NS

Reversible air/water heat pump

Cooling capacity 251 ÷ 731 kW – Heating capacity 281 ÷ 786 kW

- **High efficiency also at partial loads**
- **Electronic expansion valve**

DESCRIPTION

Reversible outdoor heat pumps for the production of chilled/heated water designed to satisfy the needs of residential and commercial buildings, or for industrial applications.
The base, the structure and the panels are made of galvanized steel treated with polyester paint RAL 9003.

VERSIONS

A High efficiency
E Silenced high efficiency

FEATURES

Operating field

Working at full load up to -10 °C outside air temperature in winter, and up to 48°C in summer. Hot water production up to 55°C (for more details refer to the technical documentation).

Bi-tri circuit unit

The units are mono or dual-circuit, to ensure maximum efficiency both at full load and at partial load.

Electronic expansion valve

The possibility to use electronic expansion valve, offers significant benefits, especially when the chiller is working with partial loads, increasing the energy efficiency of the unit.

Integrated hydronic kit

Integrated hydronic kit containing the main hydraulic components; available with various configurations with one or two pumps, high or low head, to obtain a solution that allows you to save money and to facilitate installation.

CONTROL

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

— 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 supervising systems with MODBUS protocol. 1 accessory is provided for each unit control board.
AERBAC-ONE: Ethernet communication interface for Bacnet/IP and Modbus TCP/IP protocols, HTTPS protocol for web interface, encrypted communication protocols and access credential management in accordance with the latest standards. One accessory is provided for each unit control board.
AERBACP: Ethernet communication interface for Bacnet/IP and Modbus TCP/IP protocols. 1 accessory is provided for each unit control board.
AERNET: The device remotely controls, manages and remotely monitors a chiller/heat pump using a PC, smartphone or table via a Cloud connection. AERNET acts as Master while each connected unit is configured as Slave up to a maximum of 6 control cards. The connection is made via cable and/or USB key. Wi-Fi connectivity is not available. It is also possible to save a log file with all the data from the connected units to your terminal with a simple click for possible post-analysis. With the purchase of the Router, the Customer benefits from a 24-month free period during which he can use the Aernet Service at no additional cost. At the end of this initial period, the Service may be renewed by subscribing to a 1, 2 or 3 year subscription. For further details on costs and renewal methods, please contact our office or consult the technical documentation available on our website. www.aermec.com.
MULTICHILLER-EVO: Control, switch-on and switch-off system of the single chillers where multiple units are installed in parallel (max. no. 9), always ensuring constant flow rate to the evaporators.
PRV3: Allows you to control the chiller at a distance.
DCPX: Device for condensation temperature control, with continuous speed modulation of fans by using a pressure transducer.
GP_M: Anti-intrusion grid.
AVX: Spring anti-vibration supports.

FACTORY FITTED ACCESSORIES

RIF: Power factor correction. Connected in parallel to the motor allowing about 10% reduction of input current.
KRS: Electric heater for the heat exchanger
AK: Acoustic kit that lowers the noise level even further, thanks to the special coating on the panelling or on those components that produce the most noise in the unit. Available for the low noise version only.

ACCESSORIES COMPATIBILITY

Model	Ver	1251	1401	1402	1601	1602	1801	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602
AER485P1	A,E	•	•		•		•											
AER485P1 x no. 2	A,E			•		•		•	•	•	•	•	•	•	•	•	•	•
AERBAC-ONE	A,E	•	•		•		•											
AERBAC-ONE x no. 2	A,E			•		•		•	•	•	•	•	•	•	•	•	•	•
AERBACP	A,E	•	•		•		•											
AERBACP x no. 2	A,E			•		•		•	•	•	•	•	•	•	•	•	•	•
AERNET	A,E	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
MULTICHILLER-EVO	A,E	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
PRV3	A,E	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

Condensation control temperature

Ver	1251	1401	1402	1601	1602	1801	1802	2002	2202
A	DCPX69	DCPX69	DCPX68	DCPX69	DCPX68	DCPX69	DCPX68	DCPX73	DCPX73
E	As standard	As standard	As standard	As standard	As standard	As standard	As standard	As standard	As standard

Ver	2352	2502	2652	2802	3002	3202	3402	3602
A	DCPX73	DCPX73	DCPX73	DCPX73	DCPX73	DCPX73	DCPX73	DCPX73
E	As standard	As standard	As standard	As standard	As standard	As standard	As standard	As standard

