



DATA SHEET

WL12L-2B530A02

W12
Photoelectric sensors

SICK

Sensor Intelligence

PHOTOELECTRIC SENSORS

WL12L-2B530A02

ORDERING INFORMATION

| Type | part no. |
|----------------|----------|
| WL12L-2B530A02 | 1019379 |

Further device versions and accessories at www.sick.com/W12



Illustration may differ



DETAILED TECHNICAL DATA

FEATURES

| | | |
|-----------------------------|---|-----------------------------------|
| Functional principle | Photoelectric retro-reflective sensor | |
| Functional principle detail | Without reflector minimum distance (autocollimation/coaxial optics) | |
| Sensing range max. | 0 m ... 18 m ¹⁾ | |
| Polarisation filter | Yes | |
| Emitted beam | Light source | Laser ²⁾ |
| | Type of light | Visible red light |
| | Light spot size (distance) | Ø 0.8 mm (300 mm) |
| Key laser figures | Normative reference | EN 60825-1:2014, IEC 60825-1:2007 |
| | Laser class | 2 ^{3) 4)} |
| Key LED figures | Wave length | 650 nm |
| Adjustment | None | |
| Special features | American version | |
| Special applications | Detecting small objects, Detection of objects moving at high speeds | |

¹⁾ Reflector PL80A.

²⁾ Average service life: 50,000 h at T_v = +25 °C.

³⁾ Pulse length 4 µs, max. pulse power < 5,0 mW.

⁴⁾ Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

ELECTRONICS

| | |
|----------------------|---|
| Supply voltage U_B | 10 V DC ... 30 V DC ¹⁾ |
| Ripple | < 5 V _{pp} ²⁾ |
| Current consumption | 55 mA ³⁾ |
| Protection class | III |
| Digital output | <p>Type PNP, NPN</p> <p>Switching mode Dark switching</p> <p>Switching mode selector Selectable via L/D control cable</p> <p>Signal voltage PNP HIGH/LOW $U_v - < 2.9 \text{ V}, U_v \text{ V} / 0 \text{ V} \leq 1.5 \text{ V}$</p> <p>Signal voltage NPN HIGH/LOW $U_v - < 2.9 \text{ V}, U_v \text{ V} / 0 \text{ V} \leq 1.5 \text{ V}$</p> <p>Output current I_{max} $\leq 100 \text{ mA}$</p> <p>Response time $\leq 200 \mu\text{s}$ ⁴⁾</p> <p>Switching frequency 2,500 Hz ⁵⁾</p> |
| Output function | Complementary |
| Circuit protection | A ⁶⁾ C ⁷⁾ D ⁸⁾ |

¹⁾ Limit values when operated in short-circuit protected network: max. 8 A.

²⁾ May not fall below or exceed 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.

MECHANICS

| | |
|------------------------|--|
| Housing | Rectangular |
| Dimensions (W x H x D) | 15 mm x 49 mm x 41.5 mm |
| Connection | Plug, M12, 5-pin |
| Material | <p>Housing Metal</p> <p>Front screen Plastic, PMMA</p> |
| Weight | 130 g |

AMBIENT DATA

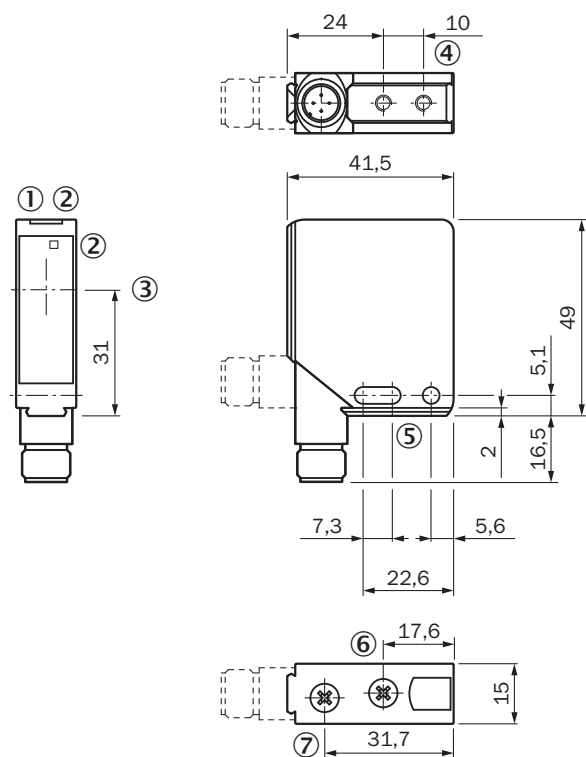
| | |
|-------------------------------|---|
| Enclosure rating | IP67 IP69K |
| Ambient operating temperature | -10 °C ... +50 °C |
| Ambient temperature, storage | -25 °C ... +75 °C |
| UL File No. | American Version, 242362, 242361 (0312012-00) |

