

WSH

Water cooled heat pump reverse cycle with two-screw compressor
 Cooling capacity from 166 up to 672 kW
 Heating capacity from 183 up to 784 kW

R134a



Aermec takes part in the EUROVENT certification Programme. The products concerned result in the EUROVENT directory of certified products.



- **CYCLE REVERSING VALVE**
- **OPTIONAL ELECTRONIC EXPANSION VALVE, WHICH ALLOWS:**
 - **THE PRODUCTION OF COOLED AIR UP TO – 6 °C**
 - **ADJUSTMENT OF THE COOLING CAPACITY BY MEANS OF CONTINUOUS MODULATION 25–100%**

Features

- 10 sizes available (4 single-compressor sizes and bi-compressor sizes)
- The versions are realised using R134a gas
- Cooling only versions - heat pump with cycle reverse valve
- Versions available with partial recuperator
- Standard Version (°):
 - temperature of water produced up to 55 °C, depending on the heat pump
- X Version:
 - For the production of cooled water to -6 °C
- L Version:
 - Reduced sound emission
- High-efficiency screw compressors with silent functioning and cooling power adjustment by means of continuous modulation from 40 up to 100% with standard thermostatic valve. (25-100% with electronic valve accessory)
- Shut-off valve on the delivery of the compressors and on the liquid line
- Standard amperometric transformer for each compressor
- Two-circuit plate exchangers in the two-circuit versions, optimised for the use of R134a gas
- Microprocessor modular adjustment
- Independent control of the individual circuits
- Electric control board with numbering of all cables
- Continuous adjustment of the capacity with dynamic display of the cooling capacity
- "Always Working" function: In the case of critical conditions, the machine does not stop but can adjust itself
- Automatic compensation of the Set Point with analogue input from 4 to 20 mA or 0 - 10 V or external air probe.
- Self-adaptive work differential to always ensure the correct functioning times of the compressors.
- PDC "Pull Down Control" System: prevents the activation of power steps when the temperature of the water quickly approaches the set-point.
- DL "Demand Limit": allows to limit electric absorption of the machine in the case of insufficient electrical power (load peaks or start-up of generators).
- Compact dimensions.
- Multi-language parameters display.
- Galvanised metal cabinet treated with polyester ant-corrosion paint.

Accessories

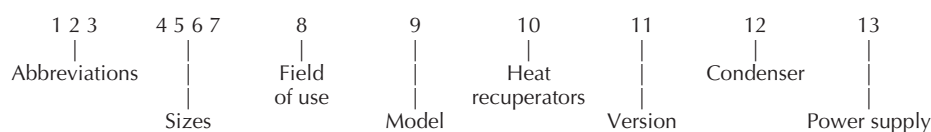
- **AER485P1:** RS-485 interface for supervising systems with MODBUS protocol.
- **PRV3:** Allows to control the chiller at a distance.
- **RIF:** Capacitor device. Connected in parallel to the motor winding. It allows to maintain a constant COS δ at 0.95 and also allows an input current reduction (about 10%)
It must be factory set when the unit is manufactured.
- **AVX:** Spring anti-vibration mounts.
- **AERWEB30:** the AERWEB device allows the remote control of a chiller from a common PC by means of a serial connection. By using additional modules the device allows control of the chiller by telephone network, using the **AERMODEM**; accessory or GSM network, using the **AERMODEMGSM**. The AERWEB can pilot up to 9 chillers, each of which must be equipped with the AER485 or AER485P2 accessory.
- **SAP:** A series of pumps and storage tanks is available. They are not dimensionally compatible. Refer to the technical manual.
- **MULTICHILLER:** Control system for the command and switch on/off of the individual chillers in a plant where several appliances are installed in parallel, always ensuring the constant flow rate to the evaporators.
- **AKW: ACUSTIC KIT:** Allows to reduce noise further by means of: unit soundproof cover optimised using high density ecologic material.

