

Reflex Sensor with Background Suppression

HB03PBT7

Part Number



- Adjustable switching distance
- Electronic background suppression
- Enclosed in M8 housing
- Red light

Technical Data

Optical Data

| | |
|---------------------------|------------|
| Range | 30 mm |
| Adjustable Range | 10...30 mm |
| Switching Hysteresis | < 10 % |
| Light Source | Red Light |
| Service Life (T = +25 °C) | 100000 h |
| Max. Ambient Light | 10000 Lux |
| Light Spot Diameter | 2 mm |

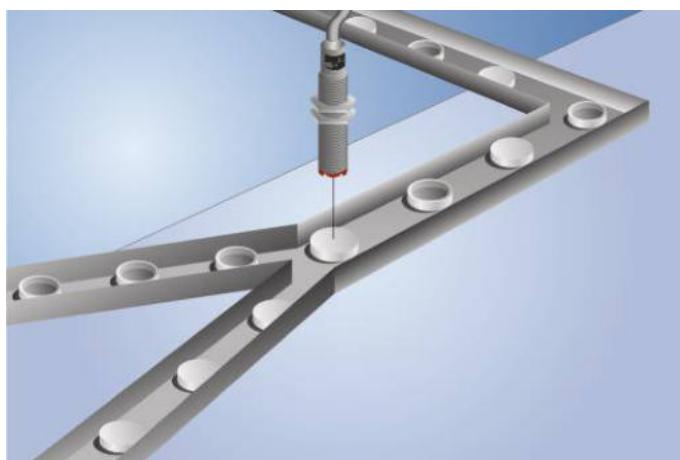
Electrical Data

| | |
|--|--------------|
| Supply Voltage | 10...30 V DC |
| Current Consumption (Ub = 24 V) | < 25 mA |
| Switching Frequency | 600 Hz |
| Response Time | 833 µs |
| Temperature Drift | < 5 % |
| Temperature Range | -25...60 °C |
| Switching Output Voltage Drop | < 2,5 V |
| PNP Switching Output/Switching Current | 100 mA |
| Short Circuit Protection | yes |
| Reverse Polarity Protection | yes |
| Overload Protection | yes |
| Protection Class | III |

Mechanical Data

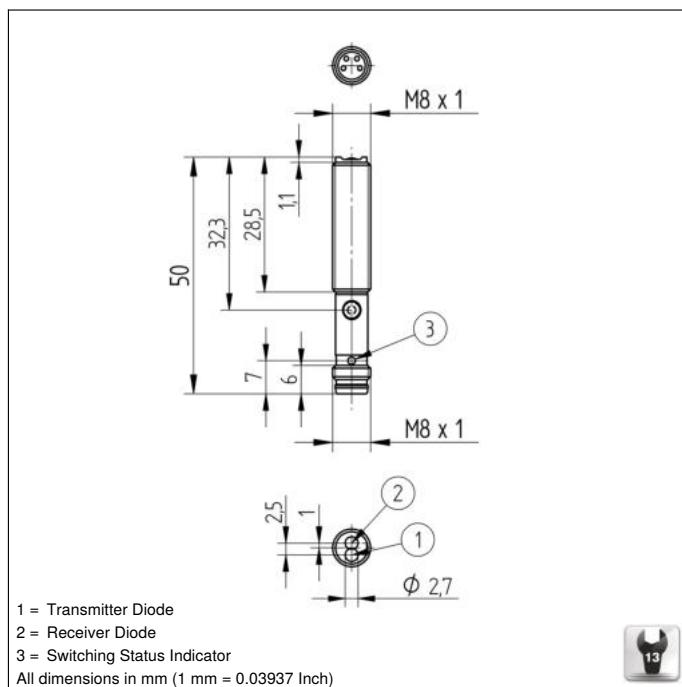
| | |
|-----------------------------------|-----------------|
| Setting Method | Teach-In |
| Housing Material | Stainless Steel |
| Full Encapsulation | yes |
| Degree of Protection | IP67 |
| Connection | M8 x 1; 4-pin |
| PNP NO | ● |
| Connection Diagram No. | 1021 |
| Control Panel No. | B1 |
| Suitable Connection Equipment No. | 7 |
| Suitable Mounting Technology No. | 200 |

These sensors detect distance by measuring angles. They are particularly good at recognizing objects in front of any background. The color, shape and surface characteristics of the object have practically no influence on sensor switching performance.

