WSE12-3P2431

W12-3

SMALL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

WSE12-3P2431 | W12-3
SMALL PHOTOELECTRIC SENSORS

Illustration may differ

Ordering information

Type	Part no.
WSE12-3P2431	1041459

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

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

Detailed technical data

Features

Functional principle	Through-beam photoelectric sensor
Sensing range max.	0 m ... 20 m
Sensing range	0 m ... 15 m
Emitted beam	
Light source	LED [1]
Type of light	Visible red light
Light spot size (distance)	Ø 220 mm (15 m)
Key LED figures	
Wave length	640 nm
Adjustment	Potentiometer, 5 turns
Angle of dispersion	Approx. 1.5 °
Items supplied	2 x clamps BEF-KH-W12, incl. screws
Part number of individual components	2041879 WS12-3D2430 2041881 WE12-3P2431

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

Safety-related parameters

$MTTF_D$	826 years
DC_{avg}	0 %

Electronics

Supply voltage U_B	10 V DC … 30 V DC [1]
Ripple	< 5 V_{pp} [2]
Current consumption, sender	≤ 30 mA [3]
Current consumption, receiver	≤ 15 mA [3]
Protection class	III
Digital output	
Type	PNP
Switching mode	Light/dark switching
Signal voltage PNP HIGH/LOW	> Uv - 2,5 V / ca. 0 V
Output current $I_{max.}$	≤ 100 mA
Response time	≤ 330 µs [4]
Switching frequency	1,500 Hz [5]
Output function	Complementary
Circuit protection	A [6] C [7] D [8]
Test input sender off	TE to 0 V

[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] 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.

Mechanics

Housing	Rectangular
Dimensions (W x H x D)	15.6 mm x 48.5 mm x 42 mm
Connection	Male connector M12, 4-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

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

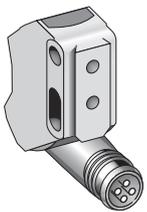## Adjustments

WL12-3, WSE12-3
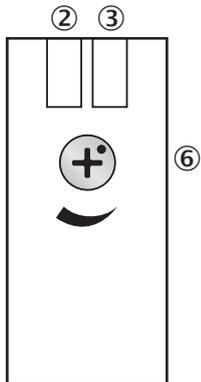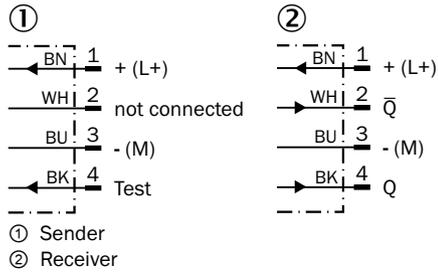
② LED indicator yellow: Status of received light beam
③ LED indicator green: Supply voltage active
⑥ Sensitivity control: potentiometer

Connection type

Connection diagram

Cd-072

① BN 1 + (L+)
WH 2 not connected
BU 3 - (M)
BK 4 Test

② BN 1 + (L+)
WH 2 $\overline{Q}$
BU 3 - (M)
BK 4 Q

① Sender
② Receiver

Characteristic curve

WSE12-3

Sensing range
Sensing range, typ. max.

| | 4 | 8 | 12 | 16 | 20 |
| m | (13.12) | (26.25) | (39.37) | (52.49) | (65.62) |
(feet)

Distance in m (feet)
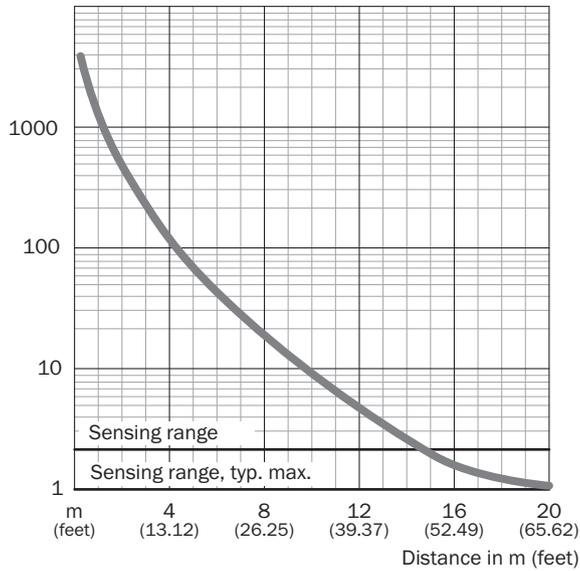
Sensing range diagram

WSE12-3

| 0 | 4 | 8 | 12 | 16 | 20 |
| 0 | (13.12) | (26.25) | (39.37) | (52.49) | (65.62) |

Distance in m (feet)

■ Sensing range   ■ Sensing range typ. max.
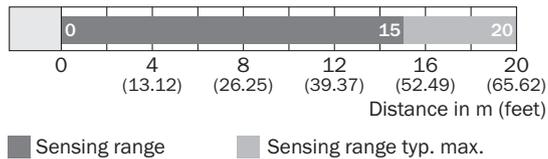
Dimensional drawing (Dimensions in mm (inch))

WL12-3, WSE12-3

① Optical axis
② LED indicator yellow: Status of received light beam
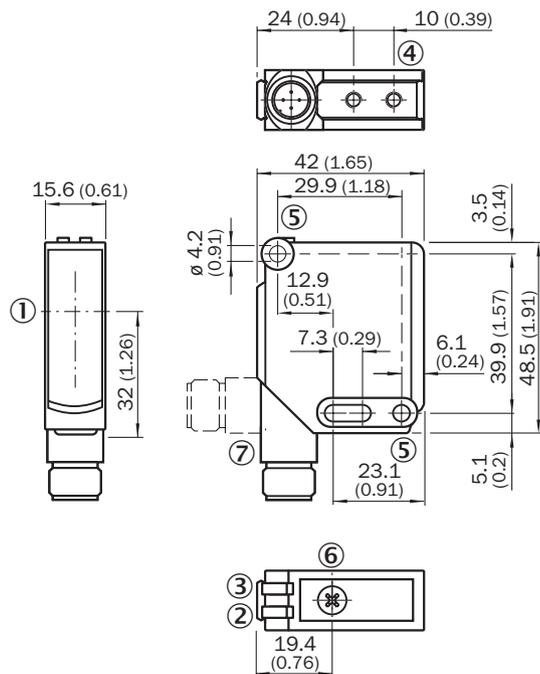③ LED indicator green: Supply voltage active
④ M4 threaded mounting hole, 4 mm deep
⑤ Mounting hole, Ø 4.2 mm
⑥ Sensitivity control: potentiometer
⑦ Connection

Recommended accessories

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

	Brief description	Type	Part no.
Others			
	• **Connection type head A:** Female connector, M12, 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:** Zones with chemicals, Uncontaminated zones	YF2A14-050VB3XLEAX	2096235
	• **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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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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