WSE4SC-3P2230A91

W4

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

WSE4SC-3P2230A91 | W4

PHOTOELECTRIC SENSORS

Illustration may differ

Ordering information

Type	part no.
WSE4SC-3P2230A91	1067770

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

Detailed technical data

Features

Functional principle	Through-beam photoelectric sensor
Sensing range max.	0 m ... 5 m
Sensing range	0 m ... 4.5 m
Emitted beam	
Light source	PinPoint LED [1]
Type of light	Visible red light
Light spot size (distance)	Ø 50 mm (2 m)
Key LED figures	
Wave length	650 nm
Adjustment	IO-Link
Part number of individual components	2073737 WS4S-3D2230 2073951 WE4SC-3P2230A91
Pin 2 configuration	External input, Teach-in input, Detection output, logic output, alarm output operating reserve

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

Safety-related parameters

$MTTF_D$	693 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	0x8000E9
DeviceID DEC	8388841

Electronics

Supply voltage U_B	10 V DC ... 30 V DC [1]
Ripple	< 5 V_{pp} [2]
Current consumption	20 mA [3]
	20 mA [4]
Protection class	III
Digital output	
Type	PNP [5]
Switching mode	Light/dark switching
Output current $I_{max.}$	≤ 100 mA
Repeatability (response time)	150 μs [6]
Switching frequency	1,000 Hz
Circuit protection	A [7]
	B [8]
	C [9]
	D [10]
Response time Q/ on Pin 2	300 μs ... 450 μs [11] [6]
Switching frequency Q / to pin 2	1,000 Hz [12]
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] Sender.

[4] Receiver without load.

[5] Pin 4: This switching output must not be connected to another output.

[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] Signal transit time with resistive load.

[12] 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	40 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: 550 µs ... 650 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: - 90 ... + 90 µs
Min. Time between two process events (switches)	SIO Direct: 450 µs SIO Logic: 450 µs IOL: 500 ms
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
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
Function reserve	Yes

Certificates

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

Classifications

ECLASS 5.0	27270901
ECLASS 5.1.4	27270901
ECLASS 6.0	27270901
ECLASS 6.2	27270901
ECLASS 7.0	27270901
ECLASS 8.0	27270901
ECLASS 8.1	27270901
ECLASS 9.0	27270901
ECLASS 10.0	27270901
ECLASS 11.0	27270901
ECLASS 12.0	27270901
ETIM 5.0	EC002716
ETIM 6.0	EC002716
ETIM 7.0	EC002716
ETIM 8.0	EC002716
UNSPSC 16.0901	39121528

Connection diagram Cd-365

①
BN	1	+ (L+)
BK	4	Q_{L1}/C
WH	2	MF
BU	3	– (M)

②
BN	1	+ (L+)
BK	4	Test
WH	2	Not connected
BU	3	– (M)

① receiver
② sender
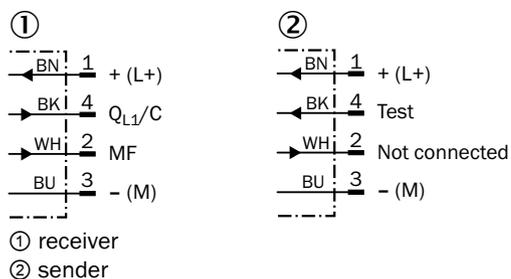
Characteristic curve WSE4S-3

Operating reserve
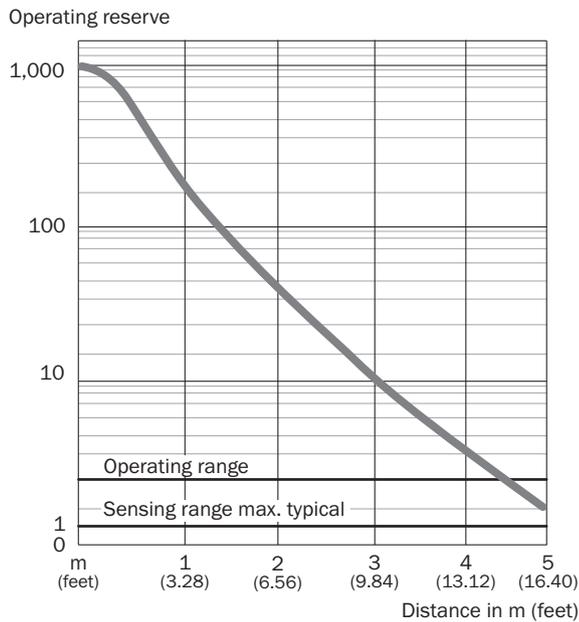
Sensing range diagram WSE4S-3
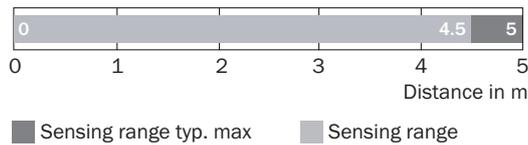
Recommended accessories

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
	• **Description:** Plate N08 for universal clamp bracket • **Material:** Steel, zinc diecast • **Details:** Zinc plated steel (sheet), Zinc die cast (clamping bracket) • **Items supplied:** Universal clamp (5322626), mounting hardware • **Usable for:** W100, W150, W4S, W4F, W8, W9-3, W8G, W8 Laser, W8 Inox, G6, W100 Laser, W100-2, W10, G6 Inox, RAY10, W4SLG-3, W9, GR18, MultiPulse, Reflex Array, MultiLine, LUT3, KT5, KT8, KT10, CS8	BEF-KHS-N08	2051607

Brief description	Type	part no.
connects and cables		
• **Connection type head A:** Male connector, M8, 4-pin, straight, A-coded • **Description:** Unshielded • **Connection systems:** Screw-type terminals • **Permitted cross-section:** 0.14 mm² ... 0.5 mm²	STE-0804-G	6037323
• **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:** Uncontaminated zones, Zones with chemicals	YF8U14-050VA3XLEAX	2095889
• **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, PUR, halogen-free • **Description:** Sensor/actuator cable, unshielded • **Application:** Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation	YF8U14-050UA3XLEAX	2094792

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."

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