Prana BWR DHW

Ground Source & Geothermal Heat Pumps

***modular capability

HEATING | COOLING | HOT WATER | MODULAR | HR

REVERSIBLE HEAT PUMP WITH TOTAL HEAT RECOVERY 40KW - 360KW

Unit Description

The DeLonghi Prana BWR DHW are a unique range of commercial ground or water source heat pumps which are capable of providing a high efficiency combination of output conditions:

- Heating only
- Simultaneous heating and hot water to 55ºC.
- Hot water only
- Cooling only
- Simultaneous cooling and hot water with up to 100% heat recovery
- Simultaneous cooling and heating with up to 100% heat recovery

- The range is very similar to the Prana BWR MTD in terms of features and control however the range allows these four pipe units to be applied on a wider range of applications.
- The range includes single-circuit/two-compressor versions and also twin circuit/four compressor versions for larger output capacity. This configuration provides excellent load management capability which gives high performance and efficiency along with associated contingency benefits and redundancy.
- These fully optimised water source heat pumps provide partial or total heat recovery for the simultaneous production of chilled/hot water with hermetic rotary scroll compressors operating with R410A, plate heat exchangers and thermostatically controlled expansion valve.
- Also these heat pump units will provide up to 100% duty on either primary or secondary heat exchangers along with the ability to provide a combination of load capability heating and hot water simultaneously or heating and cooling simultaneously with up to 100% heat recovery. This allows the heat pump units to provide this simultaneous output feature to manage seasonal heating and cooling loads from the same heat pump unit.
- Energy saving is achieved by the W3000 advanced control logic. The most efficient operational mode is set completely automatically and independently by the units controller, in order to minimize the absorbed energy whatever the cooling and/or heating demand might be.

Unit Summary

PRANA BWR DHW UNITS: WW/WWR & BW/BWR

CAPACITY: 40kW-360kW

POWER SUPPLY: Three Phase models

These units provide simultaneous supplies of domestic hot water and heating/air conditioning.

HIGH EFFICIENCY & PERFORMANCE:

COP 4.1 (410% efficient)*

*BWR DHW source flow temperature 0ºC/-3ºC & output flow temp 35ºC

COP 5.06 (506% efficient)*

*WWR DHW source flow temperature 5ºC/10ºC & output flow temp 35ºC

*Average COP for the Prana BWR & WWR MTD ranges

NOTE. Actual system efficiency (COP) and annual performance will depend on the distribution/emiiter system utilised. Care should be taken to ensure that the heat pump is installed in order to provide efficient operational performance.

FEATURES & OPERATIONAL BENEFITS:

- Full DHW and heating control
- Simulataneous heating and cooling outputs
- Heating only or reversible heat pump
- 100% heat recovery capability
- Suitable for a 4 pipe distribution system
- 55ºC output temperature
- Modular control for multiple unit configuration
- Compact footprint for plant room positioning

W3000

The W3000 controller offers the latest control and operating functions developed directly by Climaveneta utilising their experience gained within the field of heat pump design and related plant engineering. The keypad is generously sized with a full operating status display, the controls and detailed LCD make access to machine settings easy and safe. Temperature regulation with a proportional logic capability is related to the return water temperature which provides the ability to satisfy simultaneously heating, sanitary hot water and cooling requests with no need for mode changeover. The diagnostics include full management of alarms with black box function and an alarm recorder for analysis of unit performance. Monitoring is achieved through either Climaveneta devices or with various options for interfacing to ModBus, Bacnet or Echelon & LonTalk protocols. The controller has the compatibility to operate with a remote keyboard (single controller management of up to 10 modular units) along with a full time clock function for efficient programming of operation (standard 4 days and 10 time bands). Exclusive self-adaptive defrost logic, monitoring multiple operational- and ambient parameters are incorporated which allow the unit to reduce the number and duration of the defrost cycles with the benefit of increased overall energy efficiency.

