



MELSEC iQ-F FX5-CCLIEF

Hardware Manual

JY997D63901F



Manual Number	JY997D63901
Revision	F
Date	October 2023

This manual describes the part names, dimensions, installation, and specifications of the product. Before use, read this manual and manuals of relevant products fully to acquire proficiency in handling and operating the product. Make sure to learn all the product information, safety information, and

precautions.
And, store this manual in a safe place so that you can take it out and read it

whenever necessary. Always forward it to the end user. Registration: Ethernet is a registered trademark of Fuji Xerox Co., Ltd. in Japan. The company names, system names and product names mentioned in this manual are either registered trademarks or trademarks of their respective companies. In some cases, trademark symbols such as """ or "e" are not specified in this manual.

Effective October 2023
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Safety Precautions (Read these precautions before use.) This manual classifies the safety precautions into two categories: **MARNING** and **MCAUTION**

<u></u> MARNING	Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.
 △ CAUTION	Indicates that incorrect handling may cause hazardous conditions, resulting in minor or moderate injury or property damage.

Depending on the circumstances, procedures indicated by ACAUTION may also cause severe injury.
It is important to follow all precautions for personal safety.

Associated Manual

Manual name	Manual No.	Description
MELSEC iQ-F FX5 CC-Link IE Field Network Module User's Manual	JY997D64201	Describes the functions of the CC-Link IE Field network module.
MELSEC iQ-F FX5S/ FX5UJ/FX5U/FX5UC User's Manual (Hardware)	SH-082452ENG	Describes the details of hardware of the CPU module, including performance specifications, wiring, installation, and maintenance.
MELSEC iQ-F FX5 Programming Manual (Instructions, Standard Functions/Function Blocks)	JY997D55801	Describes specifications of instructions and functions that can be used in programs.

For the necessary product manuals or documents, consult with your local Mitsubishi Electric representative

Applicable standards

Applicable stationards

FXS-CCLIEF complies with the EU Directive (EMC Directive), UL standards (UL, cUL) and UKCA marking. Further information can be found in the following manual.

— MELSEC IQ-F FXS CC-Link IE Field Network Module User's Manual Regarding the standards that relate to the CPU module, please refer to either the product catalog or consult with your local Mitsubishi Electric representative. Attention

This product is designed for use in industrial applications

1. Outline

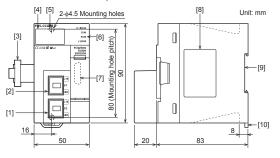
FXS-CCLIEF intelligent device station for CC-Link IE Field network (hereinafter referred to as FXS-CCLIEF) is an intelligent function module for connecting to a CC-Link IE Field network as an intelligent device station.

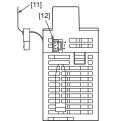
1.1 Incorporated Items

Check that the following product and items are included in the package

	31 1 3
Product	FX5-CCLIEF intelligent device station for CC-Link IE Field network
	FX2NC-100MPCB power cable: (1 m, three wire)
Included Items	Dust proof protection sheet (1 sheet)
meradea nemo	Hardware manual [Japanese /English] (This manual)
	Hardware manual [Chinese]

1.2 External Dimensions, Part Names





MASS (Weight): Approx. 0.3 kg Outer painting color: Munsell 0.6B7.6/0.2

- [1] Modular jack for P2 (RJ-45) (with cap)[2] Modular jack for P1 (RJ-45) (with cap)
- [3] Extension cable
- [4] Dot matrix LED
- [5] Direct mounting hole: 2 holes of \$\dagger{4}\$.5 (mounting screw: M4 screw)
- [6] Operation status display LEDs
 [7] Extension connector (for next module)
- [8] Name plate
- [9] DIN rail mounting groove (DIN rail: DIN 46277, 35 mm wide)
- [10] DIN rail mounting hook
- [11] Pullout tab
- [12] Power connecto

1.3 Indications of LEDs

LED	display	LED color	Status	Indication
D LINK*1			On	Data link (cyclic transmission being performed)
		Green	Flashing	Data link (cyclic transmission stopped)
			Off	Data link not performed (disconnection)
	SD	Green	On	Data being sent
	30	Green	Off	Data not being sent
	RD	Green	On	Data being received
	ND	Green	Off	Data not being received
	ERR	Red	On	Error data are received
_	ENN	Reu	Off	Normal data are received
DC)WFR	Green	On	Power on
PC	WER	Green	Off	Power off
	RUN	Green	On	Normal operation
r	KUN		Off	Error
		Red	On	Minor error (Major error when the RUN LED turns off)
ERROR*1	ROR*1		Flashing	Moderate error (Major error when the RUN LED turns off)
			Off	Normal operation
	L FR	Red	On	Error data are received
P1	LEK		Off	Normal data are received
	LINK	LINK Green	On	Link-up
		Green	Off	Link-down
P2	L ER	Red	On	Error data are received
	LEK		Off	Normal data are received
	LINIZ	LINK Green	On	Link-up
	LINK		Off	Link-down
Dot matrix LED		Orange	-	Displays the station number set in the module and the module communication test result.

