



DATA SHEET

WSE9L-3P2237

W9
Photoelectric sensors

SICK

Sensor Intelligence



Illustration may differ

PHOTOELECTRIC SENSORS

WSE9L-3P2237

ORDERING INFORMATION

Type	part no.
WSE9L-3P2237	1058182

Further device versions and accessories at www.sick.com/W9



DETAILED TECHNICAL DATA

FEATURES

Functional principle	Through-beam photoelectric sensor
Dimensions (W x H x D)	12.2 mm x 49.8 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) ²⁾
Adjustment	Single teach-in button
Special applications	Detecting small objects
Part number of individual components	2064062 WS9L-3D2236 2064067 WE9L-3P2232

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

²⁾ Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

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	PNP 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 M8, 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	2064062 WS9L-3D2236 2064067 WE9L-3P2232

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⁾ 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 %

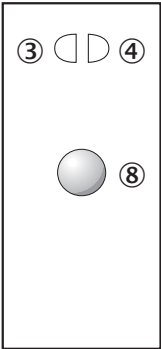
¹⁾ Mode of calculation: Parts-Count-calculation.

CERTIFICATES

EU declaration of conformity	✓
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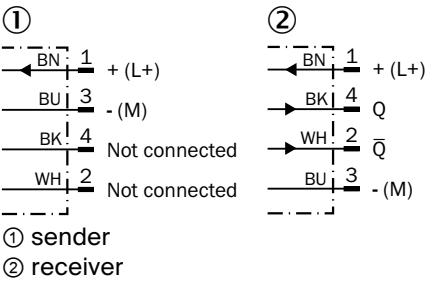
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
China Compulsory Product Certification (CCC) exempt	✓
ECOLAB certificate	✓
cULus certificate	✓
Laser safety (IEC 60825-1) certificate	✓

ADJUSTMENTS SINGLE TEACH-IN BUTTON

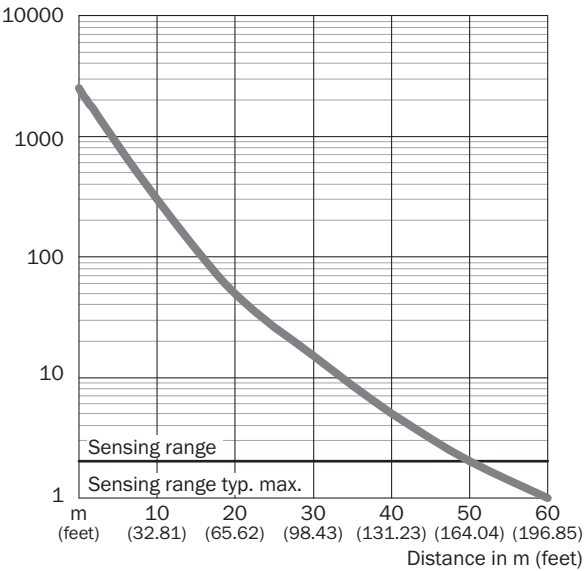


- ③ LED indicator yellow: Status of received light beam
- ④ LED indicator green: power on
- ⑧ Teach-in button

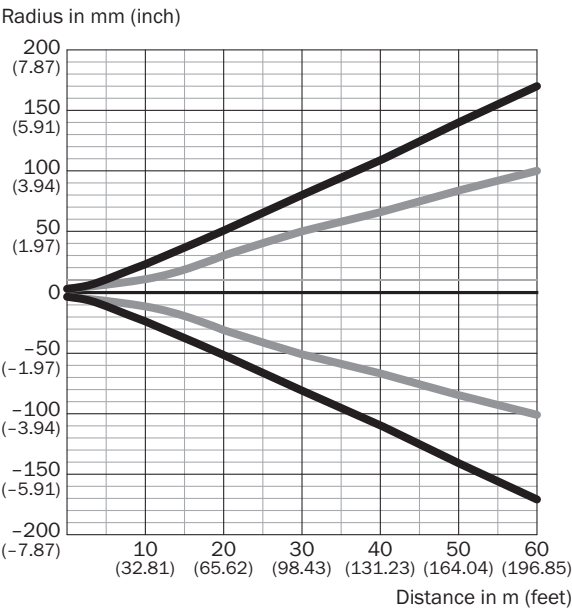
CONNECTION DIAGRAM CD-232



CHARACTERISTIC CURVE



LIGHT SPOT SIZE

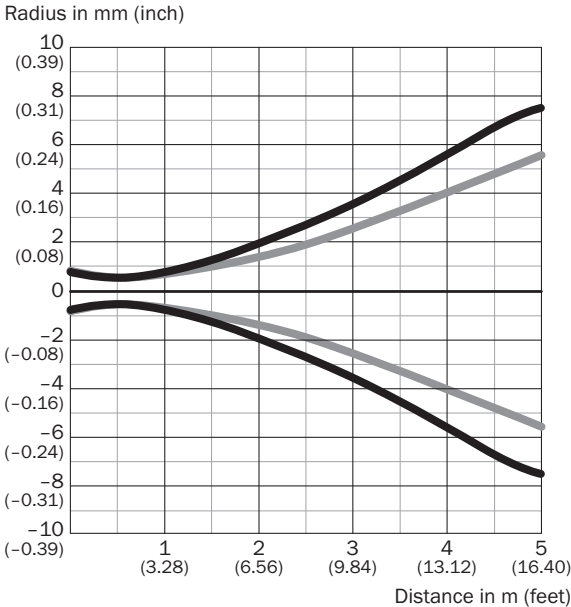


Dimensions in mm (inch)

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)

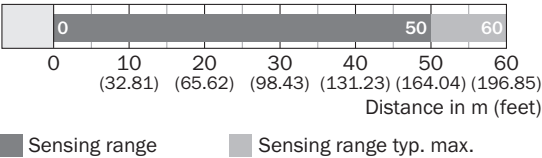
— Vertical
— Horizontal

LIGHT SPOT SIZE (DETAILED VIEW) DETAILED VIEW CLOSE RANGE

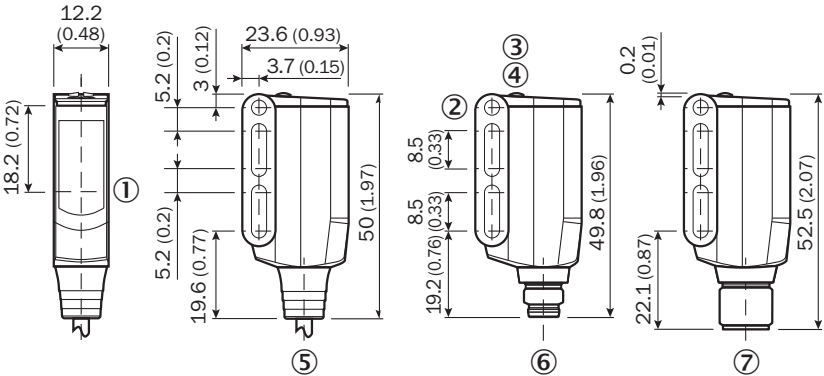


Vertical
Horizontal

SENSING RANGE DIAGRAM



DIMENSIONAL DRAWING WSE9L-3



- Dimensions in mm (inch)
- 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

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/1058182



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SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

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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