



Vitorondens 200-T Typ BR2A



Vitorondens 200-T Typ J2RA



Vitoladens 300-C Typ BC3/J3RA



Vitoladens 300-T Typ VW3B

VITORONDENS 200-T Type BR2A

Cast iron oil condensing boiler

With Vitoflame 300 blue flame oil burner (20.2 to 53.7 kW).

VITORONDENS 200-T Type J2RA

Cast iron oil condensing boiler

With Vitoflame 300 blue flame oil burner (67.6 to 107.3 kW).

VITORONDENS 222-F Type BS2A

Cast iron oil condensing boiler as a storage combi boiler with integral DHW cylinder

With Vitoflame 300 blue flame oil burner (20.2 to 28.6 kW).

VITOLADENS 300-C Type BC3/J3RA

Oil condensing boiler

With 2-stage Compact blue flame burner (12.9 to 28.9 kW) or modulating blue flame oil burner (10.3 to 28.9 kW).

5822441 GB 5/2018

VITOLADENS 300-T Type VW3B

Oil condensing boiler

With Vitoflame 300 blue flame oil burner (35.4 to 53.7 kW).

All condensing boilers and burners are suitable for **open flue** or **room sealed** operation.

Operation possible with the following types of fuel oil:

Fuel oil DIN 51603-1 EL Standard

Fuel oil DIN 51603-1 EL **low sulphur**

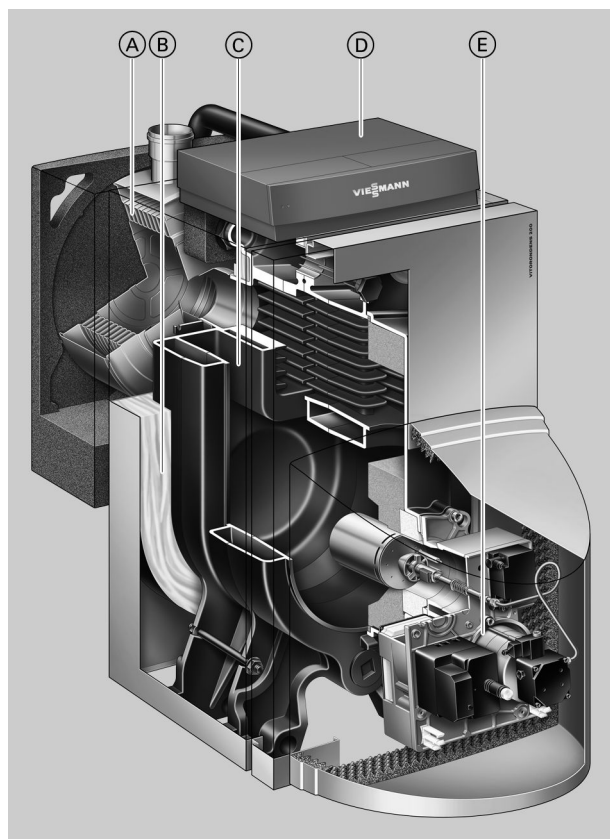
Fuel oil DIN 51603-6 EL A Bio 10: **low sulphur** fuel oil EL with up to **10 %** bio-components (FAME)

Index

1. Vitorondens 200-T	1.1 Product description	4
	1.2 Operating conditions	5
	1.3 Specification type BR2A, 20.2 to 53.7 kW	6
	1.4 Specification type J2RA, 67.6 to 107.3 kW	10
	■ Pressure drop on the heating water side	12
2. Vitorondens 222-F <small>(not available in DE)</small>	2.1 Product description	13
	2.2 Operating conditions	14
	2.3 Specification	15
3. Vitoladens 300-C	3.1 Product description	18
	3.2 Operating conditions	19
	3.3 Specification	20
4. Vitoladens 300-T	4.1 Product description	24
	4.2 Operating conditions	24
	4.3 Specification	25
5. Burner	5.1 Specification Vitoflame 300, type VHG	28
6. DHW cylinders	6.1 Specification Vitocell 100-V, types CVA, CVAA, CVAA-A	34
	■ Factory setting	40
	6.2 Specification Vitocell 300-V, type EVIA-A	41
	■ Factory setting	42
	6.3 Specification Vitocell 100-H, type CHA	42
	■ Factory setting	45
	6.4 Specification Vitocell 300-H, type EHA	46
	■ Factory setting	50
	6.5 DHW cylinder connections on the DHW side	50
7. Installation accessories	7.1 Specification	51
	■ Accessories for connecting DHW cylinders to boilers	51
	■ Accessories for heating circuits	51
	■ Accessories for boilers	59
	■ Sound insulation set	60
	■ Cleaning brush set, mixing assembly	61
	■ Adjustable anti-vibration feet and boiler supports	61
	■ Part no. Z015500	61
8. Design information	8.1 Positioning	62
	■ General information	62
	■ Handling	62
	■ Installation room	63
	■ Safety equipment for the installation room	63
	■ Minimum clearances for Vitorondens 200-T (up to 53.7 kW)	64
	■ Minimum clearances for Vitorondens 200-T (67.6 to 107.3 kW)	64
	■ Vitorondens 222-F minimum clearances <small>(not applicable for DE)</small>	65
	■ Minimum clearances for Vitoladens 300-C	66
	■ Minimum clearances for Vitoladens 300-T	66
	■ Connection on the flue gas side	66
	■ Combustion air apertures (open flue operation)	66
	8.2 Fuel	66
	8.3 Condensate connection and neutralisation	67
	8.4 Hydraulic connection	68
	■ System design	68
	■ Safety equipment	68
	■ Chemical anti-corrosion agents	68
	■ Heating circuits	69
	■ Plastic pipework for radiators	69
	■ Distributor for solar central heating backup (accessory)	70
	■ Low water indicator	72
	■ Water quality/frost protection	72
	■ Expansion vessels	73
	8.5 Oil supply	73
	8.6 Flue system	74
	8.7 Intended use	75
9. Control units	9.1 Control unit types	75
	■ Assigning the control units to the boiler	75

■ Vitotronic 100, type KC2B	75
■ Vitotronic 200, type KO1B	75
■ Vitotronic 200, type KO2B	76
■ Vitotronic 200, type KW6B	76
9.2 Components in the delivered condition	76
■ For Vitotronic 100, type KC2B and Vitotronic 200, type KO1B and KO2B	76
■ For Vitotronic 200, type KW6B	77
9.3 Vitotronic 100, type KC2B, part no. 7441799	77
■ Specification	77
■ Factory setting	78
9.4 Vitotronic 200, type KO1B, part no. 7441800	78
■ Specification	78
■ Factory setting	80
9.5 Vitotronic 200, type KO2B, part no. 7441802	81
■ Specification	81
■ Factory setting	83
9.6 Vitotronic 200, type KW6B	83
■ Specification	83
9.7 Control unit accessories	85
■ Allocation of accessories according to control unit type	85
■ Vitotrol 100, type UTA	85
■ Vitotrol 100, type UTDB	86
■ External H4 extension	86
■ Vitotrol 100, type UTDB-RF	87
■ Information on the Vitotrol 200-A and Vitotrol 300-A	87
■ Vitotrol 200-A	87
■ Vitotrol 300-A	88
■ Information on Vitotrol 200-RF	89
■ Vitotrol 200-RF	89
■ Wireless base station	89
■ Wireless repeater	90
■ Room temperature sensor	90
■ Immersion temperature sensor	91
■ Flue gas temperature sensor	91
■ Radio clock receiver	91
■ External extension H5	92
■ KM BUS distributor	92
■ Mixer extension kit with integral mixer motor	92
■ Mixer extension kit for separate mixer motor	93
■ Immersion thermostat	93
■ Contact thermostat	94
■ Solar control module, type SM1	94
■ EA1 extension	95
■ Vitoconnect 100, type OPTO1	96
■ LON connecting cable for data exchange between control units	97
■ Connecting cable extension	97
■ Terminator (2 pce)	97
■ LON communication module	97
10. Appendix	97
11. Keyword index	98

1.1 Product description



- (A) Inox-Radial heat exchanger
- (B) Highly effective thermal insulation
- (C) Eutectoplex heating surface made of special homogeneous cast iron
- (D) Digital Vitotronic boiler control unit
- (E) Vitoflame 300 Unit oil burner

The Vitorondens 200-T is an advanced cast iron oil condensing boiler at an attractive price.

The Eutectoplex heating surface consisting of cast sections guarantees high operational reliability. By ensuring an even heat flux, stress fractures are virtually eliminated. The wide water galleries prevent sedimentation and boiling noises.

Flexible gaskets permanently seal the individual sections on the hot gas side. The horizontal layout of the hot gas flues also permits thorough and easy cleaning of the boiler.

The corrosion-resistant stainless steel Inox-Radial heat exchanger downstream ensures efficient heat recovery, with residue-free condensation of the flue gases.

The Unit blue flame oil burner stands for particularly clean, environmentally responsible and efficient combustion.

Benefits at a glance

- Standard seasonal efficiency [to DIN] up to 97 % (H_s) [gross cv].
- Eutectoplex heating surface for high operational reliability and a long service life.
- Cast sections with flexible gaskets for permanent hot gas tightness.
- Corrosion-resistant stainless steel Inox-Radial heat exchanger.
- JetFlow system for optimum heating water distribution.
- Easy to use Vitotronic control unit with plain text and graphic display.
- All commercially available EL fuel oils can be used. Also for fuel oil DIN 51603-6-EL A Bio 10: low sulphur fuel oil EL with up to 10 % bio-components (FAME).
- Quiet operation thanks to external silencer.

■ Horizontal hot gas flue layout enables simple and affordable maintenance.

■ Web-enabled thanks to Vitoconnect (accessories) for operation and service via Viessmann apps.

Factory setting

Boiler body up to 53.7 kW with boiler door, fitted thermal insulation and fitted boiler control unit

- 1 Box with Inox-Radial heat exchanger
- 1 Product pack (technical documentation)
- 1 Box with Vitoflame 300 Unit oil burner
- 1 Box with Vitoflame 300 Unit oil burner hood
- 1 Box with flue gas silencer
- 1 Box with accessories for room sealed operation (subject to order)

Boiler body from 67.6 kW with boiler door

- 1 Box with thermal insulation
- 1 Box with boiler control unit
- 1 Box with Inox-Radial heat exchanger
- 1 Product pack (technical documentation)
- 1 Box with Vitoflame 300 Unit oil burner
- 1 Box with Vitoflame 300 Unit oil burner hood
- 1 Box with flue gas silencer

Tested quality



CE designation according to current EC directives.



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1.2 Operating conditions

	Requirements	Implementation
1. Heating water flow rate	None	—
2. Boiler return temperature (minimum value)	None	—
3. Lower boiler water temperature	None	—

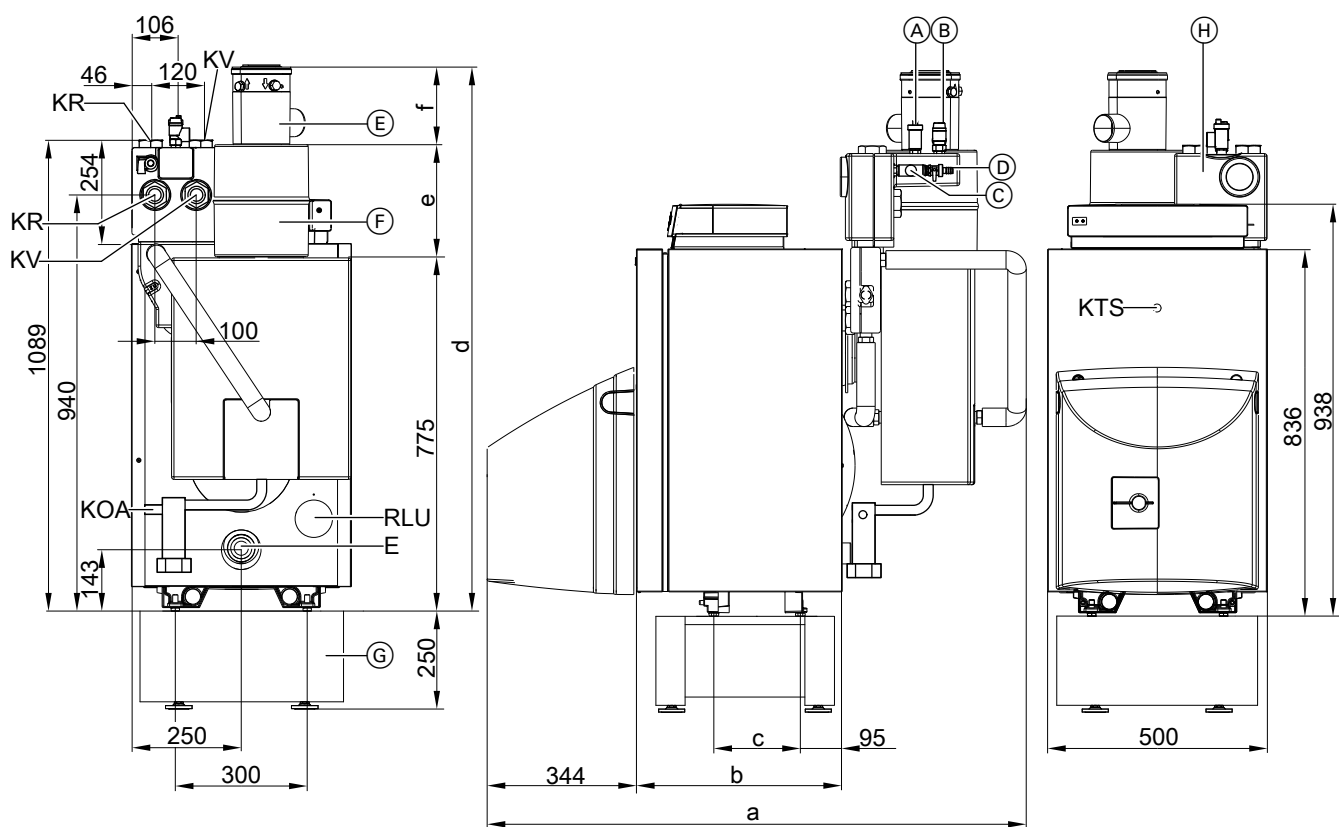
1.3 Specification type BR2A, 20.2 to 53.7 kW

Rated heating output							
$T_F/T_R = 50/30\text{ °C}$	kW	20.2	24.6	28.6	35.4	42.8	53.7
$T_F/T_R = 80/60\text{ °C}$	kW	18.8	22.9	27	33	40	50
Rated heat input	kW	19.6	23.9	28.1	34.4	41.6	52.1
Product ID		CE-2456CL102.3					
Transport dimensions (incl. thermal insulation)							
Length	mm	515	515	650	650	810	810
Width	mm	500	500	500	500	500	500
Height	mm	940	940	940	940	940	940
Overall dimensions							
Total length (incl. heat exchanger and thermal insulation)	mm	1226	1226	1362	1362	1662	1662
Total width	mm	500	500	500	500	500	500
Total height	mm	940	940	940	940	940	940
Plinth height	mm	250	250	250	250	250	250
Height of DHW cylinder below the boiler							
– Capacity 130 to 200 l	mm	654	654	654	654	654	654
– Capacity 350 l	mm	–	–	786	786	786	786
Weight boiler body	kg	89	89	120	120	152	152
Total weight	kg	147	147	184	184	224	224
Boiler incl. thermal insulation, heat exchanger, burner and boiler control unit							
Capacity boiler	litres	27	27	35	35	44	44
Capacity boiler water	litres	32	32	40	40	52	52
Permiss. operating pressure	bar	3	3	3	3	3	3
	MPa	0.3	0.3	0.3	0.3	0.3	0.3
Boiler connections							
Boiler flow and return	G	1½	1½	1½	1½	1½	1½
Safety connection (Safety valve at the safety equipment block)	G	1½	1½	1½	1½	1½	1½
Drain	G	1½	1½	1½	1½	1½	1½
Condensate drain	Ø mm	20	20	20	20	20	20
Flue gas parameters^{*1}							
Temperature at							
– 30 °C return temperature	°C	32	34	37	39	36	40
– 60 °C return temperature	°C	62	63	65	67	64	67
Mass flow rate for fuel oil EL	kg/h	31	38	46	56	68	85
Standard seasonal efficiency [to DIN] at heating system temp. 50/30 °C		97 (H _s) [gross cv]					
Maximum condensate volume to DWA-A 251	l/h	1.9	2.3	2.7	3.4	4.1	5.1
Flue gas connection	Ø mm	80	80	80	80	110	110
Ventilation air connection	Ø mm	80	80	80	80	80	80
Boiler gas capacity	litres	27	27	39	39	51	51
Available draught^{*2}	Pa	100	100	100	100	100	100
	mbar	1.0	1.0	1.0	1.0	1.0	1.0
Sound power level (to EN ISO 9614-2)							
– In room sealed operation	dB(A)			60			
– In open flue operation	dB(A)			63			
Energy efficiency class		A	A	A	A	A	A

^{*1} Values for calculating the size of the flue system to EN 13384 relative to 13 % CO₂ for fuel oil EL.

Flue gas temperatures as an average gross value to EN 304 at 20 °C combustion air temperature.

^{*2} Observe when sizing the chimney.



- | | | | |
|-----|--|-----|--|
| (A) | Air vent valve | (H) | Safety equipment block (accessories) |
| (B) | Safety valve | E | Drain outlet |
| (C) | Connection, diaphragm expansion vessel | KTS | Boiler water temperature sensor |
| (D) | Fill valve | KV | Boiler flow |
| (E) | Boiler flue connection | KR | Boiler return |
| (F) | Silencer | RLU | Ventilation air connection for room sealed operation |
| (G) | Plinth | KOA | Condensate drain |

Note

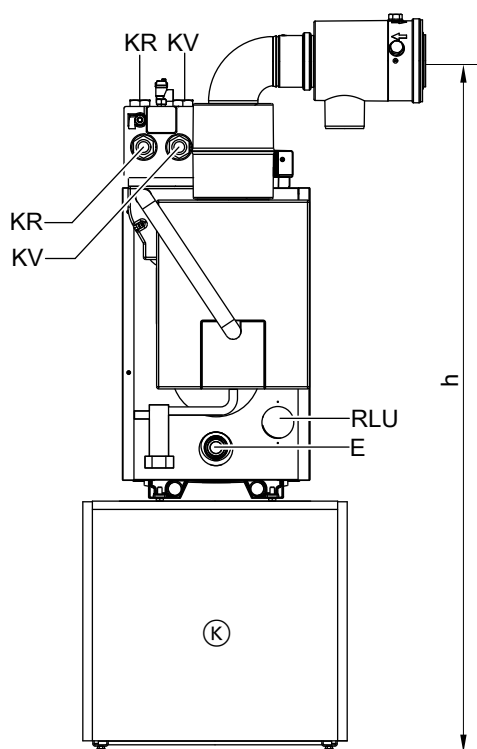
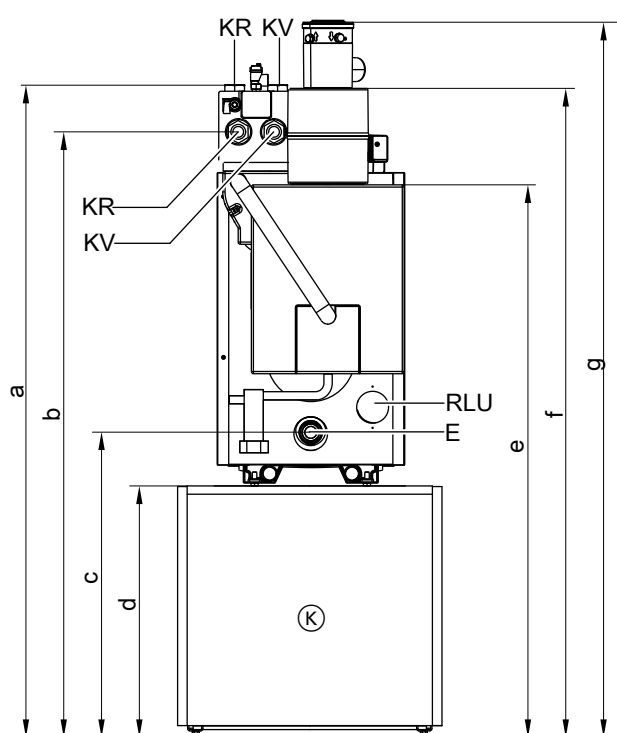
Minimum total height incl. plinth when using a balanced flue bend (87°) up to the centre of the bend with

- System size $\varnothing 80$ mm: 1545 mm
- System size $\varnothing 110$ mm (42.8 and 53.7 kW): 1777 mm

Dimensions

Rated heating output	kW	20.2	24.6	28.6	35.4	42.8	53.7
a	mm	1226	1226	1362	1362	1663	1663
b	mm	469	469	606	606	778	778
c	mm	200	200	334	334	468	468
d	mm	1210	1210	1210	1210	1410	1410
e	mm	255	255	255	255	357	357
f	mm	176	176	176	176	278	278

1



- Ⓚ Vitocell 100-H or 300-H
(For specification see chapter "DHW cylinders")
- E Drain outlet and diaphragm expansion vessel
- KR Boiler return

- KV Boiler flow
- RLU Ventilation air connection for room sealed operation

Vitorondens 200-T (cont.)

Dimensions

Rated heating output	kW	20.2	24.6	28.6 and 35.4		42.8 and 53.7	
With DHW cylinder below the boiler	litres	130 to 200	130 to 200	130 to 200	350	160 and 200	350
a	mm	1720	1720	1720	1852	1720	1852
b	mm	1589	1589	1589	1721	1589	1721
c	mm	792	792	792	924	792	924
d	mm	654	654	654	786	654	786
e	mm	1424	1424	1424	1556	1424	1556
f	mm	1680	1680	1680	1812	1781	1913
g	mm	1857	1857	1857	1989	2059	2191
g (when using a balanced flue bend (87°) up to the centre of the bend)	mm	1952	1952	1952	2084	2180	2312
h (with horizontal flue gas connection)	mm	1772	1772	1772	1904	—	—

Information on the Vitorondens 200-T up to 35.4 kW if using a DHW cylinder below the boiler:

To reduce the installed height, the boiler can be ordered with accessories for horizontal room sealed operation (the accessories comprise an 87° flue bend and a suitable boiler flue connection).

1.4 Specification type J2RA, 67.6 to 107.3 kW

Rated heating output				
T _F /T _R = 50/30 °C	kW	67.6	85.8	107.3
T _F /T _R = 80/60 °C	kW	63	80	100
Rated heat input	kW	65.6	83.3	104.2
Product ID		CE-2456CL102.3		
Transport dimensions				
Length	mm	694	694	694
Width	mm	480	480	480
Height	mm	935	935	935
Overall dimensions				
Total length (incl. heat exchanger and thermal insulation)	mm	1704	1704	1704
Total width	mm	600	600	600
Total height	mm	1149	1149	1149
Plinth height	mm	250	250	250
Weight boiler body	kg	237	237	237
Total weight	kg	348	348	348
Boiler incl. thermal insulation, heat exchanger, burner and boiler control unit				
Capacity boiler	litres	63	63	63
Capacity boiler water	litres	76	76	76
Permiss. operating pressure	bar	3	3	3
	MPa	0.3	0.3	0.3
Boiler connections				
Boiler flow and return	G	2	2	2
Safety connection	G	1½	1½	1½
(Safety valve at the safety equipment block)				
Drain	G	1½	1½	1½
Condensate drain	Ø mm	20	20	20
Flue gas parameters ^{*3}				
Temperature at				
– 30 °C return temperature	°C	38	38	38
– 60 °C return temperature	°C	59	58	61
Mass flow rate for fuel oil EL	kg/h	107	136	170
Standard seasonal efficiency [to DIN]	%	97 (H _s) [gross cv]		
at heating system temp. 50/30 °C				
Maximum condensate volume	l/h	6.4	8.2	10.2
to DWA-A 251				
Flue gas connection	Ø mm	110	110	110
Boiler gas capacity	litres	82	82	82
Available draught ^{*4}	Pa	100	100	100
	mbar	1.0	1.0	1.0
Sound power level	dB(A)	70	72	80
(to EN ISO 9614-2)				
Energy efficiency class		A	A	A

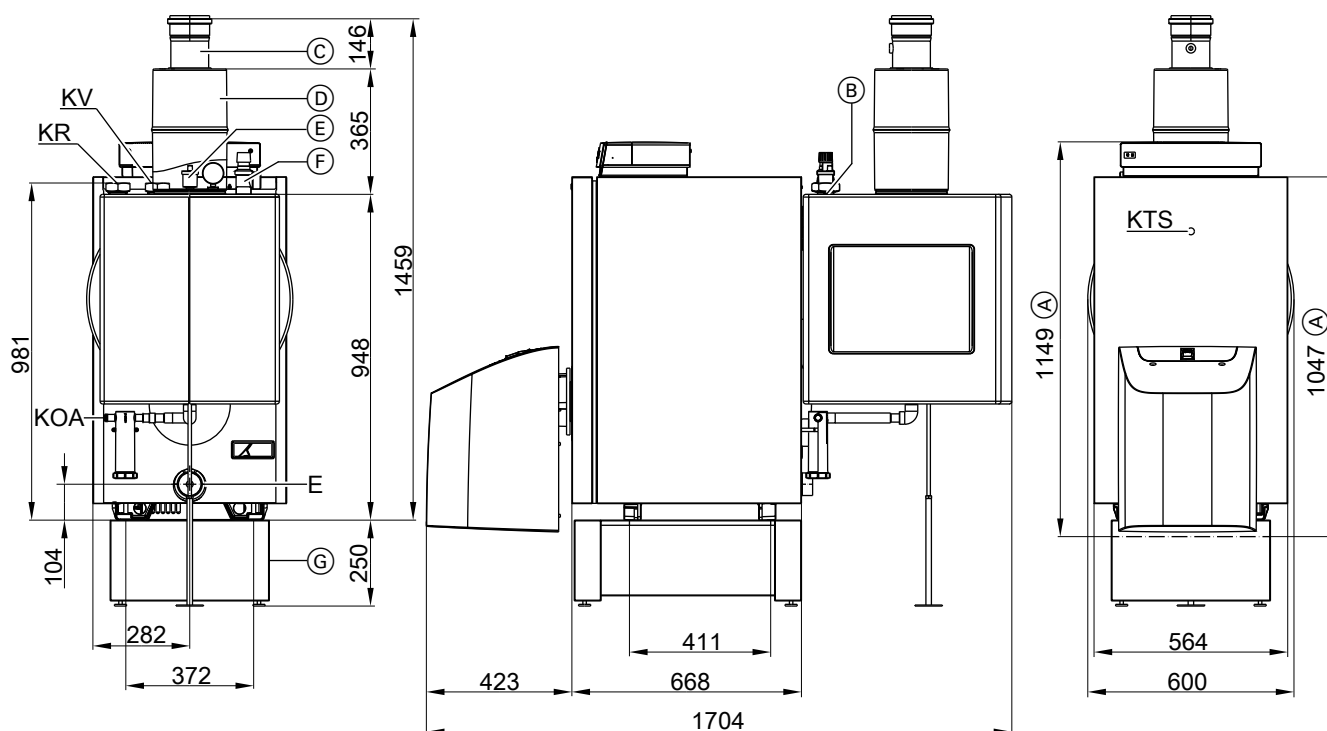
Note

Vitorondens 200-T, type J2RA, should be provided with sound attenuation if sited near rooms that are sensitive to noise. A sound insulation kit for open flue operation (see page 60) can be used, which reduces noise emissions by around 6 dB(A).

^{*3} Values for calculating the size of the flue system to EN 13384 relative to 13 % CO₂ for fuel oil EL.

Flue gas temperatures as an average gross value to EN 304 at 20 °C combustion air temperature.

^{*4} Observe when sizing the chimney.

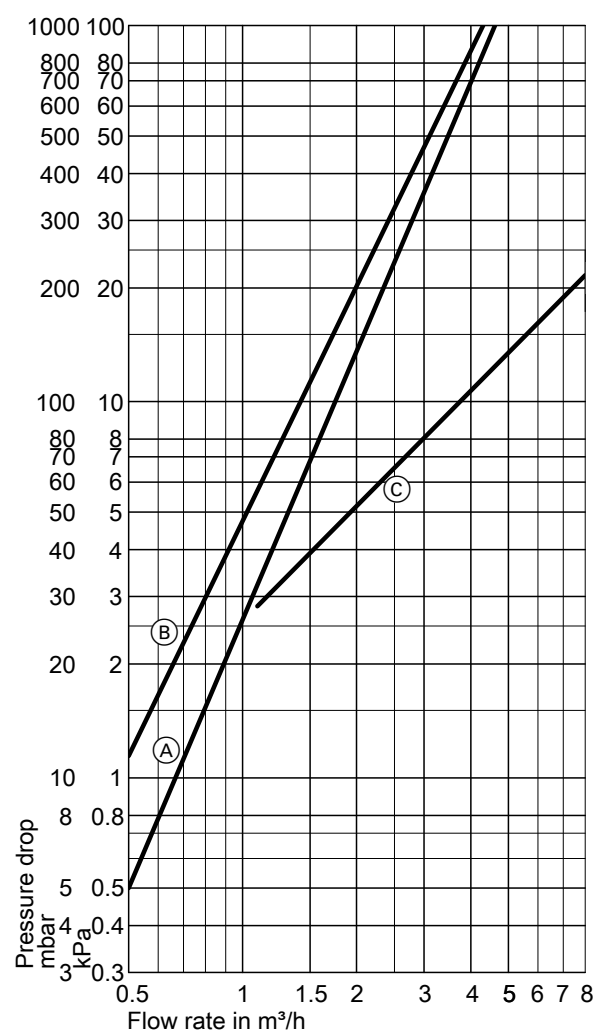


- | | |
|---|-------------------------------------|
| (A) Dimension incl. adjustable feet (if installing without plinth) | (F) Safety valve |
| (B) Boiler flow/return distributor with integral safety equipment block | (G) Plinth |
| (C) Boiler flue connection | E Drain outlet |
| (D) Silencer | KTS Boiler water temperature sensor |
| (E) Air vent valve | KV Boiler flow |
| | KR Boiler return |
| | KOA Condensate drain |

Note

Due to the design, the burner silencer hood protrudes beyond the front of the boiler. With the Vitorondens 67.6 to 107 kW, we recommend also ordering a boiler plinth; see page 59. If a boiler plinth is not ordered, the boiler must be sited on a suitable base.

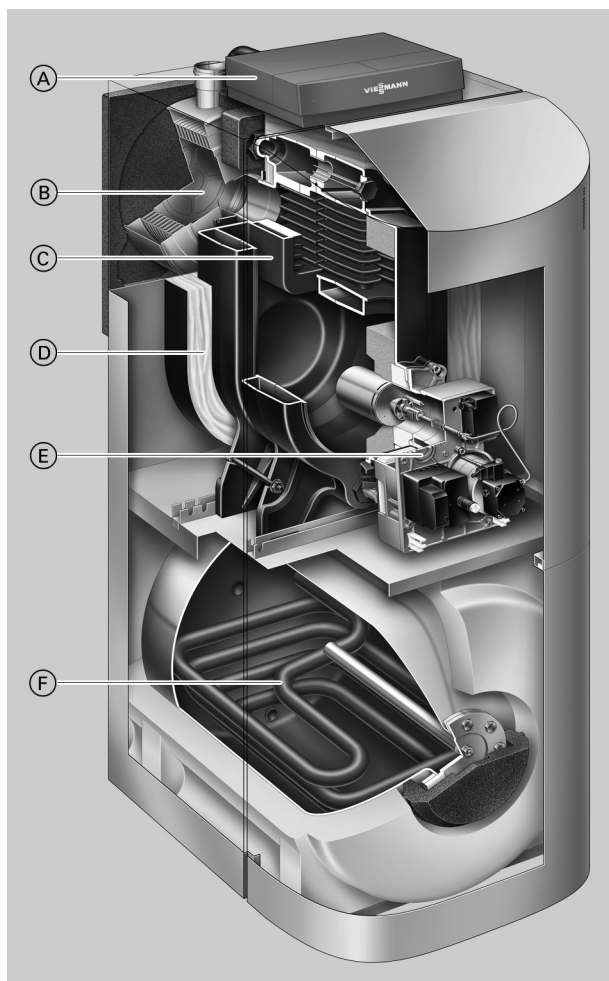
Pressure drop on the heating water side



The Vitorondens 200-T is only suitable for fully pumped hot water heating systems.

- Ⓐ For 20.2 to 35.4 kW
- Ⓑ For 42.8 and 53.7 kW
- Ⓒ For 63.7 to 107.3 kW

2.1 Product description



- (A) Digital Vitotronic boiler control unit
- (B) Inox-Radial heat exchanger
- (C) Eutectoplex heating surface
- (D) Highly effective thermal insulation
- (E) Vitoflame 300 Unit oil burner
- (F) Controllable DHW cylinder with Ceraprotect enamel coating

The Vitorondens 222-F is a compact and fully plumbed combination, comprising a Vitorondens 200-T cast iron oil condensing boiler and an integral DHW cylinder with 130 or 160 l capacity (subject to boiler output).

The three-pass boiler with Eutectoplex cast iron heating surface is characterised by high operational reliability and a long service life. The Vitorondens 222-F requires an installation area of less than 0.6 m² and has a total height, including control unit, of under 1.80 m. With the Vitoflame 300 Unit blue flame oil burner the Vitorondens 222-F can also be operated in room sealed mode. Thus, unnecessary heat loss is prevented. Together with the flue outlet positioning at the top, this opens up new installation options in your home.

The handling aid and delivery in assemblies make for easy installation, even under difficult conditions.

Benefits at a glance

- Standard seasonal efficiency [to DIN] up to 97 % (H_s) [gross cv]
- Eutectoplex heating surface for high operational reliability and a long service life.
- Cast sections with flexible gaskets for permanent hot gas tightness.
- Corrosion-resistant stainless steel Inox-Radial heat exchanger.
- JetFlow system for optimum heating water distribution.
- High level of DHW convenience thanks to an integral DHW cylinder.
- Flexible siting with choice of open flue or room sealed operation.
- Easy to use Vitotronic control unit with plain text and graphic display.

