NYBI F

Air-water chiller with free-cooling

Cooling capacity 29 ton

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

DESCRIPTION

NYBI is made up of independent 31 ton modules that can be connected to each other up to a power of 276 ton. Every single module is an outdoor chiller to produce chilled water.
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 114.8 °F external air temperature. Unit can produce chilled water up to 39.2 °F .
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.

Hot water production

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

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

Unit 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 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.
Modalità 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 supervision systems with MODBUS protocol.
AERNET: The device allows the control, the management and the remote monitoring of a Chiller with a PC, smartphone or tablet using Cloud connection. AERNET works as Master while every unit connected is configured as Slave (max. 6 unit); also, with a simple click is possible to save a log file with all the connected unit datas in the personal terminal for post analysis.

GPNYB_BACK: kit with 1 anti-intrusion grid for the short side of the unit.
GPNYBI_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.
NYBI_INV LCP: LCP display allowing full access to all available information of the compressor inverter driver.
PGD1: Allows you to control the unit at a distance.
CRATE_NYB: Special crate for transport

FACTORY FITTED ACCESSORIES

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

COMPATIBILITY WITH VMF SYSTEM

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

ACCESSORIES COMPATIBILITY

Accessory	NYBI F 500
AER485P1	•
AERNET	•
GPNYB_BACK	•
GPNYBI_SIDE	•
MULTICHILLER_EVO	•
NYBI_INV LCP	•
PGD1	•

Special crate for transport

Accessory	NYBI F 500
CRATE_NYB	•

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

Accessory	NYBI F 500
KNYB	•

CONFIGURATOR

Field		Description
1,2,3,4		**NYBI**
5,6,7		**Size** 500
8		**Model**
	F	Free-cooling
9		**Heat recovery**
	°	Without heat recovery
	D	With desuperheater
10		**Coils**
	°	Aluminium microchannel
	O	Coated aluminium microchannel
	R	Copper pipes-copper fins
	S	Copper pipes-Tinned copper fins
	V	Copper pieps-Coated aluminium fins
11		**Fans**
	J	Inverter
	M	Inverter surdimensionnés (1)
12		**Power supply**
	6	230V ~ 3 60Hz
	7	460V ~ 3 60Hz
	8	575V ~ 3 60Hz
	9	208V ~ 3 60Hz
13,14		**Integrated hydronic kit**
	00	85 psi nominal
	01	300 psi nominal
15		**Hydraulic headers kit**
	A	6" manifold group - pipes in carbon steel, in accordance with ANSI B36.10, schedule number 40
	H	6" manifold group - standard pipes in carbon steel, in accordance with EN 10255

(1) Option not available with 575V power supply

PERFORMANCE SPECIFICATIONS

		NYBI F 500
Cooling performance chiller operation (1)		
Cooling capacity	ton	29.04
Input power	kW	35.82
Cooling total input current	A	57.0
EER	BTU/(Wh)	9.73
IPLV	BTU/(Wh)	18.02
Water flow rate system side	gpm	69.47
Pressure drop system side	ftH_2O	8.03
Cooling performances with free-cooling (2)		
Cooling capacity	ton	18.91
Input power	kW	4.54
Free cooling total input current	A	7.3
EER	BTU/(Wh)	49.92
Water flow rate system side	gpm	69.47
Pressure drop system side	ftH_2O	21.08

(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 / * °C; External air 35.6 °F

PART LOAD IPLV

		NYBI F 500
Part load IPLV		
100 %	BTU/W	9.73
75 %	BTU/W	13.91
50 %	BTU/W	20.84
25 %	BTU/W	22.42

ELECTRIC DATA

Size			**500**
Power supply: 230V			
Peak current (LRA)	J	A	87
	M	A	98
Minimum circuit amperage (MCA)	J	A	150
	M	A	175
Maximum overcurrent permitted by the protection device (MOP)	J,M	A	200
Power supply: 460V			
Peak current (LRA)	J	A	46
	M	A	52
Minimum circuit amperage (MCA)	J	A	75
	M	A	80
Maximum overcurrent permitted by the protection device (MOP)	J,M	A	100
Power supply: 575V			
Peak current (LRA)	J	A	36
	M	A	-
Minimum circuit amperage (MCA)	J	A	60
	M	A	-
Maximum overcurrent permitted by the protection device (MOP)	J	A	75
	M	A	-
Power supply: 208V			
Peak current (LRA)	J	A	94
	M	A	105
Minimum circuit amperage (MCA)	J	A	150
	M	A	175
Maximum overcurrent permitted by the protection device (MOP)	J,M	A	200

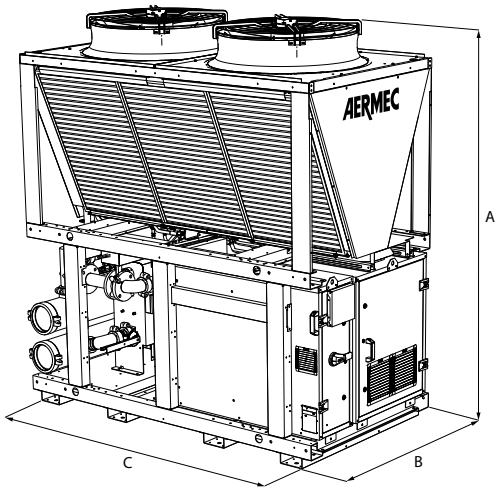
GENERAL TECHNICAL DATA

		NYBI F 500
Compressor		
Type	type	Scroll
Compressor regulation	Type	Inverter
Number	no.	2
Circuits	no.	2
Refrigerant	type	R410A
Refrigerant load circuit 1 (1)	lbs	13.2
Refrigerant load circuit 2 (1)	lbs	13.0
Oil	Type	POE
Oil charge circuit 1	gal	1.08
Oil charge circuit 2	gal	1.08
System side heat exchanger		
Type	type	Brazed plate
Number	no.	1
Maximum water flow rate	gpm	263.3
Minimum water flow rate	gpm	15.9
System side hydraulic connections		
Connections (in/out)	Type	Grooved joints
Sizes (in/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.

Size			**500**
Fan			
Type	J,M	type	axials
Fan motor	J,M	type	Inverter
Number	J,M	no.	2
Air flow rate	J,M	cfm	19,747

DIMENSIONS



		NYBI F 500
Dimensions and weights		
A	in	96.5
B	in	46.9
C	in	86.6
Empty weight	lbs	2,910
Weight functioning	lbs	3,131

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