MITSUBISHI ELECTRIC

FAM-A-0044-A

Production Discontinuation of CF Card Special Adapter for the MELSEC-F Series

■Date of Issue
March 2022
■Relevant Models
FX3U-CF-ADP

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

We are informing you that production of the following product will be discontinued.

1   MODEL TO BE DISCONTINUED

Product	Model
FX3U-CF-ADP CF card special adapter	FX3U-CF-ADP

2   SCHEDULE

• Start of made-to-order production: October 1, 2022

• Order acceptance: Until January 31, 2023

• Production discontinuation: March 31, 2023

3   REASON FOR DISCONTINUATION

Some parts of the adapter are now obsolete, and we will have difficulty to maintain our production system.

4   REPAIR SUPPORT

Repair support period: Until March 31, 2030 (for seven years after the discontinuation of production)

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5 ALTERNATIVE MODELS

The following modules can be used.

- FX5U CPU module
- FX5UC CPU module
- FX5UJ CPU module[*1]

The memory card function of each CPU module corresponds to the FX3U-CF-ADP.

*1 For the FX5UJ CPU modules, file operation instructions will be supported soon.

Precautions

To select a suitable CPU module, check the relevant manuals for the specifications such as external dimensions and power supply.

The following shows the precautions on replacement.

FX3U-CF-ADP	File operation instructions that can be used in the FX5U/FX5UC CPU module[*1]

Data stored in a file can be read and written by specifying the number of columns (in increments of column).
- At writing

Index	DATE TIME	Data1	Data2	Data3	Data4	Data5	
1	2021/08/10 9:15:00	11	1	0	-444	555	(CR)(LF)
2	2021/08/10 9:15:05	12	0	1	-44	5	(CR)(LF)

Instruction is executed.
(2 columns are rewritten by user-specified.)

Index	DATE TIME	Data1	Data2	Data3	Data4	Data5	
1	2021/08/10 9:15:00	11	1	0	-444	555	(CR)(LF)
2	2021/08/16 9:15:30	12	0	1234	2345	5	(CR)(LF)

- At reading

Index	DATE TIME	Data1	Data2	Data3	Data4	Data5	
1	2021/08/10 9:15:00	11	1	0	-444	555	(CR)(LF)
2	2021/08/10 9:15:05	12	0	1	-44	5	(CR)(LF)
3	2021/08/16 9:15:30	12	0	1	-44	5	(CR)(LF)

Instruction is executed.

Read device	Value
R100	1
R101	-44

Data stored in a file can be read and written by specifying the line number (in increments of line).
- At writing

Index	DATE TIME	Data1	Data2	Data3	Data4	Data5	
1	2021/08/10 9:15:00	11	1	0	-444	555	(CR)(LF)
2	2021/08/10 9:15:05	12	0	1	-44	5	(CR)(LF)

Instruction is executed.
(By adding the data to the end of the file, all columns are rewritten.)

Index	DATE TIME	Data1	Data2	Data3	Data4	Data5	
1	2021/08/10 9:15:00	11	1	0	-444	555	(CR)(LF)
2	2021/08/10 9:15:05	12	0	1	-44	5	(CR)(LF)
3	2021/08/16 9:15:30	200	5	10	-55	16	(CR)(LF)

- At reading

Index	DATE TIME	Data1	Data2	Data3	Data4	Data5	
1	2021/08/10 9:15:00	11	1	0	-444	555	(CR)(LF)
2	2021/08/10 9:15:05	12	0	1	-44	5	(CR)(LF)
3	2021/08/16 9:15:30	13	1	2	-4444	50	(CR)(LF)

Instruction is executed.

Read device	Value
R100	13
R101	1
R102	2
R103	-4444
R104	50

After replacement, change the user program.
For details on programs, refer to the following.
📖 MELSEC iQ-F FX5 Programming Manual (Instructions, Standard Functions/Function Blocks) (JY997D55801)

FX3U-CF-ADP	File operation instructions that can be used in the FX5U/FX5UC CPU module[1]
Multiple data types can be specified at reading/writing (mixture of bit data, word data, and string in one line).	Only one type of data can be specified with one instruction.

