



# Solar Catalogue

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**OPTI-Solar**  
I N V E R T E R   P O W E R



## OPTI-UPS

Established in 1991

Renowned supplier of Uninterruptible  
Power Supply (UPS)



## OPTI-SOLAR

Established in 2007

Total Solution Provider and Inverter Expert

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## History of a Trustworthy Brand



## ISO 9001 CERTIFICATE



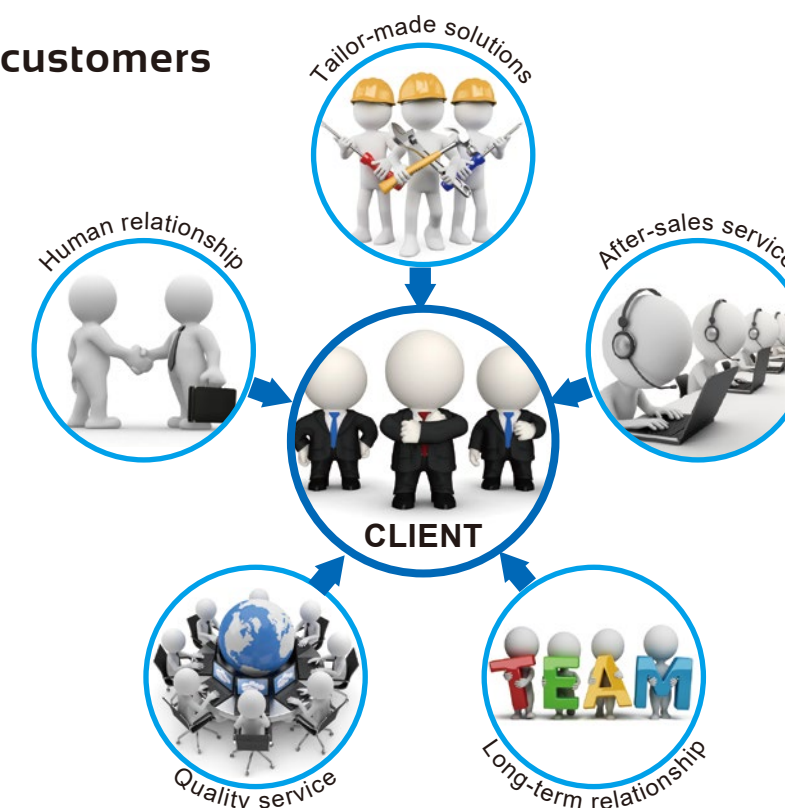
## Key values for our partners & customers

Our confidence in superior quality and more than 20 years of solid achievements have satisfied customers worldwide.

Inspections, auto-error detection, correction, and extensive tests are continuously led on our assembly systems.

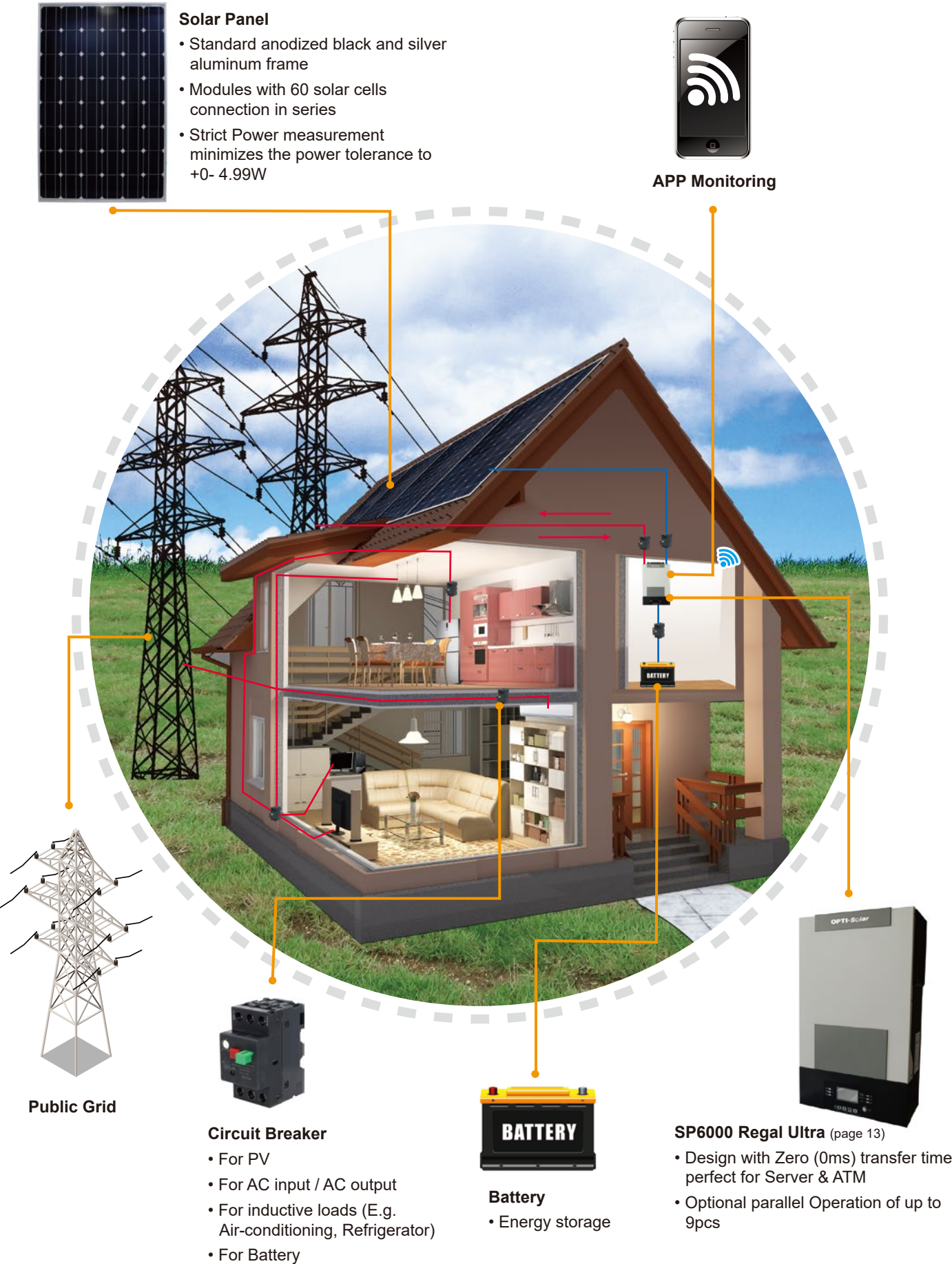
Prompt services in consultation, configuration, maintenance, and repair.

Technical seminars to benefit our partners.





OPTI-Solar Smart Energy Solution Overview



**Lighting/Monitoring System**  
500W~1000W  
SP Initial-M (page 5) / SP Handy (page 7)

**Residential System**  
2000W~3000W  
SP Initial-M (page 5) / SP Handy (page 7)

**Harsh Environment**  
5000W~8000W  
SP IP Plus (page 18)

**Community**  
5000W~20000W  
SP Handy Ultra (page 14) / SP Premium (page 20)

**Wireless Transmission**  
Wi-Fi  
SP Handy Plus (page 8) / SP Handy Ultra (page 14) / SP Regal Ultra (page 13)

**Industry**  
SP Premium Plus (page 22)





Small Scale PV Generation

500W~1000W

SP1000-2000 Initial-M (page 5)

Small-Medium Scale PV Generation

2000W~3000W

SP3000-5000 Initial-M (page 5) /  
SP1200-5000 Handy (page 7)



Medium Scale PV Generation

4000W~5000W

SP4000-6000 Handy Plus (page 8)

Medium-Large Scale PV Generation

6000W~11000W

SP6000-11000 Handy Ultra (page 14) /  
SP6000 Brilliant Ultra II (page 12)



Large Scale PV Generation

10000W~

SP10-15K Premium (page 20) / SP30K Premium Plus (page 22)

SP1000 ~ 5000 Initial-M/-M II

SP Initial Series

Maintain a high economic value!

SP Initial series allows you to use solar energy in your home at an affordable price.

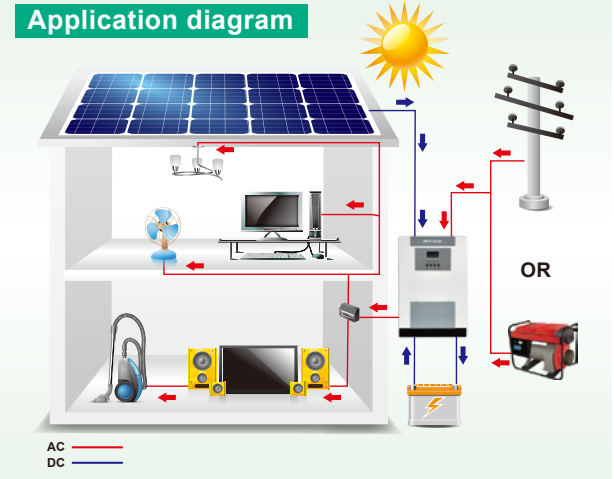
Easy to use, highly efficient, and reliable.

Enjoy the green life with our SP Initial Series!

Features

- Pure sine wave inverter with PF1
- Selectable high power charging current
- Compatible with mains or generator power
- Smart battery charger design for battery performance optimization
- Built-in solar charge controller
- Overload and short circuit protection
- Cold start function
- USB communication port

Application diagram



Specifications

| MODEL                                 | SP1000 Initial-M                             |  | SP2000 Initial-M |  | SP3000 Initial-M |  | SP3000 Initial-M II |        | SP5000 Initial-M |  |  |  |
|---------------------------------------|--|--|------------------|--|------------------|--|---------------------|--------|------------------|--|--|--|
| Rated Power                           | 1000VA/1000W                                 |  | 2000VA/2000W     |  | 3000VA/3000W     |  | 3000VA/3000W        |        | 5000VA/5000W     |  |  |  |
| INPUT                                 |  |  |                  |  |                  |  |                     |        |                  |  |  |  |
| Voltage                               | 230 VAC                                      |  |                  |  |                  |  |                     |        |                  |  |  |  |
| Selectable Voltage Range              | 170-280 VAC (For Personal Computers)         |  |                  |  |                  |  |                     |        |                  |  |  |  |
|                                       | 90-280 VAC (For Home Appliances)             |  |                  |  |                  |  |                     |        |                  |  |  |  |
| Frequency Range                       | 50 Hz/60 Hz (Auto sensing)                   |  |                  |  |                  |  |                     |        |                  |  |  |  |
| OUTPUT                                |  |  |                  |  |                  |  |                     |        |                  |  |  |  |
| AC Voltage Regulation (Batt. Mode)    | 230VAC ± 5%                                  |  |                  |  |                  |  |                     |        |                  |  |  |  |
| Surge Power                           | 2000VA                                       |  | 4000VA           |  | 6000VA           |  | 6000VA              |        | 10000VA          |  |  |  |
| Peak Efficiency                       | 93%  |  |                  |  |                  |  |                     |        |                  |  |  |  |
| Transfer Time                         | 10 ms (For Personal Computers)               |  |                  |  |                  |  |                     |        |                  |  |  |  |
|                                       | 20 ms (For Home Appliances)                  |  |                  |  |                  |  |                     |        |                  |  |  |  |
| Waveform                              | Pure sine wave                               |  |                  |  |                  |  |                     |        |                  |  |  |  |
| BATTERY                               |  |  |                  |  |                  |  |                     |        |                  |  |  |  |
| Battery Voltage                       | 12 VDC                                       |  | 24 VDC           |  |                  |  |                     | 48 VDC |                  |  |  |  |
| Floating Charge Voltage               | 13.5 VDC                                     |  | 27 VDC           |  |                  |  |                     | 54 VDC |                  |  |  |  |
| Overcharge Protection                 | 16 VDC                                       |  | 33 VDC           |  |                  |  |                     | 63 VDC |                  |  |  |  |
| SOLAR CHARGER & AC CHARGER            |  |  |                  |  |                  |  |                     |        |                  |  |  |  |
| Maximum PV Array Open Circuit Voltage | 102VDC                                       |  |                  |  | 100VDC           |  | 145VDC              |        |                  |  |  |  |
| PV Maximum Input power                | 500W   |  | 1000W            |  | 1000W            |  | 1500W               |        | 3000W            |  |  |  |
| PV Array MPPT Voltage Range           | 15~80VDC                                     |  | 30~80VDC         |  | 30~80VDC         |  | 30~115VDC           |        | 60~115VDC        |  |  |  |
| Maximum Solar Charging Current        | 40A  |  |                  |  | 40A              |  | 60A                 |        |                  |  |  |  |
| Maximum AC Charging Current           | 20A  |  |                  |  | 25A              |  | 60A                 |        |                  |  |  |  |
| Maximum Charging Current              | 60A  |  |                  |  | 60A              |  | 120A                |        |                  |  |  |  |
| PHYSICAL                              |  |  |                  |  |                  |  |                     |        |                  |  |  |  |
| Dimension (D×W×H)                     | 88×225×315 mm                                |  |                  |  | 100×285×334 mm   |  | 100×300×440 mm      |        |                  |  |  |  |
| Net Weight                            | 4.4kgs                                       |  | 5kgs             |  | 6.3kgs           |  | 9.5kgs              |        | 9.7kgs           |  |  |  |
| OPERATING ENVIRONMENT                 |  |  |                  |  |                  |  |                     |        |                  |  |  |  |
| Humidity                              | 5% to 95% Relative Humidity (Non-condensing) |  |                  |  |                  |  |                     |        |                  |  |  |  |
| Operating Temperature                 | -10°C ~ 55°C                                 |  |                  |  |                  |  |                     |        |                  |  |  |  |
| Storage Temperature                   | -15°C ~ 60°C                                 |  |                  |  |                  |  |                     |        |                  |  |  |  |

Specifications are subject to change without notice.

