Product data sheet

WL4SLC-3P2232A72

W4

MINIATURE PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	Part no.
WL4SLC-3P2232A72	1098509

The sensor is equipped with a special Smart Task function. Additional information can be found in the “Technical Data.” Use of the sensor for pure object detection is limited.

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

Detailed technical data

Features

Functional principle	Photoelectric retro-reflective sensor
Functional principle detail	Without reflector minimum distance (autocollimation/coaxial optics)
Sensing range max.	0 m ... 12 m [1]
Sensing range	0 m ... 8 m [1]
Polarisation filters	Yes
Emitted beam	
Light source	Laser [2]
Type of light	Visible red light
Light spot size (distance)	Ø 1 mm (500 mm)
Key laser figures	
Normative reference	EN 60825-1:2014, IEC 60825-1:2014 / CDRH 21 CFR 1040.10 & 1040.11
Laser class	1
Wave length	650 nm
Adjustment	IO-Link, Single teach-in button

[1] Reflector PL80A.

[2] Average service life: 50,000 h at T_U = +25 °C.

Required accessories	Auxiliary sensor (e.g. WL4SL-3P2232, 1061561), Smart-Sensor Y-junction SYL-8204-G0M11-X2 (6055012), 2 x connecting cable (e.g. YF8U14-C60VA3M8U14, 2096612), 2 x reflector (e.g. P250F, 5308843)
Mounting hole	M3

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Safety-related parameters

$MTTF_D$	562 years (EN ISO 13849-1) [1]
DC_{avg}	0 %
T_M (mission time)	10 years

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

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 = Detection signal Qint.1 Bit 2 ... 15 = measuring value
VendorID	26
DeviceID HEX	0x800222
DeviceID DEC	8389154

Electronics

Supply voltage U_B	10 V DC ... 30 V DC [1]
Ripple	< 5 V_{pp} [2]
Current consumption	30 mA [3]
Protection class	III
Digital output	
Type	PNP [4] [5]
Switching mode	Light/dark switching [4]
Output current $I_{max.}$	≤ 100 mA
Response time	≤ 0.5 ms [6]

[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] Signal transit time with resistive load.
[7] Valid for Q \ on Pin2, if configured with software.
[8] With light/dark ratio 1:1.
[9] A = V_S connections reverse-polarity protected.
[10] B = inputs and output reverse-polarity protected.
[11] C = interference suppression.
[12] With light / dark ratio 1:1, valid for Q \ on Pin2, if configured with software.

Repeatability (response time)	150 µs [7]
Switching frequency	1,000 Hz [8]
Output function	Complementary
Circuit protection	A [9] B [10] C [11]
Response time Q/ on Pin 2	300 µs ... 450 µs [6] [7]
Switching frequency Q / to pin 2	1,000 Hz [12]

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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, Novodur
Front screen	Plastic, PMMA
Weight	100 g

Ambient data

Enclosure rating	IP66 IP67
Ambient operating temperature	–10 °C ... +50 °C
Ambient operating temperature extended	–30 °C ... +55 °C [1] [2]
Ambient temperature, storage	–30 °C ... +70 °C
UL File No.	NRKH.E181493

[1] 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.
[2] 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.

Smart Task

Smart Task name	Speed and Length Monitoring
Measurement mode	Speed Length Length incremental
Relative measurement error related to the measured value	≤ 1 %

Resolution measurement value	1 mm / 1 mm/s
Logic function	WINDOW
Timer function	Impulse width, impulse shift
Max. pulse frequency at the external input (pin 2 / white wire)	≤ 1,000 Hz
Switching signal	
Switching signal Q_{L1}	Switching output to measuring value switching thresholds
Measuring value	Speed measurement value / length measurement value

Diagnosis

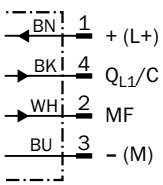
Device status	Yes
Quality of teach	Yes
Quality of run	Yes, Contamination display

