



Diffuse mode sensor RLK61-8-4000-Z/31/135



- 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

Diffuse mode sensor



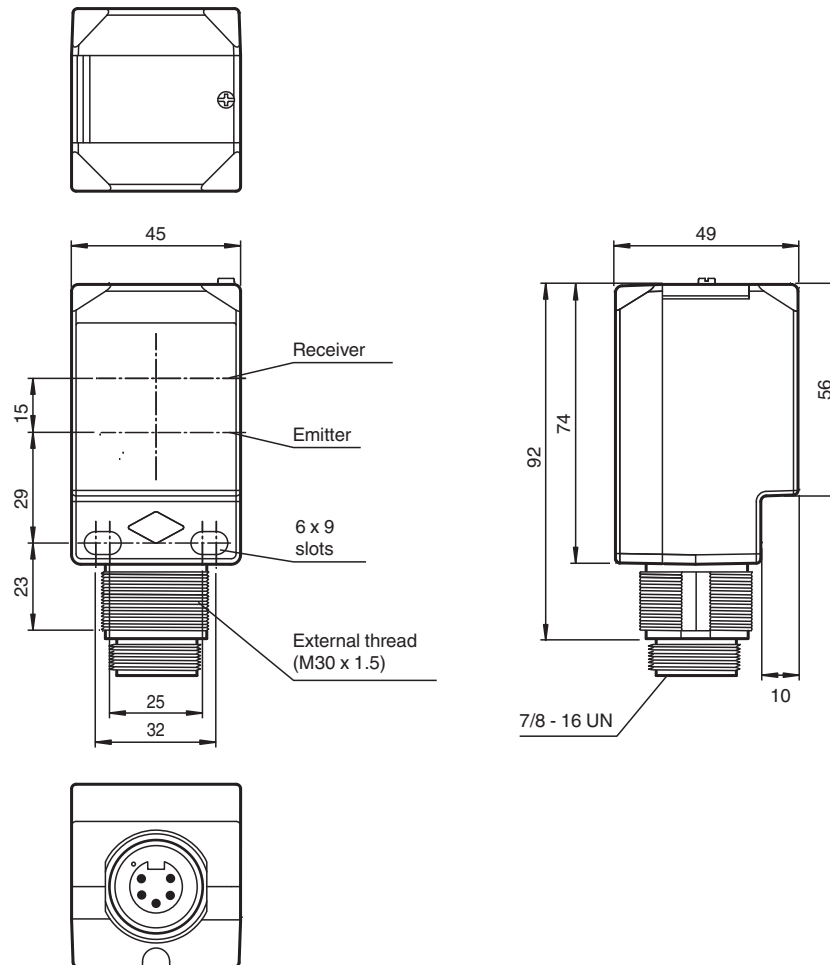
Function

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

| General specifications | |
|----------------------------|---|
| Detection range | 0 ... 4000 mm adjustable |
| Adjustment range | 270 ... 4000 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. 45 mm at a distance of 4000 mm |
| Opening angle | 0.7 ° |
| 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 |

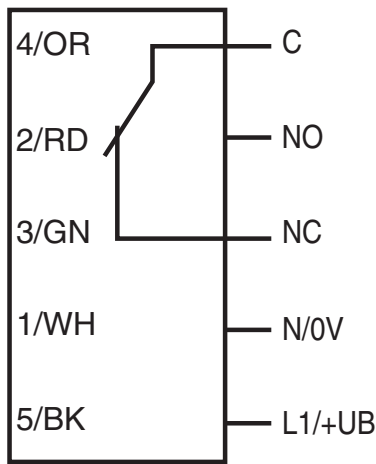
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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

Technical Data

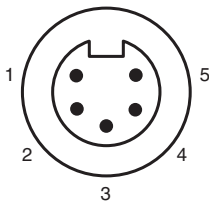
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|---|-------|--|
| Power consumption | P_0 | $\leq 2 \text{ VA}$ |
| Output | | |
| Switching type | | light/dark on, switchable |
| Signal output | | 1 SPDT relay |
| Switching voltage | | max. 250 V AC/DC |
| Switching current | | max. 3 A |
| Switching power | | DC: max. 150 W AC: max. 750 VA |
| Switching frequency | f | 20 Hz |
| Response time | | $\leq 25 \text{ ms}$ |
| 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 | | 5-pin V95 connector (7/8"-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 "Light-ON". This complies to the default setting of the light/dark switch, located on top of the housing (factory setting).