- All commercially available EL fuel oils can be used. Also for fuel oil DIN 51603-6-EL A Bio 10: low sulphur fuel oil EL with up to 10 % bio-components (FAME).
- Quiet operation thanks to external silencer.
- Horizontal hot gas flue layout enables simple and affordable maintenance.
- Web-enabled thanks to Vitoconnect (accessories) for operation and service via Viessmann apps.

Factory setting

Boiler body with boiler door and DHW cylinder (packed separately).

- 1 Box with thermal insulation and burner hood
- 1 Product pack (coding card and technical documentation)
- 1 Box with boiler control unit and 1 bag with technical documentation
- 1 Box with Vitoflame 300 Unit blue flame oil burner
- 1 Box with accessories for room sealed operation of Vitoflame 300 (subject to order)
- 1 Box with accessories for DHW cylinder incl. high efficiency circulation pump for cylinder heating
- 1 Box with Inox-Radial heat exchanger
- 1 Box with flue gas silencer

Tested quality



CE designation according to current EC directives.



ÖVGW Quality Mark for gas and water equipment

2.2 Operating conditions

	Requirements	Implementation
1. Heating water flow rate	None	—
2. Boiler return temperature (minimum value)	None	—
3. Lower boiler water temperature	None	—

2.3 Specification

Rated heating output				
$T_F/T_R = 50/30\text{ °C}$	kW	20.2	24.6	28.6
$T_F/T_R = 80/60\text{ °C}$	kW	18.8	22.9	27
Rated heat input		19.6	23.9	28.1
DHW cylinder				
Capacity	litres	130	130	160
Continuous DHW output ^{*5}	l/h	442	442	540
Performance factor N_L ^{*6}		1.1	1.1	1.6
Max. draw-off rate at the specified performance factor N_L and DHW heating from 10 to 45 °C	l/min	15	15	16
Product ID		CE-2456CL102.3		
Boiler body dimensions				
Length	mm	508	508	645
Width	mm	360	360	360
Height	mm	716	716	716
Cylinder body dimensions				
Length	mm	850	850	995
Width	mm	640	640	640
Height	mm	640	640	640
Overall dimensions				
Total length (dim. c)	mm	1278	1278	1423
Total width	mm	665	665	665
Total height (in operation)	mm	1590	1590	1590
Weight				
– Boiler body	kg	98	98	130
– Cylinder body	kg	73	73	86
Total weight complete with thermal insulation, heat exchanger, burner, DHW cylinder and boiler control unit	kg	271	271	317
Capacity				
Boiler	litres	27	27	35
Boiler and heat exchanger	litres	32	32	40
Permiss. operating pressure				
– Boiler	bar	3	3	3
	MPa	0.3	0.3	0.3
– DHW cylinder	bar	10	10	10
	MPa	1	1	1
Boiler connections				
Boiler flow and return	G	1	1	1
DHW cylinder connections				
Cold water, DHW	R	¾	¾	¾
DHW circulation	R	1	1	1
Condensate drain	Ø mm	20	20	20
Flue gas parameters^{*7}				
Temperature at				
– 30 °C return temperature	°C	32	34	37
– 60 °C return temperature	°C	62	63	65
Mass flow rate for fuel oil EL	kg/h	31	38	46
Standard seasonal efficiency [to DIN]		97 (H _s) [gross cv]		
at heating system temp. 75/60 °C				
Maximum condensate volume		1.9	2.3	2.7
to DWA-A 251				
Flue gas connection	Ø mm	80	80	80
Ventilation air connection	Ø mm	80	80	80
Boiler gas capacity	litres	27	39	51
Available draught^{*8}		100	100	100
	mbar	0.1	0.1	0.1
Pressure drop on the hot gas side		22	32	39
	mbar	0.22	0.32	0.39

^{*5} At 10 °C water inlet temperature and 45 °C water outlet temperature. This DHW output will be guaranteed only during operation with priority control for DHW heating.

^{*6} To DIN 4708 at an average boiler water temperature of 70 °C and cylinder storage temperature $T_{cyl} = 60\text{ °C}$.

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

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

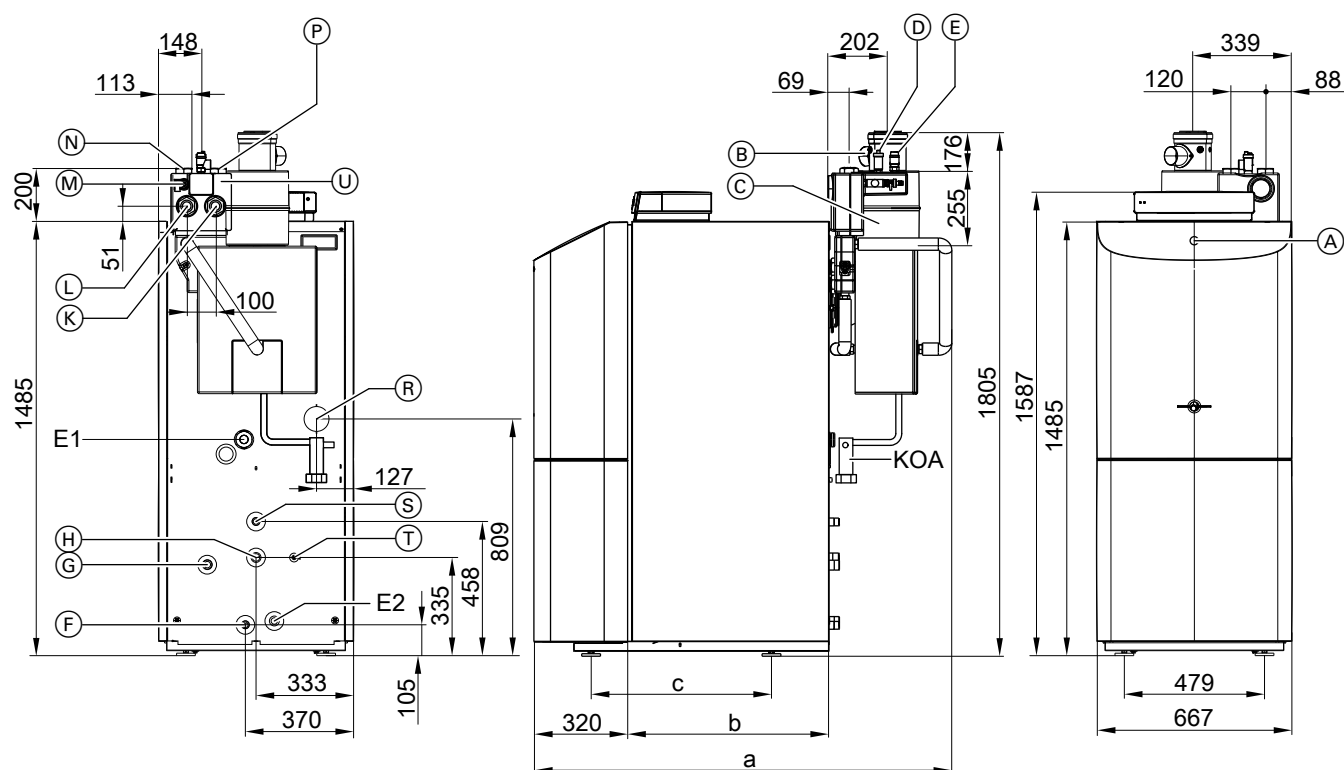
^{*7} Values for calculating the size of the flue system to EN 13384 relative to 13 % CO₂ for fuel oil EL.

Flue gas temperatures as an average gross value to EN 304 at 20 °C combustion air temperature.

^{*8} Observe when sizing the chimney.

Vitorondens 222-F_(not available in DE) (cont.)

Rated heating output				
$T_F/T_R = 50/30\text{ °C}$	kW	20.2	24.6	28.6
$T_F/T_R = 80/60\text{ °C}$	kW	18.8	22.9	27
Sound power level (to EN ISO 9614-2)				
– In room sealed operation	dB(A)		60	
– In open flue operation	dB(A)		63	
Energy efficiency class, heating		A	A	A

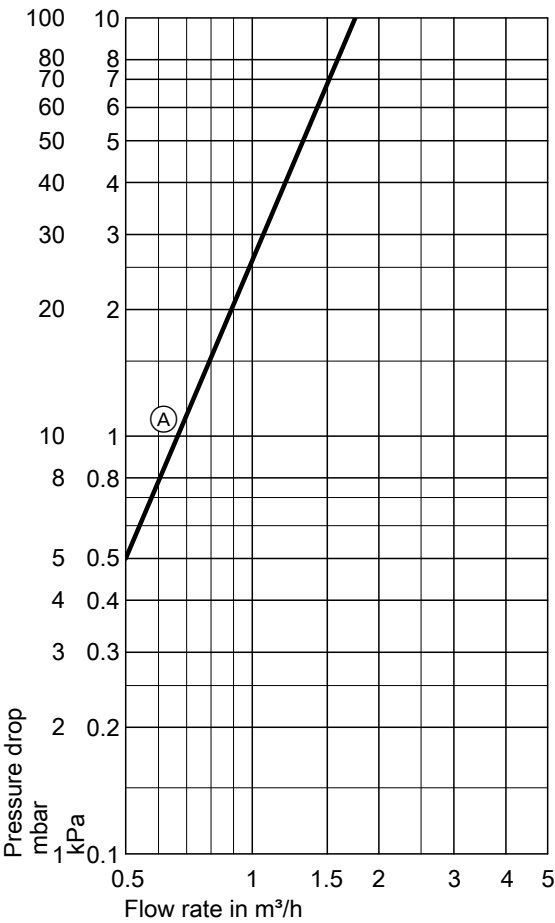


- | | |
|--|--|
| (A) Boiler water temperature sensor | (M) Fill valve |
| (B) Boiler flue connection | (N) Heating return |
| (C) Silencer | (P) Heating flow |
| (D) Air vent valve | (R) Ventilation air connection for room sealed operation |
| (E) Safety valve | (S) DHW |
| (F) Cold water | (T) Cylinder temperature sensor |
| (G) Cylinder flow | (U) Safety equipment block |
| (H) DHW circulation | E1 Boiler drain |
| (K) Cylinder flow and heating flow | E2 DHW cylinder drain outlet |
| (L) Cylinder return and heating return | KOA Condensate drain |

Dimensions

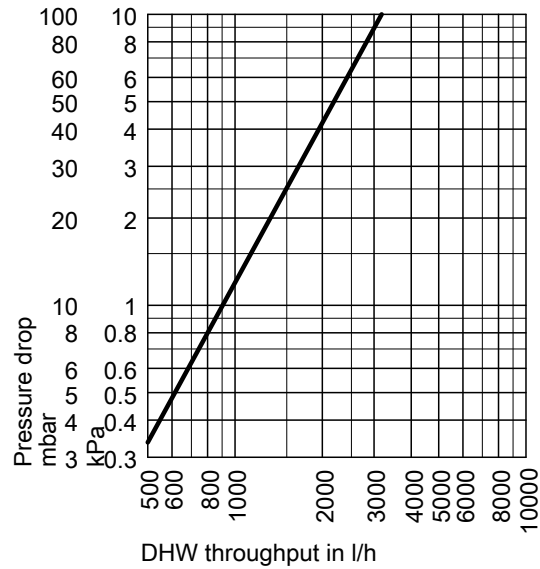
Rated heating output		kW	20.2	24.6	28.6
a	mm		1278	1278	1423
b	mm		539	539	684
c	mm		471	471	616
Total height (when using a balanced flue bend (87°) up to the centre of the bend)		mm	1900	1900	1900

Pressure drops



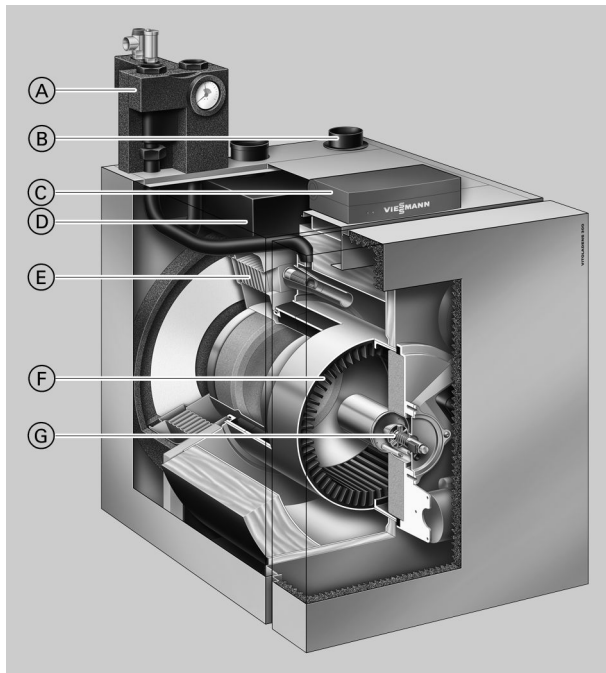
Pressure drop on the heating water side

The Vitorondens 222-F is only suitable for fully pumped hot water heating systems.



Pressure drop on the DHW side

3.1 Product description



- (A) Safety assembly included in standard delivery
- (B) Flue outlet and ventilation air inlet at the top
- (C) Vitotronic control unit
- (D) Integral silencer
- (E) Integral stainless steel Inox-Radial heat exchanger
- (F) Biferral composite heating surface
- (G) Compact blue flame burner

The Vitoladens 300-C is a highly efficient oil condensing boiler that offers great flexibility in terms of application. Particularly compact, it is suitable both for use in new build and as a replacement for old boilers.

At the core of this condensing boiler lies a corrosion-resistant stainless steel Inox-Radial heat exchanger. In direct connection with the biferral composite heating surface, the energy used is converted to heat efficiently and with practically no loss.

This extremely economical usage of valuable fuel oil also results in reduced CO₂ emissions. This means that by operating the Vitoladens 300-C, you are personally contributing towards active climate protection.

The design and characteristics of the stainless steel heat exchanger encourage the condensation of hot gases. The condensate created flushes the heating surface and produces a self-cleaning effect, which ensures a permanently high efficiency of 98 %.

Longer maintenance intervals and therefore lower service costs save you money. The demand-dependent modulating Compact blue flame burner in the Vitoladens 300-C matches its output to the current heat demand. It is also very economical and efficient.

The burner operates in room sealed or open flue mode, thus allowing flexible siting of the oil condensing boiler. The entire burner adjustment by the contractor is made via the control unit.

The Vitoladens 300-C has already won the red dot design award. All connections of the Vitoladens 300-C are at the top. It is prefitted at the factory, and takes little time to install on site.

A combination with the Vitocell 300-H DHW cylinder is ideal, to form a single unit with the Vitoladens 300-C. If there is a requirement to install a neutralising system at the boiler installation site, there is plenty of space to do so in the boiler plinth.

Function of the modulating pressure-jet oil burner

The modulating pressure-jet oil burner for the Vitoladens 300-C now has two essential new components that enable output modulation: Motor pump unit and an electronics box. The motor pump unit is used to vary the oil pressure between 5 and 28 bar, so that any output between 9.6 and 28.9 kW can be implemented. This enables much better ramping up or down to the current heat demand than with a 2-stage burner.

Its operation is controlled via the signal from the pressure sensor integrated in the motor pump unit. This is processed in the electronics box and the fan speed is ramped to the relevant optimum level. External influences affecting combustion, such as contamination, can be reliably compensated for through intelligent adjustment of the fan speed in the first step and the oil pressure in the second step. The burner is set by adjusting the fan speed under full and partial load, which causes the nominal curve of the oil pressure/air relationship stored in the control unit to be matched to the current local conditions. Adjustments directly at the burner are no longer required and are not now possible as there are no adjustment screws on the fan or the oil pump.

Benefits at a glance

- Standard seasonal efficiency [to DIN] up to 98 % (H_s) [gross cv] / 104 % (H_i) [net cv]
- Maximum energy utilisation with minimum dimensions
- Biferral composite heating surface with directly linked stainless steel Inox-Radial heat exchanger
- 2-stage or modulating Compact blue flame burner for open flue or room sealed operation
- Quiet operation through integral silencer
- Easy to use Vitotronic 200 control unit with plain text and graphic display
- All commercially available EL fuel oils can be used. Also suitable for fuel oil DIN 51603-6 EL A Bio 10: low sulphur fuel oil EL with up to 10 % bio-components (FAME)
- Optional space saving installation of neutralising system inside the boiler plinth
- Safety assembly included in standard delivery
- Easier handling and extended transport accessories
- Winner of test conducted by German consumer association "Stiftung Warentest" 05/2008 (boilers with two-stage Compact blue flame burner)
- Web-enabled thanks to Vitoconnect (accessories) for operation and service via Viessmann apps.

Factory setting

Oil condensing boiler with duplex biferral composite heating surface, integral stainless steel Inox-Radial heat exchanger and fitted Compact blue flame burner with oil preheater.

Vitoladens 300-C (cont.)

With fitted boiler control unit, fitted thermal insulation and trap also provided.

Packed separately:

- Programming unit
- Boiler flue connection, subject to order:
 - For open flue operation
 - For coaxial room sealed operation
 - For parallel room sealed operation
- Distributor casing with safety assembly on the heating water side (safety equipment block)

Tested quality



CE designation according to current EC Directives

Corresponds to the LV Directive 2006/95/EC.

Corresponds to the EMC Directive 2004/108/EC.

Meets the limits set by the "Blue Angel" eco-label for burner/boiler combinations to RAL UZ 46.

3.2 Operating conditions

	Requirements	Implementation
1. Heating water flow rate	None	—
2. Boiler return temperature (minimum value)	None	—
3. Lower boiler water temperature (also for frost protection)	None	—

3.3 Specification

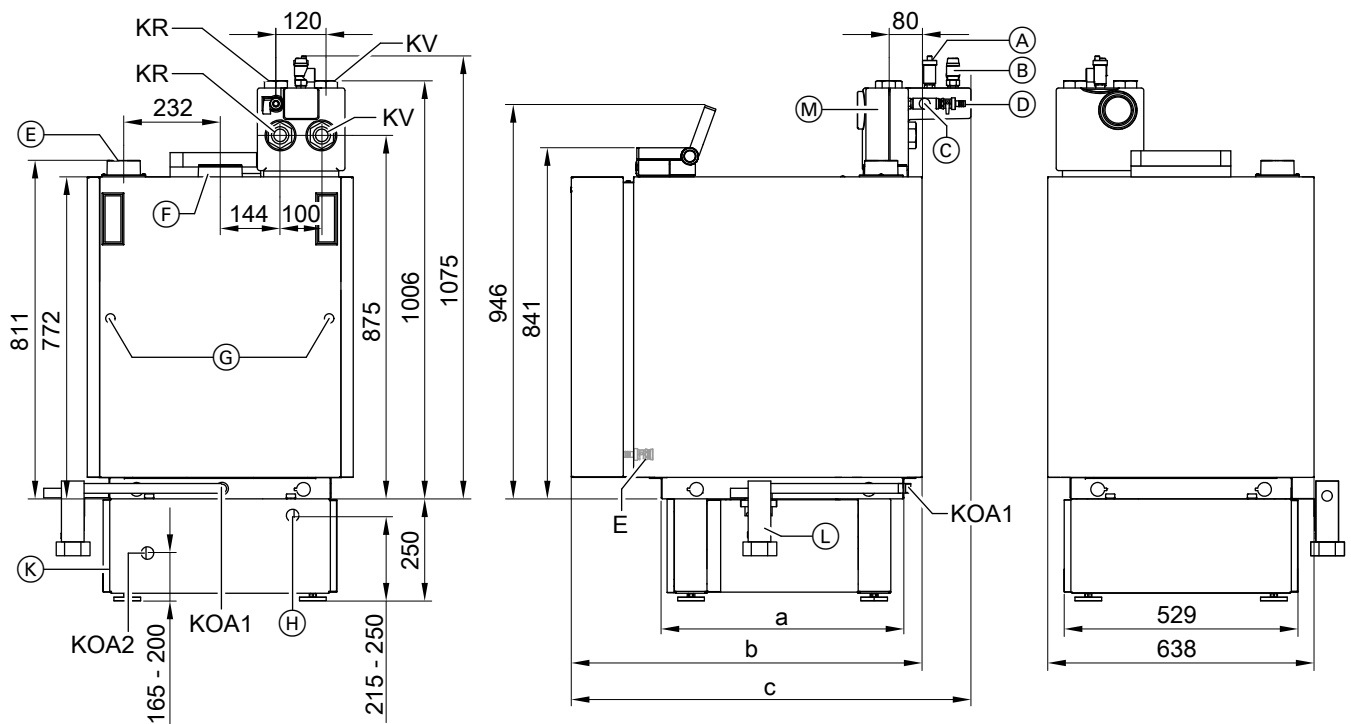
Rated heating output with Compact blue flame burner or blue flame oil burner		2-stage	2-stage	2-stage	Modulating	Modulating	Modulating
$T_F/T_R = 50/30\text{ °C}$	kW	12.9/19.3	16.1/23.6	19.3/28.9	10.3-19.3	10.3-23.6	12.9-28.9
$T_F/T_R = 80/60\text{ °C}$	kW	12/18	15/22	18/27	9.6-18	9.6-22	12-27
Rated heat input	kW	12.5/18.7	15.6/22.9	18.7/28.1	10.0-18.7	10.0-22.9	12.5-28.1
Product ID		CE-2456BS104.4			CE-2456CO106.2		
Dimensions							
Total length (dim. c)	mm	958	958	1076	958	958	1076
Total width	mm	638	638	638	638	638	638
Total height (in operation)	mm	841	841	841	841	841	841
– Height (control unit in operating position)	mm	946	946	946	946	946	946
Plinth height	mm	250	250	250	250	250	250
Height of DHW cylinder below the boiler							
– Capacity 130 to 200 l	mm	654	654	654	654	654	654
Total weight	kg	148	148	168	148	148	168
Boiler with thermal insulation, burner and boiler control unit							
Power consumption^{*9}							
– 100 % of rated heating output	W	215	234	270	106	154	128
– 30 % of rated heating output	W	58	62	71	60	55	56
Appliance in standby mode	W	6	6	6	6	6	6
Capacity boiler water (boiler and heat exchanger)	l	42.5	42.5	55	42.5	42.5	55
Permiss. operating pressure							
	bar	3	3	3	3	3	3
	MPa	0.3	0.3	0.3	0.3	0.3	0.3
Boiler connections							
Boiler flow and return							
– Flat gaskets	G	1½	1½	1½	1½	1½	1½
– With threaded inserts supplied	Rp	1	1	1	1	1	1
Safety connection (safety valve)	G	¾	¾	¾	¾	¾	¾
Drain	R	½	½	½	½	½	½
Condensate drain/connection	Ø mm	21	21	21	21	21	21
Flue gas parameters^{*10}							
Temperature							
– At 30 °C return temperature	°C	35	40	35	35	40	35
– At 60 °C return temperature	°C	70	70	65	70	70	65
Mass flow rate for fuel oil EL	kg/h	19.3/28.8	14.5-28.8	24.5/35.9	14.5-35.9	28.8/43.1	19.5-43.1
Standard seasonal efficiency [to DIN] at heating system temp. 50/30 °C	%	Up to 98 (H _s) [gross cv] / 104 (H _i) [net cv]					
Maximum condensate volume to DWA-A 251	l/h	1.8	2.2	2.7	1.8	2.2	2.7
Flue gas connection	Ø mm	80	80	80	80	80	80
Ventilation air connection	Ø mm	80	80	80	80	80	80
Available draught^{*11}							
	Pa	100	100	100	100	100	100
	mbar	1.0	1.0	1.0	1.0	1.0	1.0
Sound power level (to EN ISO 9614-2)							
– In room sealed operation	dB(A)	55 to 60	52 to 60	55 to 60	52 to 60	55 to 60	52 to 60
– In open flue operation	dB(A)	59 to 66	53 to 65	59 to 66	53 to 65	59 to 66	53 to 65
Energy efficiency class		A	A	A	A	A	A

^{*9} For 2-stage burner: Standard parameter.

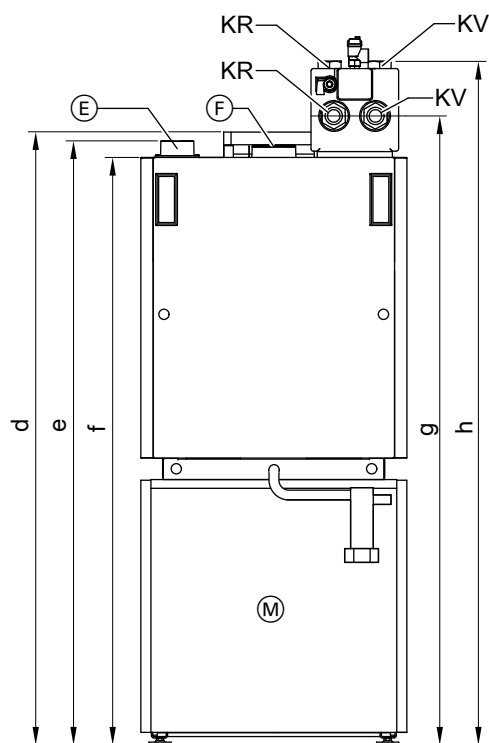
^{*10} Values for calculating the size of the flue system to EN 13384 relative to 13 % CO₂ for fuel oil EL.

Flue gas temperatures as an average gross value to EN 304 at 20 °C combustion air temperature.

^{*11} Observe when sizing the chimney.



- | | | | |
|-----|---|------|--|
| (A) | Air vent valve | (K) | Plinth |
| (B) | Safety valve (3 bar or 0.3 MPa) | (L) | Trap |
| (C) | Connection for diaphragm expansion vessel | (M) | Safety equipment block |
| (D) | Fill valve | E | Drain valve |
| (E) | Ventilation air connection | KOA1 | Condensate drain |
| (F) | Flue gas connection | KOA2 | Condensate drain (with neutralising system positioned inside the plinth) |
| (G) | Fixing apertures for mounting the transport aid (accessories) | KR | Boiler return |
| (H) | Condensate supply (with neutralising system positioned inside the plinth) | KV | Boiler flow |

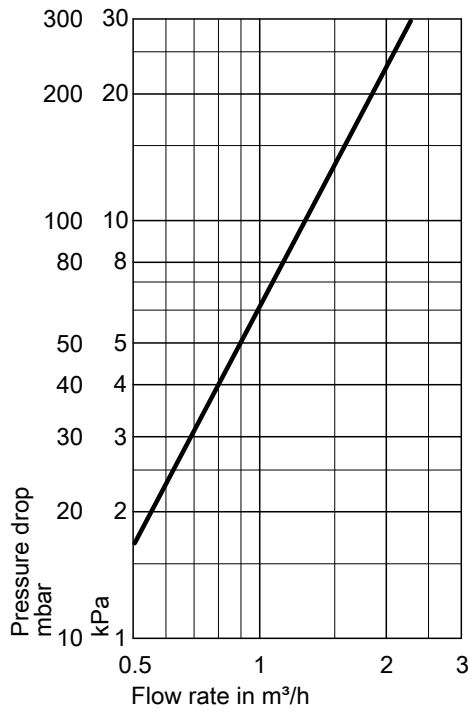


- (E) Ventilation air connection
(F) Flue gas connection
(M) Vitocell 100-H or Vitocell 300-H
KR Boiler return
KV Boiler flow

Dimensions				
Rated heating output		kW		
(T _F /T _R =50/30 °C)		19.3	23.6	28.9
a	mm	582	582	700
b	mm	841	841	959
c	mm	958	958	1076
With DHW cylinder below the boiler		130 to 200	130 to 200	130 to 200
d	mm	1496	1496	1496
e	mm	1470	1470	1470
f	mm	1427	1427	1427
g	mm	1527	1527	1527
h	mm	1616	1616	1616

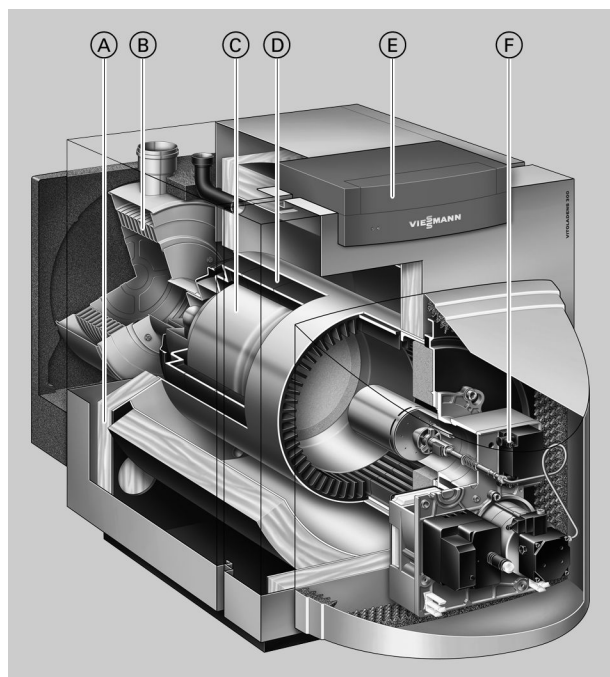
Vitoladens 300-C (cont.)

Pressure drop on the heating water side



The Vitoladens 300-C is only suitable for fully pumped hot water heating systems.

4.1 Product description



- (A) Highly effective thermal insulation
- (B) Inox-Radial heat exchanger
- (C) Integral silencer
- (D) Biferral cast iron and steel composite heating surface
- (E) Vitotronic control unit
- (F) Vitoflame 300 Unit oil burner

4

The Vitoladens 300-T is the world's most widely sold oil condensing boiler, and comes at a particularly attractive price.

In the output range 35.4 to 53.7 kW the Vitoladens 300-T offers the ideal solution for incorporating oil condensing technology in modernisation projects.

The use of high quality materials and proven components ensures that the Vitoladens 300-T is very economical and reliable.

The Vitoflame 300 Unit blue flame burner stands for particularly clean, environmentally responsible and efficient combustion.

The 2-stage heat recovery process of the Vitoladens 300-T incorporates the proven biferral composite heating surface and the corrosion-resistant stainless steel Inox-Radial heat exchanger, installed downstream of the boiler. This principle ensures that combustion and condensation occur in physically separate locations, so the combustion gases condense in an area that is free from deposits. In practice, this means longer-than-average service intervals for cleaning the combustion chamber and significantly lower maintenance costs.

Benefits at a glance

- Standard seasonal efficiency [to DIN]: Up to 97 % (H_s) [gross cv]
- Most widely sold oil condensing boiler worldwide
- Durable stainless steel biferral composite heating surface, proven in millions of boilers
- Corrosion-resistant stainless steel Inox-Radial heat exchanger
- Easy access to the heat exchanger surfaces for cleaning
- Quiet operation through integral silencer
- Flexible siting through open flue or room sealed operation

- Easy to operate Vitotronic control unit with plain text and graphic display
- Web-enabled thanks to Vitoconnect (accessories) for operation and service via Viessmann apps.
- All commercially available EL fuel oils can be used. Also suitable for fuel oil DIN 51603-6 EL A Bio 10: low sulphur fuel oil EL with up to 10 % bio-components (FAME)

Factory setting

Boiler body with boiler door

- 1 Box with thermal insulation
- 1 Box with boiler control unit and 1 bag with technical documentation
- 1 Box with Vitoflame 300 blue flame oil burner
- 1 Box with accessories for room sealed operation of the Vitoflame 300 blue flame oil burner (subject to order)
- 1 Box with boiler connection set (flue gas side, subject to order)
- 1 Box with heat exchanger
- 1 Box with burner hood
- 1 Cleaning brush
- 1 Product pack (coding card and technical documentation)

Tested quality



CE designation according to current EC directives.

