

# Reflex Sensor with Background Suppression

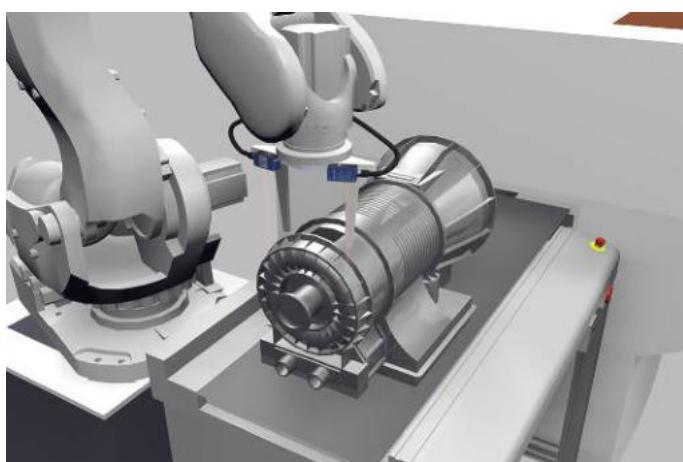
## P1KH031 LASER

PNG//smart



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

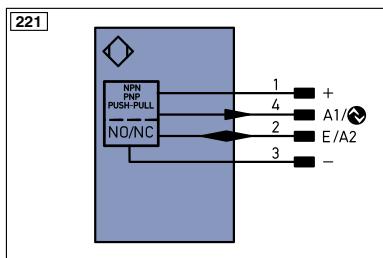
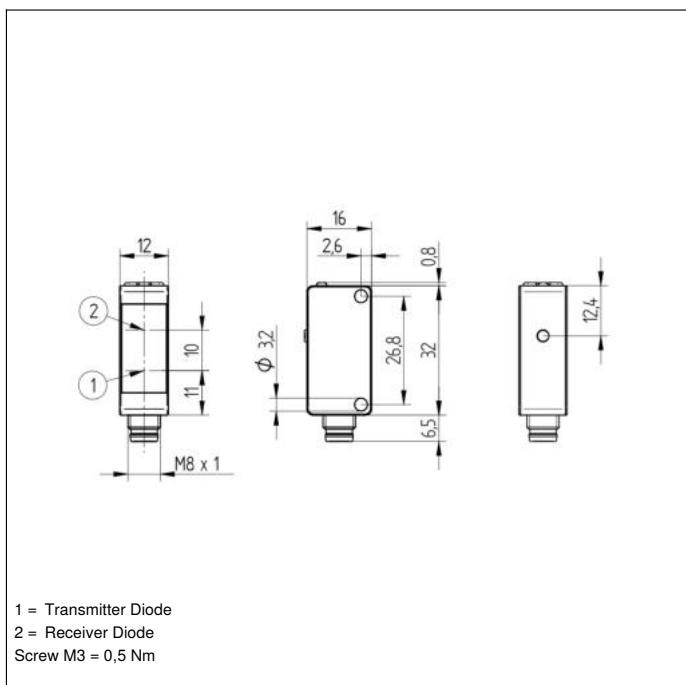
The reflex sensor with background suppression works with laser light according to the angle measurement principle. It has a IO-Link interface with a data storage function as well as additional configuration and diagnostic options. The interface can also be used to configure the sensors (PNP/NPN, NC/NO, switching distance, error output), as well as for reading out switching statuses and distance values. The teach-in function also provides another configuration option. Two independent switching outputs can be used, for instance, to monitor minimum and maximum values of distances or fill levels and stack heights.



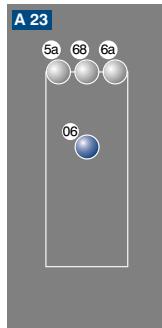
Optical Data	
Range	120 mm
Adjustable Range	30...120 mm
Switching Hysteresis	< 10 %
Light Source	Laser (red)
Wavelength	655 nm
Service Life (T = +25 °C)	100000 h
Laser Class (EN 60825-1)	1
Max. Ambient Light	10000 Lux
Light Spot Diameter	see Table 1
Electrical Data	
Supply Voltage	15...30 V DC
Supply Voltage with IO-Link	18...30 V DC
Current Consumption (Ub = 24 V)	< 20 mA
Switching Frequency	100 Hz
Switching Frequency (1 Switching Output)	1000 Hz
Response Time	5 ms
Response time (1 switching output)	0,5 ms
Temperature Drift	< 5 %
Temperature Range	-40...60 °C
Number of Switching Outputs	2
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
Data Storage	yes
Protection Class	III
FDA Accession Number	1710976-001
Mechanical Data	
Setting Method	Teach-In
Housing Material	Plastic
Degree of Protection	IP67/IP68
Connection	M8 x 1; 4-pin
Optic Cover	PMMA
NPN NO	●
IO-Link	●
Connection Diagram No.	221
Control Panel No.	A23
Suitable Connection Equipment No.	7
Suitable Mounting Technology No.	400

### Complementary Products

IO-Link Master  
Software



### Ctrl. Panel



06 = Teach Button  
30 = Switching Status/Contamination Warning  
5a = Switching Status Display, O1  
68 = Supply Voltage Indicator  
6a = Switching Status Display, O2

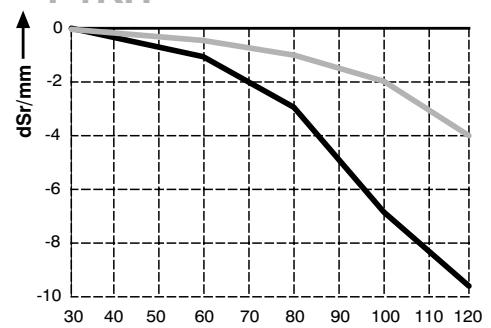
**Table 1**

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

