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DATA SHEET

**WTB4S-3P2402VS09**

W4  
Photoelectric sensors

**SICK** Sensor Intelligence

## PHOTOELECTRIC SENSORS

WT-  
B4S-3P2402VS09

## ORDERING INFORMATION

Type	part no.
WTB4S-3P2402VS09	1054706

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 ... 280 mm <sup>1)</sup>	
Sensing range	10 mm ... 150 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 (100 mm)
Key LED figures	Wave length	650 nm
	Adjustment	Cable, Single teach-in button
Special features	Light spot diameter of 2.5 mm in 150 mm distance Reduced sensing range of 280 mm	
Special applications	Hygienic and washdown zones	
Housing design	Washdown	

<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.

**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	30 mA <sup>3)</sup>
Protection class	III
Digital output	Type PNP Switching mode Light/dark 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> B <sup>7)</sup> C <sup>8)</sup>

<sup>1)</sup> Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A.

<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> B = inputs and output reverse-polarity protected.

<sup>8)</sup> C = interference suppression.

**MECHANICS**

Housing	Rectangular
Design detail	Slim
Dimensions (W x H x D)	15.25 mm x 44.9 mm x 22.2 mm
Connection	Male connector M12, 4-pin <sup>1)</sup>
Material	Housing Metal, Stainless steel V4A (1.4404, 316L) Front screen Plastic, PMMA
Weight	45 g

<sup>1)</sup> Max. tightening torque: 0.7 Nm.

**AMBIENT DATA**

Enclosure rating	IP66 IP67 IP68 IP69K <sup>1)</sup>
Ambient operating temperature	-30 °C ... +70 °C <sup>2)</sup> -30 °C ... +60 °C
Ambient temperature, storage	-30 °C ... +75 °C
UL File No.	NRKH.E181493 & NRKH7.E181493

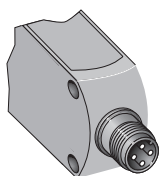
<sup>1)</sup> Only in case of correctly mounted IP69K connecting cable.

<sup>2)</sup> At  $U_V \leq 24$  V and  $I_A < 30$  mA.

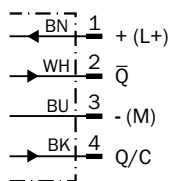
**CERTIFICATES**

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 TYPE**

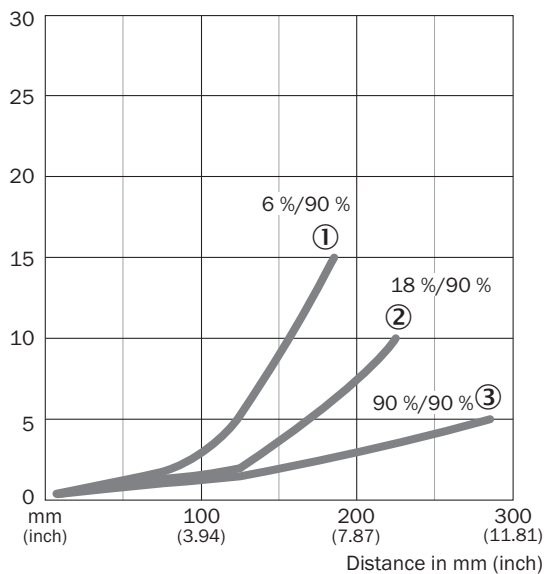


**CONNECTION DIAGRAM CD-098**

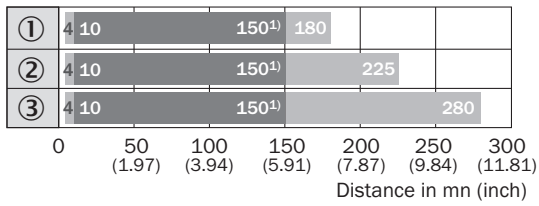


**CHARACTERISTIC CURVE WTB4S-3, SENSING RANGE 280 MM**

% of sensing distance



**SENSING RANGE DIAGRAM WTB4S-3, SENSING RANGE 280 MM**

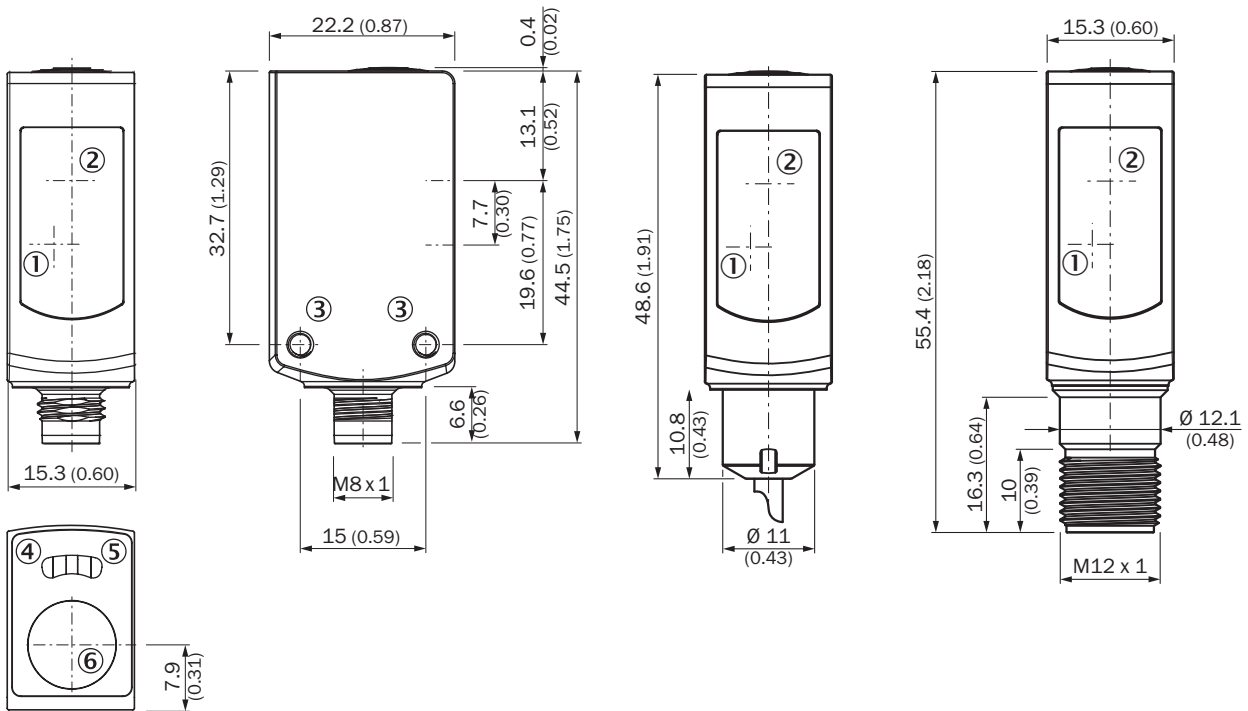


■ Operating distance    ■ Sensing distance typ. max.

- ① Sensing distance on black, 6 % remission
- ② Sensing distance on grey, 18 % remission
- ③ Sensing distance on whitw, 90 % remission

<sup>4)</sup> Due to the focus of the light spot at 100 mm (3.94 inch)

**DIMENSIONAL DRAWING WTB4S-3V, WTF4S-3V, 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
- ⑥ 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/1054706](http://www.sick.com/1054706)



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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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