



PROGRAMMABLE CONTROLLERS  
MELSEC-F

# FX2N-8EYR-S-ES/UL HARDWARE MANUAL



Manual Number	JY997D40801
Revision	B
Date	April 2015

This manual describes the part names, dimensions, mounting, and specifications of the product. Before use, read this manual and the manuals of all relevant products fully to acquire proficiency in handling and operating the product. Make sure to learn all the product information, safety information, and precautions. Store this manual in a safe place so that it can be taken out and read whenever necessary. Always forward it to the end user.

Registration:  
The company and product names described in this manual are registered trademarks or the trademarks of their respective companies.

Effective April 2015  
Specifications are subject to change without notice.  
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## Safety Precaution (Read these precautions before use.)

This manual classify the safety precautions into two categories:

**WARNING** and **CAUTION**.

<b>WARNING</b>	Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.
<b>CAUTION</b>	Indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight personal injury or physical damage.

Depending on circumstances, procedures indicated by **CAUTION** may also be linked to serious results.  
In any case, it is important to follow the directions for usage.

## Associated Manuals

Manual name	Manual No.	Description
FX3G Series User's Manual - Hardware Edition	JY997D31301 MODEL CODE: 09R521	Explains FX3G Series PLC specification details for I/O, wiring, installation, and maintenance.
FX3U Series User's Manual - Hardware Edition	JY997D16501 MODEL CODE: 09R516	Explains FX3U Series PLC specification details for I/O, wiring, installation, and maintenance.
FX3UC Series User's Manual - Hardware Edition	JY997D28701 MODEL CODE: 09R519	Explains FX3UC Series PLC specification details for I/O, wiring, installation, and maintenance.
FX2N HARDWARE MANUAL	JY992D66301 MODEL CODE: 09R508	Explains FX2N Series PLC specification details for I/O, wiring, installation, and maintenance.
FX2NC (D/UL) HARDWARE MANUAL	JY992D87201	Explains FX2NC (D/UL) Series PLC specification details for I/O, wiring, installation, and maintenance.
FX2NC (DSS/DS) HARDWARE MANUAL	JY992D76401 MODEL CODE: 09R509	Explains FX2NC (DSS/DS) Series PLC specification details for I/O, wiring, installation, and maintenance.
FX1N HARDWARE MANUAL	JY992D89301 MODEL CODE: 09R511	Explains FX1N Series PLC specification details for I/O, wiring, installation, and maintenance.

## How to obtain manuals

For the necessary product manuals or documents, consult with the Mitsubishi Electric dealer from where you purchase your product.

## Certification of UL, cUL standards

FX2N-8EYR-S-ES/UL units comply with the UL standards (UL, cUL).

UL, cUL File Number: E95239

Regarding the standards that comply with the main unit, please refer to either the FX series product catalog or consult with your nearest Mitsubishi product provider.

## Compliance with EC directive (CE Marking)

This document does not guarantee that a mechanical system including this product will comply with the following standards.

Compliance to EMC directive and LVD directive for the entire mechanical module should be checked by the user/manufacturer. For more information please consult with your nearest Mitsubishi product provider.

## Requirement for Compliance with EMC directive

The following products have shown compliance through direct testing (of the identified standards below) and design analysis (through the creation of a technical construction file) to the European Directive for Electromagnetic Compatibility (2004/108/EC) when used as directed by the appropriate documentation.

### Attention

- This product is designed for use in industrial applications.

### Note

- Authorized Representative in the European Community:  
Mitsubishi Electric Europe B.V.  
Gothaer Str. 8, 40880 Ratingen, Germany

Type: Programmable Controller (Open Type Equipment)  
Models: MELSEC FX2N series manufactured

from September 1st, 2010 FX2N-8EYR-S-ES/UL

Standard	Remark
EN61131-2:2007 Programmable controllers - Equipment requirements and tests	Compliance with all relevant aspects of the standard. EMI • Radiated Emissions • Conducted Emissions EMS • Radiated electromagnetic field • Fast Transient burst • Electrostatic discharge • High-energy surge • Voltage drops and interruptions • Conducted RF • Power frequency magnetic field

## Requirement for Compliance with LVD directive

The following products have shown compliance through direct testing (of the identified standards below) and design analysis (through the creation of a technical construction file) to the European Directive for Low Voltage (2006/95/EC) when used as directed by the appropriate documentation.

