

# Retro-Reflex Sensor

## Universal

# RO88PD3

Part Number



- Compact housing
- Red light

## Technical Data

### Optical Data

|                                    |           |
|------------------------------------|-----------|
| Range                              | 2500 mm   |
| Reference Reflector/Reflector Foil | RQ100BA   |
| Switching Hysteresis               | < 15 %    |
| Light Source                       | Red Light |
| Polarization Filter                | yes       |
| Service Life (T = +25 °C)          | 100000 h  |
| Max. Ambient Light                 | 10000 Lux |
| Opening Angle                      | 8 °       |
| Two-Lens Optic                     | yes       |

### Electrical Data

|                                             |              |
|---------------------------------------------|--------------|
| Supply Voltage                              | 10...30 V DC |
| Current Consumption (U <sub>b</sub> = 24 V) | < 40 mA      |
| Switching Frequency                         | 500 Hz       |
| Response Time                               | 1 ms         |
| Temperature Drift                           | < 10 %       |
| Temperature Range                           | -10...60 °C  |
| Switching Output Voltage Drop               | < 2,5 V      |
| PNP Switching Output/Switching Current      | 200 mA       |
| Residual Current Switching Output           | < 50 µA      |
| Short Circuit Protection                    | yes          |
| Reverse Polarity Protection                 | yes          |
| Overload Protection                         | yes          |
| Protection Class                            | III          |

### Mechanical Data

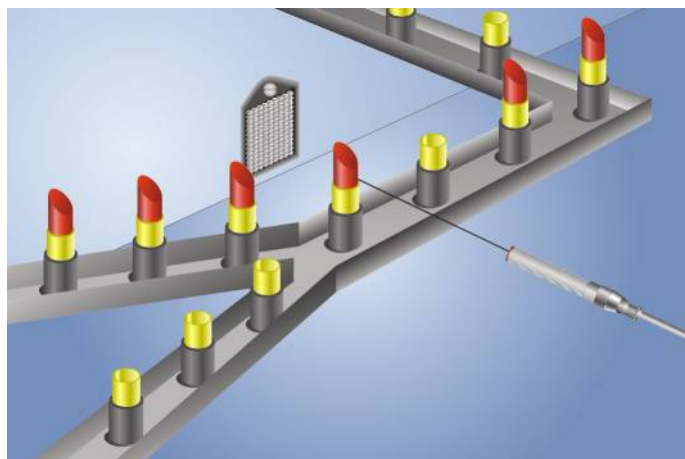
|                      |                     |
|----------------------|---------------------|
| Setting Method       | Potentiometer       |
| Housing Material     | CuZn, nickel-plated |
| Full Encapsulation   | yes                 |
| Degree of Protection | IP65                |
| Connection           | M12 × 1; 4-pin      |

PNP NC



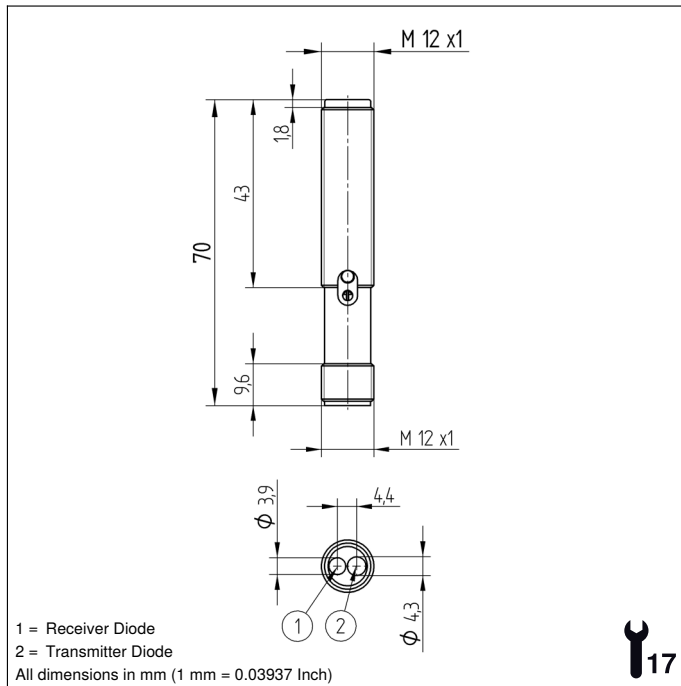
|                                   |     |
|-----------------------------------|-----|
| Connection Diagram No.            | 106 |
| Control Panel No.                 | O2  |
| Suitable Connection Equipment No. | 2   |
| Suitable Mounting Technology No.  | 170 |

A reflector must be used in combination with these sensors. They can be installed in all kinds of industrial environments thanks to ample functional reserve.



