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**

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 PCO_5

Microprocessor adjustment, with keyboard and LCD display,for easy access on the unit is 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 supervision systems with MODBUS protocol.
AERBACP: Ethernet communication Interface for protocols Bacnet/IP, Modbus TCP/IP, SNMP
AERLINK: Wifi Gateway with an RS485 serial port that can be installed on all machines or on all controllers having an RS485 serial port themselves. The module is capable of simultaneously activating the AP WIFI (Access point) and WIFI Station functions, the latter making it possible to connect to the home or business LAN both with VMF-E5 and E6. To facilitate certain management and control operations of the unit, the AERAPP application is available both for Android and iOS systems.

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, always ensuring constant flow rate to the evaporators.
PGD1: Allows you to control the unit at a distance.

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
AER485P1	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	•

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
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CONFIGURATOR

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

Field		Description
12		**Coils / free-cooling coils**
	°	Alluminium microchannel / Copper - aluminium
	0	Painted alluminium microchannel / Copper painted aluminium
	R	Copper-copper/Copper-copper
	S	Copper-Tinned copper / Copper -Tinned copper
	V	Copper-painted alumimium / Copper-painted alumimium
13		**Fans**
	°	Standard
	J	Inverter
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	65,0
EER	A	W/W	2,88
	E	W/W	2,61
Water flow rate system side	A	l/h	18104
	E	l/h	17164
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	18104
	E	l/h	17164
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
SEER - 23/18 (EN14825: 2018) with standard fans (1)			
Seasonal efficiency	A	%	184.2%
	E	%	181.3%
SEER	A	W/W	4,68
	E	W/W	4,61
SEER - 23/18 (EN14825: 2018) with inverter fans			
Seasonal efficiency	A	%	191.5%
	E	%	189.2%
SEER	A	W/W	4,86
	E	W/W	4,81
SEPR - (EN14825: 2018) High temperature with standard fans (1)			
SEPR	A	W/W	5,94
	E	W/W	5,60
SEPR - (EN14825: 2018) High temperature with inverter fans (1)			
SEPR	A	W/W	5,94
	E	W/W	5,60

(1) Calculation performed with FIXED water flow rate.

ELECTRIC DATA

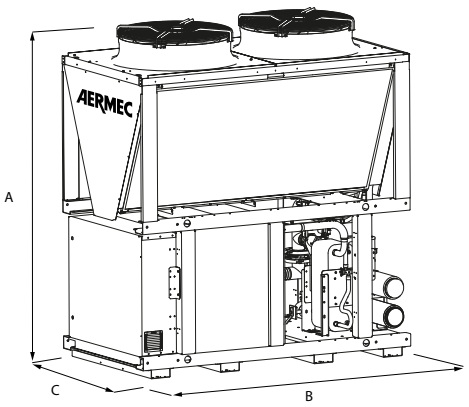
Size			0550
Electric data			
Maximum current (FLA)	A,E	A	95,6
Peak current (LRA)	A,E	A	280,6

GENERAL TECHNICAL DATA

Size			0550
Compressor			
Type	A,E	type	Scroll
Number	A,E	no.	2
Circuits	A,E	no.	1
Refrigerant	A,E	type	R410A
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″
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 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	1389

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