Type: Programmable Controller (Open Type Equipment)  
Models: MELSEC FX2N series manufactured

from September 1st, 2010 FX2N-8EYR-S-ES/UL

Standard	Remark
EN61131-2:2007 Programmable controllers - Equipment requirements and tests	The equipment has been assessed as a component for fitting in a suitable enclosure which meets the requirements of EN61131-2:2007

## Caution for EC Directive

### Installation in Enclosure

Programmable logic controllers are open-type devices that must be installed and used within conductive control cabinets. Please use the programmable logic controller while installed within a conductive shielded control cabinet. Please secure the cabinet door to the control cabinet (for conduction). Installation within a control cabinet greatly affects the safety of the system and aids in shielding noise from the programmable logic controller.

## 1. Outline

### 1.1 Outline

The FX2N-8EYR-S-ES/UL output extension block (hereinafter called FX2N-8EYR-S-ES/UL) is an extension block to connect the FX3G/FX3U/FX3UC/FX2N/FX2NC/FX1N/FX1NC Series main units.

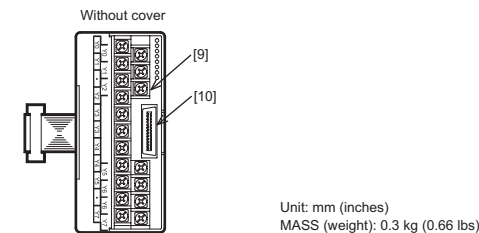
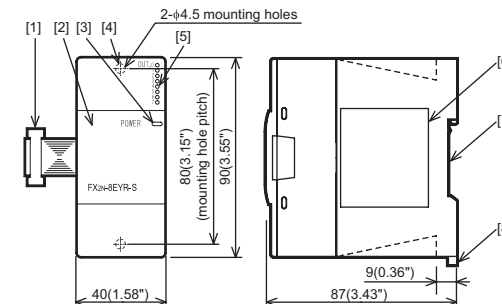
FX2N-8EYR-S-ES/UL has 8 points relay outputs, and all output terminals have separate reference terminals (Commons).

### 1.2 Communication Function

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

Included Items	
FX2N-8EYR-S-ES/UL	1 unit
Input/output number label	1 sheet
Dust proof protection sheet	1 sheet
Manuals (Japanese version, English version)	1 manual each

### 1.3 External Dimensions, Part Names



No.	Name
[1]	Extension cable
[2]	Top cover
[3]	Power LED
[4]	Direct mounting hole (mounting screw: M4 screw)
[5]	Output LED
[6]	Nameplate
[7]	DIN rail mounting groove (DIN rail: DIN46277, 35mm (1.38) width)
[8]	DIN rail mounting hook
[9]	Output terminal block (M3 terminal screw)
[10]	Extension connector

## 2. General specifications and Installation

DESIGN PRECAUTIONS	WARNING
<ul style="list-style-type: none"> <li>Make sure to have 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.</li> <li>1) Most importantly, have 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).</li> <li>2) Note that when the PLC CPU 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 PLC CPU 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.</li> <li>3) Note that when an error occurs in a relay output device, the output could be held either on or off. For output signals that may lead to serious accidents, external circuits and mechanisms should be designed to ensure safe machinery operation in such a case.</li> </ul>	

DESIGN PRECAUTIONS	CAUTION
<ul style="list-style-type: none"> <li>Do not bundle the control line together with or lay it close to the main circuit or power line. As a guideline, lay the control line at least 100mm (3.94") or more away from the main circuit or power line. Noise may cause malfunctions.</li> <li>Install module so that excessive force will not be applied to the terminal blocks. Failure to do so may result in wire damage/breakage or PLC failure.</li> </ul>	

