HEAT PUMPS

AWR-HT 0404 - 0604

High efficiency reversible heat pump, air source for outdoor installation, high water temperature 116-181 kW



Version

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

AW(R)-HT offer maximum operating reliability, thanks to their 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 1000 kW 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.

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.

Controls

W3000SE

The W3000SE controller is the new device designed especially for heat pump applications with 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 display language. The controller provides temperature control for the heating and cooling systems in the air-conditioned rooms, 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 "blackbox" functions (via PC) and alarm log (display or PC) for best analysis of unit be haviour. For systems made up of multiple units, differentiated device management means just a certain portion of the capacity installed can be dedicated to domestic water production, in this way ensuring more efficient energy distribution and, at the same time, guaranteeing simultaneous water delivery to the different distribution systems. The built-in clock can be used to create an operating profile containing up to 4 typical days and 10 time bands, essential for efficient programming of energy production, and fundamental for managing the Legionella prevention cycles. Defrosts use proprietary self-adaptive logic involving monitoring of multiple operating and climate parameters. This reduces the number and duration of defrosts, consequently increasing overall energy efficiency. Supervision is available with different options, using proprietarydevices or by integration into third party systems using ModBus, BACnet, BACnet-over-IP and Echelon LonWorks protocols. A dedicated wall-mounted keypad can be used for remote control of all the functions.







AWD HT / CA E			0404	0524	0604	
AWR-HT / CA-E Power supply		V/ph/Hz	400/3/50	400/3/50	0604 400/3/50	
COOLING ONLY (GROSS VALUE)		v/pi1/nZ	400/3/30	400/3/30	400/3/30	
Cooling capacity	(1)	kW	120	146	181	
Total power input	(1)	kW	43.8	53,3	65,8	
EER	(1)	kW/kW	2,73	2,75	2,75	
ESEER	(1)	kW/kW	3,34	3,42	3,31	
COOLING ONLY (EN14511 VALUE)						
Cooling capacity	(1)(2)	kW	119	146	181	
EER	(1)(2)	kW/kW	2,70	2,72	2,72	
ESEER	(1)(2)	kW/kW	3,25	3,33	3,23	
Cooling energy class			С	С	С	
HEATING ONLY (GROSS VALUE)	(3)	kW	135	171	205	
