FAM-A-0031-A

Replacement of Micro Programmable Controller FX0 and FX0S With FX3S

■Date of Issue
March 2022
■Relevant Models
MELSEC-F FX0 and FX0S series

Thank you for your continued support of Mitsubishi Electric micro programmable controllers, MELSEC-F series.

In this technical bulletin, we introduce the recommended alternative models and references. Please use them as a reference when replacing discontinued models.

The alternative models are recommended based on the number of I/O points, program capacity, characteristics, and type of I/O terminal (including terminal block type and connector type). Note that, depending on the application and usage conditions, there are cases where the recommended model is not suitable.

Also, due to the release of new models or the improvement of existing models, the recommended model may not be appropriate.

Before replacing discontinued models, please consult your local Mitsubishi representative.

1   RELEVANT MODELS (SERIES)

Discontinued model	Alternative model	Remarks (Be sure to check differences using references shown in Chapter 5.)
FX0	FX3S	• FX3S has a larger program capacity. • There are differences in assignment of devices, the supported versions of programming tool, and other specifications.
FX0S	FX3S	• FX3S has a larger program capacity. • There are differences in assignment of devices, the supported versions of programming tool, and other specifications. • For models with the 12VDC power supply, there is no alternative model.

2   PRODUCTION DISCONTINUATION DATE

FX0: June 30, 2002
FX0S: January 31, 2006

3   REPAIR SUPPORT

FX0: Until June 30, 2009
FX0S: Until January 31, 2013

MITSUBISHI ELECTRIC CORPORATION

4 ALTERNATIVE MODELS

Replace the Mitsubishi micro programmable controller FX0 and FX0S series with the FX3S series.

The alternative models in this bulletin are recommended based on the number of I/O points, program capacity, characteristics, and type of I/O terminal (including terminal block type and connector type). Note that, depending on the application and usage conditions, there are cases where the recommended model is not suitable.

Check the following notes and select the suitable model for your application.

Notes

- The recommended models in the following tables can be used by a single unit. Depending on the usage status and system configuration (use of extension modules of extension blocks), other models or series may be suitable.
- When the number of I/O points actually used is small, you can select a model with the smaller number of I/O points than the recommended model.
- The Special notes in the following tables describe the points to which you should pay particular attention when replacing. Many alternative models, however, have differences in specifications other than description in Special notes, such as smaller external dimensions. Thus, when selecting alternative models, check the relevant manuals as well as Special notes for the details of specifications such as external dimensions and power capacity.
- Even if your model has no recommended alternative model, it may be possible to replace it with other models in the FX3 series depending on the application and system configuration. Check the required functions and features and select a suitable model.

4.1 Replacement of Main Unit

List of recommended models for FX0 series (main unit)

Discontinued model		Recommended model	Special notes
Product	**Model**	**Model**	
Main unit (AC power supply)	FX0-14MR	FX3S-14MR/ES[*1]	—
	FX0-20MR	FX3S-20MR/ES[*1]	
	FX0-30MR	FX3S-30MR/ES[*1]	
	FX0-14MT	FX3S-14MT/ES[*1]	
	FX0-20MT	FX3S-20MT/ES[*1]	
	FX0-30MT	FX3S-30MT/ES[*1]	
Main unit (AC power supply) (Sink/source input, relay output)	FX0-14MR-ES/UL	FX3S-14MR/ES	
	FX0-20MR-ES/UL	FX3S-20MR/ES	
	FX0-30MR-ES/UL	FX3S-30MR/ES	
Main unit (24VDC power supply)	FX0-14MR-D	FX3S-14MR/DS[*1]	
	FX0-20MR-D	FX3S-20MR/DS[*1]	
	FX0-30MR-D	FX3S-30MR/DS[*1]	
	FX0-14MT-D	FX3S-14MT/DS[*1]	
	FX0-20MT-D	FX3S-20MT/DS[*1]	
	FX0-30MT-D	FX3S-30MT/DS[*1]	
Main unit (24VDC power supply) (Sink/source input, relay output)	FX0-14MR-DS	FX3S-14MR/DS	
	FX0-20MR-DS	FX3S-20MR/DS	
	FX0-30MR-DS	FX3S-30MR/DS	
Main unit (24VDC power supply) (Sink/source input, transistor output (source))	FX0-14MT-DSS	FX3S-14MT/DSS	
	FX0-20MT-DSS	FX3S-20MT/DSS	
	FX0-30MT-DSS	FX3S-30MT/DSS	

*1   The external wiring is required between S/S terminal and 24V terminal.

