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DATA SHEET

WTB4S-3P3435V

W4
Photoelectric sensors

SICK Sensor Intelligence

PHOTOELECTRIC SENSORS

WTB4S-3P3435V

ORDERING INFORMATION

Type	part no.
WTB4S-3P3435V	1046407

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.	4 mm ... 120 mm ¹⁾	
Sensing range	10 mm ... 120 mm ¹⁾	
Emitted beam	Light source	PinPoint LED ²⁾
	Type of light	Visible red light
	Light spot size (distance)	Ø 2.5 mm (50 mm)
Key LED figures	Wave length	650 nm
	Adjustment	Cable ³⁾
Special applications	Hygienic and washdown zones	
Housing design	Washdown	

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

²⁾ Average service life: 100,000 h at T_u = +25 °C.

³⁾ External teach-in: pulse > 2 s with voltage U_v with PNP and M with NPN.

SAFETY-RELATED PARAMETERS

MTTF _D	1,211 years
DC _{avg}	0 %

T_M (mission time)	20 years
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ELECTRONICS

Supply voltage U_s	10 V DC ... 30 V DC ¹⁾										
Ripple	< 5 V _{pp} ²⁾										
Current consumption	30 mA ³⁾										
Protection class	III										
Digital output	<table border="0"> <tr> <td>Type</td> <td>PNP</td> </tr> <tr> <td>Switching mode</td> <td>Light switching</td> </tr> <tr> <td>Output current I_{max}</td> <td>≤ 100 mA</td> </tr> <tr> <td>Response time</td> <td>< 0.5 ms ⁴⁾</td> </tr> <tr> <td>Switching frequency</td> <td>1,000 Hz ⁵⁾</td> </tr> </table>	Type	PNP	Switching mode	Light switching	Output current I_{max}	≤ 100 mA	Response time	< 0.5 ms ⁴⁾	Switching frequency	1,000 Hz ⁵⁾
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Circuit protection	<table border="0"> <tr> <td>A ⁶⁾</td> </tr> <tr> <td>B ⁷⁾</td> </tr> <tr> <td>C ⁸⁾</td> </tr> </table>	A ⁶⁾	B ⁷⁾	C ⁸⁾							
A ⁶⁾											
B ⁷⁾											
C ⁸⁾											

¹⁾ Limit values, reverse-polarity protected, operation in short-circuit protected network; max. 8 A.

²⁾ May not fall below or exceed U_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⁾ B = inputs and output reverse-polarity protected.

⁸⁾ C = interference suppression.

MECHANICS

Housing	Rectangular						
Design detail	Slim						
Dimensions (W x H x D)	15.25 mm x 48.6 mm x 22.2 mm						
Connection	Cable with M12 male connector, 4-pin ^{1) 2)}						
Connection detail	<table border="0"> <tr> <td>Length of cable (L)</td> <td>150 mm ²⁾</td> </tr> </table>	Length of cable (L)	150 mm ²⁾				
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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
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Front screen	Plastic, PMMA						
Cable	Plastic, PVC						
Weight	60 g						

¹⁾ Max. tightening torque: 0.7 Nm.

²⁾ Do not bend below 0 °C.

AMBIENT DATA

Enclosure rating	<table border="0"> <tr> <td>IP66</td> </tr> <tr> <td>IP67</td> </tr> <tr> <td>IP68</td> </tr> <tr> <td>IP69K</td> </tr> </table>	IP66	IP67	IP68	IP69K
IP66					
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Ambient operating temperature	<table border="0"> <tr> <td>-30 °C ... +70 °C ¹⁾</td> </tr> <tr> <td>-30 °C ... +60 °C</td> </tr> </table>	-30 °C ... +70 °C ¹⁾	-30 °C ... +60 °C		
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¹⁾ At $UV \leq 24$ V and $IA < 30$ mA.

PHOTOELECTRIC SENSORS - WTB4S-3P3435V

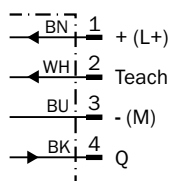
Ambient temperature, storage	-30 °C ... +75 °C
UL File No.	NRKH.E181493 & NRKH7.E181493

^{*)} At UV ≤ 24 V and IA < 30 mA.

