Introduction

This is a MPPT (maximum Power Point Tracking) smart solar controller, with charging and discharging function, increasing 30%~60% efficiency than traditional PWM controller. It has automatic recognition function, three Stages charging function, also supports many kinds of battery charging and discharging, RS232 communication etc, It's our company's MPPT solar controller e-SMART series.

Remarks:DC12V/24V/48V battery system automatic recognised

Features：

1. MPPT charging mode, peak efficiency up to 99%, saving 30%~60% solar panel than traditional PWM controller.

2. DC12V/24V/48V battery system automatic recognition, users would like to use in different system conveniently.

3. DC12V/24V/48V system, maximum PV input voltage up to DC100V.

4. Charge type: three stages charge fast charge(MPPT), constant voltage,

floating charge, protected our battery, lead to a long use age.

5. Discharge type owns always on pattern and always off pattern, it also has PV voltage solar controlling switch pattern.

6. Clients can auto choose any one in the 4 kinds of commonly used batteries, Sealed lead acid, vented, Gel, NiCd and custom other batteries.

7. Digital tube display controller battery voltage and charging current,upper computer display various parameters, such as model, PV input voltage, battery types, battery voltage, charging current, charging power, working condition etc.

8. RS232 communication, and that providing communication protocol, it's convenient for customer's integration management.

9. This controller could be paralleled infinitely.

10. CE, RoHS Certifications approved; cooperating with clients through the other certifications.

11. 2 years warranty; 3~10 years extended technical service.

Parameters:

MPPT solar controller modes： I-P-e-SMART-12V/24V/48V-series	15A	20A	25A	30A	40A
Charge mode	MPPT(maximum power point tracking)				
Charge method	Three stages: constant current(MPPT),constant voltage,floating charge				
System type	DC12V/24V/48V	Automatic recognition			

	12V system	DC9V~DC15V				
System voltage	24V system	DC18V~DC30V				
	48V system	DC36V~DC60V				
Soft start time	12V/24V/48V system	≤3S				
Dynamic response recovery time	12V/24V/48V system	500us				
MPPT efficiency	12V/24V/48V system	≥96.5%,≤99%				
INPUT CHARACTERISTICS						
	12V system	DC14V~DC100V				
MPPT working voltage range	24V system	DC30~DC100V				
	48V system	DC60~DC100V				
	12V system	DC14V				
Low input voltage protection point	24V system	DC30V				
	48V system	DC60V				
	12V system	DC18V				
Low input voltage Recovery point	24V system	DC34V				
	48V system	DC65V				
High input voltage protection point	12V/24V/48V system	DC110				
High input voltage recovery point	12V/24V/48V system	DC100V				
	12V system (W)	213	284	355	426	568
Maximum PV power	24V system (W)	426	568	710	852	1136
	48V system (W)	852	1136	1420	1704	2272
CHARGE CHRECTRESTICS						
Selectable Battery Types (Default Gel battery)	12V/24V/48V system	Sealed lead acid, Vented, Gel, NiCd battery (Other types of the batteries also can be defined)				
Constant Voltage	12V/24V/48V system					
Floating Charge Voltage	12V/24V/48V system	Please check the charge voltage according to the battery type form.				
Rated Input Current	12V/24V/48V system	15A	20A	25A	30A	40A
Current-limit Protection	12V/24V/48V system	20A	25A	30A	35A	45A
Temperature Factor	12V/24V/48V system	±0.02%/°C				
Temperature Compensation	12V/24V/48V system	14.2V-(The highest temperature-25°C)*0.3				
Output Ripples(peak)	12V/24V/48V system	200mV				
Output Voltage Stability Precision	12V/24V/48V system	≤±1.5%				
Output Discharge Characteristics						
Output voltage		Base on battery voltage				
Low voltage output Protection point		Default 10.5V; Recovery 11V; It can be adjustable.				
Rated output Current		30A				
The output control		On mode, Off mode, PV voltage control mode				
Output control set mode		Controller button or PC software				
Display						
LED digital tube display		Battery voltage, Charge current				
LED light display		Charging indicator light, LOAD indicator light				
PC（communication port）		RS232				
Protection						
Low input voltage protection		Check the input characteristics				
High input voltage protection		Check the input characteristics				
Charge overpower protection		yes				
Discharge low voltage protection		yes				

