## KV DUCTABLE MONOBLOCK AIR TREATMENT UNIT FOR CONTROLLED MECHANICAL VENTILATION

**GIACOMINI**
WATER E-MOTION

ICIM
SISTEMA DI GESTIONE CERTIFICATO
ISO 9001 ISO 14001 OHSAS 18001



**KV**

## Main components



| Legend | | | |
|---|---|---|---|
| 1 | Air/air heat recovery unit | 3 | Room delivery fan |
| 2 | Ejection fan | 4 | Free-cooling by-pass |

## Description

Ductable monoblock air treatment unit for controlled mechanical ventilation.
For installation on drop ceilings, floors (above slab) or walls.
Features: high efficiency double-flow heat recovery unit, 2 centrifugal fans.
Complete of removable synthetic filtering section class G4+F7 on external air and G4 on recovery air. Galvanized metal sheet case, expanded polystyrene insulation, galvanized metal internal air ducts ("sandwich" structure).
Internal duct soundproofed with sound absorbing material on delivery side.
Motorized by-pass for summer free-cooling.
Remote control panel (DIN modular) to set: air flow rates, working times.
Supply: 230 V.

## Versions and Product Codes

| Product code | Ventilation | Air flow rate [m³/h] |
|---|---|---|
| KVY160 | YES | 160 |
| KVY300 | YES | 300 |
| KVY500 | YES | 500 |

## Technical Data

| Product Code | KVY160 | KVY300 | KVY500 |
|---|---|---|---|
| Air duct connection Ø [mm] | 150 | 200 | 200 |
| Electric power | 230 V, 50 Hz | 230 V, 50 Hz | 230 V, 50 Hz |
| Absorbed electric power [W] | 55 | 190 | 340 |
| SEC [kWh/m²year] * | -37,3 | -37,8 | -37,8 |
| Energy efficiency class | A | A | A |
| Max. air flow rate [m³/h] | 160 | 300 | 500 |
| Available pressure [Pa] | 100 | 300 | 400 |
| Thermal efficiency | 0,78 | 0,81 | 0,81 |
| Absorbed power [W] | 44 | 192 | 340 |
| Air flow rate of reference [m³/h] | 110 | 210 | 350 |
| Available pressure [Pa] | 50 | 50 | 50 |
| Thermal efficiency | 0,81 | 0,84 | 0,83 |
| Absorbed power [W] | 22 | 44 | 70 |
| Min. air flow rate [m³/h] | 80 | 150 | 250 |

* SEC: Specific Energy Consumption, regulation (EU) n. 1253/2014
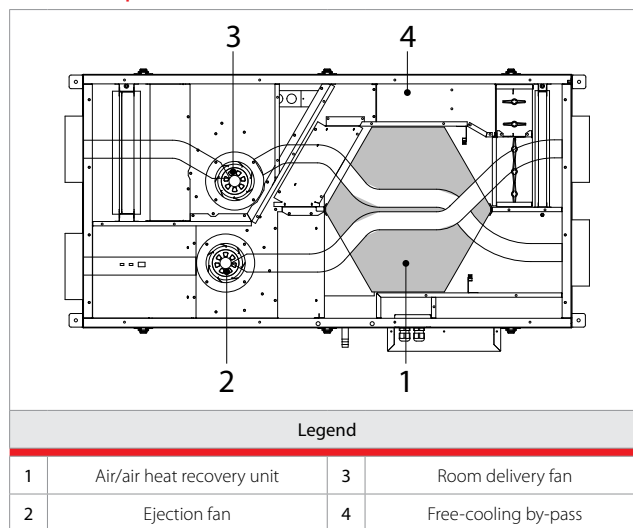
## Control Panel

The unit features a remote-control panel for installation on DIN template in a wall-mounted switchboard.

The control panel is equipped with a terminal board to connect the unit through four wires supplying the panel (24 V) and for serial communication with the electronic board.



