Keenso FX3U-48MT

Keenso FX3U-48MT PLC Industrial Control Board User Manual

Model: FX3U-48MT

1. Introduction

This user manual provides essential information for the safe and efficient operation of the Keenso FX3U-48MT PLC Industrial Control Board. It covers product overview, specifications, setup, operating instructions, maintenance, and troubleshooting. Please read this manual thoroughly before installation and use.
The Keenso FX3U-48MT is a 24V industrial control board designed for various industrial automation control applications. It features 24 inputs and 24 transistor outputs, along with high-speed counting capabilities and support for analog input/output.

2. Product Overview

The Keenso FX3U-48MT PLC Industrial Control Board is built with high-quality electrical components, ensuring stable performance and durability. Its compact size makes it suitable for integration into various systems.

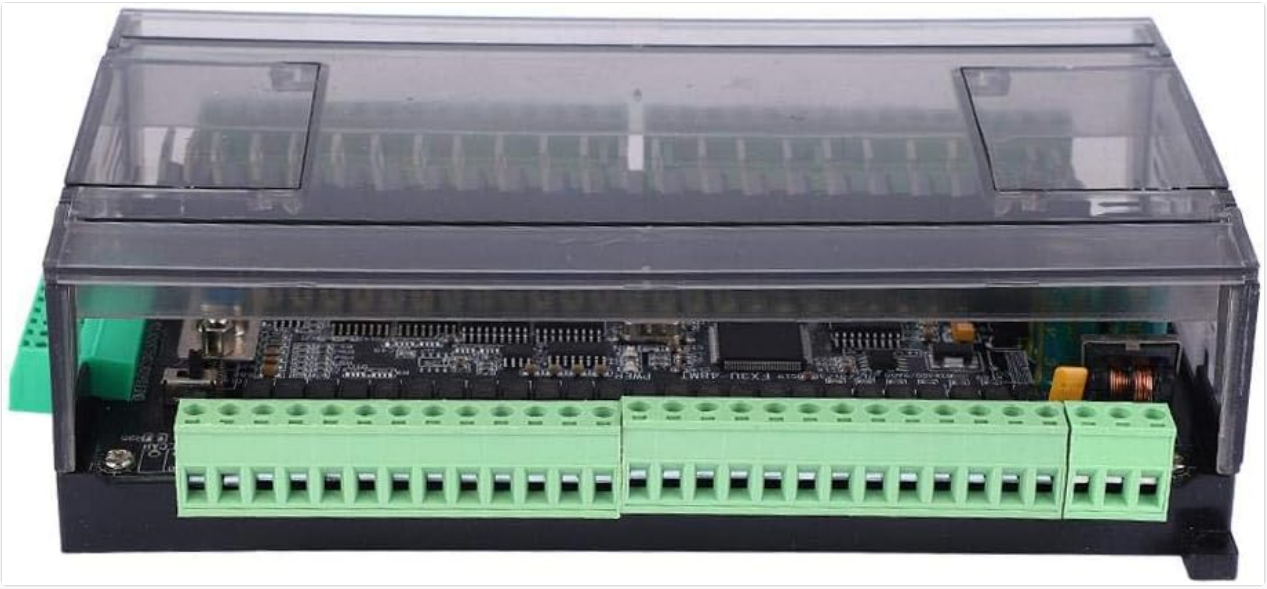

Figure 2.1: Front view of the Keenso FX3U-48MT PLC Industrial Control Board.

Figure 2.2: Angled view of the control board.

