



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

WTB2S-2N1145



Model Name > [WTB2S-2N1145](#)
Part No. > [1063552](#)



Illustration may differ

At a glance

- Sensing ranges of up to 150 mm
- Almost no black/white shift up to 60 mm
- Sensor with line-shaped light spot
- Sensor with laser-like focused light spots
- Precise background suppression that is immune to interference/crosstalk
- High-performance PinPoint 2.0 LED

Your benefits

- An ultra-compact design with the performance of large photoelectric proximity sensors offers new space-saving machine construction possibilities.
- Large variety of proximity sensors and operating concepts enable a wide range of application options
- Use in confined spaces: detection of small, flat parts thanks to high-quality background suppression and almost nonexistent black/white shift
- Remote access: models with IO-Link allow data to be easily accessed from the PLC
- High availability 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.:	4 mm ... 110 mm ¹⁾
Sensing range:	10 mm ... 90 mm ²⁾
Type of light:	Visible red light
Light source:	PinPoint LED ³⁾
Wave length:	640 nm
Adjustment:	Cable
Light spot size (distance):	Ø 4.4 mm (60 mm)

^{1) 2)} Object with 90 % reflectance (referred to standard white, DIN 5033) ³⁾ Average service life of 100,000 h at T_A = +25 °C

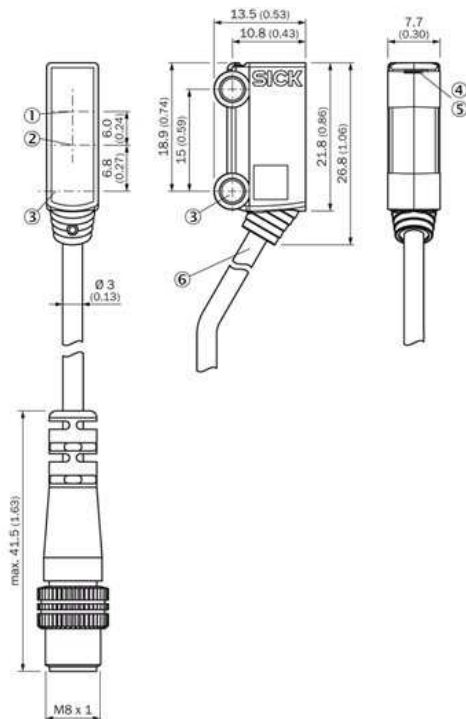
Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Ripple:	≤ 5 Vpp ²⁾
Power consumption:	≤ 20 mA ³⁾

Output type:	NPN
Switching mode:	Light switching
Output current I _{max} :	< 50 mA
Response time:	< 0.5 ms ⁴⁾
Switching frequency:	1,000 Hz ⁵⁾
Connection type:	Cable, 4-wire, 2 m ⁶⁾
Cable material:	PVC
Cable diameter:	Ø 3 mm
Circuit protection:::	A, B, D ^{7) 8) 9)}
IO-Link:	-
Optics material:	PMMA
Enclosure rating:	IP 67
Ambient temperature operation:	-25 °C ... +50 °C
Ambient storage temperature:	-40 °C ... +75 °C
UL File No.:	NRKH.E181493
Housing material:	ABS/PC, Plastic

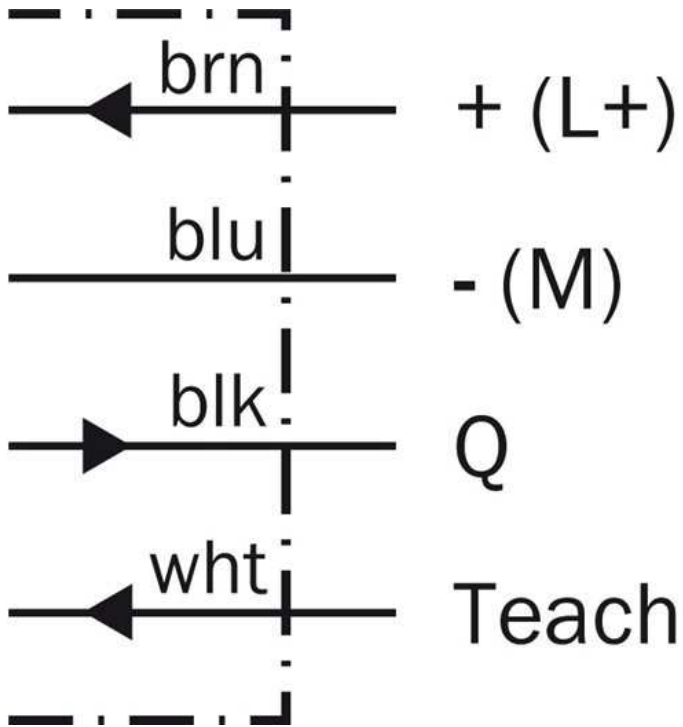
1) Limit values 2) May not exceed or fall short of V_S tolerances 3) Without load 4) Signal transit time with resistive load 5) With light/dark ratio 1:1 6) Do not bend below 0 °C 7) A = V_S connections reverse-polarity protected 8) B = output reverse-polarity protected 9) D = outputs overcurrent and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

