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DATA SHEET

**WTB4SL-3N1162V**

W4  
Photoelectric sensors

**SICK** Sensor Intelligence

## PHOTOELECTRIC SENSORS

## WTB4SL-3N1162V

## ORDERING INFORMATION

Type	part no.
WTB4SL-3N1162V	1058257

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.	25 mm ... 300 mm <sup>1)</sup>	
Sensing range	25 mm ... 300 mm <sup>1)</sup>	
Emitted beam	Light source	Laser <sup>2)</sup>
	Type of light	Visible red light
	Light spot size (distance)	Ø 1 mm (170 mm)
Key laser figures	Normative reference	EN 60825-1:2014, IEC 60825-1:2014 / CDRH 21 CFR 1040.10 & 1040.11
	Laser class	1 <sup>3)</sup>
	Wave length	650 nm
Adjustment	Single teach-in button	
Special applications	Hygienic and washdown zones, Detecting small objects	
Housing design	Washdown <sup>4)</sup>	
Mounting hole	M3	

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

<sup>2)</sup> Average service life: 50,000 h at T<sub>u</sub> = +25 °C.

<sup>3)</sup> Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

<sup>4)</sup> Difference between standard/washdown and hygiene: The essential difference between a standard/washdown product and a hygiene product is that where the process and contact with the medium (activity in the vicinity of the food) are concerned, a hygiene product is designed in accordance with the latest standards and hygiene design guidelines, and materials are selected accordingly.

**SAFETY-RELATED PARAMETERS**

MTTF <sub>D</sub>	441 years (EN ISO 13849-1) <sup>1)</sup>
DC <sub>avg</sub>	0 %

<sup>1)</sup> Mode of calculation: Parts-Count-calculation.

**ELECTRONICS**

Supply voltage U <sub>s</sub>	10 V DC ... 30 V DC <sup>1)</sup>										
Ripple	< 5 V <sub>pp</sub> <sup>2)</sup>										
Current consumption	30 mA <sup>3)</sup>										
Protection class	III										
Digital output	<table border="0"> <tr> <td>Type</td> <td>NPN<sup>4)</sup></td> </tr> <tr> <td>Switching mode</td> <td>Light/dark switching<sup>4)</sup></td> </tr> <tr> <td>Output current I<sub>max.</sub></td> <td>≤ 100 mA</td> </tr> <tr> <td>Response time</td> <td>≤ 0.5 ms<sup>5)</sup></td> </tr> <tr> <td>Switching frequency</td> <td>1,000 Hz<sup>6)</sup></td> </tr> </table>	Type	NPN <sup>4)</sup>	Switching mode	Light/dark switching <sup>4)</sup>	Output current I <sub>max.</sub>	≤ 100 mA	Response time	≤ 0.5 ms <sup>5)</sup>	Switching frequency	1,000 Hz <sup>6)</sup>
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Switching frequency	1,000 Hz <sup>6)</sup>										
Output function	Complementary										
Circuit protection	<table border="0"> <tr> <td>A<sup>7)</sup></td> </tr> <tr> <td>B<sup>8)</sup></td> </tr> <tr> <td>C<sup>9)</sup></td> </tr> </table>	A <sup>7)</sup>	B <sup>8)</sup>	C <sup>9)</sup>							
A <sup>7)</sup>											
B <sup>8)</sup>											
C <sup>9)</sup>											

<sup>1)</sup> Limit values when operated in short-circuit protected network: max. 8 A.

<sup>2)</sup> May not fall below or exceed U<sub>v</sub> tolerances.

<sup>3)</sup> Without load.

<sup>4)</sup> Q = light switching.

<sup>5)</sup> Signal transit time with resistive load.

<sup>6)</sup> With light/dark ratio 1:1.

<sup>7)</sup> A = V<sub>s</sub> connections reverse-polarity protected.

<sup>8)</sup> B = inputs and output reverse-polarity protected.

<sup>9)</sup> C = interference suppression.