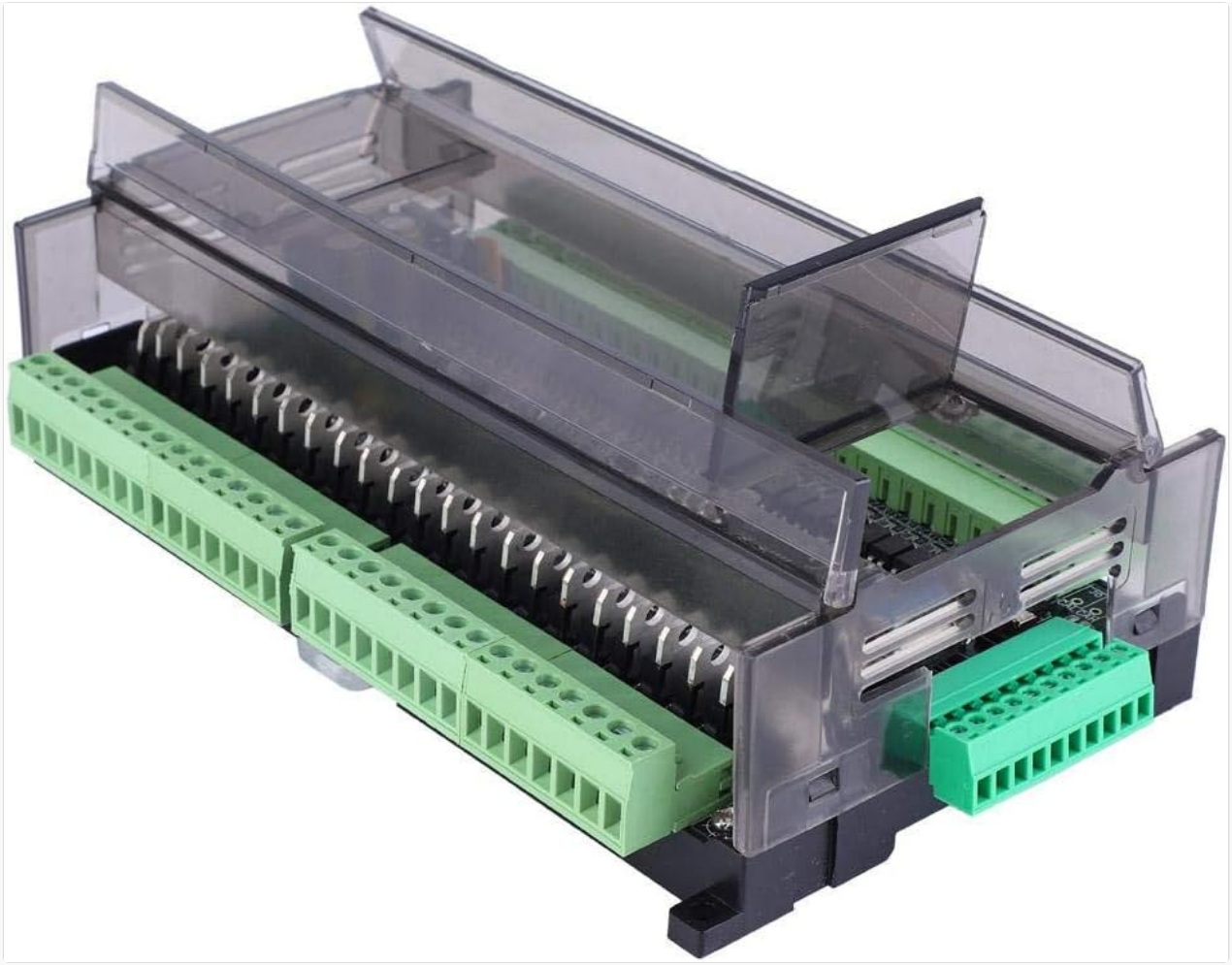

Figure 2.3: Top view with cover open, showing internal components.

