

Solarshop Control Charger

Series solar charge controller



Features for LED indicator controllers:

1. Intuitionistic LED indicators show the current system battery capacity, charging and discharging state of the battery.
2. Protection functions as overcharging, over discharging, overload and reversed connection.
3. PWM charging method makes the charging efficiency increase by 3% to 6%, compared with non-PWM charging.
4. The parameters of charging and discharging have been set during the production (special parameters need to be told)

Features for LCD display controllers:

1. Vivid LCD graphic symbols
2. Protection as battery reverse-discharge protection, battery low voltage disconnection(LVD), battery reverse connection protection, over-current protection
3. Simple button operation make it easy to set the operation mode of load
4. PWM charging mode with 4 stages(bulk, absorption, float and equalized).
5. Adaptable to Sealed, GEL, Flooded and other customized battery type.
6. Automatic identification of system voltage level
7. Adjustable charge-discharge parameters
8. Automatic temperature compensation

STORE ENERGY TODAY,
KEEP BILLS AWAY!

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KEEP BILLS AWAY!

	AUTO 10 Ah	คอนโทรลล์ชาร์จเจอร์อัตโนมัติ ขนาด 10 แอมป์ 12/24 โวลต์
	AUTO 20 Ah	คอนโทรลล์ชาร์จเจอร์อัตโนมัติ ขนาด 20 แอมป์ 12/24 โวลต์
	SLC-GP2410E	คอนโทรลล์ชาร์จเจอร์อัตโนมัติ ขนาด 10 แอมป์ 12/24 โวลต์ + USB
	SLC-GP2420E	คอนโทรลล์ชาร์จเจอร์อัตโนมัติ ขนาด 20 แอมป์ 12/24 โวลต์ + USB
	SLC-GP2430E	คอนโทรลล์ชาร์จเจอร์อัตโนมัติ ขนาด 30 แอมป์ 12/24 โวลต์ + USB
	SLC-GP4830C	คอนโทรลล์ชาร์จเจอร์อัตโนมัติ ขนาด 30 แอมป์ 48 โวลต์ + USB
	SLC-GP2450E	คอนโทรลล์ชาร์จเจอร์อัตโนมัติ ขนาด 50 แอมป์ 12/24 โวลต์ + USB
	SLC-GP2460E	คอนโทรลล์ชาร์จเจอร์อัตโนมัติ ขนาด 60 แอมป์ 12/24 โวลต์ + USB
	SLC-GP4860C	คอนโทรลล์ชาร์จเจอร์อัตโนมัติ ขนาด 60 แอมป์ 48 โวลต์ + USB
	SLC-GP1220	คอนโทรลล์ชาร์จเจอร์อัตโนมัติ ขนาด 20 แอมป์ 12 โวลต์ พร้อมหลอดไฟ 2 วัตต์ + USB

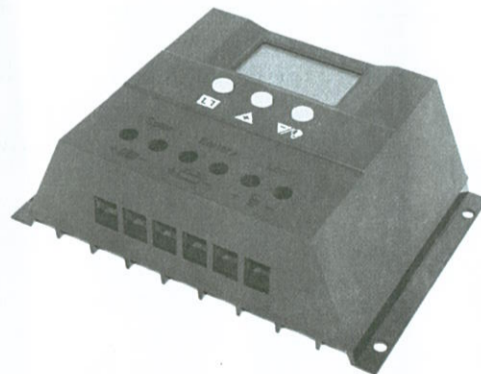
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SLC-GP5024 / SLC-GP6024 / SLC-GP5048 / SLC-GP6048



Intelligent Solar Charge Controller

User's Manual



Please read this manual carefully before you use this product

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1. Product Introduction

The series controller is a kind of intelligent, multi-purpose solar charge and discharge controller. The family use the fixed LCD display, with a very friendly interface; various control parameters can be flexibly set, fully meet your various application requirements. The series controller has following features:

