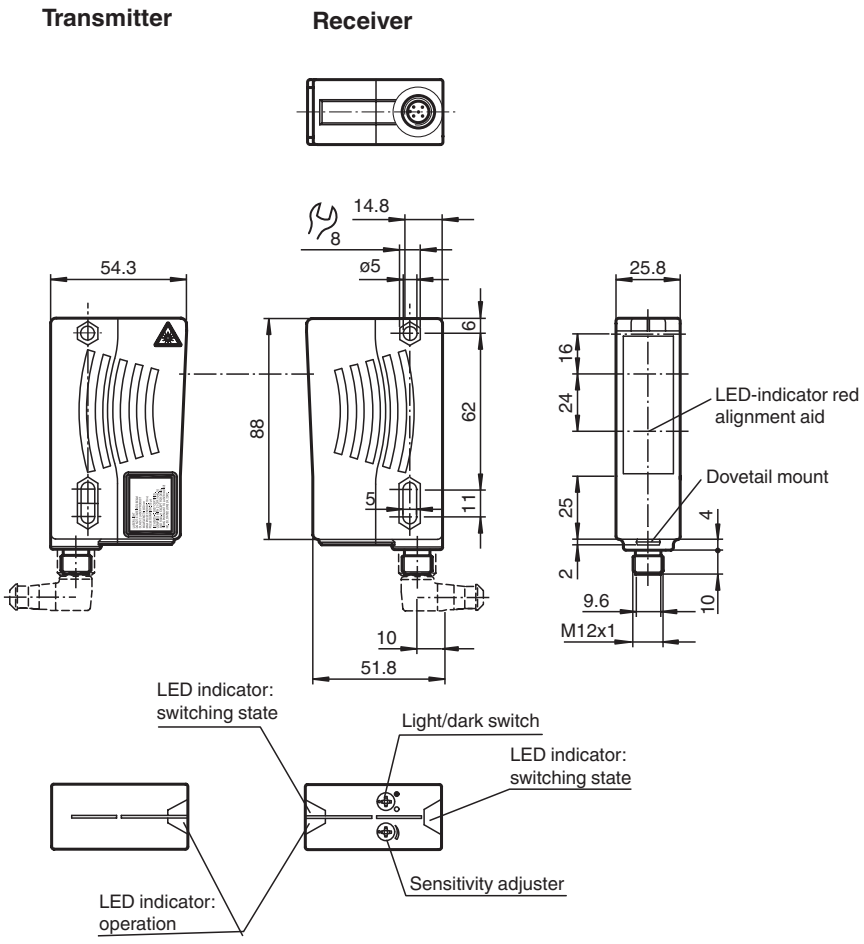
Thru-beam sensor (pair)

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

Release date: 2023-09-05 Date of issue: 2023-09-05 Filename: 310277_eng.pdf

Technical Data

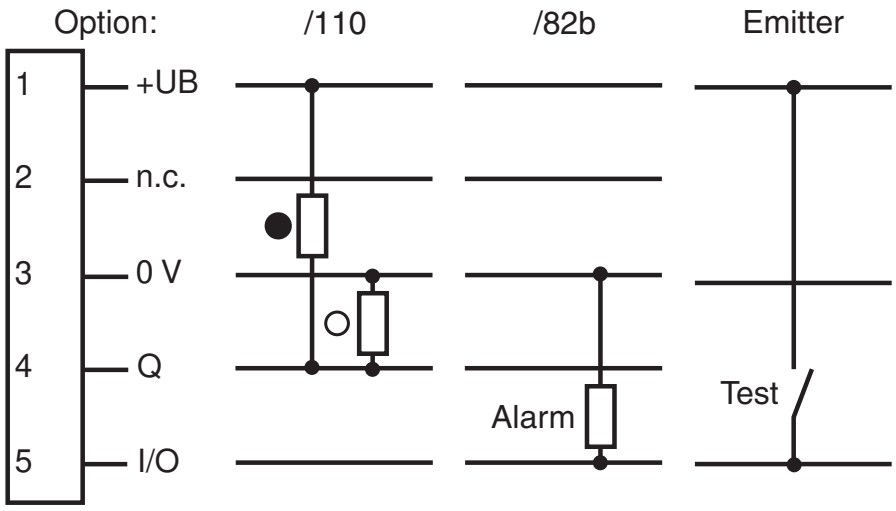
Emitter		LD28-LAS-F1-7675
Receiver		LV28-LAS-F1-7675
General specifications		
Effective detection range		0 ... 120 m
Threshold detection range		150 m
Light source		laser diode
Light type		modulated visible red light
Laser nominal ratings		
Note		LASER LIGHT , DO NOT STARE INTO BEAM
Laser class		2
Wave length		650 nm
Beam divergence		< 4 mrad
Pulse length		20 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. 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
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-on/dark-on changeover switch
Electrical specifications		
Operating voltage	U_B	10 ... 30 V DC
Ripple		10 %
No-load supply current	I_0	Emitter: ≤ 55 mA Receiver: ≤ 40 mA
Input		
Test input		emitter deactivation at $+U_B$
Output		
Stability alarm output		1 PNP transistor, short-circuit protected, protected from reverse polarity, open collector, Umax = 30 V DC, Imax = 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
Conformity		
Product standard		EN 60947-5-2
Laser safety		EN 60825-1

