

Vitorondens 200-T BR2A

Vitorondens 200-T J2RA

Vitoladens 300-C BC3B/J3RB

Vitoladens 300-T 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)

VITOLADENS 300-C Type BC3B/J3RB

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)

VITOLADENS 300-T Type VW3B

Oil condensing boiler
With Vitoflame 300 blue flame oil burner (35.4 to 53.7 kW)

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

Can be operated 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 SPEC 51603-6-EL A Bio 20: **Low sulphur** EL fuel oil with blends of up to **20 %** bio-components (FAME) and

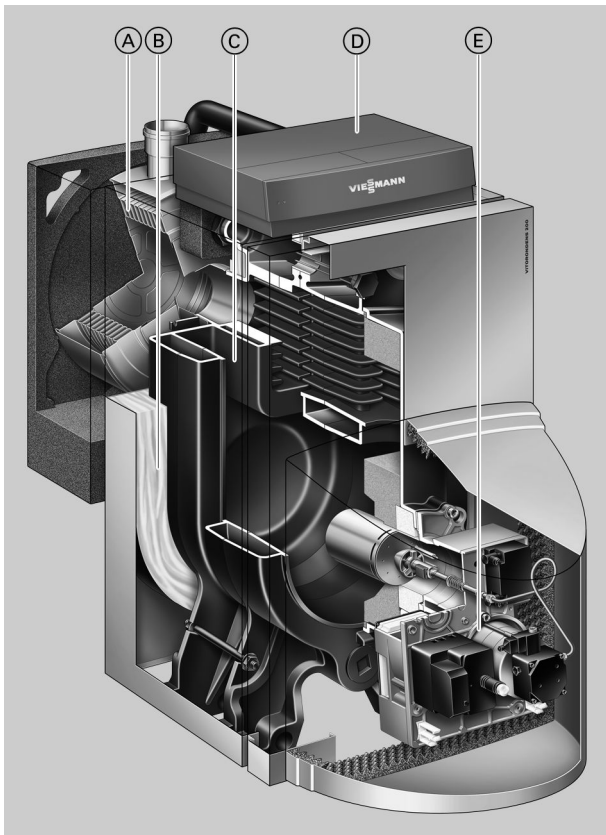
paraffinic fuel oil to DIN TS 51603-8 (e.g. HVO, PTL, etc.)

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1.1 Product description



- (A) Inox-Radial heat exchanger
- (B) Highly effective thermal insulation
- (C) Eutectoplex heating surface made from homogeneous special 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 option to utilise greenhouse gas-reduced liquid fuel types results in lower fossil CO₂ emissions. By operating the Vitorondens 200-T, you are making a personal contribution to active climate protection and preparing yourself for the future.

The Eutectoplex heating surface made from cast sections ensure high operational reliability. Stress fractures are virtually excluded, as an even heat flux is guaranteed. Wide water galleries prevent deposits and boiling noises.

Flexible gaskets permanently seal the individual sections on the secondary side. Also, the horizontal layout of the hot gas flues permits thorough and easy cleaning.

The downstream corrosion-resistant stainless steel Inox-Radial heat exchanger ensures efficient heat recovery through the condensation of flue gas without any deposits.

The 1-stage Unit blue flame oil burner is synonymous with particularly clean, environmentally responsible and efficient combustion.

Benefits at a glance

- Seasonal central heating energy efficiency up to 94 % (H_s) [gross cv] (label A).
- Eutectoplex heating surface for high operational reliability and a long service life.
- Cast sections with flexible gaskets for durable sealing on the hot gas side.
- 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 SPEC 51603-6-EL A Bio 20: Low sulphur EL fuel oil with blends of up to 20 % bio-components (FAME) and paraffinic fuel oils (e.g. HVO, PTL, etc.) to DIN TS 51603-8 in proportions of up to 100 %.



GREEN FUELS READY

- Quiet operation thanks to externally fitted silencer.
- Horizontal hot gas flue layout enables simple and affordable maintenance.
- Web-enabled via Vitoconnect (accessories) for operation and service using Viessmann apps.

Delivered condition

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

Vitorondens 200-T (cont.)

Tested quality



CE designation according to current EC directives.



ÖVGW Quality Mark for gas and water equipment

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					
Handling 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
Total 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
Height of plinth	mm	250	250	250	250	250	250
Height of below-boiler DHW cylinder							
– Capacity 130 to 200 litres	mm	654	654	654	654	654	654
– Capacity 350 litres	mm	–	–	786	786	786	786
Weight of 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							
Burner weight	kg	12	12	12	12	13	13
Boiler capacity	l	27	27	35	35	44	44
Boiler water capacity	l	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
Power consumption							
– 100 % of rated heating output	W	226	215	235	235	320	320
– 30 % of rated heating output	W	60	66	73	80	113	113
– Appliance in standby	W	3	3	3	3	3	3
Boiler connections							
Boiler flow and return	G	1½	1½	1½	1½	1½	1½
Safety connection (Safety valve on safety equipment block)	G	1½	1½	1½	1½	1½	1½
Drain	G	1½	1½	1½	1½	1½	1½
Condensate drain	∅ mm	20	20	20	20	20	20
Suction and return line	R	¾	¾	¾	¾	¾	¾
Burner oil hoses							
Oil throughput	kg/h	1.7	2	2.5	2.9	3.5	4.6
	l/h	2	2.4	2.9	3.4	4.1	5.1
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 with EL fuel oil	kg/h	31	38	46	56	68	85
Maximum amount of condensate to DWA-A 251	l/h	1.9	2.3	2.7	3.4	4.1	5.1
Flue gas connection	∅ mm	80	80	80	80	110	110
Ventilation air connection	∅ mm	80	80	80	80	80	80
Gas capacity of boiler	l	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	dB(A)	56	57	58	57	61	60
Energy efficiency class		A	A	A	A	A	A
Seasonal central heating energy efficiency^{*3}	ηs %	90	90	91	91	92	92

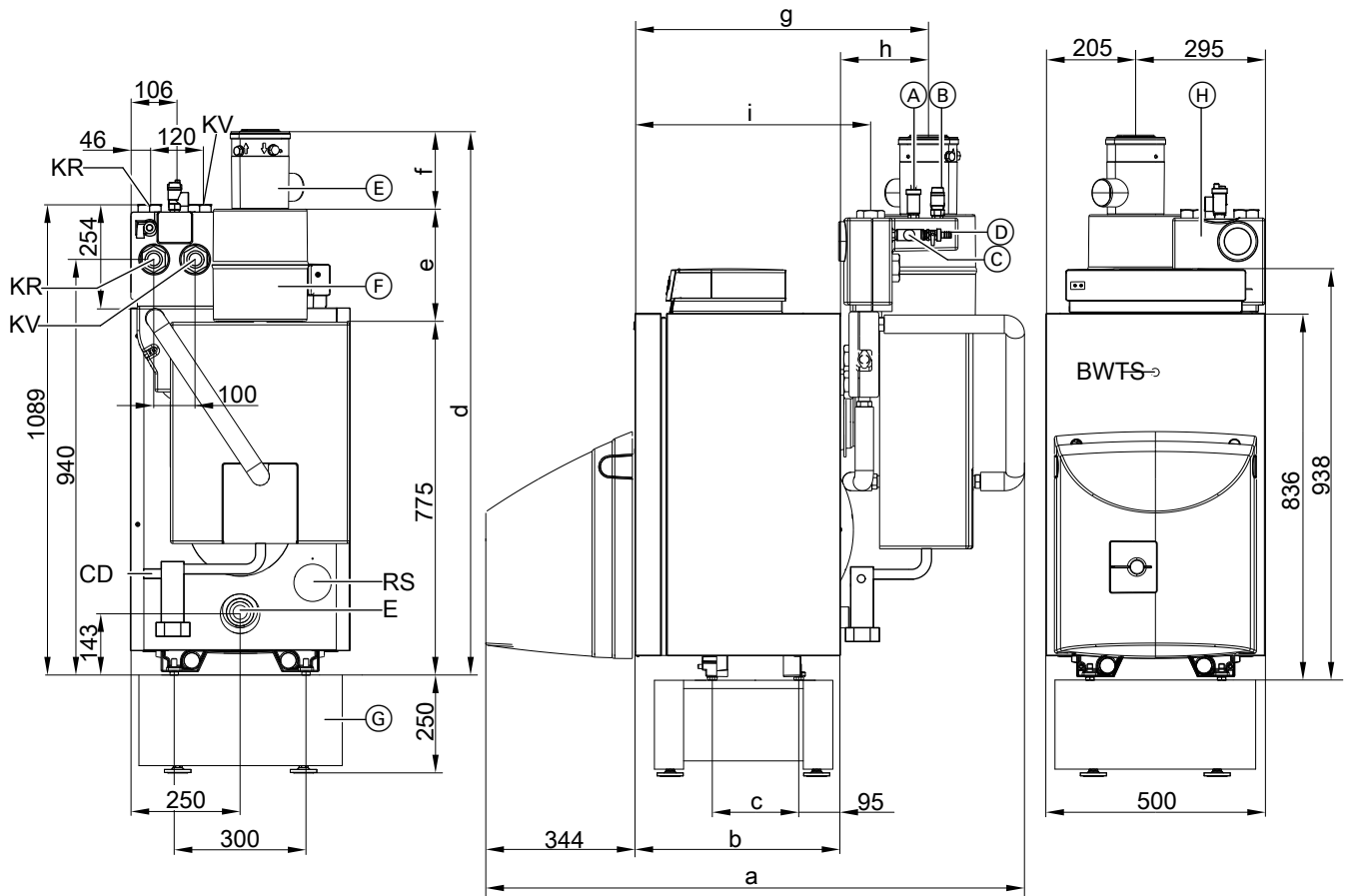
^{*1} Values for calculating the size of the flue system to EN 13384 relative to 13 % CO₂ for EL fuel oil.

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

^{*2} Observe when sizing the chimney.

^{*3} Figure for the appliance only (without control unit): For the final energy efficiency figure, the system label must be calculated.

Vitorondens 200-T (cont.)



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

Note

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

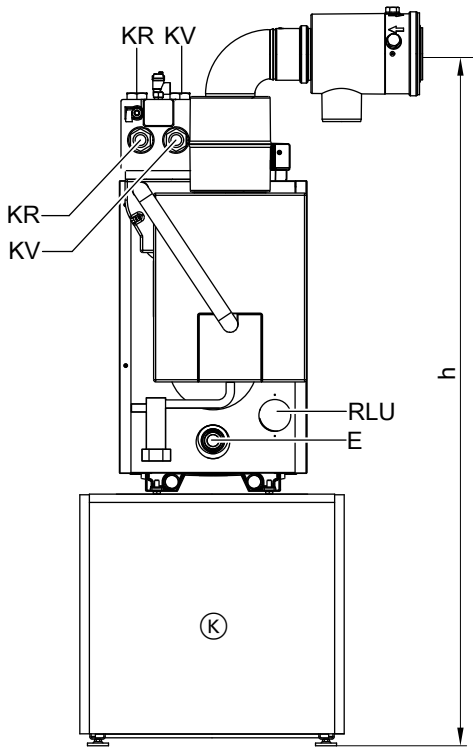
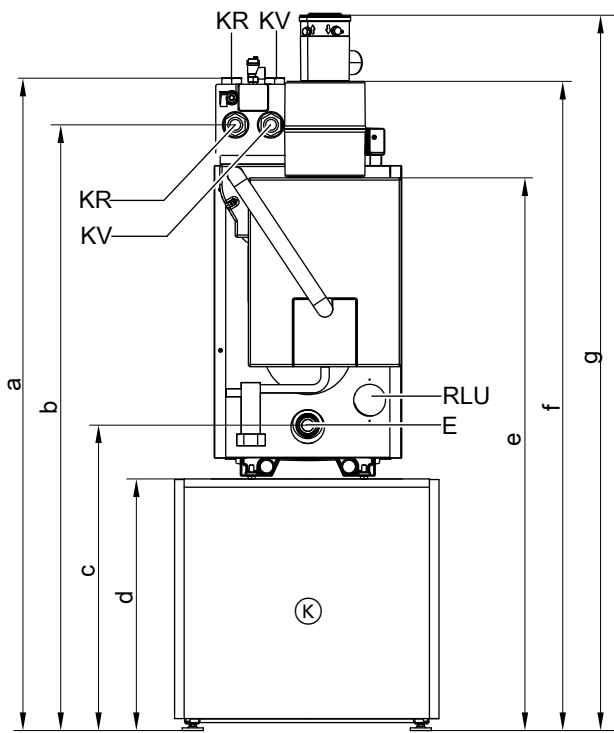
- System size \varnothing 80 mm: 1545 mm
- System size \varnothing 110 mm (42.8 and 53.7 kW): 1777 mm

Table of 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
g	mm	677	677	814	814	1048	1048
h	mm	165	165	165	165	216	216
i	mm	540	540	677	677	849	849

Vitorondens 200-T (cont.)

1



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

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

Vitorondens 200-T (cont.)

Table of dimensions

Rated heating output	kW	20.2	24.6	28.6 and 35.4		42.8 and 53.7	
With DHW cylinder below	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 centre of bend)	mm	1952	1952	1952	2084	2180	2312
h (with horizontal flue gas connection)	mm	1772	1772	1772	1904	—	—

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

To reduce the installed height, the boiler can be ordered with accessories for horizontal room sealed operation (comprising 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		
Handling dimensions				
Length	mm	710	710	710
Width	mm	480	480	480
Height	mm	950	950	950
Total dimensions				
Total length (incl. heat exchanger and thermal insulation)	mm	1710	1710	1710
Total width	mm	600	600	600
Total height	mm	1149	1149	1149
Height of plinth	mm	250	250	250
Weight of boiler body	kg	237	237	237
Burner weight	kg	21	21	21
Total weight	kg	348	348	348
Boiler incl. thermal insulation, heat exchanger, burner and boiler control unit				
Boiler capacity	l	63	63	63
Boiler water capacity	l	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 (Safety valve on safety equipment block)	G	1½	1½	1½
Drain	G	1½	1½	1½
Condensate drain	∅ mm	20	20	20
Suction and return line on the supplied oil hoses	R	¾	¾	¾
Oil throughput	kg/h	5.5	7.0	8.8
	l/h	6.5	8.2	10.3
Power consumption				
– 100 % of rated heating output	W	552	562	577
– 30 % of rated heating output	W	232	245	265
– Appliance in standby	W	4	4	4
Flue gas parameters^{*4}				
Temperature at				
– 30 °C return temperature	°C	38	38	38
– 60 °C return temperature	°C	59	58	61
Mass flow rate with EL fuel oil	kg/h	107	136	170
Maximum amount of condensate to DWA-A 251	l/h	6.4	8.2	10.2
Flue gas connection	∅ mm	110	110	110
Gas capacity of boiler	l	82	82	82
Available draught^{*5}	Pa	100	100	100
	mbar	1.0	1.0	1.0
Sound power level	dB(A)	70	72	80
Energy efficiency class		A	A	A
Seasonal central heating energy efficiency^{*6}	η _s %	91	92	91

Note

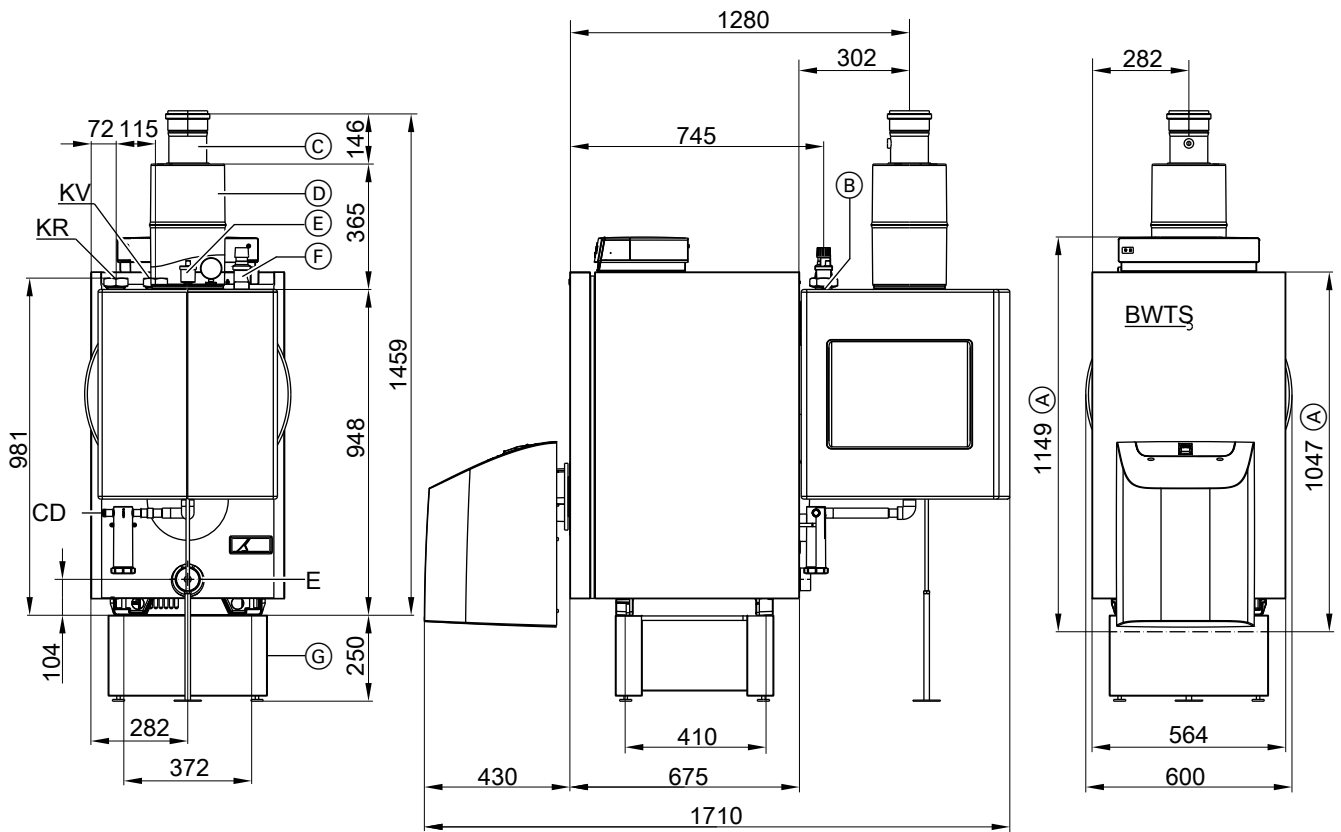
Vitorondens 200-T, type J2RA, should be provided with sound attenuation if sited near rooms that are sensitive to noise. A sound insulation kit for open flue operation (see page 52) can be used, which reduces sound emissions by around 6 dB(A).

^{*4} Values for calculating the size of the flue system to EN 13384 relative to 13 % CO₂ for EL fuel oil.

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

^{*5} Observe when sizing the chimney.

^{*6} Figure for the appliance only (without control unit): For the final energy efficiency figure, the system label must be calculated.



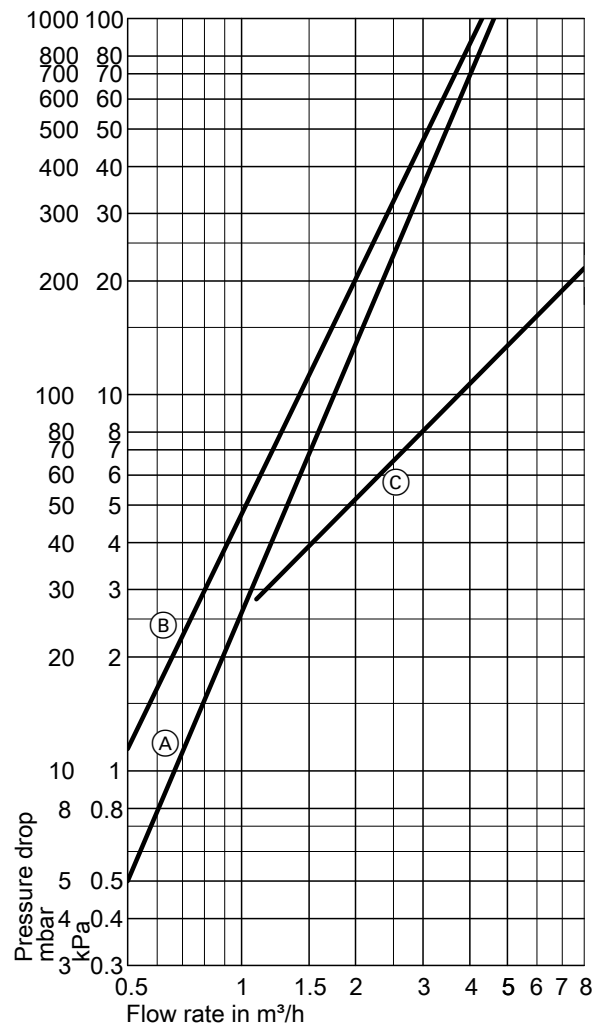
- | | |
|---|-------------------------------------|
| (A) Dimensions incl. adjustable feet (when siting without a plinth) | (F) Safety valve |
| (B) Boiler flow/return distributor with integral safety equipment block | (G) Plinth |
| (C) Boiler flue connection | E Drain |
| (D) Silencer | KTS Boiler 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 out over the front of the boiler. With the Vitorondens 67.6 to 107 kW, we recommend also ordering a boiler plinth; see page 51. If a boiler plinth is not ordered, the appliance must be sited on a suitable base.

Vitorondens 200-T (cont.)

