
1.1 Part names

- FX3S-10M
- FX3S-14M
- FX3S-20M
- FX3S-30M

Incorporated Items

- FX3S-10M: Product
- FX3S-14M: Dust proof protection sheet
- FX3S-20M: Manuals [Japanese/English]
- FX3S-30M: 1 manual

1. Outline

1.1 Part names
1.2 External dimensions and weight

<table>
<thead>
<tr>
<th>Model name</th>
<th>W (mm)</th>
<th>H1 (mm)</th>
<th>Direct mounting hole pitches</th>
<th>MASS (Weight): kg (lbs)</th>
<th>AC power type</th>
<th>DC power type</th>
</tr>
</thead>
<tbody>
<tr>
<td>FX3S-10M2</td>
<td>60 (2.37&quot;)</td>
<td>52 (2.05&quot;)</td>
<td>Approx. 0.30 (0.66 lbs)</td>
<td>Approx. 0.22 (0.48 lbs)</td>
<td>W: 38 (1.49&quot;)</td>
<td>W1: 38 (1.49&quot;)</td>
</tr>
<tr>
<td>FX3S-14M2</td>
<td>60 (2.37&quot;)</td>
<td>52 (2.05&quot;)</td>
<td>Approx. 0.30 (0.66 lbs)</td>
<td>Approx. 0.22 (0.48 lbs)</td>
<td>W: 43 (1.58&quot;)</td>
<td>W1: 43 (1.58&quot;)</td>
</tr>
<tr>
<td>FX3S-20M2</td>
<td>75 (2.99&quot;)</td>
<td>67 (2.64&quot;)</td>
<td>Approx. 0.40 (0.88 lbs)</td>
<td>Approx. 0.30 (0.66 lbs)</td>
<td>W: 43 (1.58&quot;)</td>
<td>W1: 43 (1.58&quot;)</td>
</tr>
<tr>
<td>FX3S-30M2</td>
<td>92 (3.63&quot;)</td>
<td>92 (3.63&quot;)</td>
<td>Approx. 0.49 (1.09 lbs)</td>
<td>Approx. 0.35 (0.77 lbs)</td>
<td>W: 57 (2.23&quot;)</td>
<td>W1: 57 (2.23&quot;)</td>
</tr>
</tbody>
</table>

2. Installation (general specifications)

As for installation of the special adapters and expansion boards, refer to the following manual:

2.1 Generic specifications

- **Ambient temperature**:
  - 0 to 55 °C (-13 to 131 °F) when stored
  - -25 to 75 °C (-13 to 167 °F) when stored
- **Ambient humidity**:
  - 5 to 95 %RH (no condensation) when stored

- **Vibration resistance**:
  - 147 m/s² (5720 g) shock resistance
  - 1 to 50 Hz vibration resistance

- **Shock resistance**:
  - 49 m/s² (19.1 g)

- **Diodelectric withstand voltage**:
  - Between FX3G-2EYT-BD output terminal (transistor) and ground terminal
  - Between FX3G-2EYT-BD output terminal (diode) and ground terminal

- **Insulation resistance**:
  - Between terminals of special adapter and ground terminal

3.1 Installing the PLC

- **Installation location**:
  - Install the PLC in an environment conforming to the generic specifications (section 2.1), installation precautions and notes.

3.2 Procedures for installing to DIN rail

- **DIN rail mounting hooks**
  - DIN rail mounting hooks (70 mm (2.76") or more)
  - Drill a hole with a diameter of 6 mm (0.24") or more

- **Mounting hole pitches**
  - FX3S-10M2: 3 (0.23")
  - FX3S-20M2: 5 (0.32")

3.3 Peripheral device connecting connector (USB)

- **Connect the peripheral device cables securely to their designated connectors.**
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- **Connect the peripheral device cables securely to their designated connectors.**

3.4 Installation

- **Installation**
  - 35-mm-wide DIN rail or Direct (screw) mounting (M4×2)

4. Wiring precautions

- **WARNING**
  - Make sure to cut 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.

### Notes

- **When a dust-proof sheet is supplied with units, keep the sheet applied to the ventilation slits during installation work.**
- **To prevent temperature rise, do not install the PLC on a floor, a ceiling or a vertical surface.**
- **Install it horizontally on a wall as shown in section 2.2.**
- **Keep a space of 50 mm (1.97") or more between the unit main body and another device or structure (part A). Install the unit as far away as possible from high-voltage lines, high-voltage devices and power equipment.**

