

Fiessler Safe Expander Module

FSEM



Safe contact expander module

For safety related applications up to cat. 4 ref. EN 954-1

in connection with ULVT, BLVT, ULCT, BLCT and FPSC

3 positive-guided undelayed safety contacts

Simple top hat rail mounting

LED indicator for both channel status

Activation optionally with one or two channels



DIN EN ISO 9001
Reg.Nr. 96007



optional



Typ 4
EN 61496



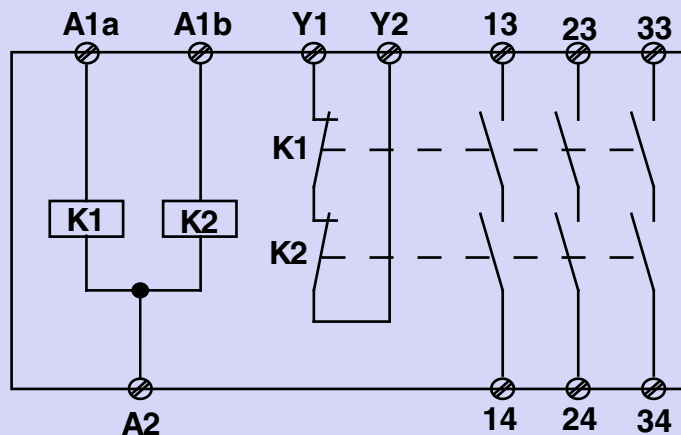
Application

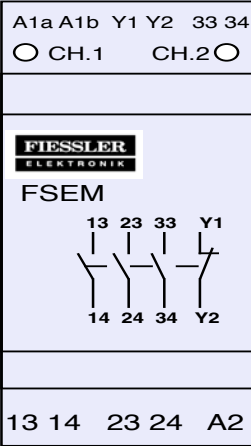
The safe expander module FSEM expands an existing circuit. As the output relays are monitored with the base unit feedback loop, it is possible to reach the same safety level to the contact expander module. Base units can be all safety devices with a monitored feedback loop. Fiessler Elektronik offers the safety light curtains series ULVT, BLVT, ULCT, BLCT as well as the programmable safety controller FPSC. It is possible to realise applications up to cat. 4 ref. EN 954-1. The achievable category is depending on the base unit and the electrical connection.

Operating modes

Input circuit	Single channel	Dual channel
Base unit: Safety relay		
Base unit: Safety light curtains series ULVT, BLVT, ULCT and BLCT		
Base unit: Programmable safety controller FPSC		
Feedback loop	<p>EDM and Ex.x are inputs on the base unit. They are evaluating the feedback loop signal. In case of FPSC we recommend using the Software block valve monitoring.</p>	

