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> LCRHLCNC YL586K Series Vector VFD Frequency Converter User Manual

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Model: YL586K Series | Brand: LCRHLCNC

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your LCRHLCNC YL586K Series Vector VFD Frequency Converter. Please read this manual thoroughly before installation, operation, or maintenance. Proper understanding and adherence to these instructions will ensure optimal performance and longevity of the device.

1.1 Safety Precautions

- **Electrical Hazard:** This device operates with high voltage. Only qualified personnel should perform installation, wiring, and maintenance.
- **Disconnect Power:** Always disconnect all power sources before performing any work on the VFD or connected equipment. Wait for the charge indicator to extinguish.
- **Grounding:** Ensure the VFD is properly grounded according to local electrical codes.
- **Environmental Conditions:** Do not expose the VFD to moisture, corrosive gases, or excessive dust. Operate within specified temperature and humidity ranges.
- **Motor Compatibility:** Ensure the motor is compatible with the VFD's output specifications.

2. PRODUCT OVERVIEW

The LCRHLCNC YL586K Series Vector VFD Frequency Converter is designed for precise motor speed control in various industrial applications. It features a compact design, user-friendly interface, and robust performance.



Figure 2.1: Front view of the LCRHLCNC YL586K Series VFD Frequency Converter, showing the digital display and control panel.

2.1 Key Features

- **Versatile Input/Output:** Single-phase 100-120V AC input with three-phase 0-120V AC output capability, supporting frequencies up to 3200Hz for precise motor control.
- **Compact Design:** Space-saving dimensions of 3.35 x 5.68 x 3.62 inches with efficient heat dissipation and low noise operation.
- **Multi-Application Use:** Ideal for controlling 3D printers, CNC machines, textile equipment, and cutting machines requiring variable frequency drive.
- **User-Friendly Interface:** Digital LCD display with 9 functional buttons including directional controls, Run/Stop, and parameter adjustment keys.
- **Professional Grade:** Supports loads up to 11A with an operating temperature range of -25°C to 55°C.



Figure 2.2: Various perspectives of the VFD, including front, side, top, and bottom views, highlighting its compact form factor.

2.2 Control Panel Functions

The VFD features an intuitive control panel for easy operation and parameter setting.

PRODUCT KEY USE



- ① Digital Display
- ② Shift key
- ③ Run key
- ④ Stop Reset button
- ⑤ Enter key
- ⑥ Frequency adjustment key
- ⑦ Programming key (forward/backward)
- ⑧ Multifunctional key
- ⑨ Up and down keys

Figure 2.3: Detailed diagram illustrating the function of each key on the VFD's control panel.

1. **Digital Display:** Shows current frequency, parameters, and error codes.
2. **Shift Key:** Used to move the cursor during parameter editing or to view different digits.
3. **Run Key:** Initiates motor operation.
4. **Stop/Reset Button:** Stops motor operation or resets error conditions.
5. **Enter Key:** Confirms parameter settings or enters sub-menus.
6. **Frequency Adjustment Key (Rotary Knob):** Adjusts the output frequency.
7. **Programming Key (PROG):** Enters or exits programming mode.
8. **Multifunctional Key (MF.K):** Function varies based on context, often for quick access to common parameters.
9. **Up and Down Keys:** Navigate through parameters or adjust values.

3. SETUP AND INSTALLATION

3.1 Unpacking and Inspection

Carefully unpack the VFD and inspect it for any signs of damage during transit. Ensure all components are present. The unit is securely packaged with protective foam padding to prevent damage.

Your browser does not support the video tag.

Video 3.1: A brief overview demonstrating the unpacking and initial display of the LCRHLCNC Vector VFD Frequency Converter, showcasing its components and physical appearance.

3.2 Mounting

Mount the VFD vertically on a flat, non-flammable surface. Ensure adequate clearance around the unit for proper ventilation and heat dissipation. Avoid mounting in direct sunlight or near heat sources.

3.3 Wiring

Refer to the wiring diagram below for correct electrical connections. All wiring must comply with local and national electrical codes. Use appropriate wire gauges for power and motor connections.

