

# Reflex Sensor with Background Suppression

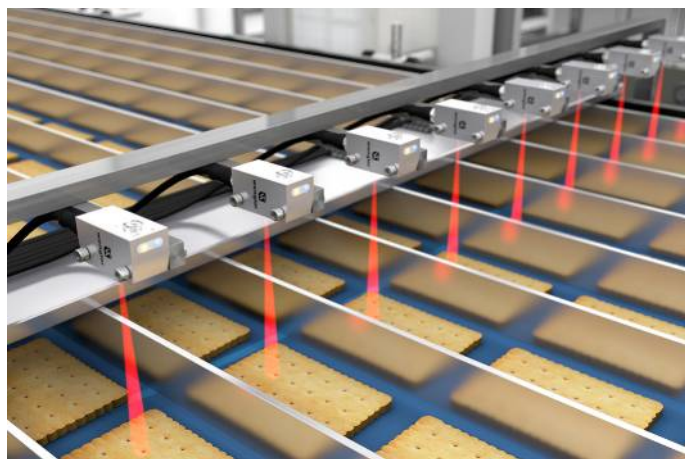
## P2KH024

Part Number



- Data storage
- High-end
- Robust stainless steel housing with IP69K
- Two independent switching outputs

The reflex sensor with background suppression works with red light according to the angle measurement principle. It has an IO-Link interface with a data storage function as well as additional configuration and diagnostic options. The interface can also be used to configure the sensors (PNP/NPN, NC/NO, switching distance, error output), as well as for reading out switching statuses and distance values. Two independent switching outputs can be used, for instance, to monitor minimum and maximum values of distances or fill levels and stack heights. 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	200 mm
Setting Range	30...200 mm
Switching Hysteresis	< 10 %
Light Source	Red Light
Service Life (T = +25 °C)	100000 h
Max. Ambient Light	10000 Lux
Light Spot Diameter	see Table 1

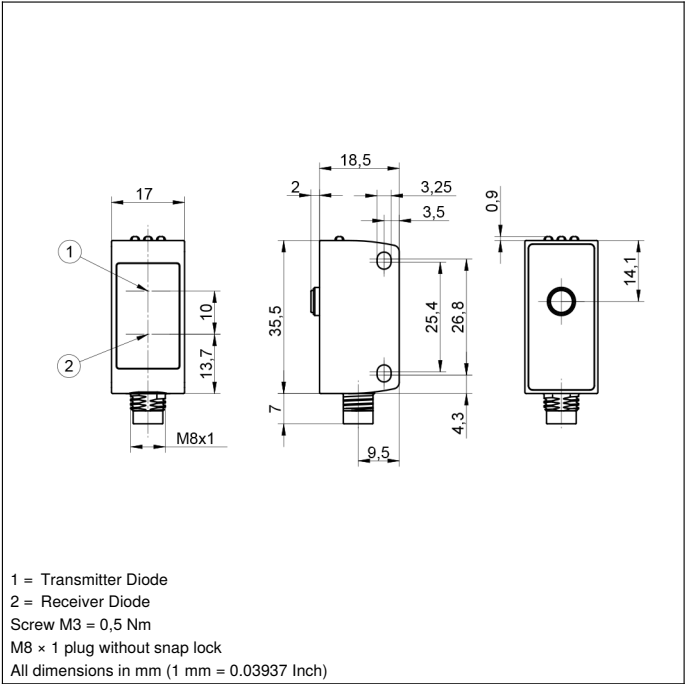
Electrical Data	
Supply Voltage	15...30 V DC
Supply Voltage with IO-Link	18...30 V DC
Current Consumption (U <sub>b</sub> = 24 V)	< 20 mA
Switching Frequency	100 Hz
Switching Frequency (1 Switching Output)	1000 Hz
Response Time	5 ms
Response time (1 switching output)	0,5 ms
Temperature Drift	< 5 %
Temperature Range	-40...60 °C
Number of Switching Outputs	2
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
Data Storage	yes
Protection Class	III

Mechanical Data	
Setting Method	Teach-In
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)	1496,09 a
NPN NO	●
IO-Link	●
Connection Diagram No.	221
Control Panel No.	A23
Suitable Connection Equipment No.	7
Suitable Mounting Technology No.	400

### Complementary Products

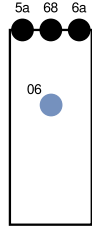
IO-Link Master



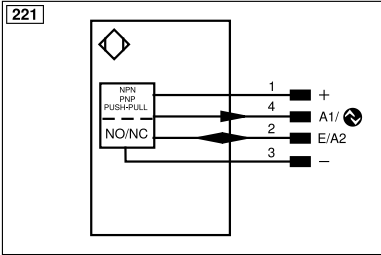
1 = Transmitter Diode  
2 = Receiver Diode  
Screw M3 = 0,5 Nm  
M8 x 1 plug without snap lock  
All dimensions in mm (1 mm = 0.03937 Inch)

## Ctrl. Panel

A 23



06 = Teach Button  
5a = Switching Status Display, O1  
68 = supply voltage indicator  
6a = Switching Status Display, O2



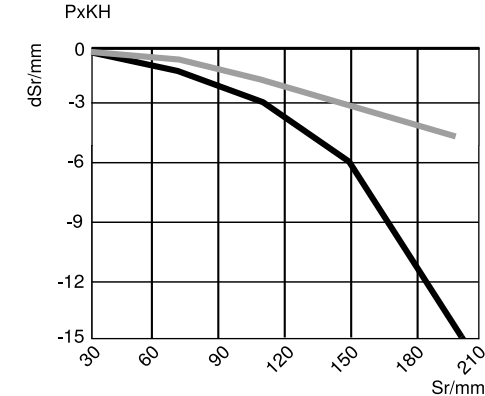
Legend			
+	Supply Voltage +	nc	Not connected
-	Supply Voltage 0 V	U	Test Input
~	Supply Voltage (AC Voltage)	Ů	Test Input inverted
A	Switching Output (NO)	W	Trigger Input
Ā	Switching Output (NC)	W-	Ground for the Trigger Input
V	Contamination/Error Output (NO)	O	Analog Output
Ȳ	Contamination/Error Output (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	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
BI_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)
		ENBRIS422	Encoder B/B̄ (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

Detection Range	30 mm	120 mm	200 mm
Light Spot Diameter	9 mm	7 mm	13 mm

## Switching Distance Deviation

Typical characteristic curve based on white, 90 % remission



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

