

# Reflex Sensor with Background Suppression

## P1KH027



- Condition monitoring
- IO-Link 1.1
- Low switching distance deviation for black/white
- Reliably detect objects against any background

The reflex sensor with background suppression works with red light according to the angle measurement principle and is suitable for the detection of objects against any background. The sensor always has the same switching distance, regardless of the color, shape and surface of the objects. Minimal height differences can be detected with the sensors and, for example, various parts can be reliably differentiated from each other. The IO-Link interface can be used to configure the reflex sensors (PNP/NPN, NC/NO), as well as for reading out switching statuses.



### Optical Data

Range	300 mm
Adjustable Range	30...300 mm
Switching Hysteresis	< 5 %
Light Source	Red Light
Service Life (T = +25 °C)	100000 h
Max. Ambient Light	10000 Lux
Light Spot Diameter	see Table 1

### Electrical Data

Supply Voltage	10...30 V DC
Supply Voltage with IO-Link	18...30 V DC
Current Consumption (U <sub>b</sub> = 24 V)	< 20 mA
Switching Frequency	1000 Hz
Switching Frequency (interference-free mode)	500 Hz
Response Time	0,5 ms
Response time (interference-free mode)	1 ms
Temperature Drift (0 °C < T <sub>u</sub> < 40 °C)	< 5 % *
Temperature Range	-40...60 °C
Switching Output Voltage Drop	< 2 V
Switching Output/Switching Current	100 mA
Residual Current Switching Output	< 50 µA
Short Circuit and Overload Protection	yes
Reverse Polarity Protection	yes
Lockable	yes
Interface	IO-Link V1.1
Protection Class	III

### Mechanical Data

Setting Method	Multi-turn
Housing Material	Plastic
Degree of Protection	IP67/IP68
Connection	M8 × 1; 3-pin
Optic Cover	PMMA

### Safety-relevant Data

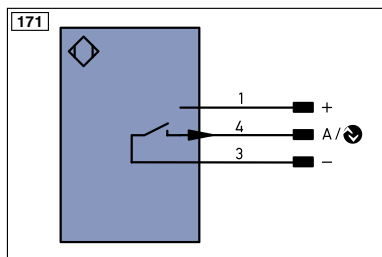
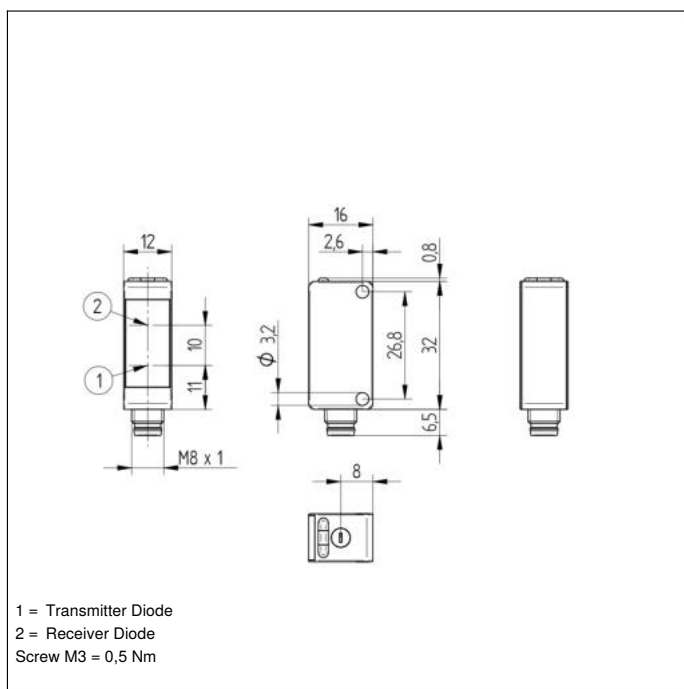
MTTFd (EN ISO 13849-1)	2045,4 a
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NPN NO	●
IO-Link	●
Connection Diagram No.	171
Control Panel No.	1K3
Suitable Connection Equipment No.	8
Suitable Mounting Technology No.	400

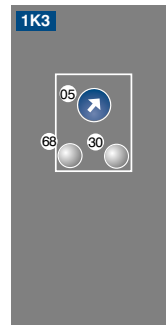
\* See operating instructions for further information

### Complementary Products

IO-Link Master
Software



## Ctrl. Panel



05 = Switching Distance Adjuster  
30 = Switching Status/Contamination Warning  
68 = Supply Voltage Indicator

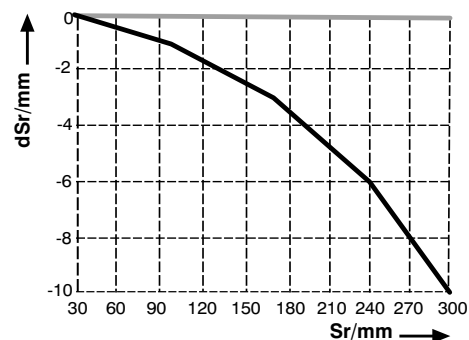
**Table 1**

Detection Range	30 mm	130 mm	300 mm
Light Spot Diameter	8 mm	7 mm	18 mm

## Switching Distance Deviation

Typical characteristic curve based on white, 90 % remission

**P1KH**



Sr = Switching Distance

dSr = Switching Distance Change

— black 6 % remission

— grey 18 % remission

