NRG 0282-0754 F

Air-water chiller with free-cooling

Cooling capacity 58 ÷ 190 kW

- **High efficiency also at partial loads**
- **Low refrigerant charge**
- **Compact dimensions**

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 R32 gas.
Condensing coil with copper pipes and aluminium louvers, plate heat exchanger.
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 48°C external air temperature. Unit can produce chilled water up to -10 °C.
For more information refer to the selection program and to to the dedicated documentation.

Dual-circuit unit

The units are dual-circuit, to ensure maximum efficiency both at full load and at partial load.

Refrigerant HFC R32

The environmental impact of the units is reduced considerably owing to the last generation R32 (A2L) refrigerant.
Combining a reduced refrigerant load with a low global warming potential (GWP), these units boast low equivalent CO_2 values.

■ *The leak detector is supplied as per standard.*

Condensation control temperature

Fitted as standard with a device for electronic condensation control so that the unit can work even with low temperatures, adapting the air flow rate to the actual system request in order to reduce consumption.

New condensing Coils

The whole range uses copper - aluminium condensation coils with reduced diameter rows, allowing a lower quantity of gas to be used compared to traditional coils.

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.

Option integrated hydronic kit

An optional, integrated hydronic kit containing the main hydraulic components, to obtain a solution that allows you to save money and to facilitate installation.
It is available in different configurations with storage tank or with fixed pumps also inverter.

CONTROL

Microprocessor adjustment, with keyboard and LCD display,for easy access on the unit is 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:** the function can be activated with inverter fans or with DCPX which allows unit operation to be optimised at any operating point through continuous modulation of the fan speed. In addition, the use of inverter fans ensures an increase in energy efficiency at partial loads.
— **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
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.
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.
SGD: Electronic expansion that enables connecting to the photovoltaic system and heat pumps to accumulate heat in the DHW tank or in the heating system during the photovoltaic production phase and release it at times when heating demand is highest.
GP: Anti-intrusion grid.
VT: Anti-vibration supports.

FACTORY FITTED ACCESSORIES

DRE: Electronic device for peak current reduction.
RIF: Power factor correction. Connected in parallel to the motor allowing about 10% reduction of input current.
T6: Double safety valve with exchange cock, both on the high and low pressure branches.

ACCESSORIES COMPATIBILITY

Model	Ver	0282	0302	0332	0352	0502	0552	0554	0604	0654	0704	0754
AER485P1	A					•	•	•	•	•	•	•
	E	•	•	•	•	•	•	•	•	•	•	•
AERBACP	A					•	•	•	•	•	•	•
	E	•	•	•	•	•	•	•	•	•	•	•
AERNET	A					•	•	•	•	•	•	•
	E	•	•	•	•	•	•	•	•	•	•	•
MULTICHILLER_EVO	A					•	•	•	•	•	•	•
	E	•	•	•	•	•	•	•	•	•	•	•
PGD1	A					•	•	•	•	•	•	•
	E	•	•	•	•	•	•	•	•	•	•	•
SGD	E	•	•	•								

Antivibration

Ver	0282	0302	0332	0352	0502	0552	0554	0604	0654	0704	0754
Integrated hydronic kit: 00, I3, I4, P3, P4											
A	-	-	-	-	VT11	VT11	VT11	VT11	VT22	VT22	VT22
E	VT17	VT13	VT13	VT13	VT11	VT11	VT11	VT11	VT22	VT22	VT22
Integrated hydronic kit: 03, 04, K3, K4											
A	-	-	-	-	VT11	VT11	VT11	VT11	VT22	VT22	VT22
E	VT13	VT13	VT13	VT13	VT11	VT11	VT11	VT11	VT22	VT22	VT22

Anti-intrusion grid

Ver	0282	0302	0332	0352	0502	0552	0554	0604	0654	0704	0754
A	-	-	-	-	GP2 x 2 (1)	GP2 x 2 (1)	GP2 x 2 (1)	GP2 x 3 (1)	GP2 x 3 (1)	GP2 x 3 (1)	GP2 x 3 (1)
E	GP4	GP4	GP4	GP4	GP2 x 2 (1)	GP2 x 2 (1)	GP2 x 2 (1)	GP2 x 3 (1)	GP2 x 3 (1)	GP2 x 3 (1)	GP2 x 3 (1)

(1) x _ indicates the quantity to buy
The accessory cannot be fitted on the configurations indicated with -

Device for peak current reduction

Ver	0282	0302	0332	0352	0502	0552	0554	0604	0654	0704	0754
A	-	-	-	-	DRENRG502FC	DRENRG552FC	DRENRG554	DRENRG604	DRENRG654	DRENRG704	DRENRG754
E	DRENRG282FC	DRENRG302FC	DRENRG332FC	DRENRG352FC	DRENRG502FC	DRENRG552FC	DRENRG554	DRENRG604	DRENRG654	DRENRG704	DRENRG754

