

# 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



## OPTI-Solar Smart Energy Solution Overview

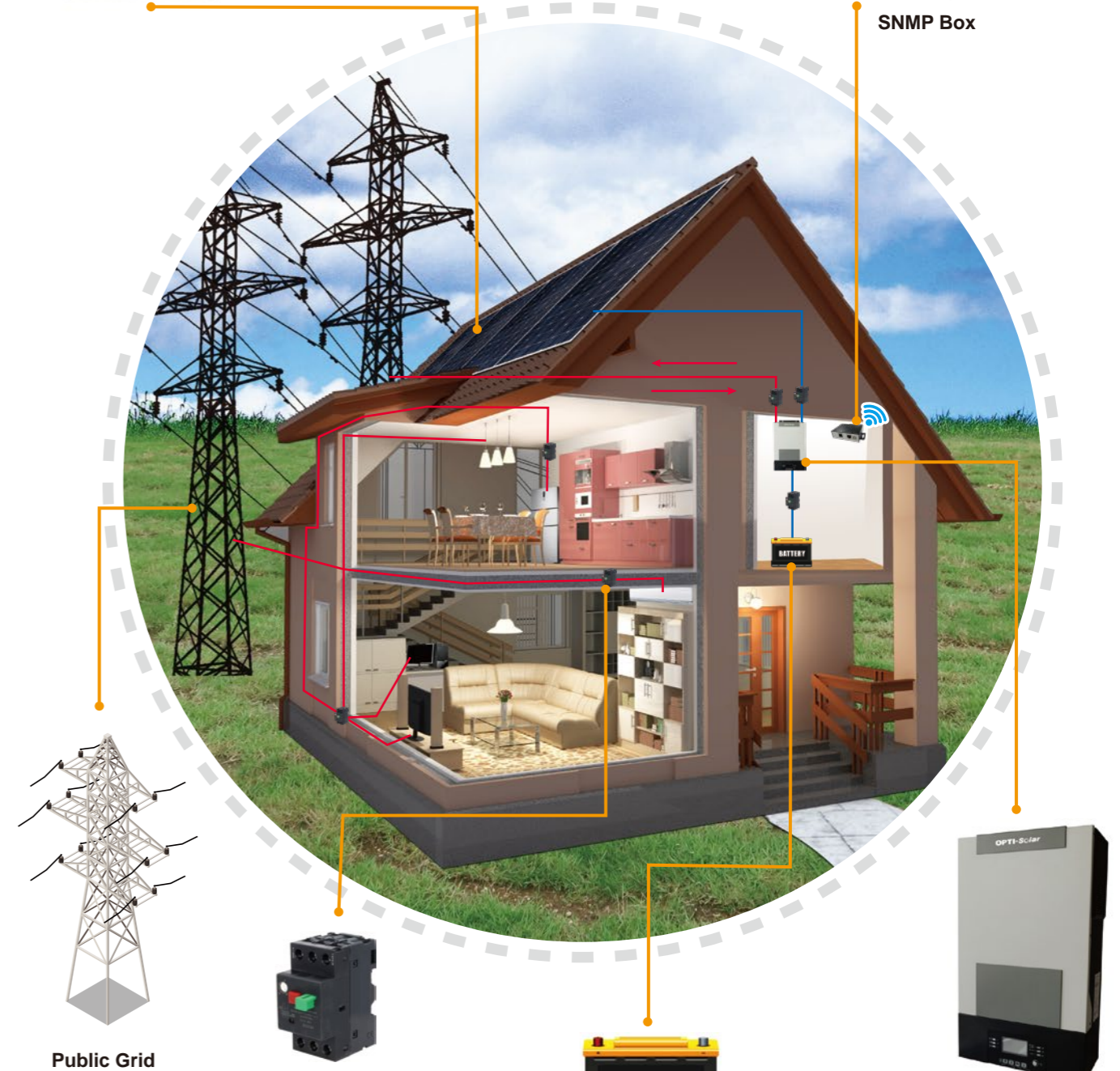


### Solar Panel

- Standard anodized black and silver aluminum frame
- Modules with 60 solar cells connection in series
- Strict Power measurement minimizes the power tolerance to +0- 4.99W



SNMP Box



Public Grid

### Circuit Breaker

- For PV
- For AC input / AC output
- For inductive loads (E.g. Air-conditioning, Refrigerator)
- For Battery



### Battery

- Energy storage

### SP6000 Regal Ultra (page 27)

- Design with Zero (0ms) transfer time perfect for Server & ATM
- Optional parallel Operation of up to 9pcs

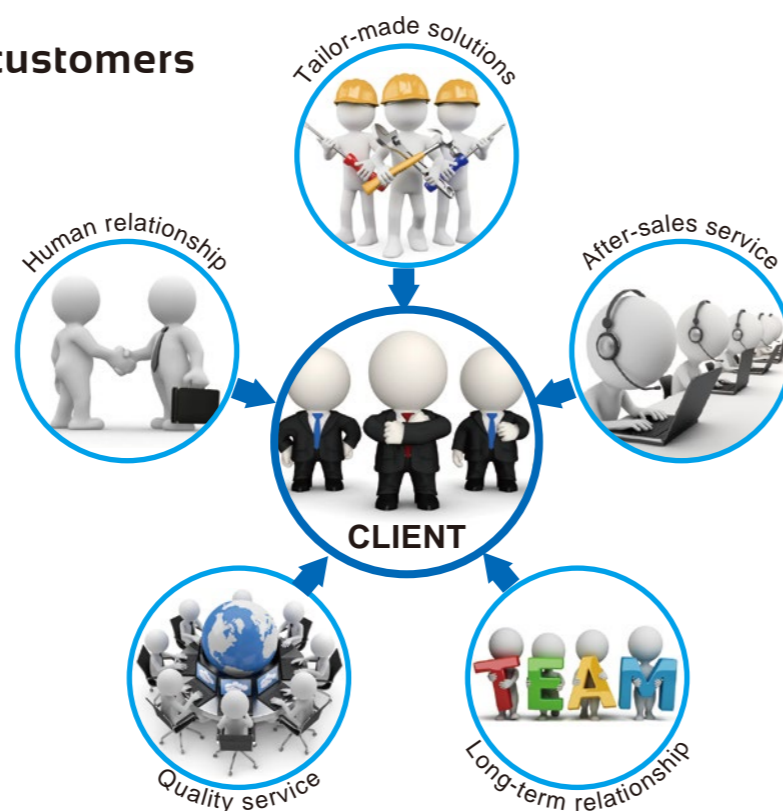
## Key values for our partners & customers

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.





### Lighting/Monitoring System

500W-1000W

SP Initial-M (page 6) / SP Handy (page 8)



### Residential System

2000W-3000W

SP Initial-M (page 6) / SP Handy (page 8)



### Small Scale PV Generation

500W-1000W

SP1000-2000 Initial-M (page 6)



### Small-Medium Scale PV Generation

2000W-3000W

SP3000-5000 Initial-M (page 6) /  
SP1200-5000 Handy (page 8)



### Harsh Environment

5000W-8000W

SP IP Plus (page 18)



### Community

5000W-20000W

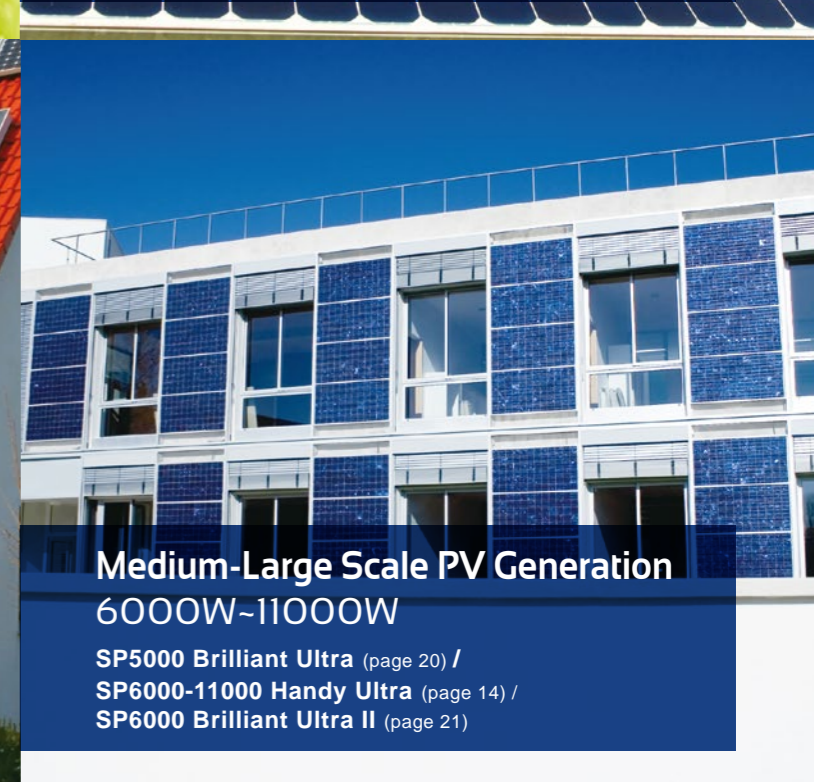
SP Handy Ultra (page 14) / SP Premium (page 22)



### Medium Scale PV Generation

4000W-5000W

SP4000-6000 Handy Plus (page 10)



### Medium-Large Scale PV Generation

6000W-11000W

SP5000 Brilliant Ultra (page 20) /  
SP6000-11000 Handy Ultra (page 14) /  
SP6000 Brilliant Ultra II (page 21)



### Wireless Transmission

Wi-Fi

SP Handy Plus (page 10) / SP Handy Ultra (page 14) /  
SP Regal Ultra (page 27)



### Industry

SP Premium Plus (page 24)



### Large Scale PV Generation

10000W~

SP10-15K Premium (page 22) / SP30K Premium Plus (page 24)



# 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!



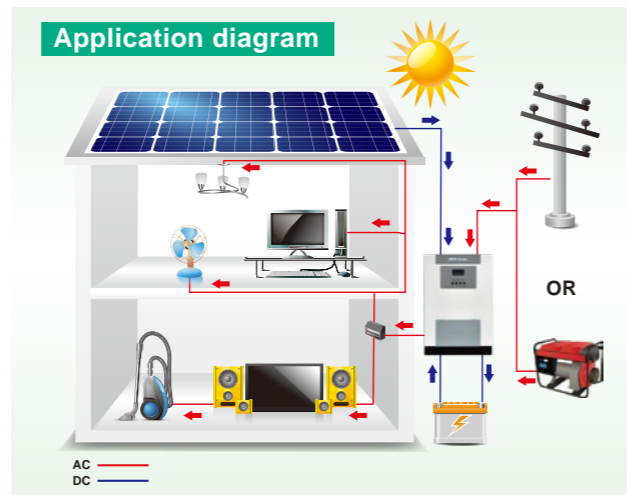
## Features

- 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

## 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
<b>INPUT</b>					
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)				
<b>OUTPUT</b>					
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				
<b>BATTERY</b>					
Battery Voltage	12 VDC		24 VDC		48 VDC
Floating Charge Voltage	13.5 VDC		27 VDC		54 VDC
Overcharge Protection	16 VDC		32 VDC		63 VDC
<b>SOLAR CHARGER &amp; AC CHARGER</b>					
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	
<b>PHYSICAL</b>					
Dimension (DxWxH)	88x225x315 mm		100x285x334 mm	100x300x440 mm	
Net Weight	4.4kgs	5kgs	6.3kgs	9.5kgs	9.7kgs
<b>OPERATING ENVIRONMENT</b>					
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 Power One Series