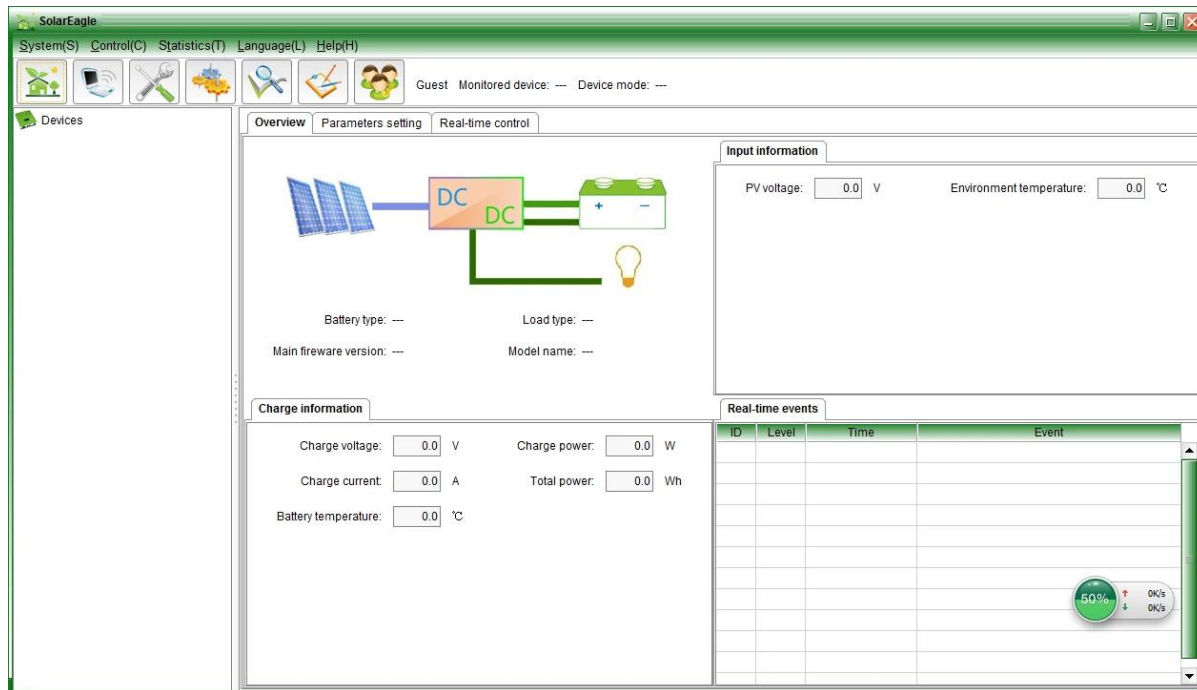| Discharge high current protection	yes	
Temperature protection	yes	
Other Parameters		
Noise	≤40dB	
Thermal heat-dissipating method	Itself cooling	Fan cooling
Components	Imported material With EU standards.	
Certification	CE\FCC\RoHS	
Physical		
Measurement D x W x H(mm)	205*168*60	
package size D x W x H(mm)	265*196*110	
N.G(KG)	1.8kg	
G.N(KG)	2kg	
Mechanical Protection	IP25	
Environment		
Humidity	0~90%RH (no condense)	
Altitude	0~3000m	
Operating Temperature	-20℃ ~ +50℃	
Storage Temperature	-40℃ ~ +75℃	
Atmospheric Pressure	70~106kPa	