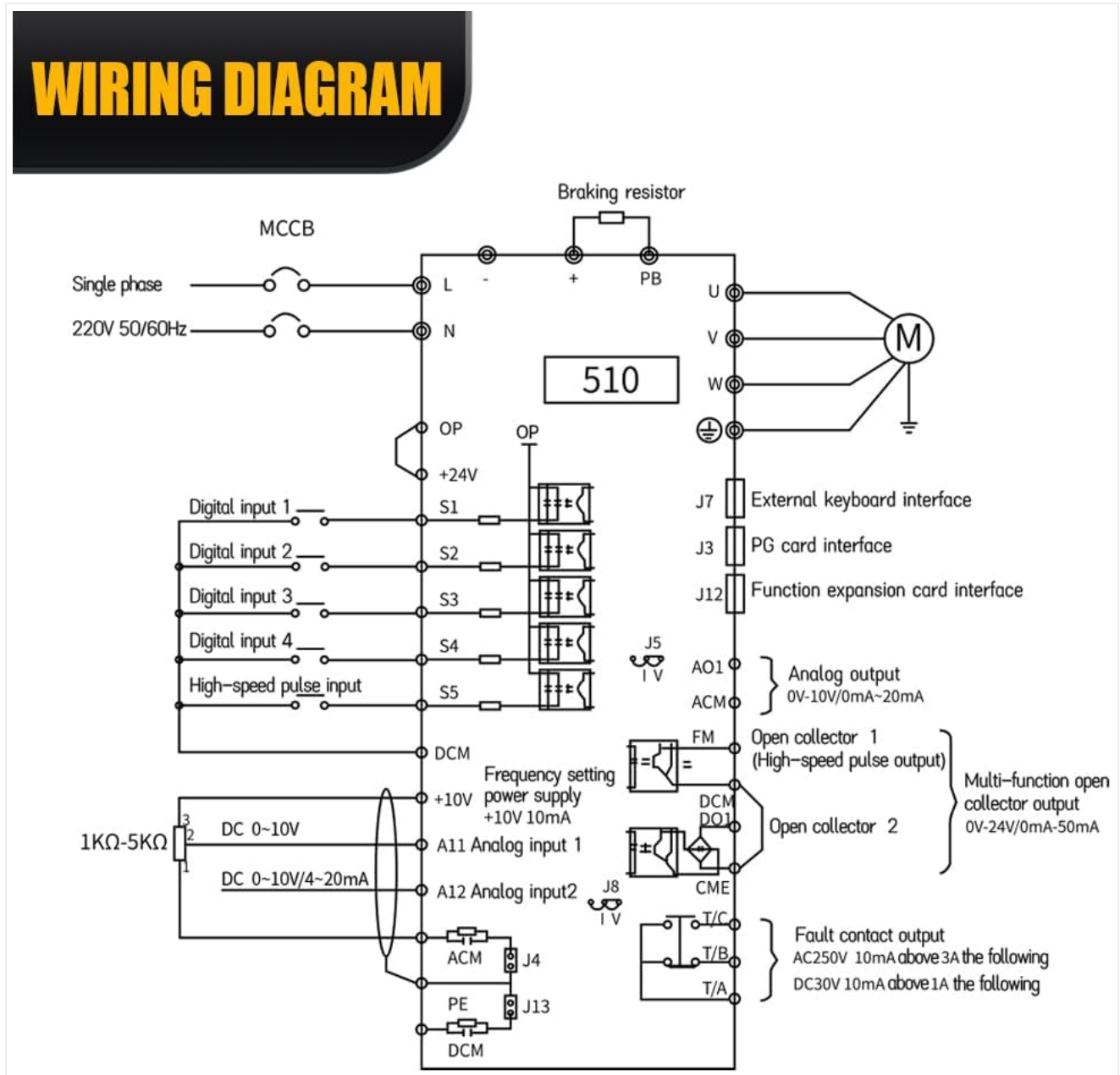


Figure 3.1: Comprehensive wiring diagram for the VFD, detailing connections for single-phase input, three-phase motor output, braking resistor, digital inputs, analog inputs/outputs, and control terminals.

- **Power Input (L, N):** Connect single-phase AC power (110V/220V/380V depending on model).
- **Motor Output (U, V, W):** Connect to the three-phase motor terminals.
- **Ground (PE):** Connect to earth ground.
- **Braking Resistor (PB, P+):** Optional connection for external braking resistor.

- **Control Terminals:** For external control signals (digital inputs, analog inputs, relay outputs).

4. OPERATING INSTRUCTIONS

4.1 Basic Operation

1. **Power On:** Apply power to the VFD. The digital display will illuminate.
2. **Frequency Setting:** Use the rotary knob or the Up/Down keys to set the desired output frequency.
3. **Start Motor:** Press the **RUN** key to start the motor. The display will show the actual output frequency.
4. **Stop Motor:** Press the **STOP/RESET** key to stop the motor.

