### Introduction:

This is a smart solar charge controller which has advanced MPPT technology .<u>Solar charge controller</u> is one of the important parts in the off-grid solar system. For having the advanced MPPT technology, the controller can trace the peak power with 99% conversion efficiency. MPPT microprocessor, inside the controller[making 30% more charge current with significantly less power than tradition. In addition to this, easier installing and supporting to expand volume are other advantages. It can also store energy to different kinds of batteries. We provide battery choice(Vented[]Sealed[]Gel[]NiCd).

#### Feature:

1.MPPT charge mode, conversion efficiency upto 99%, can save 30%  $\sim$  60% of the power than traditional controller.

2.With high efficient MPPT operation scheme and adopting TI28035 chip,make the Solar panels utilization rate upto 99%.

Intelligent design, the device can be upgraded online, customers enjoy the lifelong upgrade service.

4.Compliance with the 2002/95/EC environment protecting demand, doesn't include the Cadmium, hydride and fluoride

5.Adopting the well-known brand components,the devices can suffer the temperature not less than 105°C.The service life is designed to extend to 10 years in theory.

6.Charge mode: three stages (fast charge, constant charge, floating charge)

7.12V/24V/48V system auto recognize for easy control.

8.Nominal maximum solar input is DC 150V

9.Connected Battery Type choosing: Sealed lead acid, vented, Gel, NiCd battery. Other types of the batteries can also be defined.

10. LCD and LEDs show all kinds of parameter like products model, PV input voltage,battery voltage,charge current,charge power,work condition,and also can add customers' company name and website.

11. Communication Port.RS232 communication can provide communication protocol, This make the unified and integrated management more convenient to customers.

12. With providing a Microsoft by connecting with PC that can show the working state and all parameters in 7 languages.

13. Extensible LAN remote control.

14.Equipment integrity: controller+CD-ROM(microcomputer software) + communication wire+Anderson terminals;

15.CE,ROHS,FCC,PSE certifications approved. The device also can support to pass the other certifications.

16. 2 years warranty. And 3~10 years extended warranty service also can be provided.



#### **Parameters:**

MPPT solar controller I-P-e-SMART-12V/24V/		30A			
Charge mode	MPPT(maximum powe	er point tracking)			
Charge method	Three stages: constar	nt 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	12V system	DC18V		
Recovery point 24V system 48V system		DC34V DC65V		
Input over voltage protection point	12V/24V/48V system	DC110V		
Input over voltage recovery point	12V/24V/48V system	DC100V		
12V system (W)		450 850 1700		
CHARGE CHRECTREST		1,00		
Selectable Battery				
Types (Default type is GEL battery)		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		
	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) Output Voltage	12V/24V/48V system	200mV		
Stability Precision	12V/24V/48V system	≤±1.5%		
Output Discharge Cha	racteristics			
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 mo Display	de	Controller button or upper computer		
LED digital tube display		Battery voltage, charge current		
LED light display		Charging indicator light, LOAD indicator light		
PC]]communication po Protection	ort[]	RS232		
Input Low Voltage Pro	tection	Check the input characteristics		
Input Overvoltage Pro	tection	Check the input characteristics		
Charge over voltage p	ower Protection	yes		
Low Voltage output Protection		yes		
Rated output Current protection		yes		
Temperature Protectic Other Parameters	on	yes		
Noise		≤40dB		
Thermal heat-dissipat	ing method	Itself cooling fan cooling		
Components		Imported material, with EU standards.		
Certification Physical		CE\FCC\ROHS		
Measurement D x W x	H(mm)	205*168*60		
package size D x W x H(mm)		265*196*110		
N.G(KG) G.N(KG)		1.8kg 2kg		
Type of Mechanical Pr	otection	2kg IP25		
Environment				
Humidity Altitude		0~90%RH ( no condense)		
Operating Temperatur	re	0~3000m -20℃ ~ +50℃		
Storage Temperature		-40°C ~ +75°C		
Atmospheric Pressure		70~106kPa		