MODBUS connectiont to the unit

+V
A
B
GND

unità rinnovo aria
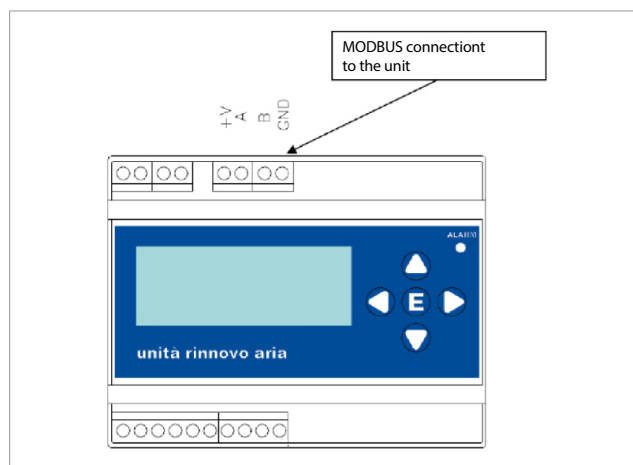
**MODBUS-RTU Connection**

Connection with 4 wires; on A and B ends, insert the included end resistor.
The V+ wire supplies 24 V power to the panel.
If connection exceeds 25 meters, use a shielded wire.

**Keypad available settings**

- unit start up;
- clock;
- air flow rates;
- automatic refresh time bands;

It also displays the temperature values of the unit sensors, a desirable feature when testing or inspecting proper operation.

## General Information and Main screen

Programming is performed on a weekly basis: the unit may change its working mode at every daily hour change of the week.

The following information will show on the right of the screen during normal operation:
- day of the week, hour and minutes
- alarms (if any)

Four time bands are displayed on the left side of the screen starting from the current one; a symbol next to each band shows the programmed mode:
- no ventilation: no symbol
- minimum speed ventilation: vertical bar
- medium speed ventilation: two vertical bars
- maximum speed ventilation: three vertical bars

Using the up and down arrows, the user can read the provided program for all twenty-three hours after the current one; the blinking vertical bars indicate that the program has been temporarily changed.

## Unit shut down

Press and hold button E (three seconds).

## Function menu

Press key E anytime to open the menu; select the desired function by moving the cursor with ▼ and ▲, then ▶ to display the corresponding template; the menu entries are:
- Temporary Program
- Weekly Program
- Type Day
- Copy Type
- Set date/time
- Technical Settings
- Sensor Reading

## Temporary modification of regular program

Access the function by selecting "Temporary Program" from the main menu; using the up and down arrow keys, scroll to the time for which one wishes to change the ventilation mode normally provided using the ▶ and ◀ keys; the current hour and the subsequent twenty-three can be modified; once the modifications have been implemented, press briefly key E to access the confirmation screen where, using the ▼ and ▲ keys and confirming with E, the following operations are enabled: re-access the function, save or delete all temporary modifications.

## Weekly operational program

Access the function by selecting "Weekly Program" from main menu; the program normally active is displayed starting from Monday 00.00; with the up and down arrow keys, move the cursor to select the day and time to be changed using the ▶ and ◀ keys; press briefly key E to access the confirmation screen where, using the ▼ and ▲ keys and confirming with E, the following operations are enabled: re-access function, save or delete modifications.

## Type Day

A "Type Day" with the same operational modes used in the "Weekly Program" function can be saved to make the initial setting of weekly data easier; saving of "Type Day" will not change the saved programs.

## Type Copy

This function changes the weekly program by copying the "Type Day" program for each day; the "Weekly Program" function enables to make changes for specific days, e.g. Sunday and Saturday.

## Set Day/Time

Using the left and right arrows, the user can modify the day of the week, the clock hour and minutes; change the value using the up and down arrows when the field is blinking.

## Technical Settings

### - Flow Rates

To assign the desired air flow rate (low, medium and high) to each ventilation mode.

