

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

AERBAC-MODU: Ethernet communication Interface for protocols Bacnet/IP, Modbus TCP/IP, SNMP. The accessory is supplied with the unit and must be installed on an external electrical panel.

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.

SGD: Electronic expansion that enables connecting to the photovoltaic system and heat pumps to accumulate heat in the DHW tank or in the heating system during the photovoltaic production phase and release it at times when heating demand is highest.

VT: Anti-vibration 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
AERBAC-MODU	°A	*	*	*	*	*	*	*	*	*
AERSET	°A	*	*	*	*	*	*	*	*	*
KSAE	°A	*	*	*	*	*	*	*	*	*
MODU-485BL	°A	*	*	*	*	*	*	*	*	*
PR3	°A	*	*	*	*	*	*	*	*	*
SGD	°A	*	*	*	*	*	*	*	*	*

Antivibration

Version	Integrated hydronic kit, source side	System side - pumps	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	System side - pumps	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

Configuration options

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)

Field	Description
U	Pump high head (6)
Applications with bore hole water	
V	2-way modulating valve
12	System side - pumps
°	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

(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

Size		026	031	041	051	071	081	101	141	161
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
nsh	%	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+++

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

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

Size		026	031	041	051	071	081	101	141	161
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	70	56	79	66	56	148	164	157
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	59	46	70	54	41	130	148	138

(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

Size		026	031	041	051	071	081	101	141	161
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	70	56	-	-	-	-	-	-
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	59	45	-	-	-	-	-	-

(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	∅	9,5	9,5	9,5	12,7	12,7	15,9	15,9	18,0	18,0
Liquid line (C1)	E	∅	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+++

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

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

Size			026	031	041	051	071	081	101	141	161
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	75,0	90,0	94,0	95,0
	M	A	63,0	84,0	119,0	-	-	-	-	-	-

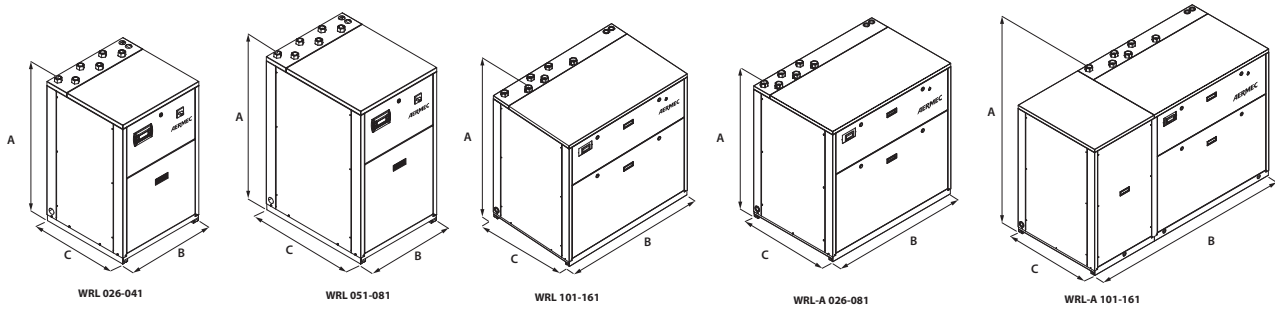
GENERAL TECHNICAL DATA

Size			026	031	041	051	071	081	101	141	161
Compressor											
Type	°A	type						Scroll			
Number	°A	no.	1	1	1	1	1	1	2	2	2
Circuits	°A	no.	1	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	1
System side heat exchanger											
Type	°A	type						Brazed plate			
Number	°A	no.	1	1	1	1	1	1	1	1	1
Source side hydraulic connections											
Connections (in/out)	°A	Type						Gas-F			
Sizes (in/out)	°A	Ø						1" 1/4			
System side hydraulic connections											
Connections (in/out)	°A	Type						Gas-F			
Sizes (in/out)	°A	Ø						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
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) 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	1126
	A	mm	1126	1126	1126	1126	1126	1126	1126	1126	1126
B	°	mm	605	605	605	605	605	605	1155	1155	1155
	A	mm	1155	1155	1155	1155	1155	1155	1755	1755	1755
C	°	mm	603	603	603	773	773	773	773	773	773
	A	mm	773	773	773	773	773	773	773	773	773
Empty weight	°	kg	120	125	130	150	170	180	260	270	280
	A	kg	190 (1)	200 (1)	210 (1)	230 (1)	250 (1)	260 (1)	340 (1)	350 (1)	360 (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.

Aermec S.p.A.

Via Roma, 996 - 37040 Bevilacqua (VR) - Italia
Tel. 0442633111 - Telefax 044293577
www.aermec.com