

GS-CO2-RHT-W

Wall Mount Carbon Dioxide, RH & T Transmitter



Features:

- CO₂ Self-calibration algorithm
- LCD Display with real time measurements

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-W-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, 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:	
CO ₂	±40ppm +3% of reading
RH	<3%RH, 20-80%RH
Temp.	±0.5°C
CO ₂ Stability	<2% of FS over sensor life
Sensor life	10 years, typical
Response time	<2 min., for 90% step change
Stabilization time:	
First time	24 Hours
Operational	5 Minutes
LCD display	
3 colour, displays CO ₂ , RH & Temp.	
Green	Optimal (<1000ppm)
Yellow	Moderate (1001 ~1400ppm)
Red	Poor (>1400ppm)
Environmental:	
Operational:	
Temp	0 to + 50°C (32 to 122°F)
RH	0 to 95% non-condensing
Storage temp.	-40 to +70°C (-40 to 158°F)
CE Conformity	CE Marked
Housing:	
Material	ABS
Dimensions	130 x 85 x 36.5mm (5.12 x 3.35 x 1.44")
Protection	IP30
Country of origin	China



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

Part Codes:

GS-CO2-RHT-W-LCD

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

GS-CO2-RHT-W-M-LCD

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



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.

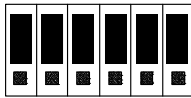
1. Select a location on a wall of the controlled space which will give a representative sample of the prevailing room condition. **Avoid sitting the sensor in direct sunlight, near diffusers, steam sources rubbish bins and gas appliances.**
2. Gently remove the front cover from the back plate. The front 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 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.
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 2 days. This will allow the CO₂ sensors ABC Logic self-calibration system to operate correctly.

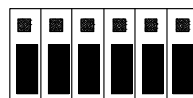
Jumper Settings:

0-10Vdc (default):



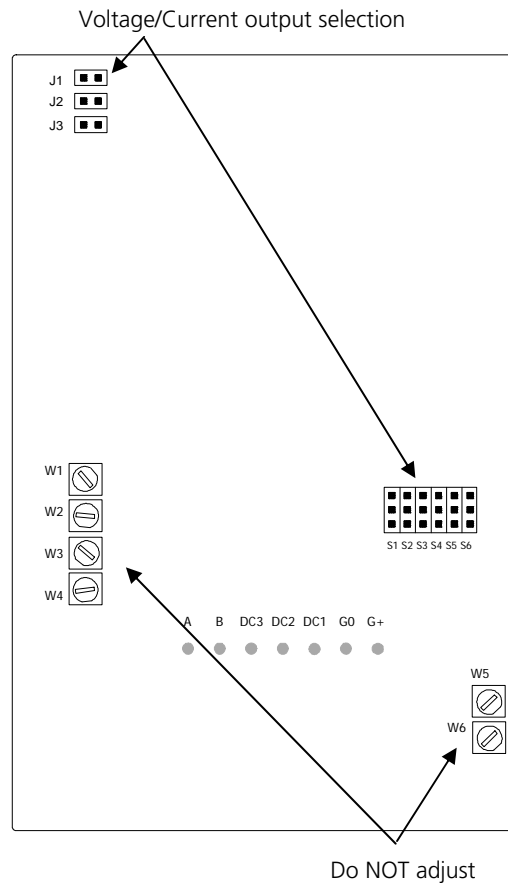
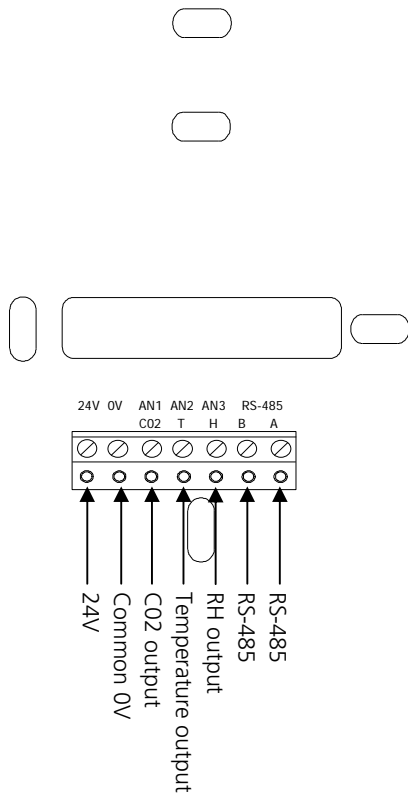
S1 S2 S3 S4 S5 S6

4-20mA:



S1 S2 S3 S4 S5 S6

Connections & PCB Layout:



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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