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.

PV+   PV-

LAN   RS232

BAT(+) BAT(-)

BAT TEMP

+ LOAD -

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-SMART2-40A/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 (For install the controller on the wall)
4	4 set	Screw (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
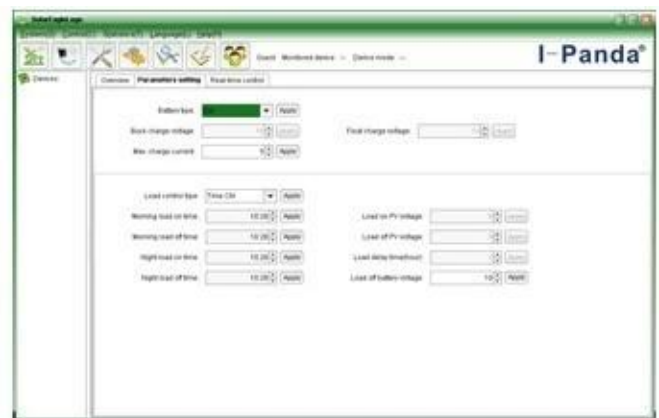

Upper Computer Software

Parts

Package

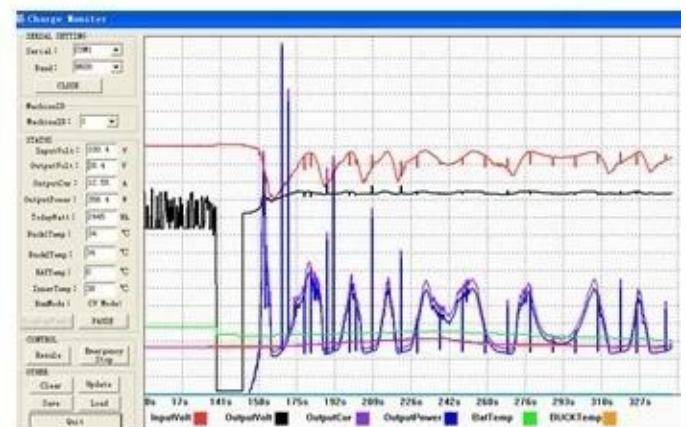**Upper Computer Software and Test Software**

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

Solar Panel

Breaker

PV+ PV-

LAN RS232

BAT(+) BAT(-)

TEMP

Router

WIFI

Temp.sensor

PC

Breaker

Battery Box

Breaker

Breaker

DC Output

Inverter

AC Output

Solar Panel

Breaker

PV+ PV-

LAN RS232

BAT(+) BAT(-)

USB to RS232

Temp.sensor

Breaker

Breaker

DC Output

PC

Battery Box

Breaker

Inverter

AC Output