Total heating capacity Total power input	(3)	kW	39,6	48,1	58,9	
COP	(3)	kW/kW	3,41	3,56	3,48	
HEATING ONLY (EN14511 VALUE)	(0)	100071000	0,11	0,00	0,10	
Total heating capacity	(3)(2)	kW	135	172	206	
COP	(3)(2)	kW/kW	3,38	3,52	3,45	
Cooling energy class	. / / /		A	A	A	
ENERGY EFFICIENCY						
SEASONAL EFFICIENCY IN COOLING (Re	g. EU 20	16/2281)				
Ambient refrigeration	J U _ U	,				_
Prated,c	(11)	kW		-		
SEER	(11)(12)		-	-	-	
Performance ηs	(11)(13)	%	-	-	-	
SEASONAL EFFICIENCY IN HEATING (Re	g. EU 81	3/2013)				
PDesign	(4)	kW	92,6	117	139	
SCOP	(4)(14)		3,23	3,40	3,29	
Performance ηs	(4)(15)	%	126	133	129	
Seasonal efficiency class	(4)		-	-	-	
PDesign	(5)	kW	98,9	126	148	
SCOP	(5)(14)	0/	3,02	3,19	3,08	
Performance ηs	(5)(15)	%	118	125	120	
Seasonal efficiency class	(5)		-	-	-	
EXCHANGERS	OED 4 T'	NA.				
HEAT EXCHANGER USER SIDE IN REFRI			5.72	7.01	9.67	
Water flow Pressure drop	(1)	l/s kPa	5,72 19.6	7,01 20.6	8,67 24,0	
HEAT EXCHANGER USER SIDE IN HEATI		NEd	19,0	20,0	∠4,0	
Water flow	(3)	I/s	6,51	8.25	9.89	
Pressure drop	(3)	kPa	25,4	28,6	31,3	
REFRIGERANT CIRCUIT	(0)	NI G	20,4	20,0	01,0	
Compressors nr.		N°	4	4	4	
No. Circuits		N°	2	2	2	
Refrigerant charge		kg	66,0	108	108	
NOISE LEVEL		9	55,0	. 30		
Sound power level in cooling	(6)(7)	dB(A)	92	93	94	
Sound power level in heating	(6)(8)	dB(A)	92	93	94	
Sound Pressure	(9)	dB(A)	73	73	74	
SIZE AND WEIGHT						
A	(10)	mm	3110	4110	4110	
В	(10)	mm	2220	2220	2220	
Н	(10)	mm	2150	2150	2150	
Operating weight	(10)	kg	1950	2400	2530	
lotes: Plant (side) cooling exchanger water (in/out) 12°C/ Values in compliance with EN14511-3:2013. Plant (side) heat exchanger water (in/out) 40°C/45 Seasonal space heating energy efficiency class LC Seasonal space heating energy efficiency class LG Seasonal space heating energy efficiency class MI Sound power on the basis of measurements made Sound power level in cooling, outdoors. Sound power level in heating, outdoors. Average sound pressure level at 1m distance, unit	°C; Source OW TEMPE EDIA TEMP in complia	(side) heat e RATURE in A PERATURE in nce with ISO	xchanger air (in) AVERAGE climat n AVERAGE clim 9614.	7°C - 87% R.H. e conditions [REGUL ate conditions [REGI	ULATIOŇ (ÉÚ) N. 8	13/201
10 Unit in standard configuration/execution, without of a Seasonal energy efficiency of the cooling environ 12 Seasonal space heating energy index 13 Seasonal energy efficiency of the space cooling 14 Seasonal energy efficiency of the space cooling			U) N. 2016/2281]			

