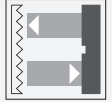




## Retroreflective sensor RLK61-55-Z/31/135



- 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

Retroreflective sensor with polarization filter



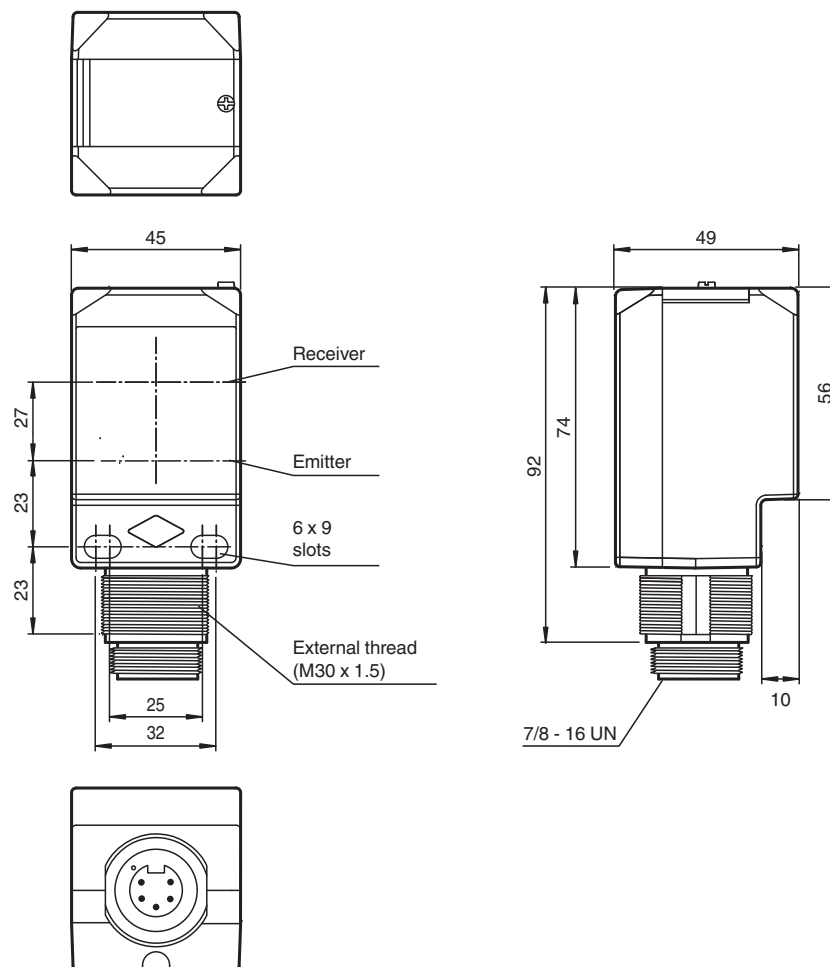
### Function

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 ½" - 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

|                            |                                      |
|----------------------------|--------------------------------------|
| 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<br>12 ... 240 V DC |
| No-load supply current | $I_0$ | ≤ 35 mA                            |

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

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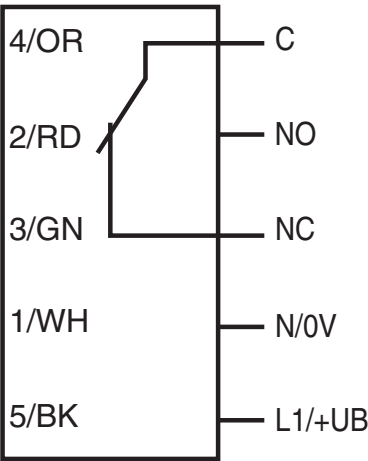
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## Technical Data

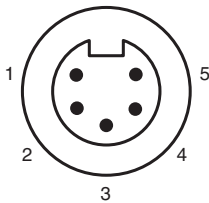
|                                                 |                                                                                                                                                                                              |                                                                                                                                    |
|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Protection class                                | II, rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1<br>Output circuit basis insulation of input circuit according to EN 50178, rated insulation voltage 240 V AC |                                                                                                                                    |
| Power consumption                               | P <sub>0</sub>                                                                                                                                                                               | ≤ 2 VA                                                                                                                             |
| <b>Output</b>                                   |                                                                                                                                                                                              |                                                                                                                                    |
| 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                                                                                        |
| <b>Compliance with standards and directives</b> |                                                                                                                                                                                              |                                                                                                                                    |
| Directive conformity                            |                                                                                                                                                                                              |                                                                                                                                    |
| EMC Directive 2004/108/EC                       |                                                                                                                                                                                              | EN 60947-5-2:2007+A1:2012                                                                                                          |
| Standard conformity                             |                                                                                                                                                                                              |                                                                                                                                    |
| Product standard                                |                                                                                                                                                                                              | EN 60947-5-2:2007<br>IEC 60947-5-2:2007                                                                                            |
| Standards                                       |                                                                                                                                                                                              | EN 50178, UL 508                                                                                                                   |
| <b>Approvals and certificates</b>               |                                                                                                                                                                                              |                                                                                                                                    |
| EAC conformity                                  |                                                                                                                                                                                              | TR CU 020/2011 TR CU 004/2011                                                                                                      |
| UL approval                                     |                                                                                                                                                                                              | cULus Listed, Type 1 enclosure<br>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)                                                                                  |
| <b>Ambient conditions</b>                       |                                                                                                                                                                                              |                                                                                                                                    |
| Ambient temperature                             |                                                                                                                                                                                              | -40 ... 55 °C (-40 ... 131 °F)                                                                                                     |
| Storage temperature                             |                                                                                                                                                                                              | -40 ... 70 °C (-40 ... 158 °F)                                                                                                     |
| <b>Mechanical specifications</b>                |                                                                                                                                                                                              |                                                                                                                                    |
| 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

