

WRL 026H - 161H

Reversible water-cooled heat pump, gas side

- High efficiency
- Production of hot water up to 60 °C
- Production of domestic hot water priority
- Suitable for geothermal applications

Cooling capacity 6 ÷ 40 kW
Heating capacity 8 ÷ 48 kW



DESCRIPTION

Water-water offering chilled/hot water, designed to meet air conditioning needs in residential/commercial complexes or industrial applications. Indoor units with hermetic scroll compressors and plate heat exchangers.

In the configuration with desuperheater, it is also possible to produce free-hot water.

The technological choices made, always oriented to the highest quality, ensure very easy installation. In fact the electrical and hydraulic connections are all located in the upper part of the unit, facilitating the installation and maintenance operations and also reducing the technical gaps and their position in as little space as possible.

VERSIONS

° Without storage tank

A With storage tank

FEATURES

Operating field

Operation at full power with domestic hot water for the system up to 60 °C.

(for more information, refer to the technical documentation).

Plug and play

All the units are equipped with scroll compressors and plate heat exchangers; the base and panelling are made of steel treated with RAL 9003 polyester paints.

The electric and hydraulic connections are all located on the upper part of the unit facilitating installation and maintenance. This allows reduced plant room space and installation in the smallest space possible. The heat pump can be supplied with all the components required for its installation in new systems and to replace other heat generators. It can be combined with low temperature emission systems such as floor heating or fan coils, but also with conventional radiators.

Version with Integrated hydronic kit

The standard unit is supplied with a water filter, differential pressure switch and safety valve already installed on the service and source side (and also on the recovery side, if present).

To obtain a solution that offers economic savings and facilitates installation, these units can be configured with an integrated hydronic kit on both hydraulic sides (service and source).

Low-head and high-head pumps are available, along with a modulating 2-way valve that can only be applied on the source side to reduce consumption in applications with groundwater.

CONTROL MPC

Microprocessor adjustment, with keyboard and LCD display, for easy access on the unit is a menu available in several languages.

- Possibility to control two units in a Master-Slave configuration
- The presence of a programmable timer allows functioning time periods and a possible second set-point to be set.
- The temperature control takes place with the integral proportional logic, based on the water output temperature.

ACCESSORIES

AER485P1: RS-485 interface for supervision systems with MODBUS protocol.

AERBACP: Ethernet communication Interface for protocols Bacnet/IP, Modbus TCP/IP, SNMP

KSAE: External air sensor.

PGD1: Allows you to control the unit at a distance.

SSM: Probe to be used with the mixer valve in applications with radiant panels. The probe requires the VMF-CRP area accessory as well.

TAH: Ambient terminal with temperature and humidity probe - 230V AC flush-mounting model that can command an On-Off valve or a zone pump and dehumidifier consent.

TAT: Ambient terminal with temperature probe - 230V AC flush-mounting model that can command an On-Off valve or a zone pump.

VT: Antivibration supports

VPHL: Pressure switch valve with bypass solenoid valve, during cooling mode operation the bypass valve is closed so the water flows exclusive-

ly through the circuit with the pressure switch. During heating mode operation the water flows through both branches of the circuit.

ACCESSORIES COMPATIBILITY

Model	026	031	041	051	071	081	101	141	161
AER48SP1	*	*	*	*	*	*	*	*	*
AERBACP	*	*	*	*	*	*	*	*	*
KSAE	*	*	*	*	*	*	*	*	*
PGD1	*	*	*	*	*	*	*	*	*
SSM	*	*	*	*	*	*	*	*	*
TAH	*	*	*	*	*	*	*	*	*
TAT	*	*	*	*	*	*	*	*	*

Antivibration

Version	Integrated hydronic kit, source side	Integrated hydronic kit user side	026	031	041	051	071
°	°B,I,U,V	°N,P	VT9	VT9	VT9	VT9	VT9
A	°B,I,U,V	°N,P	VT15	VT15	VT15	VT15	VT15

Version	Integrated hydronic kit, source side	Integrated hydronic kit user side	081	101	141	161
°	°B,I,U,V	°N,P	VT9	VT15	VT15	VT15
A	°B,I,U,V	°N,P	VT15	VT15A	VT15A	VT15A

Pressure switch valve

Ver	026	031	041	051	071	081	101	141	161
°A	VPHL1	VPHL1	VPHL2	VPHL2	VPHL3	VPHL3	VPHL4	VPHL4	VPHL4

CONFIGURATOR

Field	Description
1,2,3	WRL
4,5,6	Size 026, 031, 041, 051, 071, 081, 101, 141, 161
7	Operating field
X	Electronic thermostatic expansion valve
8	Model
H	Reversible heat pump, gas side
9	Version
°	Without storage tank
A	With storage tank
10	Heat recovery
°	Without heat recovery
11	Integrated hydronic kit, source side
°	Without hydronic kit
B	On-off pump (1)
I	Inverter pump (2)
U	Pump high head (3)
V	Applications with bore hole water
12	Integrated hydronic kit user side
°	Without hydronic kit
N	Pump high head (3)
P	On-off pump (1)
13	Integrated hydronic kit, recovery side
°	Without hydronic kit
14	Soft-start
°	Without soft-start
S	With soft-start
15	Power supply
°	400V~3N 50Hz
4	230V~3 50Hz (4)
M	230V~ 50Hz (5)

(1) For size WRL 051 ÷ 081. The speed of the inverter pump must be set upon commissioning, according to the useful static pressure required; once it has been set, the pump will work at a constant flow rate.

(2) Only for WRL 026 ÷ 081

(3) Only for WRL 101 ÷ 161

(4) Only for WRL 051 ÷ 141

(5) Only for WRL 026 ÷ 041

PERFORMANCE SPECIFICATIONS 12 °C / 7 °C - 40 °C / 45 °C

WRL - (H°) - (400V 3N ~ 50Hz)

Size		026	031	041	051	071	081	101	141	161
Power supply: °										
Cooling performance 12 °C / 7 °C (1)										
Cooling capacity	kW	6,3	8,1	10,4	13,7	17,8	20,3	27,6	35,4	40,4
Input power	kW	1,6	2,3	2,3	3,0	4,2	5,0	6,1	8,5	10,1
Cooling total input current	A	4,0	4,0	6,0	7,0	9,0	10,0	13,0	17,0	19,0
EER	W/W	3,98	3,47	4,52	4,51	4,18	4,08	4,49	4,15	4,01
Water flow rate source side	l/h	1346	1782	2178	2870	3759	4312	5763	7501	8611
Pressure drop source side	kPa	13	16	19	20	24	27	28	37	44
Water flow rate system side	l/h	1085	1396	1798	2367	3058	3492	4748	6098	6964
Pressure drop system side	kPa	9	11	13	14	16	18	20	24	29
Heating performance 40 °C / 45 °C (2)										
Heating capacity	kW	7,9	9,5	12,4	16,4	20,9	24,0	32,7	41,7	47,6
Input power	kW	2,1	2,4	3,0	4,0	5,2	6,1	8,1	10,5	12,3
Heating total input current	A	4,8	4,8	6,6	8,3	10,0	12,0	16,0	20,0	23,0
COP	W/W	3,84	3,96	4,08	4,07	4,01	3,94	4,05	3,97	3,87
Water flow rate source side	l/h	1714	2086	2759	3635	4611	5291	7248	9196	10445
Pressure drop source side	kPa	34	34	46	43	50	59	52	62	73
Water flow rate system side	l/h	1364	1644	2151	2842	3616	4165	5669	7217	8246
Pressure drop system side	kPa	20	18	28	28	32	38	35	43	51

(1) Date 14511:2022; Water user side 12 °C / 7 °C; Water source side 30 °C / 35 °C

(2) Date 14511:2022; Water user side 40 °C / 45 °C; Water source side 10 °C / 7 °C

Technical data WRL (H°) - (2.30V ~ 50Hz)

Size		026	031	041	051	071	081	101	141	161
Power supply: M										
Cooling performance 12 °C / 7 °C (1)										
Cooling capacity	kW	6,3	7,9	10,3	-	-	-	-	-	-
Input power	kW	1,7	1,9	2,4	-	-	-	-	-	-
Cooling total input current	A	9,0	11,0	14,0	-	-	-	-	-	-
EER	W/W	3,74	4,13	4,28	-	-	-	-	-	-
Water flow rate source side	l/h	1363	1678	2179	-	-	-	-	-	-
Pressure drop source side	kPa	14	16	19	-	-	-	-	-	-
Water flow rate system side	l/h	1085	1362	1781	-	-	-	-	-	-
Pressure drop system side	kPa	9	10	13	-	-	-	-	-	-
Heating performance 40 °C / 45 °C (2)										
Heating capacity	kW	7,9	9,9	12,6	-	-	-	-	-	-
Input power	kW	2,1	2,6	3,3	-	-	-	-	-	-
Heating total input current	A	10,0	13,0	17,0	-	-	-	-	-	-
COP	W/W	3,85	3,89	3,82	-	-	-	-	-	-
Water flow rate source side	l/h	1717	2173	2745	-	-	-	-	-	-
Pressure drop source side	kPa	34	36	46	-	-	-	-	-	-
Water flow rate system side	l/h	1366	1723	2186	-	-	-	-	-	-
Pressure drop system side	kPa	20	22	29	-	-	-	-	-	-

(1) Date 14511:2022; Water user side 12 °C / 7 °C; Water source side 30 °C / 35 °C