- 12 Seasonal space heating energy index
 13 Seasonal energy efficiency of the space cooling
 14 Seasonal performance coefficient
 15 Seasonal space heating energy efficiency
 The units highlighted in this publication contain HFC R407C [GWP₁₀₀ 1774] fluorinated greenhouse gases.

 Certified data in EUROVENT



Power supply	AWR-HT / LN-CA-E			0404	0524	0604
COOLING ONLY (GROSS VALUE)			V/ph/Hz			
Cooling capacity			*/PI//12	+00/0/00	400/0/00	+00/0/00
Total power input		(1)	kW	116	145	176
COOLING ONLY (EN14511 VALUE)	Total power input	(1)	kW	42,0	52,2	63,2
COOLING ONLY (EN14511 VALUE)						
Cooling capacity (1)/2) kW 116 144 175 EER (1)/2) kW/kW 2,74 2,74 2,75 ESEER (1)/2) kW/kW 3,31 3,37 3,28 Cooling energy class C C C C C C C C C C C C C C C C C C		(1)	kW/kW	3,39	3,47	3,37
EER		(1)(2)	L\ \\	116	1/1/	175
SEEER						
Cooling energy class						
Total power input (3) kW 39,6 48,1 58,9 CPC (3) kW/kW 3,41 3,56 3,48 HEATING ONLY (EN14511 VALUE) Total power input (3) kW/kW 3,41 3,56 3,48 HEATING ONLY (EN14511 VALUE) Total power input (3) kW/kW 3,41 3,56 3,48 HEATING ONLY (EN14511 VALUE) Total heating capacity (3)(2) kW/kW 3,38 3,52 3,45 CODP (4)(1) kW	Cooling energy class					
Total power input						
COP						
HEATING ONLY (EN14511 VALUE) (3)(2)						
Total heating capacity (3)(2) kW 135 172 206 COP (3)(2) kW/kW 3,38 3,52 3,45 COP (3)(2) kW/kW 3,38 3,52 3,45 COoling energy class A A A A A A A A A A A A A A A A A A		(3)	KVV/KVV	3,41	3,30	3,40
COP (3)(2) kW/kW 3.38 3.52 3.45 Cooling energy class A A A A A A A A A A A A A A A A A A		(3)(2)	kW	135	172	206
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281) SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281) SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281) SEER						
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281) Ambient refrigeration Prated, C.	Cooling energy class					
Ambient refrigeration Pretadd,c						
Prated, C (11) kW SESER (11)(12)	,	Reg. EU 201	16/2281)			
SEER (11)(12)						
Performance ns		. ,	kW	-	-	-
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013) Plesign		. , , ,	0/			
PDesign	•			-	-	-
SCOP				92.6	117	139
Performance ns			1/4.4			
PDesign			%			
SCOP						
Performance ns			kW			
Seasonal efficiency class (5)			0/			
### REAT EXCHANGER USER SIDE IN REFRIGERATION Water flow (1) I/s 5,56 6,92 8,41 Pressure drop (1) kPa 18,5 20,1 22,6 ##################################			%			
Water flow	•	(0)				
Water flow (1) I/s 5,56 6,92 8,41 Pressure drop (1) kPa 18,5 20,1 22,6 HEAT EXCHANGER USER SIDE IN HEATING Water flow (3) I/s 6,51 8,25 9,89 Pressure drop (3) kPa 25,4 28,6 31,3 REFRIGERANT CIRCUIT Compressors nr. N° 4 4 4 4 No. Circuits N° 2 2 2 2 Refrigerant charge kg 66,0 108 108 108 NOISE LEVEL Sound power level in cooling (6)(7) dB(A) 86 86 86 87 Sound power level in heating (6)(8) dB(A) 88 88 89 Sound Pressure (9) dB(A) 67 66 67 SIZE AND WEIGHT A (10) mm 3110 4110 4110 4110 B (10) mm 2220 2220 2220 PARTING WEIGHT A (10) mm 2150 2150 2150 Operating weight (10) kg 1960 2410 2540 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 EN14511-3:2013. 3 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H. 4 Seasonal space heating energy efficiency class MEDIA TEMPERATURE in AVERAGE climate conditions [REGULATION (EU) N. 8 5 Seasonal space heating energy efficiency class MEDIA TEMPERATURE in AVERAGE climate conditions [REGULATION (EU) N. 8 5 Sound power level in heating, outdoors. 3 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 to the space beating energy efficiency of the cooling environment [REGULATION (EU) N. 2016/2281] 12 Seasonal space heating energy index 3 Seasonal space heating energy efficiency of the space cooling		RIGERATIO	N			
