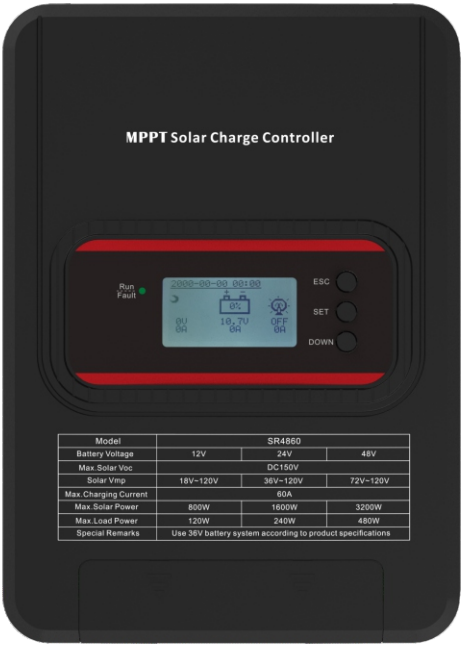
Solar charge controller
User's Manual



Model	SR4860		
Battery Voltage	12V	24V	48V
Max.Solar Voc	DC150V		
Solar Vmp	18V~120V	36V~120V	72V~120V
Max.Charging Current	60A		
Max.Solar Power	800W	1600W	3200W
Max.Load Power	120W	240W	480W
Special Remarks	Use 36V battery system according to product specifications		

Contents

1. Thanks

Thank you very much for selecting our product!choosing our and congratulations on your choosing new high-performance our product.this manual will help you get to know your new product.when you choose our solar charge controller,you option for reliable and high-performance technology

2. About This Manual

2.1 Validity

This manual describes the assembly, installation, commissioning and maintenance of the following solar charge controller model:

SR4810 SR4820 SR4830 SR4840 SR4850 SR4860 SR4880

This manual does not cover any details concerning equipment connected to the sales (e.g. PV modules). Information concerning the connected equipment is available from the manufacturer of the equipment.

2.2 Purpose

The purpose of this manual is to provide explanations and procedures for installing, operating, maintaining, and troubleshooting the Solar charge controller.

2.3 Scope

This manual provides safety guidelines, detailed planning and setup information, procedures for installing the Solar charger controller, as well as information about operating and troubleshooting the unit. It does not provide details about particular brands of batteries. You need to consult individual battery manufacturers for this information.

2.4 Audience

This manual is intended for anyone who needs to install and operate the Solar charger controller. Installers should be certified technicians or electricians.

3. Important Safety Massage

3.1 Save these instructions

This manual contains important instructions for Solar charger controller that shall be followed during installation and maintenance.

3.2 General

3.2.1. Refer installation and servicing to qualified service personnel. Incorrect installation or use may result in risk of fire. No user serviceable parts in this unit.

3.2.2. Remove all sources of power, photovoltaic and battery before servicing or installing.

3.2.3. Warning – risk of explosive gases

- When Solar charger controller is working, Please DO NOT touch it because the temperature is too high.
- Working in the vicinity of lead-acid batteries is dangerous. Batteries produce explosive gasses during normal battery operation.
- To reduce risk of battery explosion, follow these instructions and those published by battery manufacturer and manufacturer of any equipment you intend to use in vicinity of battery.

3.2.4. Personal precautions

- Someone should be within range of your voice or close enough to come to your aid when you work near a lead-acid battery.
- Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing or eyes.
- Wear complete eye protection and clothing protection. Avoid touching eyes while working near battery.
- If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters eye, immediately flood eye with running cold water for at least 10 minutes and get medical attention immediately.
- NEVER smoke or allow a spark or flame in vicinity of battery.
- Be extra cautious to reduce risk of dropping metal tool onto battery. It might spark or short circuit battery or other electrical part that may cause explosion.
- Remove personal metal items such as rings, bracelets, necklaces, and watches when working with a lead-acid battery. A lead-acid battery can produce a short circuit current high enough to weld a ring or the like to metal, causing a severe burn.

3.2.5. Preparing to charge

- Never charge a frozen battery.
- Be sure battery is mounted in a well-ventilated compartment.
- Add distilled water in each cell until battery acid reaches level specified by battery manufacturer. This helps purge excessive gas from the cells. Do not overfill. For a battery without cell caps, carefully follow manufacturers charging instructions.

3.2.6. Charger location & installation

- Controller employs components that tend to produce arcs or sparks. NEVER install in battery

compartment or in the presence of explosive gases.

- Protect all wiring from physical damage, vibration and excessive heat.
- Insure that the controller is properly setup for the battery being charged.
- Do not expose controller to rain or snow.
- Insure all terminating connections are clean and tight to prevent arcing and overheating.
- Charging system must be properly installed as described in these instructions prior to operation.
- Do not connect to a PV array capable of producing greater than 30 Amps of short circuit current @ 25°C.
- Do not connect input to DC source directly with load, Solar charger controller need to be powered by solar panel.
- Do not short-circuit DC output port, it will damage Solar charger controller.

3.3 Symbol Explain

Symbol	Explanation
	Electrical voltage!
	Risk of burns
	Operation after 10 minutes
	Point of connection for grounding protection
	Direct Current (DC)
	The Solar charger controller has no transformer isolation.
	Read the manual
	CE mark. The Solar charger controller. complies with the requirements of the applicable CE guidelines.
	The Solar charger controller must not be disposed of with the household waste.

