

## WRL 026H - 161H

## Reversible water-cooled heat pump, gas side

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

- High efficiency
- Production of hot water up to 60 °C
- Production of domestic hot water priority
- 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 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.

### 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

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

**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:** To predict accessory for the management of the probes SPLW / SDHW if provided with the MULTICONTROL

VT: Antivibration supports

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

flows exclusively 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
AER485P1	*	*	*	*	*	*	*	*	*
KSAE	*	*	*	*	*	*	*	*	*
PGD1	*	*	*	*	*	*	*	*	*
SSM	*	*	*	*	*	*	*	*	*
TAH	*	*	*	*	*	*	*	*	*
TAT	*	*	*	*	*	*	*	*	*
VMF-CRP	*	*	*	*	*	*	*	*	*

### Antivibration

Version	Integrated hydronic kit, source side	Integrated hydronic kit, user side	026	031	041	051	071	081	101	141	161
°	°B,I,U,V	°N,P	VT9	VT9	VT9	VT9	VT9	VT9	VT15	VT15	VT15
A	°B,I,U,V	°N,P	VT15	VT15	VT15	VT15	VT15	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
<b>1,2,3</b>	<b>WRL</b>
<b>4,5,6</b>	<b>Size</b> 026, 031, 041, 051, 071, 081, 101, 141, 161
<b>7</b>	<b>Operating field</b>
X	Electronic thermostatic valve
<b>8</b>	<b>Model</b>
H	Reversible heat pump, gas side
<b>9</b>	<b>Version</b>
°	Without storage tank
A	With storage tank
<b>10</b>	<b>Heat recovery</b>
°	Without heat recovery
T	With total recovery
<b>11</b>	<b>Integrated hydronic kit, source side</b>
°	Without hydronic kit
B	On-off pump (1)
I	Inverter pump (2)
U	Pump high head (3)
V	Applications with bore hole water
<b>12</b>	<b>Integrated hydronic kit, user side</b>
°	Without hydronic kit
N	Pump high head (3)
P	On-off pump (1)
<b>13</b>	<b>Integrated hydronic kit, recovery side</b>
°	Without hydronic kit
Q	Inverter pump
<b>14</b>	<b>Soft-start</b>
°	Without soft-start
S	With soft-start
<b>15</b>	<b>Power supply</b>
°	400V~3N 50Hz
4	230V~3 50Hz (4)
M	230V~ 50Hz (5)

(1) Inverter pump for size WRL 026 ÷ 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
<b>400V~3N 50Hz</b>										
<b>Cooling performance 12 °C / 7 °C (1)</b>										
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
<b>Heating performance 40 °C / 45 °C (2)</b>										
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 14511:2018; Water user side 12 °C / 7 °C; Water source side 30 °C / 35 °C

(2) Date 14511:2018; Water user side 40 °C / 45 °C; Water source side 10 °C / 7 °C

**Technical data WRL (H°) - (230V ~ 50Hz)**

Size		026	031	041	051	071	081	101	141	161
<b>230V ~ 50Hz</b>										
<b>Cooling performance 12 °C / 7 °C (1)</b>										
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	-	-	-	-	-	-
<b>Heating performance 40 °C / 45 °C (2)</b>										
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 14511:2018; Water user side 12 °C / 7 °C; Water source side 30 °C / 35 °C

(2) Date 14511:2018; 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
<b>400V~3N 50Hz</b>										
<b>Cooling performance 23 °C / 18 °C (1)</b>										
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	4,0	3,0	6,0	8,0	9,0	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
<b>Heating performance 30 °C / 35 °C (2)</b>										
Heating capacity	kW	7,9	9,4	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	3612	4165	5669	7217	8246
Pressure drop system side	kPa	20	18	28	28	32	38	35	43	51

(1) Date 14511:2018; Water user side 23 °C / 18 °C; Water source side 30 °C / 35 °C

(2) Date 14511:2018; 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
<b>230V~ 50Hz</b>										
<b>Cooling performance 23 °C / 18 °C (1)</b>										
Cooling capacity	kW	8,3	10,1	13,3	-	-	-	-	-	-
Input power	kW	1,6	2,0	2,5	-	-	-	-	-	-
Cooling total input current	A	8,0	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	-	-	-	-	-	-
<b>Heating performance 30 °C / 35 °C (2)</b>										
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 14511:2018; Water user side 23 °C / 18 °C; Water source side 30 °C / 35 °C

(2) Date 14511:2018; Water user side 30 °C / 35 °C; Water source side 10 °C / 5 °C

