Product data sheet

WTB12-3N1131

W12-3

SMALL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	Part no.
WTB12-3N1131	1041418

Included in delivery: BEF-KH-W12 (2)

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.	20 mm ... 350 mm [1]
Sensing range	20 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

[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] Do not bend below 0 °C.
[7] A = V_S connections reverse-polarity protected.
[8] C = interference suppression.
[9] D = outputs overcurrent and short-circuit protected.

Ripple	≤ 5 V_{pp} [2]
Power consumption	45 mA [3]
Switching output	NPN
Output function	Complementary
Switching mode	Light/dark switching
Signal voltage NPN HIGH/LOW	Approx. VS / < 2.5 V
Output current $I_{max.}$	100 mA
Response time	≤ 330 µs [4]
Switching frequency	1,500 Hz [5]
Connection type	Cable, 4-wire, 2 m [6]
Cable material	PVC
Conductor cross-section	0.25 mm²
Circuit protection	A [7] C [8] D [9]
Protection class	III
Weight	200 g
Housing material	Metal
Optics material	Plastic, PMMA
Enclosure rating	IP66 IP67 IP69K
Items supplied	2 x clamps BEF-KH-W12, incl. screws
Ambient operating temperature	–40 °C ... +60 °C
Ambient storage temperature	–40 °C ... +75 °C
UL File No.	NRKH.E181493 & NRKH7.E181493

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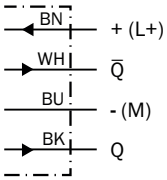
Classifications

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
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
UNSPSC 16.0901	39121528

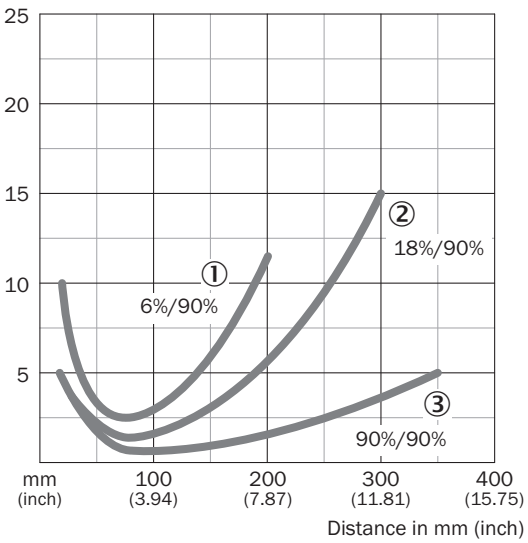
Connection diagram

Cd-094



Characteristic curve

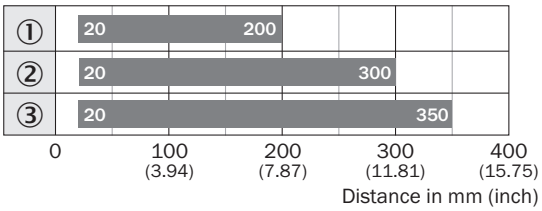
WTB12-3, red light, 350 mm



① Sensing range on black, 6% remission
② Sensing range on gray, 18 % remission
③ Sensing range on white, 90% remission

Sensing range diagram

WTB12-3, red light, 350 mm

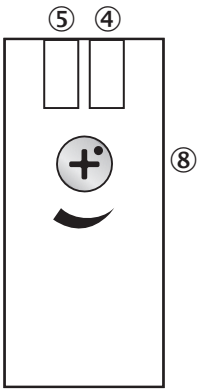


Sensing range

① Sensing range on black, 6% remission
② Sensing range on gray, 18 % remission
③ Sensing range on white, 90% remission

Adjustments possible

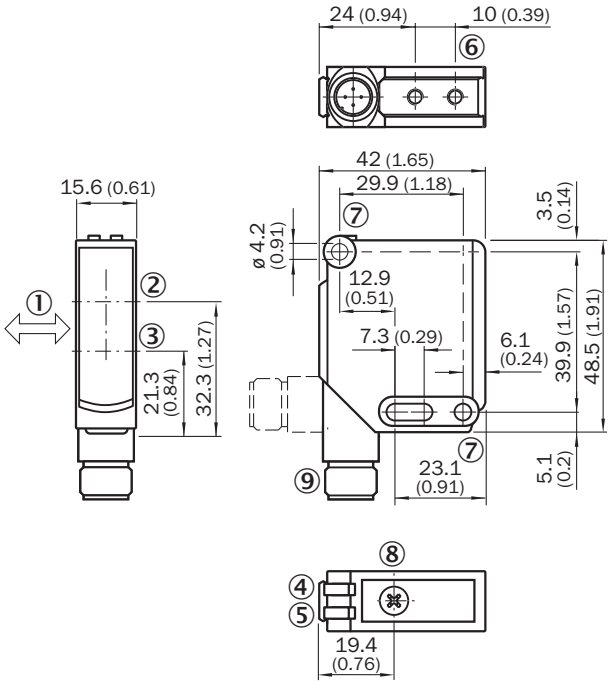
WTB12-3, WTF12-3, potentiometer



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

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
⑧ Sensing range adjustment: potentiometer
⑨ Connection

Recommended accessories

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

	Brief description	Type	Part no.
Plug connectors and cables			
	Head A: male connector, M12, 4-pin, straight Head B: - Cable: unshielded	STE-1204-G	6009932

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

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