

# Retro-Reflex Sensor



## LK89PA7

Part Number

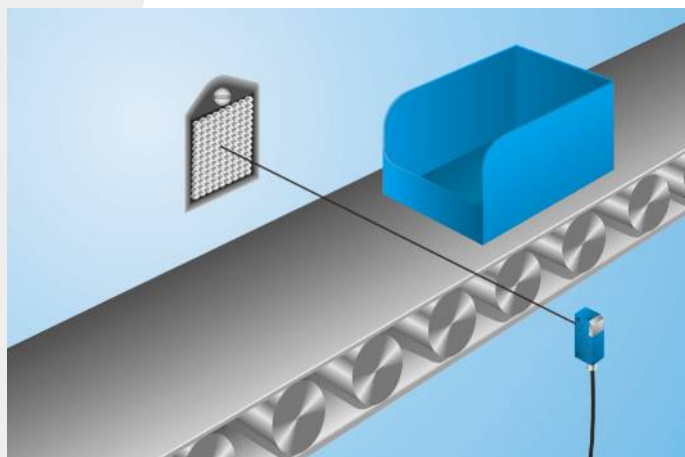


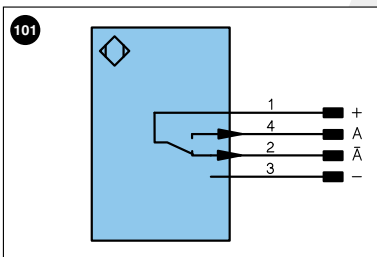
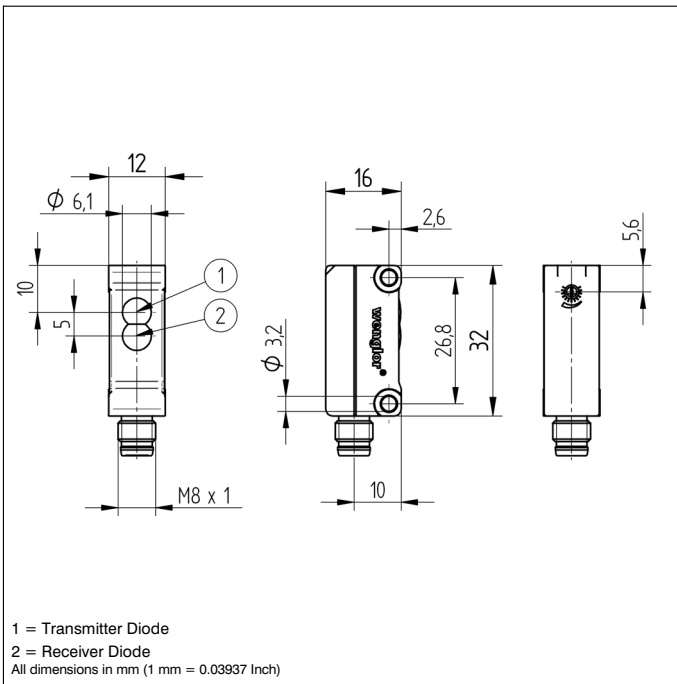
- Metal Plug
- Miniature Design
- Red Light

### Technical Data

| Optical Data                                |                                                                                       |
|---------------------------------------------|---------------------------------------------------------------------------------------|
| Range                                       | 4500 mm                                                                               |
| Reference Reflector/Reflex 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 °                                                                                   |
| Light Spot Diameter                         | see Table 1                                                                           |
| Two-Lens Optic                              | yes                                                                                   |
| Electrical Data                             |                                                                                       |
| Supply Voltage                              | 10...30 V DC                                                                          |
| Current Consumption (U <sub>b</sub> = 24 V) | < 30 mA                                                                               |
| Switching Frequency                         | 1 kHz                                                                                 |
| Response Time                               | 500 µs                                                                                |
| Temperature Drift                           | < 10 %                                                                                |
| Temperature Range                           | -25...60 °C                                                                           |
| Switching Output Voltage Drop               | < 2,5 V                                                                               |
| PNP Switching Output/Switching Current      | 100 mA                                                                                |
| Residual Current Switching Output           | < 50 µA                                                                               |
| Short Circuit Protection                    | yes                                                                                   |
| Reverse Polarity Protection                 | yes                                                                                   |
| Overload Protection                         | yes                                                                                   |
| Protection Class                            | III                                                                                   |
| Mechanical Data                             |                                                                                       |
| Housing Material                            | Plastic                                                                               |
| Full Encapsulation                          | yes                                                                                   |
| Degree of Protection                        | IP67                                                                                  |
| Connection                                  | M8 × 1; 4-pin                                                                         |
| PNP NO/NC antivalent                        |  |
| Connection Diagram No.                      |  |
| Control Panel No.                           |  |
| Suiting Connection Technology No.           |  |
| Suiting Mounting Technology No.             |  |

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.





