Introduction

This is a <u>MPPT (maximum Power Point Tracking) smart solar controller</u>, With charging and discharging function, increasing 30% ~ 60% efficiency than traditional PWM controller. It has automatic recognition function, three Stages charging function, also supports many kinds of battery charging and discharging, RS232 communication etc, It's our company's <u>MPPT solar controller</u> e-SMART series.

Features

- 1. MPPT charging mode, peak efficiency up to 99%;
- 2. DC12V / 24V / 48V battery system automatic recognition;
- 3. Maximum PV input voltage up to DC100V;
- 4. Three stages charge: fast charge (MPPT), constant voltage charge, floating charge;
- 5. Three option of discharge: on mode and off mode and PV voltage (solar) control mode.
- 6. Users can choose 4 kinds of commonly standard batteries (Sealed lead acid, Vented, Gel, NiCd);
- 7. Digital tube can display battery voltage and charging current;
- 8. RS232 communication, we can offer communication protocol also;
- 9. This controller can be paralleled infinitely.
- 10. CE, RoHS and FCC Certifications are approved.
- 11. 2 years warranty; 3 ~ 10 years extended technical service.

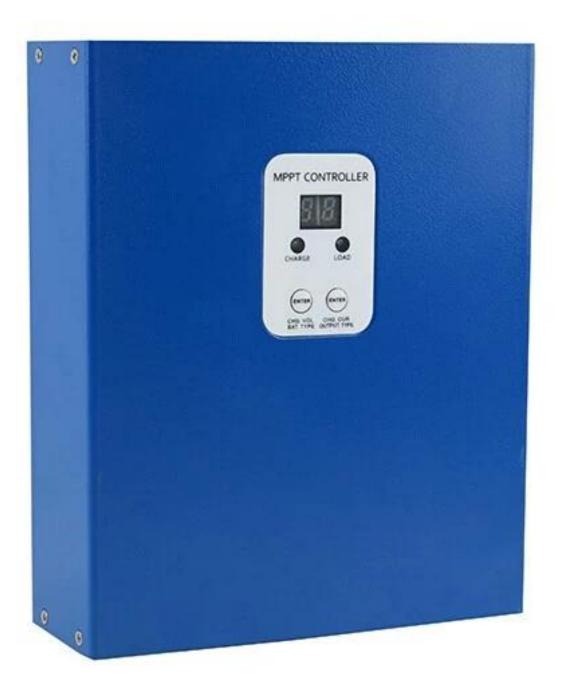
Parameter

| MPPT solar controller modes: I-P-e-SMART-12V / 24V / 48V-series | | 40A |
|--|--|-----------------------|
| Charge mode | MPPT (maximum power point tracking) | |
| Charge method | Three stages: constant current (MPPT), constant voltage, floating charge | |
| System type | DC12V / 24V / 48V | Automatic recognition |
| System voltage | 12V system | DC9V ~ DC15V |
| | 24V system | DC18V ~ DC30V |
| | 48V system | DC36V ~ DC60V |
| Soft start time | 12V / 24V / 48V system | <3S |
| Dynamic response recovery and range | 12V / 24V / 48V system | 500us |
| MPPT efficiency | 12V / 24V / 48V system | ≥96.5%, ≤99% |
| INPUT CHARACTERIS | TICS | |
| MPPT working voltage and Range | 12V system | DC14V ~ DC100V |
| | 24V system | DC30 ~ DC100V |
| | 48V system | DC60 ~ DC100V |
| Low voltage input Protection point | 12V system | DC14V |
| | 24V system | DC30V |
| | 48V system | DC60V |