## Complementary Products

|                               |
|-------------------------------|
| Path-Folding Mirror LA9       |
| PNP-NPN Converter BG2V1P-N-2M |
| Reflector, Reflector Foil     |

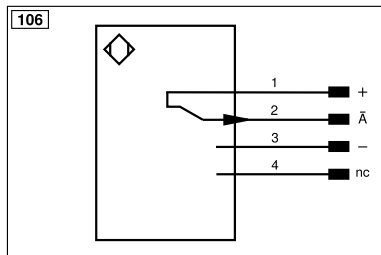


## Ctrl. Panel

O2



05 = Switching Distance Adjuster  
30 = Switching Status/Contamination Warning



| Legend    |                                            |                                        |                                |
|-----------|--------------------------------------------|----------------------------------------|--------------------------------|
| +         | Supply Voltage +                           | nc                                     | Not connected                  |
| -         | Supply Voltage 0 V                         | U                                      | Test Input                     |
| ~         | Supply Voltage (AC Voltage)                | Ü                                      | Test Input inverted            |
| A         | Switching Output (NO)                      | W                                      | Trigger Input                  |
| Ä         | Switching Output (NC)                      | W-                                     | Ground for the Trigger Input   |
| V         | Contamination/Error Output (NO)            | O                                      | Analog Output                  |
| Ȳ         | Contamination/Error Output (NC)            | O-                                     | Ground for the Analog Output   |
| E         | Input (analog or digital)                  | BZ                                     | Block Discharge                |
| T         | Teach Input                                | Amv                                    | Valve Output                   |
| Z         | Time Delay (activation)                    | a                                      | Valve Control Output +         |
| S         | Shielding                                  | 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   | IO-Link                                    | Rx+/-                                  | Ethernet Receive Path          |
| PoE       | Power over Ethernet                        | Tx+/-                                  | Ethernet Send Path             |
| IN        | Safety Input                               | Bus                                    | Interfaces-Bus A(+)/B(-)       |
| OSSD      | Safety Output                              | La                                     | Emitted Light disengageable    |
| Signal    | Signal Output                              | Mag                                    | Magnet activation              |
| BI_D+/-   | Ethernet Gigabit bidirect. data line (A-D) | RES                                    | Input confirmation             |
| ENo RS422 | Encoder 0-pulse 0/Ü (TTL)                  | EDM                                    | Contact Monitoring             |
| PT        | Platinum measuring resistor                | ENARs422                               | Encoder A/Ä (TTL)              |
|           |                                            | ENBRs422                               | Encoder B/B̄ (TTL)             |
|           |                                            | ENA                                    | Encoder A                      |
|           |                                            | ENb                                    | Encoder B                      |
|           |                                            | AMIN                                   | Digital output MIN             |
|           |                                            | AMAX                                   | Digital output MAX             |
|           |                                            | Ack                                    | Digital output OK              |
|           |                                            | SY In                                  | Synchronization In             |
|           |                                            | SY OUT                                 | Synchronization OUT            |
|           |                                            | OLt                                    | Brightness output              |
|           |                                            | M                                      | Maintenance                    |
|           |                                            | rsv                                    | Reserved                       |
|           |                                            | Wire Colors according to DIN IEC 60757 |                                |
|           |                                            | BK                                     | Black                          |
|           |                                            | BN                                     | Brown                          |
|           |                                            | RD                                     | Red                            |
|           |                                            | OG                                     | Orange                         |
|           |                                            | YE                                     | Yellow                         |
|           |                                            | GN                                     | Green                          |
|           |                                            | BU                                     | Blue                           |
|           |                                            | VT                                     | Violet                         |
|           |                                            | GY                                     | Grey                           |
|           |                                            | WH                                     | White                          |
|           |                                            | PK                                     | Pink                           |
|           |                                            | GNYE                                   | Green/Yellow                   |

## Feasible reflector distance

Reflector type, mounting distance

|           |              |           |              |
|-----------|--------------|-----------|--------------|
| RQ100BA   | 0,02...2,5 m | RR25_M    | 0,05...0,7 m |
| RE18040BA | 0,02...1,8 m | RR25KP    | 0,05...0,3 m |
| RQ84BA    | 0,02...2,2 m | RR21_M    | 0,05...0,6 m |
| RR84BA    | 0,02...2 m   | ZRAE02B01 | 0,02...1 m   |
| RE9538BA  | 0,02...0,9 m | ZRME01B01 | 0,05...0,3 m |
| RE6151BM  | 0,05...2 m   | ZRME03B01 | 0,02...0,8 m |
| RE6151BH  | 0,02...0,8 m | ZRMR02K01 | 0,02...0,4 m |
| RR50_A    | 0,02...1,5 m | ZRMS02_01 | 0,02...0,4 m |
| RE6040BA  | 0,02...1,5 m | RF505     | 0,06...0,8 m |
| RE8222BA  | 0,02...1 m   | RF255     | 0,06...0,6 m |
| RR34_M    | 0,05...1 m   | RF508     | 0,06...0,8 m |
| RE3220BM  | 0,05...0,7 m | RF258     | 0,06...0,6 m |
| RE6210BM  | 0,05...0,6 m | ZRDF_K01  | 0,06...1 m   |