

Axial fan dry cooler



FC / FI NEOSTAR range

FC NEOSTAR "City":

Compactness and high efficiency.

FI NEOSTAR "Industry":

Low pressure drop and high capacity.
Wide range up to 1,200 kW, optimized head loss.

Main applications:

air conditioning, free cooling, co-generation,
power plants, process, industry ... and cooling all kinds
of fluids compatible with copper,
with a maximum inlet temperature of 100°C.



20 1200 kW

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Description

Casing

- The casing is made of galvanized, as well as pre-painted, galvanized sheet steel RAL 9002.
- The use of stainless steel screws guarantees excellent, long-lasting corrosion resistance (standard ISO 7253) and aesthetic quality.
- All components used have successfully passed the salt mist corrosion and Kesternich tests.
- The units are delivered screwed to a wooden base.
- Full crate packaging in option.

Ventilation

- The FC/FI NEOSTAR range is equipped with 2 speed external rotor fans units 400V/3/50Hz (star or delta coupling) - Class F.
- The FCH/FIH NEOSTAR range is equipped with 2 speed external rotor fans units 400V/3/50Hz (star or delta coupling) - Class H.
- These motors are of the type 400V/3/50Hz, sealed, IP54, compliant with standard EN 60529 and permanently lubricated.
- The motor fan units are wired as standard and factory connected as follows:
 - 1 to 3 electrical boxes for the models L (motors connected in series),
 - 2 to 8 electrical boxes for the models P (motors connected in parallel).
- **We are also able to deliver the units unwired upon request (option SCU).**
- Fan guards are compliant with safety standards.
- EC type of motor fan units (MEC) is also optional available and enables optimised operation of your installation.
- Fans units with special voltage ratings (FC/FI NEOSTAR):
 - **M60**: Fan motor 400 V/3/60Hz, IP54, class F, in version 06P Ø 910 mm
 - **M26**: Fan motor 230 V/3/60Hz, IP54, class F, in version 06P Ø 910 mm
 - **M25**: Fan motor 230 V/3/50Hz, IP54, class F, in version 06P and 12P Ø 800 mm

Coil

- The dry coolers are equipped with coils with the following characteristics :
 - Copper tubes in a staggered arrangement and corrugated aluminium fins for optimum heat transfer.
 - Headers with air vents and drain plugs.
 - Connections : steel pipe, flanges.
- In option: Vinyl protection (**BAE**) or Blygold Polual XT protection (**BXT**) offering greater corrosion resistance when used in aggressive atmospheres.

Generalities

- The freezing point of the fluid must be at least 5K below the minimum winter ambient temperature of the site of installation.

Freezing risk

- A standard dry cooler cannot be fully drained simply by opening the drain fitting orifices.
- Always run the piping leak tests using the selected fluid.
- For an application with water (without anti-frost), and if the ambient temperature may drop below 0°C, the dry cooler must be suitably designed to allow complete draining of the unit (option **VID**).

Recommendations

- According to the professional regulations concerning :
 - Vents and drains
 - Surge tanks (**VEX** option)
 - Flexible connexions
 - Vibration protection
 - Correct percentage of glycol
 - Fan motor protection
- Water treatment

Kit	Factory
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M60	Fans 400 V/3/60Hz (please contact us for details).
M25	Fans 230 V/3/50Hz (please contact us for details).
M26	Fans 230 V/3/60Hz (please contact us for details).
MTH	Motors equipped with a protection thermostat. Recommended with frequent start sequences (more than 30 start sequences per hour) or when a speed controller is used.
IRP	Rotary proximity switch(es).
C2V	2-speed factory wired in the switching box.
SCU	Sans câblage usine (specify when ordering).
VEX	Surge tank (see photo).
VID	Total-draining special circuits.
BAE	Vinyl protection of fins.
BXT	Blygold Polual XT protection of fins.
RAL	Special colours.
REH	Legs extended by 240 mm (legs = 800 mm)
RE2	Legs extended by 840 mm (legs = 1,400 mm)
RE3	Legs extended by 1,340 mm (legs = 1,900 mm)
RE4	Legs extended by 1,840 mm (legs = 2,400 mm)
ECB	Full crate packaging.
MEC	Condensation pressure control with speed variation using an electronic switching motor (EC).
CMP	Motor protection cabinet.
RT1	CMP + condensation pressure control with cascade stoppage of fans.
RT2	CMP + condensation pressure control with speed variation (voltage).
RT3	CMP + condensation pressure control with speed variation (frequency).
MSK	Floor mounting kit.

