



# WTB11-2N1131

## W11-2

SMALL PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



## Ordering information

| Type         | Part no. |
|--------------|----------|
| WTB11-2N1131 | 1041379  |

Other models and accessories → [www.sick.com/W11-2](http://www.sick.com/W11-2)

## Detailed technical data

### Features

|                                        |                                                        |
|----------------------------------------|--------------------------------------------------------|
| <b>Sensor/ detection principle</b>     | Photoelectric proximity sensor, Background suppression |
| <b>Dimensions (W x H x D)</b>          | 15.6 mm x 48.5 mm x 42 mm                              |
| <b>Housing design (light emission)</b> | Rectangular                                            |
| <b>Sensing range max.</b>              | 20 mm ... 350 mm <sup>1)</sup>                         |
| <b>Sensing range</b>                   | 20 mm ... 350 mm                                       |
| <b>Type of light</b>                   | Visible red light                                      |
| <b>Light source</b>                    | LED <sup>2)</sup>                                      |
| <b>Light spot size (distance)</b>      | Ø 6 mm (200 mm)                                        |
| <b>Wave length</b>                     | 640 nm                                                 |
| <b>Adjustment</b>                      | Potentiometer, 5 turns                                 |

<sup>1)</sup> Object with 90 % reflectance (referred to standard white, DIN 5033).

<sup>2)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

### Mechanics/electronics

|                       |                                   |
|-----------------------|-----------------------------------|
| <b>Supply voltage</b> | 10 V DC ... 30 V DC <sup>1)</sup> |
| <b>Ripple</b>         | ≤ 5 V <sub>pp</sub> <sup>2)</sup> |

<sup>1)</sup> Limit values when operated in short-circuit protected network: max. 8 A.

<sup>2)</sup> May not exceed or fall below U<sub>V</sub> tolerances.

<sup>3)</sup> Without load.

<sup>4)</sup> Signal transit time with resistive load.

<sup>5)</sup> With light/dark ratio 1:1.

<sup>6)</sup> Do not bend below 0 °C.

<sup>7)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>8)</sup> C = interference suppression.

<sup>9)</sup> D = outputs overcurrent and short-circuit protected.

|                                       |                                                       |
|---------------------------------------|-------------------------------------------------------|
| <b>Power consumption</b>              | 40 mA <sup>3)</sup>                                   |
| <b>Switching output</b>               | NPN                                                   |
| <b>Output function</b>                | Complementary                                         |
| <b>Switching mode</b>                 | Light/dark switching                                  |
| <b>Signal voltage NPN HIGH/LOW</b>    | Approx. VS / < 2.5 V                                  |
| <b>Output current I<sub>max</sub></b> | 100 mA                                                |
| <b>Response time</b>                  | ≤ 2.5 ms <sup>4)</sup>                                |
| <b>Switching frequency</b>            | 200 Hz <sup>5)</sup>                                  |
| <b>Connection type</b>                | Cable, 4-wire, 2 m <sup>6)</sup>                      |
| <b>Cable material</b>                 | PVC                                                   |
| <b>Conductor cross-section</b>        | 0.25 mm <sup>2</sup>                                  |
| <b>Circuit protection</b>             | A <sup>7)</sup><br>C <sup>8)</sup><br>D <sup>9)</sup> |
| <b>Protection class</b>               | II                                                    |
| <b>Weight</b>                         | 200 g                                                 |
| <b>Housing material</b>               | Plastic, ABS                                          |
| <b>Optics material</b>                | Plastic, PMMA                                         |
| <b>Enclosure rating</b>               | IP66<br>IP67<br>IP69K                                 |
| <b>Ambient operating temperature</b>  | -30 °C ... +60 °C                                     |
| <b>Ambient storage temperature</b>    | -40 °C ... +75 °C                                     |
| <b>UL File No.</b>                    | NRKH.E181493 & NRKH7.E181493                          |

1) Limit values when operated in short-circuit protected network: max. 8 A.

2) May not exceed or fall below U<sub>y</sub> tolerances.

3) Without load.

4) Signal transit time with resistive load.

5) With light/dark ratio 1:1.

6) Do not bend below 0 °C.

7) A = V<sub>S</sub> connections reverse-polarity protected.

8) C = interference suppression.

9) D = outputs overcurrent and short-circuit protected.

