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› [CNweiken WK-9600 Series 4KW Variable Frequency Drive \(VFD\) Instruction Manual](#)

## CNweiken WK-9600 Series 4KW

# CNweiken WK-9600 Series 4KW Variable Frequency Drive (VFD) Instruction Manual

Model: WK-9600 Series 4KW | Brand: CNweiken

## 1. INTRODUCTION

This manual provides essential information for the safe and efficient operation, installation, and maintenance of your CNweiken WK-9600 Series 4KW Variable Frequency Drive (VFD). This VFD is designed to convert single-phase 220V input into three-phase 220V output, enabling precise speed regulation for spindle motors and other three-phase AC motor applications.

Please read this manual thoroughly before attempting any installation, operation, or maintenance procedures. Keep this manual for future reference.

## 2. SAFETY INFORMATION

**WARNING:** Improper installation or operation can lead to serious injury or death. Always follow safety precautions.

- Read the user's manual completely before installation or operation.
- Do not open the VFD cover unless you are a qualified technician.
- Always disconnect the power supply before performing any wiring, inspection, or maintenance.
- Ensure proper grounding of the VFD and connected motor to prevent electrical shock.
- Verify all wiring connections are secure and correct before applying power.
- Do not touch internal components immediately after power-off, as residual voltage may be present.
- Install the VFD in a clean, dry, and well-ventilated environment, away from direct sunlight, corrosive gases, and excessive vibration.

## 3. PRODUCT OVERVIEW

### 3.1. Components

The CNweiken WK-9600 Series VFD typically includes the main frequency converter unit, a detachable remote keypad, and a connection cable for the keypad.



This image displays the CNweiken WK-9600 Series Variable Frequency Drive, showcasing its main unit, a detachable remote keypad, and the cable for connecting the keypad. The main unit features a digital display, control buttons, and terminal blocks for wiring.

### 3.2. Specifications (4KW Model)

| Specification      | Value  |
|--------------------|--|
| Model No.          | wk-9600  |
| Input Voltage      | Single phase 220V±10% 50Hz/60Hz                |
| Output Voltage     | 3PH 0-220V 0-650Hz                             |
| Output Power       | 4.0KW / 5HP                                    |
| Rated Current      | 16A (60s for 150% of the rated current)        |
| Control Method     | Open loop vector control (SVC) V/F control     |
| Product Dimensions | 9.84 x 9.84 x 9.84 inches (250 x 250 x 250 mm) |
| Item Weight        | 3.74 pounds (1.7 kg)                           |



This image provides the physical dimensions of the VFD: 160mm (6.3 inches) height, 130mm (5.11 inches) width, and 170mm (6.7 inches) depth. It also includes a table with specifications like Model No. (wk-9600), Input voltage (Single phase 220V±10% 50Hz/60Hz), Output voltage (3PH 0-220V 0-650Hz), Output power (4.0KW / 5HP), Rated current (16A (60s for 150% of the rated current)), and Control way (Open loop vector control (SVC) V/F control).