(2) Date 14511:2022; Water user side 40 °C / 45 °C; Water source side 10 °C / 7 °C

PERFORMANCE SPECIFICATIONS 23 °C / 18 °C - 30 °C / 35 °C

WRL - (H°) - (400V 3N ~ 50Hz)

Size		026	031	041	051	071	081	101	141	161
Power supply: °										
Cooling performance 23 °C / 18 °C (1)										
Cooling capacity	kW	8,3	10,0	13,5	17,5	23,9	27,4	34,9	47,8	54,5
Input power	kW	1,6	1,9	2,4	3,3	4,4	5,2	6,6	9,0	10,7
Cooling total input current	A	4,1	3,0	6,0	7,6	9,2	10,0	14,0	17,0	19,0
EER	W/W	5,22	5,34	5,54	5,35	5,39	5,25	5,31	5,32	5,11
Water flow rate source side	l/h	1681	2039	2719	3547	4844	5557	7089	9679	11092
Pressure drop source side	kPa	20	21	30	31	40	45	42	62	73
Water flow rate system side	l/h	1428	1737	2330	3022	4136	4730	6040	8270	9438
Pressure drop system side	kPa	16	17	22	23	29	33	32	44	53
Heating performance 30 °C / 35 °C (2)										
Heating capacity	kW	8,1	10,1	13,0	17,0	22,6	25,8	34,1	45,0	50,8
Input power	kW	1,6	1,9	2,5	3,2	4,3	5,1	6,4	8,7	10,3
Heating total input current	A	3,7	3,7	5,2	6,4	8,4	9,7	12,0	16,0	19,0
COP	W/W	5,03	5,38	5,29	5,33	5,24	5,06	5,31	5,18	4,91
Water flow rate source side	l/h	1397	1751	2246	2934	3893	4456	5888	7770	8761
Pressure drop source side	kPa	21	20	30	30	37	43	38	50	58
Water flow rate system side	l/h	1901	2418	3098	4045	5363	6102	8125	10710	11951
Pressure drop system side	kPa	42	46	58	53	68	78	65	84	95

(1) Date 14511:2022; Water user side 23 °C / 18 °C; Water source side 30 °C / 35 °C
 (2) Date 14511:2022; Water user side 30 °C / 35 °C; Water source side 10 °C / 5 °C

WRL (H°) - (230V ~ 50Hz)

Size		026	031	041	051	071	081	101	141	161
Power supply: M										
Cooling performance 23 °C / 18 °C (1)										
Cooling capacity	kW	8,3	10,1	13,3	-	-	-	-	-	-
Input power	kW	1,6	2,0	2,5	-	-	-	-	-	-
Cooling total input current	A	8,1	11,0	14,0	-	-	-	-	-	-
EER	W/W	5,05	5,18	5,27	-	-	-	-	-	-
Water flow rate source side	l/h	1690	2070	2699	-	-	-	-	-	-
Pressure drop source side	kPa	22	24	29	-	-	-	-	-	-
Water flow rate system side	l/h	1428	1755	2295	-	-	-	-	-	-
Pressure drop system side	kPa	16	17	22	-	-	-	-	-	-
Heating performance 30 °C / 35 °C (2)										
Heating capacity	kW	8,2	10,2	13,1	-	-	-	-	-	-
Input power	kW	1,6	1,9	2,6	-	-	-	-	-	-
Heating total input current	A	8,1	9,7	13,0	-	-	-	-	-	-
COP	W/W	5,05	5,27	5,01	-	-	-	-	-	-
Water flow rate source side	l/h	1409	1767	2263	-	-	-	-	-	-
Pressure drop source side	kPa	21	23	31	-	-	-	-	-	-
Water flow rate system side	l/h	1919	2430	3082	-	-	-	-	-	-
Pressure drop system side	kPa	42	45	58	-	-	-	-	-	-

(1) Date 14511:2022; Water user side 23 °C / 18 °C; Water source side 30 °C / 35 °C
 (2) Date 14511:2022; Water user side 30 °C / 35 °C; Water source side 10 °C / 5 °C

ENERGY INDICES (REG. 2016/2281 EU)

WRL - (H°) - (400V 3N ~ 50Hz)

Size		026	031	041	051	071	081	101	141	161
Power supply: °										
SEER - 12/7 (EN14825:2018) (1)										
SEER	W/W	3,64	3,39	4,31	4,53	4,20	4,13	4,81	4,49	4,36
Seasonal efficiency	%	142,7%	132,4%	169,4%	178,1%	165,1%	162,3%	189,4%	176,5%	171,4%
UE 811/2013 performance in average ambient conditions (average) - 55 °C - Pdesignh ≤ 70 kW (2)										
Pdesignh	kW	10	12	16	21	26	31	42	53	61
ηsh	%	141,0%	145,0%	151,0%	152,0%	151,0%	150,0%	175,0%	173,0%	167,0%
SCOP	W/W	3,73	3,83	3,98	4,00	3,98	3,95	4,58	4,53	4,38
Efficiency energy class		A++	A++	A+++	A+++	A+++	A+++	A+++	A+++	A+++
UE 811/2013 performance in average ambient conditions (average) - 35 °C - Pdesignh ≤ 70 kW (3)										
Pdesignh	kW	11	14	17	23	30	35	45	60	68
ηsh	%	195,0%	210,0%	207,0%	212,0%	211,0%	205,0%	233,0%	226,0%	212,0%
SCOP	W/W	5,08	5,45	5,38	5,50	5,48	5,33	6,03	5,85	5,50
Efficiency energy class		A+++	A+++	A+++	A+++	A+++	A+++	A+++	A+++	A+++

(1) Calculation performed with FIXED water flow rate and VARIABLE outlet temperature.

(2) Efficiencies for average temperature applications (55 °C)

(3) Efficiencies for low temperature applications (35 °C)

WRL - (H°) - (230V ~ 50Hz)

Size		026	031	041	051	071	081	101	141	161
Power supply: M										
SEER - 12/7 (EN14825:2018) (1)										
SEER	W/W	3,48	3,80	4,15	-	-	-	-	-	-
Seasonal efficiency	%	136,2%	148,8%	163,1%	-	-	-	-	-	-
UE 811/2013 performance in average ambient conditions (average) - 55 °C - Pdesignh ≤ 70 kW (2)										
Pdesignh	kW	10	13	16	-	-	-	-	-	-
ηsh	%	142,0%	145,0%	142,0%	-	-	-	-	-	-
SCOP	W/W	3,75	3,83	3,75	-	-	-	-	-	-
Efficiency energy class		A++	A++	A++	-	-	-	-	-	-
UE 811/2013 performance in average ambient conditions (average) - 35 °C - Pdesignh ≤ 70 kW (3)										
Pdesignh	kW	11	14	17	-	-	-	-	-	-
ηsh	%	198,0%	212,0%	199,0%	-	-	-	-	-	-
SCOP	W/W	5,15	5,50	5,18	-	-	-	-	-	-
Efficiency energy class		A+++	A+++	A+++	-	-	-	-	-	-

(1) Calculation performed with FIXED water flow rate and VARIABLE outlet temperature.

(2) Efficiencies for average temperature applications (55 °C)

(3) Efficiencies for low temperature applications (35 °C)

WRL - (H ABP) - (400V 3N ~ 50Hz)

Size		026	031	041	051	071	081	101	141	161
Power supply: °										
SEER - 12/7 (EN14825:2018) (1)										
SEER	W/W	4,47	4,07	5,37	5,40	4,96	4,85	5,17	4,75	4,67
Seasonal efficiency	%	175,9%	159,7%	211,8%	213,1%	195,3%	190,9%	203,7%	186,8%	183,9%
UE 811/2013 performance in average ambient conditions (average) - 55 °C - Pdesignh ≤ 70 kW (2)										
Pdesignh	kW	10	12	16	21	26	30	41	52	60
ηsh	%	151,0%	155,0%	161,0%	161,0%	157,0%	155,0%	173,0%	170,0%	166,0%
SCOP	W/W	3,98	4,08	4,23	4,23	4,13	4,08	4,53	4,45	4,35
Efficiency energy class		A+++	A+++	A+++	A+++	A+++	A+++	A+++	A+++	A+++
UE 811/2013 performance in average ambient conditions (average) - 35 °C - Pdesignh ≤ 70 kW (3)										
Pdesignh	kW	10	13	17	22	30	34	44	59	66
ηsh	%	223,0%	238,0%	222,0%	237,0%	222,0%	210,0%	232,0%	230,0%	216,0%
SCOP	W/W	5,78	6,15	5,75	6,13	5,75	5,45	6,00	5,95	5,60
Efficiency energy class		A+++	A+++	A+++	A+++	A+++	A+++	A+++	A+++	A+++

(1) Calculation performed with FIXED water flow rate and VARIABLE outlet temperature.