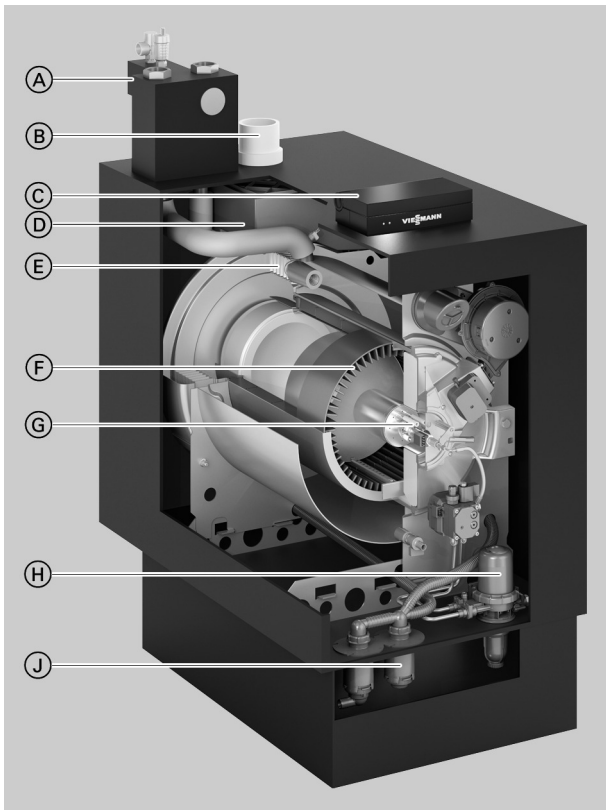
Pressure drop on the heating water side



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) Safety assembly included in standard delivery
- (B) Ventilation air supply and flue outlet 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
- (H) Integral oil filter
- (J) Integral trap with dirt separator

The Vitoladens 300-C is a highly efficient oil condensing boiler or boiler for liquid fuels 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.

Its extremely economical use of valuable fuel oil and the option to utilise greenhouse gas-reduced liquid fuel types such as FAME, PTL (Power To Liquid), etc. also results in lower fossil CO₂ emissions.

This means that by operating the Vitoladens 300-C, you are making a personal contribution to active climate protection.

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 losses.

The structure and design 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 %.

Service parts that are accessed easily from the front ensure low service costs and save you money. The demand-dependent modulating Compact blue flame burner in the Vitoladens 300-C matches its output to the current heat demand, and is economical and efficient.

The burner works in room sealed or open flue operation, enabling flexible siting of the oil condensing boiler. In the case of modulating burners, adjustment is carried out by the heating contractor solely via the control unit.

The design panels, delivered separately, reduce the risk of dirt/damage during transportation and allow you to choose between the colours Vitopearlwhite or Vitographite.

Hydraulic connections and connections on the flue gas side on the Vitoladens 300-C are at the top. It is largely prefitted at the factory and takes little time to install.

A combination with the Vitocell 300-H DHW cylinder is ideal, to form a single unit with the Vitoladens 300-C.

How the modulating pressure-jet oil burner works

The modulating pressure-jet oil burner for the Vitoladens 300-C has two essential components that enable output modulation: A motor pump unit and an electronics box. The motor pump unit varies 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.

Essential for this is the signal of the motor pump unit's integral pressure sensor, which is processed in the electronics box, and the corresponding optimum fan speed is set.

External influences on combustion, such as contamination, can be reliably counteracted 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 setting under full load and partial load via the control unit. As a result, the nominal curve of the oil pressure/air relationship stored on the control unit is matched to the current on-site conditions.

There is no setting option on the fan or oil pump.

Benefits at a glance

- Seasonal central heating energy efficiency up to 95 % (H_s) [gross cv] (label A)
- Best 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 thanks to an integral silencer and double casing as a result of the new casing concept.
- Easy to use Vitotronic 200 control unit with plain text and graphic display

Vitoladens 300-C (cont.)

- All commercially available EL fuel oils can be used. Also for fuel oil DIN SPEC 51603-6 EL A Bio 20: Low sulphur EL fuel oil with blends of up to 20 % bio-components (FAME) and paraffinic fuel oils (HVO, PTL, etc.) to DIN TS 51603-8 in proportions of up to 100 %



- All service parts (incl. oil filter and trap) accessible from the front, for quick and easy maintenance.
- Safety assembly included in standard delivery
- Easier handling and extended transport accessories
- Web-enabled via Vitoconnect (accessories) for operation and service using Viessmann apps.
- Vitoppearlwhite and Vitographite are available as colour options

Delivered condition

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.

With fitted boiler control unit and thermal insulation.

Packed separately:

- Programming unit
- Boiler flue connection (supplied with the design panels)
- Distributor casing with safety assembly on the heating water side (safety equipment block)
- Design panels, available in Vitoppearlwhite or Vitographite depending on order
- Oil filter and trap with dirt separator (supplied with the design panels)
- Locking ring fitting for oil connection line

Tested quality

CE 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.

2.2 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	—

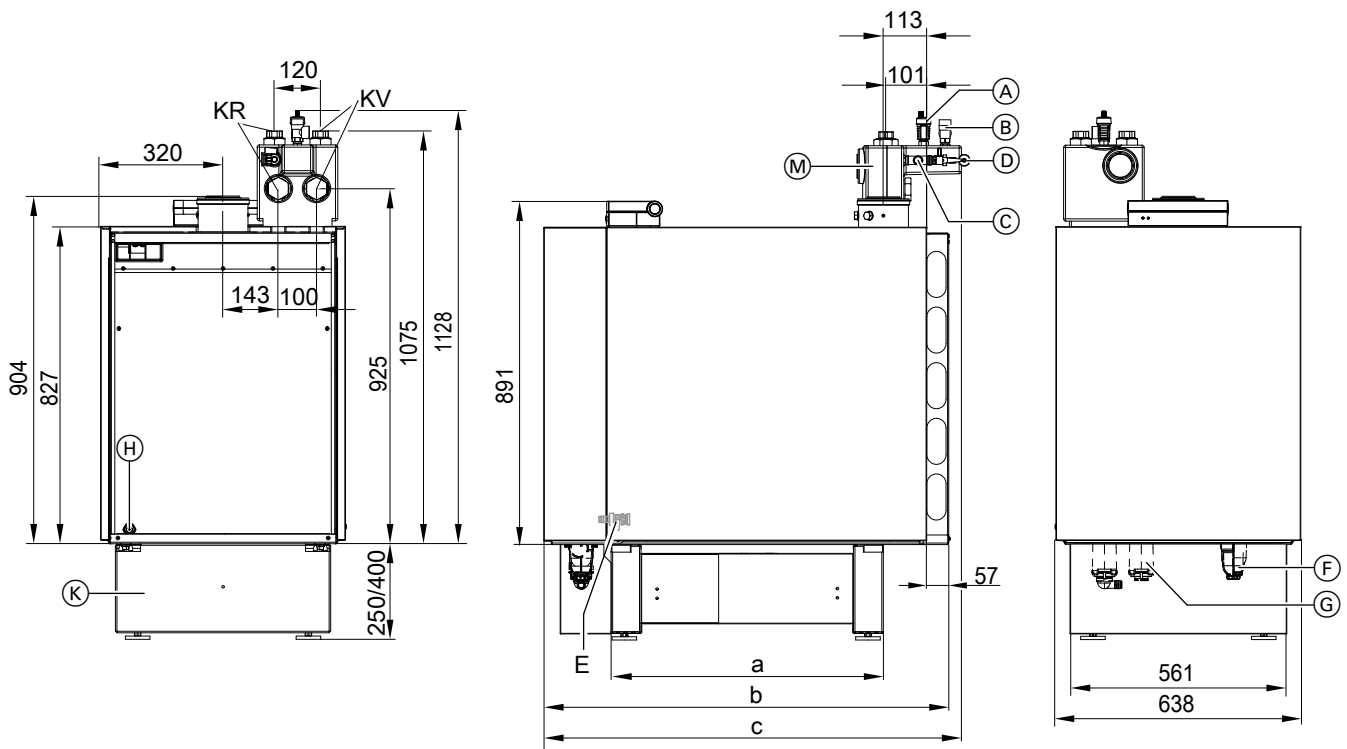
2.3 Specification

Type		BC3B	BC3B	BC3B	J3RB	J3RB	J3RB
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 to 19.3	10.3 to 23.6*7	12.9 to 28.9*7
$T_F/T_R = 80/60\text{ °C}$	kW	12/18	15/22	18/27	9.6 to 18	9.6 to 22	12 to 27
Rated heat input	kW	12.5/18.7	15.6/22.9	18.7/28.1	10.0 to 18.7	10.0 to 22.9	12.5 to 28.1
Product ID		CE-2456BS104.4			CE-2456CO106.2		
Dimensions							
Total length (dim. c)	mm	978	978	1096	978	978	1096
Total width	mm	638	638	638	638	638	638
Total height (in operation)	mm	894	894	894	894	894	894
– Height (control unit in operating position)	mm	998	998	998	998	998	998
Height of plinth	mm	250/400	250/400	250/400	250/400	250/400	250/400
Height with DHW cylinder below the boiler							
– Capacity 130 to 200 l	mm	654	654	654	654	654	654
Total weight	kg	178	178	198	178	178	198
Central heating boiler with thermal insulation, burner, boiler control unit, design panels, oil filter, trap and safety equipment block							
Transport weight	kg	155	155	175	155	155	175
Central heating boiler incl. thermal insulation and burner							
Power consumption							
– 100 % of rated heating output	W	180	195	220	105	160	190
– 30 % of rated heating output	W	58	68	75	36	42	46
Appliance in standby mode	W	6	6	6	6	6	6
Boiler water capacity (central heating 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 gasket	G	1½	1½	1½	1½	1½	1½
– with the 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
Oil line connection	G	¾	¾	¾	¾	¾	¾
Oil throughput	kg/h	1.6	1.9	2.4	1.6	1.9	2.4
	l/h	1.9	2.2	2.8	1.9	2.2	2.8
Flue gas parameters*8							
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 with EL fuel oil	kg/h	19.3/28.8	24.5/35.9	28.8/43.1	14.5 to 28.8	14.5 to 35.9	19.5 to 43.1
Maximum amount of condensate 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	125	125	125	125	125	125
Available draught*9	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 15036-1 / ISO 3744)							
– in room sealed operation	dB(A)	55 to 60	55 to 60	55 to 60	52 to 60	52 to 60	52 to 60
– in open flue operation	dB(A)	59 to 66	59 to 65	59 to 66	53 to 65	53 to 66	53 to 65
Energy efficiency class		A	A	A	A	A	A
Seasonal central heating energy efficiency (ηs)*10	%	92	92	92	93	93	93

*7 Cyclical control behaviour of the oil pump reduces the maximum amount of energy supplied per h:

- With J3RB-24 by 6.4 % as the calculated value relative to the rated heating output or rated heat input. Rated heating output: Max. 22.1 kWh per h at 50/30 °C and max. 20.6 kWh per h at 80/60 °C.

- With J3RB-29 by 9.7 % as the calculated value relative to the rated heating output or rated heat input. Rated heating output: Max. 26.1 kWh per h at 50/30 °C and max. 24.4 kWh per h at 80/60 °C.



- | | |
|---|--------------------------------|
| (A) Air vent valve | (H) Connection for oil supply |
| (B) Safety valve (3 bar or 0.3 MPa) | (K) Plinth |
| (C) Connection for diaphragm expansion vessel | (M) Safety equipment block |
| (D) Fill valve | KR Boiler return |
| (F) Oil filter | KV Boiler flow |
| (G) Trap with dirt separator | E Central heating boiler drain |

Note

Trap and oil filter require siting in a higher position. We therefore recommend that you also order a boiler plinth (K) for installation without a cylinder below the appliance. The plinth is available in heights 250 or 400 mm.

If a plinth is not ordered, the appliance must be sited on a suitable base.

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

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

*7 Cyclical control behaviour of the oil pump reduces the maximum amount of energy supplied per h:

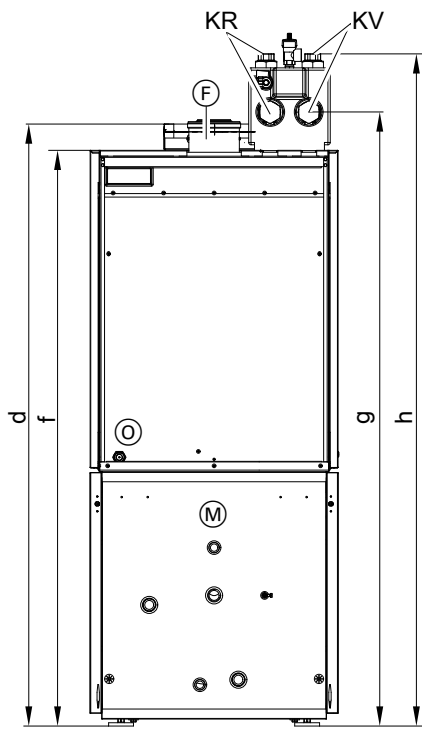
- With J3RB-24 by 6.4 % as the calculated value relative to the rated heating output or rated heat input. Rated heating output: Max. 22.1 kWh per h at 50/30 °C and max. 20.6 kWh per h at 80/60 °C.

- With J3RB-29 by 9.7 % as the calculated value relative to the rated heating output or rated heat input. Rated heating output: Max. 26.1 kWh per h at 50/30 °C and max. 24.4 kWh per h at 80/60 °C.

*9 Observe when sizing the chimney.

*10 Figure for the appliance only (without control unit): For the final energy efficiency figure, the system label must be calculated.

Vitoladens 300-C (cont.)

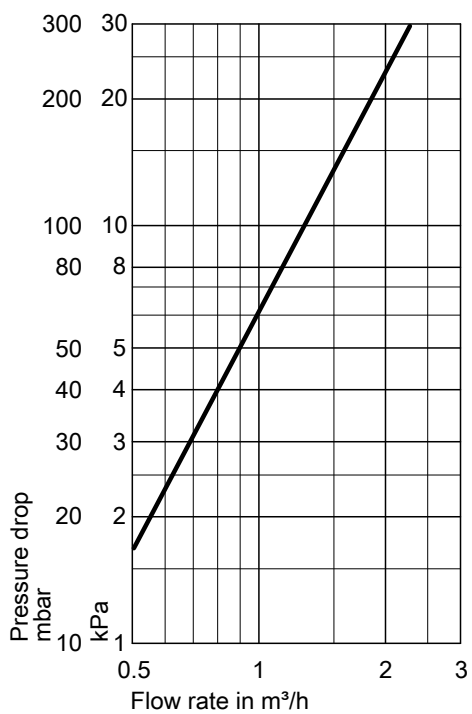


- (F) Balanced flue connection
- (M) DHW cylinder, Vitocell 100-H or Vitocell 300-H
- (O) Connection for oil supply
- KR Boiler return
- KV Boiler flow

Table of dimensions

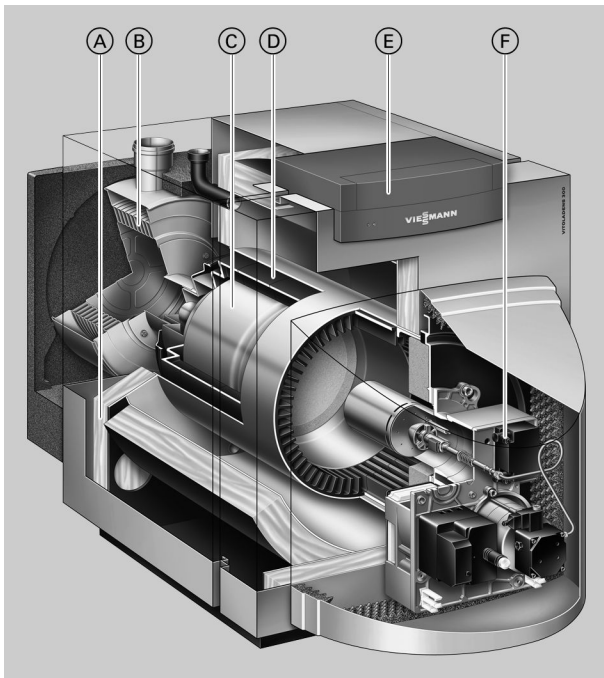
Rated heating output ($T_F/T_R=50/30\text{ }^\circ\text{C}$)	kW	19.3	23.6	28.9
a	mm	598	598	710
b	mm	937	937	1055
c	mm	978	978	1096
With DHW cylinder below	Litres	130 to 200	130 to 200	130 to 200
d	mm	1548	1548	1548
f	mm	1483	1483	1483
g	mm	1580	1580	1580
h	mm	1730	1730	1730

Pressure drop on the heating water side



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

3.1 Product description



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

The Vitoladens 300-T is the most popular oil condensing boiler in the world, and comes at a particularly attractive price.

For the output range 35.4 to 53.7 kW, the Vitoladens 300-T offers an ideal solution for utilising 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 is synonymous with particularly clean, environmentally responsible and efficient combustion.

The option to utilise greenhouse gas-reduced liquid fuel types results in lower fossil CO₂ emissions. By operating the Vitoladens 300-T, you are making a personal contribution to active climate protection and preparing yourself for the future.

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 design ensures that combustion and condensation occur in physically separate locations, so that the combustion gases condense in a location which is free of deposits. In practice, this means longer-than-average service intervals for cleaning the combustion chamber and significantly lower maintenance costs.

Benefits at a glance

- Seasonal central heating energy efficiency up to 95 % (H_s) [gross cv] (label A)
- Most popular oil condensing boiler in the world
- Durable biferral stainless steel composite heating surface, proven in millions of boilers
- Corrosion-resistant stainless steel Inox-Radial heat exchanger
- Easy accessibility of the heat exchanger surfaces for cleaning
- Quiet operation through integral silencer
- Flexible siting with choice of open flue or room sealed operation

- Easy to operate Vitotronic control unit with plain text and graphic display
- Web-enabled via Vitoconnect (accessories) for operation and service using Viessmann apps.
- All commercially available EL fuel oils can be used. Also for fuel oil DIN SPEC 51603-6 EL A Bio 20: Low sulphur EL fuel oil with blends of up to 20 % bio-components (FAME) and paraffinic fuel oils (HVO, PTL, etc.) to DIN TS 51603-8 in proportions of up to 100 %.



GREEN FUELS READY

Delivered condition

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 CE designation according to current EC directives.

3.2 Operating conditions

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

3.3 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
Total dimensions				
Total length h incl. flue gas heat exchanger	mm	1600	1770	1770
Total width e	mm	667	776	776
Total height b (in operation)	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
Height of plinth ^{*11}	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 of boiler body	kg	185	260	260
Total weight	kg	242	333	333
Boiler incl. thermal insulation, heat exchanger, burner and boiler control unit				
Burner weight	kg	12	13	13
Power consumption ^{*12}				
– 100 % of rated heating output	W	250	340	340
– 30 % of rated heating output	W	84	113	113
– Appliance in standby	W	3	3	3
Boiler water capacity (central heating boiler and heat exchanger)	l	93	147	147
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
Suction and return line of oil hoses	R	¾	¾	¾
Oil throughput				
	kg/h	2.9	3.7	4.6
	l/h	3.4	4.4	5.4
Power consumption				
– 100 % of rated heating output	W	250	340	340
– 30 % of rated heating output	W	84	113	113
– Appliance in standby	W	3	3	3
Flue gas parameters ^{*13}				
Temperature				
– at 30 °C return temperature	°C	39	38	39
– at 60 °C return temperature	°C	67	62	63
Mass flow rate with EL fuel oil	kg/h	56	68	85
Maximum amount of condensate to DWA-A 251	l/h	3.4	4.1	5.1
Flue gas connection	Ø mm	80	110	110
Ventilation air connection	Ø mm	80	110	110
Available draught ^{*14}				
	Pa	100	100	100
	mbar	1.0	1.0	1.0
Sound power level	dB(A)	64	65	66
Energy efficiency class				
		A	A	A
Seasonal central heating energy efficiency ^{*15}	ηs %	92	92	93

^{*11} When operating the boiler with a neutralising system and without a DHW cylinder below the boiler, order the plinth separately.

^{*12} Standard parameter.

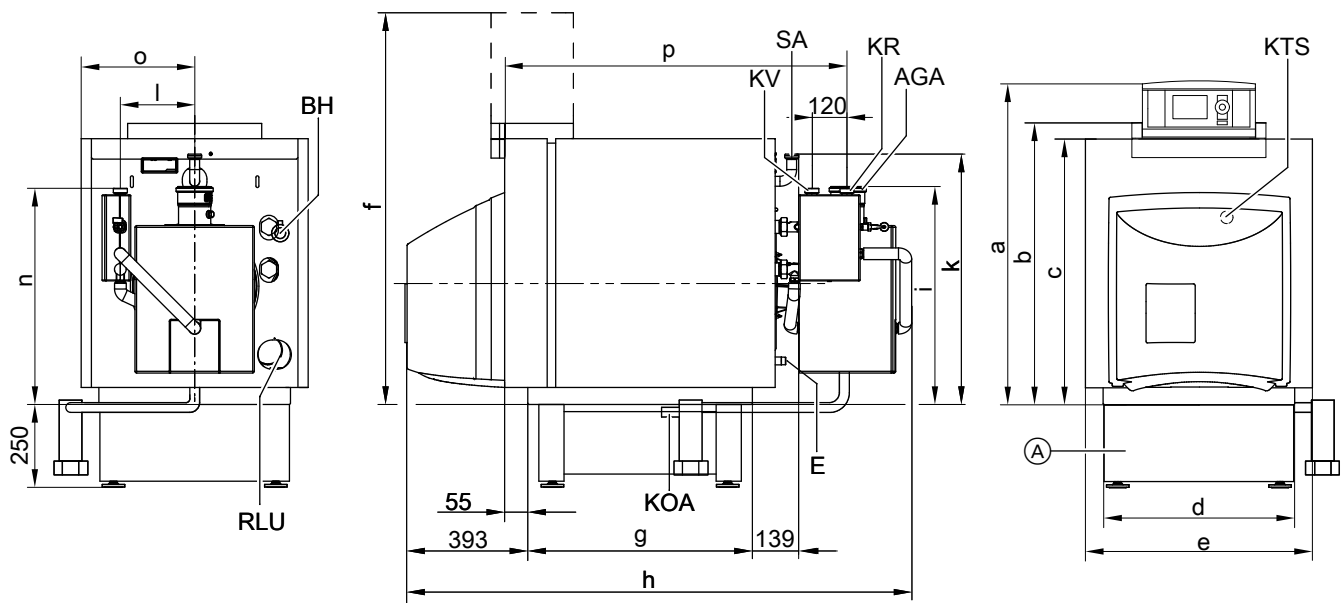
^{*13} Values for calculating the size of the flue system to EN 13384 relative to 13 % CO₂ for EL fuel oil.

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

^{*14} Observe when sizing the chimney.

