



Fiber-optic sensors  
WLL180T, Fiber-optic photoelectric sensor

WLL180T-P434



**Model Name** > [WLL180T-P434](#)  
**Part No.** > [6039095](#)



*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:                      | Stand-alone   |
| 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:::                  | 0,5) 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  $T_A = +25\text{ °C}$

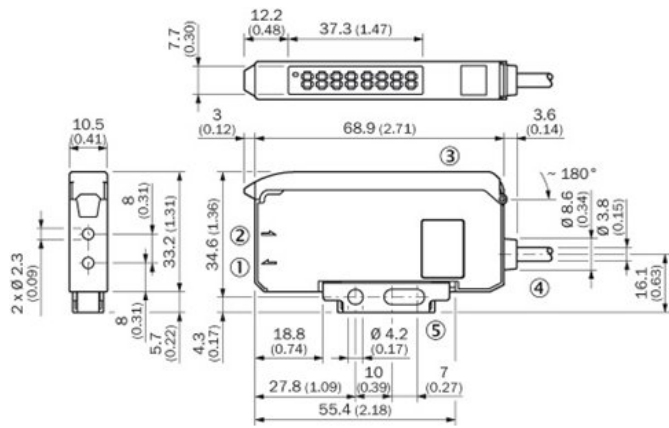
## Mechanics/electronics

|                                    |   |
|------------------------------------|---|
| 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:                       | PNP, 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:                   | Connector M8, 4-pin   |
| Protection class:                  | III   |
| Circuit protection:::              | A, B, C, D <sup>6) 7) 8) 9)</sup>   |
| Special device:                    | 0   |
| Housing material:                  | ABS/PC  |
| Ambient operating temperature:     | -25 °C ... 55 °C  |
| Ambient storage temperature:       | -40 °C ... 70 °C  |

See LL3 fiber-optic data;

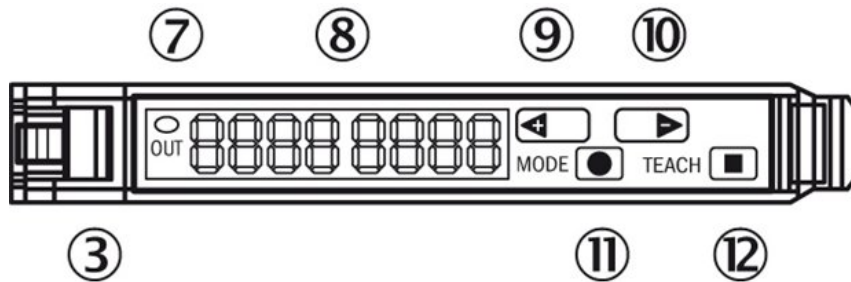
1) With correctly attached fibre-optic cable LL3 and closed protection hood <sup>2)</sup> +/- 10% <sup>3)</sup> May not exceed or fall short of  $V_S$  tolerances <sup>4)</sup> Without load <sup>5)</sup> Selectable <sup>6)</sup>  
A =  $V_S$  connections reverse-polarity protected <sup>7)</sup> B = inputs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

## Dimensional drawing



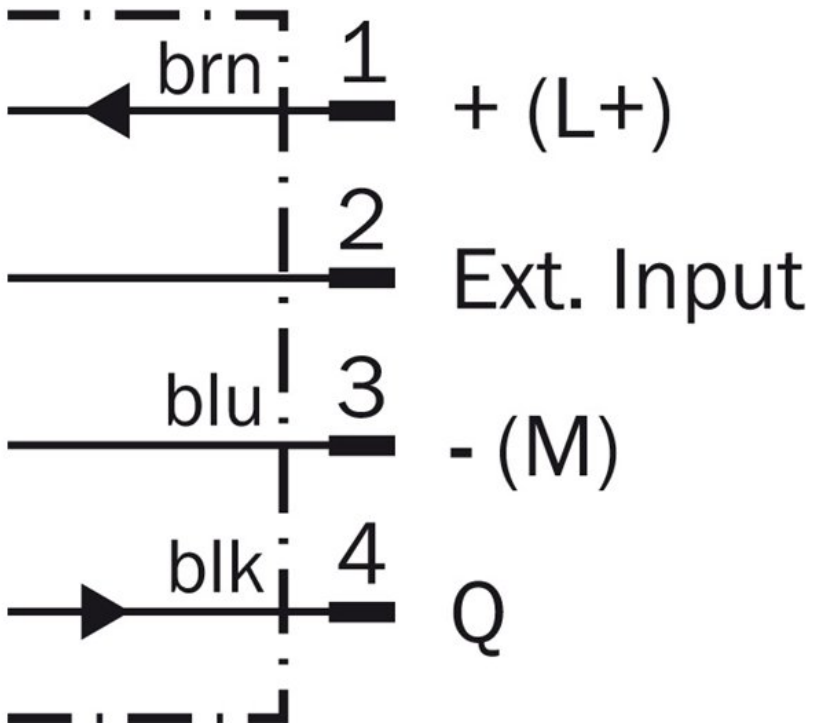
- [1] Sender LED, installation of LL3 fibre-optic cable (sender fibre)
- [2] Receiver, installation of LL3 fibre optic cable (receiver fibre)
- [3] Locking the fiber-optic cables
- [4] Protective hood, can be raised at both ends
- [5] Connection
- [6] Mounting bracket, included

## Adjustments possible

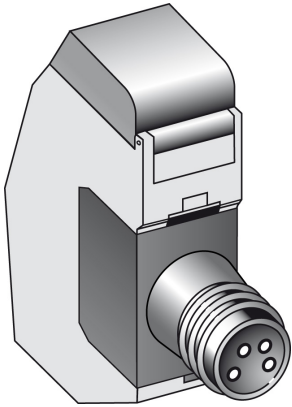


- [3] Locking the fiber-optic cables
- [7] LED indicator orange, lights up when switching output is active
- [8] Numeric display 2 x 4-digit; green: switching threshold, operating mode; red: actual value, Teach-in and function parameter
- [9] Step-button > (manual switching threshold: higher; or next function parameter)
- [10] Step-button < (manual switching threshold: lower; or previous function parameter)
- [11] Mode/Enter-button
- [12] Teach-in button

Connection diagram



Connection type



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