4.2 Operating conditions

	Requirements	Implementation
1. Heating water flow rate	None	—
2. Boiler return temperature (minimum value)	None	—
3. Lower boiler water temperature	None	—

4.3 Specification

Rated heating output				
$T_F/T_R = 50/30\text{ °C}$	kW	35.4	42.8	53.7
$T_F/T_R = 80/60\text{ °C}$	kW	33.0	40.0	50.0
Rated heat input	kW	34.4	41.5	52.1
Product ID		CE-2456BO107.5		
Boiler body dimensions				
Length g	mm	768	817	817
Width d	mm	565	674	674
Height k	mm	708	819	819
Overall dimensions				
Total length h incl.				
flue gas heat exchanger	mm	1585	1770	1770
Total width e	mm	667	776	776
Total height b (when operational)	mm	815	940	940
– Height a (control unit in operating position)	mm	934	1050	1050
– Height f (control unit in maintenance position)	mm	1163	1275	1275
Plinth height ^{*12}	mm	250	250	250
Height s (DHW cylinder below the boiler)				
– Capacity 130 to 200 l	mm	654	654	654
– Capacity 350 l	mm	786	786	786
Weight boiler body	kg	185	260	260
Total weight	kg	242	333	333
Boiler incl. thermal insulation, heat exchanger, burner and boiler control unit				
Power consumption^{*13}				
– 100 % of rated heating output	W	250	340	340
– 30 % of rated heating output	W	84	113	113
Appliance in standby mode	W	3	3	3
Capacity boiler water	l	93	147	147
(boiler and heat exchanger)				
Permiss. operating pressure	bar	3	3	3
	MPa	0.3	0.3	0.3
Boiler connections				
Boiler flow and return	G	1½	1½	1½
Safety connection (safety valve)	G	1½	1½	1½
Drain	R	¾	¾	¾
Filling	R	½	½	½
Condensate drain/connection	Ø mm	20	20	20
Flue gas parameters^{*14}				
Temperature				
– At 30 °C return temperature	°C	39	38	39
– At 60 °C return temperature	°C	67	62	63
Mass flow rate for fuel oil EL	kg/h	56	68	85
Standard seasonal efficiency [to DIN]	%	97 (H _s) [gross cv]		
at heating system temp. 50/30 °C				
Maximum condensate volume	l/h	3.4	4.1	5.1
to DWA-A 251				
Flue gas connection	Ø mm	80	110	110
Ventilation air connection	Ø mm	80	110	110
Available draught^{*15}	Pa	100	100	100
	mbar	1.0	1.0	1.0
Sound power level				
(to EN ISO 9614-2)				
– In room sealed operation	dB(A)	60	60	60
– In open flue operation	dB(A)	63	63	63
Energy efficiency class		A	A	A

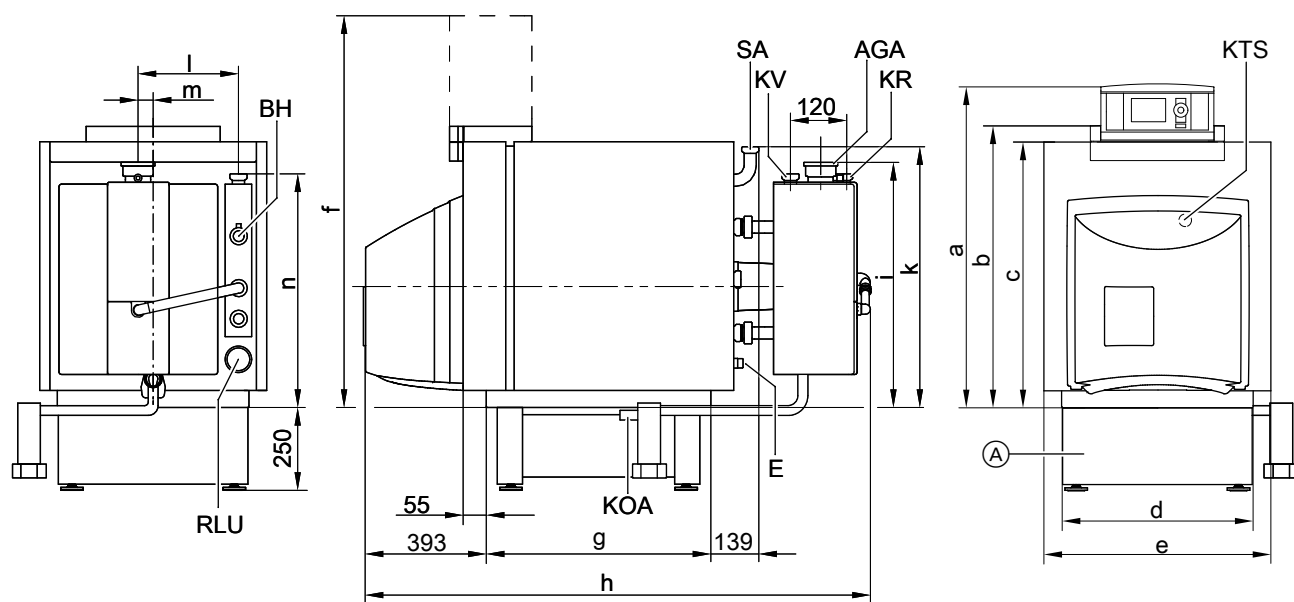
^{*12} When operating the boiler with a neutralising system and without a DHW cylinder below the boiler, order the plinth separately.

^{*13} Standard parameter.

^{*14} Values for calculating the size of the flue system to EN 13384 relative to 13 % CO₂ for fuel oil EL.

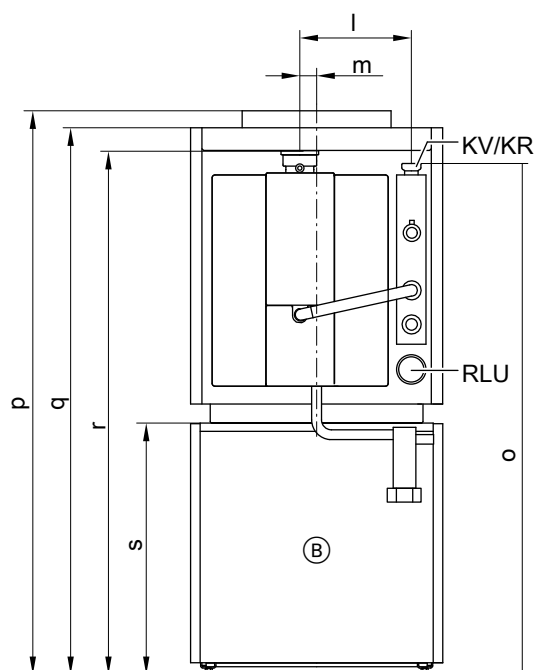
Flue gas temperatures as an average gross value to EN 304 at 20 °C combustion air temperature.

^{*15} Observe when sizing the chimney.



- (A) Plinth
 AGA Flue outlet
 E Drain and diaphragm expansion vessel connection
 BH Fill valve
 KOA Condensate drain
 KR Boiler return

- KTS Boiler water temperature sensor
 KV Boiler flow
 RLU Ventilation air connection for room sealed operation.
 The heat exchanger can be installed so that the left or right connectors can be used for the boiler flow and return.
 SA Safety connection (safety valve)



- (B) Vitocell 100-H or Vitocell 300-H (for specification see chapter "DHW cylinders")
 KR Boiler return

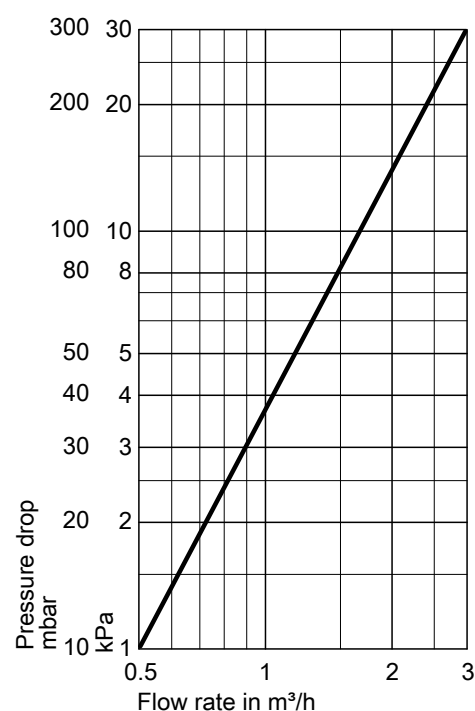
- KV Boiler flow
 RLU Ventilation air connection for room sealed operation.
 The heat exchanger can be installed so that the left or right connectors can be used for the boiler flow and return.

Vitoladens 300-T (cont.)

Dimensions

Rated heating output (T _F /T _R =50/30 °C)		kW		35.4		42.8		53.7	
a	mm	934		1050		1050			
b	mm	815		940		940			
c	mm	763		874		908			
d	mm	565		674		674			
e	mm	667		776		776			
f	mm	1163		1275		1275			
g	mm	768		817		817			
h	mm	1585		1770		1770			
i	mm	642		672		672			
k	mm	708		819		819			
l	mm	280		254		254			
m	mm	55		0		0			
n	mm	575		702		702			
With DHW cylinder below the boiler		l	160 and 200	350	200	350	350		
o	mm	1229	1361	1356	1488	1488			
p	mm	1469	1601	1594	1726	1726			
q	mm	1417	1549	1528	1660	1660			
r	mm	1269	1400	1269	1400	1400			
s	mm	654	786	654	786	786			

Pressure drop on the heating water side



The Vitoladens 300-T is only suitable for fully pumped hot water heating systems.

Burner

5.1 Specification Vitoflame 300, type VHG

For the Vitorondens 200-T up to 50 kW in open flue and room sealed version

Rated boiler heating output	kW	18.8	22.9	27	33	40	50
Rated heat input	kW	19.6	23.9	28.1	34.4	41.6	52.1
Burner type		VHGI-2	VHGI-3	VHGI-4	VHGI-5	VHGII-1	VHGII-2
Type test no. to EN 267		5G999S					
Oil throughput	kg/h	1.7	2	2.5	2.9	3.5	4.6
	litres/h	2	2.4	2.9	3.4	4.1	5.1
Voltage	V	230					
Frequency	Hz	50					
Power consumption	W	226	226	235	235	340	340
including 4 ignition events per hour							
Motor speed	rpm	2800					
Version		Single stage					
Oil pump rate	litres/h	45					
Dimensions							
Length (dim. a)	mm	335	335	335	335	370	370
Width	mm	535	535	535	535	650	650
Height (dim. b)	mm	580	580	580	580	650	650
Weight	kg	12	12	12	12	13	13
Connections	R	¾					
Suction and return lines on the supplied oil hoses							
Max. permissible supply pressure in the supply lines	bar	2					
(for ring pipelines)	MPa	0.2					
Ventilation air connection	DN	80					
(for balanced flue operation, on the back of the boiler)							

For the Vitorondens 200-T from 67.6 kW in room sealed version

Rated boiler heating output	kW	67.6	85.8	107.3
Rated heat input	kW	65.6	83.3	104.2
Burner type		VHG III-1	VHG III-2	VHG III-3
Product ID number (together with boiler)		CE-2456CL102.3		
Oil throughput				
Stage 1	kg/h	3.6	4.9	6.2
	litres/h	4.6	5.7	7.2
Stage 2	kg/h	5.5	7.0	8.8
	litres/h	6.5	8.2	10.3
Voltage	V	230		
Frequency	Hz	50		
Power consumption				
including 4 ignition events per hour				
Stage 1	W	585		
Stage 2	W	616		
Motor speed	rpm	3600		
Version		2-stage		
Oil pump rate	litres/h	45		
Dimensions				
Length (dim. a)	mm	385		
Width	mm	402		
Height (dim. b)	mm	660		
Weight	kg	21		
Connections	R	¾		
Suction and return lines on the supplied oil hoses				
Max. permissible supply pressure in the supply lines	bar	2		
(for ring pipelines)	MPa	0.2		

Burner (cont.)

For the Vitorondens 222-F (not available in DE) in open flue and room sealed version

Rated boiler heating output	kW	18.8	22.9	27
Rated heat input	kW	19.6	23.9	28.1
Burner type		VHGI-2	VHGI-3	VHGI-4
Type test no. to EN 267		5G999S		
Oil throughput	kg/h	1.7	2	2.5
	litres/h	2	2.4	2.9
Voltage	V	230		
Frequency	Hz	50		
Power consumption	W	226	226	235
including 4 ignition events per hour				
Motor speed	rpm	2800		
Version		Single stage		
Oil pump rate	litres/h	45		
Dimensions				
Length (dim. a)	mm	335	335	335
Width	mm	535	535	535
Height (dim. b)	mm	580	580	580
Weight	kg	12	12	12
Connections	R	3/8		
Suction and return lines on the supplied oil hoses				
Max. permissible supply pressure in the supply lines	bar MPa	2 0.2		
(for ring pipelines)				
Ventilation air connection	DN	80		
(for balanced flue operation, on the back of the boiler)				

For the Vitoladens 300-T in open flue and room sealed version

Rated boiler heating output	kW	33.0	40.0	50.0
Rated heat input	kW			
Burner type		VHG I-5	VHG II-1	VHG II-2
Type test no. to EN 267		5G999S		
Oil throughput	kg/h	2.9	3.7	4.6
	litres/h	3.4	4.4	5.4
Voltage	V	230		
Frequency	Hz	50		
Power consumption	W	250	340	340
including 4 ignition events per hour				
Motor speed	rpm	2800		
Version		Single stage		
Oil pump rate	litres/h	45		
Dimensions				
Length (dim. a)	mm	335	370	370
Width	mm	535	650	650
Height (dim. b)	mm	580	660	660
Weight	kg	12	13	13
Connections	R	3/8		
Suction and return lines on the supplied oil hoses				
Max. permissible supply pressure in the supply lines	bar MPa	2 0.2		
(for ring pipelines)				
Ventilation air connection	DN	80	110	110
(for balanced flue operation, on the back of the boiler)				

Burner type

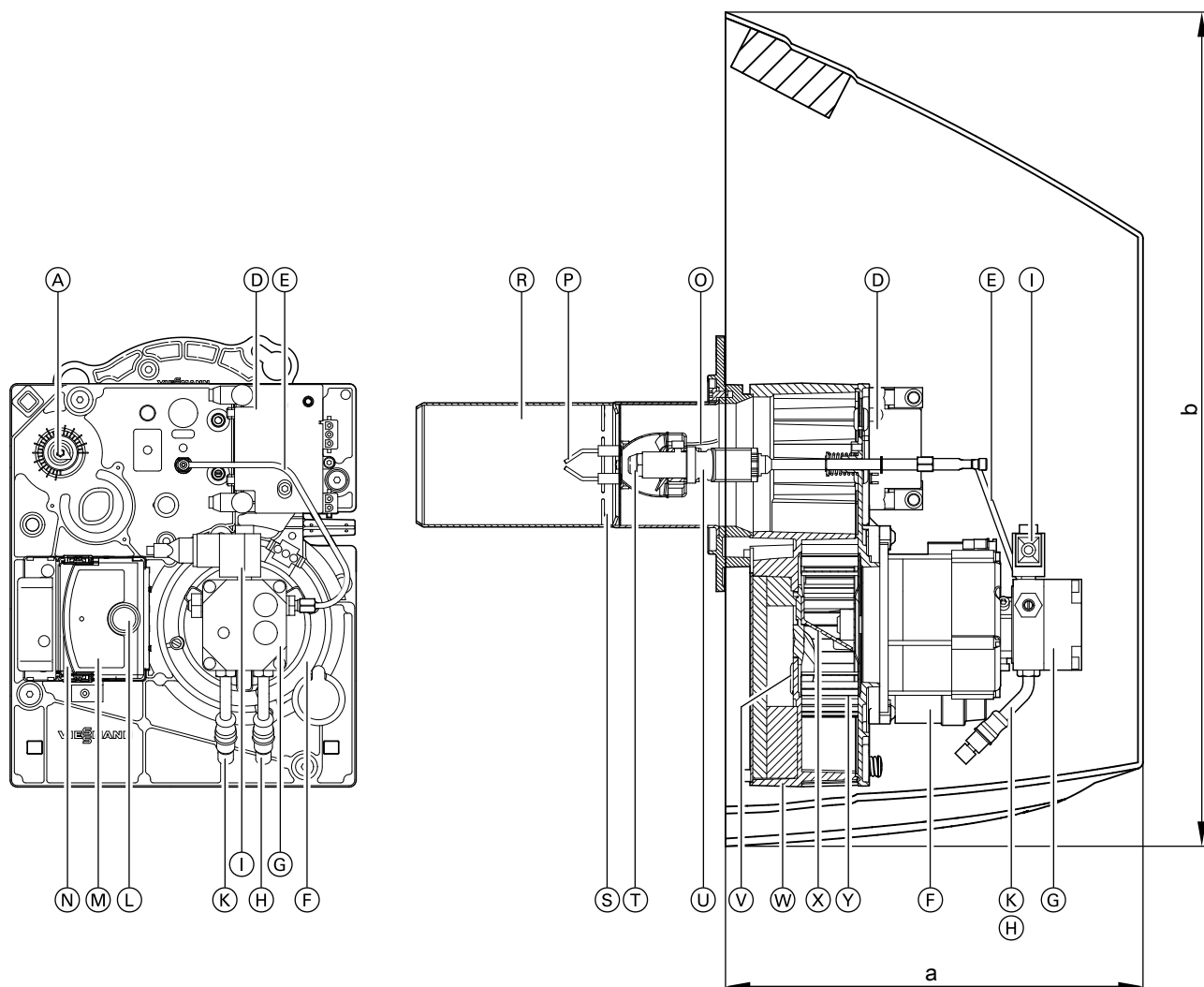
Burners for **balanced** flue operation are equipped with specially designed gaskets.
The following installation types are available: B₂₃, OC₁₃, OC₃₃, OC₄₃, OC₅₃, OC₆₃, OC₈₃.

Tested quality



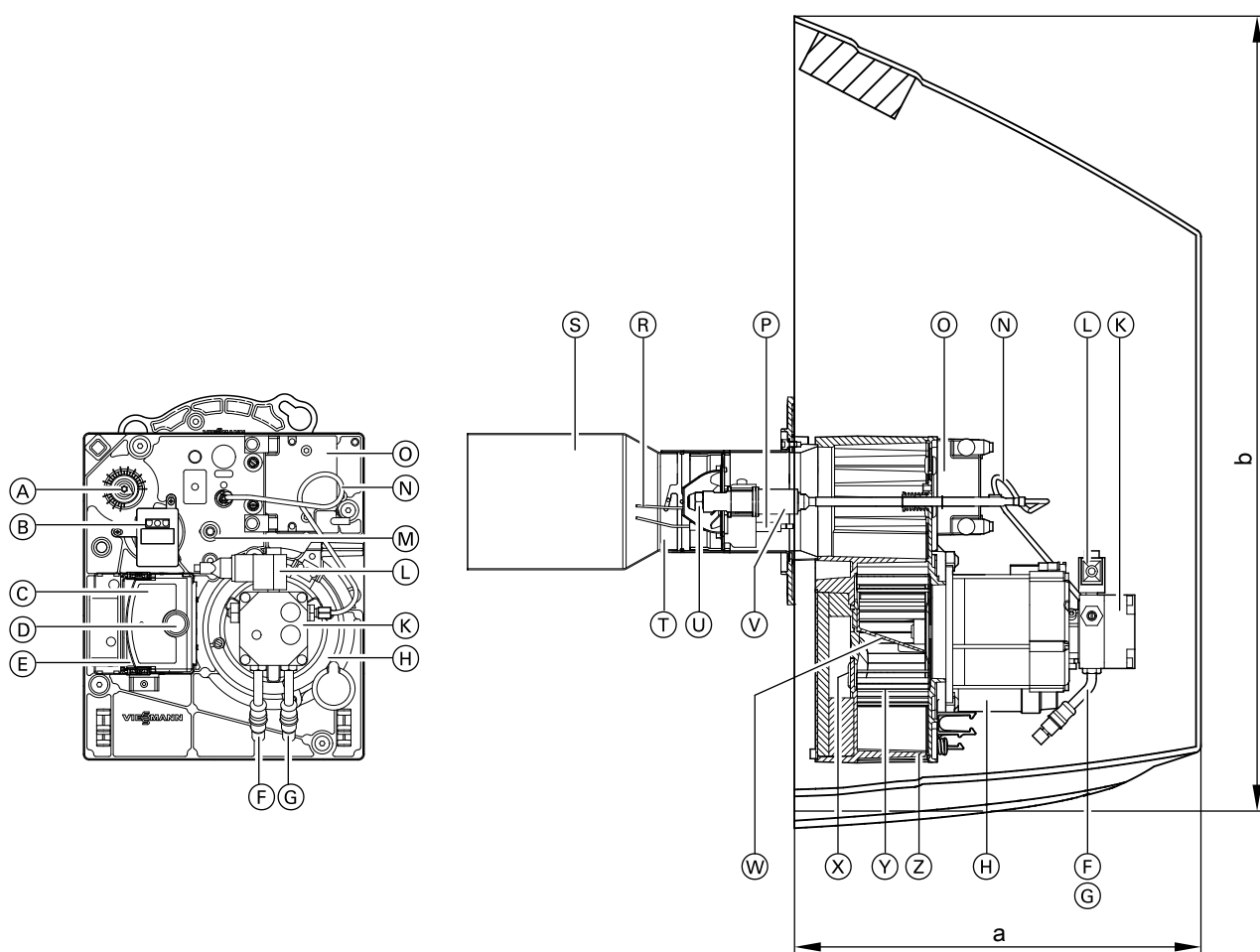
CE designation according to current EC Directives.

The burners meet the requirements of the "Blue Angel" certificate of environmental excellence for burner/boiler combinations to RAL UZ 46.



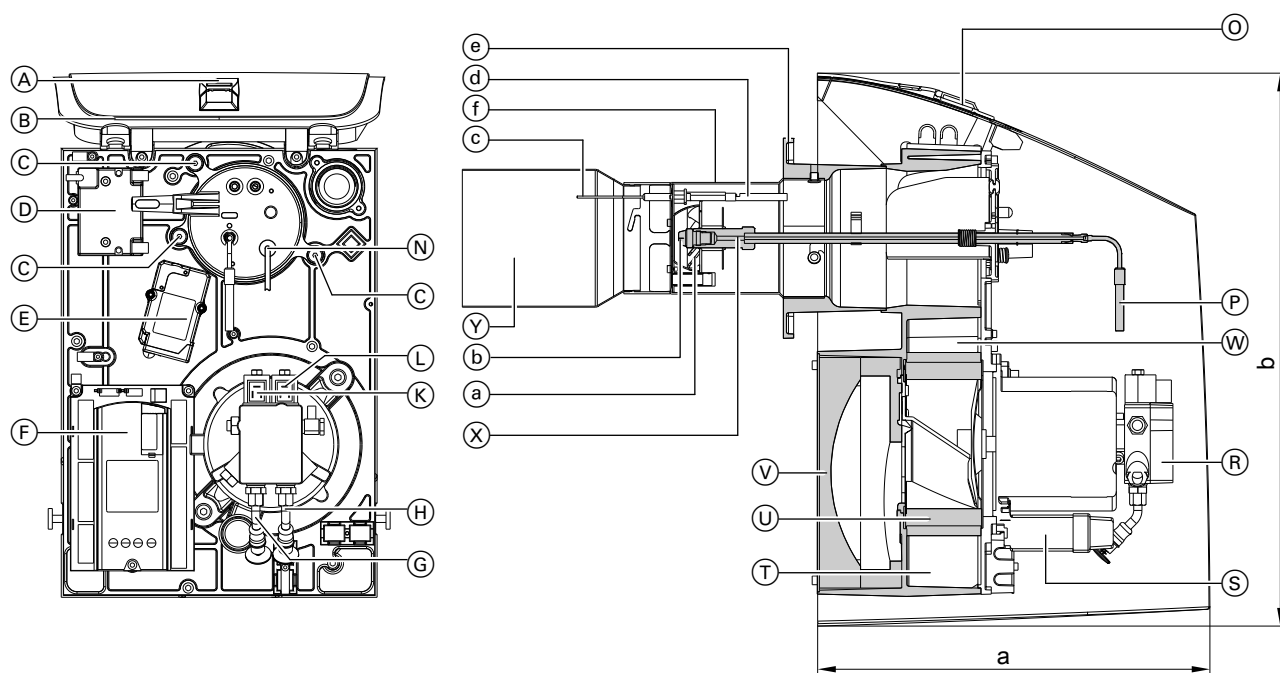
Vitoflame 300, type VHG from 18.8 to 33 kW

- | | |
|--|--|
| (A) Air regulating valve | (N) Connection panel |
| (D) HF ignition unit
(with flame monitor) | (O) Ignition cable |
| (E) Oil line | (P) Ignition electrodes |
| (F) Fan motor | (R) Flame tube |
| (G) Oil pump | (S) Mixing assembly |
| (H) Suction line | (T) Oil burner nozzle |
| (I) Solenoid valve | (U) Blast tube connection with oil preheater |
| (K) Return line | (V) Inlet air aperture |
| (L) Reset button with extension | (W) Burner casing |
| (M) Burner control unit | (X) Air routing |
| | (Y) Impeller |



Vitoflame 300, type VHG with 40 and 50 kW

- | | |
|---------------------------------|--|
| (A) Air regulating valve | (N) Oil line |
| (B) Timer | (O) HF ignition unit |
| (C) Burner control unit | (P) Ignition cable |
| (D) Reset button with extension | (R) Ignition electrodes |
| (E) Connection panel | (S) Flame tube |
| (F) Return line | (T) Mixing assembly |
| (G) Suction line | (U) Oil burner nozzle |
| (H) Fan motor | (V) Blast tube connection with oil preheater |
| (K) Oil pump | (W) Air routing |
| (L) Solenoid valve | (X) Inlet air aperture |
| (M) Flame monitor | (Y) Impeller |
| | (Z) Burner casing |



Vitoflame 300, type VHG with 67.6 to 107.3 kW

- | | |
|--|---------------------------|
| (A) Service switch (for burner adjustment) | (R) Oil pump |
| (B) Hood adaptor | (S) Fan motor |
| (C) Quick-action fastener | (T) Fan casing |
| (D) Electronic ignition | (U) Impeller |
| (E) Servomotor | (V) Inlet air silencer |
| (F) Burner control unit | (W) Air regulating valve |
| (G) Return line or suction line (different, subject to manufacturer) | (X) Blast tube connection |
| (H) Suction line or return line (different, subject to manufacturer) | (Y) Flame tube |
| (K) Solenoid valve stage 2 | (a) Mixing assembly |
| (L) Solenoid valve stage 1 | (b) Oil burner nozzle |
| (N) Flame monitor | (c) Ignition electrodes |
| (O) Reset button | (d) Ignition cable |
| (P) Oil line | (e) Flange |
| | (f) Adaptor pipe |

DHW cylinders

Listed below are specifications for DHW cylinders for which system connections to the boiler and heat meter are available (see Viessmann pricelist).

For DHW cylinders with a cylinder capacity above 500 l and further DHW cylinders from the Viessmann pricelist, the connection lines are to be provided on site.

Note

- *To determine the cylinder size, see the Vitocell technical guide.*
- *If used in conjunction with solar DHW heating and central heating backup, see the Vitosol technical guide.*

6.1 Specification Vitocell 100-V, types CVA, CVAA, CVAA-A

For DHW heating in conjunction with boilers and district heating systems; optionally with an electric heater as an accessory for DHW cylinders with 300 and 500 l capacity

- Operating pressure on the **heating water side** up to **25 bar (2.5 MPa)**
- Operating pressure on the **DHW side** up to **10 bar (1.0 MPa)**

Suitable for the following systems:

- DHW temperature up to **95 °C**
- Heating water flow temperature up to **160 °C**

Specification

Type		CVAA-A/CVA		CVAA	CVA	CVAA	
Cylinder capacity (AT: Actual water capacity)	l	160	200	300	500	750	950
Heating water capacity	l	5.5	5.5	10.0	12.5	29.7	33.1
Gross volume	l	165.5	205.5	310.0	512.5	779.7	983.1
DIN registration number		9W241/11–13 MC/E				Applied for	
Continuous output for DHW heating from 10 to 45 °C and a heating water flow temperature of ... at the heating water flow rate stated below	90 °C	kW	40	40	53	70	109
		l/h	982	982	1302	1720	2670
	80 °C	kW	32	32	44	58	91
		l/h	786	786	1081	1425	2236
	70 °C	kW	25	25	33	45	73
		l/h	614	614	811	1106	1794
	60 °C	kW	17	17	23	32	54
		l/h	417	417	565	786	1332
	50 °C	kW	9	9	18	24	33
		l/h	221	221	442	589	805
	90 °C	kW	36	36	45	53	94
		l/h	619	619	774	911	1613
Continuous output for DHW heating from 10 to 60 °C and a heating water flow temperature of ... at the heating water flow rate stated below	80 °C	kW	28	28	34	44	75
		l/h	482	482	584	756	1284
	70 °C	kW	19	19	23	33	54
		l/h	327	327	395	567	923
Heating water flow rate for the stated continuous outputs	m ³ /h		3.0	3.0	3.0	3.0	3.0
Standby heat loss	kWh/24 h		0.97/1.35	1.04/1.46	1.65	1.95	2.28
Dimensions							
Length (Ø)							
– With thermal insulation	a	mm	581	581	667	859	1062
– Excl. thermal insulation		mm	—	—	—	650	790
Width							
– With thermal insulation	b	mm	605	605	744	923	1110
– Excl. thermal insulation		mm	—	—	—	837	1005
Height							
– With thermal insulation	c	mm	1189	1409	1734	1948	1897
– Excl. thermal insulation		mm	—	—	—	1844	1817
Height when tilted							
– With thermal insulation		mm	1260	1460	1825	—	—
– Excl. thermal insulation		mm	—	—	—	1860	1980
Entire weight incl. thermal insulation	kg		86	97	156	181	301
Heating surface	m ²		1.0	1.0	1.5	1.9	3.5
Connections (male thread)							
Heating water flow and return	R		1	1	1	1	1 ¼
Cold water, DHW	R		¾	¾	1	1 ¼	1 ¼
DHW circulation	R		¾	¾	1	1	1 ¼
Energy efficiency class			A / B	A / B	B	B	—

Information regarding continuous output

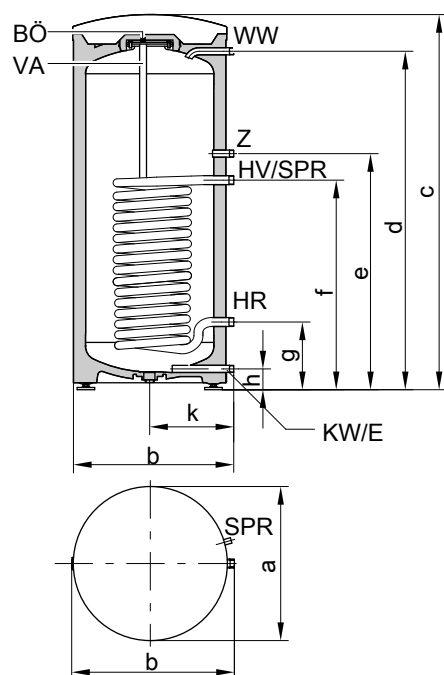
When designing systems with the specified or calculated continuous output, select a matching circulation pump. The stated continuous output is achieved only if the rated boiler heating output is ≥ continuous output.

Note

Up to 300 l cylinder capacity also available as Vitocell 100-W in white.

DHW cylinders (cont.)

Vitocell 100-V, type CVA / CVAA-A, 160 and 200 l capacity



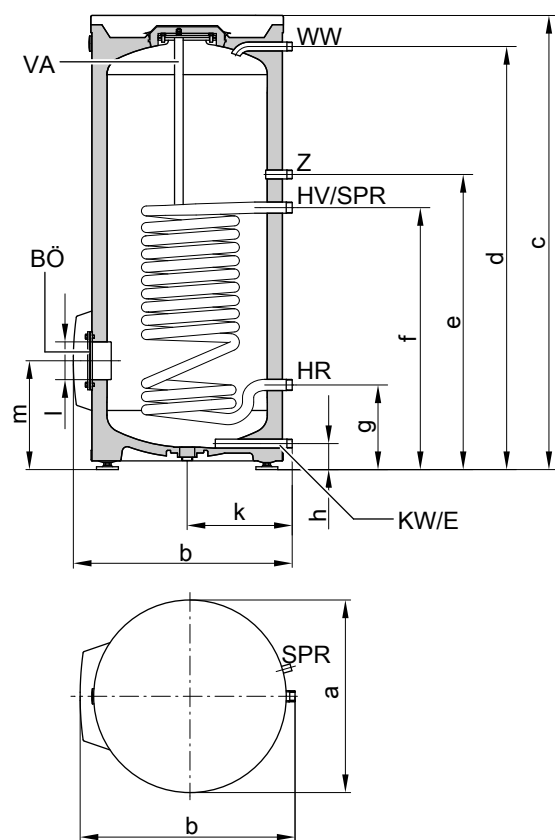
Dimensions

Cylinder capacity			160	200
Length (Ø)	a	mm	581	581
Width	b	mm	605	605
Height	c	mm	1189	1409
	d	mm	1050	1270
	e	mm	884	884
	f	mm	634	634
	g	mm	249	249
	h	mm	72	72
	k	mm	317	317

- BÖ Inspection and cleaning aperture
- E Drain
- HR Heating water return
- HV Heating water flow
- KW Cold water
- SPR Cylinder temperature sensor of the cylinder temperature controller or temperature controller (internal sensor well diameter 16 mm)
- VA Protective magnesium anode
- WW DHW
- Z DHW circulation

DHW cylinders (cont.)

Vitocell 100-V, type CVAA, 300 l capacity



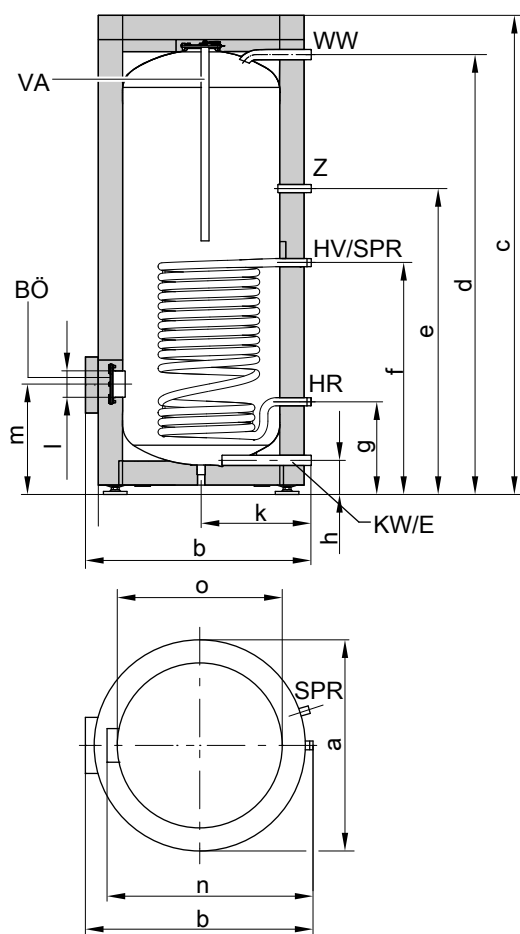
Dimensions

Cylinder capacity	l		300
Length (Ø)	a	mm	667
Width	b	mm	744
Height	c	mm	1734
	d	mm	1600
	e	mm	1115
	f	mm	875
	g	mm	260
	h	mm	76
	k	mm	361
	l	mm	Ø 100
	m	mm	333

- BÖ Inspection and cleaning aperture
- E Drain
- HR Heating water return
- HV Heating water flow
- KW Cold water
- SPR Cylinder temperature sensor of the cylinder temperature controller or temperature controller (internal sensor well diameter 16 mm)
- VA Protective magnesium anode
- WW DHW
- Z DHW circulation

DHW cylinders (cont.)

