



Photoelectric sensors  
W2S-2, Photoelectric proximity sensor,  
Background suppression

WTB2S-2F3110



**Model Name** > [WTB2S-2F3110](#)  
**Part No.** > [1064396](#)



*Illustration may differ*

**At a glance**

- Sensing ranges of up to 150 mm
- Almost no black/white shift up to 60 mm
- Sensor with line-shaped light spot
- Sensor with laser-like focused light spots
- Precise background suppression that is immune to interference/crosstalk
- High-performance PinPoint 2.0 LED

**Your benefits**

- An ultra-compact design with the performance of large photoelectric proximity sensors offers new space-saving machine construction possibilities.
- Large variety of proximity sensors and operating concepts enable a wide range of application options
- Use in confined spaces: detection of small, flat parts thanks to high-quality background suppression and almost nonexistent black/white shift
- Remote access: models with IO-Link allow data to be easily accessed from the PLC
- High availability and long-term use in grippers thanks to flexible and rugged cable entry



**Features**

|                                   |  |
|-----------------------------------|--|
| Sensor/detection principle:       | Photoelectric proximity sensor, Background suppression |
| Dimensions (W x H x D):           | 7.7 mm x 21.8 mm x 13.5 mm                             |
| Housing design (light emission):  | Rectangular  |
| Sensing range max.:               | 1 mm ... 18 mm <sup>1)</sup>                           |
| Sensing range:                    | 3 mm ... 15 mm <sup>2)</sup>                           |
| Type of light:                    | Visible red light                                      |
| Light source:                     | PinPoint LED <sup>3)</sup>                             |
| Wave length:                      | 640 nm   |
| Light spot size (distance):       | Ø 2 mm (8 mm)  |
| Background suppression typ. from: | 20 mm  |

<sup>1) 2)</sup> Object with 90 % reflectance (referred to standard white, DIN 5033) <sup>3)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

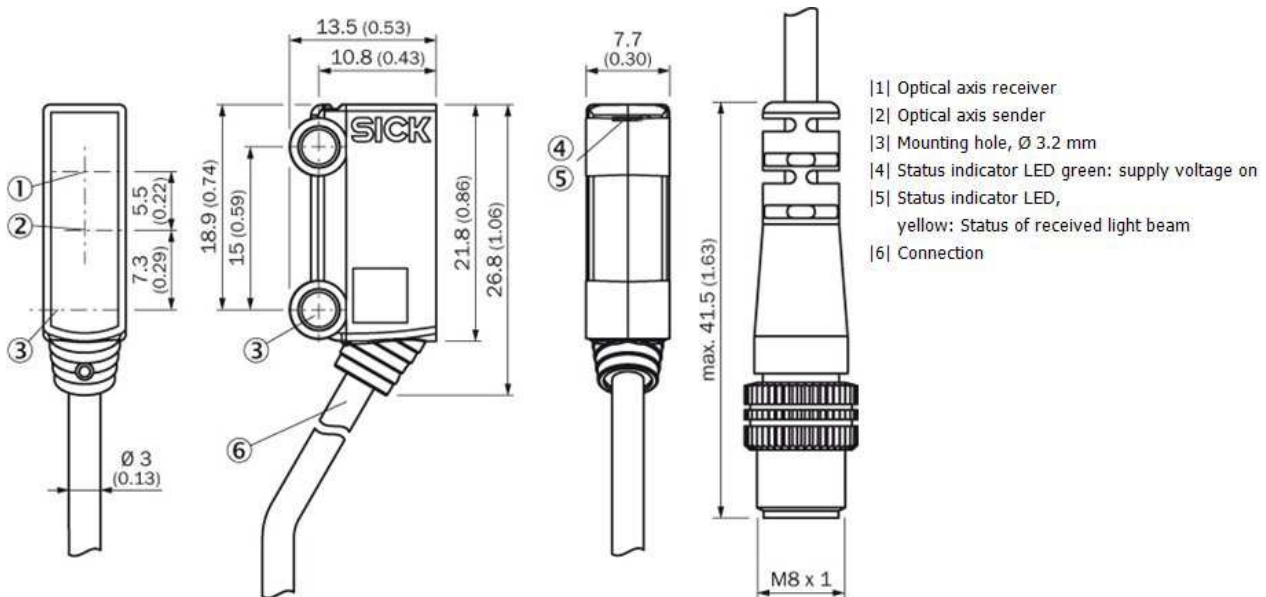
**Mechanics/electronics**

|                    |                                   |
|--------------------|-----------------------------------|
| Supply voltage:    | 10 V DC ... 30 V DC <sup>1)</sup> |
| Ripple:            | ≤ 5 Vpp <sup>2)</sup>             |
| Power consumption: | ≤ 20 mA <sup>3)</sup>             |

