HEAT PUMPS

AWR-HT

0122 - 0302 34,00-91,70 kW

High efficiency reversible heat pump, air source for outdoor installation, high water temperature

AWR-HT represent the best solution for systems in which there is the need to combine both high temperature water for space heating and sanitary purposes, as well as air conditioning. With this solution the space heating can be easily provided by using radiators, so without any major changes on the already existing distribution system available on site. The EVI technology compressor with additional steam injection in the compressing cycle assures a water temperature of 65°C and operating limits as low as -20°C. Neither probes nor connections pipes to wells are needed; the installation is simple, this is a suitable solution for all applications.

Control

W3000SE

W3000SE controller dedicated to heat pump applications features a incorporated logic for high temperature hot water production. The keypad features function controls and a complete LCD display for viewing data and activating the unit via a multilevel menu, with settable language. The controller provides temperature control for the heating and cooling systems, as well as for domestic hot water. These different temperatures are managed automatically based on the different conditions in which the system operates, with the possibility to assign specific levels of priority to domestic hot water production, depending on the needs of the application. Diagnostics include complete alarm management, with “black-box” functions (via PC) and alarm log (display or PC) for best analysis of unit be haviour. For multiple units' systems, differentiated device management means just a certain portion of the capacity installed can be dedicated to domestic water production, thus ensuring more efficient energy distribution and simultaneous water delivery to the different distribution systems.

- Built-in clock to create operating profiles up to 4 typical days and 10 time bands, essential for efficient programming of energy production and for managing the Legionella prevention cycles.
- Proprietary self-adaptive logic for defrost involving monitoring of multiple operating and climate parameters. This reduces the number and duration of defrosts, consequently increasing overall energy efficiency.
- Supervision available using proprietary devices or by integration into third party systems using ModBus, BACnet, BACnet-over-IP and Echelon LonWorks protocols.
- Dedicated wall-mounted keypad for remote control of all the functions.

Refrigerant

R407C

Versions

CA-E	Premium efficiency version: Class A enhanced	LN-CA-E	Premium efficiency version, Class A enhanced, low-noise

Configurations

-	Basic function	D	Partial condensing heat recovery function

Features

PREMIUM ´CLASS A’ EFFICIENCY

The full range is available with a premium efficiency rating, over the Class A (in heating). AWR-HT/CA-E and AWR-HT/LN-CA-E guaranty premium levels of efficiency and quietness, making this range the best solution for both residential and light commercial markets.

WIDE OPERATING RANGE

Production of high temperature hot water up to 65°C for space heating and sanitary purposes. The unit can operate as standard down to -20°C outdoor temperature.

MAXIMUM RELIABILITY

Maximum operating reliability, thanks to two main features:
- two independent circuits for all sizes;
- system to prevent formation of ice on the coil, ensuring shorter and more efficient defrost cycles.

RENEWABLE ENERGY FOR COMMERCIAL INSTALLATIONS

Best solution in centralised residential systems such as apartment buildings, where the cost of renovation needs to be limited by keeping the same distribution system with radiators, while offering a source of renewable energy.

MODULAR CONFIGURATION

Modular configuration with capacity extension up to 400kW for medium- and high-capacity installations. Ability of managing different thermal loads according to the requirements of both heating and the domestic hot water systems.

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

365 HEATING | SCROLL | ENERGY CLASS
HEATING | R HFC R-407C | P PLATES
HOT WATER | COOLING | AXIAL

AWR-HT / CA-E			0122	0152	0202	0262	0302
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
COOLING ONLY (GROSS VALUE)							
Cooling capacity	(1)	kW	34,10	43,80	60,30	76,40	91,70
Total power input	(1)	kW	11,60	14,70	20,40	25,80	31,30
EER	(1)	kW/kW	2,940	2,980	2,956	2,961	2,930
ESEER	(1)	kW/kW	3,400	3,340	3,400	3,380	3,350
COOLING ONLY (EN14511 VALUE)							
Cooling capacity	(1)(2)	kW	34,00	43,70	60,20	76,20	91,40
EER	(1)(2)	kW/kW	2,910	2,950	2,940	2,930	2,890
ESEER	(1)(2)	kW/kW	3,340	3,260	3,330	3,300	3,270
Cooling energy class			B	B	B	B	B
HEATING ONLY (GROSS VALUE)							
Total heating capacity	(3)	kW	38,00	51,30	68,80	84,90	102,0
Total power input	(3)	kW	10,70	14,40	19,40	23,60	27,70
COP	(3)	kW/kW	3,551	3,562	3,546	3,597	3,682
HEATING ONLY (EN14511 VALUE)							
Total heating capacity	(3)(2)	kW	38,10	51,40	69,00	85,20	102,3
COP	(3)(2)	kW/kW	3,530	3,540	3,520	3,560	3,650
Cooling energy class			A	A	A	A	A
ENERGY EFFICIENCY							
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)							
Ambient refrigeration							
Prated,c	(11)	kW	-	-	-	-	-
SEER	(11)(12)		-	-	-	-	-
Performance ηs	(11)(13)	%	-	-	-	-	-
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)							
PDesign	(4)	kW	28,4	33,8	47,5	58,5	70,6
SCOP	(4)(14)		3,24	3,16	3,22	3,26	3,35
Performance ηs	(4)(15)	%	127	124	126	127	131
Seasonal efficiency class	(16)		A+	A+	A+	A+	-
PDesign	(5)	kW	30,5	36,8	50,7	63,3	74,7
SCOP	(5)(14)		3,00	2,98	3,01	3,05	3,12
Performance ηs	(5)(15)	%	117	116	117	119	122
Seasonal efficiency class	(17)		A+	A+	A+	A+	-
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(1)	l/s	1,631	2,095	2,884	3,654	4,385
Pressure drop	(1)	kPa	8,10	9,21	11,0	14,5	18,2
HEAT EXCHANGER USER SIDE IN HEATING							
Water flow	(3)	l/s	1,834	2,476	3,321	4,098	4,924
Pressure drop	(3)	kPa	10,2	12,9	14,6	18,3	22,9
REFRIGERANT CIRCUIT							
Compressors nr.		N°	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2
Refrigerant charge		kg	13,0	22,0	27,6	35,0	42,0
NOISE LEVEL							
Sound power level in cooling	(6)(7)	dB(A)	84	86	87	87	87
Sound power level in heating	(6)(8)	dB(A)	84	86	87	87	87
Sound Pressure	(9)	dB(A)	67	69	70	69	69
SIZE AND WEIGHT							
A	(10)	mm	1695	2195	2745	2745	2745
B	(10)	mm	1120	1120	1120	1120	1120
H	(10)	mm	1465	1465	1465	1665	1665
Operating weight	(10)	kg	510	750	870	940	1030

