

WL18-3N230

W18-3

SMALL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

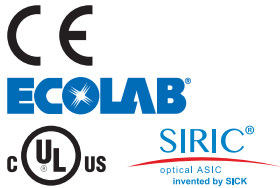


Ordering information

| Type | Part no. |
|------------|----------|
| WL18-3N230 | 1025914 |

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

Illustration may differ



Detailed technical data

Features

| | |
|--|---------------------------------------|
| Functional principle | Photoelectric retro-reflective sensor |
| Functional principle detail | Autocollimation |
| 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. | 0 m ... 7 m ¹⁾ |
| Sensing range | 0 m ... 5 m ¹⁾ |
| Focus | 1.8° |
| Type of light | Visible red light |
| Light source | LED ²⁾ |
| Light spot size (distance) | Ø 40 mm (2 m) |
| Angle of dispersion | 1.8° |
| Wave length | 645 nm |
| Adjustment | Potentiometer, 1 turn |

¹⁾ Reflector PL80A.

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

Mechanics/electronics

| | |
|--|---|
| Supply voltage | 10 V DC ... 30 V DC ¹⁾ |
| Ripple | < 5 V _{pp} ²⁾ |
| Current consumption | 40 mA ³⁾ |
| Switching output | NPN |
| Output function | Complementary |
| Switching mode | Light/dark switching |
| Output current I_{max.} | ≤ 100 mA |
| Response time | < 500 μs ⁴⁾ |
| Switching frequency | 1,000 Hz ⁵⁾ |
| Connection type | Cable, 4-wire, 5 m ⁶⁾ |
| Cable material | PVC |
| Circuit protection | A ⁷⁾ C ⁸⁾ D ⁹⁾ |
| Weight | 260 g |
| Polarisation filter | ✓ |
| 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⁾ Do not bend below 0 °C.

⁷⁾ A = V_S connections reverse-polarity protected.

⁸⁾ C = interference suppression.

⁹⁾ D = outputs overcurrent and short-circuit protected.

Safety-related parameters

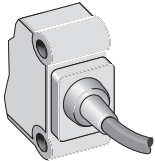
| | |
|-------------------------|-------------|
| MTTF_D | 1,759 years |
| DC_{avg} | 0 % |

Classifications

| | |
|---------------------|----------|
| eCl@ss 5.0 | 27270902 |
| eCl@ss 5.1.4 | 27270902 |
| eCl@ss 6.0 | 27270902 |
| eCl@ss 6.2 | 27270902 |
| eCl@ss 7.0 | 27270902 |
| eCl@ss 8.0 | 27270902 |

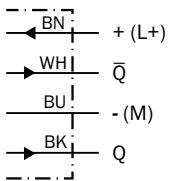
| | |
|-----------------------|----------|
| eCl@ss 8.1 | 27270902 |
| eCl@ss 9.0 | 27270902 |
| eCl@ss 10.0 | 27270902 |
| eCl@ss 11.0 | 27270902 |
| eCl@ss 12.0 | 27270902 |
| ETIM 5.0 | EC002717 |
| ETIM 6.0 | EC002717 |
| ETIM 7.0 | EC002717 |
| ETIM 8.0 | EC002717 |
| UNSPSC 16.0901 | 39121528 |

Connection type



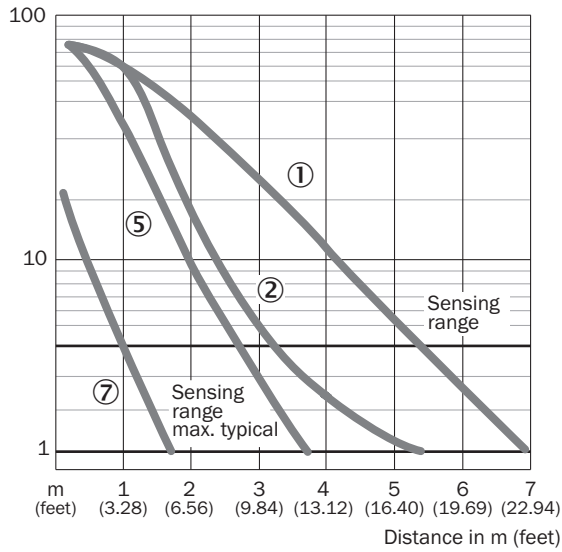
Connection diagram

Cd-094



Characteristic curve

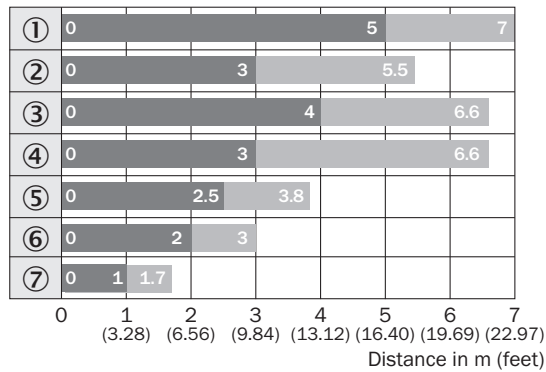
WL18-3, WL18-3 Ex



- ① Reflector PL80A
- ② Reflector C110A
- ⑤ Reflector PL30A
- ⑦ Reflective tape Diamond Grade

Sensing range diagram

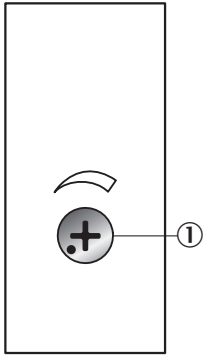
WL18-3, WL18-3 Ex



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

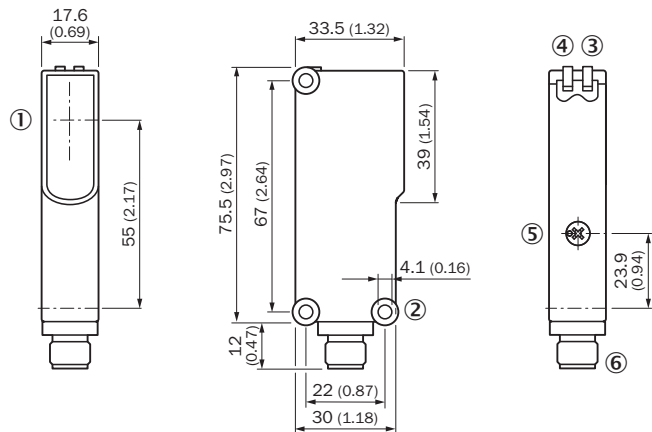
Adjustments

Potentiometer



① Setting of the sensing range: potentiometer, 4 revolutions


Dimensional drawing (Dimensions in mm (inch))





- ① Center of optical axis
- ② Mounting hole \varnothing 4.1 mm
- ③ LED indicator yellow: Status of received light beam
- ④ LED indicator green: Supply voltage active
- ⑤ Sensitivity control, potentiometer 270° on WE
- ⑥ 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. |
|---|---|-------------|----------|
| Mounting brackets and plates | | | |
|  | Universal mounting bracket for reflectors, steel, zinc coated | BEF-WN-REFX | 2064574 |

| | Brief description | Type | Part no. |
|---|---|-------------|-----------------|
| Plug connectors and cables | | | |
|  | Head A: male connector, M12, 4-pin, straight Cable: unshielded | STE-1204-G | 6009932 |
| Reflectors | | | |
|  | Rectangular, screw connection, 84 mm x 84 mm, PMMA/ABS, Screw-on, 2 hole mounting | PL80A | 1003865 |

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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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