Heat pumps

84.9 to 222.2 kW

Vitocal 300-G PRO up to 60 °C with heat pump control unit Vitotronic 200, type WO1C

 Brine/water heat pump, with two-stage scroll compressor 84.9 to 222.2 kW

13.1

8/2023

080800

13

2-stage heat pump Brine/water heat pump, 84.9 to 222.2 kW





Vitocal 300-G PRO

BW 302.D

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

With weather-compensated Vitotronic 200 heat pump control unit

Permissible operating pressure: heating water 10 bar (1.0 MPa)

- Heat pump with electric drive for heating/cooling
- With electronic soft starter
- With Vitotronic 200 weather-compensated control unit, type WO1C
- With hermetically sealed scroll compressor and R410A refrigerant
- Flow temperature up to 60 °C
- With sound-optimised appliance design
- Compact and maintenance-friendly design

13.1– 1

Brine/water heat pumps, type BW 2-stage

Heating system

Control unit

ATS ■ 1 heating circuit without mixer

■ 1 or 2 heating circuits with mixer

Vitotronic 200

Type WO1C, for weather-compensated mode

- Digital heat pump control unitCylinder temperature controller
- Menu-assisted user prompts
- Integral diagnostic system
- Control of an instantaneous heating water heater
- Control of an additional oil/gas boiler
- Cascade control for up to 5 Vitocal (requires accessories)
- Control functions for natural cooling
- Swimming pool heating
- Communication capability with Vitocom 100 and 300

Extensions are required for each heating circuit with mixer, the additional oil/gas boiler, cooling control functions and swimming pool heating (see Accessories).



Please note:

The heat pumps must be commissioned by a heating contractor for heat pumps trained by Viessmann.

Standard delivery:

- Complete heat pump in a compact design (casing panels supplied separately)
- Integral heat pump control unit with outside temperature sensor (programming unit to be integrated in the front panel)
- Electronic starting current limiter
- Anti-vibration base frame

13.1

13.1–2 VIESMANN

Brine/water heat pumps, type BW 2-stage

	Type Operating mode	Rated heating output (kW) at operating point B0/W35, 5 K spread (to EN 14511)						
		84.9 2-stage	108.7 2-stage	135.3 2-stage	174.9 2-stage	222.2 2-stage		мg YD
	BW 302.D090 Brine/water	Z016814 41.642,–	-	-	-	-		Part no. Euro
	BW 302.D110 Brine/water	-	Z016815 47.130, –	-	-	-		Part no. Euro
	BW 302.D140 Brine/water	-	-	Z016816 55.377, –	-	-		Part no. Euro
	BW 302.D180 Brine/water	-	-	-	Z016817 60.884, –	-		Part no. Euro
	BW 302.D230 Brine/water	-	-	-	-	Z016818 81.394 ,–		Part no. Euro
	Specification							
	Length	1383	1383	1972	1972	1972		mm
	Width	911	911	911	911	911		mm
	Height	1650	1650	1650	1650	1650		mm
	Weight	680	860	1150	1250	1425		kg
	Coefficient of performance (COP)	4.6	4.5	4.4	4.5	4.6		
	Flow temperature	55	55	55	55	55		°C

The flow temperature refers to a brine inlet temperature of 0 $^{\circ}$ C. If the primary inlet is at least 5 K higher, the maximum flow temperature increases by 5 $^{\circ}$ C.

VIESMANN 13.1-3

13.1

29.01.2024 08:23:18

Accessories

Accessories		
Hydraulic connection accessories		MG YD
Connection set To connect the heat pump to the primary and secondary circuit 2 Victaulic couplings, 3 inch 2 Victaulic couplings 2½ inch 2 adaptors with flange 2½ inch DN 65/PN 10, 220 mm long 2 adaptors with flange, 3 inch DN 80/PN 10, 300 mm long Without sound insulation	ZK03790 895, –	Part no. Euro
Sound-insulating expansion joints ■ 2 expansion joints with flange connection on both sides DN 65/PN 10, 100 mm long ■ 2 expansion joints with flange connection on both sides DN 80/PN 10, 100 mm long ■ Pressure rating up to 10 bar, max. 100 °C	ZK03793 2.425, –	Part no. Euro
Brine circuit (primary circuit)		MG YD
Pressure switch Pressure range 0.2 to 4.0 bar	ZK04684 197,–	Part no. Euro
Heat transfer medium		MG WX
Heat transfer medium "Tyfocor GE" 30 litres Ready-mixed ethylene glycol-based medium with corrosion inhibitors and protection down to -16 °C (light green), in disposable container Not suitable for air/water applications or solar thermal systems	ZK05914 123,–	Part no. Euro
Heat transfer medium "Tyfocor GE" 200 litres Ready-mixed ethylene glycol-based medium with corrosion inhibitors and protection down to -16 °C (light green), in disposable container Not suitable for air/water applications or solar thermal systems	ZK05915 735,–	Part no. Euro
Safety assembly		MG W
Safety equipment block ■ Safety valve (3 bar), pressure gauge and air vent valve ■ Thermal insulation	7143783 227, –	Part no. Euro

