



WLL180T-M434

WLL180T

FIBER-OPTIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	Part no.
WLL180T-M434	6039101

Included in delivery: BEF-WLL180 (1)

Other models and accessories → www.sick.com/WLL180T

Detailed technical data

Features

Type	Base unit ¹⁾
Dimensions (W x H x D)	10.5 mm x 34.6 mm x 71.9 mm
Housing design (light emission)	Rectangular
Sensing range max.	0 m ... 20 m, Through-beam system ^{2) 3)}
Sensing range	0 mm ... 1,400 mm, Proximity system ^{4) 5)} 0 m ... 18 m, Through-beam system ^{2) 3)}
Focus	⁶⁾
Type of light	Visible red light
Light source	LED ⁷⁾
Angle of dispersion	Approx. 65° ⁶⁾
Wave length	650 nm
Adjustment	Menu-controlled Single teach-in button Cable
Delay time	Programmable, 0 ms ... 9,999 ms
Time functions	Without time delay Off delay On delay ON and OFF delay One shot
Indication	Display

¹⁾ Up to 15 expansion units can be connected.

²⁾ Sensing range with 8 ms response time. Reduction with shorter response time (see tables LL3/WLL180T).

³⁾ LL3-TX01.

⁴⁾ Objects to be sensed with 90% reflectivity (based on DIN 5033 white standard). Sensing range with 8 ms response time. Reduction with shorter response time (see tables LL3/WLL180T).

⁵⁾ LL3-DK06.

⁶⁾ See LL3 fiber-optic data.

⁷⁾ Average service life: 100,000 h at T_U = +25 °C.

Display	LED status display / 2x 4-character digital dual displays, Set value (green indicator) and actual value (red indicator) are displayed simultaneously, display of parameters
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Mechanics/electronics

Supply voltage	12 V DC ... 24 V DC ¹⁾
Ripple	$\leq 10\%$ ²⁾
Power consumption	50 mA ³⁾
Switching output	PNP
Number of switching outputs	1
Switching mode	Light/dark switching
Switching mode selector	Manually selectable
Output current $I_{\max}$	$\leq 100\text{ mA}$
Response time	$\leq 16\text{ }\mu\text{s}$, $\leq 70\text{ }\mu\text{s}$, $\leq 250\text{ }\mu\text{s}$, $\leq 2,000\text{ }\mu\text{s}$, $\leq 8,000\text{ }\mu\text{s}$ ⁴⁾
Switching frequency	31.2 kHz 7.1 kHz 2 kHz 250 Hz 62.5 Hz
Time functions	Without time delay Off delay On delay ON and OFF delay One shot
Delay time	Programmable, 0 ms ... 9,999 ms
Input	Multifunctional input MF
Connection type	Male connector M8, 4-pin
Circuit protection	A ⁵⁾ B ⁶⁾ C ⁷⁾ D ⁸⁾
Protection class	III
Weight	20 g
Housing material	Plastic, ABS/PC

¹⁾ $\pm 10\%$.

²⁾ May not exceed or fall below U_V tolerances.

³⁾ Without load.

⁴⁾ Selectable.

⁵⁾ A = V_S connections reverse-polarity protected.

⁶⁾ B = inputs and output reverse-polarity protected.

⁷⁾ C = interference suppression.

⁸⁾ D = outputs overcurrent and short-circuit protected.

⁹⁾ With correctly attached fibre-optic cable LL3 and closed protection hood.

Enclosure rating	IP50 ⁹⁾
Items supplied	BEF-WLL180 mounting bracket
Ambient operating temperature	-25 °C ... +55 °C
Ambient storage temperature	-40 °C ... +70 °C
UL File No.	NRKH.E300503 & NRKH7.E300503

- 1) +/- 10%.
2) May not exceed or fall below U_v tolerances.
3) Without load.
4) Selectable.
5) A = V_S connections reverse-polarity protected.
6) B = inputs and output reverse-polarity protected.
7) C = interference suppression.
8) D = outputs overcurrent and short-circuit protected.
9) With correctly attached fibre-optic cable LL3 and closed protection hood.

