DEWIN KDMFBZDBB-GS110208-03

DEWIN 380V 1.5kW Single-Phase Input Three-Phase Output VFD Inverter User Manual

Model: KDMFBZDBB-GS110208-03

1. Introduction

This manual provides essential information for the safe and efficient operation of your DEWIN 380V 1.5kW Variable Frequency Drive (VFD) inverter. This industrial-grade inverter is designed for precise motor speed control in various applications, including fans, pumps, compressors, conveyors, and grinding machines. Please read this manual thoroughly before installation, operation, or maintenance to ensure proper usage and prevent damage or injury.



Figure 1: Front view of the DEWIN 380V 1.5kW VFD Inverter, showing the display panel and control buttons.

2. Safety Information

Always observe the following safety precautions to prevent electric shock, fire, or personal injury:

- Ensure the power supply is disconnected before any wiring or maintenance.
- Wait at least 10 minutes after removing power before servicing to allow capacitors to discharge.
- Do not connect AC power to the output terminals (U/T1, V/T2, W/T3).
- Installation and wiring must be performed by qualified personnel only.
- Ensure proper grounding to prevent electric shock.
- Do not operate the inverter with damaged cables or if the casing is open.
- Keep the inverter away from water, direct sunlight, and corrosive environments.

3. Product Overview

3.1 Components and Controls

The VFD inverter features a clear display and intuitive control buttons for easy operation.



Figure 2: Detailed view of the inverter's control panel, indicating the status display area, numeric up key, frequency setting knob, value down key, run key, stop/reset button, and parameter data setting button.

- **Status Display Area:** Shows current frequency, voltage, current, and other operational parameters.
- **Numeric Up Key (▲):** Used to increase numerical values or navigate menus.
- **Frequency Setting Knob:** Adjusts the output frequency.
- **Value Down Key (▼):** Used to decrease numerical values or navigate menus.
- **PRG (Program) Button:** Enters or exits parameter setting mode.
- **ENTER Button:** Confirms selections or enters sub-menus.
- **RUN Button:** Starts motor operation.
- **STOP/RST (Stop/Reset) Button:** Stops motor operation or resets fault alarms.

4. Setup

4.1 Mounting

The inverter is designed for wall-mounted installation. Ensure the mounting surface is stable and allows for adequate ventilation around the unit. Maintain sufficient clearance for cooling air circulation.

4.2 Wiring Instructions

Proper wiring is crucial for safe and correct operation. Refer to the diagrams below for connecting the power supply and motor.

