



## W4S-3

Photoelectric sensor family with best-in-class performance

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



### Technical data overview

<b>Dimensions (W x H x D)</b>	12.2 mm x 41.8 mm x 17.3 mm
<b>Sensing range max.</b>	4 mm ... 180 mm <sup>1)</sup> 4 mm ... 120 mm <sup>1)</sup> 4 mm ... 150 mm <sup>1)</sup> 4 mm ... 500 mm <sup>1)</sup> 100 mm <sup>1)</sup> 4 mm ... 280 mm <sup>1)</sup> 8 mm ... 120 mm <sup>1)</sup> 4 mm ... 100 mm <sup>1)</sup> 3 mm ... 280 mm <sup>1)</sup> 3 mm ... 120 mm <sup>1)</sup> 30 mm ... 100 mm <sup>1)</sup> 3 mm ... 100 mm <sup>1)</sup> 0 m ... 4 m <sup>2)</sup> 0 m ... 5 m <sup>2)</sup> 0 m ... 5 m 0 m ... 2 m
<b>Light source</b>	PinPoint LED
<b>Type of light</b>	Visible red light
<b>Enclosure rating</b>	IP67 IP66
<b>Housing material</b>	Plastic ABS
<b>Adjustment</b>	Potentiometer, 5 turns Single teach-in button Cable Fix Cable <sup>3)</sup> IO-Link None Potentiometer

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

<sup>2)</sup> Reflector PL80A.

<sup>3)</sup> External teach-in: pulse > 2 s with voltage Uv with PNP and M with NPN.

### Product description

The W4S-3 family of photoelectric sensors offers best-in-class performance in a slim housing design. Universal use of the latest ASIC and PinPoint LED technologies provide maximum reliability in the detection of all objects, including transparent and shiny objects like blisters, e-cards and aluminum cans. Optical axes on the flat side enable simple, space-saving integration in the machine environment - even without separate mounting brackets.

### At a glance

- Best background suppression sensor in its class
- Universal use of PinPoint LED technology in all models
- BGS proximity sensor with laser-like light spot for precise detection tasks
- Reliable setting via 5-turn potentiometer, teach-in pushbutton, teach-in via cable or IO-Link
- Flexible sensor settings, monitoring, advanced diagnostics, and visualization thanks to IO-Link

## Your benefits

- Application versatility due to reliable detection of shiny, transparent or jet-black objects
- Very quick and easy alignment due to the highly visible, intense PinPoint LED light spot
- Rugged mounting system with M3 threaded metal inserts reduces maintenance costs due to a long service life
- Background suppression sensors with a laser-like light spot reduce costs and installation of additional protective measures by replacing laser sensors
- IO-Link provides easy data access from the PLC
- Quick and easy configuration
- Quick and easy integration using function blocks

## Ordering information

Other models and accessories → [www.sick.com/W4S-3](http://www.sick.com/W4S-3)

- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** Background suppression
- **Light source:** PinPoint LED
- **Voltage type:** DC
- **Switching mode:** Light switching
- **Type of light:** visible red light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.	
30 mm ... 100 mm	NPN	Potentiometer	Cable, 4-wire, 2.5 m <sup>1)</sup>	WTB4S-3N1061S14	1095761	
3 mm ... 120 mm	PNP	None	Cable with M8 male connector, 4-pin, 100 mm <sup>1)</sup>	WTB4S-3P3260S02	1044275	
4 mm ... 120 mm	NPN	Potentiometer	Cable, 3-wire, 2 m <sup>1)</sup>	WTB4S-3N1331	1042062	
			Cable, 4-wire, 2 m <sup>1)</sup>	WTB4S-3W1331	1050573	
			Connector M8, 3-pin	WTB4S-3N2131	1042061	
		Teach-in button	Cable with connector M8, 3-pin, 100 mm <sup>1)</sup>	WTB4S-3N3132	1074980	
			Cable, 3-wire, 2 m <sup>1)</sup>	WTB4S-3N1332	1042055	
			Cable, 4-wire, 2 m <sup>1)</sup>	WTB4S-3N1132	1051563	
		Cable	Cable, 4-wire, 2 m <sup>1)</sup>	WTB4S-3N1135	1047127	
			Cable, Teach-in button	Cable, 4-wire, 2 m <sup>1)</sup>	WTB4S-3N1134	1042052
			PNP	Potentiometer	Cable with connector M8, 3-pin, 100 mm <sup>1)</sup>	WTB4S-3P3131
	Cable, 3-wire, 2 m <sup>1)</sup>	WTB4S-3P1331			1042059	
	Connector M8, 3-pin	WTB4S-3P2131			1042056	
	Teach-in button	Cable with connector M8, 3-pin, 100 mm <sup>1)</sup>		WTB4S-3P3132	1042054	
		Cable, 3-wire, 2 m <sup>1)</sup>		WTB4S-3P1332	1052284	
		Connector M8, 3-pin		WTB4S-3P2132	1042053	
	Cable, Teach-in button	Cable with M8 male connector, 4-pin, 100 mm <sup>1)</sup>	WTB4S-3P3234	1042051		
Male connector M8, 4-pin		WTB4S-3P2234	1042050			
		WTB4S-3P2234S07	1058763			