Vitocell 100-V, type CVA, 500 l capacity



- HV Heating water flow
 KW Cold water
 SPR Cylinder temperature sensor of the cylinder temperature controller or temperature controller (internal sensor well diameter 16 mm)
 VA Protective magnesium anode
 WW DHW
 Z DHW circulation

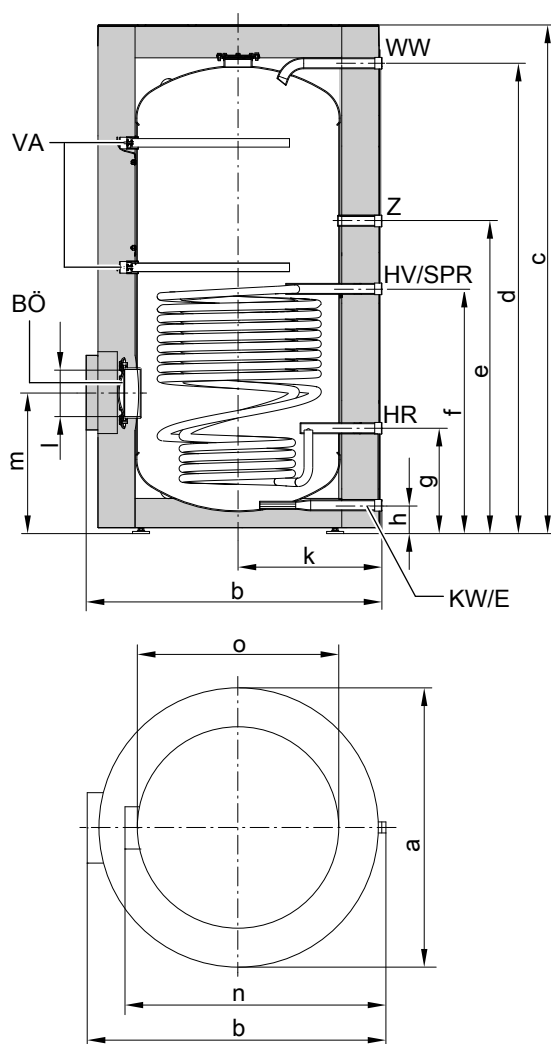
Dimensions

Cylinder capacity		I	500
Length (Ø)	a	mm	859
Width	b	mm	923
Height	c	mm	1948
	d	mm	1784
	e	mm	1230
	f	mm	924
	g	mm	349
	h	mm	107
	k	mm	455
	l	mm	Ø 100
	m	mm	422
Excl. thermal insulation	n	mm	837
Excl. thermal insulation	o	mm	Ø 650

- BÖ Inspection and cleaning aperture
 E Drain
 HR Heating water return

DHW cylinders (cont.)

Vitocell 100-V, type CVAA, 750 and 950 l capacity



- HV Heating water flow
 KW Cold water
 SPR Clamping system for fixing immersion temperature sensors to the cylinder jacket. Fixing points for 3 immersion temperature sensors
 VA Protective magnesium anode
 WW DHW
 Z DHW circulation

Dimensions

Cylinder capacity		l	750	950
Length (Ø)	a	mm	1062	1062
Width	b	mm	1110	1110
Height	c	mm	1897	2197
	d	mm	1788	2094
	e	mm	1179	1283
	f	mm	916	989
	g	mm	377	369
	h	mm	79	79
	k	mm	555	555
	l	mm	Ø 180	Ø 180
	m	mm	513	502
Excl. thermal insulation	n	mm	1005	1005
Excl. thermal insulation	o	mm	Ø 790	Ø 790

- BÖ Inspection and cleaning aperture
 E Drain
 HR Heating water return

Performance factor N_L

- To DIN 4708
- Cylinder storage temperature T_{cyl} = cold water inlet temperature + 50 K ^{+5 K/-0 K}

Cylinder capacity	l	160	200	300	500	750	950
Performance factor N_L							
at heating water flow temperature							
90 °C		2.5	4.0	9.7	21.0	38.0	44.0
80 °C		2.4	3.7	9.3	19.0	32.0	42.0
70 °C		2.2	3.5	8.7	16.5	25.0	39.0

Information on performance factor N_L

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

Standard values

- $T_{cyl} = 60\text{ °C} \rightarrow 1.0 \times N_L$
- $T_{cyl} = 55\text{ °C} \rightarrow 0.75 \times N_L$
- $T_{cyl} = 50\text{ °C} \rightarrow 0.55 \times N_L$
- $T_{cyl} = 45\text{ °C} \rightarrow 0.3 \times N_L$

DHW cylinders (cont.)

Peak output (over 10 minutes)

- Relative to performance factor N_L
- DHW heating from 10 to 45 °C

Cylinder capacity	l	160	200	300	500	750	950
Peak output							
at heating water flow temperature							
90 °C	l/10 min	210	262	407	618	850	937
80 °C	l/10 min	207	252	399	583	770	915
70 °C	l/10 min	199	246	385	540	665	875

Max. draw-off rate (over 10 minutes)

- Relative to performance factor N_L
- With reheating
- DHW heating from 10 to 45 °C

Cylinder capacity	l	160	200	300	500	750	950
Max. draw-off rate							
at heating water flow temperature							
90 °C	l/min	21	26	41	62	85	94
80 °C	l/min	21	25	40	58	77	92
70 °C	l/min	20	25	39	54	67	88

Drawable water volume

- Cylinder content heated to 60 °C
- Without reheating

Cylinder capacity	l	160	200	300	500	750	950
Draw-off rate	l/min	10	10	15	15	20	20
Drawable water volume	l	120	145	240	420	615	800
Water at t = 60 °C (constant)							

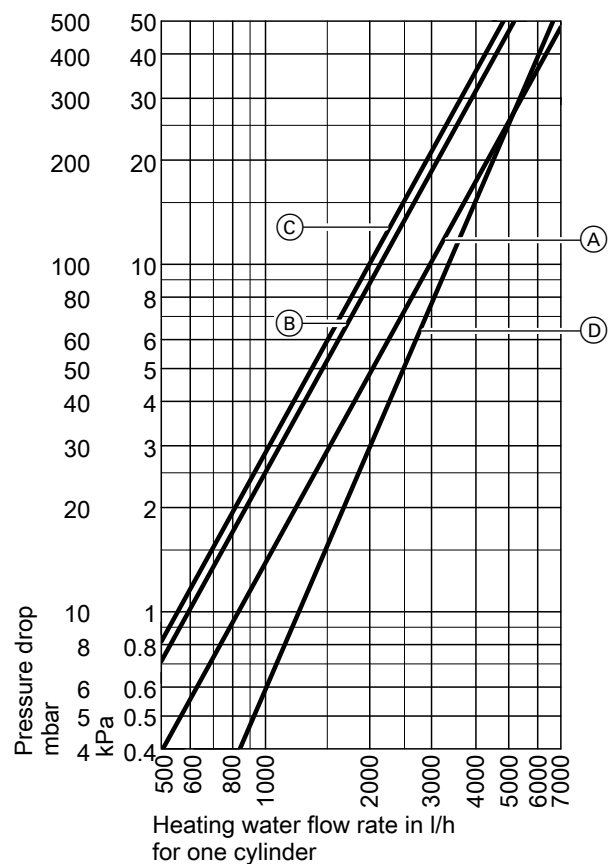
Heat-up time

The heat-up times will be achieved when the maximum continuous output of the DHW cylinder is made available at the relevant heating water flow temperature and when DHW is heated from 10 to 60 °C.

Cylinder capacity	l	160	200	300	500	750	950
Heat-up time							
at heating water flow temperature							
90 °C	min	19	19	23	28	23	35
80 °C	min	24	24	31	36	31	45
70 °C	min	34	37	45	50	45	70

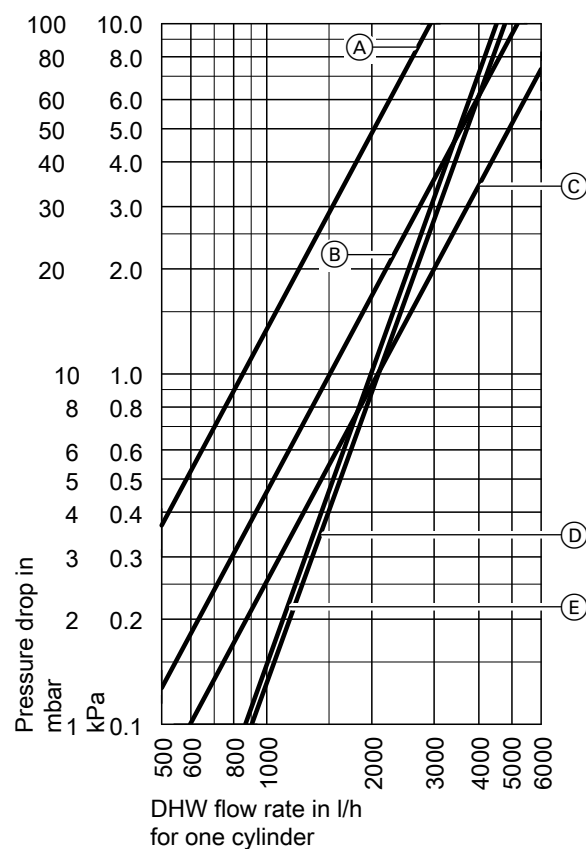
DHW cylinders (cont.)

Pressure drop on the heating water side



- Ⓐ Cylinder capacity 160 and 200 l
- Ⓑ Cylinder capacity 300 l
- Ⓒ Cylinder capacity 500 l
- Ⓓ Cylinder capacity 750 l and 950 l

Pressure drop on the DHW side



- Ⓐ Cylinder capacity 160 and 200 l
- Ⓑ Cylinder capacity 300 l
- Ⓒ Cylinder capacity 500 l
- Ⓓ Cylinder capacity 750 l
- Ⓔ Cylinder capacity 950 l

Factory setting

Vitocell 100-W, type CVA 160 to 300 l capacity

DHW cylinder made from steel with Ceraprotect enamel coating.

- Integral welded sensor well for cylinder temperature sensor or temperature controller (internal diameter 16 mm)
- Threaded adjustable feet

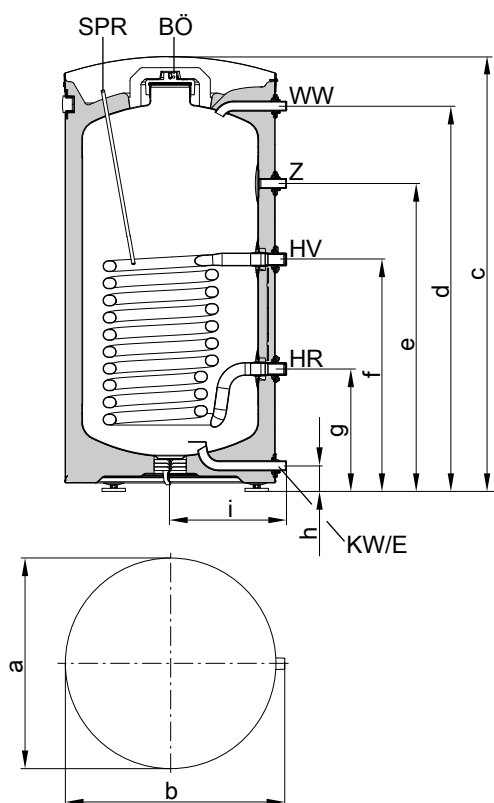
- Protective magnesium anode
- Fitted thermal insulation

6.2 Specification Vitocell 300-V, type EVIA-A

- Adjacent
 - Heated by an internal indirect coil; made from stainless steel
- For further technical details, see the separate datasheet for the Vitocell 300-V.

Type		EVIA-A+	EVIA-A+	EVIA-A	EVIA-A
Cylinder capacity (AT: Actual water capacity)	l	160	200	160	200
Heating water capacity	l	7.4	7.4	7.4	7.4
Gross volume	l	167.4	207.4	167.4	207.4
DIN registration no.		Applied for		9W71-10MC/E	
Connections (male thread)					
Heating water flow and return	R	1	1	1	1
Cold water, DHW	R	¾	¾	¾	¾
DHW circulation	R	¾	¾	¾	¾
Permiss. operating pressure					
– Heating water side	bar	10	10	10	10
	MPa	1	1	1	1
– DHW side	bar	10	10	10	10
	MPa	1	1	1	1
Permiss. temperatures					
– Heating water side	°C	160	160	160	160
– DHW side	°C	95	95	95	95
Standby heat loss	kWh/24 h	0.70	0.75	0.90	0.91
Dimensions					
Length a (Ø)	mm	581	581	581	581
Width b	mm	605	605	605	605
Height d	mm	1189	1409	1189	1409
Weight	kg	62	72	60	70
Energy efficiency class		A	A	A	A

DHW cylinders (cont.)



Cylinder capacity	l	160	200
a	mm	581	581
b	mm	605	605
c	mm	1189	1409
d	mm	1055	1275
e	mm	843	885
f	mm	635	635
g	mm	335	335
h	mm	70	70
i	mm	317	317

- BÖ Inspection and cleaning aperture
 E Drain
 HR Heating water return
 HV Heating water flow
 KW Cold water
 SPR Sensor well for cylinder temperature sensor (internal diameter 7 mm)
 WW DHW
 Z DHW circulation

Pressure drop on the DHW side

See the separate datasheet for the Vitocell 300-V.

Factory setting

Vitocell 300-W, type EVIA-A+/EVIA-A

160 to 200 l capacity

DHW cylinder made from stainless steel.

- Integral welded sensor well for cylinder temperature sensor/temperature controller (internal diameter 17 mm)
- Thermometer

- Adjustable feet
- Fitted thermal insulation

6.3 Specification Vitocell 100-H, type CHA

For DHW heating in conjunction with boilers

Suitable for systems with

- Heating water flow temperature up to **110 °C**
- DHW temperature up to **95 °C**
- Operating pressure on the **heating water side** up to **10 bar (1.0 MPa)**
- Operating pressure on the **DHW side** up to **10 bar (1.0 MPa)**

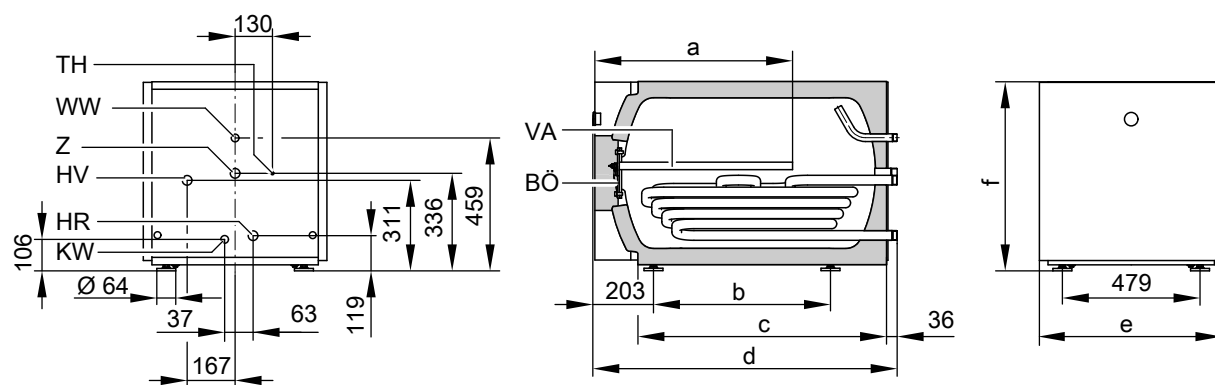
DHW cylinders (cont.)

Specification

Type		CHA	CHA	CHA
Cylinder capacity (AT: Actual water capacity)	l	130	160	200
Heating water capacity	l	5.5	7	8
Gross volume	l	135.5	167	208
DIN registration number		9W243/11-13 MC/E		
Continuous output				
For DHW heating from 10 to 45 °C and a heating water flow temperature of ... at the heating water flow rate stated below				
90 °C	kW	28	33	42
	l/h	688	810	1032
80 °C	kW	23	28	32
	l/h	565	688	786
70 °C	kW	19	22	26
	l/h	466	540	638
60 °C	kW	14	16	18
	l/h	344	393	442
Continuous output				
For DHW heating from 10 to 60 °C and a heating water flow temperature of ... at the heating water flow rate stated below				
90 °C	kW	27	32	38
	l/h	464	550	653
80 °C	kW	20	24	29
	l/h	344	412	498
70 °C	kW	14	17	19
	l/h	241	292	326
Heating water flow rate for the stated continuous outputs	m ³ /h	3.0	3.0	3.0
Standby heat loss	kWh/24 h	1.15	1.29	1.34
Overall dimensions				
Total length d	mm	907	1052	1216
Total width e	mm	640	640	640
Total height f	mm	654	654	654
Weight	kg	90	103	116
DHW cylinder with thermal insulation				
Heating surface	m ²	0.8	1	1.2
Connections (male thread)				
Heating water flow and return	R	1	1	1
Cold water, DHW	R	¾	¾	¾
DHW circulation	R	1	1	1
Energy efficiency class		B	B	B

Information regarding continuous output

When engineering systems with the specified or calculated continuous output, select a matching circulation pump. The stated continuous output is only achieved when the rated boiler heating output is ≥ the continuous output.



BÖ Inspection and cleaning aperture
 HR Heating water return
 HV Heating water flow
 KW Cold water

TH Sensor well for cylinder temperature sensor or temperature controller (internal diameter 7 mm).
 VA Protective magnesium anode
 WW DHW
 Z DHW circulation

DHW cylinders (cont.)

Dimensions

Cylinder capacity	I	130	160	200
a	mm	200	250	300
b	mm	471	616	780
c	mm	721	866	1030
d	mm	907	1052	1216
e	mm	640	640	640
f	mm	654	654	654

Dim. a: Minimum wall clearance to enable installation/removal of the protective magnesium anode

Performance factor N_L

- To DIN 4708
- Cylinder storage temperature T_{cyl} = cold water inlet temperature +50 K ^{+5 K/-0 K}

Cylinder capacity	I	130	160	200
Performance factor N_L				
at heating water flow temperature				
90 °C		1.3	2.2	3.5
80 °C		1.3	2.2	3.5
70 °C		1.1	1.6	2.5

Information regarding performance factor N_L

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

Standard values

- $T_{cyl} = 60\text{ °C} \rightarrow 1.0 \times N_L$
- $T_{cyl} = 55\text{ °C} \rightarrow 0.75 \times N_L$
- $T_{cyl} = 50\text{ °C} \rightarrow 0.55 \times N_L$
- $T_{cyl} = 45\text{ °C} \rightarrow 0.3 \times N_L$

Peak output (over 10 minutes)

- Relative to performance factor N_L
- DHW heating from 10 to 45 °C

Cylinder capacity	I	130	160	200
Peak output				
at heating water flow temperature				
90 °C	l/10 min	159	199	246
80 °C	l/10 min	159	199	246
70 °C	l/10 min	148	173	210

Max. draw-off rate (over 10 minutes)

- Relative to performance factor N_L
- With reheating
- DHW heating from 10 to 45 °C

Cylinder capacity	I	130	160	200
Max. draw-off rate				
at heating water flow temperature				
90 °C	l/min	16	20	24
80 °C	l/min	16	20	24
70 °C	l/min	15	17	21

Drawable water volume

- Cylinder content heated to 60 °C
- Without reheating

Cylinder capacity	I	130	160	200
Draw-off rate	l/min	10	10	10
Drawable water volume	l	100	145	180
Water at t = 60 °C (constant)				

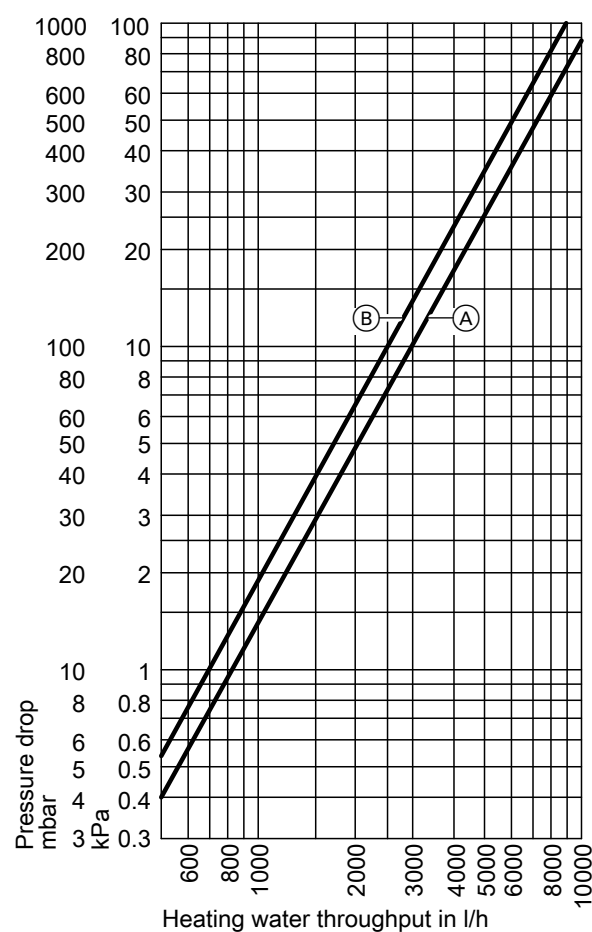
DHW cylinders (cont.)

Heat-up time

The specified heat-up times will be achieved when the maximum continuous output of the DHW cylinder is made available at the relevant flow temperature and when DHW is heated from 10 to 60 °C.

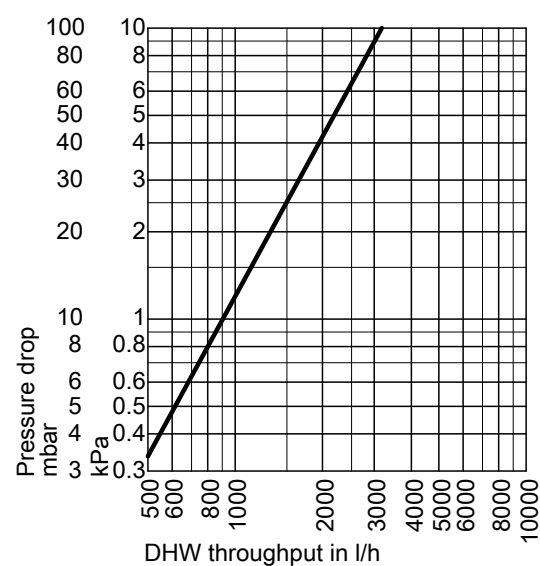
Cylinder capacity	I	130	160	200
Heat-up time				
at heating water flow temperature				
90 °C	min	20	19	18
80 °C	min	25	26	25
70 °C	min	34	34	32

Pressure drop on the heating water side



- (A) 130 l cylinder capacity
 (B) 160 and 200 l cylinder capacity

Pressure drop on the DHW side



Factory setting

Vitocell 100-H, type CHA 130, 160 and 200 l

- DHW cylinder made from steel with Ceraprotect enamel coating
- Integral protective magnesium anode
- Fitted thermal insulation made from rigid PUR foam
- Integral welded sensor well (internal diameter 7 mm) for cylinder temperature sensor and temperature controller
- Threaded adjustable feet

Colour of the epoxy-coated sheet steel casing: Vitosilver

6.4 Specification Vitocell 300-H, type EHA

For DHW heating in conjunction with boilers, district heating systems and low temperature heating systems

Suitable for systems with

- Heating water flow temperature up to **200 °C**
- Operating pressure on the **heating water side** up to **25 bar (2.5 MPa)**
- Only for 350 and 500 l: **saturated steam at 1 bar (0.1 MPa)** pressure
- Operating pressure on the **DHW side** up to **10 bar (1.0 MPa)**

Specification

Type		EHA	EHA	EHA	EHA
Cylinder capacity (AT: Actual water capacity)	l	160	200	350	500
Heating water capacity	l	7	8	13	16
Gross volume	l	167	208	363	516
DIN registration number		0081/08-10 MC			
Continuous output For DHW heating from 10 to 45 °C and a heating water flow temperature of ... at the heating water flow rate stated below	90 °C	kW	32	41	80
		l/h	786	1007	1966
	80 °C	kW	28	30	64
		l/h	688	737	1573
	70 °C	kW	20	23	47
		l/h	490	565	1155
Continuous output For DHW heating from 10 to 60 °C and a heating water flow temperature of ... at the heating water flow rate stated below	65 °C	kW	17	19	40
		l/h	417	467	983
	60 °C	kW	14	16	33
		l/h	344	393	811
	90 °C	kW	28	33	70
		l/h	482	568	1204
Continuous output for DHW heating from 10 to 60 °C and a heating water flow temperature of ... at the heating water flow rate stated below	80 °C	kW	23	25	51
		l/h	396	430	877
	70 °C	kW	15	17	34
Heating water flow rate for the stated continuous outputs		l/h	258	292	585
		m ³ /h	3.0	5.0	5.0
Continuous output for DHW heating from 10 to 45 °C and saturated steam from ... with a max. steam velocity of 50 m/s	0.5 bar/	kW	–	–	83
	50 kPa	l/h	–	–	2039
	1.0 bar/	kW	–	–	105
Standby heat loss	100 kPa	l/h	–	–	2580
		kWh/24 h	1.18	1.24	1.76
Overall dimensions					
Total length	mm	1072	1236	1590	1654
Total width	mm	640	640	830	910
Width without casing	mm	–	–	768	–
Total height	mm	654	654	786	886
Weight	kg	76	84	172	191
DHW cylinder with thermal insulation					
Heating surface	m ²	0.87	0.9	1.7	2.1
Connections (male thread)					
Heating water flow and return	R	1	1	1¼	1¼
Cold water, DHW	R	¾	¾	1¼	1¼
DHW circulation	R	1	1	1	1¼
Energy efficiency class		B	B	B	B

Information on width without casing (only 350 l)

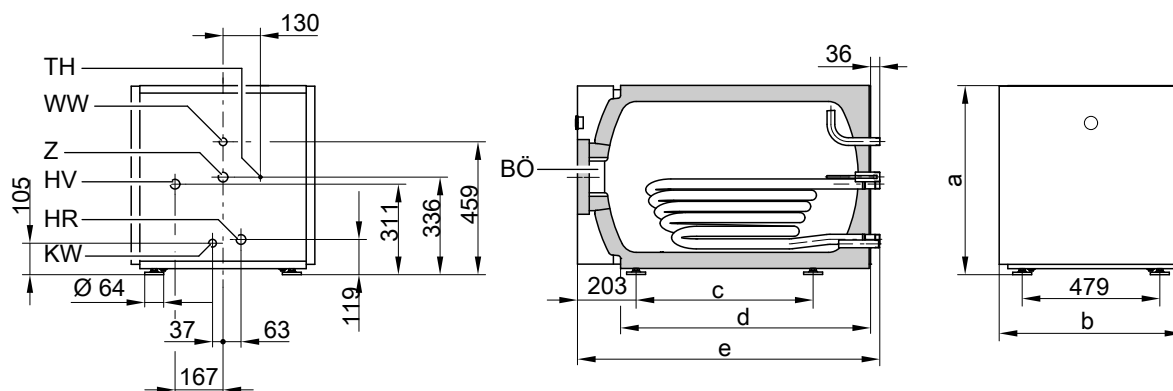
350 l: Where access to the boiler room is difficult, the front panel with thermometer and the side panels can be removed, the adjustable feet can be unscrewed and the DHW cylinder can be turned to one side.

Information regarding continuous output

When engineering systems with the specified or calculated continuous output, factor in a matching circulation pump. The stated continuous output is only achieved if the rated boiler heating output is ≥ the continuous output.

DHW cylinders (cont.)

Vitocell 300-H with 160 to 200 l capacity



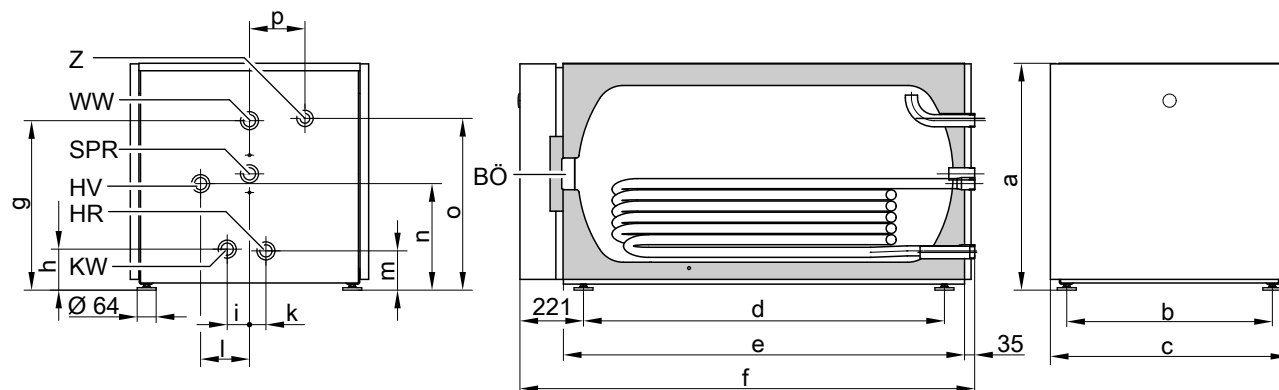
BÖ Inspection and cleaning aperture
 HR Heating water return
 HV Heating water flow
 KW Cold water

TH Sensor well for cylinder temperature sensor or temperature controller (internal diameter 7 mm)
 WW DHW
 Z DHW circulation

Dimensions

Cylinder capacity	l	160	200
a	mm	654	654
b	mm	640	640
c	mm	616	780
d	mm	866	1030
e	mm	1072	1236

Vitocell 300-H with 350 and 500 l capacity



BÖ Inspection and cleaning aperture
 HR Heating water return
 HV Heating water flow
 KW Cold water

SPR R 1 1/4 connector with reducer to R 1/2 and sensor well internal diameter 14.5 mm (for cylinder temperature sensor and temperature controller)
 WW DHW
 Z DHW circulation

DHW cylinders (cont.)

Dimensions

Cylinder capacity	I	350	500
a	mm	786	886
b	mm	716	795
c	mm	830	910
d	mm	1256	1320
e	mm	1397	1461
f	mm	1590	1654
g	mm	586	636
h	mm	140	139
i	mm	78	78
k	mm	57	72
l	mm	170	203
m	mm	134	138
n	mm	368	410
o	mm	594	677
p	mm	193	226

Note

When installing the sensor well and cylinder temperature sensor or the temperature controller, maintain a minimum wall clearance of 450 mm behind the DHW cylinder.

Performance factor N_L

- To DIN 4708
- Cylinder storage temperature T_{cyl} = cold water inlet temperature +50 K ^{+5 K/-0 K}

Cylinder capacity	I	160	200	350	500
Performance factor N_L					
at heating water flow temperature					
90 °C		2.3	6.6	12.0	23.5
80 °C		2.2	5.0	12.0	21.5
70 °C		1.8	3.4	10.5	19.0

Information regarding performance factor N_L

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

Standard values

- $T_{cyl} = 60\text{ °C} \rightarrow 1.0 \times N_L$
- $T_{cyl} = 55\text{ °C} \rightarrow 0.75 \times N_L$
- $T_{cyl} = 50\text{ °C} \rightarrow 0.55 \times N_L$
- $T_{cyl} = 45\text{ °C} \rightarrow 0.3 \times N_L$

Peak output (over 10 minutes)

- Relative to performance factor N_L
- DHW heating from 10 to 45 °C

Cylinder capacity	I	160	200	350	500
Peak output					
at heating water flow temperature					
90 °C	l/10 min	203	335	455	660
80 °C	l/10 min	199	290	445	627
70 °C	l/10 min	182	240	424	583

Max. draw-off rate (over 10 minutes)

- Relative to performance factor N_L
- With reheating
- DHW heating from 10 to 45 °C

Cylinder capacity	I	160	200	350	500
Max. draw-off rate					
at heating water flow temperature					
90 °C	l/min	20	33	45	66
80 °C	l/min	20	29	45	62
70 °C	l/min	18	24	42	58

DHW cylinders (cont.)

Drawable water volume

- Cylinder content heated to 60 °C
- Without reheating

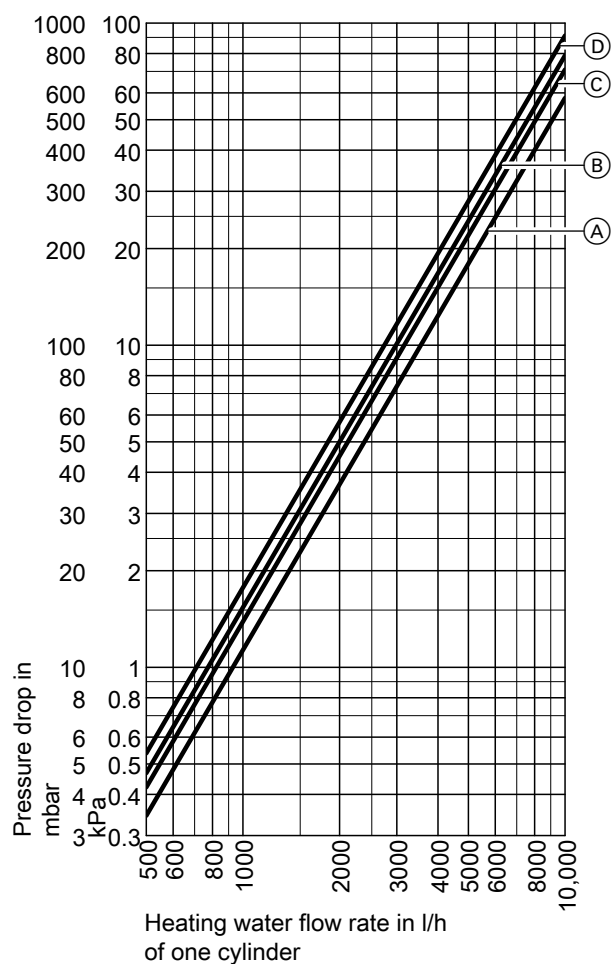
Cylinder capacity	l	160	200	350	500
Draw-off rate	l/min	10	10	15	15
Drawable water volume	l	150	185	315	440
Water at t = 60 °C (constant)					

Heat-up time

The specified heat-up times will be achieved when the maximum continuous output of the DHW cylinder is made available at the relevant flow temperature and when DHW is heated from 10 to 60 °C.

