



Model Number

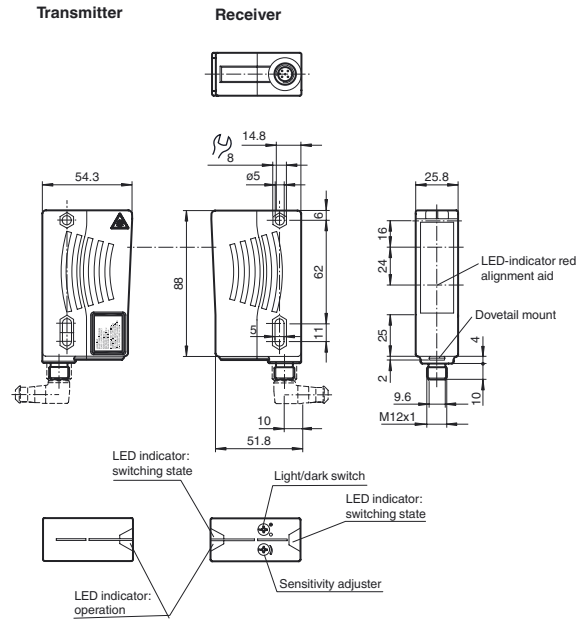
LD28/LV28-LAS-F1/47/76a/82b/105

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

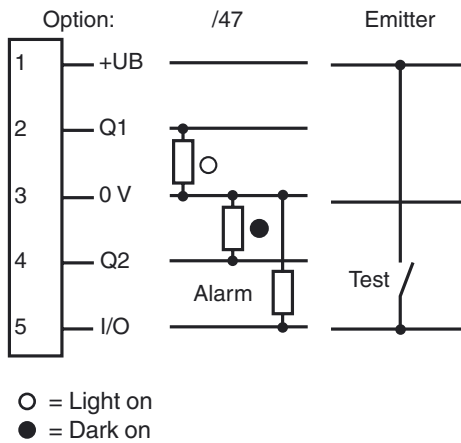
Features

- 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

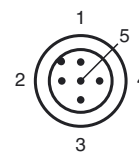
Dimensions



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

LASER LIGHT
DO NOT STARE INTO BEAM
CLASS 2 LASER PRODUCT
WAVELENGTH: 650 nm
MAX PULSE ENERGY: < 18 nJ
PULSE DURATION: 20 µs
IEC 60825-1: 2007 CERTIFIED.
COMPLIES WITH 21 CFR 1040.10
AND 1040.11 EXCEPT FOR DEVIATIONS PURSUANT TO LASER NOTICE NO. 50, DATED JUNE 24, 2007.

LUMIÈRE LASER
NE PAS REGARDER LE FAISCEAU
PRODUIT LASER CLASSE 2
LONGUEUR D'ONDE: 650 nm
MAX. ÉNERGIE D'IMPULSION: < 18 nJ
DURÉE D'IMPULSION: 20 µs
CERTIFIÉ CEI 60825-1: 2007.
CONFORME AUX NORMES 21 CFR 1040.10 ET 1040.11 À L'EXCEPTION DES ÉCARTS CONFORMÉMENT À LA NOTICE DU LASER N° 50, DATÉE DU 24 JUIN 2007.

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

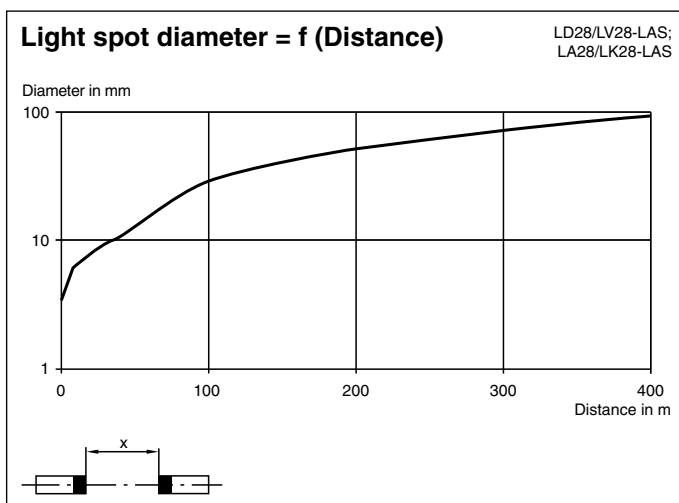
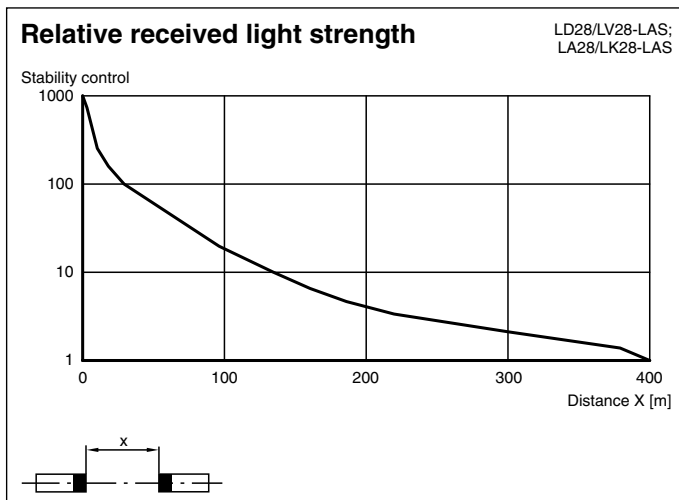
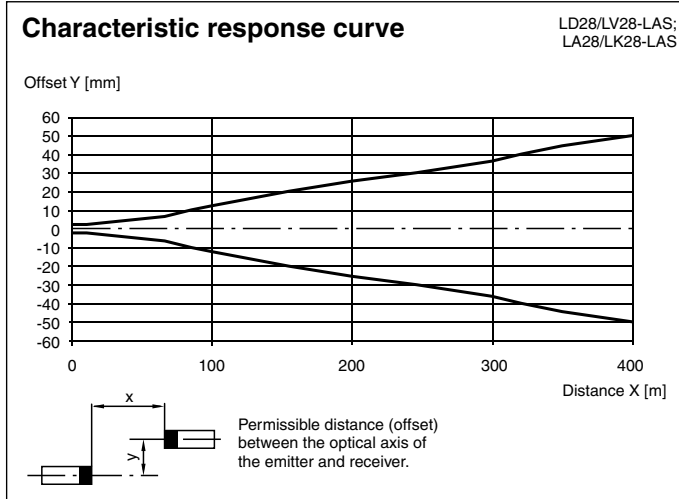
Approvals and certificates

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".

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- 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.

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