

At a glance:

- Small, but robust
- Long operating distances
- High switching frequency: 1000 Hz / 500 Hz*
- 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 12-turn potentiometer
- High degree of protection: IP 67

Construction

The devices are built into a housing of glass-fiber reinforced PBTP/polybutyleneterephthalate (Crastin), and fully potted with polyurethane resin. The covers are ultrasonically welded. Two mounting holes are provided for the use of M4 fastening screws. A universal mounting bracket as well as screws are included with every switch.

Sensitivity setting

The sensitivity can be very finely adjusted by means of the built-in 12-turn potentiometer. The potentiometer cannot be turned too far. 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. Appropriate technology prevents malfunctions or destruction caused by electrostatic discharges, fast transients, or HF fields.

LED

The yellow LED lights up when the light-ON output is switched. The green LED lights up if the receiver gets enough light (excess gain) for reliable operation. At the same time the corresponding output (types -102 and -104 only) is switched.

Connection

Switches with 3 m PVC cable 4 x 0.14 mm² (type 2) or 4-pole S8 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 (separate output for types -102 and -104) simplifies alignment and adjustment of the sensors. Any eventual dirt is recognized in time, and can be removed easily.

Technical data:

(according to IEC 60947-5-2)

Hysteresis	10 % typ.
Supply voltage range U _B	10 ... 36 VDC
Max. ripple content	20 %
Output current (total of both outputs)	200 mA max.
Output voltage drop	2.0 V max. at 200 mA
Max. switching frequency	1000 Hz / 500 Hz*
Switching time (↑ and ↓)	0.5 msec / 1 msec*
Max. ambient light:	
halogen	5,000 Lux
sun	10,000 Lux
Ambient temperature range	-25 ... +55 °C (-13 ... +131 °F)
Degree of protection	IP 67
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
* Diffuse sensor with background suppression	

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.

Background suppression

The diffuse sensor with background suppression uses electronic distance setting. A PSD (Position-Sensitive Device) serves as the light receiver. Operating distance adjustment is carried out by means of a potentiometer, using visible red light as the source. The visible light spot (approx. 3 mm Ø) permits simple alignment. The device contains no moving optical parts, and is therefore insensitive to vibration.

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

Proximity switch, mounting bracket, screws, washers and nuts, screwdriver, instructions.

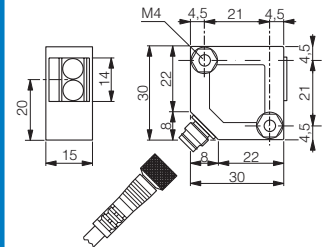
□ 30x30

Diffuse sensor, energetic

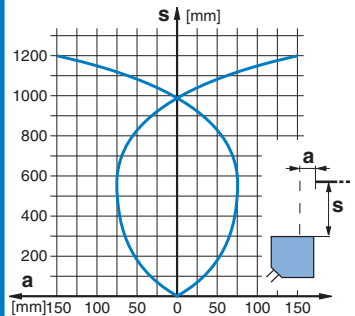
1,200 mm



Dimensions:



Response curve:



Operating distance	1,200 mm
Standard target	200 x 200 mm white
No-load supply current	15 mA typ.
Emitter	IR LED 880 nm
Weight (cable / connector model)	75 / 17 g
Part ref.: (bold : preferred types)	
NPN changeover outputs / cable	LTK-3030-101
NPN light-ON + excess gain / cable	LTK-3030-102
NPN changeover outputs / conn. S8	LTS-3030-101
NPN light-ON + excess gain / conn. S8	LTS-3030-102
PNP changeover outputs / cable	LTK-3030-103
PNP light-ON + excess gain / cable	LTK-3030-104
PNP changeover outputs / conn. S8	LTS-3030-103
PNP light-ON + excess gain / conn. S8	LTS-3030-104
Suitable connecting cables (page 146)	E, F
Wiring (pages 114 - 115)	Diagram 2

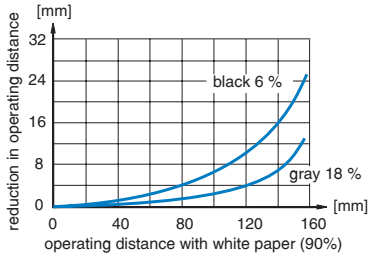
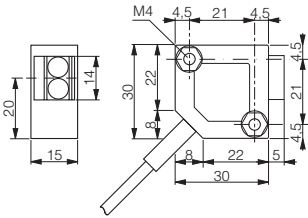
SERIES 3030

