



## Photoelectric sensors W100, Through-beam photoelectric sensor

WS/WE100-P4230



**Model Name** > [WS/WE100-P4230](#)  
**Part No.** > [6028587](#)



*Illustration may differ*

#### At a glance

- Standard miniature housing with M3 threaded mounting holes
- Optics with standard red LED or bright light LED
- Connector and cable versions
- Light/dark switching and sensitivity adjustment via rotary switch possible
- Various versions are available, including through-beam, retro-reflective, energetic and background suppression
- Wide variety of accessories available

#### Your benefits

- Highly visible light spot simplifies alignment
- Reliable detection of glossy objects at a close range with WL100 bright light models
- Less contamination due to high optical operating reserve
- M3 threaded mounting holes provide quick and easy installation

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



#### 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

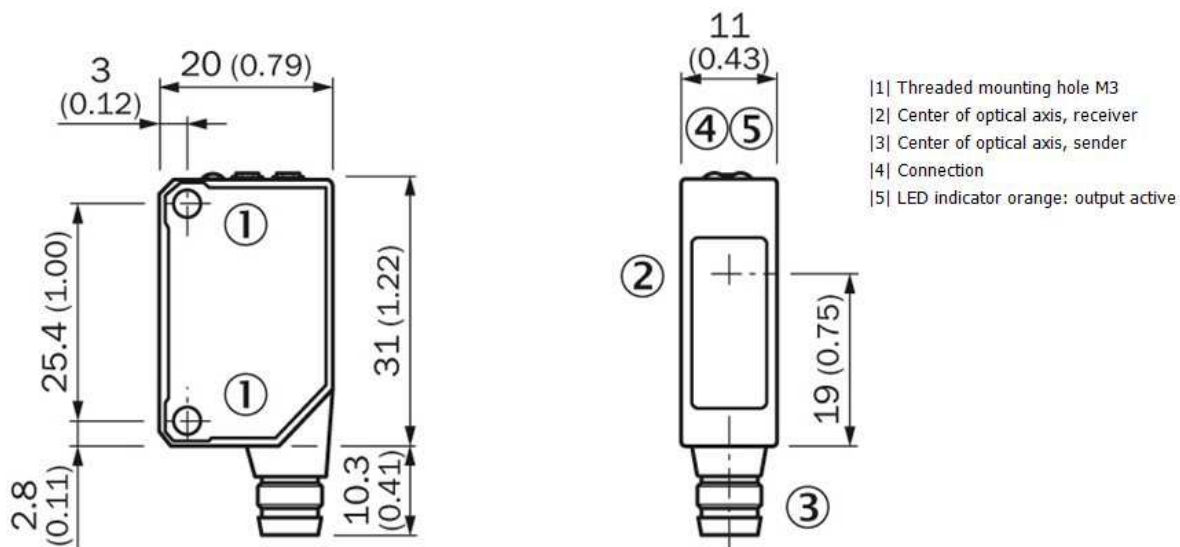
#### Mechanics/electronics

|                              |                                   |
|------------------------------|-----------------------------------|
| Supply voltage:              | 10 V DC ... 30 V DC <sup>1)</sup> |
| Residual ripple:             | ± 10 % <sup>2)</sup>              |
| Power consumption, sender:   | ≤ 15 mA <sup>3)</sup>             |
| Power consumption, receiver: | ≤ 20 mA <sup>4)</sup>             |

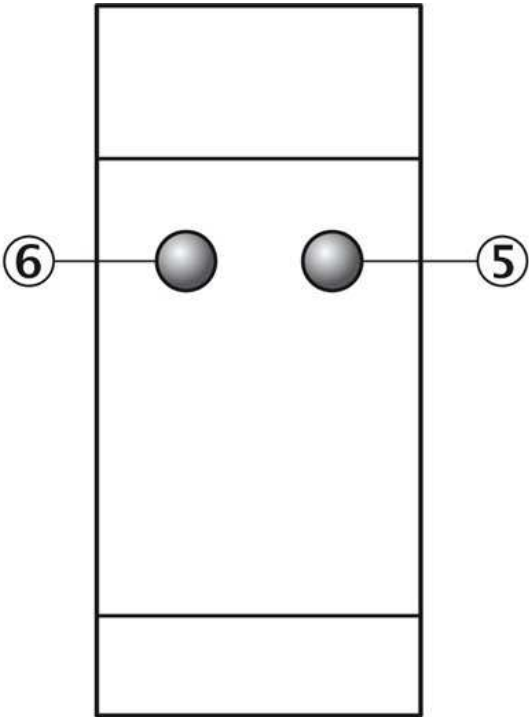
|                                   |                             |
|-----------------------------------|-----------------------------|
| Output type:                      | PNP, open collector         |
| Switching mode:                   | Dark switching              |
| Output current I <sub>max</sub> : | ≤ 100 mA                    |
| Response time:                    | ≤ 0.5 ms <sup>5)</sup>      |
| Switching frequency:              | 1,000 Hz <sup>6)</sup>      |
| Angle of reception:               | Ca. 15 °                    |
| Electrical connection:            | Connector M8, 4-pin         |
| Circuit protection:::             | A, B, D <sup>7)</sup> 8) 9) |
| Weight:                           | 18 g                        |
| Polarisation filter:              | -                           |
| Special device:                   | -                           |
| Optics material:                  | PMMA                        |
| Enclosure rating:                 | IP 65                       |
| Ambient temperature operation:    | -25 °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, Plastic             |

