



## Fiber optic sensor RLK61-LL-IR-Z/31/115



- 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
- Includes universal fiber adapter kit

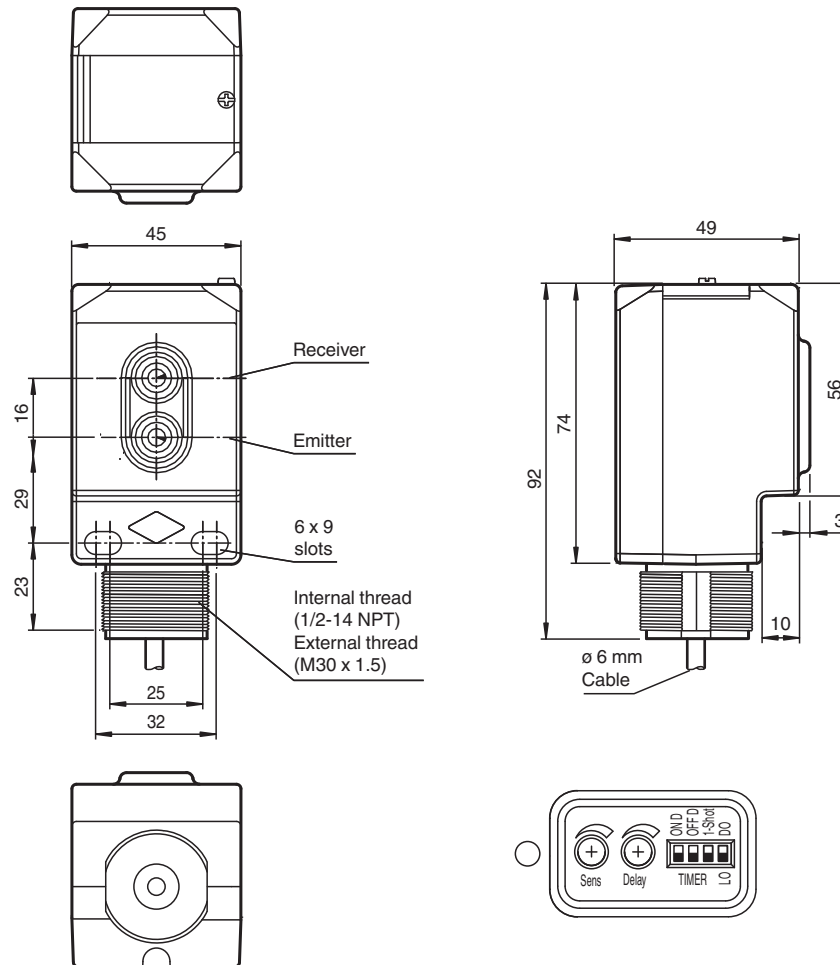
### Fiber optic sensor



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

## Dimensions



## Technical Data

|                                   |                |                                                                                                                                                                                               |
|-----------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>General specifications</b>     |                |                                                                                                                                                                                               |
| Detection range                   |                | Dependent on fibers selected                                                                                                                                                                  |
| Light source                      |                | IREL                                                                                                                                                                                          |
| Light type                        |                | modulated infrared light , 850 nm                                                                                                                                                             |
| Ambient light limit               |                | 5000 Lux ; according EN 60947-5-2                                                                                                                                                             |
| <b>Indicators/operating means</b> |                |                                                                                                                                                                                               |
| 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 )                                                                                                                                                                  |
| <b>Electrical specifications</b>  |                |                                                                                                                                                                                               |
| Operating voltage                 | U <sub>B</sub> | 24 ... 240 V AC<br>12 ... 240 V DC                                                                                                                                                            |
| No-load supply current            | I <sub>0</sub> | ≤ 35 mA                                                                                                                                                                                       |
| 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                                                                                                                                                                              |

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

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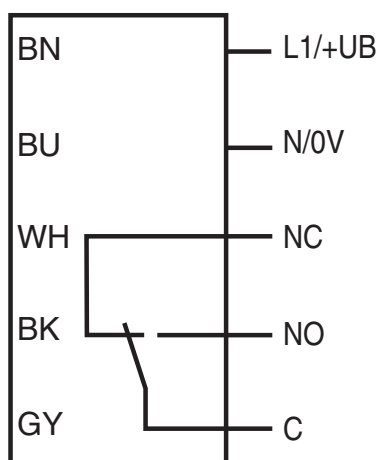
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|                                                 |   |                                                                                                                                    |
|-------------------------------------------------|---|------------------------------------------------------------------------------------------------------------------------------------|
| 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                                      |   | 2 m fixed cable , 5-wire                                                                                                           |
| Material                                        |   |                                                                                                                                    |
| Housing                                         |   | PC (Polycarbonate)                                                                                                                 |
| Optical face                                    |   | PMMA                                                                                                                               |
| Mass                                            |   | approx. 240 g                                                                                                                      |
| Tightening torque, fastening screws             |   | max. 2 Nm                                                                                                                          |
| Cable length                                    |   | 2 m                                                                                                                                |

## Connection Assignment



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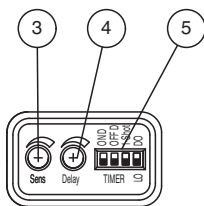
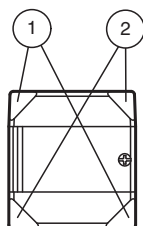
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## Assembly



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

## Accessories

|                                                                                     |                     |                                         |
|-------------------------------------------------------------------------------------|---------------------|-----------------------------------------|
|    | <b>FE-BTS6S-5</b>   | Glass fiber optic - diffuse             |
|    | <b>FE-BTS6M-3</b>   | Glass fiber optic - diffuse             |
|    | <b>MPGKITC</b>      | Fiber cable adapter kit                 |
|    | <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>FE-BTS6S-3</b>   | Glass fiber optic - diffuse             |
|  | <b>FE-BTSAS6S-3</b> | Glass fiber optic - diffuse             |
|  | <b>FE-BTSAS6M-3</b> | Glass fiber optic - diffuse             |
|  | <b>FE-BNSRA5S-3</b> | Glass fiber optic - diffuse             |
|  | <b>FE-BRL7S-3</b>   | Glass fiber optic - diffuse             |
|  | <b>FE-BRL7M-3</b>   | Glass fiber optic - diffuse             |
|  | <b>FE-BNSRA5M-3</b> | Glass fiber optic - diffuse             |

Configuration

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## Timer Functions

| Switching Type         | Detection Status             | Operation Mode | Light Received | No Light Received |
|------------------------|------------------------------|----------------|----------------|-------------------|
| L.ON                   |                              |                |                |                   |
| 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                   |                              |                |                |                   |
| 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               |

Time (T) is adjustable from 0 to 10 sec

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