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ELECTRONIC

Technical Datasheet

PolyGard®2

Sensor Cartridge SC2
with CO_2 infrared sensor
for dispensing and refrigeration systems

DESCRIPTION

APPLICATION

FEATURES

SPECIFICATIONS

ORDERING INFORMATION

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SAFETY FIRST

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 CO_2.

The Sensor Cartridge SC2 includes a CO_2 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.

APPLICATION

The PolyGard®2 Sensor Cartridge is used for the detection of CO_2 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 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**
	I-S1164-C **I-S1164-B** **I-S1164-A**	**Gas type** Carbon dioxide CO_2 Carbon dioxide CO_2 Carbon dioxide CO_2	**Measuring range** 0–2 Vol % 0–5 Vol % 0–2000 ppm	**Gas type/ measuring range**

* Only on request

EXAMPLE

CO_2 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