



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

WTB2S-2N1010S23



Model Name > [WTB2S-2N1010S23](#)
Part No. > [1063826](#)



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 ¹⁾ |
| Sensing range: | 3 mm ... 15 mm ²⁾ |
| Type of light: | Visible red light |
| Light source: | PinPoint LED ³⁾ |
| Wave length: | 640 nm |
| Special features: | Cable length 1 m |
| Light spot size (distance): | Ø 2 mm (8 mm) |
| Background suppression typ. from: | 20 mm |

^{1) 2)} Object with 90 % reflectance (referred to standard white, DIN 5033) ³⁾ Average service life of 100,000 h at T_A = +25 °C

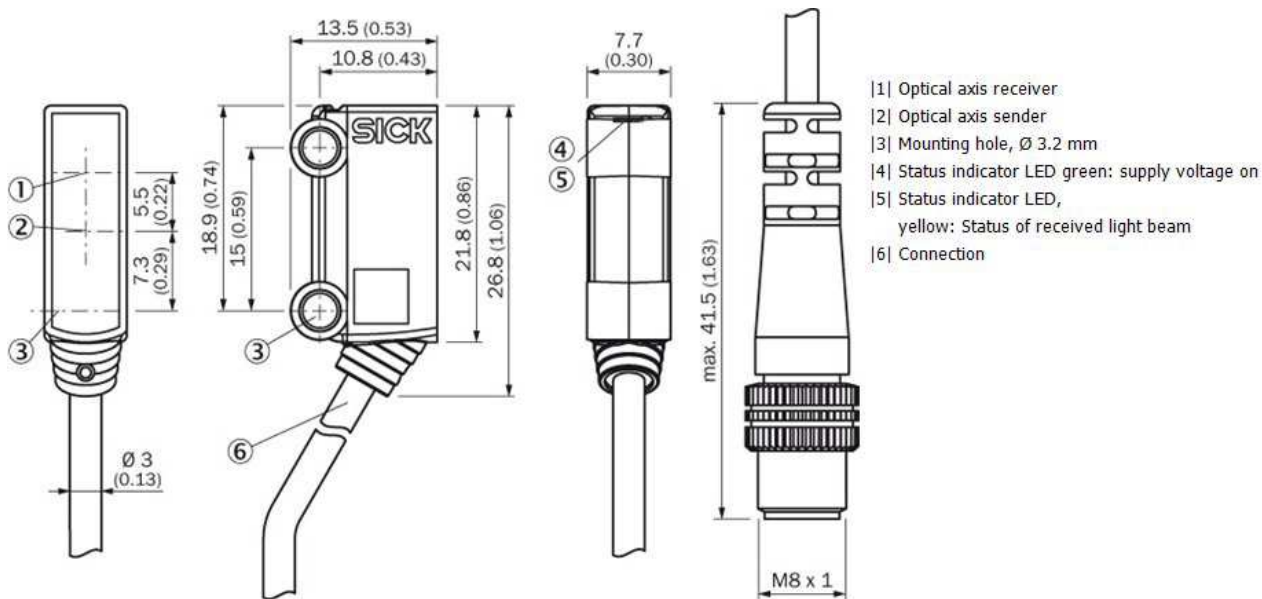
Mechanics/electronics

| | |
|-----------------|-----------------------------------|
| Supply voltage: | 10 V DC ... 30 V DC ¹⁾ |
| Ripple: | ≤ 5 Vpp ²⁾ |

| | |
|------------------------------------|----------------------------------|
| Power consumption: | ≤ 20 mA ³⁾ |
| Output type: | NPN |
| Switching mode: | Light switching |
| Output current I _{max.} : | < 50 mA |
| Response time: | < 0.4 ms ⁴⁾ |
| Switching frequency: | 1,200 Hz ⁵⁾ |
| Connection type: | Cable, 3-wire, 1 m ⁶⁾ |
| Cable material: | PVC |
| Cable diameter: | Ø 3 mm |
| Circuit protection::: | A, B, D ^{7) 8) 9)} |
| 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_S 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_S connections reverse-polarity protected 8) B = output reverse-polarity protected 9) D = outputs overcurrent and short-circuit protected