3.4 Abbreviations and Acronyms

Abbreviations	Full name
BTS	Battery Temperature Sensor
DC	Direct Current
LED	Light Emitting Diode
LVD	Low Voltage Disconnect
LVR	Low Voltage Reconnect
B.SELECT	Battery type selector
BAT	Battery
CHG.MODE	Charge mode
PV	Photovoltaic
MPPT	Maximum Power Point Tracking
PWM	Pulse Width Modulation

4. Product description

4.1 General description

Solar charger controller is Maximum Power Point Tracking (MPPT) photovoltaic (PV) battery charge controller. Through the use of MPPT technology, Solar charger controller can increase charge current up to 30% or more compared to conventional controllers. Solar charger controller's sophisticated three stage charge control system can be configured to optimize charge parameters to precise battery requirements. The unit is fully protected against voltage transients, over temperature, over current, reverse battery and reverse PV connections. An automatic current limit feature without worrying about overload from excessive current, voltage or amp-hour based load control.

Series pass Pulse Width Modulation (PWM) charge voltage control combined with a multistage charge control algorithm leads to superior charging and enhanced battery performance. The filtered PWM power control system uses highly efficient and reliable power MOSFET transistors. The MOSFET's are turned on and off at high frequency to precisely control charge voltage and MPPT.

Fully automatic temperature compensation of charge voltage is available to further improve charge control and battery performance. The optional battery temperature sensor is built for long term reliability. The sensor element is environmentally sealed and encapsulated into a plastic lug which adheres to directly to the battery terminal and by screw port connect with the unit, And the Solar charger controller also includes an isolated RS232 port for connection to a PC computer for data logging and system monitoring.

The Solar charger controller can easily install in parallel connection of output, so it also suitable for large system current application condition.

4.2 Features

- Maximum efficiency of 98%
- DC Load output port(10A)
- Wide PV input voltage range
- An optional battery temperature sensor ensures precise battery charging
- LCD and LED displays to indicate the status of charge
- TVS Lightning protection
- Reverse current at night
- Three-stage battery charging (bulk, absorption, and float) with optional temperature compensation
- Automatic overload protection
- Silent, pulse width modulated (PWM), high efficiency operation
- RS232 communication
- Natural cooling
- Temperature compensate for battery
- Support for gel batteries, sealed batteries, Fluid batteries, lithium batteries and other different types of battery charging procedures.
- With a limited-current charging mode, when the battery plate power is too large and the charging current is greater than the rated current, the controller automatically reduces the charging power and makes it work at the rated charging current.
- Support capacitive load instant high current start.
- Support battery voltage automatic recognition.
- Overheated protection.

4.3 Product description

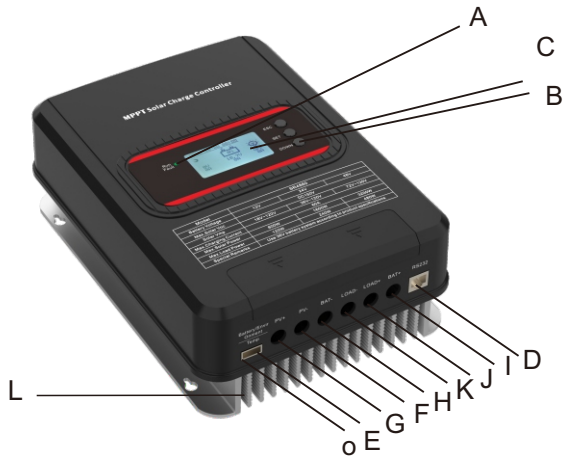


Figure 1 : The Solar charge controller Overview

Position	Description
A	LED
B	LCD
C	Function Key
D	RS232
E	Environment temperature sensor port
F	PV input negative
G	PV input positive
H	Battery negative
I	Battery positive
J	DC load negative output
K	DC load positive output
L	Safety (Earth) ground
O	Battery temperature sensor port

More detail about the type label as the chart below:

Model		SR4810	SR4820	SR4830	SR4840	SR4850	SR4860	SR4880
PV Input data(PV)								
Max.PV voltage (VOC)		75V		145V				
System voltage		12V/24V		12V/24V/48V auto,36V Set				
MPPT voltage range		Battery voltage+3V-120V						
Suggest input Voc voltage		24V/40V		24V/40V/54V/72V				
Number of MPPT trackers		1	1	1	1	1	1	1
Max.PV input power	12V	140W	270W	400W	540W	670W	800W	1100W
	24V	270W	540W	800W	1070W	1340W	1600W	2150W
	36V	400W	800W	1200W	1600W	2000W	2400W	3200W
	48V	540W	1080W	1600W	2140W	2670W	3200W	4300W
Charger Output (DC)								
Max.output current (revisable)		10A	20A	30A	40A	50A	60A	80A
Rating load current		10A						
Max. capacitive load capacity		10000uF						
Ripple voltage		< 0.5%						
Electric current								
Applicable battery type (ex-factory default lead-acid battery)		Sealed lead-acid battery/colloidal battery/liquid-rich battery/ lithium,other battery types can be customized						
Efficiency								
Max.efficiency		=98%						
MPPT efficiency		>99%						
Equipment protection		Input-output ovevoltage、PV anti-reverse、battery anti-reverse、load overcurrent protection、load short-circuit protection、temperature protection.						

Regular data							
Unloaded loss	<1.5W	<1.5W	<1.5W	<1.5W	<1.5W	<1.5W	<1.5W
Operating temperture range	-20 ••• ••• +45℃						
Elevation height	=3000m						
Working humidity	0%to95%(no condensat)						
Cooling concept	Natural						
Environmental Protection Rating	IP20						

4.4 Size and weight

Product dimension (D*W*H),mm	
Pack dimension (D*W*H),mm	
N.W	
G.W	

5. Installation Instructions

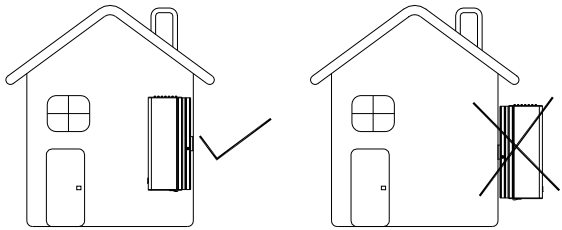
5.1 Pre-Installation

The instructions that follow are applicable to the typical installation. For special applications, consult a qualified electrician or your Certified Dealer. Installation procedures will vary according to your specific application.

