NYG 0500 F

Air-water chiller with free-cooling

Cooling capacity 27 ton

- **Easy and quick to install compact**
- **Reliability and modularity**

DESCRIPTION

Air-cooled outdoor chiller designed to meet air conditioning needs in residential/commercial complexes or industrial applications.
These are outdoor units with streamlined scroll compressors used with R454B gas.
The base, the structure and the panels are made of galvanized steel treated with polyester paint RAL 9003.

FEATURES

Operating field

Operation at full load up to 115.0 °F external air temperature.
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

Possibility of coupling several units designed to minimise the overall footprint.

Silent

Silent at the highest levels thanks to the inverter fans used in both the standard (J) and oversized (M) should be enhanced – the latter also offer high static pressure.

Reliability

— The electrical panel on each module and the management logic via the Multichiller_EVO accessory, which allows the modules to work in synergy with each other, ensure continuity of service even if one unit malfunctions.
— Modularity is essential when component redundancy is required, as it allows for a safer system design and increased reliability.
— Possibility of using them in a system with fixed or variable flow rates.
— Possibility of excluding individual modules with valves on every unit in case of maintenance.

R454B refrigerant gas.

Use refrigerant fluid R454B, whose classification according to ISO 817 is A2L.
The environmental impact of the units is reduced considerably owing to the last generation R454B refrigerant.
Combining a reduced refrigerant load with a low global warming potential (GWP), these units boast low equivalent CO_2 values.

Aluminium microchannel coils

The microchannel condensing aluminum coils ensure high levels of efficiency, reduced quantities of refrigerant and lower unit weight. The treatment "O" available as configurator it ensures high resistance to corrosion even in the most aggressive environments.

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.

Electronic expansion valve

The possibility to use electronic expansion valve, offers significant benefits, especially when the chiller is working with partial loads, increasing the energy seasonal efficiency of the unit.

CONTROL PCO[5]

Microprocessor control, with keyboard and LCD display, for easy access on the unit with 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:** available for all models with an inverter fan. Thanks to continuous fan modulation, unit operation is optimised in every working position in cooling mode. The result is enhanced machine energy efficiency with partial loads.
— **Night Mode:** it is possible to set a silenced operation profile. Perfect for night operation 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. 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.
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. The connection is made via cable and/or USB key. Wi-Fi connectivity is not available. 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.
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.
CRATE_NYG: Special crate for transport

FACTORY FITTED ACCESSORIES

KNYB: Pair of caps with grooved joints assembled on the unit manifold.
KRQ: Electric heater for the control and electric power board.
GPNYG_SIDE_2: Anti-intrusion grid.
GPNYG_BACK: Anti-intrusion grid.

ACCESSORIES COMPATIBILITY

Model	0500
AER485P1	•
AERBAC-ONE	•
AERNET	•
MULTICHILLER-EVO	•
PGD1	•

Anti-intrusion grid

0500
GPNYG_BACK

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

0500
GPNYG_SIDE_2 (1)

(1) For 2-pipe units
A grey background indicates the accessory must be assembled in the factory

Electric heater for the control and electric power board

0500
KRQ_NYG_M

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

CRATE

0500
CRATE_NYG

CONFIGURATOR

Field		Description
1,2,3		**NYG**
4,5,6,7		**Size** 0500
8		**Operating field**
	X	Electronic thermostatic expansion valve (1)
	Z	Low temperature electronic thermostatic valve (2)
9		**Model**
	F	Free-cooling
10		**Heat recovery**
	D	With desuperheater
	°	Without heat recovery
11		**Coils / free-cooling coils**
	0	Painted alluminium microchannel / Copper painted aluminium
	°	Alluminium microchannel / Copper - aluminium
12		**Fans**
	J	Inverter
	M	Enhanced EC inverter (3)
13		**Power supply**
	6	230V - 3 60Hz
	7	460V - 3 60Hz
	8	575V - 3 60Hz
	9	208V - 3 60Hz
14,15		**Integrated hydronic kit**
	00	145 psi rated
	0P	300 psi rated
16		**System type**
	2	2-pipe system

(1) Outlet water temperature from +39,2 °F
(2) Water outlet temperature below +39.2 °F
(3) Option not available with 575 V power supply

PERFORMANCE SPECIFICATIONS

		NYG 0500 F
Cooling performance chiller operation (1)		
Cooling capacity	ton	27.10
Input power	kW	31.60
EER	BTU/(Wh)	10.29
IPLV	BTU/(Wh)	13.92
Water flow rate system side	gpm	64.82
Pressure drop system side	ft H_2O	8.65
Cooling performances with free-cooling (2)		
Cooling capacity	ton	18.48
Input power	kW	3.70
EER	BTU/(Wh)	59.94
Water flow rate system side	gpm	64.8
Pressure drop system side	ftH_2O	17.40

