







Mini rack cooler



Range: 3.2-9.4 kW

The units in the MRAC family offer an ideal solution for cooling 19" racks, which require precise internal temperature control and 24/7 operation. In split execution, with R410Arefrigerant external condensing unit, the range extends from 3.6 to 7.9 kW. The CW version, with chilled water, reaches 4.5 kW. The MRAC unit is controlled by a dedicated software, developed within HiRef, allowing a LAN connection for up to 8 units and interfacing with an automatic door-opening system in the event of an alarm.

Main advantages

Compactness

MRAC has been designed to be hidden inside the rack cabinet and take up as little space as possible. Installable in any rack cabinet with 19"racks, it occupies the height of just 7 racks, taking up very little space in the Data Center.





Maximum MRAC redundancy with the version having two external motocondensing units

The MRAC unit with dual external motocondensing unit is available on request. This solution provides redundancy and ensures continuity of service even in the event of failure of one of the two units.

Ventilation EC

EC PLUG fans, standard on the entire range, make it possible to vary the air flow according to the thermal load. Their accurate adjustment allows an efficient use of power for ventilation and a consequent reduction of the system's PUE. Extended range speed adjustment is carried out via Modbus protocol. The "emergency speed" function enables the fan to move even if the microprocessor is switched off.











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Technological components



Multi-protocol communication interface

HiRef units can be integrated with the customer's external supervision Building Management System (BMS), using the most popular communication protocols, including Modbus RTU, Modbus/IP, BacNet,LonWorks,SNMP.



Inverter driven compressors

Inverter-driven compressors allow compressorrotationspeedandefficiency to be controlled, by modulating the frequency and the supply voltage of the motor. They are driven by electronically commutated (EC)brushless permanentmagnet (BLDC) synchronous motors. The use of these motors reduces unit consumption, noise and footprint, improves the efficiency and life cycle of the system through accurate control of speed and acceleration, resulting in less heat dissipation. In addition, inrush currents and sparks are eliminated.

Types of system



EC Radial Fans

Radial or centrifugal fans are characterised by backward blades. Air is taken in the axial direction, parallel to the rotation axis and delivered radially, perpendicular to the rotation axis. This type of fan does not require an external screw, has a high head and is suitable for use in indoor units where the air is often ducted and recirculated. They are driven by electronically commutated (EC) brushless permanent-magnet (BLDC) synchronous motors. The use of these motors reduces unit consumption, noise and footprint, improves the efficiency and life cycle of the system through accurate control of speed and acceleration, resulting in less heat dissipation. In addition, inrush currents and sparks are eliminated.



AIR/AIR



Additional benefits

- Coil with highly efficient hydrophilic fin and aluminum frame
- A version is available for low outdoor airtemperatures
- Compressor with brushless inverter technology available for 7kW version
- Condensate drain pan made from stainless steel AISI430
- Electrical and rapid control connections
- Completely insulated panelling
- Air filter type G3

Technical table

MRAC DX		0035	035B	0070	070 (INVERTER)
AIR	TEMPERAT	TURE30°C - RELATIVEHU	IMIDITY 35% / OUTDOOR	AIR TEMPERATURE35°C	
COOLING CAPACITY	kW	3.7	3.2	4	8.8
SHR		1	1	1	0.83
EER		3.58	3.18	3.73	2.73
TOTAL POW ERINPUT	kW	1.3	1.4	1.5	4
AIR TEMPERATURE35°C - RELATIVEHUMIDITY 30% / OUTDOOR AIR TEMPERATURE35°C					
COOLING CAPACITY	kW	4	3.6	4.7	9.4
SHR		1	1	1	0.86
EER	-	3.78	3.43	4.22	2.86
TOTAL POW ERINPUT	kW	1.3	1.4	1.5	4.1
AIR FLOW INTERNAL UNIT	m³/ h	915		1330	
AIR FLOW EXTERNAL UNIT	m³/ h		160 0		5100
POWER SUPPLY INTERNAL UNIT	-	230/1/50			
POWER SUPPLY EXTERNAL UNIT	-	230/1/50			
SOUND PRESSURE LEVEL at 2 meters free field INTERNAL UNIT	dB	62		66	
SOUND PRESSURE LEVEL at 10 meters free field EXTERNAL UNIT	dB		34		46
DIMENSIONS INTERNAL UNIT [LxHxD]	mm	485×300×600			
DIMENSIONS EXTERNAL UNIT[LxHxD]	mm	776×540×320			1305×648×495

Performance datafor size 035B relating to operation with only one motocondensing unit.|Totalabsorbed power relating to indoor unit and motocondensing unit.| Also available with 60 Hz power supply.



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