



DATA SHEET

WLL80P-22T6Y2DZA71Z1Z1

WLL80
Fiber-optic sensors

SICK

Sensor Intelligence



Illustration may differ

FIBER-OPTIC SENSORS

WLL80P-22T6Y2DZA71Z1Z1

ORDERING INFORMATION

Type	part no.
WLL80P-22T6Y2DZA71Z1Z1	6084904

Further device versions and accessories at 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	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 indicator Static on: power on Flashing: IO-Link mode LED yellow 1 Status of received light beam Static on: object present Static off: object not present Flashing: Executing teach-in/teach-in error LED yellow 2 Status of received light beam Static on: object present Static off: object not present Flashing: Executing teach-in/teach-in error Display Display of sensor functions Menu languages. German, English, Chinese, Korean, Japanese
Special features	Reduced scanning range to avoid operation in the saturation range

Items supplied	BEF-WLL180 mounting bracket
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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 Quint.1 Bit 3 = detection signal Quint.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⁾

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.

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 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 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_V 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	Male connector M8, 4-pin	
Material		
	Housing	Plastic, PC
	Protection hood	Plastic, PC
	Operating buttons	Plastic, Rubber
	Male connector	Metal, nickel-plated brass

Weight	Approx. 24 g
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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: ≤ 16,000 lx Sunlight: ≤ 67,000 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

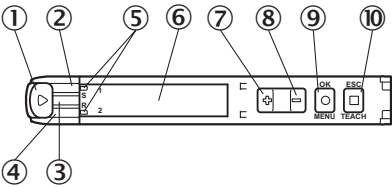
DIAGNOSIS

Quality of run	Yes
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CERTIFICATES

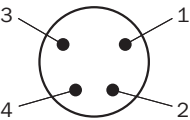
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
China Compulsory Product Certification (CCC) exempt	✓
cULus certificate	✓
IO-Link certificate	✓
Photobiological safety (DIN EN 62471) certificate	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

DISPLAY AND ADJUSTMENT ELEMENTS

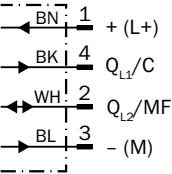


- ① Fiber optic interlock
- ② LED yellow 1
- ③ LED green
- ④ LED yellow 2
- ⑤ Indicator for correctly inserted fibers
- ⑥ Display
- ⑦ (+) button
- ⑧ (-) pushbutton
- ⑨ Menu/OK pushbutton
- ⑩ Teach-in/escape pushbutton

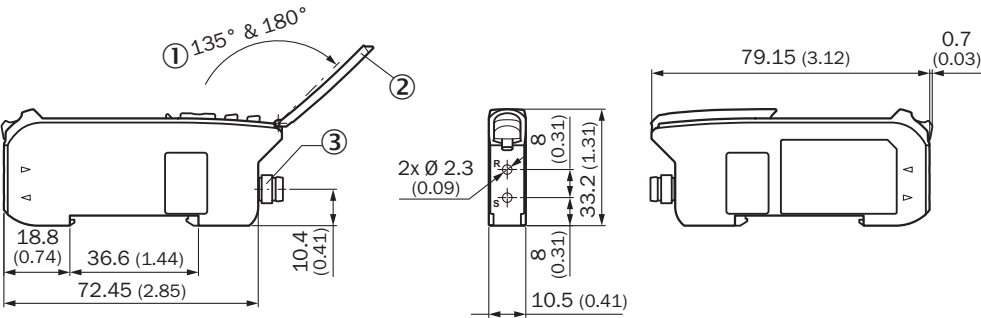
CONNECTION TYPE MALE CONNECTOR M8, 4-PIN



CONNECTION DIAGRAM CD-527



DIMENSIONAL DRAWING



- Dimensions in mm (inch)
- ① aperture angle
 - ② Hinged cover for the pushbuttons
 - ③ Connection

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/6084904



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SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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