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Product data sheet




# WTB2S-2P1151

W2

MINIATURE PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

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# WTB2S-2P1151 | W2

MINIATURE PHOTOELECTRIC SENSORS



Illustration may differ

## Ordering information

| Type | Part no. |
|---|---|
| WTB2S-2P1151 | 1066110 |

Other models and accessories → www.sick.com/W2

## Detailed technical data

### Features

| | |
|---|---|
| **Functional principle** | Photoelectric proximity sensor |
| **Functional principle detail** | Background suppression |
| **Dimensions (W x H x D)** | 7.7 mm x 27.5 mm x 13.5 mm |
| **Housing design (light emission)** | Rectangular |
| **Sensing range max.** | 1 mm ... 150 mm [1] |
| **Sensing range** | 18 mm ... 110 mm [1] |
| **Type of light** | Visible red light |
| **Light source** | PinPoint LED [2] |
| **Light spot size (distance)** | Ø 3.5 mm (50 mm) |
| **Wave length** | 640 nm |
| **Adjustment** | Potentiometer, 3 turns |
| **Special applications** | Detecting small objects |

[1] Object with 90% remission (based on standard white, DIN 5033).

[2] Average service life: 100,000 h at $T_U$ = +25 °C.

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## Mechanics/electronics

| | |
|---|---|
| **Supply voltage $U_B$** | 10 V DC ... 30 V DC [1] |
| **Ripple** | < 5 $V_{pp}$ [2] |
| **Current consumption** | 20 mA [3] |
| **Switching output** | PNP |
| **Switching mode** | Light/dark switching |
| **Output current $I_{max.}$** | ≤ 50 mA |
| **Response time** | < 0.5 ms [4] |
| **Switching frequency** | 1,000 Hz [5] |
| **Connection type** | Cable, 4-wire, 2 m [6] |
| **Cable material** | PVC |
| **Conductor cross section** | 0.09 mm² |
| **Cable diameter** | Ø 3 mm |
| **Circuit protection** | A [7]<br>B [8]<br>D [9] |
| **Housing material** | Plastic, ABS/PC |
| **Optics material** | Plastic, PMMA |
| **Enclosure rating** | IP67 |
| **Ambient operating temperature** | –25 °C ... +50 °C |
| **Ambient temperature, storage** | –40 °C ... +75 °C |
| **UL File No.** | NRKH.E181493 |

[1] Limit values.
[2] May not exceed or fall below $U_V$ 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.

## Safety-related parameters

| | |
|---|---|
| **$MTTF_D$** | 3,138 years |
| **$DC_{avg}$** | 0 % |

## Classifications

| | |
|---|---|
| **ECLASS 5.0** | 27270904 |
| **ECLASS 5.1.4** | 27270904 |
| **ECLASS 6.0** | 27270904 |
| **ECLASS 6.2** | 27270904 |
| **ECLASS 7.0** | 27270904 |
| **ECLASS 8.0** | 27270904 |
| **ECLASS 8.1** | 27270904 |

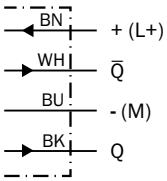
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| | |
|---|---|
| **ECLASS 9.0** | 27270904 |
| **ECLASS 10.0** | 27270904 |
| **ECLASS 11.0** | 27270904 |
| **ECLASS 12.0** | 27270903 |
| **ETIM 5.0** | EC002719 |
| **ETIM 6.0** | EC002719 |
| **ETIM 7.0** | EC002719 |
| **ETIM 8.0** | EC002719 |
| **UNSPSC 16.0901** | 39121528 |

