

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.) |

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 |

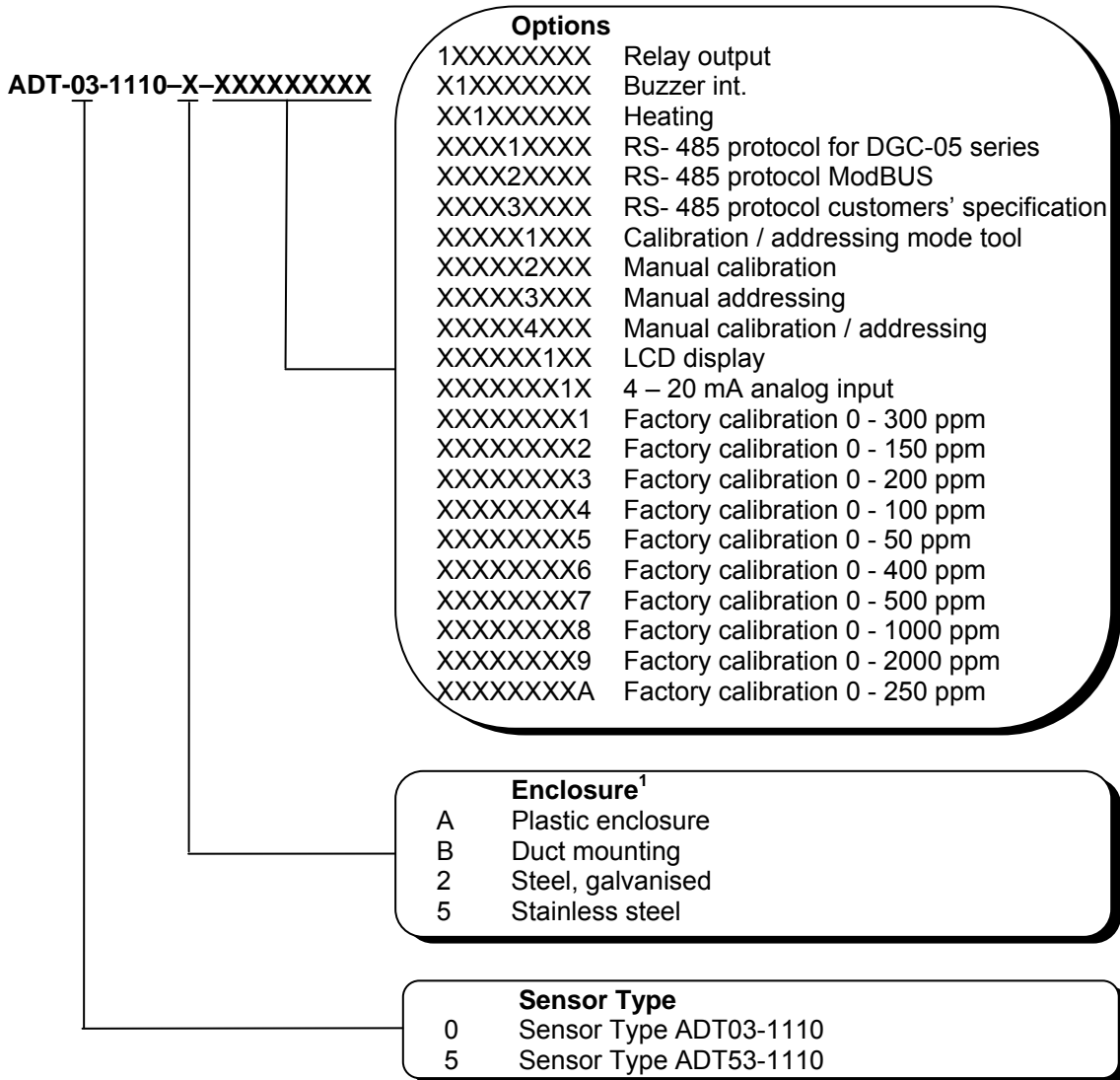
* The table doesn't claim to be complete. Other gases, too, can have an influence on the sensitivity. The mentioned cross sensitivity data are only reference values valid for new sensors.

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) |
| 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

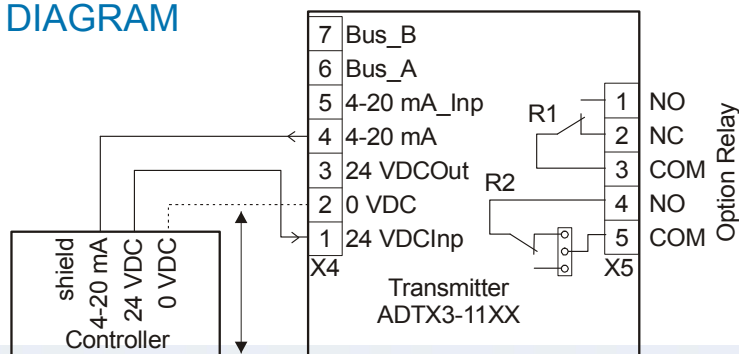


¹ See Data sheet „PolyGard AT/DT Enclosure”

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