



WSE9L-3N2437

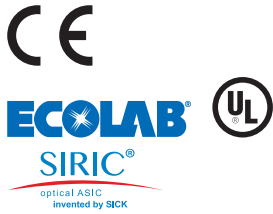
W9

SMALL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | Part no. |
|--------------|----------|
| WSE9L-3N2437 | 1058180 |

Other models and accessories → www.sick.com/W9

Detailed technical data

Features

| | |
|--|---|
| Functional principle | Through-beam photoelectric sensor |
| Dimensions (W x H x D) | 12.2 mm x 52.2 mm x 23.6 mm |
| Housing design (light emission) | Rectangular |
| Mounting hole | M3 |
| Sensing range max. | 0 m ... 60 m |
| Sensing range | 0 m ... 50 m |
| Type of light | Visible red light |
| Light source | Laser ¹⁾ |
| Light spot size (distance) | Ø 1 mm (500 mm) |
| Wave length | 650 nm |
| Laser class | 1 (IEC 60825-1 / CDRH 21 CFR 1040.10 & 1040.11) |
| Adjustment | Single teach-in button |
| Special applications | Detecting small objects |

¹⁾ Average service life: 50,000 h at T_U = +25 °C.

Mechanics/electronics

| | |
|---|---|
| Supply voltage U_B | 10 V DC ... 30 V DC ¹⁾ |
| Ripple | < 5 V _{pp} ²⁾ |
| Current consumption | 30 mA ³⁾ |
| Switching output | NPN ⁴⁾ |
| Output function | Complementary |
| Switching mode | Light/dark switching ⁴⁾ |
| Output current I_{max} | ≤ 100 mA |
| Response time | ≤ 0.5 ms ⁵⁾ |
| Switching frequency | 1,000 Hz ⁶⁾ |
| Connection type | Male connector M12, 4-pin |
| Circuit protection | A ⁷⁾ B ⁸⁾ C ⁹⁾ |
| Protection class | III |
| Weight | 13 g |
| Housing material | Plastic, VISTAL® |
| Optics material | Plastic, PMMA |
| Enclosure rating | IP66 IP67 IP69K |
| Ambient operating temperature | -10 °C ... +50 °C |
| Ambient operating temperature extended | -30 °C ... +55 °C ^{10) 11)} |
| Ambient temperature, storage | -30 °C ... +70 °C |
| UL File No. | NRKH.E181493 |
| Part number of individual components | 2064063 WS9L-3D2436 2064066 WE9L-3N2432 |

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⁾ With light/dark ratio 1:1.

⁷⁾ A = V_S connections reverse-polarity protected.

⁸⁾ B = inputs and output reverse-polarity protected.

⁹⁾ C = interference suppression.

¹⁰⁾ 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.

¹¹⁾ 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.

Safety-related parameters

| | |
|-------------------------|--|
| MTTF_D | 355 years (EN ISO 13849-1) ¹⁾ |
| DC_{avg} | 0 % |

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

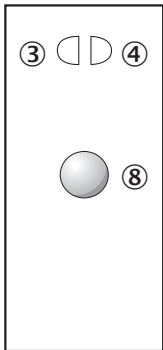
Classifications

| | |
|-------------------|----------|
| ECLASS 5.0 | 27270901 |
|-------------------|----------|

| | |
|-----------------------|----------|
| ECLASS 5.1.4 | 27270901 |
| ECLASS 6.0 | 27270901 |
| ECLASS 6.2 | 27270901 |
| ECLASS 7.0 | 27270901 |
| ECLASS 8.0 | 27270901 |
| ECLASS 8.1 | 27270901 |
| ECLASS 9.0 | 27270901 |
| ECLASS 10.0 | 27270901 |
| ECLASS 11.0 | 27270901 |
| ECLASS 12.0 | 27270901 |
| ETIM 5.0 | EC002716 |
| ETIM 6.0 | EC002716 |
| ETIM 7.0 | EC002716 |
| ETIM 8.0 | EC002716 |
| UNSPSC 16.0901 | 39121528 |

Adjustments

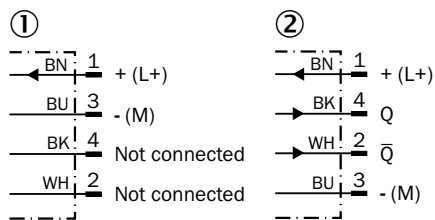
Single teach-in button



- ③ LED indicator yellow: Status of received light beam
- ④ LED indicator green: power on
- ⑧ Teach-in button

