



# WLL180T-F333

WLL180T

FIBER-OPTIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

| Type         | Part no. |
|--------------|----------|
| WLL180T-F333 | 6042429  |

**Included in delivery:** BEF-WLL180 (1)

Other models and accessories → [www.sick.com/WLL180T](http://www.sick.com/WLL180T)

### Detailed technical data

#### Features

|                                        |                                                                                                                                                                             |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Type</b>                            | Expansion unit                                                                                                                                                              |
| <b>Dimensions (W x H x D)</b>          | 10.5 mm x 34.6 mm x 71.9 mm                                                                                                                                                 |
| <b>Housing design (light emission)</b> | Rectangular                                                                                                                                                                 |
| <b>Sensing range max.</b>              | 0 m ... 20 m, Through-beam system <sup>1) 2)</sup>                                                                                                                          |
| <b>Sensing range</b>                   | 0 mm ... 1,400 mm, Proximity system <sup>3) 4)</sup><br>0 m ... 18 m, Through-beam system <sup>1) 2)</sup>                                                                  |
| <b>Focus</b>                           | <sup>5)</sup>                                                                                                                                                               |
| <b>Type of light</b>                   | Visible red light                                                                                                                                                           |
| <b>Light source</b>                    | LED <sup>6)</sup>                                                                                                                                                           |
| <b>Angle of dispersion</b>             | Approx. 65° <sup>5)</sup>                                                                                                                                                   |
| <b>Wave length</b>                     | 650 nm                                                                                                                                                                      |
| <b>Adjustment</b>                      | Menu-controlled<br>Single teach-in button                                                                                                                                   |
| <b>Delay time</b>                      | Programmable, 0 ms ... 9,999 ms                                                                                                                                             |
| <b>Time functions</b>                  | Without time delay<br>Off delay<br>On delay<br>ON and OFF delay<br>One shot                                                                                                 |
| <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> Sensing range with 8 ms response time. Reduction with shorter response time (see tables LL3/WLL180T).

<sup>2)</sup> LL3-TX01.

<sup>3)</sup> 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).

<sup>4)</sup> LL3-DK06.

<sup>5)</sup> See LL3 fiber-optic data.

<sup>6)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

## Mechanics/electronics

|                                        |                                                                             |
|----------------------------------------|-----------------------------------------------------------------------------|
| <b>Supply voltage</b>                  | 12 V DC ... 24 V DC <sup>1)</sup>                                           |
| <b>Ripple</b>                          | ≤ 10 % <sup>2)</sup>                                                        |
| <b>Power consumption</b>               | 50 mA <sup>3)</sup>                                                         |
| <b>Switching output</b>                | PNP                                                                         |
| <b>Number of switching outputs</b>     | 1                                                                           |
| <b>Switching mode</b>                  | Light/dark switching                                                        |
| <b>Switching mode selector</b>         | Manually selectable                                                         |
| <b>Output current I<sub>max.</sub></b> | ≤ 100 mA                                                                    |
| <b>Response time</b>                   | ≤ 16 μs, ≤ 70 μs, ≤ 250 μs, ≤ 2,000 μs, ≤ 8,000 μs <sup>4)</sup>            |
| <b>Switching frequency</b>             | 31.2 kHz<br>7.1 kHz<br>2 kHz<br>250 Hz<br>62.5 Hz                           |
| <b>Time functions</b>                  | Without time delay<br>Off delay<br>On delay<br>ON and OFF delay<br>One shot |
| <b>Delay time</b>                      | Programmable, 0 ms ... 9,999 ms                                             |
| <b>Input</b>                           | -                                                                           |
| <b>Connection type</b>                 | Connector M8, 3-pin                                                         |
| <b>Circuit protection</b>              | A <sup>5)</sup><br>B <sup>6)</sup><br>C <sup>7)</sup><br>D <sup>8)</sup>    |
| <b>Protection class</b>                | III                                                                         |
| <b>Housing material</b>                | Plastic, ABS/PC                                                             |
| <b>Enclosure rating</b>                | IP50 <sup>9)</sup>                                                          |
| <b>Items supplied</b>                  | BEF-WLL180 mounting bracket                                                 |
| <b>Ambient operating temperature</b>   | -25 °C ... +55 °C <sup>10)</sup>                                            |
| <b>Ambient storage temperature</b>     | -40 °C ... +70 °C                                                           |
| <b>UL File No.</b>                     | NRKH2.E300503 & NRKH8.E300503                                               |

