



W2S-2

Incredibly small, yet powerful

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Technical data overview

Dimensions (W x H x D)	7.7 mm x 27.5 mm x 13.5 mm 7.7 mm x 21.8 mm x 13.5 mm
Sensing range max.	50 mm ... 800 mm ¹⁾ 1 mm ... 18 mm ²⁾ 1 mm ... 36 mm ²⁾ 3 mm ... 30 mm ²⁾ 1 mm ... 36 mm 1 mm ... 66 mm ²⁾ 1 mm ... 60 mm ²⁾ 4 mm ... 110 mm ²⁾ 85 mm ²⁾ 4 mm ... 90 mm ²⁾ 1 mm ... 150 mm ²⁾ 3 mm ... 130 mm ²⁾ 4 mm ... 40 mm ²⁾ 0 m ... 1.2 m ³⁾ 0 m ... 2.5 m
Light source	Laser PinPoint LED LED (depending on type)
Type of light	Infrared light Visible red light Visible blue light (depending on type)
Enclosure rating	IP67
Housing material	Plastic ABS/PC
Adjustment	None IO-Link Cable Potentiometer, 3 turns Cable Teach-in

¹⁾ Object with 6 ... 90 % remission (based on standard white to DIN 5033).

²⁾ Object with 90 % reflectance (referred to standard white, DIN 5033).

³⁾ Reflector P250F.

Product description

Developing lighter, more compact, and more intelligent machines. The incredibly small latest generation W2S-2 miniature photoelectric sensor offers completely new machine design possibilities. Intelligent features: the sensors feature background suppression that enables detection of black objects with a degree of reflection of 1%. The W2S-2 also offers world-class sensing distances in this housing size.

Whether it is used in machines in the pharmaceutical industry, in logistics handling applications or in automatic assembly equipment, the ultra-compact W2S-2 offers optimal performance and high reliability in industrial environments. Industry 4.0 is already on board: Both the sensing distance as well as continuous monitoring are set via the controller. The W2S-2 reduces the load on the machine control by using a counter, timestamp and false tripping suppression functions.

Programmable sensors, adjustable via a 3-turn potentiometer, and sensors with fixed sensing distances of 15 mm, 30 mm, 45 mm and 60 mm are also available.

At a glance

- Sensor with background suppression and without any significant black/white shift
- PinPoint 2.0 LED with extended sensing distances and high operating reserves
- A variety of application possibilities thanks to clearly-defined laser-like or line-shaped light spots
- Detection of highly-transparent and reflective objects using sensors with V-optics
- Photoelectric retro-reflective sensor with autocollimation and a clearly visible light spot

Your benefits

- Machine design flexibility: the ultra-compact sensors offer above-average sensing distances and provide space-saving installation
- Remote setup: sensors installed in confined spaces can be set and monitored remotely via IO-Link.
- High operational reliability: ultrablack objects are detected with a degree of reflection of 1%
- Maximum reliability during object detection and option of a space-saving machine design without reflectors or through-beam systems
- Quick and easy commissioning: the photoelectric retro-reflective sensor with autocollimation provides a clearly visible light spot for high process reliability
- Universal application options: wide range of models enclosed in a rugged housing
- Proven mounting and housing design

Fields of application

- Detection of transparent ampules and vials in the pharmaceutical industry
- Detection of solar cells
- Detection of modules in smartphone production
- Detection of small parts such as pins, screws and rings in mounting technology
- Detection of parts in grippers

Ordering information

Other models and accessories → www.sick.com/W2S-2

- **Light source:** laser
- **Type of light:** Infrared light

Sensing range max.	Type	Part no.
50 mm ... 800 mm	WTT2SL-2P1192	Ref:291551532248
	WTT2SL-2P3292	Ref:291551490144
	WTT2SLC-2P3292A00	Ref:291551557444

- **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.
1 mm ... 150 mm	PNP	Potentiometer	Cable with connector M8, 3-pin, 200 mm ¹⁾	WTB2S-2P3151	1067502
			Cable with connector M8, 3-pin, 700 mm ¹⁾	WTB2S-2P3151S22	1069138

¹⁾ Do not bend below 0 °C.

