

NSM
1402/9603
free cooling

Air/Water chillers for outdoor installation with free cooling
 Screw compressors, shell and tube heat exchangers and axial fans
 Cooling capacity from 306÷2028kW

RI34a



- **HIGH EFFICIENCY ALSO AT PARTIAL LOADS**
- **ENERGY SAVING**
- **MICRO-CHANNEL COIL**
- **QUICK AND EASY INSTALLATION**
- **NIGHT MODE**

Features

The NSM free cooling chillers are designed and manufactured to meet air conditioning requirements in residential/commercial buildings or to meet refrigeration requirements in industrial facilities. These are outdoor units with screw compressors, axial fans, micro-channel coils, and shell and tube heat exchangers. The base, the structure and the panels are made of steel treated with rustproof polyester paint.

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 operation (mixed Free cooling and compressors, or Free cooling only), the fluid is cooled directly by the outdoor air, allowing even the complete shutdown of compressors with a significant energy saving.

Versions

- NSM_F Free cooling
- NSM_P Free cooling plus

Operating range: Work up to 50°C of outdoor air temperature at full load, depending on size and version. For further details refer to the selection software/technical documentation.

- Unit with 2/3 refrigerant circuits designed to provide maximum efficiency

at full load, ensuring high efficiency at partial loads also and ensuring continuity in case one of the circuits stop.

- The full range uses aluminium micro-channel coils, ensuring very high levels of efficiency. This allows using less refrigerant compared to traditional copper/aluminium coils.
 - The possibility of using the electronic thermostatic valve brings significant benefits, in particular when the refrigerant is working at partial loads to the benefit of energy efficiency of the unit. IT is supplied as standard from size 5202÷6402 e 8403÷9603, optional for all other sizes.
 - Standard differential pressure switch
 - Throttle valve in the hydraulic circuit for water switching on the Free-Cooling coils
 - DCPX series
 - Device for electronically controlling the series condensation, for operation even at low temperatures or in free cooling, which allows adjusting the air flow rate to actual system demand with resulting advantages in terms of consumption reduction.
 - Microprocessor adjustment, that allows isolating the condenser coils to maximise the free cooling efficiency, even in mixed Free cooling and compressor operation
- Complete, with keyboard and LCD display, for easy consultation and intervention on the unit via a menu available in

several languages.

- The presence of a programmable timer allows setting time bands of operation and a possible second set-point
- The temperature control takes place with the integral proportional logic, based on the water output temperature.
- 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.
 - **AERWEB300:** the AERWEB device allows the remote control of a chiller by means of a common PC through Ethernet connection, via a common browser; 4 models available:
AERWEB300-6: Web server for monitoring and controlling maximum 6 RS485 network devices;
AERWEB300-18: Web server for monitoring and controlling maximum 18 RS485 network devices;
AERWEB300-6G: Web server for monitoring and controlling maximum 6 RS485 network devices with integrated GPRS modem;
AERWEB300-18G: Web server for monitoring and controlling maximum 18 RS485 network devices with integrated GPRS modem;
 - **PRV3:** Allows you to control the chiller at a distance.
 - **MULTICHILLER_PCO:** 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.
 - **AVX:** Spring anti-vibration mounts.
- Accessories mounted in the factory;**
- **KRS:** Exchangers electric resistance
 - **KRSDES:** Electrical resistor for desuperheater
 - **RIFNSM:** Current power factor correction. Connected in parallel to the motor, it allows a reduction of the input current (approx. 10%).
 - **GP:** Anti-intrusion grids.
 - **AK: ACOUSTIC KIT.**
This accessory further reduce the noise.

Accessories compatibility

Mod.	vers.	1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902	4202	4502
AER485P1		•(x2)	•(x2)	•(x2)	•(x2)	•(x2)	•(x2)	•(x2)	•(x2)	•(x2)	•(x2)	•(x2)	•(x2)	•(x2)	•(x2)	•(x2)	•(x2)
AERWEB300		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
PRV3		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
MULTICHILLER_PCO		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
AVX	(1)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

Accessories mounted in the factory;

