

封面：

SV24500PS/SV241000PS/SV242000PS

太阳能逆控一体机  
SOLAR INVERTER



2-in-1 Integrated  
(inverter+controller)

第一页：

## 产品特点：

### 特点：

- 内置PWM太阳能充电控制器与逆变器于一体，小巧灵活
- 采用高速的运算技术提高系统性能，最大转换率可达到90%
- 大尺寸显示屏与三个按键组合，提升了人机信息交换率
- 支持12V 24V 电池电压
- 支持铅酸电池，三元锂电池，磷酸铁锂电池
- 支持AC220V用电设备

### 应用场景：



居民用电



船舶/岛屿



畜牧业



野外装备



无电地区



翻译：

## Product Features:

### Features:

- Integrated PWM solar charge controller and inverter in one unit, featuring compact size and flexible installation
- Adopts high-speed computing technology to enhance system performance, with a maximum conversion efficiency of up to 90%
- Equipped with a large-size display screen and three buttons, improving human-machine information interaction efficiency
- Supports 12V/24V battery voltage (auto-adaptive)
- Compatible with lead-acid batteries, ternary lithium batteries (LiPo), and lithium iron phosphate batteries (LiFe)
- Suitable for powering AC220V electrical equipment

### Application Scenarios:

Residential electricity use

Ships/islands

Animal husbandry

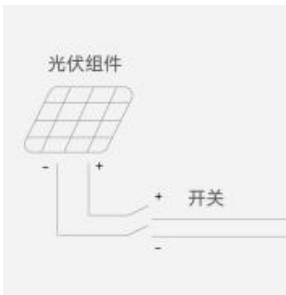
Outdoor equipment

Areas without grid power

产品应用示意图



2



Solar Panel  
Switch



Fuse  
Battery (12V/24V)



Never connect DC load to inverter.

第三页:

## 产品外观/按键/接线口

Product Appearance/Buttons/Wiring Terminals



Product Appearance

左边:

LCD Display Screen: For showing system parameters and working status

Mode Adjustment/Confirmation Button

Overcharge/Overdischarge Switching Button

右边: Overcharge/Overdischarge Voltage Adjustment Button



太阳能正极: Solar Positive Terminal (+): For connecting the positive pole of the solar panel

太阳能负极: Solar Negative Terminal (-): For connecting the negative pole of the solar panel

电池正极: Battery Positive Terminal (+): For connecting the positive pole of the battery

电池正极: Battery Negative Terminal (-): For connecting the negative pole of the battery

负载正极: Load Positive Terminal (+): For connecting the positive pole of DC loads

负载负极: Load Negative Terminal (-): For connecting the negative pole of DC loads



Fan

OUT-AC220V

按键说明

|                                                                                         |                                                                                        |                                                                                              |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
|  RESET |  MENU |  ON / OFF |
| 过充/过放切换                                                                                 |                                                                                        | 过充/过放电压调节                                                                                    |
| 负载端模式选择切换<br>过充电压，低压保护设定                                                                | 模式调整/确定                                                                                | 负载端强制启动/停止<br>手动模式负载开关键                                                                      |

左：  
switch between overcharge and overdischarge protection modes  
switch the working mode of the load terminal  
overcharge voltage and low-voltage protection threshold

中：  
select and confirm the controller's working mode

右：  
Overcharge Voltage/Low Voltage Adjustment  
Forced Start/Stop at Load Side  
manually start or stop the load

模式调整

按下 " "，当前的控制模式会闪烁，然后按下 " " 调出需要的控制模式，再按下 " " 进行确认。

Press the " " " Button"; the current control mode will flash. Press the button " " " to call up the required control mode. Press the " " " Button" to confirm.

