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

Individual UL2075 Recognized CO, NO2, or dual sensing elements in one enclosure.

BACnet/Modbus or Analog ouput models.

Operates as a sensor or stand-alone controller.

Standard LCD with intuitive set up menu.

DESCRIPTION

Senva UL Listed TG Series sensors can be ordered as individual CO or NO2 sensors or as a combination of CO&NO2 sensors in a shared enclosure. CO and NO2 sensor components are listed to UL2075. 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.
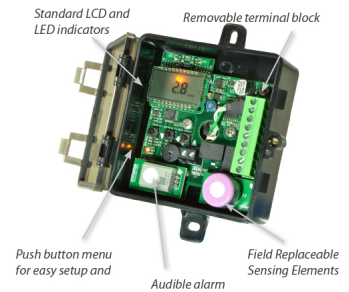
APPLICATIONS

- Ensure adequate air flow in occupied spaces.
- Ideal for parking lot garages.
- Monitor multiple toxic gases with one mounted unit.
- Alert occupants of elevated gas levels.
- Directly control exhaust fans.
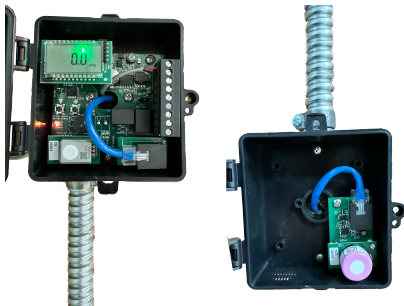
NEW! TG-REM kit - mount CO and NO2 at different heights; same functionality as a single device
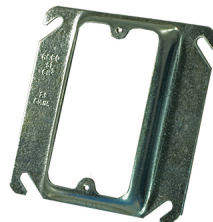
TG ABS Enclosure - Available with Tinted or Solid Lid Options

Standard LCD and LED indicators *Removable terminal block*
Push button menu for easy setup and *Audible alarm* *Field Replaceable Sensing Elements*

Two sensing elements, buzzer, three color LEDs, and LCD for setup and calibration
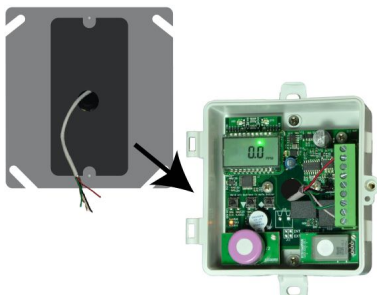
Through-back hole allows for streamlined installation in a junction box

ABS version comes with handy conduit box adapter

Designed and manufactured in America
World-class quality backed by seven year limited warranty

Buy American Act Certified

FEATURES

- NEW! UL2075 Recognized CO and NO2 elements.
- Supports BACnet MS/TP and Modbus RTU networks.
- Integrated display, LED indicators, audible alarm.
- Analog menu selectable 0-5/10V, 1-5V and 4-20mA outputs (0-10V default).
- Analog version supports daisy chain wiring to cost-effectively sense and control large areas.
- Sensor self-test feature for added safety and reliability.
- Temperature compensated elements for maximum accuracy.
- UL listed and LADBS Approved (City of LA).

- Warning indicators alert occupants when element's lifecycle is near end for replacement.
- Field replaceable sensing elements; 7 year life expectancy on CO and NO2 elements.
- Complies with IMC 404.2.1, UMC 403.7.2, and NFPA 720.
- Great for local codes requiring CO and NO2 at different heights
- Plug-and-play; provided with pre-cut CAT-5 cable
- Single power source, single location for RS-485/analog/relay connections
- Single BACnet device; reduce devices/points on your network
- Through-the-back wiring makes junction-box-mounting easy
- No programming necessary

ORDERING

TG ☐ - ☐   ☐   ☐ - ☐   ☐

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

Output Type
A = Analog
B = BACnet/Modbus

Refrigerant sensors may not be paired with CH4, C3H8, or H2, or paired together.

