Data sheet


# WL2SGC-2P3234B01

W2

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

Illustration may differ

## Ordering information

| Type | part no. |
|---|---|
| WL2SGC-2P3234B01 | 1106695 |

**Included in delivery:** SCREW SET W2S/G2S (1)

Other models and accessories → www.sick.com/W2

## Detailed technical data

### Features

| | |
|---|---|
| **Functional principle** | Photoelectric retro-reflective sensor |
| **Functional principle detail** | Without reflector minimum distance (autocollimation/coaxial optics) |
| **Dimensions (W x H x D)** | 7.7 mm x 21.8 mm x 13.5 mm |
| **Housing design (light emission)** | Rectangular |
| **Sensing range max.** | 0 m ... 1.2 m [1] |
| **Sensing range** | 0 m ... 0.55 m [1] |
| **Type of light** | Visible red light |
| **Light source** | PinPoint LED [2] |
| **Light spot size (distance)** | Ø 12 mm (250 mm) |
| **Wave length** | 640 nm |
| **Adjustment** | IO-Link |
| **Pin 2 configuration** | External input, Teach-in input, Sender off input, Detection output, logic output, Device contamination alarm output |
| **AutoAdapt** | ✓ |
| **Special applications** | Detecting transparent objects |
| **Special features** | Factory setting: pin 2 / white: input, teach-in |

[1] Reflector P250F.
[2] Average service life: 100,000 h at $T_U$ = +25 °C.

## Mechanics/electronics

| | |
|---|---|
| **Supply voltage $U_B$** | 10 V DC ... 30 V DC [1] |
| **Ripple** | < 5 $V_{pp}$ [2] |
| **Current consumption** | 20 mA [3] |
| **Switching output** | PNP [4] |
| **Switching mode** | Light/dark switching |
| **Switching mode selector** | Dark switching (pre-setting) |
| **Output current $I_{max.}$** | ≤ 50 mA |
| **Response time** | < 0.5 ms [5] |
| **Response time Q/ on Pin 2** | 300 µs ... 450 µs [5] [6] |
| **Switching frequency** | 1,000 Hz |
| **Switching frequency Q / to pin 2** | 1,000 Hz [6] [7] |
| **Connection type** | Cable with M8 male connector, 4-pin, 200 mm [8] |
| **Cable material** | Plastic, PVC |
| **Conductor cross section** | 0.09 mm² |
| **Cable diameter** | Ø 3 mm |
| **Circuit protection** | A [9]<br>B [10]<br>D [11] |
| **Protection class** | III |
| **Polarizing filter** | ✓ |
| **Housing material** | Plastic, ABS/PC |
| **Optics material** | Plastic, PMMA |
| **Enclosure rating** | IP67 |
| **Ambient operating temperature** | –20 °C ... +50 °C |
| **Ambient temperature, storage** | –40 °C ... +75 °C |
| **UL File No.** | NRKH.E181493 |
| **Repeatability Q/ on Pin 2:** | 150 µs |

[1] Limit values.
[2] May not fall below or exceed $U_V$ tolerances.
[3] Without load.
[4] Pin 4: This switching output must not be connected to another output.
[5] Signal transit time with resistive load.
[6] Valid for Q \ on Pin2, if configured with software.
[7] With light/dark ratio 1:1.
[8] Do not bend below 0 °C.
[9] A = $V_S$ connections reverse-polarity protected.
[10] B = output reverse-polarity protected.
[11] D = outputs overcurrent and short-circuit protected.

## Safety-related parameters

| | |
|---|---|
| **$MTTF_D$** | 1,788 years |
| **$DC_{avg}$** | 0 % |

| | |
|---|---|
| **$T_M$ (mission time)** | 20 years |

## Communication interface

| | |
|---|---|
| **Communication interface** | IO-Link V1.1 |
| **Communication Interface detail** | COM2 (38,4 kBaud) |
| **Cycle time** | 2.3 ms |
| **Process data length** | 16 Bit |
| **Process data structure** | Bit 0 = switching signal $Q_{L1}$<br>Bit 1 = switching signal $Q_{L2}$<br>Bit 2 ... 15 = empty |
| **VendorID** | 26 |
| **DeviceID HEX** | 0x800124 |
| **DeviceID DEC** | 8388900 |

