



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

Specification

Range's:	
CO ₂	0 to 2000ppm
Temp.	0 to +50°C
Output signals	0-10Vdc or 4-20mA
Power supply:	
Voltage output	24Vac/dc, ±10%
Current output	24Vdc only, ±10%
Consumption	Max, 3.5W Avg, 2.8W
Accuracy:	
CO ₂	±40ppm +3% of reading
Temp.	±0.5°C
CO ₂ Stability	<2% of FS over sensor life
Sensor life	10 years, typical
Response time	<2 minutes, for 90% step change
Stabilization time:	
First time	24 Hours
Operational	5 Minutes
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	130 x 85 x 36.5mm
Protection	IP30
Country of origin	China

Product Codes

GS-CO2-T-W

Carbon Dioxide and temperature transmitter with current selectable outputs



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



Technical Overview

The GS-C02-T-W is a non-dispersive infrared sensor for measuring CO_2 concentrations, utilising microprocessor based electronics and a unique self-calibration algorithm to improve long-term stability and accuracy. The sensor also offers a temperature output.

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

Installation

 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 on the base 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 on the back plate. Install wiring into terminal blocks as required, and push excess wire back into wall or junction box.
- Select output type, 4-20mA or 0-10Vdc. Do <u>not</u> adjust any of the potentiometers W1/W6 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.
- Power the unit, a red light will flash for about 120 sec. This is situated at the bottom of the housing face cover. After the count down the analogue output will be activated.

Installation (continued)

- Pre-commissioning checks can be made after 10 minutes. Full commissioning should not be carried out for at least 24 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.

ABC Logic Self-Calibration

When first powering the transmitter, it needs to be powered continuously for at least 24 hours. This will allow the CO_2 sensors ABC Logic self-calibration system operate correctly.

Jumper Settings

Output signal type:





4-20mA:







Connections



Do NOT adjust



Note:

Voltage output

This can be supplied with 24Vac/dc.

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 OV connection.



Trend Scaling

	4-20mA	
)		
-2000	Brange:	-3000
2000	Trange:	2000
2000	Upper:	2000
0	Lower:	0
4	Exponent:	4
	4-20mA	
-50	Brange	-75
50	Trange	50
50	Upper	50
0	Lower	0
3	Exp	3
	-2000 2000 2000 0 4 -50 50 50 0 3	4-20mA -2000 Brange: 2000 Upper: 2000 Upper: 0 Lower: 4 Exponent: 4-20mA -50 Brange 50 Trange 50 Upper 0 Lower 3 Exp

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

0-10Vdc		4-20mA	
(0 to 2000ppm	ı)		
Upper:	2000	Upper:	2000
Lower:	0	Lower:	0
Exponent:	4	Exponent:	4
Points Used:	2	Points Used:	2
I1:	0	I1:	4
01:	0	01:	0
12:	10	12:	20
02:	2000	02:	2000
0-10Vdc		4-20mA	
0-10Vdc (0 to 50°C)		4-20mA	
0-10Vdc (0 to 50°C) Upper:	50	4-20mA Upper:	50
0-10Vdc (0 to 50°C) Upper: Lower:	50 0	4-20mA Upper: Lower:	50 0
0-10Vdc (0 to 50°C) Upper: Lower: Exponent:	50 0 3	4-20mA Upper: Lower: Exponent:	50 0 3
0-10Vdc (0 to 50°C) Upper: Lower: Exponent: Points Used:	50 0 3 2	4-20mA Upper: Lower: Exponent: Points Used:	50 0 3 2
0-10Vdc (0 to 50°C) Upper: Lower: Exponent: Points Used: I1:	50 0 3 2 0	4-20mA Upper: Lower: Exponent: Points Used: I1:	50 0 3 2 4
0-10Vdc (0 to 50°C) Upper: Lower: Exponent: Points Used: I1: O1:	50 0 3 2 0 0	4-20mA Upper: Lower: Exponent: Points Used: I1: O1:	50 0 3 2 4 0
0-10Vdc (0 to 50°C) Upper: Lower: Exponent: Points Used: I1: O1: I2:	50 0 3 2 0 0 10	4-20mA Upper: Lower: Exponent: Points Used: I1: O1: I2:	50 0 3 2 4 0 20
0-10Vdc (0 to 50°C) Upper: Lower: Exponent: Points Used: I1: O1: I2: O2:	50 0 3 2 0 0 10 50	4-20mA Upper: Lower: Exponent: Points Used: I1: O1: I2: O2:	50 0 3 2 4 0 20 50

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