Pressure drop (1) kPa 18,5 20,1 22,6 HEAT EXCHANGER USER SIDE IN HEATING Water flow (3) I/s 6,51 8,25 9,89 Pressure drop (3) kPa 25,4 28,6 31,3 REFRIGERANT CIRCUIT Compressors nr. N° 4 4 4 4 No. Circuits N° 2 2 2 2 Refrigerant charge kg 66,0 108 108 NOISE LEVEL Sound power level in cooling (6)(7) dB(A) 86 86 86 87 Sound power level in heating (6)(8) dB(A) 88 88 89 Sound Pressure (9) dB(A) 67 66 67 SIZE AND WEIGHT A (10) mm 3110 4110 4110 B (10) mm 2220 2220 2220 H (10) mm 2220 2220 2220 H (10) mm 2150 2150 2150 2150 Operating weight (10) kg 1960 2410 2540 Notes: 1 telant (side) cooling exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 35°C. 2 Values in compliance with EN14511-3:2013. 3 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H. 4 Seasonal space heating energy efficiency class MEDIA TEMPERATURE in AVERAGE climate conditions [REGULATION (EU) N. 8 5 Seasonal space heating energy efficiency class MEDIA TEMPERATURE in AVERAGE climate conditions [REGULATION (EU) N. 8 5 Sound power level in cooling, outdoors. 3 Sound power level in heating, outdoors. 3 Sound power level in heating, outdoors. 4 Vasues on a pace heating energy efficiency class MEDIA TEMPERATURE in AVERAGE climate conditions [REGULATION (EU) N. 8 5 Sound power level in heating, outdoors. 3 Sound power level in heating, outdoors. 4 Vasues on a pace heating energy efficiency class MEDIA TEMPERATURE in AVERAGE climate conditions [REGULATION (EU) N. 8 5 Sound power level in heating, outdoors. 4 Vasues on a pace heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (EU) N. 8 5 Sound power level in heating, outdoors. 4 Vasues on a pace heating energy efficiency of the cooling environment [REGULATION (EU) N. 2016/2281] 12 Seasonal space heating energy index 3 Seasonal energy efficiency of the space cooling				5,56	6,92	8,41
Water flow (3) I/s 6,51 8,25 9,89 Pressure drop (3) kPa 25,4 28,6 31,3 REFRIGERANT CIRCUIT Compressors nr. N° 4 4 4 4 No. Circuits N° 2 2 2 2 2 Refrigerant charge kg 66,0 108 108 108 NOISE LEVEL Sound power level in cooling (6)(7) dB(A) 86 86 87 Sound power level in heating (6)(8) dB(A) 88 88 89 Sound Pressure (9) dB(A) 67 66 67 SIZE AND WEIGHT 4 4 410 4110 4110 4110 A (10) mm 3110 4110 4110 4110 B (10) mm 2150 2150 2150 Operating weight (10) kg 1960 2410 2540 <						
Pressure drop	HEAT EXCHANGER USER SIDE IN HEAT					
REFRIGERANT CIRCUIT Compressors nr. N° 4 4 4 No. Circuits N° 2 2 2 2 Refrigerant charge kg 66,0 108 108 NOISE LEVEL Sound power level in cooling (6)(7) dB(A) 86 86 86 87 Sound power level in heating (6)(8) dB(A) 88 88 88 89 Sound Pressure (9) dB(A) 67 66 67 SIZE AND WEIGHT A (10) mm 3110 4110 4110 4110 B (10) mm 2220 2220 2220 H (10) mm 2250 2220 2220 H (10) mm 2150 2150 2150 2150 Operating weight (10) kg 1960 2410 2540 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 EN14511-3:2013. 3 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H. 4 Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (EU) N. 8 5 Seasonal space heating energy efficiency class MEDIA TEMPERATURE in AVERAGE climate conditions [REGULATION (EU) N. 8 5 Sound power level in heating, outdoors. 3 Sound power level in heating, outdoors. 3 Sound power level in heating, outdoors. 4 Overage sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level in heating, outdoors. 4 Overage sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level in heating, outdoors. 4 Overage sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level in heating, outdoors. 4 Overage sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level in heating. Outdoors. 5 Overage sound power level in heating. Outdoors. 6 Overage sound power level in heating. Outdoors. 7 Sound power level in heating. Outdoors. 8 Sound space heating energy efficiency of the space cooling environment (REGULATION (EU) N. 2016/2281]						
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No. Circuits			B.10	4	4	4
