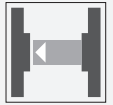




# Thru-beam sensor

## LD31/LV31/76a/115/136

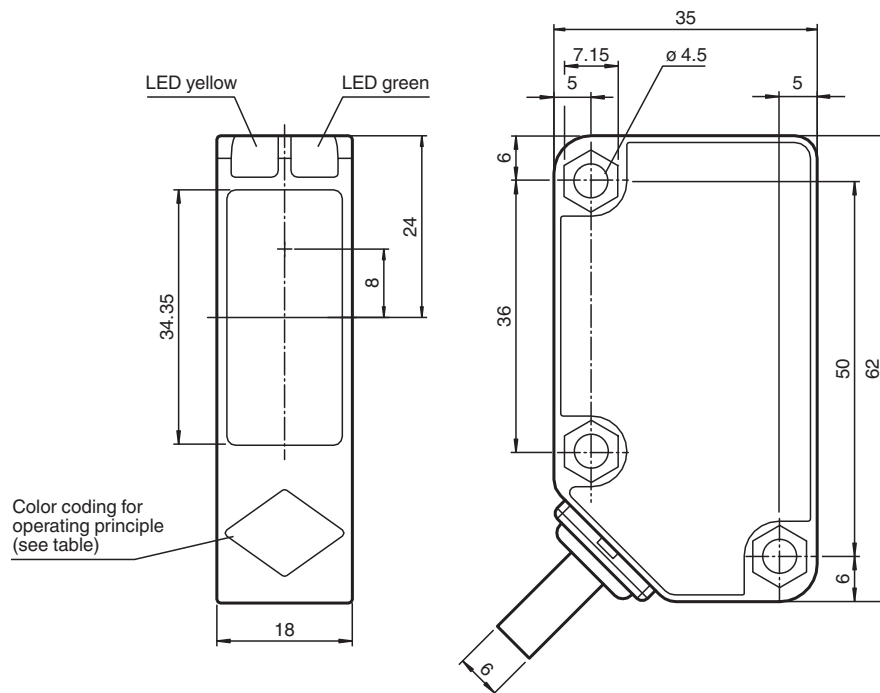


- Highly visible LED
- Powerful push-pull output
- Compact and stable housing
- Protection class II

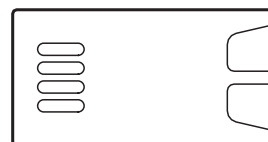
Thru-beam sensor, 30 m detection range, red light, dark on, DC version, 2 push-pull outputs, emitter switch-off, fixed cable



## Dimensions



Operating principle	color
Retroreflective sensor with polarisation filter	green
Retroreflective sensor	blue
Diffusive mode sensor	white
Thru-beam sensor	grey
Diffusive mode sensor with background suppression	red



## Technical Data

### System components

Emitter	LD31/76a/115
Receiver	LV31/115/136

### General specifications

Effective detection range	0 ... 30 m
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Release date: 2024-09-17 Date of issue: 2024-09-17 Filename: 187672\_eng.pdf

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

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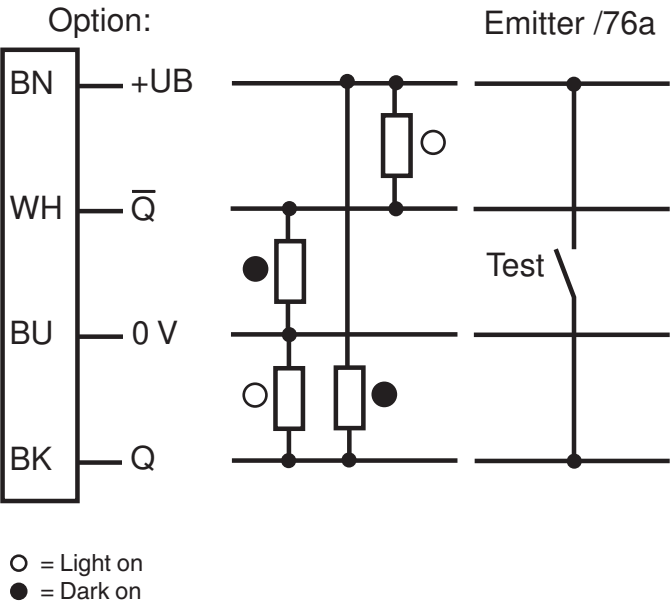
## Technical Data

