

IT COOLING

DIRECT EXPANSION AIR CONDITIONING UNITS



i-AX2-G02-M0

Full inverter air conditioning for metrology rooms and laboratories

From 11 to 16 kW

IT COOLING

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i-AX2-G02-M0



Family overview

System and target

Main components

Remote condenser

Configurations

Control accuracy

Operating limits

Full features

Optional accessories

Control system

Selling points

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CLOSE CONTROL

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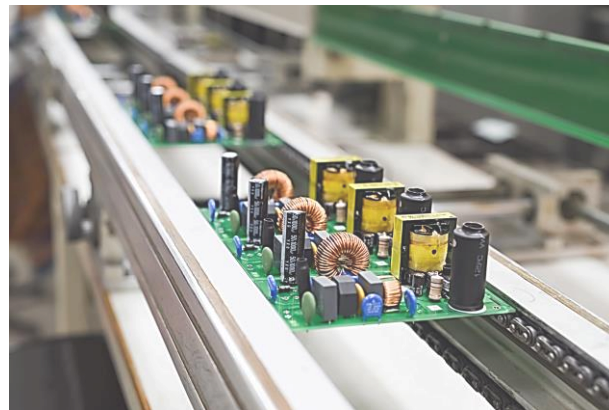
Operating limits

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System and Target

i-AX2-G02-M0



- ✓ Direct expansion unit for indoor perimetral installation.
- ✓ Remote air-cooled condenser for **optimal matching** with i-AX2-G02-M0.

GX-Z



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Main components

7" Touch-screen display (opt)

for control and monitor of
operating and alarm status

Electronic Expansion Valve

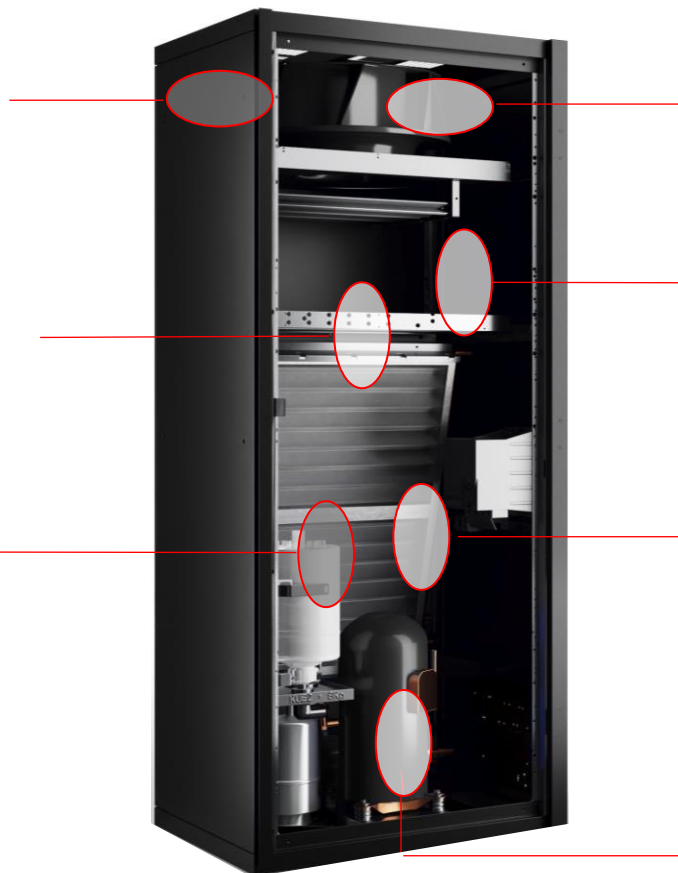
for power cooling wide modulation

Humidifier

Modulating steam humidifier with
immersed electrodes fitted with
safety and running accessories.