Mod	Vers.	Compatibility of accessories									
		0701	0801	0901	1101	1402	1602	1802	2002	2202	2502
AERWEB30		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MULTICHILLER		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
AER485P1		✓	✓	✓	✓	✓(x2)	✓(x2)	✓(x2)	✓(x2)	✓(x2)	✓(x2)
RIF		161	161	201	241	161(x2)	161(x2)	201(x2)	201-241	241(x2)	301(x2)
PRV3		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
AVX	°/L	665	665	665	666	662	662	662	663	664	664
	D	665	665	665	666	662	662	662	663	664	664
AKW		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Choice of the unit

By appropriately combining the many options available each model can be configured in a way to satisfy the most demanding plant requirements.

Configurator:



Abbreviation:

WSH

Size:

0701, 0801, 0901, 1101, 1402, 1602, 1802, 2002, 2202, 2502

Field of use

- ° - Standard with water produced above +4 °C
- X - With electronic thermostatic valve that allows:
 - Cooled water produced to -6 °C
 - Cooling power control with continuous modulation (25 - 100%)

Model:

- ° - Standard

Heat recuperator:

- ° - Without recuperators
- D - With desuperheater

Version:

- ° - Standard
- L - Silenced

Condenser:

- ° - In compliance with PED Standard

Power supply:

- ° - 400V 3~ 50Hz with fuses
- 8 - 400V 3~ 50Hz with magnet-circuit breakers
- 2 - 230V 3~ 50Hz with fuses *
- 4 - 230V 3~ 50Hz with magnet-circuit breakers *
- * (not available as for 2502 size)
- 5 - 500V 3~ 50Hz with fuses
- 9 - 500V 3~ 50Hz with magnet-circuit breakers

Attention: the standard options are represented by °;

Example of sales code: **WSH1602L8**

This is a high efficiency WSH unit, size 1602 in silenced version, with exchangers in compliance with PED Standards and electric control board for compressors with 400V 3~ 50Hz motors, protected by magnet-circuit breakers.

As you may have noted, as every option is represented in an unmistakable manner, it is not necessary to indicate the standard options (identified by °) in the sales code.

Technical data

WSH Mod.		0701	0801	0901	1101	1402	1602	1802	2002	2202	2502
Cooling power	kW	166	196	217	270	360	428	466	526	594	672
Total absorbed power	kW	36	41	47	57	76	88	99	109	120	138
Water flow to the evaporator	l/h	28550	33710	37320	46440	61920	73620	80150	90470	102170	115580
Loss of load to the evaporator	kPa	23	24	22	27	43	47	48	59	65	74
Water consumption to the condenser	l/h	34740	40760	45410	56240	74990	88750	97180	109220	122810	139320
Loss of load to the condenser	kPa	30	31	30	36	57	62	65	79	88	101
Heating power	kW	183	210	237	300	420	490	540	620	700	784
Total absorbed power	kW	44	50	57	72	98	116	125	144	162	176
Water flow to the condenser	l/h	31480	36120	40760	51600	72240	84280	92880	106640	120400	134850
Loss of load to the condenser	kPa	24	23	23	29	57	62	63	72	79	90
Water consumption to the evaporator	l/h	23910	27520	30960	39220	55380	64330	71380	81870	92540	104580
Loss of load to the evaporator	kPa	15	15	14	18	27	29	29	32	36	40
E.E.R.	W/W	4.61	4.78	4.62	4.74	4.74	4.86	4.71	4.83	4.95	4.87
EEEC ⁽¹⁾		C	B	C	B	B	B	B	B	B	B
C.O.P.	W/W	4.16	4.20	4.16	4.17	4.29	4.22	4.32	4.31	4.32	4.45
EEEC ⁽¹⁾		B	B	B	B	B	B	B	B	B	A
Electric power supply		400V 3~ 50Hz									
Current absorbed when cold	A	65	73	80.6	100	135	146.5	162	187.5	210	242
Current absorbed when hot	A	81	91	101	130.5	178.5	210	221	256.5	291	320
Maximum current (FLA)	A	124	144	162	182	248	288	324	344	364	430
Peak current (LRA)	A	163	192	229	300	287	336	391	462	482	575
Compressor	Type	bi-vis									
Quantity	n°	1	1	1	1	2	2	2	2	2	2
Partialisation with standard VT	%	40-100	40-100	40-100	40-100	20-100	20-100	20-100	20-100	20-100	20-100
Partialisation with electronic VT	%	25-100	25-100	25-100	25-100	12,5-100	12,5-100	12,5-100	12,5-100	12,5-100	12,5-100
Evaporator	Type	Plate									
Quantity	n°	1	1	1	1	1	1	1	1	1	1
Evaporator hydraulic attachments	Ø	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"
Type of hydraulic attachments	Type	Viciaulic									
Condenser	Type	Plate									
Quantity	n°	1	1	1	1	1	1	1	1	1	1
Condenser hydraulic attachments	Ø	3"	3"	3"	3"	3"	3"	3"	3"	3"	3"
Type of hydraulic attachments	Type	Viciaulic									
Sound pressure ⁽²⁾	db(A)	54	54	54	60	57	57	57	61	63	63

