

## Wall Mount Carbon Dioxide Transmitter with LED Indication



### Features

- Real-time detecting CO<sub>2</sub> level
- Self calibration algorithm
- User selectable outputs
- LED indication on CO<sub>2</sub> levels
- Optional override switch

### Specification

Range	0 to 2000ppm
Output signals (jumper selectable depending on version):	
0-10Vdc	
4-20mA	
Modbus RS485	19200bps, 15KV antistatic protection
Power supply:	
Voltage output	24Vac/dc, ±10%
Current output	24Vdc only, ±10%
Consumption	1.6W max., 0.8W avg.
Accuracy	±40ppm +3% of reading @ 25°C
Stability	<2% of FS over sensor life
Non-linearity	<1% of FS
Sensor life	15 years, typical
Response time	<2 minutes, for 90% step change
Stabilization time:	
First time	48 Hours
Operational	10 Minutes
LED's	See page 2 for information
Environmental:	
Operational:	
Temp	0 to + 50°C
RH	0 to 95% non-condensing
Storage :	
Temp	-40 to +70°C
CE Conformity	CE Marked
Housing:	
Material	ABS
Dimensions	100 x 80 x 28mm
Protection	IP30
Country of origin	China

### Product Codes

#### GS-CO2-W-LED

Carbon Dioxide transmitter 0-2000ppm, 4-20mA/  
0-10Vdc selectable output with led indication

*Suffix (add to part code)*

**-M**

Modbus output

**-B**

Override switch (0-10Vdc output only for CO<sub>2</sub>)



#### Please Note:

Current versions are NOT loop powered and will require a common 0V connection.

## Technical Overview

The GS-C02-W-LED is a non-dispersive infrared sensor for measuring CO<sub>2</sub> concentrations, utilising microprocessor based electronics and a unique self-calibration algorithm to improve long-term stability and accuracy.

The sensor can be used to ensure adequate ventilation while maximizing energy savings by ventilating at the optimum level.

## Installation

1. Select a location on a wall of the controlled space which will give a representative sample of the prevailing room condition.

**Avoid sitting the sensor in direct sunlight, near diffusers and steam sources.**

2. Gently remove the front cover from the back plate. The front plate is removed by pressing the tab at the top of the sensor with a flat bladed screwdriver. Gently slant the screwdriver and this will separate the front cover from the back plate.
3. Using the base as a template mark the hole centres and fix to the wall with suitable screws. Alternatively the base plate can be mounted on to a conduit box or a standard recessed back box.
4. Feed cable through the knockout in the base of the housing and terminate the cores at the terminal block. Install wiring into terminal blocks as required, and push excess wire back into wall or junction box.
5. Select output type, 4-20mA or 0-10Vdc. Do **not** adjust the potentiometer Rr as this will void warranty.
6. Ensure that the supply voltage is within the specified tolerances.
7. Replace the front cover to the base plate until a click is heard.
8. Power the unit, pre-commissioning checks can be made after 10 minutes. Full commissioning should not be carried out for at least 48 hours. This will enable the ABC Logic self calibration procedure to complete.
9. It is recommended that screened cable be used and that the screen should be earthed at the controller only. Care should be taken not to lay control signal wiring in close proximity to power or other cables which may produce significant electromagnetic noise.

## LED Indication

1st Green LED	<600ppm
1st & 2nd Green LED's	600 to 800ppm
1st Yellow LED	800 to 1200ppm
1st & 2nd Yellow LED's	1200 to 1400ppm
1st Red LED	1400 to 1600ppm
1st & 2nd Red LED	>1600ppm

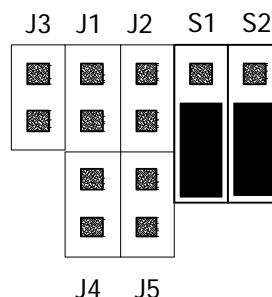
## ABC Logic Self-Calibration

When first powering the transmitter, it needs to be powered continuously for at least 2 days. This will allow the CO<sub>2</sub> sensors ABC Logic self-calibration system operate correctly.

