NRV 0550 F

Air-water chiller with free-cooling

Cooling capacity 99,9 ÷ 105,4 kW

- **Micro-channel coil**
- **Easy and quick to install compact module**
- **Reliability and modularity**

DESCRIPTION

NRV is made up of independent 108kW modules that can be connected to each other up to a power of 970kW. Every single module is an outdoor chiller to produce chilled water with high efficiency scroll compressors, axial fans, micro-channel coils, system side plate heat exchanger. In the units with desuperheater, there is also the possibility of producing hot water for free.

The base, the structure and the panels are made of galvanised steel treated with rustproof polyester paint.

With NRV, it is possible to couple up to 9 chillers designed to reduce the overall unit dimensions to a minimum. Modularity that 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.

These chillers are also equipped with a Free cooling coil and are used when the refrigerant load request persists even during the winter months, or when the outdoor air temperature is below the temperature of the return liquid from the system. In Free cooling functioning (mixed Free cooling and compressors, or Free cooling only), the fluid is cooled directly by the outdoor air, allowing even complete compressor switch-off with a significant energy saving.

VERSIONS

NRV_FA High Efficiency
NRV_FE High Efficiency Silenced

FEATURES

NRV is made up of a cooling circuit.

The careful selection of the components used, the particular configuration and the option of connecting several independent modules and manage them as if they were a single unit allows for maximum yield at full load but even partial loads, thanks to the partialisation steps that increase as the number of connected modules increases, ensuring continuous adaptation to the actual system requirements.

The electrical panel in every unit and the management logic that allows each module to be operated in synergy with the others ensure continuity even if one or more of the modules freeze up.

Operating range

Work up to 46°C of outdoor air temperature at full load.

Modularity

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

The modules are easy to install and connect to each other from a hydraulic standpoint, **thanks to the connections with grooved joints.**

The chiller module uses aluminium micro-channel coils, ensuring very high levels of efficiency. These coils allow less refrigerant to be used compared to traditional copper/aluminium coils.

Components

NRV is 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

Microprocessor adjustment, with keyboard and LCD display, for easy consultation and intervention on the unit via 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

Thermoregulation takes place with the integral proportional logic, based on the water output temperature.

Night Mode: it is possible to set a silenced functioning profile. Perfect for night functioning, since it guarantees greater acoustic comfort in the evenings, and a high efficiency in the time of greater load.

ACCESSORIES

AER485P1: RS-485 interface for supervising systems with MODBUS protocol.

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

MULTICHILLER_EVO: Control, switch-on and switch-off system of the individual chillers when multiple units are installed in parallel, always ensuring constant flow rate to the evaporators.
FB1: Micro-channel coil protection air filter. Built with frame and a composite set in aluminium micro-stitched net with extremely low head losses.
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.

ACCESSORIES MOUNTED IN THE FACTORY;

DRE: Plate peak current reduction electronic device.
RIF: Current power factor correction. Connected in parallel to the motor, it allows a reduction of the input current (approx. 10%).
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 (see documents)

COMPATIBILITY WITH VMF SYSTEM

For further information on system, refer to specific documentation.

ACCESSORIES COMPATIBILITY

Model		vers	0550
AER485P1		A,E	•
PGD1		A,E	•
MULTICHILLER_EVO		A,E	•
FB1		A,E	•
GPNYB_BACK		A,E	•
GPNYB_SIDE	(1)	A,E	•

(1) Kit made up of two grids

DRE: Electronic device for peak current reduction

Ver	0550
A,E	DRE (1)

(1) Contact the head office
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 head office
A grey background indicates the accessory must be assembled in the factory

KNYB: Caps with grooved joints

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

CONFIGURATOR

Field		Description
1,2,3		**NRV**
4,5,6,7		**Size**
		0550
8		**Operating field**
	°	Mechanical thermostatic valve (produced water up to +4°C)
	X	Electronic thermostatic 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		**Condensing Coils / Free Cooling Water Coils**
	°	Aluminium micro-channel / Copper Aluminium
	0	Aluminium micro-channel with cataphoresis treatment / Copper Aluminium Painted
	R	Copper - Copper / Copper - Copper
	S	Copper - Thinned / Copper - Thinned
	V	Painted Aluminium Copper / Painted Aluminium Copper
13		**Fans**
	°	Standard
	J	Inverter
14		**Power supply**
	°	400V/3/50Hz with magnet circuit breakers
15,16		**Integrated hydronic kit**
	00	Without hydronic kit

PERFORMANCE SPECIFICATIONS

NRV - FA

Size		0550
Cooling performance chiller operation (1)		
Cooling capacity	kW	105,4
Input power	kW	36,6
Cooling total input current		65
EER		2,88
Water flow rate system side	l/h	18104
Pressure drop system side	kPa	31
Cooling performances with free-cooling (2)		
Cooling capacity	kW	69,3
Input power	kW	3,70
Free cooling total input current		6,7
EER		18,48
Water flow rate system side	l/h	18104
Pressure drop system side	kPa	73

(1) System side water heat exchanger 12 °C/7 °C; External air 35 °C; Chiller operation 100%; Free-cooling 0%
(2) System side water heat exchanger 12 °C / 8,7 °C; External air 2°C

NRV - FE

Size		0550
Cooling performance chiller operation (1)		
Cooling capacity	kW	99,9
Input power	kW	38,2
Cooling total input current		65
EER		2,61
Water flow rate system side	l/h	17164
Pressure drop system side	kPa	27
Cooling performances with free-cooling (2)		
Cooling capacity	kW	57,7
Input power	kW	2,6
Free cooling total input current		4,5
EER		21,98
Water flow rate system side	l/h	17164
Pressure drop system side	kPa	66

(1) System side water heat exchanger 12 °C/7 °C; External air 35 °C; Chiller operation 100%; Free-cooling 0%
(2) System side water heat exchanger 12 °C / 8,7 °C; External air 2°C

ENERGY DATA

Size			0550
Energy index			
SEPR	A	W/W	5,84
	E	W/W	5,51

ELECTRIC DATA

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

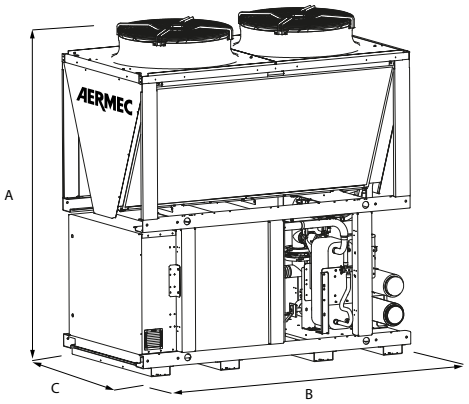
GENERAL TECHNICAL DATA

Size	Version		0550
Compressor		type	Scroll
Compressor / Circuit		n°/n°	2/1
Refrigerant		type	R410A
System side heat exchanger		type	Plates
Exchanger		n°	1
Fans		type	Axial
Fans		n°	2
Air flow rate in cooling mode	FA	m³/h	28600
	FE	m³/h	22000
Sound data			
Sound power level	A	dB(A)	85
Sound pressure level		dB(A)	53
Sound power level	E	dB(A)	82
Sound pressure level		dB(A)	50

(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).

Note: For further information, refer to the selection program or to the technical documentation on www.aermec.com

DIMENSIONS



Size		Vers.	0550
Dimensions and weights			
A	mm	A,E	2480
B	mm	A,E	2200
C	mm	A,E	1190
Weight*	kg	A,E	1389

* Weight of the Standard unit without acessoires

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