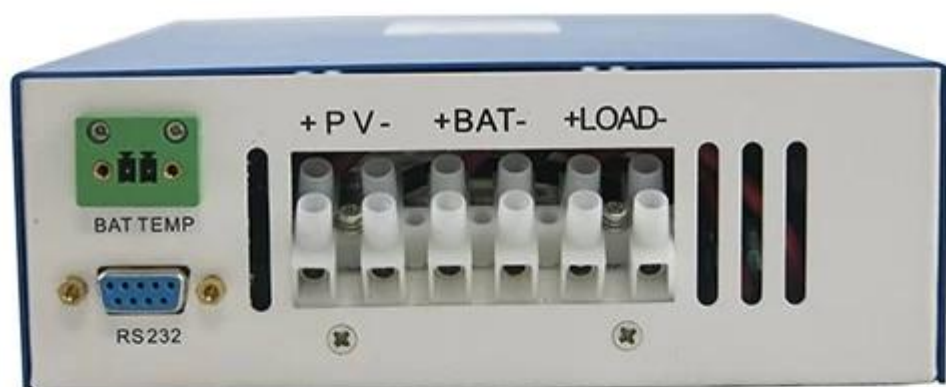# Introduction

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.

Features

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

2. D**C12V/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 select 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.

Products photos

Parameters

MPPT solar controller modes：I-P-e-SMART-12V/24V/48V-series		30A
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 and range	12V/24V/48V system	500us
MPPT efficiency	12V/24V/48V system	≥96.5%,≤99%
INPUT CHARACTERISTICS		
MPPT working voltage and Range	12V system	DC14V~DC100V
	24V system	DC30~DC100V
	48V system	DC60~DC100V

Low voltage input Protection point	12V system	DC14V
	24V system	DC30V
	48V system	DC60V
Low voltage input Recovery point	12V system	DC18V
	24V system	DC34V
	48V system	DC65V
Input over voltage protection point	12V/24V/48V system	DC110V
Input over voltage recovery point	12V/24V/48V system	DC100V
Maximum PV power	12V system (W)	426
	24V system (W)	852
	48V system (W)	1704

CHARGE CHRECTRESTICS

Selectable Battery Types (Default type is 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	Please check the charge voltage according to the battery type form.
Rated Input Current	12V/24V/48V system	30A
Current-limiting Protection	12V/24V/48V system	35A
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; custom available ;
Rated output Current	30A
The output control	Always on, always off, PV voltage control switch
Output control set mode	Controller button or upper computer

Display

LED digital tube display	Battery voltage, charge current
LED light display	Charging indicator light, LOAD indicator light
PC（communication port）	RS232

Protection

Input Low Voltage Protection	Check the input characteristics
Input Overvoltage Protection	Check the input characteristics
Charge over voltage power Protection	yes
Low Voltage output Protection	yes
Rated output 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
Type of 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