Dimensional drawing

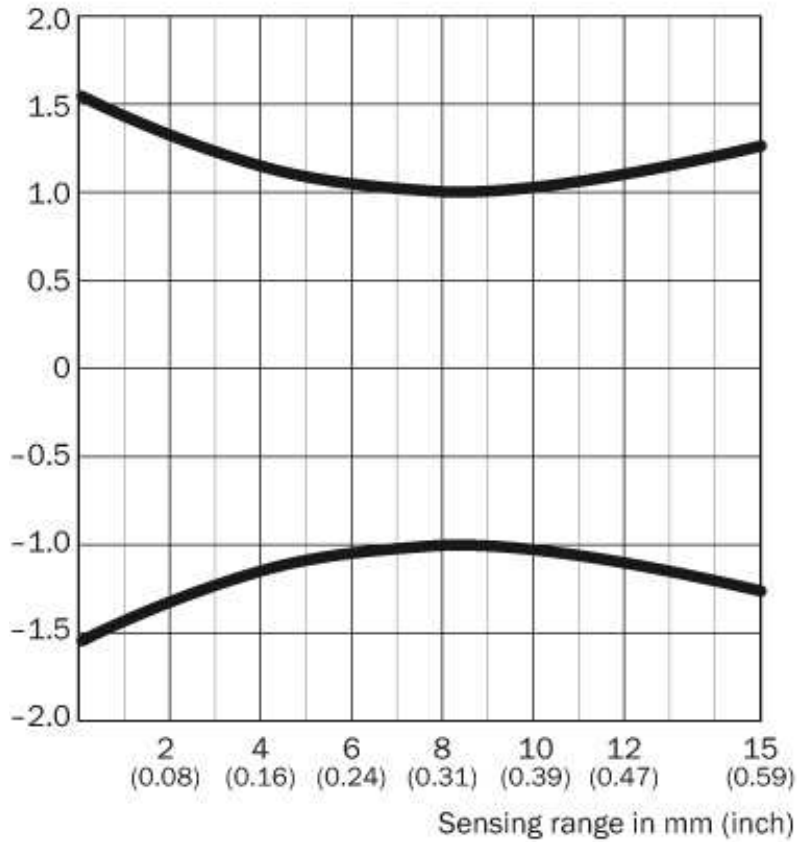


Connection diagram



Light spot size

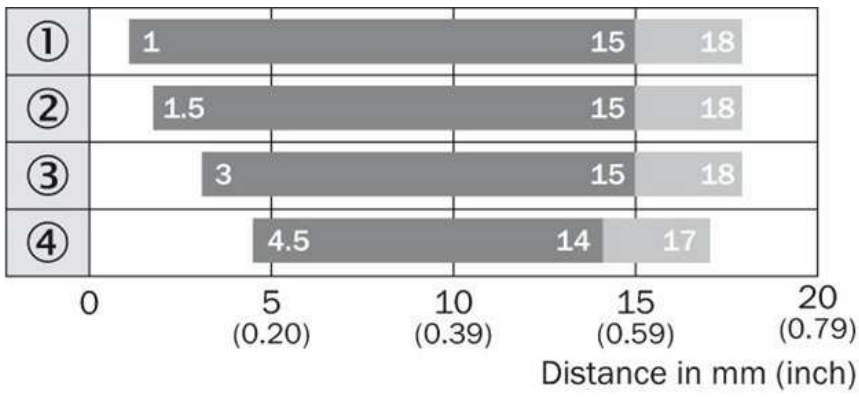
Spot diameter in mm (inch)



Dimensions in mm (inch)

| Sensing range | Spot diameter |
|---------------------|---------------|
| 4 (0.16) | 2.3 (0.09) |
| 8 (0.31) | 2.0 (0.08) |
| 15 (0.59) | 2.5 (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.

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