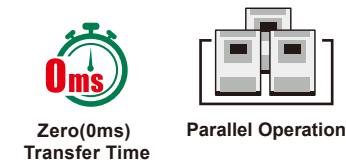




SP3000 Power One

# SP Power One Series

zero(0ms) transfer time with 120V voltage output configuration



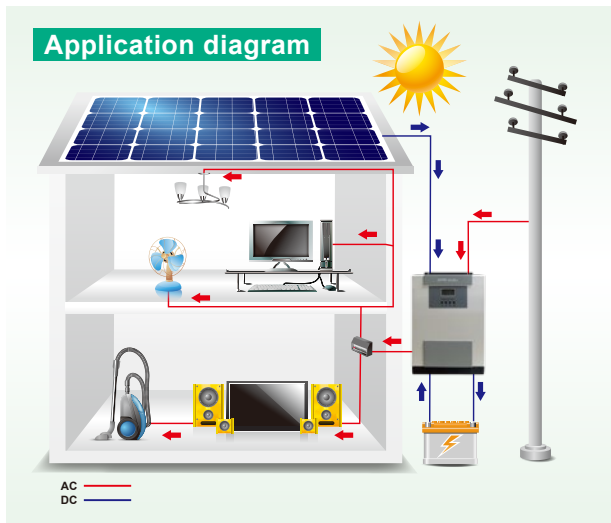
### Features

- Zero(0ms) transfer time, the best protection for servers, ATM
- Pure sine wave inverter
- Built-in MPPT solar charge controller
- Selectable input voltage range for home appliances and personal computers
- Selectable charging current based on applications
- Configurable AC/Solar input priority via LCD setting
- Compatible with mains or generator power
- Auto restart while AC is recovering
- Overload and short circuit protection
- Smart battery charger design for battery performance optimization
- Cold start function
- Parallel Operation of up to 9 units

### Specifications

|                                       |   |
|---------------------------------------|---|
| MODEL                                 | SP3000 Power One  |
| Rated Power                           | 3000VA/3000W  |
| INPUT                                 |   |
| Voltage                               | 110/120VAC  |
| Selectable Voltage Range              | 90-140 VAC (For Personal Computers)<br>60-140 VAC (For Home Appliances) |
| Frequency Range                       | 50 Hz/60 Hz (Auto sensing)  |
| OUTPUT                                |   |
| AC Voltage Regulation (Batt. Mode)    | 110/120VAC ± 3%   |
| Surge Power                           | 6000VA  |
| Peak Efficiency                       | 90%   |
| Transfer Time                         | Line mode↔Battery mode: 0ms<br>Inverter↔Bypass: 4ms                     |
| Waveform                              | Pure sine wave  |
| BATTERY                               |   |
| Battery Voltage                       | 48VDC   |
| Floating Charge Voltage               | 54VDC   |
| Overcharge Protection                 | 60VDC   |
| SOLAR CHARGER & AC CHARGER            |   |
| Maximum PV Array Power                | 4000W   |
| Maximum PV Array Open Circuit Voltage | 145Vdc  |
| PV Array MPPT Voltage Range           | 60~115Vdc   |
| Maximum Solar Charging Current        | 80A   |
| Maximum AC Charging Current           | 60A   |
| Maximum Charging Current              | 140A  |
| PHYSICAL                              |   |
| Dimension (D×W×H)                     | 120×295×468mm   |
| Net Weight                            | 11.5kgs   |
| OPERATING ENVIRONMENT                 |   |
| Humidity                              | 5% to 95% Relative Humidity (Non-condensing)                            |
| Operating Temperature                 | -10°C ~ 55°C  |
| Storage Temperature                   | -15°C ~ 60°C  |

Specifications are subject to change without notice.



SP1200 ~ 5000 Handy

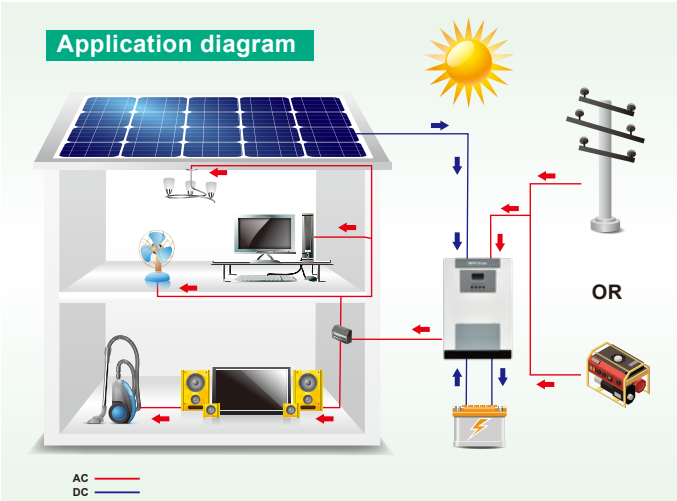
# SP Handy Series

An advanced and easy-to-use Solar inverter with energy exchange functions, and its anti-dust filter design that helps to increase its lifespan.  
Battery-free operation available and high PV input voltage.



### Features

- High PV input range
- Feasible for without-battery operation
- Pure sine wave inverter with PF1
- Selectable high power charging current
- Compatible with mains or generator power
- Built-in MPPT solar charger
- Overload and short circuit protection
- Support Battery Management System (BMS)
- Cold start function
- The Anti-Dust Filter design can increase the lifespan



### Specifications

|                                       |   |  |              |  |                   |  |                   |  |
|---------------------------------------|---|--|--------------|--|-------------------|--|-------------------|--|
| MODEL                                 | SP1200 Handy                                |  | SP2500 Handy |  | SP3000 Handy      |  | SP5000 Handy      |  |
| Rated Power                           | 1200VA/1200W                                |  | 2500VA/2500W |  | 3000VA/3000W      |  | 5000VA/5000W      |  |
| INPUT                                 |   |  |              |  |                   |  |                   |  |
| Voltage                               | 230 VAC                                     |  |              |  |                   |  |                   |  |
| Selectable Voltage Range              | 170-280 VAC (For Personal Computers)        |  |              |  |                   |  |                   |  |
|                                       | 90-280 VAC (For Home Appliances)            |  |              |  |                   |  |                   |  |
| Frequency Range                       | 50 Hz/60 Hz (Auto sensing)                  |  |              |  |                   |  |                   |  |
| OUTPUT                                |   |  |              |  |                   |  |                   |  |
| AC Voltage Regulation (Batt. Mode)    | 230VAC ± 5%                                 |  |              |  |                   |  |                   |  |
| Surge Power                           | 2400VA                                      |  | 5000VA       |  | 6000VA            |  | 10000VA           |  |
| Peak Efficiency                       | 93%   |  |              |  |                   |  |                   |  |
| Transfer Time                         | 10 ms (For Personal Computers)              |  |              |  |                   |  |                   |  |
|                                       | 20 ms (For Home Appliances)                 |  |              |  |                   |  |                   |  |
| Waveform                              | Pure sine wave                              |  |              |  |                   |  |                   |  |
| BATTERY                               |   |  |              |  |                   |  |                   |  |
| Battery Voltage                       | 12 VDC                                      |  | 24 VDC       |  | 24 VDC            |  | 48 VDC            |  |
| Floating Charge Voltage               | 13.5 VDC                                    |  | 27 VDC       |  | 27 VDC            |  | 54 VDC            |  |
| Overcharge Protection                 | 16 VDC                                      |  | 33 VDC       |  | 33 VDC            |  | 63 VDC            |  |
| SOLAR CHARGER & AC CHARGER            |   |  |              |  |                   |  |                   |  |
| Maximum PV Input Power                | 2000W                                       |  | 3000W        |  |                   |  | 5000W             |  |
| Maximum PV Array Open Circuit Voltage | 350Vdc                                      |  | 450Vdc       |  |                   |  | 500Vdc            |  |
| PV Array MPPT Voltage Range           | 30 ~ 300Vdc                                 |  | 30 ~ 400Vdc  |  |                   |  | 120~450Vdc        |  |
|                                       | 30 ~ 60Vdc with battery connected only      |  |              |  |                   |  |                   |  |
| Maximum Solar Charging Current        | 100A  |  |              |  | 100A              |  |                   |  |
| Maximum AC Charging Current           | 80A   |  |              |  | 100A              |  |                   |  |
| Maximum Charging Current              | 100A  |  |              |  | 100A              |  |                   |  |
| Maximum PV Input Current              | 13A   |  |              |  | 18A               |  |                   |  |
| PHYSICAL                              |   |  |              |  |                   |  |                   |  |
| Dimension (D × W × H)                 | 90 x 288 x 357mm                            |  |              |  | 110 x 288 x 390mm |  | 100 x 300 x 440mm |  |
| Net Weight                            | 6.5kg                                       |  | 7kg          |  | 7.2kg             |  | 10kg              |  |
| OPERATING ENVIRONMENT                 |   |  |              |  |                   |  |                   |  |
| Humidity                              | 5% to 95% Relative Humidity(Non-condensing) |  |              |  |                   |  |                   |  |
| Operating Temperature                 | -10°C ~ 55°C                                |  |              |  |                   |  |                   |  |
| Storage Temperature                   | -15°C ~ 60°C                                |  |              |  |                   |  |                   |  |

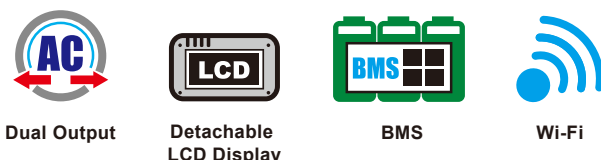
Specifications are subject to change without notice.



SP4000 ~ 6000 Handy Plus

# SP Handy Plus Series

Detachable LCD screen design with full information.  
Easily access the DATA via its Wi-Fi function.  
BMS communication for better battery management.

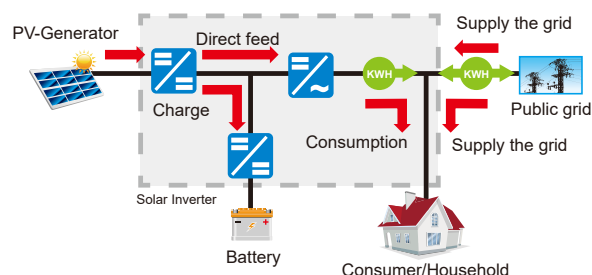


## Features

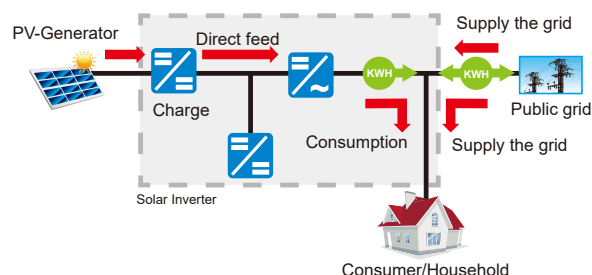
- High PV input range
- Pure sine wave inverter
- Selectable high power charging current
- Compatible with mains or generator power
- Built-in solar charge controller
- Overload and short circuit protection
- Smart battery charger design for battery performance optimization
- Cold start function
- Wi-Fi function
- Detachable LCD display

## Operation Diagram:

### Operation with battery



### Operation without battery



## Specifications

| MODEL                                  | SP4000 Handy Plus                            |  | SP6000 Handy Plus |  |
|--|--|--|-------------------|--|
| Rated Power                            | 4000VA/4000W                                 |  | 6000VA/6000W      |  |
| INPUT                                  |  |  |                   |  |
| Voltage                                | 230 VAC                                      |  |                   |  |
| Selectable Voltage Range               | 170-280 VAC (For Personal Computers)         |  |                   |  |
|  | 90-280 VAC (For Home Appliances)             |  |                   |  |
| Frequency Range                        | 50 Hz / 60 Hz (Auto sensing)                 |  |                   |  |
| OUTPUT                                 |  |  |                   |  |
| AC Voltage Regulation (Batt. Mode)     | 230VAC ± 5%                                  |  |                   |  |
| Surge Power                            | 2 rated power for 5 seconds                  |  |                   |  |
| Peak Efficiency                        | 93%  |  |                   |  |
| Transfer Time                          | 10 ms (For Personal Computers)               |  |                   |  |
|  | 20 ms (For Home Appliances)                  |  |                   |  |
| Waveform                               | Pure sine wave                               |  |                   |  |
| BATTERY                                |  |  |                   |  |
| Battery Voltage                        | 24 VDC                                       |  | 48 VDC            |  |
| Floating Charge Voltage                | 27 VDC                                       |  | 54 VDC            |  |
| Overcharge Protection                  | 33 VDC                                       |  | 63 VDC            |  |
| SOLAR CHARGER & AC CHARGER             |  |  |                   |  |
| Maximum PV Array Power                 | 5000W  |  | 6000W             |  |
| Maximum PV Input Current               | 27A  |  |                   |  |
| Maximum PV Input Short Circuit Current | 30A  |  |                   |  |
| Maximum PV Array Open Circuit Voltage  | 500Vdc                                       |  |                   |  |
| PV Array MPPT Voltage Range            | 60~450Vdc                                    |  |                   |  |
| Maximum Solar Charging Current         | 120A   |  |                   |  |
| Maximum AC Charging Current            | 100A   |  |                   |  |
| Maximum Charging Current               | 120A   |  |                   |  |
| PHYSICAL                               |  |  |                   |  |
| Dimension (D × W × H)                  | 115 × 300 × 400mm                            |  |                   |  |
| Net Weight                             | 9kg  |  | 10kg              |  |
| Communication Port                     | RS232/USB/Dry-contact/BMS/Wi-Fi              |  |                   |  |
| OPERATING ENVIRONMENT                  |  |  |                   |  |
| Humidity                               | 5% to 95% Relative Humidity (Non-condensing) |  |                   |  |
| Operating Temperature                  | -10°C ~ 55°C                                 |  |                   |  |

Specifications are subject to change without notice.

SP4000~6000 Handy Plus II

# SP Handy Plus II Series

Large LCD touch screen with easy access to DATA through USB and Wi-Fi function.

Colorful LED light bar indicating the status of the inverter.

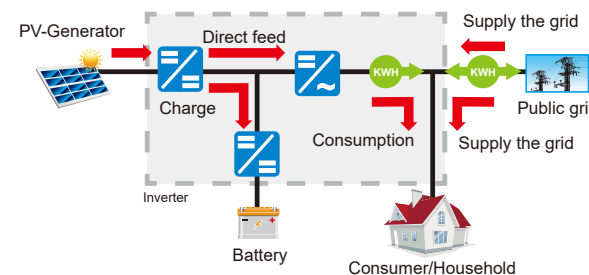


## Features

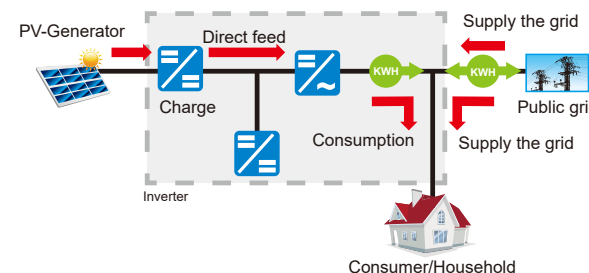
- High PV input range
- Feasible for without-battery operation
- Pure sine wave inverter
- Selectable high power charging current up to 120A
- Compatible with mains or generator power
- Smart battery charger design for battery performance optimization
- Built-in MPPT solar charge controller
- LED ring design with RGB lights
- Built-in Data storage
- Built-in anti-dust Kit
- Wi-Fi function (APP)
- Touchable button with 4.3" colored LCD
- Dual output design

## Operation Diagram:

### Operation with battery



### Operation without battery



## Specifications

| MODEL                                  | SP4000 Handy Plus II                         |        | SP6000 Handy Plus II |
|--|--|--------|----------------------|
| Rated Power                            | 4000VA/4000W                                 |        | 6000VA/6000W         |
| INPUT                                  |  |        |                      |
| Voltage                                | 230 VAC                                      |        |                      |
| Selectable Voltage Range               | 170-280 VAC (For Personal Computers)         |        |                      |
|  | 90-280 VAC (For Home Appliances)             |        |                      |
| Frequency Range                        | 50 Hz/60 Hz (Auto sensing)                   |        |                      |
| OUTPUT                                 |  |        |                      |
| AC Voltage Regulation (Batt. Mode)     | 230VAC ± 5%                                  |        |                      |
| Surge Power                            | 11000VA                                      |        |                      |
| Peak Efficiency                        | 93%  |        |                      |
| Transfer Time                          | 10 ms (For Personal Computers)               |        |                      |
|  | 20 ms (For Home Appliances)                  |        |                      |
| Waveform                               | Pure sine wave                               |        |                      |
| BATTERY                                |  |        |                      |
| Battery Voltage                        | 24 VDC                                       | 48 VDC |                      |
| Floating Charge Voltage                | 27 VDC                                       | 54 VDC |                      |
| Overcharge Protection                  | 33 VDC                                       | 63 VDC |                      |
| SOLAR CHARGER & AC CHARGER             |  |        |                      |
| Maximum PV Array Power                 | 4000W  | 6000W  |                      |
| Maximum PV Input Current               | 27A  |        |                      |
| Maximum PV Input Short Circuit Current | 30A  |        |                      |
| Maximum PV Array Open Circuit Voltage  | 500Vdc                                       |        |                      |
| PV Array MPPT Voltage Range            | 60-450 VDC                                   |        |                      |
| Maximum Solar Charging Current         | 120A   |        |                      |
| Maximum AC Charging Current            | 100A   |        |                      |
| Maximum Charging Current               | 120A   |        |                      |
| PHYSICAL                               |  |        |                      |
| Dimension (D × W × H)                  | 119 × 314 × 458mm                            |        |                      |
| Net Weight                             | 10kgs  | 12kgs  |                      |
| Communication Port                     | RS232/USB/Dry-contact/Wi-Fi                  |        |                      |
| OPERATING ENVIRONMENT                  |  |        |                      |
| Humidity                               | 5% to 95% Relative Humidity (Non-condensing) |        |                      |
| Operating Temperature                  | -10°C ~ 55°C                                 |        |                      |
| Storage Temperature                    | -15°C ~ 60°C                                 |        |                      |

Specifications are subject to change without notice.