(2) Efficiencies for average temperature applications (55 °C)

(3) Efficiencies for low temperature applications (35 °C)

WRL - (H ABP) - (230V ~ 50Hz)

Size		026	031	041	051	071	081	101	141	161
Power supply: M										
SEER - 12/7 (EN14825:2018) (1)										
SEER	W/W	4,21	4,63	5,14	-	-	-	-	-	-
Seasonal efficiency	%	165,5%	182,3%	202,7%	-	-	-	-	-	-
UE 811/2013 performance in average ambient conditions (average) - 55 °C - Pdesignh ≤ 70 kW (2)										
Pdesignh	kW	10	13	16	-	-	-	-	-	-
ηsh	%	152,0%	156,0%	152,0%	-	-	-	-	-	-
SCOP	W/W	4,00	4,10	4,00	-	-	-	-	-	-
Efficiency energy class		A+++	A+++	A+++	-	-	-	-	-	-
UE 811/2013 performance in average ambient conditions (average) - 35 °C - Pdesignh ≤ 70 kW (3)										
Pdesignh	kW	11	13	17	-	-	-	-	-	-
ηsh	%	228,0%	243,0%	214,0%	-	-	-	-	-	-
SCOP	W/W	5,90	6,28	5,55	-	-	-	-	-	-
Efficiency energy class		A+++	A+++	A+++	-	-	-	-	-	-

(1) Calculation performed with FIXED water flow rate and VARIABLE outlet temperature.

(2) Efficiencies for average temperature applications (55 °C)

(3) Efficiencies for low temperature applications (35 °C)

ELECTRIC DATA

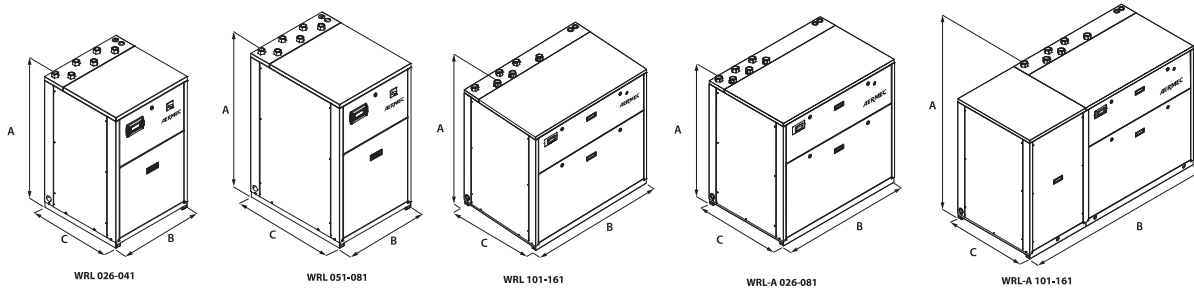
Size		026	031	041	051	071	081	101	141	161
Power supply: °										
Electric data										
Maximum current (FLA)	A	8,5	9,0	11,0	13,0	20,0	23,0	23,0	37,0	43,0
Peak current (LRA)	A	34,0	37,0	50,0	66,0	75,0	75,0	88,0	91,0	94,0
Power supply: M										
Electric data										
Maximum current (FLA)	A	19,0	22,0	26,0	-	-	-	-	-	-
Peak current (LRA)	A	63,0	84,0	99,0	-	-	-	-	-	-

GENERAL TECHNICAL DATA

Size		026	031	041	051	071	081	101	141	161
Compressor										
Type	°A type									
Number	°A no.	1	1	1	1	1	1	2	2	2
Circuits	°A no.	1	1	1	1	1	1	1	1	1
Refrigerant	°A type									
Source side heat exchanger										
Type	°A type									
Number	°A no.	1	1	1	1	1	1	1	1	1
System side heat exchanger										
Type	°A type									
Number	°A no.	1	1	1	1	1	1	1	1	1
Source side hydraulic connections										
Connections (in/out)	°A Type									
Sizes (in/out)	°A Ø									
System side hydraulic connections										
Connections (in/out)	°A Type									
Sizes (in/out)	°A Ø									
Sound data calculated in cooling mode (1)										
Sound power level	°A dB(A)	55,5	57,0	57,5	59,0	60,0	60,5	62,0	63,0	63,5
Sound pressure level (10 m)	° dB(A)	24,3	25,8	26,3	27,7	28,7	29,2	30,6	31,6	32,1
	A dB(A)	24,1	25,6	26,1	27,6	28,6	29,1	30,5	31,5	32,0

(1) Sound power calculated on the basis of measurements made in accordance with UNI EN ISO 9614-2, as required for Eurovent certification. Sound pressure (cold functioning) measured in free field, 10m away from the unit external surface (in compliance with UNI EN ISO 3744).

DIMENSIONS



Size		026	031	041	051	071	081	101	141	161
Dimensions and weights										
A	°	mm	976	976	976	1126	1126	1126	1126	1126
	A	mm	1126	1126	1126	1126	1126	1126	1126	1126
B	°	mm	605	605	605	605	605	605	1155	1155
	A	mm	1155	1155	1155	1155	1155	1155	1755	1755
C	°	mm	603	603	603	773	773	773	773	773
	A	mm	773	773	773	773	773	773	773	773
Empty weight	°	kg	120	125	130	150	170	180	260	270
	A	kg	190 (1)	200 (1)	210 (1)	230 (1)	250 (1)	260 (1)	340 (1)	350 (1)

(1) Units with two heat exchangers and storage tank, without pumps

Aermec reserves the right to make any modifications deemed necessary.
All data is subject to change without notice. Aermec does not assume responsibility or liability for errors or omissions.

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WRL 026 -161

Water cooled heat pump reversible water side

Cooling capacity 6,6 ÷ 44,2 kW
Heating capacity 7,5 ÷ 48,0 kW



- High efficiency
- Suitable for geothermal applications



DESCRIPTION

Water-water offering chilled/hot water, designed to meet air conditioning needs in residential/commercial complexes or industrial applications. Indoor units with hermetic scroll compressors and plate heat exchangers.

In the configuration with desuperheater, it is also possible to produce free-hot water.

The technological choices made, always oriented to the highest quality, ensure very easy installation.

In fact, the electrical and hydraulic connections are all located at the top of the unit making it easy to install and maintain, also reducing the technical areas and their placement in the smallest space possible.

VERSIONS

° Without storage tank

A With storage tank

FEATURES

Operating field

Full-load operation with the production of chilled water 4-18°C, and the possibility to produce also negative temperature water down to -8°C for the evaporator and hot water for the condenser up to 55 °C. (for more information, refer to the technical documentation).

Plug and play

All the units are equipped with scroll compressors and plate heat exchangers; the base and panelling are made of steel treated with RAL 9003 polyester paints.

The electric and hydraulic connections are all located on the upper part of the unit facilitating installation and maintenance. This allows reduced plant room space and installation in the smallest space possible. The heat pump can be supplied with all the components required for its installation in new systems and to replace other heat generators. It can be combined with low temperature emission systems such as floor heating or fan coils, but also with conventional radiators.

Version with Integrated hydronic kit

The standard unit is supplied with a water filter, differential pressure switch and safety valve already installed on the service and source side (and also on the recovery side, if present).

To obtain a solution that offers economic savings and facilitates installation, these units can be configured with an integrated hydronic kit on both hydraulic sides (service and source).

Low-head and high-head pumps are available, along with a modulating 2-way valve that can only be applied on the source side to reduce consumption in applications with groundwater.

MODUCONTROL CONTROL

The command panel of the unit allows the rapid setting of the working parameters of the machine, and their visualisation. The display consists of 4 figures and various LEDs for indicating the type of operational mode, the visualisation of the parameters set and of any alarms triggered. The card stores all the default settings and any modifications. The regulation using an outside air temperature sensor (accessory) allows a dynamic control of the water temperature produced by increasing the energy efficiency of the system.

ACCESSORIES

AERBACP: Ethernet communication Interface for protocols Bacnet/IP, Modbus TCP/IP, SNMP

AERSET: It makes it possible to automatically compensate for the operation setting of the unit to which it is connected, based on a 0-10V MODBUS input signal. Mandatory accessory MODU-485BL.

KSAE: External air sensor.

MODU-485BL: RS-485 interface for supervision systems with MODBUS protocol.

PR3: Simplified remote panel. This makes it possible to carry out the unit's basic controls with the signalling of alarms. Can be made remote with shielded cable up to 150 m.

VT: Antivibration supports

VPL: Pressure switch valve complete with connections, piloted directly in relation to condensation pressure; the valve modulates the volume

of water needed to cool the condenser, thereby maintaining the condensation temperature unchanged.

ACCESSORIES COMPATIBILITY

Model	Ver	026	031	041	051	071	081	101	141	161
AERBACP	°A	•	•	•	•	•	•	•	•	•
AERSET	°A	•	•	•	•	•	•	•	•	•
KSAE	°A	•	•	•	•	•	•	•	•	•
MODU-485BL	°A	•	•	•	•	•	•	•	•	•
PR3	°A	•	•	•	•	•	•	•	•	•

Antivibration

Version	Integrated hydronic kit, source side	Integrated hydronic kit user side	026	031	041	051	071
°	°	°	VT9	VT9	VT9	VT9	VT9
°	B,I,U,V	N,P	VT9	VT9	VT9	VT9	VT9
A	°B,I,U,V	°N,P	VT15	VT15	VT15	VT15	VT15

Version	Integrated hydronic kit, source side	Integrated hydronic kit user side	081	101	141	161
°	°	°	VT9	VT15	VT15	VT15
°	U	N,P	VT9	VT15	VT15	VT15
°	B,I,V	N,P	VT9	VT15	VT15	-
A	°B,I,U,V	°N,P	VT15	VT15A	VT15A	VT15A

- not available

Pressure switch valve

Ver	026	031	041	051	071	081	101	141	161
°A	VPL1	VPL1	VPL2	VPL2	VPL3	VPL3	VPL4	VPL4	VPL4

CONFIGURATOR

Field	Description
1,2,3	WRL
4,5,6	Size 026, 031, 041, 051, 071, 081, 101, 141, 161
7	Operating field
°	Standard mechanic thermostatic valve (1)
Y	Low temperature mechanic thermostatic valve (2)
8	Model
°	Heat pump reversible on the water side
E	Evaporating unit (3)
9	Version
°	Without storage tank
A	With storage tank
10	Heat recovery
°	Without heat recovery
D	With desuperheater
11	Integrated hydronic kit, source side
°	Without hydronic kit
B	On-off pump (4)
I	Inverter pump (5)
U	Pump high head (6)
	Applications with bore hole water
V	2-way modulating valve
12	Integrated hydronic kit user side
°	Without hydronic kit
N	Pump high head (6)
P	On-off pump (4)
13	Field for future development
°	Field not used
14	Soft-start
°	Without soft-start
S	With soft-start
15	Power supply
°	400V~3N 50Hz
M	230V~ 50Hz (7)

(1) Water produced from 4 °C ÷ 18 °C

(2) Water produced from 4 °C ÷ - 8 °C

(3) Shipped with holding charge only

(4) For size WRL 051 ÷ 081. The speed of the inverter pump must be set upon commissioning, according to the useful static pressure required; once it has been set, the pump will work at a constant flow rate.