- Image of LCD graphic symbol
- Simple button operation
- Automatic Identification System Voltage level
- Intelligent PWM charge mode
- Automatic Temperature Compensation
- Adjustable charge-discharge control parameters
- Settable Operating mode of Load
- Overload, Short Circuit Protection
- Remote monitoring and control function (custom)
- Battery reverse-discharge protection
- Battery Low Voltage Disconnection (LVD)
- Battery reverse connection protection
- Accumulated function of charge and discharge Ampere hours

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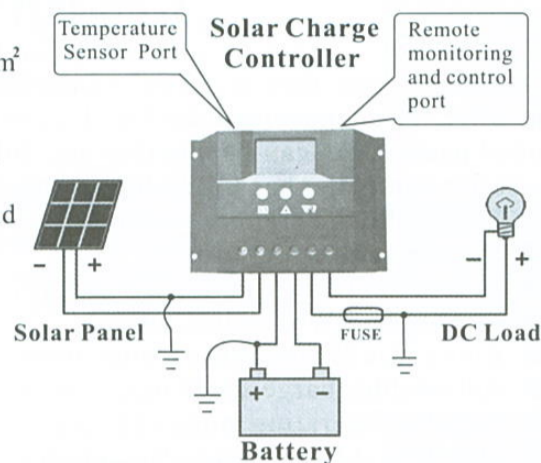
SLC-GP5024 / SLC-GP6024 / SLC-GP5048 / SLC-GP6048



2. Installation

Install:

- ① Ready tools and cables. Encourage you to matching the right cables. Ensure that the current density $< 4\text{mm}^2$ that is conducive to reducing the line voltage drop. Recommended: 50A with 16mm^2 cable. Check weather the installation sites compliance with the relevant safety requirements. Please avoid the damp, dusty, there is a place flammable, explosive and corrosive gases use the controller to install.
- ② Install the controller into a fixed vertical plane. See section 5 of the pore size and pore spacing. In order to ensure a good thermal control conditions, please set aside each 10cm below the controller space.
- ③ As shown on the right, connect the (1) Load, (2) Battery and (3) Solar Panel to the controller according to the order of (1) (2) (3). Pay attention to the load, battery, solar panel and controller of same polarity.
- ④ Put into the external temperature sensor on the left of the controller (probe port). The temperature sensor should be similar space with battery. (Otherwise, the controller will control the parameters all wrong temperature compensation.)
- ⑤ If you have remote monitoring and control function, please insert one end of the included communication wire on the right of the controller (communication port), the other end to connect to The host computer.



Demolition: To prevent accidents, please order the demolition of solar panels, battery and disconnect with controller.

Note: Battery polarity will not damage the controller, but you will have a load equipment security risks.

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3. Operation

Description of LCD graphic symbol

- | | |
|--|---------------------------------------|
| : Stop-powered Status for Loads | : Stop the battery charging |
| : Power to the load status, the load circuit without current | : Bulk charging the battery |
| : The load circuit with current | : Float charging the battery |
| : Load | : The system is working correctly |
| : Solar Panel | : The system is not working properly |
| : Load sensor control | : Battery charge capacity instruction |
| : Load timer control | : Battery |

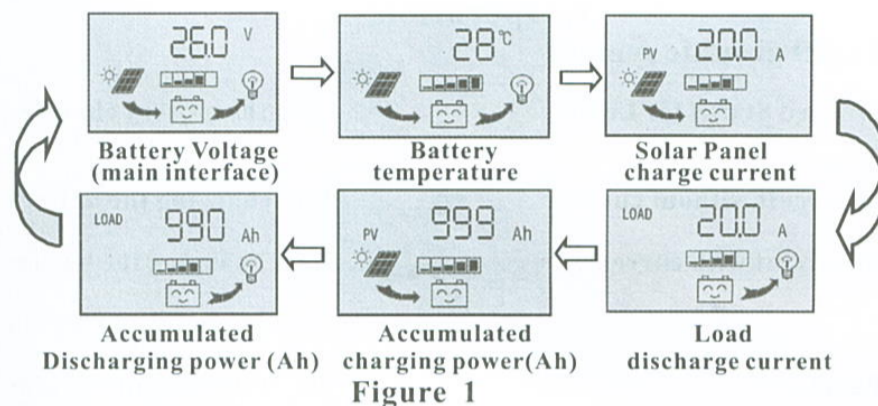
Description of Button Function:

- | : Interface loop switch button, use the button to cycle between pages in each switch cycle sequence shown in (figure 1)
- | : Adjustment of parameters plus buttons. In addition, at the state in the parameter view, long press the button more than 5 seconds, all parameter to restore factory setting.
- | : Adjustment of parameters minus button. In addition, in the main interface, click this button to switch the load.

