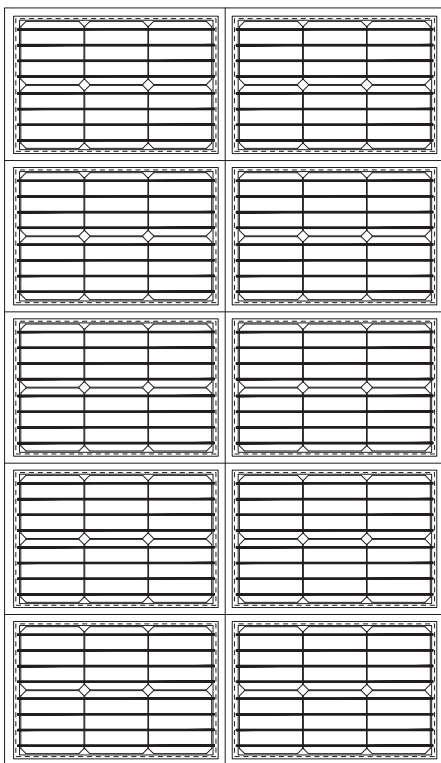


**POWERTECH**

ZM9126

**Canvas Blanket  
Solar Panel with  
Charge  
Controller**



**Instruction Manual**

## INTRODUCTION:

Please ensure that you have read the product manual and instructions in full before using this product. Failure to do so may result in incorrect operation and potentially impact the performance of the product.

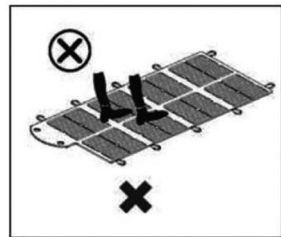
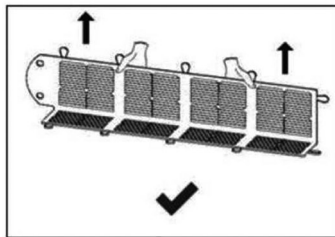
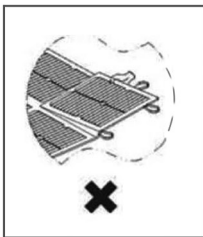
This product converts natural sunlight into DC electricity. It is designed to charge a 12V battery.

## BOX CONTENTS:

1 x 400W Canvas Blanket Solar Panel  
1 x 30A Solar Regulator  
2 x Leads

## CAUTION/WARNING:

- For optimum performance, protect the solar cell from dust, dirt, and other debris.
- Use and store the product in a dry and ventilated location.
- Do not use in flammable or explosive areas.
- Stop use immediately if any wires become loose or electronic components are exposed.
- **Do not pick panel up directly by the solar cells.**
- **Use the gap between solar cells to pick up the panel.**
- **Do not stand or walk on the solar panel.**



## PRODUCT SPECIFICATIONS:

<b>Solar Panel</b>	
Solar Cell Type:	Monocrystalline
Power Output:	400W
Open Circuit Voltage:	23.7V
Short Circuit Current:	18A
Working Voltage:	22.6V
Working Current:	17.6A
Output:	Anderson, USB2.0, USB/QC3.0, Type-C/ PD60W, DC5521
Weight:	10.5KG
Dimensions:	
Folded:	572(W) x 360(H)mm
Unfolded:	1142(W) x 1898(H)mm
<b>Solar Charge Controller</b>	
System Voltage:	12V
Charge Current:	30A
Discharge Current:	30A
Max. Solar Current:	<50V
Battery Equalisation:	
Sealed:	14.4V
GEL:	14.2V
Flood:	14.6V
Float Charge:	13.7V (Default, Adjustable)
Discharge Stop:	10.7V (Default, Adjustable)
Discharge Reconnect:	12.6V (Default, Adjustable)
USB Output:	5V, 2A
Self-Consumption:	<10mA
Operating Temperature:	-35°C ~ 60°C
Weight:	200g

