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FIBER OPTIONS

Lens (For thru-beam type fiber)

esignatio	on Model No.			De	escription	n						
			Sensing range for FX-300 red LED type (mm) [Lens on both sides] (Note 3)									
				Mode	U-LG	LONG		STD	FAST	S-D	H-SP	
				Fiber		3,500 (Note 2)		2,500	2,000	1,000	1,000	
			Increases the sensing range by 5 times or more. • Ambient temperature:	FT-FM2	,			2,500 3,500 (Note 2)	,	1,300	1,000	
				FT-T80								
					,			3,500 (Note 2)		1,300	1,000	
Expansi				FT-R80	3,500 (Note 2)	, , ,	3,500 (Note 2)	,	1,600	800	750	
lens (Note 1)	FX-LE1			FT-W8	,		3,500 (Note 2)		2,000	1,000	900	
			-60 to +350 °C -76 to +662 °F	FT-P80 FT-P60	. , ,			3,500 (Note 2)		1,100 900	1,000	
			(Note 5)		,			3,500 (Note 2)			800 950	
				FT-P81X	,			1,600 (Note 2)		1,100		
				FT-H35-M2	,	3,500 (Note 2)		2,000	1,500	750	700	
				FT-H20W-M1	1,600 (Note 2)				900	500	400	
				FT-H20-M1	1,600 (Note 2)	1,600 (Note 2)	1,600 (Note 2)	1,600 (Note 2)	1,100	900	600	
				Sensing rai	nge for F	X-300 rec	LED typ	e (mm) [L	ens on b	oth sides	1 (Note 3)	
		6 J#	Tremendously increases the sensing range with large diameter lenses. • Ambient temperature: -60 to +350 °C -76 to +662 °F (Note 5)	Mode	U-LG	LONG		STD	FAST	S-D	H-SP	
				Fiber					3,500 (Note 2)	-		
				FT-FM2	, , ,	, , ,	, , ,	, , ,	3,500 (Note 2)	, , ,	, ,	
				FT-R80					3,500 (Note 2)			
				FT-W8					3,500 (Note 2)			
Super- expansion	on			FT-P80	, (,	, , ,	, , ,	, , ,	3,500 (Note 2)	, , ,	, ,	
(Note 1)	FX-LE2			FT-P60			,		3,500 (Note 2)			
				FT-P81X	1,600 (Note 2)							
					, ()	, , ,	, , ,		1,600 (Note 2)			
				FT-H35-M2	3,500 (Note 2)			,	3,500 (Note 2)			
				FT-H20W-M1	1,600 (Note 2)	, , ,			1,600 (Note 2)		1,600 (Note 2	
				FT-H20-M1 FT-H13-FM2	1,600 (Note 2)				1,600 (Note 2) 3,500 (Note 2)			
					3,500 (Note 2)	3,300 (NOIE 2)	3,500 (Noie 2)	[3,500 (Note 2)	3,500 (Noie 2)	3,500 (Note 2)	3,500 (NOR 2	
				Sensing rai	nge for F	X-300 rec	LED typ	e (mm) [L	ens on b	oth sides] (Note 3)	
				Mode	U-LG	LONG		STD	FAST	S-D	H-SP	
				Fiber	1,450	1,100	660	530	400	186	180	
				FT-FM2	1,800	1,200	810	600	440	210	210	
			Beam axis is bent by	FT-T80	1,800	1,200	810	600	440	210	210	
		a la construction de la construc	90°.	FT-W8	1,300	900	600	450	330	160	160	
Side-viev lens	FX-SV1		Ambient temperature:	FT-P80	1,800	1,200	810	600	440	210	210	
10113		and the	-60 to +300 °C -76 to +572 °F	FT-P60	850	650	400	300	200	130	120	
			(Note 5)	FT-P81X	1,800	1,200	810	600	440	200	200	
				FT-H35-M2	840	550	370	280	200	90	90	
				FT-H20W-M1	400	310	180	140	100	50	50	
				FT-H20-M1	840	550	370	280	200	90	90	
					540	000	5/0	200	200			
Expansi	on		Sensing range increases	Sensing rar	nge for F)	(-300 red	LED type	(mm) [Le	ns on bot	h sides] (l	Note 3, 4)	
lens for		- Dime	by 4 times or more.	Mode	U-LG	LONG		STD	FAST	S-D	H-SP	
vacuum	FV-LE1	al a	Ambient temperature:	Fiber FT-H30-M1V	1,600	1,200	650	450	300	150	200	
fiber (Note 1)			-60 to +350 °C -76 to +662 °F (Note 5		1,000	1,200	000		000	100	200	
(,				
Vacuum		~~~~	Beam axis is bent by 90°.	Sensing ran	-			<u>, , , , , , , , , , , , , , , , , , , </u>		<u> </u>	. ,	
registant		No.9Da	Ambient temperature:	Fiber	U-LG	LONG	STDF	STD	FAST	S-D	H-SP	
resistant								1				
side-viev	V FV-SV2	S DE D	−60 to +300 °C −76 to +572 °F	FT-H30-M1V	1,600	1,200	650	450	300	150	200	

