



WTB4SC-3P2262A91
W4

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
WTB4SC-3P2262A91	1067758

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.		4 mm ... 180 mm ¹⁾
Sensing range		10 mm ... 180 mm ¹⁾
Emitted beam		
	Light source	PinPoint LED ²⁾
	Type of light	Visible red light
	Light spot size (distance)	Ø 6.5 mm (150 mm)
Key LED figures		
	Wave length	650 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: 100,000 h at T_U = +25 °C.

Safety-related parameters

MTTF_D	873 years
DC_{avg}	0 %

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	0x8000D5
DeviceID DEC	8388821

Electronics

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 fall below or exceed U_y 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.

Mechanics

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	Timestamp + debouncing
Logic function	Direct AND OR WINDOW Hysteresis
Timer function	Deactivated Switch-on delay Off delay ON and OFF delay Impulse (one shot)
Inverter	Yes
Response time	SIO Direct: 300 µs ... 450 µs ¹⁾ SIO Logic: 800 µs ... 950 µs ²⁾ IOL: — ³⁾
Repeatability	SIO Direct: 150 µs ¹⁾ SIO Logic: 150 µs ²⁾ IOL: — ³⁾
Time stamp accuracy	SIO Direct: — SIO Logic: — IOL: - 80 ... + 330 µs
Min. Time between two process events (switches)	SIO Direct: 450 µs SIO Logic: 500 µs IOL: 800 µs
Time stamp number buffer	SIO Direct: — SIO Logic: — IOL: 8
Max. TimeStamp Range	SIO Direct: — SIO Logic: — IOL: 260 ms
Debounce time max.	SIO Direct: — SIO Logic: 52 ms IOL: 52 ms
Switching signal	
Switching signal Q _{L1}	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.

Switching signal Q _{L2}	Switching output
Measuring value	Timestamp

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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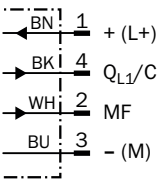
Certificates

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

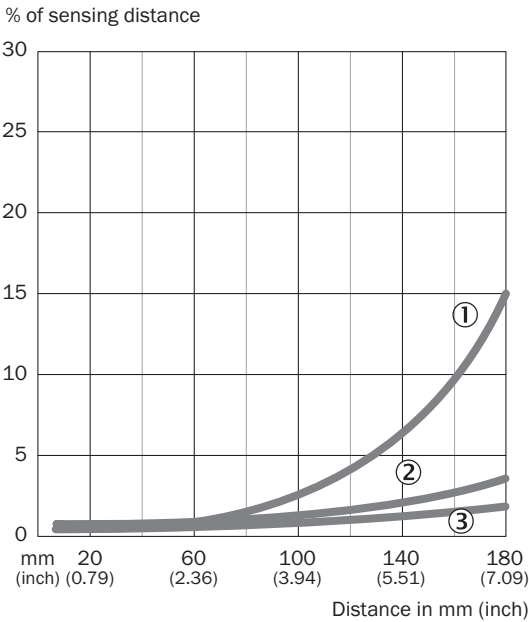
Classifications

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

Connection diagram Cd-367

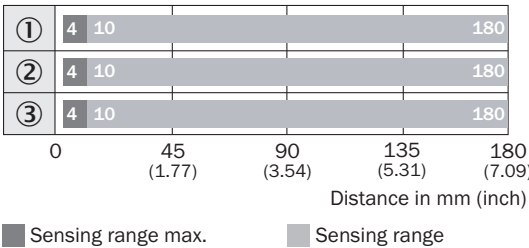


Characteristic curve WTB4S-3, 180 mm



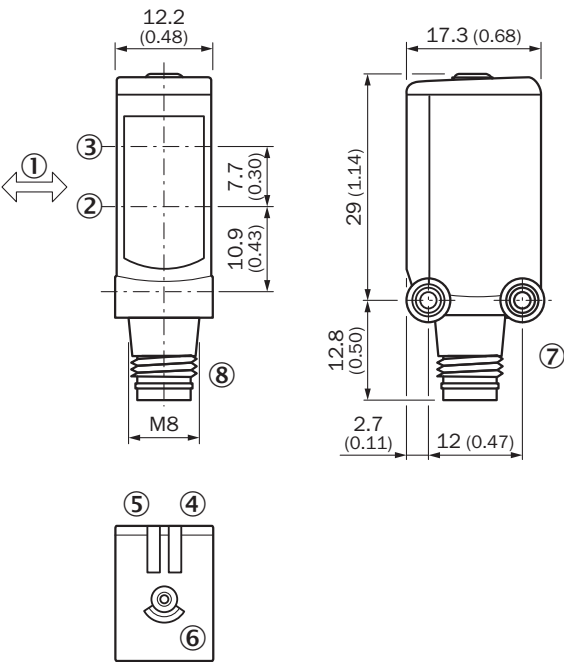
- ① Sensing range on black, 6% remission factor
- ② Sensing range on gray, 18% remission factor
- ③ Sensing range on white, 90% remission factor

Sensing range diagram WTB4S-3, 180 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

Dimensional drawing WTB4S-3, Single teach-in button



- 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 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.
Mounting systems			
	• Description: Mounting bracket for wall mounting • Material: Stainless steel • Details: Stainless steel 1.4571 • Items supplied: Mounting hardware included • Suitable for: W4S, W4F, W4S	BEF-W4-A	2051628

	Brief description	Type	part no.
connectors and cables			
	• 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 • Cable: 0.11 m, PVC • Description: Unshielded	SYL-8204-G0M11-X2	6055012
	• 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, Uncontaminated zones	YF8U14-050VA3XLEAX	2095889
	• 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, Uncontaminated zones	YF8U14-050VA3M2A14	2096609

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