Classifications

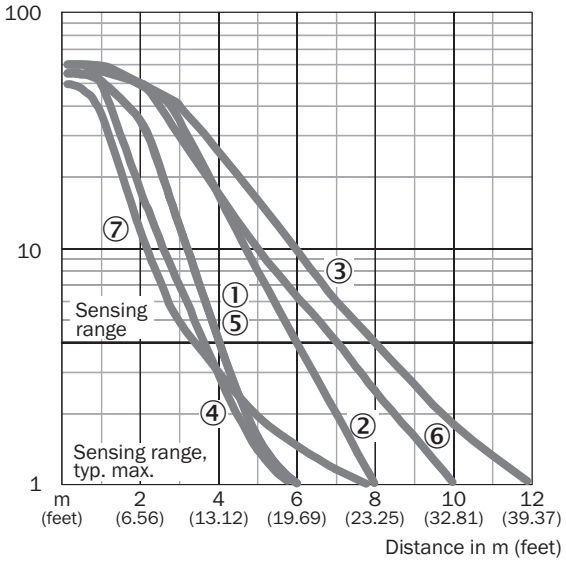
ECLASS 5.0	27270902
ECLASS 5.1.4	27270902
ECLASS 6.0	27270902
ECLASS 6.2	27270902
ECLASS 7.0	27270902
ECLASS 8.0	27270902
ECLASS 8.1	27270902
ECLASS 9.0	27270902
ECLASS 10.0	27270902
ECLASS 11.0	27270902
ECLASS 12.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
ETIM 8.0	EC002717
UNSPSC 16.0901	39121528

Connection diagram

Cd-367

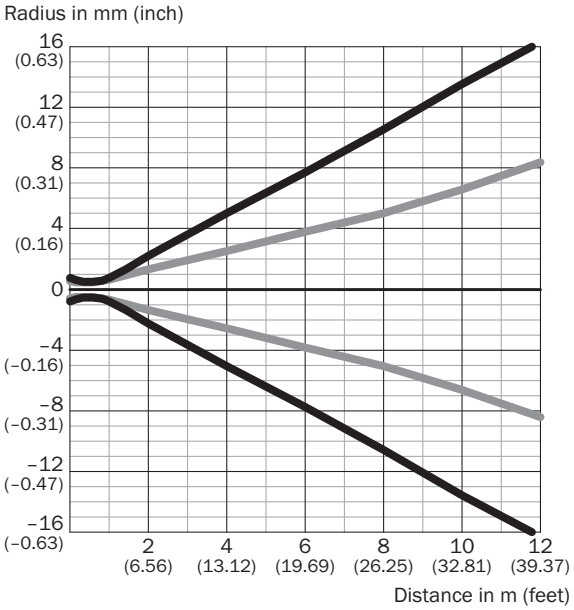


Characteristic curve



① Reflector PL20A
② Reflector PL40A
③ Reflector PL80A
④ PL10F reflector
⑤ Reflector PL20F
⑥ Reflector P250F
⑦ Reflective tape REF-AC1000

Light spot size

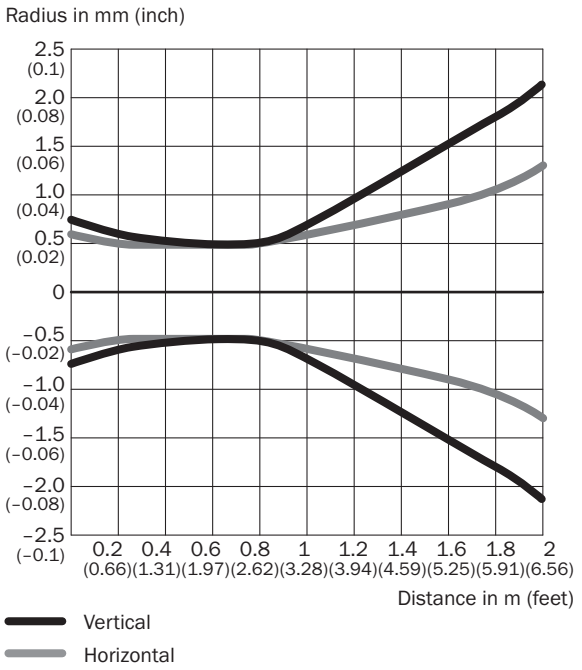


Dimensions in mm (inch)