Anti-intrusion grid

Ver	1251	1401	1402	1601	1602	1801	1802	2002	2202
A, E	GP300M	GP300M	GP300B	GP300M	GP300B	GP400M	GP400B	GP500B	GP500B

Ver	2352	2502	2652	2802	3002	3202	3402	3602
A, E	GP500B	GP500B	GP500B	GP500B	GP300M+300M	GP300M+300M	GP300M+400M	GP400M+400M

Antivibration

Ver	1251	1401	1402	1601	1602	1801	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602
Integrated hydronic kit: 00																	
A, E	AVX536	AVX536	AVX537	AVX536	AVX538	AVX540	AVX541	AVX543	AVX543	AVX545	AVX549	AVX551	AVX551	AVX554	AVX556	AVX557	AVX559
Integrated hydronic kit: PA																	
A, E	AVX536	AVX536	AVX537	AVX536	AVX538	AVX540	AVX541	AVX543	AVX543	AVX545	AVX550	AVX551	AVX551	AVX553	AVX553	AVX557	AVX559
Integrated hydronic kit: PC, PE, PG, PJ																	
A, E	AVX536	AVX536	AVX538	AVX536	AVX538	AVX540	AVX541	AVX543	AVX543	AVX545	AVX550	AVX551	AVX551	AVX553	AVX555	AVX557	AVX559

Heater exchangers

Ver	1251	1401	1402	1601	1602	1801	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602
A, E	KRS11	KRS11	KRS19	KRS11	KRS19	KRS11	KRS19	KRS19	KRS19	KRS19	KRS19	KRS19	KRS19	KRS14	KRS14	KRS14	KRS14

A grey background indicates the accessory must be assembled in the factory

Power factor correction

Ver	1251	1401	1402	1601	1602	1801	1802	2002	2202
A, E	RIFNSH1251	RIFNSH1401	RIFNSH1402	RIFNSH1601	RIFNSH1602	RIFNSH1801	RIFNSH1802	RIFNSH2002	RIFNSH2202

A grey background indicates the accessory must be assembled in the factory

Ver	2352	2502	2652	2802	3002	3202	3402	3602
A, E	RIFNSH2352	RIFNSH2502	RIFNSH2652	RIFNSH2802	RIFNSH3002	RIFNSH3202	RIFNSH3402	RIFNSH3602

A grey background indicates the accessory must be assembled in the factory

Acoustic kit

Ver	1251	1401	1402	1601	1602	1801	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602
A, E	AK (1)	AK (1)	AK (1)	AK (1)	AK (1)	AK (1)	AK (1)	AK (1)	AK (1)	AK (1)	AK (1)	AK (1)	AK (1)	AK (1)	AK (1)	AK (1)	AK (1)

(1) Available only in low noise version
A grey background indicates the accessory must be assembled in the factory

CONFIGURATOR

Field	Description
1,2	**NS**
3,4,5,6	**Size** 1251, 1401, 1402, 1601, 1602, 1801, 1802, 2002, 2202, 2352, 2502, 2652, 2802, 3002, 3202, 3402, 3602
7	**Operating field**
X	Electronic thermostatic expansion valve
8	**Model**
H	Heat pump
9	**Heat recovery**
D	With desuperheater
°	Without heat recovery
10	**Version**
A	High efficiency
E	Silenced high efficiency
11	**Coils**
R	Copper pipes-copper fins
V	Copper pieps-Coated aluminium fins
°	Copper-aluminium
12	**Fans**
J	Inverter
°	Standard
13	**Power supply**
8	400V~3 50Hz with magnet circuit breakers
°	400V~3 50Hz with fuses
14,15	**Integrated hydronic kit**
	Without hydronic kit
00	Without hydronic kit
	Kit with n° 1 pump
PA	Pump A
PC	Pump C
PE	Pump E
PG	Pump G
PJ	Pump J (1)

(1) For all configurations including pump J please contact the factory.