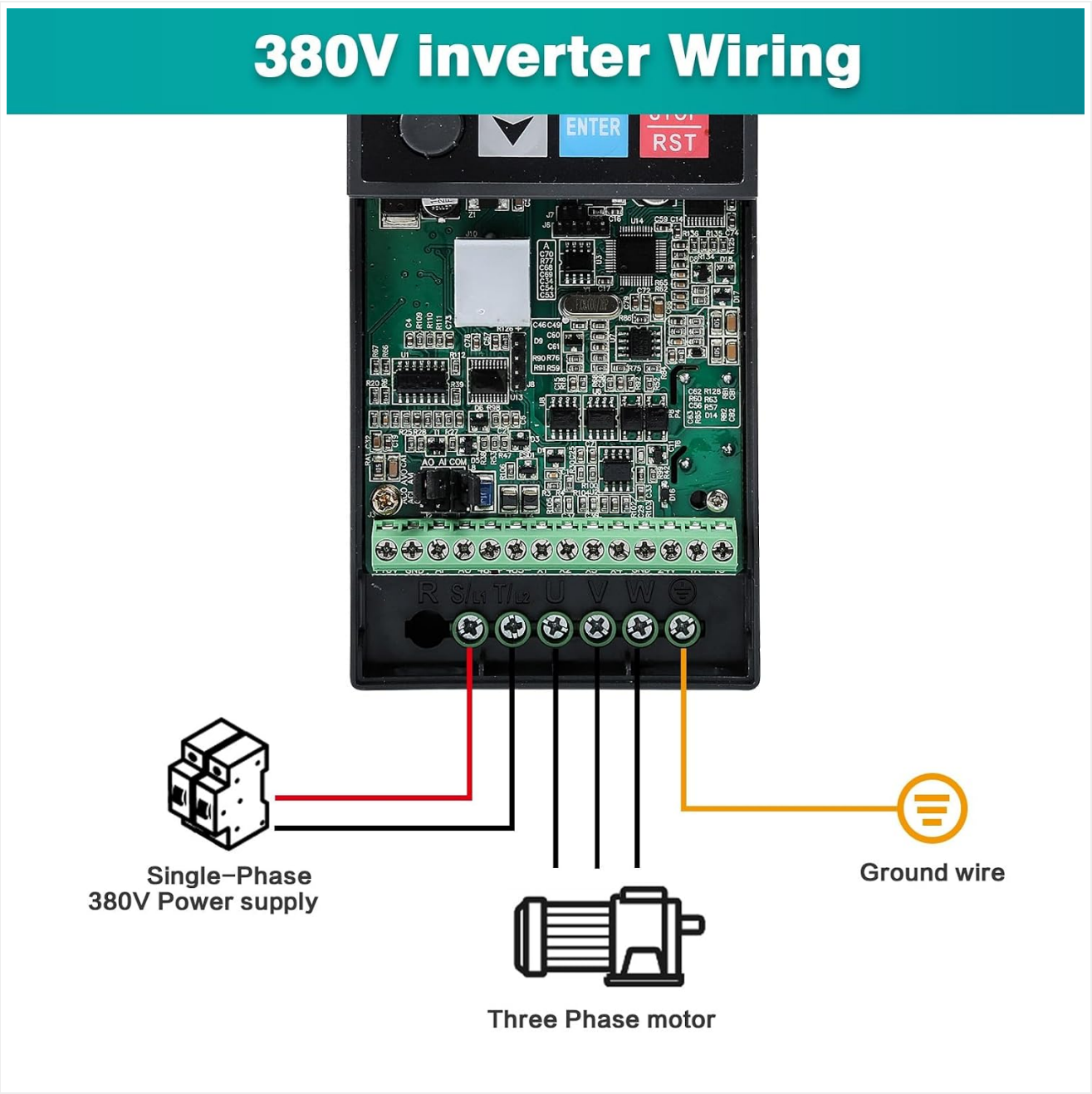


Figure 3: Basic wiring diagram for the 380V inverter, showing connections for a single-phase 380V power supply, ground wire, and a three-phase motor.

