

Datasheet

For part no. and prices: see pricelist



Heat pumps with electric drive for central heating and DHW heating in mono mode or dual mode heating systems

VITOCAL 300-G

Up to 65 °C flow temperature

■ **Type BW 301.B06 to B17**

Single stage heat pump without integral circulation pumps, also as stage 1 (master) of a two-stage heat pump

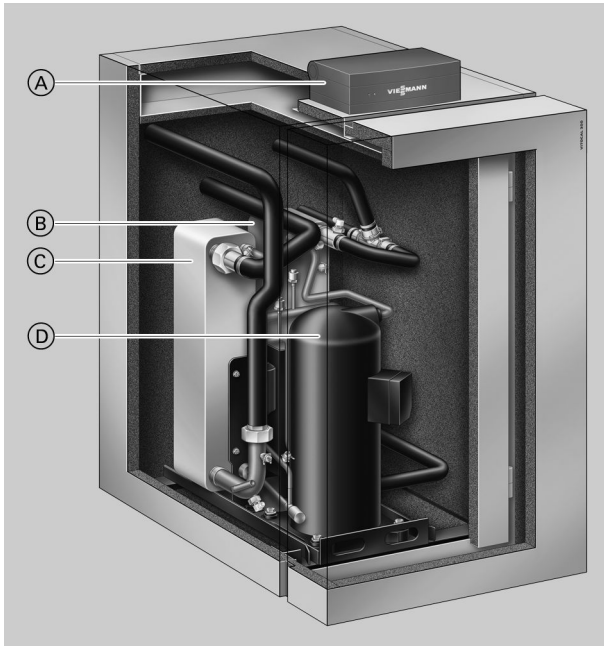
■ **Type BWS 301.B06 to B17**

Stage 2 (slave) of a two-stage heat pump, without individual control unit

■ **Type BWC 301.B06 to B17**

Single stage heat pump with integral high efficiency circulation pumps for the primary circuit (brine) and secondary circuit, plus circulation pump for cylinder heating

Benefits of Vitocal 300-G, type BW/BWS



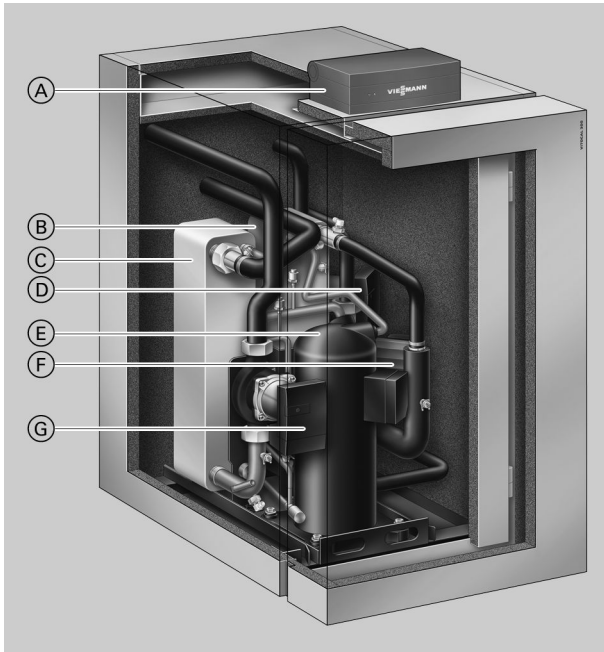
- Ⓐ Weather-compensated, digital heat pump controller Vitotronic 200
- Ⓑ Condenser
- Ⓒ Evaporator
- Ⓓ Hermetically sealed Compliant scroll compressor

- Low running costs thanks to a high COP to EN 14511: Up to 5.0 (B0/W35)
- Mono mode operation for central heating and DHW heating
- Maximum flow temperatures of up to 65 °C for high DHW convenience
- Low noise and vibration levels through sound-optimised appliance design – sound power level < 42 dB(A)
- Low running costs with the highest level of efficiency at any operating point through the innovative Refrigerant Cycle Diagnostic (RCD) system with electronic expansion valve (EEV)
- For two-stage version (type BW+BWS):
Highly flexible due to option of combining modules of different outputs
Easier handling through smaller and lighter modules

