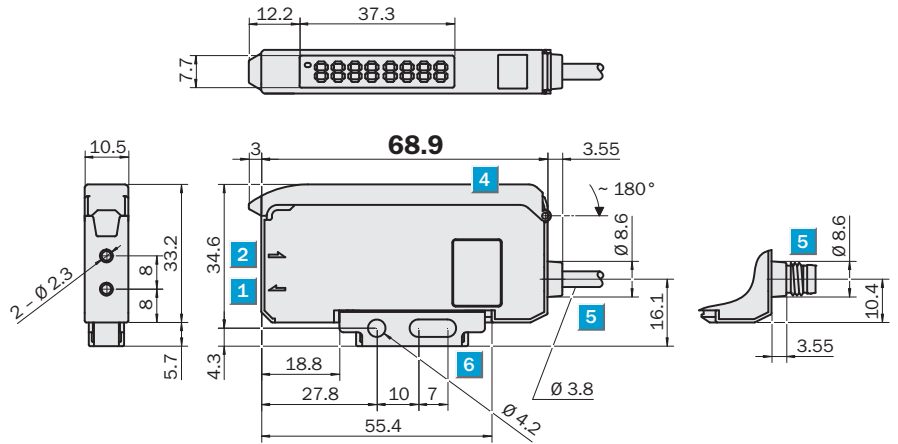


	Scanning distance 0 ... 480 mm
	Scanning range 0 ... 20 m
Proximity switch with fibre-optic cables	

- Longest ranges
- Fast switching frequency
- Precise, stable switching point
- Dual display
- High resolution signal processing
- Appropriate for the LL3 fibre-optic cable series

Dimensional drawing

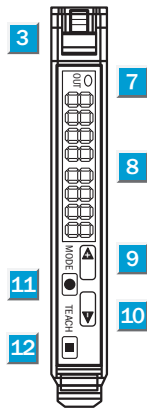


WLL180T



Adjustments possible

All types

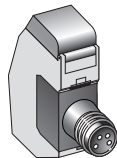


- 1** Sender LED, installation of LL3 fibre-optic cable (sender fibre)
- 2** Receiver, installation of LL3 fibre-optic cable (receiver fibre)
- 3** Locking of fibre optic cables
- 4** Protective hood: can be folded out approx. 180°
- 5** Connector
- 6** Mounting bracket included (see accessories)
- 7** Indicator LED, orange:
- 8** lights up when switching output is active
Numeric display: 2 x 4-digit
green: switching threshold, operating mode
red: actual value, Teach-in and function parameter
- 9** Step button < (manual switching threshold: higher; or next function parameter)
- 10** Step button > (manual switching threshold: lower or previous function parameter)
- 11** Mode/Enter button (programming button)
- 12** "Teach-in" pushbutton

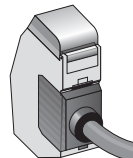
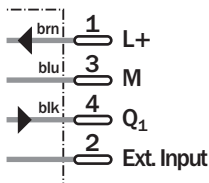


Connection types

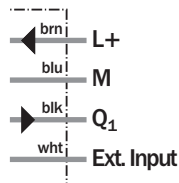
WLL180T-P434	WLL180T-P432
WLL180T-N434	WLL180T-N432



4-pin, M8



4 x 0.2 mm²



Accessories
Mounting systems
Fibre-optic cables
Connector, M8, 4-pin
Tip adapters

Technical data		WLL180T	P434	N434	P432	N432						
Operating distance	0 ... 480 mm ¹⁾											
Fibre-optic cable (proximity system)	LL3-DB01											
Adjustment of operating distance	Teach-in: Teach button & cable											
Scanning range typ. max.	0 ... 20 m ²⁾											
Fibre-optic cable (through-beam system)	LL3-TX01											
Scanning range, recommended	0 ... 18 m ²⁾											
Fibre-optic cable (through-beam system)	LL3-TX01											
Sensitivity adjustment	Teach-in: Teach button & cable											
Precise correction	Step button +/- manual											
Light source, light type	LED, red light, 650 nm ³⁾											
Light spot diameter	Depending on scanning range											
Angle of dispersion	Approx. 65° (deviations see LL3 data)											
Supply voltage V_S	12 ... 24 V DC ⁴⁾											
Ripple	≤ 10 % ⁵⁾											
Power consumption	≤ 50 mA ⁶⁾											
Switching outputs	NPN, Q											
	PNP, Q											
Switching mode	Light/dark-switching, selectable											
Output current I _a max	≤ 100 mA											
Response time	Selectable: 16 µs/70 µs/250 µs/2 ms/8ms											
Switching frequency	31.2 kHz/7.1 kHz/2 kHz/250 Hz/62.5 Hz											
Time delay	Programmable 0 ms ... 9,999 ms											
Time type	Programmable											
	OFF/T _{OFF} /T _{ON} /ONE-SHOT/T _{ON} /OFF											
Connection type	Cable, PVC, 2 m ⁷⁾											
	Connector, M8, 4-pin											
VDE protection class	◆											
Circuit protection	V _S connections reverse-polarity protected/ In-/outputs short-circuit protected/ Interference suppression/Outputs overcurrent and short-circuit protected											
Enclosure rating	IP 50 ⁸⁾											
Ambient temperature T_A	Operation -25 °C ... +55 °C Storage -40 °C ... +70 °C											
Weight	Approx. 25 g Approx. 20 g											
Housing material	ABS, PC											