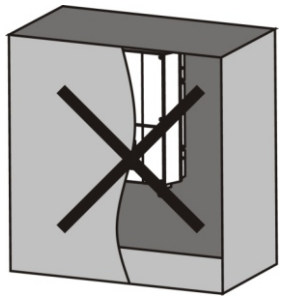
✧ **Important:** Installations should meet all local codes and standards. Installations of this equipment should only be performed by skilled personnel such as qualified electricians and Certified Renewable Energy (RE) System Installers.

5.2 Installation location

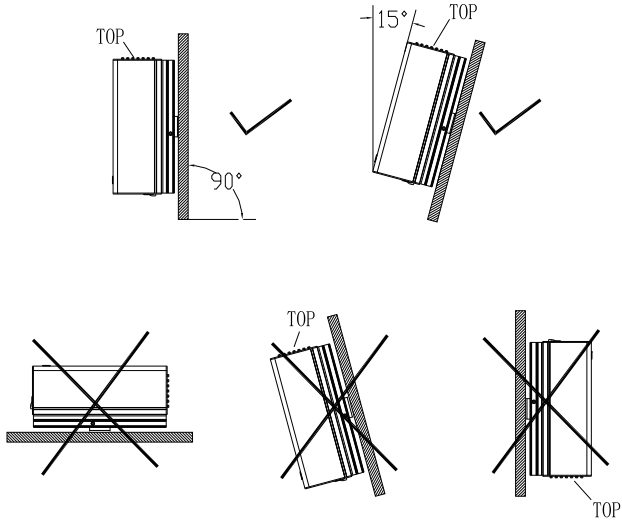
This is guidance for installer to choose a suitable installation location, to avoid potential damages to device and operators. The inverter can't install close to trunk of outdoor。The Ingress Protection rate is IP20 which means the inverter can be installed indoors.



Please make sure the solar charge controller installed at the right place。 The the solar charge controller can not install close to trunk.



The installation location must be suitable for the inverter's weight and dimensions for a long period time. Select the installation location so that the status display can be easily viewed. Do not install the solar charge controller on structures constructed of flammable or thermolabile materials.Never install the solar charge controller in environment of little or no air flow, nor dust environment. The humidity of the installation location should be 0~95% without condensation. The installation location must be freely and safely to get at all times. Vertically installation and make sure the connection of the solar charge controller must be downwards. Never install horizontal and avoids forward and sideways tilt.



5.3 Mounting the Solar charger controller

The Solar charger controller is designed for indoor mounting. Care should be taken in selecting a location and when mounting the enclosure. Avoid mounting it in direct sunlight to prevent heating of the enclosure. The enclosure should be mounted vertically on a wall. In outdoor installations, the Solar charge controller must be installed in a rainproof enclosure to eliminate exposure to rain, mist or water-spray.

✧ Caution: Damage to Solar charge Controller, Install the Solar charge controller in a dry, protected location away from sources of high temperature, moisture, and vibration. Exposure to saltwater is particularly destructive. Corrosion is not covered by the warranty.

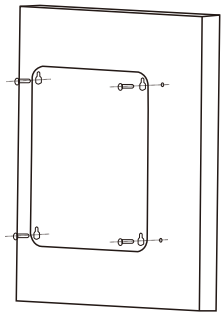
Mount the Solar charge controller step

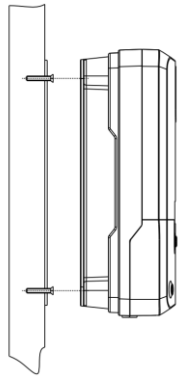
Step 1: Fixed screw

First put the installation position guide board in the right position, then use a pen to mark the installation position, drill 4 suitable size installation holes at 4 marks, and fix the screws.

Step 2: Fixed controller

Aim the fixed holes of the controller at the four screws fixed in advance and hang them to ensure the safety and reliability of the controller.





✧ **Warning:** Explosion/Corrosion Hazard and don't mount solar charger controller on the flammable wall(for example: wooden all and so on).

Do not locate the Solar charge controller in a sealed compartment with the batteries. Batteries can vent hydrogen-sulfide gas, which is corrosive to electronic equipment. Batteries also generate hydrogen and oxygen gas that can explode when exposed to a spark.

6. Electrical connection

6.1 Wire Size

Solar charger advice PV input voltage：

Table : Suggestion Minimum wire size

Model	SR4810	SR4820	SR4830	SR4840	SR4850	SR4860	SR4880
PV connection dimensions	1*PC#10AWG	1*PC#10AWG	1*PC#8AWG	2*PC#10AWG	2*PC#8AWG	2*PC#8AWG	3*PC#8AWG
Battery connection dimensions	1*PC#10AWG	1*PC#10AWG	1*PC#8AWG	2*PC#10AWG	2*PC#8AWG	2*PC#8AWG	3*PC#8AWG
Load connection dimensions	1*PC#12AWG	1*PC#10AWG	1*PC#12AWG	2*PC#12AWG	1*PC#12AWG	1*PC#12AWG	1*PC#12AWG

6.2 DC terminal connector locations

Terminal connectors for DC wiring are located on the lower edge of the circuit board. Terminal Torque Requirements. Once the wires have been installed, torque the terminals as follows. Be careful not to over tighten of the power wire.

	When connecting the battery and solar panels to distinguish between positive and negative attention, please pay attention to safety.