KRS	A	22	22	23	23	23	23	23	23	23	23	23	24	24	24	24	24
	E	23	23	23	23	23	23	23	23	23	23	23	24	24	24	24	24
	U	23	23	23	23	23	23	23	23	23	23	23	24	24	24	24	24
	N	23	23	23	23	23	23	23	23	23	23	23	24	24	24	24	24
KRS_DES		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
RIFNSM		1402	1602	1802	2002	2202	2352	2502	2652	2802	3002	3202	3402	3602	3902	4202	4502
GP es. (GP4V)	A	4V	4V	4V	4V	5V	5V	5V	6V	6V	6V	6V	7V	7V	8V	8V	9V
	E	4V	4V	5V	5V	5V	6V	6V	7V	7V	7V	7V	8V	8V	9V	10V	10V
	U	4V	4V	5V	5V	5V	6V	6V	7V	7V	7V	7V	8V	8V	9V	10V	10V
	N	5V	5V	6V	6V	6V	7V	7V	8V	8V	8V	8V	9V	10V	11V	11V	6V+7V
AK	(2)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

Mod.	vers.	4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
AER485P1		•(x2)	•(x2)	•(x2)	•(x2)	•(x2)	•(x3)	•(x3)	•(x3)	•(x3)	•(x3)	•(x3)
AERWEB300		•	•	•	•	•	•	•	•	•	•	•
PRV3		•	•	•	•	•	•	•	•	•	•	•
MULTICHILLER_PCO		•	•	•	•	•	•	•	•	•	•	•
AVX	(1)	•	•	•	•	•	•	•	•	•	•	•

Accessories mounted in the factory;

KRS	A	24	24	24	24	24	24+23	24+23	24+23	24+23	24+23	24+23
	E	24	24	23+23	23+23	23+23	24+23	24+23	24+23	24+23	24+23	24+23
	U	24	24	23+23	23+23	23+23	24+23	24+23	24+23	24+23	24+23	24+23
	N	23+23	23+23	23+23	23+23	23+23	24+23	24+23	24+23	24+23	24+23	24+23
KRS_DES	(1)	•	•	•	•	•	•	•	•	•	•	•
RIFNSM		4802	5202	5602	6002	6402	6503	6703	6903	7203	8403	9603
GP es. (GP9V)	A	9V	9V	10V	11V	11V	8V+4V	8V+4V	9V+5V	9V+5V	10V+5V	11V+6V
	E	11V	11V	6V+6V	6V+7V	7V+7V	9V+5V	10V+5V	10V+5V	11V+6V	11V+6V	11V+6V
	U	11V	11V	6V+6V	6V+7V	7V+7V	9V+5V	10V+5V	10V+5V	11V+6V	11V+6V	11V+6V
	N	7V+7V	7V+8V	8V+8V	8V+8V	8V+8V	8V+8V	8V+8V	8V+8V	8V+8V	8V+8V	11V+6V
AK	(2)	•	•	•	•	•	•	•	•	•	•	•

(1) Accessories to be defined for compatibility

(2) The accessory is only available for the "E/N" silenced versions

(x2) Indicates the amount to order

Choosing the unit

By appropriately combining the variety of options available, every model can be configured in order to meet all specific system requirements.

Field	Description	
1,2,3	NSM	
4,5,6,7	Sizes 1402-1602-1802-2002-2202-2352-2502-2652-2802-3002-3202 (dual circuit) 3402-3602-3902-4202-4502-4802-5202-5602-6002-6402 (dual circuit) 6503-6703-6903-7203-8403-9603 (triple circuit)	
8	Scope of application ° Standard (temperature of water produced up to +4 °C) (3) Y Low temperature (temperature of water produced from +4°C to -6°C) (4) X Electronic thermostatic valve (temperature of water produced up to +4 °C) Z Low temperature electronic thermostatic valve (temperature of water produced from +4°C to -6°C) (4)	
9	Model F Free cooling P Free cooling Plus (5)	
10	Heat recovery ° Without heat recovery D With desuperheater	
11	Version A High efficiency E Silenced high efficiency U Very high efficiency N Silenced very high efficiency	
12	Condensing coils ° Aluminium microchannel O Painted aluminium microchannel R Copper - Copper S Copper - Thinned V Epoxy paint (only free cooling coil)	Free cooling water coils Copper Aluminium Painted Aluminium Copper Copper Copper Copper - Thinned Epoxy paint (only free cooling coil)
13	Fans ° Standard J Inverter	
14	Power supply ° 400V/3/50Hz with fuses 8 400V/3/50Hz with magnet circuit breakers 2 230V/3/50Hz with fuses (6) 4 230V/3/50Hz with magnet circuit breakers (6) 5 500V/3/50Hz with fuses (7) 9 500V/3/50Hz with magnet circuit breakers (7)	
15-16	Integrated hydronic kit 00 Without hydronic kit PA Pumping unit (pump A) PB Pumping unit (pump B) PC Pumping unit (pump C) PD Pumping unit (pump D) PE Pumping unit (pump E) PF Pumping unit (pump F) PG Pumping unit (pump G) PH Pumping unit (pump H) PI Pumping unit (pump I) PJ Pumping unit (pump J) FROM Pumping unit (pump A and reserve pump) DB Pumping unit (pump B and reserve pump) DC Pumping unit (pump C and reserve pump) DD Pumping unit (pump D and reserve pump) DE Pumping unit (pump E and reserve pump) DF Pumping unit (pump F and reserve pump) DG Pumping unit (pump G and reserve pump) DH Pumping unit (pump H and reserve pump) DI Pumping unit (pump I and reserve pump) DJ Pumping unit (pump J and reserve pump)	Operation of pumps in parallel TF Double static, pressure pump (pump F) TG Double static, pressure pump (pump G) TH Double static, pressure pump (pump H) TI Double static, pressure pump (pump I) TJ Double static, pressure pump (pump J)

