WSE9M4-3N1130

W9

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	part no.
WSE9M4-3N1130	1051914

Other models and accessories ➜ www.sick.com/W9

Detailed technical data

Features

Functional principle	Through-beam photoelectric sensor
Dimensions (W x H x D)	12.2 mm x 50 mm x 23.6 mm
Housing design (light emission)	Rectangular
Mounting hole	M4
Sensing range max.	0 m ... 10 m
Sensing range	0 m ... 7 m
Type of light	Visible red light
Light source	PinPoint LED [1]
Light spot size (distance)	Ø 25 mm (1 m)
Wave length	650 nm
Adjustment	None

[1] Average service life: 100,000 h at T_U = +25 °C.

Mechanics/electronics

Supply voltage U_B	10 V DC … 30 V DC [1]
Ripple	< 5 V_{pp} [2]
Current consumption	30 mA [3]
Switching output	NPN [4]
Output function	Complementary
Switching mode	Light/dark switching [4]
Output current $I_{max.}$	≤ 100 mA [5]
Response time	< 0.5 ms [6]
Switching frequency	1,000 Hz [7]
Connection type	Cable, 4-wire, 2 m [8]
Cable material	Plastic, PVC
Conductor cross section	0.14 mm²
Circuit protection	A [9] B [10] C [11]
Protection class	III
Weight	80 g
Housing material	Plastic, VISTAL®
Optics material	Plastic, PMMA
Enclosure rating	IP66 IP67 IP69K
Test input sender off	Sender off
Ambient operating temperature	–40 °C … +60 °C
Ambient temperature, storage	–40 °C … +75 °C
UL File No.	NRKH.E181493
Part number of individual components	2057935 WS9M4-3D1130 2057937 WE9M4-3N1130

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

[2] May not fall below or exceed U_V tolerances.

[3] Without load.

[4] Q = light switching.

[5] At and above Tu 50 °C, a max. load current of Imax. = 50 mA is permitted.

[6] Signal transit time with resistive load.

[7] With light/dark ratio 1:1.

[8] Do not bend below 0 °C.

[9] A = V_S connections reverse-polarity protected.

[10] B = inputs and output reverse-polarity protected.

[11] C = interference suppression.

Safety-related parameters

$MTTF_D$	968 years
DC_{avg}	0 %
T_M (mission time)	20 years

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	✓

Classifications

ECLASS 5.0	27270901
ECLASS 5.1.4	27270901
ECLASS 6.0	27270901
ECLASS 6.2	27270901
ECLASS 7.0	27270901
ECLASS 8.0	27270901
ECLASS 8.1	27270901
ECLASS 9.0	27270901
ECLASS 10.0	27270901
ECLASS 11.0	27270901
ECLASS 12.0	27270901
ETIM 5.0	EC002716
ETIM 6.0	EC002716
ETIM 7.0	EC002716
ETIM 8.0	EC002716
UNSPSC 16.0901	39121528

Adjustments No adjustment possibility

③ ◖▷ ④
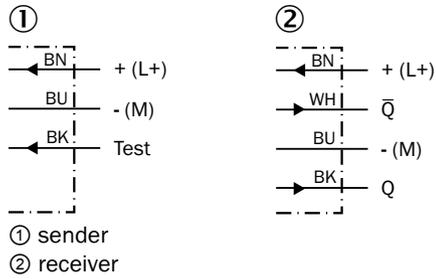
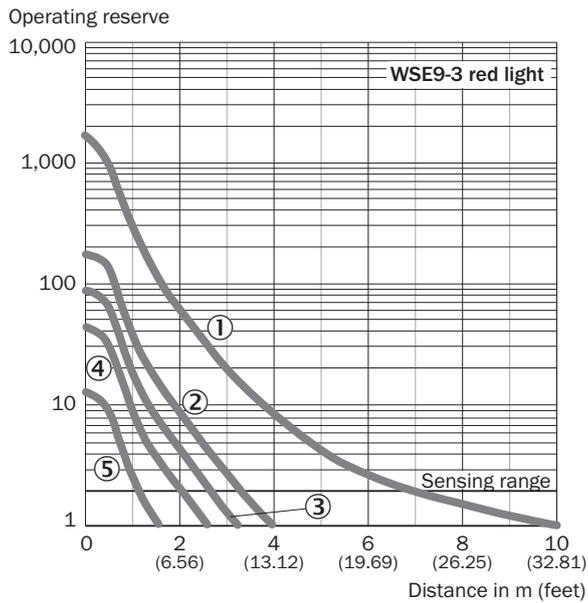③ LED indicator yellow: Status of received light beam
④ LED indicator green: power on
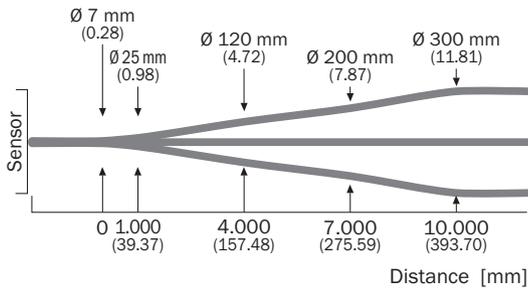
Connection type
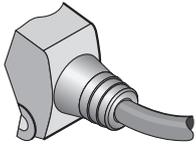
Connection diagram Cd-074