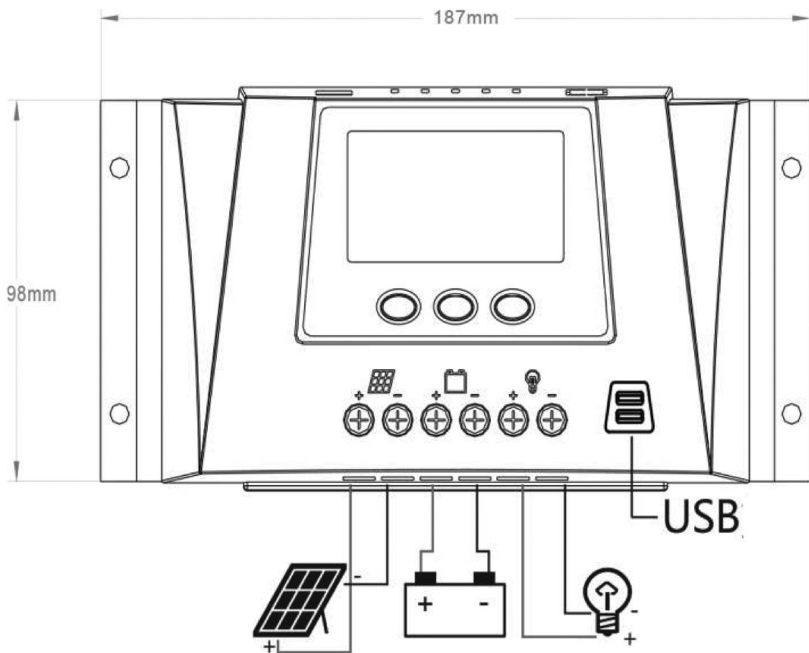
## HOW TO USE:

- Unfold the solar panel.
- Place the unfolded solar panel in a position that receives direct sunlight, facing to the sun. Ensure that no shadows are covering the solar cells.
- Tilt the solar panel at a suitable angle. This can be the same as your local latitude (additional support may be necessary, not supplied).
- Connect the solar panel to the solar charge controller before connecting battery clamp lead to the solar controller.

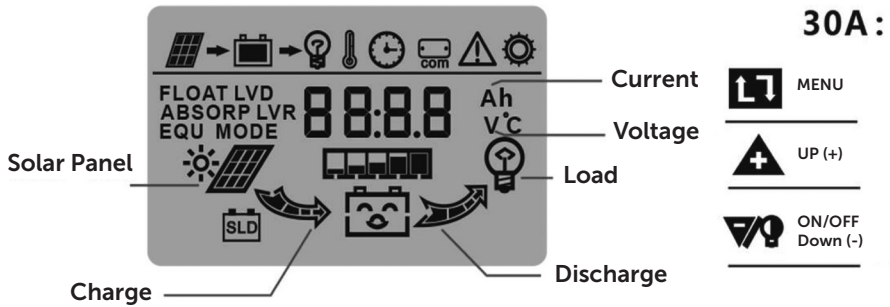
## HOW TO CHARGE A 12V BATTERY :

1. Connect the battery to the solar charge controller.
2. Connect load to solar charge controller.
3. Connect solar panel to solar charge controller.
4. Reverse this order when disconnecting.