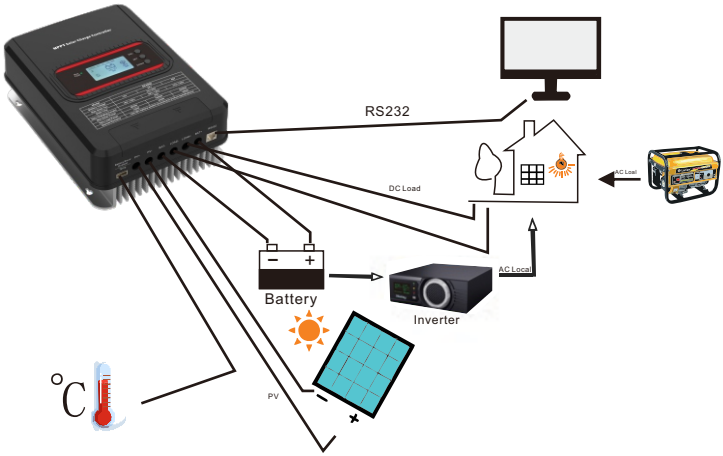
Figure 2 : DC terminal connector locations

6.3 PV Charge And Load Control Mode Wiring

The procedure below is illustrated in Figure 3 .

✧ **WARNING:** Shock Hazard

PV arrays generate voltage whenever light strikes the surface of the array. Before connecting the Solar charge controller, cover or disconnect the array to prevent any current from being generated



1. Connect the PV array's positive (+) output to the terminal marked PV positive (+) on the Solar charge controller and tighten the screw.

2. Connect the PV array's negative (–) output to the terminal marked PV negative (–) on the Solar charge controller and tighten the screw.

3. Connect the terminal marked battery negative (–) on the Solar charge controller to the negative (–) battery terminal and tighten the screw.

4. Connect the terminal marked battery positive (+) on the Solar charge controller to the positive (+) battery terminal and tighten the screw.

5. Connect the terminal marked load negative (–) on the Solar charge controller to the negative (–) load terminal and tighten the screw.

6. Connect the terminal marked load positive (+) on the Solar charger controller to the positive (+) battery terminal and tighten the screw.

7. Connect a cable from the controller's other terminal marked load negative (–) to the negative terminal of your DC load and tighten the screw.

8. Connect a cable from the controller's other terminal marked load positive (+) to the positive terminal of your DC load and tighten the screw.

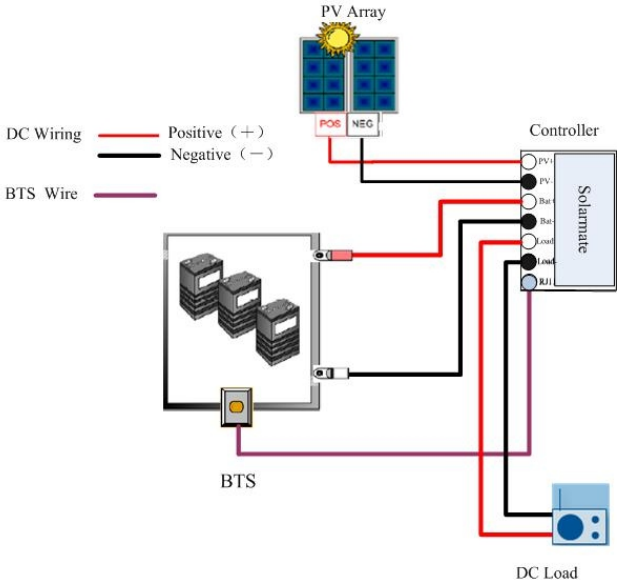


Figure 3: Connection diagram

6.4 Grounding

The Solar charge controller is designed to work with grounded electrical systems. In solar charger controller ground is not connected to input terminal and output terminal so customer can connect Ground to battery + or batter - But don't connect battery terminal and PV output terminal with Ground at same time

Figure4: Safety (Earth) ground

7. Operation Instructions

7.1 Key define

ESC	Back to Previous Page
SET	Set Parameters
DOWM	Turn Down

7.2 Browse display message

Display according to (solar panel voltage, current)， (the battery voltage, charging current), (load voltage, load current), (battery AH capacitance, battery temperature), (the percentage of battery power, temperature compensation coefficient), (battery system voltage 12/24/36/48 V, battery type) in order to cycle display the above parameters。Use the DOWN key Switching the display between the various parameters, shows the structure shown in Figure 5 :

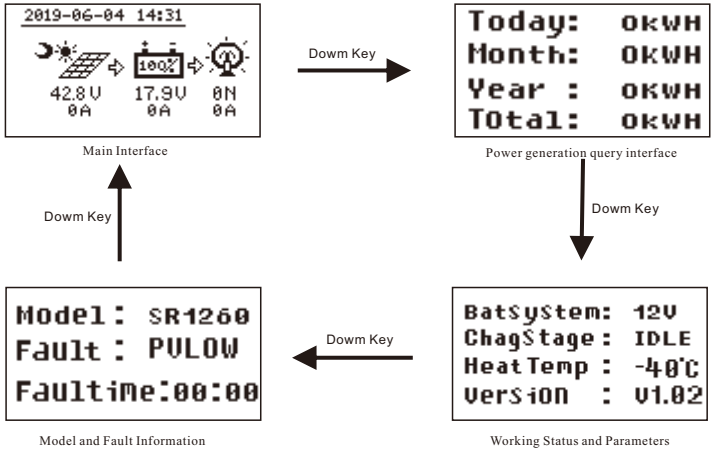


Figure 5 : Browse page

8. Configuring the Solar charge controller

8.1 Display message description

When have any key operation, the LCD backlight will automatically turn on; when without any key operation, the LCD backlight will automatically turns off after 30 seconds

