

mitsubishi electric
HYDRONICS & IT COOLING SYSTEMS S.p.A.

COMFORT

AIR HANDLING UNITS

CVAIR

COMPACT AIR HANDLING UNIT
FROM 3000 TO 20000 m³/h



CVAIR



Nowadays we spend most of our time in indoor environments. The fresh air treatment is the key to achieving better comfort. CVAIR is the new Climaveneta compact and pre-configured Air Handling Units from 3000 to 20000 m³/h **for complete air conditioning of small/medium volume environment (cooling, heating, humidification and dehumidification) with air renewal up to 100%.**

THE SERIES

Partial or full fresh air AHUs
7 sizes in 3 versions: Basic (C), Intermediate (I) and Boosted (B)
Hydronic air treatment coil

WIDE CAPACITY RANGE



CVAIR AR All Recirculation

Airflow from 3000 to 20000 m³/h
Cooling capacity from 10 to 125 kW



CVAIR MF Mixing & Free Cooling

Airflow from 3000 to 20000 m³/h
Cooling capacity from 10 to 125 kW



CVAIR HR/P Plate heat exchanger

Airflow from 3000 to 15000 m³/h
Cooling capacity from 20 to 150 kW

PERFECT INTEGRATION WITH CLIMAVENETA SYSTEMS

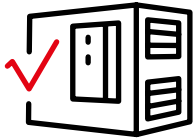
The range is equipped with a hydronic air treatment coil, optimized to work in synergy with Climaveneta units such as i-NX2 / i-NX2-N.





Groundbreaking performance

CVAIR brings brilliant performance, operating **down to -20°C** in heat pump mode.



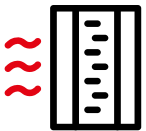
Standardized and pre-configured range

The concept of the new air handling unit CVAIR is based on targeted design and the use of standard components, which allows optimization of each production step and assures high quality level and reliability.



Air quality

Thanks to a complete range of filters and technologies (**electronic filters, PCO lamps and CO₂ probe**) CVAIR is the cutting-edge solution for air sanitization.



Improved casing performance

The insulation of the unit is significantly **improved thanks to** the new structure based on self supporting panels **which drastically improve the thermal bridging effects compared to classic structures with aluminium profiles.**



Complete Plug&Play solution

The CVAIR units are fully Plug&Play solutions equipped with an advanced and proprietary controller developed by MEHITS S.p.a. Able to manage both ventilation and heating/cooling demands, the controller exploits at best the energy coming from the coupled Climaveneta units.



Quick selection and quotation

Thanks to standardized design, the new CVAIR can be easily selected within APPLY ME in a few simple steps, always keeping high versatility of capacity and high configurability.

CVAIR: fully dedicated to comfort

Complete solution for:

- ✓ COOLING
- ✓ HEATING
- ✓ AIR FILTRATION
- ✓ HUMIDIFICATION and DEHUMIDIFICATION
- ✓ AIR RENEWAL

- Industrial buildings
- Warehouses
- Supermarket and retail
- Cinemas and theatres
- Conference rooms





