



CO₂ Monitor & Controller (24V)



- 24V AC/DC supply voltage
- 3 colour LCD backlight indicating ventilation requirement based on CO₂ measurement
- Non dispersive infrared sensing technology
- Volt-free relay output to control a ventilator
- Digital display of carbon dioxide levels (ppm)
- Temperature and humidity monitoring
- Dual alarm indication; audible alarm and backlight colour switch
- Programmable setpoints
- Bespoke or preset configurations

Application

The Duomo CO₂ Monitor & Controller is used to monitor room CO₂ level, as well as room temperature and humidity. It provides one on/off volt-free relay output to control a ventilator with four CO₂ levels preset and features both an audible alarm and a three colour backlit switching alarm display. It is available as a bespoke or pre-configured unit;

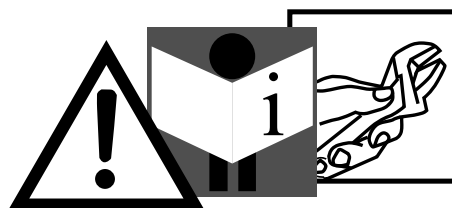
- CO₂MC -R (Classrooms)
Green - Yellow setpoint: 1000ppm
Yellow - Red setpoint: 1500ppm
Relay activation: Make in alarm
Relay setpoint: 1400ppm
- CO₂MC -K (Kitchens)
Green - Yellow setpoint: 1500ppm
Yellow - Red setpoint: 2800ppm
Relay activation: Break in alarm
Relay setpoint: 5000ppm
- CO₂MC -L (Laboratories)
Green - Yellow setpoint: 1000ppm
Yellow - Red setpoint: 2800ppm
Relay activation: Break in alarm
Relay setpoint: 5000ppm

Operation

Upon powering up the unit, it will countdown to 0 seconds before it begins reading. This is the initial warm-up stage.

The measured temperature and the relative humidity is then displayed on the upper line of the LCD and the measured level of CO₂ in parts per million will be displayed below that.

Please note: when the unit is first turned on (or first used after a long period without use - a month or more) the warm up time should be 24 hours.



Carefully read the following instructions prior to installation of this device. Always keep this pamphlet for future reference.

CO₂ Monitor Fascia



Green - optimal air quality (<1000ppm)

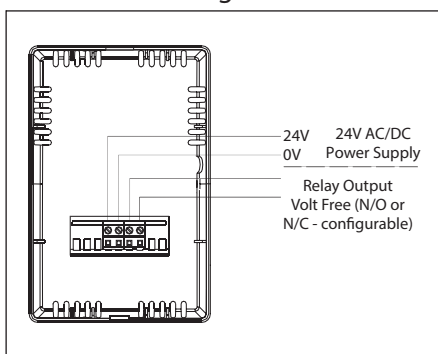
Yellow - moderate air quality (1001 - 1400ppm)

Red - poor air quality (>1400ppm)

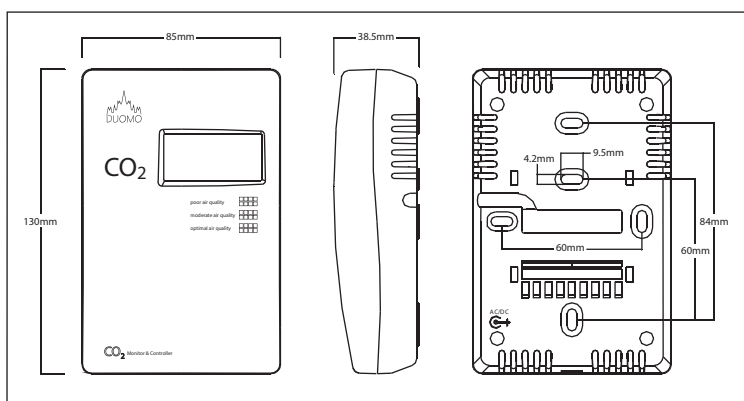
NOTE: The above values are defaults and can be altered to your requirements.

CO₂ Monitor & Controller Layout & Dimensions

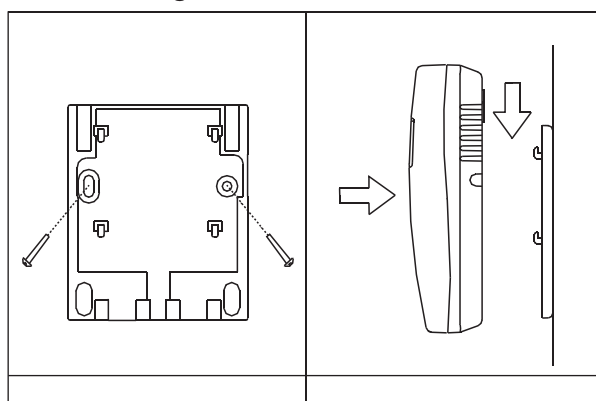
Wall mount wiring



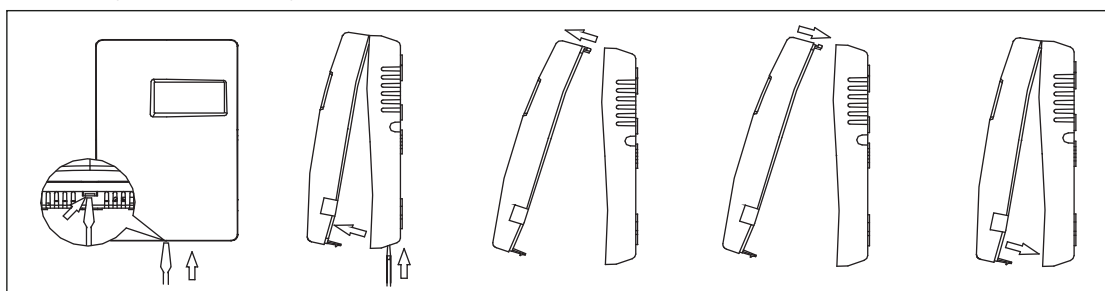
Mounting and dimensions



Wall mounting-base bracket



Removing and replacing the enclosure



Installation

Do not mount this unit;

- behind a door,
- in a corner,
- near a heat source, diffuser or any steam source,
- in direct sunlight,
- near garbage bins,
- near gas ovens.

