



## Photoelectric sensors W9-3 Glass, Photoelectric retro-reflective sensor, autocollimation

WL9M4G-3N1132



**Model Name** > [WL9M4G-3N1132](#)  
**Part No.** > [1051897](#)



*Illustration may differ*

#### At a glance

- High-performance retro-reflective clear material sensor in ultra-rugged VISTAL™ housing
- Best-in-class optical performance for transparent object detection
- Continuous threshold adaption
- PinPoint LED for highly visible and precise light spot
- Variable mounting with M4 hole pattern
- Wide range of connection options

#### Your benefits

- Rugged VISTAL™ housing provides reliable installation and operation
- Reliable object detection in all situations using best-in-class performance
- Quick and easy alignment with reliable detection due to the highly visible PinPoint light spot
- M4 slotted hole mounting for multiple mounting possibilities
- One housing with a wide range of options makes machine integration easy
- Variety of accessories for simple mounting



#### Features

|                                  |                                                        |
|----------------------------------|--------------------------------------------------------|
| Sensor/detection principle:      | Photoelectric retro-reflective sensor, autocollimation |
| Dimensions (W x H x D):          | 12.2 mm x 50 mm x 23.6 mm                              |
| Housing design (light emission): | Rectangular                                            |
| Mounting hole:                   | M4                                                     |
| Sensing range max.:              | 0 m ... 5 m <sup>1)</sup>                              |
| Sensing range:                   | 0 m ... 3 m <sup>2)</sup>                              |
| Type of light:                   | Visible red light                                      |
| Light source:                    | PinPoint LED <sup>3)</sup>                             |
| Wave length:                     | 650 nm                                                 |
| Teach-in:                        | Single teach-in button                                 |
| Adjustment:                      | Teach-in                                               |
| Light spot size (distance):      | Ø 45 mm (1.5 m)                                        |
| Continuous threshold adaption:   | ✓                                                      |

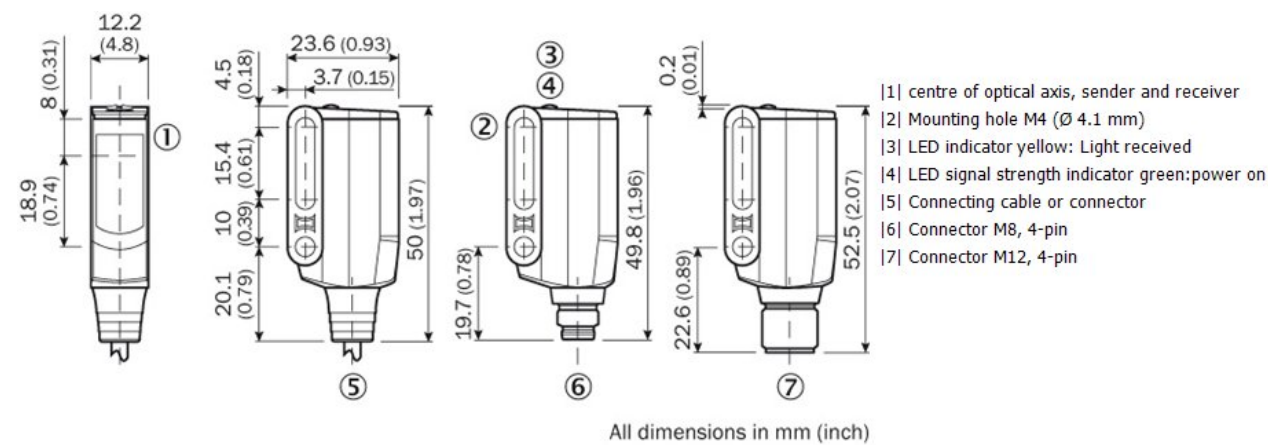
<sup>1) 2)</sup> PL80A <sup>3)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

