# WL12G-3P2582S10

W12

**PHOTOELECTRIC SENSORS**

**SICK**
Sensor Intelligence.

# WL12G-3P2582S10 | W12

## PHOTOELECTRIC SENSORS

## Ordering information

| Type | part no. |
|------|----------|
| WL12G-3P2582S10 | 1053544 |

Other models and accessories ➜ www.sick.com/W12

Illustration may differ
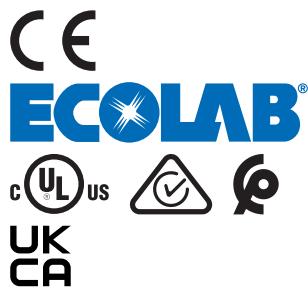
## Detailed technical data

### Features

| | |
|---|---|
| **Functional principle** | Photoelectric retro-reflective sensor |
| **Functional principle detail** | Without reflector minimum distance (autocollimation/coaxial optics) |
| **Sensing range max.** | 0 m … 4 m [1] |
| **Polarisation filter** | Yes |
| **Emitted beam** | |
| Light source | LED [2] |
| Type of light | Infrared light |
| Light spot size (distance) | Ø 100 mm (3 m) |
| **Key LED figures** | |
| Wave length | 850 nm |
| **Adjustment** | Single teach-in button [3] |
| **Special applications** | Detecting transparent objects |
| **AutoAdapt** | ✓ |

[1] Reflector PL80A.

[2] Average service life: 100,000 h at $T_U$ = +25 °C.

[3] Mode I, 10 % attenuation.

## Electronics

| | |
|---|---|
| **Supply voltage U$_B$** | 10 V DC ... 30 V DC [1] |
| **Ripple** | < 5 V$_{pp}$ [2] |
| **Current consumption** | 40 mA [3] |
| **Protection class** | III |
| **Digital output** | |
| Type | PNP, with time delay toff 50 ms |
| Switching mode | Light switching |
| Output characteristic | With time delay toff 50 ms |
| Signal voltage PNP HIGH/LOW | Approx. V$_S$ – 2.5 V / 0 V |
| Output current I$_{max.}$ | ≤ 100 mA |
| Response time | ≤ 333 µs [4] |
| Switching frequency | 1,500 Hz [5] |
| **Circuit protection** | A [6]<br>B [7]<br>C [8]<br>D [9] |
| **Special feature** | Detecting transparent objects |
| **Operating mode** | Mode I, 10 % attenuation, Mode II, 18 % attenuation |

[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.

[9] D = outputs overcurrent and short-circuit protected.

## Mechanics

| | |
|---|---|
| **Housing** | Rectangular |
| **Dimensions (W x H x D)** | 15.5 mm x 48.5 mm x 42 mm |
| **Connection** | Plug, M12, 5-pin |
| **Material** | |
| Housing | Metal, zinc diecast |
| Front screen | Plastic, PMMA |
| **Weight** | 120 g |

## Ambient data

| | |
|---|---|
| **Enclosure rating** | IP66<br>IP67 |
| **Ambient operating temperature** | –40 °C ... +60 °C |
| **Ambient temperature, storage** | –40 °C ... +75 °C |
| **UL File No.** | NRKH.E181493 & NRKH7.E181493 |

## Classifications

| | |
|---|---|
| **ECLASS 5.0** | 27270902 |
| **ECLASS 5.1.4** | 27270902 |
| **ECLASS 6.0** | 27270902 |
| **ECLASS 6.2** | 27270902 |
| **ECLASS 7.0** | 27270902 |
| **ECLASS 8.0** | 27270902 |
| **ECLASS 8.1** | 27270902 |
| **ECLASS 9.0** | 27270902 |
| **ECLASS 10.0** | 27270902 |
| **ECLASS 11.0** | 27270902 |
| **ECLASS 12.0** | 27270902 |
| **ETIM 5.0** | EC002717 |
| **ETIM 6.0** | EC002717 |
| **ETIM 7.0** | EC002717 |
| **ETIM 8.0** | EC002717 |
| **UNSPSC 16.0901** | 39121528 |

## Certificates

| | |
|---|---|
| **EU declaration of conformity** | ✓ |
| **UK declaration of conformity** | ✓ |
| **ACMA declaration of conformity** | ✓ |
| **Moroccan declaration of conformity** | ✓ |
| **China RoHS** | ✓ |
| **ECOLAB certificate** | ✓ |
| **cULus certificate** | ✓ |
| **Photobiological safety (DIN EN 62471) certificate** | ✓ |

## Dimensional drawing
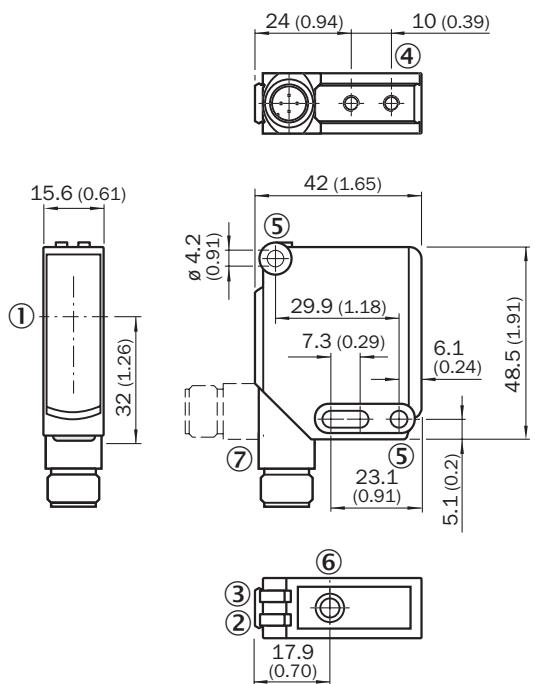
Dimensions in mm (inch)
① Optical axis
② LED indicator yellow: Status of received light beam
③ LED indicator green: Supply voltage active
④ M4 threaded mounting hole, 4 mm deep
⑤ Mounting hole, Ø 4.2 mm
⑥ Sensitivity setting: single teach-in button
⑦ Connection

