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DEWIN IRAYIYEBQ-GS109481-02-dewzzq-02

DeWin Three-Phase Frequency Converter (VFD) Instruction Manual

Model: IRAYIYEBQ-GS109481-02-dewzzq-02
Brand: DEWIN

1. Product Overview

The DeWin Three-Phase Frequency Converter (VFD) is designed for precise motor speed control, offering stable and continuous pure sine wave output. It integrates advanced IPM and IGBT modules for enhanced efficiency, reduced heat generation, and reliable automatic protection. This device is equipped with a 485 communication port, ensuring strong load capacity and stable performance. Its user-friendly interface allows for easy parameter debugging and one-touch mode switching, with a high-definition display for intuitive data visualization.
This VFD is widely applicable in various industrial settings, including fans, water pumps, CNC machine tools, ball mills, injection molding machines, crushers, conveyor belts, and textile equipment.



Image 1.1: Front view of the DeWin 5.5kW Three-Phase Frequency Converter (VFD), showing the control panel and warning labels.

2. Safety Precautions

Before operating or servicing the DeWin Frequency Converter, it is imperative to read and understand this entire instruction manual. Failure to follow safety guidelines can result in serious injury or equipment damage.

- **Electrical Shock Hazard:** This device operates with high voltage. Always ensure power is disconnected before installation, maintenance, or troubleshooting.
- **Discharge Time:** After disconnecting power, wait at least 10 minutes before servicing the unit. Internal capacitors may retain a dangerous charge.
- **Proper Grounding:** Ensure the unit is properly grounded according to local electrical codes to prevent electrical shock.
- **Qualified Personnel:** Installation, wiring, and maintenance should only be performed by qualified and experienced personnel.
- **Environmental Conditions:** Do not expose the VFD to moisture, excessive dust, corrosive gases, or extreme temperatures outside its specified operating range.
- **Overload Protection:** Do not exceed the rated current or power of the VFD. Ensure connected motors are within the VFD's capacity.

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

3. Installation and Wiring

The DeWin VFD supports both wall-mounted and cabinet-mounted installations. Ensure adequate ventilation around the unit to facilitate air cooling.

3.1 Wiring Connections

Proper wiring is crucial for safe and effective operation. Refer to the wiring diagram below for correct connections. The VFD features a removable panel for easier access to screw terminals during wiring.

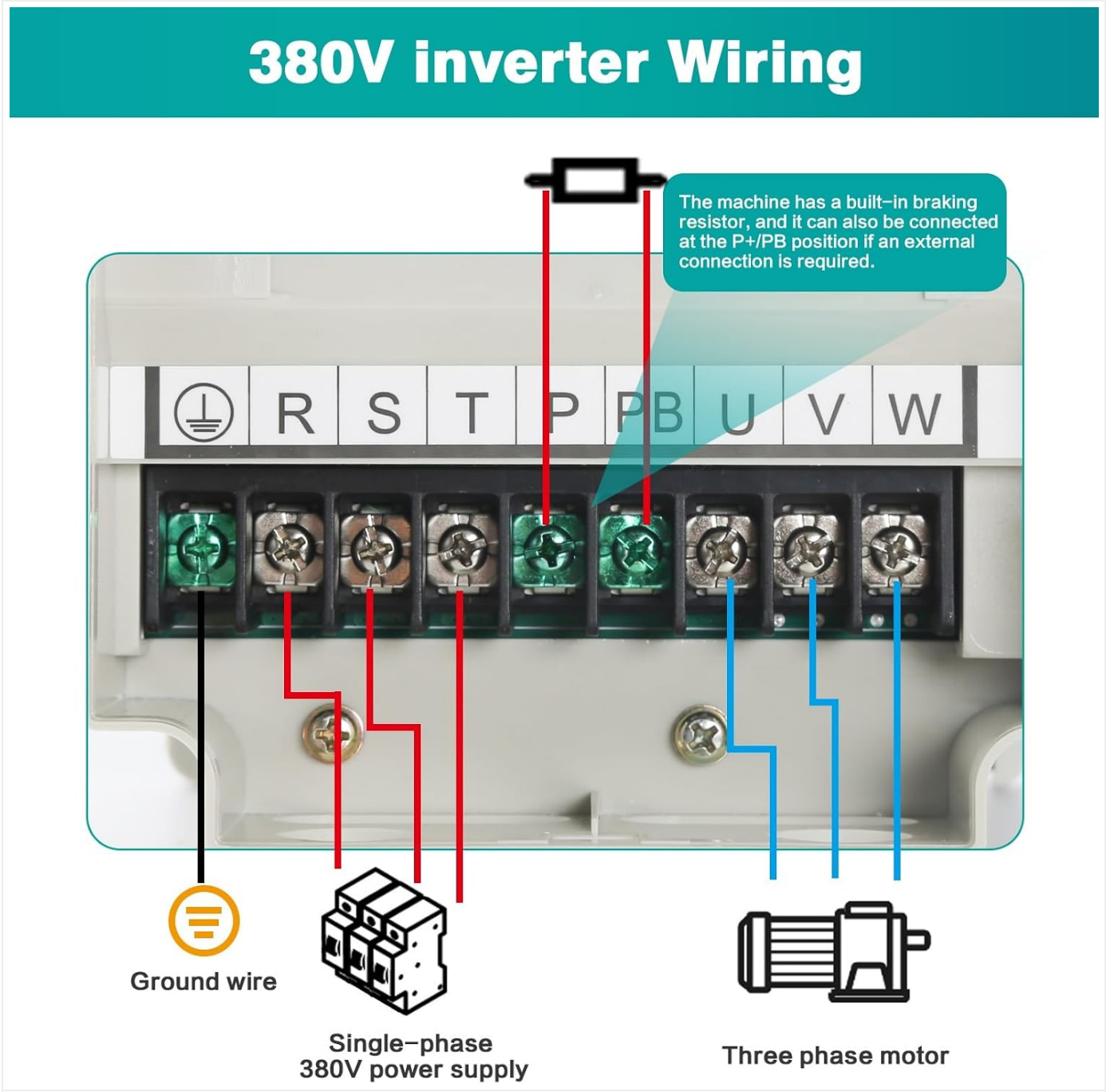


Image 3.1: Detailed wiring diagram for the 380V inverter, illustrating connections for ground, single-phase 380V power supply, and a three-phase motor. Note the P+/PB position for optional external braking resistor connection.



