**DEWIN QYABERYYQ-GS110208-04**

# DEWIN Three-Phase Frequency Inverter Instruction Manual

Model: MS500-4T-2.2G (QYABERYYQ-GS110208-04)

## 1. Introduction

This manual provides essential information for the safe and efficient operation of your DEWIN Three-Phase Frequency Inverter, model MS500-4T-2.2G. This device is designed to control the speed of three-phase AC motors by varying the frequency and voltage of the power supplied to the motor. Please read this manual thoroughly before installation, operation, or maintenance to ensure proper use and to prevent damage or injury.




Image: DEWIN Variable Frequency Drive highlighting its core benefits: Motor Protection, Energy Saving, Frequency Control, and Strong Security.

## 2. Safety Information

Always observe the following safety precautions to prevent electric shock, injury, or damage to the equipment.

- **Read the user manual before operation.**
- **Risk of electrical shock.** Always ensure power is disconnected before performing any work on the inverter.
- **Wait 10 minutes after removing power before servicing.** Residual voltage may be present.
- **Do not connect AC power to output terminals U/T1, V/T2, and W/T3.** These terminals are for motor connection only.
- Ensure proper grounding of the inverter.
- Only qualified personnel should install, operate, and maintain this equipment.




Image: Front view of the DEWIN Frequency Inverter, clearly displaying the critical safety warning label regarding electrical shock and terminal connections.

## 3. Product Features

The DEWIN Frequency Inverter incorporates advanced features for reliable and efficient motor control:

- **Multiple Control Algorithms:** Supports VF control for asynchronous motors, current vector open-loop control, standard open-loop control for permanent magnet synchronous motors, and open-loop vector control. Achieves 150% starting torque at 0.5 Hz (sensorless vector control) for high torque, high precision, and wide speed adjustment range.
- **Torque Limit Protection:** Limits torque to a set maximum to protect machinery when the command torque exceeds the equipment's capacity, ensuring maximum efficiency while safeguarding the system.
- **High-Quality Double-Layer Board:** Features a high-configuration power board and main board for high-speed processing.

Designed with large buttons for simple operation and real-time data display on a clear digital screen. The panel is detachable for easy installation and wiring via screw terminals.

- **Fast Current Limiting Function:** Prevents frequent overcurrent alarms by quickly limiting current within the protection point when it exceeds the set limit, protecting equipment from sudden load changes or interference.
- **Efficient Cooling System:** Equipped with a high-speed fan and an independent heat dissipation duct, significantly reducing heat and noise. This ensures stable, long-term operation of the equipment. Constructed from flame-retardant ABS plastic for high impact and heat resistance, enhancing safety and reliability.




Image: Rear view of the DEWIN Frequency Inverter, highlighting the integrated cooling fan and the product label with model (MS500-4T-2.2G), power (2.2KW), input/output specifications, and serial number JLS0022B43GB24030106.

## 4. Setup and Installation

The DEWIN Frequency Inverter is designed for wall-mounted installation. Ensure the installation location is dry, well-ventilated, and free from excessive dust or corrosive gases. Allow sufficient space around the unit for proper heat dissipation.

## 4.1. Dimensions

Refer to the diagram below for the physical dimensions of the inverter to ensure adequate mounting space.




| | |
|---|---|
| Material: Flame retardant ABS plastic | Applicable motor: 2.2KW |
| Input rated voltage: three-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: 5.5A | Cooling method: cooling fan |

Image: Diagram illustrating the dimensions of the DEWIN Frequency Inverter: 140mm height, 70mm width (front), 115mm depth, and 35mm width (side).

## 4.2. Wiring

Connect the three-phase 380V AC input power to the designated input terminals. Connect the motor to the output terminals U/T1, V/T2, and W/T3. Ensure all connections are secure and follow local electrical codes. Refer to the product label for specific input/output specifications.

# 5. Operating Instructions

The inverter features a user-friendly control panel for setting parameters and controlling motor operation.




Image: Detailed diagram of the DEWIN Frequency Inverter's control panel, labeling the Status display area, Numeric up key, Frequency setting knob, Value down key, Run key, Stop/reset button, and Parameter data Setting button.