SP6000 Handy Grid

# SP Handy Grid Series

SP6000 Handy Grid with Grid-Tie Design.

Increase photovoltaic capacity up to 7KW to benefit the users.

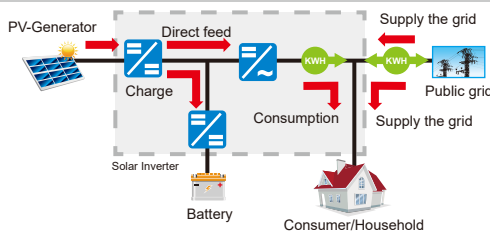


## Features

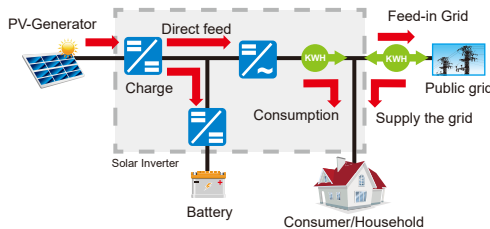
- High PV input range & 6KW PV capacity
- Feasible for without-battery operation
- Pure sine wave inverter
- Selectable high power charging current
- Compatible with mains or generator power
- Smart battery charger design for battery performance optimization
- Built-in MPPT solar charge controller
- Overload and short circuit protection
- Grid-Tie function
- Cold start function
- Wi-Fi function
- Detachable LCD
- Parallel Operation of up to 9pcs

## Operation Diagram:

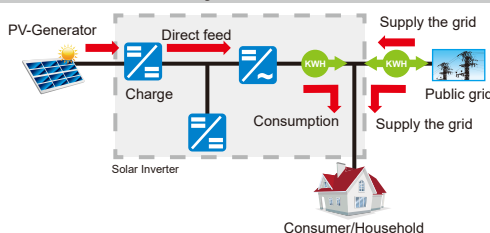
### Operation with battery



### Operation with battery (Grid-Tie)



### Operation without battery



## Specifications

| MODEL                                      | SP6000 Handy Grid  |
|--|--|
| Rated Power                                | 6000VA/6000W   |
| INPUT                                      |  |
| Nominal Voltage                            | 220/230/240 VAC  |
| Selectable Voltage Range                   | 170-280 VAC (For Personal Computers)<br>90-280 VAC (For Home Appliances) |
| Frequency Range                            | 50 Hz/ 60 Hz (Auto sensing)  |
| Maximum AC Input Current                   | 40A  |
| AC OUTPUT                                  |  |
| AC Voltage Regulation (Batt. Mode)         | 230VAC ± 5%  |
| Surge Power                                | 12000VA  |
| Transfer Time                              | 10 ms (For Personal Computers)<br>20 ms (For Home Appliances)            |
| Waveform                                   | Pure sine wave   |
| GRID OUTPUT                                |  |
| Nominal Voltage                            | 220/230/240 VAC  |
| Voltage Range                              | 184-264.5 VAC or 195.5-253 VAC   |
| Nominal Current                            | 21.7A  |
| Power Factor Range                         | 0.9 lag- 0.9 lead, Default 0.99  |
| EFFICIENCY                                 |  |
| DC to AC                                   | 95%  |
| Battery to AC                              | 93%  |
| BATTERY                                    |  |
| Battery Voltage                            | 48 VDC   |
| Floating Charge Voltage                    | 54 VDC   |
| Overcharge Protection                      | 66 VDC   |
| SOLAR CHARGER & AC CHARGER                 |  |
| Maximum PV Array Power                     | 7000W  |
| Maximum PV Array Open Circuit Voltage      | 500Vdc   |
| Start-up Voltage / Initial Feeding Voltage | 120Vdc / 150Vdc  |
| PV Array MPPT Voltage Range                | 120~430Vdc   |
| Maximum PV Input Current                   | 27A  |
| Maximum PV Input Short Circuit Current     | 30A  |
| Maximum Solar Charging Current             | 120A   |
| Maximum AC Charging Current                | 120A   |
| Maximum Charging Current                   | 120A   |
| PHYSICAL                                   |  |
| Dimension (D×W×H)                          | 142×297×455 mm   |
| Net Weight                                 | 12kgs  |
| Communication Port                         | RS232/USB/Dry-contact/Wi-Fi  |
| OPERATING ENVIRONMENT                      |  |
| Humidity                                   | 5% to 95% Relative Humidity (Non-condensing)                             |
| Operating Temperature                      | 0°C ~ 50°C   |
| Storage Temperature                        | -10°C ~ 60°C   |

Specifications are subject to change without notice.



SP6000 Handy Grid II

# SP Handy Grid II Series

Dual AC voltage 110/220V.

SP6000 Handy Grid II with Grid-Tie design is suitable for any type of application.

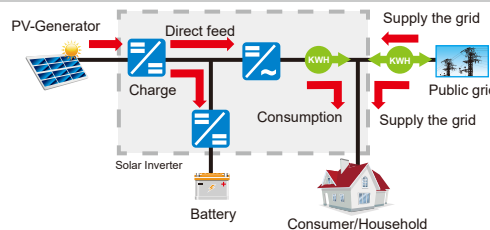


## Features

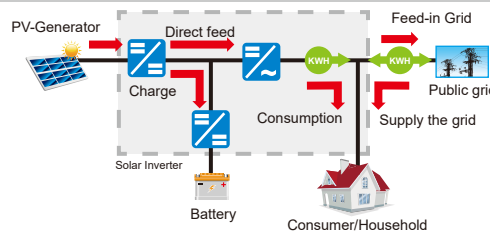
- Dual AC rated voltage 110/220V
- High PV input range & 6KW PV capacity
- Pure sine wave inverter
- Selectable high power charging current
- Compatible with mains or generator power
- Smart battery charger design for battery performance optimization
- Built-in MPPT solar charge controller
- Overload and short circuit protection
- Grid-Tie function
- Cold start function
- Wi-Fi function
- Detachable LCD
- Parallel Operation of up to 9pcs

## Operation Diagram:

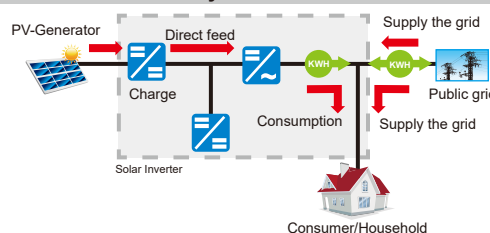
### Operation with battery



### Operation with battery (Grid-Tie)



### Operation without battery



## Specifications

| MODEL                                  | SP6000 Handy Grid II  |
|--|---|
| Rated Power                            | 6000VA/6000W  |
| AC INPUT                               |   |
| Nominal Voltage                        | L-L 220 VAC<br>L-N 110 VAC                                    |
| Acceptable Voltage Range               | L-L 130-280 VAC<br>L-N 65-140 VAC                             |
| Maximum Input Current                  | 40A per phase   |
| Frequency Range                        | 50 Hz/ 60 Hz (Auto sensing)                                   |
| AC OUTPUT                              |   |
| AC Voltage Regulation (Batt. Mode)     | L-L 220VAC ± 5%<br>L-N 110VAC ± 5%                            |
| Surge Power                            | 10000VA   |
| Peak Efficiency                        | 88%   |
| Transfer Time                          | 10 ms (For Personal Computers)<br>20 ms (For Home Appliances) |
| Waveform                               | Pure sine wave  |
| GRID OUTPUT (Grid-Tie)                 |   |
| Acceptable Voltage Range               | L-L 183-264VAC<br>L-N 91.5-132VAC                             |
| Nominal Current                        | 27.3A per phase   |
| Power Factor                           | > 0.99  |
| Max. Conversion Efficiency (DC/AC)     | 95%   |
| BATTERY                                |   |
| Battery Voltage                        | 48 VDC  |
| Floating Charge Voltage                | 54 VDC  |
| Overcharge Protection                  | 66 VDC  |
| SOLAR CHARGER & AC CHARGER             |   |
| Maximum PV Array Power                 | 6000W   |
| Maximum PV Array Open Circuit Voltage  | 450Vdc  |
| PV Array MPPT Voltage Range            | 120~450Vdc  |
| Maximum PV Input Current               | 27A   |
| Maximum PV Input Short Circuit Current | 30A   |
| Maximum Charging Capacity              | 5000W   |
| Maximum Solar Charging Current         | 100A  |
| Maximum AC Charging Current            | 100A  |
| Maximum Charging Current               | 100A  |
| PHYSICAL                               |   |
| Dimension (D×W×H)                      | 138.4×365×593.6mm   |
| Net Weight                             | 26kgs   |
| Communication Port                     | RS232/USB/Dry-contact/Wi-Fi                                   |
| OPERATING ENVIRONMENT                  |   |
| Humidity                               | 5% to 95% Relative Humidity (Non-condensing)                  |
| Operating Temperature                  | -10°C ~ 50°C  |

Specifications are subject to change without notice.







SP6000 Brilliant Ultra II

# SP Brilliant Ultra II Series

SP6000 Brilliant Ultra II provide the integration of MPPT solar charger & utility charger.

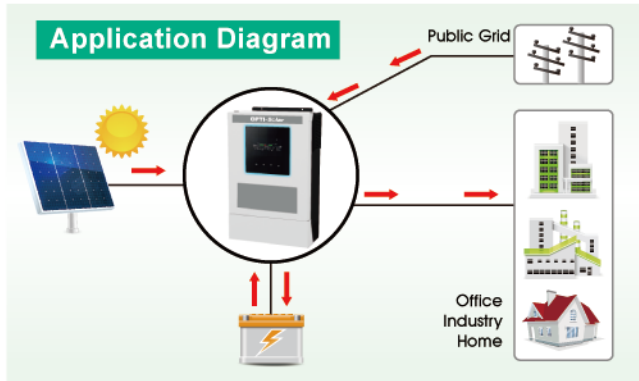
The hybrid operation allows smooth transfer between Solar & Utility power source.

To effectively gain the solar in safe & friendly way.



- 4.3" Color LCD
- Touchable Button
- BMS
- Wi-Fi
- Parallel Operation

- Features**
- Pure sine wave inverter
  - Built-in MPPT solar charger
  - Selectable input voltage range for home appliances and person al computers
  - Selectable charging current based on applications
  - Configurable AC/Solar charging priority
  - Compatible to mains voltage or generator power
  - Touchable Button with 4.3" colorful LCD
  - Overload and short circuit protection
  - Smart battery charger design for battery performance optimization
  - Dual Output Design
  - Built-in Parallel application
  - Operation without battery



| Specifications                         |  |
|--|--|
| MODEL                                  | SP6000 Brilliant Ultra II  |
| Rated Power                            | 6000VA/6000W   |
| INPUT                                  |  |
| Voltage                                | 230 VAC  |
| Selectable Voltage Range               | 170-280 VAC (For Personal Computers)<br>90-280 VAC (For Home Appliances) |
| Frequency Range                        | 50 Hz/60 Hz (Auto sensing)   |
| OUTPUT                                 |  |
| AC Voltage Regulation (Batt. Mode)     | 230VAC ± 5%  |
| Surge Power                            | 12000VA  |
| Peak Efficiency                        | 93%  |
| Transfer Time                          | 10 ms (For Personal Computers)<br>20 ms (For Home Appliances)            |
| Waveform                               | Pure sine wave   |
| Overload Capacity                      | 10s for 110%~150% load<br>5s for ≥150% load                              |
| BATTERY                                |  |
| Battery Voltage                        | 48 VDC   |
| Floating Charge Voltage                | 54 VDC (maximum 58Vdc)   |
| Low Battery Alarm Voltage              | 42 VDC   |
| Shutdown Voltage                       | 40 VDC   |
| Overcharge Protection                  | 66 VDC   |
| Reverse Polarity Protection            | Yes  |
| SOLAR CHARGER & AC CHARGER             |  |
| Maximum PV Array Open Circuit Voltage  | 500Vdc   |
| PV Max. Input Power                    | 6000W  |
| PV Max. Input Current                  | 27A  |
| PV Array MPPT Voltage Range            | 120~430Vdc   |
| Maximum Solar Charging Current         | 120A   |
| Maximum AC Charging Current            | 120A   |
| Maximum Charging Current               | 120A   |
| Maximum PV Input Current               | 27A  |
| Maximum PV Input Short Circuit Current | 30A  |
| PHYSICAL                               |  |
| Dimension (D×W×H)                      | 120 × 295 × 468mm  |
| Net Weight                             | 12kgs  |
| OPERATING ENVIRONMENT                  |  |
| Humidity                               | 5% to 95% Relative Humidity (Non-condensing)                             |
| Operating Temperature                  | 0°C - 55°C   |
| Storage Temperature                    | -15°C - 60°C   |

Specifications are subject to change without notice.



SP6000 Regal Ultra

# SP Regal Ultra Series

The SP Regal Ultra series is a zero (0ms) transfer time design.

