



WSE4SC-3P2230A70 W4

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

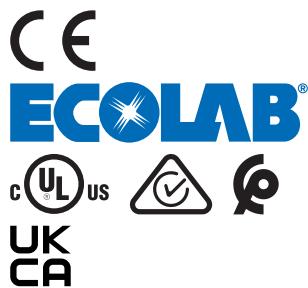


Ordering information

Type	part no.
WSE4SC-3P2230A70	1067768

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

Illustration may differ



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 2073949 WE4SC-3P2230A70		
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	0x8000E5
DeviceID DEC	8388837

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 μ s ⁶⁾
Switching frequency	1,000 Hz
Circuit protection	A ⁷⁾ B ⁸⁾ C ⁹⁾ D ¹⁰⁾
Response time Q_1 on Pin 2	300 μ s ... 450 μ s ^{11) 6)}
Switching frequency Q_1 / 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_B tolerances.

³⁾ Sender.

⁴⁾ Receiver without load.

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

⁶⁾ Valid for Q_1 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_1 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	Time measurement + debouncing
Logic function	Direct WINDOW
Timer function	Deactivated Switch-on delay Off delay ON and OFF delay Impulse (one shot)
Inverter	Yes
Response time	1) 2)
Repeatability	1) 2)
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: - 5,7 ... + 5,7 ms IOL: - 5,9 ... + 5,9 ms
Resolution time measuring value	1 ms
Min. Time between two process events (switches)	SIO Direct: -- SIO Logic: 450 µs IOL: 500 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

¹⁾ SIO Logic: Sensor operation in standard I/O mode without IO-Link communication. Sensor-internal logic or timing parameters plus Automation Functions used.²⁾ IOL: Sensor operation with full IO-Link communication and usage of logic, timing and Automation Function parameters.

Diagnosis

Device status	Yes
Function reserve	Yes

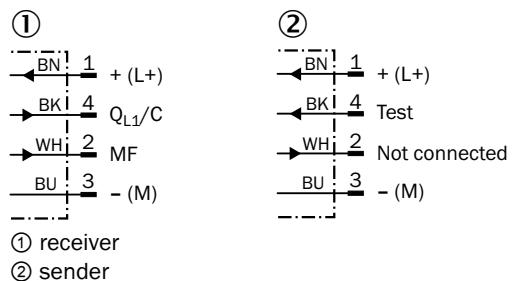
Certificates

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

Classifications

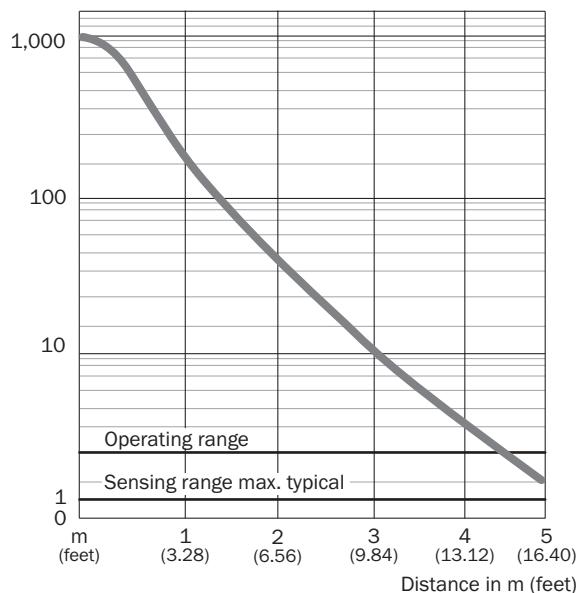
ECLASS 5.0	27270901
ECLASS 5.1.4	27270901
ECLASS 6.0	27270901
ECLASS 6.2	27270901
ECLASS 7.0	27270901
ECLASS 8.0	27270901
ECLASS 8.1	27270901
ECLASS 9.0	27270901
ECLASS 10.0	27270901
ECLASS 11.0	27270901
ECLASS 12.0	27270901
ETIM 5.0	EC002716
ETIM 6.0	EC002716
ETIM 7.0	EC002716
ETIM 8.0	EC002716
UNSPSC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

Connection diagram Cd-365



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			
	<ul style="list-style-type: none"> 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			
	<ul style="list-style-type: none">Connection type head A: Male connector, M8, 4-pin, straight, A-codedDescription: UnshieldedConnection systems: Screw-type terminalsPermitted cross-section: 0.14 mm² ... 0.5 mm²	STE-0804-G	6037323
	<ul style="list-style-type: none">Connection type head A: Female connector, M8, 4-pin, straight, A-codedConnection type head B: Flying leadsSignal type: Sensor/actuator cableCable: 5 m, 4-wire, PVCDescription: Sensor/actuator cable, unshieldedApplication: Zones with chemicals, Uncontaminated zones	YF8U14-050VA3XLEAX	2095889

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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