

Thru-beam sensor

LA31/LK31/25/31/115 SET

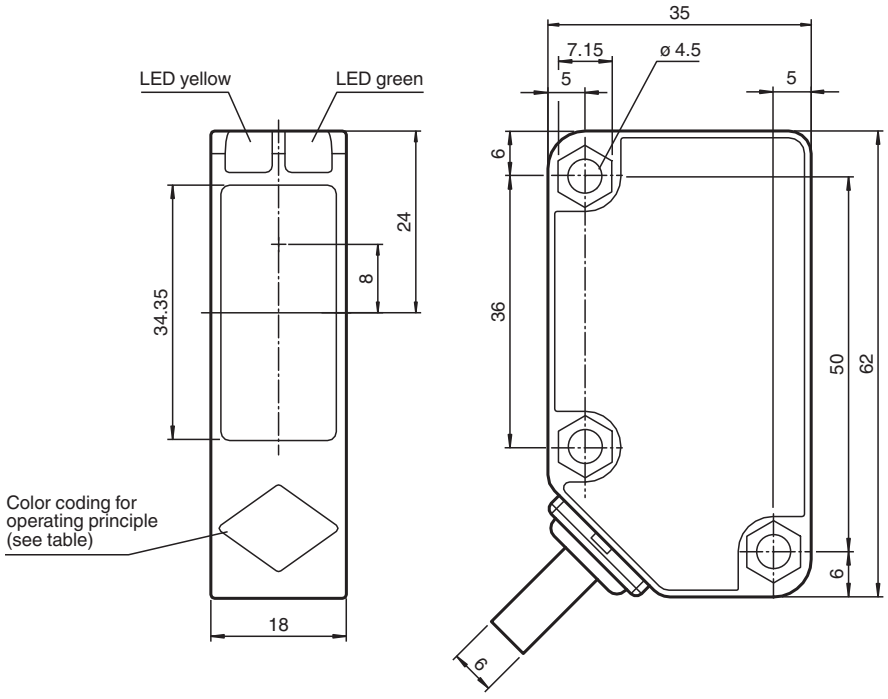
- Photoelectric sensor for detecting people, objects and vehicles
- Large construction with small housing
- Not sensitive to ambient light
- Version for universal voltages
- Relay output
- Version with accessories in scope of delivery

Mid-range photoelectric sensors for detecting people, objects, and vehicles

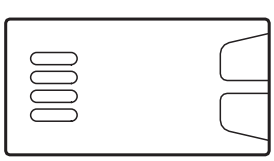
Function

Series 31 is a range of cost-effective and, most importantly, reliable photoelectric sensors for standard applications in the fields of material handling and logistics, and for monitoring industrial doors, elevators, and automatic gates. The ultrasonic-welded plastic housing provides a high degree of protection, making these sensors ideal for tasks in harsh outdoor conditions. These sensors are currently the most compact "wide range power supply sensors" that can work with any DC and AC voltage between 24 V and 240 V. In addition to the robust technology, the sensors offer numerous product details that help the user with assembly, connection and operation.

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



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Technical Data

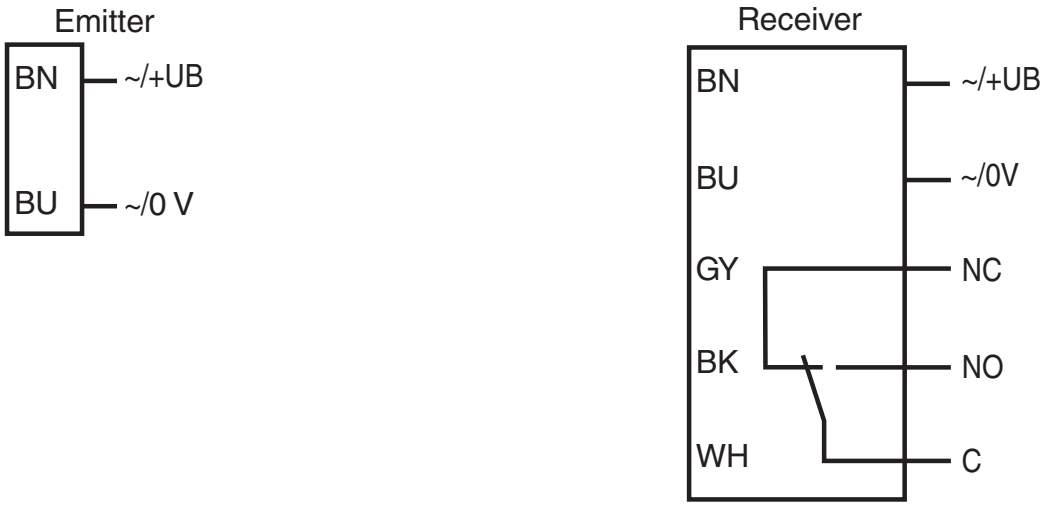
System components		
Emitter		LA31/115
Receiver		LK31/25/31/115
General specifications		
Effective detection range		0 ... 30 m
Threshold detection range		43 m
Light source		LED
Light type		modulated visible red light , 630 nm
Alignment aid		LED yellow: 1. LED illuminates: Sufficient light signal received, 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
Angle of divergence		Emitter: 0.5 ° , Receiver: 1.5 °
Ambient light limit		50000 Lux
Accessories provided		2 x Mounting bracket OMH-RL31-01 and mounting materials
Functional safety related parameters		
$MTTF_d$		790 a
Mission Time (T_M)		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_B	24 ... 240 V AC 12 ... 240 V DC
No-load supply current	I_0	Emitter: ≤ 40 mA Receiver: ≤ 3 mA
Power consumption	P_0	Emitter: ≤ 1 VA Receiver: ≤ 1 VA
Output		
Switching type		light-on
Signal output		Relay, 1 alternator
Switching voltage		max. 250 V AC/DC
Switching current		max. 3 A
Switching power		DC: max. 150 W AC: max. 750 VA
Switching frequency	f	≤ 20 Hz
Response time		≤ 25 ms
Conformity		
Product standard		EN 60947-5-2
Compliance with standards and directives		
Standard conformity		
Standards		EN 62103
Approvals and certificates		
EAC conformity		TR CU 020/2011 TR CU 004/2011
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
CCC approval		Certified by China Compulsory Certification (CCC)
Ambient conditions		
Ambient temperature		-25 ... 55 °C (-13 ... 131 °F)
Storage temperature		-40 ... 70 °C (-40 ... 158 °F)
Mechanical specifications		

