



SB1 Safety Barrier

4–20 mA supply of
intrinsically safe transmitters



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Only gas detection devices that have the appropriate ATEX approval must be used in potentially explosive atmospheres. A further prerequisite for the installation of a fixed transmitter in Ex zone 0 is an intrinsically safe circuit with a safety-limited power supply.



Designed for connection of intrinsically safe gas detection devices

To connect an intrinsically safe circuit to a non-intrinsically safe power supply, a safety barrier is required. This limits the voltage to a maximum permissible value.

For the installation of analog gas detection devices with intrinsically safe design in Ex zones GfG has developed the SB1 safety barrier. It is connected between the

three-wire non-intrinsically safe circuit and the two- or four-wire intrinsically safe circuit which supplies the transmitter within the hazardous area.

Installation instructions

The SB1 safety barrier must be connected outside the hazardous area. Installation may only be carried out by qualified personnel, for example a GfG service specialist.

Device protection and connections

The compact housing in the 22 series design is made of plastic. It is designed for wall mounting and is protected against splash water and dust (IP54).

The SB1 is connected to a controller or a higher-level process control system (PLC) via a three-wire cable. Depending on

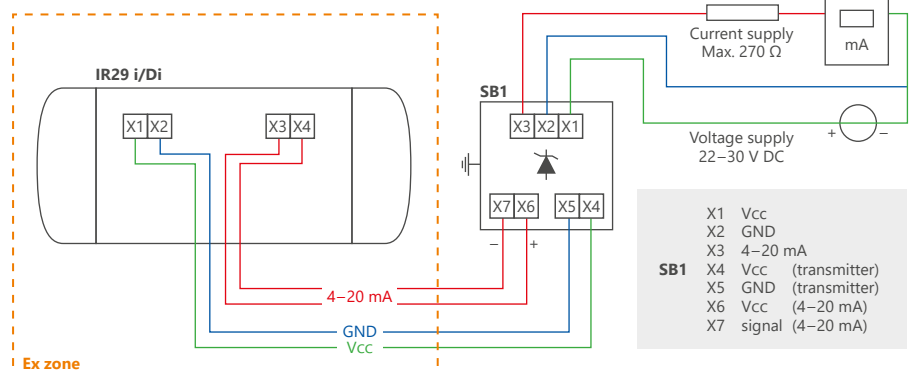
requirements, two or four connection terminals are available for connecting an analog, intrinsically safe transmitter.

In addition, there is a connection terminal for potential equalization on the underside of the safety barrier (cable cross-section: 4 mm²). The safety barrier is equipped with three replaceable fuses.

Suitable transmitters

The safety barrier SB1 is suitable for the connection of the following intrinsically safe GfG transmitters in Ex zone 0 via a three-wire 4–20 mA cable:

- » EC28 i
- » EC28 Di
- » IR29 i
- » IR29 Di



Connection diagram: SB1 safety barrier with intrinsically safe IR29 i/Di transmitter

SB1 Technical data:

Temperature: -20 to +55 °C
Humidity: 0 to 100 % r. F.
Air pressure: 0 to 200 kPa
Voltage supply:
Input voltage: 22 to 30 V DC
Output voltage: max. 21 V DC

Output signal: 4–20 mA
Housing: Plastic
Protection class: IP54
Dimensions: 96 x 98 x 48 mm
(W x H x D)
Weight: 300 g

Approvals / Certifications:
Markings &
type of protection: Ⓢ II (1)G [Ex ia Ga] IIC
-20 °C ≤ Ta ≤ +55 °C

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