Data sheet

WSE9C-3P2430A00

W9

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	part no.
WSE9C-3P2430A00	1080921

Other models and accessories ➜ www.sick.com/W9

Detailed technical data

Features

Functional principle	Through-beam photoelectric sensor
Dimensions (W x H x D)	12.2 mm x 52.2 mm x 23.6 mm
Housing design (light emission)	Rectangular
Mounting hole	M3
Sensing range max.	0 m ... 10 m
Sensing range	0 m ... 7 m
Type of light	Visible red light
Light source	PinPoint LED [1]
Light spot size (distance)	Ø 25 mm (1 m)
Wave length	650 nm
Adjustment	IO-Link
Pin 2 configuration	External input, Teach-in input, Detection output, logic output, Device contamination alarm output

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

Mechanics/electronics

Supply voltage U_B	10 V DC ... 30 V DC [1]
Ripple	< 5 V_{pp} [2]
Current consumption	30 mA [3]
Switching output	PNP [4] [5]
Switching mode	Light/dark switching [4]
Output current $I_{max.}$	≤ 100 mA [6]
Response time	< 0.5 ms [7]
Response time Q/ on Pin 2	300 µs ... 450 µs [7] [8]
Switching frequency	1,000 Hz [9]
Switching frequency Q / to pin 2	≤ 1,000 Hz [10]
Connection type	Male connector M12, 4-pin
Circuit protection	A [11] B [12] C [13]
Protection class	III
Weight	13 g
Housing material	Plastic, VISTAL®
Optics material	Plastic, PMMA
Enclosure rating	IP66 IP67 IP69K
Test input sender off	Sender off
Ambient operating temperature	–40 °C ... +60 °C
Ambient temperature, storage	–40 °C ... +75 °C
UL File No.	NRKH.E181493
Part number of individual components	2055824 WS9-3D2430, 2088124 WE9C-3P2430A00
Repeatability Q/ on Pin 2:	150 µs [8]

[1] Limit values when operated in short-circuit protected network: max. 8 A.
[2] May not fall below or exceed U_V tolerances.
[3] Without load.
[4] Q = light switching.
[5] Pin 4: This switching output must not be connected to another output.
[6] At and above Tu 50 °C, a max. load current of Imax. = 50 mA is permitted.
[7] Signal transit time with resistive load.
[8] Valid for Q \ on Pin2, if configured with software.
[9] With light/dark ratio 1:1.
[10] With light / dark ratio 1:1, valid for Q \ on Pin2, if configured with software.
[11] A = V_S connections reverse-polarity protected.
[12] B = inputs and output reverse-polarity protected.
[13] C = interference suppression.

Safety-related parameters

$MTTF_D$	693 years

DC_{avg}	0 %

Communication interface

Communication interface	IO-Link V1.1
Communication Interface detail	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	0x8000E4
DeviceID DEC	8388836

Smart Task

Smart Task name	Base logics
Logic function	Direct AND OR WINDOW Hysteresis
Timer function	Deactivated Switch-on delay Off delay ON and OFF delay Impulse (one shot)
Inverter	Yes
Switching frequency	SIO Direct: 1000 Hz [1] SIO Logic: 1000 Hz [2] IOL: 900 Hz [3]
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}	Output type (dependant on the adjusted threshold)
Switching signal Q_{L2}	Output type (dependant on the adjusted threshold)

[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

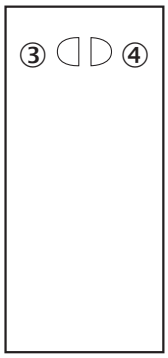
EU declaration of conformity	✓

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

Classifications

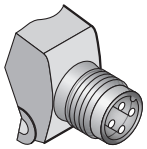
ECLASS 5.0	27270901
ECLASS 5.1.4	27270901
ECLASS 6.0	27270901
ECLASS 6.2	27270901
ECLASS 7.0	27270901
ECLASS 8.0	27270901
ECLASS 8.1	27270901
ECLASS 9.0	27270901
ECLASS 10.0	27270901
ECLASS 11.0	27270901
ECLASS 12.0	27270901
ETIM 5.0	EC002716
ETIM 6.0	EC002716
ETIM 7.0	EC002716
ETIM 8.0	EC002716
UNSPSC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

Adjustments No adjustment possibility

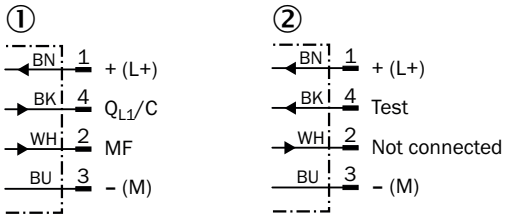


③ LED indicator yellow: Status of received light beam
④ LED indicator green: power on