### - Free-Cooling Function

If the external temperature is lower than the internal and the latter exceeds the "Free Cooling Temp." setting, the function is activated based on a preset option among those below:

"never"

"ventilation" with related air flow

"always (in) high" (air flow)

"always (in) medium"

"always (in) low"

### - Free Cooling Temperature

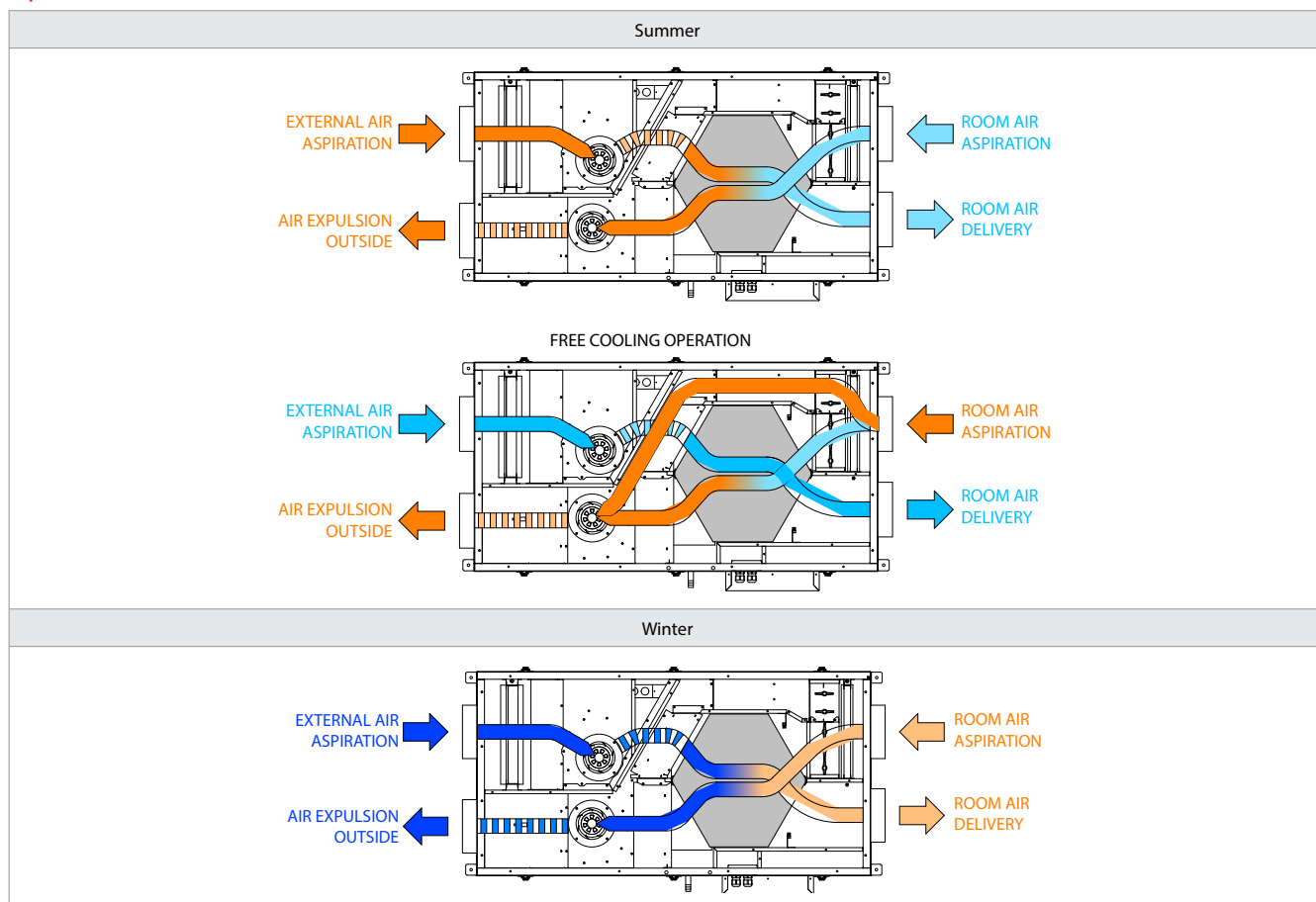To set the room temperature below which the "free cooling" function is disabled.

