

Laser Distance Sensor

Long-Range

P1PY103 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

The sensors function in accordance with the principle of transit time measurement with laser class 1. The win tec with Dynamic Sensitivity technology (DS) enables previously unattainable reception sensitivity even with very weak signals. As a result, the sensors have a large working range of up to 10 m and can reliably detect dark or shiny objects even at extreme angles. win tec also works very reliably in adverse ambient conditions, e.g., caused by ambient light or dirt. Extensive condition monitoring functions additionally enable predictive maintenance and trouble-free operation.



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 (Ub = 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 x 1; 4/5-pin

Safety-relevant Data

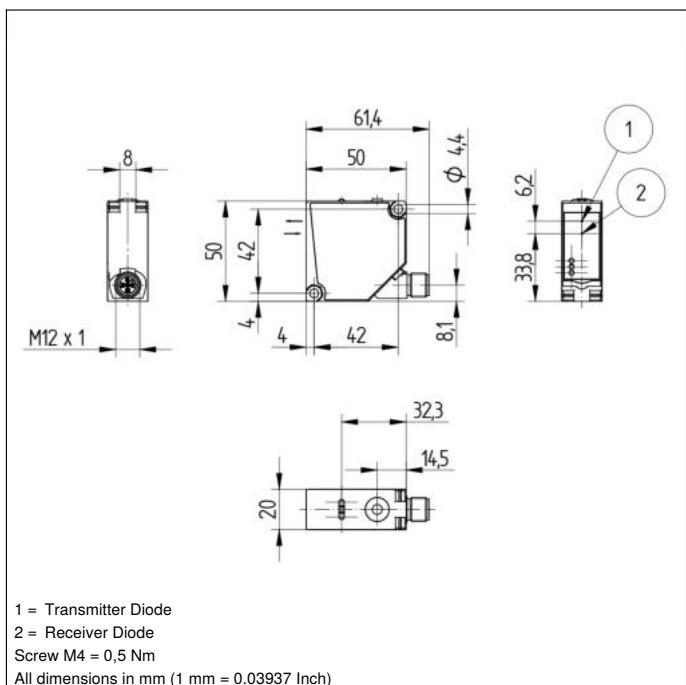
MTTFd (EN ISO 13849-1)	547,59 a
NPN NO	●
IO-Link	●
Connection Diagram No.	243
Control Panel No.	A43
Suitable Connection Equipment No.	2 35
Suitable Mounting Technology No.	380

* Depends on mode, see table 2

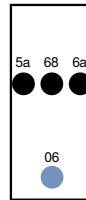
Complementary Products

IO-Link Master

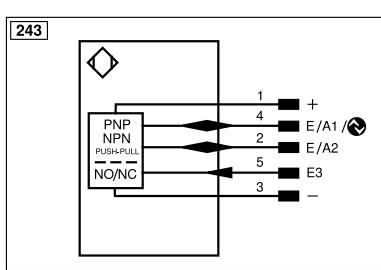
Software



Ctrl. Panel



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



Legend		Encoder B/B (TTL)	
+	Supply Voltage +	nc	Not connected
-	Supply Voltage 0 V	U	Test Input
~	Supply Voltage (AC Voltage)	Ü	Test Input inverted
A	Switching Output (NO)	W	Trigger Input
Ä	Switching Output (NC)	W-	Ground for the Trigger Input
V	Contamination/Error Output (NO)	O	Analog Output
Ü	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		Rx+/-	Ethernet Receive Path
PoE	Power over Ethernet	Tx+/-	Ethernet Send Path
IN	Safety Input	Bus	Interfaces-Bus A(+)/B(-)
OSD	Safety Output	La	Emitted Light disengagable
Signal	Signal Output	Mag	Magnet activation
BI_D+/-	Ethernet Gigabit bidirect. data line (A-D)	RES	Input confirmation
EN0_RS422	Encoder 0-pulse 0/0 (TTL)	EDM	Contactor Monitoring
PT	Platinum measuring resistor	ENARS422	Encoder A/A (TTL)

Wire Colors according to DIN IEC 60757

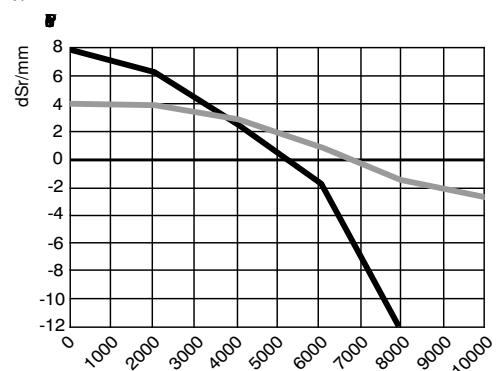
BK	Black
BN	Brown
RD	Red
OG	Orange
YE	Yellow
GN	Green
BU	Blue
VT	Violet
GY	Grey
WH	White
PK	Pink
GNYE	Green/Yellow

Table 1

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



Sr = Switching Distance

dSr = Switching Distance Change

— black 6 % remission
— grey 18 % remission

