

# Carbon Monoxide (CO) Analog Gas Transmitters



**PolyGard CO  
AT-1110**

## DESCRIPTION

Analog gas transmitters for the detection of carbon monoxide (CO) in the ambient air.

## APPLICATION

To sense carbon monoxide (CO) in a wide variety of commercial and industrial applications such as vehicle exhaust in parking structures, engine repair shops, tunnels, equipment rooms and ventilation systems, etc. and transmit to any compatible electronic analog control, DDC/PLC control or automation system.

## FEATURES

- Continuous monitoring
- 4-20 mA analog signal output
- Two-stage relay output control, optional
- Easy plug-in sensor
- Electrochemical gas sensor, gas specific, long-life
- Polarity protected
- RFI/EMI protected
- Modular plug-in technology
- Easy maintenance
- UL performance tested for 12 months



City of Los Angeles Approved

## SPECIFICATIONS

### Electrical

Power supply 17-28 VDC, polarity protected  
 Power consumption 22 mA (0.6 VA), max.  
 - w/relay package 35 mA (1.0 VA), max.  
 RFI/EMI protection 5.0 W @ 1 ft. (0.31 m) radiated

### Sensor Performance

Gas detected Carbon monoxide (CO)  
 Sensor element Electrochemical, diffusion  
 Range Span field adjustable from 0-150 to 0-300 ppm via calibration, 0-250 ppm factory set  
 Stability & resolution ± 0.5 ppm of reading  
 Repeatability ± 1% of reading  
 Long term output drift < 0.4% signal loss/month  
 Response time  $t_{90} < 30$  sec.  
 Sensor life expectancy 5 plus years, normal operating environment  
 Sensor coverage 5,000 sq.ft., max. 10,000 sq.ft. (465 m<sup>2</sup>, max. 930 m<sup>2</sup>), under "ideal conditions"

### Installation Location

Mounting height 5 to 6 ft. (1.5 to 1.8 m) above floor

### Type of Control

General Continuous proportional analog sensor signal output  
 Analog output 4-20 mA @ 450 Ω, max., polarity protected  
 Optional contact outputs (2) relays, potential free

### Environmental

Permissible ambient  
 - working temperature 14°F to 104°F (-10°C to 40°C)  
 - storage temperature 23°F to 86°F (-5°C to 30°C)  
 - humidity 15 to 95% RH, non condensing  
 - working pressure Atmospheric ± 10%

### Physical

Enclosure, standard  
 - material Galvanized steel w/zinc coating, corrosion resistant  
 - color Light gray  
 - protection NEMA 1, general purpose  
 - installation Wall (surface) mounted, or single gang electrical box  
 Dimensions (H x W x D) 5.59 x 5.59 x 2.48 in. (142 x 142 x 63 mm)  
 Cable entry 1 hole for 1/2 in. conduit for wall (surface) mounting and 1 hole on back side of base plate for single gang electrical box mounting  
 Wire connection Terminal blocks, screw type for lead wire  
 Wire size Min. 24 AWG (0.25 mm<sup>2</sup>), Max. 14 AWG (2.5 mm<sup>2</sup>)  
 Wire distance Max. loop resistance 450 Ω (= wire resistance plus controller input resistance)  
 Weight 0.7 lbs. (0.3 kg)  
**Approvals/Listings** UL Recognized CO sensor  
 City of Los Angeles  
 CE  
 VDI 2053, air treatment systems for garages and tunnels  
 EMV-Compliance 89/336/EWG, low voltage directives 73/23/EWG  
**Warranty** Two years material and workmanship

**OPTIONS**

**Enclosures**

<b>Duct mounted</b>	NEMA 3
- w/probe	7/8 in. (22 mm) diameter and 7.16 in. (182 mm) length
- cable entry	1 hole for 1/2 in. conduit
<b>Wall mounted</b>	NEMA 4X, w/splash guard
- material	ABS UL94 V0
- color	Light gray
- dimensions	4.80 x 4.72 x 3.42 in. (122 x 120 x 87 mm)

