

PHOTOELECTRIC SENSORS

WL4SLC-3P2232A72

ORDERING INFORMATION

Type	part no.
WL4SLC-3P2232A72	1098509

Further device versions and accessories at www.sick.com/W4



Illustration may differ



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 filter	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 ³⁾
	Wave length	650 nm
Adjustment	IO-Link, Single teach-in button	
Required accessories	Auxiliary sensor (e.g. WL4SL-3P2232, 1061561), Smart-Sensor Y-junction SYL-8204-GOM11-X2 (6055012), 2 x connecting cable (e.g. YF8U14-C60VA3M8U14, 2096612), 2 x reflector (e.g. P250F, 5308843)	
Mounting hole	M3	

¹⁾ Reflector PL80A.

²⁾ Average service life: 50,000 h at T_v = +25 °C.

³⁾ Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

SAFETY-RELATED PARAMETERS

MTTF _D	562 years (EN ISO 13849-1) ¹⁾
DC _{avg}	0 %

¹⁾ Mode of calculation: Parts-Count-calculation.

T_M (mission time)	10 years
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¹⁾ Mode of calculation: Parts-Count-calculation.

COMMUNICATION INTERFACE

IO-Link	✓, IO-Link V1.1
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_L Bit 1 = Detection signal Qint.1 Bit 2 ... 15 = measuring value
VendorID	26
DeviceID HEX	0x800222
DeviceID DEC	8389154
Compatible master port type	A
SIO mode support	Yes

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⁾ 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⁾

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.

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 $T_a = 50\text{ °C}$, a max. supply voltage $V_{max} = 24\text{ V}$ and a max. load current $I_{max} = 50\text{ mA}$ is permitted.

²⁾ Operation below $T_u -10\text{ °C}$ is possible if the sensor is already switched on at $T_u > -10\text{ °C}$, then cools down, and the supply voltage is subsequently not switched off. Switching on below $T_u -10\text{ °C}$ 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	$\leq 1\%$
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)	$\leq 1,000\text{ Hz}$
Switching signal	Switching signal Q_{L1} Switching output to measuring value switching thresholds
Measuring value	Speed measurement value / length measurement value

DIAGNOSIS

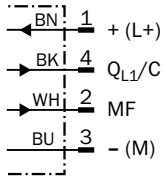
Device status	Yes
Quality of teach	Yes
Quality of run	Yes, Contamination display

CERTIFICATES

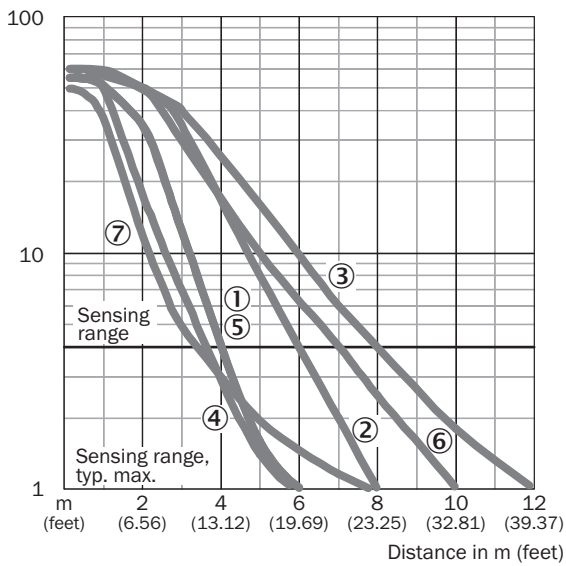
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
China Compulsory Product Certification (CCC) exempt	✓

ECOLAB certificate	✓
Laser safety (IEC 60825-1) certificate	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

