



# WTB2SC-2P3244B05

W2S-2

MINIATURE PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ

### Ordering information

Type	Part no.
WTB2SC-2P3244B05	1120664

Other models and accessories → [www.sick.com/W2S-2](http://www.sick.com/W2S-2)



### Detailed technical data

#### Features

<b>Device type</b>	Photoelectric sensors
<b>Sensor/ detection principle</b>	Photoelectric proximity sensor, Background suppression
<b>Dimensions (W x H x D)</b>	7.7 mm x 21.8 mm x 13.5 mm
<b>Housing design (light emission)</b>	Rectangular
<b>Sensing range max.</b>	4 mm ... 110 mm <sup>1)</sup>
<b>Preset sensing range</b>	45 mm
<b>Sensing range</b>	10 mm ... 90 mm <sup>1)</sup>
<b>Type of light</b>	Visible red light
<b>Light source</b>	PinPoint LED <sup>2)</sup>
<b>Light spot size (distance)</b>	Ø 4.4 mm (60 mm)
<b>Wave length</b>	640 nm
<b>Adjustment</b>	IO-Link
<b>Pin 2 configuration</b>	External input, Teach-in input, Sender off input, Detection output, logic output
<b>Special applications</b>	Detecting small objects
<b>Special features</b>	Sensing range preset: 45 mm Pin 2 = deactivated Inverter 1 = activated

<sup>1)</sup> Object with 90 % reflectance (referred to standard white, DIN 5033).

<sup>2)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

## Mechanics/electronics

<b>Supply voltage</b>	10 V DC ... 30 V DC <sup>1)</sup>
<b>Ripple</b>	< 5 V <sub>pp</sub> <sup>2)</sup>
<b>Current consumption</b>	20 mA <sup>3)</sup>
<b>Switching output</b>	PNP <sup>4)</sup>
<b>Switching mode</b>	Light/dark switching <sup>4)</sup>
<b>Switching mode selector</b>	Programmable
<b>Output current I<sub>max.</sub></b>	≤ 50 mA
<b>Response time</b>	< 0.5 ms <sup>5)</sup>
<b>Response time Q/ on Pin 2</b>	300 μs ... 450 μs <sup>5) 6)</sup>
<b>Switching frequency</b>	1,000 Hz
<b>Switching frequency Q / to pin 2</b>	1,000 Hz <sup>6) 7)</sup>
<b>Connection type</b>	Cable with M8 male connector, 4-pin, 200 mm <sup>8)</sup>
<b>Cable material</b>	PVC
<b>Cable diameter</b>	Ø 3 mm
<b>Circuit protection</b>	A <sup>9)</sup> B <sup>10)</sup> D <sup>11)</sup>
<b>Protection class</b>	III
<b>Housing material</b>	Plastic, ABS/PC
<b>Optics material</b>	Plastic, PMMA
<b>Enclosure rating</b>	IP67
<b>Description</b>	IO-Link
<b>Ambient operating temperature</b>	-25 °C ... +50 °C
<b>Ambient temperature, storage</b>	-40 °C ... +75 °C
<b>UL File No.</b>	NRKH.E181493
<b>Repeatability Q/ on Pin 2:</b>	150 μs <sup>6)</sup>

<sup>1)</sup> Limit values.

<sup>2)</sup> May not exceed or fall below U<sub>v</sub> tolerances.

<sup>3)</sup> Without load.

<sup>4)</sup> Parametrisable via IO-Link.

<sup>5)</sup> Signal transit time with resistive load.

<sup>6)</sup> Valid for Q \ on Pin2, if configured with software.

<sup>7)</sup> With light/dark ratio 1:1.

<sup>8)</sup> Do not bend below 0 °C.

<sup>9)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>10)</sup> B = output reverse-polarity protected.

<sup>11)</sup> D = outputs overcurrent and short-circuit protected.

## Safety-related parameters

<b>MTTF<sub>D</sub></b>	1,547 years
<b>DC<sub>avg</sub></b>	0 %

## Communication interface

<b>Communication interface</b>	IO-Link V1.1
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<b>Communication Interface detail</b>	COM2 (38,4 kBaud)
<b>Cycle time</b>	2.3 ms
<b>Process data length</b>	16 Bit
<b>Process data structure</b>	Bit 0 = switching signal Q <sub>L1</sub> Bit 1 = switching signal Q <sub>L2</sub> Bit 2 ... 15 = empty
<b>VendorID</b>	26
<b>DeviceID HEX</b>	0x800121
<b>DeviceID DEC</b>	8388897

