

Duct Mount Carbon Dioxide Transmitter

Features



- Real-time detecting CO₂ level
- Self calibration algorithm
- User selectable outputs with Modbus option

Specification

Range	0 to 2000ppm
Output signals (jumper selectable):	
0-10Vdc	
4-20mA	
Modbus RS485	19200bps, 15KV antistatic protection
Power supply:	
Voltage output	24Vac/dc, ±10%
Current output	24Vdc only, ±10%
Consumption	
Max	1.6W
Average	0.8W
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	<5 minutes, for 90% step change
Stabilization time:	
First time	48 Hours
Operational	10 Minutes
Duct air velocity	0 to 450m/min.
Environmental:	
Operational:	
Temp	0 to + 50°C
RH	0 to 95% non-condensing
Storage :	
Temp	-20 to +70°C
CE Conformity	CE Marked
Housing dimensions:	
Housing	100 x 80 x 50mm
Probe	125.5 x 40mm
Housing material	ABS
Protection	IP54
Country of origin	China



Please Note:

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

Product Codes

GS-C02-D

Carbon Dioxide transmitter 0-2000ppm

Suffix (add to part code)

-M

Modbus output

Technical Overview

The GS-C02-D is a non-dispersive infrared sensor for measuring CO₂ concentrations, utilising microprocessor based electronics and a unique self-calibration algorithm to improve long-term stability and accuracy.

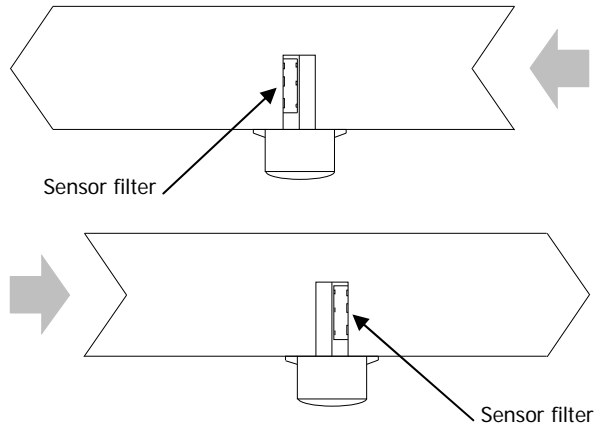
The sensor can be used to ensure adequate ventilation while maximizing energy savings by ventilating at the optimum level.

Installation

1. Select a location in the duct where dust & contaminants are at a minimum.
2. Unscrew and remove the front panel from the base.
3. Drill two pilot holes at 100mm centres, and a 42mm hole centre for the probe in the surface to which the sensor is to be mounted.
4. It is important that the probe is fitted so that the air flow is opposite from the filter (see fig. 1). The probe can be turned to the correct position, by carefully twisting and removing the probe and re-inserted.
5. 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.
6. Select output type, 4-20mA or 0-10Vdc. Do **not** adjust the potentiometers W1 & W4, as this will void warranty.
7. Ensure that the supply voltage is within the specified tolerances.
8. Replace the front cover to the base plate, and tighten the screws.
9. 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.
10. 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.

Installation (continued)

Fig. 1

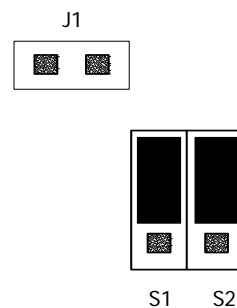


ABC Logic Self-calibration

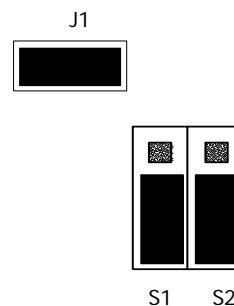
When first powering the transmitter, it needs to be powered continuously for at least 2 days. This will allow the CO₂ sensors ABC Logic self-calibration system operate correctly.

Jumper Settings

0-10Vdc:

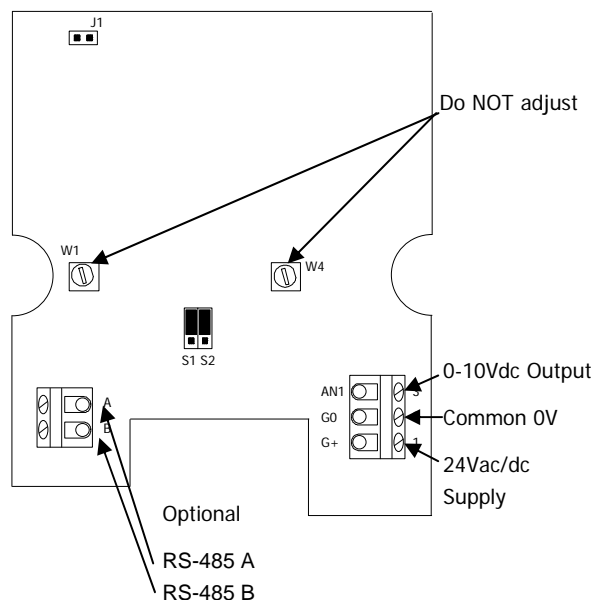


4-20mA:

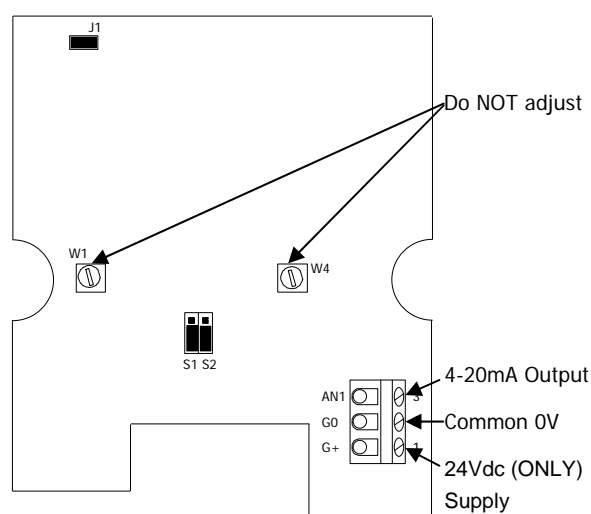


Connections

0-10Vdc:



4-20mA:



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