

MELSEC IQ-F FX5-ENET Hardware Manual



Table with Manual Number, Revision, Date and their values.

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.

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.

Effective October 2023 Specifications are subject to change without notice.

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Safety Precautions (Read these precautions before use.)

This manual classifies the safety precautions into two categories:

WARNING and CAUTION.

Table defining WARNING and CAUTION symbols and their implications for user safety.

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

Associated Manual

Table listing associated manuals with columns for Manual name, Manual No., and Description.

How to obtain manuals

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

Applicable standards

FX5-ENET 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 FX5 Ethernet 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

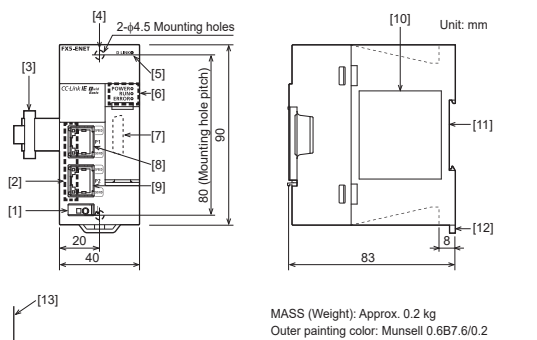
FX5-ENET Ethernet module (hereinafter referred to as FX5-ENET) is an intelligent function module for connecting to a CC-Link IE Field network Basic (master station) and general-purpose Ethernet.

1.1 Incorporated Items

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

Table listing included items: Product, Dust proof protection sheet, Hardware manuals in Japanese/English/Chinese.

1.2 External Dimensions, Part Names



- Legend for dimensions and parts: [1] External ground terminal, [2] Link status display LEDs, [3] Extension cable, [4] Direct mounting hole, [5] Network status display LEDs, [6] Operation status display LEDs, [7] Extension connector, [8] Modular jack for P1, [9] Modular jack for P2, [10] Name plate, [11] DIN rail mounting groove, [12] DIN rail mounting hook, [13] Pullout tab.

1.3 Indications of LEDs

Table showing LED display, LED color, Status, and Indication for D LINK and POWER LEDs.

Table showing RUN and ERROR status indicators with their corresponding colors and meanings.

2. Installation

INSTALLATION PRECAUTIONS WARNING

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

INSTALLATION PRECAUTIONS CAUTION

- Do not touch the conductive parts of the product directly. Doing so may cause device failures or malfunctions.

For further information on mounting, refer to the following manual. → MELSEC IQ-F FX5S/FX5UJ/FX5U/FX5UC User's Manual (Hardware)

3. Wiring

WIRING PRECAUTIONS WARNING

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

WIRING PRECAUTIONS CAUTION

- Make sure to observe the following precautions in order to prevent any damage to the machinery or accidents due to malfunction of the PLC caused by abnormal data written to the PLC due to the effects of noise.

3.1 Connector to be used and cable

3.1.1 Pin configuration

The pin configuration of RJ45 type modular jack on FX5-ENET is as follows:

Table showing pin configuration for RJ45 type modular jack with columns for Pin No., Signal, and Contents.

3.1.2 Cables to be used

Use Ethernet cable that meets the following standards.

Table showing Ethernet standard and Specifications for 100BASE-TX and 10BASE-T.

*1 Shielded twisted pair cable. A straight/cross cable can be used.

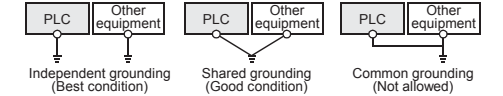
3.2 Grounding

Ground the PLC as stated below.

- Perform class D grounding. (Grounding resistance: 100 Ω or less)

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 User's Manual (Hardware)



3.2.1 Grounding of FX5-ENET

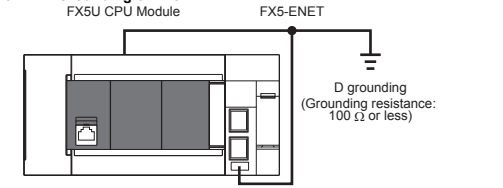


Table showing Terminal name and Content for the grounding connection.

