Model Number

RLK61-8-1000-Z/31/115
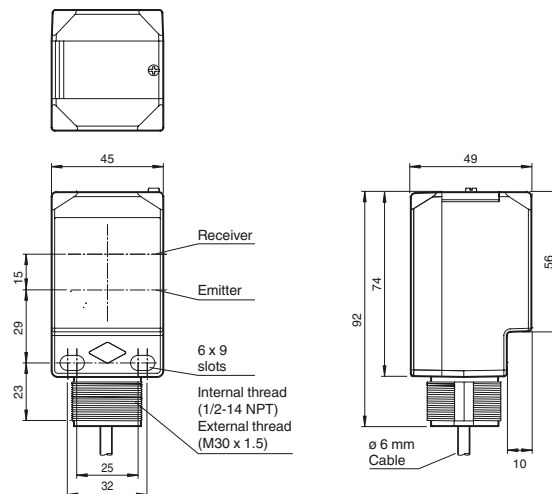
Diffuse mode sensor
with fixed cable

Features

- 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
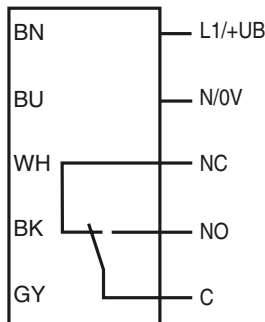- Relay output

Product information

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 ½" - 14 NPT internal threads for use with flexible conduit.

Dimensions

- 45
- 49
- 15
- 29
- 23
- 92
- 74
- 56
- Receiver
- Emitter
- 6 x 9 slots
- Internal thread (1/2-14 NPT)
- External thread (M30 x 1.5)
- 25
- 32
- ø 6 mm Cable
- 10

Electrical connection

BN	L1/+UB
BU	N/0V
WH	NC
BK	NO
GY	C

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

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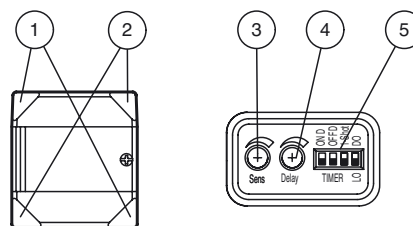
1	Operating display	green
2	Signal display	yellow
3	Sensing range adjuster	
4	Time adjuster	
5	DIP-switches	

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

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www.pepperl-fuchs.com	fa-info@us.pepperl-fuchs.com	fa-info@de.pepperl-fuchs.com	fa-info@sg.pepperl-fuchs.com	**PEPPERL+FUCHS** *SENSING YOUR NEEDS*	**1**

Technical data

General specifications

Detection range	0 ... 1000 mm adjustable
Adjustment range	120 ... 1000 mm
Reference target	standard white 200 mm x 200 mm
Light source	IRED
Light type	modulated infrared light , 850 nm
Diameter of the light spot	approx. 17 mm at a distance of 1000 mm
Angle of divergence	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: object outside the sensing range
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	≤ 35 mA
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

Ambient conditions

Ambient temperature	-40 ... 55 °C (-40 ... 131 °F)
Storage temperature	-40 ... 70 °C (-40 ... 158 °F)

Mechanical specifications

Degree of protection	IP67
Connection	2 m fixed cable
Material	
Housing	PC (Polycarbonate)
Optical face	PMMA
Mass	approx. 240 g
Tightening torque, fastening screws	≤ 2 Nm
Cable length	2 m

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)

Accessories

MPZB01
Mounting bracket with vertical slots

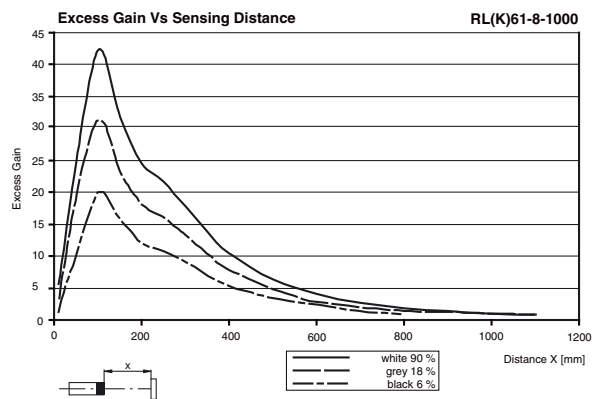**MPZB02**
Mounting bracket with circular slots

MPZB06
Ball and Swivel Mounting Bracket

MPZB07
Ball and Swivel Vertical Mounting Plate

Other suitable accessories can be found at www.pepperl-fuchs.com
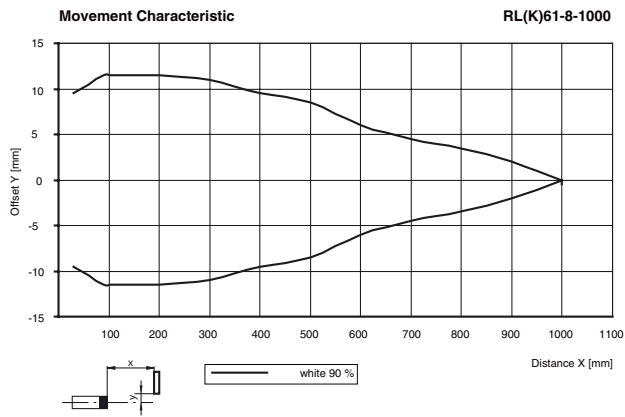
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Curves/Diagrams

Movement Characteristic   **RL(K)61-8-1000**

Offset Y [mm] vs Distance X [mm]

— white 90 %

Excess Gain Vs Sensing Distance   **RL(K)61-8-1000**

Excess Gain vs Distance X [mm]

— white 90 %
— grey 18 %
— black 6 %

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

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Timer Functions

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

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

DIP-Switch position ➔ ▪

Time (T) is adjustable from 0 to 10 sec

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Adjustment Instructions

Intended use:

The diffuse mode sensor contains the emitter and receiver in a single housing. The light from transmitter is reflected back from the target object and is evaluated by the receiver. The sensing range depends on the object color and finish. With dark or very small objects, the sensing range is reduced.

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:

Adjust the sensor on the background. If the yellow LED illuminates, reduce the sensing range using the potentiometer until the yellow LED turns off.

Object detection:

Move the target into the light beam. Position the light spot on the object. If the object is detected, the yellow LED lights up. If it does not light up, further adjust the sensing range with the potentiometer until the yellow LED lights up.

Cleaning:

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

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