Display message explain

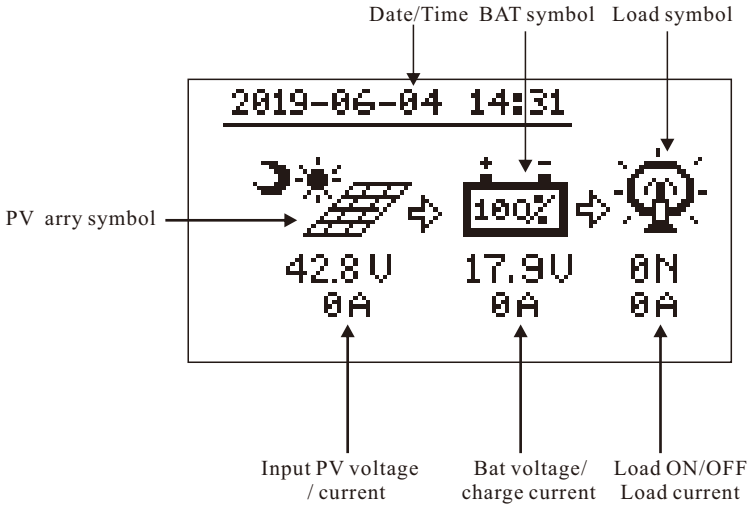


Figure 6 : LCD display message

LED indicator light explain:

LED indicator light	Green	Charge normally
	Red	PV not on or malfunctioning

Battery capacity indicator:

Each cell corresponds to 20% of the capacity. Note: This capacity is based on 100% of full voltage, over-discharge voltage is 0%, the percentage of the battery voltage is calculated.

8.2 Parameter setting operation

Using **SET** Key means you can set some parameters : the battery charge current limit, the load switch, the battery capacity **AH**,the battery temperature compensation coefficient,the 36V Battery System the battery type, a total

of six parameters that can be modified In the Master Browse Interface, Or any interface press SET key 3 seconds to enter into the parameter setting state, There is a black sign in the current value setting position, and press DOWM to select the parameters you want to change then press the **SET** key. then sign will twinkling that has entered into the modification mode, press DOWN key modify the parameter value, if the parameter have finished, press SET key save the parameter value and return to the main page, if you do not want to save, press ESC key, return to the main page .

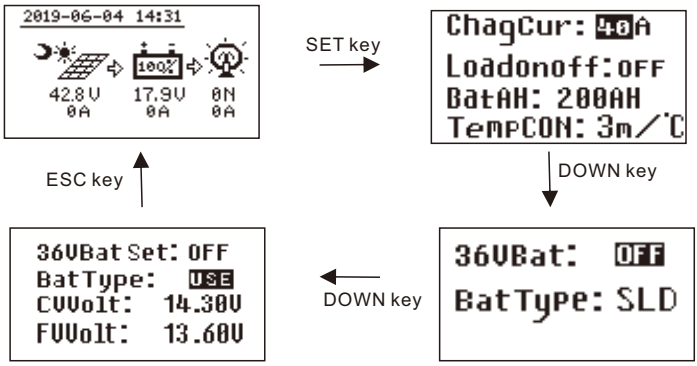


Figure 7: Parameter Settings interface

8 .3 Parameter setting description

8 .3.1 The charging current limit setting (Each adjustment is 5A)

The SR4810 model solar charger supports charging current of 10A, the default maximum charging current is limited to 10A. There can modify charging current limit 5A to 10 A .

The SR4820 model solar charger supports charging current of 20A, the default maximum charging current is limited to 20A. There can modify charging current limit 5A to 20 A .

The SR4830 model solar charger supports charging current of 20A, the default maximum charging current is limited to 30A. There can modify charging current limit 5A to 30A .

The SR4840 model solar charger supports charging current of 20A, the default maximum charging current is limited to 40A. There can modify charging current limit 5A to 40 A .

The SR4850 model solar charger supports charging current of 20A, the default maximum charging current is limited to 50A. There can modify charging current limit 5A to 50 A .

The SR4860 model solar charger supports charging current of 20A, the default maximum charging current is limited to 60A. There can modify charging current limit 5A to 60 A .

The SR4880 model solar charger supports charging current of 20A, the default maximum charging current is limited to 80A. There can modify charging current limit 5A to 80 A .

8.3.2 Load switch setting

If you set load on / off state, the main interface will also display the load on/off state and load current.

8.3.3 The battery capacity setting

The battery nominal capacity, modify the range 5~400AH, Press once for 5AH adjustment the default capacity 200AH.because the battery capacity parameters involved in the charging and discharge control operation, so try to set data security and the actual number of hours battery similar or consistent .

8.3.4 Battery temperature compensation setting

This parameter involved in the charging and discharging control algorithms, modify the range of 0~8 mV/Cell / ℃, Press once for 1mV/Cell/ ℃ adjustment the default 3 mV / Cell / ℃,when the parameter is 0,the means that there is no temperature compensation .

8.3.5 The 36V Battery system setting

This parameter means you need to set the swith yourself when you connect the 36V battery system(12 V/24V/48V Automatic recognition).

Note: After the 36V battery system is turned on, the machine needs to be powered up again. Or if the 36V battery system is already turned on and you want to another battery system, you need to turn off the above operation and then power up the machine again.

8.3.6 Battery type setting

The used have five optional of the battery type SLD sealed lead-acid battery, GEL colloidalead-acid battery,FLD liquid lead-acid battery LI lithiumbattery, User(Custom) In the battery system type (12/24/36/48/60V system) .

when you choose User type, you can set the constant charging voltage and floating charging voltage point.

