

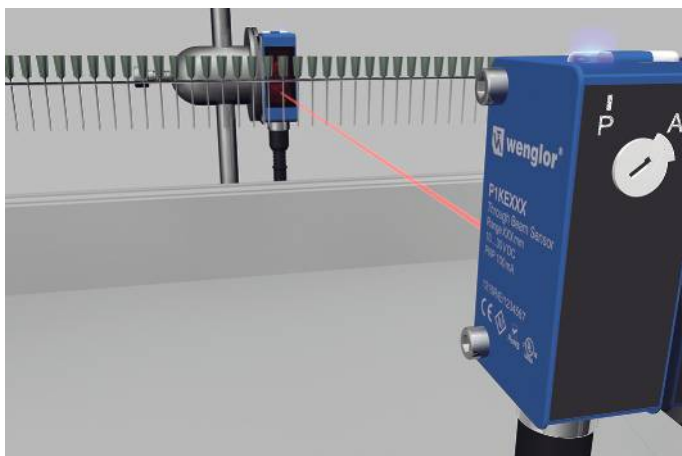
# Through-Beam Sensor

## P1KE013 LASER



- Detect smallest parts until 0,6 mm
- IO-Link 1.1
- Test input for high operational reliability
- Very high switching frequency

The through-beam sensor works with a fine laser beam as well as a transmitter and a receiver. The collimated laser beam of laser class 1 detects objects, for instance, when conducting installation, feed or presence controls, starting at a size of just 0,6 millimeters. The transmitter can be deactivated using test input in order to test the functionality of the through-beam sensor. The IO-Link interface can be used to configure the sensor (PNP/NPN, NC/NO, switching distance), as well as for reading out switching statuses and signal values.



Optical Data	
Range	10000 mm
Smallest Recognizable Part	see Table 1
Switching Hysteresis	< 10 %
Light Source	Laser (red)
Service Life (T = +25 °C)	100000 h
Laser Class (EN 60825-1)	1
Max. Ambient Light	10000 Lux

Electrical Data	
Sensor Type	Receiver
Supply Voltage	10...30 V DC
Supply Voltage with IO-Link	18...30 V DC
Current Consumption (U <sub>b</sub> = 24 V)	< 15 mA
Switching Frequency	4500 Hz
Switching Frequency (interference-free mode)	2000 Hz
Response Time	0,11 ms
Response time (interference-free mode)	0,25 ms
Temperature Drift (-10 °C < T <sub>u</sub> < 40 °C)	10 % *
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
Interface	IO-Link V1.1
Protection Class	III

Mechanical Data	
Setting Method	Potentiometer
Housing Material	Plastic
Degree of Protection	IP67/IP68
Connection	M12 × 1; 4-pin
Cable Length	200 mm
Optic Cover	PMMA

Safety-relevant Data	
MTTFd (EN ISO 13849-1)	1945,13 a

PNP NO/NC antivalent	●
IO-Link	●
Connection Diagram No.	<b>215</b>
Control Panel No.	<b>1K1</b>
Suitable Connection Equipment No.	<b>2</b>
Suitable Mounting Technology No.	<b>400</b>

### Suitable Emitter

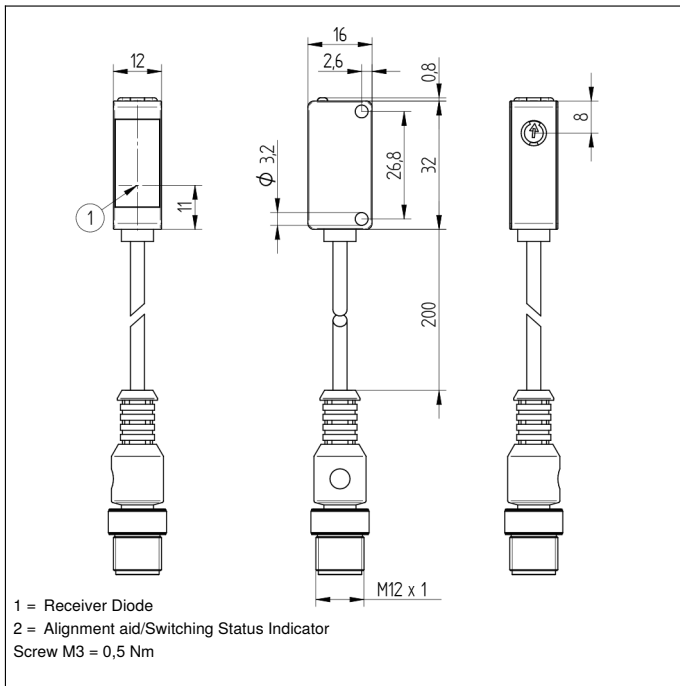
P1KS006
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\* See operating instructions for further information

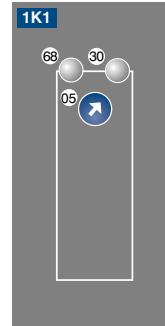
\* Temperature range with permanently installed cable, bending radius: > 20 mm

### Complementary Products

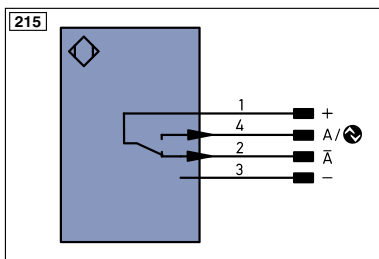
IO-Link Master Software
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### Ctrl. Panel



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



**Table 1**

Distance transmitter/receiver	1 m	6 m	10 m
Smallest Recognizable Part	2,5 mm	0,6 mm	1,5 mm