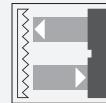




Retroreflective sensor

RLK61-55-Z/31/168



- Cost-optimized series for standard tasks in a special design
- Compact design
- Wide range of mounting options thanks to cubic housing design with M30 thread
- 360° high visibility LEDs
- Programmable ON-delay, OFF-delay, and One-shot timers
- Version for universal voltages
- Relay output

Retroreflective sensor with polarization filter



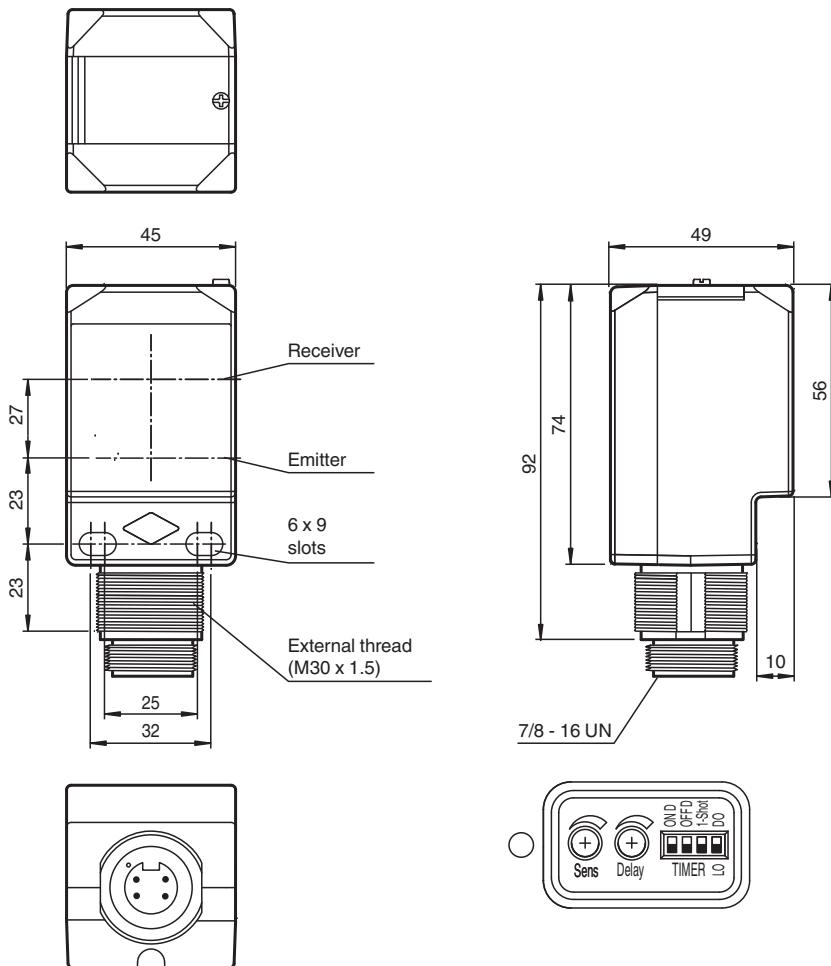
Function

The Series 61 sensor family is a comprehensive product line, offering five sensing modes. Each sensor is equipped with four LEDs that are highly visible from all directions, indicating Power-On, target presence and marginal excess gain. The widely recognized, polycarbonate housing provides a IP67 protection degree rating. Color-coded labels are clearly printed on the housing to easily identify the sensing mode. DC models offer a 4-in-1 output while AC/DC models have a SPDT relay output rated to 3 A. All versions come standard with an integral multifunction timer, sensitivity adjustment and Light-ON/Dark-ON switch. Series 61 sensors are cross-talk protected and have a high degree of resistance to ambient lighting. Each sensor can be mounted via front and rear slots, rear dovetail guide or M30 x 1.5 mounting base. Additionally, cabled sensor models provide 1/2" - 14 NPT internal threads for use with flexible conduit.

Application

- Object tracking in material handling, and the packaging sector
- Material flow monitoring
- Bin occupancy check in storage technology
- Fine positioning in high-bay warehouses
- Presence and height monitoring on pallet conveyors
- Single-beam protection for automatic industrial gates and elevator doors
- Protection at automatic gates

Dimensions



Technical Data

Release date: 2022-05-04 Date of issue: 2022-05-04 Filename: 913470_eng.pdf

General specifications

Effective detection range	0 ... 18 m
Reflector distance	0.3 ... 18 m
Threshold detection range	25 m
Reference target	FE-RR1 reflector
Light source	LED
Light type	modulated visible red light , 630 nm
Polarization filter	yes
Diameter of the light spot	approx. 350 mm at a distance of 18 m
Opening angle	1.1 °
Optical face	frontal
Ambient light limit	5000 Lux ; according EN 60947-5-2

