



## Photoelectric sensors W100, Through-beam photoelectric sensor

WS/WE100-P1339



**Model Name** > [WS/WE100-P1339](#)  
**Part No.** > [6026042](#)



*Illustration may differ*

#### At a glance

- Standard miniature housing with M3 threaded mounting holes
- Optics with standard red LED or bright light LED
- Special slotted masks and polarizing filter tip adapters available as accessories
- Light/dark switching and sensitivity adjustment via rotary switch possible

#### Your benefits

- Highly visible light spot simplifies alignment
- Less contamination due to high optical operating reserve
- M3 threaded mounting holes provide easy installation
- Special accessory allows optimizing the optical performance depending on the application



#### Features

|                                  |                                   |
|----------------------------------|-----------------------------------|
| Sensor/detection principle:      | Through-beam photoelectric sensor |
| Dimensions (W x H x D):          | 11 mm x 31 mm x 20 mm             |
| Housing design (light emission): | Rectangular                       |
| Sensing range max.:              | 0 m ... 15 m                      |
| Sensing range:                   | 0 m ... 12 m                      |
| Type of light:                   | Visible red light                 |
| Light source:                    | LED <sup>1)</sup>                 |
| Wave length:                     | 680 nm                            |
| Angle of dispersion:             | Ca. 7.2 °                         |
| Focus adjustable:                | -                                 |
| Light spot size (distance):      | Ø 1,500 mm (12 m)                 |

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

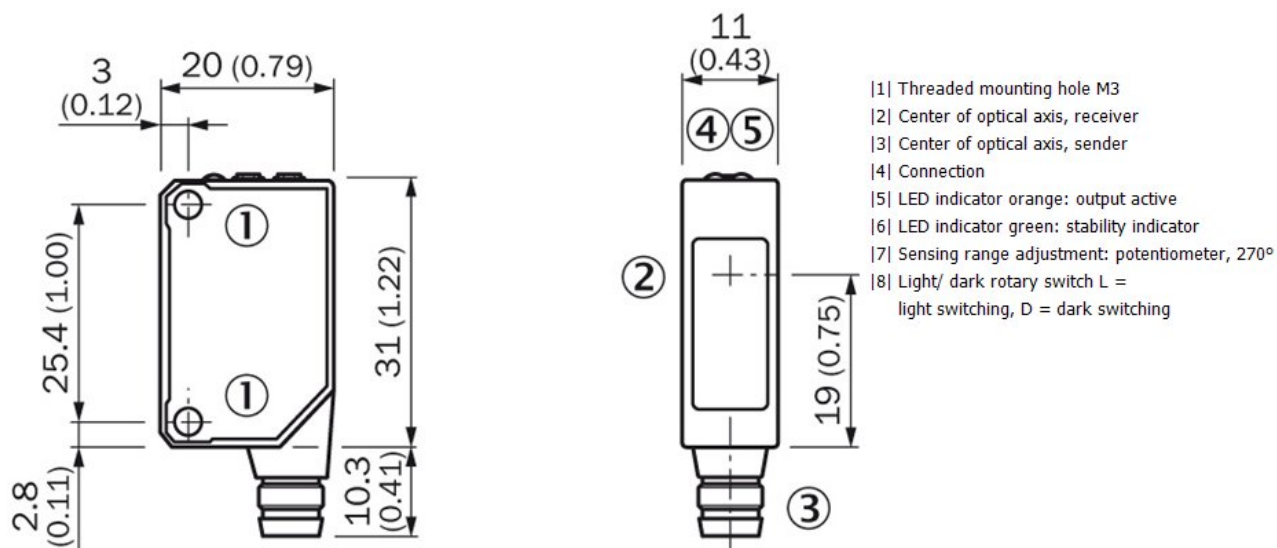
#### Mechanics/electronics

|                                    |                                   |
|------------------------------------|-----------------------------------|
| Supply voltage:                    | 10 V DC ... 30 V DC <sup>1)</sup> |
| Ripple:                            | ± 10 % <sup>2)</sup>              |
| Power consumption, sender:         | ≤ 15 mA <sup>3)</sup>             |
| Power consumption, receiver:       | ≤ 20 mA <sup>4)</sup>             |
| Output type:                       | PNP, open collector               |
| Switching mode:                    | Light switching                   |
| Signal voltage PNP HIGH/LOW:       | UV - 1,8 V/ca. 0 V                |
| Output current I <sub>max.</sub> : | 100                               |

