



# WLL190T-2M494

WLL190

FIBER-OPTIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

Type	Part no.
WLL190T-2M494	6033298

Other models and accessories → [www.sick.com/WLL190](http://www.sick.com/WLL190)

### Detailed technical data

#### Features

<b>Device type</b>	Fiber-optic sensors
<b>Device type detail</b>	Base unit <sup>1)</sup>
<b>Dimensions (W x H x D)</b>	10.5 mm x 34.8 mm x 68.9 mm
<b>Housing design (light emission)</b>	Rectangular
<b>Sensing range max.</b>	0 m ... 4 m (Through-beam system) <sup>2) 3)</sup>
<b>Sensing range</b>	0 mm ... 160 mm, Proximity system <sup>4) 5)</sup> 0 m ... 900 mm, Through-beam system <sup>6)</sup>
<b>Focus</b>	Approx. 65° <sup>7)</sup>
<b>Type of light</b>	Visible green light
<b>Light source</b>	LED <sup>8)</sup>
<b>Angle of dispersion</b>	Approx. 65° <sup>7)</sup>
<b>Wave length</b>	525 nm
<b>Adjustment</b>	Menu-controlled Single teach-in button Cable
<b>Indication</b>	Display
<b>Display</b>	LED status display / 2x 4-character digital dual displays. Set value (green indicator) and actual value (red indicator) are displayed simultaneously, display of parameters

<sup>1)</sup> Up to 15 expansion units can be connected.

<sup>2)</sup> Sensing range at response time 2 ms. Reduction at shorter response time (see LL3/ WLL190T-2 table).

<sup>3)</sup> LL3-TB02 and tip adapter LL3-TA01.

<sup>4)</sup> Object with 90% remission (based on standard white DIN 5033). Sensing range at 2 ms response time. Reduced at shorter response times (see LL3 / WLL190T-2 tables).

<sup>5)</sup> LL3-DM01.

<sup>6)</sup> LL3-TB01.

<sup>7)</sup> See LL3 fiber-optic data.

<sup>8)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

## Mechanics/electronics

<b>Supply voltage <math>U_B</math></b>	10 V DC ... 24 V DC <sup>1)</sup>
<b>Ripple</b>	$\leq 10\%$ <sup>2)</sup>
<b>Current consumption</b>	50 mA
<b>Switching output</b>	PNP <sup>3) 4)</sup>
<b>Switching mode</b>	Light/dark switching <sup>3) 4)</sup>
<b>Switching mode selector</b>	Manually selectable
<b>Response time</b>	$\leq 2$ ms $\leq 60$ $\mu$ s $\leq 250$ $\mu$ s
<b>Switching frequency</b>	8,333 Hz 2,000 Hz 250 Hz
<b>Time functions</b>	Without time delay Off delay On delay One shot
<b>Delay time</b>	Programmable, 0 ms ... 9,999 ms
<b>Connection type</b>	Male connector M8, 4-pin
<b>Circuit protection</b>	A <sup>5)</sup> B <sup>6)</sup> C <sup>7)</sup> D <sup>8)</sup>
<b>Protection class</b>	III
<b>Weight</b>	25 g
<b>Housing material</b>	Plastic, ABS/PC
<b>Enclosure rating</b>	IP50 <sup>9)</sup>
<b>Ambient operating temperature</b>	-25 °C ... +55 °C <sup>10)</sup>
<b>Ambient temperature, storage</b>	-40 °C ... +70 °C

1)  $\pm 10\%$ .

2) May not exceed or fall below  $U_V$  tolerances.

3) Q1, Q2.

4) Selectable Q2, external teach or counter reset.

5) A =  $V_S$  connections reverse-polarity protected.

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

7) C = interference suppression.

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

9) With correctly attached fibre-optic cable LL3 and closed protection hood.

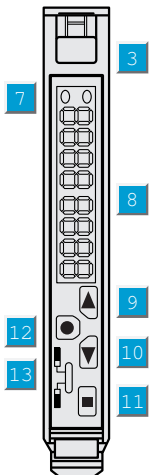
10) Operating temperature fluctuates according to number of devices connected: 4–8 devices: -25 °C ... +50 °C (output current 50 mA) / 9–16 devices: -25 °C ... +45 °C (output current 20 mA).

