

# UES Series Solar Charge Controller

## User's Manual

### 1. Product Introduction

UES series solar charge controller is a kind of intelligent, multi-functional solar charge and discharge controller. These serial products adopt customized LCD display screen, which makes the operation on the interface rather convenient. All the controlling parameters can be reset flexibly to satisfy your different needs.

**This controller has the following features:**

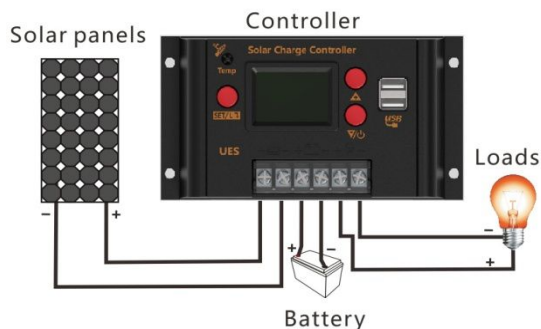
- Visual LCD graphic symbol
- Automatic identification system voltage level
- Automatic temperature compensation
- Adjustable charge-discharge control parameters
- Accumulated function of charge and discharge ampere hours
- Battery low voltage protection
- Overload & short circuit protection
- Brief key operation
- Intelligent PWM charge mode
- Multiple selection of battery
- Settable operating modes of loads
- Battery over temperature protection
- Battery reverses polarity protection
- With Dual USB 5V output

### 2. Specification

Model	UES-2410	UES-2420
Max. charge current	10A	20A
Max. discharge current	10A	20A
Max. solar panel input voltage	≤55V	
Rated voltage	12V/24V auto work	
Stop charge voltage	14.7V/29.4V	
Low voltage recovery	12.2V/24.4V	
Low voltage protection	10.5V/21.0V	
USB output voltage/current	5V 2A	
Characteristic	No load loss:≤10mA; Temperature compensation:-3mV/cell/°C	
Operation temperature	-20°C~60°C	
Dimension of controller	152×80.2×30mm (L*W*H)	
Package size	163×95×40mm (L*W*H)	
Weight	200g	

**\*Parameters may customized by customers.**

### 3. Installation Instructions



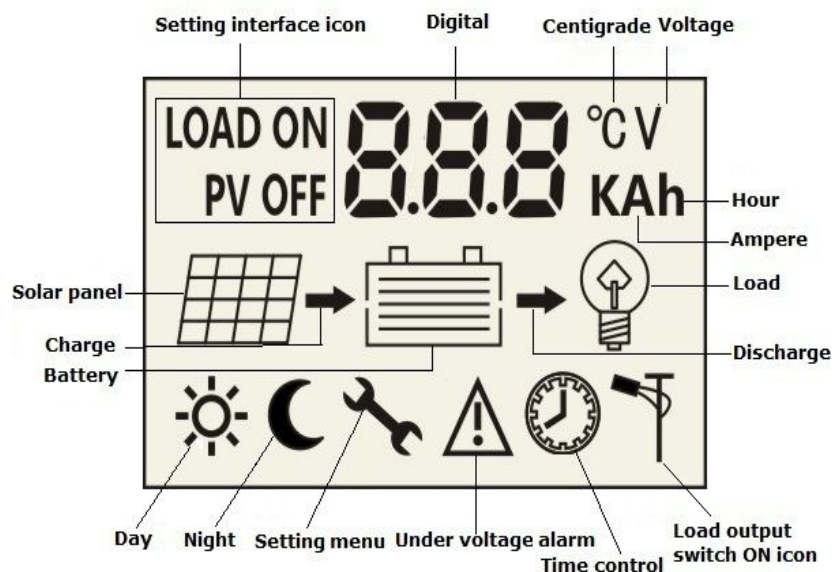
As shown in the installation connection diagram, the battery, solar panel, load and controller should be connected by turns. Please connect the battery first, and then the solar panel or load. Pay attention that the positive (+) and negative (-) polarity are consistent with the controller.

### 4. Button Description and Parameters Display

Parameters setting and checking button **SET/L 1**

Parameters plus button

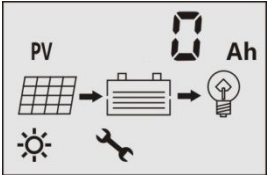
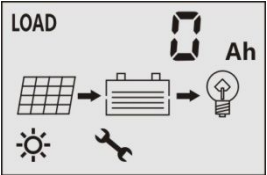
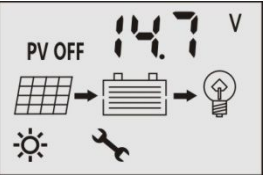
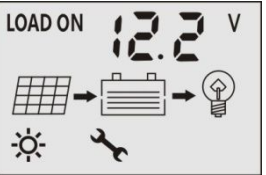
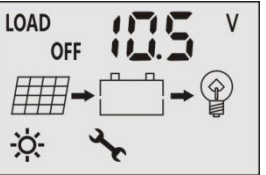

