

## Features

- Protection module for 2 signal lines
- Nominal voltage 24 V DC
- Protection module for grounded signal lines
- Max. surge current (8/20  $\mu$ s) 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

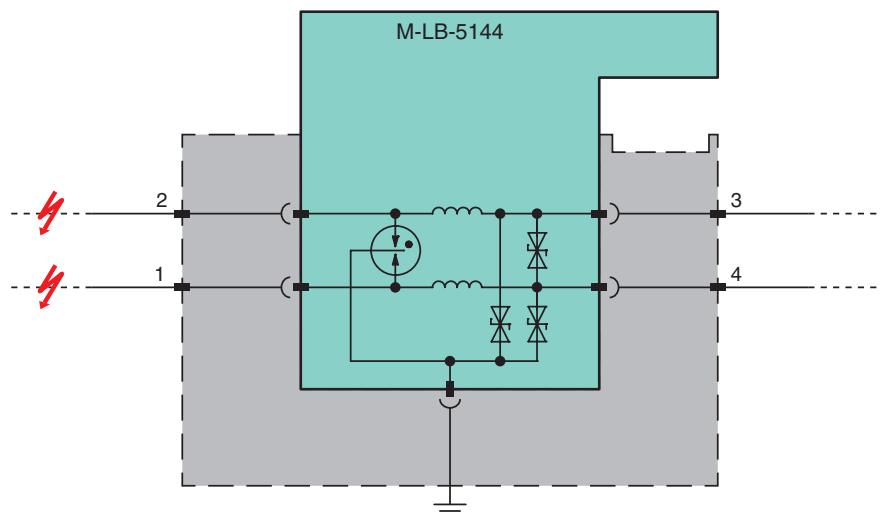


CE




SIL 3

## Connection



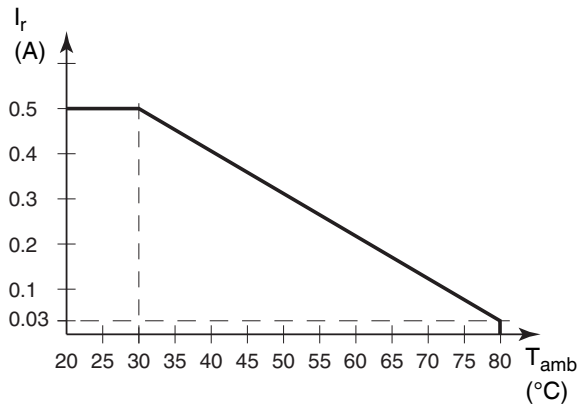
Zone 2

<b>General specifications</b>	
Number of protected signal lines	2
Topology	grounded
<b>Functional safety related parameters</b>	
Safety Integrity Level (SIL)	SIL 3
<b>Electrical specifications</b>	
Connection	protected area: terminals 3, 4 unprotected area: terminals 1, 2
Rated current $I_r$	500 mA , restrictions see derating characteristics
Leakage current	< 6 $\mu$ 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	$\leq 0.5 \Omega$ 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 $\mu$ s) $I_{imp}$	1 kA per line (2x)
Nominal discharge current (8/20 $\mu$ s) $I_n$	5 kA per line (10x)
Rated surge current (8/20 $\mu$ s) $I_{SM}$	10 kA per line (1x)
Total discharge current (8/20 $\mu$ s) $I_{total}$	20 kA (1x)
Voltage protection level $U_p$	$\leq 45$ V line-line for nominal discharge current $I_n$ $\leq 60$ 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 $\Omega$ -System $\leq 3$ dB, at 0 ... 500 kHz, in 100 $\Omega$ -System
<b>Conformity</b>	
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
<b>Ambient conditions</b>	
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
<b>Mechanical specifications</b>	
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
<b>Data for application in connection with hazardous areas</b>	
Certificate	BVS 17 ATEX E 070 X
Marking	 II 3G Ex ec IIC T6...T4 Gc
Temperature class	T6 for ambient temperature $\leq 60$ °C T5 for ambient temperature $\leq 70$ °C T4 for ambient temperature $\leq 80$ °C
Directive conformity	
Directive 2014/34/EU	EN 60079-0:2012+A11:2013 , EN 60079-7:2015
<b>International approvals</b>	
IECEX approval	
IECEX certificate	IECEX BVS 17.0061X
IECEX marking	Ex ec IIC T6...T4 Gc
<b>General information</b>	
Supplementary information	Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> .
<b>Accessories</b>	
Designation	system components: - base module with screw terminals M-LB-5000 - base module with spring terminals M-LB-5000.SP - place holder module M-LB-5900

Release date 2019-01-28 16:50 Date of issue 2019-01-28 269090\_eng.xml

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

**Derating of the Rated Current**



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