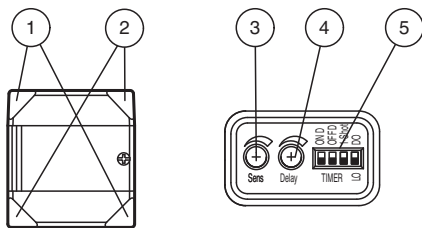
Connection Assignment



Wire colors

- 1 | WH (white)
- 2 | RD (red)
- 3 | GN (green)
- 4 | OR (orange)
- 5 | BK (black)

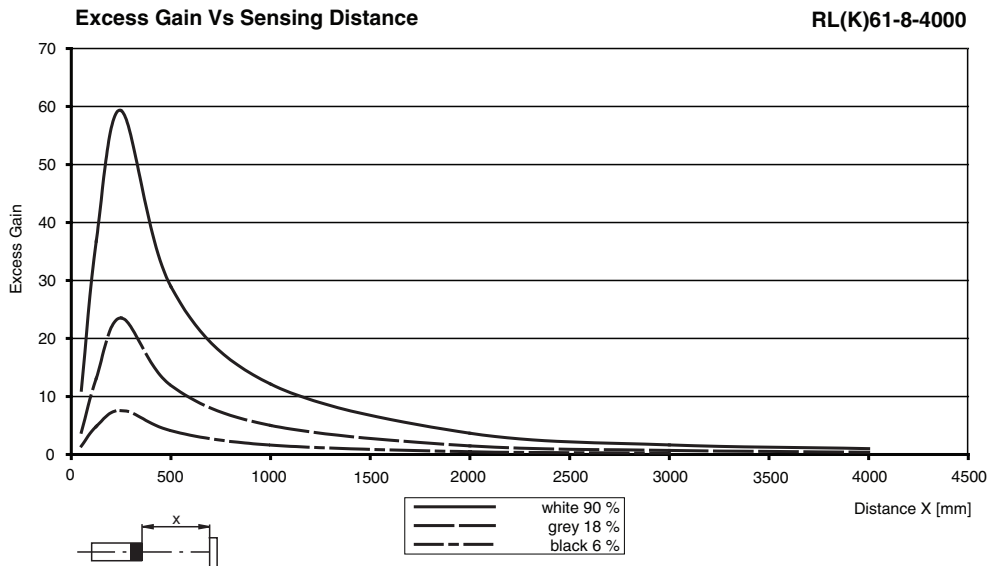
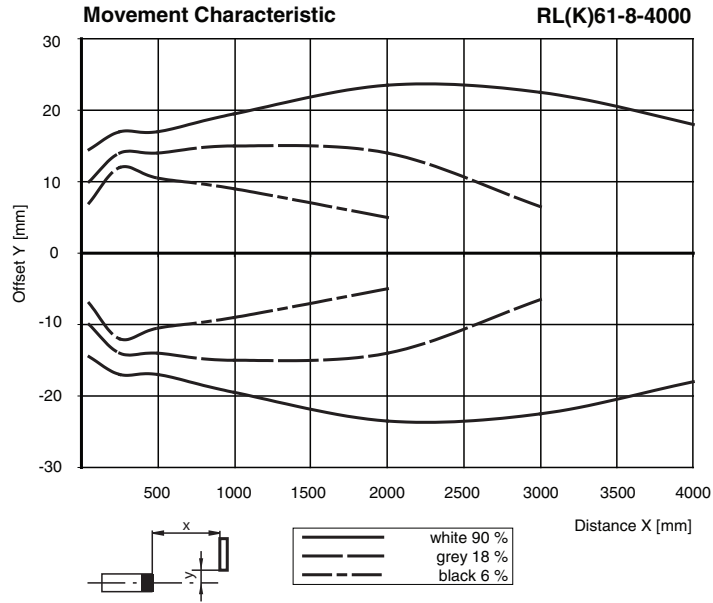
Assembly



