

# Introduction

This is a [MPPT \(maximum Power Point Tracking\) smart solar controller](#), 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 [MPPT solar controller](#) 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:<br>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 CHARACTERISTICS  |  |                       |
| 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                 |

|   |  |  |
|---|--|--|
| Low voltage input   | 12V system                                       | DC18V  |
| Recovery point  | 24V system                                       | DC34V  |
|   | 48V system                                       | DC65V  |
| Input over voltage protection point                       | 12V / 24V / 48V system                           | DC110V   |
| Input over voltage recovery point                         | 12V / 24V / 48V system                           | DC100V   |
| Maximum PV power  | 12V system (W)                                   | 568  |
|   | 24V system (W)                                   | 1136   |
|   | 48V system (W)                                   | 2270   |
| CHARGE CHRECTRESTICS                                      |  |  |
| Selectable Battery Types<br>(Default type is GEL battery) | 12V / 24V / 48V system                           | Sealed lead acid, vented, Gel, NiCd battery<br>(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                           | Please check the charge voltage according to the battery type form.                                |
| Rated Input Current                                       | 12V / 24V / 48V system                           | 40A  |
| Current-limiting Protection                               | 12V / 24V / 48V system                           | 45A  |
| 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%   |
| Output Discharge Characteristics                          |  |  |
| Output voltage  | Base on battery voltage                          |  |
| Low voltage output Protection point                       | Default 10.5V; recovery 11V; custom available;   |  |
| Rated output Current                                      | 30A  |  |
| The output control  | Always on, always off, PV voltage control switch |  |
| Output control set mode                                   | Controller button or upper computer              |  |
| Display   |  |  |
| LED digital tube display                                  | Battery voltage, charge current                  |  |
| LED light display   | Charging indicator light, LOAD indicator light   |  |
| PC (communication port)                                   | RS232  |  |
| Protection  |  |  |
| Input Low Voltage Protection                              | Check the input characteristics                  |  |
| Input Overvoltage Protection                              | Check the input characteristics                  |  |
| Charge over voltage power Protection                      | yes  |  |
| Low Voltage output Protection                             | yes  |  |
| Rated output Current protection                           | yes  |  |
| Temperature Protection                                    | yes  |  |
| Other Parameters  |  |  |
| Noise   | ≤40dB  |  |
| Thermal heat-dissipating method                           | Itself cooling                                   | fan cooling  |
| Components  | Imported material, with EU standards.            |  |
| Certification   | CE FCC ROHS                                      |  |
| Physical  |  |  |
| Measurement D x W x H (mm)                                | 205 * 168 * 60                                   |  |
| package size D x W x H (mm)                               | 265 * 196 * 110                                  |  |
| N.G (KG)  | 1.8kg  |  |
| G.N (KG)  | 2kg  |  |
| Type of Mechanical Protection                             | IP25   |  |

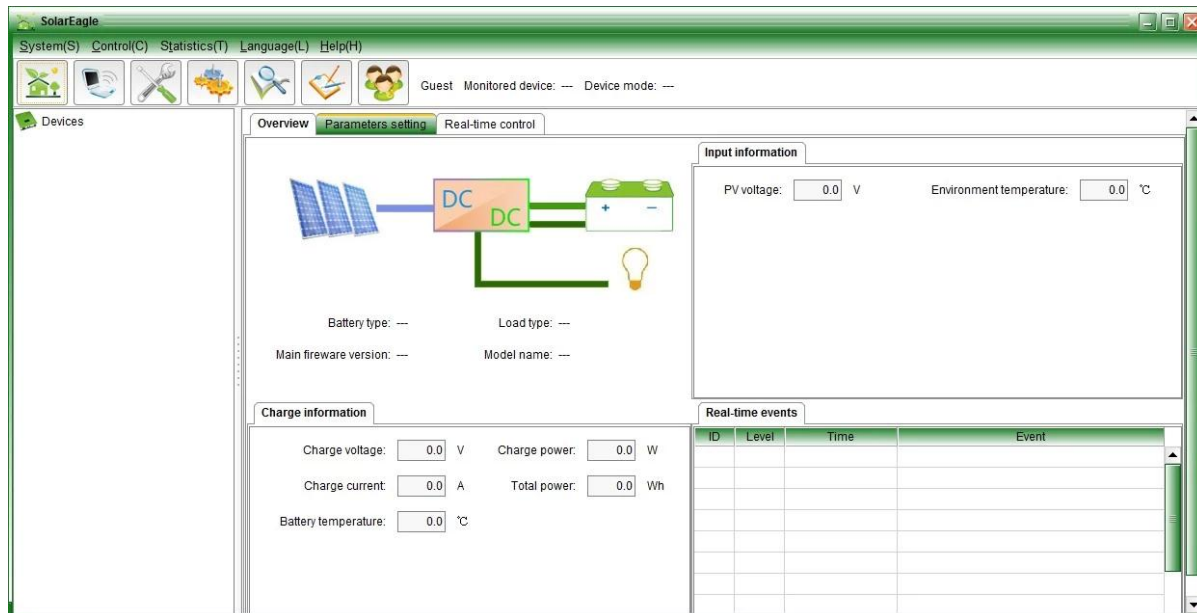
| Environment           |                          |
|-----------------------|--------------------------|
| Humidity              | 0 ~ 90% RH (no condense) |
| Altitude              | 0 ~ 3000m                |
| Operating Temperature | -20 °C ~ + 50 °C         |
| Storage Temperature   | -40 °C ~ + 75 °C         |
| Atmospheric Pressure  | 70 ~ 106kPa              |

