



## WLL80P-1IUXY1XZS03Z1Z1

WLL80

FIBER-OPTIC SENSORS

**SICK**  
Sensor Intelligence.



## Ordering information

Type	part no.
WLL80P-1IUXY1XZS03Z1Z1	6089262

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

Other models and accessories → [www.sick.com/WLL80](http://www.sick.com/WLL80)

Illustration may differ



## Detailed technical data

## Features

<b>Device type</b>	Fiber-optic amplifier	
<b>Device type detail</b>	Stand-alone	
<b>Functional principle detail</b>	Depending on the optical fiber cable used	
<b>Sensing range max.</b>	Depending on the optical fiber cable used	
<b>Emitted beam</b>	Light source	LED
	Type of light	Visible red light
<b>Key LED figures</b>		
Normative reference	EN 62471:2008-09   IEC 62471:2006, modified	
LED risk group marking	Free group	
Wave length	660 nm	
Average service life	100,000 h at $T_a = +25^\circ\text{C}$	
<b>Adjustment</b>		
Wire/pin	For deactivating the sender and executing the test logic/for setting the sensing range/for resetting the counter/load parameter set (job) via cable/pin2	
Display + operating buttons	For configuring the sensor parameters	
<b>Display</b>		
LED green	Operating indicatorStatic on: power on	
LED yellow 1	Status of switching output 1Permanently on: Switching output 1 activePermanently off: Switching output 1 not activeFlashing: Executing teach-in/teach-in error	
LED yellow 2	Status of switching output 2Permanently on: Switching output 2 activePermanently off: Switching output 2 not activeFlashing: Executing teach-in/teach-in error	
Display	Display of sensor functionsMenu languages. German, English, Chinese, Korean, Japanese	
<b>Special features</b>	Function: Load parameter set (job) via cable / Pin2	
<b>Items supplied</b>	BEF-WLL180 mounting bracket	

## Safety-related parameters

<b>MTTF<sub>D</sub></b>	324.1 years
<b>DC<sub>avg</sub></b>	0%
<b>T<sub>M</sub> (mission time)</b>	20 years

## Electronics

<b>Supply voltage U<sub>B</sub></b>	12 V DC ... 30 V DC <sup>1)</sup>
<b>Ripple</b>	± 10 %
<b>Current consumption</b>	≤ 50 mA
<b>Protection class</b>	III
<b>Digital output</b>	
Number	2 (individually adjustable)
Type	Push-pull: PNP/NPN <sup>2)</sup>
	PNP
	NPN: open collector
Signal voltage PNP HIGH/LOW	Approx. U <sub>B</sub> -2.5 V / 0 V
Signal voltage NPN HIGH/LOW	Approx. U <sub>B</sub> / < 2.5 V
Output current I <sub>max.</sub>	≤ 100 mA
Circuit protection outputs	Reverse polarity protected
	Overcurrent protected
	Short-circuit protected
Response time	≤ 16 µs
	≤ 70 µs
	≤ 250 µs
	≤ 500 µs
	≤ 1,000 µs
	≤ 2,000 µs
	≤ 8,000 µs
Switching frequency	31.2 kHz <sup>3)</sup>
	7.1 kHz
	2 kHz
	1 kHz
	500 Hz
	250 Hz
	62.5 Hz
Time functions	Switch-on delay, off delay, ON and OFF delay, Impulse (one shot), Switch-on delay and pulse, deactivated
Delay time	Adjustment via operating buttons, 0 ms ... 30,000 ms
<b>Digital input</b>	
Number	1

<sup>1)</sup> Limit values.<sup>2)</sup> Selectable via menu.<sup>3)</sup> With light/dark ratio 1:1.

Pin/Wire assignment	
Function of pin 4/black (BK)	Digital output, object present → Output Q1 HIGH
Function of pin 2/white (WH)	Load job
Function of pin 2/white (WH) – detail	The pin 2 function of the sensor can be configured
Pin 5 function/gray (GY)	Switching output, object present → Q <sub>L2</sub> output HIGH
Pin 5 function/gray (GY) – detail	The pin 5 function of the sensor can be configured

<sup>1)</sup> Limit values.<sup>2)</sup> Selectable via menu.<sup>3)</sup> With light/dark ratio 1:1.

## Mechanics

<b>Housing</b>	Rectangular
<b>Dimensions (W x H x D)</b>	10.5 mm x 33.2 mm x 79.9 mm
<b>Connection</b>	Cable, 5-wire, 2 m
<b>Connection detail</b>	
Conductor size	0.18 mm <sup>2</sup>
Cable diameter	Ø 4 mm
Length of cable (L)	2 m
<b>Material</b>	
Housing	Plastic, PC
Cable	Plastic, PVC
<b>Weight</b>	Approx. 76 g

