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› Jadeshay AT1-2200X Variable Frequency Drive User Manual

Jadeshay AT1-2200X

Jadeshay AT1-2200X Variable Frequency Drive User Manual

Model: AT1-2200X

1. INTRODUCTION

This manual provides detailed instructions for the safe and efficient use of the Jadeshay AT1-2200X Variable Frequency Drive (VFD). This device is designed to convert single-phase AC 220V input into three-phase AC output, allowing for precise speed control of three-phase motors up to 2.2KW. Please read this manual thoroughly before installation and operation to ensure proper functionality and to prevent damage or injury.



Figure 1: Jadeshay AT1-2200X Variable Frequency Drive (VFD).

2. SAFETY PRECAUTIONS

WARNING: Improper installation or operation can lead to severe injury or equipment damage. Always follow these safety guidelines:

- Ensure power is disconnected before any wiring or maintenance.
- Do not connect U/V/W output terminals directly to AC power supply; this will cause damage.
- The inverter must be installed in a non-flammable environment, free from explosive gases, high temperatures, humidity, and dust.
- The ground terminal of the inverter must be properly grounded.
- Only qualified professionals should perform wiring and internal adjustments.
- Avoid touching internal components while the device is powered or recently powered, due to residual voltage.



Figure 2: Safety precautions label on the VFD unit.

3. PRODUCT OVERVIEW

3.1 Key Features

- **Comprehensive Protection:** Includes overcurrent, overvoltage, undervoltage, module failure, overheating, short circuit, input/output phase loss, abnormal motor parameter adjustment, and electronic thermal relay protection.
- **High Precision Control:** Unique control design offers excellent anti-tripping performance and adaptability to strong electrical interference, temperature, humidity, and dust.
- **User-Friendly Operation:** Simple wiring via screw terminals for quick setup.
- **Efficient Heat Dissipation:** Designed with a large heat sink and dual fans for reliable long-term operation.
- **Flexible Speed Regulation:** Optimised PWM control technology for high torque, high precision, and a wide speed regulation range.

3.2 Control Panel Buttons

The VFD features an intuitive control panel with a 5-digit LED display and various buttons for monitoring, programming, and operation.

