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FIBER-OPTIC PHOTOELECTRIC SENSORS

RELIABLE SHORT- AND LONG-RANGE SENSING

With self-contained fiber-optic sensors available in housings as small as 30 × 30 × 15 mm, and several models of small DIN-rail mounted amplifiers that accommodate multiple-sensor applications, the Contrinex range is highly versatile. A choice of **synthetic** or **glass optical fibers** provides options for even the most demanding applications.

KEY ADVANTAGES

Fiber-optic sensors

- ✓ Robust 3030 series (30 × 30 × 15 mm)
- ✓ DIN-rail mounted 3060 series (31 × 60 × 10 mm) suitable for multiple-sensor applications
- ✓ Distance setting by potentiometer or teach-in
- ✓  **IO-Link**

Fibers

- ✓ Large selection of types, including cylindrical light beam, multi-beam and low & high temperature
- ✓ Diffuse or through-beam sensing, axial or radial
- ✓ Synthetic fibers with bending radii from 2 mm, suitable for cutting on-site
- ✓ Glass fibers for high temperatures and aggressive environment



PRODUCT OVERVIEW

 **IO-Link**

SERIES	3030	3060
Housing size mm	□ 30 × 30 × 15	□ 30 × 60 × 10
Fiber-optic amplifier (s _n mm)	60/120	200

OPTICAL FIBERS OVERVIEW

Housing size		Ø2.3 mm	M3	Ø3.2 mm	M4	Ø4.5 mm	M5	M6	□ 18 × 32 mm
Synthetic fibers	Diffuse	p. 168	p. 168			p. 170	p. 170	p. 168, 172	p. 168
	Through-beam		p. 170	p. 170	p. 172			p. 174	
Glass fibers	Diffuse							p. 170	
	Through-beam				p. 174				

COMMON FEATURES

Supply Voltage range	10 ... 36 VDC
----------------------	---------------

OUTPUT

Sensor type

[F] Fiber amplifier

[0] High performance [1] Standard

L[x][x]-303[x]-[xxx] — see p. 197

Connection

[K] Cable [S] Connector

Reference key on page 197

OPERATING PRINCIPLE

Diffuse

Through-beam

ACCESSORIES

Group A: M8 3-pin
Sub-group: Field attachable connectors
Sub-group: Distribution boxes

Group B: M8 4-pin
Sub-group: Field attachable connectors

Group C: M12 4-pin
Sub-group: Field attachable connectors
Sub-group: Distribution boxes

Group D: M12 AC/DC 3-pin

Group E: Universal mounting brackets
Sub-group: Mechanical stops

Group F: Photoelectric mounting brackets

Group G: Photoelectric reflectors

Group H: Sensor tester

Go to page 298 for details

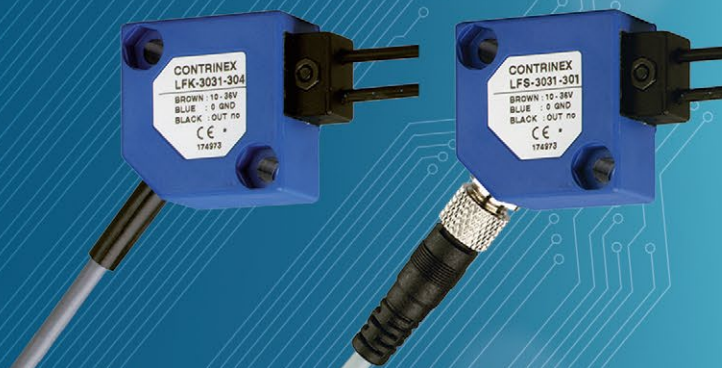
CABLES
Cable lengths available:
2 m, 5 m, 10 m
other customised lengths possible

CUBIC 3030
3030 SERIES
AMPLIFIER

FAMILY	OPERATING PRINCIPLE	SENSING RANGE (mm)	HOUSING SIZE (mm)	LIGHT SOURCE	
CUBIC 3030 – 3030 SERIES	or (dependent on selected optical fiber)	60	30 × 30	LED, red 660 nm	
		60	30 × 30	LED, red 660 nm	
		60	30 × 30	LED, red 660 nm	
		60	30 × 30	LED, red 660 nm	
		60	30 × 30	LED, red 660 nm	
		60	30 × 30	LED, red 660 nm	
		60	30 × 30	LED, red 660 nm	
		60	30 × 30	LED, red 660 nm	
		60	30 × 30	LED, red 660 nm	
		120	30 × 30	LED, red 660 nm	
		120	30 × 30	LED, red 660 nm	
		120	30 × 30	LED, red 660 nm	
		120	30 × 30	LED, red 660 nm	
		120	30 × 30	LED, red 660 nm	
		120	30 × 30	LED, red 660 nm	
		120	30 × 30	LED, red 660 nm	

