

# Laser Distance Sensor

## Triangulation

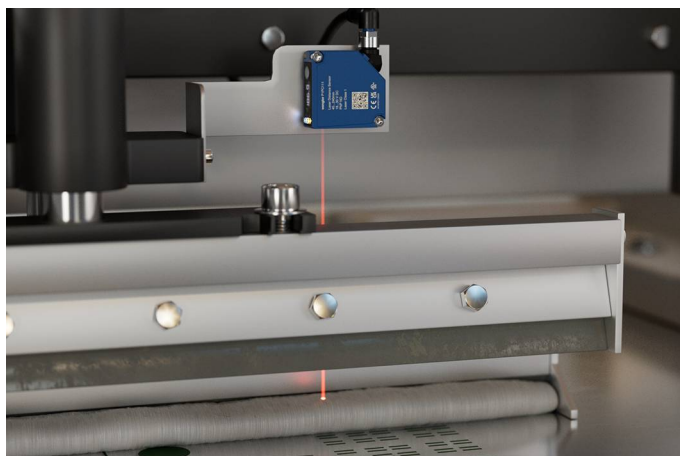
# P1PC112

Part Number



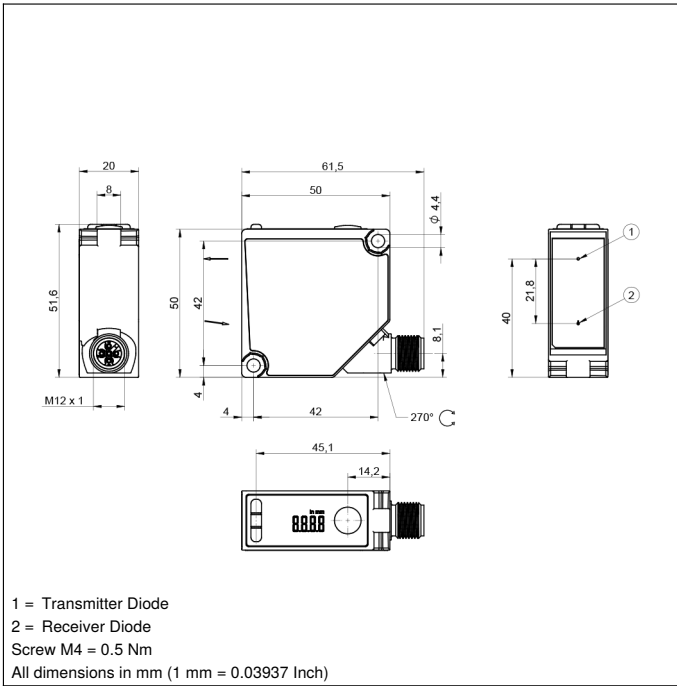
- Analog output 0...10 V
- Integrated jump detection
- Intuitive operating concept
- Switching point independent of material, color and brightness
- Wireless settings via NFC

These laser distance sensors work with a fine red light beam and a high-resolution CMOS line. They determine the distance between the sensor and the object by means of the triangulation principle. They are designed to fulfill applications in a wide range of industries intuitively, reliably and economically. Innovative functions simplify initial start-up and make the sensors versatile all-rounders. Extensive condition monitoring functions also enable predictive maintenance and trouble-free operation. The display shows the current measured values, which allows the sensor to be set up quickly and intuitively. Settings are entered via IO-Link or conveniently using the weCon app via NFC.