Indicators/operating means

Operation indicator	2 LEDs green
Function indicator	2 LEDs yellow lights up when receiving the light beam ; flashes when falling short of the stability control; OFF when light beam is interrupted
Control elements	Light-on/dark-on changeover switch
Control elements	Sensing range adjuster
Control elements	Time adjuster (0 ... 10 s)

Electrical specifications

Operating voltage	U_B	24 ... 240 V AC 12 ... 240 V DC
No-load supply current	I_0	$\leq 35 \text{ mA}$

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

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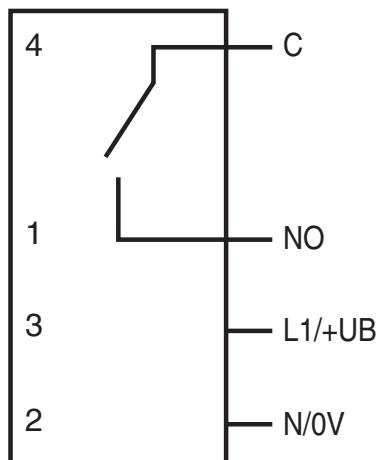
Singapore: +65 6779 9091
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 PEPPERL+FUCHS

Technical Data

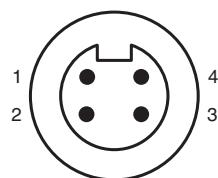
Protection class	II, rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1 Output circuit basis insulation of input circuit according to EN 50178, rated insulation voltage 240 V AC	
Power consumption	P ₀	≤ 2 VA
Output		
Switching type		light/dark on, switchable
Signal output		1 SPDT relay
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
Timer function		DIP switch for selection of operating modes
Compliance with standards and directives		
Directive conformity		
EMC Directive 2004/108/EC		EN 60947-5-2:2007+A1:2012
Standard conformity		
Product standard		EN 60947-5-2:2007 IEC 60947-5-2:2007
Standards		EN 50178, UL 508
Approvals and certificates		
EAC conformity		TR CU 020/2011 TR CU 004/2011
UL approval		cULus Listed, Type 1 enclosure For overcurrent protection, install a fuse with a rated current of max. 5 A and min. 240 V AC/DC
CCC approval		Certified by China Compulsory Certification (CCC)
Ambient conditions		
Ambient temperature		-40 ... 55 °C (-40 ... 131 °F)
Storage temperature		-40 ... 70 °C (-40 ... 158 °F)
Mechanical specifications		
Housing width		45 mm
Housing height		73.7 mm
Housing depth		48.6 mm
Degree of protection		IP67
Connection		4-pin V94 connector (7/8 inch-16 UN 2A)
Material		
Housing		PC (Polycarbonate)
Optical face		PMMA
Mass		approx. 140 g
Tightening torque, fastening screws		max. 2 Nm

Connection Assignment

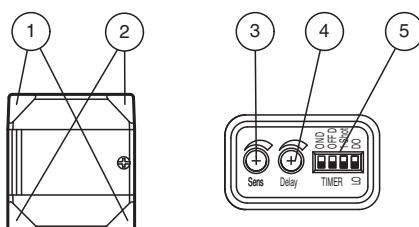


The relay-functions "NC" and "NO" bear on the switching mode "Dark-ON". This complies to the default setting of the light/dark switch (factory setting).

Connection Assignment



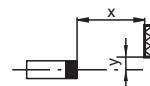
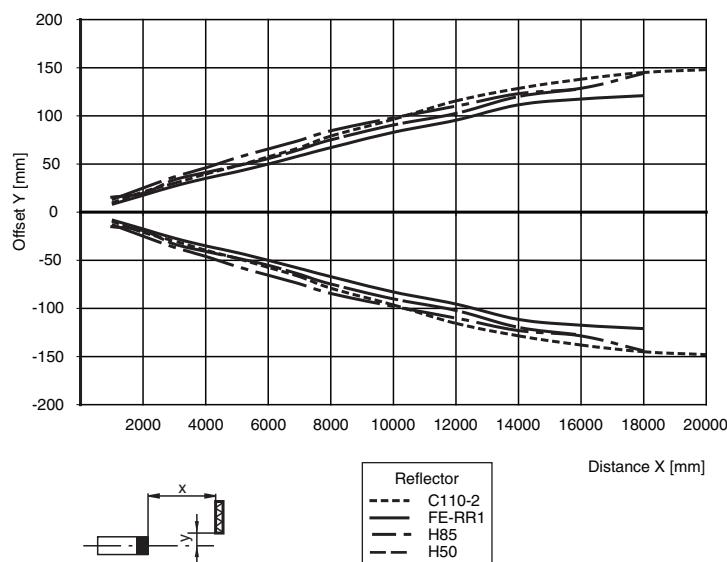
Assembly



