



# WLL80P-22T6Y2DZA71Z1Z1

WLL80

FIBER-OPTIC AMPLIFIER

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

Type	Part no.
WLL80P-22T6Y2DZA71Z1Z1	6084904

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

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

### 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 <sub>a</sub> = +25 °C
<b>Adjustment</b>	
IO-Link	For configuring the sensor parameters and Smart Task functions
Wire/pin	For deactivating the sender and executing the test logic/for setting the sensing range/for resetting the counter
Display + operating buttons	For configuring the sensor parameters
<b>Indication</b>	
LED green	Operating indicator Static on: power on Flashing: IO-Link mode
LED yellow 1	Status of switching output 1 Permanently on: Switching output 1 active Permanently off: Switching output 1 not active Flashing: Executing teach-in/teach-in error

LED yellow 2	Status of switching output 2 Permanently on: Switching output 2 active Permanently off: Switching output 2 not active Flashing: Executing teach-in/teach-in error
Display	Display of sensor functions Menu languages: German, English, Chinese, Korean, Japanese OLED display
<b>Special features</b>	Reduced scanning range to avoid operation in the saturation range
<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

### Communication interface

<b>IO-Link</b>	✓, IO-Link V1.1
Data transmission rate	COM3 (230.4 kbit/s)
Cycle time	0.5 ms
Process data length	32 Bit
Process data structure	Bit 0 = switching signal Q <sub>L1</sub> Bit 1 = switching signal Q <sub>L2</sub> Bit 2 = detection signal Q <sub>int.1</sub> Bit 3 = detection signal Q <sub>int.2</sub> Bit 16 ... 31 = Current receiver level (live)
Compatible master port type	A
SIO mode support	Yes

### Electronics

<b>Supply voltage U<sub>B</sub></b>	12 V DC ... 30 V DC <sup>1) 2)</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, PNP, NPN: open collector <sup>3)</sup>
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, 7.1 kHz, 2 kHz, 1 kHz, 500 Hz, 250 Hz, 62.5 Hz <sup>4)</sup>

<sup>1)</sup> Limit values.

<sup>2)</sup> IO-Link mode: 18 VDC ... 30 VDC.

<sup>3)</sup> Selectable via menu.

<sup>4)</sup> With light/dark ratio 1:1.

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 / via IO-Link, 0 ms ... 30,000 ms
<b>Pin/Wire assignment</b>	
Function of pin 4/black (BK)	Switching output, object present → Q <sub>L1</sub> output HIGH; IO-Link communication C
Function of pin 4/black (BK) – detail	The pin 4 function of the sensor can be configured Additional possible settings via IO-Link
Function of pin 2/white (WH)	Switching output, object present → Q <sub>L2</sub> output HIGH
Function of pin 2/white (WH) – detail	The pin 2 function of the sensor can be configured Additional possible settings via IO-Link

1) Limit values.

2) IO-Link mode: 18 VDC ... 30 VDC.

3) Selectable via menu.

4) 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>	Male connector M8, 4-pin
<b>Material</b>	
Housing	Plastic, PC
<b>Weight</b>	Approx. 24 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

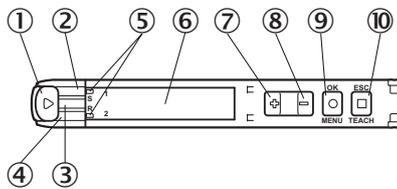
### Smart Task

<b>Smart Task name</b>	Counter + debouncing
<b>Logic function</b>	Direct WINDOW Hysteresis
<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 $\bar{Q}_{L1}$	Switching output
Diagnosis	
<b>Quality of run</b>	Yes
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

## Adjustments

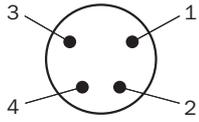
Display and adjustment elements



- 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

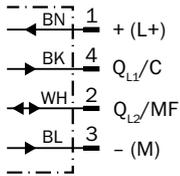
### Connection type

Male connector M8, 4-pin

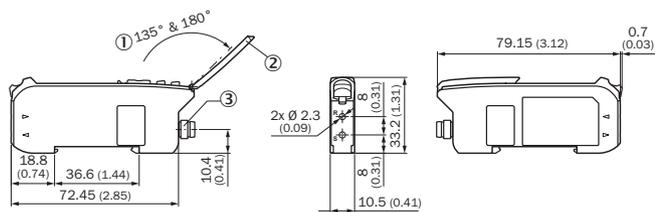


### Connection diagram

Cd-527



### 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.
<p>Fibers</p> <ul style="list-style-type: none"> <li>• <b>For fiber optic amplifiers:</b> WLL80, WLL180, GLL170(T)</li> <li>• <b>Functional principle:</b> Proximity system</li> <li>• <b>Fiber material:</b> Plastic</li> <li>• <b>Jacket material:</b> Plastic</li> <li>• <b>Fiber head material:</b> Stainless steel</li> <li>• <b>Thread diameter (housing):</b> M3</li> <li>• <b>Fiber length:</b> 2,000 mm</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)