List of recommended models for FX0S series (main unit)

Discontinued model		Recommended model	Special notes
Product	**Model**	**Model**	
Main unit (AC power supply)	FX0S-10MR	FX3S-10MR/ES[*1]	—
	FX0S-14MR	FX3S-14MR/ES[*1]	
	FX0S-20MR	FX3S-20MR/ES[*1]	
	FX0S-30MR	FX3S-30MR/ES[*1]	
	FX0S-10MT	FX3S-10MT/ES[*1]	
	FX0S-14MT	FX3S-14MT/ES[*1]	
	FX0S-20MT	FX3S-20MT/ES[*1]	
	FX0S-30MT	FX3S-30MT/ES[*1]	
Main unit (AC power supply) (Sink/source input, relay output)	FX0S-10MR-ES/UL	FX3S-10MR/ES	
	FX0S-14MR-ES/UL	FX3S-14MR/ES	
	FX0S-20MR-ES/UL	FX3S-20MR/ES	
	FX0S-30MR-ES/UL	FX3S-30MR/ES	
Main unit (24VDC power supply)	FX0S-10MR-D	FX3S-10MR/DS[*1]	
	FX0S-14MR-D	FX3S-14MR/DS[*1]	
	FX0S-20MR-D	FX3S-20MR/DS[*1]	
	FX0S-30MR-D	FX3S-30MR/DS[*1]	
	FX0S-10MT-D	FX3S-10MT/DS[*1]	
	FX0S-14MT-D	FX3S-14MT/DS[*1]	
	FX0S-20MT-D	FX3S-20MT/DS[*1]	
	FX0S-30MT-D	FX3S-30MT/DS[*1]	
Main unit (24VDC power supply) (Sink/source input, relay output)	FX0S-10MR-DS	FX3S-10MR/DS	
	FX0S-14MR-DS	FX3S-14MR/DS	
	FX0S-20MR-DS	FX3S-20MR/DS	
	FX0S-30MR-DS	FX3S-30MR/DS	
Main unit (24VDC power supply) (Sink/source input, transistor output (source))	FX0S-10MT-DSS	FX3S-10MT/DSS	
	FX0S-14MT-DSS	FX3S-14MT/DSS	
	FX0S-20MT-DSS	FX3S-20MT/DSS	
	FX0S-30MT-DSS	FX3S-30MT/DSS	
Main unit (12VDC power supply)	FX0S-14MR-D12	No alternative model	
	FX0S-30MR-D12		
	FX0S-14MT-D12		
	FX0S-30MT-D12		
Main unit (12VDC power supply) (Sink/source input, relay output)	FX0S-14MR-D12S	No alternative model	
	FX0S-30MR-D12S		
Main unit (12VDC power supply) (Sink/source input, transistor output (source))	FX0S-14MT-D12SS		
	FX0S-30MT-D12SS		

*1   The external wiring is required between S/S terminal and 24V terminal.

Required programming tools

Items available for the FX0 and FX0S series		Items available for the FX3S series	Special notes
Product	**Model**	**Model**	
Handy programming panel	FX-20P-E-SET0	FX-30P	Connect this item using the included cable FX-20CAB0.
Programming software	FX-PCS/WIN-E (SW0PC-FXGP/WIN-E)	GX Developer (Ver.8)[1] (SW8D5C-GPPW-E)	Use this item with FX3G. Available for FX0 and FX0S.
		GX Works2 (SW1DNC-GXW2-E)	Available for FX0 and FX0S.
	GX Developer (Ver.7 or earlier)	GX Developer (Ver.8)[1] (SW8D5C-GPPW-E)	Use this item with FX3G. Available for FX0 and FX0S.
		GX Works2 (SW1DNC-GXW2-E)	Available for FX0 and FX0S.