Threshold detection range		43 m
Light source		LED
Light type		modulated visible red light , 630 nm
Alignment aid		LED yellow: 1. LED illuminates: Sufficient light signal received, emitter and receiver alignment is correct 2. LED flashes: Reaching switching point 3. LED off: Light beam is interrupted or the alignment is out
Diameter of the light spot		approx. 800 mm at a distance of 30 m
Opening angle		Emitter: 1.5 ° , Receiver: 1.5 °
Ambient light limit		50000 Lux ; according to EN 60947-5-2
Functional safety related parameters		
MTTF <sub>d</sub>		750 a
Mission Time (T <sub>M</sub> )		20 a
Diagnostic Coverage (DC)		0 %
Indicators/operating means		
Operation indicator		LED green: power on
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
Electrical specifications		
Operating voltage	U <sub>B</sub>	10 ... 30 V DC
Ripple		10 %
No-load supply current	I <sub>o</sub>	Emitter: ≤ 18 mA Receiver: ≤ 18 mA
Input		
Test input		emitter deactivation at +U <sub>B</sub>
Output		
Switching type		dark-on
Signal output		2 push-pull (4 in 1) outputs, short-circuit protected, reverse polarity protected
Switching voltage		max. 30 V DC
Switching current		max. 100 mA
Voltage drop	U <sub>d</sub>	≤ 1.5 V
Switching frequency	f	≤ 250 Hz
Response time		≤ 2 ms
Conformity		
Product standard		EN 60947-5-2
Approvals and certificates		
Protection class		II , rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1 Output circuit basis insulation of input circuit according to EN 50178, rated insulation voltage 240 V AC
UL approval		cULus Listed, Class 2 Power Source, Type 1 enclosure
CCC approval		CCC approval / marking not required for products rated ≤36 V
Ambient conditions		
Ambient temperature		-30 ... 55 °C (-22 ... 131 °F)
Storage temperature		-40 ... 70 °C (-40 ... 158 °F)
Mechanical specifications		
Degree of protection		IP67
Connection		Emitter: 2 m fixed cable , 3-wire Receiver: 2 m fixed cable , 4-wire
Material		
Housing		Polycarbonate
Optical face		PMMA
Mass		Emitter: 98 g Receiver: 132 g
Dimensions		

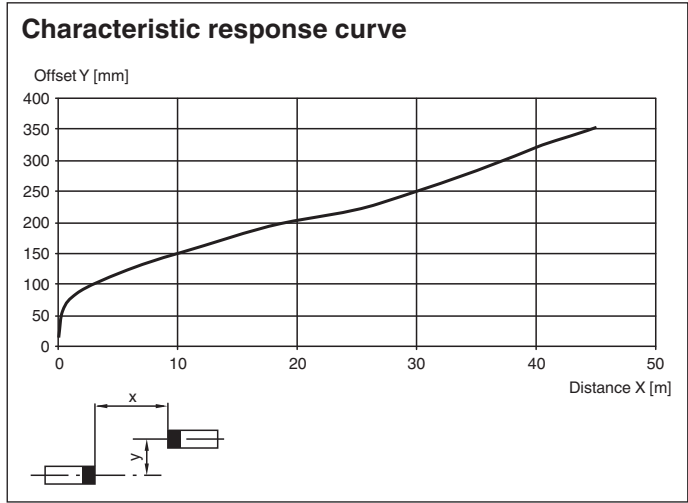
Technical Data

Height	62 mm
Width	18 mm
Depth	35 mm

Connection Assignment

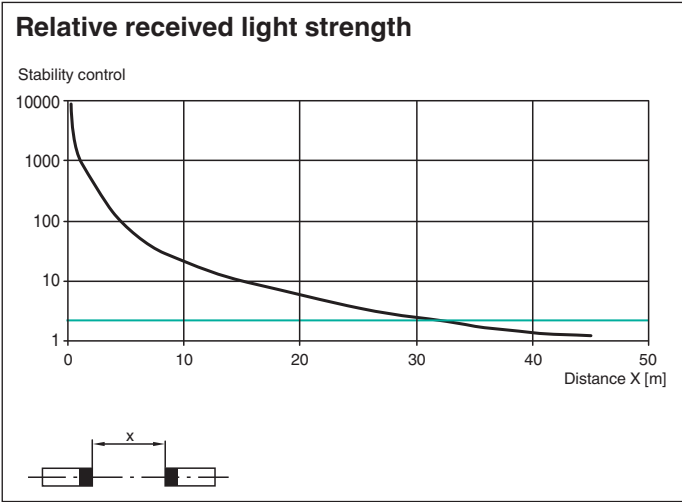


Characteristic Curve



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