1) Limit values, operation in short-circuit protected network max. 8 A 2) May not exceed or fall short of V<sub>S</sub> tolerances 3) 4) Without load 5) Signal transit time with resistive load 6) With light/dark ratio 1:1 7) A = V<sub>S</sub> connections reverse-polarity protected 8) B = inputs and output reverse-polarity protected 9) D = outputs overcurrent and short-circuit protected

## Dimensional drawing



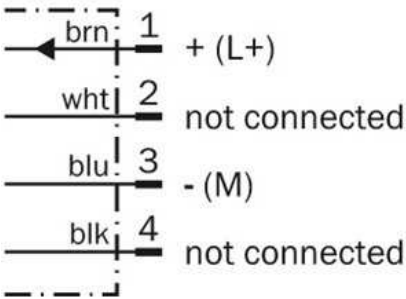
Adjustments possible



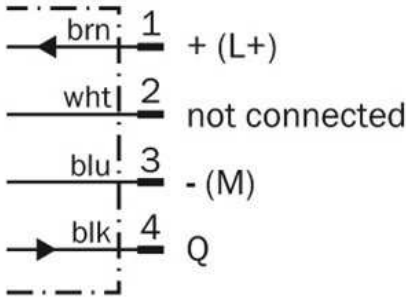
- |5| Orange LED indicator : switching output active
- |6| LED indicator green: stability indicator

