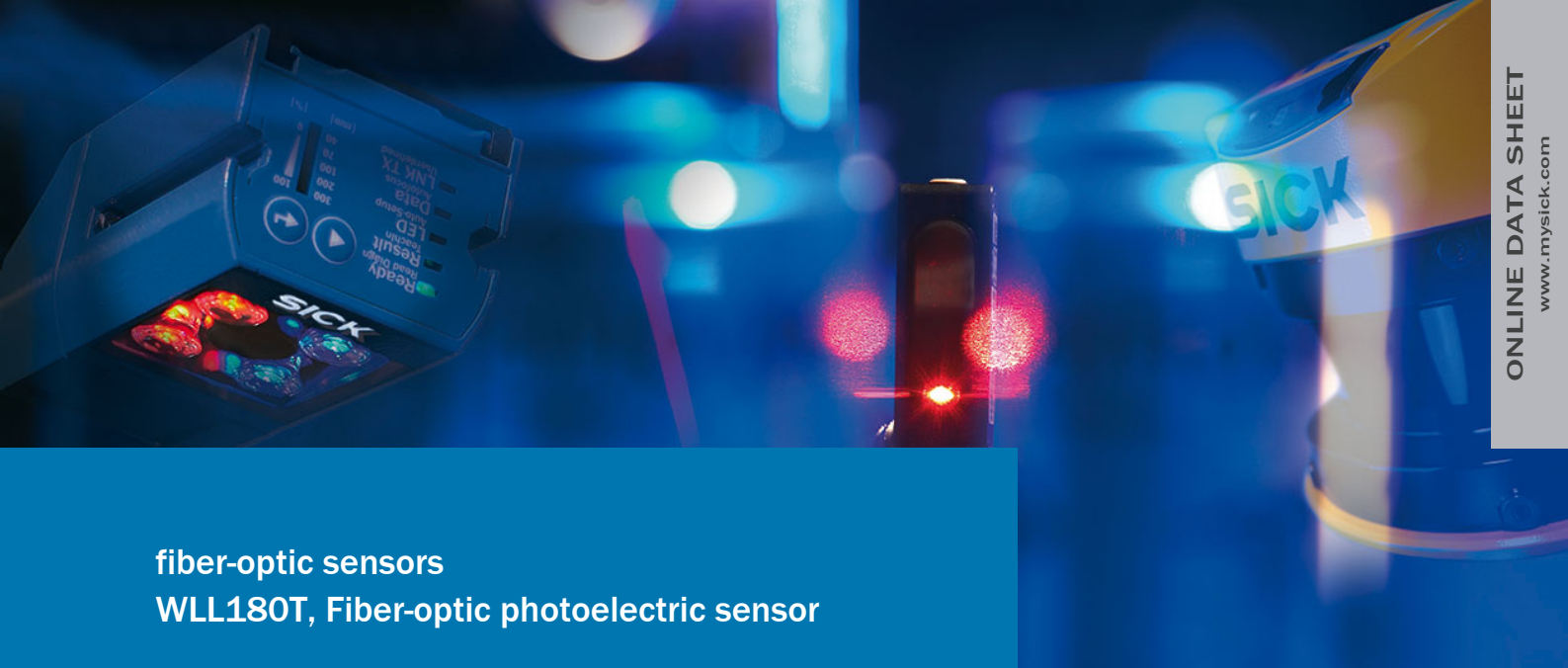




fiber-optic sensors  
WLL180T, Fiber-optic photoelectric sensor

WLL180T-E232



**Model Name** > **WLL180T-E232**  
**Part No.** > **6039100**



*Illustration may differ*

#### At a glance

- Selectable response time up to 16  $\mu$ s
- Sensing range up to 20 m, sensing distance up to 1400 mm
- Bus-compatible with anti-interference
- 2 x 4-digit display
- Adjustable hysteresis
- Rotatable display screen
- High-resolution signal processing
- Programmable time delays

#### Your benefits

- Reliable, rapid process detection, even under the most difficult ambient conditions, such as dust, spray or mist
- Easy commissioning and product changeover due to external teach-in
- Cross-talk is eliminated when utilizing bus configuration option
- Quick, easy setup and adjustment due to an intuitive operating menu
- Flexible parameter adjustment due to high-resolution signal processing. Hysteresis and time delays can be adapted to suit the application, e.g., when detecting tiny or transparent objects
- Easy-to-read display, even under difficult installation conditions