过充/过放电压调节

长按  3秒，出现H:电压闪烁，然后按  调节需要电压，再按下 " " 进行确认。  
(H : 过充电压 L : 过放电压)

Overcharge/Overdischarge Voltage Adjustment

Long-press the " " " button" for 3 seconds until the overcharge voltage (marked as "H") flashes. Press the " " button to adjust to the required voltage. Press the " " " button" to confirm.  
(H for overcharge voltage, L for overdischarge voltage)

连接顺序: 1; 2; 3; 4

|   |                                                               |
|---|---------------------------------------------------------------|
| 1 | 连接电池<br>注意: 蓄电池端子应带保险安装, 安装距离不超过150mm                         |
| 2 | 连接负载                                                          |
| 3 | 连接太阳能发电板                                                      |
| 4 | 控制器通电<br>连接蓄电池, 识别控制系统的电压, 观察显示屏是否亮起。如果不工作或显示异常, 请查看操作说明与故障指南 |

注意: 如果要连接逆变器, 请将逆变器直接连接到电池上, 不要连接控制器的负载端子

Connection Sequence: 1 2 3 4

1 Connect the battery:

The battery terminal must be installed with a fuse, and the installation distance should not exceed 150mm

2 Connect the load

3 Connect the solar panel

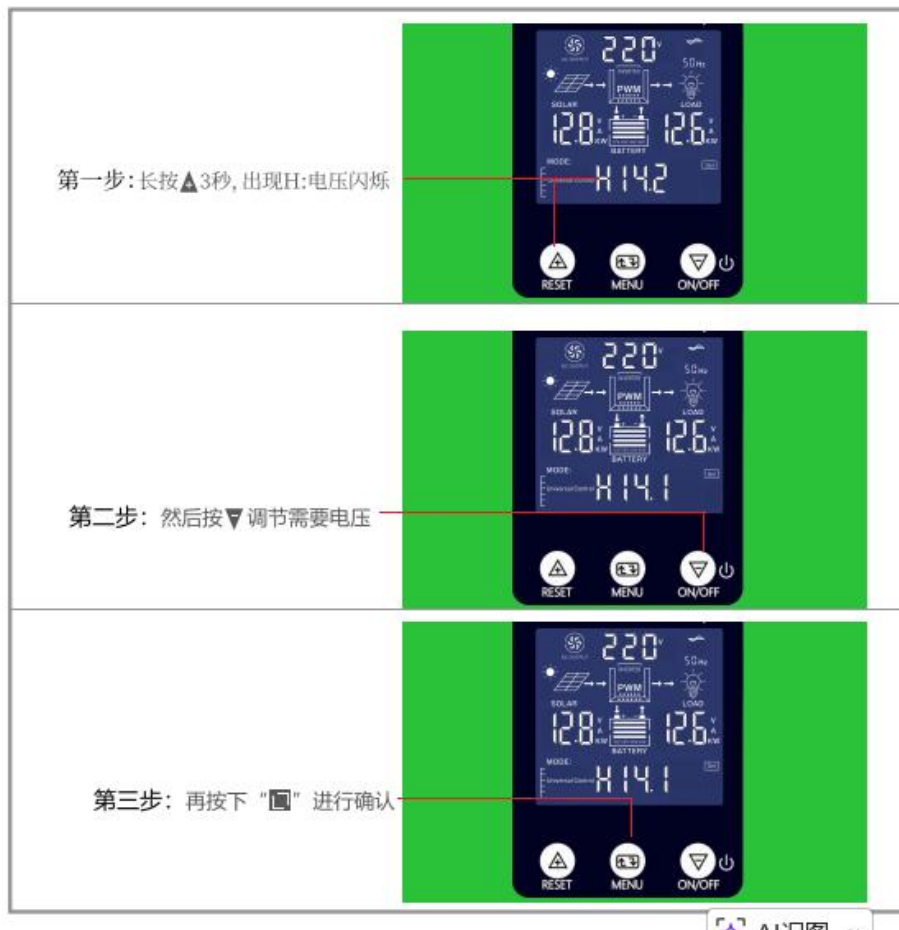
4 Power on the controller: After connecting the battery, check if the display screen of the control system lights up; if the working display is abnormal, refer to the operation manual and guide

Note: If connecting the inverter, connect it directly to the battery; do not connect it to the controller's load terminal

第四页：

## 过充/过放电压调节

长按▲3秒，出现H:电压闪烁，然后按▼调节需要电压，再按下“■”进行确认。  
(H：过充电压 L：过放电电压)



### Overcharge/Overdischarge Voltage Adjustment

Long-press the "▲" for 3 seconds until the overcharge voltage (marked as "H") flashes.

Press the button ▼ to adjust to the required voltage. Press the "■" to confirm. ((H for overcharge voltage, L for overdischarge voltage))

- 1 Long-press the "▲" for 3 seconds until the overcharge voltage (marked as "H") flashes.
- 2 Press the button ▼ to adjust to the required voltage.



