



**Model Number**

**RLK61-8-4000-Z/31/115**

Diffuse mode sensor  
with fixed cable

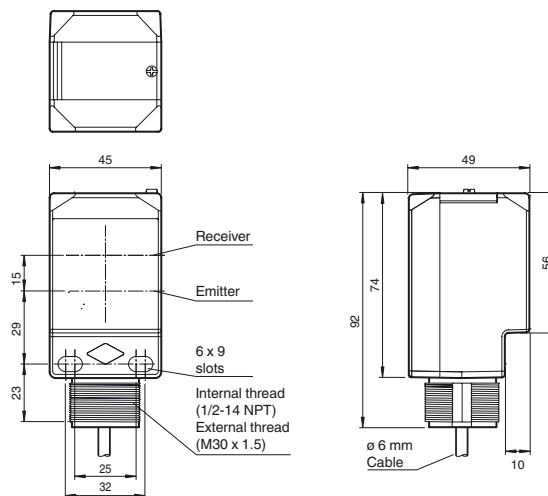
**Features**

- 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

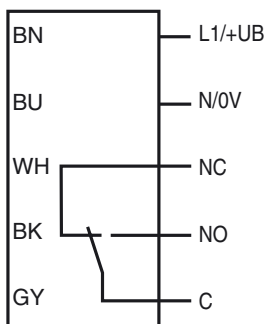
**Product information**

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 1/2" - 14 NPT internal threads for use with flexible conduit.

**Dimensions**

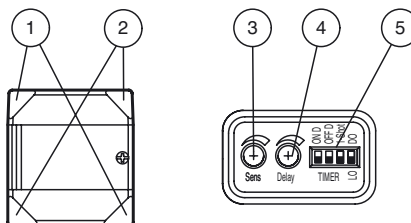


**Electrical connection**



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           |        |

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Subject to modifications without notice

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**Technical data****General specifications**

|                            |  |
|----------------------------|--|
| Detection range            | 0 ... 4000 mm adjustable               |
| Adjustment range           | 270 ... 4000 mm                        |
| Reference target           | standard white 200 mm x 200 mm         |
| Light source               | IREL                                   |
| Light type                 | modulated infrared light , 850 nm      |
| Diameter of the light spot | approx. 45 mm at a distance of 4000 mm |
| Angle of divergence        | 0.7 °                                  |
| Ambient light limit        | 5000 Lux ; according EN 60947-5-2      |

**Indicators/operating means**

|                   |   |
|-------------------|---|
| Operating display | 2 LEDs green  |
| Function display  | 2 LEDs yellow<br>ON: object inside the scanning range<br>OFF: object outside the scanning range |
| Controls          | Light/Dark switch   |
| Controls          | Detection range adjuster  |
| Controls          | Time adjuster ( 0 ... 10 s )  |

**Electrical specifications**

|                        |       |  |
|------------------------|-------|--|
| Operating voltage      | $U_B$ | 24 ... 240 V AC<br>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       | 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                                     |
| 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**

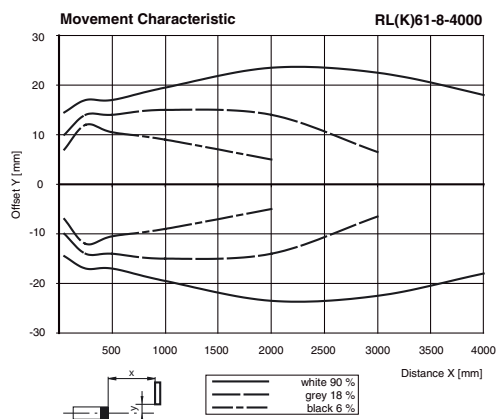
|                   |                    |
|-------------------|--------------------|
| Protection degree | IP67               |
| Connection        | 2 m fixed cable    |
| Material          |                    |
| Housing           | PC (Polycarbonate) |
| Optical face      | PMMA               |
| Mass              | 240 g              |

**Compliance with standards and directives**

|                     |   |
|---------------------|---|
| Standard conformity |   |
| Product standard    | EN 60947-5-2:2007<br>IEC 60947-5-2:2007 |

**Approvals and certificates**

|              |   |
|--------------|---|
| UL approval  | cULus   |
| CCC approval | Certified by China Compulsory Certification (CCC) |

**Curves/Diagrams****Accessories****MPZB01**

Mounting bracket with vertical slots

**MPZB02**

Mounting bracket with circular slots

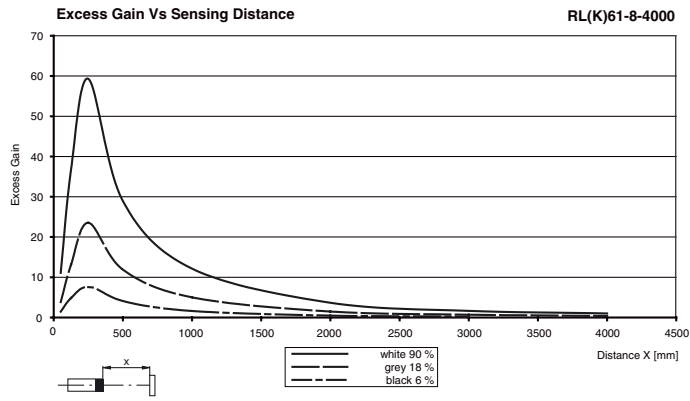
**MPZB06**

Ball and Swivel Mounting Bracket

**MPZB07**

Ball and Swivel Vertical Mounting Plate

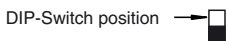
Other suitable accessories can be found at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)



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Timer Functions

| Switching Type | Detection Status              | Operation Mode         | Light Received    |
|----------------|-------------------------------|------------------------|-------------------|
| L.ON           |                               |                        | No Light Received |
| OFF ON         | ON D<br>OFF D<br>1-Shot<br>DO | No Delay (Timer OFF)   | ON<br>OFF         |
| OFF ON         | ON D<br>OFF D<br>1-Shot<br>DO | ON Delay               | ON<br>OFF         |
| OFF ON         | ON D<br>OFF D<br>1-Shot<br>DO | OFF Delay              | ON<br>OFF         |
| OFF ON         | ON D<br>OFF D<br>1-Shot<br>DO | One-Shot Delay         | ON<br>OFF         |
| OFF ON         | ON D<br>OFF D<br>1-Shot<br>DO | ON Delay and OFF Delay | ON<br>OFF         |
| D.ON           |                               |                        | No Light Received |
| OFF ON         | ON D<br>OFF D<br>1-Shot<br>DO | No Delay (Timer OFF)   | ON<br>OFF         |
| OFF ON         | ON D<br>OFF D<br>1-Shot<br>DO | ON Delay               | ON<br>OFF         |
| OFF ON         | ON D<br>OFF D<br>1-Shot<br>DO | OFF Delay              | ON<br>OFF         |
| OFF ON         | ON D<br>OFF D<br>1-Shot<br>DO | One-Shot Delay         | ON<br>OFF         |
| OFF ON         | ON D<br>OFF D<br>1-Shot<br>DO | ON Delay and OFF Delay | ON<br>OFF         |



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.