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
1 mm ... 18 mm	NPN	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	WTB2S-2N3110	1064398
			Cable, 3-wire, 2 m ¹⁾	WTB2S-2N1310	1064249
			Cable, 3-wire, 3 m ¹⁾	WTB2S-2N1010S06	1063815
			Cable with connector MOLEX MINI-FIT, 3-pin, 300 mm ¹⁾	WTB2S-2N3010S20	1063831
	PNP	None	Cable with M8 male connector, 4-pin, 540 mm ¹⁾	WTB2S-2P3210S53	1123891
			Cable with connector M8, 3-pin, 200 mm ¹⁾	WTB2S-2P3110	1064395
			Cable with connector M8, 3-pin, 500 mm ¹⁾	WTB2S-2P3110S50	1111906
			Cable, 3-wire, 2 m ¹⁾	WTB2S-2P1310	1064393
1 mm ... 36 mm	NPN	Cable	Cable, 4-wire, 2 m ¹⁾	WTV2S-2N1125	1088077
		None	Cable with connector M8, 3-pin, 200 mm ¹⁾	WTB2S-2N3130	1064581
			Cable, 3-wire, 2 m ¹⁾	WTB2S-2N1330	1064578
	PNP	Cable	Cable with M8 male connector, 4-pin, 200 mm ¹⁾	WTV2S-2P3225	1082104
			Cable with M8 male connector, 4-pin, 500 mm ¹⁾	WTV2S-2P3220S52	1115590
		None	Cable with AMP connector, 3.5 m ¹⁾	WTB2S-2P3030S16	1063829
			Cable with connector M8, 3-pin, 200 mm ¹⁾	WTB2S-2P3130	1064575
				WTV2S-2P3120	1064662
				WTB2S-2P3030S21	1063827
			Cable, 3-wire, 2 m ¹⁾	WTB2S-2P1330	1064573
				WTB2S-2P1330S01	1068960
				WTB2S-2P1330S39	1088310
				WTV2S-2P1320	1064660
			Cable, 3-wire, 3 m ¹⁾	WTB2S-2P1030S32	1082599
			Cable, 3-wire, 5 m ¹⁾	WTB2S-2P1030S52	1117673

¹⁾ Do not bend below 0 °C.

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
1 mm ... 66 mm	NPN	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	WTB2S-2N3160	1064611
			Cable, 3-wire, 2 m ¹⁾	WTB2S-2N1360	1064609
	PNP	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	WTB2S-2P3160	1064607
			Cable with connector M8, 3-pin, 55 mm ¹⁾	WTB2S-2P3160S04	1072543
			Cable, 3-wire, 2 m ¹⁾	WTB2S-2P1360	1064605
3 mm ... 130 mm	NPN	None	Cable with special male connector, 4-pin, 500 mm ¹⁾	WTB2S-2N3060S19	1078050
3 mm ... 30 mm	PNP	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	WTB2S-2P3130S25	1079691
			Cable, 3-wire, 3.5 m ¹⁾	WTB2S-2P1030S13	1063814
4 mm ... 110 mm	NPN	Cable	Cable, 4-wire, 2 m ¹⁾	WTB2S-2N1145	1063552
	PNP	Cable	Cable with M8 male connector, 4-pin, 200 mm ¹⁾	WTB2S-2P3245	1064615
			Cable, 4-wire, 2 m ¹⁾	WTB2S-2P1145	1064614
				WTB2SC-2P1144S26	1079773
4 mm ... 90 mm	NPN	Cable	Cable, 4-wire, 2 m ¹⁾	WTB2S-2N1175	1064621
	PNP	Cable	Cable with M8 male connector, 4-pin, 200 mm ¹⁾	WTB2S-2P3275	1064620
				WTB2S-2P3275S36	1086470
				WTB2S-2P3275S37	1086876
				WTB2S-2P3275S49	1104637
85 mm	PNP	Cable	Cable with connector, JST, PA-P-03V-S, 100 mm ¹⁾	WTB2S-2P3040S47	1103244

