

# WTB12-3N1131P01

W12-3

**SMALL PHOTOELECTRIC SENSORS** 





#### Ordering information

Туре	Part no.
WTB12-3N1131P01	1044102

Included in delivery: BEF-WG-W12 (1)

Other models and accessories → www.sick.com/W12-3

Illustration may differ



#### Detailed technical data

#### **Features**

Functional principle	Photoelectric proximity sensor
Functional principle detail	Background suppression
Sensing range max.	20 mm 350 mm <sup>1)</sup>
Sensing range	20 mm 350 mm
Emitted beam	
Light source	LED <sup>2)</sup>
Type of light	Visible red light
Light spot size (distance)	Ø 6 mm (200 mm)
Key LED figures	
Wave length	640 nm
Adjustment	Potentiometer, 5 turns
Items supplied	BEF-WG-W12 mounting bracket

 $<sup>^{1)}</sup>$  Object with 90% remission (based on standard white, DIN 5033).

#### Safety-related parameters

MTTF <sub>D</sub>	672 years
DC <sub>avg</sub>	0 %
T <sub>M</sub> (mission time)	20 years

<sup>&</sup>lt;sup>2)</sup> Average service life: 100,000 h at  $T_U$  = +25 °C.

#### **Electronics**

Supply voltage $\mathbf{U}_{\mathrm{B}}$	10 V DC 30 V DC <sup>1)</sup>
Ripple	< 5 V <sub>pp</sub> <sup>2)</sup>
Current consumption	45 mA <sup>3)</sup>
Protection class	III
Digital output	
Туре	NPN
Switching mode	Light/dark switching
Signal voltage NPN HIGH/LOW	Approx. VS / < 2.5 V
Output current I <sub>max.</sub>	≤ 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.

#### Mechanics

Housing	Rectangular
Dimensions (W x H x D)	15.6 mm x 48.5 mm x 42 mm
Connection	Cable, 4-wire, 2 m <sup>1)</sup>
Connection detail	
Conductor size	0.25 mm <sup>2</sup>
Length of cable (L)	$2~\mathrm{m}^{~1)}$
Material	
Housing	Metal
Front screen	Plastic, PMMA
Cable	Plastic, PVC
Weight	200 g

<sup>1)</sup> Do not bend below 0 °C.

#### Ambient data

Enclosure rating	IP66 IP67 IP69K
Ambient operating temperature	-40 °C +60 °C
Ambient temperature, storage	-40 °C +75 °C

 $<sup>^{2)}</sup>$  May not fall below or exceed  $\mathrm{U}_{\mathrm{V}}$  tolerances.

<sup>3)</sup> Without load.

<sup>&</sup>lt;sup>4)</sup> Signal transit time with resistive load.

<sup>5)</sup> With light/dark ratio 1:1.

<sup>&</sup>lt;sup>6)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

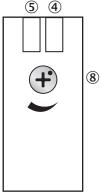
<sup>7)</sup> C = interference suppression.

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

UL File No.	NRKH.E181493 & NRKH7.E181493
Classifications	
ECLASS 5.0	27270904
ECLASS 5.1.4	27270904
ECLASS 6.0	27270904
ECLASS 6.2	27270904
ECLASS 7.0	27270904
ECLASS 8.0	27270904
ECLASS 8.1	27270904
ECLASS 9.0	27270904
ECLASS 10.0	27270904
ECLASS 11.0	27270904
ECLASS 12.0	27270903
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

# Adjustments

WTB12-3, WTF12-3, potentiometer



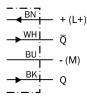
- 4 LED indicator green: Supply voltage active
- ⑤ LED indicator yellow: Status of received light beam
- Sensing range adjustment: potentiometer

#### Connection type



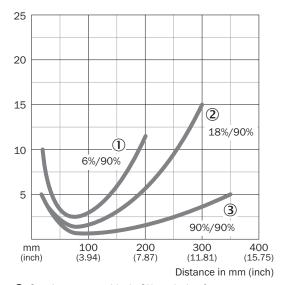
### Connection diagram

#### Cd-094



#### Characteristic curve

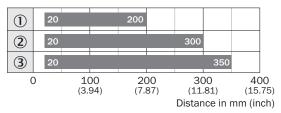
WTB12-3, red light, 350 mm



- ① Sensing range on black, 6% remission factor
- ② Sensing range on gray, 18% remission factor③ Sensing range on white, 90% remission factor

#### Sensing range diagram

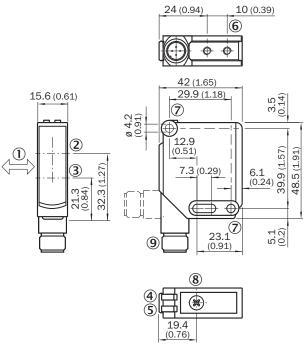
WTB12-3, red light, 350 mm



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

#### Dimensional drawing (Dimensions in mm (inch))

WTB12-3, potentiometer



- 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
- Sensing range adjustment: potentiometer
- Connection

#### Recommended accessories

Other models and accessories → www.sick.com/W12-3

	Brief description	Туре	Part no.
Others			
	• Connection type head A: Male connector, M12, 4-pin, straight, A-coded • Description: Unshielded • Connection systems: Screw-type terminals • Permitted cross-section: ≤ 0.75 mm²	STE-1204-G	6009932

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