



# WTB12C-3P2432A00

## W12

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
WTB12C-3P2432A00	1067771

Other models and accessories → [www.sick.com/W12](http://www.sick.com/W12)

Detailed technical data

Features

Functional principle		Photoelectric proximity sensor
Functional principle detail		Background suppression
Sensing range max.		20 mm ... 350 mm <sup>1)</sup>
Sensing range		20 mm ... 350 mm <sup>1)</sup>
Emitted beam		
	Light source	PinPoint LED <sup>2)</sup>
	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

<sup>1)</sup> Object with 90% remission (based on standard white, DIN 5033).  
<sup>2)</sup> Average service life: 50,000 h at T<sub>U</sub> = +25 °C.

Safety-related parameters

MTTF <sub>D</sub>	704 years
DC <sub>avg</sub>	0 %

## Communication interface

<b>IO-Link</b>	✓ , 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 <sub>L1</sub> Bit 1 = switching signal Q <sub>L2</sub> Bit 2 ... 15 = empty
VendorID	26
DeviceID HEX	0x8000EA
DeviceID DEC	8388842

## Electronics

<b>Supply voltage U<sub>B</sub></b>	10 V DC ... 30 V DC <sup>1)</sup>
<b>Ripple</b>	< 5 V <sub>pp</sub> <sup>2)</sup>
<b>Current consumption</b>	45 mA <sup>3)</sup>
<b>Protection class</b>	III
<b>Digital output</b>	
Type	PNP <sup>4)</sup>
Switching mode	Light/dark switching
Signal voltage PNP HIGH/LOW	> U <sub>v</sub> - 2,5 V / ca. 0 V
Output current I <sub>max.</sub>	≤ 100 mA
Repeatability (response time)	100 μs <sup>5)</sup>
Switching frequency	1,500 Hz
<b>Circuit protection</b>	A <sup>6)</sup> B <sup>7)</sup> C <sup>8)</sup> D <sup>9)</sup>
<b>Response time Q/ on Pin 2</b>	200 μs ... 300 μs <sup>10) 5)</sup>
<b>Switching frequency Q / to pin 2</b>	≤ 1,500 Hz <sup>11)</sup>

<sup>1)</sup> Limit values when operated in short-circuit protected network: max. 8 A.

<sup>2)</sup> May not fall below or exceed U<sub>y</sub> tolerances.

<sup>3)</sup> Without load.

<sup>4)</sup> Pin 4: This switching output must not be connected to another output.

<sup>5)</sup> Valid for Q \ on Pin2, if configured with software.

<sup>6)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>7)</sup> B = inputs and output reverse-polarity protected.

<sup>8)</sup> C = interference suppression.

<sup>9)</sup> D = outputs overcurrent and short-circuit protected.

<sup>10)</sup> Signal transit time with resistive load.

<sup>11)</sup> With light / dark ratio 1:1, valid for Q \ on Pin2, if configured with software.

## Mechanics

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

<b>Material</b>	Housing	Metal, zinc diecast
	Front screen	Plastic, PMMA
<b>Weight</b>		120 g

## Ambient data

<b>Enclosure rating</b>	IP66 IP67
<b>Ambient operating temperature</b>	-40 °C ... +60 °C
<b>Ambient temperature, storage</b>	-40 °C ... +75 °C
<b>UL File No.</b>	NRKH.E181493 & NRKH7.E181493

## Smart Task

Smart Task name		Base logics
Logic function		Direct AND OR WINDOW Hysteresis
Timer function		Deactivated Switch-on delay Off delay ON and OFF delay Impulse (one shot)
Inverter		Yes
Switching frequency		SIO Direct: 1500 Hz <sup>1)</sup> SIO Logic: 600 Hz <sup>2)</sup> IOL: 450 Hz <sup>3)</sup>
Response time		SIO Direct: 200 μs ... 300 μs <sup>1)</sup> SIO Logic: 650 μs ... 750 μs <sup>2)</sup> IOL: 650 μs ... 1000 μs <sup>3)</sup>
Repeatability		SIO Direct: 100 μs <sup>1)</sup> SIO Logic: 100 μs <sup>2)</sup> IOL: 300 μs <sup>3)</sup>
Switching signal		
	Switching signal Q <sub>L1</sub>	Switching output
	Switching signal Q <sub>L2</sub>	Switching output

<sup>1)</sup> SIO Direct: sensor operation in standard I/O mode without IO-Link communication and without using internal sensor logic or time parameters (set to "direct"/"deactivated").

<sup>2)</sup> SIO Logic: Sensor operation in standard I/O mode without IO-Link communication. Sensor-internal logic or timing parameters plus Automation Functions used.

<sup>3)</sup> IOL: Sensor operation with full IO-Link communication and usage of logic, timing and Automation Function parameters.