1	Operating display	green
2	Signal display	yellow
3	Sensing range adjuster	
4	Time adjuster	
5	DIP-switches	

Characteristic Curve

Movement Characteristic **RL(K)-61-55-Z**

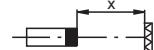
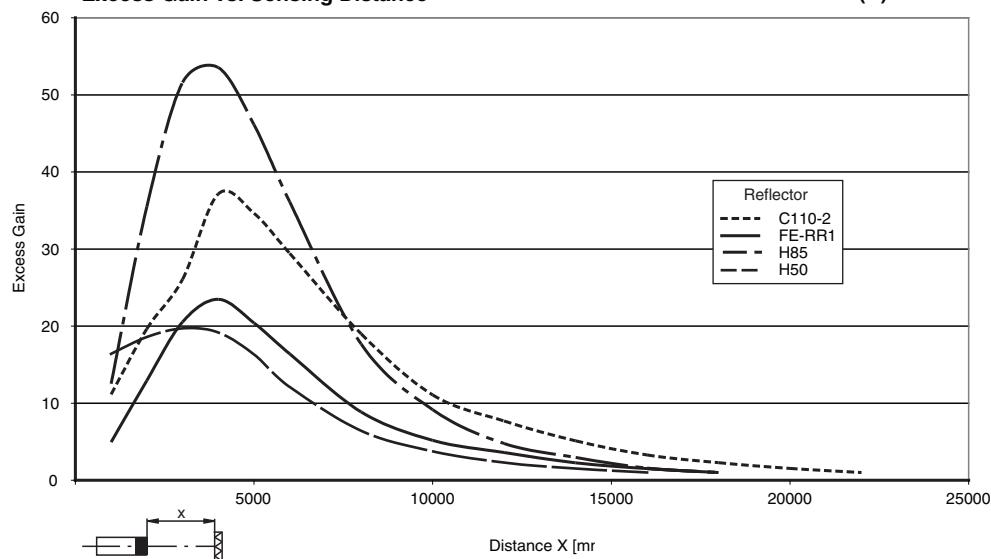


Reflector
 C110-2
 FE-RR1
 H85
 H50

Distance X [mm]

Excess Gain vs. Sensing Distance

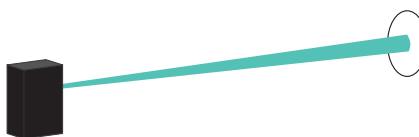
RL(K)61-55-Z



Distance X [mm]

Reflector
 C110-2
 FE-RR1
 H85
 H50

Application



Accessories

	MPZB01	Mounting bracket with vertical slots
	MPZB02	Mounting bracket with circular slots
	MPZB06	Ball and Swivel Mounting Bracket
	MPZB07	Ball and Swivel Vertical Mounting Plate
	V94-G-YE2M-STOOW	Female cordset, 7/8", 4-pin, STOOW cable

Timer Functions

Switching Type	Detection Status		
L.ON	Operation Mode		Light Received No Light Received
OFF ON	No Delay (Timer OFF)		ON OFF
OFF ON	ON Delay		ON OFF
OFF ON	OFF Delay		ON OFF
OFF ON	One-Shot Delay		ON OFF
OFF ON	ON Delay and OFF Delay		ON OFF
Switching Type	Detection Status		
D.ON	Operation Mode		Light Received No Light Received
OFF ON	No Delay (Timer OFF)		ON OFF
OFF ON	ON Delay		ON OFF
OFF ON	OFF Delay		ON OFF
OFF ON	One-Shot Delay		ON OFF
OFF ON	ON Delay and OFF Delay		ON OFF

Time (T) is adjustable from 0 sec ... 10 sec

Adjustment Instructions

Intended use:

The retroreflective sensor contains the emitter and receiver in a single housing. The light from transmitter is reflected back from a reflector to the receiver. If an object interrupts the light beam, the switching function is initiated.

Mounting instructions:

The sensor can be mounted using the through-holes or with a mounting bracket (not included with delivery).

The base surface must be flat to avoid distorting the sensor housing during mounting. It is advisable to secure the bolts and screws with washers so that the sensor does not become misaligned.

Adjustment Instructions:

Connect the sensor to operating voltage and the green LED lights up solid.

Mount a suitable reflector opposite the sensor and make a rough adjustment.

The precise adjustment is done by swiveling the sensor horizontally and vertically. With optimum light reception, the yellow LED lights up solid. It will blink if the sensor requires fine adjustment.

Object detection:

Move an object into the light beam. If the object is detected, the yellow LED switches off. If it does not switch off, reduce the sensitivity with the potentiometer until it does. It should light up solid when the object is removed.

Cleaning:

The yellow LED flashes if the light received decreases (e.g. dirty lenses).

We recommend that you clean the optical interfaces and check all connections at regular intervals.