MIC

Air-water chiller

Cooling capacity 3 kW

- **Easy and quick to install compact**
- **Separable hydraulic circuit and refrigerant**
- **AISI304 stainless steel tank and pump impeller**
- **R513A refrigerant gas in A1 class with low GWP**

DESCRIPTION

Air-cooled modular refrigerant to produce chilled water, designed and created to satisfy the cooling needs of industrial buildings.
Unit with alternative hermetic compressor and coaxial heat exchanger positioned in a 20-litre AISI304 stainless steel tank.
The base, the structure and the panels are made of galvanized steel treated with polyester paint RAL 9003.

FEATURES

Operating field

Operation at full load up to 45 °C external air temperature. Unit can produce chilled water 20 °C up to -10 °C.

Refrigerant circuit

The refrigerant circuit is in the upper part of the machine and can be lifted up to be cleaned, or completely removed if a broken module needs to be replaced, leaving the hydronic part in place to ensure the system works properly.

Hydraulic components

Standard configuration: is fitted as standard
— One differential pressure switch
— An interception tap on the heat exchanger, used to remove the upper part of the machine or to balance the load.
— An AISI304 STAINLESS steel tank
— Connection pipes made of copper
— Brass valves
— 4 STAINLESS steel grooved joints and 2 caps. The water input and output can only be defined in a unit without pumps by the client at the installation stage.

In the configuration with pumps, as well as the components supplied as standard, there is a choice between two pumps with different head.

Modularity

Thanks to its modular construction, the installation can be adapted to suit specific system development needs whilst guaranteeing improved safety and reliability.
As a result, the cooling capacity can be easily increased over time, at a limited cost.
The modules are easy to install and link together from the hydronic point of view, thanks to the connections with grooved joints.

CONTROL

Microprocessor adjustment, with keyboard and LCD display,for easy access on the unit is a menu available in several languages.

Modularity

There are 3 solutions for dealing with several modules:

Solution 1: no interconnection between modules
Each module works independently on its own set point.
If it is necessary to switch all the machines on or off, each module must be operated.

Solution 2: through remote ON-OFF contact (Master/Slave)
With this solution, several modules can be connected in parallel and, where necessary, the start-up and switch-off of all modules can be coordinated with a single command.
The electrical panel has a contact for remote ON/OFF, which can be used to connect several modules in parallel, so that the start-up of the first unit (Master) results in the cascade start-up of all subsequent connected units (Slaves).
Each module works independently on its own set point.

Solution 3: via an external supervisor (BMS)
The modules can be controlled with an external supervisor with this solution using a ModBus (accessory) communication module.

ACCESSORIES

ETHERNET-RS485: Gateway to change a Modbus RS485 serial into a TCP-IP serial.
FB_MIC: Air filter to protect the coils. Formed of a frame and a composite baffle in micro-expanded aluminium mesh, with particularly low pressure drops.
MIC_RUE: Swivel wheels with locking system

MODBUSMICS: This accessory allows you to manage up to multiple units, making available a serial in ModBus RTU protocol on RS485, for supervision with an external BMS.

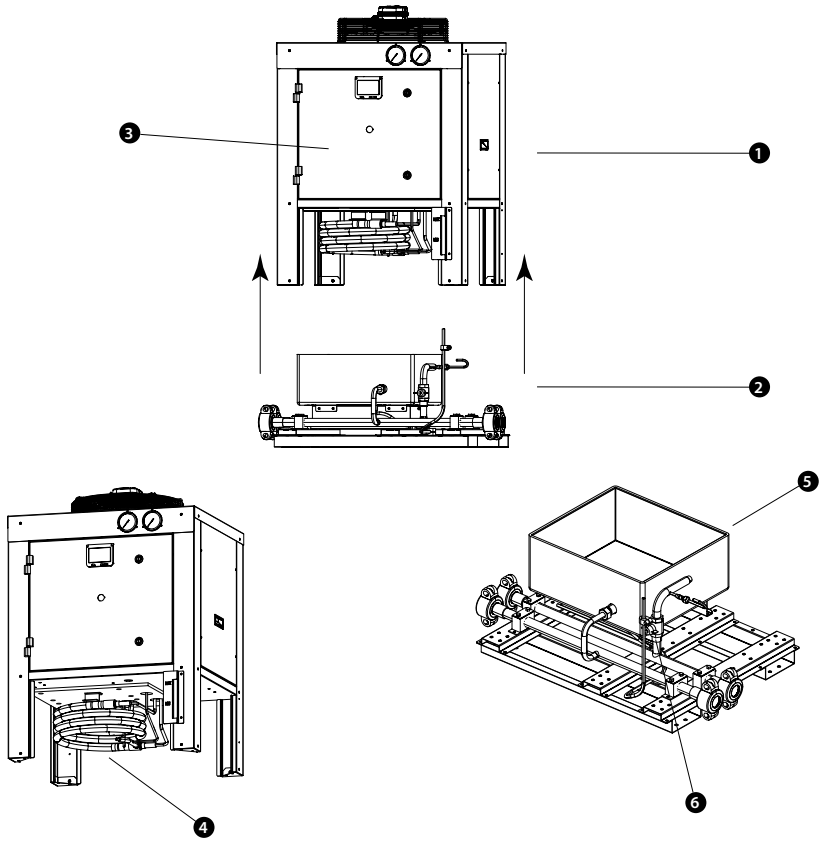
DCPXMICS: Device for condensation temperature control, with continuous speed modulation of fans by using a pressure transducer.

