

THKFMSRC GD11048MH

THKFMSRC Solar Inverter GD11048MH (11KW 48V) Instruction Manual

Model: GD11048MH

1. INTRODUCTION

Thank you for choosing the THKFMSRC GD11048MH Solar Inverter. This manual provides essential information for the safe and efficient installation, operation, and maintenance of your 11KW 48V photovoltaic energy storage inverter with built-in MPPT. Please read this manual thoroughly before installation and operation, and retain it for future reference.

2. SAFETY INFORMATION

Always observe the following safety precautions to prevent injury and damage to the inverter or connected equipment.

- **Electrical Hazard:** This inverter operates with high voltages. Only qualified personnel should perform installation and maintenance.
- **Disconnect Power:** Before performing any wiring or maintenance, ensure all power sources (solar panels, battery, AC grid) are disconnected.
- **Proper Grounding:** The inverter must be properly grounded to prevent electric shock.
- **Ventilation:** Install the inverter in a well-ventilated area to prevent overheating. Do not block ventilation openings.
- **Flammable Materials:** Do not install the inverter near flammable or explosive materials.
- **Water Exposure:** Protect the inverter from water, rain, snow, and excessive humidity.
- **Battery Safety:** Follow battery manufacturer's safety guidelines. Wear appropriate personal protective equipment when working with batteries.

3. PRODUCT OVERVIEW

The THKFMSRC GD11048MH is a high-efficiency 11KW 48V solar inverter designed for photovoltaic energy storage systems. It features a built-in MPPT charge controller for optimized solar power harvesting and dual output capabilities.

3.1. Inverter Components



Figure 1: Front view of the THKFMSRC GD11048MH Solar Inverter. This image shows the main unit with its white casing, yellow accents, and the central display panel. The display indicates operational status and power flow, surrounded by control buttons and indicator lights. A ventilation grille is visible on the left side.

- **Display Panel:** Provides real-time operational data, system status, and error codes.
- **Control Buttons:** Used for navigating menus and configuring settings.
- **Indicator Lights:** Show power status, fault conditions, and charging status.
- **Ventilation Grilles:** Ensure proper airflow for cooling internal components.
- **Input/Output Terminals (Rear/Bottom):** Connections for solar panels, batteries, AC input, and AC output (refer to specific wiring diagrams in the full manual).

4. SETUP

4.1. Unpacking and Inspection

1. Carefully unpack the inverter from its packaging.
2. Inspect the unit for any visible damage that may have occurred during transit. If damage is found, contact your supplier immediately.
3. Verify that all accessories listed in the packing list are present.

4.2. Mounting the Inverter

Choose a suitable location for mounting the inverter, considering the following:

- **Ventilation:** Ensure adequate clearance (at least 20 cm) around the inverter for proper airflow.
- **Environment:** Mount in a dry, dust-free area, away from direct sunlight and heat sources.
- **Structural Support:** The mounting surface must be strong enough to support the inverter's weight (approximately 44.1 pounds).
- **Accessibility:** Ensure easy access for wiring, operation, and maintenance.

Use appropriate mounting hardware (not included) to securely fasten the inverter to a vertical surface.

4.3. Wiring Connections

All wiring must comply with local electrical codes and regulations. Use appropriately sized cables for all connections.

1. **Grounding:** Connect the inverter's ground terminal to a reliable earth ground.
2. **Battery Connection:** Connect the battery bank to the inverter's battery terminals. Ensure correct polarity (+ to + and - to -). Install a DC circuit breaker between the battery and inverter.
3. **Solar Panel Connection:** Connect the solar panel array to the PV input terminals. Observe correct polarity and ensure the open-circuit voltage (Voc) and short-circuit current (Isc) are within the inverter's specifications. Install a DC circuit breaker between the solar array and inverter.
4. **AC Input (Grid/Generator):** If connecting to an AC grid or generator, connect the AC input to the designated terminals. Install an AC circuit breaker.
5. **AC Output (Loads):** Connect your AC loads to the inverter's AC output terminals. Install an AC circuit breaker.

Important: Double-check all connections for tightness and correct polarity before proceeding. Incorrect wiring can cause severe damage to the inverter and pose a safety risk.

5. OPERATING INSTRUCTIONS

5.1. Initial Power-Up

1. Ensure all wiring connections are secure and correct.
2. Close the battery circuit breaker.
3. Close the solar panel circuit breaker.
4. Close the AC input circuit breaker (if connected to grid/generator).
5. Close the AC output circuit breaker to power your loads.
6. The inverter will perform a self-test and then begin operation. Observe the display for status indications.

5.2. Display and Controls

The LCD display provides real-time information about the system's performance, including input voltage, output voltage, battery status, charging current, and load power. Use the control buttons (typically 'Up', 'Down', 'Enter', 'Esc') to navigate through the menus and adjust settings such as output voltage, charging parameters, and operating modes.

5.3. Operation Modes

The inverter supports various operation modes, which can be configured via the display panel. Common modes include:

- **Utility Priority:** AC loads are primarily powered by the utility grid, with solar/battery as backup.
- **Solar Priority:** AC loads are primarily powered by solar energy, then battery, and finally the utility grid.
- **Battery Priority:** AC loads are primarily powered by the battery, then solar, and finally the utility grid.

Refer to the detailed menu structure in the full manual for specific configuration options.

6. MAINTENANCE

Regular maintenance ensures optimal performance and longevity of your inverter.

- **Cleaning:** Periodically clean the inverter's exterior and ventilation openings to prevent dust accumulation. Use a dry, soft cloth.
- **Connections Check:** Annually inspect all wiring connections for tightness and signs of corrosion. Re-tighten if necessary.
- **Battery Inspection:** Follow the battery manufacturer's maintenance schedule. Check battery terminals for corrosion and ensure proper ventilation around the battery bank.
- **Environmental Check:** Ensure the installation environment remains within specified temperature and humidity ranges.

Caution: Always disconnect all power sources before performing any maintenance.

7. TROUBLESHOOTING

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

Problem	Possible Cause	Solution
Inverter not turning on	No battery connection; Battery voltage too low; DC breaker open.	Check battery connections; Charge battery; Close DC breaker.
No AC output	AC output breaker open; Overload; Inverter fault.	Close AC output breaker; Reduce load; Check display for error codes.
Low solar charging	Shading on panels; Dirty panels; PV input voltage too low/high.	Clear shading; Clean panels; Verify PV array configuration.
Overload warning	Connected loads exceed inverter capacity.	Reduce the total power consumption of connected appliances.

8. TECHNICAL SPECIFICATIONS

The following table outlines the key technical specifications for the THKFMSRC GD11048MH Solar Inverter.

Feature	Value
Model	GD11048MH
Rated Power	11 KW
System Voltage	48 V
Inverter Efficiency	98%
Power Source	Battery Powered
Item Weight	44.1 pounds
Package Dimensions	0.39 x 0.39 x 0.39 inches
Manufacturer	THKFMSRC

9. WARRANTY AND SUPPORT

This THKFMSRC Solar Inverter comes with a standard manufacturer's warranty. Please refer to the warranty card included with your product for specific terms and conditions. For technical support, service, or warranty claims, please contact your point of purchase or the manufacturer directly. Ensure you have your product model and serial number available when contacting support.