WSE12-3P2431

W12-3

SICK
Sensor Intelligence.

Ordering information

Type	Part no.
WSE12-3P2431	1041459

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

Illustration may differ

Detailed technical data

Features

Sensor/ detection principle	Through-beam photoelectric sensor
Dimensions (W x H x D)	15.6 mm x 48.5 mm x 42 mm
Housing design (light emission)	Rectangular
Sensing range max.	0 m … 20 m
Sensing range	0 m … 15 m
Type of light	Visible red light
Light source	LED [1]
Light spot size (distance)	Ø 220 mm (15 m)
Angle of dispersion	Approx. 1.5 °
Wave length	640 nm
Adjustment	Potentiometer, 5 turns

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

Mechanics/electronics

Supply voltage	10 V DC … 30 V DC [1]
Ripple	≤ 5 V_{pp} [2]

[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.

Power consumption, sender	≤ 30 mA [3]
Power consumption, receiver	≤ 15 mA [3]
Switching output	PNP
Output function	Complementary
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]
Connection type	Male connector M12, 4-pin
Circuit protection	A [6] C [7] D [8]
Protection class	III
Weight	120 g
Housing material	Metal
Enclosure rating	IP66 IP67 IP69K
Items supplied	2 x clamps incl. screws
Test input sender off	TE to 0 V
Ambient operating temperature	–40 °C ... +60 °C
Ambient storage temperature	–40 °C ... +75 °C
UL File No.	NRKH.E181493 & NRKH7.E181493
Part number of individual components	2041879 WS12-3D2430 2041881 WE12-3P2431

[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.

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Classifications

ECl@ss 5.0	27270901
ECl@ss 5.1.4	27270901
ECl@ss 6.0	27270901
ECl@ss 6.2	27270901
ECl@ss 7.0	27270901
ECl@ss 8.0	27270901
ECl@ss 8.1	27270901
ECl@ss 9.0	27270901
ETIM 5.0	EC002716

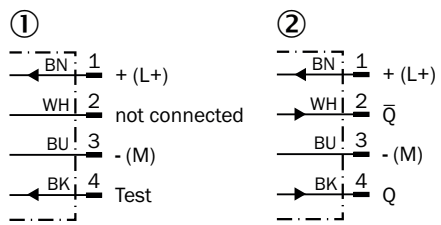| ETIM 6.0	EC002716
UNSPSC 16.0901	39121528

Adjustments possible

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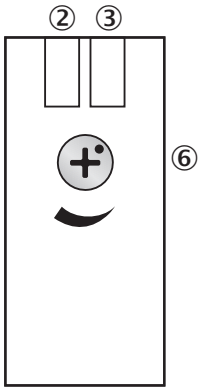
② LED indicator yellow: Status of received light beam
③ LED indicator green: Supply voltage active
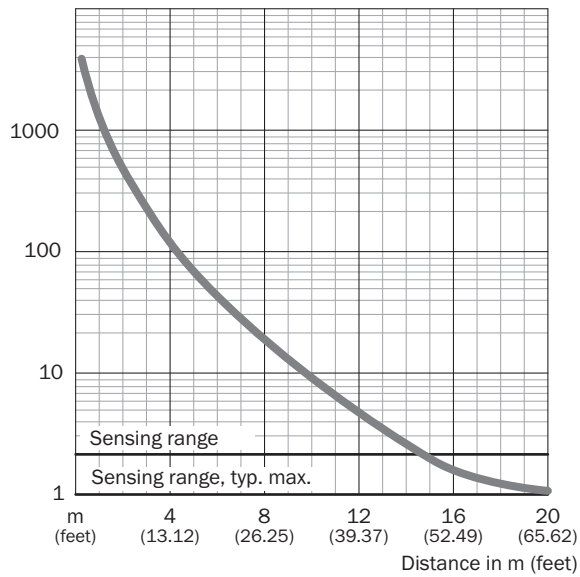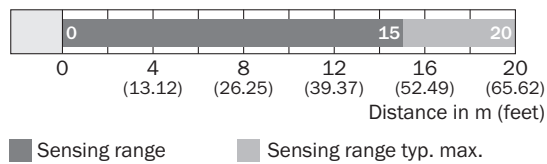⑥ Sensitivity control: potentiometer

Connection 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 diagram

WSE12-3

■ Sensing range   ■ Sensing range typ. max.

Dimensional drawing (Dimensions in mm (inch))

WL12-3, WSE12-3
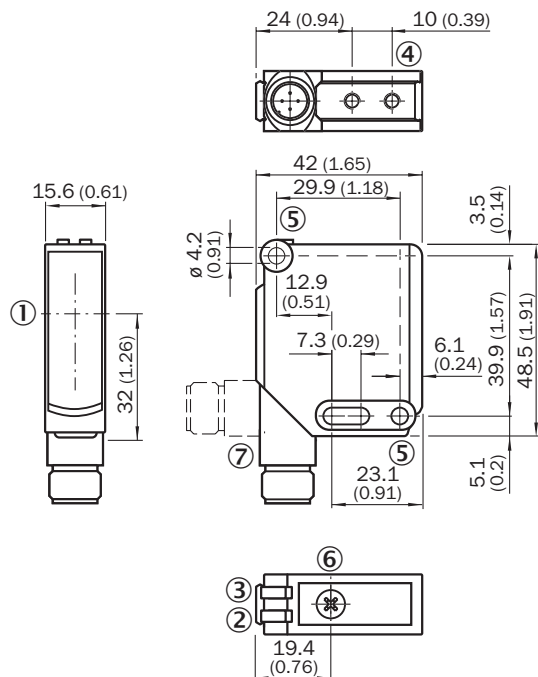
① Optical axis
② LED indicator yellow: Status of received light beam
③ LED indicator green: Supply voltage active
④ M4 threaded mounting hole, 4 mm deep
⑤ Mounting hole, Ø 4.2 mm
⑥ Sensitivity control: potentiometer
⑦ Connection

Recommended accessories

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

|	Brief description	Type	Part no.
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
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

Brief description	Type	Part no.
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, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YF2A14-020VB3XLEAX	2096234
Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF2A14-050VB3XLEAX	2096235
Head A: female connector, M12, 4-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YG2A14-020VB3XLEAX	2095895
Head A: female connector, M12, 4-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YG2A14-050VB3XLEAX	2095897
Head A: female connector, M12, 4-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 10 m	YG2A14-100VB3XLEAX	2095898
Head A: female connector, M12, 4-pin, angled with LED, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YI2A14-020VB3XLEAX	2096222
Head A: female connector, M12, 4-pin, angled with LED, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YI2A14-050VB3XLEAX	2096223
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
Masks		
Mask card for WS/WE12-3 with 2 self-adhesive masks each for sender and receiver, slot width X: 0.5 mm/1.0 mm/1.5 mm/2.0 mm	BL-12-SKN	4031815

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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