

ONLINE DATA SHEET
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Photoelectric sensors
W2S-2, Photoelectric proximity sensor, Background suppression

WTV2S-2F3120



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Type > WTV2S-2F3120
Part No. > 1071810





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 [1)]
Sensing range:	4 mm ... 30 mm [2)]
Type of light:	Visible red light
Light source:	PinPoint LED [3)]
Wave length:	640 nm
Special features:	V-optics
Light spot size (distance):	X Ø 2 mm (15 mm)

[1) 2)] Object with 90 % reflectance (referred to standard white, DIN 5033) [3)] Average service life: 100,000 h at T_U = +25 °C

Mechanics/electronics

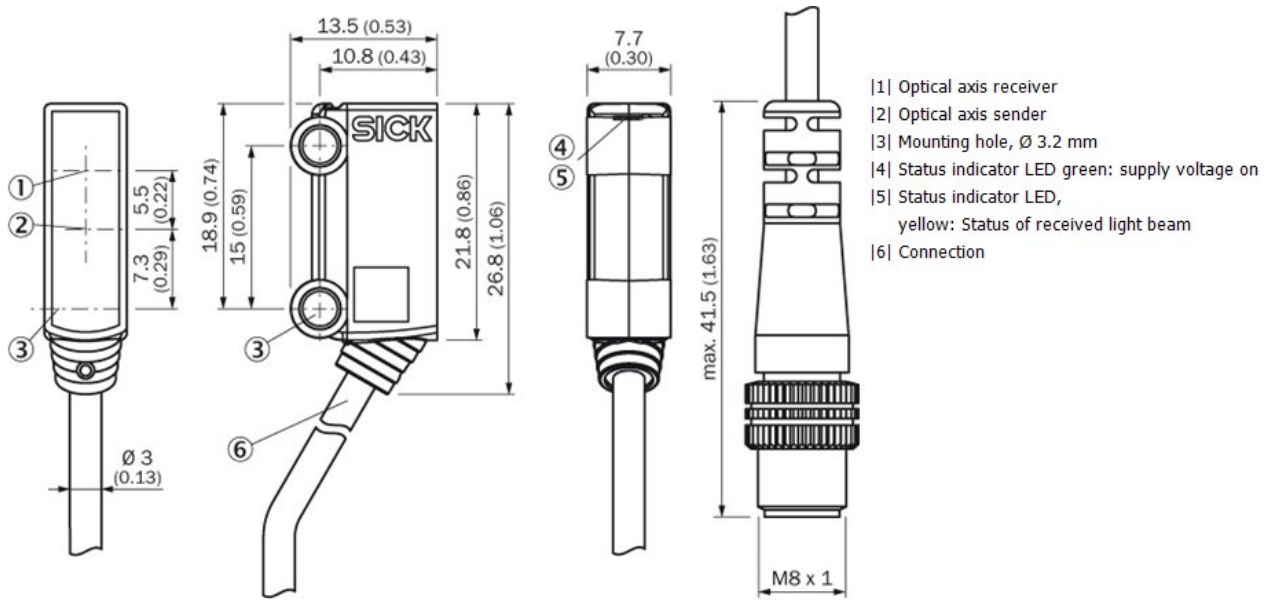
Supply voltage:	10 V DC ... 30 V DC [1)]
Ripple:	≤ 5 Vpp [2)]
Current consumption:	≤ 20 mA [3)]
Output type:	PNP
Switching mode:	Dark switching
Output current Imax.:	< 50 mA

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Response time:	< 0.5 ms [4]
Switching frequency:	1,000 Hz [5]
Connection type:	Cable with connector M8, 3-pin, 200 mm [6]
Cable material:	PVC
Cable diameter:	Ø 3 mm
Circuit protection:::	A, B, D [7] [8] [9]
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

