of the combustion equipment. These valves must isolate the gas supply for at least 30 minutes up to a temperature of 650 °C. This is intended to prevent the formation of explosive gas mixtures in the event of a fire.

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

Gas supply line

The following table is designed to assist in the approximate sizing of the on-site gas supply line.

For each 90° bend 1 m is deducted from the max. possible pipe length.

Checking your calculations against TRGI and TRF [or local regulations] is recommended.

Rated heat input kW	Gas type	Connection values		Nominal diameter of the gas supply line		
		m ³ /h	kg/h	DN 15	DN 20	DN 25
16.7	Natural gas E	1.77		13	60	–
	Natural gas LL	2.05		8	40	127
	LPG		1.31	80	–	–
17.9	Natural gas E	1.89		8	40	127
	Natural gas LL	2.20		6	28	91
	LPG		1.40	62	–	–
24.7	Natural gas E	2.61		6	28	91
	Natural gas LL	3.04		4	21	68
	LPG		1.93	36	156	–
30.5	Natural gas E	3.23		4	21	68
	Natural gas LL	3.75		–	16	53
	LPG		2.38	23	100	–
33.3	Natural gas E	3.52		4	21	68
	Natural gas LL	4.10		–	16	53
	LPG		2.60	23	100	–
34.9	Natural gas E	3.86		4	21	68
	Natural gas LL	4.49		–	16	53
	LPG		2.85	23	100	–

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 - Vitodens

kW

11 to 19

26

35 (gas condensing boilers)

35 (gas condensing combi boilers and Vitodens 222-W)

Gas flow switch For natural gas

GS 4

GS 6

GS 6

GS 10

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

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.

Pre-installation for mounting the Vitodens 200-W and 300-W directly on the wall – Installation on finished walls

Accessories required for installation without DHW cylinder

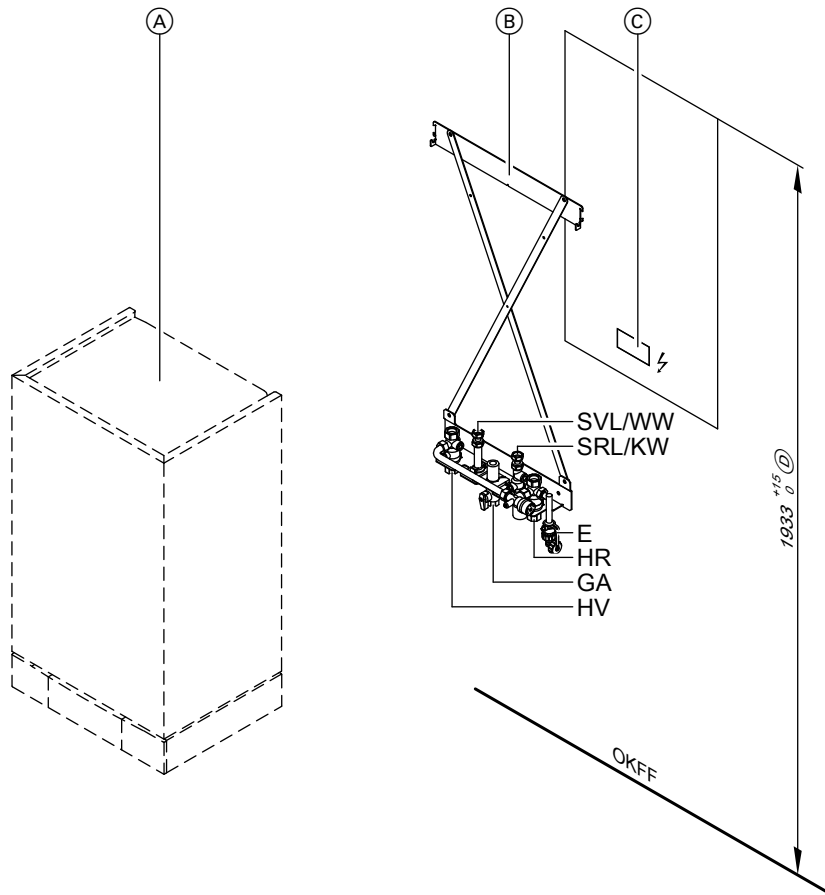
Pre-plumbing jig

With fixing components, valves and gas shut-off valve Rp ½ with integral thermally activated safety shut-off valve

Additional requirements when connecting a DHW cylinder

Connection set for DHW cylinders

Design information (cont.)



Showing pre-plumbing jig for Vitodens 200-W

(A)	Vitodens	HR	Heating return Rp $\frac{3}{4}$
(B)	Pre-plumbing jig	HV	Heating flow Rp $\frac{3}{4}$
(C)	Area for power cables. Allow all cables to protrude approx. 800 mm from the wall.	KW	Cold water Rp $\frac{1}{2}$ (gas combi boiler)
(D)	Compulsory in conjunction with DHW cylinders below the boiler. Otherwise recommendation only.	OKFF	Top edge, finished floor
E	Drain	WW	DHW Rp $\frac{1}{2}$ (gas combi boiler)
GA	Gas connection Rp $\frac{1}{2}$	SRL	Cylinder return G $\frac{3}{4}$ (gas boiler)
		SVL	Cylinder flow G $\frac{3}{4}$ (gas boiler)

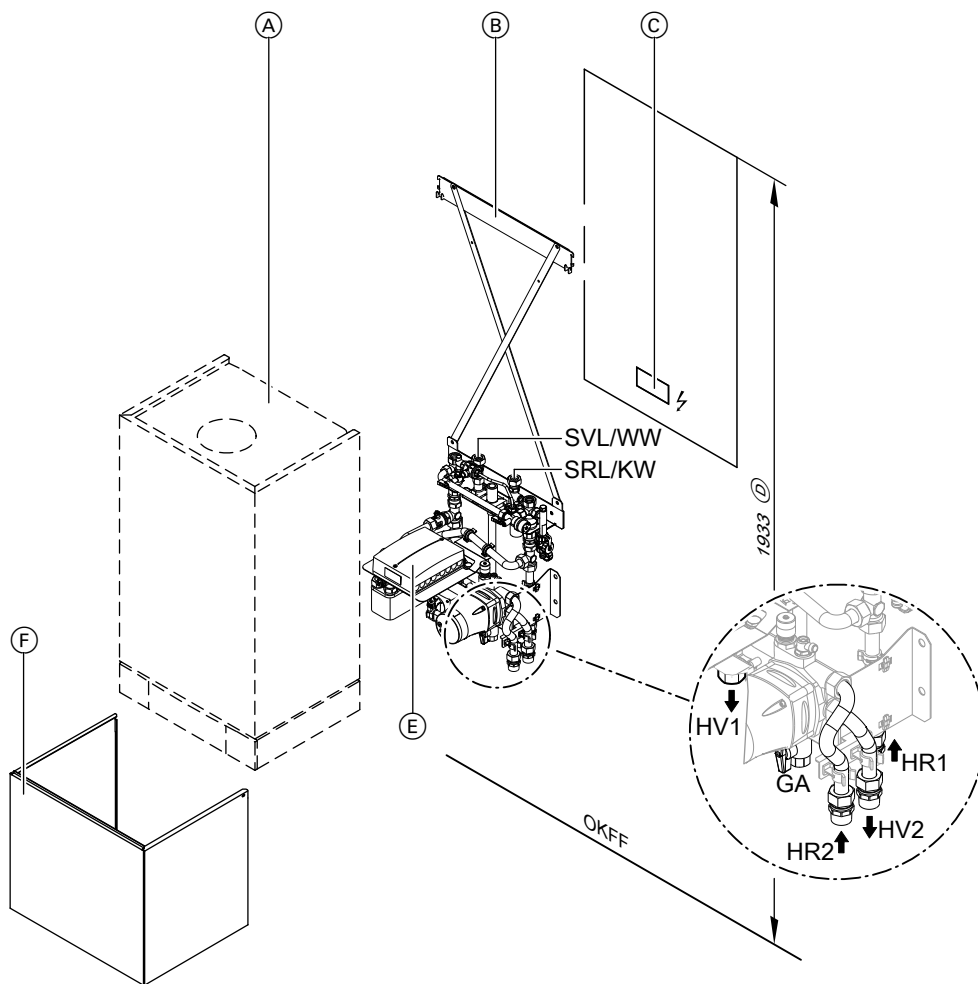
Pre-installation with the sub-mounting kit with mixer – installation on finished walls

Required accessories:

- Sub-mounting kit:
With plate heat exchanger, circulation pump, 3-way mixer, bypass, mixer electronics, flow temperature sensor, cover and installation template
- Pre-plumbing jig:
With fixing components, valves and gas shut-off valve Rp $\frac{1}{2}$ with integral thermally activated safety shut-off valve
- Connection set for DHW cylinders (if installed)
Not in conjunction with the Vitocell 100-W DHW cylinder installed below the boiler.

For specification and accessories for the sub-mounting kit, see page 43.

Install a drain & fill valve on site in the flow of the heating circuit with mixer (HV2).



Showing sub-mounting kit for Vitodens 200-W

- | | | | |
|-----|--|------|---|
| (A) | Vitodens | HR2 | Heating return, heating circuit with mixer R $\frac{3}{4}$ |
| (B) | Pre-plumbing jig | HV1 | Heating flow, heating circuit without mixer R $\frac{3}{4}$ |
| (C) | Area for power cables.
Allow all cables to protrude approx. 800 mm from the wall. | HV2 | Heating flow, heating circuit with mixer R $\frac{3}{4}$ |
| (D) | Recommendation | KW | Cold water G $\frac{1}{2}$ (gas combi boiler) |
| (E) | Sub-mounting kit | OKFF | Top edge, finished floor |
| (F) | Sub-mounting kit cover | WW | DHW G $\frac{1}{2}$ (gas combi boiler) |
| GA | Gas connection R $\frac{1}{2}$ | SRL | Cylinder return G $\frac{3}{4}$ (gas boiler) |
| HR1 | Heating return, heating circuit without mixer R $\frac{3}{4}$ | SVL | Cylinder flow G $\frac{3}{4}$ (gas boiler) |

Pre-installation for mounting the Vitodens 200-W and 300-W directly on the wall – Installation on unfinished walls

Accessories required for installation without DHW cylinder

Pre-plumbing jig

With fixing components, valves and gas shut-off valve R $\frac{1}{2}$ with integral thermally activated safety shut-off valve.

Additional requirements when connecting a DHW cylinder

Connection set for DHW cylinders.

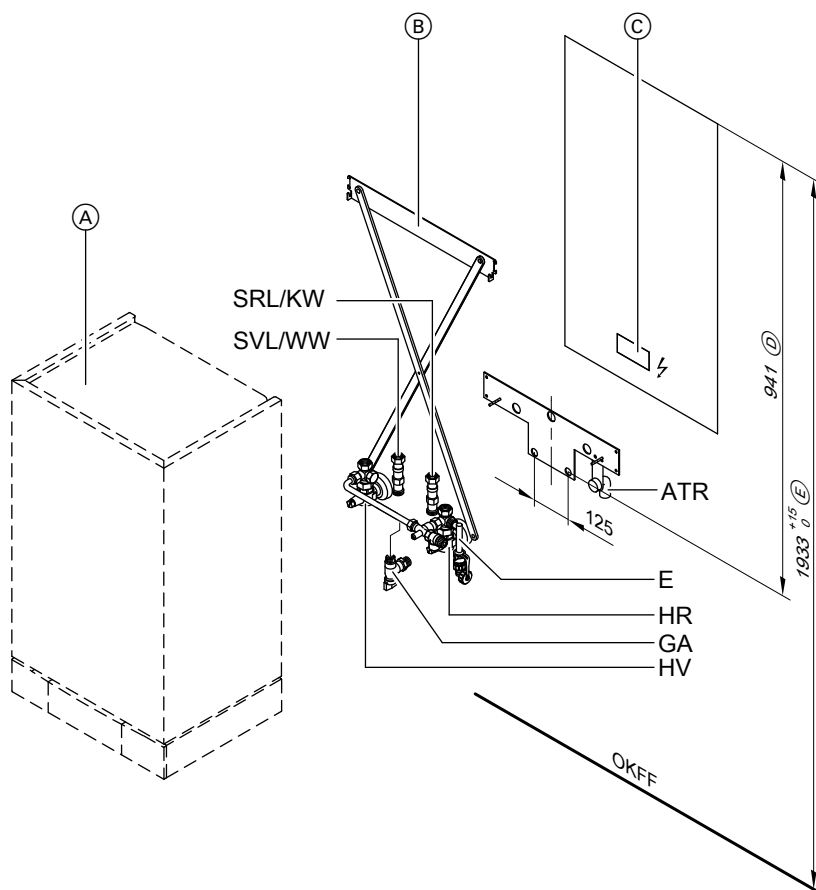


Illustration: Connection layout for the Vitodens 200-W gas system boiler

- | | | | |
|-----|---|------|-----------------------------------|
| (A) | Vitodens | E | Drain |
| (B) | Pre-plumbing jig | GA | Gas connection R ½ |
| (C) | Area for power cables.
Allow cables to protrude approx. 800 mm from the wall. | HR | Heating return G ¾ |
| (D) | Cold water and DHW connections in conjunction with DHW cylinder installed below the boiler. | HV | Heating flow G ¾ |
| (E) | Compulsory in conjunction with DHW cylinders below the boiler. Otherwise recommendation only. | KW | Cold water G ½ (gas combi boiler) |
| ATR | Drain outlet connection R 1 | OKFF | Top edge, finished floor |
| | | WW | DHW G ½ (gas combi boiler) |
| | | SRL | Cylinder return G ¾ (gas boiler) |
| | | SVL | Cylinder flow G ¾ (gas boiler) |

Pre-installation with mounting frame

Mounting frame with expansion vessel for Vitodens 300-W (26 and 35 kW)

With diaphragm expansion vessel (rated capacity 18 litres), valves, fixing elements and gas angle valve G ¾ with thermally activated safety shut-off valve.

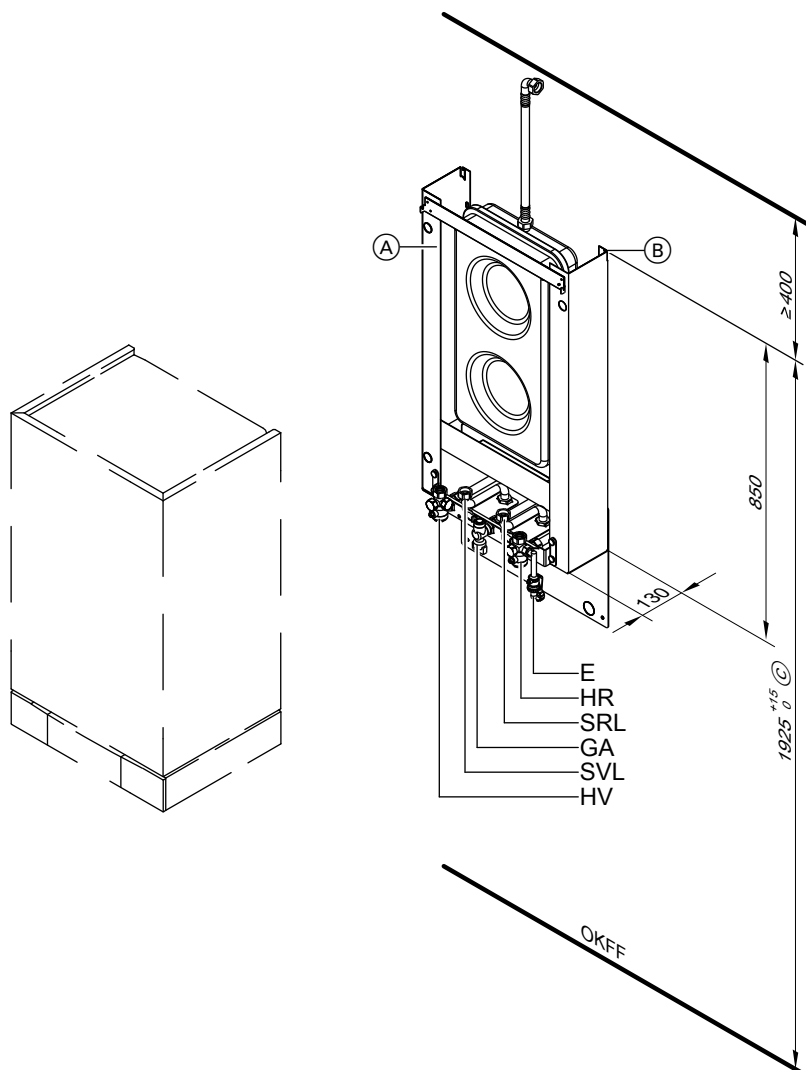
With valves with threaded fitting

- For installation on finished walls
- For installation on unfinished walls

All fittings are located inside the boiler casing.