KEY ADVANTAGES

- ✓ Fiber-optic amplifiers in rugged Crastin housing 30 × 30 × 15 mm
- ✓ Shock and vibration resistant due to fully potted electronics
- ✓ Sensing range up to 120 mm



	HOUSING MATERIAL	CABLE	CONNECTOR	IO-Link	SWITCHING FREQUENCY (Hz)	AMBIENT TEMPERATURE	DEGREE OF PROTECTION	PART REFERENCE	ACCESSORIES (SEE PAGE 164)
	PBTP (Crastin)	PVC			1,000	−25 ... +55°C	IP67	LFK-3031-301	F H
	PBTP (Crastin)	PVC			1,000	−25 ... +55°C	IP67	LFK-3031-302	F H
	PBTP (Crastin)		M8		1,000	−25 ... +55°C	IP67	LFS-3031-301	A F H
	PBTP (Crastin)		M8		1,000	−25 ... +55°C	IP67	LFS-3031-302	A F H
	PBTP (Crastin)	PVC			1,000	−25 ... +55°C	IP67	LFK-3031-303	F H
	PBTP (Crastin)	PVC			1,000	−25 ... +55°C	IP67	LFK-3031-304	F H
	PBTP (Crastin)		M8		1,000	−25 ... +55°C	IP67	LFS-3031-303	A F H
	PBTP (Crastin)		M8		1,000	−25 ... +55°C	IP67	LFS-3031-304	A F H
	PBTP (Crastin)	PVC			1,000	−25 ... +55°C	IP67	LFK-3030-101	F H
	PBTP (Crastin)		M8		1,000	−25 ... +55°C	IP67	LFS-3030-101	B F H
	PBTP (Crastin)	PVC			1,000	−25 ... +55°C	IP67	LFK-3030-103	F H
	PBTP (Crastin)		M8		1,000	−25 ... +55°C	IP67	LFS-3030-103	B F H

COMMON FEATURES

Supply Voltage range	10 ... 30 VDC
----------------------	---------------

OUTPUT

Sensor type
[F] Fiber amplifier

[0] Red light [3] Blue light

L[x][x]-3[x]6[x]-[xxx] — see p. 197

Connection
[K] Cable [S] Connector

[0] Potentiometer
[5] Teach
[6] Digital display

Reference key on page 197

OPERATING PRINCIPLE

Diffuse

Through-beam

ACCESSORIES

Group A: M8 3-pin
Sub-group: Field attachable connectors
Sub-group: Distribution boxes

Group B: M8 4-pin
Sub-group: Field attachable connectors

Group C: M12 4-pin
Sub-group: Field attachable connectors
Sub-group: Distribution boxes

Group D: M12 AC/DC 3-pin

Group E: Universal mounting brackets
Sub-group: Mechanical stops

Group F: Photoelectric mounting brackets

Group G: Photoelectric reflectors

Group H: Sensor tester

Go to page 298 for details

CABLES

Cable lengths available:
2 m, 5 m, 10 m
other customised lengths possible

CUBIC 3060
3060 SERIES
AMPLIFIER

FAMILY	OPERATING PRINCIPLE	SENSING RANGE (mm)	HOUSING SIZE (mm)	LIGHT SOURCE	
CUBIC 3060 – 3060 SERIES	or (dependent on selected optical fiber)	100	31 × 60	LED, blue 465 nm	
		100	31 × 60	LED, blue 465 nm	
		100	31 × 60	LED, blue 465 nm	
		100	31 × 60	LED, blue 465 nm	
		200	31 × 60	LED, red 680 nm	
		200	31 × 60	LED, red 680 nm	
		200	31 × 60	LED, red 680 nm	
		200	31 × 60	LED, red 680 nm	
		200	31 × 60	LED, red 680 nm	
		200	31 × 60	LED, red 680 nm	
		200	31 × 60	LED, red 680 nm	
		200	31 × 60	LED, red 680 nm	
		200	31 × 60	LED, red 680 nm	
		200	31 × 60	LED, red 680 nm	
		200	31 × 60	LED, red 680 nm	
		200	31 × 60	LED, red 680 nm	
		200	31 × 60	LED, red 680 nm	
		200	31 × 60	LED, red 680 nm	
		200	31 × 60	LED, red 680 nm	
		200	31 × 60	LED, red 680 nm	

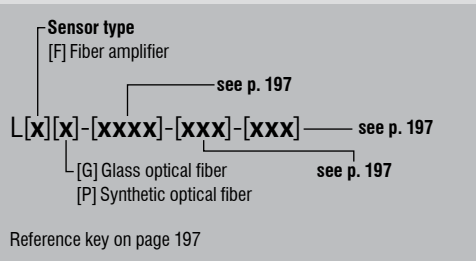
KEY ADVANTAGES

- ✓ Complete series of fiber-optic amplifiers for plastic fibers and DIN-rail mounting
- ✓ Small housings 31 × 60 × 10 mm
- ✓ Sensing ranges up to 200 mm
- ✓ IO-Link
- ✓ Blue light version for glass detection

