

Brine/water  
heat pumps



# VITOCAL 350-G

# VITOCAL 300-G

Powerful heat pumps with high flow temperatures meet the requirements for high DHW convenience in large detached houses and apartment buildings.

With its two high temperature heat pumps, the Vitocal 350-G and Vitocal 300-G, Viessmann also meets the demand for higher heating outputs. Four sizes are available up to 84.6 kW.

### EVI for high flow temperatures

The Vitocal 350-G achieves high flow temperatures of up to 70 °C. This results from the use of an EVI (enhanced vapour injection) refrigerant circuit, where an intermediate vapour injection cools the refrigerant so that it can be more densely compressed than is otherwise possible.

The Vitocal 350-G also delivers sufficiently high temperatures to make it suitable for modernising apartment buildings with radiator heating systems.

### RCD system for highest level of efficiency

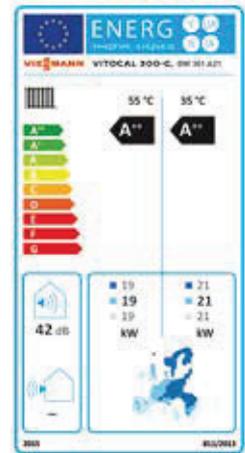
RCD stands for refrigerant cycle diagnostic system. This provides constant monitoring of the refrigerant circuit in Vitocal high temperature heat pumps and, in conjunction with the electronic expansion valve, ensures the highest level of efficiency at every operating point.

### Perfect for high heating output

The Vitocal 350-G/300-G is an economical solution for higher heat demands. It allows the heating flow and return lines of several heat pumps to be linked in a cascade.

A heat pump cascade consists of one lead heat pump and up to four lag heat pumps. Both the lead heat pump and the lag heat pumps can have two stages. This not only delivers the higher heating output required, but also increases the operational reliability of the entire system.

The modular design, with separate compressor circuits, also ensures particularly high levels of efficiency in partial load operation, and enables simultaneous DHW and central heating.



Energy efficiency label  
Vitocal 300-G, BW 301.A21



EHPA Quality Label  
as proof of the COP,  
for subsidy according  
to the German market  
incentive programme

### Take advantage of these benefits

- Low noise and vibration emissions through sound-optimised appliance design
- Low operating costs with the highest level of efficiency at every operating point through the innovative RCD (refrigerant cycle diagnostic) system with electronic expansion valve (EEV)
- Monovalent operation for DHW and central heating is possible
- Master/slave solutions for higher heat demands and DHW convenience, e.g. combination of Vitocal 300-G and Vitocal 350-G
- Extremely quiet operation through sound-optimised appliance design
- Vitotronic 200 control unit with plain text and graphic display for weather-compensated heating mode and natural or active cooling
- Control of Viessmann ventilation units possible
- Prepared for the use of power generated on site, for example by photovoltaic systems
- Web-enabled via free ViCare app and Vitoconnect (optional)

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## VITOCAL 350-G

20.5 to 42.3 kW (single stage)

41.0 to 84.6 kW (two-stage)



### Vitocal 350-G (master)

- 1 Vitotronic 200 control unit
- 2 Condenser
- 3 Large area evaporator for an efficient exchange of heat
- 4 Hermetically sealed Compliant scroll compressor with EVI (enhanced vapour injection) process

The powerful Vitocal 350-G brine/water heat pump is one of the quietest heat generators of its kind, thanks to its low-vibration design.

Where heat demand is even higher, the Vitocal 350-G can be operated in two-stage mode with an additional heat pump of the same type, or with a Vitocal 300-G in a master/slave system, and can then provide an output of up to 84.6 kW. As early as at the design stage, this system configuration allows for optimum matching of the heat pumps to the heat demand.

#### Master/slave system for DHW and central heating

In a master/slave system, the Vitocal 350-G (master) delivers high flow temperatures for DHW heating, while the Vitocal 300-G (slave, without its own control unit) covers the required heat load.

The EVI refrigerant circuit enables the Vitocal 350-G to achieve an extremely high COP of up to 5.0, which contributes to its low operating costs.

#### Vitotronic 200 control unit with communication capability

Viessmann uses the convenient Vitotronic 200 control unit to ensure standardised operation for all its heat generators. The many functions of this control unit include operation with user prompts, an integral diagnostic system, control of the instantaneous heating water heater and an additional oil or gas boiler, and of course, natural and active cooling functions.

Furthermore, the Vitotronic 200 is capable of communicating, and via the Vitocom 300 module, allows the heat pump system to be set up, monitored and optimised over the internet with the Vitotrol app on a smartphone or tablet.

