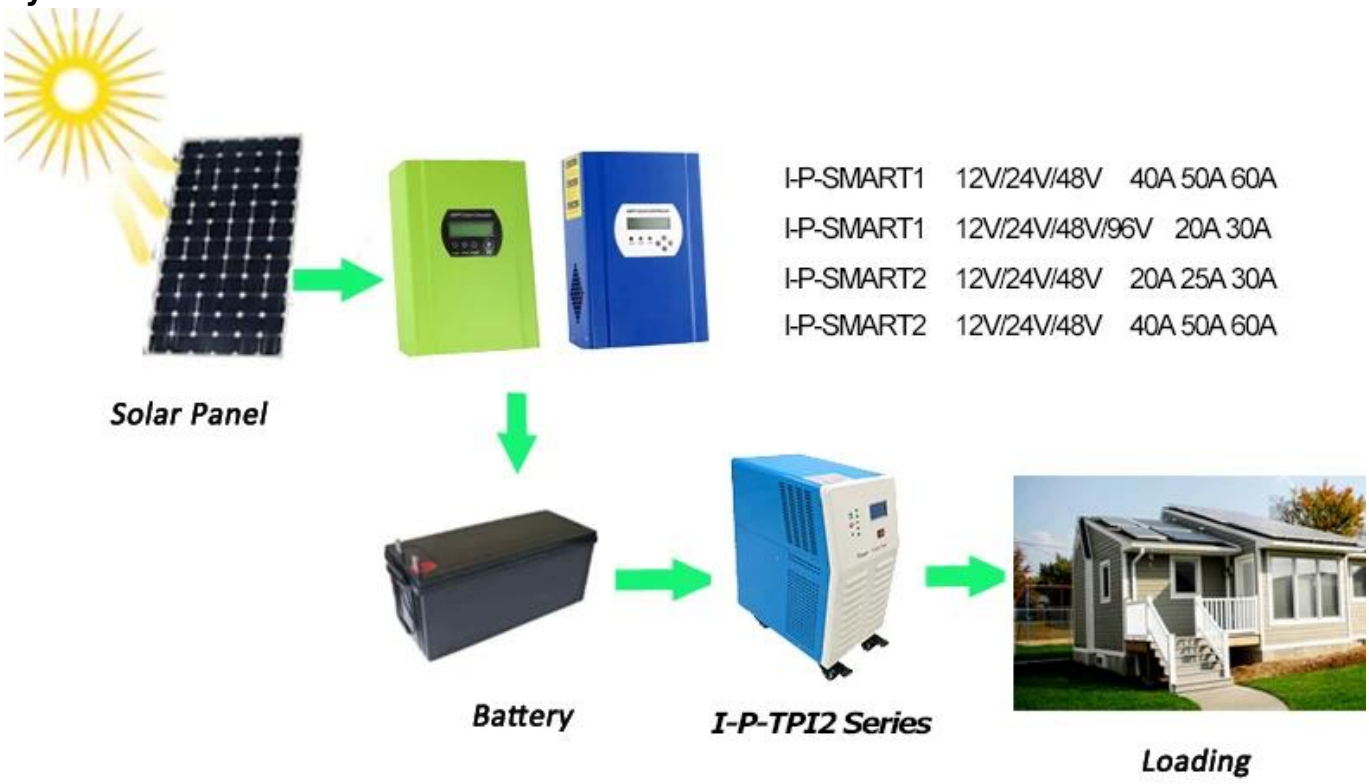
## High Conversion Efficiency Wide Range Input Voltage DC12V/24V/48V Syatem Automatic Identification

I-P- SMART1-DC12V/24V/48V-40A MPPT Solar chargeController. With MPPT, it can target the highest output possibe from PV panels,make efficiency higher upto 30%~60% than traditional PWM ones. It can storeenergy to different kinds of batteries(Gel,Vented, Sealed, NiCd etc.). For all ofour products has passed CE, ROHS, FCC etc.Unlimited connect in parallel.

### System




### Features

1. Peak efficiency upto 99% with MPPT,increasing30%~60% efficiency than traditional controller.
2. 12v/24v/48v system voltage automatic recognize.
3. Max. input PV voltage upto DC150V.
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 leadacid,vented,NiCd,etc.
7. LCD and LEDs show parameters and systeminformation,like PV input voltage,battery voltage,charge current,chargepower,etc.
8. Port RS232 or connects to PC with uppersoftware to show working state and parameters in 11 languages.
9. CE,RoHS, FCC certificatons approved.
10. 2 years warranty;3~10 years extended technicalservice.

### Parameter

| Model:I-P-SMART1-DC12V/24V/48V-series | 40A | |
|---|---|---|
| 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/48Vsyste m | ≤10S |
| Dynamic Response Recovery Time | 12V/24V/48Vsyste m | 500us |
| Conversion Efficiency | 12V/24V/48Vsyste m | ≥96.5%,≤99% |
| PV Modules Utilization Rate | 12V/24V/48Vsyste m | ≥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 | DC150V |
| Input Overvoltage Recovery Point | 12V/24V/48V system | DC145V |
| Max. PV Power | 12V system | 570W |
| | 24V system | 1130W |
| | 48V system | 2270W |
| Output Characteristics | | |
| Selectable Battery Types (Default type is GEL battery) | 12V/24V/48Vsyste m | 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 |
| Current-limiting Protection | 12V/24V/48V system | 44A |
| 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% |
| 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 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 |

## RS232 Connect Way