

### W-H R410A / 90kW / DATASHEET Ground Source Heat Pump Brine to Water

SPECIFICATIONS	VOLTA W H 90	UNITS	wнн	WHA	
APPLICATION	Place of installation	_	Ind	oors	
	Type of brine system <sup>1</sup>	_	Ground source / Air s	Ground source / Air source / Hybrid source	
	DHW with external tank	_	$\checkmark$	$\checkmark$	
	Heating and Pool	_	$\checkmark$	$\checkmark$	
	External Passive cooling management	_	$\checkmark$	$\checkmark$	
	Integrated Active cooling	_	_	$\checkmark$	
PERFORMANCE	Modulation range of the compressor	%	25 to 100		
	Heating power output <sup>1</sup> , BOW35	kW	21.1 to 86.7		
	COP <sup>1</sup> , BOW35	_	4.5		
	Active cooling power output <sup>1</sup> , B35W7	kW	_	22.3 to 90.3	
	EER 1, B35W7	_	_	4.6	
	Max. DHW temperature without / with support	°C	60 / 70		
	Noise power emission level <sup>3</sup>	db	59 to 72		
	Energy label / ŋs / SCOP W35 average climate control	_	A+++ / 199% / 5.08		
	Energy label / ŋs / SCOP W55 average climate control	_	A++ / 147% / 3.78		
	Distribution / Set heating outlet temperature range <sup>2</sup>	°C	10 to 60 / 20 to 60		
	Distribution / Set cooling outlet temperature range <sup>2</sup>	°C	5 to 35 / 7 to 25		
OPERATION LIMITS	Brine inlet temperature range in heating applications <sup>2</sup>	°C	-20 to 35		
	Brine inlet temperature range in cooling applications <sup>2</sup>	°C	10 to 60		
	Minimum / Maximum refrigerant circuit pressure	bar	2 / 45		
	Production / Pre-load circuit pressure	bar	0.5 to 5.0		
	Brine / Pre-load circuit pressure	bar	0.5 to 5.0		
WORKING FLUIDS	R41DA Refrigerant load	kg	8.5	9.1	
	Compressor oil type / load	kg	POE 1605Z / 7.7		
	Nominal primary flow rate, BOW351 (ΔT = 3 °C)	l/h	4765 to 19360		
	Nominal secondary flow rate, BOW351 (ΔT = 5 °C)	l/h	3625 to 14935		
CONTROL ELECTRICAL DATA	1/N/PE 230 V / 50-60 Hz ⁵	_	$\checkmark$		
	Maximum recommended external protection <sup>7</sup>	—	C1A		
	Transformer primary circuit fuse	А	0,63		
	Transformer secondary circuit fuse	А	4.0		
ELECTRICAL DATA: THREE-PHASE	3/N/PE 400 V / 50-60Hz ⁵	_	$\checkmark$		
	Maximum recommended external protection <sup>7</sup>	_	C63A		
	Maximum consumption <sup>2</sup> , BOW35	kW / A	20.3 / 31.8		
	Maximum consumption <sup>2</sup> , BOW55	kW / A	29.6 / 45.1		
	Maximum consumption	kW / A	33.7 / 52.9		
	Minimum / Maximum starting current *	А	10.8 / 16.7		
	Correction of cosine Ø	_	0.96 / 1		
DIMENSIONS /	Height x width x depth	mm	1063x950x886		
WEIGHT	Empty weight (without assembly)	kg	450	465	

1. In compliance with EN 14511, this includes the consumption of the circulation pumps and the compressor driver.

2. With variable speed circulating pumps, managed by the VOLTA W H heat pump.

3. According to EN 12102.

- 4. Starting current depends on working condition of the hydraulic circuits.
- 5. The admissible voltage range for proper operation of the heat pump is  $\pm 10\%.$

 Maximum consumption can vary significantly according to working conditions, or if the compressor's range of operation is restricted.  External protection exclusively regarding the VOLTA W heat pump controller electrical consumption. This protection should be updated in case of using the controller singlephase electrical supply to wire other equipments depending on the features of such equipments.

8. In case of air source or hybrid source configuration, it is required to combine the VOLTA W H heat pump with the VOLTA S-Source.

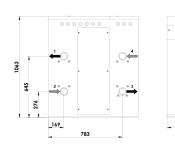
9. Note: primary circuit and secondary circuit circulation pumps not included.

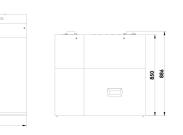


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## **Dimensions and hydraulic connections**

VOLTA W H

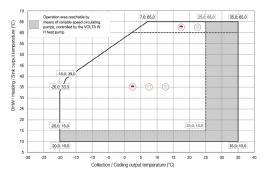




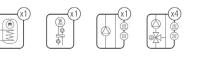
1.	Secondary Outlet - 2 1/2" M
2.	Secondary Inlet - 2 1/2" M
3.	Primary Outlet - 2 1/2" M
4.	Primary Inlet - 2 1/2" M
4.	Primary Inlet - 2 1/2" M

950

# **Operational chart**



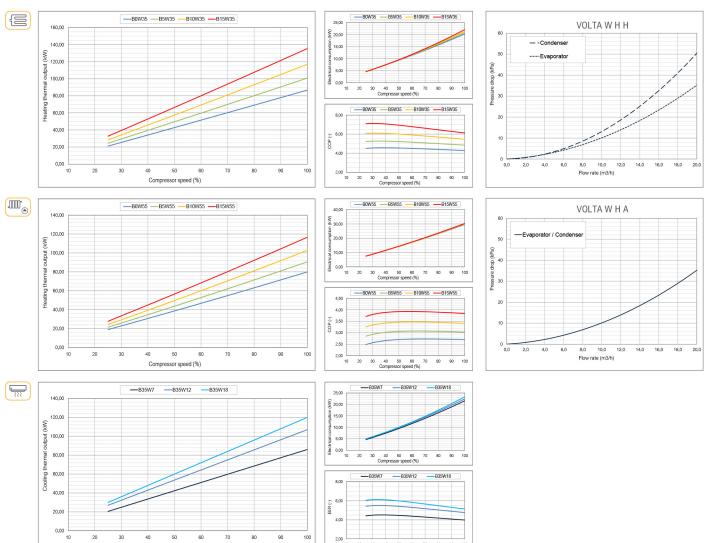
## Installation management



Hydraulic performance

# **Performance curves**

#### Thermal performance



10 20

30 40 50 60 Compressor speed (%)

70 80 90



Compressor speed (%)