9. Communications connection（Optional Accessories）

By using RS232 to connect the computer's upper computer software, you can monitor the machine's operating status and parameter information at all times, and you can also calibrate the parameters.

Figure8:The Communications connection diagram

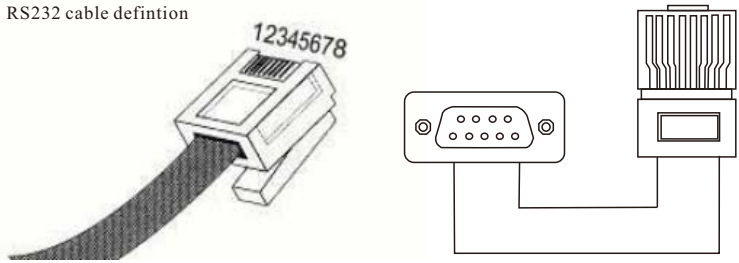


Figure 9: The cable connection diagram

Crystal Head/RJ45	Function
Pin1	RS232-TX
Pin2	RS232-RX
Pin3	NC
Pin4	NC
Pin5	NC
Pin6	NC
Pin7	NC
Pin8	GND

10. Start-Up and shut down the Solar charge controller

10.1 Start-Up the the Solar charge controller

Turn –on the Solar charge controller step

1. Connect the Battery breaker of the Solar charge controller.
2. Turn on the PV switch, and the Solar charge controller will start automatically when the input voltage is higher than the battery voltage 3V.
3. Check the the Solar charge controller operating status
4. Waiting until LED, LCD display have operation normal, the Solar charge controller is start up.

10.2 Turn-off the Solar charge controller

5. Turn –off the Solar charge controller step:
6. Disconect PV breaker
7. Turn off the Battery switch.
8. Check the Solar charge controller operating status
9. Waiting until LED, LCD display have go out, the Solar charge controller is shut down.

11. Maintenance and Cleaning

11.1 Checking Heat Dissipation

	Please stop the solar charge controller , half an hour after the operation, the heat sink temperature too high prevent scalding hands.

If the solar charge controller regularly reduces its output power due to high temperature, please improve the heat dissipation condition. Maybe you need to clean the heat sink.

11.2 Cleaning the solar charge controller

If the solar charge controller is dirty, turn-off the DC breaker or DC switch ,waiting the solar charge controller shut down ,then clean the enclosure lid, the display, and the LEDs using only a wet cloth. Do not use any cleaning agents (e.g. solvents or abrasives).

11.3 Checking the DC Disconnect

	When connecting the battery and solar panels to distinguish between positive and negative attention, please pay attention to safety. Don't disconnect under the DC connectors under load.

Check for externally visible damage and discoloration of the DC Disconnect and the cables at regular solar charge controllers.If there is any visible damage to the DC Disconnect, or visible discoloration or damage to the cables, contact the installer.

12. Trouble shooting

12.1 Errors(E)

CAUTION	When the LED light turns on the red light ,the solar charge controller had operation abnormal.please check the solar charge controller.

Errors(E) codes identify a possible equipment failure, fault or incorrect inverter setting or configuration. Any and all attempts to correct or clear a fault must be performed by qualified personnel. Typically, the (E) code can be cleared once the cause or fault is removed. Some of the (E) codes, Error as indicated in the table below, may indicate a fatal error and require you to contact the supplier or the our company to replace a new one.

When an exception occurs, you can browse the fault information according to the following procedure.

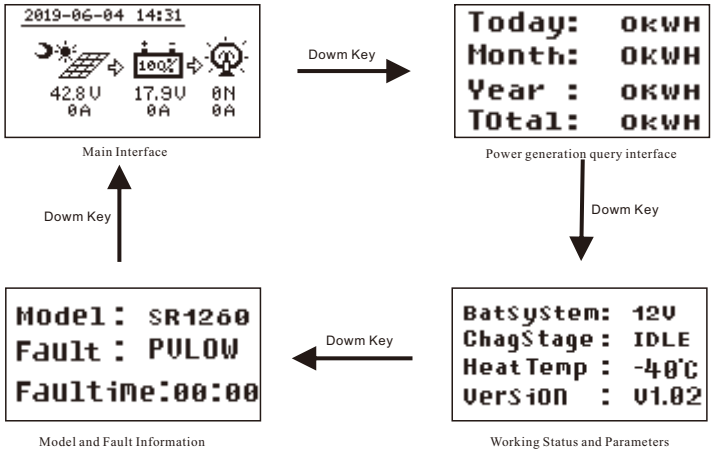


Figure 10 : The fault browse interface

Error code	Description	Suggestion
101	EEPROM fault	1.Restart the solar charge controller. 2.IF erroe message still exists,contact Sumry.
102	Remote communicate fault	1.Restart the solar charge controller. 2.IF erroe message still exists,contact Sumry.
103	Input PV voltage too low	1.Please check the PV voltage. 2.If the PV normal,restart the solar charge controller. 3.If erroe message still exists,contact Sumry.
104	Input PV voltage too high	1.Please check the PV voltage. 2.If the PV normal,restart the solar charge controller. 3.If erroe message still exists,contact Sumry.
105	Battery voltage too low	1.Please check the battery voltage. 2.If the battery normal,restart the solar charge controller. 3.If error message still exists,contact Sumry.
106	Battery voltage too high	1.Please check the battery voltage. 2.If the battery normal,restart the solar charge controller. 3.If error message still exists,contact Sumry.
107	Charging overflow	1.Restart the solar charge controller. 2.If error message still exists,contace Sumry.
108	Load overflow	1.Restart the solar charge controller. 2.If error message still exists,contace Sumry.
109	Battery temperature too high	1.Check actual battery temperature. 2.Restart the solar charge controller. 3.If error message still exists,contace Sumry.
110	Heat sink temperture too high	1.Restart the solar charge controller. 2.If error message still exists,contace Sumry.
115	Load short circuit	1.Restart the solar charge controller. 2.If error message still exists,contace Sumry.

