

PERFECT SOLUTIONS FOR GAS ALARM SYSTEMS



## Technical Datasheet



PolyGard<sup>®</sup>2

# Sensor-Board SB2

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Specifications subject to change without notice.

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■ Made  
■ in Germany

## DESCRIPTION

### Sensor-Board with RS-485 interface for integration of the sensor series SC2.

Up to 3 different sensors of the SC2 series can be connected to the SB2 Sensor-Board via local bus. The SB2 provides the power supply of the SC2(s) and makes the measured data available for digital communication. Communication with the DGC-06 controller takes place via the RS-485 fieldbus interface with DGC-06 protocol. Other communication protocols for direct connection to superordinate BMS are available as well.

The SC2 is connected to the local bus via a plug connection enabling simple SC2 exchange instead of an on-site calibration. The internal X-Change routine recognizes and the exchanged SC2 during the exchanging process and starts the measurement mode automatically. An LED indicates the correct procedure of the exchange operation.

As an alternative, the on-site calibration via the Service-Tool STL06 can be performed with the integrated, comfortable calibration routine.

## APPLICATION

The PolyGard®2 Sensor-Board SB2 is used for integration of the SC2 Sensor(s).

## FEATURES

- Digital measurement value processing incl. temperature compensation
- Internal functional control with integrated Hardware Watchdog
- Data / measured values stored in  $\mu$ C Sensor, therefore simple exchange of SC2 uncalibrated <-> calibrated
- Up to 3 different sensors
- 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 (housing type A in delivery state)
- Serial RS-485 interface with protocol for DGC-06 or Modbus
- Sensor can be mounted remotely with Remote-Board (RB2), therefore adaptation to necessary mounting heights possible (option)
- Warning module consisting of buzzer and status LED red (option)
- Display (option)
- Conformity to:
  - EN 50271
- ANSI/UL 61010 1 & CAN/CSA-C22.2 No. 61010-1 (optional)

## SPECIFICATIONS

<b>ELECTRICAL</b>	
Power supply	16–29 V DC, reverse-polarity protected 24 V AC $\pm$ 15 % (only 1x SC2 connected, not for DGC-06 mode)
Power consumption (24 V DC)	10 mA (0.24 VA)
Output for local bus	5 V DC, 250 mA max. Overload, short-circuit and reverse-polarity protected
Overvoltage category	I
<b>SERIAL INTERFACE</b>	
Local bus	1-wire / 19200 Baud
Field bus	RS-485 / 19200 Baud
Tool bus	2-wire / 19200 Baud
<b>AMBIENT CONDITIONS</b>	
Temperature range	-35 °C to +60 °C (-31 °F to 140 °F)
Humidity range	15–90 % RH not-condensing
Pollution degree	2 (installation only indoors), not suitable for wet environment
Permissible height above sea level	1500 m (ca. 5000 ft.)
Storage temperature	-20 °C to +65 °C (-40 °F to 149 °F)
Storage time	6 months
<b>PHYSICAL</b>	
Housing	<b>Type A</b>
Material	Polycarbonate
Burning behaviour	UL 94 V2
Housing colour	RAL 7032 (light grey)
Dimensions W x B x D	94 x 130 x 57 mm (3.7 x 5.1 x 2.2 in.)
Weight	0.3 kg (0.7 lb)
Protection class (delivery status)*	NEMA 4X (IP65)
Installation	Wall mounting
Wire connection: Field bus	Screw-type terminal 0.25–2.5 mm <sup>2</sup> (24–10 AWG)
Local bus for SC	3-pin connector
Cable lengths local bus for Remote Board	Max. 5 m (16.4 ft.)
Knockout for integration of sensor(s)	3x M25 for M25 housing
<b>REGULATIONS</b>	
Directives	EMC directives 2014/30/EU CE EN 61010-1:2010 Conformity to: EN 50271 Option: 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
<b>OPTIONS</b>	
<b>DISPLAY</b>	
LCD	2 lines, 16 characters each, background highlighted in 2 colours
Operation	Menu driven via 6 pushbuttons
Power consumption	5 V, 60 mA, 0.3 VA
<b>WAO STATUS-LED/BUZZER</b>	
Colour / mode	Red (fault)
Acoustic pressure	> 85 dB (A) (0.1 m distance)
Frequency	2300 Hz $\pm$ 300 Hz
Protection class	IP65

\* If there are changes to the housing it has to be re-evaluated.

All specifications were collected under optimal test conditions.

We confirm compliance with the minimum requirements of the applicable standard.