Zero(0ms)  
Transfer Time



Parallel Operation



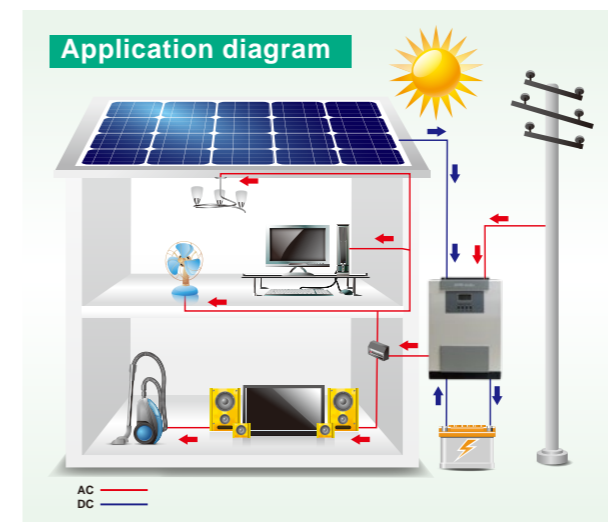
## Features

- 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	SP1000 Power One	SP2000 Power One	SP3000 Power One
Rated Power	1000VA/1000W	2000VA/2000W	3000VA/3000W
<b>INPUT</b>			
Voltage	110/120VAC		
Selectable Voltage Range	90-140 VAC (For Personal Computers) 60-140 VAC (For Home Appliances)		
Frequency Range	50 Hz/60 Hz (Auto sensing)		
<b>OUTPUT</b>			
AC Voltage Regulation (Batt. Mode)	110/120VAC ± 3%		
Surge Power	2000VA	4000VA	6000VA
Peak Efficiency	90%		
Transfer Time	Line mode↔Battery mode: 0ms Inverter↔Bypass: 4ms		
Waveform	Pure sine wave		
<b>BATTERY</b>			
Battery Voltage	12 VDC	24 VDC	48VDC
Floating Charge Voltage	13.5 VDC	27 VDC	54VDC
Overcharge Protection	16 VDC	32 VDC	60VDC
<b>SOLAR CHARGER &amp; AC CHARGER</b>			
Maximum PV Array Power	1000W	2000W	4000W
Maximum PV Array Open Circuit Voltage	145Vdc		
PV Array MPPT Voltage Range	15~115Vdc	30~115Vdc	60~115Vdc
Maximum Solar Charging Current	80A		
Maximum AC Charging Current	60A		
Maximum Charging Current	140A		
<b>PHYSICAL</b>			
Dimension (DxWxH)	120x295x468mm		
Net Weight	10.5kg	11kg	11.5kg
<b>OPERATING ENVIRONMENT</b>			
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.



BMS



Wi-Fi

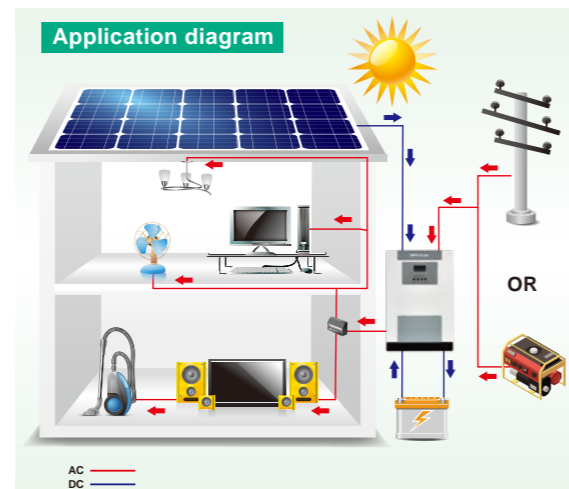
## Features

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

Specifications are subject to change without notice.



SP3500 ~ 5500 Handy

# SP Handy Series

Dual AC outlet design that improves power distribution.



Dual Output



Touchable Button



BMS



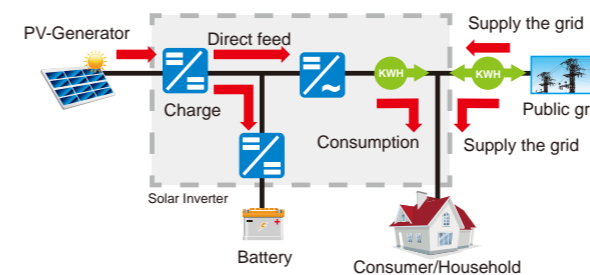
Wi-Fi

## Features

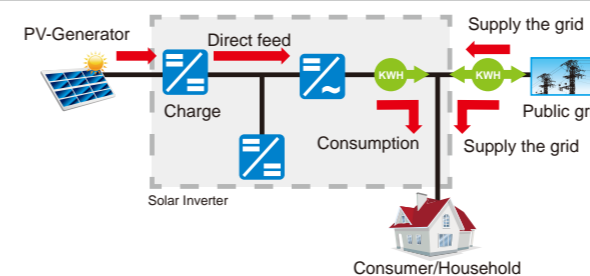
- High PV input range
- Feasible for without-battery operation
- Pure sine wave inverter
- Selectable high power charging current
- Compatible with mains or generator power
- Smart battery charger design for battery performance optimization
- Built-in MPPT solar charge controller
- Overload and short circuit protection
- Cold start function
- Dual AC output design

## Operation Diagram:

### Operation with battery



### Operation without battery



## Specifications

MODEL	SP3500 Handy	SP5500 Handy
<b>Rated Power</b>	3500VA/3500W	5500VA/5500W
<b>INPUT</b>		
<b>Voltage</b>	230 VAC	
<b>Selectable Voltage Range</b>	170-280 VAC (For Personal Computers) 90-280 VAC (For Home Appliances)	
<b>Frequency Range</b>	50 Hz/60 Hz (Auto sensing)	
<b>OUTPUT</b>		
<b>AC Voltage Regulation (Batt. Mode)</b>	230VAC ± 5%	
<b>Surge Power</b>	7000VA	11000VA
<b>Peak Efficiency</b>	93%	
<b>Transfer Time</b>	10 ms (For Personal Computers) 20 ms (For Home Appliances)	
<b>Waveform</b>	Pure sine wave	
<b>BATTERY</b>		
<b>Battery Voltage</b>	24 VDC	48 VDC
<b>Floating Charge Voltage</b>	27 VDC	54 VDC
<b>Overcharge Protection</b>	32 VDC	63 VDC
<b>SOLAR CHARGER &amp; AC CHARGER</b>		
<b>Maximum PV Array Power</b>	5000W	6000W
<b>Maximum PV Array Open Circuit Voltage</b>	500Vdc	
<b>Maximum PV Array Current</b>	30A	
<b>PV Array MPPT Voltage Range</b>	60~450Vdc	
<b>Maximum Solar Charging Current</b>	100A	
<b>Maximum AC Charging Current</b>	100A	
<b>Maximum Charging Current</b>	100A	
<b>Maximum PV Input Current</b>	27A	
<b>Maximum PV Input Short Circuit Current</b>	30A	
<b>PHYSICAL</b>		
<b>Dimension (DxWxH)</b>	107 x 323 x 420mm	
<b>Net Weight</b>	9.5kg	10.5kg
<b>OPERATING ENVIRONMENT</b>		
<b>Humidity</b>	5% to 95% Relative Humidity (Non-condensing)	
<b>Operating Temperature</b>	-10°C ~ 55°C	
<b>Storage Temperature</b>	-15°C ~ 60°C	

Specifications are subject to change without notice.

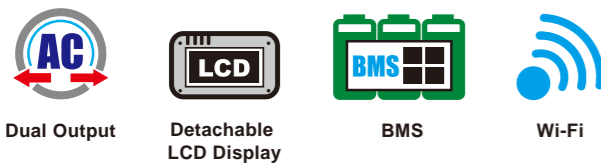




SP4000 ~ 6000 Handy Plus

# 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.

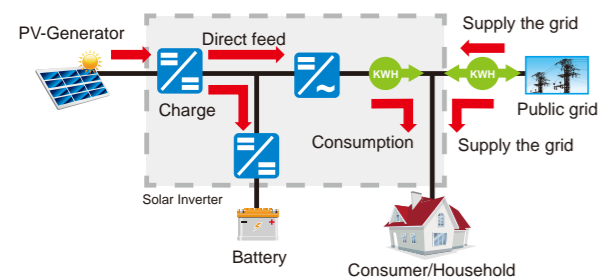


### Features

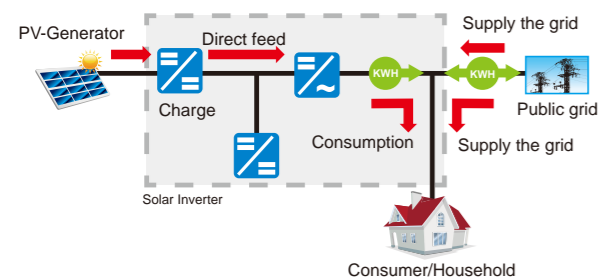
- High PV input range
- Pure sine wave inverter
- Selectable high power charging current
- Compatible with mains or generator power
- Built-in solar charge controller
- Overload and short circuit protection
- Smart battery charger design for battery performance optimization
- Cold start function
- Wi-Fi 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
<b>INPUT</b>		
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)	
<b>OUTPUT</b>		
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	
<b>BATTERY</b>		
Battery Voltage	24 VDC	48 VDC
Floating Charge Voltage	27 VDC	54 VDC
Overcharge Protection	33 VDC	63 VDC
<b>SOLAR CHARGER &amp; AC CHARGER</b>		
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	
<b>PHYSICAL</b>		
Dimension (D x W x H)	115 x 300 x 400mm	
Net Weight	9kg	10kg
Communication Port	RS232/USB/Dry-contact/BMS/Wi-Fi	
<b>OPERATING ENVIRONMENT</b>		
Humidity	5% to 95% Relative Humidity (Non-condensing)	
Operating Temperature	-10°C ~ 55°C	

Specifications are subject to change without notice.



