# Photoelectric slot sensor
# GL50-RT/32/40a/98a

- Optimized for the detection of small parts
- High switching frequency
- Multiple device installation possible, no mutual interference (no cross-talk)
- Sensitivity adjuster and light-on/dark-on changeover switch as standard features of this series
- Visible red light
- Degree of protection IP67
- cULus approval
- Diecast zinc housing, powder coated

Photoelectric slot sensor, zinc pressure diecast housing, 50 mm slot width, red light, light/dark on, sensitivity adjuster, DC version, PNP output, 3 pin M8 plug

## Function

Photoelectric slot sensors offer vast installation benefits thanks to their housing design. When it comes to operation, these new generation devices boast features such as high resolution, high repeatability, automatic signal threshold adjustment, ambient light resistance, and detection of and/or light transmission through transparent objects. Cross-talk protection enables parallel installation of devices despite extremely high switching frequency. These characteristics guarantee reliable detection of small parts, from 0.3 mm, across the entire detection range, even in very fast moving applications.

## Dimensions
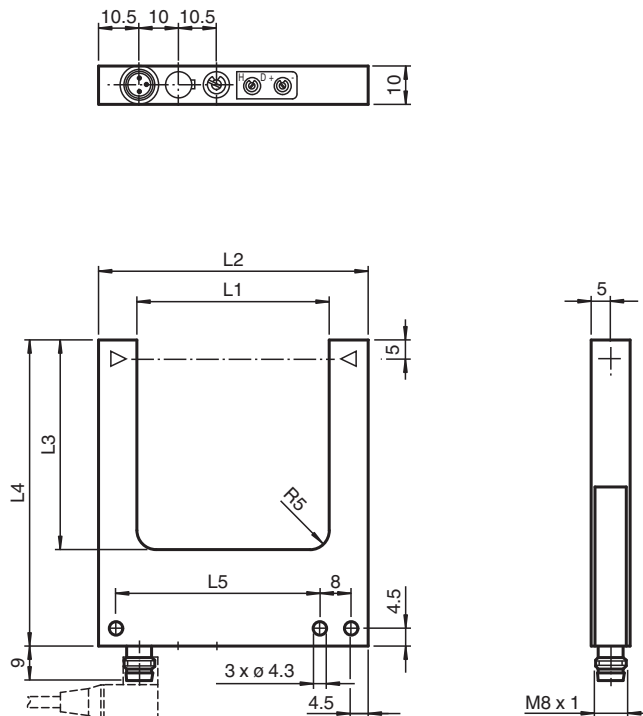


|         | L1 | L2  | L3 | L4 | L5 |
|---------|-----|-----|----|----|----|
| GL30..  | 30  | 50  | 35 | 60 | 33 |
| GL50..  | 50  | 70  | 55 | 80 | 53 |
| GL80..  | 80  | 100 | 55 | 80 | 83 |

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

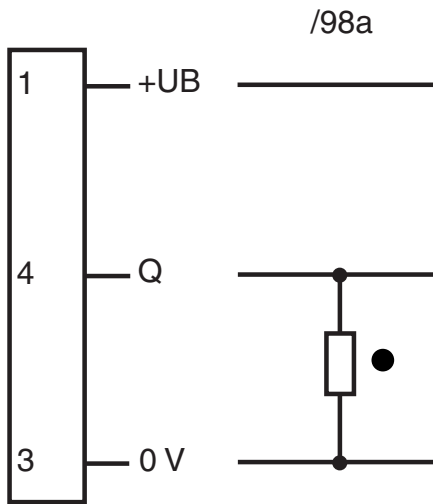Pepperl+Fuchs Group
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## Technical Data

| General specifications | | |
|---|---|---|
| Light source | | LED |
| Light type | | modulated visible red light |
| Tests | | EN 60947-5-2 |
| Target size | | 0.3 mm |
| Slot  width | | 50 mm |
| Slot depth | | 55 mm |
| Ambient light limit | | 100000 Lux |
| **Functional safety related parameters** | | |
| $MTTF_d$ | | 1290 a |
| Mission Time ($T_M$) | | 20 a |
| Diagnostic Coverage (DC) | | 0 % |
| **Indicators/operating means** | | |
| Function indicator | | LED red in connector |
| Control elements | | Sensitivity adjuster, light/dark switch |
| **Electrical specifications** | | |
| Operating voltage | $U_B$ | 10 ... 30 V DC, class 2 |
| Ripple | | 10  % |
| No-load supply current | $I_0$ | ≤ 15 mA |
| **Output** | | |
| Switching type | | light/dark on |
| Signal output | | 1 PNP, short-circuit protected, open collector |
| Switching voltage | | max. 30 V DC |
| Switching current | | max. 100 mA |
| Repeat accuracy | | 0.05  mm |
| Switching frequency | f | 3 kHz |
| Response time | | ≤ 160 µs |
| **Conformity** | | |
| Product standard | | EN 60947-5-2 |
| **Approvals and certificates** | | |
| CE conformity | | CE |
| UL approval | | cULus |
| CCC approval | | CCC approval / marking not required for products rated ≤36 V |
| **Ambient conditions** | | |
| Ambient temperature | | -20 ... 60 °C (-4 ... 140 °F) |
| Storage temperature | | -20 ... 75 °C (-4 ... 167 °F) |
| **Mechanical specifications** | | |
| Degree of protection | | IP67 |
| Connection | | M8 connector, 3-pin |
| Material | | |
| Housing | | powder coated diecast zinc |
| Optical face | | glass |
| Mass | | 90 g |

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

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## Connection Assignment

/98a

```
1 ── +UB ──────────────
4 ── Q ───────────
3 ── 0 V ──────────
```

○ = Light on
● = Dark on

## Connection Assignment

```
        4
    1 ( • ) 3
        •
```
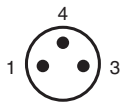
Wire colors in accordance with EN 60947-5-2

| 1 | BN | (brown) |
| 3 | BU | (blue) |
| 4 | BK | (black) |

## Assembly
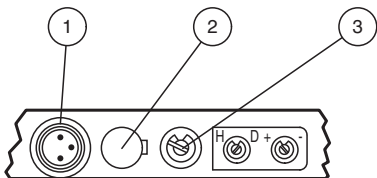
| 1 | Functional display | red |
| 2 | Light-/dark switch | |
| 3 | Sensitivity adjuster | |

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

## Application
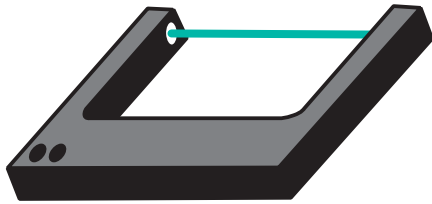


## Accessories

| | **V3-WM-2M-PUR** | Female cordset single-ended M8 angled A-coded, 3-pin, PUR cable grey |
|---|---|---|

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

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## Operating principle

Photoelectric slot sensors are photoelectric sensors that operate according to the thru-beam sensor principle. The transmitter sends signals directly to the receiver. If an object breaks the light beam, the switching element function is triggered. The special U-shaped design means the transmitter and receiver can be accommodated in one housing, which ensures high resistance to vibrations. In contrast to standard thru-beam sensors, photoelectric slot sensors have the added advantage of not requiring complex electrical installation, as only one device needs to be connected. Also, adjustment of the optical axes is not necessary.

## Application

- Small part detection, from object size 0.3 mm
- Can also be used for systems with strong vibrations
- Detection of small needles in transparent hollow needles
- Counting of small parts on conveyors
- Feed and correct separation verification
- Web edge control
- Elevator car position in elevators

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