

Features

- Protection module for 1 signal line
- Nominal voltage 24 V DC
- Protection module for non-grounded signal lines
- Max. surge current (8/20 μs) 10 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 used in applications where more than 2 signal lines have to be protected, e. g. in applications with 3-wire resistance thermometers or 4-/6-wire measuring bridges.

The device is HART transparent.

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

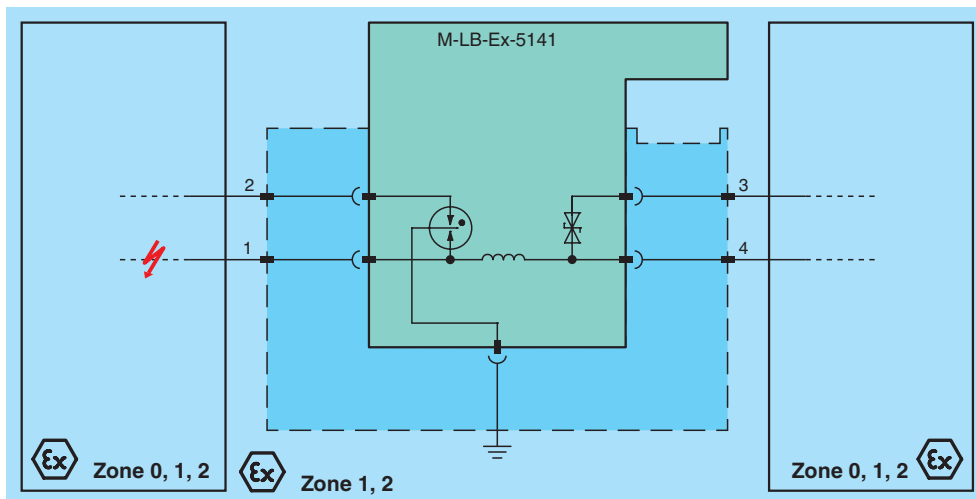
The device can be replaced without tools by a locking lever.

Assembly

Front view






Connection



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

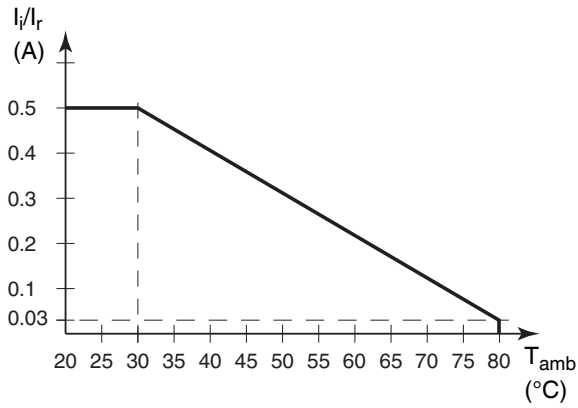
General specifications		
Number of protected signal lines		1
Topology		non-grounded
Functional safety related parameters		
Safety Integrity Level (SIL)		SIL 3
Electrical specifications		
Connection		protected area: terminal 4 unprotected area: terminals 1, 2, 3
Rated current I_r		500 mA , restrictions see derating characteristics
Leakage current		< 3 μ A at 24 V and 25 °C (77 °F) , line-line
Nominal voltage		24 V DC
Maximum continuous operating voltage U_c		30 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}		10 kA (1x)
Voltage protection level U_p		\leq 55 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 ... 550 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		 II 2(1)G Ex ia [ia Ga] IIC T6...T4 Gb  II (1)D [Ex ia Da] IIIC  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		30 V
Current I_i		500 mA , restrictions see derating characteristics
Internal capacitance C_i		negligible
Internal inductance L_i		18 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.