

## Introduction

This e-SMART [MPPT \(maximum Power Point Tracking\) solar charge controller](#) is a smart solar controller with 12v/24v/48v 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.

## Charaters

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 can use it in different system conveniently.
3. Maximum PV input voltage up to DC100V.
4. Three stages charge: fast charge(MPPT), constant voltage charge, floating charge, It can protect batteries well .
5. Three option of discharge: on mode and off mode and PV voltage(solar) control mode.
6. Users can choose 4 kinds of commonly standard batteries(Sealed lead acid, Vented, Gel, NiCd). Other kinds of batteries can be defined by users.
7. Digital tube can display battery voltage and charging current. The software can display various parameters such as model number, PV input voltage, battery type, battery voltage, charging current, charging power, working condition.
8. RS232 communication, we can offer communication protocol also, it's convenient for user's integration management.
9. This controller can be paralleled infinitely.
10. [CE and RoHS Certifications](#) are approved. We can help clients to approve other certifications.
11. 2 years warranty; 3~10 years extended technical service.

## Specification

MPPT solar controller modes	15A	20A	25A	30A	40A
I-P-e-SMART-12V/24V/48V-series					
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)	213	284	355	426	568
	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	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	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°C ~ +50°C
Storage Temperature	-40°C ~ +75°C
Atmospheric Pressure	70~106kPa

### Products Package

Number	quantity	Items included
1	1 pc	Controller color (blue or green is optional OEM ODM order is highly welcome )
2	2 pc	Hangers (used for controller hanging on the wall)
3	4 set	Screw
4	1 pc	RJ45 to RS232 cable
5	1 pc	Battery temperature sensor wire
6	2 pc	Fuse DC output
7	1 pc	User instruction manual
8	1 pc	CD









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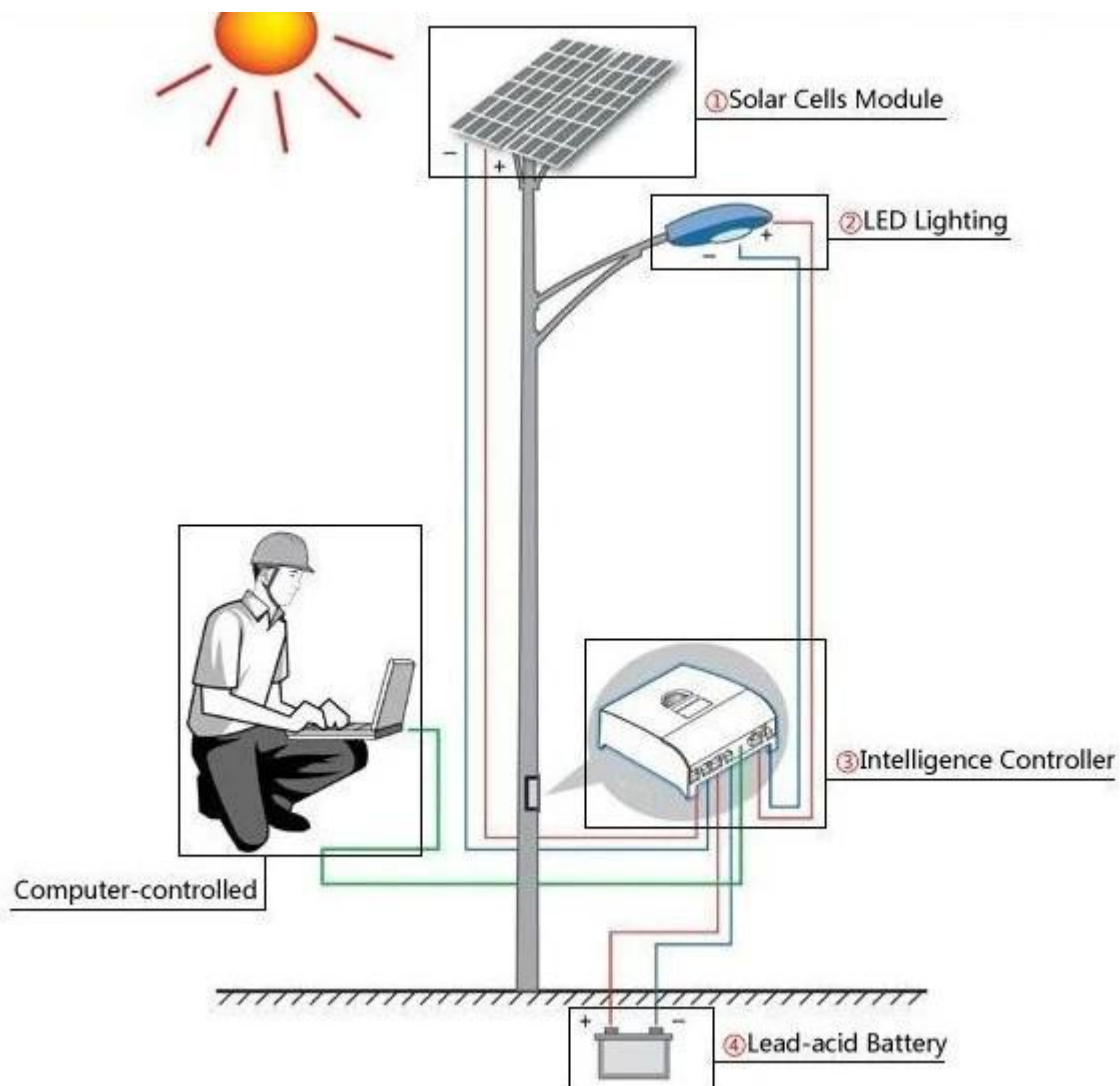
**Solar Eagle**  
Professional MPPT solar charge  
controller manufacturer



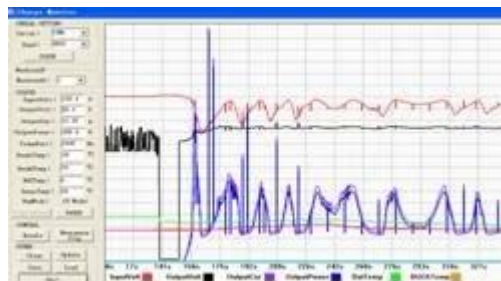
## [Application](#)



# DC FIRST SYSTEM



## Controller PC upper software and testing software



## Information display and parameter setting

