1. Introduction

The FX 3UC series PLC is a general purpose Mitsubishi PLC series designed for industrial control applications. This manual explains the FX 3UC series PLC. 

2. Installation

2.1 Installation Precautions

Precautions must be taken to ensure the safe and correct installation and use of the PLC. 

2.2 Connections

Connections must be made in accordance with the instructions in this manual. 

3. Specification

3.1 Applicable PLC

The PLC must be used in combination with the specified control equipment. 

3.2 General Specifications

Specifications are subject to change without notice. 

3.3 Power Supply Specification

The power supply must meet the specifications listed in this manual. 

4. Program Example

FX3U-32MT-LT(-2) PLC Ver. 2.70 and later

Use the product within the generic environment specifications described in the PLC main unit manual (Hardware Edition).

Make sure to shut down all phases of the power supply externally before installation. Failure to do so may cause electric shock to the product.

Installation

WARNING

• Use the product within the environment specifications described in the PLC main unit manual (Hardware Edition).

4.1 Precautions

Installing the expansion board outside of the unit may cause damage to the product.

5. Trimmer Layout Label

CAUTION

• Installing the expansion board outside of the unit may cause damage to the product. 

6. Caution On Use

6.1 Warning

The warning symbol indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.

6.2 Caution

The cautions symbol indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight personal injury or physical damage.

6.3 Instruction

Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.

The FX Series PLCs are designed to be incorporated in an industrial device or system used in purposes related to human life. This product has been manufactured as a general-purpose part for general industries, and has not been designed or manufactured to be incorporated in an industrial device or system used in purposes related to human life. 

This product has been manufactured under strict quality control. However, Mitsubishi Electric Corporation is not responsible for any problems occurring in the product which may result from the action of the owner.

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Compliance with EC directives (CE Marking)

This product complies with the following EC directives:

- **2014/30/EU** for Electromagnetic Compatibility (EMC) Directive
- **2014/53/EU** for Limited Power Source

The CE mark is affixed to the product as a declaration of conformity with the applicable European Directives. The Declaration of Conformity can be found on the Mitsubishi Electric Corporation's website or by contacting your local Mitsubishi Electric representative.

**Notes:**
- The CE mark does not guarantee that the product is suitable for use in all countries. It is the responsibility of the user to ensure that the product is used within the guidelines specified in the product manual and any other relevant documentation.
- The CE mark is not a guarantee of product quality or performance.

**Warning:**
- The CE mark is only applicable to products that comply with the applicable EC directives. Failure to comply with these directives may result in non-compliance with local laws and regulations.

**Manufacturer:**
Mitsubishi Electric Corporation

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

**Contact Information:**
For more information, please visit the Mitsubishi Electric Corporation website at www.mitsubishielectric.com or contact your local Mitsubishi Electric representative.

**Legal Disclaimer:**
This document is provided for information purposes only and does not constitute a warranty. Mitsubishi Electric Corporation does not assume any liability for any errors or omissions in this document or for any consequences arising from the use of this information.

**Safety Precautions:**
- Always ensure proper power supply and ground connection.
- Do not disassemble or modify the product.
- Keep the product away from water and moisture.
- Avoid exposure to high temperatures or direct sunlight.

**Technical Specifications:**
- **Power Supply:** 100-240 VAC, 50/60 Hz
- **Current Consumption:** Up to 1 A
- **Dimensions:** Width: 85 mm, Height: 119.1 mm
- **Weight:** 450 g

**Environmental Compliance:**
- Follow local laws and regulations regarding the disposal of electronic waste.

**Use Conditions:**
- The product is designed for use in industrial environments.
- Outdoor use is not recommended.

**Notices:**
- This product is not intended for use in medical, nuclear, or aerospace applications.
- Before using the product in a critical application, consult with Mitsubishi Electric Corporation.

**Warranty:**
- Mitsubishi Electric Corporation provides a warranty for this product. For details, please refer to the warranty documentation provided with the product.

**Service Support:**
- For service and support, contact your local Mitsubishi Electric representative or visit the Mitsubishi Electric Corporation website.

**Revisions:**
- This manual is subject to change without notice. Please check the latest version on the Mitsubishi Electric Corporation website for the most current information.

