This manual describes the parts names, dimensions, mounting, cabling and specifications for the product. This manual is extracted from FX3UC (D,DS,DSS) Series User's Manual - Hardware Edition. Refer to FX3UC Series User's Manual - Hardware Edition 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 all the product information, safety information, and precautions. And, 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 name and the product name to be described in this manual are the registered trademarks or trademarks of each company. Effective May 2011 Specifications are subject to change without notice. © 2007 Mitsubishi Electric Corporation Safety Precaution (Read these precautions before use.) This manual classifies the safety precautions into two categories:● DANGER and ● CAUTION Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury. Indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight personal injury or physical damage. Depending on the circumstances, procedures indicated by may also cause severe injury. It is important to follow all precautions for personal safety.

STARTUP AND MAINTENANCE PRECAUTIONS
● Use the battery for memory backup correctly in FX3UC Series Hardware Edition - - Use the battery only for the specified purpose. - Connect the battery correctly. - Do not change, disassemble, heat, put in fire, short-circuit, connect reversely, weld, swallow or burn the battery, or apply excessive forces (such as 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 contents directly. - Incorrect handling of the battery may cause heat excessive generation, bursting, ignition, liquid leakage or deformation, or lead to injury, fire, or failures and malfunctions of facilities and other equipment. - Before modifying or disrupting the program in operation or running the PLC, calls related through this manual and the associated manuals and ensure the safety of the operation. - An operation error may damage the machinery or cause accidents.

COMPLIANCE WITH DIRECTIVES
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 of the entire mechanical system should be checked by the user / manufacturer. For more details please contact the local Mitsubishi Electric sales site.

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 Directives 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
- Manufactured by: Mitsubishi Electric Corporation 2-7-3 Marunouchi, Chiyoda-ku, Tokyo, 100-8310 Japan
- Manufactured at: Mitsubishi Electric Corporation Himeji Works 170-Cho, Chiyoda-machi, Himeji, Hyogo, 670-8777 Japan
- Authorized Representative in the European Community: Mitsubishi Electric Europe B.V. Gouthaer Str. 8, 40880 Ratingen, Germany.

Type : Programmable Controller (Open Type Equipment) Models : MELSEC FX3U series and FX3NC series
From May 1st, 2005 FX3U-FLROM-16 FX3U-FLROM-64L FX3U-223ADP FX3U-485ADP FX3U-4AD-ADP FX3U-4AD-TC-ADP FX3U-FLROM-64
From June 1st, 2005 FX3U-FLROM-16 FX3U-FLROM-64L FX3U-223ADP FX3U-485ADP FX3U-4AD-ADP FX3U-4AD-TC-ADP FX3U-FLROM-64

From April 1st, 2007 FX3U-223ADP-MB FX3U-485ADP-MB
From September 1st, 2007 FX3U-**MT/D FX3U-**MT/DSS
From October 1st, 2007 FX3U-16EX-T FX3U-16EX-T DS
From December 1st, 2007 FX3U-4AD-PTW-ADP FX3U-4AD-PNK-ADP FX3U-4AD-CF-ADP
From June 1st, 2009 FX3U-16ER-T FX3U-16ER-T DS
From May 1st, 2011 FX3U-FLROM-1M

From March 1st, 1999 FX3NC-**EX FSXNC-**EXT DS
From August 1st, 1999 FX2N-16EYR-T DS FX2N-16EYR-ESS/UL
From October 1st, 2007 FX3NC-**EX FX3NC-**EYTX DS
From August 1st, 2005 FX2N-8ER-ES/UL FX2N-8EX-ES/UL
From March 1st, 1999 FX2N-16EYR-ESS/UL FX2N-16EYR-T DS
From October 1st, 2007 FX3NC-**EX FX3NC-**EYTX DS

From July 1st, 1997 FX2N-16EX-ES/UL FX2N-16ER-T DS
From August 1st, 2005 FX2N-16EX-ESS/UL FX2N-16ER-T ES/UL
From September 1st, 2010 FX2N-16ER-T DS
From March 1st, 2002 FX2N-16ER-T ES/UL
For the products above, PLC’s manufactured before March 31st, 2002 are compliant with EN50081-2 (EN61000- 6-4) and EN50022-0.2 only.
PLC’s manufactured from April 1st, 2002 to April 30th, 2006 are compliant with EN60508-1 (EN61000-6-4) and EN61131-2:1994+A11:1996+A12:2000
PLC’s manufactured after May 1st, 2006 are compliant with EN61131-2:2007