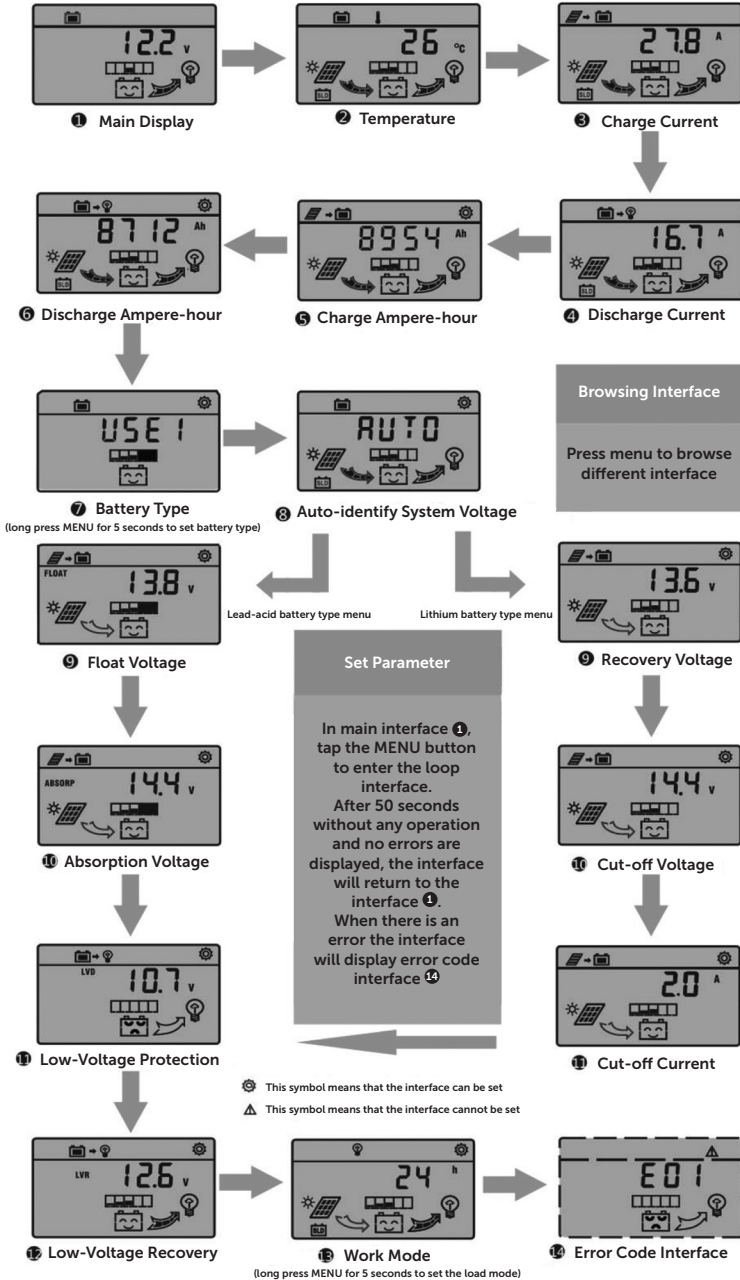
**Note:** Heavy loads should not be connected to the battery.



**LCD DISPLAY/KEY:**



# DISPLAY/SETTINGS:



## TROUBLESHOOTING:

<b>Error Code</b>	<b>Cause</b>	<b>Solution</b>
E01	Low battery voltage, load off	Change the battery or change a new battery.
E02	Overload, load off	Decrease the load, the use (-) button to turn on the load. Load will automatically turn on after 2 minutes.
E03	Load short-circuit, load off	Remove the short-circuit load, use (-) button to turn on the load.
E04	Over-voltage of battery, load off	Check the connection of battery, and whether if the capacity of battery is too low, check if there is another charger connected to the battery.
E05	Solar panel over current, controller stops charging	Check whether the power of solar panel has been over powered, decrease the panels and then the controller will start charging automatically after 2 minutes.

## FULL TECHNICAL PARAMETERS:

Solar Input	Rated Current	30A
	Input Voltage	≤50V (12V)