The accessory cannot be fitted on the configurations indicated with -
A grey background indicates the accessory must be assembled in the factory

Power factor correction

Ver	0282	0302	0332	0352	0502	0552	0554	0604	0654	0704	0754
A	-	-	-	-	RIFNRG502FC	RIFNRG552FC	RIFNRG554	RIFNRG604	RIFNRG654	RIFNRG704	RIFNRG754
E	RIFNRG282FC	RIFNRG302FC	RIFNRG332FC	RIFNRG352FC	RIFNRG502FC	RIFNRG552FC	RIFNRG554	RIFNRG604	RIFNRG654	RIFNRG704	RIFNRG754

The accessory cannot be fitted on the configurations indicated with -
A grey background indicates the accessory must be assembled in the factory

Double safety valves

Ver	0282	0302	0332	0352	0502	0552	0554	0604	0654	0704	0754
A,E	T6NRG2	T6NRG2	T6NRG2	T6NRG2	T6NRG2	T6NRG2	T6NRG2	T6NRG2	T6NRG2	T6NRG2	T6NRG2

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

CONFIGURATOR

Field	Description
1,2,3	**NRG**
4,5,6,7	**Size** 0282, 0302, 0332, 0352, 0502, 0552, 0554, 0604, 0654, 0704, 0754
8	**Operating field**
X	Electronic thermostatic expansion valve
Z	Low temperature electronic thermostatic valve
9	**Model**
F	Free-cooling
S	Free-cooling with special 3-way valve
10	**Heat recovery**
°	Without heat recovery
D	With desuperheater
11	**Version**
A	High efficiency
E	Silenced high efficiency (1)
12	**Coils / free-cooling coils**
°	Copper-aluminium / Copper-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 (2)
14	**Power supply**
°	400V ~ 3N 50Hz with magnet circuit breakers
15,16	**Integrated hydronic kit**
00	Without hydronic kit
	Kit with storage tank and pump/s
03	Storage tank with high head pump
04	Storage tank with high head pump + stand-by pump
	Kit with pump/s
P3	Single pump high head
P4	Pump high head + stand-by pump
	Kit with inverter pump/s to fixed speed
I3	Single high head pump + fixed speed inverter
I4	Single high head pump with fixed speed inverter + stand-by pump
	Kit with storage tank and inverter pump/s to fixed speed
K3	Single high head pump + storage tank + fixed speed inverter
K4	Storage tank and low head pump with fixed speed inverter + stand-by pump

(1) The size 0282-0302-0332-0352 only available in low noise versions.

(2) As standard in sizes fom 0282 to 0352

PERFORMANCE SPECIFICATIONS

NRG - A

Size		0282	0302	0332	0352	0502	0552	0554	0604	0654	0704	0754
Cooling performance chiller operation (1)												
Cooling capacity	kW	-	-	-	-	100,8	111,4	116,9	134,7	148,5	168,3	190,0
Input power	kW	-	-	-	-	31,5	35,1	38,4	43,2	49,0	58,5	67,0
Cooling total input current	A	-	-	-	-	60,0	63,0	63,0	83,0	94,0	114,0	123,0
EER	W/W	-	-	-	-	3,20	3,18	3,05	3,12	3,03	2,88	2,84
Water flow rate system side	l/h	-	-	-	-	17316	19137	20081	23139	25509	28916	32647
Pressure drop system side	kPa	-	-	-	-	43	52	44	60	72	84	85
Cooling performances with free-cooling (2)												
Cooling capacity	kW	-	-	-	-	73,2	75,6	76,6	89,6	92,2	95,1	97,5
Input power	kW	-	-	-	-	3,7	3,7	3,8	5,6	5,6	5,6	5,6
Free cooling total input current	A	-	-	-	-	7,0	6,6	6,3	11,0	11,0	11,0	10,0
EER	W/W	-	-	-	-	19,94	20,59	20,14	16,15	16,62	17,14	17,56
Water flow rate system side	l/h	-	-	-	-	17316	19137	20081	23139	25509	28916	32647
Pressure drop system side	kPa	-	-	-	-	63	76	71	65	78	90	93

