

## Introduction:

This is a smart solar charge controller which has advanced MPPT technology .[Solar charge controller](#) 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 up to 99%,can save 30%~60% of the power than traditional controller.
- 2.With high efficient MPPT operation scheme and adopting TI28035 chip,make the Solar panels utilization rate up to 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,floatting charge)
- 7.12V/24V/48V/96V system auto recognize for easy control.
8. 12V/24V/48V system maximum solar input is DC 150V ,96V system maximum solar input is DC 300V ;
- 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.



# Parameter:

Model:I-P-SMART1-DC12V/24V/48V-series		40A
Charge Mode	Maximum Power Point Tracking	
Method	3 stages: fast charge(MPPT),constant voltage,floating charge	
System Type	DC12V/24V/48V	Automatic recognition
System Voltage	12V system	DC9V~DC15V
	24V system	DC18V~DC30V
	48Vsystem	DC36V~DC60V
Soft Start Time	12V/24V/48Vsystem	≤10S
Dynamic Response Recovery Time	12V/24V/48Vsystem	500us
Conversion Efficiency	12V/24V/48Vsystem	≥96.5%,≤99%
PV Modules Utilization Rate	12V/24V/48Vsystem	≥99%
Input Characteristics		
MPPT Working Voltage and Range	12V system	DC18V~DC150V
	24V system	DC34~DC150V
	48V system	DC65~DC150V
Low Voltage Input Protection Point	12V system	DC16V
	24V system	DC30V
	48V system	DC60V
Low Voltage Input Recovery Point	12V system	DC22V
	24V system	DC34V
	48V system	DC65V
Max DC Voltage	12V/24V/48V system	DC160V
Input Overvoltage Protection Point	12V/24V/48V system	DC150V
Input Overvoltage Recovery Point	12V/24V/48V system	DC145V
Max. PV Power	12V system	570W
	24V system	1130W
	48V system	2270W

Output Characteristics
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Selectable Battery Types (Default type is GEL battery)	12V/24V/48Vsystem	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	
Over Charge Protection Voltage	12V system	14.6V
	24V system	29.2V
	48V system	58.4V
Rated Output Current	12V/24V/48V system	40A
Current-limiting Protection	12V/24V/48V system	44A
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%

### Pictures:



## The Figures of the PC Firmware and Testing Software

The screenshot displays the SolarEagle software interface. At the top, there's a menu bar with options like System(S), Control(C), Statistics(T), Language(L), and Help(H). Below the menu is a toolbar with various icons representing different functions. The main window is divided into several sections:

- Header Area:** Displays "Guest Monitored device: COM1[01]\_1234567890123456" and "Device mode: Constant voltage charging". The "I-Panda®" logo is prominently displayed on the right.
- Left Sidebar:** Labeled "Devices", it shows a tree view with "COM1[01]\_1234567890123456" selected.
- Main Content Area:**
  - Tabs:** "Overview" (selected), "Parameters setting", and "Real-time control".
  - Schematic Diagram:** A diagram showing solar panels connected to a DC-DC converter box, which is then connected to a battery unit labeled "+ -".
  - System Information:**
    - Battery type: Gel
    - Model name: IPANDA-MPPT-60A
    - Main firmware version: 1.0
- Bottom Section:**
  - Output information tab:** Shows real-time data:
    - Output voltage: 27.1 V
    - Output current: 0.0 A
    - Battery temperature: 0.0 °C
    - Output power: 0.0 W
    - Total power: 3.9 kWh
  - Real-time events tab:** A table listing recent events:
 

ID	Level	Time	Event
3001	Messa...	2011-11-05 15:20:...	Communication restore
3002	Messa...	2011-11-05 15:20:...	Communication lost
3001	Messa...	2011-11-05 15:20:...	Communication restore

Figure 1: PC Firmware

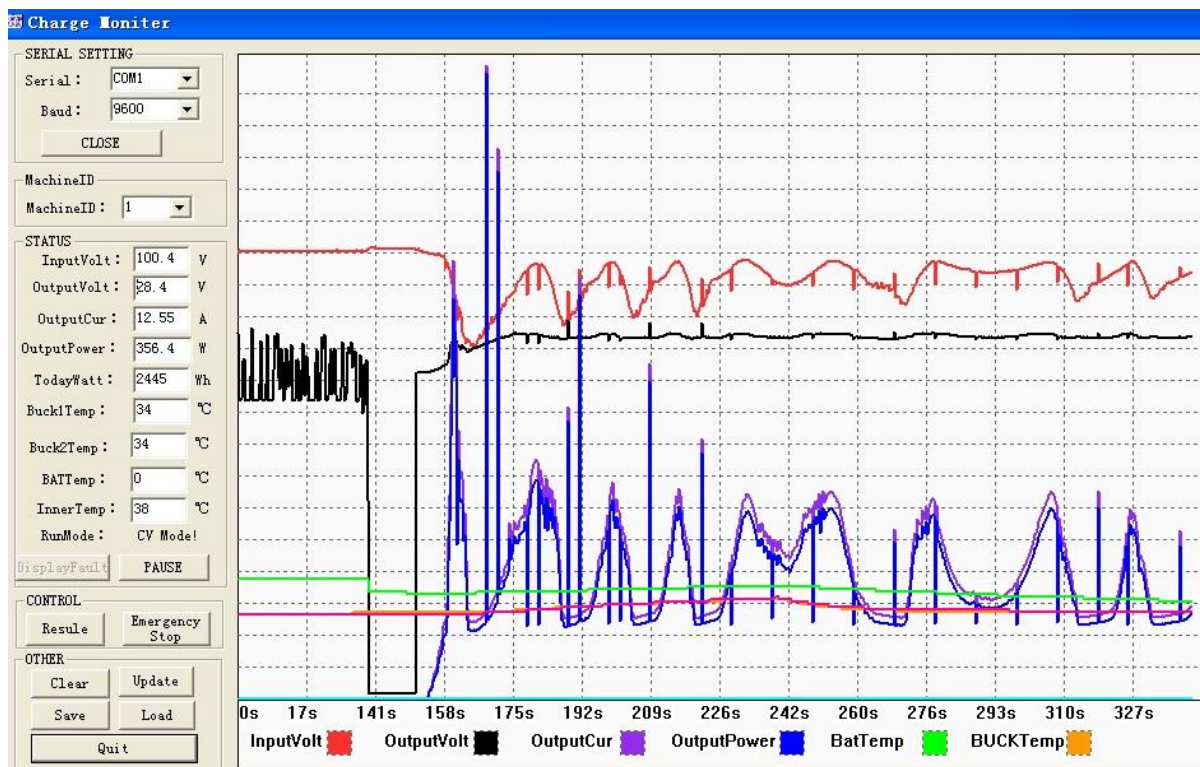


Figure: Testing Software

Welcome to order I-Panda [MPPT Solar Charge Controller Smart1 48V 20A](#)

## Company







