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DATA SHEET

WTB27-3P3741

W27  
Photoelectric sensors

**SICK** Sensor Intelligence



Illustration may differ

PHOTOELECTRIC SENSORS

WTB27-3P3741

ORDERING INFORMATION

| Type         | part no. |
|--------------|----------|
| WTB27-3P3741 | 1027748  |

Further device versions and accessories at [www.sick.com/W27](http://www.sick.com/W27)

DETAILED TECHNICAL DATA

FEATURES

|                                 |                                  |
|---------------------------------|----------------------------------|
| Functional principle            | Photoelectric proximity sensor   |
| Functional principle detail     | Background suppression           |
| Dimensions (W x H x D)          | 24.6 mm x 80.6 mm x 54 mm        |
| Housing design (light emission) | Rectangular                      |
| Sensing range max.              | 30 mm ... 1,100 mm <sup>1)</sup> |
| Sensing range                   | 100 mm ... 1,100 mm              |
| Type of light                   | Visible red light                |
| Light source                    | LED <sup>2)</sup>                |
| Light spot size (distance)      | Ø 15 mm (500 mm)                 |
| Wave length                     | 660 nm                           |
| Adjustment                      | Potentiometer                    |

<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.

MECHANICS/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             | 35 mA <sup>3)</sup>                                   |
| Switching output                | PNP                                                   |
| Output function                 | Complementary                                         |
| Switching mode                  | Light/dark switching                                  |
| Signal voltage PNP HIGH/LOW     | Approx. $V_S - 2.5 \text{ V} / 0 \text{ V}$           |
| Output current $I_{\text{max}}$ | ≤ 100 mA                                              |
| Response time                   | ≤ 1.5 ms <sup>4)</sup>                                |
| Switching frequency             | 350 Hz <sup>5)</sup>                                  |
| Connection type                 | Cable with Q7 male connector, 7-pin, DC-coded, 150 mm |
| Cable material                  | Plastic, PVC                                          |
| Circuit protection              | A <sup>6)</sup><br>B <sup>7)</sup><br>C <sup>8)</sup> |
| Protection class                | II <sup>9)</sup>                                      |
| Weight                          | 120 g                                                 |
| Housing material                | Plastic, ABS                                          |
| Optics material                 | Plastic, PMMA                                         |
| Enclosure rating                | IP66<br>IP67                                          |
| Ambient operating temperature   | -40 °C ... +60 °C                                     |
| Ambient temperature, storage    | -40 °C ... +75 °C                                     |
| UL File No.                     | NRKH.E181493 & NRKH7.E181493                          |

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

<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.

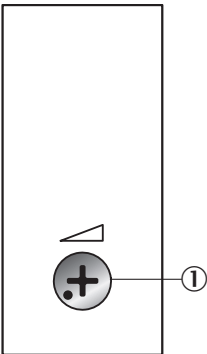
<sup>6)</sup> A =  $V_S$  connections reverse-polarity protected.

<sup>7)</sup> B = inputs and output reverse-polarity protected.

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

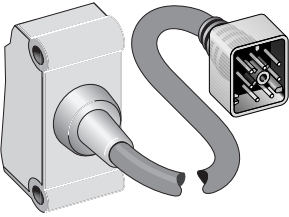
<sup>9)</sup> Reference voltage: 50 V DC.

ADJUSTMENTS POTENTIOMETER

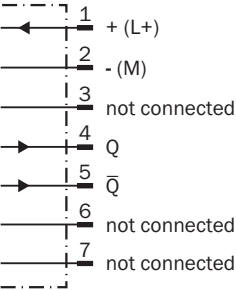


① Potentiometer

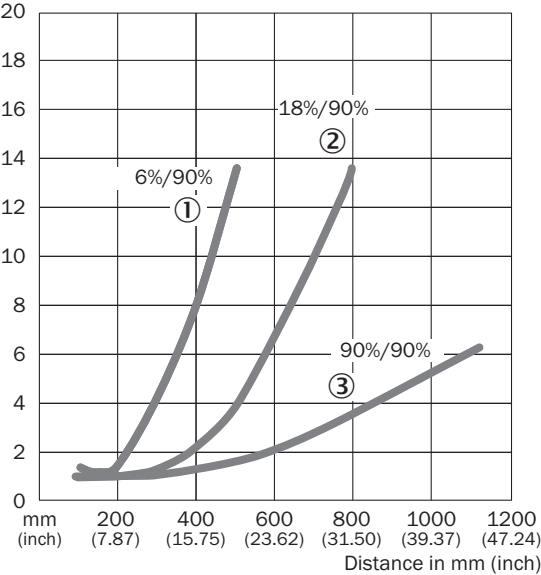
CONNECTION TYPE



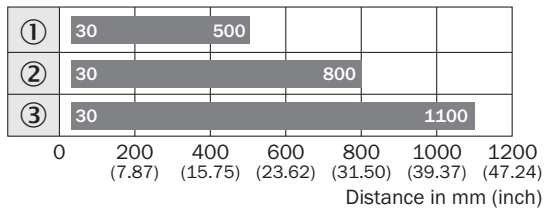
CONNECTION DIAGRAM CD-191



CHARACTERISTIC CURVE

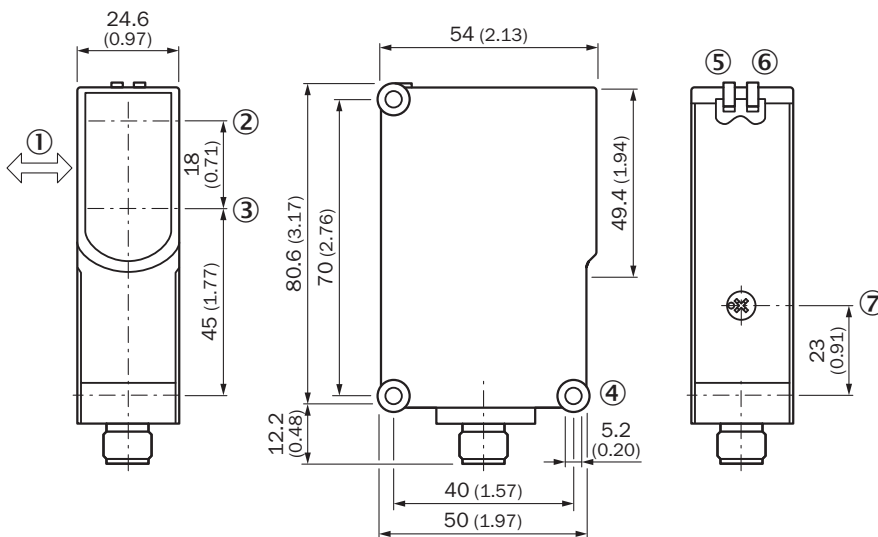


- ① Sensing range on black, 6% remission factor
- ② Sensing range on gray, 18% remission factor
- ③ Sensing range on white, 90% remission factor

**SENSING RANGE DIAGRAM**

■ 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 WTB27-3, POTENTIOMETER**

Dimensions in mm (inch)

- ① Standard direction of the material being detected
- ② Optical axis, sender
- ③ Optical axis, receiver
- ④ Mounting hole  $\varnothing$  5.2 mm
- ⑤ LED indicator green: Supply voltage active
- ⑥ LED indicator yellow: Status of received light beam
- ⑦ Sensing range adjustment: potentiometer

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/1027748](http://www.sick.com/1027748)



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# SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

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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