



**Model Number**

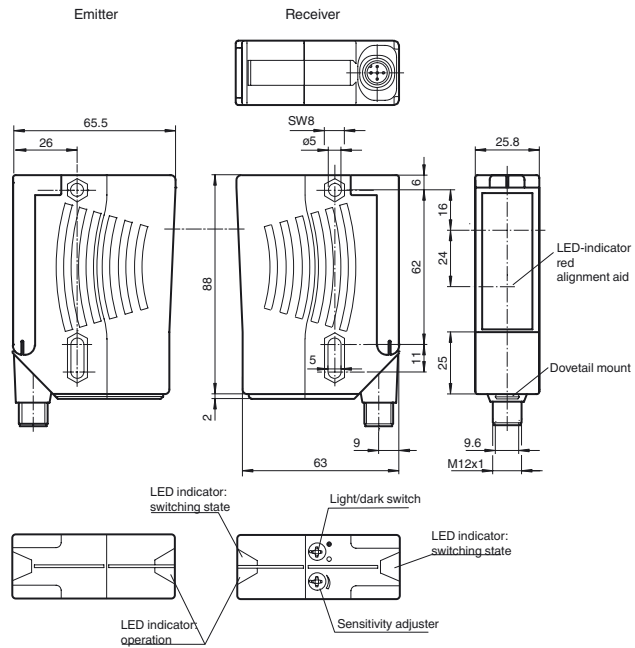
**LD28/LV28-F1-3974/47/82b/112**

Thru-beam sensor  
with metal connector M12; 5-pin, 90°  
convertible

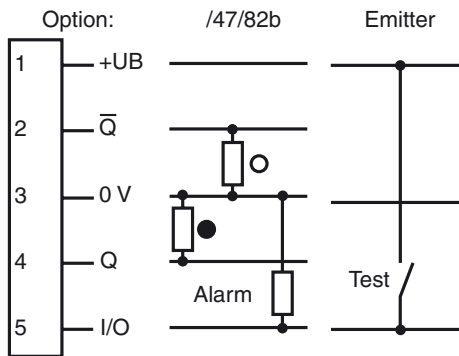
**Features**

- Ultra bright LEDs for power on, weak signal indication and switching state
- Highly visible LED as alignment aid in receiver optics
- Emitter deactivation
- Not sensitive to ambient light, even with switched energy saving lamps
- Extra vibration proof version
- Waterproof, degree of protection IP67

**Dimensions**

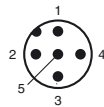


**Electrical connection**



○ = Light on  
● = Dark on

**Pinout**



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

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

Emitter	LD28-F1-3974/76a/112
Receiver	LV28-F1-3974/47/82b/112

**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) illuminated constantly: beam is interrupted, flashes: reaching switching point, 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°, 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: 1. LED lit constantly: signal > 2 x switching point (function reserve) 2. LED flashes: signal between 1 x switching point and 2 x switching point 3. LED off: signal < switching point
Control elements	sensitivity adjustment (Adjustment to < 25% of the effective operating range) , Light-on/dark-on changeover 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 Receiver: ≤ 35 mA

**Input**

Test input	emitter deactivation at +U <sub>B</sub> (I <sub>max</sub> < 3 mA at 30 V DC)
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**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 The output becomes inactive if the signal level has fallen below the function reserve for approx. 10 s (yellow and red LEDs flash). 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	

**Conformity**

Product standard	EN 60947-5-2
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**Ambient conditions**

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

**Mechanical specifications**

Housing width	25.8 mm
Housing height	88 mm
Housing depth	65.5 mm
Degree of protection	IP67
Connection	Metal connector, M12, 5-pin, 90° rotatable
Material	
Housing	Plastic ABS
Optical face	Plastic pane
Mass	140 g (emitter and receiver)

**Approvals and certificates**

EAC conformity	TR CU 020/2011
UL approval	cULus
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**

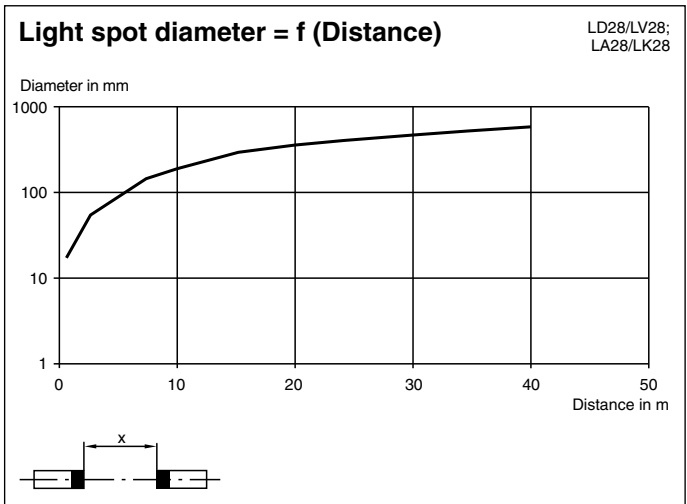
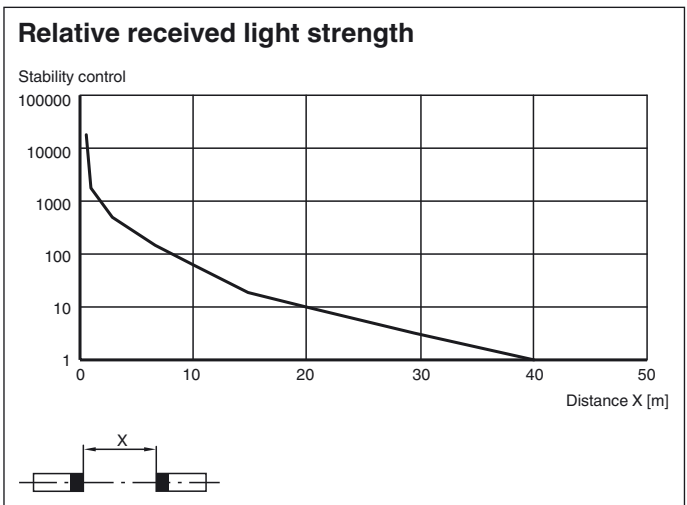
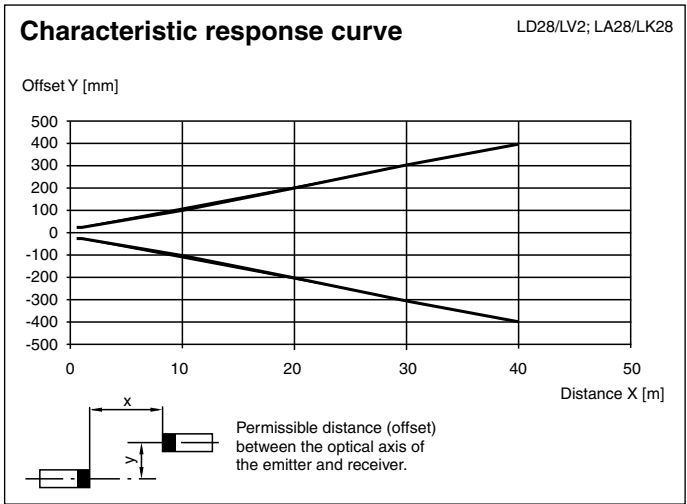
Mounting bracket for rear wall mounting

**OMH-RL28-C**

Weld slag cover model

Additional accessories can be found in the Internet.

**Curves/Diagrams**



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