(1) EEEC EUROVENT energy efficiency class

(2) Sound pressure measured in free field with directivity factor 2 to 10 m distance, in agreement with the ISO 3744 Standard.

The performance refers to the following conditions:

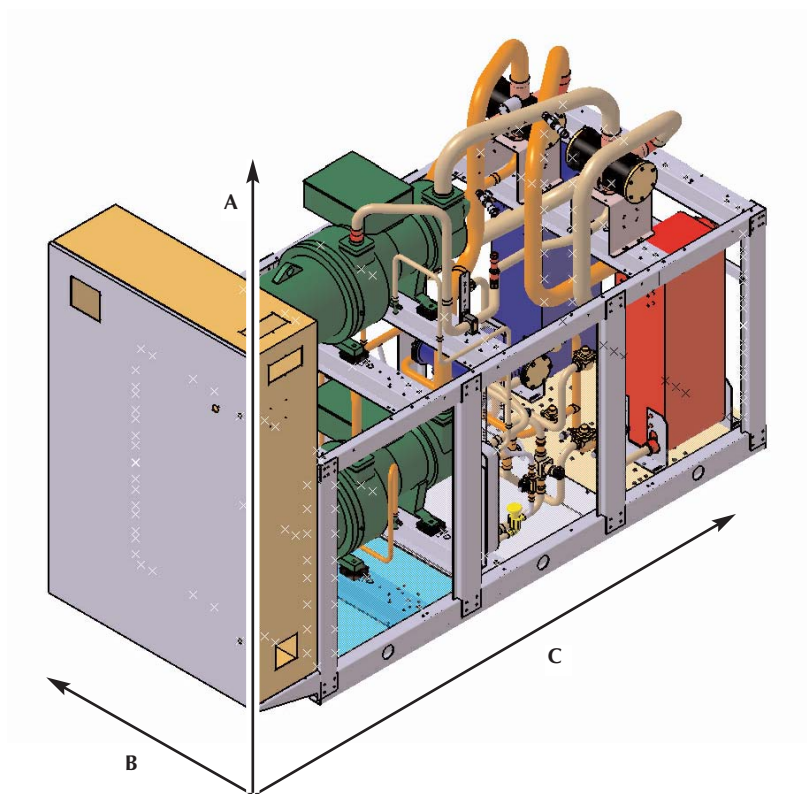
■ Cooling:

- temperature of water produced 7 °C
- condenser water inlet temperature 30 °C
- $\Delta t = 5$ K

■ Heating:

- temperature of water produced 45 °C
- evaporator water inlet temperature 10 °C
- $\Delta t = 5$ K

Dimensions (mm)



Mod WSH			0701	0801	0901	1101	1402	1602	1802	2002	2202	2502
Height (A)	(°)	mm	1980	1980	1980	2060	2000	2000	2000	2000	2060	2060
	L	mm	2120	2120	2120	2120	2120	2120	2120	2120	2120	2120
Width (B)		mm	810	810	810	810	1260	1260	1260	1260	1260	1260
Depth (C)		mm	2960	2960	2960	3360	3060	3060	3060	3460	3460	3460
Weight (empty)		kg (°)	1391	1443	1506	1946	2276	2350	2423	2872	3309	3407
		kg (D)	1622	1674	1737	2200	2542	2616	2689	3168	3605	3703