Technological Choices

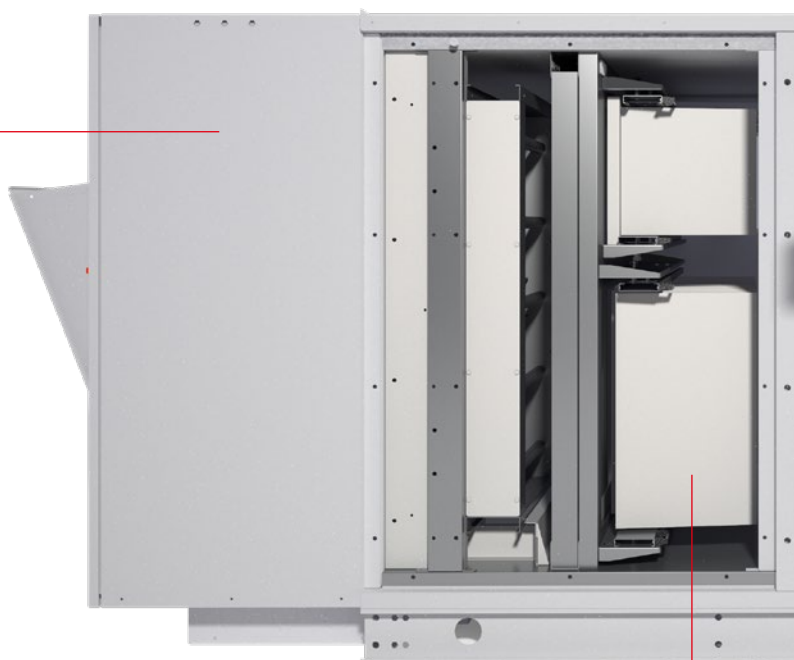
CVAIR AR and MF

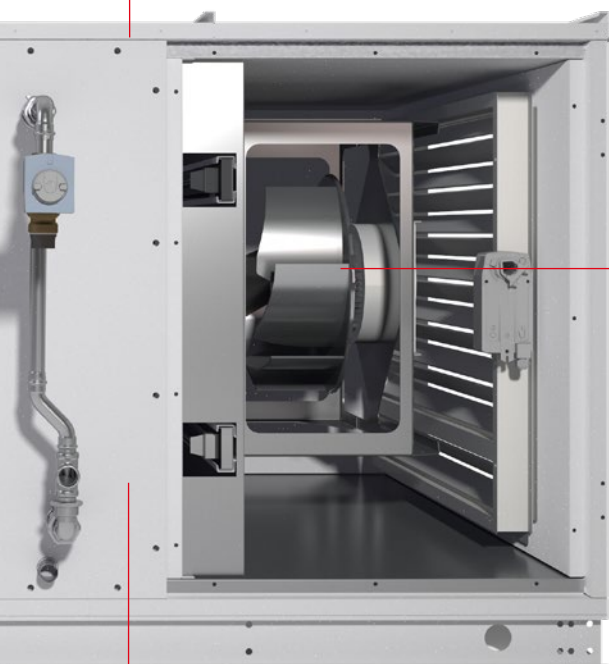
Control panel

Built-in control panel with integrated ventilation system always provided onboard, to ensure the maximum safety against overheating, refrigerant gas stagnation, condensation on electrical component. Thanks to AIR 3000 +, the control software fully developed by MEHITS, the management of both the ventilation and the cooling/heating demand are optimized.

Filters

Prefilters + rigid bag filters with side withdrawal for gross and fine filtration.





Structure

Self-supporting structure with sandwich panels:

- Panel thickness 60mm;
- Polyurethane insulation as standard to guarantee **high thermal insulation**;
- Smooth RAL7035 pre-painted external panels;
- Galvanized steel internal panels.

EC Plug fans

Supply and return (according to the configuration) plug fans with brushless EC motors, to ensure the best efficiencies and highest energy savings. They manage constant airflow or constant pressure controls, as well as the variable airflow operation.

Air treatment coil

The hydronic air treatment coil, from 10 to 125 kW, designed according to the MEHITS standards optimized to work with Climaveneta chillers or heat pumps.

Technological Choices

CVAIR HR/P

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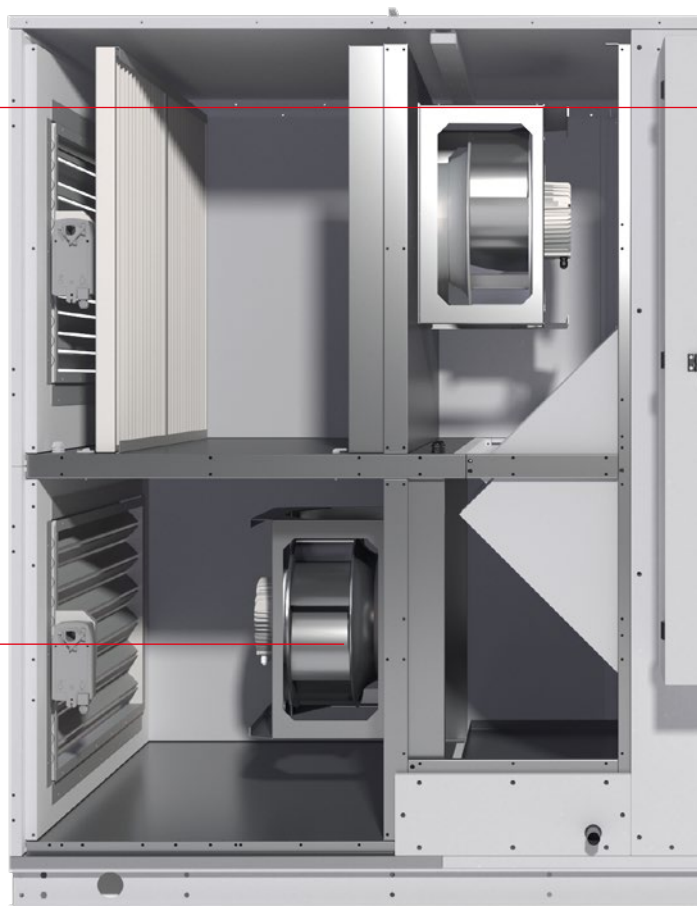