<sup>1)</sup> ± 10%.

<sup>2)</sup> May not exceed or fall below U<sub>V</sub> tolerances.

<sup>3)</sup> Without load.

<sup>4)</sup> Selectable.

<sup>5)</sup> A = V<sub>S</sub> 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> With correctly attached fibre-optic cable LL3 and closed protection hood.

<sup>10)</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).

## Safety-related parameters

|                         |           |
|-------------------------|-----------|
| <b>MTTF<sub>D</sub></b> | 317 years |
|-------------------------|-----------|

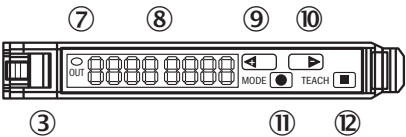
|                         |    |
|-------------------------|----|
| <b>DC<sub>avg</sub></b> | 0% |
|-------------------------|----|

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>ETIM 5.0</b>       | EC002651 |
| <b>ETIM 6.0</b>       | EC002651 |
| <b>UNSPSC 16.0901</b> | 39121528 |

Adjustments possible

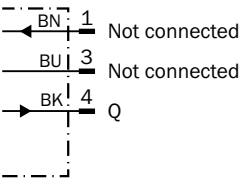
WLL180T



- 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 pushbutton > (manual switching threshold: higher/next function parameter)
- ⑩ Step pushbutton < (manual switching threshold: lower/previous function parameter)
- ⑪ Mode/Enter-button
- ⑫ Teach-in button