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

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Characteristic Curve



Application

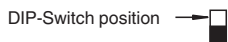


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Timer Functions

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



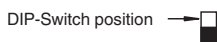
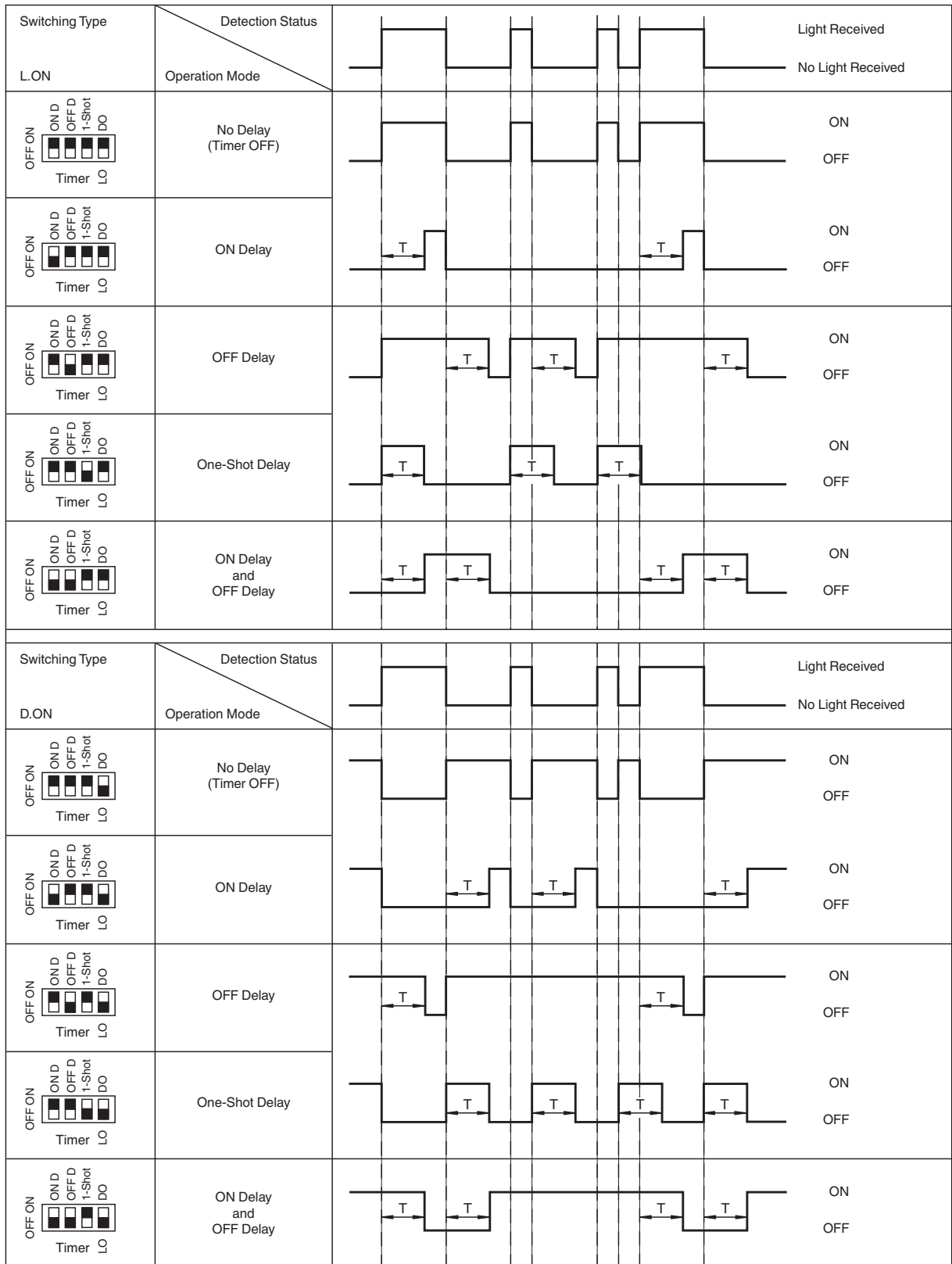
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Accessories

| | | |
|---|-------------------------|--|
|  | MPZB01 | Mounting bracket with vertical slots |
|  | MPZB02 | Mounting bracket with circular slots |
|  | MPZB07 | Ball and Swivel Vertical Mounting Plate |
|  | MPZB06 | Ball and Swivel Mounting Bracket |
|  | V95-G-YE2M-STOOW | Female cordset, 7/8", 5-pin, STOOW cable |
|  | V95-W-YE2M-STOOW | Female cordset, 7/8", 5-pin, STOOW cable |

Additional Information

Timer Functions



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Time (T) is adjustable from 0 to 10 sec

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.