



WTB27X-3P1861S01

W27

COMPACT PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Ordering information

| Type | Part no. |
|------------------|----------|
| WTB27X-3P1861S01 | 1129913 |

Other models and accessories → www.sick.com/W27

Illustration may differ



Detailed technical data

Features

| | |
|--|----------------------------------|
| Functional principle | Photoelectric proximity sensor |
| Functional principle detail | Background suppression |
| Dimensions (W x H x D) | 31.4 mm x 112.3 mm x 70.4 mm |
| Housing design (light emission) | Rectangular |
| Sensing range max. | 30 mm ... 2,000 mm ¹⁾ |
| Sensing range | 100 mm ... 2,000 mm |
| Type of light | Visible red light |
| Light source | PinPoint LED ²⁾ |
| Light spot size (distance) | Ø 12 mm (800 mm) |
| Wave length | 660 nm |
| Adjustment | Potentiometer |
| Special applications | Explosive areas |

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

²⁾ 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 | 40 mA ³⁾ |
| Switching output | PNP |
| Output function | Complementary |
| Switching mode | Light/dark switching |
| Signal voltage PNP HIGH/LOW | Approx. $V_S - 2.5 \text{ V} / 0 \text{ V}$ |
| Output current I_{max} | ≤ 100 mA |
| Response time | ≤ 1.5 ms ⁴⁾ |
| Switching frequency | 350 Hz ⁵⁾ |
| Connection type | Cable, 4-wire, 10 m ⁶⁾ |
| Cable material | PVC |
| Circuit protection | A ⁷⁾ B ⁸⁾ C ⁹⁾ |
| Protection class | II ¹⁰⁾ |
| Weight | 750 g |
| Housing material | Plastic, Stainless steel V2A (1.4301) |
| Optics material | Plastic, PMMA |
| Enclosure rating | IP64 |
| Certificate (CCC) | SiTiiAS 2023322315005303 |
| Certificate (IECEX) | IECEX TUR 20.0064X |
| Ex marking (IECEX) | Ex ec nC op is IIB T4 Gc, Ex op is tc IIIB T135 °C Dc |
| ATEX marking | EX II 3G EX ec nC op is IIB T4 Gc X EX II 3D EX op is tc IIIB T135 °C Dc X In accordance with directive 2014/34 / EU |
| Ex area category | 3D, 3G |
| Ambient operating temperature | -20 °C ... +50 °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⁾ Signal transit time with resistive load.

⁵⁾ With light/dark ratio 1:1.

⁶⁾ Do not bend below 0 °C.

⁷⁾ A = V_S connections reverse-polarity protected.

⁸⁾ B = inputs and output reverse-polarity protected.

⁹⁾ C = interference suppression.

¹⁰⁾ Reference voltage: 50 V DC.

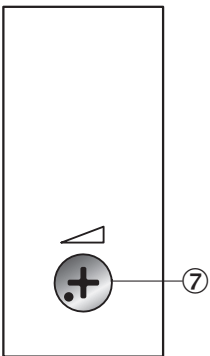
Safety-related parameters

| | |
|-------------------------|-----------|
| MTTF_D | 754 years |
| DC_{avg} | 0 % |

Classifications

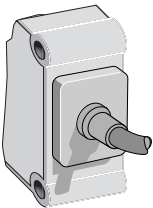
| | |
|-----------------------|----------|
| ECLASS 5.0 | 27270903 |
| ECLASS 5.1.4 | 27270903 |
| ECLASS 6.0 | 27270903 |
| ECLASS 6.2 | 27270903 |
| ECLASS 7.0 | 27270903 |
| ECLASS 8.0 | 27270903 |
| ECLASS 8.1 | 27270903 |
| ECLASS 9.0 | 27270903 |
| ECLASS 10.0 | 27270904 |
| ECLASS 11.0 | 27270904 |
| ECLASS 12.0 | 27270903 |
| ETIM 5.0 | EC001821 |
| ETIM 6.0 | EC001821 |
| ETIM 7.0 | EC002719 |
| ETIM 8.0 | EC002719 |
| UNSPSC 16.0901 | 39121528 |

Adjustments



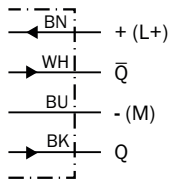
⑦ Sensing range adjustment: potentiometer

Connection type



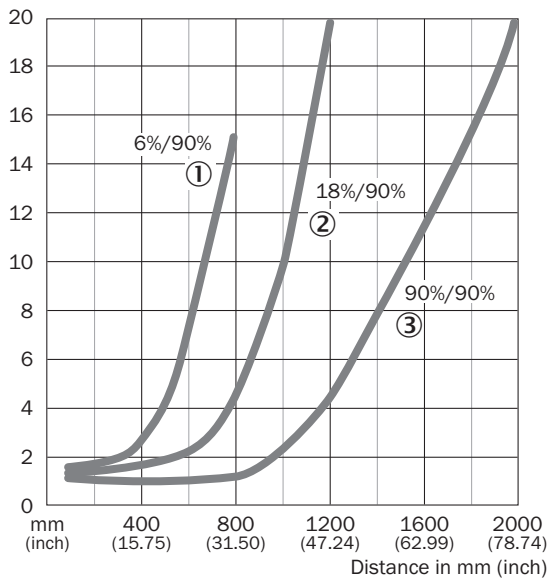
Connection diagram

Cd-094



Characteristic curve

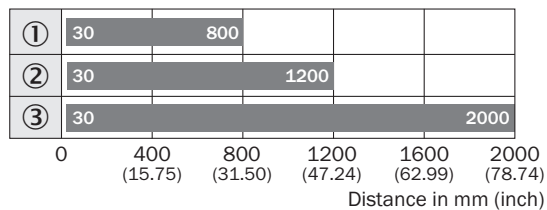
WTB27-3, PinPoint LED



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

Sensing range diagram

WTB27-3, PinPoint LED

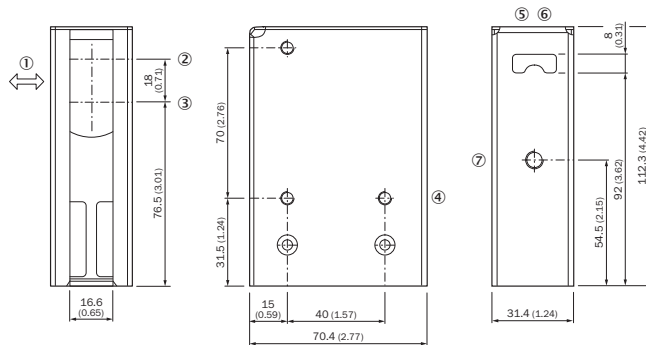


■ Sensing range

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Dimensional drawing (Dimensions in mm (inch))


WTB27-3 EX



- ① Standard direction
- ② Optical axis, sender
- ③ Optical axis, receiver
- ④ Mounting hole, \varnothing 5.2 mm
- ⑤ LED indicator green: Supply voltage active
- ⑥ LED indicator yellow: Status of received light beam
- ⑦ Sensing range adjustment: potentiometer

Recommended accessories

Other models and accessories → www.sick.com/W27

| | Brief description | Type | Part no. |
|---|---|------------|----------|
| Plug connectors and cables | | | |
|  | <ul style="list-style-type: none"> • Connection type head A: Male connector, M12, 4-pin, straight • Description: Unshielded • Connection systems: Screw-type terminals • Permitted cross-section: $\leq 0.75 \text{ mm}^2$ | STE-1204-G | 6009932 |

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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