Product data sheet

WSE4SC-3P2230S03

W4

MINIATURE PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	Part no.
WSE4SC-3P2230S03	1078552

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
Special features	Parameter presettings: 200 ms on delay on QL1
Part number of individual components	2073737 WS4S-3D2230
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.

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	0x8000E3
DeviceID DEC	8388835

Electrical data

Supply voltage U_B	10 V DC ... 30 V DC [1]
Ripple	< 5 V_{pp} [2]
Current consumption	20 mA, 20 mA [3] [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 exceed or fall below 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.

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	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	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: 1000 Hz IOL: 900 Hz
Response time	SIO Direct: 300 µs ... 450 µs [1] SIO Logic: 500 µs ... 600 µs [2] IOL: 500 µs ... 900 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
Function reserve	Yes

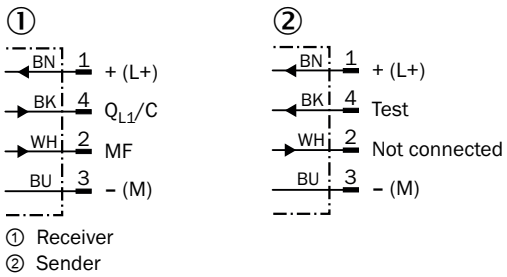
Classifications

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 Receiver
② Sender

Characteristic curve

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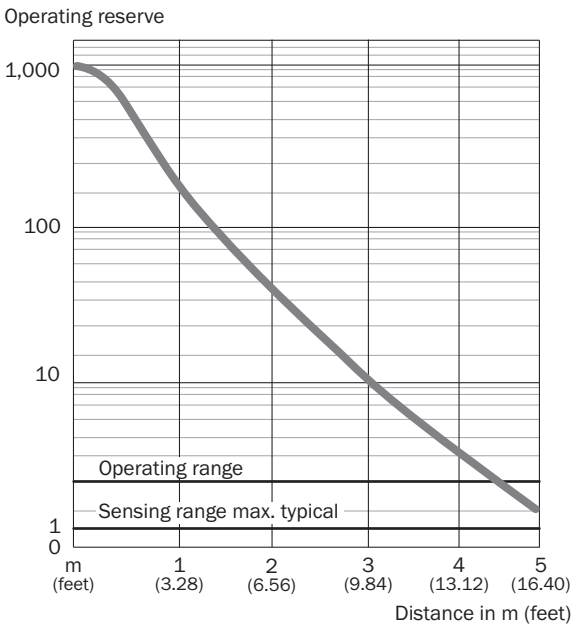

Sensing range diagram

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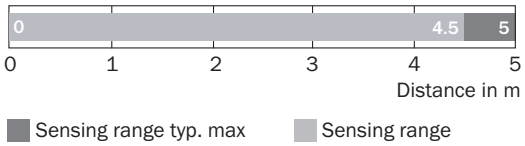

Recommended accessories

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

	Brief description	Type	Part no.
Mounting brackets and plates			
	Mounting bracket for wall mounting, Stainless steel 1.4571, mounting hardware included	BEF-W4-A	2051628
Plug connectors and cables			
	• **Connection type head A:** Male connector, M8, 4-pin, straight • **Description:** Unshielded • **Connection systems:** Screw-type terminals • **Permitted cross-section:** 0.14 mm² ... 0.5 mm²	STE-0804-G	6037323
Others			
	• **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

Recommended services

Additional services ➜ www.sick.com/W4

	Type	Part no.
Function Block Factory		
• **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 here. • **Note:** You can configure your function block at 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:

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