



PolyGard®2

Sensor Board SB2

Sensor board with RS 485 interface for integration of the Sensor Cartridges SC2.

Up to three different Sensor Cartridges of the SC2 series can be connected to the 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 DGC06 controller takes place via the RS 485 fieldbus interface with DGC06 protocol. Other communication protocols for direct connection to superordinate BMS are available as well.

The SC is 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 the exchanging process and the exchanged SC 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 DGC06 Service Tool can be performed with the integrated, comfortable calibration routine.

APPLICATION

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

FEATURES

- Digital measurement value processing incl. temperature compensation
- Internal functional control with integrated Hardware Watchdog
- Data / measured values in μ C Sensor Cartridge, therefore simple exchange of SC uncalibrated <> calibrated
- Up to three different Sensor Cartridges
- Sensor Cartridge can be mounted remotely with Remote Board (RB2), therefore adaptation to necessary mounting heights possible
- 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
- IP 65 version (housing type A in delivery state)
- Serial RS 485 interface with protocol for DGC06. Modbus as option.
- Warning module consisting of buzzer and status LED red (option)
- LCD display (option)
- Conformity to
 - EN 50271
- ANSI/UL 61010 1 & CAN/CSA-C22.2 No. 61010-1 (optional)



Sensor board with 1x SC2 in housing A





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SPECIFICATIONS

Electrical

Power supply	16 – 29 V DC, reverse-polarity protected
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

General

Temperature range	-35 °C to +50 °C (-31 °F to 122 °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 (env. 5000 ft.)
Storage temperature	5 °C to 40 °C (41 °F to 104 °F)
Storage time	6 months

Serial interface

Local bus	1-wire / 19200 Baud
Field bus	RS 485 / 19200 Baud
Tool bus	2-wire / 19200 Baud

Physical

Housing	Type A
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 (IP 65)
Installation	Wall mounting
Wire connection: Field bus	Screw-type terminal min. 0.25 mm ² , max. 2.5 mm ² (24 to 10 AWG)
Local bus for SC	3-pin connector
Cable lengths local bus for Remote Sensor Board	Max. 5 m (16.4 ft.)
Knockout for integration of Sensor Cartridges	3 x M25 for M25 housing

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

Options**LCD display**

LCD	Two lines, 16 characters each, background highlighted in two colours
Operation	Menu driven via six push-buttons
Power consumption	5 V, 60 mA, 0.3 VA

Visual/acoustic indicator

Colour / operating mode	Red / Fault
Sound pressure	> 85 dB (A) (0.1 m distance)
Frequency	2300 Hz
Protection class	IP 65

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



MSR-Electronic GmbH ::: Würdinger Str. 27 & 27A ::: 94060 Pocking ::: Germany

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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ORDERING INFORMATION

SENSOR BOARD SB2

SB2 - **X X 0 X X 0 0 X 0 X**

FURTHER OPTIONS

0 No further options

A Version UL/CSA 61010-1 (only housing A & C)

WARNING DEVICES¹

0 Without built-on warning device

DISPLAY¹

0 Without display

2 With display/keypad

ANALOG INPUT¹

0 No analog input

DIGITAL INPUT¹

0 No digital input

OUTPUT SIGNAL – BUS

2 RS 485 with DGC 06 protocol

4 RS 485 with Modbus protocol

8 MSR_D_Bus

VISUAL / ACOUSTIC WARNING INDICATOR¹

0 Without visual / acoustic indicator

2 Plug connector for warning module

3 Warning module, buzzer & status LED red, mounted on the housing

4 Warning module, buzzer & status LED red, as replacem. (only for SB Board with connector for warning module)

ALARM RELAYS¹

0 No alarm relay

POWER SUPPLY

1* 12 V DC¹

2 24 V DC

7* 100 – 240 V AC / 24 V DC, 15 VA¹

8* UPS 100 – 240 V AC / 12 V DC, 15 VA, 0.8 Ah¹

9* UPS 100 – 240 V AC / 24 V DC, 15 VA, 0.8 Ah¹

HOUSING

0 Without housing

A Housing type A 90 x 130 x 57

C Housing type C 130 x 130 x 75

K* Housing type K ATEX Ø 95 x 82

5 Housing type 5 stainless steel (113 x 135 x 45 mm)²

* only on request

¹ Not in stainless steel housing

² Only for integration of one sensor cartridge

Standard version: SB2-A-2-0-0-2-0-0-0-0-0



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REMOTE BOARD RB2

RB2- **X** 1XXXXXXX **X**

FURTHER OPTIONS

- 0** No further options
- A** Version UL/CSA 61010-1

VERSION REMOTE BOARD

1XXXXXXX Remote Board for remote connection of one SC2 at the SB2

HOUSING

- 0** Without housing
- A** Housing type A 90 x 130 x 57

ELECTRICAL CONNECTION

