

## PolyGard® Carbon Monoxide CO Flow Transmitter FT-D3 1110 with Infrared Sensor

### DESCRIPTION

CO transmitter with two-beam infrared sensor for the continuous monitoring of the ambient air to detect carbon monoxide concentrations. The infrared measuring method with integrated temperature and drift compensation stands for highest accuracy, selectivity and reliability despite of the calibration interval of 3 years. The FT-D3 possesses a standard analog output (0) 4- 20 mA or (0) 2- 10 VDC, and an RS-485 interface. 2 relays with adjustable switching thresholds as well as an integrated display are available as options.

### APPLICATION

For detecting carbon monoxide concentrations within a wide range of commercial applications. Due to the standard analog signal and the RS-485 serial interface the CO transmitter is compatible to the PolyGard gas controller series by MSR-E as well as to any other controllers or automation systems.



Standard enclosure

### FEATURES

- Two-beam infrared gas sensor (NDIR)
- High accuracy, selectivity and reliability
- Automatic drift and temperature compensation
- Good resistance to poisoning
- Life expectancy > 10 years
- Maintenance periods > 3 years
- 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 version
- Housing fire-resistant according to UL 94V2
- Modular plug-in technology
- Manual addressing for RS-485 mode (optional)
- 4 - 20 mA analog input for external transmitter (optional)
- Relay output (optional)
- Integrated buzzer (optional)
- LED flashlight (optional)
- LCD display (optional)
- LED status indicator (optional)
- Heating (optional)

## SPECIFICATIONS

### General sensor performance

Detected gas	Carbon monoxide (CO)
Sensor element	Two-beam infrared (NDIR)
Measuring ranges (3)	0 – 2 / 10 / 100 Vol.-%
Accuracy	< 2 % of measuring range
Repeatability	< 2 % of measuring range
Response time	$t_{90} < 15 \text{ sec. @ } 500 \text{ ml/min (constant)}$
Resolution	0.01 Vol.-%
Temperature range	-10 °C to + 40 °C (14 °F to 104 °F)
Long-term zero-point drift	< 2 % of measuring range/year
Long-term output drift	< 2 % of measuring range/year
Pressure range	800 -1200 hPa
Humidity range	0 – 95 % RH non-condensing
Life expectancy	> 10 years
Recommended calibration interval	> 3 years
Storage temperature	- 20 °C to 60 °C (-4 °F to 140 °F)
Storage time	Max. 12 months

### Pneumatic

Flow speed	200 – 800 ml/min (constant)
Tube connection	4 mm inner diameter

### Electrical

Power supply	18 - 28 VDC/AC, (reverse polarity protected)
Power consumption (without options)	45 mA, max. (1.1 VA)

### Output signal

Analogue output signal	(0) 4 – 20 mA, load $\leq 500 \Omega$ , Resolution 0.02 mA
Selectable: Current / tension	(0) 2 - 10 V, load $\geq 50 \text{ k } \Omega$ , Resolution 0.02 V
Starting point 0 / 20 %	proportional, overload and short-circuit proof

### Serial interface

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

Enclosure plastic type C	Polycarbonate
Flammability	UL 94 V2
Enclosure colour	RAL 7032 (light grey)
Dimensions (W x H x D)	130 x 130 x 75 mm (5.12 x 5.12 x 2.95 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, 0.25 - 2.5 mm <sup>2</sup> (24 - 14 AWG)
Wire distance	Current signal: ca. 500 m (1500 ft) Voltage signal: ca. 200 m (600 ft.)