(5) Only for WRL 026 ÷ 081

(6) Only for WRL 101 ÷ 161

(7) Only for WRL 026 ÷ 041

PERFORMANCE SPECIFICATIONS

WRL - °

Size		026	031	041	051	071	081	101	141	161
Power supply: °										
Cooling performance 12 °C / 7 °C (1)										
Cooling capacity	kW	6,7	8,4	11,3	14,7	19,3	21,9	29,5	38,5	43,9
Input power	kW	1,5	1,8	2,6	3,1	4,0	4,7	6,2	8,1	9,5
Cooling total input current	A	3,1	2,6	4,9	6,4	7,4	9,1	13,0	15,0	18,0
EER	W/W	4,49	4,74	4,39	4,70	4,77	4,63	4,72	4,75	4,62
Water flow rate source side	l/h	1396	1735	2375	3054	3978	4538	6100	7947	9077
Pressure drop source side	kPa	28	30	35	32	40	46	42	57	66
Water flow rate system side	l/h	1154	1447	1955	2541	3320	3770	5078	6638	7555
Pressure drop system side	kPa	15	17	23	21	26	30	25	34	38
Heating performance 40 °C / 45 °C (2)										
Heating capacity	kW	7,7	9,3	12,6	16,3	21,0	24,0	32,5	42,1	48,0
Input power	kW	1,9	2,3	3,2	4,0	5,1	5,9	8,0	10,2	12,0
Heating total input current	A	4,1	3,4	6,1	8,2	9,2	11,0	16,0	18,0	23,0
COP	W/W	3,93	4,04	3,94	4,05	4,17	4,04	4,06	4,14	4,02
Water flow rate source side	l/h	1680	2053	2767	3602	4708	5325	7200	9414	10671
Pressure drop source side	kPa	32	34	46	42	52	60	50	68	76
Water flow rate system side	l/h	1326	1607	2181	2819	3647	4159	5629	7284	8315
Pressure drop system side	kPa	25	26	30	27	34	39	36	48	55
Power supply: M										
Cooling performance 12 °C / 7 °C (1)										
Cooling capacity	kW	6,6	8,3	11,3	-	-	-	-	-	-
Input power	kW	1,5	1,8	2,5	-	-	-	-	-	-
Cooling total input current	A	7,2	9,2	12,0	-	-	-	-	-	-
EER	W/W	4,30	4,50	4,56	-	-	-	-	-	-
Water flow rate source side	l/h	1386	1731	2359	-	-	-	-	-	-
Pressure drop source side	kPa	28	29	36	-	-	-	-	-	-
Water flow rate system side	l/h	1137	1430	1955	-	-	-	-	-	-
Pressure drop system side	kPa	15	17	23	-	-	-	-	-	-
Heating performance 40 °C / 45 °C (2)										
Heating capacity	kW	7,6	9,4	12,5	-	-	-	-	-	-
Input power	kW	2,0	2,4	3,1	-	-	-	-	-	-
Heating total input current	A	9,3	12,0	15,0	-	-	-	-	-	-
COP	W/W	3,86	3,89	4,05	-	-	-	-	-	-
Water flow rate source side	l/h	1662	2053	2778	-	-	-	-	-	-
Pressure drop source side	kPa	32	35	46	-	-	-	-	-	-
Water flow rate system side	l/h	1319	1626	2171	-	-	-	-	-	-
Pressure drop system side	kPa	25	26	30	-	-	-	-	-	-

(1) Date 14511:2022; Water user side 12 °C / 7 °C; Water source side 30 °C / 35 °C

(2) Date 14511:2022; Water user side 40 °C / 45 °C; Water source side 10 °C / 7 °C

ENERGY INDICES (REG. 2016/2281 EU)

WRL - °

Size		026	031	041	051	071	081	101	141	161
Power supply: °										
SEER - 12/7 (EN14825:2018) (1)										
SEER	W/W	3,93	4,29	4,13	4,51	4,66	4,52	4,93	4,93	4,75
Seasonal efficiency	%	154,0%	168,5%	162,1%	177,3%	183,3%	177,8%	194,1%	194,0%	187,1%
UE 811/2013 performance in average ambient conditions (average) - 35 °C - Pdesignh ≤ 70 kW (2)										
Pdesignh	kW	11	14	17	23	30	35	45	60	68
SCOP	W/W	5,08	5,45	5,38	5,50	5,48	5,33	6,03	5,85	5,50
ηsh	%	195,0%	210,0%	207,0%	212,0%	211,0%	205,0%	233,0%	226,0%	212,0%
Efficiency energy class		A+++	A+++	A+++	A+++	A+++	A+++	A+++	A+++	A+++
Power supply: M										
SEER - 12/7 (EN14825:2018) (1)										
SEER	W/W	3,77	4,13	4,27	-	-	-	-	-	-
Seasonal efficiency	%	147,9%	162,0%	167,6%	-	-	-	-	-	-
UE 811/2013 performance in average ambient conditions (average) - 35 °C - Pdesignh ≤ 70 kW (2)										
Pdesignh	kW	11	14	17	-	-	-	-	-	-
SCOP	W/W	5,15	5,50	5,18	-	-	-	-	-	-
ηsh	%	198,0%	212,0%	199,0%	-	-	-	-	-	-
Efficiency energy class		A+++	A+++	A+++	-	-	-	-	-	-

(1) Calculation performed with FIXED water flow rate and VARIABLE outlet temperature.

(2) Efficiencies for low temperature applications (35 °C)

PERFORMANCE SPECIFICATIONS

WRL ABP

Size		026	031	041	051	071	081	101	141	161
Power supply: °										
Cooling performance 12 °C / 7 °C (1)										
Cooling capacity	kW	6,8	8,5	11,4	14,9	19,4	22,0	29,8	38,9	44,2
Input power	kW	1,4	1,7	2,5	3,1	3,9	4,6	6,3	8,1	9,4
Cooling total input current	A	3,7	3,3	5,6	7,5	8,6	10,0	14,0	17,0	20,0
EER	W/W	4,75	5,02	4,62	4,84	4,93	4,78	4,75	4,79	4,69
Water flow rate source side	l/h	1396	1735	2375	3054	3978	4538	6100	7947	9077
Useful head source side	kPa	59	53	36	63	43	28	116	137	125
Water flow rate system side	l/h	1154	1447	1955	2541	3320	3770	5078	6638	7555
Useful head system side	kPa	74,0	70,0	56,0	79,0	66,0	56,0	148,0	164,0	157,0
Heating performance 40 °C / 45 °C (2)										
Heating capacity	kW	7,6	9,2	12,5	16,1	20,9	23,8	32,2	41,6	47,6
Input power	kW	1,9	2,2	3,1	3,9	4,9	5,8	8,0	10,1	11,8
Heating total input current	A	4,7	4,0	6,7	9,3	10,0	13,0	18,0	20,0	25,0
COP	W/W	4,05	4,17	4,05	4,11	4,24	4,09	4,01	4,13	4,04
Water flow rate source side	l/h	1680	2053	2767	3602	4708	5325	7200	9414	10671
Useful head source side	kPa	52	43	16	46	20	4	90	121	109
Water flow rate system side	l/h	1326	1607	2181	2819	3647	4159	5629	7284	8315
Useful head system side	kPa	63,0	59,0	46,0	70,0	54,0	41,0	130,0	148,0	138,0
Power supply: M										
Cooling performance 12 °C / 7 °C (1)										
Cooling capacity	kW	6,7	8,4	11,4	-	-	-	-	-	-
Input power	kW	1,5	1,8	2,4	-	-	-	-	-	-
Cooling total input current	A	7,8	9,9	12,0	-	-	-	-	-	-
EER	W/W	4,54	4,75	4,80	-	-	-	-	-	-
Water flow rate source side	l/h	1386	1731	2359	-	-	-	-	-	-
Useful head source side	kPa	59	54	36	-	-	-	-	-	-
Water flow rate system side	l/h	1137	1430	1955	-	-	-	-	-	-
Useful head system side	kPa	74,0	70,0	56,0	-	-	-	-	-	-
Heating performance 40 °C / 45 °C (2)										
Heating capacity	kW	7,5	9,3	12,4	-	-	-	-	-	-
Input power	kW	1,9	2,3	3,0	-	-	-	-	-	-
Heating total input current	A	9,9	13,0	15,0	-	-	-	-	-	-
COP	W/W	3,97	4,01	4,17	-	-	-	-	-	-
Water flow rate source side	l/h	1662	2053	2778	-	-	-	-	-	-
Useful head source side	kPa	52	43	16	-	-	-	-	-	-
Water flow rate system side	l/h	1319	1626	2171	-	-	-	-	-	-
Useful head system side	kPa	63,0	59,0	45,0	-	-	-	-	-	-

