

## H8-(W)or(B)-CO2



### PORTABLE NDIR CO2 MONITORING MODULE

ALSO DISPLAYS CURRENT TEMPERATURE & HUMIDITY

*IDEAL FOR SCHOOL CLASSROOMS & OFFICE BUILDINGS TO MONITOR CO2 LEVELS TO AID IN THE FIGHT AGAINST COVID & FOR GENERAL HEALTH & WELL BEING. THE MEASUREMENT OF CO2 LEVEL IS A GREAT INDICATION OF AIR QUALITY. THE MODULE MAKES USE OF AN NDIR TYPE CO2 MEASURING CELL WHICH OFFERS EXCELLENT LONG TERM STABILITY & AUTO CALIBRATION.*

The module displays the current CO2 value by a large central digital display directly in parts per million (ppm) & incorporates a surrounding colour graphic ring giving quick visual indication from afar of the range of the current reading. The flashing colour indicates the current measurement range, green is the ideal level indicating levels are below 700ppm, Note typical outside fresh air is approximately ~420ppm and most indoor typical lightly occupied environments will sit in the range from ~450 to 650ppm. Each flashing colour ring indicates an increase in the measured value in 100ppm steps. Measurements over 900ppm (red flashing ring from 900 & above) for sustained periods of time (~1 hour) should be considered as an unsuitable environment and steps taken to introduce fresh air to ventilate the space. At undesirable levels above 1000ppm an internal beeper (1 min. delay) also sounds which can be muted by momentary pushing the power button, or will automatically reset when levels drop below 700ppm. The device is powered by an external 5vdc plug pack & to also charge its internal battery. The device can be left on charge as a semi-permanent installation or just charged and used as a portable monitor (up to 6 hr run time). The unit can be wall mounted using the rear mounting slots hanging on 2 suitable exposed screw heads.

# TECHNICAL DATA

**ALLOW 2 HOURS FOR READINGS TO STABILISE ONCE POWER APPLIED**

Product model	H8-(W) or (B)-CO2	-W = WHITE CASE, -B = BLACK CASE
Detection Technology	Infrared beam detection technology	
Proper Temperature	0 ~ 70°C	
Display Mode	LCD screen+backlight	
CO2 Detection Range	400 ~ 5000 PPM	<b>+/- 100ppm</b>
Product Size	70*90*35 mm	
Charging voltage	5V	
CO2 Sensor	NDIR sensor self calibrating	
Battery Capacity	1200mAh	
Charging Port	Type-C	
Package Size	150*100*50mm	
Gross Weight	200g	
Net Weight	130g	
CO2 Detection Sensitivity	1 PPM	
Temp Measurement Range	0 ~ 50°C	
Temp Measurement Accuracy	±2°C	Note : Temperature & Humidity measurements can
Humidity Measurement Range	0 ~ 99%RH	be affected whilst charging & from other heat influences
Humidity Measurement Accuracy	±7%RH	
Packaging Details	One box: 15 * 10 * 5cm 20 pieces in a box: 24 * 25 * 24cm 80 pieces in a box: 47 * 25 * 48cm	
CO2 colour bar trigger levels	400~700 ppm: GREEN SECTION FLASHES 701~800 ppm: YELLOW SECTION FLASHES 801~900 ppm: ORANGE SECTION FLASHES 901~1000 ppm: RED SECTION FLASHING <b>OVER 1000 ppm SIREN BEEPS (mutable by power button)</b>	

**SUBJECT TO ONE MINUTE DELAY**

The monitor does not require calibration as this module uses a **self calibrating** & checking algorithm to maintain correct co2 indication levels over a typical 10 year life span. If however you feel the device is not giving expected co2 results, to help reset the auto calibration the module could be left in a protected outside air fresh air location for several days to flush & reset the internal co2 detection chamber. The internal software auto calibration algorithm monitors an average co2 reading for its auto calibration process over an 8 day period.



## WALL MOUNTED DESIGNS

It is suitable for more scenarios and more practical.

## EXAMPLE SCREEN DISPLAYS AT VARIOUS CO2 CONCENTRATIONS



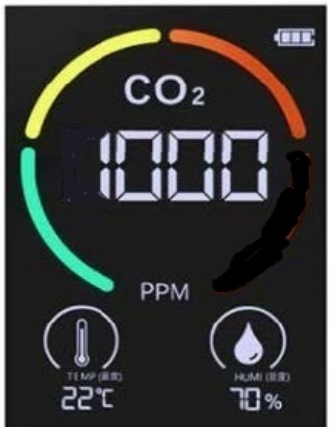
**GREEN CIRCLE SECTION FLASHES UPTO 700 ppm**



**YELLOW CIRCLE SECTION FLASHES 701-800 ppm**



**ORANGE CIRCLE SECTION FLASHES 801-900 ppm**



**RED CIRCLE SECTION FLASHES 901-1000ppm + ABOVE 1000ppm BUZZER BEEPS**



**CHARGER / POWER TYPE C PORT SOCKET. USB -C CABLE SUPPLIED**

# TYPICAL AFFECTS OF CO2 ON WELL BEING & COMFORT

- 350 - 450 LOW CO2 LEVEL, TYPICAL OF OUTSIDE FRESH AIR CONDITIONS
- 450 - 750 TYPICAL OCCUPIED ENVIROMENTS CONSIDERED EXCEPTABLE
- 750 - 900 WARNING LEVEL THAT CO2 LEVELS HAVE INCREASED AND FRESH AIR SHOULD BE INTRODUCED TO REDUCE LEVEL ESPECIALLY FOR SUSTAINED PERIODS OF OCCUPATION.
- 900 - 1000 RECOMMENED LEVEL TO FLUSH ROOM TO REDUCE LEVEL, AVOID LONG EXPOSURE.
- 1000-2000 SUSTAINED EXPOSURE CAUSES FEELING OF DISCOMFORT & DROWSINESS.
- 2000-3000 TYPICALLY CAUSES DIZZINESS AND DIFFICULT TO CONCENTRATE
- 3000-4000 ACCELERATED HEART BEAT & NAUSEA
- 4000-5000 SUSTAINED EXPOSURE CAUSES SEVERE HYPOXIA & POSSIBLE BRAIN DAMAGE.
- 5000 & ABOVE PROLONGED EXPOSURE CAUSES COMA LEADING TO DEATH

## A WORD ABOUT CO2 MONITORING AND COVID SAFETY

*Besides the cause & affects of high CO2 levels as detailed above on human health & well being, Obviously CO2 measurement isn't a measure of Covid Virus particals floating in the air in the monitored space, but what it does give is an indication of the freshness of the air. Typical CO2 levels in a fresh outside air environment sit around 430ppm, whereas in a typical lightly occupied building CO2 levels tend to be in the range of 500 to 650ppm. It has long been the practice in commercial air conditioning systems to start introducing fresh air into a building as CO2 levels increase over 700ppm, with 100% fresh air introduced to flush the building as levels approach 1000ppm.*

*CO2 measurement gives an indication of the contamination in a room of exhaled air we breath out (CO2) and as such the increased risk of inhaling someones else's exhaled air which may be contaminated with Covid particals, so the lower the CO2 level the less chance of breathing contaminated air. Obviously there has to be some consideration and balance against the increased cost of running the air conditioning system to cope with large amounts of fresh air, but we highly recommend all efforts be made to keep levels below ~ 650ppm during this pandemic.*