



Photoelectric sensors  
W100, Photoelectric retro-reflective sensor,  
Standard optics

WL100-P4429S11



**Model Name** > [WL100-P4429S11](#)  
**Part No.** > [6030173](#)



*Illustration may differ*

#### At a glance

- Standard miniature housing with M3 threaded mounting holes
- Optics with standard red LED or bright light LED
- Polarizing filter
- Light/dark switching and sensitivity adjustment via rotary switch possible
- All necessary accessories (BEF-W100-A and P250) are included with delivery (depending on type)

#### Your benefits

- Highly visible light spot simplifies alignment
- Less contamination due to high optical operating reserve
- Polarization filter allows reliable detection of objects with shiny surfaces and prevents false switching
- M3 threaded mounting holes provide easy installation
- Variants available for reliably detecting clear materials, min. attenuation 20 %
- All necessary accessories (bracket and reflector) are included with delivery, reducing installation and procurement costs (depending on type)

**Product will be phased out and can be ordered until 31.12.2015.**



#### Features

|                                  |                                                        |
|----------------------------------|--------------------------------------------------------|
| Sensor/detection principle:      | Photoelectric retro-reflective sensor, Standard optics |
| Dimensions (W x H x D):          | 11 mm x 31 mm x 20 mm                                  |
| Housing design (light emission): | Rectangular                                            |
| Sensing range max.:              | 0.01 m ... 3 m <sup>1)</sup>                           |
| Sensing range:                   | 0.01 m ... 2.6 m <sup>2)</sup>                         |
| Type of light:                   | Visible red light                                      |
| Light source:                    | LED <sup>3)</sup>                                      |
| Wave length:                     | 680 nm                                                 |
| Angle of dispersion:             | Ca. 4 °                                                |
| Focus adjustable:                | -                                                      |
| Adjustment:                      | Potentiometer, 270 °                                   |
| Light spot size (distance):      | Ø 200 mm (2 m)                                         |

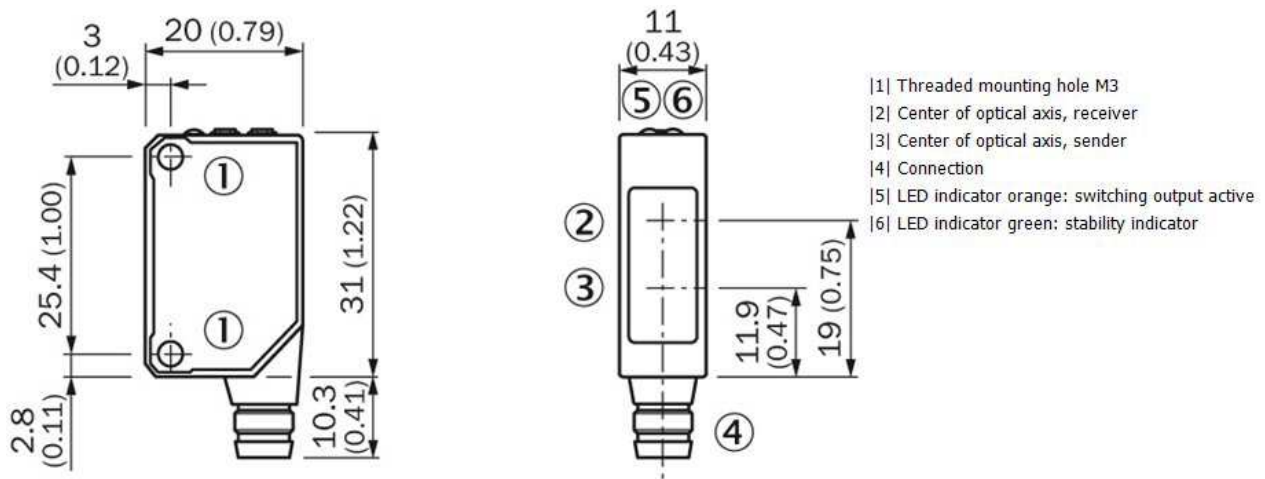
<sup>1) 2)</sup> PL80A <sup>3)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