13. Manufacturer Warranty

This certificate represents a 3~5 year warranty for the solar charge controller products listed below. Possession of this certificate validates a standard factory warranty of 3~5 years from the date of purchase.

13.1 Warranted products

This warranty is applicable solely to the following products:

SR4810 SR4820 SR4830 SR4840 SR4850 SR4860 SR4880

our company

13.2 Limited Product Warranty

(Applicable under normal application, installation, use and service conditions)
Our company warrants the above listed products to be free from defects and/or failure specified for a period not exceeding 3~5 years from the date of sale as shown in the Proof of Purchase to the Original purchaser.
The warranties described in these “Limited Warranties” are exclusive and are expressly in lieu of and exclude all other warranties, whether written, oral, express or implied, including but not limited to, warranties of merchantability and of fitness for a particular purpose, use, or application, and all other obligations or liabilities on the part of our company , unless such other obligations or liabilities are expressly agreed to it in writing signed and approved by our company, Our company shall have no responsibility or liability whatsoever for damage or injury to persons or property, or for other loss or injury resulting from any cause whatsoever arising out of or related to the modules, including, without limitation, any defects in the modules or from use or installation. Under no circumstances shall our company be liable for incidental , consequential or special damages howsoever caused; loss of use, loss of production, loss of revenues are therefore specifically and without limitation excluded to the extent legally permissible, Our company 's aggregate liability, if any, in damages or otherwise, shall not exceed the invoice as paid by the customer.

The “Limited Product Warranties” described above shall not apply to, and our company shall have no obligation of any kind whatsoever with respect to, any inverter which has been subjected to:

- Misuse, abuse, neglect or accident;
- Alteration, improper installation or application;
- Unauthorized modification or attempted repairs;
- Insufficient ventilation of the product;
- Transport damage;
- Breaking of the original manufacturers seal;
- Non-observance of Sumry installation and maintenance instruction;
- Failure to observe the applicable safety regulations
- Power failure surges, lighting, flood, fire, exposure to incorrect use, negligence, accident, force majeure, explosion, terrorist act, vandalism or damage caused by incorrect installation, modification or extreme weather conditions or other circumstances not reasonably attributable to our company.

The warranty shall also cease to apply if the product cannot be correctly identified as the product of Sumry . Warranty claims will not be honored if the type of serial number on the inverters have been altered, removed or rendered illegible.

13.3 Liability

The liability of Sumry in respect of any defects in its PV inverters shall be limited to compliance with the obligations as stated in these terms and conditions of warranty. Maximum liability shall be limited to the sale price of the product. Sumry shall accept no liability for loss of profit, resultant of indirect damage, any loss of electrical power and/or compensation of energy suppliers within the express meaning of that term. The warranty rights as meant herein are not transferable or assignable to any third party excepting the named warranty holder.

13.4 Warranty conditions

If a device becomes defective during the agreed Sumry factory warranty period and provided that it will not be impossible or unreasonable, the device will be, as selected by Sumry. Shipped to a Sumry service centre for repair, or repaired on-site, or exchanged for a replacement device of equivalent value according to model and age.

The warranty shall not cover transportation costs in connection with the return of defective modules. The cost of the installation or reinstallation of the modules shall also be expressly excluded as are all other related logistical and process costs incurred by all parties in relation to this warranty claim.

14. Decommissioning

14.1 Dismantling the solar charge controller

1 Disconnect the solar charge controller as described in section6，section7.
2 Remove all connection cables from the solar charge controller。

CAUTION	Danger of burn injuries due to hot enclosure parts! Wait 10 minutes before disassembling until the housing has cooled down.
	When your want backout the PV input wire, your must break down the switch ,and wait 10 minutes .

3 Screw off all projecting cable glands.
4 Lift the solar charge controller off the bracket and unscrew the bracket screws.

14.2 Packing the Inverter

If possible, always pack the solar charge controller in its original carton and secure it with tension belts. If it is no longer available, you can also use an equivalent carton. The box must be capable of being closed completely and made to support both the weight and the size of the solar charge controller.

14.3 Storing the solar charge controller

Store the solar charge controller a dry place where ambient temperatures are always between -25°C and +60°C.

14.4 Disposing of the solar charge controller

Do not dispose of faulty solar charge controller or accessories together with household waste. Please accordance with the disposal regulations for electronic waste which apply at the installation site at that time. Ensure that the old unit and, where applicable, any accessories are disposed of in a proper manner

15. Technical Data

Model		SR4810	SR4820	SR4830	SR4840	SR4850	SR4860	SR4880
PV Input data(PV)								
Max.PV voltage (VOC)		75V		145V				
System voltage		12V/24V		12V/24V/48V auto,36V Set				
MPPT voltage range		Battery voltage+3V-120V						
Suggest input Voc voltage		24V/40V		24V/40V/54V/72V				
Number of MPPT trackers		1	1	1	1	1	1	1
Max.PV input power	12V	140W	270W	400W	540W	670W	800W	1100W
	24V	270W	540W	800W	1070W	1340W	1600W	2150W
	36V	400W	800W	1200W	1600W	2000W	2400W	3200W
	48V	540W	1080W	1600W	2140W	2670W	3200W	4300W
Charger Output (DC)								
Max.output current (revisable)		10A	20A	30A	40A	50A	60A	80A
Rating load current		10A						
Max. capacitive load capacity		10000uF						
Ripple voltage		< 0.5%						
Electric current								
Applicable battery type (ex-factory default lead-acid battery)		Sealed lead-acid battery/colloidal battery/liquid-rich battery/ lithium,other battery types can be customized						
Efficiency								
Max.efficiency		=98%						
MPPT efficiency		>99%						
Equipment protection		Input-output ovevoltage、PV anti-reverse、battery anti-reverse、load overcurrent protection、load short-circuit protection、temperature protection.						

