

# Reflex Sensor with Background Suppression

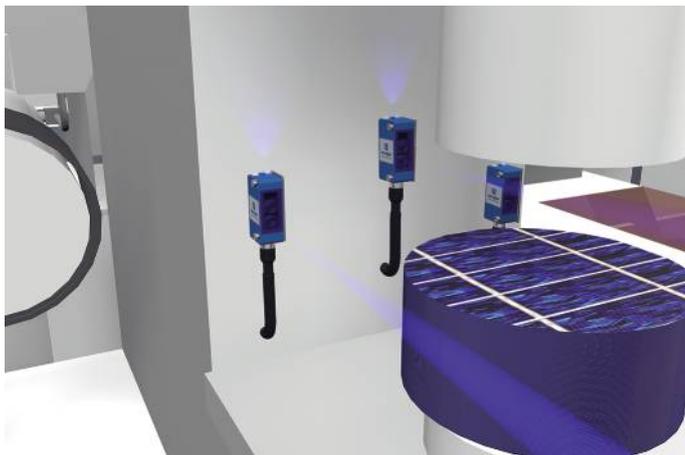
## P1KH019

PNG // smart



- Blue light for dark, shiny objects
- Condition monitoring
- IO-Link 1.1
- Reliably detect objects against any background

The reflex sensor with background suppression works with blue light according to the angle measurement principle and is designed to detect objects against any background. The sensor always has the same switching distance, regardless of the color, shape and surface of the objects. The reflex sensor with blue light is specially designed for applications with dark shiny objects, such as when manufacturing solar wafers. The IO-Link interface can be used to configure the reflex sensors (PNP/NPN, NC/NO, switching distance), as well as for reading out switching statuses and distance values.



### Optical Data

Range	150 mm
Adjustable Range	30...150 mm
Switching Hysteresis	< 10 %
Light Source	Blue Light
Service Life (T = +25 °C)	100000 h
Risk Group (EN 62471)	1
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	< 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	Potentiometer
Housing Material	Plastic
Degree of Protection	IP67/IP68
Connection	M8 × 1; 4-pin
Optic Cover	PMMA

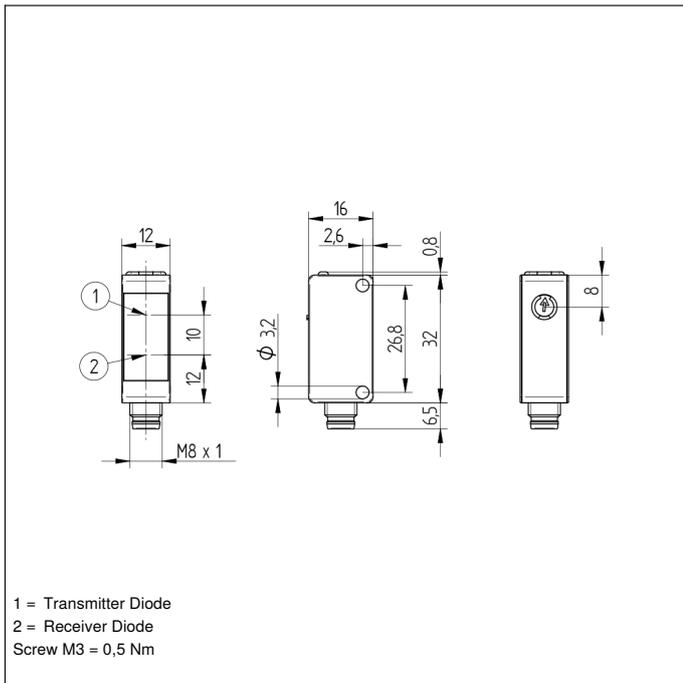
### Safety-relevant Data

MTTFd (EN ISO 13849-1)	1717,03 a
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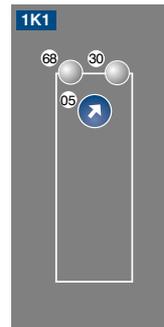
PNP NO/NC antivalent	●
IO-Link	●
Connection Diagram No.	<b>215</b>
Control Panel No.	<b>1K1</b>
Suitable Connection Equipment No.	<b>7</b>
Suitable Mounting Technology No.	<b>400</b>

### Complementary Products

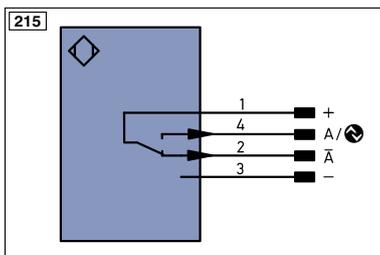
IO-Link Master  
Software



### Ctrl. Panel



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



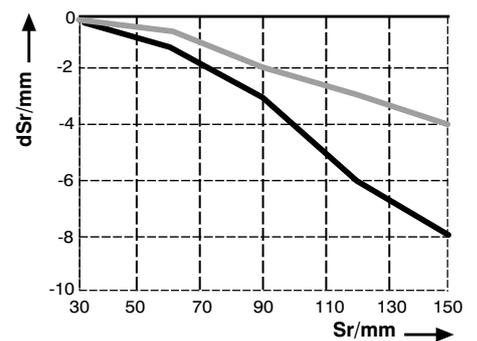
**Table 1**

Detection Range	50 mm	100 mm	150 mm
Light Spot Diameter	4 mm	6 mm	10 mm

### Switching Distance Deviation

Typical characteristic curve based on white, 90 % remission

#### P1KH BLUE



Sr = Switching Distance

dSr = Switching Distance Change

— black 6 % remission

— grey 18 % remission