Cylinder capacity	l	160	200	350	500
Heat-up time					
at heating water flow temperature					
90 °C	min	19	18	15	20
80 °C	min	26	25	20	26
70 °C	min	34	32	31	40

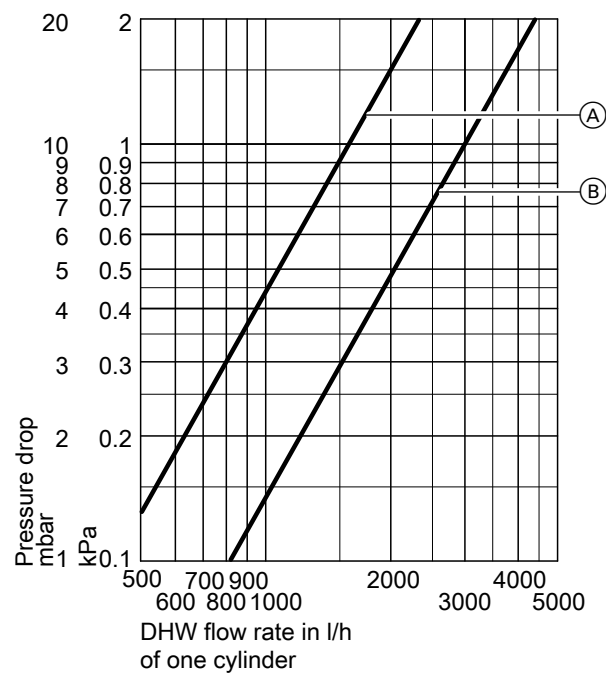
Pressure drop on the heating water side



- (A) 160 l cylinder capacity
- (B) 200 l cylinder capacity

- (C) 350 l cylinder capacity
- (D) 500 l cylinder capacity

Pressure drop on the DHW side



- (A) 160 and 200 l cylinder capacity
- (B) 350 and 500 l cylinder capacity

DHW cylinders (cont.)

Factory setting

Vitocell 300-H, type EHA, 160 and 200 l capacity

- DHW cylinder made from high alloy stainless steel.
- Fitted thermal insulation made from rigid PUR foam
- Integral welded sensor well for cylinder temperature sensor or temperature controller (internal diameter 7 mm)
- Integral thermometer
- Threaded adjustable feet

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

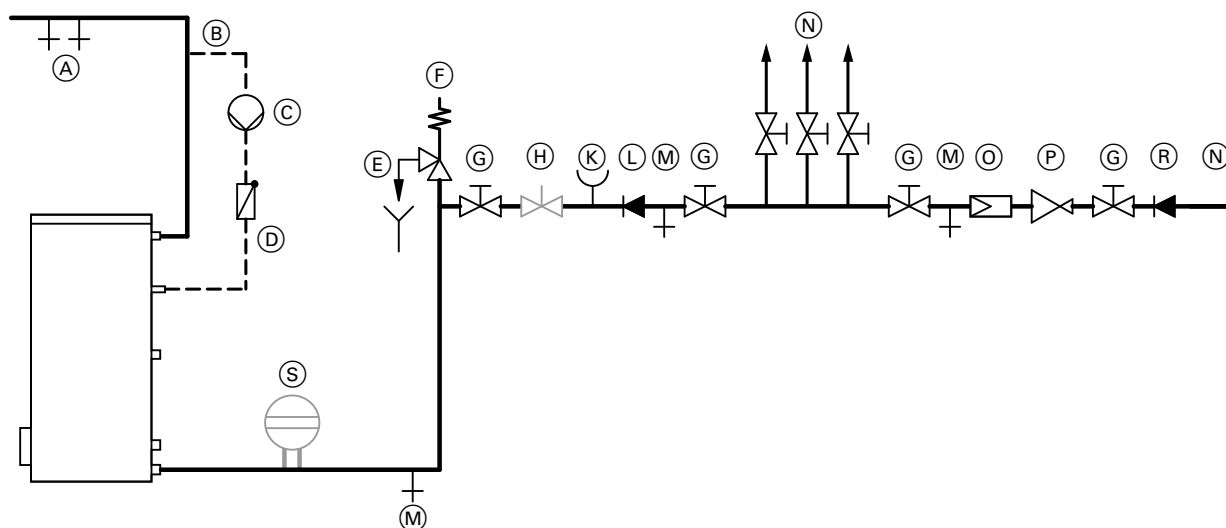
Vitocell 300-H, type EHA, 350 and 500 l capacity

- DHW cylinder made from high alloy stainless steel.
 - Fitted thermal insulation made from rigid PUR foam
 - Connectors for cylinder temperature sensor or temperature controller
 - Integral thermometer
 - Threaded adjustable feet
- Packed separately:
- Female reducer R 1 × ½
 - Sensor well (internal diameter 14.5 mm)
 - Thermal insulation for sensor well

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

6.5 DHW cylinder connections on the DHW side

Connection to DIN 1988



Example: Vitocell 100-V

- | | |
|---|--|
| <ul style="list-style-type: none"> Ⓐ DHW Ⓑ DHW circulation pipe Ⓒ DHW circulation pump Ⓓ Spring-loaded check valve Ⓔ Discharge pipe with a visible outlet point Ⓕ Safety valve Ⓖ Shut-off valve Ⓗ Flow regulating valve | <ul style="list-style-type: none"> Ⓚ Pressure gauge connection Ⓛ Non-return valve Ⓜ Drain outlet Ⓝ Cold water Ⓞ Drinking water filter^{*16} Ⓟ Pressure reducer to DIN 1988-2, Dec. 1988 issue Ⓡ Non-return valve/pipe separator Ⓢ Diaphragm expansion vessel, suitable for potable water |
|---|--|
- (Recommendation: installation and adjustment of the max. water flow rate in accordance with the 10 minute peak output of the DHW cylinder)

The safety valve must be installed.

Recommendation: Install the safety valve higher than the top edge of the cylinder. This protects the valve against contamination, scaling and high temperatures. Work on the safety valve does not require the DHW cylinder to be drained.

^{*16} According to DIN 1988-2, a drinking water filter should be installed in systems with metal pipework. In line with DIN 1988, when using plastic pipes Viessmann also recommends the installation of a drinking water filter to prevent contaminants entering the DHW system.

7.1 Specification

Accessories for connecting DHW cylinders to boilers

System connections for Vitoladens 300 with Vitocell

Complete with:

- Connection lines
- Circulation pump, fully wired
- Check valve

For part numbers for the relevant cylinder types, see pricelist.

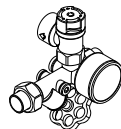
Safety assembly to DIN 1988

Components:

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

Up to 200 l cylinder capacity

- 10 bar (1 MPa): **Part no. 7219722**
- **Ⓐ** 6 bar (0.6 MPa): **Part no. 7265023**
- DN 15/R ¾
- Max. heat input: 75 kW



From 300 l cylinder capacity

- 10 bar (1 MPa): **Part no. 7180662**
- **Ⓐ** 6 bar (0.6 MPa): **Part no. 7179666**
- DN 20/R 1
- Max. heat input: 150 kW



Accessories for heating circuits

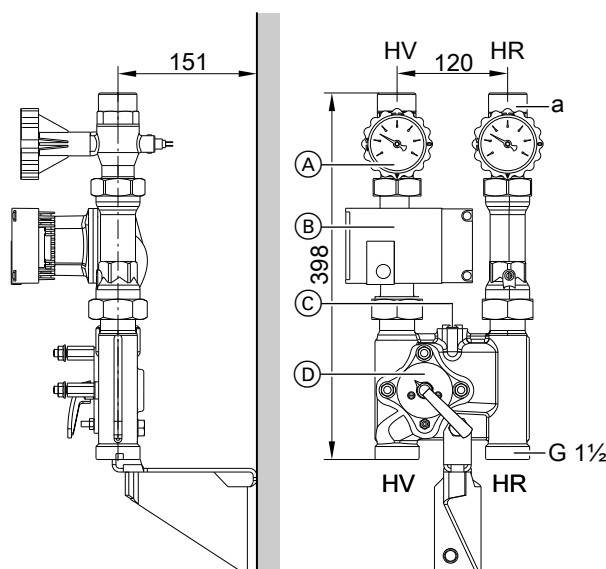
Layout and function

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

Divicon heating circuit distributor

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

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

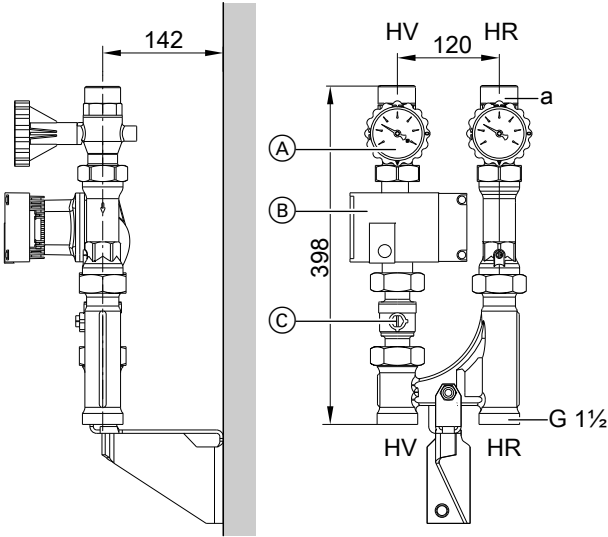


Divicon with mixer (wall mounting, shown without thermal insulation or mixer drive extension kit)

- HR Heating return
- HV Heating flow
- Ⓐ** Ball valves with thermometer (as programming unit)
- B** Circulation pump
- C** Bypass valve (accessories)
- D** Mixer-3

Installation accessories (cont.)

Heating circuit connection	R	$\frac{3}{4}$	1	$1\frac{1}{4}$
Flow rate (max.)	m ³ /h	1.0	1.5	2.5
a (female)	Rp	$\frac{3}{4}$	1	$1\frac{1}{4}$
a (male)	G	$1\frac{1}{4}$	$1\frac{1}{4}$	2

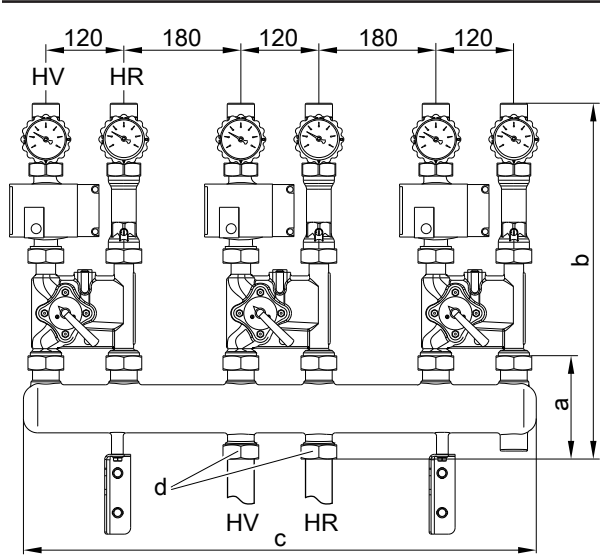


Divicon without mixer (wall mounting, shown without thermal insulation)

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

Heating circuit connection	R	$\frac{3}{4}$	1	$1\frac{1}{4}$
Flow rate (max.)	m ³ /h	1.0	1.5	2.5
a (female)	Rp	$\frac{3}{4}$	1	$1\frac{1}{4}$
a (male)	G	$1\frac{1}{4}$	$1\frac{1}{4}$	2

Installation example: Divicon with triple manifold

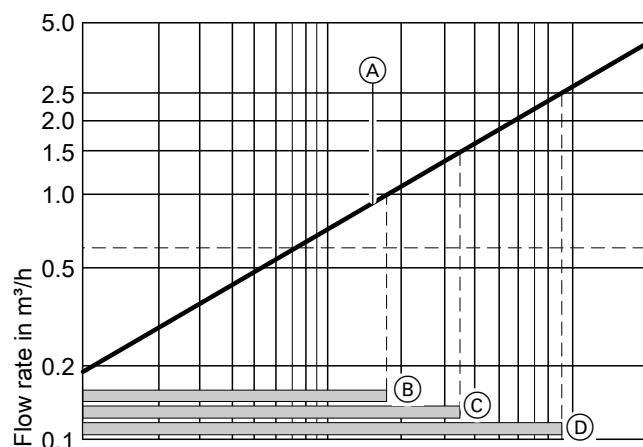


(shown without thermal insulation)

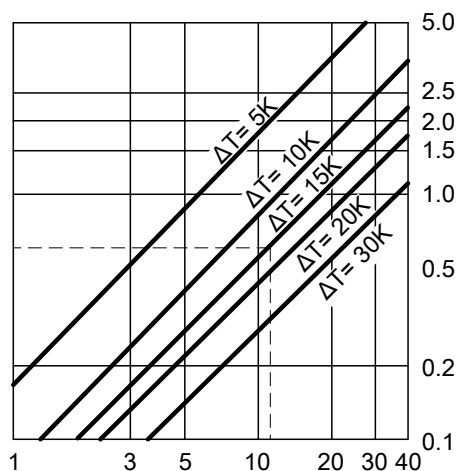
- HR Heating return
HV Heating flow

Dimension	Manifold with heating circuit connection	
	R $\frac{3}{4}$ and R 1	R $1\frac{1}{4}$
a	135	183
b	535	583
c	784	784
d	G $1\frac{1}{4}$	G 2

Determining the required nominal diameter



Mixer control characteristics



Heating circuit output in kW

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

- Ⓒ Divicon with mixer-3 (R 1)
Application range: 0 to 1.5 m³/h
- Ⓓ Divicon with mixer-3 (R 1¼)
Application range: 0 to 2.5 m³/h

Example:

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

- c Specific thermal capacity
 \dot{m} Mass flow rate
 \dot{Q} Heating output
 \dot{V} Flow rate

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

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

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

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

Circulation pump curves and pressure drop on the heating water side

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

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

Maximum flow rate for Divicon:

- With R ¾ = 1.0 m³/h
- With R 1 = 1.5 m³/h
- With R 1¼ = 2.5 m³/h

Example:

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

Selected:

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

Head of the relevant pump curve:

48 kPa

Divicon pressure drop:

3.5 kPa

Residual head:

48 kPa – 3.5 kPa = 44.5 kPa.

Note

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

Differential pressure-dependent heating circuit pumps

According to the [German] Energy Saving Ordinance (EnEV), circulation pumps in central heating systems must be sized in accordance with current technical rules.

Ecodesign Directive 2009/125/EC requires high efficiency circulation pumps to be used throughout Europe from 1 January 2013, if the pumps are not installed in the heat generator.

Design information

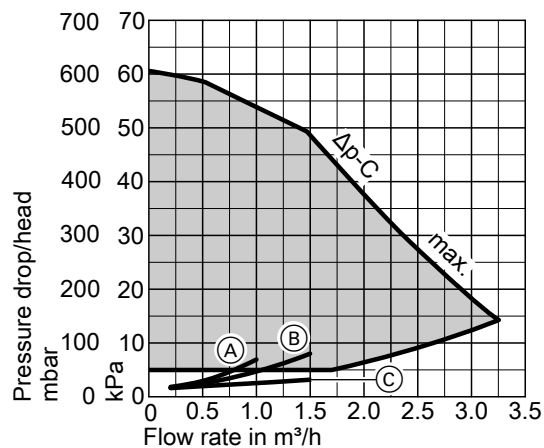
The use of differential pressure-dependent heating circuit pumps requires heating circuits with variable pump rates. These include e.g. single and twin line heating systems with thermostatic valves and underfloor heating systems with thermostatic or zone valves.

Installation accessories (cont.)

Wilo Yonos PARA 25/6

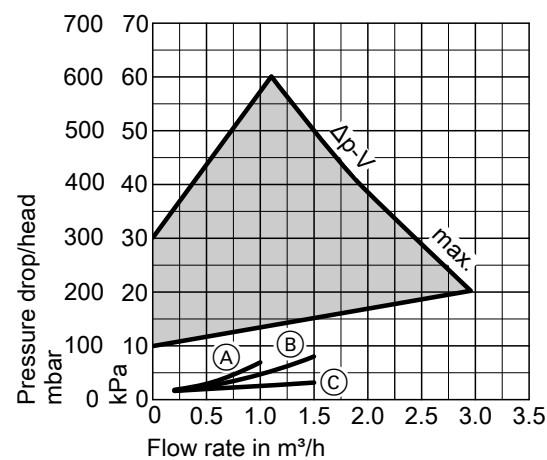
- Particularly power saving, high efficiency circulation pump
- Energy efficiency index $EEI \leq 0.20$

Operating mode: Constant differential pressure



- (A) Divicon R $\frac{3}{4}$ with mixer
- (B) Divicon R 1 with mixer
- (C) Divicon R $\frac{3}{4}$ and R 1 without mixer

Operating mode: Variable differential pressure

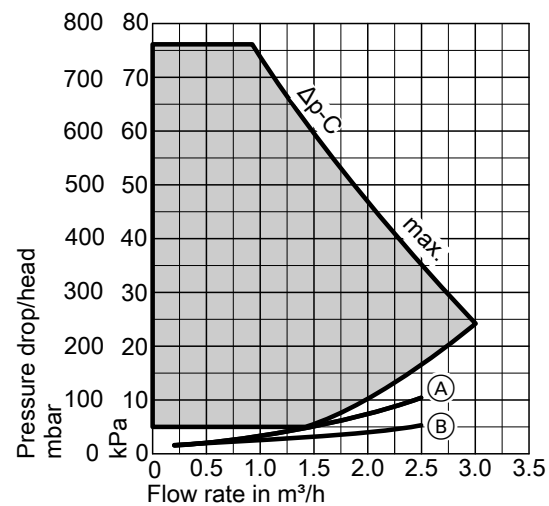


- (A) Divicon R $\frac{3}{4}$ with mixer
- (B) Divicon R 1 with mixer
- (C) Divicon R $\frac{3}{4}$ and R 1 without mixer

Wilo Yonos PARA Opt. 25/7.5

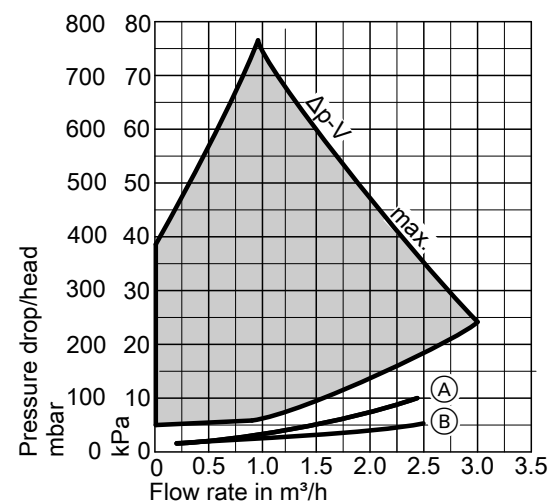
Operating mode: Constant differential pressure

- Energy efficiency index $EEI \leq 0.21$



- (A) Divicon R 1 $\frac{1}{4}$ with mixer
- (B) Divicon R 1 $\frac{1}{4}$ without mixer

Operating mode: Variable differential pressure



- (A) Divicon R 1 $\frac{1}{4}$ with mixer
- (B) Divicon R 1 $\frac{1}{4}$ without mixer

Installation accessories (cont.)

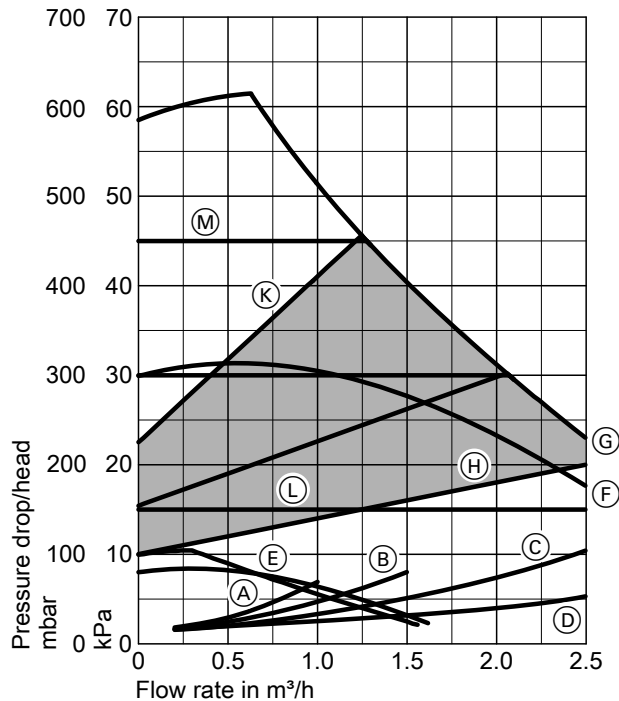
Grundfos Alpha 2.1 25-60

- With power consumption display
- With Autoadapt function (automatic matching to the pipework)
- With night setback function
- Energy efficiency index EEI ≤ 0.20

Bypass valve

Part no. 7464889

For hydraulic balancing of the heating circuit with mixer. To be inserted into the Divicon.



- (A) Divicon R ¼ with mixer
- (B) Divicon R 1 with mixer
- (C) Divicon R 1¼ with mixer
- (D) Divicon R ¼, R 1 and R 1¼ without mixer
- (E) Stage 1
- (F) Stage 2
- (G) Stage 3
- (H) Min. proportional pressure
- (K) Max. proportional pressure
- (L) Min. constant pressure
- (M) Max. constant pressure

Installation accessories (cont.)

Manifold

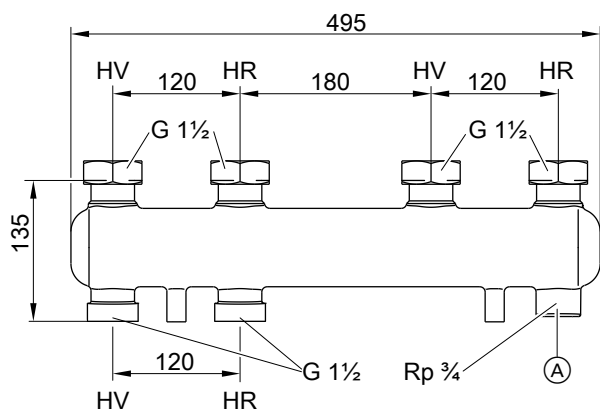
With thermal insulation

For wall mounting with separately ordered wall mounting bracket.

The connection between boiler and manifold must be made on site.

For 2 Divicon

Part no. **7460638** for Divicon R $\frac{3}{4}$ and R 1

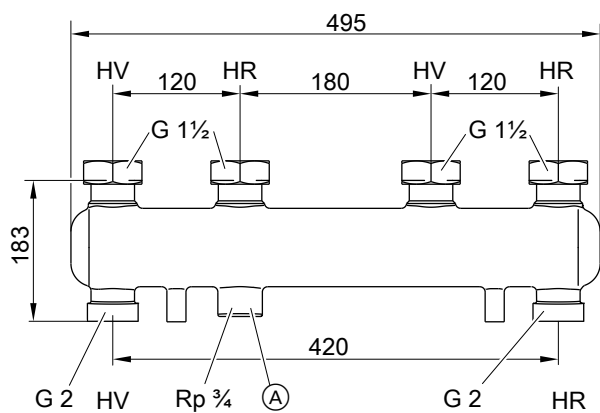


(A) Connection option for expansion vessel

HV Heating water flow

HR Heating water return

Part no. **7466337** for Divicon R $\frac{1}{4}$

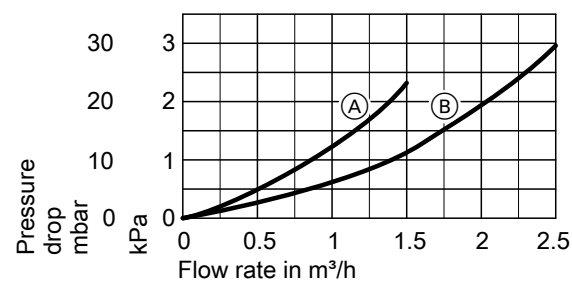


(A) Connection option for expansion vessel

HV Heating water flow

HR Heating water return

Pressure drop



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

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

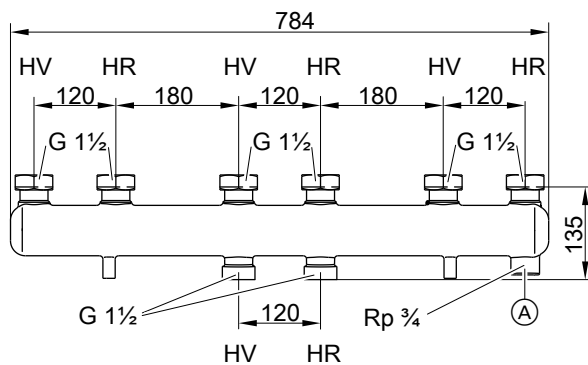
Note

The curves always refer to one pair of connectors only (HV/HR).

Installation accessories (cont.)

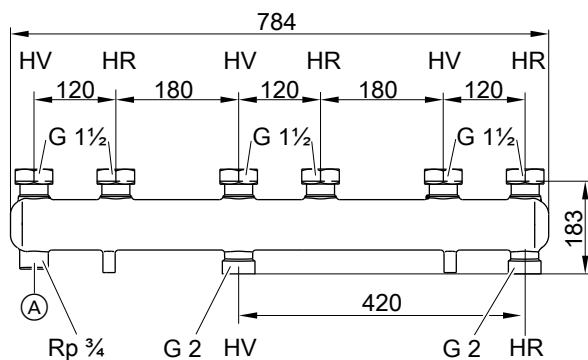
For 3 Divicon

Part no. 7460643 for Divicon R $\frac{3}{4}$ and R 1



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

Part no. 7466340 for Divicon R $1\frac{1}{4}$

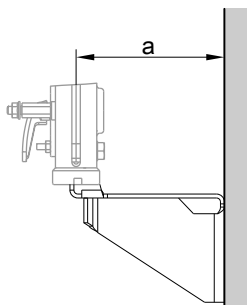


- (A) Connection option for expansion vessel
HV Heating water flow
HR Heating water return

Wall mounting bracket

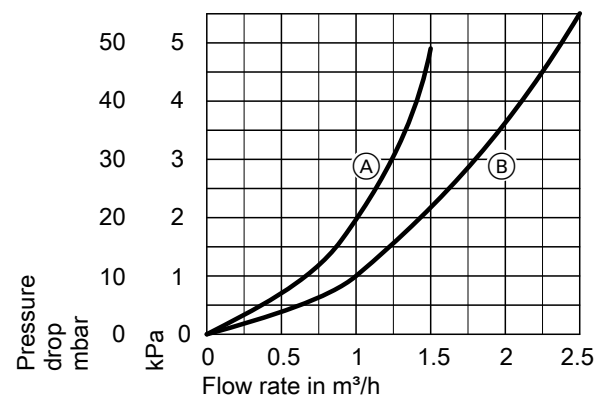
Part no. 7465894 for individual Divicons

With screws and rawl plugs.



For Divicon	With mixer	Without mixer
a mm	151	142

Pressure drop



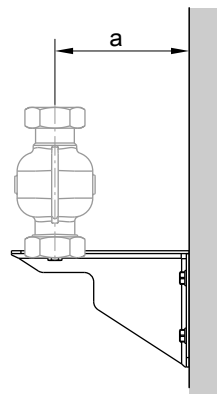
- (A) Manifold for Divicon R $\frac{3}{4}$ and R 1
(B) Manifold for Divicon R $1\frac{1}{4}$

Note

The curves always refer to one pair of connectors only (HV/HR).

Part no. 7465439 for manifolds

With screws and rawl plugs.



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

Installation accessories (cont.)

Distributor for solar central heating backup

Part no. 7441163

Flow rate up to 2.5 m³/h

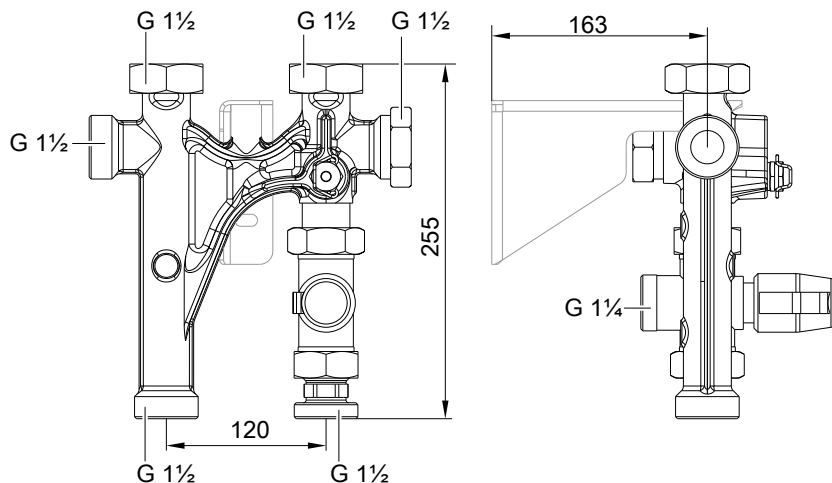
With 3-way diverter valve, sensor well for return temperature sensor and thermal insulation.

For installation between the boiler and the Divicon heating circuit distributor or Divicon heating circuit distributor manifold.

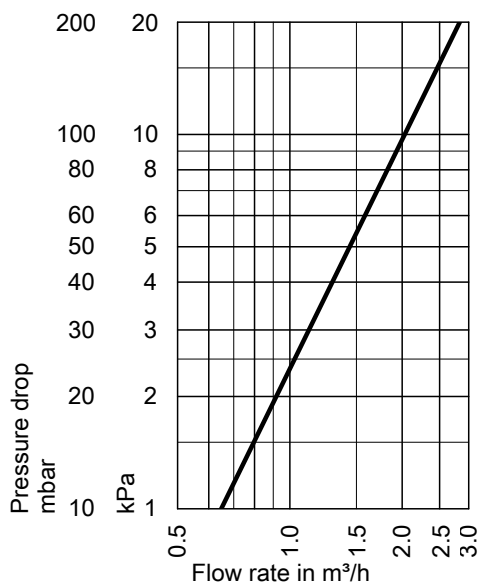
See design information for connection options.

The extension for installation on a wall and the wall mounting bracket must be ordered separately if required.

The connection between boiler, cylinder and distributor must be made on site.



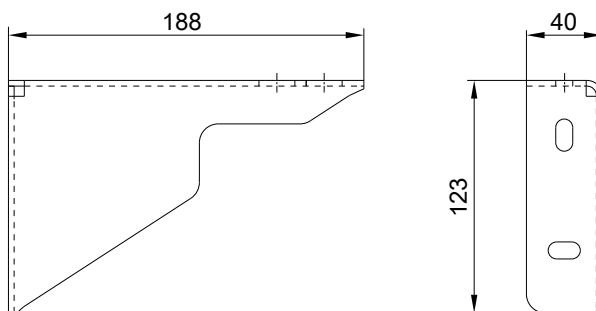
Pressure drop



Wall mounting bracket for distributor

Part no. 7441165

For fixing the distributor to the wall with screws and rawl plugs.



Extension for installation on a wall

Part no. 7441445

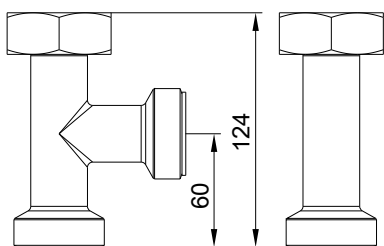
With connection for heating water flow or return and thermal insulation.

For installation below the distributor.

Connections G 1 1/2.

See design information for connection options.

The extension for installation on a wall must be ordered separately for the distributor if required.



The wall mounting extension is only used for the Vitoladens 300-T. In the Vitoladens 300-C, the side connection is already fitted in the safety equipment block on the boiler.

Accessories for boilers

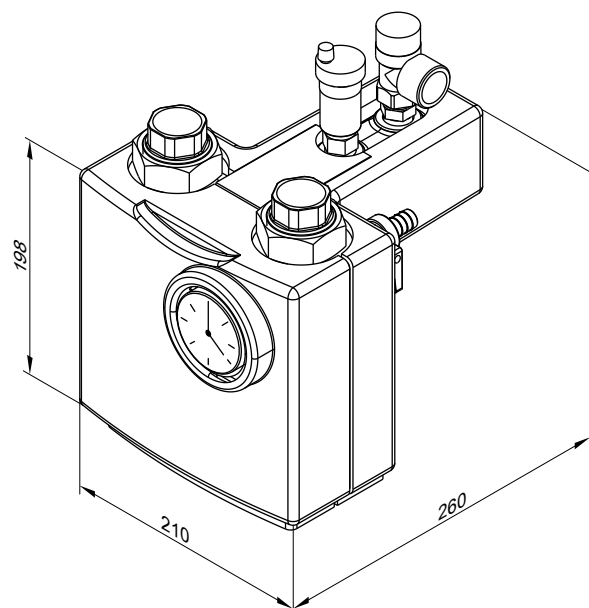
Safety equipment block for Vitorondens 200-T up to 53.7 kW and Vitorondens 222-F (not applicable for DE)

- Safety assembly in the distributor casing on the heating water side
- Safety valve (3 bar or 0.3 MPa)
- Thermal insulation

Note

If a Divicon heating circuit distributor or a distributor for solar central heating backup is to be fitted to the boiler, the safety equipment block must also be ordered.

Part no. 7248938

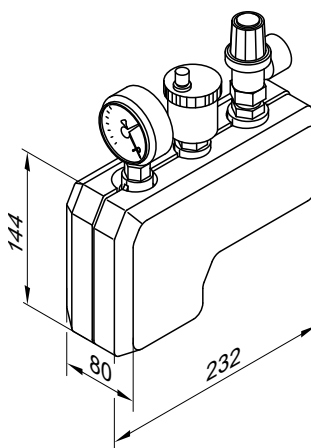


Safety equipment block (only for Vitoladens 300-T)

- With safety valve R ½ or R ¾ (discharge pressure 3 bar or 0.3 MPa)
- With pressure gauge
- With automatic air vent valve with automatic shut-off facility
- Incl. thermal insulation

Part no. 7143779 for 35.4 to 42.8 kW

Part no. 7143780 for 53.7 kW



- With safety valve R ½ or R ¾ (discharge pressure 3 bar or 0.3 MPa)
- With pressure gauge
- With automatic air vent valve with automatic shut-off facility
- Incl. thermal insulation

Flow and return exchanger (only for the Vitoladens 300-T)

Part no. 7199331

Plinth for Vitorondens 200-T

- Height: 250 mm

Part no. 7196529 for 20.2 and 24.6 kW

(Should always be ordered, except when installing a DHW cylinder below the boiler)

Part no. 7196530 for 28.6 and 35.4 kW

(Should always be ordered, except when installing a DHW cylinder below the boiler)

Part no. 7196531 for 42.8 to 53.7 kW

(Should always be ordered, as no DHW cylinder is to be installed below the boiler)

Plinth for Vitorondens 200-T, 67.6 to 107.3 kW

Part no. ZK00326

250 mm high

Note

Due to the design, the burner silencer hood protrudes beyond the front of the boiler. With the Vitorondens 67.6 to 107 kW, we recommend also ordering a boiler plinth. If a boiler plinth is ordered, the boiler must be sited on a suitable base.

