



WTB2SC-2P3274A00

W2S-2

MINIATURE PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ

### Ordering information

Type	Part no.
WTB2SC-2P3274A00	1063646

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



### Detailed technical data

#### Features

<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 ... 90 mm <sup>1)</sup>
<b>Preset sensing range</b>	45 mm
<b>Sensing range</b>	10 mm ... 70 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>	2.2 mm x 9 mm (45 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, Detecting perforated objects, Detecting uneven, shiny objects, Detecting objects wrapped in film, Detecting objects with position tolerances
<b>IO-Link functions</b>	Standard functions
<b>Special features</b>	Line-shaped light spot

<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>	$\leq 5 V_{pp}$ <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 <math>I_{max}</math></b>	< 50 mA
<b>Response time</b>	< 0.5 ms <sup>5)</sup>
<b>Response time Q/ on Pin 2</b>	300 $\mu$ s ... 450 $\mu$ s <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>	$\varnothing$ 3 mm
<b>Circuit protection</b>	A <sup>9)</sup> B <sup>10)</sup> D <sup>11)</sup>
<b>Protection class</b>	III
<b>IO-Link</b>	✓
<b>Transmission rate</b>	COM2
<b>Housing material</b>	Plastic, ABS/PC
<b>Optics material</b>	Plastic, PMMA
<b>Enclosure rating</b>	IP67
<b>Special feature</b>	Line-shaped light spot
<b>Description</b>	IO-Link
<b>Ambient operating temperature</b>	-25 °C ... +50 °C
<b>Ambient storage temperature</b>	-40 °C ... +75 °C
<b>UL File No.</b>	NRKH.E181493
<b>Repeatability Q/ on Pin 2:</b>	150 $\mu$ s <sup>6)</sup>

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

<sup>2)</sup> May not exceed or fall below  $U_v$  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 =  $V_S$  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
<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 Q<sub>L1</sub></b>	Switching output
<b>Switching signal Q<sub>L2</sub></b>	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.

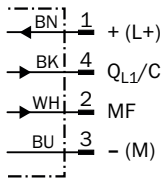
### Classifications

<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>ECI@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>UNSPSC 16.0901</b>	39121528

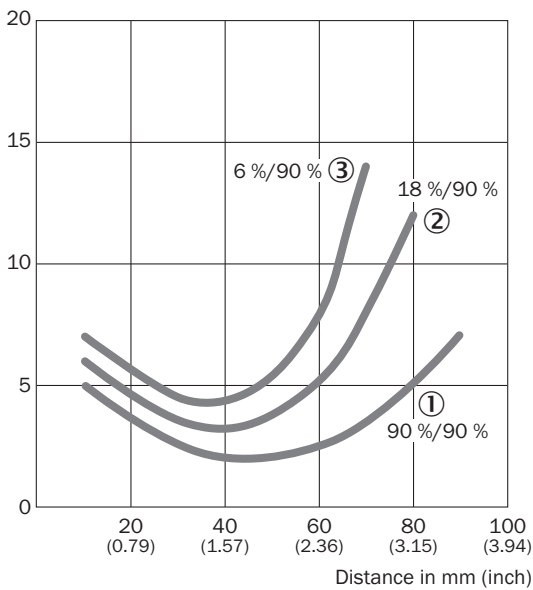
### Connection diagram

Cd-367



### Characteristic curve

WTB2S-2, 90 mm, line-shaped light spot

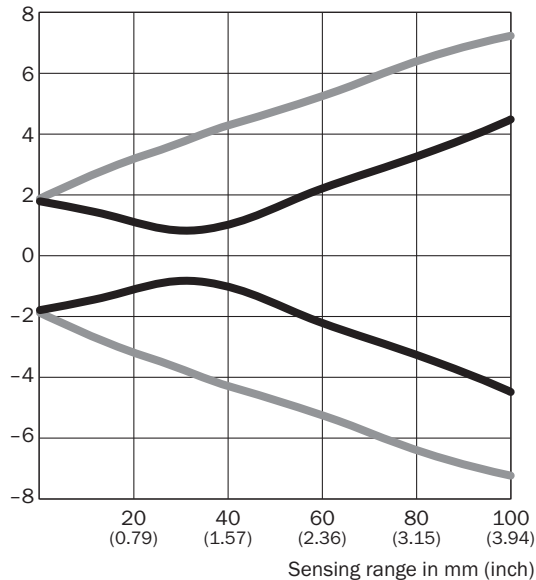


- ① Sensing range on white, 90% remission
- ② Sensing range on gray, 18% remission
- ③ Sensing range on black, 6% remission

### Light spot size

WTB2S-2, 90 mm, line-shaped light spot

Spot diameter in mm (inch)



