

At a glance:

- Short: housing length 50 mm (cable model) / 60 mm (connector model)
- Long operating distances
- High switching frequency: 1000 Hz
- All devices with visible red light
- Glass window, therefore scratch resistant and easy to clean
- Excellent resistance to environmental influences thanks to polyurethane potting of the electronic module
- Convenient sensitivity adjustment by means of the built-in potentiometer (diffuse sensor; optional for other models)
- High degree of protection: IP 67

Construction

The devices are built into nickel-plated brass housings, and encapsulated in polyurethane. The electronic module is constructed using SMD technology on a ceramic-free epoxy substrate, and is therefore insensitive to shock.

Sensitivity setting

The sensitivity can be adjusted by means of the built-in potentiometer (diffuse sensor; optional for other models). Turning clockwise increases the sensitivity.

Protection

The switches are protected against overloads, short-circuits and all possible wire reversals. Furthermore, protection against overvoltages caused by inductive loads on the output and against voltage spikes on the power supply lines are built in. Malfunctions or destruction caused by electrostatic discharges, fast transients, or HF fields, are prevented by appropriate technology.

LED

The yellow LED lights up when the output is switched. The green LED lights up when sufficient light is available for reliable operation (approx. 80% of the maximum operating distance).

Connection

Switches with 2 m PVC cable 3 x 0.34 mm² (type 8) or 4-pole S12 connector are standard. Other cable types or lengths are available on request. Suitable connecting cables are listed on page 146.

Reflectors

A range of suitable reflectors for the reflex sensors is listed on page 113.

Test input

The additional test input built into the emitters of the through-beam models provides the possibility of an extra system control.

Excess-gain control

The built-in excess-gain circuit simplifies alignment and adjustment of the sensors. Any eventual dirt on the sensing faces is recognized in time, and can be removed easily.

Power-ON reset

Operation of the output is inhibited until the power supply requirements are met. This prevents unwanted switching of the output during power-ON.

Data sheets

Detailed data sheets with additional technical information are available for all models. These may be retrieved from the CONTRINEX website (www.contrinex.com), or ordered cost-free from our sales offices.

Drawings

The mechanical drawings may be downloaded as data files from the CONTRINEX website, and imported directly into construction drawings.

Delivery package

Photoelectric proximity switch, 2 fixing nuts, screwdriver, instructions.

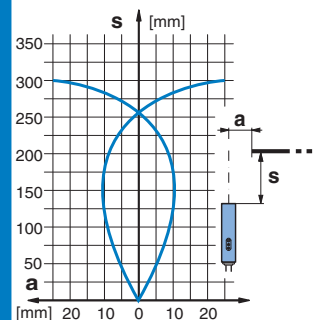
M12

Diffuse sensor, energetic

300 mm



Response curve:



Operating distance	300 mm
Standard target	100 x 100 mm white
No-load supply current	15 mA typ.
Emitter	LED red 660 nm
Weight (cable / connector model)	100 / 20 g
Part ref.: (bold : preferred types)	
NPN light-ON / cable	LTK-1120-301
NPN dark-ON / cable	-
NPN light-ON / connector S12	LTS-1120-301
NPN dark-ON / connector S12	-
PNP light-ON / cable	LTK-1120-303
PNP dark-ON / cable	-
PNP light-ON / connector S12	LTS-1120-303
PNP dark-ON / connector S12	-
Suitable connecting cables (page 146)	G, H, K, L
Wiring (pages 114 - 115)	Diagram 1

SERIES 1120

M12

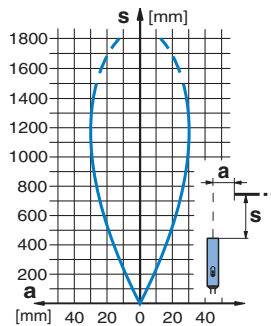
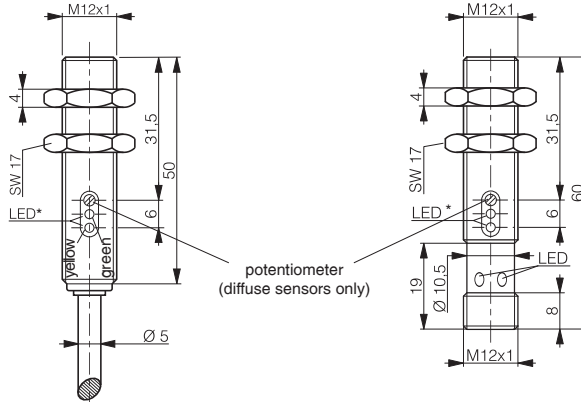
Reflex sensor

1,500 mm

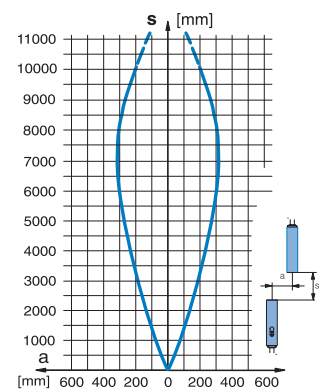
M12

Through-beam sensor

10,000 mm



*receiver only



1,500 mm

Reflector type 3

15 mA typ.

LED red polarized 660 nm

100 / 20 g

10,000 mm

-

15 mA typ.