#### Operation with solar power generated on site

The Vitocal 350-G heat pump is already prepared for the utilisation of more affordable power generated on site by a PV system. An intelligent control unit ensures maximum consumption of self-generated power while lowering energy costs.



Two-stage Vitocal 350-G (master on the right/slave on the left) as a brine/water or water/water heat pump

#### Take advantage of these benefits

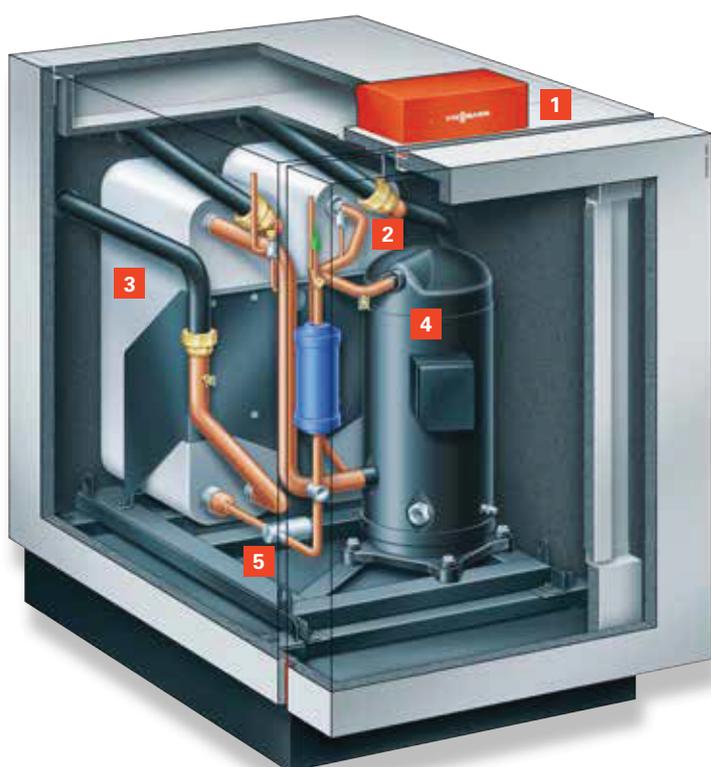
- Brine/water heat pump  
Single stage heating output: 20.5 to 42.3 kW, two-stage: 41.0 to 84.6 kW
- Water/water heat pump  
Single stage heating output: 25.4 to 52.3 kW, two-stage: 50.8 to 117.8 kW
- Low operating costs thanks to high coefficient of performance (COP) to EN 14511 of up to 5.0 (B0/W35)
- Flow temperature: up to 70 °C

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## VITOCAL 300-G

21.2 to 42.8 kW (single stage)

42.4 to 85.6 kW (two-stage)



### Vitocal 300-G

- 1 Vitotronic 200 heat pump control unit
- 2 Condenser
- 3 Large area evaporator for an efficient exchange of heat
- 4 High efficiency pump
- 5 Hermetically sealed Compliant scroll compressor

The Vitocal 300-G is the specialist for large detached houses and apartment buildings. For applications with higher heat demands, the two-stage Vitocal 300-G, based on the master/slave principle, is the right choice.

#### Cascades up to 589 kW

It can deliver a heating output from 42.4 to 85.6 kW (brine/water) with ground as the primary heat source, or 56.2 to 117.8 kW (water/water) when using groundwater. If this is not enough, the integral cascade function enables output to be raised to up to 589 kW (water/water) with several Vitocal 300-G units.

This also assures greater operational reliability for the system as a whole. The modular design, with separate compressor circuits, also ensures particularly high levels of efficiency in partial load operation, and enables simultaneous central and DHW heating.

#### Powerful and reliable

At the heart of the Vitocal 300-G lies its powerful Compliant scroll compressor. This component stands out on account of its high degree of operational safety and reliability. In conjunction with the large heat exchangers and integral refrigerant manifold, the Vitocal 300-G achieves a high coefficient of performance and flow temperatures up to 60 °C.



Two-stage Vitocal 300-G  
(master on the right/slave on the left)  
as a brine/water heat pump, two-stage:  
42.4 to 85.6 kW, maximum 428 kW  
(as a cascade)

#### Quiet operation and great performance are not mutually exclusive

The hermetically sealed casing and particularly clever appliance design enable a reduction in noise emissions in the Vitocal 300-G that far exceeds expectations in this output range.

