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CHUNYE FX1N Series

CHUNYE FX1N Series PLC Module User Manual

Models: FX1N-14MR-ES/UL, FX1N-24MR-ES/UL, FX1N-40MR-ES/UL, FX1N-60MR-ES/UL, FX1N-14MT-ES/UL, FX1N-24MT-ES/UL, FX1N-40MT-ES/UL, FX1N-60MT-ES/UL

1. Introduction

This manual provides essential information for the safe and efficient use of the CHUNYE FX1N Series Programmable Logic Controller (PLC) modules. It covers installation, operation, maintenance, and troubleshooting for various models within the FX1N series. Please read this manual thoroughly before installing or operating the device to ensure proper functionality and safety.
The CHUNYE FX1N Series PLC modules are designed for industrial automation applications, offering robust control capabilities for a wide range of systems.

2. Safety Information

Always observe the following safety precautions to prevent personal injury or damage to the equipment:

- **Electrical Hazard:** Ensure all power is disconnected before performing any installation, wiring, or maintenance. Only qualified personnel should handle electrical connections.
- **Proper Grounding:** The PLC module must be properly grounded to prevent electrical shock and ensure stable operation.
- **Environmental Conditions:** Do not expose the module to excessive moisture, dust, corrosive gases, or extreme temperatures. Operate within specified environmental limits.
- **Correct Wiring:** Verify all wiring connections are correct and secure according to the wiring diagrams provided. Incorrect wiring can lead to malfunction or damage.
- **Load Capacity:** Do not exceed the specified current and voltage ratings for inputs and outputs. Overloading can damage the module.

3. Product Overview

The CHUNYE FX1N Series PLC modules are compact and powerful programmable controllers designed for various industrial automation tasks. Key features include:

- **Flexibility:** High programming flexibility, allowing control programs to be written and modified according to different

applications and needs.

- **Reliability:** Designed for industrial environments, PLCs have excellent durability and stability.
- **Ease of Maintenance:** PLC systems are often designed with a modular structure, making them easy to maintain and replace faulty modules.
- **Versatility:** PLCs can perform multiple tasks such as logic control, timing, counting, and data processing.
- **Integration:** PLCs usually have various input and output interfaces, allowing easy integration with sensors, actuators, and other devices.

The series includes models with different input/output configurations, such as:

- FX1N-14MR-ES/UL (14 I/O, Relay Output)
- FX1N-24MR-ES/UL (24 I/O, Relay Output)
- FX1N-40MR-ES/UL (40 I/O, Relay Output)
- FX1N-60MR-ES/UL (60 I/O, Relay Output)
- FX1N-14MT-ES/UL (14 I/O, Transistor Output)
- FX1N-24MT-ES/UL (24 I/O, Transistor Output)
- FX1N-40MT-ES/UL (40 I/O, Transistor Output)
- FX1N-60MT-ES/UL (60 I/O, Transistor Output)



Figure 3.1: Front view of a CHUNYE FX1N Series PLC Module, showing indicator lights and terminal block covers.

4. Setup and Installation

4.1 Mounting

The FX1N series PLC modules are typically mounted on a DIN rail within an industrial control cabinet. Ensure adequate ventilation space around the module for heat dissipation.

1. Secure the DIN rail horizontally in the desired location.
2. Align the module's DIN rail clip with the rail and press firmly until it clicks into place.
3. Verify the module is securely fastened and does not wobble.

4.2 Wiring

All wiring should be performed with power disconnected. Refer to the specific model's wiring diagram for detailed connections. General wiring steps include:

1. **Power Supply:** Connect the AC power supply (AC85-264V, 50/60Hz) to the L and N terminals. Ensure proper grounding to the FG terminal.
2. **Input Wiring:** Connect input devices (sensors, switches) to the X0-Xn terminals. Common (COM) terminals are provided for input common connections.
3. **Output Wiring:** Connect output devices (relays, contactors) to the Y0-Yn terminals. For relay output models (MR), ensure the load voltage and current are within specifications. For transistor output models (MT), ensure proper load connection for DC loads.
4. **Communication Ports:** If applicable, connect programming cables or communication devices to the designated communication ports (e.g., RS-422/RS-485).



