

ONLINE DATA SHEET
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Photoelectric sensors
W4S-3, Photoelectric proximity sensor, Background suppression

WTB4S-3P2161



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Model Name > WTB4S-3P2161
Part No. > 1042040





Illustration may differ

At a glance

- Best background suppression in its class
- Setting either via teach-in pushbutton, 5-turn potentiometer cable or by IO-Link
- All models with PinPoint LED technology
- Versions with laser-like LED light spots
- High immunity to ambient light

Your benefits

- Less downtime due to reliable detection of all types of objects
- Laser-like light spot provides quick and easy alignment
- Smart machine design makes it possible to mount the sensor in the tightest spaces
- Reliable object detection due to best-in-class background suppression and high immunity to ambient light

Features

Sensor/detection principle:	Photoelectric proximity sensor, Background suppression
Dimensions (W x H x D):	12.2 mm x 41.8 mm x 17.3 mm
Housing design (light emission):	Rectangular
Sensing range max.:	4 mm ... 180 mm [1]
Sensing range:	10 mm ... 180 mm [2]
Type of light:	Visible red light
Light source:	PinPoint LED [3]
Wave length:	650 nm
Adjustment:	Potentiometer, 5 turns
Light spot size (distance):	Ø 6.5 mm (150 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

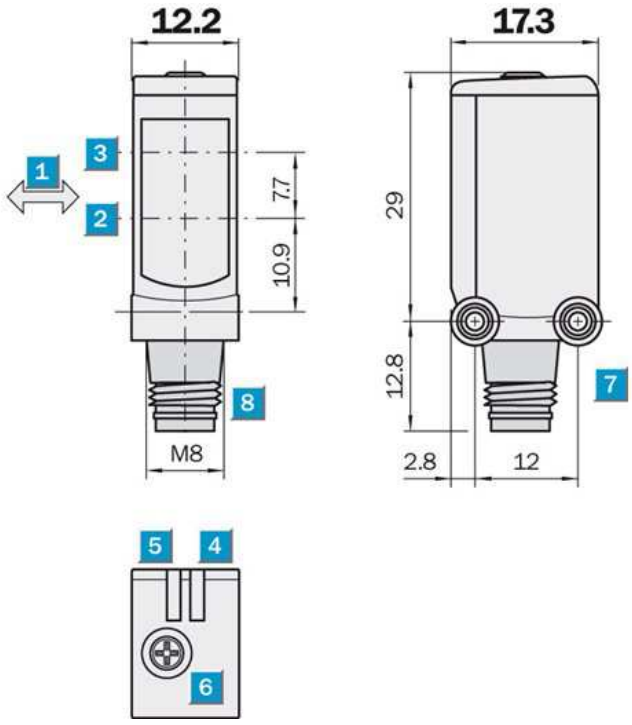
Supply voltage:	10 V DC ... 30 V DC [1]
Ripple:	< 5 Vpp [2]
Power consumption:	≤ 20 mA [3]
Output type:	PNP
Switching mode:	Light switching
Output current Imax.:	≤ 100 mA
Response time:	< 0.5 ms [4]

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Switching frequency:	1,000 Hz [5]
Connection type:	Connector M8, 3-pin
Circuit protection:::	A, C, D [6] [7] [8]
Protection class:	III
Weight:	30 g
Housing material:	ABS, Plastic
Optics material:	PMMA
Enclosure rating:	IP 67 IP 66
Ambient operating temperature:	-40 °C ... 60 °C
Ambient storage temperature:	-40 °C ... 75 °C
UL File No.:	NRKH.E181493 & NRKH7.E181493

[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] A = V_S connections reverse-polarity protected [7] C = interference suppression [8] D = outputs overcurrent and short-circuit protected

