Product data sheet

WLL180T
P434
SICK
SICK
BROWN: 1-L+ 12...24VDC
BLUE : 3-M 0V
BLACK : 4-Q OUT ≤ 0.1A
WHITE : 2-EXTERNAL INPUT
WLL180T-P434
6039095
0936K
CE
MADE IN JAPAN

# WLL180T-P474S14

## WLL180

**FIBER-OPTIC SENSORS**

SICK
Sensor Intelligence.

Illustration may differ

## Ordering information

| Type | Part no. |
|---|---|
| WLL180T-P474S14 | 6052848 |

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

Other models and accessories ➜ www.sick.com/WLL180

## Detailed technical data

### Features

| | |
|---|---|
| **Device type** | Fiber-optic sensors |
| **Device type detail** | Stand-alone |
| **Dimensions (W x H x D)** | 10.5 mm x 34.6 mm x 71.9 mm |
| **Housing design (light emission)** | Rectangular |
| **Sensing range max.** | 0 mm ... 1,000 mm (Through-beam system) 1) 2) |
| **Sensing range** | 0 mm ... 400 mm, Proximity system 3) 4)<br>0 m ... 850 mm, Through-beam system 1) 2) |
| **Focus** | Approx. 65 ° 5) |
| **Type of light** | Infrared light |
| **Light source** | LED 6) |
| **Angle of dispersion** | Approx. 65 ° 5) |
| **Wave length** | 880 nm |
| **Adjustment** | Menu-controlled<br>Single teach-in button<br>Cable |
| **Indication** | 7-segment |
| **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 with 8 ms response time. Reduction with shorter response time (see tables LL3/WLL180T).

2) LL3-TW01.

3) Object with 90% remission (based on standard white DIN 5033). Sensing range at 8 ms response time. Reduced at shorter response times (see LL3 / WLL180T tables).

4) LL3-DW01.

5) See LL3 fiber-optic data.

6) Average service life: 100,000 h at $T_U$ = +25 °C.

## Mechanics/electronics

| | |
|---|---|
| **Supply voltage $U_B$** | 12 V DC ... 24 V DC 1) |
| **Ripple** | ≤ 10 % 2) |
| **Current consumption** | 50 mA 3) |
| **Switching output** | PNP |
| **Number of switching outputs** | 1 |
| **Switching mode** | Light/dark switching |
| **Switching mode selector** | Manually selectable |
| **Response time** | ≤ 16 μs, ≤ 70 μs, ≤ 250 μs, ≤ 2,000 μs, ≤ 8,000 μs 4) |
| **Switching frequency** | 31.2 kHz, 7.1 kHz, 2 kHz, 250 Hz, 62.5 Hz |
| **Time functions** | Without time delayoff delayon delayON and OFF delayone shot |
| **Delay time** | Programmable, 0 ms ... 9,999 ms |
| **Input** | - |
| **Connection type** | Male connector M8, 4-pin |
| **Circuit protection** | A 5)<br>B 6)<br>C 7)<br>D 8) |
| **Protection class** | III |
| **Weight** | 20 g |
| **Special device** | ✓ |
| **Housing material** | Plastic, ABS/PC |
| **Enclosure rating** | IP50 9) |
| **Items supplied** | BEF-WLL180 mounting bracket |
| **Ambient operating temperature** | –25 °C ... +55 °C |
| **Ambient temperature, storage** | –40 °C ... +70 °C |
| **UL File No.** | NRKH2.E300503 & NRKH8.E300503 |

1) +- 10%.

2) May not exceed or fall below $U_V$ tolerances.

3) Without load.

4) Selectable.

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.

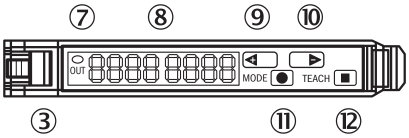
## Classifications

| | |
|---|---|
| **ECLASS 5.0** | 27270905 |
| **ECLASS 5.1.4** | 27270905 |
| **ECLASS 6.0** | 27270905 |
| **ECLASS 6.2** | 27270905 |
| **ECLASS 7.0** | 27270905 |
| **ECLASS 8.0** | 27270905 |

| | |
|---|---|
| **ECLASS 8.1** | 27270905 |
| **ECLASS 9.0** | 27270905 |
| **ECLASS 10.0** | 27270905 |
| **ECLASS 11.0** | 27270905 |
| **ECLASS 12.0** | 27270905 |
| **ETIM 5.0** | EC002651 |
| **ETIM 6.0** | EC002651 |
| **ETIM 7.0** | EC002651 |
| **ETIM 8.0** | EC002651 |
| **UNSPSC 16.0901** | 39121528 |

