



WTB4SC-3P2232B02

W4

MINIATURE PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ

Ordering information

Type	Part no.
WTB4SC-3P2232B02	1088195

Other models and accessories → www.sick.com/W4



Detailed technical data

Features

Functional principle	Photoelectric proximity sensor
Functional principle detail	Background suppression
Sensing range max.	8 mm ... 120 mm ¹⁾
Sensing range	50 mm ... 120 mm ¹⁾
Emitted beam	
Light source	PinPoint LED ²⁾
Type of light	Visible red light
Light spot size (distance)	Ø 2.5 mm (50 mm)
Key LED figures	
Wave length	650 nm
Adjustment	IO-Link, Single teach-in button
Special features	Printed front screen for increased blind zone
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: 100,000 h at T_J = +25 °C.

Safety-related parameters

MTTF_D	868 years
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DC_{avg}	0 %
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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 = empty
VendorID	26
DeviceID HEX	0x800197
DeviceID DEC	8389015

Electrical data

Supply voltage U_B	10 V DC ... 30 V DC ¹⁾
Ripple	< 5 V _{pp} ²⁾
Current consumption	30 mA ³⁾
Protection class	III
Digital output	
Type	PNP ⁴⁾
Switching mode	Light/dark switching
Output current I _{max}	≤ 100 mA
Repeatability (response time)	150 μs ⁵⁾
Switching frequency	1,000 Hz
Circuit protection	A ⁶⁾ B ⁷⁾ C ⁸⁾ D ⁹⁾
Response time Q/ on Pin 2	300 μs ... 450 μs ^{10) 5)}
Switching frequency Q / to pin 2	1,000 Hz ¹¹⁾

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⁾ Pin 4: This switching output must not be connected to another output.

⁵⁾ Valid for Q \ on Pin2, if configured with software.

⁶⁾ A = V_S connections reverse-polarity protected.

⁷⁾ B = inputs and output reverse-polarity protected.

⁸⁾ C = interference suppression.

⁹⁾ D = outputs overcurrent and short-circuit protected.

¹⁰⁾ Signal transit time with resistive load.

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

Mechanical data

Housing	Rectangular
Design detail	Slim
Dimensions (W x H x D)	12.2 mm x 41.8 mm x 17.3 mm

Connection	Male connector M8, 4-pin
Material	Housing: Plastic, ABS
	Front screen: Plastic, PMMA
Weight	20 g

Ambient data

Enclosure rating	IP67 IP66
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	Base logics
Logic function	Direct AND OR WINDOW Hysteresis
Timer function	Deactivated On delay Off delay ON and OFF delay Impulse (one shot)
Inverter	Yes
Switching frequency	SIO Direct: 1000 Hz SIO Logic: 600 Hz IOL: 450 Hz
Response time	SIO Direct: 300 µs ... 450 µs ¹⁾ SIO Logic: 750 µs ... 900 µs ²⁾ IOL: 800 µs ... 1200 µs ³⁾
Repeatability	SIO Direct: 150 µs ¹⁾ SIO Logic: 150 µs ²⁾ IOL: 400 µs ³⁾
Switching signal	Switching signal Q _{L1} : Switching output
	Switching signal Q _{L2} : Switching output

¹⁾ 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").

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

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

Diagnosis

Device status	Yes
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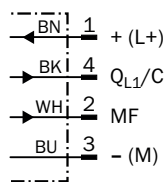
Classifications

ECLASS 5.0	27270904
ECLASS 5.1.4	27270904
ECLASS 6.0	27270904
ECLASS 6.2	27270904

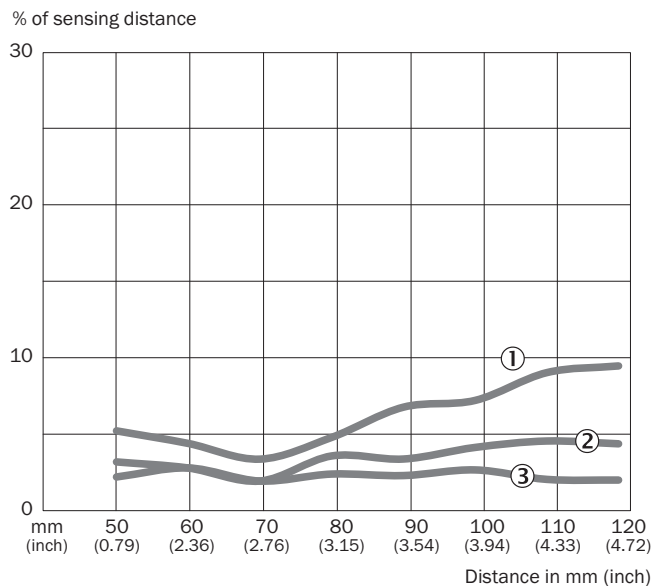
ECLASS 7.0	27270904
ECLASS 8.0	27270904
ECLASS 8.1	27270904
ECLASS 9.0	27270904
ECLASS 10.0	27270904
ECLASS 11.0	27270904
ECLASS 12.0	27270903
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