## Smart Task

| | |
|---|---|
| **Smart Task name** | Base logics |
| **Logic function** | Direct<br>AND<br>OR<br>WINDOW<br>Hysteresis |
| **Timer function** | Deactivated<br>Switch-on delay<br>Off delay<br>ON and OFF delay<br>Impulse (one shot) |
| **Inverter** | Yes |
| **Switching frequency** | SIO Direct: 1000 Hz<br>SIO Logic: 1000 Hz<br>IOL: 900 Hz |
| **Response time** | SIO Direct: 300 µs ... 450 µs [1]<br>SIO Logic: 500 µs ... 600 µs [2]<br>IOL: 500 µs ... 900 µs [3] |
| **Repeatability** | SIO Direct: 150 µs [1]<br>SIO Logic: 150 µs [2]<br>IOL: 400 µs [3] |
| **Switching signal** | |
| Switching signal $Q_{L1}$ | Switching output |
| Switching signal $Q_{L2}$ | Switching output |

[1] SIO Direct: sensor operation in standard I/O mode without IO-Link communication and without using internal sensor logic or time parameters (set to "direct"/"deactivated").
[2] SIO Logic: Sensor operation in standard I/O mode without IO-Link communication. Sensor-internal logic or timing parameters plus Automation Functions used.
[3] IOL: Sensor operation with full IO-Link communication and usage of logic, timing and Automation Function parameters.

## Diagnosis

| | |
|---|---|
| **Device status** | Yes |
| **Quality of teach** | Yes |
| **Quality of run** | Yes, Contamination display |

## Certificates

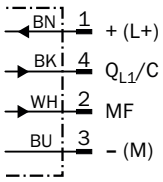
| | |
|---|---|
| **EU declaration of conformity** | ✓ |

| | |
|---|---|
| **ACMA declaration of conformity** | ✓ |
| **Moroccan declaration of conformity** | ✓ |
| **China RoHS** | ✓ |
| **cULus certificate** | ✓ |
| **IO-Link** | ✓ |
| **Photobiological safety (DIN EN 62471) certificate** | ✓ |
| **Information according to Art. 3 of Data Act (Regulation EU 2023/2854)** | ✓ |

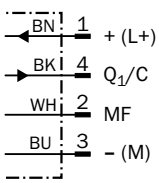
## Classifications

| | |
|---|---|
| **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 |

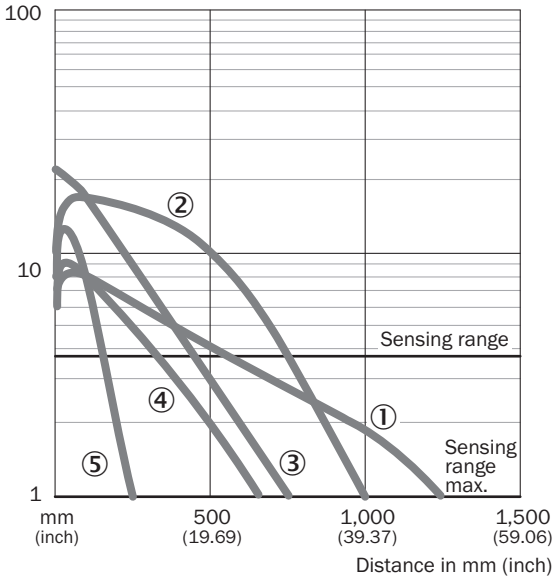
## Connection diagram Cd-367




## Connection diagram Cd-273



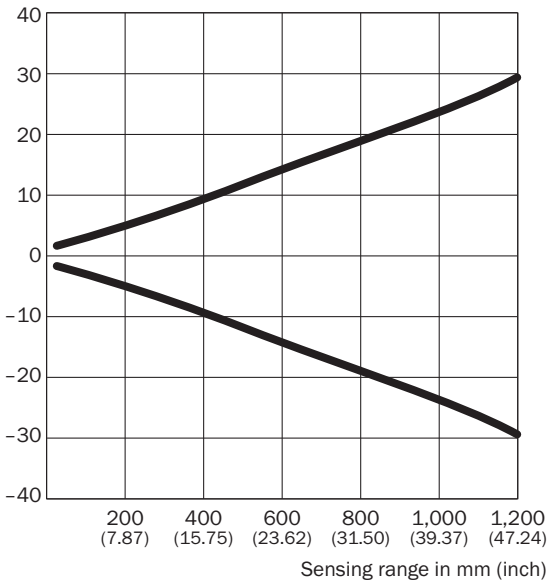
## Characteristic curve WL2S-2




① Reflector P250F
② Reflector PL20F
③ Reflective tape REF-AC1000
④ PL10F reflector
⑤ Reflector PL8FH

## Light spot size WL2S-2

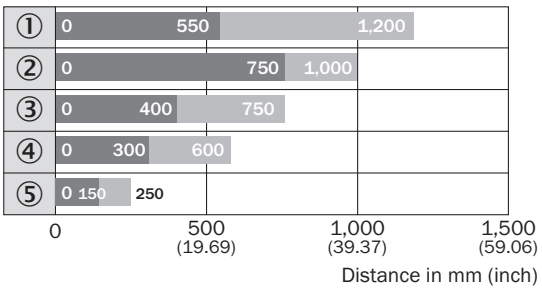
Spot diameter in mm (inch)