Plate heat recovery

High efficiency plate heat exchanger for energy recovery between the fresh and the return air. The system has been designed to avoid high pressure drops and satisfy the ErP efficiency limits. Complete separation between supply and return air flows, with no risk of contamination.



Air treatment coil

The hydronic air treatment coil expansion, from 20 to 150 kW, designed according to the standards optimized to work with Climaveneta chillers or heat pumps.

Flow Management

SINGLE FLOW MANAGEMENT

AR All Recirculation | 100% Recirculated air

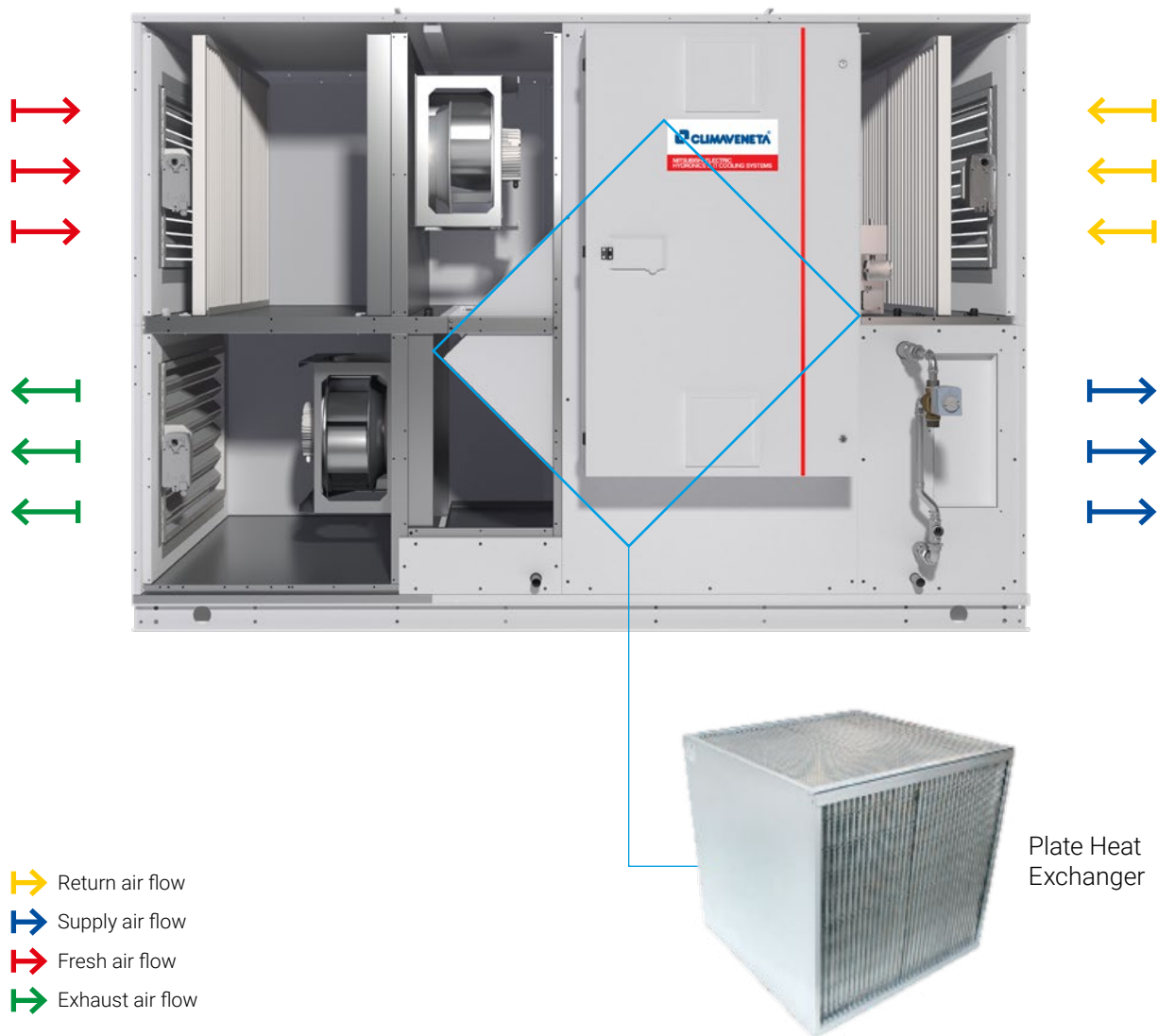


MF Mixing and Free cooling | Partial and full fresh air, Free cooling



DOUBLE FLOWS MANAGEMENT

HR-P **Heat Recovery – Plate heat ex.** | Full fresh air, Free cooling



Accessories

We supply high
quality accessories

The main objective is to ensure high levels of customer satisfaction.
Continuous upgrade of the units' performance and the use of quality accessories
can contribute in extending the life cycle of the plant.



Air quality control in
the environment with
CO₂ probe



Pre-heating and
re-heating electric or
hot water coils



BMS system
connections

THE NEW CVAIR RANGE HAS BEEN DESIGNED WITH EXCELLENCE TO SATISFY THE SYSTEM AND TECHNOLOGY REQUIREMENTS OF MODERN BUILDINGS

The main objective is to meet every customer needs, a wide range of accessories makes the new unit the perfect solution for any installation requirements.

- **2- or 3-way mixing box for air recirculation**

- **Roof**

Aluminum roof for outdoor installations

- **Steam humidifier section**

Additional section equipped with with immersed electrodes which produces steam to control the humidity level of the rooms.

- **Dampers for fresh air intake, supply, return and exhaust airflows**

