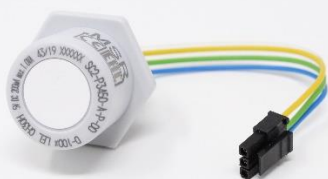


## Technical Datasheet



PolyGard® 2

## Sensor Cartridge SC2 for combustible gases

DESCRIPTION

APPLICATION

FEATURES

SPECIFICATIONS

ORDERING INFORMATION



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](http://www.msr-24.com).  
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■ All Products  
■ Made  
■ in Germany

## DESCRIPTION

### **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 (e.g. 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.

## APPLICATION

The PolyGard<sup>®</sup>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
- Sensor with long life expectancy
- Hardware and software according to SIL 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
- IP65 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)



Option: SC2-Pellistor with cable extension  
(Fig. w/o laser engraving)

## SPECIFICATIONS

<b>ELECTRICAL</b>	
Power supply	5 V DC from Sensor Board (e.g. SB2/MSB2), reverse polarity protected
Power consumption:	200 mA, max. (1.0 VA)
Serial interface local bus	1-wire / 19200 Baud
<b>SENSOR ELEMENT</b>	
Gas type and measuring range	Combustible gases, see Ordering Information
Sensor element	Pellistor (catalytic bead) sensor
Temperature range	-30 °C to +60 °C (-22 °F to 140 °F)
Humidity range	0–95 % RH not condensing
Pressure range	Atmospheric ± 10 %
Oxygen concentration	21 % (standard) 18 % minimum level
Storage temperature range	0 °C to +20 °C (32 °F to 68 °F)
Storage time	6 months
Sensor lifetime	5 years / normal ambient conditions
Poisoning	Sensitivity of Pellistor sensors can be influenced by substances containing silicon compounds and even poisoned and destroyed by them. The sensors are also susceptible to poisoning by organic solvents.
<b>PHYSICAL</b>	
Housing in plastic	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.)
Housing type L	(D x H) 24 x 30 mm (0.94 x 1.18 in.)
Weight	Ca. 30 g (0.07 lb)
Protection class	IP65
Mounting	Screw mounting
Connection type	3-pin connector
Cable length	110 mm (4.33 in.)
<b>REGULATIONS</b>	
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

Gas type	Ordering No.	Measuring range	Accuracy	Display resolution	Repeatability	t <sub>90</sub> time	Zero-point variation	Drift in air		Calibration interval <sup>1</sup>
								Zero	Gain	
	SC2-	% LEL/ ppm	± % sig.	% LEL / ppm	<± % sig.	≤ sec.	± % LEL	< % signal/ month		Months
CH <sub>4</sub>	P3400-A	0–100 % LEL	1 (CH <sub>4</sub> )	0.1	2 (CH <sub>4</sub> )	15	0.5 (CH <sub>4</sub> )	0.5 (CH <sub>4</sub> )	2 (CH <sub>4</sub> )	6
NH <sub>3</sub>	P3408-A	0–100 % LEL	1 (CH <sub>4</sub> )	0.1	2 (CH <sub>4</sub> )	20	0.5 (CH <sub>4</sub> )	0.5 (CH <sub>4</sub> )	2 (CH <sub>4</sub> )	6
C <sub>3</sub> H <sub>8</sub>	P3480-A	0–100 % LEL	1 (CH <sub>4</sub> )	0.1	2 (CH <sub>4</sub> )	20	0.5 (CH <sub>4</sub> )	0.5 (CH <sub>4</sub> )	2 (CH <sub>4</sub> )	6
C <sub>3</sub> H <sub>8</sub>	P3480-B	0–30 % LEL	2 (C <sub>3</sub> H <sub>8</sub> )	0.01	2 (C <sub>3</sub> H <sub>8</sub> )	15	0.5 (C <sub>3</sub> H <sub>8</sub> )	n.d. (> 3% C <sub>4</sub> H <sub>10</sub> )	2 (C <sub>3</sub> H <sub>8</sub> )	6
C <sub>3</sub> H <sub>8</sub>	P3480-C	0–5000 ppm	2 (C <sub>3</sub> H <sub>8</sub> )	1 (ppm)	2 (C <sub>3</sub> H <sub>8</sub> )	15	0.5 (C <sub>3</sub> H <sub>8</sub> )	n.d. (> 3% C <sub>4</sub> H <sub>10</sub> )	2 (C <sub>3</sub> H <sub>8</sub> )	6
All others	PXXXX-A	0–100 % LEL	1 (CH <sub>4</sub> )	0.1	2 (CH <sub>4</sub> )	n.d.	0.5 (CH <sub>4</sub> )	0.5 (CH <sub>4</sub> )	2 (CH <sub>4</sub> )	6

<sup>1</sup> 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.