Gas Type 1*
C = Carbon Monoxide (CO)
N = Nitrogen Dioxide (NO2)
D = Carbon Dioxide (CO2)
E = Dual Channel CO2
M = Methane (CH4)
P = Propane (C3H8)
H = Hydrogen (H2)
O = Oxygen (O2)
S = Hydrogen Sulphide (H2S)
A = Ammonia (NH3)
2 = R22
3 = R134A (Multi-Refrigerant)
4 = R410A
5 = R404A
6 = R407C
7 = R449A
8 = R513A
9 = 1233ZDE

Gas Type 2*
X = No second gas
N = Nitrogen Dioxide (NO2)
D = Carbon Dioxide (CO2)
E = Dual Channel CO2
M = Methane (CH4)
P = Propane (C3H8)
H = Hydrogen (H2)
O = Oxygen (O2)
S = Hydrogen Sulphide (H2S)
A = Ammonia (NH3)

Temperature
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
K = 20k

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

Replacement Elements
TGS-CO-UL = Carbon Monoxide
TGS-NO2-UL = Nitrogen Dioxide
TGS-CH4-UL = Methane
TGS-C3H8-UL = Propane
TGS-O2-UL = Oxygen
TGS-H2-UL = Hydrogen
TGS-S-UL = Hydrogen Sulfide
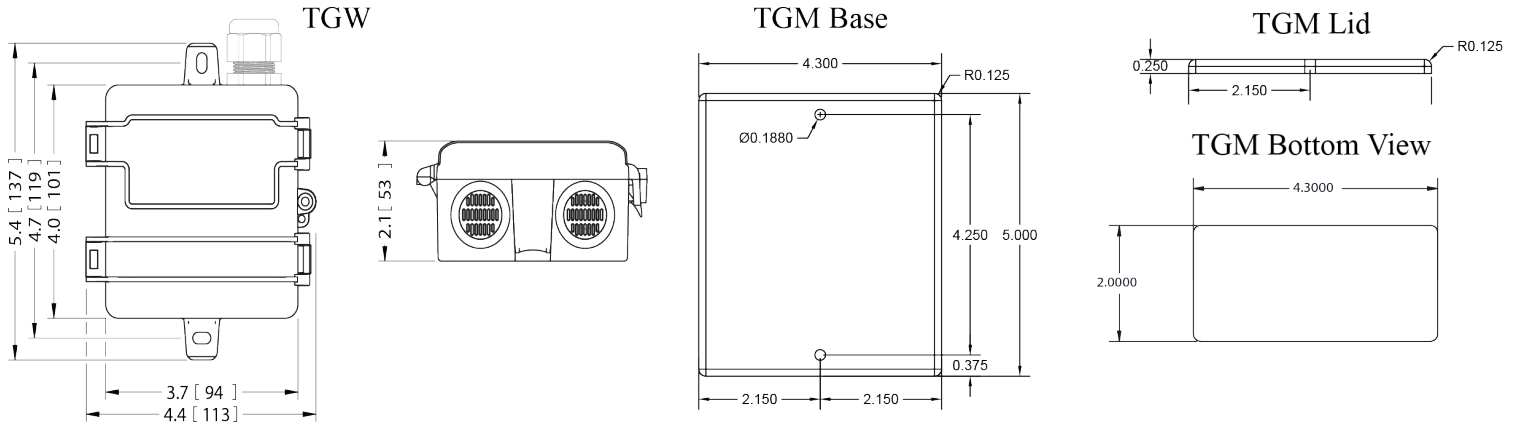Call for more options

TG ☐ - **REM** - ☐

Package
W = Wall Mount
M = Metal

Cable Length
5 = 5 feet
10 = 10 feet
15 = 15 feet
20 = 20 feet

^TG-REM is a kit only and does not include gas sensing element. Purchase TGS sensor or dual-element TG separately.

DIMENSIONS

TGW   TGM Base   TGM Lid

TGM Bottom View

⚠️ **Warning:** The datasheet is designed for reference only. Refer to installation instructions that accompany the product and heed all safety instructions. Product improvement is a continuing process at Senva. Changes may occur to products without prior notice.