## Products photos

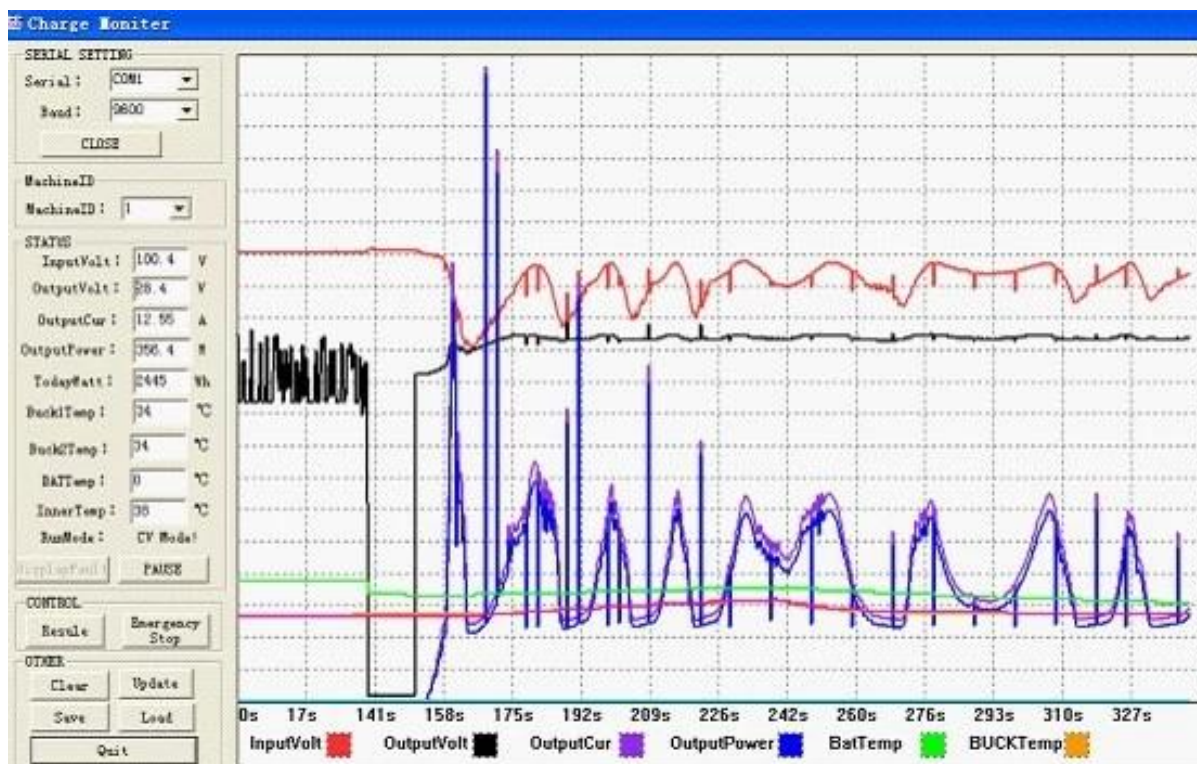




**Upper software and test software display information and set parameters**



**Graphical: upper software**



**Graphical: testing ware**

## Certificate



## Company





