MDWXDOFP SU800

MDWXDOFP SUSWE SU800 VFD Frequency Converter Instruction Manual

Model: SU800 Series (4KW 220V Variant)

1. Introduction

This manual provides essential information for the safe and efficient installation, operation, and maintenance of the MDWXDOFP SUSWE SU800 series Variable Frequency Drive (VFD). The SU800 VFD is designed to control the speed of three-phase AC motors by varying the frequency and voltage of the power supplied to the motor. It features RS485 communication for integration into control systems.

Please read this manual thoroughly before installing or operating the VFD to ensure proper usage and to prevent potential hazards or equipment damage. Keep this manual accessible for future reference.

2. Safety Information

WARNING: Improper installation or operation can lead to serious injury or death, and equipment damage. Only qualified personnel should install, operate, and maintain this VFD.

- **Electrical Shock Hazard:** The VFD contains high voltage components. Do not touch internal components immediately after power-off. Wait at least 5 minutes for capacitors to discharge. Always verify zero voltage before servicing.
- **Proper Grounding:** Ensure the VFD is properly grounded according to local electrical codes.
- **Overcurrent Protection:** Install appropriate overcurrent protection devices (fuses or circuit breakers) on the input power lines.
- **Environmental Conditions:** Install the VFD in a clean, dry, and well-ventilated area, away from direct sunlight, corrosive gases, flammable materials, and excessive vibration.
- **Motor Compatibility:** Ensure the motor is compatible with the VFD's output voltage and current ratings.
- **Emergency Stop:** Implement an independent emergency stop circuit that directly cuts off power to the VFD and motor.

3. Product Overview

The SUSWE SU800 series VFD offers reliable and precise motor speed control for various industrial applications. Available in multiple power ratings (4KW, 5.5KW, 7.5KW) and voltage inputs (220V, 380V), it provides a versatile solution for optimizing motor performance and energy efficiency.

Figure 3.1: Various models within the SUSWE SU800 VFD series, showcasing different power ratings and physical sizes.

3.1. Key Features

- Variable frequency and voltage output for precise motor speed control.
- Built-in RS485 communication interface for remote control and monitoring.
- Multiple protection functions: overcurrent, overvoltage, undervoltage, overload, overheating.
- User-friendly control panel with digital display and intuitive buttons.
- Efficient cooling system for stable operation.

Figure 3.2: The SU800 VFD connected to an external control panel, demonstrating remote operation capability.

3.2. Control Panel Layout

The VFD features a front-mounted control panel for local operation and parameter setting.

