

Laser Distance Sensor

Triangulation

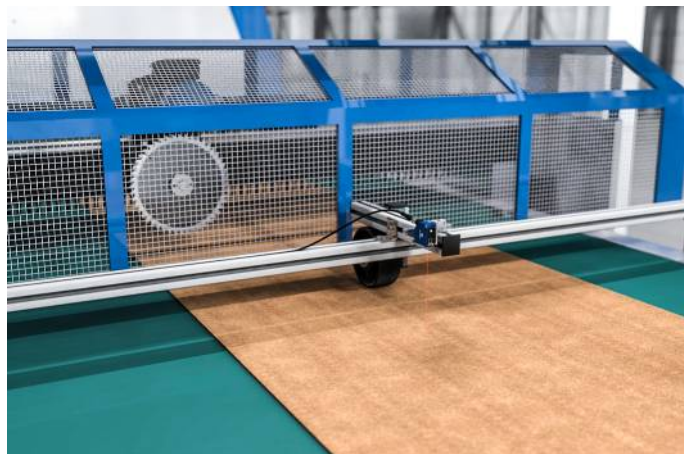
P3PC301

Part Number



- 2 mutually independent switching outputs
- Integrated jump detection
- Intuitive operating concept
- Rugged aluminium housing
- Switching point independent of material, color and brightness

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. Thanks to the integrated TripleA technology, the sensors offer high precision, temperature stability and material independence. This means they deliver accurate results even with objects of different materials, colors and shapes, as well as in fluctuating light and temperature conditions. The intuitive operating concept simplifies initial start-up and makes the sensors versatile all-rounders.

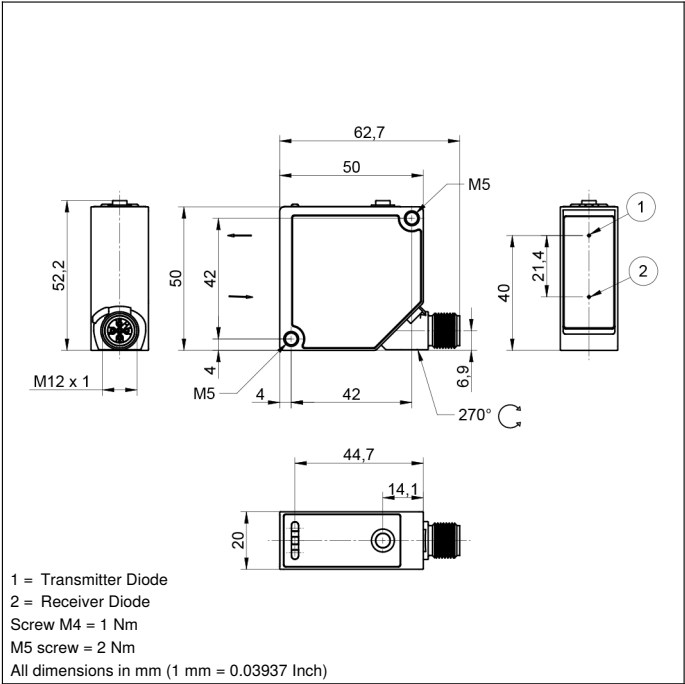


Technical Data

| Optical Data | |
|---|-------------------------|
| Working Range | 60...660 mm |
| Setting Range | 60...660 mm |
| Reproducibility maximum | 550 μ m |
| Reproducibility: 1 Sigma | 30 μ m |
| Linearity Deviation | 900 μ 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 | 20000 Lux |
| Light Spot Diameter | see Table 1 |
| Electrical Data | |
| Supply Voltage | 18...30 V DC |
| Current Consumption (U _b = 24 V) | < 50 mA |
| Switching Frequency | 650 Hz |
| Response Time | < 0,5 ms |
| Temperature Drift | < 50 μ m/K |
| Temperature Range | -30...60 °C |
| Number of Switching Outputs | 2 |
| Switching Output Voltage Drop | < 1,5 V |
| Switching Output/Switching Current | 100 mA |
| Short Circuit and Overload Protection | yes |
| Reverse Polarity Protection | yes |
| Interface | IO-Link V1.1 |
| Baud Rate | COM3 |
| Protection Class | III |
| FDA Accession Number | 2310674-000 |
| Mechanical Data | |
| Setting Method | Teach-In |
| Housing Material | Aluminum |
| Degree of Protection | IP67 |
| Connection | M12 \times 1; 4/5-pin |
| Optic Cover | Plastic, PMMA |
| Safety-relevant Data | |
| MTTFd (EN ISO 13849-1) | 720,35 a |
| PNP NO | ● |
| IO-Link | ● |
| Connection Diagram No. | 243 |
| Control Panel No. | X5 |
| Suitable Connection Equipment No. | 2 35 |
| Suitable Mounting Technology No. | 380 |

Complementary Products

| |
|-------------------|
| IO-Link Master |
| Protective Screen |
| Software |



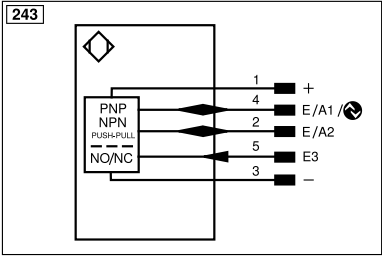
1 = Transmitter Diode
2 = Receiver Diode
Screw M4 = 1 Nm
M5 screw = 2 Nm
All dimensions in mm (1 mm = 0.03937 Inch)

Ctrl. Panel

X5



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



| Legend | | | | | |
|-----------|--|-----------|--------------------------------|--|---------------------|
| + | Supply Voltage + | nc | Not connected | ENBRS422 | Encoder B/B (TTL) |
| - | Supply Voltage 0 V | U | Test Input | ENA | Encoder A |
| ~ | Supply Voltage (AC Voltage) | Ü | Test Input inverted | ENb | Encoder B |
| A | Switching Output (NO) | W | Trigger Input | AMIN | Digital output MIN |
| Ä | Switching Output (NC) | W- | Ground for the Trigger Input | AMAX | Digital output MAX |
| V | Contamination/Error Output (NO) | O | Analog Output | AOK | Digital output OK |
| Ȳ | Contamination/Error Output (NC) | O- | Ground for the Analog Output | SY In | Synchronization In |
| E | Input (analog or digital) | BZ | Block Discharge | SY OUT | Synchronization OUT |
| T | Teach Input | Amv | Valve Output | OLt | 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 | 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 |
| OSSD | 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/Ü (TTL) | EDM | Contact Monitoring | GNYE | Green/Yellow |
| PT | Platinum measuring resistor | ENARIS422 | Encoder A/A (TTL) | | |

Table 1

| Working Distance | 60 mm | 360 mm | 660 mm |
|---------------------|--------|--------|--------|
| Light Spot Diameter | 1,5 mm | 1 mm | 0,5 mm |

