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## ETURBEV SU800/SU900

# ETURBEV SU800/SU900 Series VFD User Manual

Variable Frequency Drive (VFD) for 3-Phase Output 380V

## 1. Introduction

This manual provides essential information for the safe and efficient operation, installation, and maintenance of the ETURBEV SU800 and SU900 series Variable Frequency Drives (VFDs). These VFDs are designed to control the speed of 3-phase AC motors by varying the frequency and voltage of the power supplied to the motor. Please read this manual thoroughly before installation or operation to ensure proper usage and to prevent damage or injury.

## 2. Safety Information

**WARNING: Dangerous Voltages.** This device operates with high voltages that can cause severe injury or death. Always ensure the power supply is disconnected and wait at least 5 minutes for capacitors to discharge before performing any installation, wiring, or maintenance. Only qualified personnel should install, operate, or service this equipment.

- Do not touch electrical components immediately after power-off.
- Ensure proper grounding of the VFD and the motor.
- Do not operate the VFD with covers removed.
- Protect the VFD from moisture, dust, and corrosive gases.




Figure 2.1: Front view of the SU-800 VFD, highlighting the display and critical safety warnings regarding dangerous voltages and discharge time.

## 3. Product Overview

The ETURBEV SU800/SU900 series VFDs are compact and robust frequency converters designed for various industrial applications. They feature a digital display for monitoring operational parameters and a user-friendly control panel for setting and adjusting drive functions.

### 3.1. Key Components

- **Control Panel:** Features a digital display, RUN/STOP buttons, and navigation keys for parameter adjustment.
- **Power Terminals:** For connecting input power and motor output.
- **Control Terminals:** For external control signals (e.g., start/stop, speed reference).
- **Cooling Fan:** Ensures optimal operating temperature.




Figure 3.1: Front and side view of the VFD, illustrating the integrated control panel and the heat dissipation design.




Figure 3.2: Side view of the SU-900 model, showing the ventilation grilles for cooling.

## 4. Setup

### 4.1. Installation Environment

- Install the VFD in a well-ventilated area, free from direct sunlight, excessive dust, moisture, and corrosive gases.
- Maintain adequate clearance around the VFD for proper airflow and heat dissipation.
- Mount the VFD vertically on a stable, non-flammable surface.

### 4.2. Wiring

All wiring must comply with local electrical codes and regulations. Use appropriate wire gauges for the VFD's power rating.

1. **Input Power (R, S, T):** Connect the 3-phase 380V AC power supply to the input terminals.
2. **Motor Output (U, V, W):** Connect the 3-phase motor to the output terminals.
3. **Grounding (PE):** Ensure a secure ground connection to the VFD's ground terminal.

4. **Control Wiring:** Connect external control signals (e.g., start/stop, speed reference potentiometer) to the designated control terminals as per your application requirements. Refer to the wiring diagram provided with your specific model.




Figure 4.1: Internal view of the VFD, illustrating the main circuit board and the terminal block where power and control wires are connected. Note the warning label on the cover.




Figure 4.2: Detailed view of the VFD's internal circuit board, showing the arrangement of components and connection points.

## 5. Operating Instructions

### 5.1. Control Panel Functions

The VFD features a digital display and a set of buttons for operation and parameter setting:

- **RUN:** Starts the motor.
- **STOP/RESET:** Stops the motor or resets fault conditions.
- **PRG (Program):** Enters or exits parameter setting mode.
- **▲ (Up) / ▼ (Down):** Navigates through parameters or adjusts values.
- **MFX (Multi-Function Key):** Function varies depending on context.
- **ENTER:** Confirms parameter selection or value changes.
- **Display:** Shows frequency (Hz), current (A), voltage (V), and other operational data.

### 5.2. Basic Operation

1. **Power On:** Ensure all connections are secure, then apply power to the VFD. The display will illuminate.
2. **Start Motor:** Press the **RUN** button. The motor will accelerate to the set frequency.
3. **Adjust Frequency:** Use the ▲ and ▼ buttons to increase or decrease the output frequency, thereby adjusting motor speed.
4. **Stop Motor:** Press the **STOP/RESET** button. The motor will decelerate and stop.

### 5.3. Parameter Settings

To access and modify parameters:

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

Refer to the detailed parameter list in the full technical manual for specific parameter functions and ranges.

## 6. Maintenance

Regular maintenance ensures the longevity and reliable operation of your VFD.

- **Cleaning:** Periodically clean the VFD's exterior and ventilation openings to prevent dust accumulation. Use a soft, dry cloth. Do not use liquid cleaners.
- **Inspection:** Regularly inspect wiring connections for tightness and signs of damage or corrosion. Check the cooling fan for proper operation and cleanliness.
- **Environmental Check:** Ensure the operating environment remains within specified temperature and humidity ranges.

**CAUTION:** Always disconnect power and wait for discharge before performing any maintenance.

## 7. Troubleshooting

This section outlines common issues and their potential solutions. For complex problems, contact technical support.

| Problem | Possible Cause | Solution |
|---|---|---|
| VFD does not power on | No input power; Blown fuse | Check power supply; Inspect and replace fuses if necessary. |
| Motor does not run | Incorrect wiring; Fault condition; Parameter error | Verify motor wiring; Check for fault codes on display and clear; Review motor parameters. |
| Overcurrent fault | Motor overload; Short circuit; Rapid acceleration | Reduce motor load; Check motor and wiring for shorts; Increase acceleration time parameter. |
| Overvoltage fault | High input voltage; Rapid deceleration | Check input voltage; Increase deceleration time parameter. |

| Problem | Possible Cause | Solution |
|---|---|---|
| Overheat fault | Insufficient cooling; High ambient temperature | Clean VFD and ensure proper ventilation; Reduce ambient temperature. |

## 8. Specifications

| Feature | Specification |
|---|---|
| Model Series | SU800 / SU900 |
| Input Voltage | 3-Phase 380V |
| Output Voltage | 3-Phase 0-380V |
| Output Frequency Range | 0-600 Hz (typical) |
| Power Range | 4.5kW, 7.5kW, 11kW, 15kW (depending on model) |
| Control Method | V/F Control, Vector Control (sensorless) |
| Protection Functions | Overcurrent, Overvoltage, Undervoltage, Overheat, Overload, Short Circuit |
| Cooling Method | Forced air cooling |
| Product Dimensions | 0.39 x 0.39 x 0.39 inches (Note: This dimension appears to be a placeholder and may not reflect the actual product size.) |
| Item Weight | 1.76 ounces (Note: This weight appears to be a placeholder and may not reflect the actual product weight.) |

## 9. Warranty and Support

ETURBEV 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 ETURBEV website. Please have your product model and serial number ready when contacting support.

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