

**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 or infrared 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 in plastic housing  
without cable extension

### 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
- Duct mounting kit (accessory)





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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	
Measuring range	See Ordering Information	
Sensor element	Pellistor (catalytic bead) sensor P34XX	Infrared sensor I34XX
Accuracy	± 1 % LEL (CH <sub>4</sub> )	+/- 3 % for < 50 % of range +/- 5 % of range for > 50 % of range
Resolution	0.2 % (CH <sub>4</sub> )	0.04 % of range
Repeatability	< 1 % sig. (CH <sub>4</sub> )	0.1 % of range
Response time t <sub>90</sub>	< 15 sec (CH <sub>4</sub> )	< 30 sec
Zero point variation	0.5 % (CH <sub>4</sub> )	-
Long-term zero-point drift	< 0.5 % 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 to 122 °F)	-30 °C to +65 °C (-22 °F to 149 °F)
Humidity range	5 - 95 % RH not condensing	0 - 95 % RH
Pressure range	Atmospheric ± 20 %	700 – 1300 hPa
Sensor life time	> 36 months / normal ambient conditions	> 5 years
Calibration interval <sup>1</sup>	6 months	12 months (verification pending)
Storage temperature range	+ 5 °C to + 30 °C (41 °F to 86 °F)	-40 °C to +80 °C (-40 °F to 176 °F)
Storage time	6 months	6 months
Poisoning	Substances containing silicon compounds can influence the sensitivity of Pellistor sensors and even poison and destroy them.	Polymerizing substances, e.g. Styrene

## Physical

Housing type P	Polycarbonate
Combustion	UL 94 V2
Housing colour	RAL 7032 (light grey)
Dimensions: Housing type P	(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 sensor (not if poisoned or overloaded),  
2 years on device

<sup>1</sup> Manufacturer-recommended calibration interval for normal environmental conditions.





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## ORDERING INFORMATION

SC2-P34XX-X X-XX

00 Without cable extension (standard)

XX With cable extension: 01, 02, 03, 04, 05 ... 15 max. (length in m)

P Sensor housing plastic

S Sensor housing stainless steel

	Gas type	Measuring range	Gas density (Air = 1)	Mounting height
P3485-A	Acetone, C <sub>3</sub> H <sub>6</sub> O	0 – 100 % LEL	2.00	Floor
P3408-A	Ammonia, NH <sub>3</sub>	0 – 100 % LEL	0.60	Ceiling
P3430-A	Benzene, C <sub>6</sub> H <sub>6</sub>	0 – 100 % LEL	2.70	Floor
P3448-A	Butyl acetate, C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	0 – 100 % LEL	4.01	Floor
P3415-A	Cyclohexane, C <sub>6</sub> H <sub>12</sub>	0 – 100 % LEL	2.90	Floor
P3472-A	Cyclopentane, C <sub>5</sub> H <sub>10</sub>	0 – 100 % LEL	2.42	Floor
P3420-A	Ethane, C <sub>2</sub> H <sub>6</sub>	0 – 100 % LEL	1.05	1.5 – 1.8 m
P3427-A	Ethyl acetate, C <sub>4</sub> H <sub>8</sub> O <sub>2</sub>	0 – 100 % LEL	3.04	Floor
P3425-A	Ethyl alcohol, C <sub>2</sub> H <sub>5</sub> OH	0 – 100 % LEL	1.59	Floor
P3410-A	Ethylene, C <sub>2</sub> H <sub>4</sub>	0 – 100 % LEL	0.98	Ceiling!
P3440-A	Hydrogen, H <sub>2</sub>	0 – 100 % LEL	0.07	Ceiling
P3468-A	Isobutyl alcohol, C <sub>4</sub> H <sub>10</sub> O	0 – 100 % LEL	2.56	Floor
P3482-A	Isopropyl alcohol, C <sub>3</sub> H <sub>8</sub> O	0 – 100 % LEL	2.08	Floor
P3460-A	Iso/n-Butane, C <sub>4</sub> H <sub>10</sub>	0 – 100 % LEL	2.11	Floor
P3475-A	Iso/n-Pentane, C <sub>5</sub> H <sub>12</sub>	0 – 100 % LEL	2.49	Floor
P3402-A	LPG	0 – 100 % LEL	-	-
P3400-A	Methane, CH <sub>4</sub>	0 – 100 % LEL	0.55	Ceiling
P3450-A	Methanol, CH <sub>3</sub> OH	0 – 100 % LEL	1.11	Floor
P3473-A	Methyl acetate, C <sub>3</sub> H <sub>6</sub> O <sub>2</sub>	0 – 100 % LEL	2.56	Floor
P3458-A	Methyl ethyl ketone, C <sub>4</sub> H <sub>8</sub> O	0 – 100 % LEL	1.15	Floor
P3491-A	n-Heptane, C <sub>7</sub> H <sub>16</sub>	0 – 100 % LEL	3.46	Floor
P3435-A	n-Hexane, C <sub>6</sub> H <sub>14</sub>	0 – 100 % LEL	2.98	Floor
P3496-A	Petrol Vapours	0 – 100 % LEL	-	-
P3480-A	Propane, C <sub>3</sub> H <sub>8</sub>	0 – 100 % LEL	1.55	Floor
P3480-B	Propane, C <sub>3</sub> H <sub>8</sub>	0 – 30 % LEL	1.55	Floor
P3484-A	Propyl alcohol, C <sub>3</sub> H <sub>8</sub> O	0 – 100 % LEL	2.08	Floor
P3490-A	Toluene, C <sub>7</sub> H <sub>8</sub>	0 – 100 % LEL	3.18	Floor
I3400-A	Methane, CH <sub>4</sub>	0 – 100 % LEL	0.55	Ceiling
I3480-A	Propane, C <sub>3</sub> H <sub>8</sub>	0 – 100 % LEL	1.55	Floor

## EXAMPLE

CH<sub>3</sub>OH Sensor Cartridge, plastic housing without cable extension, measuring range 0-100 % LEL

Order number: SC2-P3450-A-P-00

## ACCESSORY

Duct mounting kit

Order number: C2-Z2

