



fiber-optic sensors  
WLL190T-2, Fiber-optic photoelectric sensor

WLL190T-2F393



**Model Name** > [WLL190T-2F393](#)  
**Part No.** > [6032577](#)



*Illustration may differ*

#### At a glance

- Sensing range up to 4 m, sensing distance up to 480 mm
- Two separately adjustable channels
- Alarm output
- Optional analog output
- Integrated counter
- Bus-compatible with anti-interference
- 2 x 4-digit display
- Red and green LED emitter

#### Your benefits

- Two channels can be configured independently of one another, simplifying installation
- Simple commissioning and product changeover via external teach-in
- Bus communication saves space and money, reduces wiring and eliminates interference caused by fiber-optic heads mounted close to one another
- Easy monitoring of process parameters
- Time delays can be adjusted individually to suit the application
- APC for (Automatic Power Correction) long-term, stable detection
- Alarm output for reliable detection in adverse conditions, ensuring high process reliability



#### Features

|                                   |                                                                                   |
|-----------------------------------|-----------------------------------------------------------------------------------|
| Device type:                      | Expansion unit                                                                    |
| Dimensions (W x H x D):           | 10.5 mm x 34.8 mm x 68.9 mm                                                       |
| Sensing range max.::              | 0 m ... 4 m, through-beam system <sup>1) 2)</sup>                                 |
| Sensing range:::                  | 0,5) 900 mm, through-beam system, 0 mm ... 160 mm, proximity system <sup>3)</sup> |
| Light source:                     | LED <sup>6)</sup>                                                                 |
| Type of light:                    | Green light                                                                       |
| Wave length:                      | 525 nm                                                                            |
| Sensitivity adjustment:           | Teach-in button                                                                   |
| Adjustment of operating distance: | Teach-in button                                                                   |
| Teach-in:                         | Menu-controlled                                                                   |
| Time type:                        | Without time delay<br>time delay off<br>switch on delay<br>one shot               |

|                                  |                                                                                                                                                                             |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Delay time:                      | Programmable: 0 ... 9,999 ms                                                                                                                                                |
| Indication:                      | Display                                                                                                                                                                     |
| Sensor/detection principle:      | Fiber-optic photoelectric sensor                                                                                                                                            |
| Angle of dispersion:             | Ca. 65 °                                                                                                                                                                    |
| Housing design (light emission): | Rectangular                                                                                                                                                                 |
| 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 |

<sup>1)</sup> Sensing range at response time 2 ms. Reduction at shorter response time (see LL3/ WLL190T-2 table) <sup>2)</sup> LL3-TB02 and tip adapter LL3-TA01 <sup>3)</sup> Objects to be sensed with 90% reflectivity (based on DIN 5033 white standard). Sensing range with 2 ms response time. Reduction with shorter response time (see tables LL3/WLL190T-2) <sup>4)</sup> LL3DM01 <sup>5)</sup> LL3-TB01 <sup>6)</sup> Average service life of 100,000 h at  $T_A = +25\text{ °C}$

## Mechanics/electronics

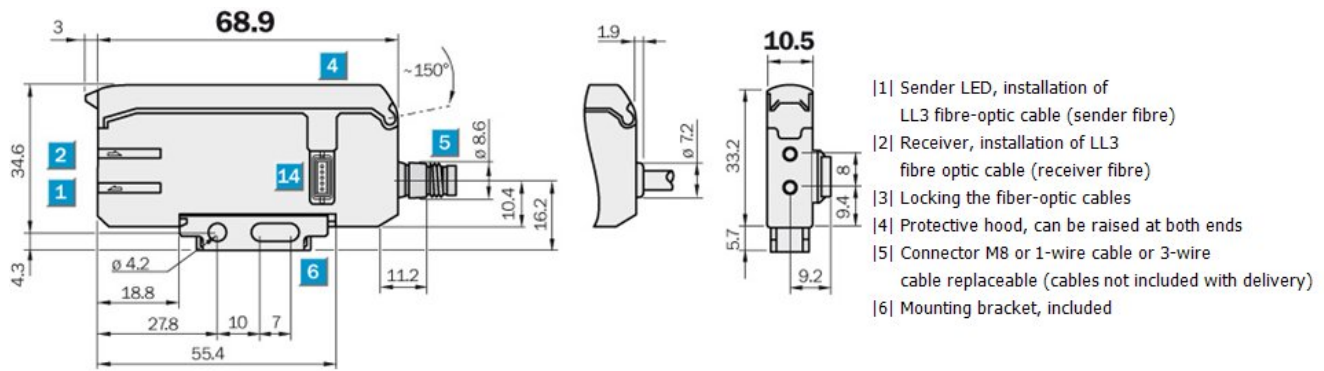
|                                   |                                                                                     |
|-----------------------------------|-------------------------------------------------------------------------------------|
| Enclosure rating:                 | IP 50 <sup>1)</sup>                                                                 |
| Supply voltage:                   | 10 V DC ... 24 V DC <sup>2)</sup>                                                   |
| Ripple:                           | $\leq 10\%$ <sup>3)</sup>                                                           |
| Power consumption:                | $\leq 50\text{ mA}$                                                                 |
| Output type:                      | PNP, Light/dark-switching, manually selectable, open collector <sup>4)</sup>        |
| Output current I <sub>max</sub> : | $\leq 100\text{ mA}$                                                                |
| Response time:                    | $\leq 2\text{ ms}$<br>$\leq 60\text{ }\mu\text{s}$<br>$\leq 250\text{ }\mu\text{s}$ |
| Switching frequency:              | 8,333 Hz<br>2,000 Hz<br>250 Hz                                                      |
| Connection type:                  | Connector M8, 3-pin                                                                 |
| Protection class:                 | III                                                                                 |
| Circuit protection:::             | A, B, C, D <sup>5)</sup> <sup>6)</sup> <sup>7)</sup> <sup>8)</sup>                  |
| Special device:                   | 0                                                                                   |
| Housing material:                 | ABS/PC                                                                              |
| Ambient operating temperature:    | -25 °C ... 55 °C <sup>9)</sup>                                                      |
| Ambient storage temperature:      | -40 °C ... 70 °C                                                                    |
| Weight:                           | 25 g                                                                                |