Image 3.2: The VFD with its control panel detached, demonstrating the removable panel feature for convenient wiring and operation access.

3.2 RS485 Communication

The VFD is equipped with an RS485 communication port, allowing for remote control and data exchange. This port supports 8 adjustable segments for flexible integration into control systems.



Image 3.3: Close-up view of the RS485 communication terminals, highlighting the connectivity options for external control and monitoring.

3.3 Comprehensive Wiring Diagram

For advanced connections and control signals, refer to the comprehensive wiring instructions diagram below. This diagram details connections for multi-function input terminals, analog voltage/current frequency commands, and output signals.



Image 3.4: Comprehensive wiring instructions, showing connections for phase induction motor, multi-function input terminals (Forward/stop, Reverse/stop, Abnormal regression, Multi-speed commands), signal common terminal, multi-function indication output contact, multifunctional photosynthetic outlet, analog voltage/current frequency command, and 485 communication.

4. Operation Guide

The DeWin VFD features an intuitive operation interface designed for ease of use and precise control over motor speed.

4.1 Control Panel Overview

The control panel consists of a high-definition display and various buttons and a knob for setting parameters and controlling operation.



Image 4.1: Detailed view of the operation interface, labeling key components such as Status indication (RUN, DIR, TRIP, HZ), Electric current (A), Voltage (V), Multifunction key, Menu (PRG, MF), Speed knob, Shift key, Up and down selection keys, Enter, Run key, Stop button, and Reset button.

4.2 Speed Adjustment

Adjusting the motor speed is simple and precise with the integrated speed knob. The VFD offers 0-999Hz stepless speed regulation, providing versatile control for most motors.



Image 4.2: Illustration of the speed adjustment knob, emphasizing its role in providing 0-999Hz stepless speed regulation, suitable for a wide range of motors.

5. Maintenance

Regular maintenance ensures the longevity and optimal performance of your DeWin Frequency Converter. Always disconnect power and wait 10 minutes before performing any maintenance.

- **Cleaning:** Periodically clean the exterior of the VFD with a soft, dry cloth. Ensure ventilation openings are free from dust and debris. Do not use liquid cleaners.
- **Fan Inspection:** Check the cooling fan for proper operation and ensure it is free from obstructions. A malfunctioning fan can lead to overheating.
- **Terminal Connections:** Periodically inspect all wiring connections to ensure they are secure and free from corrosion. Loose connections can cause intermittent operation or damage.
- **Environmental Check:** Verify that the operating environment remains within the specified temperature and humidity ranges.

6. Troubleshooting

The DeWin VFD is equipped with multiple protection functions to ensure safe operation. If an error occurs, the display may show a fault code. Refer to the full user manual for a complete list of error codes and their remedies.

6.1 Common Protection Functions

- **Overvoltage Protection:** Activates if the input voltage exceeds safe limits.
- **Undervoltage Protection:** Activates if the input voltage drops below safe limits.
- **Overcurrent Protection:** Activates if the output current to the motor exceeds its rated value.
- **Overload Protection:** Protects the motor and VFD from sustained excessive load.
- **Overheat Protection:** Activates if the internal temperature of the VFD becomes too high.
- **Power Module Protection:** Safeguards the internal power modules (IPM/IGBT) from damage.
- **Grounding Protection:** Detects and protects against grounding faults.
- **Short-Circuit Protection:** Protects against short circuits in the output wiring.
- **Stall Protection:** Prevents motor damage due to stalling conditions.

If a fault occurs, first identify the error code displayed. Then, consult the detailed troubleshooting section in the comprehensive user manual for specific steps to resolve the issue. Ensure all power is disconnected before inspecting any wiring or internal components.

7. Technical Specifications

Feature	Specification
Brand	DEWIN
Model Number	IRAYIYEBQ-GS109481-02-dewzzq-02
Material	Flame-retardant ABS plastic
Color	White
Rated Input Voltage	Three-phase 380V
Rated Output Voltage	Three-phase 380V
Rated Power	5.5kW
Output Current (5.5kW)	13A
Factory Frequency	50Hz
Output Frequency Range	0-999Hz
Installation Method	Wall-mounted, Cabinet-mounted
Dimensions (L x W x H)	32 x 25 x 17 cm (approx.)
Item Weight	2.62 Kilograms
Cooling Method	Air-cooled, with fan control
Protection Class	IP20
V/F Level	Adjustable

8. Warranty and Support

For detailed information regarding the product warranty, including terms, conditions, and duration, please refer to the warranty card included with your purchase or contact DEWIN customer support directly. Keep your proof of purchase for warranty claims. If you encounter any issues not covered in this manual or require technical assistance, please contact DEWIN customer service through the official channels provided at the time of purchase or on the manufacturer's website. Provide your model number and a detailed description of the issue for efficient support.

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