INSTALLATION PRECAUTIONS	WARNING
<ul style="list-style-type: none"> <li>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.</li> </ul>	

INSTALLATION PRECAUTIONS	CAUTION
<ul style="list-style-type: none"> <li>Use the product within the generic environment specifications described in PLC main unit manual (Hardware Edition). Never use the product in areas with excessive dust, oily smoke, conductive dusts, corrosive gas (salt air, Cl<sub>2</sub>, H<sub>2</sub>S, SO<sub>2</sub>, or NO<sub>2</sub>), flammable gas, vibration or impacts, or expose it to high temperature, condensation, or rain and wind. If the product is used in such conditions, electric shock, fire, malfunctions, deterioration or damage may occur.</li> <li>Do not touch the conductive parts of the product directly. Doing so may cause device failures or malfunctions.</li> <li>Install the product securely using a DIN rail or mounting screws.</li> <li>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.</li> <li>When drilling screw holes or wiring, make sure that cutting and wiring debris do not enter the ventilation slits. Failure to do so may cause fire, equipment failures or malfunctions.</li> <li>Be sure to remove the dust proof sheet from the PLC's ventilation port when installation work is completed. Failure to do so may cause fire, equipment failures or malfunctions.</li> <li>Connect the extension cables securely to their designated connectors. Loose connections may cause malfunctions.</li> </ul>	

### 2.1 General specifications

The general specifications are equivalent to the PLC main unit.  
→ For general specifications, refer to the manual of the PLC main unit.


### 2.2 Installation

The product is mounted by the following method.


- DIN rail mounting
- Direct mounting (mounting screw: M4 screw)

For details, refer to the respective PLC manual.


### 3. Power supply/output specifications and examples of external 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**


- When drilling screw holes or wiring, make sure cutting or wire debris does not enter the ventilation slits. Failure to do so may cause fire, equipment failures or malfunctions.
- Do not wire vacant terminals externally. Doing so may damage the product.
- Make sure to properly wire to the terminal blocks in accordance with the following precautions. Failure to do so may cause electric shock, equipment failures, a short-circuit, wire breakage, malfunctions, or damage to the product.
  - The disposal size of the cable end should follow the dimensions described in the manual
  - Tightening torque should follow the specifications in the manual

**STARTUP AND MAINTENANCE PRECAUTIONS**  **CAUTION**

- Do not disassemble or modify the PLC. Doing so may cause fire, equipment failures, or malfunctions. \* For repair, contact your local Mitsubishi Electric distributor.
- Do not drop the product or exert strong impact to it. Doing so may cause damage.

**DISPOSAL PRECAUTIONS**  **CAUTION**

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

**TRANSPORT AND STORAGE PRECAUTIONS**  **CAUTION**

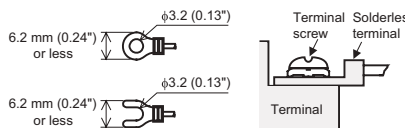
- The product is a precision instrument. During transportation, avoid any impacts. Failure to do so may cause failures in the product. After transportation, verify the operations of the product.

#### 3.1 Wiring

##### 3.1.1 Cable end treatment and tightening torque

For the terminals of FX2N-8EYR-S-ES/UL, M3 screws are used. The electric wire ends should be treated as shown below. Tighten the screws to a torque of 0.5 to 0.8 N·m. Do not tighten terminal screws with a torque exceeding the regulation torque. Failure to do so may cause equipment failures or malfunctions.