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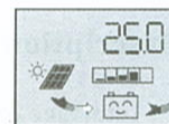


3 View the parameters:

The controller will default entry “battery voltage” interface after correct power-on. This is the Main interface. Use the button could in turn visit the following parameters interface.

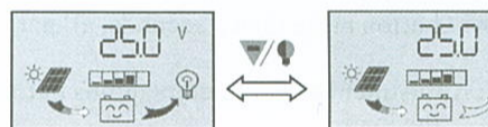
3.1 Battery Voltage of View

As shown on the right, displays the value for current battery voltage. This interface (based interface) displays charge status, discharge status, battery capacity and battery voltage.



3.2 The load on/off control

View the interface in the battery voltage could be used key On, off the load. In other interface, The key there is no such feature.



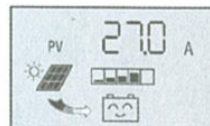
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the value used for temperature compensation on LVD function. The sensor Must be plug in before using the controller.



3.4 Solar Panel charging current of View

As shown on the right, display the value of charging current from solar panel.



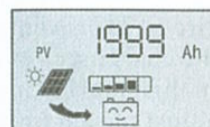
3.5 Load discharging current of View

As shown on the right, display the value of discharging current for Loads.



3.6 View the Accumulated charging power (Ah) by solar panel And back to zero

As shown on the right, display the accumulated charging power from solar panel (Total ampere hour), long press the button more than 5seconds, The value will back to zero.



3.7 View the Accumulated discharging power (Ah) by Load and Back to zero

As shown on the right, display the accumulated discharging power for loads (Total ampere hour), long press the button more than 5seconds, the value willback to zero.



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4 Set the parameters

At the main interface press for long (>5 seconds, and the number starts flickering) to enter into parameter Setting interface. Press for short (<1 second) to reset the parameter, and press to adjust this parameter. After

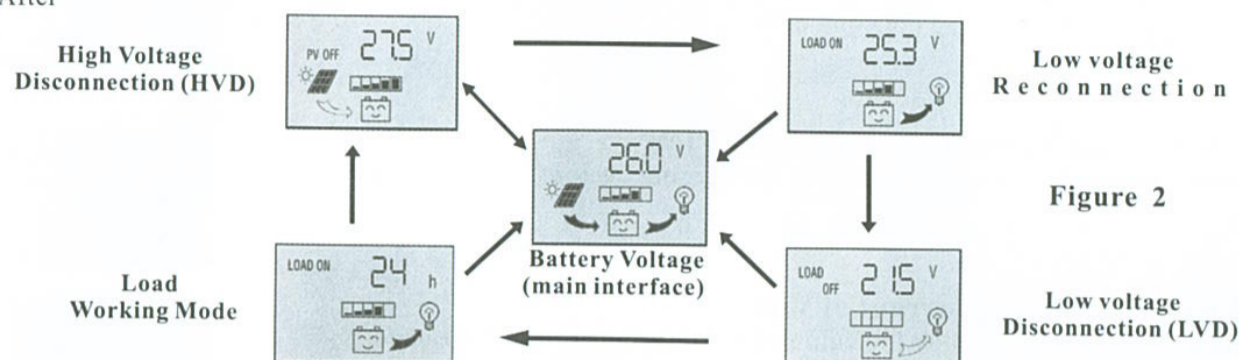
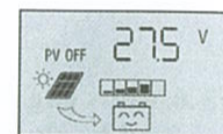


Figure 2

4.1 Set the High Voltage Disconnection

As shown on the right, shows the values for the HVD voltage. When the battery voltage is reach to HVD voltage, the controller will cut off the charging circuit to prevent over-charging battery. Battery voltage drops under the value the charging circuit will be re-connected.