CONNECTION DIAGRAM CD-367

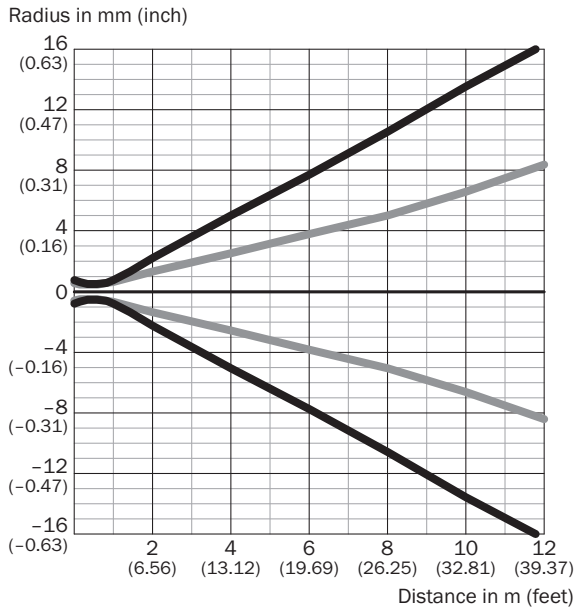


CHARACTERISTIC CURVE



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

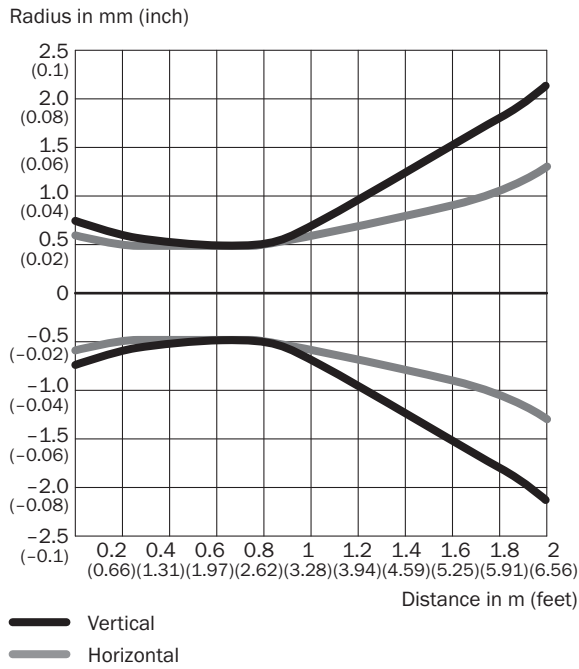
LIGHT SPOT SIZE



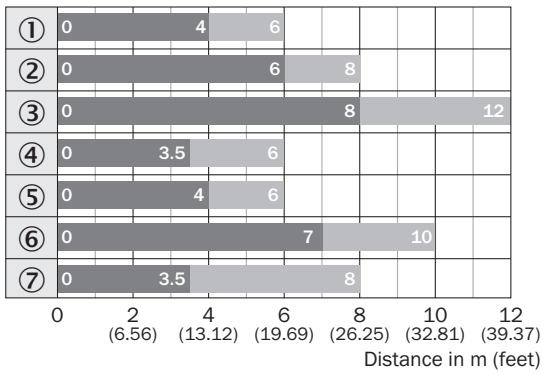
Dimensions in mm (inch)

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)

LIGHT SPOT SIZE (DETAILED VIEW)



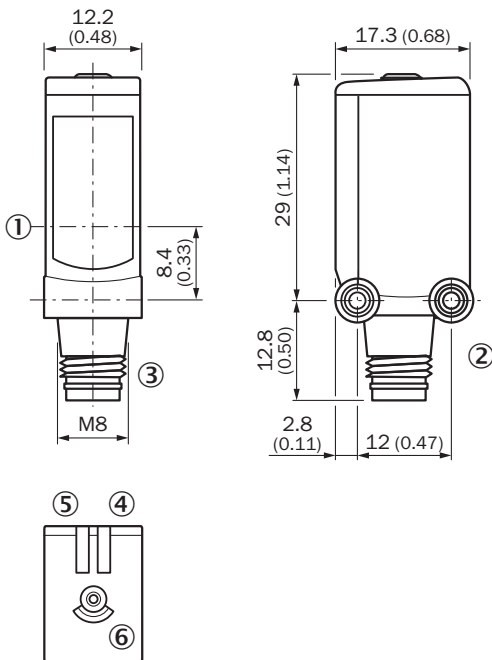
SENSING RANGE DIAGRAM



■ Sensing range ■ Sensing range typ. max.

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

DIMENSIONAL DRAWING WL4SL-3, WL4SLG-3, WSE4SL-3, PLUG



Dimensions in mm (inch)

- 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

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1098509



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SICK AT A GLANCE

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