Data sheet

WLL80P-1IU2Y1DZZZZZ1Z1

WLL80

FIBER-OPTIC SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	part no.
WLL80P-1IU2Y1DZZZZZ1Z1	6076716

Included in delivery: BEF-WLL180 (1)

Other models and accessories → www.sick.com/WLL80

Detailed technical data

Features

Device type	Fiber-optic amplifier
Device type detail	Stand-alone
Functional principle detail	Depending on the optical fiber cable used
Sensing range max.	Depending on the optical fiber cable used
Emitted beam	
Light source	LED
Type of light	Visible red light
Key LED figures	
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 °C
Adjustment	
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
Display	
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
Items supplied	BEF-WLL180 mounting bracket

Safety-related parameters

$MTTF_D$	324.1 years
DC_{avg}	0%
T_M (mission time)	20 years

Communication interface

Serial	✓

Electronics

Supply voltage U_B	12 V DC ... 30 V DC [1]
Ripple	± 10 % [2]
Current consumption	≤ 50 mA [3]
Protection class	III
Digital output	
Number	2 (individually adjustable)
Type	Push-pull: PNP/NPN [4]
	PNP
	NPN: open collector
Switching mode	Light/dark switching
Signal voltage PNP HIGH/LOW	Approx. U_B-2.5 V / 0 V
Signal voltage NPN HIGH/LOW	Approx. U_B / < 2.5 V
Output current $I_{max.}$	≤ 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 [5]
	7.1 kHz
	2 kHz
	1 kHz
	500 Hz
	250 Hz
	62.5 Hz

[1] Limit values.
[2] May not fall below or exceed U_V tolerances.
[3] Without load.
[4] Selectable via menu.
[5] 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, 0 ms ... 30,000 ms
Digital input	
Number	1
Pin/Wire assignment	
Function of pin 4/black (BK)	Digital output, object present → Output Q1 HIGH
Function of pin 4/black (BK) – detail	The pin 4 function of the sensor can be configured
Function of pin 2/white (WH)	Teach-in input
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_{L2} output HIGH
Pin 5 function/gray (GY) – detail	The pin 5 function of the sensor can be configured

[1] Limit values.
[2] May not fall below or exceed U_V tolerances.
[3] Without load.
[4] Selectable via menu.
[5] With light/dark ratio 1:1.

Mechanics

Housing	Rectangular
Dimensions (W x H x D)	10.5 mm x 33.2 mm x 79.9 mm
Connection	Cable, 5-wire, 2 m
Connection detail	
Deep-freeze property	Do not bend below 0 °C
Conductor size	0.18 mm²
Cable diameter	Ø 4 mm
Length of cable (L)	2 m
Material	
Housing	Plastic, PC
Cable	Plastic, PVC
Weight	Approx. 76 g

Ambient data

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

Smart Task

Smart Task name	Counter + debouncing
Timer function	Deactivated

	Switch-on delay Off delay ON and OFF delay Impulse (one shot) Switch-on delay and pulse
Inverter	Yes
Switching signal	
Switching signal Q_{L1}	Switching output
Switching signal Q_{L2}	Switching output

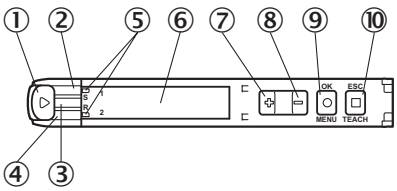
Certificates

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

Classifications

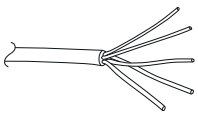
ECLASS 5.0	27270905
ECLASS 5.1.4	27270905
ECLASS 6.0	27270905
ECLASS 6.2	27270905
ECLASS 7.0	27270905
ECLASS 8.0	27270905
ECLASS 8.1	27270905
ECLASS 9.0	27270905
ECLASS 10.0	27270905
ECLASS 11.0	27270905
ECLASS 12.0	27270905
ETIM 5.0	EC002651
ETIM 6.0	EC002651
ETIM 7.0	EC002651
ETIM 8.0	EC002651
UNSPSC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

display and adjustment elements

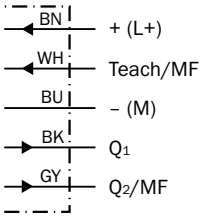


① Fiber optic interlock
② LED yellow 1
③ LED green
④ LED yellow 2
⑤ Indicator for correctly inserted fibers
⑥ Display
⑦ (+) button
⑧ (-) pushbutton
⑨ Menu/OK pushbutton
⑩ Teach-in/escape pushbutton

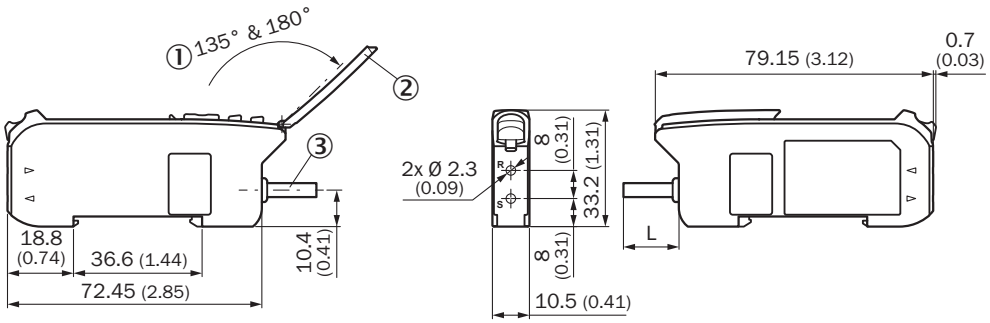
Connection type Cable, 5-wire



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

	Brief description	Type	part no.
fiber-optic sensors			
	• **For fiber optic amplifiers:** WLL80, WLL180, GLL170(T) • **Functional principle:** Proximity system • **Fiber length:** 2,000 mm • **Thread diameter (housing):** M3 • **Fiber material:** Plastic • **Jacket material:** Plastic • **Fiber head material:** Stainless steel • **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)	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