

Technical Datasheet



PolyGard®2

Sensor SC2

with Premium Infrared Sensor
for Methane, Propane or Carbon Dioxide

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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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■ All Products
■ Made
■ in Germany

DESCRIPTION

Exchangeable premium 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 SC2 includes a high-quality infrared sensor element 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 element 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 (e.g. SB2 or MSB2). The calibration management is also integrated in the μ Controller of the Sensor.

Calibration is done either by simply replacing the Sensor or by using the comfortable, integrated calibration routine directly at the system.

APPLICATION

The PolyGard[®]2 Sensor SC2 is used for the detection of methane, propane 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 of the Sensor, therefore simple exchange of Sensor 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 or by comfortable on-site calibration
- Reverse polarity protected, overload and short-circuit proof
- IP65 version
- Conformity to:
 - EN 61010-1
 - ANSI/UL 61010 1
 - CAN/CSA-C22.2 No. 61010-1
- Duct mounting kit (accessory)



Option: SC2 in plastic housing L with cable extension (fig. w/o laser engraving)

SPECIFICATIONS

ELECTRICAL	
Power supply	5 V DC from Sensor Board (e.g. SB2/MSB2), reverse polarity protected
Power consumption	60 mA, max. (0.3 VA)
Serial interface local bus	1-wire / 19200 Baud
SENSOR ELEMENT	
Gas type	See Ordering Information
Sensor element	Infrared sensor
Accuracy	± 3 % of range for < 50 % of range ± 5 % of range for > 50 % of range
Pressure range	70–130 kPa
Storage temperature range	-40 °C to +80 °C (-40 °F to 176 °F)
Storage time ¹	Ca. 6 months
PHYSICAL	
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	Ca. 150 mm (5.91 in.) standard version w/o cable extension
REGULATIONS	
Directives (only in connection with the Sensor-Boards from MSR)	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 If stocked for a longer period, we recommend checking the zero point and recalibrating if necessary.

Gas type	Ordering No.	Measuring range	Display resolution	Repeatability	t ₉₀ time	Zero-point variation	Temperature range	Humidity range (non-condensing)	Life time ¹ in air	Relative Gas density	Calibration interval ²
	SC2-		% / ppm	<± % Sig.	≤ sec.	± % LEL / % vol	°C	% RH	> years	Air = 1	Months
CH ₄	I400-A	0–100 % LEL	0.1	2	20	4	-30 / +60	0–95	5	0.56	12
CH ₄	I400-B	0–100 % vol	0.1	5	30	4	-30 / +60	0–95	5	0.56	12
C ₃ H ₈	I480-A	0–100 % LEL	0.1	2	70	4	-30 / +60	0–95	5	1.55	12
CO ₂	I464-B	0–5 % vol	0.001	5	50	n.d.	-30 / +60	0–95	5	1.53	12
CO ₂	I464-D	0–5000 ppm	1	5	25	n.d.	-30 / +60	0–95	5	1.53	12
CO ₂	I464-F	0–10 % vol	0.01	5	60	n.d.	-30 / +60	0–95	5	1.53	12

¹ Expected service life for normal ambient conditions.

² Manufacturer-recommended calibration interval for normal environmental conditions (verification pending).

All specifications were collected under optimal test conditions.

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

ORDERING INFORMATION

SC2-	I4XX-X-	X-	XX	
			00	Without cable extension (standard)
			XX ¹	With cable extension: 01, 02, 03, 04, 05 ... 15 max. (length in m)
				Cable
		P		Sensor housing plastic (standard)
		L		Sensor housing long (only with cable extension)
		S		Sensor housing stainless steel (only with cable extension)
				Sensor housing
	Gas type	Measuring range	Density (air = 1)	Mounting height
I400-A	Methane, CH ₄	0–100 % LEL	0.56	Ceiling
I400-B	Methane, CH ₄	0–100 % vol	0.56	Ceiling
I480-A	Propane, C ₃ H ₈	0–100 % LEL	1.55	Floor
I464-B	Carbon dioxide, CO ₂	0–5 % vol	1.53	0.6–1.5 m (2–5 ft.)
I464-D	Carbon dioxide, CO ₂	0–5000 ppm	1.53	0.6–1.5 m (2–5 ft.)
I464-F	Carbon dioxide, CO ₂	0–10 % vol	1.53	0.6–1.5 m (2–5 ft.)

Gas type/Measuring range/Density/ Mounting height

¹ Sensor housing plastic in combination with cable extension only type L

EXAMPLE

Sensor 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