

High-Performance Distance Sensors

P1PY102 LASER

Part Number

PNG//smart, der wintec.



- 2 mutually independent switching outputs
- Intuitive operating concept
- No interactive influence
- Wide working range and precise detection thanks to DS technology

These sensors function in accordance with the principle of transit time measurement in laser class I. This technology permits reliable detection of black or glossy objects even in extremely inclined positions. Unwanted reflections are suppressed by the intelligent measuring method. Extensive setting options permit ideal adaptation to any application. Thanks to WinTec, the sensors can be installed directly next to or opposite each other.



Technical Data

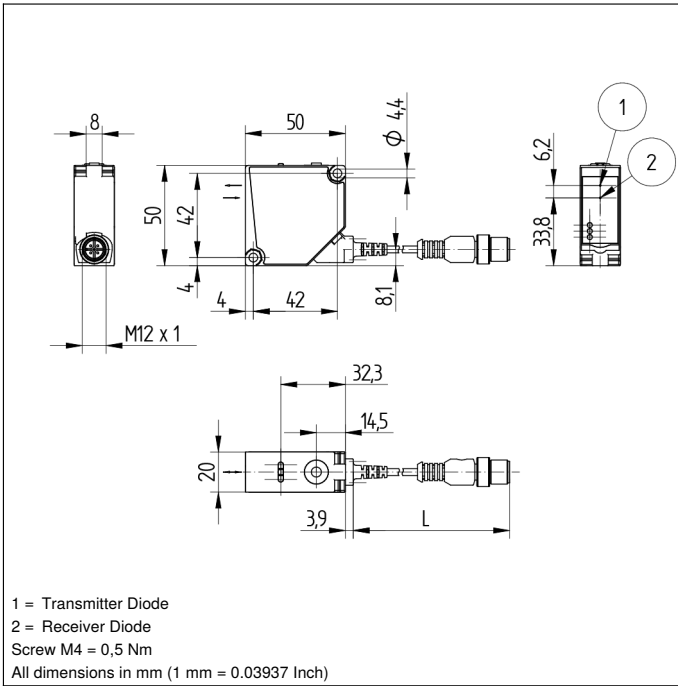
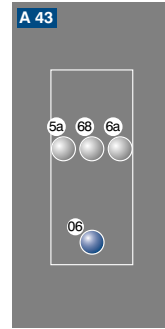
Optical Data	
Working Range	0...10000 mm
Adjustable Range	50...10000 mm
Reproducibility maximum	3 mm*
Linearity Deviation	10 mm*
Switching Hysteresis	< 15 mm
Light Source	Laser (red)
Wavelength	660 nm
Service Life (T = +25 °C)	100000 h
Laser Class (EN 60825-1)	1
Beam Divergence	< 2 mrad
Max. Ambient Light	100000 Lux
Light Spot Diameter	see Table 1
Electrical Data	
Supply Voltage	18...30 V DC
Current Consumption (U _b = 24 V)	< 35 mA
Switching Frequency	50 Hz*
Switching frequency (max.)	250 Hz*
Response Time	15 ms *
Response time (min.)	4,7 ms *
Temperature Drift	< 0,4 mm/K
Temperature Range	-40...50 °C**
Number of Switching Outputs	2
Switching Output Voltage Drop	< 2,5 V
Switching Output/Switching Current	100 mA
Reverse Polarity and Overload Protection	yes
Short Circuit Protection	yes
Interface	IO-Link V1.1
Baud Rate	COM3
Protection Class	III
FDA Accession Number	2110079-000
Mechanical Data	
Setting Method	Teach-In
Housing Material	Plastic
Optic Cover	PMMA
Degree of Protection	IP67/IP68
Connection	M12 × 1; 4/5-pin
Cable Length	500 mm
Safety-relevant Data	
MTTFd (EN ISO 13849-1)	547,59 a
PNP NO	●
IO-Link	●
Connection Diagram No.	243
Control Panel No.	A43
Suitable Connection Equipment No.	2 35
Suitable Mounting Technology No.	380

* Depends on mode, see table 2

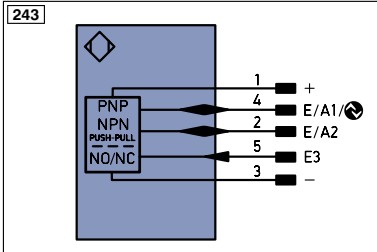
** Temperature range with permanently installed cable, bending radius: > 40 mm

Complementary Products

IO-Link Master
Software


Ctrl. Panel


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



- = supply voltage 0 V
 + = supply voltage +
 E/A1 = programmable input/output / IO-Link
 E/A2 = programmable input/output
 E3 = input

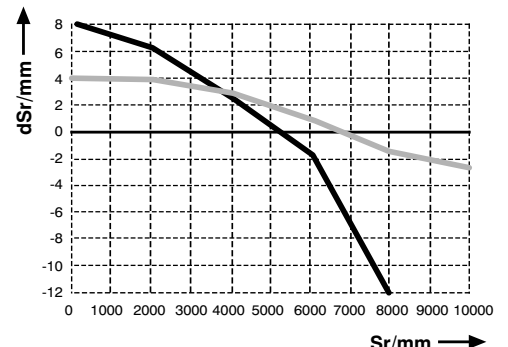
Mode	White working range	Gray working range	Black working range	Switching frequency	Response time	Maximum reproducibility	Linearity deviation	Low signal detection
Speed	0...10000 mm	0...9000 mm	0...7000 mm	250 Hz	4.7 ms	5 mm	15 mm	+
Precision (default)	0...10000 mm	0...10000 mm	0...8000 mm	50 Hz	15 ms	3 mm	10 mm	++
Precision Plus	0...10000 mm	0...10000 mm	0...8000 mm	25 Hz	28.7 ms	3 mm	10 mm	+++

Table 2
Table 1

Working Distance	0 m	5 m	10 m
Light Spot Diameter	5 mm	10 mm	15 mm

Switching Distance Deviation

Typical characteristic curve based on white, 90 % remission

P1PY1 Precision


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

