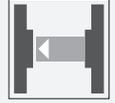




# Thru-beam sensor (pair)

## LD28/LV28-LAS-F1-7675

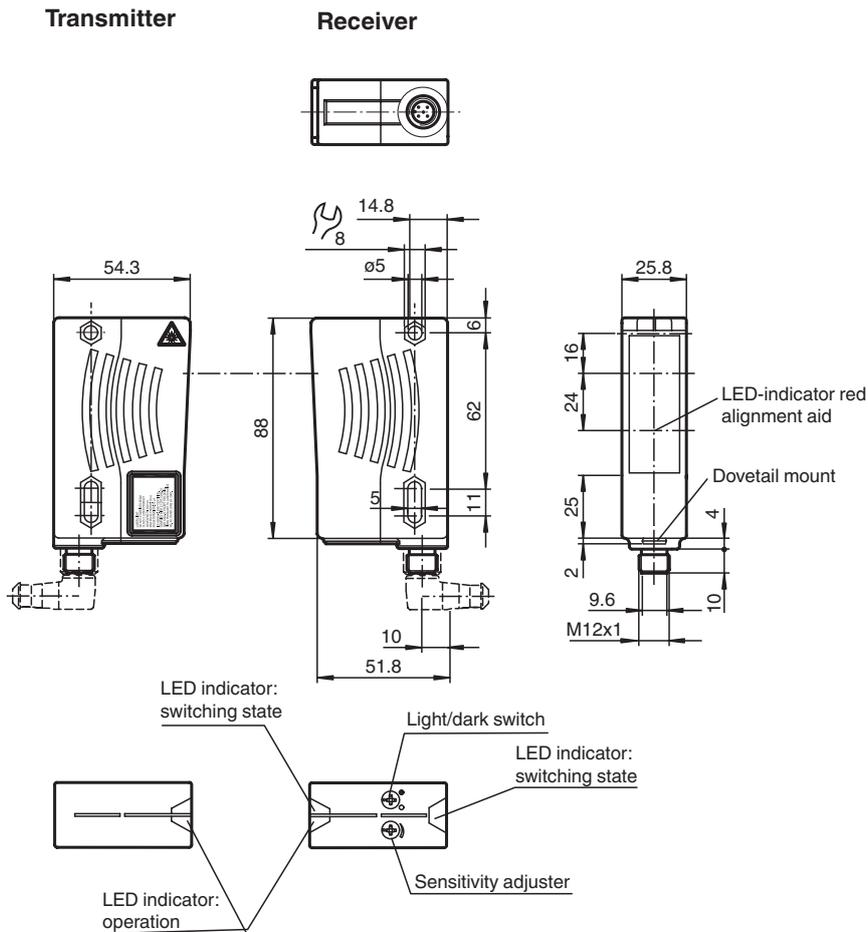


- Universal series with highly versatile fields of use
- Resistant against noise: reliable operation under all conditions
- Highly visible LED as alignment aid in receiver optics
- Emitter with test input
- Laser version for long ranges

Universal thru-beam sensor, large housing design, 120 m detection range, red laser light, laser class 2, 25 kHz transmission frequency, light/dark on, DC version, push-pull output, test input, pre-fault output, M12 plug



### Dimensions



### Technical Data

#### System components

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

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## Technical Data

Emitter	LD28-LAS-F1-7675	
Receiver	LV28-LAS-F1-7675	
<b>General specifications</b>		
Effective detection range	0 ... 120 m	
Threshold detection range	150 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	< 4 mrad	
Pulse length	20 $\mu$ s	
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. 20 mm at 5 m, approx. 75 mm x 300 mm at 70 m horizontal in relation to the housing axis	
Opening angle	Emitter: 0.23 ° Receiver: 5 °	
Ambient light limit	50000 Lux	
<b>Functional safety related parameters</b>		
MTTF <sub>d</sub>	540 a	
Mission Time (T <sub>M</sub> )	20 a	
Diagnostic Coverage (DC)	90 %	
<b>Indicators/operating means</b>		
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	
<b>Electrical specifications</b>		
Operating voltage	U <sub>B</sub>	10 ... 30 V DC
Ripple		10 %
No-load supply current	I <sub>0</sub>	Emitter: $\leq$ 55 mA Receiver: $\leq$ 40 mA
<b>Input</b>		
Test input	emitter deactivation at +U <sub>B</sub>	
<b>Output</b>		
Stability alarm 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	1 push-pull (4 in 1) output, short-circuit protected, reverse polarity protected	
Switching voltage	max. 30 V DC	
Switching current	max. 100 mA	
Switching frequency	f	1000 Hz
Response time	0.5 ms	
<b>Conformity</b>		
Product standard	EN 60947-5-2	
Laser safety	EN 60825-1	