Options

Ventilation

- Fans 400 V/3/60Hz (please contact us for details).
- Fans 230 V/3/50Hz (please contact us for details).
- Fans 230 V/3/60Hz (please contact us for details).
- Motors equipped with a protection thermostat. Recommended with frequent start sequences (more than 30 start sequences per hour) or when a speed controller is used.
- Rotary proximity switch(es).
- 2-speed factory wired in the switching box.
- Sans câblage usine (specify when ordering).

Coil

- Surge tank (see photo).
- Total-draining special circuits.
- Vinyl protection of fins.
- Blygold Polual XT protection of fins.

Casing

- Special colours.
- Legs extended by 240 mm (legs = 800 mm)
- Legs extended by 840 mm (legs = 1,400 mm)
- Legs extended by 1,340 mm (legs = 1,900 mm)
- Legs extended by 1,840 mm (legs = 2,400 mm)
- Full crate packaging.

Protection and control enclosure

- Condensation pressure control with speed variation using an electronic switching motor (EC).
- Motor protection cabinet.
- CMP + condensation pressure control with cascade stoppage of fans.
- CMP + condensation pressure control with speed variation (voltage).
- CMP + condensation pressure control with speed variation (frequency).
- Floor mounting kit.

Other options

Please contact us for details.



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Advantages

Selection

As the performance of a dry cooler varies a lot with each working condition, it is not possible to present a selection method in this document. Only the selection software, at your disposal on simple request, will allow you to select the dry cooler which suits the best your needs. In case of emergency, do not hesitate to consult us in specifying : capacity, maximum day/night noise level, type of fluid, ambient temperature, fluid inlet temperature, fluid outlet temperature (or flow), maximum allowed pressure drop, other external constraints.

Installation

Simple and cheap installation (steel pipes).

Servicing / Maintenance

Reduced maintenance due to direct driven fans.

Low maintenance costs.

Dry coolers advantages

Replace advantageously cooling towers :

- no air and water bacteria contamination
- no water consumption
- no steam production
- flexible use in winter time
- easy control of fluid temperature in winter time

An optimised solution (noise level, energy consumption, size, type of temperature control...) due to multiple selection possibilities.

Designation

FI⁽¹⁾ **H**⁽²⁾ **PU**⁽³⁾ **06**⁽⁴⁾ **D**⁽⁵⁾
L⁽⁶⁾ **04**⁽⁷⁾ **D5**⁽⁸⁾

- (1) **FC** = Dry cooler "City" - **FI** = Dry cooler "Industry"
 (2) **H** = Class H motor (for **PU** and **SN** version only).
 (3) **PN** = Power Normal - **PE** = Power Extra - **PU** = Power Ultra
SN = Silence Normal - **SE** = Silence Extra - **SU** = Silence Ultra
 (4) Number of poles
 (5) **D** = delta coupling - **Y** = star coupling
 (6) Fan arrangement :
L : fans in line - **P** : fans in parallel
 (7) Number of fans
 (8) Type of module

Certifications



FC / FI NEOSTAR	POWER				SILENCE				
	PN	PE	PU	FCH PU FIH PU	SN	SE	SU	FCH SN FIH SN	
Air temperature	< 70°C	< 70°C	< 60°C	< 80°C	< 70°C	< 80°C	< 80°C	< 80°C	
Diameter	Ø 800	Ø 800	Ø 910	Ø 900	Ø 800	Ø 800	Ø 800	Ø 900	
Poles	06P	06P	06P	06P	08P	12P	16P	08P	
Specifications	400V/3/50Hz	400V/3/50Hz	400V/3/50Hz	400V/3/50Hz	400V/3/50Hz	400V/3/50Hz	400V/3/50Hz	400V/3/50Hz	
Class	F class	F class*	F class	H class	F class	F class	F class	H class	
Delta (Δ)	rpm	880	910	885	910	660	435	360	687
	W max.	1940	2650	2650	2600	990	360	235	1230
	A max.	3,90	6,00	6,00	5,50	2,37	1,12	0,65	3,00
	dB(A)	80	85	88	84	72	64	60	78
Star (Y)	rpm	670	730	685	738	485	340	255	540
	W max.	1210	1650	1650	1800	580	200	105	850
	A max.	2,23	3,10	3,10	3,00	1,21	0,47	0,25	1,60
	dB(A)	75	79	80	79	67	58	51	70

* heavy-duty motor

