P1NH302





- Condition monitoring
- IO-Link 1.1
- Low switching distance deviation for black/white
- Reliably detect objects against any background

The reflex sensor with background suppression works with red 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. Minimal height differences can be detected with the sensors and, for example, various parts can be reliably differentiated from each other. The IO-Link interface can be used to configure the reflex sensors (PNP/NPN, NC/NO), as well as for reading out switching statuses.

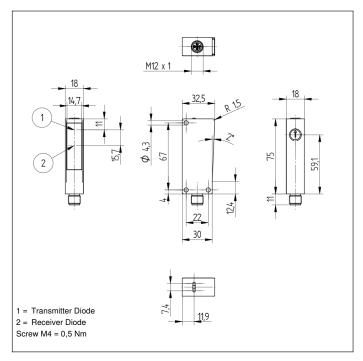


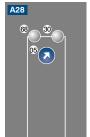
Range 500 mm Adjustable Range 60500 mm Switching Hysteresis < 5 % Light Source Red Light Service Life (T = +25 °C) 100000 h Max. Ambient Light 100000 Lux Light Spot Diameter see Table 1 Electrical Data Supply Voltage 1030 V DC Supply Voltage with IO-Link 1830 V DC Current Consumption (Ub = 24 V) < 25 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 Bange -4060 °C Switching Output Voltage Drop < 2 V Switching Output Voltage Drop < 2 V Switching Output/Switching Current 100 mA Residual Current Switching Output < 50 µA Short Circuit Protection yes Reverse Polarity Protection yes Overload Protection Class III Mechanical Data III <td< th=""><th>Optical Data</th><th></th></td<>	Optical Data			
Switching Hysteresis Light Source Red Light Service Life (T = +25 °C) 100000 h Max. Ambient Light Light Spot Diameter See Table 1 Electrical Data Supply Voltage Supply Voltage with IO-Link Current Consumption (Ub = 24 V) Switching Frequency Switching Frequency (interference-free mode) Response Time Response time (interference-free mode) 1 ms Temperature Drift Temperature Range 4060 °C Switching Output Voltage Drop Switching Output/Switching Current 100 mA Residual Current Switching Output Short Circuit Protection Severse Polarity Protection Ves Overload Protection Interface IO-Link V1.1 Protection Class III Mechanical Data Setting Method Housing Material Degree of Protection Phy MAA Safety-relevant Data MTTFd (EN ISO 13849-1) Connection Diagram No. Control Panel No. Suitable Connection Equipment No.	Range	500 mm		
Light Source Red Light Service Life (T = +25 °C) 100000 h Max. Ambient Light 10000 Lux Light Spot Diameter see Table 1 Electrical Data 1030 V DC Supply Voltage with IO-Link 1830 V DC Current Consumption (Ub = 24 V) < 25 mA	Adjustable Range	60500 mm		
Service Life (T = +25 °C) 100000 h Max. Ambient Light 10000 Lux Light Spot Diameter see Table 1 Electrical Data 1030 V DC Supply Voltage with IO-Link 1830 V DC Current Consumption (Ub = 24 V) < 25 mA	Switching Hysteresis	< 5 %		
Max. Ambient Light 10000 Lux Light Spot Diameter see Table 1 Electrical Data Supply Voltage 1030 V DC Supply Voltage with IO-Link 1830 V DC Current Consumption (Ub = 24 V) < 25 mA	Light Source	Red Light		
Light Spot Diameter Electrical Data Supply Voltage Supply Voltage with IO-Link Current Consumption (Ub = 24 V) Switching Frequency Switching Frequency (interference-free mode) Response Time Response time (interference-free mode) Temperature Drift Temperature Range -4060 °C Switching Output Voltage Drop Switching Output/Switching Current Residual Current Switching Output Short Circuit Protection Protection Class Interface Inter	Service Life (T = +25 °C)	100000 h		
