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› SGPWATT SPH10048P 10000W 48V Solar Inverter User Manual

SGPWATT SPH10K48SP-P

SGPWATT SPH10048P 10000W 48V Solar Inverter User Manual

Comprehensive instructions for installation, operation, and maintenance.

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your SGPWATT SPH10048P 10000W 48V Solar Inverter. Please read all instructions carefully before installation and use.

The SPH10048P is an all-in-one solar charge inverter designed for split-phase (120V/240V) or single-phase (120V) output. It features two built-in MPPT solar controllers, a maximum 200A battery charging capacity, and a pure sine wave output. A WiFi module is included for remote monitoring via a mobile application.

2. SAFETY INSTRUCTIONS

Always adhere to local electrical codes and regulations. Installation should be performed by qualified personnel.

Disconnect all power sources before servicing. This device operates at high voltages and currents; improper handling can result in severe injury or death.

- Do not disassemble the inverter.
- Ensure proper grounding.
- Keep away from flammable materials.
- Do not expose to rain or moisture.
- Verify correct battery polarity before connection.

3. PRODUCT OVERVIEW

The SGPWATT SPH10048P is a versatile solar inverter designed for various power needs. Key features include:

- **All-in-one design:** Combines solar charge controller, inverter, and battery charger.
- **Dual MPPTs:** Two Maximum Power Point Tracking solar controllers for efficient solar energy harvesting.
- **High charging capacity:** Max 200A battery charging.

- **Flexible AC output:** Settable 120V/240V split phase or 120V single phase.
- **Pure Sine Wave:** Ensures stable and clean power for sensitive electronics.
- **WiFi Module:** For remote monitoring and parameter adjustment via mobile app.
- **Battery Compatibility:** Supports 48V AGM/Sealed, Gel, Flooded, Lithium batteries and a User Mode.
- **Time-slot charging/discharging:** Allows setting specific periods for utility and PV energy usage based on tariffs.



Figure 3.1: Front view of the SGPWATT SPH10048P 10000W 48V Solar Inverter.

10KW Pure Sine Wave Inverter

Split Phase : AC input : 240V, AC Output : 120V/240V

Single Phase: AC input : 120V, AC output : 120V

11000W

MAX PV Array Power

500V

MAX Open Circuit Voltage

200A

Max Charge Current



Figure 3.2: Key features of the SGPWATT SPH10048P Inverter, highlighting 11000W Max PV Array Power, 500V Max Open Circuit Voltage, and 200A Max Charge Current.

4. SETUP AND INSTALLATION

4.1 Unpacking and Inspection

Upon receiving your inverter, carefully unpack it and inspect for any shipping damage. Ensure all components listed in the packing list are present.

- SGPWATT SPH10048P Inverter
- WiFi module
- WiFi cable
- Communication cable
- Cable lugs & Screws
- User Manual (this document)

- Warranty Card



Figure 4.1: Dimensions of the SPH10048P inverter and included accessories.

4.2 Mounting the Inverter

Mount the inverter vertically on a sturdy, non-flammable surface. Ensure adequate clearance for ventilation (at least 20 cm on all sides). Avoid direct sunlight, high temperatures, and moisture.

4.3 Electrical Connections

All wiring must comply with national and local electrical codes. Use appropriate wire gauges for all connections.

1. **Battery Connection:** Connect the 48V battery bank to the inverter's battery terminals. Ensure correct polarity (+ to + and - to -).
2. **PV Array Connection:** Connect the solar panel array to the PV input terminals. Observe maximum open circuit voltage (500VDC) and current limits.
3. **AC Input Connection:** Connect the utility grid (if applicable) to the AC input terminals.

