# CO3800

# CO SMART SENSOR

## DESCRIPTION

The CO3800 Carbon Monoxide smart sensor is a slim wall mounted sensor with a very unique feature. It has a tiny fan that draws air in from the bottom of the housing through a dust filter over the sensor and discharges through the top. This ensures a positive response to carbon monoxide emissions while the sensor is well protected inside the polycarbonate housing.

The CO3800 sensor operates on a two wire non-polarised connection to the TC5044 controller. Power and communications are supplied over one pair of wires. Up to ten CO3800 sensors can be connected to the one controller. (Note: Earlier models were limited to six CO3800 sensors). There are two 4 position DIP switches on each sensor. DIP Switch 1 is for setting the address for each sensor. The CO level for each area can be read at the controller. The controller will recognise how many sensors are connected will select the highest CO level to control the carpark ventilation fan(s). If the DIP switches are not set, then the controller will allocate an address to

each sensor, however the CO Levels for each area will not be available, only the highest CO level detected. DIP Switch 2 is for the selection of the analogue output. 1 – 4-20mA. 2 – 0-10vdc.

Each CO3800 Carbon Monoxide sensor is calibrated as a group in a custom calibration chamber and a calibration label showing the following data is attached to each CO3800 sensor.

Serial Number
Calibration Date
Temperature
Calibration Reference in ppm.

Note 1: When installing sensor be careful not to damage or dislodge fan.

Note 2: This sensor also works with diesel emissions eliminitating the use of seperate control sensors.
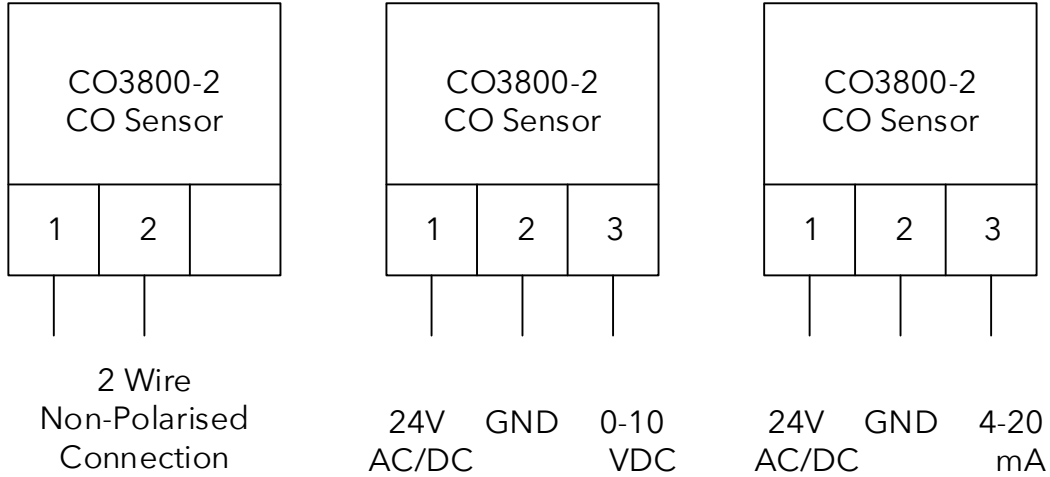
## DIP SWITCH 1 SETTINGS

| | | | | | | |
|---|---|---|---|---|---|---|
| 0001 = 1 | 0010 = 2 | 0011 = 3 | 0100 = 4 | 0101 = 5 | 0110 = 6 | 0111 = 7 |
| 1000 = 8 | 1001 = 9 | 1010 = 10 | | | | |
| 0 indicates Off | | 1 indicates On | | 000 Default – Address not used | | |

## DIP SWITCH 2 SETTINGS

| | | | |
|---|---|---|---|
| All Off = Smart Sensor Mode | SW1 1000 = 4-20mA | SW2 0100 = 0-10Vdc | Note: Up is ON |

## CONNECTION DIAGRAMS

Note: Multicore screened data cables must be suitable for RS485 connection with a recommended maximum wire to wire capacitance of 40pF/m and a nominal area per conductor of 0.4 sqr mm. Daisy chain connection is preferred. Avoid star connection if possible. If signal attenuation is causing poor communication, try disconnecting the shield.

| CO3800-2 CO Sensor | | | CO3800-2 CO Sensor | | | CO3800-2 CO Sensor | | |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | | 1 | 2 | 3 | 1 | 2 | 3 |
| 2 Wire Non-Polarised Connection | | | 24V AC/DC | GND | 0-10 VDC | 24V AC/DC | GND | 4-20 mA |

## TECHNICAL DATA

| | |
|---|---|
| **Measuring Range** | 0 – 100ppm |
| **Output** | Comms Output to TC5044. 4-20mA 0-10vdc |
| **Sensor Life** | 10 years min. |
| **Supply Voltage** | 24VDC Power & Comms supplied from TC5044 |
| **Power Consumption** | 0.2W Max |
| **Fan Life** | MTTF 50,000 Hrs. |
| **Ambient Temp Operation** | -10° to 50°C |
| **Ambient Humidity** | Max 90%RH |
| **Dimensions** | L115 x H72 x D16mm |
| **Colour** | Light Grey |
| **Weight** | 75g |
| **Fan Aspirated Sensor** | Patent Pending |
| **Accuracy** | +/- 2.0ppm |
| **t90 Time** | ≤ 60 sec |
| **Type** | Solid State |

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