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DATA SHEET

WS/WE12L-2P430

W12
Photoelectric sensors

SICK Sensor Intelligence

Illustration may differ

PHOTOELECTRIC SENSORS

WS/WE12L-2P430

ORDERING INFORMATION

Type	part no.
WS/WE12L-2P430	1018254

Further device versions and accessories at www.sick.com/W12

DETAILED TECHNICAL DATA

FEATURES

Functional principle	Through-beam photoelectric sensor
Sensing range max.	0 m ... 80 m
Emitted beam	
Light source	Laser [1]
Type of light	Visible red light
Light spot size (distance)	Ø 150 mm (60 m)
Key laser figures	
Normative reference	EN 60825-1:2014, IEC 60825-1:2007
Laser class	2 [2] [3]
Key LED figures	
Wave length	650 nm
Adjustment	Potentiometer
Special applications	Detecting small objects, Detection of objects moving at high speeds
Items supplied	2 x clamps BEF-KH-W12, incl. screws
Part number of individual components	2021722 WS12L-2D430 2021726 WE12L-2P430

[1] Average service life: 50,000 h at T_U = +25 °C.

[2] Pulse length 4 µs, max. pulse power < 5,0 mW.

[3] Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

SAFETY-RELATED PARAMETERS

$MTTF_D$	396 years
DC_{avg}	0 %
T_M (mission time)	10 years

ELECTRONICS

Supply voltage U_B	10 V DC ... 30 V DC [1]
Ripple	< 5 V_{pp} [2]
Current consumption, sender	≤ 45 mA [3]
Current consumption, receiver	≤ 15 mA [3]
Protection class	III
Digital output	
Type	PNP
Signal voltage PNP HIGH/LOW	Uv - < 2.9 V, Uv V / 0 V <= 1.5 V
Signal voltage NPN HIGH/LOW	Uv - < 2.9 V, Uv V / 0 V <= 1.5 V
Output current $I_{max.}$	≤ 100 mA
Response time	≤ 200 µs [4]
Switching frequency	2,500 Hz [5]
Output function	Complementary
Circuit protection	A [6] C [7] D [8]

[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 mm x 49 mm x 41.5 mm
Connection	Male connector M12, 4-pin
Material	
Housing	Metal
Front screen	Plastic, PMMA
Weight	260 g

AMBIENT DATA

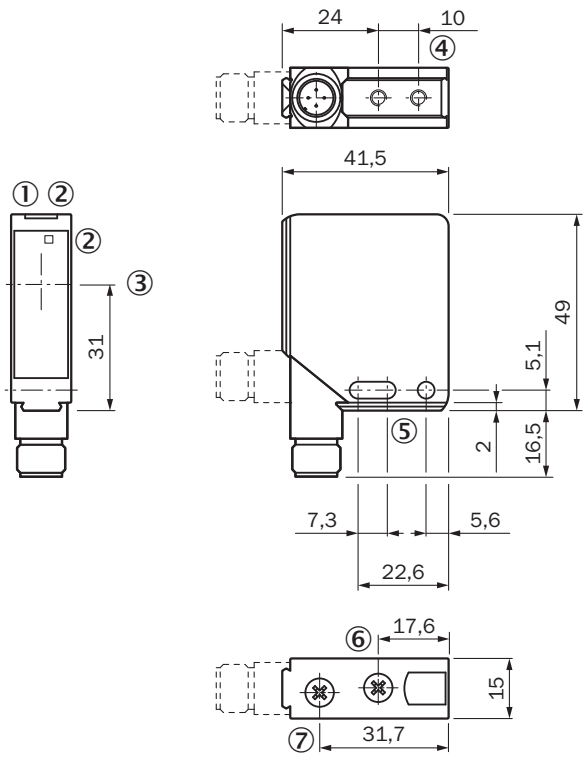
Enclosure rating	IP67 IP69K
Ambient operating temperature	–10 °C ... +50 °C
Ambient temperature, storage	–25 °C ... +75 °C
UL File No.	NRKH.E181493 & NRKH7.E181493

CERTIFICATES

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓

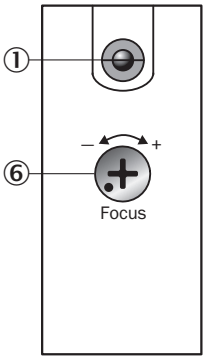
China RoHS	✓
China Compulsory Product Certification (CCC) exempt	✓
cULus certificate	✓
Laser safety (IEC 60825-1) certificate	✓
Optical radiation safety (GB 44703:2024) declaration of manufacturer (low risk)	✓

DIMENSIONAL DRAWING WL12L-2, WS/WE12L-2



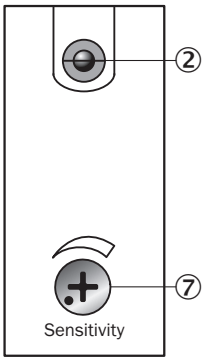
Dimensions in mm (inch)
① Operating indicator, green
② LED reception indicator, yellow
③ Center of optical axis
④ M4 threaded mounting hole – 4 mm depth
⑤ Mounting hole, Ø 4.2 mm
⑥ Focal adjustment
⑦ sensitivity control

ADJUSTMENTS WS/WE12L-2



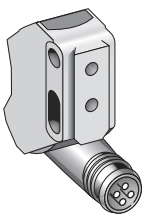
① status indicator (WS, top only)
⑥ Focal adjustment (WS)

ADJUSTMENTS

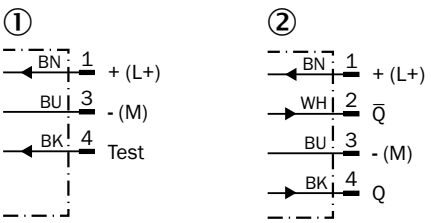


② LED signal strength indicator (WE)
⑦ Sensitivity adjustment (WE)

CONNECTION TYPE

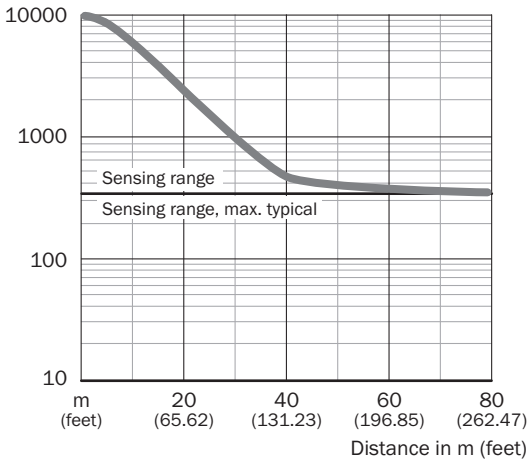


CONNECTION DIAGRAM CD-077

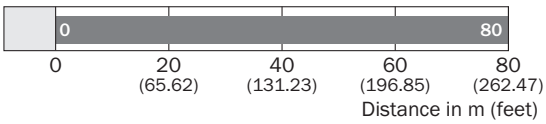


① sender
② receiver

CHARACTERISTIC CURVE WS/WE12L-2, 80 M



SENSING RANGE DIAGRAM WS/WE12L-2, 80 M



Sensing range/sensing range typ. max.

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1018254

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SICK AT A GLANCE

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SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

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