Accessories - Plate heat exchangers

Accessories		
Separating heat exchangers for system separation		MG YC
High performance plate heat exchanger In accordance with the countercurrent principle, comprising single plates with all-round Elastomer seal. Thanks to the individual plate pattern, optimum heat transfer is achieved while the pressure drop is kept to a minimum. The condensate drain (on site) drains off any condensate. Please note: A flow switch set must also be ordered for water/water operation. An on-site power supply and control system is required for the well pump.		
Vitotrans EC-Pro GW100 Plate heat exchanger for water/water application of heat pump with drip pan For type BWR 302.D090	ZK07130 4.323,–	Part no. Euro
Vitotrans EC-Pro GW150 Plate heat exchanger for water/water application of heat pump with drip pan For type BW 302.D110 and type BW 302.D140	ZK07131 5.696, –	Part no. Euro
Vitotrans EC-Pro GW210 Plate heat exchanger for water/water application of heat pump with drip pan For type BW 302.D180	ZK07132 6.980,–	Part no. Euro
Vitotrans EC-Pro GW250 Plate heat exchanger for water/water application of heat pump with drip pan For type BW 302.D230	ZK07133 7.743, –	Part no. Euro
DHW heating		MG YC
High performance plate heat exchanger Works according to the countercurrent principle and features copper-soldered stainless steel plates for system separation when heating DHW with a cylinder loading system Incl. thermal insulation A DHW side B Heating water side		
Vitotrans EC-Pro HW050 Plate heat exchanger for DHW heating with cylinder loading system For type BWR 302.D090 sized for 50 % heat pump output	ZK07328 597, –	Part no. Euro
Vitotrans EC-Pro HW075 Plate heat exchanger for DHW heating with cylinder loading system For type BWR 302.D110 sized for 50 % heat pump output	ZK07329 1.064,–	Part no. Euro
Vitotrans EC-Pro HW100 Plate heat exchanger for DHW heating with cylinder loading system For type BWR 302.D140 sized for 50 % heat pump output For type BWR 302.D090 sized for 100 % heat pump output	ZK07330 1.243,–	Part no. Euro
Vitotrans EC-Pro HW150 Plate heat exchanger for DHW heating with cylinder loading system For type BW 302.D180 and type BW 302.D230 sized for 50 % heat pump output For type BWR 302.D110 sized for 100 % heat pump output	ZK07331 1.530, –	Part no. Euro
Vitotrans EC-Pro HW210 Plate heat exchanger for DHW heating with cylinder loading system For type BW 302.D140 and type BW 302.D180 sized for 100 % heat pump output	ZK07332 1.862, –	Part no. Euro
Vitotrans EC-Pro HW250 Plate heat exchanger for DHW heating with cylinder loading system For type BWR 302.D180 sized for 100 % heat pump output	ZK07333 2.226,–	Part no. Euro

VIESMANN

13.1 13.1-5

Accessories

- Plate heat exchangers

Accessories		
Natural cooling		MG YC
High performance plate heat exchanger Works according to the countercurrent principle, with copper-brazed stainless steel plates Without thermal insulation (insulate on site) Please note: For water/water operation, the NC plate heat exchanger in the intermediate circuit must be fitted downstream of the separating heat exchanger.		
Vitotrans EC-Pro NC050 Plate heat exchanger for the natural cooling function For type BWR 302.D090	ZK07334 1.013,-	Part no. Euro
Vitotrans EC-Pro NC075 Plate heat exchanger for the natural cooling function For types BW 302.D110 and BW 302.D140	ZK07335 1.199,–	Part no. Euro
Vitotrans EC-Pro NC100 Plate heat exchanger for the natural cooling function For type BW 302.D180	ZK07336 1.584, –	Part no. Euro
Vitotrans EC-Pro NC150 Plate heat exchanger for the natural cooling function For type BW 302.D230	ZK07337 1.999, –	Part no. Euro