Only type BW:

- Easy-to-use Vitotronic control unit with plain text and graphic display for weather-compensated heating mode and natural or active cooling
- Optional installation of an instantaneous heating water heater, for example for screed drying
- Optimised utilisation of power generated by an on-site photovoltaic system
- Control of a Vitovent 300-F ventilation unit
- Web-enabled through Vitoconnect (accessories) for operation and service via Viessmann apps

Benefits of Vitocal 300-G, type BWC



- Ⓐ Weather-compensated, digital heat pump controller Vitotronic 200
- Ⓑ Condenser
- Ⓒ Evaporator
- Ⓓ Secondary pump (heating water), HE circulation pump
- Ⓔ Hermetically sealed Compliant scroll compressor
- Ⓕ High efficiency circulation pump for cylinder heating
- Ⓖ Primary pump (brine), HE circulation pump

- Low running costs thanks to a high COP to EN 14511: Up to 5.0 (B0/W35)
- Mono mode operation for central heating and DHW heating
- Maximum flow temperatures of up to 65 °C for high DHW convenience
- Low noise and vibration levels through sound-optimised appliance design – sound power level < 42 dB(A)
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- Easy-to-use Vitotronic control unit with plain text and graphic display for weather-compensated heating mode and natural or active cooling
- Optional installation of an instantaneous heating water heater, for example for screed drying
- Optimised utilisation of power generated by an on-site photovoltaic system
- Control of a Vitovent 300-F ventilation unit
- Web-enabled through Vitoconnect (accessories) for operation and service via Viessmann apps

Specification

Specification for brine/water heat pumps

Type BWC/BW/BWS 301.B		06	08	10	13	17
Performance data to EN 14511 (B0/W35, 5 K spread)						
Rated heating output	kW	5.69	7.64	10.36	12.99	17.24
Cooling capacity	kW	4.54	6.13	8.43	10.57	13.85
Power consumption	kW	1.24	1.62	2.07	2.60	3.65
Coefficient of performance ϵ (COP)		4.60	4.71	5.01	5.00	4.73
Brine (primary circuit)						
Content	l	3.0	3.4	4.0	4.5	5.9
Minimum flow rate	l/h	860	1160	1470	1880	2490
Flow pressure drop at minimum flow rate (type BW/BWS only)	mbar kPa	22 2.2	25 2.5	25 2.5	45 4.5	50 5.0
Residual head at minimum flow rate (type BWC only)	mbar kPa	670 67.0	660 66.0	810 81.0	780 78.0	796 79.6
Max. flow temperature (brine inlet)	°C	25	25	25	25	25
Min. flow temperature (brine inlet)	°C	-10	-10	-10	-10	-10
Heating water (secondary circuit)						
Content	l	3.0	3.5	4.0	4.6	5.7
Nominal flow rate	l/h	990	1320	1780	2230	2980
Pressure drop at nominal flow rate (type BW/BWS only)	mbar kPa	30 3	40 4	50 5	80 8	120 12
Residual head at nominal flow rate (type BWC only)	mbar kPa	760 76	690 69	630 63	480 48	260 26
Minimum flow rate	l/h	520	680	880	1080	1490
Flow pressure drop at minimum flow rate (type BW/BWS only)	mbar kPa	10 1.0	12 1.2	14 1.4	18 1.8	34 3.4
Residual head at minimum flow rate (type BWC only)	mbar kPa	800 80.0	790 79.0	710 71.0	721 72.1	668 66.8
Max. flow temperature	°C	65	65	65	65	65
Electrical values, heat pump						
Rated voltage, compressor		3/N/PE 400 V/50 Hz				
Rated current, compressor	A	4.8	6.2	7.4	9.7	13.0
Starting current compressor with starting current limiter (not for type BWC/BW/BWS 301.B06)	A	25.0	14.0	20.0	22.0	25.0
Starting current, compressor with stalled armature	A	28.0	43.0	51.5	62.0	75.0
Compressor MCB/fuse protection	A	C16A 3-pole	B16A 3-pole	B16A 3-pole	B16A 3-pole	C20A 3-pole
Power consumption of factory-fitted circulation pumps (type BWC only)						
– Primary pump	W	5 to 70	5 to 70	5 to 70	8 to 130	8 to 130
– Secondary pump	W	5.7 to 87	5.7 to 87	5.7 to 87	5.7 to 87	5.7 to 87
– Circulation pump for cylinder heating	W	3.8 to 70	3.8 to 70	3.8 to 70	3.8 to 70	3.8 to 70
Protection class		I	I	I	I	I
Electrical values, control unit (type BWC/BW only)						
Rated voltage		1/N/PE 230 V/50 Hz				
MCB/fuse protection		B16A				
Fuses		2 x 6.3 A H (slow)/250 V				
Max. power consumption	W	1000	1000	1000	1000	1000
Power consumption in operation	W	5	5	5	5	5
Refrigerant circuit						
Refrigerant		R410A	R410A	R410A	R410A	R410A
– Refrigerant charge	kg	1.4	1.95	2.4	2.25	2.75
– Global warming potential (GWP)		2088	2088	2088	2088	2088
– CO ₂ equivalent	t	2.92	4.07	5.01	4.70	5.74
Permissible operating pressure						
– Low pressure	bar MPa	28 2.8	28 2.8	28 2.8	28 2.8	28 2.8
– High pressure	bar MPa	45 4.5	45 4.5	45 4.5	45 4.5	45 4.5
Compressor	Type	Hermetically sealed scroll				
Oil in compressor	Type	Emkarate RL32 3MAF				
Quantity of oil in compressor	l	0.74	1.24	1.24	1.24	1.89
Permiss. operating pressure						
Primary circuit	bar MPa	3 0.3	3 0.3	3 0.3	3 0.3	3 0.3
Secondary circuit	bar MPa	3 0.3	3 0.3	3 0.3	3 0.3	3 0.3