## ENERGY DATA

### Energy index - WRL - (H°) - (400V 3N ~ 50Hz)

Size		026	031	041	051	071	081	101	141	161
<b>400V~3N 50Hz</b>										
<b>UE 811/2013 performance in average ambient conditions (average) - 55 °C - Pdesignh ≤ 70 kW (1)</b>										
Pdesignh	kW	10	12	16	21	26	31	42	53	61
ηsh	%	141,00	145,00	151,00	152,00	151,00	150,00	175,00	173,00	167,00
SCOP		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+++
<b>UE 811/2013 performance in average ambient conditions (average) - 35 °C - Pdesignh ≤ 70 kW (2)</b>										
Pdesignh	kW	11	14	17	23	30	35	45	60	68
ηsh	%	195,00	210,00	207,00	212,00	211,00	205,00	233,00	226,00	212,00
SCOP		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+++
<b>Cooling capacity with low leaving water temp (UE n° 2016/2281)</b>										
ηsc	%	142,30	132,30	173,00	182,00	168,30	165,90	196,10	181,20	174,80
SEER	W/W	3,76	3,51	4,53	4,75	4,41	4,35	5,10	4,73	4,57

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

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

### Energy index - WRL - (H°) - 230V ~ 50Hz)

Size		026	031	041	051	071	081	101	141	161
<b>230V~ 50Hz</b>										
<b>UE 811/2013 performance in average ambient conditions (average) - 55 °C - Pdesignh ≤ 70 kW (1)</b>										
Pdesignh	kW	10	13	16	-	-	-	-	-	-
ηsh	%	142,00	145,00	142,00	-	-	-	-	-	-
SCOP		3,75	3,83	3,75	-	-	-	-	-	-
Efficiency energy class		A++	A++	A++	-	-	-	-	-	-
<b>UE 811/2013 performance in average ambient conditions (average) - 35 °C - Pdesignh ≤ 70 kW (2)</b>										
Pdesignh	kW	11	14	17	-	-	-	-	-	-
ηsh	%	198,00	212,00	199,00	-	-	-	-	-	-
SCOP		5,15	5,50	5,18	-	-	-	-	-	-
Efficiency energy class		A+++	A+++	A+++	-	-	-	-	-	-
<b>Cooling capacity with low leaving water temp (UE n° 2016/2281)</b>										
ηsc	%	135,40	167,50	188,10	-	-	-	-	-	-
SEER	W/W	3,59	4,39	4,90	-	-	-	-	-	-

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

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

## ELECTRIC DATA

### Electric data

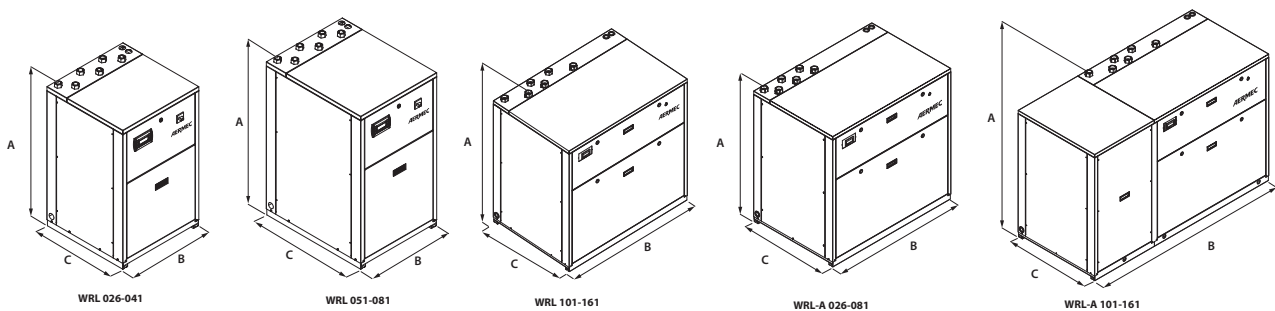
Size		026	031	041	051	071	081	101	141	161
<b>400V~3N 50Hz</b>										
<b>Electric data</b>										
Maximum current (FLA)	A	8,5	9,0	11,0	13,0	20,0	23,0	23,0	37,0	43,0
Peak current (LRA)	A	34,0	37,0	50,0	66,0	75,0	75,0	88,0	91,0	94,0
<b>230V~ 50Hz</b>										
<b>Electric data</b>										
Maximum 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
<b>Compressor</b>											
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			
<b>Source side heat exchanger</b>											
Type	°A	type						Brazed plate			
Number	°A	no.	1	1	1	1	1	1	1	1	1
<b>System side heat exchanger</b>											
Type	°A	type						Brazed plate			
Number	°A	no.	1	1	1	1	1	1	1	1	1
<b>Source side hydraulic connections</b>											
Connections (in/out)	°A	Type						Gas - F			
Sizes (in/out)	°A	Ø						1" 1/4			
<b>System side hydraulic connections</b>											
Connections (in/out)	°A	Type						Gas - F			
Sizes (in/out)	°A	Ø						1" 1/4			
<b>Sound data calculated in cooling mode (1)</b>											
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)	°A	dB(A)	24,0	25,8	25,3	27,7	28,7	29,2	30,6	31,6	32,1

(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



## Dimensions and weights

Size			026	031	041	051	071	081	101	141	161
<b>Dimensions and weights</b>											
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	1155	1155	1155
C	°	mm	603	603	603	773	773	773	773	773	773
	A	mm	773	773	773	773	773	773	773	773	773
Weight empty	°	kg	120	125	130	150	170	180	260	270	280
	A	kg	190	200	210	230	250	260	340	350	360

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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