

Delta Electronics VFD015EL21A

Delta VFD015EL21A VFD-EL Variable Frequency Drive Instruction Manual

Model: VFD015EL21A | Brand: Delta Electronics

1. INTRODUCTION

This manual provides essential information for the safe and efficient installation, operation, and maintenance of the Delta VFD015EL21A VFD-EL Variable Frequency Drive. Please read this manual thoroughly before attempting to install or operate the unit. Retain this manual for future reference.

2. SAFETY INFORMATION

WARNING: Improper installation or operation may result in serious injury or death, and damage to equipment. Always observe the following safety precautions:

- Ensure power is disconnected before installation, wiring, or maintenance.
- Only qualified personnel should perform installation and wiring.
- Properly ground the VFD and motor to prevent electrical shock.
- Do not touch internal components or circuit boards when power is applied.
- Verify correct voltage and current ratings before connecting power.
- Protect the unit from moisture, dust, and corrosive gases.

3. PRODUCT OVERVIEW

The Delta VFD015EL21A is a 2HP (1500W) Variable Frequency Drive designed for precise motor control. It operates on a 230V AC power supply and delivers up to 7.5A output current. This compact unit supports both chassis and DIN rail mounting, and includes an RS-485 interface for communication with automation systems.



Figure 3.1: Front view of the Delta VFD015EL21A VFD-EL Variable Frequency Drive, showing the LED display and control buttons.

4. SETUP

4.1 Unpacking and Inspection

Upon receiving the VFD, carefully unpack it and inspect for any signs of damage during transit. Verify that all components are present according to the packing list. If any damage or missing parts are found, contact your supplier immediately.

4.2 Mounting

The VFD015EL21A offers flexible mounting options:

- **DIN Rail Mounting:** Attach the VFD directly to a standard 35mm DIN rail. Ensure it clicks securely into place.
- **Chassis Mounting:** Use screws to secure the VFD to a panel or enclosure. Ensure adequate ventilation space around the unit (minimum 50mm clearance above and below, 10mm on sides).

Mount the VFD vertically to optimize heat dissipation. Avoid mounting in direct sunlight or near heat sources.

4.3 Wiring

All wiring must be performed by a qualified electrician. Ensure power is disconnected before wiring.

- **Power Input (L1, L2):** Connect the 230V AC single-phase power supply to the L1 and L2 terminals. Use appropriate wire gauges as specified in the technical documentation.
- **Motor Output (U, V, W):** Connect the three-phase motor leads to the U, V, and W terminals. Ensure correct phase sequence for desired motor rotation.

- **Grounding (PE):** Connect the protective earth (ground) terminal of the VFD to a reliable earth ground. This is critical for safety.
- **Control Terminals:** Connect external control signals (e.g., start/stop, speed reference, fault reset) to the designated digital and analog input terminals. Relay outputs can be used for status indication. Refer to the detailed wiring diagram in the full product manual for specific terminal assignments.
- **RS-485 Communication (A+, B-):** For remote monitoring and control, connect the RS-485 communication lines to the A+ and B- terminals. Ensure proper termination resistors are used if required by the network configuration.

Note: A detailed wiring diagram is typically provided in the comprehensive product manual. Always refer to it for precise terminal connections and wire specifications.

5. OPERATING INSTRUCTIONS

5.1 Control Panel Overview

The VFD features an LED display and several buttons for local operation and parameter setting. The LED display shows operational status, frequency, current, and error codes. Buttons typically include RUN, STOP, PROGRAM, ENTER, UP, and DOWN.

5.2 Basic Operation

- **Starting the Motor:** Press the **RUN** button. The motor will accelerate to the set frequency.
- **Stopping the Motor:** Press the **STOP** button. The motor will decelerate and stop.
- **Adjusting Speed:** Use the **UP** and **DOWN** buttons to adjust the output frequency (motor speed) when in local control mode.

5.3 Parameter Settings

To access and modify VFD parameters:

1. Press the **PROGRAM** button to enter parameter mode.
2. Use the **UP** and **DOWN** buttons to navigate through parameter groups and individual parameters.
3. Press **ENTER** to select a parameter and view its current value.
4. Use **UP** and **DOWN** to change the value.
5. Press **ENTER** again to save the new value.
6. Press **PROGRAM** to exit parameter mode.

Refer to the VFD-EL Series User Manual for a complete list of parameters and their functions.

6. MAINTENANCE

Regular maintenance ensures optimal performance and extends the lifespan of the VFD.

6.1 Routine Inspection

- Periodically check all wiring connections for tightness and signs of corrosion.
- Inspect the VFD for any unusual noises, vibrations, or odors.
- Monitor the operating temperature of the VFD and ensure proper ventilation.

6.2 Cleaning

With power disconnected, use compressed air to remove dust and debris from the VFD's heatsink and ventilation openings. Do not use liquid cleaners directly on the unit.

6.3 Environmental Considerations

Ensure the operating environment remains within the specified temperature range of -10°C to 50°C (14°F to 122°F) and appropriate humidity levels to prevent condensation.

7. TROUBLESHOOTING

This section provides guidance for common issues. For complex problems or error codes not listed, consult the comprehensive VFD-EL Series User Manual or contact technical support.

Problem	Possible Cause	Solution
VFD does not power on	No input power; Blown fuse; Incorrect wiring	Check power supply; Replace fuse; Verify wiring connections
Motor does not run	Stop command active; Incorrect motor wiring; Parameter settings	Check control signals; Verify motor connections (U,V,W); Review run parameters
Motor runs at incorrect speed	Incorrect frequency reference; Parameter settings	Check speed reference input; Adjust frequency parameters (e.g., max frequency, acceleration/deceleration times)
VFD displays an error code	Overcurrent, Overvoltage, Overheat, etc.	Note the error code and consult the VFD-EL Series User Manual for specific troubleshooting steps. Address the underlying cause (e.g., motor overload, power supply issues).

8. SPECIFICATIONS

Specification	Value
Model Name	VFD015EL21A
Brand	Delta Electronics
Power Output	2HP / 1500W
Output Current	7.5A
Input Voltage	230V AC
Power Source	AC Power
Inverter Capacity	2000 VA
Electrical Output Waveform	Modified Sine Wave
Display Type	LED Display
Connectivity	RS-485 Interface
Mounting Options	Chassis Mount, DIN Rail Mount
Operating Temperature	-10°C to 50°C (14°F to 122°F)

Specification	Value
Product Dimensions (L x W x H)	8" x 4.5" x 12"
Item Weight	6 Pounds
Manufacturer	Delta Electronics/Industrial Automation

9. WARRANTY AND SUPPORT

9.1 Warranty Information

No specific warranty description is provided with this product. For detailed warranty terms and conditions, please contact Delta Electronics directly or refer to the official product documentation provided at the time of purchase.

9.2 Technical Support

For technical assistance, troubleshooting beyond this manual, or inquiries regarding product functionality, please contact Delta Electronics customer support or visit their official website for resources and contact information.

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.

Name

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After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

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

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question