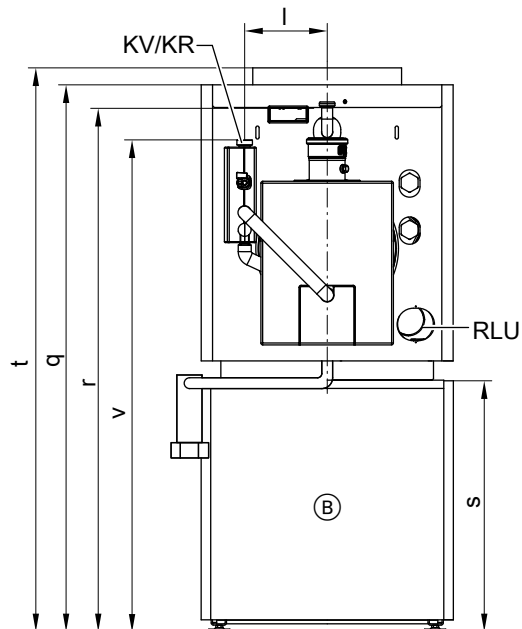
^{*15} Figure for the appliance only (without control unit): For the final energy efficiency figure, the system label must be calculated.

Vitoladens 300-T (cont.)



- Ⓐ 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 Supply air connection for room sealed operation.
The heat exchanger can be installed so that the left or right-hand connectors can be used for the boiler flow and boiler return.
- SA Safety connection (safety valve)



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

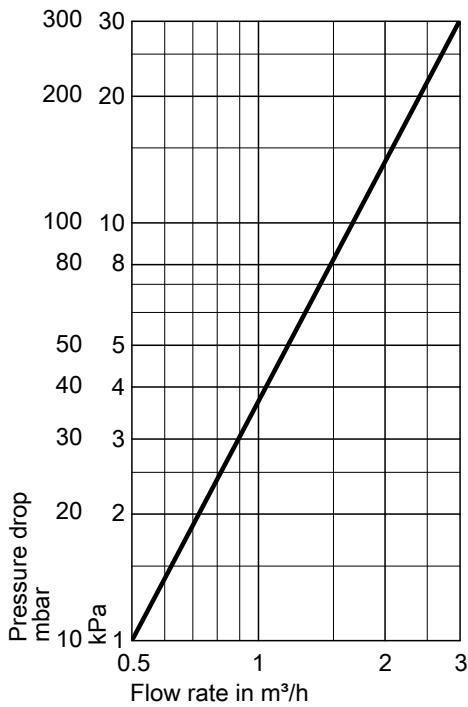
- KV Boiler flow
- RLU Supply air connection for room sealed operation.
The heat exchanger can be installed so that the left or right-hand connectors can be used for the boiler flow and boiler return.

Vitoladens 300-T (cont.)

Table of dimensions

Rated heating output ($T_F/T_R=50/30\text{ }^\circ\text{C}$)	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	1600		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
o	mm	333		388		388
p	mm	1076		1179		1179
With DHW cylinder below	Litres	160 and 200	350	200	350	350
t	mm	1229	1361	1356	1488	1488
v	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.

DHW cylinder

Listed below are the specifications for the DHW cylinders for which system connections to the boiler and the 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.*

DHW cylinder (cont.)

4.1 Specification Vitocell 100-V/100-W

Information on continuous output

When designing systems with the specified or calculated continuous output, allow for a matching circulation pump. The stated continuous output is achieved only if the heat generator's rated heating output is \geq continuous output.

Sizing entry points

The actual dimensions of the DHW cylinder may vary slightly due to manufacturing tolerances.

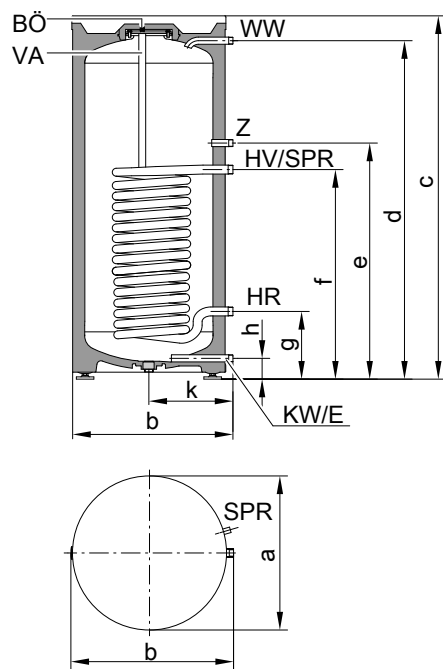
Specification

Type	CVAA/CVAB-A		CVAB	CVA	CVAA		
Cylinder capacity	l	160	200	300	500	750	950
(AT: Actual water capacity)							
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		9W241-13 MC/E					
Continuous output at heating water flow rate stated below							
– For DHW heating from 10 to 45 °C and following heating water flow temperatures							
90 °C	kW	40	40	53	70	109	116
	l/h	982	982	1302	1720	2670	2861
80 °C	kW	32	32	44	58	91	98
	l/h	786	786	1081	1425	2236	2398
70 °C	kW	25	25	33	45	73	78
	l/h	614	614	811	1106	1794	1926
60 °C	kW	17	17	23	32	54	58
	l/h	417	417	565	786	1332	1433
50 °C	kW	9	9	18	24	33	35
	l/h	221	221	442	589	805	869
– For DHW heating from 10 to 60 °C and following heating water flow temperatures							
90 °C	kW	36	36	45	53	94	101
	l/h	619	619	774	911	1613	1732
80 °C	kW	28	28	34	44	75	80
	l/h	482	482	584	756	1284	1381
70 °C	kW	19	19	23	33	54	58
	l/h	327	327	395	567	923	995
Heating water flow rate for the stated continuous outputs	m³/h	3.0	3.0	3.0	3.0	3.0	3.0
Standby heat loss	kWh/24 h	1.21/0.96	1.38/1.00	1.56	1.95	2.28	2.48
Permissible temperatures							
– Heating water side	°C	160	160	160	160	160	160
– DHW side	°C	95	95	95	95	95	95
Permissible operating pressure							
– Heating water side	bar	10	10	10	10	10	10
	MPa	1.0	1.0	1.0	1.0	1.0	1.0
– DHW side	bar	10	10	10	10	10	10
	MPa	1.0	1.0	1.0	1.0	1.0	1.0
Dimensions							
Length a (∅)							
– Incl. thermal insulation	mm	582/634	582/634	668	859	1062	1062
– Excl. thermal insulation	mm	—	—	—	650	790	790
Width b							
– Incl. thermal insulation	mm	607/637	607/637	706	923	1110	1110
– Excl. thermal insulation	mm	—	—	—	837	1005	1005
Height c							
– Incl. thermal insulation	mm	1129	1349	1687	1948	1897	2197
– Excl. thermal insulation	mm	—	—	—	1844	1817	2123
Height when tilted							
– Incl. thermal insulation	mm	1250/1275	1450/1470	1790	—	—	—
– Excl. thermal insulation	mm	—	—	—	1860	1980	2286
Total weight incl. thermal insulation	kg	62/65	70/73	115	181	301	363
Heating surface	m²	1.0	1.0	1.5	1.9	3.5	3.9

DHW cylinder (cont.)

Type		CVAA/CVAB-A		CVAB	CVA	CVAA	
Cylinder capacity	I	160	200	300	500	750	950
(AT: Actual water capacity)							
Connections (male thread)							
Heating water flow and return	R	1	1	1	1	1¼	1¼
Cold water, DHW	R	¾	¾	1	1¼	1¼	1¼
DHW circulation	R	¾	¾	1	1	1¼	1¼
Energy efficiency class		B / A	B / A	B	B	—	—
Colour							
– Vitosilver		X		X	X		X
– Vitopearlwhite		X		X	X		—
– Vitographite		Type CVAA		—	—		—

Dimensions of type CVAA, CVAB-A, 160 and 200 l capacity

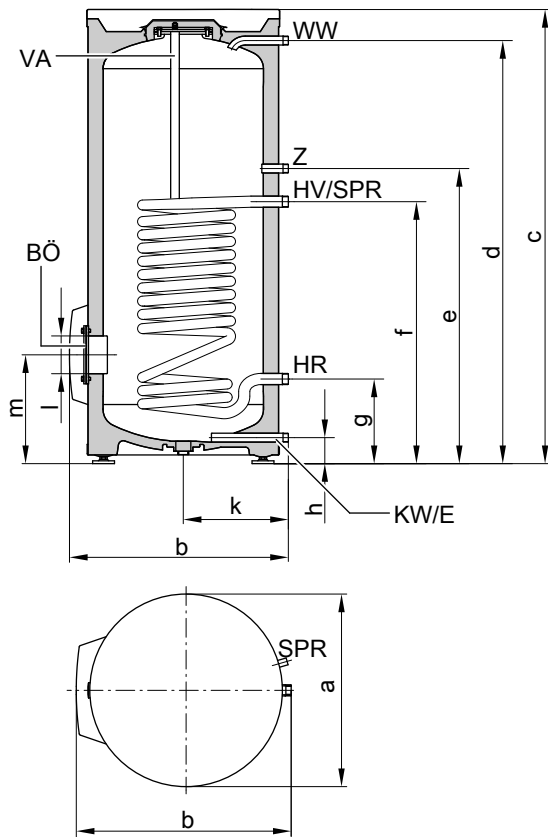


- BÖ Inspection and cleaning aperture
- E Drain
- HR Heating water return
- HV Heating water flow
- KW Cold water
- SPR Sensor well for cylinder temperature sensor and temperature controller (internal diameter 16 mm)
- VA Protective magnesium anode
- WW DHW
- Z DHW circulation

Dimensions

Type		CVAA		CVAB-A		
Cylinder capacity	I	160	200	160	200	
Length (∅)	a	mm	582	582	634	634
Width	b	mm	607	607	637	637
Height	c	mm	1128	1348	1129	1349
	d	mm	1055	1275	1055	1275
	e	mm	889	889	889	889
	f	mm	639	639	639	639
	g	mm	254	254	254	254
	h	mm	77	77	77	77
	k	mm	317	317	347	347

Dimensions of type CVAB, 300 l capacity



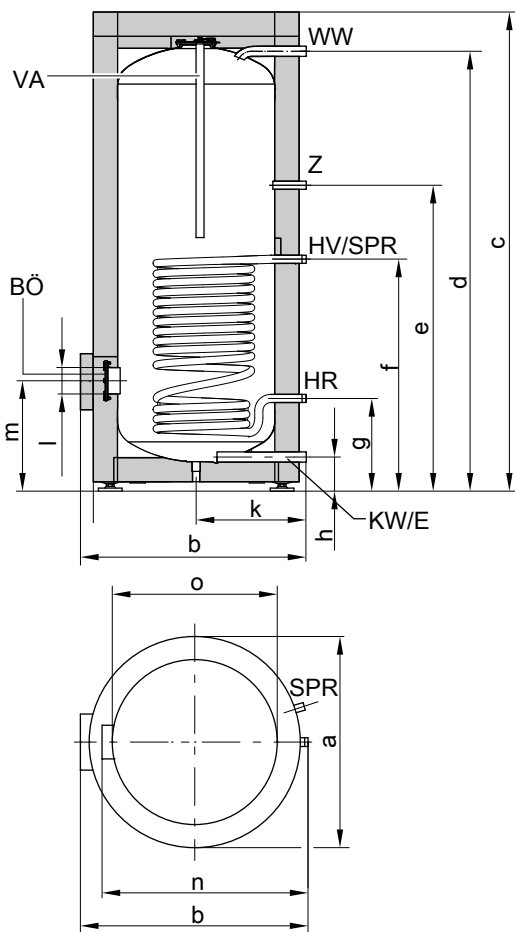
- BÖ Inspection and cleaning aperture, also for installation of an immersion heater EHE or heating lance
- E Drain
- HR Heating water return
- HV Heating water flow
- KW Cold water
- SPR Sensor well for cylinder temperature sensor and temperature controller (internal diameter 16 mm)
- VA Protective magnesium anode
- WW DHW
- Z DHW circulation

DHW cylinder (cont.)

Dimensions of type CVAB

Cylinder capacity		l		300
Length (∅)	a	mm		668
Width	b	mm		706
Height	c	mm		1687
	d	mm		1607
	e	mm		1122
	f	mm		882
	g	mm		267
	h	mm		83
	k	mm		362
	l	mm	∅ 100	
	m	mm		340

Measurements, type CVA, 500 l capacity

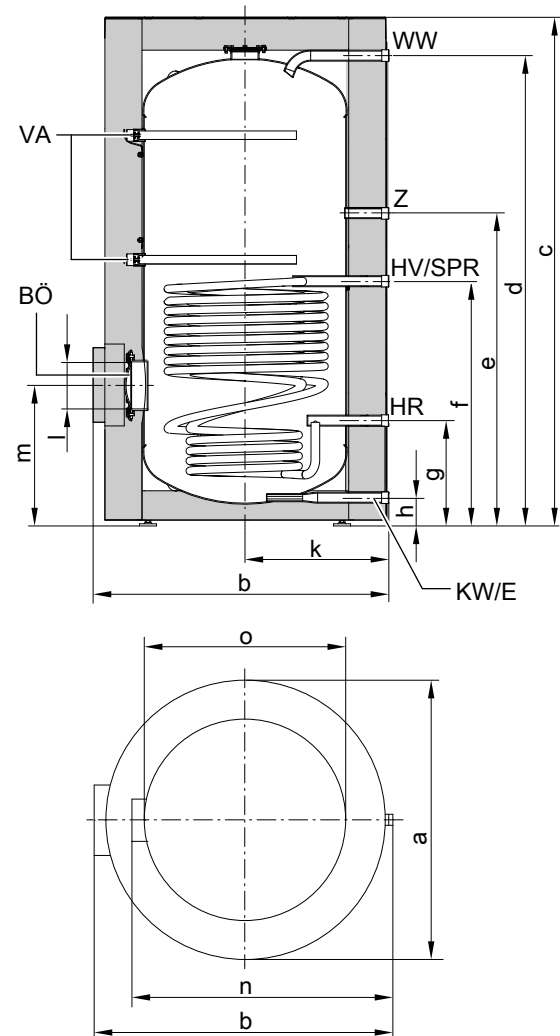


- BÖ Inspection and cleaning aperture, also for installation of an immersion heater EHE or heating lance
- E Drain
- HR Heating water return
- HV Heating water flow
- KW Cold water
- SPR Sensor well for cylinder temperature sensor and temperature controller (internal diameter 16 mm)
- VA Protective magnesium anode
- WW DHW
- Z DHW circulation

Dimensions of type CVA

Cylinder capacity		l		500
Length (∅)	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	∅ 100	
	m	mm		422
Excl. thermal insulation	n	mm		837
Excl. thermal insulation	o	mm	∅ 650	

Measurements, type CVAA, 750 and 950 l capacity



- BÖ Inspection and cleaning aperture, also for installation of an immersion heater EHE or heating lance
- E Drain
- HR Heating water return
- HV Heating water flow
- KW Cold water
- SPR Clamping device for securing immersion temperature sensors to the cylinder jacket. Retainers for 3 immersion temperature sensors
- VA Protective magnesium anode

DHW cylinder (cont.)

WW DHW
Z DHW circulation

Dimensions of type CVAA

Cylinder capacity	I	750	950
Length (∅)	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	∅ 180	∅ 180
	m mm	513	502
Excl. thermal insulation	n mm	1005	1005
Excl. thermal insulation	o mm	∅ 790	∅ 790

Performance factor N_L to DIN 4708

Cylinder capacity	I	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

- The performance factor N_L depends on the cylinder storage temperature T_{cyl}
- Cylinder storage temperature T_{cyl} = cold water inlet temperature + 50 K ^{+5 K/-0 K}

Standard values for performance factor N_L

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

Peak output over 10 min, relative to performance factor N_L

Cylinder capacity	I	160	200	300	500	750	950
Peak output for heating the DHW from							
10 to 45 °C							
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 min., relative to performance factor N_L

Cylinder capacity	I	160	200	300	500	750	950
Max. draw-off rate for DHW heating							
from 10 to 45 °C, with reheating							
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 capacity	I	160	200	300	500	750	950
Draw-off rate for cylinder volume heated	l/min	10	10	15	15	20	20
to 60 °C							
Drawable water volume without reheat-	l	120	145	240	420	615	800
ing							
Water at $t = 60\text{ °C}$ (constant)							

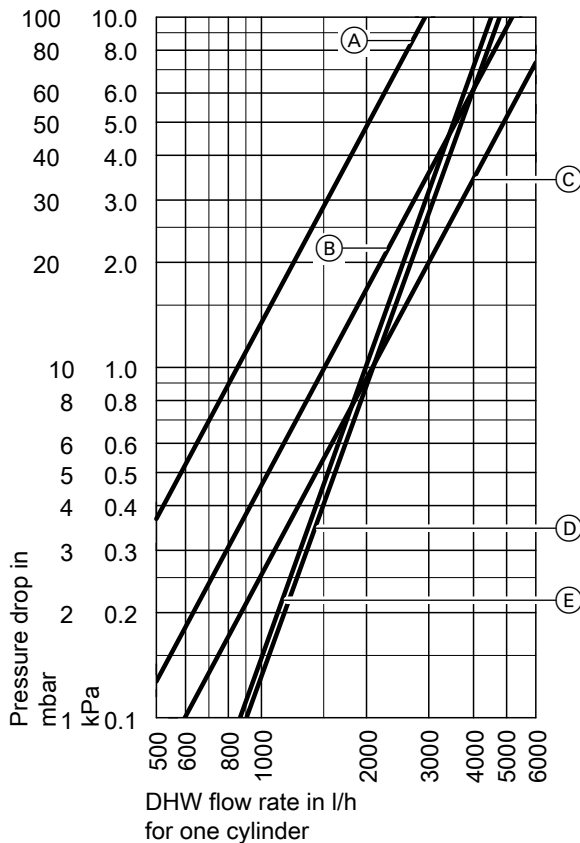
Heat-up time

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

DHW cylinder (cont.)

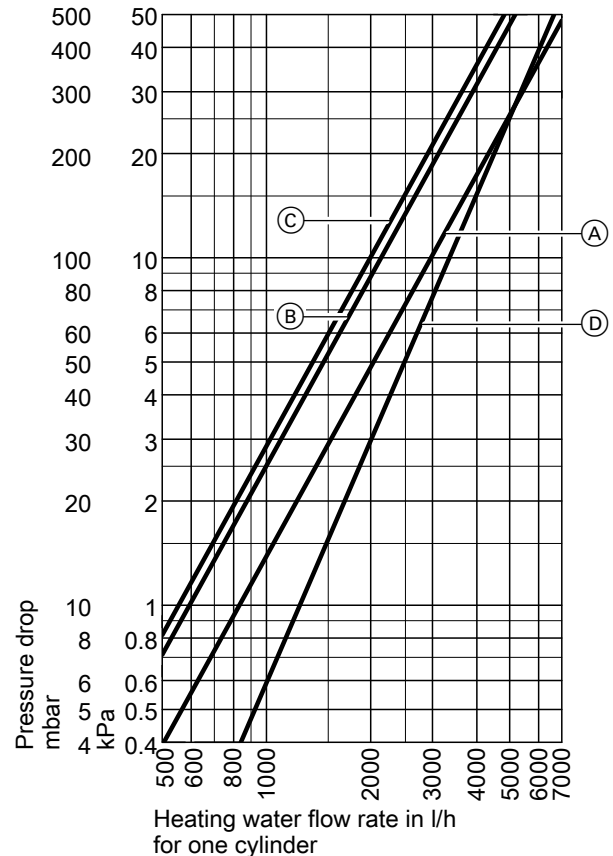
Cylinder capacity	I	160	200	300	500	750	950
Heat-up time							
Heating water flow temperature							
90 °C	min	19	19	23	28	23	35
80 °C	min	24	24	31	36	31	45
70 °C	min	34	37	45	50	45	70

Pressure drop on the DHW side



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

Pressure drop on the heating water side



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

Delivered condition

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

DHW cylinder made from steel with Ceraprotect enamel coating.

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

- Protective magnesium anode
- Fitted thermal insulation

4.2 Specification Vitocell 300-V/300-W

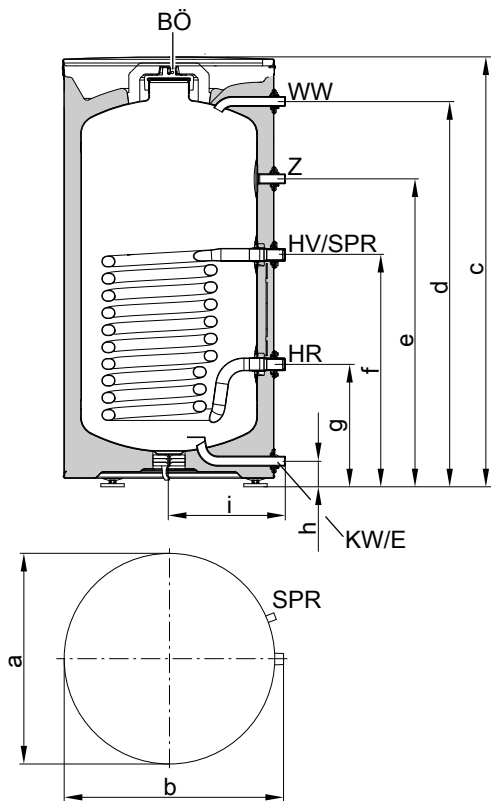
- Adjacent to the boiler
- Heated by an internal indirect coil; made from stainless steel

For further specifications, see the separate datasheet for the Vitocell 300-V/300-W.

Type		EVIB-A+		EVIB-A	
		160	200	160	200
Cylinder capacity (AT: Actual water capacity)	l				
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			
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
Permissible temperatures					
– Heating water side	°C	160	160	160	160
– DHW side	°C	95	95	95	95
Permissible 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
Standby heat loss	kWh/24 h	0.71	0.75	0.98	1.04
Dimensions					
Length a (∅)	mm	634	634	634	581
Width b	mm	661	661	661	605
Height d	mm	1190	1410	1190	1410
Weight	kg	57	65	57	65
Energy efficiency class		A+	A+	A	A
Colour of the Vitocell 300-V					
– Vitosilver		X	X	X	X
– Vitographite		—	—	X	X
Colour of the Vitocell 300-W					
– Vitopearlwhite		X	X	X	X

DHW cylinder (cont.)

