

# 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 adjustment, with keyboard and LCD display, for easy access on the unit is 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.

**AERBACP:** Ethernet communication interface for Bacnet/IP, Modbus TCP/IP, SNMP 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 allows the control, the management and the remote monitoring of a Chiller with a PC, smartphone or tablet using Cloud connection. AERNET works as Master while every unit connected is configured as Slave (max. 6 control boards). Also, with a simple click is possible to save a log file with all the connected unit datas in the personal terminal for post analysis.

**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 signaling 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.

**VT:** Anti-vibration supports.

## 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
AER485P1	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
<b>1,2,3</b>	<b>NRL</b>
<b>4,5,6,7</b>	<b>Size</b> 0280, 0300, 0330, 0350
<b>8</b>	<b>Operating field</b>
X	Electronic thermostatic expansion valve
°	Standard mechanic thermostatic valve
<b>9</b>	<b>Model</b>
H	Heat pump
<b>10</b>	<b>Heat recovery</b>
D	With desuperheater (1)
°	Without heat recovery
<b>11</b>	<b>Version</b>
E	Silenced high efficiency
L	Standard silenced
<b>12</b>	<b>Coils</b>
R	Copper pipes-copper fins
S	Copper pipes-Tinned copper fins
V	Copper pipes-Coated aluminium fins
°	Copper-aluminium
<b>13</b>	<b>Fans</b>
J	Inverter (2)
M	Oversized
<b>14</b>	<b>Power supply</b>
°	400V ~ 3 50Hz with magnet circuit breakers
<b>15,16</b>	<b>Integrated hydronic kit</b>

Field	Description
00	Without hydronic kit
	<b>Kit with storage tank and pump/s</b>
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
	<b>Kit with pump/s and storage tank with holes for heaters</b>
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)
	<b>Double loop</b>
09	Double loop
10	Double loop with holes for heaters
	<b>Kit with pump/s</b>
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
<b>Cooling performance 12 °C / 7 °C (1)</b>					
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	36,0	40,0	44,0	51,0
EER	W/W	2,49	2,67	2,49	2,32
Water flow rate system side	l/h	8762	10480	11340	12542
Pressure drop system side	kPa	47	43	29	45
<b>Heating performance 40 °C / 45 °C (2)</b>					
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	33,0	38,0	41,0	50,0
COP	W/W	3,06	3,14	3,05	2,91
Water flow rate system side	l/h	10080	11818	13035	14252
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
<b>Cooling performance 12 °C / 7 °C (1)</b>					
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	30,0	34,0	37,0	45,0
EER	W/W	2,93	3,06	2,94	2,86
Water flow rate system side	l/h	9106	10652	11855	13229
Pressure drop system side	kPa	27	27	51	29
<b>Heating performance 40 °C / 45 °C (2)</b>					
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	35,0	39,0	43,0	49,0
COP	W/W	3,38	3,36	3,31	3,30
Water flow rate system side	l/h	10254	11992	13209	14947
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.

## ELECTRIC DATA

Size			0280	0300	0330	0350
<b>Electric data</b>						
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

## ENERGY DATA

Size			0280	0300	0330	0350
<b>Cooling capacity with low leaving water temp (UE n° 2016/2281)</b>						
SEER	E	W/W	3,74	3,71	3,80	3,71
	L	W/W	2,96	3,19	3,01	3,28
$\eta_{sc}$	E	%	146,50	145,20	148,90	145,30
	L	%	115,30	124,40	117,30	128,30
<b>UE 811/2013 performance in average ambient conditions (average) - 35 °C - Pdesignh ≤ 70 kW (1)</b>						
Efficiency energy class	E,L		A+	A+	A+	-
Pdesignh	E,L	kW	-	-	-	-
$\eta_{sh}$	E	%	138,00	137,00	137,00	135,00
	L	%	125,00	128,00	125,00	125,00
SCOP	E	W/W	3,53	3,50	3,50	3,45
	L	W/W	3,20	3,28	3,20	3,20

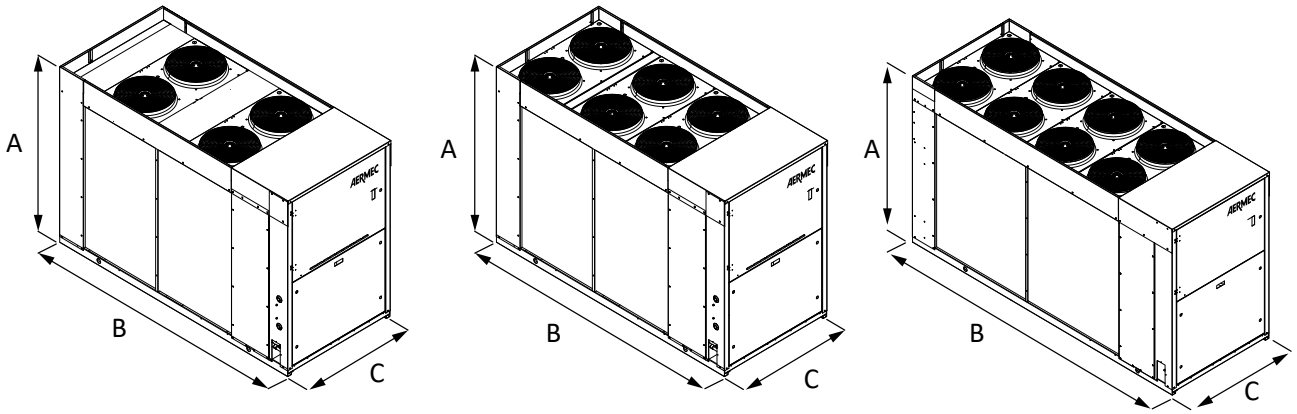
(1) Efficiencies for low temperature applications (35 °C)

## GENERAL TECHNICAL DATA

Size			0280	0300	0330	0350
<b>Compressor</b>						
Type	E,L	type			Scroll	
Compressor regulation	E,L	Type			On-Off	
Number	E,L	no.	2	2	2	2
Circuits	E,L	no.	2	2	2	2
Refrigerant	E,L	type			R410A	
<b>System side heat exchanger</b>						
Type	E,L	type			Brazed plate	
Number	E,L	no.	1	1	1	1
<b>System side hydraulic connections</b>						
Connections (in/out)	E,L	Type			Grooved joints	
Sizes (in/out)	E,L	Ø			2" 1/2	
<b>Fan</b>						
Type	E,L	type			axials	
Number	E	no.	6	8	8	8
	L	no.	4	6	6	6
Air flow rate	E	m <sup>3</sup> /h	20000	26000	26000	26000
	L	m <sup>3</sup> /h	14000	20000	20000	20000
<b>Sound data calculated in cooling mode (1)</b>						
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
<b>Dimensions and weights</b>						
A	E,L	mm	1606	1606	1606	1606
B	E,L	mm	1100	1100	1100	1100
C	E	mm	-	2950	2950	2950
	L	mm	2450	2450	2450	2450
<b>Weights</b>						
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  
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