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

□ 30x30

Diffuse sensor with background suppression

15 ... 150 mm



15 ... 150 mm
 100 x 100 mm white
 25 mA typ.
 LED red 660 nm
 75 / 17 g

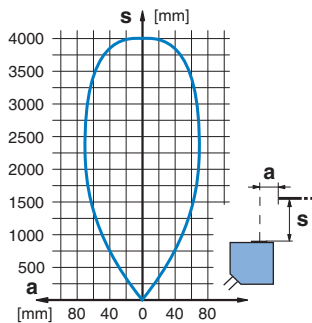
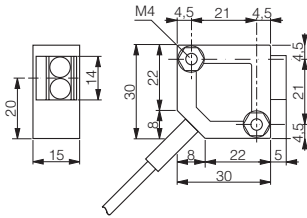
LHK-3030-101
 LHK-3030-102
LHS-3030-101
 LHS-3030-102
LHK-3030-103
LHK-3030-104
LHS-3030-103
LHS-3030-104
 E, F

Diagram 2

□ 30x30

Reflex sensor

4,000 mm



4,000 mm
 Reflector type 3
 15 mA typ.
 LED red polarized 660 nm
 80 / 18 g

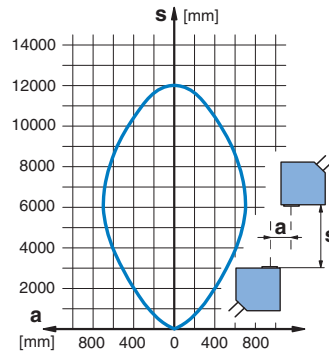
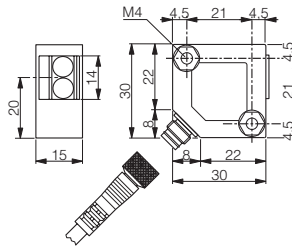
LRK-3030-101
 LRK-3030-102
LRS-3030-101
 LRS-3030-102
LRK-3030-103
LRK-3030-104
LRS-3030-103
LRS-3030-104
 E, F

Diagram 2

□ 30x30

Through-beam sensor

12,000 mm



12,000 mm
 -
 10 mA typ. (R) / 15 mA typ. (E)
 IR LED 880 nm
 150 / 34 g (R and E)

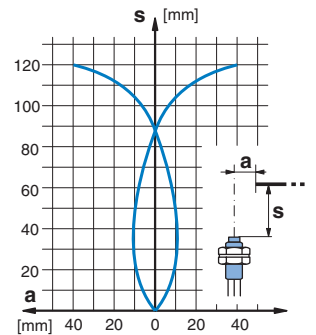
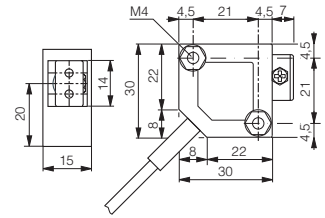
(R) receiver / (E) emitter
LLK-3030-001 (R) / LLK-3030-000 (E)
 LLK-3030-002 (R) / **LLK-3030-000 (E)**
LLS-3030-001 (R) / LLS-3030-000 (E)
 LLS-3030-002 (R) / **LLS-3030-000 (E)**
LLK-3030-003 (R) / LLK-3030-000 (E)
LLK-3030-004 (R) / LLK-3030-000 (E)
LLS-3030-003 (R) / LLS-3030-000 (E)
LLS-3030-004 (R) / LLS-3030-000 (E)
 E, F

Diagram 2 (R) / 4 (E)

□ 30x30

Fiber-optic amplifier

120 mm



120 mm (with LFP-1002-020)
 100 x 100 mm white
 15 mA typ.
 LED red 660 nm
 78 / 18 g

LFK-3030-101
 LFK-3030-102
LFS-3030-101
 LFS-3030-102
LFK-3030-103
 LFK-3030-104
LFS-3030-103
 LFS-3030-104
 E, F

Diagram 2

At a glance:

- Small, but robust
- Low cost
- High switching frequency: 1000 Hz / 500 Hz*
- 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 12-turn potentiometer
- High degree of protection: IP 65

Construction

The devices are built into a housing of glass-fiber reinforced PBTP/polybutyleneterephthalate (Crastin), and fully potted with polyurethane resin. The covers are ultrasonically welded. Two mounting holes are provided for the use of M4 fastening screws.

Sensitivity setting

The sensitivity can be very finely adjusted by means of the built-in 12-turn potentiometer. The potentiometer cannot be turned too far. 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. Appropriate technology prevents malfunctions or destruction caused by electrostatic discharges, fast transients, or HF fields.

