SICK.COM

DATA SHEET

# WL4SLG-3P5254H

W4
Photoelectric sensors

SICK
Sensor Intelligence

Illustration may differ

## PHOTOELECTRIC SENSORS

# WL4SLG-3P5254H

### ORDERING INFORMATION

| Type | part no. |
|---|---|
| WL4SLG-3P5254H | 1109333 |

Further device versions and accessories at www.sick.com/W4

## 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 ... 3.5 m [1] |
| Sensing range | 0 m ... 2.2 m [1] |
| Polarisation filter | Yes |
| Emitted beam | |
| Light source | Laser [2] |
| Type of light | Visible red light |
| Light spot size (distance) | Ø 1 mm (500 mm) |
| Key laser figures | |
| Normative reference | EN 60825-1:2014, IEC 60825-1:2014 / CDRH 21 CFR 1040.10 & 1040.11 |
| Laser class | 1 [3] |
| Wave length | 650 nm |
| Adjustment | Teach-in by wire [4] |
| Special applications | Hygienic and washdown zones, Detecting transparent objects, Detecting small objects |

[1] Reflective tape REF-AC1000.

[2] Average service life: 50,000 h at $T_u$ = +25 °C.

[3] Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

[4] External teach-in: pulse > 2 s with voltage Uv with PNP and M with NPN.

[5] Difference between standard/washdown and hygiene: The essential difference between a standard/washdown product and a hygiene product is that where the process and contact with the medium (activity in the vicinity of the food) are concerned, a hygiene product is designed in accordance with the latest standards and hygiene design guidelines, and materials are selected accordingly.

| | |
|---|---|
| Housing design | Hygiene [5] |

[1] Reflective tape REF-AC1000.

[2] Average service life: 50,000 h at $T_u$ = +25 °C.

[3] Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

[4] External teach-in: pulse > 2 s with voltage Uv with PNP and M with NPN.

[5] Difference between standard/washdown and hygiene: The essential difference between a standard/washdown product and a hygiene product is that where the process and contact with the medium (activity in the vicinity of the food) are concerned, a hygiene product is designed in accordance with the latest standards and hygiene design guidelines, and materials are selected accordingly.

## SAFETY-RELATED PARAMETERS

| | |
|---|---|
| $MTTF_D$ | 589 years (EN ISO 13849-1) [1] |
| $DC_{avg}$ | 0 % |

[1] Mode of calculation: Parts-Count-calculation.

## 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 |
| Switching mode | Light switching |
| Output current $I_{max.}$ | ≤ 100 mA |
| Response time | ≤ 0.5 ms [4] |
| Switching frequency | 1,000 Hz [5] |
| Circuit protection | A [6]<br>B [7]<br>C [8] |
| Special feature | D12 adapter shaft |

[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] Signal transit time with resistive load.

[5] With light/dark ratio 1:1.

[6] A = $V_s$ connections reverse-polarity protected.

[7] B = inputs and output reverse-polarity protected.

[8] C = interference suppression.

## MECHANICS

| | |
|---|---|
| Housing | Rectangular |
| Design detail | Slim |
| Dimensions (W x H x D) | 15.3 mm x 63.2 mm x 22.2 mm |
| Connection | Male connector M8, 4-pin [1] |
| Material | |
| Housing | Metal, Stainless steel V4A (1.4404, 316L) |
| Front screen | Plastic, PMMA |

[1] Max. tightening torque: 0.6 Nm.

| | |
|---|---|
| Weight | 140 g |

[1] Max. tightening torque: 0.6 Nm.

## AMBIENT DATA

| | |
|---|---|
| Enclosure rating | IP66<br>IP67<br>IP68<br>IP69K [1] |
| Ambient operating temperature | –10 °C ... +50 °C |
| Ambient operating temperature extended | –30 °C ... +55 °C [2] [3] |
| Ambient temperature, storage | –30 °C ... +70 °C |
| RoHS certificate | ✓ |

[1] Only in case of correctly mounted IP69K connecting cable.

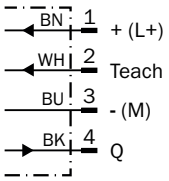
[2] As of $T_a$ = 50 °C, a max. supply voltage $V_{max.}$ = 24 V and a max. load current $I_{max.}$ = 50 mA is permitted.