Protection				
Load Short Circuit Protection(Five times that day)	Yes	Yes	Yes	Yes
Output overvoltage protection	Yes	Yes	Yes	Yes
Input overvoltage protection	Yes	Yes	Yes	Yes
PV Anti-Counter protection	Yes	Yes	Yes	Yes
Battery Anti-Counter protection	Yes	Yes	Yes	Yes
Input overcurrrnt protection	Yes	Yes	Yes	Yes
Over temperation protection	Yes(70 protection, restore65℃)	Yes(70 protection, restore65℃)	Yes(70 protection, restore65℃)	Yes(70 protection, restore65℃)
Battery voltage too low/high protection	Yes	Yes	Yes	Yes

Regular data							
Product dimension (D*W*H),mm							
Pack dimension (D*W*H),mm							
N.W							
G.W							
Unloaded loss	<1.5W	<1.5W	<1.5W	<1.5W	<1.5W	<1.5W	<1.5W
Operating temperture range	-20 ••• ••• +45 ℃						
Elevation height	=3000m						
Working humidity	0%to95%(no condensat)						
Cooling concept	Natural						
Environmental Protection Rating	IP20						

Features							
PV connection	Screw terminal						
Battery connection	Screw terminal						
Load connection	Screw terminal						
Battery type choice	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Environment temperature detect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Battery temperature detect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
DC output control	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Battert temperature compensation factor	-3mV/℃(default、except lithium)						
Mode of communication	RS232(Extensible interface)						
Display mode	LCD128*64						
Quality assurance :year/year	Standard/ optional	Standard/ optional	Standard/ optional	Standard/ optional	Standard/ optional	Standard/ optional	Standard/ optional
Certification and licensing							

	Table of parameters of various types of batteries				
Set voltage battery type	SLD sealed lead-acid battery	GEL colloidal lead-acid battery	FLD liquid lead-acid battery	LI lithium battery	User(Custom)
Equilibrium voltage (V)	14.3	14.2	14.2	12.6	12-14.3
Floating voltage (V)	13.6	13.7	13.6	12.6	12-14.3
Battery overpressure(V)	15	15	15		15
Battery overvoltage restore voltage(V)	14.8	14.8	14.8		14.8
Low voltage disconnect voltage(V)	8.5	8.5	8.5	8.5	8.5
Low voltage disconnect restore voltage(V)	9	9	9	9	9
Discharge limit voltage(V)	11.5	11.5	11.5	11.5	11.5
Discharge recovery voltage(V)	14.3	14.3	14.2	12.6	equilibrium voltage

16. PV-Battery system installation reference

Suggestion

Model	SR4810	SR4820	SR4830	SR4840	SR4850	SR4860	SR4880
BAT	12V/24V		12V/24V/36V /48V				
VOC	24V/40V		24V/40V/54V /72V				

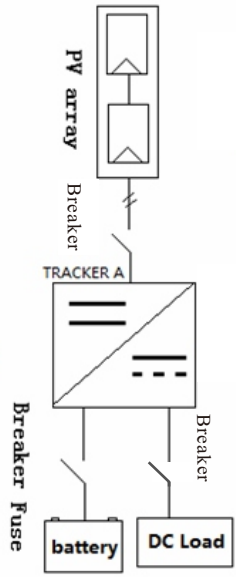
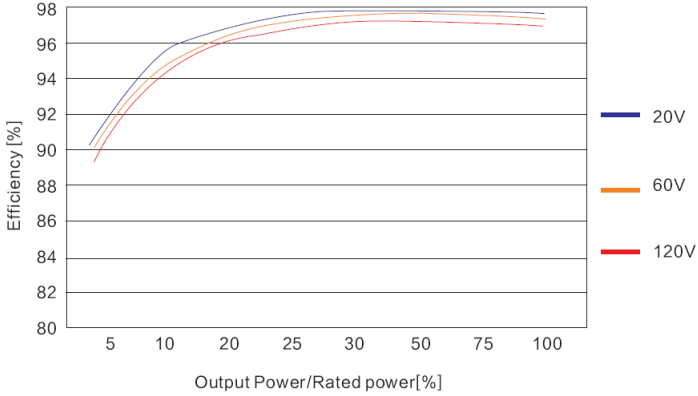


Figure11:PV-Battery system installation diagram

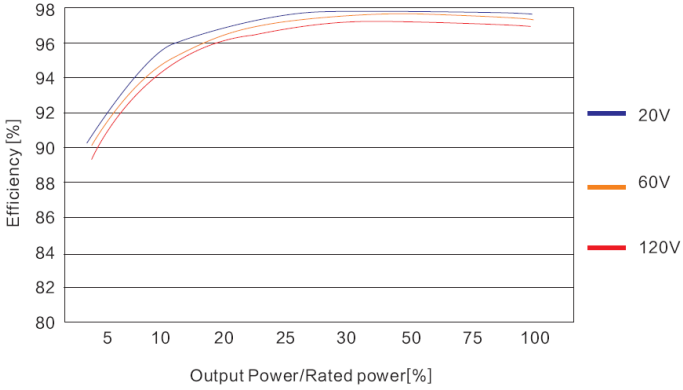
17 Annex

Efficiency curve:

SR4860（12V battery systerm）



SMY2460DM-SCC （12V battery systerm）



技术要求：单页尺寸142*210;
材质：封面157g铜版纸,覆亚膜，内页80g书写纸;
料号打于后封面左下角;