## Introduction

This is a solar charge controller 40A ~60A that have automatic max. power point tracking function with high efficiency that almost 30%~60% higher than traditional charge controller. It also features the functions of system voltage auto recognition, wide rang of PV input ,charge for all kinds of battery,automatic discharge control,RS 232 / LAN communication function and so on. It is very high-end product for solar market with its best partner I-P-TPI2 model Inverter/Charger/UPS.

## Feature

1.MPPT charge mode,conversion efficiency upto 99%.
2.12V/24V/48V system auto recognize.
3.Wide range of PV input with max. is DC150V.
4.Unlimited parallel connection.
5.Journal function , Save function set ,Date ,time ,Generating capacity and so on .
6.Charge mode: three stages (fast charge ,constant charge ,floating charge) .It prolongs service life of the batteries .
7.Discharge mode: ON/OFF mode, double time control mode,PV voltage control mode ,PV voltage+time delay mode and so on .
8.Recommended battery types: sealed lead acid, vented, gel, NiCd battery. Other types of the batteries can also be defined.
9.Most information could be provide by LCD and LED like: model no.,PV input voltage,battery type,battery voltage,charging current,charging power,working status and so on. Also customer's information like company name,website and logo can be added into Solar Eagle software.
10.RS232 and LAN communication port. IP and Gate address could be user define it satisfy global area.And communication protocol can be provided to help customer manage all information .
11.The upper computer software is displayed in 11 languages, it could show work status and set parameters of the discharge system.
12.With intelligent design,the device can be upgraded online lifelong.
13.Adopting the well-known brand components,the devices can suffer the temperature not less than 105℃.The service life is designed to use for 10 years in theory.
14.Compliance with the 2002/95/EC environment protecting demand, doesn't include the Cadmium, hydride and fluoride etc material
15.Equipment integrity: controller + CD-ROM(microcomputer software) + communication wire + temperature sensing wire+Anderson terminals;
16.CE,ROHS certifications approved.

## Parameter

| Model:I-P-SMART2-40A/50A/60A -series | | 40A | 50A | 60A |
|---|---|---|---|---|
| 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 | DC150 | | |
| Input Overvoltage Recovery Point | 12V/24V/48V system | DC145V | | |
| Max. PV Power | 12V system | 570W | 700W | 900W |
| | 24V system | 1130W | 1400W | 1700W |
| | 48V system | 2270W | 2800W | 3400W |
| Output Characteristics | | | | |
| 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 | | | |
| Over Charge Protection Voltage | 12V system | 14.6V | | |
| | 24V system | 29.2V | | |
| | 48V system | 58.4V | | |
| Rated Output Current | 12V/24V/48V system | 40A | 50A | 60A |
| Current-limiting Protection | 12V/24V/48V system | 44A | 55A | 66A |
| Rate charge current | 12V/24V/48V System | 40A | 50A | 60A |
| 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% | | |
| Charge voltage Peak-Peak Ripple | 12V/24V/48V System | 200mV | | |
| Charger voltage accuracy | 12V/24V/48V System | ≤±1.5% | | |
| Discharge characteristic | | | | |
| Setting Control | Controller or LAN | | | |
| Max discharge current | 12V/24V/48V System | 40A | | |
| Discharge protection | 12V/24V/48V System | fuse 30A*2 | | |
| Double-time control | 12V/24V/48V System | On in morning ,off in morning / On in night ,off in night | | |
| ON / OFF mode | 12V/24V/48V System | ON / OFF | | |
| PV voltage control | 12V/24V/48V System | PV voltage on□PV voltage off | | |
| PV voltage / time delay control | 12V/24V/48V System | PV voltage on□time delay off | | |
| Discharge voltage protection | 12V/24V/48V System | Output off when it under setting voltage; Factory set is 10.5 .( Note : set based on 1 battery ) | | |
| Communication Features | | | | |
| RS232 Communication | 12V/24V/48V System | Chose COM communication | | |
| LAN Communication | 12V/24V/48V System | Set IP and Gate address for controller and solar eagle ;Then chose TCP communication | | |
| Protection | | | | |
| Input Low Voltage Protection | | Check the input characteristics | | |
| Input Overvoltage Protection | | Check the input characteristics | | |
| Input Polarity Reversal Protection | | yes | | |
| Output Overvoltage Protection | | Check the output characteristics | | |
| Output Polarity Reversal Protection | | yes | | |
| Short-circuit Protection | | Recover after eliminating the Short-circuit fault, no problem for long term Short-circuit | | |
| Temperature Protection | | 95℃ | | |
| Temperature protection | | Above 85℃,decrease the output power, decrease 3A per degree. | | |
| Other Parameters | | | | |
| Noise | | ≤40dB | | |
| Thermal methods | | Forced air cooling, fan speed rate regulated by temperature, when inner temperature is too low, fan ran slowly or stop; when controller stop working, fan also stop ran. | | |
| Components | | World brand raw materials. Compliance with EU standards. All rated temperature of electrolytic capacitors not less than 105℃ | | |
| Smell | | No peculiar smell and toxic substances. | | |
| Environment Protection | | Meet the 2002/95/EC,no cadmium hydride and fluoride | | |
| Physical | | | | |
| Measurement DxWxH (mm) | | 270*185*90 | | |
| N.G(kg) | | 3 | | |
| G.N(kg) | | 3.6 | | |
| Color | | Blue/Green (optional) | | |
| Safety | | CE, RoHS, PSE,FCC | | |
| EMC | | EN61000 | | |
| Type of Mechanical Protection | | IP21 | | |
| Environment | | | | |
| Humidity | 0~90%RH ( no condense) | | | |
| Altitude | 0~3000m | | | |
| Operating Temperature | -20℃ ~ +40℃ | | | |
| Storage Temperature | -40℃ ~ +75℃ | | | |
| Atmospheric Pressure | 70~106kPa | | | |

