

# INSTALLATION INSTRUCTIONS

## TGOR Economy Series Room CO and Refrigerant Transmitters



### WARNING

- Use installation wires rated for 75°C and above.
- The TG Series (the equipment covered by the IFU) has not been tested for Life Safety Applications and are not to be used in Life Safety Applications in jurisdictions that require this certification.
- Only qualified trade installers should install, program, maintain and test system incorporated therein. Installer is responsible for compliance of all applicable codes.
- Read, understand, and follow instructions thoroughly.
- Do not install in hazardous or classified locations.
- De-energize power supply prior to installation.
- Gas sensors should not be used as a substitute for proper installation, use, or maintenance of gas emitting equipment.
- This device is designed to detect conditions that could result in acute effects of gas exposure. It will not fully safeguard individuals with specific medical conditions. If in doubt, consult a medical practitioner.

#### LIMITATION OF LIABILITY

Senva's liability, whether in contract, in tort, under any warranty, in negligence or otherwise shall not exceed the amount of the purchase price paid by the purchaser for the product. Under no circumstances shall Senva be liable for special or consequential damages.

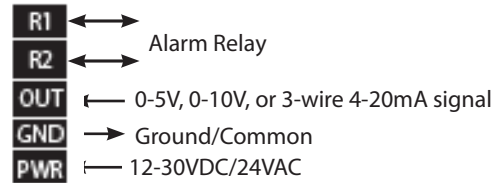
## INSTALLATION

1. Recommended CO Sensor Mounting Height is 3-6 feet Above finished floor. Refrigerant sensors should be mounted 6 inches above finished floor. Check with local and state building codes to ensure sensor mounting height is in compliance.

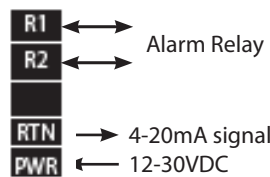
NOTE: Do not install sensor in multi-gang electrical boxes with line voltage or other electrical devices.

2. Wire sensor as shown below.

3-wire:



2-wire (CO version only):



3. If installing in a junction box, check that provided insulation covers entire junction box opening to ensure reading accuracy.

4. Snap on screw covers to complete installation.

## OPERATION

The following section details factory defaults for LED function, alarm set-points, alarm status functions, and the sensor element lifetime clock.

### LED Function

#### CO LED Function

Pre Alarm:

- 1 long blink every second when above 30 PPM

Alarm:

- 1 short blink every second when above 70 PPM

#### Refrigerant LED Function

Pre Alarm:

- 1 long blink every second when above 300 PPM

Alarm:

- 1 short blink every second when above 600 PPM

#### EOL LED Function

3 blinks every 30 seconds for both CO and Refrigerants.

### Alarm Setpoints

#### Alarm Relay and Buzzer Setpoint

CO:

- Over 30 PPM for 1 hour
- Over 70 PPM for 15 minutes

Refrigerants:

- Over 300 PPM for 1 hour
- Over 600 PPM for 15 minutes

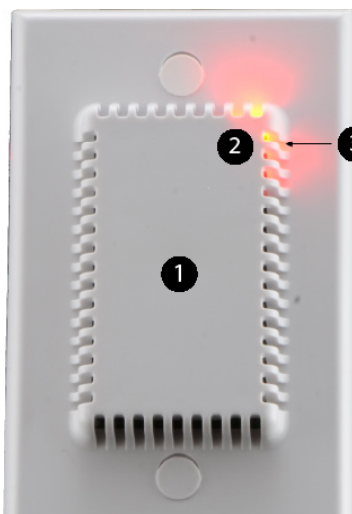
### Silencing the Alarm

Hold hand over cap touch button for 3 seconds

**NOTICE:** Device can be silenced three time, after the third silence gas level must drop bellow setpoint to turn off, or the device can be power cycled.

### Test Feature

To test the alarm and buzzer use a small screwdriver to press the test button for one second, the buzzer will sound and the relay will activate for 2 seconds.



- 1 - Alarm Silence Button  
\*Capacitive Touch
- 2 - LED Indicator
- 3 - Test/Calibration Button

## PERIODIC TEST AND MAINTENANCE

### Periodic Maintenance

Though the frequency of inspection is typically affected by the operating conditions and environment (extreme temperatures, extreme humidity, exposure to contaminants, etc.), Senva recommends the following maintenance and intervals. More frequent maintenance may be required per local code by the Jurisdiction Having Authority (JHA). An accurate log of all maintenance and abnormal occurrences should be maintained for the proper service of this product.