Release date: 2023-09-05 Date of issue: 2023-09-05 Filename: 310277_eng.pdf

Technical Data

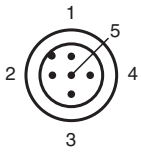
Approvals and certificates		
Protection class		II, rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1
UL approval		cULus Listed , Class 2 power source
CCC approval		CCC approval / marking not required for products rated ≤36 V
FDA approval		IEC 60825-1:2007 Complies with 21 CFR 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



Release date: 2023-09-05 Date of issue: 2023-09-05 Filename: 310277_eng.pdf

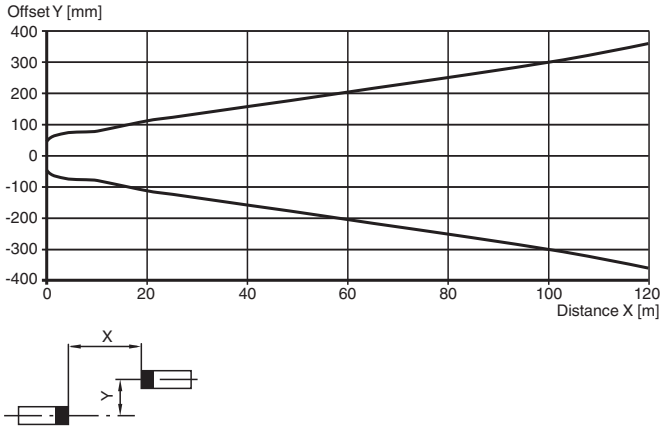
Connection Assignment

Wire colors in accordance with EN 60947-5-2

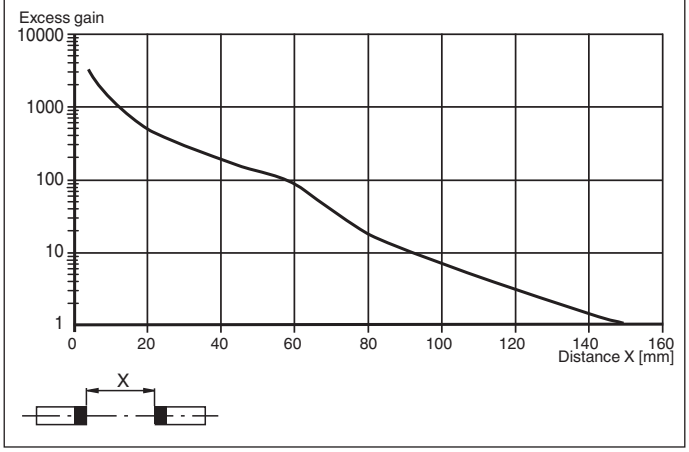
1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)
5	GY	(gray)

Characteristic Curve

Characteristic response curve

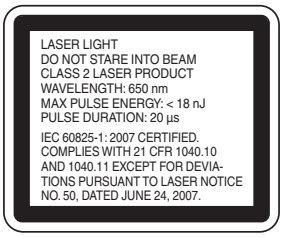


Relative received light strength



Release date: 2023-09-05 Date of issue: 2023-09-05 Filename: 310277_eng.pdf

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

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

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