Remarks：

The specification is only for reference. Subject to change without prior notice

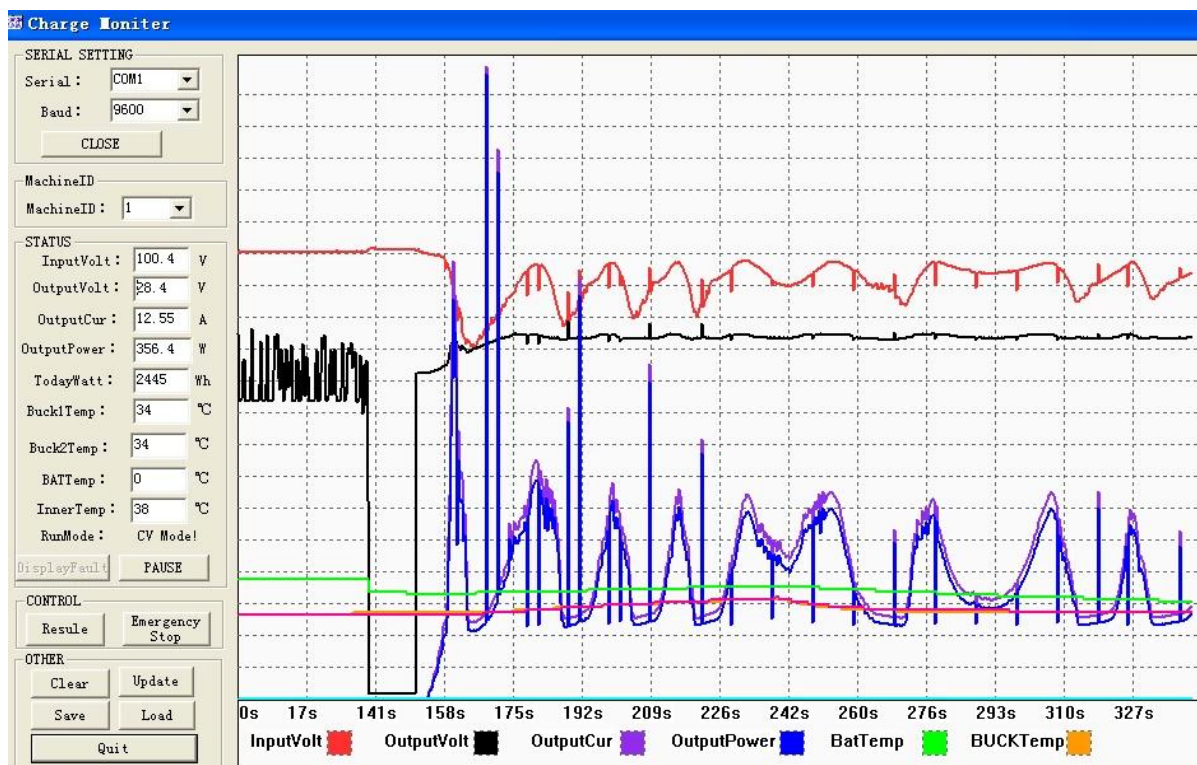We provide OEM and ODM service. The 36V/72V/96V model also can be custom made for you.

Products Package：

Number	quantity	parets name
1	1 pc	Controller appearance(blue or green is optional，OEM is available also)
2	2 pc	hangers（Used in the controller hanging）
3	4 set	screw（Used for hanging ear lock in the controller）
4	1 pc	RS232 port
5	1 pc	Battery temperature sensing lines
6	2 pc	fuse（DC output）
7	1 pc	specification（manual）
8	1 pc	CD（Built-in upper software）

Controller upper software testing software display information and set parameters.

1.Upper software and test software display information and set parameters.

Graphical: upper software

Graphical: testing ware

1.1 show solar charge and discharge status, PV voltage, charge voltage, charge Current etc, and setting the type of the batteries, LOAD output control method.

1.2 Product standard upper software; testing software is not provided(Due to testing software need clients' PC has software development platform, if clients have the requests, please apply to our company for taking)

Remarks: the PC software is offered freely by our company.

2. Information display and parameter setting.

e-Smart series

2.1 ENTER1 button: press left ENTER1 show 2 digital battery voltage（if it is charging, then shows 2 digital charge voltage), for example,the battery voltage or charge voltage is 13.5V, it shows13.

Press ENTER1 for a long time, you can set battery types; more informations please see the specification.

2.2 ENTER2 button: press right ENTER2 show 2 digital battery current（if it has n't been charging, then display 00, if the charge current is 20.5A, then it shows 25; press ENTER2, you can set always on and aways off pattern, you can see more details in the specification.

Other detailed parameters

Please see the outline of the design, technical documents, product manuals etc.

Engineering department custom 2th version on May 5, 2014.

eSMART

MPPT Solar Charge Controller

Product Manual

Solar Eagle

Professional MPPT solar charge
controller manufacturer

MAINTENANCE CARD

Name   Tel

Address

Brand   Model   Serial No.

Bought From   Date Purchased

Invoice Number   Invoice Price

Conditions of warranty:
1. The above appliance is guaranteed, under normal use, for two year from date of purchase. During the
period, We will issue or all option replace, free of charge, any damaged parts.
2. Defects caused by accident, negligence, misuse, transportation, normal wear and tear or any alteration
that affects the reliability or performance of this machine will not be covered by this warranty.
3. this warranty does not cover cost fork part and the cost in condition No.2, and after the warranty period,
as well as the cost of any on-site work and service are the product owner is responsibility.
4. Any alteration of this certificate will be allowed.
5. Please keep your invoice and present with this warranty card for maintenance service.

                                      Issued By

CERTIFICATE

Model:

Specifications:

Inspector:

Date:

Products have been tested qualified by
standard and permitted to deliver.

MPPT Solar Charge Controller

Adopting Advanced MPPT Technology
High Conversion Efficiency
Rs232 Port

CE FC

HIGH-END QUALITY
SOLAR CHARGE CONTROLLER

CE FC