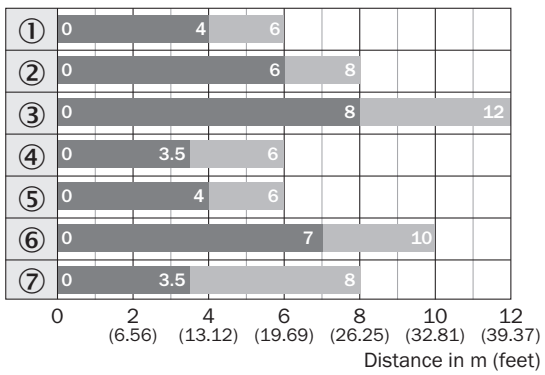
Sensing range	Vertical	Horizontal
0.5 m (1.64 feet)	< 1.0 (0.04)	< 1.0 (0.04)
1 m (3.28 feet)	1.5 (0.06)	1.2 (0.05)
6 m (19.69 feet)	15.2 (0.60)	7.6 (0.30)
12 m (39.37 feet)	32.4 (1.28)	16.4 (0.65)

Vertical
Horizontal

Light spot size (detailed view)



Sensing range diagram



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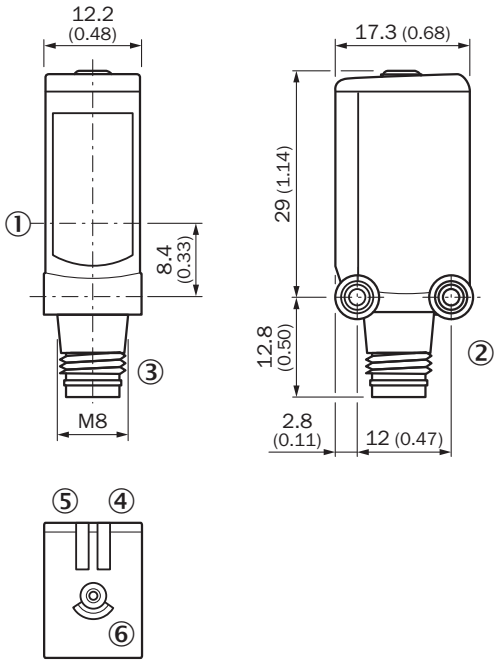
Dimensional drawing (Dimensions in mm (inch))

WL4SL-3, WL4SLG-3, WSE4SL-3, plug



① Center of optical axis
② Threaded mounting hole M3
③ Connection
④ LED indicator green: Supply voltage active
⑤ LED indicator yellow: Status of received light beam
⑥ Single teach-in button

Recommended accessories

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

	Brief description	Type	Part no.
Others			
	• **Description:** Fine triple reflector, screw connection, suitable for laser sensors • **Dimensions:** 20 mm 32 mm • **Ambient operating temperature:** –30 °C ... +65 °C	PL10F	5311210
	• **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, Uncontaminated zones	YF8U14-050VA3XLEAX	2095889
	• **Connection type head A:** Male connector, M8, 4-pin, straight, A-coded • **Description:** Unshielded • **Connection systems:** Screw-type terminals • **Permitted cross-section:** 0.14 mm² ... 0.5 mm²	STE-0804-G	6037323

Recommended services

Additional services ➜ www.sick.com/W4

	Type	Part no.
Function Block Factory		
• **Description:** The Function Block Factory is an engineering tool for creating device and environment-specific function blocks that enable IO-Link sensors to be integrated into programmable logic controllers. The Function Block Factory supports common programmable logic controllers (PLCs) of various manufacturers such as Siemens, Beckhoff, Rockwell Automation B&R and more. More information on the FBF can be found here . • **Provision:** Customers can obtain access to the Function Block Factory and the license via https://fbf.cloud.sick.com.	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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