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**For safe use:**
- This product has been manufactured in accordance with the provisions of the EC directives and other applicable laws and regulations.
- It is designed for use in industrial environments and is not intended for use in residential or commercial settings.

**Electrical Safety:**
- Always ensure proper electrical ground connection.
- Avoid electrical hazards by following local electrical codes and regulations.

**Mechanical Safety:**
- Use proper tools and equipment for installation and maintenance.
- Avoid mechanical hazards by following local mechanical codes and regulations.

**Environmental Safety:**
- Follow local laws and regulations regarding the disposal of electronic waste.
- Recycle or dispose of the product responsibly.

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**Legal Notice:**
- This document is protected by copyright laws. No part of this document may be reproduced or transmitted in any form or by any means without the written permission of Mitsubishi Electric Corporation.

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**Product Information:**
- For more information, please contact your local Mitsubishi Electric representative or visit the Mitsubishi Electric Corporation website.

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- HEAD OFFICE: 2-7-3 MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN
- Telephone: +81-3-3801-7700
- Website: http://www.mitsubishielectric.com
1. Introduction
The FX3U-8AV-BD is an expansion board equipped with eight analog set points which can be used as analog input.

1.1 Incorporated Items
The FX3U-8AV-BD is an expansion board equipped with eight analog set points which can be used as analog input. It can be used with the FX3U-8AV-BD expansion unit, FX3UC-8AV-BD expansion unit, or FX3UC-16AV-BD expansion unit. The FX3U-8AV-BD expansion board is compatible with FX3U-FX3UC series PLCs.

2. Installation

2.1 Installation PRECAUTIONS

- Ensure that the PLC is powered off before installation.
- Check that the expansion board is in the correct orientation.
- Use a flat head screwdriver as shown in the illustration.
- Ensure that the expansion board cover is securely fastened.
- Use the provided M3 tapping screws to attach the expansion board to the main unit.
- Use the provided M3 tapping screws to attach the expansion board to the main unit.

2.2 Trimmer Layout Label

If your FX3U-8AV-BD expansion board is used in a position where the scale value is 10 or more.

When a value larger than 100 is entered as the scale value of a trimmer, the actual value is multiplied by 10 to obtain the analog value. If the value entered is larger than the value that can be handled, the output value will be saturated.

When the input equals the scale value, the output equals the scale value.

When the input is 0, the output equals 0.

3. Specification

3.1 Applicable PLC

- FX3U-48M (FX3U-48MR/ES)
- FX3UC-32MT-LT (-2)
- FX3UC-48MT-LT

3.2 General Specifications

- Power supply: 24V DC ±15% 50/60Hz
- Current capacity: 2.0A
- Life expectancy: 10 years
- Dimensions: Width: 85.0mm, Height: 44.4mm, Depth: 32.2mm

3.3 Power Supply Specification

- Model: FX3U-8AV-BD
- Power supply: 24V DC ±15%
- Current capacity: 2.0A

4. Program Example

For details on the FX3U-8AV-BD instructions, refer to the following manuals:
- Refer to the FX3U-8AV-BD Programming Manual for programming details.
- Refer to the FX3U-8AV-BD USER'S MANUAL for detailed instructions and functions.
- Refer to the FX3U-8AV-BD INSTALLATION MANUAL for installation instructions and procedures.

5. Attention

- Panel-type equipment, such as control panels, are subject to damage caused by electric shock. To avoid electric shock, disconnect the power supply before installing or removing the expansion board.
- When installing the expansion board, ensure that the expansion board cover is securely fastened.
- Use the provided M3 tapping screws to attach the expansion board to the main unit.
- Use a flat head screwdriver as shown in the illustration.
- Insert the expansion board cover into the expansion board connector.

6. Caution On Use

Ensure that the FX3U-8AV-BD expansion board is used for a main unit and that the communication function is not used.

- Under the following conditions, the FX3U-8AV-BD expansion board will be damaged:
- When an expansion board is used in a position where the scale value is 10 or more.
- When the input value exceeds the scale value.
- When the input value is 0.

For safe use

- Use the FX3U-8AV-BD expansion board for industrial use only.
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