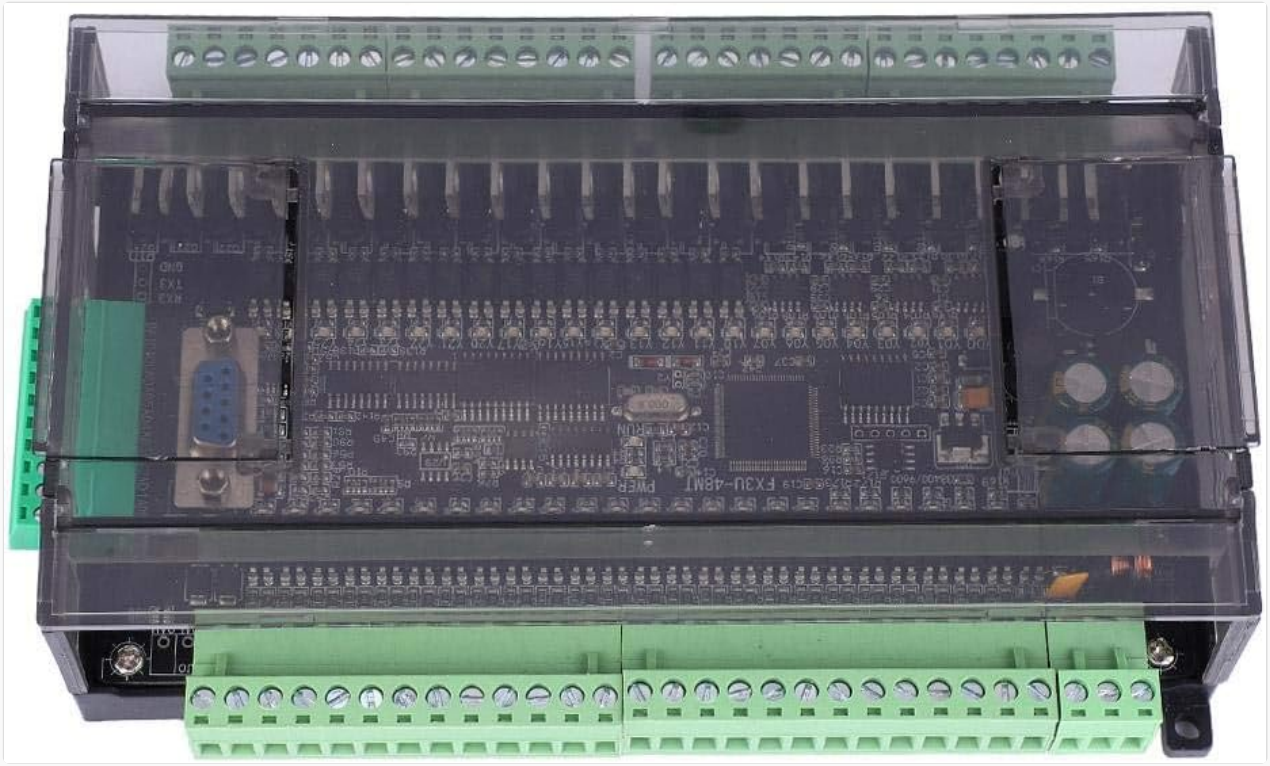

Figure 2.4: Detailed view of the circuit board.

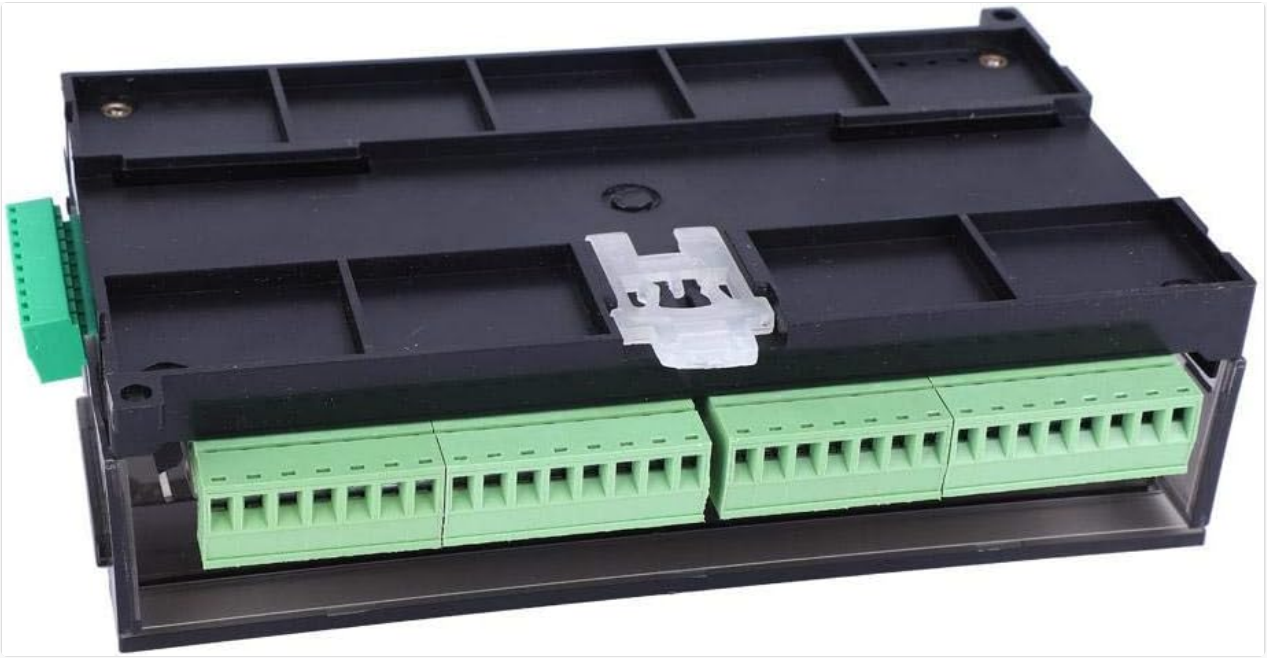

Figure 2.5: Bottom view with mounting details.

3. Specifications

Property	Value
Model	FX3U-48MT-3V3I-2D-M-K-5
Output Type	Transistor Output
Number of Input Points	24
Number of Output Points	24
Supply Voltage	24V DC
Output Current	1A
Analog Input	6AD
Analog Output	2DA
High Speed Counting	6 Channels 12K
Pulse Output	4 Channels 100K, 4 Channels 12K
Floating Point Support	Yes
Stepper Motor Support	Yes
Memory Capacity	8,000 Steps
RS485 Communication Port	Yes
Text Screen Connection	Support

Property	Value
Programming Software	GX Developer or GX Works2
Installation Method	Fixed Isolation Column Installation
Operating Temperature	60 Degrees Celsius
Product Dimensions	6.85 x 3.94 x 1.18 inches
Item Weight	1.01 pounds (0.46 Kilograms)
Material	Copper

4. Setup

Before setting up your Keenso FX3U-48MT PLC, ensure you have all necessary components, including a 24V DC power supply, appropriate wiring, and a computer with GX Developer or GX Works2 software installed for programming.