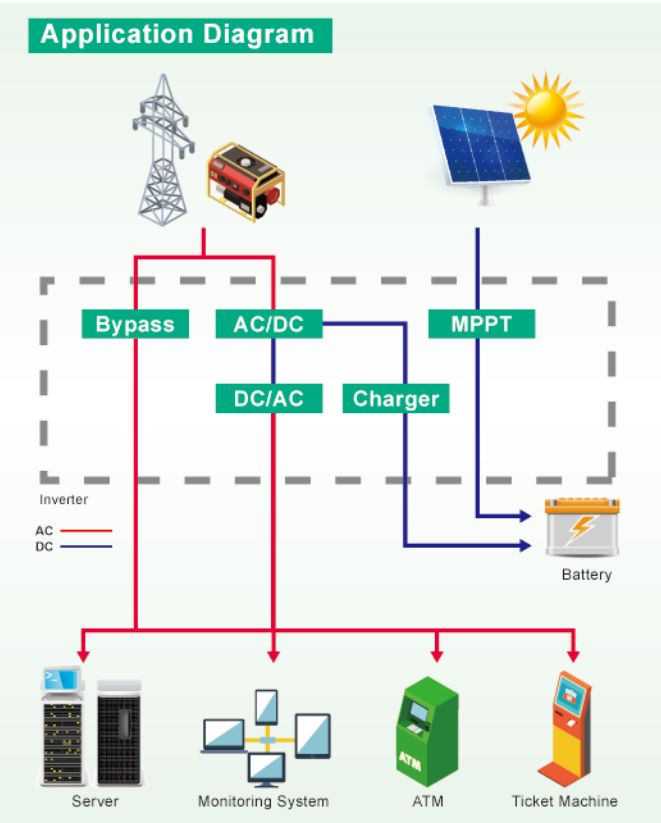
Switch the power source between Solar/Utility without any interruption.

An ideal solution for critical loads such as servers and ATM machines.



- Zero(0ms) Transfer Time
- BMS
- Wi-Fi
- Parallel operation

- Features**
- Detachable LCD control Panel
  - Built-in Wi-Fi function for APP monitoring
  - Zero(0ms) transfer time, the best protection for servers, ATM.
  - Pure Sine Wave inverter with built-in MPPT solar charger
  - Selectable high power charging current
  - Configurable AC/Solar input priority via LCD setting
  - Auto restart while AC is recovering
  - Overload and short circuit protection
  - Cold start function
  - Optional parallel operation of up to 9pcs



| Specifications                         |  |
|--|--|
| MODEL                                  | SP6000 Regal Ultra   |
| Rated Power                            | 6000VA/6000W   |
| INPUT                                  |  |
| Voltage                                | 230 VAC  |
| Selectable Voltage Range               | 170-280 VAC (For Personal Computers)<br>90-280 VAC (For Home Appliances) |
| Frequency Range                        | 50 Hz/60 Hz (Auto sensing)   |
| OUTPUT                                 |  |
| AC Voltage Regulation (Batt. Mode)     | 230VAC ± 5%  |
| Surge Power                            | 10000VA  |
| Peak Efficiency                        | 93%  |
| Transfer Time                          | 0 ms   |
| Waveform                               | Pure sine wave   |
| BATTERY                                |  |
| Battery Voltage                        | 48 VDC   |
| Floating Charge Voltage                | 54 VDC   |
| Overcharge Protection                  | 63 VDC   |
| SOLAR CHARGER & AC CHARGER             |  |
| Maximum PV Power                       | 6000W  |
| Maximum PV Array Open Circuit Voltage  | 500Vdc   |
| PV Array MPPT Voltage Range            | 120~450Vdc   |
| Maximum Solar Charging Current         | 120A   |
| Maximum AC Charging Current            | 120A   |
| Maximum Charging Current               | 120A   |
| Maximum PV Input Current               | 27A  |
| Maximum PV Input Short Circuit Current | 30A  |
| PHYSICAL                               |  |
| Dimension (D×W×H)                      | 140 × 295 × 468mm  |
| Net Weight                             | 12kgs  |
| OPERATING ENVIRONMENT                  |  |
| Humidity                               | 5% to 95% Relative Humidity (Non-condensing)                             |
| Operating Temperature                  | -10°C ~ 55°C   |
| Storage Temperature                    | -15°C ~ 60°C   |

Specifications are subject to change without notice.







SP6000 ~ 11000 Handy Ultra

# SP Handy Ultra Series


Dual output design with high output capacity.  
Perfect for inductive loads.




Dual Output  
(SP8000 Handy Ultra (SP11000 Handy Ultra only))




Dual Input  
(SP11000 Handy Ultra only)




Detachable  
LCD Display



BMS



Wi-Fi

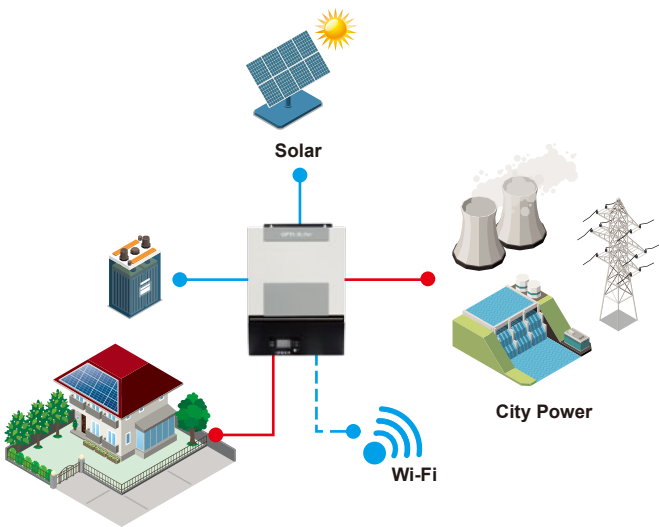


Parallel Operation

### Features

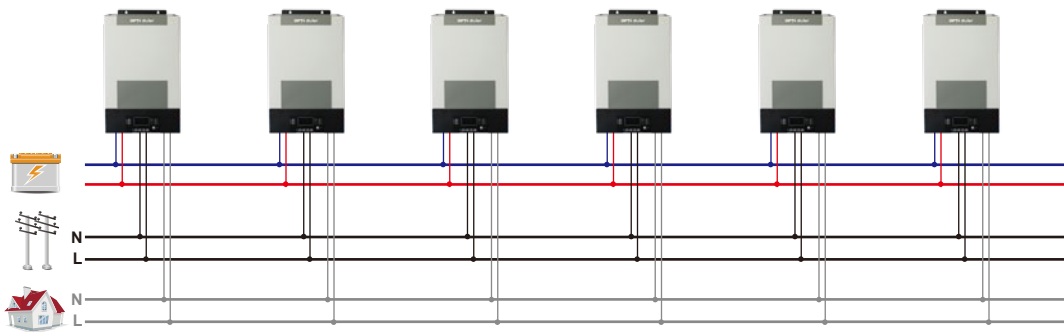
- High PV input range
- Feasible for without-battery operation
- Built-in anti-dust kit
- Selectable high power charging current
- Compatible with mains or generator power
- Replaceable fan design for easy maintenance
- Overload and short circuit protection
- Smart battery charger design for battery performance optimization
- Cold start function
- Wi-Fi function
- Detachable LCD
- Parallel Operation of up to 6 units

The inverter could simultaneously connect to the city power and solar panels, and operate without interference from one another. The inverters can operate normally.



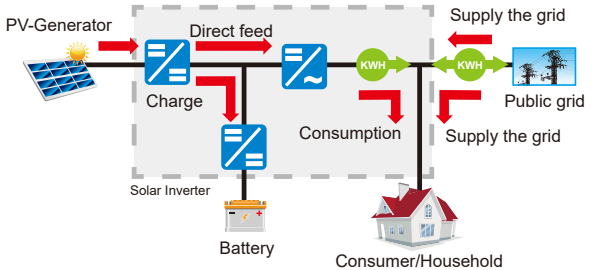
### Parallel Operation

Maximum 6 units in parallel

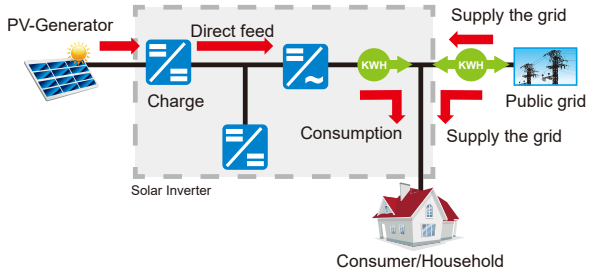


### Operation Diagram:

#### Operation with battery



#### Operation without battery



### Specifications


| MODEL                                  | SP6000 Handy Ultra                          | SP8000 Handy Ultra                   | SP11000 Handy Ultra            |
|--|---|--------------------------------------|--------------------------------|
| Rated Power                            | 6000VA/6000W                                | 8000VA/8000W                         | 11000VA/11000W                 |
| INPUT                                  |   |                                      |                                |
| Voltage                                | 120 VAC                                     | 230 VAC                              |                                |
| Selectable Voltage Range               | 90-140 VAC (For Personal Computers)         | 170-280 VAC (For Personal Computers) |                                |
|  | 80-140 VAC (For Home Appliances)            | 90-280 VAC (For Home Appliances)     |                                |
| Frequency Range                        | 50 Hz/ 60 Hz (Auto sensing)                 | 50 Hz/ 60 Hz (Auto sensing)          |                                |
| OUTPUT                                 |   |                                      |                                |
| AC Voltage Regulation (Batt. Mode)     | 120VAC ± 5%                                 | 230VAC ± 5%                          |                                |
| Surge Power                            | 12000VA                                     | 16000VA                              | 22000VA                        |
| Peak Efficiency                        | 93%   |                                      |                                |
| Transfer Time                          | 15 ms (For Personal Computers)              |                                      | 10 ms (For Personal Computers) |
|  | 20 ms (For Home Appliances)                 |                                      |                                |
| Waveform                               | Pure sine wave                              |                                      |                                |
| BATTERY                                |   |                                      |                                |
| Battery Voltage                        | 48 VDC                                      |                                      |                                |
| Floating Charge Voltage                | 54 VDC                                      |                                      |                                |
| Overcharge Protection                  | 66 VDC                                      |                                      |                                |
| SOLAR CHARGER & AC CHARGER             |   |                                      |                                |
| Maximum PV Array Power                 | 8000W (4000W MPPT×2)                        |                                      | 11000W (5500W MPPT×2)          |
| Maximum PV Array Open Circuit Voltage  | 250Vdc                                      | 500Vdc                               |                                |
| PV Array MPPT Voltage Range            | 90~230Vdc                                   | 90~430Vdc                            | 90~450Vdc                      |
| Maximum Solar Charging Current         | 120A  | 120A                                 | 150A                           |
| Maximum AC Charging Current            | 120A  | 120A                                 | 150A                           |
| Maximum Charging Current               | 120A  | 120A                                 | 150A                           |
| Maximum PV Input Current               | 27A   |                                      |                                |
| Maximum PV Input Short Circuit Current | 30A   |                                      |                                |
| PHYSICAL                               |   |                                      |                                |
| Dimension (D×W×H)                      | 147.5× 432.5×553.5mm                        |                                      |                                |
| Net Weight                             | 18.4kgs                                     |                                      |                                |
| Communication Port                     | RS232/USB/Dry-contact/Wi-Fi                 |                                      |                                |
| OPERATING ENVIRONMENT                  |   |                                      |                                |
| Humidity                               | 5% to 95% Relative Humidity(Non-condensing) |                                      |                                |
| Operating Temperature                  | -10°C ~ 55°C                                |                                      |                                |
| Storage Temperature                    | -15°C ~ 60°C                                |                                      |                                |

Specifications are subject to change without notice.




# SP Handy Ultra II Series


Friendly design with the wide touchable LCD screen.




4.3" Color LCD




Touchable Button



BMS



Wi-Fi



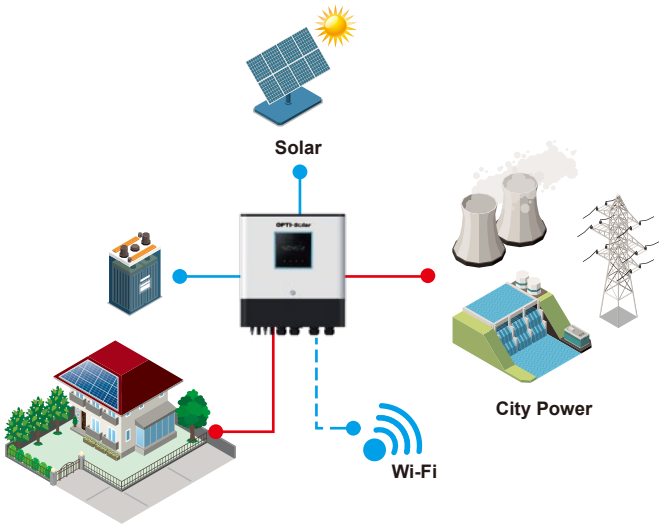
Parallel Operation

### Features

- High PV input range
- Feasible for without-battery operation
- Built-in anti-dust kit
- Selectable high power charging current
- Maximum PV input current 27A
- Overload and short circuit protection
- Smart battery charger design for optimized battery performance
- Cold start function
- Wi-Fi function
- Wide touchable LCD screen
- Two AC input sources for mains voltage or generator power
- Parallel operation up to 6 units

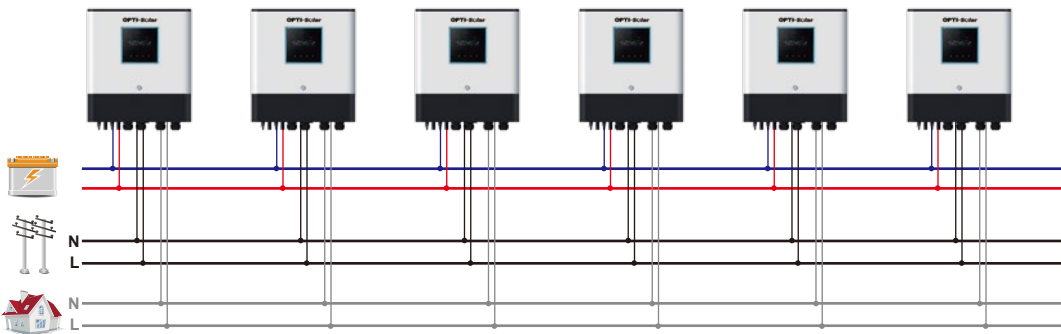


The inverter could simultaneously connect to the city power and solar panels, and operate without interference from one another. The inverters can operate normally.