3 Press the "  " to confirm.

## 控制器模式调节

按下 ""，当前的控制模式会闪烁，然后按下 "" 调出需要的控制模式，再按下 "" 进行确认。



### Mode Adjustment

Long press the  button for 3 seconds until the H voltage flashes. Then press the  button to adjust to the required voltage, and press the "" button to confirm. (H: Overcharge Voltage L: Overdischarge Voltage)

1 Press the "  "; the current control mode will flash .

2 Press the button  again to call up the required control mode.

3 Press the "  " to confirm .

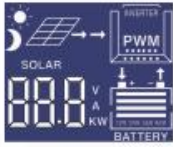
第五页：无

第六页:

**01**  温度超过55度或逆变器启动时动态显示并启动风扇

 50赫兹正弦波输出显示  
电压和功率每间隔5秒轮流显示

01 When the temperature exceeds 55°C or the inverter starts, it displays dynamically and starts the fan. 50Hz sine wave output display Voltage and power are displayed in turn every 5 seconds.

**2** 

当太阳能板显示太阳图标并动态显示太阳能经过控制器向电池充电，此时处于充电状态。

当太阳能板显示月亮图标，此时是晚上或未接通太阳能板。

左下方数值显示充电电压和充电电流，每5秒轮换显示。

2 When the solar panel displays the sun icon and dynamically shows that solar energy is charging the battery through the controller, it is in the charging state. When the solar panel displays the moon icon, it is night or the solar panel is not connected. The values at the lower left display the charging voltage and charging current, switching every 5 seconds.

**3** 

当负载图标小灯为动态发光状态并动态显示电池通过控制器向负载放电，此时处于放电状态。

当负载图标小灯处于静止状态，此时控制器处于关闭负载状态

右下方数值显示电池电压和放电电流，每5秒轮换显示。

3 When the load icon light is in a dynamic glowing state and dynamically shows that the battery is discharging to the load through the controller, it is in the discharge state. When the load icon light is in a static state, the controller is in the load-off state. The values at the lower right display the battery voltage and discharge current, switching every 5 seconds.

04

## 模式控制显示区域

MODE:  
 [ Light control  
 and delay  
 [ Universal Control  
 [ Manual  
 [ Timing  
 [ Test

- ➡ "Mode:"常亮，表示此区域为控制模式选择区域。
- ➡ "Light Control"常亮，表示控制器工作在【光控模式】。
- ➡ "Light Control and delay"常亮，表示控制器工作在【光控启动+延时停止控制模式】。
- ➡ "Universal Control"常亮，表示控制器工作在【通用控制模式】。
- ➡ "Manual"常亮，表示控制器工作在手动【控制模式】。
- ➡ "Timing"常亮，表示控制器工作在定时控制模式，误差过大不可用。
- ➡ "Test"常亮，表示控制器工作在【测试模式】。

04 Mode Control Display Area - "Mode:" is always on, indicating that this area is the control mode selection area. - "Light Control" is always on, indicating that the controller works in [Light Control Mode]. - "Light Control and delay" is always on, indicating that the controller works in [Light Control Start + Delay Stop Control Mode]. - "Universal Control" is always on, indicating that the controller works in [Universal Control Mode]. - "Manual" is always on, indicating that the controller works in [Manual Control Mode]. - "Timing" is always on, indicating that the controller works in Timing Control Mode, and it is unavailable if the error is too large. - "Test" is always on, indicating that the controller works in [Test Mode].

5

00:00 °C  
 TIMER ON  
 TIMER OFF  
 KWH

四位数码管轮流显示：时间“TIMER”、温度“°C”；每5秒轮换显示。

在光控延时模式下显示：时间“TIMER”、温度“°C”、负载关断剩余时间“TIMER OFF”；每5秒轮换显示

在定时模式下显示：时间“TIMER”、温度“°C”、负载开启时间“TIMER ON”、负载关断时间“TIMER OFF”；每5秒轮换显示。

5 The four-digit nixie tube displays cyclically: Time "TIMER", Temperature "°C"; switching every 5 seconds. In light control delay mode, it displays: Time "TIMER", Temperature "°C", Remaining load cutoff time "TIMER OFF"; switching every 5 seconds. In timing mode, it displays: Time "TIMER", Temperature "°C", Load on time "TIMER ON", Load cutoff time "TIMER OFF"; switching every 5 seconds.

