



Model Number

LD28/LV28-F1-3057/35/47/115b

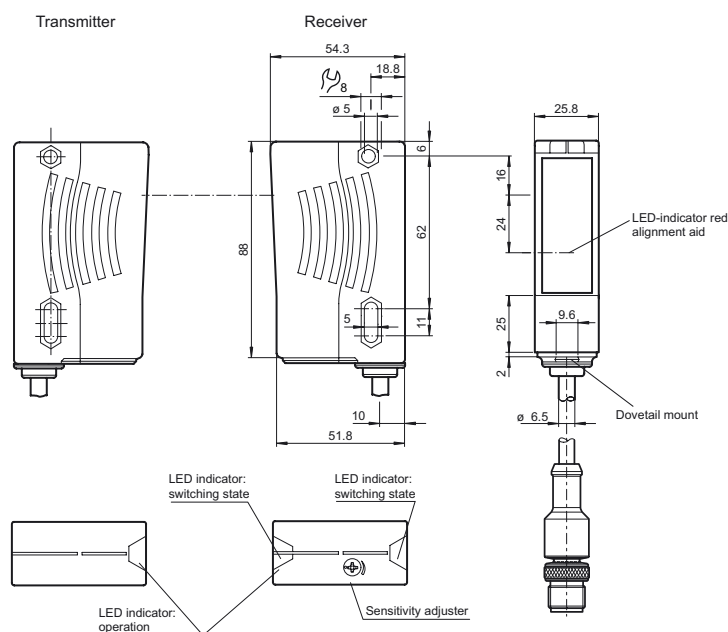
Thru-beam sensor

fixed cable 230 mm with M12 x 1 male connector, 4-pin

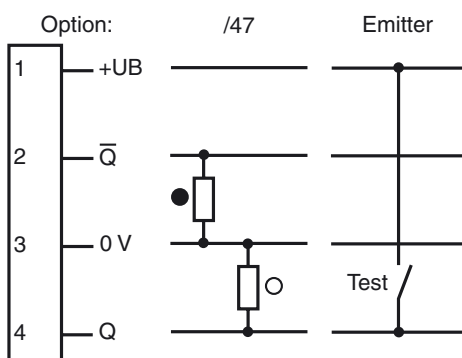
Features

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

Dimensions

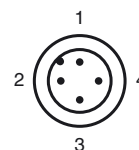


Electrical connection



○ = Light on
● = Dark on

Pinout



Technical data

System components

Emitter	LD28-F1-3057/35/76a/115b
Receiver	LV28-F1-3057/35/47/115b

General specifications

Effective detection range	0 ... 65 m
Threshold detection range	90 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	F1 = 25 kHz
Diameter of the light spot	approx. 1.3 m at 65 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, flashes in case of short-circuit
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

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)
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Output

Switching type	light/dark on , preset to light on
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 25 Hz
Response time	20 ms

Ambient conditions

Ambient temperature	-40 ... 60 °C (-40 ... 140 °F)
Storage temperature	-40 ... 75 °C (-40 ... 167 °F)

Mechanical specifications

Protection degree	IP67
Connection	fixed cable 230 mm with M12 x 1 male connector, 4-pin
Material	
Housing	Plastic ABS
Optical face	Plastic pane
Mass	500 g (emitter and receiver)

Compliance with standards and directives

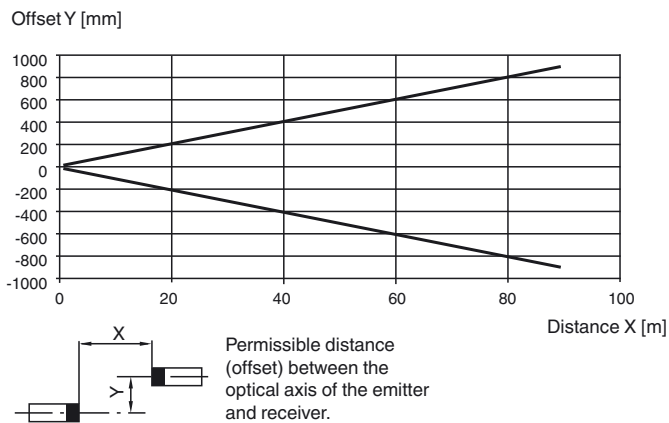
Standard conformity	
Product standard	EN 60947-5-2:2007 IEC 60947-5-2:2007

Approvals and certificates

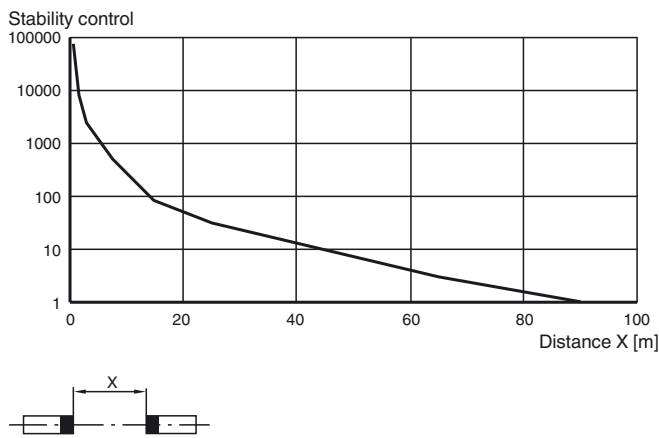
Protection class	II, rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1
UL approval	cULus
CCC approval	CCC approval / marking not required for products rated ≤ 36 V

Curves/Diagrams

Characteristic response curve



Relative received light strength



Light spot diameter = f (Distance)