Notes

1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
2 Values in compliance with EN14511
3 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
4 Parameter calculated for LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
5 Parameter calculated for MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 813/2013]
6 Sound power on the basis of measurements made in compliance with ISO 9614.
7 Sound power level in cooling, outdoors.
8 Sound power level in heating, outdoors.
9 Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
10 Unit in standard configuration/execution, without optional accessories.
11 Parameter calculated according to [REGULATION (EU) N. 2016/2281]
12 Seasonal energy efficiency ratio
13 Seasonal space cooling energy efficiency
14 Seasonal coefficient of performance
15 Seasonal space heating energy efficiency
16 Energy efficiency class referred to LOW-TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 811/2013]
17 Energy efficiency class referred to MEDIUM TEMPERATURE application in AVERAGE climate conditions according to [REGULATION (EU) N. 811/2013]

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AWR-HT / LN-CA-E			0122	0152	0202	0262	0302
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
COOLING ONLY (GROSS VALUE)							
Cooling capacity	(1)	kW	34,00	44,46	60,20	76,20	90,40
Total power input	(1)	kW	11,60	14,90	20,50	26,10	32,90
EER	(1)	kW/kW	2,931	2,987	2,937	2,920	2,748
ESEER	(1)	kW/kW	3,380	3,310	3,360	3,340	3,180
COOLING ONLY (EN14511 VALUE)							
Cooling capacity	(1)(2)	kW	33,90	44,30	60,10	76,00	90,10
EER	(1)(2)	kW/kW	2,900	2,940	2,910	2,890	2,720
ESEER	(1)(2)	kW/kW	3,330	3,220	3,290	3,280	3,100
Cooling energy class			B	B	B	C	C
HEATING ONLY (GROSS VALUE)							
Total heating capacity	(3)	kW	38,40	50,43	69,40	85,80	100,3
Total power input	(3)	kW	10,70	14,30	19,40	23,70	27,60
COP	(3)	kW/kW	3,589	3,524	3,577	3,620	3,634
HEATING ONLY (EN14511 VALUE)							
Total heating capacity	(3)(2)	kW	38,50	50,60	69,60	86,10	100,6
COP	(3)(2)	kW/kW	3,560	3,490	3,550	3,590	3,600
Cooling energy class			A	A	A	A	A
ENERGY EFFICIENCY							
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)							
Ambient refrigeration							
Prated,c	(11)	kW	-	-	-	-	-
SEER	(11)(12)		-	-	-	-	-
Performance ηs	(11)(13)	%	-	-	-	-	-
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)							
PDesign	(4)	kW	26,8	34,5	47,8	59,3	70,3
SCOP	(4)(14)		3,26	3,14	3,24	3,29	3,35
Performance ηs	(4)(15)	%	127	123	127	128	131
Seasonal efficiency class	(16)		A+	A+	A+	A+	-
PDesign	(5)	kW	28,8	37,1	50,9	63,3	75,2
SCOP	(5)(14)		3,00	2,97	3,02	3,05	3,11
Performance ηs	(5)(15)	%	117	116	118	119	121
Seasonal efficiency class	(17)		A+	A+	A+	A+	-
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(1)	l/s	1,626	2,126	2,879	3,644	4,323
Pressure drop	(1)	kPa	8,05	17,7	11,0	14,5	17,7
HEAT EXCHANGER USER SIDE IN HEATING							
Water flow	(3)	l/s	1,854	2,434	3,350	4,142	4,842
Pressure drop	(3)	kPa	10,5	23,2	14,8	18,7	22,2
REFRIGERANT CIRCUIT							
Compressors nr.		N°	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2
Refrigerant charge		kg	16,0	25,3	35,3	44,1	52,0
NOISE LEVEL							
Sound power level in cooling	(6)(7)	dB(A)	80	82	83	83	84
Sound power level in heating	(6)(8)	dB(A)	82	84	85	85	86
Sound Pressure	(9)	dB(A)	48	50	51	51	52
SIZE AND WEIGHT							
A	(10)	mm	1695	2195	2745	2745	2745
B	(10)	mm	1120	1120	1120	1120	1120
H	(10)	mm	1465	1465	1465	1665	1665
Operating weight	(10)	kg	550	780	940	1010	1060

Notes

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Dimensional drawing