

## TG Series UL Wall & Duct Dual Combustible Gas Sensor/Controller

UL2075 recognized combustible gas sensing elements  
Individual sensors or as any dual combination of gases  
Detect Methane/Propane leaks and monitor for elevated CO levels  
Operates as stand-alone sensor or local controller



### DESCRIPTION

Senva TG Series sensors can be ordered as individual CH<sub>4</sub> sensor, C<sub>3</sub>H<sub>8</sub> sensor, H<sub>2</sub> sensor, O<sub>2</sub> sensor, H<sub>2</sub>S sensor, or specify two sensing elements in one enclosure including CO and NO<sub>2</sub>. 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

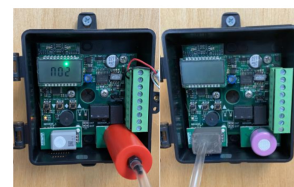
- Boiler rooms
- Commercial kitchens
- Battery Rooms
- Compressed Gas storage
- Residential and commercial heating and water heating
- Vehicle bays and garages for natural gas (LNG) or petroleum gas (LPG) vehicles
- Waste facilities



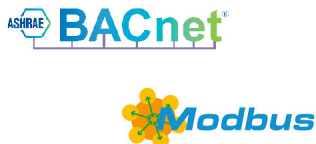
TG Metal LED or Solid Enclosure Available



TG ABS Enclosure - Available with Tinted or Solid Lid Options

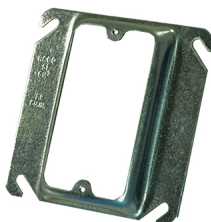


Gas shrouds secure over respective sensing elements for calibration



Analog

Analog and BACnet/Modbus protocol options



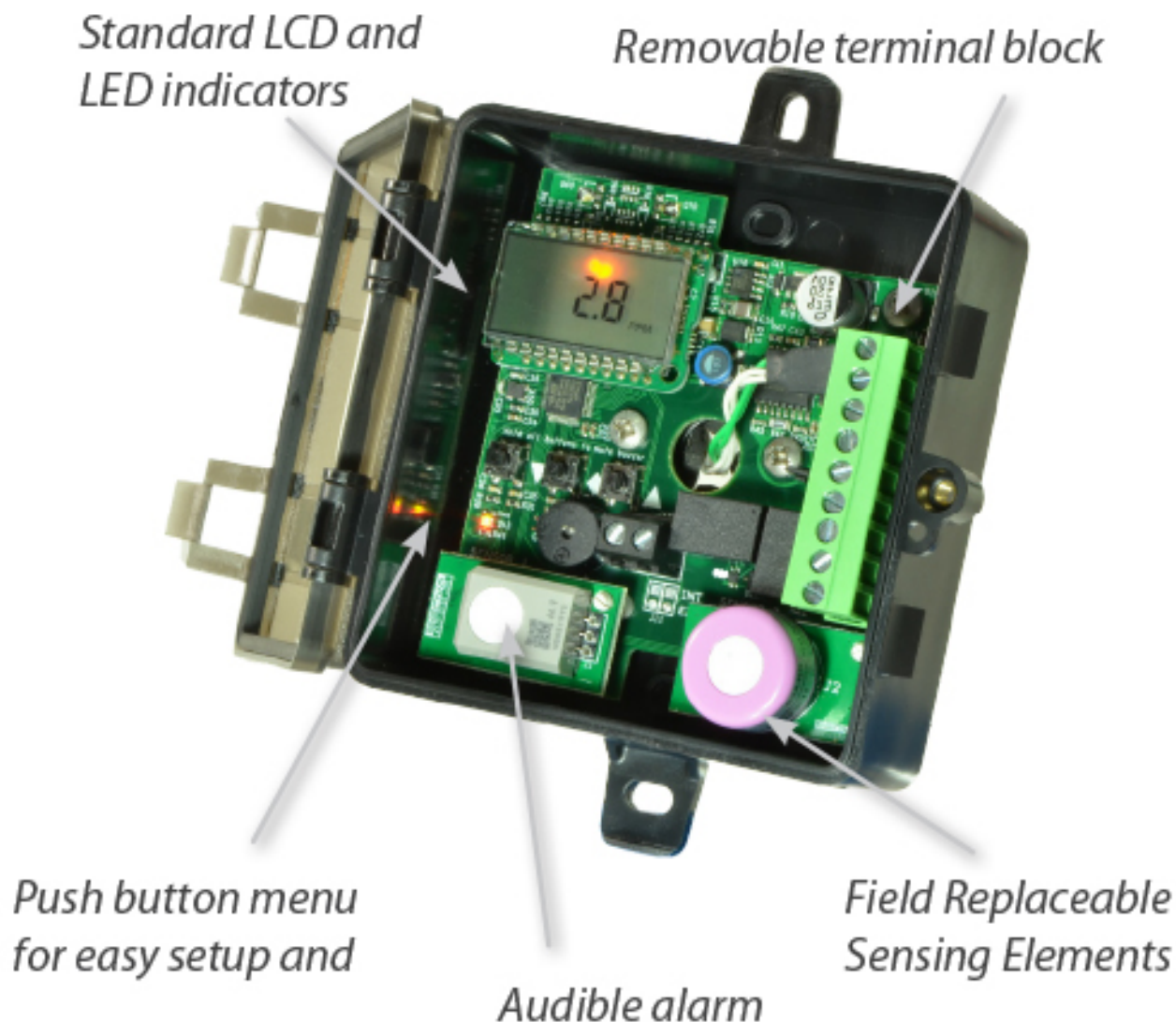
ABS version comes with handy conduit box adapter



