# WLL190T-2P532
## WLL190

**FIBER-OPTIC SENSORS**

**SICK**
Sensor Intelligence.

# WLL190T-2P532 | WLL190

FIBER-OPTIC SENSORS



Illustration may differ

CE

## Ordering information

| Type | Part no. |
|---|---|
| WLL190T-2P532 | 6032557 |

Other models and accessories ➜ www.sick.com/WLL190

## Detailed technical data

### Features

| | |
|---|---|
| Device type | Fiber-optic sensors |
| Device type detail | Stand-alone |
| Dimensions (W x H x D) | 10.5 mm x 34.8 mm x 76.5 mm |
| Housing design (light emission) | Rectangular |
| Sensing range max. | 0 m ... 4 m (Through-beam system) [1] [2] |
| Sensing range | 0 mm ... 480 mm, Proximity system [3] [4]<br>0 ... 2 m, Through-beam system [5] |
| Focus | Approx. 65° [6] |
| Type of light | Visible red light |
| Light source | LED [7] |
| Angle of dispersion | Approx. 65° [6] |
| Wave length | 650 nm |
| Adjustment | Menu-controlled<br>Single teach-in button<br>Cable |
| Indication | Display |
| Display | LED status display / 2x 4-character digital dual displays, Set value (green indicator) and actual value (red indicator) are displayed simultaneously, display of parameters |

[1] Sensing range at response time 2 ms. Reduction at shorter response time (see LL3/ WLL190T-2 table).

[2] LL3-TB01 and LL3-TA01 tip adaptor.

[3] 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).

[4] LL3-DB01.

[5] LL3-TB01.

[6] See LL3 fiber-optic data.

[7] Average service life: 100,000 h at $T_U$ = +25 °C.

## Mechanics/electronics

| | |
|---|---|
| **Supply voltage $U_B$** | 10 V DC … 24 V DC [1] |
| **Ripple** | ≤ 10 % [2] |
| **Current consumption** | 50 mA |
| **Switching output** | PNP [3] |
| **Output function** | Analog |
| **Switching mode** | Light/dark switching [3] |
| **Switching mode selector** | Manually selectable |
| **Response time** | ≤ 2 ms<br>≤ 60 µs<br>≤ 250 µs |
| **Switching frequency** | 8,333 Hz<br>2,000 Hz<br>250 Hz |
| **Time functions** | Without time delay<br>Off delay<br>On delay<br>One shot |
| **Delay time** | Programmable, 0 ms … 9,999 ms |
| **Connection type** | Cable, 4-wire, 2 m [4] |
| **Cable material** | PVC |
| **Conductor cross section** | 0.2 mm² |
| **Circuit protection** | A [5]<br>B [6]<br>C [7]<br>D [8] |
| **Protection class** | III |
| **Weight** | 20 g |
| **Housing material** | Plastic, ABS/PC |
| **Enclosure rating** | IP66 [9] |
| **Output current $Q_{A2}$** | 4 … 20 mA |
| **Ambient operating temperature** | −25 °C … +55 °C [10] |
| **Ambient temperature, storage** | −40 °C … +70 °C |

[1] +- 10%.

[2] May not exceed or fall below $U_v$ tolerances.

[3] $Q_1$.

[4] Do not bend below 0 °C.

[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).

## Safety-related parameters

| | |
|---|---|
| **$MTTF_D$** | 290 years |

| DC$_{avg}$ | 0 % |
|---|---|

## Classifications

| eCl@ss 5.0 | 27270905 |
|---|---|
| eCl@ss 5.1.4 | 27270905 |
| eCl@ss 6.0 | 27270905 |
| eCl@ss 6.2 | 27270905 |
| eCl@ss 7.0 | 27270905 |
| eCl@ss 8.0 | 27270905 |
| eCl@ss 8.1 | 27270905 |
| eCl@ss 9.0 | 27270905 |
| eCl@ss 10.0 | 27270905 |
| eCl@ss 11.0 | 27270905 |
| eCl@ss 12.0 | 27270905 |
| ETIM 5.0 | EC002651 |
| ETIM 6.0 | EC002651 |
| ETIM 7.0 | EC002651 |
| ETIM 8.0 | EC002651 |
| UNSPSC 16.0901 | 39121528 |

## Adjustments
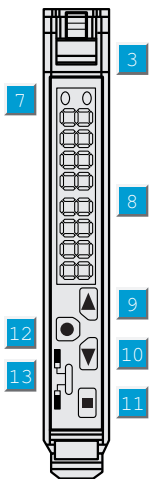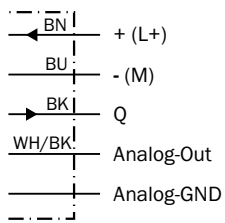
③ Locking the fiber-optic cables
⑦ Status indicator LED, yellow: Output active
⑧ Numeric display 3-digit and 4-digit
⑨ Step pushbutton > (manual switching threshold: higher/next function parameter)
⑩ Step pushbutton < (manual switching threshold: lower/previous function parameter)
⑪ Teach-in button
⑫ Mode/Enter-button
⑬ Operating mode selector switch:"SET" (active Teach-in switching threshold) /"RUN" (sensor mode and function parameter selection)
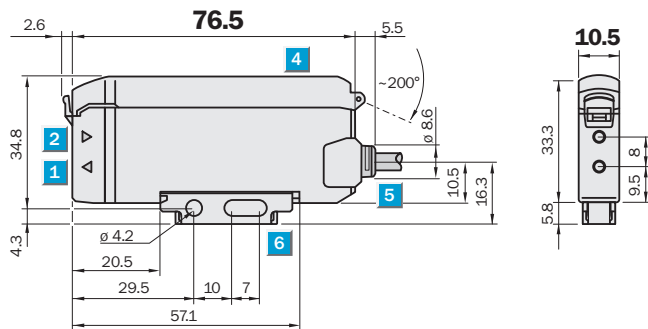
## Connection type
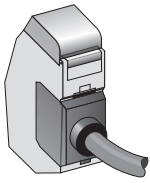


## Connection diagram

Cd-156



BN — + (L+)
BU — - (M)
BK — Q
WH/BK — Analog-Out
— Analog-GND

## 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

| | Brief description | Type | Part no. |
|---|---|---|---|
| **Mounting brackets and plates** | | | |
|  | Mounting bracket, steel, zinc coated, without mounting hardware | BEF-WLL170 | 5306574 |

| Brief description | Type | Part no. |
|---|---|---|
| **Other mounting accessories** | | |
| Rail end piece for block mounting, stainless steel, mounting hardware included | BEF-EB01-W190 | 5313011 |

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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."**

# WORLDWIDE PRESENCE:

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