



Photoelectric sensors
W100, Through-beam photoelectric sensor

WS/WE100-N1239



Model Name > [WS/WE100-N1239](#)
Part No. > [6026038](#)



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 ¹⁾ |
| Wave length: | 680 nm |
| 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

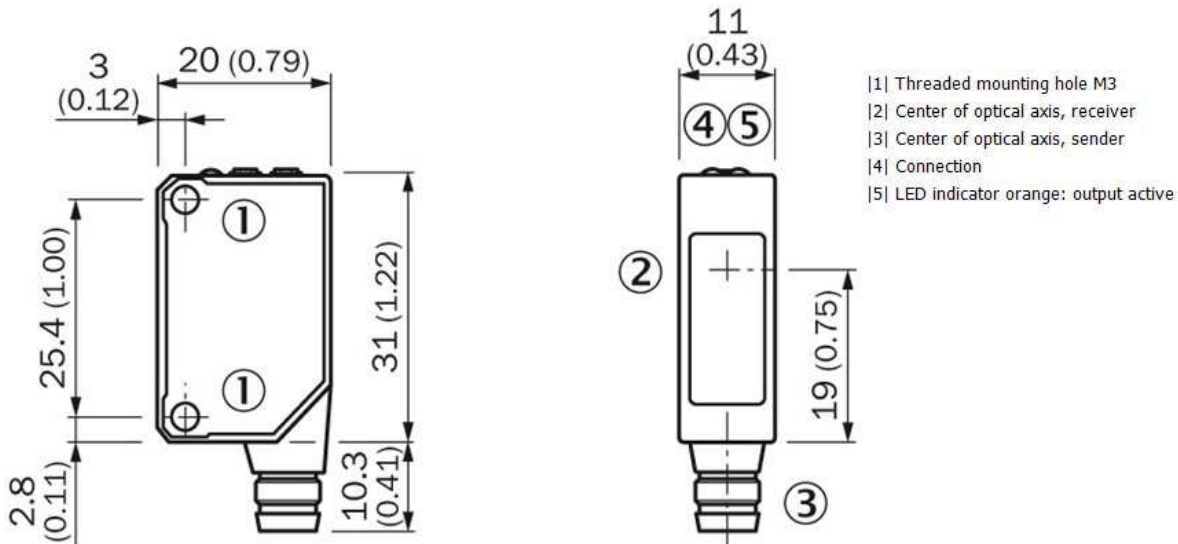
| | |
|------------------------------|-----------------------------------|
| Supply voltage: | 10 V DC ... 30 V DC ¹⁾ |
| Residual ripple: | ± 10 % ²⁾ |
| Power consumption, sender: | ≤ 15 mA ³⁾ |
| Power consumption, receiver: | ≤ 20 mA ⁴⁾ |

| | |
|-----------------------------------|---|
| Output type: | NPN, open collector |
| Switching mode: | Dark switching |
| Output current I _{max} : | 100 |
| Response time: | ≤ 0.5 ms ⁵⁾ |
| Switching frequency: | 1,000 ⁶⁾ |
| Angle of reception: | Ca. 15 ° |
| Electrical connection: | Cable, 3-wire, 2 m ⁷⁾ |
| Cable material: | PVC |
| Conductor cross-section: | 0.18 mm ² |
| Circuit protection::: | A, B, D ^{8) 9) 10)} |
| Weight: | 106 g |
| Polarisation filter: | - |
| Special device: | - |
| Optics material: | PMMA |
| Enclosure rating: | IP 65 |
| Items supplied: | 2 Stainless steel mounting brackets (1.4301/304) BEF-W100-A |
| Ambient temperature operation: | -25 °C ... +55 °C |
| Ambient storage temperature: | -40 °C ... +70 °C |
| Signal voltage NPN HIGH/LOW: | Approx. V _S / < 1.8 V |
| Housing material: | ABS/PC, Plastic |

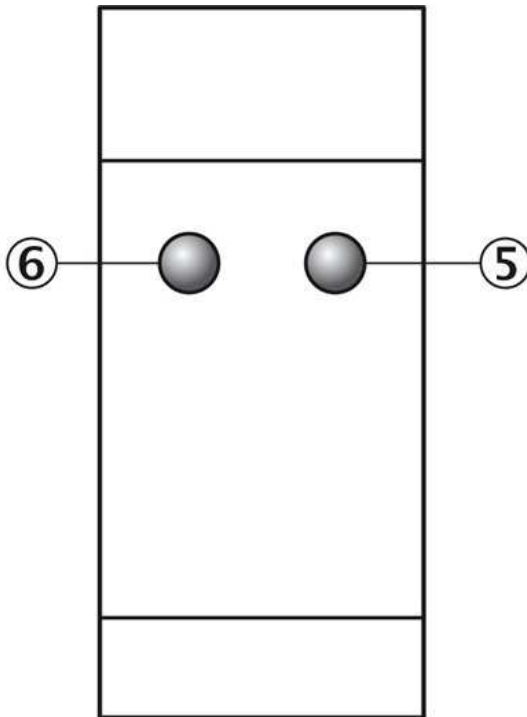
1) Limit values, operation in short-circuit protected network max. 8 A resistive load⁶⁾ With light/dark ratio 1:1⁷⁾ Do not bend below 0 °C⁸⁾ A = V_S connections reverse-polarity protected⁹⁾ B = inputs and output reverse-polarity protected¹⁰⁾ D = outputs overcurrent and short-circuit protected