*1 The LED is always off in offline mode.

2. Installation	
INSTALLATION PRECAUTIONS	<u></u> MARNING
attempting installation Failure to do so may of Use the product with the User's Manual (Hz Never use the product dusts, corrosive gas vibration or impacts, of and wind.	ause electric shock or damage to the product. If the generic environment specifications described in ridware) for the CPU module to be used. It in areas with excessive dust, oily smoke, conductive (salt air, CI2, H2S, SO2 or NO2), flammable gas or expose it to high temperature, condensation, or rair in such conditions, electric shock, fire, malfunctions
INSTALLATION PRECAUTIONS	∴CAUTION
Doing so may cause of	uctive parts of the product directly. levice failures or malfunctions. oles or wiring, make sure that cutting and wiring debris ation slits of the PLC.

- Failure to do so may cause fire, equipment failures or malfunctions
- The dust proof sheet should be affixed to the ventilation sits befor installation and wiring work to block foreign objects such as cutting and wiring debris. However, when the installation work is completed, make sure tremove the sheet to provide adequate ventilation. Failure to do so may cause fire, equipment failures or malfunctions.
- Install the product on a flat surface If the mounting surface is rough, undue force will be applied to the PC boar
- thereby causing nonconformities.

 Install the product securely using a DIN rail or mounting screws.
- Connect the extension cables securely to their designated connectors. Loose connections may cause malfunctions.

For further information on mounting, refer to the following manual.

→ MELSEC iQ-F FX5S/FX5UJ/FX5U/FX5UC User's Manual (Hardware)

3. Wiring

<u>∧</u>WARNING WIRING PRECAUTIONS

Make sure to cut off all phases of the power supply externally be attempting installation or wiring work. Failure to do so may cause electric shock or damage to the product

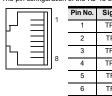
WIRING PRECAUTIONS **ACAUTION**

- Securely connect the connector to the module. Poor contact may cause
- Make sure to observe the following precautions in order to prevent ardamage to the machinery or accidents due to malfunction of the PLC cause damage to the machinery or accidents due to mairunction or to by abnormal data written to the PLC due to the effects of noise
- Do not bundle the power line and communication cables together with or lay them close to the main circuit, high-voltage line, load line or power line As a guideline, lay the power line, control line and communication cables at least 100 mm away from the main circuit, high-voltage line, load line o

3.1 Connector to be used and cable

3.1.1 Pin configuration

The pin configuration of the RJ-45 connector is as follows.



1	Pin No.	Signal	Contents
'	1	TP0+	Data 0 send and receive (+ side)
	2	TP0-	Data 0 send and receive (- side)
8	3	TP1+	Data 1 send and receive (+ side)
0	4	TP2+	Data 2 send and receive (+ side)
	5	TP2-	Data 2 send and receive (- side)
	6	TP1-	Data 1 send and receive (- side)
	7	TP3+	Data 3 send and receive (+ side)
	8	TP3-	Data 3 send and receive (- side)

3.1.2 Cables to be used

Use Ethernet cable that meets the following standards.

Ethernet cable	Туре
Double shielded, STP Straight cable	IEEE802.3 (1000BASE-T) ANSI/TIA/EIA-568-B (Category 5e)

3.1.3 Power supply connector

For further information on the power supply wiring and power cable, refer to the following manual ə manual. → MELSEC iQ-F FX5 CC-Link IE Field Network Module User's Manual

(Green) - (Black)

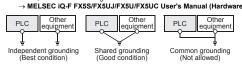
(Red)

3.2 Grounding

Ground the PLC as stated below.

- Perform class D grounding. (Grounding resistance: 100 Ω or less)
- Ground the PLC independently if possible.

 If the PLC cannot be grounded independently, perform the "Shared grounding" shown below.
- For details, refer to the following manual. MELSEC iQ-F FX5S/FX5UJ/FX5U/FX5UC



Bring the grounding point close to the PLC as much as possible so that the ground cable can be shortened.

4. Specification

<u></u> MARNING

- Make sure to set up the following safety circuits outside the PLC to ensure safe system operation even during external power supply problems or PLC failure. Otherwise, malfunctions may cause serious accidents.

 Most importantly, set up the following: an emergency stop circuit, a protection circuit, an interlock circuit for opposite movements (such as normal vs. reverse rotation), and an interlock circuit (to prevent damage to the equipment at the upper and lower positioning limits).