#### Features

|                                   |                                                                                         |
|-----------------------------------|-----------------------------------------------------------------------------------------|
| Device type:                      | Expansion unit                                                                          |
| Dimensions (W x H x D):           | 10.5 mm x 34.6 mm x 71.9 mm                                                             |
| Sensing range max.::              | 0 m ... 20 m, through-beam system <sup>1) 2)</sup>                                      |
| Sensing range:::                  | 0 m ... 18 m, through-beam system, 0 mm ... 1,400 mm, proximity system <sup>3)</sup>    |
| Light source:                     | LED <sup>7)</sup>                                                                       |
| Type of light:                    | Visible red light                                                                       |
| Wave length:                      | 650 nm                                                                                  |
| Sensitivity adjustment:           | Teach-in button<br>cable<br>+/- increment button, manual                                |
| Adjustment of operating distance: | Cable, +/- increment button, manual, Teach-in button                                    |
| Teach-in:                         | Menu-controlled                                                                         |
| Time type:                        | Without time delay<br>time delay off<br>switch on delay<br>ON and OFF 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 |

- 1) 5) Sensing range with 8 ms response time. Reduction with shorter response time (see tables LL3/WLL180T) 2) 6) LL3-TX01 3) Objects to be sensed with 90% reflectivity (based on DIN 5033 white standard). Sensing range with 8 ms response time. Reduction with shorter response time (see tables LL3/WLL180T) 4) LL3-DK06
- 7) Average service life of 100,000 h at  $T_A = +25\text{ °C}$

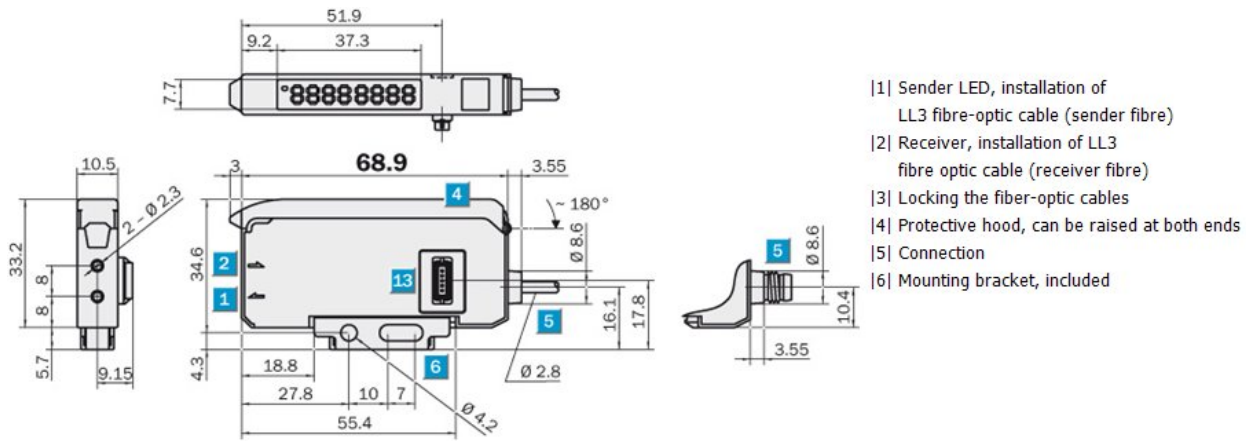
## Mechanics/electronics

|                                   |                                                                                                                                                         |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Enclosure rating:                 | IP 50 <sup>1)</sup>                                                                                                                                     |
| Supply voltage:                   | 12 V DC ... 24 V DC <sup>2)</sup>                                                                                                                       |
| Ripple:                           | $\leq 10\%$ <sup>3)</sup>                                                                                                                               |
| Power consumption:                | $\leq 50\text{ mA}$ <sup>4)</sup>                                                                                                                       |
| Output type:                      | NPN, Light/dark-switching, manually selectable, open collector                                                                                          |
| Output current I <sub>max</sub> : | $\leq 100\text{ mA}$                                                                                                                                    |
| Response time:                    | $\leq 2\text{ ms}$<br>$\leq 8\text{ ms}$<br>$\leq 16\text{ }\mu\text{s}$<br>$\leq 70\text{ }\mu\text{s}$ <sup>5)</sup><br>$\leq 250\text{ }\mu\text{s}$ |
| Switching frequency:              | 31.2 kHz<br>7.1 kHz<br>2 kHz<br>250 Hz<br>62.5 Hz                                                                                                       |
| Connection type:                  | Cable, 2-wire, 2 m <sup>6)</sup>                                                                                                                        |
| Cable material:                   | PVC                                                                                                                                                     |
| Conductor cross-section:          | 0.2 mm <sup>2</sup>                                                                                                                                     |
| Protection class:                 | III                                                                                                                                                     |
| Circuit protection:::             | A, B, C, D <sup>7) 8) 9) 10)</sup>                                                                                                                      |
| Special device:                   | 0                                                                                                                                                       |
| Housing material:                 | ABS/PC                                                                                                                                                  |
| Ambient operating temperature:    | -25 °C ... 55 °C <sup>11)</sup>                                                                                                                         |
| Ambient storage temperature:      | -40 °C ... 70 °C                                                                                                                                        |