**Relay Package**

Type (1) SPDT (R9), (1) SPST (R10)

**Contact rating**

30 VAC/VDC, 0.5 A, max.

**Setpoint**

Adjustable setting for each relay within 10 to 90% of full range

- factory set  
Switching differential

Lo = 50 ppm, Hi = 100 ppm  
5% or 10% of full range,  
jumper selectable

**Relay mode**

Jumper selectable, de-energized or energized (fail-safe) for each relay (2) LEDs, one for each relay

**Status indicator**

For low temperature environment (-40°F (-40°C))

**Heater, built-in**

Ambient temperature

Power supply

Power consumption

Thermostatic control

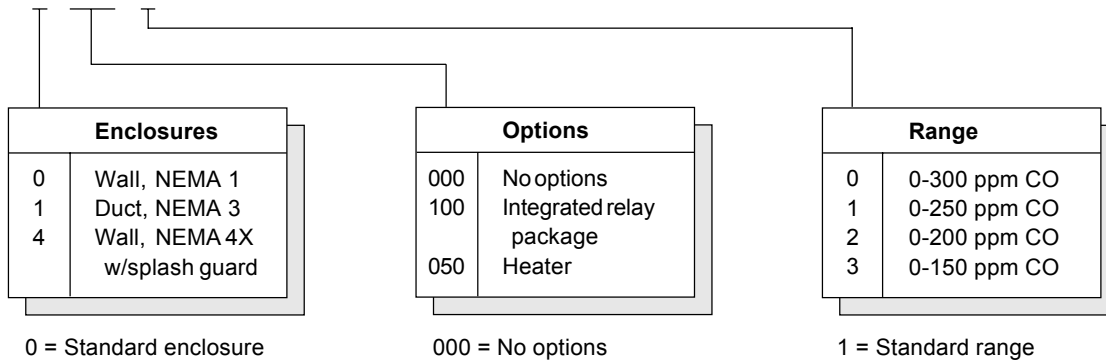
24 VAC/VDC ± 5%, 50/60 Hz

1.0 A (24 VA), max.

32°F (0°C) ± 5°F (3°C)

**ORDERING INFORMATION**

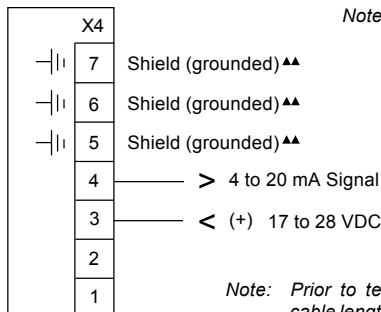
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**WIRING CONFIGURATION**

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**24 VDC, 2-wire configuration**



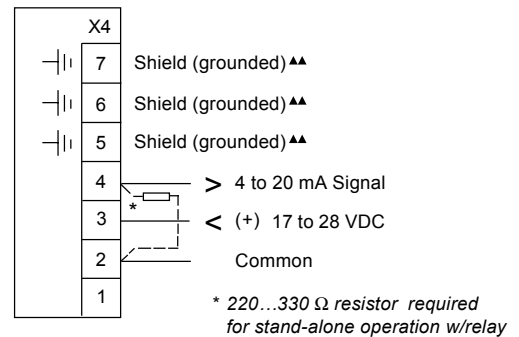
Note: Twisted, shielded wire is recommended for 2- or 3-wire configurations.

▲▲ Connect Shield to either terminal 5, 6 or 7. Shield should be grounded at either the sensor or controller. DO NOT ground Shield at both ends.

Note: Prior to terminating the wire, secure enough cable length within the enclosure to snap-on the supplied ferrite core. The ferrite core must be within the enclosure and located such that the PCB can be installed.

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**24 VDC, 3-wire configuration (required w/relay)**



AT-1110 w/relay package, relay connection applies to standard 24 VDC, 3-wire configuration only

**AT-1110 w/heater**