Q; See LL3 fiber-optic data;

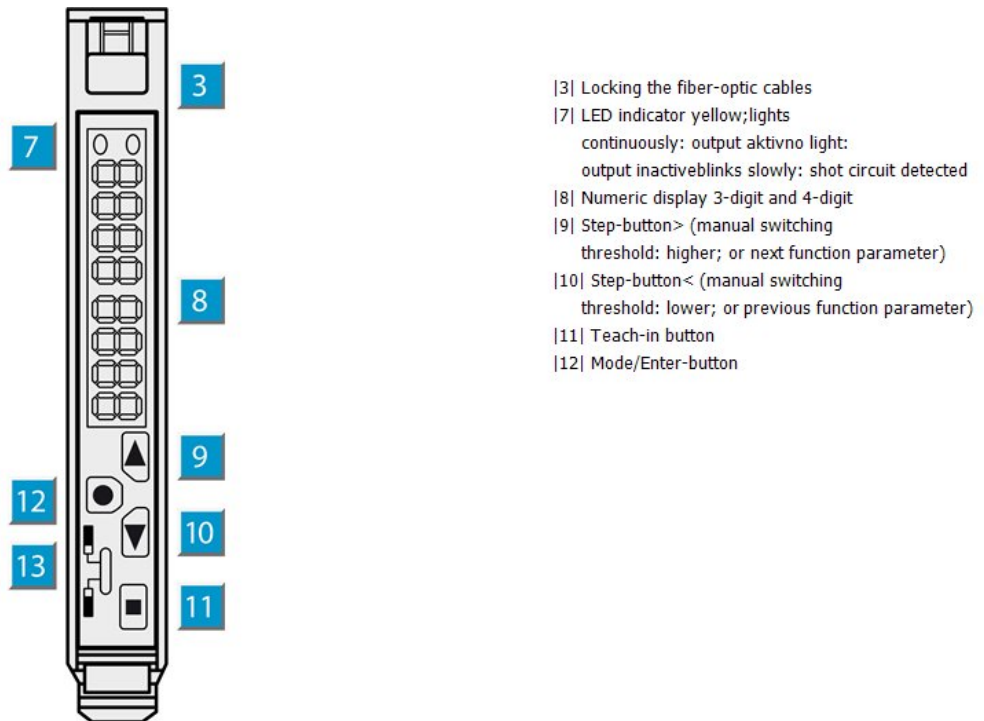
<sup>1)</sup> With correctly attached fibre-optic cable LL3 and closed protection hood <sup>2)</sup>  $\pm 10\%$  <sup>3)</sup> May not exceed or fall short of  $V_S$  tolerances <sup>4)</sup> Q <sup>5)</sup> A =  $V_S$  connections reverse-polarity protected <sup>6)</sup> B = inputs and output reverse-polarity protected <sup>7)</sup> C = interference suppression <sup>8)</sup> D = outputs overcurrent and short-circuit protected <sup>9)</sup>

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)

