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DATA SHEET

WTB4SL-3P2264VS02

W4
Photoelectric sensors

SICK Sensor Intelligence

PHOTOELECTRIC SENSORS

WT-
B4SL-3P2264VS02

ORDERING INFORMATION

Type	part no.
WTB4SL-3P2264VS02	1095525

Further device versions and accessories at www.sick.com/W4



Illustration may differ

DETAILED TECHNICAL DATA

FEATURES

Functional principle	Photoelectric proximity sensor						
Functional principle detail	Background suppression						
Sensing range max.	40 mm ... 200 mm ¹⁾						
Sensing range	40 mm ... 200 mm ¹⁾						
Emitted beam	<table border="0"> <tr> <td>Light source</td> <td>Laser ²⁾</td> </tr> <tr> <td>Type of light</td> <td>Visible red light</td> </tr> <tr> <td>Light spot size (distance)</td> <td>Ø 1 mm (170 mm)</td> </tr> </table>	Light source	Laser ²⁾	Type of light	Visible red light	Light spot size (distance)	Ø 1 mm (170 mm)
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Key laser figures	<table border="0"> <tr> <td>Normative reference</td> <td>EN 60825-1:2014, IEC 60825-1:2014 / CDRH 21 CFR 1040.10 & 1040.11</td> </tr> <tr> <td>Laser class</td> <td>1 ³⁾</td> </tr> <tr> <td>Wave length</td> <td>650 nm</td> </tr> </table>	Normative reference	EN 60825-1:2014, IEC 60825-1:2014 / CDRH 21 CFR 1040.10 & 1040.11	Laser class	1 ³⁾	Wave length	650 nm
Normative reference	EN 60825-1:2014, IEC 60825-1:2014 / CDRH 21 CFR 1040.10 & 1040.11						
Laser class	1 ³⁾						
Wave length	650 nm						
Adjustment	Single teach-in button, cable						
Special features	External teach Light/dark switching via teach-in and ET (when switched off)						
Special applications	Hygienic and washdown zones, Detecting small objects						
Housing design	Washdown ⁴⁾						

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

²⁾ Average service life: 50,000 h at T_v = +25 °C.

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

⁴⁾ 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.

Mounting hole	M3
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SAFETY-RELATED PARAMETERS

MTTF _D	445 years (EN ISO 13849-1) ¹⁾
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¹⁾ Mode of calculation: Parts-Count-calculation.

ELECTRONICS

Supply voltage U_B	10 V DC ... 30 V DC ¹⁾										
Ripple	$< 5\text{ V}_{PP}$ ²⁾										
Current consumption	30 mA ³⁾										
Protection class	III										
Digital output	<table border="0"> <tr> <td>Type</td> <td>PNP ⁴⁾</td> </tr> <tr> <td>Switching mode</td> <td>Light/dark switching ⁴⁾</td> </tr> <tr> <td>Output current I_{max}</td> <td>$\leq 100\text{ mA}$</td> </tr> <tr> <td>Response time</td> <td>$\leq 1\text{ ms}$ ⁵⁾</td> </tr> <tr> <td>Switching frequency</td> <td>500 Hz ⁶⁾</td> </tr> </table>	Type	PNP ⁴⁾	Switching mode	Light/dark switching ⁴⁾	Output current I_{max}	$\leq 100\text{ mA}$	Response time	$\leq 1\text{ ms}$ ⁵⁾	Switching frequency	500 Hz ⁶⁾
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Switching mode	Light/dark switching ⁴⁾										
Output current I_{max}	$\leq 100\text{ mA}$										
Response time	$\leq 1\text{ ms}$ ⁵⁾										
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Output function	Complementary										
Circuit protection	<table border="0"> <tr> <td>A ⁷⁾</td> </tr> <tr> <td>B ⁸⁾</td> </tr> <tr> <td>C ⁹⁾</td> </tr> </table>	A ⁷⁾	B ⁸⁾	C ⁹⁾							
A ⁷⁾											
B ⁸⁾											
C ⁹⁾											

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

²⁾ May not fall below or exceed U_B tolerances.

