Information of Discontinued Models

SUNX

Created November 2004

Slim body automatic sensitivity setting fiber sensor
FX-7 series

Stopping taking order date: 30, Sep, 2005
Date of production discontinuance: 31, Dec, 2005

Discontinued models

Slim body automatic sensitivity setting fiber sensor
FX-7 series

※Confirm that table in
Main points of difference between recommended replacements and discontinued models for details on model numbers for each type.

Recommended replacements

Digital fiber sensor
FX-300 series

Refer to 'Digital fiber sensor **FX-300** series catalog' for details.

Advantages of switching to recommended replacements

Increased sensing ranges

A double coupling lens has been adopted, so that light emitting efficiency has been increased to maximum limits.
The sensing ranges for small-diameter and ultra-small diameter fibers has been increased by 50 % compared to previous models.

Stable sensing

The red LED type utilizes a four-chemical emitting element to maintain a stable light emitting amount over long periods. In addition, an APC (Auto Power Control) circuit has been provided to ensure light emitting amounts are stable over short periods, so that stable sensing can be obtained.

Digital display

The digital fiber sensors are equipped with a 4-digit display. This can be used for confirming incident light intensity, threshold value settings and a variety of other function displays.

MODE NAVI

The digital fiber sensors utilize a MODE NAVI function that is both multifunctional and yet easy to use. Basic sensor operations are indicated by means of six indicators, so that even inexperienced operators can use the sensors easily.

Wire-saving

A main cable and a sub cable enable the amount of wiring used to be reduced when the sensors are installed side by side.

Notes on using recommended replacements

Recommended replacements	Sensing performance	Specifications	Output circuit	Mounting dimensions	Dimensions	Enclosure color
FX-300 series	◎	◎	○	○	※	※

◎: Highly interchangeable ○: Almost no difference
※: Large differences –: No corresponding item or model

- High degree of interchangealibity in specifications, mounting dimensions and operability, so that replacement of the **FX-7** series with the **FX-300** series can be carried out smoothly.
- The **FX-7** series is equipped with self-diagnosis output, but the **FX-300** series is not.
- Cable types and connector types both must be changed to quick-connection cables.

Main points of difference between recommended replacements and discontinued models

Discontinued models			Recommended replacements		Main points of difference from discontinued models
Model No.	Light source		Model No.	Light source	
FX-7	Red LED	→	**FX-301**	Red LED	● Recommended replacements are connector types. ● Recommended replacements require the use of a quick-connection cable (**CN-73-C**□).
FX-7J	Red LED	→	**FX-301**	Red LED	
FX-7P	Red LED	→	**FX-301P**	Red LED	
FX-7PJ	Red LED	→	**FX-301P**	Red LED	
FX-7G	Green LED	→	**FX-301G**	Green LED	
FX-7GJ	Green LED	→	**FX-301G**	Green LED	
FX-7GP	Green LED	→	**FX-301GP**	Green LED	
FX-7GPJ	Green LED	→	**FX-301GP**	Green LED	
● External synchronization input type (With gate trigger / edge trigger function and light emission halt function)					
Model No.	Light source		Model No.	Light source	
FX-75	Red LED	→	—	—	● The discontinued models are external synchronization input types. ● No recommended replacements have been made available because of a low degree of market need.
FX-75G	Green LED	→	—	—	
● Remote sensitivity adjustment type (With external sensitivity setting function)					
Model No.	Light source		Model No.	Light source	
FX-77	Red LED	→	—	—	● The discontinued models are remote types. ● External teaching can be carried out by using the **FX-301** series and the **FX-CH2** series together in combination. ● Recommended replacements require the use of a quick-connection cable (**CN-73-C**□).
FX-77G	Red LED	→	—	—	
● Cable with connector (Given for reference. Not a discontinued model.)					
Model No.	Light source		Model No.	Light source	
CN-54-C2	—	→	**CN-73-C2**	—	● The quick-connection cables are available in different lengths of 1 m 3.281 ft, 2 m 6.562 ft and 5 m 16.404 ft. Select whichever length best suits your application. ● A main cable / sub cable are included in the lineup in order to reduce the amount of wiring required when installing the sensors side by side.
CN-54-C5	—	→	**CN-73-C5**	—	