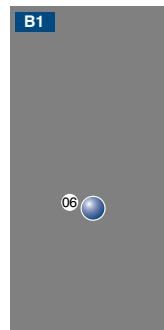


Complementary Products

PNP-NPN Converter BG7V1P-N-2M



Ctrl. Panel



06 = Teach Button

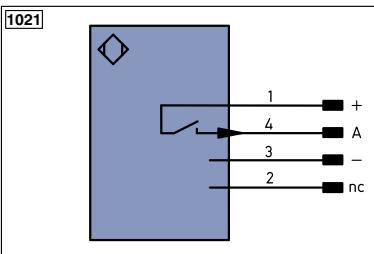


1 = Transmitter Diode

2 = Receiver Diode

3 = Switching Status Indicator

All dimensions in mm (1 mm = 0.03937 Inch)

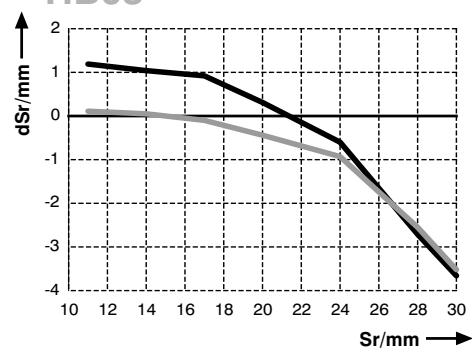


| | | | | | |
|--|--|--------------------|--------------------------------|--------------------------------------|---------------------|
| Legend | | PT | Platinum measuring resistor | EN _{AR5422} | Encoder A/A (TTL) |
| + | | nc | not connected | EN _{BR5422} | Encoder B/B (TTL) |
| - | | U | Test Input | ENA | Encoder A |
| - | | Ü | Test Input inverted | ENB | Encoder B |
| A | | W | Trigger Input | A _{MIN} | Digital output MIN |
| Ä | | W- | Ground for the Trigger Input | A _{MAX} | Digital output MAX |
| V | | O | Analog Output | A _{OK} | Digital output OK |
| V | | O- | Ground for the Analog Output | SY _{IN} | Synchronization In |
| E | | BZ | Block Discharge | SY _{OUT} | Synchronization OUT |
| T | | AVm | Valve Output | O _{LIT} | Brightness output |
| Z | | a | Valve Control Output + | M | Maintenance |
| S | | b | Valve Control Output 0 V | rsv | reserved |
| Rx _D | | SY | Synchronization | Wire Colors according to DIN IEC 757 | |
| Tx _D | | SY- | Ground for the Synchronization | BK | Black |
| RDY | | E+ | Receiver-Line | BN | Brown |
| GND | | S+ | Emitter-Line | RD | Red |
| CL | | ± | Grounding | OG | Orange |
| E/A | | SnR | Switching Distance Reduction | YE | Yellow |
|  IO-Link | | Rx _{+/} - | Ethernet Receive Path | GN | Green |
| PoE | | Tx _{+/} - | Ethernet Send Path | BU | Blue |
| IN | | Bus | Interfaces-Bus A(+)/B(-) | VT | Violet |
| QSSD | | La | Emitted Light disengageable | GY | Grey |
| Signal | | Mag | Magnet activation | WH | White |
| BL _D +/ | | RES | Input confirmation | PK | Pink |
| EN _{QSSD} | | EDM | Contactor Monitoring | GN/YE | Green/Yellow |

Switching Distance Deviation

Typical characteristic curve based on white, 90 % remission

HB03



Sr = Switching Distance

dSr = Switching Distance Change

black 6 % remission

grey 18 % remission