SP6000 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.

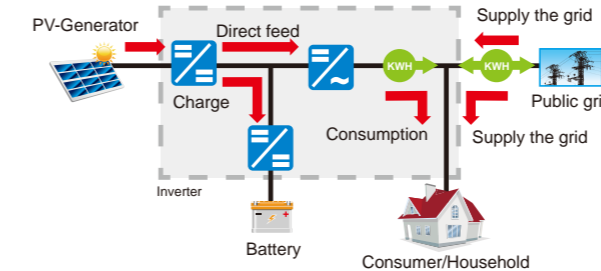


### Features

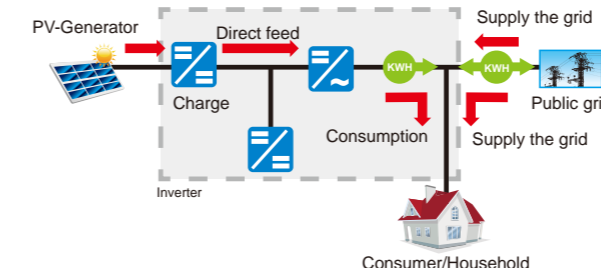
- High PV input range
- Feasible for without-battery operation
- Pure sine wave inverter
- Selectable high power charging current up to 120A
- Compatible with mains or generator power
- Smart battery charger design for battery performance optimization
- Built-in MPPT solar charge controller
- LED ring 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	SP6000 Handy Plus II
Rated Power	6000VA/6000W
<b>INPUT</b>	
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)
<b>OUTPUT</b>	
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
<b>BATTERY</b>	
Battery Voltage	48 VDC
Floating Charge Voltage	54 VDC
Overcharge Protection	63 VDC
<b>SOLAR CHARGER &amp; AC CHARGER</b>	
Maximum PV Array Power	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	120~450Vdc
Maximum Solar Charging Current	120A
Maximum AC Charging Current	100A
Maximum Charging Current	120A
<b>PHYSICAL</b>	
Dimension (DxWxH)	119 x 314 x 458mm
Net Weight	12kg
Communication Port	RS232/USB/Dry-contact/Wi-Fi
<b>OPERATING ENVIRONMENT</b>	
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.

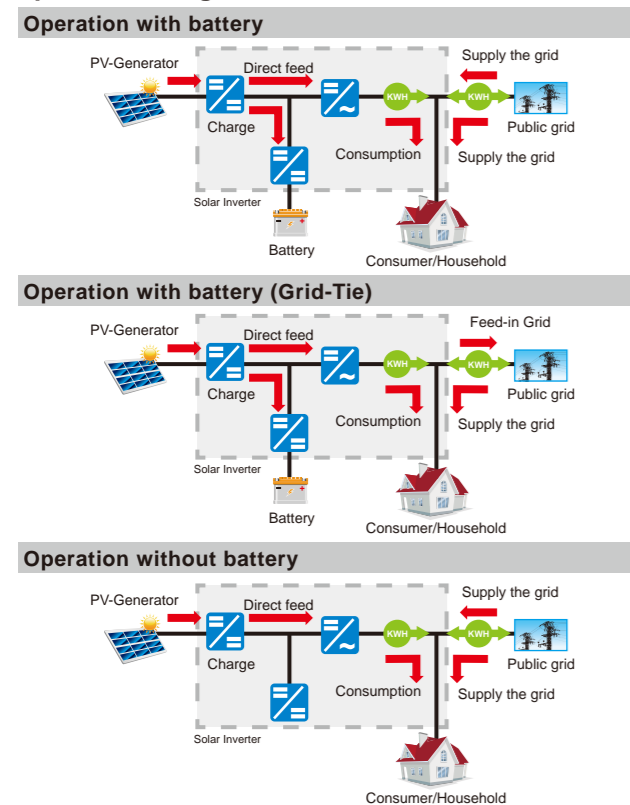
Increase photovoltaic capacity up to 7KW to benefit the users.



### 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:



### Specifications

MODEL	SP6000 Handy Grid
Rated Power	6000VA/6000W
<b>INPUT</b>	
Nominal Voltage	220/230/240 VAC
Selectable Voltage Range	170-280 VAC (For Personal Computers) 90-280 VAC (For Home Appliances)
Frequency Range	50 Hz/ 60 Hz (Auto sensing)
Maximum AC Input Current	40A
<b>AC OUTPUT</b>	
AC Voltage Regulation (Batt. Mode)	230VAC ± 5%
Surge Power	12000VA
Transfer Time	10 ms (For Personal Computers) 20 ms (For Home Appliances)
Waveform	Pure sine wave
<b>GRID OUTPUT</b>	
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
<b>EFFICIENCY</b>	
DC to AC	95%
Battery to AC	93%
<b>BATTERY</b>	
Battery Voltage	48 VDC
Floating Charge Voltage	54 VDC
Overcharge Protection	66 VDC
<b>SOLAR CHARGER &amp; AC CHARGER</b>	
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
<b>PHYSICAL</b>	
Dimension (DxWxH)	142x297x455 mm
Net Weight	12kgs
Communication Port	RS232/USB/Dry-contact/Wi-Fi
<b>OPERATING ENVIRONMENT</b>	
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.

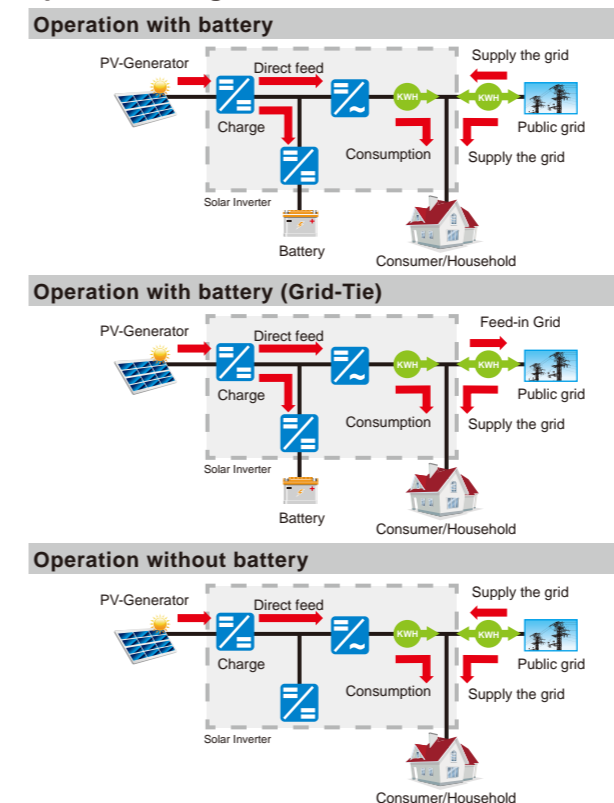
SP6000 Handy Grid II with Grid-Tie design is suitable for any type of application.



### 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:



### Specifications

MODEL	SP6000 Handy Grid II	
Rated Power	6000VA/6000W	
<b>AC INPUT</b>		
Nominal Voltage	L-L	220 VAC
	L-N	110 VAC
Acceptable Voltage Range	L-L	130-280 VAC
	L-N	65-140 VAC
Maximum Input Current	40A per phase	
Frequency Range	50 Hz/ 60 Hz (Auto sensing)	
<b>AC OUTPUT</b>		
AC Voltage Regulation (Batt. Mode)	L-L	220VAC ± 5%
	L-N	110VAC ± 5%
Surge Power	10000VA	
Peak Efficiency	88%	
Transfer Time	10 ms (For Personal Computers)	
	20 ms (For Home Appliances)	
Waveform	Pure sine wave	
<b>GRID OUTPUT (Grid-Tie)</b>		
Acceptable Voltage Range	L-L	183-264VAC
	L-N	91.5-132VAC
Nominal Current	27.3A per phase	
Power Factor	> 0.99	
Max. Conversion Efficiency (DC/AC)	95%	
<b>BATTERY</b>		
Battery Voltage	48 VDC	
Floating Charge Voltage	54 VDC	
Overcharge Protection	66 VDC	
<b>SOLAR CHARGER &amp; AC CHARGER</b>		
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	
<b>PHYSICAL</b>		
Dimension (DxWxH)	138.4x365x593.6mm	
Net Weight	26kgs	
Communication Port	RS232/USB/Dry-contact/Wi-Fi	
<b>OPERATING ENVIRONMENT</b>		
Humidity	5% to 95% Relative Humidity (Non-condensing)	
Operating Temperature	-10°C ~ 50°C	

Specifications are subject to change without notice.

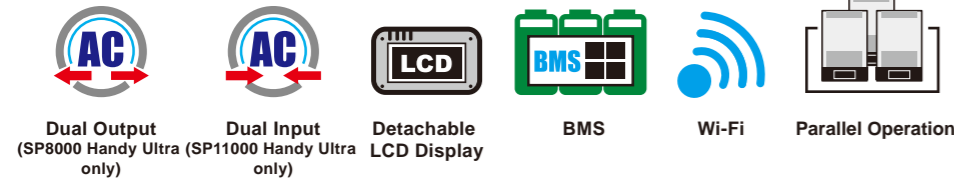




SP6000 ~ 11000 Handy Ultra

# SP Handy Ultra Series

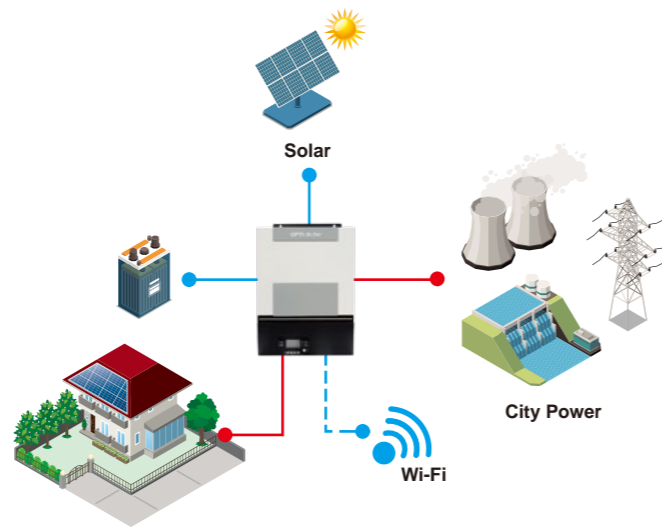
Dual output design with high output capacity.  
Perfect for inductive loads.



