



# CO<sub>2</sub> Monitor & Controller (230V)



- 230V AC supply voltage
- Three colour (green/yellow/red) LCD backlight indicating ventilation requirement based on CO<sub>2</sub> measurement
- Non dispersive infrared sensing technology
- 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
- Easy touch button for operation
- Programmable setpoints

## Application

The Duomo CO<sub>2</sub> Monitor & Controller is used to monitor room CO<sub>2</sub> level, as well as room temperature and humidity.

It provides one on/off relay output to control a ventilator with four CO<sub>2</sub> levels preset and features both an audible alarm and a three colour backlit switching alarm display.

## 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 CO<sub>2</sub> 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.

## Use

The 'Switch' button on the fascia cycles through the following options;

LCD Display	Relay output	Audible alarm
AUTO + ON	Auto run	On
AUTO + OFF	Auto run	Off
ON	Always on	Off
OFF	Off	Off
The order: AUTO + ON > AUTO + OFF > ON > OFF > Power off		

LCD Display refers to what is shown on the screen, Relay output refers to whether or not the relay is set to auto run, always on or off and audible alarm refers to whether or not the alarm is on or off.

**NOTE:** Auto functions are disabled when the relay is turned off in the advanced settings.



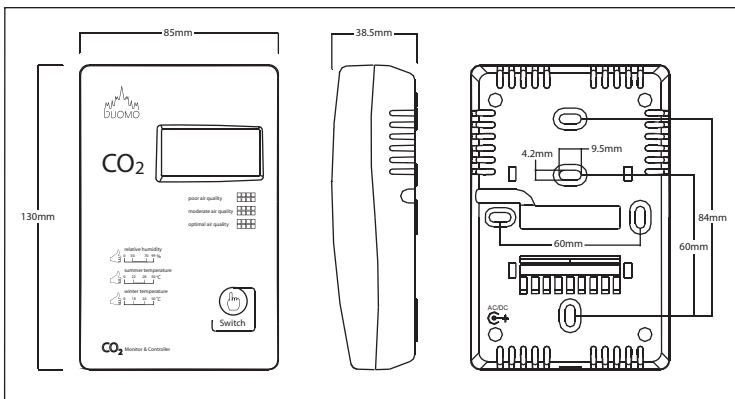
Carefully read the following instructions prior to installation of this device. Always keep this pamphlet for future reference. Always isolate the electrical supply before opening.

