DUOMO

CO₂ Monitor & Controller (230V)

- 230V AC 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
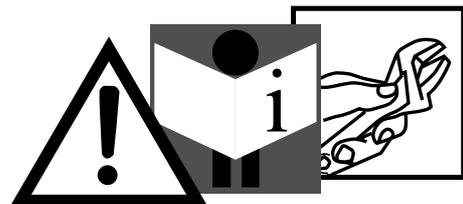 **Relay activation:** Break in alarm
  Relay setpoint: 5000ppm

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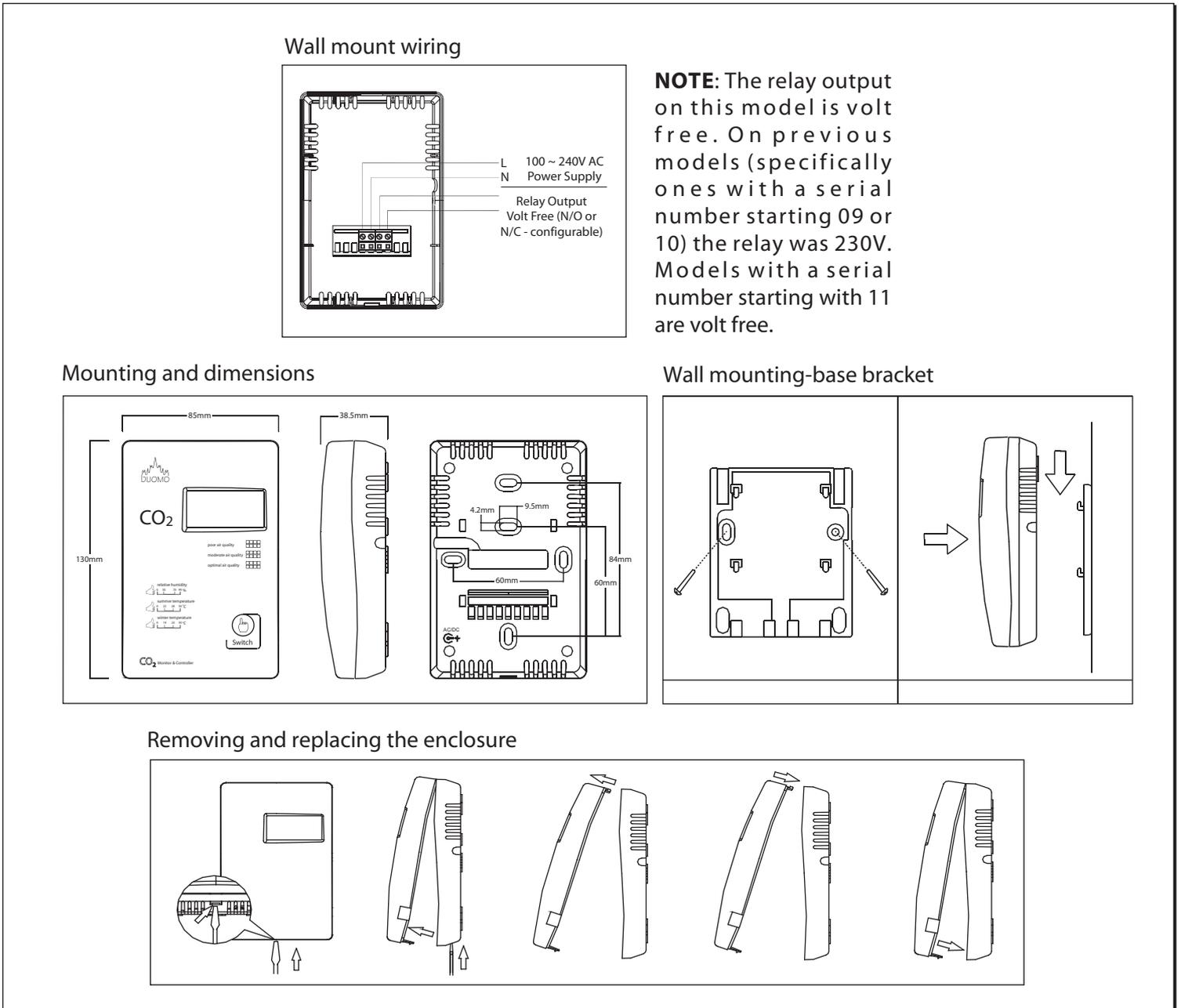
Carefully read the following instructions prior to installation of this device. Always keep this pamphlet for future reference.