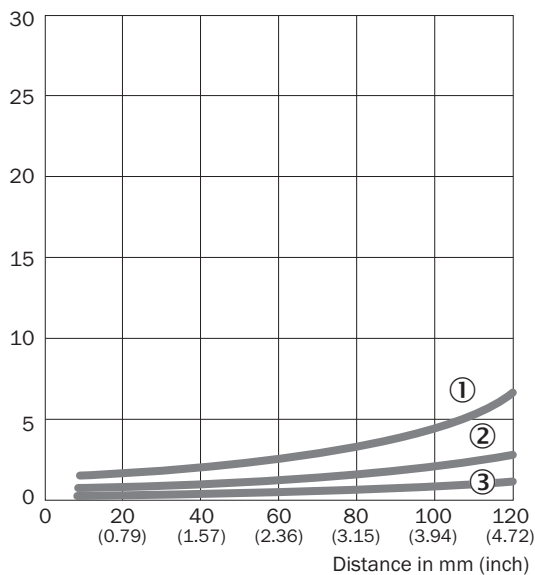
CERTIFICATES

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

CONNECTION DIAGRAM CD-092

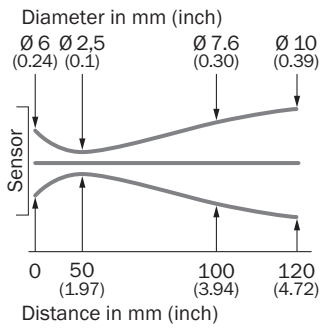


CHARACTERISTIC CURVE WTB4S-3, 120 MM

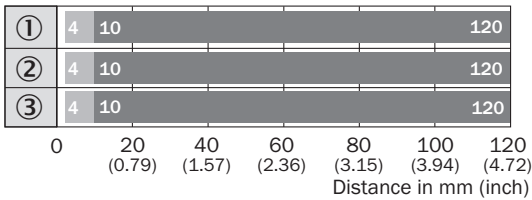


- ① Sensing range on black, 6% remission factor
- ② Sensing range on gray, 18% remission factor
- ③ Sensing range on white, 90% remission factor

LIGHT SPOT SIZE

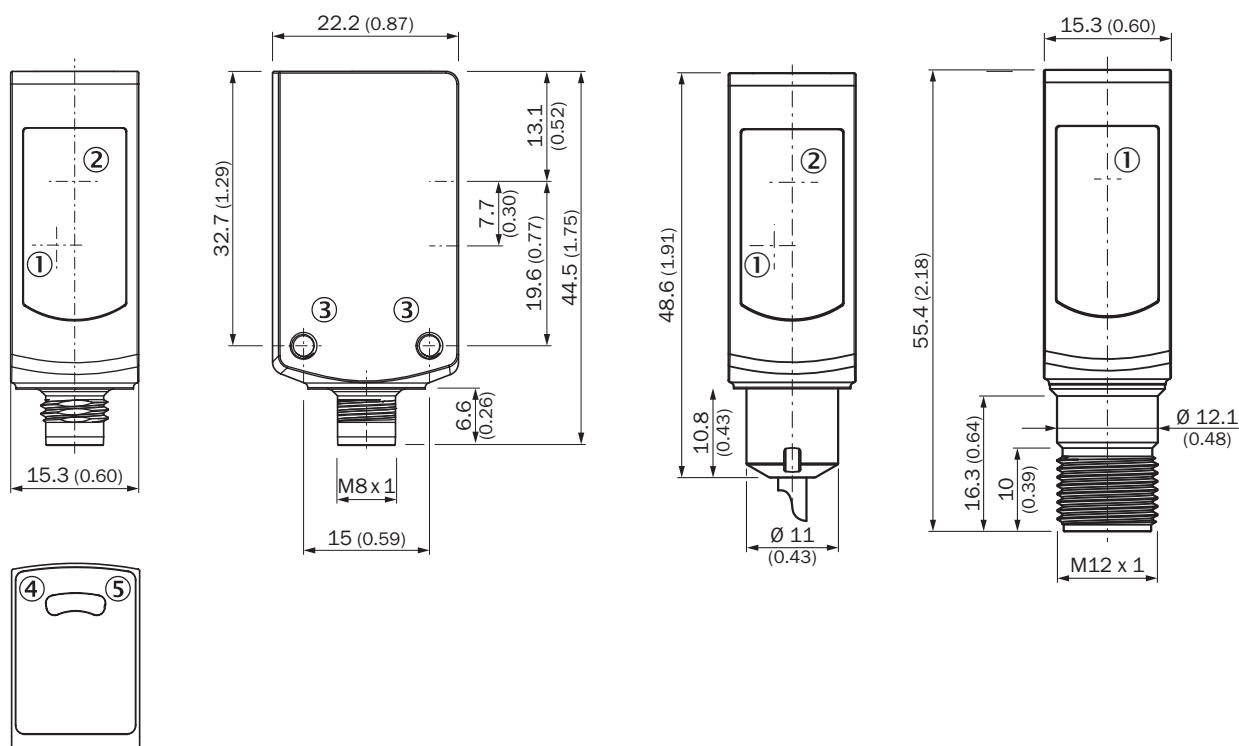


SENSING RANGE DIAGRAM WTB4S-3, 120 MM



- Sensing range
- Sensing range 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 WTB4S-3V, WTF4S-3V, WITHOUT SINGLE TEACH-IN BUTTON



Dimensions in mm (inch)

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

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/1046407



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SICK AT A GLANCE

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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.

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