

NRV 0550 F

Air-water chiller with free-cooling

Cooling capacity 99,9 ÷ 105,4 kW

- Easy and quick to install compact
- Reliability and modularity
- Microchannel coils



AERMEC 

DESCRIPTION

NRV is comprised of independent 99.9 kW modules, that can be connected together up to a power of 900 kW. Each individual module is an outdoor chiller for the production of chilled water.

The base, the structure and the panels are made of galvanized steel treated with polyester paint RAL 9003.

VERSIONS

- A** High efficiency
- E** Silenced high efficiency

FEATURES

Operating field

Operation at full load up to 46°C external air temperature. Unit can produce chilled water up to 4 °C.

Maximum yield at full load but even partial load, thanks to the partialisation steps that increase as the number of connected modules increases this ensures continuous adaptation to the actual system requirements.

Modularity

It is possible to couple up to 9 chillers designed to reduce the overall unit dimensions to a minimum.

The combination of the various chillers allows all the strengths of the individual module to be maintained.

Modularity allows you to adapt installation to the actual development needs of the system. This way the cooling capacity can be increased over time simply and affordably.

Modularity is essential when component redundancy is required, as it allows for a safer system design and increased reliability.

Microchannel coils

Microchannel heat exchanger that guarantees higher thermal exchange yield. Circuit that optimises the liquid distribution in the coil, which is arranged with V beam geometry with open angle.

Free-cooling water coils

These units also have a water coil dedicated to free-cooling mode. Free-cooling offers significant energy saving in applications that require cooling all year round.

As soon as the outside air temperature allows, a valve makes the water flow towards the free-cooling battery which is cooled directly by the air. The compressors are completely shut down, if possible, leading to considerable electrical savings.

Components

Already equipped with a water filter, differential pressure switch and butterfly check valves, useful to cut off the hydraulic circuit for maintenance; for instance, to clean the filter.

In the event of variable flow rate, the motorised hydronic valves can intercept one or more modules to reduce the flow rate in low heat load conditions.

CONTROL PCO₅

Microprocessor control, with keyboard and LCD display, for easy access on the unit with a menu available in several languages.

- Adjustment includes complete management of the alarms and their log.
- 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.
- **Night mode:** only in the **non-silenced** versions is it possible to set a silenced operating mode, which is useful for example at night for greater acoustic comfort but always guarantees performance even at peak load times.

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.

FB1: Air filter to protect the micro-channel coils. Formed of a frame and a composite baffle in micro-expanded aluminium mesh, with particularly low pressure drops.

GPNYB_BACK: kit with 1 anti-intrusion grid for the short side of the unit.

GPNYB_SIDE: kit with 2 anti-intrusion grids for the long side of the unit.

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 board designed to receive external signals from the electricity grid or energy suppliers, converting them into Modbus commands

for our units. This system allows you to vary the operation of our generators to optimise consumption based on electricity prices, grid load or the availability of renewable sources. The key principle of the standard is demand response: shifting consumption from peak demand times to times when energy is cheaper and more environmentally sustainable.

FACTORY FITTED ACCESSORIES

DRE: Electronic device for peak current reduction.

KNYB: Pair of caps with grooved joints assembled on the unit manifold.

KREC: Accessory kit to remote the electric power supply input to the back

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

COMPATIBILITY WITH VMF SYSTEM

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

ACCESSORIES COMPATIBILITY

Model	Ver	0550
AER48SP1	A,E	•
AERBAC-ONE	A,E	•
AERBACP	A,E	•
AERLINK	A,E	•
FB1	A,E	•
GPNYB_BACK	A,E	•
GPNYB_SIDE	A,E	•
MULTICHILLER-EVO	A,E	•
PGD1	A,E	•
SGD	A,E	•

DRE: electronic device for peak current reduction

Ver	0550
A, E	DRE (1)

(1) Contact the factory

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

KNYB: Pair of caps with grooved joints assembled on the unit manifold

Ver	0550
A, E	KNYB

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

KREC: kit to remote the electric power supply input to the back

Ver	0550
A, E	KREC

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

RIF: Power factor correction

Ver	0550
A, E	RIF (1)

(1) Contact the factory

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

CONFIGURATOR

Field	Description
1,2,3	NRV
4,5,6,7	Size 0550
8	Operating field
X	Electronic thermostatic expansion valve
°	Standard mechanic thermostatic valve (1)
9	Model
F	Free-cooling
10	Heat recovery
D	With desuperheater
°	Without heat recovery
11	Version
A	High efficiency
E	Silenced high efficiency

