

**Features**

- Protection module for 1 signal line
- Nominal voltage 24 V DC
- Protection module for 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.

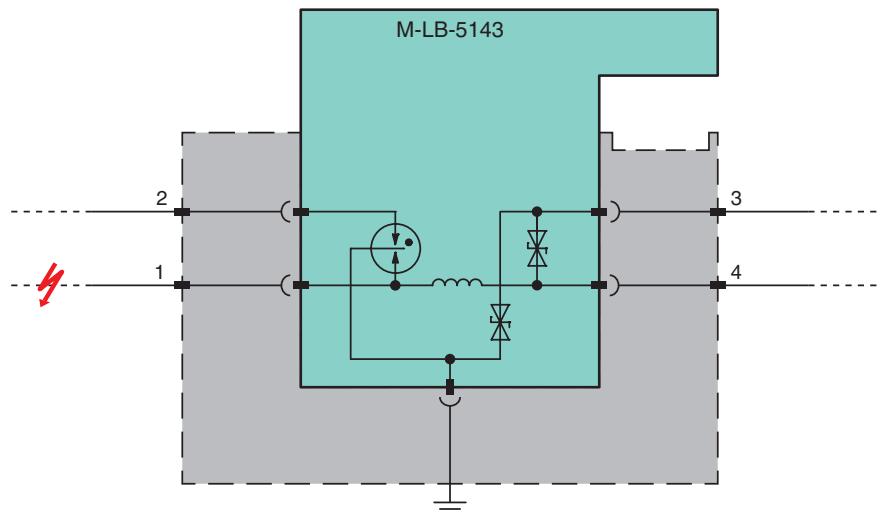
**Assembly**

Front view



**SIL 3**

**Connection**



**Zone 2**

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

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|  |   |
|--|---|
| <b>General specifications</b>                                  |   |
| Number of protected signal lines                               | 1   |
| Topology   | grounded  |
| <b>Functional safety related parameters</b>                    |   |
| Safety Integrity Level (SIL)                                   | SIL 3   |
| <b>Electrical specifications</b>                               |   |
| Connection   | protected area: terminal 4<br>unprotected area: terminals 1, 3  |
| Rated current $I_r$  | 500 mA , restrictions see derating characteristics  |
| Leakage current  | < 3 $\mu$ 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)<br>10 kV/5 kA (category C2)<br>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) $I_{total}$             | 10 kA (1x)  |
| Voltage protection level $U_p$                                 | $\leq 55$ V line-line for nominal discharge current $I_n$<br>$\leq 60$ 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<br>$\leq 3$ dB, at 0 ... 550 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<br>IEC 61643-21:2001+A1:2008+A2:2012   |
| <b>Ambient conditions</b>                                      |   |
| Ambient temperature  | -40 ... 80 °C (-40 ... 176 °F)<br>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<br>T5 for ambient temperature $\leq 70$ °C<br>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:<br>- base module with screw terminals M-LB-5000<br>- base module with spring terminals M-LB-5000.SP<br>- place holder module M-LB-5900                                       |

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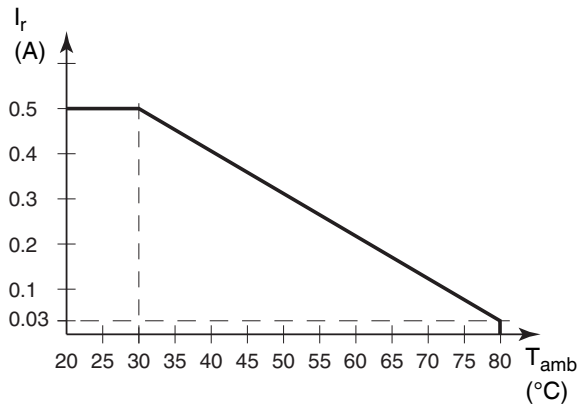
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**Derating of the Rated Current**



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