

Reflex Sensor with Background Suppression

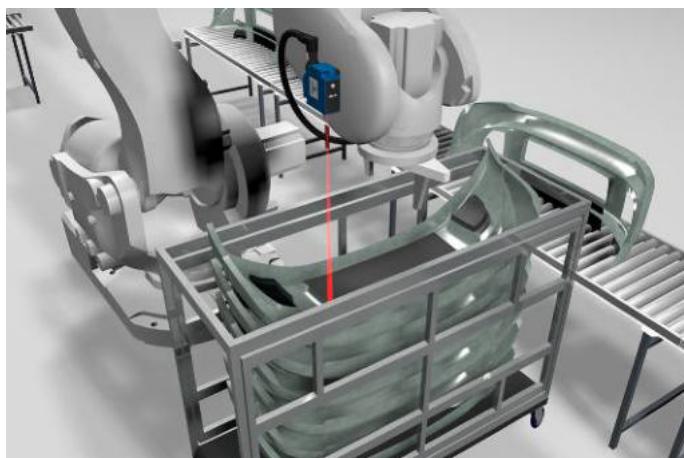
P1PH302

Part Number



- Data storage
- High-end
- IO-Link 1.1
- Teach-in
- Two independent switching outputs
- Wireless settings via NFC

The reflex sensor with background suppression works with red light according to the angle measurement principle. It has a IO-Link interface with a data storage function as well as additional configuration and diagnostic options. The interface can also be used to configure the sensors (PNP/NPN, NC/NO, switching distance, error output), as well as for reading out switching statuses and distance values. The teach-in function also provides another configuration option. Two independent switching outputs can be used, for instance, to monitor minimum and maximum values of distances or fill levels and stack heights.



PNG//smart

Technical Data

Optical Data

| | |
|---------------------------|-------------|
| Range | 500 mm |
| Adjustable Range | 60...500 mm |
| Switching Hysteresis | < 3 % |
| Light Source | Red Light |
| Service Life (T = +25 °C) | 100000 h |
| Max. Ambient Light | 10000 Lux |
| Light Spot Diameter | see Table 1 |

Electrical Data

| | |
|--|--------------|
| Supply Voltage | 15...30 V DC |
| Supply Voltage with IO-Link | 18...30 V DC |
| Current Consumption (Ub = 24 V) | < 25 mA |
| Switching Frequency | 150 Hz |
| Switching Frequency (1 Switching Output) | 800 Hz |
| Response Time | 3,3 ms |
| Response time (1 switching output) | 1,25 ms |
| Temperature Drift | < 5 % |
| Temperature Range | -40...60 °C |
| Switching Output Voltage Drop | < 2 V |
| Switching Output/Switching Current | 100 mA |
| Short Circuit Protection | yes |
| Reverse Polarity Protection | yes |
| Overload Protection | yes |
| Interface | IO-Link V1.1 |
| Data Storage | yes |
| Protection Class | III |

Mechanical Data

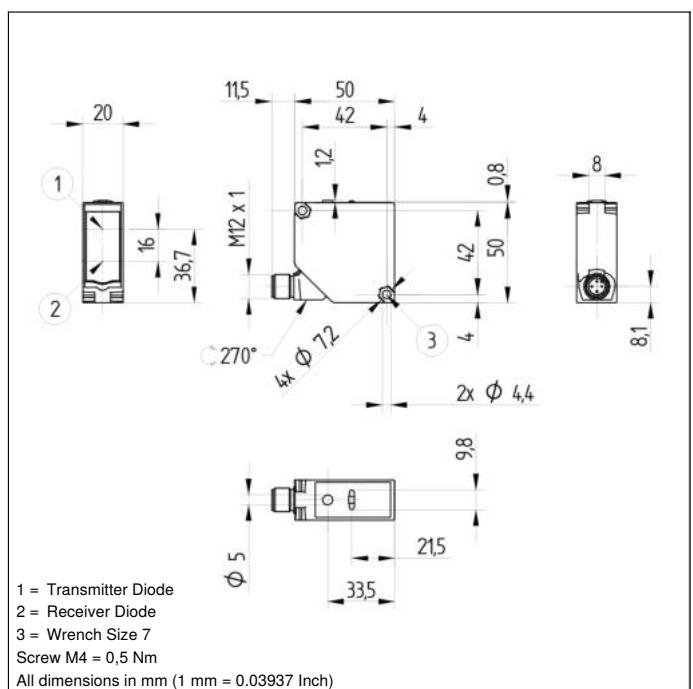
| | |
|-----------------------------------|----------------|
| Setting Method | Teach-in/NFC |
| Housing Material | Plastic |
| Degree of Protection | IP67/IP68 |
| Connection | M12 x 1; 4-pin |
| Optic Cover | PMMA |
| PNP NO | ● |
| IO-Link | ● |
| NFC interface | ● |
| Connection Diagram No. | 221 |
| Control Panel No. | A35 |
| Suitable Connection Equipment No. | 2 |
| Suitable Mounting Technology No. | 380 |