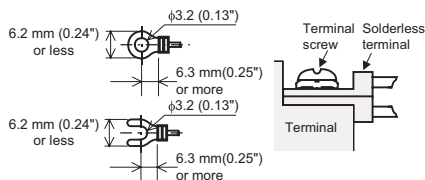
- When one wire is connected to one terminal



##### <Reference>

Terminal Manufacturer	Type No.	Certification	Pressure Bonding Tool
JAPAN SOLDERLESS TERMINAL MFG CO LTD (JST)	FV1.25-B3A	UL Listed	YA-1(JST)
	FV2-MS3		

- When two wires are connected to one terminal



##### <Reference>

Terminal Manufacturer	Type No.	Certification	Pressure Bonding Tool
JAPAN SOLDERLESS TERMINAL MFG CO LTD (JST)	FV1.25-B3A	UL Listed	YA-1(JST)

#### 3.2 Power supply specifications

Item	Specifications
Internal 24V DC*1	24V DC 75mA 24V DC power is either supplied internally from the main unit or input/output extension unit, or from an extension power supply unit.
5V DC*1	5V DC 30mA 5V DC power is either supplied internally from the main unit or input/output extension unit, or from an extension power supply unit.

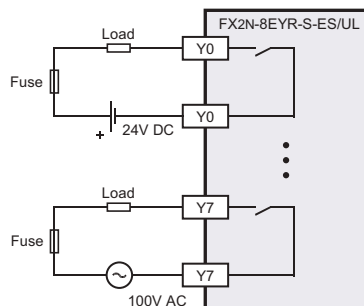
\*1 For details on power supply connections, refer to the respective PLC manual. Power supply specification is the same as the FX2N-8EYR(-ES/UL). When there is not a description in the PLC manual, please select in the same way as the FX2N-8EYR(-ES/UL).

#### 3.3 Output specifications and example of external wiring

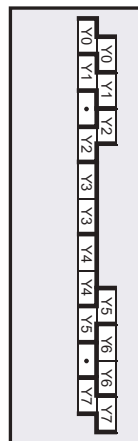
##### 3.3.1 Relay output specifications

Item	Output specifications	
Number of output points	8 points (All points have separate reference terminals (Commons))	
Output connecting type	Terminal block	
Output form	Relay	
External power supply	30V DC or less, 240V AC or less (Between 250V and 240V CE, UL, and cUL are not compliant.)	
Max. load	Resistance load	2A/1point
	Inductive load	80VA/1point
Min. load	5V DC, 2mA (reference value)	
Open circuit leakage current	-	
Response time	OFF→ON	Approx. 10ms
	ON→OFF	
Circuit insulation	Mechanical insulation	
Display of output operation	LED lights when power is applied to relay coil.	

##### 3.3.2 Example of relay output wiring




### 4. Terminal layouts



Industrial automation  
**Elincom Group**  
 European Union: [www.elinco.eu](http://www.elinco.eu)  
 Russia: [www.elinc.ru](http://www.elinc.ru)

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**  
 Mitsubishi will not be held liable for damage caused by factors found not to be the cause of Mitsubishi; opportunity loss or lost profits caused by faults in the Mitsubishi products; damage, secondary damage, accident compensation caused by special factors unpredictable by Mitsubishi; damages to products other than Mitsubishi products; and to other duties.

 **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.
- 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.

**MITSUBISHI ELECTRIC CORPORATION**

HEAD OFFICE : TOKYO BUILDING, 2-7-3 MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN



PROGRAMMABLE CONTROLLERS  
MELSEC-F

Side A JAPANESE  
Side B ENGLISH

FX2N-8EYR-S-ES/UL  
HARDWARE MANUAL



Manual Number	JY997D40801
Revision	B
Date	April 2015

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This manual classifies the safety precautions into two categories:

⚠️ **WARNING** and ⚠️ **CAUTION**

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Depending on circumstances, procedures indicated by ⚠️ **CAUTION** may also be linked to serious results. In any case, it is important to follow the directions for usage.

