



WTB9M4-3P3411S14

W9

SMALL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | Part no. |
|------------------|----------|
| WTB9M4-3P3411S14 | 1054431 |

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

Detailed technical data

Features

| | |
|--|--------------------------------|
| Functional principle | Photoelectric proximity sensor |
| Functional principle detail | Background suppression |
| Dimensions (W x H x D) | 12.2 mm x 52.2 mm x 23.6 mm |
| Housing design (light emission) | Rectangular |
| Mounting hole | M4 |
| Sensing range max. | 20 mm ... 800 mm ¹⁾ |
| Sensing range | 20 mm ... 400 mm ²⁾ |
| Type of light | Infrared light |
| Light source | LED ³⁾ |
| Light spot size (distance) | Ø 40 mm (400 mm) |
| Wave length | 850 nm |
| Adjustment | Potentiometer, 5 turns |

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

²⁾ Object with 6% remission (based on standard white, DIN 5033).

³⁾ Average service life: 100,000 h at T_J = +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 | < 2.5 ms ⁶⁾ |
| Switching frequency | 200 Hz ⁷⁾ |
| Connection type | Cable with M12 male connector, 4-pin, 120 mm ⁸⁾ |
| Cable material | PVC |
| Circuit protection | A ⁹⁾ B ¹⁰⁾ C ¹¹⁾ |
| Protection class | III |
| Special device | ✓ |
| Housing material | Plastic, VISTAL® |
| Optics material | Plastic, PMMA |
| Enclosure rating | IP66 IP67 IP69K |
| Ambient operating temperature | -40 °C ... +60 °C |
| Ambient temperature, storage | -40 °C ... +75 °C |

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⁾ Q = light switching.

⁵⁾ At and above T_u 50 °C, a max. load current of $I_{max} = 50$ 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.

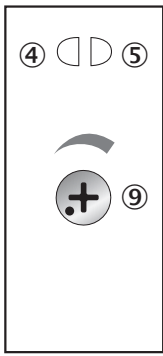
Classifications

| | |
|---------------------|----------|
| 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 |

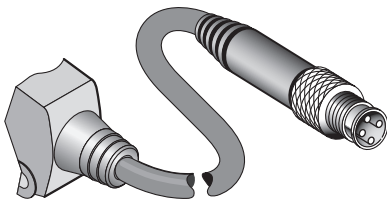
Adjustments

Potentiometer



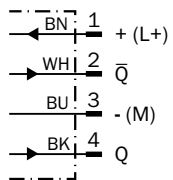
- ④ LED indicator yellow: Status of received light beam
- ⑤ LED indicator green: power on
- ⑨ Adjustment of sensing range

Connection type



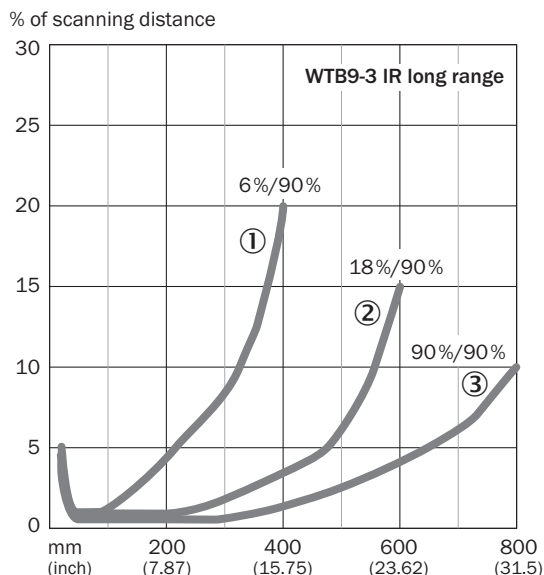
Connection diagram

Cd-084



Characteristic curve

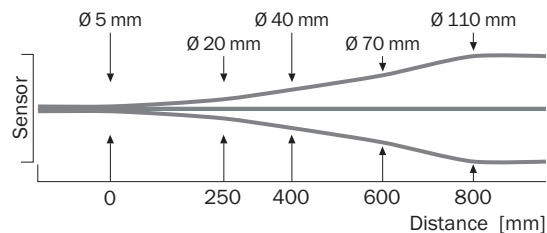
WTB9-3, infrared light, 800 mm



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

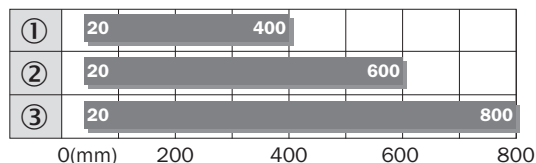
Light spot size

WTB9-3, infrared light, 800 mm



Sensing range diagram

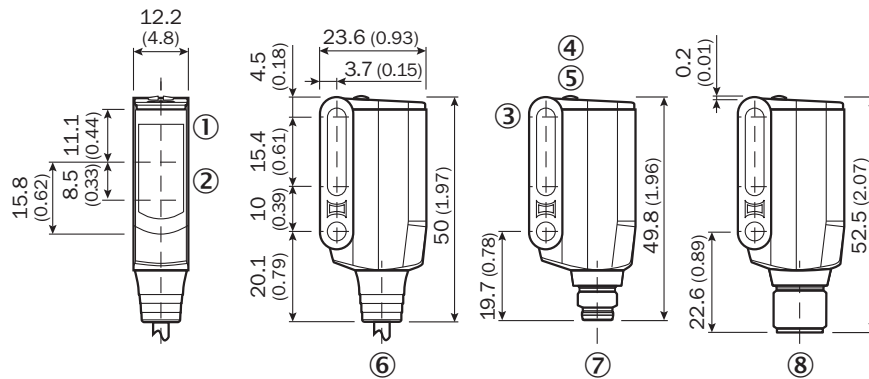
WTB9-3, infrared light, 800 mm



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

Dimensional drawing (Dimensions in mm (inch))





WTB9M4-3



- ① Center of optical axis, receiver
- ② Center of optical axis, sender
- ③ Mounting hole M4 (Ø 4.1 mm)
- ④ LED indicator yellow: Status of received light beam
- ⑤ LED indicator green: power on
- ⑥ Connection cable
- ⑦ Male connector M8, 4-pin
- ⑧ Male connector M12, 4-pin

Recommended accessories

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

| | Brief description | Type | Part no. |
|---|---|--------------------|----------|
| Mounting brackets and plates | | | |
|  | Mounting bracket for wall mounting, steel, zinc coated, mounting hardware included | BEF-W160 | 5305197 |
| Plug connectors and cables | | | |
|  | Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m | YF2A14-050VB3XLEAX | 2096235 |
|  | Head A: male connector, M8, 4-pin, straight Cable: unshielded | STE-0804-G | 6037323 |
|  | Head A: male connector, M12, 4-pin, straight Cable: unshielded | STE-1204-G | 6009932 |

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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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