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Giosolar GN-12AMPV+BK3048+T5M+3YC+GS3048

Giosolar 1440W 48V Solar Panel Kit with 3000W Pure Sine Wave Inverter User Manual

Model: GN-12AMPV+BK3048+T5M+3YC+GS3048

1. Introduction

This manual provides essential instructions for the safe and efficient installation, operation, and maintenance of your Giosolar 1440W 48V Solar Panel Kit with 3000W Pure Sine Wave Inverter. Please read this manual thoroughly before proceeding with installation or use to ensure optimal performance and longevity of your system.

2. Important Safety Instructions

Failure to follow these instructions may result in electric shock, fire, serious injury, or property damage.

- Always wear appropriate personal protective equipment (PPE) including safety glasses and insulated gloves during installation and maintenance.
- Ensure all electrical connections are secure and properly insulated to prevent short circuits.
- Do not attempt to disassemble or repair the solar panels or inverter. Refer to qualified personnel for service.
- Keep children and unauthorized personnel away from the solar power system.
- Avoid touching live electrical components. Solar panels generate electricity when exposed to light.
- Ensure proper ventilation around the inverter to prevent overheating.
- Connect the inverter to a properly grounded electrical system.

3. System Components

Your Giosolar 1440W 48V Solar Panel Kit includes the following main components:

- 12 x 120W Monocrystalline Solar Panels
- 1 x 3000W Pure Sine Wave Power Inverter (48V to 120V)
- Necessary cables and connectors (e.g., MC4 connectors)

Each 120W Monocrystalline Solar Panel features:

- Bypass diodes to minimize power drop from shading.
- Anti-reflective, high transparency, low iron-tempered glass.
- Corrosion-resistant aluminum frame.
- IP65 waterproof junction box.
- IP67 waterproof MC4 connectors.



Figure 3.1: Overview of a Giosolar 120W Monocrystalline Solar Panel, showing the front, back, junction box, and MC4 connectors.



Figure 3.2: Detailed view of the back of a Giosolar solar panel, highlighting the IP65 waterproof junction box, drainage hole, mounting holes, and IP67 waterproof MC4 connectors.

4. Technical Specifications

4.1. 120W Monocrystalline Solar Panel

Specification	Value
Maximum Power (Pmax)	120W
Optimum Operating Voltage (Vmp)	18V
Open Circuit Voltage (Voc)	21.2V
Optimum Operating Current (Imp)	6.67A

Specification	Value
Short-Circuit Current (Isc)	7.23A
Dimensions (L x W x H)	1015 x 670 x 30 mm (19.96 x 26.38 x 1.18 inches)
Weight	7 kg (15.5 lbs)
Cable Length	90mm with male & female connectors
Material	Aluminum, Glass, Monocrystalline Silicon
Special Features	Bypass Diodes, Tempered Glass, Corrosion-resistant frame, IP65 Junction Box, IP67 MC4 Connectors

4.2. 3000W Pure Sine Wave Power Inverter

Specification	Value
Rated Power	3000W
Peak Power	6000W
Input Voltage	48V DC
Output Voltage	120V AC
Waveform	Pure Sine Wave
Protection Functions	Overload, Over Current, High Temperature, Short Circuit, Battery Reverse Connect