Connection diagram

Cd-367

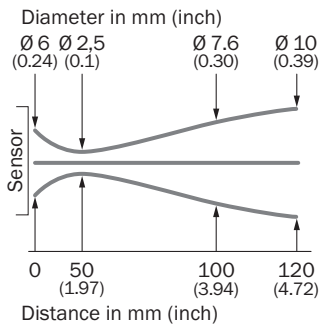


Characteristic curve

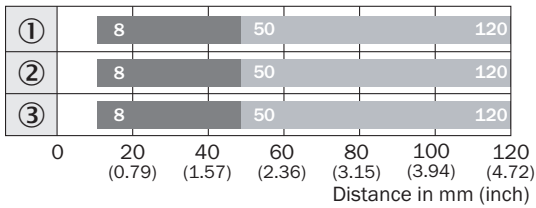


- ① Sensing range on black, 6% remission factor
- ② Sensing range on gray, 18% remission factor
- ③ Sensing range on white, 90% remission factor

Light spot size



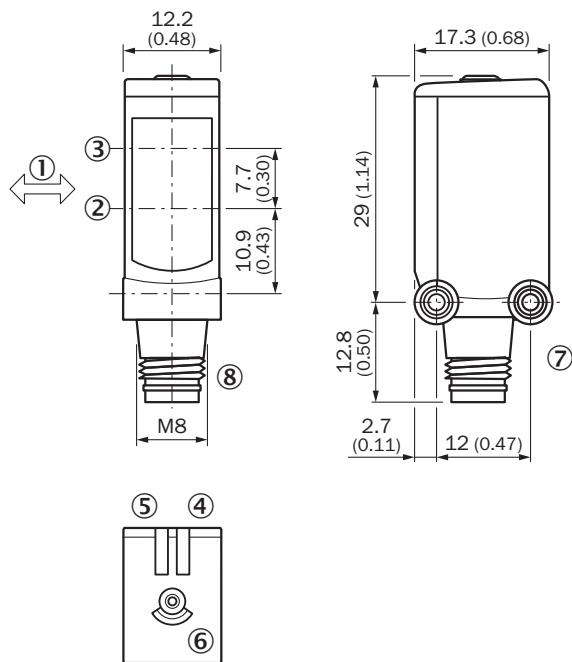
Sensing range diagram



- Sensing range max. ■ 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 (Dimensions in mm (inch))



WTB4S-3, Single teach-in button





- 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 Teach-in button
- ⑦ Threaded mounting hole M3
- ⑧ Connection

Recommended accessories

Other models and accessories → www.sick.com/W4

	Brief description	Type	Part no.
Distributors			
	<ul style="list-style-type: none"> • Connection type head A: Male connector, M12, 4-pin, A-coded • Connection type head B: Female connector, M8, 4-pin, A-coded • Connection type head C: Female connector, M8, 4-pin, A-coded • Signal type: Sensor/actuator cable • Cable: 0.11 m, PVC • Description: Sensor/actuator cable, Y-distribution, 2 x M8 female connectors, 4-pin, straight, 0.11 m, PVC cable, 1 x M12 male connector, 4-pin, straight, connects a SICK sensor to a SICK Smart sensor; Female connector brassed (A): Auxiliary sensor; Female connector nickel-plated (B): Smart Sensor; Male connector nickel-plated (C): IO-Link master/ PLC • Note: Slimline T-piece, 2 x M8 female connector + M12 male connector with cable 	SYL-8204-G0M11-X2	6055012
Mounting brackets and plates			
	Mounting bracket for wall mounting, Stainless steel 1.4571, mounting hardware included	BEF-W4-A	2051628

	Brief description	Type	Part no.
Others			
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M8, 4-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 5 m, 4-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Zones with chemicals 	YF8U14-050VA3XLEAX	2095889
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M8, 4-pin, straight, A-coded • Connection type head B: Male connector, M12, 4-pin, straight, A-coded • Signal type: Sensor/actuator cable • Cable: 5 m, 4-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Zones with chemicals 	YF8U14-050VA3M2A14	2096609

Recommended services

Additional services → www.sick.com/W4

	Type	Part no.
Function Block Factory		
<ul style="list-style-type: none"> • Description: The Function Block Factory supports common programmable logic controllers (PLCs) from various manufacturers, such as Siemens, Beckhoff, Rockwell Automation and B&R. More information on the FBF can be found <a _blank"="" href="https://fbf.cloud.sick.com target=">here. • Note: You can configure your function block at <a _blank"="" href="https://fbf.cloud.sick.com target=">Function Block Factory. As a login please use your SICK ID. 	Function Block Factory	On request

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:

Contacts and other locations –www.sick.com