

Technical Datasheet



PolyGard®2

Sensor Cartridge SC2

with CO₂ infrared sensor
for dispensing and refrigeration systems

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.
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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 to detect CO₂.

The Sensor Cartridge SC2 includes a CO₂ sensor element with 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 despite the long calibration interval. 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.

APPLICATION

The PolyGard®2 Sensor Cartridge is used for the detection of CO₂ leakages in dispensing and refrigeration systems.

FEATURES

- Digital measurement value processing incl. temperature compensation
- Internal functional control with integrated Hardware Watchdog
- Data/measured values in μ C of Sensor Cartridge, therefore simple exchange of SC uncalibrated <> calibrated
- High accuracy, selectivity and reliability
- Low zero-point drift
- Sensor with long life expectancy > 15 years
- Software according to SIL2 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
- Integrated heating down to -35 °C
- IP65 version
- Conformity to:
 - EN 378-1
 - EN 45544
 - EN 61010-1
 - ANSI/UL 61010 1
 - CAN/CSA-C22.2 No. 61010-1
- Duct mounting kit (accessory)

SPECIFICATIONS

ELECTRICAL	
Power supply	5 V DC from SB, reverse polarity protected
Power consumption:	50 mA, max. (0.25 VA)
Serial interface local bus	1-wire / 19200 Baud
SENSOR ELEMENT	
Gas type	Carbon dioxide CO ₂
Sensor element	Infrared (NDIR)
Measuring range	See Ordering Information
Accuracy	< 10 % of reading
Response time	t ₉₀ < 100 s
Sensor lifetime	15 years for normal ambient conditions
Calibration interval (recommendation)	5 years
Temperature range	-35 °C to +50 °C (-31 °F to +122 °F)
Humidity range	0–90 % RH not condensing
Pressure range	Atmospheric ± 30 % (influence + 1.6 % on measured value per kPa)
Storage temperature range	+5 °C to +30 °C (+41 °F to +86 °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 378-1 EN 45544 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

All specifications were collected under optimal test conditions.
We confirm compliance with the minimum requirements of the applicable standard.

ORDERING INFORMATION

SC2-	I-S1164-X-	P-	XX	
			00	Without cable extension (standard)
			XX*	With cable extension: 01, 02, 03, 04, 05 ... 15 max. (length in m) Cable
		P	Sensor housing plastic Sensor housing	
			Gas type	Measuring range
	I-S1164-C		Carbon dioxide CO ₂	0–2 Vol %
	I-S1164-B		Carbon dioxide CO ₂	0–5 Vol %
	I-S1164-A		Carbon dioxide CO ₂	0–2000 ppm
				Gas type/ measuring range

* Only on request

EXAMPLE

CO₂ Sensor Cartridge, plastic housing without cable extension, measuring range 5 Vol %

Order number: SC2-I-S1164-B-P-00

ACCESSORY

Duct mounting kit

Order number: C2-Z2