[3] Operation below Tu –10 °C is possible if the sensor is already switched on at Tu > –10 °C, then cools down, and the supply voltage is subsequently not switched off. Switching on below Tu –10 °C is not permissible.

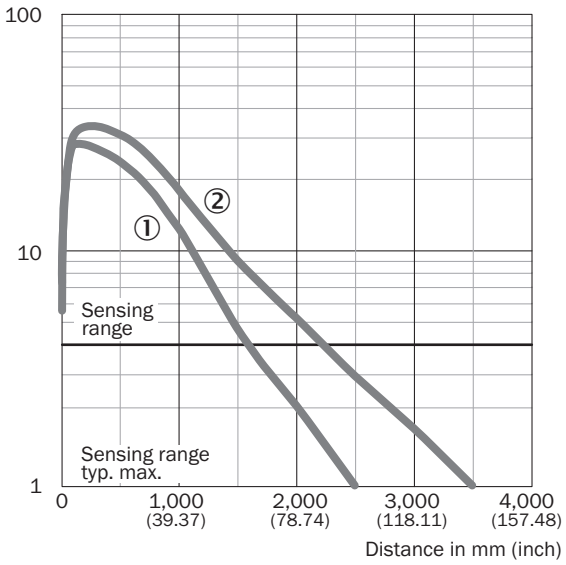
## CERTIFICATES

| | |
|---|---|
| EU declaration of conformity | ✓ |
| UK declaration of conformity | ✓ |
| ACMA declaration of conformity | ✓ |
| Moroccan declaration of conformity | ✓ |
| China RoHS | ✓ |
| ECOLAB certificate | ✓ |
| Laser safety (IEC 60825-1) certificate | ✓ |

## CONNECTION DIAGRAM CD-092

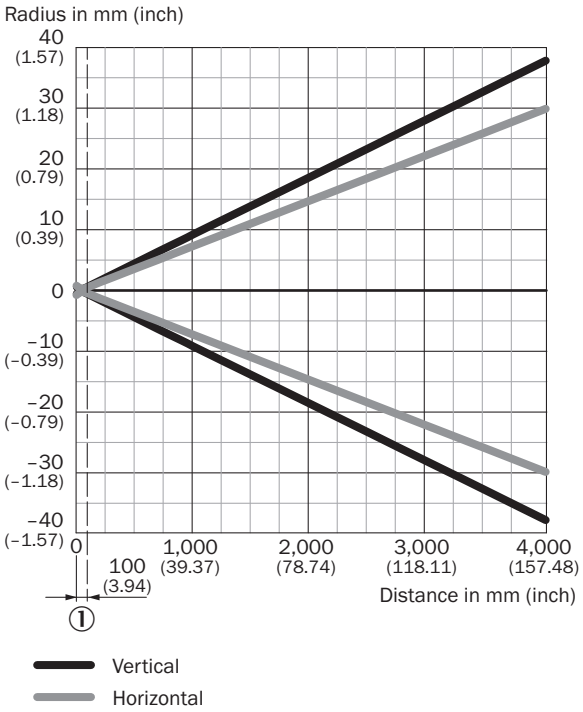


## CHARACTERISTIC CURVE




① Reflector PLV14-A / PLH25-M12 / PLH25-D12
② Reflector P41F / reflective tape REF-AC1000

