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Jadeshay NKBBBNYAE-02

Jadeshay Frequency Converter VFD Motor Speed Controller User Manual

Model: NKBBBNYAE-02

1. Introduction

This manual provides essential information for the safe and efficient operation of your Jadeshay Frequency Converter (VFD) Motor Speed Controller. Please read this manual thoroughly before installation, operation, or maintenance to ensure proper usage and prevent damage or injury.

2. Safety Information

WARNING: Risk of electrical shock. Read the user manual before operation. Wait 10 minutes after removing power before servicing.

- Ensure all wiring is performed by qualified personnel.
- Disconnect all power before making any connections or performing maintenance.
- Do not operate the device with wet hands or in wet conditions.
- Ensure proper grounding to prevent electrical shock.
- Do not open the enclosure unless specifically instructed to do so for maintenance.
- Verify input voltage matches the device specifications (Single Phase 220V).

3. Product Features

- **Motor Speed Control:** Adjusts motor power for variable speed operation, optimizing energy consumption.
- **Voltage Fluctuation Reduction:** Helps stabilize power line voltage.
- **Advanced Control Mode:** Enables high power, high torque, high precision, and wide-range speed regulation.
- **RS485 Communication Port:** For external communication and control.
- **Robust Performance:** Dual-layer board design (power board + motherboard) for enhanced stability.
- **User-Friendly Interface:** Simple parameter debugging and one-key adjustment for special models.
- **High-Definition Display:** Intuitive data display for voltage, current, and frequency.
- **Comprehensive Protection:** Includes Undervoltage, Overvoltage, Overcurrent, Overload, Short Circuit, Phase Loss, Overheating, Ground, and Stall Protection.



Image Description: This image displays nine distinct icons, each representing a safety protection feature of the Jadeshay VFD. These include Undervoltage Protection, Overvoltage Protection, Overcurrent Protection, Overload Protection, Short Circuit Protection, Phase Loss Protection, Overheating Protection, Ground Protection, and Stall Protection. These features ensure the safe and reliable operation of the motor and the inverter.



Image Description: This image shows the RS485 communication interface of the frequency converter. It highlights the terminal block with connections for GND, AVI, AO, X1, X2, X3, X4, X5, X6, X7, +10V, 485+, and 485-. This interface allows for external control and monitoring of the VFD, supporting 8-segment adjustable communication functions.

4. Specifications

Product information



Model:	JLS-E-4T-5.5G
Material:	Process flame retardant ABS plastic
Color:	White
Rated input voltage:	Single Phase 220V
Rated output Voltage:	Three-phase 220V Rated Power: 5.5KW
Output current:	25A
Factory frequency:	50Hz
Output frequency:	0~999Hz
Installation Method:	Wall-mounted, cabinet
The nature of DC Power supply:	Voltage Type
Control mode:	V/F closed loop
Output voltage regulation method:	PAM control

Image Description: This image presents a detailed product information table alongside a front view of the Jadeshay VFD. The table lists key specifications such as Model (JLS-E-4T-5.5G), Material (Process flame retardant ABS plastic), Color (White), Rated input voltage (Single Phase 220V), Rated output voltage (Three-phase 220V), Rated Power (5.5KW), Output current (25A), Factory frequency (50Hz), Output frequency (0-999Hz), Installation Method (Wall-mounted, cabinet), DC Power supply type (Voltage Type), Control mode (V/F closed loop), and Output voltage regulation method (PAM control).

Parameter	Value
Model	NKBBBNYAE-02 (JLS-E-4T-5.5G)
Material	Flame Retardant ABS Plastic
Color	White
Nominal Input Voltage	Single Phase 220V
Rated Output Voltage	Three-phase 220V
Rated Power	5.5KW
Output Current	25A

Factory Frequency	50Hz
Output Frequency Range	0-999Hz
Installation Method	Wall-mounted, Cabinet Mount
Cooling Method	Air cooling, with fan control
Protection Level	IP20
Product Dimensions (L x W x H)	32cm x 25cm x 17cm (Approx. 12.6" x 9.8" x 6.7")
Item Weight	2620 g (Approx. 5.78 lbs)



Image Description: This image provides dimensional views of the Jadeshay VFD. The front view shows a width of 125mm and a height of 220mm. The side view indicates a depth of 63mm. These measurements are crucial for planning installation space.

5. Setup and Installation (Wiring)

Proper wiring is critical for the safe and correct operation of the frequency converter. Refer to the diagrams below and ensure all connections are secure.

