



Photoelectric sensors  
W100, Through-beam photoelectric sensor

WS/WE100-N1439



**Model Name** > [WS/WE100-N1439](#)  
**Part No.** > [6026040](#)



*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:	-
Adjustment:	Potentiometer, 270°
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

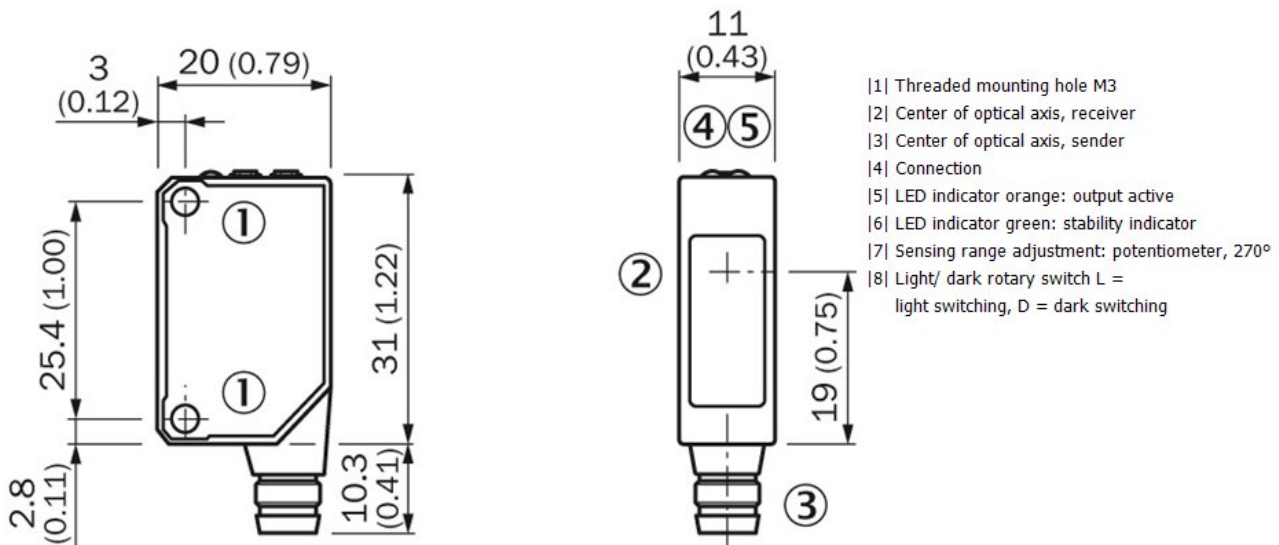
**Mechanics/electronics**

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:	NPN, open collector
Switching mode:	Light/dark-switching
Switching mode selector:	Manually selectable

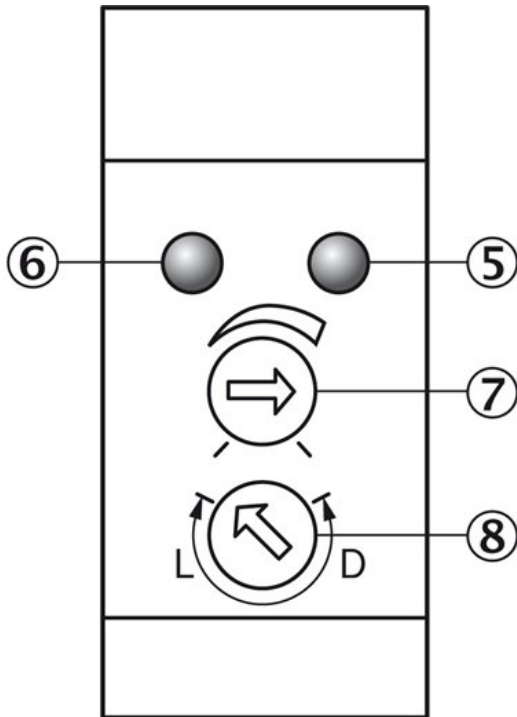
Signal voltage NPN HIGH/LOW:	Approx. $V_S / < 1.8 \text{ V}$
Output current $I_{max}$ :	100
Response time:	$\leq 0.5 \text{ ms}$ <sup>5)</sup>
Switching frequency:	1,000 <sup>6)</sup>
Angle of reception:	Ca. $15^\circ$
Connection type:	Cable, 3-wire, 2 m <sup>7)</sup>
Cable material:	PVC
Conductor cross-section:	$0.18 \text{ mm}^2$
Circuit protection:::	A, B, D <sup>8) 9) 10)</sup>
Weight:	106 g
Polarisation filter:	-
Housing material:	ABS/PC/POM, Plastic
Optics material:	PMMA
Enclosure rating:	IP 65
Items supplied:	2 Stainless steel mounting brackets (1.4301/304) BEF-W100-A
Ambient operating temperature:	$-25^\circ \text{C} \dots 55^\circ \text{C}$
Ambient storage temperature:	$-40^\circ \text{C} \dots 70^\circ \text{C}$

