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DATA SHEET

**WTB4S-3N1331**

W4  
Photoelectric sensors

**SICK** Sensor Intelligence

## PHOTOELECTRIC SENSORS

## WTB4S-3N1331

## ORDERING INFORMATION

Type	part no.
WTB4S-3N1331	1042062

Further device versions and accessories at [www.sick.com/W4](http://www.sick.com/W4)



Illustration may differ



## DETAILED TECHNICAL DATA

## FEATURES

Functional principle	Photoelectric proximity sensor	
Functional principle detail	Background suppression	
Sensing range max.	4 mm ... 120 mm <sup>1)</sup>	
Sensing range	10 mm ... 120 mm <sup>1)</sup>	
Emitted beam	Light source	PinPoint LED <sup>2)</sup>
	Type of light	Visible red light
	Light spot size (distance)	Ø 2.5 mm (50 mm)
Key LED figures	Wave length	650 nm
	Adjustment	Potentiometer, 5 turns

<sup>1)</sup> Object with 90% remission (based on standard white, DIN 5033).

<sup>2)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

## SAFETY-RELATED PARAMETERS

MTTF <sub>D</sub>	893 years
DC <sub>avg</sub>	0 %
T <sub>M</sub> (mission time)	20 years

**ELECTRONICS**

Supply voltage $U_B$	10 V DC ... 30 V DC <sup>1)</sup>
Ripple	< 5 V <sub>pp</sub> <sup>2)</sup>
Current consumption	20 mA <sup>3)</sup>
Protection class	III
Digital output	Type NPN Switching mode Light switching Output current $I_{max}$ ≤ 100 mA Response time < 0.5 ms <sup>4)</sup> Switching frequency 1,000 Hz <sup>5)</sup>
Circuit protection	A <sup>6)</sup> C <sup>7)</sup> D <sup>8)</sup>

<sup>1)</sup> Limit values.<sup>2)</sup> May not fall below or exceed  $U_V$  tolerances.<sup>3)</sup> Without load.<sup>4)</sup> Signal transit time with resistive load.<sup>5)</sup> With light/dark ratio 1:1.<sup>6)</sup> A =  $V_V$  connections reverse-polarity protected.<sup>7)</sup> C = interference suppression.<sup>8)</sup> D = outputs overcurrent and short-circuit protected.**MECHANICS**

Housing	Rectangular
Design detail	Slim
Dimensions (W x H x D)	12.2 mm x 41.8 mm x 17.3 mm
Connection	Cable, 3-wire, 2 m <sup>1)</sup>
Connection detail	Conductor size 0.14 mm <sup>2</sup> Cable diameter Ø 3.4 mm Length of cable (L) 2 m <sup>1)</sup>
Material	Housing Plastic, ABS Front screen Plastic, PMMA Cable Plastic, PVC
Weight	30 g

<sup>1)</sup> Do not bend below 0 °C.**AMBIENT DATA**

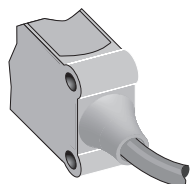
Enclosure rating	IP67 IP66
Ambient operating temperature	-40 °C ... +60 °C
Ambient temperature, storage	-40 °C ... +75 °C
UL File No.	NRKH.E181493 & NRKH7.E181493

**CERTIFICATES**

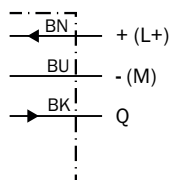
EU declaration of conformity	✓
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UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
ECOLAB certificate	✓
Photobiological safety (DIN EN 62471) certificate	✓