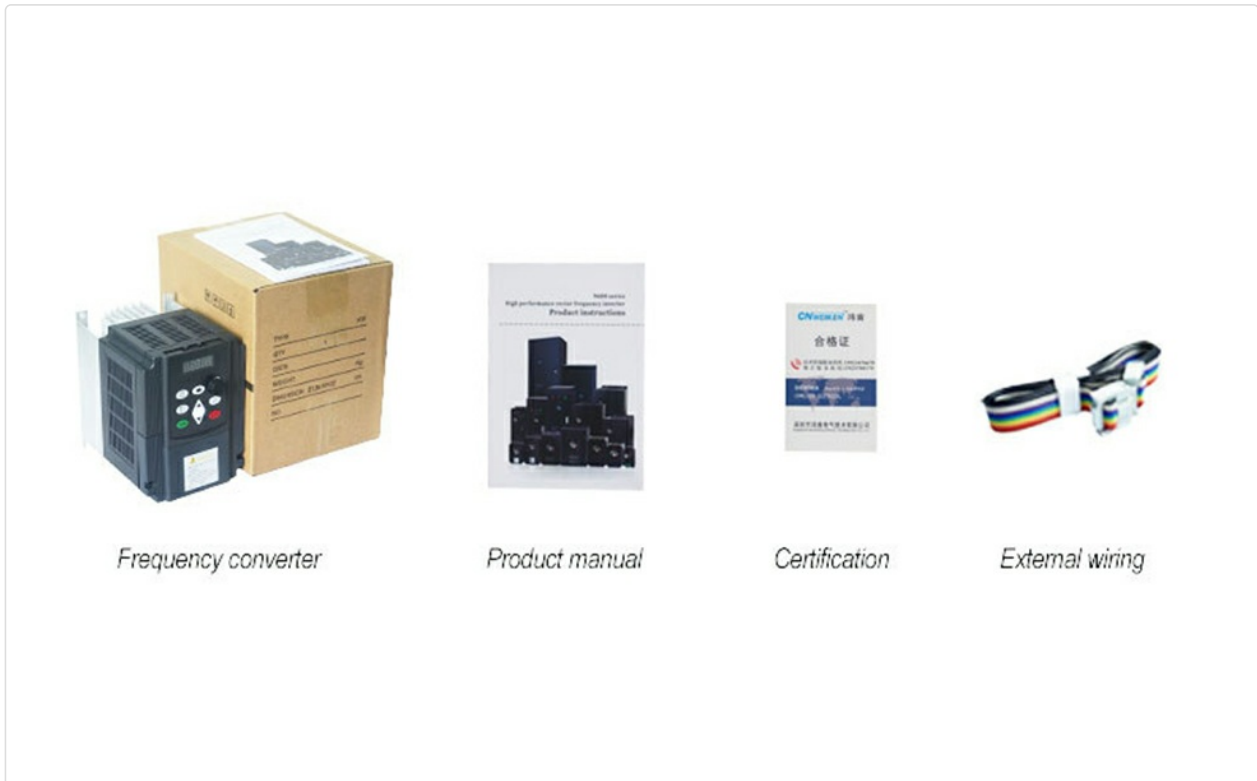
## 4. SETUP AND WIRING

Proper wiring is crucial for the safe and correct operation of the VFD. Refer to the diagrams below for connection details. Ensure all connections are tight and insulated.

### 4.1. Power and Motor Connections

- **Input Power (R, S):** Connect your single-phase 220V AC power supply to terminals R and S. It is recommended to use an air switch for protection.
- **Output to Motor (U, V, W):** Connect the three-phase AC motor to terminals U, V, and W.

- **Brake Resistance (P, B):** If using a brake resistor, connect it to terminals P and B.
- **Grounding:** Ensure the VFD chassis and motor frame are properly grounded to a reliable earth ground.



*Frequency converter*

*Product manual*

*Certification*

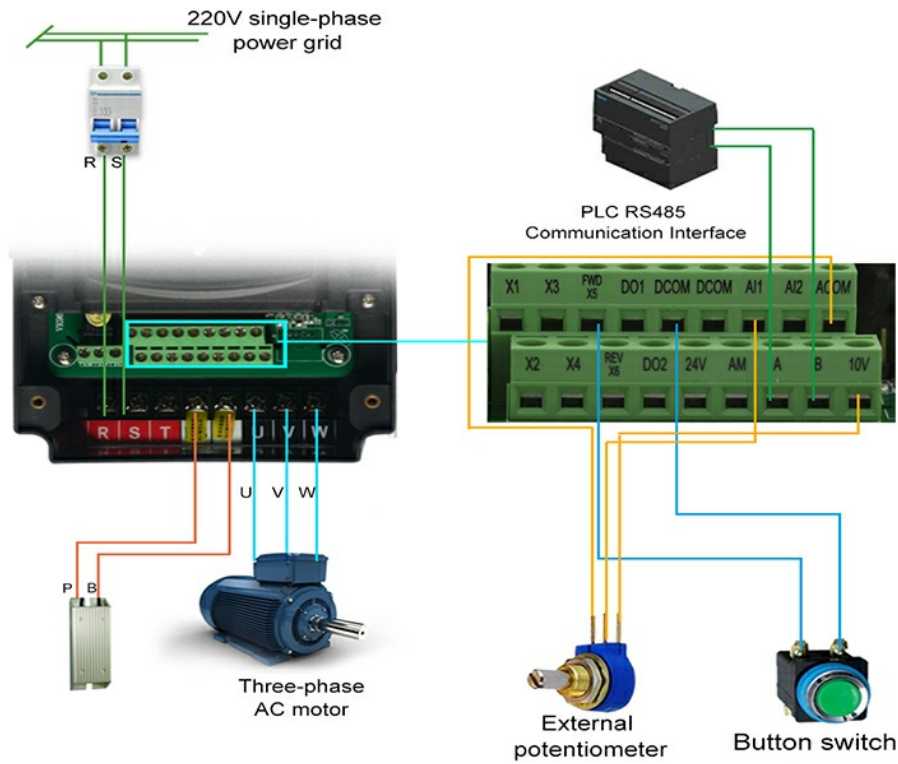
*External wiring*

A detailed wiring diagram illustrating the connections for the VFD. It shows the input power (L1, L2) connected via an air switch, output terminals (U, V, W) connected to a three-phase AC motor, and terminals for brake resistance (P, B). Control terminals are shown for PLC RS485 communication, external potentiometer, and button switch for forward/reverse and start/stop functions.

