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

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, automaticly save ernergy both from human and
solar.
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

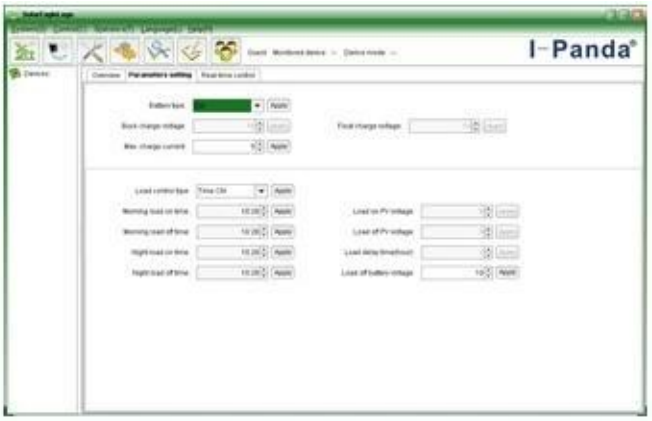
Green

Upper Computer

Package

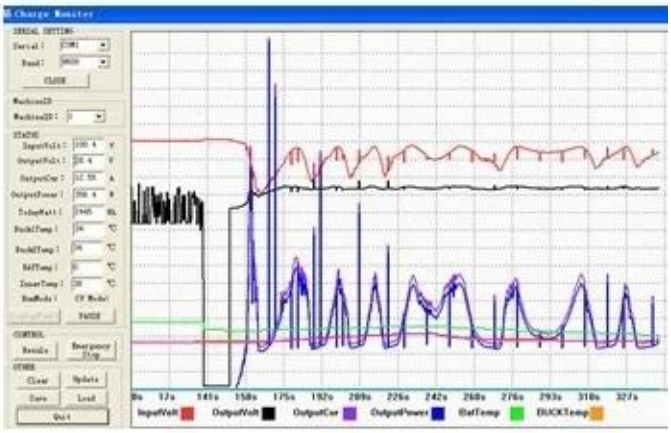
Upper Computer Software and Test Software

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 By EMS,DHL,FedEx or other express.

4.2 By our forwarding agent(by air or by sea).

4.3 By your own forwarding agent.

5. OEM and ODM

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