

Carbon Monoxide (CO) Analog Gas Transmitters



DESCRIPTION

Microprocessor-based 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*
- *(0)4-20 mA, (0)2-10 VDC output, selectable*
- *Polarity protected*
- *Two-stage relay output control, optional*
- *Electrochemical gas sensor, gas specific, long-life*
- *Temperature compensated*
- *Easy plug-in sensor*
- *NEMA 1 enclosure*
- *RFI/EMI protected*
- *Modular plug-in technology*
- *Easy maintenance*
- *UL performance tested*

**PolyGard
AT-1110 V3**



CE
City of Los Angeles
Approved



NRTL Performance Tested
& Certified
Conforms to STD **UL 2075**

SPECIFICATIONS

Electrical

Power supply	24 VAC ± 15%, 50/60 Hz, or 17-28 VDC, polarity protected
Power consumption	22 mA (0.6 VA), max.
- w/relay package	35 mA (1.0 VA), max.
- w/heater	235 mA (6 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 adjustable from 0-200 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 ² , max. 930 m ²), under "ideal conditions"

Installation Location

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

General	Continuous proportional analog sensor signal output
Analog output	(0)4-20 mA, load < 500 Ω; (0)2-10 VDC, load > 50K Ω; jumper selectable, 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 (IP42), 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 ²), Max. 14 AWG (2.5 mm ²)
Wire distance	Max. loop resistance 450 Ω (= wire resistance plus controller input resistance)
Weight	0.7 lbs. (0.3 kg)
Calibration	Adjustment via onboard zero and gain potentiometers

SPECIFICATIONS

Approvals/Listings

- unit rating NRTL Performance Tested & Certified
 Conforms to STD ANSI/UL 2075
 City of Los Angeles
 CE
 VDI 2053, air treatment systems
 for garages and tunnels
 EMV-Compliance 2004/108/EWG,
 low voltage directives 73/23/EWG

Warranty

Two years material and
 workmanship

OPTIONS

Enclosures

Duct mounted "1" NEMA 3 (IP45)
 - w/probe* 7/8 in. (22 mm) diameter and
 7.16 in. (182 mm) length
 1 hole for 1/2 in. conduit
 - cable entry
Wall mounted "4"* NEMA 4X (IP65), w/splash guard
 - material ABS UL94 V0
 - color Light gray
 - installation Wall (surface) mounted
 - dimensions (H x W x D) 4.80 x 4.72 x 3.42 in.
 (122 x 120 x 87 mm)
 (1) PG 13.5 compression fitting,
 removeable, hole fits 1/2 in.
 conduit conductor

Relay Package

Type (1) SPDT (R1), and (1) SPST-NC
 or SPST-NO (R2), jumper
 selectable
 Contact rating 30 VAC/VDC, 0.5 A, max.
 Setpoint (factory set) Lo/SPDT = 50 ppm*
 Hi/SPST = 100 ppm*

Switching differential (factory set) 15 ppm*
 * other values on special request
 at time of ordering

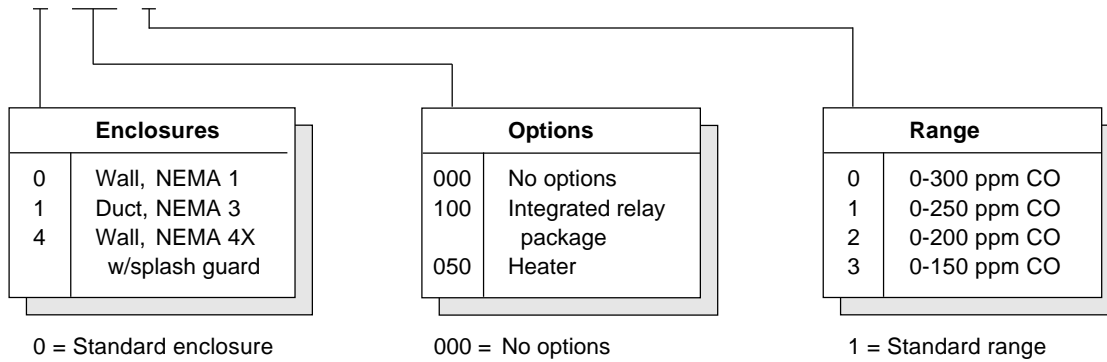
Relay mode (factory set) De-energized for each relay,
 energized (fail-safe) mode on
 special request

