Introduction

This e-SMART MPPT (maximum Power Point Tracking) solar charge controller is a smart solar controller with automatic recognition function, smart charging and discharging function, three stages charging function to protect battery. It can increase 30%~60% efficiency than traditional PWM controller. It supports many kinds of batteries.It also have RS232 communication function.

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.

Protection

Input Low Voltage Protection;

Input Overvoltage Protection;

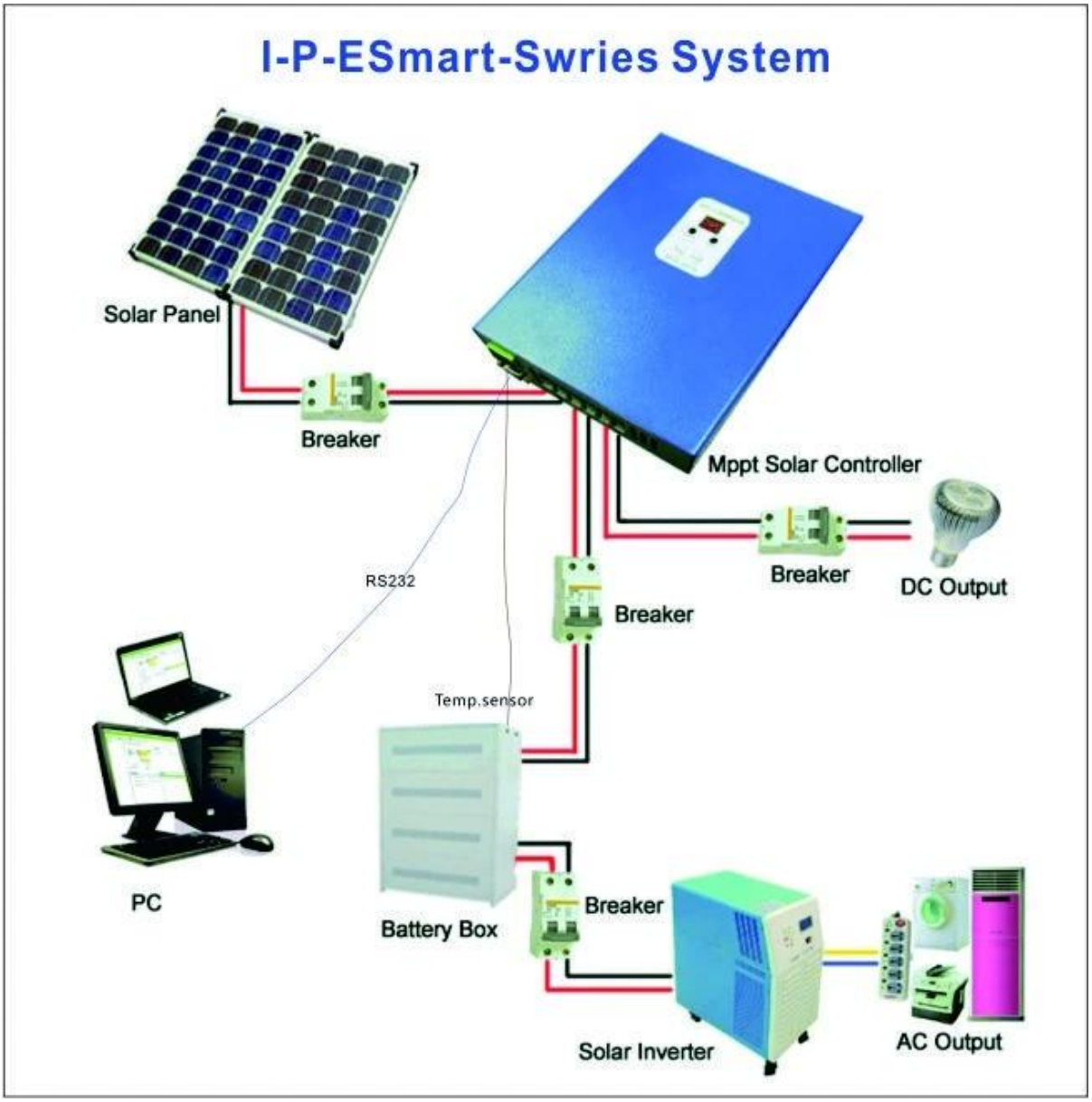
Charge over voltage power Protection;

Low Voltage output Protection;

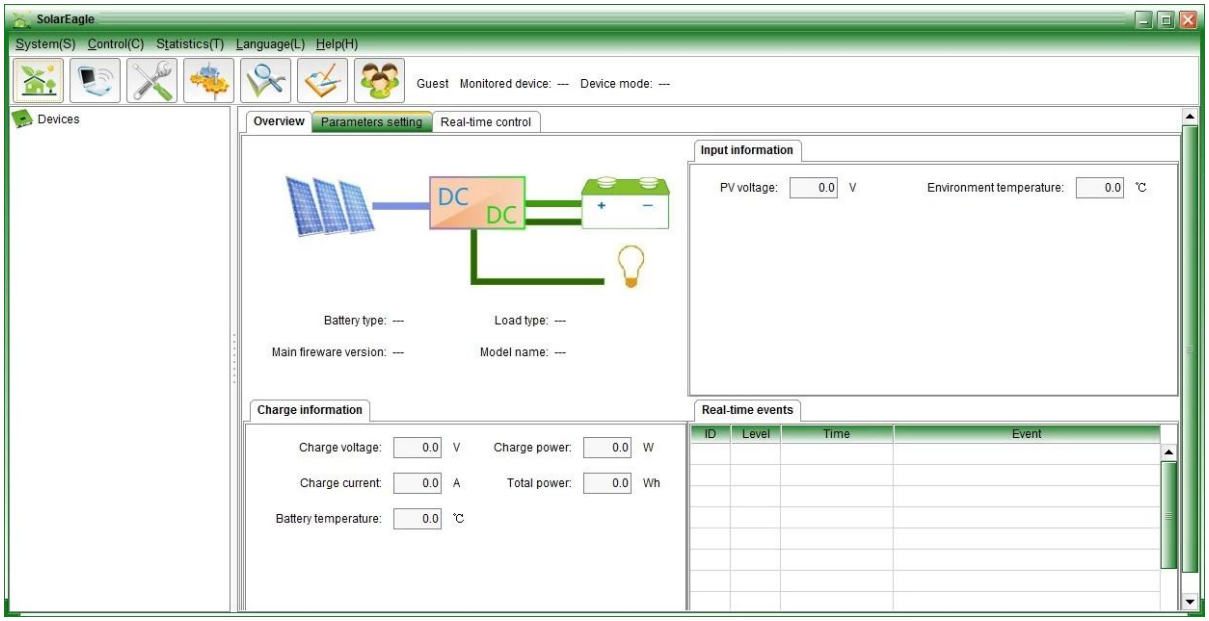
Rated output Current protection;

