

Manual Number	JY97053401
Revision	L
Date	April 2026

This manual describes the part names, dimensions, installation, cabling and specifications for the product. This manual is extracted from MELSEC IQ-F FX5S/FX5UJ/FX5UFXSUC User's Manual (Hardware). Refer to MELSEC IQ-F FX5S/FX5UJ/FX5UFXSUC User's Manual (Hardware) for more details. Before use, read this manual and manuals of relevant products fully to acquire proficiency in the handling and operating the product. Make sure to learn 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 follow it to the end user.

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Effective April 2026
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Safety Precautions (Read these precautions before use.)
If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
This manual classifies the safety precautions into two categories:

- WARNING** 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 **CAUTION** may also cause severe injury. Failure to follow all precautions for personal safety.

- STARTUP AND MAINTENANCE PRECAUTIONS**
- WARNING**
- Do not touch any terminal while the PLC's power is on. Doing so may cause electric shock or malfunction.
 - Before cleaning or refigthering terminals, cut off all phases of the power supply externally. Failure to do so in the power ON status may cause electric shock.
 - Before modifying the program in operation, forcing output, running or stopping the PLC, read through this manual carefully, and ensure complete safety.
 - An operation error may damage the machinery or cause accidents.
 - Do not change the program in the PLC from two or more peripheral equipment devices at the same time. (i.e. from an engineering tool and a GOT.)
 - Doing so may cause destruction or malfunction of the PLC program.
 - Use the battery for memory backup in conformance to the MELSEC IQ-F FX5S/FX5UJ/FX5UFXSUC User's Manual (Hardware).
 - Use the battery for the specified purpose only.
 - Connect the battery correctly.
 - Do not charge, disassemble, heat, put in fire, short-circuit, connect reversely, weld, swallow or turn the battery, or apply excessive forces (vibration, impact, drop, etc.) to the battery.
 - Do not store or use the battery at high temperatures or expose to direct sunlight.
 - Do not expose to water, bring near fire or touch liquid leakage or other conditions directly.
 - When replacing the battery, make sure to use our specified product (FX5U-32BL).
 - When a battery error occurs ("BAT LED is lit in red), follow the description in MELSEC IQ-F FX5S/FX5UJ/FX5UFXSUC User's Manual (Hardware).

WIRING PRECAUTIONS

- WARNING**
- Make sure to wire the screw terminal block in accordance with the following precautions.
 - Failure to do so may cause electric shock, equipment failures, a short-circuit, wire breakage, malfunctions, or fire.
 - The disposal size of the cable end should follow the dimensions described in the manual.
 - Tightening torque should follow the specifications in the manual.
 - Tighten the screws using a Phillips-head screwdriver No.2 (shaft diameter 6 mm or less). Make sure that the screwdriver does not touch the partition set of the terminal block.

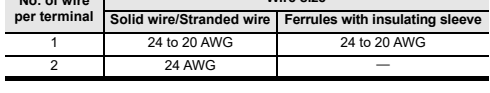
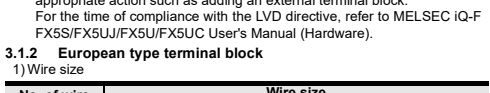
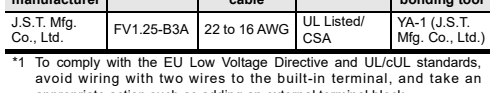
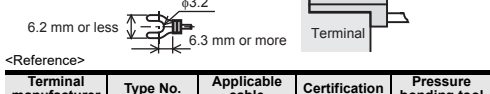
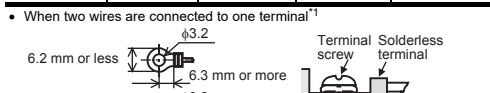
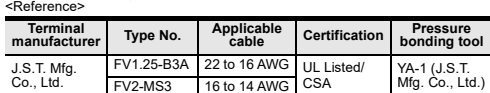
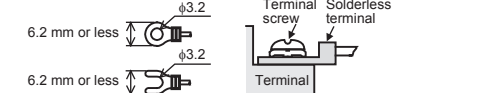
WIRING PRECAUTIONS

- CAUTION**
- Perform class D grounding (grounding resistance: 100 Ω or less) of the grounding terminal on the CPU module and extension modules with a wire 2 mm² or thicker. Do not use common grounding with heavy electrical systems (refer to section 3.3).
 - Connect the power supply wiring to the dedicated terminals described in this manual. If an AC power supply is connected to a DC input/output terminal or DC power supply terminal, the PLC will burn out.
 - Do not wire vacant terminals externally. Doing so may damage the product.
 - 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.
 - Do not bundle the power line, control 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 or power line.
 - Ground the shield of the shielded wire or shielded cable at one point on the PLC. However, do not use common grounding with heavy electrical systems.
 - Ground the shield of the analog input/output cable at one point on the signal receiving side.

However, do not use common grounding with heavy electrical systems.

3.1 Cable end treatment and tightening torque

- 3.1.1 Screw type terminal block**
- For the terminals of FX5U CPU module and I/O module, M3 screws are used. Use solid or stranded wires with sizes ranging from 22 to 14 AWG. The electric wire ends should be treated as shown below. Tighten the screws to a torque of 0.5 to 0.8 N·m (4.4 to 7.0 lb·in). Do not tighten terminal screws with a torque outside the above-mentioned range. Failure to do so may cause equipment failures or malfunctions.
- When one wire is connected to one terminal



Terminal manufacturer	Type No.	Applicable cable	Certification	Presure bonding tool
J.S.T. Mfg. Co., Ltd.	FV1-25-BA	22 to 16 AWG	UL Listed/CSA	YA-1 (J.S.T. Mfg. Co., Ltd.)
Phoenix Contact	FV2-M3	16 to 14 AWG	UL Listed/CSA	YA-1 (J.S.T. Mfg. Co., Ltd.)

*1 To comply with the EU Low Voltage Directive and UL/ULC standards, add wiring with two wires to the built-in terminal, and take an appropriate action such as adding an external terminal block.

For the time of compliance with the LVD directive, refer to MELSEC IQ-F FX5S/FX5UJ/FX5UFXSUC User's Manual (Hardware).

3.1.2 European type terminal block

- *1 Wire size

No. of wire per terminal	Wire size
1	24 to 20 AWG
2	24 AWG

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