¹⁾ Object with 90 % remission (based on standard white DIN 5033). Scanning distance at response time 8 ms. Distance reduction at shorter response time (see LL3/WLL180T table)

²⁾ Scanning range at response time 8 ms. Range reduction at shorter response time (see LL3/WLL180T table)
³⁾ Average service life 100,000 h at T_A = +25 °C

⁴⁾ ± 10 %
⁵⁾ May not exceed or fall short of V_S tolerances
⁶⁾ Without load
⁷⁾ Do not bend below 0 °C

⁸⁾ Only with correct adaption of the LL3 fibre-optic cable

Sensitivity setting

The following optimization modes can be programmed:

a) Normal mode (default) – 3 alternatives:

- 1-point teach-in
- 2-point teach-in
- Auto teach-in

b) Zone teach-in (window technology)

c) Glass teach-in (detection of transparent objects)

Order information

Type	Order no.
WLL180T-P432	6039093
WLL180T-N432	6039094
WLL180T-P434	6039095
WLL180T-N434	6039096

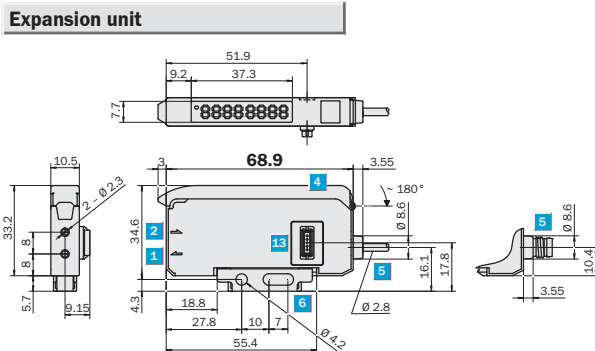
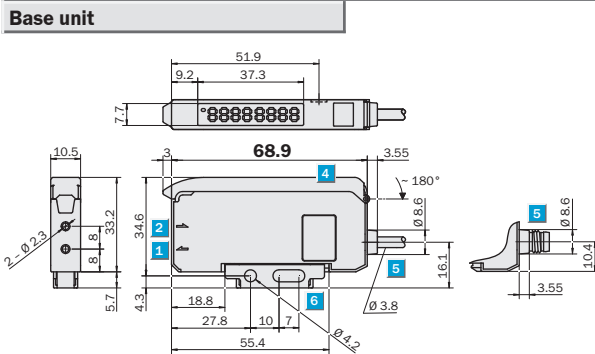
	Scanning distance 0 ... 480 mm
	Scanning range 0 ... 20 m
Proximity switch with fibre-optic cables	

- Cable saving bus mode
- Automatic anti-interference
- Longest ranges
- Fast switching frequency
- Dual display
- High resolution signal processing

WLL180T

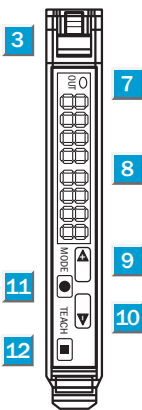


Dimensional drawing



Adjustments possible

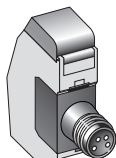
All types



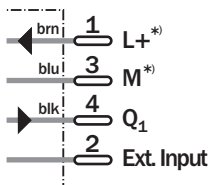
- 1** Sender LED, Installation of LL3 fibre-optic cable (Sender fibre)
- 2** Receiver, Installation of LL3 fibre-optic cable (receiver fibre)
- 3** Locking of fibre optic cables
- 4** Protective hood: can be folded out approx. 180°
- 5** Connector
- 6** Mounting bracket included (see accessories)
- 7** Indicator LED, 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 button < (manual switching threshold: higher; or next function parameter)
- 10** Step button > (manual switching threshold: lower or previous function parameter)
- 11** Mode/Enter button (programming button)
- 12** "Teach-in" pushbutton
- 13** Bus connector