FX3U-CF-ADP:

Index	DATE TIME	Data1	Data2	Data3	Data4	Data5	
1	2021/08/10 9:15:00	11	1	FFFA	1.00E+00	aaa	(CR)(LF)
2	2021/08/10 9:15:05	12	0	FFFB	1.21E+03	bbb	(CR)(LF)

(Decimal) (Bit)   (String)
(Hexadecimal) (Real number)

File operation instructions:

Index	DATE TIME	Data1	Data2	Data3	Data4	Data5	
1	2021/08/10 9:15:00	11	1	0	-444	555	(CR)(LF)
2	2021/08/10 9:15:05	12	0	1	-44	5	(CR)(LF)

(Only one type of data can be specified with one instruction.)

After replacement, change the user program.
To specify multiple data types, perform the following operations.
- To specify multiple data types for reading, specify "From the position where the previous reading ends" for "File position" of the control data of the SP.FREAD instruction and execute the instruction for each specified data type.
- To specify multiple data types for writing, specify "Add converting the last line feed code of file to a comma (write continuing the last line)" for "Application setting area" of the control data of the SP.FWRITE instruction and execute the instruction for each specified data type.

For details on programs, refer to the following.
📖 MELSEC iQ-F FX5 Programming Manual (Instructions, Standard Functions/Function Blocks) (JY997D55801)

Available memory card: CompactFlash card For details, refer to the following. 📖FX3U-CF-ADP USER'S MANUAL (JY997D35401)	Available memory card: SD memory card For details, refer to the following. 📖 MELSEC iQ-F FX5U User's Manual (Hardware) (JY997D55301) 📖 MELSEC iQ-F FX5UC User's Manual (Hardware) (JY997D61401)

*1 For the FX5UJ CPU modules, file operation instructions will be supported soon.

6   SPECIFICATIONS COMPARISON

This chapter compares the differences in specifications between the FX3U-CF-ADP and the FX5U/FX5UC/FX5UJ CPU module.

6.1   General Specifications

Item	FX3U-CF-ADP				FX5U/FX5UC/FX5UJ CPU module			
Operating ambient temperature	0 to 55℃				FX5U/FX5UC: -20 to 55℃, No freezing FX5UJ: 0 to 55℃, No freezing			
Storage ambient temperature	-25 to 75℃				-25 to 75℃, No freezing			
Operating relative humidity	5 to 95%RH (No condensation)				5 to 95%RH (No condensation)			
Storage relative humidity								
Vibration resistance (Installed on DIN rail)	Frequency	Acceleration	Half amplitude	Number of sweeps	Frequency	Acceleration	Half amplitude	Number of sweeps
	10 to 57Hz	—	0.035mm	10 times in each direction of X, Y, and Z (80 minutes in each direction)	5 to 8.4Hz	—	1.75mm	10 times in each direction of X, Y, and Z (80 minutes in each direction)
	57 to 150Hz	4.9m/s^2	—		8.4 to 150Hz	4.9m/s^2	—	
Vibration resistance (Direct installing)	Frequency	Acceleration	Half amplitude		Frequency	Acceleration	Half amplitude	
	10 to 57Hz	—	0.075mm		5 to 8.4Hz	—	3.5mm	
	57 to 150Hz	9.8m/s^2	—		8.4 to 150Hz	9.8m/s^2	—	
Shock resistance	147m/s^2, Action time: 11ms, 3 times by half-sine pulse in each direction of X, Y, and Z				147m/s^2, Action time: 11ms, 3 times by half-sine pulse in each direction of X, Y, and Z			
Noise durability	Noise voltage: 1000Vp-p, Noise width: 1μs, Rise time: 1ns, Noise frequency: 30 to 100Hz (noise simulator condition)				Noise voltage: 1000Vp-p, Noise width: 1μs, Rise time: 1ns, Noise frequency: 30 to 100Hz (noise simulator condition)			
Withstand voltage	500VAC for 1 minute (Between each terminal and the ground terminal)				■Between the power supply terminal (AC power supply) and the ground terminal 1.5kVAC for 1 minute ■Between the power supply terminal (DC power supply) and the ground terminal 500VAC for 1 minute			
Insulation resistance	5MΩ or higher (500VDC insulation resistance tester) (Between each terminal and the ground terminal)				10MΩ or higher (500VDC insulation resistance tester) (Between each terminal and the ground terminal)			