Specification (cont.)

Type BWC/BW/BWS 301.B		06	08	10	13	17
Dimensions						
Total length	mm	844	844	844	844	844
Total width	mm	600	600	600	600	600
Total height (programming unit pivoted up)	mm	1155	1155	1155	1155	1155
Weight						
Heat pump, type BWC	kg	123	127	139	145	158
Heat pump stage 1, type BW 301.B	kg	113	117	129	135	148
Heat pump stage 2, type BWS 301.B	kg	109	113	125	131	144
Connections						
Primary circuit flow/return	G	1½	1½	1½	1½	1½
Secondary circuit flow/return	G	1½	1½	1½	1½	1½
Sound power level (tested with reference to EN 12102/EN ISO 9614-2) Weighted total sound power level at B0±3 K/W35±5 K						
– At rated heating output	dB(A)	40	41	41	41	42
Energy efficiency class to EU Regulation no. 811/2013						
Heating, average climatic conditions						
– Low temperature applications (W35)		A ⁺⁺	A ⁺⁺	A ⁺⁺	A ⁺⁺	A ⁺⁺
– Medium temperature applications (W55)		A ⁺⁺	A ⁺⁺	A ⁺⁺	A ⁺⁺	A ⁺⁺

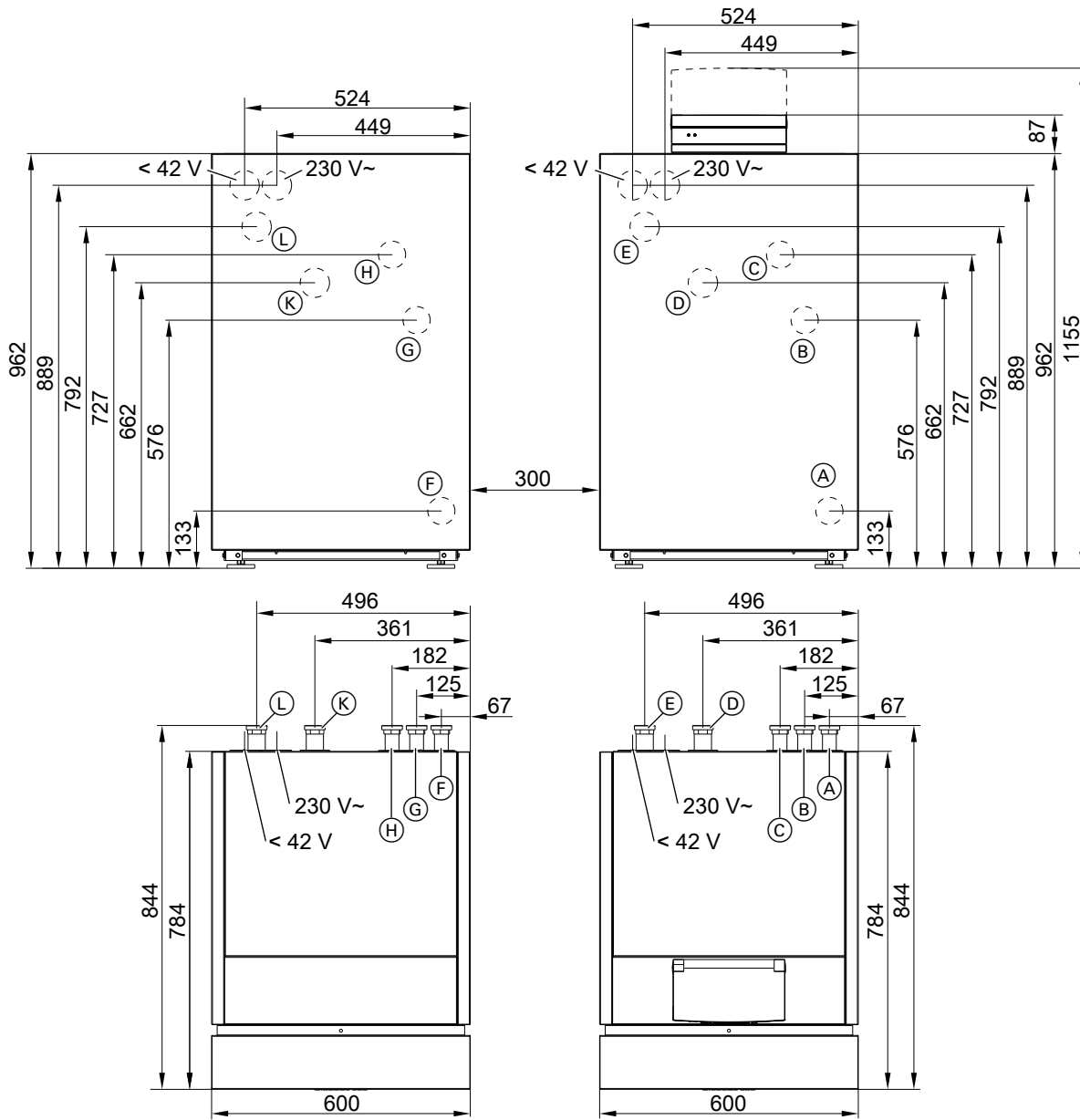
Water/water heat pump specification

Type BWC/BW/BWS 301.B in conjunction with a conversion kit for water/water heat pump		06	08	10	13	17