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Response time (interference-free mode) Temperature Drift Temperature Range -4060 °C Switching Output Voltage Drop Switching Output/Switching Current Residual Current Switching Output Short Circuit Protection Reverse Polarity Protection yes Overload Protection yes Ill Mechanical Data Setting Method Housing Material Degree of Protection Optic Cover PMMA Safety-relevant Data MTTFd (EN ISO 13849-1) Polaric Connection Diagram No. Control Panel No. Suitable Connection Equipment No. 1 ms 1 mo. 1 po. 2 po. 1 po. 2 po. 3 po. 4 po	Switching Frequency (interference-free mode)	500 Hz		
Temperature Drift Temperature Range -4060 °C Switching Output Voltage Drop Switching Output/Switching Current Residual Current Switching Output Short Circuit Protection Reverse Polarity Protection yes Overload Protection Interface IO-Link V1.1 Protection Class III Mechanical Data Setting Method Housing Material Degree of Protection Optic Cover PMMA Safety-relevant Data MTTFd (EN ISO 13849-1) Polatic Connection Diagram No. Control Panel No. Suitable Connection Equipment No. 2 15	Response Time	0,5 ms		
Temperature Range -4060 °C Switching Output Voltage Drop <2 V Switching Output/Switching Current 100 mA Residual Current Switching Output <50 μA Short Circuit Protection yes Reverse Polarity Protection yes Overload Protection yes Interface IO-Link V1.1 Protection Class III Mechanical Data Setting Method Single-turn Housing Material Plastic Degree of Protection IP67/IP68 Connection M12 × 1; 4-pin Optic Cover PMMA Safety-relevant Data MTTFd (EN ISO 13849-1) 2069,6 a PNP NO/NC antivalent IO-Link Connection Diagram No. 215 Control Panel No. A28 Suitable Connection Equipment No. 2	Response time (interference-free mode)	1 ms		
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Residual Current Switching Output Short Circuit Protection Reverse Polarity Protection Overload Protection yes Interface IO-Link V1.1 Protection Class III Mechanical Data Setting Method Single-turn Housing Material Plastic Degree of Protection IP67/IP68 Connection Optic Cover PMMA Safety-relevant Data MTTFd (EN ISO 13849-1) PO-Link Connection Diagram No. Control Panel No. Suitable Connection Equipment No.	Switching Output Voltage Drop	< 2 V		
Short Circuit Protection Reverse Polarity Protection Overload Protection Overload Protection Interface IO-Link V1.1 Protection Class III Mechanical Data Setting Method Housing Material Degree of Protection Connection Optic Cover PMMA Safety-relevant Data MTTFd (EN ISO 13849-1) Polarical Polarical Optic Connection PMP NO/NC antivalent IO-Link Connection Diagram No. Control Panel No. Suitable Connection Equipment No.	Switching Output/Switching Current	100 mA		
Reverse Polarity Protection Overload Protection Interface Interface Protection Class III Mechanical Data Setting Method Housing Material Degree of Protection Connection Optic Cover PMMA Safety-relevant Data MTTFd (EN ISO 13849-1) POLink Connection Diagram No. Control Panel No. Suitable Connection Equipment No.	Residual Current Switching Output	< 50 µA		
Overload Protection Interface Interface Interface IO-Link V1.1 Protection Class III Mechanical Data Setting Method Single-turn Housing Material Plastic Degree of Protection IP67/IP68 Connection Optic Cover PMMA Safety-relevant Data MTTFd (EN ISO 13849-1) PNP NO/NC antivalent IO-Link Connection Diagram No. Control Panel No. Suitable Connection Equipment No.	Short Circuit Protection	yes		
