High-Performance Distance Sensors

P1PY108   LASER

Part Number

- **Analog output: 4…20 mA**
- **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.
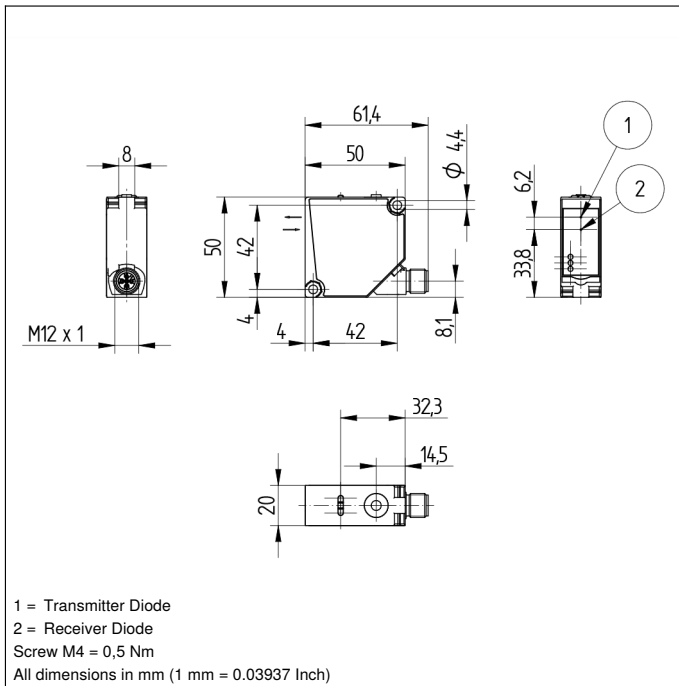
Technical Data

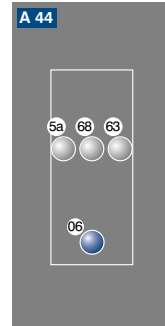| Optical Data	
Working Range	0...10000 mm
Adjustable Range	50...10000 mm
Reproducibility maximum	3 mm*
Linearity Deviation	10 mm*
Light Source	Laser (red)
Wavelength	660 nm
Service Life (T = +25 °C)	100000 h
Laser Class (EN 60825-1)	1
Beam Divergence	< 2 mrad
Max. Ambient Light	100000 Lux
Light Spot Diameter	see Table 1
Electrical Data	
Supply Voltage	18...30 V DC
Current Consumption (Ub = 24 V)	< 40 mA
Measuring Rate	100 /s *
Measuring Rate (max.)	500 /s *
Temperature Drift	< 0,4 mm/K
Temperature Range	-40...50 °C
Analog Output	4...20 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
Safety-relevant Data	
MTTFd (EN ISO 13849-1)	512,61 a
Error Output	●
Analog Output	●
IO-Link	●
Connection Diagram No.	242
Control Panel No.	A44
Suitable Connection Equipment No.	2 35
Suitable Mounting Technology No.	380

* Depends on mode, see table 2

Complementary Products

IO-Link Master
Software

1 = Transmitter Diode
2 = Receiver Diode
Screw M4 = 0,5 Nm
All dimensions in mm (1 mm = 0.03937 Inch)

M12 x 1

Ctrl. Panel

A 44

06 = Teach Button
5a = Switching Status Display, O1
63 = Analog Output Current Indicator
68 = supply voltage indicator

242

PNP
NPN
PUSH-PULL
NO/NC
4...20mA

1 +
4 E /A1/⌀
2 O
5 E3
3 −
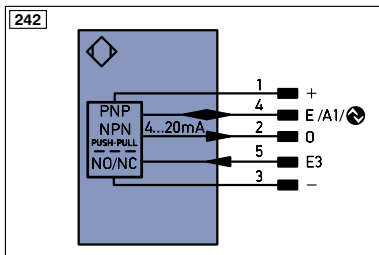
Legend

+	Supply Voltage +	PT	Platinum measuring resistor	EN$_{ARS422}$	Encoder A/Ā (TTL)
−	Supply Voltage 0 V	nc	not connected	EN$_{BRS422}$	Encoder B/B̄ (TTL)
~	Supply Voltage (AC Voltage)	U	Test Input	EN$_A$	Encoder A
A	Switching Output (NO)	Ū	Test Input inverted	EN$_B$	Encoder B
Ā	Switching Output (NC)	W	Trigger Input	A$_{MIN}$	Digital output MIN
V	Contamination/Error Output (NO)	W−	Ground for the Trigger Input	A$_{MAX}$	Digital output MAX
V̄	Contamination/Error Output (NC)	O	Analog Output	A$_{OK}$	Digital output OK
E	Input (analog or digital)	O−	Ground for the Analog Output	SY In	Synchronization In
T	Teach Input	BZ	Block Discharge	SY OUT	Synchronization OUT
Z	Time Delay (activation)	A$_{MW}$	Valve Output	0$_{LT}$	Brightness output
S	Shielding	a	Valve Control Output +	M	Maintenance
RxD	Interface Receive Path	b	Valve Control Output 0 V	rsv	reserved
TxD	Interface Send Path	SY	Synchronization		Wire Colors according to IEC 60757
RDY	Ready	SY−	Ground for the Synchronization	BK	Black
GND	Ground	E+	Receiver-Line	BN	Brown
CL	Clock	S+	Emitter-Line	RD	Red
E/A	Output/Input programmable	⏚	Grounding	OG	Orange
⌀	**IO**-Link	SnR	Switching Distance Reduction	YE	Yellow
PoE	Power over Ethernet	Rx+/−	Ethernet Receive Path	GN	Green
IN	Safety Input	Tx+/−	Ethernet Send Path	BU	Blue
OSSD	Safety Output	B$_{us}$	Interfaces-Bus A(+)/B(−)	VT	Violet
Signal	Signal Output	La	Emitted Light disengageable	GY	Grey
BI_D+/−	Ethernet Gigabit bidirect. data line (A-D)	Mag	Magnet activation	WH	White
EN$_{0RS422}$	Encoder 0-pulse 0-0̄ (TTL)	RES	Input confirmation	PK	Pink
		EDM	Contactor Monitoring	GNYE	Green/Yellow

Table 1

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

EAC CE LASER CLASS 1 EN 60825-1:2014 RoHS III c UL us LISTED