Panel Control Buttons

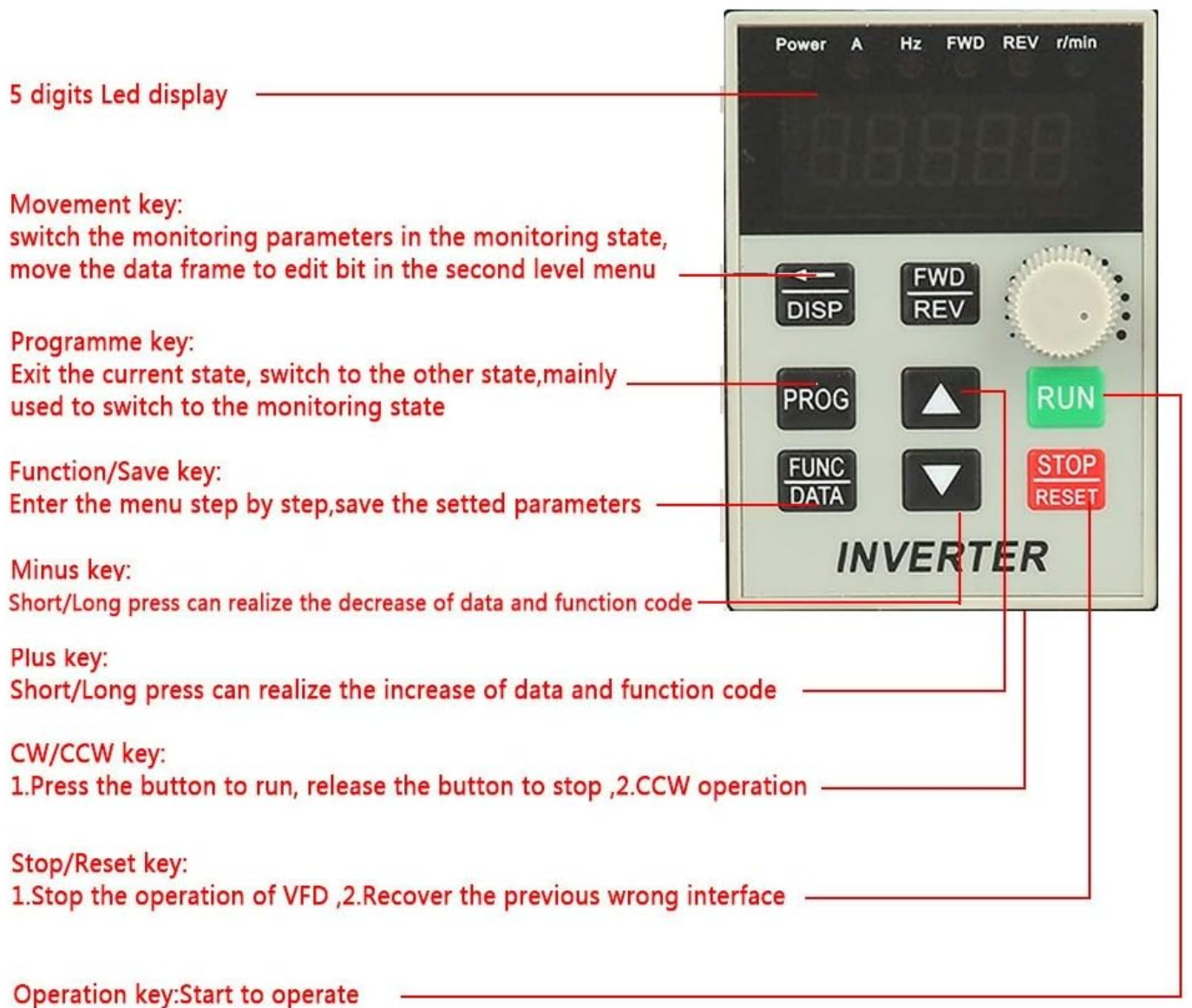


Figure 3: Control Panel Buttons and their functions.

- **DISP (Movement key):** Switches monitoring parameters; moves data frame to edit bit in the second-level menu.
- **PROG (Programme key):** Exits current state; switches to other states, mainly used to switch to monitoring state.
- **FUNC/DATA (Function/Save key):** Enters menu step-by-step; saves set parameters.
- **Up/Down Arrows (Plus/Minus keys):** Short/Long press to increase or decrease data and function codes.
- **FWD/REV (CW/CCW key):** Press to run (CW), release to stop. For CCW operation, refer to specific parameter settings.
- **RUN (Operation key):** Starts operation.
- **STOP/RESET (Stop/Reset key):** Stops VFD operation; recovers previous wrong interface.

4. SETUP

4.1 Physical Installation

The VFD should be mounted in a well-ventilated area, away from direct sunlight, moisture, and excessive dust. Ensure sufficient clearance around the unit for proper airflow, especially for the heat sink and cooling fans.

