NRK 0090-0150

Reversible air/water heat pump

Cooling capacity 18,4 ÷ 31,0 kW – Heating capacity 20,8 ÷ 34,4 kW

- **Cooling / heating / high-temperature water production even for DHW production.**
- **Water produced up to +65 °C**
- **Heating operations with external temperatures down to -20 °C**
- **Optimised for heating mode**

DESCRIPTION

Air-cooled outdoor chiller designed to meet air conditioning needs in residential, commercial complexes or industrial applications.
The base, the structure and the panels are made of galvanized steel treated with polyester paint RAL 9003.

VERSIONS

° High efficiency

FEATURES

Operating field

Working at full load up to -20 °C outside air temperature in winter, and up to 48 °C in summer. Hot water production up to 65 °C.

Integrated hydronic kit

Integrated hydronic kit containing the main hydraulic components; available with various configurations with one pumps or storage tank to obtain a solution that allows you to save money and to facilitate installation.

Components

Water filter,flow switch, low and high pressure transducers as standard supply on all units.

Hot water production

In the configuration with desuperheater, it is also possible to produce free-hot water.

DCPX as standard

Phase-cut device that regulates the fan speed to ensure optimum unit operation in all conditions.

CONTROL

MODUCONTROL control type.
The command panel of the unit allows the rapid setting of the working parameters of the machine, and their visualisation. The display consists of 4 figures and various LEDs for indicating the type of operational mode, the visualisation of the parameters set and of any alarms triggered. The card stores all the default settings and any modifications.

ACCESSORIES

AERBAC-MODU: Ethernet communication Interface for protocols Bacnet/IP, Modbus TCP/IP, SNMP. The accessory is supplied with the unit and must be installed on an external electrical panel.
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. 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.
MODU-485BL: RS-485 interface for supervision systems with MODBUS protocol.
MULTICONTROL: Allows the simultaneous control of several units (up to 4), installed in the same hydraulic system.
PR3: Simplified remote panel. This makes it possible to carry out the unit's basic controls with the signalling of alarms. Can be made remote with shielded cable up to 150 m.
SAF: Thermal buffer tank kit with instantaneous Domestic Hot Water production. For more information about SAF refer to the dedicated documentation.

SDHW: Domestic hot water sensor. To be used with a storage tank for the control of water temperature produced.
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.
SPLW: System water temperature sensor. In most cases the loose supplied sensors for each chiller/heat pump are sufficient. In cases of a common flow/return header this sensor can be used to control the common system supply water temperature for the chillers connected to the header, or it can be used for temperature monitoring
VMF-CRP: Accessory module for controlling boilers, heat recover units and pumps (if associated with VMF-E5 / RCC panels); if associated with the VMF-E6 panel, the VMF-CRP modules will be able to manage heat recovery units, RAS, boiler, sanitary management, I/O control, pumps.
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.

CONFIGURATOR

Field		Description
1,2,3		**NRK**
4,5,6,7		**Size** 0090, 0100, 0150
8		**Operating field (1)**
	°	Standard mechanic thermostatic valve
9		**Model**
	H	Heat pump
10		**Heat recovery**
	D	With desuperheater (2)
	°	Without heat recovery
11		**Version**
	°	High efficiency
12		**Coils**
	R	Copper pipes-copper fins
	S	Tinned copper
	V	Copper pieps-Coated aluminium fins
	°	Alluminium
13		**Fans**
	°	Standard
14		**Power supply**
	°	400V ~ 3N 50Hz
15,16		**Integrated hydronic kit**
	00	Without hydronic kit
	01	Storage tank with low head pump
	03	Storage tank with high head pump
	P1	Single pump low head
	P3	Single pump high head

(1) Water produced up to +4 °C.
(2) The desuperheater can only be used with cold running.

For the installation of the PR4 remote panel, the MODU-485BL communication interface is indispensable.

VT: Anti-vibration supports.
BSKW: Electric heaters kit with IP44 panel for remote mounting in a sheltered area.

Refer to the specific "SAF" datasheet for more information about correct system operation, and about the required or recommended accessories. Please consult the VMF system for the production of DHW with a thermal storage tank not supplied by Aermec.

FACTORY FITTED ACCESSORIES

DRE: Electronic device for peak current reduction.

COMPATIBILITY WITH VMF SYSTEM

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

ACCESSORIES COMPATIBILITY

Model	Ver	0090	0100	0150
AERBAC-MODU	°	•	•	•
AERLINK	°	•	•	•
AERNET	°	•	•	•
BMConverter	°	•	•	•
MODU-485BL	°	•	•	•
MULTICONTROL	°	•	•	•
PR3	°	•	•	•
SAF (1)	°	•	•	•
SDHW (2)	°	•	•	•
SGD	°	•	•	•
SPLW (3)	°	•	•	•
VMF-CRP	°	•	•	•

(1) For more information about SAF refer to the dedicated documentation.
(2) Probe required for MULTICONTROL for managing the domestic hot water system.
(3) Probe required for MULTICONTROL to manage the secondary circuit system.

Remote panel

Model	Ver	0090	0100	0150
PR4	°	•	•	•

For the installation of the PR4 remote panel, the MODU-485BL communication interface is indispensable.