## 5.1. Control Panel Overview

- **Status Display Area:** Shows current operating parameters such as frequency, voltage, and current.
- **PRG (Program) Button:** Used to enter parameter setting mode.
- **Up/Down Keys (Numeric Up/Value Down):** Adjust parameter values or navigate menus.
- **ENTER Button:** Confirms selections or parameter changes.
- **RUN Button:** Starts motor operation.
- **STOP/RST (Reset) Button:** Stops motor operation or clears fault alarms.
- **Frequency Setting Knob:** Adjusts the output frequency directly.

## 5.2. Basic Operation

1. **Power On:** Ensure all wiring is correct and secure. Apply three-phase 380V power to the inverter. The display will light up.

2. **Set Frequency:** Use the Frequency Setting Knob to adjust the desired output frequency. Alternatively, use the PRG button to enter parameter mode and set frequency parameters using the Up/Down keys and ENTER.
3. **Start Motor:** Press the **RUN** button. The motor will start accelerating to the set frequency.
4. **Stop Motor:** Press the **STOP/RST** button. The motor will decelerate and stop.
5. **Reset Faults:** If a fault occurs, the display will show an error code. After addressing the cause, press the **STOP/RST** button to clear the alarm.

## 6. Maintenance

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

- **Cleaning:** Periodically clean the exterior of the inverter and ensure the cooling fan and heat dissipation ducts are free from dust and debris. A blocked fan or duct can lead to overheating and reduced performance.
- **Connections:** Regularly check all wiring connections for tightness and signs of corrosion. Loose connections can cause intermittent operation or damage.
- **Environmental Check:** Ensure the operating environment remains within specified temperature and humidity ranges. Avoid exposure to excessive moisture, dust, or corrosive substances.
- **Fan Inspection:** Inspect the cooling fan for proper operation. If the fan is noisy or not spinning, it may need replacement.

## 7. Troubleshooting

This section provides common issues, their possible causes, and recommended solutions. For issues not listed or if solutions do not resolve the problem, please contact technical support.

### 7.1. General Faults

| No. | Error Phenomenon | Possible Causes | Solutions |
|---|---|---|---|
| 1 | No display after power on | Insufficient power supply voltage; Rectifier bridge is damaged; Buffer resistance error; Poor connection of control board, power board, or keypad. | Verify input power; Check rectifier bridge; Contact manufacturer's technical service. |
| 2 | "P.OFF" indication during power on | Bad connection between control board and power board; Related components on the control board are damaged; Short circuit to ground or motor line; Hall error; Low power supply voltage. | Contact manufacturer's technical service. |
| 3 | Screen displays correctly, but inverter shows "P.OFF" after operation and stops immediately. | Fan is damaged or blocked; Short circuit in peripheral control terminal wiring. | Replace fan; Rectify external short circuits. |
| 4 | Frequent overcurrent alarms E-14 (Module overheating) | Carrier frequency is set too high; Fan is damaged or air duct is blocked; Internal inverter components (thermistor or others) are damaged. | Reduce carrier frequency (P00.15); Replace fan; Clean air duct; Contact manufacturer's technical service. |
| 5 | Motor does not turn after powering on the inverter. | Motor and cable errors; Error in inverter parameter configuration; Poor connection between control board and power board; Controller board error. | Verify connection between inverter and motor; Rectify mechanical failure; Review and re-establish parameters. |

| No. | Error Phenomenon | Possible Causes | Solutions |
|---|---|---|---|
| 6 | X connection is not valid. | Error in parameter configuration; External signal error; Controller board error. | Review and re-establish relevant parameters in group F07; Recognize the signal line; Contact manufacturer's technical service. |
| 7 | The inverter frequently reports overcurrent and overvoltage errors. | Incorrect motor parameter configuration; Inadequate acceleration/deceleration times; Load fluctuations. | Reinitialize motor parameters or perform motor optimization; Configure appropriate acceleration/deceleration times; Contact manufacturer's technical service. |
| 8 | All digital indicators are lit. | Related board components are damaged. | Replace the control board. |

