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 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.

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				
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				

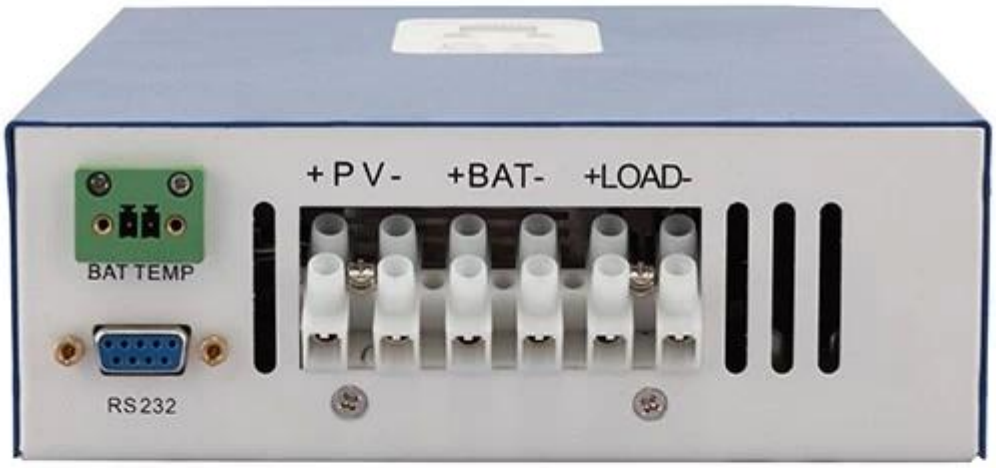
High input voltage protection point	12V/24V/48V system	DC110				
High input voltage recovery point	12V/24V/48V system	DC100V				
Maximum PV power	12V system (W)	213	284	355	426	568
	24V system (W)	426	568	710	852	1136
	48V system (W)	852	1136	1420	1704	2272
CHARGE CHRECTRESTICS						
Selectable Battery 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%/℃				
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

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

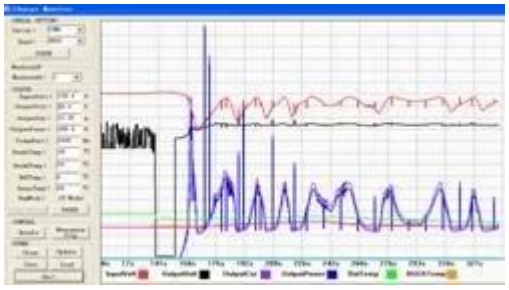

MPPT CONTROLLER
MPPT CONTROLLER


+ P V -
+BAT-
+LOAD-
BAT TEMP
RS 232


Solar Eagle
Solar Eagle
Professional MPPT solar charge
controller manufacturer

Controller PC upper software and testing software

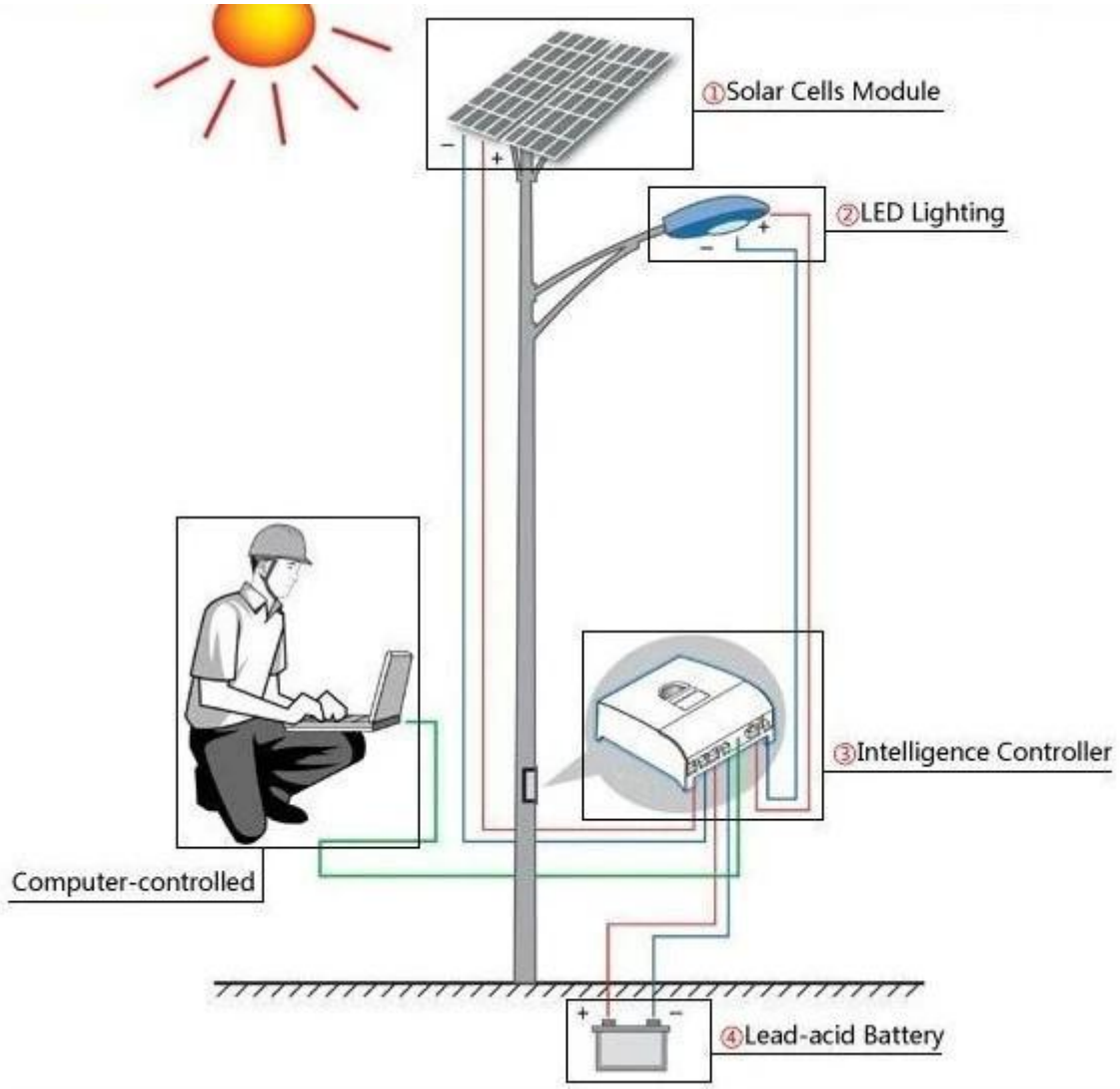
1. The first picture show solar controller working status(charge and discharge), PV voltage, charge voltage, charge current etc. Users can choose the type of the batteries, DC-load output control method.
2. We provide PC upper software. Testing software is not including. (user's PC has software development platform, if needed, please apply for it)



Information display and parameter setting

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,please see Figure 2.1;Press ENTER1 a little bit longer, users can set battery types.
2. ENTER2 button: press right ENTER2 show 2 digital battery current (if it is not charging, then it display 00, if the charge current is 22.5A, then it shows 22,please see Figure 2.2); press ENTER2 button a little bit longer, DC load control can be set (On mode, Off mode, PV voltage control mode)
Please see more details in the user manual.

Applications


①Solar Cells Module
②LED Lighting
③Intelligence Controller
Computer-controlled
④Lead-acid Battery