

PERFECT SOLUTIONS FOR GAS ALARM SYSTEMS



Technical Datasheet



Poly Gard® 2

Sensor SC2 with Catalytic Sensor Element for Combustible Gases

DESCRIPTION

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SPECIFICATIONS

ORDER ING INFORMATION



■ All Products
■ Made
■ in Germany



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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 SC2 includes a Pellistor sensor element and an amplifier as well as a μ Controller for measured values processing. All important data and measured values of the sensor element are stored fail-safe in the μ Controller and transmitted digitally via the local bus to the Sensor Board (e.g. SB2 or MSB2). The calibration management is also integrated in the μ Controller of the Sensor.

Calibration is done either by simply replacing the Sensor or by using the comfortable, integrated calibration routine directly at the system.

APPLICATION

The PolyGard®2 Sensor 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 μ C of the sensor, therefore simple exchange of sensor uncalibrated <-> calibrated
- High accuracy, selectivity and reliability
- Sensor with long life expectancy
- Hardware and software according to SIL compliant development process
- Modular technology (plug-in and replaceable)
- Easy maintenance and calibration by exchange of the sensor 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)



Option: SC2 in plastic housing type L
with cable extension (fig. w/o laser engraving)

SPECIFICATIONS

ELECTRICAL	
Power supply	5 V DC from Sensor Board (e.g. SB2/MSB2), reverse polarity protected
Power consumption:	200 mA, max. (1.0 VA)
Serial interface local bus	1-wire / 19200 Baud
SENSOR ELEMENT	
Gas type and measuring range	Combustible gases, see Ordering Information
Sensor element	Pellistor (catalytic bead) sensor
Temperature range	-30 °C to +60 °C (-22 °F to 140 °F)
Humidity range	0–95 % RH not condensing
Pressure range	90–110 kPa
Oxygen concentration	21 % (standard) 18 % minimum level
Storage temperature range	0 °C to +20 °C (32 °F to 68 °F)
Storage time ¹	Ca. 6 months
Sensor lifetime	5 years / normal ambient conditions
Poisoning	Sensitivity of Pellistor sensors can be influenced by substances containing silicon compounds and even poisoned and destroyed by them. The sensors are also susceptible to poisoning by organic solvents.
PHYSICAL	
Housing in plastic	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.)
Housing type L	(D x H) 24 x 30 mm (0.94 x 1.18 in.)
Weight	Ca. 30 g (0.07 lb)
Protection class	IP65
Mounting	Screw mounting
Connection type	3-pin connector
Cable length	Ca. 150 mm (5.91 in.) standard version w/o cable extension
REGULATIONS	
Directives (only in connection with the Sensor-Boards from MSR)	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 If stocked for a longer period, we recommend checking the zero point and recalibrating if necessary.

Gas type	Ordering No.	Measuring range	Accuracy	Display resolution	Repeatability	t ₉₀ time	Zero-point variation	Drift in air		Calibration interval ¹
								Zero	Gain	
	SC2-	% LEL/ ppm	± % sig.	% LEL / ppm	<± % sig.	≤ sec.	± % LEL	< % signal/ month		Months
CH ₄	P3400-A	0–100 % LEL	1 (CH ₄)	0.1	2 (CH ₄)	15	0.5 (CH ₄)	0.5 (CH ₄)	2 (CH ₄)	6
NH ₃	P3408-A	0–100 % LEL	1 (CH ₄)	0.1	2 (CH ₄)	20	0.5 (CH ₄)	0.5 (CH ₄)	2 (CH ₄)	6
NH ₃	P3408-B	0–20 % LEL	1 (CH ₄)	0.1	2 (CH ₄)	10	0.5 (CH ₄)	0.5 (CH ₄)	2 (CH ₄)	6
H ₂	P3440-A	0–100 % LEL	1 (CH ₄)	0.1	1 (CH ₄)	10	0.5 (CH ₄)	0.5 (CH ₄)	2 (CH ₄)	6
C ₃ H ₈	P3480-A	0–100 % LEL	1 (CH ₄)	0.1	2 (CH ₄)	20	0.5 (CH ₄)	0.5 (CH ₄)	2 (CH ₄)	6
C ₃ H ₈	P3480-B	0–30 % LEL	2 (C ₃ H ₈)	0.01	2 (C ₃ H ₈)	15	0.5 (C ₃ H ₈)	n.d.	2 (C ₃ H ₈)	6
C ₃ H ₈	P3480-C	0–5000 ppm	2 (C ₃ H ₈)	1 (ppm)	2 (C ₃ H ₈)	15	0.5 (C ₃ H ₈)	n.d.	2 (C ₃ H ₈)	6
C ₃ H ₆	P3481-B	0–30 % LEL	2 (C ₃ H ₆)	0.01	5 (C ₃ H ₆)	15	1.0 (C ₃ H ₆)	n.d.	2 (C ₃ H ₆)	6
All others	PXXXX-A	0–100 % LEL	1 (CH ₄)	0.1	2 (CH ₄)	n.d.	0.5 (CH ₄)	0.5 (CH ₄)	2 (CH ₄)	6