### Guidelines

	EMC Directive 2004 / 108 / EC
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### Warranty

	CE
	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

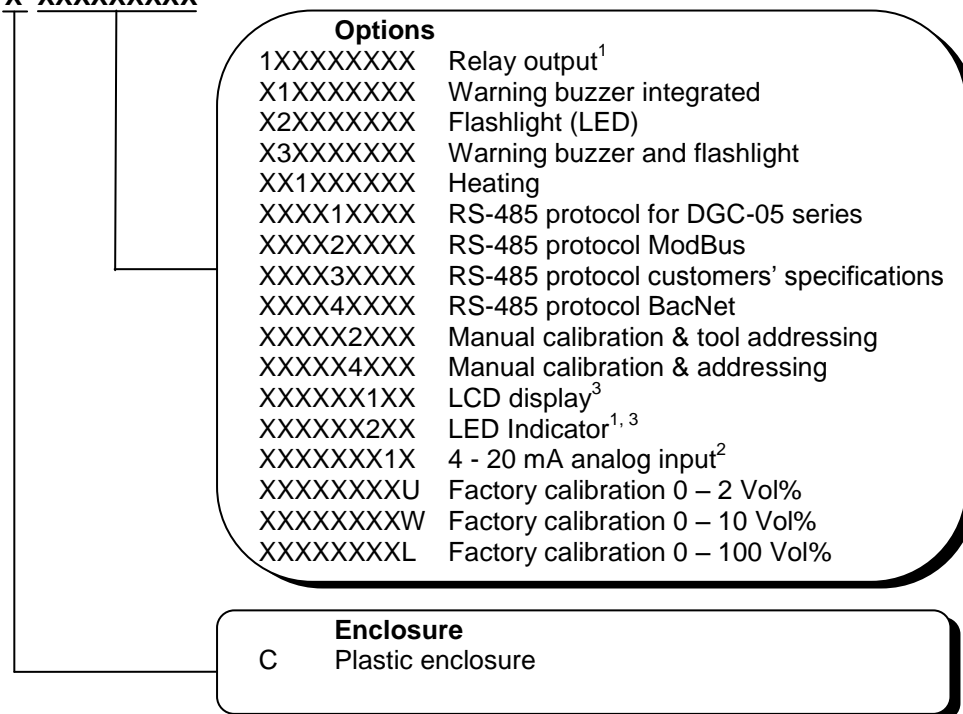
Acoustic pressure	83 dB (distance 200 mm) (1 ft)
Frequency	2.3 kHz
Power consumption	30 mA, (max 0.8 VA)

# GAS ALARM SYSTEMS

<b>LCD Display</b>	
LCD	Two lines, each 16 characters
Power consumption	10 mA, (max 0.3 VA)
<b>LED Indicator</b>	
Green- yellow- red	Power supply, Low Alarm, High Alarm
Power Consumption	10 mA, (max. 0.3 VA)
<b>Heating</b>	
Temperature controlled	3 °C ±2° C (37.5 °F ± 3.6 °F)
Ambient temperature	- 30 °C (- 22 °F)
Power consumption	0.3 A; 7.5 VA
<b>Analog Input</b>	
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. charge 50 mA

## ORDERING INFORMATION

**FT-D3-1110-X-XXXXXXXXXX**



<sup>1</sup> Please indicate the thresholds for Low and High Alarm, when ordering  
<sup>2</sup> Only in connection with a RS-485 protocol  
<sup>3</sup> Not in connection with option Relay or RS-485 interface

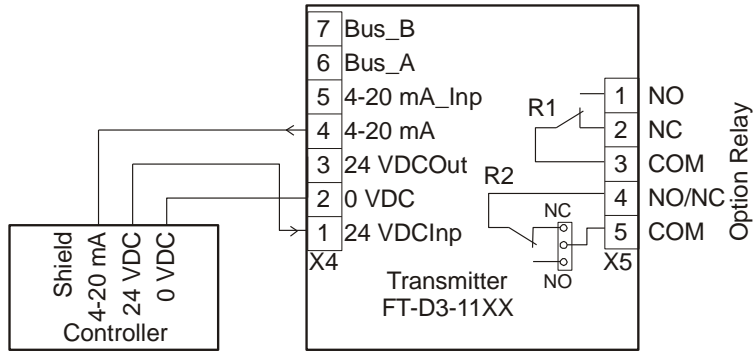
**Example:** Carbon monoxide IR transmitter, plastic housing, manual calibration & tool addressing, factory calibration 0 – 2 Vol%

**Ordering number: FT-D3-1110-C-XXXXX2XXU**



# GAS ALARM SYSTEMS

## ELECTRIC CONNECTION DIAGRAM



## PNEUMATIC CONNECTION