Electric heater

Electric heater consisting of finned
aluminium elements, ensuring low
surface temperature and deleting
the air ionization problems



Variable-speed EC fans

wing profiled, single suction
with composite material
impeller

Electrical panel

with power circuit
components and Evolution+
control

Evaporator

copper tubes and aluminum
fins with hydrophilic
treatment that assure the
condensate water drop

Full inverter compressor

allows for the refrigeration power
modulation based on the real needs

Main components – EC centrifugal fans

- Wing profiled, single suction with composite material impeller
- Fans speed control with proportional signal 0-10V
- Available external static pressure from 20 Pa up to max ESP adjustable with air flow rate



■ **Variable speed drive**

■ **Extreme reliability and durability**

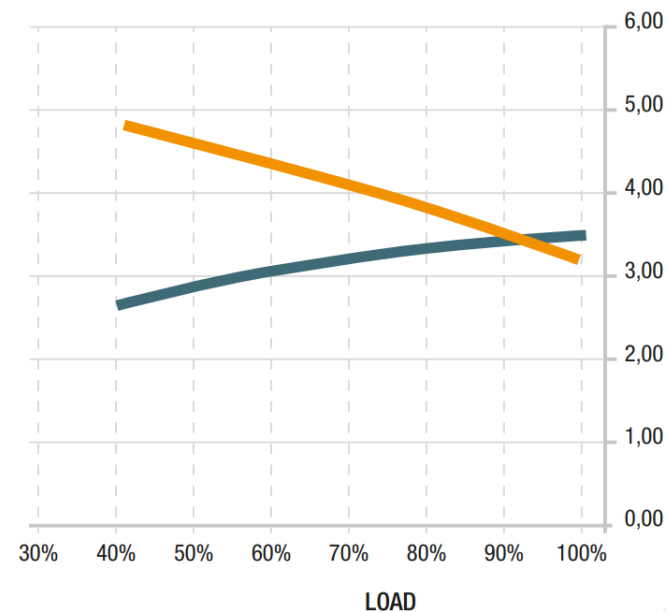
■ **High efficiency motor**

Main components – Inverter compressor

- **No in-rush current**
- **Energy saving** compared to the traditional on/off system
- **More reliability** thanks to the continuous operation



— EER ON/OFF unit
— EER FULL INVERTER unit



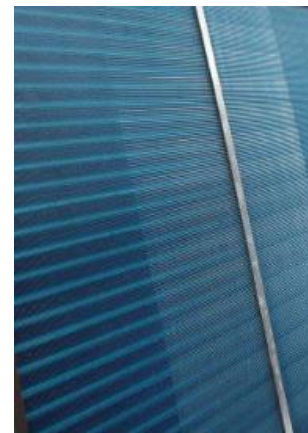
Main components – Humidifier



- **Modulating** steam humidifier with immersed electrodes fitted with safety and running accessories.
- The immersed electrodes in the water work as an electrical resistance and overheats to produce steam
- Steam production up to 5 kg/h

Main components – Cooling section and Refrigerant circuit

- Finned pack with **hydrophilic treatment** that ensures optimal draining of the condensate water and high thermal conductivity
- Not favor the growth of micro-organisms
- Combined **temperature** and **humidity** sensor on air intake with function of control and adjustment



- Electronic expansion valve
- Liquid and humidity sight glass
- Pressure transducer
- Pressure relief valve on liquid receiver

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Remote condenser – GX-Z

Frame

Full aluminium frame
for outdoor installation

Condenser

Fully-aluminium
microchannel
condensing coil



LT kit (opt.)

Working condition up to -45 °C

Electrical panel

with power circuit
components and IP44
enclosure class

Variable-speed AC/EC

Axial fans with sickle-shaped
blades, fan guard and
optimized for low noise levels

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Configurations

UNDER

With **bottom air supply** in the floor void, and top air return. For rooms with raised floor



OVER

With **top air supply**, ducted, or direct in the ambient, and air return through the frontal grill. For rooms with normal floor

Configurations

MODEL	012	018
SIZE	E2	E2
TOTAL COOLING CAPACITY* [kW]	11.1	15.80
SENSIBLE COOLING CAPACITY* [kW]	11.1	14.55
SHR*	1	0.92
EER* 100% load	3.78	3.26