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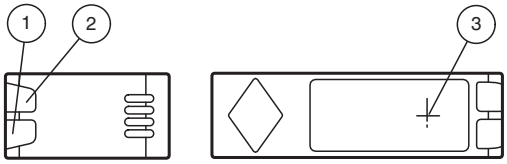
Technical Data

Degree of protection	IP67
Connection	Emitter: 2 m fixed cable , 2-wire Receiver: 2 m fixed cable , 5-wire
Material	
Housing	Polycarbonate
Optical face	PMMA
Mass	Emitter: 116 g Receiver: 131 g

Connection Assignment

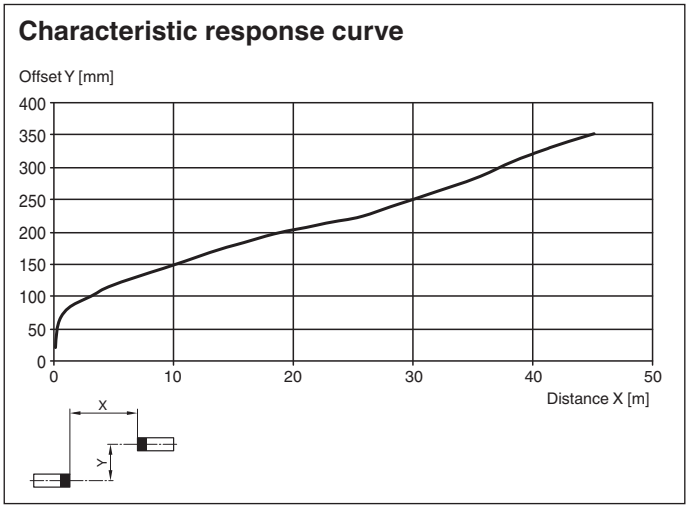


Assembly

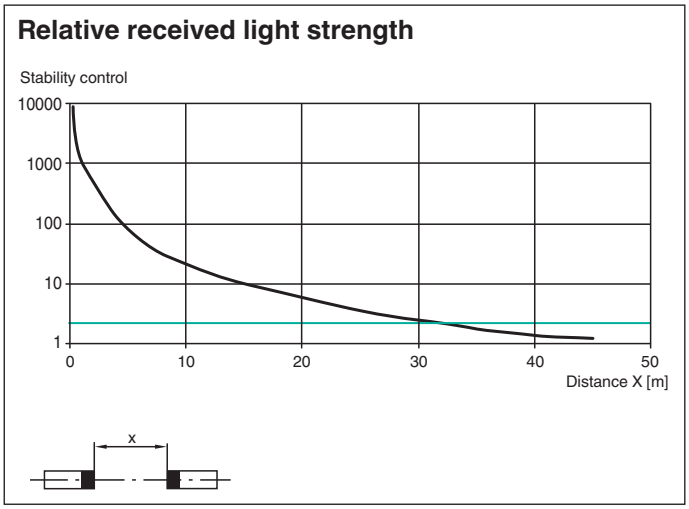


1	Operating display	green
2	Signal display	yellow
3	Emitter or receiver	

Characteristic Curve



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Application



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Application

- Monitoring closing edges of automatic industrial doors and elevators
- Monitoring the swing range of automatic gates
- Detecting and tracking objects in material handling

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