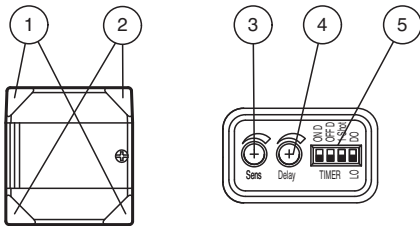


The relay-functions "NC" and "NO" bear on the switching mode "Dark-ON". This complies to the default setting of the light/dark switch (factory setting).

Connection Assignment



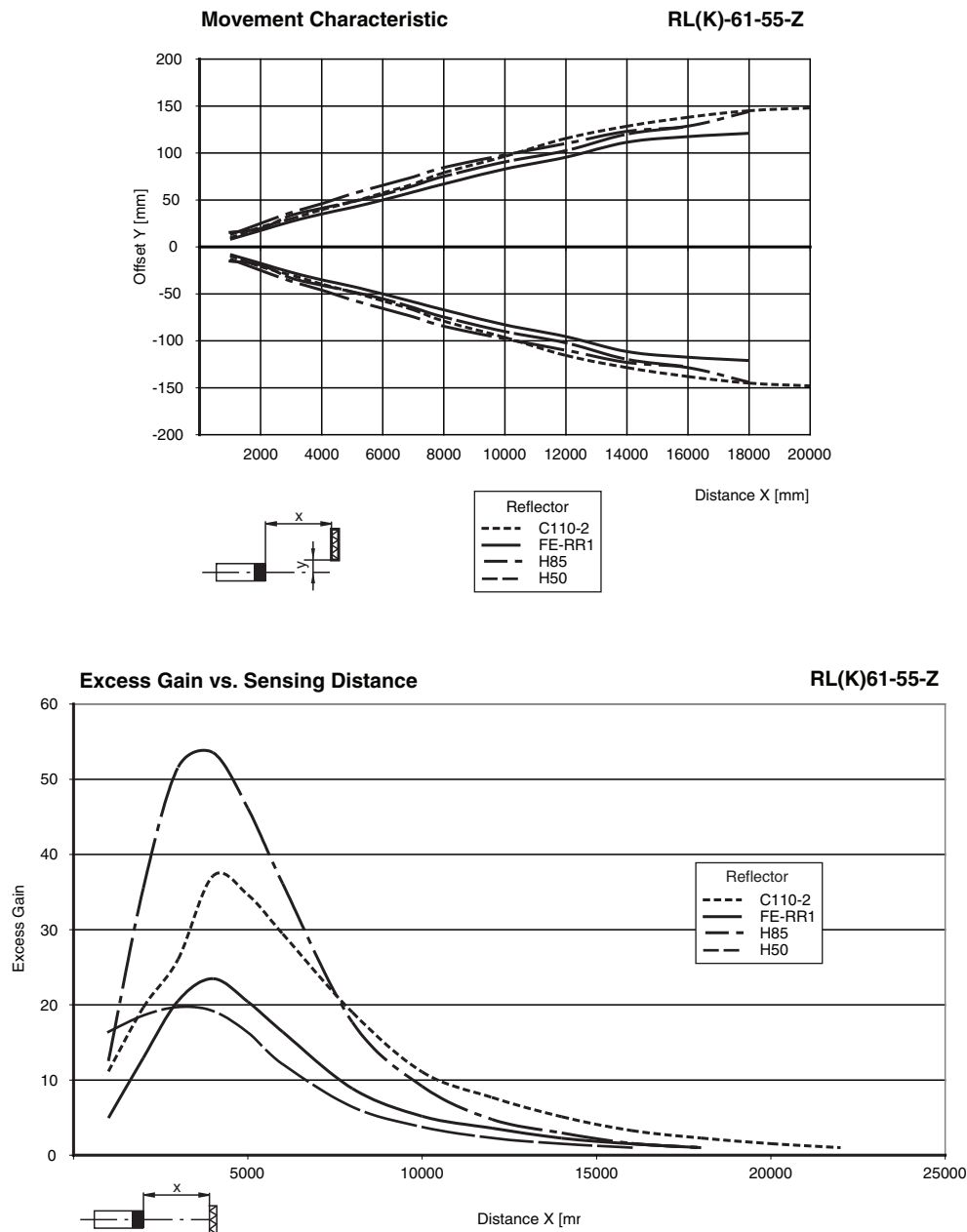
Assembly



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

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Characteristic Curve



Application



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## Accessories

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

## Timer Functions

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

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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.