<sup>1)</sup> Do not bend below 0 °C.

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.	
4 mm ... 150 mm	NPN	Cable, Teach-in button	Cable, 4-wire, 2 m <sup>1)</sup>	WTB4S-3N1164	1042036	
			Cable with connector M8, 3-pin, 100 mm	WTB4S-3P3162	1042038	
	PNP	Teach-in button	Connector M8, 3-pin	WTB4S-3P2162	1042037	
			Teach-in button, Teach-in button	Male connector M8, 4-pin	WTB4S-3P2264S01	1043652
			Cable, Teach-in button	Cable with M8 male connector, 4-pin, 100 mm <sup>1)</sup>	WTB4S-3P3264	1042035
				Male connector M8, 4-pin	WTB4S-3P2264	1042034
4 mm ... 180 mm	NPN	Potentiometer	Cable, 3-wire, 2 m <sup>1)</sup>	WTB4S-3N1361	1042046	
			Connector M8, 3-pin	WTB4S-3N1361P01	1103888	
			Connector M8, 3-pin	WTB4S-3N2161	1042045	
	PNP	Potentiometer	Cable with connector M8, 3-pin, 100 mm <sup>1)</sup>	WTB4S-3P3161	1042042	
			Cable, 3-wire, 2 m <sup>1)</sup>	WTB4S-3P1361	1042043	
			Connector M8, 3-pin	WTB4S-3P2161	1042040	
4 mm ... 280 mm	PNP	Cable, Teach-in button	Cable with M8 male connector, 4-pin, 100 mm <sup>1)</sup>	WTB4S-3P3234S04	1050600	
4 mm ... 500 mm	PNP	Cable, Teach-in button	Cable with M8 male connector, 4-pin, 100 mm <sup>1)</sup>	WTB4S-3P3264S13	1123076	

<sup>1)</sup> Do not bend below 0 °C.

- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** Background suppression
- **Light source:** PinPoint LED
- **Voltage type:** DC
- **Switching mode:** Dark switching
- **Type of light:** visible red light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
100 mm	PNP	None	Cable with connector M8, 3-pin, 100 mm	WTB4S-3F3160S12	1062834
4 mm ... 120 mm	NPN	Potentiometer	Cable, 3-wire, 2 m <sup>1)</sup>	WTB4S-3E1331	1042064
	PNP	Potentiometer	Connector M8, 3-pin	WTB4S-3F2131	1042060
4 mm ... 180 mm	NPN	Potentiometer	Cable, 3-wire, 2 m <sup>1)</sup>	WTB4S-3E1361	1042047
	PNP	Potentiometer	Connector M8, 3-pin	WTB4S-3F2161	1042044

<sup>1)</sup> Do not bend below 0 °C.

- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** Background suppression
- **Light source:** PinPoint LED
- **Voltage type:** DC
- **Switching mode:** Light/dark switching
- **Type of light:** visible red light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
3 mm ... 280 mm	PNP	Teach-in button	Cable with M12 male connector, 4-pin, 150 mm <sup>1)</sup>	WTB4S-3P3432S05	1051765
4 mm ... 100 mm	PNP	Potentiometer	Cable with M8 male connector, 4-pin, 100 mm <sup>1)</sup>	WTB4S-3P3231S09	1063276
		None	Male connector M8, 4-pin	WTB4S-3P2264S03	1046255
4 mm ... 120 mm	NPN	Potentiometer	Cable, 4-wire, 2 m <sup>1)</sup>	WTB4S-3N1131	1042063
		Teach-in button	Male connector M8, 4-pin	WTB4S-3N2232	1051872
	PNP	Potentiometer	Cable with M12 male connector, 4-pin, 150 mm <sup>1)</sup>	WTB4S-3P3431	1055059
			Male connector M8, 4-pin	WTB4S-3P2231	1042057
	Teach-in button	Teach-in button	Cable with M12 male connector, 4-pin, 150 mm <sup>1)</sup>	WTB4S-3P3432	1051373
			Male connector M8, 4-pin	WTB4S-3P2232	1054282
			Male connector M8, 4-pin	WTB4SC-3P2232A00	1042049

<sup>1)</sup> Do not bend below 0 °C.