LED

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

Connection

Switches with 2 m PVC cable 3 x 0.14 mm² (type 2) or 3-pole S8 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 dirt 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.

Technical data:

(according to IEC 60947-5-2)	
Hysteresis	10 % typ.
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:	1000 Hz / 500 Hz*
Switching time (↑ and ↓)	0.5 msec / 1 msec*
Max. ambient light:	
halogen	5,000 Lux
sun	10,000 Lux
Ambient temperature range	-25 ... +55 °C (-13 ... +131 °F)
Degree of protection	IP 65
EMC protection:	
IEC 60255-5	1 kV
IEC 61000-4-2	Level 3
IEC 61000-4-3	Level 3
IEC 61000-4-4	Level 3
* Diffuse sensor with background suppression	

Background suppression

The diffuse sensor with background suppression uses electronic distance setting. A PSD (Position-Sensitive Device) serves as the light receiver. Operating distance adjustment is carried out by means of a potentiometer, using visible red light as the source. The visible light spot (approx. 3 mm Ø) permits simple alignment. The device contains no moving optical parts, and is therefore insensitive to vibration.

Fixing

For fixation purposes, CONTRINEX offers a mounting set (order reference LXW-3030-003), consisting of a universal fixing bracket, screws, and a screwdriver suitable for adjusting the potentiometer.

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

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Delivery package

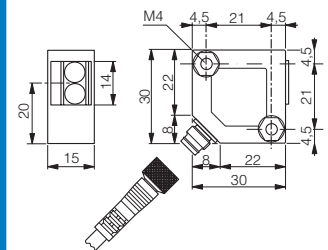
Proximity switch, instructions.

□ 30x30

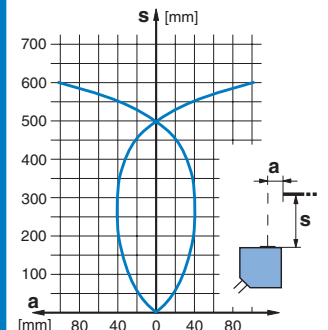
Diffuse sensor, energetic
600 mm



Dimensions:



Response curve:



Operating distance	600 mm
Standard target	200 x 200 mm white
No-load supply current	15 mA typ.
Emitter	IR LED 880 nm
Weight (cable / connector model)	75 / 17 g
Part ref.: (bold : preferred types)	
NPN light-ON / cable	LTK-3031-301
NPN dark-ON / cable	-
NPN light-ON / connector S8	LTS-3031-301
NPN dark-ON / connector S8	-
PNP light-ON / cable	LTK-3031-303
PNP dark-ON / cable	-
PNP light-ON / connector S8	LTS-3031-303
PNP dark-ON / connector S8	-
Suitable connecting cables (page 146)	A, B
Wiring (pages 114 - 115)	Diagram 1

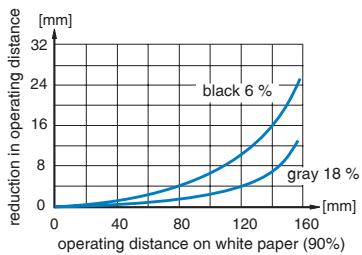
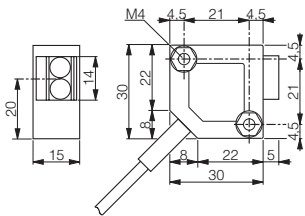
SERIES 3031

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□ 30x30

Diffuse sensor with background suppression

15 ... 150 mm



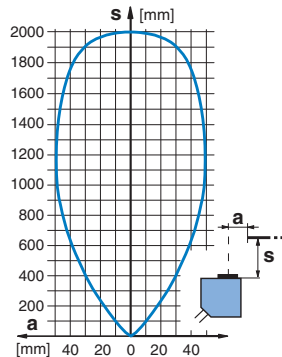
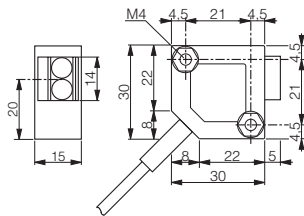
15 ... 150 mm
100 x 100 mm white
25 mA typ.
LED red 660 nm
75 / 17 g