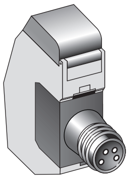
## Adjustments

WLL180



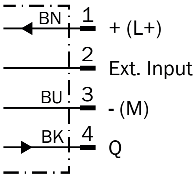
③ Locking the fiber-optic cables
⑦ LED indicator orange, lights up when switching output is active
⑧ Numeric display 2 x 4-digit; green: switching threshold, operating mode; red: actual value, Teach-in and function parameter
⑨ Step pushbutton > (manual switching threshold: higher/next function parameter)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

## Connection type



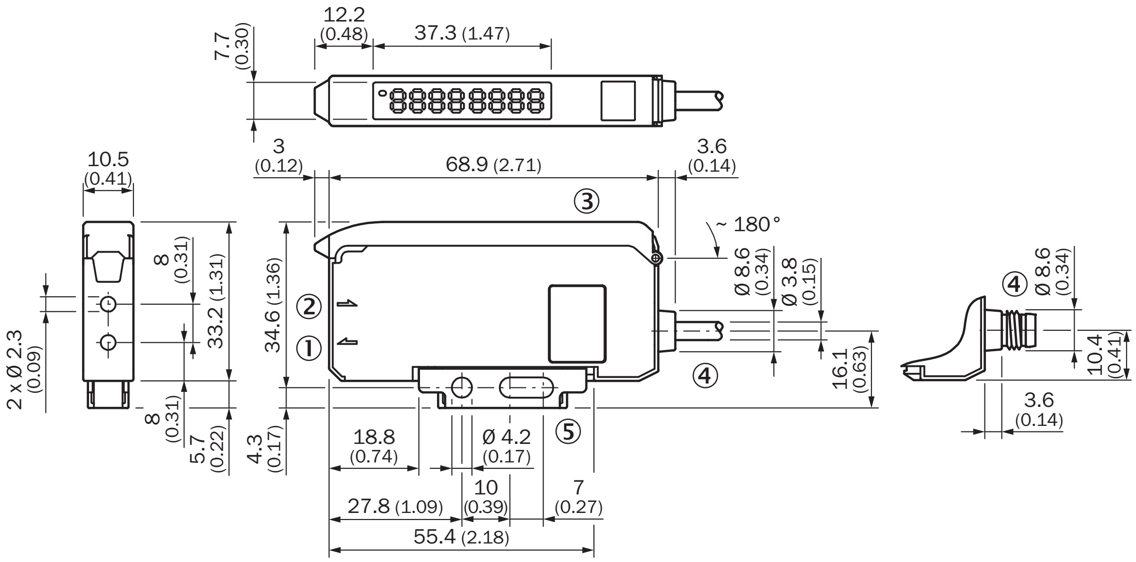
## Connection diagram

Cd-134



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

Stand-alone


12.2
(0.48)
37.3 (1.47)
7.7
(0.30)
3
(0.12)
68.9 (2.71)
3.6
(0.14)
10.5
(0.41)
③
~ 180°
2 x Ø 2.3
(0.09)
8
(0.31)
33.2 (1.31)
34.6 (1.36)
②
①
Ø 8.6
(0.34)
Ø 3.8
(0.15)
④
Ø 8.6
(0.34)
16.1
(0.63)
10.4
(0.41)
④
3.6
(0.14)
8
(0.31)
5.7
(0.22)
4.3
(0.17)
18.8
(0.74)
Ø 4.2
(0.17)
⑤
10
(0.39)
7
(0.27)
27.8 (1.09)
55.4 (2.18)

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

## Recommended accessories

Other models and accessories → www.sick.com/WLL180

| | Brief description | Type | Part no. |
|---|---|---|---|
| Plug connectors and cables | | | |
| | • **Connection type head A:** Female connector, M8, 4-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 2 m, 4-wire, PVC<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Application:** Zones with chemicals | YF8U14-020VA3XLEAX | 2095888 |
| | • **Connection type head A:** Female connector, M8, 4-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 5 m, 4-wire, PVC<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Application:** Zones with chemicals | YF8U14-050VA3XLEAX | 2095889 |
| | • **Connection type head A:** Female connector, M8, 4-pin, angled, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 2 m, 4-wire, PVC<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Application:** Zones with chemicals | YG8U14-020VA3XLEAX | 2095962 |

| | Brief description | Type | Part no. |
|---|---|---|---|
| | • **Connection type head A:** Female connector, M8, 4-pin, angled, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 5 m, 4-wire, PVC<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Application:** Zones with chemicals | YG8U14-050VA3XLEAX | 2095963 |
| Fibers | | | |
| | LL3-TH08 | LL3-TH08 | 5325978 |

# 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