



WTB4SC-3P5232HA00

W4

MINIATURE PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ

### Ordering information

Type	Part no.
WTB4SC-3P5232HA00	1097836

Other models and accessories → [www.sick.com/W4](http://www.sick.com/W4)



### Detailed technical data

#### Features

<b>Functional principle</b>	Photoelectric proximity sensor
<b>Functional principle detail</b>	Background suppression
<b>Sensing range max.</b>	4 mm ... 180 mm <sup>1)</sup>
<b>Sensing range</b>	10 mm ... 180 mm <sup>1)</sup>
<b>Emitted beam</b>	
Light source	PinPoint LED <sup>2)</sup>
Type of light	Visible red light
Light spot size (distance)	Ø 2.5 mm (50 mm)
<b>Key LED figures</b>	
Wave length	650 nm
<b>Adjustment</b>	Single teach-in button
<b>Special applications</b>	Hygienic and washdown zones
<b>Housing design</b>	Hygiene
<b>Pin 2 configuration</b>	External input, Teach-in input, Sender off input, Detection output, logic output

<sup>1)</sup> Object with 90% remission (based on standard white, DIN 5033).

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

## Safety-related parameters

<b>MTTF<sub>D</sub></b>	868 years
<b>DC<sub>avg</sub></b>	0 %

## Communication interface

<b>IO-Link</b>	✓, COM2 (38,4 kBaud)
Data transmission rate	COM2 (38,4 kBaud)
Cycle time	2.3 ms
Process data length	16 Bit
Process data structure	Bit 0 = switching signal Q <sub>L1</sub> Bit 1 = switching signal Q <sub>L2</sub> Bit 2 ... 15 = empty
VendorID	26
DeviceID HEX	0x8001E9
DeviceID DEC	8389097

## Electrical data

<b>Supply voltage U<sub>B</sub></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>	30 mA <sup>3)</sup>
<b>Protection class</b>	III
<b>Digital output</b>	
Type	PNP <sup>4)</sup>
Switching mode	Light/dark switching
Output current I <sub>max.</sub>	≤ 100 mA
Response time	< 0.5 ms <sup>5)</sup>
Repeatability (response time)	150 μs <sup>6)</sup>
Switching frequency	1,000 Hz <sup>7)</sup>
<b>Output function</b>	Complementary
<b>Circuit protection</b>	A, B, C <sup>10) 8) 9)</sup>
<b>Response time Q/ on Pin 2</b>	300 μs ... 450 μs <sup>5) 6)</sup>
<b>Switching frequency Q / to pin 2</b>	1,000 Hz <sup>11)</sup>
<b>Special feature</b>	D12 adapter shaft

<sup>1)</sup> Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A.

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

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

<sup>4)</sup> Pin 4: This switching output must not be connected to another output.

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

<sup>9)</sup> B = inputs and output reverse-polarity protected.

<sup>10)</sup> C = interference suppression.

<sup>11)</sup> With light / dark ratio 1:1, valid for Q \ on Pin2, if configured with software.

Mechanical data

<b>Housing</b>	Rectangular
<b>Design detail</b>	Slim
<b>Dimensions (W x H x D)</b>	15.25 mm x 63.2 mm x 22.15 mm
<b>Connection</b>	Male connector M8, 4-pin <sup>1)</sup>
<b>Material</b>	
	Housing Stainless steel, Stainless steel V4A (1.4404, 316L)
	Front screen Plastic, PMMA
<b>Weight</b>	140 g

<sup>1)</sup> Max. tightening torque: 0.6 Nm.

Ambient data

<b>Enclosure rating</b>	IP66 IP67 IP68 IP69K
<b>Ambient operating temperature</b>	-30 °C ... +70 °C <sup>1)</sup> -30 °C ... +60 °C
<b>Ambient temperature, storage</b>	-30 °C ... +75 °C
<b>UL File No.</b>	FDA, UL No. NRKH.E181493 & cUL No. NRKH7.E181493

<sup>1)</sup> At UV ≤ 24 V and IA < 30 mA.

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 SIO Logic: 600 Hz IOL: 450 Hz
<b>Response time</b>	SIO Direct: 300 µs ... 450 µs <sup>1)</sup> SIO Logic: 750 µs ... 900 µs <sup>2)</sup> IOL: 800 µs ... 1200 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

<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.

Switching signal Q <sub>L2</sub>	Switching output
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- 1) 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").
- 2) SIO Logic: Sensor operation in standard I/O mode without IO-Link communication. Sensor-internal logic or timing parameters plus Automation Functions used.
- 3) IOL: Sensor operation with full IO-Link communication and usage of logic, timing and Automation Function parameters.