Note

Minimum clearance between mounting frame and ceiling for removal of the expansion vessel: 400 mm.



- | | |
|---|--|
| <p>Ⓐ Mounting frame</p> <p>Ⓑ Reference point top edge Vitodens and mounting frame</p> <p>Ⓒ Compulsory in conjunction with DHW cylinders below the boiler. Otherwise recommendation only.</p> <p>E Drain</p> <p>GA Gas connection G $\frac{3}{4}$</p> | <p>HR Heating return G $\frac{3}{4}$</p> <p>HV Heating flow G $\frac{3}{4}$</p> <p>OKFF Top edge, finished floor</p> <p>SRL Cylinder return G $\frac{3}{4}$</p> <p>SVL Cylinder flow G $\frac{3}{4}$</p> |
|---|--|

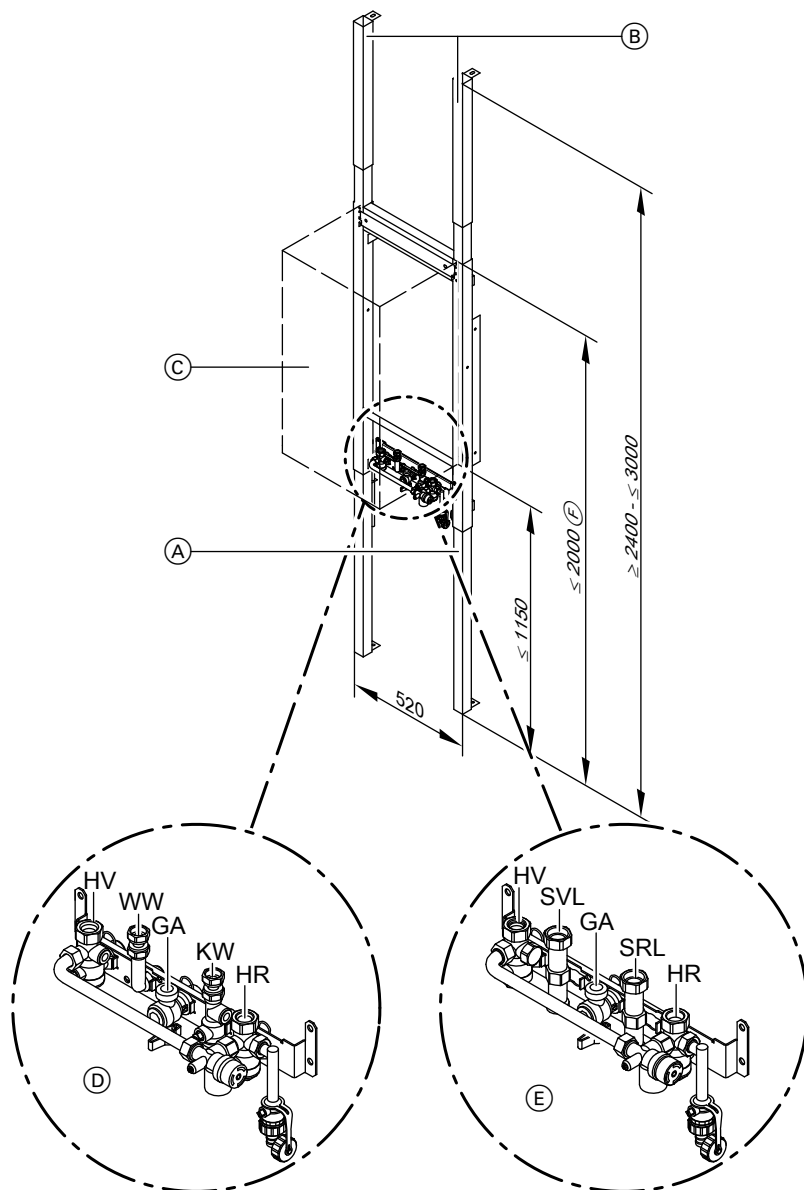
Self-supporting installation of the Vitodens 200-W and 300-W

Self-supporting mounting frame

Suitable for wall mounting, for self-supporting installation or cladding. With valves with threaded fitting and gas angle valve G $\frac{3}{4}$ with thermally activated safety shut-off valve.

- For gas combi boiler
- For gas boiler

Design information (cont.)



Showing mounting brackets for Vitodens 200-W

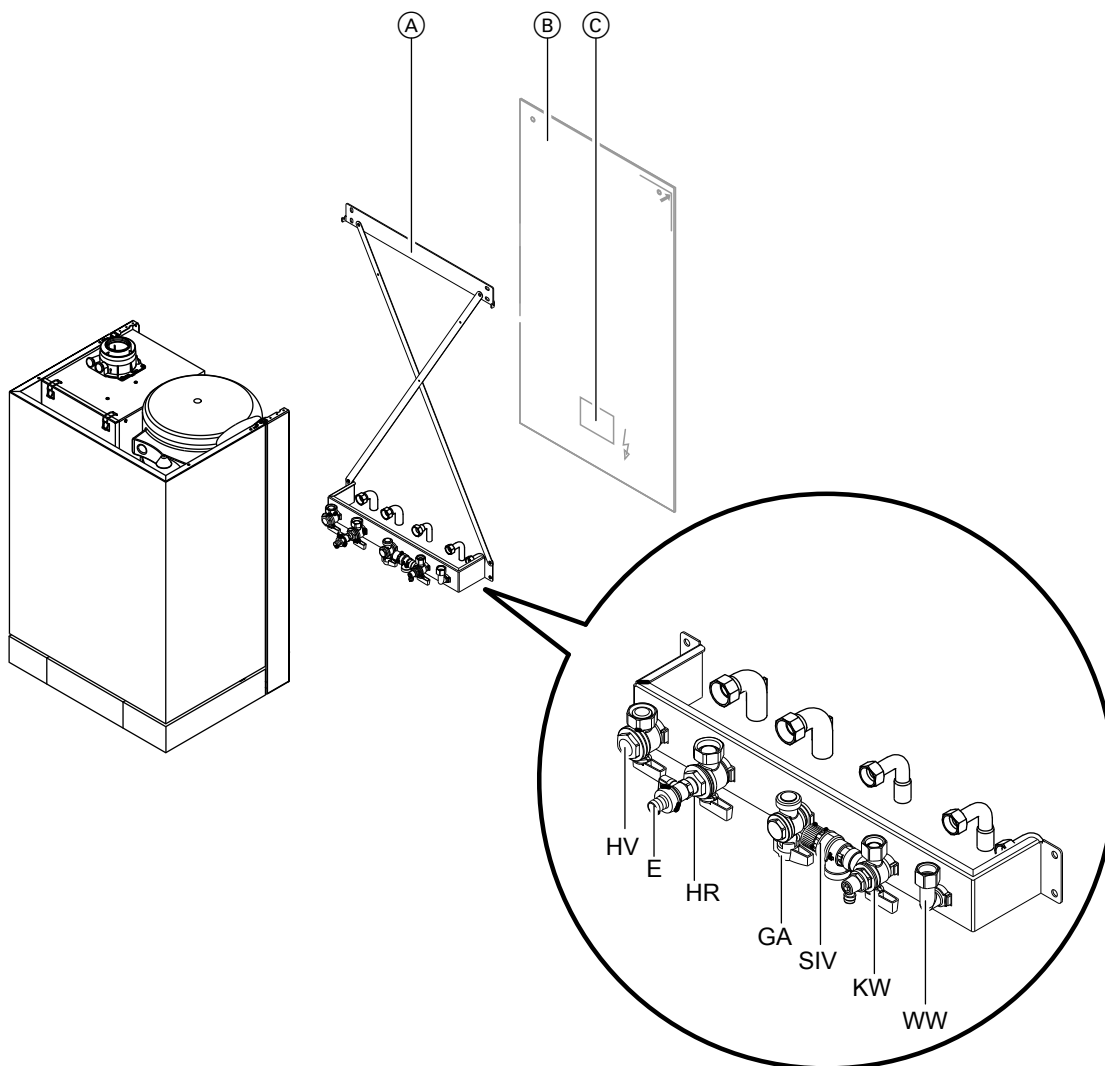
- | | | | |
|-----|---|-----|-----------------------------------|
| (A) | Self-supporting mounting frame for the Vitodens incl. connection bracket | GA | Gas connection R ½ |
| (B) | Ceiling fixing extension (Vitodens) | HR | Heating return G ¾ |
| (C) | Vitodens | HV | Heating flow G ¾ |
| (D) | Gas combi boiler connection bracket | KW | Cold water G ½ (gas combi boiler) |
| (E) | Gas boiler connection bracket | WW | DHW G ½ (gas combi boiler) |
| (F) | In conjunction with DHW cylinder installed below the boiler, min. 1933 mm | SRL | Cylinder return G ¾ (gas boiler) |
| | | SVL | Cylinder flow G ¾ (gas boiler) |

Pre-installation for Vitodens 222-W

Pre-installation on finished walls

Accessories required for installation in unfinished buildings:
Pre-plumbing jig, comprising:

Fixings, valves, gas shut-off valve, safety valve on the DHW side and pipe bends.



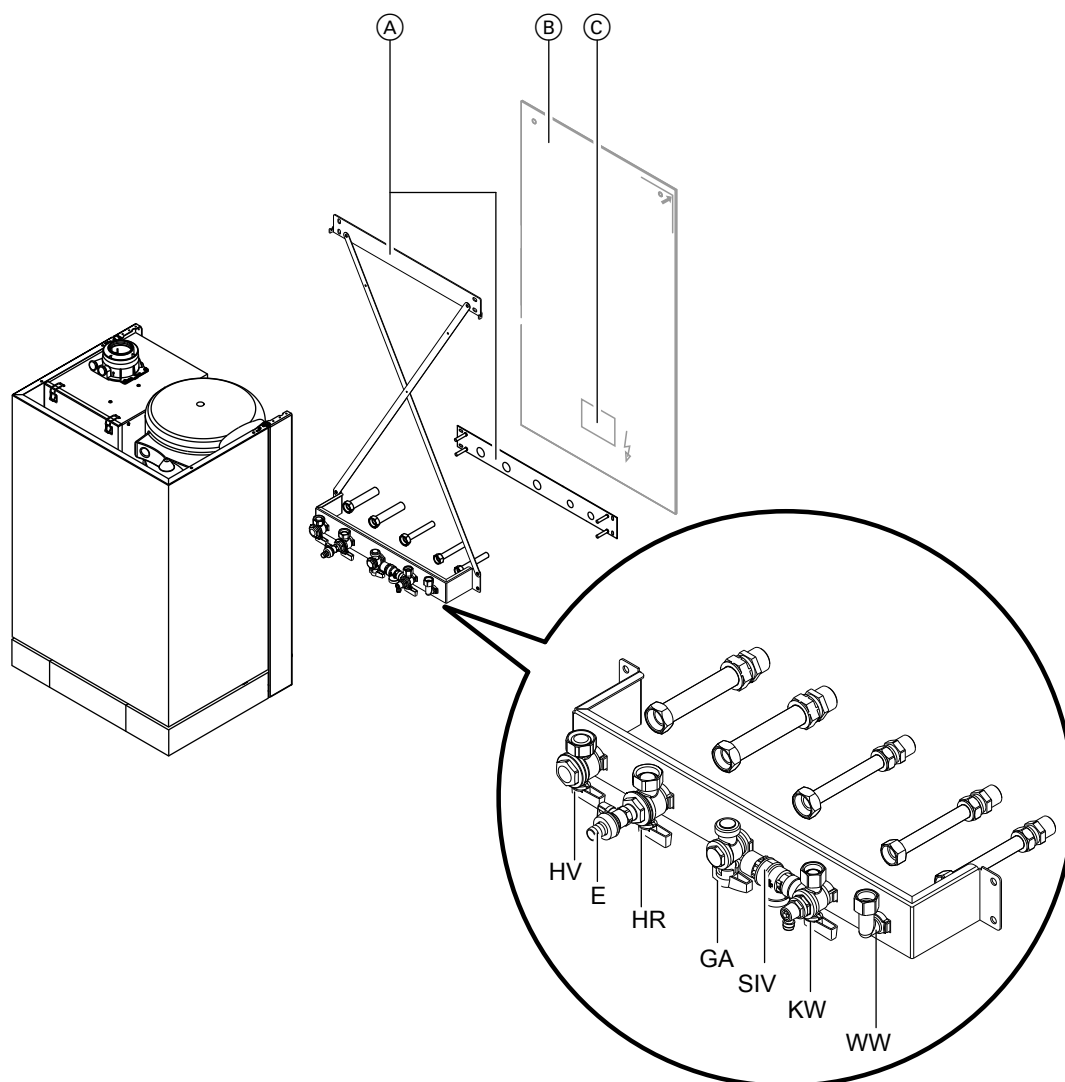
- Ⓐ Pre-plumbing jig
- Ⓑ Vitodens position
- Ⓒ Area for power cables.
Allow cables to protrude approx. 1300 mm from the wall.
- E Drain
- GA Gas connection R ½

- HR Heating return R ¾
- HV Heating flow R ¾
- KW Cold water R ½
- SIV Safety valve on the DHW side
- WW DHW R ½

Pre-installation on unfinished walls

Accessories required for installation in unfinished buildings:
Pre-plumbing jig, comprising:

Fixings, valves, gas shut-off valve, safety valve on the DHW side and connectors.



- (A) Pre-plumbing jig
- (B) Vitodens position
- (C) Area for power cables.
Allow cables to protrude approx. 1300 mm from the wall.
- E Drain
- GA Gas connection R 1/2

- HR Heating return R 3/4
- HV Heating flow R 3/4
- KW Cold water R 1/2
- SIV Safety valve on the DHW side
- WW DHW R 1/2

6.2 Replacing third party appliances with the Vitodens 200-W or 300-W

Using an adaptor, the Vitodens hydraulic connections are compatible with Ceramini-Z-SR, Cerastar-ZR/-ZWR and Thermoblock-VC110E-/VC112E/-VC/-VCW boilers.

For modernisation projects, adaptors are available as accessories (see pricelist). These comprise connection components for the heating water and DHW sides and fixing components for replacing the third party appliances listed below with a Vitodens.

Replacing these boilers with the Vitodens will not result in a greater installation effort compared to replacing them with a same-brand appliance.

Where a wall mounted gas boiler is replaced by a Vitodens 200-W or 300-W gas condensing boiler, the flue must also be replaced with a system that is suitable for "condensing operation" (see pricelist for "flue systems for the Vitodens").

Match up the flue connections on site.

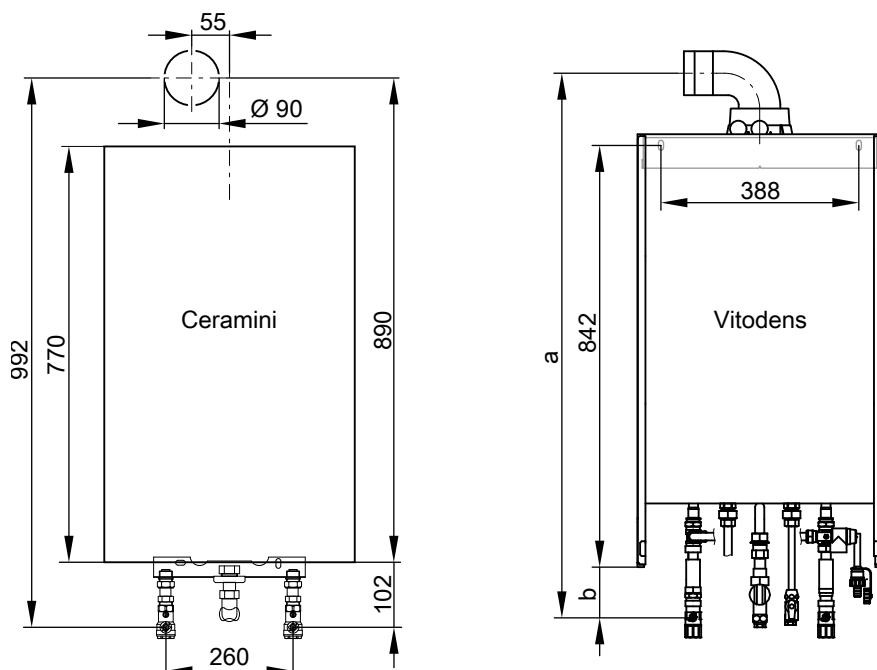
Note

For modernisation projects, the State Building Regulations [Germany] require the on-site installation of a gas shut-off valve with thermally activated shut-off facility.