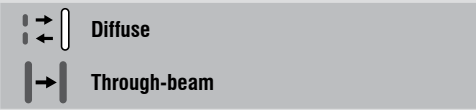


	HOUSING MATERIAL	CABLE	CONNECTOR	IO-Link	SWITCHING FREQUENCY (Hz)	AMBIENT TEMPERATURE	DEGREE OF PROTECTION	PART REFERENCE	ACCESSORIES (SEE PAGE 166)
	PBTP (Crastin)	PVC			1,500	−25 ... +55°C	IP64	LFK-3360-101	H
	PBTP (Crastin)		M8		1,500	−25 ... +55°C	IP64	LFS-3360-101	B H
	PBTP (Crastin)	PVC			1,500	−25 ... +55°C	IP64	LFK-3360-103	H
	PBTP (Crastin)		M8		1,500	−25 ... +55°C	IP64	LFS-3360-103	B H
	PBTP (Crastin)	PVC			1,500	−25 ... +55°C	IP64	LFK-3065-101	H
	PBTP (Crastin)		M8		1,500	−25 ... +55°C	IP64	LFS-3065-101	B H
	PBTP (Crastin)	PVC			1,500	−25 ... +55°C	IP64	LFK-3065-103	H
	PBTP (Crastin)		M8		1,500	−25 ... +55°C	IP64	LFS-3065-103	B H
	PBTP (Crastin)	PVC			1,500	−25 ... +55°C	IP64	LFK-3060-101	H
	PBTP (Crastin)		M8		1,500	−25 ... +55°C	IP64	LFS-3060-101	B H
	PBTP (Crastin)	PVC			1,500	−25 ... +55°C	IP64	LFK-3060-103	H
	PBTP (Crastin)		M8		1,500	−25 ... +55°C	IP64	LFS-3060-103	B H
	PBTP (Crastin)	PVC			4,000	−25 ... +55°C	IP64	LFK-3066-101	H
	PBTP (Crastin)		M8		4,000	−25 ... +55°C	IP64	LFS-3066-101	B H
	PBTP (Crastin)	PVC		IO-Link	4,000	−25 ... +55°C	IP64	LFK-3066-403	H
	PBTP (Crastin)		M8	IO-Link	4,000	−25 ... +55°C	IP64	LFS-3066-403	B H

OUTPUT



OPERATING PRINCIPLE



FAMILY	OPERATING PRINCIPLE	SENSING RANGE (mm)	FIBER MATERIAL	HOUSING SIZE (mm)	
OPTICAL FIBERS		40	Plastic	Ø 2.3	
		40	Plastic	M3	
		40	Plastic	M3	
		90	Plastic	M6	
		90	Plastic	M6	
		90	Plastic	18 × 32	

KEY ADVANTAGES

- ✓ Very small dimensions
- ✓ Long sensing ranges
- ✓ Small bending radii
- ✓ Can be cut on site
- ✓ Large selection of types
- ✓ Mechanically rugged sensing head



	CABLE	SLEEVE	TEMPERATURE		
	2 m	PE	-25 ... +70°C		LFP-1012-020
	2 m	PE	-25 ... +70°C		LFP-1001-020
	2 m	PE	-25 ... +70°C		LFP-1004-020
	2 m	PE	-25 ... +70°C		LFP-1102-020
	2 m	PE	-55 ... +105°C		LFP-1002-020-002
	2 m	PE	-25 ... +70°C		LFP-1011-020

OUTPUT

Sensor type

[F] Fiber amplifier

see p. 197

L[X][X]-[XXXX]-[XXX]-[XXX]

see p. 197

[G] Glass optical fiber

[P] Synthetic optical fiber

see p. 197

Reference key on page 197

OPERATING PRINCIPLE

Diffuse

Through-beam

FIBERS
SYNTHETIC & GLASS

FAMILY	OPERATING PRINCIPLE	SENSING RANGE (mm)	FIBER MATERIAL	HOUSING SIZE (mm)	
OPTICAL FIBERS	Diffuse	100	Plastic	Ø 4.5	
	Diffuse	100	Plastic	M5	
	Through-beam	120	Plastic	M3	
	Through-beam	120	Plastic	M3	
	Through-beam	120	Plastic	Ø 3.2	
	Diffuse	120	Glass	M6	

