



**WTB4S-3P1361**  
W4S-3

**MINIATURE PHOTOELECTRIC SENSORS**

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

| Type         | Part no. |
|--------------|----------|
| WTB4S-3P1361 | 1042043  |

Other models and accessories → [www.sick.com/W4S-3](http://www.sick.com/W4S-3)

### Detailed technical data

#### Features

|  |  |
|--|--|
| <b>Sensor/ detection principle</b>     | Photoelectric proximity sensor, Background suppression |
| <b>Dimensions (W x H x D)</b>          | 12.2 mm x 41.8 mm x 17.3 mm                            |
| <b>Housing design (light emission)</b> | Rectangular  |
| <b>Sensing range max.</b>              | 4 mm ... 180 mm <sup>1)</sup>                          |
| <b>Sensing range</b>                   | 10 mm ... 180 mm <sup>1)</sup>                         |
| <b>Type of light</b>                   | Visible red light                                      |
| <b>Light source</b>                    | PinPoint LED <sup>2)</sup>                             |
| <b>Light spot size (distance)</b>      | Ø 6.5 mm (150 mm)                                      |
| <b>Wave length</b>                     | 650 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>                     |
| <b>Power consumption</b>               | 20 mA <sup>3)</sup>                                   |
| <b>Switching output</b>                | PNP   |
| <b>Switching mode</b>                  | Light switching                                       |
| <b>Output current I<sub>max.</sub></b> | ≤ 100 mA  |
| <b>Response time</b>                   | < 0.5 ms <sup>4)</sup>                                |
| <b>Switching frequency</b>             | 1,000 Hz <sup>5)</sup>                                |
| <b>Connection type</b>                 | Cable, 3-wire, 2 m <sup>6)</sup>                      |
| <b>Cable material</b>                  | PVC   |
| <b>Conductor cross-section</b>         | 0.14 mm <sup>2</sup>                                  |
| <b>Cable diameter</b>                  | Ø 3.4 mm  |
| <b>Circuit protection</b>              | A <sup>7)</sup><br>C <sup>8)</sup><br>D <sup>9)</sup> |
| <b>Protection class</b>                | III   |
| <b>Weight</b>                          | 30 g  |
| <b>Housing material</b>                | Plastic, ABS  |
| <b>Optics material</b>                 | Plastic, PMMA   |
| <b>Enclosure rating</b>                | IP67<br>IP66  |
| <b>Ambient operating temperature</b>   | -40 °C ... +60 °C                                     |
| <b>Ambient storage temperature</b>     | -40 °C ... +75 °C                                     |
| <b>UL File No.</b>                     | NRKH.E181493 & NRKH7.E181493                          |

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

<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.

## Safety-related parameters

|                         |             |
|-------------------------|-------------|
| <b>MTTF<sub>D</sub></b> | 1,180 years |
| <b>DC<sub>avg</sub></b> | 0%          |

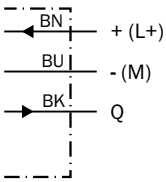
## Classifications

|                     |          |
|---------------------|----------|
| <b>ECl@ss 5.0</b>   | 27270904 |
| <b>ECl@ss 5.1.4</b> | 27270904 |
| <b>ECl@ss 6.0</b>   | 27270904 |
| <b>ECl@ss 6.2</b>   | 27270904 |
| <b>ECl@ss 7.0</b>   | 27270904 |

|                       |          |
|-----------------------|----------|
| <b>ECl@ss 8.0</b>     | 27270904 |
| <b>ECl@ss 8.1</b>     | 27270904 |
| <b>ECl@ss 9.0</b>     | 27270904 |
| <b>ECl@ss 10.0</b>    | 27270904 |
| <b>ECl@ss 11.0</b>    | 27270904 |
| <b>ETIM 5.0</b>       | EC002719 |
| <b>ETIM 6.0</b>       | EC002719 |
| <b>ETIM 7.0</b>       | EC002719 |
| <b>UNSPSC 16.0901</b> | 39121528 |

