

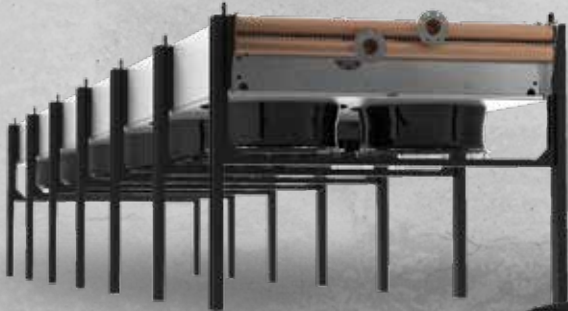
FRIGA-BOHN

FC NEOSTAR

Axial fan dry cooler
Industrial range



NEW!



FCR NEOSTAR
FIR NEOSTAR



FC NEOSTAR
FI NEOSTAR

|||| 20 - 1200 kW



- # To best meet the needs of your application, **4 versions** are available:
 - **FC Neostar**: combines **compactness** and **high efficiency**.
 - **FI Neostar**: guarantees **low pressure drop** and an **extended power range** up to 1,200 kW.
 - **FCR** and **FIR Neostar** ("forced draft" versions): offer an installation with a **low noise level** and allow the use of **EC motor(s) in high temperature applications**.
- # Coil reduces clogging and allows for efficient maintenance to ensure **long-lasting performance**.
- # **Adaptability**: more than 5,300 possible models to suit your project.

VENTILATION

- # The FC/FI NEOSTAR range is equipped with motor fans:
 - Standard motor**: 400V/3/50Hz with external rotor, two-speed (triangle and star connection).
 - "High Temperature" motor**: 400V/3/50Hz, two-speed (triangle and star connection).
 - EC motor**: electronically commutated motor fans enabling speed variation and reducing your installation's energy consumption.
- # The motor fans are wired as standard and connected in the factory, as follows:
 - 1 to 3 electrical boxes for L models (in-line motors),
 - 2 to 8 electrical boxes for P models (parallel motors).
- # We can deliver them unwired on request.
- # Special voltage ventilation (FC/FI NEOSTAR):
 - **M60** : Motor fans Ø 910 mm, 400V/3/60Hz, IP54, version 06P
 - **M26** : Motor fans Ø 910 mm, 230V/3/60Hz, IP54, version 06P

OPTIONS

- M26** Motor fans 230 V/3/60 Hz. [CONTACT US](#)
- IRP** Rotary proximity switch(es).
- SCU** Without factory wiring (specify when ordering).

AC MOTORS

- M60** Motor fans 400 V/3/60 Hz. [CONTACT US](#)
- MTH** Wiring on front terminal block of protection thermostats. Recommended for high starting frequencies (more than 30 starts per hour) or use of variable speed drives.
- C2V** Factory wiring 2 speeds in one electrical box.

NEW!

FCR Neostar and FIR Neostar

To best meet your needs, the FC and FI Neostar are now available in "forced draft" versions.

The **FCR Neostar** and **FIR Neostar** versions enable:

- # A reduced noise level.
- # The use of EC motors in high temperature applications, allowing speed variation and reducing your installation's energy consumption.

All FC / FI Neostar models and options are available for the "forced draft" **FCR** and **FIR** versions.



Options specific to the **FCR** and **FIR** versions:

OPTIONS

- RAB** Feet lowered by 300 mm ([KIT TO INSTALL](#)) (ground clearance 700 mm).
- RE3** Feet raised by 1,340 mm ([KIT TO INSTALL](#)) (ground clearance 1,500 mm).
- RE4** Feet raised by 1,840 mm ([KIT TO INSTALL](#)) (ground clearance 2,000 mm).
- GPB** Coil protection grille.

CASING

- # Robust, made of white pre-painted galvanized sheet steel.
- # The use of stainless steel fasteners gives it excellent corrosion resistance and long-lasting aesthetics.
- # All models (except A modules) offer as standard direct access to the coil between two fans for easy maintenance.
- # The units are delivered flat, screwed onto a wooden base with feet to be installed.

OPTIONS

RAL	Special colour polyester paint.
REH	Feet raised by 240 mm KIT TO INSTALL (ground clearance 800 mm).
RE2	Feet raised by 840 mm KIT TO INSTALL (ground clearance 1,400 mm).
RE3	Feet raised by 1,340 mm KIT TO INSTALL (ground clearance 1,900 mm).
RE4	Feet raised by 1,840 mm KIT TO INSTALL (ground clearance 2,400 mm).
ECB	Wooden crate packaging.

Select your coil treatment to extend your unit cooler's lifespan!
Contact us.

COILS

- # Aluminium fins with 1.9 mm (FC Neostar) or 2.12 mm (FI Neostar) spacing.
- # Combined with staggered copper tubes, the coils are very efficient and compact.
- # Manifolds with air vent and drain plug
- # Aluminium flange connection PN16.

OPTIONS

VEX	Expansion tank.
VID	Fully drainable special circuits.
HT / BT	HV / LV superimposed circuits.
AAS	Advanced Adiabatic System: adiabatic spray system.

CONTACT US

PRODUCT ADVANTAGES

- # The long-lasting performance of the FC/FI Neostar is ensured by coils with:
 - louvreless fins, limiting clogging and allowing efficient cleaning,
 - double HV/LV circuits in the same block, which avoids the usual fouling between 2 blocks and also makes cleaning easier.
- # Easy and inexpensive installation.
- # Maintenance is reduced as a result of the direct-coupled motor fans.
- # Low maintenance costs.
- # An optimized selection of different models to choose from (noise level, energy consumption, size, type of regulation, etc.).
- # Louvreless fins, limiting clogging and allowing efficient cleaning to ensure long-lasting performance.

