



Model Number

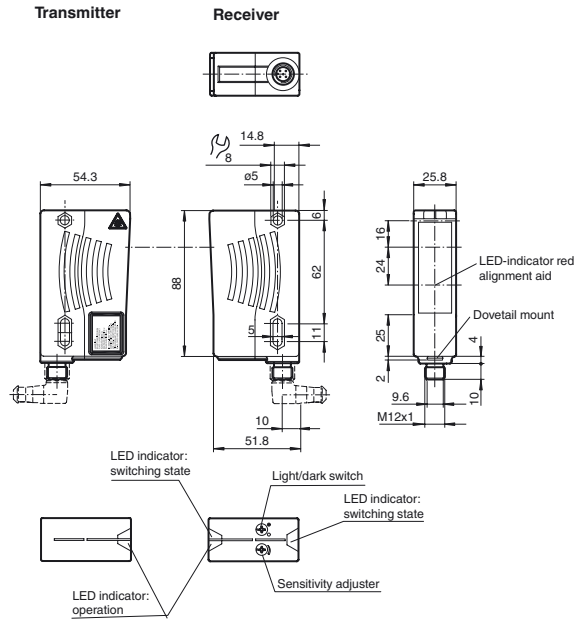
LD28/LV28-LAS-F1/47/76a/82b/105

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

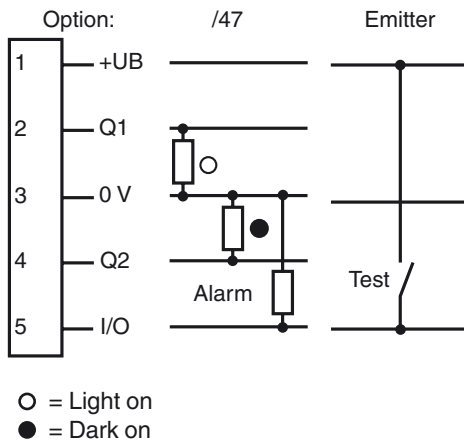
Features

- 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
- Laser version for long ranges

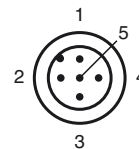
Dimensions



Electrical connection



Pinout



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Technical data**System components**

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

General specifications

Effective detection range	0 ... 300 m
Threshold detection range	400 m
Light source	laser diode
Light type	modulated visible red light

Laser nominal ratings

Note	LASER LIGHT , DO NOT STARE INTO BEAM
Laser class	2
Wave length	650 nm
Beam divergence	< 1.5 mrad
Pulse length	20 µs
Repetition rate	25 kHz
max. pulse energy	18 nJ

Alignment aid
LED red (in receiver lens)
illuminated constantly: beam is interrupted,
flashes: reaching switching point,
off: sufficient stability control

Diameter of the light spot	approx. 6 mm at 5 m, approx. 75 x 300 mm at 300 m vertical to housing axis
Angle of divergence	Emitter: 0.06 ° Receiver: 5 °
Ambient light limit	50000 Lux

Functional safety related parameters

MTTF _d	540 a
Mission Time (T _M)	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/Dark switch

Electrical specifications

Operating voltage	U _B	10 ... 30 V DC
Ripple		10 %
No-load supply current	I ₀	Emitter: ≤ 55 mA Receiver: ≤ 35 mA

Input

Test input	emitter deactivation at +U _B
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Output

Pre-fault indication output	1 PNP transistor, short-circuit protected, protected from reverse polarity, open collector, U _{max} = 30 V DC, I _{max} = 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	

Ambient conditions

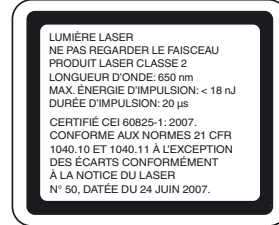
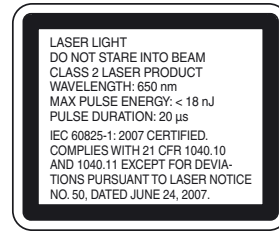
Ambient temperature	-10 ... 50 °C (14 ... 122 °F)
Storage temperature	-20 ... 75 °C (-4 ... 167 °F)