¹⁾ 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.
1 mm ... 18 mm	NPN	None	Cable with M8 male connector, 4-pin, 200 mm ¹⁾	WTB2S-2E3210S17	1077271
			Cable with special connector 3M, 4-wire, 1,000 mm ¹⁾	WTB2S-2E3010S51	1113346
			Cable with special connector 3M, 4-wire, 660 mm ¹⁾	WTB2S-2E3010S09	1074793
	PNP	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	WTB2S-2F3110	1064396
			Cable, 3-wire, 2 m ¹⁾	WTB2S-2F1310	1064394
	1 mm ... 36 mm	NPN	None	Cable, 3-wire, 2 m ¹⁾	WTB2S-2E1330
PNP		None	Cable with connector M8, 3-pin, 200 mm ¹⁾	WTB2S-2F3130	1064576
				WTV2S-2F3120	1071810
			Cable, 3-wire, 2 m ¹⁾	WTB2S-2F1330	1064574
	Cable, 3-wire, 5 m ¹⁾	WTB2S-2F1430	1078662		
1 mm ... 60 mm	PNP	None	Cable, 3-wire, 2 m ¹⁾	WTB2S-2F1360S03	1072307
1 mm ... 66 mm	PNP	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	WTB2S-2F3160	1064608
			Cable, 3-wire, 2 m ¹⁾	WTB2S-2F1360	1064606

¹⁾ 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.
1 mm ... 150 mm	NPN	Potentiometer	Cable with M8 male connector, 4-pin, 200 mm ¹⁾	WTB2S-2N3251	1066114
			Cable, 4-wire, 2 m ¹⁾	WTB2S-2N1151	1066113
				WTB2S-2N1151S26	1116488
	PNP	Potentiometer	Cable with M8 male connector, 4-pin, 200 mm ¹⁾	WTB2S-2P3251	1066111
			Cable, 4-wire, 2 m ¹⁾	WTB2S-2P1151	1066110
				WTB2S-2P1351S33	1082752

¹⁾ Do not bend below 0 °C.

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
1 mm ... 18 mm	NPN	None	Cable with M8 male connector, 4-pin, 200 mm ¹⁾	WTB2S-2N3210	1064400
			Cable, 4-wire, 2 m ¹⁾	WTB2S-2N1110	1063516
	PNP	None	Cable with M8 male connector, 4-pin, 200 mm ¹⁾	WTB2S-2P3210	1063314
1 mm ... 36 mm	NPN	None	Cable, 4-wire, 2 m ¹⁾	WTB2S-2N1130	1063321
				WTV2S-2N1320	1066109
	PNP	None	Cable with M8 male connector, 4-pin, 200 mm ¹⁾	WTB2S-2P3230	1063517
				WTV2S-2P3220	1064661
1 mm ... 66 mm	NPN	None	Cable, 4-wire, 2 m ¹⁾	WTB2S-2N1160	1063546
	PNP	Cable	Cable, 4-wire, 3.1 m ¹⁾	WTB2SC-2P1044S25	1078971
		None	Cable with M8 male connector, 4-pin, 200 mm ¹⁾	WTB2S-2P3260	1063545
4 mm ... 110 mm	PNP	Cable		WTB2SC-2P3244A00	1063550
				WTB2SC-2P3244B05	1120664
				WTB2SC-2P3244S46	1100907
			Cable with connector M8, 3-pin, 200 mm ¹⁾	WTB2SC-2P3144B01	1105144
4 mm ... 90 mm	PNP	Cable	Cable with M8 male connector, 4-pin, 200 mm ¹⁾	WTB2SC-2P3274A00	1063646
				WTB2SC-2P3274B02	1113399
			Cable, 4-wire, 600 mm ¹⁾	WTB2SC-2P1074B04	1117582

¹⁾ Do not bend below 0 °C.

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

Sensing range max.	Adjustment	Connection type	Type	Part no.
1 mm ... 18 mm	None	Cable with MOLEX-connector, 145 mm ¹⁾	WTB2S-2P3010S14	1076594

¹⁾ Do not bend below 0 °C.