SPECIFICATIONS

Power Supply		15-30VDC/24VAC(1), 4W max, 160mA max.
	TG-REM	Powered through CAT-5 cable, no separate power required.
Wiring	Conductor	14-24 AWG, Minimum 600V, 75°C
	Terminal Torque	0.5 N•m
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), 0-30ppm (menu selectable)
	CO2 output scaling	0-1000 ppm (default), 0-1000 ppm (menu selectable)
	Propane/Methane / Hydrogen Output Scaling	0-50% LEL (default), 0-50% LEL (menu selectable)
	Oxygen Output Scaling	0-25% Vol (default), 0-25% Vol (menu selectable)
	Refrigerant Output Scaling	0-1000 ppm (default), 0-1000 ppm (menu selectable)
	H2S Output Scaling	0-100 ppm (default), 0-100 ppm (menu selectable)
	Ammonia NH3 Output Scaling	0-100 ppm (default), 0-100 ppm (menu selectable)
	Temperature output scaling	-20 to 85°C
BACnet /Modbus	Protocol RS-485	BACnet MS/TP, Modbus RTU, Modbus ASCII
	Baud Rates	9600, 19200, 38400, 57600, 76800, 115200
	RS-485 Loading	1/4 unit
Fan Relay	Fan relay characteristics	N.C. 1A@24/30VDC (50/60Hz) (no mains connection)
	CO fan relay setpoint	25ppm (default), 0-1000 ppm (menu selectable)
	NO2 fan relay setpoint	1ppm (default), 0-30ppm (menu selectable)
Alarm Relay	Alarm relay characteristics	N.C. 1A@24/30VDC (50/60Hz) (no mains connection)
	CO alarm relay setpoint	100ppm (default), 0-1000 ppm (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 = Warning/Fan Relay, Red = Alarm/Alarm Relay
Audible Alarm	85dB Piezo transducer	30 minutes above alarm setpoint per UL2075
Exposure		(menu selectable)
CO Sensor Performance	Type	Electrochemical
	Accuracy	±5% of default range[2], ±5%of reading above 200ppm
	Resolution	1ppm

	Certifications	UL2075 Recognized Component
	Life expectancy	>7 years
	Recommended Calibration	Annual
	Recommended Height and Coverage Area	3 to 6 feet, coverage 5000-7500 square feet (Click for details)
NO_2 Sensor Performance	Type	Electrochemical
	Accuracy	±5% of default range[3] ±5%of reading above 20ppm
	Resolution	0.1ppm
	Certifications	UL2075 Recognized Component
	Life expectancy	>7 years
	Recommended Calibration	Annual
	Recommended Height and Coverage Area	3 to 6 feet, coverage 5000-7500 square feet (Click for details)
Carbon Dioxide (CO_2)	Type	Non-Dispersive Infrared (NDIR)
	Accuracy[4]	±(30ppm +3% of reading) (400-2000ppm), @-10-50°C
		±(50ppm +5% of reading) Standard (2000-5000ppm),
		±(50ppm+3% of reading) Dual Channel (2000-5000ppm),
		±(100ppm+10% of reading) (5000-10000ppm)
	Drift with ABC Disabled [5]	35 ppm / month [6] (Standard), 5 ppm / month [6] (Dual-Channel)
	Resolution	1 ppm
	Life Expectancy	15 years
	Response Time	30s
	Sample Rate	1s
	Recommended Height and Coverage Area	3 to 6 feet, coverage area 5000-7500 square feet (Click for details)
Methane/Propane / Hydrogen Sensor Performance	Type	Catalytic
	Detection Range	0-50% LEL (Lower Explosive Limit)
	Accuracy	±5% of Range
	Resolution	1% LEL
	Certifications	UL2075 Recognized component for Methane/Propane
	Life Expectancy	>5 years
	Response Time	<10s to 90%
	Recommended Calibration	6 months
	Recommended Height and Coverage Area	Hydrogen/Methane: 1 foot from ceiling, coverage area 5000-7500 sq. ft.
Oxygen Sensor Performance	Type	Electrochemical
	Detection Range	0-25% Volume
	Accuracy	±5% of Range
	Resolution	0.1%
	Life Expectancy	5 years
	Recommended Calibration	Annual
	Recommended Height and Coverage Area	3 to 6 feet, 5000-7500 sq. ft.
H2S Sensor Performance	Type	Electrochemical
	Detection Range	0-100 ppm
	Accuracy	±5% of Range
	Resolution	1 ppm
	Life Expectancy	5 years
	Recommended Calibration	6 months
	Recommended Height and Coverage Area	3 to 6 feet, coverage area 5000 - 7500 sq. ft.
Ammonia NH3 Sensor Performance	Type	Electrochemical
	Detection Range	0-100 ppm