## Features

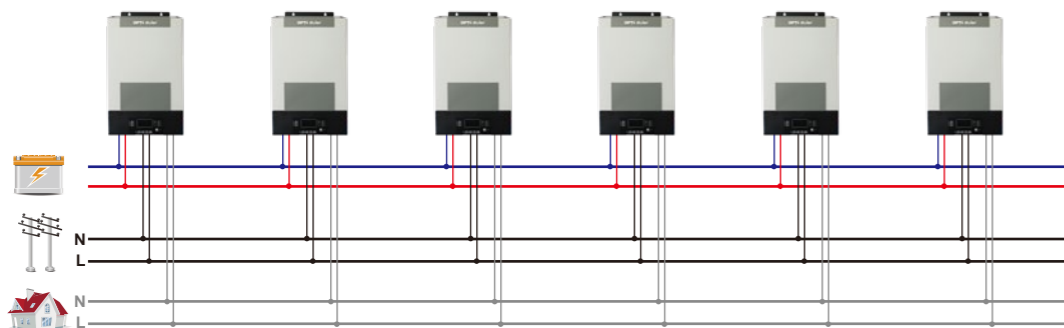
- High PV input range
- Feasible for without-battery operation
- Built-in anti-dust kit
- Selectable high power charging current
- Compatible with mains or generator power
- Replaceable fan design for easy maintenance
- Overload and short circuit protection
- Smart battery charger design for battery 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.



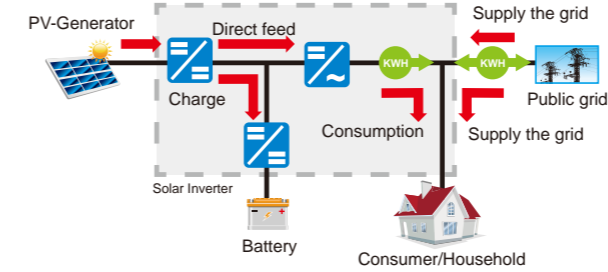
## Parallel Operation

Maximum 6 units in parallel

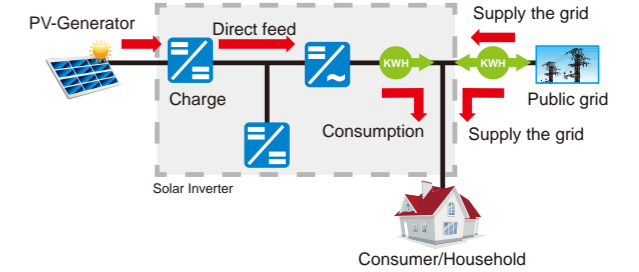


## Operation Diagram:

### 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
<b>INPUT</b>			
Voltage	120 VAC	230 VAC	
Selectable Voltage Range	90-140 VAC (For Personal Computers) 80-140 VAC (For Home Appliances)	170-280 VAC (For Personal Computers) 90-280 VAC (For Home Appliances)	
Frequency Range	50 Hz/ 60 Hz (Auto sensing)		
<b>OUTPUT</b>			
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)
Waveform	Pure sine wave		
<b>BATTERY</b>			
Battery Voltage	48 VDC		
Floating Charge Voltage	54 VDC		
Overcharge Protection	66 VDC		
<b>SOLAR CHARGER &amp; AC CHARGER</b>			
Maximum PV Array Power	8000W (4000W MPPTx2)		11000W (5500W MPPTx2)
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		
<b>PHYSICAL</b>			
Dimension (DxWxH)	147.5x 432.5x553.5mm		
Net Weight	18.4kgs		
Communication Port	RS232/USB/Dry-contact/Wi-Fi		
<b>OPERATING ENVIRONMENT</b>			
Humidity	5% to 95% Relative Humidity(Non-condensing)		
Operating Temperature	-10°C ~ 55°C		
Storage Temperature	-15°C ~ 60°C		

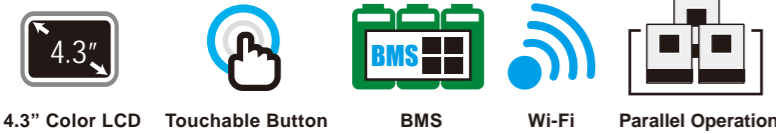
Specifications are subject to change without notice.



SP8000 ~ 11000 Handy Ultra II

# SP Handy Ultra II Series

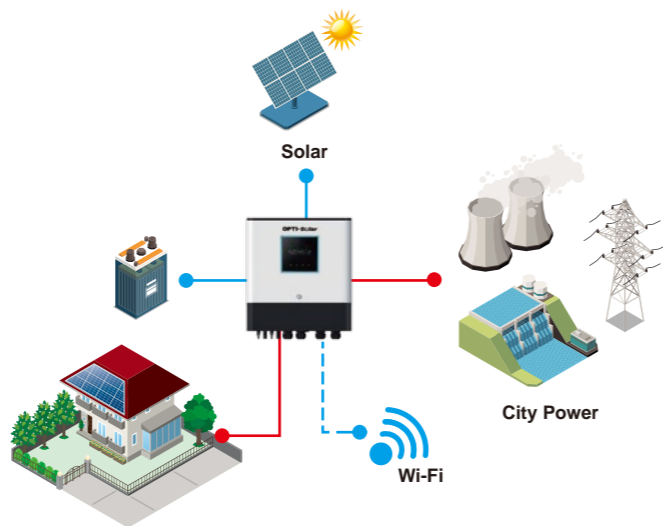
Friendly design with the wide touchable LCD screen.



## Features

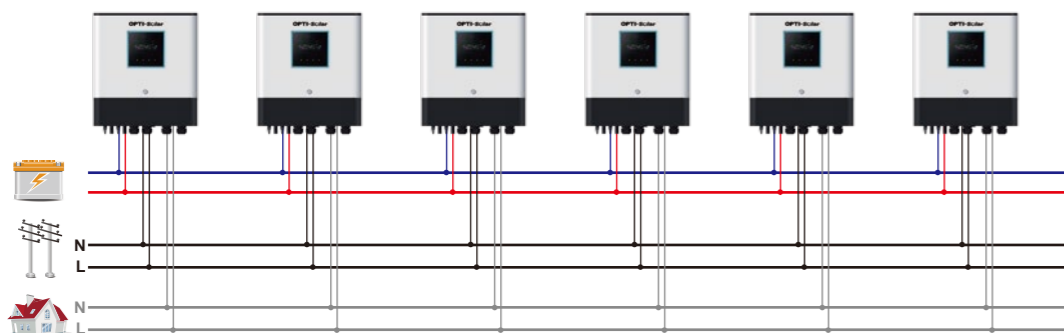
- High PV input range
- Feasible for without-battery operation
- Built-in anti-dust kit
- Selectable high power charging current
- Maximum PV input current 27A
- Overload and short circuit protection
- Smart battery charger design for optimized battery performance
- Cold start function
- Wi-Fi function
- 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.



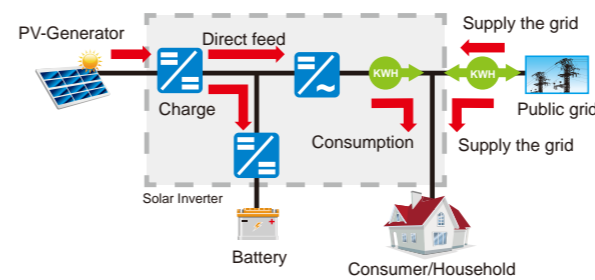
## Parallel Operation

Maximum 6 units in parallel

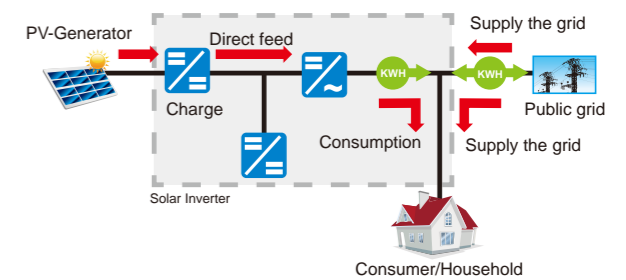


## Operation Diagram:

### Operation with battery



### Operation without battery



## Specifications

MODEL	SP8000 Handy Ultra II	SP11000 Handy Ultra II
<b>Rated Power</b>	8000VA/8000W	11000VA/11000W
<b>INPUT</b>		
<b>Voltage</b>	230 VAC	
<b>Selectable Voltage Range</b>	170-280 VAC (For Personal Computers) 90-280 VAC (For Home Appliances)	
<b>Frequency Range</b>	50 Hz/ 60 Hz (Auto sensing)	
<b>OUTPUT</b>		
<b>AC Voltage Regulation (Batt. Mode)</b>	230VAC ± 5%	
<b>Surge Power</b>	16000VA	22000VA
<b>Peak Efficiency</b>	93%	
<b>Transfer Time</b>	15 ms (For Personal Computers)	10 ms (For Personal Computers)
	20 ms (For Home Appliances)	
<b>Waveform</b>	Pure sine wave	
<b>BATTERY</b>		
<b>Battery Voltage</b>	48 VDC	
<b>Floating Charge Voltage</b>	54 VDC	
<b>Overcharge Protection</b>	66 VDC	
<b>SOLAR CHARGER &amp; AC CHARGER</b>		
<b>Maximum PV Array Power</b>	8000W (4000W MPPTx2)	11000W (5500W MPPTx2)
<b>Maximum PV Array Open Circuit Voltage</b>	500Vdc	
<b>PV Array MPPT Voltage Range</b>	90~430Vdc	90~450Vdc
<b>Maximum Solar Charging Current</b>	120A	150A
<b>Maximum AC Charging Current</b>	120A	150A
<b>Maximum Charging Current</b>	120A	150A
<b>Maximum PV Input Current</b>	27A	
<b>Maximum PV Input Short Circuit Current</b>	30A	
<b>PHYSICAL</b>		
<b>Dimension (DxWxH)</b>	147.5 x 432.5 x 553.5 mm	
<b>Net Weight</b>	18.4kgs	
<b>Communication Port</b>	RS232/USB/Dry-contact/Wi-Fi	
<b>OPERATING ENVIRONMENT</b>		
<b>Humidity</b>	5% to 95% Relative Humidity(Non-condensing)	
<b>Operating Temperature</b>	-10°C ~ 55°C	
<b>Storage Temperature</b>	-15°C ~ 60°C	

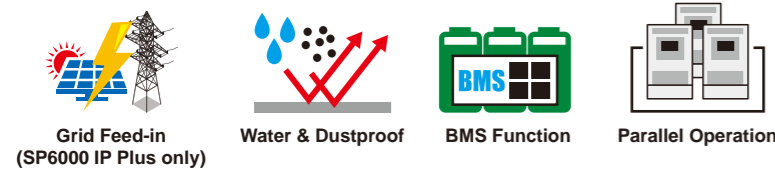
Specifications are subject to change without notice.



