PERFECT SOLUTIONS FOR **GAS ALARM** SYSTEMS

Technical Datasheet

PolyGard®2

Sensor Cartridge SC2

for combustible gases

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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DESCRIPTION

Exchangeable sensor including digital value processing, temperature compensation and self-control for the continuous monitoring of the ambient air.

The Sensor Cartridge SC2 includes a Pellistor sensor element and an amplifier as well as a µController for measured values processing. All important data and measured values of the sensor element are stored fail-safe in the µController 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 combustible gases in non-Ex zones.

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
- Sensor with long life expectancy
- Hardware and 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
- IP65 version
- Conformity to:
  - EN 50545:2017
  - EN 50271
  - 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:	200 mA, max. (1.0 VA)
Serial interface local bus	1-wire / 19200 Baud
SENSOR ELEMENT	
Gas type	Combustible gases, see Ordering Information
Measuring range	See Ordering Information
Sensor element	Pellistor (catalytic bead) sensor
Accuracy	± 1 % LEL (CH_4)
Display resolution	0.1 % LEL
Repeatability	< 2 % sig. (CH_4)
Response time t_{90}	< 15 sec (CH_4)
Zero-point variation	0.5 % (CH_4)
Long-term zero-point drift	< 0.5 % LEL / month (CH_4)
Long-term sensitivity drift	< 1 % LEL / month (CH_4)
Temperature range	-30 °C to +60 °C (-22 to 140 °F)
Humidity range	5-95 % RH not condensing
Pressure range	Atmospheric ± 10 %
Sensor lifetime	> 36 months / normal ambient conditions
Calibration interval[1]	6 months
Storage temperature range	+ 5 °C to + 30 °C (41 °F to 86 °F)
Storage time	6 months
Poisoning	Substances containing silicon compounds can influence the sensitivity of Pellistor sensors and even poison and destroy them. The sensors are susceptible to poisoning by organic solvents and silicone vapours.
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 50545:2017 EN 50271 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- **P34XX-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	Gas density (air = 1)	Mounting height	
P3485-A	Acetone, C_3H_6O	0–100 % LEL	2.00	Floor	
P3408-A*	Ammonia, NH_3	0–100 % LEL	0.60	Ceiling	
P3430-A	Benzene, C_6H_6	0–100 % LEL	2.70	Floor	
P3494-A	Butadiene, C_4H_6	0–100 % LEL	1.92	Floor	
P3448-A	Butyl acetate, $C_6H_{12}O_2$	0–100 % LEL	4.01	Floor	
P3415-A	Cyclohexane, C_6H_{12}	0–100 % LEL	2.90	Floor	
P3472-A	Cyclopentane, C_5H_{10}	0–100 % LEL	2.42	Floor	
P3420-A	Ethane, C_2H_6	0–100 % LEL	1.05	1.5 to 1.8 m	
P3427-A	Ethyl acetate, $C_4H_8O_2$	0–100 % LEL	3.04	Floor	
P3425-A	Ethyl alcohol, C_2H_5OH	0–100 % LEL	1.59	Floor	
P3410-A	Ethylene, C_2H_4	0–100 % LEL	0.98	1.5 to 1.8 m	
P3440-A	Hydrogen, H_2	0–100 % LEL	0.07	Ceiling	
P3468-A	Isobutyl alcohol, $C_4H_{10}O$	0–100 % LEL	2.56	Floor	
P3482-A	Isopropyl alcohol, C_3H_8O	0–100 % LEL	2.08	Floor	
P3460-A	Iso/n-Butane, C_4H_{10}	0–100 % LEL	2.11	Floor	
P3475-A	Iso/n-Pentane, C_5H_{12}	0–100 % LEL	2.49	Floor	
P3402-A	LPG	0–100 % LEL	-	-	
P3400-A	Methane, CH_4	0–100 % LEL	0.55	Ceiling	
P3450-A	Methanol, CH_3OH	0–100 % LEL	1.11	Floor	
P3473-A	Methyl acetate, $C_3H_6O_2$	0–100 % LEL	2.56	Floor	
P3458-A	Methyl ethyl ketone, C_4H_8O	0–100 % LEL	1.15	Floor	
P3491-A	n-Heptane, C_7H_{16}	0–100 % LEL	3.46	Floor	
P3435-A	n-Hexane, C_6H_{14}	0–100 % LEL	2.98	Floor	
P3495-A	Nonane, C_9H_{20}	0–100 % LEL	4.43	Floor	
P3470-A	Octane, C_8H_{18}	0–100 % LEL	1.04	1.5 to 1.8 m	
P3496-A	Petrol Vapours	0–100 % LEL	-	-	
P3480-A	Propane, C_3H_8	0–100 % LEL	1.55	Floor	**Gas type/**
P3480-B	Propane, C_3H_8	0–30 % LEL	1.55	Floor	**measuring range/**
P3480-C	Propane, C_3H_8	0–5000 ppm	1.55	Floor	**gas density**
P3490-A	Toluene, C_7H_8	0–100 % LEL	3.18	Floor	**mounting height**

[1] Only on request in combination with sensor housing plastic
* Only on request

EXAMPLE
CH_3OH Sensor Cartridge, plastic housing without cable extension, measuring range 0-100 % LEL

Order number: SC2-P3450-A-P-00

ACCESSORY
Duct mounting kit

Order number: C2-Z2