



Photoelectric sensors  
W2 Slim, Photoelectric retro-reflective sensor,  
Standard optics

WL2S-N111



**Model Name** > [WL2S-N111](#)  
**Part No.** > [1023870](#)



*Illustration may differ*

#### At a glance

- Small, sharply defined light spot of Ø 10 mm at 100 mm distance
- Maximum sensing range of 800 mm on the small PL20A reflector
- Fast response time of 0.6 ms

#### Your benefits

- PinPoint LED provides a sharply defined, highly visible light spot for quick and easy alignment
- Compact design saves space while providing long sensing ranges
- High immunity to crosstalk with another device enables the installation of several sensors in a single area
- Ball-and-socket bracket for quick and easy alignment



#### Features

|                                  |                                                        |
|----------------------------------|--------------------------------------------------------|
| Sensor/detection principle:      | Photoelectric retro-reflective sensor, Standard optics |
| Dimensions (W x H x D):          | 7.6 mm x 25.1 mm x 12.5 mm                             |
| Housing design (light emission): | Rectangular, Slim                                      |
| Sensing range max.:              | 0.04 m ... 0.8 m <sup>1)</sup>                         |
| Sensing range:                   | 0.04 m ... 0.8 m <sup>2)</sup>                         |
| Type of light:                   | Visible red light                                      |
| Light source:                    | PinPoint LED <sup>3)</sup>                             |
| Wave length:                     | 660 nm                                                 |
| Focus adjustable:                | ✓                                                      |
| Light spot size (distance):      | Ø 10 mm (100 mm)                                       |

<sup>1) 2)</sup> PL20A <sup>3)</sup> Average service life 75,000 h at T<sub>A</sub> = +25 °C

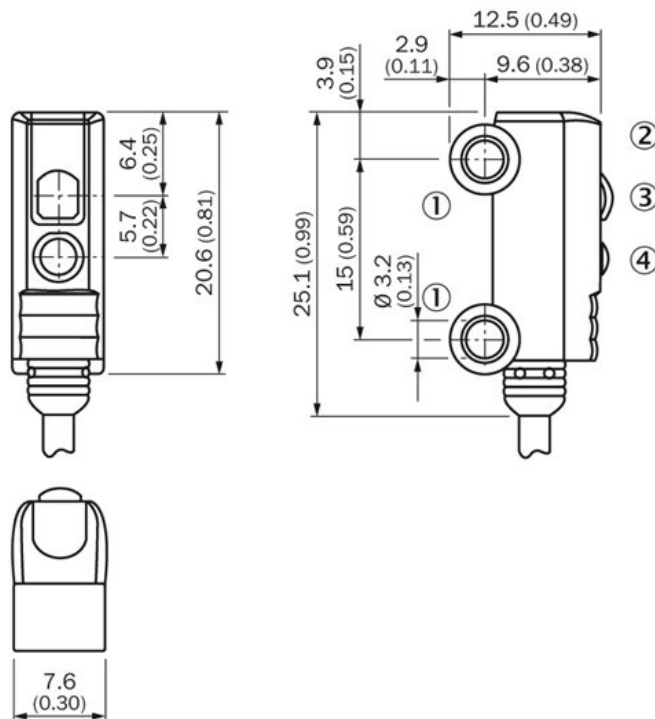
#### Mechanics/electronics

|                                   |                                   |
|-----------------------------------|-----------------------------------|
| Supply voltage:                   | 10 V DC ... 30 V DC <sup>1)</sup> |
| Ripple:                           | ≤ 5 Vpp <sup>2)</sup>             |
| Output type:                      | NPN                               |
| Switching mode:                   | Light switching                   |
| Output current I <sub>max</sub> : | ≤ 50 mA                           |
| Response time:                    | < 0.6 ms <sup>3)</sup>            |
| Switching frequency:              | 800 Hz <sup>4)</sup>              |
| Connection type:                  | Cable, 3-wire, 2 m <sup>5)</sup>  |

|                                |                             |
|--------------------------------|-----------------------------|
| Cable material:                | PVC                         |
| Cable diameter:                | Ø 2.4 mm                    |
| Circuit protection:::          | A, C, D <sup>6) 7) 8)</sup> |
| Weight:                        | 18 g                        |
| Polarisation filter:           | ✓                           |
| Reverse polarity protection:   | ✓                           |
| Short-circuit protection:      | ✓                           |
| Housing material:              | ABS, Plastic                |
| Optics material:               | PMMA                        |
| Enclosure rating:              | IP 67<br>IP 69K             |
| Ambient operating temperature: | -20 °C ... 50 °C            |
| Ambient storage temperature:   | -40 °C ... 75 °C            |

