QOMOLANGMA AWC7824

Anywells AWC7824 Laser Controller System

User Manual

Model: AWC7824 | Brand: QOMOLANGMA

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of the Anywells AWC7824 LCD Touch Screen Laser Controller System. The AWC7824 is designed for CO2 laser cutting and engraving systems, offering advanced features such as a 5-inch TFT touch screen, 4-axis motion control, and independent control for double-head lasers. It is suitable for small to medium-sized laser power cutting machines and is widely applicable in advertising, printing, packaging, clothing, leather, toys, and embroidery industries.

2. Safety Information

WARNING: Improper use of laser equipment can result in serious injury or death. Always follow safety guidelines.

- Ensure all electrical connections are made by qualified personnel and comply with local electrical codes.
- Always disconnect power before performing any installation, maintenance, or troubleshooting.
- Wear appropriate personal protective equipment (PPE), including laser safety glasses, when operating laser machinery.
- Do not expose the controller or main board to moisture, extreme temperatures, or corrosive environments.
- Verify proper grounding of all connected equipment to prevent electrical shock.
- Keep the work area clear and well-ventilated.

3. Package Contents

Verify that all items listed below are present in your package. If any items are missing or damaged, contact your supplier immediately.



Image: The AWC7824 controller unit, main control board, and included accessories.

- AWC7824 LCD Touch Screen Controller Unit
- AWC7824 Main Control Board
- USB Communication Cable
- Ethernet (LAN) Cable
- Power Cable
- Terminal Connectors (various sizes)
- Mounting Hardware (screws, standoffs)



Image: A detailed view of the communication and power cables supplied with the system.

4. Product Overview

The AWC7824 system consists of an LCD touch screen controller and a main control board, designed for precise control of CO2 and RF laser systems.



Image: The 5-inch TFT touch screen controller unit, displaying the model number AWC7824.



Image: The main control board, showing various green terminal blocks for connections and product identification labels.

4.1. LCD Touch Screen Controller

- **Display:** 5-inch TFT color touch screen for intuitive operation.

- **Interface:** USB port for file transfer and communication.
- **Navigation:** Provides access to system settings, job management, and manual controls.

4.2. Main Control Board



Image: The rear side of the main control board, highlighting the various input/output ports and connectors.

- **Processor:** New 32-bit high-speed DSP for enhanced performance and stability.
- **Motion Control:** Supports 4-axis motion (X, Y, Z, U).
- **Laser Control:** Independent control for double-head laser systems.
- **Connectivity:** USB2.0 high-speed interface and network communication for stable file transfer.
- **Inputs/Outputs:** 6 input and 6 output channels for various peripheral connections.

5. Setup

Careful installation is crucial for optimal performance and safety. Refer to your laser machine's specific wiring diagrams in conjunction with these instructions.

5.1. Mounting

1. Select a secure and vibration-free location within your laser machine's control cabinet for the main control board.
2. Mount the main control board using the provided mounting hardware, ensuring adequate space for cable routing and ventilation.
3. Install the LCD touch screen controller in an accessible location, typically on the machine's control panel, using its designated mounting points.

5.2. Wiring Connections

All wiring should be performed with the main power supply to the laser machine disconnected.

1. **Power Supply:** Connect a stable DC 24V, 3A power supply to the designated power input terminals on the main control board. Observe correct polarity.
2. **Motor Connections:** Connect the stepper or servo motors for the X, Y, Z, and U axes to their respective terminals on the main control board. Ensure correct phase wiring.
3. **Laser Tube Connections:** Connect the CO2 or RF laser tube power supply and control signals to the laser output terminals. The system supports independent control for two laser heads.
4. **Input/Output Signals:** Connect limit switches, emergency stop buttons, water protection, and other auxiliary input/output devices to the 6 input and 6 output terminals as required by your machine configuration.
5. **Controller Unit Connection:** Connect the LCD touch screen controller to the main control board using the provided communication cable (typically a flat ribbon cable or dedicated serial cable).
6. **PC Connection (Optional):** For software communication, connect the main control board to your computer via the USB communication cable or an Ethernet cable.

6. Operating Instructions

The AWC7824 controller is designed for ease of use, featuring a user-friendly touch screen interface.