Design information (cont.)

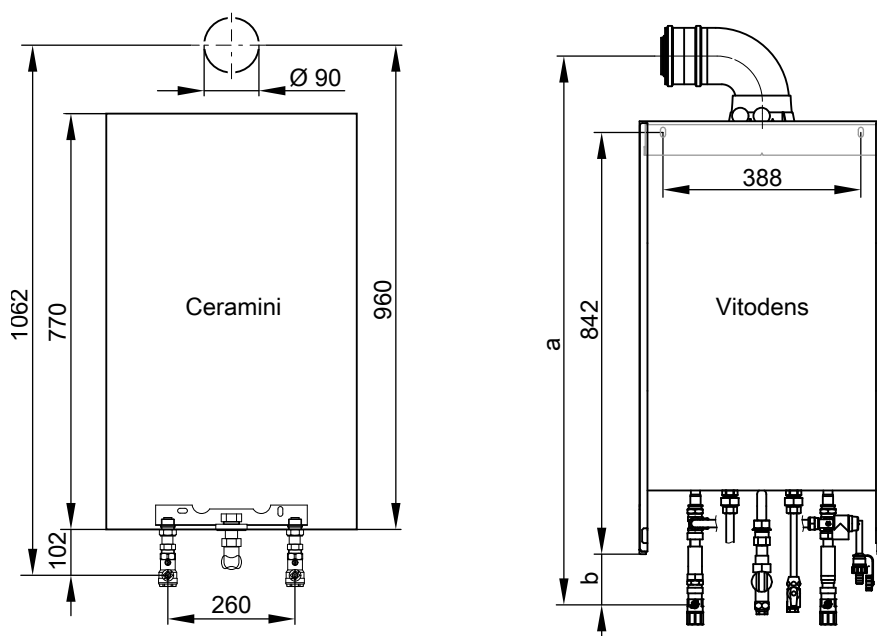
Replacing a Ceramini-Z-SR with a Vitodens 200-W (3.2-19 kW) or a Vitodens 300-W (1.9-19 kW)

Open flue operation



Dimensions	Unfinished walls	Finished walls
a mm	1098	1086
b mm	127	115

Balanced flue operation



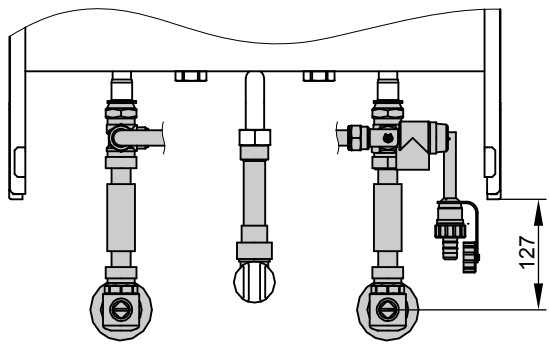
Dimensions	Unfinished walls	Finished walls
a mm	1105	1093
b mm	127	115

The parts marked in grey (incl. mounting bracket) in the following diagrams are part of the standard delivery.

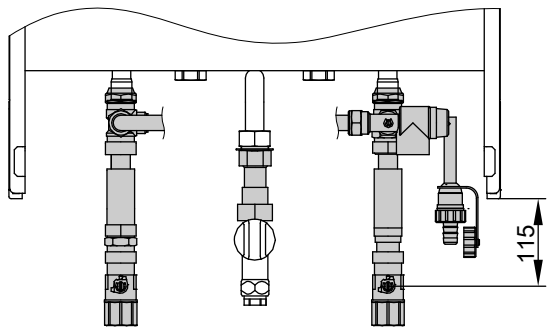
Existing hydraulic connections have identical dimensions.

Design information (cont.)

Installation on unfinished walls

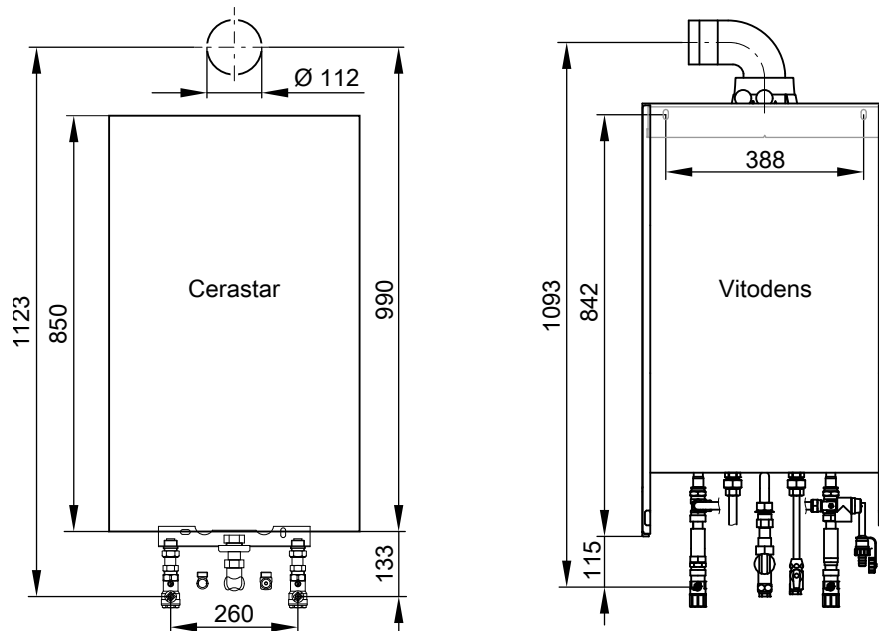


Installation on finished walls



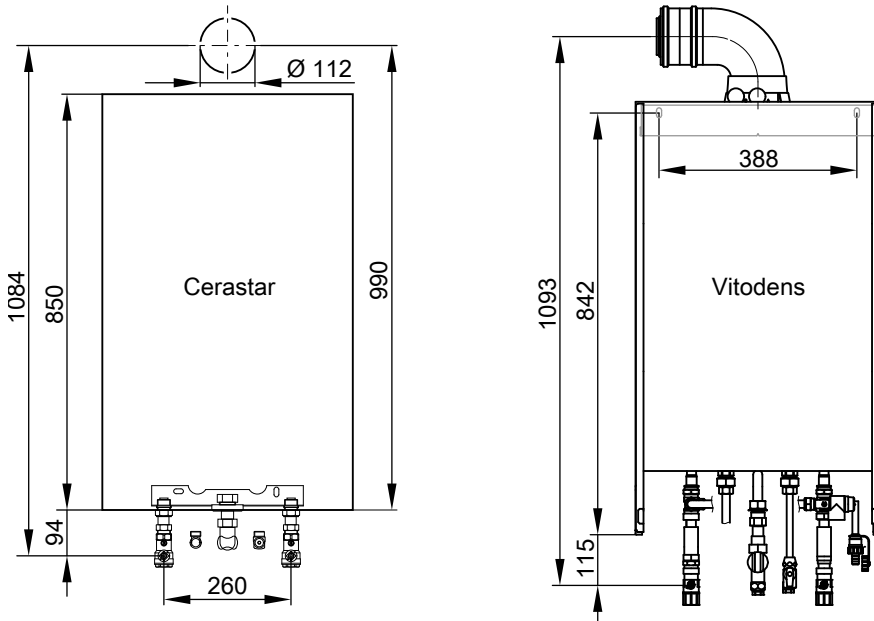
Replacing a Cerastar-ZR/-ZWR with a Vitodens 200-W (5.2-35 kW) or a Vitodens 300-W (4.0-35 kW)

Open flue operation



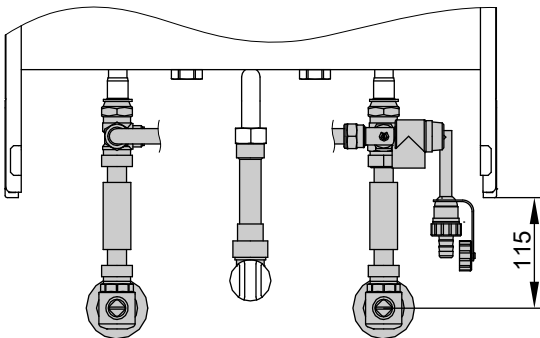
Design information (cont.)

Balanced flue operation

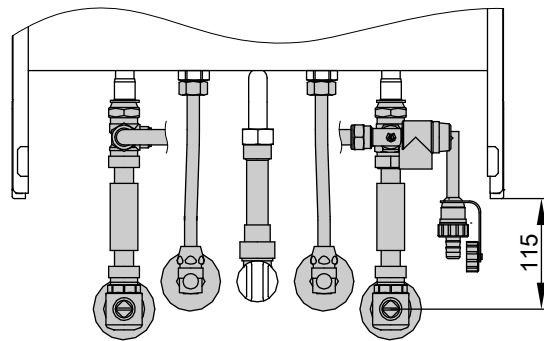


Existing hydraulic connections have identical dimensions.
The parts marked in grey (incl. mounting bracket) in the following diagrams are part of the standard delivery.

Installation on unfinished walls

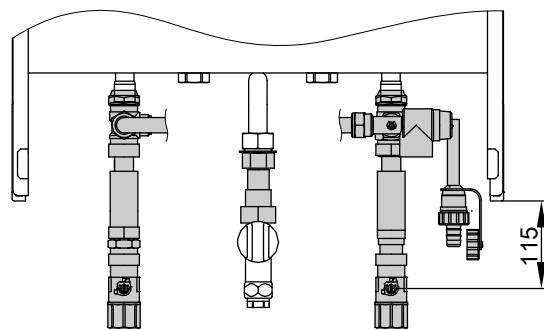


Gas boiler



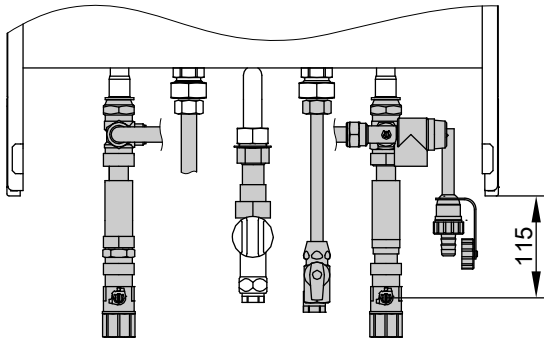
Gas combi boiler

Installation on finished walls



Gas boiler

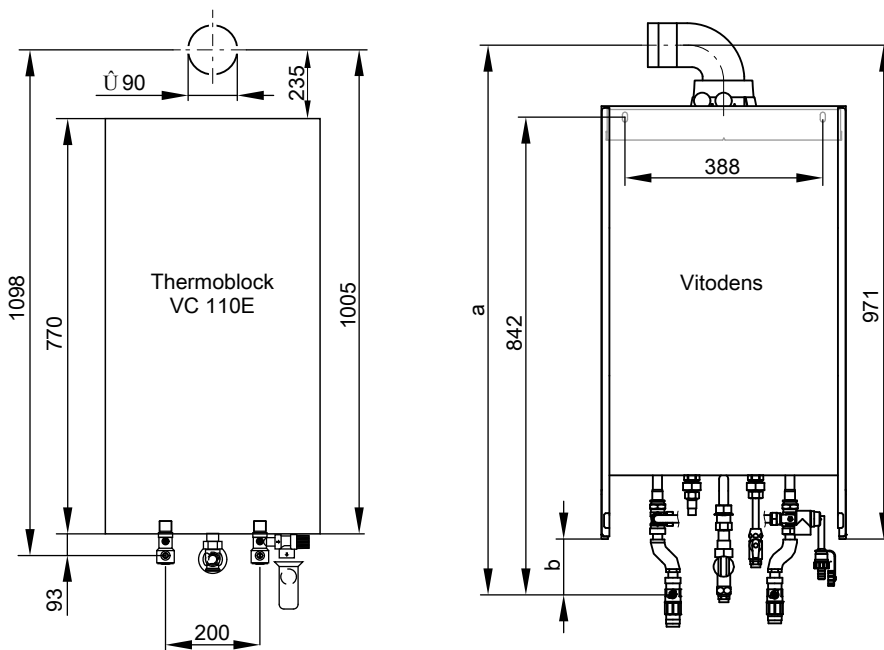
Design information (cont.)



Gas combi boiler

Replacing a Thermoblock-VC110E/-VC112E with a Vitodens 200-W (3.2-19 kW) or a Vitodens 300-W (1.9-19 kW)

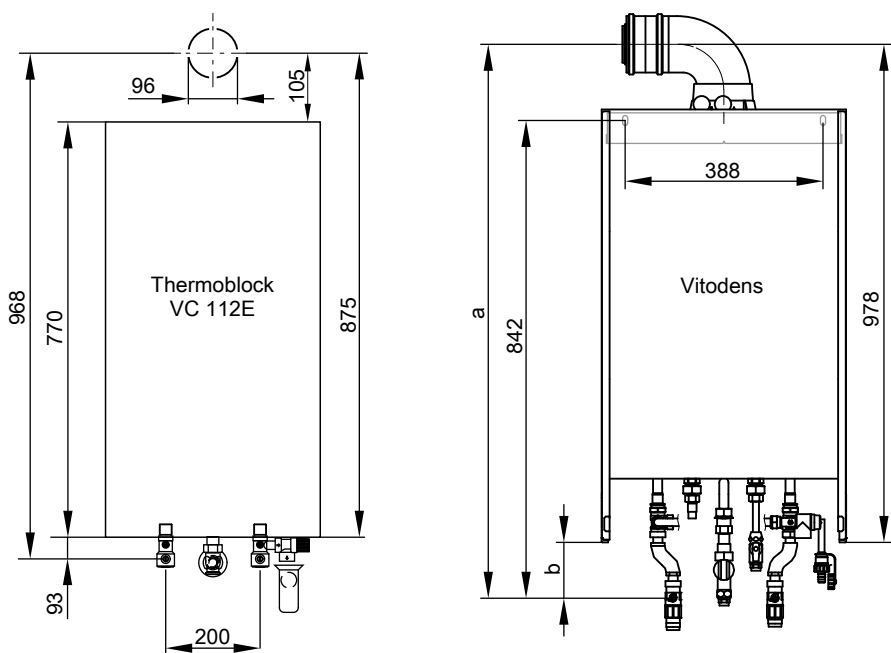
Open flue operation



Dimensions		Unfinished walls	Finished walls
a	mm	1037	1076
b	mm	66	105

Design information (cont.)

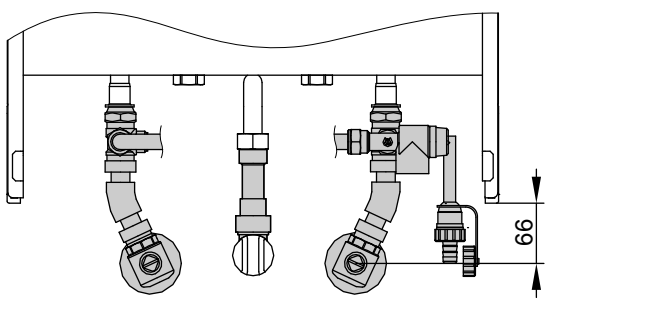
Balanced flue operation



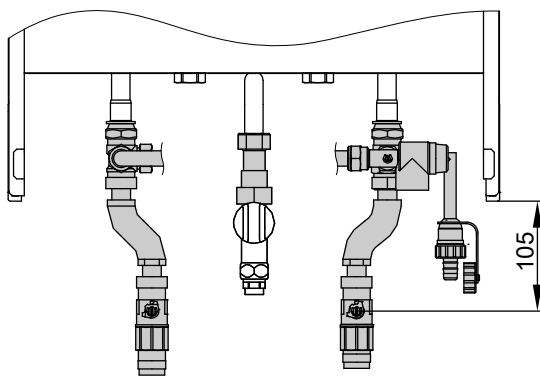
Dimensions	Unfinished walls	Finished walls
a mm	1044	1083
b mm	66	105

Existing hydraulic connections have identical dimensions.
The parts marked in grey (incl. mounting bracket) in the following diagrams are part of the standard delivery.

