



Model Number

RL61-LL-IR-Z/92/136

Fiber optic sensor
with 4-pin, M12 x 1 connector

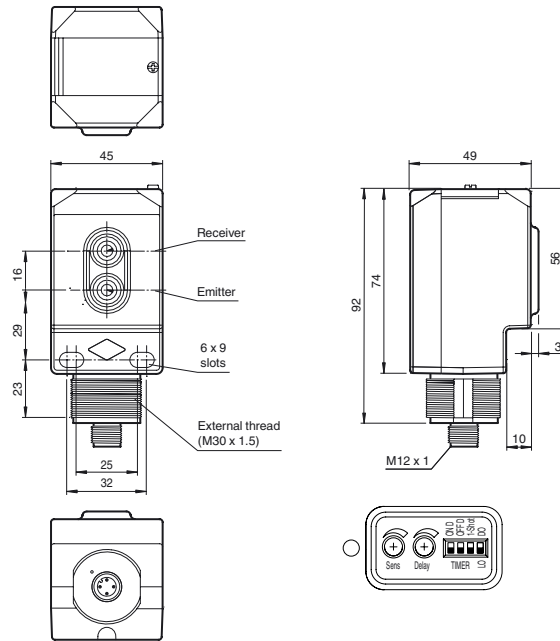
Features

- 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
- 4-in-1 output (push-pull)
- Version with infrared light
- Includes universal fiber adapter kit

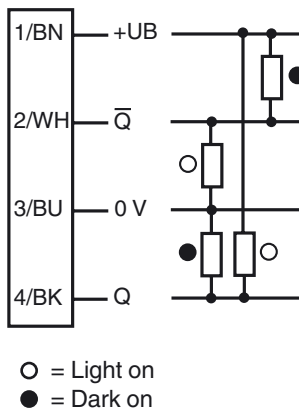
Product information

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.

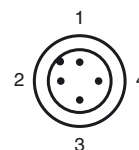
Dimensions



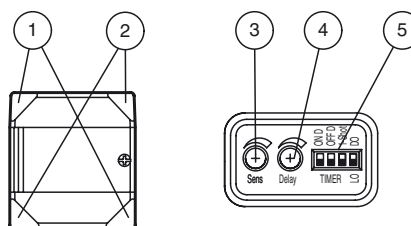
Electrical connection



Pinout



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

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Technical data**General specifications**

| | |
|---------------------|-----------------------------------|
| Detection range | Dependent on fibers selected |
| Light source | IRED |
| Light type | modulated infrared light , 850 nm |
| Ambient light limit | 5000 Lux ; according EN 60947-5-2 |

Indicators/operating means

| | |
|---------------------|---|
| Operation indicator | 2 LEDs green |
| Function indicator | 2 LEDs yellow ON: object inside the sensing range OFF: object outside the sensing range |
| Control elements | Light/Dark switch |
| Control elements | Detection range adjuster |
| Control elements | Time adjuster (0 ... 50 ms) |

Electrical specifications

| | | |
|------------------------|-------|--|
| Operating voltage | U_B | 10 ... 30 V DC |
| Ripple | | 10 % |
| 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 |

Output

| | | |
|---------------------|---|---|
| Switching type | light/dark on, switchable | |
| Signal output | 2 push-pull (4 in 1) outputs, short-circuit protected, reverse polarity protected | |
| Switching voltage | max. 30 V DC | |
| Switching current | max. 100 mA | |
| Voltage drop | U_d | ≤ 2.5 V |
| Switching frequency | f | 500 Hz |
| Response time | | ≤ 1 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 | 4-pin, M12 x 1 connector |
| Material | |
| Housing | PC (Polycarbonate) |
| Optical face | PMMA |
| Mass | 120 g |
| Tightening torque, fastening screws | ≤ 2 Nm |

Compliance with standards and directives

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

Approvals and certificates

| | |
|--------------|--|
| UL approval | cULus |
| CCC approval | CCC approval / marking not required for products rated ≤36 V |

Accessories**FE-BTS6S-5**

Glass fiber optic - diffuse

FE-BTS6S-10

Glass fiber optic - diffuse

FE-BTS6M-3

Glass fiber optic - diffuse

MPGKITC

Fiber cable adapter kit

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

V1-G-2M-PUR

Female cordset, M12, 4-pin, PUR cable

V1-W-2M-PUR

Female cordset, M12, 4-pin, PUR cable

FE-BTS6S-3

Glass fiber optic - diffuse

FE-BTSAS6S-3

Glass fiber optic - diffuse

FE-BTSAS6M-3

Glass fiber optic - diffuse

FE-BNSRA5S-3

Glass fiber optic - diffuse

FE-BRL7S-3

Glass fiber optic - diffuse

FE-BRL7M-3

Glass fiber optic - diffuse

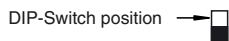
FE-BNSRA5M-3

Glass fiber optic - diffuse

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

Timer Functions

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



Time (T) is adjustable from 0 to 50 ms

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