Wall Mount Carbon Dioxide Transmitter

Features

- Real-time detecting CO_2 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	9600/14400/19200(default)/28800 or 38400bps programmable selection, 15KV antistatic protection
Power supply:	
Voltage output	24Vac/dc, ±10%
Current output	24Vdc only, ±10%
Consumption	
Max	1.5W
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	<2 minutes, for 90% step change
Stabilization time:	
First time	48 Hours
Operational	10 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	100 x 80 x 28mm
Protection	IP30
Country of origin	China

⚠ Please Note:

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

Product Codes

GS-CO2-W
Carbon Dioxide transmitter 0-2000ppm

Suffix (add to part code)

-M
Modbus output

Technical Overview

The GS-C02-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 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 potentiometers W1 & W2 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.
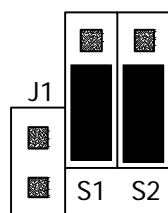
ABC Logic Self-Calibration

When first powering the transmitter, it needs to be powered continuously for at least 2 days. This will allow the CO_2 sensors ABC Logic self-calibration system operate correctly.
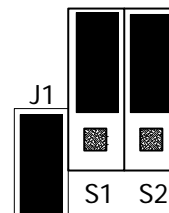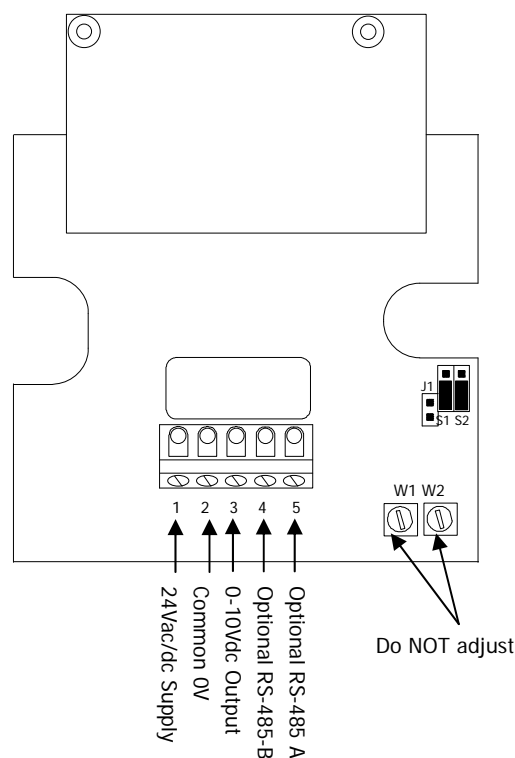
Jumper Settings

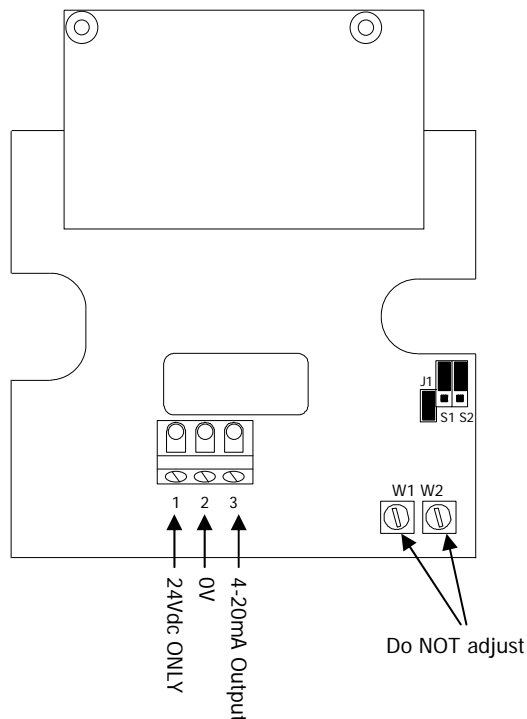Output signal type:

0-10Vdc:

4-20mA:

Connections

0-10Vdc:

Connections (continued)

4-20mA:

24Vdc ONLY
0V
4-20mA Output

1 2 3

J1
S1 S2

W1 W2

Do NOT adjust

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

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For the latest information and product updates, register at www.sontay.com