Accessories

Accessories



Cooling

Frost stat

Safety switch for heat pump frost protection Temperature limit adjustable from -25 to 15 °C



7179164 170,-

Part no. Euro

Safety equipment

Flow switch set SR5906

For ensuring the minimum flow rate when using a brine/water heat pump as a water/water heat pump Supply voltage: 230 V/50 Hz Switching voltage: 230 V

Adjustable electronic flow switch SR5906

- Variable flow sensor SF6200
- Adaptor M18 x ½ inch for insertion into ½ inch connection

Z011176 1.395,-

MG Y Part no. Euro

■ Connecting cable 5 m long

13.1–7

Control unit accessories

Accessories		
Sensors		MG W
Immersion temperature sensor (NTC 10 kOhm) ■ To capture the temperature in a sensor well ■ With connecting lead (5.8 m long) and plug As a cylinder temperature sensor for DHW cylinders or heating water buffer cylinders.	7438702 110,–	Part no. Euro
Threaded sensor well Suitable for a Ø 6 mm sensor ■ Connection ½" ■ Length 100 mm	ZK03843 55,–	Part no. Euro MG YD
Threaded sensor well Suitable for a Ø 6 mm sensor ■ Connection ½" ■ Length 150 mm	ZK03844 58,–	Part no. Euro
Threaded sensor well Suitable for a Ø 6 mm sensor ■ Connection ½" ■ Length 200 mm	7549713 139,–	Part no. Euro
Threaded sensor well Suitable for a Ø 6 mm sensor ■ Connection ½" ■ Length 250 mm	ZK03845 70,–	Part no. Euro
Threaded sensor well Suitable for a Ø 6 mm sensor ■ Connection ½" ■ Length 450 mm	7511395 181,–	Part no. Euro
Room temperature sensor (NTC 10 kOhm) In an enclosure for wall mounting To capture the room temperature when cooling via a separate cooling circuit.	7438537 87,–	Part no. Euro
Contact temperature sensor (NTC 10 kOhm) ■ To capture the temperature on a pipe ■ With connecting lead (5.8 m long) and plug To capture the flow temperature in heating systems with external heat generator	7426463 110,–	Part no. Euro
Cooling		MG WX
Contact humidistat 230 V ■ For capturing the dew point ■ To prevent condensation	7452646 523,–	Part no. Euro
Natural cooling extension kit PCB for processing signals and switching the natural cooling control function. ■ Connection plug ■ Installation accessories Contact humidistat must also be ordered.	7179172 177,–	Part no. Euro

13.1 **13.1**-8 **VIESMANN**

Control unit accessories

Accessories		
Remote control units		MG W
Hardwired remote control units cannot be combined with the wireless base station.		
Vitotrol 200-A (KM-BUS subscriber) For setting one heating circuit: Set room temperature and operating program Party and economy functions Display to show outside temperature, room temperature and operating statuses Room temperature sensor for room temperature hook-up (only for one heating circuit with mixer)	Z008341 171,-	Part no. Euro
If the Vitotrol 200-A is to be used for room temperature hook-up, site the device in a main living room (lead room).		
Wireless remote control units		MG W
The wireless components cannot be combined with hardwired remote control units.		
Vitotrol 200-RF (wireless subscriber) Remote control unit with integral wireless transmitter for operation with the wireless base station (accessories). For setting one heating circuit: Set room temperature and operating program Party and economy functions Display to show outside temperature, room temperature and operating statuses Room temperature sensor for room temperature hook-up (only for one heating circuit with mixer) Max. 3 wireless remote control units per Vitotronic.	Z011219 187,-	Part no. Euro
Wireless accessories		MG W
Wireless base station (KM-BUS subscriber) For communication between the Vitotronic control unit and the following components: Vitotrol 200-RF wireless remote control unit For up to 3 wireless remote control units. Not in conjunction with a hardwired remote control unit.	Z011413 169,–	Part no. Euro
EnOcean wireless repeater Mains operated wireless repeater to increase the wireless range of EnOcean wireless signals and for operation in areas where wireless communication is difficult. Redirection of wireless signals if disrupted by steel reinforced concrete ceilings/floors and/or multiple walls For circumventing large metallic objects situated between the wireless components. Max. 1 wireless repeater per Vitotronic.	7456538 352,-	Part no. Euro
Miscellaneous		MG W
Contactor relay Contactor in small enclosure With 4 N/C and 4 N/O contacts With terminal strips for protective conductors Rated current: AC1 16 A, AC3 9 A Coil voltage: 230 V/50 Hz	7814681 199,–	Part no. Euro
KM-BUS distributor For connecting 2 to 9 appliances to the KM-BUS	7415028 75, –	Part no. Euro