#### Every 6 Months

- For Refrigerants retest and recalibrate the unit using NIST traceable reference gas to ensure sensors remain accurate.
- Visually inspect to ensure optimal operating conditions (no broken pieces/components, visual indicators operational, etc.).
- Clean the exterior with a soft cloth to remove debris from the sensor intake ports.

#### Annual

- CO retest and recalibrate the unit using NIST traceable reference gas to ensure sensors remain accurate.

#### Do Not

- Expose the sensor and its elements to solvents.
- Immerse the sensor into liquids.

## CALIBRATION

- 1) Baseline Cal: Without gas applied, use a small screwdriver to press the test button for 10 seconds until the LED begins to blink slowly, with 1 short blink every second.
- 2) After the 10 seconds there will be a short beep from the buzzer and the LED will begin to blink more quickly, with a short blink every 1 second to indicate gas can be applied.
- 3) Apply gas (CO @ 0.5 LPM 100 PPM, R134A @ 0.2 LPM 1000 PPM) for 5 minutes. The device will beep once gas calibration is completed. Continue applying gas and measure the output to ensure it reaches the correct level for the gas applied.
- 4) Field calibration can be exited at any time prior to completion by holding down the Test Button for 1 second after field calibration has begun.

**ERROR:** If no beep occurs at the end of baseline or span calibration and the led continues to blink then the device has not seen a value within the acceptable range.

## TROUBLESHOOTING

Symptom	Solution
No output	Check wiring. Ensure power supply meets requirements.
Output reading error	Verify control panel software is configured for correct output scaling.
	Verify accuracy of test instrument. Observe installation guidelines.
	Verify unit is located away from sources of hot/cold.
	Install insulation foam gasket provided to prevent thermal conduction from inside wall.

## SPECIFICATIONS

Power supply	12-30VDC/24VAC <sup>(1)</sup> 24mA max power consumption	
Outputs	0-10V, 0-5V, 2-wire or 3-wire 4-20mA (selectable)	
Output scaling	CO	0-200 PPM
	Refrigerant	0-1000 PPM
Alarm Relay	Relay characteristics	N.C. 1A@24/30VAC/DC (50/60Hz) (no mains connection)
	CO alarm setpoint	Activates above 30PPM for 1 hour or 70 PPM for 15 min
	Refrigerant alarm setpoint	300PPM
LEDs	End-of-life Indicator	3 blinks every 30 seconds
	LED indicator CO	1 long blink above 30 PPM, 1 short blink above 70 PPM
	LED indicator Refrigerant	1 long blink above 300 PPM, 1 short blink above 600 PPM
Audible Alarm	Alarm Test	Button provided for buzzer test
	Buzzer Level	82 dB
	Audible Buzzer CO	Above 30 PPM for 1 hour or 70 PPM for 15 min
	Audible Buzzer Refrigerant	Above 300 PPM for 1 hour or 600 PPM for 15 min
CO Sensor Performance	Type	Electrochemical
	Accuracy	±5%
	Resolution	1 PPM
	Certifications	UL2075 Recognized Component
	Life expectancy	>7 years
	Coverage Area	5000-7500 square feet
	Calibration Interval	Annually
Refrigerant Sensor Performance	Type	MOS
	Resolution	1 PPM
	Life expectancy	>10 years (typical life expectancy of MOS sensors)
	Sensitivity	@300 PPM test gas: 450PPM R410A, 425 PPM R407C, 400 PPM R404A, 370 PPM R22, 300 PPM R134A
	Other detectable gases <sup>(3)</sup>	R407A, R407F, R427A, R452B, R507, R448A, R449A, R422A, R422D, R452A, R513A, R514A, R32
	Calibration <sup>(2)</sup>	Calibrated to Selected refrigerant
	Coverage Area	5000-7500 square feet
	Calibration Interval	6 Months
Operating Environment	Humidity	15-95% continuous, 0-95% intermittent
	Temperature	-40C/-40F
	Max Elevation	9000ft
Enclosure	Dimensions	4.45"h x 2.7"w x 0.5"d (depth measured from wall)
	Unit Temp Rating	-4 to 104°F (-20 to 40°C)
Compliance	CE, RoHS	

(1) One side of transformer, secondary is connected to signal common. Dedicated transformer is recommended. 15-30VDC/24VAC power supply voltage required for 10 volt output.

(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.

\*Refer to Refrigerant cross sensitivities document on Senvainc.com

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

(4) High altitudes will not cause the sensor to not operate, but will affect accuracy. To maintain accuracy spec, a field calibration is recommended