	Accuracy	±5% of Range
	Resolution	0.1 ppm
	Life Expectancy	5 years
	Recommended Calibration	6 months
	Recommended Height and Coverage Area	0.5 to 1 foot from ceiling, coverage 5000 - 7500 sq. ft.
Refrigerant Sensor Performance	Type	MOS
	Detection Range	0-1000 ppm
	Resolution	1 ppm
	R22, R134A, R410A, R404A, R407C	Calibrated for respective gas.
	R134 Sensitivity [7]	@ 300 ppm test gas: 450 ppm R410A, 425 ppm R407C, 400 ppm R404A, 370 ppm R134A
	Other Detectable Gases [8]	R407A, R407F, R427F, R452B, R507, R448A, R454B, R455A, R455C, R422A, R422... R32. Consult factory for other A2L gases.
	Life Expectancy	10 years (typical expectation for MOS sensors)
	Recommended Calibration	6 months
	Recommended Height and Coverage Area	6 inches above floor, no more than 18 inches above lowest level of equipment detection, coverage 5000 - 7500 sq. ft.
Operating Environment	Temperature, Continuous	-20 to 50°C (-4 to 122°F) (CO_2 versions rated to -40°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 (+6.8" probe for duct version)
	Conduit Opening	Tapped 1/2" NPT
	Rating	IP43 or NEMA 3R
Enclosure (Metal)	Material & Enclosure Rating	Powder-coated steel
	Dimensions	5.0"h x 4.3"w x 2.25"d
	Opening	Dual air vents on front lid of enclosure
	Mounting	Pre-drilled for 2x4" electrical box
	Rating	IP41 or NEMA 3R
Agency	Compliance	UL61010-1 Listed UL, cUL, CE, UL2075 Recognized CO and NO2 elements (TGx... are not yet tested for CE compliance)

(1) One side of transformer secondary is connected to signal common. Dedicated transformer is recommended. No mains circuit connection allowed. In addition, it i... 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.

(4) Accuracy of CO2 reading may be reduced at temperatures below 14ºF (-10°C). CO2 sensor is equipped with a heater to account for temperatures down to -40°C...

(5) It is not recommended to de-activate ABC (auto-calibration) except for continuously occupied spaces or greenhouses. Drift ratings may vary based on environm...

(6) Combination CO/Methane, Co/Propane, or CO/Refrigerant sensors should be mounted according to Propane/Methane/Refrigerant recommendations. Consult fa... combinations. Mounting height recommendations may be adjusted according to installation. Ensure sensor is accessible for maintenance and target gas has unobst... sensor. Mount in accordance with ANSI/NFPA 70 and NEC or CEC.

(7) R134A sensor may be used as a general purpose refrigerant detection. The sensor's response to other refrigerants will change proportionally as shown in the foll... https://www.senvainc.com/catalog/documents/downladcenter/Refrigerant%20cross%20sensitivities.pdf Actual response may vary depending on installation. For mo... response to a specific gas, a unit may be field calibrated.

(8) These gases may be detected by the sensor but sensitivity curves are not available at this time.

Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.