Dimensions



- HR Heating water return
 HW Heating water flow
 KW Cold water
 SPR Clamping device for securing immersion temperature sensors to the cylinder jacket, with fixing points for 3 immersion temperature sensors per clamping device
 WW DHW
 Z DHW circulation

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

Pressure drop on the DHW side

See separate datasheet for the Vitocell 300-V/300-W.

- BÖ Inspection and cleaning aperture
 E Drain

Delivered condition

Type EVIB-A, EVIB-A+

DHW cylinder with 160 and 200 l capacity:

- Attached vacuum-insulated panels
- Sheet steel casing, epoxy-coated: Vitopearlwhite, Vitosilver and Vitographite

- Adjustable feet
- Cylinder and internal indirect coil made from stainless steel
- Clamping device for securing immersion temperature sensors to the cylinder jacket, with fixing points for 3 immersion temperature sensors

4.3 Specification Vitocell 100-H

Information on continuous output

When designing systems with the specified or calculated continuous output, allow for a matching circulation pump. The stated continuous output is achieved only if the heat generator's rated heating output is \geq continuous output.

Sizing entry points

The actual dimensions of the DHW cylinder may vary slightly due to manufacturing tolerances.

Specification

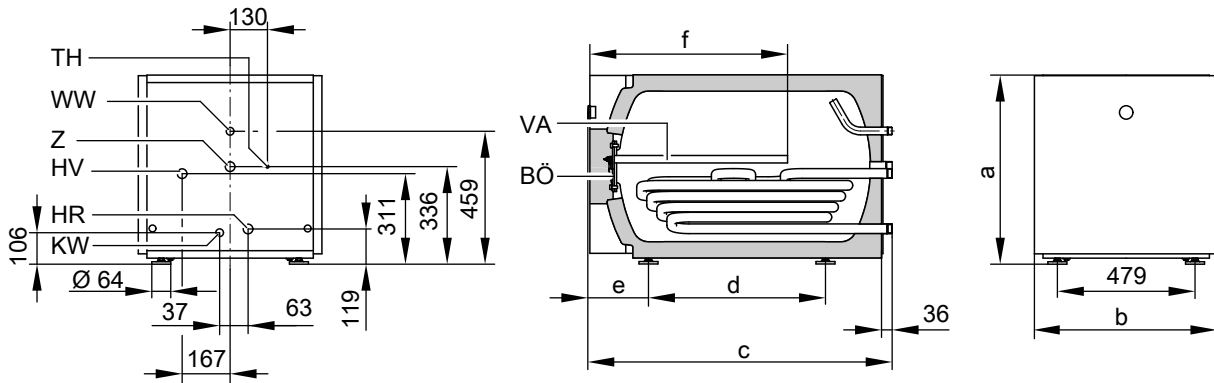
Type	CHA			
	CHAA (only in conjunction with Vitoladens 300-C)			
Cylinder capacity (AT: Actual water capacity)	l	130	160	200
Heating water capacity	l	5.5	7	8
Gross volume	l	135.5	167	208
DIN registration number				
- Type CHA				Applied for
- Type CHAA				Applied for

DHW cylinder (cont.)

Type	CHA			
	CHAA (only in conjunction with Vitoladens 300-C)			
Cylinder capacity (AT: Actual water capacity)	I	130	160	200
Continuous output at heating water flow rate stated below				
– For DHW heating from 10 to 45 °C and following heating water flow temperatures				
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
– For DHW heating from 10 to 60 °C and following heating water flow temperatures				
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				
– Type CHA	kWh/24 h	1.15	1.29	1.34
– Type CHAA	kWh/24 h	1.114	1.277	1.333
Permissible temperatures				
– Heating water side	°C	110	110	110
– DHW side	°C	95	95	95
Permissible operating pressure				
– Heating water side	bar	10	10	10
	MPa	1.0	1.0	1.0
– DHW side	bar	10	10	10
	MPa	1.0	1.0	1.0
Total dimensions				
Total length				
– Type CHA	mm	907	1052	1216
– Type CHAA	mm	988	1143	1307
Total width	mm	640	640	640
Total height	mm	654	654	654
Total weight incl. thermal insulation	kg	90	103	116
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
Colour				
– Type CHA		Vitosilver		
– Type CHAA		Vitographite		

DHW cylinder (cont.)

Dimensions



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

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

Dimensions

Type		CHA			CHAA		
Cylinder capacity	I	130	160	200	130	160	200
a	mm	654	654	654	654	654	654
b	mm	640	640	640	640	640	640
c	mm	907	1052	1216	998	1143	1307
d	mm	471	616	780	471	616	780
e	mm	203	203	203	294	294	294
f	mm	300	350	400	300	350	400

Performance factor N_L to DIN 4708

Cylinder capacity	I	130	160	200
Performance factor N_L				
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

- The performance factor N_L depends on the cylinder storage temperature T_{cyl} .
- Cylinder storage temperature $T_{cyl} = \text{cold water inlet temperature} + 50 \text{ K} + 5 \text{ K}/0 \text{ K}$

Standard values for performance factor N_L

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

Peak output over 10 min, relative to performance factor N_L

Cylinder capacity	I	130	160	200
Peak output for DHW heating from 10 to 45 °C				
Heating water flow temperature				
90 °C	I/10 min	159	199	246
80 °C	I/10 min	159	199	246
70 °C	I/10 min	148	173	210

DHW cylinder (cont.)

Max. draw-off rate over 10 min, relative to performance factor N_L

Cylinder capacity	l	130	160	200
Max. draw-off rate for DHW heating from 10 to 45 °C, with re-heating				
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

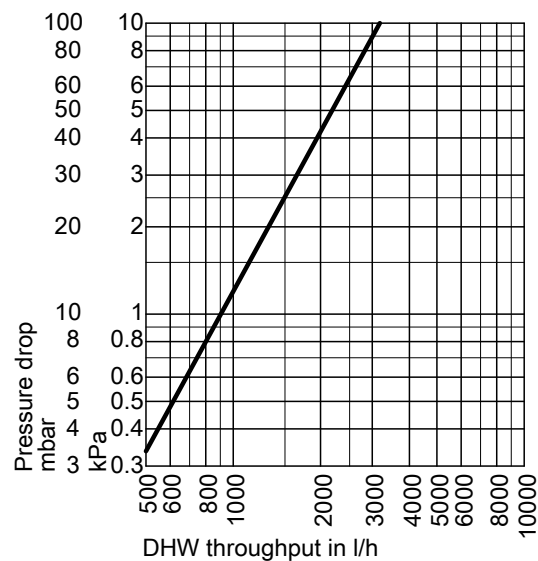
Cylinder capacity	l	130	160	200
Draw-off rate for cylinder volume heated to 60 °C				
	l/min	10	10	10
Drawable water volume without reheating				
	l	100	145	180
Water at $t = 60$ °C (constant)				

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 heating water flow temperature and when DHW is heated from 10 to 60 °C.

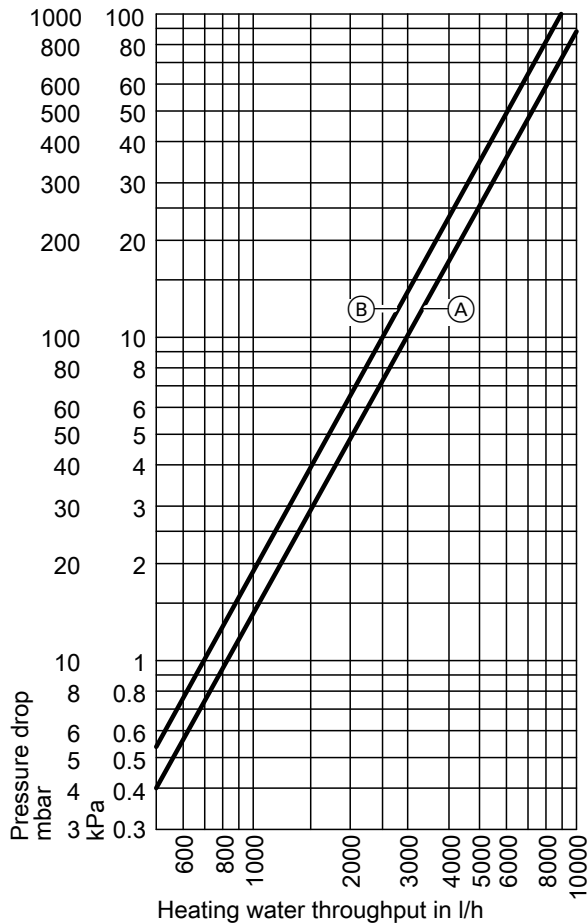
Cylinder capacity	l	130	160	200
Heat-up time				
Heating water flow temperature				
90 °C	min	20	19	18
80 °C	min	25	26	25
70 °C	min	34	34	32

Pressure drop on the DHW side



DHW cylinder (cont.)

Pressure drop on the heating water side



- Ⓐ Cylinder capacity 130 l
 Ⓑ Cylinder capacity 160 and 200 l

Delivered condition

Delivered condition

Type CHA

DHW cylinder with **130, 160 and 200 l** capacity:

- Fitted thermal insulation
- Sheet steel casing, epoxy-coated: Vitosilver
- Adjustable feet
- Cylinder and internal indirect coil made from steel, corrosion protection through Ceraprotect enamel coating
- Additional cathodic protection with protective magnesium anode
- Integral welded sensor well with internal diameter 7 mm for cylinder temperature sensor and temperature controller

Type CHAA

DHW cylinder with **130, 160 and 200 l** capacity:

- Fitted thermal insulation
- Sheet steel casing, epoxy-coated: Vitographite
- Adjustable feet
- Cylinder and internal indirect coil made from steel, corrosion protection through Ceraprotect enamel coating
- Additional cathodic protection with protective magnesium anode
- Integral welded sensor well with internal diameter 7 mm for cylinder temperature sensor and temperature controller
- Condensate hose set

4.4 Specification Vitocell 300-H

Information on continuous output

When designing systems with the specified or calculated continuous output, allow for a matching circulation pump. The stated continuous output is achieved only if the heat generator's rated heating output is \geq continuous output.

Sizing entry points

■ The actual dimensions of the DHW cylinder may vary slightly due to manufacturing tolerances.

■ 350 l cylinder capacity:

For handling purposes, the front panel, side panels and thermometer can be removed. The adjustable feet can be removed and the DHW cylinder can be rotated to the side.

Specification

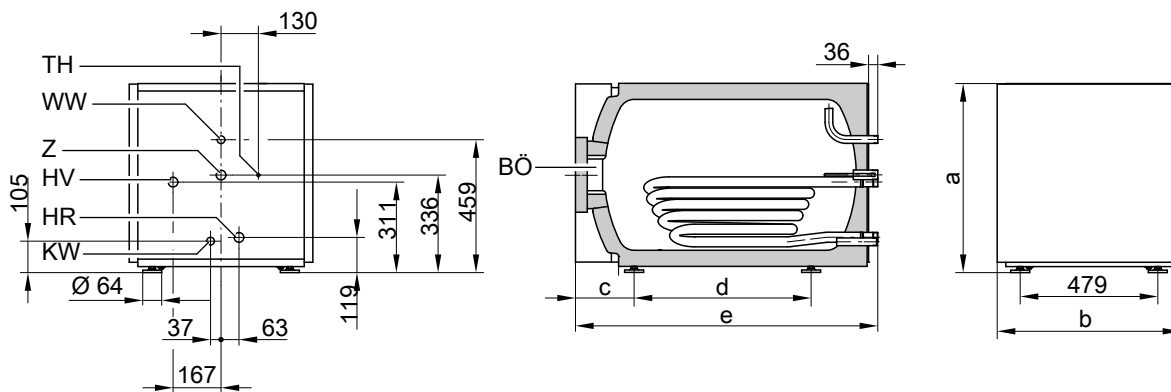
Type	EHA		EHA		
	EHAA (only in conjunction with Vitoladens 300-C)		EHA		
Cylinder capacity (AT: Actual water capacity)	l	160	200	350	500
Heating water capacity	l	7	8	13	16
Gross volume	l	167	208	363	516
DIN registration number – Type EHA – Type EHAA		9W81-10 MC Applied for			
Continuous output at heating water flow rate stated below – For DHW heating from 10 to 45 °C and following heating water flow temperatures					
90 °C	kW l/h	32 786	41 1007	80 1966	97 2383
80 °C	kW l/h	28 688	30 737	64 1573	76 1867
70 °C	kW l/h	20 490	23 565	47 1155	55 1351
65 °C	kW l/h	17 417	19 467	40 983	46 1130
60 °C	kW l/h	14 344	16 393	33 811	38 934
– For DHW heating from 10 to 60 °C and following heating water flow temperatures					
90 °C	kW l/h	28 482	33 568	70 1204	82 1410
80 °C	kW l/h	23 396	25 430	51 877	62 1066
70 °C	kW l/h	15 258	17 292	34 585	39 671
Heating water flow rate for the stated continuous outputs	m³/h	3.0	5.0	5.0	5.0
Continuous output at a max. steam velocity of 50 m/s For DHW heating from 10 to 45 °C and following operating pressures for saturated steam					
0.5 bar/ 50 kPa	kW l/h	—	—	83 2039	83 2039
1.0 bar/ 100 kPa	kW l/h	—	—	105 2580	105 2580
Standby heat loss – Type EHA – Type EHAA	kWh/24 h kWh/24 h	1.18 1.14	1.24 1.22	1.76 —	1.95 —
Permissible temperatures – Heating water side – DHW side	°C °C	160 95	160 95	160 95	160 95
Permissible operating pressure – Heating water side – Positive saturated steam pressure – DHW side	bar MPa bar MPa bar MPa	10 1.0 — 10 1.0	10 1.0 — 10 1.0	10 1.0 10 1.0	10 1.0 10 1.0



DHW cylinder (cont.)

Type		EHA EHA (only in conjunction with Vitoladens 300-C)		EHA	
		160	200	350	500
Cylinder capacity (AT: Actual water capacity)	l	160	200	350	500
Total dimensions					
Total length					
– Type EHA	mm	1072	1236	1590	1654
– Type EHA	mm	1143	1306		
Total width	mm	640	640	830	910
Width without casing	mm	–	–	768	–
Total height	mm	654	654	786	886
Total weight incl. thermal insulation	kg	76	84	172	191
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
Colour					
– Type EHA		Vitosilver		Vitosilver	
– Type EHA		Vitographite		–	

Dimensions 160 to 200 l capacity



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

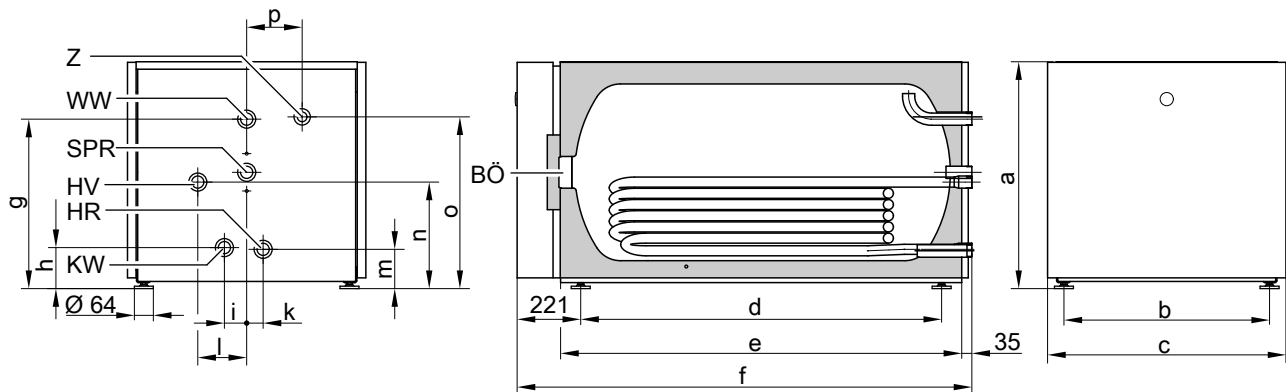
TH Sensor well for cylinder temperature sensor and temperature controller (internal diameter 7 mm)
 WW DHW
 Z DHW circulation

Dimensions for type EHA, EHA

Type	l	EHA		EHA	
		160	200	160	200
Cylinder capacity					
a	mm	654	654	654	654
b	mm	640	640	640	640
c	mm	203	203	294	294
d	mm	616	780	616	780
e	mm	1072	1236	1143	1306

DHW cylinder (cont.)

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

Note

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

Dimensions for type EHA

Cylinder capacity	l	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

Performance factor N_L to DIN 4708

Cylinder capacity	l	160	200	350	500
Performance factor N_L					
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

- The performance factor N_L depends on the cylinder storage temperature T_{cyl} .
- Cylinder storage temperature T_{cyl} = cold water inlet temperature + 50 K ^{+5 K/-0 K}

Standard values for performance factor N_L

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

DHW cylinder (cont.)

Peak output over 10 min, relative to performance factor N_L

Cylinder capacity	l	160	200	350	500
Peak output for DHW heating from 10 to 45 °C					
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 min, relative to performance factor N_L

Cylinder capacity	l	160	200	350	500
Max. draw-off rate for DHW heating from 10 to 45 °C, with reheating					
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

Drawable water volume

Cylinder capacity	l	160	200	350	500
Draw-off rate for cylinder volume heated to 60 °C					
	l/min	10	10	15	15
Drawable water volume without reheating					
	l	150	185	315	440
Water at t = 60 °C (constant)					

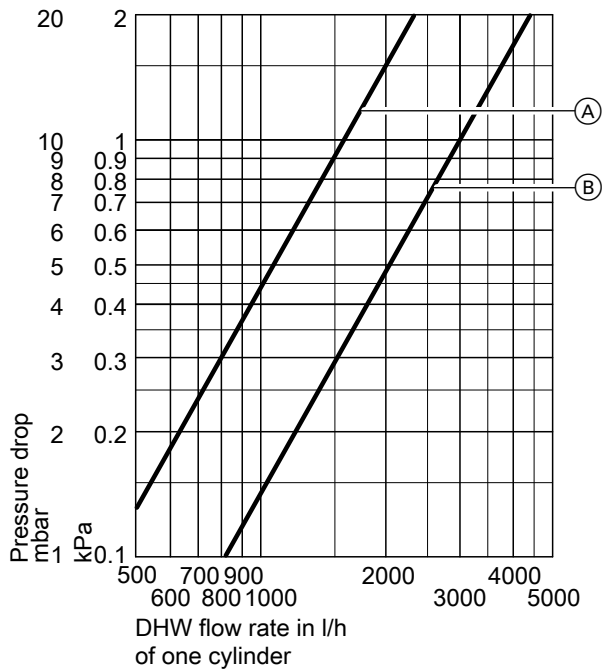
Heat-up time

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

Cylinder capacity	l	160	200	350	500
Heat-up time					
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

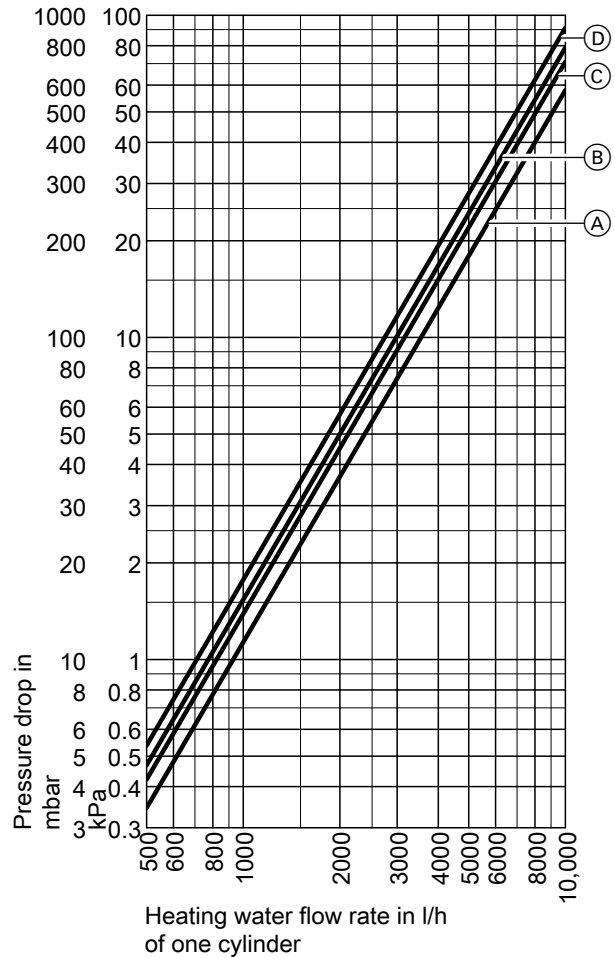
DHW cylinder (cont.)

Pressure drop on the DHW side



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

Pressure drop on the heating water side



- (A) Cylinder capacity 160 l
 (B) Cylinder capacity 200 l
 (C) Cylinder capacity 350 l
 (D) Cylinder capacity 500 l

Delivered condition

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

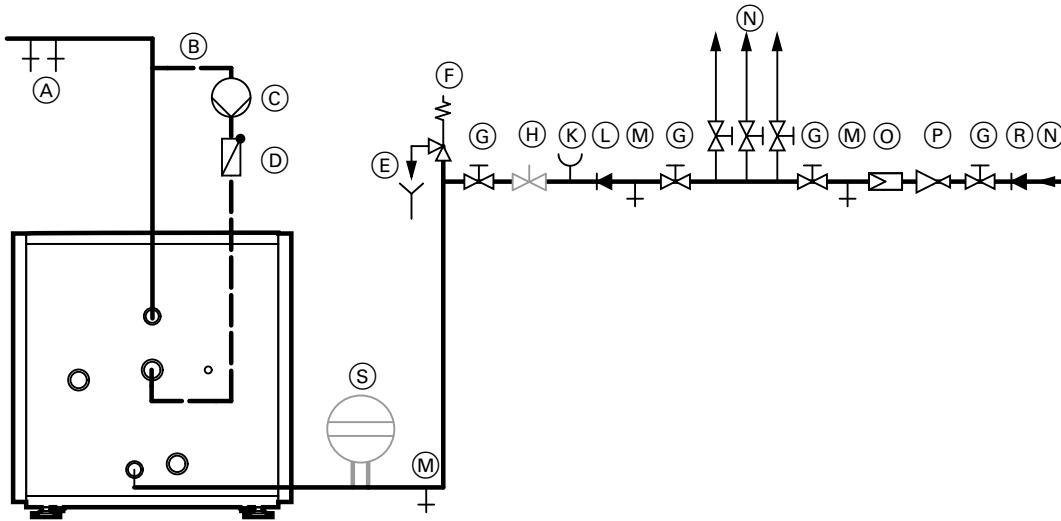
Packed separately:

- 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.