(1) Date 14511:2022; Water user side 12 °C / 7 °C; Water source side 30 °C / 35 °C

(2) Date 14511:2022; Water user side 40 °C / 45 °C; Water source side 10 °C / 7 °C

PERFORMANCE SPECIFICATIONS EVAPORATING UNITS

Size		026	031	041	051	071	081	101	141	161
Cooling performance 12 °C / 7 °C (1)										
Cooling capacity	E kW	6,3	7,8	10,4	13,4	17,4	19,7	26,8	34,7	39,4
Input power	E kW	1,7	2,0	2,8	3,6	4,5	5,3	7,2	9,1	10,6
Cooling total input current	E A	3,0	3,0	5,0	7,0	8,0	10,0	14,0	17,0	21,0
EER	E W/W	3,71	3,90	3,71	3,72	3,87	3,72	3,72	3,81	3,72
Water flow rate system side	E l/h	1082	1340	1787	2302	2990	3385	4605	5962	6769
Pressure drop system side	E kPa	13	15	20	17	21	25	21	28	31
Length of refrigerant lines from/to 0 - 10 m										
Gas line (C1)	E Ø	9,5	9,5	9,5	12,7	12,7	15,9	15,9	18,0	18,0
Liquid line (C1)	E Ø	9,5	9,5	9,5	12,7	12,7	12,7	15,9	18,0	18,0
Topping up the refrigerant gas (C1)	E g/m	54	54	54	103	103	108	161	214	214

(1) Date 14511:2022; Water user side 12 °C / 7 °C; Water source side 30 °C / 35 °C

ENERGY INDICES (REG. 2016/2281 EU)

WRL ABP

Size		026	031	041	051	071	081	101	141	161
Power supply: °										
SEER - 12/7 (EN14825:2018) (1)										
SEER	W/W	5,00	5,37	5,22	5,38	5,62	5,30	5,31	5,27	5,21
Seasonal efficiency	%	196,9%	211,7%	205,8%	212,0%	221,7%	208,8%	209,2%	207,7%	205,5%
UE 811/2013 performance in average ambient conditions (average) - 35 °C - Pdesignh ≤ 70 kW (2)										
Pdesignh	kW	10	13	17	22	30	34	44	59	66
SCOP	W/W	5,78	6,15	5,75	6,13	5,75	5,45	6,00	5,95	5,60
ηsh	%	223,0%	238,0%	222,0%	237,0%	222,0%	210,0%	232,0%	230,0%	216,0%
Efficiency energy class		A+++	A+++	A+++	A+++	A+++	A+++	A+++	A+++	A+++
Power supply: M										
SEER - 12/7 (EN14825:2018) (1)										
SEER	W/W	4,73	5,20	5,22	-	-	-	-	-	-
Seasonal efficiency	%	186,3%	205,1%	205,6%	-	-	-	-	-	-
UE 811/2013 performance in average ambient conditions (average) - 35 °C - Pdesignh ≤ 70 kW (2)										
Pdesignh	kW	11	13	17	-	-	-	-	-	-
SCOP	W/W	5,90	6,28	5,55	-	-	-	-	-	-
ηsh	%	228,0%	243,0%	214,0%	-	-	-	-	-	-
Efficiency energy class		A+++	A+++	A+++	-	-	-	-	-	-

- (1) Calculation performed with FIXED water flow rate and VARIABLE outlet temperature.
(2) Efficiencies for low temperature applications (35 °C)

ELECTRIC DATA

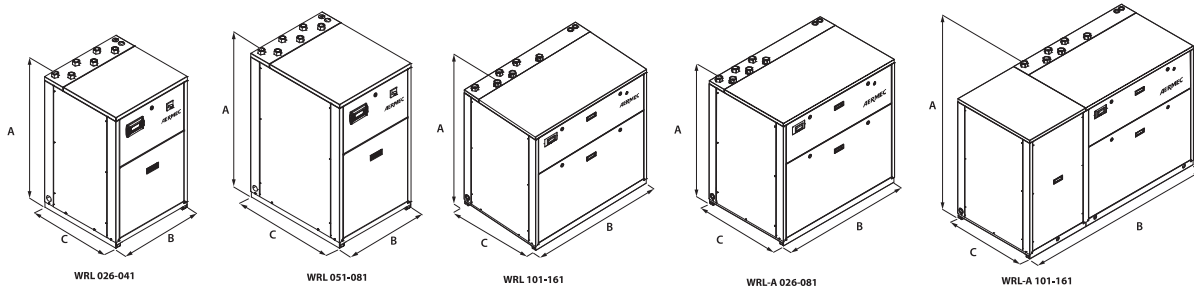
Size		026	031	041	051	071	081	101	141	161	
Electric data											
Maximum current (FLA)	°	A	8,0	8,0	15,0	17,0	21,0	22,0	32,0	40,0	41,0
	M	A	18,0	21,0	34,0	-	-	-	-	-	-
Peak current (LRA)	°	A	34,0	37,0	65,0	75,0	75,0	90,0	94,0	95,0	
	M	A	63,0	84,0	119,0	-	-	-	-	-	

GENERAL TECHNICAL DATA

Size		026	031	041	051	071	081	101	141	161	
Compressor											
Type	°A	type					Scroll				
Number	°A	no.	1	1	1	1	1	2	2	2	
Circuits	°A	no.	1	1	1	1	1	1	1	1	
Refrigerant	°A	type					R410A				
Refrigerant charge (1)	°A	kg	0,8	0,9	1,2	1,6	1,9	2,0	3,6	4,4	4,7
Source side heat exchanger											
Type	°A	type					Brazed plate				
Number	°A	no.	1	1	1	1	1	1	1	1	
System side heat exchanger											
Type	°A	type					Brazed plate				
Number	°A	no.	1	1	1	1	1	1	1	1	
Source side hydraulic connections											
Connections (in/out)	°A	Type					Gas-F				
Sizes (in/out)	°A	∅					1" 1/4				
System side hydraulic connections											
Connections (in/out)	°A	Type					Gas-F				
Sizes (in/out)	°A	∅					1" 1/4				
Sound data calculated in cooling mode (2)											
Sound power level	°A	dB(A)	55,5	57,0	57,5	59,0	60,0	60,5	62,0	63,0	63,5
	°	dB(A)	24,3	25,8	26,3	27,7	28,7	29,2	30,6	31,6	32,1
Sound pressure level (10 m)	°A	dB(A)	24,1	25,6	26,1	27,6	28,6	29,1	30,5	31,5	32,0
	°	dB(A)									

- (1) The load indicated in the table is an estimated and preliminary value. The final value of the refrigerant load is indicated on the unit's technical label. For further information contact the office.
(2) Sound power calculated on the basis of measurements made in accordance with UNI EN ISO 9614-2, as required for Eurovent certification. Sound pressure (cold functioning) measured in free field, 10m away from the unit external surface (in compliance with UNI EN ISO 3744).

DIMENSIONS



Size		026	031	041	051	071	081	101	141	161
Dimensions and weights										
A	°	mm	976	976	976	1126	1126	1126	1126	1126
	A	mm	1126	1126	1126	1126	1126	1126	1126	1126
B	°	mm	605	605	605	605	605	605	1155	1155
	A	mm	1155	1155	1155	1155	1155	1155	1755	1755
C	°	mm	603	603	603	773	773	773	773	773
	A	mm	773	773	773	773	773	773	773	773
Empty weight	°	kg	120	125	130	150	170	180	260	270
	A	kg	190 (1)	200 (1)	210 (1)	230 (1)	250 (1)	260 (1)	340 (1)	350 (1)

(1) Units with two heat exchangers and storage tank, without pumps

Aermec reserves the right to make any modifications deemed necessary.
All data is subject to change without notice. Aermec does not assume responsibility or liability for errors or omissions.

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WRL 180H - 650H

Reversible water-cooled heat pump, gas side

Cooling capacity 44,9 ÷ 157,4 kW
Heating capacity 53,0 ÷ 183,3 kW



- High efficiency
- Suitable for geothermal applications
- Production of hot water up to 55 °C



DESCRIPTION

Water-water offering chilled/hot water, designed to mit air conditioning needs in residential/commercial complexes or industrial applications. Indoor units with hermetic scroll compressors and plate heat exchangers.

In the configuration with desuperheater, it is also possible to produce free-hot water.

The technological choices made, always oriented to the highest quality, ensure very easy installation. In fact the electrical and hydraulic connections are all located in the upper part of the unit, facilitating the installation and maintenance operations and also reducing the technical gaps and their position in as little space as possible.

FEATURES

Operating field

Full-load operation with the production of chilled water 4-18°C, and the possibility to produce also negative temperature water down to -8°C for the evaporator and hot water for the condenser up to 55 °C. (for more information, refer to the technical documentation).

Plug and play

All the units are equipped with scroll compressors and plate heat exchangers; the base and panelling are made of steel treated with RAL 9003 polyester paints.