Performance data to EN 14511 (W10/W35, 5 K spread)						
Rated heating output	kW	7.51	10.18	13.51	16.89	22.59
Cooling capacity	kW	6.35	8.74	11.60	14.46	19.17
Power consumption	kW	1.24	1.55	2.05	2.61	3.68
Coefficient of performance ε (COP)		6.05	6.58	6.58	6.46	6.15
Brine (primary intermediate circuit)						
Content	l	3.0	3.4	4.0	4.5	5.9
Minimum flow rate	l/h	1530	2000	2570	3300	4450
Flow pressure drop at minimum flow rate (type BW/BWS only)	mbar kPa	58 5.8	76 7.6	61 6.1	122 12.2	143 14.3
Residual head at minimum flow rate (type BWC only)	mbar kPa	613 61.3	520 52.0	770 77.0	624 62.4	290 29.0
Max. flow temperature (brine inlet)	°C	25	25	25	25	25
Min. flow temperature (brine inlet)	°C	7.5	7.5	7.5	7.5	7.5
Heating water (secondary circuit)						
Content	l	3.0	3.5	4.0	4.6	5.7
Minimum flow rate	l/h	690	900	1170	1450	1990
Flow pressure drop at minimum flow rate (type BW/BWS only)	mbar kPa	16 1.6	20 2.0	29 2.9	39 3.9	58 5.8
Residual head at minimum flow rate (type BWC only)	mbar kPa	791 79.1	755 75.5	690 69.0	660 66.0	540 54.0
Max. flow temperature	°C	65	65	65	65	65

Note

