Product 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 sensors
Device type detail	Stand-alone
Functional principle detail	Depends on the fiber 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	
Display + operating buttons	For configuring the sensor parameters
Indication	
LED green	Operating indicator Static on: power on
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	For configuring the sensor parameters OLED display
Items supplied	BEF-WLL180 mounting bracket
Display	Display

Safety-related parameters

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

Communication interface

IO-Link	✓, 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_{L1} Bit 1 = switching signal Q_{L2} Bit 2 = detection signal Qint.1 Bit 3 = detection signal Qint.2 Bit 16 ... 31 = Current receiver level (live)
Compatible master port type	A
SIO mode support	Yes

Electrical data

Supply voltage U_B	12 V DC ... 30 V DC [1]
Ripple	± 10 %
Current consumption	≤ 50 mA
Protection class	III
Digital output	
Number	2 (individually adjustable)
Type	Push-pull: PNP/NPNPNPNPN: open collector [2]
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, 7.1 kHz, 2 kHz, 1 kHz, 500 Hz, 250 Hz, 62.5 Hz [3]
Time functions	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)	Switching output, object present → Q1 output HIGH
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

[1] Limit values.
[2] Selectable via menu.
[3] With light/dark ratio 1:1.

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] Selectable via menu.
[3] With light/dark ratio 1:1.

Mechanical data

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
Logic function	Direct WINDOW Hysteresis
Timer function	Deactivated 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 $\bar{Q}_{L1}$	Switching output

Diagnosis

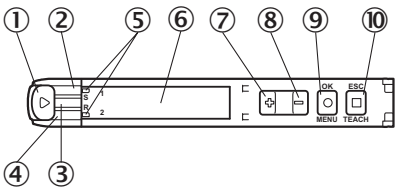
Quality of run	Yes

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

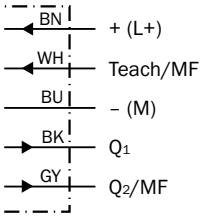
Display and adjustment elements



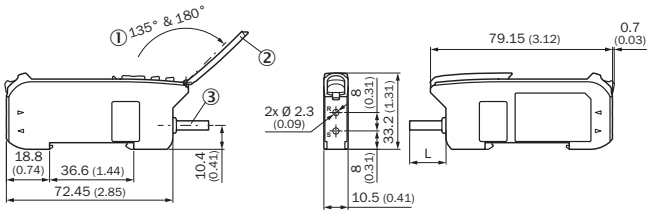
① Fiber optic interlock
② LED yellow 1
③ LED green
④ LED yellow 2
⑤ Indicator for correctly inserted fibers
⑥ Display
⑦ (+) button
⑧ (-) button
⑨ Menu/OK pushbutton
⑩ Teach-in/escape pushbutton

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.
Fibers		
• **Device type detail:** Fiber suitable for WLL260 • **For fiber-optic sensor:** GLL170(T), WLL180, WLL24 Ex, KTL180, WLL80 • **Functional principle:** Proximity system • **Fiber material:** Plastic • **Jacket material:** Plastic • **Fiber head material:** Stainless steel • **Thread diameter (housing):** M6 • **Fiber length:** 2,000 mm	LL3-DB01	5308074
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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.”

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