



Photoelectric sensors W4SL-3, Through-beam photoelectric sensor

WSE4SL-3N1137



Model Name > [WSE4SL-3N1137](#)
Part No. > [1058250](#)



Illustration may differ

At a glance

- Precise laser light spot, laser class 1
- Long-range detection up to 60 m
- Established and proven housing design
- High-quality sensor manufacturing and testing for mechanical ruggedness
- Choice of adjustment via teach-in button, 5-turn potentiometer, or cable

Your benefits

- Highly visible, even laser light spot with a sharp contour to facilitate alignment
- Long sensing range allows use up to 60 m
- Sender-receiver system ensures high reliability
- Established and proven housing design for easy installation



Features

Sensor/detection principle:	Through-beam photoelectric sensor
Dimensions (W x H x D):	12.2 mm x 41.8 mm x 17.3 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 (EN60825-1:2008-05 & IEC 60825-1:2007-03/CDRH 21 CFR 1040.10 & 1040.11)
Wave length:	650 nm
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

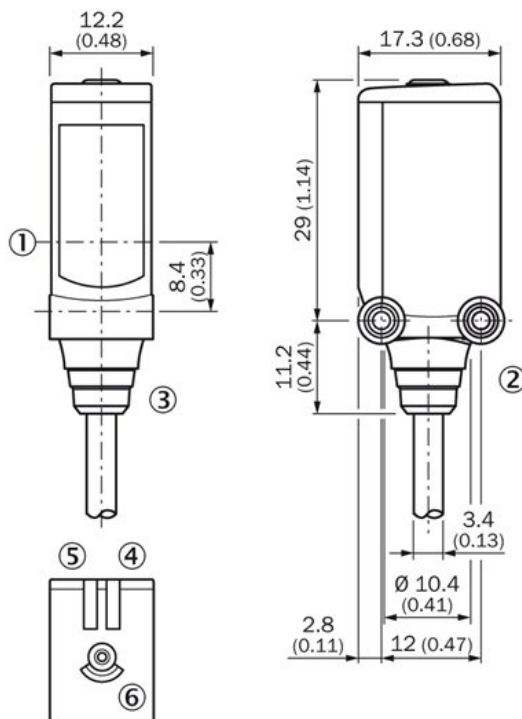
Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Power consumption:	≤ 30 mA ²⁾
Output type:	NPN ³⁾
Output function:	Complementary
Switching mode:	Light/dark-switching ⁴⁾
Output current I _{max.} :	≤ 100 mA

Response time:	$\leq 0.5 \text{ ms}$ ⁵⁾
Switching frequency:	1,000 Hz ⁶⁾
Connection type:	Cable, 4-wire, 2 m ⁷⁾
Cable material:	PVC
Conductor cross-section:	0.14 mm ²
Circuit protection:::	A, B, C ⁸⁾ ⁹⁾ ¹⁰⁾
Protection class:	III
Weight:	100 g
Housing material:	Plastic, Bayblend
Optics material:	PMMA
Enclosure rating:	IP 66 IP 67
Ambient operating temperature:	-10 °C ... 50 °C
Ambient storage temperature:	-30 °C ... 70 °C
Ambient operating temperature extended::	-30 °C ... 55 °C ¹¹⁾ ¹²⁾
MTTFd:	350 a (EN ISO 13849-1) ¹³⁾

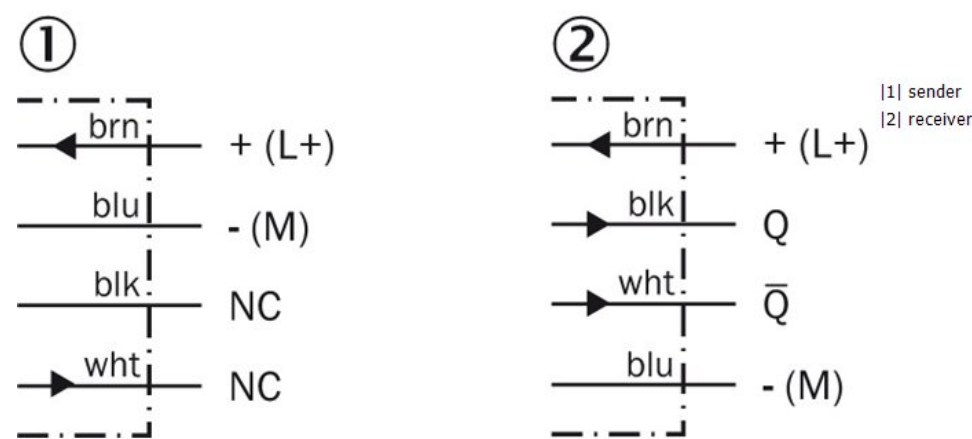
¹⁾ Limit values, operation in short-circuit protected network max. 8 A ²⁾ Without load ³⁾ ⁴⁾ Q = light-switching ⁵⁾ Signal transit time with resistive load ⁶⁾ With light/dark ratio 1:1 ⁷⁾ Do not bend below 0 °C ⁸⁾ A = V_S connections reverse-polarity protected ⁹⁾ B = inputs and output reverse-polarity protected ¹⁰⁾ C = interference suppression ¹¹⁾ As of T_a = 50 °C, a max. supply voltage V_{max.} = 24 V and a max. load current I_{max.} = 50 mA is permitted ¹²⁾ Using the sensor below T_a = -10 °C is possible, if the sensor is turned on at T_a > -10 °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 °C ¹³⁾ Mode of calculation: Parts-Count-calculation