Figure 4.1: Top view of the PLC module, illustrating the input (X) and output (Y) terminal blocks for wiring connections.



Figure 4.2: Angled view of the PLC module, highlighting the power input terminals (AC85-264V) and various I/O labels.

5. Operating Instructions

5.1 Powering On

After completing all wiring and ensuring safety, apply power to the PLC module. The "POWER" indicator LED on the front panel should illuminate.

5.2 Programming

The FX1N series PLCs are programmed using dedicated software (e.g., GX Developer or GX Works2). Connect the PLC to a computer via a programming cable (e.g., SC-09 or USB-SC09).

1. Install the programming software and necessary drivers on your computer.
2. Connect the programming cable between the computer and the PLC's programming port.
3. Launch the programming software and establish communication with the PLC.
4. Write your ladder logic program or function block diagram.
5. Download the program to the PLC.
6. Switch the PLC to RUN mode to execute the program. The "RUN" indicator LED will illuminate.

5.3 Indicator Lights

- **POWER:** Illuminates when power is supplied to the module.

- **RUN:** Illuminates when the PLC is in RUN mode and executing a program.
- **ERROR:** Illuminates or flashes to indicate a system error or fault. Refer to the troubleshooting section.
- **IN (X):** Individual LEDs illuminate when the corresponding input is active.
- **OUT (Y):** Individual LEDs illuminate when the corresponding output is active.

6. Maintenance

Regular maintenance ensures the longevity and reliable operation of your PLC module.

- **Cleaning:** Periodically clean the module's exterior with a soft, dry cloth. Do not use solvents or abrasive cleaners. Ensure ventilation slots are free from dust and debris.
- **Connection Checks:** Routinely inspect all wiring connections for tightness and signs of corrosion. Re-tighten screws as necessary.
- **Environmental Monitoring:** Ensure the operating environment remains within specified temperature and humidity ranges.
- **Firmware Updates:** Check the manufacturer's website for any available firmware updates that may improve performance or address issues.

7. Troubleshooting

This section provides solutions to common issues encountered with the FX1N Series PLC module.

Problem	Possible Cause	Solution
POWER LED Off	No power supply, incorrect wiring, or faulty power supply.	Check power connections (L, N, FG). Verify power source is active. Ensure voltage is within AC85-264V.
ERROR LED On/Flashing	System error, program error, or hardware fault.	Connect to programming software to read error codes. Check program logic. Inspect hardware for damage.
PLC Not Responding to Inputs	Input device fault, incorrect input wiring, or program logic error.	Verify input device functionality. Check input wiring to X terminals. Review program logic for input conditions.
Outputs Not Activating	Output device fault, incorrect output wiring, or program logic error.	Verify output device functionality. Check output wiring to Y terminals. Ensure load voltage/current are within specifications. Review program logic for output conditions.
Cannot Connect to Programming Software	Incorrect cable, driver issues, or wrong communication settings.	Ensure correct programming cable (e.g., SC-09). Install/update USB drivers. Verify COM port and communication settings in software.

8. Specifications

General specifications for the CHUNYE FX1N Series PLC Modules:

- **Brand:** CHUNYE
- **Model Series:** FX1N
- **Power Supply:** AC85-264V, 50/60Hz
- **Input/Output Count:** Varies by model (e.g., 14, 24, 40, 60 I/O points)
- **Output Type:** Relay (MR models) or Transistor (MT models)
- **Unit Count:** 1.0 Count
- **Manufacturer:** CHUNYE
- **ASIN:** B0DGWYYLWN



Figure 8.1: Side view of the PLC module, displaying the model number (FX1N), power requirements (AC85-264V), and manufacturer details.

9. Warranty and Support

For warranty information and technical support, please contact your vendor or the manufacturer directly. Keep your purchase receipt as proof of purchase. This manual is intended for informational purposes only, and specifications are subject to change without notice.

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