For wall mounting, please follow the steps on the previous page. Cut off the power supply and place a flat head screwdriver deep inside of the hole on the bottom of the monitor casing, then depress the clip **lightly** to remove the face plate from the wall plate. Mount the back plate on the wall, 1.2 - 1.3m from the ground (please see dimensions on previous page).

Connect wires to the terminal block making sure that all connections are correct and secure. After finishing the mounting of the unit, follow the steps to close the cover.

Settings

	ON	OFF
Dip 1 (Switch 1)	Programme Mode	Normal Mode
Dip 1 (Switch 2)	° Fahrenheit	° Celcius

The value of CO₂ at which the unit will go into alarm can be altered by changing over the DIP switches on the back of the unit (accessible through a slot on the rear of the unit). This and many other features can be altered before shipping. Please contact us to discuss your exact requirement.

Dip 2 (Switch 1)	Dip 2 (Switch 2)	CO ₂ Level
OFF	OFF	800ppm
OFF	ON	1000ppm
ON	OFF	1200ppm
ON	ON	1400ppm

Specification

Gas detected	Carbon dioxide (CO ₂)	Temperature sensor	NTC
Sensing element	Non-dispersive infrared detector (NDIR)	Humidity sensor	HS series capacitive sensor
Accuracy @ 25°C	± 60ppm + 3% of reading	Temperature measuring range	0 ~ 50°C (32 ~ 122°F)
Stability	< 2% of FS over life of sensor (15 years typical)	Humidity measuring range	0 ~ 99% RH
Calibration interval	ABC logic self calibration algorithm	Relay output (optional)	One volt-free relay output Make or break at set threshold (see configuration table) Max. 3A @ 250VAC
NDIR life	15 years	Operating conditions	0 ~ 50°C (32 ~ 122°F) 0 ~ 95% RH, non-condensing
Response time	< 2 minutes for 90% step change	Storage conditions	-40 ~ 70°C (-40 ~ 158°F)
Signal update	Every 2 seconds	Weight	200g
Warm up time	24 hours (first time), 5 minutes (operation)	Dimensions (mm)	130 (H) x 85 (W) x 36.5 (D)
CO ₂ measuring range	0 ~ 5,000ppm	Installation (mm)	Desktop and wall mounting (65 x 65 or 2" x 4" wire box)
CO ₂ display resolution	1ppm	Housing and IP class	PC/ABS fireproof plastic material, protection class: IP30
Power supply	10 ~ 24V AC	Standard	CE Approval
Consumption	3.5W max. : 2.5W average		



CO₂ Monitor & Controller Model Selection

Company : _____ Contact Name : _____ Contact Number : _____ Email : _____

Settings

Model Version 230V or 24V		Audible Alarm 0 = No sound 4 = Intermittent beep Default: 4 Range: 0 - 4
Relay Contact Setpoint 1 Value at which the relay switches over Default: 800ppm Range: 1 - 5000ppm		Relay Contact Control Direction 0 = Break in alarm 1 = Make in alarm Default: 1 Range: 0 - 1
Relay Contact Setpoint 2 Value at which the relay switches over Default: 1000ppm Range: 1 - 5000ppm		Measurement Upper Limit The maximum value the unit will reach Default: 5000ppm Range: 1 - 5000ppm
Relay Contact Setpoint 3 Value at which the relay switches over Default: 1200ppm Range: 1 - 5000ppm		Warm-up Time Recommended at default or higher Default: 60 secs. Range: 1 - 600 secs.
Relay Contact Setpoint 4 Value at which the relay switches over Default: 1400ppm Range: 1 - 5000ppm		Green LED Brightness Default: 100 Range: 0 - 100
Green - Yellow LED Switching Point Value at which the backlight changes Default: 1000ppm Range: 1 - 5000ppm		Red LED Brightness Default: 100 Range: 0 - 100
Yellow - Red LED Switching Point Value at which the backlight changes Default: 1400ppm Range: 1 - 5000ppm		Altitude Calibration Height in feet the sensor will be used at Default: 0 feet Range: 0 - 32,479 feet
Alarm Point Value at which the audible alarm sounds Default: 1800ppm Range: 1 - 5000ppm		Backlight Control 1 - Off 2 - Green 3 - Yellow 4 - Red 5 - Traffic light operation Default: 5 Range: 1 - 5

Preset Models

- CO₂MC -R (Classrooms)
Green - Yellow Setpoint: 1000ppm
Yellow - Red Setpoint: 1500ppm
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Relay Setpoint: 5000ppm
- CO₂MC -L (Laboratories)
Green - Yellow Setpoint: 1000ppm
Yellow - Red Setpoint: 2800ppm
Relay Activation: Break in alarm
Relay Setpoint: 5000ppm

Please complete this order form and fax it back to us on 01905 774296.