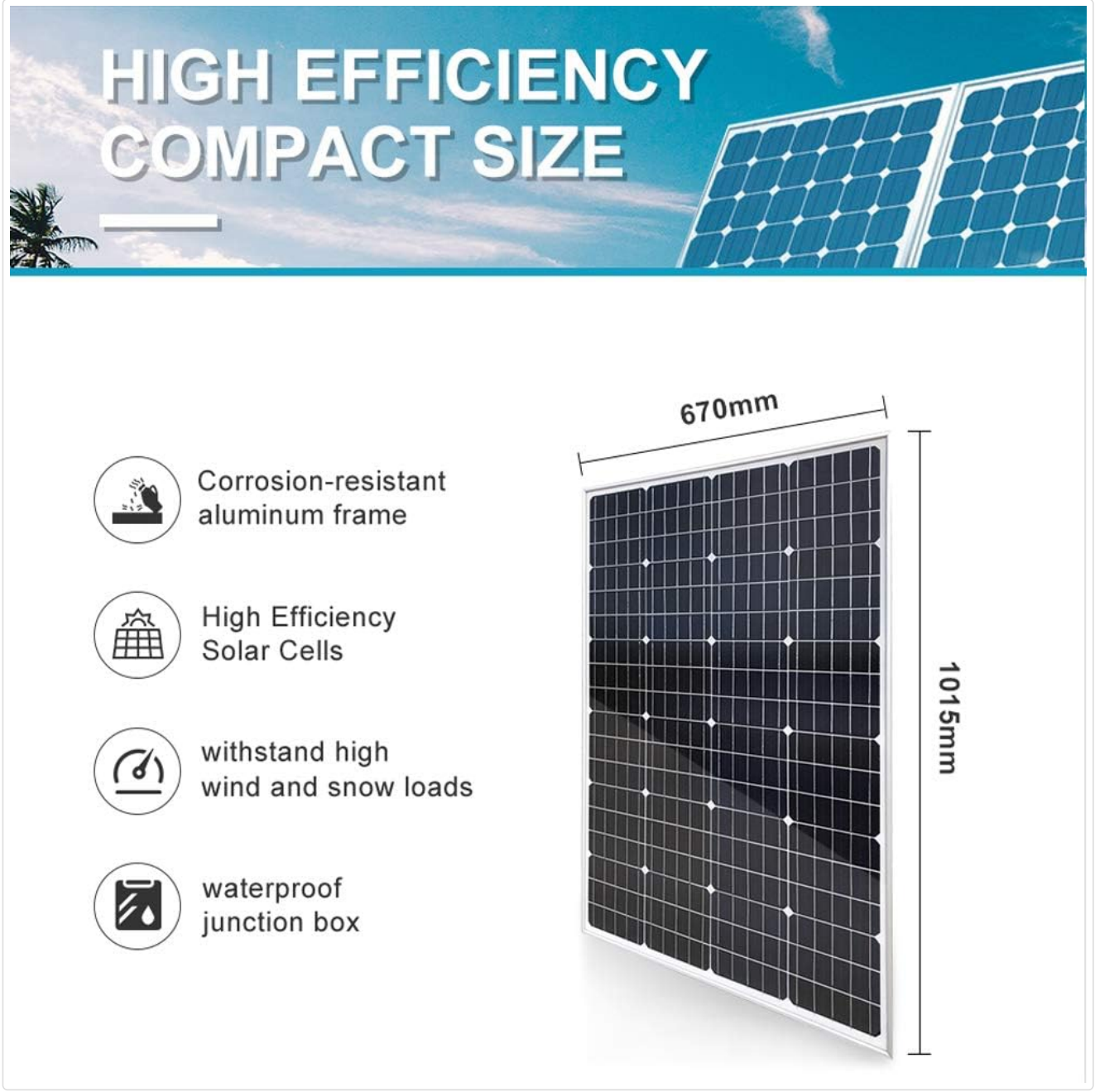


Figure 4.1: Giosolar solar panel highlighting its compact size, dimensions (1015mm x 670mm), corrosion-resistant aluminum frame, high-efficiency cells, wind/snow load resistance, and waterproof junction box.

5. Setup and Installation

Proper installation is crucial for the performance and safety of your solar kit. It is recommended that installation be performed by a qualified professional.

5.1. Site Selection

- Choose a location for your solar panels that receives maximum direct sunlight throughout the day, free from shading by trees or buildings.
- Ensure the mounting surface is structurally sound to support the weight of the panels and withstand wind loads.
- Select a dry, well-ventilated area for the inverter, away from direct sunlight, moisture, and flammable materials.