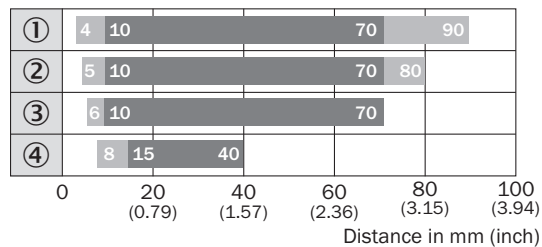
— Vertical  
 — Horizontal

### Dimensions in mm (inch)

Sensing range	Spot diameter Vertical	Spot diameter Horizontal
<b>0</b> (0.00)	3.5 (0.14)	3.8 (0.15)
<b>10</b> (0.39)	3.0 (0.12)	5.2 (0.20)
<b>20</b> (0.79)	3.3 (0.13)	6.4 (0.25)
<b>30</b> (1.18)	1.8 (0.07)	7.4 (0.29)
<b>40</b> (1.57)	2.0 (0.08)	8.6 (0.34)
<b>60</b> (2.36)	4.4 (0.17)	10.5 (0.41)
<b>80</b> (3.15)	6.5 (0.26)	12.8 (0.50)
<b>100</b> (3.94)	9.0 (0.35)	14.5 (0.57)

### Sensing range diagram

WTB2S-2, 90 mm, line-shaped light spot

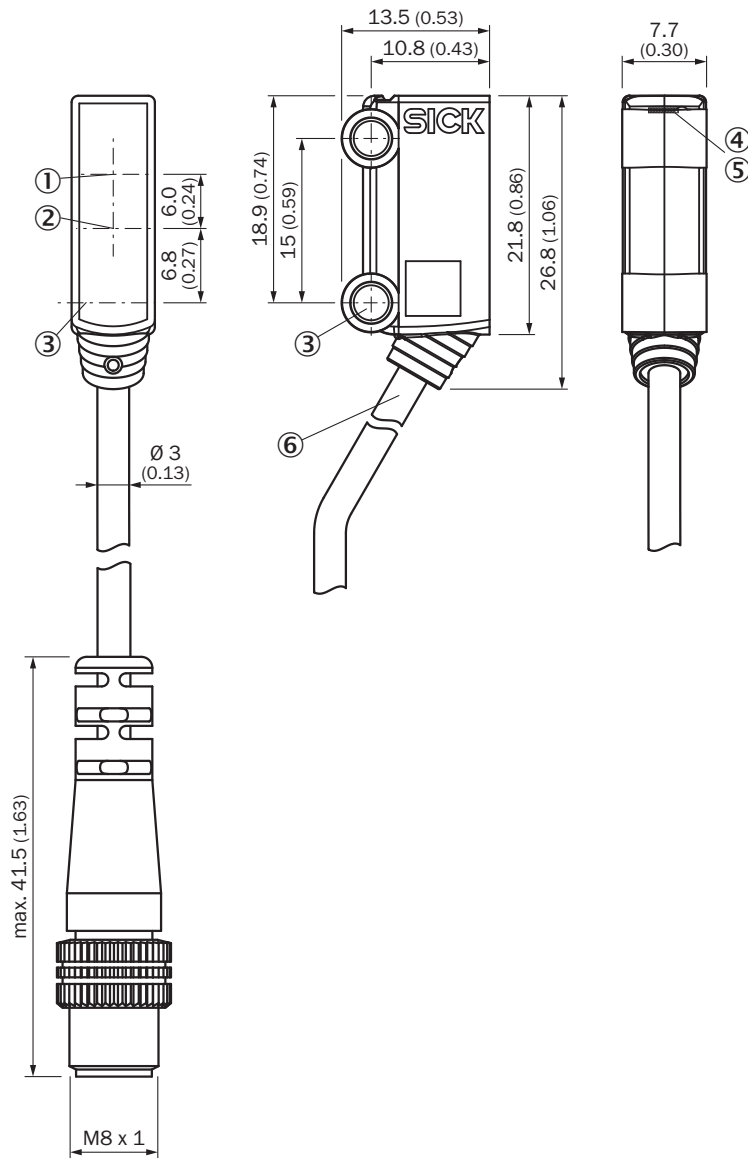


■ Sensing range    ■ Sensing range max.

- 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

### Recommended accessories

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

	Brief description	Type	Part no.
Plug connectors and cables			
	Head A: female connector, M8, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF8U14-050VA3XLEAX	2095889
	Head A: male connector, M8, 4-pin, straight Head B: - Cable: unshielded	STE-0804-G	6037323

### Recommended services

Additional services → [www.sick.com/W2S-2](http://www.sick.com/W2S-2)

	Type	Part no.
Function Block Factory		
<ul style="list-style-type: none"> <li><b>Description:</b> The Function Block Factory supports common programmable logic controllers (PLCs) from various manufacturers, such as Siemens, Beckhoff, Rockwell Automation and B&amp;R. More information on the FBF can be found <a _blank"="" href="https://fbf.cloud.sick.com target=">here</a>.</li> </ul>	Function Block Factory	On request

## 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)