**Associated Manuals**

Manual name	Manual No.	Description
FX3G Series User's Manual - Hardware Edition	JY997D31301 MODEL CODE: 09R521	Explains FX3G Series PLC specification details for I/O, wiring, installation, and maintenance.
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FX3UC Series User's Manual - Hardware Edition	JY997D28701 MODEL CODE: 09R519	Explains FX3UC Series PLC specification details for I/O, wiring, installation, and maintenance.
FX2N HARDWARE MANUAL	JY992D66301 MODEL CODE: 09R508	Explains FX2N Series PLC specification details for I/O, wiring, installation, and maintenance.
FX2NC (D/UL) HARDWARE MANUAL	JY992D87201	Explains FX2NC (D/UL) Series PLC specification details for I/O, wiring, installation, and maintenance.
FX2NC (DSS/DS) HARDWARE MANUAL	JY992D76401 MODEL CODE: 09R509	Explains FX2NC (DSS/DS) Series PLC specification details for I/O, wiring, installation, and maintenance.
FX1N HARDWARE MANUAL	JY992D89301 MODEL CODE: 09R511	Explains FX1N Series PLC specification details for I/O, wiring, installation, and maintenance.

**How to obtain manuals**

For the necessary product manuals or documents, consult with the Mitsubishi Electric dealer from where you purchase your product.

**Certification of UL, cUL standards**

FX2N-8EYR-S-ES/UL units comply with the UL standards (UL, cUL).  
UL, cUL File Number: E95239  
Regarding the standards that comply with the main unit, please refer to either the FX series product catalog or consult with your nearest Mitsubishi product provider.

**Compliance with EC directive (CE Marking)**

This document does not guarantee that a mechanical system including this product will comply with the following standards.  
Compliance to EMC directive and LVD directive for the entire mechanical module should be checked by the user/manufacturer. For more information please consult with your nearest Mitsubishi product provider.

**Requirement for Compliance with EMC directive**

The following products have shown compliance through direct testing (of the identified standards below) and design analysis (through the creation of a technical construction file) to the European Directive for Electromagnetic Compatibility (2004/108/EC) when used as directed by the appropriate documentation.

**Attention**

- This product is designed for use in industrial applications.

**Note**

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Mitsubishi Electric Europe B.V.  
Gothaer Str. 8, 40880 Ratingen, Germany

Type: Programmable Controller (Open Type Equipment)  
Models: MELSEC FX2N series manufactured from September 1st, 2010 FX2N-8EYR-S-ES/UL

Standard	Remark
EN61131-2:2007 Programmable controllers - Equipment requirements and tests	Compliance with all relevant aspects of the standard. EMI • Radiated Emissions • Conducted Emissions EMS • Radiated electromagnetic field • Fast Transient burst • Electrostatic discharge • High-energy surge • Voltage drops and interruptions • Conducted RF • Power frequency magnetic field

**Requirement for Compliance with LVD directive**

The following products have shown compliance through direct testing (of the identified standards below) and design analysis (through the creation of a technical construction file) to the European Directive for Low Voltage (2006/95/EC) when used as directed by the appropriate documentation.

Type: Programmable Controller (Open Type Equipment)  
Models: MELSEC FX2N series manufactured from September 1st, 2010 FX2N-8EYR-S-ES/UL

Standard	Remark
EN61131-2:2007 Programmable controllers - Equipment requirements and tests	The equipment has been assessed as a component for fitting in a suitable enclosure which meets the requirements of EN61131-2:2007

**Caution for EC Directive**

**Installation in Enclosure**

Programmable logic controllers are open-type devices that must be installed and used within conductive control cabinets. Please use the programmable logic controller while installed within a conductive shielded control cabinet. Please secure the cabinet door to the control cabinet (for conduction). Installation within a control cabinet greatly affects the safety of the system and aids in shielding noise from the programmable logic controller.

**1. Outline**

**1.1 Outline**

The FX2N-8EYR-S-ES/UL output extension block (hereinafter called FX2N-8EYR-S-ES/UL) is an extension block to connect the FX3G/FX3U/FX3UC/FX2N/FX2NC/FX1N/FX1NC Series main units.

