

Model Number

RAL150-IR/32/98

Slot grid sensor

with 3-pin, M8 x 1 connector

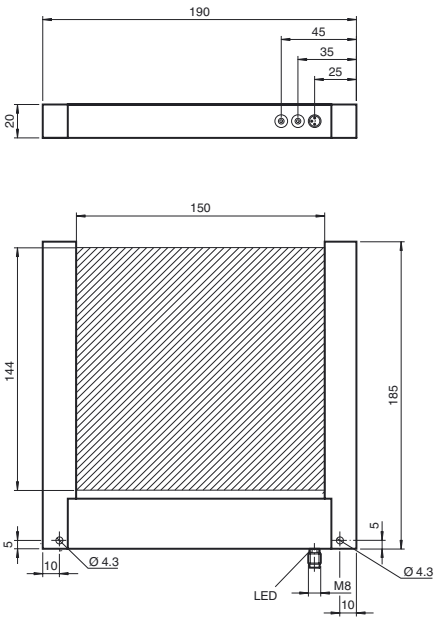
Features

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

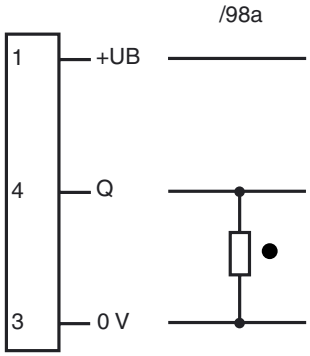
Product information

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



Electrical connection

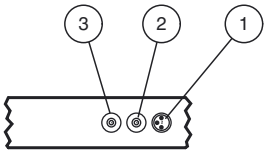


○ = Light on
● = Dark on

Pinout



Indicators/operating means



1	Functional display	yellow
2	Time/static	
3	Sensitivity adjuster	

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Technical data

General specifications		
Light source		IRED
Light type		modulated infrared light
Marking		CE
Fork width		150 mm
Ambient light limit		10000 Lux
Resolution		3 mm
Temperature influence		< 10 %
active zone		150 mm x 144 mm
Indicators/operating means		
Function display		LED, yellow
Controls		sensitivity adjustment
Controls		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
Standard conformity		
Standards		EN 60947-5-2
Ambient conditions		
Ambient temperature		-10 ... 60 °C (14 ... 140 °F)
Mechanical specifications		
Protection degree		IP67
Connection		M8 connector, 3-pin
Material		
Housing		black anodized aluminum
Optical face		glass
Mass		500 g

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.

Accessories

V3-GM-2M-PUR
Cable socket, M8, 3-pin, PUR cable

V3-WM-2M-PUR
Cable socket, M8, 3-pin, PUR cable

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

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Refer to “General Notes Relating to Pepperl+Fuchs Product Information”.
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