



WTB4SL-3P3161

W4

MINIATURE PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | Part no. |
|---------------|----------|
| WTB4SL-3P3161 | 1075216 |

Other models and accessories → www.sick.com/W4

Detailed technical data

Features

| | |
|------------------------------------|---|
| Functional principle | Photoelectric proximity sensor |
| Functional principle detail | Background suppression |
| Sensing range max. | 25 mm ... 300 mm ¹⁾ |
| Sensing range | 25 mm ... 300 mm ¹⁾ |
| Emitted beam | |
| Light source | Laser ²⁾ |
| Type of light | Visible red light |
| Light spot size (distance) | Ø 1 mm (170 mm) |
| Key laser figures | |
| Normative reference | EN 60825-1:2014, IEC 60825-1:2014 / CDRH 21 CFR 1040.10 & 1040.11 |
| Laser class | 1 |
| Wave length | 650 nm |
| Adjustment | Potentiometer, 5 turns |
| Special applications | Detecting small objects |
| Mounting hole | M3 |

¹⁾ Object with 90% remission (based on standard white, DIN 5033).

²⁾ Average service life: 50,000 h at T_U = +25 °C.

Safety-related parameters

| | |
|-------------------------|--|
| MTF_D | 420 years (EN ISO 13849-1) ¹⁾ |
| DC_{avg} | 0 % |

¹⁾ Mode of calculation: Parts-Count-calculation.

Electrical data

| | |
|-------------------------------------|---|
| 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⁾ B ⁷⁾ C ⁸⁾ |

¹⁾ Limit values when operated in short-circuit protected network: max. 8 A.

²⁾ May not exceed or fall below 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.

Mechanical data

| | |
|-------------------------------|--|
| Housing | Rectangular |
| Design detail | Slim |
| Dimensions (W x H x D) | 12.2 mm x 41.8 mm x 17.3 mm |
| Connection | Cable with connector M8, 3-pin ¹⁾ |
| Connection detail | |
| Conductor size | 0.14 mm ² |
| Length of cable (L) | 100 mm ¹⁾ |
| Material | |
| Housing | Plastic, Novodur |
| Front screen | Plastic, PMMA |
| Cable | PVC |
| Weight | 100 g |

¹⁾ Do not bend below 0 °C.

Ambient data

| | |
|---|------------------------------------|
| Enclosure rating | IP66 IP67 |
| Ambient operating temperature | -10 °C ... +50 °C |
| Ambient operating temperature extended | -30 °C ... +55 °C ^{1) 2)} |
| Ambient temperature, storage | -30 °C ... +70 °C |
| RoHS certificate | ✓ |

¹⁾ As of $T_a = 50\text{ °C}$, a max. supply voltage $V_{max.} = 24\text{ V}$ and a max. load current $I_{max.} = 50\text{ mA}$ is permitted.

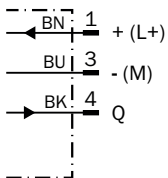
²⁾ Operation below $T_u -10\text{ °C}$ is possible if the sensor is already switched on at $T_u > -10\text{ °C}$, then cools down, and the supply voltage is subsequently not switched off. Switching on below $T_u -10\text{ °C}$ is not permissible.

Classifications

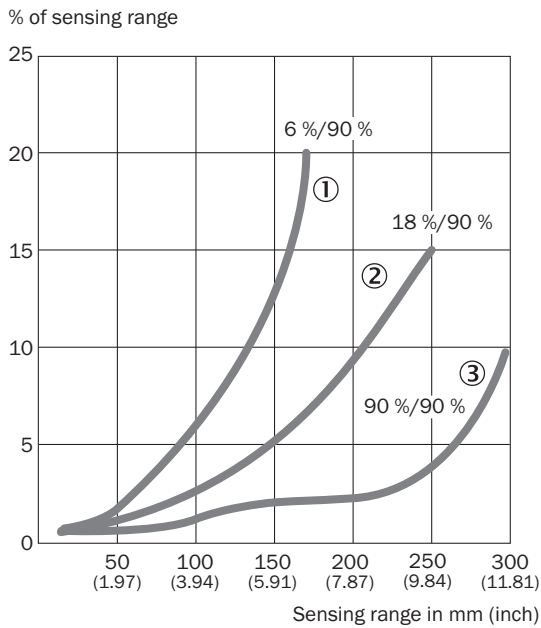
| | |
|-----------------------|----------|
| ECLASS 5.0 | 27270904 |
| ECLASS 5.1.4 | 27270904 |
| ECLASS 6.0 | 27270904 |
| ECLASS 6.2 | 27270904 |
| ECLASS 7.0 | 27270904 |
| ECLASS 8.0 | 27270904 |
| ECLASS 8.1 | 27270904 |
| ECLASS 9.0 | 27270904 |
| ECLASS 10.0 | 27270904 |
| ECLASS 11.0 | 27270904 |
| ECLASS 12.0 | 27270903 |
| ETIM 5.0 | EC002719 |
| ETIM 6.0 | EC002719 |
| ETIM 7.0 | EC002719 |
| ETIM 8.0 | EC002719 |
| UNSPSC 16.0901 | 39121528 |

