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› XCFDP AC 220V 0.45kW 0.5HP Variable Frequency Drive User Manual

XCFDP 220V 0.45kw 0.6HP

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Model: 220V 0.45kw 0.6HP

INTRODUCTION

This manual provides detailed instructions for the safe and efficient operation of your XCFDP AC 220V 0.45kW 0.5HP Variable Frequency Drive (VFD). This VFD is designed to convert single-phase 220V input to three-phase output for precise spindle motor speed control. Please read this manual thoroughly before installation, operation, or maintenance to ensure proper usage and to prevent damage or injury.

SAFETY PRECAUTIONS

Always observe the following safety precautions to prevent electric shock, fire, or personal injury. Failure to comply with these instructions may result in severe consequences.

- Ensure the power supply is disconnected before any wiring or maintenance.
- Only qualified personnel should perform installation and wiring.
- Verify that the input voltage matches the VFD's specifications (AC 220V +/-15%).
- Properly ground the VFD to prevent electric shock.
- Do not operate the VFD in environments with explosive gases, flammable materials, or excessive dust.
- Avoid touching internal components immediately after power-off, as residual voltage may be present.
- Ensure adequate ventilation around the VFD to prevent overheating.

XCFDP SINGLE PHASE VFD



Image: The VFD unit highlighting various safety protections including undervoltage, overvoltage, overload, overcurrent, over temperature, and phase loss protection.

PRODUCT FEATURES AND COMPONENTS

The XCFDP VFD is equipped with a user-friendly control panel and robust design features for reliable performance.

Multifunctional Control Panel

ADVANTAGE OF OUR VFD

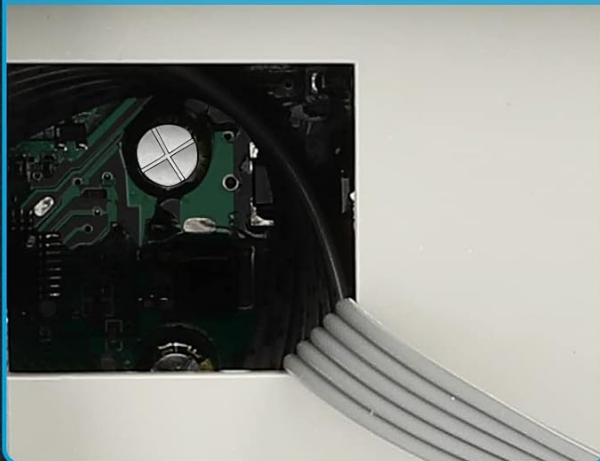
▲ Vent Design: Low Noise and Fast Heat Dissipation



▲ 20CM Three Anti-paint Protection Lines ▲ Just to show the lines, No Removable Panel



▲ Tightness and Integrity



▲ Longer Service Life

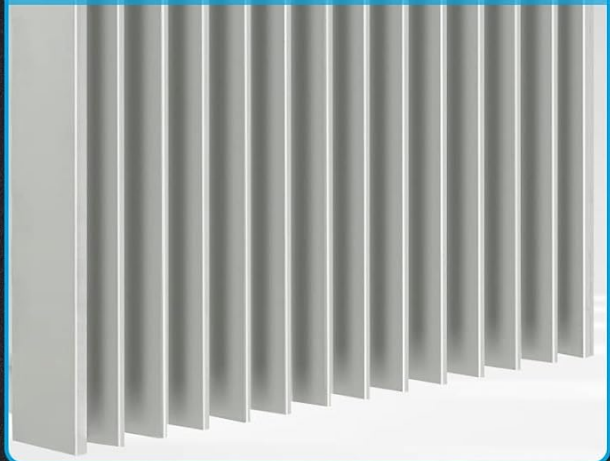


Image: A close-up of the VFD's control panel, showing the 5-digit LED display, various function keys, and the speed adjustment knob. Each component is numbered for easy identification.

The control panel allows for easy monitoring and adjustment of the VFD's parameters. Key components include:

1. **5 Digit LED Display:** Shows frequency, current, and other operational data.
2. **Shift Key (DISP):** Used to shift between display modes or parameters.
3. **Enter or Exit Programming (PROG):** Accesses and exits the programming menu.
4. **Function / Save Key (FUNC DATA):** Selects functions and saves parameter settings.
5. **Forward/Reverse (FWD REV):** Changes the motor's rotation direction.
6. **Numerical Modification Keys (Up/Down Arrows):** Adjusts parameter values.
7. **Speed Adjustment Knob:** Fine-tunes the output frequency/motor speed.
8. **Start Key (RUN):** Initiates motor operation.
9. **Stop / Reset Key (STOP RESET):** Halts motor operation and resets errors.