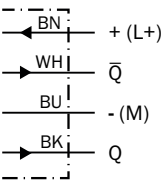
## Classifications

|                     |          |
|---------------------|----------|
| <b>ECI@ss 5.0</b>   | 27270904 |
| <b>ECI@ss 5.1.4</b> | 27270904 |
| <b>ECI@ss 6.0</b>   | 27270904 |
| <b>ECI@ss 6.2</b>   | 27270904 |
| <b>ECI@ss 7.0</b>   | 27270904 |
| <b>ECI@ss 8.0</b>   | 27270904 |
| <b>ECI@ss 8.1</b>   | 27270904 |
| <b>ECI@ss 9.0</b>   | 27270904 |
| <b>ETIM 5.0</b>     | EC002719 |
| <b>ETIM 6.0</b>     | EC002719 |

|                |          |
|----------------|----------|
| UNSPSC 16.0901 | 39121528 |
|----------------|----------|

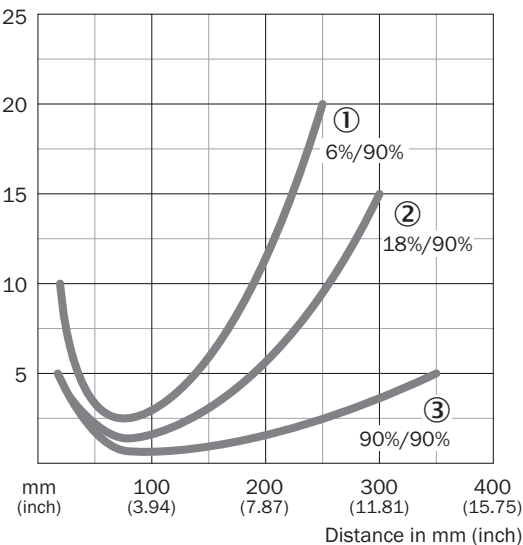
Connection diagram

Cd-094



Characteristic curve

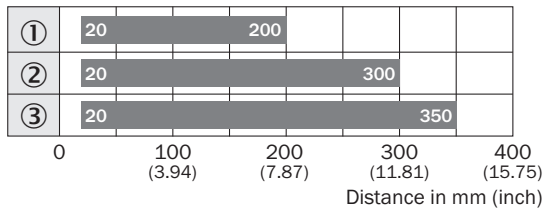
WTB11-2, 350 mm



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

## Sensing range diagram

WTB11-2, 350 mm

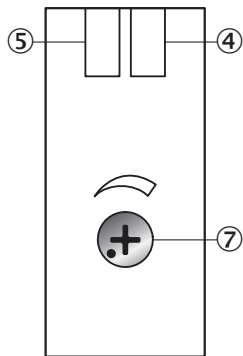


■ Sensing range

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

## Adjustments possible

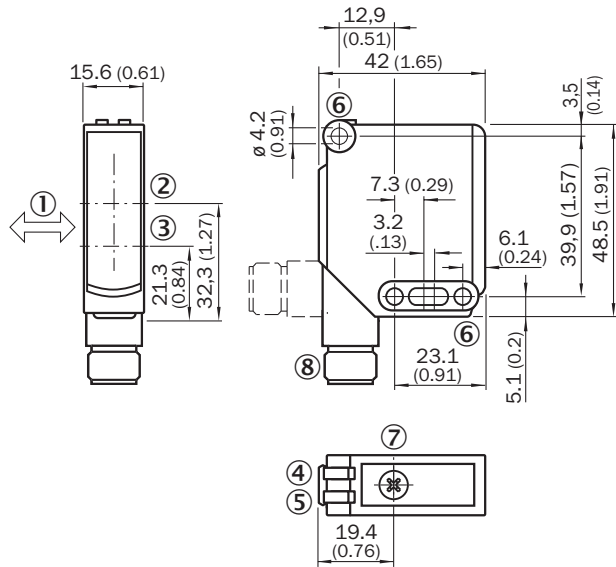
WTB11-2, WTF11-2



- ④ LED indicator green: Supply voltage active
- ⑤ LED indicator yellow: Status of received light beam
- ⑦ Sensing range adjustment: potentiometer

## Dimensional drawing (Dimensions in mm (inch))

WTB11-2, WTF11-2



- ① Standard direction of the material being detected
- ② Optical axis, receiver
- ③ Optical axis, sender
- ④ LED indicator green: Supply voltage active
- ⑤ LED indicator yellow: Status of received light beam
- ⑥ Mounting hole  $\varnothing$  4.2 mm
- ⑦ Sensing range adjustment: potentiometer
- ⑧ Connection

## Recommended accessories

Other models and accessories → [www.sick.com/W11-2](http://www.sick.com/W11-2)

|                                                                                     | Brief description                                                              | Type       | Part no. |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|------------|----------|
| Mounting brackets and plates                                                        |                                                                                |            |          |
|  | Mounting bracket, large, stainless steel, mounting hardware included           | BEF-WG-W12 | 2013942  |
| Plug connectors and cables                                                          |                                                                                |            |          |
|  | Head A: male connector, M12, 4-pin, straight<br>Head B: -<br>Cable: unshielded | STE-1204-G | 6009932  |

## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

**For us, that is “Sensor Intelligence.”**

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)