Complementary Products

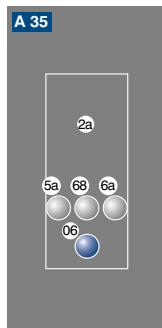
IO-Link Master

Set Protective Housing Z1PS001

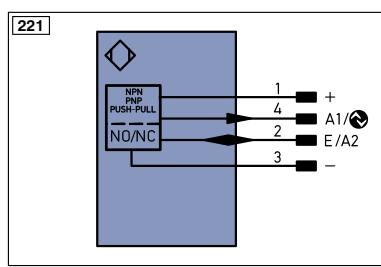
Software



Ctrl. Panel



06 = Teach Button
2a = NFC interface
5a = Switching Status Display, O1
68 = Supply Voltage Indicator
6a = Switching Status Display, O2



Legend

| | | | |
|----------|---|-------|--------------------------------|
| + | Supply Voltage + | PT | Platinum measuring resistor |
| - | Supply Voltage 0 V | nc | not connected |
| ~ | Supply Voltage (AC Voltage) | U | Test Input |
| A | Switching Output (NO) | Ü | Test Input inverted |
| Ā | Switching Output (NC) | W | Trigger Input |
| V | Contamination/Error Output (NO) | W- | Ground for the Trigger Input |
| Ā | Contamination/Error Output (NC) | O | Analog Output |
| E | Input (analog or digital) | O- | Ground for the Analog Output |
| T | Teach Input | BZ | Block Discharge |
| Z | Time Delay (activation) | Awv | Valve Output |
| S | Shielding | a | Valve Control Output + |
| | | 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 |
| BL-D | Ethernet Gigabit bidirec. data line (A-D) | RES | Input confirmation |
| EN0RS422 | Encoder 0-pulse 0-0 (TTL) | EDM | Contactor Monitoring |

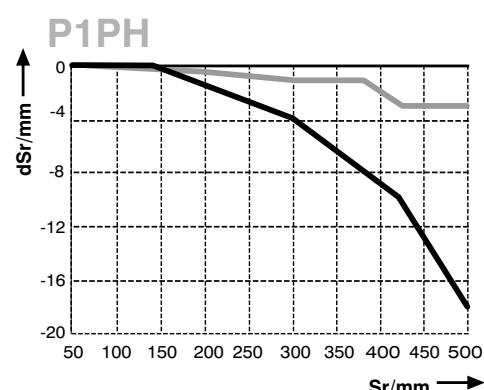
| | |
|------------------------------------|---------------------|
| EN0RS422 | Encoder A/Ā (TTL) |
| EN1RS422 | Encoder B/Ā (TTL) |
| ENA | Encoder A |
| ENB | Encoder B |
| AMIN | Digital output MIN |
| AMAX | Digital output MAX |
| AOK | Digital output OK |
| SY IN | Synchronization IN |
| SY OUT | Synchronization OUT |
| OLT | Brightness output |
| M | Maintenance |
| rsv | reserved |
| Wire Colors according to IEC 60757 | |
| BK | Black |
| BN | Brown |
| RD | Red |
| OG | Orange |
| YE | Yellow |
| GN | Green |
| BU | Blue |
| VT | Violet |
| GY | Grey |
| WH | White |
| PK | Pink |
| GN/YE | Green/Yellow |

Table 1

| Detection Range | 60 mm | 250 mm | 500 mm |
|---------------------|-------|--------|--------|
| Light Spot Diameter | 11 mm | 13 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