## 4.2. Control Signal Connections

The VFD supports various control methods, including external potentiometers, button switches, and RS485 communication.

- **External Potentiometer:** Connect the intermediate terminal of the potentiometer to AI1. Connect the other two terminals to 10V and ACOM. Ensure jumper J9 selects the upper part for external potentiometer control.
- **Forward/Reverse Start-Stop Switch:** For forward connection, wire X5 to DCOM. For reverse connection, wire X6 to DCOM. Set parameter P7.02=2 for this control mode.
- **PLC RS485 Communication:** Connect the PLC's RS485 interface to the VFD's A and B terminals.



This image presents a comprehensive circuit diagram of the VFD, detailing connections for power-source input (Q, F, R, S, T), programmable input ends (X1-X6), RS485 communication interface (TA, TB), analog inputs (AI1, AI2), analog output (AM), and multifunction collector outputs (DO1, DO2). It also illustrates the internal components and signal paths.

## 5. OPERATING INSTRUCTIONS

The VFD can be operated via its integrated control panel or external control signals.

### 5.1. Keypad Functions



This image details the VFD's control panel, highlighting the functions of each button and the panel potentiometer. Buttons include Shift key, Program/Return (PRG ESC), Multi-function button/Reverse (MF.K REV), Run key (RUN), Confirm key (RD WT), Stop/Reset key (STOP RESET), and Increment/Decrement arrows.

- **PRG/ESC:** Program/Escape key. Used to enter/exit parameter setting mode and return to the previous menu.
- **MF.K/REV:** Multi-function key / Reverse. Function depends on parameter settings. Can be used for reverse operation.
- **RUN:** Start key. Initiates motor operation.
- **STOP/RESET:** Stop/Reset key. Stops motor operation or clears fault alarms.
- **Up/Down Arrows:** Increment/Decrement values or navigate menus.
- **Left/Right Arrows:** Shift cursor position during parameter editing.
- **RD/WT:** Read/Write key. Confirms parameter changes.
- **Panel Potentiometer:** Adjusts motor speed when configured for local control.

## 5.2. Basic Operation Steps

1. **Power On:** Connect the VFD to the single-phase 220V power supply. The display will light up.
2. **Set Frequency/Speed:** Use the panel potentiometer or external control (if configured) to set the desired output frequency (motor speed).

3. **Start Motor:** Press the **RUN** button on the keypad or activate the external start signal. The motor will begin to accelerate to the set frequency.
4. **Adjust Speed:** While the motor is running, adjust the panel potentiometer or external control to change the motor speed.
5. **Stop Motor:** Press the **STOP/RESET** button on the keypad or activate the external stop signal. The motor will decelerate and stop.

### 5.3. Operational Demonstration Video

Watch this video for a visual guide on connecting and operating the VFD with a three-phase motor, including speed adjustment and current/waveform measurements.

Your browser does not support the video tag.

This video demonstrates the basic setup and operation of the CNweiken VFD, showing how to connect it to a three-phase motor and adjust speed using the panel potentiometer. It also illustrates current and waveform measurements.

## 6. MAINTENANCE

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

- **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 check all wiring connections for tightness and signs of wear or damage. Inspect the cooling fan for proper operation and blockages.
- **Environment:** Ensure the operating environment remains within specified temperature and humidity ranges.
- **Capacitor Life:** Electrolytic capacitors have a finite lifespan. Consider professional inspection or replacement after several years of continuous operation.

