

**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 μ Controller for measured values processing. All important data and measured values of the sensor element are stored fail-safe in the μ Controller and transmitted digitally via the local bus to the sensor board SB2 or MSB2. The calibration management is also integrated in the μ 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.



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 μ 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





PolyGard®2

Sensor Cartridge SC2 for combustible gases

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 ₄)
Resolution	0.2% (CH ₄)
Repeatability	< 1 % sig. (CH ₄)
Response time t ₉₀	10 sec.
Zero point variation	0.5 % (CH ₄)
Long-term zero-point drift	< 0.3 % LEL / month (CH ₄)
Long-term sensitivity drift	< 1 % LEL / month (CH ₄)
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 ¹	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)

¹ Manufacturer-recommended calibration interval for normal environmental conditions.





PolyGard®2

Sensor Cartridge SC2 for combustible gases

ORDERING INFORMATION

SC2-P34XX-X

	Gas type	Measuring range	Gas density (Air = 1)	Mounting height
P3485-A	Acetone, C ₃ H ₆ O	0 – 100 % LEL	2.00	Floor
P3405-A*	Acetylene, C ₂ H ₂	0 – 100 % LEL	0.90	Ceiling
P3408-A*	Ammonia, NH ₃	0 – 100 % LEL	0.60	Ceiling
P3496-A	Petrol Vapours	0 – 100 % LEL	-	-
P3460-A	Butane, C ₄ H ₁₀	0 – 100 % LEL	2.11	Floor
P3472-A*	Cyclopentane, C ₅ H ₁₀	0 – 100 % LEL		Floor
P3427-A*	Ethyl acetate, C ₄ H ₈ O ₂	0 – 100 % LEL	3.04	Floor
P3425-A	Ethyl alcohol, C ₂ H ₅ OH	0 – 100 % LEL	1.59	Floor
P3410-A*	Ethylene, C ₂ H ₄	0 – 100 % LEL	0.98	Ceiling!
P3491-A*	Heptane, C ₇ H ₁₆	0 – 100 % LEL	3.46	Floor
P3435-A*	Hexane, C ₆ H ₁₄	0 – 100 % LEL	2.98	Floor
P3476-A*	Isopentane, C ₅ H ₁₂	0 – 100 % LEL	2.48	Floor
P3482-A*	Isopropyl alcohol, C ₃ H ₈ O	0 – 100 % LEL	2.08	Floor
P3498-A*	JP8	0 – 100 % LEL	-	-
P3402-A	LPG	0 – 100 % LEL	-	-
P3400-A	Methane, CH ₄	0 – 100 % LEL	0.55	Ceiling
P3450-A*	Methanol, CH ₃ OH	0 – 100 % LEL	1.11	Floor
P3473-A*	Methyl acetate, C ₃ H ₆ O ₂	0 – 100 % LEL	2.56	Floor
P3458-A*	Methyl ethyl ketone, C ₄ H ₈ O	0 – 100 % LEL	1.15	Floor
P3475-A*	Pentane, C ₅ H ₁₂	0 – 100 % LEL	2.49	Floor
P3480-A	Propane, C ₃ H ₈	0 – 100 % LEL	1.55	Floor
P3484-A*	Propyl alcohol, C ₃ H ₈ O	0 – 100 % LEL	2.08	Floor
P3490-A	Toluene, C ₇ H ₈	0 – 100 % LEL	3.18	Floor
P3440-A	Hydrogen, H ₂	0 – 100 % LEL	0.07	Ceiling

*only on request

EXAMPLE

CH₃OH Sensor Cartridge, measuring range 0-100 % LEL

Order number: SC2-P3450-A