Installation on unfinished walls



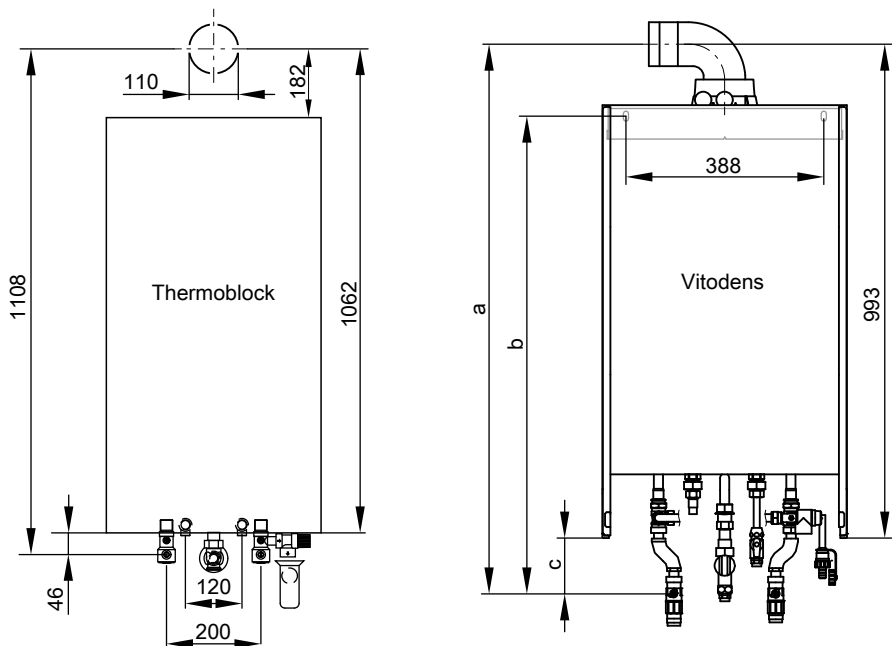
Installation on finished walls



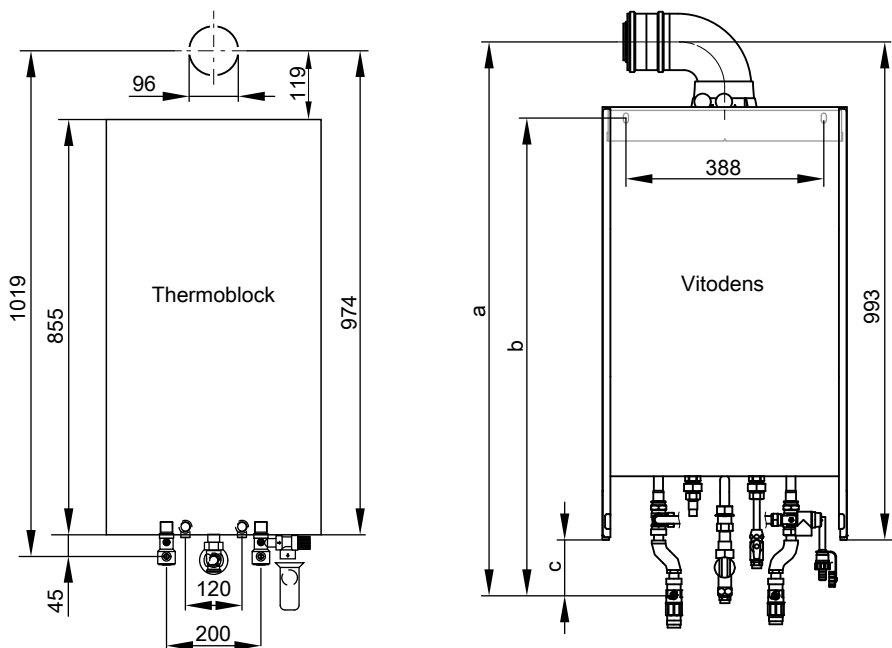
Design information (cont.)

Replacing a Thermoblock-VC/VCW with a Vitodens 200-W (5.2-35 kW) or a Vitodens 300-W (4.0-35 kW)

Open flue operation



Balanced flue operation



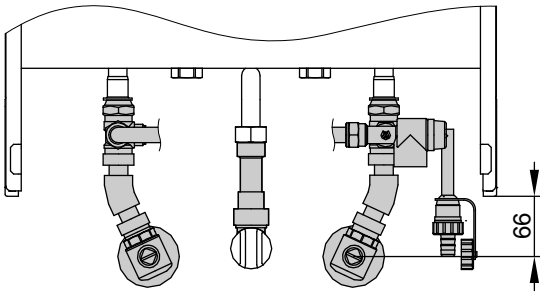
Dimensions		Unfinished walls	Finished walls
a	mm	1059	1098
b	mm	908	947
c	mm	66	105

Existing hydraulic connections have identical dimensions.
The parts marked in grey (incl. mounting bracket) in the following diagrams are part of the standard delivery.

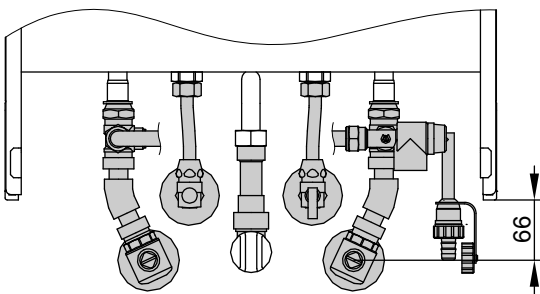
5822 430 GB

Design information (cont.)

Installation on unfinished walls

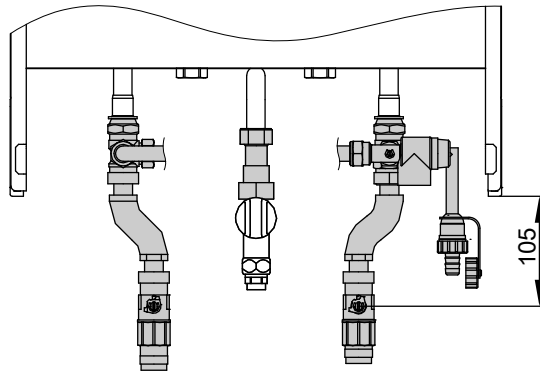


Gas boiler

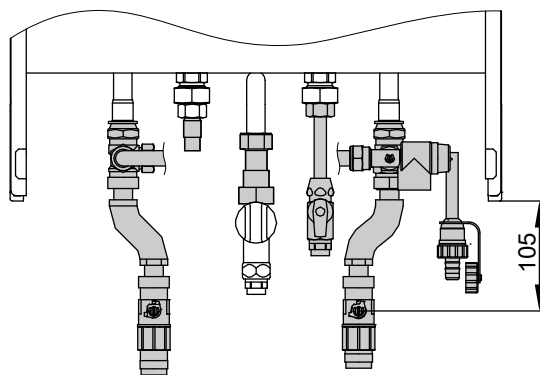


Gas combi boiler

Installation on finished walls



Gas boiler



Gas combi boiler

6.3 Decision-making aids regarding DHW heating

To provide the perfect solution for every situation the Vitodens may be supplied with integral, direct DHW heating (gas combi boiler), or alternatively it can be supplied in combination with a separate DHW cylinder (gas boiler) or integral DHW loading cylinder (Vitodens 222-W):

- Vitodens 200-W
as a gas boiler and gas combi boiler
- Vitodens 300-W
as gas boiler
- Vitodens 222-W
with integral DHW loading cylinder

Various factors should be taken into consideration when designing heating systems and deciding between a gas combi boiler or a gas boiler with a separate DHW cylinder or an integral DHW loading cylinder:

- DHW demand, convenience
- Usage of the various connected draw-off points
- Distance between the draw-off points and the boiler
- System modernisation
- Space requirement
- Water quality

Information about water quality

During DHW heating, settling of lime on the surfaces of the plate heat exchanger cannot be completely prevented. The tendency towards limescale build-up depends on various conditions, predominantly on the substances contained in the water, the amount of water that is heated (DHW consumption) and the DHW temperature.

Although scale deposits inside the plate heat exchanger are generally minor enough not to cause any reduction in DHW output, such impairment cannot be excluded with increased water hardness. From a water hardness of 20 °dH (3.5 mol/m³) and higher, we therefore recommend the use of DHW cylinders with internal indirect coils or a water treatment system in the cold water supply when heating DHW.

Please note that regional water supply utilities frequently specify an average water hardness. Higher levels of water hardness may therefore occur from time to time. This may make the use of a water treatment facility advisable even from 17 °dH (> 3.0 mol/m³) upwards.

Design information (cont.)

Selection table

		Vitodens 200-W gas combi boiler with instantaneous water heater	Vitodens 200-W and Vitodens 300-W gas boiler with separate DHW cylinder	Vitodens 222-W with integral DHW loading cylinder
DHW demand, convenience	DHW demand for an apartment	+	+	+
	DHW demand for a detached house	0	+	+
	DHW demand for a centralised system in an apartment building	-	+	-
	DHW demand for a decentralised system in an apartment building	+	+	0
Usage of the various connected draw-off points	One draw-off point	+	0	0
	Several draw-off points, no simultaneous utilisation	+	+	+
	Several draw-off points, simultaneous utilisation	-	+	+
Distance between draw-off point and boiler	Up to 7 m (without DHW circulation pipe)	+	+	+
	With DHW circulation pipe	-	+	-
Modernisation	Existing DHW cylinder	-	+	-
	Replacement of an existing combi boiler	+	-	0
Space requirement	Limited space available (installation in recesses)	+	0	0
	Sufficient space available (installation room)	+	+	+
Solar DHW heating can be connected	Connection to a dual mode DHW cylinder	-	+	-
	Connection to the integral DHW cylinder	-	-	-

+ = recommended

0 = recommended under certain conditions

- = not recommended

Separate DHW cylinders

For greater DHW convenience, separate DHW cylinders are also available in white in the following versions:

- Below the boiler (120 or 150 litres).
- Adjacent to the boiler (160, 200, 300 or 400 litres).

Further DHW cylinders with up to 1000 litre capacity are offered in Vitosilver and may also be used in accordance with the available heating output.

The Vitodens 200-W and 300-W boilers are equipped at factory with a separate DHW cylinder for DHW heating. For this purpose, the Vitodens 200-W and 300-W are provided with an integral diverter valve.

To connect a separate DHW cylinder, always include the connection set for the respective DHW cylinder in your order. For DHW cylinder specifications, see chapter "DHW cylinders".

Sizing cylinders

Determine the DHW cylinder size in accordance with the specific DHW demand.

Various consumer combinations may apply.

If identical consumers are combined, only take into account the individual consumer, not the combination.

The following summary enables an **approximate** sizing of the DHW cylinder:

Small households (1 to 2 occupants)	
Average households (3 to 4 occupants)	

Note

Instead of a Vitodens 200-W or 300-W with 120 litre DHW cylinder, a Vitodens 222-W can also be used.

Cylinder capacity in litres

	Bath 1600 to DIN 4471	Bath 1700 to DIN 4471	Small and stepped bath	Large bath (1800 × 750 mm)	Shower cubicle with mixer tap and standard shower head	Shower cubicle with 1 shower head and 2 side nozzles	Washbasin	Bidet
Draw-off rate in Wh	5820	6510	4890	8720	1630	4070	700	810
Draw-off volume per use or available capacity in l	140	160	120	200	40	100	17	20
Bath 1600 to DIN 4471	120				120	120	120	120
	120				120	150/160	120	120
Bath 1700 to DIN 4471		120			120	120	120	120
		120			120	120	120	120
Small and stepped bath			120		120	120	120	120
			120		120	120	120	120
Large bath (1800 × 750 mm)				120	120	120	120	120
				200	150/160	200	150/160	150/160
Shower cubicle with mixer tap and standard shower head	120	120	120	120	120	120	120	120
	120	120	120	150/160	120	120	120	120

5822 430 GB

Design information (cont.)

	Bath 1600 to DIN 4471	Bath 1700 to DIN 4471	Small and stepped bath	Large bath (1800 × 750 mm)	Shower cubicle with mixer tap and standard shower head	Shower cubicle with 1 shower head and 2 side nozzles	Washbasin	Bidet
Shower cubicle with 1 shower head and 2 side nozzles	120	120	120		120	120	120	120
	150/160		150/160	200	120	120	120	120
Washbasin	120	120	120	120	120	120	120	120
	120	120	120	150/160	120	120	120	120
Bidet	120	120	120	120	120	120	120	120
	120	120	120	150/160	120	120	120	120

Example:

- Average household with 3 occupants.
- Use of a bath tub 1600 with 140 litres drawn.
- Simultaneous use of a shower cubicle with mixer tap and standard shower head with 40 litres drawn.

The table shows that the correct DHW cylinder to DIN 4708 would have a capacity of 120 litres.

Selection tables, DHW cylinders

The DHW cylinders with a "-W" in the product name are supplied in white. The appliances with a "-B" or "-V" in the product name are supplied in Vitosilver (marked in grey in the table).

Vitodens 200-W and 300-W gas boilers, cylinder allocation

Rated heating output range [kW]	Practical cylinder allocation (cylinder capacity in litres)		
	1.9 to 19.0	4.0 to 26.0	4.0 to 35.0
Vitocell 100-W (type CUG) below the boiler	120	120	120
	150	150	150
Vitocell 100-W (type CVA) adjacent to the boiler	160	160	160
	200	200	200
	300	300	300
Vitocell 100-V (type CVA) adjacent to the boiler	—	—	500
Vitocell 300-W (type EVA) adjacent to the boiler	160	160	160
	200	200	200
Vitocell 300-V (type EVI) adjacent to the boiler	—	300	300
		500	500
Vitocell 100-W (type CVB) adjacent, dual mode	300	300	300
	400	400	400
Vitocell 100-W (type CVU) adjacent, dual mode	400	400	400
Vitocell 100-B (type CVB) adjacent, dual mode	—	500	500
Vitocell 300-B (type EVB) adjacent, dual mode	300	300	300
		500	500
Vitocell 340-M (type SVK) heating water buffer cylinder with DHW heating	705/33	705/33	705/33
Vitocell 360-M (type SVS) heating water buffer cylinder with DHW heating	705/33	705/33	705/33

6.4 Connections on the water side

Connections on the DHW side

Vitodens 200-W gas combi boiler

For the DHW connection, connection sets for installation on finished or unfinished walls are available as accessories. The integral instantaneous water heater provides direct DHW heating.

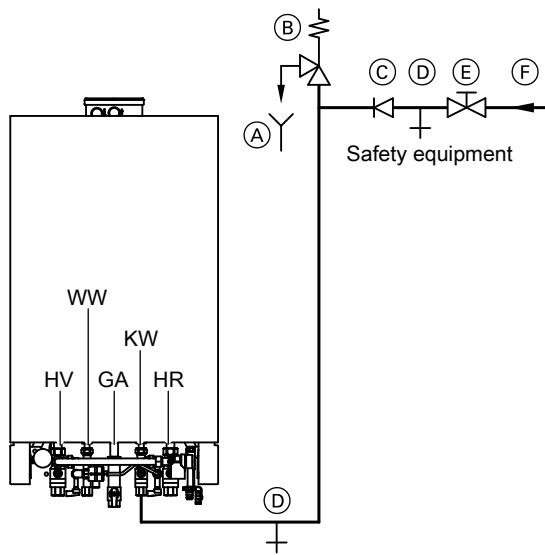
When using galvanised pipes, observe that the instantaneous water heater is designed as a stainless steel plate heat exchanger with copper solder joints (observe the flow rule).

In existing installations (modernisation projects), the risk of electrolytic corrosion is low, since a protective layer will have formed on the inside of the pipes.

If DHW is to be drawn simultaneously from several points, we recommend the installation of a separate DHW cylinder in conjunction with the gas boiler (see "Decision-making aids regarding DHW heating"). From a water hardness of 20 °dH [3.58 mmol/l] and higher, we recommend the use of a water treatment system in the cold water supply.

Design information (cont.)

Cold water installation for the Vitodens 200-W gas combi boiler



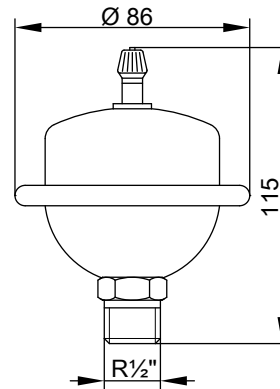
- (A) Visible drain pipe outlet
- (B) Safety valve
- (C) Non-return valve
- (D) Drain
- (E) Shut-off valve
- (F) Cold water
- GA Gas connection
- HR Heating return
- HV Heating flow
- KW Cold water
- WW DHW

A safety valve to DIN 1988 only has to be installed when the mains water supply pressure exceeds 10 bar (1 MPa), (A): 6 bar (0.6 MPa), and no DHW pressure reducing valve is used (in accordance with DIN 4753).

Install a safety valve if the cold water supply is equipped with a non-return valve. In addition remove the toggle from the cold water shut-off-valve.