6.2   Power Supply Specifications

Item	FX3U-CF-ADP	FX5U/FX5UC/FX5UJ CPU module
Power supply voltage	24VDC +20% to -15%, Ripple (p-p): 5% or less	Specifications differ depending on the CPU module used. For details, refer to each manual. 📖 MELSEC iQ-F FX5U User's Manual (Hardware) (JY997D55301) 📖 MELSEC iQ-F FX5UC User's Manual (Hardware) (JY997D61401) 📖 MELSEC iQ-F FX5UJ User's Manual (Hardware) (SH-082206ENG)
Allowable momentary power failure time	Operation can be continued upon occurrence of instantaneous power failure for 1ms or less.	
Current consumption	130mA Supply a 24VDC power supply to the power supply connector.	
Power supply for interface	5VDC, 50mA 5VDC power is supplied internally from the main module.	—

6.3   Functions

Item	FX3U-CF-ADP	FX5U/FX5UC CPU module[*1]
Creating FIFO function files inside the CompactFlash card.	FLCRT instruction	SP.FWRITE instruction Files are created one by one, so multiple SP.FWRITE instructions need to be executed.
Creating files inside the CompactFlash card.	FLCRT instruction	SP.FWRITE instruction
Deleting specified files stored in the CompactFlash card.	FLDEL instruction Specify the file ID.	SP.FDELETE instruction Specify the folder or file.
Writing bit data, word data, double-word data, floating-point data, and character string data to a specified file stored in the CompactFlash card.	FLWR instruction • Various data types are supported. • Various data types, such as bit data, word data, and character string, can be mixed in one line.	SP.FWRITE instruction • Word data and double word data are supported. • Only one type of data can be specified with one instruction. • When using the CSV format, string data and floating-point data can be written.
Forcibly writing data of a specified file stored in the internal buffer to the CompactFlash card.	FLCMD instruction	SP.FWRITE instruction Data is written each time the instruction is executed.
Reading the number from the final line in a specified file stored in the CompactFlash card.	FLSTD instruction The last line number is read.	SP.FREAD instruction Specify the line number.
Reading the data from a specified line in a specified file stored in the CompactFlash card.	FLRD instruction	SP.FREAD instruction
Writing the data name.	FLWR instruction Specify the data name.	SP.FWRITE instruction Specify the string.
Formatting the CompactFlash card.	FLDEL instruction	Perform the operation from the GX Works3. CPU memory is initialized.
Sending a mount command to the CompactFlash card.	FLCMD instruction	No alternative function When the SD memory card is inserted, the installation will be recognized automatically.
Sending an unmount command to the CompactFlash card.	FLCMD instruction	Special register SD606: SD memory card forced disable instruction
Detecting that a CompactFlash card is mounted.	FLSTRD instruction	Special register SD604.b0: SD memory card is being used.
Detecting that a CompactFlash card is full.	FLSTRD instruction	Used space of the CompactFlash card is calculated using the following formula. Capacity of SD memory card (special register SD606 to SD609) - Free space of SD memory card (special register SD610 to SD612)
Detecting errors that have occurred in the CF-ADP.	FLSTRD instruction	Errors are indicated by the command abnormal end flag for each file operation.
Reading error codes of the CF-ADP.	FLSTRD instruction	Error codes corresponding to the completion status of file operation instruction are stored in the following special register areas. Special register SD0: Latest self diagnostics error code, Special register SD10 to 25: Self diagnostics error code 1 to 16
Data capacity of the CompactFlash card. Unit (kb)	FLSTRD instruction	Special register SD606 to 609: Capacity of SD memory card
Used space of the CompactFlash card. (Unit: kb)	FLSTRD instruction	Used space of the CompactFlash card is calculated using the following formula. Capacity of SD memory card (special register SD606 to SD609) - Free space of SD memory card (special register SD610 to SD612)
Free space of the CompactFlash card. (Unit: kb)	FLSTRD instruction	Special register SD610 to SD612: Free space of SD memory card
File ID list.	Specify the file ID.	Specify the folder and file.
CF-ADP version information.	FLSTRD instruction	Special register SD8001: PLC type and system version

*1   For the FX5UJ CPU modules, file operation instructions will be supported soon.

6.4 External Dimensions

This section shows the external dimensions of FX3U-CF-ADP, FX5U CPU module, FX5UC CPU module, and FX5UJ CPU module.

FX3U-CF-ADP

External dimensions vary depending on the module used. For details, refer to the manual for each CPU module.