In this interface, numbers start flashing, you can use the key to adjust the parameter. After long press the key (>5seconds) to exit parameter Setting interface, the controller will save the settings.



4.2 Set the Low Voltage Reconnection

As shown on the right, shows the values for the LVR voltage. Under the LVR protection in the controller, when the battery voltage is restored to the higher Voltage than LVR voltage, the controller will re-connect the load circuit.

In this interface, numbers start flashing. You can use the key to adjust the parameter. After long press the key (>5seconds) to exit parameter setting



4.3 View and set the Low Voltage Disconnection Protection

As shown on the right, shows the values for the LVD protection voltage. When the battery voltage is lower than protection voltage, the controller will disconnect the load circuit to prevent battery over-discharge.

In this interface, numbers start flashing, that has entered the LVD setup interface, you can use the key to adjust the parameter. After long press the key (>5seconds) to exit parameter setting interface, the controller will save the settings.



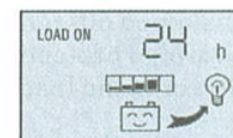
4.4 View and set Load Working Mode

As shown on the right is Load working mode interface, different values represent different load working patterns.

4h said Normal Mode, in case of no fault state of the load is always in power.
1~23h said Light Control with Time Control Mode, Load power after dark, and close the load according to the timer setting.

1 said Light Control Mode, Load power after dark, turn off the load after dawn.

In this interface, numbers start flashing, that has entered the Load Working Mode setup interface, you can use the key to adjust the parameter. After long press the key (>5seconds) to exit parameter setting interface, the controller will save the settings.



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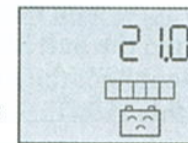
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4. Common Fault and Handling

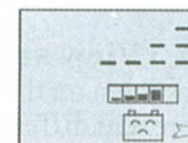
LVD Protection and Treatment:

Screen display as shown in the figure that the battery drops below the LVD protection voltage. The controller has entered the LCD protection state, load circuit has been disconnected. Use the solar panels recharge the battery or charger when the battery voltage reaches LVR voltage, the controller will resume on the load power supply, into the normal working state.




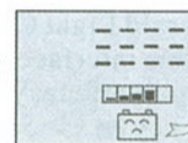
Overload Protection and Treatment:

Screen display (see the figure) and flashing expressed load loop circuit current sustained 60seconds than 1.5times rated current, the controller has entered into overload protection state. After reduce the load, press the button  to restore power to the load.




Short Circuit Protection and Treatment:

Screen display (see the figure on the right) and flashing expressed there is short circuit on the load loop circuit. The controller has enter into Short Circuit Protection state Check the load if there is damage or not, if there is cable short circuit or not, after trouble shooting short press  the button for restoration.



Solar Panel Fault and Treatment:

 Symbol flashing represent the controller was not detected solar panels within 24hours. Check there is a connection from solar panel, check if there is an open circuit between solar panels with controller.

Load Shock Fault:

Open load if the flashing, that indicate the load impulse current is more than twice rated current of the controller. The controller is restarting the load in action many timers do.

6. Technical Data

Data	current			Data	current		
	40A	50A	60A		40A	50A	60A
Rated voltage	12V/24V		48V	Installation cable area	>3# AWG (<25mm ²)		
Maximum voltage of solar panel	≤ 50		≤ 100	Operating temperature	-20 ~ 50°C		
Float voltage	13.7V/27.4V		54.8V	Storage temperature	-30 ~ 70°C		
Low Voltage Disconnection	10.7V/21.4V		42.8V	Humidity Requiremen	<90%, no condensation		
Low Voltage Reconnection	12.6V/25.2V		50.4V	Size	130mm *188mm *62mm		
No load loss	<30mA			Mounting hole spacing	90 mm *178 mm --5		
Loop voltage drop	<200mV			Weight	590g		
Charging mode	PWM mode						
Temperature compensation	-4mV/Cell/°C						
Notes	Model suffix "Z" represent automatic identify system voltage level, "T" represent controller with remote monitoring						