**MECHANICS**

Housing	Rectangular						
Design detail	Slim						
Dimensions (W x H x D)	15.3 mm x 55.4 mm x 22.2 mm						
Connection	Cable, 4-wire, 2 m <sup>1)</sup>						
Connection detail	<table border="0"> <tr> <td>Conductor size</td> <td>0.14 mm<sup>2</sup></td> </tr> <tr> <td>Length of cable (L)</td> <td>2 m<sup>1)</sup></td> </tr> </table>	Conductor size	0.14 mm <sup>2</sup>	Length of cable (L)	2 m <sup>1)</sup>		
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Material	<table border="0"> <tr> <td>Housing</td> <td>Metal, Stainless steel V4A (1.4404, 316L)</td> </tr> <tr> <td>Front screen</td> <td>Plastic, PMMA</td> </tr> <tr> <td>Cable</td> <td>Plastic, PVC</td> </tr> </table>	Housing	Metal, Stainless steel V4A (1.4404, 316L)	Front screen	Plastic, PMMA	Cable	Plastic, PVC
Housing	Metal, Stainless steel V4A (1.4404, 316L)						
Front screen	Plastic, PMMA						
Cable	Plastic, PVC						
Weight	80 g						

<sup>1)</sup> Do not bend below 0 °C.

**AMBIENT DATA**

Enclosure rating	IP66 IP67 IP68 IP69K <sup>1)</sup>
Ambient operating temperature	-10 °C ... +50 °C
Ambient operating temperature extended	-30 °C ... +55 °C <sup>2) 3)</sup>
Ambient temperature, storage	-30 °C ... +70 °C
RoHS certificate	✓

<sup>1)</sup> Only in case of correctly mounted IP69K connecting cable.

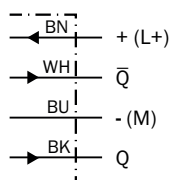
<sup>2)</sup> As of T<sub>a</sub> = 50 °C, a max. supply voltage V<sub>max</sub> = 24 V and a max. load current I<sub>max</sub> = 50 mA is permitted.

<sup>3)</sup> Operation below Tu -10 °C is possible if the sensor is already switched on at Tu > -10 °C, then cools down, and the supply voltage is subsequently not switched off. Switching on below Tu -10 °C is not permissible.

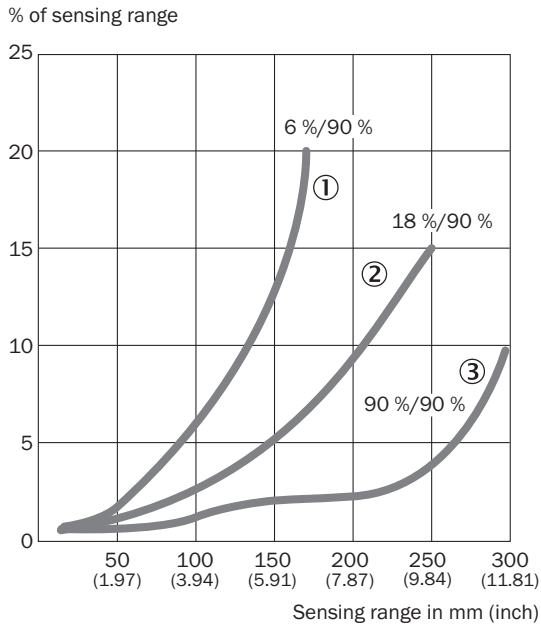
**CERTIFICATES**

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
ECOLAB certificate	✓
Laser safety (IEC 60825-1) certificate	✓