5.1. General Wiring Diagram

Wiring instructions

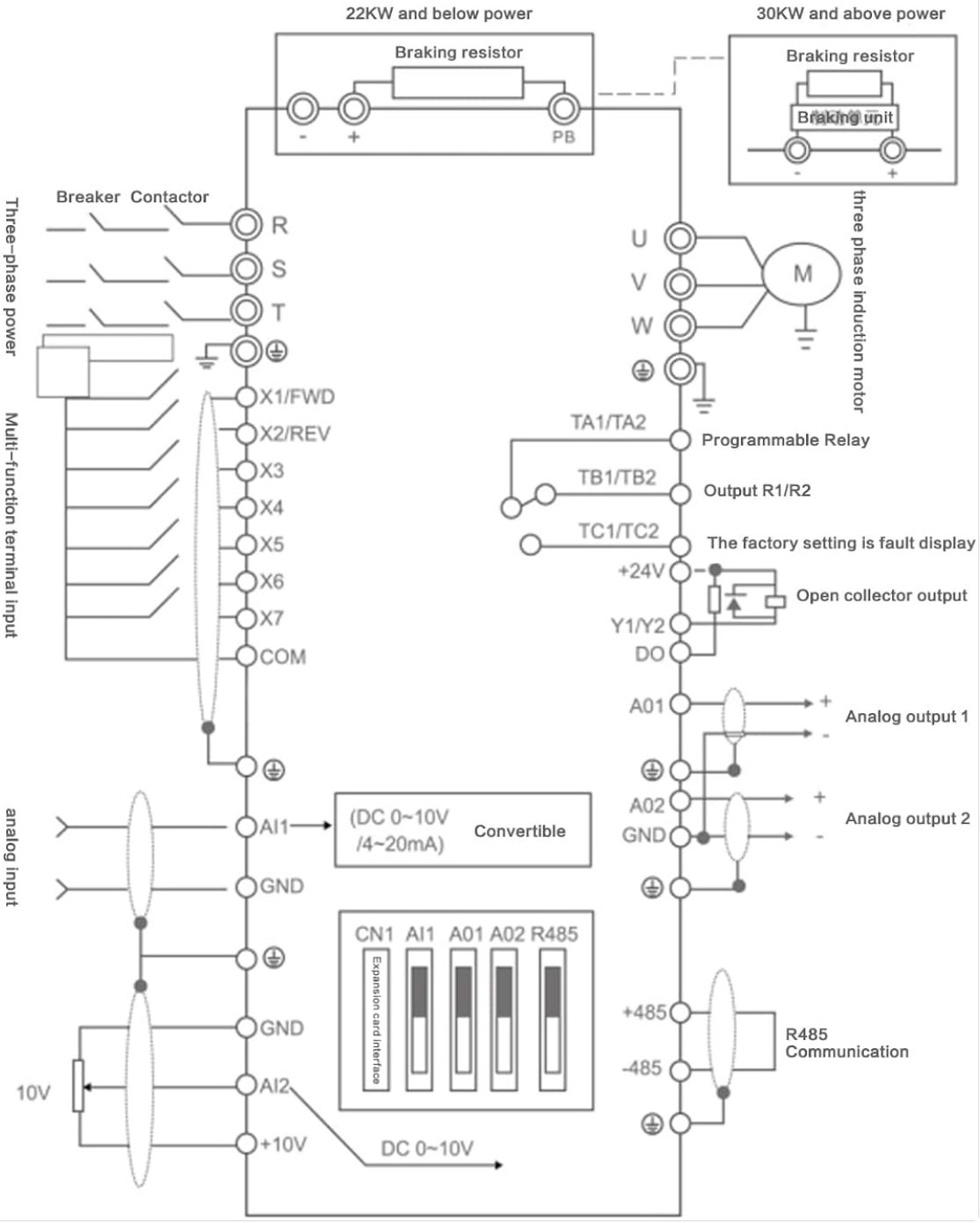


Image Description: This detailed wiring diagram illustrates the comprehensive connection points for the Jadeshay VFD. It shows connections for three-phase power input (R, S, T), multi-function terminal inputs (X1/FWD to X7, COM), analog inputs (AI1, AI2, GND, +10V), programmable relay outputs (TA1/TA2, TB1/TB2), open collector output (Y1/Y2, DO, +24V), analog outputs (AO1, AO2, GND), and RS485 communication (+485, -485). It also depicts connections for braking resistors for different power levels (22KW and below, 30KW and above) and the three-phase induction motor (U, V, W).

