

GS-CO2-RHT-D

Duct Mount Carbon Dioxide, RH & T Transmitter



Features:

- CO₂ Self-calibration algorithm
- Real time detecting CO₂ levels
- Backlit LCD

Benefits:

- High and long term stability
- 4-20mA and 0-10Vdc outputs for compatibility with a wide range of controllers

Technical Overview

The GS-CO2-RHT-D-LCD 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 offers 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.

Specification:

Range's:	
CO ₂	0 to 2000ppm
RH	0 to 100%
Temp.	0 to 50°C (32 to 122°F)
Output signals (jumper selectable):	
	0-10Vdc or 4-20mA
Modbus RS485	19200bps, 15KV antistatic protection
Power supply:	
Voltage output	24Vac/dc, ±10%
Current output	24Vdc only, ±10%
Consumption	Max, 1.8W / Avg, 1.0W
Accuracy:	
CO ₂	±40ppm +3% of reading @ 22°C
RH	<±3% @25°C, 40-60%RH
Temp.	±0.4°C @ 25°C
Stability	
CO ₂	<2% of FS over sensor life
RH	±0.1°C per year
Temp.	±1%RH per year
Sensor life	15 years, typical
Response time	<5 min, for 90% step change
Stabilization time:	
First time	24 Hours
Operational	10 Minutes
LCD display	3 colour, displays CO ₂ , RH & Temp.
Green	Optimal (<1000ppm)
Yellow	Moderate (1001 ~1400ppm)
Red	Poor (>1400ppm)
Duct air velocity	0 to 450m/min.
Environmental:	
Temp	0 to + 50°C (32 to 122°F)
RH	0 to 95% non-condensing
Storage temp.	-20 to +70°C (-4 to 158°F)
CE Conformity	CE Marked
Housing dimensions:	
Housing	100 x 80 x 50mm (3.94 x 3.15 x 1.97")
Probe	125.5 x 40mm (4.94 x 1.57")
Housing material	ABS
Protection	IP54
Country of origin	China

Part Codes:

GS-CO2-RHT-D-LCD

Duct mount Carbon Dioxide, RH & Temp transmitter with current or voltage selectable outputs and LCD display

GS-CO2-RHT-D-M-LCD

Duct mount Carbon Dioxide, RH & Temp transmitter with current, voltage and Modbus selectable outputs and LCD display



The products referred to in this data sheet meet the requirements of EU Directive 2004/108/EC



Please Note:

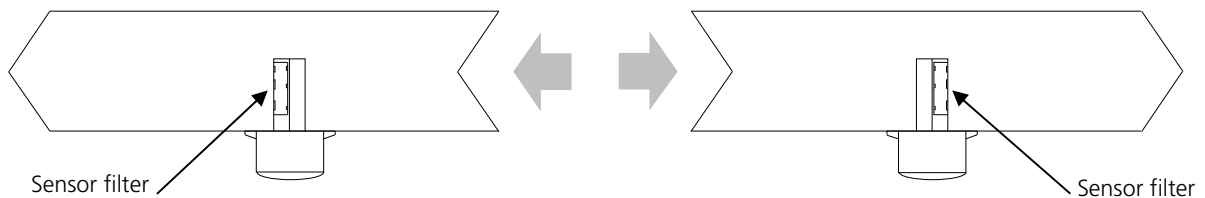
Current versions are NOT loop powered and will require a common 0V connection.

Installation:



Antistatic precautions must be observed when handling these sensors. The PCB contains circuitry that can be damaged by static discharge.

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 (3.94") centres, and a 42mm (1.65") 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. 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/W6, 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.

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 to operate correctly.

Jumper Settings:

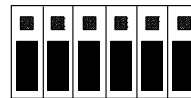
0-10Vdc:



4-20mA:

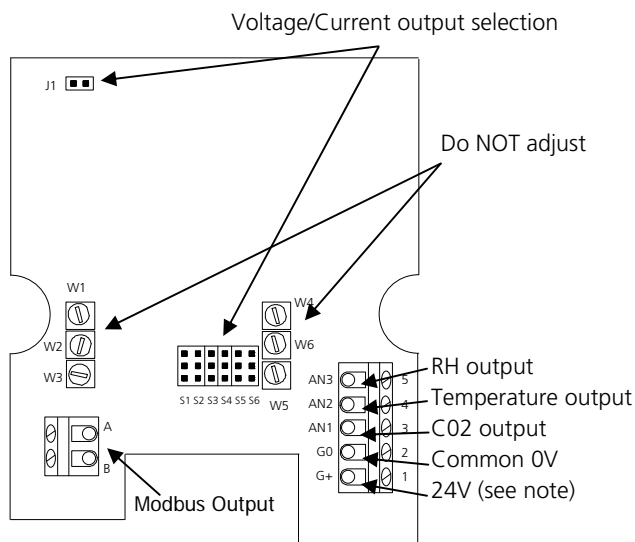


S1 S2 S3 S4 S5 S6



S1 S2 S3 S4 S5 S6

Connections & PCB Layout:



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.

Whilst every effort has been made to ensure the accuracy of this specification, Sontay cannot accept responsibility for damage, injury, loss or expense from errors or omissions. In the interest of technical improvement, this specification may be altered without notice.

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