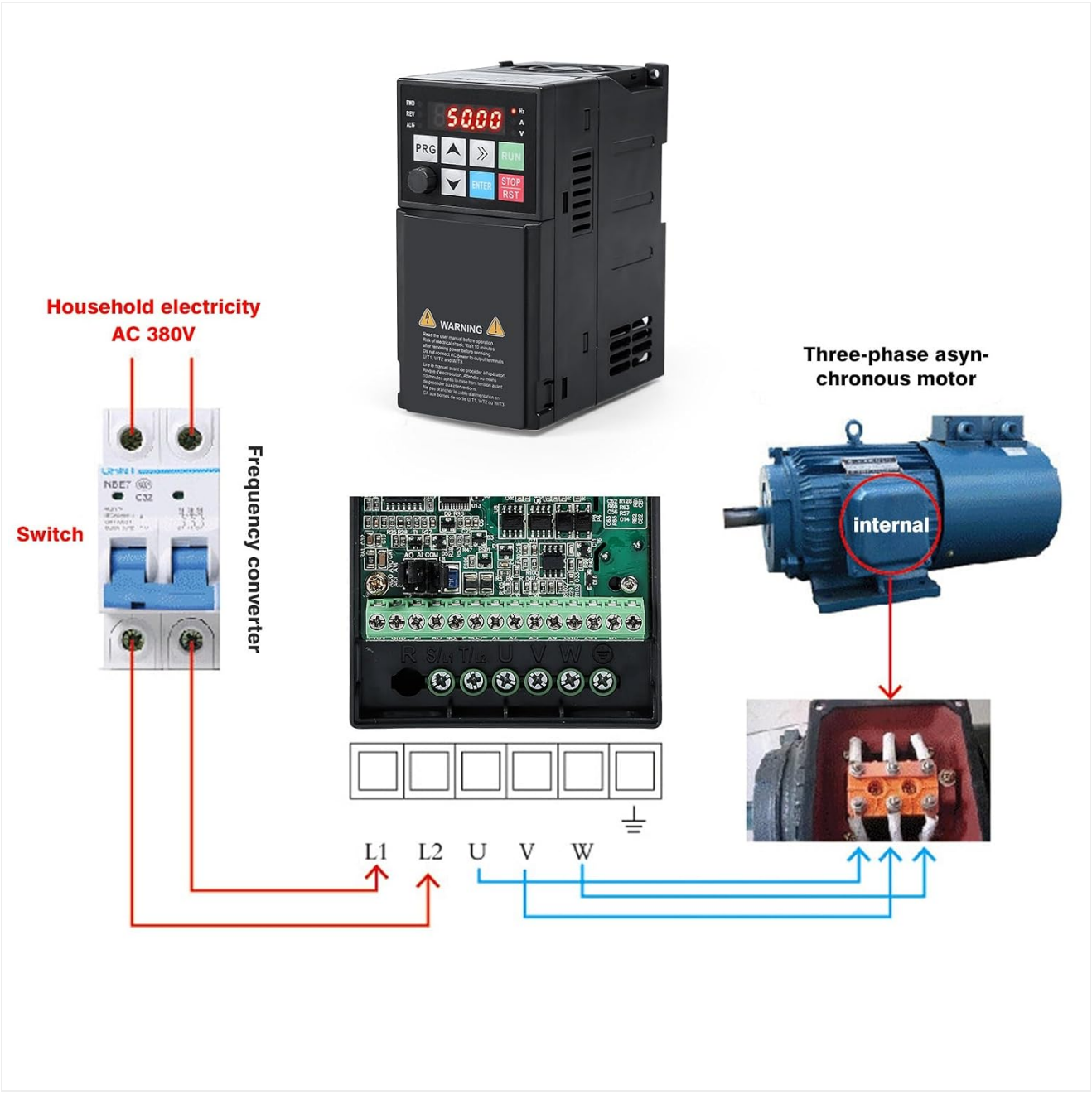


Figure 4: Detailed wiring diagram illustrating the connection from a household AC 380V supply via a switch to the frequency converter (inverter), and then to a three-phase asynchronous motor. Input terminals are L1, L2, and output terminals are U, V, W.