The electric and hydraulic connections are all located on the upper part of the unit facilitating installation and maintenance. This allows reduced plant room space and installation in the smallest space possible. The heat pump can be supplied with all the components required for its installation in new systems and to replace other heat generators. It can be combined with low temperature emission systems such as floor heating or fan coils, but also with conventional radiators.

Version with Integrated hydronic kit

The standard unit is supplied with a water filter, differential pressure switch and safety valve already installed on the service and source side (and also on the recovery side, if present).

To obtain a solution that offers economic savings and facilitates installation, these units can be configured with an integrated hydronic kit on both hydraulic sides (service and source).

Low-head and high-head pumps are available, along with a modulating 2-way valve that can only be applied on the source side to reduce consumption in applications with groundwater.

CONTROL MPC

Microprocessor adjustment, with keyboard and LCD display, for easy access on the unit is a menu available in several languages.

- Possibility to control two units in a Master-Slave configuration
- The presence of a programmable timer allows functioning time periods and a possible second set-point to be set.
- The temperature control takes place with the integral proportional logic, based on the water output temperature.

ACCESSORIES

AER485P1: RS-485 interface for supervision systems with MODBUS protocol.

AERNET: The device allows the control, the management and the remote monitoring of a Chiller with a PC, smartphone or tablet using Cloud connection. AERNET works as Master while every unit connected is configured as Slave (max. 6 unit); also, with a simple click is possible to save a log file with all the connected unit datas in the personal terminal for post analysis.

KSAE: External air sensor.

PGD1: Allows you to control the unit at a distance.

SSM: Probe to be used with the mixer valve in applications with radiant panels. The probe requires the VMF-CRP area accessory as well.

TAH: Ambient terminal with temperature and humidity probe - 230V AC flush-mounting model that can command an On-Off valve or a zone pump and dehumidifier consent.

TAT: Ambient terminal with temperature probe - 230V AC flush-mounting model that can command an On-Off valve or a zone pump.

VMF-CRP: Accessory module for controlling boilers, heat recover units and pumps (if associated with VMF-E5 / RCC panels); if associated with

the VMF-E6 panel, the VMF-CRP modules will be able to manage heat recovery units, RAS, boiler, sanitary management, I/O control, pumps.

VT: Antivibration supports

ACCESSORIES COMPATIBILITY

Model	Ver	180	200	300	400	500	550	600	650
AER48SP1	°	*	*	*	*	*	*	*	*
AERNET	°	*	*	*	*	*	*	*	*
KSAE	°	*	*	*	*	*	*	*	*
PGD1	°	*	*	*	*	*	*	*	*
SSM	°	*	*	*	*	*	*	*	*
TAH	°	*	*	*	*	*	*	*	*
TAT	°	*	*	*	*	*	*	*	*
VMF-CRP	°	*	*	*	*	*	*	*	*

Antivibration

Version	Integrated hydronic kit user side	Integrated hydronic kit, source side	180	200	300	400	500	550	600	650
°	°N,P	°B,F,I,U,V	VT9	VT9	VT9	VT9	VT15	VT15	VT15	VT15

CONFIGURATOR

Field	Description
1,2,3	WRL
4,5,6	Size 180, 200, 300, 400, 500, 550, 600, 650
7	Operating field
°	Standard mechanic thermostatic valve (1)
X	Electronic thermostatic expansion valve
Y	Low temperature mechanic thermostatic valve (2)
8	Model
H	Reversible heat pump, gas side
9	Version
°	Standard
10	Heat recovery
°	Without heat recovery
D	With desuperheater
11	Integrated hydronic kit, source side
°	Without hydronic kit
B	On-off pump

Field	Description
F	Single low-head inverter pump
I	High-head inverter pump
U	Pump high head
Applications with bore hole water	
V	2-way modulating valve
12	Integrated hydronic kit user side
°	Without hydronic kit
N	Pump high head
P	Pump low head
13	Field for future development
°	Field for future development
14	Soft-start
°	Without soft-start
S	With soft-start
15	Power supply
°	400V ~ 3N 50Hz

(1) Water produced from 4 °C ÷ 18 °C
(2) Water produced from 4 °C ÷ - 8 °C

PERFORMANCE SPECIFICATIONS

WRL - °

Size			180	200	300	400	500	550	600	650
Cooling performance 12 °C / 7 °C (1)										
Cooling capacity	°	kW	44,9	59,6	64,8	79,5	93,0	120,1	140,1	157,4
Input power	°	kW	10,8	14,7	16,3	18,6	20,1	27,6	31,4	35,8
Cooling total input current	°	A	20,0	25,0	28,0	32,0	36,0	52,0	60,0	69,0
EER	°	W/W	4,15	4,06	3,97	4,27	4,63	4,34	4,46	4,39
Water flow rate source side	°	l/h	9520	12659	13823	16682	19331	25177	29250	32920
Pressure drop source side	°	kPa	31	52	51	74	34	56	57	71
Water flow rate system side	°	l/h	7732	10274	11168	13711	16013	20686	24139	27112
Pressure drop system side	°	kPa	22	37	36	52	25	40	40	38
Heating performance 40 °C / 45 °C (2)										
Heating capacity	°	kW	53,0	70,9	76,6	92,6	106,4	143,7	164,2	183,3
Input power	°	kW	12,9	17,7	19,1	22,6	24,0	33,1	37,2	42,7
Heating total input current	°	A	23,0	29,0	31,0	37,0	41,0	56,0	64,0	74,0
COP	°	W/W	4,10	4,00	4,01	4,10	4,44	4,34	4,41	4,30
Water flow rate source side	°	l/h	11777	15734	17011	20840	24211	32704	37512	41689
Pressure drop source side	°	kPa	49	89	92	132	61	107	101	126
Water flow rate system side	°	l/h	9190	12277	13264	16046	18452	24913	28485	31788
Pressure drop system side	°	kPa	30	52	49	72	32	58	56	70

- (1) Date 14511:2022; Water user side 12 °C / 7 °C; Water source side 30 °C / 35 °C
 (2) Date 14511:2022; Water user side 40 °C / 45 °C; Water source side 10 °C / 7 °C

ELECTRIC DATA

Size			180	200	300	400	500	550	600	650
Electric data										
Maximum current (FLA)	°	A	32,6	41,8	45,2	52,1	59,0	99,0	112,0	125,0
Peak current (LRA)	°	A	119,0	123,0	125,0	167,0	174,0	265,0	310,0	323,0

ENERGY INDICES (REG. 2016/2281 EU)

Size			180	200	300	400	500	550	600	650
SEER - 12/7 (EN14825:2018) (1)										
SEER	°	W/W	4,25	4,04	4,15	4,38	5,04	4,62	4,80	4,69
Seasonal efficiency	°	%	166,9%	158,5%	162,8%	172,3%	198,4%	181,7%	188,9%	184,5%
UE 813/2013 performance in average ambient conditions (average) - 55 °C - Pdesignh ≤ 400 kW (2)										
Pdesignh	°	kW	68	91	98	119	137	185	212	236
ηsh	°	%	173,0%	170,0%	170,0%	175,0%	189,0%	186,0%	189,0%	184,0%
SCOP	°	W/W	4,53	4,45	4,45	4,58	4,93	4,85	4,93	4,80
Efficiency energy class	°		A+++	-	-	-	-	-	-	-
UE 813/2013 performance in average ambient conditions (average) - 35 °C - Pdesignh ≤ 400 kW (3)										
Pdesignh	°	kW	79	-	-	-	-	-	-	-
ηsh	°	%	222,0%	-	-	-	-	-	-	-
SCOP	°	W/W	5,75	-	-	-	-	-	-	-
Efficiency energy class	°		A+++	-	-	-	-	-	-	-

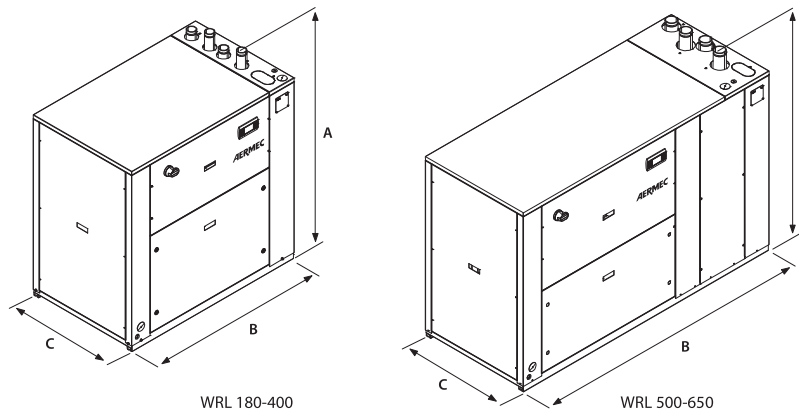
- (1) Calculation performed with FIXED water flow rate and VARIABLE outlet temperature.
 (2) Efficiencies for average temperature applications (55 °C)
 (3) Efficiencies for low temperature applications (35 °C)

GENERAL TECHNICAL DATA

Size		180	200	300	400	500	550	600	650
Compressor									
Type	° type					Scroll			
Compressor regulation	° Type					On-Off			
Number	° no.	2	2	2	2	2	2	2	2
Circuits	° no.	1	1	1	1	1	1	1	1
Refrigerant	° type					R410A			
Source side heat exchanger									
Type	° type					Braze plate			
Number	° no.	1	1	1	1	1	1	1	1
System side heat exchanger									
Type	° type					Braze plate			
Number	° no.	1	1	1	1	1	1	1	1
Source side hydraulic connections									
Connections (in/out)	° Type					Grooved joints			
Sizes (in/out)	° Ø	2"	2"	2"	2"	2" 1/2	2" 1/2	2" 1/2	2" 1/2
System side hydraulic connections									
Connections (in/out)	° Type					Grooved joints			
Sizes (in/out)	° Ø	2"	2"	2"	2"	2" 1/2	2" 1/2	2" 1/2	2" 1/2
Sound data calculated in cooling mode (1)									
Sound power level	° dB(A)	61,1	61,8	62,9	71,1	67,6	79,1	79,1	79,1
Sound pressure level (10 m)	° dB(A)	29,6	30,3	31,4	39,6	36,0	47,5	47,5	47,5

(1) Sound power calculated on the basis of measurements made in accordance with UNI EN ISO 9614-2, as required for Eurovent certification. Sound pressure (cold functioning) measured in free field, 10m away from the unit external surface (in compliance with UNI EN ISO 3744).

