



PolyGard®2

## Sensor Cartridge SC2 for combustible gases

**Exchangeable sensor including digital value processing, temperature compensation and self control for the continuous monitoring of the ambient air.**

The sensor cartridge SC2 includes a Pellistor sensor element and an amplifier as well as a  $\mu$ Controller for measured values processing. All important data and measured values of the sensor element are stored fail-safe in the  $\mu$ Controller and transmitted digitally via the local bus to the sensor board SB2 or MSB2. The calibration management is also integrated in the  $\mu$ Controller of the sensor cartridge.

Calibration is done either by simply replacing the sensor cartridge or by using the comfortable, integrated calibration routine directly at the system.



Sensor Cartridge

### APPLICATION

The PolyGard®2 Sensor Cartridge is used for the detection of combustible gases in non-Ex zones.

### FEATURES

- Digital measurement value processing incl. temperature compensation
- Internal functional control with integrated Hardware Watchdog
- Data / measured values in  $\mu$ C Sensor Cartridge, therefore simple exchange of SC uncalibrated <-> calibrated
- High accuracy, selectivity and reliability
- Low zero point drift
- Sensor with long life expectancy
- Hardware & software according to SIL2 compliant development process
- Modular technology (plug-in and replaceable)
- Easy maintenance and calibration by exchange of the sensor cartridge or by comfortable on-site calibration
- Reverse polarity protected, overload and short-circuit proof
- IP 65 version
- Conformity to
  - EN 50271
  - EN 61010-1
  - ANSI/UL 61010 1
  - CAN/CSA-C22.2 No. 61010-1





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## SPECIFICATIONS

## Electrical

Power supply	5 V DC from SB/MSB2, reverse polarity protected
Power consumption:	200 mA, max. (1.0 VA)
Serial interface local bus	1-wire / 19200 Baud

## Sensor element

Gas type	Combustible gases, see Ordering Information
Sensor element	Pellistor (catalytic bead sensor)
Measuring range	0 – 100 % LEL
Accuracy	± 1 % LEL (CH <sub>4</sub> )
Resolution	0.2% (CH <sub>4</sub> )
Repeatability	< 1 % sig. (CH <sub>4</sub> )
Response time t <sub>90</sub>	10 sec.
Zero point variation	0.5 % (CH <sub>4</sub> )
Long-term zero-point drift	< 0.3 % LEL / month (CH <sub>4</sub> )
Long-term sensitivity drift	< 1 % LEL / month (CH <sub>4</sub> )
Temperature range	-20 °C to +50 °C (-4 °F to +122 °F)
Humidity range	5 - 95 % RH not condensing
Pressure range	Atmospheric ± 20 %
Sensor life time	> 36 months / normal ambient conditions
Calibration interval <sup>1</sup>	6 months
Storage temperature range	+5 °C to +30 °C (+41 °F to +86 °F)
Storage time	6 months
Poisoning	The sensitivity of Pellistor sensors can be influenced by substances containing silicon compounds and even poisoned and destroyed by them.

## Physical

Housing M25	Polycarbonate
Combustion	UL 94 V2
Housing colour	RAL 7032 (light grey)
Dimensions: M25 housing	(D x H) 24 x 22 mm (0.94 x 0.87 in.)
Weight	ca. 30 g (0.07 lb)
Protection class	IP 65
Mounting	Screw mounting
Connection type	3-pin connector
Cable length	110 mm (4.33 in.)

## Directives

	EMC directives 2014/30/EU
	CE
	Conformity to:
	EN 50271
	EN 61010-1:2010
	ANSI/UL 61010-1
	CAN/CSA-C22.2 No. 61010-1

## Warranty

	1 year on material (without sensor element)
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<sup>1</sup> Manufacturer-recommended calibration interval for normal environmental conditions.





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### ORDERING INFORMATION

#### SC2-P34XX-X

	Gas type	Measuring range	Gas density (Air = 1)	Mounting height
<b>P3485-A</b>	Acetone, C <sub>3</sub> H <sub>6</sub> O	0 – 100 % LEL	2.00	Floor
<b>P3405-A*</b>	Acetylene, C <sub>2</sub> H <sub>2</sub>	0 – 100 % LEL	0.90	Ceiling
<b>P3408-A*</b>	Ammonia, NH <sub>3</sub>	0 – 100 % LEL	0.60	Ceiling
<b>P3496-A</b>	Petrol Vapours	0 – 100 % LEL	-	-
<b>P3460-A</b>	Butane, C <sub>4</sub> H <sub>10</sub>	0 – 100 % LEL	2.11	Floor
<b>P3472-A*</b>	Cyclopentane, C <sub>5</sub> H <sub>10</sub>	0 – 100 % LEL		Floor
<b>P3427-A*</b>	Ethyl acetate, C <sub>4</sub> H <sub>8</sub> O <sub>2</sub>	0 – 100 % LEL	3.04	Floor
<b>P3425-A</b>	Ethyl alcohol, C <sub>2</sub> H <sub>5</sub> OH	0 – 100 % LEL	1.59	Floor
<b>P3410-A*</b>	Ethylene, C <sub>2</sub> H <sub>4</sub>	0 – 100 % LEL	0.98	Ceiling!
<b>P3491-A*</b>	Heptane, C <sub>7</sub> H <sub>16</sub>	0 – 100 % LEL	3.46	Floor
<b>P3435-A*</b>	Hexane, C <sub>6</sub> H <sub>14</sub>	0 – 100 % LEL	2.98	Floor
<b>P3476-A*</b>	Isopentane, C <sub>5</sub> H <sub>12</sub>	0 – 100 % LEL	2.48	Floor
<b>P3482-A*</b>	Isopropyl alcohol, C <sub>3</sub> H <sub>8</sub> O	0 – 100 % LEL	2.08	Floor
<b>P3498-A*</b>	JP8	0 – 100 % LEL	-	-
<b>P3402-A</b>	LPG	0 – 100 % LEL	-	-
<b>P3400-A</b>	Methane, CH <sub>4</sub>	0 – 100 % LEL	0.55	Ceiling
<b>P3450-A*</b>	Methanol, CH <sub>3</sub> OH	0 – 100 % LEL	1.11	Floor
<b>P3458-A*</b>	Methyl ethyl ketone, C <sub>4</sub> H <sub>8</sub> O	0 – 100 % LEL	1.15	Floor
<b>P3475-A*</b>	Pentane, C <sub>5</sub> H <sub>12</sub>	0 – 100 % LEL	2.49	Floor
<b>P3480-A</b>	Propane, C <sub>3</sub> H <sub>8</sub>	0 – 100 % LEL	1.55	Floor
<b>P3484-A*</b>	Propyl alcohol, C <sub>3</sub> H <sub>8</sub> O	0 – 100 % LEL	2.08	Floor
<b>P3490-A</b>	Toluene, C <sub>7</sub> H <sub>8</sub>	0 – 100 % LEL	3.18	Floor
<b>P3440-A</b>	Hydrogen, H <sub>2</sub>	0 – 100 % LEL	0.07	Ceiling

\*only on request

#### EXAMPLE

CH<sub>3</sub>OH Sensor Cartridge, measuring range 0-100 % LEL

Order number: SC2-P3450-A