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
4 mm ... 180 mm	PNP	Potentiometer	Cable with M12 male connector, 4-pin, 150 mm <sup>1)</sup>	WTB4S-3P3461	1044809
			Cable with M8 male connector, 4-pin, 150 mm	WTB4S-3P3261	1064142
			Male connector M8, 4-pin	WTB4S-3K2261	1047804
		Teach-in button	Cable with M12 male connector, 4-pin, 150 mm <sup>1)</sup>	WTB4S-3P3462	1051374
			Male connector M8, 4-pin	WTB4S-3P2262	1070222
		Teach-in button, Teach-in button	Cable with M12 male connector, 4-pin, 150 mm	WTB4SC-3P3462A00	1117403
			Male connector M8, 4-pin	WTB4SC-3P2262A00	1042033
				WTB4SC-3P2262A70	1067756
				WTB4SC-3P2262A71	1067757
				WTB4SC-3P2262A73	1093610
				WTB4SC-3P2262A91	1067758
			WTB4SC-3P2262B03	1099918	
		4 mm ... 280 mm	PNP	Teach-in button, Teach-in button	Cable with M8 male connector, 4-pin, 100 mm
8 mm ... 120 mm	PNP	Teach-in button, Teach-in button	Male connector M8, 4-pin	WTB4SC-3P2232B02	1088195

<sup>1)</sup> Do not bend below 0 °C.

- **Sensor principle:** Photoelectric proximity sensor
- **Detection principle:** Foreground suppression
- **Light source:** PinPoint LED
- **Voltage type:** DC
- **Switching mode:** Light/dark switching
- **Type of light:** visible red light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
3 mm ... 100 mm	PNP	Potentiometer	Cable with M8 male connector, 4-pin, 100 mm <sup>1)</sup>	WTF4S-3P3231S08	1061140

<sup>1)</sup> Do not bend below 0 °C.

- **Sensor principle:** Photoelectric retro-reflective sensor
- **Detection principle:** autocollimation
- **Light source:** PinPoint LED
- **Voltage type:** DC
- **Switching mode:** Dark switching
- **Type of light:** visible red light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
0 m ... 4 m	NPN	None	Cable, 3-wire, 2 m <sup>1)</sup>	WL4S-3E1330	1042072
			Cable, 4-wire, 2 m <sup>1)</sup>	WL4S-3E1130S05	1052970
			Connector M8, 3-pin	WL4S-3E2130	1042071
	PNP	None	Cable with M12 male connector, 4-pin, 150 mm <sup>1)</sup>	WL4S-3F3430S01	1053409
			Cable with connector M8, 3-pin, 100 mm <sup>1)</sup>	WL4S-3F3130	1042067
			Cable with connector M8, 3-pin, 300 mm <sup>1)</sup>	WL4S-3F3130S04	1056053
			Cable, 3-wire, 2 m <sup>1)</sup>	WL4S-3F1330	1042068
			Connector M8, 3-pin	WL4S-3F2130	1042065
0 m ... 5 m	NPN	Teach-in button	Cable with connector M8, 3-pin, 100 mm <sup>1)</sup>	WL4S-3E3132	1074981
			Cable, 3-wire, 2 m <sup>1)</sup>	WL4S-3E1332	1042081
			Cable, 4-wire, 2 m <sup>1)</sup>	WL4S-3W1132	1042083
			Connector M8, 3-pin	WL4S-3E2132	1042080
	PNP	Teach-in button	Cable with connector M8, 3-pin, 100 mm <sup>1)</sup>	WL4S-3F3132	1042075
			Cable, 3-wire, 2 m <sup>1)</sup>	WL4S-3F1332	1042076
			Cable, 4-wire, 2 m <sup>1)</sup>	WL4S-3V1132	1069132
			Connector M8, 3-pin	WL4S-3F2132	1042074
			Male connector M8, 4-pin	WL4S-3V2232	1042079

<sup>1)</sup> Do not bend below 0 °C.

