

PolyGard® Carbon Monoxide CO Transmitter ADTX3 1110

DESCRIPTION

CO transmitter including digital measurement value processing and temperature compensation for the continuous monitoring of the ambient air to detect carbon monoxide concentrations (CO). Comfortable calibration routine with selective access release is integrated in the transmitter. The ADT-03 possesses a standard analog output (0) 4- 20 mA or (0) 2- 10 V DC, and an RS-485 interface. 2 relays with adjustable switching thresholds are available as an option.

APPLICATION

For the detection of carbon monoxide (CO) within a wide range of commercial applications such as underground garages, tunnels, engine repair shops, loading bays, engine test benches, shelters, go-kart race courses etc. Due to the standard analog signal the CO transmitter is compatible to the PolyGard series MGC by MSR-E as well as to any other electronic control or automation system.



Standard enclosure

FEATURES

- Digital measurement value processing incl. temperature compensation.
- Continuous monitoring
- Low zero point drift
- Good stability to poisoning
- Long life sensor
- Modular plug-in technology
- Easy maintenance
- Comfortable calibration with selective access release
- Reverse polarity protected, overload and short-circuit proof
- (0) 4 - 20 mA / (0) 2 - 10V analog signal output, selectable
- Serial interface RS-485
- IP65 protected
- Manual calibration via potentiometer (option)
- Manual addressing for RS-485 mode (option)
- 4 - 20 mA analog input for external AT transmitter (optional)
- Relay output (optional)
- Integrated buzzer (optional)
- LCD display (optional)
- Heating (optional)
- Duct mounting (optional)

SPECIFICATIONS

General sensor performance

Detected gas	Carbon monoxide (CO)
Sensor element	Electrochemical, diffusion
Measuring range: - Standard	0 – 300 ppm
- Optional	50 – 2000 ppm (see Ordering Information)
Pressure range	Atmospheric \pm 10 %
Humidity range	15 – 90 % RH non-condensing
Storage temperature	5 °C to 30 °C (41 °F to 86 °F)
Storage time	6 months
Mounting height	1,5 to 1,8 m (5 – 6 ft.)
Sensor coverage	465 m ² , (5,000 sq.ft.), to 930 m ² (10,000 sq.ft.) "ideal conditions" assumed

Type ADT03-1110

Accuracy	\pm 3 ppm	
Repeatability	\pm 3 % of reading	
Long term zero-point drift	< 5% signal loss/year	
Response time	$t_{90} \leq$ 50 s	
Sensor life expectancy	5 years, normal operating environment	
Humidity range: Short-time	0 – 95 % RH non-condensing	
Working temp.: Continuous	-10 °C to + 50 °C (14 °F to 122 °F)	
Working temp.: Short-time	-20 °C to + 50 °C (-4 °F to 122 °F)	
Cross sensitivity*	Concentration (ppm)	Reaction (ppm)
Acetone, C ₃ H ₆ O	1000	0
Acetylene, C ₂ H ₂	40	80
Ammonia, NH ₃	100	0
Carbon dioxide, CO ₂	5000	0
Chlorine, Cl ₂	2	0
Ethanol, C ₂ H ₅ OH	2000	5
Hydrogen, H ₂	100	20
Hydrogen Sulphide, H ₂ S	25	0
Iso Propanol, C ₃ H ₈ O	200	0
Nitric oxide, NO	50	8
Nitrogen dioxide, NO ₂	50	-1,0
Sulphur dioxide, SO ₂	50	< 0,5

Type ADT53-1110

Accuracy	\pm 1 ppm	
Repeatability	\pm 2 % of reading	
Long term sensitivity output drift	< 2% signal loss/month	
Response time	$t_{90} \leq$ 40 s	
Sensor life expectancy	3 years, normal operating environment	
Working temp.: Continuous	-20 °C to + 45 °C (14 °F to 113 °F)	
Working temp.: Short-time	-20 °C to + 50 °C (-4 °F to 122 °F)	
Cross sensitivity*	Concentration (ppm)	Reaction (ppm)
Sulphur dioxide, SO ₂	50	0
Hydrogen Sulphide, H ₂ S	25	0
Nitrogen dioxide, NO ₂	50	0
Nitric oxide, NO	50	0
Hydrogen, H ₂	100	< 60

* The table doesn't claim to be complete. Other gases, too, can have an influence on the sensitivity. The mentioned cross sensitivity data are only reference values valid for new sensors.