#### Mechanics/electronics

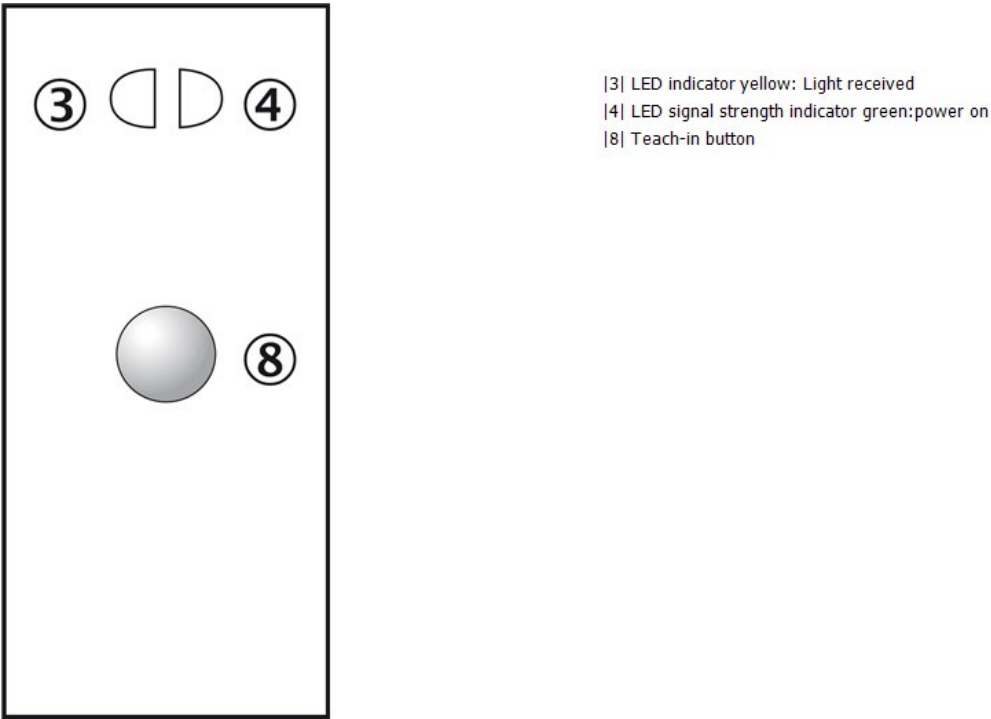
|                                    |                                                     |
|------------------------------------|-----------------------------------------------------|
| Supply voltage:                    | 10 V DC ... 30 V DC <sup>1)</sup>                   |
| Power consumption:                 | ≤ 20 mA <sup>2)</sup>                               |
| Output type:                       | NPN <sup>3)</sup>                                   |
| Output function:                   | Complementary                                       |
| Switching mode:                    | Light/dark-switching <sup>4)</sup>                  |
| Output current I <sub>max.</sub> : | ≤ 100 mA <sup>5)</sup>                              |
| Response time:                     | < 0.5 ms <sup>6)</sup>                              |
| Switching frequency:               | 1,000 Hz <sup>7)</sup>                              |
| Connection type:                   | Cable, 4-wire, 2 m <sup>8)</sup>                    |
| Cable material:                    | PVC                                                 |
| Conductor cross-section:           | 0.14 mm <sup>2</sup>                                |
| Circuit protection:::              | A, B, C <sup>9)</sup> <sup>10)</sup> <sup>11)</sup> |
| Protection class:                  | III                                                 |
| Weight:                            | 80 g                                                |
| Polarisation filter:               | ✓                                                   |
| Housing material:                  | Plastic, VISTAL                                     |
| Optics material:                   | PMMA                                                |
| Enclosure rating:                  | IP 66<br>IP 67<br>IP 69K                            |
| Special feature:                   | For transparent objects                             |
| Ambient operating temperature:     | -40 °C ... 60 °C                                    |
| Ambient storage temperature:       | -40 °C ... 75 °C                                    |
| UL File No.:                       | NRKH.E181493                                        |

<sup>1)</sup> Limit values, operation in short-circuit protected network max. 8 A <sup>2)</sup> Without load <sup>3)</sup> <sup>4)</sup> Q = light-switching <sup>5)</sup> As of Tu 50 °C, a max. load current I<sub>max.</sub> = 50 mA is permitted <sup>6)</sup> Signal transit time with resistive load <sup>7)</sup> With light/dark ratio 1:1 <sup>8)</sup> Do not bend below 0 °C <sup>9)</sup> A = V<sub>S</sub> connections reverse-polarity protected <sup>10)</sup> B = inputs and output reverse-polarity protected <sup>11)</sup> C = interference suppression