LED red 660 nm

200 / 65 g (R and E)

(R) receiver / **(E)** emitter

LLK-1120-201 (R) / **LLK-1120-200 (E)**

LLK-1120-202 (R) / LLK-1120-200 (E)

LLS-1120-201 (R) / **LLS-1120-200 (E)**

LLS-1120-202 (R) / LLS-1120-200 (E)

LLK-1120-203 (R) / **LLK-1120-200 (E)**

LLK-1120-204 (R) / LLK-1120-200 (E)

LLS-1120-203 (R) / **LLS-1120-200 (E)**

LLS-1120-204 (R) / LLS-1120-200 (E)

G, H, K, L

Diagram 1

G, H, K, L

Diagram 1 (R) / 4 (E)

- 1 Inductive proximity switches
- 2 Photoelectric proximity switches
- 3 Optical fibers
- 4 Ultrasonic proximity switches
- 5 Connecting cables
- 6 Accessories
- 7 Glossary
- 8 Index

At a glance:

- Precise laser beam for the detection of very small objects
- Short: housing length 50 mm (cable model) / 60 mm (connector model)
- Long operating distance: 50 m
- High switching frequency: 5,000 Hz
- Visible red laser light 660 nm
- Glass lens and window, therefore scratch resistant and easy to clean
- Excellent resistance to environmental influences thanks to polyurethane potting of the electronic module
- Convenient sensitivity adjustment by means of the built-in potentiometer
- High degree of protection: IP 67

Construction

The devices are built into stainless-steel housings (V2A), and encapsulated in polyurethane. The electronic module is constructed using SMD technology on a ceramic-free epoxy substrate, and is therefore insensitive to shock.

Sensitivity setting

The sensitivity can be adjusted by means of the built-in potentiometer. Turning clockwise increases the sensitivity.

Protection

The switches are protected against overloads, short-circuits and all possible wire reversals. Furthermore, protection against overvoltages caused by inductive loads on the output and against voltage spikes on the power supply lines are built in. Malfunctions or destruction caused by electrostatic discharges, fast transients, or HF fields, are prevented by appropriate technology.

LED

The yellow LED lights up when the output is switched. The green LED lights up when sufficient light is available for reliable operation (approx. 80% of the maximum operating distance).

Connection

Switches with 2 m PVC cable 3 x 0.34 mm² (type 8) or 4-pole S12 connector are standard. Other cable types or lengths are available on request. Suitable connecting cables are listed on page 146.

Test input

The additional test input built into the emitters of the through-beam models provides the possibility of an extra system control.

Technical data:

(according to IEC 60947-5-2)	
Supply voltage range U _B	10 ... 36 VDC
Max. ripple content	20 %
Output current	200 mA max.
Output voltage drop	2.0 V max. at 200 mA
Max. switching frequency	5,000 Hz
Switching time (↑ and ↓)	0.1 msec
Max. ambient light:	
halogen	5,000 Lux
sun	10,000 Lux
Ambient temperature range	-10 ... +50 °C (+14 ... +122 °F)
Degree of protection	IP 67
Laser protection degree	2
EMC protection:	
IEC 60255-5	1 kV
IEC 61000-4-2	Level 2
IEC 61000-4-3	Level 3
IEC 61000-4-4	Level 3

Excess-gain control

The built-in excess-gain circuit simplifies alignment and adjustment of the sensors. Any eventual dirt on the sensing faces is recognized in time, and can be removed easily.

Power-ON reset

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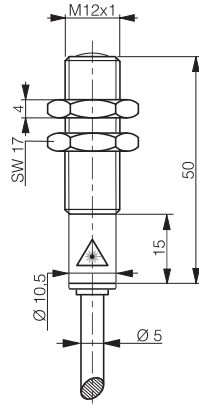
Operating distance	
Standard target	
No-load supply current	
Emitter	
Weight (cable / connector model)	
Part ref.: (bold : preferred types)	
NPN light-ON / cable	
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NPN light-ON / connector S12	
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PNP light-ON / cable	
PNP dark-ON / cable	
PNP light-ON / connector S12	
PNP dark-ON / connector S12	
Suitable connecting cables (page 146)	
Wiring (pages 114 - 115)	

LASER THROUGH-BEAM SENSORS

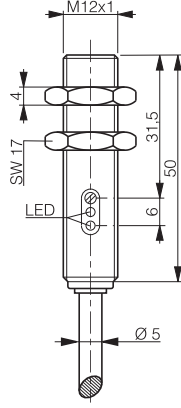
M12

Through-beam sensor

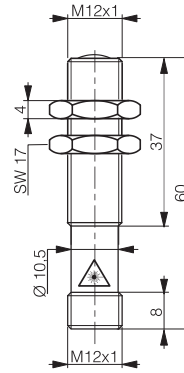
50,000 mm



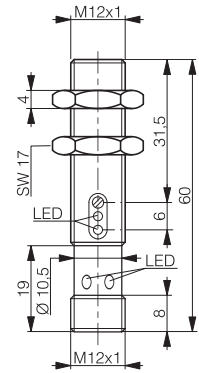
Emitter



Receiver



Emitter



Receiver

1 Inductive proximity switches

2 Photoelectric proximity switches

3 Optical fibers

4 Ultrasonic proximity switches

5 Connecting cables

6 Accessories

7 Glossary

8 Index

50,000 mm

-

10 mA typ.

Laser red pulsed 660 nm

180 / 50 g (R and E)

(R) receiver / **(E)** emitter

LLK-1121L-201 (R) / **LLK-1121L-200 (E)**

LLK-1121L-202 (R) / **LLK-1121L-200 (E)**

LLS-1121L-201 (R) / **LLS-1121L-200 (E)**

LLS-1121L-202 (R) / **LLS-1121L-200 (E)**

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G, H, K, L

Diagram 1 (R) / 4 (E)