



Photoelectric sensors
W9L-3, Through-beam photoelectric sensor

WSE9L-3N2437



Type > [WSE9L-3N2437](#)
Part No. > [1058180](#)



Illustration may differ

At a glance

- Tough VISTAL™ housing
- Precise laser light spot
- Laser class 1
- Teach-in
- Optimized SICK ASIC technology
- Connections: M8 and M12 plugs, cable as well as cable with plug
- M3 hole pattern

Your benefits

- Precise detection of small objects and object features
- Detection of objects even through small openings
- Less machine downtime thanks to the stable VISTAL™ housing
- The longest sensing ranges in its class
- Wide range of connection options
- Multiple mounting options
- Highly visible light spot simplifies alignment



Features

Sensor/detection 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⁾
Laser class:	1, 1 (IEC 60825-1/CDRH 21 CFR 1040.10 & 1040.11)
Adjustment:	Single teach-in button
Light spot size (distance):	Ø 1 mm (500 mm)

¹⁾ Average service life 50,000 h at T_A = +25 °C

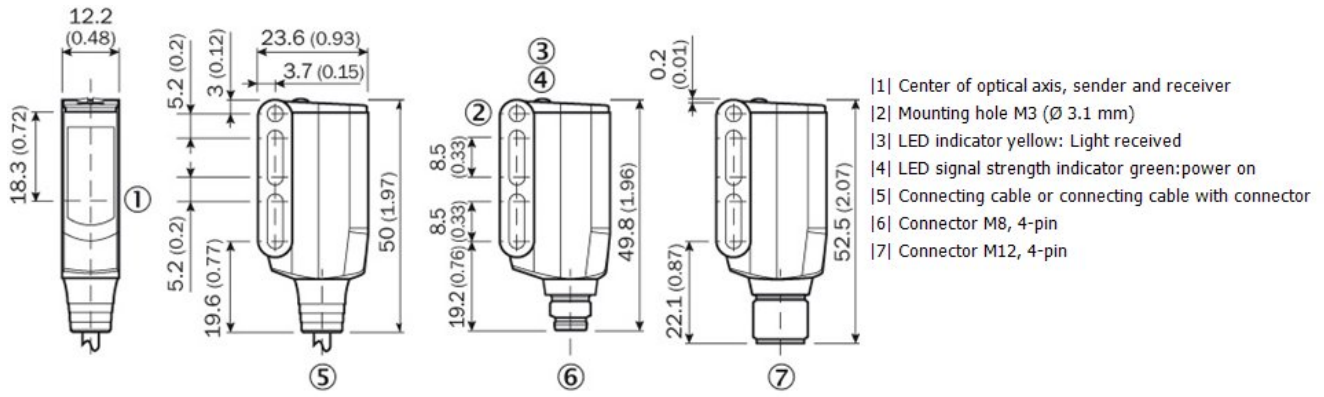
Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Ripple:	< 5 V _{pp} ²⁾
Power consumption:	≤ 30 mA ³⁾

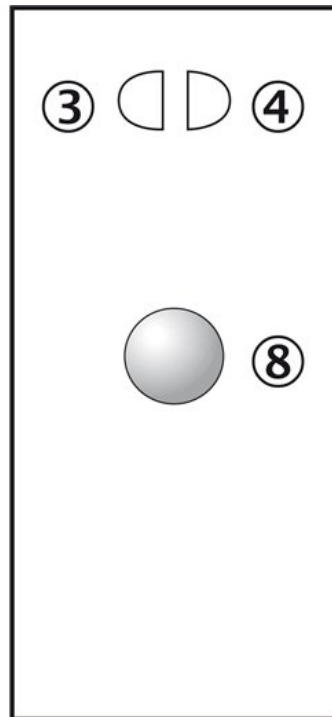
Output type:	NPN ⁴⁾
Output function:	Complementary
Switching mode:	Light/dark switching ⁵⁾
Output current I _{max.} :	≤ 100 mA
Response time:	≤ 0.5 ms ⁶⁾
Switching frequency:	1,000 Hz ⁷⁾
Connection type:	M12, 4-pin male connector
Circuit protection:::	A, B, C ^{8) 9) 10)}
Protection class:	III
Weight:	13 g
Special device:	-
Optics material:	PMMA
Enclosure rating:	IP 66 IP 67 IP 69K
Ambient operating temperature:	-10 °C ... +50 °C
Ambient storage temperature:	-30 °C ... +70 °C
Ambient operating temperature extended:::	-30 °C ... +55 °C ^{11) 12)}
UL File No.:	NRKH.E181493
Housing material:	Plastic, VISTAL

¹⁾ Limit values, operation in short-circuit protected network max. 8 A ²⁾ May not exceed or fall short of V_S tolerances ³⁾ Without load ^{4) 5)} Q = light-switching ⁶⁾ Signal transit time with resistive load ⁷⁾ With light/dark ratio 1:1 ⁸⁾ $A = V_S$ connections reverse-polarity protected ⁹⁾ B = inputs and output reverse-polarity protected ¹⁰⁾ C = interference suppression ¹¹⁾ 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 ¹²⁾ Using the sensor below $T_a = -10\text{ °C}$ is possible, if the sensor is turned on at $T_a > -10\text{ °C}$, then the environment cools down and the sensor is not disconnected from the supply voltage during the whole time. It is not allowed to turn on the sensor below $T_a = -10\text{ °C}$