## LIGHT SPOT SIZE

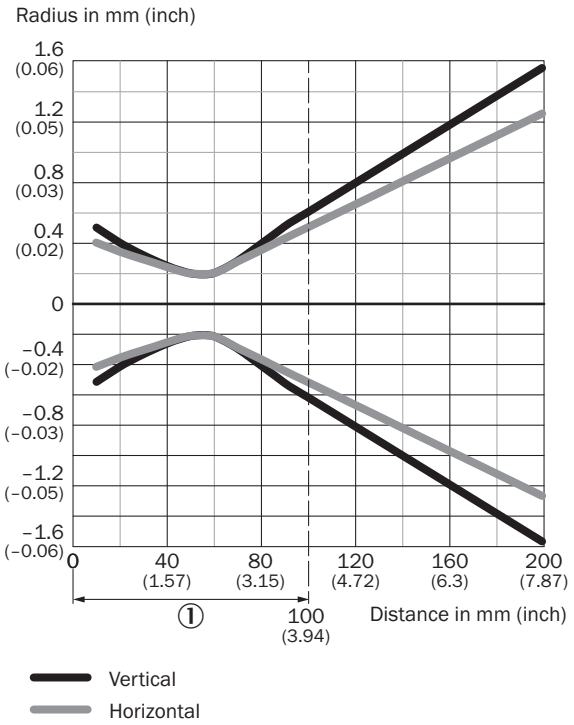



① Minimum distance between sensor and reflector

**Dimensions in mm (inch)**

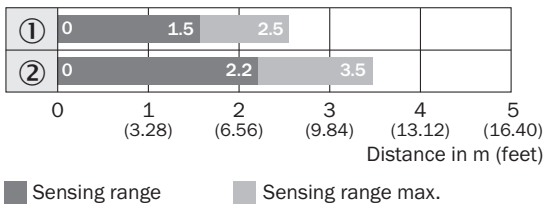
| Sensing range | Vertical | Horizontal |
|---|---|---|
| **60 mm (2.36)** | 0.4 (0.02) | 0.4 (0.02) |
| **200 mm (7.87)** | 3.2 (0.13) | 2.4 (0.09) |
| **2,000 mm (78,74)** | 40 (1.57) | 30 (0.18) |
| **3,500 mm (137.80)** | 60 (2.36) | 50 (1.97) |

### LIGHT SPOT SIZE (DETAILED VIEW)



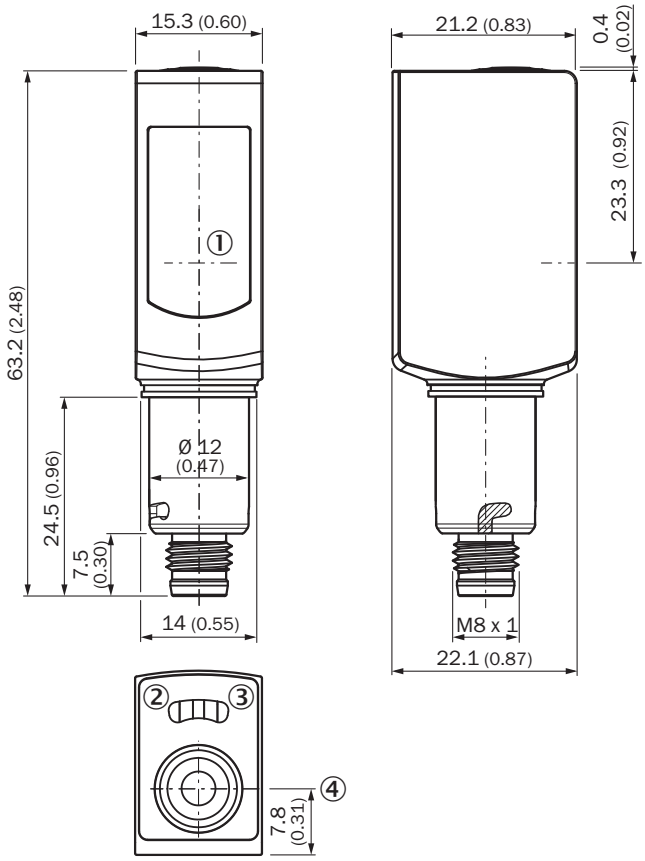

① Minimum distance between sensor and reflector

### SENSING RANGE DIAGRAM




① Reflector PLV14-A / PLH25-M12 / PLH25-D12
② Reflector P41F / reflective tape REF-AC1000

**DIMENSIONAL DRAWING WTB4S-3H, WTF4S-3H, WITH SINGLE TEACH-IN BUTTON, D12 ADAPTER SHAFT, L-ADAPTION**




Dimensions in mm (inch)
① Center of optical axis
② LED indicator yellow: Status of received light beam
③ LED indicator green: Supply voltage active
④ single 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/1109333

SICK AG
WALDKIRCH
GERMANY
SICK.COM

# 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

SICK

Sensor Intelligence