Installation accessories (cont.)

Plinth for Vitoladens 300-T

- Height: 250 mm
(Should always be ordered, except when installing a DHW cylinder below the boiler)

Part no. 7187610 for 35.4 kW

Part no. 7517415 for 42.8 to 53.7 kW

Plinth for Vitoladens 300-C

- Height: 250 mm
(Should always be ordered, except when installing a DHW cylinder below the boiler)

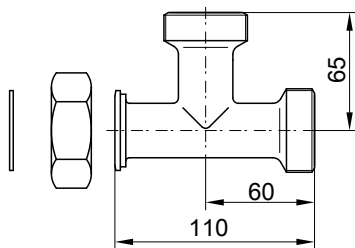
Part no. 5452517 for 12.9 to 28.9 kW

Tee

Tees and fittings for connecting 2 Divicon heating circuit distributors or system mixers to the Vitorond 200.

Part no. 7237422

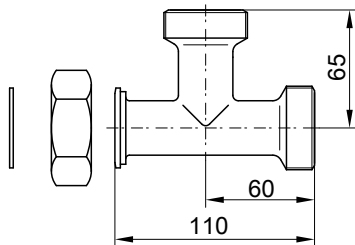
G 1½ x 1½ x 1½



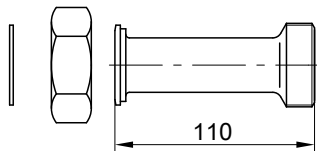
Adaptors

Part no. 7205625

Tee: G 1½ x 1½ x 1½



Extension: G 1½ x 1½



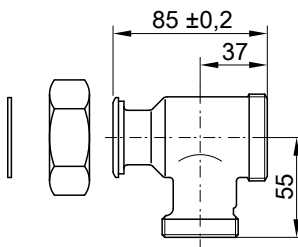
Tees for connecting DHW cylinders

Tees and fittings for connecting DHW cylinders. Required if no system connections are ordered.

Tee with check valve

Part no. 7336645

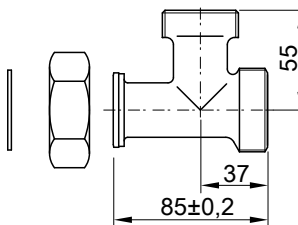
G 1½ x 1¼ x 1½



Tee without check valve

Part no. 7336644

G 1½ x 1¼ x 1½



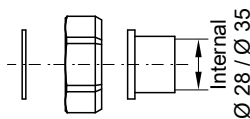
Shut-off valve G 1½

Part no. 7815145

Solder fitting DN 28 and 35

For part no. allocation, see pricelist.

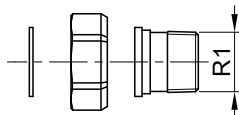
G 1½ x Ø 28 mm or Ø 35 mm



Threaded fitting R 1

For part no. allocation, see pricelist.

G 1½ x R 1



Sound insulation set

For Vitorondens 200-T, type JR2A

Part no. ZK01296

- Air intake cover with hose connection
- Flexible hose with silencing core
- Hose end piece as rodent guard

Use of the sound insulation set reduces the sound power during operation by approx. 6 dB(A).

Note

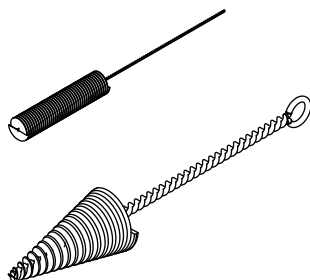
When using the sound insulation set, the max. heating output for the output size 100 or 107.3 kW is reduced by 11%!

Installation accessories (cont.)

Cleaning brush set, mixing assembly

For Vitoflame 300 burner

Part no. ZK01791



- Small cleaning brush for mixing assembly
- Large cleaning brush for mixing assembly

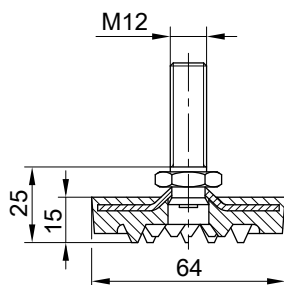
Adjustable anti-vibration feet and boiler supports

The adjustable anti-vibration feet and boiler supports effectively reduce the transmission of structure-borne noise. If these components are used, the pipework should be equipped with compensators.

Consider the total operating weight of the boiler system when sizing such supports. Ensure the supporting surface is level when using linear anti-vibration brackets (anti-vibration boiler supports). Effective structure-borne noise attenuation is particularly important when installing boilers in attics.

Adjustable anti-vibration feet – permissible load 1200 kg

Part no. 7306246

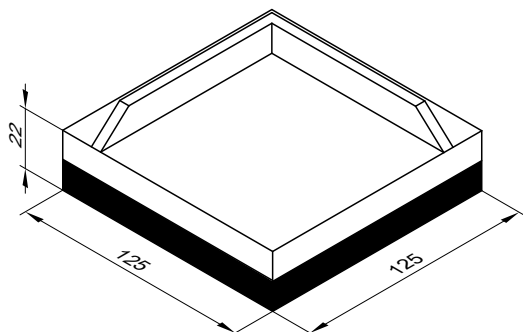


- For boilers or
For boilers with a Vitocell-H 100 or Vitocell-H 300 DHW cylinder installed below
or for
Vitocell-H 100 or Vitocell-H 300 DHW cylinder
- To be inserted into the base rails from below
- Permissible load 1200 kg

Anti-vibration boiler supports

Part no. 7017819

See pricelist for allocation.



- Comprising an aluminium support plate and a permanently joined rubber spring made from oil-resistant Buna N.
- Permissible load 1200 kg

Part no. Z015500

Monitoring device for safety shutdown of the boiler in the event of escaping carbon monoxide.

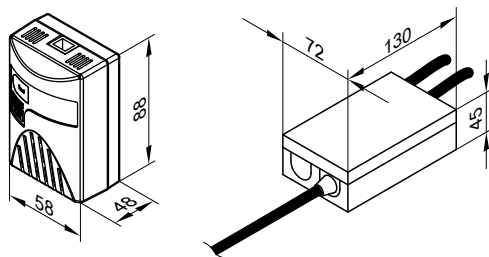
Wall mounting in the ceiling area near the boiler.

Components:

- Casing with
 - Integral CO sensor
 - Mode, fault and alarm indicators
 - Acoustic alarm system
- Communication cable for interface (2.5 m).

Installation accessories (cont.)

- Interface inside the casing with power cable (1.2 m) and connecting lead for burner shutdown relay (1.2 m)
- Fixing materials



Specification

Rated voltage	230 V~
Rated frequency	50 Hz
Power consumption	2 W
Rated breaking capacity of the relay output	8 A 230 V~
Alarm threshold	55 ppm CO to EN 50291-1
Protection class	II
IP rating	IP 20 to EN 60529; ensure through design/installation.
Permissible ambient temperature	0 °C to 40 °C

Design information

8.1 Positioning

General information

- Viessmann oil condensing boilers can be used in new and existing heating systems.
- No shut-off valves may be installed between the boiler safety equipment and the heat exchanger (only for Vitorondens 200-T and Vitoladens 300-T).
- A competent heating contractor must clean the boiler and heat exchanger at least annually.

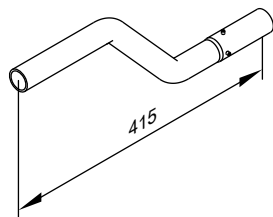
Handling

The following accessories can be ordered to facilitate boiler handling:

Carrying handles for Vitoladens 300-C and Vitoladens 300-T

Part no. 7517308

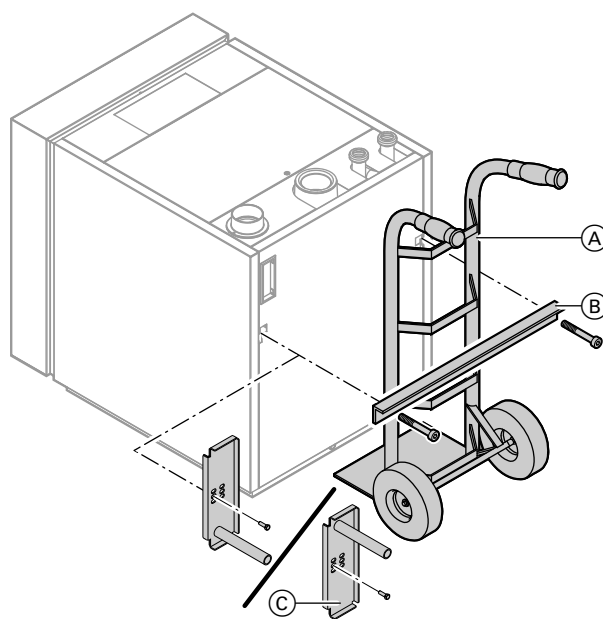
(4 pce)



Transport and handling aid for Vitoladens 300-C and Vitoladens 300-T

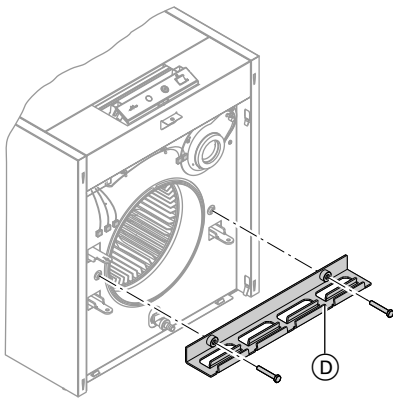
Part no. 9521645

Transport and handling aid (A) is designed for transportation in hallways and on stairs.



(A) Transport and handling aid (for Vitoladens 300-C and Vitoladens 300-T)

(B) and (C) Transport accessories for Vitoladens 300-C



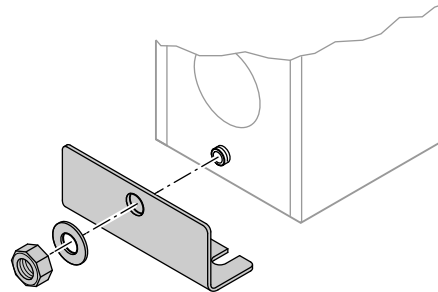
Ⓓ Carrying handle for the front of the Vitoladens 300-C

Transport accessories for Vitoladens 300-C Part no. 7453042

- Rail (B) for securing the Vitoladens 300-C to transport and handling aid (A) or to a sack truck
- 2 carrying handles (C) for transportation without a sack truck
- 1 carrying handle (D) for securing at the front of the boiler for transportation without a sack truck

Handling accessories Vitorondens 200-T up to 53.7 kW Part no. 7198575

- To facilitate handling of the Vitorondens 200-T using the transport and handling aid or a sack truck
- For securing to the thermally insulated Vitorondens 200-T
- Not required if the boiler is moved inside its shipping packaging.



Carrying handles for Vitorondens 200-T up to 53.7 kW Part no. 7189602 (4 pce)

Transport aid for Vitorondens 200-T 67.6 to 107.3 kW Part no. 7181544 Lifting loops (4 pce)

Vitorondens 222-F transport accessories (not applicable for DE) Part no. 7245709 Carrying handles (4 pce)

Installation room

The installation room must meet current building regulations. Observe local regulations relating to combustion equipment. Provide a condensate drain and a discharge pipe for the safety valve in the installation room. The maximum ambient temperature of the system should not exceed 35 °C. If these instructions and those below are not observed, any consequential losses directly related to any of these causes are excluded from our warranty.

Clearance towards the fuel tank

With this combustion equipment, a maximum surface temperature of 40 °C will not be exceeded. Consequently, a minimum clearance of 0.1 m between the combustion equipment and the fuel tank is sufficient.

Installation conditions

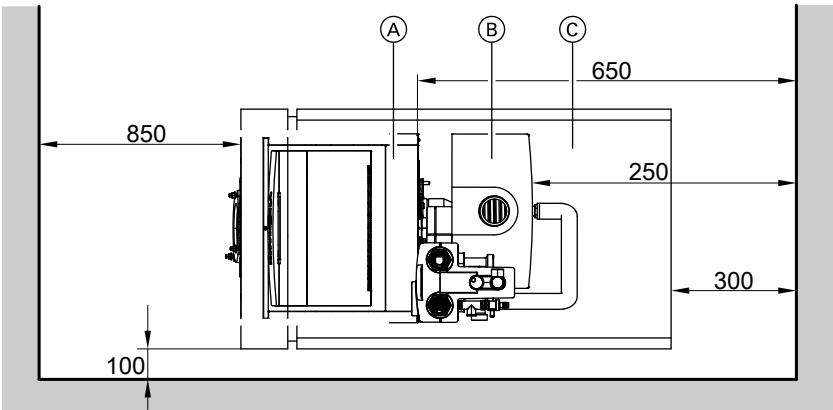
- Avoid air contamination through halogenated hydrocarbons (e.g. as in sprays, paints, solvents and cleaning agents)
 - Avoid very dusty conditions
 - Avoid high levels of humidity
 - Protect against frost and ensure good ventilation
- Otherwise, the system may suffer faults and damage. In rooms where air contamination from **halogenated hydrocarbons** is to be expected, operate the boiler only in balanced flue mode.

Safety equipment for the installation room

Viessmann heat generators are tested and approved in accordance with all safety regulations and are therefore fail-safe. Unpredictable, external factors may, in the rarest of cases, lead to the potentially harmful escape of carbon monoxide (CO). For this case, we recommend using a CO limiter. This can be ordered as a separate accessory.

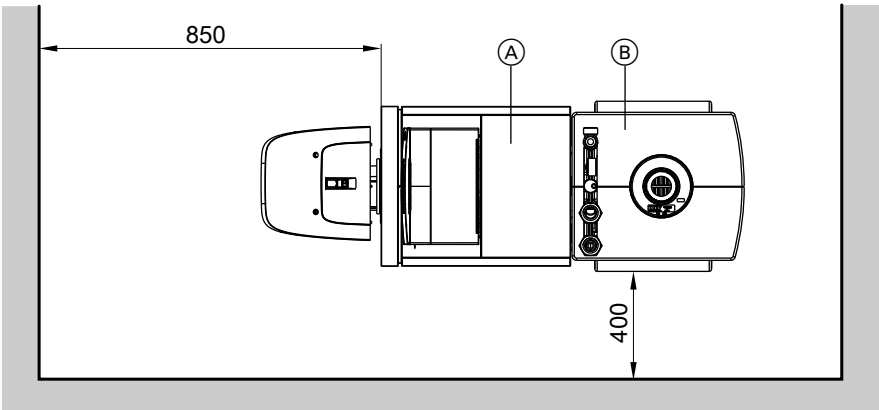
Design information (cont.)

Minimum clearances for Vitorondens 200-T (up to 53.7 kW)



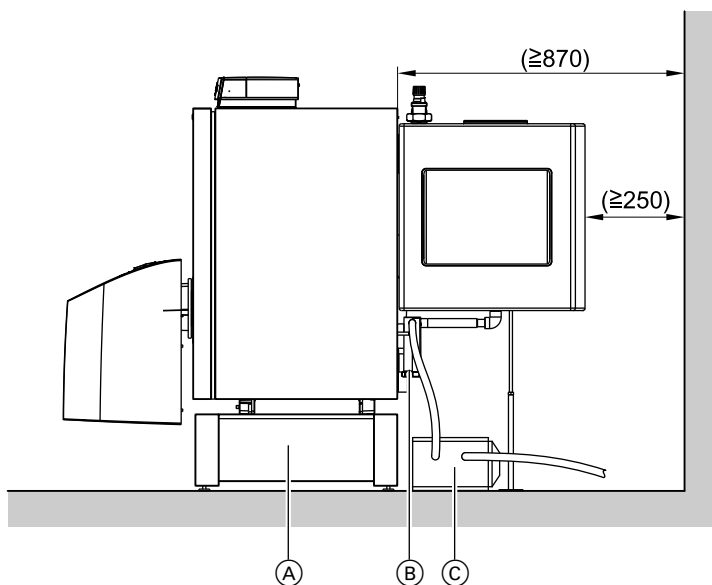
- Ⓐ Boiler
- Ⓑ Heat exchanger
- Ⓒ DHW cylinder

Minimum clearances for Vitorondens 200-T (67.6 to 107.3 kW)



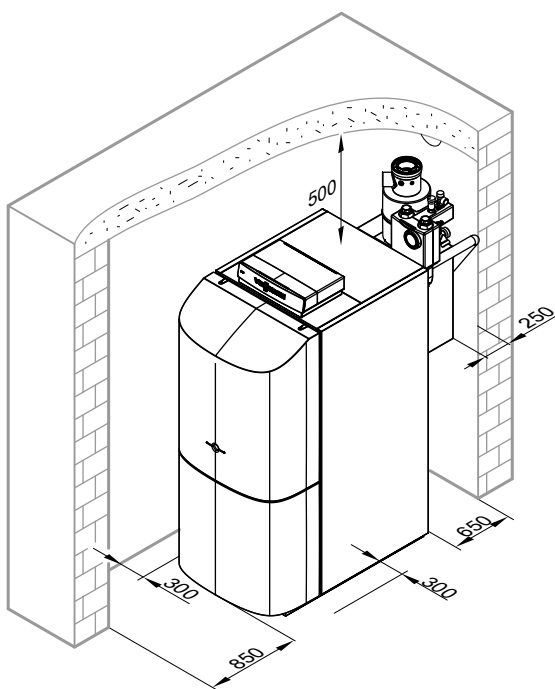
- Ⓐ Boiler
- Ⓑ Heat exchanger

Design information (cont.)



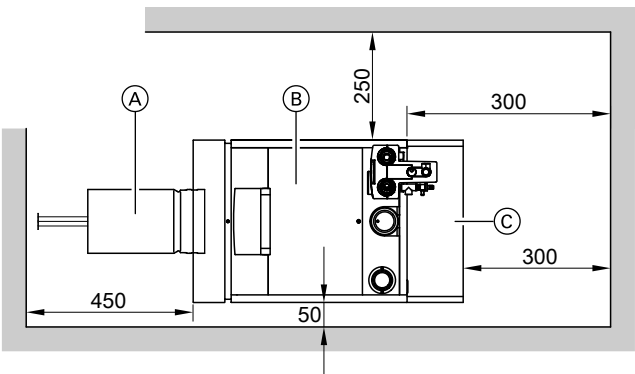
- (A) Plinth (accessories)
- (B) Trap
- (C) Neutralising system (accessories)

Vitorondens 222-F minimum clearances (not applicable for DE)



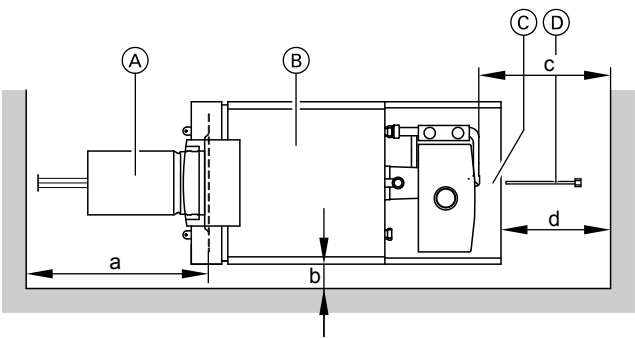
Design information (cont.)

Minimum clearances for Vitoladens 300-C



- (A) Combustion chamber (space for removal during maintenance)
- (B) Boiler
- (C) DHW cylinder (if installed)

Minimum clearances for Vitoladens 300-T



- (A) Combustion chamber
- (B) Boiler
- (C) DHW cylinder
- (D) DHW cylinder sensor well (only for 350 l capacity)

Rated heating output (T _F /T _R =50/30 °C)	kW	35.4	42.8	53.7
a	mm	750	850	850
b	mm	100	100	100
c	mm	300	300	300
d	mm	450	450	450

Dim. a: Maintain this space in front of the boiler to enable the removal of the combustion chamber with silencer.
Dim. c: Without DHW cylinder below the boiler.
Dim. d: With DHW cylinder below the boiler (350 litre capacity).

Connection on the flue gas side

The following requirements regarding design and installation apply to flue systems for condensing combustion equipment:
Prior to starting work on the flue system, your heating contractor should confer with the responsible flue gas inspector [where applicable].
Combustion equipment must be connected to the domestic chimney on the same floor as where it is installed (no transition through separating ceilings).

For further information regarding the connection on the flue gas side and the balanced flue system, see the technical guide to Vitoladens flue systems.

Combustion air apertures (open flue operation)

The cross-section should be at least 150 cm². This cross-section may not be split over more than 2 apertures (observe local fire regulations).

8.2 Fuel

The boilers achieve optimum energy utilisation by means of low flue gas temperatures and additional energy yield from the condensation of hot gases on the heat exchanger surface.

The aggressiveness of the condensate resulting from the condensation of hot gases depends largely on the sulphur content of the fuel. The less sulphur the fuel oil contains, the less sulphuric acid and sulphurous acid is produced during combustion.

The boilers can be operated with all commercially available EL fuel oils. For preference, we recommend using low sulphur fuel oil of premium quality. According to DIN 51603-1 and the third BImSchV [Germany], fuel oil is described as "low sulphur" when its sulphur content is no greater than 50 mg/kg (50 ppm). The designation is then "low sulphur fuel oil DIN 51603-1 EL" or "fuel oil DIN SPEC 51603-6 EL A Bio 10".

Use of this low sulphur fuel (or fuel oil with an even lower sulphur content), according to Code of Practice DWA-A 251, enables operation without a condensate neutralising system in the output range up to 200 kW.

Fuel oil to DIN SPEC 51603-6 EL A Bio 10 with max. 10.9 % (V/V) bio-components (FAME) is permissible.

8.3 Condensate connection and neutralisation

Condensate connection

Route the condensate pipe with a constant fall.

The condensate from the flue system (if equipped with a drain) and the boiler condensate should be routed to the public sewage system via a neutralising system or an active charcoal filter (accessories) (observe current regulations).

The condensate drain and trap must be checked and cleaned once a year.

Note

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

Only for Vitoladens 300-C:

If the neutralising system available as an accessory (or a third party neutralising system) is not used, install the trap supplied with the boiler. Also order the plinth if the boiler is installed without a DHW cylinder below.

Condensate drain pipe and neutralisation

Drain the condensate created in the condensing boiler and flue pipe during heating operation via a suitable neutralising system (available as an accessory). The pH value of the condensate generally lies between 2 and 3.

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.

DWA-A 251 specifies no requirements for neutralisation for operation with low sulphur fuel oil (sulphur content ≤ 50 mg/kg).

Use an active charcoal filter (accessories) if no neutralising system is connected.

The condensate drain pipe to the sewer connection must be freely accessible for inspection. It must be installed with a fall and a stench trap. The bottom drain should be located below the anti-flooding level of the trap.

Condensate drains must only be made from corrosion-resistant materials (e.g. reinforced hoses). **Never use any zinc-plated materials or those containing copper for pipes, connection pieces, etc.**

Install the trap supplied at the condensate drain to prevent flue gases from escaping.

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

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

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

Neutralising system

The boilers may be supplied with a separate neutralising system (accessories). This is obligatory when using standard EL fuel oil. With the Vitoladens 300-C, the neutralising system can be positioned inside the plinth. The neutralising system can also be installed alongside the boiler if the boiler is mounted on top of the DHW cylinder or on an on-site plinth.

Where space is limited, a wall mounting bracket for mounting the neutralising system on a wall may be ordered. For this arrangement, ensure that the condensate drains off reliably.

Any condensate is piped to the neutralising system for processing. 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 boiler is installed below the waste water anti-flooding level.

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

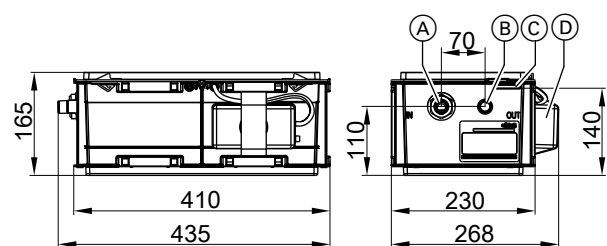
Neutralising system

For part no., see pricelist

With neutralising granulate and active charcoal filter.

Note

A connecting cable is included in the standard delivery, for parallel connection to the burner.



- (A) Condensate inlet
- (B) Condensate drain
- (C) Overflow aperture
- (D) Ventilation pump

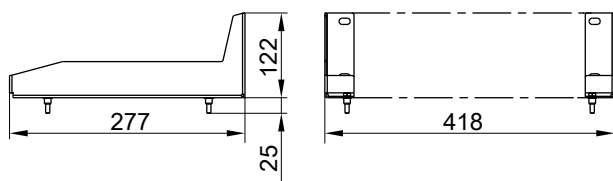
Wall mounting bracket for neutralising system

If the plinth is not used.

Ensure that the condensate drains off reliably.

Part no. 7452527

Design information (cont.)



Active charcoal filter

Recommended if no neutralising system is used.
Part no. 7452518

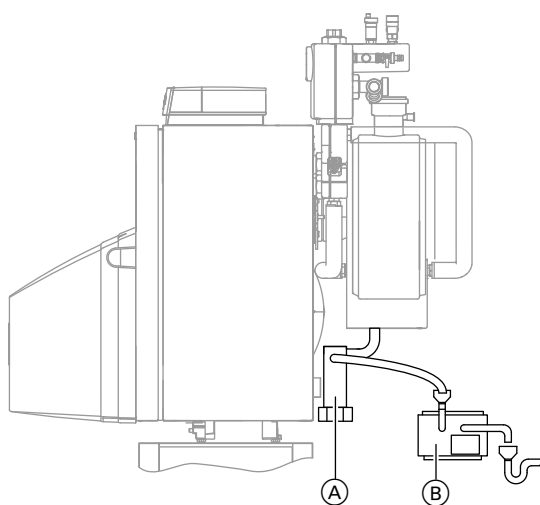
Maintenance set for active charcoal filter

Part no. 7834968

Maintenance set for neutralising system

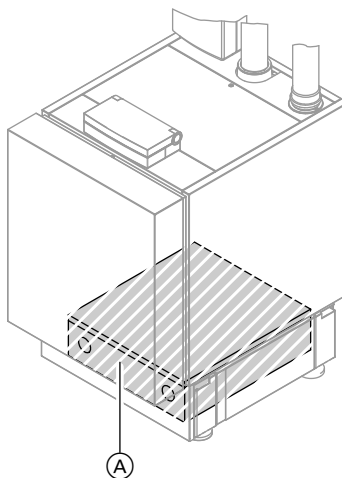
Comprising neutralising granulate and active charcoal filter
Part no. 7834967

Installing the neutralising system



Shown using the Vitorondens 200-T as an example

- (A) Trap
- (B) Neutralising system



Shown using the Vitoladens 300-C as an example

- (A) Neutralising system

8.4 Hydraulic connection

System design

Viessmann condensing boilers can generally be installed in any fully pumped hot water heating system (sealed unvented system). The heat generator must be correctly sized and selected. No special standards apply.

Minimum system pressure 0.8 bar (80 kPa).

The boiler water temperature is limited to the following values:

- Vitoladens 300-C: 81 °C
Specified by boiler coding card
- Vitoladens 300-T: 75 °C
Can be mechanically increased to 95 °C
- Vitorondens 200-T: 75 °C
Can be mechanically increased to 95 °C

Safety equipment

As described in EN 12828 for hot water heating systems, the boilers should have a maximum safety temperature of 110 °C and be equipped with a type-tested safety valve in accordance with their type approval.

This must be identified in accordance with TRD 721:

- "H" up to 3.0 bar (0.3 MPa) permissible operating pressure and max. 2700 kW heating output
- "D/G/H" for all other operating conditions

Chemical anti-corrosion agents

According to VDI guideline 2035, the design of heating systems must ensure they are sealed against corrosion. Additives in the heating water (additives, chemicals) as corrosion protection measures are normally not necessary.

Exception: In systems without system separation, for example, additives can be considered.

Heating circuits

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

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

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

Underfloor heating systems and heating circuits with very large water content (>15 l/kW) should be connected to the condensing boiler via a 3-way mixer. See technical guide "Control of underfloor heating systems" or the relevant sample applications. Install a temperature limiter in the flow of the underfloor heating circuit to restrict the maximum temperature. Observe the requirements of DIN 18560-2 [or local regulations].

Plastic pipework for radiators

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

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

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

- Flush the heating system thoroughly before filling.
- Only fill with water of potable quality.
- VDI guideline 2035 recommends water softening treatment to prevent harmful scaling in the heating water. Additives to stabilise hardness do not remove the scale forming chemicals from the heating water. 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 l/kW heating output, use the output of the smallest boiler in multi boiler systems.
- Special antifreeze (category 1 to 3) suitable for heating systems can be added to the fill water. The use of glycols without sufficient inhibition and buffering is not permitted. The suitability of the antifreeze must be confirmed by the manufacturer. If antifreeze is added, more monitoring and maintenance is necessary. Observe the manufacturer's instructions. Viessmann accepts no liability for damage and malfunctions caused by unsuitable or incorrectly dosed antifreeze, or incorrect maintenance.

- EN 1717 and DIN 1988-100 must be observed if the heating water is used simultaneously as a heat transfer medium for DHW heating.
- When disposing of heating water that contains additives, check whether it may be discharged into the public drain network once it has been treated again.

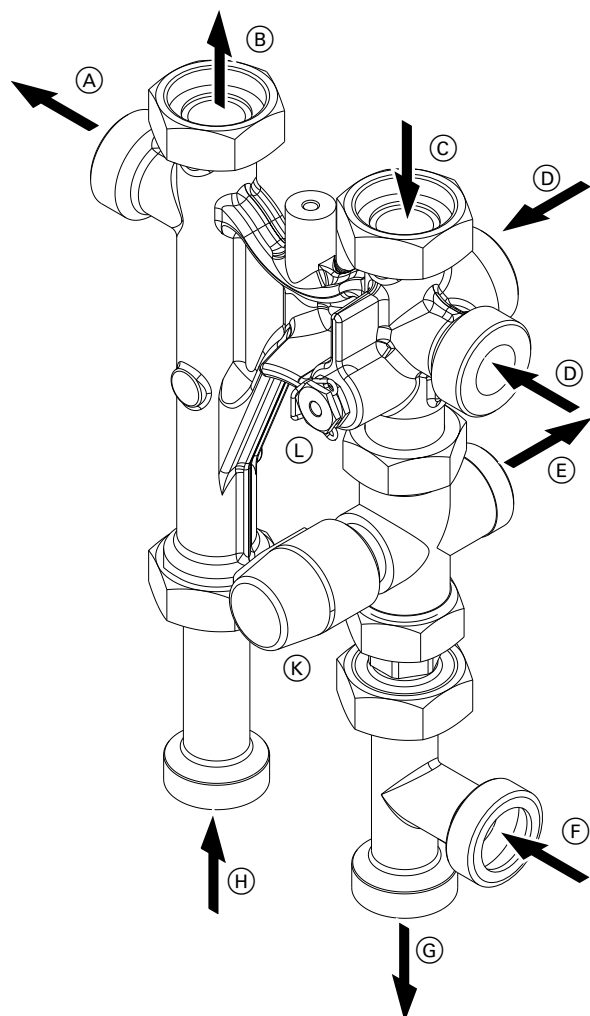
When designing the system, observe the following:

- Install shut-off valves in each section. This prevents the need for draining all the heating water in the case of repairs or system expansion.
- In systems > 50 kW, install a water meter to record the volume of fill and top-up water. Record the amount of water 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 localised concentration of limescale deposits on the heating surfaces.
- In multi boiler systems, start all boilers simultaneously to prevent the total amount of limescale deposits settling in the heat exchanger of just one boiler.
- During expansion or repair work, only drain the necessary pipe-work sections.
- Where water treatment is required, treat even the first fill of the heating system prior to commissioning. This also applies to any subsequent filling, e.g. when adding top-up water or after a repair, or for any system expansion.
- Check, clean and activate filters, dirt traps and other blow down or separating facilities in the heating water circuit more frequently after commissioning and in new installations. Later on this can be carried out subject to the requirements of the water treatment applied (e.g. water softening).

Distributor for solar central heating backup (accessory)



The 3-way diverter valve is controlled by the solar control module, type SM1 or the Vitosolic 200 (separate accessory).

