

Information of Discontinued Models

High speed digital fiber sensor FX-303

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

Discontinued models

High speed digital fiber sensor FX-303



Recommended replacements

Digital fiber sensor FX-300 series



※Confirm that table in

Main points of difference between recommended replacements and discontinued models for details on model numbers for each type.

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

Advantages of switching to recommended replacements

High-speed response 65 μ s

The high-speed response of 65 μ s is approximately 1.4 times faster than previous models.

Stable sensing

The red LED type utilizes a 'four-chemical emitting element' to maintain a stable light emitting amount over long periods, and an APC (Auto Power Control) circuit to ensure light emitting amounts are stable over short periods.

Fully interchangeable

The dimensions and mounting are fully interchangeable for the discontinued models and the recommended replacements.

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 interchangeability in specifications, mounting dimensions and operability, so that replacement of the **FX-302** with the **FX-300** series can be carried out smoothly.
- The same quick-connection cable can be used.

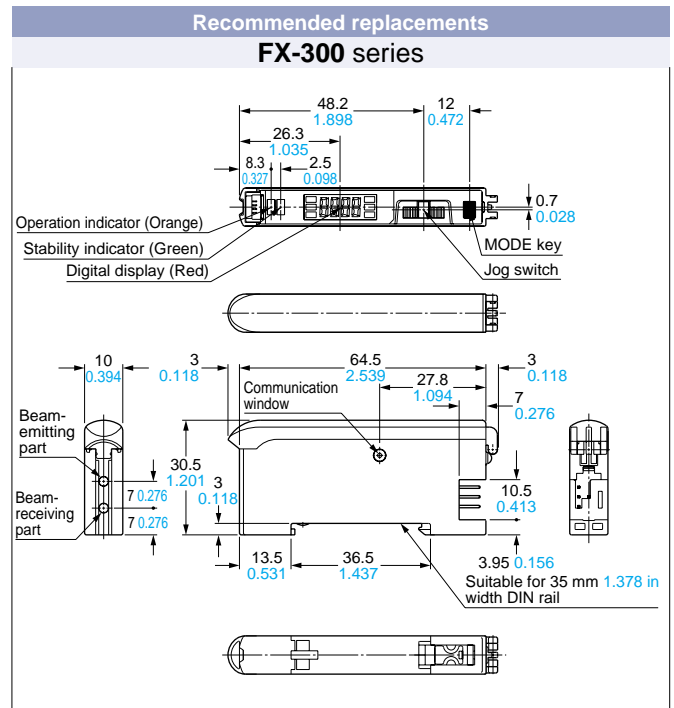
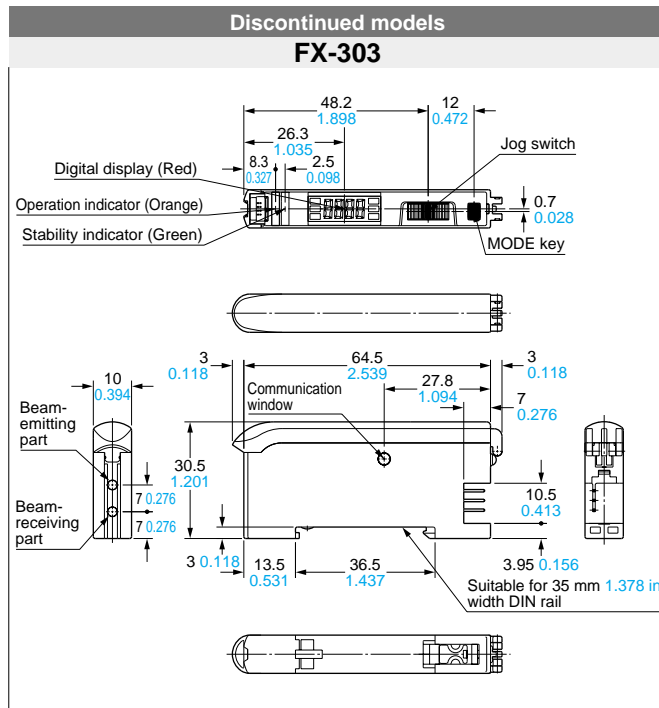
Main points of difference between recommended replacements and discontinued models

Discontinued models		Recommended replacements		Main points of difference from discontinued models
Model No.	Light source	Model No.	Light source	
FX-303	Red LED	FX-301	Red LED	→
FX-303P	Red LED	FX-301P	Red LED	

Information of Discontinued Models

High speed digital fiber sensor FX-303

Dimensions (Unit: mm in)



Sensing performance

Discontinued models		
FX-303		
Fiber	Sensing range (mm in) ■: H-SP (90 μs)	Min. sensing object
Thru-beam type FT-FM2	220 8.661	φ 0.03 mm φ 0.0011 in opaque object
Reflective type FD-FM2	80 3.150	φ 0.02 mm φ 0.0008 in gold wire

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

Recommended replacements		
FX-300 series		
Fiber	Sensing range (mm in) (Note) ■: H-SP (65 μs) ■: FAST (150 μs)	Min. sensing object
Thru-beam type FT-FM2	150 5.906 280 11.024	φ 0.03 mm φ 0.0011 in opaque object
Reflective type FD-FM2	55 2.165 100 3.937	φ 0.02 mm φ 0.0008 in gold wire

High speed digital fiber sensor FX-303

Main rated specifications

Item	Type Basic model No.	Discontinued models		Recommended replacements	
		NPN output FX-303	PNP output FX-303P	NPN output FX-301	PNP output FX-301P
Emitting element		Red LED			
Supply voltage		12 to 24 V DC \pm 10 % Ripple P-P 10 % or less			
Current consumption		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 (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.]	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 jog switch			
Response time		90 μ s or less		65 μ s or less (H-SP), 150 μ s or less (FAST), 250 μ s or less (STD / S-D), 2 ms or less (LONG), selectable with jog switch	
Sensitivity setting		2-level teaching / Limit teaching / Manual adjustment		2-level teaching / Limit teaching / Manual adjustment / Full-auto teaching / Max. sensitivity teaching	
Timer function		Incorporated with variable ON-delay / OFF-delay / ONE SHOT timer, switchable either effective or ineffective (Timer period: 0.5 ms to 500 ms approx.)		Incorporated with variable ON-delay / OFF-delay / ONE SHOT timer, switchable either effective or ineffective. [Timer period: Red LED type; 0.5 ms approx., 1 to 9999 ms (Blue LED, Green LED, Infrared LED type;) approx. 0.5 to 500 ms]	
Light emitting amount selection function		—		Incorporated (Red LED type only) (Note 1) FAST, STD, LONG: 4 level, H-SP: 3 level, S-D: 2 level	
Automatic interference prevention function		Not incorporated (The communication function is not incorporated) (Note 2)		Incorporated (Note 3) (Up to four sets of fiber heads can be mounted close together. However, H-SP mode is 2 fiber heads.)	
Ambient temperature		- 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			
Material		Enclosure: Heat-resistant ABS, Case cover: Polycarbonate Switch: Acrylic		Enclosure: Heat-resistant ABS, Case cover: Polycarbonate MODE key: Acrylic, Jog switch: Heat-resistant ABS	
Connecting method		Connector (for quick-connection cable)		Connector (for quick-connection cable)	
Weight		20 g approx.		20 g approx.	

Notes: 1) The light emitting amount can be zero (emission halt) in all modes.

2) Because this sensor does not include a communication function, identical models needed to be mounted together when connected together with the FX-300 series.

3) When the power supply is switched on, the light emission timing is automatically set for interference prevention.

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