CO$_2$ 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.

CO$_2$ Monitor & Controller Layout & Dimensions

Wall mount wiring

L
N   100 ~ 240V AC Power Supply

Relay Output Volt Free (N/O or N/C - configurable)

NOTE: The relay output on this model is volt free. On previous models (specifically ones with a serial number starting 09 or 10) the relay was 230V. Models with a serial number starting with 11 are volt free.

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)	º Fahrenheit	º Celcius

The value of CO_2 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
		Temperature measuring range	$0 \sim 50^oC$ ($32 \sim 122^oF$)
Accuracy @ 25^oC	$\pm$ 60ppm + 3% of reading		
Stability	< 2% of FS over life of sensor (15 years typical)	Humidity measuring range	0 ~ 99% RH
		Relay output (optional)	One volt-free relay output Make or break at set threshold (see configuration table) Max. 3A @ 250VAC
Calibration interval	ABC logic self calibration algorithm		
NDIR life	15 years		
Response time	< 2 minutes for 90% step change	Operating conditions	$0 \sim 50^oC$ ($32 \sim 122^oF$) 0 ~ 95% RH, non-condensing
Signal update	Every 2 seconds	Storage conditions	$-40 \sim 70^oC$ ($-40 \sim 158^oF$)
Warm up time	24 hours (first time), 5 minutes (operation)	Weight	200g
		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	100 ~ 240V AC	Standard	CE Approval
Consumption	3.5W max. : 2.5W average		

DUOMO

CO$_2$ Monitor & Controller Model Selection

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

Preset Models

☐ CO$_2$MC -R (Classrooms)

Green - Yellow Setpoint: 1000ppm

Yellow - Red Setpoint: 1500ppm

Relay Activation: Make in alarm

Relay Setpoint: 1400ppm

☐ CO$_2$MC -K (Kitchens)

Green - Yellow Setpoint: 1500ppm

Yellow - Red Setpoint: 2800ppm

Relay Activation: Break in alarm

Relay Setpoint: 5000ppm

☐ CO$_2$MC -L (Laboratories)

Green - Yellow Setpoint: 1000ppm

Yellow - Red Setpoint: 2800ppm

Relay Activation: Break in alarm

Relay Setpoint: 5000ppm

Settings

Audible Alarm

0 = No sound   4 = Intermittent beep

Default: 4   Range: 0 - 4

Relay Contact Control Direction

0 = Break in alarm   1 = Make in alarm

Default: 1   Range: 0 - 1

Measurement Upper Limit

The maximum value the unit will reach

Default: 5000ppm   Range: 1 - 5000ppm

Warm-up Time

Recommended at default or higher

Default: 60 secs.   Range: 1 - 600 secs.

Green LED Brightness

Default: 100   Range: 0 - 100

Red LED Brightness

Default: 100   Range: 0 - 100

Altitude Calibration

Height in feet the sensor will be used at

Default: 0 feet   Range: 0 - 32,479 feet

Backlight Control

1 - Off   2 - Green   3 - Yellow   4 - Red
5 - Traffic light operation

Default: 5   Range: 1 - 5

Model Version

230V or 24V

Relay Contact Setpoint 1

Value at which the relay switches over

Default: 800ppm   Range: 1 - 5000ppm

Relay Contact Setpoint 2

Value at which the relay switches over

Default: 1000ppm   Range: 1 - 5000ppm

Relay Contact Setpoint 3

Value at which the relay switches over

Default: 1200ppm   Range: 1 - 5000ppm

Relay Contact Setpoint 4

Value at which the relay switches over

Default: 1400ppm   Range: 1 - 5000ppm

Green - Yellow LED Switching Point

Value at which the backlight changes

Default: 1000ppm   Range: 1 - 5000ppm

Yellow - Red LED Switching Point

Value at which the backlight changes

Default: 1400ppm   Range: 1 - 5000ppm

Alarm Point

Value at which the audible alarm sounds

Default: 1800ppm   Range: 1 - 5000ppm

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