Temperature Protection.

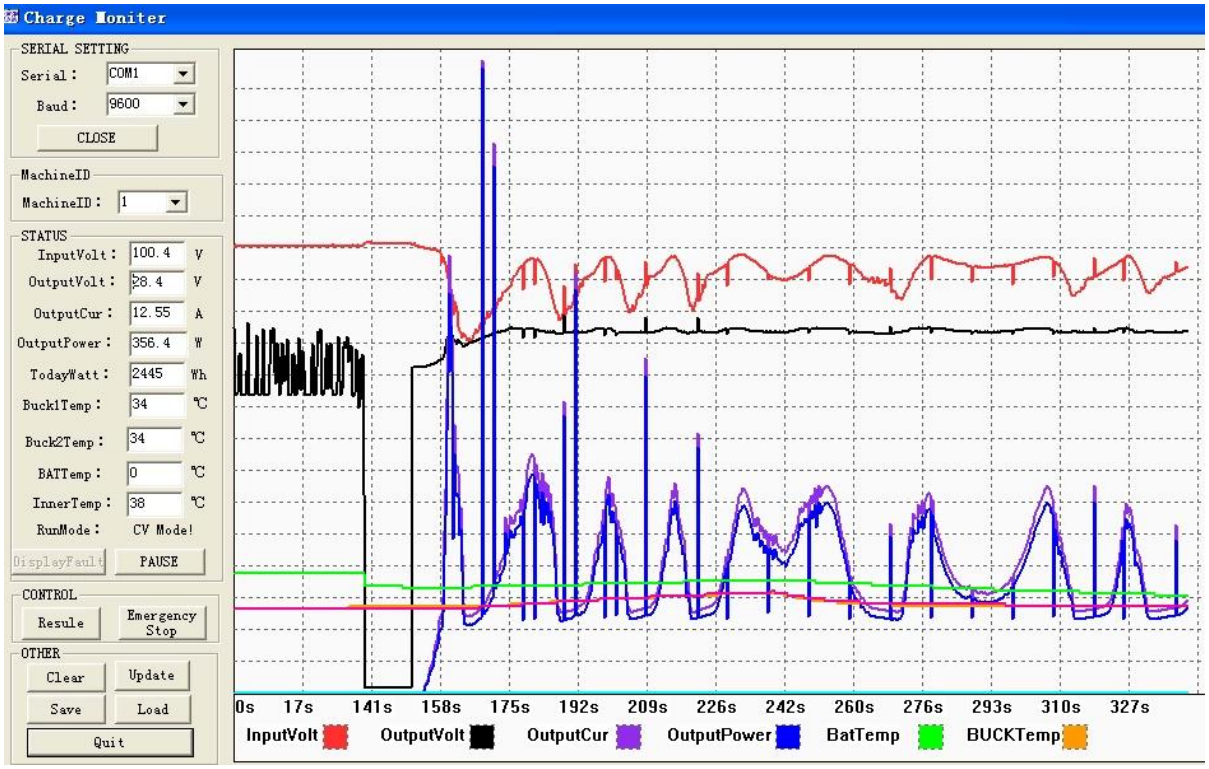
Connection diagram



The interface of upper computer software working state



The interface of test software working state



Parameters

MPPT solar controller modes I-P-e-SMART-12V/24V/48V-series		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		
System voltage	12V system	DC9V~DC15V		
	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				
MPPT working voltage range	12V system	DC14V~DC100V		
	24V system	DC30~DC100V		
	48V system	DC60~DC100V		
Low input voltage protection point	12V system	DC14V		
	24V system	DC30V		
	48V system	DC60V		
Low input voltage Recovery point	12V system	DC18V		
	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		
Maximum PV power	12V system (W)	355	426	568
	24V system (W)	710	852	1136
	48V system (W)	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	Please check the charge voltage according to the battery type form.		
Floating Charge Voltage	12V/24V/48V system			
Rated Input Current	12V/24V/48V system	25A	30A	40A
Current-limit Protection	12V/24V/48V system	30A	35A	45A
Temperature Factor	12V/24V/48V system	±0.02%/℃		
Temperature Compensation	12V/24V/48V system	14.2V-(The highest temperature-25℃)*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		

Packing and shipping

+PV-
+BAT-
+LOAD-
BAT TEMP
RS232

eSMART
Product Manual
Solar Eagle

MPPT Solar Charge Controller
Adopting Advanced MPPT Technology
High Conversion Efficiency
RS232 Port
HIGH-END QUALITY
SOLAR CHARGE CONTROLLER

Company

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Mundial SA