

Through-Beam Sensor

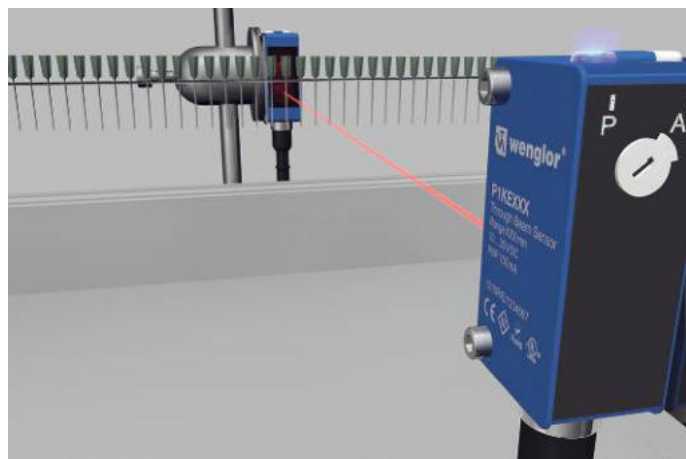
P1KE007 **LASER**

Part Number



- 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.



Technical Data

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 _b = 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 _u < 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	M8 × 1; 3-pin
Optic Cover	PMMA

Safety-relevant Data

MTTFd (EN ISO 13849-1)	1945,13 a
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PNP NC

IO-Link

Connection Diagram No.

Control Panel No.

Suitable Connection Equipment No.

Suitable Mounting Technology No.

●

●

217

1K1

8

400

Suitable Emitter

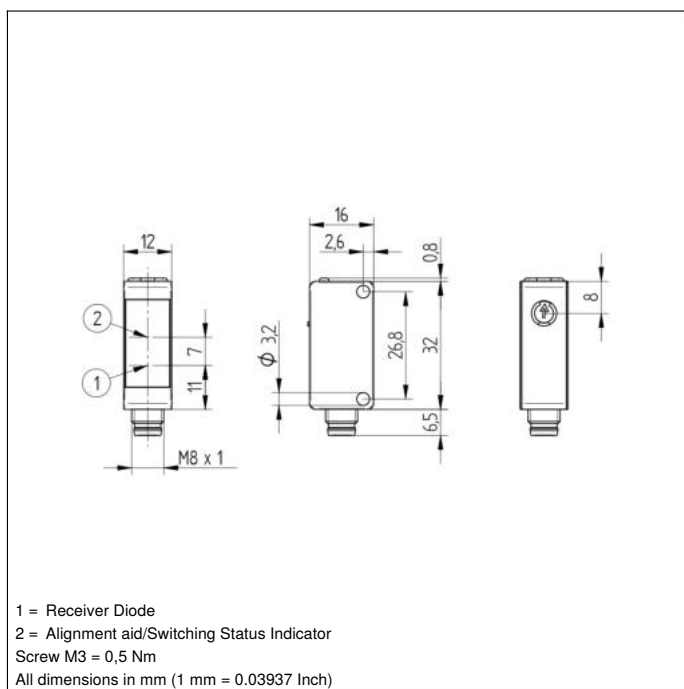
P1KS003

* See operating instructions for further information

Complementary Products

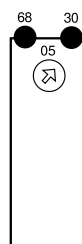
IO-Link Master

Software

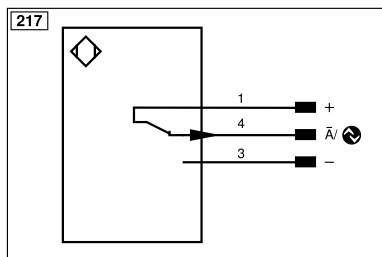


Ctrl. Panel

1K1



05 = Switching Distance Adjuster
30 = Switching Status/Contamination Warning
68 = supply voltage indicator



Legend			
+	Supply Voltage +	nc	Not connected
-	Supply Voltage 0 V	U	Test Input
~	Supply Voltage (AC Voltage)	Ů	Test Input inverted
A	Switching Output (NO)	W	Trigger Input
Ā	Switching Output (NC)	W-	Ground for the Trigger Input
V	Contamination/Error Output (NO)	O	Analog Output
Ȳ	Contamination/Error Output (NC)	O-	Ground for the Analog Output
E	Input (analog or digital)	BZ	Block Discharge
T	Teach Input	Amv	Valve Output
Z	Time Delay (activation)	a	Valve Control Output +
S	Shielding	b	Valve Control Output 0 V
RxD	Interface Receive Path	SY	Synchronization
TxD	Interface Send Path	SY-	Ground for the Synchronization
RDY	Ready	E+	Receiver-Line
GND	Ground	S+	Emitter-Line
CL	Clock	±	Grounding
E/A	Output/Input programmable	SnR	Switching Distance Reduction
IO-Link		Rx+/-	Ethernet Receive Path
PoE	Power over Ethernet	Tx+/-	Ethernet Send Path
IN	Safety Input	Bus	Interfaces-Bus A(+)/B(-)
OSSD	Safety Output	La	Emitted Light disengageable
Signal	Signal Output	Mag	Magnet activation
BL_D+/-	Ethernet Gigabit bidirect. data line (A-D)	RES	Input confirmation
ENo RS422	Encoder 0-pulse 0/0 (TTL)	EDM	Contact Monitoring
PT	Platinum measuring resistor	ENARIS422	Encoder A/A (TTL)
		ENBRIS422	Encoder B/B (TTL)
		ENA	Encoder A
		ENB	Encoder B
		AMIN	Digital output MIN
		AMAX	Digital output MAX
		ACK	Digital output OK
		SY In	Synchronization In
		SY OUT	Synchronization OUT
		OLT	Brightness output
		M	Maintenance
		rsv	Reserved
		Wire Colors according to DIN IEC 60757	
		BK	Black
		BN	Brown
		RD	Red
		OG	Orange
		YE	Yellow
		GN	Green
		BU	Blue
		VT	Violet
		GY	Grey
		WH	White
		PK	Pink
		GNYE	Green/Yellow

Table 1

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