



WTB12-3P2531S46

W12-3

SMALL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	Part no.
WTB12-3P2531S46	1044103

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

Detailed technical data

Features

Device type	Photoelectric sensors
Functional principle	Photoelectric proximity sensor
Functional principle detail	Background suppression
Sensing range max.	30 mm ... 350 mm ¹⁾
Sensing range	50 mm ... 350 mm
Emitted beam	
Light source	LED ²⁾
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
Special features	Health output Switching frequency 1500 Hz

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

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

Electrical data

Supply voltage U_b	10 V DC ... 30 V DC ¹⁾
Ripple	< 5 V _{pp} ²⁾
Current consumption	60 mA ³⁾
Protection class	III
Digital output	
Type	PNP
Signal voltage PNP HIGH/LOW	> U _v - 2,5 V / ca. 0 V
Output current I _{max.}	≤ 100 mA
Response time	< 330 μs ⁴⁾
Switching frequency	1,500 Hz ⁵⁾
Switching mode	Light/dark switching
Output function	Complementary
Circuit protection	A ⁶⁾ C ⁷⁾ D ⁸⁾

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

²⁾ May not exceed or fall below 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.

Mechanical data

Housing	Rectangular
Dimensions (W x H x D)	15.6 mm x 48.5 mm x 42 mm
Connection	Male connector M12, 5-pin
Material	
Housing	Metal
Front screen	Plastic, PMMA
Weight	120 g

Ambient data

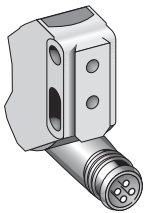
Enclosure rating	IP66 IP67 IP69K
Ambient operating temperature	-40 °C ... +60 °C
Ambient temperature, storage	-40 °C ... +75 °C
UL File No.	NRKH.E181493 & NRKH7.E181493

Classifications

eCl@ss 5.0	27270904
eCl@ss 5.1.4	27270904
eCl@ss 6.0	27270904

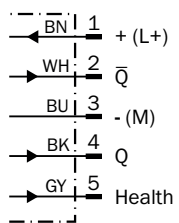
eCl@ss 6.2	27270904
eCl@ss 7.0	27270904
eCl@ss 8.0	27270904
eCl@ss 8.1	27270904
eCl@ss 9.0	27270904
eCl@ss 10.0	27270904
eCl@ss 11.0	27270904
eCl@ss 12.0	27270903
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

Connection type



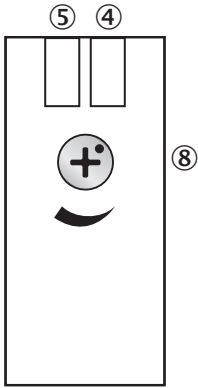
Connection diagram

Cd-157



Adjustments

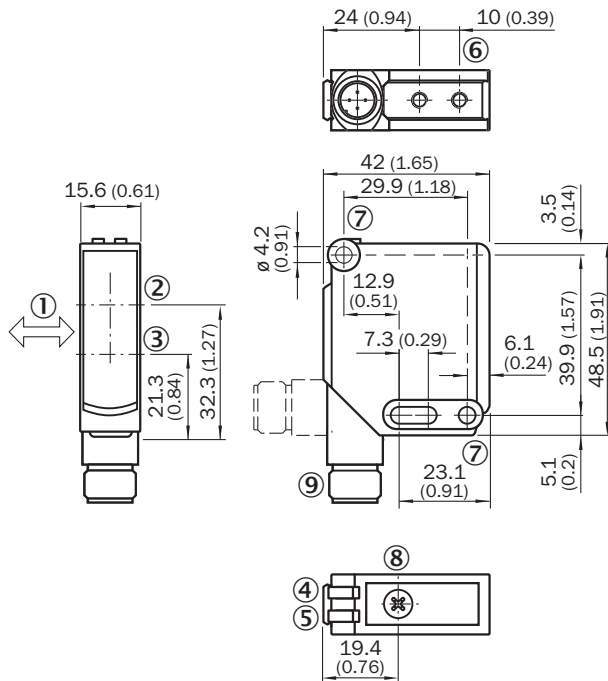
WTB12-3, WTF12-3, potentiometer



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

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, \varnothing 4.2 mm
- ⑧ Sensing range adjustment: potentiometer
- ⑨ Connection

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

WORLDWIDE PRESENCE:

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