4.5 DHW cylinder connections on the DHW side

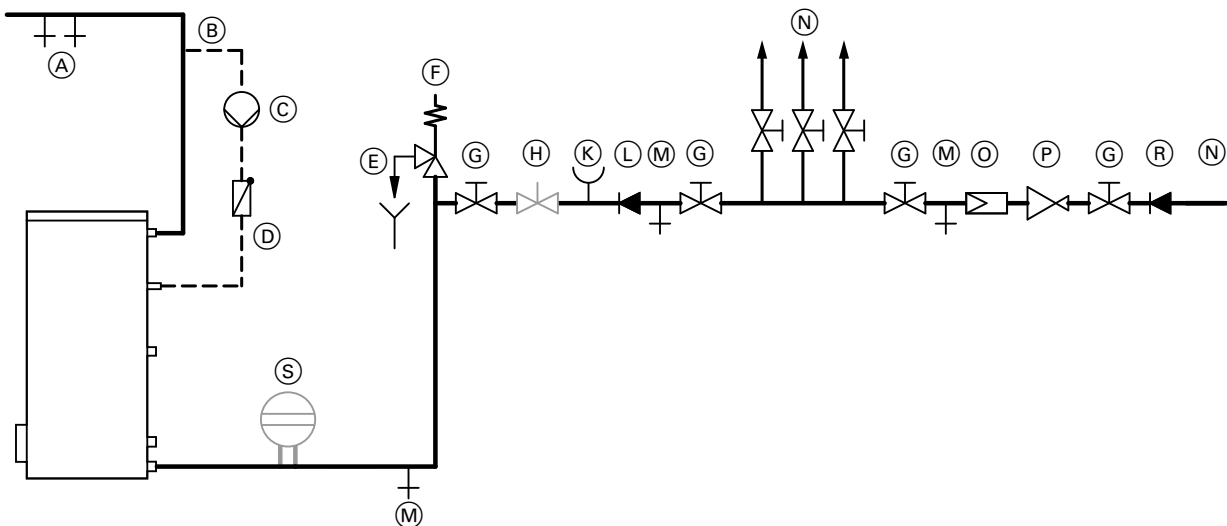
Vitocell 100-H and Vitocell 300-H



Connection on the DHW side to DIN 1988

- | | |
|---|--|
| (A) DHW | (K) Pressure gauge connector |
| (B) DHW circulation pipe | (L) Non-return valve |
| (C) DHW circulation pump | (M) Drain |
| (D) Spring-loaded check valve | (N) Cold water |
| (E) Visible discharge pipe outlet point | (O) Drinking water filter |
| (F) Safety valve | (P) Pressure reducer DIN 1988-200:2012-05 |
| (G) Shut-off valve | (R) Non-return valve/pipe separator |
| (H) Flow regulating valve | (S) Diaphragm expansion vessel, suitable for potable water |

Vitocell 100-V and Vitocell 300-V



Connection on the DHW side to DIN 1988

- | | |
|---|------------------------------|
| (A) DHW | (F) Safety valve |
| (B) DHW circulation pipe | (G) Shut-off valve |
| (C) DHW circulation pump | (H) Flow regulating valve |
| (D) Spring-loaded check valve | (K) Pressure gauge connector |
| (E) Visible discharge pipe outlet point | |

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DHW cylinder (cont.)

- Ⓛ Non-return valve
- Ⓜ Drain
- Ⓝ Cold water
- Ⓞ Drinking water filter
- Ⓟ Pressure reducer DIN 1988-200:2012-05
- Ⓡ Non-return valve/pipe separator
- Ⓢ Diaphragm expansion vessel, suitable for potable water

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.

Installation accessories

5.1 Specification

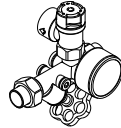
Accessories for connecting DHW cylinders to boilers

System connections with Vitocell

Complete with:

- Connecting cables
- 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
- Diaphragm safety valve

Up to 200 l cylinder capacity

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



Above 200 l cylinder capacity

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

Accessories for heating circuits

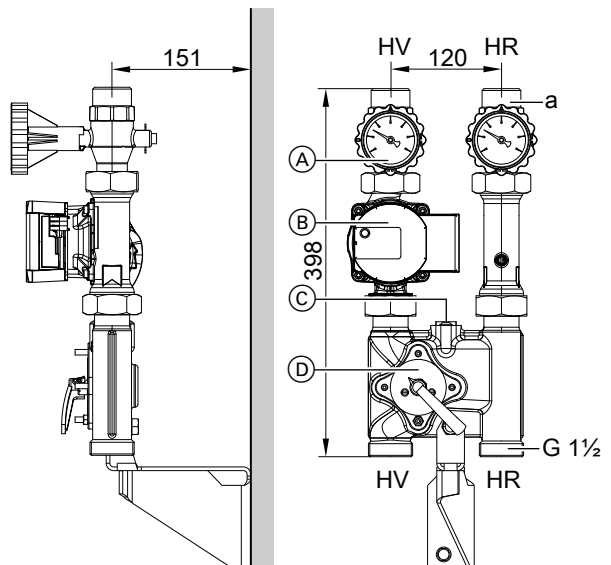
Layout and function

- 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.



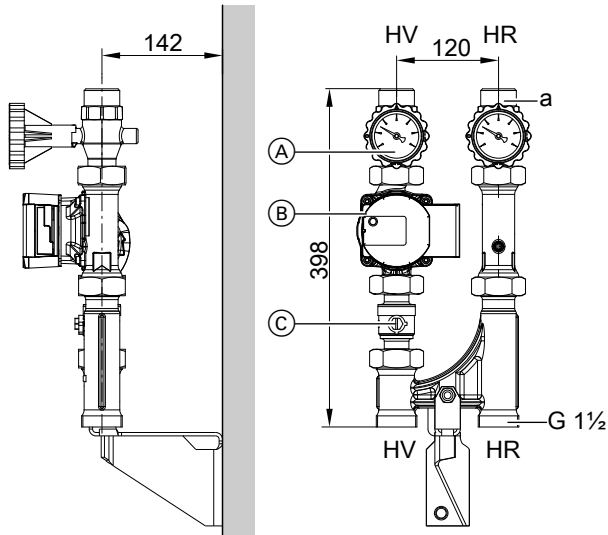
Divicon with mixer: Wall mounting, shown without thermal insulation and mixer extension kit

HR Heating return
HV Heating flow

Installation accessories (cont.)

- (A) Ball valves with thermometer (as operating element)
- (B) Circulation pump
- (C) Bypass valve (accessories)
- (D) Mixer-3

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



Divicon without mixer: Wall mounting, shown without thermal insulation

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

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

Installation example: Divicon with triple manifold

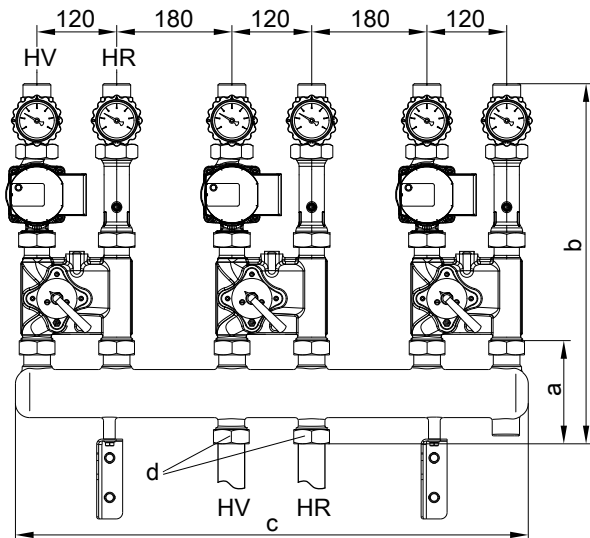
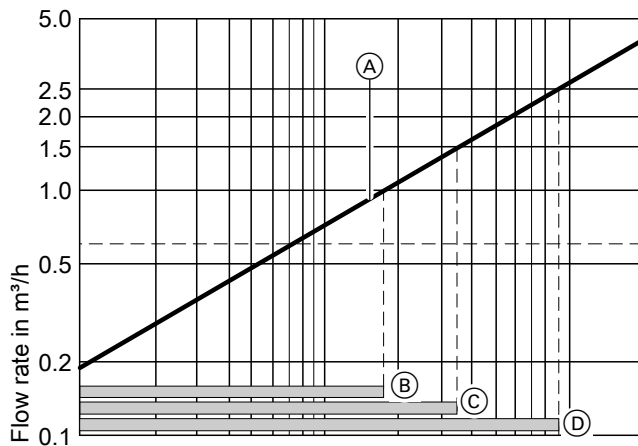


Diagram without thermal insulation

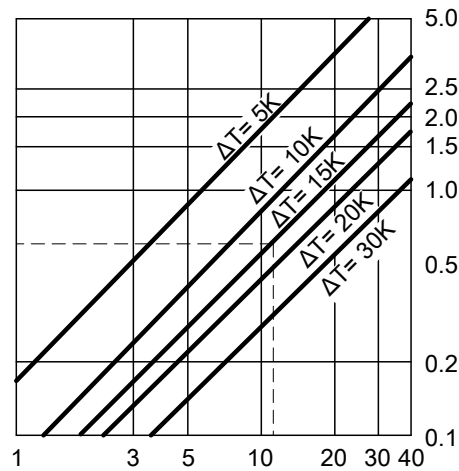
- HR Heating return
- HV Heating flow

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

Determining the required nominal diameter



Mixer control characteristics



Heating circuit output in kW

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

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

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

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

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

Circulation pump curves and pressure drop on the heating water side

The residual pump head results from the differential between the selected pump curve and the pressure drop curve of the respective heating circuit distributor and 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 $\dot{V} = 0.665 \text{ m}^3/\text{h}$

Example result: Divicon with mixer-3 (R ¾)

Selected:

- Divicon with mixer R ¾
- Wilo 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] Buildings Energy Act (GEG), circulation pumps in central heating systems must be sized in accordance with current technical rules.

Installation accessories (cont.)

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

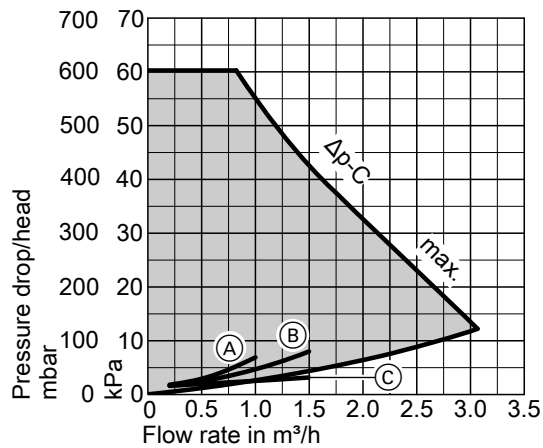
Design information

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

Wilo Para 25/6

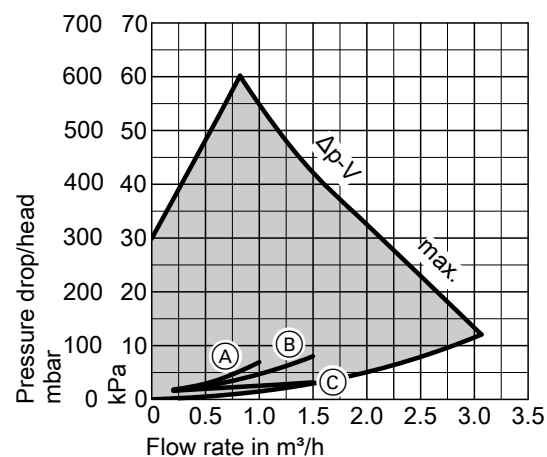
- Particularly power saving, high efficiency circulation pump
- Energy efficiency index EEI ≤ 0.20

Operating mode: Constant differential pressure



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

Operating mode: Variable differential pressure

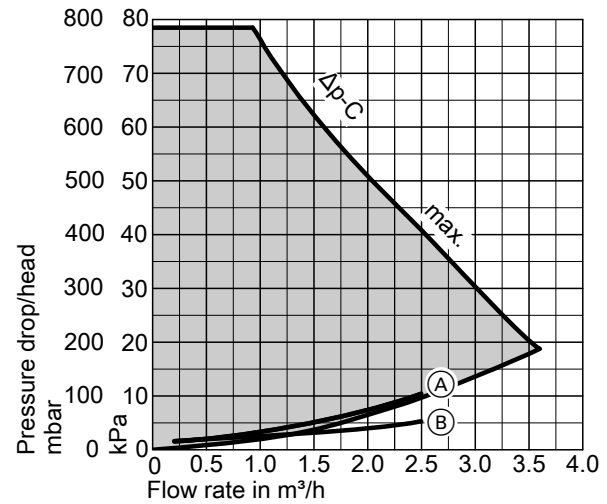


- (A) Divicon R ¾ with mixer
- (B) Divicon R 1 with mixer
- (C) Divicon R ¾ and R 1 without mixer

Wilo Para 25/8

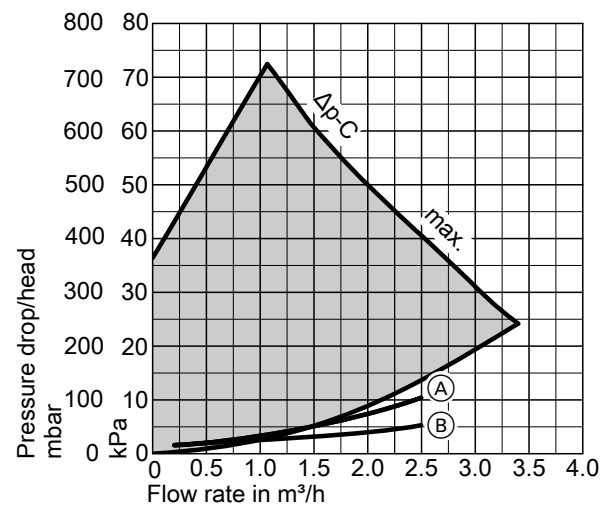
Operating mode: Constant differential pressure

- Energy efficiency index EEI ≤ 0.20



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

Operating mode: Variable differential pressure

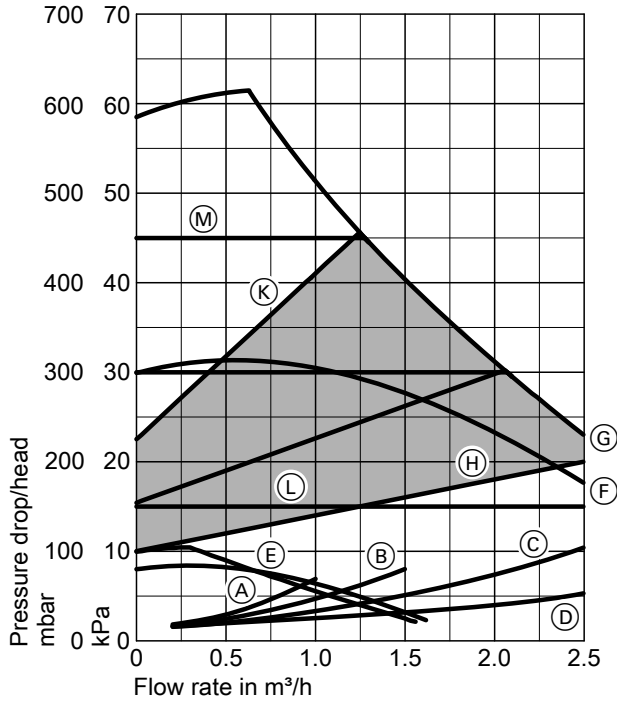


- (A) Divicon R 1¼ with mixer
- (B) Divicon R 1¼ without mixer

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



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

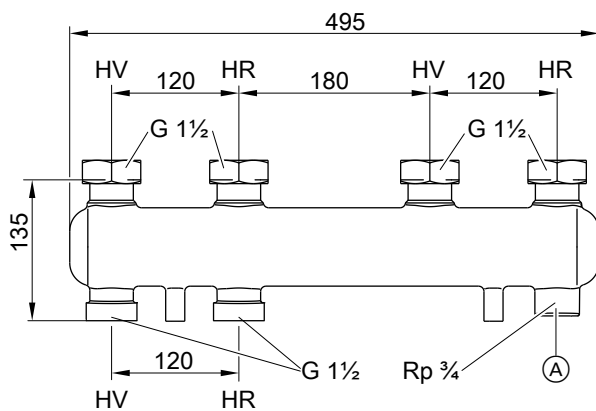
Manifold

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 3/4 and R 1



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

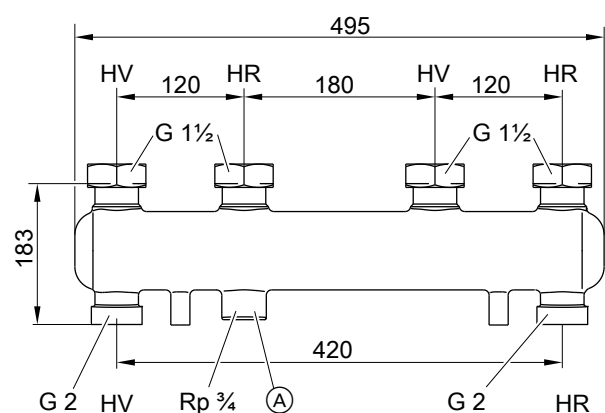
- (C) Divicon R 1 1/4 with mixer
- (D) Divicon R 3/4, R 1 and R 1 1/4 without mixer
- (E) Stage 1
- (F) Stage 2
- (G) Stage 3
- (H) Min. proportional pressure
- (K) Max. proportional pressure
- (L) Min. constant pressure
- (M) Max. constant pressure

Bypass valve

Part no. 7464889

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

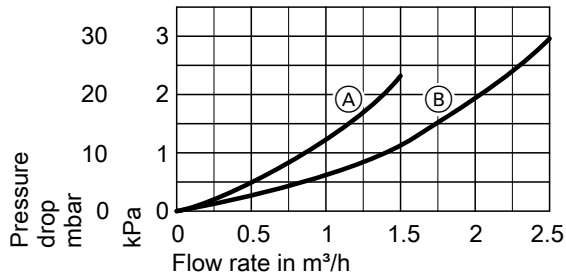
Part no. 7466337 for Divicon R 1 1/4



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

Installation accessories (cont.)

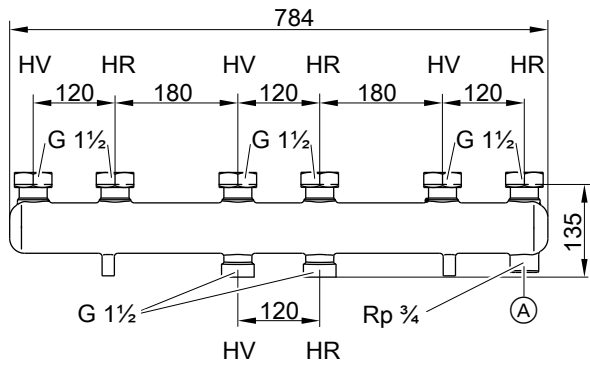
Pressure drop



- (A) Manifold for Divicon R ¼ and R 1
- (B) Manifold for Divicon R 1¼

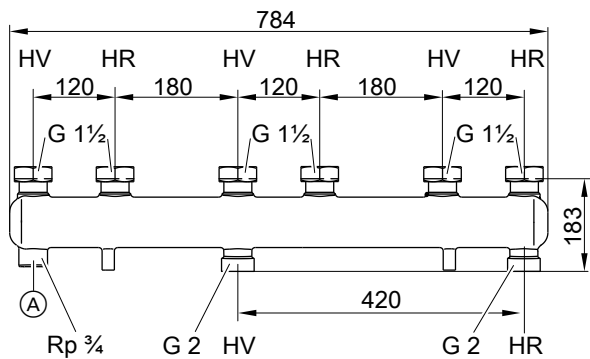
For 3 Divicon

Part no. 7460643 for Divicon R ¼ and R 1



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

Part no. 7466340 for Divicon R 1¼

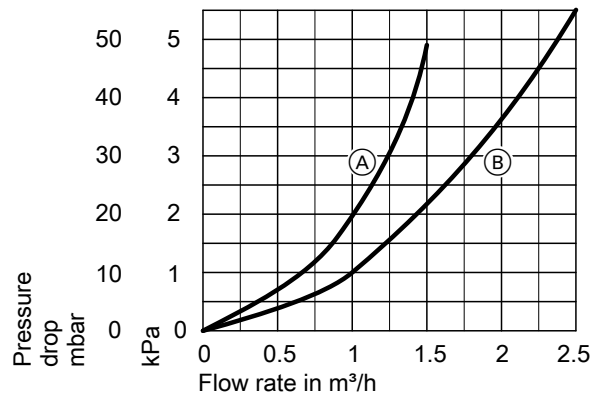


- (A) Connection option for expansion vessel
- HV Heating water flow
- HR Heating water return

Note

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

Pressure drop



- (A) Manifold for Divicon R ¼ and R 1
- (B) Manifold for Divicon R 1¼

Note

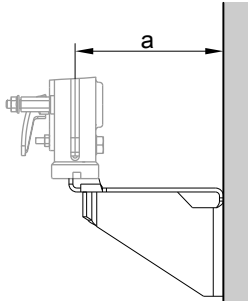
The curves always refer to one pair of connectors only (HV/HR).

Installation accessories (cont.)

Wall mounting bracket

Part no. 7465894 for individual Divicons

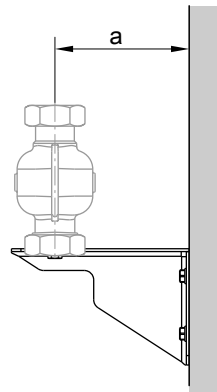
With screws and rawl plugs.



For Divicon	With mixer	Without mixer
a mm	151	142

Part no. 7465439 for manifolds

With screws and rawl plugs.