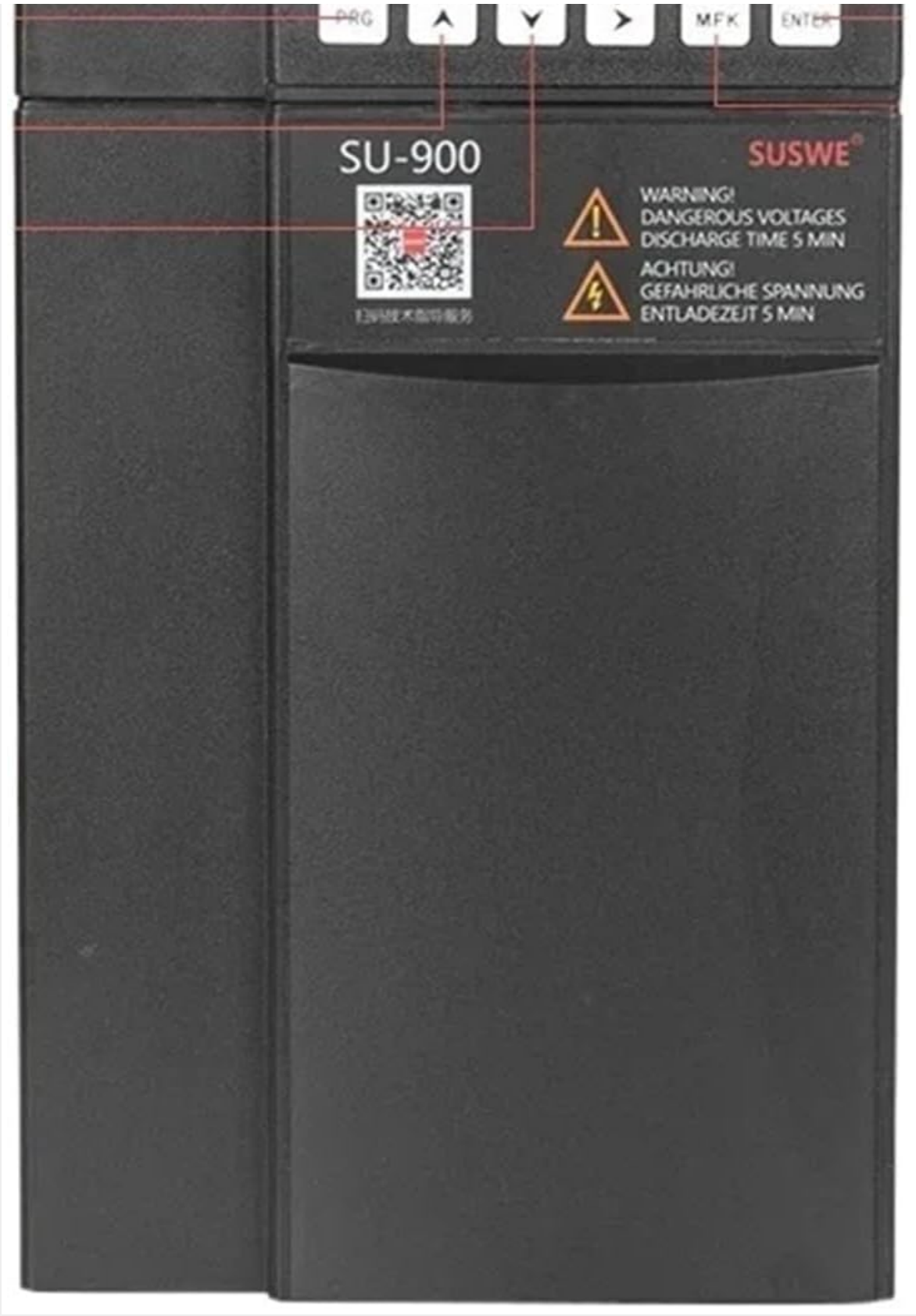

Figure 3.3: Detailed view of the VFD control panel, highlighting the digital display, function buttons, and warning indicators.

- **Digital Display:** Shows operating frequency, output current, voltage, and parameter values.
- **RUN Button:** Starts the motor.
- **STOP/RST Button:** Stops the motor or resets fault conditions.
- **PRG Button:** Enters/exits parameter setting mode.
- **Up/Down Arrows:** Adjust frequency, navigate parameters, or change parameter values.
- **Left/Right Arrows (MFK/ENTER):** Select parameters, confirm settings, or shift digits.
- **Rotary Knob:** Fine-tunes frequency or parameter values.

Figure 3.4: The integrated cooling fan, essential for dissipating heat during operation and maintaining optimal performance.

4. Specifications

The following table outlines the general specifications for the SUSWE SU800 VFD series. Specific values may vary based on the exact model (e.g., 4KW 220V, 5.5KW 380V, 7.5KW 380V).

Specification	Value
Product Dimensions	1.18 x 0.79 x 0.79 inches (Note: This appears to be packaging or a small component dimension, not the VFD unit itself. Refer to product documentation for actual unit dimensions.)
Item Weight	1.76 ounces / 50 Grams (Note: This appears to be packaging or a small component weight, not the VFD unit itself. Refer to product documentation for actual unit weight.)
Brand	MDWXDOFP
Model Name	MDWXDOFP (Note: The product series is SU800)
Item model number	MDWXDOFP (Note: The product series is SU800)

Specification	Value
Assembly required	No (for the VFD unit itself)
Number of pieces	1 (VFD unit)
Color	One Color (Typically Black)

Note: The provided product dimensions and weight appear to be for packaging or a small accessory. Please consult the product's physical label or detailed technical datasheet for accurate VFD unit dimensions and weight. The model name/number listed as 'MDWXDOFP' refers to the manufacturer/brand; the product series is SU800.

5. Setup and Installation

5.1. Mounting

- Mount the VFD vertically on a non-flammable surface, ensuring adequate clearance for ventilation above and below the unit.
- Avoid mounting in areas with excessive dust, moisture, or direct heat sources.

5.2. Wiring

All wiring must be performed by a qualified electrician in accordance with national and local electrical codes.

Figure 5.1: Internal view of the VFD showing the terminal block layout for power and control connections.

