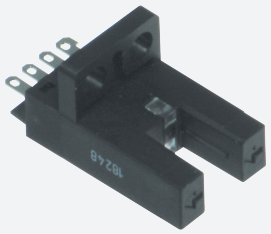


Photoelectric slot sensor

GL5-J/28a/155

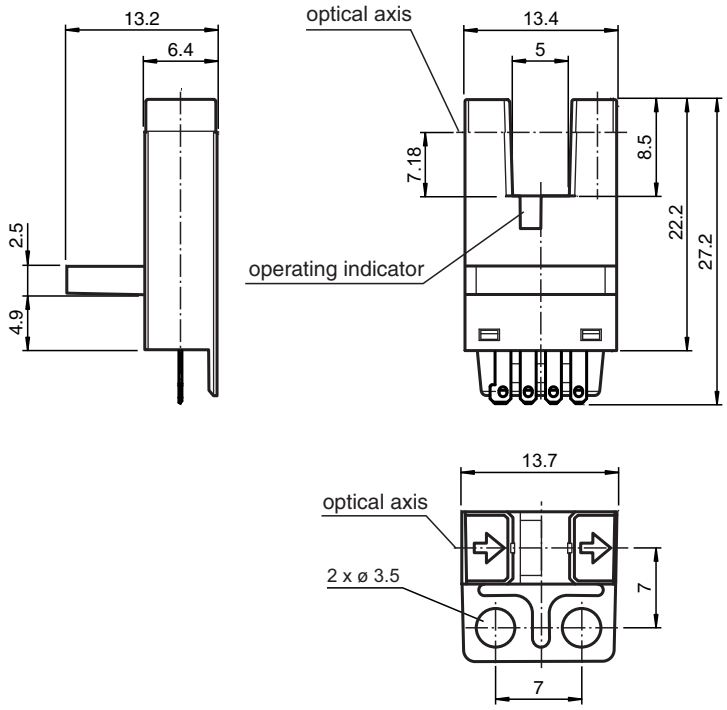
- Miniature design
- Optimized for the detection of small parts
- High switching frequency
- Simple and fast mounting
- Clearly visible LED functional display

Miniature photoelectric slot sensor for the detection of small parts, J design, fork width 5 mm, infrared light, NPN outputs, flat connector

Function

The GL5 miniature slot sensor compares a high optical performance in a small housing and is optimized to the requirements in semiconductors industry for small part detection. A wide voltage range of 5 - 24 V DC and the fastest switching frequency of 5 kHz in its class stands for the quality of this sensor. The integrated aperture allows the small part detection with a minimum object size of 0.8 x 1.8 mm. The sensor offers antivalent npn or pnp outputs. Due to a variety of different housings and an optimized housing concept offers the sensor a maximum of freedom in a crowded mounting environment.

Dimensions



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Technical Data

General specifications		
Light source		IRED
Light type		Infrared, continuous light , 940 nm
Target size		0.8 x 1.8 mm
Slot width		5 mm
Slot depth		8.5 mm
Ambient light limit		1000 Lux
Functional safety related parameters		
$MTTF_d$		3760 a
Mission Time (T_M)		20 a
Diagnostic Coverage (DC)		0 %
Indicators/operating means		
Function indicator		red LED lights up when receiving the light beam
Electrical specifications		
Operating voltage	U_B	5 ... 24 V DC , class 2
No-load supply current	I_0	max. 20 mA
Time delay before availability	t_v	< 2 ms
Output		
Switching type		light/dark on
Signal output		2 NPN complementary , overvoltage protected
Switching voltage		max. 30 V DC
Switching current		max. 50 mA , resistive load
Voltage drop	U_d	max. 0.2 V at 10 mA max. 0.6 V at 50 mA
Switching frequency	f	max. 5 kHz
Response time		40 µs Light beam is not interrupted 80 µs Light beam is interrupted
Repeat accuracy	R	0.03 mm
Compliance with standards and directives		
Directive conformity		
EMC Directive 2004/108/EC		EN 60947-5-2:2007+A1:2012
Standard conformity		
Standards		UL 60947-5-2
Approvals and certificates		
UL approval		cULus Recognized, Class 2 Power Source
CCC approval		CCC approval / marking not required for products rated ≤36 V
Ambient conditions		
Ambient temperature		-25 ... 55 °C (-13 ... 131 °F)
Storage temperature		-30 ... 80 °C (-22 ... 176 °F)
Pollution degree		2
Mechanical specifications		
Housing width		13.2 mm
Housing height		13.4 mm
Degree of protection		IP50
Connection		4-pin flat connector
Material		
Housing		PBT
Mass		3 g
Tightening torque, fastening screws		0.6 Nm

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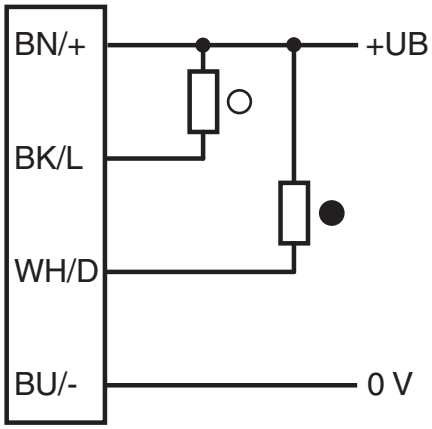
Connection Assignment



○ = Light on
● = Dark on

Accessories

	CBL SET GL5	Connection cable for GL5 series

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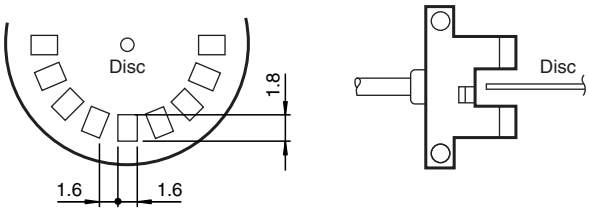
Response frequency

The response frequency is the value when the disc, given in the figure below, is rotated.



t = 0.2

Applications

The GL5 is suited for applications in the semiconductor and electronic industrial environment.

Typical applications include:

1. Detection of lead frames
2. Detection of cam positions
3. Detection of limit positions of moving objects
4. Position detection of wafer cases

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