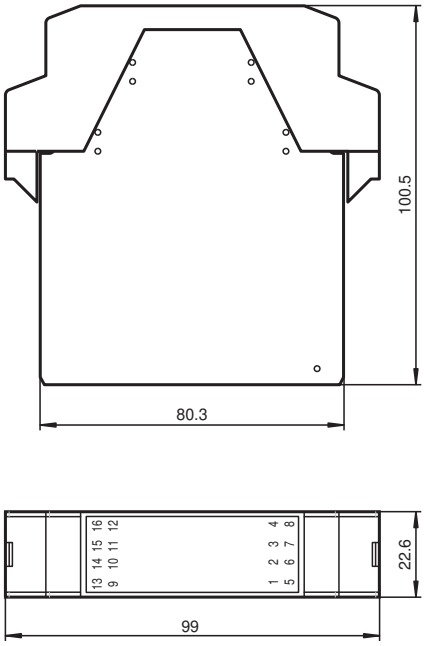
Safety control unit module

SB4 Module 4CO

- Sensor module
- 4 sensor channels
- Single module for safety thru-beam sensors SLA12 and SLA29 and for 2 channel safety devices (emergency off)
- Operating mode can be selected by means of DIP switches

Safety control unit module

Dimensions



Technical Data

General specifications	
Operating mode	ODER-Function
Functional safety related parameters	
Safety Integrity Level (SIL)	SIL 3
Performance level (PL)	PL e
Category	Cat. 4
Mission Time (T_M)	20 a
Type	4
Indicators/operating means	
Function indicator	LED yellow (4x): indicator lamp channel 1 ... 4

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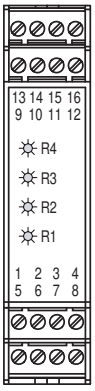
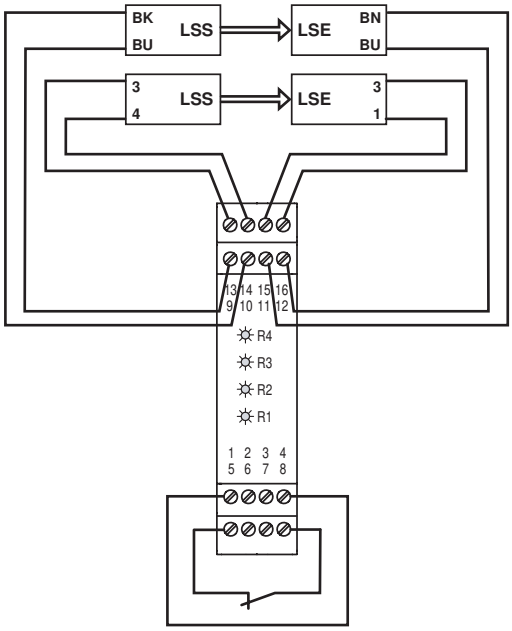
Technical Data

Stability alarm indicator		LED yellow flashing: Indicator lamp channel 1 ... 4
Control elements		DIP switch
Electrical specifications		
Operating voltage	U_B	24 V DC ± 20 % , via SB4 Housing
Input		
Activation current		approx. 7 mA
Conformity		
Functional safety		ISO 13849-1 ; EN 61508 part1-4
Product standard		EN 61496-1
Approvals and certificates		
CE conformity		CE
UL approval		cULus
TÜV approval		TÜV
Ambient conditions		
Ambient temperature		0 ... 50 °C (32 ... 122 °F)
Storage temperature		-20 ... 70 °C (-4 ... 158 °F)
Mechanical specifications		
Degree of protection		IP20
Connection		screw terminals , lead cross section 0.2 ... 2 mm²
Material		
Housing		Polyamide (PA)
Mass		approx. 150 g

Connection



Terminal	Function	Channel assignment
1	Receiver 2 input	Input
2	Receiver 2 +U	Channel 2
3	Transmitter 2 +U	
4	Transmitter 2 output	Output
5	Receiver 1 input	Input
6	Receiver 1 +U	Channel 1
7	Transmitter 1 +U	
8	Transmitter 1 output	Output
9	Transmitter 3 output	Output
10	Transmitter 3 +U	Channel 3
11	Receiver 3 +U	
12	Receiver 3 input	Input
13	Transmitter 4 output	Output
14	Transmitter 4 +U	Channel 4
15	Receiver 4 +U	
16	Receiver 4 input	Input



Connection example
(LSS = transmitter of light barrier;
LSE = receiver of light barrier)

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This module can only be operated within an evaluation device of the SafeBox SB4 type.

The SafeBox instruction manual should be observed.

Function

The 4-channel sensor card module SB4-4CO makes it possible to connect light barriers or light grids or contact safety sensors in a one-channel version.

When the system is switched on, the software determines whether a light barrier or a contact safety sensor is switched on at a channel and monitors its presence during operation.

Contact safety sensors, which are connected to the SafeBox, must work according to the normally closed principle. An open contact indicates "safe state".

The channels 1 and 2 as well as 3 and 4 can be combined via an OR function when using light barriers.

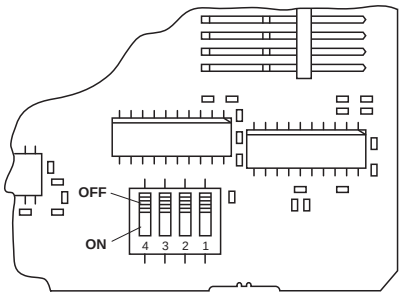
Danger!

When using this function, it must be ensured that the effectiveness of the fusing is maintained.
This must be checked on installation and commissioning .

Operating modes

The assembly has 4 DIP switches for selecting the OR-operation of neighbouring channels (1 OR 2 and 3 OR 4). For selecting functions, 2 selector switches must always be actuated. The functions are only effective if light barriers are connected.

Position of the DIP switches



Switch	Position	Operation type
1 and 3	OFF	No OR-operation channel 1 and 2
	ON	OR-operation channel 1 and 2
2 and 4	OFF	No OR-operation channel 3 and 4
	ON	OR-operation channel 3 and 4

Displays

For each channel, there is a yellow LED on the front panel of the module.

Display	LED	Meaning
R1 - R4	yellow	Status of light barrier 1 ... 4 Off: light beam interrupted On: light beam released Flashing: light beam released, function reserve fallen short of (frequency approx. 2.5 Hz) Flashing fast: error (frequency approx. 5 Hz)

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