



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

WTB2S-2E3010S09



Type > [WTB2S-2E3010S09](#)
Part No. > [1074793](#)



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.:	1 mm ... 18 mm ¹⁾
Sensing range:	3 mm ... 15 mm ²⁾
Type of light:	Visible red light
Light source:	PinPoint LED ³⁾
Wave length:	640 nm
Light spot size (distance):	X Ø 2 mm (8 mm)
Background suppression typ. from:	20 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 V _{pp} ²⁾
Current consumption:	≤ 20 mA ³⁾

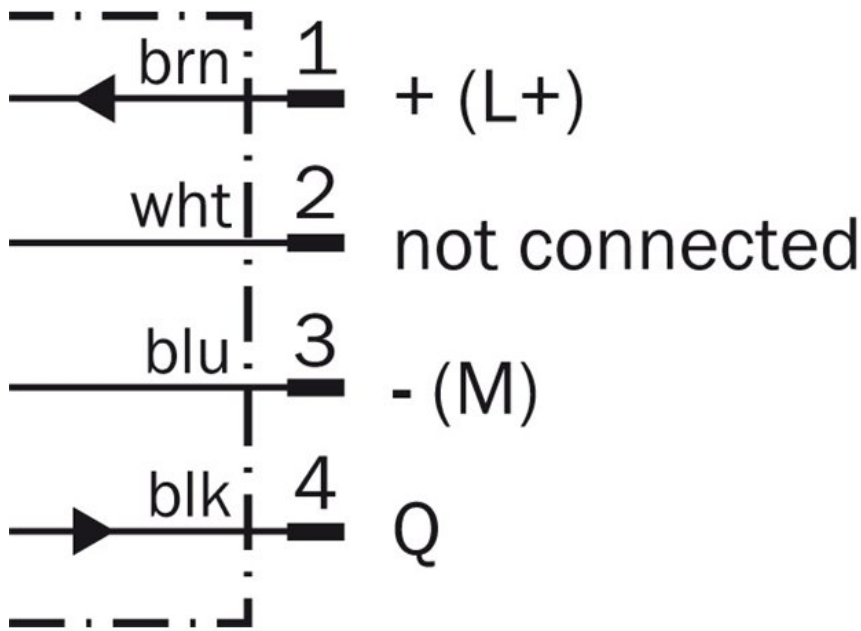
Output type:	NPN
Switching mode:	Dark switching
Output current I _{max} :	< 50 mA
Response time:	< 0.4 ms ⁴⁾
Switching frequency:	1,200 Hz ⁵⁾
Connection type:	Cable with special connector 3M, 4-wire, 660 mm ⁶⁾
Cable material:	PVC
Circuit protection:::	A, B, D ^{7) 8) 9)}
IO-Link:	-
Special device:	-
Optics material:	PMMA
Enclosure rating:	IP 67
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

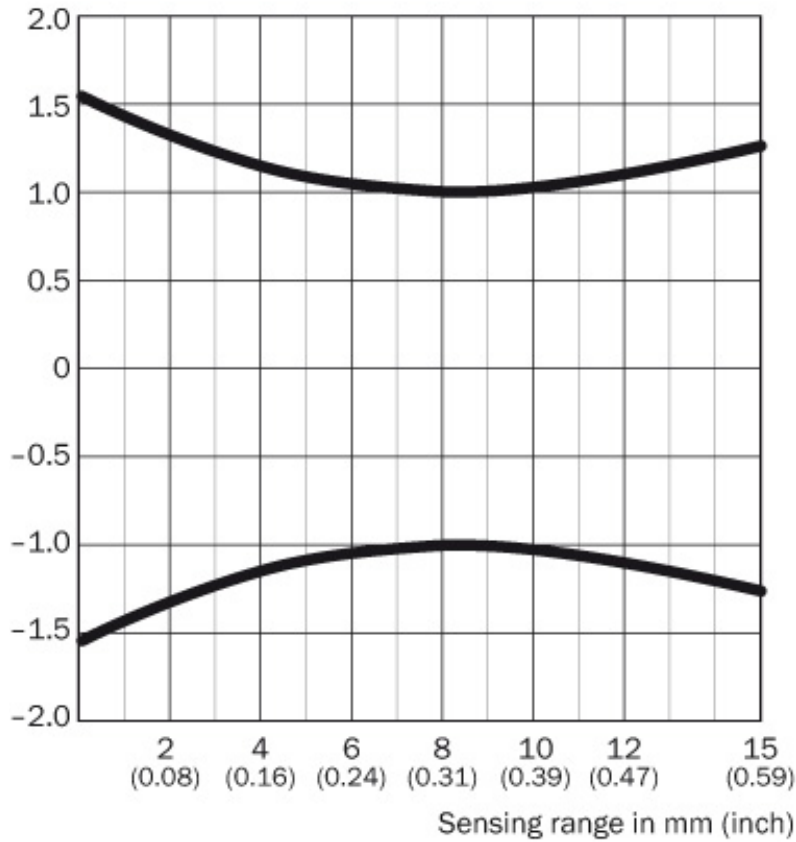
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Connection diagram



Light spot size

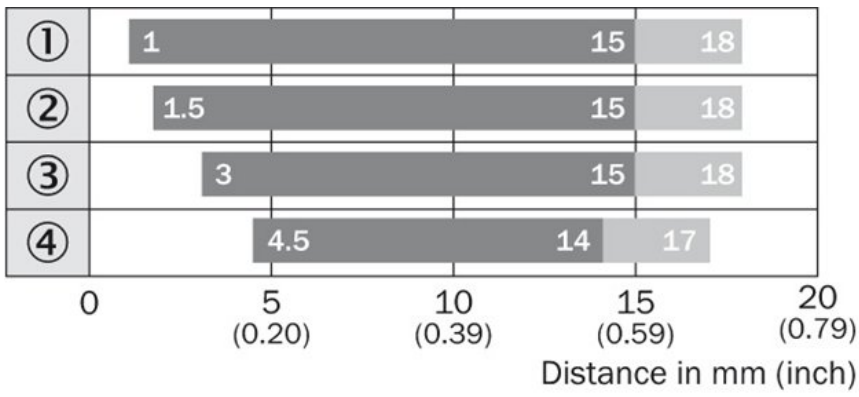
Spot diameter in mm (inch)



Dimensions in mm (inch)

Sensing range	Spot diameter
4 (0.16)	2.3 (0.09)
8 (0.31)	2.0 (0.08)
15 (0.59)	2.5 (0.10)

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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