Note: OEM and ODM service are provided. The 36V/72V/96V model also can be custom made for you.

## Product Parts

| NO. | Quantity | Description |
|---|---|---|
| 1 | 1 unit | Charge controller |
| 2 | 2 pc | Terminals |

| | | |
|---|---|---|
| 3 | 2 pc | Gallow pulley<br>(For install the controller on the wall ) |
| 4 | 4 set | Screw<br>(For install the controller on the wall ) |
| 5 | 1 pc | 232 turn to RJ45 communication cable |
| 6 | 1 pc | User manual |
| 7 | 1 pc | Temperature sensing wire |
| 8 | 2 pc | Fuse wire |

Blue

Green

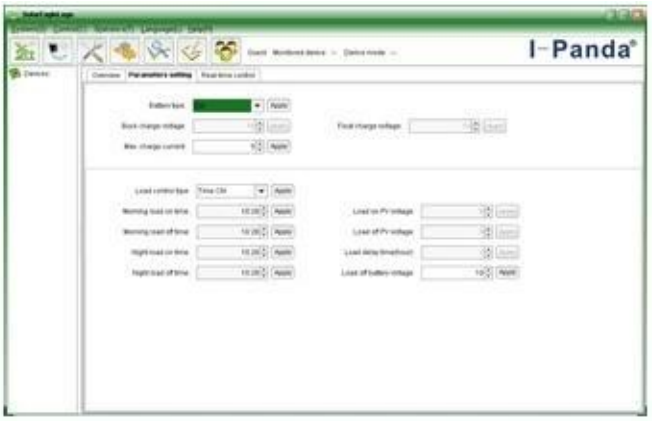

Upper Computer Software

Parts


Package

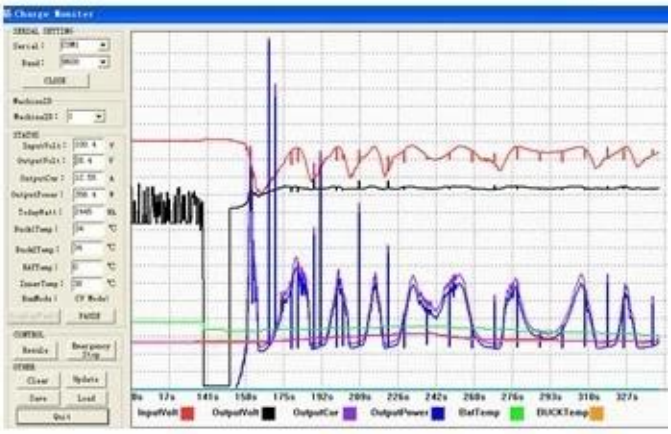
**Upper Computer Software and Test Software**


The interface of upper computer software working state




The interface of upper computer software parameter setting state


Upper computer software on/off interface and generating capacity record clean interface



The interface of test software working state

## MPPT Connection



## Certificates

ISO2008
ISO2004

CE
FCC
ROHS

### Service and Contact

1. OEM and ODM orders are provided.
2. Power solution consult available based on technical group
3. 24 months warranty; 3 to 10 years extended
4. Free technical study and discussion on products are provided every year.