

Reflex Sensor with Background Suppression

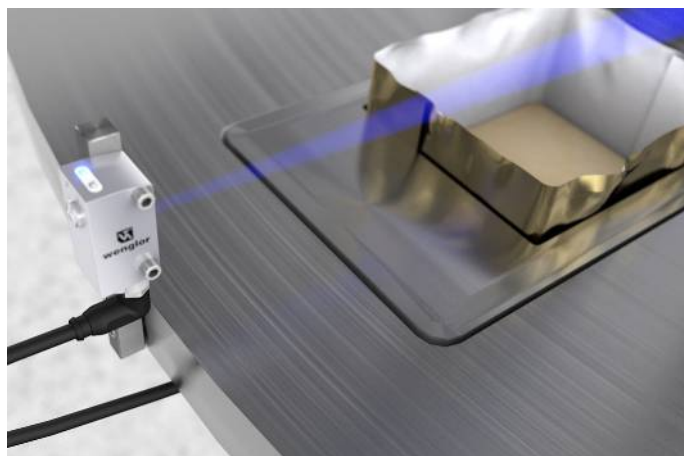
P2KH022

Part Number



- Blue light for dark, shiny objects
- Condition monitoring
- Reliably detect objects against any background
- Robust stainless steel housing with IP69K

The reflex sensor with background suppression works with blue light according to the angle measurement principle and is suitable for the detection of objects against any background. The sensor always has the same switching distance, regardless of the color, shape, and surface of the objects. The reflect sensor with blue light is specially designed for applications with dark shiny objects, such as when manufacturing solar wafers. The IO-Link interface can be used to configure retro-reflex sensors (PNP/NPN, NC/NO, switching distance), as well as to output switching statuses and distance values. The robust V4A (1.4404/316L) stainless steel housing is resistant to oils and coolants, as well as cleaning agent.

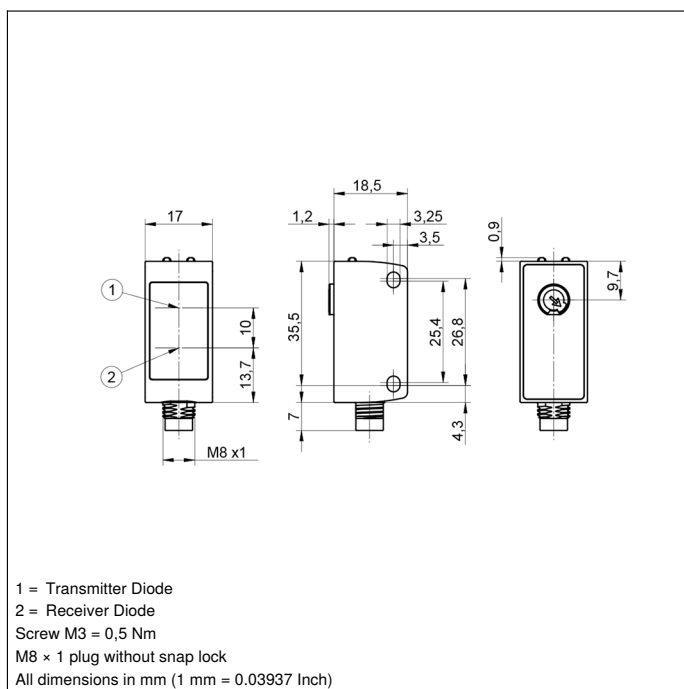


Technical Data

Optical Data	
Range	150 mm
Setting Range	30...150 mm
Switching Hysteresis	< 10 %
Light Source	Blue Light
Service Life (T = +25 °C)	100000 h
Risk Group (EN 62471)	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)	< 20 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
Mechanical Data	
Setting Method	Potentiometer
Housing Material	Stainless steel 316L
Degree of Protection	IP68/IP69K
Connection	M8 × 1; 4-pin
Optic Cover	PMMA
Ecolab	yes
Safety-relevant Data	
MTTFd (EN ISO 13849-1)	1697,23 a
NPN NO/NC antivalent	●
IO-Link	●
Connection Diagram No.	213
Control Panel No.	1K1
Suitable Connection Equipment No.	7
Suitable Mounting Technology No.	400

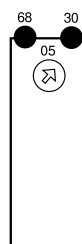
Complementary Products

IO-Link Master
Software

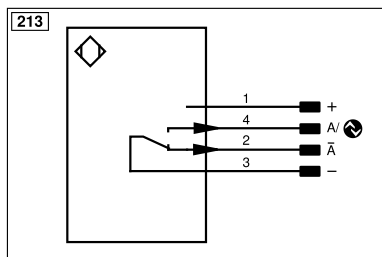


Ctrl. Panel

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/Ā (TTL)
		ENBIS422	Encoder B/B̄ (TTL)
		ENA	Encoder A
		ENb	Encoder B
		AMIN	Digital output MIN
		AMAX	Digital output MAX
		AOK	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

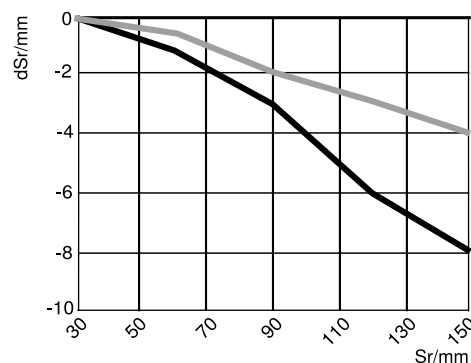
Table 1

Detection Range	50 mm	100 mm	150 mm
Light Spot Diameter	4 mm	6 mm	10 mm

Switching Distance Deviation

Typical characteristic curve based on white, 90 % remission

P1KH BLUE



Sr = Switching Distance

dSr = Switching Distance Change

black 6 % remission

grey 18 % remission

