



WL4SLC-3P2232A72

W4

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | part no. |
|------------------|----------|
| WL4SLC-3P2232A72 | 1098509 |

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 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_U = +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 % |
| 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 Q _{int.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⁾ |
| Repeatability (response time) | 150 μs ⁷⁾ |
| Switching frequency | 1,000 Hz ⁸⁾ |
| Output function | Complementary |
| Circuit protection | A ⁹⁾ |

¹⁾ Limit values when operated in short-circuit protected network: max. 8 A.

²⁾ May not fall below or exceed U_y 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.

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

2) Operation below $T_u - 10$ °C is possible if the sensor is already switched on at $T_u > -10$ °C, then cools down, and the supply voltage is subsequently not switched off. Switching on below $T_u - 10$ °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 |

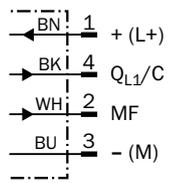
Certificates

| | |
|--|---|
| EU declaration of conformity | ✓ |
| UK declaration of conformity | ✓ |
| ACMA declaration of conformity | ✓ |
| Moroccan declaration of conformity | ✓ |
| China RoHS | ✓ |
| ECOLAB certificate | ✓ |
| Laser safety (IEC 60825-1) certificate | ✓ |
| Information according to Art. 3 of Data Act (Regulation EU 2023/2854) | ✓ |

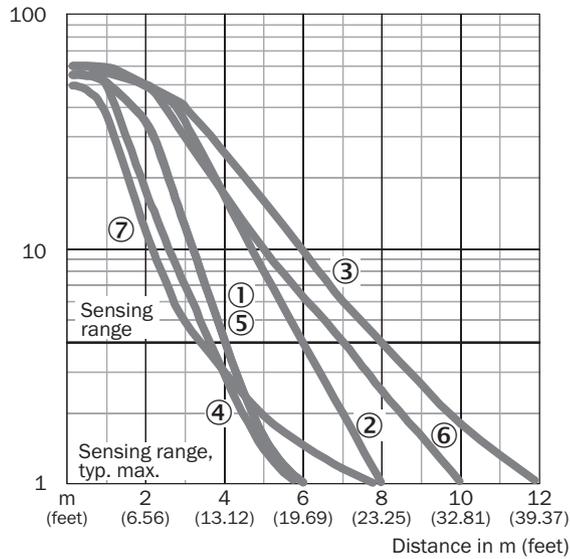
Classifications

| | |
|-----------------------|----------|
| 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

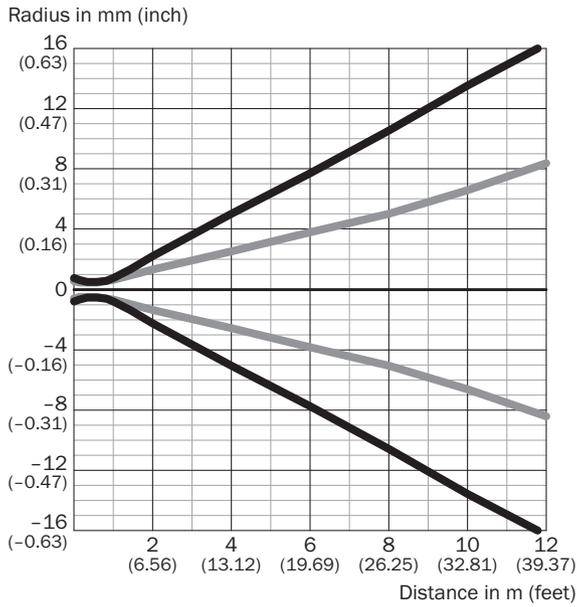


Characteristic curve



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

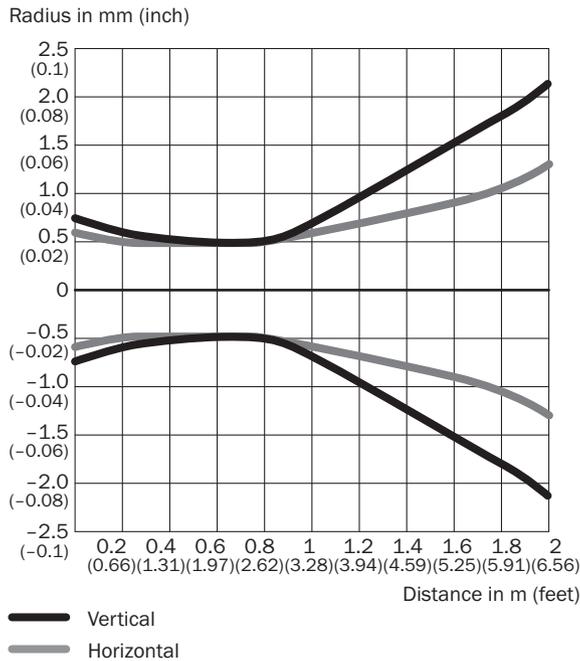
Light spot size



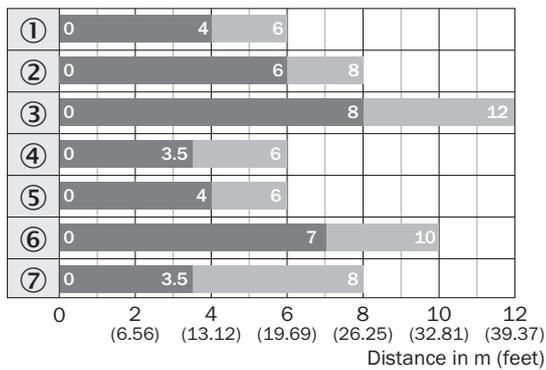
Dimensions in mm (inch)

| 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) |

Light spot size (detailed view)



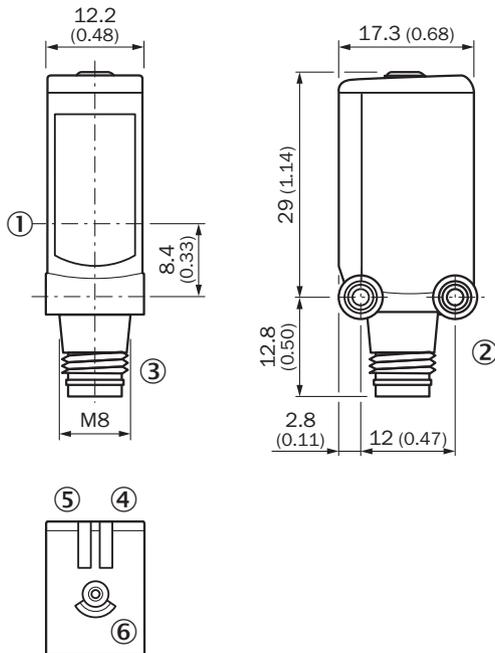
Sensing range diagram



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

Recommended accessories

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

| | Brief description | Type | part no. |
|--|---|--------------------|----------|
| reflectors and optics | | | |
|  | <ul style="list-style-type: none"> Description: Fine triple reflector, screw connection, suitable for laser sensors Dimensions: 20 mm 32 mm Ambient operating temperature: -30 °C ... +65 °C | PL10F | 5311210 |
| connectors and cables | | | |
|  | <ul style="list-style-type: none"> 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: Uncontaminated zones, Zones with chemicals | YF8U14-050VA3XLEAX | 2095889 |
|  | <ul style="list-style-type: none"> 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 |
|  | <ul style="list-style-type: none"> 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, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YF8U14-050UA3XLEAX | 2094792 |

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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