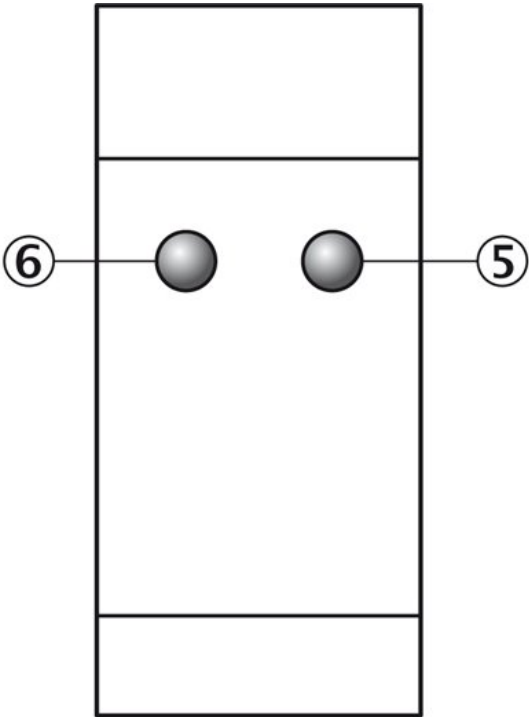
|                                |                                                             |
|--------------------------------|-------------------------------------------------------------|
| Response time:                 | $\leq 0.5 \text{ ms}$ <sup>5)</sup>                         |
| Switching frequency:           | 1,000 <sup>6)</sup>                                         |
| Angle of reception:            | Ca. 15 °                                                    |
| Connection type:               | Cable, 3-wire, 2 m <sup>7)</sup>                            |
| Cable material:                | PVC                                                         |
| Conductor cross-section:       | 0.18 mm <sup>2</sup>                                        |
| Circuit protection:::          | A, B, D <sup>8)</sup> 9) 10)                                |
| Weight:                        | 106 g                                                       |
| Polarisation filter:           | -                                                           |
| Housing material:              | ABS/PC, Plastic                                             |
| Optics material:               | PMMA                                                        |
| Enclosure rating:              | IP 65                                                       |
| Items supplied:                | 2 Stainless steel mounting brackets (1.4301/304) BEF-W100-A |
| Ambient operating temperature: | -25 °C ... 55 °C                                            |
| Ambient storage temperature:   | -40 °C ... 70 °C                                            |

<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> 4) Without load <sup>5)</sup> Signal transit time with  
 resistive load <sup>6)</sup> With light/dark ratio 1:1 <sup>7)</sup> Do not bend below 0 °C <sup>8)</sup> A =  $V_S$  connections reverse-polarity protected <sup>9)</sup> B = inputs and output reverse-polarity  
 protected <sup>10)</sup> D = outputs overcurrent and short-circuit protected

## Dimensional drawing



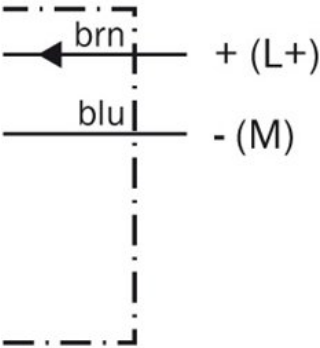
Adjustments possible



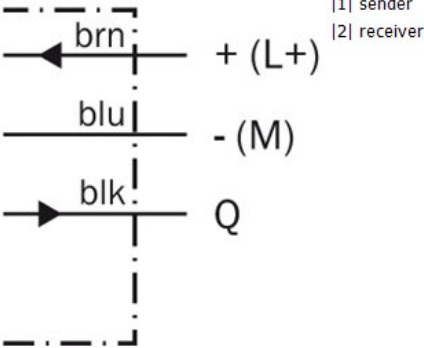
|5| Orange LED indicator : switching output active  
|6| LED indicator green: stability indicator