Example: FX3U-32M□
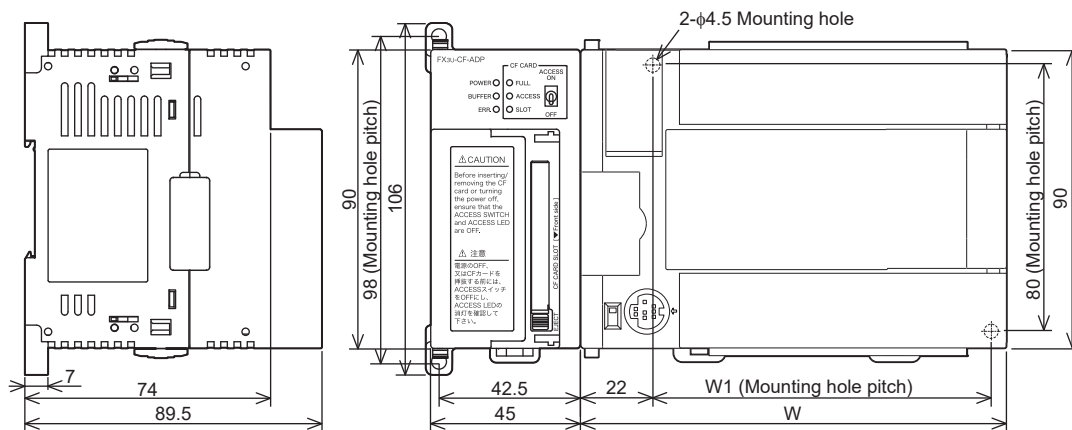
(Unit: mm)

Model	W	W1 (Mounting hole pitch)	Weight
FX3U-32MR/ES FX3U-32MT/ES FX3U-32MT/ESS FX3U-32MS/ES FX3U-32MR/DS FX3U-32MT/DS FX3U-32MT/DSS	150mm	123mm	Approx. 0.65kg

FX5U CPU module

External dimensions vary depending on the module used. For details, refer to the manual for each CPU module.

Example: FX5U-32M□

(Unit: mm)

Model	W	W1 (Mounting hole pitch)	Weight
FX5U-32MR/ES FX5U-32MT/ES FX5U-32MT/ESS FX5U-32MR/DS FX5U-32MT/DS FX5U-32MT/DSS	150mm	123mm	Approx. 0.7kg

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FX5UC CPU module

External dimensions vary depending on the module used. For details, refer to the manual for each CPU module.

Example: FX5UC-32M□

■Connector type

(Unit: mm)

Model	W	Weight
FX5UC-32MT/D FX5UC-32MT/DSS	42.1mm	Approx. 0.2kg

■Spring clamp terminal block type

(Unit: mm)

Model	W	Weight
FX5UC-32MT/DS-TS FX5UC-32MT/DSS-TS	48.1mm	Approx. 0.25kg

FX5UJ CPU module

External dimensions vary depending on the module used. For details, refer to the manual for each CPU module.

