

NRL 0280H-0350H

Reversible air/water heat pump

Cooling capacity 51 ÷ 76 kW – Heating capacity 58 ÷ 86 kW

- High efficiency also at partial loads
- Compact dimensions
- Quick & easy installation



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

- E Silenced high efficiency
- L Standard silenced

FEATURES

Operating field

Working at full load up to -15°C outside air temperature in winter, and up to 46°C in summer. Hot water production up to 55°C (for more information see the technical documentation).

Dual-circuit unit

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

Electronic expansion valve

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

Option integrated hydronic kit

Integrated hydronic kit containing the main hydraulic components; available with various configurations with one or two pumps, with high or low head and storage tank, 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.

- **Floating HP control:** the function can be activated with inverter fans or with DCPX which allows unit operation to be optimised at any operating point through continuous modulation of the fan speed. In addition, the use of inverter fans ensures an increase in energy efficiency at partial loads.

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.

AERLINK: Aerlink is a WiFi gateway with an RS485 serial port that allows a wide range of Aermec products (heat pumps/chillers/system controllers) equipped with this interface to connect easily and securely to a Wi-Fi network. It works both as an access point (AP access point) and as a client (WiFi Station), it can be connected to a single generator or system centraliser, allowing anyone to easily integrate them into any network. Thanks to the AerApp and AerPlants apps, which can be used on Android and iOS platforms, the remote management of the air conditioning systems developed by Aermec becomes intuitive and simple.

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.

BMConverter: The BMConverter accessory consists of the FPC-N54 network device which allows units that communicate via the Modbus RTU protocol

on RS485, to be controlled by a third-party BMS system via the BACNet TCP-IP protocol.

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.

PGD1: Allows you to control the unit at a distance.

SGD: Electronic expansion that enables connecting to the photovoltaic system and heat pumps to accumulate heat in the DHW tank or in the heating system during the photovoltaic production phase and release it at times when heating demand is highest.

PR4: Remote panel with LCD display and touch keyboard that allows carrying out the basic controls, the programming of time ranges and the signalling of the alarms of a single unit.

■ *The accessory PR4 should only be combined with the RS485 communication interface when the serial port is occupied by another device.*

DCPX: Device for condensation temperature control, with continuous speed modulation of fans by using a pressure transducer.

GP: Anti-intrusion grid.

FACTORY FITTED ACCESSORIES

DRE: Electronic device for peak current reduction.

RIF: Power factor correction. Connected in parallel to the motor allowing about 10% reduction of input current.

C-TOUCH: 7", touch screen keyboard, which allows to navigate intuitively among the various screens, allowing to modify the operating parameters and graphically view the progress of some variables in real time.

COMPATIBILITY WITH VMF SYSTEM

For more information about VMF system, refer to the dedicated documentation.

ACCESSORIES COMPATIBILITY

Model	Ver	0280	0300	0330	0350
AER48SP1	E,L	•	•	•	•
AERBAC-ONE	E,L	•	•	•	•
AERBACP	E,L	•	•	•	•
AERLINK	E,L	•	•	•	•
AERNET	E,L	•	•	•	•
BMConverter	E,L	•	•	•	•
MULTICHILLER-EVO	E,L	•	•	•	•
PGD1	E,L	•	•	•	•
SGD	E,L	•	•	•	•

Model	Ver	0280	0300	0330	0350
C-TOUCH	E,L	•	•	•	•

Remote panel

Model	Ver	0280	0300	0330	0350
PR4	E,L	•	•	•	•

The accessory PR4 should only be combined with the RS485 communication interface when the serial port is occupied by another device.

Condensation control temperature

Ver	0280	0300	0330	0350
Fans: M				
E, L	DCPX63	DCPX63	DCPX63	DCPX63

Antivibration

Ver	0280	0300	0330	0350
Integrated hydronic kit: 00, P1, P2, P3, P4				
E, L	VT17	VT17	VT17	VT17
Integrated hydronic kit: 01, 02, 03, 04, 05, 06, 07, 08, 09				
E, L	VT13	VT13	VT13	VT13

Anti-intrusion grid

Ver	0280	0300	0330	0350
E	GP3	GP4	GP4	GP4
L	GP3	GP3	GP3	GP3

Model	Ver	0280	0300	0330	0350
C-TOUCH	E,L	•	•	•	•

Device for peak current reduction

Ver	0280	0300	0330	0350
E, L	DRE281 (1)	DRE301 (1)	DRE331 (1)	DRE351 (1)

(1) Only for supplies of 400V 3N ~ 50Hz and 400V 3 ~ 50Hz x 2 or x 3 (if present) indicates the quantity to be ordered.