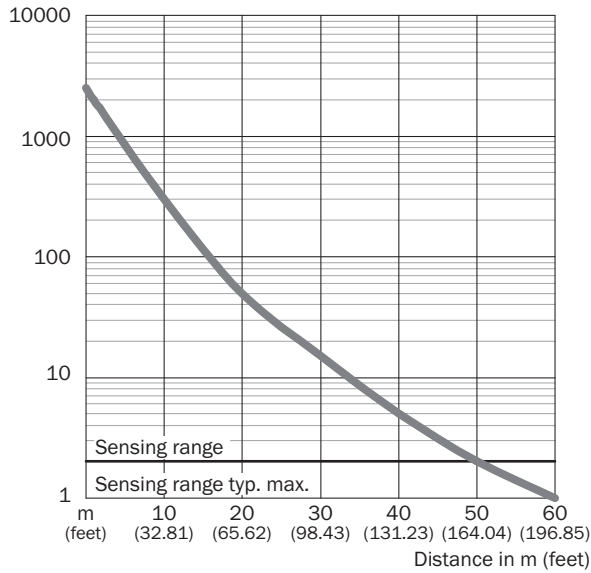
Connection diagram

Cd-232

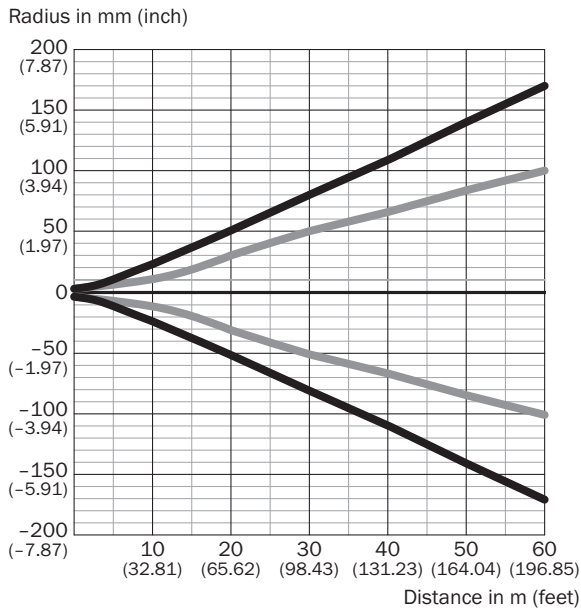


- ① Sender
- ② Receiver

Characteristic curve



Light spot size



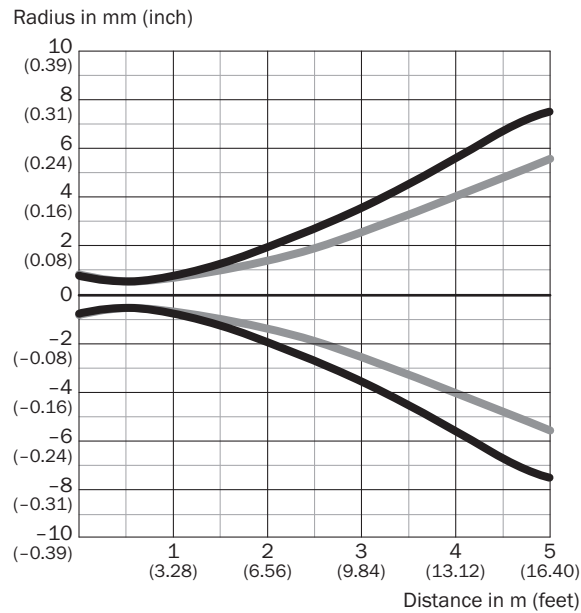
Dimensions in mm (inch)

| 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) |
| 5 m (16.40 feet) | 15 (0.59) | 11 (0.43) |
| 10 m (32.81 feet) | 45 (1.77) | 28 (1.10) |
| 60 m (196.85 feet) | 336 (13.23) | 200 (7.87) |

— Vertical
— Horizontal

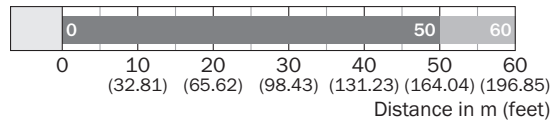
Light spot size (detailed view)

Detailed view close range



- Vertical
- Horizontal

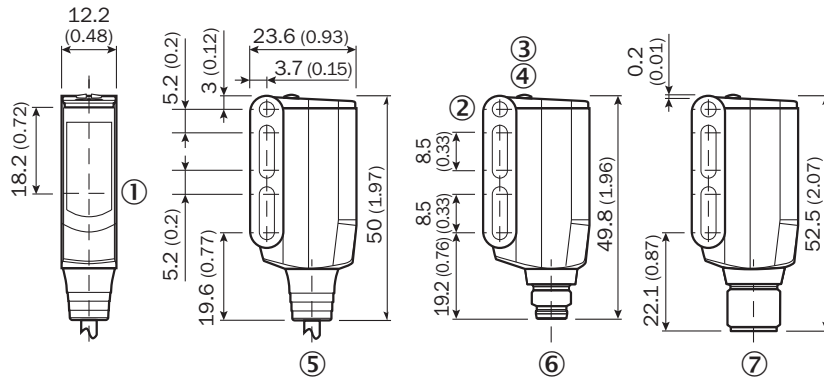
Sensing range diagram



- Sensing range
- Sensing range typ. max.

Dimensional drawing (Dimensions in mm (inch))




WSE9L-3



- ① Sender and receiver optical axis center
- ② Mounting hole M3 (Ø 3.1 mm)
- ③ LED indicator yellow: Status of received light beam
- ④ LED indicator green: power on
- ⑤ Connecting cable or connecting cable with connector
- ⑥ Male connector M8, 4-pin
- ⑦ Male connector M12, 4-pin

Recommended accessories

Other models and accessories → www.sick.com/W9

| | Brief description | Type | Part no. |
|---|---|--------------------|----------|
| Mounting brackets and plates | | | |
|  | Mounting bracket, steel, zinc coated, mounting hardware included | BEF-WN-W9-2 | 2022855 |
| Plug connectors and cables | | | |
|  | Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m | YF2A14-050VB3XLEAX | 2096235 |
|  | Head A: male connector, M12, 4-pin, straight Cable: unshielded | STE-1204-G | 6009932 |

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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