



WLL180T-P435

WLL180

FIBER-OPTIC AMPLIFIER

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	Part no.
WLL180T-P435	6069359

Included in delivery: BEF-WLL180 (1)

Other models and accessories → www.sick.com/WLL180

Detailed technical data

Features

Device type	Fiber-optic amplifier
Device type detail	Stand-alone
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) ^{1) 2)}
Sensing range	0 mm ... 1,400 mm, Proximity system ^{3) 4)} 0 m ... 18 m, Through-beam system ^{1) 2)}
Focus	Approx. 65° ⁵⁾
Type of light	Visible red light
Light source	LED ⁶⁾
Angle of dispersion	Approx. 65° ⁵⁾
Wave length	650 nm
Adjustment	Menu-controlled Single teach-in button Cable
Indication	7-segment
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

¹⁾ Sensing range with 8 ms response time. Reduction with shorter response time (see tables LL3/WLL180T).

²⁾ LL3-TX01.

³⁾ Object with 90% remission (based on standard white DIN 5033). Sensing range at 8 ms response time. Reduced at shorter response times (see LL3 / WLL180T tables).

⁴⁾ LL3-DK06.

⁵⁾ See LL3 fiber-optic data.

⁶⁾ Average service life: 100,000 h at T_U = +25 °C.

Mechanics/electronics

Supply voltage U_B	12 V DC ... 24 V DC ¹⁾
Ripple	$\leq 10\%$ ²⁾
Current consumption	50 mA ³⁾
Switching output	PNP
Number of switching outputs	1
Switching mode	Light/dark switching
Switching mode selector	Manually selectable
Response time	$\leq 16\ \mu\text{s}, \leq 70\ \mu\text{s}, \leq 250\ \mu\text{s}, \leq 2,000\ \mu\text{s}, \leq 8,000\ \mu\text{s}$ ⁴⁾
Switching frequency	31.2 kHz, 7.1 kHz, 2 kHz, 250 Hz, 62.5 Hz
Time functions	Without time delayoff delayswitch-on delayON and OFF delayone shot
Delay time	Programmable, 0 ms ... 9,999 ms
Input	Multifunctional input MF
Connection type	Cable, 4-wire, 5 m ⁵⁾
Cable material	Plastic, PVC
Conductor cross section	0.2 mm ²
Circuit protection	A ⁶⁾ B ⁷⁾ C ⁸⁾ D ⁹⁾
Protection class	III
Weight	25 g
Housing material	Plastic, ABS/PC
Enclosure rating	IP50 ¹⁰⁾
Items supplied	BEF-WLL180 mounting bracket
Ambient operating temperature	-25 °C ... +55 °C
Ambient temperature, storage	-40 °C ... +70 °C
UL File No.	NRKH2.E300503 & NRKH8.E300503

¹⁾ +/- 10%.

²⁾ May not fall below or exceed U_y tolerances.

³⁾ Without load.

⁴⁾ Selectable.

⁵⁾ Do not bend below 0 °C.

⁶⁾ A = V_S connections reverse-polarity protected.

⁷⁾ B = inputs and output reverse-polarity protected.

⁸⁾ C = interference suppression.

⁹⁾ D = outputs overcurrent and short-circuit protected.

¹⁰⁾ With correctly attached fibre-optic cable LL3 and closed protection hood.

Safety-related parameters

MTTF_D	290.7 years
DC_{avg}	0 %

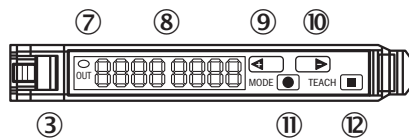
Classifications

ECLASS 5.0	27270905
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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

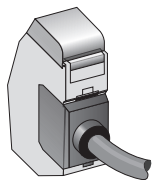
Adjustments

WLL180



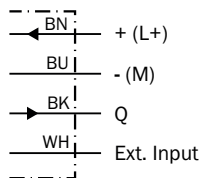
- ③ Locking the fiber-optic cables
- ⑦ LED indicator orange, lights up when switching output is active
- ⑧ Numeric display 2 x 4-digit; green: switching threshold, operating display 2 x 4-digit; red: actual value, Teach-in and function parameter
- ⑨ Step pushbutton > (manual switching threshold: higher/next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

