



WL27X-3P3431

W27-3 Ex

COMPACT PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Ordering information

| Type | Part no. |
|--------------|----------|
| WL27X-3P3431 | 1029955 |

Other models and accessories → www.sick.com/W27-3_Ex

Illustration may differ



Detailed technical data

Features

| | |
|--|---------------------------------------|
| Sensor/ detection principle | Photoelectric retro-reflective sensor |
| 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. | 0.1 m ... 15 m ¹⁾ |
| Sensing range | 0.1 m ... 11 m ¹⁾ |
| Type of light | Visible red light |
| Light source | LED ²⁾ |
| Light spot size (distance) | Ø 220 mm (10 m) |
| Angle of dispersion | Approx. 1.5° |
| Wave length | 660 nm |
| Adjustment | Potentiometer |
| Special applications | Explosive areas |

¹⁾ Reflector PL80A.

²⁾ Average service life: 100,000 h at T_U = +25 °C.

Mechanics/electronics

| | |
|-----------------------|-----------------------------------|
| Supply voltage | 10 V DC ... 30 V DC ¹⁾ |
|-----------------------|-----------------------------------|

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.

⁹⁾ Reference voltage: 50 V DC.

| | |
|---|---|
| Ripple | $\leq 5 V_{pp}^{2)}$ |
| Power consumption | 35 mA ³⁾ |
| Switching output | PNP |
| Output function | Complementary |
| Switching mode | Light/dark switching |
| Signal voltage PNP HIGH/LOW | Approx. $V_S - 2.5 V / 0 V$ |
| Output current $I_{max.}$ | $\leq 100 mA$ |
| Response time | $\leq 500 \mu s^{4)}$ |
| Switching frequency | 1,000 Hz ⁵⁾ |
| Connection type | Cable with M12 male connector, 4-pin, 300 mm |
| Cable material | PVC |
| Circuit protection | A ⁶⁾ B ⁷⁾ C ⁸⁾ |
| Protection class | II ⁹⁾ |
| Weight | + 750 g |
| Polarisation filter | ✓ |
| Housing material | Stainless steel, plastic, Stainless steel V2A (1.4301) |
| Optics material | Plastic, PMMA |
| Enclosure rating | IP67 |
| ATEX marking | EX II 3G EX nA op is IIB T4 Gc X EX II 3D EX tc IIIB T135 °C Dc IP67 X |
| Ex area category | 3D, 3G |
| Ambient operating temperature | -20 °C ... +50 °C |
| Ambient storage temperature | -40 °C ... +75 °C |

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⁵⁾ With light/dark ratio 1:1.

⁶⁾ A = V_S connections reverse-polarity protected.

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⁹⁾ Reference voltage: 50 V DC.

Safety-related parameters

| | |
|-------------------------|-------------|
| MTTF_D | 1,646 years |
| DC_{avg} | 0% |

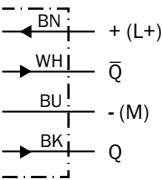
Classifications

| | |
|---------------------|----------|
| ECI@ss 5.0 | 27270902 |
| ECI@ss 5.1.4 | 27270902 |
| ECI@ss 6.0 | 27270902 |
| ECI@ss 6.2 | 27270902 |
| ECI@ss 7.0 | 27270902 |

| | |
|-----------------------|----------|
| ECI@ss 8.0 | 27270902 |
| ECI@ss 8.1 | 27270902 |
| ECI@ss 9.0 | 27270902 |
| ETIM 5.0 | EC002717 |
| ETIM 6.0 | EC002717 |
| UNSPSC 16.0901 | 39121528 |