Connection diagram

Cd-045

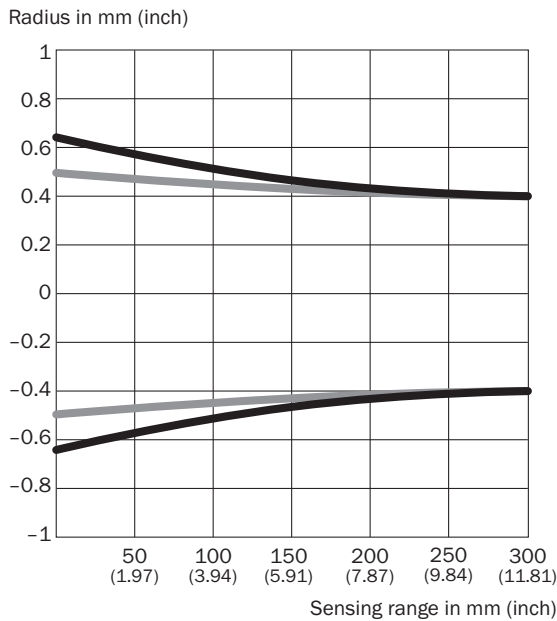


Characteristic curve



- ① Sensing range on black, 6% remission factor
- ② Sensing range on gray, 18% remission factor
- ③ Sensing range on white, 90% remission factor

Light spot size

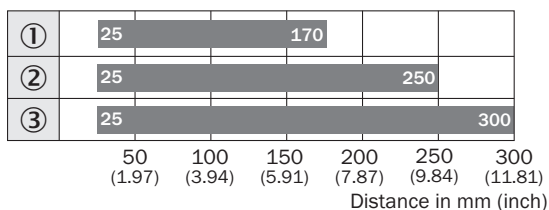


Dimensions in mm (inch)

| Sensing range | Vertical | Horizontal |
|---------------------------------|---------------|---------------|
| 50 mm (1.97) | 1.2 (0.05) | 1.0 (0.04) |
| 100 mm (3.94) | 1.1 (0.04) | 1.0 (0.04) |
| 200 mm (7.87) | 0.9 (0.04) | 0.9 (0.04) |
| 300 mm (11.81) | 0.8 (0.03) | 0.8 (0.03) |

- Vertical
- Horizontal

Sensing range diagram

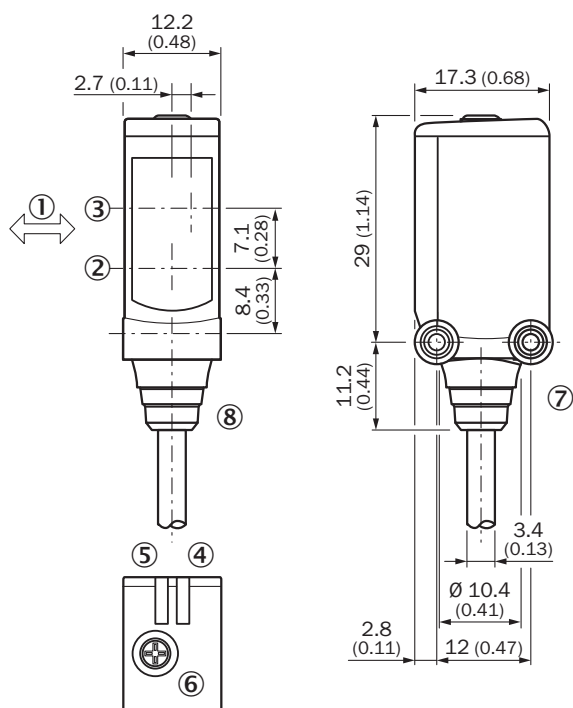


■ Sensing range typ. max.

- ① Sensing range on black, 6% remission factor
- ② Sensing range on gray, 18% remission factor
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Dimensional drawing (Dimensions in mm (inch))



WTB4SL-3, cable



- ① Standard direction of the material being detected
- ② Center of optical axis, sender
- ③ Center of optical axis, receiver
- ④ LED indicator green: Supply voltage active
- ⑤ LED indicator yellow: Status of received light beam
- ⑥ Potentiometer
- ⑦ Threaded mounting hole M3
- ⑧ Connection

Recommended accessories

Other models and accessories → www.sick.com/W4

| | Brief description | Type | Part no. |
|---|--|--------------------|----------|
| Plug connectors and cables | | | |
|  | <ul style="list-style-type: none"> • Connection type head A: Male connector, M8, 3-pin, straight • Description: Unshielded • Connection systems: Screw-type terminals • Permitted cross-section: 0.14 mm² ... 0.5 mm² | STE-0803-G | 6037322 |
| Others | | | |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M8, 3-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 5 m, 3-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Zones with chemicals | YF8U13-050VA1XLEAX | 2095884 |

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Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

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