Merlin CO2 Monitor

2800 / 4500 ppm

User Guide

Please read this guide carefully and retain for future use.

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1 General Information

The Merlin CO2 Monitor has a LED display to show the user a clear and precise reading of the CO2 level in the room and also a traffic light LED indicator.

The Merlin CO2 Monitor can be used independently or can work in conjunction with one of our Merlin gas control systems. If the CO2 reaches alarm level the Merlin CO2 Monitor will sound an audible alarm to alert the user and also send a signal to the Merlin gas control system which will in turn, close the gas solenoid valve as is appropriate.

During the first 24 hours of installation, the unit will continue to adjust its calibration to the ambient CO2. During this time, you may notice slight variations in the PPM readings of CO2 displayed on the monitor.

1.1 Mounting the CO2 Monitor

The control panel is designed for surface mounting using two mounting screws. Removing the back plate gives access to the circuit board. Do not attempt to remove the PCB. Place the monitor at eye level or between 1.4 and 1.6 meters from floor level.

Important Warning Statements

It is recommended that this unit be commissioned upon installation and serviced annually.

The expected life time of the detector/sensor element is: 10 Years

Do not apply lighter gas or other aerosols to the detector – this will cause extreme damage.

Never ignore your device when in alarm.

This device requires a continual supply of electrical power – it will not work without power.

The unit should be stored in cool, dry conditions.

Avoid Installation near any ventilation openings, i.e. vents, chimneys, windows etc.

Avoid installation near ceiling fans, windows or areas exposed to direct weather.

This unit may not fully safeguard individuals with specific medical conditions.
If in doubt, consult a doctor/physician.

Your product should reach you in perfect condition, if you suspect it is damaged, contact your supplier.

Information on waste disposal for consumers of electrical & electronic equipment. (EEE)

When this product has reached the end of its life it must be treated as Waste Electrical & Electronics Equipment (WEEE). Any WEEE marked products must not be mixed with general household waste, but kept separate for the treatment, recovery and recycling of the materials used.

Please contact your supplier or local authority for details of recycling schemes in your area.

2 Circuit Board

2.1 Mains Supply

A 230-volt electrical supply should be supplied to the panel. This should be externally fused at 3 Amps using a fused spur and should be connected to the terminals marked [L N Power].

2.2 Alarm Relay

Model: CO2 Monitor 2800ppm

This will switch over should the level of Co2 rise above 2800ppm, and automatically switch back once the levels have dropped below 2750ppm.

Model: CO2 Monitor 4500ppm

This will switch over should the level of Co2 rise above 4500ppm, and automatically switch back once the levels have dropped below 4450ppm.

2.3 Pre Alarm Relay

Model: CO2 Monitor 2800ppm

This will switch over should the level of Co2 rise above 1500ppm, and automatically switch back once the levels have dropped below 1450ppm.

Model: CO2 Monitor 4500ppm

This will switch over should the level of Co2 rise above 2800ppm, and automatically switch back once the levels have dropped below 2750ppm.

2.4 Temperature Relay

This will switch over should the temperature rise above 30°C and switch back once the temperature drops below 29°C.

2.5 Audible Alarm

There is a switch on the circuit board to activate/de-activate the audible alarm.

ON = audible alarm on (default).

1 = audible alarm off.

2.6 0-10 Volt DC Output

The voltage will increase / decrease depending on the ppm read out of Co2 detected.

Model: **2800ppm** Analogue output		Model: **4500ppm** Analogue output	
ppm	***Voltage***	***ppm***	***Voltage***
0-1000	0	0-500	2
1000-1500	4	500-750	3
1500-2000	6	750-1000	4
2000-2800	8	1000-1250	5
2800+	10	1250-1500	6
		1500-1750	7
		1750-2000	8
		2000-2400	9
		2400-2800	10

3 LED Indication Status

Model: **CO2 Monitor 2800ppm**

- Low (Green) LED
  Good air quality, CO_2 <1000ppm
- Medium (Amber) LED
  Moderate air quality, 1000ppm> CO_2 <1500ppm
- High (Red) LED
  Poor air quality CO_2 >1500ppm

