Product data sheet

WLL80I-22TGY4DMZZZZ1Z1

WLL80

FIBER-OPTIC AMPLIFIER

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	Part no.
WLL80I-22TGY4DMZZZZ1Z1	6084825

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	Base unit [1]
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	Infrared light
Key LED figures	
Normative reference	EN 62471:2008-09 | IEC 62471:2006, modified
LED risk group marking	Free group
Wave length	1,450 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
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	Display of sensor functions

[1] Up to 15 expansion units can be connected.

	Menu languages: German, English, Chinese, Korean, Japanese
	OLED display
Items supplied	BEF-WLL180 mounting bracket

[1] Up to 15 expansion units can be connected.

Safety-related parameters

$MTTF_D$	372.2 years
DC_{avg}	0%
T_M (mission time)	20 years

Communication interface

Serial	✓

Electronics

Supply voltage U_B	12 V DC ... 24 V DC [1]
Ripple	± 10 %
Current consumption	≤ 50 mA
Protection class	III
Digital output	
Number	2 (individually adjustable)
Type	Push-pull: PNP/NPN, PNP, NPN: 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 [3]
Switching frequency	31.2 kHz, 7.1 kHz, 2 kHz, 1 kHz, 500 Hz, 250 Hz, 62.5 Hz [4]
Time functions	Switch-on delay off delay ON and OFF delay Impulse (one shot) Switch-on delay and pulse de-activated
Delay time	Adjustment via operating buttons / via gateway, 0 ms ... 30,000 ms
Pin/Wire assignment	
Function of pin 4/black (BK)	Switching output, object present → Q1 output HIGH
Function of pin 2/white (WH)	Switching output, object present → Q_{L2} output HIGH
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] In bus mode, the fastest response time is 22 µs.
[4] With a light/dark ratio of 1:1. In bus mode, the highest switching frequency is 22.7 kHz.

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
Weight	Approx. 24 g

Ambient data

Enclosure rating	IP54 (EN 60529)
Ambient operating temperature	–25 °C ... +55 °C [1]
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

[1] In bus mode, the temperature range is restricted ($I_{max.}$ 20 mA): –25 °C ... +45 °C.

Smart Task

Timer function	Deactivated Switch-on delay Off delay ON and OFF delay Impulse (one shot) Switch-on delay and pulse
Inverter	Yes

Diagnosis

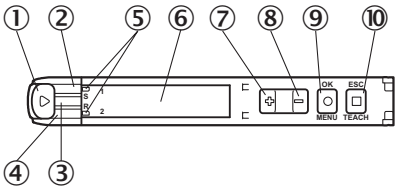
Quality of run	Yes

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

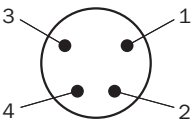
Display and adjustment elements



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 (-) pushbutton
⑨ Menu/OK pushbutton
⑩ Teach-in/escape pushbutton

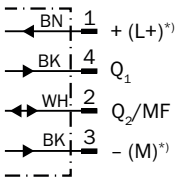
Connection type

Male connector M8, 4-pin



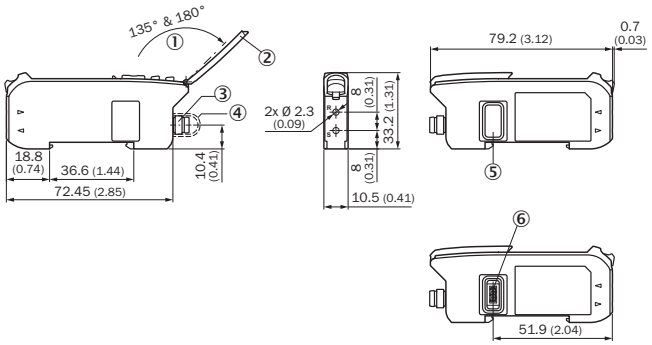
Connection diagram

Cd-528



*) Only base unit

Dimensional drawing (Dimensions in mm (inch))



① Aperture angle
② Hinged cover for the pushbuttons
③ Connection
④ Connection cap
⑤ Side cover
⑥ Female connector for bus module

Recommended accessories

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

	Brief description	Type	Part no.
Others			
	• **Description:** EtherCAT coupler for WLL180T, KTL180 and AOD1. Features: EtherCAT; transmission rates of up to 100 Mbaud; M12 EtherCAT connection; M8 voltage supply connection, 4-pin; full read/write functionality for the process and service data of the connected sensors. See operating instructions for additional information and technical details	WI180C-EC	6068089
	• **Description:** IO-Link Smart Sensor Gateway for WLL180T, KTL180 and AOD1; Features: IO-Link; COM3; M8 connection, 4-pin; full read/write functionality for the process and service data of the connected sensors. See operating instructions for additional information and technical details	WI180C-IOA00	6071650
	• **Description:** PROFINET coupler for WLL180T, KTL180 and AOD1. Features: PROFINET IRT; transmission rates 10 Mbaud – 100 Mbaud; M12 PROFINET connection; M8 voltage supply connection, 4-pin; full read/write functionality for the process and service data of the connected sensors. See operating instructions for additional information and technical details	WI180C-PN	6068088
Fibers			
	LL3-DW01	LL3-DW01	5315234
	LL3-TH08	LL3-TH08	5325978
	LL3-TW01	LL3-TW01	5315233

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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