To add a personal computer to your system, the following interface cables are required separately.

- RS-232C on the personal computer: RS-232C/RS-422 converter FX-232-AWC(-H) + Cable F2-232CAB-1 + Cable FX-422CAB0
- FX1S USB port on the personal computer: FX-USB-AW (Dedicated cable included)
- FX3S USB port on the personal computer: GT09-C30USB-5P, MR-J3USBL3M

[1]   For restrictions and precautions when creating programs using GX Developer, refer to TECHNICAL BULLETIN FAM-A-0043.

Extension devices that can be used even after replacement

There is no available device. Please use new devices.

Extension devices that can be used in the FX3S series

Extension device	Model
Memory cassette with loader function	FX3G-EEPROM-32L
Input/output expansion board	FX3G-4EX-BD, FX3G-2EYT-BD
Analog input adapter	FX3U-4AD-ADP[1], FX3G-2AD-BD
Analog output adapter	FX3U-4DA-ADP[1], FX3G-1DA-BD
Analog input/output adapter	FX3U-3A-ADP[1]
Analog volume expansion board	FX3G-8AV-BD
Temperature sensor	FX3U-4AD-PT-ADP[1], FX3U-4AD-PTW-ADP[1], FX3U-4AD-TC-ADP[1]
Communications/Network	FX3G-232-BD, FX3G-422-BD, FX3G-485-BD, FX3G-485-BD-RJ, FX3U-232ADP-MB[1], FX3U-485ADP-MB[1], FX3U-ENET-ADP[1]

[1]   To connect a FX3S series special adapter, FX3S-CNV-ADP is required.

5   REFERENCES

References for FX0 or FX0S series

References			Description
Series	**Item**	**Manual name (manual number)**	
FX0	Module	FX0/FX0N HARDWARE MANUAL (JY992D47501)	Describes the details of hardware of the FX0/FX0N series, including specifications, installation, wiring, maintenance/ inspection, and procedure of connection with optional devices.
	Program	THE FX SERIES OF PROGRAMMABLE CONTROLLER PROGRAMMING MANUAL (FX0/FX0S/FX0N/FX/FX2C/FX2N/FX2NC) (JY992D48301)	Describes the details of programs for the FX0/FX0S/FX0N/FX/ FX2C/FX2N/FX2NC series, including basic instructions, stepladder diagrams, application instructions, and available devices.
FX0S	Module	FX0S SERIES PROGRAMABLE CONTROLLERS HARDWARE MANUAL (JY992D55301)	Describes input/output specifications, wiring, installation, basic instructions, application instructions, and available devices.
	Program	THE FX SERIES OF PROGRAMMABLE CONTROLLER PROGRAMMING MANUAL (FX0/FX0S/FX0N/FX/FX2C/FX2N/FX2NC) (JY992D48301)	Describes the details of programs for the FX0/FX0S/FX0N/FX/ FX2C/FX2N/FX2NC series, including basic instructions, stepladder diagrams, application instructions, and available devices.

