



DATA SHEET

WTB4-3P2271

W4  
Photoelectric sensors

**SICK** Sensor Intelligence



Illustration may differ

# PHOTOELECTRIC SENSORS

## WTB4-3P2271

### ORDERING INFORMATION

| Type        | part no. |
|-------------|----------|
| WTB4-3P2271 | 1042190  |

Further device versions and accessories at [www.sick.com/W4](http://www.sick.com/W4)

### DETAILED TECHNICAL DATA

#### FEATURES

|                             |                                                                                                   |
|-----------------------------|---------------------------------------------------------------------------------------------------|
| Functional principle        | Photoelectric proximity sensor                                                                    |
| Functional principle detail | Background suppression                                                                            |
| Sensing range max.          | 4 mm ... 150 mm <sup>1)</sup>                                                                     |
| Sensing range               | 15 mm ... 150 mm <sup>1)</sup>                                                                    |
| Emitted beam                |                                                                                                   |
| Light source                | PinPoint LED <sup>2)</sup>                                                                        |
| Type of light               | Visible red light                                                                                 |
| Light spot size (distance)  | 5 mm x 28 mm (50 mm)                                                                              |
| Key LED figures             |                                                                                                   |
| Wave length                 | 650 nm                                                                                            |
| Adjustment                  | Potentiometer, 5 turns                                                                            |
| Special applications        | Detecting perforated objects, Detecting objects with position tolerances, 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>u</sub> = +25 °C.

#### SAFETY-RELATED PARAMETERS

|                   |             |
|-------------------|-------------|
| MTTF <sub>D</sub> | 1,143 years |
| DC <sub>avg</sub> | 0 %         |

**ELECTRONICS**

|                      |                                                                                                                                                                                                                                                                                            |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Supply voltage $U_B$ | 10 V DC ... 30 V DC <sup>1)</sup>                                                                                                                                                                                                                                                          |
| Ripple               | < 5 V <sub>pp</sub> <sup>2)</sup>                                                                                                                                                                                                                                                          |
| Current consumption  | 20 mA <sup>3)</sup>                                                                                                                                                                                                                                                                        |
| Protection class     | III                                                                                                                                                                                                                                                                                        |
| Digital output       | <div>Type</div> <div>PNP</div> <div>Switching mode</div> <div>Light/dark switching</div> <div>Output current <math>I_{max}</math></div> <div>≤ 100 mA</div> <div>Response time</div> <div>&lt; 0.5 ms <sup>4)</sup></div> <div>Switching frequency</div> <div>1,000 Hz <sup>5)</sup></div> |
| Output function      | Complementary                                                                                                                                                                                                                                                                              |
| Circuit protection   | <div>A <sup>6)</sup></div> <div>C <sup>7)</sup></div> <div>D <sup>8)</sup></div>                                                                                                                                                                                                           |
| Special feature      | Line-shaped light spot                                                                                                                                                                                                                                                                     |

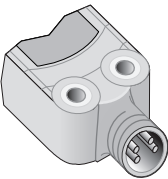
<sup>1)</sup> Limit values.<sup>2)</sup> May not fall below or exceed  $U_V$  tolerances.<sup>3)</sup> Without load.<sup>4)</sup> Signal transit time with resistive load.<sup>5)</sup> With light/dark ratio 1:1.<sup>6)</sup> A =  $V_B$  connections reverse-polarity protected.<sup>7)</sup> C = interference suppression.<sup>8)</sup> D = outputs overcurrent and short-circuit protected.**MECHANICS**

|                        |                                                                                             |
|------------------------|---------------------------------------------------------------------------------------------|
| Housing                | Rectangular                                                                                 |
| Design detail          | Flat                                                                                        |
| Dimensions (W x H x D) | 16 mm x 39.5 mm x 12 mm                                                                     |
| Connection             | Male connector M8, 4-pin                                                                    |
| Material               | <div>Housing</div> <div>Plastic, ABS</div> <div>Front screen</div> <div>Plastic, PMMA</div> |
| Weight                 | 30 g                                                                                        |

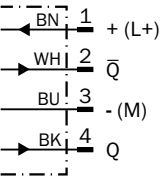
**AMBIENT DATA**

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

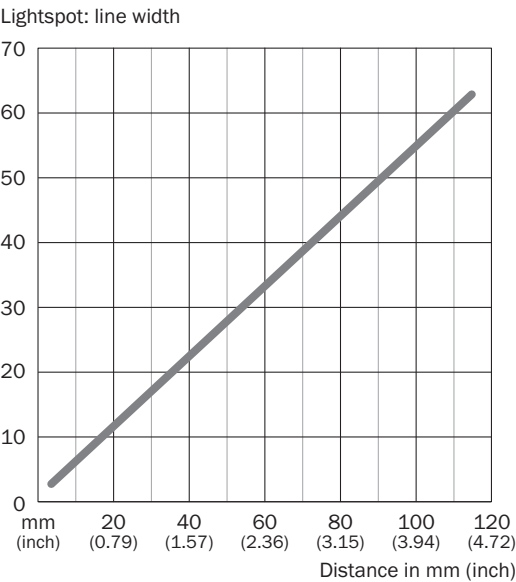
CONNECTION TYPE



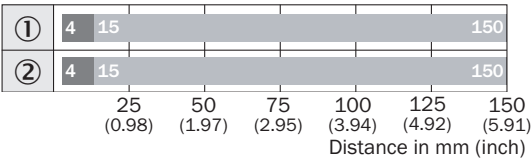
CONNECTION DIAGRAM CD-083



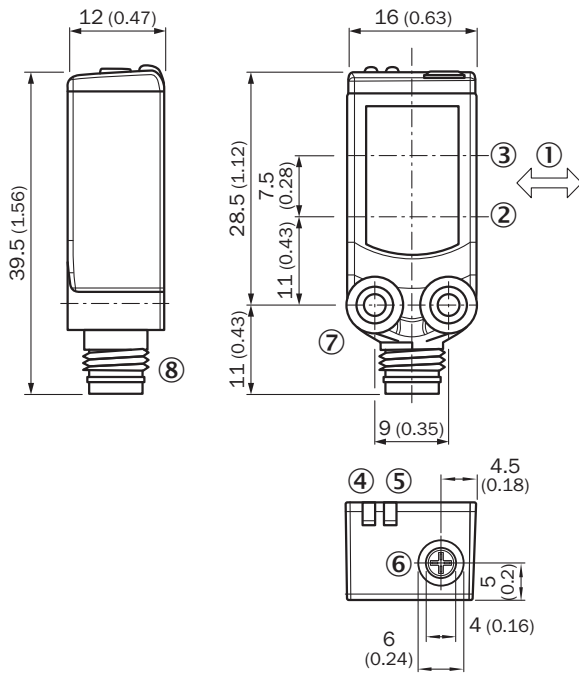
LIGHT SPOT SIZE WTB4-3, LINE-SHAPED LIGHT SPOT



SENSING RANGE DIAGRAM WTB4-3, LINE-SHAPED LIGHT SPOT



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

**DIMENSIONAL DRAWING WTX4-3, POTENTIOMETER**

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 Potentiometer
- ⑦ Threaded mounting hole M3
- ⑧ Connection

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at [www.sick.com/1042190](http://www.sick.com/1042190)



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SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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