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

Distributor for solar central heating backup

Part no. 7441163

Flow rate up to 2.5 m³/h

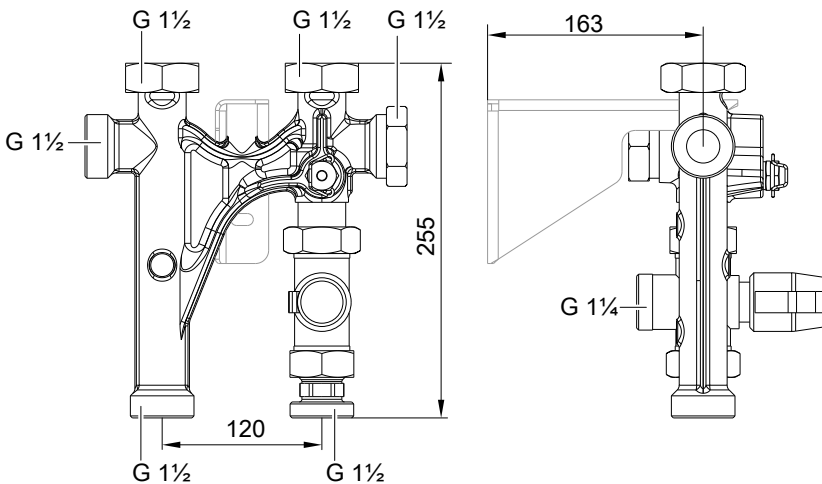
With 3-way diverter valve, sensor well for return temperature sensor and thermal insulation.

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

See design information for connection options.

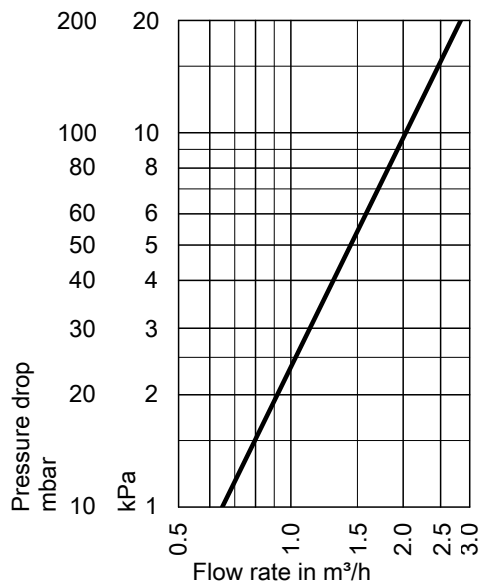
The extension for installation on a wall and the wall mounting bracket must be ordered separately if required.

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



Installation accessories (cont.)

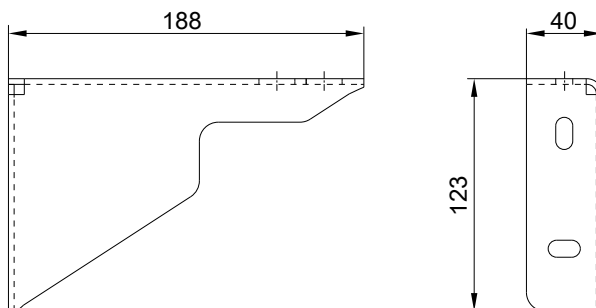
Pressure drop



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

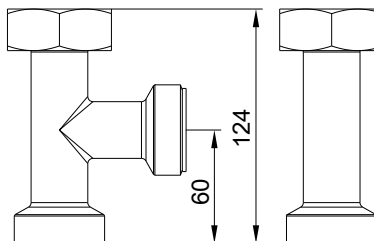
With connection for heating water flow or return and thermal insulation.

For installation below the distributor.

Connections G 1½.

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 the Vitorondens 200-T up to 53.7 kW and Vitorondens 222-F

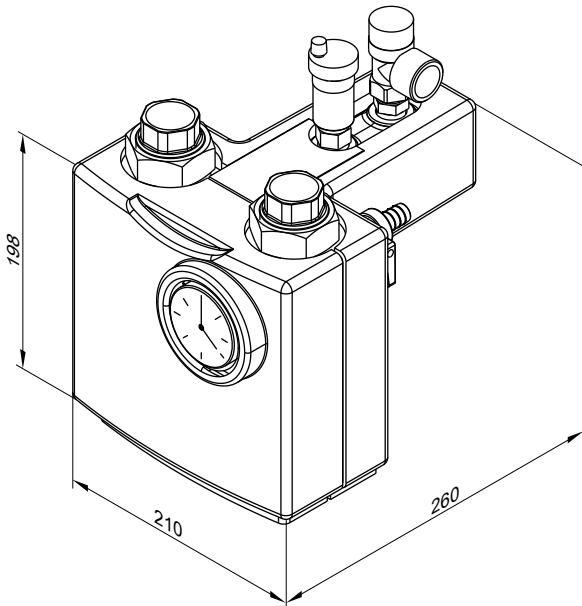
- Safety assembly in the distributor casing on the heating water side
- Safety valve (3 bar or 0.3 MPa)
- Thermal insulation

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.

Installation accessories (cont.)

Part no. 7248938

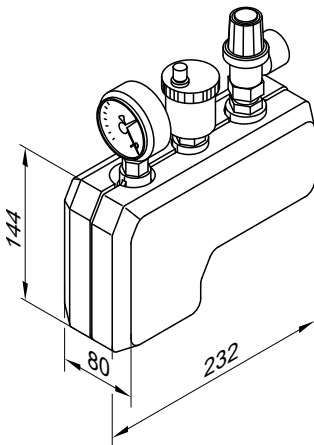


Safety equipment block (only for the Vitoladens 300-T)

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

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

Part no. 7199331

Plinth for the 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

(To be ordered separately in every case, as no DHW cylinder is intended to be installed below the boiler)

Plinth for the 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 out over the front of the boiler. With the Vitorondens 67.6 to 107 kW, we recommend ordering a boiler plinth separately. If a boiler plinth is not ordered, the appliance must be sited on a suitable base.

Plinth for the Vitoladens 300-T

- Height: 250 mm

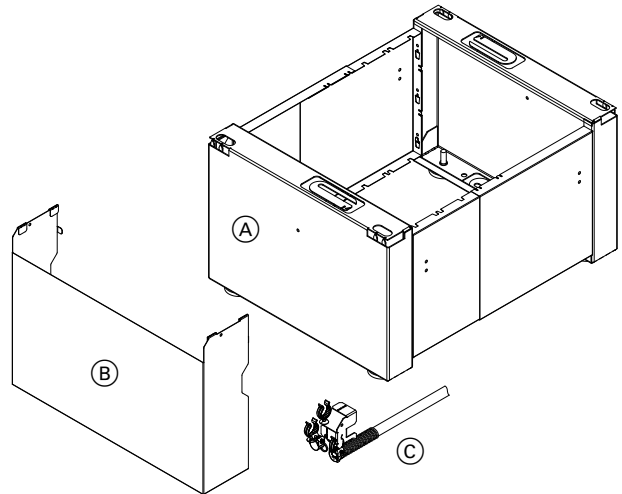
(Should always be ordered, except when installing a DHW cylinder below the boiler)

Part no. 7187610 for 35.4 kW

Part no. 7517415 for 42.8 to 53.7 kW

Plinth for the Vitoladens 300-C

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



- (A) Plinth
- (B) Design cover
- (C) Condensate hose set

- Height 250 mm:

Part no. ZK05968

Including condensate hose for connecting the trap to the neutralising system, activated carbon filter or on-site outflow.

Hose clips for securing the condensate hose to the plinth and design panel (210 mm high)

- Height 400 mm:

Part no. ZK05966

Including condensate hose for connecting the trap to the neutralising system, activated carbon filter or on-site outflow.

Hose clips for securing the condensate hose to the plinth and design panel (355 mm high)

Installation accessories (cont.)

Design panel **(B)** for the Vitoladens 300-C

For covering and protecting the oil filter, trap and dirt separator (included in standard delivery of plinth for Vitoladens 300-C).

■ Height 210 mm:

Part no. ZK05965

■ Height 355 mm:

Part no. ZK05967

Condensate hose set **(C)** for the Vitoladens 300-C

For connecting the trap to the neutralising system, activated carbon filter or on-site outflow (included in standard delivery of plinth and DHW cylinder below the boiler). With hose clips for securing to the plinth or DHW cylinder below the boiler.

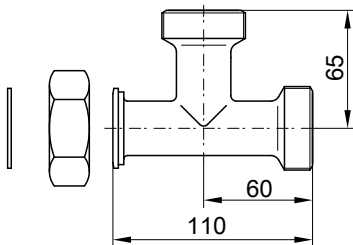
Part no. ZK05969

Tee

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

Part no. 7237422

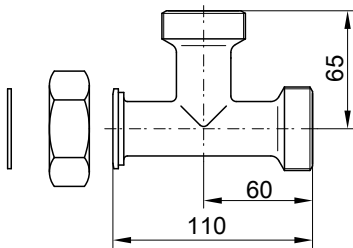
G 1½ x 1½ x 1½



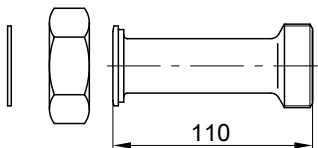
Adaptors

Part no. 7205625

Tee: G 1½ x 1½ x 1½



Extension: G 1½ x 1½



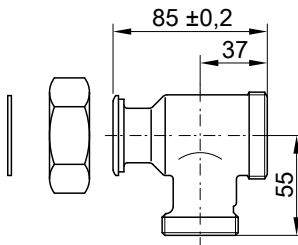
Tees for connecting DHW cylinders

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

Tee with check valve

Part no. 7336645

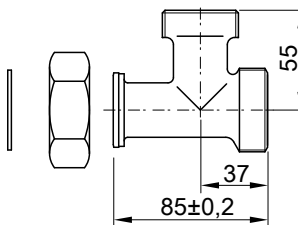
G 1½ x 1¼ x 1½



Tee without check valve

Part no. 7336644

G 1½ x 1¼ x 1½



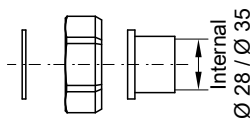
Shut-off valve G 1½

Part no. 7815145

Solder fitting DN 28 and 35

For part no. allocation, see pricelist.

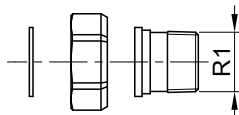
G 1½ x Ø 28 mm or Ø 35 mm



Threaded fitting R 1

For part no. allocation, see pricelist.

G 1½ x R 1



Sound insulation set

For the Vitorondens 200-T, type J2RA

Part no. ZK01296

■ Air intake cover with hose connection

■ Flexible hose with silencing core

■ Hose terminal as rodent guard

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

Note

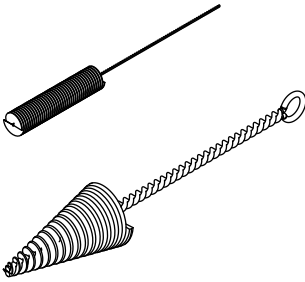
When using the sound insulation set, the max. heating output for the output size 100 or 107.3 kW is reduced by 11 %!

Installation accessories (cont.)

Set of cleaning brushes, mixer assembly

For the Vitoflame 300 burner
Part no. ZK01791

- Cleaning brush, small, for mixer assembly
- Cleaning brush, large, for mixer assembly



Set of cleaning brushes, Vitoladens 300-C

For cleaning the condensate hoses.

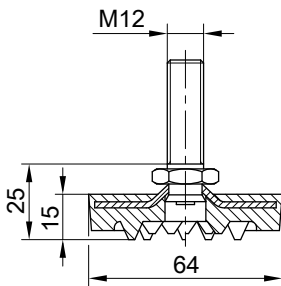
Part no. ZK05970

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 bearing 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.

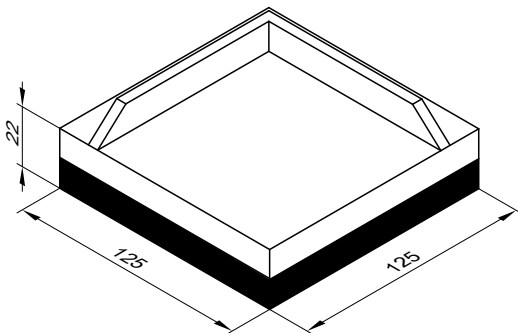
Adjustable anti-vibration feet – permissible load 1200 kg
Part no. 7306246



- 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

Installation accessories (cont.)

CO limiter

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

Wall mounting in the ceiling area near the boiler.

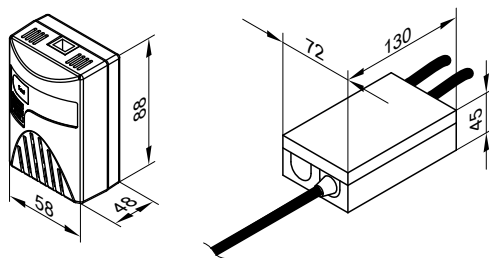
CO limiter for boiler	Part no.
Vitoladens 300-C	Z015500
Vitorondens 200-T up to 55 kW, Vitoladens 300-T	Z021823
Vitocrossal 200 type CIB, Vitocrossal 300	Z024247
Vitorondens 200-T, type J2RA	

Components:

- Casing with
 - Integral CO sensor
 - Mode, fault and alarm indicators
 - Acoustic alarm system
- Communication cable for interface (2.5 m)
- Interface inside the casing with power cable (1.2 m) and connecting lead for burner shutdown relay (1.2 m)
- Fixing materials
- For Vitoladens 300-T and Vitorondens 200-T, including connecting cable for connection to the corresponding boiler

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

6.1 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 the Vitorondens 200-T and Vitoladens 300-T).
- A competent heating contractor must clean the boiler and heat exchanger at least annually.
- The maximum installation altitude is 2000 m above sea level.

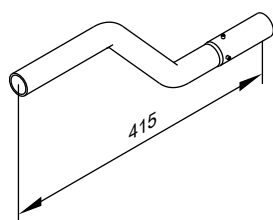
Handling

The following accessories can be ordered to facilitate boiler handling:

Handles for the Vitoladens 300-T

Part no. 7517308

(4 pce)

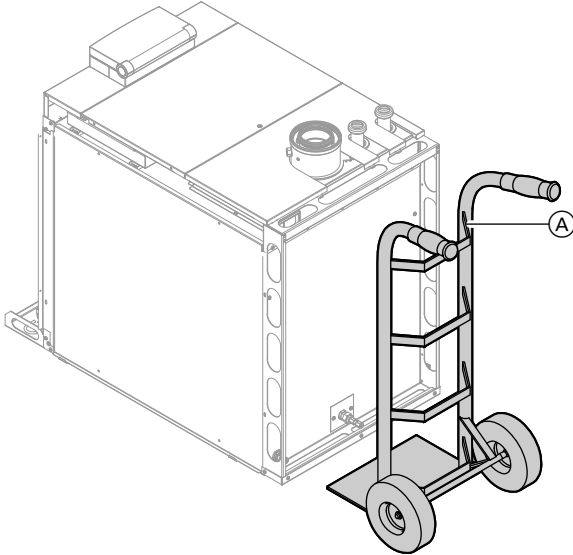


Design information (cont.)

Transport and handling aid

Part no. 9521645

Special transport and handling aid for Viessmann central heating boilers and DHW cylinders
Suitable for transportation across hallways and on stairs - load bearing capacity 400 kg (max.)



Shown with Vitoladens 300-C

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

Transport accessory for Vitoladens 300-C

Part no. ZK05971

- 2 carrying handles for flexible height-adjusted mounting on the front of the boiler
- 1 carrying handle for flexible height-adjusted mounting on the back of the boiler

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.

For the Vitoladens 300-C, an ambient temperature of 40 °C is permissible.

If these instructions and those following are not observed, any consequential losses directly related to any of these causes are excluded from our warranty.

Extractors for open flue operation

Operating appliances that extract air to the outside (extractor hoods, extractors, air conditioning units, etc.) can create negative pressure. If the boiler is operated at the same time, this can lead to a reverse flow of flue gas.

Clearance towards the fuel tank

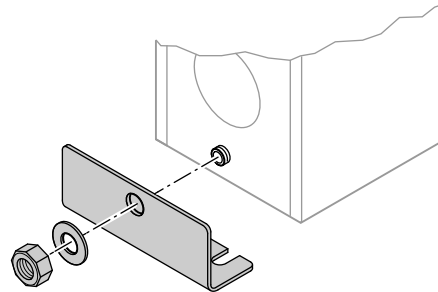
A maximum surface temperature of 40 °C will not be exceeded anywhere on this combustion equipment.

Consequently, a minimum clearance of 0.1 m between the combustion equipment and the fuel tank is sufficient.

Handling accessories Vitorondens 200-T up to 53.7 kW

Part no. 7198575

- To facilitate handling 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.



Handles for the Vitorondens 200-T up to 53.7 kW

Part no. 7189602

(4 pce)

Transport aid for the Vitorondens 200-T 67.6 to 107.3 kW

Part no. 7181544

Lifting loops (4 pce)

Transport accessories Vitorondens 222-F

Part no. 7245709

Carrying handles (4 pce)

Siting conditions

- Prevent air contamination by halogenated hydrocarbons (e.g. as contained in sprays, paints, solvents and cleaning agents) or organosilicon compounds (e.g. siloxanes)
 - Prevent very dusty conditions
 - Prevent high levels of humidity
 - Prevent frost and ensure good ventilation
- Otherwise the system may suffer faults and damage. In rooms where air contamination from **halogenated hydrocarbons or organosilicon compounds** is to be expected, operate the boiler only in room sealed mode.

This can cause life threatening poisoning.

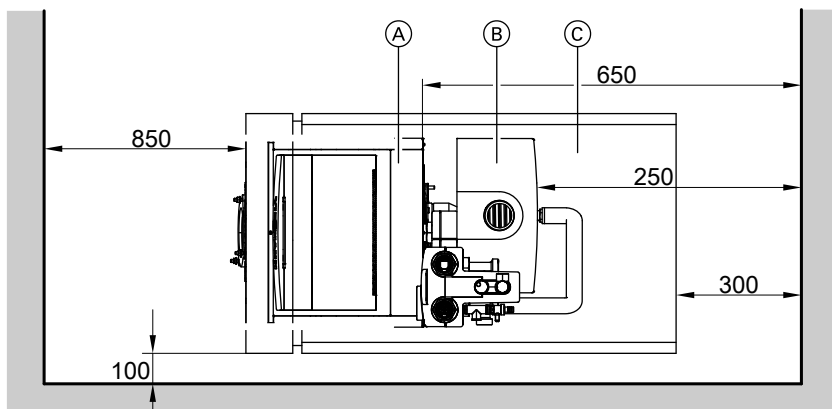
To prevent the reverse flow of flue gas, fit an interlock circuit or take suitable steps to ensure an adequate supply of combustion air.

Design information (cont.)

Safety equipment for the installation room

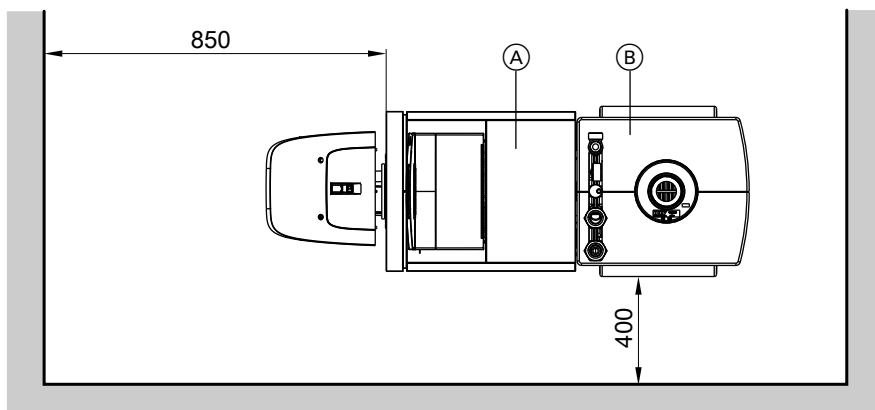
Viessmann heat generators are tested and approved in accordance with all safety regulations and are therefore fail-safe. Unpredictable, external factors may, in the rarest of cases, lead to the potentially harmful escape of carbon monoxide (CO). For this case, we recommend using a CO limiter. This can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

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



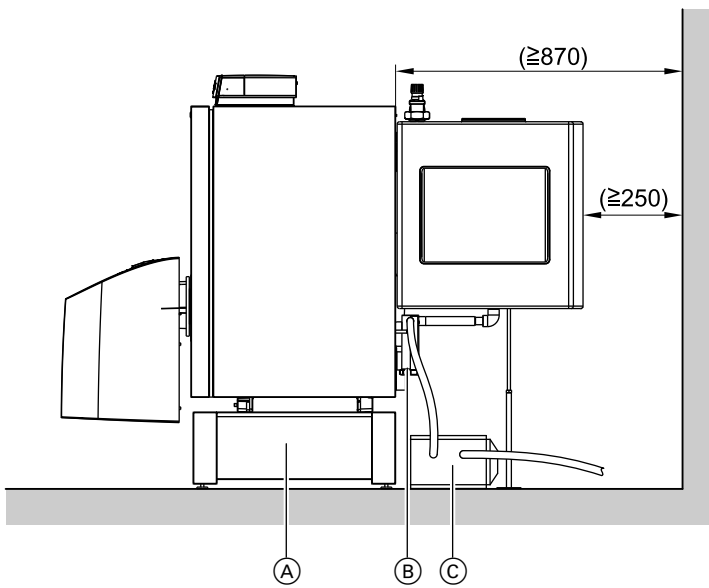
- (A) Boiler
- (B) Heat exchangers
- (C) DHW cylinder

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



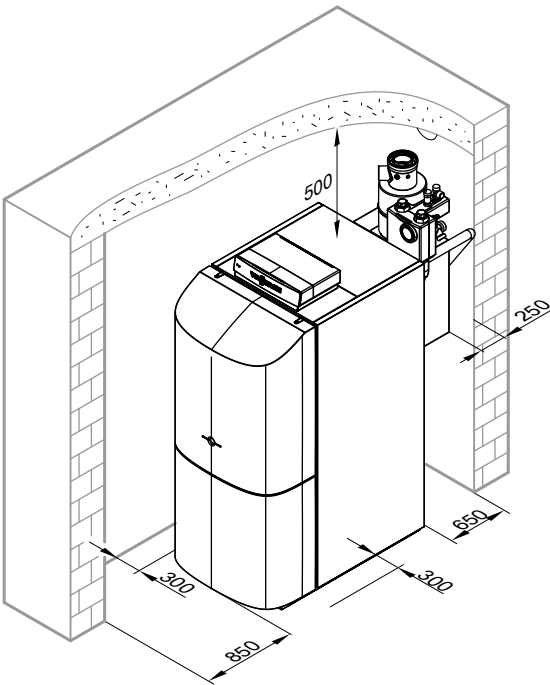
- (A) Boiler
- (B) Heat exchangers

Design information (cont.)