- **High pressure fans**

Upated fans available for both supply and return

Solutions for perfect Air Sanitization

Active Sanitization System with Photocatalytic Oxidation



The active sanitizing system features a special UV-C lamp which uses the Photocatalytic oxidation process to reduce the microbial load airborne (such as bacteria,

molds, allergens, odors, organic and volatile compounds, ultra-fine powders), in order to make your environment a healthier living place.

SUPERMARKETS AND FOOD CHAINS

It has been proven that the use of this technology not only increases air quality, but also increases the duration of food freshness because the bacteriological load in the air is reduced.

HOTELS, GYMS & RESTAURANTS

Reduction of smells and contaminants, giving the perception of healthier air in the rooms.

OFFICE BUILDINGS

Reduction of bacteria, allergens, and odors which can cause allergies or respiratory diseases.

MAIN FEATURES



Healthier and cleaner air

Ionization process for capturing and breaking down molecules of toxic VOCs, which can cause allergic phenomena or respiratory tract diseases.



Odour reduction

Smoke, chemicals, kitchen fumes, etc.



Reduced maintenance

Quick and easy cleaning of the honeycomb structure with a simple jet of compressed air.



Reduction of the bacterial load

Reduction of the bacterial load and germs present in the air up to 95-99%.

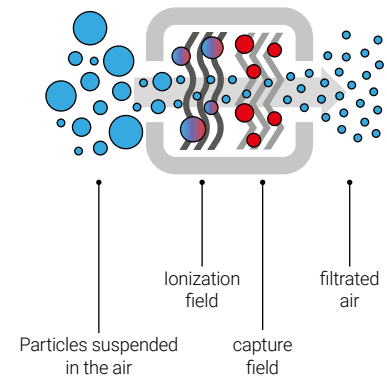


ELECTRONIC FILTERS

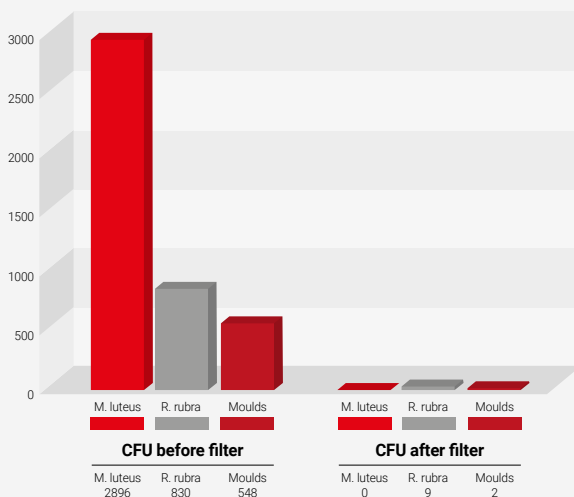
Electronic filters based on the electrostatic precipitation process are used to purify the air in the rooms. Their working principle involves using electricity to catch dust, pollen, and other airborne particles prior to them entering your building.