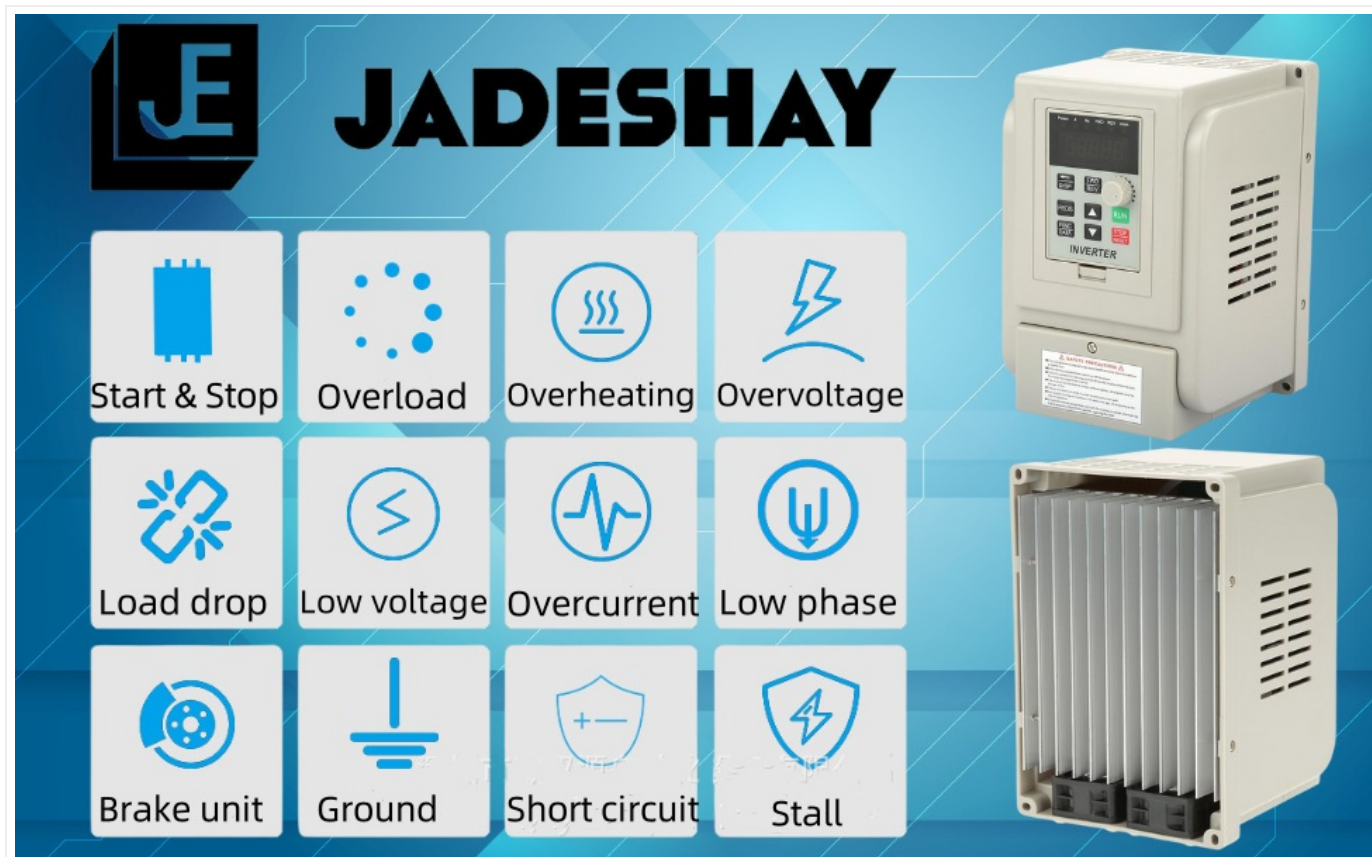


Figure 4: VFD dimensions (approx. 12.5L x 12.5W x 18H cm).



Figure 5: Side view illustrating the VFD's heat dissipation design.

4.2 Wiring Instructions

Refer to the wiring diagrams below for correct connection of the VFD to the power supply and the three-phase motor. Ensure all connections are secure and properly insulated.