1. **Power Input (R, S, T):** Connect the three-phase AC power supply to the R, S, and T terminals. Ensure the

voltage matches the VFD's rating (e.g., 220V or 380V).

2. **Motor Output (U, V, W):** Connect the three-phase motor leads to the U, V, and W terminals.
3. **Grounding (PE):** Connect the protective earth (ground) wire from the power supply and the motor frame to the PE terminal on the VFD. This is critical for safety.
4. **Control Wiring (RS485, Analog/Digital Inputs):** Refer to the detailed wiring diagram in the full product manual for connecting RS485 communication (A, B terminals), analog input signals (e.g., 0-10V, 4-20mA for speed reference), and digital input signals (e.g., run/stop commands, multi-speed selection).

5.3. Initial Power-Up

- Before applying power, double-check all wiring connections for correctness and tightness.
- Ensure no foreign objects are inside the VFD.
- Apply power to the VFD. The digital display should illuminate.
- Observe for any error codes or unusual behavior. If a fault occurs, refer to the troubleshooting section.

6. Operating Instructions

6.1. Basic Operation from Control Panel

1. **Set Frequency:** Use the Up/Down arrow buttons or the rotary knob to set the desired output frequency (motor speed). The display will show the set frequency.
2. **Start Motor:** Press the **RUN** button. The VFD will accelerate the motor to the set frequency. The display will show the actual output frequency.
3. **Stop Motor:** Press the **STOP/RST** button. The VFD will decelerate the motor to a stop.

6.2. Parameter Setting

The VFD has numerous parameters to configure its operation, such as acceleration/deceleration times, motor parameters, control modes, and protection settings. Refer to the detailed parameter list in the full product manual for specific parameter codes and functions.

1. **Enter Parameter Mode:** Press the **PRG** button. The display will show a parameter group or code.
2. **Navigate Parameters:** Use the Up/Down arrow buttons to scroll through parameter codes.
3. **Select Parameter:** Press the **ENTER** button (or Right arrow) to select a parameter and view its current value.
4. **Change Value:** Use the Up/Down arrow buttons or the rotary knob to adjust the parameter value.
5. **Save Value:** Press the **ENTER** button to save the new value.
6. **Exit Parameter Mode:** Press the **PRG** button repeatedly until the VFD returns to the main operating display.

7. Maintenance

Regular maintenance helps ensure the longevity and reliable operation of your VFD. Always disconnect power before performing any maintenance.

- **Cleaning:** Periodically clean the VFD's exterior and cooling fins to prevent dust accumulation, which can hinder heat dissipation. Use a soft, dry cloth or compressed air. Do not use liquid cleaners.
- **Fan Inspection:** Check the cooling fan for proper operation, excessive noise, or obstructions. Replace if necessary.
- **Terminal Connections:** Annually inspect all power and control terminal connections for tightness. Loose connections can cause overheating and intermittent operation.
- **Environmental Check:** Ensure the operating environment remains within specified temperature and humidity

ranges.

8. Troubleshooting

This section provides solutions for common issues. For complex problems or issues not listed here, contact technical support.

Problem/Fault Code	Possible Cause	Solution
Motor does not run	No RUN command; incorrect frequency setting; motor wiring error; VFD in fault state.	Check RUN command source (panel/external); verify frequency setting; inspect motor wiring; check for fault codes and reset.
OV (Overvoltage)	Input voltage too high; motor regeneration during deceleration too fast.	Check input voltage; increase deceleration time; consider adding a braking resistor if regeneration is severe.
OC (Overcurrent)	Motor overload; short circuit in motor wiring; acceleration time too short.	Reduce motor load; check motor and wiring for shorts; increase acceleration time; verify motor parameters.
UV (Undervoltage)	Input voltage too low or unstable.	Check input power supply voltage and stability.
OH (Overheat)	Ambient temperature too high; VFD cooling fan blocked or faulty; VFD overloaded.	Improve ventilation; clean VFD fins; check/replace fan; reduce load.

To reset a fault, press the **STOP/RST** button after resolving the cause of the fault.

9. Warranty and Support

Specific warranty terms and conditions for the MDWXDOFP SUSWE SU800 VFD are typically provided at the point of purchase or within the product packaging. Please retain your proof of purchase for warranty claims.

For technical support, service, or inquiries regarding warranty, please contact your supplier or the manufacturer directly. Ensure you have your product model number (SU800) and purchase details available when seeking assistance.