Example: FX5UJ-24M□

(Unit: mm)
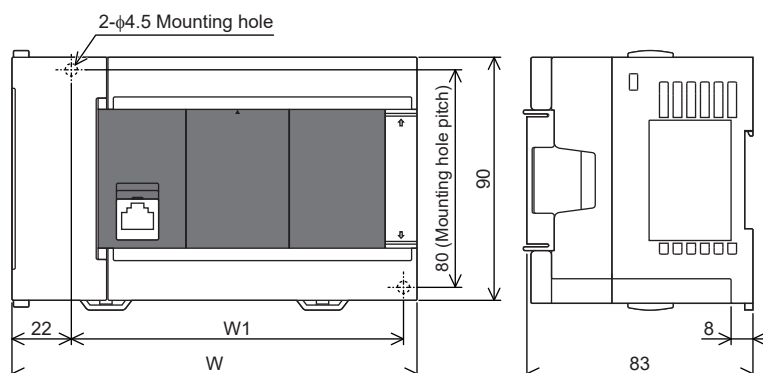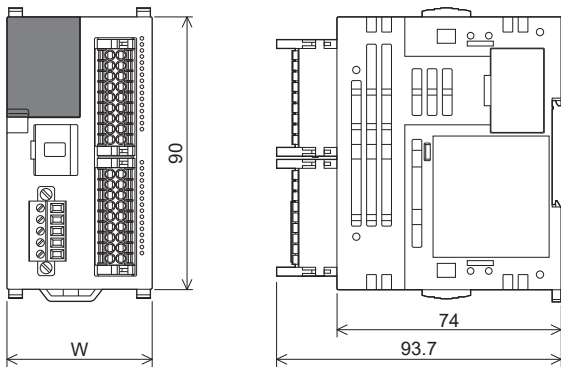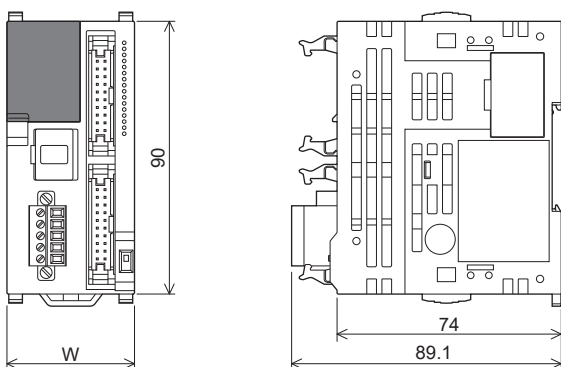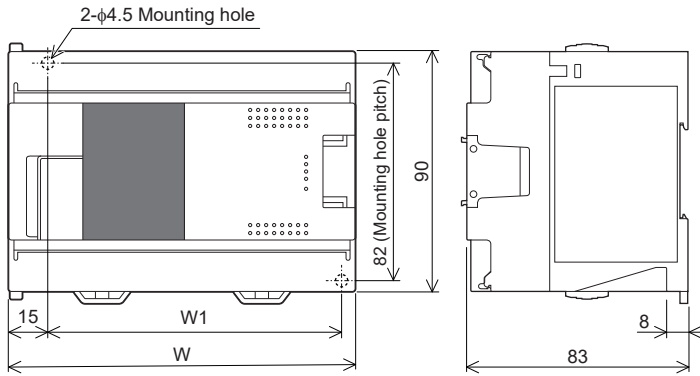
Model	W	W1 (Mounting hole pitch)	Weight
FX5UJ-24MR/ES FX5UJ-24MT/ES FX5UJ-24MT/ESS	95mm	76mm	Approx. 0.55kg

7 REFERENCES

Module	Manual name [manual number]	Description
FX3U-CF-ADP	FX3U-CF-ADP INSTALLATION MANUAL [JY997D35201(E)]	Describes the specifications and installation of the FX3U-CF-ADP CF card special adapter.
	FX3U-CF-ADP USER'S MANUAL [JY997D35401]	Describes the details of FX3U-CF-ADP CF card special adapter, including part names, external dimensions, specifications, and handling.
MELSEC-F main module	FX3U SERIES USER'S MANUAL - Hardware Edition [JY997D16501]	Describes the details of hardware of the FX3U series, including input/output specifications, wiring, and installation.
	FX3UC SERIES USER'S MANUAL - Hardware Edition [JY997D28701]	Describes the details of hardware of the FX3UC series, including input/output specifications, wiring, and installation.
	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.
MELSEC iQ-F CPU module	MELSEC iQ-F FX5U User's Manual (Hardware) [JY997D55301]	Describes the details of hardware of the FX5U CPU module, including input/output specifications, wiring, and installation.
	MELSEC iQ-F FX5UC User's Manual (Hardware) [JY997D61401]	Describes the details of hardware of the FX5UC CPU module, including input/output specifications, wiring, and installation.
	MELSEC iQ-F FX5 Programming Manual (Program Design) [JY997D55701]	Describes the specifications of the FX5U and FX5UC CPU modules, including ladder programs and labels.
	MELSEC iQ-F FX5 Programming Manual (Instructions, Standard Functions/Function Blocks) [JY997D55801]	Describes the specifications of instructions and functions that can be used in programs of the FX5U and FX5UC CPU modules.
	MELSEC iQ-F FX5UJ User's Manual (Hardware) [SH-082206ENG]	Describes the details of hardware of the FX5UJ CPU module, including input/output specifications, wiring, installation, and maintenance.
	MELSEC iQ-F FX5 User's Manual (Startup) [JY997D58201]	Describes the performance specifications, procedures before operation, and troubleshooting of the FX5 CPU module.
	MELSEC iQ-F FX5 User's Manual (Application) [JY997D55401]	Describes the basic knowledge required for program design, functions of CPU module, devices/labels, and details of parameters.

REVISIONS

Version	Date of Issue	Revision
A	March 2022	First edition

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