Buy American Act Certified

## FEATURES

- NEW! UL2075 Recognized Propane and Methane elements.
- Integrated display, LED indicators, audible alarm
- Menu selectable 0-5/10V, 1-5V and 4-20mA outputs (0-10V default)
- BACnet supports BACnet MS/TP and Modbus RTU networks with auto-configuration for network baud rate, serial format, protocol type and self-addressing
- Dual outputs support daisy chain wiring to cost-effectively sense and control large areas
- UL2075 recognized catalytic sensing element
- Warning indicators alert occupants when element's lifecycle is near end for replacement
- Installer-friendly circuit board makes through-the-back wiring simple
- Test mode speeds up field commissioning for verifying warning indicators and relay functions
- Push buttons and LCD to navigate setting parameters
- UL Listed (UL61010-1)
- 7-year limited warranty on electronics; 2-year on elements
- Sense in two locations
- 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
- Order dual hydrogen sensors - great for modular battery energy storage system



## ORDERING

### TG

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

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

**Gas Type 1\***  
C = Carbon Monoxide (CO)  
N = Nitrogen Dioxide (NO<sub>2</sub>)  
D = Carbon Dioxide (CO<sub>2</sub>)  
E = Dual Channel CO<sub>2</sub>  
M = Methane (CH<sub>4</sub>)  
P = Propane (C<sub>3</sub>H<sub>8</sub>)  
H = Hydrogen (H<sub>2</sub>)  
O = Oxygen (O<sub>2</sub>)  
S = Hydrogen Sulphide (H<sub>2</sub>S)  
A = Ammonia (NH<sub>3</sub>)  
2 = R22  
3 = R134A (Multi-Refrigerant)  
4 = R410A  
5 = R404A  
6 = R407C  
7 = R449A  
8 = R513A  
9 = 1233ZDE

**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  
TGS-O<sub>2</sub>-UL = Oxygen  
TGS-H<sub>2</sub>-UL = Hydrogen  
TGS-S-UL = Hydrogen Sulfide  
Call for more options

**Gas Type 2\***  
X = No second gas  
N = Nitrogen Dioxide (NO<sub>2</sub>)  
D = Carbon Dioxide (CO<sub>2</sub>)  
E = Dual Channel CO<sub>2</sub>  
M = Methane (CH<sub>4</sub>)  
P = Propane (C<sub>3</sub>H<sub>8</sub>)  
H = Hydrogen (H<sub>2</sub>)  
O = Oxygen (O<sub>2</sub>)  
S = Hydrogen Sulphide (H<sub>2</sub>S)  
A = Ammonia (NH<sub>3</sub>)

**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

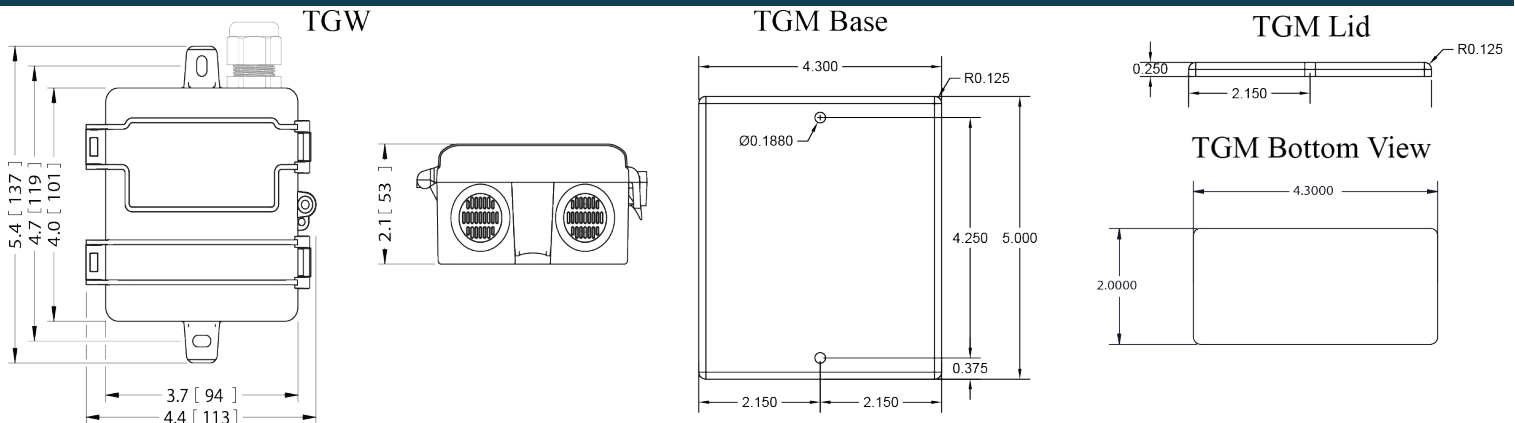
\*Refrigerant sensors may not be paired with CH<sub>4</sub>, C<sub>3</sub>H<sub>8</sub>, or H<sub>2</sub>, or paired together.