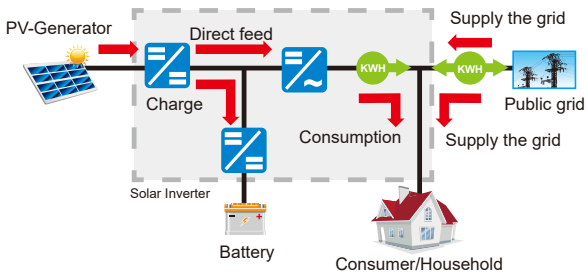
### Parallel Operation

Maximum 6 units in parallel

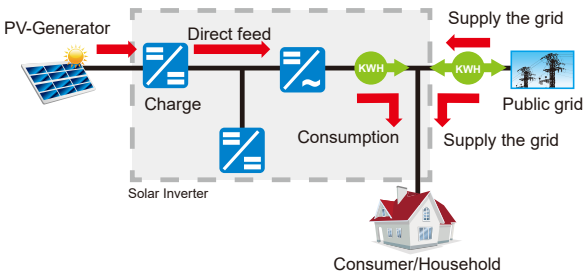


### Operation Diagram:

#### Operation with battery



#### Operation without battery



### Specifications

| MODEL                                  | SP8000 Handy Ultra II                       |  | SP11000 Handy Ultra II         |  |
|--|---|--|--------------------------------|--|
| Rated Power                            | 8000VA/8000W                                |  | 11000VA/11000W                 |  |
| INPUT                                  |   |  |                                |  |
| Voltage                                | 230 VAC                                     |  |                                |  |
| Selectable Voltage Range               | 170-280 VAC (For Personal Computers)        |  |                                |  |
|  | 90-280 VAC (For Home Appliances)            |  |                                |  |
| Frequency Range                        | 50 Hz/ 60 Hz (Auto sensing)                 |  |                                |  |
| OUTPUT                                 |   |  |                                |  |
| AC Voltage Regulation (Batt. Mode)     | 230VAC ± 5%                                 |  |                                |  |
| Surge Power                            | 16000VA                                     |  | 22000VA                        |  |
| Peak Efficiency                        | 93%   |  |                                |  |
| Transfer Time                          | 15 ms (For Personal Computers)              |  | 10 ms (For Personal Computers) |  |
|  | 20 ms (For Home Appliances)                 |  |                                |  |
| Waveform                               | Pure sine wave                              |  |                                |  |
| BATTERY                                |   |  |                                |  |
| Battery Voltage                        | 48 VDC                                      |  |                                |  |
| Floating Charge Voltage                | 54 VDC                                      |  |                                |  |
| Overcharge Protection                  | 66 VDC                                      |  |                                |  |
| SOLAR CHARGER & AC CHARGER             |   |  |                                |  |
| Maximum PV Array Power                 | 8000W (4000W MPPT×2)                        |  | 11000W (5500W MPPT×2)          |  |
| Maximum PV Array Open Circuit Voltage  | 500Vdc                                      |  |                                |  |
| PV Array MPPT Voltage Range            | 90~430Vdc                                   |  | 90~450Vdc                      |  |
| Maximum Solar Charging Current         | 120A  |  | 150A                           |  |
| Maximum AC Charging Current            | 120A  |  | 150A                           |  |
| Maximum Charging Current               | 120A  |  | 150A                           |  |
| Maximum PV Input Current               | 27A   |  |                                |  |
| Maximum PV Input Short Circuit Current | 30A   |  |                                |  |
| PHYSICAL                               |   |  |                                |  |
| Dimension (D×W×H)                      | 147.5 × 432.5 × 553.5 mm                    |  |                                |  |
| Net Weight                             | 18.4kgs                                     |  |                                |  |
| Communication Port                     | RS232/USB/Dry-contact/Wi-Fi                 |  |                                |  |
| OPERATING ENVIRONMENT                  |   |  |                                |  |
| Humidity                               | 5% to 95% Relative Humidity(Non-condensing) |  |                                |  |
| Operating Temperature                  | -10°C ~ 55°C                                |  |                                |  |
| Storage Temperature                    | -15°C ~ 60°C                                |  |                                |  |

Specifications are subject to change without notice.





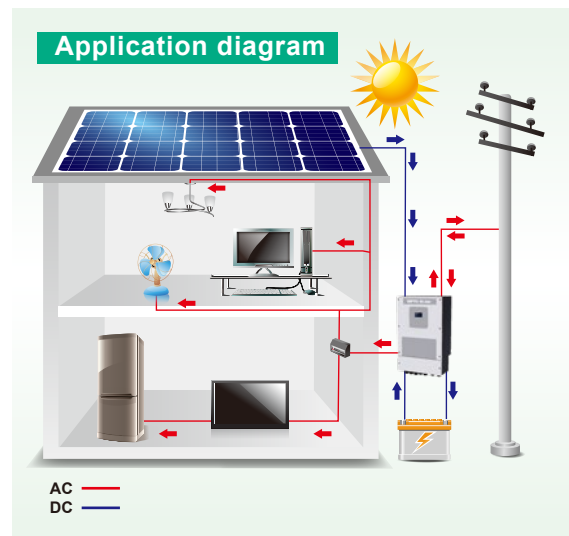
# SP IP Plus Series

## Outdoor Hybrid Solar Inverter



### Features

- High PV input voltage range
- Feasible for without-battery operation
- Selectable high power charging current
- Compatible with mains or generator power
- Overload and short circuit protection
- Smart battery charger design for battery performance optimization
- Cold start function
- IP 65 design
- Support parallel operation



### Specifications

| MODEL                                  | SP8000 IP Plus                               |
|--|--|
| Rated Power                            | 8000VA/8000W                                 |
| INPUT                                  |  |
| Voltage                                | 230 VAC                                      |
| Selectable Voltage Range               | 170-280 VAC (For Personal Computers)         |
|  | 90-280 VAC (For Home Appliances)             |
| Frequency Range                        | 50 Hz/ 60 Hz (Auto sensing)                  |
| OUTPUT                                 |  |
| AC Voltage Regulation (Batt. Mode)     | 230VAC ± 5%                                  |
| Surge Power                            | 16000VA                                      |
| Peak Efficiency (Battery - DC to AC)   | 93%  |
| Transfer Time                          | 10 ms (For Personal Computers)               |
|  | 20 ms (For Home Appliances)                  |
| Waveform                               | Pure sine wave                               |
| BATTERY                                |  |
| Battery Voltage                        | 48 VDC                                       |
| Floating Charge Voltage                | 54 VDC                                       |
| Overcharge Protection                  | 66 VDC                                       |
| SOLAR CHARGER & AC CHARGER             |  |
| Maximum PV Array Power                 | 8000W  |
| Maximum PV Array Open Circuit Voltage  | 500Vdc                                       |
| PV Array MPPT Voltage Range            | 90~450Vdc                                    |
| Maximum Solar Input Current            | 18A×2  |
| Maximum Solar Charging Current         | 150A   |
| Maximum AC Charging Current            | 120A   |
| Maximum Charging Current               | 150A   |
| Maximum PV Input Current               | 27A  |
| Maximum PV Input Short Circuit Current | 30A  |
| PHYSICAL                               |  |
| Dimension (D × W × H)                  | 200×360×665 mm                               |
| Net Weight                             | 32kgs  |
| Communication Port                     | RS232/USB/Dry-contact/BMS                    |
| OPERATING ENVIRONMENT                  |  |
| Humidity                               | 5% to 95% Relative Humidity (Non-condensing) |
| Operating Temperature                  | -10°C ~ 50°C                                 |
| Storage Temperature                    | -15°C ~ 60°C                                 |

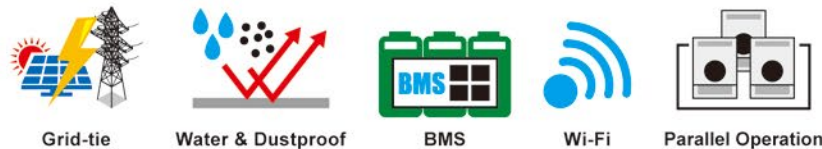
Specifications are subject to change without notice.



# SP IP Grid Series

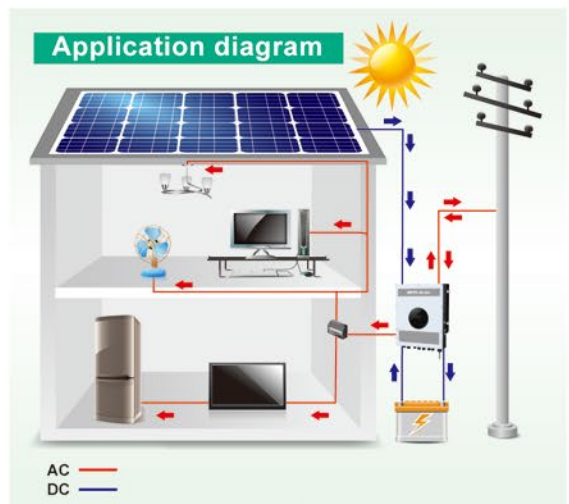
## IP65 waterproof and dustproof design.

Hybrid inverter with Grid-tie function for outdoor installations.



### Features

- IP65 waterproof and dustproof design
- Grid-tie function with backup
- Dual output selected as either programmable output or generator input
- Built-in alternative port for generator and emergent load
- Optional external CT sensor to guarantee 100% self-consumption.
- Built-in communication port for BMS
- User-adjustable charging current and voltage
- Parallel Operation of up to 6 units



### Specifications

| MODEL  | SP6000 IP Grid   | SP10000 IP Grid        |
|--|--|------------------------|
| RATED POWER                                  | 6000 W   | 10000 W                |
| PV INPUT (DC)                                |  |                        |
| Maximum DC Power                             | 7500 W   | 12000 W                |
| Nominal DC Voltage                           | 360 VDC  |                        |
| Maximum DC Voltage                           | 600 VDC  |                        |
| Start-up Voltage / Initial Feeding Voltage   | 125 VDC / 160 VDC  |                        |
| MPP Voltage Range                            | 120 VDC ~ 550 VDC  |                        |
| Maximum Input Current                        | 2×15 A   | 2×18 A                 |
| Isc PV (absolute maximum)                    | 21 A   | 21 A                   |
| Max. inverter back feed current to the array | 0 A  | 0 A                    |
| GRID OUTPUT (AC)                             |  |                        |
| Nominal Output Voltage                       | 110 VAC (P-N) / 220 VAC (P-P)                                |                        |
| Output Voltage Range                         | 105.5 - 132 VAC per phase                                    | 97 - 132 VAC per phase |
| Output Frequency Range                       | 47.5 ~ 51.5 Hz or 59.3~ 60.5Hz                               |                        |
| Nominal Output Current                       | 25 A per phase   | 41.5 A per phase       |
| Inrush Current/Duration                      | 30 A per phase / 20ms  | 60 A per phase / 20ms  |
| Maximum Output Fault Current/Duration        | 90 A per phase / 1ms   | 120 A per phase / 1ms  |
| Maximum output Overcurrent Protection        | 90A per phase  | 120A per phase         |
| Power Factor Range                           | 0.9 lead – 0.9 lag   |                        |
| AC INPUT                                     |  |                        |
| AC Start-up Voltage                          | 85 VAC per phase (P-N) / 170 VAC per phase (P-P)             |                        |
| Auto Restart Voltage                         | 90 VAC per phase (P-N) / 180 VAC per phase (P-P)             |                        |
| Acceptable Input Voltage Range               | 85 - 140 VAC per phase (P-N) / 170 - 280 VAC per phase (P-P) |                        |
| Nominal Frequency                            | 50 Hz / 60 Hz  |                        |
| AC Input Power                               | 6000VA/6000W   | 10000VA/10000W         |
| Maximum AC Input Current                     | 30 A   | 40 A                   |
| Inrush Input Current                         | 30 A / 1ms   | 40 A / 1ms             |
| BATTERY MODE OUTPUT (AC)                     |  |                        |
| Nominal Output Voltage                       | 110 VAC (P-N) / 220 VAC (P-P)                                |                        |
| Output Frequency                             | 50 Hz / 60 Hz (auto sensing)                                 |                        |
| Output Waveform                              | Pure sine wave   |                        |
| Output Power                                 | 6000VA/6000W   | 10000VA/10000W         |
| EFFICIENCY                                   |  |                        |
| DC to AC                                     | 96%  |                        |
| Battery to AC                                | 91%  |                        |
| BATTERY & CHARGER                            |  |                        |
| Nominal DC Voltage                           | 48 VDC   |                        |
| DC Voltage Range                             | 40 - 62 VDC  |                        |
| Maximum Battery Discharging Current          | 150 A  | 150 A                  |
| Maximum Solar Charging Current               | 120 A  | 200 A                  |
| Maximum Charging Current                     | 120 A  | 200 A                  |
| Maximum PV Input Current                     | 27A  |                        |
| Maximum PV Input Short Circuit Current       | 30A  |                        |
| PHYSICAL                                     |  |                        |
| Dimension (D × W × H)                        | 215.5 × 515 × 700 mm   |                        |
| Net Weight                                   | 41kg   | 45kg                   |
| INTERACE                                     |  |                        |
| Communication Port                           | RS-232 / USB / BMS   |                        |
| Intelligent Slot                             | Optional SNMP, Modbus cards available                        |                        |
| ENVIRONMENT                                  |  |                        |
| Protective Class                             | I  |                        |
| Ingress Protection Rating                    | IP65   |                        |
| Humidity                                     | 0 ~ 90% RH (No condensing)                                   |                        |
| Operating Temperature                        | -25 to 60°C  |                        |
| Altitude                                     | 0 ~ 2000 m*  |                        |

Specifications are subject to change without notice.

\* Power derating 1% every 100m when altitude is higher than 1000m.





SP10000-15000 Premium

# SP Premium Series

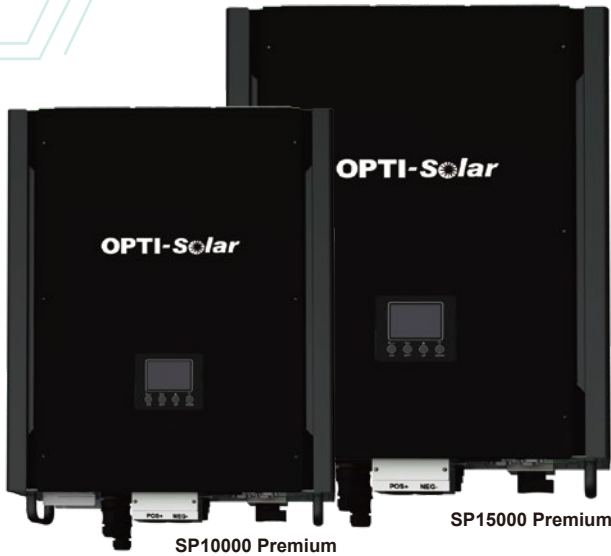
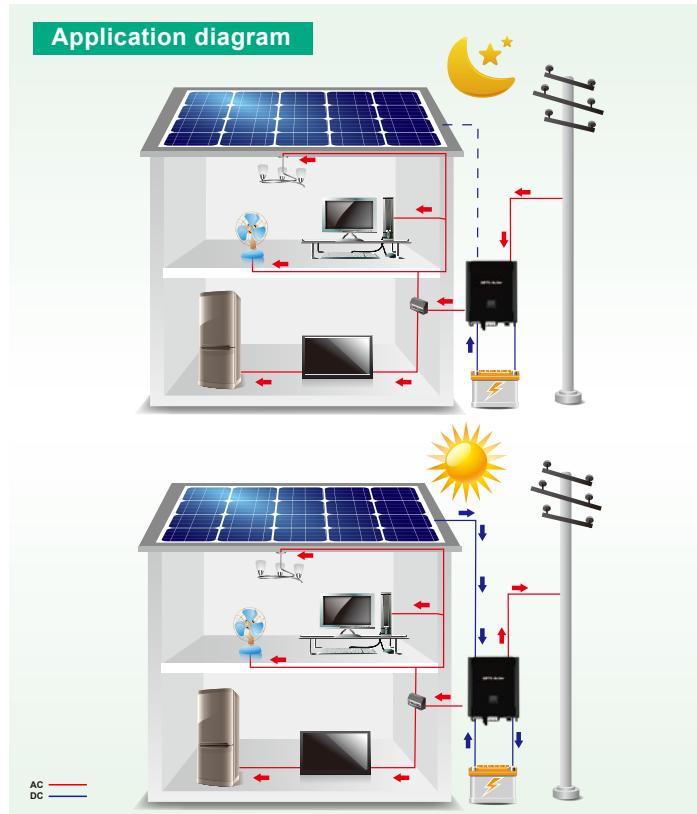
## True Hybrid Solar Inverter with Energy Storage

SP Premium Series is a universal power supply tool for houses. It utilizes solar power in the daytime and feeding it to your appliances like illumination lamps, TV, stereo player, and PC equipment, saving extra power to the batteries for nighttime usage, and selling the power surplus, unused by the connected appliances, to the grid.