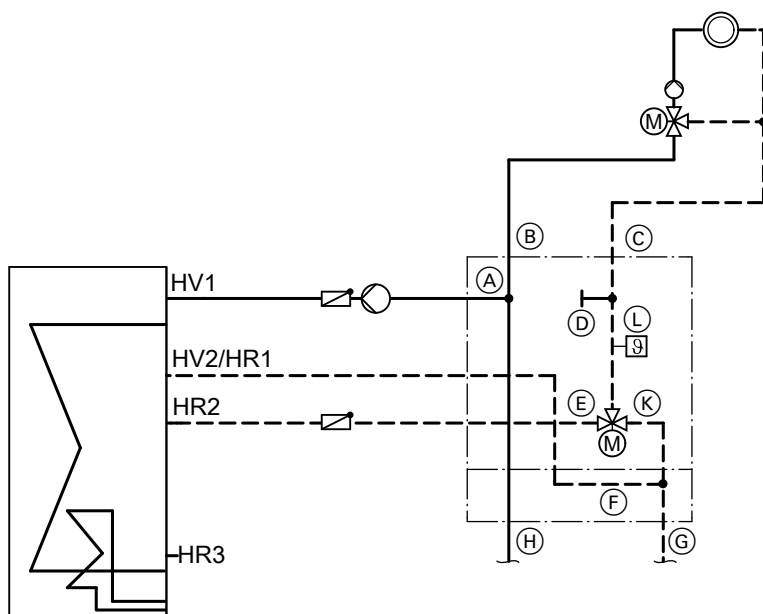
Optional connections:

- Solar central heating backup via the multi mode heating water buffer cylinder or heating water buffer cylinder
- DHW heating by the boiler in conjunction with a mono mode DHW cylinder or multi mode heating water buffer cylinder

- (A) Heating water flow for DHW heating G 1½
- (B) Heating water flow for heating circuit G 1½
- (C) Heating water return for heating circuit G 1½
- (D) Heating water return for DHW heating G 1½ (optional)
- (E) Heating water return to multi mode heating water buffer cylinder G 1¼
- (F) Heating water flow from multi mode heating water buffer cylinder G 1½
or
Heating water return for DHW heating
- (G) Heating water return to boiler G 1½
- (H) Heating water flow from boiler G 1½
- (K) 3-way diverter valve
- (L) Connection for return temperature sensor

Installation examples

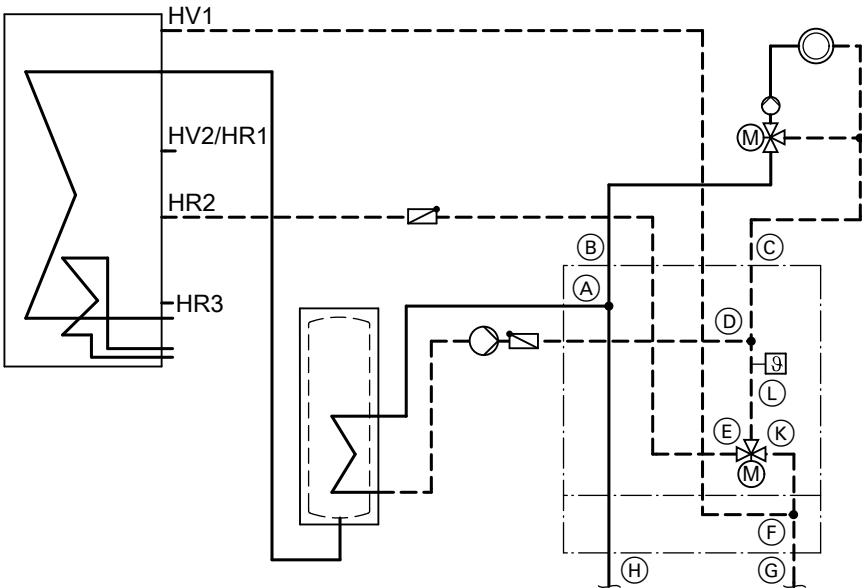
DHW heating and central heating backup with a multi mode heating water buffer cylinder



- | | |
|--|--|
| Ⓐ Heating water flow for DHW heating | Ⓔ Heating water return to boiler |
| Ⓑ Heating water flow for heating circuit | ⓓ Heating water flow from boiler |
| Ⓒ Heating water return for heating circuit | Ⓚ 3-way diverter valve |
| Ⓓ Without connection | Ⓛ Return temperature sensor (separate accessory) |
| Ⓔ Heating water return to multi mode heating water buffer cylinder | |
| Ⓛ Heating water flow from multi mode heating water buffer cylinder or Heating water return for DHW heating | |

Design information (cont.)

DHW heating with mono mode DHW cylinder and central heating backup with multi mode heating water buffer cylinder



- (A) Heating water flow for DHW heating

(B) Heating water flow for heating circuit

(C) Heating water return for heating circuit

(D) Heating water return for DHW heating

(E) Heating water return to multi mode heating water buffer cylinder
- (F) Heating water flow from multi mode heating water buffer cylinder

(G) Heating water return to boiler

(H) Heating water flow from boiler

(K) 3-way diverter valve

(L) Return temperature sensor (separate accessory)

Note
Connection (F) is located on the safety equipment block of the Vitorondens 200-T and Vitoladens 300-C, and on the wall mounting extension (accessories) of the Vitoladens 300-T.

Low water indicator

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

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

Water quality/frost protection

Unsuitable fill and top-up water increases the level of deposits and corrosion and may lead to boiler damage. Observe VDI guideline 2035 regarding the quality and volume of heating water, incl. fill and top-up water.

- Flush the heating system thoroughly before filling.
- Only fill with water of potable quality.

■ VDI guideline 2035 recommends water softening treatment to prevent harmful scaling in the heating water. Additives to stabilise hardness do not remove the scale forming chemicals from the heating water. 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)

Design information (cont.)

- For systems with a specific system volume in excess of 20 l/kW heating output, use the output of the smallest boiler in multi boiler systems.
- Special antifreeze (category 1 to 3) suitable for heating systems can be added to the fill water. The use of glycols without sufficient inhibition and buffering is not permitted. The suitability of the antifreeze must be confirmed by the manufacturer. If antifreeze is added, more monitoring and maintenance is necessary. Observe the manufacturer's instructions. Viessmann accepts no liability for damage and malfunctions caused by unsuitable or incorrectly dosed antifreeze, or incorrect maintenance.
- EN 1717 and DIN 1988-100 must be observed if the heating water is used simultaneously as a heat transfer medium for DHW heating.
- When disposing of heating water that contains additives, check whether it may be discharged into the public drain network once it has been treated again.

When designing the system, observe the following:

- Install shut-off valves in each section. This prevents the need for draining all the heating water in the case of repairs or system expansion.
- In systems > 50 kW, install a water meter to record the volume of fill and top-up water. Record the amount of water 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 localised concentration of limescale deposits on the heating surfaces.
- In multi boiler systems, start all boilers simultaneously to prevent the total amount of limescale deposits settling in the heat exchanger of just one boiler.
- During expansion or repair work, only drain the necessary pipe-work sections.
- Where water treatment is required, treat even the first fill of the heating system prior to commissioning. This also applies to any subsequent filling, e.g. when adding top-up water or after a repair, or for any system expansion.
- Check, clean and activate filters, dirt traps and other blow down or separating facilities in the heating water circuit more frequently after commissioning and in new installations. Later on this can be carried out subject to the requirements of the water treatment applied (e.g. water softening).

Expansion vessels

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

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

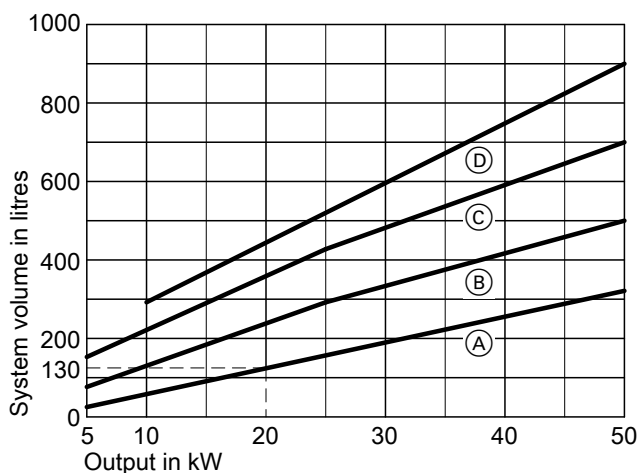
Checking the expansion vessel

When making the hydraulic connections, check that the size of the expansion vessel matches the system conditions.

The following steps will enable you to carry out a rough check.

V_{MAG}	= $f \cdot ((V_A + V_K) \cdot A_f + 2.4)$
V_{MAG}	= Volume of the expansion vessel
f	= Expansion factor (= 2 for expansion vessel)
V_A	= System volume
V_K	= Boiler water volume
A_f	= Heating water expansion factor

Calculating the heating system volume (approximate values)



- (A) Convector heaters
- (B) Panel radiators
- (C) Radiators
- (D) Underfloor heating system

Calculating the expansion factor A_f

Average water temp. [°C]	Expansion factor A_f
50	0.0121
60	0.0171
70	0.0228

8.5 Oil supply

The oil supply must be implemented as a single line system. It is essential to install an R 3/8 fuel oil filter with return feed line (filter with air vent valve and connection between the return connection and the suction line) in the oil supply system. Filter grade max. 35 µm, recommendation 5 µm. For modulating burners max. 5 µm.

Size the oil line in accordance with the following table. For this, observe the oil line requirements to DIN 4755-2 [or local regulations].

Design information (cont.)

Where the tank is set lower than the boiler, the height differential H (see fig.) between the oil burner pump and the foot valve in the tank must not exceed 4 m. Greater height differentials lead to noisy operation and pump wear.

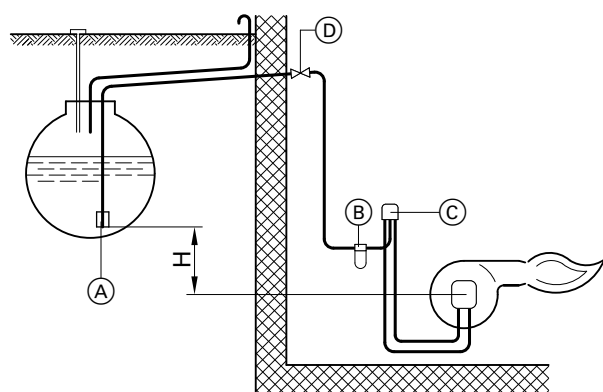
If the suction head or maximum pipe run for tanks set lower than the boiler is greater than that shown in the following table, then an oil feed pump with intermediate tank is required in the immediate vicinity of the boiler. Site the intermediate tank so that the integral oil burner pump can deliver the oil.

The oil feed pump must be regulated independently of the boiler, i.e. no signal from the boiler must be used for this purpose.

The maximum permissible vacuum pressure in the oil line is 0.40 bar (40 kPa).

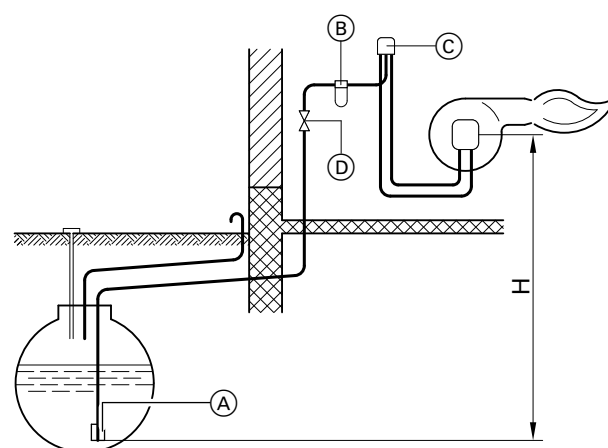
Anti-lift valve

- Fuel oil tank systems where the highest possible fuel oil level inside the tank is (or could become) higher than the lowest point of the fuel oil suction line require an anti-lift valve.
- If the tank is installed higher (level with foot valve, or the floating inlet is higher than the oil pump), do not install mechanical anti-lift valves. Instead, use an electric solenoid valve.
- When installing an anti-lift valve, ensure that the negative pressure on the inlet side of the oil burner pump will not exceed -0.4 bar (-40 kPa) in the worst possible case.



Tank above boiler

- (A) Foot valve
- (B) Fuel oil filter
- (C) Fuel oil air vent valve
- (D) Anti-lift valve



Tank below boiler

- (A) Foot valve
- (B) Fuel oil filter
- (C) Fuel oil air vent valve
- (D) Shut-off equipment

Suction head H in m	Max. pipe length in m when the suction line has the following diameter:	
	6x1 mm	8x1 mm
+4.0	100	100
+3.5	95	100
+3.0	89	100
+2.5	83	100
+2.0	77	100
+1.5	71	100
+1.0	64	100
+0.5	58	100
0.0	52	100
-0.5	46	100
-1.0	40	100
-1.5	33	100
-2.0	27	100
-2.5	21	100
-3.0	15	75
-3.5	9	44
-4.0	—	12

- At the max. pipe run, a total pressure drop of 0.35 bar (35 kPa) is assumed, based on fuel oil EL with 6.0 cSt (DIN 51603-1), including 1 shut-off valve, 1 foot valve and 1 fuel oil filter.
- To prevent air accumulating in the pipework, select the smallest possible pipe diameter. 6x1 mm pipework can generally be used for systems up to 200 kW.

For further information on designing and sizing oil lines: See Top-Technik brochure "Oil supply in heating system modernisation".

8.6 Flue system

These boilers can be operated in **open flue** or **room sealed** mode.

For the flue system use the components listed in the Viessmann pricelist. For further information, see the technical guide to Vitoldens flue systems.

Design information (cont.)

8.7 Intended use

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

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

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

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

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

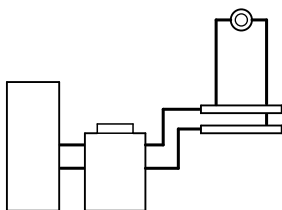
Control units

9.1 Control unit types

Assigning the control units to the boiler

Vitotronic	100	200		
Type	KC2B	KO1B	KO2B	KW6B
Boiler				
Vitorondens 200-T			X	
Vitorondens 222-F (not applicable for DE)			X	
Vitoladens 300-C				X
Vitoladens 300-T	X	X		

Vitotronic 100, type KC2B

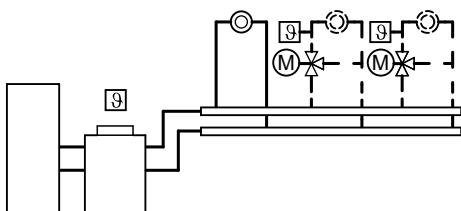


Electronic boiler control unit:

- For single boiler systems.
- For single stage, two-stage or modulating burners.
- For constant boiler water temperature.
- For one heating circuit without mixer.
- With digital display.
- With cylinder temperature controller.
- With integral diagnostic system and additional functions.

According to the Energy Saving Ordinance [Germany], a weather-compensated or room temperature-dependent control unit with time program for reduced mode must be installed downstream.

Vitotronic 200, type KO1B

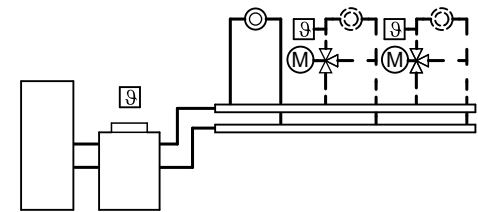


Weather-compensated, digital boiler and heating circuit control unit:

- For single boiler systems.
- For single stage, two-stage or modulating burners.
- For one heating circuit without mixer and up to two heating circuits with mixer. An extension kit (accessories) is required for each heating circuit with mixer.
- With cylinder temperature controller.
- With programming unit featuring a plain text and graphic display.
- With digital time switch with individual and seven-day programs.
- With separately adjustable switching times, set values and heating curves for the heating circuits.
- With separate switching times for central heating, DHW heating and the DHW circulation pump.
- With integral diagnostic system and additional functions.
- With capability to communicate via LON (LON communication module is an accessory).

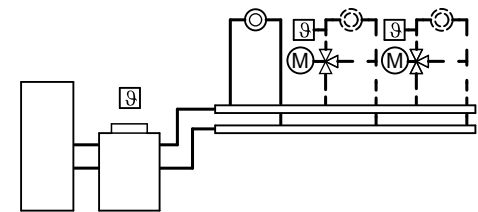
Control units (cont.)

Vitotronic 200, type KO2B



- Weather-compensated, digital boiler and heating circuit control unit:
- For single boiler systems.
 - For single stage, two-stage or modulating burners.
 - For one heating circuit without mixer and up to two heating circuits with mixer. An extension kit (accessories) is required for each heating circuit with mixer.
 - With cylinder temperature controller.
 - With programming unit featuring a plain text and graphic display.
 - With digital time switch with individual and seven-day programs.
 - With separately adjustable switching times, set values and heating curves for the heating circuits.
 - With separate switching times for central heating, DHW heating and the DHW circulation pump.
 - With integral diagnostic system and additional functions.
 - With capability to communicate via LON (LON communication module is an accessory).

Vitotronic 200, type KW6B



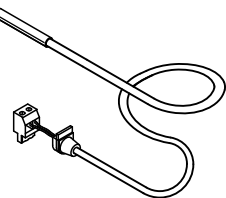
- Weather-compensated, digital boiler and heating circuit control unit:
- For single boiler systems.
 - For one heating circuit without mixer and two heating circuits with mixer.
 - With cylinder temperature controller.
 - With digital time switch with individual day and seven-day programs.
 - With separately adjustable switching times, set values and heating curves for the heating circuits.
 - With separate switching times for central heating, DHW heating and the DHW circulation pump.
 - With integral diagnostic system

9.2 Components in the delivered condition

Vitotronic	100	200		
Type	KC2B	KO1B	KO2B	KW6B
Components				
Boiler water temperature sensor	X	X	X	X
Cylinder temperature sensor	X	X	X	X
Outside temperature sensor		X	X	X

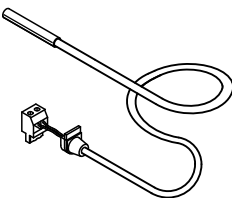
For Vitotronic 100, type KC2B and Vitotronic 200, type KO1B and KO2B

Boiler water temperature sensor



Specification	
Lead length	1.6 m, fully wired
IP rating	IP 32 to EN 60529; ensure through design/installation
Sensor type	Viessmann NTC 10 kΩ, at 25 °C
Permissible ambient temperature	
– Operation	0 to +130 °C
– Storage and transport	–20 to +70 °C

Cylinder temperature sensor



Specification	
Lead length	5.8 m, fully wired
IP rating	IP 32 to EN 60529; ensure through design/installation.
Sensor type	Viessmann NTC 10 kΩ, at 25 °C
Permissible ambient temperature	
– Operation	0 to +90 °C
– Storage and transport	–20 to +70 °C

Control units (cont.)

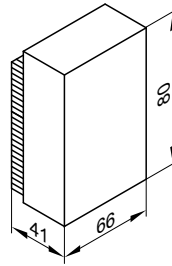
Outside temperature sensor

Installation site:

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

Connection:

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



Specification

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

For Vitotronic 200, type KW6B

Boiler water temperature sensor

Specification

Sensor type Viessmann NTC, 10 kΩ at 25 °C

Permissible ambient temperature

- During operation 0 to +200 °C
- During storage and transport -20 to +70 °C

Cylinder temperature sensor

Specification

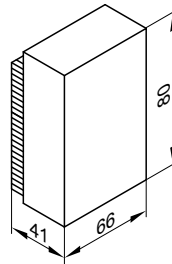
Lead length 3.75 m, fully wired
IP rating IP 32
Sensor type Viessmann NTC 10 kΩ at 25 °C

Permissible ambient temperature

- During operation 0 to +90 °C
- During storage and transport -20 to +70 °C

Connection:

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



Specification

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

Outside temperature sensor

Installation site:

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

9.3 Vitotronic 100, type KC2B, part no. 7441799

Specification

Design

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

Standard unit

- ON/OFF switch
- Test key
- Optolink laptop interface
- Temperature controller TR 1107 or TR 1168

- High limit safety cut-out

STB 1154

or

STB 1169

- MCB/fuse

- Operating and fault display

- Plug connection chamber:

- Connection of external equipment via system plug

- Connection of three-phase consumers via additional contactors

Programming unit

- Easy to operate, thanks to high contrast display with large fonts
- User prompts through pictographs

Control units (cont.)

- Operating keys:
 - Navigation
 - Confirmation
 - Settings/menu
- Settings:
 - Boiler water temperature
 - DHW temperature
 - Operating program
 - Codes
 - Actuator tests
 - Test mode
- Indicators:
 - Boiler water temperature
 - DHW temperature
 - Operating data
 - Diagnostic details
 - Maintenance and fault messages

Functions

- Constant control of the boiler water temperature
- Electronic maximum boiler water temperature limit
- Integral diagnostic system
- Cylinder temperature controller with priority control (heating circuit pump off)
- Control of solar DHW heating and central heating backup in conjunction with the solar control module, type SM1
- Functions via external contact:
 - External demand with set minimum boiler water temperature
 - External blocking
 - Room temperature controller/room thermostat
- Additional functions by means of the EA1 extension (accessories):
 - External demand through default set boiler water temperature via 0 to 10 V input
 - Central fault message via floating output
 - 3 digital inputs for the following functions:
 - External blocking with fault message input
 - Fault message input

According to the [German] Energy Saving Ordinance, a weather-compensated or room temperature-dependent control unit with time program for reduced mode must be installed downstream of the boiler (see Viessmann pricelist register 18 "Heating circuit control units").

Control characteristics

- P characteristics with 2-point output
- Temperature controller for limiting the boiler water temperature: 75 °C, may be adjusted to 87 °C or 95 °C
- Adjusting the high limit safety cut-out: 110 °C, adjustable to 100 °C

Boiler coding card

For matching to the boiler (supplied with the boiler).

Specification

Rated voltage	230 V~
Rated frequency	50 Hz
Rated current	6 A~
Power consumption	5 W
Safety category	I
IP rating	IP 20D to EN 60529; ensure through design/installation.
Function	Type 1B to EN 60730-1
Permissible ambient temperature	
– Operation	0 to +40 °C Installation in living spaces or boiler rooms (standard ambient conditions)
– Storage and transport	–20 to +65 °C
Rated relay output breaking capacity	
– [20]	Heating circuit pump 4(2) A, 230 V~
– [21]	Circulation pump for cylinder heating 4(2) A, 230 V~
– [41]	Burner 4(2) A, 230 V~
Only with auxiliary module (part of the standard delivery for Viessmann boilers):	
– [90]	1(0.5) A, 230 V~
2-stage burner	
– [90]	Modulating burner 0.1 (0.05) A, 230 V~
Total	Max. 6 A, 230 V~

Factory setting

- Control with integral programming unit
- Boiler water temperature sensor
- Cylinder temperature sensor
- Power cable
- Bag with technical documentation

Heating system with DHW cylinder

Order the circulation pump with check valve for cylinder temperature control separately.

9.4 Vitotronic 200, type KO1B, part no. 7441800

Specification

Design

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

Standard unit

- ON/OFF switch
- Test key
- Optolink laptop interface
- Temperature controller TR 1107 or TR 1168

- High limit safety cut-out STB 1154 or STB 1169
- MCB/fuse
- Operating and fault display
- Plug connection chamber:
 - Connection of external equipment via system plug
 - Connection of three-phase consumers via additional contactors

Programming unit

- Straight forward operation:
 - Plain text display with graphic ability
 - Large font and black/white depiction for good contrast
 - Context-sensitive help
- Operating keys:
 - Navigation
 - Confirmation
 - Help and additional information
 - Menu
- Settings:
 - Set room temperatures
 - 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
- Indicators:
 - Boiler water temperature
 - DHW temperature
 - Operating data
 - Diagnostic details
 - Maintenance and fault messages
- Available languages:
 - German
 - Bulgarian
 - Czech
 - Danish
 - English
 - Spanish
 - Estonian
 - French
 - Croatian
 - Italian
 - Latvian
 - Lithuanian
 - Hungarian
 - Dutch
 - Polish
 - Russian
 - Romanian
 - Slovenian
 - Finnish
 - Swedish
 - Turkish

Functions

- Weather-compensated control of the boiler water and/or flow temperature
- Electronic maximum and minimum limitation of the flow temperature in heating circuits with mixer
- Demand-dependent heating circuit pump and burner shutdown (not for burners on boilers with a low-end boiler water temperature limit)
- Adjustment of a variable heating limit
- Pump anti-seizing protection
- Integral diagnostic system
- Flue gas temperature monitoring in connection with flue gas temperature sensor
- Service indicator
- Adaptive cylinder temperature control with priority control (heating circuit pump off, mixer close)
- Auxiliary function for DHW heating (short-term heating to a higher temperature)

- Control of solar DHW heating and central heating backup as well as graphical representation of solar energy yield in conjunction with the solar control module, type SM1
- Screed drying program for the heating circuits with mixer
- External fault message facility can be connected
- Functions via external contact:
 - External demand with set minimum boiler water temperature
 - External blocking
- Additional functions by means of the EA1 extension (accessories):
 - External demand through default set boiler water temperature via 0 to 10 V input
 - Central fault message or
Switching a feed pump to a substation via floating output
 - 3 digital inputs for the following functions:
 - external operating program changeover, separate for heating circuits 1 to 3
 - External blocking with fault message input
 - Fault message input
 - Brief operation of the DHW circulation pump

The requirements of EN 12831 for calculating the heat load are met. To reduce the heat-up load, the reduced room temperature will be raised in the 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 [German] Energy Saving Ordinance, the temperature in each room must be individually controlled, e.g. by means of thermostatic valves.

Control characteristics

- Boiler control unit:
 - P characteristics with 2-point output when using a multi stage burner
 - PI characteristics with 3-point output when using a modulating burner
- Heating circuit control unit:
 - PI characteristics with 3-point output
- Temperature controller for limiting the boiler water temperature: 75 °C, may be adjusted to 87 °C or 95 °C
- Adjusting the high limit safety cut-out: 110 °C, adjustable to 100 °C
- Heating curve setting range:
 - Slope: 0.2 to 3.5
 - Level: –13 to 40 K
 - Max. limit: 20 to 130 °C
 - Min. limit: 1 to 127 °C
- Differential temperature for a heating circuit with mixer: 0 to 40 K
- Setting range of the set DHW temperature: 10 to 60 °C, adjustable to 10 to 90 °C

Boiler coding card

For matching to the boiler (supplied with the boiler).

Time switch

Digital time switch (integrated into the programming unit).

- Individual day and seven-day program, annual calendar
 - Automatic summer/wintertime changeover
 - Automatic function for DHW heating and DHW circulation pump
 - Time, day and standard switching times for central heating, DHW heating and the DHW circulation pump are factory-set
 - Switching times are individually programmable; up to 4 time phases per day
- Shortest switching interval: 10 min
Power reserve: 14 days

Setting the operating programs

Frost protection monitoring (see frost protection function) for the heating system is enabled in all operating programs. The following operating programs can be selected:

Control units (cont.)

■ Heating and DHW

■ Only DHW

■ Standby mode

External operating program changeover for each separate heating circuit in conjunction with EA1 extension (accessories).

Summer mode

("DHW only")

The burner starts only when the DHW cylinder needs reheating (controlled by the cylinder temperature controller).

The respective lower boiler water temperature of each boiler is maintained if required.

Frost protection function

- The frost protection function will start when the outside temperature falls below approx. +1 °C.

As part of the frost protection function, the heating circuit pumps are started and the boiler water is held at the set value for reduced mode. Minimum lower temperature of approx. 20 °C. The allocated temperature is maintained for boilers with a low-end temperature limit.

- The frost protection function is switched off if the outside temperature exceeds approx. +3 °C, i.e. the heating circuit pump and burner are switched off.

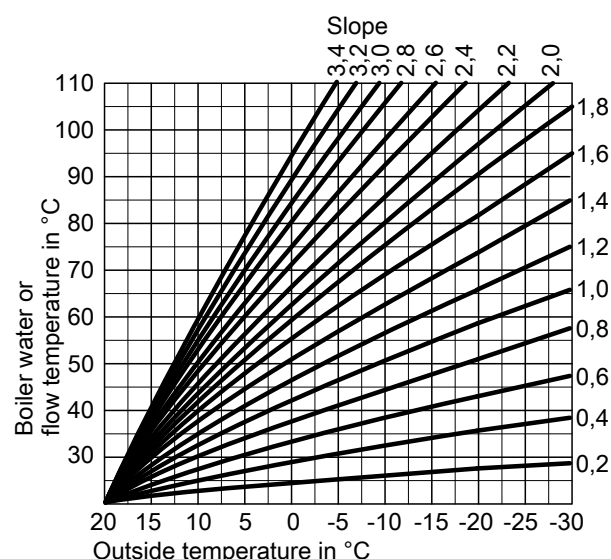
Heating curve setting (slope and level)

The Vitotronic regulates the boiler water temperature (= flow temperature of the heating circuit without mixer) **and** the flow temperature of the heating circuits with mixer in weather-compensated mode. For this, the boiler water temperature is automatically controlled to between 0 and 40 K above 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 conditions.

The upper boiler water temperature is limited by the temperature controller and the electronic maximum temperature limiter.



Specification

Rated voltage		230 V~
Rated frequency		50 Hz
Rated current		6 A~
Power consumption		5 W
Safety category		I
IP rating		IP 20D to EN 60529; ensure through design/ installation.
Function		Type 1B to EN 60730-1
Permissible ambient temperature		
– Operation		0 to +40 °C Installation in living spaces or boiler rooms (standard ambient conditions)
– Storage and transport		–20 to +65 °C
Rated relay output breaking capacity		
– [20]	Heating circuit pump	4(2) A, 230 V~
– [21]	Circulation pump for cylinder heating	4(2) A, 230 V~
– [28]	DHW circulation pump	4(2) A, 230 V~
– [41]	Burner	4(2) A, 230 V~
Only with auxiliary module (part of the standard delivery for Viessmann boilers):		
– [90]	2-stage burner	1(0.5) A, 230 V~
– [90]	Modulating burner	0.1 (0.05) A, 230 V~
Total		Max. 6 A, 230 V~

Power supply, DHW circulation pump

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

Factory setting

- Control with integral programming unit
- Outside temperature sensor
- Boiler water temperature sensor
- Cylinder temperature sensor
- Power cable
- Bag with technical documentation

Heating system with DHW cylinder

Order the circulation pump with check valve for cylinder temperature control separately.

Heating system with heating circuit with mixer

A mixer extension kit (accessories) is required for the heating circuit with mixer.

Communication

The LON communication module (accessories) is required for communication with other control units.

9.5 Vitotronic 200, type KO2B, part no. 7441802

Specification

Design

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

Standard unit

- ON/OFF switch
- Terminals for checking the high limit safety cut-out
- Optolink laptop interface
- Temperature controller
 - TR 1107
 - or
 - TR 1168
- High limit safety cut-out
 - STB 1154
 - or
 - STB 1169
- MCB/fuse
- Operating and fault display
- Plug connection chamber:
 - Connection of external equipment via system plug
 - Connection of three-phase consumers via additional contactors

Programming unit

- Straight forward operation:
 - Plain text display with graphic ability
 - Large font and black/white depiction for good contrast
 - Context-sensitive help
- Operating keys:
 - Navigation
 - Confirmation
 - Help and additional information
 - Menu
- Settings:
 - Set room temperatures
 - 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

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

Functions

- Weather-compensated control of the boiler water and/or flow temperature
- Electronic maximum and minimum limit of the flow temperature in the heating circuits with mixer
- Demand-dependent heating circuit pump and burner shutdown (not for burners on boilers with a low-end boiler water temperature limit)
- Adjustment of a variable heating limit
- Pump anti-seizing protection
- Integral diagnostic system
- Flue gas temperature monitoring in connection with flue gas temperature sensor
- Service indicator
- Adaptive cylinder temperature control with priority control (heating circuit pump off, mixer close)
- Auxiliary function for DHW heating (short-term heating to a higher temperature)
- Control of solar DHW heating and central heating backup as well as graphical representation of solar energy yield in conjunction with the solar control module, type SM1
- Screed drying program for the heating circuits with mixer
- External fault message facility can be connected

Control units (cont.)

- Functions via external contact:
 - External demand with set minimum boiler water temperature
 - External blocking
- Additional functions by means of the EA1 extension (accessories):
 - External demand through default set boiler water temperature via 0 to 10 V input
 - Central fault message or
 - Switching a feed pump to a substation via floating output
 - 3 digital inputs for the following functions:
 - external operating program changeover, separate for heating circuits 1 to 3
 - External blocking with fault message input
 - Fault message input
 - Brief operation of the DHW circulation pump

The requirements of EN 12831 for calculating the heat load are met. To reduce the heat-up load, the reduced room temperature will be raised in the 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 [German] Energy Saving Ordinance, the temperature in each room must be individually controlled, e.g. by means of thermostatic valves.

Control characteristics

- Boiler control unit:
 - P characteristics with 2-point output when using a multi stage burner
 - PI characteristics with 3-point output when using a modulating burner
- Heating circuit control unit:
 - PI characteristics with 3-point output
- Temperature controller for limiting the boiler water temperature:
 - 75 °C, can be set to 87, 95 °C
- Adjusting the high limit safety cut-out:
 - 110 °C, adjustable to 100 °C
- Heating curve setting range:
 - Slope: 0.2 to 3.5
 - Level: –13 to 40 K
 - Max. limit: 20 to 130 °C
 - Min. limit: 1 to 127 °C
- Differential temperature for the heating circuit with mixer: 0 to 40 K
- Setting range of the set DHW temperature:
 - 10 to 60 °C, adjustable to 10 to 90 °C

Boiler coding card

For matching to the boiler (supplied with the boiler).

Time switch

Digital time switch (integrated into the programming unit).

- Individual day and seven-day program, annual calendar
- Automatic summer/wintertime changeover
- Automatic function for DHW heating and DHW circulation pump
- Time, day and standard switching times for central heating, DHW heating and the DHW circulation pump are factory-set
- Switching times are individually programmable; up to 4 time phases per day

Shortest switching interval: 10 min

Power reserve: 14 days

Setting the operating programs

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

The following operating programs can be selected:

- Heating and DHW
- Only DHW
- Standby mode

External operating program changeover for each separate heating circuit in conjunction with EA1 extension (accessory).

Summer mode

("DHW only")

The burner starts only when the DHW cylinder needs reheating (controlled by the cylinder temperature controller).

The respective lower boiler water temperature of each boiler is maintained if required.

Frost protection function

- The frost protection function will start when the outside temperature falls below approx. +1 °C.
 - As part of the frost protection function, the heating circuit pumps are started and the boiler water is held at the set value for reduced mode. Minimum lower temperature of approx. 20 °C. The allocated temperature is maintained for boilers with a low-end temperature limit.
- The frost protection function is switched off if the outside temperature exceeds approx. +3 °C, i.e. the heating circuit pump and burner are switched off.

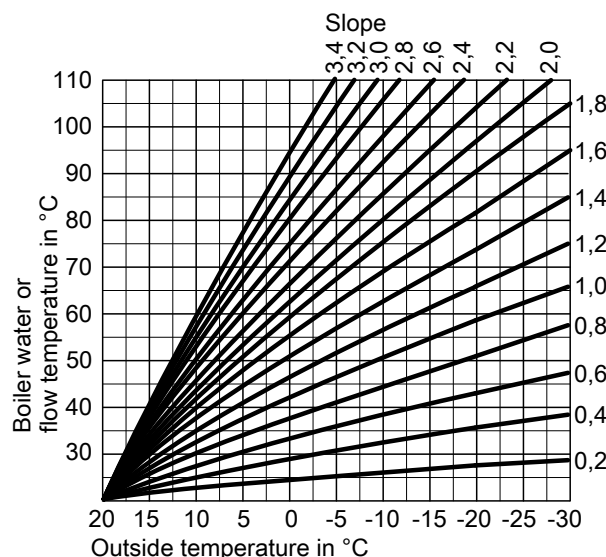
Heating curve setting (slope and level)

The Vitotronic regulates the boiler water temperature (= flow temperature of the heating circuit without mixer) **and** the flow temperature of the heating circuits with mixer in weather-compensated mode. For this, the boiler water temperature is automatically controlled to between 0 and 40 K above 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 conditions.