- **Sensor principle:** Photoelectric retro-reflective sensor
- **Detection principle:** autocollimation
- **Light source:** PinPoint LED
- **Voltage type:** DC
- **Switching mode:** Light switching
- **Type of light:** visible red light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
0 m ... 4 m	NPN	None	Cable, 3-wire, 2 m <sup>1)</sup>	WL4S-3N1330	1042073
	PNP	None	Cable with connector M8, 3-pin, 100 mm <sup>1)</sup>	WL4S-3P3130	1042070
			Connector M8, 3-pin	WL4S-3P2130	1042069
0 m ... 5 m	NPN	Teach-in button	Cable, 3-wire, 2 m <sup>1)</sup>	WL4S-3N1332	1042082
	PNP	Teach-in button	Cable with connector M8, 3-pin, 100 mm <sup>1)</sup>	WL4S-3P3132	1044802
			Connector M8, 3-pin	WL4S-3P2132	1042077

<sup>1)</sup> Do not bend below 0 °C.

- **Sensor principle:** Photoelectric retro-reflective sensor
- **Detection principle:** autocollimation
- **Light source:** PinPoint LED
- **Voltage type:** DC
- **Switching mode:** Light/dark switching
- **Type of light:** visible red light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
0 m ... 4 m	PNP	None	Cable with M8 male connector, 4-pin, 100 mm	WL4S-3P3230	1073200
			Male connector M8, 4-pin	WL4S-3P2230	1042066
				WL4S-3P2230S02	1054695
0 m ... 5 m	PNP	Teach-in button	Male connector M8, 4-pin	WL4S-3P2232	1042078
				Teach-in button, Teach-in button	Male connector M8, 4-pin
		WL4SC-3P2232A70	1067760		
		WL4SC-3P2232A71	1067761		
		WL4SC-3P2232A91	1067762		

- **Sensor principle:** Photoelectric retro-reflective sensor
- **Light source:** PinPoint LED
- **Switching mode:** Light/dark switching
- **Type of light:** visible red light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
0 m ... 5 m	PNP	Teach-in button, Teach-in button	Cable with M8 male connector, 4-pin, 200 mm <sup>1)</sup>	WL4SC-3P3232B02	1104554

<sup>1)</sup> Do not bend below 0 °C.



- **Sensor principle:** Through-beam photoelectric sensor
- **Light source:** PinPoint LED
- **Voltage type:** DC
- **Switching mode:** Dark switching
- **Type of light:** visible red light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
0 m ... 5 m	NPN	None	Cable, 3-wire, 2 m <sup>1)</sup>	WSE4S-3E1330	1042093
				WSE4S-3E1330	1052867
			Connector M8, 3-pin	WSE4S-3E2130	1042092
				WSE4S-3E2130	1052876
	PNP	None	Cable with M12 male connector, 4-pin, 150 mm <sup>1)</sup>	WSE4S-3F3430	1051883
				WSE4S-3F3430	1052884
			Cable with connector M8, 3-pin, 100 mm <sup>1)</sup>	WSE4S-3F3130	1042089
				WSE4S-3F3130	1052881
			Cable, 3-wire, 2 m <sup>1)</sup>	WSE4S-3F1330	1042090
				WSE4S-3F1330	1052879
			Connector M8, 3-pin	WSE4S-3F2130	1042088
				WSE4S-3F2130	1052890

<sup>1)</sup> Do not bend below 0 °C.

- **Sensor principle:** Through-beam photoelectric sensor
- **Light source:** PinPoint LED
- **Voltage type:** DC
- **Switching mode:** Light switching
- **Type of light:** visible red light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
0 m ... 5 m	NPN	None	Cable, 3-wire, 2 m <sup>1)</sup>	WSE4S-3N1330	1042094
				WSE4S-3N1330	1052872
	PNP	None	Connector M8, 3-pin	WSE4S-3P2130	1042091
				WSE4S-3P2130	1052892

<sup>1)</sup> Do not bend below 0 °C.

- **Sensor principle:** Through-beam photoelectric sensor
- **Light source:** PinPoint LED
- **Voltage type:** DC
- **Switching mode:** Light/dark switching
- **Type of light:** visible red light

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
0 m ... 2 m	PNP	Cable	Male connector M8, 4-pin	WSE4SC-3P2230S04	1079435

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
0 m ... 5 m	PNP	Cable	Male connector M8, 4-pin	WSE4SC-3P2230A00	1067767
				WSE4SC-3P2230A70	1067768
				WSE4SC-3P2230A71	1067769
				WSE4SC-3P2230A91	1067770
				WSE4SC-3P2230S03	1078552
		None	Male connector M8, 4-pin	WSE4S-3K2236	1074138
				WSE4S-3P2230	1067843

## 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)