

# Reflex Sensor with Background Suppression

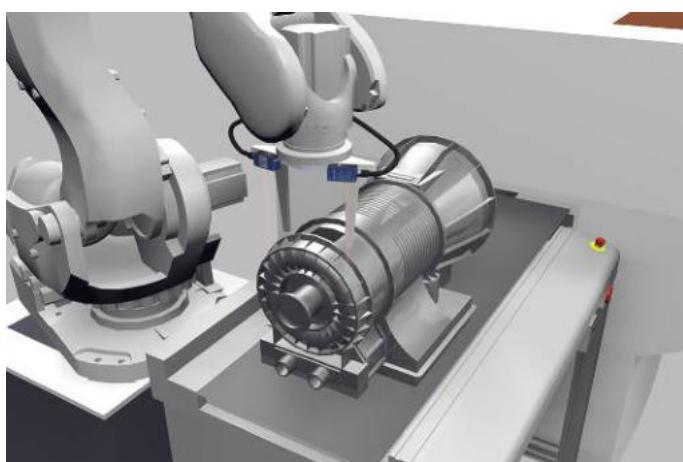
## P1KH028 LASER

PNG//smart



- Condition monitoring
- Detect extremely small parts starting at 0.1 mm
- IO-Link 1.1
- Laser class 1

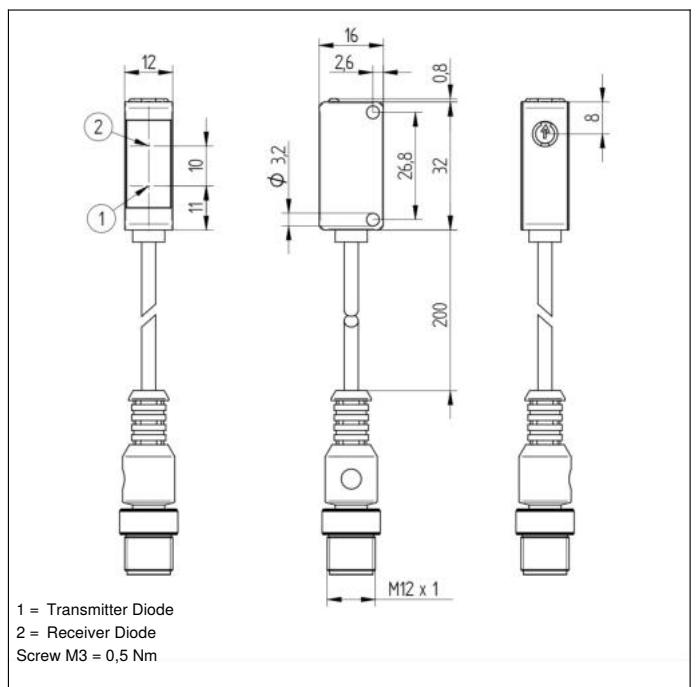
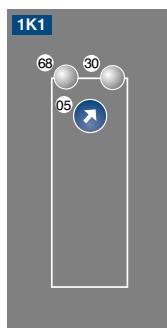
The reflex sensor with background suppression works with laser light according to the angle measurement principle and is designed to detect objects against any background. The sensor always has the same switching distance, regardless of the color, shape and surface of the objects. The fine laser beam means that even the smallest parts, starting at 0.1 mm in size, can be reliably detected. 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.



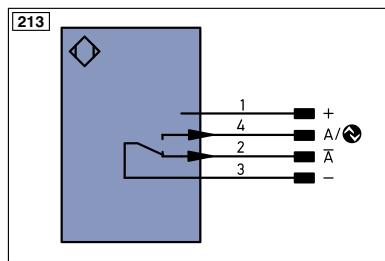
Optical Data	
Range	120 mm
Adjustable Range	30...120 mm
Switching Hysteresis	< 10 %
Light Source	Laser (red)
Wavelength	655 nm
Service Life (T = +25 °C)	100000 h
Laser Class (EN 60825-1)	1
Max. Ambient Light	10000 Lux
Light Spot Diameter	see Table 1
Electrical Data	
Supply Voltage	10...30 V DC
Supply Voltage with IO-Link	18...30 V DC
Current Consumption (Ub = 24 V)	< 15 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
FDA Accession Number	1710976-001
Mechanical Data	
Setting Method	Potentiometer
Housing Material	Plastic
Degree of Protection	IP67/IP68
Connection	M12 x 1; 4-pin
Cable Length	20 cm
Optic Cover	PMMA
Safety-relevant Data	
MTTFd (EN ISO 13849-1)	1641,23 a
NPN NO/NC antivalent	●
IO-Link	●
Connection Diagram No.	213
Control Panel No.	1K1
Suitable Connection Equipment No.	2
Suitable Mounting Technology No.	400

### Complementary Products

IO-Link Master  
Software


**Ctrl. Panel**


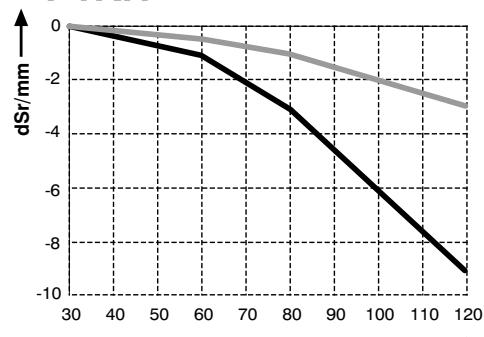
05 = Switching Distance Adjuster  
30 = Switching Status/Contamination Warning  
68 = Supply Voltage Indicator


**Table 1**

Detection Range	40 mm	80 mm	120 mm
Light Spot Diameter	2,5 mm	1,5 mm	1 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

