

Features

- Protection module for 2 signal lines
- Nominal voltage 1 V DC
- Protection module for non-grounded signal lines
- Max. surge current (8/20 μs) 20 kA
- Uninterruptable operation (auto reset)
- Mounting on base module, pluggable
- Up to SIL 3 acc. to IEC 61508

Function

The protection module limits induced transients of different causes, e. g. lightning or switching operations. The limitation is achieved by diverting the current to earth and limiting the signal circuit voltage during the duration of the overvoltage pulse.

The device is HART transparent.

The device is inserted onto the base module and forms the surge protection barrier together with the base module.

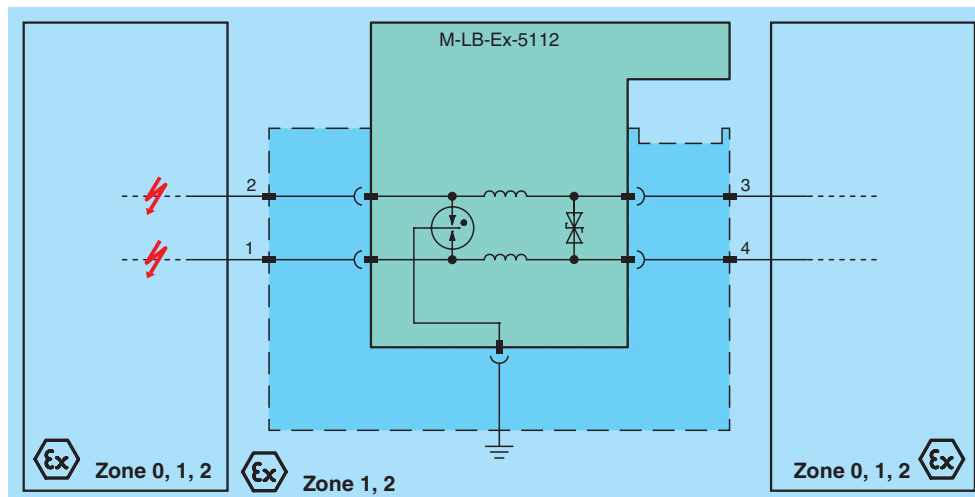
The device can be replaced without tools by a locking lever.

Assembly

Front view



Connection



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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

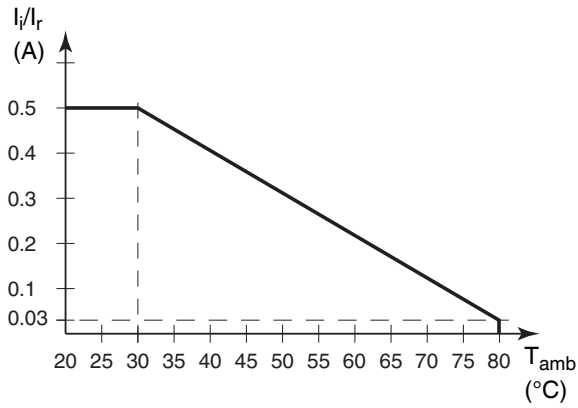
General specifications	
Number of protected signal lines	2
Topology	non-grounded
Functional safety related parameters	
Safety Integrity Level (SIL)	SIL 3
Electrical specifications	
Connection	protected area: terminals 3, 4 unprotected area: terminals 1, 2
Rated current I_r	500 mA , restrictions see derating characteristics
Leakage current	< 5 μ A at 1 V and 25 °C (77 °F) , line-line
Nominal voltage	1 V DC
Maximum continuous operating voltage U_c	6 V DC
Series resistance	\leq 0.5 Ω per line at 25 °C (77 °F)
Impulse rating	1 kV/0.5 kA (category C1) 10 kV/5 kA (category C2) 1 kA (category D1)
Impulse discharge current (10/350 μ s) I_{imp}	1 kA per line (2x)
Nominal discharge current (8/20 μ s) I_n	5 kA per line (10x)
Rated surge current (8/20 μ s) I_{SM}	10 kA per line (1x)
Total discharge current (8/20 μ s) I_{total}	20 kA (1x)
Voltage protection level U_p	\leq 12 V line-line for nominal discharge current I_n \leq 1400 V line-earth for nominal discharge current I_n
Impulse reset time	< 500 ms
Insertion loss	\leq 0.04 dB, at 0 ... 4 kHz, in 600 Ω -System \leq 3 dB, at 0 ... 450 kHz, in 100 Ω -System
Conformity	
Degree of protection	IEC 60529:2013
Functional safety	IEC/EN 61508:2010
Surge protective devices for low voltage	EN 61643-21:2001+A1:2009+A2:2013 IEC 61643-21:2001+A1:2008+A2:2012
Ambient conditions	
Ambient temperature	-40 ... 80 °C (-40 ... 176 °F) Observe the temperature range limited by derating, see section derating.
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
Relative humidity	max. 95 % , without condensation
Mechanical specifications	
Degree of protection	IP20
Mass	approx. 20 g
Dimensions	6.2 x 77 x 79 mm
Mounting	pluggable in base module for mounting on 35 mm DIN mounting rail
Data for application in connection with hazardous areas	
EU-Type Examination Certificate	BVS 17 ATEX E 069 X
Marking	$\text{\textcircled{Ex}}$ II 2(1)G Ex ia [ia Ga] IIC T6...T4 Gb $\text{\textcircled{Ex}}$ II (1)D [Ex ia Da] IIIC $\text{\textcircled{Ex}}$ I (M1) [Ex ia Ma] I
Temperature class	T6 for ambient temperature \leq 60 °C T5 for ambient temperature \leq 70 °C T4 for ambient temperature \leq 80 °C
Voltage U_i	6 V
Current I_i	500 mA , restrictions see derating characteristics
Internal capacitance C_i	negligible
Internal inductance L_i	36 μ H
Directive conformity	
Directive 2014/34/EU	EN 60079-0:2012+A11:2013 , EN 60079-11:2012
International approvals	
IECEX approval	
IECEX certificate	IECEX BVS 17.0061X
IECEX marking	Ex ia [ia Ga] IIC T6...T4 Gb [Ex ia Da] IIIC [Ex ia Ma] I
General information	
Supplementary information	Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see www.pepperl-fuchs.com .
Accessories	

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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

Designation	system components: - base module with screw terminals M-LB-Ex-5000 - base module with spring terminals M-LB-Ex-5000.SP - place holder module M-LB-Ex-5900 - insulation spacer M-UPR-I
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Derating of the Rated Current



In the case of a short circuit, the rated current must not be exceeded.