### TG - REM -

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

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

## DIMENSIONS



**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	TG-REM	15-30VDC/24VAC(1), 4W max, 160mA max. Powered through CAT-5 cable, no separate power required.
Analog Outputs	2 programmable outputs	0-10V (default), 0-5V, 1-5V, 4-20mA (menu selectable)
BACnet /Modbus	Output scaling	Menu selectable; see installation manual for ranges
	Protocol RS-485	BACnet MS/TP, Modbus RTU, Modbus ASCII
	Baud Rates	9600, 19200, 38400, 57600, 76800, 115200
Fan Relay	Fan relay characteristics	N.C. 1A@24/30VDC (50/60Hz) (no mains connection)

	Fan relay setpoint	300 ppm (default), 0-1000 ppm (menu selectable)
Alarm Relay	Alarm relay characteristics	N.C. 1A@24/30VDC (50/60Hz) (no mains connection)
	Alarm relay setpoint	600 ppm (default), 0-1000 ppm (menu selectable)
Display	3-1/2 digit LCD	Indicates gas concentration in ppm (menu selectable)
LEDs	Green, Yellow, Red	Green = Normal, Yellow = Relay, Red = Alarm
Audible Alarm	85dB Piezo transducer	30 minutes above alarm setpoint (menu selectable)
Oxygen Sensor Performance	Type	Electrochemical
	Detection Range	0-25% Volume
	Accuracy	±5% of range
	Resolution	0.1%
	Life expectancy	5 years, with Annual Calibration
	Mounting	3 to 6 feet off the ground; coverage of 5000-7500 square feet
Ammonia Sensor Performance	Type	Electrochemical
	Accuracy	±5% of default range
	Resolution	0.1ppm
	Life expectancy	5 years
	Coverage Area	5000-7500 square feet ( <a href="#">Click for details</a> )
Carbon Dioxide (CO2)	Type	Non-Dispersive Infrared (NDIR)
	Accuracy(4)	±(30ppm + 3% of reading) (400-2000ppm), @-10-50°C
	Resolution	1 ppm
	Life expectancy	15 years
	Coverage Area	5000-7500 square feet ( <a href="#">Click for details</a> )
Methane/Propane/Hydrogen Sensors Performance	Type	Catalytic
	Detection Range	0-50% LEL (Lower Explosive Limit)
	Accuracy	5% of range
	Certifications	UL2075 Recognized Component for Methane and Propane
	Resolution	1%LEL
	Certifications	UL2075 Recognized Component
	Life expectancy	>5 years
	Response Time	<10s to 90%
Hydrogen Sulphide Sensor Performance	Coverage Area	Methane/Hydrogen 5000-7500 sq ft; Propane 5000 sq ft ( <a href="#">Click for details</a> )
	Type	Electrochemical
	Detection Range	0-100 ppm
	Accuracy	±5% of Range
	Resolution	1 ppm
	Life expectancy	5 years with 6 month calibration
	Mounting	3 to 6 foot above the ground; coverage of 5000-7500 square feet
Operating Environment	Temperature, Operational(4)	-20 to 50°C (-4 to 122°F) (CO <sub>2</sub> 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
	Conduit Opening	Tapped 1/2" NPT
	Rating	IP43 or NEMA 3R
Enclosure	Material & Enclosure Rating	Powder-coated steel/acrylic

(Metal)	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
	Rating	IP41 or NEMA 3R
Agency	Compliance	UL61010-1 Listed UL, cUL, CE, UL 2075 Recognized Propane/Methane/Hydrogen/Nitrogen Dioxide/Carbon Monoxide sensor

(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) R134A sensor is factory calibrated to R134A gas but may be used as a general-purpose refrigerant sensor. Sensitivity to some other gases can be found in the installation manual. Actual response may vary depending on installation. For more accurate response to a specific gas, a unit may be field calibrated.

(3) 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.*