<table>
<thead>
<tr>
<th>Standard</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN61000-6-4:2007</td>
<td>Generic emission standard Industrial environment</td>
</tr>
<tr>
<td>EN60098-2:1995</td>
<td>Electromagnetic compatibility</td>
</tr>
<tr>
<td>EN61131-2:1994</td>
<td>Programmable controllers - Equipment requirements and tests</td>
</tr>
</tbody>
</table>

Compliance with all relevant aspects of the standard:
- Emission-Enclosure port
- Emission-Low voltage AC mains port
- Emission-Telecommunications/ network port

Compliance with all relevant aspects of the standard:
- RF immunity
- Radiated Transients
- ESD
- Conducted
- Power magnetic fields

Compliance with all relevant aspects of the standard:
- Radiated electromagnetic field
- Fast transient burst
- Electrostatic discharge
- Damped oscillatory wave

Compliance with all relevant aspects of the standard:
- Radiated electromagnetic field
- Conducted Emission
- 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 FX3U series manufactured from September 1st, 2010 FX3U-16MR/DS-T FX3U-16MR/DS-D-T

<table>
<thead>
<tr>
<th>Standard</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN61131-2:2007</td>
<td>Programmable controllers - Equipment requirements and tests</td>
</tr>
</tbody>
</table>

Models : MELSEC FX3NC series manufactured from August 1st, 1999 FX3NC-16EYR-T-DS FX3NC-16EYR-T

PLC’s manufactured from April 1st, 2002 to April 30th, 2006 are compliant with EN60508-1 (EN61000-6-4) and EN61131-2:1994+A11:1996+A12:2000
PLC’s manufactured after May 1st, 2006 are compliant with EN61131-2:2007

<table>
<thead>
<tr>
<th>Standard</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEC1010-1:1990</td>
<td>Compliance with all relevant aspects of the standard: Emission-Enclosure port</td>
</tr>
<tr>
<td>BSEN61010-1:1993</td>
<td>Safety requirements for electrical equipment for measurement, control, and laboratory use</td>
</tr>
</tbody>
</table>

*Compliance to BSEN61010-1 is claimed through virtue of 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:

- General requirements

- Radiated electromagnetic field
- Conducted Emission
- Radiated electromagnetic field
- Fast transient burst
- Electrostatic discharge
- High-energy surge
- Voltage drops and interruptions
- Conducted RF
- Power frequency magnetic field

Plc's manufactured from April 1st, 2002 to April 30th, 2006 are compliant with EN60508-1 (EN61000-6-4) and EN61131-2:1994+A11:1996+A12:2000
Plc's manufactured after May 1st, 2006 are compliant with EN61131-2:2007

Iec1010-1:1990
Bsen61010-1:1993
Safety requirements for electrical equipment for measurement, control, and laboratory use
- General requirements

*Compliance to BSEN61010-1 is claimed through virtue of 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:

- General requirements

Caution for compliance with EC Directive

Installation in Enclosure

Programmable logic controllers are open-type devices that must be installed and used within conduction control boxes. Please use the FX3UC (D,DS,DSS) Series programmable logic controllers while installed in conduction shielded control boxes. Please secure the control box lid to the control box (for conduction). Installation within a control box greatly affects the reliability of the system and aids in shielding noise from the programmable logic controller.

Caution for Analog Products in use

The analog special adapters have been found to be compliant to the European standards in the above said manual and directive. However, for the very best performance from what are in fact delicate measuring and controlled output device Mitsubishi Electric would like to make the following points:
As analog devices are sensitive by nature, their use should be considered carefully. For users of proprietary cables (integral with sensors or actuators), these users should follow the manufacturer's installation requirements.
Mitsubishi Electric recommends that shielded cables be used. If no other EMC protection is provided, then users may experience temporary loss of accuracy between +10%/-10% in very heavy industrial areas.
However, Mitsubishi Electric suggests that when adequate EMC precautions are followed with general good EMC practice for the users complete control system.

Sensible analog cables should not be laid next to or bound with high voltage cabling. Where possible, users should run analog cables separately.

