Gas Detection.

Technical Datasheet

PolyGard®

Sensor-Board SB

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DESCRIPTION

Sensor-Board with RS-485 interface for integration of the sensor heads SC.

Up to 3 different sensor heads of the SC/RC series can be connected to the Sensor-Board SB via local bus (2x SC/RC on SB, 1x SC on RB). The SB provides the power supply of the SC/RC and makes the measured data available for digital communication. Communication with the DGC controller takes place via the RS-485 fieldbus interface with DGC protocol. Other communication protocols for direct connection to superordinate BMS are available as well.

The SC/RC are connected to the local bus via a plug connection enabling simple SC exchange instead of an on-site calibration. The internal X-Change routine recognizes and the exchanged SC 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 STL can be performed with the integrated, comfortable calibration routine.

APPLICATION

The PolyGard® Sensor-Board SB is used for integration of the SC/RC sensor heads.

FEATURES

- Digital measurement value processing incl. temperature compensation
- Internal functional control with integrated Watchdog
- Data / measured values stored in sensor heads µC, therefore simple exchange of SC/RC uncalibrated <> calibrated
- Up to 3 different sensor heads
- Software according to SIL compliant development process
- Modular technology (plug-in and replaceable)
- Easy maintenance and calibration by exchange of the sensor head 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 or Modbus
- Sensor head SC able to be mounted remotely with Remote-Board (RB), therefore adaptation to necessary mounting heights possible (option)
- Warning module consisting of buzzer and status LED red (option)
- Display (option)

SPECIFICATIONS

ELECTRICAL	
Power supply	16–29 V DC, reverse-polarity protected 24 V AC ± 15 % (only 1x SC/RC connected, not for DGC mode)
Power consumption (24 V DC)	10 mA (0.24 VA)
Overvoltage category	I
Output for local bus	5 V DC, 250 mA max. Overload, short-circuit and reverse-polarity protected
SERIAL INTERFACE	
Local bus	1-wire / 19200 Baud
Field bus	RS-485 / 19200 Baud
Tool bus	2-wire / 19200 Baud
MODBUS PROTOKOLL RTU RS-485	
Function	Transmission of measured values & alarm stages (see GA_SB_MSC_PX_Modbus_supplement)
AMBIENT CONDITIONS	
Temperature range	-25 °C to +60 °C (-13 °F to 140 °F), observe temp. range of options
Humidity range	15–90 % RH not-condensing
Pressure range	80–120 kPa
Pollution degree	2 (installation only indoors), not suitable for wet environment
Permissible height above sea level	1500 m (ca. 5000 ft.)
RECOMMENDED STORAGE CONDITIONS (without sensor heads)	
Storage temperature range	-20 °C to +65 °C (-4 °F to 149 °F)
Storage time	Ca. 12 months
Humidity range	20–90 % RH non-condensing
Pressure range	80–120 kPa
PHYSICAL	
Housing	**Type A**
Material	Polycarbonate
Flammability classification	UL 94 V2
Housing colour	Similar to RAL 7035 (light grey)
Dimensions (W x H 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)[1]	IP65 NEMA 4X
Installation	Wall mounting
Wire connection: Field bus Local bus for SC	Screw-type terminal 0.25–2.5 mm² (24–10 AWG) 3-pin connector
Cable lengths local bus for Remote Board	Max. 5 m (16.4 ft.)
Knockout for integration of sensor heads	3x M25 for M25 housing

[1] If the housing is modified, it must be re-evaluated. IP protection ratings do not mean that the device will measure gas during or after exposure to these conditions. The SplashGuard SG-PG accessory is strongly recommended for these applications.

REGULATIONS	
Directives	EMC directives 2014/30/EU CE EN IEC 61010-1:2010 Conformity to: EN 50271 EN 50270 Type I EN IEC 61508-1–3 EN 50402 EN IEC 62990-1: Type SM EN 50104 EN 14624 EN 378 Option: ANSI/UL 61010-1 CAN/CSA-C22.2 No. 61010-1
Warranty	2 years on device 1 year on sensor heads (not if poisoned or overloaded)
OPTIONS	
DISPLAY	
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
Temperature range	-20 °C to +60 °C (-4 °F to 140 °F)
WAO STATUS-LED/BUZZER	
Colour (mode)	Red (warning)
Acoustic pressure	> 85 dB (A) (0.1 m distance)
Frequency	2300 Hz ± 300 Hz
Protection class	IP65

All specifications were collected under optimal test conditions.
We confirm compliance with the minimum requirements of the applicable standard.
The T 021 (DGUV-I-213-056) and T 023 (DGUV-I-213-057) as well as T 055 leaflets must be observed.