(1) Reference conditions: AHRI std 550/590 I-P; Service side water 54.01°F / 44.01°F; Outside air 95°F
(2) System side water heat exchanger 54.01 °F / * °F; External air 35.6 °F

Size			**0500**
Cooling performance chiller operation (1)			
Cooling total input current	6	A	98.00
	7	A	48.00
	8	A	38.00
	9	A	99.00
Cooling performances with free-cooling (2)			
Free cooling total input current	6	A	10.0
	7	A	5.0
	8	A	4.0
	9	A	12.0

(1) System side water heat exchanger 53.6 °F / 44.6 °F; External air 95 °F; Chiller operation 100%; Free-cooling 0%
(2) System side water heat exchanger 53.6 °F / * °F; External air 35.6 °F

		NYG 0500 F
Partialisations EER		
100 %	BTU/Wh	10,30
75 %	BTU/Wh	12,32
50 %	BTU/Wh	14,84
25 %	BTU/Wh	16,48

GENERAL TECHNICAL DATA

		NYG 0500 F
Compressor		
Type	type	Scroll
Compressor regulation	Type	On-Off
Number	no.	2
Circuits	no.	2
Refrigerant	type	R454B
Total refrigerant charge (1)	lbs	33.1
System side heat exchanger		
Type	type	Brazed plate
Number	no.	1
Hydraulic connections		
Connections (in/out)	Type	Grooved joints
Size (in)	Ø	6"
Size (out)	Ø	6"

(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.

ELECTRIC DATA

Size			0500
Power supply: 230V			
Peak current (LRA)	J	A	430
	M	A	441
Minimum circuit amperage (MCA)	J	A	150
	M	A	175
Maximum overcurrent permitted by the protection device (MOP)	J	A	175
	M	A	200
Nominal Short-Circuit Current (SCCR)	J,M	kA	65
Power supply: 460V			
Peak current (LRA)	J	A	238
	M	A	243
Minimum circuit amperage (MCA)	J,M	A	80
Maximum overcurrent permitted by the protection device (MOP)	J,M	A	100
Nominal Short-Circuit Current (SCCR)	J,M	kA	65
Power supply: 575V			
Peak current (LRA)	J	A	171
	M	A	-
Minimum circuit amperage (MCA)	J	A	70
	M	A	-
Maximum overcurrent permitted by the protection device (MOP)	J	A	90
	M	A	-
Nominal Short-Circuit Current (SCCR)	J	kA	50
	M	kA	-
Power supply: 208V			
Peak current (LRA)	J	A	430
	M	A	441
Minimum circuit amperage (MCA)	J	A	150
	M	A	175
Maximum overcurrent permitted by the protection device (MOP)	J	A	175
	M	A	200
Nominal Short-Circuit Current (SCCR)	J,M	kA	65

Data calculated without hydronic kit and accessories.

FANS DATA

		NYG 0500 F
Inverter fan		
Type	type	Axial
Fan motor	type	Inverter
Number	no.	2
Air flow rate	cfm	21,189
Increased fan		
Type	type	Axial
Number	no.	2
Fan motor	type	Inverter
Air flow rate	cfm	21,189
High static pressure - maximum	in-wc	1

SOUND DATA

Without high static pressure

Size			0500
Sound data calculated in cooling mode (1)			
Sound power level	J,M	dB(A)	89,4

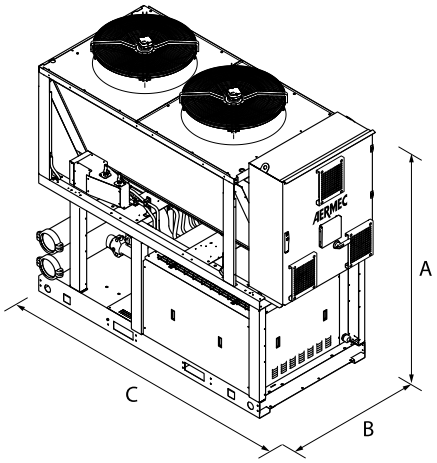
(1) Sound power calculated on the basis of measurements made in accordance with UNI EN ISO 9614-2. Sound pressure (cold functioning) measured in free field, 10 m / 33 ft away from the unit external surface (in compliance with UNI EN ISO 3744).

With high static pressure

Size			0500
Sound data calculated in cooling mode (1)			
Sound power level	J	dB(A)	-
	M	dB(A)	97,4
High static pressure - maximum	J	in-wc	-
	M	in-wc	1

(1) Sound power calculated on the basis of measurements made in accordance with UNI EN ISO 9614-2. Sound pressure (cold functioning) measured in free field, 10 m / 33 ft away from the unit external surface (in compliance with UNI EN ISO 3744).

DIMENSIONS



Size			0500
Dimensions and weights			
A	J	in	96.5
	M	in	99.6
B	J,M	in	46.9
C	J,M	in	106.9
2-pipe			
Empty weight	J,M	lbs	2,886

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