ACCESSORIES COMPATIBILITY

Accessory	MIC01°	MIC01P1	MIC01P2
ETHERNET-RS485	•	•	•
FB_MIC	•	•	•
MODBUSMICS	•	•	•

Accessory	MIC01°	MIC01P1	MIC01P2
DCPXMICS	•	•	•

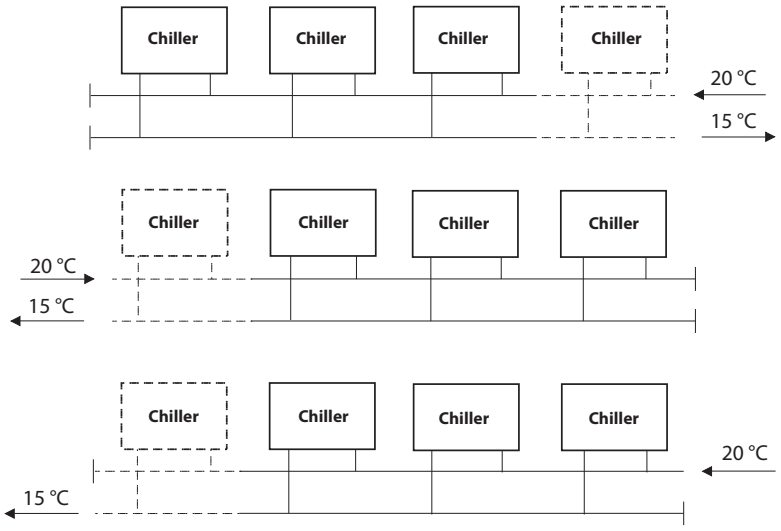
SEPARABLE HYDRAULIC CIRCUIT AND REFRIGERANT

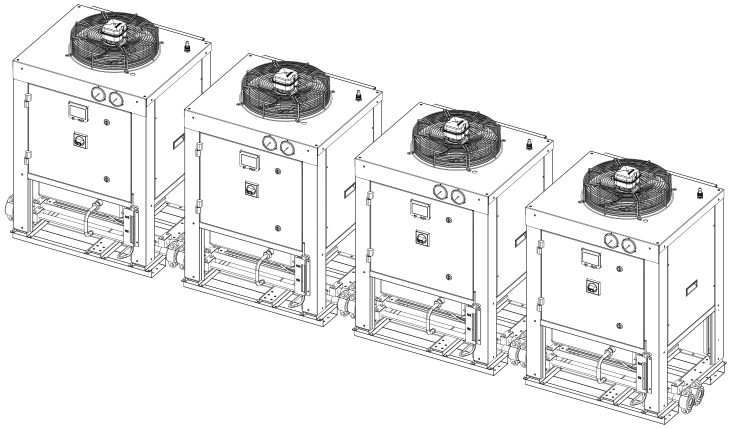


Key:
1 Refrigerant circuit
2 Hydraulic circuit
3 Electric power board
4 Conduit pipe evaporator
5 AISI304 stainless steel tank
6 Shut-off tap