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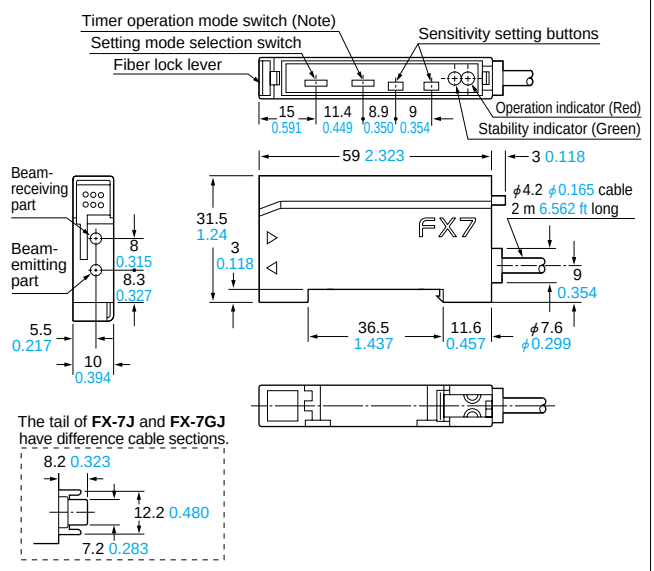
Dimensions (Unit : mm in)

Discontinued models

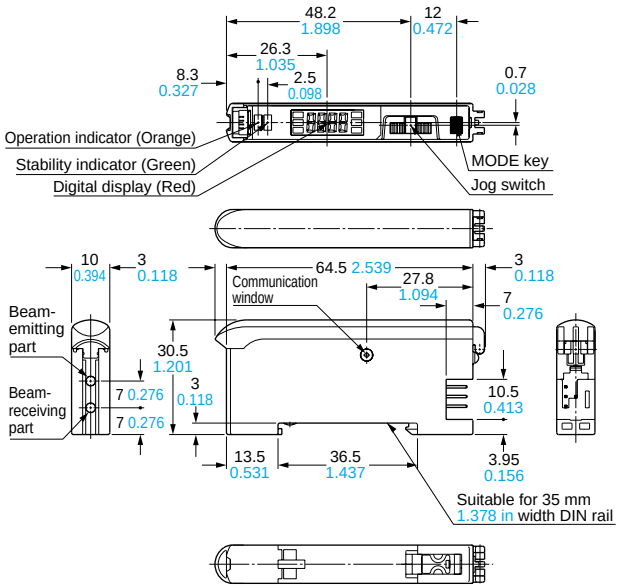
FX-7 series



Note: The external synchronization input type is an external synchronization select switch.

Recommended replacements

FX-300 series



Sensing performance

Discontinued models

FX-7 series

Fiber	Sensing range (mm in) (Note)	Min. sensing object
Thru-beam type **FT-FM2**	320 12.598	φ0.08 mm φ0.003 in opaque object
Reflective type **FD-FM2**	130 5.118	φ0.01 mm φ0.0004 in gold wire

Recommended replacements

FX-300 series

Fiber	Sensing range (mm in) (Note) ■ : LONG ■ : STD	Min. sensing object
Thru-beam type **FT-FM2**	780 30.709 400 15.748	φ0.03 mm φ0.0011 in opaque object
Reflective type **FD-FM2**	310 12.205 140 5.512	φ0.02 mm φ0.0008 in gold wire

Note: The sensing range is the value for red LED type.

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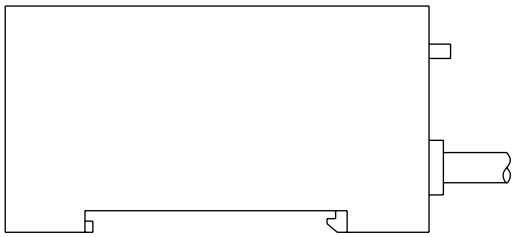
Examples of product configurations

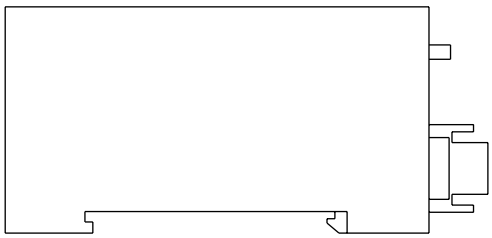
Discontinued models

FX-7 series

Cable connection type



Connector connection type

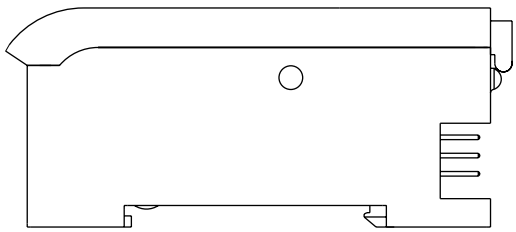


※ The **CN-54-C**□ cable with connector must be used.

