

# TG UL Series Wall & Duct Dual Toxic Gas 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 sensors or as any dual combination of CO/NO<sub>2</sub>/Propane/Methane 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

## FEATURES

### Cost-effective dual gas sensing and control

- Integrated display, LED indicators, audible alarm
- Order as individual CO, NO<sub>2</sub>, Propane or Methane sensor, or specify any two sensing elements in one enclosure

### Flexibility of analog output model

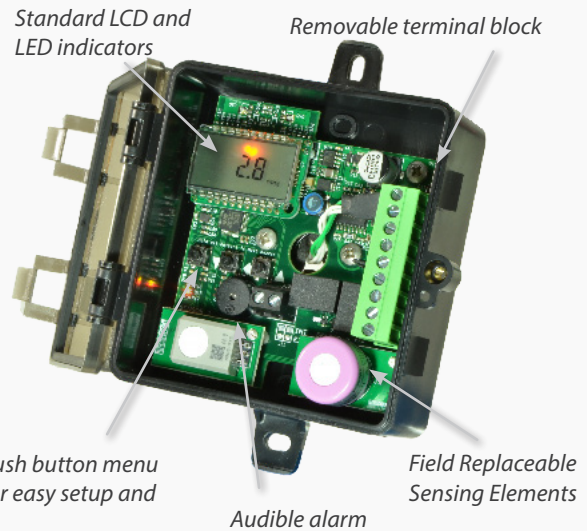
- Menu selectable 0-5/10V, 1-5V and 4-20mA outputs (0-10V default)
- Dual outputs support daisy chain wiring to cost-effectively sense and control large areas

### 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
- 7 year life expectancy on CO and NO<sub>2</sub> 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



## ORDERING

	Pkg	Out	Gas1	Gas2	Temp	Lid
<b>TG</b>	<input type="text"/>	-	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

**Package**  
W = Wall Mount  
M = Metal  
D = Duct Mount

**Output Type**  
A = Analog  
B = BACnet/Modbus

**Gas Type 1**  
C = Carbon Monoxide (CO)  
N = Nitrogen Dioxide (NO<sub>2</sub>)  
M = Methane (CH<sub>4</sub>)  
P = Propane (C<sub>3</sub>H<sub>8</sub>)

**Gas Type 2**  
N = Nitrogen Dioxide (NO<sub>2</sub>)  
M = Methane (CH<sub>4</sub>)  
P = Propane (C<sub>3</sub>H<sub>8</sub>)  
X = No second gas

**Temperature Output**  
A = None  
C = 100Pt RTD  
D = 1000Pt RTD  
E = 10K Type 2  
F = 10K Type 3  
G = 10k w/11k  
H = 3k  
I = 2k2  
J = 1k8

**Enclosure Lid**  
Blank = Clear/Tinted  
S = Solid/Opaque  
W=All White Solid

## Replacement Elements

- TGS-CO-UL = Carbon Monoxide
- TGS-NO<sub>2</sub>-UL = Nitrogen Dioxide
- TGS-CH<sub>4</sub>-UL = Methane
- TGS-C<sub>3</sub>H<sub>8</sub>-UL = Propane



## Pair it with a fan relay

See Senva pilot and power relays for ordering information.



## SPECIFICATIONS

Power Supply	15-30VDC/24VAC <sup>(1)</sup> , 4W max, 160mA max.		
Analog Outputs	2 programmable outputs CO output scaling NO <sub>2</sub> output scaling Temperature output scaling	0-10V (default), 0-5V, 1-5V and 4-20mA (menu selectable) 0-200ppm (default), 0-1000ppm (menu selectable) 0-10ppm (default), 0-30ppm (menu selectable) -20 to 85°C	
	BACnet /Modbus	Protocol RS-485 Baud Rates	BACnet MS/TP, Modbus RTU, Modbus ASCII 9600, 19200, 38400, 57600, 76800, 115200
	Fan Relay	Fan relay characteristics CO fan relay setpoint NO <sub>2</sub> fan relay setpoint	N.C. 1A@24/30VDC (50/60Hz) (no mains connection) 25ppm (default), 0-1000 ppm (menu selectable) 1ppm (default), 0-30ppm (menu selectable)
Alarm Relay (Analog model only)	Alarm relay characteristics CO alarm relay setpoint NO <sub>2</sub> alarm relay setpoint	N.C. 1A@24/30VDC (50/60Hz) (no mains connection) 100ppm (default), 0-1000 ppm (menu selectable) 3ppm (default), 0-30ppm (menu selectable)	
Display	3-1/2 digit LCD	Indicates CO ppm, NO <sub>2</sub> 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)	
CO Sensor Performance	Type	Electrochemical	
	Accuracy	±5% of default range <sup>(2)</sup> ±5% of reading above	
	Resolution	1ppm	
	Certifications	UL2034 Listed Component	
NO <sub>2</sub> Sensor Performance	Life expectancy	>7 years	
	Coverage Area	5000-7500 square feet	
	Type	Electrochemical	
	Accuracy	±5% of default range <sup>(3)</sup> ±5% of reading above 20ppm	
Methane Sensor Performance	Resolution	0.1ppm	
	Life expectancy	>7 years	
	Coverage Area	5000-7500 square feet	
	Type	Catalytic	
Propane Sensor Performance	Detection Range	0-50% LEL (Lower Explosive Limit)	
	Accuracy	5% of range	
	Resolution	1%LEL	
	Life expectancy	>5 years	
Operating Environment	Coverage Area	5000-7500 square feet	
	Temperature, continuous	-20 to 50°C	
	Humidity	15-95% continuous, 0-95% intermittent	
	Max Elevation	2000m	
Enclosure (Wall & Duct)	Material	ABS/Polycarbonate	
	Dimensions	4.0"h x 4.4"w x 2.1"d	
	Conduit Opening	Tapped 1/2" NPT	
Enclosure (Metal)	Rating	IP20	
	Material & Enclosure Rating	Powder coated steel/acrylic, NEMA 3R	
	Dimensions	5.0"h x 4.3"w x 2.25"d	
Agency	Opening	Dual air vents on bottom of enclosure	
	Mounting	Pre-drilled for 2x4" electrical box	
	Rating	IP20	
Agency	Compliance	UL61010-1 Listed UL, cUL	

(1) One side of transformer secondary is connected to signal common. Dedicated transformer is recommended. No mains circuit connection allowed. In addition, it is required to use an isolated power supply that is certified by a national or international standard (i.e. UL). Use of a Class 2 LPS power supply or greater is required.  
(2) Carbon Monoxide full scale is 1000ppm.  
(3) Nitrogen Dioxide full scale is 30ppm