TG UL Series Wall & Duct
Dual Toxic Gas CO/NO₂ Sensor/Controller

Analog and BACnet/Modbus protocol options
Field replaceable calibrated 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 any dual combination of 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, programmable fan and alarm relays, LED indicators, integrated display and audible alarm.

APPLICATIONS

▪ Control exhaust in parking garages according to International Mechanical Code
▪ 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 or NO₂ 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 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
▪ Through the back wiring
▪ Test mode speeds up field commissioning for verifying warning indicators and relay functions
▪ Push buttons and LCD to navigate setting parameters
**ORDERING**

<table>
<thead>
<tr>
<th>Package</th>
<th>W = Wall Mount</th>
<th>M = Metal</th>
<th>D = Duct Mount</th>
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**Output Type**

| A = Analog | B = BACnet/Modbus |

**Gas Type 1**

| C = Carbon Monoxide (CO) | N = Nitrogen Dioxide (NO₂) | D = Carbon Dioxide (CO₂) | E = Dual Channel CO₂ |

**Gas Type 2**

| N = Nitrogen Dioxide (NO₂) | D = Carbon Dioxide (CO₂) | E = Dual Channel CO₂ | 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 |

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**Replacement Elements**

- TGS-CO-UL = Carbon Monoxide
- TGS-NO₂-UL = Nitrogen Dioxide

**Pair it with a fan relay**

See Senva pilot and power relays for ordering information.

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**Duct Applications**

See Senva’s Duct Mount Gas sensing application note to learn about the use of duct-mounted sensors to provide redundancy and peace of mind.

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**Power Supply**

- 2 programmable outputs
- CO output scaling: 0-200ppm (default), 0-1000ppm (menu selectable)
- NO₂ output scaling: 0-10ppm (default), 0-30ppm (menu selectable)
- Temperature output scaling: -20 to 85°C

**BACnet/Modbus**

- Protocol: RS-485
- Baud Rates: 9600, 19200, 38400, 57600, 76800, 115200

**Fan Relay**

- CO fan relay setpoint: 25ppm (default), 0-1000ppm (menu selectable)
- NO₂ fan relay setpoint: 1ppm (default), 0-30ppm (menu selectable)

**Alarm Relay**

- CO alarm relay setpoint: 100ppm (default), 0-1000ppm (menu selectable)
- NO₂ alarm relay setpoint: 3ppm (default), 0-30ppm (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**

- 85dB Piezo transducer
- 30 minutes above alarm setpoint per UL2034 (menu selectable)

**Carbon Dioxide (CO₂)**

- Type: Non-Dispersive Infrared (NDIR)
- Accuracy: ±(30ppm + 3% of reading) (400-2000ppm), ±(50ppm + 5% of reading) Standard (2000-5000ppm), ±(50ppm + 3% of reading) Dual Channel (2000-5000ppm), ±(100ppm + 10% of reading) (5000-10000ppm)
- Resolution: 1 ppm
- Life expectancy: 15 years
- Coverage Area: 5000-7500 square feet

**Operating Environment**

- Temperature, continuous: -20 to 50°C
- Humidity: 15-95% continuous, 0-95% intermittent
- Max Elevation: 2000m

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**Warning:** Refer to installation instructions that accompany product and heed all safety instructions.