



WLL80P-1HT6Y1DZA71Z1Z1

WLL80

FIBER-OPTIC SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	part no.
WLL80P-1HT6Y1DZA71Z1Z1	6076722

Included in delivery: BEF-WLL180 (1)

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

Illustration may differ



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 $T_a = +25^\circ\text{C}$	
Adjustment		
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	
Display		
LED green	Operating indicatorStatic on: power onFlashing: IO-Link mode	
LED yellow 1	Status of received light beamStatic on: object presentStatic off: object not presentFlashing: Executing teach-in/teach-in error	

LED yellow 2	Status of received light beamStatic on: object presentStatic off: object not presentFlashing: 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

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

Electronics

Supply voltage U_B	12 V DC ... 30 V DC ¹⁾ ²⁾
Ripple	± 10 % ³⁾
Current consumption	≤ 50 mA ⁴⁾
Protection class	III
Digital output	
Number	2 (individually adjustable)
Type	Push-pull: PNP/NPN ⁵⁾
	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

¹⁾ Limit values.²⁾ IO-Link mode: 18 VDC ... 30 VDC.³⁾ May not fall below or exceed U_V tolerances.⁴⁾ Without load.⁵⁾ Selectable via menu.⁶⁾ With light/dark ratio 1:1.

	Short-circuit protected
Response time	$\leq 16 \mu\text{s}$ $\leq 70 \mu\text{s}$ $\leq 250 \mu\text{s}$ $\leq 500 \mu\text{s}$ $\leq 1,000 \mu\text{s}$ $\leq 2,000 \mu\text{s}$ $\leq 8,000 \mu\text{s}$
Switching frequency	31.2 kHz ⁶⁾ 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 / via IO-Link, 0 ms ... 30,000 ms
Pin/Wire assignment	
Function of pin 4/black (BK)	Digital output, object present → Output Q _{L1} 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)	Digital output, object present → Output Q _{L2} 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⁾ May not fall below or exceed U_Y tolerances.⁴⁾ Without load.⁵⁾ Selectable via menu.⁶⁾ 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, 4-wire, 2 m
Connection detail	
Deep-freeze property	Do not bend below 0 °C
Conductor size	0.18 mm ²
Cable diameter	Ø 4 mm
Length of cable (L)	2 m
Material	
Housing	Plastic, PC

Weight	Cable	Plastic, PVC
		Approx. 75 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 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

Diagnosis

Quality of run	Yes
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Certificates

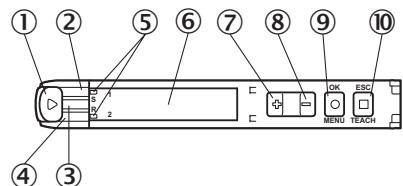
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China-RoHS	✓
cULus certificate	✓
IO-Link	✓
Photobiological safety (DIN EN 62471) certificate	✓

Classifications

ECLASS 5.0	27270905
ECLASS 5.1.4	27270905
ECLASS 6.0	27270905

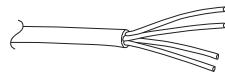
ECLASS 6.2	27270905
ECLASS 7.0	27270905
ECLASS 8.0	27270905
ECLASS 8.1	27270905
ECLASS 9.0	27270905
ECLASS 10.0	27270905
ECLASS 11.0	27270905
ECLASS 12.0	27270905
ETIM 5.0	EC002651
ETIM 6.0	EC002651
ETIM 7.0	EC002651
ETIM 8.0	EC002651
UNSPSC 16.0901	39121528

display and adjustment elements

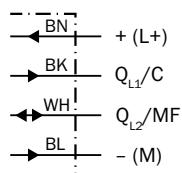


- ① Fiber optic interlock
- ② LED yellow 1
- ③ LED green
- ④ LED yellow 2
- ⑤ Indicator for correctly inserted fibers
- ⑥ Display
- ⑦ (+) button
- ⑧ (-) pushbutton
- ⑨ Menu/OK pushbutton
- ⑩ Teach-in/escape pushbutton

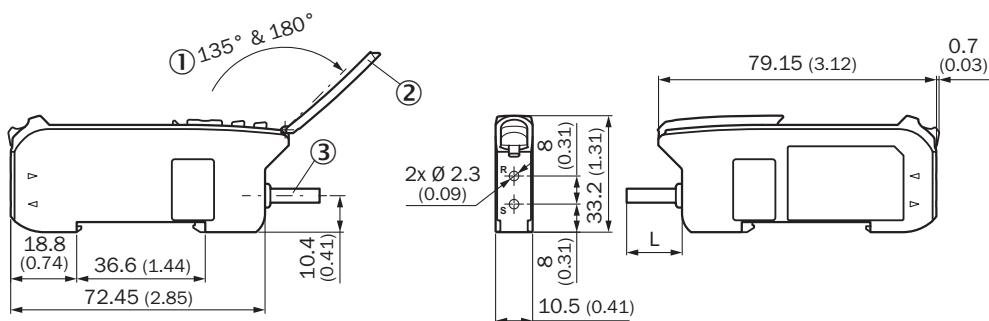
Connection type Cable, 4-wire



Connection diagram Cd-530



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			
	<ul style="list-style-type: none">• 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."

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