|                                   |  |
|-----------------------------------|--|
| Output type:                      | PNP  |
| Switching mode:                   | Dark switching                                       |
| Output current I <sub>max</sub> : | < 50 mA  |
| Response time:                    | < 0.4 ms <sup>4)</sup>                               |
| Switching frequency:              | 1,200 Hz <sup>5)</sup>                               |
| Connection type:                  | Cable with connector M8, 3-pin, 200 mm <sup>6)</sup> |
| Cable material:                   | PVC  |
| Cable diameter:                   | Ø 3 mm   |
| Circuit protection:::             | A, B, D <sup>7)</sup> <sup>8)</sup> <sup>9)</sup>    |
| IO-Link:                          | -  |
| Optics material:                  | PMMA   |
| Enclosure rating:                 | IP 67  |
| Ambient temperature operation:    | -25 °C ... +50 °C                                    |
| Ambient storage temperature:      | -40 °C ... +75 °C                                    |
| UL File No.:                      | NRKH.E181493   |
| Housing material:                 | ABS/PC, Plastic                                      |

1) Limit values 2) May not exceed or fall short of V<sub>S</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) B = output reverse-polarity protected 9) D = outputs overcurrent and short-circuit protected

## Dimensional drawing

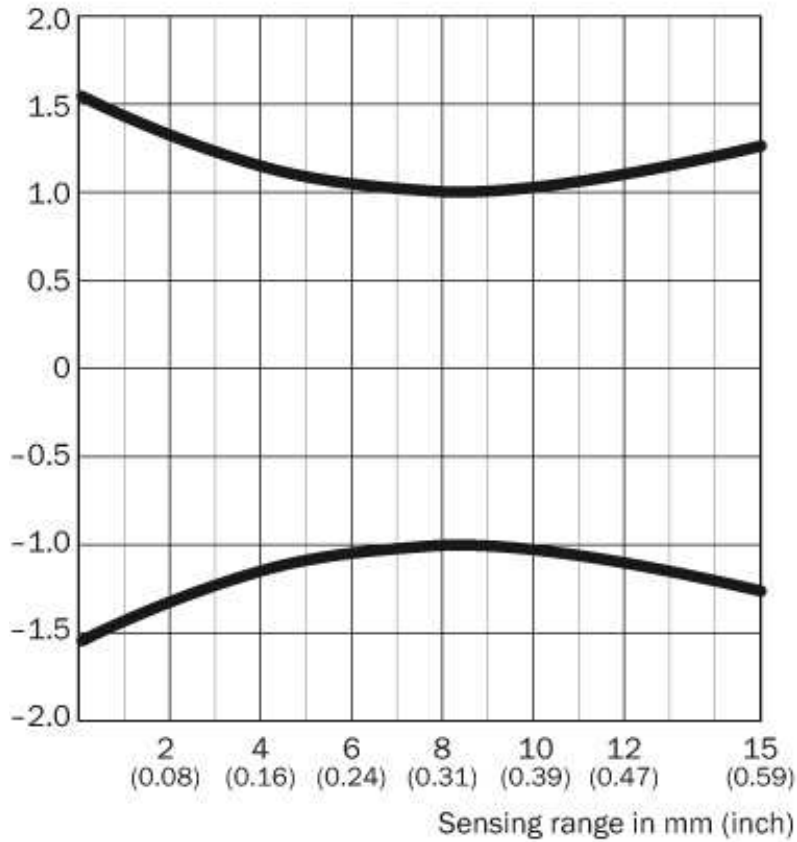


Connection diagram



Light spot size

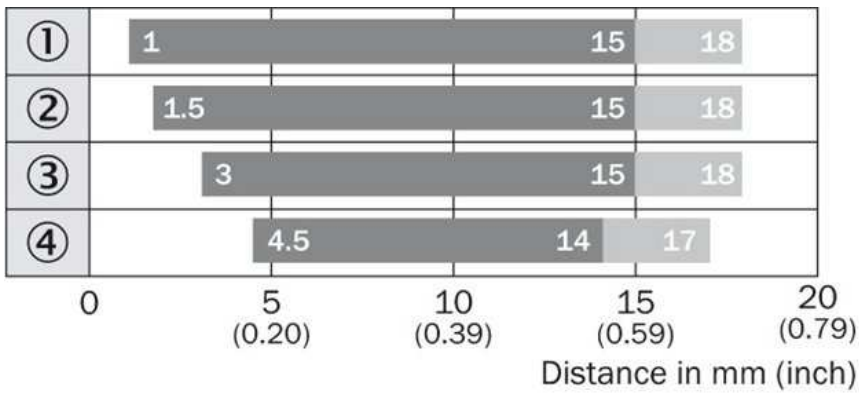
Spot diameter in mm (inch)