## Classifications

<b>eCl@ss 5.0</b>	27270905
<b>eCl@ss 5.1.4</b>	27270905
<b>eCl@ss 6.0</b>	27270905
<b>eCl@ss 6.2</b>	27270905
<b>eCl@ss 7.0</b>	27270905
<b>eCl@ss 8.0</b>	27270905

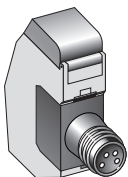
<b>eCl@ss 8.1</b>	27270905
<b>eCl@ss 9.0</b>	27270905
<b>eCl@ss 10.0</b>	27270905
<b>eCl@ss 11.0</b>	27270905
<b>eCl@ss 12.0</b>	27270905
<b>ETIM 5.0</b>	EC002651
<b>ETIM 6.0</b>	EC002651
<b>ETIM 7.0</b>	EC002651
<b>ETIM 8.0</b>	EC002651
<b>UNSPSC 16.0901</b>	39121528

### Adjustments



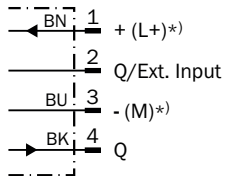
- ③ Locking the fiber-optic cables
- ⑦ LED indicator yellow; Lights continuously: output aktiv; No light: output inactive; Blinks slowly: shot circuit detected
- ⑧ Numeric display 3-digit and 4-digit
- ⑨ Step pushbutton > (manual switching threshold: higher/next function parameter)
- ⑩ Step pushbutton < (manual switching threshold: lower/previous function parameter)
- ⑪ Teach-in button
- ⑫ Mode/Enter-button

### Connection type



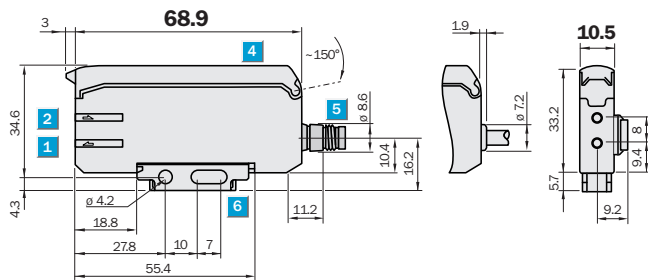
Connection diagram

Cd-139



\*) Only base unit




Dimensional drawing (Dimensions in mm (inch))







- ① Sender LED, installation of LL3 fibre-optic cable (sender fibre)
- ② Receiver, installation of LL3 fibre optic cable (receiver fibre)
- ③ Locking the fiber-optic cables
- ④ Protective hood opens approx. 180°
- ⑤ Connector M8 or 1-wire cable or 3-wire cable replaceable (cables not included with delivery)
- ⑥ Mounting bracket, included with delivery

Recommended accessories

Other models and accessories → [www.sick.com/WLL190](http://www.sick.com/WLL190)

	Brief description	Type	Part no.
<b>Mounting brackets and plates</b>			
	Mounting bracket, steel, zinc coated, without mounting hardware	BEF-WLL170	5306574
<b>Other mounting accessories</b>			
	Rail end piece for block mounting, stainless steel, mounting hardware included	BEF-EB01-W190	5313011
<b>Plug connectors and cables</b>			
	Head A: female connector, M8, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YF8U14-020VA3XLEAX	2095888
	Head A: female connector, M8, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF8U14-050VA3XLEAX	2095889

	Brief description	Type	Part no.
	Head A: female connector, M8, 4-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YG8U14-020VA3XLEAX	2095962
	Head A: female connector, M8, 4-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YG8U14-050VA3XLEAX	2095963
	Head A: female connector, M8, 4-pin, straight Cable: unshielded	DOS-0804-G	6009974
	Head A: female connector, M8, 4-pin, angled Cable: unshielded	DOS-0804-W	6009975
	Head A: male connector, M8, 4-pin, straight Cable: unshielded	STE-0804-G	6037323

## 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:

Contacts and other locations –[www.sick.com](http://www.sick.com)