

Wall Mount Carbon Dioxide Transmitter



Features

- Innovative self calibration algorithm
- User selectable outputs
- Low ambient sensitivity
- Snap-on face plate, no screws required

Specification

Range	0 to 2000ppm
Output signals:	
0-10Vdc	
4-20mA	
Power supply	20 to 30Vdc or 24Vac
Maximum current	100mA
Accuracy	±30ppm ±5% of measured value
Repeatability	±20ppm ±1% of measured value
Response time	<60s, for 90% step change
Operating temp. range	0 to + 50°C
Housing:	
Material	ABS high impact plastic, UL 90VO
Dimensions	121 x 89 x 30mm
Protection	IP30
Calibration	5 years (recommended)
Country of origin	USA

Product Codes

GS-CDE-W

Carbon Dioxide transmitter 0-2000ppm

GS-CDE-W-T

Carbon Dioxide transmitter 0-2000ppm with an optional thermistor output for temperature



Please Note:

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

Technical Overview

The GS-CDE-W 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.

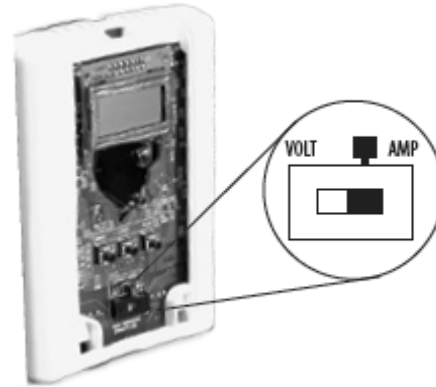
The sensor can be used to ensure adequate ventilation while maximizing energy savings by ventilating at the optimum level.

Installation

1. Select a location 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.**
2. Gently remove cover plate and the front cover from back plate. The front plate is removed by pressing the tab at the top of the sensors while pulling outward from the top of the cover.
3. Using the base as a template mark the hole centres and fix to the wall with suitable screws.
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 slack wire back into wall or junction box.
5. Replace the housing to the base plate until a click is heard.
6. Select output type, 4-20mA or 0-10Vdc (Fig 1), and position automatic baseline calibration jumper as required. **DO NOT PRESS THE ENTER BUTTON, THIS IS FOR RE-CALIBRATION ONLY.**
7. Replace cover plate.
8. Power the unit with 24Vac/dc and after a stabilising period of 5 minutes functionality checks can be made
9. Ensure that the supply voltage is within the specified tolerances.
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.



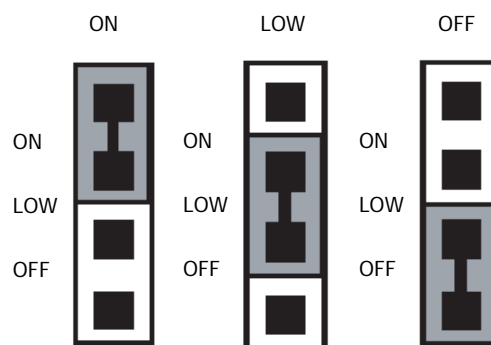
ABC Calibration Algorithm

ABC (Automatic Baseline Calibration) is a patented self-calibration feature, which automatically adjusts the CO₂ sensor to compensate for drift. When ABC is enabled, the lowest reading within every 24-hour period is recorded and analyzed over a running 7-day or 28-day period. If a statistically significant amount of drift is detected, an automatic correction factor is applied. This enables the sensor to operate within specifications for the 5-year calibration interval.

ON POSITION. *Recommended Setting.* Use the ON setting for applications where the building is unoccupied within a 24-hour time frame. This setting runs the ABC for a 7-day average.

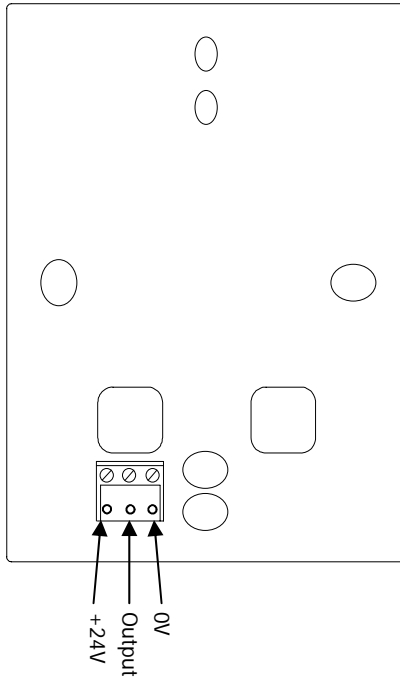
LOW POSITION. Use the LOW setting for buildings occupied 24 hours a day. This setting extends the ABC to a 28-day average.

OFF POSITION. Not Recommended.

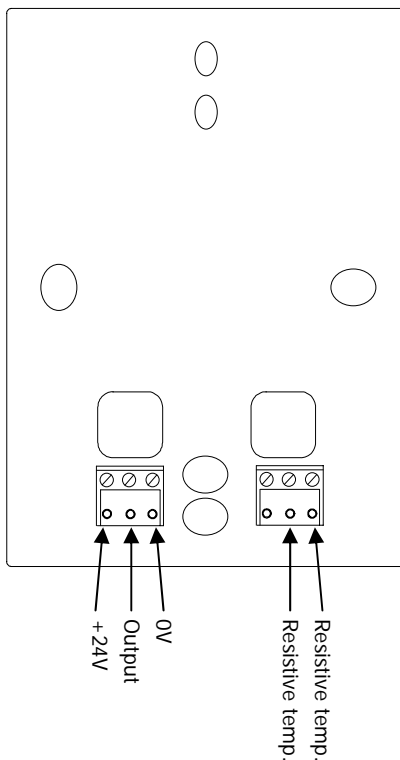


Connections

GS-CDE-W:



GS-CDE-W-T:



Connections (continued)

Please Note:

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

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.

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

Trend Scaling

4-20mA (0 to 2000ppm)	0-10Vdc (0 to 2000ppm)
Brange: -3000	Brange: -2000
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)

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

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

5 Year Calibration Process

1. Remove cover as installation instructions on page 2.
2. Using a suitable flexible hose connect to plastic port located on sensing module.
3. Power the sensor as normal.
4. Start flowing (Nitrogen) 0ppm Gas (0ppm only).
5. Push and hold down calibration button until the LED illuminates.
6. Continue flowing gas through the sensor until the LED is off - estimated calibration time is 30 seconds to five minutes.