



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 \leftrightarrow calibrated
- High accuracy and reliability
- 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 50545:2017
 - EN 50271
 - EN 61010-1
 - ANSI/UL 61010 1
 - CAN/CSA-C22.2 No. 61010-1
- Duct mounting kit (accessory)



Sensor Cartridge in plastic housing without cable extension



Sensor Cartridge in plastic housing with cable extension





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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 |
| Accuracy | ± 1 % LEL (CH ₄) |
| Display resolution | 0.1 % LEL |
| Repeatability | < 2 % sig. (CH ₄) |
| Response time t ₉₀ | < 15 sec (CH ₄) |
| Zero point variation | 0.5 % (CH ₄) |
| Long-term zero-point drift | < 0.5 % LEL / month (CH ₄) |
| Long-term sensitivity drift | < 1 % LEL / month (CH ₄) |
| Temperature range | -30 °C to +60 °C (-22 to 140 °F) |
| Humidity range | 5 - 95 % RH not condensing |
| Pressure range | Atmospheric ± 10 % |
| 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 | Substances containing silicon compounds can influence the sensitivity of Pellistor sensors and even poison and destroy them. |

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 50545:2017 |
| 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

¹ Manufacturer-recommended calibration interval for normal environmental conditions.

All specifications were collected under optimal test conditions.

We confirm compliance with the minimum requirements of the applicable standard.





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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 ₃ H ₆ O | 0 – 100 % LEL | 2.00 | Floor |
| P3408-A | Ammonia, NH ₃ | 0 – 100 % LEL | 0.60 | Ceiling |
| P3430-A | Benzene, C ₆ H ₆ | 0 – 100 % LEL | 2.70 | Floor |
| P3494-A | Butadiene, C ₄ H ₆ | 0 – 100 % LEL | 1.92 | Floor |
| P3448-A | Butyl acetate, C ₆ H ₁₂ O ₂ | 0 – 100 % LEL | 4.01 | Floor |
| P3415-A | Cyclohexane, C ₆ H ₁₂ | 0 – 100 % LEL | 2.90 | Floor |
| P3472-A | Cyclopentane, C ₅ H ₁₀ | 0 – 100 % LEL | 2.42 | Floor |
| P3420-A | Ethane, C ₂ H ₆ | 0 – 100 % LEL | 1.05 | 1.5 – 1.8 m |
| 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 | 1.5 to 1.8 m |
| P3440-A | Hydrogen, H ₂ | 0 – 100 % LEL | 0.07 | Ceiling |
| P3468-A | Isobutyl alcohol, C ₄ H ₁₀ O | 0 – 100 % LEL | 2.56 | Floor |
| P3482-A | Isopropyl alcohol, C ₃ H ₈ O | 0 – 100 % LEL | 2.08 | Floor |
| P3460-A | Iso/n-Butane, C ₄ H ₁₀ | 0 – 100 % LEL | 2.11 | Floor |
| P3475-A | Iso/n-Pentane, C ₅ H ₁₂ | 0 – 100 % LEL | 2.49 | Floor |
| 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 |
| P3491-A | n-Heptane, C ₇ H ₁₆ | 0 – 100 % LEL | 3.46 | Floor |
| P3435-A | n-Hexane, C ₆ H ₁₄ | 0 – 100 % LEL | 2.98 | Floor |
| P3495-A | Nonane, C ₉ H ₂₀ | 0 – 100 % LEL | 4.43 | Floor |
| P3470-A | Octane, C ₈ H ₁₈ | 0 – 100 % LEL | 1.04 | 1.5 to 1.8 m |
| P3496-A | Petrol Vapours | 0 – 100 % LEL | - | - |
| P3480-A | Propane, C ₃ H ₈ | 0 – 100 % LEL | 1.55 | Floor |
| P3480-B | Propane, C ₃ H ₈ | 0 – 30 % 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 |

EXAMPLE

CH₃OH 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



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Specifications subject to change without notice.

Up-to-date data sheets and user manuals can be found in the download area of www.msr-24.com.

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