Connection type



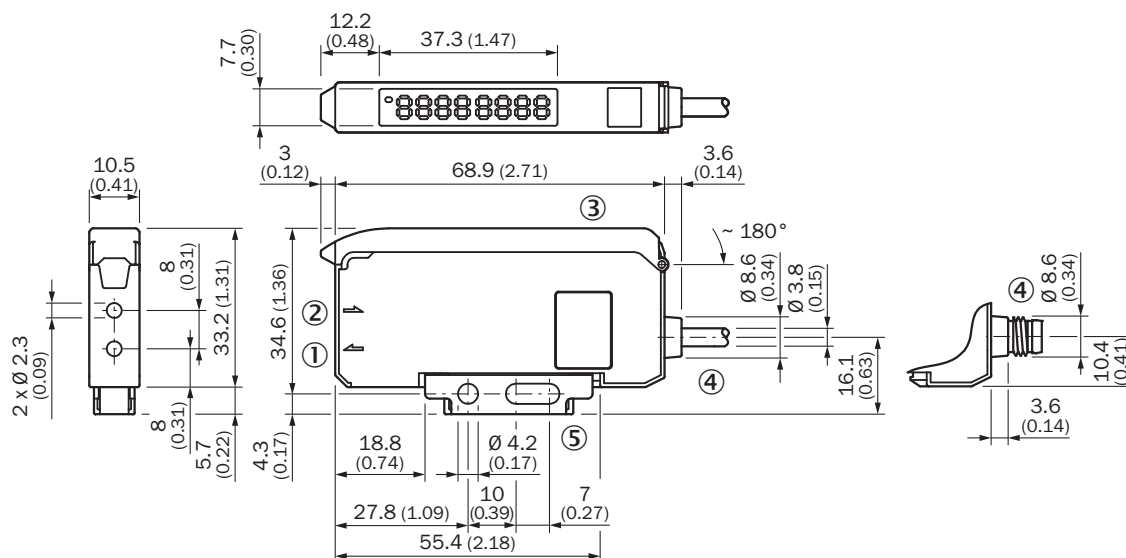
Connection diagram

Cd-136



Dimensional drawing (Dimensions in mm (inch))

Stand-alone



- 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/WLL180

Brief description	Type	Part no.
<p>Fibers</p> <ul style="list-style-type: none"> • For fiber optic amplifiers: GLL170(T), WLL180, WLL24 Ex, KTL180, WLL80 • Functional principle: Proximity system • Fiber material: Plastic • Jacket material: Plastic • Fiber head material: Stainless steel • Thread diameter (housing): M6 • Fiber length: 2,000 mm 	LL3-DB01	5308074

Brief description	Type	Part no.
<ul style="list-style-type: none"> • For fiber optic amplifiers: GLL170(T), WLL180, WLL24 Ex, WLL80 • Functional principle: Proximity system • Fiber material: Plastic • Jacket material: Plastic • Fiber head material: Stainless steel • Thread diameter (housing): M6 • Fiber length: 2,000 mm 	LL3-DB02	5308083
<ul style="list-style-type: none"> • For fiber optic amplifiers: GLL170(T), WLL180, KTL180, WLL80 • Functional principle: Proximity system • Fiber material: Plastic • Jacket material: Plastic • Fiber head material: Plastic • Fiber length: 2,000 mm 	LL3-DC38	5322472
<ul style="list-style-type: none"> • For fiber optic amplifiers: GLL170(T), WLL180, WLL80 • Functional principle: Proximity system • Fiber material: Plastic • Jacket material: Plastic • Fiber head material: Stainless steel • Fiber length: 2,000 mm 	LL3-DR11	5326000
<ul style="list-style-type: none"> • For fiber optic amplifiers: GLL170(T), WLL180, WLL80 • Functional principle: Proximity system • Fiber material: Plastic • Jacket material: Plastic • Fiber head material: Stainless steel • Thread diameter (housing): M3 • Fiber length: 2,000 mm 	LL3-DT01	5308076
<ul style="list-style-type: none"> • For fiber optic amplifiers: GLL170(T), WLL180, WLL24 Ex, WLL80 • Functional principle: Proximity system • Fiber material: Plastic • Jacket material: Plastic • Fiber head material: Plastic • Thread diameter (housing): M6 • Fiber length: 2,000 mm 	LL3-DV05	5322549
<ul style="list-style-type: none"> • For fiber optic amplifiers: GLL170(T), WLL180, WLL24 Ex, WLL80 • Functional principle: Through-beam system • Fiber material: Plastic • Jacket material: Plastic • Fiber head material: Stainless steel • Thread diameter (housing): M4 • Fiber length: 2,000 mm 	LL3-TB01	5308050
<ul style="list-style-type: none"> • For fiber optic amplifiers: GLL170(T), WLL180, WLL24 Ex, WLL80 • Functional principle: Through-beam system • Fiber material: Plastic • Jacket material: Plastic • Fiber head material: Plastic • Fiber length: 2,000 mm 	LL3-TS40	5323971
<ul style="list-style-type: none"> • For fiber optic amplifiers: GLL170(T), WLL180, WLL24 Ex, WLL80 • Functional principle: Through-beam system • Fiber material: Plastic • Jacket material: Plastic • Fiber head material: Plastic • Thread diameter (housing): M4 • Fiber length: 2,000 mm 	LL3-TV05	5322546
<ul style="list-style-type: none"> • For fiber optic amplifiers: GLL170(T), WLL180, WLL24 Ex, WLL80 • Functional principle: Through-beam system • Fiber material: Plastic • Jacket material: Plastic • Fiber head material: Stainless steel • Thread diameter (housing): M12 • Fiber length: 20,000 mm 	LL3-TX01	5324173

Brief description	Type	Part no.
<ul style="list-style-type: none">• For fiber optic amplifiers: GLL170(T), WLL180, WLL24 Ex, WLL80• Functional principle: Through-beam system• Fiber material: Plastic• Jacket material: Chemical-resistant plastic• Fiber head material: Chemical-resistant plastic• Fiber length: 2,000 mm	LL3-TY01	5308066

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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