Sontay®
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GS-CO-1000
Space Mounted CO Sensors

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Features & Benefits

- Direct thermistor temperature options available
- High stability & reliability
- Long term stability
- 4-20mA, 0-5Vdc and 0-10Vdc outputs for compatibility with a wide range of controllers

Technical Overview

The GS-CO-1000 series of Carbon Monoxide sensors are based on tried and tested SnO_2 sensor technology, the new design provides a highly cost-effective answer for monitoring CO, typically for alarm purposes.

NB The sensor is not designed, manufactured or intended for use or re-sale as control or monitoring equipment in environments requiring life safety performance, in which the failure of the sensor could lead directly to death, personal injury, or severe physical or environmental damage. Sontay and its suppliers specifically disclaim any express or implied warranty of fitness for life safety.

Product Codes

GS-CO-1000	Space carbon monoxide sensor

Suffixes (add to part code)

-T Direct resistive temperature output*

Thermistor types:

A (10K3A1)	B (10K4A1)	C (20K6A1)
H (SAT1)	K (STA1)	L (TAC1)
M (2.2K3A1)	N (3K3A1)	P (30K6A1)
Q (50K6A1)	S (SAT2)	T (SAT3)
W (SIE1)	Y (STA2)	Z(10K NTC)

Platinum types:

D (PT100a)	E (PT1000a)

Nickel types:

F (NI1000a)	G (NI1000a/TCR (LAN1))

Interface Options (add to part code)**

-SP	Resistive set point 0-10kΩ or 11-1kΩ
-FS3	Resistive 3-speed fan switch
-FS4	Resistive 4-speed fan switch
-FS5	Resistive 5-speed fan switch
-MS	Momentary switch
-LCD	Integral LCD

Accessories

DECOR	Decorators trim plate
GASKET	Insulating gasket (pack of 10)

** Interface Restrictions

- SP only
- MS only
- SP-MS only
- SP-FS only

Note*:
When using the -T option, they are not compensated for internal heating.

WEEE Directive:
At the end of the products useful life please dispose as per the local regulations.
Do not dispose of with normal household waste.
Do not burn.

Specification

Outputs:		
	Voltage	0-10Vdc, 0-5Vdc
	Current	4-20mA (3-wire)
Optional Passive Outputs:		
		Thermistor
	Set point	0-10kΩ or 11-1kΩlinear
	Momentary switch	VFC
	Fan Speed	Resistive
Measurement range:		0 to 160ppm
Power Supply:		12-26Vac or 16-26Vdc @60mA
Ambient:		
	Temperature	0 to 50°C
	RH	0 to 95% RH, non-condensing
Housing:		
	Material	ABS (flame retardant)
	Colour	polished white finish
Dimensions		115 x 85 x 28mm
Ambient range		-10 to 60°C
Protection		IP30
Country of origin		UK

CE

The products referred to in this data sheet meet the requirements of EU Directive 2014/30/EU

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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, on an outside wall or near heat sources. An idea mounting height is 1.5m from the floor.

2. Undo the tamperproof screw at the bottom of the housing and remove the front panel from the base.

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 standard recessed back box. The base plate is suitable for EU & North America fixings.

4. Feed cable through the hole in the base plate of the housing and terminate the cores at the terminal block as required. Leaving some slack inside the unit.

5. Set jumper links according to output type required and replace the housing to the base plate and tighten the tamperproof screw (if required) through the lug at the bottom of the base plate.

6. Before powering the sensor, ensure that the supply voltage is within the specified tolerances.
   Note: When using the sensor with a 4-20mA output, it is important to make all electrical connections before applying the supply voltage. If the sensor is not connected sequence, then you may see a higher reading than expected (can be as much as 55mA).

7. Power the unit, pre-commissioning checks can be made after an hour. Full commissioning should not be carried out for a minimum of 24 hours with the unit in clean air free of contaminates. This will allow the electronics and sensor time to stabilise.

Note:

-T Direct thermistor output (if fitted) is between terminals OP1 and T2, polarity is independent. When using the -T option, they are not compensated for internal heating.

Connections

Left Hand terminal Block:

24V	Supply + 24Vac or Vdc
GND	Supply 0V
OP1	Temperature output (see J11 settings)
OP2	Not used
GND	Common 0v
OP3	CO Output
GND	Common 0V
OVRD	0-10Vdc input to indicate occupancy or override. Note: that this can only be used if voltage output is used, as it needs a common 0V

Right Hand Terminal Block (if -T option is selected);

T**2**	Direct thermistor output only (other half of OP1 if J11 is set to T)
MS1	Momentary switch VFC output
MS2	Momentary switch VFC output
P5*	Set point
P6*	Set point, wiper
P7*	Set point
FS2	Fan speed switch output, resistive
FS1	Fan speed switch output, resistive

Voltage output — Nominal voltage 24Vac/dc.

Current output — 3-wire (0V connection) 24Vac/dc
Please see note in section 7 on previous page regarding connections.

If using the -LCD option, when in loop powered mode the back light will not be lit. The transmitter will require a 0V connection for the back light to work (3-wire).

Jumper Settings

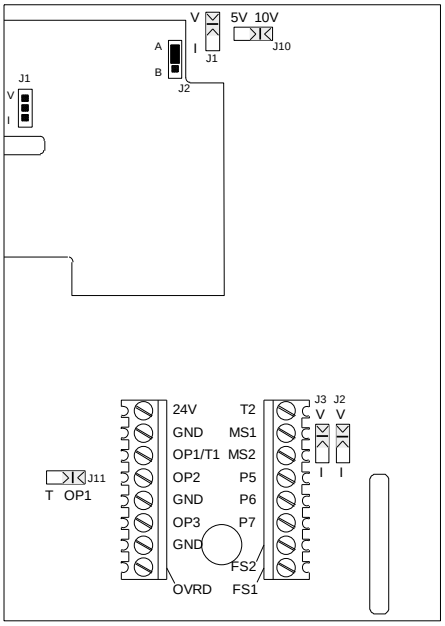
Main board
J1, J2, J3
These set the outputs to either voltage of current, V for voltage, I for current

J10
If the outputs are set to voltage (jumpers J1, J2 & J3 in the "V" position), the output can be set to either 0-10Vdc or 0-5Vdc.

J11
Selects either active temperature output (current or voltage) or direct thermistor.
OP1 = active temperature output
T = direct thermistor

CO board
J1
This sets the output to either voltage of current:
V for voltage, I for current

J2
Default position "**A**" no not remove or change.



Options

Fan Speed (if fitted)
The position of the selector switch will cause the resistance between the terminals to alter as shown below.

Switch position	Output
0	Open circuit
1	22.7kΩ
2	26kΩ
3	29.3kΩ
Auto	32.6kΩ

Set point(if fitted)
This is available in two standard values:

-	+
0kΩ	10kΩ
11kΩ	1kΩ

Using an external 1kΩ resistor (not supplied) on the terminals 0-10kΩ, 1-11kΩ can be achieved if required.

2-wire 11-1kΩ output is required use terminals P6 and P7
2-wire 0-10kΩ output is required, use terminals P5 and P6

Momentary switch (if fitted)
Rated at 24Vac/dc @ 500mA max.

Note:

-T Direct thermistor output (if fitted) is between terminals OP1 and T2, polarity is independent. When using the -T option, they are not compensated for internal heating.