



**WL4SC-3P3232B02**

W4

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



## Ordering information

Type	part no.
WL4SC-3P3232B02	1104554

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

Illustration may differ



## Detailed technical data

## Features

<b>Functional principle</b>	Photoelectric retro-reflective sensor	
<b>Sensing range max.</b>	0 m ... 5 m <sup>1)</sup>	
<b>Sensing range</b>	0 m ... 3 m <sup>1)</sup>	
<b>Polarisation filters</b>	Yes	
<b>Emitted beam</b>	Light source	PinPoint LED <sup>2)</sup>
	Type of light	Visible red light
	Light spot size (distance)	Ø 45 mm (1.5 m)
<b>Key LED figures</b>		
	Wave length	650 nm
<b>Adjustment</b>	IO-Link, Single teach-in button	
<b>Pin 2 configuration</b>	External input, Teach-in input, Sender off input, Detection output, logic output, Device contamination alarm output	

<sup>1)</sup> Reflector PL80A.

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

## Safety-related parameters

<b>MTTF<sub>D</sub></b>	1,222 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 $Q_{L1}$
	Bit 1 = switching signal $Q_{L2}$
	Bit 2 ... 15 = empty
VendorID	26
DeviceID HEX	0x800127
DeviceID DEC	8388903

## Electronics

<b>Supply voltage <math>U_B</math></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>Protection class</b>	III
<b>Digital output</b>	
Type	PNP <sup>4)</sup>
Switching mode	Light/dark switching
Output current $I_{max.}$	≤ 100 mA
Repeatability (response time)	150 µs <sup>5)</sup>
Switching frequency	1,000 Hz
<b>Circuit protection</b>	
	A <sup>6)</sup>
	B <sup>7)</sup>
	C <sup>8)</sup>
	D <sup>9)</sup>
<b>Response time <math>Q_1</math> on Pin 2</b>	300 µs ... 450 µs <sup>10) 5)</sup>
<b>Switching frequency <math>Q_1</math> to pin 2</b>	1,000 Hz <sup>11)</sup>

<sup>1)</sup> Limit values when operated in short-circuit protected network: max. 8 A.<sup>2)</sup> May not fall below or exceed  $U_y$  tolerances.<sup>3)</sup> Without load.<sup>4)</sup> Pin 4: This switching output must not be connected to another output.<sup>5)</sup> Valid for  $Q_1$  on Pin2, if configured with software.<sup>6)</sup> A =  $V_S$  connections reverse-polarity protected.<sup>7)</sup> B = inputs and output reverse-polarity protected.<sup>8)</sup> C = interference suppression.<sup>9)</sup> D = outputs overcurrent and short-circuit protected.<sup>10)</sup> Signal transit time with resistive load.<sup>11)</sup> With light / dark ratio 1:1, valid for  $Q_1$  on Pin2, if configured with software.

## Mechanics

<b>Housing</b>	Rectangular
<b>Design detail</b>	Slim

<sup>1)</sup> Do not bend below 0 °C.

<b>Dimensions (W x H x D)</b>	12.2 mm x 41.8 mm x 17.3 mm
<b>Connection</b>	Cable with M8 male connector, 4-pin <sup>1)</sup>
<b>Connection detail</b>	Conductor size 0.14 mm <sup>2</sup>
	Cable diameter Ø 3.4 mm
	Length of cable (L) 200 mm <sup>1)</sup>
<b>Material</b>	Housing Plastic, ABS
	Front screen Plastic, PMMA
	Cable Plastic, PVC
<b>Weight</b>	30 g

<sup>1)</sup> Do not bend below 0 °C.

