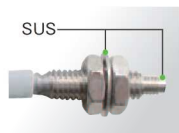


Threaded Type

- It is a standard fiber which is mounted using nuts. It has reasonable pricing while drastically improving flexing performance.
- With the lens installable type, long distance sensing and microscopic object sensing is possible by installing a lens.
- A protective tube and a sturdy stainless jacket type that prevents disconnection are also prepared.

Stainless steel fittings are used for the fiber head of all models.

- Clearly conforms to RoHS
- Can be used for secondary battery
- Improved mounting strength



* Some models not included (FT-R41W, FT-R42W, FT-140)

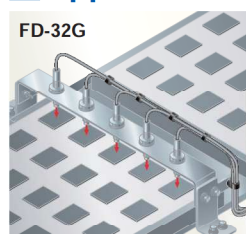
Application

Metal-free fiber

FT-41, FD-G60, FD-G40

- Made of resin
- Metallic particulate production ratio: ZERO
- Effect on magnetic fields: ZERO

*For details, please see our website.



Sensing the presence of workpiece



Improved centering accuracy

The beam axis deviation of each unit is kept within $\pm 3^\circ$ and the beam axis centering accuracy is kept within $\pm 150 \mu\text{m}$.

(Within $\pm 5^\circ$ and $\pm 90 \mu\text{m}$ for ultra small diameter fibers)

- Makes beam axis adjustment easier
- Improves mounting hole machining accuracy
- Improves sensing accuracy

Improved specularity

High precision polishing is accomplished by using the PCTC polishing technique.

The specularity of the end face of the fiber is 5 times greater.

- Light intensity is increased, enabling stable sensing.

Thru-beam type (one pair set)

Type	Shape of fiber head (mm)	Model No.	Bending radius (mm)	Fiber cable length (m)	Sensing range (mm in) (Note 1)			Beam axis dia. (mm)	Beam axis position/Inclination of beam axis	Protection	Ambient temp.
					FX-500 series	U-LG LONG FAST H-SP	FX-101 (Upper value) FX-102 (Lower value)				
Threaded	M3	Tough NEW FT-31	R2	2 m	STD 315 12.402 HYPR 1,350 53.150	770 30.315 550 21.654 210 8.268 70 2.756	130 5.118 340 13.386	0.5	150 μm $\pm 2^\circ$		-55 to +80 °C
		NEW FT-31W	R1		STD 260 10.236 HYPR 990 38.976	590 23.228 440 17.323 150 5.906 53 2.087	80 3.150 240 9.449				
	M4	NEW FT-43	R4	1 m	STD 1,400 55.118 HYPR (Note 2) 3,600 141.732	2,800 110.236 2,100 82.677 770 30.315 240 9.449	350 13.780 970 38.189	1.5	150 μm $\pm 2^\circ$	IP67	-55 to +80 °C
		Tough NEW FT-42	R4		STD 1,130 44.488 HYPR (Note 2) 3,600 141.732	2,050 80.709 1,600 62.992 530 20.866 190 7.480	300 11.811 800 31.496				
		NEW FT-42W	R1		STD 800 31.496 HYPR 3,300 129.921	1,900 74.803 1,400 55.118 490 19.291 160 6.299	260 10.236 720 28.346				
		NEW FT-45X	R4		STD 1,200 47.244 HYPR (Note 2) 1,600 62.992	1,600 62.992 (Note 2) 1,600 62.992 (Note 2) 630 24.803 200 7.874	340 13.386 920 36.220				
	Elbow	Tough NEW FT-R40	R4	2 m	STD 930 36.614 HYPR (Note 2) 3,600 141.732	1,750 68.898 1,500 59.055 500 19.685 160 6.299	270 10.630 740 29.134	1	150 μm $\pm 2^\circ$		-55 to +80 °C
		NEW FT-R41W	R1		STD 800 31.496 HYPR 3,200 125.984	1,800 70.866 1,400 55.118 460 18.110 150 5.906	250 9.843 710 27.953				
	Square head	NEW FT-R42W	R1	2 m	STD 2,200 86.614 HYPR (Note 2) 3,600 141.732	3,600 141.732 (Note 2) 3,500 137.795 1,300 51.181 460 18.110	510 20.079 2,000 78.740	2.2	150 μm $\pm 2^\circ$	IP40	-40 to +60 °C
		NEW FT-140	R4		STD (Note 2) 19,600 771.654 HYPR (Note 2) 19,600 771.654	19,600 771.654 (Note 2) 19,600 771.654 (Note 2) 16,000 629.921 6,300 248.031	14,000 551.181 19,600 771.654 (Note 2)				
	Long range	Tough NEW FT-140	R4	10 m	STD (Note 2) 19,600 771.654 HYPR (Note 2) 19,600 771.654	19,600 771.654 (Note 2) 19,600 771.654 (Note 2) 16,000 629.921 6,300 248.031	14,000 551.181 19,600 771.654 (Note 2)	10	—	IP67	-40 to +70 °C