³⁾ Without load.

⁴⁾ Q = dark switching.

⁵⁾ Signal transit time with resistive load.

⁶⁾ With light/dark ratio 1:1.

⁷⁾ A = V_B connections reverse-polarity protected.

⁸⁾ B = inputs and output reverse-polarity protected.

⁹⁾ 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	Male connector M8, 4-pin ¹⁾				
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> </table>	Housing	Metal, Stainless steel V4A (1.4404, 316L)	Front screen	Plastic, PMMA
Housing	Metal, Stainless steel V4A (1.4404, 316L)				
Front screen	Plastic, PMMA				
Weight	40 g				

¹⁾ Max. tightening torque: 0.6 Nm.

AMBIENT DATA

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

¹⁾ Only in case of correctly mounted IP69K connecting cable.

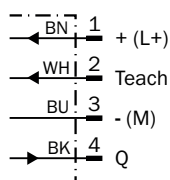
²⁾ As of T_a = 50 °C, a max. supply voltage V_{max} = 24 V and a max. load current I_{max} = 50 mA is permitted.

³⁾ 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.

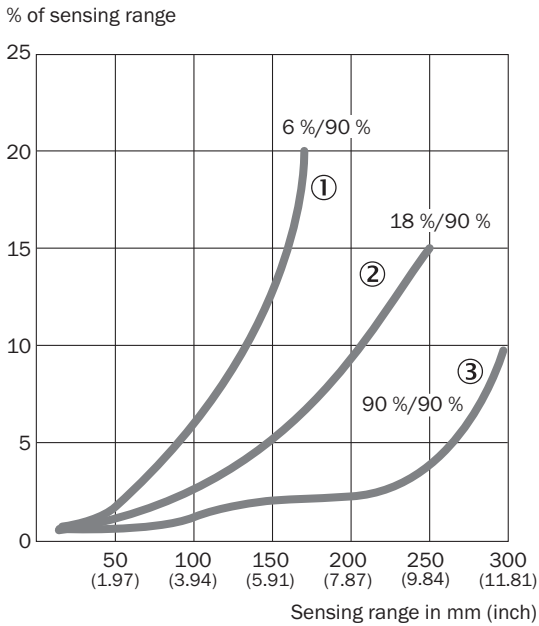
CERTIFICATES

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-092

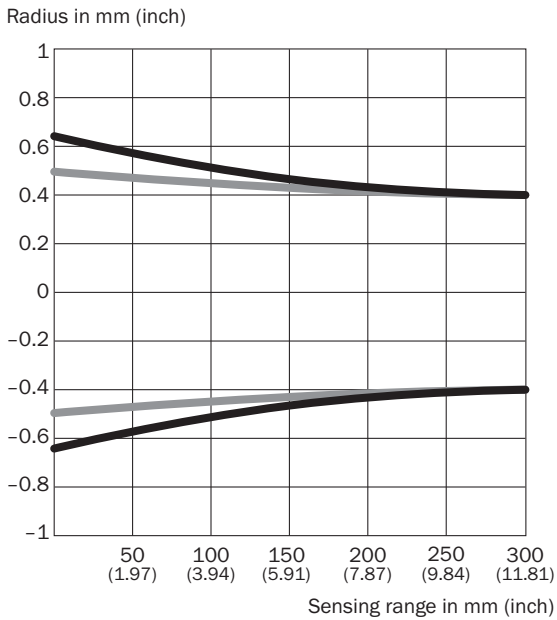


CHARACTERISTIC CURVE



- 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

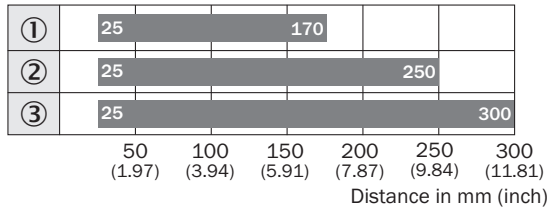


Dimensions in mm (inch)