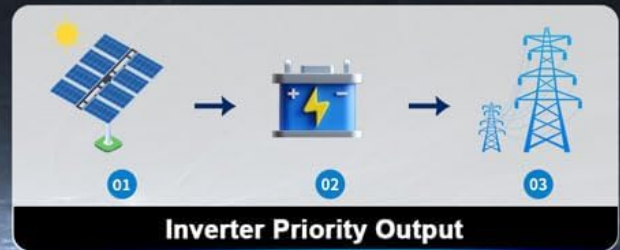
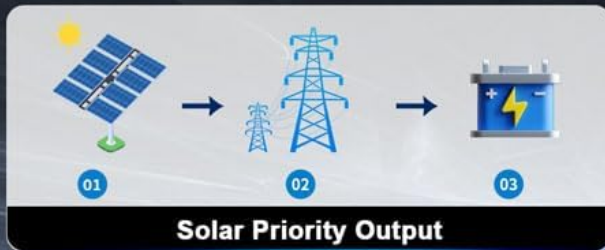
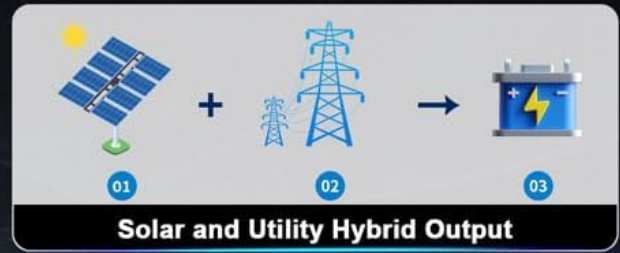
4. **AC Output Connection:** Connect your loads to the AC output terminals. The inverter supports 120V/240V split phase or 120V single phase output.



Figure 4.2: Diagram illustrating the system connection for the SGPWATT solar inverter, showing PV panels, generator, mains, external battery packs, and home appliances.

Working Modes

4 AC Output Mode



4 Battery Charging Mode

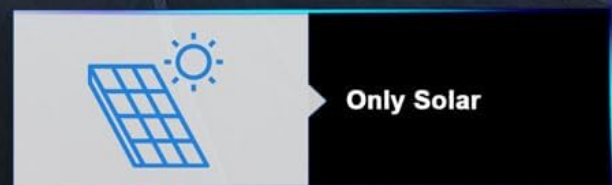


Figure 4.3: Wiring diagrams for split-phase and three-phase parallel connections of up to 6 units.

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Video 4.1: This video demonstrates the connection and communication setup between the SPH8-10KW inverter and SG48100P battery. It covers the physical wiring and initial communication settings.

5. OPERATING INSTRUCTIONS

5.1 Initial Power-Up

1. Ensure all connections are secure and correct.
2. Turn on the battery breaker.
3. Turn on the PV array breaker (if applicable).
4. Turn on the AC input breaker (if applicable).
5. Turn on the inverter's power switch.
6. Observe the LCD display for status and any error messages.

LCD HD Display

View real-time data and Set different parameter



Figure 5.1: The LCD HD display showing real-time data and parameter settings.

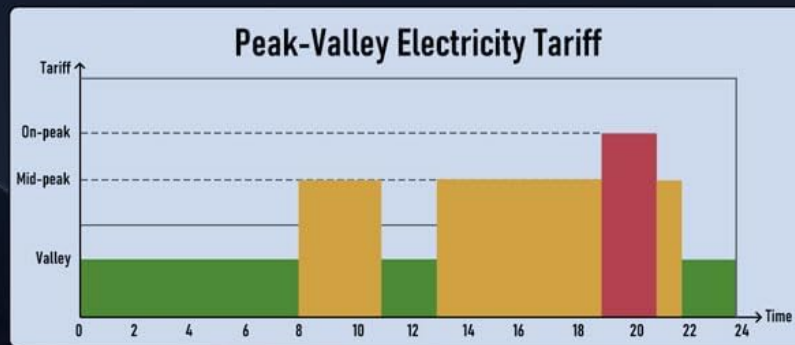
5.2 Operating Modes

The inverter offers various charging and output modes to suit different energy management strategies:

- **Charging Modes:** Hybrid Charging, Utility Priority Charging, Solar Priority Charging, Only Solar Charging.
- **Output Modes:** Utility Priority, Solar and Utility Hybrid, Solar Priority, Inverter Priority.

Time-slot charging/discharging

With time slot control, you can set the priority of using the mains and battery according to the time slot in conjunction with the local peak and valley tariff



Time-slot Utility Charging/Carrying Function



With 3 definable periods, the user can freely set the mains charging/carrying time within the range of 00:00 to 23:59. During the time period set by the user, if PV energy is available, PV energy will be used first, and if PV energy is not available or insufficient, utility energy will be used as a supplement.