Connection type

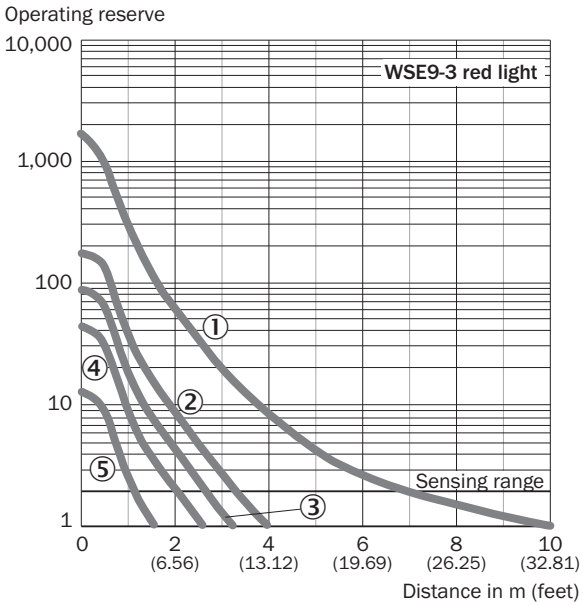


Connection diagram Cd-365



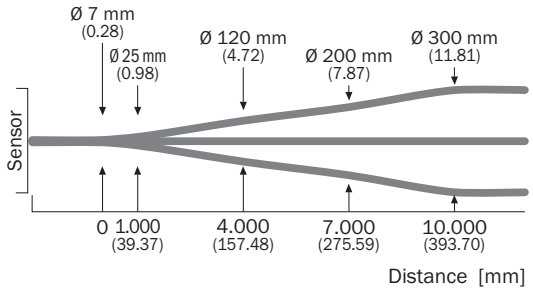
① receiver
② sender

Characteristic curve WSE9-3, red light, 10 m

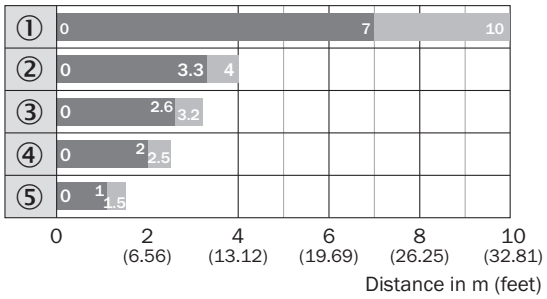


① Without masks
② With slotted mask, width 2.0 mm
③ With slotted mask, width 1.5 mm
④ With slotted mask, width 1.0 mm
⑤ With slotted mask, width 0.5 mm

Light spot size WSE9-3, red light, 10 m



Sensing range diagram WSE9-3, red light, 10 m



① Without masks
② With slotted mask, width 2.0 mm
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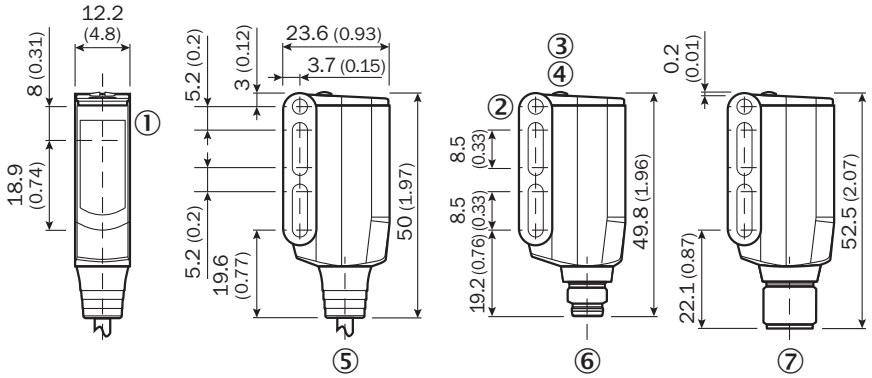
Dimensional drawing WL9-3, WSE9-3



Dimensions in mm (inch)
① Sender and receiver optical axis center
② Mounting hole M3 (Ø 3.1 mm)
③ LED indicator yellow: Status of received light beam
④ LED indicator green: power on
⑤ Connecting cable or connector
⑥ male connector M8, 4-pin
⑦ male connector M12, 4-pin

Recommended accessories

Other models and accessories ➜ www.sick.com/W9

	Brief description	Type	part no.
Mounting systems			
	• **Description:** Mounting bracket • **Material:** Steel • **Details:** Steel, zinc coated • **Items supplied:** Mounting hardware included • **Suitable for:** W9-3	BEF-WN-W9-2	2022855
connectors and cables			
	• **Connection type head A:** Female connector, M12, 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	YF2A14-050VB3XLEAX	2096235
	• **Connection type head A:** Male connector, M12, 4-pin, straight, A-coded • **Description:** Unshielded • **Connection systems:** Screw-type terminals • **Permitted cross-section:** ≤ 0.75 mm²	STE-1204-G	6009932

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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