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DATA SHEET

WL4SC-3P2232A72

W4
Photoelectric sensors

SICK Sensor Intelligence

PHOTOELECTRIC SENSORS

WL4SC-3P2232A72

ORDERING INFORMATION

| Type | part no. |
|-----------------|----------|
| WL4SC-3P2232A72 | 1088640 |

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 ... 5 m ¹⁾ | |
| Sensing range | 0 m ... 3 m ¹⁾ | |
| Polarisation filter | Yes | |
| Emitted beam | Light source | PinPoint LED ²⁾ |
| | Type of light | Visible red light |
| | Light spot size (distance) | Ø 45 mm (1.5 m) |
| Adjustment | IO-Link, Single teach-in button | |
| Special features | Auxiliary sensor (e.g. WL4S-3P2232, 1042078), 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) | |

¹⁾ Reflector PL80A.

²⁾ Average service life: 100,000 h at T_u = +25 °C.

SAFETY-RELATED PARAMETERS

| | |
|-------------------------------|--|
| MTTF _D | 1,222 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 | ✓, 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_{Li} Bit 1 = Detection signal Qint.1 Bit 2 ... 15 = measuring value |
| VendorID | 26 |
| DeviceID HEX | 0x8001B7 |
| DeviceID DEC | 8389047 |
| 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⁾ |

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

²⁾ May not fall below or exceed U_B 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_B connections reverse-polarity protected.

¹⁰⁾ B = inputs and output reverse-polarity protected.

¹¹⁾ C = interference suppression.

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 |

PHOTOELECTRIC SENSORS - WL4SC-3P2232A72

| | |
|--------------|---------------|
| Front screen | Plastic, PMMA |
| Weight | 100 g |

AMBIENT DATA

| | |
|-------------------------------|-------------------|
| Enclosure rating | IP66 IP67 |
| Ambient operating temperature | -40 °C ... +60 °C |
| Ambient temperature, storage | -40 °C ... +75 °C |
| UL File No. | NRKH.E181493 |

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 _U | Switching output to measuring value switching thresholds |
| Measuring value | Speed measurement value / length measurement value |

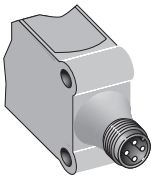
DIAGNOSIS

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

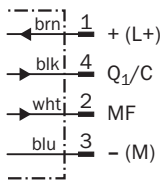
CERTIFICATES

| | |
|---|---|
| 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 | ✓ |
| IO-Link certificate | ✓ |
| Photobiological safety (DIN EN 62471) certificate | ✓ |

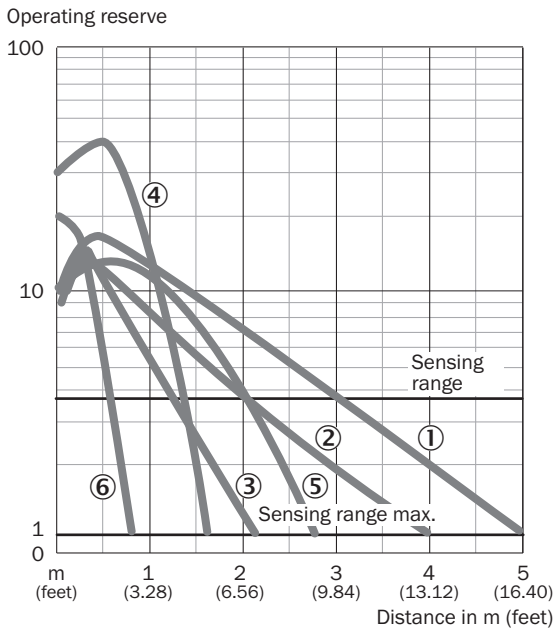
CONNECTION TYPE



CONNECTION DIAGRAM CD-273

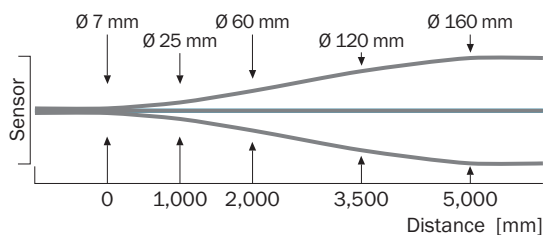


CHARACTERISTIC CURVE WL4S-3, WLG4S-3, 5 M

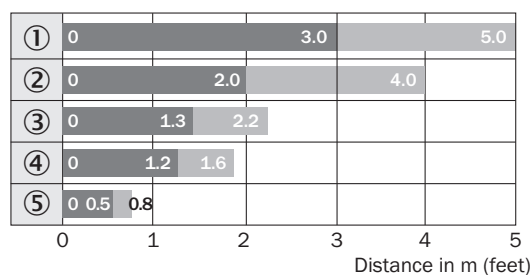


- ① Reflector PL80A
- ② Reflector PL40A
- ③ Reflector PL20A
- ④ PL10F reflector
- ⑤ Reflector P250 CHEM
- ⑥ Reflective tape REF-IRF-56

LIGHT SPOT SIZE



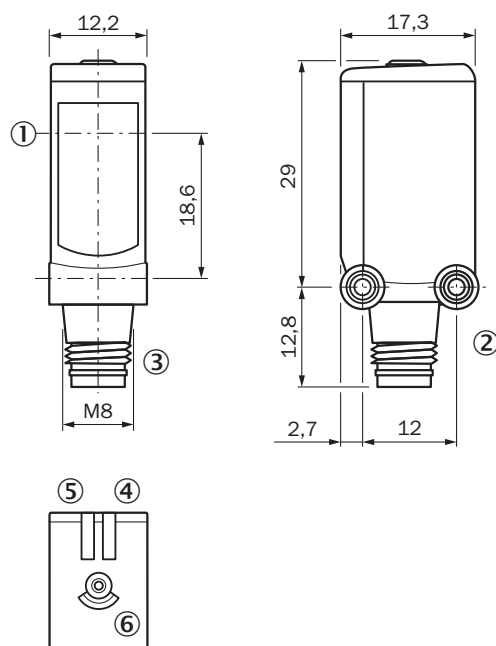
SENSING RANGE DIAGRAM WL4S-3, WLG4S-3, 5 M



■ Sensing range ■ Sensing range max.

- ① Reflector PL80A
- ② Reflector PL40A
- ③ Reflector PL20A
- ④ PL10F reflector
- ⑤ Reflective tape REF-IRF-56

DIMENSIONAL DRAWING WL4S-3, WLG4S-3, SINGLE TEACH-IN BUTTON



Dimensions in mm (inch)

- ① Center of optical axis
- ② Threaded mounting hole M3
- ③ Connection
- ④ LED indicator green: Supply voltage active
- ⑤ Orange LED indicator: status of received light beam
- ⑥ 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/1088640



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SICK AT A GLANCE

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SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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