

MK043E-20DT

User Manual for Kinco IoT MK043E-20DT HMI PLC

Model: MK043E-20DT | Brand: Generic

1. INTRODUCTION

This manual provides comprehensive instructions for the installation, operation, and maintenance of the Kinco IoT MK043E-20DT HMI PLC. This integrated panel combines a Human Machine Interface (HMI) with a Programmable Logic Controller (PLC), designed for industrial automation applications. It features a 4.3-inch touch screen and supports remote functionality.

2. SAFETY INFORMATION

Please read all safety warnings and instructions carefully before installing or operating the device. Failure to comply may result in injury, damage to the device, or property damage.

- Ensure the power supply is disconnected before performing any installation, wiring, or maintenance.
- Only qualified personnel should install and service this equipment.
- Do not operate the device in environments exceeding its specified temperature, humidity, or vibration limits.
- Protect the device from direct sunlight, excessive dust, and corrosive gases.
- Use only specified power supply voltage (DC24V).
- Avoid touching the screen with sharp objects to prevent damage.

3. PRODUCT OVERVIEW

The Kinco IoT MK043E-20DT is an integrated HMI PLC unit designed for efficient control and monitoring. It features a robust industrial CPU and a high-resolution touch screen.

3.1 Key Features

- M-IoT function for enhanced connectivity.
- Industrial CPU with 700MHz main frequency for performance upgrade.
- 128MB Flash + 64MB DDR2 large capacity storage.
- Supports new generation DTools programming software.
- High speed pulse counter and output.
- Serial communication ports (1 RS485).

- Supports rich variety of extension modules (up to 8 KS extension modules).

3.2 Components and Interfaces



Figure 3.2.1: Front View of the HMI PLC. This image shows the 4.3-inch touch screen display with the "M-IoT HMI+PLC" and "Kinco" branding visible.

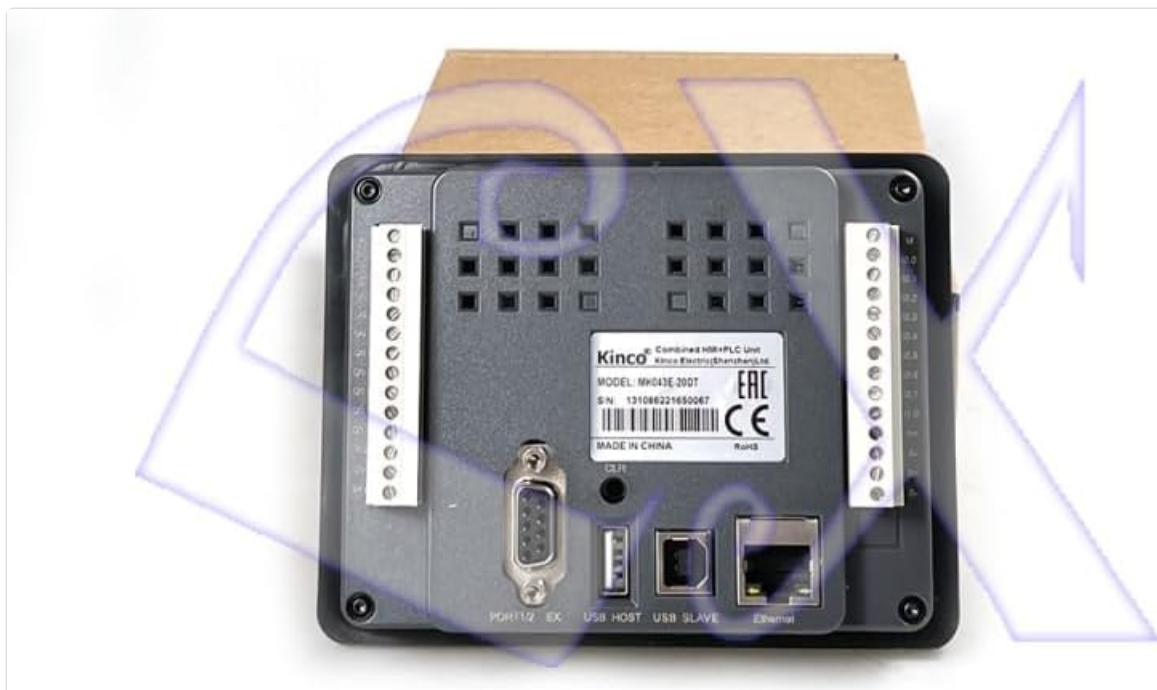


Figure 3.2.2: Back View of the HMI PLC. This image displays the rear panel, highlighting the various connection ports including RS485, USB Host, USB Slave, and Ethernet, along with terminal blocks for I/O connections.

