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DATA SHEET

WTB12-3P2441S50

W12
Photoelectric sensors

SICK Sensor Intelligence



Illustration may differ

PHOTOELECTRIC SENSORS

WTB12-3P2441S50

ORDERING INFORMATION

Type	part no.
WTB12-3P2441S50	1044106

Further device versions and accessories at www.sick.com/W12

DETAILED TECHNICAL DATA

FEATURES

Functional principle	Photoelectric proximity sensor
Functional principle detail	Background suppression
Sensing range max.	50 mm ... 100 mm [1]
Emitted beam	
Light source	LED [2]
Type of light	Visible red light
Light spot size (distance)	Ø 2 mm (60 mm)
Key LED figures	
Wave length	640 nm
Adjustment	Potentiometer, 5 turns
Special features	Blind spots up to 40 mm Sensing range preset: 55 mm

[1] Object with 6% remission (based on standard white, DIN 5033).

[2] Average service life: 100,000 h at T_U = +25 °C.

ELECTRONICS

Supply voltage U_B	10 V DC ... 30 V DC [1]

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

[2] May not fall below or exceed U_V 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] C = interference suppression.

[8] D = outputs overcurrent and short-circuit protected.

Ripple	< 5 V_{pp} [2]
Current consumption	45 mA [3]
Protection class	III
Digital output	
Type	PNP
Switching mode	Light switching
Signal voltage PNP HIGH/LOW	> Uv - 2,9 V / 0 V <= 1,5 V
Output current $I_{max.}$	≤ 100 mA
Response time	≤ 250 µs [4]
Switching frequency	2,000 Hz [5]
Delay time	One shot, 1.2 ms delay
Output function	Complementary
Circuit protection	A [6] C [7] D [8]

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[3] Without load.

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MECHANICS

Housing	Rectangular
Dimensions (W x H x D)	15.6 mm x 48.5 mm x 42 mm
Connection	Male connector M12, 4-pin
Material	
Housing	Metal
Front screen	Plastic, PMMA
Weight	130 g

AMBIENT DATA

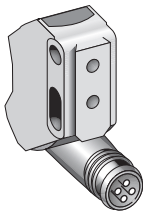
Enclosure rating	IP66 IP67 IP69K
Ambient operating temperature	–40 °C ... +60 °C
Ambient temperature, storage	–40 °C ... +75 °C
UL File No.	NRKH.E181493 & NRKH7.E181493

CERTIFICATES

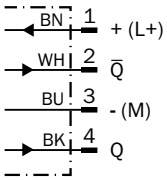
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓

China Compulsory Product Certification (CCC) exempt	✓
ECOLAB certificate	✓
cULus certificate	✓
Photobiological safety (DIN EN 62471) certificate	✓

CONNECTION TYPE



CONNECTION DIAGRAM CD-083



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/1044106

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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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