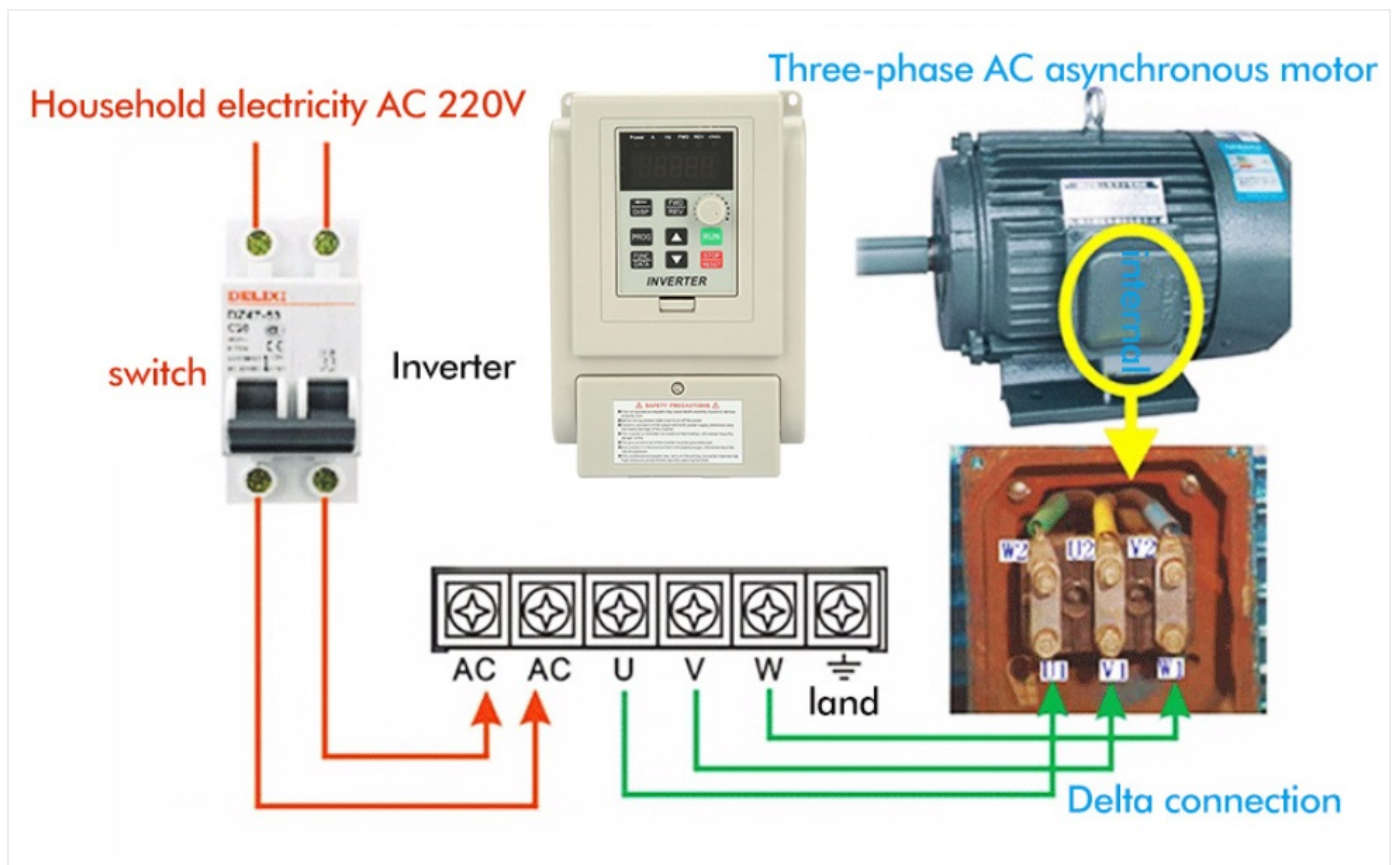


Figure 6: Basic wiring diagram for single-phase AC 220V input to a three-phase AC asynchronous motor using the VFD (Delta connection shown).



Figure 7: Detailed terminal functions and wiring examples from the official manual (Charter 1).

Terminal Definitions:

- **L, N:** Single-phase AC 220V input terminals.
- **U, V, W:** Three-phase AC 220V output terminals for motor.
- **GND:** Grounding terminal.
- **X1-X6:** Input terminals for control signals (e.g., CW/CCW, speed ranges).
- **COM:** Common terminal for control signals.
- **VI1:** External analog voltage input (0-5V/10V).
- **SP1, SP2:** Open collector outputs.
- **15V/24V:** Power supply output for control signals.

5. OPERATING INSTRUCTIONS

5.1 Basic Operation

After successful wiring, power on the VFD. The LED display will show the current frequency or other monitoring parameters.

1. **Start Motor:** Press the **RUN** button to start the motor.
2. **Adjust Frequency/Speed:** Use the rotary knob or the **Up/Down** arrow keys to adjust the output frequency, which controls the motor speed.
3. **Stop Motor:** Press the **STOP/RESET** button to stop the motor.
4. **Reverse Direction:** Use the **FWD/REV** button for forward/reverse operation, or configure parameters for external control.

Your browser does not support the video tag.

Video 1: Demonstration of VFD motor speed control using the control panel.