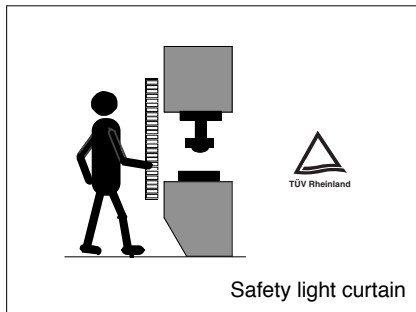
Block diagram



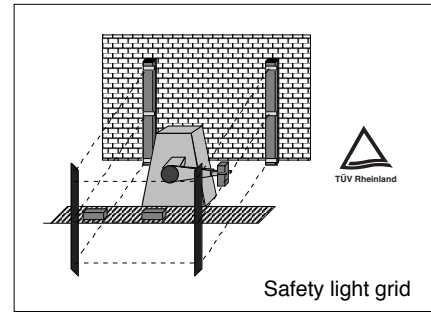
Terminal configuration																																						
																																						
Technical details																																						
	<p>Electrical data:</p> <table border="0"> <tr> <td>Supply voltage UB DC</td> <td>24V</td> </tr> <tr> <td>Voltage tolerance</td> <td>19,2 ... 30V DC</td> </tr> <tr> <td>Residual ripple DC</td> <td>max. 10%</td> </tr> </table> <table border="0"> <tr> <td>Output contacts in accordance with EN 954-1</td> <td>Safety contacts: 3</td> </tr> <tr> <td>Output breaking capacity at 240V AC 13 14, 23 24</td> <td>Imin:0,01A, Imax: 6A ohmisch</td> </tr> <tr> <td>Output breaking capacity at 160V AC 33 34</td> <td>Imin:0,01A, Imax: 6A ohmisch</td> </tr> <tr> <td>Output breaking capacity at 24V DC 13 14, 23 24, 33 34</td> <td>Imin:0,01A, Imax: 6A</td> </tr> <tr> <td>Fuse for supply voltage (external)</td> <td>T1,0A/250V</td> </tr> <tr> <td>Fuse for circuit breaker</td> <td>6A slow</td> </tr> </table> <p>Times:</p> <table border="0"> <tr> <td>Switch-on delay</td> <td>≤ 20 ms</td> </tr> <tr> <td>Fall-delay time</td> <td>≤ 15 ms</td> </tr> </table> <p>General data:</p> <table border="0"> <tr> <td>Contact material</td> <td>AgC2O</td> </tr> <tr> <td>Airgap creepage connection/wiring</td> <td>DIN VDE 0110-1 pluggable screw terminals min. 0,5qmm, max. 2,5 qmm.</td> </tr> <tr> <td>Dimensions (without connectors)</td> <td>H: 85,5 mm W: 35 mm D: 58 mm</td> </tr> <tr> <td>Installation</td> <td>Top hat rail mounting (DIN rail 35mm)</td> </tr> <tr> <td>Weight (without connectors)</td> <td>110 g</td> </tr> <tr> <td>Ambient temperature</td> <td>0° C ... 60°C</td> </tr> <tr> <td>Switching Cycle life time</td> <td>>50 x 106</td> </tr> </table>		Supply voltage UB DC	24V	Voltage tolerance	19,2 ... 30V DC	Residual ripple DC	max. 10%	Output contacts in accordance with EN 954-1	Safety contacts: 3	Output breaking capacity at 240V AC 13 14, 23 24	Imin:0,01A, Imax: 6A ohmisch	Output breaking capacity at 160V AC 33 34	Imin:0,01A, Imax: 6A ohmisch	Output breaking capacity at 24V DC 13 14, 23 24, 33 34	Imin:0,01A, Imax: 6A	Fuse for supply voltage (external)	T1,0A/250V	Fuse for circuit breaker	6A slow	Switch-on delay	≤ 20 ms	Fall-delay time	≤ 15 ms	Contact material	AgC2O	Airgap creepage connection/wiring	DIN VDE 0110-1 pluggable screw terminals min. 0,5qmm, max. 2,5 qmm.	Dimensions (without connectors)	H: 85,5 mm W: 35 mm D: 58 mm	Installation	Top hat rail mounting (DIN rail 35mm)	Weight (without connectors)	110 g	Ambient temperature	0° C ... 60°C	Switching Cycle life time	>50 x 106
Supply voltage UB DC	24V																																					
Voltage tolerance	19,2 ... 30V DC																																					
Residual ripple DC	max. 10%																																					
Output contacts in accordance with EN 954-1	Safety contacts: 3																																					
Output breaking capacity at 240V AC 13 14, 23 24	Imin:0,01A, Imax: 6A ohmisch																																					
Output breaking capacity at 160V AC 33 34	Imin:0,01A, Imax: 6A ohmisch																																					
Output breaking capacity at 24V DC 13 14, 23 24, 33 34	Imin:0,01A, Imax: 6A																																					
Fuse for supply voltage (external)	T1,0A/250V																																					
Fuse for circuit breaker	6A slow																																					
Switch-on delay	≤ 20 ms																																					
Fall-delay time	≤ 15 ms																																					
Contact material	AgC2O																																					
Airgap creepage connection/wiring	DIN VDE 0110-1 pluggable screw terminals min. 0,5qmm, max. 2,5 qmm.																																					
Dimensions (without connectors)	H: 85,5 mm W: 35 mm D: 58 mm																																					
Installation	Top hat rail mounting (DIN rail 35mm)																																					
Weight (without connectors)	110 g																																					
Ambient temperature	0° C ... 60°C																																					
Switching Cycle life time	>50 x 106																																					
Order reference																																						
	<table border="0"> <tr> <td>FSEM-C3-S</td> <td>with screw terminals</td> </tr> <tr> <td>FSEM-C3-F</td> <td>with cage clamp terminals</td> </tr> </table>		FSEM-C3-S	with screw terminals	FSEM-C3-F	with cage clamp terminals																																
FSEM-C3-S	with screw terminals																																					
FSEM-C3-F	with cage clamp terminals																																					

