



PolyGard®2

## Sensor-Board MSB2\_ES

**Sensor board with RS 485 interface, 4 – 20 mA output and further options**

The MSB2\_ES is used for management and monitoring of warning devices. It communicates with the DGC06 controller via the RS 485 field bus interface with DGC06 protocol. The alarm relays can be controlled via the DGC06 controller. The digital input for acknowledgment or test function ensures the adaptation to the wide range of applications in gas detection technology.



### APPLICATION

The PolyGard®2 Sensor Board MSB2\_ES is used for activation of warning devices and their functional control in non-operated state, in order to detect faults prior to the occurrence of hazards.

### FEATURES

- Internal functional control with integrated Hardware Watchdog
- Software according to SIL2 compliant development process
- Modular technology (pluggable and exchangeable)
- Serial RS 485 interface (SIL2) with protocol for DGC06\_ES
- 4 – 20 mA analog output with selectable signal output for special mode, fault etc.
- Two digital inputs
- Two alarm relays with change-over contact, potential-free, max. 240 V AC, 5 A, local control or via DGC06\_ES
- Fault message relay with change-over contact, potential-free, max. 240 V AC, 5 A, also configurable as alarm relay
- Monitoring the connected type-tested warning devices on function and wire break with error detection < 1 min.
- Connection socket for Service tool
- Convenient commissioning and test mode at the service tool
- Reverse polarity protected, overload and short-circuit proof
- IP 65 version
- Conformity to
  - Low Voltage Directive 2014/35/EU
  - EMC Directive 2014/30/EU
  - EN 50271 / IEC 615078
  - EN 61010-1
- Ansi / UL 61010 1 & CAN / CSA-C22.2 No 61010-1 (option)





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## SPECIFICATIONS

### Electrical

Power supply	16 – 29 V DC, reverse-polarity protected
Power consumption (24 V DC) only MSB2 board	100 mA (2.4 VA)

### Digital input

Signal input	Potential-free contact
Function	Acknowledge or test function

### Analog output signal

Proportional, overload and short-circuit proof, load  $\leq 500 \text{ Ohm}$   
 4 - 20 mA = measuring range  
 3.0 < 4 mA = underrange  
 > 20 - 21.2 mA = overrange  
 2.0 mA = fault

### Digital output

Alarm relay (2)	240 V AC, 5 A, potential_free, change-over contact (SPDT)
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### General

Temperature range	-10 °C to +50 °C (14 °F to 122 °F)
Humidity range	15 - 95 % RH not-condensing
Storage temperature	-10 °C to +40 °C (14 °F to 104 °F)
Storage time	6 months

### Serial interface

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

### Physical

Protection class (delivery status*)	IP 65
Wire connection: Field bus	Screw-type terminal min. 0.25 mm <sup>2</sup> , max. 2.5 mm <sup>2</sup> (24 to 10 AWG)
Digital input, analog output	Screw-type terminal min. 0.25 mm <sup>2</sup> , max. 1.3 mm <sup>2</sup> (24 to 16 AWG)
Power supply, relays	Screw-type terminal min. 0.25 mm <sup>2</sup> , max. 2.5 mm <sup>2</sup> (24 to 10 AWG)

### Directives

EMC directives 2014/30/EU  
 Low voltage directive 2014/35/EU  
 EN 61010-1:2010  
 Conformity to:  
 EN 50271 / IEC 615078  
 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

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





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## ORDER INFORMATION

MSB2-ES X X 2 X 3 2 3 0 0 X

**FURTHER OPTIONS**

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

**WARNING DEVICES**

- 0 Without built-on warning device

**DISPLAY**

- 0 Without Display

**ANALOG INPUT**

- 3 3 x Analog input

**DIGITAL INPUT**

- 2 2 x Digital input

**OUTPUT SIGNAL – ANALOG / BUS**

- 3 Analog output & RS 485 with DGC 06 protocol

**VISUAL/ AUDIBLE WARNING DEVICES**

- 0 Without visual / acoustic indicator
- 4\* Buzzer & status-LED (red, yellow, green)

**ALARM RELAYS**

- 2 2 x alarm relays

**POWER SUPPLY**

- 2 24 V AC/DC
- 7 100 – 240 V AC / 24 V DC, 15 VA
- 9\* USV 100 – 240 V AC / 24 V DC, 15 VA, 0.8 Ah

**HOUSING**

- 0 Without housing
- C Housing type C 130 x 130 x 75<sup>1</sup>
- E Housing type E 130 x 130 x 99

\* only on request

<sup>1</sup>Version with display and voltage supply 15 VA only with housing type E

Standard version: MSB2-ES-C-2-2-0-3-2-3-0-0-0





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## ELECTRICAL CONNECTION