Good cable shielding should be used. When grounding the shield - ensure that no loops are accidentally created.
When reading analog values, EMC induced errors can be smoothed out by averaging the readings. This can be achieved either through functions on the analog special adapter/block or through the use of the program in the FX3UC Series PLC main unit.

Associated manuals

FX3UC (D,DS,DSS) Series PLC main unit comes with this document (hardware manual) for a detailed explanation of the FX3UC Series hardware and information on PLC programming instructions and special extension unit manual, refer to the relevant documentation.

How to obtain manuals

For product manuals or documents, consult with the Mitsubishi Electric dealer from who you purchased your product.

Quick Reference Information

<table>
<thead>
<tr>
<th>Manual name</th>
<th>Manual no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FX3UC Series Programming Manual</td>
<td>09R517</td>
<td>Describes PLC programming for basic/ instructed STL/ SFC programming and system devices.</td>
</tr>
<tr>
<td>FXCPU Programming Manual</td>
<td>09R925</td>
<td>Devices, parameters, etc. required to create structured programs.</td>
</tr>
<tr>
<td>FXCPU Programming Manual</td>
<td>09R926</td>
<td>Sequence instructions provided in structured projects of GX Works2.</td>
</tr>
<tr>
<td>FXCPU Programming Manual</td>
<td>09R927</td>
<td>Application functions provided in structured projects of GX Works2.</td>
</tr>
<tr>
<td>FX3U Series User's Manual</td>
<td>09R619</td>
<td>Explains N/N Network, parallel link, computer link, non-protocol communication by RS instructions/FX3U-232F.</td>
</tr>
<tr>
<td>FX3U Series User's Manual</td>
<td>09R620</td>
<td>Explains the positioning control specifications of the FX3UC Series PLC.</td>
</tr>
<tr>
<td>FX3U Series User's Manual</td>
<td>09R621</td>
<td>Describes specifications for analog control and programming methods for the FX3UC Series PLC.</td>
</tr>
</tbody>
</table>

Incorporated Items

Verify that the following product and items are included in the package.

Product Included Items

1. Outline

1.1 Part names

Front panel
Under side

Display LED

1.2 External dimensions/weight

**Main units (Connector type)**

<table>
<thead>
<tr>
<th>Type</th>
<th>Main units (Connector type)</th>
<th>Main units (Terminal block type)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Model name</td>
<td>W: mm (inches)</td>
</tr>
<tr>
<td>Main units</td>
<td>FX2NC-16MT/D(SS)</td>
<td>34.0 (1.34)</td>
</tr>
<tr>
<td>Main units</td>
<td>FX2NC-32MT/D(SS)</td>
<td>34.0 (1.34)</td>
</tr>
<tr>
<td>Main units</td>
<td>FX2NC-64MT/D(SS)</td>
<td>59.7 (2.36)</td>
</tr>
<tr>
<td>Main units</td>
<td>FX3UC-16MRD(S)-T</td>
<td>34.0 (1.34)</td>
</tr>
<tr>
<td>Main units</td>
<td>FX3UC-32MRD(S)-T</td>
<td>34.0 (1.34)</td>
</tr>
<tr>
<td>Main units</td>
<td>FX3UC-64MRD(S)-T</td>
<td>59.7 (2.36)</td>
</tr>
<tr>
<td>Main units</td>
<td>FX3UC-16MT/D(SS)</td>
<td>34.0 (1.34)</td>
</tr>
<tr>
<td>Main units</td>
<td>FX3UC-32MT/D(SS)</td>
<td>34.0 (1.34)</td>
</tr>
<tr>
<td>Main units</td>
<td>FX3UC-64MT/D(SS)</td>
<td>59.7 (2.36)</td>
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<td>Main units</td>
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<td>34.0 (1.34)</td>
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<tr>
<td>Main units</td>
<td>FX3UC-32MT/D(SS)</td>
<td>34.0 (1.34)</td>
</tr>
<tr>
<td>Main units</td>
<td>FX3UC-64MT/D(SS)</td>
<td>59.7 (2.36)</td>
</tr>
</tbody>
</table>

**Notes**

- When a dust proof sheet is supplied with an extension unit block, keep the sheet applied to the ventilation slits during installation and wiring 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 50mm (1.97") or more between the unit main body and another device or structure (section 2.2 part A). Install the unit as far away as possible from high-voltage lines, high-voltage devices and power equipment.