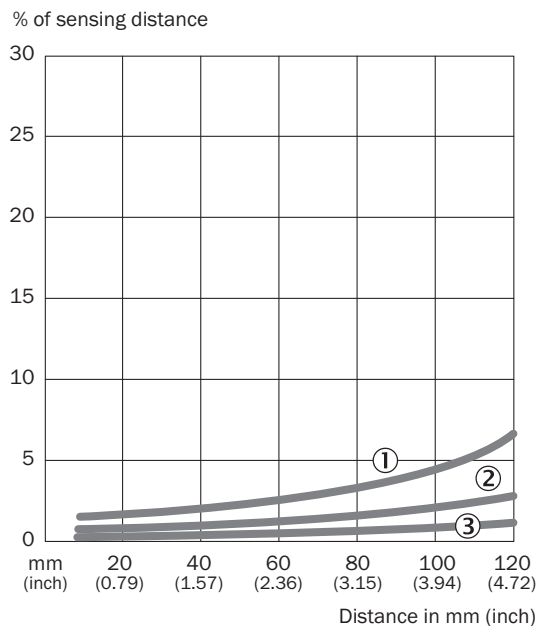
**CONNECTION TYPE**



**CONNECTION DIAGRAM CD-043**

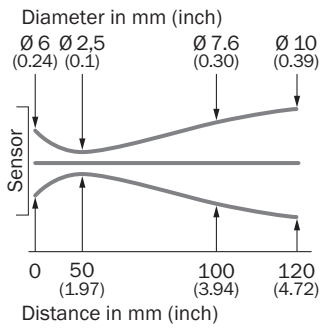


**CHARACTERISTIC CURVE WTB4S-3, 120 MM**

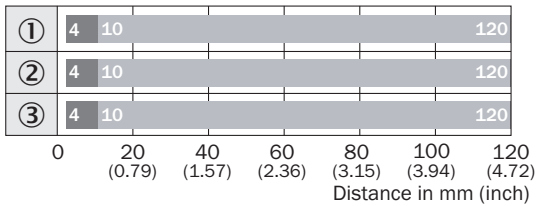


- ① Sensing range on black, 6% remission factor
- ② Sensing range on gray, 18% remission factor
- ③ Sensing range on white, 90% remission factor

**LIGHT SPOT SIZE**



**SENSING RANGE DIAGRAM WTB4S-3, 120 MM**

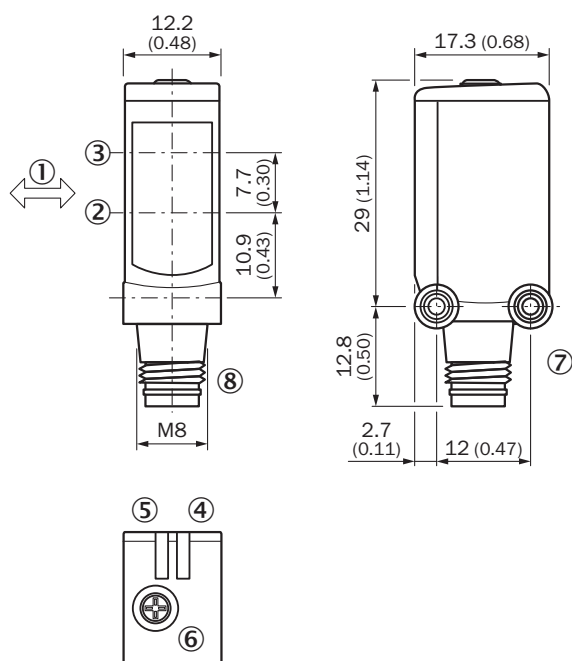


■ Sensing range max.

■ Sensing range

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

**DIMENSIONAL DRAWING WTB4S-3, POTENTIOMETER**



Dimensions in mm (inch)

- ① Standard direction of the material being detected
- ② optical axis, receiver
- ③ optical axis, sender
- ④ LED indicator green: Supply voltage active
- ⑤ LED indicator yellow: Status of received light beam
- ⑥ Potentiometer
- ⑦ Threaded mounting hole M3
- ⑧ Connection

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at [www.sick.com/1042062](http://www.sick.com/1042062)



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SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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