**CONNECTION DIAGRAM CD-094**

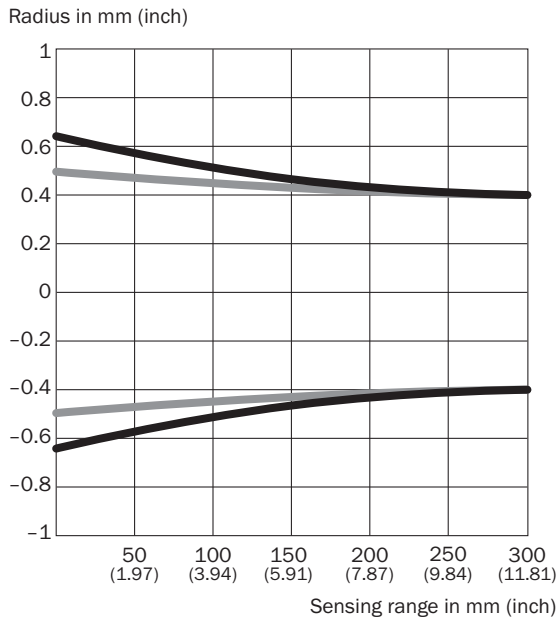


**CHARACTERISTIC CURVE**



- 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**

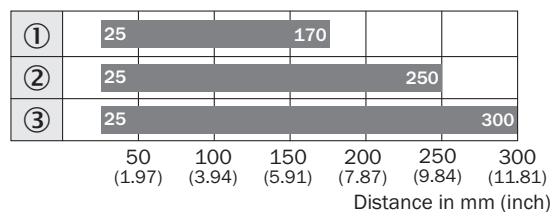


**Dimensions in mm (inch)**

Sensing range	Vertical	Horizontal
<b>50 mm</b> <b>(1.97)</b>	1.2 (0.05)	1.0 (0.04)
<b>100 mm</b> <b>(3.94)</b>	1.1 (0.04)	1.0 (0.04)
<b>200 mm</b> <b>(7.87)</b>	0.9 (0.04)	0.9 (0.04)
<b>300 mm</b> <b>(11.81)</b>	0.8 (0.03)	0.8 (0.03)

— Vertical  
— Horizontal

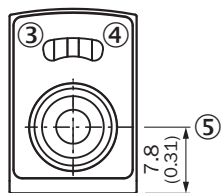
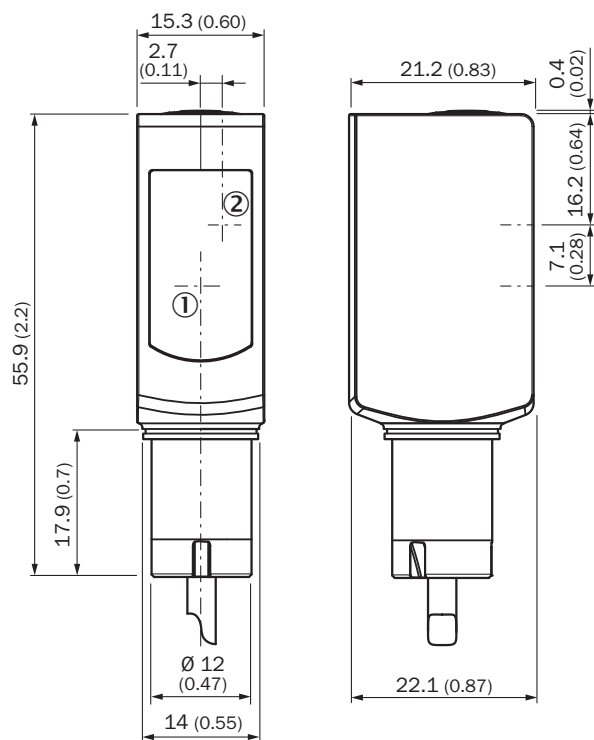
**SENSING RANGE DIAGRAM**



■ Sensing range typ. max.

- 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 WTB4SL-3, CABLE**



Dimensions in mm (inch)

- ① Center of optical axis, sender
- ② Center of optical axis, receiver
- ③ LED indicator yellow: Status of received light beam
- ④ LED indicator green: Supply voltage active
- ⑤ single teach-in button

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/1058257](http://www.sick.com/1058257)



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# SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

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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