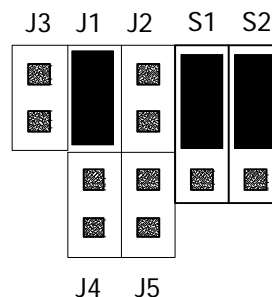
## Jumper Settings

Output signal type:

0-10Vdc::

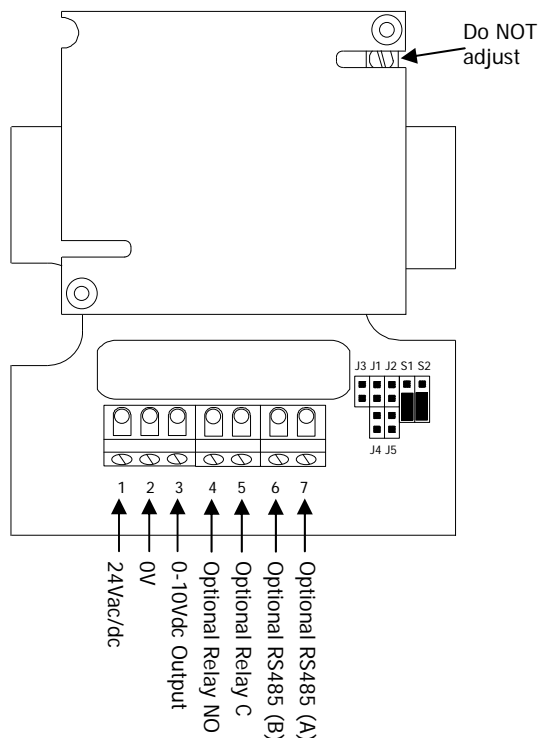


4-20mA:

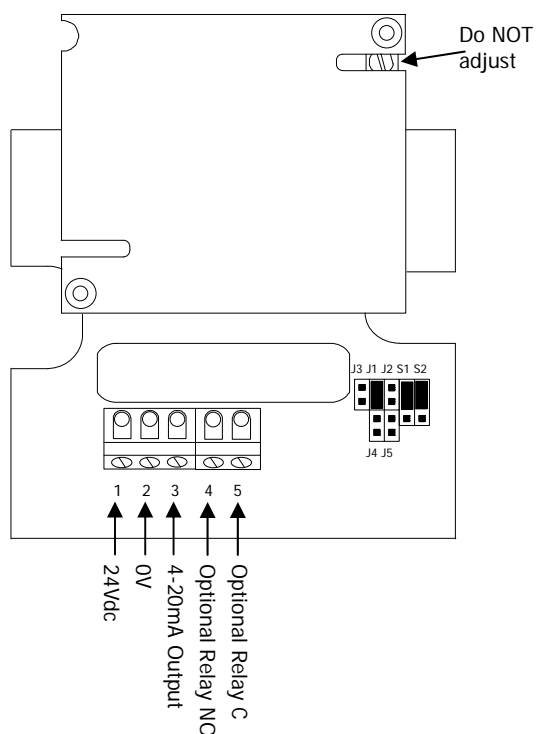


## Connections

0-10Vdc:



4-20mA:



## Connections (continued)

### Please Note:

Current output

If using in current output mode, the sensor must only be used with a 24Vdc supply. The sensor may be damaged if supplied with AC.

When using current output mode they are **NOT** loop powered and will require a common 0V connection.

## Trend Scaling

0-10Vdc (0 to 2000ppm)	4-20mA
Brange: -2000	Brange: -3000
Trange: 2000	Trange: 2000
Upper: 2000	Upper: 2000
Lower: 0	Lower: 0
Exponent: 4	Exponent: 4

Later IQ2x series and IQ3 (with type 5, characterise)

0-10Vdc (0 to 2000ppm)	4-20mA
Upper: 2000	Upper: 2000
Lower: 0	Lower: 0
Exponent: 4	Exponent: 4
Points Used: 2	Points Used: 2
I1: 0	I1: 4
O1: 0	O1: 0
I2: 10	I2: 20
O2: 2000	O2: 2000