On cloudy days, when the solar power is weak, SP Premium Series will take the lacking power from the grid. At night, the batteries will provide energy to your home. With this true hybrid design, we give you the confidence that 100% of your solar power is fully utilized.

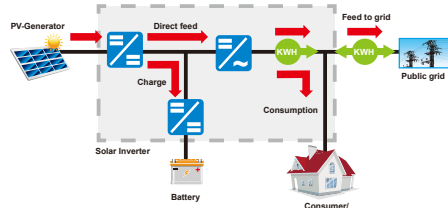
### Features

- 10/15KW on-grid inverter with energy storage
- Pure sine wave output
- To guarantee stable charging system
- Multiple operations: Grid-tie, Off-grid, and grid-tie with backup
- Built-in MPPT solar charger
- LCD panel for comprehensive information
- Multiple communications
- Green substitution for generators
- User-adjustable battery charging current
- Parallel connection capability (Maximum up to 6pcs)

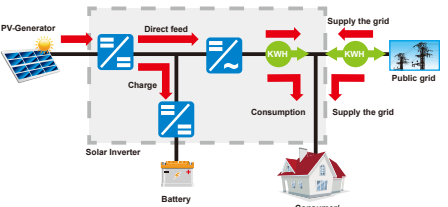


### Operation Diagram:

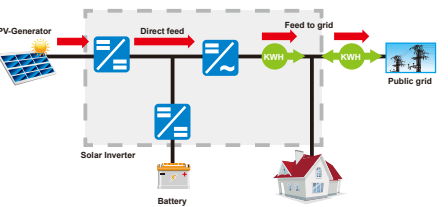
#### Enough PV Energy Input



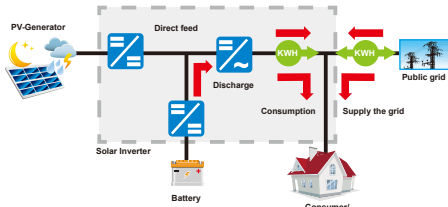
#### Household consumption is higher than supply from PV



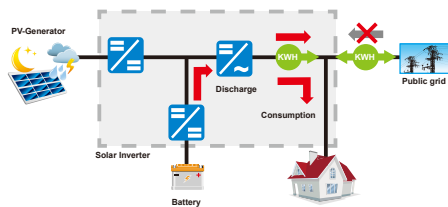
#### No consumption from household and the battery is fully charged



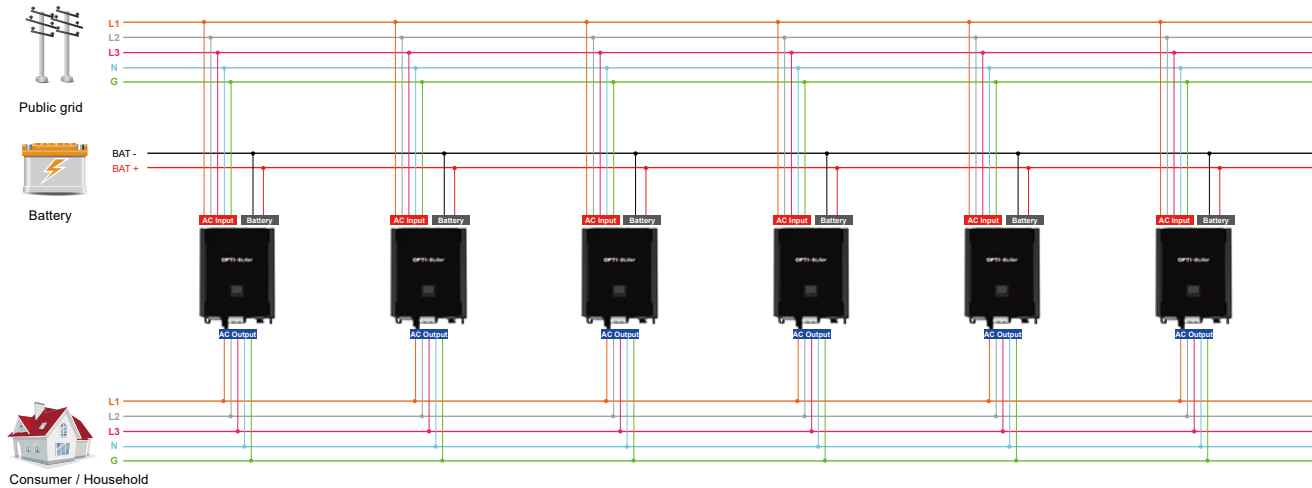
#### No PV energy and battery is fully discharged



#### No PV energy, and the consumption from household is supplied by the battery



### Parallel Operation (Maximum up to 6pcs)



### Specifications

| MODEL  | SP10000 Premium                                  | SP15000 Premium               |
|--|--|-------------------------------|
| RATED POWER                                  | 10000 W  | 15000 W                       |
| PV INPUT (DC)                                |  |                               |
| Maximum DC Power                             | 14850 W  | 22500 W                       |
| Nominal DC Voltage                           | 720 VDC  | 720 VDC                       |
| Maximum DC Voltage                           | 900 VDC  | 900 VDC                       |
| Start-up Voltage / Initial Feeding Voltage   | 320 VDC / 350 VDC                                | 320 VDC / 350 VDC             |
| MPP Voltage Range                            | 400 VDC ~ 800 VDC                                | 400 VDC ~ 800 VDC             |
| Maximum Input Current                        | 2×18.6 A   | PV1: 37.2A; PV2: 18.6A        |
| Isc PV (absolute maximum)                    | 25 A   | 50 A                          |
| Max. inverter back feed current to the array | 0 A  | 0 A                           |
| GRID OUTPUT (AC)                             |  |                               |
| Nominal Output Voltage                       | 230 VAC (P-N) / 400 VAC (P-P)                    | 230 VAC (P-N) / 400 VAC (P-P) |
| Output Voltage Range                         | 184 - 265 VAC per phase                          | 184 - 265 VAC per phase       |
| Output Frequency Range                       | 47.5 ~ 51.5 Hz or 59.3~ 60.5Hz                   |                               |
| Nominal Output Current                       | 13A per phase                                    | 21.7A per phase               |
| Inrush Current/Duration                      | 17A per phase / 20ms                             | 28A per phase / 20ms          |
| Maximum Output Fault Current/Duration        | 51A per phase / 1ms                              | 65A per phase / 1ms           |
| Maximum output Overcurrent Protection        | 51A per phase                                    | 65A per phase                 |
| Power Factor Range                           | 0.9 lead – 0.9 lag                               |                               |
| AC INPUT                                     |  |                               |
| AC Start-up Voltage                          | 120-140 VAC per phase                            | 120-140 VAC per phase         |
| Auto Restart Voltage                         | 180 VAC per phase                                | 180 VAC per phase             |
| Acceptable Input Voltage Range               | 170 - 280 VAC per phase                          | 170 - 280 VAC per phase       |
| Nominal Frequency                            | 50 Hz / 60 Hz                                    | 50 Hz / 60 Hz                 |
| AC Input Power                               | 10000VA/10000W                                   | 15000VA/15000W                |
| Maximum AC Input Current                     | 25 A   | 40 A                          |
| Inrush Input Current                         | 25 A   | 40 A                          |
| BATTERY MODE OUTPUT (AC)                     |  |                               |
| Nominal Output Voltage                       | 230 VAC (P-N) / 400 VAC (P-P)                    | 230 VAC (P-N) / 400 VAC (P-P) |
| Output Frequency                             | 50 Hz / 60 Hz (auto sensing)                     |                               |
| Output Waveform                              | Pure sine wave                                   |                               |
| Output Power                                 | 10000VA/10000W                                   | 15000VA/15000W                |
| Output Current                               | 13A per phase                                    | 21.7A per phase               |
| Efficiency (DC to AC)                        | 91%  |                               |
| BATTERY & CHARGER                            |  |                               |
| Nominal DC Voltage                           | 48 VDC   |                               |
| Maximum Battery Discharging Current          | 250 A  | 375 A                         |
| Maximum Charging Current                     | 200 A  | 300 A                         |
| PHYSICAL                                     |  |                               |
| Dimension (D×W×H)                            | 622 × 500 × 167.2 mm                             | 210 × 650 × 820 mm            |
| Net Weight                                   | 45 kg  | 62 kg                         |
| INTERACE                                     |  |                               |
| Communication Port                           | RS-232/USB                                       |                               |
| Intelligent Slot                             | Optional SNMP, Modbus and AS-400 cards available |                               |
| ENVIRONMENT                                  |  |                               |
| Protective Class                             | IP20   |                               |
| Ingress Protection Rating                    | 0 ~ 90% RH (No condensing)                       |                               |
| Humidity                                     | -10 to 55°C                                      |                               |
| Operating Temperature                        | 0 ~ 1000 m*                                      |                               |
| Altitude                                     |  |                               |

Product specifications are subject to change without further notice.  
\*Power derating 1% every 100 m when altitude is higher than 1000m.



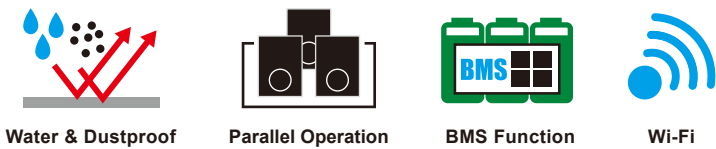
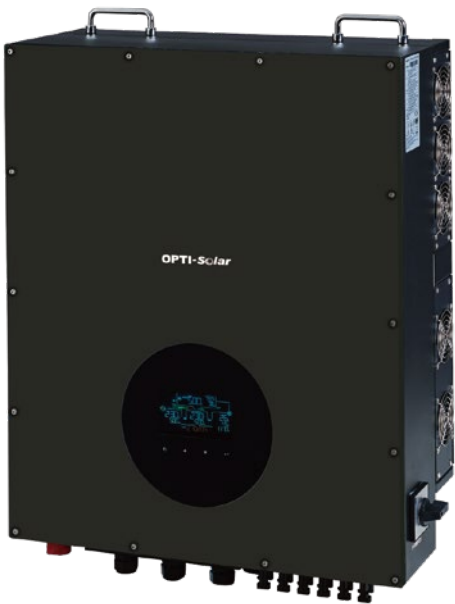
SP30000 Premium Plus

# SP Premium Plus Series

SP Premium Plus is the advanced model suitable for outdoor design.

It can be operated in a harsh environment condition, such as high humidity / high temperature (up to 60°C).

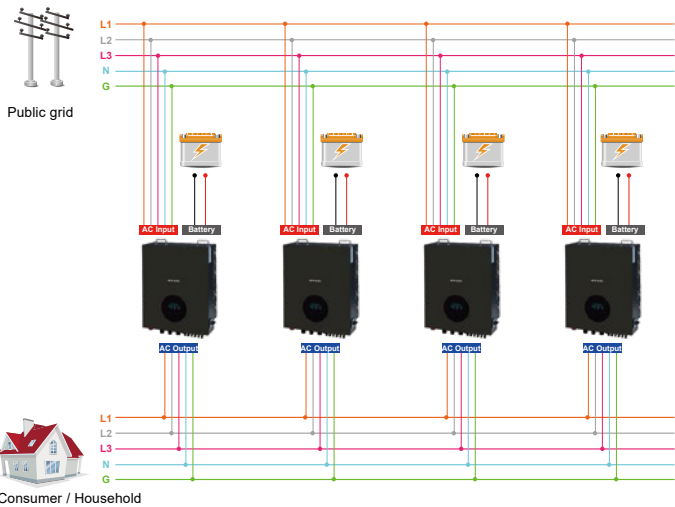
Long life span and less maintenance.



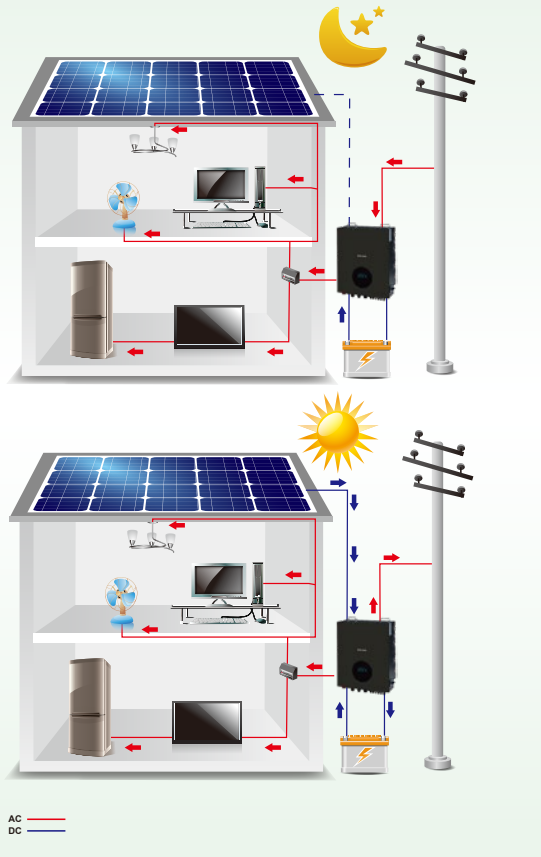
- Features**
- IP65 outdoor design
  - 150% unbalanced load support
  - Dual output selected as programmable output or Generator input
  - Programmable multiple operation modes: Grid-tie, off-grid and grid-tie with backup
  - Built-in Wi-Fi for the APP monitoring
  - Built-in BMS Function
  - Maximum charging up to 80A adjustable
  - Parallel operation up to 4 units

