



Photoelectric sensors  
W2S-2, Photoelectric proximity sensor,  
Background suppression

WTV2S-2P3220



**Type** > [WTV2S-2P3220](#)  
**Part No.** > [1064661](#)



Illustration may differ

**At a glance**

- Laser-like, clearly visible light spot
- PinPoint 2.0 LED
- Background suppression that is immune to optical interference
- Rugged housing design
- Established and proven housing design

**Your benefits**

- Reliable detection of flat, transparent and highly-reflective objects without a reflector
- Space-saving integration in compact machines where space is limited
- Increased productivity due to highly repeatable switching points
- Consistent detection of wafers, displays and foil in all production steps
- High reliability and long-term use in grippers thanks to flexible and rugged cable entry



**Features**

Sensor/detection principle:	Photoelectric proximity sensor, Background suppression
Dimensions (W x H x D):	7.7 mm x 21.8 mm x 13.5 mm
Housing design (light emission):	Rectangular
Sensing range max.:	1 mm ... 36 mm <sup>1)</sup>
Sensing range:	4 mm ... 30 mm <sup>2)</sup>
Type of light:	Visible red light
Light source:	PinPoint LED <sup>3)</sup>
Wave length:	640 nm
Special features:	V-optics
Light spot size (distance):	X Ø 2 mm (15 mm)

<sup>1) 2)</sup> Object with 90 % reflectance (referred to standard white, DIN 5033) <sup>3)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C

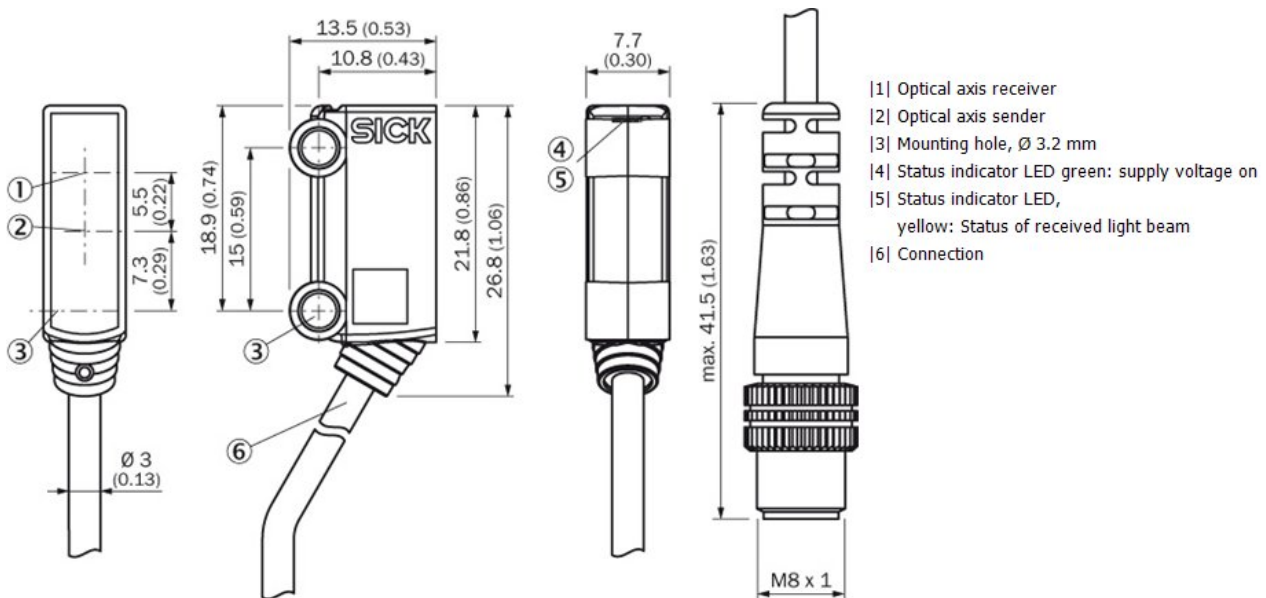
**Mechanics/electronics**

Supply voltage:	10 V DC ... 30 V DC <sup>1)</sup>
Ripple:	≤ 5 Vpp <sup>2)</sup>
Current consumption:	≤ 20 mA <sup>3)</sup>
Output type:	PNP
Switching mode:	Light/dark switching
Output current I <sub>max.</sub> :	< 50 mA