- Ambient temperature: 0 to 55°C (32 to 131°F) when operating and -25 to 70°C (-13 to 167°F) when stored
- Ambient humidity: 5 to 95%RH (no condensation) when operating

**2. General specifications and Installation**

---For more details, refer to the FXxUC Series User's Manual - Hardware Edition---

**INSTALLATION PRECAUTIONS CAUTION**

- 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 section 2.1 of this manual. Never use the product in areas with excessive dust, oily smoke, conductive dusts, corrosive gas (sulfur fume, H2S, SO2 or NO2), 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.

**INSTALLATION PRECAUTIONS CAUTION**

- 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. Instal the product on a flat surface. If the mounting surface is rough, undue force will be applied to the PCB 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.

2.2 Installation location

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

**Dimensions**

- Extension devices can be connected on the left and right sides of the PLC main unit.
- If you intend to add extension devices in the future, keep extra space on the left and right sides open.
2.3.1 Installing methods

1) Turn the power supply OFF.
2) Push the DIN rail mounting hooks of all connected units or blocks as shown in the figure on the right.
3) Align the upper side of the DIN rail mounting groove with the DIN rail (① in the figure on the right).
4) While pressing the main unit onto the DIN rail, lock the DIN rail mounting hooks as shown in the figure below.

2.3.2 Removal methods

1) Turn the power supply OFF.
2) Disconnect all input cables including power cable and I/O cables.
3) Insert a flathead screwdriver into the DIN rail mounting hook (② in the figure on the right).
4) Lever the screwdriver slightly toward direction ②, to pull out the DIN rail mounting hooks, allowing them to come off the DIN rail.
5) Remove the main unit from the DIN rail (③ in the figure on the right).
6) Push the DIN rail mounting hooks as shown in the figure on the right.

2.4 Connection of power supply connector

Use the dedicated built-in power connector to supply power to the main unit.

- The power should be supplied to the main unit, FX2NC Series I/O extension blocks and FX2NC/FX3UC Series special extension blocks. Some (FX2NC-C0.EX-T(7)) of FX2NC Series I/O extension blocks require power cable types B and C shown on the right, while others (FX2NC-C0.EX-T(7)-DS) do not require them. For details, refer to FX3UC Series User's Manual - Hardware Edition.
- When connecting two or more extension blocks which require power cables “B” and “C” shown on the right, perform crossover wiring between the extension blocks using two (upper and lower) power connectors.

2.6.1 Cable

1) Applicable cable

<table>
<thead>
<tr>
<th>Type</th>
<th>Wire size</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single wire</td>
<td>0.3mm² (AWG22 to 20)</td>
<td></td>
</tr>
<tr>
<td>Double wire</td>
<td>0.3mm² (AWG22×2)</td>
<td></td>
</tr>
</tbody>
</table>
3. Power supply specifications and examples of external wiring

3.1 Power supply specifications

The specifications for the power supply of the main unit are shown in the following table.

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply voltage</td>
<td>24V DC +20% -15% (+10%)[1] Ripple Voltage (p-p) 5% or less</td>
</tr>
<tr>
<td>Allowable instantaneous power failure time</td>
<td>Operation can be continued upon occurrence of an instantaneous power failure for 5ms or less.</td>
</tr>
<tr>
<td>Power fuse</td>
<td>125V 3.15A</td>
</tr>
<tr>
<td>RUSH current</td>
<td>36A max. 0.5ms/24V DC</td>
</tr>
</tbody>
</table>

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 it cannot be grounded independently, ground it jointly as shown below. (Refer to section 3.2 for details)
- Position the grounding point as close to the PLC as possible to decrease the length of the ground wire.

---

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).

---

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.

---

*1 Old model name: CRIMPFOX ZA 3
*2 Old model name: CRIMPFOX UD 6
*2 Cannot be used to supply power to an external destination.

---

1) Input/output extension blocks and special function units/blocks are not contained in power consumption. For power consumption of the FX3NC input/output extension blocks, refer to the following table.