**Parallel Operation**

Maximum up to 4pcs

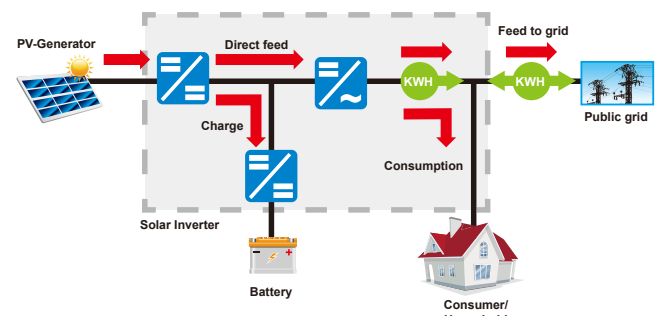


**Application diagram**

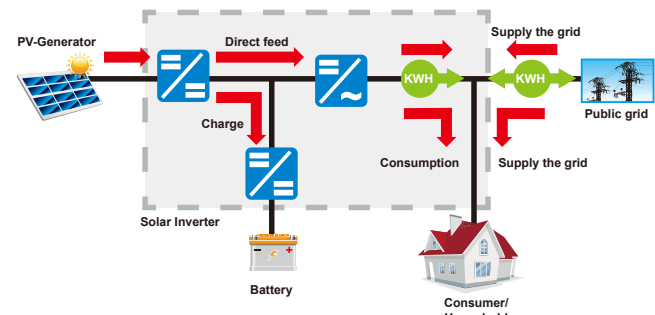


**Operation Diagram:**

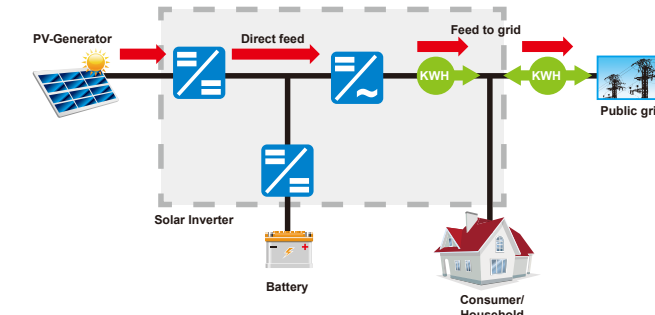
**Enough PV Energy Input**



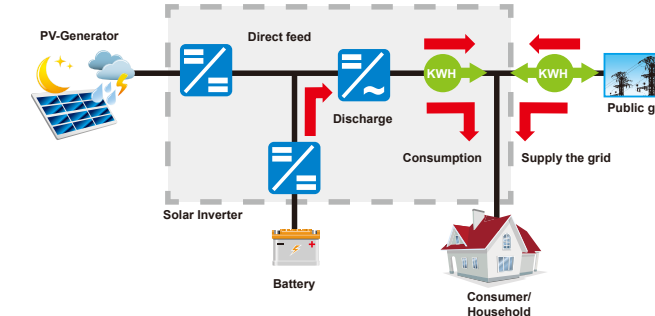
**Household's consumption is higher than supply from PV**



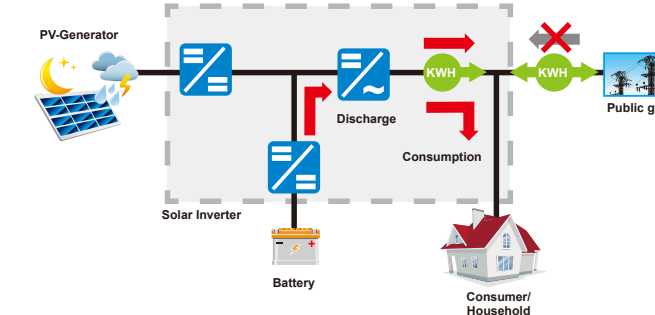
**No consumption from household and the battery is fully charged**



**No PV energy and battery is fully discharged**



**No PV energy, and the consumption from household is supplied by battery**



**Specifications**

| MODEL  | SP30KW Premium Plus                                |
|--|--|
| Rated Output Power                             | 30KW   |
| Maximum Charging Power                         | 30KW   |
| PV INPUT (DC)                                  |  |
| Maximum DC Power                               | 40KW   |
| Nominal DC Voltage/ Maximum DC Voltage         | 720 VDC / 1000 VDC                                 |
| Start-up Voltage / Initial Feeding Voltage     | 320 VDC / 350 VDC                                  |
| MPP Voltage Range                              | 600-1000VDC  |
| Number of MPP Trackers / Maximum Input Current | 3 / 26A  |
| GRID OUTPUT (AC)                               |  |
| Nominal Output Voltage                         | 230VAC* (P/N) / 400 VAC (P-P)                      |
| Output Voltage Range                           | 184-265 VAC per phase                              |
| Output Frequency Range                         | 47.5 ~ 51.5 Hz or 59.3 ~ 60.5 Hz                   |
| Nominal Output Current                         | 43.5 A per phase                                   |
| Power Factor                                   | 0.9 lag to 0.9 lead                                |
| EFFICIENCY                                     |  |
| Maximum Conversion Efficiency (DC/AC)          | 96.5%  |
| AC INPUT                                       |  |
| AC Start-up Voltage / Auto Restart Voltage     | 120-140 VAC per phase / 180 VAC per phase          |
| Acceptable Input Voltage Range                 | 170-280 VAC per phase                              |
| Maximum AC Input Curent                        | 50 A per phase                                     |
| BATTERY MODE OUTPUT (AC)                       |  |
| Nominal Output Voltage                         | 230VAC* (P/N) / 400 VAC (P-P)                      |
| Effieciency (DC to AC)                         | >96%   |
| BATTERY & CHARGER                              |  |
| Nominal DC Voltage                             | 300 VDC ~ 950 VDC (adjustable)                     |
| Maximum Charging Current                       | 80A  |
| PHYSICAL                                       |  |
| Dimension (D×W×H)                              | 255 × 660 × 750 mm                                 |
| Net Weight                                     | 73 kg  |
| INTERFACE                                      |  |
| Communication Port                             | RS-232/USB   |
| Intelligence Slot                              | Optional SNMP, GPRS, Wi-Fi, Modbus cards available |
| ENVIRONMENT                                    |  |
| Humidity                                       | 0 ~ 90% RH (Non-Condensing)                        |
| Operating Temperature                          | -10°C to 55°C                                      |
| Altitude                                       | 0 ~ 1000 m**                                       |

\*\* Power derating 1% every 100m when altitude is higher than 1000m. Specifications are subject to change without notice.





# SP Revival Series

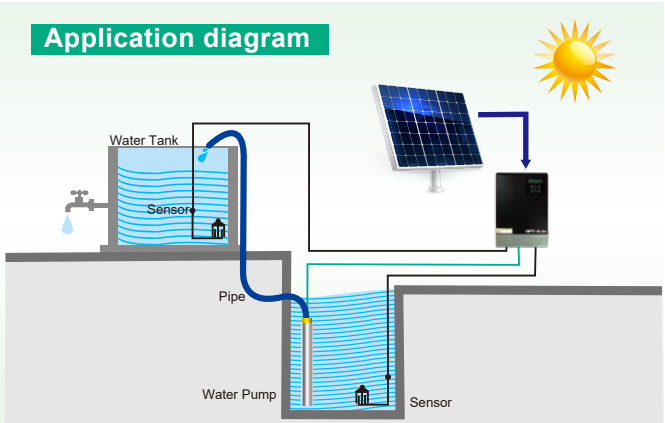
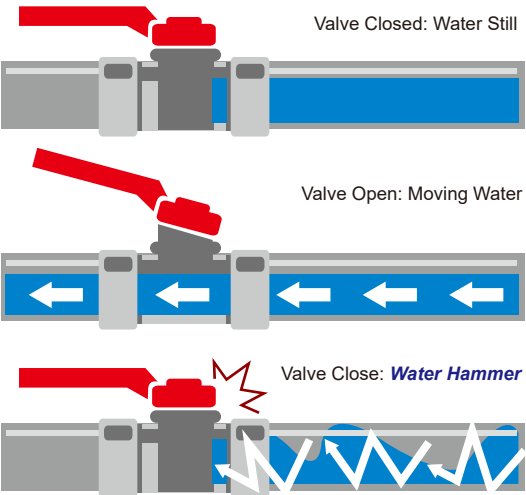
Installing water pumps has been a challenge in areas that lack AC electrical power, making irrigation and water supply difficult in remote regions.

SP Revival Series supply AC power to any conventional pump from the solar panels. Zero operating cost and maintenance-free make it the best solar option for orchard, garden, and farm irrigation.

### Features

- Built-in MPPT solar controller
- Design for three-phase motors
- Multiple protections and self diagnosis
- Soft-start Function prevents water hammer effect
- Comprehensive LCD & LED indicators
- Remote Monitoring by the RS-485 communication interface

### Water Hammer Diagram



### Specifications

| MODEL                              | SP7000 Revival  | SP10000 Revival | SP15000 Revival    |
|------------------------------------|---|-----------------|--------------------|
| Rated Power                        | 7500W   | 11000W          | 15000W             |
| Recommended Pump Capacity          | 3~9HP   | 10~14HP         | 10~20HP            |
| AC OUTPUT                          |   |                 |                    |
| AC Voltage Regulation (Batt. Mode) | 3 × 380/400/415/440vac  |                 |                    |
| Efficiency                         | >97%  |                 |                    |
| Maximum Output Current             | 15A   | 22A             | 29A                |
| Motor Type                         | Three-phase asynchronous motor  |                 |                    |
| Frequency Accuracy                 | ± 0.2%  |                 |                    |
| PV INPUT                           |   |                 |                    |
| Maximum PV Array Power             | 12000W  | 17600W          | 24000W             |
| Maximum DC Voltage                 | 800 VDC   |                 |                    |
| Start-up Voltage                   | 250 VDC   |                 |                    |
| MPPT Voltage Range                 | 250 ~ 780 VDC   |                 |                    |
| Number of MPPT Controller          | 1   |                 |                    |
| Maximum Input Current              | 14.5 A  | 22A             | 29A                |
| Protection                         |   |                 |                    |
| Protection                         | Over-voltage / under-voltage / over-current / surge / over - Temperature / short circuit protection |                 |                    |
| PHYSICAL                           |   |                 |                    |
| Dimension (D × W× H)               | 110 × 230 × 342 mm  |                 | 205 × 218 × 320 mm |
| Net Weight                         | 6kg   | 6.5kg           | 6kg                |
| Ingress Protection Rating          | IP20  |                 |                    |
| INTERFACE                          |   |                 |                    |
| Communication Port                 | RS232 / RS485   |                 |                    |
| OPERATING ENVIRONMENT              |   |                 |                    |
| Humidity                           | < 95% Relative Humidity (Non-condensing)  |                 |                    |
| Operating Temperature              | Full load: - 20°C - 45°C<br>Power derating: 46°C - 60°C   |                 |                    |

Specifications are subject to change without notice.



# SP Junior Series

### Features

- Simulated sine wave AC output
- 12Vdc and 24Vdc models available
- Protection from connecting the battery with wrong voltage
- Output short circuit protection
- Battery low, battery depleted, overheating alarms
- High efficiency



### Application diagram



### Accessories

For SP300 Junior



For SP600 Junior



### Specifications

| Model                    | SP300 Junior   |   | SP600 Junior   |   |
|--------------------------|--|---|--|---|
| DC System                | DC 12V   | DC 24V  | DC 12V   | DC 24V  |
| Output Power             | Continuous Power 300W  |   | Continuous Power 600W  |   |
| Surge Power              | 900W   |   | 1500W  |   |
| Standby Current          | < 0.5A   | < 0.4A  | < 0.5A   | < 0.3A  |
| Input Voltage            | 10VDC~15VDC  | 20VDC~30VDC   | 10VDC~15VDC  | 20VDC~30VDC   |
| Output Voltage           | AC 100V, 110V, 120V, 220V, 230V, 240V                        |   | AC 100V, 110V, 120V, 220V, 230V, 240V                        |   |
| Output Waveform          | Simulated Sine Wave  |   | Simulated Sine Wave  |   |
| Efficiency               | > 90%  |   | > 85%  |   |
| Initial Checking         | Auto-Detecting Wrong Battery Cont. ex. 12V / 24V             |   |  |   |
| Output Regulation        | +5/-8% Intelligent AVR                                       |   | ± 5% Intelligent AVR   |   |
| Output Frequency         | 50Hz , 55Hz , 60Hz Crystal Controlled                        |   |  |   |
| Cooling Control          | AUTO-OPERATION FAN   |   |  |   |
| Output Short             | Output Short Circuit Protection                              |   |  |   |
| Low Battery              | < 10.5V ± 0.5V PRE-ALARM,<br>< 9.5V ± 0.5V Shut Down & Alarm | < 21V ± 1V PRE-ALARM,<br>< 20V ± 1V Shut Down & Alarm | < 10.5V ± 0.5V PRE-ALARM,<br>< 9.5V ± 0.5V Shut Down & Alarm | < 21V ± 0.5V PRE-ALARM,<br>< 20V ± 0.5V Shut Down & Alarm |
| Over Heating             | > 60°C Pre-Alarm, > 65°C Shut Down & Alarm                   |   |  |   |
| Over Load                | >330W Pre-Alarm, >360W Shut Down & Alarm                     |   | >630W Pre-Alarm >660W Shut Down & Alarm                      |   |
| Battery Polarity Reverse | By Fuse  |   |  |   |
| Fuse                     | 35A×1PC  | 20A×1PC   | 25A×3PCS   | 15A×3PCS  |
| AC Outlet                | 2 AC Outlets, EUROPEAN TYPE: 1 AC Outlet                     |   | 2 AC Outlets, EUROPEAN TYPE: 1 AC Outlet                     |   |
| Dimension (L×W×H)        | 120×73×73mm  |   | 215×113×62mm   |   |
| Net Weight               | 0.6kg  |   | 1.5kg  |   |

Specifications are subject to change without notice.





# SP Senior Series

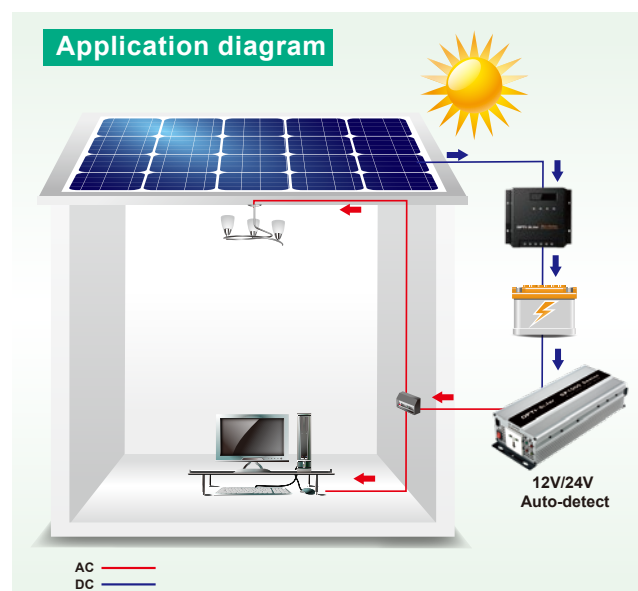
Small, light, and flexible.

An economic inverter for a simple solution.