### Smart Task

<b>Smart Task name</b>	Base logics
<b>Logic function</b>	Direct AND OR WINDOW Hysteresis
<b>Timer function</b>	Deactivated On delay Off delay ON and OFF delay Impulse (one shot)
<b>Inverter</b>	Yes
<b>Switching frequency</b>	SIO Direct: 1000 Hz <sup>1)</sup> SIO Logic: 1000 Hz <sup>2)</sup> IOL: 900 Hz <sup>3)</sup>
<b>Response time</b>	SIO Direct: 300 µs ... 450 µs <sup>1)</sup> SIO Logic: 500 µs ... 600 µs <sup>2)</sup> IOL: 500 µs ... 900 µs <sup>3)</sup>
<b>Repeatability</b>	SIO Direct: 150 µs <sup>1)</sup> SIO Logic: 150 µs <sup>2)</sup> IOL: 400 µs <sup>3)</sup>
<b>Switching signal</b>	
Switching signal Q <sub>L1</sub>	Switching output
Switching signal Q <sub>L2</sub>	Switching output

<sup>1)</sup> SIO Direct: sensor operation in standard I/O mode without IO-Link communication and without using internal sensor logic or time parameters (set to "direct"/"deactivated").

<sup>2)</sup> SIO Logic: Sensor operation in standard I/O mode without IO-Link communication. Sensor-internal logic or timing parameters plus Automation Functions used.

<sup>3)</sup> IOL: Sensor operation with full IO-Link communication and usage of logic, timing and Automation Function parameters.

### Diagnosis

<b>Device status</b>	Yes
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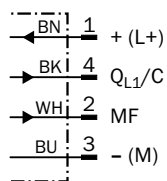
### Classifications

<b>ECl@ss 5.0</b>	27270904
<b>ECl@ss 5.1.4</b>	27270904
<b>ECl@ss 6.0</b>	27270904
<b>ECl@ss 6.2</b>	27270904
<b>ECl@ss 7.0</b>	27270904
<b>ECl@ss 8.0</b>	27270904

<b>ECI@ss 8.1</b>	27270904
<b>ECI@ss 9.0</b>	27270904
<b>ECI@ss 10.0</b>	27270904
<b>ECI@ss 11.0</b>	27270904
<b>ETIM 5.0</b>	EC002719
<b>ETIM 6.0</b>	EC002719
<b>ETIM 7.0</b>	EC002719
<b>ETIM 8.0</b>	EC002719
<b>UNSPSC 16.0901</b>	39121528

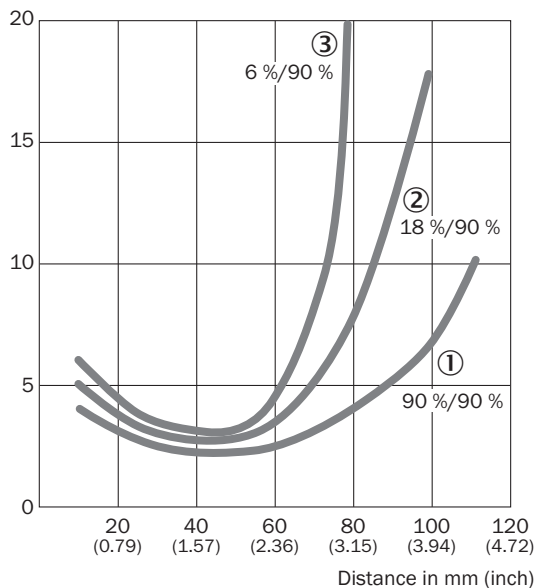
### Connection diagram

Cd-367



### Characteristic curve

WTB2S-2, 110 mm

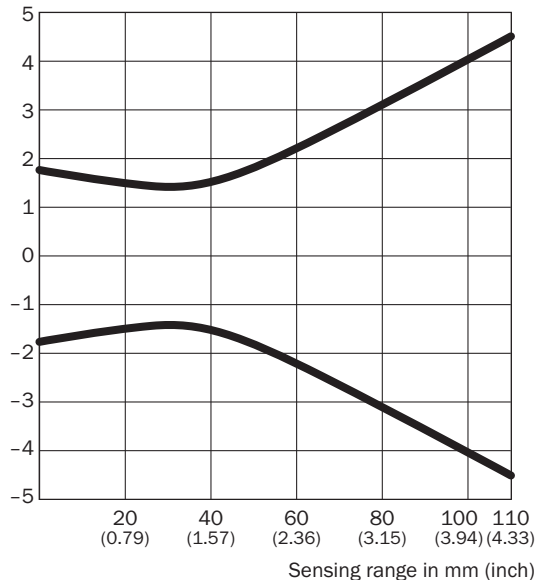


- ① Sensing range on white, 90% remission
- ② Sensing range on gray, 18% remission
- ③ Sensing range on black, 6% remission