References for FX3S series

References		Description
Item	**Manual name (manual number)**	
Module	FX3S SERIES USER'S MANUAL - Hardware Edition (JY997D48601)	Describes the details of hardware of the FX3S series, including input/output specifications, wiring, and installation.
Input/Output expansion board	FX3G-4EX-BD USER'S MANUAL (JY997D51301(E))	Describes the details of FX3G-4EX-BD input expansion board, including part names, external dimensions, installation, and specifications.
	FX3G-2EYT-BD USER'S MANUAL (JY997D51401(E))	Describes the details of FX3G-2EYT-BD output expansion board, including part names, external dimensions, installation, and specifications.
Analog input/ output	FX3S/FX3G/FX3GC/FX3U/FX3UC SERIES USER'S MANUAL - Analog Control Edition (JY997D16701)	Describes the details of analog control for the FX3S/FX3G/FX3GC/FX3U/ FX3UC series.
	FX3G-2AD-BD INSTALLATION MANUAL (JY997D33501(E))	Describes the details of FX3G-2AD-BD analog input board, including part names, external dimensions, installation, and specifications.
	FX3G-1DA-BD INSTALLATION MANUAL (JY997D33601(E))	Describes the details of FX3G-1DA-BD analog output board, including part names, external dimensions, installation, and specifications.
	FX3G-8AV-BD INSTALLATION MANUAL (JY997D33701(E))	Describes the details of FX3G-8AV-BD analog volume expansion board, including part names, external dimensions, installation, and specifications.
	FX3U-3A-ADP USER'S MANUAL (JY997D35601(E))	Describes the details of FX3U-3A-ADP analog input/output adapter, including part names, external dimensions, specifications, and handling.
	FX3U-4AD-ADP USER'S MANUAL (JY997D13901(E))	Describes the details of FX3U-4AD-ADP analog input adapter, including part names, external dimensions, specifications and handling.
	FX3U-4DA-ADP USER'S MANUAL (JY997D14001(E))	Describes the details of FX3U-4DA-ADP analog output adapter, including part names, external dimensions, installation, and specifications.
Analog input	FX3U-4AD-PT-ADP USER'S MANUAL (JY997D14701(E))	Describes the details of FX3U-4AD-PT-ADP temperature sensor input adapter, including part names, external dimensions, installation, and specifications.
	FX3U-4AD-PTW-ADP USER'S MANUAL (JY997D29101(E))	Describes the details of FX3U-4AD-PTW-ADP temperature sensor input adapter, including part names, external dimensions, installation, and specifications.
	FX3U-4AD-TC-ADP USER'S MANUAL (JY997D14801(E))	Describes the details of FX3U-4AD-TC-ADP temperature sensor input adapter, including part names, external dimensions, specifications, and handling.

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References		Description
Item	**Manual name (manual number)**	
Communications	FX SERIES USER'S MANUAL - Data Communication Edition (JY997D16901)	Describes N:N network, parallel link, computer link, inverter communication, non-protocol communication, configuration for programming communication, functions, and program examples.
	FX3G-232-BD INSTALLATION MANUAL (JY997D32001(E))	Describes the details of FX3G-232-BD, RS-232C communication expansion board, including part names, external dimensions, installation, and specifications.
	FX3G-422-BD INSTALLATION MANUAL (JY997D32101(E))	Describes the details of FX3G-422-BD, RS-422 communication expansion board, including part names, external dimensions, installation, and specifications.
	FX3G-485-BD INSTALLATION MANUAL (JY997D32201(E))	Describes the details of FX3G-485-BD, RS-485 communication expansion board, including part names, external dimensions, installation, and specifications.
	FX3G-485-BD-RJ INSTALLATION MANUAL (JY997D51501(E))	Describes the details of FX3G-485-BD-RJ, RS-485 communication expansion board with RJ45 connector, including part names, external dimensions, installation, and specifications.
	FX3U-232ADP-MB INSTALLATION MANUAL (JY997D26401(E))	Describes the details of FX3U-232ADP-MB, RS-232C communication adapter, including part names, external dimensions, installation, and specifications.
	FX3U-485ADP-MB INSTALLATION MANUAL (JY997D26301(E))	Describes the details of FX3U-485ADP-MB, RS-485 communication adapter, including part names, external dimensions, installation, and specifications.
	FX3U-ENET-ADP INSTALLATION MANUAL (JY997D47401(E))	Describes the details of FX3U-ENET-ADP Ethernet adapter, including part names, external dimensions, installation, and specifications.
Program	FX3S/FX3G/FX3GC/FX3U/FX3UC SERIES PROGRAMMING MANUAL - Basic & Applied Instructions Edition (JY997D16601)	Describes the details of sequence program for the FX3S/FX3G/FX3GC/FX3U/FX3UC series, including basic instructions, stepladder diagrams, application instructions, and available devices.
	FX-30P OPERATION MANUAL (JY997D34401)	Describes the details of sequence program, including basic instructions, stepladder diagrams, and application instructions.

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REVISIONS

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A	March 2022	First edition

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