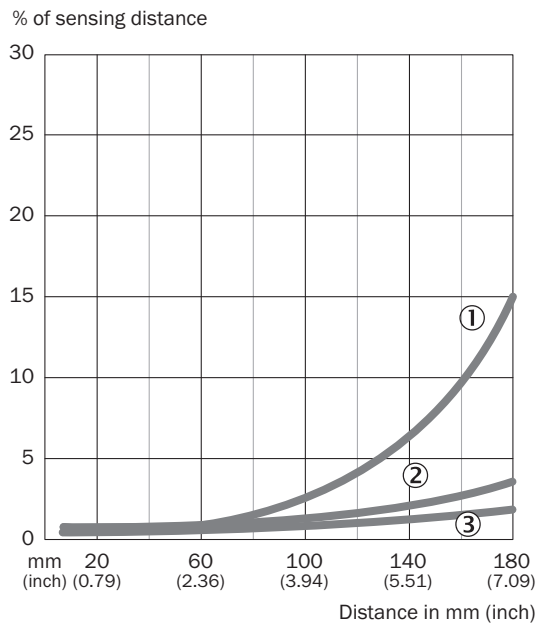
### Connection diagram

Cd-043



### Characteristic curve

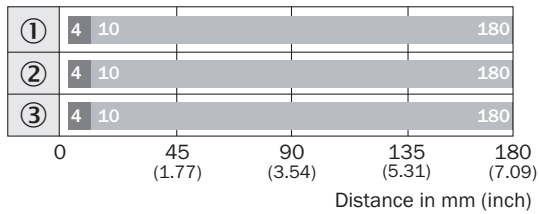
WTB4S-3, 180 mm



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

## Sensing range diagram

WTB4S-3, 180 mm

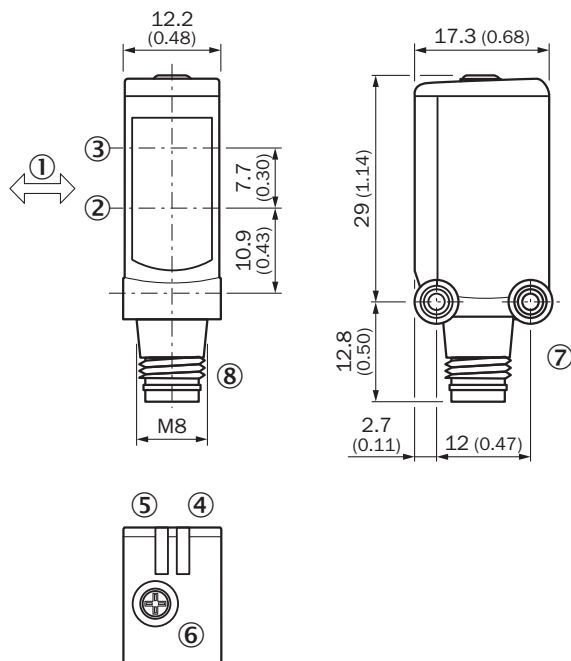


■ Sensing range max. ■ Sensing range

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

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



WTB4S-3, potentiometer



- 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 Potentiometer
- ⑦ Threaded mounting hole M3
- ⑧ Connection

Recommended accessories

Other models and accessories → [www.sick.com/W4S-3](http://www.sick.com/W4S-3)

|   | Brief description  | Type       | Part no. |
|---|--|------------|----------|
| Mounting brackets and plates  |  |            |          |
|  | Mounting bracket for wall mounting, Stainless steel 1.4571, mounting hardware included | BEF-W4-A   | 2051628  |
| Plug connectors and cables  |  |            |          |
|  | Head A: male connector, M8, 3-pin, straight<br>Head B: -<br>Cable: unshielded          | STE-0803-G | 6037322  |

## 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)