



Photoelectric sensors  
W100 Laser, Photoelectric proximity sensor,  
energetic

WT100L-E2141



**Model Name** > [WT100L-E2141](#)  
**Part No.** > [6030706](#)



*Illustration may differ*

**At a glance**

- Standard miniature housing with M3 threaded mounting holes
- Laser emitter LED, class 1
- Energetic proximity sensor
- Switching frequency of 2000 Hz
- Light/dark switching via rotary switch

**Your benefits**

- Laser light spot combined with 2 kHz switching frequency ensures reliable detection of small objects, even at fast detection speeds
- Less contamination due to high optical operating reserve
- M3 threaded mounting holes provide easy installation
- Highly visible laser light simplifies installation



**Features**

|                                  |   |
|----------------------------------|---|
| Sensor/detection principle:      | Photoelectric proximity sensor, energetic |
| Dimensions (W x H x D):          | 11 mm x 31 mm x 20 mm                     |
| Housing design (light emission): | Rectangular, Slim                         |
| Sensing range max.:              | 0 mm ... 450 mm <sup>1)</sup>             |
| Sensing range:                   | 0 mm ... 400 mm                           |
| Type of light:                   | Visible red light                         |
| Light source:                    | Laser <sup>2)</sup>                       |
| Laser class:                     | 1   |
| Wave length:                     | 650 nm                                    |
| Light spot diameter (distance):  | Ø 2 mm (400 mm)                           |
| Sensitivity adjustment:          | Potentiometer, 270°                       |
| Focus adjustable:                | -   |

<sup>1)</sup> Object with 90 % reflectance (referred to standard white DIN 5033) <sup>2)</sup> Average service life 50,000 h at T<sub>A</sub> = +25 °C

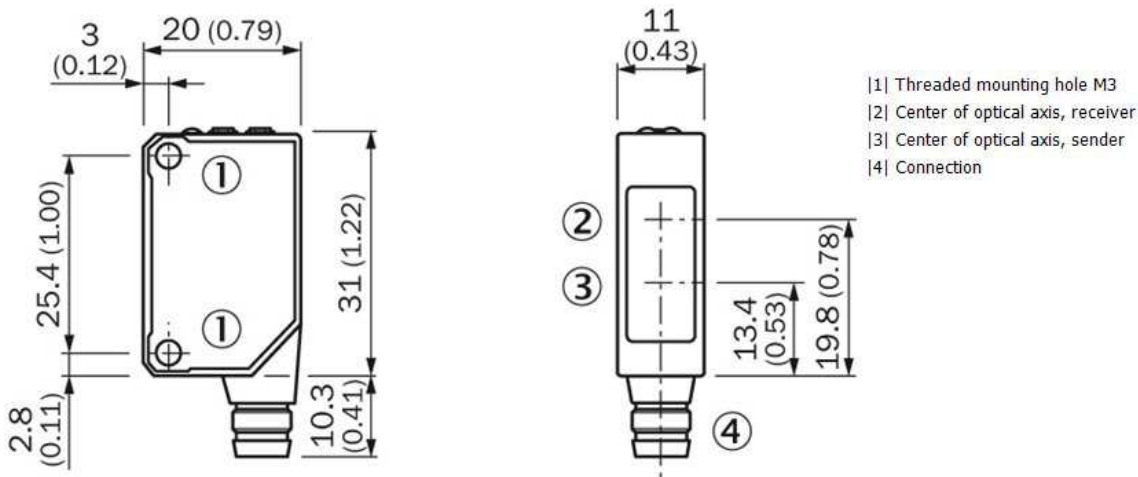
**Mechanics/electronics**

|                                    |  |
|------------------------------------|--|
| Supply voltage:                    | 10 V DC ... 30 V DC <sup>1)</sup>                              |
| Residual ripple:                   | ± 10 % <sup>2)</sup>   |
| Power consumption:                 | ≤ 30 mA <sup>3)</sup>  |
| Output type:                       | NPN, Light/dark-switching, manually selectable, open collector |
| Signal voltage NPN HIGH/LOW:       | Approx. VS / < 1.8 V   |
| Output current I <sub>max.</sub> : | 100  |

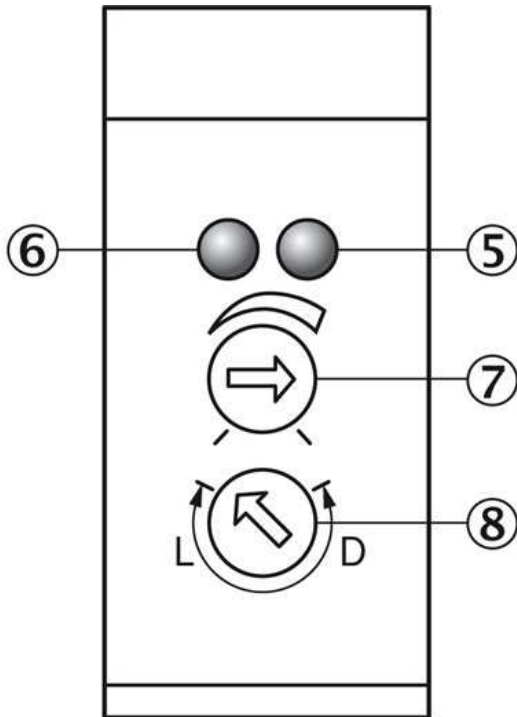
|                                |  |
|--------------------------------|--|
| Response time:                 | < 0.25 ms <sup>4)</sup>                                  |
| Switching frequency:           | 2,000 <sup>5)</sup>                                      |
| Electrical connection:         | Connector M8, 3-pin                                      |
| Circuit protection:::          | A, B, D <sup>6) 7) 8)</sup>                              |
| Weight:                        | 10 g   |
| Housing material:              | ABS/PC/POM   |
| Optics material:               | PMMA   |
| Enclosure rating:              | IP 65  |
| Items supplied:                | Stainless steel mounting bracket (1.4301/304) BEF-W100-A |
| Ambient temperature operation: | -10 °C ... 50 °C   |
| Ambient storage temperature:   | -40 °C ... 70 °C   |
| UL File-No.:                   | CDRH-conform   |