4.2 Parameter Programming

The VFD has a comprehensive set of parameters to customize its operation. Refer to the detailed parameter list in the full product manual for specific codes and functions.

1. **Enter Programming Mode:** Press the **PROG** key. The display will show a parameter group code (e.g., P00).
2. **Navigate Parameters:** Use the Up/Down keys to scroll through parameter groups and individual parameters.
3. **View/Edit Parameter:** Press **ENTER** to view the current value of a parameter. Use Up/Down keys to change the value. Use the **SHIFT** key to move between digits.
4. **Save Setting:** Press **ENTER** to save the new value.
5. **Exit Programming Mode:** Press the **PROG** key again to return to the main display.

5. MAINTENANCE

Regular maintenance ensures reliable operation and extends the lifespan of your VFD.

- **Cleaning:** Periodically clean the VFD's exterior and cooling fins to prevent dust accumulation, which can hinder heat dissipation. Use a soft, dry cloth. Do not use liquid cleaners.
- **Inspection:** Regularly check all wiring connections for tightness and signs of wear or damage. Inspect the cooling fan for proper operation.
- **Environmental Check:** Ensure the operating environment remains within specified temperature and humidity limits.

6. TROUBLESHOOTING

This section provides solutions for common issues. For complex problems, contact technical support.

Problem	Possible Cause	Solution
No Power/Display Off	No input power; Blown fuse; Loose connection.	Check power supply; Inspect fuses; Verify all connections.
Motor Not Running	Incorrect wiring; Parameter settings incorrect; Motor fault.	Verify motor wiring (U, V, W); Check motor parameters (e.g., frequency, voltage); Inspect motor.
Overload Error (OC)	Motor overloaded; Acceleration time too short; Output short circuit.	Reduce motor load; Increase acceleration time parameter; Check motor and wiring for short circuits.

Problem	Possible Cause	Solution
Overvoltage Error (OV)	Input voltage too high; Deceleration time too short; Regenerative load.	Check input voltage; Increase deceleration time parameter; Consider adding a braking resistor.
Undervoltage Error (UV)	Input voltage too low; Instantaneous power loss.	Check input voltage stability; Ensure stable power supply.

7. SPECIFICATIONS

Detailed technical specifications for the LCRHLCNC YL586K Series VFD Frequency Converter.

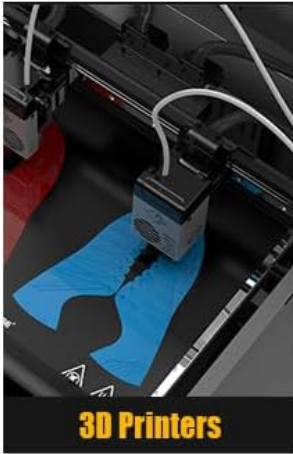
Specification	Value
Model Name	YL586K Inverter
Input Voltage	Single-phase AC 100-120V (for 110V models), 200-240V (for 220V models), 380-440V (for 380V models)
Output Voltage	Three-phase AC 0-120V (for 110V models), 0-220V (for 220V models), 0-380V (for 380V models)
Output Frequency	0-3200Hz
Rated Power	0.75KW, 1.5KW, 2.2KW (depending on variant)
Max Output Current	Up to 11A (for 0.75KW 110V model)
Operating Temperature	-25°C to 55°C (-13°F to 131°F)
Dimensions (L x W x H)	3.35 x 5.68 x 3.62 inches (approximate)
Item Weight	2.2 pounds (approximate)
Control Method	Vector Control
Recommended Uses	3D Printers, CNC Machines, Cutting Machines, Textile Machines

8. APPLICATIONS

The LCRHLCNC YL586K Series VFD is suitable for a wide range of industrial applications requiring precise motor speed and torque control.



Usage scenario



Packing method



Figure 8.1: Examples of industrial applications where the VFD can be utilized, including 3D printers, CNC machines, textile machines, and cutting machines.

- **3D Printers:** For precise control of extruder motors and other moving parts.
- **CNC Machines:** Enabling variable spindle speeds for different materials and operations.
- **Textile Machines:** Controlling motor speeds for weaving, spinning, and other processes.
- **Cutting Machines:** Optimizing cutting speed for various materials and thicknesses.
- **Other Industrial Automation:** Any application requiring variable speed control of AC induction motors.

9. WARRANTY AND SUPPORT

LCRHL CNC products are manufactured to high-quality standards. For warranty information, technical support, or service inquiries, please refer to the contact details provided with your purchase documentation or visit the official LCRHL CNC website.

When contacting support, please have your product model (YL586K Series) and purchase details readily available.