PERFORMANCE SPECIFICATIONS

NS - HA

Size		1251	1401	1402	1601	1602	1801	1802	2002	2202
Cooling performance 12 °C / 7 °C (1)										
Cooling capacity	kW	262,7	281,7	257,7	309,7	315,6	365,6	365,6	384,6	414,5
Input power	kW	86,9	95,0	94,9	107,8	108,3	128,3	125,3	132,5	138,8
Cooling total input current	A	149,00	164,00	168,00	185,00	186,00	215,00	216,00	227,00	233,00
EER	W/W	3,02	2,96	2,72	2,87	2,91	2,85	2,92	2,90	2,99
Water flow rate system side	l/h	45.186	48.451	44.327	53.262	54.292	62.883	62.883	66.147	71.302
Pressure drop system side	kPa	38	41	36	27	50	43	43	47	53
Heating performance 40 °C / 45 °C (2)										
Heating capacity	kW	281,4	281,4	342,5	395,5	450,6	541,5	585,6	664,5	786,7
Input power	kW	88,2	93,2	106,8	123,7	141,3	171,0	185,4	207,8	253,1
Heating total input current	A	150,00	165,00	182,00	213,00	236,00	292,00	318,00	359,00	423,00
COP	W/W	3,19	3,02	3,21	3,20	3,19	3,17	3,16	3,20	3,11
Water flow rate system side	l/h	48.838	48.838	59.439	68.651	78.210	94.025	101.673	115.403	136.606
Pressure drop system side	kPa	47	47	64	54	67	47	53	33	54

(1) Data EN 14511:2022; Heat exchanger water (services side) 12°C / 7°C; outside air 35°C
(2) Data EN 14511:2022; System side water heat exchanger 40 °C / 45 °C; Outside air 7 °C d.b. / 6 °C w.b.

Size		2352	2502	2652	2802	3002	3202	3402	3602
Cooling performance 12 °C / 7 °C (1)									
Cooling capacity	kW	454,6	499,5	524,5	547,5	591,5	619,6	675,5	731,4
Input power	kW	158,4	173,5	186,7	195,9	202,6	215,4	235,9	256,4
Cooling total input current	A	268,00	295,00	318,00	335,00	349,00	370,00	400,00	430,00
EER	W/W	2,87	2,88	2,81	2,80	2,92	2,88	2,86	2,85
Water flow rate system side	l/h	78.174	85.906	90.201	94.153	101.712	106.523	116.144	125.766
Pressure drop system side	kPa	37	38	40	43	34	27	35	43
Heating performance 40 °C / 45 °C (2)									
Heating capacity	kW	502,5	541,5	563,6	585,6	629,5	664,5	725,6	786,7
Input power	kW	157,9	171,0	177,1	185,4	198,0	207,8	230,4	253,1
Heating total input current	A	267,00	292,00	303,00	318,00	342,00	359,00	391,00	423,00
COP	W/W	3,18	3,17	3,18	3,16	3,18	3,20	3,15	3,11
Water flow rate system side	l/h	87.247	94.025	97.849	101.673	109.320	115.403	126.004	136.606
Pressure drop system side	kPa	49	47	49	53	41	33	43	54

(1) Data EN 14511:2022; Heat exchanger water (services side) 12°C / 7°C; outside air 35°C
(2) Data EN 14511:2022; System side water heat exchanger 40 °C / 45 °C; Outside air 7 °C d.b. / 6 °C w.b.

NS - HE

Size		1251	1401	1402	1601	1602	1801	1802	2002	2202
Cooling performance 12 °C / 7 °C (1)										
Cooling capacity	kW	250,7	266,7	242,7	292,7	301,6	343,6	349,6	366,6	394,5
Input power	kW	91,8	101,9	100,8	115,7	116,2	136,1	132,2	140,3	146,5
Cooling total input current	A	161,00	178,00	181,00	202,00	202,00	234,00	233,00	246,00	254,00
EER	W/W	2,73	2,62	2,41	2,53	2,60	2,52	2,65	2,61	2,69
Water flow rate system side	l/h	43.125	45.874	41.750	50.341	51.887	59.103	60.134	63.055	67.865
Pressure drop system side	kPa	32	37	33	24	46	38	39	43	48
Heating performance 40 °C / 45 °C (2)										
Heating capacity	kW	281,4	297,4	281,4	332,3	342,5	393,5	395,5	412,5	450,6
Input power	kW	88,2	94,2	93,2	104,0	106,8	126,7	123,7	133,9	141,3
Heating total input current	A	150,00	163,00	165,00	180,00	182,00	212,00	213,00	229,00	236,00
COP	W/W	3,19	3,16	3,02	3,20	3,21	3,11	3,20	3,08	3,19
Water flow rate system side	l/h	48.838	51.618	48.838	57.701	59.439	68.303	68.651	71.605	78.210
Pressure drop system side	kPa	47	49	47	33	64	54	54	58	67

(1) Data EN 14511:2022; Heat exchanger water (services side) 12°C / 7°C; outside air 35°C
(2) Data EN 14511:2022; System side water heat exchanger 40 °C / 45 °C; Outside air 7 °C d.b. / 6 °C w.b.