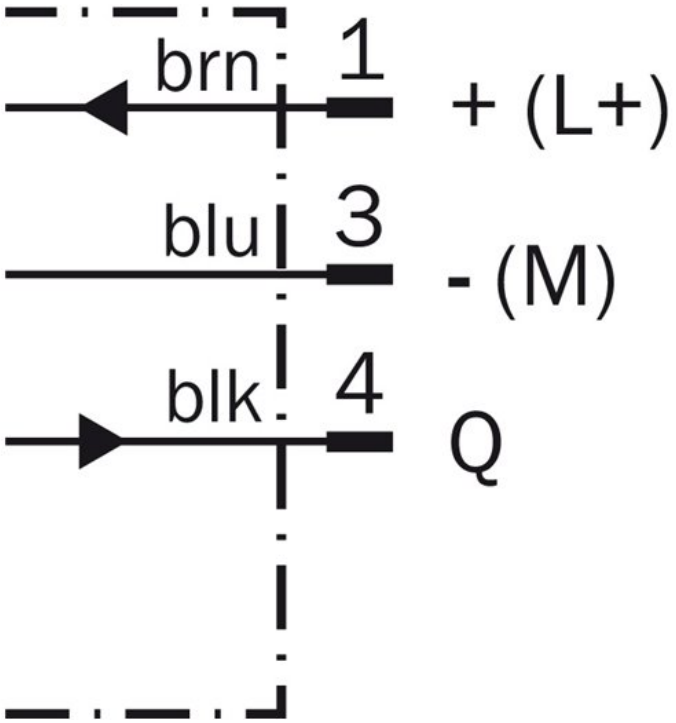
[1] Limit values [2] May not exceed or fall below U_V tolerances [3] Without load [4] Signal transit time with resistive load [5] With light/dark ratio 1:1 [6] Do not bend below 0 °C [7] A = V_S connections reverse-polarity protected [8] B = output reverse-polarity protected [9] D = outputs overcurrent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

Dimensional drawing

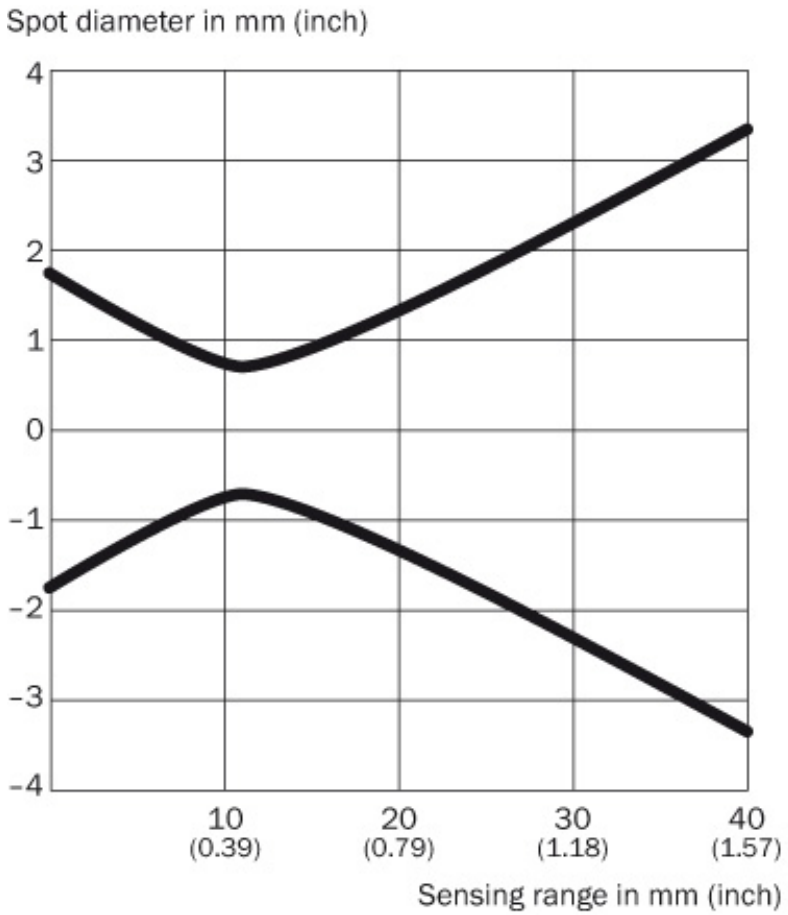


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Connection diagram



Light spot size

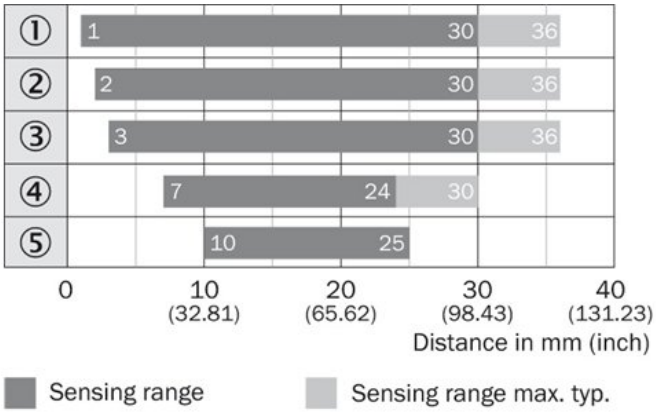


Dimensions in mm (inch)

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

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Sensing range diagram



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[1)]

[1)] Best detection of reflective and transparent surfaces within a tilt angle of < +/–10°

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