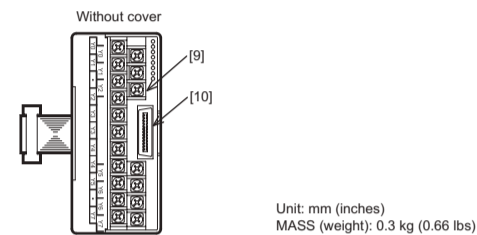
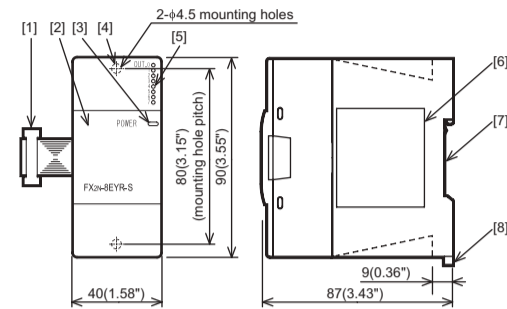
FX2N-8EYR-S-ES/UL has 8 points relay outputs, and all output terminals have separate reference terminals (Commons).

**1.2 Communication Function**

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

Included Items	
FX2N-8EYR-S-ES/UL	1 unit
Input/output number label	1 sheet
Dust proof protection sheet	1 sheet
Manuals (Japanese version, English version)	1 manual each

**1.3 External Dimensions, Part Names**



Unit: mm (inches)  
MASS (weight): 0.3 kg (0.66 lbs)

No.	Name
[1]	Extension cable
[2]	Top cover
[3]	Power LED
[4]	Direct mounting hole (mounting screw: M4 screw)
[5]	Output LED
[6]	Nameplate
[7]	DIN rail mounting groove (DIN rail: DIN46277, 35mm (1.38") width)
[8]	DIN rail mounting hook
[9]	Output terminal block (M3 terminal screw)
[10]	Extension connector

**3. Power supply/output specifications and examples of external wiring**

**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.

**CAUTION**

- When drilling screw holes or wiring, make sure cutting or wire debris does not enter the ventilation slits. Failure to do so may cause fire, equipment failures or malfunctions.
- Do not wire vacant terminals externally. Doing so may damage the product.
- Make sure to properly wire to the terminal blocks in accordance with the following precautions. Failure to do so may cause electric shock, equipment failures, a short-circuit, wire breakage, malfunctions, or damage to the product.
  - The disposal size of the cable end should follow the dimensions described in the manual
  - Tightening torque should follow the specifications in the manual

**CAUTION**

- Do not disassemble or modify the PLC. Doing so may cause fire, equipment failures, or malfunctions. \* For repair, contact your local Mitsubishi Electric distributor.
- 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.

**CAUTION**

- The product is a precision instrument. During transportation, avoid any impacts. Failure to do so may cause failures in the product. After transportation, verify the operations of the product.

**3.1 Wiring**

**3.1.1 Cable end treatment and tightening torque**

For the terminals of FX2N-8EYR-S-ES/UL, M3 screws are used. The electric wire ends should be treated as shown below. Tighten the screws to a torque of 0.5 to 0.8 N·m. Do not tighten terminal screws with a torque exceeding the regulation torque. Failure to do so may cause equipment failures or malfunctions.

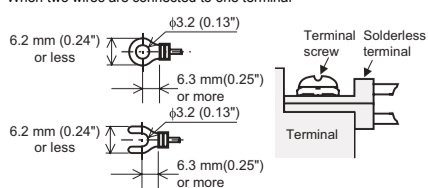
- When one wire is connected to one terminal



**<Reference>**

Terminal Manufacturer	Type No.	Certification	Pressure Bonding Tool
JAPAN SOLDERLESS TERMINAL MFG CO LTD (JST)	FV1.25-B3A	UL Listed	YA-1(JST)
	FV2-MS3		

- When two wires are connected to one terminal



**<Reference>**

Terminal Manufacturer	Type No.	Certification	Pressure Bonding Tool
JAPAN SOLDERLESS TERMINAL MFG CO LTD (JST)	FV1.25-B3A	UL Listed	YA-1(JST)

**3.2 Power supply specifications**

Item	Specifications
Internal 24V DC*	24V DC 75mA 24V DC power is either supplied internally from the main unit or input/output extension unit, or from an extension power supply unit.
5V DC*	5V DC 30mA 5V DC power is either supplied internally from the main unit or input/output extension unit, or from an extension power supply unit.