Interface	Reverse Polarity Protection	yes		
Protection Class Mechanical Data Setting Method Single-turn Housing Material Plastic Degree of Protection Connection Optic Cover PMMA Safety-relevant Data MTTFd (EN ISO 13849-1) PNP NO/NC antivalent IO-Link Connection Diagram No. Control Panel No. Suitable Connection Equipment No.	Overload Protection	yes		
Mechanical Data Setting Method Single-turn Housing Material Plastic Degree of Protection IP67/IP68 Connection Optic Cover PMMA Safety-relevant Data MTTFd (EN ISO 13849-1) PNP NO/NC antivalent IO-Link Connection Diagram No. Control Panel No. Suitable Connection Equipment No.	Interface	IO-Link V1.1		
Setting Method Housing Material Plastic Degree of Protection Connection Optic Cover PMMA Safety-relevant Data MTTFd (EN ISO 13849-1) PNP NO/NC antivalent IO-Link Connection Diagram No. Control Panel No. Suitable Connection Equipment No.	Protection Class	III		
Housing Material Plastic Degree of Protection IP67/IP68 Connection M12 x 1; 4-pin Optic Cover PMMA Safety-relevant Data MTTFd (EN ISO 13849-1) 2069,6 a PNP NO/NC antivalent IO-Link Connection Diagram No. 215 Control Panel No. A28 Suitable Connection Equipment No. 2	Mechanical Data			
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Connection M12 × 1; 4-pin Optic Cover PMMA Safety-relevant Data MTTFd (EN ISO 13849-1) 2069,6 a PNP NO/NC antivalent IO-Link Connection Diagram No. Control Panel No. Suitable Connection Equipment No.	Housing Material	Plastic		
Optic Cover PMMA Safety-relevant Data 2069,6 a MTTFd (EN ISO 13849-1) 2069,6 a PNP NO/NC antivalent IO-Link Connection Diagram No. 215 Control Panel No. A28 Suitable Connection Equipment No. 2	Degree of Protection	IP67/IP68		
Safety-relevant Data MTTFd (EN ISO 13849-1) 2069,6 a PNP NO/NC antivalent IO-Link Connection Diagram No. 215 Control Panel No. A28 Suitable Connection Equipment No. 2	Connection	M12 × 1; 4-pin		
MTTFd (EN ISO 13849-1) PNP NO/NC antivalent IO-Link Connection Diagram No. Control Panel No. Suitable Connection Equipment No. 2069,6 a PNP NO/NC antivalent A28 2	Optic Cover	PMMA		
PNP NO/NC antivalent IO-Link Connection Diagram No. Control Panel No. Suitable Connection Equipment No. 2	Safety-relevant Data			
IO-Link Connection Diagram No. Control Panel No. Suitable Connection Equipment No. 215 A28 22	MTTFd (EN ISO 13849-1)	2069,6 a		
Connection Diagram No. 215 Control Panel No. A28 Suitable Connection Equipment No. 2	PNP NO/NC antivalent	•		
Control Panel No. Suitable Connection Equipment No. 2	IO-Link			
Suitable Connection Equipment No.	Connection Diagram No.	215		
	Control Panel No.	A28		
Suitable Mounting Technology No. 350	Suitable Connection Equipment No.	2		
	Suitable Mounting Technology No.	350		

Complementary Products

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Dust Extrac	tion Tube STAUBTU	JBUS-03	
IO-Link Mas	ster		
Set Protecti	ive Housing Z1NS00	11	
Software			







Ctrl. Panel

05 = Switching Distance Adjuster

30 = Switching Status/Contamination Warning

68 = Supply Voltage Indicator

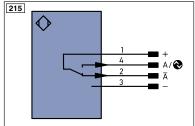
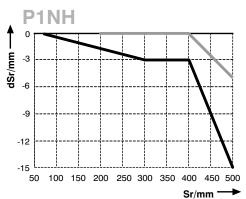


Table 1

Detection Range	60 mm	250 mm	500 mm
Light Spot Diameter	11 mm	13 mm	15 mm

Switching Distance Deviation

Typical characteristic curve based on white, 90 % remission



Sr = Switching Distance

black 6 % remission

dSr = Switching Distance Change

grey 18 % remission