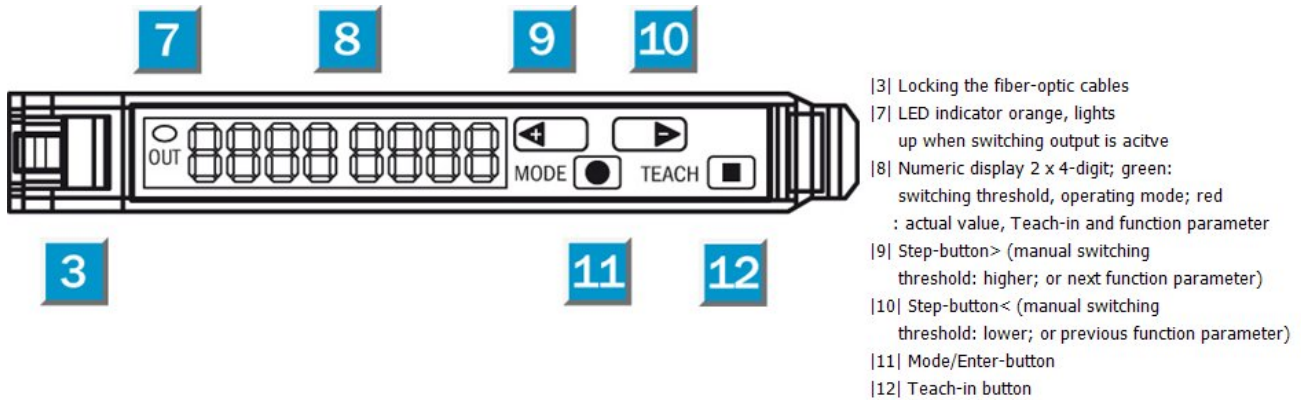
See LL3 fiber-optic data;

- 1) With correctly attached fibre-optic cable LL3 and closed protection hood 2)  $\pm 10\%$  3) May not exceed or fall short of  $V_S$  tolerances 4) Without load 5) Selectable 6)
- Do not bend below 0 °C <sup>7)</sup> A =  $V_S$  connections reverse-polarity protected <sup>8)</sup> B = inputs and output reverse-polarity protected <sup>9)</sup> C = interference suppression <sup>10)</sup> D = outputs overcurrent and short-circuit protected <sup>11)</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)

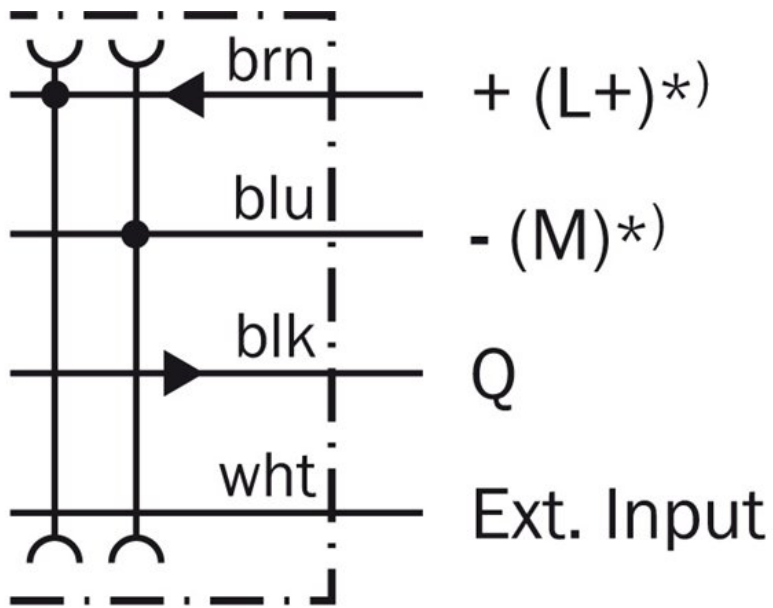
## Dimensional drawing



## Adjustments possible

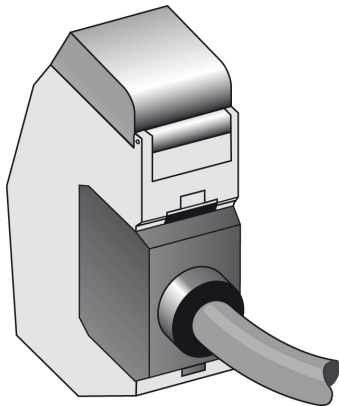


## Connection diagram



\*) Only base unit

## Connection type



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