### - Light

"always ON": screen is always lighted

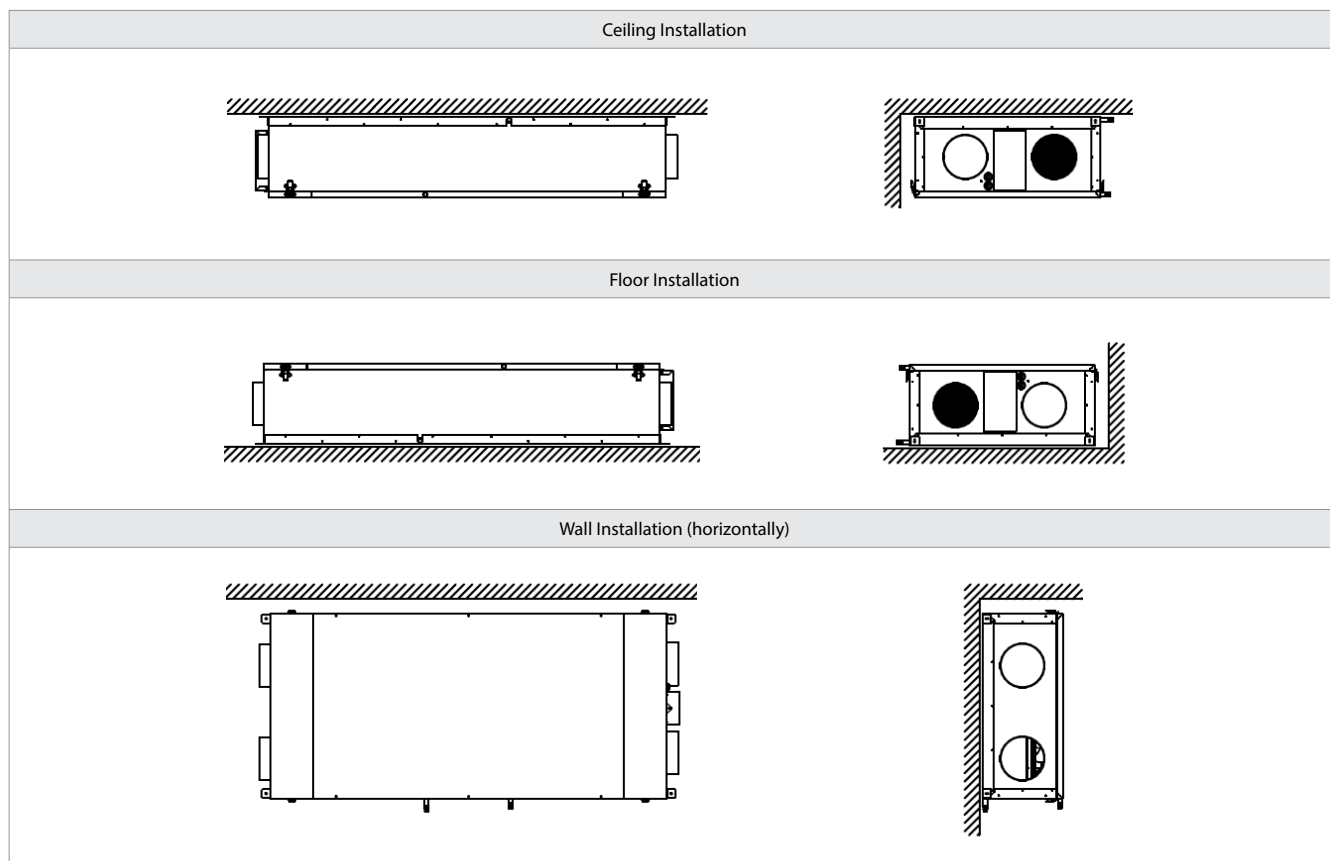"Timed light": turns OFF after one minute of inactivity

## Key Function Summary

| Key | Function |
|---|---|
| E | turns off the unit when pressed and held |
| | access main menu when pressed briefly |
| | acquires values and exits screen |
| ◀ | unit general information on main screen |
| | exits menus |
| | scales flow rate down by one level in "programming" screens |
| | scrolls lists horizontally to the left |
| ▶ | displays temperatures in main screen (if significant) |
| | activates the selected function in menus |
| | scales flow rate up by one level in "programming" screens |
| | scrolls lists horizontally to the right |
| ▼ | scrolls lists down |
| | changes value in blinking fields (decreasing if numerical) |
| ▲ | scrolls lists up |
| | changes value in blinking fields (increasing if numerical) |

