

Reflex Sensor with Background Suppression

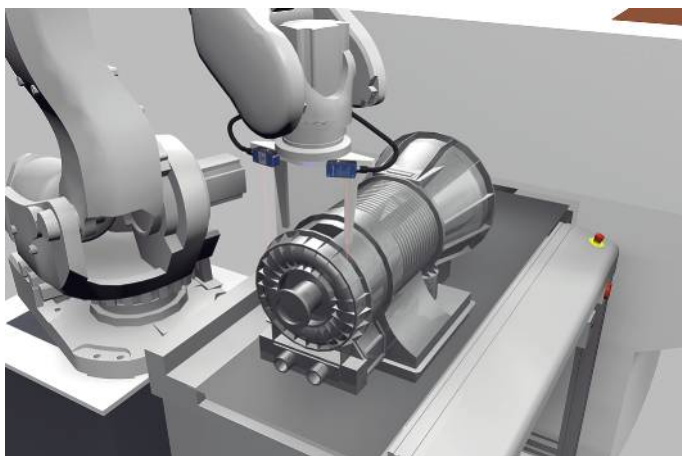
P1KH006 LASER

Part Number



- 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.

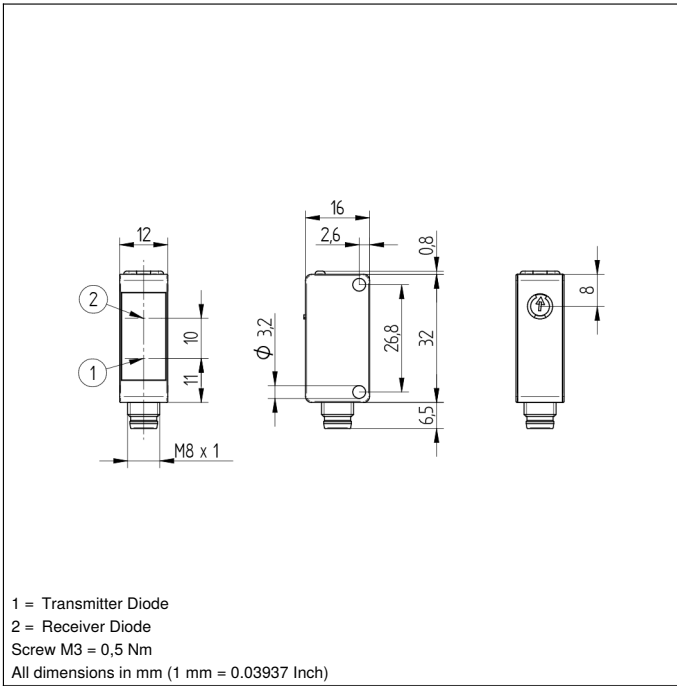


Technical Data

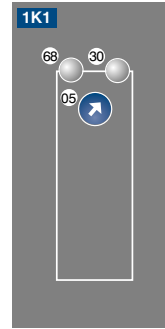
Optical Data	
Range	120 mm
Adjustable Range	30...120 mm
Switching Hysteresis	< 10 %
Light Source	Laser (red)
Wave Length	655 nm
Service Life (T = +25 °C)	100000 h
Laser Class (EN 60825-1)	1
Max. Ambient Light	10000 Lux
Spot Diameter	see Table 1
Electrical Data	
Supply Voltage	10...30 V DC
Supply Voltage with IO-Link	18...30 V DC
Current Consumption (U _b = 24 V)	< 15 mA
Switching Frequency	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	M8 × 1; 4-pin
Optic Cover	PMMA
Safety-relevant Data	
MTTFd (EN ISO 13849-1)	1641,23 a
PNP NO/NC antivalent	●
IO-Link	●
Connection Diagram No.	215
Control Panel No.	1K1
Suitable Connection Technology No.	7
Suitable Mounting Technology No.	400

Complementary Products

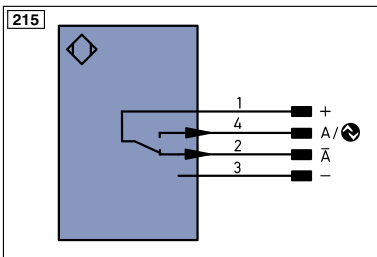
IO-Link Master
Software



Ctrl. Panel



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



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

Wire Colors according to DIN IEC 757

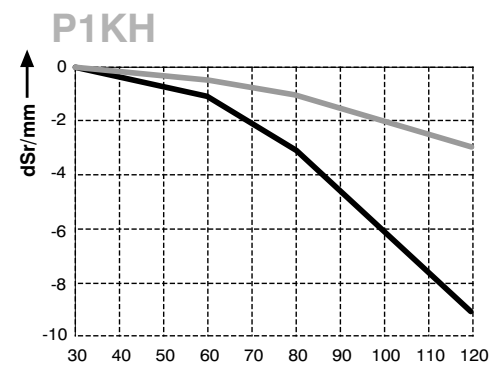
BK	Black
BN	Brown
RD	Red
OG	Orange
YE	Yellow
GN	Green
BU	Blue
VT	Violet
GY	Grey
WH	White
PK	Pink
GNVE	Green/Yellow

Table 1

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

Switching Distance Deviation

Typical characteristic curve based on Kodak white (90 % remission)



Sr = Switching Distance
 dSr = Switching Distance Change
 — black 6 % remission
 — grey 18 % remission