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

Power factor correction

Ver	0280	0300	0330	0350
E, L	RIF50	RIF50	RIF50	RIF51

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

CONFIGURATOR

Field	Description
1,2,3	NRL
4,5,6,7	Size 0280, 0300, 0330, 0350
8	Operating field
X	Electronic thermostatic expansion valve
°	Standard mechanic thermostatic valve
9	Model
H	Heat pump
10	Heat recovery
D	With desuperheater (1)
°	Without heat recovery
11	Version
E	Silenced high efficiency
L	Standard silenced
12	Coils
R	Copper pipes-copper fins
V	Copper pipes-Coated aluminium fins
°	Copper-aluminium
13	Fans
J	Inverter (2)
M	Oversized
14	Power supply
°	400V ~ 3 50Hz with magnet circuit breakers
15,16	Integrated hydronic kit

Field	Description
00	Without hydronic kit
	Kit with storage tank and pump/s
01	Storage tank with low head pump
02	Storage tank with low head pump + stand-by pump
03	Storage tank with high head pump
04	Storage tank with high head pump + stand-by pump
	Kit with pump/s and storage tank with holes for heaters
05	Storage tank with holes for heaters and single low head pump (3)
06	Storage tank with holes for heaters and pump low head + stand-by pump (3)
07	Storage tank with holes for heaters and single high head pump (3)
08	Storage tank with holes for heaters and pump high head + stand-by pump (3)
	Double loop
09	Double loop
10	Double loop with holes for heaters
	Kit with pump/s
P1	Single pump low head
P2	Pump low head + stand-by pump
P3	Single pump high head
P4	Pump high head + stand-by pump

- (1) The desuperheater must be intercepted in heating mode. In cooling mode, a water temperature no lower than 35°C must always be guaranteed on the heat exchanger inlet.
- (2) Standard for size 0280 ÷ 0350, without useful static pressure, option for other size with useful static pressure.
- (3) Storage tanks with holes for supplementary heaters (not provided) are sent from the factory with plastic protection caps. Before loading the system, if the installation of one or all resistances is not expected, all plastic caps must be replaced with the special caps, commonly commercially available.

PERFORMANCE SPECIFICATIONS

NRL HL

Size		0280	0300	0330	0350
Fans: J					
Cooling performance 12 °C / 7 °C (1)					
Cooling capacity	kW	50,8	60,8	65,9	72,8
Input power	kW	20,4	22,8	26,4	31,4
Cooling total input current	A	36,00	40,00	44,00	51,00
EER	W/W	2,49	2,67	2,49	2,32
Water flow rate system side	l/h	8.762	10.480	11.340	12.542
Pressure drop system side	kPa	47	43	29	45
Heating performance 40 °C / 45 °C (2)					
Heating capacity	kW	58,2	68,2	75,2	82,3
Input power	kW	19,0	21,7	24,6	28,3
Heating total input current	A	33,00	38,00	41,00	50,00
COP	W/W	3,06	3,14	3,05	2,91
Water flow rate system side	l/h	10.080	11.818	13.035	14.252
Pressure drop system side	kPa	61	54	36	56

- (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.

NRL HE

Size		0280	0300	0330	0350
Fans: J					
Cooling performance 12 °C / 7 °C (1)					
Cooling capacity	kW	52,9	61,9	68,8	76,8
Input power	kW	18,1	20,2	23,4	26,9
Cooling total input current	A	30,00	34,00	37,00	45,00
EER	W/W	2,93	3,06	2,94	2,86
Water flow rate system side	l/h	9.106	10.652	11.855	13.229
Pressure drop system side	kPa	27	27	51	29
Heating performance 40 °C / 45 °C (2)					
Heating capacity	kW	59,1	69,2	76,3	86,2
Input power	kW	17,5	20,6	23,1	26,1
Heating total input current	A	35,00	39,00	43,00	49,00
COP	W/W	3,38	3,36	3,31	3,30
Water flow rate system side	l/h	10.254	11.992	13.209	14.947
Pressure drop system side	kPa	25	34	66	34

- (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			0280	0300	0330	0350
Fans: J						
SEER - 12/7 (EN14825:2018)						
SEER	E	W/W	3,74	3,71	3,80	3,71
	L	W/W	2,96	3,19	3,01	3,28
Seasonal efficiency	E	%	146,50	145,20	148,90	145,30
	L	%	115,30	124,40	117,30	128,30
Water Regulation (1)	E,L	type	FW/VO	FW/VO	FW/VO	FW/VO
Performance in average ambient conditions (average) - 35 °C (2)						
Efficiency energy class	E,L		A+	A+	A+	-
Pdesignh	E	kW	50,00	58,00	64,00	73,00
	L	kW	49,00	58,00	64,00	71,00
SCOP	E	W/W	3,53	3,50	3,50	3,45
	L	W/W	3,20	3,28	3,20	3,20
ηsh	E	%	138,00	137,00	137,00	135,00
	L	%	125,00	128,00	125,00	125,00
Water Regulation (1)	E,L	type	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			0280	0300	0330	0350
Electric data						
Maximum current (FLA)	E	A	46,0	53,0	58,0	63,0
	L	A	46,0	53,0	53,0	63,0
Peak current (LRA)	E	A	155,0	184,0	190,0	200,0
	L	A	155,0	184,0	184,0	200,0