The upper boiler water temperature is limited by the temperature controller and the electronic maximum temperature limiter.



Specification

Rated voltage	230 V~
Rated frequency	50 Hz
Rated current	6 A~
Power consumption	5 W
Safety category	I
IP rating	IP 20D to EN 60529; ensure through design/installation.
Function	Type 1B to EN 60730-1

Control units (cont.)

Permissible ambient temperature		
– Operation		0 to +40 °C Installation in living spaces or boiler rooms (standard ambient conditions)
– Storage and transport		–20 to +65 °C
Rated relay output breaking capacity		
– [20]	Heating circuit pump	4(2) A, 230 V~
– [21]	Circulation pump for cylinder heating	4(2) A, 230 V~
– [28]	DHW circulation pump	4(2) A, 230 V~

– [41]	Burner	4(2) A, 230 V~
Only with auxiliary module (part of the standard delivery for Viessmann boilers):		
– [90]	2-stage burner	1(0.5) A, 230 V~
– [90]	Modulating burner	0.1 (0.05) A, 230 V~
Total		Max. 6 A, 230 V~

Power supply, DHW circulation pump

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

Factory setting

- Control with integral programming unit
- Outside temperature sensor
- Boiler water temperature sensor
- Cylinder temperature sensor
- Bag with technical documentation

Heating system with DHW cylinder

Order the circulation pump with check valve for cylinder temperature control separately.

Heating system with heating circuit with mixer

A mixer extension kit (accessories) is required for the heating circuit with mixer.

Communication

The LON communication module (accessory) is required for communication with other control units.

9.6 Vitotronic 200, type KW6B

Specification

Design

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

Standard unit

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

Programming unit

- Straight forward operation:
 - Plain text display with graphic ability
 - Large font and black & white depiction for good contrast
 - Context-sensitive help
- Operating keys:
 - Navigation
 - Confirmation
 - Help and additional information
 - Menu
- Attitude:
 - Set room temperatures
 - 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

- Indicators:
 - Boiler water temperature
 - DHW temperature
 - Information
 - Operating data
 - Diagnostic details
 - Maintenance and fault messages
- Available languages:
 - German
 - Bulgarian
 - Czech
 - Danish
 - English
 - Spanish
 - Estonian
 - French
 - Croatian
 - Italian
 - Latvian
 - Lithuanian
 - Hungarian
 - Dutch
 - Polish
 - Russian
 - Romanian
 - Slovenian
 - Finnish
 - Swedish
 - Turkish

Functions

- Weather-compensated control of the boiler water and/or flow temperature
- Electronic maximum and minimum flow temperature limit in heating circuits with mixer
- Demand-dependent heating circuit pump and burner shutdown control
- Adjustment of a variable heating limit
- Pump anti-seizing protection
- Frost protection monitoring for the heating system

Control units (cont.)

- Integral diagnostic system
- Service indicator
- Adaptive cylinder temperature control with priority control (heating circuit pump off, mixer close)
- Auxiliary function for DHW heating (short-term heating to a higher temperature)
- Control of solar DHW heating and central heating backup as well as graphical representation of solar energy yield in conjunction with the solar control module, type SM1
- Screed drying program for the heating circuits with mixer
- Additional functions by means of the EA1 extension (accessories):
 - External demand through default set boiler water temperature via 0 to 10 V input
 - Central fault message
 - or
 - Switching a feed pump to a substation via floating output
 - 3 digital inputs for the following functions:
 - external operating program changeover, separate for heating circuits 1 to 3
 - External blocking with fault message input
 - Fault message input
 - Brief operation of the DHW circulation pump

The requirements of EN 12831 for calculating the heat load are met. To reduce the heat-up load, the reduced room temperature will be raised in the 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 [German] Energy Saving Ordinance, the temperature in each room must be individually controlled, e.g. by means of thermostatic valves.

Control characteristics

PI characteristics with modulating output.

Time switch

Digital time switch (integrated into the programming unit).

- Individual day and seven-day program, annual calendar
- Automatic summer/wintertime changeover
- Automatic function for DHW heating and DHW circulation pump
- Time, day and standard switching times for central heating, DHW heating and the DHW circulation pump are factory-set
- Switching times are individually programmable; up to 4 time phases per day

Shortest switching interval: 10 min

Power reserve: 14 days

Setting the operating programs

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

The following operating programs can be selected:

- Heating and DHW
- Only DHW
- Standby mode

External operating program changeover for each separate heating circuit in conjunction with EA1 extension (accessories).

Summer mode

("DHW only")

The burner starts only when the DHW cylinder needs reheating (controlled by the cylinder temperature controller).

Frost protection function

- The frost protection function will start when the outside temperature falls below approx. +1 °C.

As part of the frost protection function, the heating circuit pumps are started and the boiler water is held at the set value for reduced mode. Minimum lower temperature of approx. 20 °C.
- The frost protection function is switched off if the outside temperature exceeds approx. +3 °C, i.e. the heating circuit pump and burner are switched off.

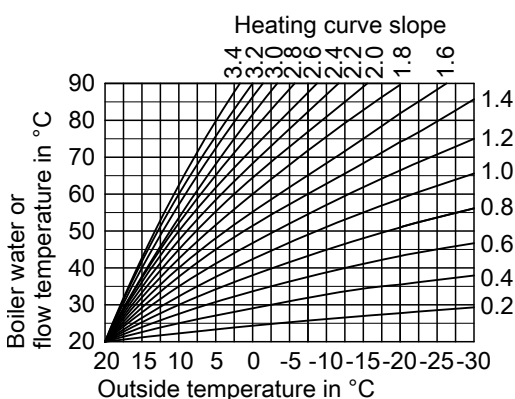
Heating curve setting (slope and level)

The Vitotronic regulates the boiler water temperature (= flow temperature of the heating circuit without mixer) **and** the flow temperature of the heating circuits with mixer in weather-compensated mode. For this, the boiler water temperature is automatically controlled to between 0 and 40 K above 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 conditions.

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



Specification

Rated voltage	230 V~
Rated frequency	50 Hz
Rated current	6 A
Safety category	I
Permissible ambient temperature	
– Operation	0 to +35 °C Installation in living spaces or boiler rooms (standard ambient conditions)
– Storage and transport	–20 to +65 °C
Electronic temperature limiter setting (heating mode)	95 °C (change not possible)
DHW temperature setting range	10 to 68 °C
Heating curve setting range	
Slope	0.2 to 3.5
Level	–13 to 40 K

Power supply, DHW circulation pump

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

9.7 Control unit accessories

Allocation of accessories according to control unit type

Vitotronic	100	200		
	KC2B	KO1B	KO2B	KW6B
Accessories				
Vitotrol 100, type UTA	X			
Vitotrol 100, type UTDB	X			
External H4 extension	X			
Vitotrol 100, type UTDB-RF	X			
Vitotrol 200-A		X	X	X
Vitotrol 300-A		X	X	X
Vitotrol 200-RF		X	X	X
Wireless base station		X	X	X
Wireless repeater		X	X	X
Room temperature sensor to supplement the Vitotrol 300-A		X	X	X
Immersion temperature sensor	X	X	X	X
Flue gas temperature sensor	X	X	X	
Radio clock receiver		X	X	X
External H5 extension	X	X	X	
KM-BUS distributor	X	X	X	X
Mixer extension kit (mixer mounting)		X	X	X
Mixer extension kit (wall mounting)		X	X	X
Immersion thermostat		X	X	X
Contact thermostat		X	X	X
Solar control module type SM1	X	X	X	X
EA1 extension	X	X	X	X
Vitoconnect 100, OPTO 1		X	X	X
LON cable		X	X	X
LON coupling		X	X	X
LON plug-in connector		X	X	X
LON socket		X	X	X
Terminator		X	X	X
LON communication module		X	X	X

Note

For further information regarding communication technology, see the "Data communication" technical guide.

Vitotrol 100, type UTA

Part no. 7170149

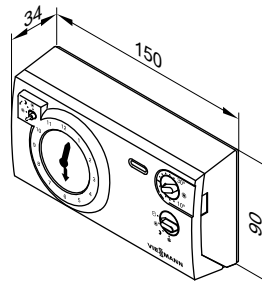
Room thermostat

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

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

Control unit connection:

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



Specification

Rated voltage	230 V/50 Hz
Rated breaking capacity of the contact	6(1) A 250 V~
IP rating	IP 20 to EN 60529 Ensure through design/installation
Permissible ambient temperature	
– Operation	0 to +40 °C
– Storage and transport	–20 to +60 °C

Control units (cont.)

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. Z007691

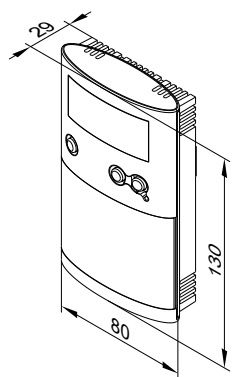
Room temperature controller

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

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

Control unit connection:

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



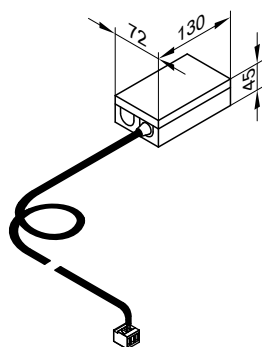
Specification

Rated voltage	3 V– Battery LR6/AA
Rated breaking capacity of the floating contact	
– max.	6(1) A, 230 V~
– min.	1 mA, 5 V–
IP rating	IP 20 to EN 60529 Ensure through design/installation
Function type	RS type 1B to EN 60730-1
Permissible ambient temperature	
– Operation	0 to +40 °C
– Storage and transport	–25 to +65 °C
Setting range	
– Comfort temperature	10 to 40 °C
– Setback temperature	10 to 40 °C
– Frost protection temperature	5 °C
Power reserve during battery change	3 min

External H4 extension

Part no. 7197227

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



Specification

Rated voltage	230 V~
Output voltage	24 V~
Rated frequency	50 Hz
Power consumption	2.5 W
Load 24 V~ (max.)	10 W
Safety category	I
IP rating	IP 41
Permissible ambient temperature	
– Operation	0 to +40 °C Installation in living spaces or boiler rooms (standard ambient conditions)
– Storage and transport	–20 to +65 °C

Control units (cont.)

Vitotrol 100, type UTDB-RF

Part no. Z007692

Room temperature controller with integral wireless transmitter and receiver

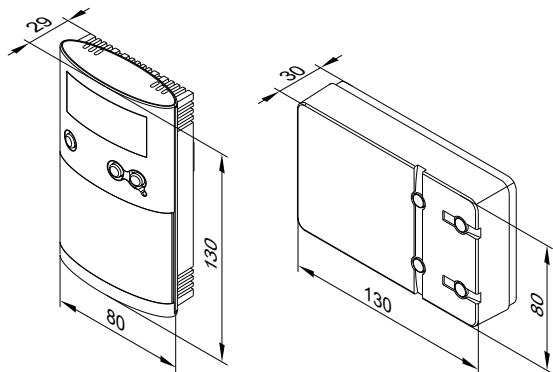
- With digital time switch
- With individual day and seven-day program
- Operation with user prompts:
 - 3 preselected time programs, individually adjustable
 - Constant manual mode with adjustable set room temperature
 - Frost protection mode
 - Holiday program
- With selector keys for party and economy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

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

Receiver with relay state indication.

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

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



Specification, room temperature controller

Rated voltage	3 V–
Transmission frequency	868 MHz
Transmission	< 10 mW
Range	approx. 25 to 30 m inside buildings, subject to construction
IP rating	IP 20 to EN 60529 Ensure through design/installation
Function type	RS type 1B to EN 60730-1
Permissible ambient temperature	
– Operation	0 to +40 °C
– Storage and transport	–25 to +65 °C
Setting range	
– Comfort temperature	10 to 40 °C
– Setback temperature	10 to 40 °C
– Frost protection temperature	5 °C
Power reserve during battery change	3 min

Specification, receiver

Operating voltage	230 V~± 10 % 50 Hz
Rated breaking capacity of the floating contact	
– max.	6(1) A, 230 V~
– min.	1 mA, 5 V–
IP rating	IP 20 to EN 60529 Ensure through design/installation
Safety category	II to EN 60730-1 subject to correct installation
Permissible ambient temperature	
– Operation	0 to +40 °C
– Storage and transport	–25 to +65 °C

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

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

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

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

Note

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

Vitotrol 200-A

Part no. Z008341

KM BUS subscriber

- Displays:
 - Room temperature
 - Outside temperature
 - Operating condition
- Settings:

Control units (cont.)

- Set room temperature for standard mode (normal room temperature)

Note

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

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

Installation location:

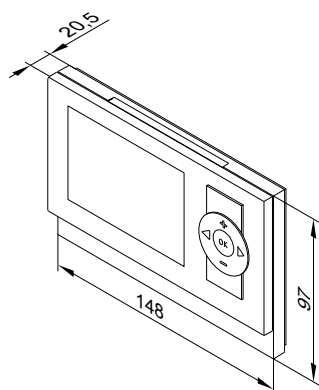
- Weather-compensated mode:
installation anywhere in the building
- Room temperature hook-up:
the integral room temperature sensor captures the actual room temperature and effects any necessary correction of the flow temperature.

The captured room temperature depends on the installation site:

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

Connection:

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



Specification

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

Notes

- If the Vitotrol 200-A is to be used for room temperature hook-up, site the device in a main living room (lead room).
- Connect a maximum of 2 Vitotrol 200-A units to the control unit.

Vitotrol 300-A

Part no. Z008342

KM BUS subscriber

- Displays:
 - Room temperature
 - Outside temperature
 - Operating program
 - Operating condition
 - Graphic illustration of the solar energy yield in conjunction with the solar control module, type SM1
- Settings:
 - Set room temperature for standard mode (normal room temperature) and reduced mode (reduced room temperature)
 - Set DHW temperature
 - Operating program, switching times for heating circuits, DHW heating and DHW circulation pump plus further settings via plain text menu on the display
- Party and economy mode can be enabled via the menu
- Integral room temperature sensor for room temperature hook-up (only for one heating circuit with mixer)

Installation location:

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

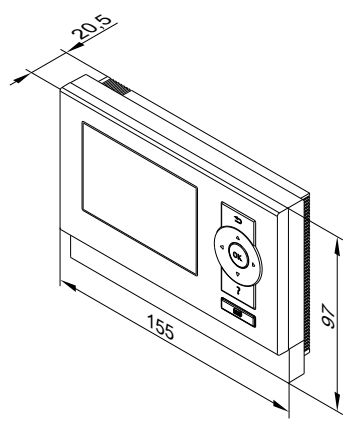
The captured room temperature depends on the installation site:

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

Connection:

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

Control units (cont.)



Specification

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

Information on Vitotrol 200-RF

Wireless remote control unit with integral wireless transmitter for operation with the wireless base station.
A Vitotrol 200-RF can be used for each heating circuit in a heating system.
The Vitotrol 200-RF can control one heating circuit.
Up to 3 wireless remote control units can be connected to the control unit.

Note

The wireless remote control **cannot** be combined with hardwired remote control units.

Vitotrol 200-RF

Part no. Z011219

Wireless subscriber

■ Displays:

- Room temperature
- Outside temperature
- Operating condition
- Wireless signal reception quality

■ Settings:

- Set room temperature for standard mode (normal room temperature)

Note

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

- Operating program

■ Party and economy mode can be enabled via keys

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

Installation location:

■ Weather-compensated mode:

Installation anywhere in the building

■ Room temperature hook-up:

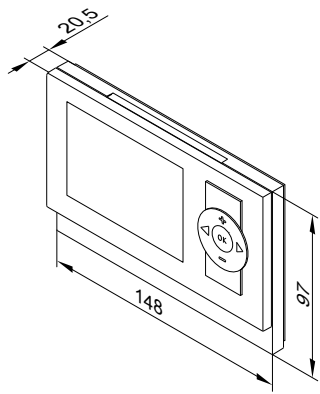
The integral room temperature sensor captures the room temperature and effects any necessary correction of the flow temperature.

The captured room temperature depends on the installation site:

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

Note

Observe the "Wireless accessories" technical guide.



Specification

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

Wireless base station

Part no. Z011413

KM-BUS subscribers

For communication between the Vitotronic control unit and Vitotrol 200-RF wireless remote control.

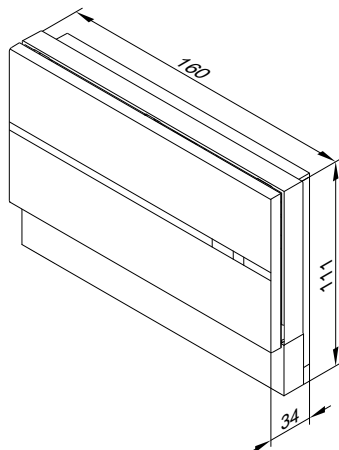
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Control units (cont.)

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

Connection:

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



Specification

Power supply via KM-BUS

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

Permissible ambient temperature

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

Wireless repeater

Part no. 7456538

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

Do not use more than one wireless repeater per Vitotronic control unit.

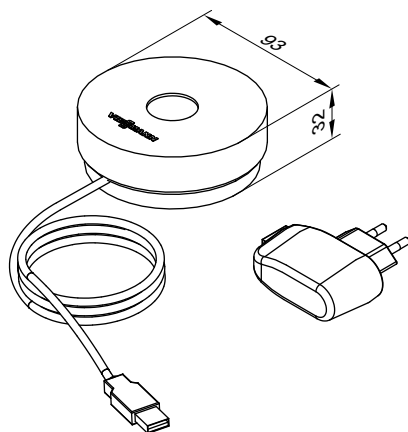
- For preventing strongly diagonal angles of penetration of the radio signals through steel reinforced concrete ceilings/floors and/or multiple walls
- For circumventing large metallic objects situated between the wireless components.

Specification

Power supply	230 V~/5 V $\overline{\text{=}}$ via plug-in power supply unit
Power consumption	0.25 W
Radio frequency	868 MHz
Lead length	1.1 m with plug
Safety category	II
IP rating	IP 20 to EN 60529; ensure through design/installation

Permissible ambient temperature

– Operation	0 to +55 °C
– Storage and transport	–20 to +75 °C



Room temperature sensor

Part no. 7438537

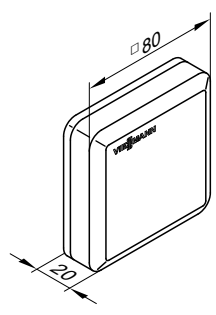
Separate room temperature sensor as supplement to the Vitotrol 300A; to be used if the Vitotrol 300A cannot be installed inside the main living room or in a suitable position for temperature capture and adjustment.

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

Connection:

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

Control units (cont.)



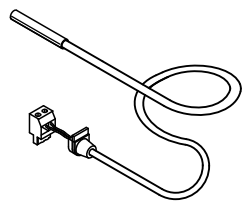
Specification

Protection class	III
IP rating	IP 30 to EN 60529; ensure through design/installation
Sensor type	Viessmann NTC 10 kΩ at 25 °C
Permissible ambient temperature	
– Operation	0 to +40 °C
– Storage and transport	–20 to +65 °C

Immersion temperature sensor

Part no. 7438702

To capture a temperature in a sensor well



Specification

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

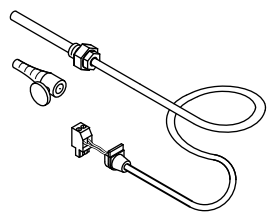
Flue gas temperature sensor

Part no. 7452531

For flue gas temperature scanning, flue gas temperature monitoring and service display, if the set temperature has been exceeded. With threaded cone.

Installation on the flue pipe. The distance from the boiler must be approx. 1.5 times the flue pipe diameter, measured from the boiler back edge to the chimney.

- Condensing boilers with Viessmann balanced flue system:
Order the balanced flue pipe with connector for the flue gas temperature sensor separately.
- For condensing boilers with on-site flue pipe:
The aperture required for the flue pipe installation must be designed and approved on site. Install the flue gas temperature sensor into a stainless steel sensor well (on-site).



Specification

Cable length	3.5 m, fully wired
IP rating	IP 60 to EN 60529; ensure through design/installation
Sensor type	Viessmann NTC 20 kΩ, at 25 °C
Permissible ambient temperature	
– Operation	0 to +250 °C
– Storage and transport	–20 to +70 °C

Radio clock receiver

Part no. 7450563

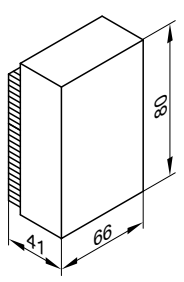
For receiving the DCF 77 time signal (location: Mainflingen near Frankfurt/Main).

Radio controlled setting of time and date.

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

Connection:

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



5822441

Control units (cont.)

External extension H5

Part no. 7199249

Function extension in a casing.

With plug [150] for the following functions:

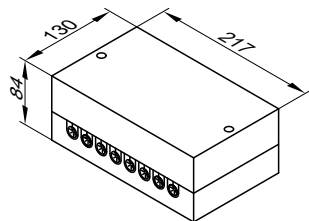
- External demand and blocking

or

Connection of a flue gas damper

- Connection of additional safety equipment

Cable 2.0 m long with plugs "X12" and [41] for connection to the control unit.



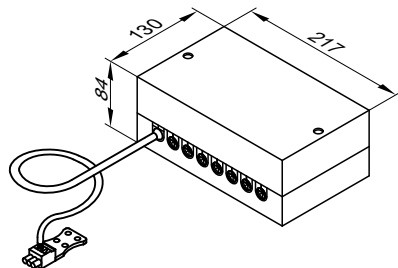
Specification

Rated voltage	230 V~
Rated frequency	50 Hz
Rated current	6 A
Safety category	I
IP rating	IP 20 to EN 60529 Ensure through design/installation
Permissible ambient temperature	
– Operation	0 to +40 °C
– Storage and transport	–20 to +65 °C

KM BUS distributor

Part no. 7415028

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



Specification

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

Mixer extension kit with integral mixer motor

Part no. ZK02940

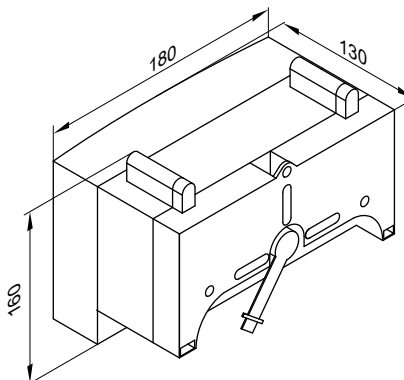
KM BUS subscriber

Components:

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

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

Mixer PCB with mixer motor

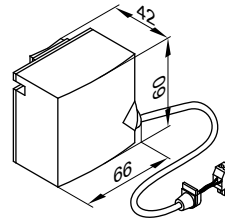


Control units (cont.)

Specification, mixer PCB with mixer motor

Rated voltage	230 V~
Rated frequency	50 Hz
Rated current	2 A
Power consumption	5.5 W
IP rating	IP 32D to EN 60529; ensure through design/installation
Safety category	I
Permissible ambient temperature	
– Operation	0 to +40 °C
– Storage and transport	–20 to +65 °C
Rated breaking capacity of the relay output for heating circuit pump [20]	2(1) A, 230 V~
Torque	3 Nm
Runtime for 90° <	120 s

Flow temperature sensor (contact temperature sensor)



Secured with a tie.

Specification, flow temperature sensor

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

Mixer extension kit for separate mixer motor

Part no. ZK02941

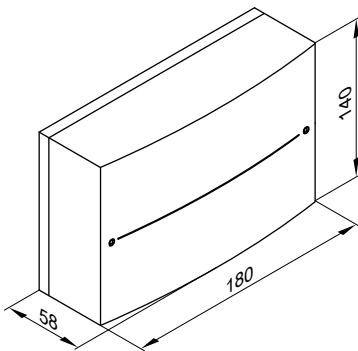
KM BUS subscriber

For connecting a separate mixer motor

Components:

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

Mixer PCB



Specification, mixer PCB

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

Permissible ambient temperature

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

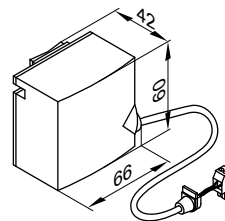
Rated relay output breaking capacity

- Heating circuit pump [20] 2(1) A, 230 V~
- Mixer motor 0.1 A, 230 V~

Required runtime of the mixer motor for 90° <

approx. 120 s

Flow temperature sensor (contact temperature sensor)



Secured with a tie.

Specification, flow temperature sensor

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

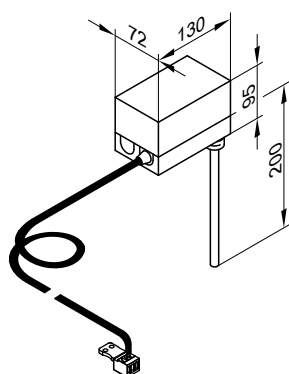
Immersion thermostat

Part no. 7151728

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

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

Control units (cont.)



Specification

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 enclosure
Stainless steel sensor well (male thread)	R ½ x 200 mm
DIN reg. no.	DIN TR 1168

Contact thermostat

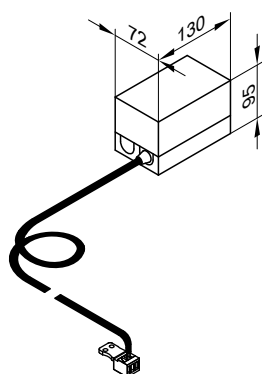
Part no. 7151729

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

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

Specification

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



Solar control module, type SM1

Part no. Z014470

Specification

Functions

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

To implement the following functions, also order immersion temperature sensor, part no. 7438702:

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

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

Structure

The solar control module contains:

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

Collector temperature sensor

For connection inside the appliance

On-site extension of the connecting lead:

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

Control units (cont.)

Collector temperature sensor specification

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

Cylinder temperature sensor

For connection inside the appliance

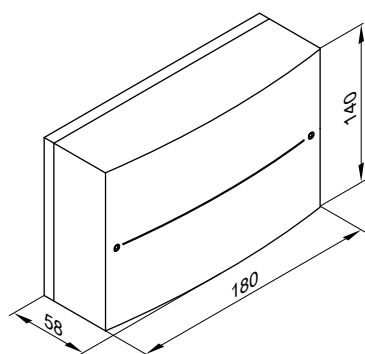
On-site extension of the connecting lead:

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

Cylinder temperature sensor specification

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

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



Solar control module specification

Rated voltage	230 V~
Rated frequency	50 Hz
Rated current	2 A
Power consumption	1.5 W
Protection class	I
IP rating	IP 20 to EN 60529; ensure through design/installation.
Function type	Type 1B to EN 60730-1
Permissible ambient temperature	
– Operation	0 to +40 °C, use in the living space or boiler room (standard ambient conditions)
– Storage and transport	–20 to +65 °C
Rated relay output breaking capacity	
– Semi-conductor relay 1	1 (1) A, 230 V~
– Relay 2	1 (1) A, 230 V~
– Total	Max. 2 A

EA1 extension

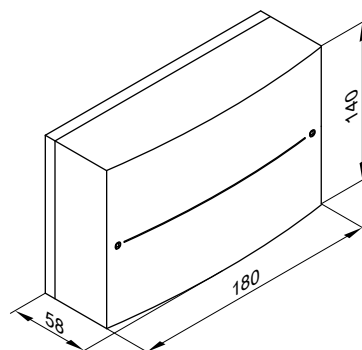
Part no. 7452091

Function extension inside enclosure for wall mounting

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

- 1 switching output (floating changeover contact)
 - Central fault message output
 - Switching the feed pump to a substation
- 1 analogue input (0 to 10 V)
 - Specifying the set boiler water temperature
- 3 digital inputs
 - External changeover of the operating status for heating circuits 1 to 3 with weather-compensated control unit
 - External blocking
 - External blocking with central fault message
 - Minimum boiler water temperature demand

- Fault messages
- Brief operation of the DHW circulation pump with weather-compensated control units



Control units (cont.)

Specification

Rated voltage	230 V~
Rated frequency	50 Hz
Rated current	2 A
Power consumption	4 W
Rated breaking capacity of the relay output	2(1) A, 250 V~
Safety category	I
IP rating	IP 20 D to EN 60529, ensure through design/installation
Permissible ambient temperature	
– Operation	0 to +40 °C Installation in living spaces or boiler rooms (standard ambient conditions)
– Storage and transport	–20 to +65 °C

Vitoconnect 100, type OPTO1

Part no. Z014494

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

Functions when operating with the ViCare app

- Calling up the temperatures of connected heating circuits
- Intuitive adjustment of desired temperatures and time programs for central heating and DHW heating
- Easy transmission of system data, e.g. fault messages via email or telephone communication with the heating contractor
- Heating system fault reporting by push notification

The ViCare app supports the following end devices:

- End devices with Apple iOS operating system
- End devices with Google Android operating system

Note

- For compatible versions, see *App Store* or *Google Play*
- For further information, see www.vicare.info and technical guide "Connectivity with WLAN and Vitoconnect".

Functions when operating with Vitoguide

- Monitoring of heating system following enabling of the system by the system user
- Access to operating programs, set values and time programs
- Scanning system information for all connected heating systems
- Display and forwarding of fault messages in plain text

Vitoguide supports the following end devices:

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

Note

For more information, see www.vitoguide.info.

Standard delivery

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

On-site requirements

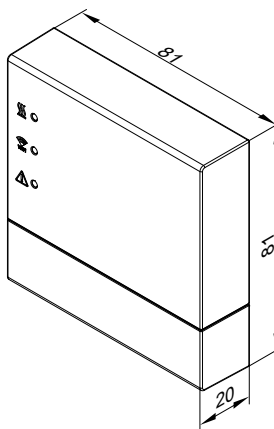
- Compatible heating system with Vitoconnect 100, type OPTO1

Note

For supported control units, see www.viessmann.com/vitoconnect

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

Specification



Specification

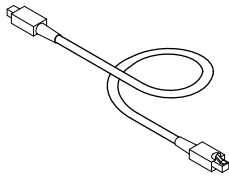
Power supply via plug-in power supply unit	230 V~/5 V=
Rated current	1 A
Power consumption	5 W
Protection class	II
IP rating	IP 30 to EN 60529; ensure through design/installation.
Permissible ambient temperature	
– Operation	–5 to +40 °C Installation in living spaces or installation rooms (standard ambient conditions)
– Storage and transport	–20 to +60 °C
WLAN frequency	2.4 GHz

Control units (cont.)

LON connecting cable for data exchange between control units

Part no. 7143495

Cable length 7 m, fully wired



Connecting cable extension

- Installation spacing 7 to 14 m:
 - 2 connecting cables (7.0 m long)
Part no. 7143495
 - 1 LON coupling RJ 45
Part no. 7143496
- Installation spacing 14 to 900 m with plug-in connectors:
 - 2 LON plug-in connectors
Part no. 7199251
 - 2-core cable, CAT5, screened or JY(St) Y 2 x 2 x 0.8
On site
- Installation spacing 14 to 900 m with junction boxes:
 - 2 connecting cables (7.0 m long)
Part no. 7143495
 - 2-core cable, CAT5, screened or JY(St) Y 2 x 2 x 0.8
On site
 - 2 LON sockets RJ 45, CAT6
Part no. 7171784

Terminator (2 pce)

Part no. 7143497

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

LON communication module

Part no. 7172173

PCB for exchanging data with Vitotronic 200-H heating circuit control units and for connecting to higher level building management systems.

Appendix

10.1 Regulations / Directives

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

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

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.

Maintenance should be carried out 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.

Keyword index

A		S	
Anti-corrosion agents.....	68	Safety valve.....	50
B		Slope.....	84
Boiler water temperature sensor.....	76, 77	Solar control module	
C		– Specification.....	95
Carbon monoxide.....	63	Specification.....	10
CO limiter.....	63	– Solar control module.....	94, 95
Condensate.....	67	– Vitorondens 200-T, type BR2A.....	6
Condensate connection.....	67	– Vitorondens 222-F, type BS2A.....	15
Constant temperature control		T	
– Programming unit.....	77	Temperature sensor	
Contact thermostat.....	94	– Boiler water temperature.....	77
Cylinder temperature sensor.....	76	– Room temperature sensor.....	90
D		Temperature sensors	
DHW connections.....	50	– Boiler water temperature sensor.....	76
Divicon.....	51	– Cylinder temperature sensor.....	76
Drinking water filter.....	50	– Flue gas temperature sensor.....	91
E		– Outside temperature sensor.....	77
EA1 extension.....	95	Thermostat	
EnEV.....	79, 82, 84	– Contact temperature.....	94
Expansion vessel.....	73	– Immersion temperature.....	93
F		V	
Flue gas temperature sensor.....	91	Vitocell 300-W adjacent to the boiler	
Fuel.....	66	– Pressure drop on the DHW side.....	42
H		Vitotrol	
Heating circuit distributor.....	51	– 200-A.....	87
Heating curves.....	84	– 200-RF.....	89
Hydraulic connection.....	68	– 300-A.....	88
I		Vitotrol 100	
Immersion thermostat.....	93	– UTA.....	85
K		– UTDB.....	86
KM BUS distributor.....	92	– UTDB-RF.....	87
L		W	
Level.....	84	Weather-compensated control unit	
Low water indicator.....	72	– Functions.....	83
M		Wireless components	
Mixer extension		– Wireless base station.....	89
– Integral mixer motor.....	92	– Wireless remote control.....	89
– Separate mixer motor.....	93	– Wireless repeater.....	90
Mixer extension kit			
– Integral mixer motor.....	92		
– Separate mixer motor.....	93		
N			
Neutralisation.....	67		
O			
Oil supply.....	73		
Outside temperature sensor.....	77		
R			
Room temperature controller.....	86, 87		
Room temperature sensor.....	90		
Room thermostat.....	85, 86, 87		



Subject to technical modifications.

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