



WTB4-3N3162

W4

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ

### Ordering information

| Type        | part no. |
|-------------|----------|
| WTB4-3N3162 | 1028089  |

Other models and accessories → [www.sick.com/W4](http://www.sick.com/W4)

### Detailed technical data

#### Features

|                                    |                                |
|------------------------------------|--------------------------------|
| <b>Functional principle</b>        | Photoelectric proximity sensor |
| <b>Functional principle detail</b> | Background suppression         |
| <b>Sensing range max.</b>          | 4 mm ... 150 mm <sup>1)</sup>  |
| <b>Sensing range</b>               | 15 mm ... 150 mm <sup>1)</sup> |
| <b>Emitted beam</b>                |                                |
| Light source                       | PinPoint LED <sup>2)</sup>     |
| Type of light                      | Visible red light              |
| Light spot size (distance)         | Ø 7 mm (50 mm)                 |
| <b>Key LED figures</b>             |                                |
| Wave length                        | 650 nm                         |
| <b>Adjustment</b>                  | Single teach-in button         |
| <b>Special applications</b>        | Detecting small objects        |

<sup>1)</sup> Object with 90% remission (based on standard white, DIN 5033).

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

#### Electronics

|                                     |                                   |
|-------------------------------------|-----------------------------------|
| <b>Supply voltage U<sub>B</sub></b> | 10 V DC ... 30 V DC <sup>1)</sup> |
| <b>Ripple</b>                       | < 5 V <sub>pp</sub> <sup>2)</sup> |
| <b>Current consumption</b>          | 20 mA <sup>3)</sup>               |
| <b>Protection class</b>             | III                               |

<sup>1)</sup> Limit values.

<sup>2)</sup> May not fall below or exceed 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> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>7)</sup> C = interference suppression.

<sup>8)</sup> D = outputs overcurrent and short-circuit protected.

|                           |                                                       |                          |
|---------------------------|-------------------------------------------------------|--------------------------|
| <b>Digital output</b>     | Type                                                  | NPN                      |
|                           | Switching mode                                        | Light switching          |
|                           | Output current $I_{max}$                              | $\leq 100$ mA            |
|                           | Response time                                         | $< 0.5$ ms <sup>4)</sup> |
|                           | Switching frequency                                   | 1,000 Hz <sup>5)</sup>   |
| <b>Circuit protection</b> | A <sup>6)</sup><br>C <sup>7)</sup><br>D <sup>8)</sup> |                          |

1) Limit values.

2) May not fall below or exceed  $U_y$  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) C = interference suppression.

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

## Mechanics

|                               |                                              |                      |
|-------------------------------|----------------------------------------------|----------------------|
| <b>Housing</b>                | Rectangular                                  |                      |
| <b>Design detail</b>          | Flat                                         |                      |
| <b>Dimensions (W x H x D)</b> | 16 mm x 39.5 mm x 12 mm                      |                      |
| <b>Connection</b>             | Cable with connector M8, 3-pin <sup>1)</sup> |                      |
| <b>Connection detail</b>      | Conductor size                               | 0.14 mm <sup>2</sup> |
|                               | Cable diameter                               | Ø 3.4 mm             |
|                               | Length of cable (L)                          | 100 mm <sup>1)</sup> |
| <b>Material</b>               | Housing                                      | Plastic, ABS         |
|                               | Front screen                                 | Plastic, PMMA        |
|                               | Cable                                        | Plastic, PVC         |
| <b>Weight</b>                 | 30 g                                         |                      |

1) Do not bend below 0 °C.

## Ambient data

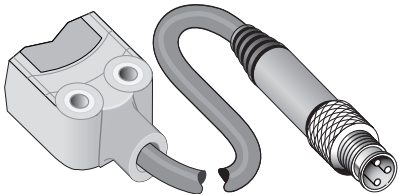
|                                      |                              |
|--------------------------------------|------------------------------|
| <b>Enclosure rating</b>              | IP67<br>IP66                 |
| <b>Ambient operating temperature</b> | -40 °C ... +60 °C            |
| <b>Ambient temperature, storage</b>  | -40 °C ... +75 °C            |
| <b>UL File No.</b>                   | NRKH.E181493 & NRKH7.E181493 |

## Classifications

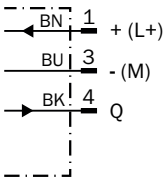
|                     |          |
|---------------------|----------|
| <b>ECLASS 5.0</b>   | 27270904 |
| <b>ECLASS 5.1.4</b> | 27270904 |
| <b>ECLASS 6.0</b>   | 27270904 |
| <b>ECLASS 6.2</b>   | 27270904 |

|                       |          |
|-----------------------|----------|
| <b>ECLASS 7.0</b>     | 27270904 |
| <b>ECLASS 8.0</b>     | 27270904 |
| <b>ECLASS 8.1</b>     | 27270904 |
| <b>ECLASS 9.0</b>     | 27270904 |
| <b>ECLASS 10.0</b>    | 27270904 |
| <b>ECLASS 11.0</b>    | 27270904 |
| <b>ECLASS 12.0</b>    | 27270903 |
| <b>ETIM 5.0</b>       | EC002719 |
| <b>ETIM 6.0</b>       | EC002719 |
| <b>ETIM 7.0</b>       | EC002719 |
| <b>ETIM 8.0</b>       | EC002719 |
| <b>UNSPSC 16.0901</b> | 39121528 |