---

* Hardware Edition.
3.3 Input specifications and external wiring

3.3.1 Input specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Input specification(24V DC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XFXuc-16MR(T-DSS)</td>
<td>8 points</td>
</tr>
<tr>
<td>XFXuc-16MR(D-T)</td>
<td>16 points</td>
</tr>
<tr>
<td>XFXuc-64MT(DSS)</td>
<td>32 points</td>
</tr>
<tr>
<td>XFXuc-96MT(DSS)</td>
<td>48 points</td>
</tr>
<tr>
<td>XFXuc-32E-X(T-DSS)</td>
<td>16 points</td>
</tr>
<tr>
<td>XFXuc-32E-X(Y-DSS)</td>
<td>16 points</td>
</tr>
<tr>
<td>XFXuc-16MR(D-S)-T</td>
<td>16 points</td>
</tr>
<tr>
<td>XFXuc-96MT(D-SS)</td>
<td>48 points</td>
</tr>
<tr>
<td>XFXuc-64MR(DSS)</td>
<td>32 points</td>
</tr>
<tr>
<td>XFXuc-32EY-T(DSS)</td>
<td>16 points</td>
</tr>
</tbody>
</table>

3.3.2 Handling of input terminal

1) FX3UC-COM7/D, FX3UC-16MR-D-T, FX3UC-COM7-(EX)-T

Inputs turn on when the input terminal and COM terminal are electrically connected with a no-voltage contact or NPN open collector transistor.

2) FX3UC-COM7/DSS, FX3UC-16MR-DSS, FX3UC-COM7-(EX)-T

- sink input
Inputs turn on when the 24V DC terminal and COM terminal or COM terminal are connected, and the input terminal and 24V DC terminal are electrically connected with a no-voltage contact or NPN open collector transistor.

- source input
Inputs turn on when the 24V DC terminal and COM terminal or COM terminal are connected, and the input terminal and 24V DC terminal are electrically connected with a no-voltage contact or PNP open collector transistor.

Where △ indicates 0 to 2

3.3.3 Example of input wiring

1. Examples of input wiring (FX3UC-COM7/D, FX3UC-16MR-D-T)

<table>
<thead>
<tr>
<th>Item</th>
<th>Input specification(24V DC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XFXuc-16MR(T-DSS)</td>
<td>8 points</td>
</tr>
<tr>
<td>XFXuc-16MR(D-T)</td>
<td>16 points</td>
</tr>
<tr>
<td>XFXuc-64MT(DSS)</td>
<td>32 points</td>
</tr>
<tr>
<td>XFXuc-96MT(DSS)</td>
<td>48 points</td>
</tr>
<tr>
<td>XFXuc-32E-X(T-DSS)</td>
<td>16 points</td>
</tr>
<tr>
<td>XFXuc-32E-X(Y-DSS)</td>
<td>16 points</td>
</tr>
<tr>
<td>XFXuc-16MR(D-S)-T</td>
<td>16 points</td>
</tr>
<tr>
<td>XFXuc-96MT(D-SS)</td>
<td>48 points</td>
</tr>
<tr>
<td>XFXuc-64MR(DSS)</td>
<td>32 points</td>
</tr>
<tr>
<td>XFXuc-32EY-T(DSS)</td>
<td>16 points</td>
</tr>
</tbody>
</table>

2. Examples of sink input wiring (FX3UC-COM7MT/DSS, FX3UC-16MRDS-T)

- No-voltage contact input NPN open collector transistor

3. Examples of source input wiring (FX3UC-COM7MT/DSS, FX3UC-16MRDS-T)

- No-voltage contact input PNP open collector transistor

*1 The grounding resistance should be 100Ω or less.

*2 The grounding resistance should be 100Ω or less.

3.4 Output specifications and example of external wiring

3.4.1 Transistor output specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Output specification (Transistor)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XFXuc-16MT(DSS)</td>
<td>8 points</td>
</tr>
<tr>
<td>XFXuc-32MT(DSS)</td>
<td>16 points</td>
</tr>
<tr>
<td>XFXuc-64MT(DSS)</td>
<td>32 points</td>
</tr>
<tr>
<td>XFXuc-96MT(DSS)</td>
<td>48 points</td>
</tr>
<tr>
<td>XFXuc-32EY-T(DSS)</td>
<td>16 points</td>
</tr>
<tr>
<td>XFXuc-32EY-U(DSS)</td>
<td>32 points</td>
</tr>
</tbody>
</table>

**Output form**

- FX3UC-COM7MT/DSS
- FX3UC-COM7-U(DSS)

**Main units**

- Y000 to Y003
- Y004 or more

**Max. load**

- Inductive load: 7.2W/point (24V DC)
- Y000 to Y003
- Y004 or more

**Open circuit leakage current**

- 0.1mA or less/30V DC

**Circuit insulation**

- Photocoupler insulation

**Display of output operation**

- LED on panel turns ON when photocoupler is driven.

