



Photoelectric sensors  
W4S-3 Glass, Photoelectric retro-reflective  
sensor, autocollimation

WLG4S-3F3132



## Photoelectric sensors

### W4S-3 Glass, Photoelectric retro-reflective sensor, autocollimation

**Model Name** > [WLG4S-3F3132](#)  
**Part No.** > [1043838](#)



*Illustration may differ*

#### At a glance

- Continuous threshold adaption of the switching threshold compensates for environmental changes
- Single-lens autocollimation optics
- Simple setting either via teach-in pushbutton, cable or IO-Link
- PinPoint LED technology with a small, highly visible, well-defined light spot enables high reserve levels when using small reflectors
- Flexible sensor settings, monitoring, advanced diagnostics, and visualization thanks to IO-Link

#### Your benefits

- Optimal detection of any kind of transparent object
- Quick and easy operation via the push of a button - automatic setting of the correct switching threshold
- Less downtime due to a Continuous Threshold Adaption which compensates for changing environmental conditions, including temperature, dust and drift effects
- The well-defined, highly visible intense light spot provides quick and reliable alignment
- IO-Link provides easy data access from the PLC
- Quick and easy configuration
- Quick and easy integration using function blocks
- Easy device replacement and identification



#### Features

|                                  |                                                        |
|----------------------------------|--------------------------------------------------------|
| Sensor/detection principle:      | Photoelectric retro-reflective sensor, autocollimation |
| Dimensions (W x H x D):          | 12.2 mm x 41.8 mm x 17.3 mm                            |
| Housing design (light emission): | Rectangular                                            |
| Sensing range max.:              | 0.01 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:   | ✓                                                      |

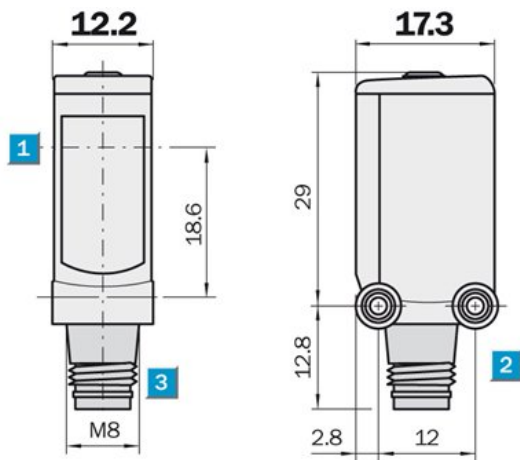
1) 2) PL80A 3) Average service life of 100,000 h at  $T_A = +25\text{ °C}$

## Mechanics/electronics

|                                    |                                                      |
|------------------------------------|------------------------------------------------------|
| Supply voltage:                    | 10 V DC ... 30 V DC <sup>1)</sup>                    |
| Ripple:                            | < 5 Vpp <sup>2)</sup>                                |
| Power consumption:                 | ≤ 20 mA <sup>3)</sup>                                |
| Output type:                       | PNP                                                  |
| Switching mode:                    | Dark-switching                                       |
| Output current I <sub>max.</sub> : | ≤ 100 mA                                             |
| Response time:                     | < 0.5 ms <sup>4)</sup>                               |
| Switching frequency:               | 1,000 Hz <sup>5)</sup>                               |
| Angle of reception:                | 30 °                                                 |
| Attenuation along light beam:      | > 8 %                                                |
| Connection type:                   | Cable with connector M8, 3-pin, 100 mm <sup>6)</sup> |
| Cable material:                    | PVC                                                  |
| Conductor cross-section:           | 0.14 mm <sup>2</sup>                                 |
| Cable diameter:                    | 3.4 mm                                               |
| Circuit protection:::              | A, C, D <sup>7) 8) 9)</sup>                          |
| Protection class:                  | III                                                  |
| Weight:                            | 30 g                                                 |
| Polarisation filter:               | ✓                                                    |
| Housing material:                  | ABS, Plastic                                         |
| Optics material:                   | PMMA                                                 |
| Enclosure rating:                  | IP 67<br>IP 66                                       |
| Special feature:                   | For transparent objects                              |
| Ambient operating temperature:     | -40 °C ... 60 °C                                     |
| Ambient storage temperature:       | -40 °C ... 75 °C                                     |
| UL File No.:                       | NRKH.E181493 & NRKH7.E181493                         |

<sup>1)</sup> Limit values <sup>2)</sup> May not exceed or fall short of  $V_S$  tolerances <sup>3)</sup> Without load <sup>4)</sup> Signal transit time with resistive load <sup>5)</sup> With light/dark ratio 1:1 <sup>6)</sup> Do not bend  
below 0 °C <sup>7)</sup> A =  $V_S$  connections reverse-polarity protected <sup>8)</sup> C = interference suppression <sup>9)</sup> D = outputs overcurrent and short-circuit protected

