

High-Performance Distance Sensor

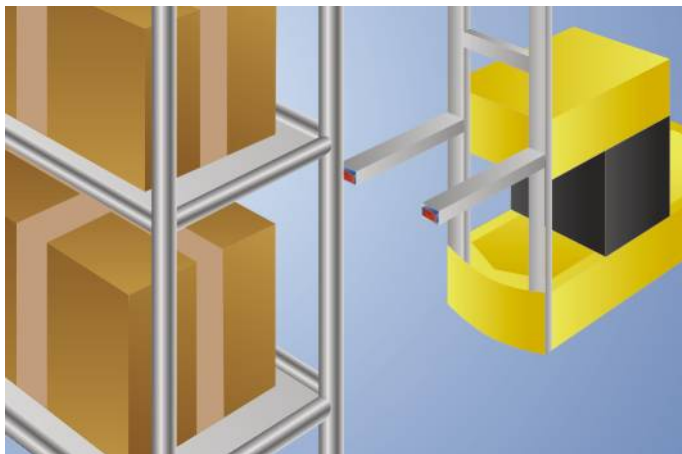
P1KY101 LASER

Part Number



- 2 mutually independent switching outputs
- IO-Link interface
- Large working range
- Miniature design

The high-performance distance sensor with compact format accurately determines distance between the sensor and the object on the basis of transit time measurement. Two mutually independent switching outputs and the intelligent IO-Link interface permit multifunctional use for precisely ascertaining distance to an object, or for detecting the object at any two switching points. A large working range of 0 to 1500 mm ensures top performance with a miniature format and flexibility where range is concerned. Thanks to laser class 1, the sensor's laser beam is harmless for the human eye.



Technical Data

Optical Data	
Working Range	0...1500 mm
Adjustable Range	50...1500 mm
Switching Hysteresis	< 30 mm
Light Source	Laser (infrared)
Wavelength	940 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 (U _b = 24 V)	< 15 mA
Switching Frequency	10 Hz
Response Time	< 36 ms
Temperature Drift	< 2,5 %
Temperature Range	-30...50 °C
Number of Switching Outputs	2
Switching Output Voltage Drop	< 2,5 V
Switching Output/Switching Current	100 mA
Residual Current Switching Output	< 50 μA
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Lockable	yes
Interface	IO-Link V1.1
Protection Class	III
FDA Accession Number	1720547-001

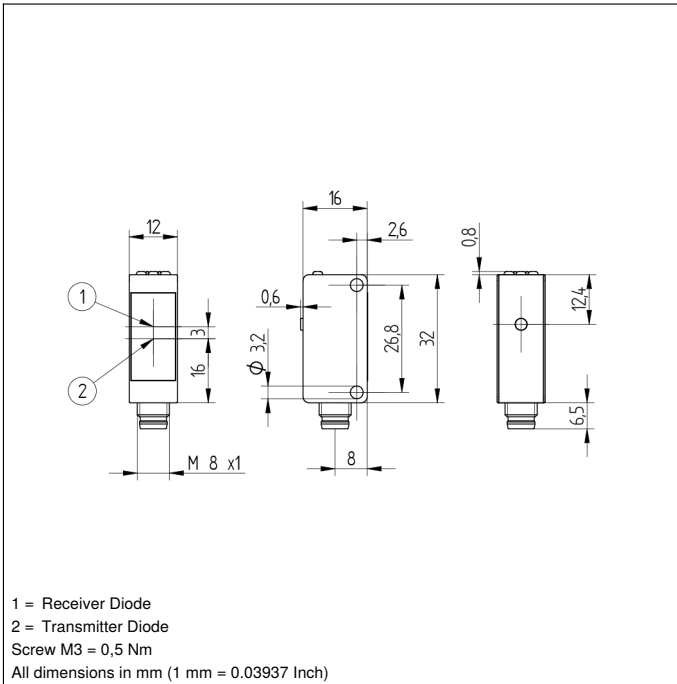
Mechanical Data	
Setting Method	Teach-In
Housing Material	Plastic
Optic Cover	PMMA
Degree of Protection	IP67/IP68
Connection	M8 × 1; 4-pin

Safety-relevant Data	
MTTFd (EN ISO 13849-1)	2266,52 a

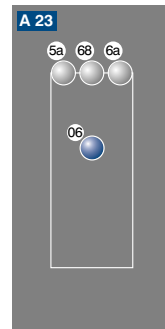
PNP NO	●
IO-Link	●
Connection Diagram No.	223
Control Panel No.	A23
Suitable Connection Equipment No.	7
Suitable Mounting Technology No.	400

Complementary Products

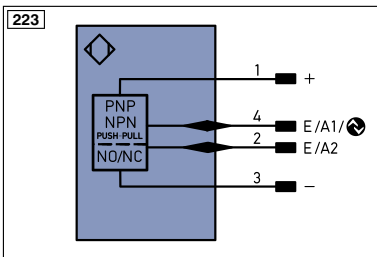
IO-Link Master Software



Ctrl. Panel



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



Legend			
+	Supply Voltage +	PT	Platinum measuring resistor
-	Supply Voltage 0 V	nc	not connected
~	Supply Voltage (AC Voltage)	U	Test Input
A	Switching Output (NO)	Ū	Test Input inverted
Ā	Switching Output (NC)	W	Trigger Input
V	Contamination/Error Output (NO)	W-	Ground for the Trigger Input
Ṽ	Contamination/Error Output (NC)	O	Analog Output
E	Input (analog or digital)	O-	Ground for the Analog Output
T	Teach Input	BZ	Block Discharge
Z	Time Delay (activation)	Aw	Valve Output
S	Shielding	a	Valve Control Output +
RxD	Interface Receive Path	b	Valve Control Output 0 V
TxD	Interface Send Path	SY	Synchronization
RDY	Ready	SY-	Ground for the Synchronization
GND	Ground	E+	Receiver-Line
CL	Clock	S+	Emitter-Line
E/A	Output/Input programmable	±	Grounding
	IO-Link	SrR	Switching Distance Reduction
PoE	Power over Ethernet	Rx+/-	Ethernet Receive Path
IN	Safety Input	Tx+/-	Ethernet Send Path
OSSD	Safety Output	Bus	Interfaces-Bus A(+)/B(-)
Signal	Signal Output	La	Emitted Light disengageable
Bl_D+/-	Ethernet Gigabit bidirect. data line (A-D)	Mag	Magnet activation
EN0r542z	Encoder 0-pulse 0-0 (TTL)	RES	Input confirmation
		EDM	Contactor Monitoring
		ENAr542z	Encoder A/Ā (TTL)
		ENBr542z	Encoder B/B̄ (TTL)
		ENa	Encoder A
		ENb	Encoder B
		Amin	Digital output MIN
		Amax	Digital output MAX
		Aok	Digital output OK
		SYin	Synchronization In
		SYOUT	Synchronization OUT
		OLT	Brightness output
		M	Maintenance
		rsv	reserved
		Wire Colors according to DIN IEC 757	
		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

Working Distance	350 mm	700 mm	1500 mm
Light Spot Diameter	14 mm	25 mm	42 mm

Switching Distance Deviation

Typical characteristic curve based on white, 90 % remission