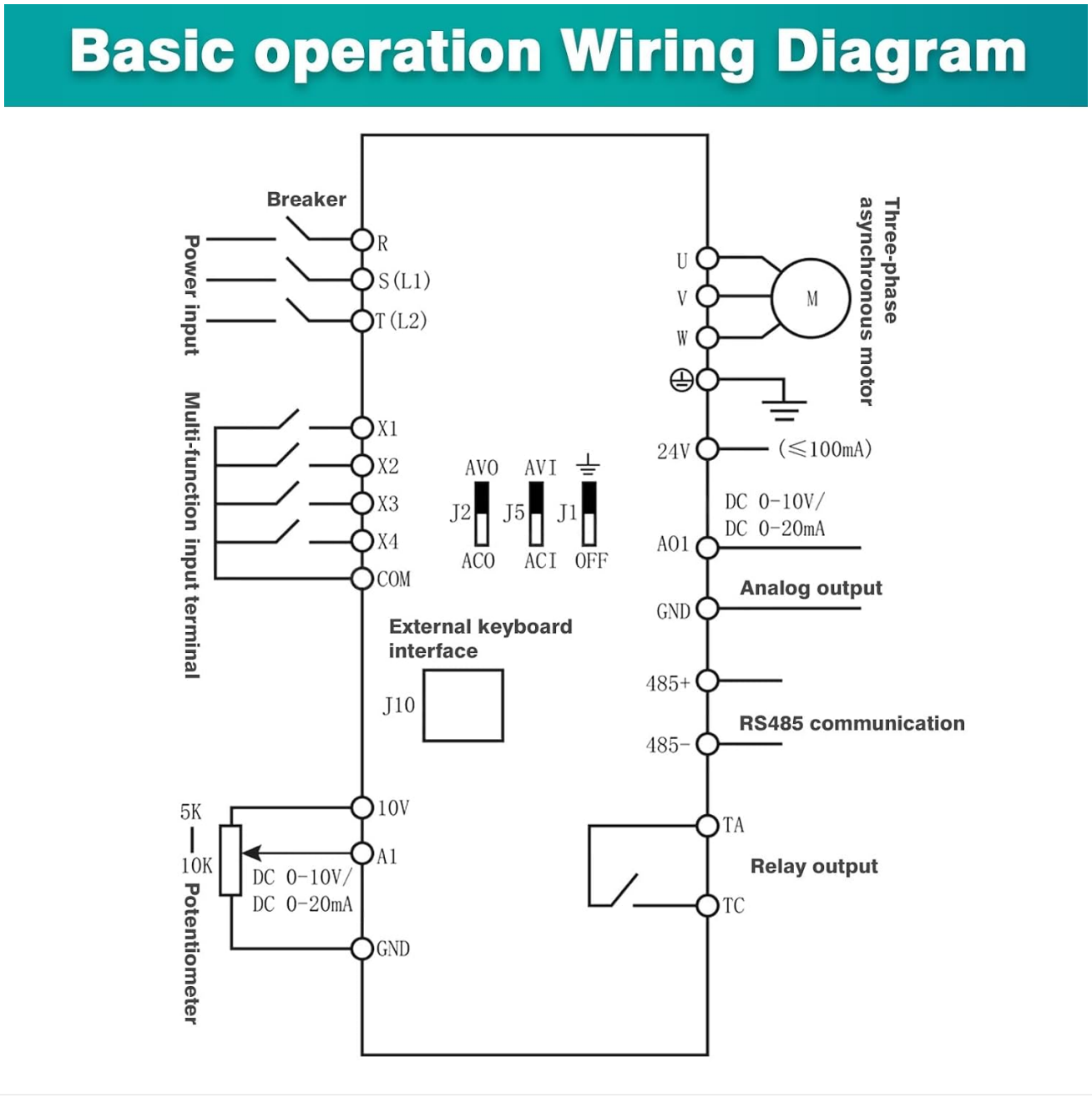


Figure 5: Comprehensive wiring schematic for basic operation, including power input (R, S(L1), T(L2)), multi-function input terminals (X1-X4, COM), external keyboard interface (J10), analog output (AO1, GND), RS485 communication (485+, 485-), relay output (TA, TC), and potentiometer connections (10V, A1, GND).

1. Connect the single-phase 380V AC power supply to the input terminals (L1, L2).
2. Connect the three-phase motor to the output terminals (U, V, W).
3. Ensure the ground wire is securely connected to the designated ground terminal.
4. For external control, connect multi-function input terminals (X1-X4) and potentiometer as per your application requirements, referring to Figure 5.
5. Double-check all connections for tightness and correctness before applying power.

5. Operating Instructions

5.1 Initial Power-Up

1. After completing all wiring, apply power to the inverter.
2. The display will light up, showing the default frequency or last set value.

5.2 Setting Parameters

To adjust operational parameters:

1. Press the **PRG** button to enter parameter setting mode.
2. Use the **Numeric Up (▲)** and **Value Down (▼)** keys to navigate through parameters.
3. Press **ENTER** to select a parameter for editing.
4. Use the **Numeric Up (▲)** and **Value Down (▼)** keys or the **Frequency Setting Knob** to change the value.
5. Press **ENTER** again to save the new value.
6. Press **PRG** to exit parameter setting mode.