Non-return valves are commonly found in pressure reducers and combined shut-off and non-return valves.

Shock arrester



If the pipework to which the Vitodens is connected comprises taps where water hammers may be created (e.g. pressure washers, washing machines or dishwashers), we recommend the installation of a shock arrester near such water hammer generators.

Flexofit S made by Flamco-Flexcon

or

Reflex made by Winkelmann + Pannhoff GmbH

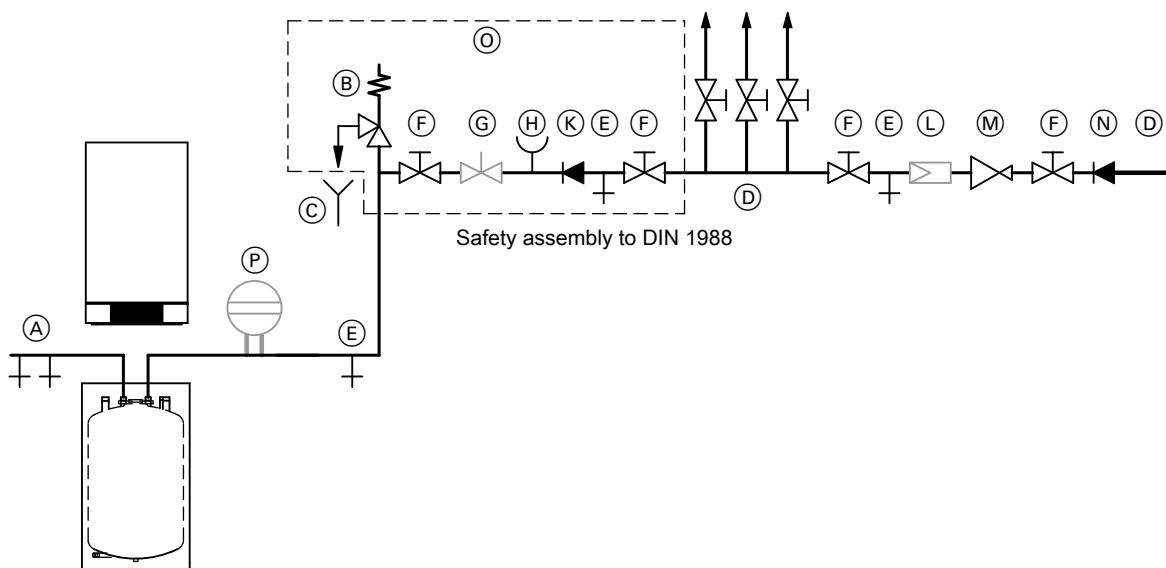
(available from your local dealer).

Design information (cont.)

Cold water installation, separate DHW cylinder and loading cylinder of the Vitodens 222-W

Example:

DHW cylinder installed below (120 or 150 l) with safety assembly to DIN 1988.



- | | |
|---|--|
| (A) DHW | (H) Pressure gauge connection |
| (B) Safety valve (included in the standard delivery of the pre-plumbing jig for the Vitodens 222-W) | (K) Non-return valve |
| (C) Visible outlet point of the discharge pipe | (L) Drinking water filter |
| (D) Cold water | (M) Pressure reducer to DIN 1988-2, Dec. 1988 issue |
| (E) Drain | (N) Non-return valve/pipe separator |
| (F) Shut-off valve | (O) Standard delivery of the safety assembly offered as an accessory (for separate DHW cylinders only) |
| (G) Flow regulating valve (installation recommended) | (P) Diaphragm expansion vessel, suitable for drinking water |

Safety valve

The safety valve **must** be installed.

We recommend installing the safety valve above the top edge of the cylinder. This protects the valve against contamination, scaling and high temperatures. It also means that the DHW cylinder does not need to be drained when working on the safety valve.

Drinking water filter

According to DIN 1988-2, a drinking water filter should be installed in systems with metal pipework. Viessmann also recommends the installation of a drinking water filter when using plastic pipes to DIN 1988 to prevent contaminants entering the DHW system.

DHW circulation (only in conjunction with the Vitodens 200-W and 300-W)

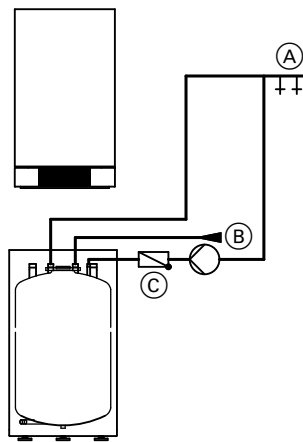
DHW circulation pipes increase DHW convenience and reduce water consumption. These advantages result from the immediate availability of DHW at the tap/draw-off point.

However, poor thermal insulation of the DHW circulation pipe can lead to substantial heat losses.

From a **line length** of **7 m** we recommend providing appropriate thermal insulation for the DHW circulation in accordance with the Energy Saving Ordinance [Germany]. This specifies that the DHW circulation pipe should, in accordance with the Energy Saving Ordinance, include a circulation pump, a check valve and a time switch for shutting down DHW circulation during the night.

Design information (cont.)

Vitodens 200-W and 300-W



DHW cylinder below the boiler

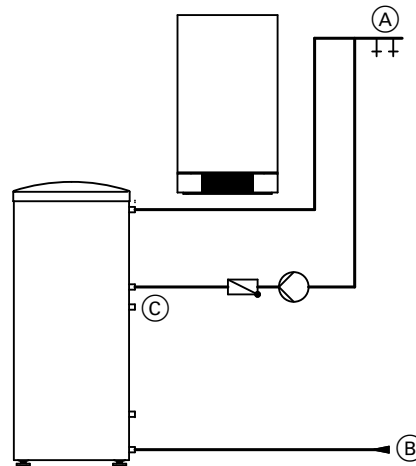
- (A) DHW
- (B) Cold water
- (C) DHW circulation

Vitodens 222-W

The connection of a DHW circulation pipe is **not recommended**.

DHW circulation for gas combi boilers

Due to the low water content of plate heat exchangers, the connection of DHW circulation lines is **not recommended** for gas combi boilers.



DHW cylinder adjacent to the boiler

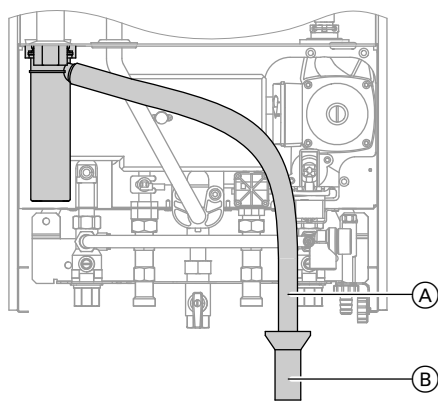
- (A) DHW
- (B) Cold water
- (C) DHW circulation

Even the low heat losses of thermally insulated DHW circulation lines (to EnEV) lead to a higher cycling frequency for the gas combi boiler (reheating).

6.5 Condensate connection

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

Vitodens 200-W and 300-W

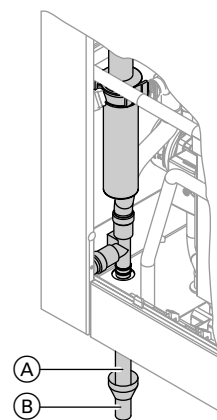


- (A) Drain hose (standard delivery for the Vitodens)
- (B) Drain outlet kit (accessories)

Note

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

Vitodens 222-W



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

Condensate drain and neutralisation

5822 430 GB Drain the condensate created in the condensing boiler and in the flue pipe during heating operation 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.

Design information (cont.)

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

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

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

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

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

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

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

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

Condensate from gas combustion equipment up to 200 kW combustion output

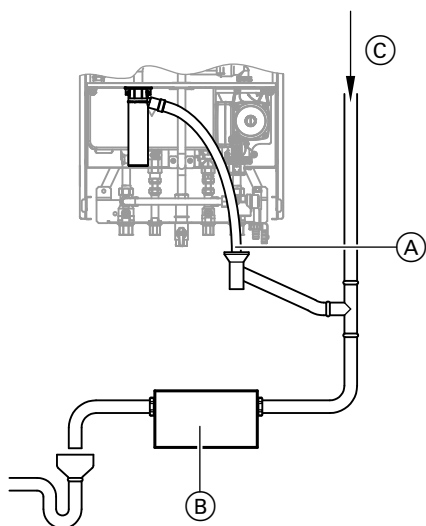
Up to a rated heating output of 200 kW, the condensate from a gas condensing boiler can generally be introduced into the public sewage system without prior neutralisation.

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

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

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

Neutralising system



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

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

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

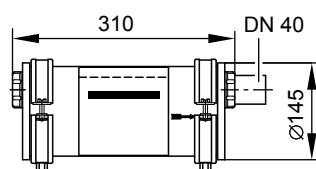
Install a condensate lifting pump if the Vitodens has been installed below the waste water anti-flooding level.

Condensate lifting pumps are available as accessories.

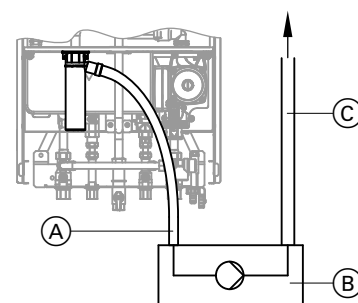
Since the consumption of neutralising granulate depends on the operating mode of the system, carry out regular checks during the first year of operation to determine the required top-up volume. It is feasible that one fill may last longer than one year.

Neutralising system

Part no. 7252 666



Condensate lifting system (accessories)



- (A) Condensate inlet
- (B) Condensate lifting system
- (C) Condensate drain

6.6 Hydraulic connection

General information

System design

Viessmann condensing boilers can generally be installed in any fully pumped hot water heating system (sealed unvented system). The circulation pump is an integral part of the appliance. Minimum system pressure 1.0 bar (0.1 MPa). The boiler water temperature is limited to 82 °C. To minimise distribution losses, we recommend sizing the heat distribution system to a max. flow temperature of 70 °C. For apartments with less than 80 m² living space or for low energy houses with low heat demand we recommend, due to the immediate capturing of the room-influencing factors, using the Vitodens with a constant temperature control unit in conjunction with the Vitotrol 100. To reduce burner cycling in low energy houses with a correspondingly low heat demand, we recommend the use of a low loss header or a Vitodens 300-W with 1.9 to 11 kW.

Chemical anti-corrosion agents

In correctly installed and operated sealed unvented heating systems corrosion is generally avoided. Never use chemical anti-corrosion additives. Some manufacturers of plastic pipes recommend the use of chemical additives. In such cases, only use anti-corrosion 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 dirt separator in underfloor heating systems; see the Viessmann Vitoset pricelist. Underfloor heating systems and heating circuits with very large water content (>15 l/kW) should be connected to the boiler, even if a condensing boiler, via a 3-way mixer. See technical guide "Control of underfloor heating systems" or the relevant sample applications. Install a temperature limiter in the flow of the underfloor heating circuit to restrict the maximum temperature. Observe the requirements of DIN 18560-2 [or local regulations].

Plastic pipework for radiators

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

Attic heating centre

The installation of a low water indicator specified as compulsory by DVGW is not required when installing the Vitodens in an attic. The Vitodens condensing boilers are protected against water shortage in accordance with EN 12828.

Safety valve

A safety valve in accordance with TRD 721 is integrated in the Vitodens (opening pressure 3 bar (0.3 MPa)). Route the discharge pipe in accordance with EN 12828 into a drain outlet (drain outlet kit available as an accessory). The drain outlet incorporates a siphon as a stench trap.

Low water indicator

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

Viessmann 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 reaches unacceptably high temperatures.

Water quality/Frost protection

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

- 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, otherwise damage to gaskets and diaphragms may occur, as well as noise during heating operation. Viessmann accepts no liability for any 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 of 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).

Modernising existing systems

Third party appliance adaptors are available as accessories for the Vitodens 200-W and 300-W.

Design information (cont.)

This enables existing hydraulic connections for wall mounted boiler types Thermobloc-VC/-VCW, Cerastar-ZR/-ZWR and Ceramini to be adapted to suit the Vitodens (see page 61).

Installation examples

For installation examples for the Vitodens 200-W, 222-W and 300-W, see "System examples".

Never install the Vitodens 222-W in dual mode systems with solid fuel boilers.

Expansion vessels

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

- An expansion vessel is integrated into the following Vitodens boilers:
 - Vitodens 200-W to 35 kW
 - Vitodens 222-W
 - Vitodens 300-W, 11 and 19 kW
- For the Vitodens 300-W, 26 and 35 kW a mounting frame with expansion vessel and valves is available as an accessory (see page 45).

Determine the size of the expansion vessel to be installed in accordance with EN 12828.

If the integral expansion vessel or that supplied as an accessory is inadequate, install a suitably sized expansion vessel on site.

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 max. flow rate of an individual design is greater than the corresponding value shown in the "Specification" table.

For installation designs in conjunction with low loss headers, see "System examples".

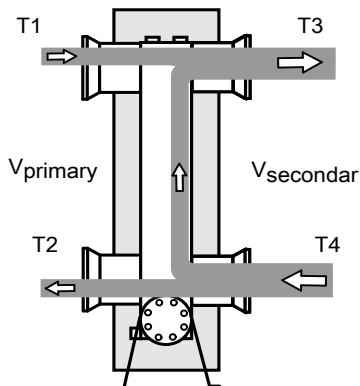
Boiler circuit

The circulation pump in the Vitodens must be able to supply the required water volume against the (generally 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 diagrams; alternatively the variable speed pump for the Vitodens 300-W can be adjusted accordingly.

Heating circuit

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

Principle of operation



V_{primary}	Heating water volume in the 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	Return temperature, heating circuit
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

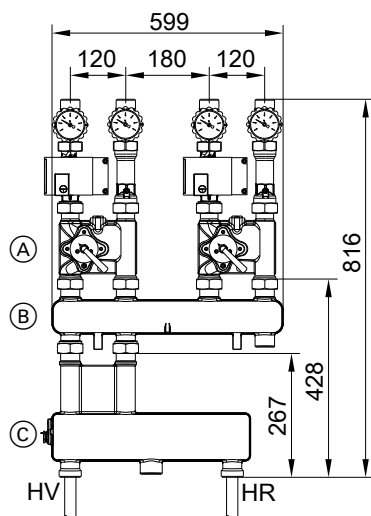
Suitable thermometers in the flow and return of the low loss header make adjustments easier.

Low loss header in conjunction with Divicon

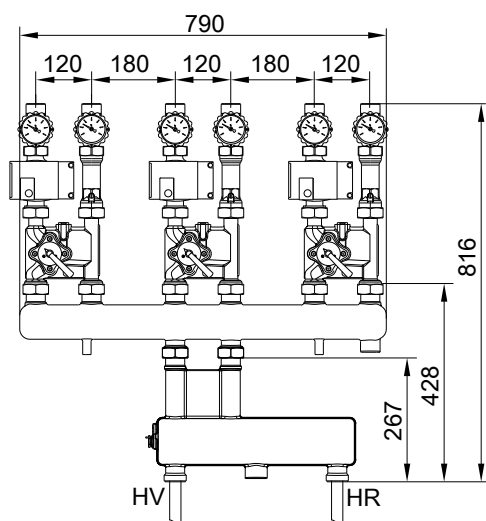
For further details, see the technical guide to the Vitodens 200-W, 45 to 150 kW.

	Max. flow rate in m ³ /h
Low loss header	
– R ¾	4.5
– R 1	4.5
– R 1¼	7.5
Divicon heating circuit distributor	
– R ¾	1.0
– R 1	1.5
– R 1¼	2.5

Design information (cont.)



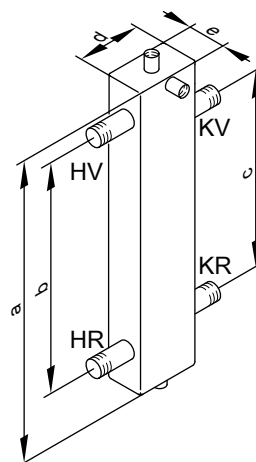
- HR Heating return
- HV Heating flow
- Ⓐ Divicon heating circuit distributor
- Ⓑ Manifold
- Ⓒ Low loss header



- HR Heating return
- HV Heating flow

Low loss header from the Vitoset range

See "Vitoset" pricelist



- HR Heating return
- HV Heating flow
- 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-	a	500	500	800	1400	1450
men-	b	360	360	650	1000	1000
sions	c	270	270	550	1000	1000
	d	80	80	120	160	200
	e	50	50	80	80	120

6.7 Intended use

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

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

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

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

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

Control units

7.1 Vitotronic 100, type HC1B, for constant temperature operation

Layout and functions

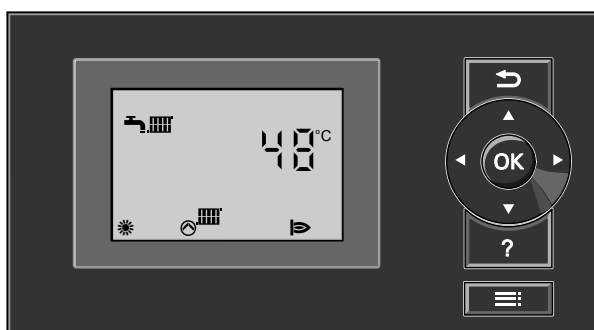
Modular structure

The control unit is integrated into the boiler.

