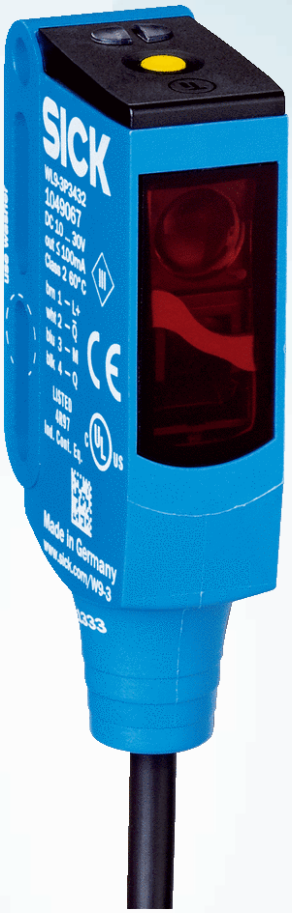
Data sheet




# WL9-3P3032S28

W9

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

Illustration may differ

## Ordering information

| Type | part no. |
|---|---|
| WL9-3P3032S28 | 1052899 |

Other models and accessories ➜ www.sick.com/W9

## 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)** | 12.2 mm x 50 mm x 23.6 mm |
| **Housing design (light emission)** | Rectangular |
| **Mounting hole** | M3 |
| **Sensing range max.** | 0 m ... 5 m [1] |
| **Sensing range** | 0 m ... 3 m [1] |
| **Type of light** | Visible red light |
| **Light source** | PinPoint LED [2] |
| **Light spot size (distance)** | Ø 45 mm (1.5 m) |
| **Wave length** | 650 nm |
| **Adjustment** | Single teach-in button |

[1] Reflector PL80A.
[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** | 30 mA [3] |
| **Switching output** | PNP [4] |
| **Output function** | Complementary |
| **Switching mode** | Light/dark switching [4] |
| **Output current $I_{max.}$** | ≤ 100 mA [5] |
| **Response time** | < 0.5 ms [6] |
| **Switching frequency** | 1,000 Hz [7] |
| **Connection type** | Cable with M8 male connector, 4-pin, 200 mm [8] |
| **Cable material** | Plastic, PVC |
| **Conductor cross section** | 0.14 mm² |
| **Circuit protection** | A [9]<br>B [10]<br>C [11] |
| **Protection class** | III |
| **Weight** | 80 g |
| **Polarizing filter** | ✓ |
| **Housing material** | Plastic, VISTAL® |
| **Optics material** | Plastic, PMMA |
| **Enclosure rating** | IP66<br>IP67<br>IP69K |
| **Ambient operating temperature** | –40 °C ... +60 °C |
| **Ambient temperature, storage** | –40 °C ... +75 °C |
| **UL File No.** | NRKH.E181493 |

[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] Q = light switching.
[5] At and above Tu 50 °C, a max. load current of Imax. = 50 mA is permitted.
[6] Signal transit time with resistive load.
[7] With light/dark ratio 1:1.
[8] Do not bend below 0 °C.
[9] A = $V_S$ connections reverse-polarity protected.
[10] B = inputs and output reverse-polarity protected.
[11] C = interference suppression.

## Safety-related parameters

| | |
|---|---|
| **$MTTF_D$** | 1,880 years |
| **$DC_{avg}$** | 0 % |

## Certificates

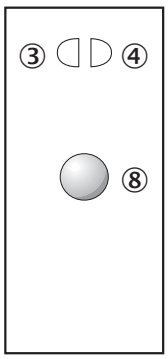
| | |
|---|---|
| **EU declaration of conformity** | ✓ |
| **UK declaration of conformity** | ✓ |

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

## Classifications

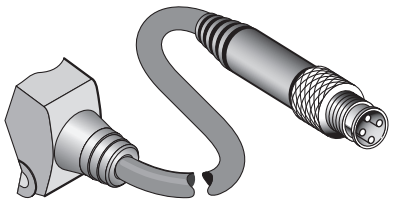
| | |
|---|---|
| **ECLASS 5.0** | 27270902 |
| **ECLASS 5.1.4** | 27270902 |
| **ECLASS 6.0** | 27270902 |
| **ECLASS 6.2** | 27270902 |
| **ECLASS 7.0** | 27270902 |
| **ECLASS 8.0** | 27270902 |
| **ECLASS 8.1** | 27270902 |
| **ECLASS 9.0** | 27270902 |
| **ECLASS 10.0** | 27270902 |
| **ECLASS 11.0** | 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 |

## Adjustments Single teach-in button

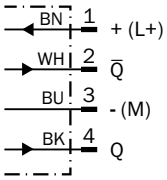



③ LED indicator yellow: Status of received light beam
④ LED indicator green: power on
⑧ Teach-in button