## Diagnosis

<b>Device status</b>	Yes
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## Certificates

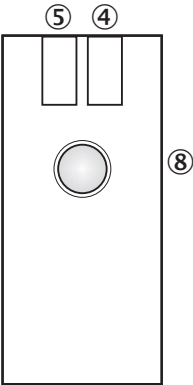
<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>Moroccan declaration of conformity</b>	✓

China-RoHS	✓
ECOLAB certificate	✓
cULus certificate	✓
IO-Link	✓
Photobiological safety (DIN EN 62471) certificate	✓

Classifications

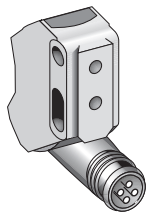
ECLASS 5.0	27270904
ECLASS 5.1.4	27270904
ECLASS 6.0	27270904
ECLASS 6.2	27270904
ECLASS 7.0	27270904
ECLASS 8.0	27270904
ECLASS 8.1	27270904
ECLASS 9.0	27270904
ECLASS 10.0	27270904
ECLASS 11.0	27270904
ECLASS 12.0	27270903
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

Adjustments

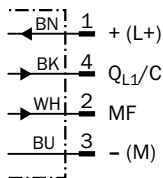


- ④ LED indicator green: Supply voltage active
- ⑤ LED indicator yellow: Status of received light beam
- ⑧ Adjustment sensing range: single teach-in button

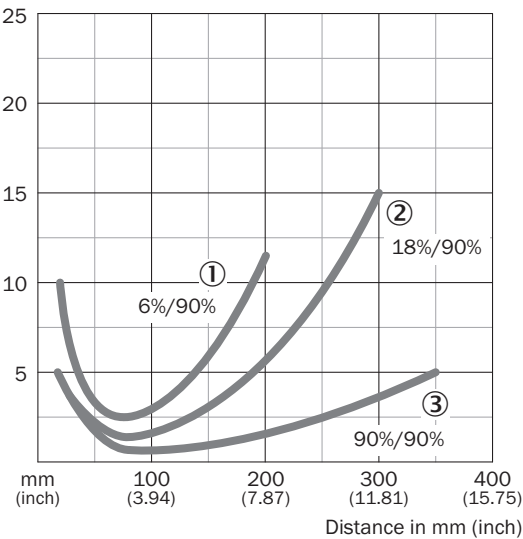
Connection type



Connection diagram Cd-367

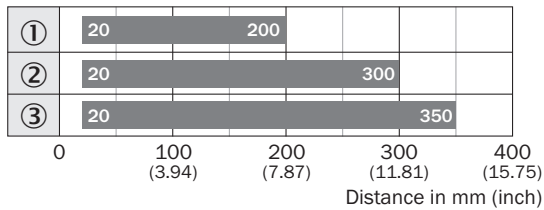


Characteristic curve WTB12-3, red light, 350 mm



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

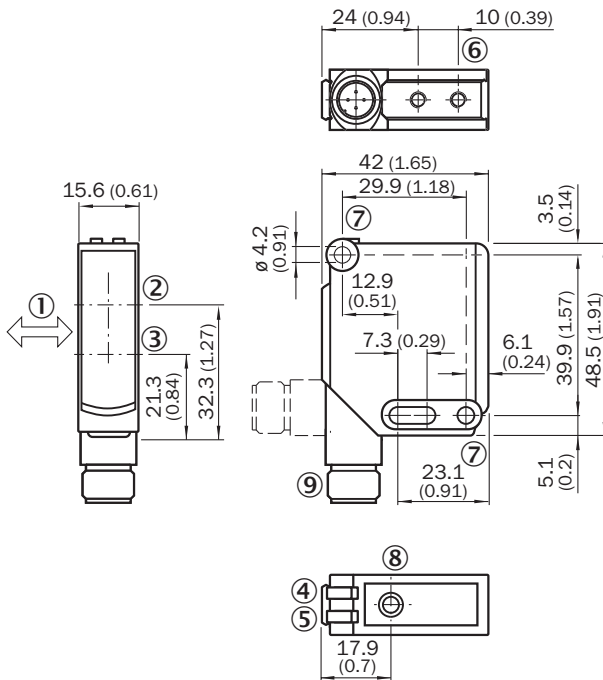
## Sensing range diagram WTB12-3, red light, 350 mm



■ 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

## 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,  $\varnothing$  4.2 mm
- ⑧ Adjustment sensing range: single teach-in button
- ⑨ Connection

Recommended accessories

Other models and accessories → [www.sick.com/W12](http://www.sick.com/W12)

	Brief description	Type	part no.
network devices			
		IOLA2US-01101 (SiLink2 Master)	1061790
connectors and cables			
	<ul style="list-style-type: none"><li>• <b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li><li>• <b>Connection type head B:</b> Flying leads</li><li>• <b>Signal type:</b> Sensor/actuator cable</li><li>• <b>Cable:</b> 5 m, 4-wire, PVC</li><li>• <b>Description:</b> Sensor/actuator cable, unshielded</li><li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li></ul>	YF2A14-050VB3XLEAX	2096235



## 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.”

## WORLDWIDE PRESENCE:

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