SP6000 ~ 8000 IP Plus

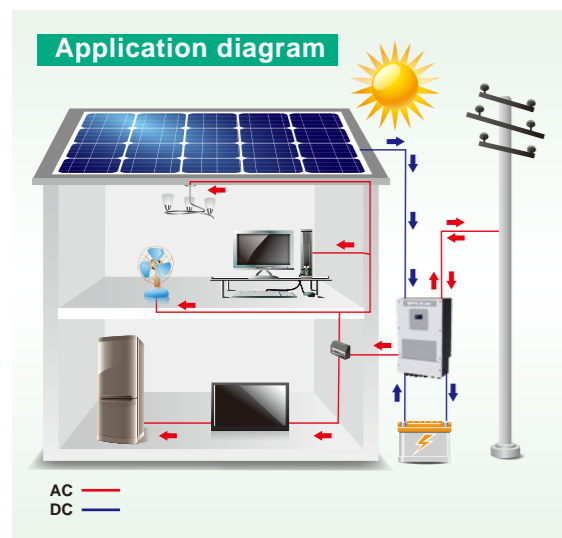
# SP IP Plus Series

## Outdoor Hybrid Solar Inverter



### Features

- High PV input voltage range
- Feasible for without-battery operation
- Grid feed-in Function (only for SP5000 IP Plus)
- 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	SP6000 IP Plus	SP8000 IP Plus
<b>Rated Power</b>	6000VA/6000W	8000VA/8000W
<b>INPUT</b>		
<b>Voltage</b>	230 VAC	
<b>Selectable Voltage Range</b>	170-280 VAC (For Personal Computers) 90-280 VAC (For Home Appliances)	
<b>Frequency Range</b>	50 Hz/ 60 Hz (Auto sensing)	
<b>OUTPUT</b>		
<b>AC Voltage Regulation (Batt. Mode)</b>	230VAC ± 5%	
<b>Surge Power</b>	12000VA	16000VA
<b>Peak Efficiency</b>	Battery - DC to AC	93%
	Grid Tie - DC to AC	96%
<b>Transfer Time</b>	10 ms (For Personal Computers)	
	20 ms (For Home Appliances)	
<b>Waveform</b>	Pure sine wave	
<b>BATTERY</b>		
<b>Battery Voltage</b>	48 VDC	
<b>Floating Charge Voltage</b>	54 VDC	
<b>Overcharge Protection</b>	63 VDC	66 VDC
<b>SOLAR CHARGER &amp; AC CHARGER</b>		
<b>Maximum PV Array Power</b>	6500W	8000W
<b>Maximum PV Array Open Circuit Voltage</b>	550Vdc	500Vdc
<b>PV Array MPPT Voltage Range</b>	120~450Vdc	90~450Vdc
<b>Maximum Solar Input Current</b>	27A	18Ax2
<b>Maximum Solar Charging Current</b>	120A	150A
<b>Maximum AC Charging Current</b>	120A	120A
<b>Maximum Charging Current</b>	120A	150A
<b>Maximum PV Input Current</b>	27A	
<b>Maximum PV Input Short Circuit Current</b>	30A	
<b>PHYSICAL</b>		
<b>Dimension (D x W x H)</b>	200x360x665 mm	200x360x665 mm
<b>Net Weight</b>	22.5kgs	32kgs
<b>Communication Port</b>	RS232/USB/Dry-contact/BMS	
<b>OPERATING ENVIRONMENT</b>		
<b>Humidity</b>	5% to 95% Relative Humidity (Non-condensing)	
<b>Operating Temperature</b>	-25°C ~ 50°C	-10°C ~ 50°C
<b>Storage Temperature</b>	-25°C ~ 60°C	-15°C ~ 60°C

Specifications are subject to change without notice.

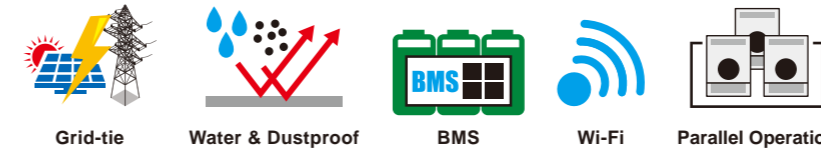


SP6000 ~ 10000 IP Grid

# SP IP Grid Series

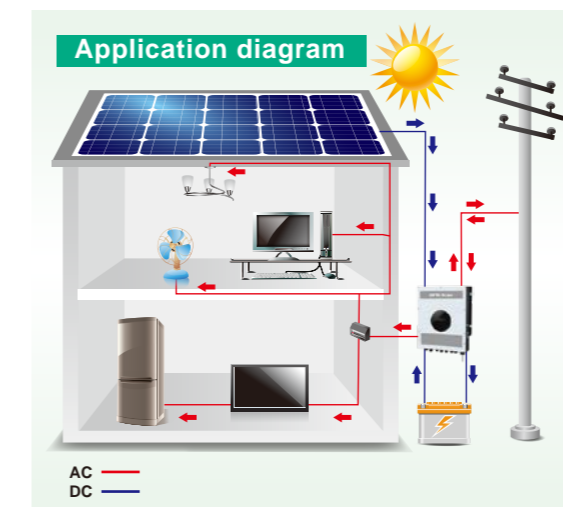
## IP65 waterproof and dustproof design.

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
<b>RATED POWER</b>	6000 W	10000 W
<b>PV INPUT (DC)</b>		
<b>Maximum DC Power</b>	7500 W	12000 W
<b>Nominal DC Voltage</b>	360 VDC	
<b>Maximum DC Voltage</b>	600 VDC	
<b>Start-up Voltage / Initial Feeding Voltage</b>	125 VDC / 160 VDC	
<b>MPP Voltage Range</b>	120 VDC ~ 550 VDC	
<b>Maximum Input Current</b>	2x15 A	2x18 A
<b>Isc PV (absolute maximum)</b>	21 A	21 A
<b>Max. inverter back feed current to the array</b>	0 A	0 A
<b>GRID OUTPUT (AC)</b>		
<b>Nominal Output Voltage</b>	110 VAC (P-N) / 220 VAC (P-P)	
<b>Output Voltage Range</b>	105.5 - 132 VAC per phase	97 - 132 VAC per phase
<b>Output Frequency Range</b>	47.5 ~ 51.5 Hz or 59.3~ 60.5Hz	
<b>Nominal Output Current</b>	25 A per phase	41.5 A per phase
<b>Inrush Current/Duration</b>	30 A per phase / 20ms	60 A per phase / 20ms
<b>Maximum Output Fault Current/Duration</b>	90 A per phase / 1ms	120 A per phase / 1ms
<b>Maximum output Overcurrent Protection</b>	90A per phase	120A per phase
<b>Power Factor Range</b>	0.9 lead ~ 0.9 lag	
<b>AC INPUT</b>		
<b>AC Start-up Voltage</b>	85 VAC per phase (P-N) / 170 VAC per phase (P-P)	
<b>Auto Restart Voltage</b>	90 VAC per phase (P-N) / 180 VAC per phase (P-P)	
<b>Acceptable Input Voltage Range</b>	85 - 140 VAC per phase (P-N) / 170 - 280 VAC per phase (P-P)	
<b>Nominal Frequency</b>	50 Hz / 60 Hz	
<b>AC Input Power</b>	6000VA/6000W	10000VA/10000W
<b>Maximum AC Input Current</b>	30 A	40 A
<b>Inrush Input Current</b>	30 A / 1ms	40 A / 1ms
<b>BATTERY MODE OUTPUT (AC)</b>		
<b>Nominal Output Voltage</b>	110 VAC (P-N) / 220 VAC (P-P)	
<b>Output Frequency</b>	50 Hz / 60 Hz (auto sensing)	
<b>Output Waveform</b>	Pure sine wave	
<b>Output Power</b>	6000VA/6000W	10000VA/10000W
<b>EFFICIENCY</b>		
<b>DC to AC</b>	96%	
<b>Battery to AC</b>	91%	
<b>BATTERY &amp; CHARGER</b>		
<b>Nominal DC Voltage</b>	48 VDC	
<b>DC Voltage Range</b>	40 - 62 VDC	
<b>Maximum Battery Discharging Current</b>	150 A	150 A
<b>Maximum Solar Charging Current</b>	120 A	200 A
<b>Maximum Charging Current</b>	120 A	200 A
<b>Maximum PV Input Current</b>	27A	
<b>Maximum PV Input Short Circuit Current</b>	30A	
<b>PHYSICAL</b>		
<b>Dimension (D x W x H)</b>	215.5 x 515 x 700 mm	
<b>Net Weight</b>	41kg	45kg
<b>INTERACE</b>		
<b>Communication Port</b>	RS-232 / USB / BMS	
<b>Intelligent Slot</b>	Optional SNMP, Modbus cards available	
<b>ENVIRONMENT</b>		
<b>Protective Class</b>	I	
<b>Ingress Protection Rating</b>	IP65	
<b>Humidity</b>	0 ~ 90% RH (No condensing)	
<b>Operating Temperature</b>	-25 to 60°C	
<b>Altitude</b>	0 ~ 2000 m*	

Specifications are subject to change without notice.

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

# SP Brilliant Ultra Series

SP Brilliant series provides a friendly PV power integration with a PV maximum charging current that reaches up to 80A or 120A.

Enjoy more solar energy with a simple solution.

### Features

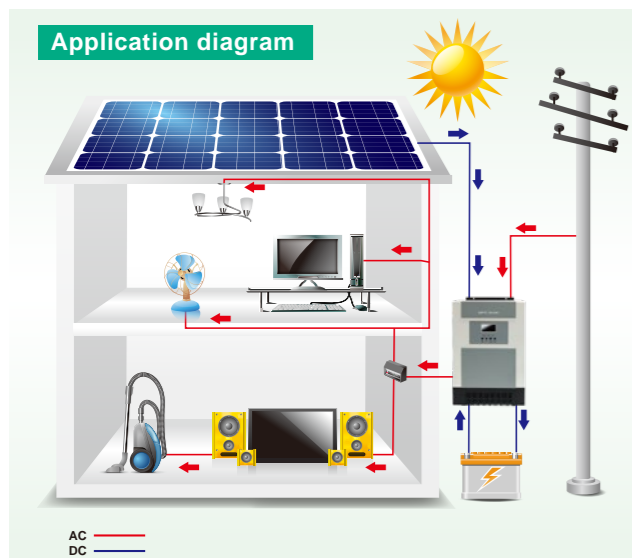
- Pure sine wave inverter
- Built-in solar charger: PWM/MPPT
- Selectable input voltage range for home appliances and personal computers
- Selectable charging current based on applications
- Configurable AC/Solar input priority
- Compatible with mains or generator power
- Auto-restart as AC recovers
- Overload and short circuit protection
- Smart battery charger design for battery performance optimization
- Cold start function
- Parallel application (optional)
- Operation without battery

### Specifications

MODEL	SP5000 Brilliant Ultra
Rated Power	6000VA/6000W
<b>INPUT</b>	
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)
<b>OUTPUT</b>	
AC Voltage Regulation (Batt. Mode)	230VAC ± 5%
Surge Power	10000VA
Peak Efficiency	90%
Transfer Time	10 ms (For Personal Computers) 20 ms (For Home Appliances)
Waveform	Pure sine wave
Overload Capacity	10s for 110%~150% load 5s for ≥150% load
<b>BATTERY</b>	
Battery Voltage	48 VDC
Floating Charge Voltage	54 VDC (maximum 58Vdc)
Low Battery Alarm Voltage	42 VDC
Shutdown Voltage	40 VDC
Overcharge Protection	60 VDC (maximum 66 VDC)
Reverse Polarity Protection	Yes
<b>SOLAR CHARGER &amp; AC CHARGER</b>	
PV Maximum Input power	6000W
Maximum PV Array Open Circuit Voltage	500Vdc
PV Array MPPT Voltage Range	120~430Vdc
Maximum Solar Charging Current	120A
Maximum AC Charging Current	120A
Maximum Charging Current	120A
<b>PHYSICAL</b>	
Dimension (DxWxH)	120x295x468mm
Net Weight	11kg
<b>OPERATING ENVIRONMENT</b>	
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.