### Installation precautions

- **CAUTION**
  - Use the product within the generic environment specifications described in section 2.1 of this manual.
  - Never use the product in areas with excessive dust. Oil, smoke, conductive dusts, corrosive gas (sulfuric acid, Cl2, H2S, SO2 or NO2), flammables, corrosives, a temperature impact or, to expose it to high temperatures, condensation, or rain and wind.
  - If the product is used in such conditions, electric shock, fire, malfunctions, damage pattern or damage may occur.
  - Do not touch the conductive parts of the product directly. During so may cause device failure or malfunctions.
  - Install the product securely using a DIN rail or mounting screws.
  - Install the product on a flat surface. If the mounting surface is rough, undue force will be applied to the PC board, thereby causing nonconformities.
  - While drilling screw holes or wiring, make sure cutting or wire debris do not enter the ventilation slits. Failure to do so may cause fire, equipment failures or malfunctions.
  - Turn off the power to the PLC before attaching or detaching the polarized devices. Failure to do so may cause device failures or malfunctions.
  - The authentication label for authorized products is affixed to the right side of the product to avoid forgery. Products that do not have the genuine product certification label or nameplate are not covered by the warranty.

### Terminal name

- **Power supply terminal (Input X) terminals**
- **Output display LEDs (red)**
- **ERR**
- **RUN Green On while the PLC is running.**
- **Operation status display LEDs**
- **Output display LEDs (red)**
- **Service power supply terminal (AC power type only)**
- **Peripheral device connecting connector (RS-422)**
- **Peripheral device connecting connector (USB)**
- **Peripheral device connecting connector cover**
- **Input display LEDs (red)**
- **DIN rail mounting hooks**
- **Top covers are open**
- **Model name (abbreviation)**
- **DIN rail mounting hooks**
- **Top covers are open**
- **Model name (abbreviation)**
3. Power supply/input/output specifications and examples of external wiring

For the details refer to the following manual.

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
• 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.
• Noise resistance may be lower when the L and N wires of an AC power supply are not wired correctly.
• Please wire using the correct polarity.
• Do not wire vacant terminals externally.
• Do not use common grounding with heavy electrical systems.
• When cutting wires, please make sure cutting of wire debris does not enter the ventilation slits.
• Failure to do so may cause fire, equipment failures or malfunctions.

<Reference>
Type No.: FV1.25-B3A, FV2-MS3
Certification: UL Listed, CA-1 (JST)
Pressure Bonding Tool: FV1.25-B3A, FV2-MS3

3.2 Power supply specifications and example of external wiring

For details, refer to the following manual.

3.2.1 Power supply specifications
24 V DC power is supplied to the main unit.

3.2.2 Example of external wiring (AC power type)
100 to 240 V AC power is supplied to the main unit.
3.3 Grounding

Ground the PLC as stated below.

- Perform class O grounding. (Grounding resistance: 100 Ω or less)
- Ground the PLC independently if possible. If it cannot be grounded independently, ground it jointly as shown below.

3.4 Specifications and external wiring

For details, refer to the following manual.

3.4.1 Input specifications

<table>
<thead>
<tr>
<th>Number of input points</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>FX3S-10MT/MC</td>
<td>6 points</td>
</tr>
<tr>
<td>FX3S-14MT/MI</td>
<td>8 points</td>
</tr>
<tr>
<td>FX3S-20MT/MI</td>
<td>12 points</td>
</tr>
<tr>
<td>FX3S-30MT/MI</td>
<td>16 points</td>
</tr>
</tbody>
</table>

3.4.2 Examples of input wiring [AC power type]

1. Sink input type

2. Source input type

3.4.3 Examples of input wiring [DC power type]

1. Sink input type

2. Source input type

3.5 Relay output specifications

For details, refer to the following manual.

3.5.1 Relay output specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of output points</td>
<td>Specification</td>
</tr>
<tr>
<td>FX3S-10MR/MI</td>
<td>4 points</td>
</tr>
<tr>
<td>FX3S-14MR/MI</td>
<td>6 points</td>
</tr>
<tr>
<td>FX3S-20MR/MI</td>
<td>8 points</td>
</tr>
<tr>
<td>FX3S-30MR/MI</td>
<td>14 points</td>
</tr>
</tbody>
</table>

3.6 External wiring of transistor output

1. External wiring of sink output type

2. External wiring of source output type

3.6.2 External wiring of transistor output

For details, refer to the following manual.

4. Terminal block layouts

For details on the terminal block layout, refer to the following manual.

Interpretation of partition

The partition of the output terminals (see following figure) indicates the range of the output connected to the same common.

Example: FX3S-30MT/ES

- Terminal block layouts
- 4 output points/common terminal: 8 A or less
- 1 output point/common terminal: 0.5 A or less


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- (3) Special damages and secondary damages whether foreseeable or not, compensation for damages to products other than Mitsubishi products.
- (4) Replacement by the user, maintenance of on-site equipment, startup test run and other tasks.

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- The 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.
- Before using the product for special purposes such as nuclear 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 lives could occur, it is recommended to prepare a fault tolerant backup or fail-safe functions in the system.