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

### Dimensional drawing

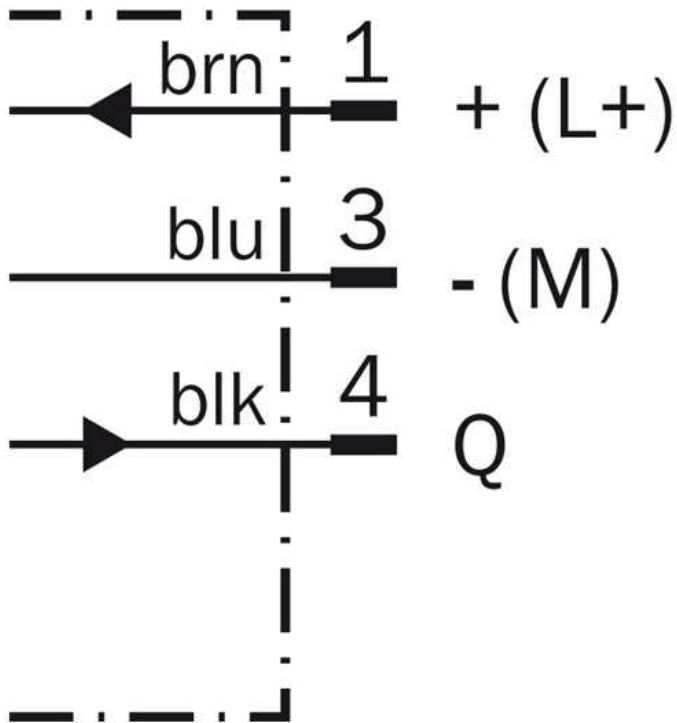


## Adjustments possible

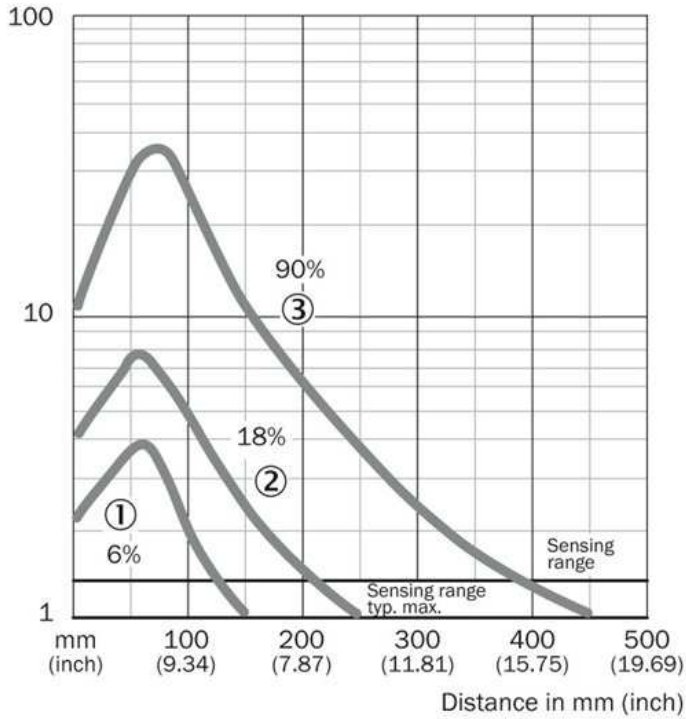


- |5| Orange LED indicator : switching output active
- |6| LED signal strength indicator green:power on
- |7| Sensing range adjustment: potentiometer, 5 turns
- |8| Light/ dark rotary switch L =  
light switching, D = dark switching

## Connection diagram

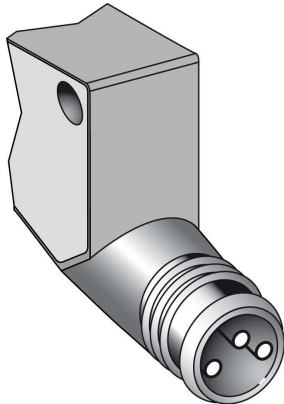


**Characteristic curve**

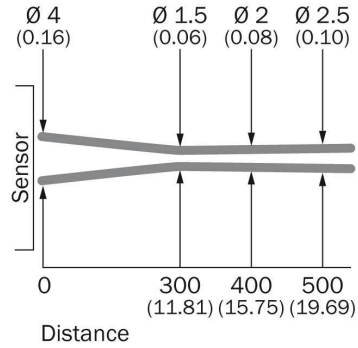


- |1| Sensing range on black, 6 % remission
- |2| Sensing range on grey, 18 % remission
- |3| Sensing range on white, 90 % remission

**Connection type**

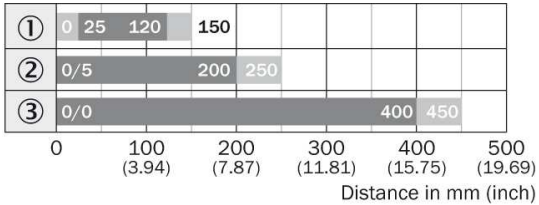


**Light spot size**



All dimensions in mm (inch)

**Sensing range diagram**



■ Sensing range      ■ Sensing range typ. max.

- ① Sensing range on black, 6 % remission
- ② Sensing range on gray, 18 % remission
- ③ Sensing range on white, 90 % remission

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