Connection diagram

①

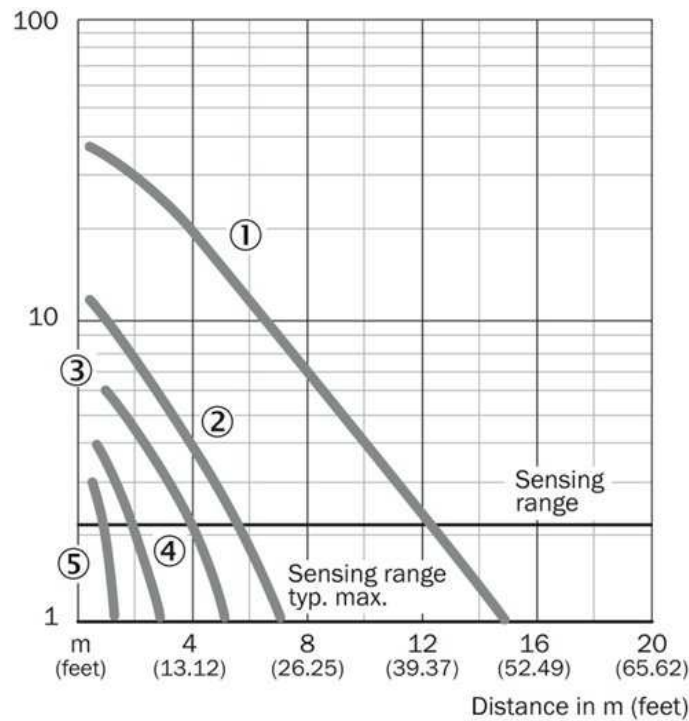


②



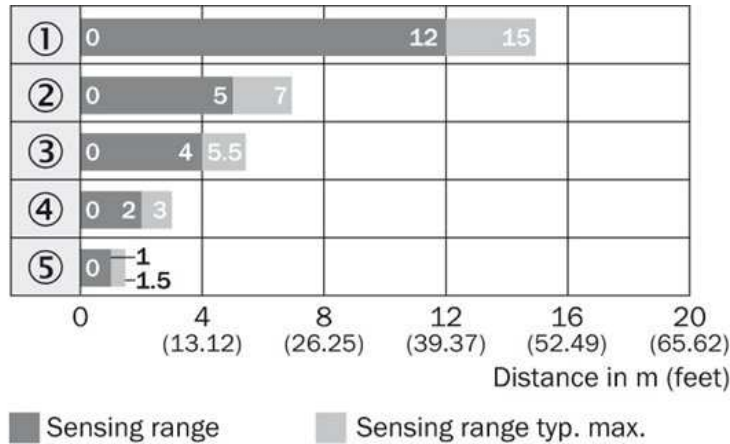
- |1| sender
- |2| receiver

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



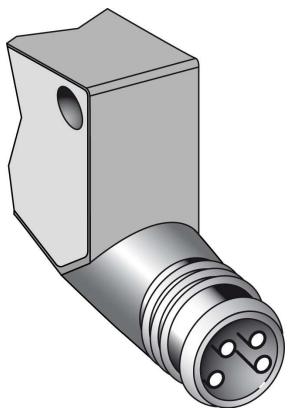
- |1| Without masks
- |2| With polarization filter tip adapter
- |3| With slotted mask, width 2.0 mm
- |4| With slotted mask, width 1.0 mm
- |5| With slotted mask, width 0.5 mm

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

---



**Australia**

Phone +61 3 9457 0600  
1800 33 48 02 – tollfree  
E-Mail sales@sick.com.au

**Belgium/Luxembourg**

Phone +32 (0)2 466 55 66  
E-Mail info@sick.be

**Brasil**

Phone +55 11 3215-4900  
E-Mail marketing@sick.com.br

**Canada**

Phone +1 905 771 14 44  
E-Mail information@sick.com

**Česká republika**

Phone +420 2 57 91 18 50  
E-Mail sick@sick.cz

**China**

Phone +86 4000 121 000  
E-Mail info.china@sick.net.cn  
Phone +852-2153 6300  
E-Mail ghk@sick.com.hk

**Danmark**

Phone +45 45 82 64 00  
E-Mail sick@sick.dk

**Deutschland**

Phone +49 211 5301-301  
E-Mail info@sick.de

**España**

Phone +34 93 480 31 00  
E-Mail info@sick.es

**France**

Phone +33 1 64 62 35 00  
E-Mail info@sick.fr

**Great Britain**

Phone +44 (0)1727 831121  
E-Mail info@sick.co.uk

**India**

Phone +91-22-4033 8333  
E-Mail info@sick-india.com

**Israel**

Phone +972-4-6881000  
E-Mail info@sick-sensors.com

**Italia**

Phone +39 02 27 43 41  
E-Mail info@sick.it

**Japan**

Phone +81 (0)3 5309 2112  
E-Mail support@sick.jp

**Magyarország**

Phone +36 1 371 2680  
E-Mail office@sick.hu

**Nederland**

Phone +31 (0)30 229 25 44  
E-Mail info@sick.nl

**Norge**

Phone +47 67 81 50 00  
E-Mail sick@sick.no

**Österreich**

Phone +43 (0)22 36 62 28 8-0  
E-Mail office@sick.at

**Polska**

Phone +48 22 837 40 50  
E-Mail info@sick.pl

**România**

Phone +40 356 171 120  
E-Mail office@sick.ro

**Russia**

Phone +7-495-775-05-30  
E-Mail info@sick.ru

**Schweiz**

Phone +41 41 619 29 39  
E-Mail contact@sick.ch

**Singapore**

Phone +65 6744 3732  
E-Mail sales.gsg@sick.com

**Slovenija**

Phone +386 (0)1-47 69 990  
E-Mail office@sick.si

**South Africa**

Phone +27 11 472 3733  
E-Mail info@sickautomation.co.za

**South Korea**

Phone +82 2 786 6321/4  
E-Mail info@sickkorea.net

**Suomi**

Phone +358-9-25 15 800  
E-Mail sick@sick.fi

**Sverige**

Phone +46 10 110 10 00  
E-Mail info@sick.se

**Taiwan**

Phone +886 2 2375-6288  
E-Mail sales@sick.com.tw

**Türkiye**

Phone +90 (216) 528 50 00  
E-Mail info@sick.com.tr

**United Arab Emirates**

Phone +971 (0) 4 88 65 878  
E-Mail info@sick.ae

**USA/México**

Phone +1(952) 941-6780  
1 (800) 325-7425 – tollfree  
E-Mail info@sickusa.com

More representatives and agencies  
at [www.sick.com](http://www.sick.com)