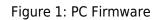
## **Pictures:**





## The Figures of the PC Firmware and Testing Software

System(S) Control(C) Statutes(f) Language() Height) Note: A set Monitored device: COM1[01]_1234567890123458 Device mode: Constantivotage charging Perform COM1[01]_1234567890123458 Battery type: Cel Model name: IPANDA-MPPT-60A Main freware version: 1.0 Codput information Codput formation Codput formation Codpu	Sulai Eagle							
Devices Overview Parameters setting Real-time control   Image: COMI[01]_1234567890123456 Image: Communication PV voltage: 105.1 V Environment temperature: 38.0 °C   Battery type: Oel Model name: IPANDA-MPPT-60A Model name: IPANDA-MPPT-60A Image: Communication restore   Main fireware version: 1.0 Image: Communication restore Image: Communication restore Image: Communication restore   Output voltage: 27.1 V Output power: 0.0 W Output voltage: 27.1 V Output power: 0.0 W   Output voltage: 27.1 V Output power: 0.0 W Image: 27.1 V Output power: 0.0 W   Output voltage: 27.1 V Output power: 0.0 W Image: 27.1 V Output power: 0.0 W   Image: 27.1 V Output power: 0.0 W Image: 27.1 V Output power: 0.0 W   Image: 27.1 V Output power: 0.0 W Image: 27.1 V Image: 27.1 V   Image: 27.1 V Output power: 0.0 W Image: 2011-11-05 15:20 Communication restore Image: 2011-11-05 15:20 Communication restore   Image: 2011-11-05 15:20 Image: 2011-11-05 15:20 Communication restore Image: 2011-11-05 15:20 Communication restore Image: 2011-11-05 15:20 Communication restore   Image: 2011-11-05 15:20 Communication restore Image: 2011-11-05 15:20 Comm	System(S) Control(C) Statistics(T)	Language(L) Help(H)						
COMI[01]_1234567890123456   Imput information     Battery type:   Gel   Model name:   IPANDA-MPPT-60A.     Main freeware version:   1.0     Output information   Real-time events     Output information   ID     Level   Time     Output voltage:   27.1     Output power:   0.0     Output current:   0.0     A   Total power:     39   KWh     Battery temperature:   0.0	法 💽 🔀 🌞	Guest Monitored device: COM1[01]_1234567880123456 Device mode: Constant voltage charging	I-Panda <sup>®</sup>					
Battery type: Gel Model name: IPANDA-MPPT-60A.   Main fireware version: 1.0 Model name: IPANDA-MPPT-60A.   Output information Real-time events   Output voltage: 27.1   Output quorent 0.0   A Total power:   39.1 Writh   Battery temperature: 0.0   V Output current:   0.0 Total power:   39.1 Writh   Battery temperature: 0.0   V Output current:   0.0 Total power:   39.1 Writh   Battery temperature: 0.0   V U   U Level   U Lo	🕵 Devices	Overview Parameters setting Real-time control						
Battery type: Oel Model name: IPANDA-MPPT-60A   Main fireware version: 1.0 Real-time events   Output information Real-time events   Output voltage: 27.1 V Output power: 0.0 W   Output current: 0.0 A Total power: 3.9 W/h   Battery temperature: 0.0 °C Image: 10.11-11-05 15:20 Communication restore		Input information	_ Input information					
Main fireware version: 1.0 Real-time events   Output information Real-time events   Output voltage: 27.1 V Output over: 0.0 W   Output current: 0.0 A Total power: 3.9 KWh Battery temperature: 0.0 °C   Battery temperature: 0.0 °C °C Communication restore Communication restore		PV voltage: 105.1 V Env	PV voltage: 105.1 V Environment temperature: 38.0 °C					
Output voltage: 27.1 V Output power: 0.0 W   Output current: 0.0 A Total power: 3.9 KWh   Battery temperature: 0.0 °C °C Solo Messa 2011-11-05 15:20 Communication restore   ID Level Time Event   3001 Messa 2011-11-05 15:20 Communication restore   3001 Messa 2011-11-05 15:20 Communication restore   ID Level III IIII IIII IIIIII   ID Level IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII								
Output voitage: 27.1 V Output power: 0.0 W 3001 Messa 2011-11-05 15:20 Communication restore   Output current: 0.0 A Total power: 3.9 KWh   Battery temperature: 0.0 C C Solo Messa 2011-11-05 15:20 Communication restore   Image: Solo C Image: Solo C Image: Solo Image: Solo Communication restore		Output information Real-time events	Real-time events					
Output current 0.0 A Total power: 3.9 KWh   Battery temperature: 0.0 V			Event					
Output current: 0.0 A Total power: 3.9 Wh   Battery temperature: 0.0 C C Communication restore		Output voltage: 27.1 V Output power: 0.0 W 3001 Messa 2011-11-05 15:20: Communi	ication restore					
Battery temperature: 0.0 °C		Output current 0.0 A Total power 3.9 W//b 3002 Messa 2011-11-05 15:20: Communi	ication lost					
		3001 Messa 2011-11-05 15:20: Communi	ication restore					
		Battery temperature: 0.0 °C						
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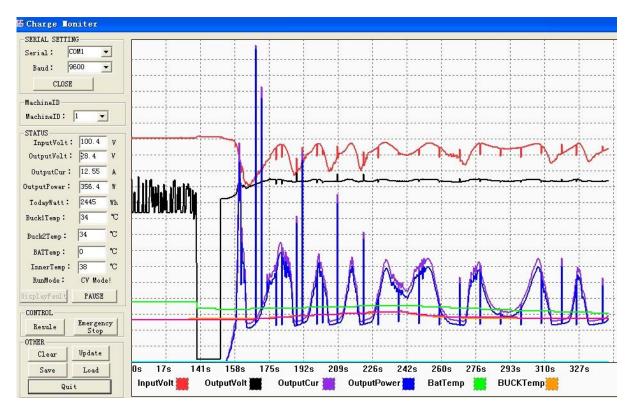


Figure: Testing Software

Welcome to order I-Panda MPPT Solar Charge Controller Smart1 48V 40A~60A

# Company