## 7.2. Error Codes

| Error Name | Code | Possible Causes | Solutions |
|---|---|---|---|
| Short Circuit Protection | E-01 | 1. Short circuit in the inverter's output circuit; 2. Cable between motor and inverter damaged; 3. Module overheating; 4. Blocked internal air duct; 5. Malfunction of the main control board; 6. Malfunction of the power board; 7. Malfunction of the inverter module. | 1. Check peripheral wiring; 2. Isolate short circuit or ground fault; 3. Check fan and clean air duct; 4. Connect all cables correctly; 5. Contact technical support; 6. Contact technical support. |
| Overcurrent during acceleration | E-02 | 1. Short circuit or fault in the inverter's output circuit; 2. Vector control parameter configuration error; 3. Acceleration time too short; 4. Insufficient buffer reinforcement; 5. Low voltage; 6. Low load; 7. Low output power. | 1. Check peripheral wiring; 2. Adjust parameters; 3. Increase acceleration time; 4. Adjust voltage to nominal range; 5. Avoid sudden load changes; 6. Install a brake unit if needed. |
| Overcurrent during deceleration | E-03 | 1. Short circuit or fault in the inverter's output circuit; 2. Vector control parameter configuration error; 3. Deceleration time too short; 4. Low voltage; 5. No brake unit installed. | 1. Check peripheral wiring; 2. Adjust parameters; 3. Increase deceleration time; 4. Adjust voltage to nominal range; 5. Install a brake unit. |
| Overcurrent at constant speed | E-04 | 1. Short circuit or fault in the inverter's output circuit; 2. Vector control parameter configuration error; 3. Low voltage. | 1. Check peripheral wiring; 2. Adjust parameters; 3. Adjust voltage to nominal range. |
| Overvoltage during acceleration | E-05 | 1. Input voltage too high; 2. External force on motor; 3. Acceleration time too short; 4. No brake unit installed. | 1. Adjust voltage to nominal range; 2. Disconnect external power source or install a brake resistance/unit. |
| Overvoltage during deceleration | E-06 | 1. Input voltage too high; 2. External force on motor; 3. Deceleration time too short; 4. No brake unit installed. | 1. Adjust voltage to nominal range; 2. Disconnect external power source or install a brake resistance/unit. |
| Overvoltage at constant speed | E-07 | 1. Input voltage too high; 2. External force on motor. | 1. Adjust voltage to nominal range; 2. Remove external force or install a brake resistance/unit. |
| Power supply input error | E-08 | 1. Input voltage is out of specified range. | 1. Input voltage is not within specified range. |
| Undervoltage error | E-09 | 1. Momentary power cut; 2. Input voltage too low; 3. Bus voltage is abnormal; 4. Rectifier and filter are abnormal; 5. Control board error. | 1. Reinitialize; 2. Adjust voltage to nominal range; 3. Contact technical support. |
| Inverter overload | E-10 | 1. High load or motor blocked; 2. Inverter power is too low. | 1. Reduce load and check motor; 2. Select a higher power inverter. |