5812398

VIESMANN

13.1 9

Control unit accessories

Accessories Temperature controller for swimming pool temperature control ig W 7009432 Temperature controller For controlling the swimming pool temperature 388,-■ With stainless steel sensor well, 200 mm long ■ Setting range: 0 to 35 °C EA1 extension is required for the swimming pool heating function. Heating circuit control unit extension ng W 7450657 Mixer motor ■ For Viessmann heating mixers DN 20 to 50 (welding fitting) and R ½ to R 1¼ (not for flanged 297,mixers) ■ For wiring on site For the 1st heating circuit with mixer (M2) and for integrating an external heat generator, activated directly by the Vitotronic 200. Also order contact temperature sensor, part no. Euro 7426463. Part no. Euro 7441998 Mixer extension kit For one heating circuit with mixer, fully wired 460.-■ Mixer motor with connecting cable (4.0 m long) for Viessmann mixers DN 20 to 50, R ½ to 1¼ (not for flanged mixers) and plug Flow temperature sensor as contact temperature sensor (NTC 10 kOhm), with connecting lead (5.8 m long) and plug ■ Plug for heating circuit pump Mixer extension kit (mixer mounting) ZK02940 Part no. (KM-BUS subscriber) Euro For one heating circuit with mixer, fully wired. ■ Mixer PCB with mixer motor for Viessmann mixers DN 20 to 50, R ½ to 1¼ (not for flanged mixers) ■ Flow temperature sensor as contact temperature sensor (NTC 10 kOhm), with connecting lead (2.0 m long) and plug ■ Plug for heating circuit pump ■ Power cable and KM-BUS cable with plug For the 2nd heating circuit with mixer (M3) or for cooling mode when using an on-site NC circuit with mixer Mixer extension kit (wall mounting) ZK02941 Part no. (KM-BUS subscriber) For one heating circuit with mixer, fully wired. ■ Mixer PCB for **separately** ordered mixer motor ■ Flow temperature sensor as contact temperature sensor (NTC 10 kOhm), with connecting lead (5.8 m long) and plug ■ Plug for heating circuit pump and mixer motor ■ Power cable and KM-BUS cable with plug For the 2nd heating circuit with mixer (M3) or for cooling mode when using an on-site NC circuit with mixer Immersion temperature limiter 7151728 Part no. Temperature limiter to restrict the maximum temperature of underfloor heating systems ■ With connecting lead (4.2 m long) and plug ■ With stainless steel sensor well R ½ x 200 mm 7151729 Part no. Contact temperature limiter Temperature limiter to restrict the maximum temperature of underfloor heating systems 164,-■ With connecting lead (4.2 m long) and plug ■ Temperature limit adjustable from 30 to 80 °C

► For heating mixers and additional mixer motors, see Register 11.7. Please note:

Provision must be made for a heating water buffer cylinder in the case of heating circuits with mixer.

► For heating water buffer cylinders, see Register 10.

13.1

Control unit accessories

Accessories Solar DHW heating and central heating backup Z014470 Solar control module, type SM1 Function extension inside enclosure for wall mounting. Electronic temperature differential control for dual mode DHW heating and central heating backup using solar collectors. ■ With output statement and diagnostic system ■ Operation and display via the Vitotronic control unit. ■ Heating of 2 consumers via a collector array ■ 2nd temperature differential control ■ Thermostat function for reheating or utilising excess heat ■ Speed control of solar circuit pump with PWM input (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 litre capacity) Also order immersion temperature sensor, part no. Euro 7438702, if the following functions are required: ■ For DHW circulation changeover in systems with 2 DHW cylinders ■ For return changeover between the heat generator and the heating water buffer cylinder ■ For heating additional consumers **Function extensions** AM1 extension 7452092 Function extension inside enclosure for wall mounting 117,-The following functions can be achieved: ■ Cooling via cooling water buffer cylinder or central fault message ■ Heat transfer to the cooling water buffer cylinder 7452091 Part no. EA1 extension 227,-Function extension inside enclosure for wall mounting. Using the inputs and outputs allows up to 5 functions to be achieved: 1 analogue input (0 to 10 V) ■ Specification of set flow temperature for secondary circuit 3 digital inputs ■ External changeover of the operating status ■ External demand and blocking ■ External demand for a minimum heating water temperature 1 switching output ■ Switching of swimming pool heating