\* SP5000 Brilliant Ultra can be installed in parallel with maximum up to 9 units, and total capacity can reach 45KVA (Transfer time is 30ms in parallel operation)



# SP Brilliant Ultra II Series

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

The Hybrid operation allows it smoothly transferred between Solar & Utility power source.

To effectively gain the solar in safety & friendly way.



4.3" Color LCD



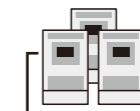
Touchable Button



BMS



Wi-Fi



Parallel Operation

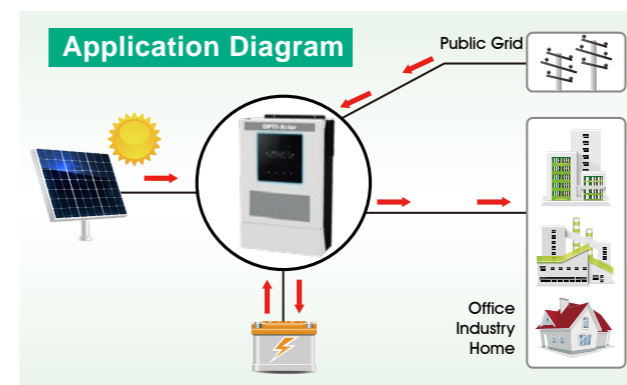
### Features

- Pure sine wave inverter
- Built-in MPPT solar charger
- Selectable input voltage range for home appliances and personal 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
<b>INPUT</b>	
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)
<b>OUTPUT</b>	
AC Voltage Regulation (Batt. Mode)	230VAC ± 5%
Surge Power	12000VA
Peak Efficiency	93%
Transfer Time	10 ms (For Personal Computers) 20 ms (For Home Appliances)
Waveform	Pure sine wave
Overload Capacity	10s for 110%~150% load 5s for ≥150% load
<b>BATTERY</b>	
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
<b>SOLAR CHARGER &amp; AC CHARGER</b>	
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
<b>PHYSICAL</b>	
Dimension (DxWxH)	120 x 295 x 468mm
Net Weight	12kgs
<b>OPERATING ENVIRONMENT</b>	
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.





SP5000 ~ 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.

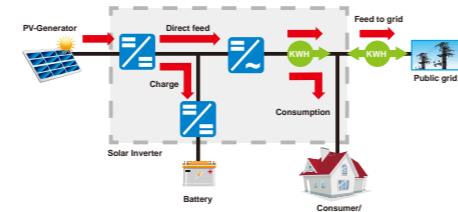
### Features

- 5/10/15KW 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)

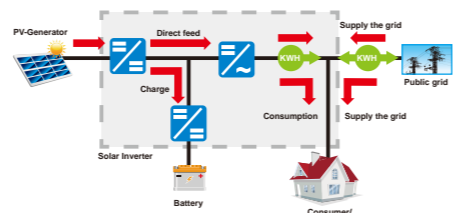


### Operation Diagram:

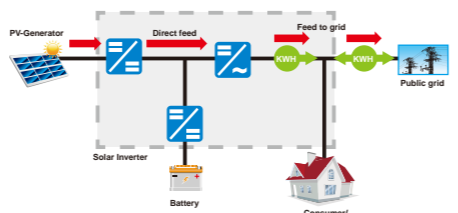
#### Enough PV Energy Input



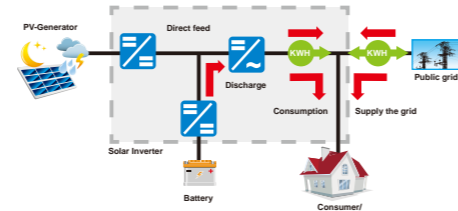
#### Household consumption is higher than supply from PV



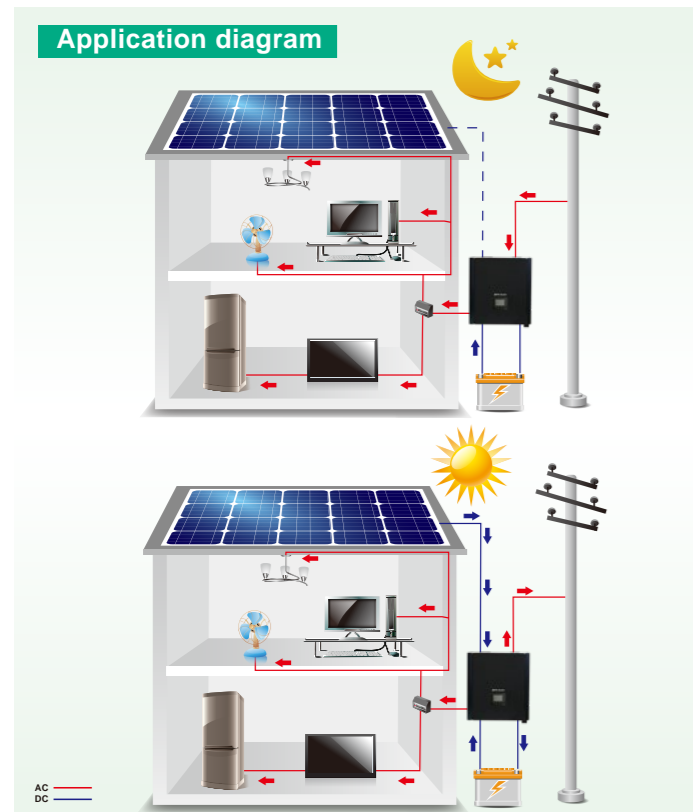
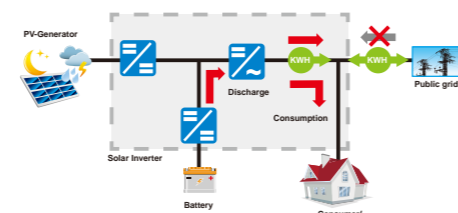
#### No consumption from household and the battery is fully charged