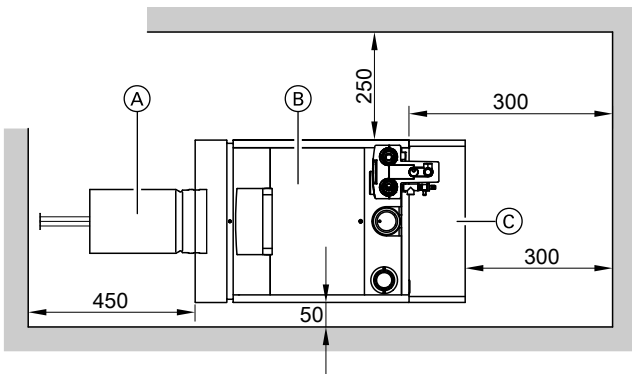
- Ⓐ Plinth (accessory)
- Ⓑ Trap
- Ⓒ Neutralising system (accessories)

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



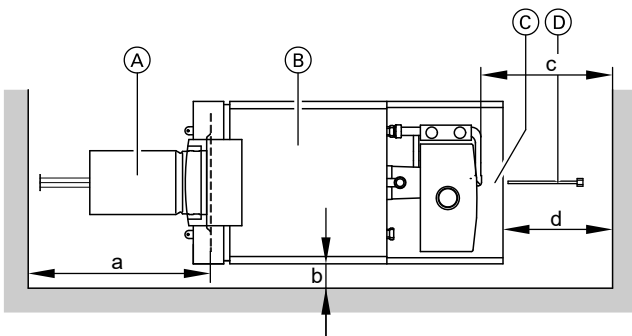
Design information (cont.)

Minimum clearances Vitoladens 300-C



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

Minimum clearances Vitoladens 300-T



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

Rated heating output ($T_F/T_R=50/30\text{ }^\circ\text{C}$)	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: This space is required in front of the boiler to enable 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 or ventilation openings

The cross-section should be at least 150 cm². This cross-section may not be split over more than 2 openings (please observe the Landes-FeuVo and CEN/TR 1749 or local fire regulations).

With the Vitoladens 300-C, C_x approval means vent apertures are not required for room sealed operation.

6.2 Fuel

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

Design information (cont.)

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. We recommend that low sulphur fuel oil of premium quality is used as a preference.

According to DIN 51603-1 and the third BImSchV [in 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, for example, "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 20 with max. 20.9 % (V/V) bio-components (FAME) and paraffinic fuel oils (HVO, PTL, etc.) to DIN TS 51603-8 in proportions of up to 100 % are permissible.

6.3 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 waste water system via a neutralising system (accessory) or an activated carbon filter (accessory) (observe current regulations).

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

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).

We recommend using the activated carbon 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 drain pipes must only be made from corrosion-resistant materials (e.g. reinforced hoses). **Never use any zinc-plated materials or those containing copper for pipes, connection pieces, etc.**

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:

- Vitrified clay pipes
- Hard PVC pipes
- PVC pipes
- PE HD pipes
- PE pipes
- ABS/ASA pipes
- Stainless steel pipes
- Borosilicate pipes

It is advisable to contact the local water authorities in good time prior to installation in order to familiarise yourself with the local regulations.

Neutralising system

The boilers may be supplied with a separate neutralising system (accessory). This is obligatory when using standard EL fuel oil.

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 has been 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.

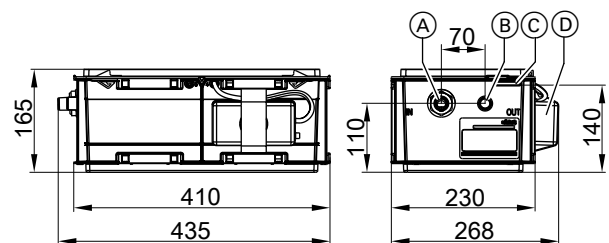
Neutralising system

For part no. see pricelist

With neutralising granulate and activated carbon filter.

Note

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



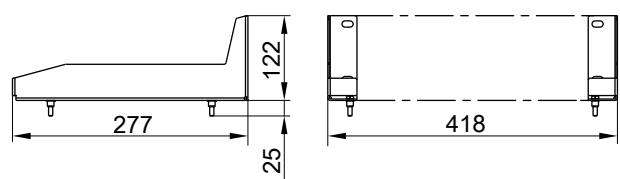
- (A) Condensate inlet
- (B) Condensate drain
- (C) Overflow aperture
- (D) Ventilation pump

Wall mounting bracket for neutralising system

If the plinth is not used.

Ensure that the condensate drains off reliably.

For part no. see pricelist



Maintenance set for neutralising system

Comprising neutralising granulate and activated carbon filter
For part no. see pricelist

Design information (cont.)

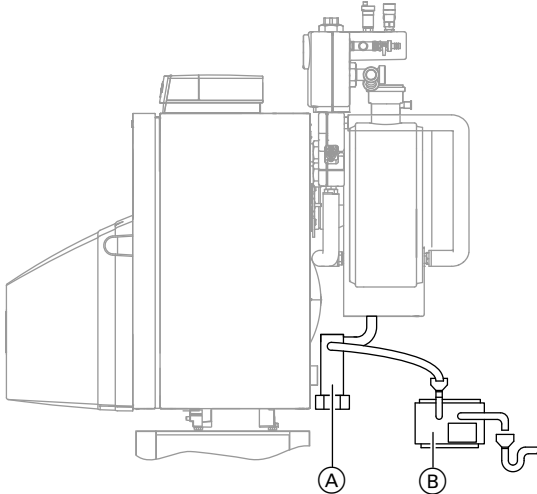
Activated carbon filter

Recommended if no neutralising system is used.
For part no. see pricelist

Maintenance set for activated carbon filter

For part no. see pricelist

Installing the neutralising system



Shown using the Vitorondens 200-T as an example

- (A) Trap
- (B) Neutralising system

6.4 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 increased mechanically to 95 °C
- Vitorondens 200-T: 75 °C can be increased mechanically 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].

Design information (cont.)

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.

Fill and top-up water

The quality of the fill and top-up water is one of the key factors for preventing damage caused by deposits or corrosion in the heating system.

In order to prevent system damage, the European standards and national guidelines for fill and top-up water must be observed right from the design stage, e.g. VDI 2035.

- Regular checks of the appearance, water hardness, conductivity and pH value of the heating water during operation lead to higher operational reliability and system efficiency. These properties must also be observed for the top-up water. According to VDI 2035, the quantity and properties of the top-up water must always be documented in the system log or maintenance reports.
- The basis for filling the heating system is tap water of potable water quality in line with Directive 98/83/EC and/or (EU) 2020/2184. For use as heating water, it is normally sufficient to soften the tap water. VDI 2035 specifies the maximum recommended concentrations of alkaline earths (hardeners), depending on the heating output and the specific system volume (ratio of the heating output of the heat generators to the heating water volume of the system): See the table below.
- We recommend always softening the fill and top-up water, as the water hardness can vary due to the mixture of different sources of supply, and the information provided by water supply utilities only gives average values. The information provided by water supply utilities is not sufficient for designing the system. In addition, it must be taken into account that the quantity of top-up water that will be added to the system during its service life cannot be predicted precisely at the design stage (especially in the case of existing heating circuits).

- If no aluminium or aluminium alloy components are installed, the heating water in systems with Viessmann heat generators does not need to be fully desalinated.
- The use of glycol as antifreeze without adequate inhibition and buffering is not permitted. The suitability of an antifreeze or other chemical additive should be certified by the manufacturer. Chemical additives in the heating water require more extensive monitoring and maintenance. Observe the manufacturer's instructions. Viessmann accepts no liability for damage or operational failure arising due to the use of unsuitable additives, incorrect dosing or poor maintenance.
- Chemical water treatments may only be planned and carried out by appropriately qualified specialist companies.

Total permissible hardness of the fill and top-up water according to VDI 2035

Total heating output of heat generator	Specific water capacity of heat generator ^{*16}	Specific system volume ^{*17}		
		≤ 20 l/kW	> 20 to ≤ 40 l/kW	> 40 l/kW
≤ 50 kW	≥ 0.3 l/kW	None	≤ 3.0 mol/m ³ (16.8 °dH)	≤ 0.05 mol/m ³ (0.3 °dH)
	< 0.3 l/kW	≤ 3.0 mol/m ³ (16.8 °dH)	≤ 1.5 mol/m ³ (8.4 °dH)	≤ 0.05 mol/m ³ (0.3 °dH)
> 50 to ≤ 200 kW	—	≤ 2.0 mol/m ³ (11.2 °dH)	≤ 1.0 mol/m ³ (5.6 °dH)	≤ 0.05 mol/m ³ (0.3 °dH)
> 200 to ≤ 600 kW	—	≤ 1.5 mol/m ³ (8.4 °dH)	≤ 0.05 mol/m ³ (0.3 °dH)	≤ 0.05 mol/m ³ (0.3 °dH)
> 600 kW	—	≤ 0.05 mol/m ³ (0.3 °dH)	≤ 0.05 mol/m ³ (0.3 °dH)	≤ 0.05 mol/m ³ (0.3 °dH)

Further requirements for the fill and top-up water independent of the heating output according to VDI 2035

Appearance

Clear, free of sedimented substances

Electrical conductivity

If the conductivity of the heating water is above **1500 µS/cm** due to a high salt content (e.g. in supply areas near the coast), desalination is necessary.

pH value

Materials in the system	pH value
Without aluminium alloys	8.2 to 10.0
With aluminium alloys	8.2 to 9.0

^{*16} In the case of systems with several heat generators that have several different specific water capacities, the smallest specific water capacity is definitive.

^{*17} To calculate the specific system volume, the smallest individual heating output should be used for systems with several heat generators.

Design information (cont.)

Information about system design

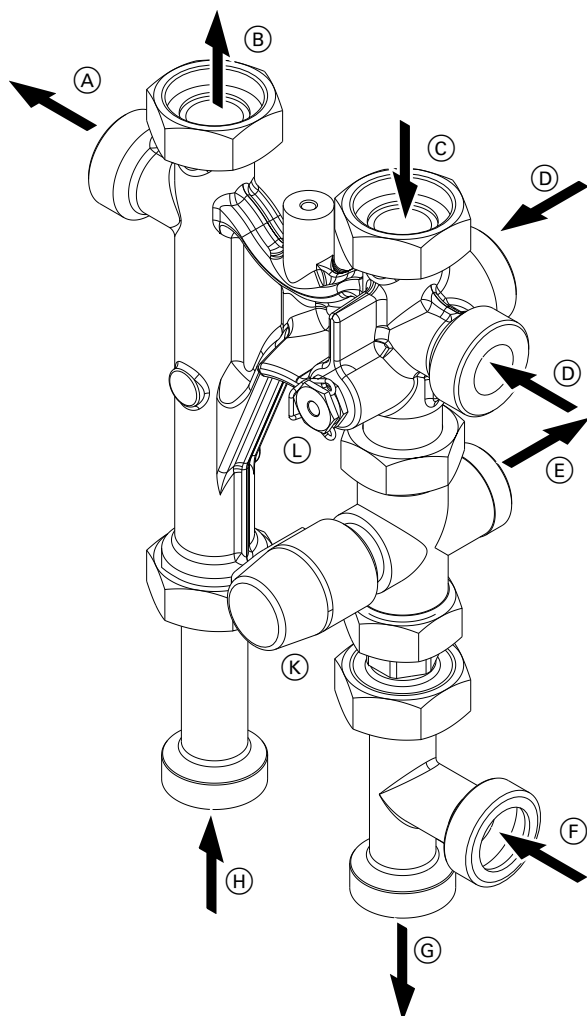
- For softening the heating water, use softening systems with water flow meters: See Vitoset pricelist.
- During installation, ensure that individual pipework sections can be drained separately. This avoids the need to drain all the heating water in the case of maintenance and repair work.
- As the formation of sludge and magnetite in the heating water cannot generally be completely prevented during operation, we recommend the installation of suitable magnetic dirt separators: See Vitoset pricelist.

Notes on commissioning and operating the system

- In order to prevent corrosion by remaining flushing water, fill the system completely immediately after flushing.
- Even treated fill water contains oxygen and small amounts of foreign matter. In order to prevent local concentrations of corrosion products and other deposits on the heating surfaces of the heat generator, commission the system in stages with a high heating water flow rate. Start with the heat generator at its lowest output. For the same reason, in the case of multi boiler systems and cascades, commission all heat generators at the same time.

- If extending the system or conducting maintenance or repair work, only drain the pipework sections where absolutely necessary.
- Check and clean filters, dirt traps and other blow-down or separating facilities in the heating water circuit after filling and commissioning.
- Special regional regulations regarding fill and top-up water must be observed. When disposing of heating water containing additives, check whether additional treatment may be required before it is discharged into the public waste water system.

Distributor for solar central heating backup (accessory)



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

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

Optional connections:

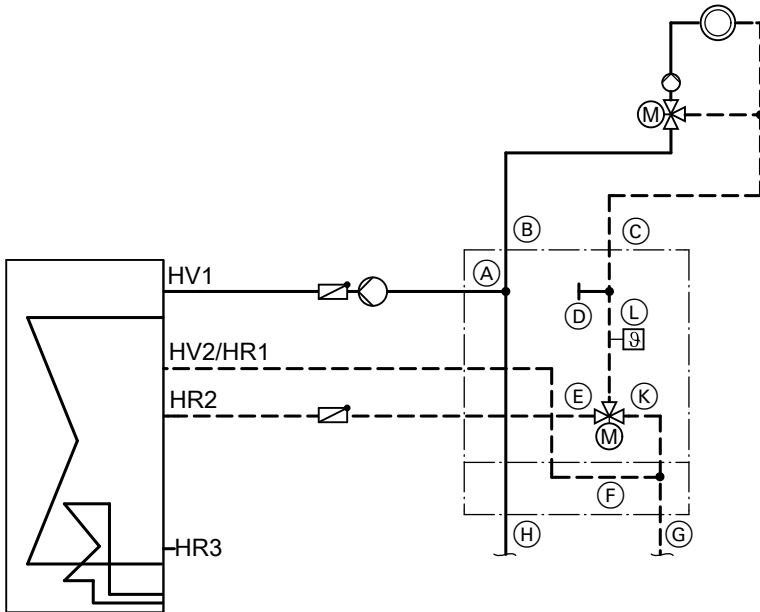
- Solar central heating backup via the multi mode heating water buffer cylinder or heating water buffer cylinder
- DHW heating by the boiler in conjunction with a mono mode DHW cylinder or multi mode heating water buffer cylinder

- Ⓐ Heating water flow for DHW heating G 1½
- Ⓑ Heating water flow for heating circuit G 1½

Design information (cont.)

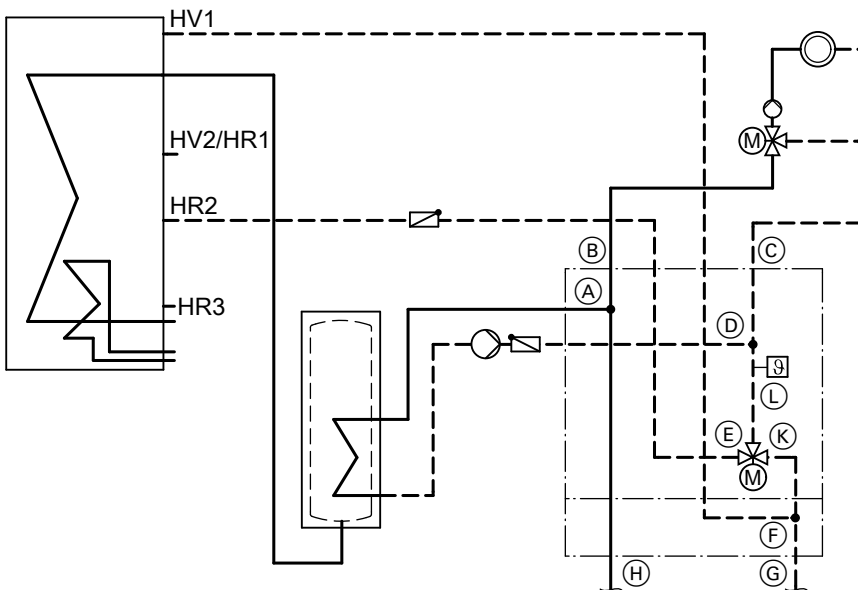
Installation examples

DHW heating and central heating backup with a 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) Without connection
- (E) Heating water return to multi mode heating water buffer cylinder
- (F) Heating water flow from multi mode heating water buffer cylinder or Heating water return for DHW heating
- (G) Heating water return to boiler
- (H) Heating water flow from boiler
- (K) 3-way diverter valve
- (L) Return temperature sensor (separate accessory)

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

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Design information (cont.)

- (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 the 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.

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

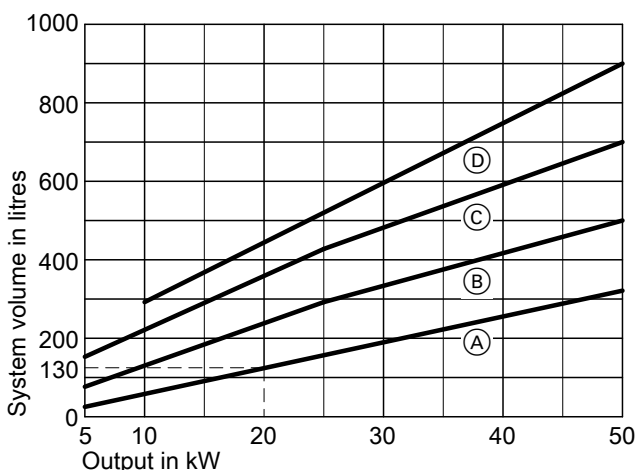
When making the hydraulic connections, check that the size of the expansion vessel matches the system conditions. A rough check can be carried out with the following steps.

- $V_{DEV} = f ((V_A + V_K) A_f + 2.4)$
- V_{DEV} = 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 expansion factor A_f

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

Calculating the heating system volume (approximate values)



- (A) Convectors
- (B) Panel radiators
- (C) Radiators
- (D) Underfloor heating

6.5 Oil supply

The oil supply must be implemented as a single line system. The materials must be suitable for the fuels used.

With > 20 % FAME in the fuel, we recommend not using non-ferrous metals such as copper.

In existing tank systems and when switching to paraffinic fuels or fuel with a FAME proportion > 10 %, we recommend cleaning the tank.

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]. The height differential H (see Fig.) between the oil burner pump and the foot valve in the tank set below the oil burner pump must not exceed 4 m. Greater height differentials lead to noisy operation and pump wear.

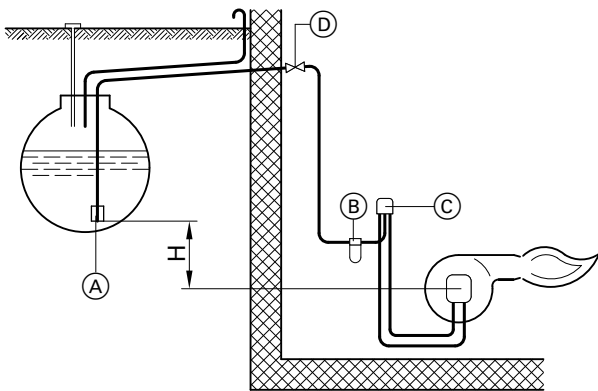
An oil feed pump with intermediate tank is required in the immediate vicinity of the boiler, if the suction head or maximum pipe run for tanks set below the boiler is greater than that shown in the following table. Site the intermediate tank so that the integral oil burner pump can deliver the oil.

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).
- The maximum permissible pre-charge pressure in the supply lines (ring pipelines) is 2 bar (0.2 MPa)

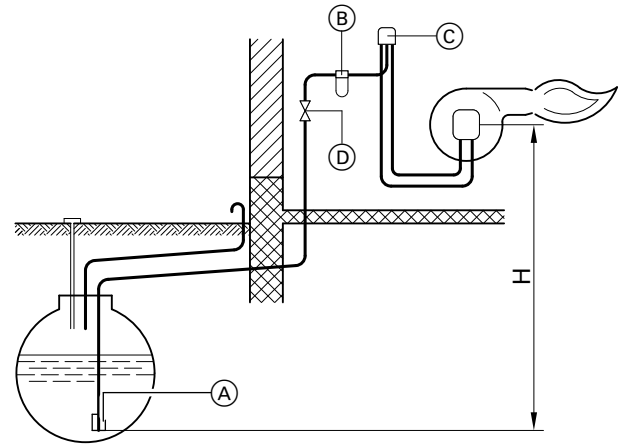
Anti-lift valve

- Fuel oil tank systems where the highest possible fuel oil level inside the tank is (or could be) higher than the lowest point of the fuel oil suction line require an anti-lift valve.
- If the tank is positioned high up (level with foot valve, or the floating inlet is higher than the oil pump), never install mechanical anti-lift valves. Instead, use a 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 oil burner pump

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



Tank below oil burner pump

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

Suction head H in m ^{*18}	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 EL fuel oil 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 planning and sizing oil lines: See TopTechnik brochure "Oil supply in heating system modernisation".

*18 Positive values in the table mean that the tank is above the oil burner pump. Negative values mean that the tank is below the oil burner pump (see figures).

Design information (cont.)

6.6 Flue system

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

6.7 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 CECS 215-2017 and 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.

The appliance is intended exclusively for domestic or semi-domestic use; even users who have not had any instruction are able to operate the appliance safely.

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).