2) May not exceed or fall short of V_S tolerances^{3) 4)} Without load⁵⁾ Signal transit time with

Dimensional drawing



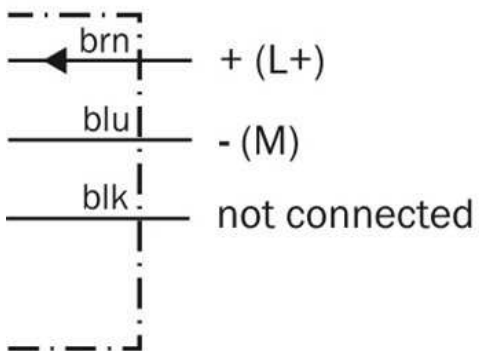
Adjustments possible



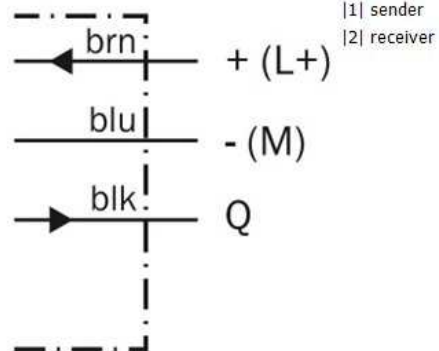
- |5| Orange LED indicator : switching output active
- |6| LED indicator green: stability indicator

Connection diagram

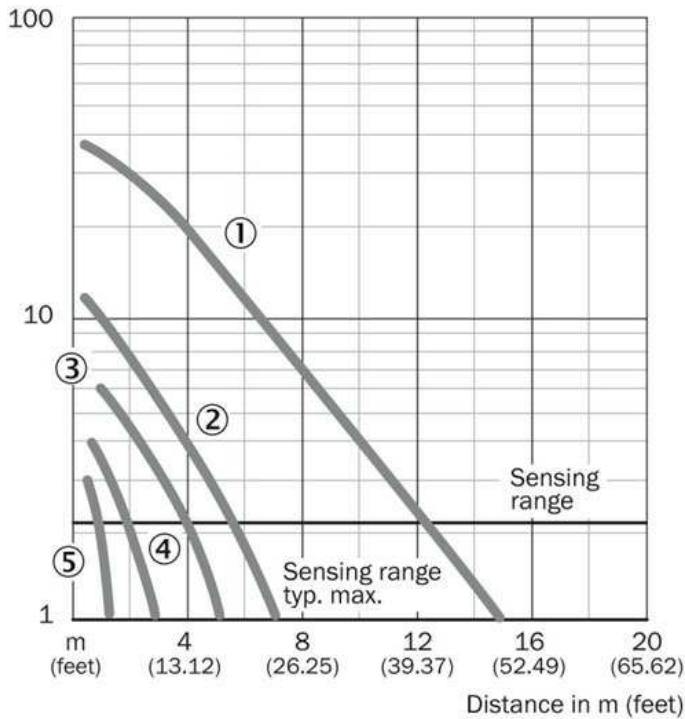
①



②

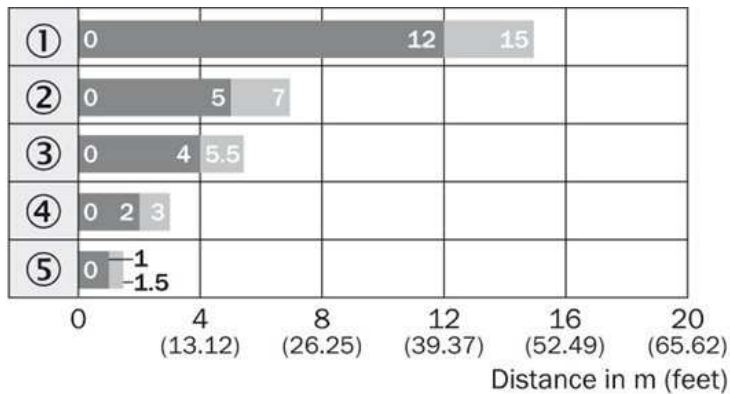


Characteristic curve



- |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



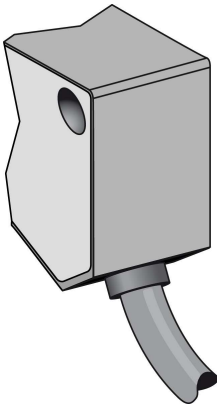
- |1| Without masks
- |2| With polarization filter tip adapter
- |3| With slotted mask, width 2.0 mm
- |4| With slotted mask, width 1.0 mm
- |5| With slotted mask, width 0.5 mm

■ Sensing range ■ 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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