5.2 Parameter Settings

The VFD allows for extensive customization through its parameter settings. To access and modify parameters:

1. Press the **PROG** key to enter the programming state.
2. Use the **Up/Down** arrow keys to navigate through parameter codes (e.g., P001, P002).
3. Press **FUNC/DATA** to enter the selected parameter for editing.
4. Use the **Up/Down** arrow keys or the rotary knob to adjust the parameter value.
5. Press **FUNC/DATA** again to save the new value.
6. Press **PROG** to exit the programming state.

Important: The drive must be stopped before saving parameter changes.

Power A Hz FWD REV r/min

F 65.0

←
DISP

FWD
REV



PROG



RUN

FUNC
DATA



STOP
RESET

INVERTER



⚠ SAFETY PRECAUTIONS ⚠

- ◆ If do not operate as request, may cause death, severely injured or serious property loss.
- ◆ Before wiring, please make sure to cut off the power.
- ◆ Forbid to connect U/V/W output end to AC power supply, otherwise cause the totally damage of the inverter.
- ◆ The inverter is forbidden to install on flammables, otherwise have the danger of fire.
- ◆ The ground terminal of the inverter must be grounded well.
- ◆ Don't install it in the environment with explosive gas, otherwise have the risk of explosion.
- ◆ Only professional people may carry on the wiring, converter internal has high pressure, and prohibits secretly opening the shell.

6. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your Jadeshay VFD.

- **Cleaning:** Periodically clean the VFD's exterior and ventilation openings to prevent dust accumulation, which can hinder heat dissipation. Use a soft, dry cloth. Do not use liquid cleaners.
- **Inspection:** Regularly check wiring connections for tightness and signs of wear or damage. Inspect the cooling fans for proper operation and clear any obstructions.
- **Environment:** Ensure the operating environment remains within specified temperature and humidity ranges.
- **Professional Service:** For internal cleaning or complex repairs, contact qualified service personnel.

7. TROUBLESHOOTING

The VFD is equipped with various protection mechanisms that display error codes in case of a fault. Refer to the table below for common fault codes and their remedies.

Power A Hz FWD REV r/min

F 65.0

←
DISP

FWD
REV



PROG



RUN

FUNC
DATA



STOP
RESET

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Figure 9: Excerpt from the fault code display table (Chapter 4).

Common Fault Codes

Fault Code	Description	Possible Cause / Remedy
Err 1	Short Circuit Overload/Power Module Protection	Check motor and wiring for short circuits. Reduce load.
Err 2	Overvoltage protection	Check input voltage. Ensure proper braking resistor if applicable.
Err 3	Undervoltage protection	Check input voltage. Ensure stable power supply.
Err 4	Driving Circuit Failure	Contact technical support.
Err 5	Overcurrent protection	Reduce motor load. Check for motor jams.
Err 6	Overload protection	Reduce motor load. Check motor parameters.
Err 7	Excessive temperatures for radiator	Ensure proper ventilation. Clean heat sink and fans.

If the issue persists after attempting the suggested remedies, please contact customer support.

8. SPECIFICATIONS

Specification	Value
Brand	Jadeshay
Model Number	AT1-2200X
Rated Voltage	AC 220V (Single-phase input / Three-phase output)
Applicable Motor Power	2.2 KW
Rated Current	12 A
Maximum Output Frequency	400 Hz
Dimensions (L x W x H)	12.5 x 12.5 x 18 cm (approx.)
Weight	1283 Grams
Display Type	LED
Power Source	DC power supply (internal conversion from AC input)
Output Waveform	Pure Sine Wave (implied by VFD function)
Efficiency	90 to 95% (standby power)
Certifications	CE

9. WARRANTY AND SUPPORT

Information regarding specific warranty terms and conditions for the Jadeshay AT1-2200X Variable Frequency Drive is not available in this document. Please refer to your purchase documentation or contact the seller directly for warranty details. For technical support, troubleshooting assistance beyond the scope of this manual, or inquiries about spare parts, please contact Jadeshay customer service or your authorized distributor.

- **Availability of Spare Parts:** Information unavailable.
- **Software Updates:** Information unavailable.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page’s manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question