Status indicator (2) LEDs, one for each relay
Heater, built-in For low temperature environment
 Ambient temperature -40°F (-40°C)
 Power consumption 0.2 A (5 VA), max.
 Thermostatic control 32°F (0°C) ± 5°F (3°C)

(* Duct's probe element and enclosure type "4" are not a part of the NRTL STD 2075 Certification

ORDERING INFORMATION

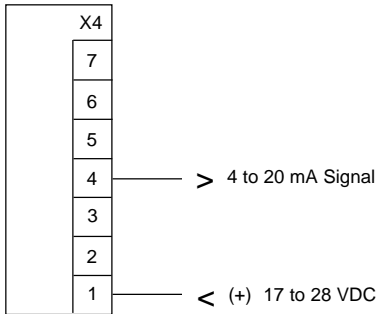
AT-1110 - 0 - 000 - 1 (Product label "AT-1110-x-xxx-x V3")



WIRING CONFIGURATION

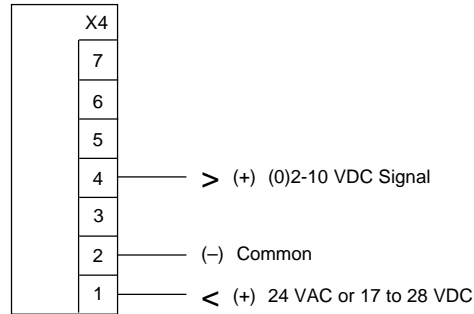
AT-1110

4-20 mA signal, 2-wire, loop-powered, 24 VDC



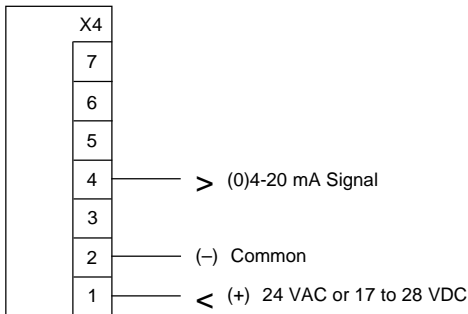
AT-1110

(0)2-10 VDC signal, 3-wire, 24 VAC or 24 VDC



AT-1110

(0)4-20 mA signal, 3-wire, 24 VAC or 24 VDC**



Jumper output signal range selectors:

- V-A Over both pins = VDC
Pins not covered = mA
- 0-20% Over both pins = 4-20 mA / 2-10 VDC
Pins not covered = 0-20 mA / 0-10 VDC

Notes:

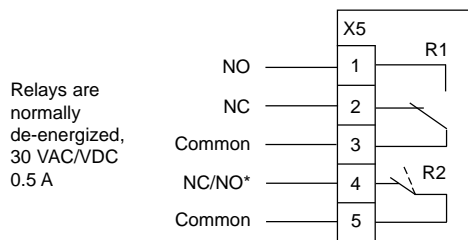
2-wire loop-powered wire configuration allow only 4-20 mA signal.

Signal range jumper selection:

- V-A Pins not covered
- 0-20% Pins both covered

Optional relay package

(0)4-20 mA signal, 3-wire, 24 VAC or 24 VDC**



** For (0)4-20 mA signal with optional relay package, and/or heater, the 3-wire configuration must be applied.

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

Shield should be grounded only at the controller. DO NOT ground shield at both ends!

With optional heater:

The wiring must be sized appropriately for a power of 0.3 A, 24 VDC.

*Jumper SPST relay NC/NO selector:

- NC Covers top two pins = SPST-NC
- NO Covers bottom two pins = SPST-NO

Note: When using AT-1110 transmitter w/relay package as a stand-alone unit (no connection to a controller), pins on jumpers "V-A" and "0-20%" must be covered.

See Jumper output signal range selectors.