## Features

- Dual output with 1pc AC socket & 1pc 5V 2.1A USB
- Green energy saving
- LED indicator design
- 12Vdc and 24Vdc Auto-Detect
- Reverse-polarity protection
- Output short circuit protection



## Specifications

| MODEL                              | SP1000 Senior                                |            |
|------------------------------------|--|------------|
| Rated Battery Voltage              | 12V  | 24V        |
| Rated Power                        | 800W   | 1000W      |
| Surge Protection                   | 2000W  | 2400W      |
| OUTPUT                             |  |            |
| AC Voltage Regulation (Batt. Mode) | 230VAC ± 5%                                  |            |
| Frequency                          | 50 / 60Hz                                    |            |
| USB Port                           | 5Vdc @ 2100mA                                |            |
| Outlet Socket                      | 1pcs   |            |
| Peak Efficiency                    | > 85%  |            |
| Waveform                           | Modified Sine Wave                           |            |
| Circuit Protection                 | Yes  |            |
| BATTERY                            |  |            |
| Battery Voltage (Auto-detect)      | 12V  | 24V        |
| Low Battery Alarm Voltage          | 10.5V ± 0.5V                                 | 21V ± 0.5V |
| Shutdown Voltage                   | 9.5V ± 0.5V                                  | 20V ± 0.5V |
| Overload Protection                | 900W   | 1200W      |
| Battery Polarity Reverse           | By Fuse                                      |            |
| PHYSICAL                           |  |            |
| Dimension (D×W×H)                  | 345×137×79mm                                 |            |
| Net Weight                         | 2.2kg  |            |
| OPERATING ENVIRONMENT              |  |            |
| Humidity                           | 5% to 95% Relative Humidity (Non-condensing) |            |
| Operating Temperature              | 0°C - 55°C                                   |            |
| Storage Temperature                | -15°C - 60°C                                 |            |

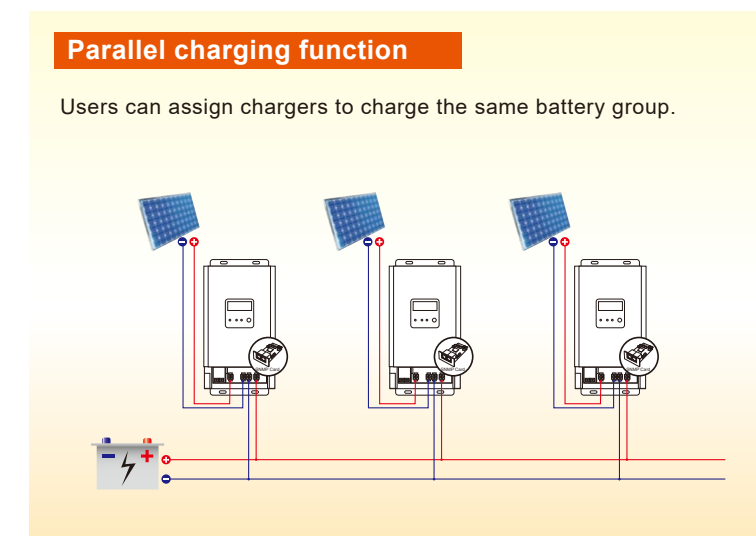
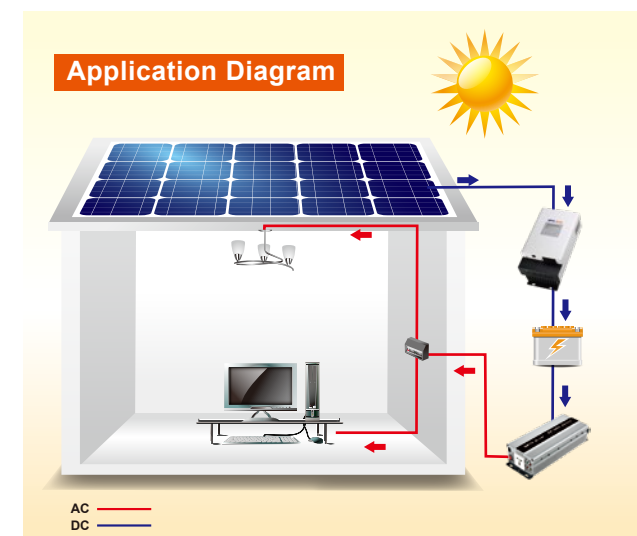
Specifications are subject to change without notice.



# MPPT Solar Charger

## Features

- Intelligent Maximum Power Point Tracking technology increases efficiency 25%~30%
- Compatible for PV systems in 12V, 24V or 48V
- Three-stage charging optimizes battery performance
- Equalization charging for extension of battery life span
- Maximum charger current up to 60A
- Maximum efficiency up to 98%
- Battery temperature sensor (BTS) automatically provides temperature compensation
- Automatic battery voltage detection
- Support a wide range of lead-acid batteries including wet, AGM, and gel batteries
- Integrated intelligent slot compatible with the SNMP/MODBUS communication
- Parallel charging function



## Specifications

| MODEL                                 | SC-3KW MPPT                              |       |     |
|---------------------------------------|--|-------|-----|
| PV INPUT                              | 60VDC~115VDC                             |       |     |
| MPPT Range                            | 145VDC                                   |       |     |
| Maximum PV Array Open Circuit Voltage | 800W                                     |       |     |
| Maximum PV Array Power                | 1600W                                    | 3200W |     |
| Maximum Input Current                 | 50A                                      |       |     |
| BATTERY                               |  |       |     |
| Nominal Battery Voltage               | 12V                                      | 24V   | 48V |
| Connected Battery Type                | Sealed lead acid, AGM, or Gel            |       |     |
| Maximum Charge Current                | 60A                                      |       |     |
| Maximum Efficiency                    | 98%                                      |       |     |
| Charging Method                       | Three stages: bulk, absorption, floating |       |     |
| PHYSICAL                              |  |       |     |
| Dimension (D×W×H)                     | 315×165×128 mm                           |       |     |
| Net Weight                            | 4.5kg                                    |       |     |
| Type of Mechanical Protection         | IP 31                                    |       |     |
| COMMUNICATION                         |  |       |     |
| Humidity                              | 5 ~ 95% RH (Non condensing)              |       |     |
| Operating Temperature                 | 0°C to 55°C                              |       |     |
| Storage Temperature                   | -15°C to 60°C                            |       |     |

Specifications are subject to change without notice.





SC-20 ~ 40 MPPT

# MPPT Solar Charger

The SC-20 MPPT/ SC-40 MPPT Solar Charger Controller improves tracking efficiency up to 99.9%.

Its RS485 interface helps the users to simply monitor the operation, and its BTS function is perfect for temperature compensation.

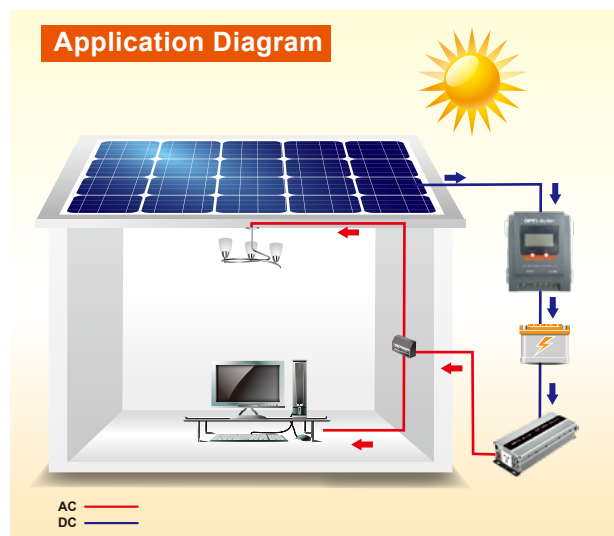
### Features

- Innovative MPPT technology, tracking efficiency 99.9%, conversion efficiency up to 90%
- Real-time display the operation data and working status of the controller in digital, graphic and textual forms by a large LCD
- AGM, Liquid and Gel battery for the selection
- Two navigation buttons, easy to implement various operation
- 12V/24V automatic recognition, temperature compensation, perfect EMC design
- Four stages of charging: MPPT, boost, equalization, float
- Full automatic electronic protection function

### Specifications

| Model name                        | SC-20MPPT   | SC-30MPPT          | SC-40MPPT                 | SC-40MPPT                      |
|-----------------------------------|---|--------------------|---------------------------|--------------------------------|
| System voltage                    | 12V/24V automatic recognition                       |                    |                           | 24V/48V automatic recognition  |
| Max solar current or load current | 20A   | 30A                | 40A(charging)/30A(output) | 40A(charging)/30A(output)      |
| Max MPPT efficiency               | >99.9%  |                    |                           |                                |
| Max PV input power                | 260/520W  | 390/780W           | 520/1040W                 | 1000/2000W                     |
| Float voltage                     | 13.7V/27.4V(25°C)                                   |                    |                           | 27.4V/54.8V(25°C)              |
| Boost voltage                     | 14.5V/29.0V(25°C)                                   |                    |                           | 29.0V/58.0V(25°C)              |
| Equal voltage                     | 14.8V/29.6V(25°C) (Liquid,AGM)                      |                    |                           | 29.6V/59.2V(25°C) (Liquid,AGM) |
| Day/Night threshold               | 8.0V/16.0V  |                    |                           | 16.0V/32.0V                    |
| Load disconnect voltage           | 10.8~11.8V/21.6~23.6V                               |                    |                           | 21.6~23.6V/43.2~47.2V          |
| Load reconnect voltage            | 11.6~12.8V/23.2~25.6V                               |                    |                           | 23.2~25.6V/46.4~51.2V          |
| Battery type                      | Liquid, Gel , AGM , Lithium                         |                    |                           |                                |
| Work mode                         | Standard, D2D(DUSK to Dawn),Street lamp , User mode |                    |                           |                                |
| Temperature compensation          | -4.17 mV / K per cell (Boost and Equal charge)      |                    |                           |                                |
|                                   | -3.33 mV / K per cell (Float charge)                |                    |                           |                                |
| Max solar voltage                 | 100V  | 55V                | 95V                       | 150V                           |
| Max battery voltage               | 40V   | 35V                | 35V                       | 65V                            |
| Dimension                         | 189×182×64mm  | 189×182×64mm       | 189×255×69mm              | 189×255×89mm                   |
| Weight                            | 1.3Kg   | 1.5Kg              | 2.5Kg                     | 2.5Kg                          |
| Max power consumption             | 8mA(12V);12mA(24V)                                  | 8mA(12V);12mA(24V) | 8mA                       | 8mA                            |
| Temp. Range during operation      | -20°C ~ + 55°C                                      |                    |                           |                                |
| Storage temperature               | -25°C ~ + 80°C                                      |                    |                           |                                |
| Ambient humidity                  | 0%~100% RH  |                    |                           |                                |
| Case protection                   | IP32  |                    |                           |                                |

Specifications are subject to change without notice.



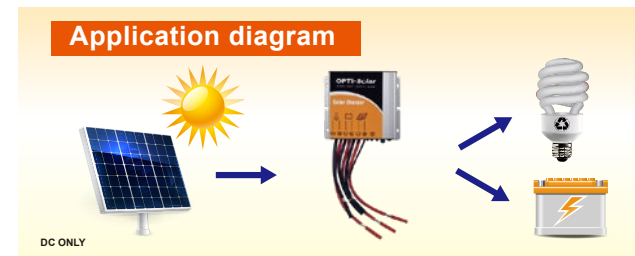
SC-10~20SM/SM-Z

# PWM Solar Charger

SC-SM Series has a built-in PV sensor that outputs power based on the photovoltaic power levels. SC-SM-Z Series outputs power continuously, whether the photovoltaic power exists or not.

### Features

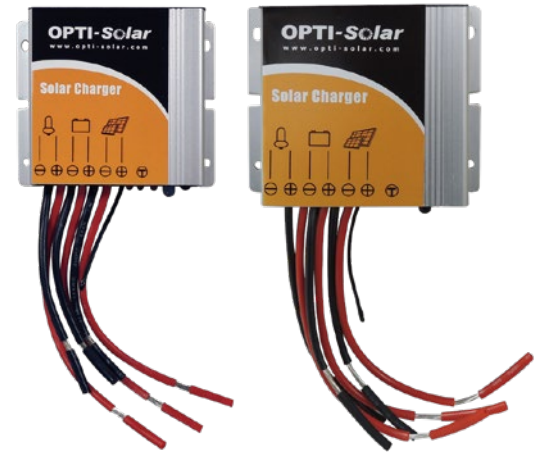
- 12V/24V automatic recognition
- Automatic temperature compensation
- Three-stage charge method
- Electronic protections
- IP68 enclosure



### Specifications

| Model                             | SC-10SM/SM-Z                      | SC-20SM/SM-Z      |
|-----------------------------------|-----------------------------------|-------------------|
| Nominal voltage                   | 12 V / 24 V automatic recognition |                   |
| Max solar current or load current | 10A                               | 20A               |
| Boost voltage                     | 14.5 / 29 V (25°C)                |                   |
| Equalization voltage              | 14.8 / 29.6 V (25°C)              |                   |
| Float voltage                     | 13.7 / 27.4 V (25°C)              |                   |
| Battery type                      | Flooded, Sealed                   |                   |
| Max solar voltage                 | 55V                               |                   |
| Max battery voltage               | 40V                               |                   |
| Cable length                      | 120mm / 80mm                      |                   |
| Over voltage protection           | 15.5 V / 31.0 V                   |                   |
| Dimensions                        | 85 × 70 × 20 mm                   | 85 × 85 × 20mm    |
| Weight                            | 200g                              | 210g              |
| Wire cross-section                | 2.5 mm <sup>2</sup>               | 4 mm <sup>2</sup> |
| Typical power consumption         | Lower than 13mA / 15mA            |                   |
| Working temperature               | -40°C ~ 60°C                      |                   |
| Case protection                   | IP68                              |                   |
| Max altitude                      | 4000 m                            |                   |

Specifications are subject to change without notice.



SC-20 ~ 6048MAX

### Features

- LCD display for status and settings
- 12V/24V automatic recognition
- Two USB interfaces (SC-20/30/40MAX)
- Multiple battery choices
- Four-stage charge method
- Electronic protections
- RS-485 standard Modbus protocol with RJ11 interface (SC-60MAX)

### Specifications

| Model                     | SC-20MAX   | SC-30MAX | SC-40MAX | SC-60MAX              | SC-6048MAX            |
|---------------------------|--|----------|----------|-----------------------|-----------------------|
| Nominal Voltage           | 12V / 24V automatic recognition  |          |          |                       | 12V/24V/36V/48V       |
| Max Solar Charger Current | 20A  | 30A      | 40A      | 60A                   | 60A                   |
| Max Output Load Current   | 20A  | 30A      | 40A      | 30A                   | 30A                   |
| USB Interface             | 5V, 2A   |          |          | Nona                  |                       |
| Temperature Compensation  | -4.17mV/K per cell (Boost and Equalization charge);<br>-3.33mV/K per cell (Float charge) |          |          |                       |                       |
| Max Solar Voltage         | 55V  |          |          |                       | 100V                  |
| Max Battery Voltage       | 35V  |          |          |                       | 65V                   |
| Dimensions                | 189 × 96 × 53 mm   |          |          | 187.5 × 138 × 62.5 mm | 187.5 × 138 × 88.5 mm |
| Weight                    | 420g   |          |          | 720g                  | 1.1kg                 |
| Max. Wire Size            | 8 AWG  |          |          | 6 AWG                 |                       |
| Typical Power Consumption | 5 mA   |          |          | 10 mA                 |                       |
| Working Temperature       | -20°C ~ 50°C   |          |          |                       |                       |
| Storage Temperature       | -25°C ~ 80°C   |          |          |                       |                       |
| Ambient Humidity          | 0 ~ 100%RH   |          |          |                       |                       |
| Case Protection           | IP32   |          |          |                       |                       |

Specifications are subject to change without notice.