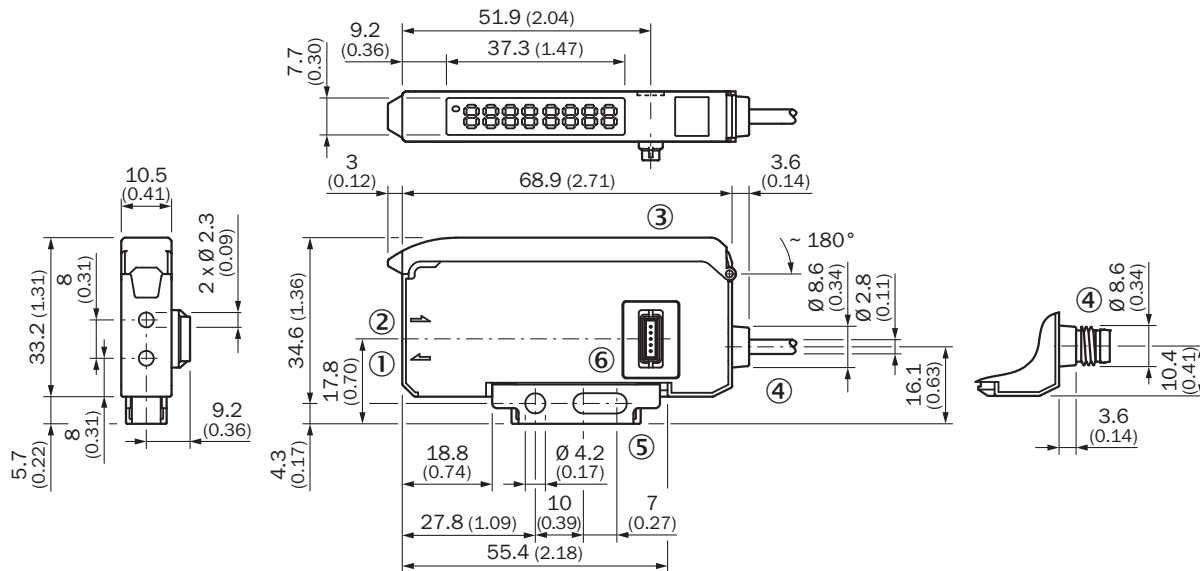
Connection diagram

Cd-362



## Dimensional drawing (Dimensions in mm (inch))

Expansion unit



- ① Sender LED, installation of LL3 fibre-optic cable (sender fibre)
- ② Receiver, installation of LL3 fibre optic cable (receiver fibre)
- ③ Protective hood opens approx. 180°
- ④ Connection
- ⑤ Mounting bracket, included with delivery
- ⑥ Bus connector

## Recommended accessories

Other models and accessories → [www.sick.com/WLL180T](http://www.sick.com/WLL180T)

|                                                                                     | Brief description                                                                                                                                                                                                                                                | Type          | Part no. |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------|
| <b>Mounting brackets and plates</b>                                                 |                                                                                                                                                                                                                                                                  |               |          |
|  | Mounting bracket, steel, zinc coated, without mounting hardware                                                                                                                                                                                                  | BEF-WLL180    | 5325812  |
| <b>Other mounting accessories</b>                                                   |                                                                                                                                                                                                                                                                  |               |          |
|  | Rail end piece for block mounting, stainless steel, mounting hardware included                                                                                                                                                                                   | BEF-EB01-W190 | 5313011  |
| <b>Modules and gateways</b>                                                         |                                                                                                                                                                                                                                                                  |               |          |
|  | EtherCATcoupler for WLL180T, KTL180 and AOD1. Properties: EtherCAT; transmission rates up to 100 MBaud; M12 connection; PEtherCAT ; connection of voltage supply M8, 4-pin; full read / write functionality of process and service data of the connected sensors | WI180C-EC     | 6068089  |
|  | Features: PROFIBUS DP-V1 Slave; transfer rates of 9,6 KBit/s - 12 MBit/s; D-Sub connection (RS485), 9-pin, PROFIBUS; connection M8, 4-pin; Access to all parameters of the connected sensors.                                                                    | WI180C-PB     | 6052566  |

|                                                                                   | Brief description                                                                                                                                                                                                                                                           | Type               | Part no. |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
|  | Profinet coupler for WLL180T, KTL180 and AOD1. Properties: PROFINET IRT; transmission rates of 10 MBaud - 100 MBaud; M12 connection; PROFINET; connection of voltage supply M8, 4-pin; full read / write functionality of process and service data of the connected sensors | WI180C-PN          | 6068088  |
| Plug connectors and cables                                                        |                                                                                                                                                                                                                                                                             |                    |          |
|  | Head A: female connector, M8, 3-pin, straight, A-coded<br>Head B: Flying leads<br>Cable: Sensor/actuator cable, PVC, unshielded, 2 m                                                                                                                                        | YF8U13-020VA1XLEAX | 2095860  |
|                                                                                   | Head A: female connector, M8, 3-pin, straight, A-coded<br>Head B: Flying leads<br>Cable: Sensor/actuator cable, PVC, unshielded, 5 m                                                                                                                                        | YF8U13-050VA1XLEAX | 2095884  |
|  | Head A: female connector, M8, 3-pin, angled, A-coded<br>Head B: Flying leads<br>Cable: Sensor/actuator cable, PVC, unshielded, 2 m                                                                                                                                          | YG8U13-020VA1XLEAX | 2096165  |
|                                                                                   | Head A: female connector, M8, 3-pin, angled, A-coded<br>Head B: Flying leads<br>Cable: Sensor/actuator cable, PVC, unshielded, 5 m                                                                                                                                          | YG8U13-050VA1XLEAX | 2096166  |

## 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)