

Wall Mount CO₂, RH & Temp Transmitter



Features

- Real-time detecting CO₂ level
- Self calibration algorithm
- User selectable outputs 4-20mA, 0-10Vdc or Modbus option
- Backlit LCD option

Specification

Range's:

CO ₂	0 to 2000ppm
RH	5 to 95%
Temp.	0 to +50°C

Output signals (jumper selectable):

0-10Vdc, 4-20mA or Modbus

Modbus RS485 19200bps, 15KV antistatic protection

Power supply:

Voltage output 24Vac/dc, ±10%

Current output 24Vdc only, ±10%

Consumption Max, 3.5W Avg, 2.8W

Accuracy:

CO₂ ±40ppm +3% of reading

RH <3%RH, 20-80%RH

Temp. ±0.5°C

CO₂ 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

LCD display (optional) 3 colour, displays CO₂, RH & Temp.

Green Optimal (<1000ppm)

Yellow Moderate (1001 ~1400ppm)

Red Poor (>1400ppm)

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-RHT-W

Carbon Dioxide, humidity and temperature transmitter with current, voltage or Modbus selectable outputs

Suffix (add to part code)

-M

Modbus output

-LCD

Backlit LCD



Please Note:

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

Technical Overview

The GS-C02-RHT-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 also offer humidity and temperature outputs. An optional backlit LCD display's all measurements.

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 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.
5. Select output type, 4-20mA or 0-10Vdc. Do **not** 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.
8. 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)

9. 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 CO₂ sensors ABC Logic self-calibration system operate correctly.

Jumper Settings

Output signal type:

0-10Vdc:

J1 

J2 

J3 



4-20mA:

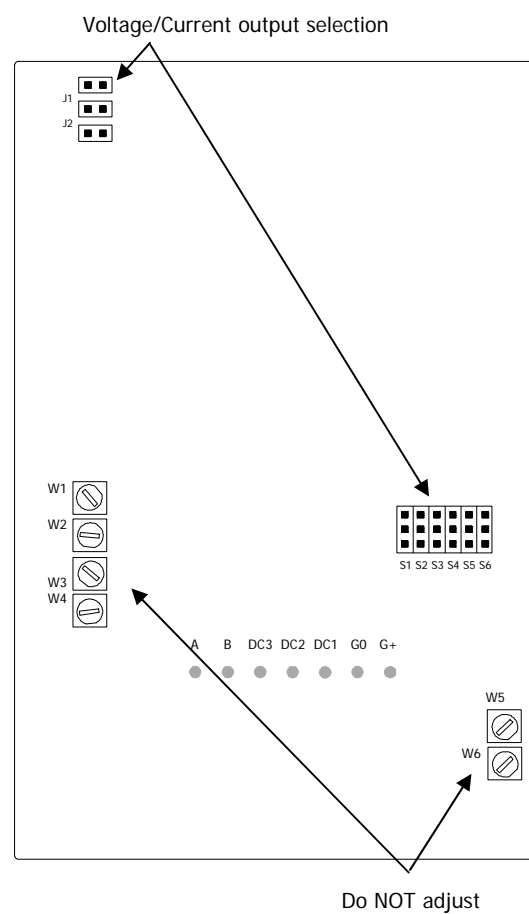
J1 

J2 

J3 

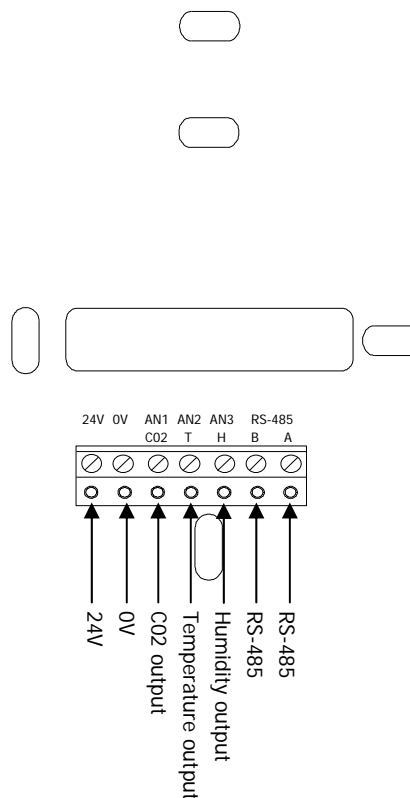


Connections



Connections (continued)

(back plate)



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 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

0-10Vdc (5 to 95%RH)	4-20mA
Brange -95	Brange -130
Trange 95	Trange 95
Upper 95	Upper 95
Lower 5	Lower 5
Exp 3	Exp 3

0-10Vdc (0 to +50°C)	4-20mA
Brange -50	Brange -75
Trange 50	Trange 50
Upper 50	Upper 50
Lower 0	Lower 0
Exp 3	Exp 3

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

0-10Vdc (5 to 95%RH)	4-20mA
Upper 95	Upper 100
Lower 5	Lower 0
Exp 3	Exp 3
Points used 2	Points used 2
I1 0	I1 4
O1 5	O1 5
I2 10	I2 20
O2 95	O2 95

Trend Scaling (continued)

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