

# Retro-Reflex Sensor

## Universal

# LW86PA3

Part Number

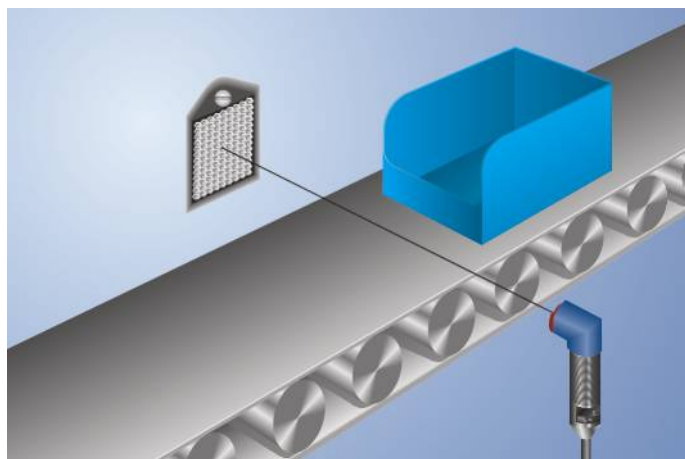


- Stainless steel housing
- Switching distance adjuster

## Technical Data

| Optical Data                                |                 |
|---------------------------------------------|-----------------|
| Range                                       | 6000 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                               | 5 °             |
| Two-Lens Optic                              | yes             |
| Electrical Data                             |                 |
| Supply Voltage                              | 10...30 V DC    |
| Current Consumption (U <sub>b</sub> = 24 V) | < 40 mA         |
| Switching Frequency                         | 1 kHz           |
| Response Time                               | 500 µs          |
| 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                            | Stainless Steel |
| Full Encapsulation                          | yes             |
| Degree of Protection                        | IP67            |
| Connection                                  | M12 × 1; 4-pin  |
| Safety-relevant Data                        |                 |
| MTTFd (EN ISO 13849-1)                      | 2987,86         |
| PNP NO/NC antivalent                        | ●               |
| Connection Diagram No.                      | 101             |
| Control Panel No.                           | D14             |
| Suitable Connection Equipment No.           | 2               |
| Suitable Mounting Technology No.            | 150             |

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. Even reflective objects can be reliably recognized through the use of polarized light.



## Complementary Products

|                               |
|-------------------------------|
| PNP-NPN Converter BG2V1P-N-2M |
| Reflector, Reflector Foil     |

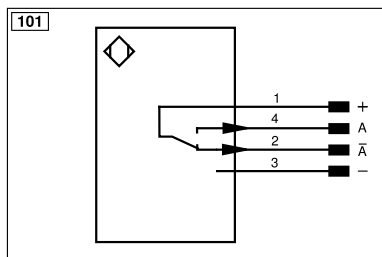
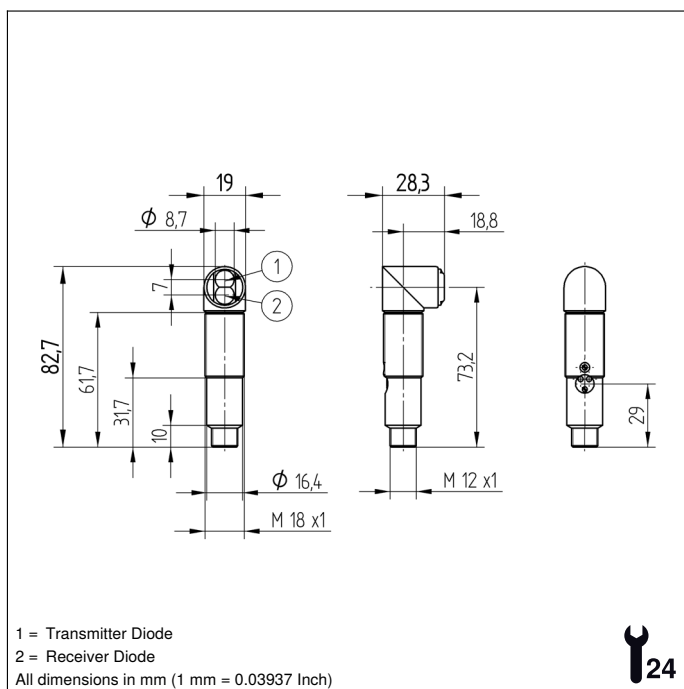
## Ctrl. Panel

**D**



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)                | Ů                                      | Test Input inverted            |
| A         | Switching Output (NO)                      | W                                      | Trigger Input                  |
| Ā         | 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 0/0 (TTL)                  | EDM                                    | Contact Monitoring             |
| PT        | Platinum measuring resistor                | ENARs422                               | Encoder A/Ā (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...6 m   | RR25_M    | 0,02...1,6 m |
| RE18040BA | 0,02...3,3 m | RR25KP    | 0,02...1,4 m |
| RQ84BA    | 0,01...4,5 m | RR21_M    | 0,01...1,6 m |
| RR84BA    | 0,02...4,5 m | ZRAE02B01 | 0,02...3 m   |
| RE9538BA  | 0,02...1,5 m | ZRME01B01 | 0,02...1 m   |
| RE6151BM  | 0,01...4,5 m | ZRME03B01 | 0,02...2,8 m |
| RE6151BH  | 0,02...2,3 m | ZRMR02K01 | 0,02...1,1 m |
| RR50_A    | 0,02...4 m   | ZRMS02_01 | 0,01...1,5 m |
| RE6040BA  | 0,02...4 m   | RF505     | 0,06...1,6 m |
| RE8222BA  | 0,01...2 m   | RF255     | 0,06...1,2 m |
| RR34_M    | 0,01...2,4 m | RF508     | 0,06...1,6 m |
| RE3220BM  | 0,01...1,6 m | RF258     | 0,06...1,2 m |
| RE6210BM  | 0,01...1,6 m | ZRDF_K01  | 0,06...4 m   |