Design Advantages

SAFETY PROTECTION




Undervoltage
Protection


Overvoltage
Protection


Overload
Protection


Overcurrent
Protection


Over Temperature
Protection


Phase Loss
Protection

Image: A composite image showing four key design advantages of the VFD: efficient vent design for heat dissipation, three anti-paint protection lines for durability, robust tightness and integrity of the casing, and a large heat sink for extended service life.

- **Vent Design:** Optimized for low noise and fast heat dissipation, ensuring stable operation.
- **Protection Lines:** Features three anti-paint protection lines for enhanced durability and resistance.
- **Tightness and Integrity:** Constructed with high-quality materials for a secure and robust enclosure.
- **Longer Service Life:** Designed with efficient cooling and durable components to ensure extended operational life.

SETUP AND INSTALLATION

Proper installation and wiring are crucial for the safe and correct functioning of the VFD. Ensure all power is disconnected before proceeding.

Wiring Diagram

MULTIFUNCTIONAL CONTROL PANEL

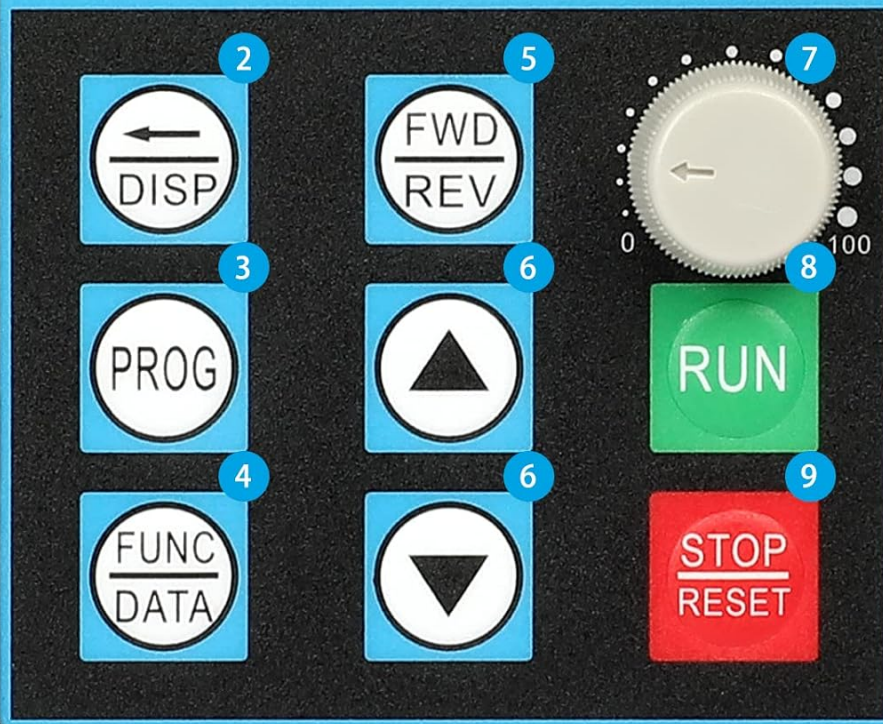
INVERTER

AT



F
H
A

RUN STOP FWD REV r/min



- 1 5 Digit Led Display
- 2 Shift Key
- 3 Enter or EXit Programming
- 4 Function / Save Key
- 5 Forward/Reverse
- 6 Numerical Modification Key
- 7 Speed Adjustment Knob
- 8 Start Key
- 9 Stop / Reset Key

Image: A clear wiring diagram illustrating the connection of a single-phase AC 220V input to the VFD (terminals L, N) and the three-phase AC output (terminals U, V, W) to a motor. A grounding terminal (GND) is also shown.

Connect the VFD according to the following diagram:

Terminal Label	Function Description
L, N	Single phase AC 220V (+/-15%) input terminal.
U, V, W	Output terminals to connect to a Delta-connection method three-phase AC motor.
GND	Grounding terminal. Ensure proper grounding for safety.

Important: You need to set the parameters of the VFD before connecting the motor. Otherwise, the settings may not be saved correctly.

External Terminal Wiring Diagram

External Terminal Wiring Diagram

NOTE: Before using the external terminal function, Adjust "P011=2"