*Air condition 24°C 45%, RH 45°C condensation

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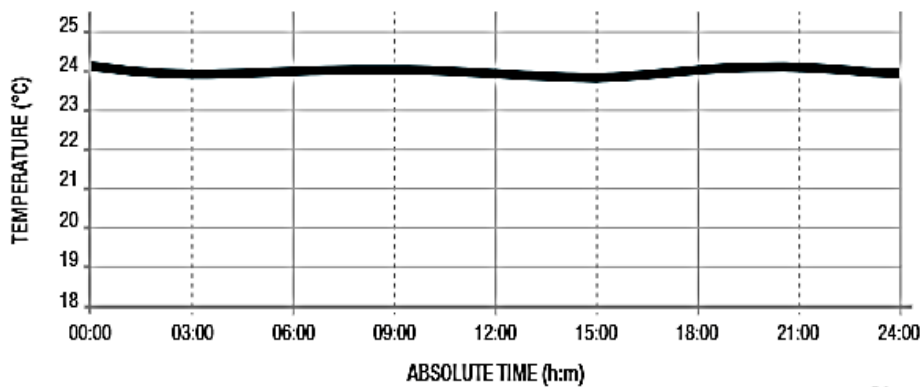
Optional accessories

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Control accuracy

MINIMUM OSCILLATIONS

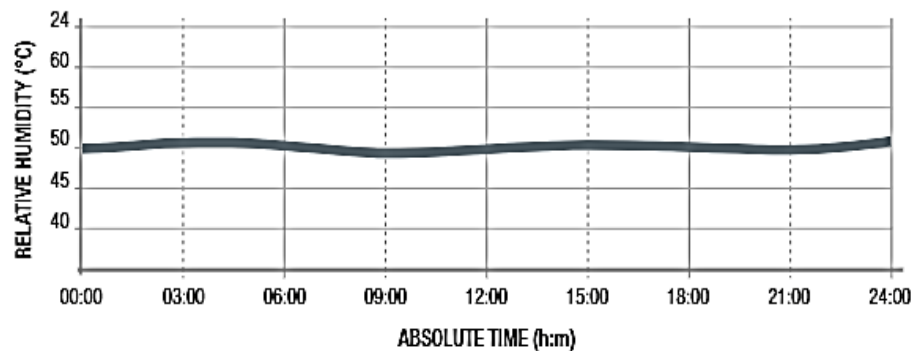


Temperature

$\pm 0.3^{\circ}\text{C}$

Humidity

$\pm 2\% \text{ RH}$



Control accuracy

HOW TO ACHIEVE THIS PRECISION

Combination of:

- ✓ **modulating** hot gas reheating
- ✓ **modulation** of cooling capacity by the inverter compressor
- ✓ accurate and **continuous adjustment** of steam production

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**ROOM AIR
CONDITIONS**

MAX.

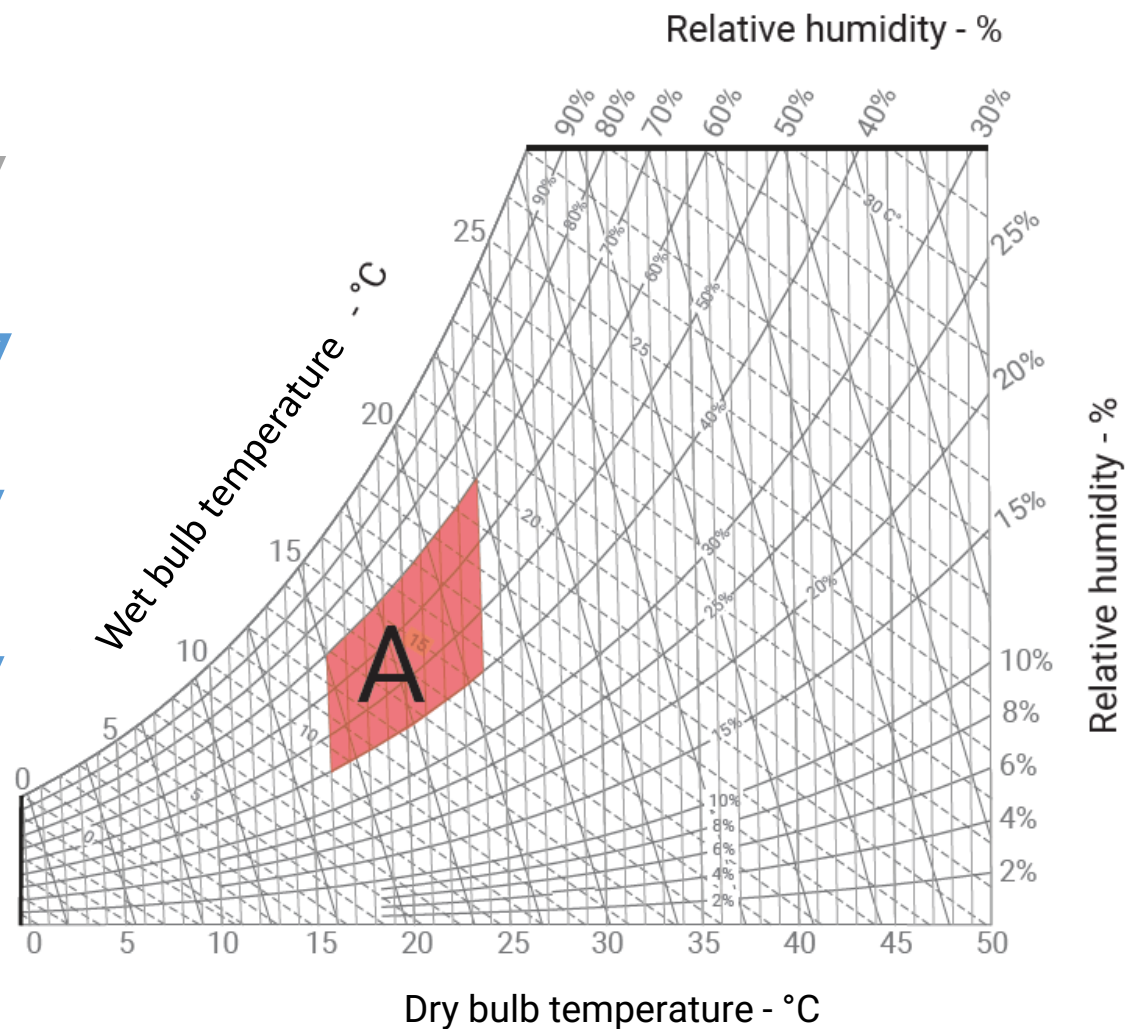
MIN.