4.1. Mounting

The control board is designed for fixed isolation column installation. Securely mount the board in a suitable enclosure or panel, ensuring adequate ventilation and protection from environmental factors.

4.2. Wiring

1. **Power Connection:** Connect a stable 24V DC power supply to the designated power input terminals. Observe correct polarity.
2. **Input Wiring:** Connect your industrial sensors, switches, and other input devices to the 24 input terminals. Refer to your application's wiring diagram for specific connections.
3. **Output Wiring:** Connect your actuators, relays, and other output devices to the 24 transistor output terminals. Ensure the output current does not exceed 1A per channel.
4. **Analog Connections:** If utilizing analog functions, connect analog sensors to the 6AD analog input terminals and analog actuators to the 2DA analog output terminals.
5. **Communication:** For communication with a text screen or other devices, use the RS485 communication port.

4.3. Software Installation

Install either GX Developer or GX Works2 programming software on your computer. These software packages are required to create, upload, and monitor PLC programs.

5. Operating Instructions

Operating the Keenso FX3U-48MT PLC involves programming, uploading, and running your control logic. The board supports flexible programming methods and can control stepper motors, hydraulic valves, and other DC

loads.

5.1. Programming

Use GX Developer or GX Works2 to write your PLC program. This program defines the logic for how the PLC responds to inputs and controls outputs. The board supports floating-point operations and stepper motor control.

5.2. Uploading and Running Programs

1. Connect the PLC to your computer via the appropriate programming cable (e.g., RS232 to USB converter if needed for the DB9 port).
2. In your programming software, establish a connection with the PLC.
3. Upload your compiled program to the PLC's memory.
4. Switch the PLC to RUN mode to execute the program.

Video 5.1: Demonstration of the Keenso PLC's features and connections.

Video 5.2: A brief demonstration of interacting with a PLC control interface. Note: This is a short preview video.

6. Maintenance

The Keenso FX3U-48MT PLC is designed for reliability and requires minimal maintenance. However, regular checks can extend its lifespan and ensure optimal performance.

- **Environmental Control:** Ensure the operating environment remains within specified temperature and humidity ranges. Protect the board from dust, moisture, and corrosive gases.
- **Connection Integrity:** Periodically inspect all wiring connections for tightness and signs of corrosion or damage. Loose connections can lead to intermittent operation or failure.
- **Cleaning:** If necessary, gently clean the exterior of the board with a soft, dry cloth. Avoid using solvents or abrasive cleaners. Ensure power is disconnected before cleaning.
- **Firmware Updates:** Check the manufacturer's website periodically for any available firmware updates that may improve performance or address issues.

7. Troubleshooting

This section provides solutions to common issues you might encounter with your Keenso FX3U-48MT PLC.

- **No Power Indicator:**
  Possible Cause: Power supply issue or incorrect wiring.
  Solution: Verify the 24V DC power supply is connected correctly and providing the specified voltage. Check all power connections for continuity.
- **PLC Not Communicating with Software:**
  Possible Cause: Incorrect cable, driver issues, or software settings.
  Solution: Ensure you are using the correct programming cable (e.g., RS232). Install necessary drivers for the communication interface. Verify communication settings (COM port, baud rate) in the programming

software match the PLC's settings.

- **Inputs Not Responding:**
  Possible Cause: Sensor malfunction, wiring error, or program logic.
  Solution: Check the functionality of the input sensor. Inspect input wiring for breaks or shorts. Review your PLC program to ensure the input logic is correctly implemented.
- **Outputs Not Activating:**
  Possible Cause: Actuator malfunction, wiring error, or program logic.
  Solution: Test the output actuator independently. Inspect output wiring. Verify the output logic in your PLC program. Ensure the load current does not exceed 1A.
- **Unexpected Behavior:**
  Possible Cause: Program error or external interference.
  Solution: Review your PLC program for logical errors. Ensure the operating environment is free from strong electromagnetic interference.

8. Support

If you encounter issues not covered in this manual or require further assistance, please contact Keenso customer support. Provide your product model number (FX3U-48MT) and a detailed description of the problem to facilitate a quicker resolution.
For additional resources and product information, please visit the official Keenso store or website.