6

Gel

LiPo

LiFe

用户选择电池类型显示：Gel 为铅酸电池、LiPo为锂电池、LiFe为铁锂电池;用户也可根据电池电压参数调整充电截止电压

6 Display of User-Selected Battery Type: Gel stands for lead-acid battery, LiPo for lithium battery, and LiFe for lithium iron phosphate battery; users can also adjust the charging cut-off voltage according to the battery voltage parameters.

第七页：

| 型号                   | 12V/24V 500W                      | 12V/24V 1000W     | 12V/24V 2000W                    |  |
|----------------------|-----------------------------------|-------------------|----------------------------------|--|
| 太阳能板光伏输入<br>峰值功率 (W) | 240W/12V 480W/24V                 | 480W/12V 960W/24V | 720W/12V 1440W/24V               |  |
| 控制器充电、放电电流<br>Max(A) | 20A                               | 40A               | 60A                              |  |
| 光伏板输入电压范围 (VDC)      | 12V电池用15V-50V光伏板                  | 24V电池用30V-50V光伏板  | 负载与DC输出接口电压<br>(等于电池电压)          |  |
| 过充电压 (VDC)           | 12V电池 14.2V (可调) 24V电池 28.4V (可调) |                   |                                  |  |
| 逆变器输出功率<br>Max ( W ) | 500W                              | 1000W             | 2000W                            |  |
| 逆变电压输出接口 ( V )       | AC220V 50Hz / AC110V 60Hz         |                   |                                  |  |
| 充电方式                 |                                   | 聚焦PWM脉宽调制充电       |                                  |  |
| 保护功能                 | 控制器：防止过冲 / 过压 / 高压保护 / 反接保护等      |                   | 逆变器：过载 / 短路 / 过压保护 / 欠压保护 / 过温保护 |  |
| 冷却方式                 | 风扇散热                              |                   |                                  |  |
|                      |                                   |                   |                                  |  |
|                      |                                   |                   |                                  |  |

7

|                                        |                                                                                                                 |                                                                                                                       |                                                            |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| Model                                  | 12V/24V 500W                                                                                                    | 12V/24V 1000W                                                                                                         | 12V/24V 2000W                                              |
| Solar Panel Input                      | 240W/12V 480W/24V                                                                                               | 480W/12V 960W/24V                                                                                                     | 720W/12V                                                   |
| Peak Power (W)                         |                                                                                                                 |                                                                                                                       | 1440W/24V                                                  |
| Controller                             |                                                                                                                 |                                                                                                                       |                                                            |
| Charge and Discharge                   | 20A                                                                                                             | 40A                                                                                                                   | 60A                                                        |
| Current Max (A)                        |                                                                                                                 |                                                                                                                       |                                                            |
| Solar Panel Input Voltage Ranges (VDC) | 12V battery with 15V-50V solar panel; 24V battery with 30V-50V solar panel                                      |                                                                                                                       | Load and DC Output Port Voltage (Equal to Battery Voltage) |
| Overcharge Voltage (VDC)               | 12V battery: 14.2V (adjustable); 24V battery: 28.4V (adjustable)                                                |                                                                                                                       |                                                            |
| Inverter Output Power Max (W)          | 500W                                                                                                            | 1000W                                                                                                                 | 2000W                                                      |
| Inverter Voltage                       | AC220V 50Hz / AC110V                                                                                            |                                                                                                                       |                                                            |
| Output Port (V)                        | 60Hz                                                                                                            |                                                                                                                       |                                                            |
| Charging Method                        |                                                                                                                 | Aggregate PWM Pulse Width Modulation Charging                                                                         |                                                            |
| Protection Functions                   | Controller: Prevent over-current / over-voltage / high-voltage protection / reverse connection protection, etc. | Inverter: Over-load / over-current / over-voltage protection / under-voltage protection / over-temperature protection |                                                            |
| Cooling Method                         |                                                                                                                 | Fan Cooling                                                                                                           |                                                            |

