

PolyXeta[®] Transmitter Series XT-A1-34XXI for Combustible Gases, Zone 1 / 2 - Infrared Sensor

Description

Microprocessor based analog gas transmitter with 4 – 20 mA output signal for monitoring the ambient air and detecting flammable gases and vapours in the lower explosion level (LEL) by means of an infrared sensor. The calibration for types without LCD display is possible via the handheld calibration keypad XT.S/CKD. The types with LCD display have a non intrusive magnetic calibration feature for easy calibration without opening the instrument and declassifying the area. The gas transmitter is available with EEx-d protection for Ex zone 1 and 2, or with EEx-n protection for Ex zone 2.

Application

The PolyXeta gas transmitter is used in industrial ranges like oil/gas, petrochemical industry, power plants, mining etc. in Ex Zone 1 and 2. The PolyXeta is also suitable for commercial ranges like gas transfer stations etc..

Due to the 4 to 20 mA analog output signal the transmitter is compatible to any electronic analog control, DDC/PLC control or automation system (e.g. PolyGard series MGC and DGC by MSR-E).

Optionally the PolyXeta transmitter is available with LCD display, relay or open collector board and RS 485 serial interface.

Features

- ATEX certifications MSR electronic/Sensitron
- Continuous monitoring
- 10 bit microprocessor
- Self diagnostic procedure
- Zero point tracking
- Easy calibration (zero, span and 4-20mA adjustment) with the calibration keypad
- Watch dog switch
- 4 to 20mA proportional output or three-step (0, 10 and 20 mA)
- Reverse polarity protected
- Overload-proof
- Poison-free
- High accuracy and long lifetime
- LCD display with status LED (optional)
- One-relay board (optional)
- Three-relay board (optional)
- Open collector board (optional)
- RS 485 serial bus (optional)



EEx-n  EEx-d

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With LCD display

Specifications

Electrical	
Power supply	12 - 24 VDC -20% +15%
Power consumption (at 12 VDC)	140 mA, max. 180 mA
Output signal	4 to 20 mA, on 200 Ω
Control unit	Microprocessor 10 bit (resolution 1024 points)
Digital filter	Variable average on the sampled values
Visual indications	Flashing LED
LCD display (optional)	4 digits; 5 status LED
Serial output (optional)	Serial RS-485
One-relay output (optional)	Max. 24 VAC/DC, 1 A
Three-relay output (optional)	Max. 24 VAC/DC, 1 A
Two open collectors (optional)	Max. 24 VDC, 20 mA
Sensor Performance	
Detected gases	Combustible gases
Sensor element	Infrared sensor
Measuring range	0-100 %LEL
Response time	$t_{90} \leq 60$ sec.
Accuracy	± 5 % of range or 10 % of reading
Repeatability	± 5 % of range
Warm-up time	300 sec.
Stabilisation time	120 sec.
Zero-point drift	Auto zero drift compensation
Operating Environment	
Humidity	20 to 90 % RH / 40 °C (104 °F)
Operating temperature	-10 °C to + 55 °C (14 °F to + 131 °F)
Storage temperature	-25 °C to + 60 °C (-13 °F to + 140 °F)
Pressure range	800 to 1100 mBar (80 to 110 kPa)
Air velocity	< 6m/sec.
Physical characteristics	
Enclosure material / color	Metal / Blue
Dimensions EEx-d (HxWxD)	200 x 105 x 90 mm (7.87 x 4.13 x 3.54 In.)
Dimensions EEx-n (HxWxD)	160 x 106 x 62 mm (6.30 x 4.17 x 2.44 In.)
Weight (without options)	EEx-d: 1,5 kg (3.3 lbs.) EEx-n: 1,4 kg (3.06 lbs.)
Protection class	EEx-d: IP65 EEx-n: IP55
Mounting	Wall mounting (sensor head downwards)
Cable entry	1 x NPT $\frac{3}{4}$ In.
Wire connection	Screw type, min. 0.25(24 AWG) max. 2.5 mm ² (14 AWG)
Wire length	Max. working resist. 200 Ω (= wire resistance+ controller input resistance)
ATEX Marking	CE 722 Ex II 2G EEx d IIC T6 CE 722 Ex II 3G EEx nA IIC T6
EC Type Certification	CESI 01ATEX053 (Electrical Safety Requirements EEx-d vers.) CESI 03ATEX339 (Electrical Safety Requirements EEx-n vers.) CESI 02ATEX084 (Performances; flammable gas version)
Guidelines	EN50014, E50018; EN50021 (Electr. Saf. Req. EEx-d and -n) EN 61779-1/4 (Performances)
Warranty	One year on material and workmanship (without sensor)

Ordering Information

XTA1-34XX-IXX-XXX

Options

- 1XX One relay board
- 2XX Open collector board
- 3XX RS-485 bus
- X1X Three-relay board**
- XX1 Factory calibration

Type / Protection

- IXX Infrared sensor
- IDX EEx-d (zone 1) protection
- INX* EEx-n (zone 2) protection
- IXL LCD display***

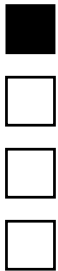
Gas type

00	Methane	CH ₄
02	LPG (liquefied petroleum gas)	
10	Ethylene	C ₂ H ₄
20	Ethane	C ₂ H ₆
25	Ethyl Alcohol	C ₂ H ₅ OH
50	Methanol	CH ₃ OH
60	n-Butane	C ₄ H ₁₀
65	ISO-Butane	C ₄ H ₁₀
75	n-Pentane	C ₅ H ₁₂
80	Propane	C ₃ H ₈
85	Acetone	(CH ₃) ₂ CO
90	Toluene	C ₇ H ₈
92	Styrene	C ₈ H ₈
96	Petrol Vapours	

* Only available for Propane, Methane, LPG, n-Butane

** Not available with LCD display

*** Not available with three-relay board



Example: Transmitter for Methane detection, EEx-d protection, LCD display, one-relay board, factory calibration

Ordering Number: XTA1-3400-IDL-101

Connecting Diagram