24°C

16°C

70 % RH

40 % RH



Operating limits

OUTDOOR AIR TEMPERATURE LIMITS

	MAX.	MIN.
Std.	46 °C	-35 °C
LT kit	46 °C	-45 °C
Only AC fans		



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Full features

Equipment included in the std configuration



Electronic expansion valve

The electronic expansion valve is for precise control of overheating in the various environmental conditions.

Water leakage detector

The system includes an electronic relay installed in the electrical panel of the unit and a water detector.



Clogged filter sensor

The system includes a differential pressure switch installed in the electrical panel or in the front of the indoor unit and the plastic hoses for the relief of the pressure upstream and downstream the air filters.

Temperature probe on air return/delivery

The unit is equipped with a combined temperature / humidity probe on the air intake, used for adjustment, and a NTC probe on the air delivery.



Full features

Equipment included in the std configuration



Electric heaters

Electric heater consisting of finned aluminum elements, ensuring low surface temperature and deleting the air ionization problems.

Humidifier

Modulating steam humidifier with immersed electrodes fitted with safety and running accessories.



Compressor soundproof jacket

The system consists of a soundproof jacket for each compressor to reduce the sound level of the unit.



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Optional accessories – Remote T/H probe (P071 / P072 / P073 / P074)



- ✓ In addition to the on-board temperature probes, the unit controller can manage **up to 4 remote T/RH probes**, to measure the return and the delivery air temperature in different positions
- ✓ **Customer can choose where to install the additional probes** to achieve best measurement results
- ✓ The probes that are enabled, contribute to the calculation of the return and delivery temperature according to:
 - Temperature of the first probe enabled
 - Average of the read temperatures
 - Highest temperature among those read
 - Lowest temperature among those read

Optional accessories – KIPlink technology (5891)



KIPlink: **LOCAL** and **REMOTE** MONITORING FUNCTIONS

Monitor and control the unit from a LAN device (PC, laptop, mobile phone) with a simple web browser

1

PROXIMITY SMART KEYBOARD **WI-FI**

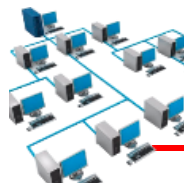


Available via MEHITS APP



2

LOCAL MONITORING LAN via TCP/IP



3

REMOTE FROM ANYWHERE

Same as LOCAL via VPN



Customer VPN

Secure accessibility to LAN
(cyber security in charge of customer)



Ethernet

Optional accessories – Touch display (A35B)