### Light spot size

WTB2S-2, 110 mm

Spot diameter in mm (inch)

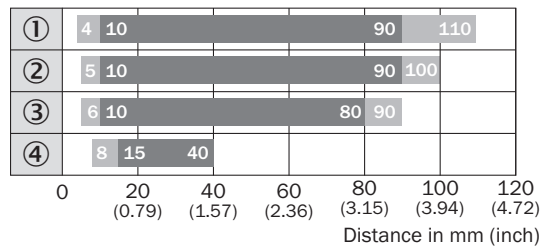


### Dimensions in mm (inch)

Sensing range	Spot diameter
<b>0</b> <b>(0.00)</b>	3.5 (0.14)
<b>20</b> <b>(0.79)</b>	3.0 (0.12)
<b>40</b> <b>(1.57)</b>	3.0 (0.12)
<b>60</b> <b>(2.36)</b>	4.4 (0.17)
<b>100</b> <b>(3.94)</b>	8.0 (0.31)
<b>110</b> <b>(4.33)</b>	9.0 (0.35)

### Sensing range diagram

WTB2S-2, 110 mm

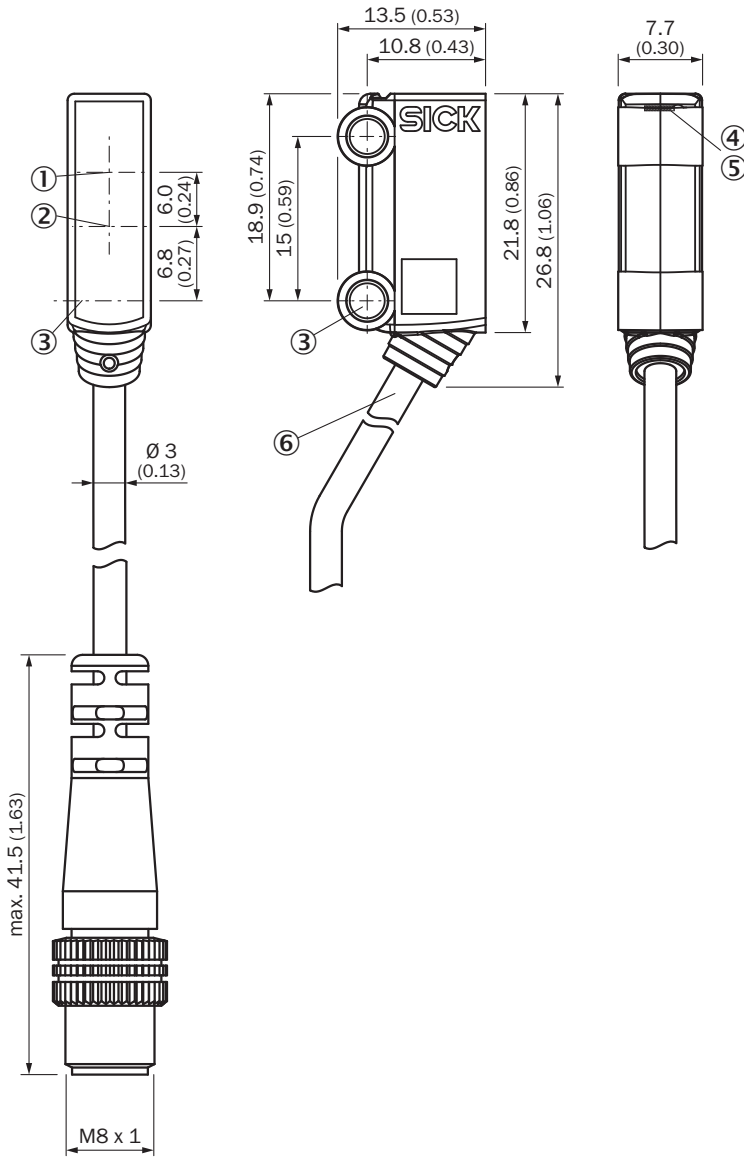


■ Sensing range    ■ Sensing range max.

- 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 ultra black, 1% remission

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

WTB2S-2, 66 mm, 90 mm, 110 mm



- ① Optical axis, receiver
- ② Optical axis, sender
- ③ Middle axis fixing hole  $\varnothing$  3.2 mm
- ④ LED indicator green: Supply voltage active
- ⑤ LED indicator yellow: Status of received light beam
- ⑥ Connection

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