

GS-CO-622

Duct Mounted CO Sensor



Features:

- Detects particulates such as cigarette smoke
- Measures VOC's and other mixed gases
- Selectable 0-10Vdc, 0-5Vdc or 4-20mA output
- LCD display option

Benefits:

- High stability & reliability
- Long term stability

Technical Overview

The GS-CO-622 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.

Please note that the sensor will need approximately 10 minutes warm-up time before the sensor becomes active.

Specification:

Part Codes:

Outputs:

Voltage	0-10Vdc or 0-5Vdc
Current	4-20mA
(optional -T)	PTC/NTC resistive sensing element

Measurement range: 0 to 160ppm

Power Supply:

Voltage	12-26Vac or 16-26Vdc @60mA
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Ambient:

Temperature	-30°C to +70°C (-22 to 158°F)
RH	0 to 95% RH, non-condensing

Housing:

Material	Flame retardant ABS
Dimensions	116 x 106 x 52mm (4.57 x 4.17 x 2.05")

Probe:

Material	Delrin
Dimensions	215 x 19mm dia. (8.46 x 0.75")

Protection:

Snap-shut lid	IP54
	IP65 (see page 3 note 4)

Country of origin

UK

GS-CO-622

Duct carbon monoxide sensor

Suffixes (add to part code)

-ACT

Active temperature output

-TR

Custom active temperature output range

-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)
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Nickel types:

F (NI1000a)	G (NI1000a/TCR (LAN1))
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The products referred to in this data sheet meet the requirements of EU Directive 2004/108/EC

Operation:

The sensor has a heated element with a nominal resistance in clean air. This resistance decreases in the presence of detectable CO. This is a nominal resistance, is different for each sensor element and will change during the life of the sensor. To allow for this, on powering the sensor a period of time is required before the sensor achieves thermal equilibrium (about ten minutes). During this process the system determines the resistance for the sensor element fitted, with this value being used for air quality calculations. While in operation this reference value is constantly monitored and adjusted as necessary.

During the ten minute warm-up after power is applied, the sensor should not be exposed to CO. During this period the output will register zero CO. During warm-up period the unit calibrates itself, it is important that the environment around it is clean uncontaminated air and free from odours, cigarette smoke and CO. If exposed to CO during this time the calibration will be wrong, though it will correct itself after a couple of hours in clean air.

The purpose of the GS-CO-622 is to monitor for CO levels up to 160ppm.

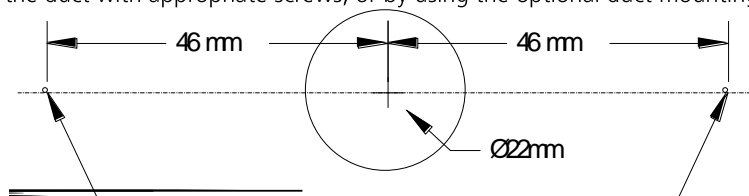
Installation:



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

Transmitters should only be fitted to a system after airflow calibration has been carried out and preferably following full fan running of at least several days, in order that the main contaminants have been removed from the stagnant system.

1. Fit the housing to the duct with appropriate screws, or by using the optional duct mounting flange.



2. Release the snap-fit lid by gently squeezing the locking tab and feed the cable through the waterproof gland and terminate the cores at the terminal block (see page 4 for connection details). Leaving some slack inside the unit, tighten the cable gland onto the cable to ensure water tightness.
3. If the sensor is to be mounted outside, it is recommended that the unit be mounted with the cable entry at the bottom. If the cable is fed from above then into the cable gland at the bottom, it is recommended that a rain loop be placed in the cable before entry into the sensor.
4. Set the yellow dip-switches according to output type required (see page 4 for dip-switch details) Snap shut the lid after the connections have been made if IP65 protection is required, secure the lid with two screws provided.

Connections, Dipswitch/Jumper Settings & PCB Layout:

- It is recommended that screened cable be used and that the screen should be earthed at the controller. Care should be taken not to lay control signal wiring in close proximity to power or other cables which may produce significant electromagnetic noise.
- 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).
- Allow 10 minutes before checking functionality, and at least 30 minutes before carrying out pre-commissioning checks. This will allow the electronics time to stabilize.

Connections, Dipswitch/Jumper Settings & PCB Layout:

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	Not used

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

T2	Direct thermistor output only (other half of OP1 if J11 is set to T)
MS1	Not used
MS2	Not used
P5	Not used
P6	Not used
P7	Not used
FS2	Not used
FS1	Not used

CO board

J1

This sets the output to either voltage or current:
V for voltage, I for current

J2

Default position "B" no not remove or change.

J11 (optional)

Selects either active temperature output
(current or voltage) or direct thermistor.

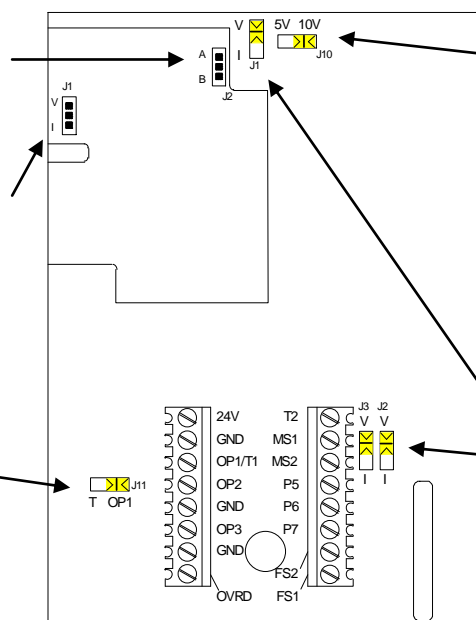
OP1	= Active temperature output
T	= Direct thermistor

Notes:

Voltage output Nominal voltage 24Vac/dc.

Current output Nominal voltage 24Vac/dc 3-Wire
Please see note in section 6 in above regarding connections.

-T Direct thermistor output (if fitted) is between terminals OP1 and T2, polarity is independent.



J10

If the outputs are set to voltage (J1, J2 & J3 in the "V" position), the output can be set to'

5V	= 0-5Vdc
10V	= 0-10Vdc

J1, J2, J3

These set the outputs to either voltage or current.

V	= Voltage
I	= Current