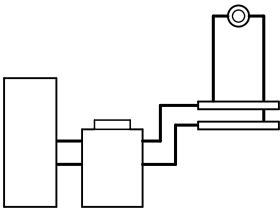
Control units

7.1 Control unit types

Assigning the control units to the boiler

Vitotronic	100	200		
Type	KC2B	KO1B	KO2B	KW6B
Boiler				
Vitorondens 200-T			X	
Vitoladens 300-C				X
Vitoladens 300-T	X	X		

Vitotronic 100, type KC2B



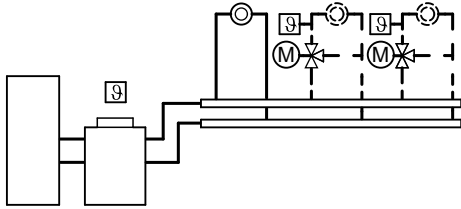
Electronic boiler control unit:

- 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.

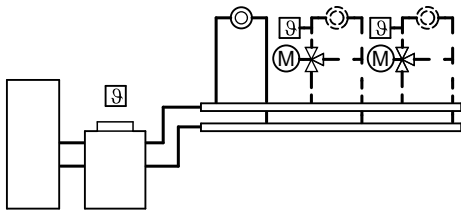
Control units (cont.)

Vitotronic 200, type KO1B



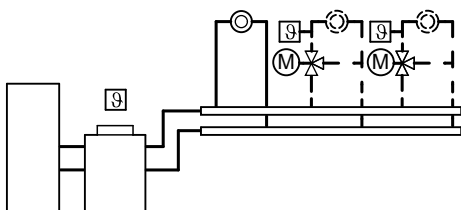
- Weather-compensated, digital boiler and heating circuit control unit:
- For single boiler systems.
 - For single stage, two-stage or modulating burners.
 - For one heating circuit without mixer and up to two heating circuits with mixer. An extension kit (accessories) is required for each heating circuit 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).

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

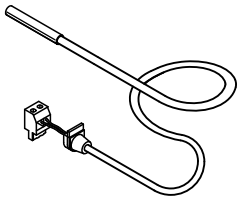
7.2 Components in the delivered condition

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

Control units (cont.)

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

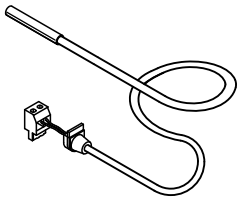
Boiler water temperature sensor



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

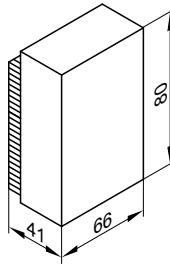
Outside temperature sensor

Installation location

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

Connection

- 2-core lead, length up to 35 m with a cross-section of 1.5 mm² (copper)
- Never route this cable 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 the 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

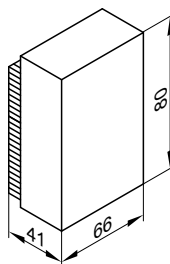
Outside temperature sensor

Installation location

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

Connection

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



Control units (cont.)

Specification

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

7.3 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
- 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.

7.4 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

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, 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:

- 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.

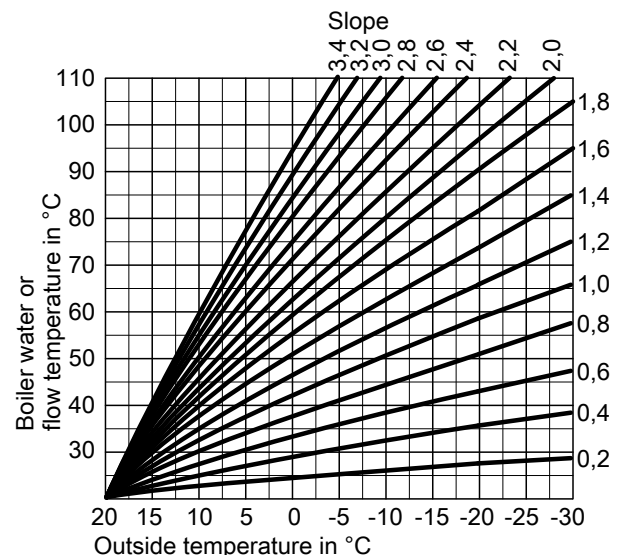
Heating curve setting (slope and level)

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

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
- 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.

7.5 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

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

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

Control units (cont.)

- 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
- 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.

Control units (cont.)

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.

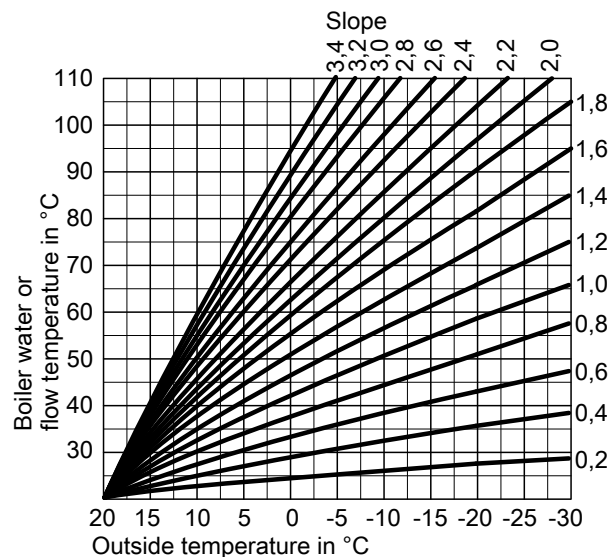
Heating curve setting (slope and level)

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
- 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.

7.6 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

Control units (cont.)

- 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
- 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.

Control units (cont.)

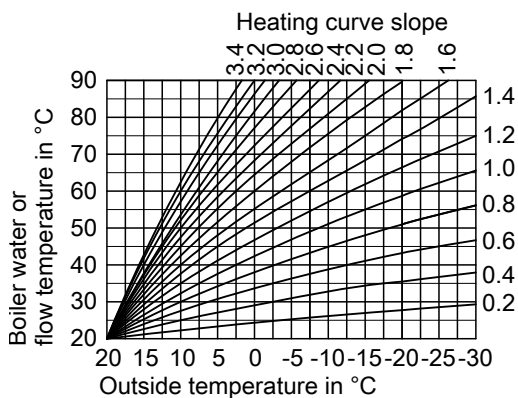
Heating curve setting (slope and level)

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.

7.7 Control unit accessories

Allocation of accessories according to control unit type

Vitotronic Type	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 2		X	X	X
LON cable		X	X	X
LON coupling		X	X	X
LON connection piece		X	X	X
LON socket		X	X	X
Terminator		X	X	X
LON communication module		X	X	X

Note

For more information on communication technology, see the "Data communication" technical guide.

Vitotrol 100, type UTA

Part no. 7170149

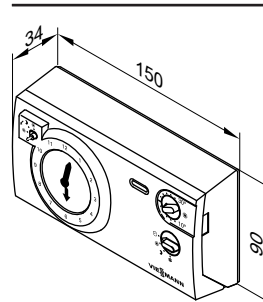
Room thermostat

- With switching output (2-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
Protection class	II
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

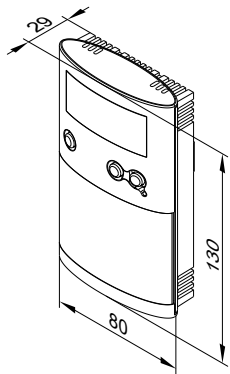
Room temperature controller

- With switching output (2-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 (2 x 1.5 V Mignon alkaline batteries, type LR6/AA, battery life approx. 1.5 years).

Control unit connection:

- 2-core cable with a cross-section of 0.75 mm² for extra low voltage (ELV)
- 2-core cable with a cross-section of 1.5 mm² for 230 V~



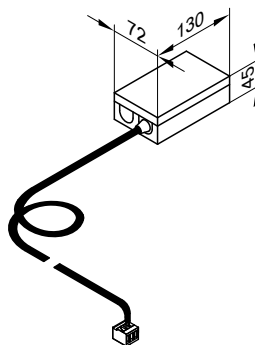
Specification

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
Protection class	II
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~

Control units (cont.)

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

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

Vitotrol 100, type UTDB-RF

Part no. Z007692

Room temperature controller with integral wireless transmitter and receiver

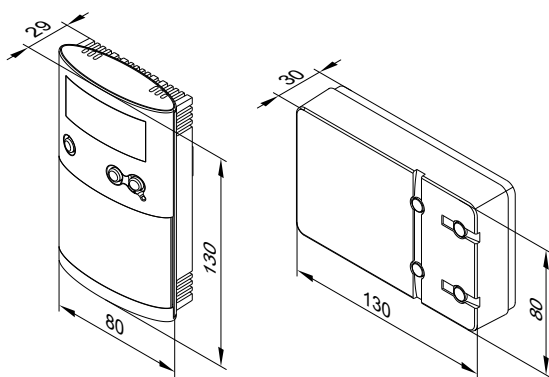
- With digital time switch
- With individual day and seven-day program
- Operation with user prompts:
 - 3 preselected time programs, individually adjustable
 - Constant manual mode with adjustable set room temperature
 - Frost protection mode
 - Holiday program
- With selector keys for party and economy 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 (2 x 1.5 V Mignon alkaline batteries, 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. 10 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

5822441

Control units (cont.)

- Displays:
 - Room temperature
 - Outside temperature
 - Operating condition
- Settings:
 - Set room temperature for standard mode (normal room temperature)

Note

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

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

Installation location:

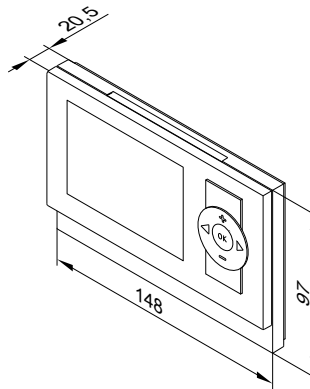
- Weather-compensated mode: installation anywhere in the building
- Room temperature hook-up: the integral room temperature sensor captures the actual room temperature and effects any necessary correction of the flow temperature.

The captured room temperature depends on the installation site:

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

Connection:

- 2-core lead, length max. 50 m (even if connecting several remote control units)
- Never route this 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.

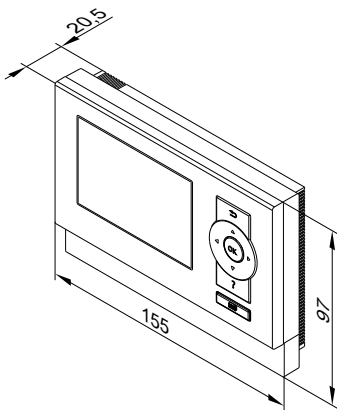
The captured room temperature depends on the installation site:

- 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:

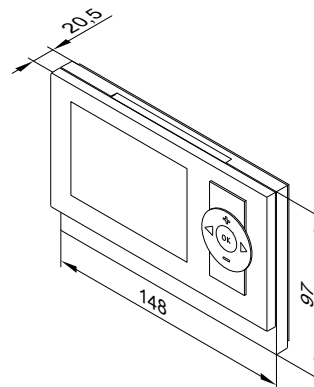
The integral room temperature sensor captures the room temperature and effects any necessary correction of the flow temperature.

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

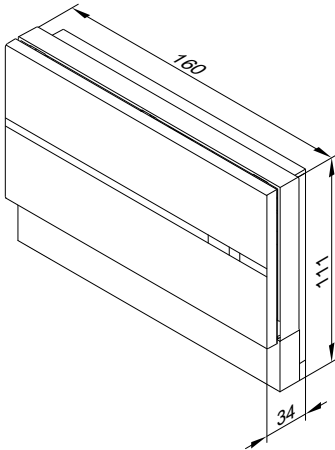
For communication between the Vitotronic control unit and Vitotrol 200-RF wireless remote control.

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

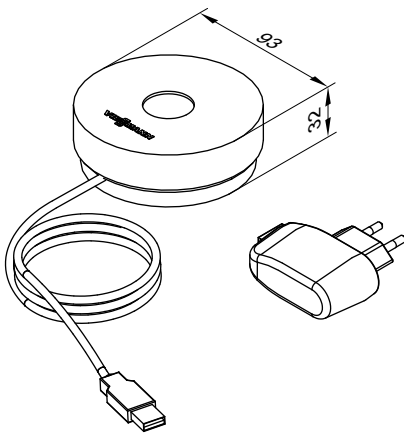
Mains operated wireless repeater to increase the wireless range and for use in areas where wireless communication is difficult. Observe the "Wireless accessories" technical guide.

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 _{DC} 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

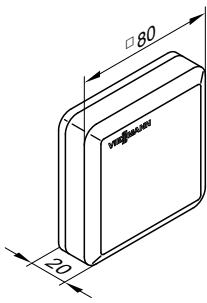
Separate room temperature sensor as supplement to the Vitotrol 300A; to be used if the Vitotrol 300A cannot be installed inside the main living room or in a suitable position for temperature capture and adjustment.

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.)



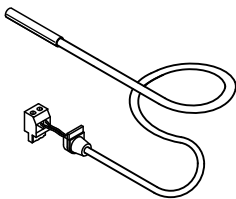
Specification

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

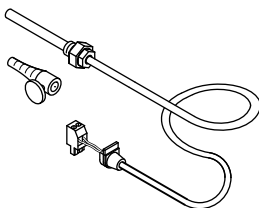
Flue gas temperature sensor

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

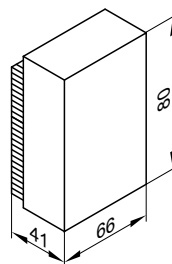
For receiving the DCF 77 time signal (location: Mainflingen near Frankfurt/Main).

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



Control units (cont.)

External extension H5

Part no. 7199249

Function extension in a casing.

With plug [150] for the following functions:

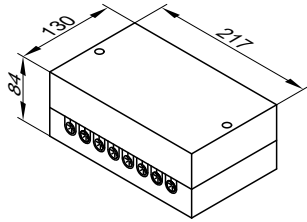
- External demand and blocking

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.



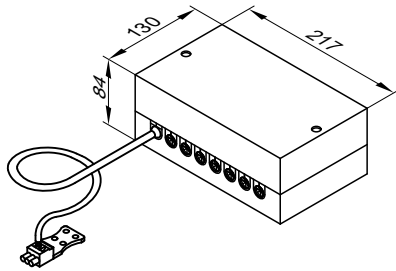
Specification

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

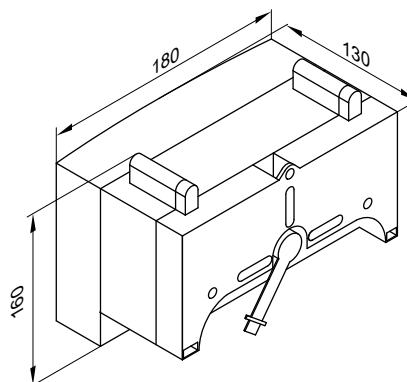
KM BUS subscriber

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

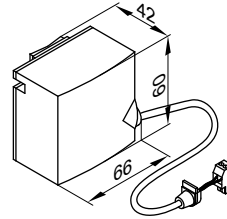


Control units (cont.)

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 \square_{20}	2(1) A, 230 V~
Torque	3 Nm
Runtime for 90° <	120 s

Flow temperature sensor (contact temperature sensor)



Secured with a tie.

Specification, 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

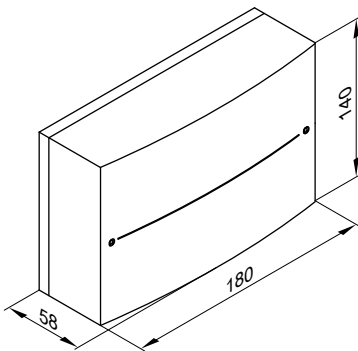
KM BUS subscriber

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

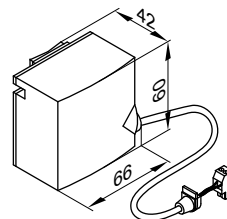
Rated relay output breaking capacity

– Heating circuit pump \square_{20}	2(1) A, 230 V~
– Mixer motor	0.1 A, 230 V~

Required runtime of the

mixer motor for 90° <	approx. 120 s
-----------------------	---------------

Flow temperature sensor (contact temperature sensor)



Secured with a tie.

Specification, 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

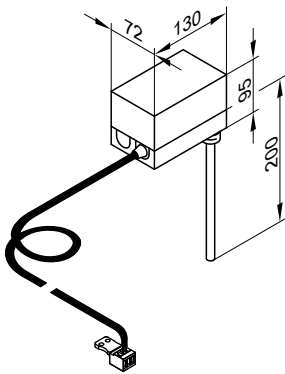
Immersion temperature limiter

Part no. 7151728

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

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

Control units (cont.)



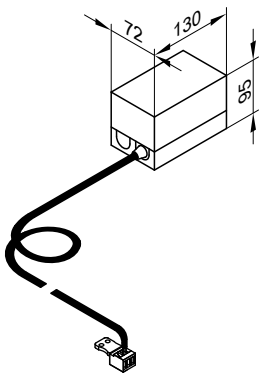
Specification

Lead length	4.2 m, fully wired
Setting range	30 to 80 °C
Switching differential	Max. 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 temperature limiter

Part no. 7151729

Can be used as a maximum temperature limiter for underfloor heating systems (only in conjunction with metal pipes). The temperature limiter is fitted to 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 enclosure
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 Viessmann 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 DHW cylinders from 400 l capacity)
- 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 changeover 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)
- Do not route this lead immediately next to 230 V/400 V cables.

Control units (cont.)

Specification – collector temperature sensor

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

Cylinder temperature sensor

For connection inside the appliance

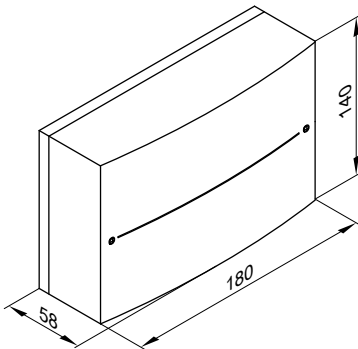
On-site extension of the connecting lead:

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

Specification – cylinder temperature sensor

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 respective 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, for 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

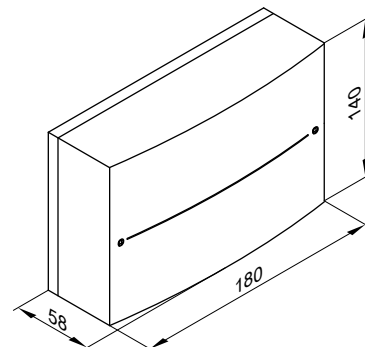
Part no. 7452091

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)
 - Issuing a central fault message
 - Feed pump connection to a substation
- 1 analogue input (0 to 10 V)
 - Specifying set boiler water temperature
- 3 digital inputs
 - External changeover of the operating status for heating circuits 1 to 3 on the 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 in conjunction with control units for weather-compensated mode



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

Vitconnect, type OPTO2

Part no. ZK04789

Part no. ZK04789

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

Functions when operating with the ViCare app

- Calling up the temperatures of connected heating circuits
- Intuitive adjustment of preferred temperatures and time programs for central heating and DHW heating
- Heating system fault reporting by push notification

The ViCare app supports mobile devices with the following operating systems:

- Apple iOS
- Google Android

Note

- **Compatible versions:** Visit the App Store or Google Play.
- **Further information:** Visit www.vicare.info

Functions when operating with ViGuide

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

Note

For further information: Visit www.vitoguide.info

On-site requirements

- Compatible heating systems with Vitconnect, type OPTO2

Note

Supported control units: Visit www.viessmann.de/vitconnect

- Before commissioning, check the system requirements for communication via local IP networks/WiFi.
- Port 443 (HTTPS) and port 123 (NTP) must be open.
- The MAC address is printed on the device label.
- Internet connection with flat rate data (**without time or volume restrictions**)

Installation location

- Installation type: Wall mounting
- Installation only in enclosed buildings
- The installation location must be dry and free of frost.
- Distance to heat generator min. 0.3 m and max. 2.5 m

- Socket 120 V/60 Hz
max. 1.5 m to installation location
- Internet access with adequate WiFi signal

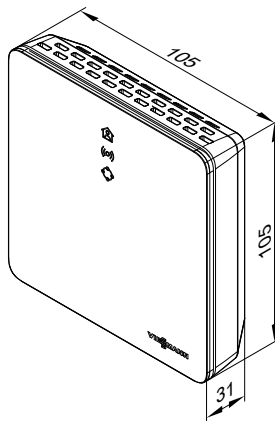
Note

The WiFi signal strength can be increased with commercially available WiFi repeaters.

Standard delivery

- Web interface for wall mounting
- Power cable with plug-in power supply unit (1.5 m long)
- Connecting cable with Optolink/USB (WiFi module/boiler control unit, 3 m long)

Specification



Control units (cont.)

Vitoconnect specification

Rated voltage	12 V $\overline{=}$
WiFi frequency	2.4 GHz
WiFi encryption	Unencrypted or WPA2
Frequency band	2400.0 to 2483.5 MHz
Max. transmission power	0.1 W (e.i.r.p.)
Internet protocol	IPv4
IP assignment	DHCP
Rated current	0.5 A
Power consumption	5.5 W
Protection class	III
IP rating	IP 20D to EN 60529
Permissible ambient temperature	
– Operation	+5 to +40 °C Installation in living spaces or boiler rooms (standard ambient conditions)
– Storage and transport	–20 to +60 °C

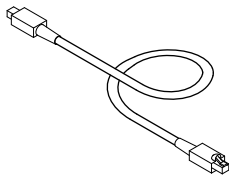
Plug-in power supply unit specification

Rated voltage	100 to 240 V~
Rated frequency	50/60 Hz
Output voltage	12 V $\overline{=}$
Output current	1 A
Protection class	II
Permissible ambient temperature	
– Operation	+5 to +40 °C Installation in living spaces or boiler rooms (standard ambient conditions)
– Storage and transport	–20 to +60 °C

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 R J45
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

8.1 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 of the building authorities and statutory requirements applicable to the installation and operation of this system.

Only qualified contractors may carry out the installation, flue gas connection, commissioning, electrical connection, and general maintenance and repair work.

Appendix (cont.)

In some regions, permits may be required for the flue system and condensate connection to the public waste water system. The local flue gas inspector and water authorities must be informed prior to commencing installation.

Maintenance should be carried out annually. As part of the maintenance procedure, check the correct function of the entire system. Any faults that occur must be rectified. Condensing boilers must only be operated with specially designed, tested and approved flues.

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Subject to technical modifications.

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