## Operation

| Summer |
| --- |



EXTERNAL AIR ASPIRATION

AIR EXPULSION OUTSIDE

ROOM AIR ASPIRATION

ROOM AIR DELIVERY

FREE COOLING OPERATION



EXTERNAL AIR ASPIRATION

AIR EXPULSION OUTSIDE

ROOM AIR ASPIRATION

ROOM AIR DELIVERY

| Winter |
| --- |



EXTERNAL AIR ASPIRATION

AIR EXPULSION OUTSIDE

ROOM AIR ASPIRATION

ROOM AIR DELIVERY

## Installation

| Ceiling Installation |
| --- |



| Floor Installation |
| --- |



| Wall Installation (horizontally) |
| --- |

## Connections

### Condensate Drain Siphon

The condensate drain is essential to prevent air suction from compromising proper drainage of possible condensate; it must be independent, with a minimum height difference of 40 mm and installed near the unit drain ducts.
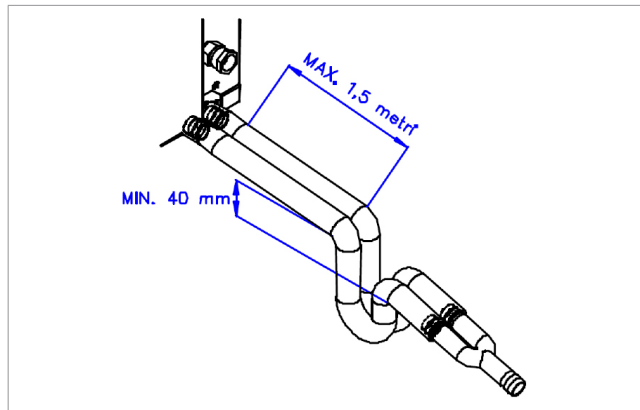


## Dimensions



| Product code | A [mm] | B [mm] | C [mm] |
|---|---|---|---|
| KVY160 | 1100 | 600 | 275 |
| KVY300 | 1440 | 660 | 285 |
| KVY500 | 1580 | 730 | 305 |

## Product specifications

### KVY160

Ductable monoblock air treatment unit for controlled mechanical ventilation. For installation on drop ceilings, floors (above slab) or walls. High efficiency double-flow heat recovery unit. 2 centrifugal fans. removable synthetic filtering section class G4+F7 on external air and G4 on recovery air. Galvanized metal sheet case, expanded polystyrene insulation, galvanized metal internal air ducts ("sandwich" structure). Soundproofed internal duct with sound absorbing material on delivery side. Internal unit duct made of sound-absorbent material. Motorized by-pass for summer free-cooling. Remote control panel (DIN modular) to set: air flows, working times. Power 230 V, 50 hZ. Energy efficiency class: A. Maximum air flow: 160 m3/h.

### KVY300

Ductable monoblock air treatment unit for controlled mechanical ventilation. For installation on drop ceilings, floors (above slab) or walls. High efficiency double-flow heat recovery unit. 2 centrifugal fans. removable synthetic filtering section class G4+F7 on external air and G4 on recovery air. Galvanized metal sheet case, expanded polystyrene insulation, galvanized metal internal air ducts ("sandwich" structure). Soundproofed internal duct with sound absorbing material on delivery side. Internal unit duct made of sound-absorbent material. Motorized by-pass for summer free-cooling. Remote control panel (DIN modular) to set: air flows, working times. Power 230 V, 50 hZ. Energy efficiency class: A. Maximum air flow: 300 m3/h.

### KVY500

Ductable monoblock air treatment unit for controlled mechanical ventilation. For installation on drop ceilings, floors (above slab) or walls. High efficiency double-flow heat recovery unit. 2 centrifugal fans. removable synthetic filtering section class G4+F7 on external air and G4 on recovery air. Galvanized metal sheet case, expanded polystyrene insulation, galvanized metal internal air ducts ("sandwich" structure). Soundproofed internal duct with sound absorbing material on delivery side. Internal unit duct made of sound-absorbent material. Motorized by-pass for summer free-cooling. Remote control panel (DIN modular) to set: air flows, working times. Power 230 V, 50 hZ. Energy efficiency class: A. Maximum air flow: 500 m3/h.