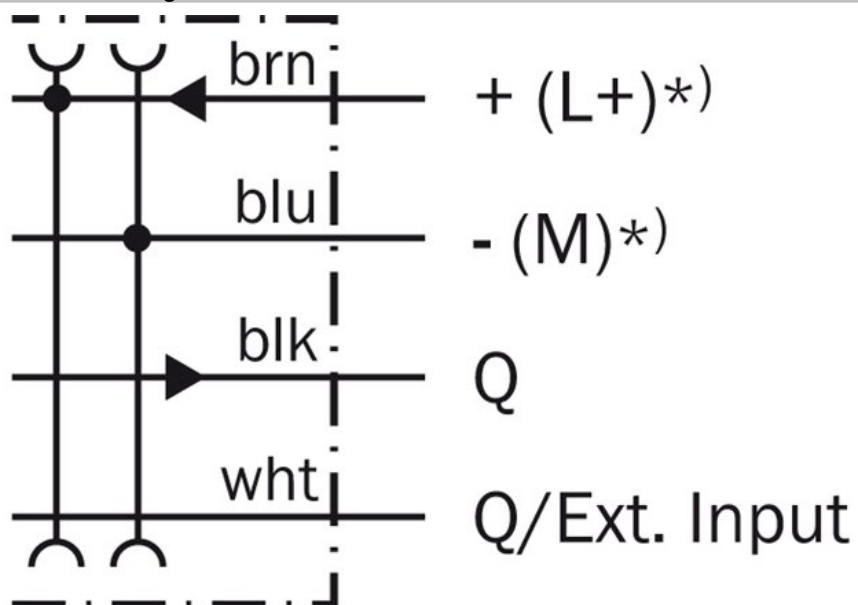
## Dimensional drawing



## Adjustments possible

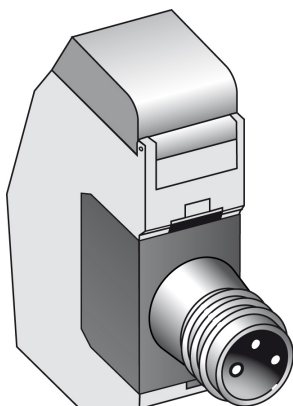


## Connection diagram



$^{*})$  Only base unit

## Connection type



**Australia**

Phone +61 3 9457 0600  
1800 334 802 – tollfree  
E-Mail sales@sick.com.au

**Belgium/Luxembourg**

Phone +32 (0)2 466 55 66  
E-Mail info@sick.be

**Brasil**

Phone +55 11 3215-4900  
E-Mail sac@sick.com.br

**Canada**

Phone +1 905 771 14 44  
E-Mail information@sick.com

**Ceská Republika**

Phone +420 2 57 91 18 50  
E-Mail sick@sick.cz

**China**

Phone +86 4000 121 000  
E-Mail info.china@sick.net.cn  
Phone +852-2153 6300  
E-Mail ghk@sick.com.hk

**Danmark**

Phone +45 45 82 64 00  
E-Mail sick@sick.dk

**Deutschland**

Phone +49 211 5301-301  
E-Mail kundenservice@sick.de

**España**

Phone +34 93 480 31 00  
E-Mail info@sick.es

**France**

Phone +33 1 64 62 35 00  
E-Mail info@sick.fr

**Great Britain**

Phone +44 (0)1727 831121  
E-Mail info@sick.co.uk

**India**

Phone +91-22-4033 8333  
E-Mail info@sick-india.com

**Israel**

Phone +972-4-6801000  
E-Mail info@sick-sensors.com

**Italia**

Phone +39 02 27 43 41  
E-Mail info@sick.it

**Japan**

Phone +81 (0)3 3358 1341  
E-Mail support@sick.jp

**Magyarország**

Phone +36 1 371 2680  
E-Mail office@sick.hu

**Nederlands**

Phone +31 (0)30 229 25 44  
E-Mail info@sick.nl

**Norge**

Phone +47 67 81 50 00  
E-Mail austefjord@sick.no

**Österreich**

Phone +43 (0)22 36 62 28 8-0  
E-Mail office@sick.at

**Polska**

Phone +48 22 837 40 50  
E-Mail info@sick.pl

**România**

Phone +40 356 171 120  
E-Mail office@sick.ro

**Russia**

Phone +7-495-775-05-30  
E-Mail info@sick.ru

**Schweiz**

Phone +41 41 619 29 39  
E-Mail contact@sick.ch

**Singapore**

Phone +65 6744 3732  
E-Mail admin@sicksgp.com.sg

**Slovenija**

Phone +386 (0)1-47 69 990  
E-Mail office@sick.si

**South Africa**

Phone +27 11 472 3733  
E-Mail info@sickautomation.co.za

**South Korea**

Phone +82 2 786 6321/4  
E-Mail info@sickkorea.net

**Suomi**

Phone +358-9-25 15 800  
E-Mail sick@sick.fi

**Sverige**

Phone +46 10 110 10 00  
E-Mail info@sick.se

**Taiwan**

Phone +886-2-2375-6288  
E-Mail sales@sick.com.tw

**Türkiye**

Phone +90 (216) 528 50 00  
E-Mail info@sick.com.tr

**United Arab Emirates**

Phone +971 (0) 4 8865 878  
E-Mail info@sick.ae

**USA/México**

Phone +1(952) 941-6780  
1 800-325-7425 – tollfree  
E-Mail info@sickusa.com

More representatives and agencies  
at [www.sick.com](http://www.sick.com)