Notes: 1) Note that the sensing range of the free-cut type fiber may be reduced by 20 % max. depending upon how the fiber is cut.

2) The fiber cable length practically limits the sensing range.

Tough : It is a fiber which possesses both unbreakable (bending radius: R10 mm, reciprocating bending: 180°) and bendable (bending radius: R4 mm or less) features.

Coaxial type FD-□G□ in which high-precision positioning can be achieved.

It is a coaxial fiber that encloses the circumference of the emitter fiber at the center with the receiver fiber. This is suitable for high-precision positioning. It can perform sensing without affecting the approach direction of the work.



Supports spot lenses and zoom lenses!

Fiber options

Lens

(For thru-beam type fiber)

►P.30~

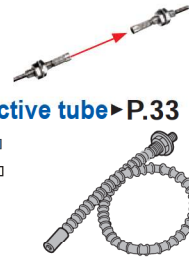
Lens

(For reflective type fiber)

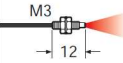
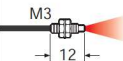
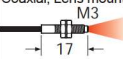
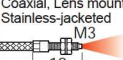
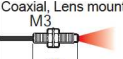
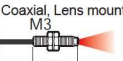
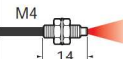
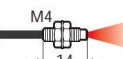
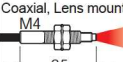
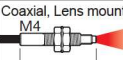
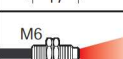
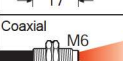
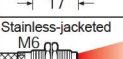
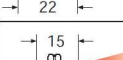
►P.32