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

Standard unit:

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



Programming unit:

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

Functions

- Electronic boiler control unit for operation at a constant boiler water temperature
- Room temperature-dependent operation requires a Vitotrol 100, type UTA, UTDB or UTDB-RF (according to EnEV [Germany])
- Heating system frost protection
- Anti-seizing pump protection
- Integral diagnostic system
- Cylinder thermostat with priority
- 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)

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 cylinder needs reheating or when DHW is drawn from a combi boiler.

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

Standard delivery for:

- Connection set for DHW cylinders below the boiler (120 or 150 litres) (order separately)
- Connection set for DHW cylinders adjacent to the boiler (160 to 400 litres) or alternative DHW cylinders (order separately)

Specification

Cable 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

Cylinder temperature sensor (Vitodens 222-W) and outlet temperature sensor

These sensors are connected to the control unit and built into the boiler or cylinder.

Specification

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

Control units (cont.)

Specification Vitotronic 100, type HC1B

Rated voltage	230 V~	Electronic temperature limiter setting (heating mode)	82 °C (no change possible)
Rated frequency	50 Hz	DHW temperature setting range	
Rated current	6 A	– gas combi boilers	10 to 57 °C
Safety category	I	– gas system boilers	10 to 68 °C
Mode of operation	Type 1 B to EN 60730-1	– Vitodens 222-W	10 to 63 °C
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		

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

In conjunction with the Vitodens 200-W and 222-W.

Layout and functions

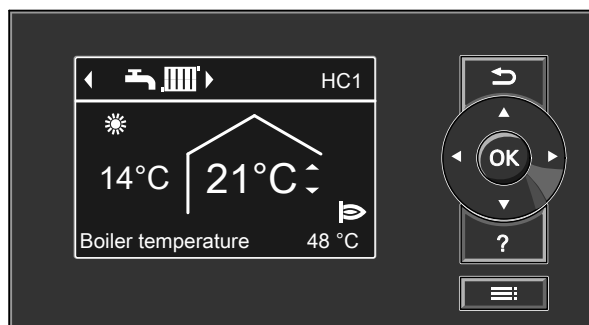
Modular structure

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

Control units (cont.)

- Pump anti-seizing protection
- Frost protection monitoring for the heating system
- Integral diagnostic system
- Maintenance display
- Cylinder temperature controller with priority control
- In conjunction with solar control module, type SM1:
 - Control unit for solar DHW heating and central heating backup
 - Graphic display of solar 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)

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

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

Control characteristics

PI characteristics with modulating output.

Time switch

Digital time switch (integrated into the programming unit)

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

Shortest switching interval: 10 minutes

Power reserve: 14 days

Setting the operating programs

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

The following heating programs can be selected:

- Heating and DHW
- Only DHW
- Standby mode

External heating program changeover in conjunction with EA1 extension.

Frost protection function

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

Summer mode

Operating program "☀"

The burner only starts when the cylinder needs reheating or when DHW is drawn from a gas combi boiler.

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).

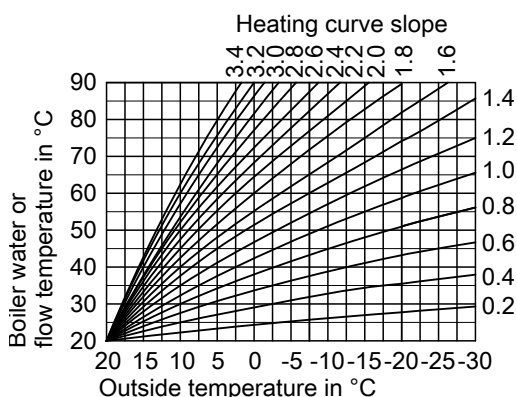
The flow temperature required to reach a specific room temperature depends on the heating system and the thermal insulation of the building to be heated.

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 (Vitodens 200-W and 300-W)

Standard delivery for:

- Connection set for DHW cylinders below the boiler (120 or 150 litre) (order separately)
- Connection set for DHW cylinders adjacent to the boiler (160 to 400 litres) or alternative DHW cylinders (order separately)

Specification

Cable 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

Cylinder temperature sensor (Vitodens 222-W) and outlet temperature sensor

These sensors are connected to the control unit and built into the boiler or cylinder.

Specification

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

Control units (cont.)

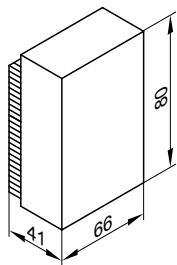
Outside temperature sensor

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~	DHW temperature setting range	
Rated frequency	50 Hz	- gas combi boilers	10 to 57 °C
Rated current	6 A	- gas system boilers	10 to 68 °C
Safety category	I	- Vitodens 222-W	10 to 63 °C
Permissible ambient temperature		Heating curve setting range	
- during operation	0 to +40 °C	Slope	0.2 to 3.5
	Installation in living spaces or boiler rooms (standard ambient conditions)	Level	-13 to 40 K
- during storage and transport	-20 to +65 °C		
Electronic temperature limiter setting (heating mode)	82 °C (no change possible)		

7.3 Vitotronic 200 RF, type HO1C, for weather-compensated operation

In conjunction with Vitodens 300-W.

Design and functions

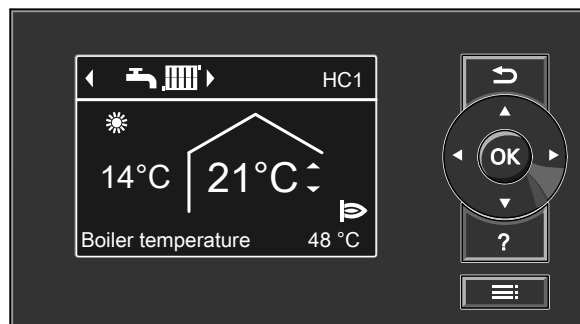
Modular design

The control unit is integrated into the boiler.

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

Standard unit:

- ON/OFF switch
- LON communication module
For remote control of the heating system via the Vitotrol app (iOS 4.3 / 5 operating system) in conjunction with Vitocom 100 LAN1, for example.
- Optolink laptop interface
- Operating and fault indicators
- Reset button
- Fuses



Programming unit:

- Easy operation thanks to:
 - Plain text display with graphic ability
 - Large font and black/white depiction for good contrast
 - Context-sensitive help
 - Removable programming unit; can optionally be mounted on the wall with separate accessory
- With digital time switch

Control units (cont.)

- With radio interface for communication with the following:
 - Wireless outside temperature sensor
 - Vitotrol 200 RF
 - Vitotrol 300 RF
 - Vitocomfort 200
 - Wireless repeater
- Operating keys for:
 - Navigation
 - Confirmation
 - Help and additional information
 - Menu
- Adjustment of:
 - Room temperature
 - Reduced room temperature
 - DHW temperature
 - Heating program
 - Time programs for central heating, DHW heating and DHW circulation
 - Economy mode
 - Party mode
 - Holiday program
 - Heating curves
 - Codes
 - Actuator tests
 - Test mode
- Display of:
 - Boiler water temperature
 - DHW temperature
 - Operating data
 - Diagnostic details
 - Fault messages
- Available languages:
 - English
 - 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
- Setting a variable heating limit
- Pump anti-seizing protection
- Frost protection monitoring for the heating system
- Integral diagnostic system
- Flow rate monitoring
- Hydraulic balancing of a heating circuit without mixer and without low loss header using Vitosoft 300 SID1. In conjunction with service case for automatic hydraulic balancing (accessories) and the flow rate sensor installed in the Vitodens.

- Communication via radio interface
- Maintenance display
- Cylinder temperature controller with priority control
- In conjunction with solar control module, type SM1:
 - Control of solar DHW heating and central heating backup
 - Graphic illustration of the solar energy yield
- Auxiliary function for DHW heating (short-term heating to a higher temperature)
- Screed drying program
- Option to connect DHW circulation pump to the control unit
- External starting and blocking (in conjunction with extension EA1)
- Capable of communicating via integral LON communication module

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

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

Control characteristics

PI characteristics with modulating output.

Time switch

Digital time switch (integrated into the programming unit)

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

Shortest switching interval: 10 minutes

Power reserve: 14 days

Setting the operating programs

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

The following heating programs can be selected:

- Heating and DHW
- Only DHW
- Standby mode

External heating program changeover in conjunction with EA1 extension.

Frost protection function

- The frost protection function will be started when the outside temperature drops below approx. +1 °C.

With frost protection, the heating circuit pump is switched ON and the boiler water is maintained at a lower temperature of approx. 20 °C.

The DHW cylinder will be heated to approx. 20°C.

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

Summer mode

Operating program "☀"

The burner only starts when the cylinder needs reheating or when DHW is drawn from a combi boiler.

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).

Control units (cont.)

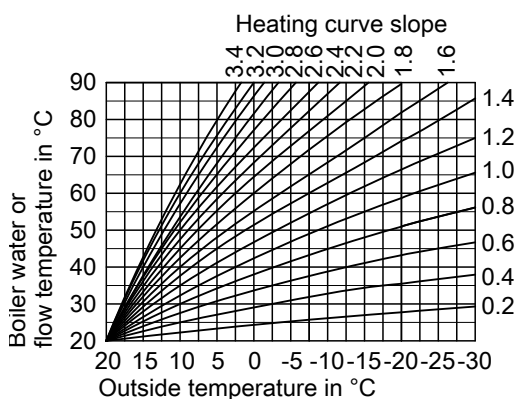
The flow temperature required to reach a specific room temperature depends on the heating system and the thermal insulation of the building to be heated.

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

Heating curves:

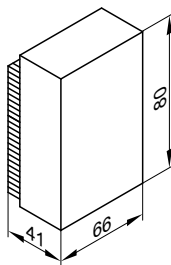
The upper boiler water temperature is limited by the temperature limiter and the temperature set at the electronic maximum thermostat.

The flow temperature cannot exceed the boiler water temperature.



Installation location:

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



Specification

Power supply via PV cells and energy store

Radio frequency

868.3 MHz

Wireless range

See "Wireless accessories" technical guide

IP rating

IP 43 to EN 60529

Ensure through design/installation

Permissible ambient temperature during operation, storage and transport

-40 to +60 °C

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

Standard delivery for:

- Connection set for DHW cylinders below the boiler (120 or 150 litre) (order separately)
- Connection set for DHW cylinders adjacent to the boiler (160 to 400 litres) or alternative DHW cylinders (order separately)

Specification

Cable 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

Information regarding outside temperature sensor

The Vitodens is supplied, subject to order, with a wireless outside temperature sensor or a hardwired outside temperature sensor:

Wireless outside temperature sensor

Wireless subscriber

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

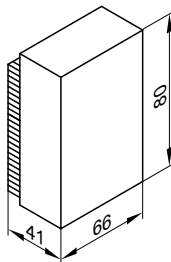
Outside temperature sensor

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

LON communication module

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

Control units (cont.)

Specification Vitotronic 200 RF, type HO1C

Rated voltage	230 V~	DHW temperature setting range	
Rated frequency	50 Hz	– gas combi boilers	10 to 57 °C
Rated current	6 A	– gas system boilers	10 to 68 °C
Safety category	I	– Vitodens 222-W	10 to 63 °C
Permissible ambient temperature		Heating curve setting range	
– during operation	0 to +40 °C	Slope	0.2 to 3.5
	Installation in living spaces or boiler rooms (standard ambient conditions)	Level	–13 to 40 K
– during storage and transport	–20 to +65 °C	Radio frequency	868.3 MHz
Electronic temperature limiter setting (heating mode)	82 °C (no change possible)	Wireless range	See "Wireless accessories" technical guide

7.4 Vitotronic accessories

Allocation to control unit types

Vitotronic	100	200	200 RF
Type	HC1B	HO1B	HO1C
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
Vitocomfort 200		x	x
Vitotrol 200 RF		x	x
Vitotrol 300 RF		x	x
Wireless base station		x	
Wireless outside temperature sensor		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	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	x
Extension kit for one heating circuit with mixer with separate mixer motor		x	x
Immersion thermostat for underfloor heating systems		x	x
Contact thermostat for underfloor heating systems		x	x
Solar control module SM1	x	x	x
Temperature sensor for solar control module SM1	x	x	x
Internal extension H1	x	x	x
Internal extension H2	x	x	x
Extension AM1	x	x	x
Extension EA1	x	x	x
Vitocom 100 LAN1 without communication module			x
Vitocom 100 LAN1 with communication module		x	
Vitocom 100 GSM2	x	x	x
Vitocom 200 GP3, LAN2		x	x
LON cable		x	x
LON coupling		x	x
LON plug-in connector		x	x
LON socket		x	x
Terminator		x	
LON communication module		x	

Control units (cont.)

Vitotrol 100, type UTA

Part no. 7170 149

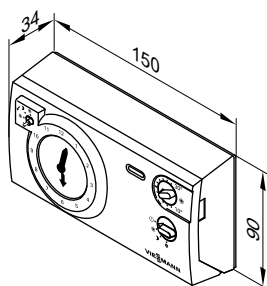
Room thermostat

- 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

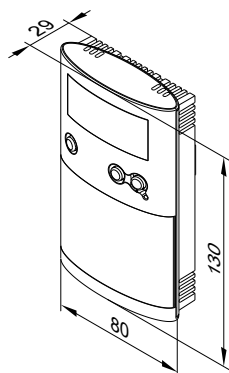
- With switching output (two-point output)
- With digital time switch
- With individual and 7-day programs
- Operation with user prompts:
 - 3 preselected time programs, individually adjustable
 - Constant manual mode with adjustable set room temperature
 - Frost protection mode
 - Holiday program
-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



5822 430 GB

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

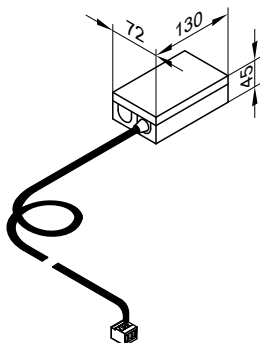
Control units (cont.)

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

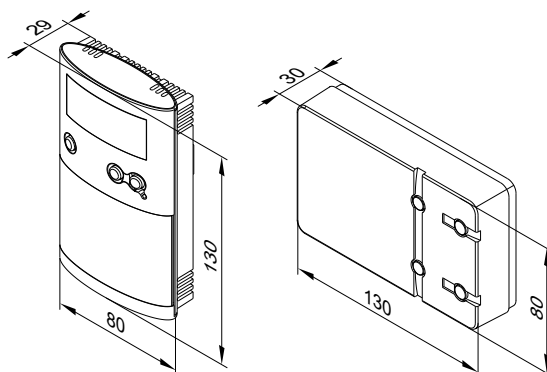
Installation in the main living room on an internal wall opposite radiators. Never install inside shelving units, in recesses, or immediately by a door or heat source (e.g. direct sunlight, fireplace, TV set, etc.).

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
Setting range	
– Comfort temperature	10 to 40 °C
– Setback temperature	10 to 40 °C
– Frost protection temperature	5 °C
Power reserve during battery change	3 min

Specification, receiver

Operating voltage	230 V~ ± 10 % 50 Hz
Rated breaking capacity of the floating contact	
– max.	6(1) A, 230 V~
– min.	1 mA, 5 V–

Control units (cont.)

IP rating	IP 20 to EN 60529 ensure through appropriate design/installation	Safety category	II to EN 60730-1 subject to cor- rect installation
		Permissible ambient temperature	
		– during operation	0 to +40 °C
		– during storage and transport	–25 to +65 °C

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

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

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

Information on the Vitotrol 200A and Vitotrol 300A

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

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

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

Note

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

Vitotrol 200A

Part no. Z008 341

KM BUS subscriber

■ 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:

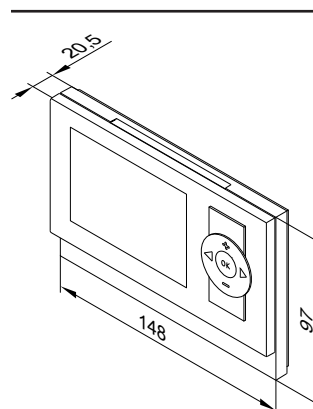
- Weather-compensated mode:
Installation anywhere in the building.
- Room temperature hook-up:
The integral room temperature sensor captures the actual room temperature and corrects the flow temperature if necessary.

