



## Photoelectric sensors W100, Through-beam photoelectric sensor

WS/WE100-P4430



**Model Name** > [WS/WE100-P4430](#)  
**Part No.** > [6028589](#)



*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, Slim                 |
| 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                            |
| Sensitivity adjustment:          | Potentiometer, 270°               |
| 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

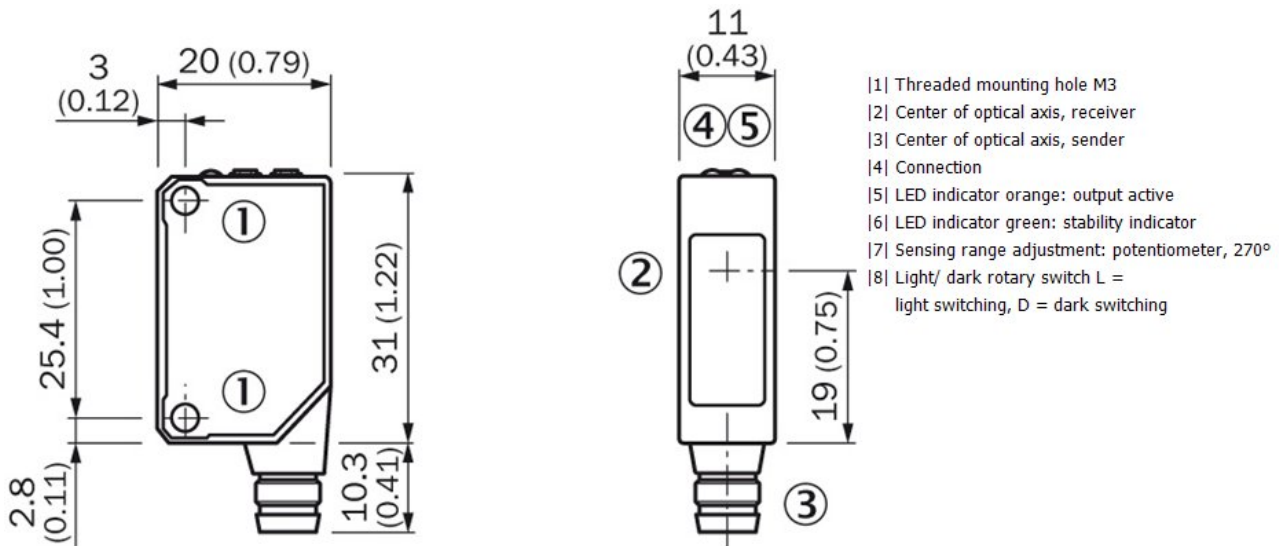
#### Mechanics/electronics

|                              |                                   |
|------------------------------|-----------------------------------|
| 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                               |
| Switching mode:              | Light/dark-switching              |
| Output characteristic:       | Open collector                    |

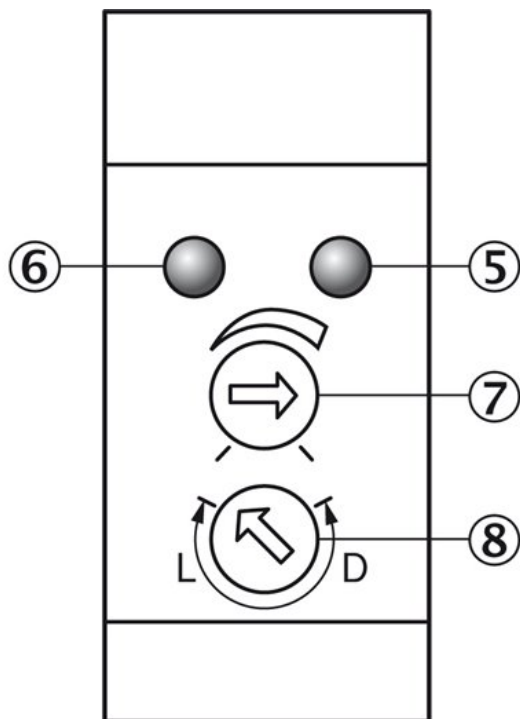
|                                   |                             |
|-----------------------------------|-----------------------------|
| Switching mode selector:          | Manually selectable         |
| Signal voltage PNP HIGH/LOW:      | UV - 1,8 V/ca. 0 V          |
| Output current I <sub>max</sub> : | ≤ 100 mA                    |
| Response time:                    | ≤ 0.5 ms <sup>5)</sup>      |
| Switching frequency:              | 1,000 Hz <sup>6)</sup>      |
| Angle of reception:               | Ca. 15 °                    |
| Connection type:                  | Connector M8, 4-pin         |
| Circuit protection:::             | A, B, D <sup>7) 8) 9)</sup> |
| Weight:                           | 18 g                        |
| Polarisation filter:              | -                           |
| Housing material:                 | ABS/PC/POM, Plastic         |
| Optics material:                  | PMMA                        |
| Enclosure rating:                 | IP 65                       |
| 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) 4)</sup> Without load    <sup>5)</sup> Signal transit time with resistive load    <sup>6)</sup> With light/dark ratio 1:1    <sup>7)</sup> A =  $V_S$  connections reverse-polarity protected    <sup>8)</sup> B = inputs and output reverse-polarity protected    <sup>9)</sup> D = outputs overcurrent and short-circuit protected