(3) sizes from 5202÷6402 and 8403÷9603 come standard with the electronic thermostatic valve

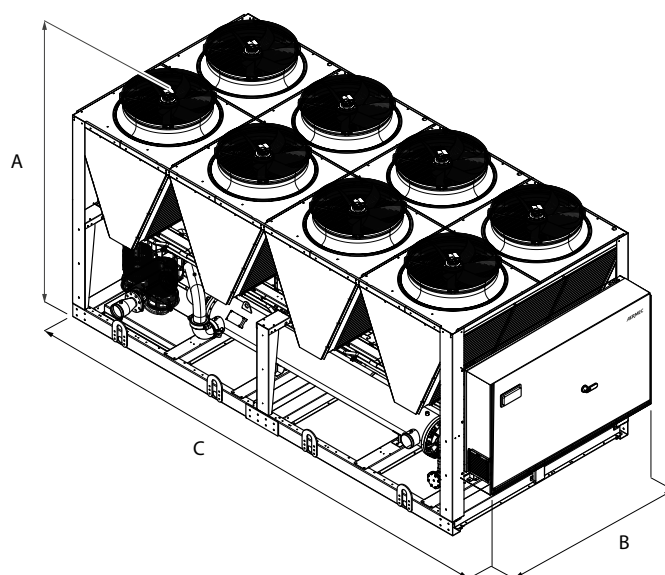
(4) The Y/Z option is not compatible with the D option

(5) The free cooling plus models can have coils only in options "°" and "O"

(6) 230V/3/50Hz available only for sizes from 1402÷2202

(7) 500V/3/50Hz available only for sizes from 1402÷3202

Dimensions and Weights



Mod. NSM Free cooling and Free cooling plus

			Vers	1402	1602	1802	2002	2202	2352	2502	2652
Height	(mm)	A	All	2450	2450	2450	2450	2450	2450	2450	2450
Width	(mm)	B	All	2200	2200	2200	2200	2200	2200	2200	2200
Length	(mm)	C	A	5160	5160	5160	5160	6350	6350	6350	7140
			E	5160	5160	6350	6350	6350	7140	7140	8330
			U	5160	5160	6350	6350	6350	7140	7140	8330
			N	6350	6350	7140	7140	7140	8330	8330	9520
			Vers	2802	3002	3202	3402	3602	3902	4202	4502
Height	(mm)	A	All	2450	2450	2450	2450	2450	2450	2450	2450
Width	(mm)	B	All	2200	2200	2200	2200	2200	2200	2200	2200
Length	(mm)	C	A	7140	7140	7140	8330	8330	9520	9520	10710
			E	8330	8330	8330	9520	9520	10710	11900	11900
			U	8330	8330	8330	9520	9520	10710	11900	11900
			N	9520	9520	9520	10710	11900	13090	13090	15470
			Vers	4802	5202	5602	6002	6402	6503	6703	6903
Height	(mm)	A	All	2450	2450	2450	2450	2450	2450	2450	2450
Width	(mm)	B	All	2200	2200	2200	2200	2200	2200	2200	2200
Length	(mm)	C	A	10710	10710	11900	13090	13090	14280	14280	16660
			E	13090	13090	14280	15470	16660	16660	17850	17850
			U	13090	13090	14280	15470	16660	16660	17850	17850
			N	16660	17850	19040	19040	19040	20230		
			Vers	7203	8403	9603					
Height	(mm)	A	All	2450	2450	2450					
Width	(mm)	B	All	2200	2200	2200					
Length	(mm)	C	A	16660	17850	20230					
			E	19040							
			U	19040							
			N								

For transport reasons, units with depth greater than 13090 mm are shipped separately. For further information, refer to the technical and/or installation manual.

Aermec reserves the right to make all the modifications deemed necessary for improving the product, including technical data.

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