The unit features a compact design suitable for panel mounting. The front panel houses the touch screen, while the rear panel provides access to power input, I/O terminals, and communication ports.

4. SETUP AND INSTALLATION

Follow these steps for proper installation of your HMI PLC unit.

1. **Mounting:** Ensure the mounting hole size of 119 x 93mm is prepared on your panel. Secure the unit using appropriate fasteners.

2. **Power Connection:** Connect a stable DC24V power supply to the designated power terminals on the rear of the unit. Observe polarity.
3. **I/O Wiring:** Connect your input and output devices to the respective I/O terminals. The unit provides 9 DI (DC24V) and 9 DO (DC24V transistor) points, plus 2 AI.
4. **Communication Wiring:** For serial communication, connect your RS485 devices to the RS485 port. For program download, use the USB download port.
5. **Extension Modules (Optional):** If using extension modules, connect them according to their specific instructions. The PLC supports up to 8 KS extension modules.



Figure 4.1: Installation Overview. This image provides an angled view of the HMI PLC, illustrating the various connection points on the rear panel, including the terminal blocks and communication ports, ready for wiring.

5. OPERATING INSTRUCTIONS

Once installed and powered, the HMI PLC is ready for operation. Programming and configuration are primarily done using the DTools software.

- **Power On:** Apply DC24V power. The unit will boot up and display the configured HMI interface.
- **Touch Screen Operation:** Interact with the HMI interface using the 4-wire precision resistor network touch screen.
- **Programming:** Use the DTools programming software on a PC to develop and download PLC logic and HMI screens. Connect the PC to the HMI PLC via the USB download port.
- **Data Transfer:** Utilize the USB Host port for data transfer or connecting external storage devices.
- **Remote Access:** Leverage the M-IoT function for remote monitoring and control, if configured.

6. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your HMI PLC.

- **Cleaning:** Gently wipe the screen and casing with a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Environmental Control:** Ensure the operating environment remains within specified temperature and humidity ranges.
- **Firmware Updates:** Periodically check the manufacturer's website for firmware updates to ensure optimal performance and security.
- **Cable Inspection:** Regularly inspect all connected cables for signs of wear or damage.

7. TROUBLESHOOTING

This section addresses common issues you might encounter.

Problem	Possible Cause	Solution
Device does not power on.	No power supply, incorrect voltage, or faulty wiring.	Check DC24V power connection and ensure correct polarity. Verify power source.
Touch screen unresponsive.	Screen calibration issue, physical damage, or software freeze.	Restart the device. If issue persists, check for physical damage or consult support.
PLC program not running.	Program not downloaded, logic error, or PLC in STOP mode.	Ensure program is successfully downloaded. Check PLC status in DTools. Review program logic.
Communication error (RS485).	Incorrect wiring, wrong communication parameters, or device address conflict.	Verify RS485 wiring (A/B, termination). Check baud rate, data bits, parity in software. Ensure unique device addresses.

8. TECHNICAL SPECIFICATIONS

Detailed specifications for the Kinco IoT MK043E-20DT HMI PLC.

8.1 PLC Specifications

- **Supply Voltage:** DC24V
- **Integration Points:** 20 points I/O (9 DI * DC24V, 9 DO * DC24V transistor, 2 AI)
- **Communication Port:** 1 RS485
- **Extended Function:** Not supported
- **Real Time Clock:** Yes
- **Dimensions:** 132 x 102 x 40.1mm
- **Mounting Hole Size:** 119 x 93mm

8.2 Display Specifications

- **LCD Size:** 4.3 inch TFT (16:9 widescreen)
- **Resolution:** 480 x 272 pixels
- **Display Color:** 65536 colors
- **Brightness:** 250 cd/m²
- **Backlight:** LED

- **Touch Screen:** 4-wire precision resistor network (surface hardness 4H)
- **Memory:** 128MB flash + 32MB memory
- **Recipe Memory:** 256KB + real time clock
- **Scalable Memory:** 1 USB Host
- **Ethernet:** Not supported
- **Program Download:** 1 USB download port

9. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please refer to the documentation provided with your purchase or contact the manufacturer directly. Keep your proof of purchase for warranty claims.

Manufacturer: HUNTAN