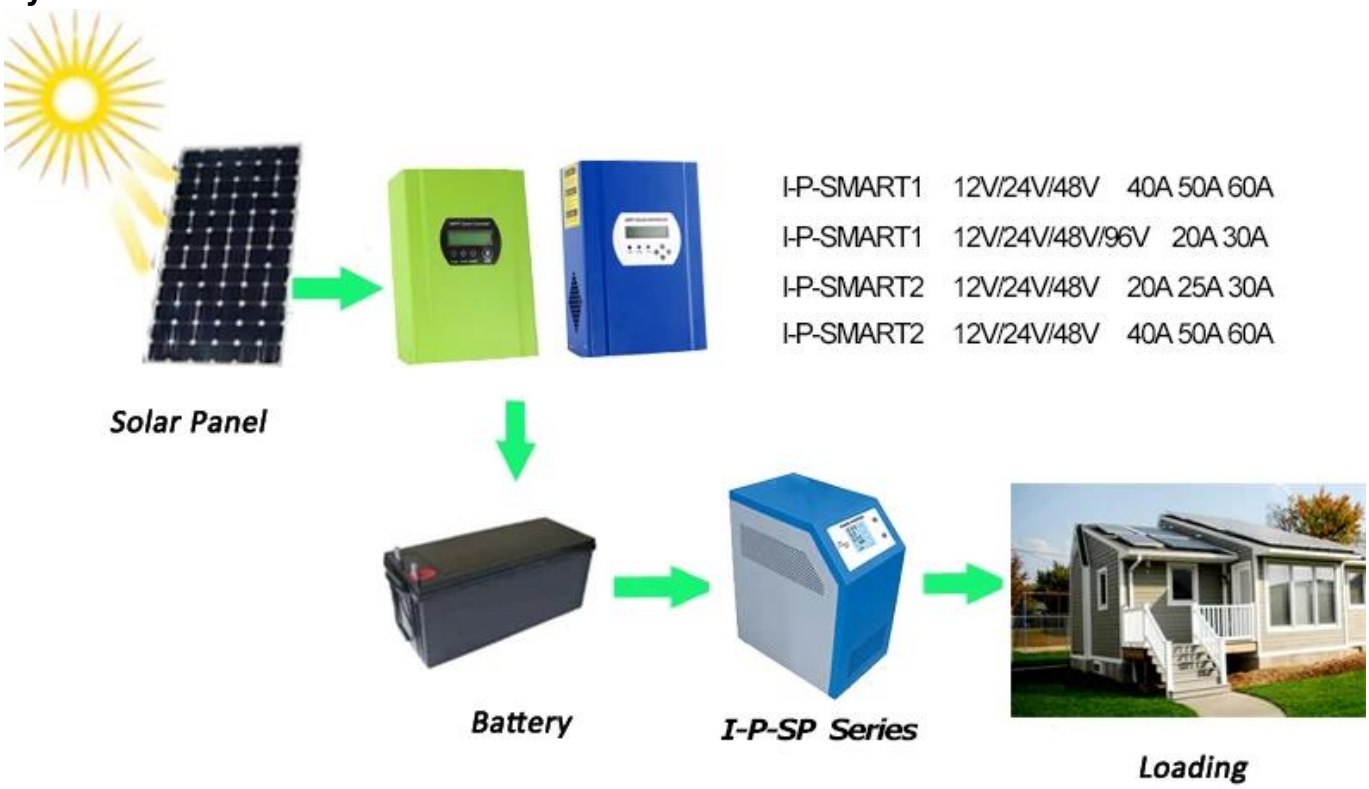
High Conversion Efficiency Wide Range Input Voltage DC12V/24V/48V/96V Syatem Automatic Identification

I-P- SMART1-DC12V/24V/48V/96V-20A MPPT Solar charge Controller. With MPPT, it can target the highest output possibe from PV panels, make efficiency higher upto 30%~60% than traditional PWM ones. It can store energy to different kinds of batteries(Gel,Vented, Sealed, NiCd etc.). For all of our products has passed CE, ROHS, FCC etc.Unlimited connect in parallel.

System



Features

1. Peak efficiency upto 99% with MPPT,increasing 30%~60% efficiency than traditional controller.
2. 12v/24v/48v/96V system voltage automatic recognize.
3. Maximum input PV voltage upto DC300V.
4. 105degrees can be sufferred by good components.
5. Charge mode: three stages (fast charge, constant charge, floating charge)
6. Support kinds of batteries:Gel,Sealed lead acid,vented,NiCd,etc.
7. LCD and LEDs show parameters and system information,like PV input voltage,battery voltage,charge current,charge power,etc.
8. Port RS232 or connects to PC with upper software to show working state and parameters in 11 languages.
9. CE,RoHS certificatons approved.
10. 2 years warranty;3~10 years extended technical service.