第八页：

| 常规电池过充电压参考值(实际过充电压以电池压为准) |            |      |        |
|---------------------------|------------|------|--------|
| 标称电压                      | 电池类型       | 电池串联 | 最高充电电压 |
| 12V                       | 12V铅酸蓄电池   | 1    | 13.8V  |
|                           | 3.7V三元锂电池  | 3    | 12.6V  |
|                           | 3.2V磷酸铁锂电池 | 3    | 11.0V  |
|                           | 3.2V磷酸铁锂电池 | 4    | 14.6V  |
| 24V                       | 12V铅酸蓄电池   | 2    | 27.6V  |
|                           | 3.7V三元锂电池  | 6    | 25.2V  |
|                           | 3.7V三元锂电池  | 7    | 29.4V  |
|                           | 3.2V磷酸铁锂电池 | 7    | 25.6V  |
|                           | 3.2V磷酸铁锂电池 | 8    | 29.2V  |
|                           |            |      |        |
|                           |            |      |        |
|                           |            |      |        |
|                           |            |      |        |
|                           |            |      |        |
|                           |            |      |        |
|                           |            |      |        |
|                           |            |      |        |

Reference Values for Overcharge Voltage of Conventional Batteries (The actual overcharge voltage shall be subject to the battery.)

| Nominal Voltage | Battery Type                        | Battery Series | Maximum Charging Voltage |
|-----------------|-------------------------------------|----------------|--------------------------|
| 12V             | 12V Lead-acid Battery               | 1              | 13.8V                    |
|                 | 3.7V Ternary Lithium Battery        | 3              | 12.6V                    |
|                 | 3.2V Lithium Iron Phosphate Battery | 3              | 11.0V                    |
|                 | 3.2V Lithium Iron Phosphate Battery | 4              | 14.0V                    |
| 24V             | 12V Lead-acid Battery               | 2              | 27.6V                    |
|                 | 3.7V Ternary Lithium Battery        | 6              | 25.2V                    |

| Nominal Voltage | Battery Type                        | Battery Series | Maximum Charging Voltage |
|-----------------|-------------------------------------|----------------|--------------------------|
|                 | 3.2V Lithium Iron Phosphate Battery | 7              | 29.4V                    |
|                 | 3.2V Lithium Iron Phosphate Battery | 8              | 29.2V                    |

第九页：



### 控制器支持太阳能板电压

1. 充12V的电瓶：  
【需要配15-50V太阳能板】
2. 充24V的电瓶：  
【需要配30-50V太阳能板】

### 控制器支持太阳能板功率

**20A控制器：**  
**12V电池 (240W) 24V电池 (480W)**

**40A控制器：**  
**12V电池 (480W) 24V电池 (960W)**

**60A控制器：**  
**12V电池 (720W) 24V电池 (1440W)**

#### Solar Panel Voltage Supported by the Controller

For charging 12V batteries:[Requires matching 15-50V solar panels]

For charging 24V batteries:[Requires matching 30-50V solar panels]

#### Solar Panel Power Supported by the Controller

##### Controller TypePower Specification

20A Controller 12V Battery (240W) 24V Battery (480W)

40A Controller 12V Battery (480W) 24V Battery (960W)

60A Controller 12V Battery (720W) 24V Battery (1440W)

## 安全注意事项

1. 铅酸电池不需要调节过充电压, 自动识别。
2. 锂电池需要手动调节过充电压。
3. 充锂电必须正规厂家生产自带保护板, 并且需要调节过充电压! 不按要求操作后果自负!

## 合格证

检验员:   
检验日期: \_\_\_\_\_

## 产品保修卡

姓名: \_\_\_\_\_ 电话: \_\_\_\_\_  
地址: \_\_\_\_\_  
订单编号: \_\_\_\_\_ 购买渠道: \_\_\_\_\_

### Safety Precautions

Lead-acid batteries do not need to adjust the overcharge voltage, as it is automatically recognized.

Lithium batteries need to manually adjust the overcharge voltage.

When charging lithium batteries, they must be equipped with a protection board produced by a regular manufacturer, and the overcharge voltage needs to be adjusted! Any consequences caused by non-compliance with the requirements shall be borne by the user.

### Certificate of Conformity

Inspector: \_\_\_\_\_ Inspection Date: \_\_\_\_\_

### Product Warranty Card

Name: \_\_\_\_\_ Phone: \_\_\_\_\_ Address: \_\_\_\_\_ Order Number: \_\_\_\_\_ Purchase Channel: \_\_\_\_\_