

**Model Number**

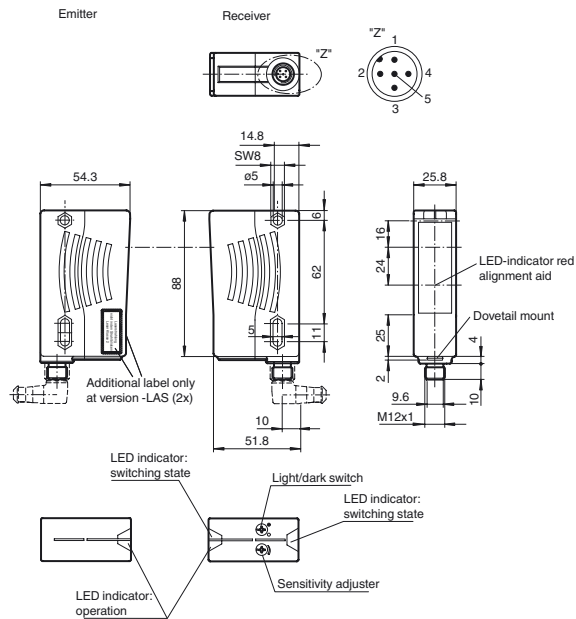
**LD28/LV28-F1/47/76a/82b/105**

Thru-beam sensor  
with 5-pin, M12 x 1 plastic connector

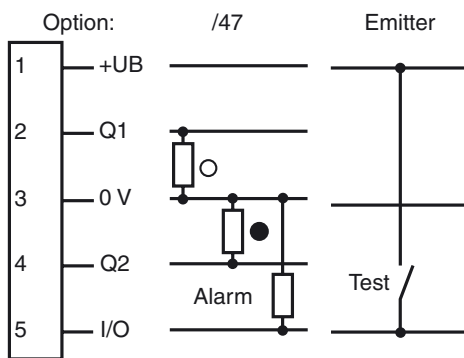
**Features**

- Universal series with highly versatile fields of use
- Resistant against noise: reliable operation under all conditions
- Highly visible LED as alignment aid in receiver optics
- Emitter with test input
- Version with red light

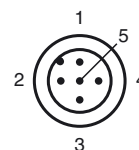
**Dimensions**



**Electrical connection**



**Pinout**



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

Pepperl+Fuchs Group  
www.pepperl-fuchs.com

USA: +1 330 486 0001  
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 4411  
fa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091  
fa-info@sg.pepperl-fuchs.com

**Technical data****System components**

|          |                    |
|----------|--------------------|
| Emitter  | LD28-F1/76a/105    |
| Receiver | LV28-F1/47/82b/105 |

**General specifications**

|                            |   |
|----------------------------|---|
| Effective detection range  | 0 ... 30 m  |
| Threshold detection range  | 40 m  |
| Light source               | LED   |
| Light type                 | modulated visible red light , 660 nm  |
| Alignment aid              | LED red (in receiver lens)<br>illuminated constantly: beam is interrupted,<br>flashes: reaching switching point,<br>off: sufficient stability control |
| Transmitter frequency      | F1 = 25 kHz   |
| Diameter of the light spot | approx. 0.6 m at 30 m   |
| Angle of divergence        | Emitter 1.2°,<br>Receiver 5°  |
| Ambient light limit        | 50000 Lux   |

**Functional safety related parameters**

|                                |       |
|--------------------------------|-------|
| MTTF <sub>d</sub>              | 620 a |
| Mission Time (T <sub>M</sub> ) | 20 a  |
| Diagnostic Coverage (DC)       | 90 %  |

**Indicators/operating means**

|                     |   |
|---------------------|---|
| Operation indicator | LED green   |
| Function indicator  | LED yellow:<br>1. LED lit constantly: signal > 2 x switching point (function reserve)<br>2. LED flashes: signal between 1 x switching point and 2 x switching point<br>3. LED off: signal < switching point |
| Control elements    | sensitivity adjustment (Adjustment to < 25% of the effective operating range) , Light/Dark switch   |

**Electrical specifications**

|                        |                |                                       |
|------------------------|----------------|---------------------------------------|
| Operating voltage      | U <sub>B</sub> | 10 ... 30 V DC                        |
| Ripple                 |                | 10 %                                  |
| No-load supply current | I <sub>0</sub> | Emitter: ≤ 50 mA<br>Receiver: ≤ 35 mA |

**Input**

|            |  |
|------------|--|
| Test input | emitter deactivation at +U <sub>B</sub> (I <sub>max</sub> < 3 mA at 30 V DC) |
|------------|--|

**Output**

|                             |   |         |
|-----------------------------|---|---------|
| Pre-fault indication output | 1 PNP transistor, short-circuit protected, protected from reverse polarity, open collector, U <sub>max</sub> = 30 V DC, I <sub>max</sub> = 0.2 A<br>The output becomes inactive if the signal level has fallen below the function reserve for approx. 10 s (yellow and red LEDs flash).<br>If the light beam is interrupted four times during this period, the output immediately becomes inactive. |         |
| Switching type              | light/dark on, switchable   |         |
| Signal output               | 2 PNP, complementary, short-circuit protected, reverse polarity protected , open collectors   |         |
| Switching voltage           | max. 30 V DC  |         |
| Switching current           | max. 200 mA   |         |
| Switching frequency         | f   | 1000 Hz |
| Response time               |   | 0.5 ms  |