#### Legend

|         |                                 |        |                              |     |                     |
|---------|---------------------------------|--------|------------------------------|-----|---------------------|
| +       | Supply Voltage +                | U      | Test Input                   | PoE | Power over Ethernet |
| -       | Supply Voltage 0 V              | Ū     | Test Input inverted          |     |                     |
| ~       | Supply Voltage (AC Voltage)     | W      | Trigger Input                |     |                     |
| A       | Switching Output (NO)           | O      | Analog Output                |     |                     |
| Ā      | Switching Output (NC)           | O-     | Ground for the Analog Output |     |                     |
| V       | Contamination/Error Output (NO) | BZ     | Block Discharge              |     |                     |
| V̄      | Contamination/Error Output (NC) | AWV    | Valve Output                 |     |                     |
| E       | Input (analog or digital)       | a      | Valve Control Output +       |     |                     |
| T       | Teach Input                     | b      | Valve Control Output 0 V     |     |                     |
| Z       | Time Delay (activation)         | SY     | Synchronization              |     |                     |
| S       | Shielding                       | E+     | Receiver-Line                |     |                     |
| RxD     | Interface Receive Path          | S+     | Emitter-Line                 |     |                     |
| TxD     | Interface Send Path             | ±      | Grounding                    |     |                     |
| RDY     | Ready                           | SnR    | Switching Distance Reduction |     |                     |
| GND     | Ground                          | Rx +/- | Ethernet Receive Path        |     |                     |
| CL      | Clock                           | Tx +/- | Ethernet Send Path           |     |                     |
| E/A     | Output/Input programmable       | Bus    | Interfaces-Bus A(+)/B(-)     |     |                     |
| IO-Link |                                 | La     | Emitted Light disengageable  |     |                     |

Wire Colors according to DIN IEC 757

|      |              |
|------|--------------|
| 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 |

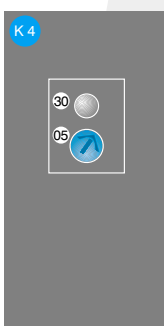
Table 1

|                     |       |       |        |
|---------------------|-------|-------|--------|
| Working Distance    | 0,2 m | 0,5 m | 4 m    |
| Light Spot Diameter | 14 mm | 40 mm | 250 mm |

## Complementary Products

Reflector, Reflex Foil

## Ctrl.Panel



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

## Feasible reflector distance

Reflector type, mounting distance

|           |               |           |               |
|-----------|---------------|-----------|---------------|
| RQ100BA   | 0,02...4,5 m  | RR25_M    | 0,015...1,1 m |
| RE18040BA | 0,04...3,5 m  | RR25KP    | 0,04...0,8 m  |
| RQ84BA    | 0,02...4 m    | RR21_M    | 0,02...1,1 m  |
| RR84BA    | 0,03...4 m    | ZRAE02B01 | 0,03...1,6 m  |
| RE9538BA  | 0,03...2 m    | ZRME01B01 | 0,04...0,5 m  |
| RE6151BM  | 0,01...4 m    | ZRME03B01 | 0,03...1,6 m  |
| RR50_A    | 0,02...2,8 m  | ZRMR02K01 | 0,03...0,6 m  |
| RE6040BA  | 0,015...3,2 m | ZRMS02_01 | 0,03...0,7 m  |
| RE8222BA  | 0,01...2,1 m  | RF505     | 0,06...1,1 m  |
| RR34_M    | 0,02...1,6 m  | RF508     | 0,06...1,3 m  |
| RE3220BM  | 0,015...1,5 m | RF258     | 0,06...1,1 m  |
| RE6210BM  | 0,01...1 m    | ZRDF_K01  | 0,06...2,5 m  |

Specifications are subject to change without notice