Notes: 1) Be careful when installing the thru-beam type fiber equipped with the expansion lens, as the beam envelope becomes narrow and alignment is difficult. Especially when installing a fiber with many cores (sharp bending fibers and heat-resistant glass fiber), please be sure to use it only after you have

adjusted it sufficiently. 2) The fiber cable length practically limits the sensing range to 3,500 mm 137.795 in long (**FT-H20W-M1**, **FT-P81X** and **FT-H20-M1**: 1,600 mm 62.992 in). 3) The sensing ranges are the values for **FX-300** series red LED type amplifier. Please contact our office for details on sensing ranges for other types of amplifiers.

4) The fiber cable length for the FT-H30-M1V is 1 m 3.281 ft. The sensing ranges in U-LG and LONG modes take into account the length of the FT-J8 atmospheric side fiber.

5) Refer to p.101~ for the ambient temperatures of fibers to be used in combination.

BER Ensors

FIBER OPTIONS

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LASER SENSORS

Lens (For reflective type fiber)

The dimensions are on p.121~.

PHOTO- ELECTRIC SENSORS	Designation		Model No.	Description							
MICRO PHOTO- ELECTRIC SENSORS AREA		Pinpoint spot lens	FX-MR1		tection of minute objects or small marks. • Applicable fibers: FD-WG4, FD-G4 158 °F (Note 1)						
SENSORS		Zoom lens	FX-MR2	Screw-in depth Distance to focal point Spot diameter		Sensing range for red LED type (Note 2)					
SAFETY COMPONENTS					ø2 mm ø0.028 to ø0.079 in according to how much the fiber is screwed in.		Distance to focal point	Spot diameter			
PPEOOUPE					 Applicable fibers: FD-WG4, FD-G4 Ambient temperature: -40 to +70 °C 	7mm	18.5 mm approx.	ø0.7 mm			
PRESSURE SENSORS					-40 to +158 °F (Note 1)	12mm	27 mm approx.	ø1.2 mm			
INDUCTIVE					Accessory: MS-EX-3 (mounting bracket)	14mm	43 mm approx.	ø2.0 mm			
PROXIMITY SENSORS		Finest spot lens	FX-MR3	Distance to focal point focal point Spot diameter	Extremely fine spot of Ø0.3 mm Ø0.012 in	Sensing range for red LED type (Note 2)					
PARTICULAR	For reflective type fiber				approx. achieved. • Applicable fibers:	Fiber model No.	Distance to focal point	Spot diameter			
SENSORS					FD-WG4, FD-G4, FD-EG1, FD-EG2, FD-EG3, FD-G6X, FD-G6 • Ambient temperature: -40 to +70 °C	FD-EG3	7.5 ± 0.5 mm	ø 0.15 mm approx.			
SENSOR OPTIONS						FD-EG2	7.5 ± 0.5 mm	ø0.2 mm approx.			
					-40 to +158 °F	FD-EG1	7.5 ± 0.5 mm	ø0.3 mm approx.			
WIRE- SAVING					(Note 1)	FD-WG4/G4/G6X/G6	7.5 ± 0.5 mm	ø0.5 mm approx.			
SYSTEMS MEASURE-		Finest spot lens	FX-MR6		Extremely fine spot of ø0.1 mm ø0.004 in	Sensing range for red LED type (Note 2)					
MENT SENSORS					approx. achieved. • Applicable fibers:	Fiber model No.	Distance to focal point	Spot diameter			
STATIC CONTROL					FD-WG4, FD-G4, FD-EG1, FD-EG2, FD-EG3,	FD-EG3	7 ± 0.5mm	ø0.1 mm approx.			
DEVICES					 FD-G6X, FD-G6 Ambient temperature: -20 to +60 °C 	FD-EG2	7 ± 0.5mm	ø0.15 mm approx.			
LASER MARKERS					–4 to +140 °F	FD-EG1	7 ± 0.5mm	ø0.2 mm approx.			
WARKERS					(Note 1)	FD-WG4/G4/G6X/G6	7 ± 0.5mm	ø0.4 mm approx.			
				Screw-in	Sensing range for red LED type (Note 2)						
		Zoom lens			FX-MR2 is converted into a side-view type and can be mounted in a very small space.	Screw-in depth	Distance to focal point	Spot diameter			
	(side-view)	FX-MR5		 Applicable fibers: FD-WG4, FD-G4 Ambient temperature: -40 to +70 °C 	8 mm	13 mm approx.	ø0.5 mm				
	\type /			-40 to +158 °F	10 mm	15 mm approx.	ø0.8 mm				
				(Note 1)	14 mm	30 mm approx.	ø3.0 mm				
				1	1						

Notes: 1) Refer to p.101~ for the ambient temperatures of fibers to be used in combination.
 2) The sensing ranges are the values when used in combination with FX-300 series red LED type amplifier. Please contact our office for details on sensing ranges for other types of amplifier.