5.3 Starting and Stopping the Motor

- To start the motor, press the **RUN** button. The display will show the operating frequency.
- To stop the motor, press the **STOP/RST** button.

5.4 Key Features

- **Current Limiting:** The inverter features rapid current limiting to prevent frequent overcurrent alarms. When current exceeds the protection point, it quickly limits the current to protect equipment and avoid alarms caused by sudden loads or interference.
- **Multiple Control Algorithms:** Supports VF control for asynchronous motors, open-loop current vector control, standard open-loop permanent magnet synchronous motor control, and open-loop vector control. Provides 150% starting torque at 0.5Hz (sensorless V/F control).
- **Torque Limitation:** Limits the rotation path to the maximum set path if the trajectory command exceeds the machine's maximum rotational resistance, ensuring equipment safety.

6. Maintenance

Regular maintenance ensures the longevity and reliable operation of your VFD inverter.

- **Cleaning:** Periodically clean the inverter's exterior and cooling fan vents to prevent dust accumulation, which can hinder heat dissipation. Use a soft, dry cloth. Do not use liquid cleaners.
- **Inspection:** Regularly inspect wiring connections for tightness and signs of wear or damage. Check for any unusual noises or odors during operation.
- **Cooling Fan:** The inverter features independent cooling air channels and a high-speed fan for efficient heat dissipation. Ensure these channels are unobstructed.
- **Storage:** If storing the inverter, keep it in a dry, dust-free environment within the specified temperature range.

7. Troubleshooting

This section addresses common issues you might encounter. For problems not listed here, contact technical support.

Problem	Possible Cause	Solution
Motor does not start	No power, incorrect wiring, parameter settings, or fault alarm.	Check power supply, verify wiring, review parameter settings, and clear any fault alarms using the STOP/RST button.

Problem	Possible Cause	Solution
Overcurrent alarm	Motor overload, short circuit, or rapid acceleration.	Reduce motor load, check motor and wiring for short circuits, adjust acceleration time in parameters.
Overvoltage alarm	Input voltage too high, or rapid deceleration.	Verify input voltage is within specifications, increase deceleration time in parameters.
Undervoltage alarm	Input voltage too low.	Check input power supply voltage.
Overheat alarm	Insufficient ventilation, high ambient temperature, or blocked cooling fan.	Ensure proper ventilation, clean fan and heatsink, reduce ambient temperature if possible.

8. Specifications

The following table details the technical specifications of the DEWIN 380V 1.5kW VFD Inverter.



Material: Flame retardant ABS plastic	Applicable motor: 1.5KW
Input rated voltage: single phase 380V	Output frequency: low frequency mode: 0~320Hz
Input rated frequency: 50/60Hz	Installation method: wall-mounted
Output rated voltage: three-phase 380V	Protection level: IP20
Rated output current: 3.7A	Cooling method: cooling fan

Figure 6: Image displaying the dimensions of the inverter (140mm height, 70mm width, 115mm depth) and a table of key specifications.

Parameter	Value
Material	Flame retardant ABS plastic
Input Rated Voltage	Single-phase 380V
Input Rated Frequency	50/60 Hz
Input Rated Current	5.0 A
Output Rated Voltage	Three-phase 380V
Output Rated Current	3.7 A
Output Frequency (Low Frequency Mode)	0 ~ 320 Hz
Applicable Motor Power	1.5 kW
Installation Method	Wall-mounted
Protection Level	IP20
Cooling Method	Cooling fan
Dimensions (L x W x H)	11.5 x 7.3 x 14.2 cm (approx. 3 x 2 x 1 cm in product data, using image data for clarity)
Weight	840 Grams
Model Number	KDMFBZDBB-GS110208-03

9. Warranty and Support

For warranty information and technical support, please refer to the documentation provided with your purchase or contact DEWIN customer service. Information regarding spare parts availability is not provided in the product details.