Connection types

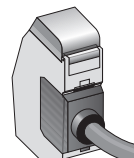
WLL180T-M434	WLL180T-L434	WLL180T-M432	WLL180T-L432
WLL180T-F434	WLL180T-E434	WLL180T-F232	WLL180T-E232



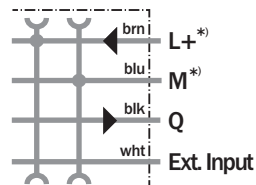
4-pin, M8



*) Only base unit



4 x 0.2 mm²



*) Only base unit

Accessories

Mounting systems
Fibre-optic cables
Connector, M8, 4-pin
Tip adapters

Technical data		WLL180T	M432	L432	M434	L434	F232	E232	F434	E434
Device type	Base unit ¹⁾									
	Expansion unit									
Operating distance	0 ... 480 mm ²⁾									
Fibre-optic cable (proximity system)	LL3-DB01									
Adjustment of operating distance	Teach-in: Teach button & cable									
Scanning range typ. max.	0 ... 20 m ³⁾									
Fibre-optic cable (through-beam system)	LL3-TX01									
Scanning range, recommended	0 ... 18 m ³⁾									
Fibre-optic cable (through-beam system)	LL3-TX01									
Sensitivity adjustment	Teach-in: Teach button & cable									
Precise correction	Step button +/- manual									
Light source, light type	LED, red light, 650 nm ⁴⁾									
Light spot diameter	Depending on scanning range									
Angle of dispersion	Approx. 65° (deviations see LL3 data)									
Supply voltage V_S	12 ... 24 V DC ⁵⁾									
Ripple	≤ 10 % ⁶⁾									
Power consumption	≤ 50 mA ⁷⁾									
Switching outputs	NPN, Q									
	PNP, Q									
Switching mode	Light-/dark-switching, selectable									
Output current I _a max	≤ 100 mA									
Response time	Selectable: 16 µs/70 µs/250 µs/2 ms/8ms									
Switching frequency	31.2 kHz/7.1 kHz/2 kHz/250 Hz/62.5 Hz									
Time delay	Programmable 0 ms ... 9,999 ms									
Time type	Programmable									
	OFF/T _{OFF} /T _{ON} /ONE-SHOT/T _{ON} /OFF									
Connection type	Cable, PVC, 2 m ⁸⁾									
	Connector, M8, 4-pin									
VDE protection class	⊠									
Circuit protection	V _S connections reverse-polarity protected/									
	In-/outputs short-circuit protected/									
	Interference suppression/Outputs overcurrent and short-circuit protected									
Enclosure rating	IP 50 ⁹⁾									
Ambient temperature T_A	Operation -25 °C ... +55 °C ¹⁰⁾									
	-25 °C ... +55 °C									
	Storage -40 °C ... +70 °C									
Weight	Approx. 20 g									
	Approx. 25 g									
Housing material	ABS, PC									

¹⁾ Up to 15 expansion units can be connected
²⁾ Object with 90 % remission (based on standard white DIN 5033). Scanning distance at response time 8 ms. Distance reduction at shorter response time (see LL3/WLL180T table)

³⁾ Scanning range at response time 8 ms. Range reduction at shorter response time (see LL3/WLL180T table)
⁴⁾ Average service life 100,000 h at T_A = +25 °C
⁵⁾ ± 10 %

⁶⁾ May not exceed or fall short of V_S tolerances
⁷⁾ Without load
⁸⁾ Do not bend below 0 °C
⁹⁾ Only with correct adaption of the LL3 fibre-optic cable

¹⁰⁾ Operation temperature may vary depending on number of connected units:
 4-8 units: -25 °C ... +50 °C (output current 50 mA),
 9-16 units: -25 °C ... +45 °C (output current 20 mA)

Sensitivity adjustment

The following optimization modes can be programmed:

- a) Normal mode (default) – 3 alternatives:
 - 1-point Teach-in
 - 2-point Teach-in
 - Auto Teach-in
- b) Zone teach-in (window technology)
- c) Glass teach-in (detection of transparent objects)

Order information

Type	Order no.
WLL180T-M432	6039097
WLL180T-F232	6039098
WLL180T-L432	6039099
WLL180T-E232	6039100
WLL180T-M434	6039101
WLL180T-F434	6039102
WLL180T-L434	6039103
WLL180T-E434	6039104