## Dimensional drawing

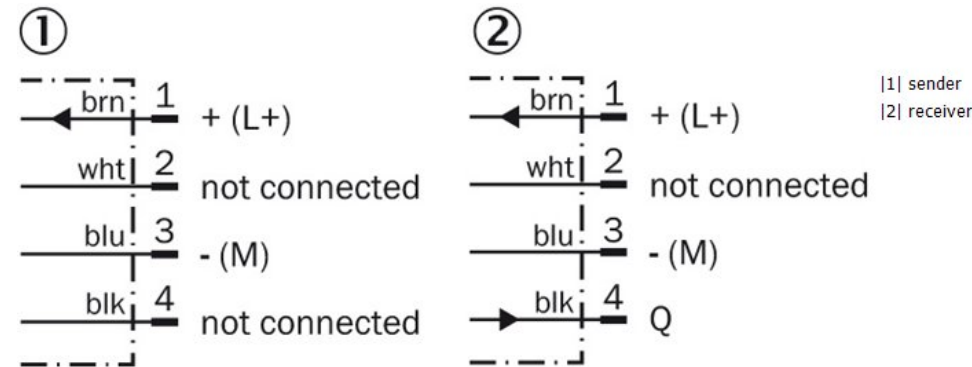


Adjustments possible

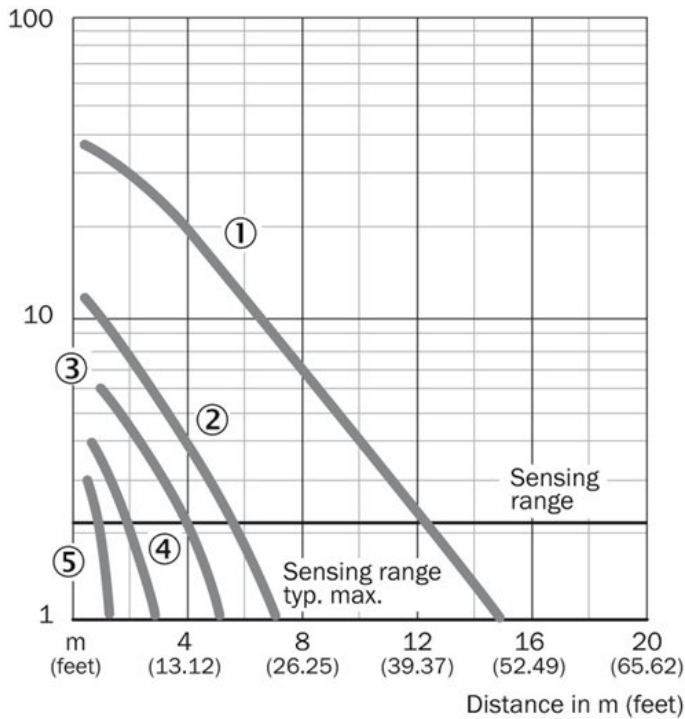


- |5| LED indicator orange: switching output active
- |6| LED indicator green- power on
- |7| Sensing range adjustment: potentiometer, 270°
- |8| Light/ dark rotary switch L = light switching, D = dark switching

Connection diagram

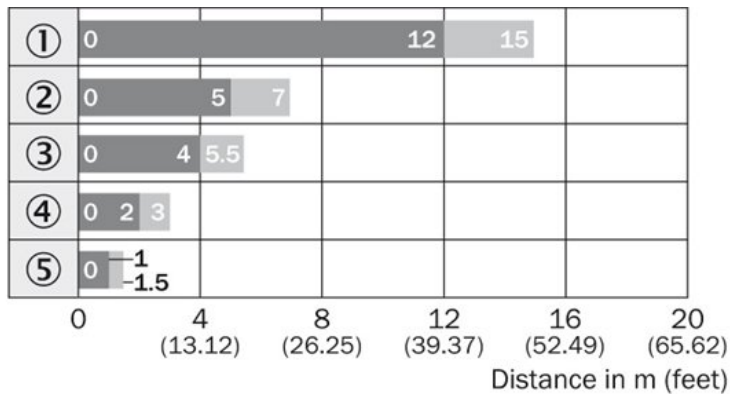


## Characteristic curve



- |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

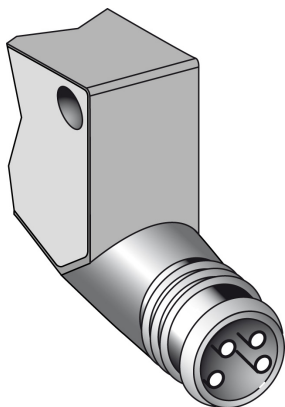
■ Sensing range      ■ Sensing range typ. max.

### 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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