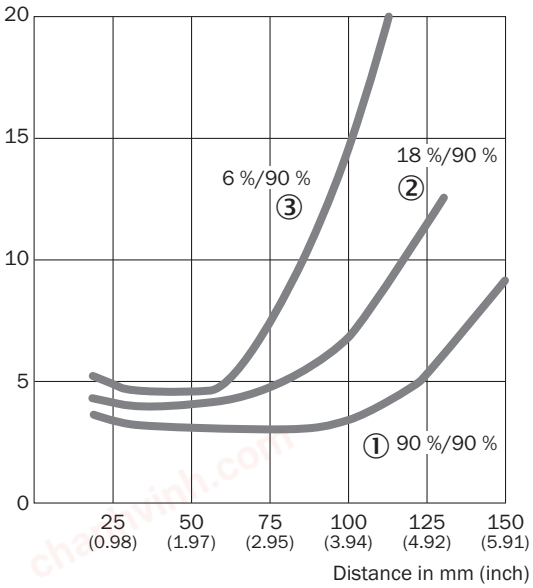
## Connection diagram

Cd-095




## Characteristic curve

WTB2S-2, 150 mm




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

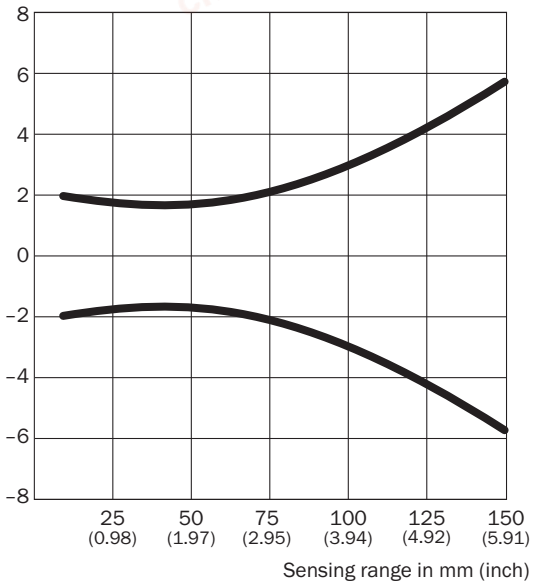
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## Light spot size

WTB2S-2, 150 mm

Spot diameter in mm (inch)

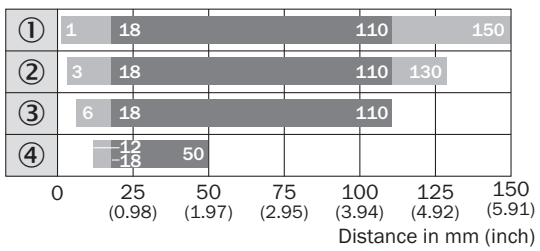



**Dimensions in mm (inch)**

| Sensing range | Spot diameter |
|---|---|
| **10 (0.39)** | 4.0 (0.16) |
| **20 (0.79)** | 3.7 (0.15) |
| **40 (1.57)** | 3.4 (0.13) |
| **80 (3.15)** | 4.4 (0.17) |
| **120 (4.72)** | 8.0 (0.31) |
| **150 (5.91)** | 11.5 (0.45) |

## Sensing range diagram

WTB2S-2, 150 mm




Sensing range  Sensing range max.

① Sensing range on white, 90% remission factor
② Sensing range on gray, 18% remission factor
③ Sensing range on black, 6% remission factor
④ Sensing range on ultra black, 1% remission

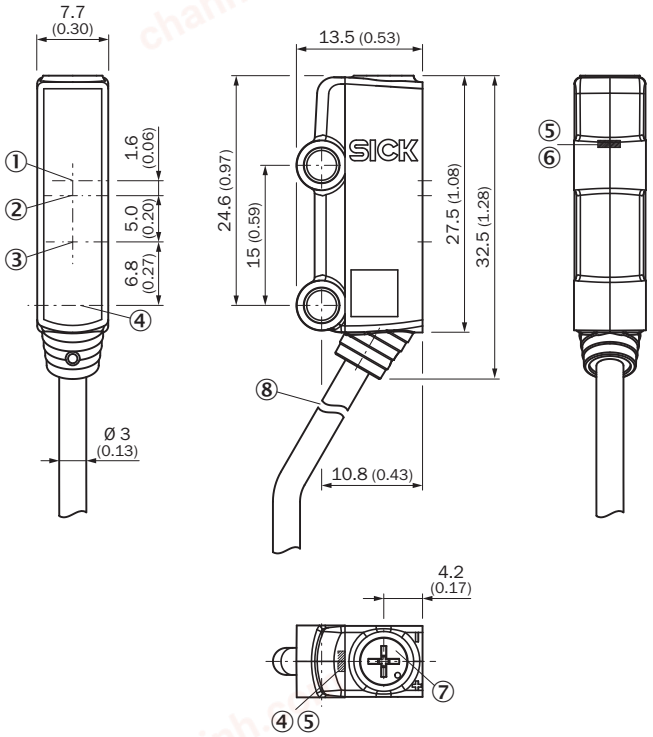
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# WTB2S-2P1151 | W2

MINIATURE PHOTOELECTRIC SENSORS

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

WTB2S-2, 150 mm




① Optical axis, receiver (sensing range min.)
② Optical axis, receiver (sensing range max.)
③ Optical axis, sender
④ Fixing hole ø 3.2 mm
⑤ LED indicator green: Supply voltage active
⑥ LED indicator yellow: Status of received light beam
⑦ Sensing range adjustment: potentiometer, 3 turns
⑧ Connection

## Recommended accessories

Other models and accessories ➜ www.sick.com/W2

| | Brief description | Type | Part no. |
|---|---|---|---|
| Plug connectors and cables | | | |
|  | • **Connection type head A:** Male connector, M8, 4-pin, straight<br>• **Description:** Unshielded<br>• **Connection systems:** Screw-type terminals<br>• **Permitted cross-section:** 0.14 mm² ... 0.5 mm² | STE-0804-G | 6037323 |

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# 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