Online data sheet

WSE4C-3P2230A00

W4-3

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	Part no.
WSE4C-3P2230A00	1080936

Other models and accessories ➜ www.sick.com/W4-3

Detailed technical data

Features

Sensor/ detection principle	Through-beam photoelectric sensor
Dimensions (W x H x D)	16 mm x 39.5 mm x 12 mm
Housing design (light emission)	Rectangular
Sensing range max.	0 m ... 4 m
Sensing range	0 m ... 3.5 m
Type of light	Visible red light
Light source	PinPoint LED [1]
Light spot size (distance)	Ø 210 mm (2 m)
Wave length	650 nm
Adjustment	IO-Link
Pin 2 configuration	External input, Teach-in input, Detection output, logic output, alarm output operating reserve
Diagnosis	Status indicator operating reserve

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

Mechanics/electronics

Supply voltage	10 V DC ... 30 V DC [1]
Ripple	< 5 V_{pp} [2]
Power consumption	≤ 20 mA [3]
Switching output	PNP
Switching mode	Light/dark switching
Output current $I_{max.}$	≤ 100 mA
Response time	< 0.5 ms [4]
Response time Q/ on Pin 2	300 µs ... 450 µs [4] [5]
Switching frequency	1,000 Hz [6]
Switching frequency Q / to pin 2	1,000 Hz [7]
Connection type	Male connector M8, 4-pin
Circuit protection	A [8] C [9] D [10]
Protection class	III
Weight	60 g
Housing material	Plastic, ABS
Optics material	Plastic, PMMA
Enclosure rating	IP67 IP66
Test input sender off	TE to 0 V
Ambient operating temperature	–40 °C ... +60 °C
Ambient storage temperature	–40 °C ... +75 °C
UL File No.	NRKH.E181493 & NRKH7.E181493
Part number of individual components	2040701 WS4-3D2230, 2087706 WE4C-3P2230A00
Repeatability Q/ on Pin 2:	150 µs [5]

[1] Limit values.
[2] May not exceed or fall below U_V tolerances.
[3] Sender.
[4] Signal transit time with resistive load.
[5] Valid for Q \ on Pin2, if configured with software.
[6] With light/dark ratio 1:1.
[7] With light / dark ratio 1:1, valid for Q \ on Pin2, if configured with software.
[8] A = V_S connections reverse-polarity protected.
[9] C = interference suppression.
[10] D = outputs overcurrent and short-circuit protected.

Classifications

ECl@ss 5.0	27270901
ECl@ss 5.1.4	27270901
ECl@ss 6.0	27270901
ECl@ss 6.2	27270901
ECl@ss 7.0	27270901

ECl@ss 8.0	27270901
ECl@ss 8.1	27270901
ECl@ss 9.0	27270901
ETIM 5.0	EC002716
ETIM 6.0	EC002716
UNSPSC 16.0901	39121528

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 Q_{L1}	Switching output
Switching signal Q_{L2}	Switching output

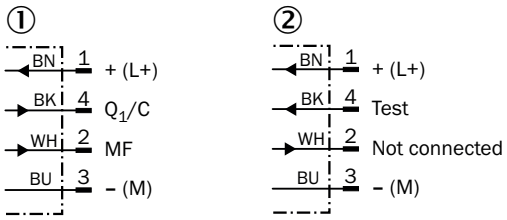
[1)] SIO Direct: sensor operation in standard I/O mode without IO-Link communication and without using internal sensor logic or time parameters (set to “direct”/“deactivated”).
[2)] SIO Logic: Sensor operation in standard I/O mode without IO-Link communication. Sensor-internal logic or timing parameters plus Automation Functions used.
[3)] IOL: Sensor operation with full IO-Link communication and usage of logic, timing and Automation Function parameters.

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

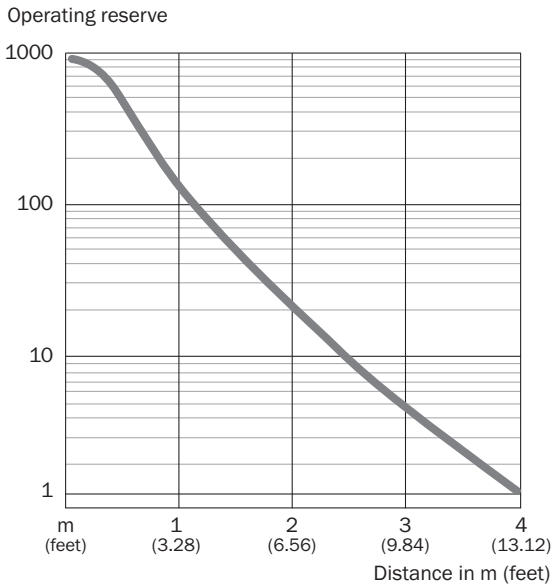
Connection diagram

cd-298



Characteristic curve

WSE4-3



Sensing range diagram

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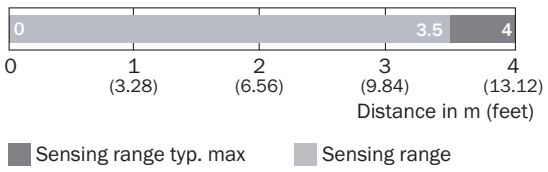

Dimensional drawing (Dimensions in mm (inch))

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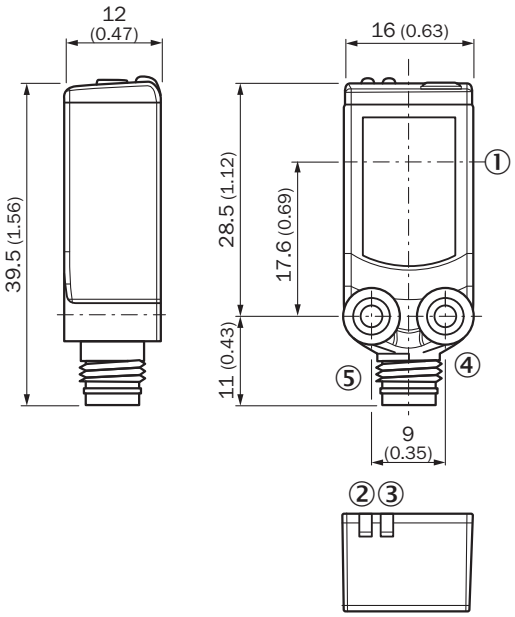

① Center of optical axis
② Orange LED indicator: status of received light beam
③ LED indicator green: Supply voltage active
④ Threaded mounting hole M3
⑤ Connection

Recommended accessories

Other models and accessories ➜ www.sick.com/W4-3

	Brief description	Type	Part no.
Universal bar clamp systems			
	Plate N08 for universal clamp bracket, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware	BEF-KHS-N08	2051607
Mounting brackets and plates			
	Mounting bracket for wall mounting, Stainless steel 1.4571, mounting hardware included	BEF-W4-A	2051628
	Mounting bracket for floor mounting, Stainless steel 1.4571, mounting hardware included	BEF-W4-B	2051630

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