Mechanical specifications

Degree of protection	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 IEC 60947-5-2:2007

Laserlabel**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

V15-G-2M-PUR

Female cordset, M12, 5-pin, PUR cable

V15-W-2M-PUR

Female cordset, M12, 5-pin, PUR cable

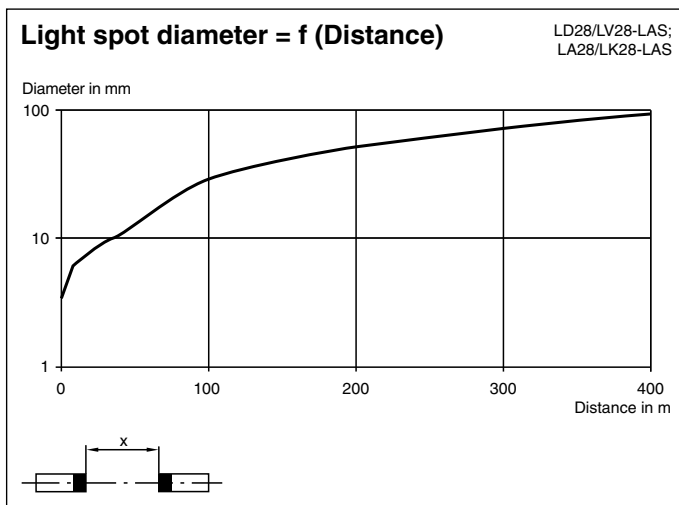
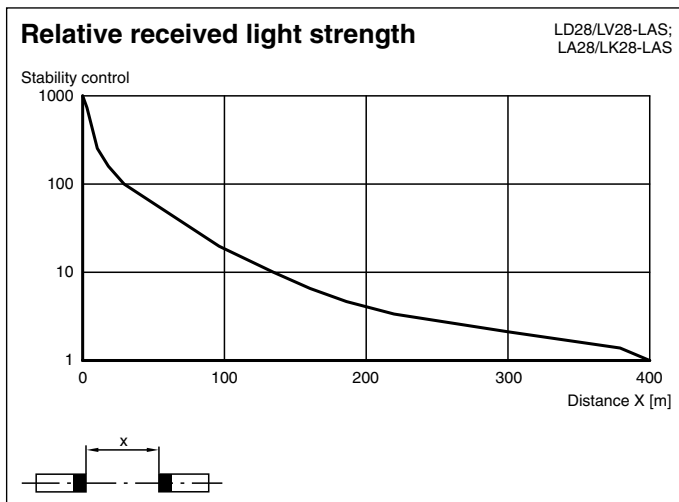
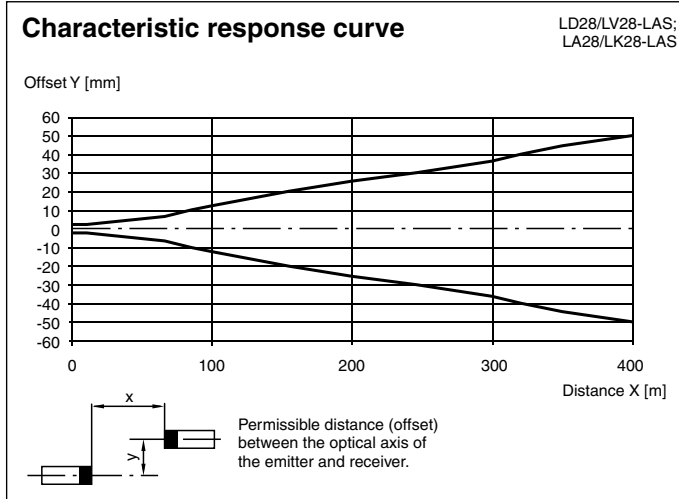
Other suitable accessories can be found at www.pepperl-fuchs.com

Laser class	IEC 60825-1:2007 Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007
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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

Curves/Diagrams



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Laser notice laser class 2

- The irradiation can lead to irritation especially in a dark environment. Do not point at people!
- Caution: Do not look into the beam!

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

- Maintenance and repairs should only be carried out by authorized service personnel!
- Attach the device so that the warning is clearly visible and readable.
- Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.