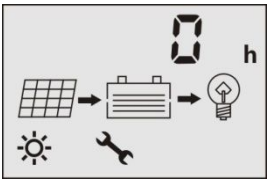
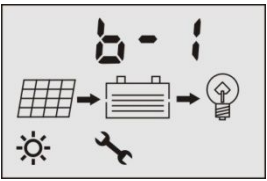
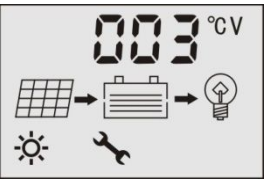
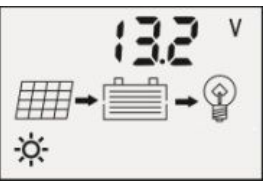
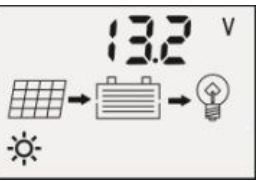
Parameters minus button (load output switch)



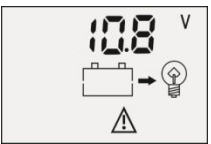

#### Parameters Display

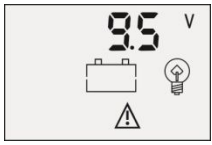


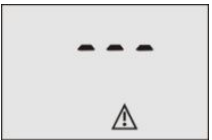

Battery voltage	Ambient temperature	Charge current	Discharge current	Accumulated charge (Ah)	Accumulated discharge (Ah)
Temperature compensation	Battery type	Load working mode	Low voltage protection	Low voltage recovery	Stop charge voltage

## 5. Parameters Setting

				
<p>long press <b>SET/L 1</b> button for 5 seconds</p>		<p>At the setting interface, keep pressing the <b>SET/L 1</b> button for 5 seconds, the figure flickers, it means the controller enters into the setting mode. At this time, you can press the <b>▲</b>, <b>▼/⏻</b> button to adjust the parameters.</p> <p>After finish setting the parameters, shortly press the <b>SET/L 1</b> button and the controller will save the set parameters automatically.</p> <p>At this interface, when there is no operation for 20 seconds, it will automatically exit the setting mode, cancel to save the parameters and return to the main interface.</p>		
<p>Clear the accumulative generating AH of solar panel</p>	<p>Clear the accumulative discharging AH of load</p>	<p>Battery stop charge voltage setting</p>	<p>Battery low voltage recovery setting</p>	<p>Battery low voltage protection setting</p>
<p><b>Factory reset:</b> At the battery voltage interface, keep pressing three buttons ( <b>SET/L 1</b>, <b>▲</b>, <b>▼/⏻</b> ) for 5 seconds until the interface displays , it means the controller has finished factory reset.</p>				
				
<p>At the setting interface, keep pressing the <b>SET/L 1</b> button for 5 seconds, the figure flickers, it means the controller enters into the setting mode. At this time, you can press the <b>▲</b>, <b>▼/⏻</b> button to adjust the parameters.</p> <p>After finish setting the parameters, shortly press the <b>SET/L 1</b> button and the controller will save the set parameters automatically.</p> <p>At this interface, when there is no operation for 20 seconds, it will automatically exit the setting mode, cancel to save the parameters and return to the main interface.</p>		<p>As shown above, the left arrow static display means it is in direct charge; the left arrow flickers means it is in float charge. If the left arrow without display means it is no charge.</p>		<p>The load output switch default ON. At the battery voltage interface, you can press the <b>▼/⏻</b> button to turn on or turn off the load.</p> <p>After pressing the <b>▼/⏻</b> button, the load is disconnected and the load output is stopped.</p>
<p>[0h] Manual mode [1-23h] Light control delayed mode [24h] Light control mode</p>	<p>Lead-acid battery b-1 AGM b-2 GEL b-3 OPEN</p>	<p>Temperature compensation setting</p>		

## 6. Trouble Shooting

	<p>Low voltage early alarm</p>	<p>When the voltage of the battery less than 11V (<math>\times 2/24V</math>), the  icon appears in the bottom of the LCD.</p>
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	Low voltage alarm	<p>When the battery voltage lower than 10.5V (<math>\times 2/24V</math>), the controller enter into the state of low voltage protection, the  icon appears in the bottom of the LCD and the  icon flickers. The load is disconnected in order to prevent it from over discharging. At this time, you need to charge the battery. When the battery voltage return to the low voltage recovery 12.2V (<math>\times 2/24V</math>), the load output restart.</p>
	Short circuit	<p>When short circuit occurs, it shows as the right figure. The controller will not recover after trying to recover for ten times. At this time, you need to shortly press the  button to turn off the load output, and then the system return to normal work.</p>
<p>Over temperature protection: when the temperature of the controller higher than 70°C, the charge and discharge of the controller stop working. When the temperature of the controller less than 65°C, the controller returns to the previous working state.</p>		

## GUARANTEE

Customer Name		Telephone	
Model		E-mail	
Bar Code No.		Purchase Area	
Address			

### After-Sales Service

1. After the product has sold, if the function failure occurs, you can choose change or repair it within \_\_\_\_\_ months.
2. Warranty: \_\_\_\_\_ years upon the date of purchase. If the product exceeds the warranty period or do not belong to the free repair, our company repair center is still dedicated to serve you.
3. Man-made damage, disassemble the product by yourself, product appearance damage and improper use, all of these may cause the invalidation of product guarantee.