



DATA SHEET

WLL180T-N432

WLL180
Fiber-optic sensors

SICK

Sensor Intelligence



Illustration may differ

FIBER-OPTIC SENSORS

WLL180T-N432

ORDERING INFORMATION

Type	part no.
WLL180T-N432	6039094

Further device versions and accessories at www.sick.com/WLL180



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 650 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/synchronization with input signal Display + operating buttons For configuring the sensor parameters
Display	LED yellow Status of digital output Permanently on: Switching output active Permanently off: Digital output not active Display Display of sensor functions
Items supplied	BEF-WLL180 mounting bracket

SAFETY-RELATED PARAMETERS

MTTF _D	365 years
DC _{avg}	0 %
T _M (mission time)	20 years

ELECTRONICS

Supply voltage U_B	12 V DC ... 24 V DC ¹⁾
Ripple	$\leq 10\%$ ²⁾
Current consumption	$\leq 50\text{ mA}$ ³⁾
Protection class	III
Digital output	Number Type Switching mode Switching mode selector Circuit protection outputs Response time Switching frequency Time functions Delay time
	1 NPN ⁴⁾ Light/dark switching Manually selectable Reverse polarity protected Overcurrent protected Short-circuit protected $\leq 16\text{ }\mu\text{s}$ $\leq 70\text{ }\mu\text{s}$ $\leq 250\text{ }\mu\text{s}$ $\leq 2,000\text{ }\mu\text{s}$ $\leq 8,000\text{ }\mu\text{s}$ 31.2 kHz 7.1 kHz 2 kHz 250 Hz 62.5 Hz Without time delay, off delay, switch-on delay, ON and OFF delay, one shot Programmable, 0 ms ... 9,999 ms
Pin/Wire assignment	
	Function of pin 4/black (BK) Digital output, received light → 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

¹⁾ $\pm 10\%$.²⁾ May not fall below or exceed U_V tolerances.³⁾ Without load.⁴⁾ Selectable via menu.**MECHANICS**

Housing	Rectangular
Dimensions (W x H x D)	10.5 mm x 34.6 mm x 71.9 mm
Connection	Cable, 4-wire
Connection detail	Deep-freeze property Conductor size Length of cable (L)
	Do not bend below 0 °C 0.2 mm² 2 m
Material	
	Housing Cable
	Plastic, ABS/PC Plastic, PVC
Weight	25 g

AMBIENT DATA

Enclosure rating	IP50 (EN 60529)
Ambient operating temperature	-25 °C ... +55 °C
Ambient temperature, storage	-40 °C ... +70 °C
Typ. Ambient light immunity	Artificial light: $\leq 3,000\text{ lx}$ Sunlight: $\leq 10,000\text{ lx}$
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
UL File No.	NRKH.E300503
RoHS certificate	✓

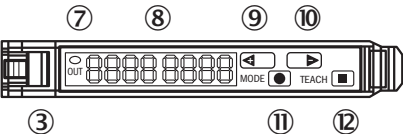
SMART TASK

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

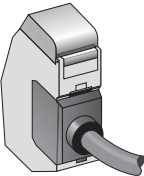
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
China Compulsory Product Certification (CCC) ex-empt	✓
ULus approval	✓
Photobiological safety (DIN EN 62471) certificate	✓

ADJUSTMENTS WLL180

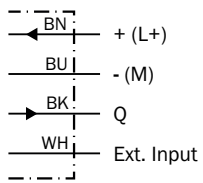


- ③ Locking the fiber-optic cables
- ⑦ LED indicator orange, lights up when switching output is active
- ⑧ Numeric display 2 x 4-digit; green: switching threshold, operating mode; red: actual value, Teach-in and function parameter
- ⑨ step pushbutton > (manual switching threshold: higher/next function parameter)
- ⑩ step pushbutton < (manual switching threshold: lower/previous function parameter)
- ⑪ Mode/Enter-button
- ⑫ Teach-in button

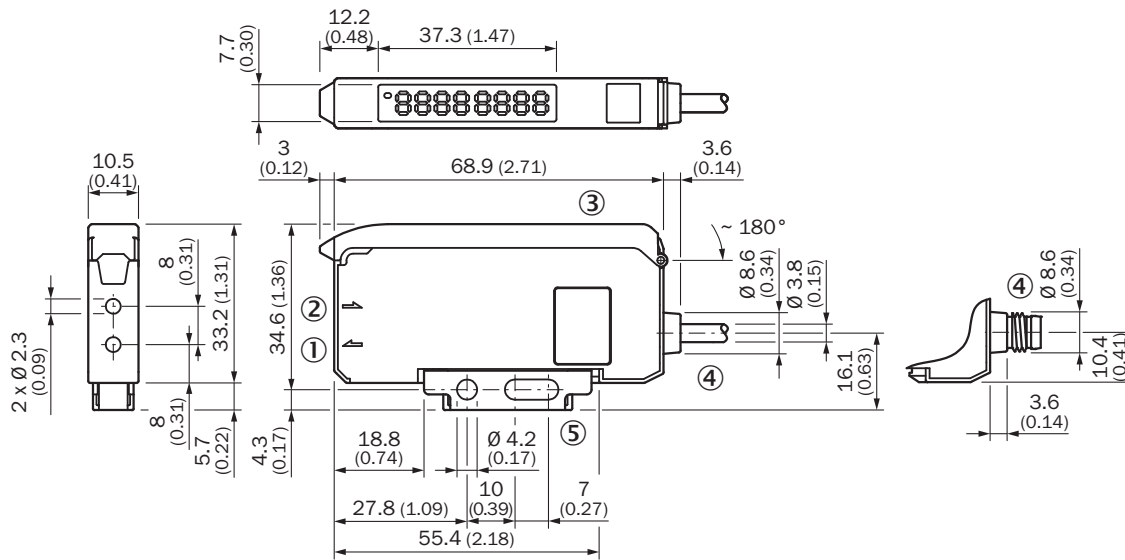
CONNECTION TYPE



CONNECTION DIAGRAM CD-136



DIMENSIONAL DRAWING STAND-ALONE



Dimensions in mm (inch)

- ① Sender LED, installation of LL3 fibre-optic cable (sender fibre)
- ② Receiver, installation of LL3 fibre optic cable (receiver fibre)
- ③ protective hood opens approx. 180°
- ④ Connection
- ⑤ Mounting bracket, included with delivery

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/6039094



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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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