CERTIFICATES

| | |
|------------------------------------|---|
| EU declaration of conformity | ✓ |
| UK declaration of conformity | ✓ |
| ACMA declaration of conformity | ✓ |
| Moroccan declaration of conformity | ✓ |

| | |
|--|---|
| China RoHS | ✓ |
| cULus certificate | ✓ |
| Laser safety (IEC 60825-1) certificate | ✓ |

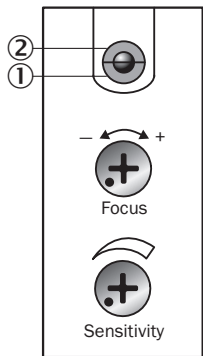
DIMENSIONAL DRAWING WL12L-2, WS/WE12L-2



Dimensions in mm (inch)

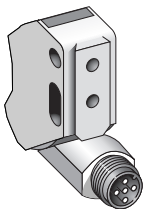
- ① Operating indicator, green
- ② LED reception indicator, yellow
- ③ Center of optical axis
- ④ M4 threaded mounting hole - 4 mm depth
- ⑤ Mounting hole, Ø 4.2 mm
- ⑥ Focal adjustment
- ⑦ sensitivity control

ADJUSTMENTS WL12L-2

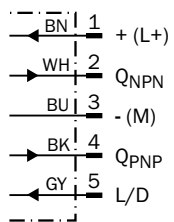


- ① Operating indicator, green
- ② LED reception indicator, yellow
- ⑥ Focal adjustment
- ⑦ sensitivity control

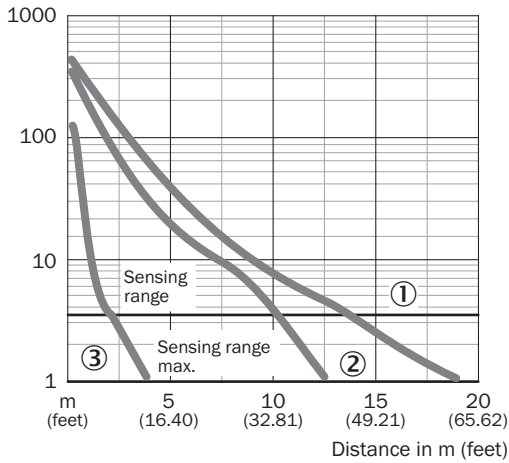
CONNECTION TYPE



CONNECTION DIAGRAM CD-145

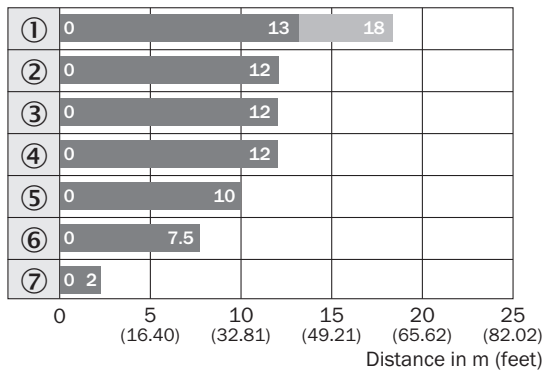


CHARACTERISTIC CURVE WL12L-2, 18 M



- ① Reflector PL80A
- ② Reflector PL50A
- ③ Reflective tape Diamond Grade

SENSING RANGE DIAGRAM WL12L-2, 18 M



■ Sensing range ■ Sensing range typ. max.

- ① Reflector PL80A
- ② Reflector PL50A
- ③ Reflector PL40A
- ④ Reflector P250
- ⑤ Reflector PL30A
- ⑥ Reflector PL20A
- ⑦ Reflective tape Diamond Grade

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1019379



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SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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