

# 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 behaviour. 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 proprietary devices 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.



AWR-HT / CA-E			0404	0524	0604
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50
<b>COOLING ONLY (GROSS VALUE)</b>					
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
<b>COOLING ONLY (EN14511 VALUE)</b>					
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			C	C	C
<b>HEATING ONLY (GROSS VALUE)</b>					
Total heating capacity	(3)	kW	135	171	205
Total power input	(3)	kW	39,6	48,1	58,9
COP	(3)	kW/kW	3,41	3,56	3,48
<b>HEATING ONLY (EN14511 VALUE)</b>					
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
<b>ENERGY EFFICIENCY</b>					
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>					
<b>Ambient refrigeration</b>					
Prated,c	(11)	kW	-	-	-
SEER	(11)(12)		-	-	-
Performance ηs	(11)(13)	%	-	-	-
<b>SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)</b>					
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)		3,02	3,19	3,08
Performance ηs	(5)(15)	%	118	125	120
Seasonal efficiency class	(5)		-	-	-
<b>EXCHANGERS</b>					
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>					
Water flow	(1)	l/s	5,72	7,01	8,67
Pressure drop	(1)	kPa	19,6	20,6	24,0
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>					
Water flow	(3)	l/s	6,51	8,25	9,89
Pressure drop	(3)	kPa	25,4	28,6	31,3
<b>REFRIGERANT CIRCUIT</b>					
Compressors nr.		N°	4	4	4
No. Circuits		N°	2	2	2
Refrigerant charge		kg	66,0	108	108
<b>NOISE LEVEL</b>					
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
<b>SIZE AND WEIGHT</b>					
A	(10)	mm	3110	4110	4110
B	(10)	mm	2220	2220	2220
H	(10)	mm	2150	2150	2150
Operating weight	(10)	kg	1950	2400	2530

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. 813/2013]
  - 5 Seasonal space heating energy efficiency class MEDIA TEMPERATURE in AVERAGE climate conditions [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 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
  - 14 Seasonal performance coefficient
  - 15 Seasonal space heating energy efficiency
- The units highlighted in this publication contain HFC R407C [GWP<sub>100</sub> 1774] fluorinated greenhouse gases.  
Certified data in EUROVENT

AWR-HT / LN-CA-E			0404	0524	0604
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50
<b>COOLING ONLY (GROSS VALUE)</b>					
Cooling capacity	(1)	kW	116	145	176
Total power input	(1)	kW	42,0	52,2	63,2
EER	(1)	kW/kW	2,77	2,77	2,78
ESEER	(1)	kW/kW	3,39	3,47	3,37
<b>COOLING ONLY (EN14511 VALUE)</b>					
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
<b>HEATING ONLY (GROSS VALUE)</b>					
Total heating capacity	(3)	kW	135	171	205
Total power input	(3)	kW	39,6	48,1	58,9
COP	(3)	kW/kW	3,41	3,56	3,48
<b>HEATING ONLY (EN14511 VALUE)</b>					
Total heating capacity	(3)(2)	kW	135	172	206
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Cooling energy class			A	A	A
<b>ENERGY EFFICIENCY</b>					
<b>SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)</b>					
<b>Ambient refrigeration</b>					
Prated,c	(11)	kW	-	-	-
SEER	(11)(12)		-	-	-
Performance ηs	(11)(13)	%	-	-	-
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PDesign	(4)	kW	92,6	117	139
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PDesign	(5)	kW	98,9	126	148
SCOP	(5)(14)		3,02	3,19	3,08
Performance ηs	(5)(15)	%	118	125	120
Seasonal efficiency class	(5)		-	-	-
<b>EXCHANGERS</b>					
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>					
Water flow	(1)	l/s	5,56	6,92	8,41
Pressure drop	(1)	kPa	18,5	20,1	22,6
<b>HEAT EXCHANGER USER SIDE IN HEATING</b>					
Water flow	(3)	l/s	6,51	8,25	9,89
Pressure drop	(3)	kPa	25,4	28,6	31,3
<b>REFRIGERANT CIRCUIT</b>					
Compressors nr.		N°	4	4	4
No. Circuits		N°	2	2	2
Refrigerant charge		kg	66,0	108	108
<b>NOISE LEVEL</b>					
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
<b>SIZE AND WEIGHT</b>					
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

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