

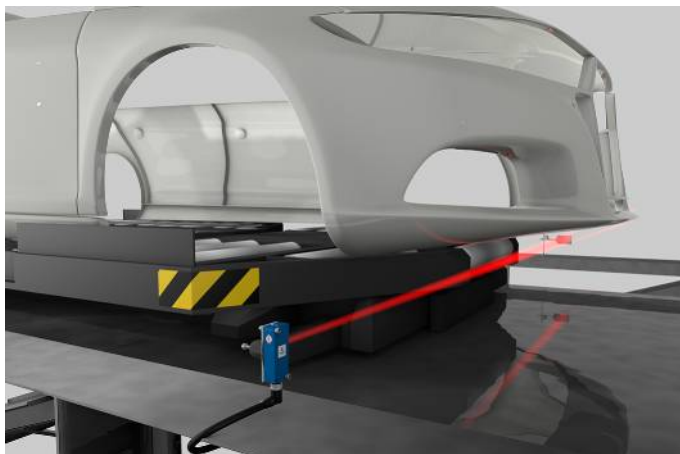
# Retro-Reflex Sensor

## P1NL301



- Also suitable for glossy and reflective objects
- Condition monitoring
- High switching frequency
- IO-Link 1.1

The retro-reflex sensor works with red light and a reflector. It also reliably detects objects with reflective or glossy surfaces at high speeds. Thanks to its great range, the sensor can, for example, be used to manage feed and presence controls as well as to detect objects on wide feed belts. The IO-Link interface can be used to configure retro-reflective barriers (PNP/NPN, NC/NO, switching distance), as well as for reading out switching statuses and signal values.



### Optical Data

Range	11000 mm
Reference Reflector/Reflector Foil	RQ100BA
Smallest Recognizable Part	see Table 2
Switching Hysteresis	< 15 %
Light Source	Red Light
Polarization Filter	yes
Service Life (T = +25 °C)	100000 h
Max. Ambient Light	10000 Lux
Light Spot Diameter	see Table 1
Two-Lens Optic	yes

### Electrical Data

Supply Voltage	10...30 V DC
Supply Voltage with IO-Link	18...30 V DC
Current Consumption (U <sub>b</sub> = 24 V)	< 20 mA
Switching Frequency	2000 Hz
Switching frequency (speed mode)	3500 Hz
Response Time	0,25 ms
Response time (speed mode)	0,14 ms
Temperature Drift	< 10 %
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	Potentiometer
Housing Material	Plastic
Degree of Protection	IP67/IP68
Connection	Cable, 4-wire, 6 m
Optic Cover	PMMA

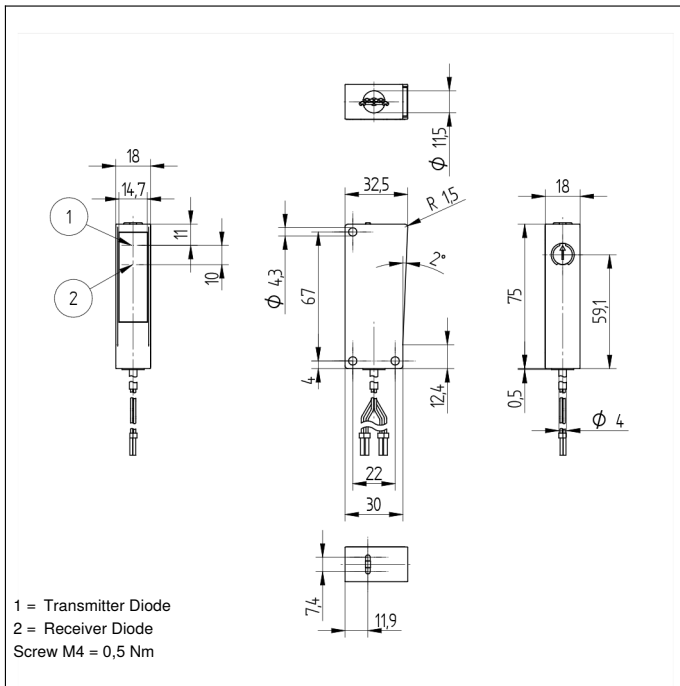
### Safety-relevant Data

MTTFd (EN ISO 13849-1)	2991,63 a
IO-Link	●
PNP NO/NC antivalent	●
Connection Diagram No.	<b>214</b>
Control Panel No.	<b>A28</b>
Suitable Mounting Technology No.	<b>350</b>

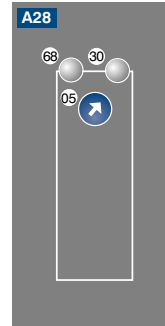
\* Temperature range with permanently installed cable, bending radius: > 40 mm

### Complementary Products

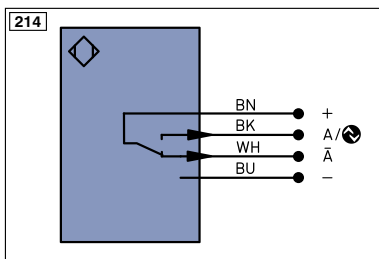
Dust Extraction Tube STAUBTUBUS-03
IO-Link Master
Reflector, Reflector Foil
Set Protective Housing Z1NS001
Software



### Ctrl. Panel



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



**Table 1**

Working Distance	2 m	5,5 m	11 m
Light Spot Diameter	120 mm	270 mm	500 mm

**Table 2**

Distance, Sensor to Reflector	2 m	5,5 m	11 m
Smallest Recognizable Part	40 mm	20 mm	30 mm

### Feasible reflector distance

Reflector type, mounting distance

RQ100BA	0,02...11 m	RR25KP	0,1...2 m
RE18040BA	0,02...7,6 m	RR21_M	0,1...2,8 m
RQ84BA	0,04...10 m	ZRAE02B01	0,02...4,5 m
RE9538BA	0,05...4,5 m	ZRME01B01	0,1...1,7 m
RE6151BM	0,07...7,5 m	ZRME03B01	0,1...5 m
RR50_A	0,02...7 m	ZRMR02K01	0,1...2 m
RE6040BA	0,15...7,5 m	ZRMS02_01	0,05...2,6 m
RE8222BA	0,02...5 m	RF505	0,1...3,3 m
RR34_M	0,1...5 m	RF508	0,1...3,1 m
RE3220BM	0,1...3,4 m	RF258	0,1...3 m
RE6210BM	0,1...2,5 m	ZRAF08K01	0,1...3,3 m
RR25_M	0,1...2,6 m	ZRDF03K01	0,1...7 m

