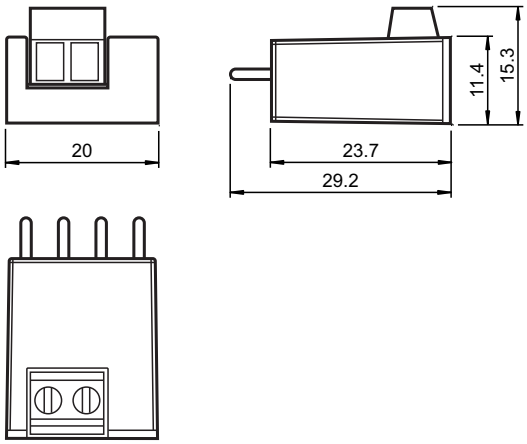
Safety control unit module
IF-SB4-01

Interface for SafeBox SB4 modules 4CP and 4C

Dimensions



Technical Data

Functional safety related parameters	
Safety Integrity Level (SIL)	SIL 3
Performance level (PL)	PL e
Category	Cat. 4
$MTTF_d$	100 a
Mission Time (T_M)	20 a
PFH_d	0.62 E-9
Type	4
Input	
Input type	PNP OSSD signals from photoelectric safety sensors

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Technical Data

Actuating voltage	ON: 24 V DC + 20 %/- 30 %; OFF: < 1 V
Activation current	max. 15 mA
Output	
Signal output	on SB4 modules 4CP or 4C
Switching current	min. 7.5 mA
Response time	3 ms
Conformity	
Functional safety	ISO 13849-1
Product standard	EN 61496-1
Approvals and certificates	
CE conformity	CE
TÜV approval	TÜV SÜD
NRTL approval	cNRTLus
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 , Cable cross-section 0.2 ... 1.5 mm²
Material	
Housing	ABS
Mass	approx. 10 g
General information	
Ordering information	For the connection are always two IF-SB4-01 is required

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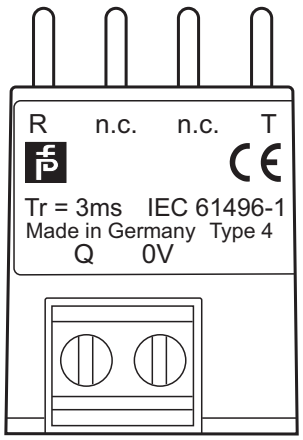
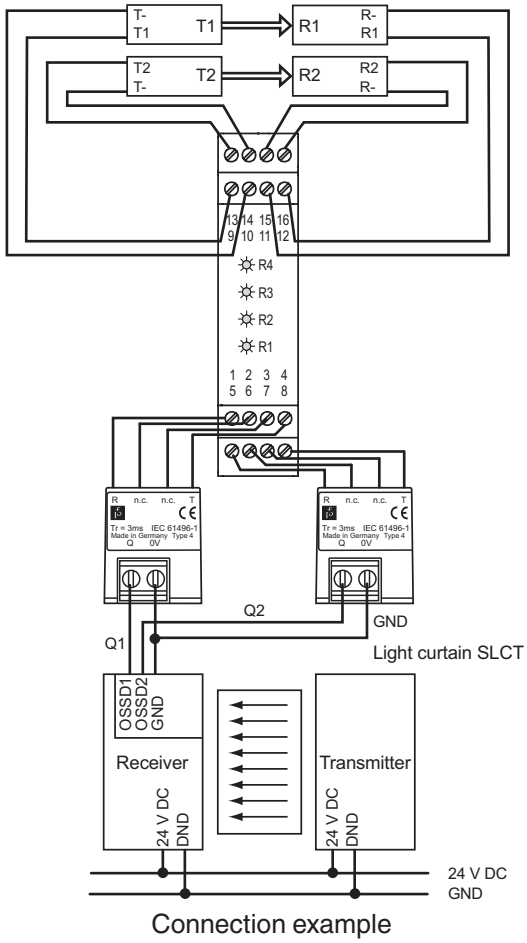
Connection



IF-SB4-01	
T	**Q** PNP OSSD Signal safety sensors
n.c.	
n.c.	**0 V** GND
R	

Safety unit 1		Safety unit 2	
OSSD 1.1	OSSD 1.2	OSSD 2.1	OSSD 2.2
Channel assignment to SB4 Module 4CP and 4C			
Terminal channel 1	Terminal channel 2	Terminal channel 3	Terminal channel 4
5	1	12	16
6	2	11	15
7	3	10	14
8	4	9	13

Thru-beam sensor SLA12, SLA29



Connection example

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IF-SB4-01 is operated on a safety control interface unit type SafeBox SB4 on the modules SB4, 4CP, and 4C.
Please note the operating instructions for the SafeBox.

Function

IF-SB4-01 enables the use of Photoelectric Safety Sensors with semiconductor output on the SafeBox modules:

- SB4 modules 4CP
- SB4 modules 4C

The task of the interface is to filter test pulses for cross-wire monitoring from the sensor at the connection cable between the semi-conductor outputs and inputs on the SafeBox module.

Note!
If a safety device with PNP outputs is connected to SafeBox “SB4 Modules 4CP” or “SB4 Modules 4C” using the IF-SB4-01, then care must be taken to ensure that the line discharges after each pulse within 200 µs. PNP outputs, whose output drivers are constructed as a Push-Pull step, are particularly suitable for this purpose.

Operating mode setting on the SB4-4CP and SB4-4C modules

There are 4 DIP switches on the assembly group of the SB4 modules 4CP and SB4 modules 4C. When using IF-SB4-01, the functionality of the simultaneous evaluation of neighboring channels (1 and 2, 3 and 4) has to be selected. 2 switches always have to be actuated for the function selection.

Note!
For correct simultaneous monitoring of the SB4 modules 4CP and SB4 modules 4C outputs, the connection of the PNP OSSD outputs must be made in pairs to the channel pair 1 and 2 or 3 and 4.

The position and operation of the DIP switches of the SB4 modules 4CP and SB4 modules 4C are given in the data sheet and the SafeBox operating instructions.

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