Dimensional drawing

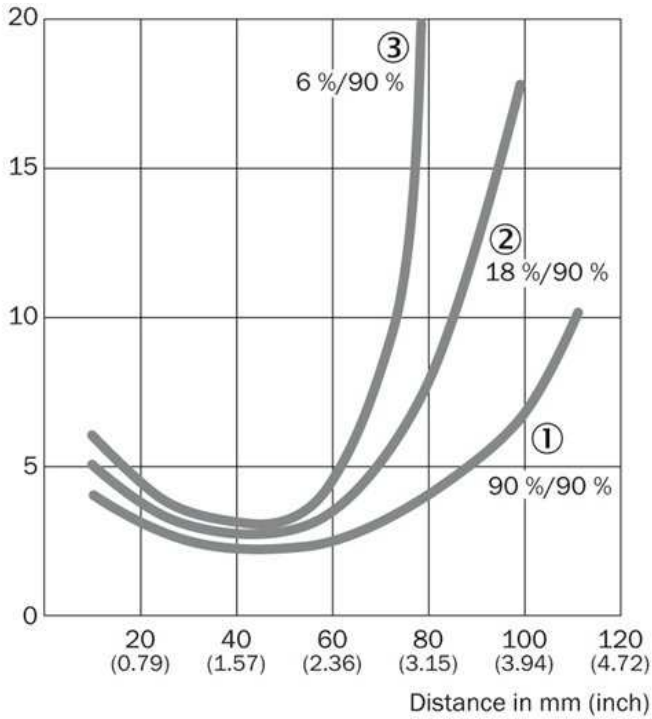


- |1| Optical axis, receiver
- |2| Optical axis, sender
- |3| Middle axis fixing hole Ø 3.2 mm
- |4| Status indicator LED green: supply voltage on
- |5| Status indicator LED, yellow: Status of received light beam
- |6| Connection

Connection diagram



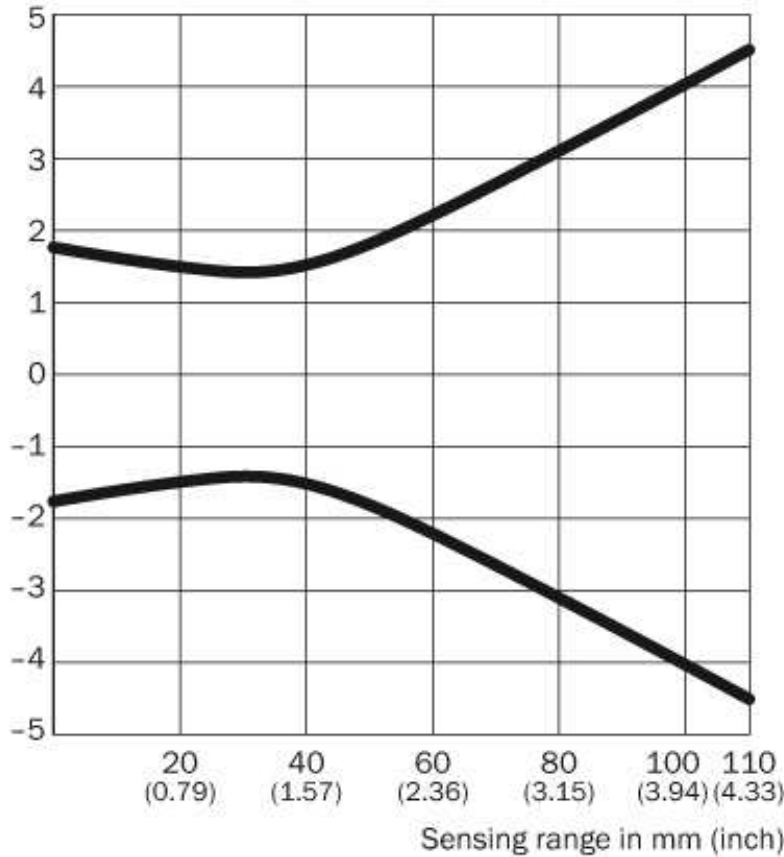
Characteristic curve



- 1| Sensing range on white, 90 % remission
- 2| Sensing range on gray, 18 % remission
- 3| Sensing range on black, 6 % remission

Light spot size

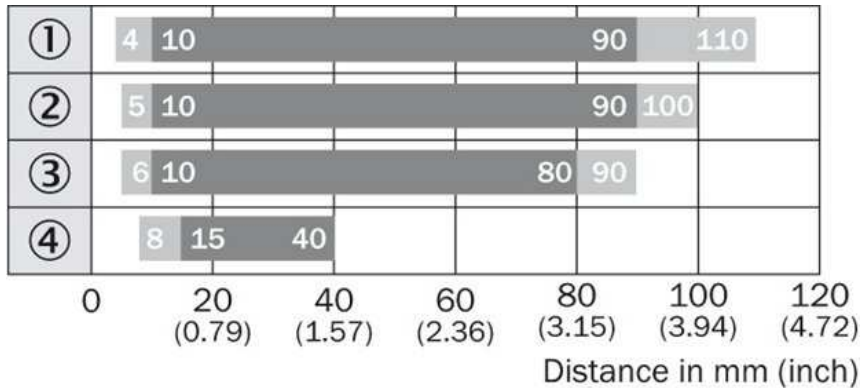
Spot diameter in mm (inch)



Dimensions in mm (inch)

Sensing range	Spot diameter
0 (0.00)	3.5 (0.14)
20 (0.79)	3.0 (0.12)
40 (1.57)	3.0 (0.12)
60 (2.36)	4.4 (0.17)
100 (3.94)	8.0 (0.31)
110 (4.33)	9.0 (0.35)

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 ultrablack, 1 % remission

■ Sensing range ■ Sensing range max.

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