

WT18-3K420

W18-3

SMALL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | Part no. |
|------------|----------|
| WT18-3K420 | 1061203 |

Other models and accessories → www.sick.com/W18-3

Detailed technical data

Features

| | |
|--|----------------------------------|
| Functional principle | Photoelectric proximity sensor |
| Functional principle detail | Background suppression |
| Dimensions (W x H x D) | 17.6 mm x 75.5 mm x 33.5 mm |
| Housing design (light emission) | Rectangular |
| Sensing range max. | 10 mm ... 1,000 mm ¹⁾ |
| Sensing range | 50 mm ... 1,000 mm ¹⁾ |
| Type of light | Infrared light |
| Light source | LED ²⁾ |
| Light spot size (distance) | Ø 30 mm (600 mm) |
| Wave length | 870 nm |
| Adjustment | Potentiometer, 4 turns |

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 | 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⁾ C = interference suppression.

⁸⁾ D = outputs overcurrent and short-circuit protected.

| | |
|--|---|
| Ripple | < 5 V _{pp} ²⁾ |
| Current consumption | 55 mA ³⁾ |
| Switching output | PNP |
| Output function | Complementary |
| Switching mode | Light/dark switching |
| Output current I_{max.} | ≤ 100 mA |
| Response time | < 700 μs ⁴⁾ |
| Switching frequency | 700 Hz ⁵⁾ |
| Connection type | Male connector M12, 4-pin |
| Circuit protection | A ⁶⁾ C ⁷⁾ D ⁸⁾ |
| Weight | 40 g |
| Housing material | Plastic, ABS |
| Optics material | Plastic, PMMA |
| Enclosure rating | IP67 |
| Ambient operating temperature | -40 °C ... +60 °C |
| Ambient temperature, storage | -40 °C ... +75 °C |
| UL File No. | NRKH.E181493 & NRKH7.E181493 |

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) C = interference suppression.

8) D = outputs overcurrent and short-circuit protected.

Safety-related parameters

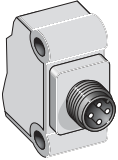
| | |
|-------------------------|-----------|
| MTTF_D | 757 years |
| DC_{avg} | 0 % |

Classifications

| | |
|---------------------|----------|
| eCl@ss 5.0 | 27270904 |
| eCl@ss 5.1.4 | 27270904 |
| eCl@ss 6.0 | 27270904 |
| eCl@ss 6.2 | 27270904 |
| eCl@ss 7.0 | 27270904 |
| eCl@ss 8.0 | 27270904 |
| eCl@ss 8.1 | 27270904 |
| eCl@ss 9.0 | 27270904 |
| eCl@ss 10.0 | 27270904 |
| eCl@ss 11.0 | 27270904 |
| eCl@ss 12.0 | 27270903 |

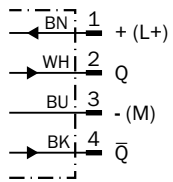
| | |
|-----------------------|----------|
| ETIM 5.0 | EC002719 |
| ETIM 6.0 | EC002719 |
| ETIM 7.0 | EC002719 |
| ETIM 8.0 | EC002719 |
| UNSPSC 16.0901 | 39121528 |

Connection type



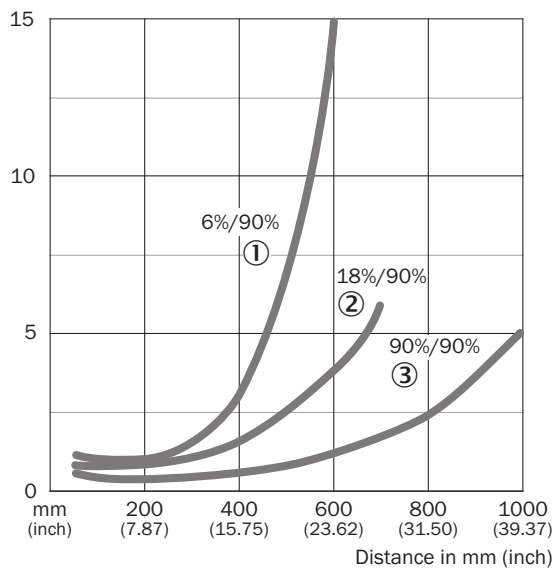
Connection diagram

Cd-102



Characteristic curve

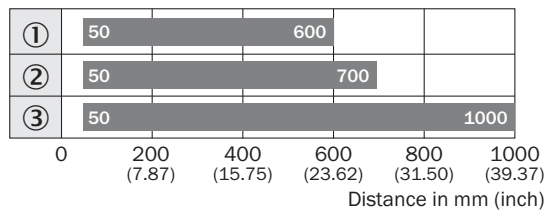
WT18-3 (Ex), infrarret, 1,000 mm



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

Sensing range diagram

WT18-3 (Ex), infrarret, 1,000 mm

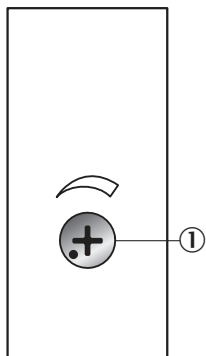


■ Sensing range

- ① Sensing range on black, 6% remission
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- ③ Sensing range on white, 90% remission

Adjustments

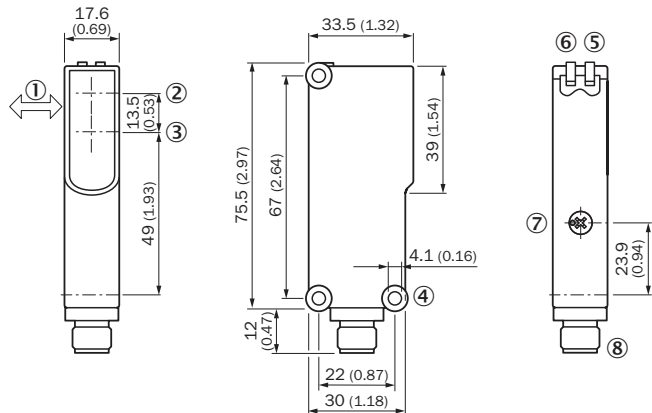
Potentiometer



- ① Setting of the sensing range: potentiometer, 4 revolutions

Dimensional drawing (Dimensions in mm (inch))



WT18-3, potentiometer



- ① Standard direction of the material being detected
- ② Center of optical axis, sender
- ③ Center of optical axis, receiver
- ④ Mounting hole \varnothing 4.1 mm
- ⑤ LED indicator yellow: Status of received light beam
- ⑥ LED indicator green: Supply voltage active
- ⑦ Setting of the sensing range: potentiometer, 4 revolutions
- ⑧ 4-pin M12 male connector or 2 m cable or 6-pin cubic connector

Recommended accessories

Other models and accessories → www.sick.com/W18-3

| | Brief description | Type | Part no. |
|---|---|--------------------|----------|
| 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, M12, 4-pin, straight Cable: unshielded | STE-1204-G | 6009932 |

SICK AT A GLANCE

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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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