SICK.COM

DATA SHEET

WSE12C-3P2430A71

W12
Photoelectric sensors

SICK Sensor Intelligence

Illustration may differ

PHOTOELECTRIC SENSORS

WSE12C-3P2430A71

ORDERING INFORMATION

Type	part no.
WSE12C-3P2430A71	1067782

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 ... 20 m
Sensing range	0 m ... 15 m
Emitted beam	
Light source	PinPoint 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	IO-Link
Angle of dispersion	Approx. 1.5°
Part number of individual components	2077229 WE12C-3P2430A71 2078000 WS12-3D2430S05
Pin 2 configuration	External input, Teach-in input, Detection output, logic output, Device contamination alarm output

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

SAFETY-RELATED PARAMETERS

$MTTF_D$	539 years
DC_{avg}	0 %
T_M (mission time)	20 years

COMMUNICATION INTERFACE

IO-Link	✓ , COM2 (38,4 kBaud)
Data transmission rate	COM2 (38,4 kBaud)
Cycle time	2.3 ms
Process data length	16 Bit
Process data structure	Bit 0 = switching signal Q_{L1} Bit 1 = switching signal Q_{L2} Bit 2 ... 15 = measuring value
VendorID	26
DeviceID HEX	0x8000F8
DeviceID DEC	8388856

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 [4]
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	[5]
Repeatability (response time)	100 µs [6]
Switching frequency	1,500 Hz
Circuit protection	A [7] B [8] C [9] D [10]
Response time Q/ on Pin 2	200 µs ... 300 µs [5] [6]
Switching frequency Q / to pin 2	≤ 1,500 Hz [11]
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] Pin 4: This switching output must not be connected to another output.

[5] Signal transit time with resistive load.

[6] Valid for Q \ on Pin2, if configured with software.

[7] A = V_s connections reverse-polarity protected.

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

[9] C = interference suppression.

[10] D = outputs overcurrent and short-circuit protected.

[11] With light / dark ratio 1:1, valid for Q \ on Pin2, if configured with software.

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, zinc diecast
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

SMART TASK

Smart Task name	Counter + debouncing
Logic function	Direct WINDOW Hysteresis
Timer function	Deactivated Switch-on delay Off delay ON and OFF delay Impulse (one shot)
Inverter	Yes
Maximum counting frequency	SIO Direct: --- SIO Logic: 1500 Hz IOL: 1000 Hz
Counter reset	SIO Direct: --- SIO Logic: 1,5 ms IOL: 1,5 ms
Min. Time between two process events (switches)	SIO Direct: --- SIO Logic: 450 µs IOL: 500 µs
Debounce time max.	SIO Direct: --- SIO Logic: 30.000 ms IOL: 30.000 ms
Switching signal	
Switching signal Q_{L1}	Output type (dependant on the adjusted threshold)
Switching signal Q_{L2}	Output type (dependant on the adjusted threshold)
Measuring value	Counting value

DIAGNOSIS

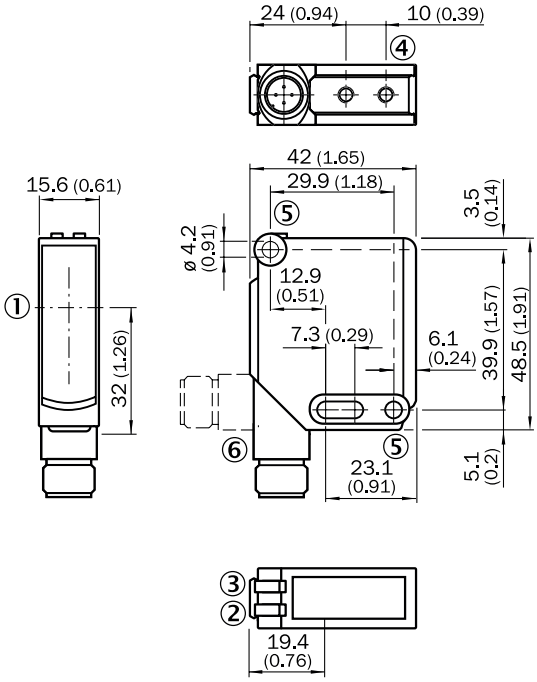
Device status	Yes
Function reserve	Yes

CERTIFICATES

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
ECOLAB certificate	✓

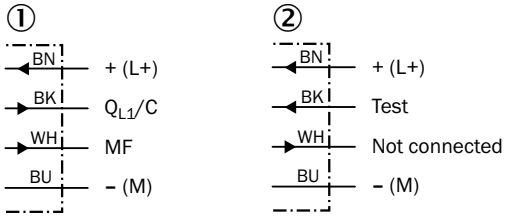
cULus certificate	✓
Photobiological safety (DIN EN 62471) certificate	✓

DIMENSIONAL DRAWING

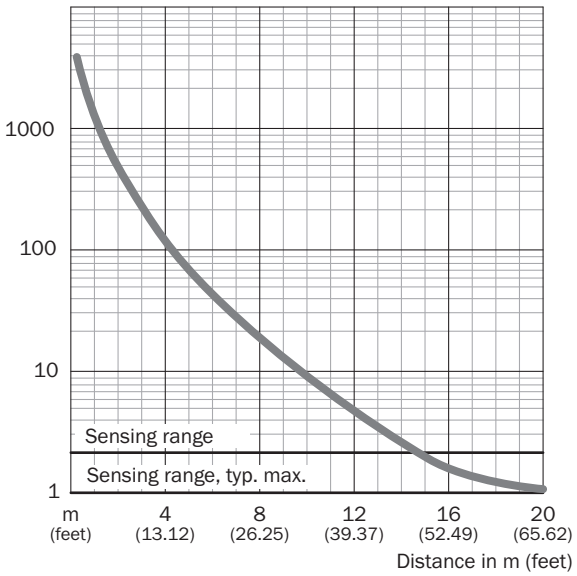


Dimensions in mm (inch)
① Optical axis
② LED indicator yellow: Status of received light beam
③ LED indicator green: Supply voltage active
④ M4 threaded mounting hole, 4 mm deep
⑤ Mounting hole, Ø 4.2 mm
⑥ Connection

CONNECTION DIAGRAM CD-366



CHARACTERISTIC CURVE WSE12-3



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/1067782

SICK AG
WALDKIRCH
GERMANY
SICK.COM

SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

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.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

SICK

Sensor Intelligence