Operating principle

The dirty air passes through the layer of ionizers, which emit charged ions. These charged ions attract the dirt solid particles contained in the air, which are then captured from the collection plate. The extra electrostatic charged particles drive the dirty particles towards the collector, allowing clean fresh air to enter your home.



Measurement of the bacterian load in the air before and after the electrostatic filter.



Single-pass effect of Electrostatic filter

The concentration of the bacteria commonly present in a given environmental air have been measured before and after the electrostatic filters.

The efficiency of bacteria removal is 98-99% for:

- Airborne bacteria, such as *Micrococcus luteus*;
- Yeast, such as *Rhodotorula rubra*;
- *Bacillus Anthracis*;
- Molds and germs present in the natural spectrum of air

AIR 3000+

The Control Software fully developed by MEHITS to manage all available functions

- + **Available resources management**
according to ambient temperature with proportional or proportional + integral logic.
- + Automatic management of free cooling, based on temperature or enthalpy.
- + **Fans management**
 - **Variable airflow** management
 - Fixed speed management
 - Constant pressure management
- Summer and winter **humidity control**
(dehumidification, re-heating, humidification)
- **HPTC high-pressure temperature control**
Automatic control of fresh air damper and, if necessary, reduction of circuit load to prevent shut down due to extremely high external temperature
- **Set point compensation**
Reduction of temperature difference: $T_{AMB} - T_{EXT}$
Discomfort reduction and avoidance of out-of-limit operations.
- Built-in clock with daily **scheduling** function.
- **BMS** interfacing.

AIR 3000+ Touch

The touch screen room thermostat



Air3000touch+ is the new user interface dedicated to the smart control of your ventilation and air conditioning system.

Designed to provide customers with the most easy and intuitive control experience, Air 3000 touch + reports all functions and settings of the unit:

READY-TO-INSTALL TOUCH SCREEN

The smart thermostat can be easily installed in public spaces without any risk in terms of safety. Access to the menu is in fact protected by a password.

EASY AND INTUITIVE

Coloured touch screen with user-friendly icons to ensure the easiest possible use.

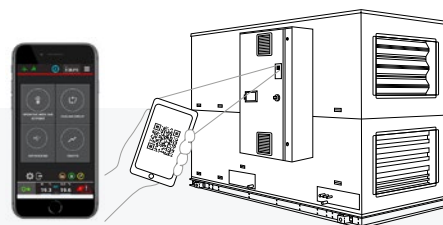
AUTONOMOUS CONTROL

Incorporated Temperature and Humidity probes detect the room requirements, automatically adjusting the control settings, with minimal intervention on the user side.

KIPlink: the Keyboard in your Pocket

An exclusive product of Climaveneta Hydronics & IT Cooling Systems

Based on Wi-Fi technology, KIPlink is an option that allows one to operate on the unit directly from a mobile device (smartphone, tablet, or notebook) by simply scanning the QR code positioned on the unit.



Suitable for industrial environment

tolerates temperatures from -20 to +65°C

Wi-Fi communication

no internet connection needed



Easier on-site operation

- Monitor each component while moving around the unit for maintenance.
- View and change all parameters with easy-to-understand screen-shots and dedicated tooltips.
- Get devoted "help" messages for alarm reset and trouble shooting.



Real-time graphs and trends

- Monitor the real time status of the compressors, heat exchangers, cooling circuits, air dampers, CO2 probes, etc...
- View the real-time graphs of the key operating variable trends.