LHK-3031-301
-
LHS-3031-301
-
LHK-3031-303
-
LHS-3031-303
-
A, B
Diagram 1

□ 30x30

Reflex sensor

2,000 mm



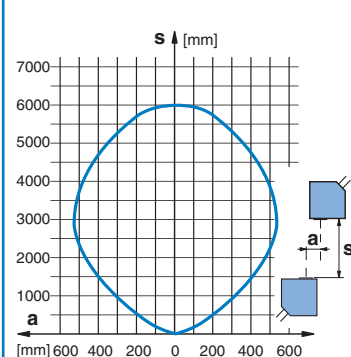
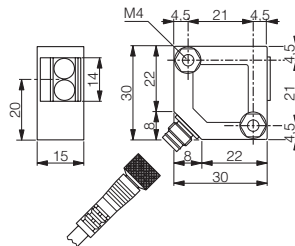
2,000 mm
Reflector type 3
15 mA typ.
LED red polarized 660 nm
80 / 18 g

-
LRK-3031-302
-
LRS-3031-302
-
LRK-3031-304
-
LRS-3031-304
-
A, B
Diagram 1

□ 30x30

Through-beam sensor

6,000 mm



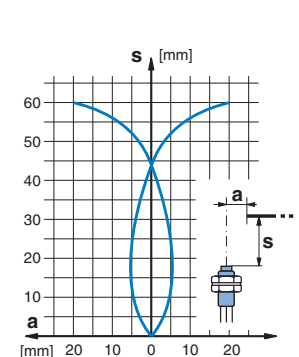
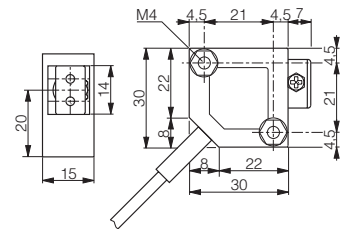
6,000 mm
-
10 mA typ. (R) / 15 mA typ. (E)
IR LED 880 nm
150 / 34 g (R and E)

(R) receiver / (E) emitter
-
LLK-3031-202 (R) / LLK-3031-200 (E)
-
LLS-3031-202 (R) / LLS-3031-200 (E)
-
LLK-3031-204 (R) / LLK-3031-200 (E)
-
LLS-3031-204 (R) / LLS-3031-200 (E)
-
A, B
Diagram 1 (R) / 4 (E)

□ 30x30

Fiber-optic amplifier

60 mm



60 mm (with LFP-1002-020)
100 x 100 mm white
15 mA typ.
LED red 660 nm
78 / 17 g

LFK-3031-301
LFK-3031-302
LFS-3031-301
LFS-3031-302
LFK-3031-303
LFK-3031-304
LFS-3031-303
LFS-3031-304
-
A, B
Diagram 1

At a glance:

- Small, but robust
- Very long operating distances
- High switching frequency: 1000 Hz
- 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 20-turn potentiometer
- High degree of protection: IP 67

Construction

The devices are built into a housing of glass-fiber reinforced PBTP/ polybutyleneterephthalate (Crastin), and fully potted with polyurethane resin. The covers are ultrasonically welded. Two mounting holes are provided for the use of M4 fastening screws. A universal mounting bracket as well as screws are delivered with every switch.

Sensitivity setting

The sensitivity can be very finely adjusted by means of the built-in 20-turn potentiometer. The potentiometer cannot be turned too far. 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. Appropriate technology prevents malfunctions or destruction caused by electrostatic discharges, fast transients, or HF fields.

LED

The yellow LED lights up when the light-ON output is switched. The green LED lights up if the receiver gets enough light (excess gain) for reliable operation (approx. 80 % of the maximum operating distance). At the same time, the corresponding output (types -102 and -104 only) is switched.

Connection

Switches with 3 m PVC cable 4 x 0.14 mm² (type 2) or 4-pole S8 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 is recognized in time, and can be removed easily.

Technical data:

(according to IEC 60947-5-2)	
Hysteresis	10 % typ.
Supply voltage range U _B	10 ... 36 VDC
Max. ripple content	20 %
Output current (total of both outputs)	200 mA max.
Output voltage drop	2.0 V max. at 200 mA
Max. switching frequency	1000 Hz
Switching time (↑ and ↓)	0.5 msec
Max. ambient light:	
halogen	5,000 Lux
sun	10,000 Lux
Ambient temperature range	-25 ... +55 °C (-13 ... +131 °F)
Degree of protection	IP 67
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

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

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Proximity switch, mounting bracket, screws, washers and nuts, screwdriver, instructions.

