Product data sheet

WTB4SLC-3P2262A00

W4SL-3

MINIATURE PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	Part no.
WTB4SLC-3P2262A00	1080939

Other models and accessories → www.sick.com/W4SL-3

Detailed technical data

Features

Sensor/ detection principle	Photoelectric proximity sensor, Background suppression
Dimensions (W x H x D)	12.2 mm x 41.8 mm x 17.3 mm
Housing design (light emission)	Rectangular
Mounting hole	M3
Sensing range max.	25 mm ... 300 mm [1]
Sensing range	25 mm ... 300 mm [1]
Type of light	Visible red light
Light source	Laser [2]
Light spot size (distance)	Ø 1 mm (170 mm)
Wave length	650 nm
Laser class	1 (EN 60825-1:2014, IEC 60825-1:2014 / CDRH 21 CFR 1040.10 & 1040.11)
Adjustment	Cable Single teach-in button
Pin 2 configuration	External input, Teach-in input, Sender off input, Detection output, logic output
Special applications	Detecting small objects

[1] Object with 90 % reflectance (referred to standard white, DIN 5033).
[2] Average service life: 50,000 h at T_U = +25 °C.

Mechanics/electronics

Supply voltage	10 V DC ... 30 V DC [1]
Ripple	< 5 V_{pp} [2]
Current consumption	30 mA [3]
Switching output	PNP [4]
Output function	Complementary
Switching mode	Light/dark switching [4]
Output current $I_{max.}$	≤ 100 mA
Response time	≤ 0.5 ms [5]
Response time Q/ on Pin 2	300 µs ... 450 µs [5] [6]
Switching frequency	1,000 Hz [7]
Switching frequency Q / to pin 2	1,000 Hz [8]
Connection type	Male connector M8, 4-pin
Circuit protection	A [9] B [10] C [11]
Protection class	III
Weight	100 g
Housing material	Plastic, Novodur
Optics material	Plastic, PMMA
Enclosure rating	IP66 IP67
Ambient operating temperature	–10 °C ... +50 °C
Ambient operating temperature extended	–30 °C ... +55 °C [12] [13]
Ambient temperature, storage	–30 °C ... +70 °C
Repeatability Q/ on Pin 2:	150 µs [6]

[1] Limit values when operated in short-circuit protected network: max. 8 A.
[2] May not exceed or fall below U_V tolerances.
[3] Without load.
[4] Q = light switching.
[5] Signal transit time with resistive load.
[6] Valid for Q \ on Pin2, if configured with software.
[7] With light/dark ratio 1:1.
[8] With light / dark ratio 1:1, valid for Q \ on Pin2, if configured with software.
[9] A = V_S connections reverse-polarity protected.
[10] B = inputs and output reverse-polarity protected.
[11] C = interference suppression.
[12] As of T_a = 50 °C, a max. supply voltage $V_{max.}$ = 24 V and a max. load current $I_{max.}$ = 50 mA is permitted.
[13] Operation below Tu –10 °C is possible if the sensor is already switched on at Tu > –10 °C, then cools down, and the supply voltage is subsequently not switched off. Switching on below Tu –10 °C is not permissible.

Safety-related parameters

$MTTF_D$	424 years (EN ISO 13849-1) [1]

[1] Mode of calculation: Parts-Count-calculation.

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	0x800109
DeviceID DEC	8388873

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 [1] SIO Logic: 600 Hz [2] IOL: 450 Hz [3]
Response time	SIO Direct: 300 µs ... 450 µs [1] SIO Logic: 750 µs ... 900 µs [2] IOL: 800 µs ... 1000 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.

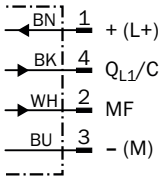
Classifications

ECl@ss 5.0	27270904
ECl@ss 5.1.4	27270904
ECl@ss 6.0	27270904
ECl@ss 6.2	27270904
ECl@ss 7.0	27270904
ECl@ss 8.0	27270904

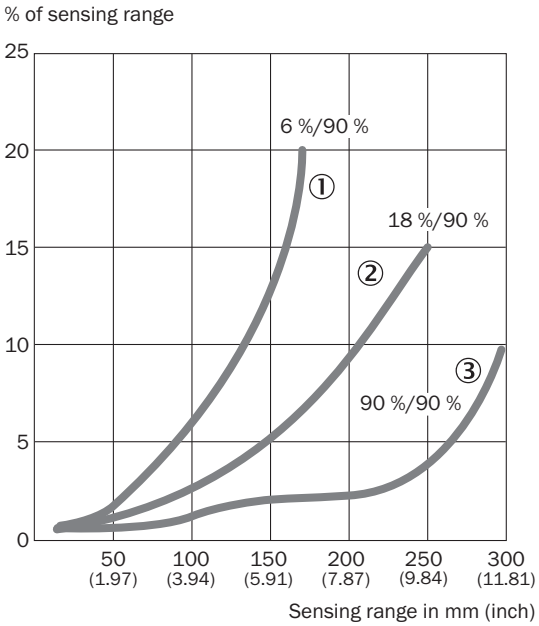
ECl@ss 8.1	27270904
ECl@ss 9.0	27270904
ECl@ss 10.0	27270904
ECl@ss 11.0	27270904
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

