



PolyGard®2

# Sensor Cartridge SC2 with semiconductor sensor for toxic gases

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

The sensor cartridge SC2 includes a semiconductor sensor element and an amplifier as well as a  $\mu$ Controller for processing of the measured values. All relevant data and measured values of the sensor element are stored fail-safe in the  $\mu$ Controller and digitally transmitted 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 SC2 is used for the detection of toxic gases in a variety of applications.

## FEATURES

- Digital measurement value processing
- Internal functional control with integrated Hardware Watchdog
- Data / measured values in  $\mu$ C Sensor Cartridge, therefore simple exchange of SC uncalibrated <> calibrated
- Low zero point drift
- Sensor with long life expectancy
- 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 61508-1-3
  - EN 61010-1
  - ANSI/UL 61010 1
  - CAN/CSA-C22.2 Nr. 61010-1
  - EN 378
  - EN 45544-1
- Duct mounting kit (accessory)



Sensor Cartridge in plastic housing with cable extension



MSR-Electronic GmbH ::: Würdinger Str. 27 & 27A ::: 94060 Pocking ::: Germany

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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# Sensor Cartridge SC2 with semi-cond. for toxic gases

## SPECIFICATIONS

### Electrical

Power supply	5 V DC from SB/MSB2, reverse polarity protected
Power consumption	160 mA, max. (0.8 VA)
Serial interface local bus	1-wire / 19200 Baud

### Sensor element

Gas type	See Ordering Information
Sensor element	Semiconductor sensor
Pressure range	Atmospheric $\pm$ 10 %
Storage temperature range	0 °C to +50 °C (32 °F to 122 °F)
Storage time	12 months

### 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 378  
EN 61508-1-3  
EN 61010-1:2010  
ANSI/UL 61010-1  
CAN/CSA-C22.2 No. 61010-1  
EN 45544-1

### Warranty

1 year on sensor (not if poisoned or overloaded),  
2 years on device



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## SPECIFICATIONS - SENSOR CARTRIDGE (SC2) / SENSOR ELEMENT

Gas type	Ordering No.	Measuring range	Display resolution	Repeatability	t90 Time	Temperature range	Humidity range (non-condensing)	Life time <sup>1</sup> in air	Relative gas density	Mounting height	Calibration interval <sup>1</sup>
	<b>SC2-</b>	ppm	ppm	<± % sig.	≤ sec.	°C	% RH.	> months	Air = 1	(m)	Months
C <sub>2</sub> H <sub>4</sub>	<b>S2189-A</b>	20-2000	1	20	10	-35 / +50	15-90	5	0,97	1.5-1,8	12
NH <sub>3</sub>	<b>S2125-C</b>	0-1000	1	10	30	-35 / +50	15-90	5	0,59	Ceiling	12
NH <sub>3</sub>	<b>S2125-F</b>	0-10.000	1	10	30	-35 / +50	15-90	5	0,59	Ceiling	12

No cross-sensitivity data is available for these sensors. It is well known that all semiconductor sensors are also sensitive to combustible gases, e.g. alcohols, etc.

The sensitivity of semiconductor sensors can be affected by substances containing silicone and they may even lead to the complete poisoning.

All specifications were collected under optimal test conditions.

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

## ORDERING INFORMATION

SC2-	<b>S2XXX-X</b>	<b>X-</b>	<b>XX</b>	
			<b>00</b>	Without cable extension (standard)
			<b>XX</b>	With cable extension: <b>01, 02, 03, 04, 05 ... 15</b> max. (length in m)
		<b>P</b>		Sensor housing plastic
		<b>S</b>		Sensor housing stainless steel
	<b>Gas type</b>	<b>Sensor type</b>	<b>Measuring range</b>	
	<b>S2189-A</b>	Ethylene, C <sub>2</sub> H <sub>4</sub>	Semiconductor	20 – 2000 ppm
	<b>S2125-C</b>	Ammonia, NH <sub>3</sub>	Semiconductor	0 – 1000 ppm
	<b>S2125-F</b>	Ammonia, NH <sub>3</sub>	Semiconductor	0 – 10.000 ppm

## EXAMPLE

Ethylene Sensor Cartridge, plastic housing without cable extension, measuring range 20 - 2000 ppm

**Order number: SC2-S2189-A-P-00**

## ACCESSORY

Duct mounting kit

**Order number: C2-Z2**