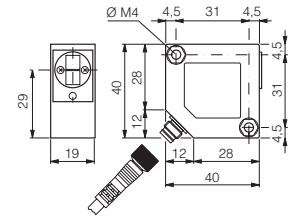
□ 40x40

Diffuse sensor, energetic

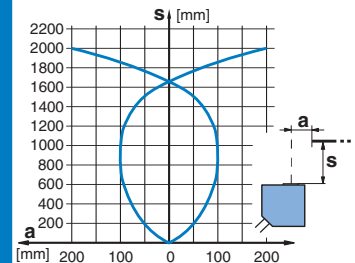
2,000 mm



Dimensions:






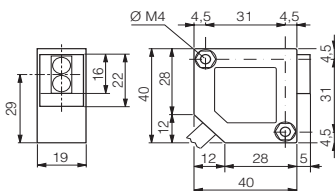
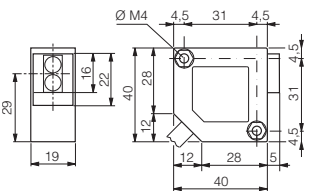
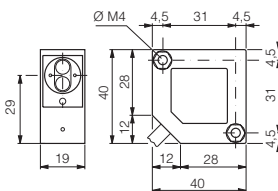
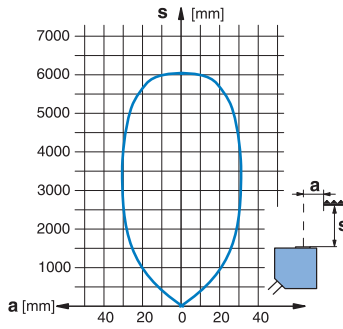
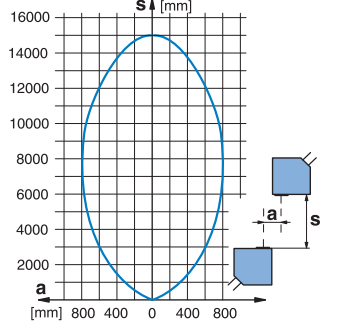
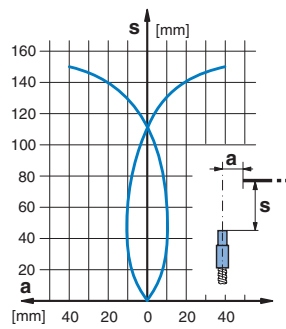
Response curve:



Operating distance	2,000 mm
Standard target	400 x 400 mm white
No-load supply current	25 mA typ.
Emitter	IR LED 880 nm
Weight (cable / connector model)	90 / 35 g
Part ref.: (bold : preferred types)	
NPN changeover outputs / cable	LTK-4040-101
NPN light-ON + excess gain / cable	LTK-4040-102
NPN changeover outputs / conn. S8	LTS-4040-101
NPN light-ON + excess gain / conn. S8	LTS-4040-102
PNP changeover outputs / cable	LTK-4040-103
PNP light-ON + excess gain / cable	LTK-4040-104
PNP changeover outputs / conn. S8	LTS-4040-103
PNP light-ON + excess gain / conn. S8	LTS-4040-104
Suitable connecting cables (page 146)	E, F

Diagram 2

SERIES 4040

	□ 40x40 Reflex sensor	□ 40x40 Through-beam sensor	□ 40x40 Fiber-optic amplifier
	6,000 mm	15,000 mm	150 mm
			
			
			
	6,000 mm Reflector type 3 20 mA typ. LED red polarized 660 nm 90 / 35 g	15,000 mm - 10 mA typ. (R) / 15 mA typ. (E) IR LED 880 nm 190 / 70 g (R and E)	150 mm (with LFG-1030-050) 100 x 100 mm white 20 mA typ. IR LED 880 nm 95 / 35 g
		(R) receiver / (E) emitter	
	LRK-4040-101	LLK-4040-001 (R) / LLK-4040-000 (E)	LFK-4040-101
	LRK-4040-102	LLK-4040-002 (R) / LLK-4040-000 (E)	LFK-4040-102
	LRS-4040-101	LLS-4040-001 (R) / LLS-4040-000 (E)	LFS-4040-101
	LRS-4040-102	LLS-4040-002 (R) / LLS-4040-000 (E)	LFS-4040-102
	LRK-4040-103	LLK-4040-003 (R) / LLK-4040-000 (E)	LFK-4040-103
	LRK-4040-104	LLK-4040-004 (R) / LLK-4040-000 (E)	LFK-4040-104
	LRS-4040-103	LLS-4040-003 (R) / LLS-4040-000 (E)	LFS-4040-103
	LRS-4040-104	LLS-4040-004 (R) / LLS-4040-000 (E)	LFS-4040-104
	E, F	E, F	E, F
	Diagram 2	Diagram 2 (R) / 4 (E)	Diagram 2

1 Inductive proximity switches

2 Photoelectric proximity switches

3 Optical fibers

4 Ultrasonic proximity switches

5 Connecting cables

6 Accessories

7 Glossary

8 Index