



PolyGard®2

Sensor Cartridge SC2 with CO₂ infrared sensor for dispensing and refrigeration systems

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 µController 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 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.



Sensor Cartridge in plastic housing
without cable extension

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 µC 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
- IP 65 version
- Conformity to
 - EN 378-1
 - EN 61010-1
 - ANSI/UL 61010 1
 - CAN/CSA-C22.2 No. 61010-1
- Duct mounting kit (accessory)





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Sensor Cartridge SC2 for CO₂ with IR sensor

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	5 vol. %
Measuring interval	2 sec.
Accuracy	< 10 % of reading
Response time	t ₉₀ < 100 s
Sensor life time	15 years for normal ambient conditions
Calibration interval (recommendation)	5 years
Temperature range	-35 °C to +40 °C (-31 °F to +104 °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	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 378-1, 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

ORDERING INFORMATION

SC2 I-S1164- X X- XX

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

P Sensor housing plastic
S Sensor housing stainless steel

	Gas type	Sensor type	Measuring range
I-S1164-C	Carbon dioxide CO ₂	Infrared	0 - 2 Vol %
I-S1164-B	Carbon dioxide CO ₂	Infrared	0 - 5 Vol %
I-S1164-A	Carbon dioxide CO ₂	Infrared	0 - 2000 ppm

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