5.2. Solar Panel Mounting

1. Securely attach the solar panels to a suitable mounting structure (e.g., roof mounts, ground mounts) using appropriate hardware. The panels feature pre-drilled mounting holes for ease of installation.
2. Ensure proper spacing between panels for ventilation and to prevent shading.
3. Angle the panels for optimal sun exposure based on your geographical location and seasonal variations.

5.3. Wiring the Solar Panels

1. Connect the solar panels in series or parallel configurations as required by your system voltage and current needs. For a 48V system, panels will typically be wired in series to achieve the desired voltage.
2. Use the provided MC4 connectors to ensure waterproof and secure connections between panels.
3. Connect the positive (+) output of the solar array to the positive input of your charge controller (not included in this kit, but essential for battery charging).
4. Connect the negative (-) output of the solar array to the negative input of your charge controller.
5. Ensure all wiring is correctly polarized (positive to positive, negative to negative).

5.4. Inverter Connection

1. Connect the 48V DC battery bank (not included) to the DC input terminals of the 3000W Pure Sine Wave Inverter. Ensure correct polarity.
2. Connect your AC loads (appliances, lights, etc.) to the AC output terminals of the inverter.
3. Ensure the inverter is properly grounded according to local electrical codes.
4. Before powering on, double-check all connections for tightness and correct polarity.

6. Operating Instructions

6.1. System Startup

1. Ensure all connections are secure and correct.
2. Turn on the DC breaker between the battery bank and the inverter.
3. Turn on the inverter's power switch. The inverter should initiate its startup sequence.
4. Monitor the inverter's display (if available) for status indicators and output voltage.
5. Once the inverter is stable, you can connect and power your AC loads.

6.2. Normal Operation

- The solar panels will generate electricity when exposed to sunlight, which will be used to charge your battery bank via a charge controller (not included).
- The inverter converts the DC power from your battery bank into AC power for your appliances.
- Avoid overloading the inverter. The total power consumption of your AC loads should not exceed the inverter's rated continuous power (3000W).

7. Maintenance

Regular maintenance ensures the longevity and efficiency of your solar power system.

7.1. Solar Panels

- **Cleaning:** Periodically clean the surface of the solar panels to remove dust, dirt, leaves, or other debris that can reduce efficiency. Use a soft cloth and water. Avoid abrasive cleaners or harsh chemicals.
- **Inspection:** Annually inspect panels for any physical damage (cracks in glass, bent frames), loose connections, or corrosion.