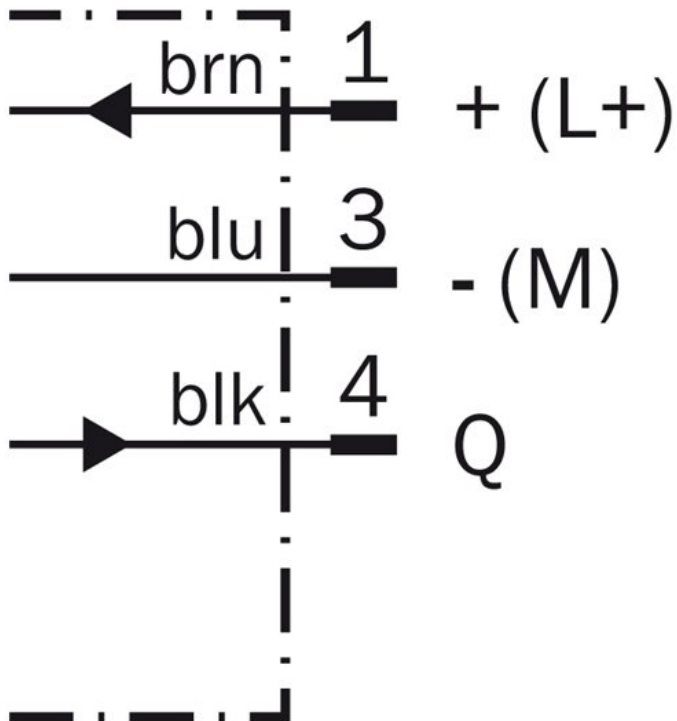
Dimensional drawing



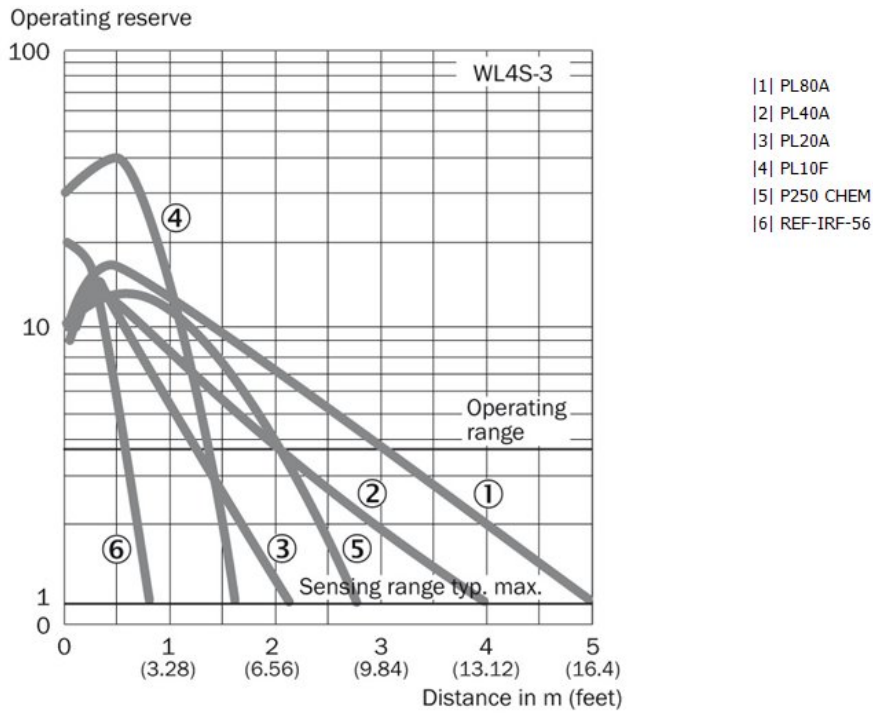
- |1| Center of optical axis
- |2| Threaded mounting hole M3
- |3| Connection
- |4| Status indicator LED green: power on
- |5| LED indicator orange: status of received light beam
- |6| Teach-in button



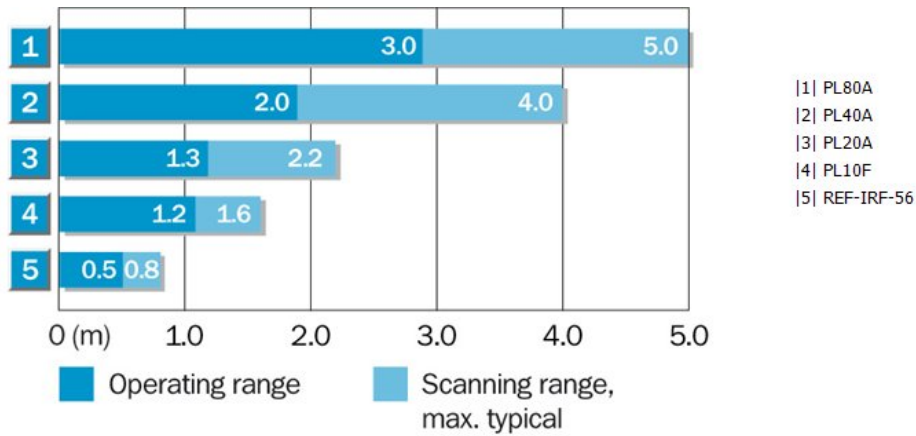
Connection diagram



## Characteristic curve



## Sensing range diagram



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

## Connection type

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