**Ambient conditions**

|                     |                                |
|---------------------|--------------------------------|
| Ambient temperature | -40 ... 60 °C (-40 ... 140 °F) |
| Storage temperature | -40 ... 75 °C (-40 ... 167 °F) |

**Mechanical specifications**

|                   |                                  |
|-------------------|----------------------------------|
| Protection degree | IP67                             |
| Connection        | 5-pin, M12 x 1 plastic connector |
| Material          |                                  |
| Housing           | Plastic ABS                      |
| Optical face      | Plastic pane                     |
| Mass              | 140 g (emitter and receiver)     |

**Compliance with standards and directives**

|                      |   |
|----------------------|---|
| Directive conformity | EMC Directive 2004/108/EC               |
| Standard conformity  |   |
| Product standard     | EN 60947-5-2:2007<br>IEC 60947-5-2:2007 |

**Approvals and certificates**

|                  |   |
|------------------|---|
| Protection class | II, rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1 |
| UL approval      | cULus Listed , Class 2 power source   |
| CCC approval     | CCC approval / marking not required for products rated ≤ 36 V                   |

**Accessories****OMH-05**

Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm

**OMH-07**

Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm

**OMH-21**

Mounting bracket

**OMH-22**

Mounting bracket

**OMH-MLV11-K**

dove tail mounting clamp

**OMH-RLK29-HW**

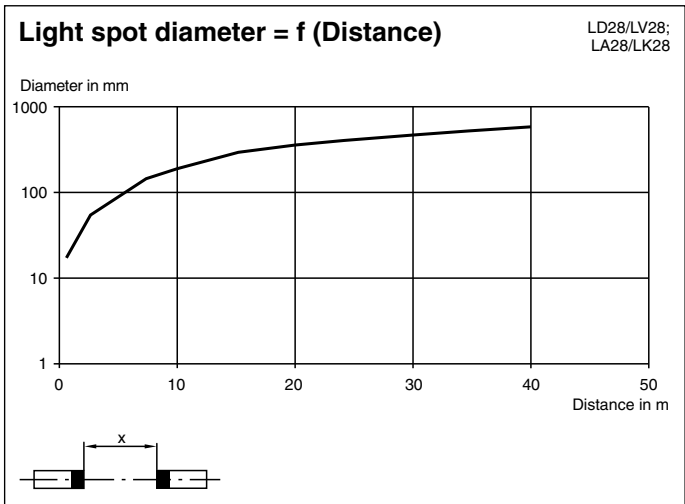
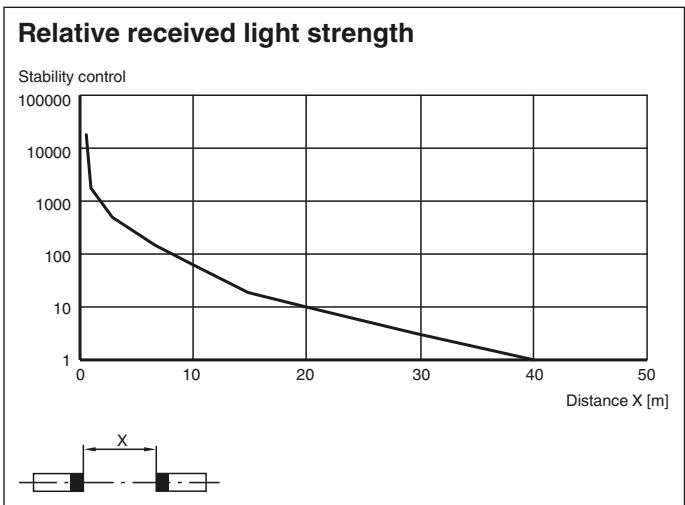
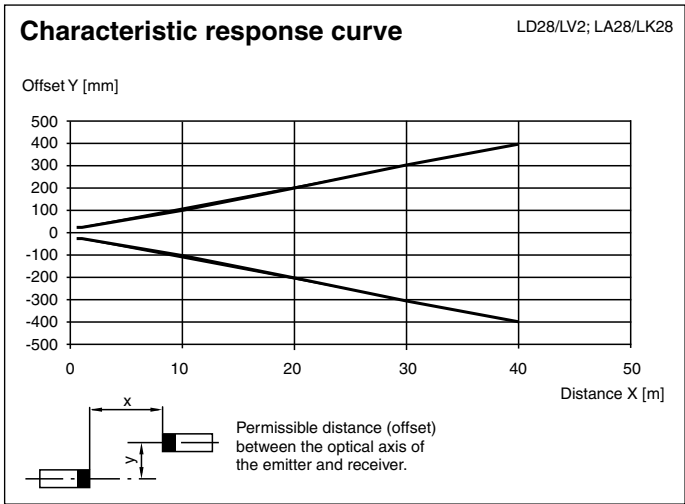
Mounting bracket for rear wall mounting

**OMH-RL28-C**

Weld slag cover model

Additional accessories can be found in the Internet.

Curves/Diagrams



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