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/in- stallation
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 A

Part no. Z008 342

KM BUS subscriber.

■ Indicators:

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

■ Settings:



Control units (cont.)

- 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 location:

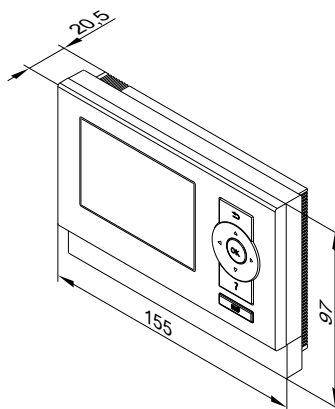
- Weather-compensated mode:
Installation anywhere in the building.
- Room temperature hook-up:
The integral room temperature sensor captures the actual room temperature and effects any necessary correction of the flow temperature.

The recorded room temperature depends on the installation site:

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

Connection:

- 2-core lead, length max. 50 m (even if connecting several remote control units).
- Never route this cable immediately next to 230/400 V cables.
- LV plug included in 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 transport	–20 to +65 °C
Setting range for set room temperature	3 to 37 °C

Vitocomfort 200

Part no. 7172 642

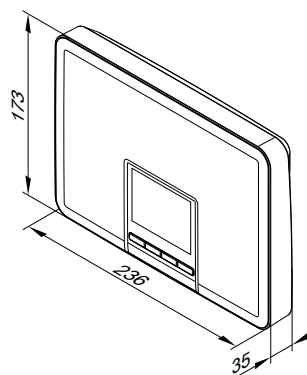
Wireless domestic control centre with mains power operation for regulating single rooms.

- Optimum room ambience by means of regulating the temperature and relative humidity in combination with a commercially available humidifier or dehumidifier.
- Saves fuel and electricity costs.
- Increased security by monitoring windows and doors.
- Intuitive operation and monitoring at home or away by means of the Vitocomfort app.
- Straight forward commissioning and easy retrofitting thanks to wireless components.
- Full control over central heating and domestic hot water.

Note

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

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



Information on the Vitotrol 200 RF and Vitotrol 300 RF

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

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

- Vitotronic 200, type HO1B
The wireless remote controls **cannot** be combined with hardwired remote control units.
- Vitotronic 200 RF, type HO1C
Can be operated with wireless remote controls, Vitocomfort 200 **and** up to two hardwired remote control units Vitotrol 200A or Vitotrol 300A.

Vitotrol 200 RF

Part no. Z011 219

Wireless subscriber.

- Displays:
 - Room temperature
 - Outside temperature



Control units (cont.)

- Operating condition
- Wireless signal reception quality
- 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 location:

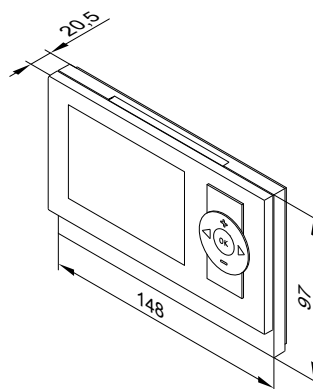
- Weather-compensated mode:
 - Installation anywhere in the building.
- Room temperature hook-up:
 - The integral room temperature sensor captures the actual room temperature and effects any necessary correction of the flow temperature.

The captured room temperature depends on the installation site:

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

Note

Observe the "Wireless accessories" technical guide.



Specification

Power supply via 2 AA batteries 3 V

Radio frequency

Wireless range

868.3 MHz

See "Wireless accessories" technical guide

Safety category

IP rating

III

IP 30 to EN 60529

Ensure through design/installation

Permissible ambient temperature

- During operation

- During storage and transport

Setting range of the set room temperature for standard mode

0 to +40 °C

-20 to +65 °C

3 to 37 °C

Vitotrol 300 RF with table-top dock

Part no. Z011 410

Wireless subscriber.

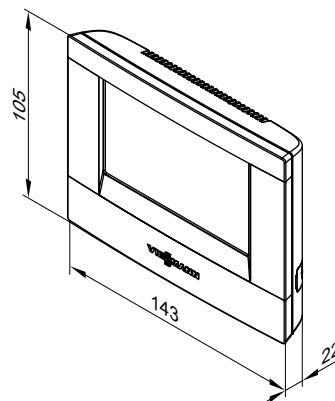
- Displays:
 - Room temperature
 - Outside temperature
 - Operating condition
 - Graphic illustration of solar yield in conjunction with the solar control module, type SM1
 - Wireless signal reception quality
- Settings:
 - Set room temperature for standard mode (day temperature) and reduced mode (night 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 keys
- Integral room temperature sensor

Note

Observe the "Wireless accessories" technical guide.

Standard delivery:

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



Vitotrol 300 RF

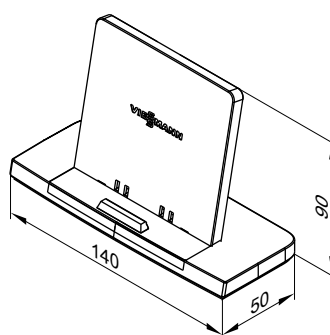


Table-top dock

Control units (cont.)

Specification

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

Power consumption

2.4 W

Radio frequency

868.3 MHz

Wireless range

See "Wireless accessories" technical guide

Safety category

II

IP rating

IP 30 to EN 60529

Ensure through design/installation

Permissible ambient temperature

– During operation

0 to +40 °C

– During storage and transport

–25 to +60 °C

Setting range for set room temperature

3 to 37 °C

Vitotrol 300 RF with wall mounting bracket

Part no. Z011 412

Wireless subscriber.

■ Displays:

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

■ Settings:

- Set room temperature for standard mode (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 location:

■ Weather-compensated mode:

Installation anywhere in the building.

■ Room temperature hook-up:

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

The captured room temperature depends on the installation site:

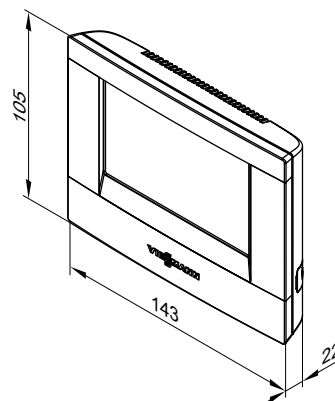
- Main living room on an internal wall opposite radiators.
- Not on shelves or in recesses.
- Never in the immediate vicinity of doors or close to heat sources (e.g. direct sunlight, fireplace, TV set, etc.).

Note

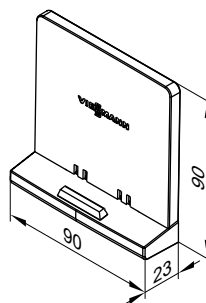
Observe the "Wireless accessories" technical guide.

Standard delivery:

- Vitotrol 300 RF
- Wall mounting bracket
- Power supply unit for fitting into a plaster box
- Two rechargeable 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 fitting into a plaster box

Power consumption

2.4 W

Radio frequency

868.3 MHz

Wireless range

See "Wireless accessories" technical guide

Safety category

II

IP rating

IP 30 to EN 60529

Ensure through design/installation

Permissible ambient temperature

– During operation

0 to +40 °C

– During storage and transport

–25 to +60 °C

Setting 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

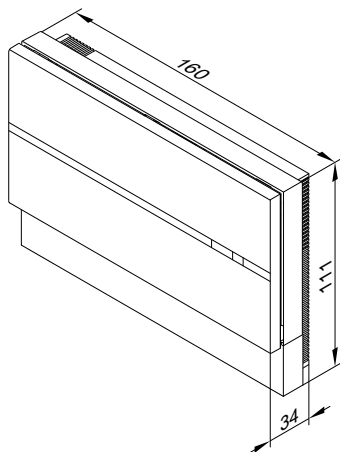
Control units (cont.)

- Wireless outside temperature sensor
- Vitocomfort 200 home automation

For up to 3 wireless remote control units or 3 Vitocomfort 200. Not in conjunction with a hard-wired 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.



Specification

Power supply via KM BUS	
Power consumption	1 W
Radio frequency	868.3 MHz
Safety category	III
IP rating	IP 20 to EN 60529 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

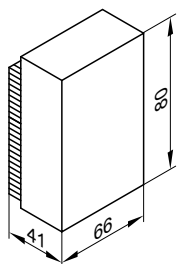
Part no. 7455 213

Wireless subscriber.

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

Installation location:

- 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

Power supply via PV cells and energy store	
Radio frequency	868.3 MHz
Wireless range	See "Wireless accessories" technical guide
IP rating	IP 43 to EN 60529 Ensure through design/installation
Permissible ambient temperature during operation, storage and transport	-40 to +60 °C

Wireless repeater

Part no. 7456 538

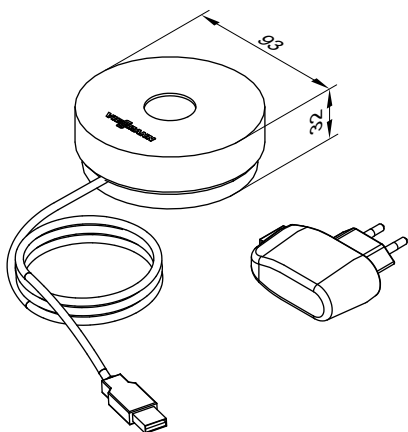
Mains operated repeater to increase the wireless range and for use in areas where wireless communication is difficult. Observe the "Wireless accessories" technical guide.

No more than one wireless repeater per Vitotronic control unit.

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

5822 430 GB

Control units (cont.)



Specification

Power supply	via plug-in power supply unit 230 V~/5 V-
Power consumption	0.25 W
Radio frequency	868.3 MHz
Cable length	1.1 m with plug
Safety category	II
IP rating	IP 20 to EN 60529
	Ensure through design/installation
Permissible ambient temperature	
– During operation	0 to +55 °C
– During storage and transport	-20 to +75 °C

Room temperature sensor

Part no. 7438 537

Separate room temperature sensor as supplement to the Vitotrol 300A; to be used if the Vitotrol 300A cannot be installed inside the main living room or in a suitable position 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.).

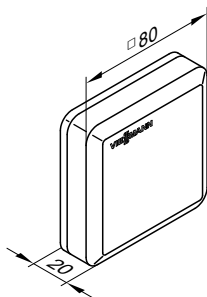
Connect the room temperature sensor to the Vitotrol 300A.

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

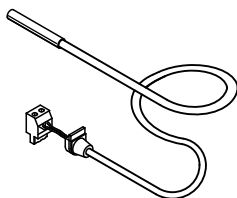
Safety category	III
IP rating	IP 30 acc. to EN 60529
	Ensure through design/installation
Sensor type	Viessmann NTC 10 kΩ at 25 °C
Permissible ambient temperature	
– during operation	0 to +40 °C
– during storage and transportation	-20 to +65 °C



Immersion temperature sensor

Part no. 7438 702

To capture the temperature in a sensor well.



Specification

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

Immersion temperature sensor

Part no. 7179 488

To capture the low loss header temperature.

Specification

Lead length	3.75 m, fully wired
IP rating	IP 32 acc. to EN 60529
	ensure through appropriate design/installation

5822 430 GB



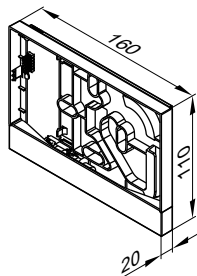
Control units (cont.)

Sensor type	Viessmann NTC 10 kΩ at 25 °C	– during operation – during storage and transport	0 to +90 °C –20 to +70 °C
Permissible ambient temperature			

Mounting base for programming unit

Part no. 7299 408

To be able to freely position the programming unit of the control unit anywhere outside the appliance.



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

Comprising:

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

Radio clock receiver

Part no. 7450 563

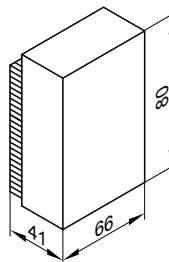
For receiving the DCF 77 time signal (location: Mainflingen near Frankfurt/Main).

Radio controlled setting of time and date.

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

Connection:

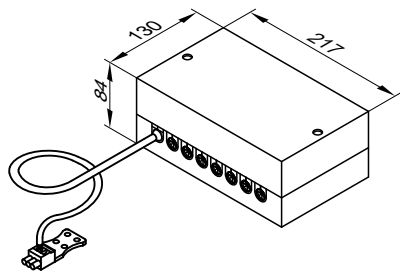
- 2-core lead, length up to 35 m with a cross-section of 1.5 mm²(copper)
- Never route this lead immediately next to 230/400 V cables.



KM BUS distributor

Part no. 7415 028

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



Specification

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

Permissible ambient temperature	0 to +40 °C
– during operation	
– during storage and transport	-20 to +65 °C

Mixer extension kit with integral mixer motor

Part no. 7301 063

KM BUS subscriber

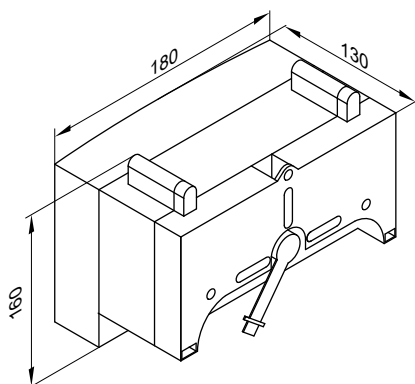
Components:

- Mixer PCB with mixer motor for Viessmann mixer DN 20 to 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.

Control units (cont.)

Mixer PCB with mixer motor

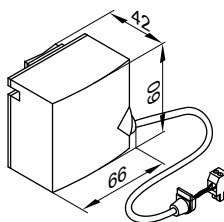


Specification

Rated voltage	230 V~
Rated frequency	50 Hz
Rated current	2 A
Power consumption	5.5 W
IP rating	IP 32D to EN 60529 ensure through appropriate design/installation
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 \square_{20}	2(1) A 230 V~
Torque	3 Nm
Runtime for 90 ° <	120 s

Flow temperature sensor (contact temperature sensor)



Secured with a tie.

Specification

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

Mixer extension kit for separate mixer motor

Part no. 7301 062

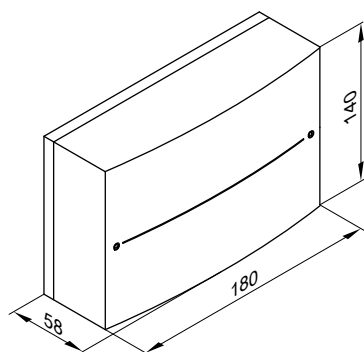
KM BUS subscriber

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

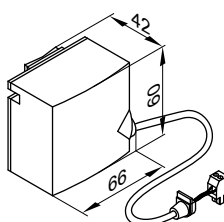


Specification

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 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 \square_{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

Cable length	5.8 m, fully wired
IP rating	IP 32D to EN 60529 Ensure through design/installation
Sensor type	Viessmann NTC 10 kΩ at 25 °C
Permissible ambient temperature	
– During operation	0 to +120 °C
– During storage and transport	-20 to +70 °C

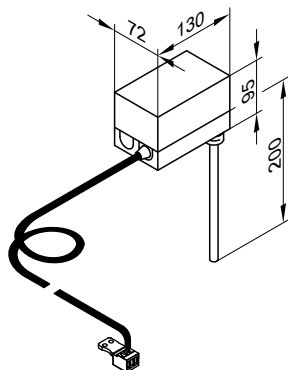
Control units (cont.)

Immersion temperature controller

Part no. 7151 728

May be used as a maximum temperature limiter for underfloor heating systems.

The temperature limiter is installed into the heating flow and switches the heating circuit pump OFF if the flow temperature is too high.



Specification

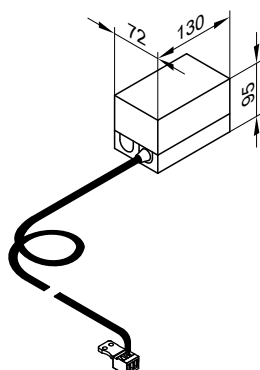
Cable length	4.2 m, fully wired
Setting range	30 to 80 °C
Switching differential	max. 11 K
Breaking capacity	6(1.5) A 250 V~
Setting scale	inside the casing
Stainless steel sensor well	R ½ x 200 mm
DIN reg. no.	DIN TR 1168

Contact temperature controller

Part no. 7151 729

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

The temperature limiter is installed into the heating flow and switches the heating circuit pump OFF if the flow temperature is too high.