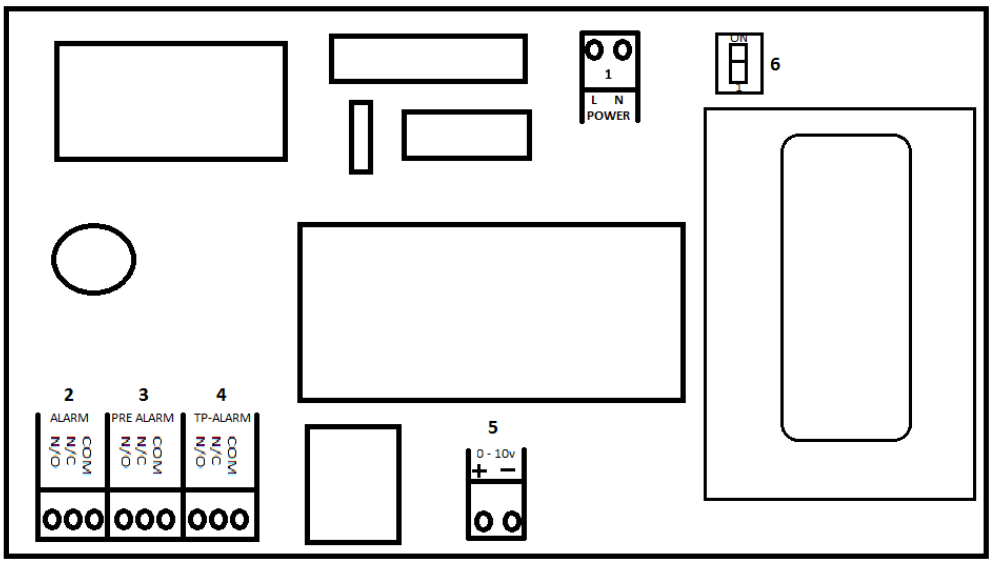
Model: **CO2 Monitor 4500ppm**

- Low (Green) LED
  Good air quality, CO_2 <1000ppm
- Medium (Amber) LED
  Moderate air quality, 1000ppm> CO_2 <2800ppm
- High (Red) LED
  Poor air quality CO_2 >2800ppm

4 Specification

Power Supply	240VAC, 50Hz (Max. 2VA)
Gas Sensor	Carbon Dioxide: Non-Dispersive Infrared Detector (NDIR) ABC Logic Self Calibration
CO2 Measuring Range	0-9999ppm (Resolution: 1ppm)
Accuracy @ 25°C (77°F)	±100ppm +6% Reading
Temperature Measuring Range	0-50°C (Resolution: 0.5°C)
Temperature Accuracy	±1°C
Warm-up time	1 Minute
Pre- alarm Switch Over Relay Output	Model **2800ppm** 240VAC 1A, 30VDC 2A switching current (Resistive load) Relay on @ >1500ppm / Relay off @ <1450ppm Model **4500ppm** 240VAC 1A, 30VDC 2A switching current (Resistive load) Relay on @ >2800ppm / Relay off @ <2750ppm
Alarm Switch Over Relay Output	Model **2800ppm** 240VAC 1A, 30VDC 2A switching current (Resistive load) Relay on @ >2800ppm / Relay off @ <2750ppm Model **4500ppm** 240VAC 1A, 30VDC 2A switching current (Resistive load) Relay on @ >4500ppm / Relay off @ <4450ppm
Storage conditions	-40~70°C (-40~158°F); 0~95%RH, non-condensing
Operation conditions	-0~50°C (-32~122°F); 0~95%RH, non-condensing
Net Weight / Dimensions	252g approx / 135mm(W)x95mm(H)x38mm(D)

5 Circuit Board



1. POWER - Mains Input 230V, L N
2. Alarm relay, volt free connection to Merlin system.
3. Pre alarm relay, volt free connection to Merlin system.
4. Temperature relay.
5. 0-10V output, low voltage connection.
6. Audible alarm switch, ON = ON / 1 = OFF

6 Maintenance

To keep your device in good working order, you must follow these steps:

✓ DO carefully remove any accumulated dust from the outer enclosure once a month.

× NEVER use detergents or solvents to clean your device – this may permenantly or temporarily damage the gas sensing elements.

× NEVER spray air fresheners, hair spray, paint or other aerosols near the device.

× NEVER paint the device. Paint will seal vents and interfere with the device.

7 Manufacturer's Warranty

3 Year Limited Warranty

Warranty coverage: The manufacturer warrants to the original consumer purchaser, that this product will be free of defects in material and workmanship for a period of three (3) years from date of purchase. The manufacturer's liability hereunder is limited to replacement of the product with repaired product at the discretion of the manufacture. This warranty is void if the product has been damaged by accident, unreasonable use, neglect, tampering or other causes not arising from defects in material or workmanship. This warranty extends to the original consumer purchaser of the product only.

Warranty disclaimers: Any implied warranties arising out of this sale, including but not limited to the implied warranties of description, merchantability and intended operational purpose, are limited in duration to the above warranty period. In no event shall the manufacturer be liable for loss of use of this product or for any indirect, special, incidental or consequential damages, or costs, or expenses incurred by the consumer or any other user of this product, whether due to a breach of contract, negligence, strict liability in tort or otherwise. The manufacturer shall have no liability for any personal injury, property damage or any special, incidental, contingent or consequential damage of any kind resulting from gas leakage, fire or explosion. This warranty does not affect your statutory rights.

Warranty Performance: During the above warranty period, your product will be replaced with a comparable product if the defective product is returned together with proof of purchase date. The replacement product will be in warranty for the remainder of the original warranty period or for six months – whichever is the greatest.

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