### Ambient data

<b>Enclosure rating</b>	IP67 IP66
<b>Ambient operating temperature</b>	-40 °C ... +60 °C
<b>Ambient temperature, storage</b>	-40 °C ... +60 °C
<b>UL File No.</b>	NRKH.E181493 & NRKH7.E181493

### Smart Task

<b>Smart Task name</b>	Base logics
<b>Logic function</b>	Direct AND OR WINDOW Hysteresis
<b>Timer function</b>	Deactivated Switch-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: 1000 Hz IOL: 900 Hz
<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 signal
	Switching signal Q <sub>L2</sub> Switching signal

<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
<b>Quality of teach</b>	Yes
<b>Quality of run</b>	Yes, Contamination display

## Certificates

<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>Moroccan declaration of conformity</b>	✓
<b>China-RoHS</b>	✓
<b>ECOLAB certificate</b>	✓
<b>cULus certificate</b>	✓
<b>IO-Link</b>	✓
<b>Photobiological safety (DIN EN 62471) certificate</b>	✓

## Classifications

<b>ECLASS 5.0</b>	27270902
<b>ECLASS 5.1.4</b>	27270902
<b>ECLASS 6.0</b>	27270902
<b>ECLASS 6.2</b>	27270902
<b>ECLASS 7.0</b>	27270902
<b>ECLASS 8.0</b>	27270902
<b>ECLASS 8.1</b>	27270902
<b>ECLASS 9.0</b>	27270902
<b>ECLASS 10.0</b>	27270902
<b>ECLASS 11.0</b>	27270902
<b>ECLASS 12.0</b>	27270902
<b>ETIM 5.0</b>	EC002717
<b>ETIM 6.0</b>	EC002717
<b>ETIM 7.0</b>	EC002717
<b>ETIM 8.0</b>	EC002717
<b>UNSPSC 16.0901</b>	39121528

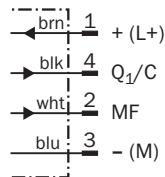
## Connection type



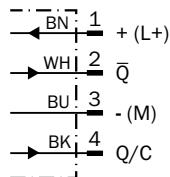
## Connection diagram Cd-367



## Connection diagram Cd-273

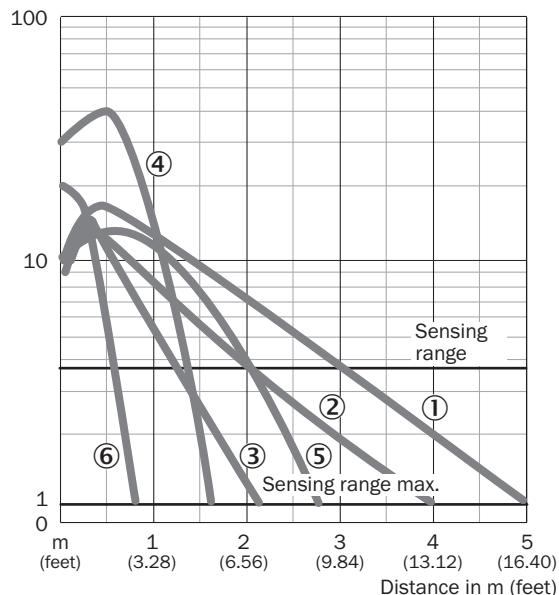


## Connection diagram Cd-098



## Characteristic curve WL4S-3, WLG4S-3, 5 m

Operating reserve

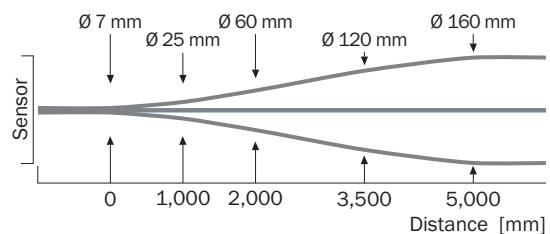


① Reflector PL80A

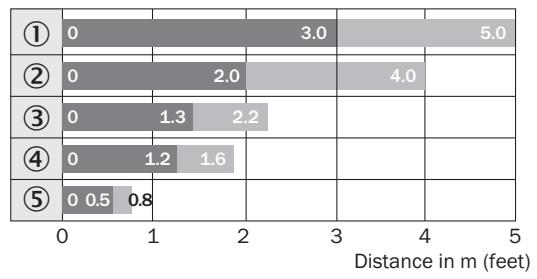
② Reflector PL40A

- ③ Reflector PL20A
- ④ PL10F reflector
- ⑤ Reflector P250 CHEM
- ⑥ Reflective tape REF-IRF-56

