## Introduction

This is a solar charge controller 20A ~30A 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.

## Application

1. Industrial, commercial, household off grid solar energy generation system
2. Movable off grid solar energy generation system
3. Communication base stations
4. New energy education business
5. Solar Monitoring System
6. Solar Street Lighting System


LAN
RS232
+ PV -
+ BAT - + LOAD -
BAT TEMP


## Reasons to choose

1. 30%-60% solar panels saved
1) Conversion efficiency 95%-99%, take most from solar panels
2) Charge for all kinds of batteries, 3 charge stage to protect battery.
Reduce consumption, cost saved.
2. Data monitor and set. Parameters from solar panels like charge current/voltage and IP gate address, total generation power, etc can be showed. 4 kinds DC load control.
3. Lan commucation and RS232 port.
4. Software to monitor 100pcs equipments at the same time on one screen on a computer.

## Features

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°C.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-SMART2-20A/25A/30A -SERIES | | 20A | 25A | 30A |
|---|---|---|---|---|
| Charge Mode | | Maximum Power Point Tracking | | |
| Discharge Mode | | Intelligent control | | |
| System Type | | 12V 24V 48V Automatic recognition | | |
| Soft Start Time | | ≤10S | | |
| Dynamic Response Recovery Time | | 500us | | |
| Conversion Efficiency | | ≥96.5%,≤99% | | |
| PV Modules Utilization Rate | | ≥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 | | DC160V | | |
| Input Overvoltage Protection Point | | DC150 | | |
| Input Overvoltage Recovery Point | | DC145V | | |
| Max. PV Power | 12V system | 286W | 357W | 429W |
| | 24V system | 572W | 715W | 858W |
| | 48V system | 1144W | 1430W | 1716W |
| CHARGE CHARACTERISTICS | | | | |
| Selectable Battery Types | | Sealed lead acid, vented, Gel, NiCd battery(Default type is GEL battery) | | |
| Other types of Battery Setting | | Constant charge | User-defined constant/floating charge voltage range between DC10V~DC15 ( based on 1 pcs 12V battery ) | |
| | | Floating charge | | |
| Battery Type Setting | | 12V/24V/48V SYS | Controller and upper monitor | |
| Charge Type | | 12V/24V/48V SYS | Three Stages :Fast charge/Constant charge/Floating charge | |
| Rated Output Current | | 20A | 25A | 30A |
| Current-limiting Protection | | 25A | 30A | 35A |
| Temperature Factor | | ±0.02%/℃ | | |
| Temperature Compensation | | 14.2V-(The highest temperature-25℃)*0.3 | | |
| Output Ripples(peak) | | 200mV | | |
| Output Voltage Stability Precision | | ≤±1.5% | | |
| Charge voltage Peak-Peak Ripple | | 200mV | | |
| Charger voltage accuracy | | ≤±1.5% | | |
| DISCHARGE CHARACTERISTICS | | | | |
| Setting Control | | Controller or LAN | | |
| Max discharge current | | 30A | | |
| Max discharge power | | 420W | 840W | 1680W |
| Discharge protection | | fuse 40A*2 | | |

| | |
|---|---|
| Double-time control | On in morning ,off in morning / On in night ,off in night |
| ON / OFF mode | ON / OFF |
| PV voltage control | PV voltage on,PV voltage off |
| PV voltage / time delay control | PV voltage on,time delay off |
| Discharge voltage protection | Output off when it under setting voltage; Factory set is 10.5 .( Note : set based on 1 battery ) |
| COMMUNICATION PORT | |
| RS232 Communication | Chose COM communication |
| LAN Communication | Set IP and Gate address for controller and solar eagle ;Then chose TCP communication |
| PROTECTIONS | |
| Input Low Voltage Protection | Check the in/output characteristics |
| Input Overvoltage Protection | |
| Input Polarity Reversal Protection | |
| Output Overvoltage Protection | |
| Output Polarity Reversal Protection | |
| 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. |
| Environment Protection | World brand raw materials. Compliance with EU standards. Meet the 2002/95/EC without cadmium hydride, fluoride, peculiar smell and toxic substances.All rated temperature of electrolytic capacitors not less than 105℃ |
| PHYSICAL | |
| Measurement DxWxH (mm) | 270*185*90 |
| N.G(kg) | 2.1 |
| G.N(kg) | 2.4 |
| 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 pc | Charge controller |
| 2 | 2 pc | Gallow pulley (For install the controller on the wall ) |
| 3 | 4 set | Screw (For install the controller on the wall ) |
| 4 | 1 pc | 232 turn to RJ45 communication cable |
| 5 | 1 pc | User manual |
| 6 | 1 pc | Temperature sensing wire |
| 7 | 2 pc | Fuse wire |