Size		2352	2502	2652	2802	3002	3202	3402	3602
Cooling performance 12 °C / 7 °C (1)									
Cooling capacity	kW	435,6	487,6	506,5	517,5	559,6	585,6	636,5	687,5
Input power	kW	169,3	192,4	202,5	210,6	217,4	231,2	251,6	272,0
Cooling total input current	A	293,00	333,00	349,00	365,00	380,00	403,00	436,00	468,00
EER	W/W	2,57	2,53	2,50	2,46	2,57	2,53	2,53	2,53
Water flow rate system side	l/h	74.910	83.844	87.108	88.998	96.214	100.681	109.444	118.206
Pressure drop system side	kPa	34	35	37	39	30	24	31	38
Heating performance 40 °C / 45 °C (2)									
Heating capacity	kW	502,5	541,5	563,6	585,6	629,5	664,5	725,6	786,7
Input power	kW	157,9	171,0	177,1	185,4	198,0	207,8	230,4	253,1
Heating total input current	A	267,00	292,00	303,00	318,00	342,00	359,00	391,00	423,00
COP	W/W	3,18	3,17	3,18	3,16	3,18	3,20	3,15	3,11
Water flow rate system side	l/h	87.247	94.025	97.849	101.673	109.320	115.403	126.004	136.606
Pressure drop system side	kPa	49	47	49	53	41	33	43	54

(1) Data EN 14511:2022; Heat exchanger water (services side) 12°C / 7°C; outside air 35°C
(2) Data EN 14511:2022; System side water heat exchanger 40 °C / 45 °C; Outside air 7 °C d.b. / 6 °C w.b.

ENERGY DATA

Size			1251	1401	1402	1601	1602	1801	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602
SEER - 12/7 (EN14825: 2018)																			
SEER	A	W/W	3,88	3,81	3,46	3,76	3,68	3,71	3,73	3,70	3,80	3,72	3,74	3,66	3,64	3,81	3,76	3,73	3,72
	E	W/W	3,41	3,28	3,00	3,19	3,23	3,19	3,32	3,28	3,37	3,28	3,23	3,18	3,12	3,30	3,25	3,23	3,23
Seasonal efficiency	A	%	152,10	149,40	135,20	147,40	144,20	145,20	146,00	145,00	149,00	145,70	146,60	143,50	142,50	149,50	147,50	146,10	145,80
	E	%	133,40	128,10	116,80	124,40	126,20	124,70	129,70	128,20	131,80	128,10	126,30	124,30	121,70	129,10	126,90	126,10	126,20
Water Regulation (1)	A,E	type	FW/VO	FW/VO	FW/VO	FW/VO	FW/VO	FW/VO	FW/VO	FW/VO	FW/VO	FW/VO	FW/VO	FW/VO	FW/VO	FW/VO	FW/VO	FW/VO	FW/VO
Performance in average ambient conditions (average) - 35 °C (2)																			
Pdesignh	A,E	kW	185,00	195,00	185,00	218,00	225,00	259,00	260,00	271,00	297,00	330,00	356,00	370,00	385,00	325,00	342,00	374,00	400,00
SCOP	A,E	W/W	3,33	3,28	3,23	3,33	3,33	3,23	3,33	3,20	3,30	3,30	3,30	3,33	3,30	3,35	3,40	3,33	3,28
ηsh	A,E	%	130,00	128,00	126,00	130,00	130,00	126,00	130,00	125,00	129,00	129,00	129,00	130,00	129,00	131,00	133,00	130,00	128,00
Water Regulation (1)	A,E	type	FW/VO	FW/VO	FW/VO	FW/VO	FW/VO	FW/VO	FW/VO	FW/VO	FW/VO	FW/VO	FW/VO	FW/VO	FW/VO	FW/VO	FW/VO	FW/VO	FW/VO

(1) VW/VO - variable water flow rate/variable outlet temperature; FW/VO - fixed water flow rate/variable outlet temperature; VW/FO - variable water flow rate/fixed outlet temperature; FW/FO - fixed water flow rate/fixed outlet temperature.
(2) Efficiencies for low temperature applications (35 °C)