#### Mechanics/electronics

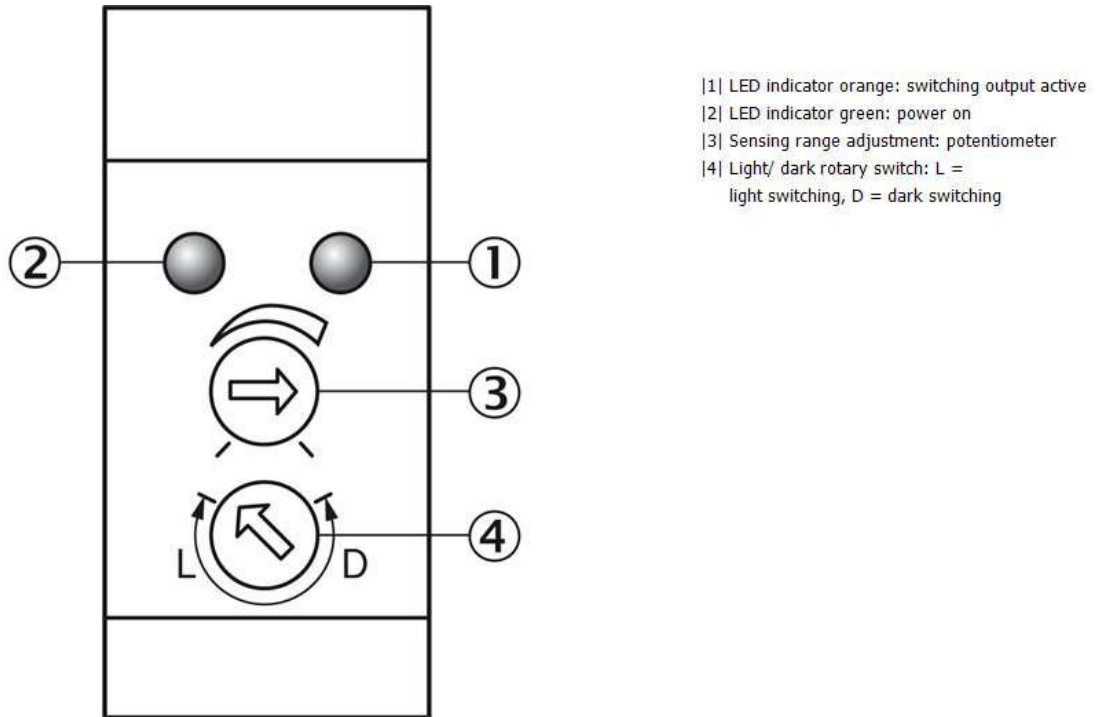
|                                   |                                                                          |
|-----------------------------------|--------------------------------------------------------------------------|
| Supply voltage:                   | 10 V DC ... 30 V DC <sup>1)</sup>                                        |
| Residual ripple:                  | $\pm 10\%$ <sup>2)</sup>                                                 |
| Power consumption:                | $\leq 30\text{ mA}$ <sup>3)</sup>                                        |
| Output type:                      | PNP, open collector                                                      |
| Switching mode:                   | Light/dark switching                                                     |
| Switching mode selector:          | Manually selectable                                                      |
| Output current I <sub>max</sub> : | $\leq 100\text{ mA}$                                                     |
| Response time:                    | $\leq 0.5\text{ ms}$ <sup>4)</sup>                                       |
| Switching frequency:              | 1,000 Hz <sup>5)</sup>                                                   |
| Attenuation along light beam:     | $> 20\%$                                                                 |
| Electrical connection:            | Connector M8, 4-pin                                                      |
| Circuit protection:::             | A, B, D <sup>6)</sup> <sup>7)</sup> <sup>8)</sup>                        |
| Weight:                           | 9 g                                                                      |
| Polarisation filter:              | ✓                                                                        |
| Special device:                   | ✓                                                                        |
| Optics material:                  | PMMA                                                                     |
| Enclosure rating:                 | IP 65                                                                    |
| Items supplied:                   | Stainless steel mounting bracket (1.4301/304) BEF-W100-A, Reflector P250 |
| Special feature:                  | Detection of transparent objects                                         |
| Ambient temperature operation:    | -30 °C ... +55 °C                                                        |
| Ambient storage temperature:      | -40 °C ... +70 °C                                                        |
| Signal voltage PNP HIGH/LOW:      | UV - 1,8 V/ca. 0 V                                                       |
| Housing material:                 | ABS/PC/POM, Plastic                                                      |

<sup>1)</sup> Limit values, operation in short-circuit protected network max. 8 A   
<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> A =  $V_S$  connections reverse-polarity protected   
<sup>7)</sup> B = inputs and output reverse-polarity protected   
<sup>8)</sup> D = outputs overcurrent and short-circuit protected