Dimensions in mm (inch)

| Sensing range       | Spot diameter |
|---------------------|---------------|
| <b>4</b><br>(0.16)  | 2.3<br>(0.09) |
| <b>8</b><br>(0.31)  | 2.0<br>(0.08) |
| <b>15</b><br>(0.59) | 2.5<br>(0.10) |

**Sensing range diagram**



- |1| Sensing range on white, 90 % remission
- |2| Sensing range on gray, 18 % remission
- |3| Sensing range on black, 6 % remission
- |4| Sensing range on ultrablack, 1 % remission

■ Sensing range      ■ Sensing range max.

**Australia**

Phone +61 3 9457 0600  
1800 33 48 02 – tollfree  
E-Mail sales@sick.com.au

**Belgium/Luxembourg**

Phone +32 (0)2 466 55 66  
E-Mail info@sick.be

**Brasil**

Phone +55 11 3215-4900  
E-Mail marketing@sick.com.br

**Canada**

Phone +1 905 771 14 44  
E-Mail information@sick.com

**Česká republika**

Phone +420 2 57 91 18 50  
E-Mail sick@sick.cz

**China**

Phone +86 4000 121 000  
E-Mail info.china@sick.net.cn  
Phone +852-2153 6300  
E-Mail ghk@sick.com.hk

**Danmark**

Phone +45 45 82 64 00  
E-Mail sick@sick.dk

**Deutschland**

Phone +49 211 5301-301  
E-Mail info@sick.de

**España**

Phone +34 93 480 31 00  
E-Mail info@sick.es

**France**

Phone +33 1 64 62 35 00  
E-Mail info@sick.fr

**Great Britain**

Phone +44 (0)1727 831121  
E-Mail info@sick.co.uk

**India**

Phone +91-22-4033 8333  
E-Mail info@sick-india.com

**Israel**

Phone +972-4-6881000  
E-Mail info@sick-sensors.com

**Italia**

Phone +39 02 27 43 41  
E-Mail info@sick.it

**Japan**

Phone +81 (0)3 5309 2112  
E-Mail support@sick.jp

**Magyarország**

Phone +36 1 371 2680  
E-Mail office@sick.hu

**Nederland**

Phone +31 (0)30 229 25 44  
E-Mail info@sick.nl

**Norge**

Phone +47 67 81 50 00  
E-Mail sick@sick.no

**Österreich**

Phone +43 (0)22 36 62 28 8-0  
E-Mail office@sick.at

**Polska**

Phone +48 22 837 40 50  
E-Mail info@sick.pl

**România**

Phone +40 356 171 120  
E-Mail office@sick.ro

**Russia**

Phone +7-495-775-05-30  
E-Mail info@sick.ru

**Schweiz**

Phone +41 41 619 29 39  
E-Mail contact@sick.ch

**Singapore**

Phone +65 6744 3732  
E-Mail sales.gsg@sick.com

**Slovenija**

Phone +386 (0)1-47 69 990  
E-Mail office@sick.si

**South Africa**

Phone +27 11 472 3733  
E-Mail info@sickautomation.co.za

**South Korea**

Phone +82 2 786 6321/4  
E-Mail info@sickkorea.net

**Suomi**

Phone +358-9-25 15 800  
E-Mail sick@sick.fi

**Sverige**

Phone +46 10 110 10 00  
E-Mail info@sick.se

**Taiwan**

Phone +886 2 2375-6288  
E-Mail sales@sick.com.tw

**Türkiye**

Phone +90 (216) 528 50 00  
E-Mail info@sick.com.tr

**United Arab Emirates**

Phone +971 (0) 4 88 65 878  
E-Mail info@sick.ae

**USA/México**

Phone +1(952) 941-6780  
1 (800) 325-7425 – tollfree  
E-Mail info@sickusa.com

More representatives and agencies  
at [www.sick.com](http://www.sick.com)