(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

NRG - E

Size		0282	0302	0332	0352	0502	0552	0554	0604	0654	0704	0754
Cooling performance chiller operation (1)												
Cooling capacity	kW	58,5	64,5	71,8	81,3	98,0	108,0	112,6	131,2	144,0	162,0	181,4
Input power	kW	18,7	22,1	24,7	30,4	32,0	36,0	39,7	44,1	50,1	60,7	70,5
Cooling total input current	A	33,0	44,0	50,0	62,0	58,0	62,0	63,0	80,0	91,0	113,0	123,0
EER	W/W	3,13	2,92	2,91	2,67	3,06	3,00	2,83	2,98	2,87	2,67	2,57
Water flow rate system side	l/h	10057	11082	12338	13965	16843	18547	19341	22540	24736	27830	31164
Pressure drop system side	kPa	20	24	29	28	40	49	41	57	68	78	77
Cooling performances with free-cooling (2)												
Cooling capacity	kW	39,2	44,0	48,8	51,0	73,2	75,6	76,6	89,6	92,2	95,1	97,5
Input power	kW	0,8	0,8	1,1	1,1	3,7	3,7	3,8	5,6	5,6	5,6	5,6
Free cooling total input current	A	1,5	1,7	2,2	2,2	6,6	6,3	6,1	10,0	10,0	10,0	9,7
EER	W/W	46,65	52,31	45,70	47,80	19,94	20,59	20,14	16,15	16,62	17,14	17,56
Water flow rate system side	l/h	10057	11082	12338	13965	16843	18547	19341	22540	24736	27830	31164
Pressure drop system side	kPa	35	31	40	41	59	71	66	61	74	84	85

(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 DATA BY TYPE OF FAN

Size			0282	0302	0332	0352	0502	0552	0554	0604	0654	0704	0754
SEPR - (EN14825: 2018) High temperature with standard fans (1)													
SEPR	A	W/W	-	-	-	-	6,43	6,30	7,50	7,56	7,17	6,57	6,34
	E	W/W	7,11	6,66	6,65	6,21	6,34	6,14	7,16	7,24	7,02	6,39	6,12

(1) Calculation performed with FIXED water flow rate.

ELECTRIC DATA

Size			0282	0302	0332	0352	0502	0552	0554	0604	0654	0704	0754
Electric data													
Maximum current (FLA)	A	A	-	-	-	-	73,5	79,1	80,5	100,1	111,4	132,7	144,0
	E	A	42,3	50,7	58,0	68,7	73,5	79,1	80,5	100,1	111,4	132,7	144,0
Peak current (LRA)	A	A	-	-	-	-	276,8	282,5	200,8	224,2	226,7	287,7	353,0
	E	A	162,7	174,8	173,3	223,7	276,8	282,5	200,8	224,2	226,7	287,7	353,0

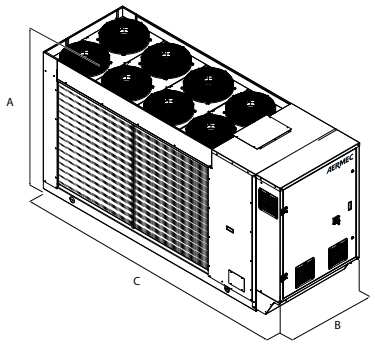
Data calculated without hydronic kit and accessories.

GENERAL TECHNICAL DATA

Size			0282	0302	0332	0352	0502	0552	0554	0604	0654	0704	0754
Compressor													
Type	A,E	type						Scroll					
Compressor regulation	A,E	Type						On/Off					
Number	A,E	no.	2	2	2	2	2	2	4	4	4	4	4
Circuits	A,E	no.	2	2	2	2	2	2	2	2	2	2	2
Refrigerant	A,E	type						R32					
System side heat exchanger													
Type	A,E	type						Brazed plate					
Number	A,E	no.	1	1	1	1	1	1	1	1	1	1	1
System side hydraulic connections													
Sizes (in/out)	A,E	Ø						2" 1/2					
Fan													
Type	A,E	type						Axial					
Number	A	no.	-	-	-	-	2	2	2	3	3	3	3
	E	no.	6	6	8	8	2	2	2	3	3	3	3
Air flow rate	A	m^3/h	-	-	-	-	36079	36079	36079	54481	54481	54481	54481
	E	m^3/h	23294	22734	26915	26915	27483	27483	27483	41449	41449	41449	41449
Sound data calculated in cooling mode (1)													
Sound power level	A	dB(A)	-	-	-	-	85,1	85,6	84,2	86,4	86,4	86,4	86,4
	E	dB(A)	73,0	73,9	74,3	74,5	81,3	82,1	76,1	77,5	77,5	77,5	77,5

(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			0282	0302	0332	0352	0502	0552	0554	0604	0654	0704	0754
Dimensions and weights													
A	A	mm	-	-	-	-	1907	1907	1907	1900	1900	1900	1900
	E	mm	1658	1658	1658	1658	1907	1907	1907	1900	1900	1900	1900
B	A	mm	-	-	-	-	1100	1100	1100	1100	1100	1100	1100
	E	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
C	A	mm	-	-	-	-	3567	3567	3567	4467	4467	4467	4467
	E	mm	3317	3317	3317	3317	3567	3567	3567	4467	4467	4467	4467

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