MODULARITY OPTIONS

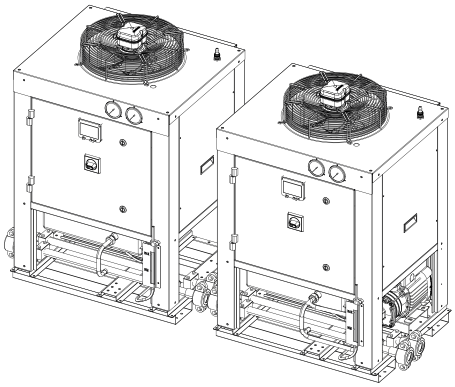
Units without pumps

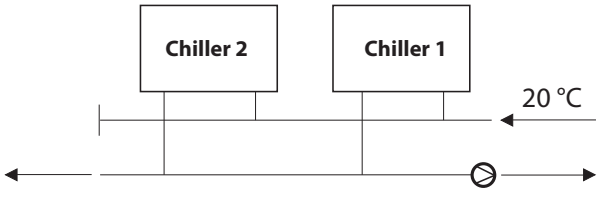




- *Each machine is supplied with 4 grooved joints and two caps (machine input and output defined by the user depending on where the caps are positioned).*

Several units and only one with a pump





- *The chiller with pump needs to be the first in the «chain» and the water entry position is secured.*

CONFIGURATOR

Field	Description
1,2,3	**MIC**
4,5	**Size** 01
6	**Version**
°	Cooling only
7	**Coils**
°	Copper-aluminium
V	Copper pieps-Coated aluminium fins
8	**Fans**
°	Standard
F	Phase cut
9,10	**Integrated hydronic kit**
00	With storage tank without pumps
P1	With storage tank and low head pump
P2	With storage tank and high head pump
11	**Power supply**
M	230V ~ 50Hz (without Schuko plug)
N	230V ~ 50Hz (with Schuko plug)

PERFORMANCE SPECIFICATIONS

		MIC01°	MIC01P1	MIC01P2
Cooling performances 20 °C / 15 °C - (14511:2022) (1)				
Cooling capacity	kW	3,0	2,9	2,9
Input power	kW	1,3	1,5	1,6
Input current	A	5,8	7,7	8,7
EER	W/W	2,31	2,01	1,83
Water flow rate system side	l/h	516	483	469
Pressure drop system side	kPa	10	-	-
Useful head system side	kPa	-	328	529

(1) Data EN 14511:2022; System side water heat exchanger 20 °C / 15 °C;; External air 32 °C

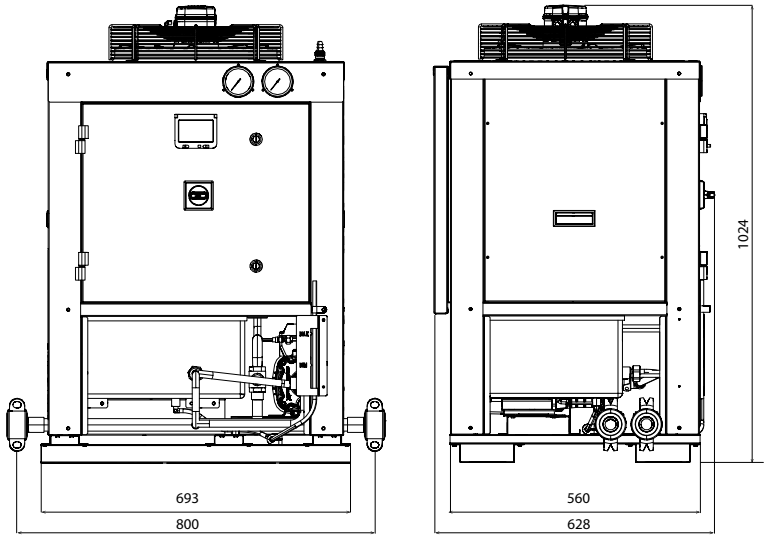
ELECTRIC DATA

		MIC01°	MIC01P1	MIC01P2
Cooling only mode				
Maximum current (FLA)	A	9,0	12,1	13,4
Peak current (LRA)	A	30,0	33,0	34,3

GENERAL TECHNICAL DATA

		MIC01°	MIC01P1	MIC01P2
System side hydraulic connections				
Sizes (in/out)	Ø		1"	
System side heat exchanger				
Type	type		Coassiale	
Number	no.	1	1	1
Water content	l	0,8	0,8	0,8
Minimum water flow rate	l/h	100	100	100
Maximum water flow rate	l/h	1200	1200	1200
Hydronic kit				
Storage tank capacity	l	20	20	20
Fan				
Type	type		Axial	
Fan motor	type		Asynchronous	
Number	no.	1	1	1
Air flow rate	m^3/h	1500	1500	1500
Total fan input power	W	120	120	120
Total fan input current	A	0,4	0,4	0,4

DIMENSIONS



		MIC01°	MIC01P1	MIC01P2
Dimensions and weights				
A	mm	1024	1024	1024
B	mm	628	628	628
C	mm	800	800	800

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