Refrigerant charge kg 66,0 108 108 NOISE LEVEL Sound power level in cooling (6)(7) dB(A) 86 86 86 87 Sound power level in heating (6)(8) dB(A) 88 88 89 Sound Pressure (9) dB(A) 67 66 67 SIZE AND WEIGHT A (10) mm 3110 4110 4110 4110 B (10) mm 2220 2220 2220 2220 H (10) mm 2150 2150 2150 Operating weight (10) kg 1960 2410 2540 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 EN14511-3:2013. 3 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H. 4 Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (EU) N. 85 5 Seasonal space heating energy efficiency class MEDIA TEMPERATURE in AVERAGE climate conditions [REGULATION (EU) N. 85 5 Seasonal space heating energy efficiency class MEDIA TEMPERATURE in AVERAGE climate conditions [REGULATION (EU) N. 85 5 Seasonal space heating energy efficiency class MEDIA TEMPERATURE in AVERAGE climate conditions [REGULATION (EU) N. 85 5 Seasonal space heating energy efficiency class MEDIA TEMPERATURE in AVERAGE climate conditions [REGULATION (EU) N. 85 5 Seasonal energy efficiency of the cooling environment [REGULATION (EU) N. 2016/2281] 11 Seasonal energy efficiency of the space cooling environment [REGULATION (EU) N. 2016/2281]						
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Sound power level in cooling (6)(7) dB(A) 86 86 87 Sound power level in heating (6)(8) dB(A) 88 88 88 Sound Pressure (9) dB(A) 67 66 67 SIZE AND WEIGHT A (10) mm 3110 4110 4110 B (10) mm 2220 2220 2220 H (10) mm 2150 2150 2150 2150 Operating weight (10) kg 1960 2410 2540 Notes: I Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C. 2 Values in compliance with EN14511-3:2013. 8 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H. 4 Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (EU) N. 8 5 Seasonal space heating energy efficiency class MEDIA TEMPERATURE in AVERAGE climate conditions [REGULATION (EU) N. 8 5 Sound power level in heating, outdoors. 3 Sound power level in heating, outdoors. 3 Sound power level in heating, outdoors. 4 Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sou 10 Unit in standard configuration/execution, without optional accessories. 11 Seasonal energy efficiency of the cooling environment [REGULATION (EU) N. 2016/2281] 12 Seasonal energy efficiency of the space cooling			ng	00,0	100	100
Sound power level in heating (6)(8) dB(A) 88 88 89 Sound Pressure (9) dB(A) 67 66 67 SIZE AND WEIGHT A (10) mm 3110 4110 4110 B (10) mm 2220 2220 2220 H (10) mm 2150 2150 2150 2150 Operating weight (10) kg 1960 2410 2540 Notes: I Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C. 2 Values in compliance with EN14511-3:2013. 3 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H. 4 Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (EU) N. 85 Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (EU) N. 85 Sound power on the basis of measurements made in compliance with ISO 9614. 7 Sound power level in heating, outdoors. 3 Sound power level in heating, outdoors. 40 Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound 10 Unit in standard configuration/execution, without optional accessories. 11 Seasonal energy efficiency of the cooling environment [REGULATION (EU) N. 2016/2281] 12 Seasonal space heating energy index 13 Seasonal energy efficiency of the space cooling		(6)(7)	dB(A)	86	86	87
Sound Pressure (9) dB(A) 67 66 67 SIZE AND WEIGHT A (10) mm 3110 4110 4110 B (10) mm 2220 2220 2220 H (10) mm 2150 2150 2150 Operating weight (10) kg 1960 2410 2540 Notes: I Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C. 2 Values in compliance with EN14511-3:2013. 3 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H. 4 Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (EU) N. 8 5 Sound power on the basis of measurements made in compliance with ISO 9614. 7 Sound power level in cooling, outdoors. 3 Sound power level in heating, outdoors. 9 Average sound pressure level at 1 m distance, unit in a free field on a reflective surface; non-binding value calculated from the sou 10 Unit in standard configuration/execution, without optional accessories. 11 Seasonal energy efficiency of the cooling environment [REGULATION (EU) N. 2016/2281] 12 Seasonal energy efficiency of the space cooling						
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The units highlighted in this publication contain HFC R407C [GWP ₁₀₀ 1774] fluorinated greenhouse gases.		FC R407C [GV	NP ₁₀₀ 17741 f	luorinated greenh	ouse gases.	
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