VIESMANN 13.1-11

13.1

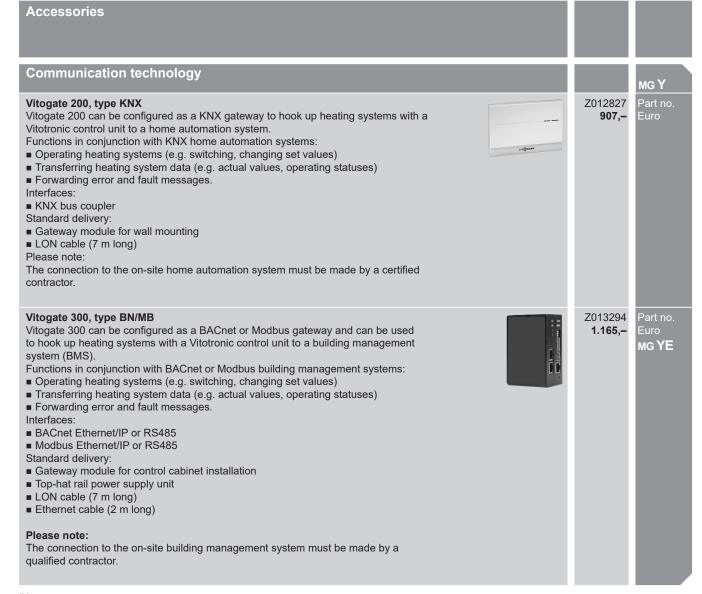
Control unit accessories

Accessories		
Communication technology		MG W
Vitoconnect, type OPTO2 Internet interface for remote control of heating systems via the internet using the ViCare app. Vitoconnect establishes a connection to the internet. Communication: Via Optolink interface with the boiler control unit Via WiFi with the internet Connections: Power cable with plug-in power supply unit USB for Optolink connecting cable WiFi communication for connection to the internet Standard delivery: Web interface for wall mounting Plug-in power supply unit with connecting cable and round plug (1.5 m long) Connecting cable with Optolink/USB (WiFi module/boiler control unit, 3 m long) Please note: Before commissioning, check the system requirements for communication via the local IP network/WiFi. Port 443 (HTTPS) and port 123 (NTP) must be open and the SSID must be visible. Hidden WiFi networks cannot be connected. The MAC address is printed on the device label. For operating the Vitoconnect, an available internet connection with flat rate data	ZK03836 224,-	Part no. Euro MG Y
(no time or volume restrictions) is recommended. LON communication module for cascade control PCB for installation in the control unit for data exchange via Viessmann LON system bus For communication with: ■ Vitotronic 200-H heating circuit control unit. ■ Vitocom 300 communication interface. In the case of heat pump cascades for installation in the lead heat pump	7172174 282, –	Part no. Euro
LON communication module PCB for installation in the control unit for data exchange via Viessmann LON system bus For communication with: ■ Vitotronic 200-H heating circuit control unit. ■ Vitocom 300 communication interface. For one heat pump; in the case of heat pump cascades, for installation in the lag heat pumps.	7172173 250,–	Part no. Euro
LON cable for control unit data exchange ■ 7.0 m long (can be extended once) ■ With RJ45 plugs	7143495 40,–	Part no. Euro
LON coupling, RJ45 To extend the LON cable	7143496 25, –	Part no. Euro
LON plug-in connectors, RJ45 (2 pce) To create a connecting cable using an on-site cable for installation spacing in excess of 14 m	7199251 73,–	Part no. Euro
LON socket, RJ45 (2 pce) To create an on-site cable (CAT 6), concealed or run in cable trunking, for installation spacing in excess of 14 m (connection from the LON socket to the control unit using the LON cable)	7171784 67,–	Part no. Euro
Terminators (2 pce) To terminate the system bus, use a terminator on each unconnected end.	7143497 10,50	Part no. Euro

13.1

13.1-12 **VIESMANN**

Control unit accessories



Please note:

The KM-BUS distributor must also be ordered if KM-BUS subscribers are already connected to the heat pump control unit (see Accessories).

VIESMANN 13.1-13

5812398

13.1 13.1-14 VIESMANN