## ORDERING INFORMATION

SC2-	P34XX-X-	X-	XX	
			00	Without cable extension (standard) (Standard)
			XX <sup>1</sup>	With cable extension: 01, 02, 03, 04, 05 ... 15 max. ( in m) <b>Cable</b>
		P		Sensor housing plastic (standard)
		L		Sensor housing plastic long (only with cable extension)
		S		Sensor housing stainless steel (only with cable extension) <b>Sensor housing</b>
	Gas type	Measuring range	Gas density (air = 1)	Mounting height
P3400-A	Methane, CH <sub>4</sub>	0–100 % LEL	0.56	Ceiling
P3402-A	LPG	0–100 % LEL	n.d.	-
P3408-A*	Ammonia, NH <sub>3</sub>	0–100 % LEL	0.60	Ceiling
P3410-A	Ethylene, C <sub>2</sub> H <sub>4</sub>	0–100 % LEL	0.97	1.5 to 1.8 m
P3415-A	Cyclohexane, C <sub>6</sub> H <sub>12</sub>	0–100 % LEL	2.90	Floor
P3420-A	Ethane, C <sub>2</sub> H <sub>6</sub>	0–100 % LEL	1.05	1.5 to 1.8 m
P3425-A	Ethyl alcohol, C <sub>2</sub> H <sub>5</sub> OH	0–100 % LEL	1.59	Floor
P3427-A	Ethyl acetate, C <sub>4</sub> H <sub>8</sub> O <sub>2</sub>	0–100 % LEL	3.04	Floor
P3430-A	Benzene, C <sub>6</sub> H <sub>6</sub>	0–100 % LEL	2.70	Floor
P3435-A	n-Hexane, C <sub>6</sub> H <sub>14</sub>	0–100 % LEL	2.97	Floor
P3440-A	Hydrogen, H <sub>2</sub>	0–100 % LEL	0.07	Ceiling
P3448-A	Butyl acetate, C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	0–100 % LEL	4.01	Floor
P3450-A	Methanol, CH <sub>3</sub> OH	0–100 % LEL	1.10	Floor
P3458-A	Methyl ethyl ketone, C <sub>4</sub> H <sub>8</sub> O	0–100 % LEL	2.48	Floor
P3460-A	Iso/n-Butane, C <sub>4</sub> H <sub>10</sub>	0–100 % LEL	2.08	Floor
P3468-A	Isobutyl alcohol, C <sub>4</sub> H <sub>10</sub> O	0–100 % LEL	2.55	Floor
P3470-A	Octane, C <sub>8</sub> H <sub>18</sub>	0–100 % LEL	3.94	Floor
P3472-A	Cyclopentane, C <sub>5</sub> H <sub>10</sub>	0–100 % LEL	2.42	Floor
P3473-A	Methyl acetate, C <sub>3</sub> H <sub>6</sub> O <sub>2</sub>	0–100 % LEL	2.56	Floor
P3475-A	Iso/n-Pentane, C <sub>5</sub> H <sub>12</sub>	0–100 % LEL	2.49	Floor
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
P3480-C	Propane, C <sub>3</sub> H <sub>8</sub>	0–5000 ppm	1.55	Floor
P3482-A	Isopropyl alcohol, C <sub>3</sub> H <sub>8</sub> O	0–100 % LEL	2.07	Floor
P3485-A	Acetone, C <sub>3</sub> H <sub>6</sub> O	0–100 % LEL	2.00	Floor
P3490-A	Toluene, C <sub>7</sub> H <sub>8</sub>	0–100 % LEL	3.18	Floor
P3491-A	n-Heptane, C <sub>7</sub> H <sub>16</sub>	0–100 % LEL	3.46	Floor
P3494-A	Butadiene, C <sub>4</sub> H <sub>6</sub>	0–100 % LEL	1.92	Floor
P3495-A	Nonane, C <sub>9</sub> H <sub>20</sub>	0–100 % LEL	4.43	Floor
P3496-A	Petrol Vapours	0–100 % LEL	n.d.	-

<sup>1</sup> Sensor housing plastic in combination with cable extension only type L

\* Only on request

### 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**