



Photoelectric sensors W100, Through-beam photoelectric sensor

WS/WE100-N4439



Model Name > [WS/WE100-N4439](#)
Part No. > [6028592](#)



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 ¹⁾
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)

¹⁾ Average service life of 100,000 h at T_A = +25 °C

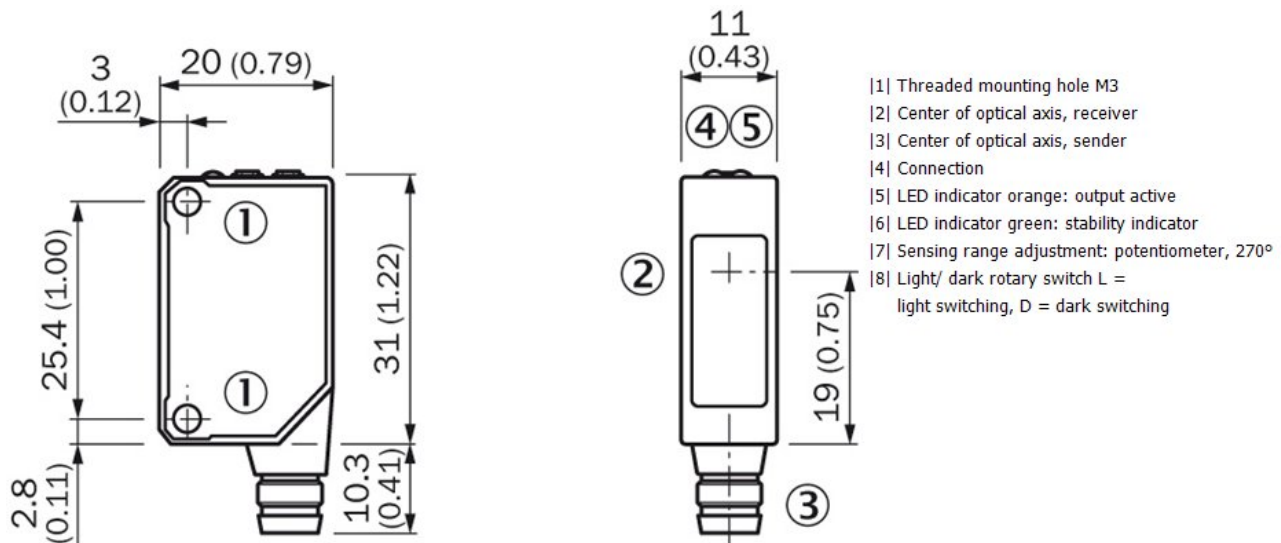
Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Ripple:	± 10 % ²⁾
Power consumption, sender:	≤ 15 mA ³⁾
Power consumption, receiver:	≤ 20 mA ⁴⁾
Output type:	NPN
Switching mode:	Light/dark-switching
Output characteristic:	Open collector

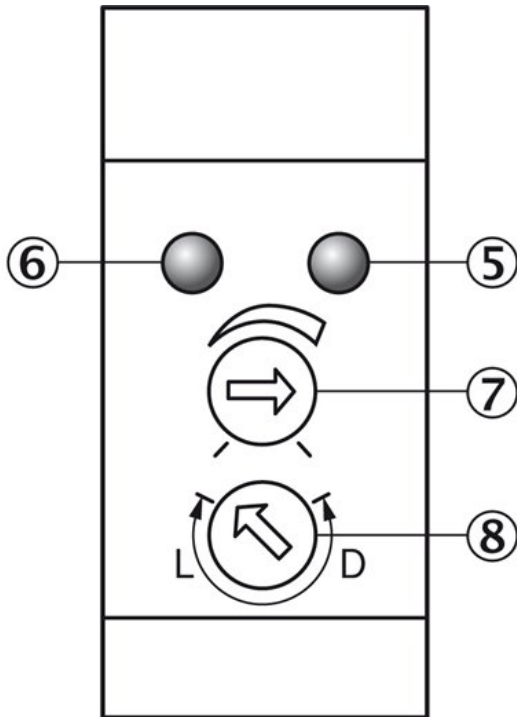
Switching mode selector:	Manually selectable
Signal voltage NPN HIGH/LOW:	Approx. $V_S / < 1.8 \text{ V}$
Output current I_{max} :	100
Response time:	$\leq 0.5 \text{ ms}$ ⁵⁾
Switching frequency:	1,000 ⁶⁾
Angle of reception:	Ca. 15°
Connection type:	Connector M8, 4-pin
Circuit protection:::	A, B, D ⁷⁾ ⁸⁾ ⁹⁾
Weight:	18 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:	$-40^\circ\text{C} \dots 70^\circ\text{C}$