①
BN	+ (L+)
BU	- (M)
BK	Test

②
BN	+ (L+)
WH	$\overline{Q}$
BU	- (M)
BK	Q

① sender
② receiver

Characteristic curve WSE9-3, red light, 10 m

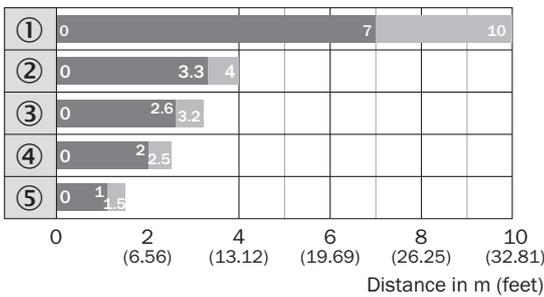Operating reserve

WSE9-3 red light

Sensing range

Distance in m (feet)

① Without masks
② With slotted mask, width 2.0 mm
③ With slotted mask, width 1.5 mm
④ With slotted mask, width 1.0 mm
⑤ With slotted mask, width 0.5 mm
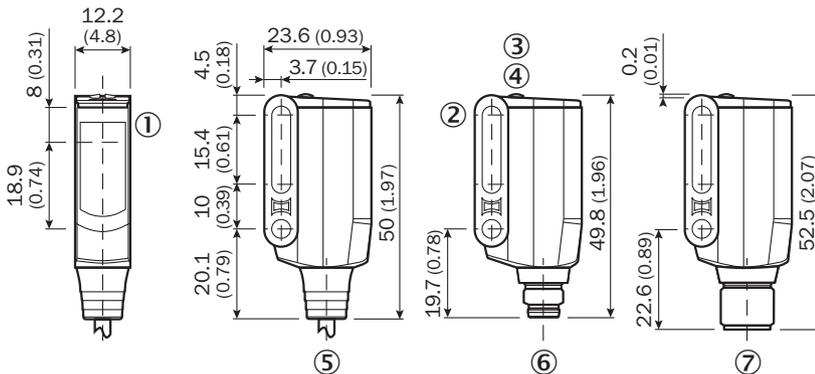
Light spot size WSE9-3, red light, 10 m

Ø 7 mm (0.28)
Ø 25 mm (0.98)
Ø 120 mm (4.72)
Ø 200 mm (7.87)
Ø 300 mm (11.81)

Sensor

0 1.000 (39.37) 4.000 (157.48) 7.000 (275.59) 10.000 (393.70)

Distance [mm]

Sensing range diagram WSE9-3, red light, 10 m

① 0 .... 7 10
② 0 ... 3.3 ... 4
③ 0 ... 2.6 ... 3.2
④ 0 ... 2 ... 2.5
⑤ 0 ... 1 ... 1.5

0   2 (6.56)   4 (13.12)   6 (19.69)   8 (26.25)   10 (32.81)

Distance in m (feet)

■ Sensing range   ■ Sensing range, max. typ.

① Without masks
② With slotted mask, width 2.0 mm
③ With slotted mask, width 1.5 mm
④ With slotted mask, width 1.0 mm
⑤ With slotted mask, width 0.5 mm

Dimensional drawing WL9M4-3, WSE9M4-3

12.2 (4.8)
8 (0.31)
18.9 (0.74)
4.5 (0.18)
23.6 (0.93)
3.7 (0.15)
15.4 (0.61)
10 (0.39)
20.1 (0.79)
50 (1.97)
0.2 (0.01)
19.7 (0.78)
49.8 (1.96)
22.6 (0.89)
52.5 (2.07)

Dimensions in mm (inch)
① Sender and receiver optical axis center
② Mounting hole M4 (Ø 4.1 mm)
③ LED indicator yellow: Status of received light beam
④ LED indicator green: power on
⑤ Connecting cable or connector
⑥ male connector M8, 4-pin
⑦ male connector M12, 4-pin

Recommended accessories

Other models and accessories ➜ www.sick.com/W9

Brief description	Type	part no.
Mounting systems		
• **Description:** Plate N08 for universal clamp bracket • **Material:** Steel, zinc diecast • **Details:** Zinc plated steel (sheet), Zinc die cast (clamping bracket) • **Items supplied:** Universal clamp (5322626), mounting hardware • **Usable for:** W100, W150, W4S, W4F, W8, W9-3, W8G, W8 Laser, W8 Inox, G6, W100 Laser, W100-2, W10, G6 Inox, RAY10, W4SLG-3, W9, GR18, MultiPulse, Reflex Array, MultiLine, LUT3, KT5, KT8, KT10, CS8	BEF-KHS-N08	2051607
• **Description:** Mounting bracket for wall mounting • **Material:** Steel • **Details:** Steel, zinc coated • **Items supplied:** Mounting hardware included • **Suitable for:** W9M4-3	BEF-W160	5305197
• **Description:** Plate N11N for universal clamp bracket • **Material:** Stainless steel • **Details:** Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp) • **Items supplied:** Universal clamp (5322627), mounting hardware • **Usable for:** DeltaPac, Glare, WTD20E	BEF-KHS-N11N	2071081
connectors and cables		
• **Connection type head A:** Female connector, M8, 4-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 5 m, 4-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Uncontaminated zones, Zones with chemicals	YF8U14-050VA3XLEAX	2095889
• **Connection type head A:** Male connector, M8, 4-pin, straight, A-coded • **Description:** Unshielded • **Connection systems:** Screw-type terminals • **Permitted cross-section:** 0.14 mm² ... 0.5 mm²	STE-0804-G	6037323
• **Connection type head A:** Female connector, M8, 4-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 5 m, 4-wire, PUR, halogen-free • **Description:** Sensor/actuator cable, unshielded • **Application:** Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation	YF8U14-050UA3XLEAX	2094792
• **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

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."

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