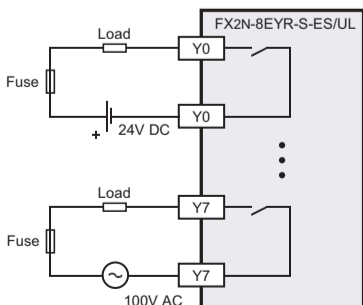
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**3.3 Output specifications and example of external wiring**

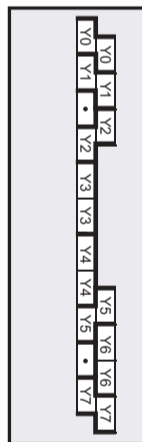
**3.3.1 Relay output specifications**

Item	Output specifications	
Number of output points	8 points (All points have separate reference terminals (Commons))	
Output connecting type	Terminal block	
Output form	Relay	
External power supply	30V DC or less, 240V AC or less (Between 250V and 240V CE, UL, and cUL are not compliant.)	
Max. load	Resistance load	2A/1point
	Inductive load	80VA/1point
Min. load	5V DC, 2mA (reference value)	
Open circuit leakage current	-	
Response time	OFF→ON ON→OFF	Approx. 10ms
Circuit insulation	Mechanical insulation	
Display of output operation	LED lights when power is applied to relay coil.	

**3.3.2 Example of relay output wiring**



**4. Terminal layouts**



**2. General specifications and Installation**

**DESIGN PRECAUTIONS**

**WARNING**

- Make sure to have 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, have 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 PLC CPU 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 PLC CPU 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.
  - Note that when an error occurs in a relay output device, the output could be held either on or off. For output signals that may lead to serious accidents, external circuits and mechanisms should be designed to ensure safe machinery operation in such a case.

**DESIGN PRECAUTIONS**

**CAUTION**

- Do not bundle the control line together with or lay it close to the main circuit or power line. As a guideline, lay the control line at least 100mm (3.94") or more away from the main circuit or power line. Noise may cause malfunctions.
- Install module so that excessive force will not be applied to the terminal blocks. Failure to do so may result in wire damage/breakage or PLC failure.

**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**

- Use the product within the generic environment specifications described in PLC main unit manual (Hardware Edition). Never use the product in areas with excessive dust, oily smoke, conductive dusts, corrosive gas (salt air, Cl<sub>2</sub>, H<sub>2</sub>S, SO<sub>2</sub>, or NO<sub>2</sub>), flammable gas, vibration or impacts, or expose it to high temperature, condensation, or rain and wind. If the product is used in such conditions, electric shock, fire, malfunctions, deterioration or damage may occur.
- Do not touch the conductive parts of the product directly. Doing so may cause device failures or malfunctions.
- Install the product securely using a DIN rail or mounting screws. If the mounting surface is rough, undue force will be applied to the PC board, thereby causing nonconformities.
- When drilling screw holes or wiring, make sure that cutting and wiring debris do not enter the ventilation slits. Failure to do so may cause fire, equipment failures or malfunctions.
- Be sure to remove the dust proof sheet from the PLC's ventilation port when installation work is completed. Failure to do so may cause fire, equipment failures or malfunctions.
- Connect the extension cables securely to their designated connectors. Loose connections may cause malfunctions.

**2.1 General specifications**

The general specifications are equivalent to the PLC main unit.  
→ For general specifications, refer to the manual of the PLC main unit.

**2.2 Installation**

The product is mounted by the following method.

- DIN rail mounting
- Direct mounting (mounting screw: M4 screw)

For details, refer to the respective PLC manual.

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**  
Mitsubishi will not be held liable for damage caused by factors found not to be the cause of Mitsubishi; opportunity loss or lost profits caused by faults in the Mitsubishi products; damage, secondary damage, accident compensation caused by special factors unpredictable by Mitsubishi; damages to products other than Mitsubishi products; and to other duties.

**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.
- 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.