Data logger function

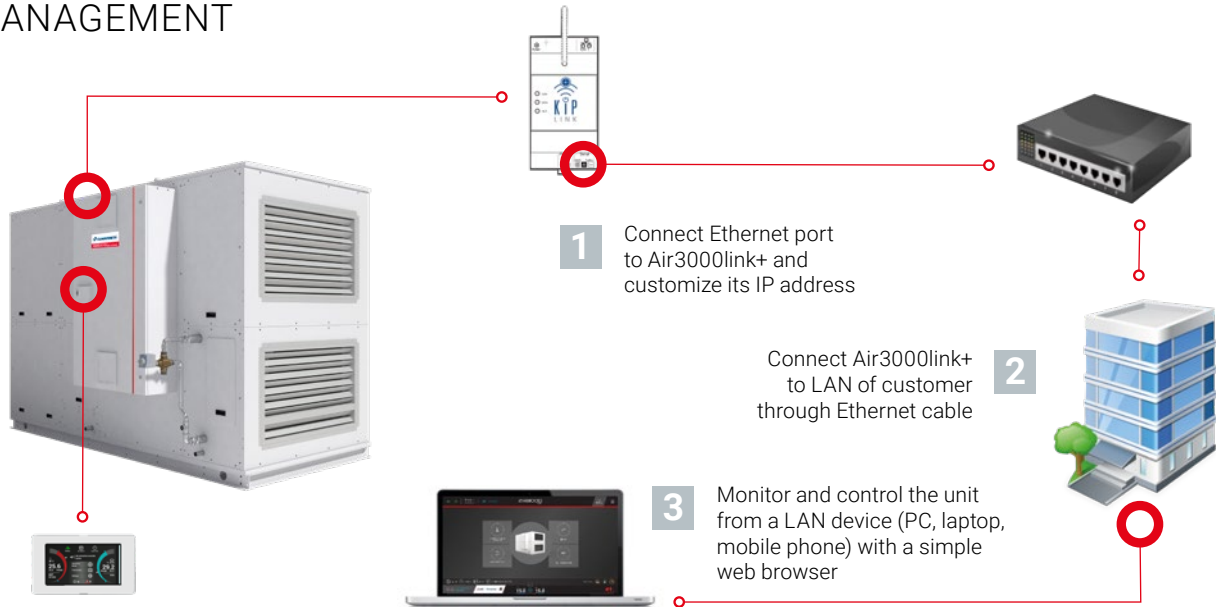
- Logging of events is automatic, and consultation of the history is facilitated by filters and search functions. To simplify diagnostic operations, all operating data are stored 10 minutes before and after each alarm.
- All data are available for download.



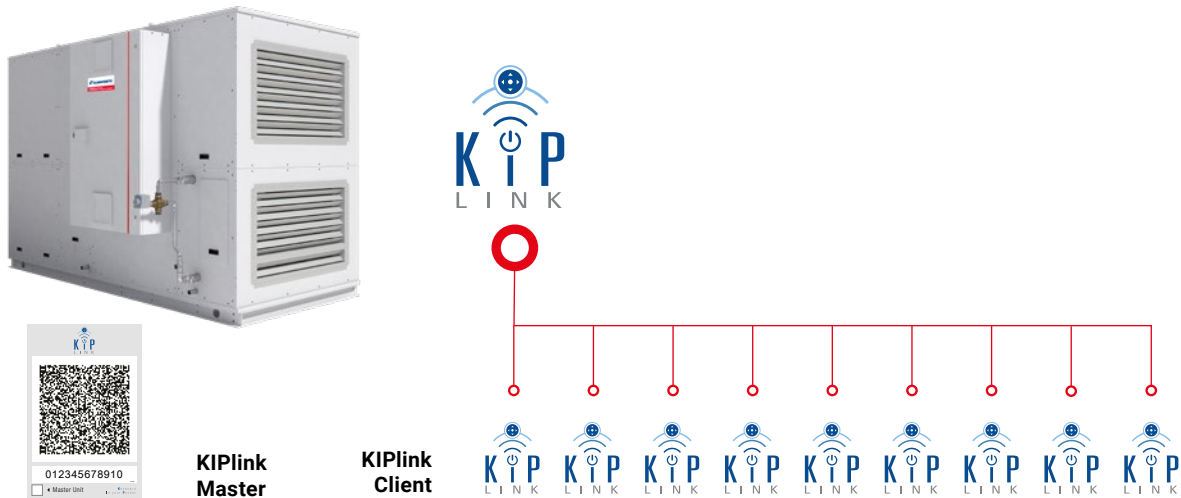
Pronto all'uso

- Download and install MEHITS APP
- Create and register your profile
- Scan the QR code and connect to the unit

LAN MANAGEMENT



KIPLAN NETWORK





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