



WTB12-3P2531S46

W12-3

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

Sensor/ detection principle	Photoelectric proximity sensor, Background suppression
Dimensions (W x H x D)	15.6 mm x 48.5 mm x 42 mm
Housing design (light emission)	Rectangular
Sensing range max.	30 mm ... 350 mm ¹⁾
Sensing range	50 mm ... 350 mm
Type of light	Visible red light
Light source	LED ²⁾
Light spot size (distance)	Ø 6 mm (200 mm)
Wave length	640 nm
Adjustment	Potentiometer, 5 turns
Special features	Health output Switching frequency 1500 Hz

¹⁾ Object with 90 % reflectance (referred to standard white, DIN 5033).

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

Mechanics/electronics

Supply voltage	10 V DC ... 30 V DC ¹⁾
-----------------------	-----------------------------------

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.

Ripple	$\leq 5 \text{ V}_{pp}^{2)}$
Power consumption	$\leq 60 \text{ mA}^{3)}$
Switching output	PNP
Output function	Complementary
Switching mode	Light/dark switching
Signal voltage PNP HIGH/LOW	$> U_v - 2,5 \text{ V} / \text{ca. } 0 \text{ V}$
Output current $I_{max.}$	100 mA
Response time	$< 330 \mu\text{s}^{4)}$
Switching frequency	1,500 Hz ⁵⁾
Connection type	Male connector M12, 5-pin
Circuit protection	A ⁶⁾ C ⁷⁾ D ⁸⁾
Protection class	III
Weight	120 g
Special device	✓
Housing material	Metal
Enclosure rating	IP66 IP67 IP69K
Ambient operating temperature	-40 °C ... +60 °C
Ambient storage temperature	-40 °C ... +75 °C
UL File No.	NRKH.E181493 & NRKH7.E181493

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.

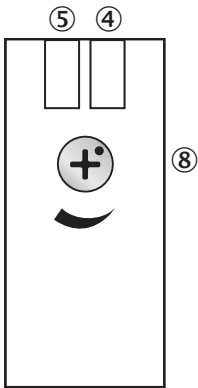
8) D = outputs overcurrent and short-circuit protected.

Classifications

ECI@ss 5.0	27270904
ECI@ss 5.1.4	27270904
ECI@ss 6.0	27270904
ECI@ss 6.2	27270904
ECI@ss 7.0	27270904
ECI@ss 8.0	27270904
ECI@ss 8.1	27270904
ECI@ss 9.0	27270904
ETIM 5.0	EC002719
ETIM 6.0	EC002719
UNSPSC 16.0901	39121528

Adjustments possible

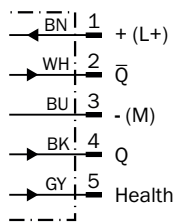
WTB12-3, WTF12-3, potentiometer



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

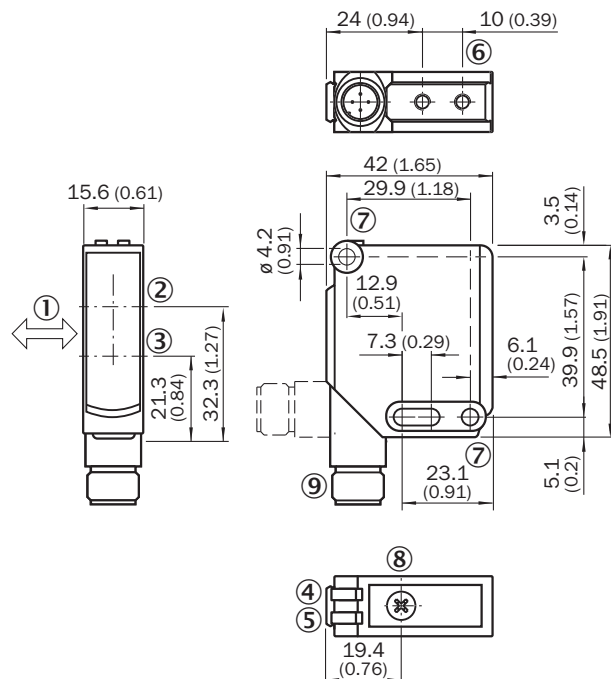
Connection diagram

Cd-157






Dimensional drawing (Dimensions in mm (inch))

WTB12-3, potentiometer



Recommended accessories

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

	Brief description	Type	Part no.
Universal bar clamp systems			
	Plate N02 for universal clamp bracket, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware	BEF-KHS-N02	2051608
	Plate N03 for universal clamp bracket, zinc coated, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware	BEF-KHS-N03	2051609
	Plate N04 for universal clamp, steel, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware	BEF-KHS-N04	2051610

	Brief description	Type	Part no.
Device protection (mechanical)			
	Protective housing for universal clamp, Zinc plated steel (protective housing), Zinc die cast (clamping bracket), Universal clamp, mounting hardware	BEF-SG-W12-3	2045175
Mounting brackets and plates			
	Mounting bracket, large, stainless steel, mounting hardware included	BEF-WG-W12	2013942
	Mounting bracket, small, stainless steel, mounting hardware included	BEF-WK-W12	2012938
Terminal and alignment brackets			
	Double clamp bracket for dovetail mounting, Aluminum (anodised), mounting hardware included	BEF-DKH-W12	2013947
	Clamping block for dovetail mounting, Aluminum (anodised), mounting hardware included	BEF-KH-W12	2013285
Plug connectors and cables			
	Head A: female connector, M12, 4-pin, straight Head B: open cable ends Cable: PVC, unshielded, 2 m	DOL-1204-G02M	6009382
	Head A: female connector, M12, 4-pin, straight Head B: open cable ends Cable: PVC, unshielded, 5 m	DOL-1204-G05M	6009866
	Head A: female connector, M12, 4-pin, angled with LED Head B: open cable ends Cable: PVC, unshielded, 2 m	DOL-1204-L02M	6027945
	Head A: female connector, M12, 4-pin, angled with LED Head B: open cable ends Cable: PVC, unshielded, 5 m	DOL-1204-L05M	6027944
	Head A: female connector, M12, 4-pin, angled Head B: open cable ends Cable: PVC, unshielded, 2 m	DOL-1204-W02M	6009383
	Head A: female connector, M12, 4-pin, angled Head B: open cable ends Cable: PVC, unshielded, 5 m	DOL-1204-W05M	6009867
	Head A: female connector, M12, 4-pin, angled Head B: open cable ends Cable: PVC, unshielded, 10 m	DOL-1204-W10M	6010541
	Head A: female connector, M12, 4-pin, straight Head B: - Cable: unshielded	DOS-1204-G	6007302
	Head A: female connector, M12, 4-pin, angled Head B: - Cable: unshielded	DOS-1204-W	6007303

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:

Contacts and other locations –www.sick.com