ORDERING INFORMATION SB

SB2-	**X-**	**2**	**0**	**X**	**2**	**0**	**0**	**X**	**0**	**X**	
										0	**Without further options**
										A	Version UL/CSA 61010-1 (only housing type A) **Further options**
									0	**Without further options**	**Options**
								0	**Without display**		
								2	Display / keypad		**Display**
							0	**Without analog input**			**Analog input**
						0	**Without digital input**				**Digital input**
					2	**RS-485 with DGC protocol (Modbus incl.)**					**Output signal**
				0	**Without buzzer and status LED**						
				2	Plug connector for warning module						**Visual/audible**
				3	Warning module, buzzer & status LED red included						**indicator (WAO)**
			0	**Without alarm relay**							**Alarm relay**
		2[1]	**24 V DC / AC**								**Power supply**
	0	Without housing									
	A	**Housing type A, 94 x 130 x 57 mm**									**Housing**

[1] In AC mode, only 1x **SC** sensor head of the sensor types the P34XX, SXXXX, I-S1164, S4X0 or IXXX can be connected.

STANDARD VERSION

Sensor-Board, in housing type A, 24 V DC, without WAO, without RS-485 with DGC & Modbus protocol, without Display, without further options (order number: SB2-A-200200000)

ORDERING INFORMATION RB

RB2-	**X-**	**1XXXXXXX**	**X**		
			0	**Without further options**	
			A	Version UL/CSA 61010-1	**Options**
		1XXXXXXX	**Remote Board for 1x SC[1] for remote connection to the SB**		**Version**
	0	Without housing			
	A	**Housing type A, 94 x 130 x 57mm**			**Housing**

[1] Option Remote-Board RB with IR sensor (S4XX, I-S11XX, I4XX) or with a semiconductor sensor (S20XX, S21XX) is not permitted. Instead, the Remote-Kit C2-Z11-XX must be used for these sensor heads.

ELECTRICAL CONNECTION

Note:
The power requirement of the SC/RC sensor heads depends on the measuring principle used. Therefore, the maximum number of sensor heads depending on the operating voltage must be observed according to Table 1.

Supply voltage	E11XX-X MXXX-X	P34XX-X	SXXXX-X[1]	I-S1164-X[1] SXXX-X[1]	IXXX-X[1]
24 V DC	1	2			
24 V DC	2	1			
24 V AC	2	1			

Table 1: Supply voltage

[1] Do not connect to RB

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

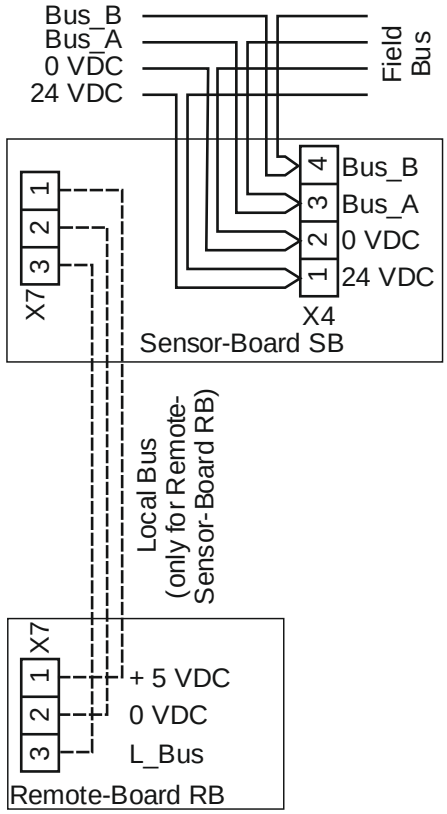

Figure 1: Electrical connection of field bus and optional local bus

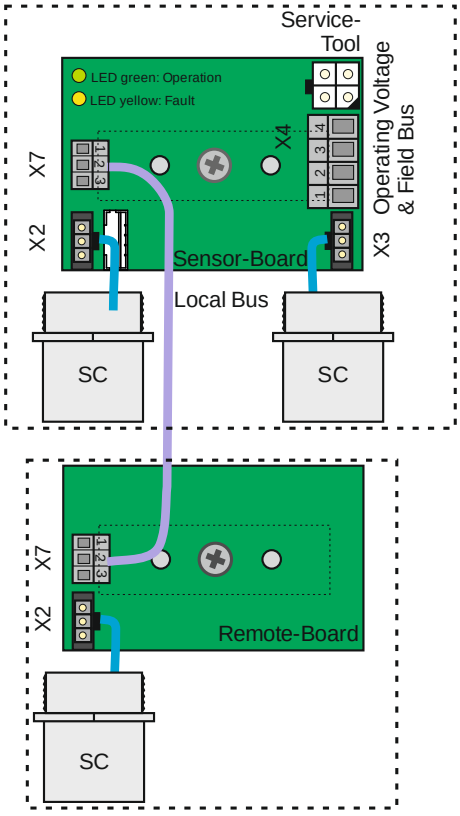

Figure 2: Sensor-Board SB with 2 sensor heads and with option Remote-Board RB with 1 sensor head

Documents

Catalog

YouTube