*1 When using an instruction related to pulse train output or positioning, make sure to set the load current to 10 to 100mA (5 to 24V DC).
3.4 Relay output specifications

- For more details, refer to FX3UC Series User’s Manual - Hardware Edition

<table>
<thead>
<tr>
<th>Item</th>
<th>Output specification (Relay)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of output points</td>
<td>FX3UC-16MR(D)(S)-T 8 points</td>
</tr>
<tr>
<td>FX3UC-16ER-Y(T)-DS 16 points</td>
<td></td>
</tr>
<tr>
<td>Output connecting type</td>
<td>Terminal block</td>
</tr>
<tr>
<td>External power supply</td>
<td>30V DC or less or 240V AC or less (250V AC or less when the unit does not comply with CE, UL or cUL standards)</td>
</tr>
<tr>
<td>Resistance load</td>
<td>2A point</td>
</tr>
<tr>
<td>Max. load</td>
<td>80VA</td>
</tr>
<tr>
<td>Open circuit leakage current</td>
<td>5V DC, 2 mA (reference value)</td>
</tr>
<tr>
<td>Response time</td>
<td>OFF→ON Approx. 10 ms</td>
</tr>
<tr>
<td>ON→OFF Approx. 10 ms</td>
<td></td>
</tr>
<tr>
<td>Circuit insulation</td>
<td>Mechanical insulation</td>
</tr>
<tr>
<td>Display of output operation</td>
<td>LED on panel lights when power is applied to relay coil</td>
</tr>
</tbody>
</table>

3.5 Cautions in input and output wiring

- For more details, refer to FX3UC Series User’s Manual - Hardware Edition

1) Protection circuit for load short-circuits
   A short-circuit at a load connected to an output terminal could cause burnout at the output element or the PC board. To prevent this, a protection fuse should be included at the output.

2) Protection circuit in PLC for inductive loads
   An internal protection circuit for the relay is not provided for the relay output circuit. It is recommended to use inductive loads with built-in protection circuits. When using loads without built-in protection circuits, insert an external contact protection circuit, etc. to reduce noise and extend the product life.
   a) DC circuit
      Connect a diode in parallel with the load. Use a diode (for commutation) having the following specifications.
      - Forward voltage 5 to 10 times the load voltage
      - Forward current Load current or more
   b) AC circuit
      Connect the surge absorber (combined CR components such as a surge killer and spark killer, etc.) parallel to the load. Select the rated voltage of the surge absorber suitable to the load used. Refer to the table below for other specifications.
      - Electrostatic capacity Approx. 0.1μF
      - Resistance value Approx. 100 to 200Ω

3) Interlock
   Loads, such as contactors for normal and reverse rotations, that must not be turned on simultaneously should have an interlock in the PLC program and an external interlock.
   - For PLC wiring, refer to FX3UC Series User’s Manual - Hardware Edition
   - For PLC wiring, refer to FX3UC Series User’s Manual - Hardware Edition
   - For PLC wiring, refer to FX3UC Series User’s Manual - Hardware Edition

4. Terminal Layout

4.1 Main units

4.1.1 FX3UC-CCMT/D
   The I/O wiring is different in the FX3UC-CCMT/D. Refer to Sections 3.3 and 3.4 for the details.
   - For more details, refer to FX3UC Series User’s Manual - Hardware Edition
   - For more details, refer to FX3UC Series User’s Manual - Hardware Edition
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This page contains diagrams and tables related to Mitsubishi Electric FX3U-64MT/D and FX3U-32MT/D input/output extension blocks. The diagrams illustrate the connection points and notches for these blocks, with additional sections dedicated to specific models such as FX3U-16MR(D)(S)-T, FX3U-16EX-DS, and FX3U-32EX-DS. The text also includes warnings about safe use and special considerations for users.