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ETURBEV GT-011G-4

ETURBEV 11KW 380V Vector Control Variable Frequency Drive Inverter

Model: GT-011G-4
User Instruction Manual

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of the ETURBEV 11KW 380V Vector Control Variable Frequency Drive (VFD) Inverter, Model GT-011G-4. This device is designed for precise control of three-phase asynchronous motors in various industrial applications. Please read this manual thoroughly before installation and operation to ensure safe and efficient use of the product.

2. Safety Information

WARNING: High voltage. Risk of electric shock. Only qualified personnel should perform installation and maintenance.

- Ensure the power supply is disconnected before any wiring or maintenance work.
- Verify correct grounding of the inverter and the motor.
- Do not touch internal components immediately after power-off, as residual voltage may be present. Wait for the indicator lights to extinguish.
- Install the inverter in a well-ventilated area, free from dust, moisture, and corrosive gases.
- Do not operate the inverter with damaged cables or if the casing is open.
- Ensure all connections are secure and properly insulated.

3. Product Overview

The ETURBEV GT-011G-4 VFD is a high-performance inverter designed for precise motor control. It features advanced vector control technology, robust overload capacity, and comprehensive protection functions.

Key Features:

- 11KW power rating, 380V three-phase operation.
- Vector Control (SVC) and V/F control modes.
- Overload Capacity: 150% for 60 seconds, 180% for 10 seconds.
- Wide output frequency range: 0.5-50/60Hz, 0.5-400Hz.
- Multiple frequency reference options: keypad, analog input, serial communication, multi-stage speed.
- Built-in PID control function.
- Automatic Voltage Regulation (AVR) to maintain stable output voltage.

Input & Output Specifications:

- **Input Voltage:** 380V, three-phase
- **Input Frequency:** 50Hz/60Hz
- **Output Voltage:** 380V, three-phase
- **Output Frequency:** 0.5-50/60Hz, 0.5-400Hz

I/O Features:

- **Programmable Digital Input:** 7 terminals for ON-OFF inputs, 1 terminal for high-speed pulse input (PNP, NPN).
- **Programmable Analog Input:** AI1 (-10V to 10V), AI2 (0-10V or 0-20mA).
- **Programmable Open Collector Output:** 1 terminal (open collector or high-speed pulse output).
- **Relay Output:** 1 output terminal.
- **Analog Output:** 2 output terminals (0/4-20mA or 0-10V, selectable).



Figure 3.1: Front view of the ETURBEV 11KW 380V VFD Inverter, showing the control panel and display. The display shows '8.8.8.8.8' and various indicator lights. The control panel includes buttons for PRG/ESC, SHIFT, TRIP, RUN, STOP/RST, DATA/SET, and arrow keys, along with a rotary knob.

4. Setup

4.1. Mounting

Mount the inverter vertically on a stable, non-flammable surface. Ensure adequate clearance around the unit for proper ventilation and heat dissipation. Avoid direct sunlight and areas with excessive vibration.

4.2. Wiring

All wiring must comply with local electrical codes and regulations. Use appropriate wire gauges for the rated current. Ensure all connections are tight and secure.

Power Input (R, S, T):

Connect the three-phase 380V AC power supply to the R, S, and T terminals. Ensure proper phase sequence.

Motor Output (U, V, W):

Connect the three-phase asynchronous motor to the U, V, and W terminals. Ensure correct motor winding connections.

Grounding (E):

Connect the ground terminal (E) to a reliable earth ground. This is critical for safety and proper operation.