Recommended replacements

FX-300 series

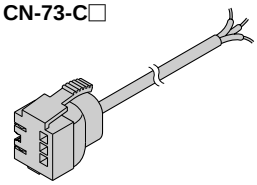
Connector connection type



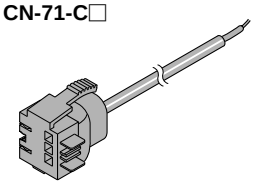
※The **CN-73-C**□ quick-connection cable must be used. Quick-connection cable is not supplied with the amplifier. Please order it separately.

※When installing side by side, you can reduce the amount of wiring used by using the **CN-71-C**□ quick-connection cable.

Main cable
CN-73-C□



Sub cable
CN-71-C□



Main rated specifications

Item \ Type	Discontinued models		Recommended replacements	
	NPN output	PNP output	NPN output	PNP output
Basic model No.	**FX-7**	**FX-7P**	**FX-301**	**FX-301P**
Emitting element	Red LED			
Supply voltage	12 to 24 V DC ±10 % Ripple P-P 10 % or less			
Current / Power consumption	30 mA or less		Normal operation: 960 mW or less (Current consumption 40 mA or less at 24 V supply voltage) ECO mode: 600 mW or less (Current consumption 25 mA or less at 24 V supply voltage)	
Sensing output	NPN open-collector transistor • Maximum sink current: 100 mA • Applied voltage: 30 V DC or less (between output and 0 V) • Residual voltage: 1.0 V or less (at 100 mA sink current) 0.4 V or less (at 16 mA sink current)	PNP open-collector transistor • Maximum source current: 100 mA • Applied voltage: 30 V DC or less (between output and +V) • Residual voltage: 2.0 V or less (at 100 mA source current) 0.1 V or less (at 16 mA source current)	NPN open-collector transistor • Maximum sink current: 100 mA (50 mA, if five, or more, amplifiers are connected in cascade.) • Applied voltage: 30 V DC or less (between output and 0 V) • Residual voltage: 1.5 V or less (at 100 mA (at 50 mA, if five, or more, amplifiers are connected in cascade) sink current.	PNP open-collector transistor • Maximum source current: 100 mA (50 mA, if five, or more, amplifiers are connected in cascade.) • Applied voltage: 30 V DC or less (between output and +V) • Residual voltage: 1.5 V or less (at 100 mA (at 50 mA, if five, or more, amplifiers are connected in cascade) source current.
Output operation	Selectable either Light-ON or Dark-ON with the order of pressing ON and OFF buttons		Selectable either Light-ON or Dark-ON, with jog switch	
Response time	0.5 ms or less (0.7 ms or less when the interference prevention function is used)		65 μs or less (H-SP), 150 μs or less (FAST), 250 μs or less (STD / S-D), 2 ms or less (LONG), selectable with jog switch	
Sensitivity setting	2-level teaching		2-level teaching / Limit teaching / Manual adjustment/ Full-auto teaching / Max. sensitivity teaching	
Ambient temperature	−10 to +50 °C +14 to +122 °F (No dew condensation or icing allowed), Storage: −20 to +70 °C −4 to +158 °F		−10 to +55 °C +14 to +131 °F (If 4 to 7 units are connected in cascade: −10 to +50 °C, +14 to +122 °F, if 8 to 16 units are connected in cascade: −10 to +45 °C, +14 to +113 °F) (No dew condensation or icing allowed), Storage: −20 to +70 °C −4 to +158 °F	
Connecting method	0.2 mm² 4-core cabtyre cable, 2 m 6.562 ft long		Connector (for quick-connection cable)	
Material	Enclosure: Heat-resistant ABS, Case cover: Polycarbonate Fiber lock lever: PPS		Enclosure: Heat-resistant ABS, Case cover: Polycarbonate, MODE key: Acrylic Jog switch: Heat-resistant ABS (**FX-301B/G/H**: Acrylic)	
Weight	65 g approx.		20 g approx.	

Refer to 'Digital fiber sensor **FX-300** series catalog' for details.