5.2. 220V Inverter Basic Wiring

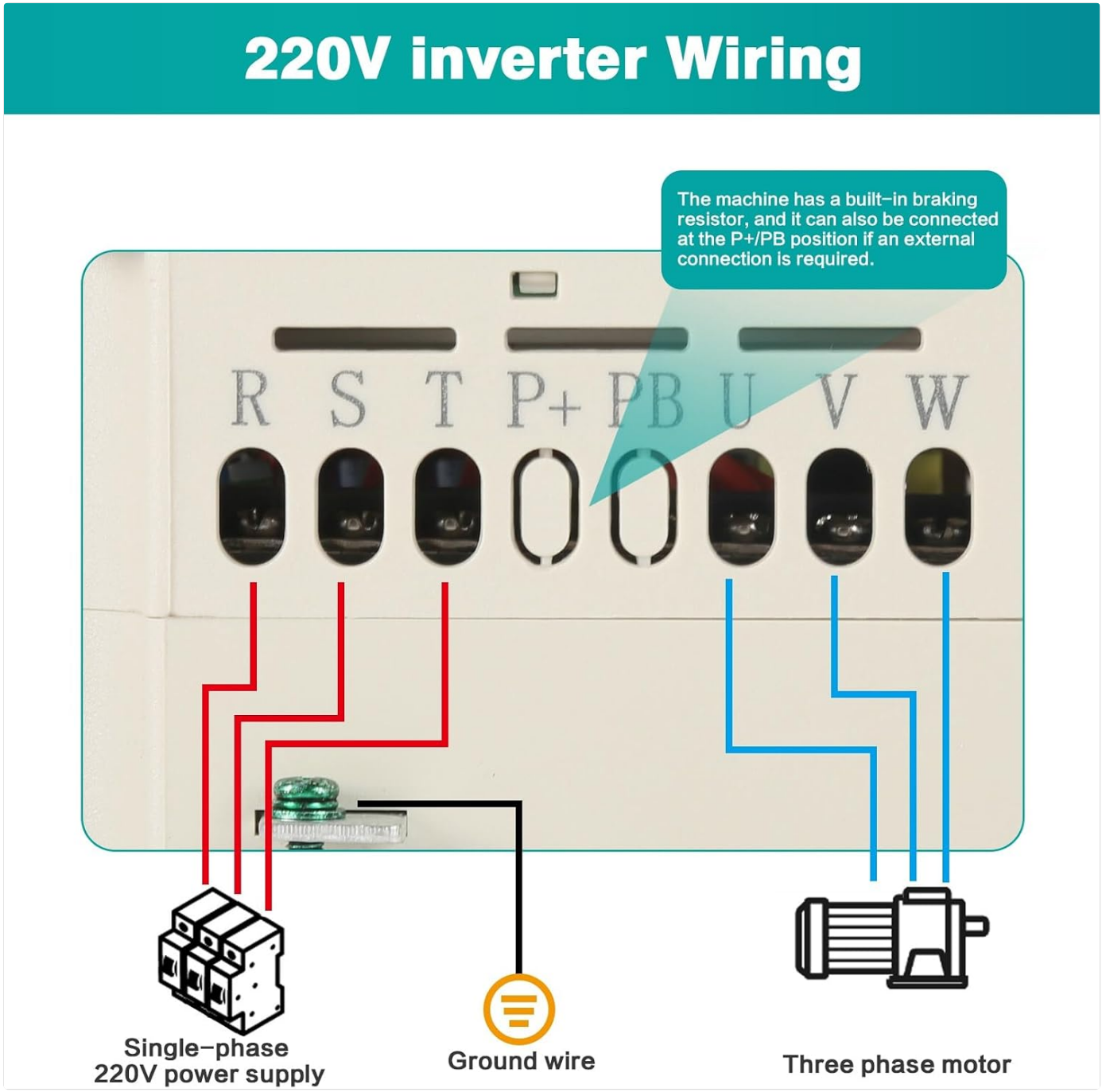


Image Description: This image provides a simplified wiring diagram for connecting the 220V inverter. It clearly shows the connections for a single-phase 220V power supply to terminals R and S, the ground wire to the ground terminal, and the three-phase motor to terminals U, V, and W. It also notes that the machine has a built-in braking resistor, and an external one can be connected at the P+/PB position if required.

Terminal Connections:

- **R, S:** Single-phase 220V AC power input.
- **Ground Symbol:** Connect to earth ground for safety.
- **U, V, W:** Three-phase output to the motor.
- **P+, PB:** Connections for an optional external braking resistor. The unit has a built-in braking resistor.

Important: Ensure correct phase sequence for motor rotation. If the motor rotates in the wrong direction, swap any two of the U, V, W output wires.

