



DATA SHEET

WTB12C-3P2432A70

W12
Photoelectric sensors

SICK

Sensor Intelligence

PHOTOELECTRIC SENSORS

WTB12C-3P2432A70

ORDERING INFORMATION

Type	part no.
WTB12C-3P2432A70	1067772

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



Illustration may differ

DETAILED TECHNICAL DATA

FEATURES

Functional principle	Photoelectric proximity sensor	
Functional principle detail	Background suppression	
Sensing range max.	20 mm ... 350 mm ¹⁾	
Sensing range	20 mm ... 350 mm ¹⁾	
Emitted beam	Light source	PinPoint LED ²⁾
	Type of light	Visible red light
	Light spot size (distance)	Ø 6 mm (200 mm)
Key LED figures	Wave length	640 nm
	Adjustment	IO-Link, Single teach-in button
Pin 2 configuration	External input, Teach-in input, Sender off input, Detection output, logic output	

¹⁾ Object with 90% remission (based on standard white, DIN 5033).

²⁾ Average service life: 50,000 h at T_v = +25 °C.

SAFETY-RELATED PARAMETERS

MTTF _D	634 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	0x8000EB
DeviceID DEC	8388843

ELECTRONICS

Supply voltage U _B	10 V DC ... 30 V DC ¹⁾
Ripple	< 5 V _{pp} ²⁾
Current consumption	45 mA ³⁾
Protection class	III
Digital output	Type PNP ⁴⁾ Switching mode Light/dark switching Signal voltage PNP HIGH/LOW > U _v - 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) 4)}
Switching frequency Q / to pin 2	≤ 1,500 Hz ¹¹⁾

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
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AMBIENT DATA

Enclosure rating	IP66 IP67
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	Time measurement + debouncing
Logic function	Direct WINDOW
Timer function	Deactivated Switch-on delay Off delay ON and OFF delay Impulse (one shot)
Inverter	Yes
Time measurement accuracy	SIO Direct: --- SIO Logic: - 0,7 ... + 0,7 ms ± 0,5 % of time measurement value IOL: - 0,9 ... + 0,9 ms ± 0,5% of the time measurement
Time measurement accuracy (e.g. accuracy for time measurement value = 1 s)	SIO Direct: --- SIO Logic: - 5,6 ... + 5,6 ms IOL: - 5,9 ... + 5,9 ms
Resolution time measuring value	1 ms
Min. Time between two process events (switches)	SIO Direct: --- SIO Logic: 500 µs IOL: 750 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	Time measurement value

DIAGNOSIS

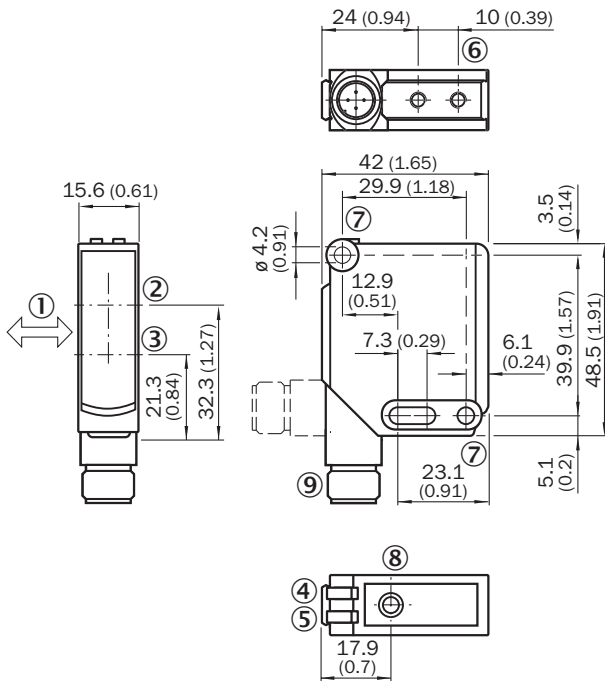
Device status	Yes
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CERTIFICATES

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
ECOLAB certificate	✓
cULus certificate	✓
IO-Link certificate	✓
Photobiological safety (DIN EN 62471) certificate	✓

Information according to Art. 3 of Data Act (Regulation EU 2023/2854) ✓

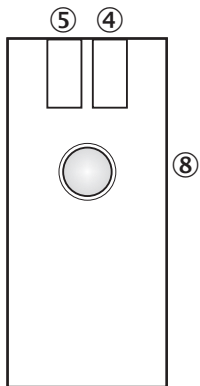
DIMENSIONAL DRAWING WTB12-3, IO-LINK



Dimensions in mm (inch)

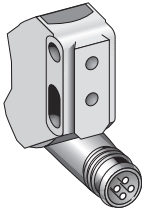
- ① Standard direction of the material being detected
- ② Optical axis, receiver
- ③ Optical axis, sender
- ④ LED indicator green: Supply voltage active
- ⑤ LED indicator yellow: Status of received light beam
- ⑥ M4 threaded mounting hole, 4 mm deep
- ⑦ Mounting hole, Ø 4.2 mm
- ⑧ Adjustment sensing range: single teach-in button
- ⑨ Connection

ADJUSTMENTS

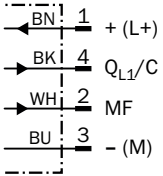


- ④ LED indicator green: Supply voltage active
- ⑤ LED indicator yellow: Status of received light beam
- ⑧ Adjustment sensing range: single teach-in button

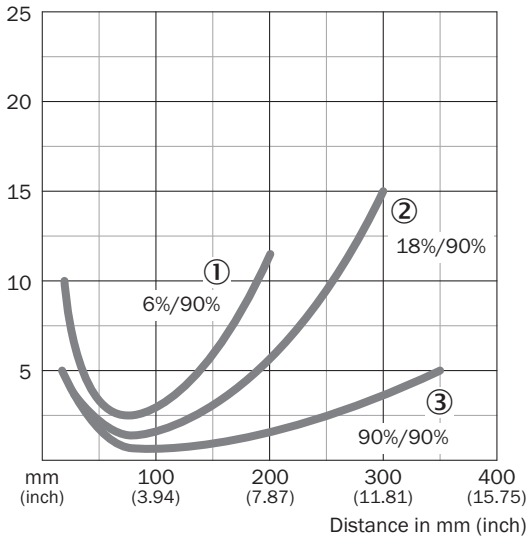
CONNECTION TYPE



CONNECTION DIAGRAM CD-367

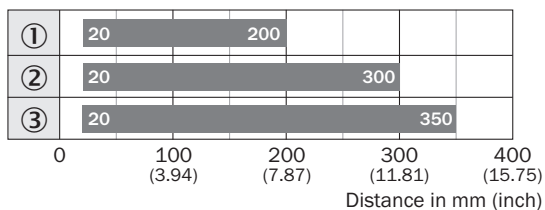


CHARACTERISTIC CURVE WTB12-3, RED LIGHT, 350 MM



- ① Sensing range on black, 6% remission factor
- ② Sensing range on gray, 18% remission factor
- ③ Sensing range on white, 90% remission factor

SENSING RANGE DIAGRAM WTB12-3, RED LIGHT, 350 MM



■ Sensing range

- ① Sensing range on black, 6% remission factor
- ② Sensing range on gray, 18% remission factor
- ③ Sensing range on white, 90% remission factor

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/1067772



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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.

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

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