

## 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 [L-P-TPI2 model Inverter/Charger/UPS](#).







## 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	12V/24V/48Vsystem	500us	
Recovery Time	12V/24V/48Vsystem	≥96.5%, ≤99%	
Conversion Efficiency	12V/24V/48Vsystem	≥99%	
PV Modules Utilization Rate	12V/24V/48Vsystem	≥99%	
<b>Input Characteristics</b>			
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	700W	900W
	24V system	1130W	1400W
	48V system	2270W	2800W
3400W			
<b>Output Characteristics</b>			
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	14.6V	
Over Charge Protection Voltage	12V system	29.2V	
	24V system	58.4V	
	48V system		
Rated Output Current	12V/24V/48V system	40A	50A
Current-limiting Protection	12V/24V/48V system	44A	55A
Rate charge current	12V/24V/48V System	40A	50A
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%	
Charge voltage Peak-Peak Ripple	12V/24V/48V System	200mV	
Charger voltage accuracy	12V/24V/48V System	≤±1.5%	
<b>Discharge characteristic</b>			
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 )	
<b>Communication Features</b>			
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	
<b>Protection</b>			
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°C		
Temperature protection	Above 85°C,decrease the output power, decrease 3A per degree.		
<b>Other Parameters</b>			
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°C		
Smell	No peculiar smell and toxic substances.		
Environment Protection	Meet the 2002/95/EC,no cadmium hydride and fluoride		
<b>Physical</b>			
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		
<b>Environment</b>			
Humidity	0~90%RH ( no condense)		
Altitude	0~3000m		
Operating Temperature	-20°C ~ +40°C		
Storage Temperature	-40°C ~ +75°C		
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	<a href="#">Charge controller</a>
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