Delivery program

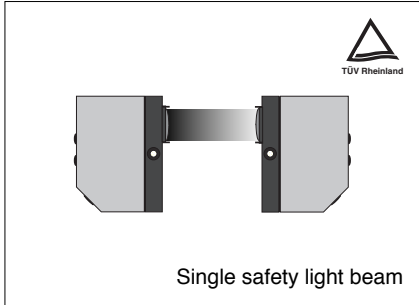
Fiessler Elektronik
 Kastellstr. 9 D-73734 Esslingen
 Telefon: 0711 / 91 96 97-0
 Telefax: 0711 / 91 96 97-50
 WWW.fiessler.de
 E-Mail: info@fiessler.de



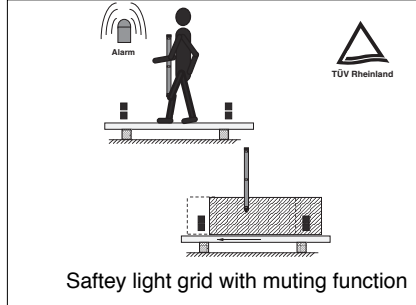
Safety light curtain



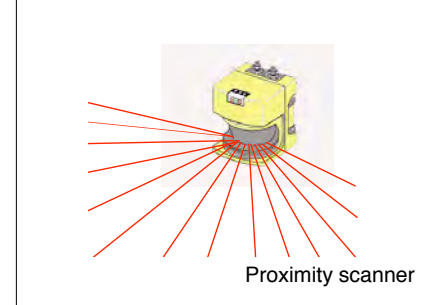
Safety light grid



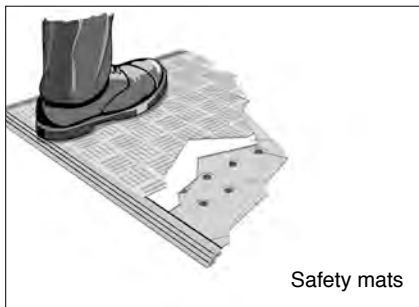
Single safety light beam



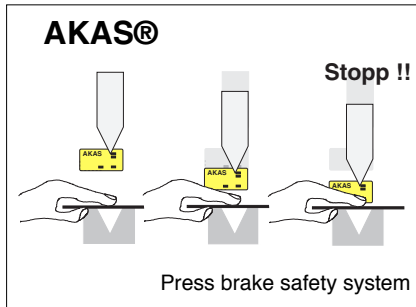
Safety light grid with muting function



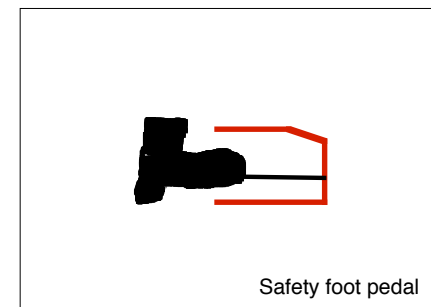
Proximity scanner



Safety mats