DIMENSIONS



Size		180	200	300	400	500	550	600	650
Dimensions and weights									
A	° mm	1380	1380	1380	1380	1380	1380	1380	1380
B	° mm	1320	1320	1320	1320	2060	2060	2060	2060
C	° mm	845	845	845	845	845	845	845	845
Empty weight	° kg	370	370	381	388	522	598	708	753

Aermec reserves the right to make any modifications deemed necessary. All data is subject to change without notice. Aermec does not assume responsibility or liability for errors or omissions.

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WRL 180 - 650

Water cooled heat pump reversible water side

Cooling capacity 49 ÷ 174 kW
 Heating capacity 55 ÷ 192 kW

- High efficiency
- Suitable for geothermal applications
- Production of hot water up to 55 °C



DESCRIPTION

Water-water offering chilled/hot water, designed to meet air conditioning needs in residential/commercial complexes or industrial applications. Indoor units with hermetic scroll compressors and plate heat exchangers.

In the configuration with desuperheater, it is also possible to produce free-hot water.

The technological choices made, always oriented to the highest quality, ensure very easy installation. In fact the electrical and hydraulic connections are all located in the upper part of the unit, facilitating the installation and maintenance operations and also reducing the technical gaps and their position in as little space as possible.

FEATURES

Operating field

Full-load operation with the production of chilled water 4-18°C, and the possibility to produce also negative temperature water down to -8°C for the evaporator and hot water for the condenser up to 55 °C. (for more information, refer to the technical documentation).

Plug and play

All the units are equipped with scroll compressors and plate heat exchangers; the base and panelling are made of steel treated with RAL 9003 polyester paints.

The electric and hydraulic connections are all located on the upper part of the unit facilitating installation and maintenance. This allows reduced plant room space and installation in the smallest space possible. The heat pump can be supplied with all the components required for its installation in new systems and to replace other heat generators. It can be combined with low temperature emission systems such as floor heating or fan coils, but also with conventional radiators.

Version with Integrated hydronic kit

The standard unit is supplied with a water filter, differential pressure switch and safety valve already installed on the service and source side (and also on the recovery side, if present).

To obtain a solution that offers economic savings and facilitates installation, these units can be configured with an integrated hydronic kit on both hydraulic sides (service and source).

Low-head and high-head pumps are available, along with a modulating 2-way valve that can only be applied on the source side to reduce consumption in applications with groundwater.

CONTROL MPC

Microprocessor adjustment, with keyboard and LCD display, for easy access on the unit is a menu available in several languages.

- Possibility to control two units in a Master-Slave configuration
- The presence of a programmable timer allows functioning time periods and a possible second set-point to be set.
- The temperature control takes place with the integral proportional logic, based on the water output temperature.

ACCESSORIES

AER485P1: RS-485 interface for supervision systems with MODBUS protocol.

AERNET: The device allows the control, the management and the remote monitoring of a Chiller with a PC, smartphone or tablet using Cloud connection. AERNET works as Master while every unit connected is configured as Slave (max. 6 unit); also, with a simple click is possible to save a log file with all the connected unit datas in the personal terminal for post analysis.

KSAE: External air sensor.

PGD1: Allows you to control the unit at a distance.

SSM: Probe to be used with the mixer valve in applications with radiant panels. The probe requires the VMF-CRP area accessory as well.

TAH: Ambient terminal with temperature and humidity probe - 230V AC flush-mounting model that can command an On-Off valve or a zone pump and dehumidifier consent.

TAT: Ambient terminal with temperature probe - 230V AC flush-mounting model that can command an On-Off valve or a zone pump.

VMF-CRP: Accessory module for controlling boilers, heat recover units and pumps (if associated with VMF-E5 / RCC panels); if associated with

the VMF-E6 panel, the VMF-CRP modules will be able to manage heat recovery units, RAS, boiler, sanitary management, I/O control, pumps.

VT: Antivibration supports

ACCESSORIES COMPATIBILITY

Ver	180	200	300	400	500	550	600	650
Model: °, E, K								
°	AER485P1, AERNET, KSAE, PGD1, SSM, TAH, TAT, VMF-CRP	AER485P1, AERNET, KSAE, PGD1, SSM, TAH, TAT, VMF-CRP	AER485P1, AERNET, KSAE, PGD1, SSM, TAH, TAT, VMF-CRP	AER485P1, AERNET, KSAE, PGD1, SSM, TAH, TAT, VMF-CRP	AER485P1, AERNET, KSAE, PGD1, SSM, TAH, TAT, VMF-CRP	AER485P1, AERNET, KSAE, PGD1, SSM, TAH, TAT, VMF-CRP	AER485P1, AERNET, KSAE, PGD1, SSM, TAH, TAT, VMF-CRP	AER485P1, AERNET, KSAE, PGD1, SSM, TAH, TAT, VMF-CRP

Antivibration

Version	Integrated hydronic kit, source side	Integrated hydronic kit user side	180	200	300	400	500	550	600	650
°	°B,F,I,U,V	°N,P	VT9	VT9	VT9	VT9	VT15	VT15	VT15	VT15

CONFIGURATOR

Field	Description
1,2,3	WRL
4,5,6	Size 180, 200, 300, 400, 500, 550, 600, 650
7	Operating field
°	Standard mechanic thermostatic valve (1)
X	Electronic thermostatic expansion valve
Y	Low temperature mechanic thermostatic valve (2)
8	Model
°	Heat pump reversible on the water side
E	Evaporating unit (3)
K	Heat pump reversible on the water side with low pressure drops
9	Version
°	Standard
10	Heat recovery
°	Without heat recovery
D	With desuperheater
11	Integrated hydronic kit, source side
°	Without hydronic kit
B	On-off pump

Field	Description
F	Single low-head inverter pump
I	High-head inverter pump
U	Pump high head
Applications with bore hole water	
V	2-way modulating valve
12	Integrated hydronic kit user side
°	Without hydronic kit
N	Pump high head
P	Pump low head
13	Field for future development
°	Field for future development
14	Soft-start
°	Without soft-start
S	With soft-start
15	Power supply
°	400V~3N 50Hz

- (1) Water produced from 4 °C ÷ 18 °C
 (2) Water produced from 4 °C ÷ - 8 °C
 (3) Shipped with holding charge only

PERFORMANCE SPECIFICATIONS

WRL - E

Size		180	200	300	400	500	550	600	650
Cooling performance 12 °C / 7 °C (1)									
Cooling capacity	kW	46,0	60,1	69,6	80,1	90,6	121,3	140,2	158,7
Input power	kW	12,4	16,0	18,5	19,8	23,1	29,6	34,1	38,5
Cooling total input current	A	23,0	29,0	32,0	36,0	42,0	56,0	65,0	74,0
EER	W/W	3,71	3,76	3,76	4,05	3,92	4,10	4,11	4,12
Water flow rate system side	l/h	7903	10326	11958	13762	15566	20841	24088	27266
Pressure drop system side	kPa	23	39	39	56	25	42	47	57

(1) Service side water 12 °C / 7 °C; Condensing temperature 45 °C

WRL - °

Size		180	200	300	400	500	550	600	650
Cooling performance 12 °C / 7 °C (1)									
Cooling capacity	kW	49,7	64,3	74,4	85,9	99,8	129,5	150,1	169,0
Input power	kW	10,8	14,4	16,8	18,3	20,4	27,0	31,0	35,7
Cooling total input current	A	20,0	25,0	29,0	62,0	36,0	51,0	59,0	68,0
EER	W/W	4,59	4,47	4,42	4,69	4,90	4,80	4,84	4,73
Water flow rate source side	l/h	10336	13418	15531	17725	20550	26664	30860	34836
Pressure drop source side	kPa	27	46	62	81	32	52	57	72
Water flow rate system side	l/h	8549	11082	12824	14822	17186	22296	25844	29025
Pressure drop system side	kPa	27	43	46	60	30	49	53	67

Heating performance 40 °C / 45 °C (2)

Heating capacity	kW	55,8	72,6	84,1	95,6	110,7	143,6	166,1	187,7
Input power	kW	13,2	17,6	20,5	22,4	24,8	32,9	37,9	43,9
Heating total input current	A	24,0	30,0	34,0	38,0	44,0	61,0	71,0	82,0
COP	W/W	4,24	4,13	4,10	4,27	4,46	4,36	4,38	4,27
Water flow rate source side	l/h	12542	16257	18813	21745	25213	32709	37914	42683
Pressure drop source side	kPa	58	93	99	129	65	105	114	144
Water flow rate system side	l/h	9685	12580	14561	16557	19196	24909	28816	32553
Pressure drop system side	kPa	24	40	55	71	28	45	50	63