## 7. TROUBLESHOOTING

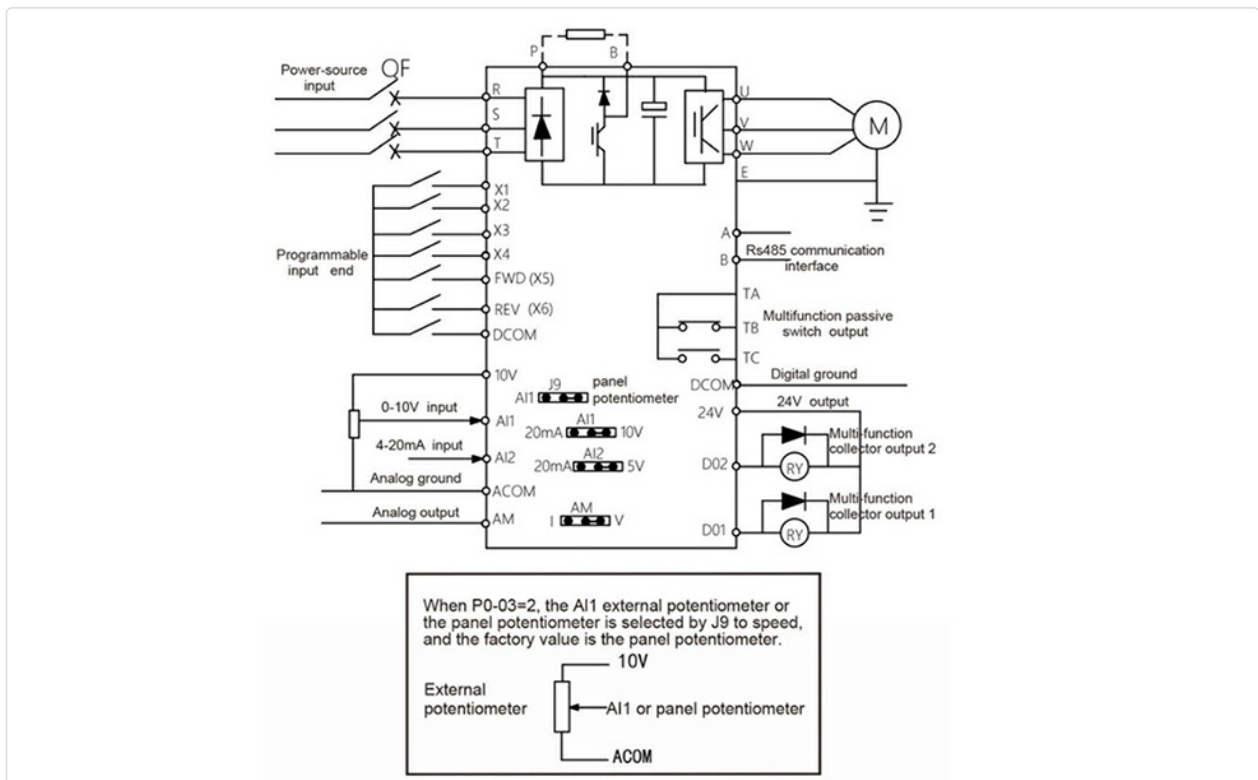
If you encounter issues with your VFD, refer to the following common troubleshooting steps. For complex problems, contact technical support.

| Problem                                  | Possible Cause  | Solution  |
|--|---|---|
| VFD does not power on                    | No input power; Blown fuse; Internal fault                            | Check power supply and circuit breaker; Replace fuse; Contact support                 |
| Motor does not start                     | Incorrect wiring; Parameter settings; Emergency stop active           | Verify wiring (U, V, W); Check P7.02 setting; Reset emergency stop                    |
| Motor runs erratically or at wrong speed | Incorrect frequency setting; Motor parameters incorrect; Interference | Adjust frequency; Verify motor parameters (P0.03, P0.04); Check for EMI               |
| Overcurrent fault (OC)                   | Motor overload; Short circuit; Rapid acceleration/deceleration        | Reduce load; Check motor/cables; Adjust acceleration/deceleration time (P0.08, P0.09) |
| Overvoltage fault (OV)                   | Rapid deceleration; High input voltage                                | Increase deceleration time (P0.09); Check input voltage; Install brake resistor       |
| Overheat fault (OH)                      | Poor ventilation; Ambient temperature too high; Fan failure           | Clean vents; Improve ventilation; Check cooling fan                                   |

## 8. PACKAGE CONTENTS

The standard package for the CNweiken WK-9600 Series VFD includes the following items:

- CNweiken WK-9600 Series Variable Frequency Drive Unit
- Product Manual (this document)
- Certification Document
- External Wiring Components (as applicable)



This image shows the typical contents of the product package: the frequency converter unit, a product manual, a certification document, and external wiring components.

## **9. WARRANTY AND SUPPORT**

For warranty information, technical support, or service inquiries, please refer to the contact details provided on the product packaging or the official CNweiken website. Keep your purchase receipt as proof of purchase for warranty claims.