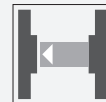




Thru-beam sensor

LD28/LV28-F2/49/76a/82b/105

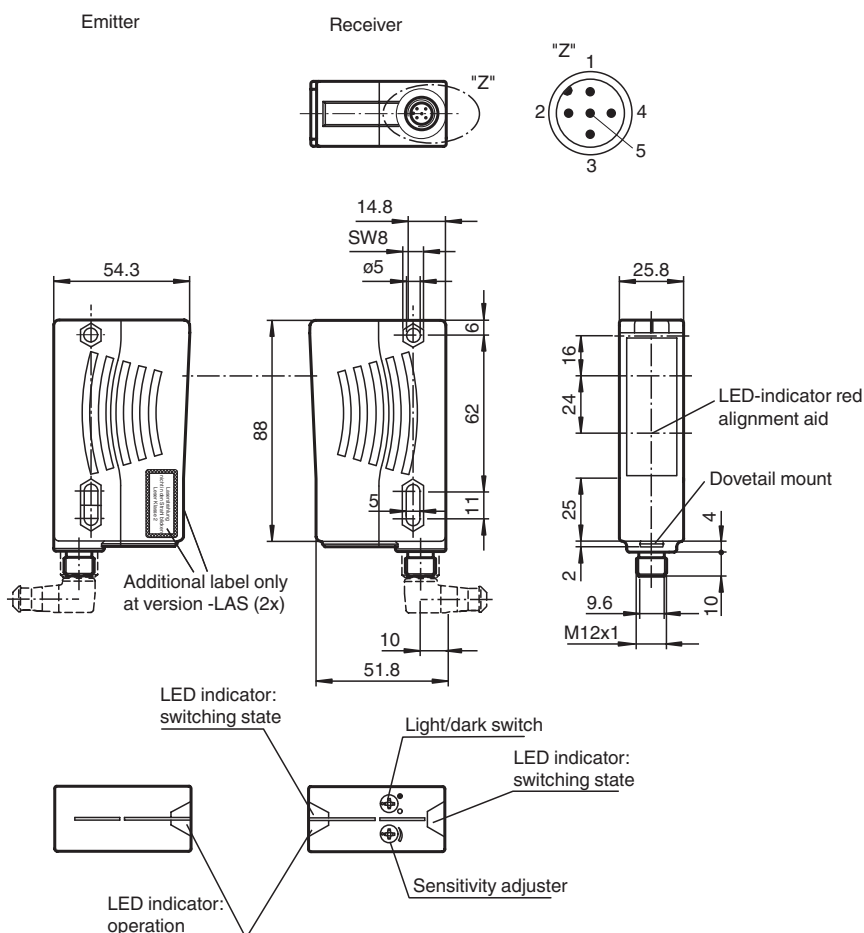


- Ultra bright LEDs for power on, weak signal indication and switching state
- Highly visible LED as alignment aid in receiver optics
- Emitter deactivation
- Various transmitter frequencies
- Not sensitive to ambient light, even with switched energy saving lamps
- Waterproof, degree of protection IP67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

Universal thru-beam sensor, large housing design, 30 m detection range, red light, 30 kHz transmission frequency, light/dark on, DC version, NPN output, PNP output, test input, pre-fault output, M12 plug



