Reflex Sensor
with Background Suppression

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.

Optical Data	
Range	500 mm
Adjustable Range	60...500 mm
Switching Hysteresis	< 5 %
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	10...30 V DC
Supply Voltage with IO-Link	18...30 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 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 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**
Suitable Mounting Technology No.	**350**

Complementary Products

Dust Extraction Tube STAUBTUBUS-03
IO-Link Master
Set Protective Housing Z1NS001
Software

![wenglor - the innovative family]

M12 x 1

18
14,7
11
15,7

1
2

32,5
R 15
2°
Ø 4,3
67
4
22
12,4
30

18
75
11
59,1

7,4
11,9

1 = Transmitter Diode
2 = Receiver Diode
Screw M4 = 0,5 Nm

215

1 — +
4 — A / ⊘
2 — Ā
3 — −

Ctrl. Panel

A28

68 30
05
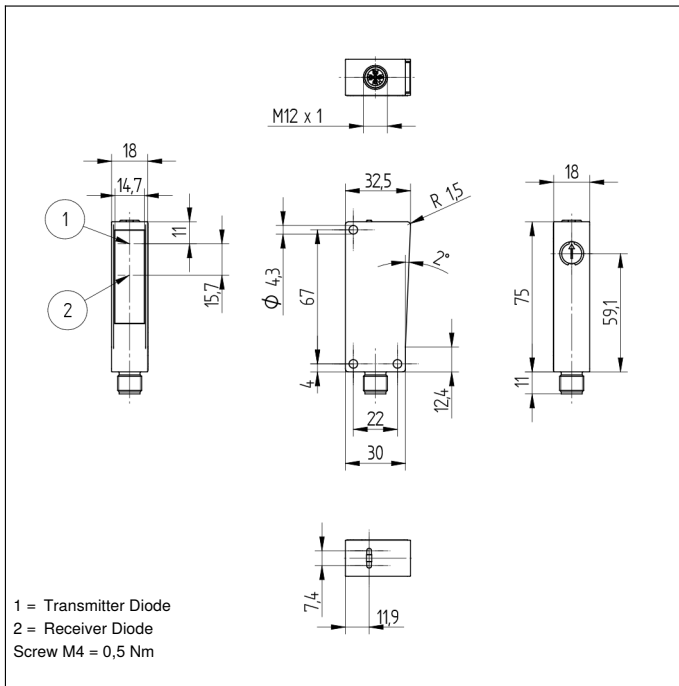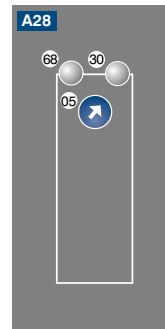
05 = Switching Distance Adjuster
30 = Switching Status/Contamination Warning
68 = Supply Voltage Indicator
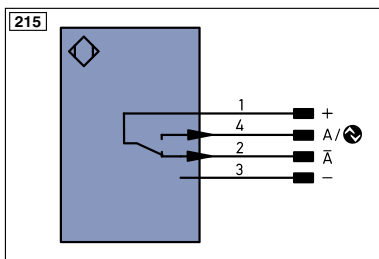
Table 1

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

P1NH

dSr/mm
0
-3
-6
-9
-12
-15

50 100 150 200 250 300 350 400 450 500

Sr/mm
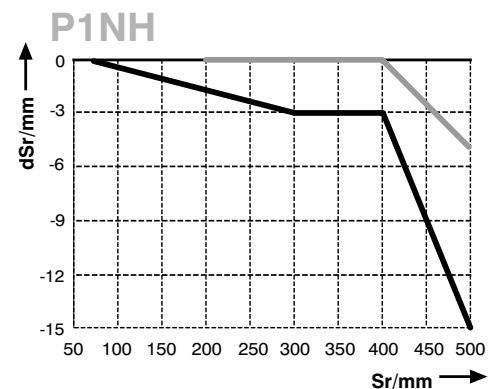
Sr = Switching Distance
dSr = Switching Distance Change

black 6 % remission
grey 18 % remission