### Diagnosis

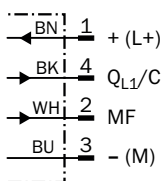
Device status	Yes
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### Classifications

<b>ECLASS 5.0</b>	27270904
<b>ECLASS 5.1.4</b>	27270904
<b>ECLASS 6.0</b>	27270904
<b>ECLASS 6.2</b>	27270904
<b>ECLASS 7.0</b>	27270904
<b>ECLASS 8.0</b>	27270904
<b>ECLASS 8.1</b>	27270904
<b>ECLASS 9.0</b>	27270904
<b>ECLASS 10.0</b>	27270904
<b>ECLASS 11.0</b>	27270904
<b>ECLASS 12.0</b>	27270903
<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

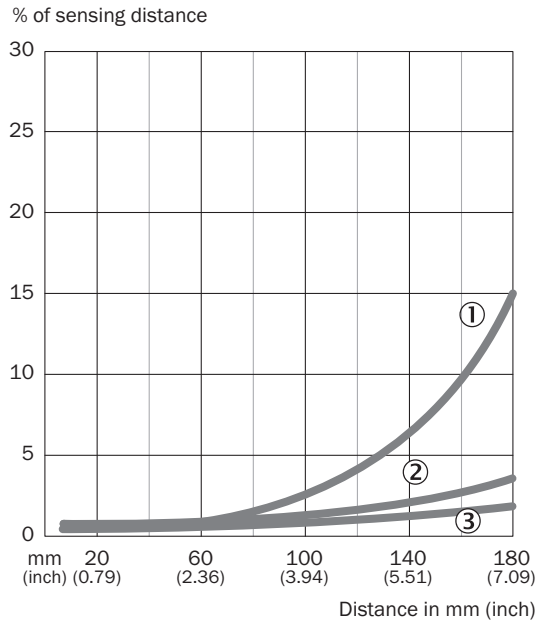
### Connection diagram

Cd-367



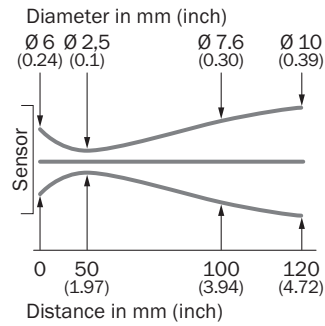
**Characteristic curve**

WTB4S-3, 180 mm



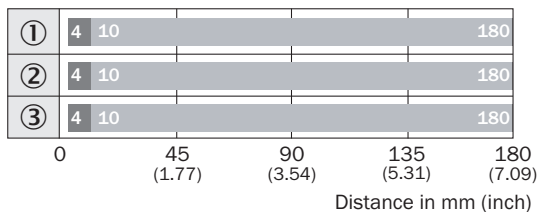
- ① Sensing range on black, 6% remission factor
- ② Sensing range on gray, 18% remission factor
- ③ Sensing range on white, 90% remission factor

**Light spot size**



### Sensing range diagram

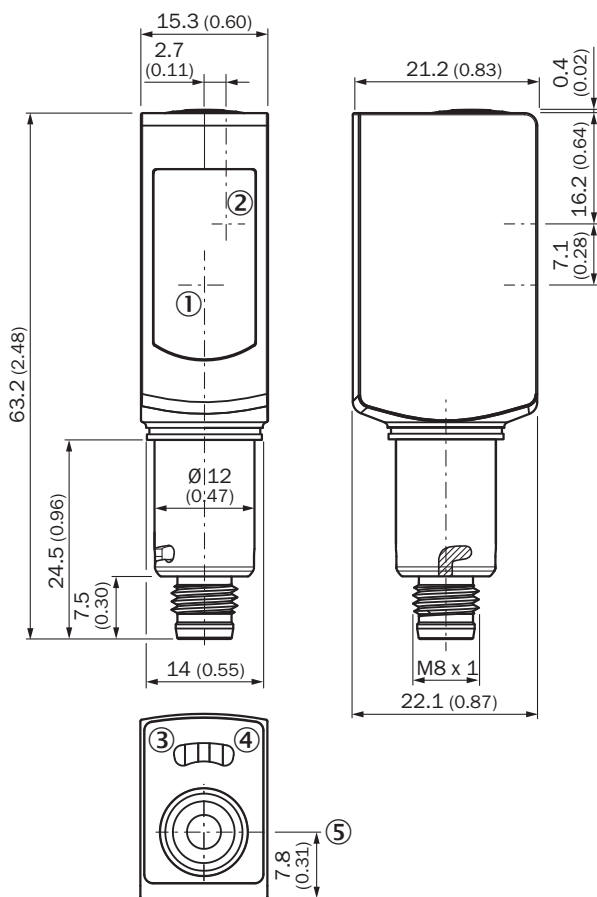
WTB4S-3, 180 mm



■ Sensing range max.    ■ Sensing range

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



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



- ① Center of optical axis, sender
- ② Center of optical axis, receiver
- ③ LED indicator yellow: Status of received light beam
- ④ LED indicator green: Supply voltage active
- ⑤ Single teach-in button

### Recommended accessories

Other models and accessories → [www.sick.com/W4](http://www.sick.com/W4)

	Brief description	Type	Part no.
Other mounting accessories			
	Diameter 18 mm x 100 mm for W4S-3 Inox hygiene. Hygienic integration without holes and brackets. Cable run inside tube	BEF-MR18G-NA	4065853
Others			
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M8, 4-pin, straight</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 5 m, 4-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Connection systems:</b> Flying leads</li> <li>• <b>Note:</b> This product is generally resistant to chemical cleaning agents (see ECOLAB). Please do not use cleaning agents of any other Kind., Not resistant against lactic acid &amp; hydrogen peroxide (H2O2)</li> <li>• <b>Application:</b> Hygienic and washdown zones</li> </ul>	DOL-0804-G05MNI	6059194

### Recommended services

Additional services → [www.sick.com/W4](http://www.sick.com/W4)

	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 href="https://fbf.cloud.sick.com target='_blank'">here</a>.</li> <li>• <b>Note:</b> You can configure your function block at <a href="https://fbf.cloud.sick.com target='_blank'">Function Block Factory</a>. As a login please use your SICK ID.</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)