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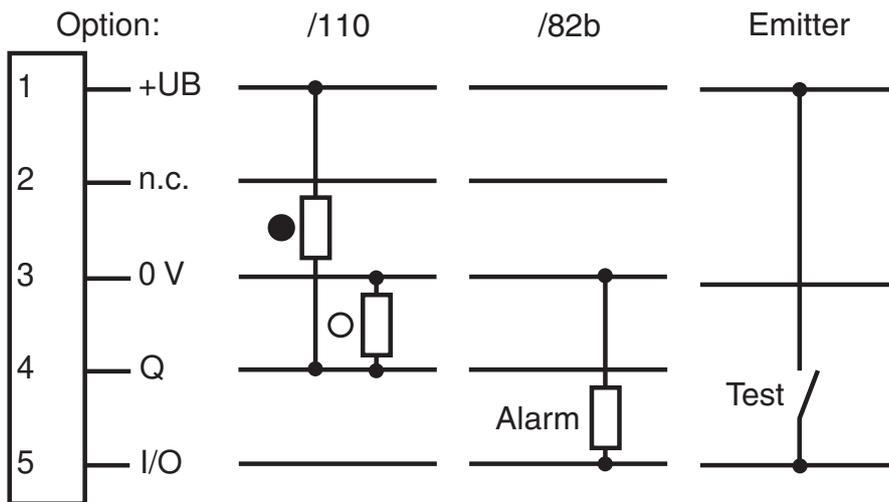
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**PEPPERL+FUCHS**

## Technical Data

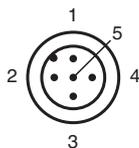
Approvals and certificates	
Protection class	II, rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1
UL approval	cULus Listed , Class 2 power source
CCC approval	CCC approval / marking not required for products rated ≤36 V
FDA approval	IEC 60825-1:2007 Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007
Ambient conditions	
Ambient temperature	0 ... 40 °C (32 ... 104 °F)
Storage temperature	-20 ... 75 °C (-4 ... 167 °F)
Mechanical specifications	
Housing width	25.8 mm
Housing height	88 mm
Housing depth	54.3 mm
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)

## Connection Assignment



○ = Light on  
● = Dark on

## Connection Assignment



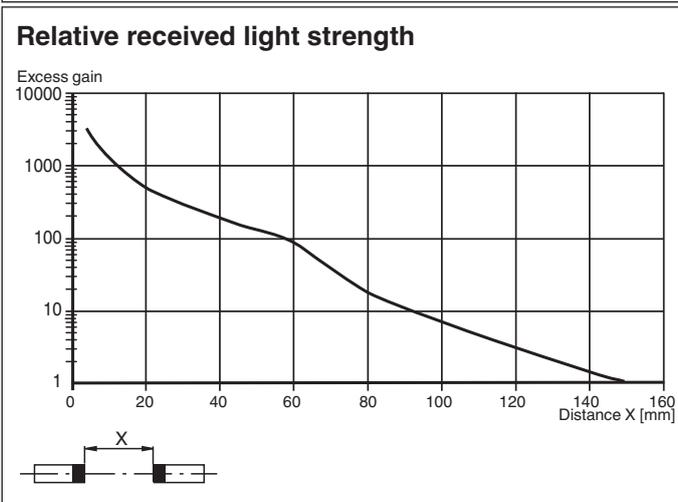
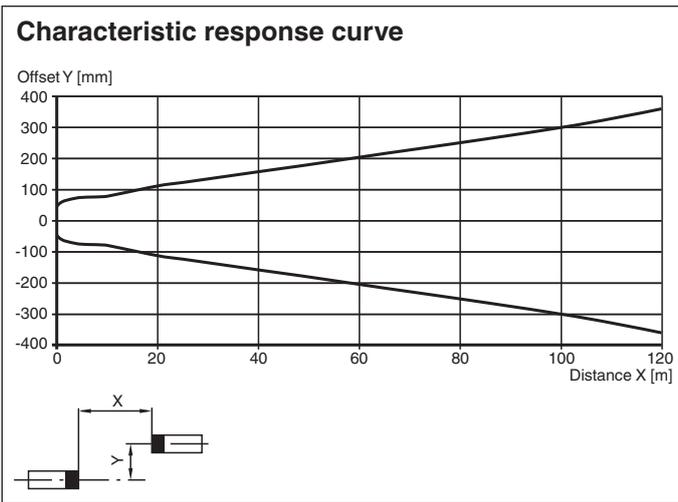
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## Connection Assignment

Wire colors in accordance with EN 60947-5-2

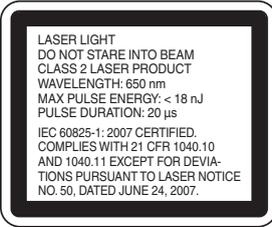
1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)
5	GY	(gray)

## Characteristic Curve



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**Safety Information**



**Safety Information**

**Laser Class 2 Information**

The irradiation can lead to irritation especially in a dark environment. Do not point at people!

Caution: Do not look into the beam!

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.

**Accessories**

	<b>OMH-05</b>	Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm
	<b>OMH-21</b>	Mounting bracket: mounting aid for sensors in the RL* series
	<b>OMH-22</b>	Mounting aid for RL* series
	<b>OMH-RLK29-HW</b>	Mounting bracket for rear wall mounting
	<b>OMH-RL28-C</b>	Weld slag cover model
	<b>V15-G-2M-PUR</b>	Female cordset single-ended M12 straight A-coded, 5-pin, PUR cable grey

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