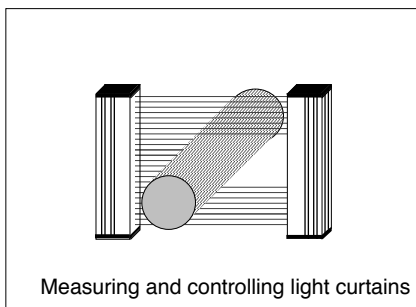
Press brake safety system



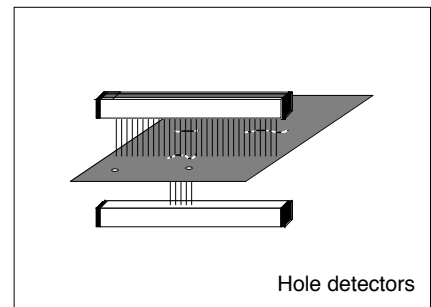
Safety foot pedal



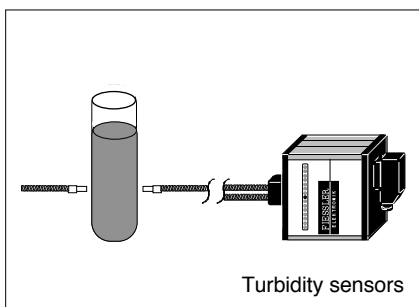
Safety PLC
 Safety controllers



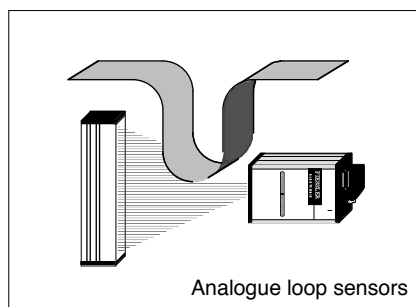
Measuring and controlling light curtains



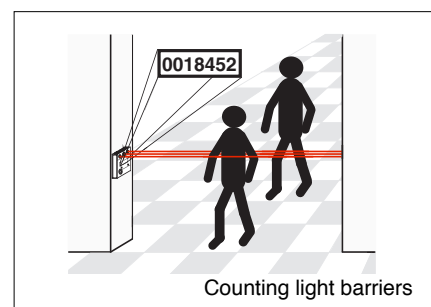
Hole detectors



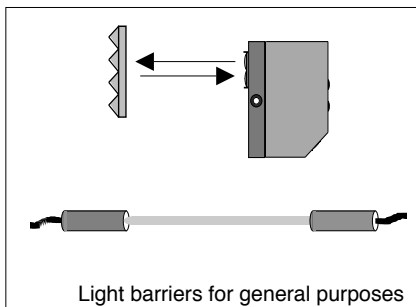
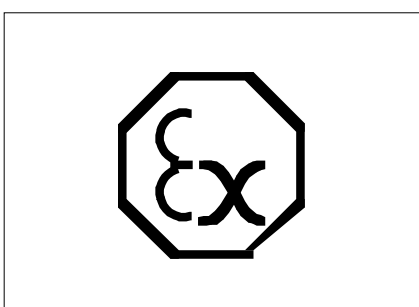
Turbidity sensors



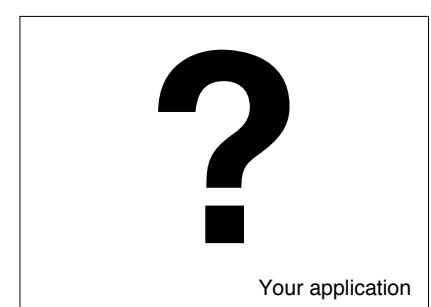
Analogue loop sensors



Counting light barriers



Light barriers for general purposes



Your application