

# Wall & Duct CO & NO2 Sensor/Controller

- Analog and BACnet/Modbus protocol options
- Field replaceable sensing elements
- Standard LCD with intuitive set up menu
- Integrated LED indicators and audible alarm



## DESCRIPTION

Senva TG Series sensors can be ordered as individual CO or NO2 sensors or as a combination CO/NO2 sensor in a shared enclosure.

The analog output model features 2 outputs that support daisy chain wiring - multiple sensors may be used in a parallel sequence (0-10V) for cost effective coverage of large areas. The unit can also act as a stand alone controller, utilizing the relay for exhaust fan operation or the output for direct control of a VFD.

The BACnet/Modbus model supports BACnet MS/TP & Modbus network communication in one unit. Standard features include network auto-configuration, a programmable fan relay, LED indicators, integrated display and audible alarm.

## APPLICATIONS

- Ensure adequate air flow in occupied spaces
- Monitor multiple toxic gases with one mounted unit
- Alert occupants of elevated gas levels
- Directly control exhaust fans



7 year limited warranty

## FEATURES

### Cost-effective dual gas sensing and control

- Integrated display, LED indicators, audible alarm
- Order as individual CO or NO2 sensor, or specify both sensing elements in one enclosure

### Flexibility of analog output model

- Menu selectable 0-5/10V, 1-5V and 4-20mA outputs (0-10V default)
- Dual outputs support daisy chain wiring to cost-effectively sense and control large areas

### Versatility with BACnet/Modbus model

- Supports BACnet MS/TP and Modbus RTU networks
- Auto-configuration detects network baud rate, serial format, protocol type and self-addresses

### High reliability reduces call backs

- Temperature compensated elements for maximum accuracy
- UL2034 recognized electrochemical CO sensing element
- 5 year life expectancy on CO and NO2 elements
- Warning indicators alert occupants when element's lifecycle is near end for replacement
- 7-year limited warranty on electronics; 2-year on elements

### Easy to install

- Test mode speeds up field commissioning for verifying warning indicators and relay functions
- Push buttons and LCD to navigate setting parameters

Standard LCD and LED indicators

Removable terminal block

Field Replaceable Sensing Elements

Push button menu for easy setup and programming

Audible alarm

**New Enclosure Option!**  
The TGM enclosure allows installers to mount the sensor to a 2x4" electrical box and pull wires through the back during installation!

**ORDERING**

**Enclosure**

W = Wall  
M = Metal  
H = Hose Barbs

**Output Type**

A = Analog  
B = BACnet/Modbus

**Gas Type**

C = Carbon Monoxide (CO)  
N = Nitrogen Dioxide (NO2)  
CN = CO/NO2 Combination

**Enclosure Lid**

Blank = Clear/Tinted  
-S = Solid/Opaque

**Replacement Elements**

TGS-CO = Carbon Monoxide

TGS-NO2-1 = Nitrogen Dioxide

(Products shipped on or after July 2018)

TGS-NO2 = Nitrogen Dioxide

(Products shipped before July 2018)


**SPECIFICATIONS**

Power Supply	15-30VDC/24VAC <sup>(1)</sup> , 4W max, 120mA max.	
Analog Outputs	2 programmable outputs	0-10V (default), 0-5V, 1-5V and 4-20mA (menu selectable)
	CO output scaling	0-200ppm (default), 0-1000ppm (menu selectable)
	NO2 output scaling	0-10ppm (default), 0-20ppm (menu selectable)
	Temperature output scaling	-20 to 85°C
BACnet/Modbus	Baud Rates	9600, 19200, 38400, 57600, 76800, 115200
Fan Relay	Fan relay characteristics	N.C. 10A@125VAC, 5A@30VDC
	CO fan relay setpoint	25ppm (default), 0-1000 ppm (menu selectable)
	NO2 fan relay setpoint	1ppm (default), 0-20ppm (menu selectable)
Alarm Relay (Analog model only)	Alarm relay characteristics	N.C. 1A@30VDC
	CO alarm relay setpoint	100ppm (default), 0-1000ppm (menu selectable)
	NO2 alarm relay setpoint	3ppm (default), 0-20ppm (menu selectable)
Display	3-1/2 digit LCD	Indicates CO ppm, NO2 ppm (menu selectable)
LEDs	Green, Yellow, Red	Green = Normal, Yellow = Relay, Red = Alarm
Audible Alarm Exposure	85dB Piezo transducer	30 minutes above alarm setpoint per UL2034 (menu selectable)
	Type	Electrochemical
CO Sensor Performance	Accuracy	+/-5% of full scale <sup>(2)</sup> @ 20°C
	Reproducibility	<+/-2% of reading
	Response time (T90)	<30 seconds
	Certifications	UL2034 Recognized Component
	Long term stability	<+/-5% per year
	Life expectancy	>5 years
	Coverage Area	5000-7500 square feet
NO2 Sensor Performance	Type	Electrochemical
	Accuracy	+/-5% of full scale <sup>(3)</sup> @ 20°C
	Reproducibility	+/-2% (same day)
	Response time (T90)	<25 seconds
	Long term stability	<2% per month
	Life expectancy	>5 years
	Coverage Area	5000-7500 square feet
Operating Environment	Temperature, continuous	-20 to 40°C
	Temperature, intermittent	-30 to 55°C
	Humidity	15-95% continuous, 0-95% intermittent
Enclosure (Wall & Hose Barb)	Material	ABS/Polycarbonate
	Dimensions	4.0"h x 4.4"w x 2.1"d
	Conduit Opening	Tapped 1/2" NPT
Enclosure (Metal)	Material & Enclosure Rating	Powder coated steel/acrylic, NEMA 3R
	Dimensions	5.0"h x 4.3"w x 2.25"d
	Opening	Dual air vents on bottom of enclosure
	Mounting	Pre-drilled for 2x4" electrical box

(1) One side of transformer secondary is connected to signal common. Dedicated transformer is recommended.

(2) Carbon Monoxide full scale is 200ppm.

(3) Nitrogen Dioxide full scale is 20ppm.