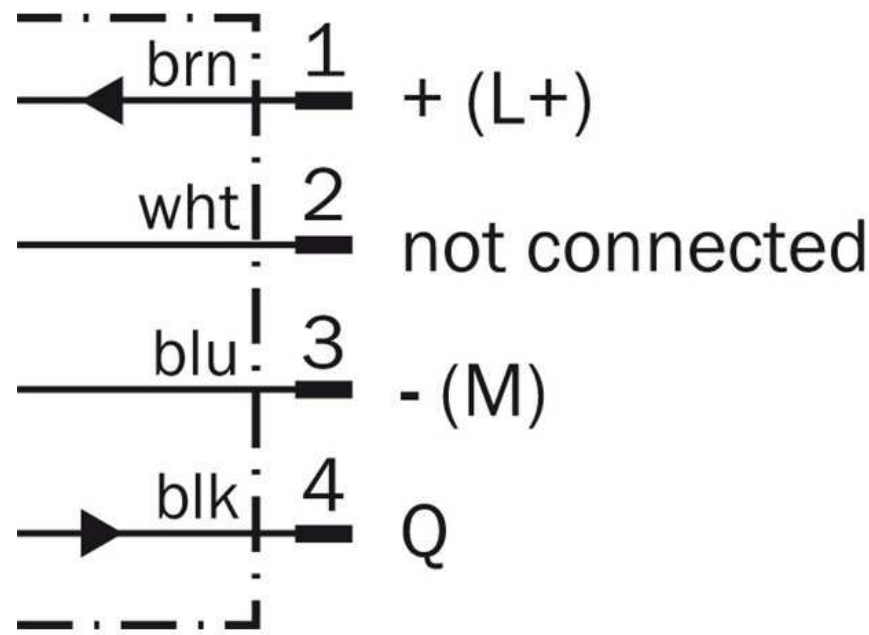
## Dimensional drawing



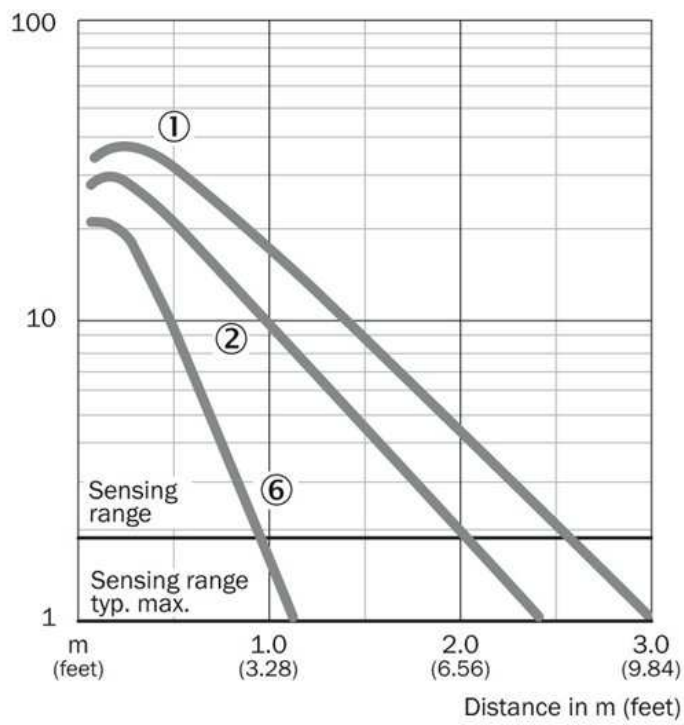
## Adjustments possible



Connection diagram

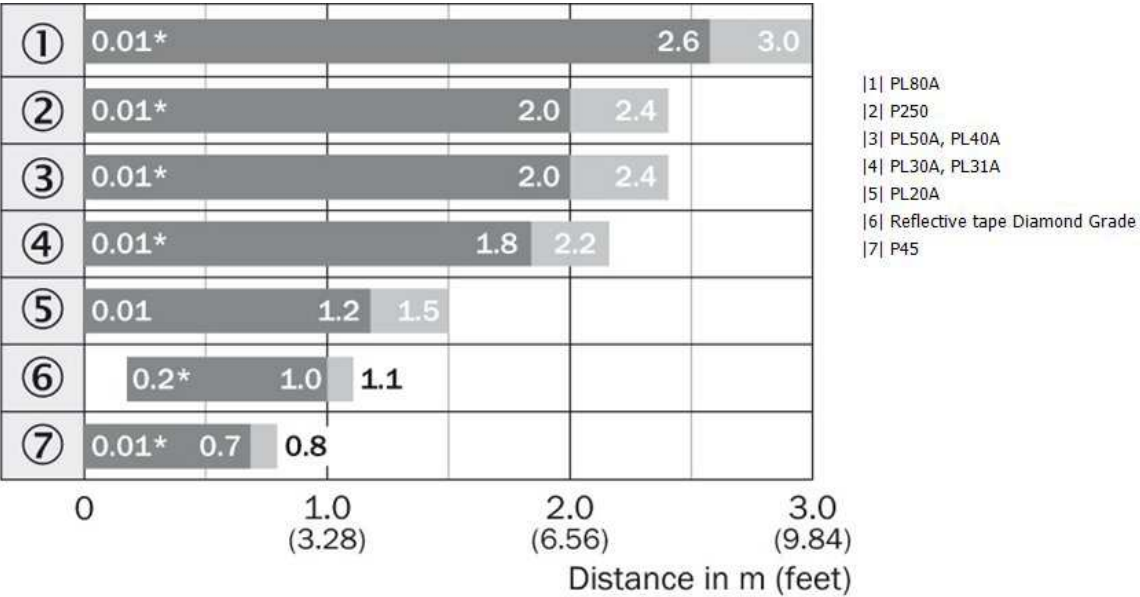


Characteristic curve

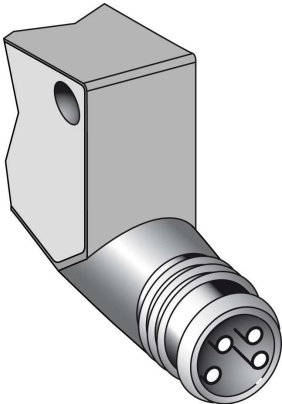


- |1| PL80A
- |2| P250
- |6| Reflective tape Diamond Grade

Sensing range diagram



Connection type



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