



Slot grid sensor RAL50-IR/32/98



- Compact slot grid sensor
- Open frame with wide detection area
- Optimized for detection of small parts up to 0.5 mm
- Option to suppress stationary objects
- Detection of very small guided and non-guided parts in free fall

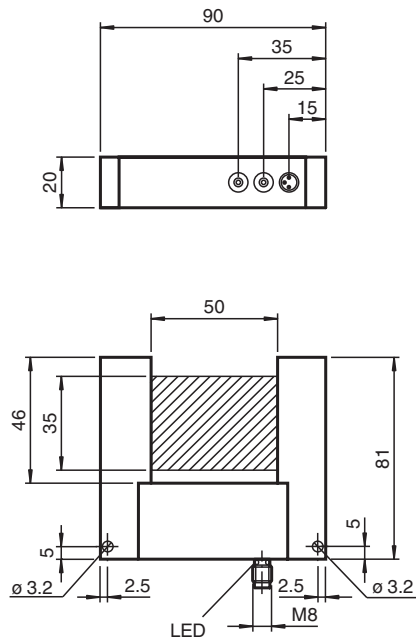
Compact slot grid sensor, optimized for detection of small parts, 50 mm slot width, infrared light, PNP output, M8 plug



Function

Slot grid sensors are ideal for filling and counting objects in feed devices. In contrast to standard photoelectric slot sensors, the slot grid sensors have an entire field for object detection with a maximum response time of 100 µs and a minimum object size of 1 mm. When using dynamic mode, only moving objects are detected.

Dimensions



Technical Data

General specifications

| | |
|---------------------|--------------------------|
| Light source | IRE |
| Light type | modulated infrared light |
| Marking | CE |
| Slot width | 50 mm |
| Slot depth | 46 mm |
| Ambient light limit | 10000 Lux |

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

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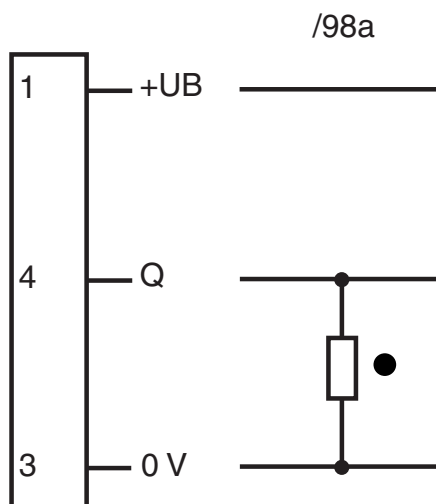
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Technical Data

| | | |
|----------------------------|-----------------------------------------------------------------------------------|------------------------|
| Resolution | 0.5 mm | |
| Temperature influence | | < 10 % |
| active zone | 35 mm x 50 mm | |
| Indicators/operating means | | |
| Function indicator | LED, yellow | |
| Control elements | | sensitivity adjustment |
| Control elements | Time adjuster for Pulse stretching and Dynamic/static operation | |
| Electrical specifications | | |
| Operating voltage | U _B | 24 V DC ± 20 % |
| No-load supply current | I ₀ | < 70 mA |
| Output | | |
| Switching type | | dark-on |
| Signal output | 1 PNP output, short-circuit protected, reverse polarity protected, open collector | |
| Switching voltage | | max. 30 V DC |
| Switching current | 200 mA | |
| Voltage drop | U _d | < 2.5 V |
| Switching frequency | f | 5000 Hz |
| Repeat accuracy | R | 0.1 mm |
| Pulse extension | 0.1 ... 150 ms | |
| Conformity | | |
| Product standard | EN 60947-5-2 | |
| Ambient conditions | | |
| Ambient temperature | -10 ... 60 °C (14 ... 140 °F) | |
| Mechanical specifications | | |
| Housing length | 81 mm | |
| Housing width | | 20 mm |
| Housing height | 90 mm | |
| Degree of protection | | IP67 |
| Connection | M8 connector, 3-pin | |
| Material | | |
| Housing | black anodized aluminum | |
| Optical face | | glass |
| Mass | 200 g | |

Connection Assignment



○ = Light on
● = Dark on

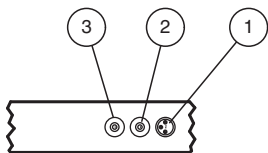
Connection Assignment



Wire colors in accordance with EN 60947-5-2

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

Assembly



| | | |
|---|----------------------|--------|
| 1 | Functional display | yellow |
| 2 | Time/static | |
| 3 | Sensitivity adjuster | |

Resolution

| Potentiometer setting | RAL-50 | RAL-70 | RAL-100 | RAL-150 |
|-----------------------|--------|---------|---------|---------|
| Minimal | 0.5 mm | 0.8 mm | 1.0 mm | 1.2 mm |
| Center | 4.0 mm | 8.0 mm | 10.0 mm | 15.0 mm |
| Maximum | 8.0 mm | 15.0 mm | 25.0 mm | 50.0 mm |

The information on the maximum resolution (smallest detectable object) relates to the center of the slot grid sensor.

Configuration information

The device is set to large parts by turning the sensitivity adjustment potentiometer clockwise and to small parts by turning the sensitivity adjustment potentiometer counterclockwise.

The "time/static" potentiometer can be used both to select pulse extension in dynamic operation and to select static/dynamic operation. Static operation is selected by turning the potentiometer counterclockwise as far as it will go. Pulse extension is set to 1 ms. Pulse extension can be adjusted between 150 ms and 0 ms by turning the potentiometer clockwise.

In static operation, the output remains set while the object is within the frame. The switching threshold is not automatically tracked in this operating mode. Temperature fluctuations and dirt may trigger a switching operation.

In dynamic operation, the output is set only to the specified pulse extension. Objects that extend into the frame are hidden.

If the device becomes dirty in dynamic operation, the output is set statically at 50% reception signal.