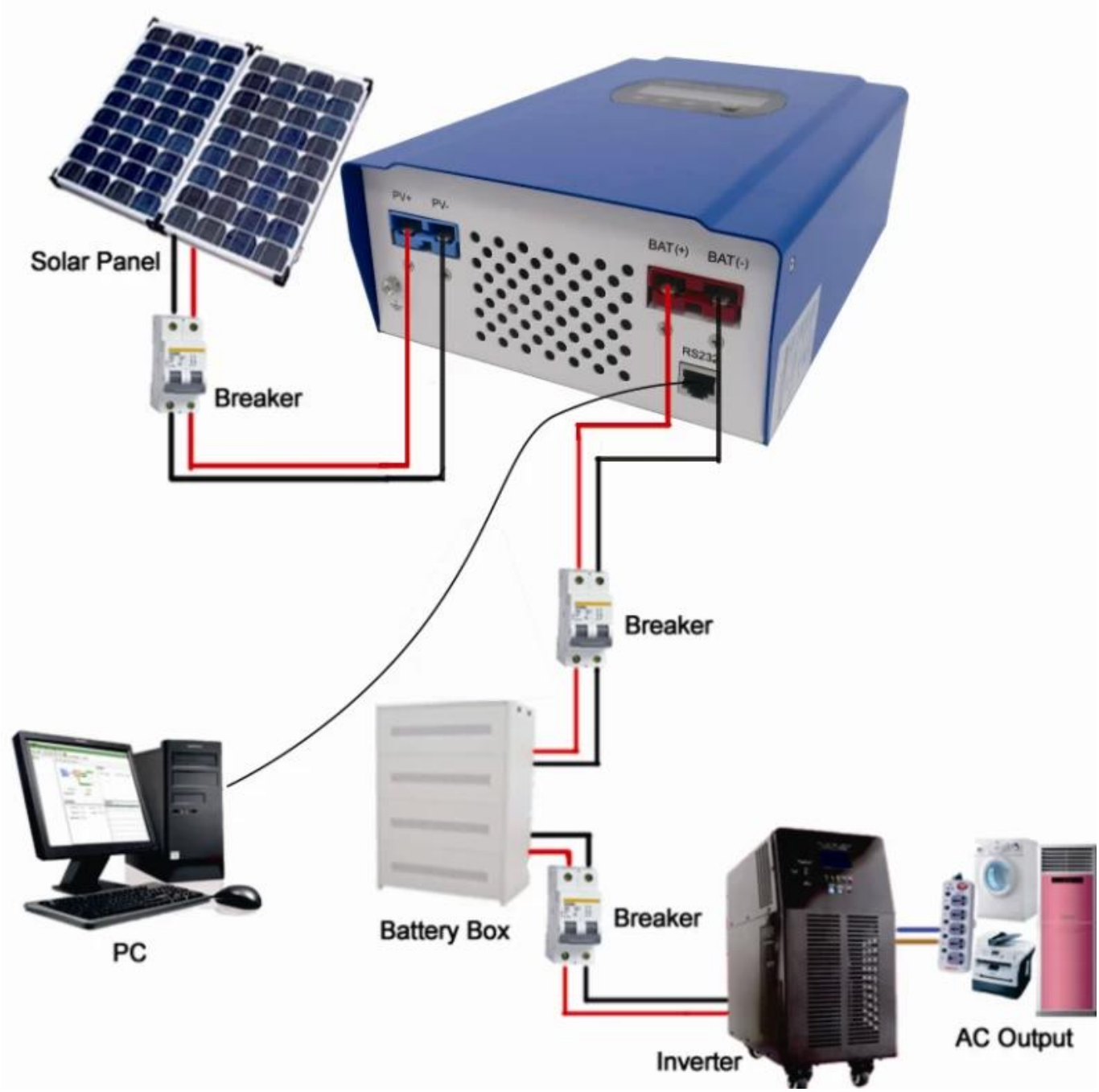
Parameter

Model:I-P-SMART1-DC12V/24V/48V/96v eries		20A
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
	96Vsystem	DC72V~DC120V

Soft Start Time	12V/24V/48V/96v system	≤10S
Dynamic Response Recovery Time	12V/24V/48V/96v system	500us
Conversion Efficiency	12V/24V/48V/96v system	≥96.5%,≤99%
PV Modules Utilization Rate	12V/24V/48V/96v system	≥99%
Input Characteristics		
MPPT Working Voltage and Range	12V system	DC18V~DC150V
	24V system	DC34~DC150V
	48V system	DC65~DC150V
	96V system	DC125~DC300V
Low Voltage Input Protection Point	12V system	DC16V
	24V system	DC30V
	48V system	DC60V
	96V system	DC120V
Low Voltage Input Recovery Point	12V system	DC22V
	24V system	DC34V
	48V system	DC65V
	96V system	DC125V
Max DC Voltage	12V/24V/48V system	DC160V
	96V system	DC300V
Input Overvoltage Protection Point	12V/24V/48V system	DC150
	96V system	DC300V
Input Overvoltage Recovery Point	12V/24V/48V system	DC145V
	96V system	DC295V
Max. PV Power	12V system	280W
	24V system	560W
	48V system	1120W
	96V system	2240W
Output Characteristics		
Selectable Battery Types (Default type is GEL battery)	12V/24V/48V/96Vsystem	Sealed lead acid, vented, Gel, NiCd battery (Other types of the batteries also can be defined)
Constant Voltage	12V/24V/48V/96V system	Please check the charge voltage according to the battery type form.
Floating Charge Voltage	12V/24V/48V/96Vsystem	
Over Charge Protection Voltage	12V system	14.6V
	24V system	29.2V
	48V system	58.4V
	96V system	116.8V
Rated Output Current	12V/24V/48V system	20A
Temperature Factor	12V/24V/48V system	±0.02%/℃
Temperature Compensation	12V/24V/48V/96v system	14.2V-(The highest temperature-25℃)*0.3
Output Ripples(peak)	12V/24V/48V/96v system	200mV
Output Voltage Stability Precision	12V/24V/48V/96v system	≤±1.5%
Display		
LCD display		Input, output parameter and output power etc (check the LCD display instruction)
LED display		3 LEDs indicates: Fault indicate light, charge indicate light, power source indicate light(check the LED instruction)
Software Control through PC(communication port)		RS232 (matching) or LAN(optional)
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)	4.5
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

RS232 Connect way


Solar Panel
PV+
PV-
BAT(+)
BAT(-)
RS232
Breaker
Breaker
PC
Battery Box
Breaker
Inverter
AC Output