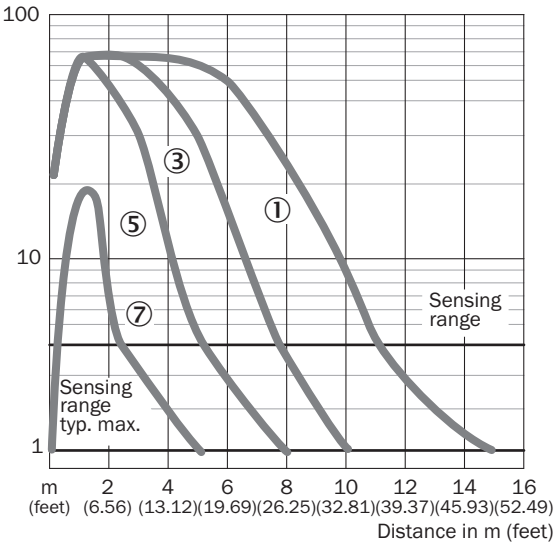
Connection diagram

Cd-094



Characteristic curve

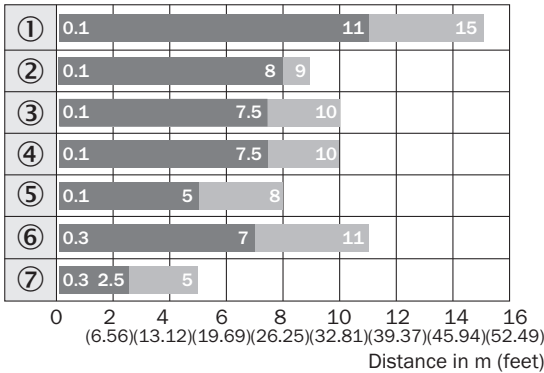
WL27-3 EX



- ① Reflector PL80A
- ③ Reflector PL40A
- ⑤ Reflector PL20A
- ⑦ Reflective tape Diamond Grade

Sensing range diagram

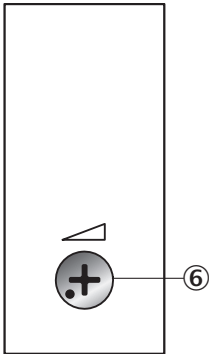
WL27-3 EX



■ Sensing range ■ Sensing range max.

- ① Reflector PL80A
- ② Reflector PL50A
- ③ Reflector PL40A
- ④ Reflector PL30A
- ⑤ Reflector PL20A
- ⑥ Reflector C110A
- ⑦ Reflective tape Diamond Grade

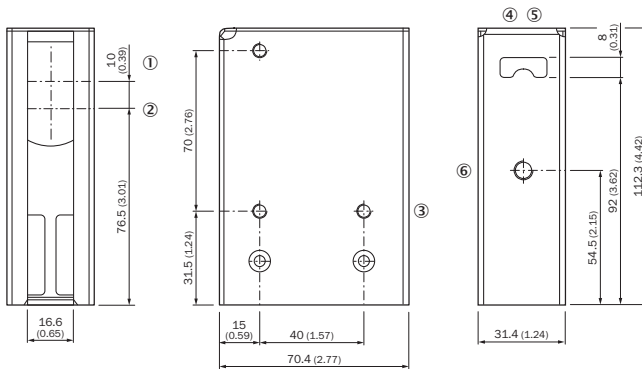
Adjustments possible



⑥ Sensitivity control: potentiometer

Dimensional drawing (Dimensions in mm (inch))




WL27-3 EX



- ① Optical axis, sender
- ② Optical axis, receiver
- ③ Mounting hole, Ø 5.2 mm
- ④ Sensitivity control
- ⑤ LED indicator yellow: Status of received light beam

Recommended accessories

Other models and accessories → www.sick.com/W27-3_Ex

| | Brief description | Type | Part no. |
|---|---|-----------------|----------|
| Mounting brackets and plates | | | |
|  | Universal mounting bracket for reflectors, steel, zinc coated | BEF-WN-REFX | 2064574 |
| Plug connectors and cables | | | |
|  | Head A: female connector, M12, 4-pin, straight Head B: Flying leads Cable: PVC, unshielded, 5 m This product is generally resistant to chemical cleaning agents (see ECOLAB). Please do not use cleaning agents of any other Kind., Not resistant against lactic acid & hydrogen peroxide (H2O2) | DOL-1204-G05MNI | 6052615 |
| Reflectors | | | |
|  | Rectangular, screw connection, 47 mm x 47 mm, PMMA/ABS, Screw-on, 2 hole mounting | P250 | 5304812 |

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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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