



PolyXeta®2

Sensor for toxic gases in zone 2

Microprocessor based gas sensor with 4 – 20 mA / RS485-Modbus output signal, alarm and fault relays (all SIL2 certified) for monitoring the ambient air on oxygen and toxic gases and vapors by means of a electrochemical sensor element (El.Ch.) or an infrared sensor element. The calibration of sensors without LCD display is carried out via the calibration device Cal PX or the PC software PC-Soft 80. Sensors with LCD display have an integrated calibration routine that is started from outside by a permanent magnet without opening the housing. In case of an alarm or fault the backlight of sensors with LCD display switches from green to red.



APPLICATION

The PolyXeta®2 sensor is used in industrial areas like oil/gas industry, biogas plants, petrochemical industry, power plants etc. in Ex-Zone 2. The PolyXeta®2 sensor is also suitable for commercial areas like gas transfer stations etc. With the 4 – 20 mA / RS485-ModBus output signal the sensor is suitable for connection to the PolyGard®2 gas controller series by MSR-Electronic, as well as to any other controllers or automation devices. Optionally, the PolyXeta®2 sensor is also available with LCD display and relay output.

FEATURES

- ATEX and IEC Ex certificates MSR-Electronic for electrical Ex protection
- ATEX metrical test & SIL2 safety functions 4 – 20 mA, RS485 and relay
- Type "Ex d" with flame-proof enclosure
- Continuous monitoring
- Microprocessor with 12 bit converter resolution
- Self-monitoring system
- Easy calibration
- Calibration service by exchanging the sensor head
- Proportional 4 – 20 mA output
- Serial interface to the control center
- Reverse polarity protection
- Overload protection
- LCD display with status LEDs (optional)
- Alarm and fault signal relay (optional)





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SPECIFICATIONS

ELECTRICAL

Power supply	16 – 28 V DC, 20 – 29 V AC
Power consumption (at 24 V DC)	90 mA, max. 130 mA
Control unit	Microprocessor with 12 bit converter resolution
Digital filter	Averaging in order to increase the EMC immunity
Visual indications	2 LEDs for operation, alarm and communication
Analog output signal (active)	Proportional, overload and short-circuit proof, load ≤ 500 Ω 4 – 20 mA = measuring range 3.0 < 4 mA = underrange > 20 – 21.2 mA = overrange 2 mA = fault > 21.8 mA = fault High
Serial interface	Serial data bus
Fault relay (optional)	Max. 30 V AC/DC, 1 A
Alarm relay (optional)	Max. 30 V AC/DC, 1 A
LCD (optional)	2 x 16 characters, 3 status LEDs, 4 menu operating elements

SENSOR DATA

Gas type	Oxygen and toxic gases	
Sensor element	Electrochemical	Infrared
Measuring range	See Ordering Information	0 – 100 % LEL
Response time	$t_{90} \leq$ depending on gas type	$t_{90} \leq 30$ sec.
Accuracy	Depending on gas type	± 1 % below 25% of measuring range
Repeatability	Depending on gas type	± 2 % of measuring range
Stabilization time	300 sec.	900 sec.
Warm-up time	Measuring mode after 120 sec.	Measuring mode after 60 sec.

ENVIRONMENTAL CONDITIONS

Humidity	20 to 90% RH (not condensing)
Operating temperature	-25 °C to +60 °C
Storage temperature	-5 °C to +30 °C
Pressure range	800 to 1200 mbar (80 to 120 kPa)
Air velocity	< 6 m/sec.

PHYSICAL CHARACTERISTICS

Case / color	Die-cast aluminum / light grey RAL 7032
Dimensions (d x H)	95 x 82 mm
Weight	Ca. 1.3 kg
Protection class	Housing protection IP66 to IP68 (depending on the cable glands used) Gas inlet IP64, with option splash-proof IP65 (available end of 2016)
Mounting	Wall mounting (sensor head downwards)
Cable entry	1 x ¾ in. (Ansi B1.20.1)
Wire connection	Spring-type terminal, 0.08 to 2.5 mm ² AWG 28 - 12
Wire length	Max. load 500 Ω (= wire resistance + controller input resistance)

ATEX MARKING

EC-type examination certificate	BVS 15 ATEX E 129 X (electrical Ex protection)
CERTIFICATES	Ex d EN60079-0, -1 Metrological approval: (pending) EN 60079-29-1 for Ex gases Functional safety (SIL2) (pending) EN 50402 EN 61508-1, -2, -3 EN 50271

WARRANTY

1 year on material and processing (without sensor)





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ORDERING INFORMATION

PX2 - 2 - X -XXXXX-X

OPTIONS

- Without option 0
- Relay set (2) 1
- LCD display 2
- Relay set (2) + LCD display 3

		GAS TYPE		Sensor type	Measuring range
	0	E1110-H	Carbon monoxide CO	El. Chem.	0-500 ppm
	1	E1125-A	Ammonia NH ₃	El. Chem.	0-100 ppm
	2	E1125-B	Ammonia NH ₃	El. Chem.	0-200 ppm
	3	E1125-D	Ammonia NH ₃	El. Chem.	0-1000 ppm
		C1129-C	Nitrogen monoxide NO	El. Chem.	0-100 ppm
		E1130-B	Nitrogen dioxide NO ₂	El. Chem.	0-20 ppm
		E1189-C	Ethylene C ₂ H ₄	El. Chem.	0-200 ppm
		C1193-B	Chlorine Cl ₂	El. Chem.	0-5 ppm
		C1193-D	Chlorine Cl ₂	El. Chem.	0-20 ppm
		E1196-B	Sulphur dioxide SO ₂	El. Chem.	0-20 ppm
		E1197-A	Hydrogen sulphide H ₂ S	El. Chem.	0-50 ppm
		E1195-A	Oxygen O ₂	El. Chem.	0-25 vol%
		E1195-B	Oxygen O ₂	El. Chem.	0-21 vol%
		I1164-A	Carbon dioxide CO ₂	Infrared	0-5 vol%

ELECTRICAL CONNECTION