The connection destination for the FG terminal of FX5-ENET is a spring clamp terminal block. To connect to the terminal block, there are two ways: by using single wires/strand wires or by using ferrules.

Ferrules

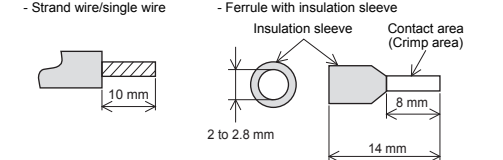
The following table shows wire ferrules and its associated tools compatible with the terminal block. The shape of the wire ferrule differs depending on the crimp tool to be used, use the reference product. If the product other than referenced products is used, the wire ferrule cannot be removed. Sufficiently confirm that the wire ferrule can be removed before use.

Table showing ferrule specifications with columns for Manufacturer, Sleeve, Ferrules model, Suitable wiring size, and Crimp tool.

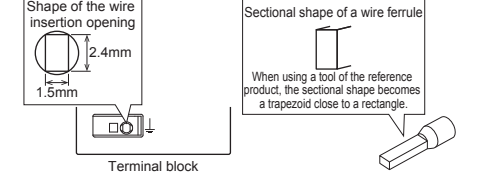
Table showing wire size specifications with columns for Wire size, Material, and Crimp tool.

Wire end treatment

Strip the cable about 10 mm from the tip to connect a wire ferrule at the striped area. Failure to do so may result in electric shock due to the conductive part.



Check the shape of the wire insertion opening with the following chart, and use the smaller wire ferrule than the described size. Also, insert the wire with care so that the wire ferrule is in proper orientation.



- Connecting a cable - When ferrules with insulation sleeve are used - When stranded wires and solid wires are used

Then, pull the wire lightly and check that it is clamped securely. <Reference>

Table showing Manufacturer and Model for the crimp tool.

- Disconnection of the cable Push the open/close button of the wire to be disconnected with a flathead screwdriver.

4. Specification

DESIGN PRECAUTIONS WARNING

- 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.

DESIGN PRECAUTIONS CAUTION

- Simultaneously turn on and off the power supplies of the CPU module and extension modules.

SECURITY PRECAUTIONS 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.

STARTUP AND MAINTENANCE PRECAUTIONS CAUTION

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

DISPOSAL PRECAUTIONS CAUTION

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

TRANSPORTATION PRECAUTIONS CAUTION

- The product is a precision instrument. During transportation, avoid impacts larger than those specified in the general specifications by using dedicated packaging boxes and shock-absorbing pallettes.

4.1 Applicable CPU module

Table showing Model name and Applicability for applicable CPU modules.

*1 FX5-ENV-IFC or FX5-C1PS-5V is necessary to connect FX5-ENET to the FX5UC CPU module.

*2 Available functions differ depending on the version of the CPU module. For details, refer to the following manual.

→ MELSEC IQ-F FX5 Ethernet Module User's Manual

4.2 Applicable Software Package

Table showing Software and Applicability for GX Works3.

*1 Available functions differ depending on the version of the software. For details, refer to the following manual. → MELSEC IQ-F FX5 Ethernet Module User's Manual

4.3 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)

Table showing Items and Specifications for general specifications.

4.4 Power Supply Specifications

Table showing Items and Specifications for power supply.

4.5 Performance Specifications

For performance specifications other than the following, refer to the MELSEC IQ-F FX5 Ethernet Module User's Manual.

Table showing Items and Specifications for performance specifications.

*1 When each protocol is used, the version applicable to each of the CPU module, FX5-ENET and software is necessary. For details, refer to the following manual.

*2 Since the IP address is shared by two ports, only one address can be set.

This manual confers no industrial property rights or any rights of any other kind, nor does it confer any patent licenses. Mitsubishi Electric Corporation cannot be held responsible for any problems involving industrial property rights which may occur as a result of using the contents noted in this manual.

Warranty

Exclusion of loss in opportunity and secondary loss from warranty liability. Regardless of the gratis warranty term, Mitsubishi shall not be liable for compensation to:

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 life.