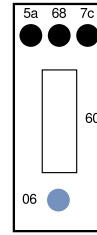
## Technical Data

Optical Data	
Working Range	40...240 mm
Measuring Range	40...240 mm
Reproducibility maximum	200 $\mu\text{m}$
Reproducibility: 1 Sigma	20 $\mu\text{m}$
Linearity Deviation	400 $\mu\text{m}$
Switching Hysteresis	< 0,5 %
Light Source	Laser (red)
Wavelength	655 nm
Service Life (T = +25 °C)	100000 h
Laser Class (EN 60825-1)	1
Max. Ambient Light	10000 Lux
Light Spot Diameter	see Table 1
Electrical Data	
Supply Voltage	18...30 V DC
Current Consumption (U <sub>b</sub> = 24 V)	< 35 mA
Switching Frequency	650 Hz
Measuring Rate	2500 /s
Response Time	< 0,77 ms
Temperature Drift	< 45 $\mu\text{m}/\text{K}$
Temperature Range	-25...50 °C
Number of Switching Outputs	1
Switching Output Voltage Drop	< 1,5 V
Switching Output/Switching Current	100 mA
Analog Output	0...10 V
Short Circuit Protection	yes
Reverse Polarity Protection	yes
Overload Protection	yes
Interface	IO-Link V1.1
IO-Link Version	1.1.4
IO-Link transmission speed	COM3
Protection Class	III
FDA Accession Number	2512215-000
Mechanical Data	
Setting Method	NFC
Setting Method	Teach-In
Housing Material	Plastic, ABS
Degree of Protection	IP67
Degree of Protection	IP68
Connection	M12 $\times$ 1; 5-pin
Optic Cover	Plastic, PMMA
Safety-relevant Data	
MTTFd (EN ISO 13849-1)	566,57 a
Scope of delivery	1 $\times$ initial start-up instructions 1 $\times$ sensor 1 $\times$ Z1PE002 mounting set
PNP NO	●
Analog Output	●
IO-Link	●
NFC interface	●
Connection Diagram No.	<b>241</b>
Control Panel No.	<b>X12</b>
Suitable Connection Equipment No.	<b>2   35</b>
Suitable Mounting Technology No.	<b>380</b>
Complementary Products	
Dust extraction tube	
IO-Link Master	
Protective housing	
Protective Screen	
Software	

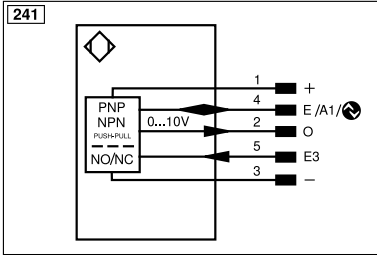


### Ctrl. Panel

X12



- 06 = Teach Button
- 5a = Switching Status Indicator, O1
- 60 = display
- 68 = Power LED
- 7c = Analog Output Indicator, AO



Legend					
+	Supply Voltage +	PT	Platinum measuring resistor	ENAR5422	Encoder A/Ā (TTL)
-	Supply Voltage 0 V	nc	Not connected	ENBR5422	Encoder B/B̄ (TTL)
~	Supply Voltage (AC Voltage)	U	Test Input	ENA	Encoder A
A	Switching Output (NO)	Ū	Test Input inverted	ENB	Encoder B
Ā	Switching Output (NC)	W	Trigger Input	AMIN	Digital output MIN
V	Contamination/Error Output (NO)	W-	Ground for the Trigger Input	AMAX	Digital output MAX
Ṽ	Contamination/Error Output (NC)	O	Analog Output	AOK	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
R	Reset input	Amv	Valve Output	Out	Brightness output
Z	Time Delay (activation)	a	Valve Control Output +	M	Maintenance
S	Shielding	b	Valve Control Output 0 V	rsv	Reserved
RxD	Interface Receive Path	SY	Synchronization	Wire Colors according to DIN IEC 60757	
TxD	Interface Send Path	SY-	Ground for the Synchronization	BK	Black
RDY	Ready	E+	Receiver-Line	BN	Brown
GND	Ground	S+	Emitter-Line	RD	Red
CL	Clock	⊕	Grounding	OG	Orange
E/A	Output/Input programmable	SnR	Switching Distance Reduction	YE	Yellow
	IO-Link	Rx+/-	Ethernet Receive Path	GN	Green
PoE	Power over Ethernet	Tx+/-	Ethernet Send Path	BU	Blue
IN	Safety Input	Bus	Interfaces-Bus A(+)/B(-)	VT	Violet
QSSD	Safety Output	La	Emitted Light disengageable	GY	Grey
Signal	Signal Output	Mag	Magnet activation	WH	White
Bl_D+/-	Ethernet Gigabit bidirect. data line (A-D)	RES	Input confirmation	PK	Pink
ENo RS422	Encoder 0-pulse 0/0 (TTL)	EDM	Contacting Monitoring	GNYE	Green/Yellow

Table 1

Working Distance	40 mm	140 mm	240 mm
Spot Size	1,1 × 3 mm	0,7 × 2,8 mm	0,4 × 2,7 mm