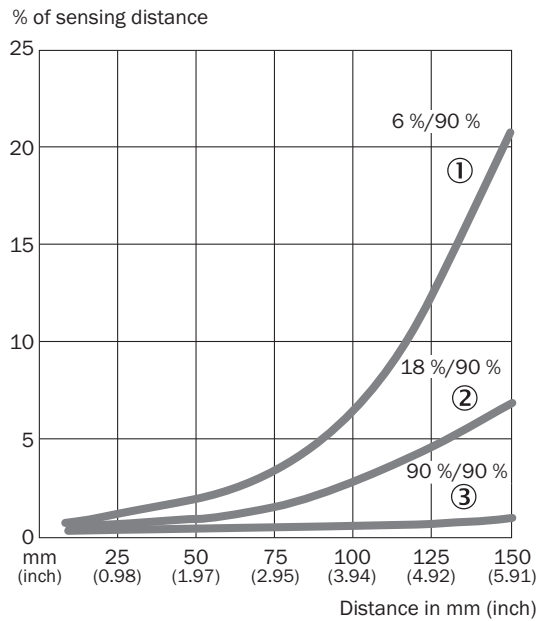
### Connection type



### Connection diagram Cd-045

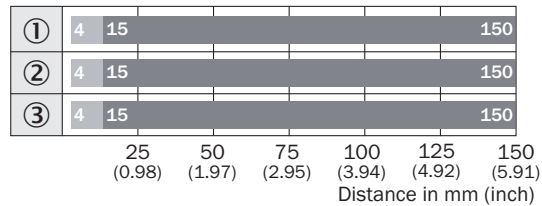


### Characteristic curve WTB4-3



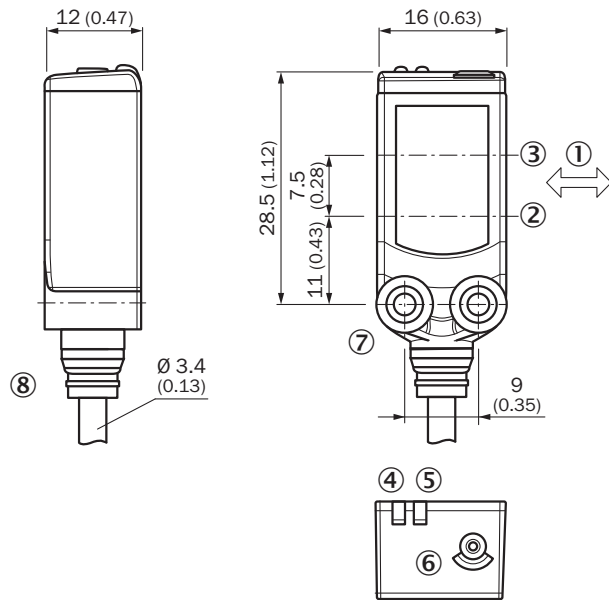
- ① Sensing range on black, 6% remission factor
- ② Sensing range on gray, 18% remission factor
- ③ Sensing range on white, 90% remission factor

### Sensing range diagram WTB4-3



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

Dimensional drawing WT<sub>x</sub>4-3, Single teach-in button



Dimensions in mm (inch)

- ① Standard direction of the material being detected
- ② optical axis, sender
- ③ optical axis, receiver
- ④ LED indicator yellow: Status of received light beam
- ⑤ LED indicator green: Supply voltage active
- ⑥ Teach-in button
- ⑦ Threaded mounting hole M3
- ⑧ Connection

## Recommended accessories

Other models and accessories → [www.sick.com/W4](http://www.sick.com/W4)

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Type               | part no. |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| <b>Mounting systems</b>                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |          |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> Plate N08 for universal clamp bracket</li> <li><b>Material:</b> Steel, zinc diecast</li> <li><b>Details:</b> Zinc plated steel (sheet), Zinc die cast (clamping bracket)</li> <li><b>Items supplied:</b> Universal clamp (5322626), mounting hardware</li> <li><b>Usable for:</b> W100, W150, W4S, W4F, W8, W9-3, W8G, W8 Laser, W8 Inox, G6, W100 Laser, W100-2, W10, G6 Inox, RAY10, W4SLG-3, W9, GR18, MultiPulse, Reflex Array, MultiLine, LUT3, KT5, KT8, KT10, CS8</li> </ul> | BEF-KHS-N08        | 2051607  |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket for wall mounting</li> <li><b>Material:</b> Stainless steel</li> <li><b>Details:</b> Stainless steel 1.4571</li> <li><b>Items supplied:</b> Mounting hardware included</li> <li><b>Suitable for:</b> W4S, W4F, W4S</li> </ul>                                                                                                                                                                                                                                      | BEF-W4-A           | 2051628  |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket for floor mounting</li> <li><b>Material:</b> Stainless steel</li> <li><b>Details:</b> Stainless steel 1.4571</li> <li><b>Items supplied:</b> Mounting hardware included</li> <li><b>Suitable for:</b> W4S, W4F, W4S</li> </ul>                                                                                                                                                                                                                                     | BEF-W4-B           | 2051630  |
| <b>connectors and cables</b>                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |          |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Unshielded</li> <li><b>Connection type head A:</b> Male connector, M8, 3-pin, straight, A-coded</li> <li><b>Connection systems:</b> Screw-type terminals</li> <li><b>Permitted cross-section:</b> 0.14 mm<sup>2</sup> ... 0.5 mm<sup>2</sup></li> </ul>                                                                                                                                                                                                                             | STE-0803-G         | 6037322  |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Connection type head A:</b> Female connector, M8, 3-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 3-wire, PVC</li> <li><b>Application:</b> Uncontaminated zones, Zones with chemicals</li> </ul>                                                                                                                         | YF8U13-050VA1XLEAX | 2095884  |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Connection type head A:</b> Female connector, M8, 3-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 3-wire, PUR, halogen-free</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>                                                                    | YF8U13-050UA1XLEAX | 2094788  |

## 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)