Time-slot Battery Discharging Function



With 3 definable time periods, users can freely set the battery discharge time within the range of 00:00 to 23:59. During the time period set by the user, the inverter will give priority to the battery inverter to carry the load, and if the battery power is insufficient, the inverter will automatically switch to mains power to ensure stable operation of the load.

Figure 5.2: Illustration of the four AC output modes and four battery charging modes.

5.3 Time-Slot Charging/Discharging

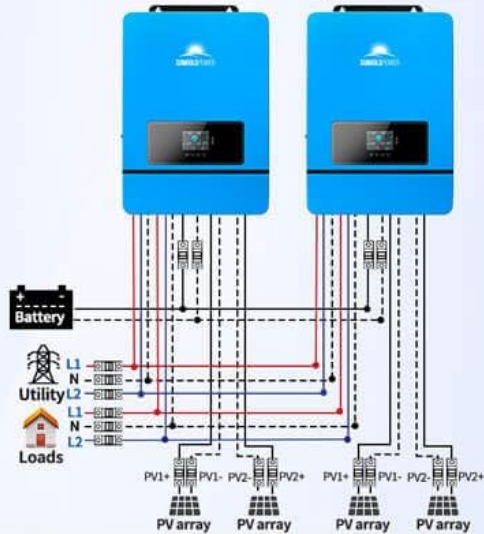
This function allows users to set specific charging and discharging periods to optimize energy usage based on local peak and valley electricity tariffs.

Parallel Function

Parallel connection of up to 6 units

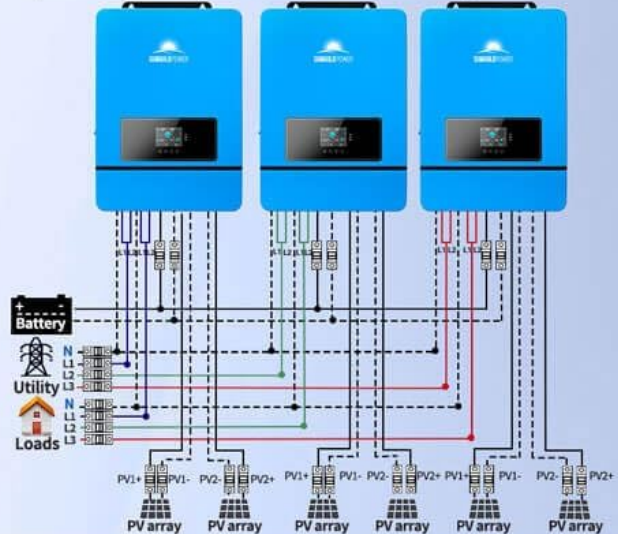
Wiring diagram for split-phase parallel connection

Two parallel-connected solar storage inverters:



Wiring diagram for three-phase parallel connection

Three-phase system (three inverters) 1+1+1 system:



Wiring diagram for three-phase parallel connection

Three-phase system
2+2+2 system:

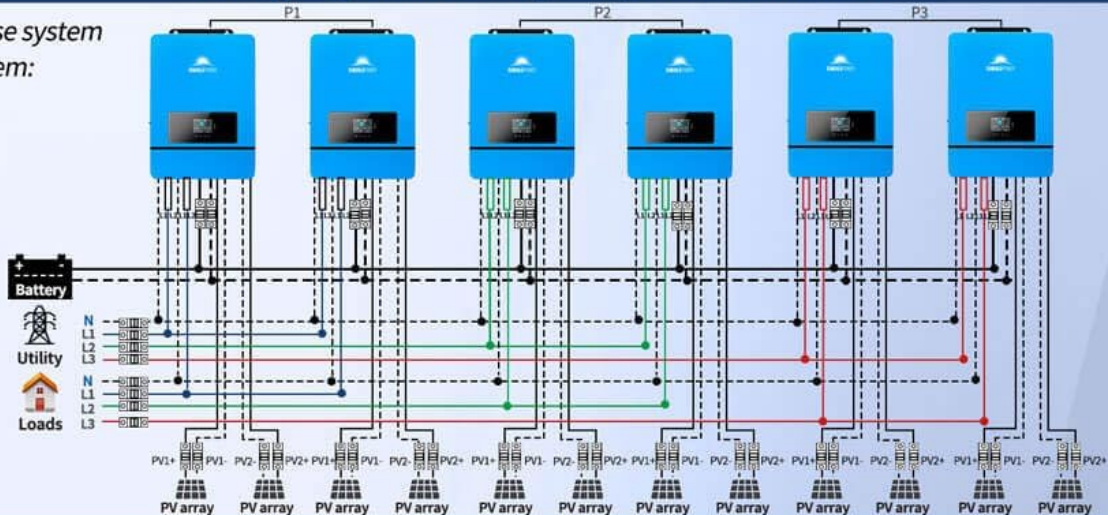


Figure 5.3: Explanation of the time-slot charging/discharging function with utility and battery examples.

6. MAINTENANCE

Regular maintenance ensures optimal performance and longevity of your inverter.

- **Cleaning:** Keep the inverter clean and free from dust. Use a dry cloth for cleaning.
- **Ventilation:** Ensure ventilation openings are not blocked.
- **Connections:** Periodically check all electrical connections for tightness and corrosion.
- **Battery Inspection:** Inspect battery terminals for corrosion and ensure proper electrolyte levels (for flooded batteries).

7. TROUBLESHOOTING

This section provides solutions to common issues. For complex problems, contact technical support.

Problem	Possible Cause	Solution
Inverter not turning on	No battery power, loose connections, faulty switch.	Check battery voltage, verify all connections, ensure power switch is ON.
No AC output	Overload, short circuit, battery low, inverter fault.	Reduce load, check for short circuits, charge battery, check error codes on display.
Solar panels not charging	Insufficient sunlight, PV connection issue, MPPT fault.	Check solar panel output, verify PV wiring, ensure MPPT settings are correct.
WiFi monitoring not working	WiFi module not connected, network issue, app configuration error.	Ensure WiFi module is securely connected, check network connectivity, reconfigure app settings.

8. SPECIFICATIONS

Feature	Detail
Model Name	SPH10K48SP-P
Rated Output Power	10000W
Max Peak Power	20000W
Battery Voltage	48V DC
Max. MPPT Charging Current	200A
Max. PV Array Power	11000W
Max. Voltage of Open Circuit	500VDC
AC Input/Output	120V/240V (settable)
Dimensions (L x W x H)	26 x 7.9 x 4.9 inches
Item Weight	53.5 pounds
Certifications	UL1741

MODEL	SPH8048P	SPH10048P
Rated Output Power	8,000W	10,000W
Max.Peak Power	16,000W	20,000W
Rated Output Voltage	120/240Vac(split phase/single phase)	
Load Capacity of Motors	5HP	6HP
Rated AC Frequency	50/60Hz	
Parallel capacity	6	
Overload	(102%<load<110%) ±10%: error and output shutdown after 5min; (110% < load < 125%) ±10%: error and output shutdown after 10s. Load > 125% ±10%: error reported and output switched off after 5s.	
Battery Type	Li-ion / Lead-Acid / User Defined	
Rated Battery Voltage	48Vdc	
Voltage Range	40-60Vdc	
Max.MPPT Charging Current	200A	
Max.Mains/Generator Charging Current	100A	120A
Max.Hybrid Charging Current	180A	200A
Num. of MPP Trackers	2	
Max.PV array power	11,000W	
Max.input current	22/22A	
Max.Voltage of Open Circuit	500Vdc	
MPPT Voltage Range	125-425Vdc	
Bypass Overload Current	63A	
MPPT Tracking Efficiency	99.9%	
Support Communication	WiFi Modules/RS485 /CAN/USB/Dry contact	
Dimensions	25.6X17.7X5.1inch	17.9X26X4.9inch
Weight	53.5lbs	54lbs

Figure 8.1: Detailed specifications for SPH8048P and SPH10048P models, including rated power, voltage, charging currents, and dimensions.

9. WARRANTY AND SUPPORT

For warranty information, please refer to the included Warranty Card. For technical support or service inquiries, please contact SGPWATT customer service.

Contact Information: Refer to your product packaging or the official SGPWATT website for the most up-to-date contact details.