BSKW: Electric heater kit

Model	Ver	0090	0100	0150
BS6KW400T	°	•	•	•
BS9KW400T	°	•	•	•

BS6KW400T (6kW, 400V 3); BS9KW400T (9kW, 400V 3)

VT: Antivibration

Ver	0090	0100	0150
Integrated hydronic kit: 00, 01, 03, P1, P3			
°	VT15	VT15	VT15

DRE: Device for peak current reduction

Ver	0090	0100	0150
°	DRE10 (1)	DRE10 (1)	DRE15 (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

PERFORMANCE SPECIFICATIONS

NRK - (°) / 12/7 °C - 40/45 °C

Size		0090	0100	0150
Cooling performance 12 °C / 7 °C (1)				
Cooling capacity	kW	18,4	26,4	31,0
Input power	kW	5,8	8,4	9,8
Cooling total input current	A	13,3	17,5	20,4
EER	W/W	3,19	3,15	3,15
Water flow rate system side	l/h	3172	4546	5338
Pressure drop system side	kPa	19	39	54
Heating performance 40 °C / 45 °C (2)				
Heating capacity	kW	20,8	28,7	34,4
Input power	kW	6,1	8,3	10,3
Heating total input current	A	14,1	17,3	21,3
COP	W/W	3,40	3,45	3,34
Water flow rate system side	l/h	3601	4965	5953
Pressure drop system side	kPa	24	45	65

(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.

NRK - (°) / 23/18 °C - 30/35 °C

Size		0090	0100	0150
Cooling performance 23 °C / 18 °C (1)				
Cooling capacity	kW	24,5	34,9	40,9
Input power	kW	6,1	9,0	10,6
Cooling total input current	A	13,9	18,5	21,5
EER	W/W	4,03	3,88	3,86
Water flow rate system side	l/h	4236	6040	7093
Pressure drop system side	kPa	34	69	95
Heating performance 30 °C / 35 °C (2)				
Heating capacity	kW	20,7	28,6	34,2
Input power	kW	6,0	8,2	10,0
Heating total input current	A	14,0	17,3	21,3
COP	W/W	3,40	3,45	3,34
Water flow rate system side	l/h	3601	4965	5953
Pressure drop system side	kPa	24	45	65

(1) Data EN 14511:2022; System side water heat exchanger 23 °C/ 18 °C; External air 35 °C
(2) Data EN 14511:2022; System side water heat exchanger 30 °C / 35 °C; External air 7 °C d.b. / 6 °C w.b.

ENERGY DATA

Size		0090	0100	0150
SEER - 12/7 (EN14825: 2018)				
SEER	W/W	3,35	3,39	3,42
Seasonal efficiency	%	131,10	132,60	133,80
Water Regulation (1)	type	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.

Size		0090	0100	0150
Performance in average ambient conditions (average) - 35 °C (1)				
Efficiency energy class		A+	A+	A+
Pdesignh	kW	21,00	27,00	32,00
SCOP	W/W	3,70	3,68	3,60
ηsh	%	145,00	144,00	141,00
Water Regulation (2)	type	FW/VO	FW/VO	FW/VO
Performance in average ambient conditions (average) - 55 °C (3)				
Efficiency energy class		A+	A+	A+
Pdesignh	kW	22,00	28,00	34,00
SCOP	W/W	3,03	2,98	2,90
ηsh	%	118,00	116,00	113,00
Water Regulation (2)	type	FW/VO	FW/VO	FW/VO

(1) Efficiencies for low temperature applications (35 °C)
(2) 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.
(3) Efficiencies for average temperature applications (55 °C)

ELECTRIC DATA

Size		0090	0100	0150
Electric data				
Maximum current (FLA)	A	19,1	24,6	29,5
Peak current (LRA)	A	104,2	121,2	143,2

GENERAL TECHNICAL DATA

Refrigerant circuit

Size		0090	0100	0150
Compressor				
Type	type		Scroll	
Compressor regulation	Type		On-Off	
Number	no.	1	1	1
Circuits	no.	1	1	1
Refrigerant	type		R410A	
Total refrigerant charge (1)	kg	13,20	13,60	16,00
Potential global heating			2088	
Equivalent CO_2	tCO_2eq	27,56	28,39	33,40

(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		0090	0100	0150
System side heat exchanger				
Type	type		Brazed plate	
Number	no.	1	1	1
Hydraulic connections				
Connections (in/out)	Type		Gas-F	
Size (in)	Ø		1½"	
Size (out)	Ø		1½"	

Fans

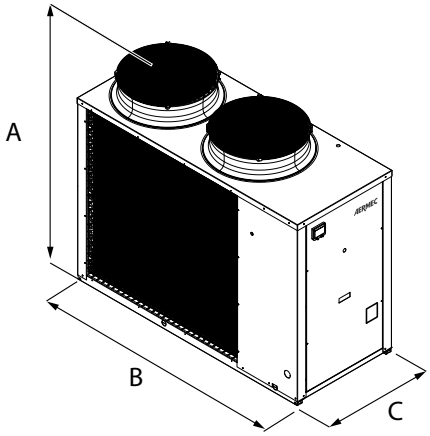
Size		0090	0100	0150
Fan				
Type	type		axials	
Fan motor	type		Asynchronous	
Number	no.	2	2	2
Air flow rate	m^3/h	14200	14200	13700

Sound data

Size		0090	0100	0150
Sound data calculated in cooling mode (1)				
Sound power level	dB(A)	78,0	78,0	78,0
Sound pressure level (10 m)	dB(A)	46,5	46,5	46,5

(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		0090	0100	0150
Dimensions and weights				
A	mm	1450	1450	1450
B	mm	1750	1750	1750
C	mm	750	750	750
Empty weight	kg	289	328	372

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