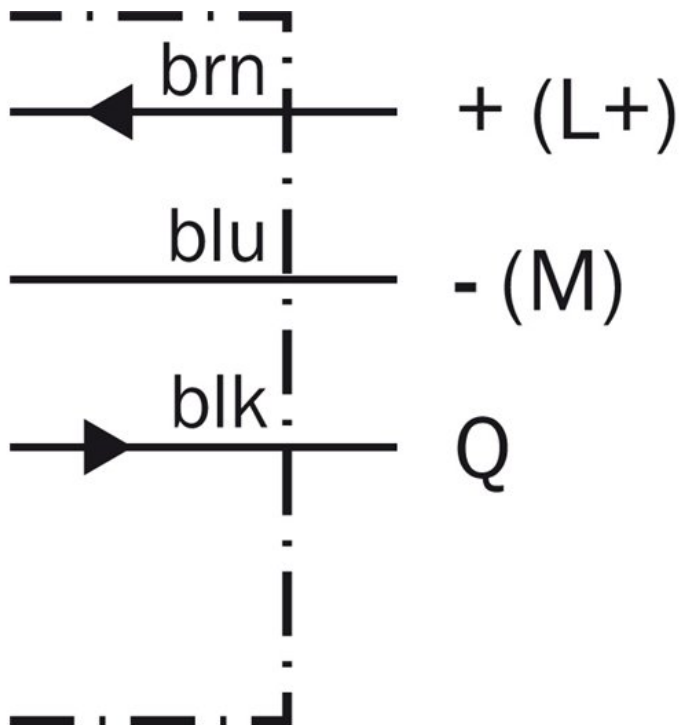
<sup>1)</sup> Limit values   <sup>2)</sup> May not exceed or fall short of  $V_S$  tolerances   <sup>3)</sup> Signal transit time with resistive load   <sup>4)</sup> With light/dark ratio 1:1   <sup>5)</sup> Do not bend below 0 °C   <sup>6)</sup> A = V  
<sup>7)</sup> C = interference suppression   <sup>8)</sup> D = outputs overcurrent and short-circuit protected

## Dimensional drawing

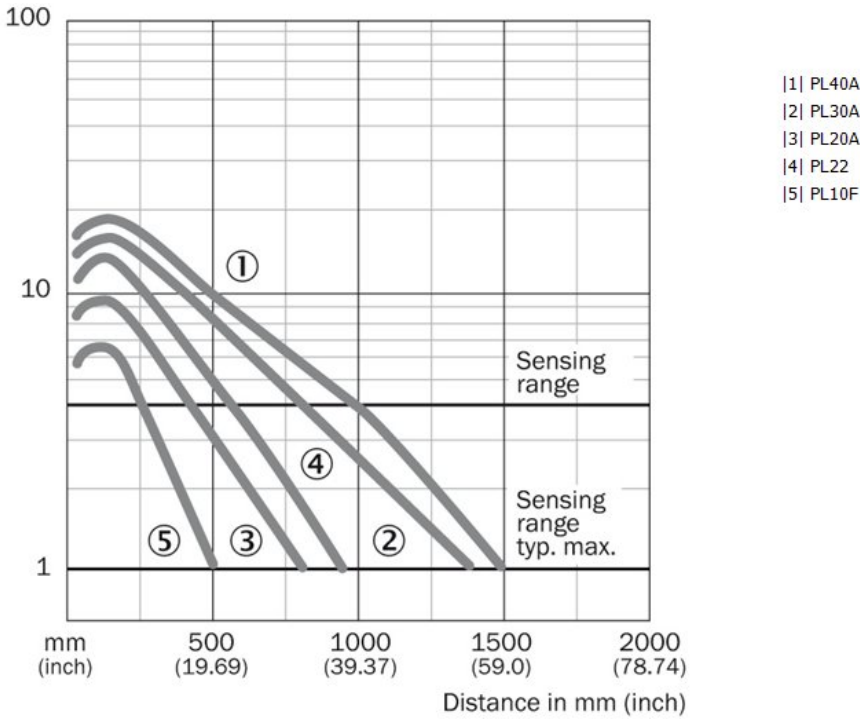


- |1| Mounting hole, Ø approx. 3.1 mm
- |2| LED signal strength indicator
- |3| Optical axis, receiver
- |4| Optical axis, sender

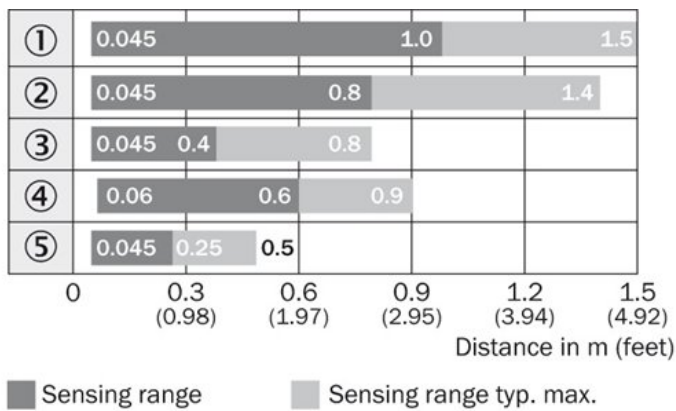
Connection diagram



Characteristic curve



Sensing range diagram



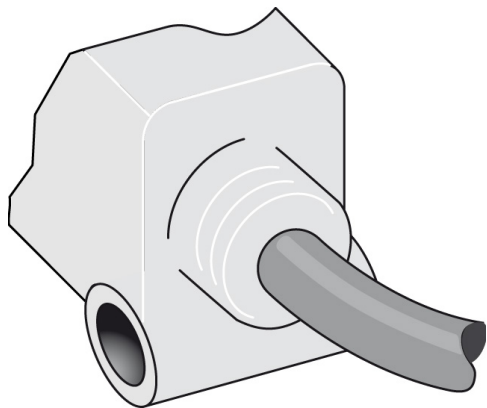
- |1| PL40A
- |2| PL30A
- |3| PL20F
- |4| PL22
- |5| PL10F

Reflector type

- ① PL40A
- ② PL30A
- ③ PL20F
- ④ PL22
- ⑤ PL10F <sup>1)</sup>

<sup>1)</sup> With reflector arrangement along the sensor axis.

Connection type



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