Connection diagram

Cd-367



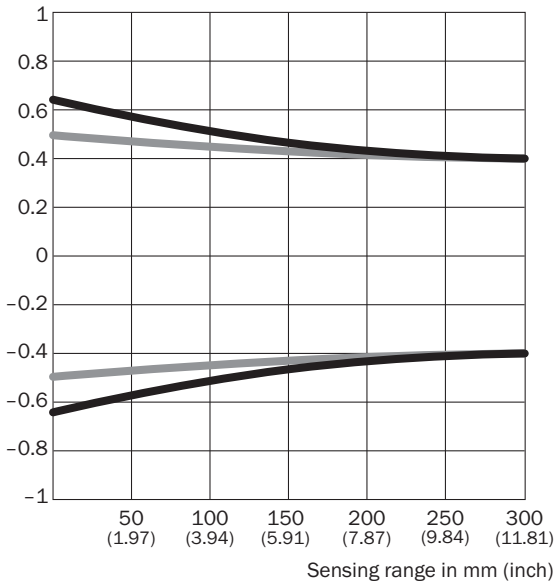
Characteristic curve



① Sensing range on black, 6% remission
② Sensing range on gray, 18 % remission
③ Sensing range on white, 90% remission

Light spot size

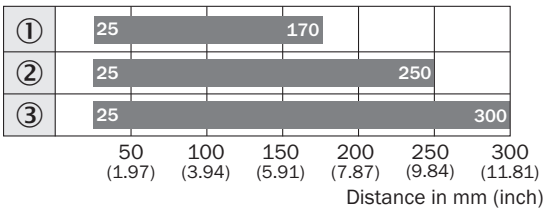
Radius in mm (inch)



Dimensions in mm (inch)

Sensing range	Vertical	Horizontal
50 mm (1.97)	1.2 (0.05)	1.0 (0.04)
100 mm (3.94)	1.1 (0.04)	1.0 (0.04)
200 mm (7.87)	0.9 (0.04)	0.9 (0.04)
300 mm (11.81)	0.8 (0.03)	0.8 (0.03)

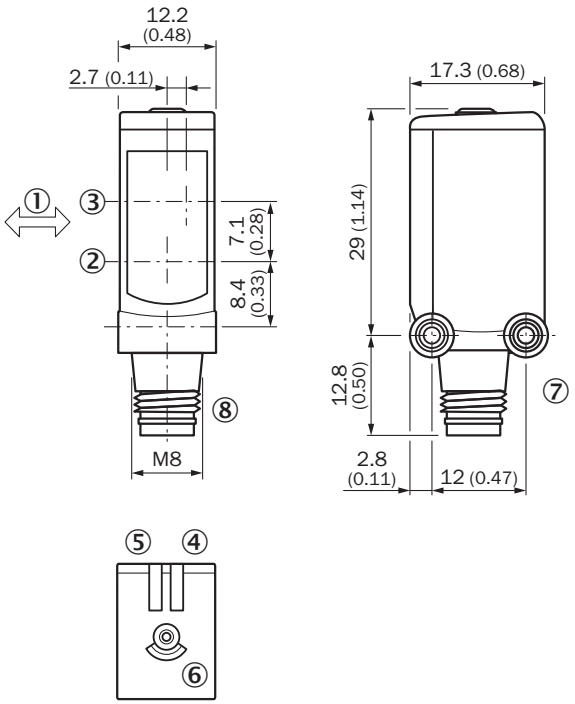
Sensing range diagram



Sensing range typ. max.

① Sensing range on black, 6% remission
② Sensing range on gray, 18 % remission
③ Sensing range on white, 90% remission

Dimensional drawing (Dimensions in mm (inch))



① Standard direction of the material being detected
② Center of optical axis, sender
③ Center of optical axis, receiver
④ LED indicator green: Supply voltage active
⑤ LED indicator yellow: Status of received light beam
⑥ Single teach-in button
⑦ Threaded mounting hole M3
⑧ Connection

Recommended accessories

Other models and accessories ➜ www.sick.com/W4SL-3

	Brief description	Type	Part no.
Plug connectors and cables			
	Head A: female connector, M8, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF8U14-050VA3XLEAX	2095889
	Head A: male connector, M8, 4-pin, straight Head B: - Cable: unshielded	STE-0804-G	6037323

Recommended services

Additional services ➜ www.sick.com/W4SL-3

	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.	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.”

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