

SB3 Safety barrier



- ▶ Suitable for applications with Ex detectors
- ▶ Input/Output Module included
- ▶ Impact-proof and scratch-resistant synthetic material
- ▶ Large opening for reuse of existing boreholes
- ▶ Screwless connection terminals

System overview

Functions

The SB3 Safety Barrier limits the electrical energy between non-inherently safe and inherently safe circuits and thus prevents the ignition of gas mixtures by electrical sparks.

The Safety Barrier must always be installed outside the explosive area.

The DCA1192 Input/Output Module is the galvanical isolation between the fire panel and SB3 Safety Barrier.

Regulatory information

Region	Regulatory compliance/quality marks	
Europe	Ex	01 ATEX 2088 SB 3
Germany	VdS	G 298021 DC 1192
Europe	CE	DC 1192
	CE	SB 3

Installation/configuration notes

- The directive 1999/92/EC standard contains important information on planning and installation in areas with a potential risk from explosive atmospheres.

- During planning works, it is essential to adhere to national standards and guidelines.
- For planning an intrinsically safe detector line for Ex areas, you have to consider:
 - the number n of devices connected to the SB3 Safety Barrier's detector line
 - the cable length l of the SB3 Safety Barrier's detector line

The following inequation must be fulfilled to achieve an intrinsically safe detector line:

C_i (nF)

resulting

$$C_0 > (n \times C_i) + (l \times C_c)$$

L_0 (SB3) > L_i

resulting

$$L_0 > (n \times L_i) + (l \times L_c)$$

Abbreviation (unit)	Description
C_0 (nF)	maximum external capacity
C_i (nF)	maximum internal capacity
C_c (nF)	cable capacitance
l (km)	length of entire detector line

Abbreviation (unit)	Description
L_0 (mH)	maximum external inductivity
L_i (mH)	maximum internal inductivity
L_c (mH)	cable inductance
n	total number of detectors

DANGER! Risk of explosion: Testing equipment must only be operated in the area not at risk of explosion.

Parts included

Quantity	Component
1	SB3 Safety Barrier
1	Installation set for SB3
1	DCA1192 Input/Output Module
1	Terminal carrier for DCA1192
1	EOL22(Ex) line termination, included with the DCA1192
2	Housing with cover

Technical specifications

SB3 Safety Barrier, with Housing

Max. voltage	28 V DC
Max. permissible current	100 mA
Max. output	0.7 W
Wire gauge	0.2 mm ² ... 2.5 mm ²
Cable bushings	PG16 (6x)
Dimensions (W x H x D)	135 x 135 x 65 mm
Housing material	Plastic, PC
Housing color	White, RAL 9010
Weight	Approx. 450 g
Protection class as per EN 60529	IP 56
Permissible operating temperature	-25 °C ... +70 °C
Permissible storage temperature	-30 °C ... +75 °C

Ignition protection according to EN 50014/20	Inherent safety EEx ia IIC / IIB
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DCA1192 Input/Output Module, with Housing

External supply	
• Operating voltage	18 V DC ... 32 V DC
• Standby current	≤45 mA
• Operating current	≤150 mA
• Line resistance	50 Ω ... 250 Ω
• Line termination	EOL22(Ex)
Line termination	
• Operating voltage	18 V DC ... 22 V DC
• Current consumption	Max. 5 mA
• Line resistance	50 Ω ... 250 Ω
• Line termination	EOL22(Ex)
Wire gauge	0.2 mm ² ... 2.5 mm ²
Cable bushings	PG16 (6x)
Housing material	Plastic, PC
Housing color	White, RAL 9010
Dimensions (W x H x D)	135 x 135 x 65 mm
Weight	Approx. 425 g
Protection class as per EN 60529	IP 56
Permissible operating temperature	-25 °C ... +70 °C
Permissible storage temperature	-30 °C ... +75 °C
Permissible relative humidity	≤100% at T≤34 °C

Characteristics for intrinsical safety

Output voltage (V)	≤ 28
Output current (mA)	≤ 100
Output power (mW)	≤ 700
External inductivity (mH)	≤ 1.6
External capacity (nF)	≤ 83

Ordering information

SB3 Safety barrier

limits the electrical energy between non-inherently safe and inherently safe circuits

Order number **SB3 | 4.998.112.085**

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