Connection diagram

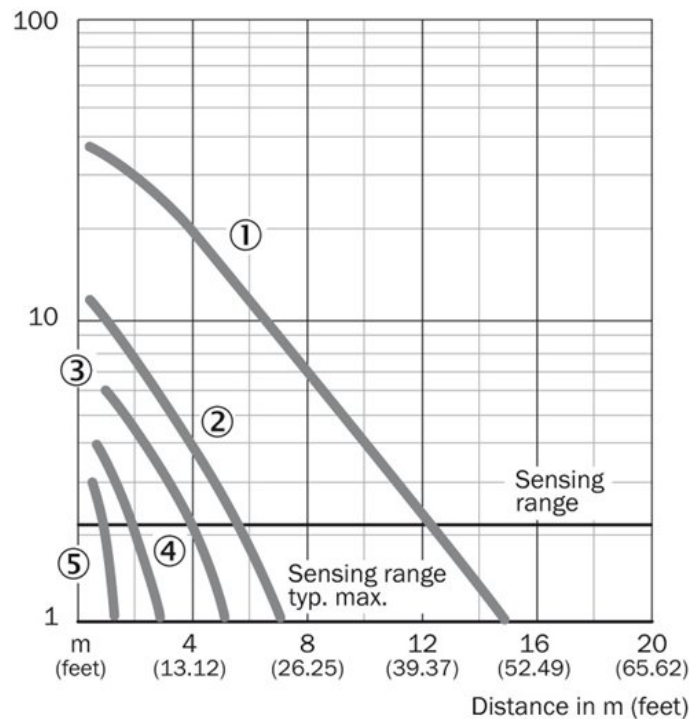
①



②

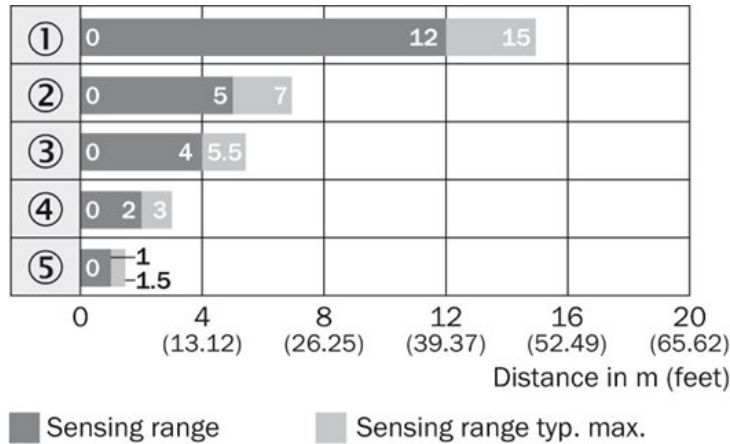


Characteristic curve



- |1| Without masks
- |2| With polarization filter tip adapter
- |3| With slotted mask, width 2.0 mm
- |4| With slotted mask, width 1.0 mm
- |5| With slotted mask, width 0.5 mm

Sensing range diagram



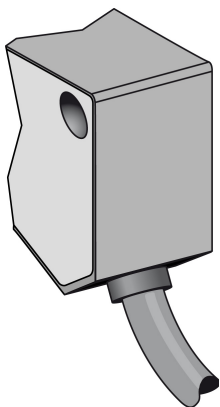
- |1| Without masks
- |2| With polarization filter tip adapter
- |3| With slotted mask, width 2.0 mm
- |4| With slotted mask, width 1.0 mm
- |5| With slotted mask, width 0.5 mm

Sensing range reduction when slotted masks are used

- ① Without masks/polarization filter
- ② With polarization filter tip adapter
- ③ With slotted mask, width 2.0 mm
- ④ With slotted mask, width 1.0 mm
- ⑤ With slotted mask, width 0.5 mm

## Connection type

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