Safety-related parameters

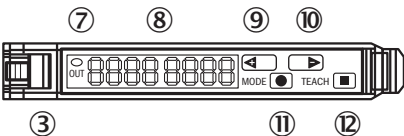
MTTF _D	319 years
DC _{avg}	0%

Classifications

ECI@ss 5.0	27270905
ECI@ss 5.1.4	27270905
ECI@ss 6.0	27270905
ECI@ss 6.2	27270905
ECI@ss 7.0	27270905
ECI@ss 8.0	27270905
ECI@ss 8.1	27270905
ECI@ss 9.0	27270905
ETIM 5.0	EC002651
ETIM 6.0	EC002651
UNSPSC 16.0901	39121528

Adjustments possible

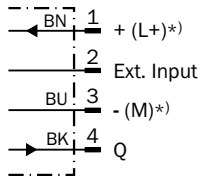
WLL180T



- 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 diagram

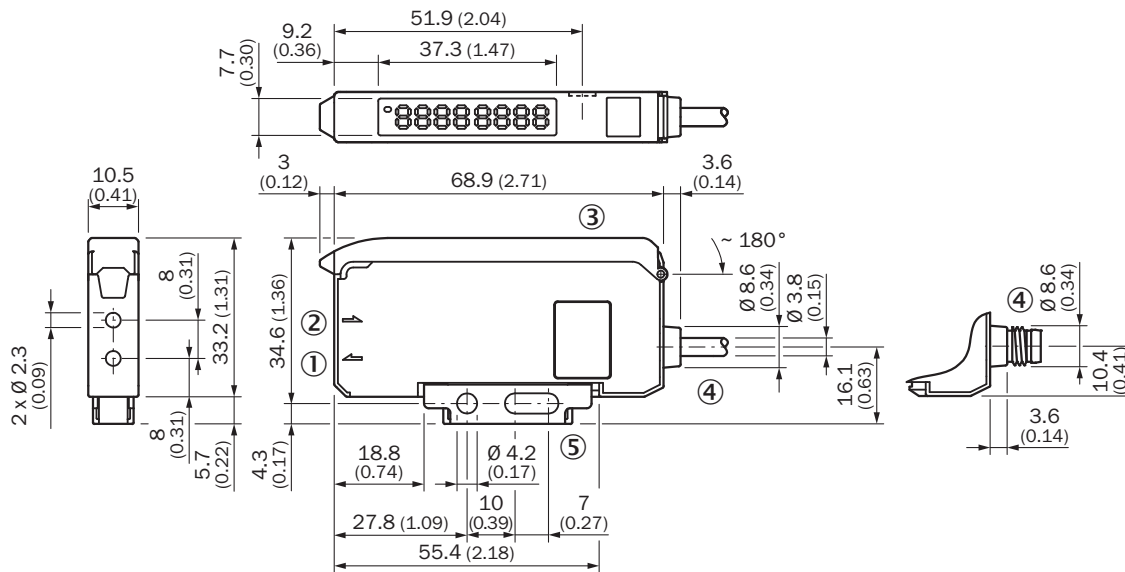
Cd-140



*) Only base unit

Dimensional drawing (Dimensions in mm (inch))

Bus type



- 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

Recommended accessories

Other models and accessories → www.sick.com/WLL180T

	Brief description	Type	Part no.
Mounting brackets and plates			
	Mounting bracket, steel, zinc coated, without mounting hardware	BEF-WLL180	5325812

	Brief description	Type	Part no.
Other mounting accessories			
	Rail end piece for block mounting, stainless steel, mounting hardware included	BEF-EB01-W190	5313011
Modules and gateways			
	EtherCATcoupler for WLL180T, KTL180 and AOD1. Properties: EtherCAT; transmission rates up to 100 MBaud; M12 connection; PEtherCAT ; connection of voltage supply M8, 4-pin; full read / write functionality of process and service data of the connected sensors	WI180C-EC	6068089
	Features: PROFIBUS DP-V1 Slave; transfer rates of 9,6 KBit/s - 12 MBit/s; D-Sub connection (RS485), 9-pin, PROFIBUS; connection M8, 4-pin; Access to all parameters of the connected sensors.	WI180C-PB	6052566
	Profinet coupler for WLL180T, KTL180 and AOD1. Properties: PROFINET IRT; transmission rates of 10 MBaud - 100 MBaud; M12 connection; PROFINET; connection of voltage supply M8, 4-pin; full read / write functionality of process and service data of the connected sensors	WI180C-PN	6068088
Plug connectors and cables			
	Head A: female connector, M8, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YF8U14-020VA3XLEAX	2095888
	Head A: female connector, M8, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF8U14-050VA3XLEAX	2095889
	Head A: female connector, M8, 4-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YG8U14-020VA3XLEAX	2095962
	Head A: female connector, M8, 4-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YG8U14-050VA3XLEAX	2095963

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.”

WORLDWIDE PRESENCE:

Contacts and other locations –www.sick.com