<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> Do not bend below  $0^\circ \text{C}$  <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



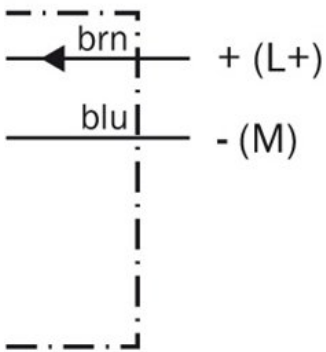
## Adjustments possible



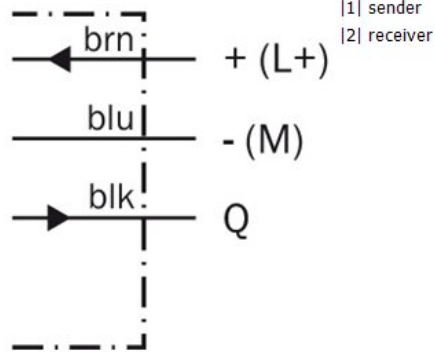
- |5| LED indicator orange: switching output active
- |6| LED indicator green- power on
- |7| Sensing range adjustment: potentiometer, 270°
- |8| Light/ dark rotary switch L = light switching, D = dark switching

## Connection diagram

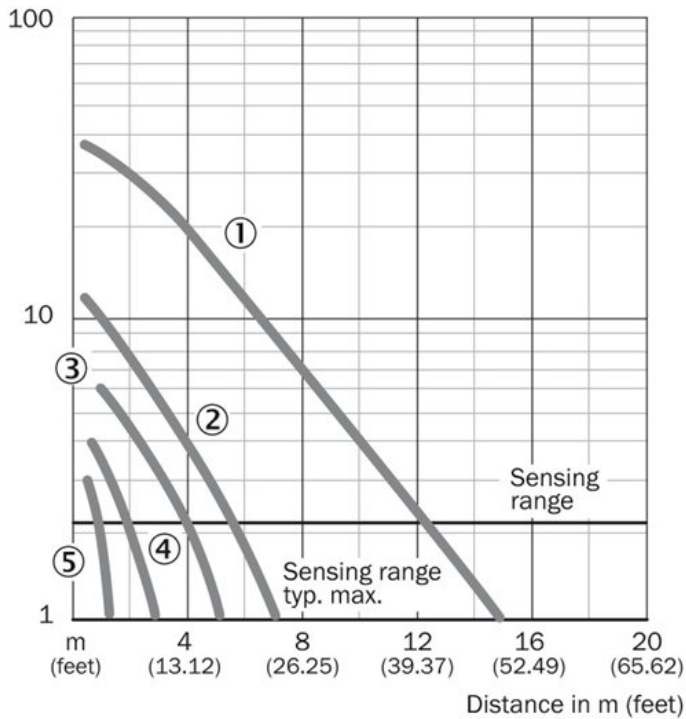
①



②

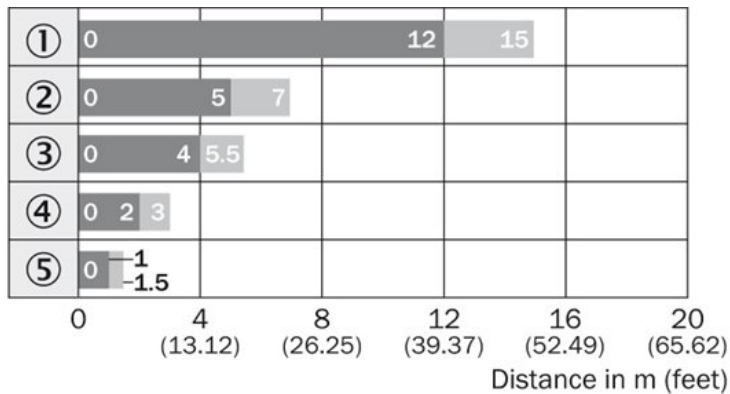


## Characteristic curve



- [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

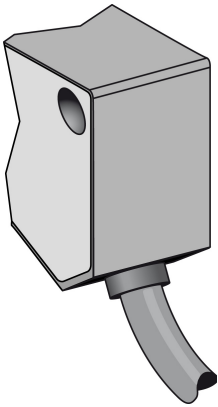
■ Sensing range      ■ Sensing range typ. max.

### 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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