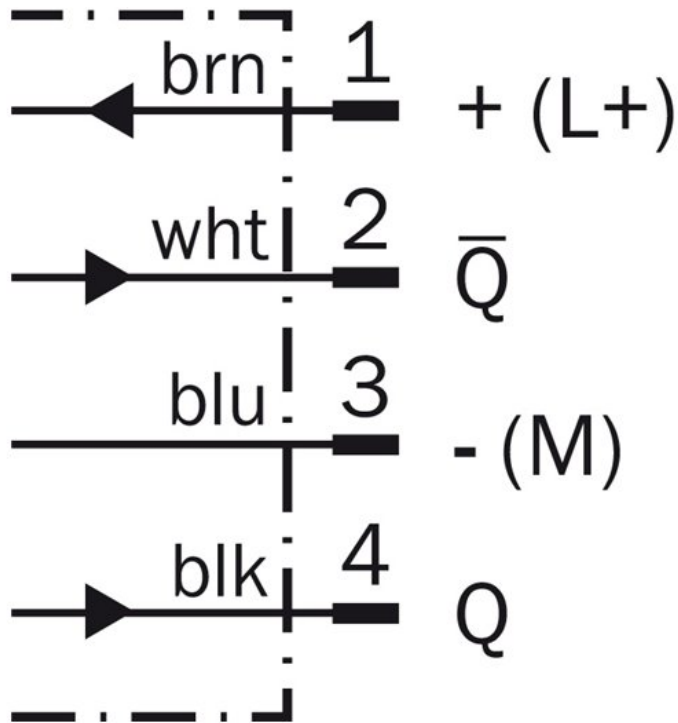
Response time:	< 0.5 ms <sup>4)</sup>
Switching frequency:	1,000 Hz <sup>5)</sup>
Connection type:	Cable with M8 male connector, 4-pin, 200 mm <sup>6)</sup>
Cable material:	PVC
Cable diameter:	Ø 3 mm
Circuit protection:::	A, B, D <sup>7) 8) 9)</sup>
IO-Link:	-
Special device:	-
Optics material:	PMMA
Enclosure rating:	IP 67
Special feature:	V-optics
Ambient operating temperature:	-25 °C ... +50 °C
Ambient storage temperature:	-40 °C ... +75 °C
UL File No.:	NRKH.E181493
Housing material:	ABS/PC, Plastic

1) Limit values 2) May not exceed or fall below U<sub>v</sub> tolerances 3) Without load 4) Signal transit time with resistive load 5) With light/dark ratio 1:1 6) Do not bend below 0 °C 7) A = V<sub>S</sub> connections reverse-polarity protected 8) B = output reverse-polarity protected 9) D = outputs overcurrent and short-circuit protected

## Dimensional drawing

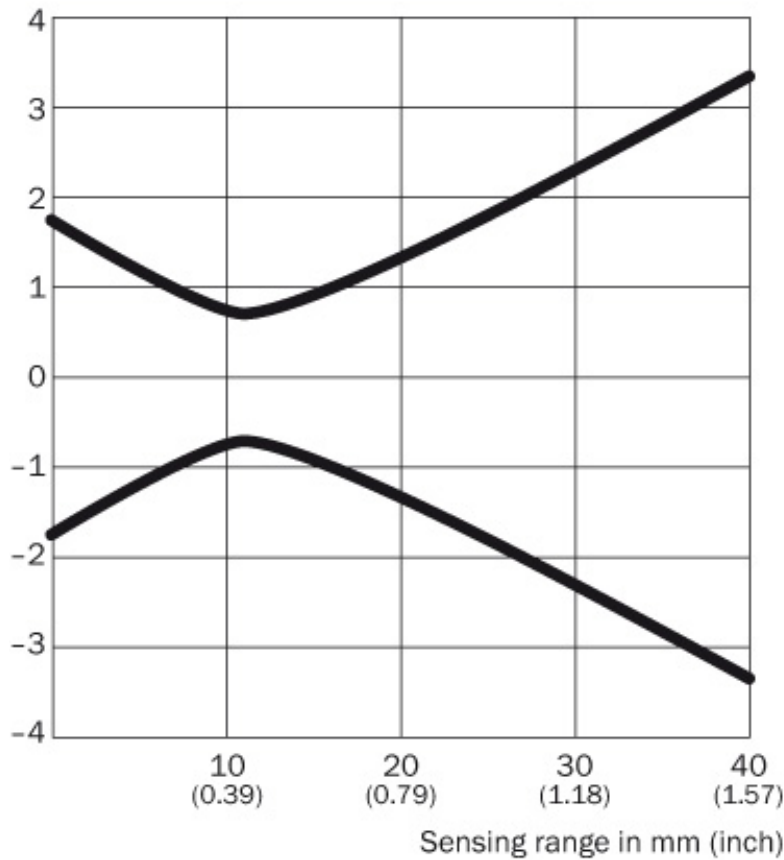


Connection diagram



Light spot size

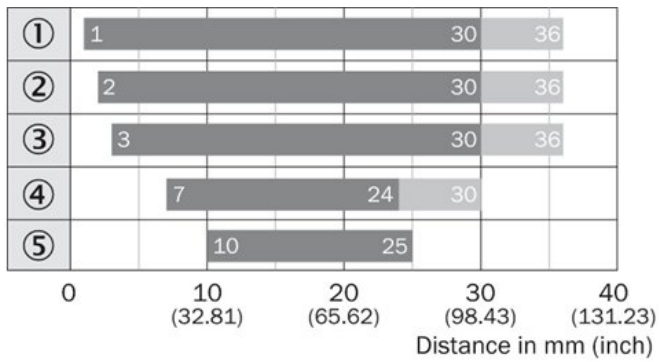
Spot diameter in mm (inch)



Dimensions in mm (inch)

Sensing range	Spot diameter
<b>10</b> (0.39)	1.5 (0.06)
<b>20</b> (0.79)	2.6 (0.10)
<b>30</b> (1.18)	4.6 (0.18)
<b>40</b> (1.57)	6.6 (0.26)

## Sensing range diagram



■ Sensing range                      ■ Sensing range max. typ.

- 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
- ⑤ Sensing range on reflective and transparent surfaces<sup>1)</sup>

<sup>1)</sup> Best detection of reflective and transparent surfaces within a tilt angle of  $< +/- 10^\circ$

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