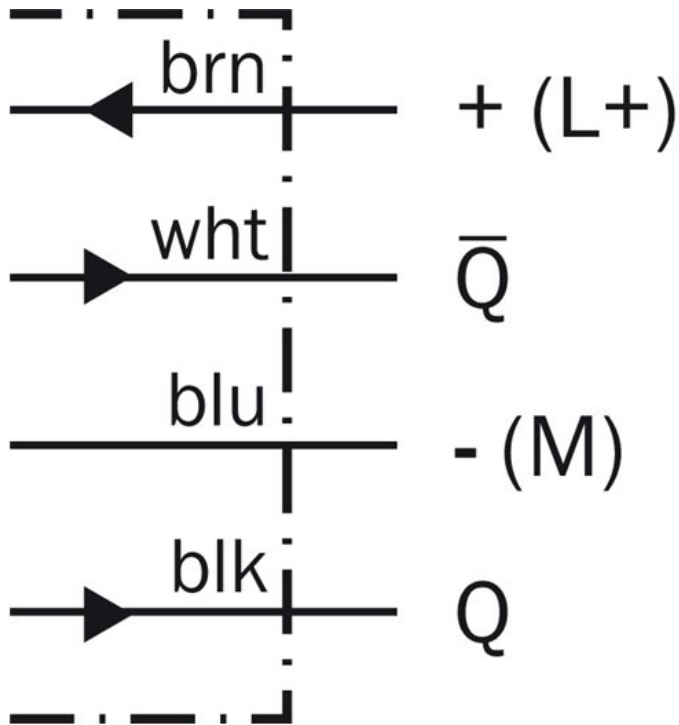
Dimensional drawing



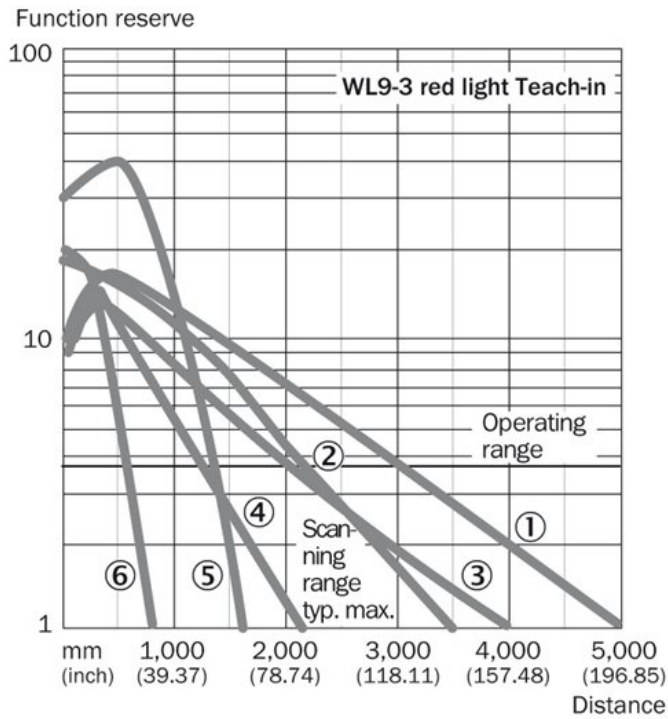
Adjustments possible



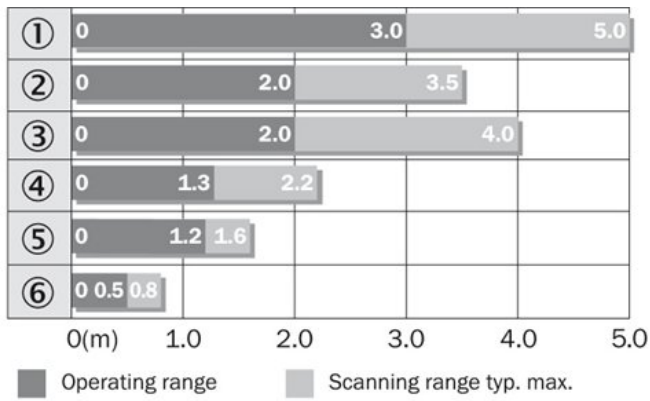
## Connection diagram



## Characteristic curve



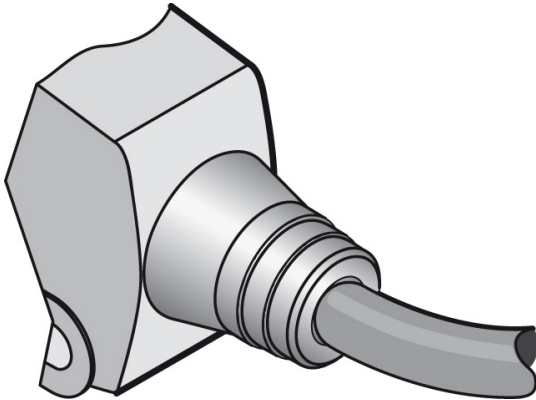
## Sensing range diagram



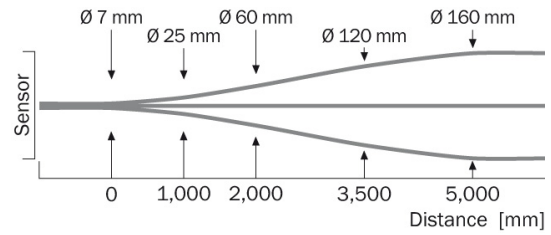
- |1| PL80A
- |2| P250F
- |3| PL40A
- |4| PL20F
- |5| PL10F
- |6| REF-IRF-56

|   | Reflector type | Operating range |
|---|----------------|-----------------|
| ① | PL80A          | 0 ... 3.0 m     |
| ② | P250           | 0 ... 2.0 m     |
| ③ | PL40A          | 0 ... 2.0 m     |
| ④ | PL20A          | 0 ... 1.3 m     |
| ⑤ | PL10F          | 0 ... 1.2 m     |
| ⑥ | REF-IRF-56     | 0 ... 0.5 m     |

## Connection type



## Light spot size



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