Charge Management						
Lead-acid Batteries	3-stage charging (bulk charge, absorption charge, float charge)					
	Lead-acid Batteries	Sealed	GEL	Flood	USE1	
	Float Voltage	13.8V	13.8V	13.8V	13.8V (9~15V adjustable)	
	Absorption Voltage	14.4V	14.0V	14.6V	14.4V (9~15V adjustable)	
	Absorption Time	2 hours				
	Absorption Recovery Voltage	12.6V				
	Limited Charge Voltage	15.5V				
	Temperature Compensation	-4mV/cell/°C				
Lithium Batteries	3-stage charging (bulk charge, constant-voltage, stop charge)					
	Lithium Batteries	3.7-3	3.7-4	3.2-4	3.2-5	USE2
	Constant Voltage	12.6V	16.8V	14.4V	18.0V	14.4V (9~17V adjustable)
	Cut-off Charge Current	2A (0.1A~30A adjustable)				
	Recovery Charge Voltage	12.0V	16.0V	13.6V	17.0V	13.6V (9~17V adjustable)

**Note:** Parameters apply to 12V system as an example. If 24V/36V/48V system, the voltage parameters should be \*2/\*3/\*4

**Note:** 10A/20A controller without temperature compensation/backlight function, without cut-off current.

B01	B02	B03	B04	B00
Sealed battery	Gel Battery	Flood Battery	Lithium Battery - Custom Type	Lead-acid Battery - Custom Type



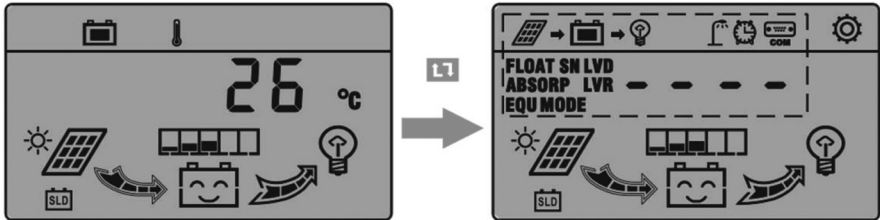
## FULL TECHNICAL PARAMETERS:

Discharge Management						
Batteries Type	Lead-acid Batteries	Lithium Battery				
		3.7-3	3.7-4	3.2-4	3.2-5	USE1
Low-Voltage Protection	10.7V (9~15V adjustable)	9.9V	13.2V	11.2V	14.0V	11.2V (9~17V adjustable)
Low-Voltage Recovery	12.6V (9~15V adjustable)	11.1V	14.8V	12.8V	16.0V	12.8V (9~17V adjustable)
Over-Voltage Protection	16.0V	18.5V				
Over-Voltage Recovery	15.5V	18.0V				
USB Power	5V USB, Max output 2A					
Voltage Range of Battery						
System Voltage	Lead-acid Batteries	Lithium Battery				
		3.7-3	3.7-4	3.2-4	3.2-5	USE2
12V	≤17V	≤14.6V	≤18.8V	≤16.4V	≤20V	≤16.4V

Other Specifications	
Max Wire Size	6mm <sup>2</sup> (AWG #9) / 16mm <sup>2</sup> (AWG#5) / 25mm <sup>2</sup> (AWG #3)
Working Temperature	-20°C ~ 50°C
Storage Temperature	-30°C ~ 70°C
Working Humidity	10% ~ 90%, no condensation
Dimensions	187 x 98 x 50mm
Weight	370g
Waterproof	IP30

## FACTORY DEFAULT SETTINGS:

At main loop interface ②, press & hold the MENU button until the symbols in the dotted column starts flashing, the controlling parameters will reset to the default value. Controller will restart automatically to re-new the controller data.



## VARIOUS WORKING MODES FOR LOAD:

There are four control modes for the load. (1) Normal control mode, (2) Light control on, (3) Delayed off mode, (4) Reverse light control mode. The delayed duration can be between 1-24 hours.

Following are the working introduction for each mode:

Load Mode	Event		
	Dark	Setting Time	Dawn
24H normal control mode	-	-	-
1-23H light control on and delayed off mode	Load on	Load off	Load off
0H light control mode	Load on	-	Load off
CH reverse light control mode	Load off	-	Load on



Distributed by:  
Electus Distribution Pty. Ltd.  
320 Victoria Rd, Rydalmere  
NSW 2116 Australia

[www.electusdistribution.com.au](http://www.electusdistribution.com.au)

Made in China