| Error Name | Code | Possible Causes | Solutions |
|---|---|---|---|
| Motor overload | E-11 | 1. Input power board abnormal; 2. Controller board abnormal; 3. Protection against lightning abnormal. | 1. Verify peripheral circuit; 2. Contact technical support. |
| Input phase loss | E-12 | 1. Input power board abnormal; 2. Controller board abnormal; 3. Protection against lightning abnormal. | 1. Verify peripheral circuit; 2. Contact technical support. |
| Output phase loss | E-13 | 1. Inverter output cable to motor abnormal; 2. Three-phase output is running; 3. Controller board abnormal; 4. Module abnormal. | 1. Check peripheral circuit; 2. Check three-phase winding; 3. Contact technical support. |
| Module overheating | E-14 | 1. Temperature too high; 2. Ventilation duct blocked; 3. Fan damaged; 4. Thermistor damaged; 5. Module damaged. | 1. Reduce temperature; 2. Clean duct; 3. Replace fan; 4. Replace thermistor; 5. Replace module. |
| External device error | E-15 | 1. External fault signal via multi-function terminal X. | 1. Reset. |
| Communication error | E-16 | 1. Computer not working correctly; 2. Communication cable error; 3. Expansion card error; 4. Communication parameters error. | 1. Verify wiring; 2. Check cable; 3. Check card; 4. Configure communication parameters. |
| Hall detection error | E-18 | 1. Hall element defective; 2. Controller board defective. | 1. Replace Hall element; 2. Replace controller board. |
| Motor adjustment error | E-19 | 1. Motor parameters not configured according to characteristics; 2. Parameter identification expired. | 1. Configure motor parameters according to characteristics; 2. Verify motor wiring. |
| EEPROM read/write error | E-21 | 1. EEPROM chip damaged. | 1. Replace main control board. |
| Inverter hardware error | E-22 | 1. Overvoltage; 2. Overcurrent. | 1. Handle overvoltage; 2. Handle overcurrent. |
| Total running time reached | E-26 | 1. Total running time has reached the set value. | 1. Clear running information via parameter function. |
| User defined error 1 | E-27 | 1. User defined fault 1 via multi-function terminal X. | 1. Reset. |
| User defined error 2 | E-28 | 1. User defined fault 2 via multi-function terminal X. | 1. Reset. |
| Total work cycle reached | E-30 | 1. Total running time has reached the set value. | 1. Clear information via parameter initialization function. |
| Inactive | E-3.0 | 1. Running current of inverter is below F12-64 and F12-65. | 1. Check if load is disconnected or if F12-64/F12-65 settings match real conditions. |
| PID feedback loss | E-3.1 | 1. PID feedback is below F08.26. | 1. Check PID feedback signal; 2. Adjust F09.26 to an appropriate value. |
| Current limit in forward direction | E-40 | 1. Load is too heavy or motor is blocked; 2. Inverter power is too low. | 1. Reduce load and check motor; 2. Select a higher power inverter. |
| Excessive speed deviation | E-42 | 1. No parameter identification; 2. No speed deviation detection configuration. | 1. Perform motor parameter identification; 2. Configure speed deviation detection according to the situation. |

| Error Name | Code | Possible Causes | Solutions |
|---|---|---|---|
| Incorrect initial position | E-51 | 1. Motor parameters and deviation are too large; 2. Nominal current is too low. | 1. Check motor parameters; 2. Check nominal current. |
| Master control error | E-55 | 1. The machine presents a fault. | 1. Review. Initiate troubleshooting based on the slave error code. |
| Brake hose protection | E-60 | 1. Brake resistance is short-circuited or brake module is not working correctly. | 1. Check brake resistance or contact technical assistance service. |
| Photovoltaic water pump shortage detection | E-65 | 1. Water shortage detection error in photovoltaic water pump. | 1. For more information, see F1.6.10 and F1.6.26. |

## 8. Specifications

| Attribute | Value |
|---|---|
| Brand | DEWIN |
| Model Number | QYABERYYQ-GS110208-04 (Factory Model: MS500-4T-2.2G) |
| Color | One Color |
| Package Dimensions | 19.4 x 16.4 x 10.6 cm |
| Product Weight | 840 g |
| ASIN | B0DR8PTC25 |
| First Available Date | 23 December 2024 |
| Material | Flame retardant ABS plastic |
| Applicable Motor Power | 2.2kW |
| Input Rated Voltage | Three-phase 380V |
| Input Rated Frequency | 50/60Hz |
| Output Rated Voltage | Three-phase 380V |
| Output Frequency (Low Frequency Mode) | 0~320Hz |
| Rated Output Current | 5.5A |
| Installation Method | Wall-mounted |
| Protection Level | IP20 |
| Cooling Method | Cooling fan |

### 8.1. Applicable Uses

The DEWIN Frequency Inverter is widely applicable for various industrial equipment requiring precise speed control:

- Fans
- Water pumps

- Oil pumping presses
- Compressors
- Conveyor belts
- Injection molding machines
- Crushers
- Mixers
- Ball mills
- And other general industrial equipment.




Image: Visual examples of applications for the DEWIN Frequency Inverter, including motors, water pumps, fans, blenders, air compressors, and conveyors.

## 9. Warranty and Support

Information regarding product warranty and specific support contact details is not available in the provided product data. For

warranty claims or technical assistance, please refer to the product packaging or contact the seller directly through the platform where the product was purchased.

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