### Light spot size



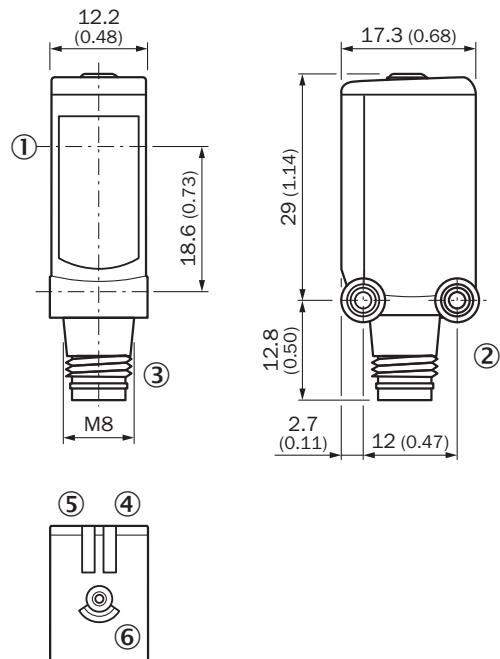
### Sensing range diagram WL4S-3, WLG4S-3, 5 m



■ Sensing range      ■ Sensing range max.

- ① Reflector PL80A
- ② Reflector PL40A
- ③ Reflector PL20A
- ④ PL10F reflector
- ⑤ Reflective tape REF-IRF-56

## Dimensional drawing WL4S-3, WLG4S-3, single teach-in button



Dimensions in mm (inch)

- ① Center of optical axis
- ② Threaded mounting hole M3
- ③ Connection
- ④ LED indicator green: Supply voltage active
- ⑤ Orange LED indicator: status of received light beam
- ⑥ Teach-in button

## Recommended accessories

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

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"> <li>• <b>Description:</b> Mounting bracket for wall mounting</li> <li>• <b>Material:</b> Stainless steel</li> <li>• <b>Details:</b> Stainless steel 1.4571</li> <li>• <b>Items supplied:</b> Mounting hardware included</li> <li>• <b>Suitable for:</b> W4S, W4F, W4S</li> </ul>	BEF-W4-A	2051628

	Brief description	Type	part no.
reflectors and optics			
	<ul style="list-style-type: none"><li><b>Description:</b> Fine triple reflector, screw connection, suitable for laser sensors</li><li><b>Dimensions:</b> 20 mm 32 mm</li><li><b>Ambient operating temperature:</b> -30 °C ... +65 °C</li></ul>	PL10F	5311210
connectors and cables			
	<ul style="list-style-type: none"><li><b>Connection type head A:</b> Female connector, M8, 4-pin, straight, A-coded</li><li><b>Connection type head B:</b> Male connector, M12, 4-pin, straight, A-coded</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>Application:</b> Zones with chemicals, Uncontaminated zones</li></ul>	YF8U14-050VA3M2A14	2096609
	<ul style="list-style-type: none"><li><b>Connection type head A:</b> Female connector, M8, 4-pin, straight, A-coded</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>Application:</b> Zones with chemicals, Uncontaminated zones</li></ul>	YF8U14-050VA3XLEAX	2095889
	<ul style="list-style-type: none"><li><b>Connection type head A:</b> Male connector, M12, 4-pin, A-coded</li><li><b>Connection type head B:</b> Female connector, M8, 4-pin, A-coded</li><li><b>Connection type head C:</b> Female connector, M8, 4-pin, A-coded</li><li><b>Cable:</b> 0.11 m, PVC</li><li><b>Description:</b> Unshielded</li></ul>	SYL-8204-G0M11-X2	6055012

## 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)