Technical Datasheet

PolyGard®2

Sensor Cartridge SC2
with Infrared Sensor for
Combustible Gases and Carbon Dioxide

DESCRIPTION

APPLICATION

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SPECIFICATIONS

ORDERING INFORMATION

All Products
Made
in Germany

DESCRIPTION

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 µController 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 µController, 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 µController 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 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 µC of 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
- IP65 version
- Conformity to:
  o EN 61010-1
  o ANSI/UL 61010 1
  o CAN/CSA-C22.2 No. 61010-1
- Duct mounting kit (accessory)

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			
	CH_4	C_3H_8	CO_2 (Vol %)	CO_2 (ppm)
Response time t_{90}	< 20 s	< 70 s	< 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 lifetime	> 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	IP65
Mounting	Screw mounting
Connection type	3-pin connector
Cable length	110 mm (4.33 in.)

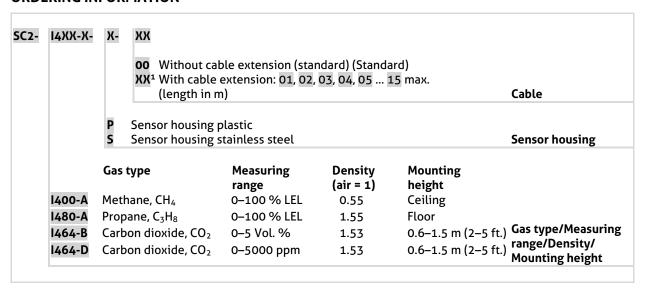| REGULATIONS	
Directives	EMC Directives 2014/30/EU CE Conformity to: EN 61010-1:2010 ANSI/UL 61010-1 CAN/CSA-C22.2 No. 61010-1
Warranty	1 year on sensor (not if poisoned or overloaded), 2 years on device

[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.

ORDERING INFORMATION

SC2-	I4XX-X-	X-	XX

		00	Without cable extension (standard) (Standard)
		XX[1]	With cable extension: 01, 02, 03, 04, 05 ... 15 max. (length in m)

Cable

P	Sensor housing plastic	
S	Sensor housing stainless steel	

Sensor housing

	Gas type	Measuring range	Density (air = 1)	Mounting height
I400-A	Methane, CH_4	0–100 % LEL	0.55	Ceiling
I480-A	Propane, C_3H_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.)

Gas type/Measuring range/Density/ Mounting height

[1] In 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