**Dimensions in mm (inch)**

| Sensing range | Spot diameter |
|---|---|
| **20**<br>**(0.79)** | 3.4<br>(0.13) |
| **100**<br>**(3.94)** | 6.5<br>(0.26) |
| **250**<br>**(9.84)** | 12.0<br>(0.47) |
| **500**<br>**(19.69)** | 34.0<br>(1.34) |
| **1,000**<br>**(39.37)** | 48.0<br>(1.89) |
| **1,200**<br>**(47.24)** | 60.0<br>(2.36) |

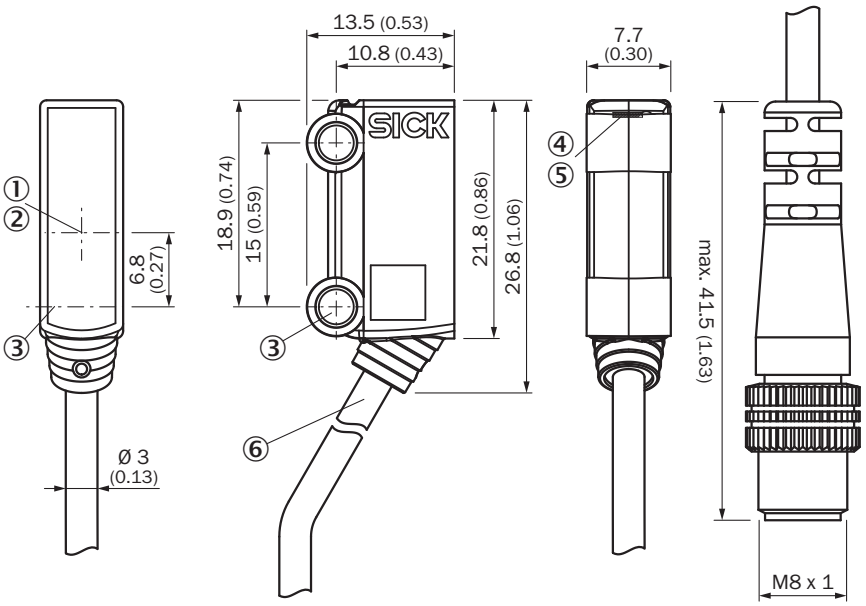
## Sensing range diagram WL2S-2




Sensing range  Sensing range max.

① Reflector P250F
② Reflector PL20F
③ Reflective tape REF-AC1000
④ PL10F reflector
⑤ Reflector PL8FH

## Dimensional drawing WL2S-2




Dimensions in mm (inch)
① Optical axis, receiver
② Optical axis, sender
③ Middle axis fixing hole Ø 3.2 mm
④ LED indicator green: Supply voltage active
⑤ LED indicator yellow: Status of received light beam
⑥ Connection

## Recommended accessories

Other models and accessories ➜ www.sick.com/W2

| | Brief description | Type | part no. |
|---|---|---|---|
| **Mounting systems** | | | |
|  | • **Description:** Mounting bracket for floor mounting<br>• **Material:** Steel<br>• **Details:** Steel, zinc coated<br>• **Items supplied:** Without mounting hardware<br>• **Suitable for:** W2S-2 | BEF-W2S-A | 4034748 |
|  | • **Description:** Plate N11N for universal clamp bracket<br>• **Material:** Stainless steel<br>• **Details:** Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp)<br>• **Items supplied:** Universal clamp (5322627), mounting hardware<br>• **Usable for:** DeltaPac, Glare, WTD20E | BEF-KHS-N11N | 2071081 |
| **reflectors and optics** | | | |
|  | • **Description:** Fine triple reflector, screw connection, suitable for laser sensors<br>• **Dimensions:** 20 mm 32 mm<br>• **Ambient operating temperature:** –30 °C ... +65 °C | PL10F | 5311210 |
| **connectors and cables** | | | |
|  | • **Connection type head A:** Male connector, M8, 4-pin, straight, A-coded<br>• **Description:** Unshielded<br>• **Connection systems:** Screw-type terminals<br>• **Permitted cross-section:** 0.14 mm² ... 0.5 mm² | STE-0804-G | 6037323 |
|  | • **Connection type head A:** Female connector, M8, 4-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 5 m, 4-wire, PVC<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Application:** Zones with chemicals, Uncontaminated zones | YF8U14-050VA3XLEAX | 2095889 |
|  | • **Connection type head A:** Female connector, M8, 4-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 5 m, 4-wire, PUR, halogen-free<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Application:** Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation | YF8U14-050UA3XLEAX | 2094792 |

# 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.”**

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