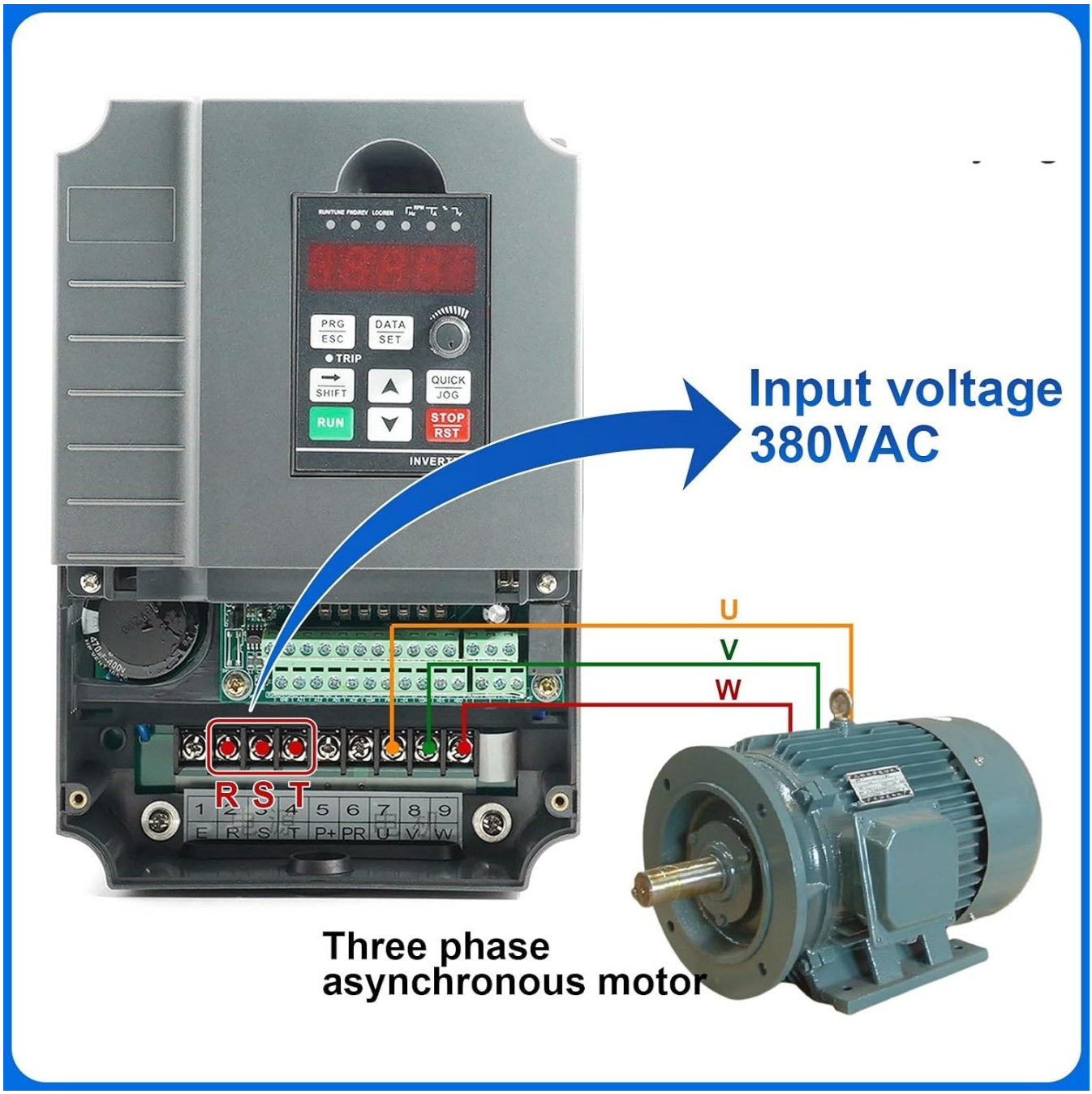


Figure 4.1: Wiring diagram for the ETURBEV 11KW 380V VFD Inverter. The image shows the internal terminal block of the inverter with labels R, S, T for input and U, V, W for output. An arrow indicates 'Input voltage 380VAC' connecting to R, S, T. Wires labeled U, V, W connect from the inverter's output terminals to a 'Three phase asynchronous motor'.

Control Wiring:

Refer to the detailed wiring diagrams in the full product manual for connecting digital inputs, analog inputs, relay outputs, and communication interfaces based on your application requirements.

5. Operating Instructions

5.1. Initial Power-Up

After completing all wiring and safety checks, apply power to the inverter. The display will illuminate, and the inverter will perform a self-test.