Dimensional drawing



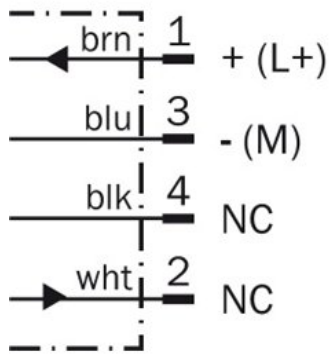
Adjustments possible



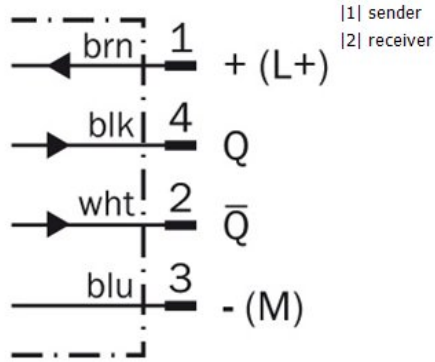
- ③ | LED indicator yellow: Light received
- ④ | LED signal strength indicator green: power on
- ⑧ | Teach-in button

Connection diagram

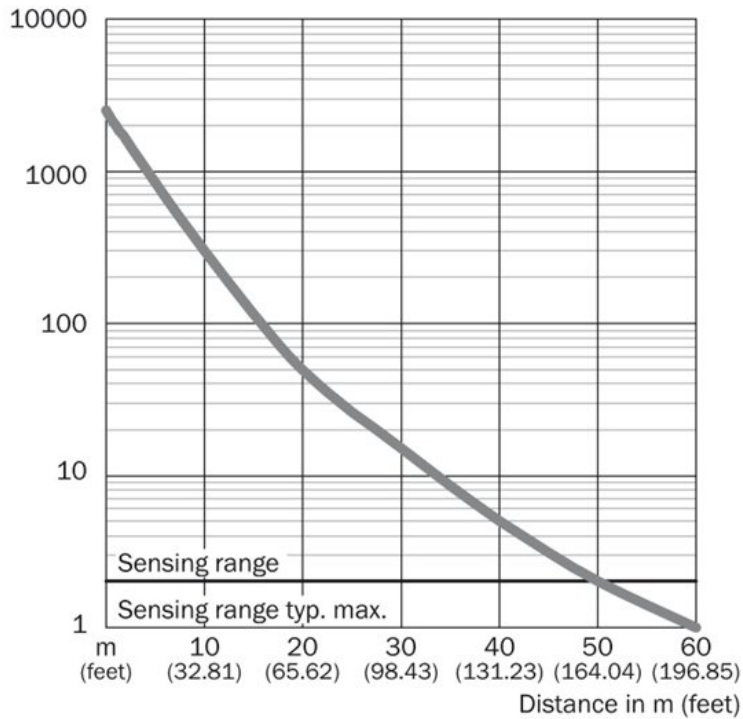
①



②

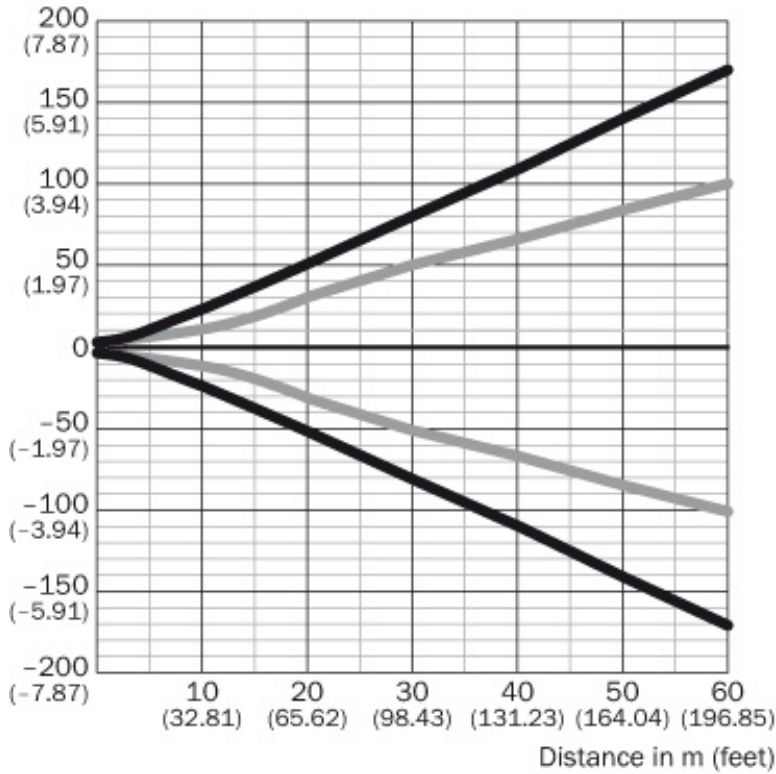


Characteristic curve



Light spot size

Radius in mm (inch)

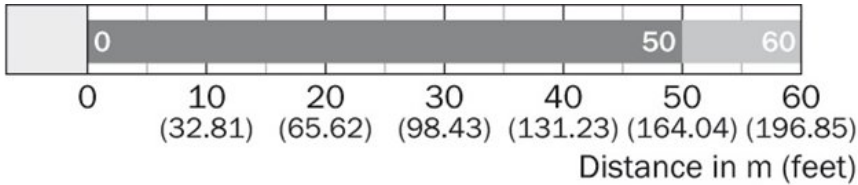


Dimensions in mm (inch)

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)

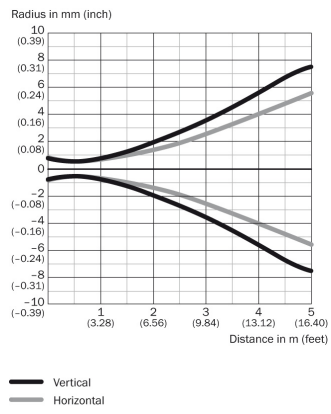
Vertical
 Horizontal

Sensing range diagram



Sensing range
 Sensing range typ. max.

Lichtfleckgröße (Detailansicht)



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