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

Dimensional drawing



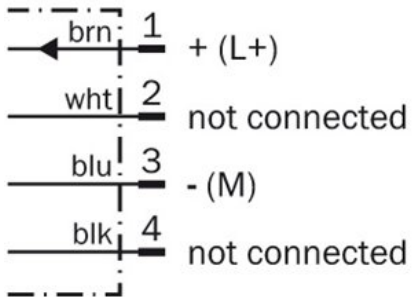
Adjustments possible



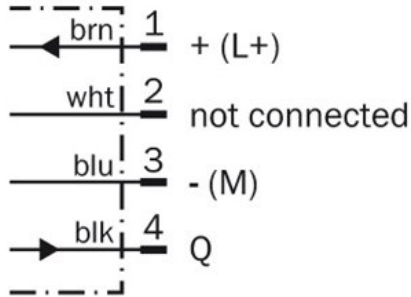
- |5| LED indicator orange: switching output active
- |6| LED indicator green- power on
- |7| Sensing range adjustment: potentiometer, 270°
- |8| Light/ dark rotary switch L =
light switching, D = dark switching

Connection diagram

①

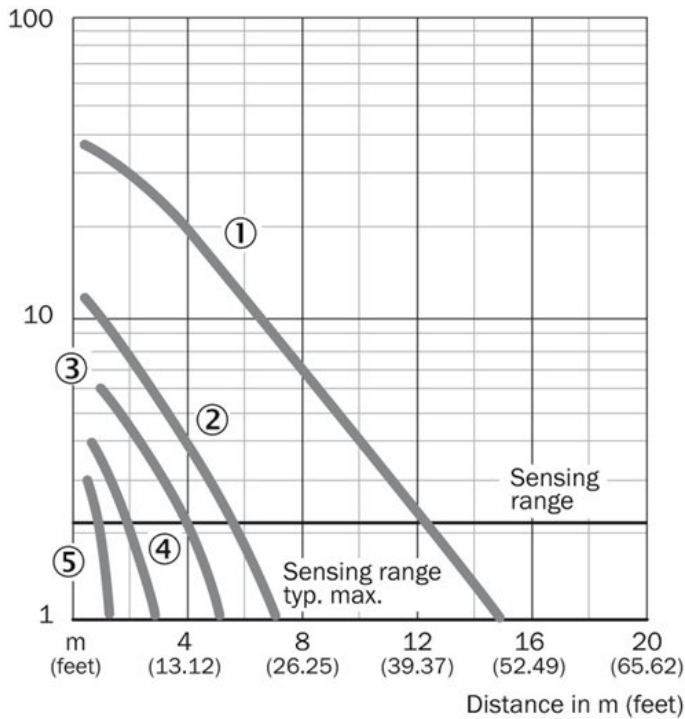


②



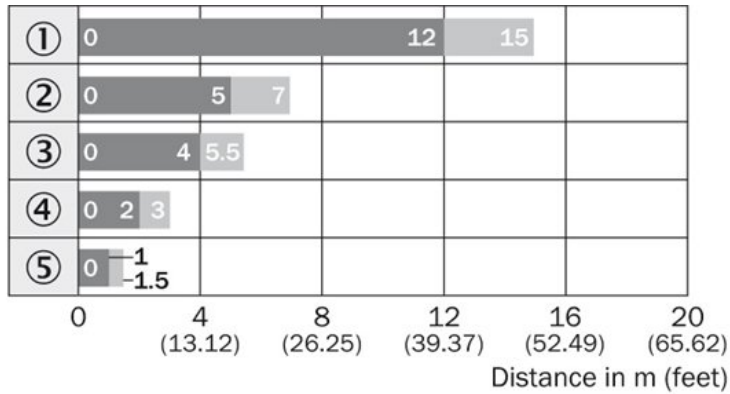
- |1| sender
- |2| receiver

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



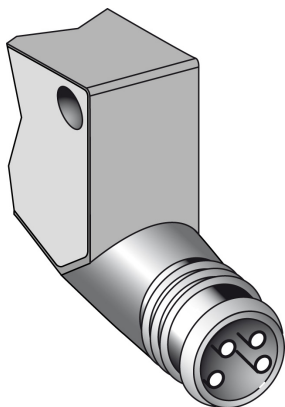
- |1| Without masks
- |2| With polarization filter tip adapter
- |3| With slotted mask, width 2.0 mm
- |4| With slotted mask, width 1.0 mm
- |5| With slotted mask, width 0.5 mm

■ Sensing range ■ 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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