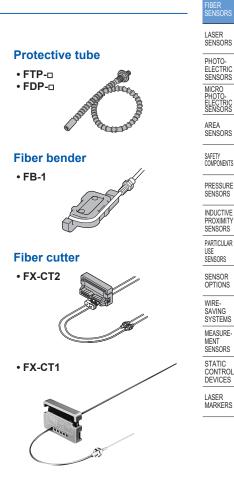
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FIBER OPTIONS

Others

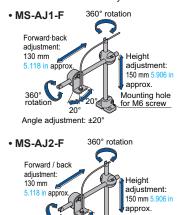
Designation	Model No.	Description								
	FTP-500 (0.5 m 1.640 ft)			FT-B8 FT-FM2 FT-FM2S FT-H13-FM2		FT-P80				
	FTP-1000 (1 m 3.281 ft)	For M4 thread	Applicable fibers			FT-P60 FT-FM2S4				
Protective tube	FTP-1500 (1.5 m 4.921 ft)									
(type fiber	FTP-N500 (0.5 m 1.640 ft)			FT-T80 FT-NFM2 FT-NFM2S FT-NFM2S4		FT-P40				
	FTP-N1000 (1 m 3.281 ft)	For M3 thread				FD-T40 FD-P40	The protective			
	FTP-N1500 (1.5 m 4.921 ft)						tube, made of non- corrosive stainless steel, protects the inner fiber cable from any external forces.			
	FDP-500 (0.5 m 1.640 ft)			FD-B8 FD-FM2 FD-FM2S FD-FM2S4		FD-P80				
	FDP-1000 (1 m 3.281 ft)	For M6 thread				FD-H13-FM2				
Protective tube	FDP-1500 (1.5 m 4.921 ft)									
type fiber	FDP-N500 (0.5 m 1.640 ft)			FD-T80 FD-NFM2 FD-NFM2S						
	FDP-N1000 (1 m 3.281 ft)	For M4 thread								
	FDP-N1500 (1.5 m 4.921 ft)			FD-NFM	2S4					
Fiber bender	FB-1	The fiber bender bends the sleeve part of the fiber head at the prope radius. (Note 1)								
Universal sensor	MS-AJ1-F	Horizontal m	ounting type Mounting stand a			nting stand ass	ssembly for fiber (For M3,			
mounting stand (Note 2)	MS-AJ2-F	Vertical mou	nting type		M4 or M6 threaded head fiber)					
Fiber cutter	FX-CT2	The free-cut type fiber can be easily cut. Accessory. FX-CT1 is attached with the FT-P80 or the								
	FX-CT1				CT2 is provided with fibers other than this.					
Attachment for fixed-length fiber	FX-AT2	This is the attachment for the fixed length fiber. (Accessory)								
Attachment for ø2.2 mm ø0.087 in fiber	FX-AT3	This is the attachment for the ø2.2 mm ø0.087 in fiber. (Accessory. Does not attach with the FT-P80 or the FD-P80 .)								
Attachment for ø1 mm ø0.039 in fiber	FX-AT4	This is the attachment for the ø1 mm ø0.039 in fiber. (Accessory)								
Attachment for ø1.3 mm ø0.051 in fiber	FX-AT5	This is the attachment for the ø1.3 mm ø0.051 in fiber. (Accessory)								
Attachment for ø1 mm ø0.039 in / ø1.3 mm ø0.051 in mixed fiber	FX-AT6	This is the attachment for the ø1 mm ø0.039 in / ø1.3 mm ø0.051 in mixed fiber. (Accessory)								

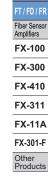
Notes: 1) Do not bend rhe sleeve part of any side-view type fiber or ultra-small diameter head type fiber. 2) Refer to p.799 for details of the universal sensor mounting stand.



Universal sensor mounting stand

Using the arm which enables adjustment in the horizontal direction, sensing can also be done from above an assembly line.



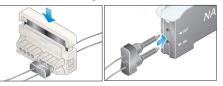


Selection Guide

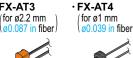
Fiber attachment

It's possible to simultaneously cut two fibers to the same length

Each fiber (with some exceptions) has a newly developed two-in-one fiber attachment (FX-AT3/AT4/AT5/AT6) which enables two fibers to be cut simultaneously to the same length with the new fiber cutter (FX-CT2). Also, since the fibers can be attached to the amplifier while being fixed in position in the two-inone fiber attachment, sensitivity changes resulting from variation in the amount of fiber insertion do not occur.









Mounting hole for M6 screw

FX-AT5 ·FX-AT6 (for ø1.3 mm ø0.051 in fiber

360

rotation

20 Angle adjustment: ±20°

> for ø1 mm ø0.039 in / ø1.3 mm ø0.051 in mixed fiber



