

DATA SHEET

# WTB12-3P2411T01

W12  
Photoelectric sensors

## PHOTOELECTRIC SENSORS

## WTB12-3P2411T01

## ORDERING INFORMATION

Type	part no.
WTB12-3P2411T01	1041425

Further device versions and accessories at [www.sick.com/W12](http://www.sick.com/W12)



Illustration may differ



## DETAILED TECHNICAL DATA

## FEATURES

Functional principle	Photoelectric proximity sensor	
Functional principle detail	Background suppression	
Sensing range max.	20 mm ... 600 mm <sup>1)</sup>	
Sensing range	20 mm ... 600 mm	
Emitted beam	Light source	LED <sup>2)</sup>
	Type of light	Infrared light
	Light spot size (distance)	Ø 6 mm (200 mm)
Key LED figures	Wave length	850 nm
	Adjustment	Potentiometer, 5 turns
Special features	Teflon coated housing	
Special applications	Hygienic and washdown zones	

<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.

## SAFETY-RELATED PARAMETERS

MTTF <sub>D</sub>	533 years
DC <sub>avg</sub>	0 %
T <sub>M</sub> (mission time)	20 years

**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	55 mA <sup>3)</sup>
Protection class	III
Digital output	Type PNP Switching mode Light/dark switching Output current $I_{max}$ ≤ 100 mA Response time ≤ 330 μs <sup>4)</sup> Switching frequency 1,500 Hz <sup>5)</sup>
Output function	Complementary
Circuit protection	A <sup>6)</sup> C <sup>7)</sup> D <sup>8)</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  $U_V$  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 =  $V_B$  connections reverse-polarity protected.

<sup>7)</sup> C = interference suppression.

<sup>8)</sup> D = outputs overcurrent and short-circuit protected.

**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, zinc diecast Plastic, PTFE coating
Weight	120 g

**AMBIENT DATA**

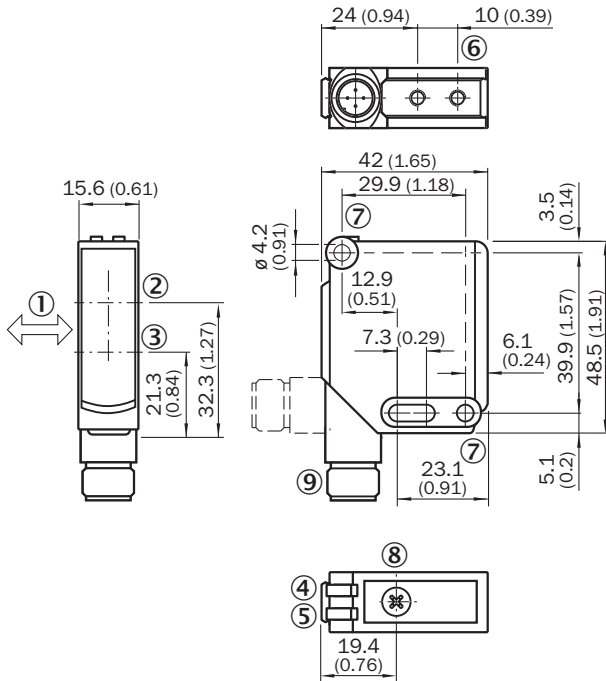
Enclosure rating	IP66 IP67 IP69K
Ambient operating temperature	-40 °C ... +60 °C
Ambient temperature, storage	-40 °C ... +75 °C
UL File No.	NRKH.E181493 & NRKH7.E181493

**CERTIFICATES**

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

ECOLAB certificate	✓
cULus certificate	✓
Photobiological safety (DIN EN 62471) certificate	✓

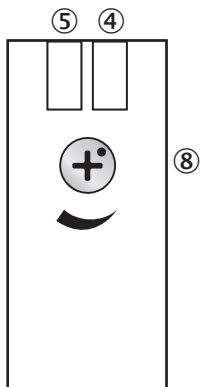
**DIMENSIONAL DRAWING WTB12-3, POTENTIOMETER**



Dimensions in mm (inch)

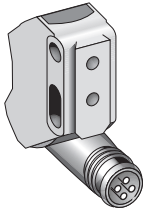
- ① Standard direction of the material being detected
- ② Optical axis, receiver
- ③ Optical axis, sender
- ④ LED indicator green: Supply voltage active
- ⑤ LED indicator yellow: Status of received light beam
- ⑥ M4 threaded mounting hole, 4 mm deep
- ⑦ Mounting hole, Ø 4.2 mm
- ⑧ Sensing range adjustment: potentiometer
- ⑨ Connection

**ADJUSTMENTS WTB12-3, WTF12-3, POTENTIOMETER**

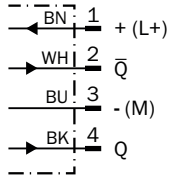


- ④ LED indicator green: Supply voltage active
- ⑤ LED indicator yellow: Status of received light beam
- ⑧ Sensing range adjustment: potentiometer

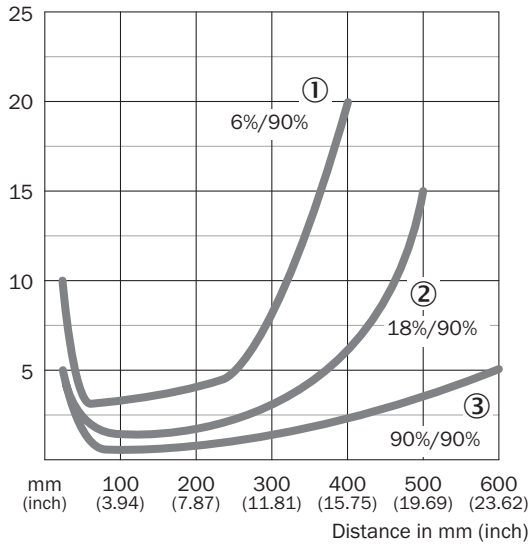
**CONNECTION TYPE**



**CONNECTION DIAGRAM CD-083**

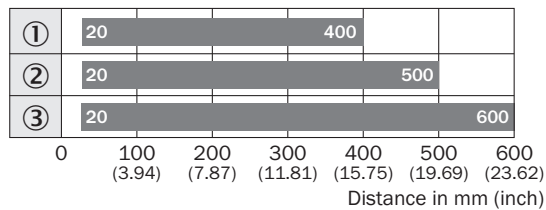


**CHARACTERISTIC CURVE WTB12-3, INFRARED LIGHT**



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

**SENSING RANGE DIAGRAM WTB12-3, INFRARED LIGHT**



■ Sensing range

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

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/1041425](http://www.sick.com/1041425)



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