GAS ALARM SYSTEMS

Electrical

Power supply	18 - 28 VDC/AC, (reverse polarity protected)
Power consumption (without options)	22 mA, max. (0,6 VA)

Output signal

Analog output signal	(0) 4 – 20 mA, load \leq 500 Ω ,
Selectable: Current / tension	(0) 2 - 10 V, load \geq 50 k Ω
Starting point 0 / 20 %	proportional, overload and short-circuit proof

Serial interface

Transceiver	RS 485 / 19200 Baud (9600 at Mod_Bus)
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Physical characteristics

Enclosure Plastic Type A*	Polycarbonate
Flammability	UL 94 V2
Enclosure color*	RAL 7032 (light grey)
Dimensions (W x H x D)	94 x 130 x 57 mm (3.7 x 5.12 x 2.24 inch.)
Weight	Approx. 0.5 kg (1.1 lbs.)
Protection class	IP 65
Installation	Wall mounting
Cable entry	Standard 1 x M 20
Wire connection	Screw type terminal, min. 0.25 mm ² (24 AWG) max. 2.5 mm ² (14 AWG)
Wire distance	Current signal: ca. 500 m (1500 ft) Voltage signal: ca. 200 m (600 ft.)

Certificate

VDI 2053 German air treatment systems for car parks (pending)

Guidelines

EMC Directive 89/336/EEC
CE

Warranty

One year on material (without sensor)

Options

Relay output

Alarm relay 1	30 VAC/DC, 0,5 A, potential-free, SPDT
Alarm relay 2	30 VAC/DC, 0,5 A, potential-free, SPNO/SPNC
Power consumption	30 mA, (max 0,8 VA)

Warning buzzer

Acoustic pressure	85 dB (distance 300 mm) (1 ft)
Frequency	3,5 kHz
Power consumption	30 mA, (max 0,8 VA)

LCD Display

LCD	Two lines, each 16 characters
Power consumption	10 mA, (max 0,3 VA)