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

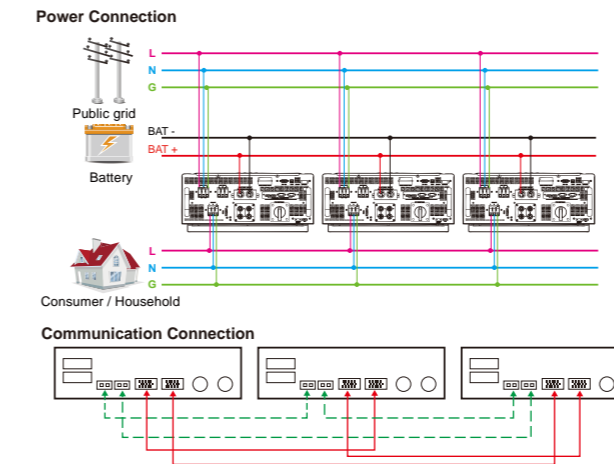


#### No PV energy, and the consumption from household is supplied by the battery

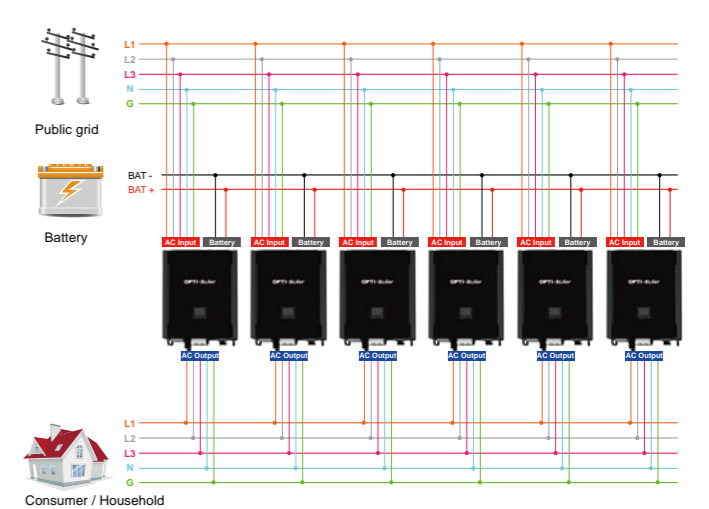


### Parallel Operation (Maximum up to 6pcs)

#### for 1-phase application (SP5000 Premium)



#### for 3-phase application (SP10000/15000 Premium)



### Specifications

MODEL	SP5000 Premium	SP10000 Premium	SP15000 Premium
<b>RATED POWER</b>	5000 W	10000 W	15000 W
<b>PV INPUT (DC)</b>			
Maximum DC Power	10000 W	14850 W	22500 W
Nominal DC Voltage	720 VDC	720 VDC	720 VDC
Maximum DC Voltage	900 VDC	900 VDC	900 VDC
Start-up Voltage / Initial Feeding Voltage	225 VDC / 250 VDC	320 VDC / 350 VDC	320 VDC / 350 VDC
MPP Voltage Range	250 VDC ~ 850 VDC	400 VDC ~ 800 VDC	400 VDC ~ 800 VDC
Maximum Input Current	2x10 A	2x18.6 A	PV1: 37.2A; PV2: 18.6A
Isc PV (absolute maximum)	25 A	25 A	50 A
Max. inverter back feed current to the array	0 A	0 A	0 A
<b>GRID OUTPUT (AC)</b>			
Nominal Output Voltage	230 VAC	230 VAC (P-N) / 400 VAC (P-P)	230 VAC (P-N) / 400 VAC (P-P)
Output Voltage Range	184 - 265 VAC	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	21 A	13A per phase	21.7A per phase
Inrush Current/Duration	21 A / 20ms	17A per phase / 20ms	28A per phase / 20ms
Maximum Output Fault Current/Duration	52 A / 1ms	51A per phase / 1ms	65A per phase / 1ms
Maximum output Overcurrent Protection	52A	51A per phase	65A per phase
Power Factor Range	0.9 lead – 0.9 lag		
<b>AC INPUT</b>			
AC Start-up Voltage	120-140 VAC	120-140 VAC per phase	120-140 VAC per phase
Auto Restart Voltage	180 VAC	180 VAC per phase	180 VAC per phase
Acceptable Input Voltage Range	170 - 280 VAC	170 - 280 VAC per phase	170 - 280 VAC per phase
Nominal Frequency	50 Hz / 60 Hz	50 Hz / 60 Hz	50 Hz / 60 Hz
AC Input Power	5000VA/5000W	10000VA/10000W	15000VA/15000W
Maximum AC Input Current	40 A	25 A	40 A
Inrush Input Current	40 A	25 A	40 A
<b>BATTERY MODE OUTPUT (AC)</b>			
Nominal Output Voltage	230 VAC	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	5000VA/5000W	10000VA/10000W	15000VA/15000W
Output Current	21A	13A per phase	21.7A per phase
Efficiency (DC to AC)	93%	91%	
<b>BATTERY &amp; CHARGER</b>			
Nominal DC Voltage	48 VDC		
Maximum Battery Discharging Current	150 A	250 A	375 A
Maximum Charging Current	100 A	200 A	300 A
<b>PHYSICAL</b>			
Dimension (DxWxH)	204.2 x 460 x 600 mm	622 x 500 x 167.2 mm	210 x 650 x 820 mm
Net Weight	29 kg	45 kg	62 kg
<b>INTERACE</b>			
Communication Port	RS-232/USB		
Intelligent Slot	Optional SNMP, Modbus and AS-400 cards available		
<b>ENVIRONMENT</b>			
Protective Class	I		
Ingress Protection Rating	IP20		
Humidity	0 ~ 90% RH (No condensing)		
Operating Temperature	-10 to 55°C		
Altitude	0 ~ 1000 m*		

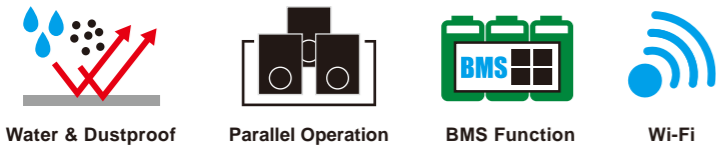
Product specifications are subject to change without further notice.  
\*Power derating 1% every 100 m when altitude is higher than 1000m.

# 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.

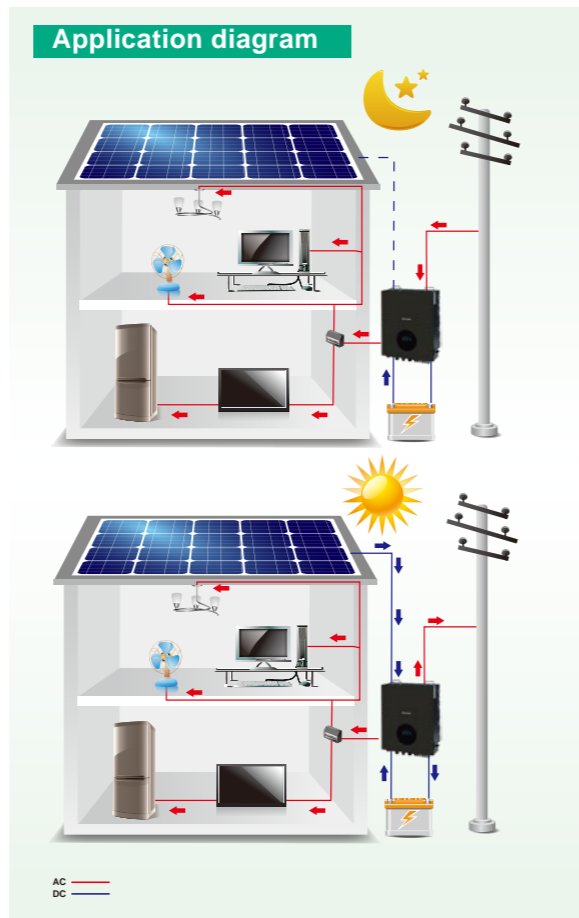
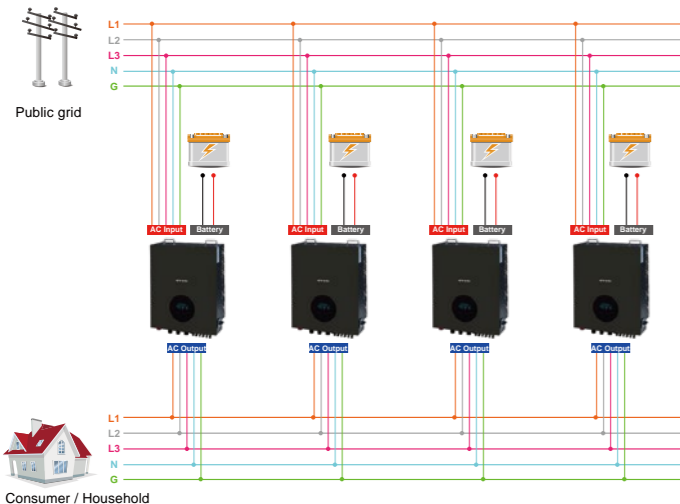


### Features

- 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

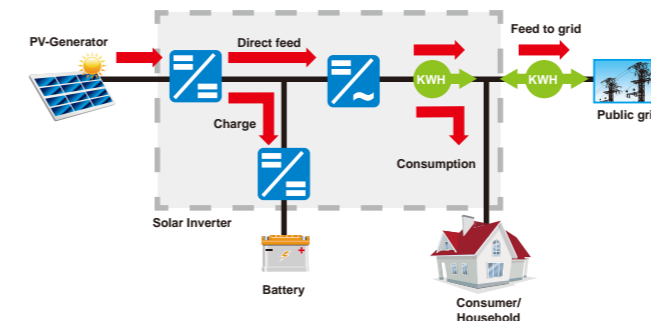
### Parallel Operation

Maximum up to 4pcs

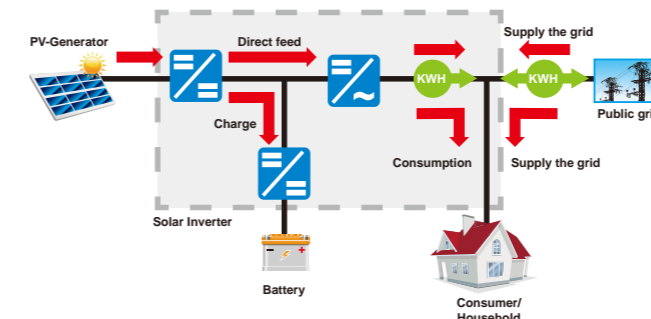


### Operation Diagram:

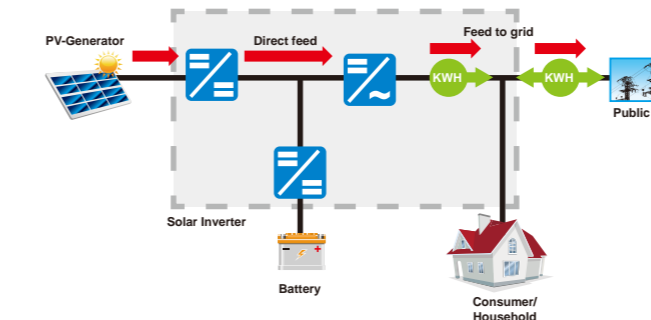
#### Enough PV Energy Input



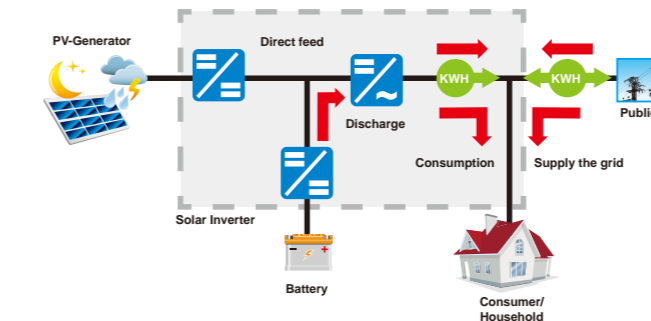
#### Household's consumption is higher than supply from PV



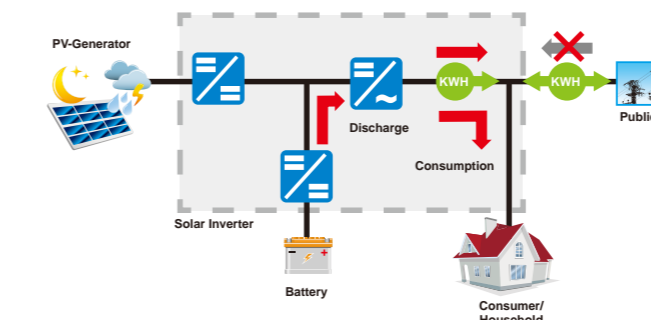
#### No consumption from household and the battery is fully charged



#### 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	350 VDC ~ 900 VDC
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 Current	50 A per phase
BATTERY MODE OUTPUT (AC)	
Nominal Output Voltage	230VAC* (P/N) / 400 VAC (P-P)
Efficiency (DC to AC)	>96%
BATTERY & CHARGER	
Nominal DC Voltage	300 VDC ~ 950 VDC (adjustable)
Maximum Charging Current	80A
PHYSICAL	
Dimension (DxWxH)	255 x 660 x 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.

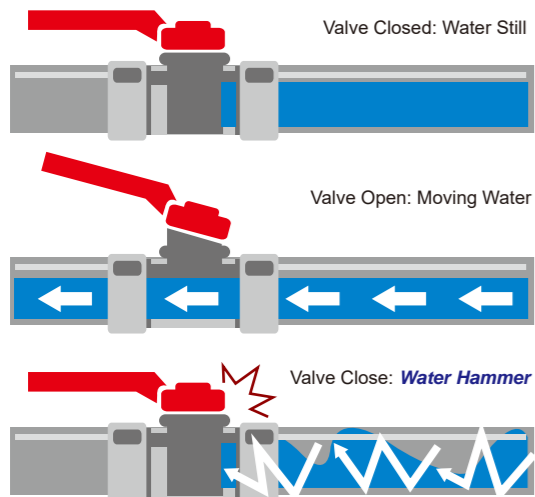
SP Revival Series supply AC power to any conventional pump from the solar panels.