5.2. Basic Operation

The inverter can be controlled via the front panel keypad, external terminals, or serial communication.

- **RUN Button:** Press to start the motor.
- **STOP/RST Button:** Press to stop the motor or reset a fault.
- **Arrow Keys (UP/DOWN):** Used to adjust frequency or navigate menu parameters.
- **DATA/SET Button:** Used to confirm parameter settings.
- **PRG/ESC Button:** Used to enter/exit programming mode or escape from a menu.
- **SHIFT Button:** Used to shift cursor position during parameter editing.
- **QUICK/JOG Key:** User-defined shortcut key for quick functions or jog operation.

5.3. Frequency Reference

The output frequency can be set using various methods:

- **Keypad:** Directly input the desired frequency via the front panel.
- **Analog Input:** Use an external voltage (0-10V) or current (0-20mA) signal.
- **Serial Communication:** Control frequency via Modbus or other communication protocols.
- **Multi-stage Speed:** Pre-set up to 16 different speeds for specific applications.

5.4. Advanced Control Functions

- **PID Control:** For closed-loop control applications, maintaining a set process variable.
- **Traverse Control:** For specific winding/unwinding applications.
- **None-Stop Function:** Maintains operation during instantaneous power loss.
- **Speed Trace Function:** Smoothly starts a running motor without tripping.
- **Automatic Voltage Regulation (AVR):** Automatically keeps the output voltage stable even with input voltage fluctuations.

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6. Maintenance

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

- **Cleaning:** Periodically clean the cooling fins and fan to prevent dust accumulation, which can hinder heat dissipation. Use compressed air to remove dust.
- **Inspection:** Regularly inspect all wiring connections for tightness and signs of wear or damage. Check for any unusual noises or odors during operation.
- **Environmental Check:** Ensure the operating environment remains within specified temperature and humidity ranges.
- **Capacitor Life:** Electrolytic capacitors have a finite lifespan. Consider professional inspection or replacement after several years of continuous operation.

Always disconnect power and wait for residual voltage to dissipate before performing any maintenance.

7. Troubleshooting

The inverter is equipped with various fault protection mechanisms. When a fault occurs, the inverter will display an error code and stop operation. Refer to the full manual for a complete list of error codes and their remedies.

Common Fault Protections:

- **Over Current (OC):** Occurs when the output current exceeds the rated limit. Check motor load, acceleration time, and wiring.
- **Over Voltage (OV):** Occurs when the DC bus voltage exceeds the permissible limit. Check input voltage, deceleration time, and regenerative load.
- **Under Voltage (UV):** Occurs when the DC bus voltage drops below the minimum limit. Check input power supply.
- **Over Temperature (OH):** Occurs when the inverter's internal temperature is too high. Check ambient temperature, ventilation, and fan operation.
- **Phase Failure (PHF):** Indicates a missing input or output phase. Check power supply and motor wiring.
- **Over Load (OL):** Occurs when the motor or inverter is continuously overloaded. Check motor load and inverter capacity.

If a fault persists after attempting basic troubleshooting, contact qualified technical support.

8. Specifications

Parameter	Value
Product Model	GT-011G-4
Rated Power	11.0 KW
Input Voltage	380V, Three-phase
Input Frequency	50Hz/60Hz
Output Voltage	380V, Three-phase
Output Frequency Range	0.5-50/60Hz, 0.5-400Hz
Control Mode	V/F, Sensorless Vector Control (SVC)
Overload Capacity	150% for 60s, 180% for 10s
Speed Adjusting Range	1:100 (SVC)
Carrier Frequency	1kHz - 15.0kHz
Product Dimensions	0.39 x 0.39 x 0.39 inches (Approximate)
Item Weight	1.76 ounces (Approximate)

Parameter	Value
Manufacturer	ETURBEV

Note: Dimensions and weight are approximate and may vary slightly. Refer to the product label for precise values.

9. Warranty and Support

For warranty information, technical support, or service inquiries, please contact your point of purchase or the manufacturer directly. Keep your purchase receipt as proof of purchase.
Manufacturer: ETURBEV

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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.

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