TECHNICAL DETAILS OF OPTIONS ON AC MOTORS

AC MOTOR possible options			
WIRING AND BOX	Power	Standard:	Power wiring on terminals (no protection option integrated into this option).
		SCU	Without motor wiring (note that no regulation is possible with this option).
	Protection	CMP	Motor protection box IP54 , including one circuit breaker per motor, a fault summary and a main switch. Possibility of floor mounting support kit (MSK).
		MSK	Floor support for cabinets above H = 800 x W = 1,000
REGULATION	Simple cascade on/off	RT1 (including CMP)	Thermostatic regulation in cascade in an IP54 enclosure allowing different regulation stages to be managed: From 1 to 4 regulation stages > possibility of managing 2 circuits. From 4 to 10 regulation stages <ul style="list-style-type: none"> • Configuration of day/night operation possible. • Integrated clock. 1 or 2 temperature sensors depending on the number of separate circuits present.
	Advanced control by variation	RT3 (including CMP) Variable frequency drive	An IP54 ventilated control cabinet with a variable frequency drive including its fuse protection. A temperature sensor to manage a circuit.

TECHNICAL DETAILS OF OPTIONS ON EC MOTORS

EC MOTOR possible options			
WIRING AND BOX	Power	Standard:	Power wiring on terminals. The power, fault, bus and control wiring is carried out.
		SCM	Without motor wiring.
		CCE	Power wiring in IP54 box and protection by stage included (in L for each fan and in P for 2 fans). The bus wiring is done.
REGULATION	Simple	SE1 *	Direct control of the motors by customer 0-10 V signal: only one circuit possible (contact us in case of multiple circuits, or 4-20 mA control signal).
		SE3	Automatic speed control by temperature (setpoint can only be changed via a computer): temperature sensor included. Only one circuit possible.
	Advanced control	CE1	Automatic speed control by temperature (setpoint can be changed via the PLC) / 1 circuit: one temperature sensor and only one circuit possible (contact us in case of multiple circuits).
		CE2	Automatic speed control by temperature (setpoint can be changed via the PLC) / 2 circuits: 2 temperature sensors and 2 separate circuits possible (contact us in case of multiple circuits).
		CE3	Automatic speed control by temperature (setpoint can be changed via the PLC) / signal comparison: 2 temperature sensors and signal comparison (contact us in case of multiple circuits).
ADDITIONAL FUNCTIONS	VMA	Maximum speed setting (configuration done on each fan, via a computer). Only with standard or CCE.	
	MJN	Possibility of setting a maximum night speed (clock by signal 0/10). Only with SE1 or CE1.	

* Default option if no customer choice.

FI_(A) H_(B) PU_(C) 06_(D) D_(E) L_(F) 04_(G) D5_(H)

- (A) **FC** = Fin spacing 1.9 mm - **FI** = Fin spacing 2.12 mm
- (B) **H** = "High Temperature" motor (only for **PU** and **SN** version)
R = "Reverse" motor (forced draft)
- (C) **PN** = Power Normal - **PU** = Power Ultra
SN = Silence Normal - **SE** = Silence Extra - **SU** = Silence Ultra
- (D) Number of poles
- (E) **D** = triangle coupling - **Y** = star coupling
- (F) Fan arrangement: **L** = in-line fans - **P** = parallel fans
- (G) Number of fans
- (H) Type of module

“ Since the performance of FC NEOSTAR varies considerably depending on the operating conditions, it is therefore not possible for us to present a selection method in this document. For more information, please consult our software. ”

	FC / FI NEOSTAR POWER					FC / FI NEOSTAR SILENCE						
	PN	PU	H PU	PU _{EC} motor	R PU _{EC} motor	SN	SE	SU	H SN	SE _{EC} motor	SU _{EC} motor	
Diameter	Ø 800	Ø 910	Ø 910	Ø 910	Ø 800	Ø 800	Ø 800	Ø 800	Ø 910	Ø 800	Ø 800	
Poles	06P	06P	06P	EC	EC	08P	12P	12P / 16P	08P	EC	EC	
400V/3/50Hz	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Triangle (D)	rpm	880	885	890	250/1200	250/1200	680	440	-	650	250/1020	250/730
	W max.	1940	2480	1950	3040	3000	890	330	-	880	2400	790
	A max.	3,90	5,15	4,20	4,90	4,50	2,22	0,86	-	2,00	3,80	1,40
	dB(A)	80	88	82	54/91	53/90	73	68	-	75	49/88	49/78
Star (Y)	rpm	670	685	730	-	-	540	-	330 / 255	480	-	-
	W max.	1210	1570	1300	-	-	590	-	190 / 105	500	-	-
	A max.	2,23	2,90	2,30	-	-	1,17	-	0,39 / 0,25	1,05	-	-
	dB(A)	75	80	78	-	-	69	-	61 / 48	68	-	-

GENERAL

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

RISK OF FROST

- # A standard dry cooler cannot be completely drained by simply opening the bleed holes.
- # Always perform leak tests with the final refrigerant.
- # For application with water (without antifreeze), and if the ambient temperature can drop below 0 °C, the dry cooler must be properly designed to allow complete draining of the unit (VID option).

RECOMMENDATIONS

- # Installation according to best industry practice without forgetting:
 - Bleds and drains
 - Expansion tank(s) (VEX option)
 - Flexible sleeves
 - Protection against vibrations
 - Percentage of antifreeze sufficient
 - Electrical protection of motors
- # Connection to a totally closed water loop, eliminating any risk of corrosion by oxygenation.
- # If used with non-ferrous metal water supply lines, protect against corrosion.