Dimensions



Technical Data

System components

Emitter

LD28-F2/76a/105

Technical Data

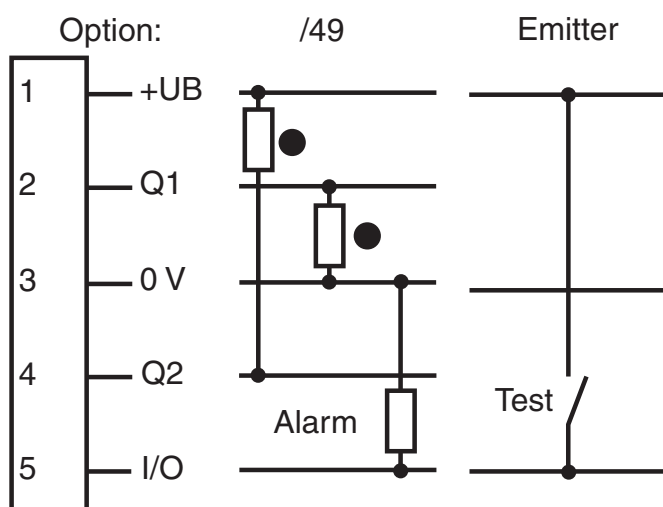
Receiver		LV28-F2/49/82b/105
General specifications		
Effective detection range		0 ... 30 m
Threshold detection range		40 m
Light source		LED
Light type		modulated visible red light , 660 nm
Alignment aid		LED red (in receiver lens) illuminated constantly: beam is interrupted, flashes: reaching switching point, off: sufficient stability control
Transmitter frequency		F2 = 30 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 _d		620 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: ≤ 50 mA Receiver: ≤ 35 mA
Input		
Test input		emitter deactivation at +U _B (I _{max.} < 3 mA at 30 V DC)
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		1 NPN, 1 PNP synchronized-switching, 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
Approvals and certificates		
EAC conformity		TR CU 020/2011
Protection class		II, rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1
UL approval		cULus
CCC approval		CCC approval / marking not required for products rated ≤36 V
Ambient conditions		
Ambient temperature		-40 ... 60 °C (-40 ... 140 °F)
Storage temperature		-40 ... 75 °C (-40 ... 167 °F)
Mechanical specifications		

Release date: 2021-11-11 Date of issue: 2021-11-11 Filename: 115579_eng.pdf

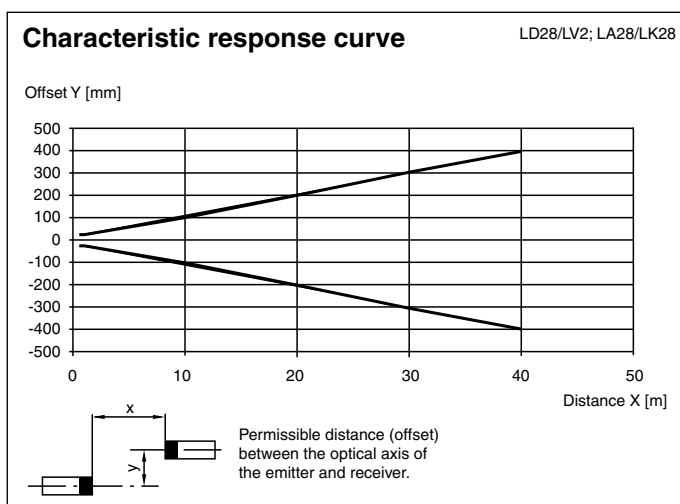
Technical Data

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

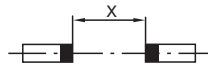
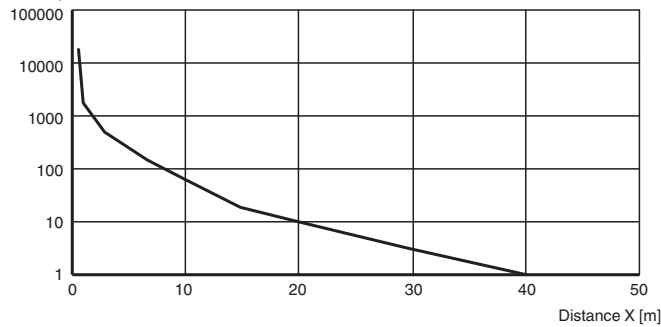


Characteristic Curve

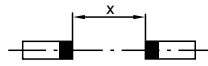
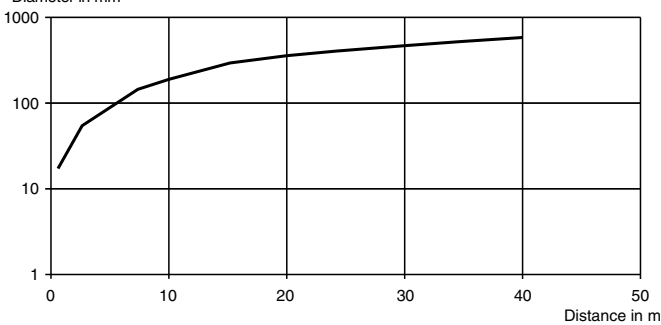








Relative received light strength

Stability control

**Light spot diameter = f (Distance)**LD28/LV28;
LA28/LK28

Diameter in mm

**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