ELECTRIC DATA

Size			1251	1401	1402	1601	1602	1801	1802	2002	2202
Electric data											
Maximum current (FLA)	A,E	A	209,0	242,0	276,0	258,0	276,0	316,0	325,0	352,0	370,0
Peak current (LRA)	A,E	A	327,0	387,0	251,0	431,0	251,0	472,0	305,0	313,0	350,0

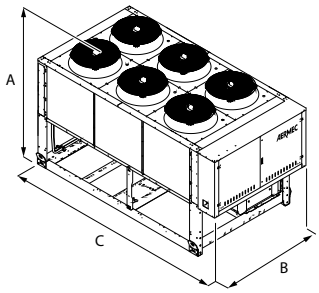
Size			2352	2502	2652	2802	3002	3202	3402	3602
Electric data										
Maximum current (FLA)	A,E	A	390,0	410,0	443,0	476,0	500,0	516,0	574,0	631,0
Peak current (LRA)	A,E	A	365,0	436,0	461,0	521,0	534,0	578,0	612,0	653,0

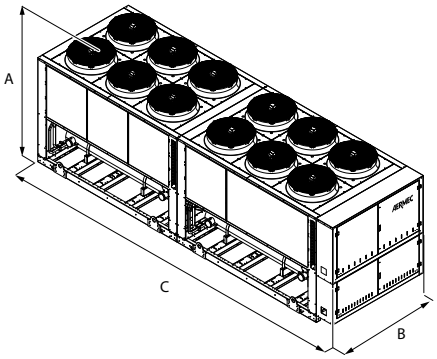
GENERAL TECHNICAL DATA

Size			1251	1401	1402	1601	1602	1801	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602
Compressor																			
Type	A,E	type									Screw								
Compressor regulation	A,E	type									On/Off								
Number	A,E	no.	1	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2
Circuits	A,E	no.	1	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2
Refrigerant	A,E	type									R134a								
Refrigerant load circuit 1 (1)	A	kg	90,0	92,0	43,0	100,0	57,0	138,0	57,0	55,0	80,0	80,0	85,0	-	97,0	92,0	-	110,0	138,0
	E	kg	90,0	92,0	43,0	118,0	57,0	138,0	57,0	55,0	80,0	80,0	85,0	-	97,0	92,0	118,0	110,0	138,0
Refrigerant load circuit 2 (1)	A	kg	-	-	45,0	-	57,0	-	57,0	75,0	102,0	85,0	85,0	-	97,0	100,0	-	145,0	138,0
	E	kg	-	-	45,0	-	57,0	-	57,0	75,0	102,0	85,0	85,0	-	97,0	118,0	118,0	145,0	138,0
Potential global heating (GWP)	A,E										1430								
Equivalent CO_2	A,E	tCO_2eq	128,70	131,56	125,84	143,00	163,02	197,34	163,02	214,50	235,95	235,95	243,10	260,26	277,42	274,56	286,00	354,64	394,68
System side heat exchanger																			
Type	A,E	type									Shell and tube								
Number	A,E	no.	1	1	2	1	2	1	2	2	1	1	1	1	1	2	2	2	2
System side hydraulic connections																			
Connections (in/out)	A,E	Type									Grooved joints								
Sizes (in/out)	A,E	Ø									6"								
Sound data calculated in cooling mode (2)																			
Sound power level	A	dB(A)	93,5	93,5	94,0	94,5	95,0	96,0	96,0	96,5	96,5	96,5	97,0	97,0	97,0	97,0	97,5	98,3	99,0
	E	dB(A)	88,5	88,5	89,0	89,5	90,0	91,0	91,0	91,5	91,5	91,5	92,0	92,0	92,0	92,0	92,5	93,3	94,0

(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			1251	1401	1402	1601	1602	1801	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602
Dimensions and weights																			
A	A,E	mm	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450
B	A,E	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
C	A,E	mm	3780	3780	3780	3780	3780	4770	4770	5750	5750	5750	5750	5750	5750	7160	7160	8150	9140

Size			1251	1401	1402	1601	1602	1801	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602
Integrated hydronic kit: 00																			
Dimensions and weights																			
Empty weight	A,E	kg	3.245	3.280	3.570	3.435	3.835	4.115	4.005	4.385	4.570	4.940	5.265	5.470	5.610	6.540	6.745	7.425	8.105
Weight functioning	A,E	kg	3.340	3.380	3.665	3.535	3.935	4.250	4.140	4.520	4.730	5.100	5.415	5.690	5.830	6.740	6.940	7.655	8.370

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