Zero operating cost and maintenance-free make it the best solar option for orchard, garden, and farm irrigation.

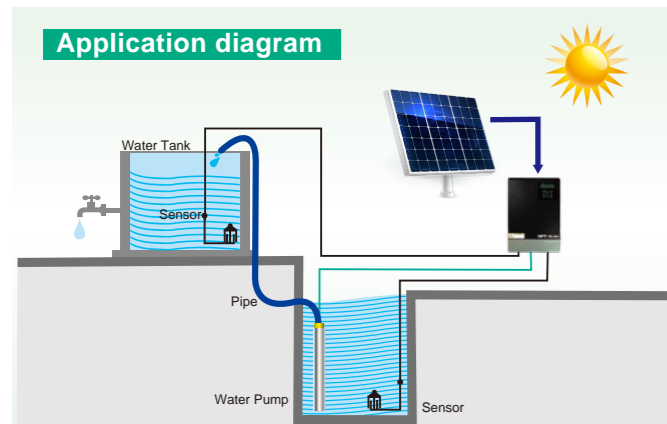
### Features

- 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



### Application diagram



### Specifications

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

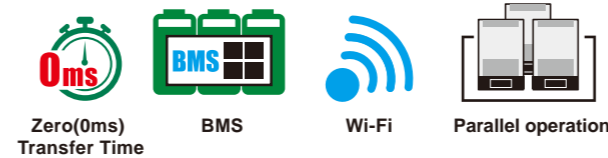
Specifications are subject to change without notice.



# 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.

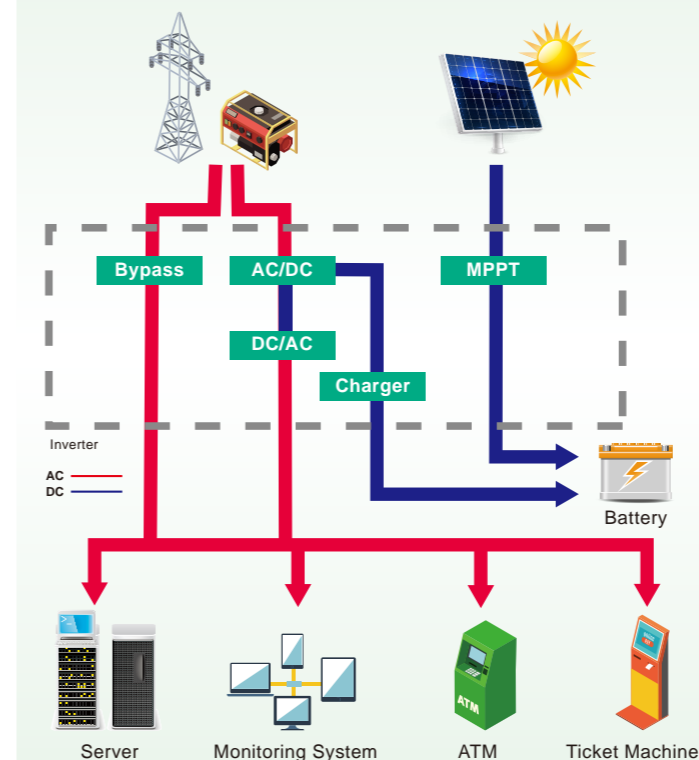
An ideal solution for critical loads such as servers and ATMs.



### 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

### Application Diagram



### Specifications

MODEL	SP6000 Regal Ultra
Rated Power	6000VA/6000W
<b>INPUT</b>	
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)
<b>OUTPUT</b>	
AC Voltage Regulation (Batt. Mode)	230VAC ± 5%
Surge Power	10000VA
Peak Efficiency	93%
Transfer Time	0 ms
Waveform	Pure sine wave
<b>BATTERY</b>	
Battery Voltage	48 VDC
Floating Charge Voltage	54 VDC
Overcharge Protection	63 VDC
<b>SOLAR CHARGER &amp; AC CHARGER</b>	
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
<b>PHYSICAL</b>	
Dimension (DxWxH)	140 x 295 x 468mm
Net Weight	12kgs
<b>OPERATING ENVIRONMENT</b>	
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 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



### Specifications

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

Specifications are subject to change without notice.



# SP Senior Series

Small, light, and flexible.

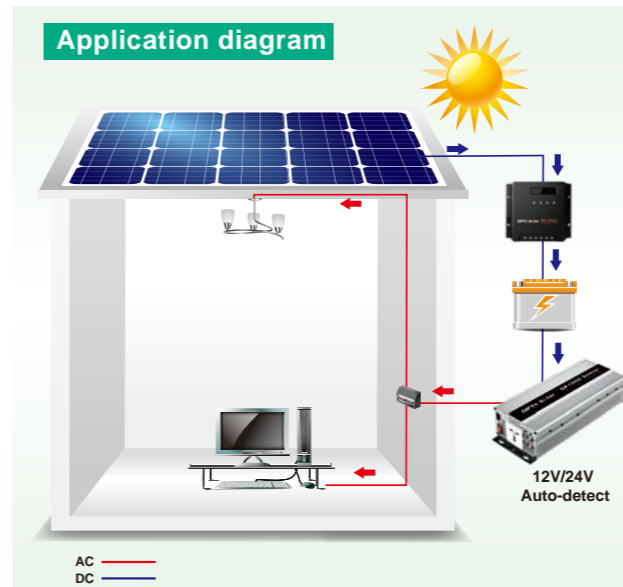
An economic inverter for a simple solution.



### 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

### Application diagram



### Specifications

MODEL	SP1000 Senior	
Rated Battery Voltage	12V	24V
Rated Power	800W	1000W
Surge Protection	2000W	2400W
<b>OUTPUT</b>		
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	
<b>BATTERY</b>		
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	
<b>PHYSICAL</b>		
Dimension (D×W×H)	345×137×79mm	
Net Weight	2.2kg	
<b>OPERATING ENVIRONMENT</b>		
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.





SC-3KW MPPT



SC-20 ~ 40 MPPT

# 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



# MPPT Solar Charger

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

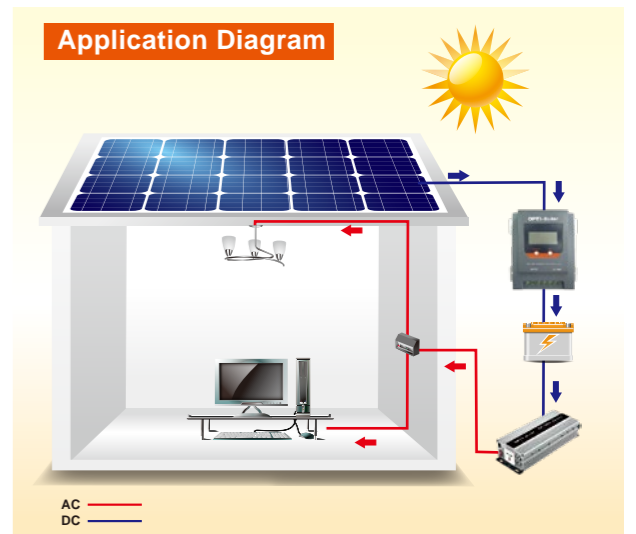
Its RS485 interface helps the users to simply monitor the operation, and its BTS function is perfect for temperature compensation.



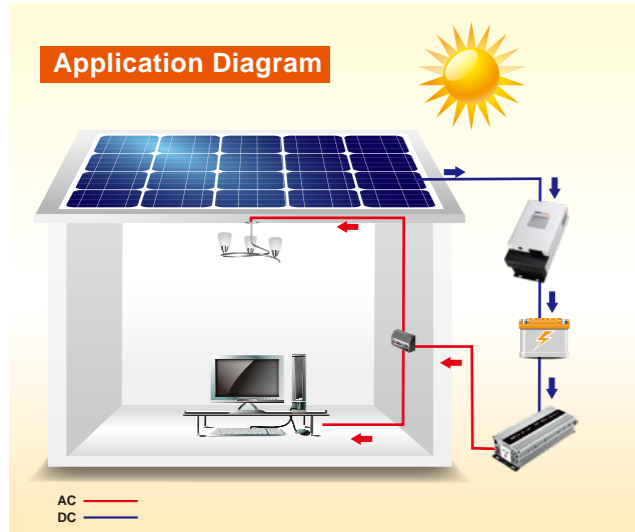
## Features

- 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

## Application Diagram

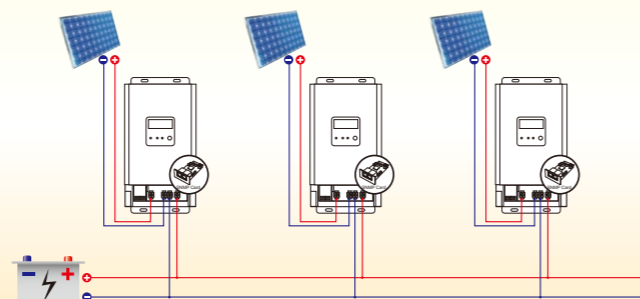


## Application Diagram



## Parallel charging function

Users can assign chargers to charge the same battery group.



## Specifications

MODEL	SC-3KW MPPT		
<b>PV INPUT</b>			
MPPT Range	60VDC~115VDC		
Maximum PV Array Open Circuit Voltage	145VDC		
Maximum PV Array Power	800W	1600W	3200W
Maximum Input Current	50A		
<b>BATTERY</b>			
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		
<b>PHYSICAL</b>			
Dimension (DxWxH)	315x165x128 mm		
Net Weight	4.5kg		
Type of Mechanical Protection	IP 31		
<b>COMMUNICATION</b>			
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.

## 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	189x182x64mm	189x182x64mm	189x255x69mm	189x255x89mm
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.

# 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

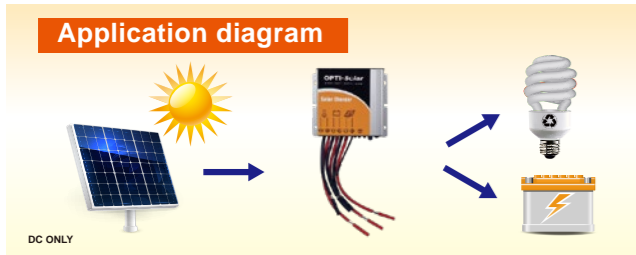


## Specifications

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 x 70 x 20 mm	85 x 85 x 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.

## Application diagram



## 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			None	
Temperature Compensation	-4.17mV/K per cell (Boost and Equalization charge); -3.33mV/K per cell (Float charge)				
Max Solar Voltage	55V				100V
Max Battery Voltage	35V				65V
Dimensions	189 x 96 x 53 mm		187.5 x 138 x 62.5 mm		187.5 x 138 x 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.