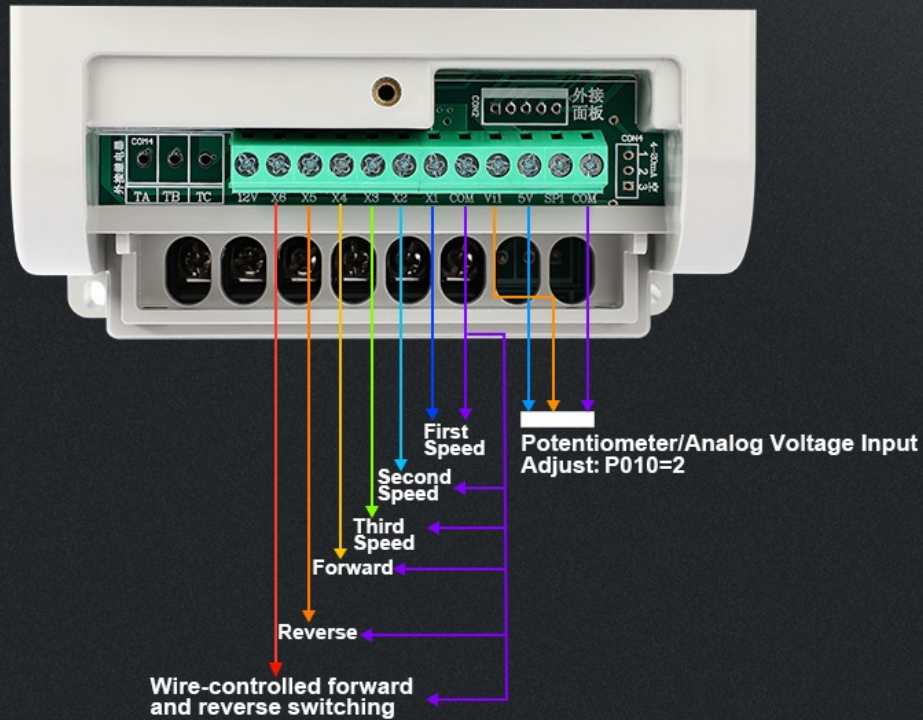


Image: An illustration of the external terminal block on the VFD, detailing connections for potentiometer/analog voltage input, and wire-controlled forward/reverse switching, along with multiple speed settings.

For external control, refer to the diagram above. Before using external terminal functions, adjust parameter P011 to '2'. For potentiometer/analog voltage input, adjust P010 to '2'.

OPERATION

Operating the VFD involves setting parameters and controlling the motor speed and direction.