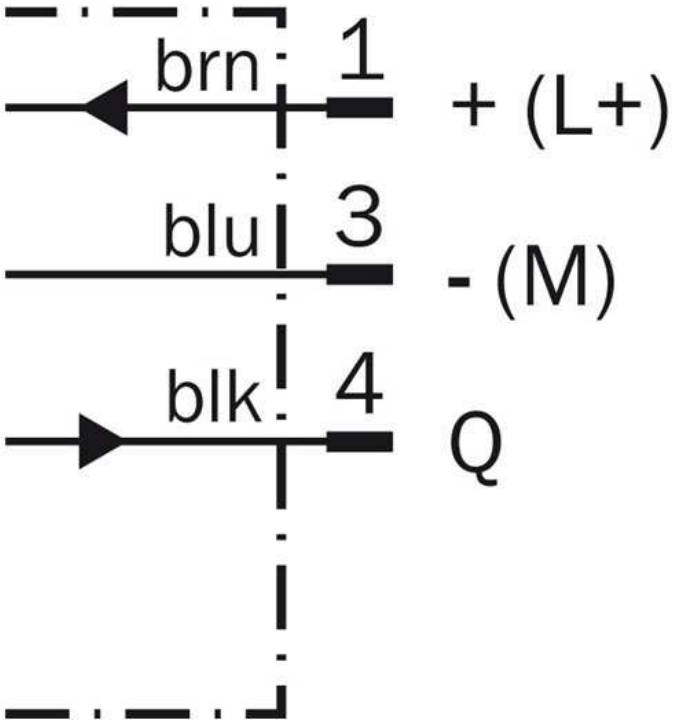
Dimensional drawing



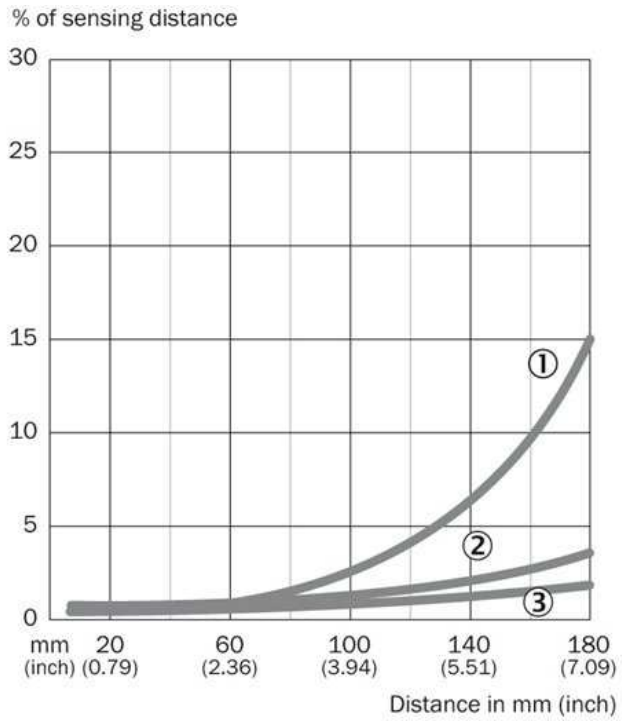
|1| Standard direction of the material being scanned
|2| Optical axis receiver
|3| Optical axis sender
|4| Status indicator LED green: power on
|5| Status indicator LED,
yellow: Status of received light beam
|6| Potentiometer
|7| Threaded mounting hole M3
|8| Connection

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Connection diagram

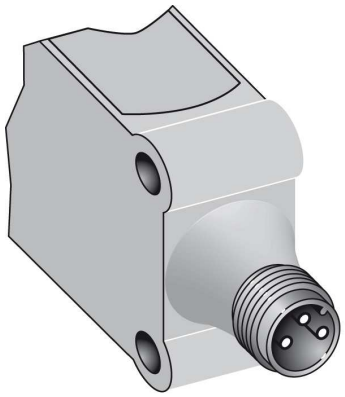


Characteristic curve

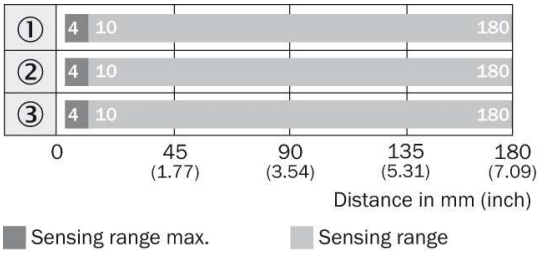


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Connection type



Sensing range diagram



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