Heating

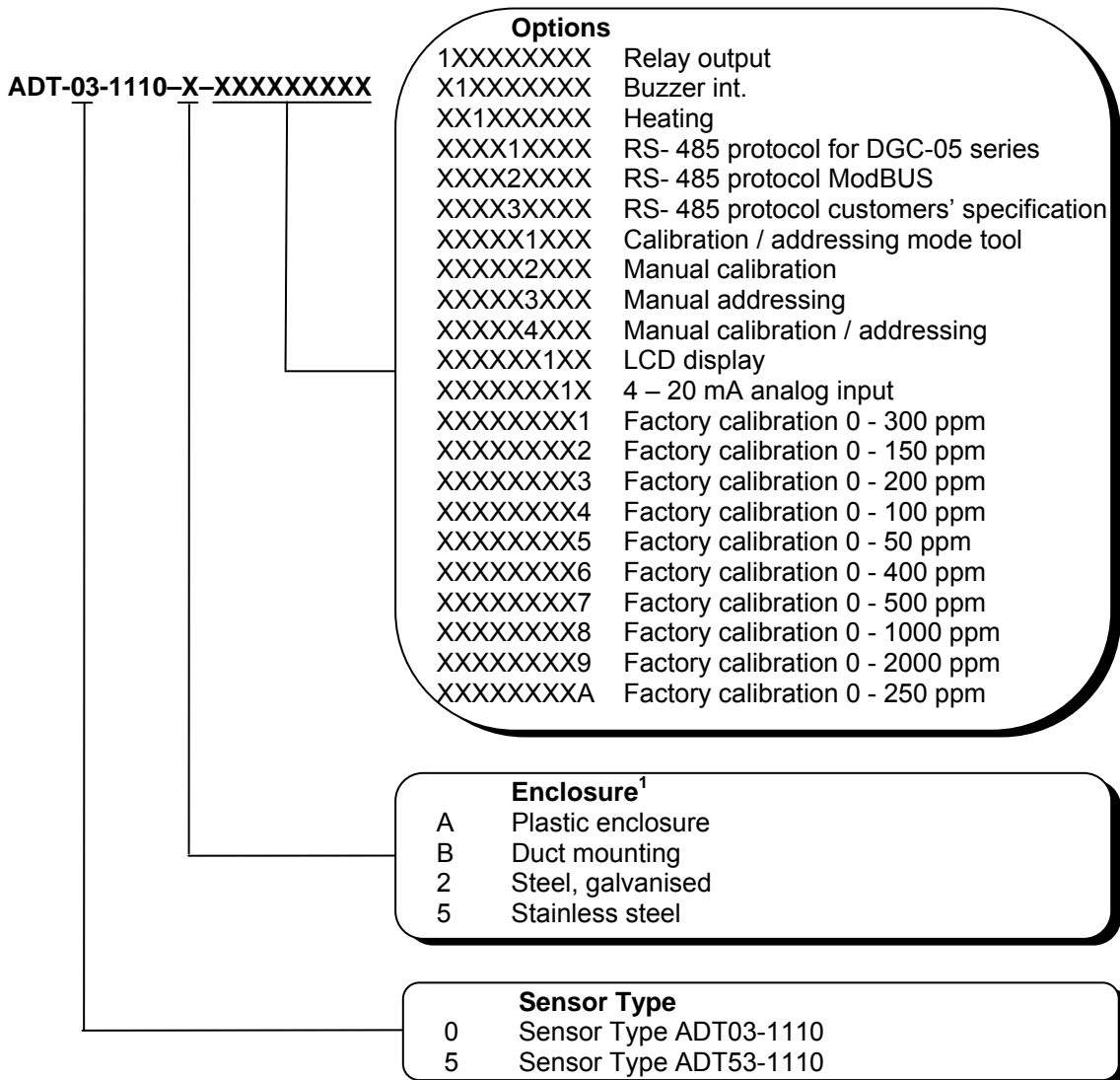
Temperature controlled	3 °C \pm 2°C (37.5 °F \pm 3,6 °F)
Ambient temperature	- 40 °C (- 40 °F)
Power supply	18 - 28 VDC/AC
Power consumption	0,3 A; 7,5 VA

Analog Input

Only for RS-485 mode	4 – 20 mA overload and short-circuit proof, input resistance 200 Ω
Power supply for external transmitter	24 VDC max. 50 mA

*For further enclosure types see datasheet AT-DT Enclosure.

ORDERING INFORMATION

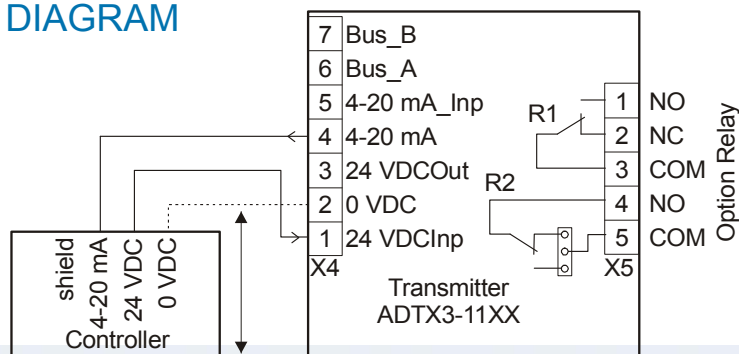


¹ See Data sheet „PolyGard AT/DT Enclosure”

Example: CO transmitter, Sensor type ADT03-1110, stainless housing, tool mode, factory calibration 0 - 300 ppm

Ordering No.: ADT-03-1110-5-XXXXX1XX1

CONNECTING DIAGRAM



0 VDC: Two wire mode only with 4 to 20 mA Output signal