Protective tube►P.33

·FTP-□
·FDP-□



Reflective type

Type	Shape of fiber head (mm)	Model No.	Bending radius (mm)	Fiber cable length Free-cut	Sensing range (mm in) (Note 1, 2)			Beam axis position/ Inclination of beam axis	Protection	Ambient temp.	
					FX-500 series	U-LG LONG FAST H-SP	FX-101 (Upper value) FX-102 (Lower value)				
M3		Tough NEW FD-31	R2 Bending durability	2 m	STD 125 4.921 HYPR 515 20.276	290 11.417 220 8.661 80 3.150 25 0.984	35 1.378 140 5.512	150 μm ±3°	IP67	-55 to +80 °C	
		NEW FD-31W	R1		STD 80 3.150 HYPR 330 12.992	180 7.087 140 5.512 45 1.772 12 0.472	15 0.591 60 2.362	—		-40 to +60 °C	
		Tough NEW FD-32G	R2 Bending durability	1 m (Note 3)	STD 200 7.874 HYPR 650 25.591	380 14.961 270 10.630 95 3.740 27 1.063	70 2.756 190 7.480	—	IP40	-55 to +80 °C	
		NEW FD-32GX	R2		STD 200 7.874 HYPR 630 24.803	410 16.142 360 14.173 100 3.937 30 1.181	75 2.953 210 8.268	—		-40 to +70 °C	
		NEW FD-EG30	R4		STD 48 1.890 HYPR 170 6.693	130 5.118 110 4.331 30 1.181 9 0.354	20 0.787 70 2.756	—		-20 to +60 °C	
		NEW FD-EG31			STD 20 0.787 HYPR 85 3.346	45 1.772 35 1.378 12 0.472 3.5 0.138	7 0.276 25 0.984	—			
Threaded M4		Tough NEW FD-41	R2 Bending durability	2 m	STD 125 4.921 HYPR 515 20.276	290 11.417 220 8.661 80 3.150 25 0.984	35 1.378 140 5.512	150 μm ±3°	IP67	-55 to +80 °C	
		NEW FD-41W	R1		STD 270 10.630 HYPR 900 35.433	630 24.803 430 16.929 150 5.906 45 1.772	80 3.150 230 9.055	—		-40 to +60 °C	
		Tough NEW FD-42G	R2 Bending durability	2 m	STD 200 7.874 HYPR 650 25.591	380 14.961 270 10.630 95 3.740 27 1.063	70 2.756 190 7.480	—	IP40	-55 to +80 °C	
		NEW FD-42GW	R1		STD 150 5.906 HYPR 670 26.378	340 13.386 280 11.024 90 3.543 25 0.984	45 1.772 140 5.512	—		-40 to +60 °C	
		NEW FD-62	R4 Bending durability		STD 520 20.472 HYPR 1,500 59.055	1,000 39.370 940 37.008 340 13.386 110 4.331	170 6.693 450 17.717	150 μm ±3°		IP67	-55 to +80 °C
		Tough NEW FD-61	R1		STD 450 17.717 HYPR 1,400 55.118	840 33.071 670 26.378 200 7.874 70 2.756	120 4.724 410 16.142	—			-40 to +60 °C
M6		NEW FD-61W	R1	2 m	STD 270 10.630 HYPR 900 35.433	630 24.803 430 16.929 150 5.906 45 1.772	80 3.150 230 9.055	—	IP67	-40 to +60 °C	
		Tough NEW FD-61G	R4 Bending durability		STD 420 16.535 HYPR 1,100 43.307	800 31.496 650 25.591 200 7.874 60 2.362	120 4.724 350 13.780	—		IP40	-55 to +80 °C
		NEW FD-64X	R4	1 m	STD 280 11.024 HYPR 670 26.378	500 19.685 410 16.142 160 6.299 50 1.969	75 2.953 220 8.661	—	IP40		-55 to +80 °C
	Elbow		Tough NEW FD-R60	R4 Bending durability	2 m	STD 290 11.417 HYPR 1,100 43.307	600 23.622 550 21.654 190 7.480 65 2.559	110 4.331 240 9.449	150 μm ±3°	IP67	-55 to +80 °C

Notes: 1) Note that the sensing range of the free-cut type fiber may be reduced by 20 % max. depending upon how the fiber is cut.

2) The sensing range is specified for white non-glossy paper.

3) The allowable cutting range is 700 mm 27.559 in from the end that the amplifier inserted.

Tough : It is a fiber which possesses both unbreakable (bending radius: R10 mm, reciprocating bending: 180°) and bendable (bending radius: R4 mm or less) features.

New product introduction
Tough Fiber

Fiber Selection Guide
Choose by model
Choose by shape/application
Viewing new models

Fibers

Super Quality
Threaded Type
Cylindrical Type
Sleeve
Flat Type
Small Spot
Narrow Beam
Wide Beam
Convergent Reflective Type
Retroreflective Type
Chemical-resistant
Heat-resistant
Vacuum-resistant
Liquid Leak / Liquid Detection

Fiber Options

Fiber Dimensions
Thru-beam Type
Retroreflective Type
Reflective Type
Others

Amplifiers

FX-500 series
FX-100 series

INDEX

Earlier models comparison table