CLIMAVENETA
Prana Heat Pumps

Prana BWR DHW Ground Source & Geothermal Heat Pumps

BWR-DHW			0152	0182	0202	0252	0262	0302	0412	0512	0612
Cooling capacity	(1)	kW	48.6	55.8	65	73.8	83.2	97.5	127	159	206
Total power input	(1)	kW	8.70	9.80	11.3	13.2	14.7	17.4	22.7	28.1	36.5
EER			5.59	5.69	5.75	5.59	5.66	5.60	5.59	5.64	5.63
ESEER			*	*	*	*	*	*	*	*	*
Heating capacity	(2)	kW	52.1	59.7	69.3	79	88.9	104	135	169	219
Total power input	(2)	kW	12.4	13.8	16.2	18.5	20.4	23.9	31	38.4	49.9
COP			4.20	4.33	4.28	4.28	4.36	4.37	4.35	4.40	4.38
Cooling capacity	(3)	kW	40.4	46.7	54.1	61.7	67.9	82	106	133	172
Total power input	(3)	kW	12.4	13.8	16.2	18.5	20.4	23.9	31	38.4	49.9
Heat recovery capacity	(3)	kW	52.1	59.7	69.3	79	88.9	104	135	169	219
No. Compressors/No. Circuits N.			2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2
Total power input kW											
Sound power	(4)	dB(A)	73	74	74	74	75	76	77	78	79
Sound pressure	(5)	dB(A)	42	43	43	43	44	45	46	47	48
Length	(6)	mm	1222	1222	1222	1222	1222	1222	1222	1222	1222
Width	(6)	mm	893	893	893	893	893	893	893	893	893
Height	(6)	mm	1496	1496	1496	1496	1496	1496	1496	1496	1496
Operating weight	(6)	kg	450	470	490	505	525	550	745	825	910

BWR-DHW			0604	0704	0804	0904	1004	1104	1204	1404	1604
Cooling capacity	(1)	kW	194	225	255	285	317	365	413	468	522
Total power input	(1)	kW	34.8	40	45.3	50.8	56.3	64.8	73	84.1	95.1
EER			5.58	5.63	5.62	5.61	5.63	5.63	5.66	5.56	5.49
ESEER			*	*	*	*	*	*	*	*	*
Heating capacity	(2)	kW	208	240	270	303	338	388	440	498	557
Total power input	(2)	kW	47.7	54.7	61.8	69.2	76.8	88.4	99.6	113	126
COP			4.36	4.38	4.37	4.38	4.40	4.39	4.41	4.41	4.42
Cooling capacity	(3)	kW	163	188	212	238	266	305	346	392	438
Total power input	(3)	kW	47.7	54.7	61.8	69.2	76.8	88.4	99.6	113	126
Heat recovery capacity	(3)	kW	208	240	270	303	338	388	440	498	557
No. Compressors/No. Circuits N.			4/2	4/2	4/2	4/2	4/2	4/2	4/2	4/2	4/2
Total power input kW											
Sound power	(4)	dB(A)	86	87	88	89	90	91	91	91	91
Sound pressure	(5)	dB(A)	54	55	56	57	58	59	59	59	59
Length	(6)	mm	2520	2520	2520	2520	2520	2520	2520	2520	2520
Width	(6)	mm	880	880	880	880	880	880	880	880	880
Height	(6)	mm	1810	1810	1810	1810	1810	1810	1810	1810	1810
Operating weight	(6)	kg	975	1165	1365	1445	1610	1710	1810	1895	2000

MODULAR CAPABILITY

The Prana BWR DHW range is designed for modular application to accommodate multi unit larger capacity requirements***.

PLATES AXIAL

Note:

1. Evaporator water (in/out) = 12/7°C; condenser water (in/out) = 14/30°C
2. Condenser water (in/out) = 40/45°C; evaporator water (in/out) = 14/7°C
3. Evaporator water (in/out) = 12/7°C; Recovery unit water (in/out) = 40/45°C
4. Sound power on the basis of measurements made in compliance with ISO 9614 and Eurovent 8/1 for Eurovent certified units; in compliance with ISO 3744 for non-certified units.
5. Average sound pressure level, at 10m distance, unit in a free field on a reflective surface; non-binding value obtained from the sound power level.
6. Unit in standard configuration/execution, without optional accessories.