(1) Date 14511:2022; Water user side 12 °C / 7 °C; Water source side 30 °C / 35 °C

(2) Date 14511:2022; Water user side 40 °C / 45 °C; Water source side 10 °C / 7 °C

WRL - K

Size		180	200	300	400	500	550	600	650
Cooling performance 12 °C / 7 °C (1)									
Cooling capacity	kW	49,7	66,3	76,7	88,6	99,8	133,5	154,6	174,1
Input power	kW	10,8	14,4	16,9	18,3	20,4	26,7	30,8	35,6
Cooling total input current	A	20,0	25,0	29,0	32,0	36,0	51,0	59,0	68,0
EER	W/W	4,59	4,61	4,55	4,85	4,50	5,00	5,02	4,90
Water flow rate source side	l/h	10336	13753	15919	18173	20550	27338	31642	35716
Pressure drop source side	kPa	27	48	65	85	32	55	60	76
Water flow rate system side	l/h	8549	11414	13209	15267	17186	22965	26619	29967
Pressure drop system side	kPa	27	34	42	48	30	24	33	41

Heating performance 40 °C / 45 °C (2)

Heating capacity	kW	55,8	74,3	86,1	97,9	110,7	147,1	170,1	192,1
Input power	kW	13,2	17,5	20,5	22,2	24,8	32,3	37,3	43,1
Heating total input current	A	24,0	30,0	34,0	38,0	44,0	61,0	71,0	82,0
COP	W/W	4,24	4,24	4,20	4,40	4,46	4,56	4,56	4,46
Water flow rate source side	l/h	12542	16745	19337	22397	25213	33690	39052	43963
Pressure drop source side	kPa	58	73	90	103	65	52	71	88
Water flow rate system side	l/h	9685	12876	14904	16953	19196	25504	29507	33331
Pressure drop system side	kPa	24	42	57	74	28	48	52	66

(1) Date 14511:2022; Water user side 12 °C / 7 °C; Water source side 30 °C / 35 °C

(2) Date 14511:2022; Water user side 40 °C / 45 °C; Water source side 10 °C / 7 °C

ENERGY INDICES (REG. 2016/2281 EU)

WRL °

Size		180	200	300	400	500	550	600	650
SEER - 12/7 (EN14825: 2018) (1)									
SEER	W/W	4,65	4,55	4,54	4,74	5,31	5,04	5,12	4,97
Seasonal efficiency	%	182,8%	178,9%	178,5%	186,4%	209,3%	198,7%	201,7%	195,8%
UE 813/2013 performance in average ambient conditions (average) - 55 °C - Pdesignh ≤ 400 kW (2)									
Pdesignh	kW	68	91	98	119	137	185	212	236
ηsh	%	173,0%	170,0%	170,0%	175,0%	189,0%	186,0%	189,0%	184,0%
SCOP	W/W	4,53	4,45	4,45	4,58	4,93	4,85	4,93	4,80
Efficiency energy class		A+++	-	-	-	-	-	-	-
UE 813/2013 performance in average ambient conditions (average) - 35 °C - Pdesignh ≤ 400 kW (3)									
Pdesignh	kW	79	-	-	-	-	-	-	-
ηsh	%	222,0%	-	-	-	-	-	-	-
SCOP	W/W	5,75	-	-	-	-	-	-	-
Efficiency energy class		A+++	-	-	-	-	-	-	-

(1) Calculation performed with FIXED water flow rate and VARIABLE outlet temperature.

(2) Efficiencies for average temperature applications (55 °C)

(3) Efficiencies for low temperature applications (35 °C)

WRL K

Size		180	200	300	400	500	550	600	650
SEER - 12/7 (EN14825: 2018) (1)									
SEER	W/W	4,65	4,71	4,67	4,90	5,31	5,31	5,35	5,19
Seasonal efficiency	%	182,8%	185,3%	183,6%	192,9%	209,3%	209,2%	210,9%	204,6%
UE 813/2013 performance in average ambient conditions (average) - 55 °C - Pdesignh ≤ 400 kW (2)									
Pdesignh	kW	68	91	98	119	137	185	212	236
ηsh	%	173,0%	170,0%	170,0%	175,0%	189,0%	186,0%	189,0%	184,0%
SCOP	W/W	4,53	4,45	4,45	4,58	4,93	4,85	4,93	4,80
Efficiency energy class		A+++	-	-	-	-	-	-	-
UE 813/2013 performance in average ambient conditions (average) - 35 °C - Pdesignh ≤ 400 kW (3)									
Pdesignh	kW	79	-	-	-	-	-	-	-
ηsh	%	222,0%	-	-	-	-	-	-	-
SCOP	W/W	5,75	-	-	-	-	-	-	-
Efficiency energy class		A+++	-	-	-	-	-	-	-

(1) Calculation performed with FIXED water flow rate and VARIABLE outlet temperature.

(2) Efficiencies for average temperature applications (55 °C)

(3) Efficiencies for low temperature applications (35 °C)

ELECTRIC DATA

Size			180	200	300	400	500	550	600	650
Electric data										
Maximum current (FLA)	°E,K	A	32,6	41,8	45,2	52,1	59,0	99,0	112,0	125,0
Peak current (LRA)	°E,K	A	119,0	123,0	125,0	167,0	174,0	265,0	310,0	323,0

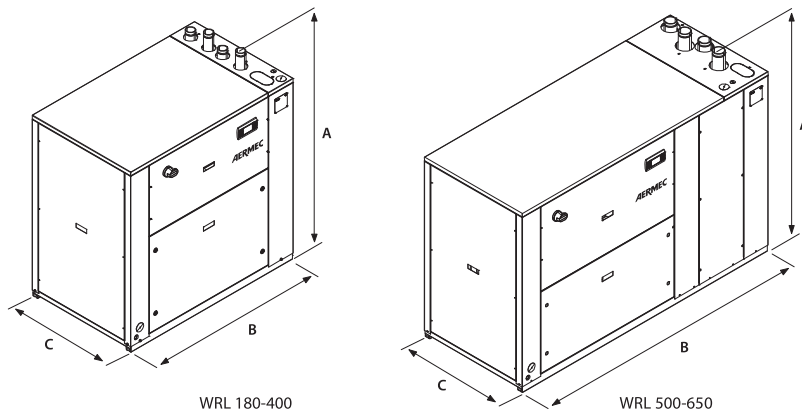
GENERAL TECHNICAL DATA

Size			180	200	300	400	500	550	600	650
Compressor										
Type	°E,K	type	Scroll							
Compressor regulation	°E,K	Type	On-Off							
Number	°E,K	no.	2	2	2	2	2	2	2	2
Circuits	°E,K	no.	1	1	1	1	1	1	1	1
Refrigerant	°E,K	type	R410A							
Refrigerant charge (1)	°K	kg	6,0	7,0	6,8	7,2	9,0	14,5	16,8	16,5
	E	kg	Holding charge	Holding charge	Holding charge	Holding charge	Holding charge	Holding charge	Holding charge	Holding charge
Source side heat exchanger										
Type	°K	type	Braze plate							
	E	type								
Number	°K	no.	1	1	1	1	1	1	1	1
	E	no.	-	-	-	-	-	-	-	-
System side heat exchanger										
Type	°E,K	type	Braze plate							
Number	°E,K	no.	1	1	1	1	1	1	1	1
Source side hydraulic connections										
Connections (in/out)	°K	Type	Grooved joints							
	E	Type								
Sizes (in/out)	°K	Ø	2"	2"	2"	2"	2" 1/2	2" 1/2	2" 1/2	2" 1/2
	E	Ø								
System side hydraulic connections										
Connections (in/out)	°E,K	Type	Grooved joints							
Sizes (in/out)	°E,K	Ø	2"	2"	2"	2"	2" 1/2	2" 1/2	2" 1/2	2" 1/2
Sound data calculated in cooling mode (2)										
Sound power level	°E,K	dB(A)	61,1	61,8	62,9	71,1	67,6	79,1	79,1	79,1
Sound pressure level (10 m)	°E,K	dB(A)	29,6	30,3	31,4	39,6	36,0	47,5	47,5	47,5

(1) The load indicated in the table is an estimated and preliminary value. The final value of the refrigerant load is indicated on the unit's technical label. For further information contact the office.

(2) Sound power calculated on the basis of measurements made in accordance with UNI EN ISO 9614-2, as required for Eurovent certification. Sound pressure (cold functioning) measured in free field, 10m away from the unit external surface (in compliance with UNI EN ISO 3744).

DIMENSIONS



Size			180	200	300	400	500	550	600	650
Dimensions and weights										
A	°E,K	mm	1380	1380	1380	1380	1380	1380	1380	1380
B	°E,K	mm	1320	1320	1320	1320	2060	2060	2060	2060
C	°E,K	mm	845	845	845	845	845	845	845	845
Empty weight	°K	kg	375	375	381	388	518	594	670	715
	E	kg	-	-	-	-	-	-	-	-

Aermec reserves the right to make any modifications deemed necessary. All data is subject to change without notice. Aermec does not assume responsibility or liability for errors or omissions.

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