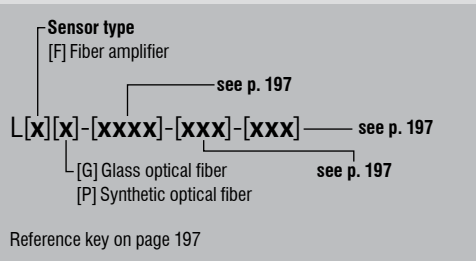
KEY ADVANTAGES

- ✓ Very small dimensions
- ✓ Long sensing ranges
- ✓ Small bending radii
- ✓ Can be cut on site
- ✓ Large selection of types
- ✓ Mechanically rugged sensing head

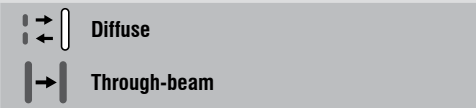


	CABLE	SLEEVE	TEMPERATURE		
	2 m	PE	-25 ... +70°C		LFP-1006-020
	2 m	PE	-25 ... +70°C		LFP-1007-020
	2 m	PE	-25 ... +70°C		LFP-2001-020
	2 m	PE	-25 ... +70°C		LFP-2003-020
	2 m	PE	-25 ... +70°C		LFP-2006-020
	0.5 m	Brass sleeve	-25 ... +160°C		LFG-1022-050

OUTPUT



OPERATING PRINCIPLE



FAMILY	OPERATING PRINCIPLE	SENSING RANGE (mm)	FIBER MATERIAL	HOUSING SIZE (mm)	
OPTICAL FIBERS		120	Plastic	M6	
		120	Plastic	M6	
		120	Plastic	M6	
		120	Plastic	M6	
		150	Plastic	M6	
		300	Plastic	M4	

KEY ADVANTAGES

- ✓ Very small dimensions
- ✓ Long sensing ranges
- ✓ Small bending radii
- ✓ Can be cut on site
- ✓ Large selection of types
- ✓ Mechanically rugged sensing head



	CABLE	SLEEVE	TEMPERATURE		
	2 m	PE	-25 ... +70°C		LFP-1002-020
	2 m	PE	-25 ... +70°C		LFP-1005-020
	2 m	PE	-25 ... +70°C		LFP-1003-020
	2 m	PE	-25 ... +70°C		LFP-1013-020
	2 m	PE	-25 ... +70°C		LFP-1202-020
	2 m	PE	-25 ... +70°C		LFP-2102-020

OUTPUT

Sensor type

[F] Fiber amplifier

see p. 197

L[X][X]-[XXXX]-[XXX]-[XXX]

see p. 197

[G] Glass optical fiber

[P] Synthetic optical fiber

see p. 197

Reference key on page 197

OPERATING PRINCIPLE

Diffuse

Through-beam

FIBERS
SYNTHETIC & GLASS

FAMILY	OPERATING PRINCIPLE	SENSING RANGE (mm)	FIBER MATERIAL	HOUSING SIZE (mm)	
OPTICAL FIBERS		 300	Plastic	M4	
		 400	Plastic	M4	
		 400	Plastic	M4	
		 500	Glass	M4	
		 500	Plastic	M4	
		 1,100	Plastic	M6	

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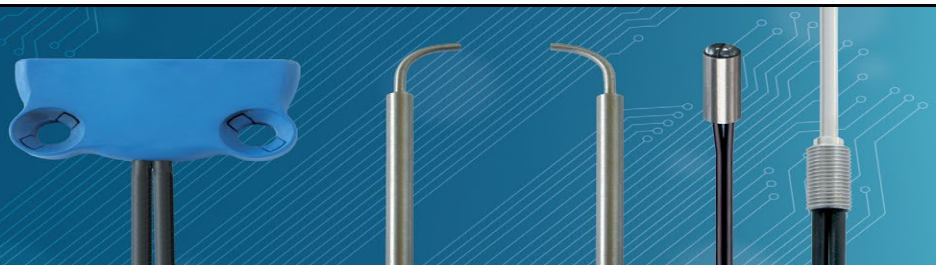
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KEY ADVANTAGES

- ✓ Very small dimensions
- ✓ Long sensing ranges
- ✓ Small bending radii
- ✓ Can be cut on site
- ✓ Large selection of types
- ✓ Mechanically rugged sensing head



	CABLE LENGTH	SLEEVE MATERIAL	TEMPERATURE RANGE	TECHNICAL DRAWING	PART REFERENCE
	2 m	PE	−55 ... +105°C		LFP-2002-020-002
	2 m	PE	−25 ... +70°C		LFP-2002-020
	2 m	PE	−25 ... +70°C		LFP-2004-020
	0.5 m	Brass sleeve	−25 ... +160°C		LFG-3022-050
	2 m	PE	−25 ... +70°C		LFP-2202-020
	2 m	PE	−25 ... +70°C		LFP-2005-020