# CO<sub>2</sub> Monitor Fascia

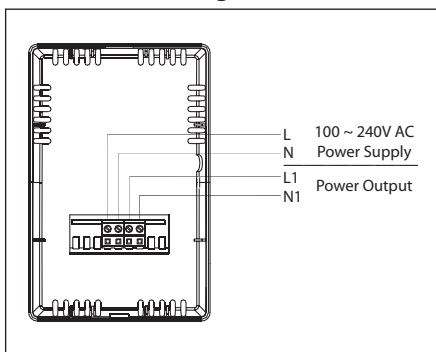


## CO<sub>2</sub> Monitor & Controller Layout & Dimensions

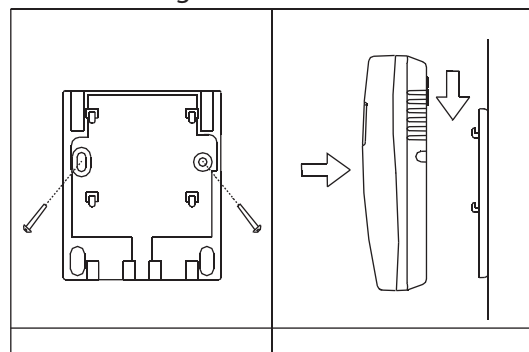
### Mounting and dimensions



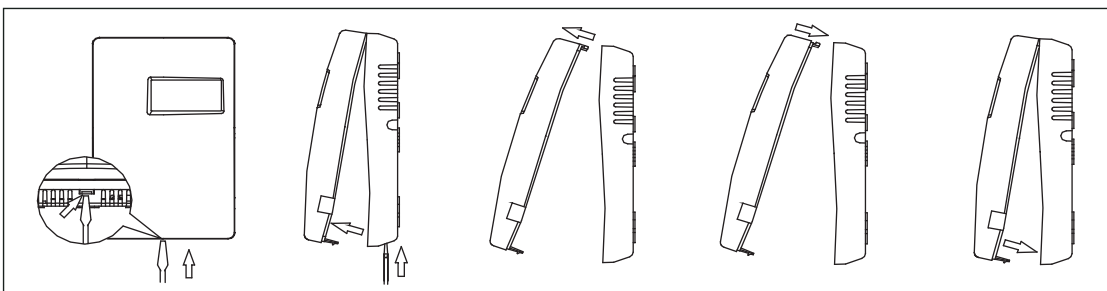
### Wall mount wiring



### 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 CO<sub>2</sub> 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 <sub>2</sub> Level
OFF	OFF	800ppm
OFF	ON	1000ppm
ON	OFF	1200ppm
ON	ON	1400ppm

# Specification

Gas detected	Carbon dioxide (CO <sub>2</sub> )
Sensing element	Non-dispersive infrared detector (NDIR)
Accuracy @ 25°C	± 60ppm + 3% of reading
Stability	< 2% of FS over life of sensor (15 years typical)
Calibration interval	ABC logic self calibration algorithm
NDIR life	15 years
Response time	< 2 minutes for 90% step change
Signal update	Every 2 seconds
Warm up time	24 hours (first time), 5 minutes (operation)
CO <sub>2</sub> measuring range	0 ~ 5,000ppm
CO <sub>2</sub> display resolution	1ppm
Power supply	100 ~ 240V AC
Consumption	3.5W max. : 2.5W average
Temperature sensor	NTC
Humidity sensor	HS series capacitive sensor
Temperature measuring range	0 ~ 50°C (32 ~ 122°F)
Humidity measuring range	0 ~ 99% RH
Relay output (optional)	One relay output with 230V rated switching current
Operating conditions	0 ~ 50°C (32 ~ 122°F); 0 ~ 95% RH, non-condensing
Storage conditions	-40 ~ 70°C (-40 ~ 158°F)
Weight	200g
Dimensions	130mm (H) x 85mm (W) x 36.5mm (D)
Installation	Desktop and wall mounting (65mm x 65mm or 2" x 4" wire box)
Housing and IP class	PC/ABS fireproof plastic material, protection class: IP30
Standard	CE Approval

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

Company : \_\_\_\_\_ Contact Name : \_\_\_\_\_ Contact Number : \_\_\_\_\_ Email : \_\_\_\_\_

<b>Model Version</b> 230V or 24V
<b>Relay Contact Setpoint 1</b> Value at which the relay switches over Default: 800ppm Range: 1 - 5000ppm
<b>Relay Contact Setpoint 2</b> Value at which the relay switches over Default: 1000ppm Range: 1 - 5000ppm
<b>Relay Contact Setpoint 3</b> Value at which the relay switches over Default: 1200ppm Range: 1 - 5000ppm
<b>Relay Contact Setpoint 4</b> Value at which the relay switches over Default: 1400ppm Range: 1 - 5000ppm
<b>Green - Yellow LED Switching Point</b> Value at which the backlight changes Default: 1000ppm Range: 1 - 5000ppm
<b>Yellow - Red LED Switching Point</b> Value at which the backlight changes Default: 1400ppm Range: 1 - 5000ppm
<b>Alarm Point</b> Value at which the audible alarm sounds Default: 1800ppm Range: 1 - 5000ppm


<b>Audible Alarm</b> 0 = No sound 4 = Intermittent beep Default: 4 Range: 0 - 4
<b>Relay Contact Control Direction</b> 0 = Break in alarm 1 = Make in alarm Default: 1 Range: 0 - 1
<b>Measurement Upper Limit</b> The maximum value the unit will reach Default: 2000ppm Range: 1 - 5000ppm
<b>Warm-up Time</b> Recommended at default or higher Default: 60 secs. Range: 1 - 600 secs.
<b>Green LED Brightness</b> Default: 100 Range: 0 - 100
<b>Red LED Brightness</b> Default: 100 Range: 0 - 100
<b>Altitude Calibration</b> Height in feet the sensor will be used at Default: 0 feet Range: 0 - 32,479 feet
<b>Backlight Control</b> 1 - Off 2 - Green 3 - Yellow 4 - Red 5 - Traffic light operation Default: 5 Range: 1 - 5