Dimensional drawing

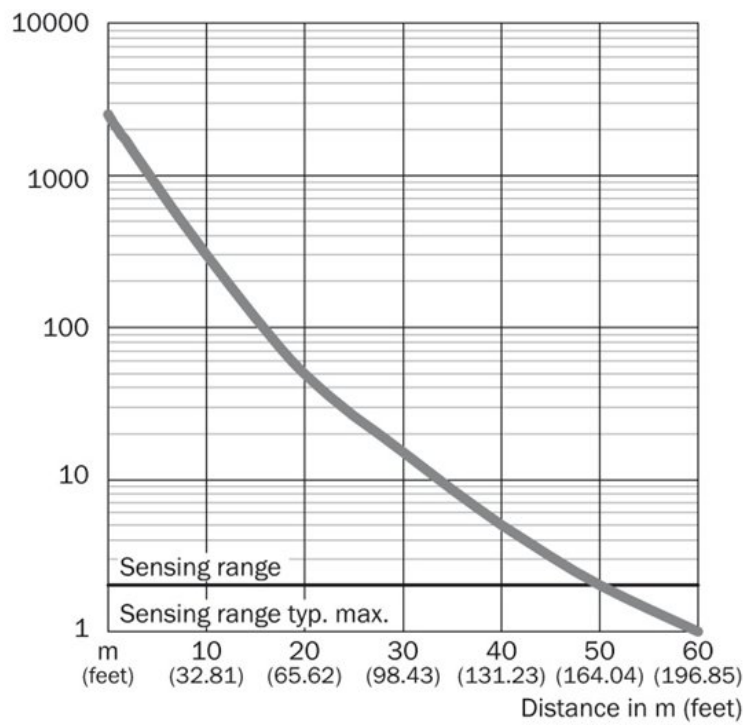


- [1] Center of optical axis
- [2] Threaded mounting hole M3
- [3] Connection
- [4] Status indicator LED green: power on
- [5] Status indicator LED, yellow: Status of received light beam
- [6] single teach-in button

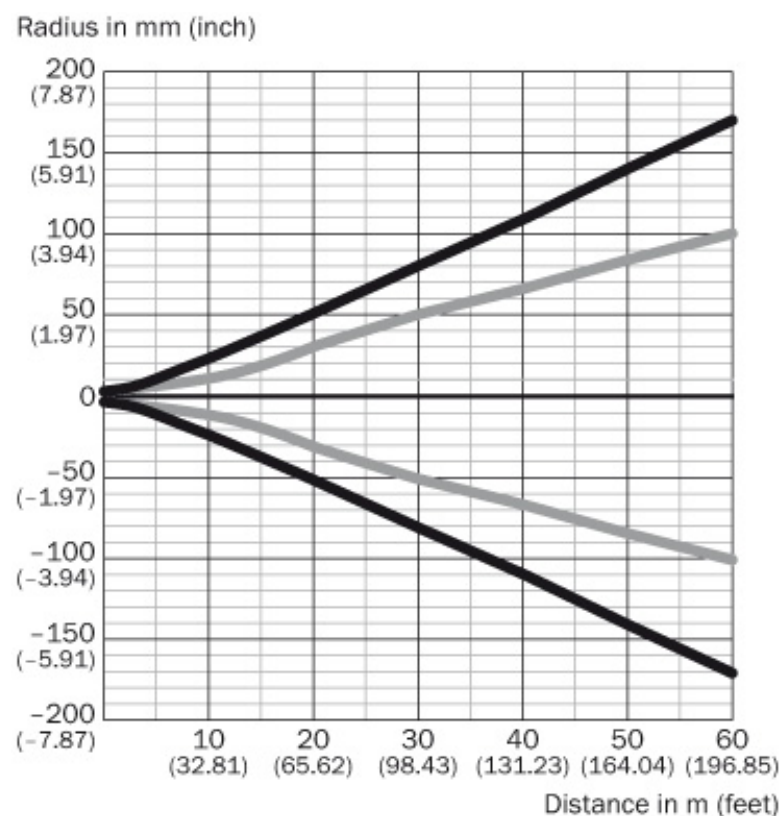
Connection diagram



Characteristic curve



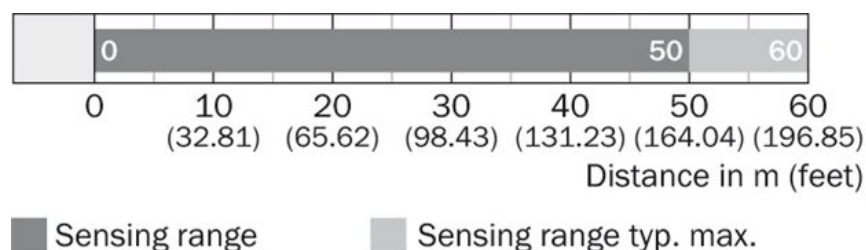
Light spot size



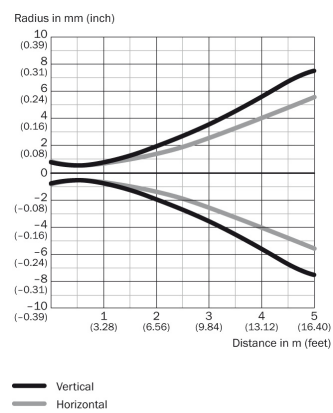
Dimensions in mm (inch)

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)

Sensing range diagram



Lichtfleckgröße (Detailansicht)



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