Basic Operation and Control Panel Functions

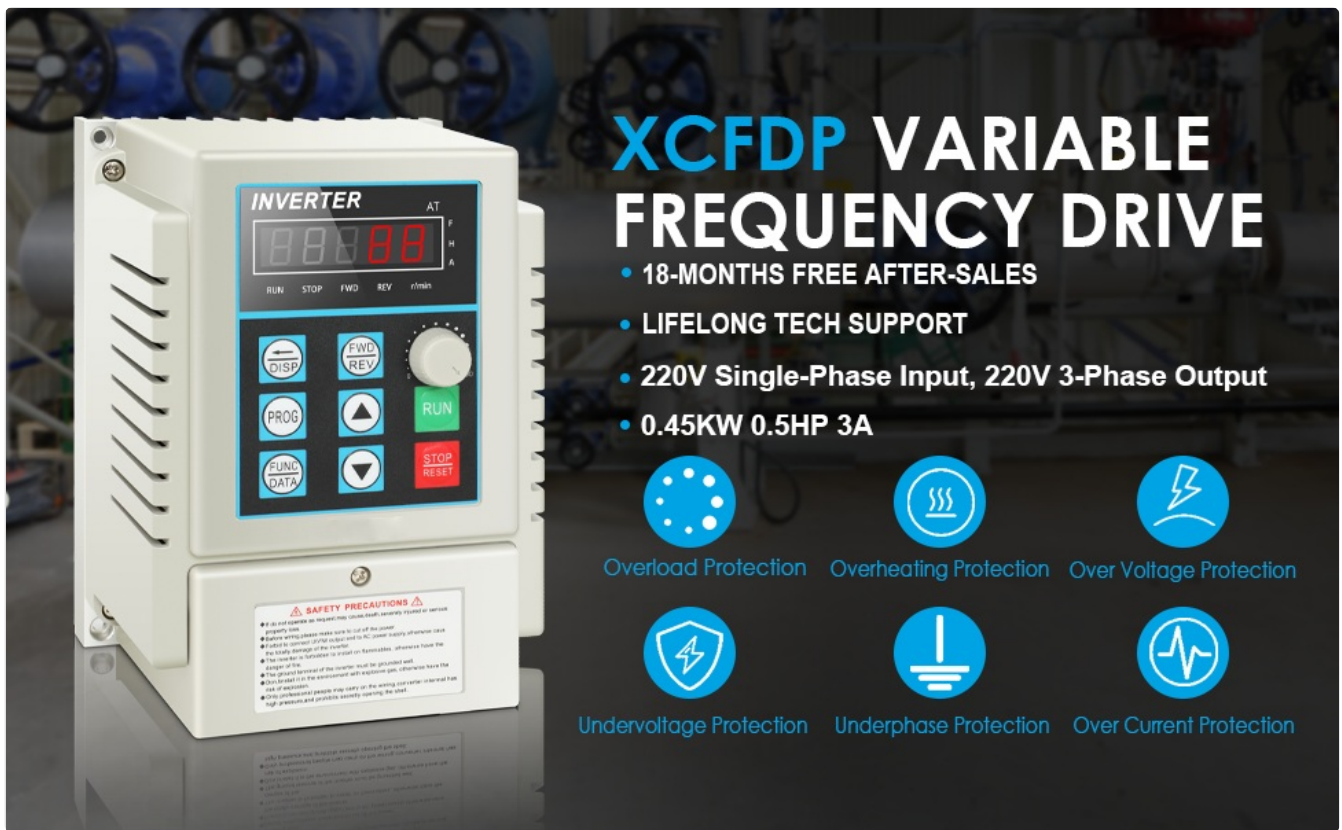


Image: The VFD control panel with labels and descriptions for each button and display element, including programming, function/save, shift, start, and stop/reset keys, along with the speed adjustment knob.

The VFD is designed for easy operation, adjustment, installation, and disassembly. Refer to the control panel section for button descriptions.

- **Starting the Motor:** Press the **RUN** key.
- **Stopping the Motor:** Press the **STOP/RESET** key.
- **Adjusting Speed:** Use the Speed Adjustment Knob or the Up/Down arrow keys to modify the output frequency.
- **Changing Direction:** Use the **FWD/REV** key.
- **Programming Parameters:** Press the **PROG** key to enter the programming mode. Use the Up/Down keys to navigate and the **FUNC DATA** key to select and save.

Note: Parameters must be set in the stop state; otherwise, changes may not be saved.

Application Reference

VFD QUICK SELECTION REFERENCE

SAME POWER TYPE--LIGHT LOAD MACHINE



Fan



Compressor



Water Pump



Sewage Treatment

1 To 2 TIMES THE POWER OF THE VFD--HIGH LOAD MACHINE



Injection Machine



Roots Blower



Crusher



Windlass



Ball Mill



Rolling Mill

Image: A quick selection reference guide for VFD applications, categorizing machines into "Light Load Machine" (e.g., fan, compressor, water pump, sewage treatment) and "High Load Machine" (e.g., injection machine, roots blower, crusher, windlass, ball mill, rolling mill), with recommendations for VFD power selection.

This VFD is suitable for 220V (+/-15%) three-phase AC motors. For light load machines, select a VFD with the same power rating as the motor. For high load machines, it is recommended to select a VFD with 1 to 2 times the power of the motor.

SPECIFICATIONS

Detailed technical specifications for the XCFDP AC 220V 0.45kW 0.5HP Variable Frequency Drive.

Specification	Value
Model Number	220V 0.45kw 0.6HP
Input Voltage	AC 220V (+/-15%) Single Phase
Output Voltage	AC 220V Three Phase
Power Rating	0.45kW (0.5HP)
Rated Current	3A
Product Dimensions (L x W x H)	4.57" x 3.98" x 6.38" (11.6cm x 10.1cm x 16.2cm)
Item Weight	2.27 pounds
Display Type	LCD or LED
Manufacturer	XCFDP

PRODUCT SIZE



Image: The VFD unit with its dimensions clearly labeled: 6.38 inches (16.2 cm) height, 3.98 inches (10.1 cm) width, and 4.57 inches (11.6 cm) depth.

MAINTENANCE

Regular maintenance helps ensure the longevity and optimal performance of your VFD.

- Keep the VFD clean and free from dust and debris. Use a soft, dry cloth for cleaning.
- Ensure ventilation openings are not obstructed to allow for proper heat dissipation.
- Periodically check all wiring connections for tightness and signs of wear or damage.
- Avoid exposing the VFD to excessive moisture or corrosive environments.

TROUBLESHOOTING

This section provides general guidance for common issues. For complex problems, contact technical support.

- **VFD not powering on:** Check input power connections and ensure the circuit breaker is on.
- **Motor not running:** Verify wiring to the motor, check VFD parameters, and ensure the RUN command is active.

- **Overload error:** Reduce motor load, check motor current, or verify VFD overload settings.
- **Overheating error:** Ensure proper ventilation, clean cooling fins, and check ambient temperature.
- **Parameter setting issues:** Ensure parameters are set while the VFD is in the stop state.

WARRANTY AND SUPPORT

XCFDP is committed to providing quality products and support.

- **Warranty:** This product includes an 18-month free after-sales warranty.
- **Technical Support:** Lifelong technical support is provided for this product.
- For further assistance, please refer to the contact information provided with your purchase or visit the official XCFDP website.

PRODUCT OVERVIEW VIDEO

Your browser does not support the video tag.

Video: An official product video from XCFDP providing an overview of the AC 220V 0.45kW 0.5HP Variable Frequency Drive, showcasing its features and design. This video is 20 seconds long.