6. Operation

6.1. Control Panel Overview

Operation interface



Image Description: This image provides a detailed view of the Jadeshay VFD's operation interface. It labels key components: Status indication LEDs (RUN, DIR, TRIP, HZ), the digital display showing frequency (e.g., 50.0 Hz), Electric current (A) and Voltage (V) indicators, Multifunction key (MF), Menu key (PRG), Shift key, Up and Down selection keys, Run key, Speed knob, Enter key, Stop button, and Reset button. This panel allows for full control and monitoring of the inverter.

Key Functions:

- **Digital Display:** Shows current frequency (Hz), voltage (V), or current (A).
- **Status Indicators (LEDs):**
  - **RUN:** Indicates the inverter is running.
  - **DIR:** Indicates motor direction.
  - **TRIP:** Indicates a fault condition.
  - **HZ:** Indicates the display is showing frequency.
- **Speed Knob:** Used to adjust the output frequency/motor speed.
- **PRG (Menu):** Enters/exits the parameter setting menu.
- **MF (Multifunction Key):** Used for various functions depending on the context.
- **Up/Down Arrows:** Navigate through menus or adjust parameter values.
- **Shift Key:** Used to shift cursor position during parameter editing.
- **ENTER:** Confirms selections or parameter changes.
- **RUN:** Starts the motor.
- **STOP/RESET:** Stops the motor or resets fault conditions.

6.2. Adjusting Motor Speed



Image Description: This image highlights the ease of speed adjustment on the Jadeshay VFD. It features a large central knob with an arrow indicating rotation, symbolizing stepless speed regulation from 0 to 999Hz. Below, it shows the multi-function display (real-time voltage and current) and the button panel, emphasizing the intuitive control interface.

The motor speed can be adjusted steplessly from 0 to 999Hz using the speed knob on the control panel. Simply turn the knob clockwise to increase speed and counter-clockwise to decrease speed.

1. Ensure the inverter is powered on and wired correctly.
2. Press the **RUN** button to start the motor.
3. Rotate the **Speed Knob** to achieve the desired motor speed. The display will show the current output frequency.
4. To stop the motor, press the **STOP/RESET** button.

6.3. Parameter Settings

For advanced settings and specific motor tuning, refer to the detailed parameter list in the full product manual (if provided separately) or consult the manufacturer's support. Basic parameter adjustments can be made using the PRG (Menu) button and navigation keys.

7. Maintenance

Regular maintenance ensures the longevity and reliable operation of your frequency converter.

- **Cleaning:** Periodically clean the exterior of the unit with a soft, dry cloth. Ensure ventilation openings are free from dust and debris to maintain proper cooling. Do not use liquid cleaners.
- **Inspection:** Regularly inspect all wiring connections for tightness and signs of wear or damage.
- **Environment:** Ensure the operating environment is within specified temperature and humidity ranges. Avoid excessive dust, corrosive gases, or direct sunlight.
- **Fan Check:** Ensure the cooling fan is operating correctly and not obstructed.

Always disconnect power and wait at least 10 minutes before performing any maintenance or inspection to allow capacitors to discharge.

8. Troubleshooting

If you encounter issues, refer to the following basic troubleshooting steps. For complex problems, contact technical support.

Problem	Possible Cause	Solution
No power/Display off	No input power; Blown fuse; Loose connection.	Check power supply; Check fuses; Verify all input wiring.
Motor not running	Motor not connected; Incorrect wiring; Fault condition (TRIP LED on); Parameters not set correctly.	Check motor connections (U, V, W); Verify wiring; Press STOP/RESET to clear fault; Check motor parameters.
Motor runs in wrong direction	Incorrect motor phase sequence.	Swap any two of the U, V, W output wires to the motor.
TRIP LED is on	Overcurrent, Overvoltage, Undervoltage, Overload, Overheating, etc.	Identify fault code (if displayed); Check motor load; Check input voltage; Allow unit to cool; Press STOP/RESET to clear. Address underlying cause.
Inconsistent speed	Unstable input voltage; Motor load fluctuations; Incorrect PID settings.	Ensure stable power supply; Check motor and load; Adjust PID parameters if applicable.

9. Warranty and Support

For warranty information, please refer to the purchase documentation or contact your retailer. Jadeshay products are designed for reliability, but should you require technical assistance or support, please contact the seller or Jadeshay customer service through their official channels. When contacting support, please have your product model number (NKBBBNYAE-02) and purchase details ready.
For further assistance, you may visit the Jadeshay Store on Amazon.

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