## Adjustments Teach-in
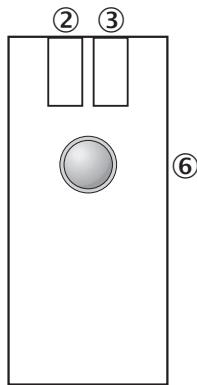
② LED indicator yellow: Status of received light beam
③ green LED indicator: power on, teach-in mode I
③ blue LED indicator: teach-in mode II
⑥ Single teach-in button,
⑥ function 1: teach-in sensitivity on reflector,
⑥ function 2: change operation/teach-in mode

## Connection diagram Cd-149

```
 ┌─ ─┐
 │ BN ─┤ 1    + (L+)
 │ WH ─┤ 2    Q toff
 │ BU ─┤ 3    - (M)
 │ BK ─┤ 4    Q
 │ GY ─┤ 5    Teach
 └─ ─┘
```
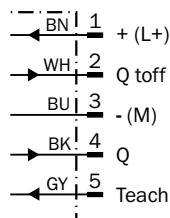
## Sensing range diagram WL12G-3

| | | |
|---|---|---|
| ① | 0 | 4.0 |
| ② | 0 | 4.0 |
| ③ | 0 | 3.0 |
| ④ | 0 | 3.5 |
| ⑤ | 0 | 3.5 |
| ⑥ | 0 | 3.0 |
| ⑦ | 0 | 1.8 |
| ⑧ | 0 | 0.6 |

Distance in m (feet)
0   1.0 (3.28)   2.0 (6.56)   3.0 (9.84)   4.0 (13.12)
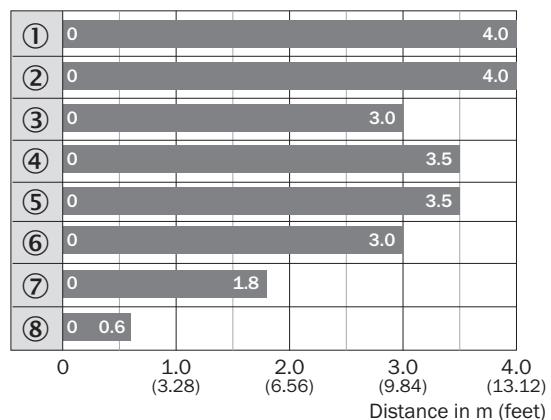
■ Sensing range max.

① Reflector PL80A
② Reflector C110A
③ Reflector P250F
④ Reflector PL50A
⑤ Reflector PL40A
⑥ Reflector PL30A
⑦ Reflector PL20A
⑧ Reflective tape REF-IRF-56

## Functions

| Teach-in-Modus für Objekte / *Teach-in mode for objects* | Lichtdämpfung / | Objekttyp / | Teach-in-Zeit / *Teach-in time* | Ext. Teach-in über Leitung / *Ext. cable teach-in* | Anzeige-LED / *LED indicator* |
|---|---|---|---|---|---|
| I | 10 % | PET-Flasche / Folie /Glas / *PET-Flasche / Folie/ glas* | 1 ... 5 s | 30 ... 100 ms | grün / green |
| II | 18 % | Farbglasflaschen/ Colored glass bottles | 5 ... 10 s | 100 ... 200 ms | blau / blue |

## Recommended accessories

Other models and accessories → www.sick.com/W12

| | Brief description | Type | part no. |
|---|---|---|---|
| **Mounting systems** | | | |
| | • **Description:** Universal mounting bracket for reflectors<br>• **Dimensions (W x H x L):** 85 mm x 90 mm x 35 mm<br>• **Material:** Steel<br>• **Details:** Steel, zinc coated<br>• **Suitable for:** C110A, P250, PL20, PL30A, PL40A, PL80A | BEF-WN-REFX | 2064574 |
| | • **Description:** Mounting bracket, large<br>• **Material:** Stainless steel<br>• **Details:** Stainless steel<br>• **Items supplied:** Mounting hardware included<br>• **Suitable for:** W11-2, W12-3, W16 | BEF-WG-W12 | 2013942 |
| **reflectors and optics** | | | |
| | • **Description:** Fine triple reflector, screw connection, suitable for laser sensors<br>• **Dimensions:** 52 mm 62 mm<br>• **Ambient operating temperature:** –30 °C ... +65 °C | P250F | 5308843 |
| **connectors and cables** | | | |
| | • **Connection type head A:** Male connector, M12, 5-pin, straight, A-coded<br>• **Description:** Unshielded<br>• **Connection systems:** Screw-type terminals<br>• **Permitted cross-section:** ≤ 0.75 mm²<br>• **Note:** For field bus technology | STE-1205-G | 6022083 |
| | • **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 5 m, 5-wire, PUR, halogen-free<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Application:** Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YF2A15-050UB5XLEAX | 2095618 |
| | • **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 5 m, 5-wire, PVC<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Application:** Uncontaminated zones, Zones with chemicals | YF2A15-050VB5XLEAX | 2096240 |

# 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."**

# WORLDWIDE PRESENCE:

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SICK AG  |  Waldkirch  |  Germany  |  www.sick.com

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