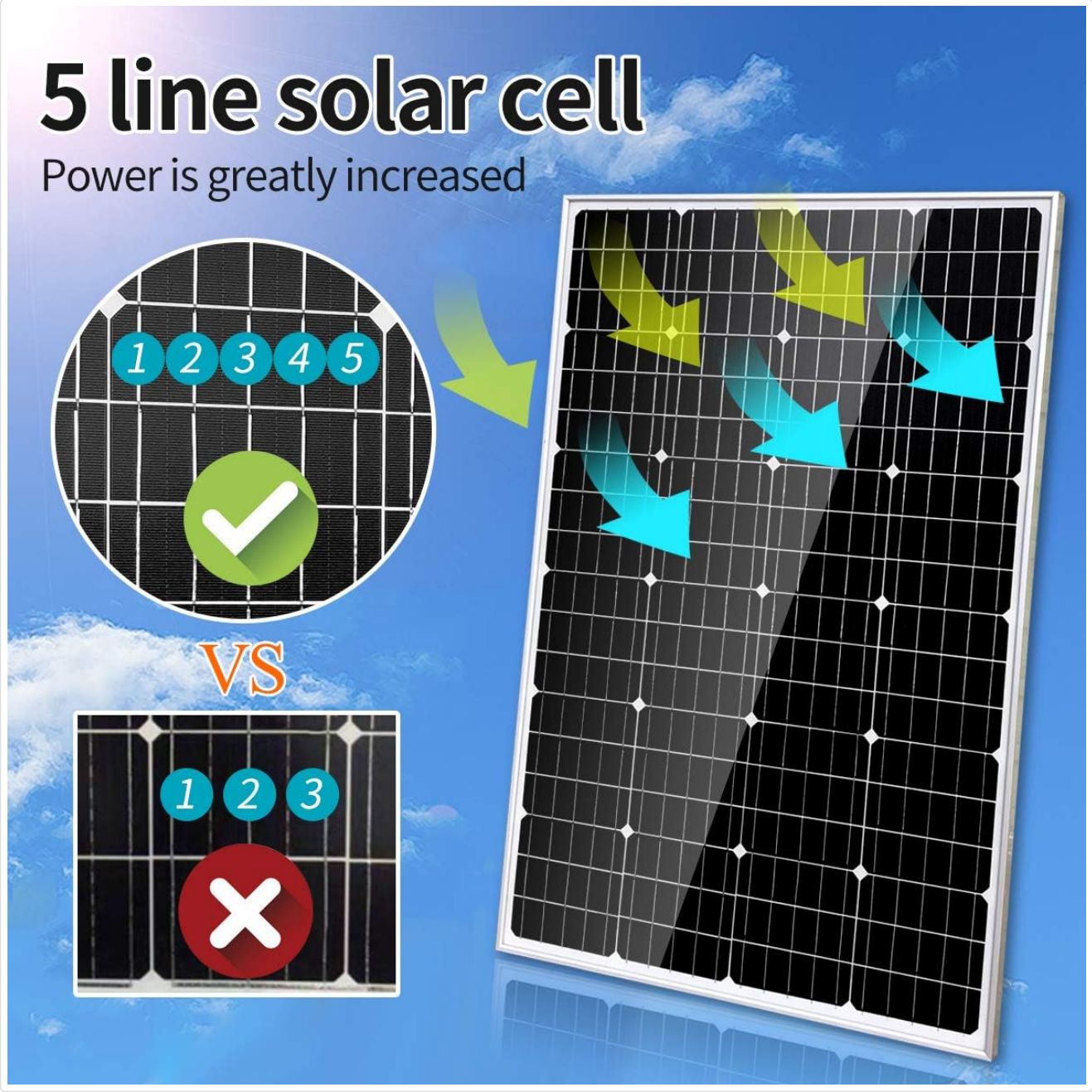


Figure 7.1: Illustration of the 5-line solar cell technology, which enhances power generation compared to 3-line cells, contributing to higher efficiency.

7.2. Inverter

- **Ventilation:** Ensure the inverter's ventilation openings are clear and free from obstructions.
- **Connections:** Periodically check all electrical connections to the inverter for tightness and signs of corrosion.
- **Environment:** Keep the inverter area clean, dry, and free from excessive dust.

8. Troubleshooting

This section addresses common issues you might encounter with your solar power system.

Problem	Possible Cause	Solution
No power output from inverter	Inverter off, low battery voltage, loose connections, inverter fault.	Check inverter power switch. Verify battery voltage. Inspect all DC and AC connections. Check inverter fault codes (if any).
Low power generation from solar panels	Shading, dirty panels, faulty panel/connection.	Remove any shading. Clean panel surfaces. Inspect wiring and connections for damage or corrosion.
Inverter overload alarm	Too many appliances connected, appliance drawing too much power.	Reduce the number of connected appliances. Ensure total load does not exceed 3000W continuous.
Inverter shuts down unexpectedly	Overload, overheating, low battery voltage, short circuit.	Check for overload. Ensure proper ventilation. Charge batteries. Inspect wiring for short circuits.

9. Warranty Information

For specific warranty terms and conditions regarding your Giosolar 1440W 48V Solar Panel Kit with 3000W Pure Sine Wave Inverter, please refer to the documentation provided at the time of purchase or contact Giosolar directly. Warranty coverage typically includes defects in materials and workmanship under normal use.

10. Customer Support

If you require technical assistance, have questions about installation, or need to report an issue, please contact Giosolar customer support. You can typically find contact information on the Giosolar website or through your retailer.
For more information, visit the official Giosolar Store:Giosolar Store on Amazon

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