## ORDERING INFORMATION

<b>SB2-</b>	<b>X-</b>	<b>X</b>	<b>0</b>	<b>X</b>	<b>X</b>	<b>0</b>	<b>0</b>	<b>X</b>	<b>0</b>	<b>X</b>	
									<b>0</b>	<b>No further options</b>	
									<b>A</b>	Version UL/CSA 61010-1 (only housing type A, C)	<b>Further options</b>
									<b>0</b>	<b>No built-on warning device</b>	<b>Warning devices</b>
									<b>0</b>	<b>No display</b>	
									<b>2</b> <sup>1</sup>	Display / keypad	<b>Display</b>
									<b>0</b>	<b>No analog input</b>	<b>Analog input</b>
									<b>0</b>	<b>No digital input</b>	<b>Digital input</b>
									<b>2</b>	<b>RS-485 with DGC-06 protocol (Modbus incl.)</b>	
									<b>8</b>	MSR_D_Bus	<b>Output signal</b>
									<b>0</b>	<b>No visual / audible indicator (WAO)</b>	
									<b>2</b> <sup>1</sup>	Plug connector for warning module	<b>Visual/audible indicator (WAO)</b>
									<b>3</b> <sup>1</sup>	Warning module, buzzer & status LED red, mounted on the housing	
									<b>0</b>	<b>No alarm relay</b>	<b>Alarm relay</b>
									<b>1</b> <sup>*1</sup>	12 V DC	
									<b>2</b> <sup>3</sup>	24 V DC / AC	
									<b>7</b> <sup>*</sup>	100–240 V AC / 24 V DC, 15 VA (only in housing C)	<b>Power supply</b>
									<b>0</b>	No housing	
									<b>A</b>	<b>Housing type A 94 x 130 x 57</b>	
									<b>C</b>	Housing type C 130 x 130 x 75	
									<b>5</b> <sup>2</sup>	Housing type 5 stainless steel (110 x 132 x 42,5 mm)	<b>Housing</b>

\* On request

<sup>1</sup> Not in stainless steel housing

<sup>2</sup> Only for integration of one sensor

<sup>3</sup> In AC mode, only 1x **SC2** Sensor from the P34XX, SXXX, I-S11XX or I4XX series connectable

### STANDARD VERSION

**Order number:** SB2-A-200200000

## ORDERING INFORMATION

<b>RB2-</b>	<b>X-</b>	<b>1XXXXXXXX</b>	<b>X</b>	
			<b>0</b>	<b>No further options</b>
			<b>A</b>	<b>Version UL/CSA 61010-1</b>
		<b>1XXXXXXXX</b>		<b>Remote Board for 1x SC2 for remote connection at the SB2</b>
	<b>0</b>			<b>No housing</b>
	<b>A</b>			<b>Housing type A 94 x 130 x 57</b>
				<b>Options</b>
				<b>Version</b>
				<b>Housing</b>

## ELECTRICAL CONNECTION

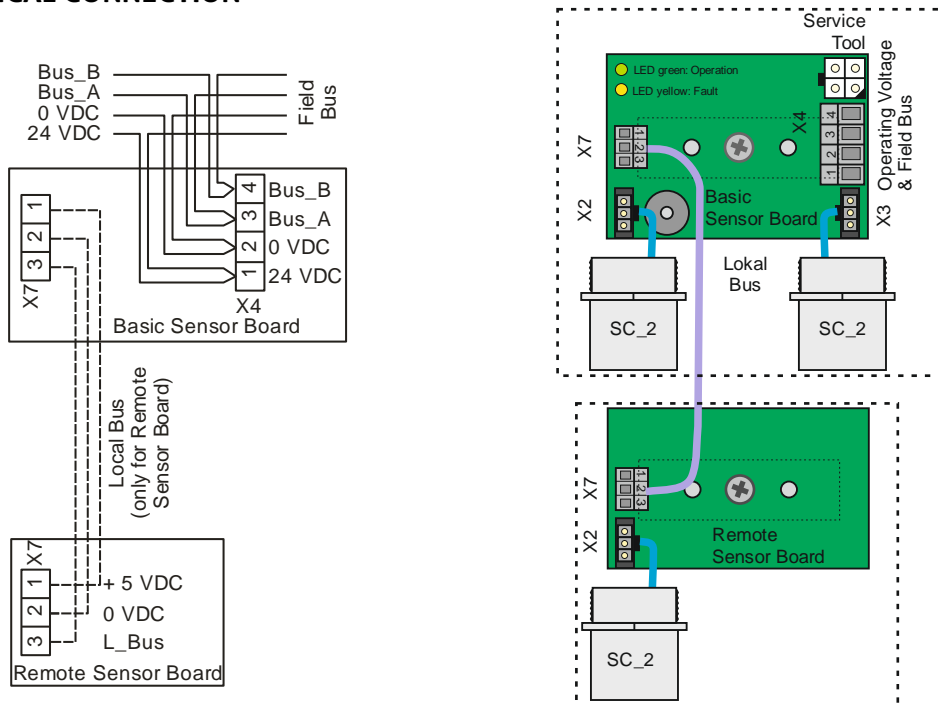


Fig. 1: Electrical connection of field bus and optional local bus

Fig. 2: Basic Sensor-Board SB2 with 2 sensors and with option Remote-Board RB2 with 1 sensor

### Note:

Option Remote-Board RB2 together with IR sensor is not permitted.

Do not connect 2 SC2 sensor heads of the same gas or the same gas group (Freons).