#### Take advantage of these benefits

- Brine/water heat pump  
Single stage heating output: 21.2 to 42.8 kW, two-stage: 42.4 to 85.6 kW, maximum: 428 kW (as a cascade)
- Water/water heat pump  
Single stage heating output: 28.1 to 58.9 kW, two-stage: 56.2 to 117.8 kW, maximum: 589 kW (as a cascade)
- Flow temperature: up to 60 °C
- Sound power level: ≤ 44 dB(A)
- Integral energy statement
- Easier handling through small and light modules

For specification, see page 42



Vitocal 350-G (brine/water)

Vitocal 350-G (single stage, master)	Type	BW 351.B20	BW 351.B27	BW 351.B33	BW 351.B42
Vitocal 350-G (2-stage, slave without own control unit)	Type	BWS 351.B20	BWS 351.B27	BWS 351.B33	BWS 351.B42
<b>Performance data</b> (to EN 14511, B0/W35 °C, 5 K spread)					
<b>Rated heating output</b>	kW	20.5	28.7	32.7	42.3
<b>COP ε in heating mode</b>		4.8	4.9	5.0	4.8
<b>Maximum flow temperature (5 K/12 K spread)</b>	°C	65/70	65/70	65/70	65/70
<b>Refrigerant circuit</b>					
<b>Refrigerant</b>		R410A	R410A	R410A	R410A
- Refrigerant charge	kg	5.5	7.3	9.0	9.25
- Global warming potential (GWP)		2088	2088	2088	2088
- CO <sub>2</sub> equivalent	t	11.5	15.2	18.8	19.3
<b>Dimensions</b>					
Length (depth)	mm	1085	1085	1085	1085
Width	mm	780	780	780	780
Height (with control unit open)	mm	1267	1267	1267	1267
<b>Weight</b>					
Type BW	kg	270	285	310	315
Type BWS	kg	265	280	305	310
<b>Energy efficiency class*</b>		A++ / A++	A++ / A++	A++ / A++	A++ / A++

Vitocal 350-G (water/water)

Vitocal 350-G (single stage, master)	Type	BW 351.B20	BW 351.B27	BW 351.B33	BW 351.B42
Vitocal 350-G (2-stage, slave without own control unit)	Type	BWS 351.B20	BWS 351.B27	BWS 351.B33	BWS 351.B42
<b>Performance data</b> (to EN 14511, B0/W35 °C, 5 K spread)					
<b>Rated heating output</b>	kW	25.4	34.7	42.2	52.3
<b>COP ε in heating mode</b>		5.7	6.1	6.2	5.8
<b>Maximum flow temperature (5 K/12 K spread)</b>	°C	65/70	65/70	65/70	65/70



Vitocal 300-G (brine/water)

Vitocal 300-G	Type	BW 301.A21	BW 301.A29	BW 301.A45
Vitocal 300-G	Type	BWS 301.A21	BWS 301.A29	BWS 301.A45
<b>Performance data</b> (to EN 14511, B0/W35 °C, 5 K spread)				
<b>Rated heating output</b>	kW	21.2	28.8	42.8
<b>COP ε in heating mode</b>		4.7	4.8	4.6
<b>Maximum flow temperature</b>	°C	60	60	60
<b>Refrigerant circuit</b>				
<b>Refrigerant</b>		R410A	R410A	R410A
- Refrigerant charge	kg	4.7	6.2	7.7
- Global warming potential (GWP)		2088	2088	2088
- CO <sub>2</sub> equivalent	t	11.5	13.0	16.1
<b>Dimensions</b>				
Length (depth)	mm	1085	1085	1085
Width	mm	780	780	780
Height	mm	1267	1267	1267
<b>Weight</b>				
Type BW	kg	245	272	298
Type BWS	kg	240	267	293
<b>Energy efficiency class*</b>		A++ / A++	A++ / A++	A++ / A++

Vitocal 300-G (water/water)

Vitocal 300-G	Type	BW 301.A21	BW 301.A29	BW 301.A45
Vitocal 300-G	Type	BWS 301.A21	BWS 301.A29	BWS 301.A45
<b>Performance data</b> (to EN 14511, B0/W35 °C, 5 K spread)				
<b>Rated heating output</b>	kW	28.1	37.1	58.9
<b>COP ε in heating mode</b>		5.9	6.0	5.5
<b>Maximum flow temperature</b>	°C	60	60	60

\* Energy efficiency class as per Regulation (EU) No. 811/2013 regarding heating under average climate conditions for low (W35)/medium temperature applications (W55)