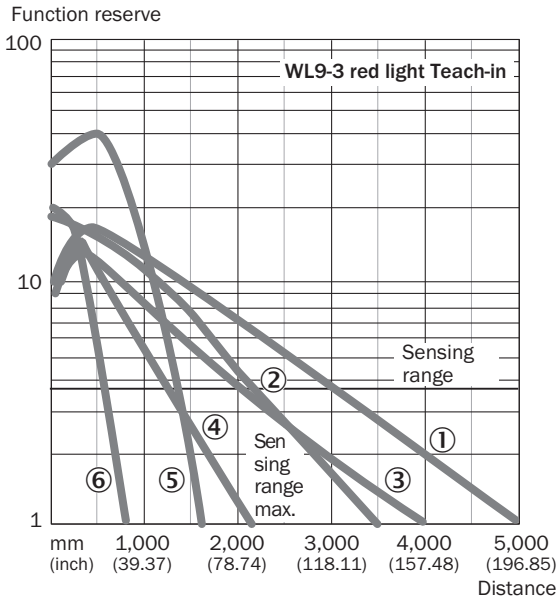
## Connection type



## Connection diagram Cd-084

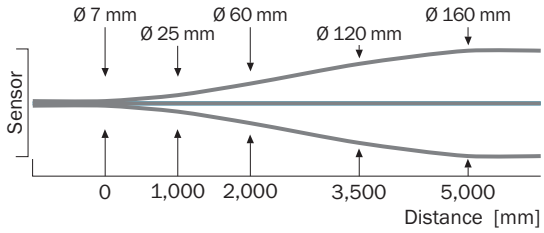



## Characteristic curve WL9-3, red light, 5 m

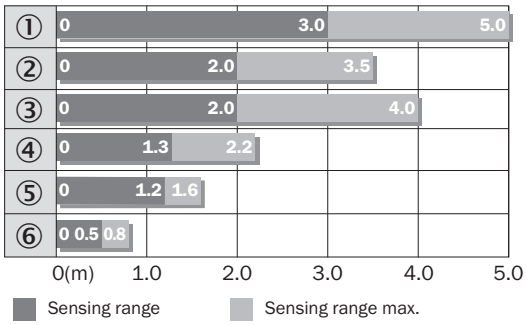



① Reflector PL80A
② Reflector P250
③ Reflector PL40A
④ Reflector PL20A
⑤ PL10F reflector
⑥ Reflective tape REF-IRF-56

## Light spot size WL9-3, red light, 5 m




## Sensing range diagram WL9-3, red light, 5 m




① Reflector PL80A
② Reflector P250F
③ Reflector PL40A
④ Reflector PL20F
⑤ PL10F reflector
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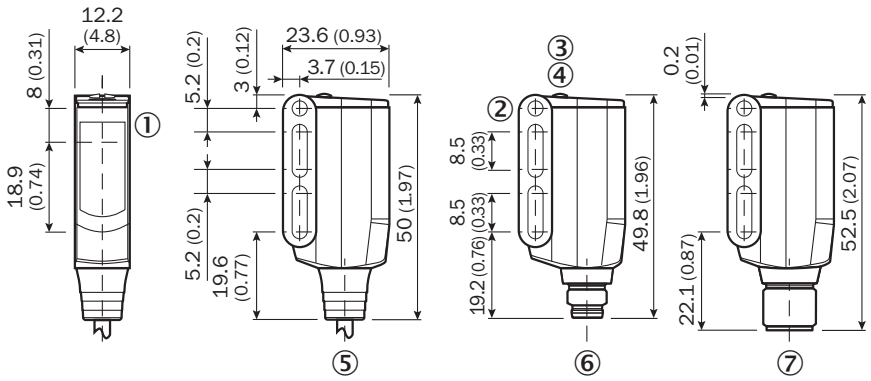
## Dimensional drawing WL9-3, WSE9-3




Dimensions in mm (inch)
① Sender and receiver optical axis center
② Mounting hole M3 (Ø 3.1 mm)
③ LED indicator yellow: Status of received light beam
④ LED indicator green: power on
⑤ Connecting cable or connector
⑥ male connector M8, 4-pin
⑦ male connector M12, 4-pin

## Recommended accessories

Other models and accessories ➜ www.sick.com/W9

| | Brief description | Type | part no. |
|---|---|---|---|
| **Mounting systems** | | | |
| | • **Description:** Plate N08 for universal clamp bracket<br>• **Material:** Steel, zinc diecast<br>• **Details:** Zinc plated steel (sheet), Zinc die cast (clamping bracket)<br>• **Items supplied:** Universal clamp (5322626), mounting hardware<br>• **Usable for:** W100, W150, W4S, W4F, W8, W9-3, W8G, W8 Laser, W8 Inox, G6, W100 Laser, W100-2, W10, G6 Inox, RAY10, W4SLG-3, W9, GR18, MultiPulse, Reflex Array, MultiLine, LUT3, KT5, KT8, KT10, CS8 | BEF-KHS-N08 | 2051607 |
| | • **Description:** Mounting bracket<br>• **Material:** Steel<br>• **Details:** Steel, zinc coated<br>• **Items supplied:** Mounting hardware included<br>• **Suitable for:** W9-3 | BEF-WN-W9-2 | 2022855 |
| | • **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:** Rectangular, screw connection<br>• **Dimensions:** 40 mm 60 mm<br>• **Ambient operating temperature:** –30 °C ... +65 °C | PL40A | 1012720 |
| **connectors and cables** | | | |
| | • **Connection type head A:** Female connector, M12, 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 | YF2A14-050VB3XLEAX | 2096235 |
| | • **Connection type head A:** Male connector, M12, 4-pin, straight, A-coded<br>• **Description:** Unshielded<br>• **Connection systems:** Screw-type terminals<br>• **Permitted cross-section:** ≤ 0.75 mm² | STE-1204-G | 6009932 |
| | • **Connection type head A:** Female connector, M12, 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 | YF2A14-050UB3XLEAX | 2095608 |

# 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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