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. (in m) Cable
		P		Sensor housing plastic (standard)
		L		Sensor housing plastic long (only with cable extension)
		S		Sensor housing stainless steel (only with cable extension) Sensor housing
				Gas type Measuring range
	P3400 -A			Methane, CH ₄ 0-100 % LEL
	P3402 -A			LPG 0-100 % LEL
	P3408 -A*			Ammonia, NH ₃ 0-100 % LEL
	P3408 -B*			Ammonia, NH ₃ 0-20 % LEL
	P3410 -A			Ethylene, C ₂ H ₄ 0-100 % LEL
	P3415 -A			Cyclohexane, C ₆ H ₁₂ 0-100 % LEL
	P3420 -A			Ethane, C ₂ H ₆ 0-100 % LEL
	P3425 -A			Ethyl alcohol, C ₂ H ₅ OH 0-100 % LEL
	P3427 -A			Ethyl acetate, C ₄ H ₈ O ₂ 0-100 % LEL
	P3430 -A			Benzene, C ₆ H ₆ 0-100 % LEL
	P3435 -A			n-Hexane, C ₆ H ₁₄ 0-100 % LEL
	P3440 -A			Hydrogen, H ₂ 0-100 % LEL
	P3448 -A			Butyl acetate, C ₆ H ₁₂ O ₂ 0-100 % LEL
	P3450 -A			Methanol, CH ₃ OH 0-100 % LEL
	P3458 -A			Methyl ethyl ketone, C ₄ H ₈ O 0-100 % LEL
	P3460 -A			Iso/n -Butane, C ₄ H ₁₀ 0-100 % LEL
	P3468 -A			Isobutyl alcohol, C ₄ H ₁₀ O 0-100 % LEL
	P3470 -A			Octane, C ₈ H ₁₈ 0-100 % LEL
	P3472 -A			Cyclopentane, C ₅ H ₁₀ 0-100 % LEL
	P3473 -A			Methyl acetate, C ₃ H ₆ O ₂ 0-100 % LEL
	P3475 -A			Iso/n -Pentane, C ₅ H ₁₂ 0-100 % LEL
	P3480 -A			Propane, C ₃ H ₈ 0-100 % LEL
	P3480 -B			Propane, C ₃ H ₈ 0-30 % LEL
	P3480 -C			Propane, C ₃ H ₈ 0-5000 ppm
	P348 1-B			Propene, C ₃ H ₆ 0-30 % LEL
	P3482 -A			Isopropyl alcohol, C ₃ H ₈ O 0-100 % LEL
	P3485 -A			Acetone, C ₃ H ₆ O 0-100 % LEL
	P3490 -A			Toluene, C ₇ H ₈ 0-100 % LEL
	P3491 -A			n-Heptane, C ₇ H ₁₆ 0-100 % LEL
	P3494 -A			Butadiene, C ₄ H ₆ 0-100 % LEL
	P3495 -A			Nonane, C ₉ H ₂₀ 0-100 % LEL
	P3496 -A			Petrol Vapours 0-100 % LEL
				Gas type/ measuring range

¹ Sensor housing plastic in combination with cable extension only type L

* Only on request

EXAMPLE

CH₃OH Sensor, 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



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