| I | 101/ | DC10// |
|---|---|--|
| Low voltage input | 12V system | DC18V |
| Pocovory point 24V system | | DC34V |
| 48V system | | DC65V |
| Input over voltage 12V / 24V / 48V | | DC110V |
| protection point | system | |
| Input over voltage | 12V / 24V / 48V | DC100V |
| recovery point | system | F C O |
| | 12V system (W) | 568 |
| Maximum PV power | 24V system (W) | 1136 |
| | 48V system (W) | 2270 |
| CHARGE CHRECTRES | TICS | |
| Selectable Battery | | |
| Types | 12V / 24V / 48V | Sealed lead acid, vented, Gel, NiCd battery |
| (Default type is GEL | | (Other types of the batteries also can be defined)) |
| battery) | - | |
| | | |
| Constant Voltage | 12V / 24V / 48V | Please check the charge voltage according to the battery |
| _ | system | type form. |
| Floating Charge | 12V / 24V / 48V | Please check the charge voltage according to the battery |
| Voltage | system | type form. |
| Rated Input Current | 12V / 24V / 48V | 40A |
| · · · · · · · | system | |
| Current-limiting | 12V / 24V / 48V | 45A |
| Protection | system | 45A |
| | 12V / 24V / 48V | |
| Temperature Factor | system | ± 0.02% / ℃ |
| Temperature | 12V / 24V / 48V | |
| Compensation | system | 14.2V- (The highest temperature-25 °C) $*$ 0.3 |
| Output Ripples | 12V / 24V / 48V | |
| (peak) | system | 200mV |
| ···· | System | |
| Output Voltage | 12V / 24V / 48V | 1 50/ |
| Stability | system | ≤ ± 1.5% |
| | | |
| Precision | | |
| Output Discharge Ch | aracteristics | |
| | aracteristics | Base on battery voltage |
| Output Discharge Ch | aracteristics | |
| <mark>Output Discharge Ch</mark> Output voltage | aracteristics | Base on battery voltage Default 10.5V; recovery 11V; custom available; |
| Output Discharge Ch Output voltage Low voltage output Protection point | | Default 10.5V; recovery 11V; custom available; |
| Output Discharge Ch Output voltage Low voltage output Protection point Rated output Current | | Default 10.5V; recovery 11V; custom available; 30A |
| Output Discharge Ch Output voltage Low voltage output Protection point Rated output Current The output control | | Default 10.5V; recovery 11V; custom available; 30A Always on, always off, PV voltage control switch |
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| Environment | |
|-----------------------|--------------------------|
| Humidity | 0 ~ 90% RH (no condense) |
| Altitude | 0 ~ 3000m |
| Operating Temperature | -20 °C ~ + 50 °C |
| Storage Temperature | -40 °C ~ + 75 °C |
| Atmospheric Pressure | 70 ~ 106kPa |

Products photos

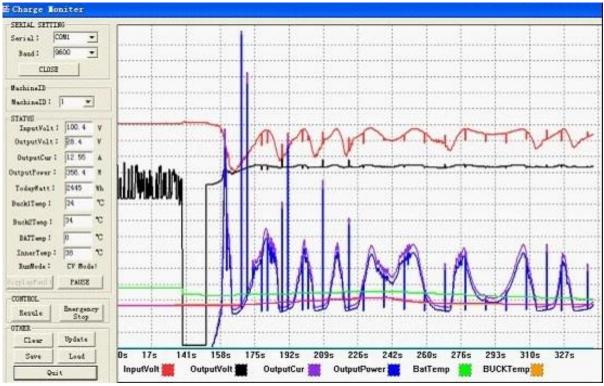




Upper software and test software display information and set parameters

| SolarEagle | | | | | |
|--|---|---|--|--|--|
| System(S) Control(C) Statistics(T) Language(L) Help(H) | | | | | |
| 📓 💽 🔀 쵫 | Guest Monitored device: Device mode: | | | | |
| Devices | Overview Parameters setting Real-time control | | | | |
| | | Input information | | | |
| | | PV voltage: 0.0 V Environment temperature: 0.0 °C | | | |
| | Battery type: Load type: | | | | |
| | Main fireware version: Model name: | | | | |
| | Charge information | Real-time events | | | |
| | Charge voltage: 0.0 V Charge power: 0.0 W | ID Level Time Event | | | |
| | Charge current: 0.0 A Total power: 0.0 Wh | | | | |
| | Battery temperature: 0.0 °C | | | | |
| | | | | | |

Graphical: upper software



Graphical: testing ware