Field	Description
12	Coils / free-cooling coils
O	Painted aluminium microchannel / Copper painted aluminium
R	Copper-copper/Copper-copper
V	Copper-painted aluminium / Copper-painted aluminium
°	Aluminium microchannel / Copper - aluminium
13	Fans
J	Inverter
°	Standard
14	Power supply
°	400V ~ 3 50Hz with magnet circuit breakers
15,16	Integrated hydronic kit
00	Without hydronic kit

(1) Water produced up to +4 °C

PERFORMANCE SPECIFICATIONS

NRV - FA/FE

Size	0550		
Cooling performance chiller operation (1)			
Cooling capacity	A	kW	105,4
	E	kW	99,9
Input power	A	kW	36,6
	E	kW	38,2
Cooling total input current	A,E	A	65,00
EER	A	W/W	2,88
	E	W/W	2,61
Water flow rate system side	A	l/h	18.104
	E	l/h	17.164
Pressure drop system side	A	kPa	31
	E	kPa	27
Cooling performances with free-cooling (2)			
Cooling capacity	A	kW	69,3
	E	kW	57,7
Input power	A	kW	3,7
	E	kW	2,6
Free cooling total input current	A	A	6,7
	E	A	4,5
EER	A	W/W	18,48
	E	W/W	21,98
Water flow rate system side	A	l/h	18.104
	E	l/h	17.164
Pressure drop system side	A	kPa	73
	E	kPa	66

(1) System side water heat exchanger 12 °C/7 °C; External air 35 °C; Chiller operation 100%; Free-cooling 0%

(2) Acqua scambiatore lato utenza 12 °C / * °C ; Aria esterna 2 °C

ENERGY INDICES (REG. 2016/2281 EU)

Size			0550
Fans: J			
SEER - 23/18 (EN14825: 2018)			
SEER	A	W/W	4,86
	E	W/W	4,81
Seasonal efficiency	A	%	191,50
	E	%	189,20
Water Regulation (1)	A,E	type	FW/FO
SEPR - (EN 14825: 2018)			
SEPR	A	W/W	5,94
	E	W/W	5,60
Water Regulation (1)	A,E	type	FW/FO
(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			0550
Fans: °			
SEER - 23/18 (EN14825: 2018)			
SEER	A	W/W	4,68
	E	W/W	4,61
Seasonal efficiency	A	%	184,20
	E	%	181,30
Water Regulation (1)	A,E	type	FW/FO
SEPR - (EN 14825: 2018)			
SEPR	A	W/W	5,94
	E	W/W	5,60
Water Regulation (1)	A,E	type	FW/FO

(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.

ELECTRIC DATA

Size			0550
Electric data			
Maximum current (FLA)	A,E	A	95,6
Peak current (LRA)	A,E	A	280,6

GENERAL TECHNICAL DATA

Refrigerant circuit

Size			0550
Compressor			
Type	A,E	type	Scroll
Number	A,E	no.	2
Circuits	A,E	no.	1
Refrigerant	A,E	type	R410A
Total refrigerant charge (1)	A,E	kg	12,50
Potential global heating (GWP)	A,E		2088
Equivalent CO ₂	A,E	tCO ₂ eq	26,10

(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			0550
System side heat exchanger			
Type	A,E	type	Brazed plate
Number	A,E	no.	1
System side hydraulic connections			
Connections (in/out)	A,E	Type	Grooved joints
Sizes (in/out)	A,E	Ø	6"

Fans

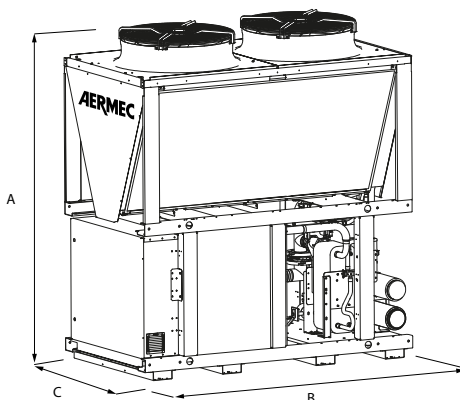
Size			0550
Fan			
Type	A,E	type	axials
Fan motor	A,E	type	Asynchronous with phase cut
Number	A,E	no.	2
Air flow rate	A	m ³ /h	28600
	E	m ³ /h	22000

Sound data

Size			0550
Sound data calculated in cooling mode (1)			
Sound power level	A	dB(A)	86,9
	E	dB(A)	81,8
Sound pressure level (10 m)	A	dB(A)	55,0
	E	dB(A)	49,9

(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			0550
Dimensions and weights			
A	A,E	mm	2480
B	A,E	mm	2200
C	A,E	mm	1190
Empty weight	A,E	kg	1.389

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.

Aermec S.p.A.
Via Roma, 996 - 37040 Bevilacqua (VR) - Italia
Tel. 0442633111 - Telefax 044293577
www.aermec.com