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ETURBEV WK600 (220V 22kW)

ETURBEV WK600 Vector Control Variable Frequency Drive (VFD) Instruction Manual

Model: WK600 (220V 22kW)

1. Introduction

This manual provides essential information for the safe and efficient installation, operation, and maintenance of the ETURBEV WK600 Vector Control Variable Frequency Drive (VFD). The WK600 VFD is designed to control the speed and torque of three-phase AC induction motors by varying the frequency and voltage of the power supplied to the motor. Please read this manual thoroughly before attempting any installation or operation to ensure proper usage and prevent potential hazards.

2. Safety Information

WARNING: Failure to follow these safety instructions may result in serious injury or death, or damage to the equipment.

- **Risk of Injury and Electric Shock:** This device operates with high voltages. Only qualified personnel should perform installation, wiring, and maintenance.
- **Capacitor Discharge:** Wait at least 10 minutes for capacitors to discharge after disconnecting the power supply before touching any internal components. Verify with a voltmeter.
- **Read Manual Before Installation:** Always consult this instruction manual completely before beginning any installation or operation procedures.
- **Proper Earth Connection:** Ensure the VFD is properly grounded (earthed) according to local electrical codes and standards to prevent electric shock.
- Do not operate the VFD with covers removed.
- Protect the VFD from moisture, dust, and direct sunlight.
- Ensure adequate ventilation around the VFD to prevent overheating.

3. Product Overview

The ETURBEV WK600 is a robust Vector Control Variable Frequency Drive designed for industrial applications requiring precise motor control. It converts a three-phase 220V input into a variable frequency and voltage output for motor operation.



Figure 3.1: Front view of the ETURBEV WK600 VFD, showing the control panel and main housing.

3.1 Key Components

The WK600 VFD features an intuitive operating keyboard for parameter setting and monitoring, along with clearly marked terminals for power input, motor output, control signals, and brake resistance.



Figure 3.2: Internal view of the WK600 VFD, highlighting the Operating keyboard, Control terminal, Power input, Output to motor, and Brake resistance terminal.

- **Operating Keyboard:** Used for setting parameters, monitoring operational status, and manual control.
- **Control Terminal:** For connecting external control signals such as start/stop, speed reference, and fault indicators.
- **Power Input:** Terminals for connecting the three-phase 220V AC power supply.
- **Output to Motor:** Terminals for connecting the three-phase AC motor.
- **Brake Resistance Terminal:** For connecting an external braking resistor, if dynamic braking is required.

4. Installation

4.1 Unpacking and Inspection

Upon receiving the VFD, carefully unpack it and inspect for any signs of damage during transit. Report any damage to the carrier immediately. Ensure all components are present as per the packing list.



Figure 4.1: Various views of the WK600 VFD and its typical packaging.

4.2 Mounting

Mount the VFD vertically on a flat, stable surface in an environment that meets the specified operating conditions (temperature, humidity, dust). Ensure sufficient clearance for ventilation and maintenance access. Refer to the dimensions below for planning.



Figure 4.2: Front and side dimensions of the WK600 VFD, showing approximate measurements of 230mm width, 465mm height, and 240mm depth.



Figure 4.3: Top and side dimensions of the WK600 VFD, showing approximate measurements of 375mm width, 345mm height, and 630mm depth (likely for a larger model or different orientation).

Note: Dimensions may vary slightly between different power ratings (e.g., 22kW vs. 30kW). Always refer to the specific model's technical data sheet for precise measurements.

4.3 Electrical Connections

All electrical wiring must be performed by a licensed electrician in accordance with national and local electrical codes. Ensure power is disconnected and locked out before making any connections.

- **Power Input (R, S, T):** Connect the three-phase 220V AC power supply to the designated input terminals.
- **Motor Output (U, V, W):** Connect the three-phase AC motor to the designated output terminals. Ensure correct phase sequence.
- **Grounding (PE):** Connect the VFD to a reliable earth ground using a dedicated ground wire. This is critical for safety.
- **Control Wiring:** Connect external control signals (e.g., start/stop buttons, speed potentiometers, PLC signals) to the control terminals as per your application requirements. Refer to the detailed wiring diagram in the full technical manual.
- **Brake Resistor (if applicable):** If dynamic braking is required, connect the appropriate braking resistor to the designated terminals.