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

— Vertical
— Horizontal

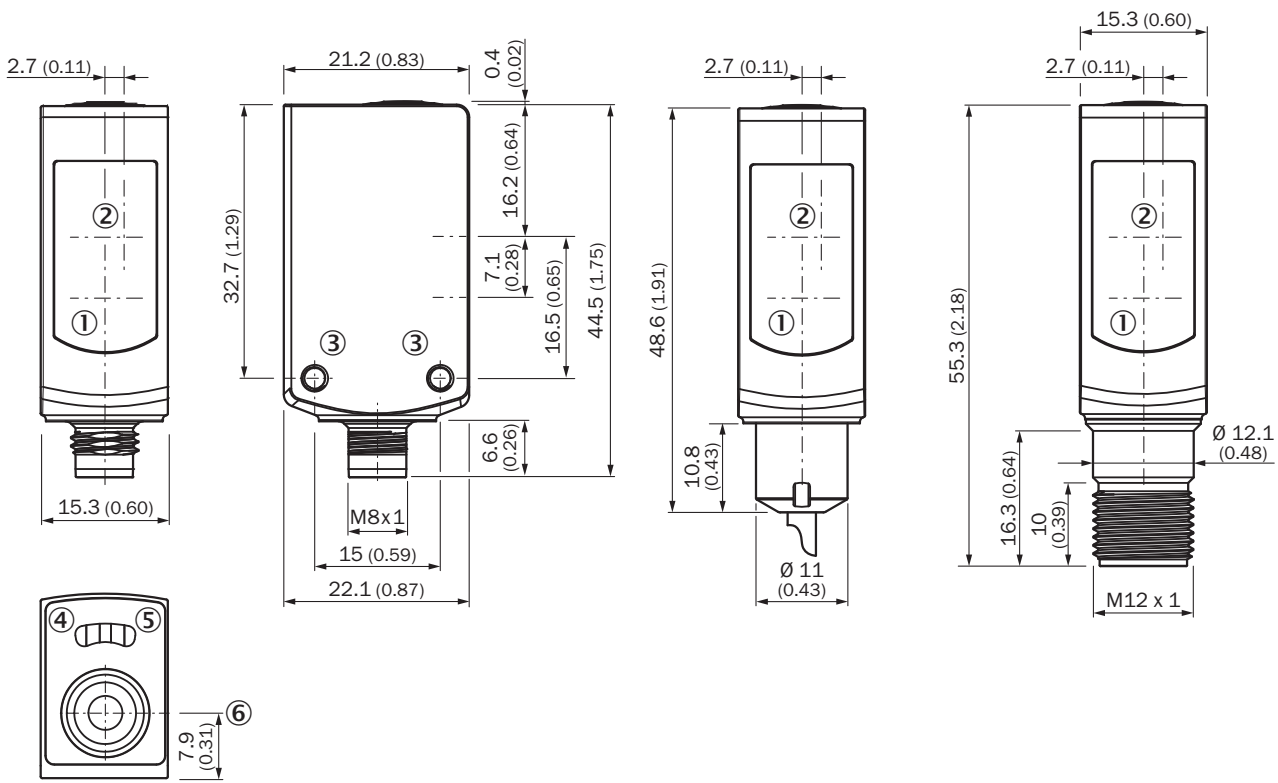
SENSING RANGE DIAGRAM



■ 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, PLUG



Dimensions in mm (inch)

- ① Center of optical axis, sender
- ② Center of optical axis, receiver
- ③ Threaded mounting hole M3
- ④ LED indicator yellow: Status of received light beam
- ⑤ LED indicator green: Supply voltage active
- ⑥ 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/1095525



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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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