6.1. Power On/Off

1. Ensure all connections are secure before applying power.
2. Turn on the main power supply to your laser machine. The AWC7824 controller unit will power on and display the boot screen.
3. To power off, first exit any active jobs, then turn off the main power supply.

6.2. Interface Navigation

- The 5-inch TFT touch screen allows direct interaction with the system.
- Tap icons or menu options to navigate through different functions such as File Management, System Settings, Manual Control, and Job Status.

6.3. File Management and Job Loading

1. **Software Compatibility:** The system supports LaserCAD and Lightburn software. Plugins are available for CorelDRAW, AutoCAD, and Adobe Illustrator.
2. **File Transfer:** Transfer design files (G-code, AI, SVG, PDF, DXF, PLT, DST, DSB, UD5, BMP, JIF, JPG, PNG) to the controller via USB disk or network connection.
3. **Loading Jobs:** From the touch screen, navigate to the File Management section, select your desired file, and load it for processing.

6.4. Setting Laser Parameters

- Access the parameter settings through the touch screen interface.
- Adjust laser power from 0-100% with 0.01% continuous adjustment for precise control.
- Set cutting speed, engraving speed, and other job-specific parameters.

6.5. Manual Control and Positioning

- Use the manual control functions on the touch screen to move the laser head along the X, Y, Z, and U axes.
- The system offers various humanized positioning modes and return modes for convenience.
- Utilize the one-key switch for manually moving the axis.

7. Maintenance

Regular maintenance ensures the longevity and reliable operation of your AWC7824 system.

- **Cleaning:** Gently clean the LCD touch screen with a soft, dry, lint-free cloth. Avoid abrasive cleaners or solvents.
- **Ventilation:** Ensure the main control board has adequate ventilation to prevent overheating. Keep cooling vents clear of dust and debris.
- **Connections:** Periodically inspect all cable connections for tightness and signs of wear. Re-secure any loose connections.
- **Software Updates:** Check the manufacturer's website for any available firmware or software updates for improved performance and features.

8. Troubleshooting

The AWC7824 features an intelligent diagnosis system to assist with fault identification. Refer to the on-screen diagnostics for specific error codes and recommendations.

Problem	Possible Cause	Solution
Controller does not power on	No power supply; Incorrect wiring; Faulty power supply	Check DC 24V power connection; Verify polarity; Test power supply output.
Communication error with PC	Loose USB/Ethernet cable; Incorrect driver; Software settings	Ensure cables are securely connected; Install correct drivers; Verify software communication settings.
Laser not firing	Laser power setting too low; Laser tube fault; Water protection triggered	Increase laser power; Check laser tube status; Verify water chiller/protection sensor.
Axis movement issues	Motor wiring incorrect; Limit switch triggered; Motor driver fault	Check motor wiring; Inspect limit switches; Consult motor driver manual.
Touch screen unresponsive	System freeze; Hardware issue	Restart the controller; If issue persists, contact support.

9. Specifications

Feature	Specification
Model	AWC7824
Power Supply	DC 24V, 3A
Input Channels	6 roads
Output Channels	6 roads
Control Axes	X, Y, Z, U axis
Control Head	Double (Independent Control)
Laser Power Adjustment	0-100%, 0.01% continuous adjustment
Accuracy	±0.001mm
Supported Laser Types	CO2 laser tube, RF tube

Feature	Specification
Supported Formats	G-code, AI, SVG, PDF, DXF, PLT, DST, DSB, UD5, BMP, JIF, JPG, PNG etc.
Supported Software	LaserCAD, Lightburn (Plugin support for CorelDRAW, AutoCAD, Adobe Illustrator)
Supported Operating System	Windows (XP, Vista, Win7, Win8, Win10)
Operating Temperature	(-10~40)°C
Relative Humidity	≤90%
Certificates	CE, ROHS

10. Warranty and Support

This product is manufactured by Sign-in-China. For warranty information, technical support, or service inquiries, please refer to the documentation provided with your purchase or contact your vendor. Keep your purchase receipt as proof of purchase.

Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

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Question

Example: How do I reset this device or fix this error?

Details

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Submit question