Gas Safety Products

Merlin CO2 Monitor

2800PPM

Installation, operating and maintenance

📖 Read these instructions carefully before operating or servicing

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* The unit should be installed by a competent person only *

* The expected life time of the detector/sensor element is more than 5 years *

* The unit should be stored in cool, dry conditions *

* We do recommend that this product is serviced annually *

* If the unit is found to be damaged – Contact us *

* CALIBRATION *

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.

Table of contents

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 also the traffic light colour system indicates the air quality in the area.

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 would 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.

2 Installation

2.1 Mounting the CO2 Sensor

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.

2.2 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 'LN Power'

2.3 Alarm Relay

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 Pre Alarm Relay.

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

2.5 Temperature Relay

This will switch over should the sensor detect the temperature rise above 30°C, and switch back once the temp drops back below 29°C etc.

2.6 0-10 Volt DC Output

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

Volt	2800ppm
0V	<1000ppm
4V	1000ppm
6V	1500ppm
8V	2000ppm
10V	2800ppm

2.7 Audible Alarm

There is a dip switch on the circuit board to activate or de-activate the in-built audible alarm.

(On = on & 1 = Off). This will sound at 1500ppm if enabled.

Note: All low voltage connections should be made using a screened cable to avoid electrical interference.

# 3   Operation Instructions

3.1   How to turn the system on and off

1. To turn on the Merlin CO2 monitor you need to supply 230V into the "L & N POWER" terminal, this will then illuminate the blue LCD screen and initiate a 60 second countdown. When the countdown is complete the LCD screen will show CO2 levels in the room.

2. To turn off the Merlin CO2 monitor you need to turn the power supply to the panel off or disconnect the fuse spur.

3.2   Explanation of LED status

- **Low (Green) LED**

   Green - Good air quality, CO_2 <1000ppm

- **Medium (Amber) LED**

   Yellow - Moderate air quality, 1000ppm> CO_2 < 1500ppm

- **High (Red) LED**

   Red - Poor air quality CO_2 >1500ppm

Merlin CO2 Wiring Diagram
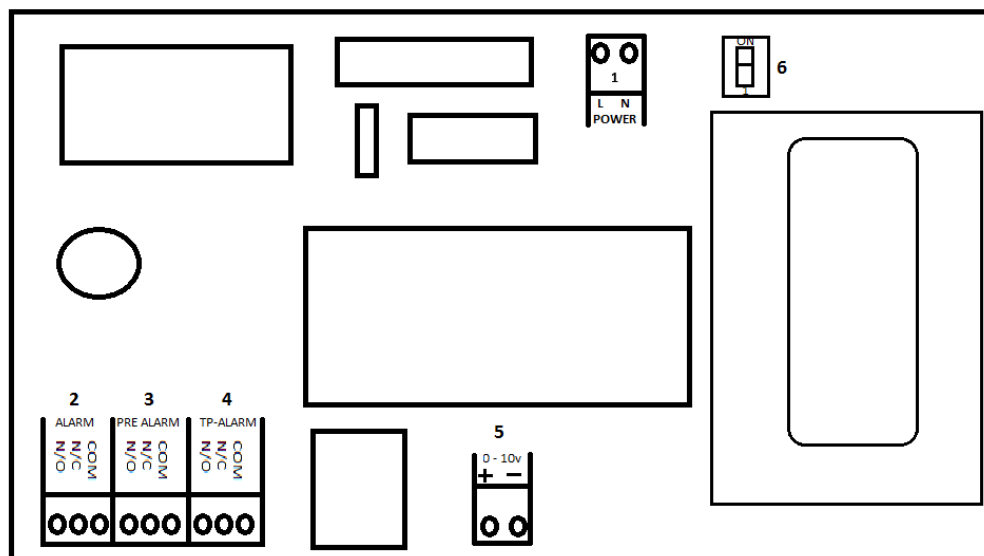
1. Mains Input 230V, L & N
2. Alarm relay, volt free connection to Merlin system.
3. Pre alarm relay, volt free connection to Merlin system.
4. Temperature relay.
5. 0-10V output.
6. Audible alarm switch, ON = ON / 1 = OFF

> Please note, Mains wires and low voltage wires should not be run in the same conduit as per the
> **LOW VOLTAGE DIRECTIVE**

Specification

Power Supply	230VAC, 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 at Switch On	1 Minute
Switch Over Relay Output	240VAC 1A, 30VDC 2A switching current (Resistive load)

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