Specification

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

Solar control module, type SM1

Part no. 7429 073

Specification

Functions

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

Order immersion temperature sensor, part no. 7438 702, if the following functions are required:

- For DHW circulation diversion in systems with 2 DHW cylinders.
- For return changeover between the heat generator and the heating water buffer cylinder.
- For heating additional consumers.

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

Control units (cont.)

Collector temperature sensor

For connection inside the appliance.

On-site extension of the connecting lead:

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

Cable length	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

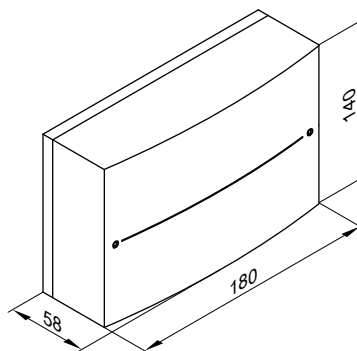
Cable length	3.75 m
IP rating	IP 32 to EN 60529, ensure through design/installation
Sensor type	Viessmann NTC 10 kΩ, at 25 °C

Permissible ambient temperature

- 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.

Specification



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

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 (only for Vitodens 200-W and 300-W):	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	
– Connection of a circulation pump for cylinder heating	
– Only with 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.

Control units (cont.)

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 (only for Vitodens 200-W and 300-W):	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	
– Connection of a circulation pump for cylinder heating	
– Only with Vitotronic 200, type HO1B: Connection of a DHW circulation pump	

Specification

Rated voltage 230 V~
Rated frequency 50 Hz

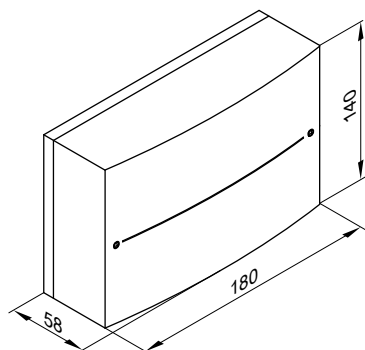
Extension AM1

Part no. 7452 092

Function extension inside casing 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
- Switching the circulation pump for cylinder heating (not for boilers with integral DHW cylinder)



Specification

Rated voltage 230 V~
Rated frequency 50 Hz
Rated current 4 A
Power consumption 4 W
Rated relay output breaking capacity 2(1) A 250 V~each
In total max. 4 A~

Safety category I
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

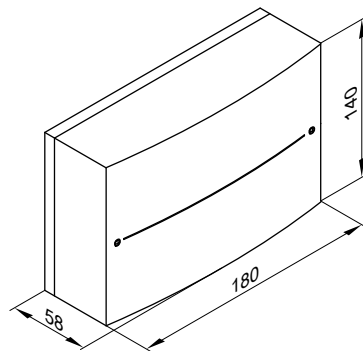
Part no. 7452 091

Function extension inside casing for wall mounting.

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

- 1 switching output (floating changeover contact)
- Central fault message output
 - 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 HO1C)
 - External blocking
 - External blocking with central fault message
 - Minimum boiler water temperature demand

- Fault messages
- Short term operation of DHW circulation pump (only with the Vitotronic 200, type HO1B and HO1C)



Specification

Rated voltage 230 V~
Rated frequency 50 Hz



Control units (cont.)

Rated current	2 A	Permissible ambient temperature	
Power consumption	4 W	– During operation	0 to +40 °C
Rated breaking capacity of the relay output	2(1) A 250 V~		Installation in living spaces or boiler rooms (standard ambient conditions)
Safety category	I	– During storage and transport	–20 to +65 °C
IP rating	IP 20 D to EN 60529		
	Ensure through design/installation		

Vitocom 100, type LAN1

Part no. Z011 224

- With communication module
- For remote control of a heating system via the internet and IP networks (LAN) with DSL router.
- Compact device for wall mounting.
- For system operation with the **Vitotrol app** or **Vitodata 100**.

Functions when operating with the Vitotrol app:

- Remote control of up to three heating circuits in one heating system.
- Setting of operating programs, set values and time programs.
- Scanning system information
- Displaying messages on the Vitotrol app user interface

The Vitotrol app supports the following end devices:

- End devices with Apple iOS operating system, versions 5.0 and 6.0.
- End devices with Google Android operating system, version 4.0 and higher.

Note

For more information, see www.vitotrol-app.info.

Functions when operating with Vitodata 100:

For all heating circuits in a heating system:

- **Remote monitoring:**
 - Forwarding of messages by email to end devices with email client functionality.
 - Forwarding messages via SMS to mobile phone/smartphone or fax (via chargeable internet service Vitodata 100 fault management).
- **Remote control:**
 - Adjusting operating programs, set values, time programs and heating curves.

Note

For more information, see www.vitodata.info.

Configuration:

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

Standard delivery:

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

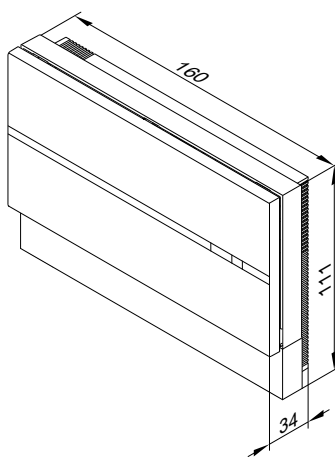
On-site requirements:

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

Note

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

Specification



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

Vitocom 100, type GSM2

For part no., see the current pricelist

For remote monitoring and remote control of a heating system via mobile phone networks. For the transmission of messages and settings for operating programs by means of SMS. Storage combi boiler.

Functions:

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

Control units (cont.)

Note

For further information, see www.vitocom.info.

Configuration:

Mobile phones via SMS

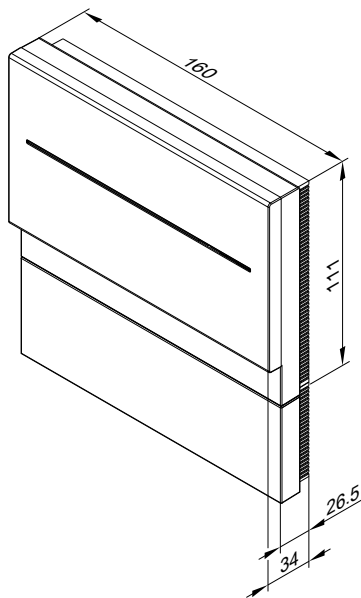
Standard delivery:

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

On-site requirements:

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

Specification



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

Vitocom 200

For part no., see the current pricelist

■ Type LAN2

For remote monitoring, remote control and remote setup of all heating circuits in a heating system via IP networks (LAN)

As an internet data transfer establishes a permanent connection ("always online"), access to the heating system is particularly fast.

Storage combi boiler for wall mounting.

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

Functions when operating with Vitotrol app:

- Remote control of up to 3 heating circuits in one heating system.
- Setting of operating programs, set values and time programs.
- Calling up of system information.
- Displaying messages on the Vitotrol app user interface.

The Vitotrol app supports the following end devices:

- End devices with Apple iOS operating system, versions 5.0 and 6.0.
- End devices with Google Android operating system, version 4.0 and higher.

Note

For more information, see www.vitotrol-app.info.

Functions when operating with Vitodata 100:

For all heating circuits in a heating system:

■ Remote monitoring:

- Forwarding messages via email to terminal devices with email client function.
- Forwarding messages via SMS to mobile phone/smartphone or fax (via chargeable internet service Vitodata 100 fault management).
- Monitoring additional devices via the inputs and output of the Vitocom 200.

■ Remote control:

Adjusting operating programs, set values, time programs and heating curves.

Note

■ *Telecommunication costs for data transfer are not included in the price of the device.*

■ For more information, see www.vitodata.info.

Control units (cont.)

Functions when operating with Vitodata 300:

For all heating circuits in a heating system:

■ Remote monitoring:

- Forwarding messages via SMS to mobile phone/smartphone, per email to terminal devices with email client function or via fax to fax machines.
- Monitoring additional devices via the inputs and output of the Vitocom 200.

■ Remote control:

Adjusting operating programs, set values, time programs and heating curves.

■ Remote setup:

- Configuring the Vitocom 200 parameters.
- Remote setup of Vitotronic control parameters via coding addresses.

Note

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

Configuration

Type LAN2

- With dynamic IP addressing (DHCP) the Vitocom 200 is configured automatically. The DSL router requires no separate settings. Observe the network settings of the DSL router.
- The inputs of the Vitocom 200 are configured using the Vitodata 100 or Vitodata 300 user interface.
- The Vitocom 200 is connected to the Vitotronic control unit via LON. The Vitocom 200 does not need to be configured for the LON.

On-site requirements:

Type LAN2

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

Note

For more information, see www.vitocom.info.

Standard delivery:

Type LAN2

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

Note

For standard delivery of packs with Vitocom, see pricelist.

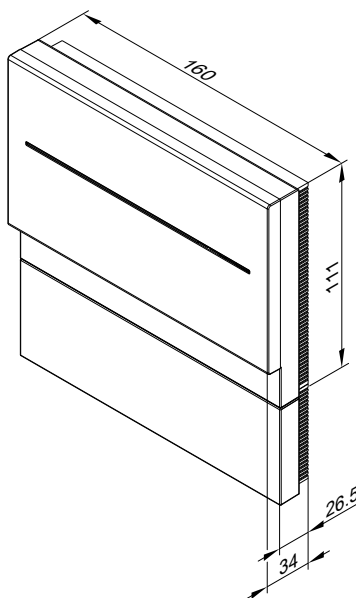
Accessories:

EM201 extension module

Part no.: Z012 116

- 1 relay output for switching external appliances (contact breaking capacity 230 V~, max. 2 A).
- Max. one EM201 extension module per Vitocom 200.

Specification:



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

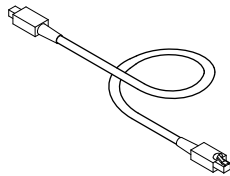
For further technical details and accessories, see the data communication technical guide.

Control units (cont.)

LON connecting cable for data exchange between control units

Part no. 7143 495

Cable length 7 m, fully wired.



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
 - Ø 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
 - Ø 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 level building management system.

For Vitotronic 200 RF, type HO1C, part of standard delivery.

Part no. 7179 113

Appendix

8.1 Regulations / Directives

Regulations and Directives

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

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

Observe all engineering standards and statutory requirements applicable to the installation and operation of this system in your country. Only qualified contractors should carry out the installation, the mains gas connection and the connection on the flue gas side, the commissioning and the electrical connection as well as general maintenance and repair work.

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

Appendix (cont.)

8

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

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

We recommend that maintenance and cleaning procedures are performed annually. As part of the maintenance procedure, check the correct function of the entire system. Remedy any faults.

Condensing boilers must only be operated with specially designed, tested and approved flue pipes.

Only authorised contractors may convert this boiler for use in countries other than those stated on the type plate. That contractor must also arrange approval in accordance with the statutes of the relevant country.

EnEV	Energy Saving Ordinance
1st BImSchV	First regulation for the implementation of the German Immissions Act (regulation regarding small and medium-sized combustion equipment)
FeuVo	Fire Regulations of the German Federal States
DIN 1986	Drainage system materials
DIN 1988	DHW pipe systems for properties
DIN 4708	Central DHW heating systems
DIN 4753	Water heaters and DHW systems for DHW and process water
DIN 18160	Domestic chimneys
DIN 18380	Heating systems and central DHW heating systems (VOB)
DIN 57116	Electrical equipment for combustion systems
EN 677	Gas condensing boiler
EN 12828	Heating systems in buildings – Design of hot water heating systems
EN 12831	Heating systems in buildings – Process for calculating the standard heat load
EN 13384	Flue systems – Thermal and flow technical calculations
DWA-A 251	Condensate from condensing boilers
DVGW G 260	Gas condition
DVGW G 600	Technical rules for gas installations (TRGI)
DVGW G 688	Gas consumption equipment, condensing technology
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 installation	42
Anti-corrosion agents	75
Antifreeze	75

B

Balanced flue operation	52
Boiler water temperature sensor	78, 80, 83

C

Carbon monoxide	47, 50, 51, 52
CO limiter	47, 50, 51, 52
Comfort function	11
Condensate	74
Condensate connection	73
Connections on the DHW side	70
Constant temperature control unit	
■ Frost protection function	78
■ Functions	78
■ Heating programs	78
■ Layout	78
■ Programming unit	78
■ Standard unit	78
Contact temperature controller	95
Control unit for constant temperature operation	78
Control unit for weather-compensated operation	79, 81
Control units	78
Cylinder sizing	69

D

Decision-making aids regarding DHW heating	68
DHW circulation	72
DHW cylinder below the boiler	29
DHW cylinders	69
DHW cylinders adjacent to the boiler	32
DHW heating	68
Drain outlet kit	46
Draw-off volume	12
Dual mode DHW cylinder	37, 40

E

Electrical connection	52
Electrical safety area	52
EnEV	80, 82
Expansion vessel	76
Extension AM1	97
Extension EA1	97
Extension kit for mixer	
■ Separate mixer motor	94

F

Fill water	75
Frost protection function	78, 80, 82

G

Gas connection	54
----------------	----

H

Heating curve adjustment	80, 82
Hydraulic connection	75

I

Immersion temperature controller	95
Initial heat-up	75
Installation	54
Installation in unfinished buildings	54
Installation room	51
Instantaneous standby water heater	11
Instantaneous water heater	70
Interlock circuit	51
Interlock switch	53
IP rating	52

K

KM BUS distributor	93
--------------------	----

L

Leads/cables	53
Level	80, 82
Loading cylinder	68, 72
LON communication module	83, 101
Low loss header	76
Low loss headers	76
Low water indicator	75

M

Mixer extension	
■ Integral mixer motor	93
■ Separate mixer motor	94
Mixer extension kit	
■ Integral mixer motor	93
Modernising existing systems	75
Mounting base for programming unit	93
Mounting frame	45, 57

N

Neutralisation	73
Neutralising system	74

O

Open flue operation	51
Outside temperature sensor	81, 83

P

Pre-installation	54
Pre-plumbing jigs	42, 49

R

Replacing third party appliances	61
Room temperature controller	85, 86
Room temperature sensor	92
Room thermostat	85, 86

S

Safety area, electrical	52
Safety assembly to DIN 1988	72
Safety equipment	75
Safety valve	71, 75
Self-supporting installation	58
Self-supporting mounting frame	58
Shock arrestor	71
Siting conditions	51
Slope	80, 82
Solar control module	
■ Specification	96
Specification	
■ Solar control module	95, 96
Standard unit	79, 81
Sub-mounting kit	43, 55
System design	75

Keyword index

T

Temperature controller	
■ Contact temperature.....	95
■ Immersion temperature.....	95
Temperature sensor	
■ Room temperature sensor.....	92
■ Wireless outside temperature.....	83
■ Wireless outside temperature sensor.....	91
Temperature sensors	
■ Boiler water temperature sensor.....	78, 80, 83
■ Outside temperature sensor.....	81, 83
Thermally activated safety shut-off valve.....	54
Time switch.....	80, 82

V

Vitocell 100.....	29
Vitocell 100-W.....	32, 37, 40
Vitocell 100-W adjacent to the boiler	
■ Pressure drop on the DHW side.....	31, 33, 38
Vitocell 300-W.....	35
Vitocell 300-W adjacent to the boiler	
■ Pressure drop on the DHW side.....	36
Vitocom	
■ 100, type GSM.....	98
■ 100, type LAN1.....	98
Vitotrol	
■ 200A.....	87
■ 200 RF.....	88
■ 300 A.....	87
■ 300 RF with table-top dock.....	89
■ 300 RF with wall mounting bracket.....	90
Vitotrol 100	
■ UTA.....	85
■ UTDB.....	85
■ UTDB-RF.....	86

W

Water quality.....	75
Weather-compensated control	
■ Operating programs.....	80, 82
Weather-compensated control unit	
■ Design.....	81
■ Frost protection function.....	80, 82
■ Functions.....	79, 81, 82
■ Layout.....	79
■ Programming unit.....	79, 81
■ Standard unit.....	79, 81
Wet area.....	52
Wireless components	
■ Wireless base station.....	90
■ Wireless outside temperature sensor.....	91
■ Wireless remote control.....	88, 89, 90
■ Wireless repeater.....	91
Wireless outside temperature sensor.....	83

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 430 GB