



PolyXeta®2

Sensor for combustible 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 to detect combustible gases and vapors within the lower explosive limit (LEL) by means of a catalytic sensor element (pellistor) 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 changes 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 controller 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 $\leq 500 \Omega$ 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	Combustible gases	
Sensor element	Pellistor	Infrared
Measuring range	0 – 100 % LEL	0 – 100 % LEL
Response time	$t_{90} \leq 20$ sec. for CH ₄	$t_{90} \leq 30$ sec.
Accuracy	± 1 % of measuring range (CH ₄)	± 1 % below 25% of measuring range
Repeatability	± 2 % of measuring range	± 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 / colour	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 ¼ 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 the sensor)





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ORDERING INFORMATION

PX2 - 2 - X -XXXXX-A

OPTIONS

Without option

Relay set (2)

LCD display

Relay set (2) + LCD display

		GAS TYPE		Sensor type	Measuring range
0	P3400-A*	Methane	CH ₄	Pellistor	0-100 %LEL
1	P3402-A*	LPG Liquefied Petroleum Gas		Pellistor	0-100 %LEL
2	P3405-A*	Acetylene	C ₂ H ₂	Pellistor	0-100 %LEL
3	P3408-A**	Ammonia	NH ₃	Pellistor	0-100 %LEL
	P3410-A*	Ethylene	C ₂ H ₄	Pellistor	0-100 %LEL
	P3425-A**	Ethyl Alcohol	C ₂ H ₅ OH	Pellistor	0-100 %LEL
	P3427-A*	Ethyl Acetate	C ₄ H ₈ O ₂	Pellistor	0-100 %LEL
	P3435-A*	Hexane	C ₆ H ₁₄	Pellistor	0-100 %LEL
	P3440-A*	Hydrogen	H ₂	Pellistor	0-100 %LEL
	P3450-A**	Methanol	CH ₃ OH	Pellistor	0-100 %LEL
	P3458-A**	Methyl Ethyl Ketone	C ₄ H ₈ O	Pellistor	0-100 %LEL
	P3460-A*	Butane	C ₄ H ₁₀	Pellistor	0-100 %LEL
	P3472-A*	Cyclopentane	C ₅ H ₁₀	Pellistor	0-100 %LEL
	P3475-A*	Pentane	C ₅ H ₁₂	Pellistor	0-100 %LEL
	P3476-A**	Isopentane	C ₅ H ₁₂	Pellistor	0-100 %LEL
	P3480-A*	Propane	C ₃ H ₈	Pellistor	0-100 %LEL
	P3482-A*	Isopropyl Alcohol	C ₃ H ₈ O	Pellistor	0-100 %LEL
	P3484-A**	Propyl Alcohol	C ₃ H ₈ O	Pellistor	0-100 %LEL
	P3485-A*	Acetone	C ₃ H ₆ O	Pellistor	0-100 %LEL
	P3490-A*	Toluene	C ₇ H ₈	Pellistor	0-100 %LEL
	P3491-A**	n-Heptane	C ₇ H ₁₆	Pellistor	0-100 %LEL
	P3496-A**	Petrol Vapours		Pellistor	0-100 %LEL
	P3498-A**	JP8		Pellistor	0-100 %LEL
	I3400-A*	Methane	CH ₄	Infrared	0-100 %LEL
	I3480-A*	Propane	C ₃ H ₈	Infrared	0-100 %LEL

* Metrological testing according to EN 60079-29-1 by DEKRA EXAM

** Testing by the manufacturer (manufacturer's declaration of conformity)





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ELECTRICAL CONNECTION