5. Operation

The WK600 VFD is operated via its integrated operating keyboard and display. Basic operation involves powering on the unit, setting essential parameters, and initiating motor control.

5.1 Initial Power-Up

1. After ensuring all wiring is correct and secure, apply power to the VFD.
2. The display on the operating keyboard should illuminate, indicating power is present.
3. Observe for any error codes or abnormal indications.

5.2 Parameter Setting

The VFD requires specific parameters to be set according to the connected motor and application requirements. These typically include:

- Motor rated power (kW)
- Motor rated voltage (V)
- Motor rated current (A)
- Motor rated frequency (Hz)
- Motor rated speed (RPM)
- Acceleration and deceleration times
- Control mode (e.g., V/F control, vector control)

Refer to the comprehensive programming guide in the full technical manual for detailed instructions on navigating the menu and setting parameters.

5.3 Starting and Stopping the Motor

The motor can be started and stopped either from the operating keyboard or via external control signals connected to the control terminals, depending on the configured control mode.

- **Start:** Press the **RUN** button on the keyboard or activate the external start command.
- **Stop:** Press the **STOP** button on the keyboard or activate the external stop command.

6. Maintenance

Regular maintenance ensures the longevity and reliable operation of the WK600 VFD. Always disconnect and lock out power before performing any maintenance.

- **Cleaning:** Periodically clean the VFD's exterior and ventilation openings to prevent dust accumulation, which can lead to overheating. Use a soft, dry cloth. Do not use liquid cleaners.
- **Inspection:** Regularly inspect wiring connections for tightness and signs of wear or damage. Check for any unusual noises or odors during operation.
- **Fan Check:** Ensure cooling fans are operating correctly and are free from obstructions.
- **Environmental Conditions:** Verify that the operating environment remains within specified temperature and humidity ranges.

7. Troubleshooting

This section provides basic troubleshooting steps for common issues. For complex problems or persistent faults, contact technical support.

Problem	Possible Cause	Solution

Problem	Possible Cause	Solution
VFD does not power on	No input power; Blown fuse; Internal fault	Check power supply; Inspect fuses; Contact support if internal fault suspected.
Motor does not start	Incorrect wiring; Parameter settings incorrect; External stop command active; Overload	Verify motor and control wiring; Check motor parameters; Ensure no active stop commands; Check for motor overload.
VFD displays an error code	Overcurrent; Overvoltage; Undervoltage; Overheat; External fault	Refer to the full technical manual for specific error code meanings and corrective actions.
Motor runs erratically	Poor motor tuning; Interference; Loose connections	Perform motor auto-tuning; Check for electromagnetic interference; Secure all connections.

8. Specifications

The following specifications apply to the ETURBEV WK600 Vector Control Variable Frequency Drive (220V 22kW model):

- **Model:** WK600
- **Input Voltage:** Three-Phase 220V
- **Output Voltage:** Three-Phase 220V (Variable)
- **Rated Power:** 22kW
- **Control Method:** Vector Control
- **Product Dimensions:** Approximately 0.39 x 0.39 x 0.39 inches (This seems incorrect based on images, likely a placeholder or error in source data. Refer to physical dimensions in Section 4.2 for more accurate visual representation.)
- **Item Weight:** Approximately 1.76 ounces (This also seems incorrect for a 22kW VFD. Actual weight is likely much higher. Please refer to product packaging or manufacturer's official data for accurate weight.)
- **Manufacturer:** ETURBEV
- **Date First Available:** May 24, 2025

Note: The provided product dimensions and item weight appear to be generic or incorrect for a device of this power rating. Please consult the manufacturer's official documentation for accurate specifications.

9. Warranty and Support

For warranty information, please refer to the documentation provided with your purchase or contact your authorized ETURBEV dealer or the manufacturer directly. Technical support can be obtained through the seller or manufacturer's official channels. For service or inquiries, please have your product model (WK600) and serial number ready.

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