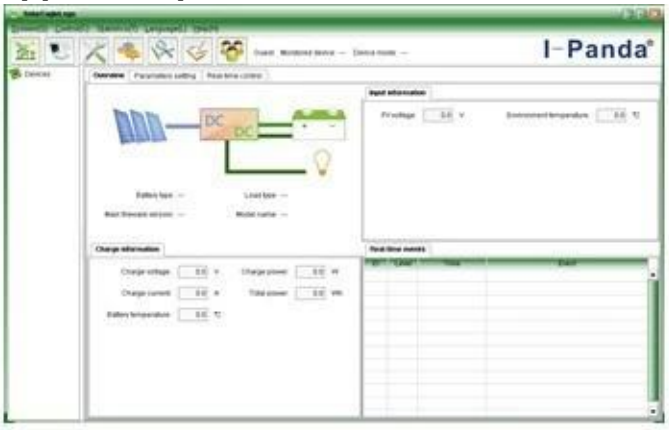
Blue

Green

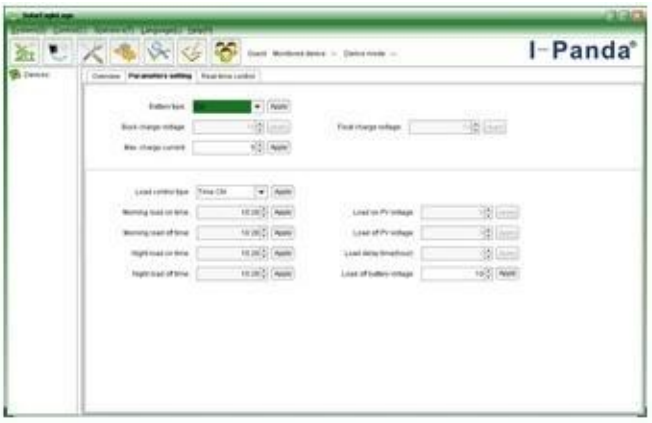
Upper Computer

Package

## Upper Computer Software and Test Software

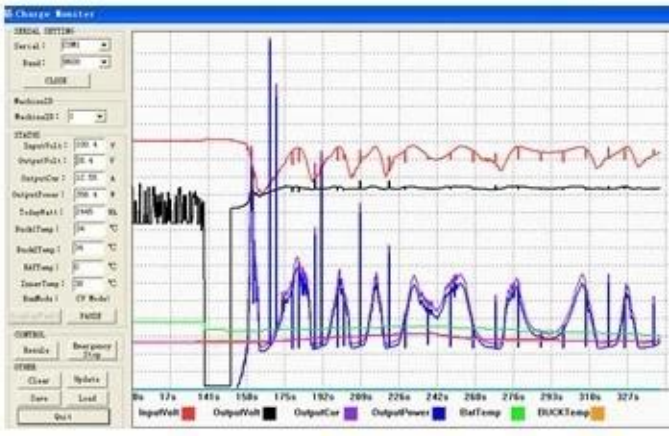


The interface of upper computer software working state



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. Warranty**

1.2 years warranty, lifelong technical assistance.

**2. Conditions and Terms**

2.1 The warranty starts from the delivery date from our factory.
2.2 During the warranty, any defective product will get repaired or replaced for free.
2.3 The warranty is unavailable for those products which are broken by the violence or the carelessness or repaired or altered without the authorization.

**3. Lead Time**

3.1 Sample orders will be delivered from our factory within 5-7 working days.
3.2 General orders will be delivered from our factory within 7-15 working days.

3.3 Big orders will be delivered from our factory within 25 working days at most.

**4. Shipment**

4.1 Samples By EMS,DHL,FedEx or other express.

4.2 Wholesale orders by our forwarding agent(by air or by sea).

4.3 Wholesale orders by your own forwarding agent.

**5. OEM and ODM**

5.1 This page shows basic data, we can provide OEM, ODM service for you.