GENERAL TECHNICAL DATA

Refrigerant circuit

Size			0280	0300	0330	0350
Fans: J						
Compressor						
Type	E,L	type	Scroll	Scroll	Scroll	Scroll
Compressor regulation	E,L	Type	On-Off	On-Off	On-Off	On-Off
Number	E,L	no.	2	2	2	2
Circuits	E,L	no.	2	2	2	2
Refrigerant	E,L	type	R410A	R410A	R410A	R410A
Total refrigerant charge (1)	E	kg	16,60	20,00	20,00	20,00
	L	kg	15,20	16,00	15,40	16,00
Potential global heating (GWP)	E,L		2088	2088	2088	2088
Equivalent CO ₂	E	tCO ₂ eq	34,66	41,76	41,76	41,76
	L	tCO ₂ eq	31,74	33,41	32,16	33,41

(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.

System side heat exchanger

Size			0280	0300	0330	0350
System side heat exchanger						
Type	E,L	type			Brazed plate	
Number	E,L	no.	1	1	1	1
System side hydraulic connections						
Connections (in/out)	E,L	Type			Grooved joints	
Sizes (in/out)	E,L	Ø			2" 1/2	

Fans

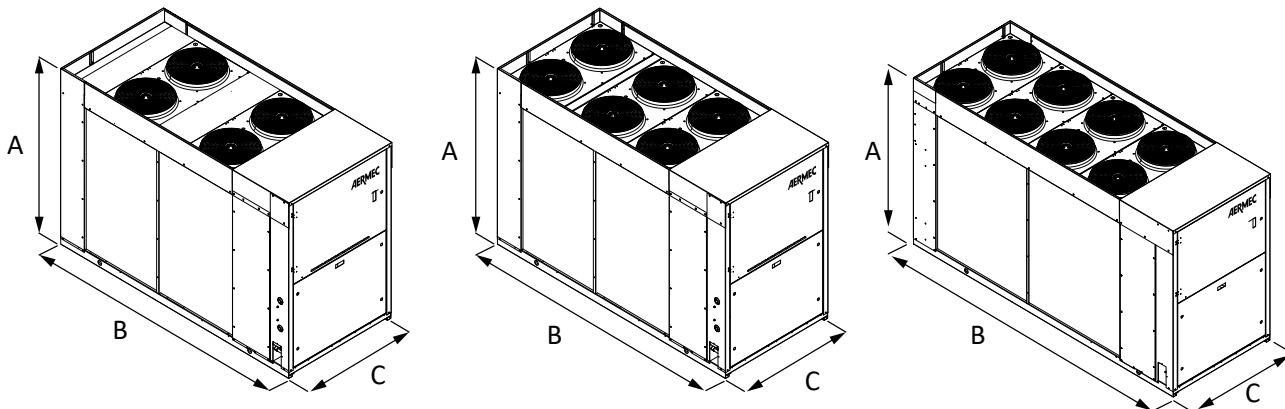
Size			0280	0300	0330	0350
Fans: J						
Fan						
Type	E,L	type	Axial	Axial	Axial	Axial
Fan motor	E,L	type	Inverter	Inverter	Inverter	Inverter
Number	E	no.	6	8	8	8
	L	no.	4	6	6	6
Air flow rate	E	m ³ /h	20.000	26.000	26.000	26.000
	L	m ³ /h	14.000	20.000	20.000	20.000

Sound data

Size			0280	0300	0330	0350
Sound data calculated in cooling mode (1)						
Sound power level	E	dB(A)	74,0	75,0	75,0	76,0
	L	dB(A)	73,0	74,0	74,0	75,0
Sound pressure level (10 m)	E	dB(A)	42,3	43,2	43,2	44,2
	L	dB(A)	41,3	42,3	42,3	43,3

(1) 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			0280	0300	0330	0350
Dimensions and weights						
A	E, L	mm	1.606	1.606	1.606	1.606
B	E, L	mm	1.100	1.100	1.100	1.100
C	E	mm	-	2.950	2.950	2.950
	L	mm	2.450	2.450	2.450	2.450
Weights						
Without hydronic kit	E	kg	730	795	805	811
	L	kg	713	724	731	740

Aermec reserves the right to make any modifications deemed necessary.
All data is subject to change without notice. Aermec does not assume responsibility or liability for errors or omissions.

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