 Note that when the CPLI module detects an error, such as a watchdoor timer.
- Note that when the CPU module detects an error, such as a watchdog timer error, during self-diagnosis, all outputs are turned off. Also, when an error that cannot be detected by the CPU module occurs in an input/output control block output control may be disabled.

 External circuits and mechanisms should be designed to ensure safe
- machinery operation in such a case.

 For the operating status of each station after a communication failure, refer t manuals relevant to the network. Incorrect output or malfunction due to communication failure may result in an accident.
- Construct an interlock circuit in the program so that the whole system alway operates on the safe side before executing the control (for data change) of the operates on the safe side before executing the control (for data change) of the PLC in operation. Read the manual thoroughly and ensure complete safety before executing other controls (for program change, parameter change, forcible output and operation status change) of the PLC in operation. Otherwise, the machine may be damaged and accidents may occur due to erroneous operations. Especially, when a remote programmable controller is controlled by an external device, immediate action cannot be taken if a problem occurs in the programmable controller due to a communication failure. To prevent this configure an interlock circuit in the program and determine corrective actions to
- configure an interlock circuit in the program, and determine corrective actions to be taken between the external device and CPU module in case of communication failure. If a communication cable is disconnected, the network may be unstable, resulting
- in a communication failure of multiple stations. Configure an interlock circuit in th program to ensure that the entire system will always operate safely even communications fail. Failure to do so may result in an accident due to an incorre output or malfuncti

⚠CAUTION PRECAUTIONS Simultaneously turn on and off the power supplies of the CPU module an extension modules.

/!\WARNING

To maintain the security (confidentiality, integrity, and availability) of the programmable controller and the system against unauthorized access, denial-of-service (DoS) attacks, computer viruses, and other cyberattacks from unreliable networks and devices via network, take appropriate measures such as firewalls, virtual private networks (VPNs), and antivirus solutions.

⚠CAUTION

- Do not disassemble or modify the PLC
- Doing so may cause fire, equipment failures, or malfunctions.

 For repair, contact your local Mitsubishi Electric representative.

 Do not drop the product or exert strong impact to it. Doing so may cause damage.

∴CAUTION

Please contact a certified electronic waste disposal company for the environmentally safe recycling and disposal of your device.

RANSPORTATION PRECAUTIONS **⚠CAUTION**

The product is a precision instrument. During transportation, avoid impacts large ecified in the general specific than those specified in the general specifications by some some shock-absorbing palettes.

Failure to do so may cause failures in the product. After transportation operation of the product and check for damage of the mounting part, etc.

4.1 Applicable CPU module

Model name	Applicability
FX5UJ CPU module	From first production
FX5U CPU module	Ver. 1.030 or later
FX5UC CPU module*1	Ver. 1.030 or later

*1 FX5-CNV-IFC or FX5-C1PS-5V is necessary to connect FX5-CCLIEF to the

4.2 General Specifications

The items other than the following are equivalent to those of the CPU module.

For the general specification, refer to the following manual.

MELSEC IQ-F FX5S/FX5UJ/FX5U/FX5UC User's Manual (Hardware)

Items	Specifications	
Dielectric withstand voltage	500 V AC for 1 minute	Between all terminals and
Insulation resistance	10 MΩ or higher by 500 V DC insulation resistance tester	ground terminal

4.3 Power Supply Specifications

Items		Specifications
	Power supply voltage	24 V DC +20%, -15%
External power supply	Allowable instantaneous power failure time	Operation continues when the instantaneous power failure is shorter than 1 ms.
	Current consumption	230 mA
Internal	Power supply voltage	5 V DC
power supply	Current consumption	10 mA

4.4 Performance Specifications

Items		Specifications
Station type		Intelligent device station
Station number		1 to 120 (sets by parameter or program)
Communication spe	eed	1 Gbps
Network topology		Line topology, star topology (coexistence of line topology and star topology is also possible), and ring topology
Maximum station-to-station distance		100 m (conforms to ANSI/TIA/EIA-568-B (Category 5e))
Cascade connection		Max. 20 stages
Communication method		Token passing
	RX	384 points, 48 bytes
Maximum number	RY	384 points, 48 bytes
of link points*1	RWr	1024 points, 2048 bytes*2
	RWw	1024 points, 2048 bytes*2
Number of occupied I/O points		8 points

- *1 The maximum number of link points that a master station can assign to one FX5-CCLIEF unit.
- *2 256 points (512 bytes) when the mode of the master station is online (High-

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for safe use

- This product has been manufactured as a general-purpose part for general
 industries, and has not been designed or manufactured to be incorporated in
 a device or system used in purposes related to human light
 before using the product for special purposes such as nuclear power, electric
 power, aerospace, medicine or passenger movement vehicles, consult with Mitsubishi Electric. This product has been manufactured under strict quality control. However
- when installing the product where major accidents or losses could occur if the product fails, install appropriate backup or failsafe functions in the system

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