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

Sensing range max.	Switching output	Adjustment	Connection type	Type	Part no.
1 mm ... 36 mm	PNP	Cable	Cable with M8 male connector, 4-pin, 200 mm ¹⁾	WTV2S-2P3285	1089737
			Cable with M8 male connector, 4-pin, 2 m ¹⁾	WTV2S-2P3285S45	1094671
			Cable, 4-wire, 2 m ¹⁾	WTV2S-2P1185S01	1088660
4 mm ... 40 mm	NPN	None	Cable, 3-wire, 2 m ¹⁾	WTB2S-2N1380	1072490
	PNP	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	WTB2S-2P3180	1072489
			Cable, 3-wire, 2 m ¹⁾	WTB2S-2P1380	1088075

¹⁾ 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 ... 1.2 m	NPN	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	WL2S-2N3130	1091885
			Cable, 3-wire, 2 m ¹⁾	WL2S-2N1330	1064595
	PNP	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	WL2S-2P3130	1064592
			Cable, 3-wire, 2 m ¹⁾	WL2S-2P1330	1064590
			Cable, 3-wire, 3 m ¹⁾	WL2S-2P1030S02	1082598
			Cable, 3-wire, 5 m ¹⁾	WL2S-2P1030S10	1117190

¹⁾ 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 ... 1.2 m	NPN	None	Cable, 3-wire, 2 m ¹⁾	WL2S-2E1330	1064596
	PNP	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	WL2S-2F3130	1064593
			Cable, 3-wire, 2 m ¹⁾	WL2S-2F1330	1064591
			Cable with special connector, 3-wire, 100 mm ¹⁾	WL2S-2F3030S03	1103245

¹⁾ 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 ... 1.2 m	NPN	None	Cable with M8 male connector, 4-pin, 200 mm ¹⁾	2N3230	1064659
			Cable with special connector 3M, 4-wire, 1,000 mm ¹⁾	WL2S-2N3030S08	1113401
			Cable with special connector 3M, 4-wire, 560 mm ¹⁾	WL2S-2N3030S05	1074791
			Cable with special connector 3M, 4-wire, 860 mm ¹⁾	WL2S-2N3030S06	1074792
	PNP	None	Cable with M8 male connector, 4-pin, 200 mm ¹⁾	WL2S-2K3230	1064594
				WL2S-2P3230	1063572
			Cable with M8 male connector, 4-pin, 300 mm	WL2S-2P3230S09	1116710
			Cable, 4-wire, 2 m ¹⁾	WL2S-2P1130	1064655

¹⁾ 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 ... 2.5 m	NPN	None	Cable, 3-wire, 2 m ¹⁾	WSE2S-2N1330	1064584
			Cable with connector M8, 3-pin, 200 mm ¹⁾	WSE2S-2P3130	1063521
	PNP	None	Cable with connector M8, 3-pin, 700 mm ¹⁾	WSE2S-2P3030S02	1069003
			Cable, 3-wire, 2 m ¹⁾	WSE2S-2P1330	1065940
				WSE2S-2P1330S03	1086435
			Cable, 3-wire, 5 m ¹⁾	WSE2S-2P1430	1075632

¹⁾ 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 ... 2.5 m	NPN	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	WSE2S-2E3130	1064588
			Cable, 3-wire, 2 m ¹⁾	WSE2S-2E1330	1064586
	PNP	None	Cable with connector M8, 3-pin, 200 mm ¹⁾	WSE2S-2F3130	1063523
			Cable with connector M8, 3-pin, 700 mm ¹⁾	WSE2S-2F3030S01	1068155
			Cable, 3-wire, 2 m ¹⁾	WSE2S-2F1330	1065941
			Cable, 3-wire, 5 m ¹⁾	WSE2S-2F1430	1077009

¹⁾ 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 ... 2.5 m	NPN	None	Cable, 4-wire, 2 m ¹⁾	WSE2S-2N1130	1063660
			Cable with M8 male connector, 4-pin, 200 mm ¹⁾	WSE2S-2P3230	1063650
			WSE2S-2P3230S04	1086969	

¹⁾ Do not bend below 0 °C.

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