Further specifications: See "Specification for brine/water heat pumps"

Dimensions, type BW, BWS

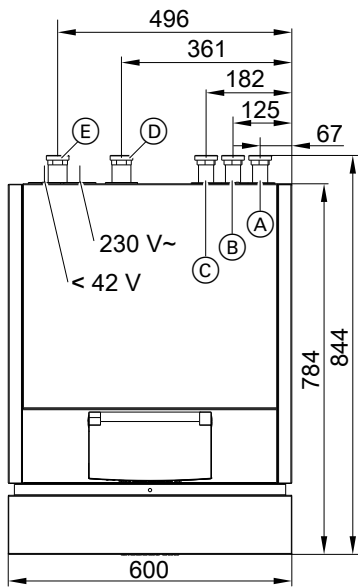
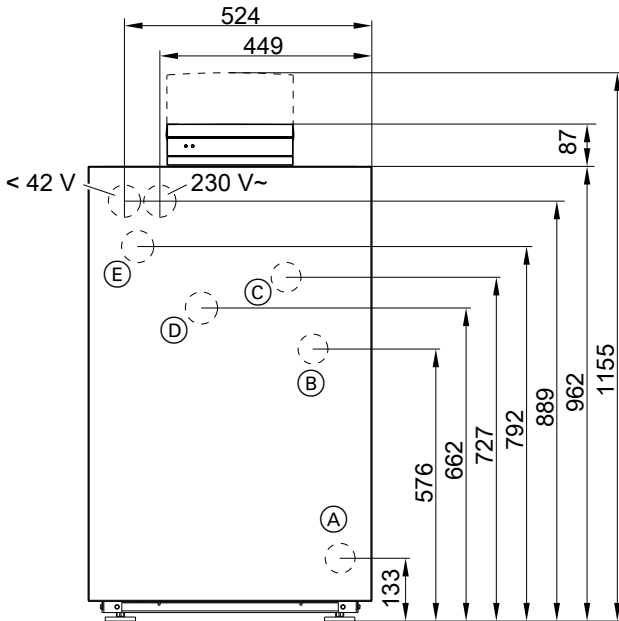


Type BWS on the left; type BW on the right

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|---|--|
| (A) Return, heating circuit and DHW cylinder, type BW | (F) Return, heating circuit and DHW cylinder, type BWS |
| (B) Flow, DHW cylinder, type BW | (G) Flow, DHW cylinder, type BWS |
| (C) Flow, heating circuit, type BW | (H) Flow, heating circuit, type BWS |
| (D) Flow, primary circuit (brine inlet), type BW | (K) Flow, primary circuit (brine inlet), type BWS |
| (E) Return, primary circuit (brine outlet), type BW | (L) Return, primary circuit (brine outlet), type BWS |

Specification (cont.)

Dimensions, type BWC



- (A) Return, heating circuit and DHW cylinder
- (B) Flow, DHW cylinder
- (C) Flow, heating circuit

- (D) Flow, primary circuit (brine inlet)
- (E) Return, primary circuit (brine outlet)

Subject to technical modifications.

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