- ✓ **7" Touch-Screen** graphic display with 16.7 million colors
- ✓ The Display is equipped with a MicroUSB port for the service connection
- ✓ **Quick and intuitive** navigation
- ✓ **Multi-language** choice

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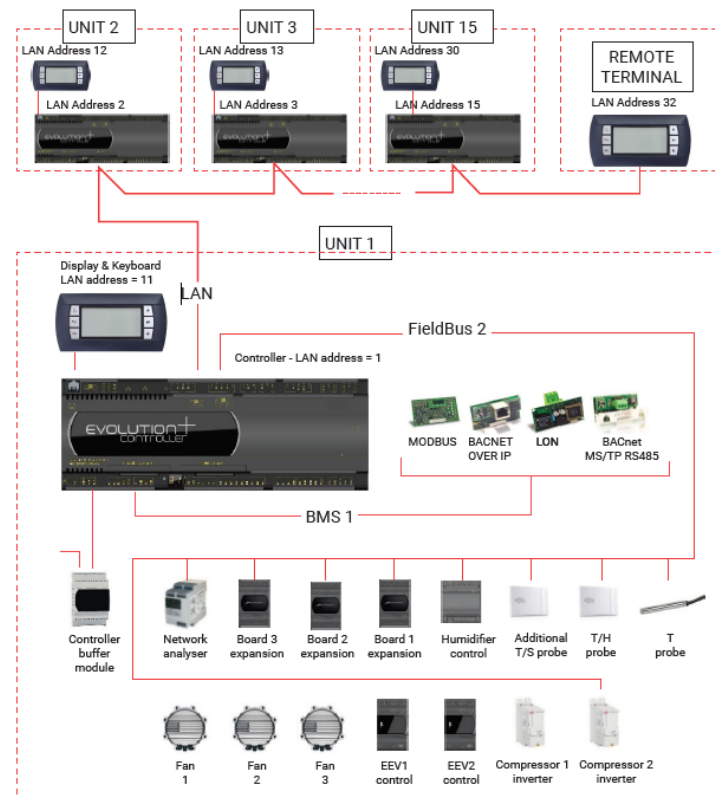
Control system - Microprocessor



- ✓ The unit is equipped with the controller connected to a 6 keys **keyboard** display or Touch screen
- ✓ The controller disposes of a “**flash**” **memory** that preserves the information even in absence of power supply.
- ✓ **Management** of LAN network up to 15 units
- ✓ Enables communication with the **modern buildings BMS** systems with the following protocols: MODBUS, LON, BACNET MS/TP RS485, BACNET OVER IP

Control system – Lan connectivity

- LAN network **up to 15 units**: each unit with the same software version
- **Balance operating hours** among the different units by rotating the reserve unit (Stand-by)
- **Turn-on the reserve unit in case other units off** due to alarm, maintenance or power feed interruption
- **Turn-on reserve unit to offset the excessive thermal load**
- Checking up to 10 units with a single user terminal (shared user terminal)



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R HFC R410A

VAR. AIR FLOW

HUMIDIF.

DEHUMID.

RE-HEAT

INVERTER

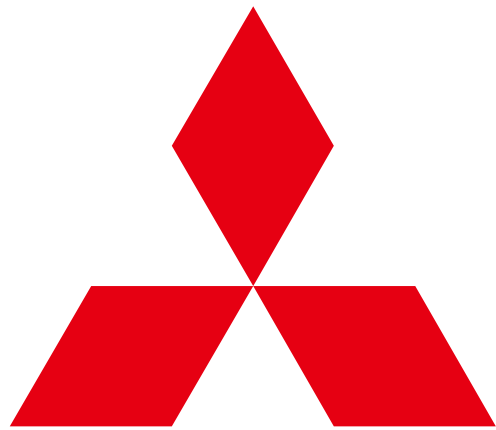
EEV

SELLING POINTS

- **Rich** equipment
- **Precise** temperature and humidity control: $\pm 0.3^{\circ}\text{C}$ and $\pm 2\%$ RH
- **Full inverter** technology
- EER up to 3.78*
- **KIPlink** optional
- **7' Touch screen** display optional
- Flexibility: upflow or downflow

*full load, Air condition at 24°C 45% RH, 45°C condensation





**MITSUBISHI
ELECTRIC**

Changes for the Better