## Ambient data

<b>Enclosure rating</b>	IP54 (EN 60529)
<b>Ambient operating temperature</b>	-25 °C ... +55 °C
<b>Ambient temperature, storage</b>	-40 °C ... +70 °C
<b>Typ. Ambient light immunity</b>	Artificial light: ≤ 3,000 lx Sunlight: ≤ 10,000 lx
<b>Shock resistance</b>	50 g, 11 ms (3 positive and 3 negative shocks along X, Y, Z axes, 18 total shocks (EN60068-2-27))
<b>Vibration resistance</b>	10 Hz ... 55 Hz (Amplitude 1 mm, 3 x 30 min (EN60068-2-6))
<b>Air humidity</b>	35 % ... 85 %, relative humidity (no condensation)
<b>Electromagnetic compatibility (EMC)</b>	EN 60947-5-2

## Smart Task

<b>Smart Task name</b>	Counter + debouncing
<b>Timer function</b>	Deactivated Switch-on delay Off delay ON and OFF delay Impulse (one shot) Switch-on delay and pulse
<b>Inverter</b>	Yes
<b>Switching signal</b>	
Switching signal Q <sub>L1</sub>	Switching output
Switching signal Q <sub>L2</sub>	Switching output

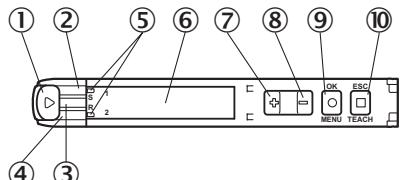
## Certificates

<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>Moroccan declaration of conformity</b>	✓
<b>China-RoHS</b>	✓
<b>cULus certificate</b>	✓
<b>Photobiological safety (DIN EN 62471) certificate</b>	✓

## Classifications

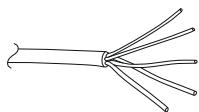
<b>ECLASS 5.0</b>	27270905
<b>ECLASS 5.1.4</b>	27270905
<b>ECLASS 6.0</b>	27270905
<b>ECLASS 6.2</b>	27270905
<b>ECLASS 7.0</b>	27270905
<b>ECLASS 8.0</b>	27270905
<b>ECLASS 8.1</b>	27270905
<b>ECLASS 9.0</b>	27270905
<b>ECLASS 10.0</b>	27270905
<b>ECLASS 11.0</b>	27270905
<b>ECLASS 12.0</b>	27270905
<b>ETIM 5.0</b>	EC002651
<b>ETIM 6.0</b>	EC002651
<b>ETIM 7.0</b>	EC002651
<b>ETIM 8.0</b>	EC002651
<b>UNSPSC 16.0901</b>	39121528

## display and adjustment elements

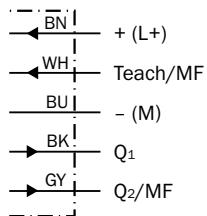


- ① Fiber optic interlock
- ② LED yellow 1
- ③ LED green
- ④ LED yellow 2
- ⑤ Indicator for correctly inserted fibers
- ⑥ Display
- ⑦ (+) button
- ⑧ (-) pushbutton
- ⑨ Menu/OK pushbutton
- ⑩ Teach-in/escape pushbutton

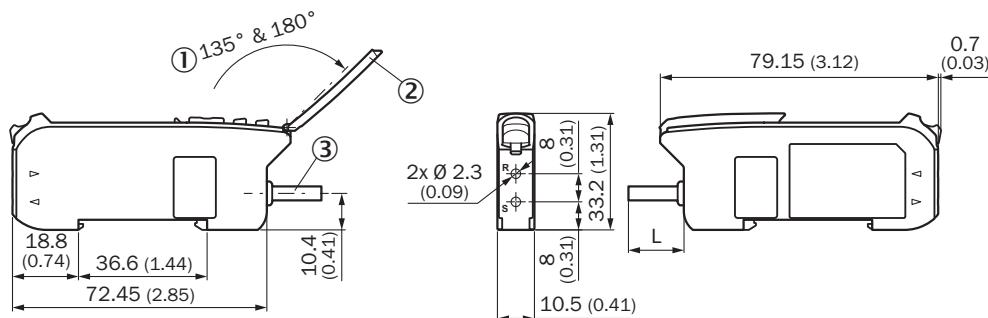
## Connection type Cable, 5-wire



## Connection diagram Cd-529



## Dimensional drawing



Dimensions in mm (inch)

① aperture angle

② Hinged cover for the pushbuttons

③ Connection

## Recommended accessories

Other models and accessories → [www.sick.com/WLL80](http://www.sick.com/WLL80)

	Brief description	Type	part no.
fiber-optic sensors			
	<ul style="list-style-type: none"> <li>For fiber optic amplifiers: WLL80, WLL180, GLL170(T)</li> <li>Functional principle: Proximity system</li> <li>Fiber length: 2,000 mm</li> <li>Thread diameter (housing): M3</li> <li>Fiber material: Plastic</li> <li>Jacket material: Plastic</li> <li>Fiber head material: Stainless steel</li> <li>Included with delivery: Mounting, 2 x M3 hexagon nut, 2 x washer, adapter sleeves, BF-WLL160-13 (1.3 mm) adapter sleeves, FC fiber cutter (5304141)</li> </ul>	LL3-DT01	5308076

## 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)