



PolyGard®2

Sensor Cartridge SC2 with infrared sensor for combustible gases and carbon dioxide

Exchangeable infrared sensor including digital value processing, temperature compensation and self control for the continuous monitoring of the ambient air to detect certain gases.

The sensor cartridge SC2 includes a high-quality infrared sensor and an amplifier as well as a μ Controller for measured values processing. The IR measuring principle with integrated temperature compensation ensures highest accuracy, selectivity and reliability. The sensor head is gold-plated inside and therefore offers best performance characteristics in terms of drift, stability and reproducibility.

In the μ Controller, all the data and measured values of the sensor element are stored fail-safe 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.



Sensor Cartridge in plastic housing without cable extension

APPLICATION

The PolyGard®2 Sensor Cartridge is used for the detection of methane, propane, acetylene and carbon dioxide 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
- Good poisoning immunity
- 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 61010-1
 - ANSI/UL 61010 1
 - CAN/CSA-C22.2 No. 61010-1
- Duct mounting kit (accessory)



Sensor Cartridge in plastic housing with cable extension – on request



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.

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SC2 with IR sensor for combustible gases & CO₂

SPECIFICATIONS

Electrical

Power supply	5 V DC from SB2/MSB2, reverse polarity protected
Power consumption:	60 mA, max. (0.28 W)
Serial interface local bus	1-wire / 19200 Baud

Sensor element

Gas type	See Ordering Information										
Measuring range	See Ordering Information										
Sensor element	Infrared sensor										
Accuracy	+/- 3 % for < 50 % of range +/- 5 % of range for > 50 % of range										
Resolution	0.04 % of range										
Repeatability	+/- 10 % of signal										
Response time t ₉₀	<table> <thead> <tr> <th>CH₄</th> <th>C₃H₈</th> <th>C₂H₂</th> <th>CO₂ (% Vol)</th> <th>CO₂ (ppm)</th> </tr> </thead> <tbody> <tr> <td>< 20 s</td> <td>< 70 s</td> <td>n. d.</td> <td>< 50 s</td> <td>< 25 s</td> </tr> </tbody> </table>	CH ₄	C ₃ H ₈	C ₂ H ₂	CO ₂ (% Vol)	CO ₂ (ppm)	< 20 s	< 70 s	n. d.	< 50 s	< 25 s
CH ₄	C ₃ H ₈	C ₂ H ₂	CO ₂ (% Vol)	CO ₂ (ppm)							
< 20 s	< 70 s	n. d.	< 50 s	< 25 s							
Warm-up to operation	< 60 sec.										
Warm-up to specification	< 180 sec.										
Temperature range	-30 °C to +60 °C (-22 °F to 140 °F)										
Humidity range	0 - 95 % RH										
Pressure range	700 – 1300 hPa										
Sensor life time	> 5 years										
Calibration interval ¹	12 months (verification pending)										
Storage temperature range	-40 °C to +80 °C (-40 °F to 176 °F)										
Storage time	6 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 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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SC2 with IR sensor for combustible gases & CO₂

ORDERING INFORMATION

SC2-	I4XX-A-	X-	XX		
			00	Without cable extension (standard)	
			XX ¹	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
I400-A		Methane, CH ₄	0 – 100 % LEL	0.55	Ceiling
I480-A		Propane, C ₃ H ₈	0 – 100 % LEL	1.55	Floor
I495-A		Acetylene, C ₂ H ₂	0 – 100 % LEL	0.91	Ceiling
I464-B		Carbon dioxide, CO ₂	0 – 5 Vol. %	1.53	0.6 m to 1.5 m (2 to 5 ft.)
I464-D		Carbon dioxide, CO ₂	0 – 5000 ppm	1.53	0.6 m to 1.5 m (2 to 5 ft.)

¹In combination with sensor housing plastic only on request!

EXAMPLE

Sensor Cartridge for methane, plastic housing without cable extension, measuring range 0 – 100 % LEL

Order number: SC2-I400-A-P-00

ACCESSORY

Duct mounting kit

Order number: C2-Z2



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