

# Off-Grid Solutions 2015

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Power The Future

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- Grid-Connected Inverter Catalog
- ✓ Off-Grid Solutions Catalog
- UPS Catalog
- Telecom Power Supply Catalog
- Customized Product Catalog

 This manual uses eco-friendly printing paper



Founded in 2003, Shenzhen JingFuYuan Tech. Co., Ltd. (Abbr. JFY) locates in Shenzhen with 16,000m<sup>2</sup> of standard production plants and advanced R&D laboratories, is a National High-tech Enterprise and certified by ISO9001:2008 international quality system. More than 10 years professional design and production experiences of power products, JFY provides customers mid-high level power products and all-in-one power system solutions. Our products cover full ranges of solar on grid inverters, off-grid power systems, UPS and telecom power supply, etc. All passed multiple international authorized certification testings e.g. TÜV, CE, Enel-GUIDA, AS4777, CEC, CSA, BDEW etc, JFY products have been exported to over 80 nations and areas. JFY is the **biggest** manufacturer of off-grid solar inverter in China. And the stable capacity, excellent performance of JFY products and the attentive service have been widely recognized by global users.

National Hi-tech Enterprise  
Honest And Trustworthy Enterprise  
China Top 10 PV Inverter Enterprise

## Patents



## Certificates



## TV Reports



China central television reported



China guangxi TV reported



China gansun TV reported

# Off-grid System Products



Normally we take granted that electricity can be obtained anywhere, but at present more than 2 billion people live without electricity in the world: most of them live in poor and remote areas, far away from power plants and public grid which makes their life inconvenient and lack of modern civil information.

JFY commits to the research and development of off-grid PV equipments. Our products cover 300W~160kW, meet all sorts of off-grid power generation demand and applications. Known as the most professional manufacturer of off-grid inverter and off-grid system solution, we offer customers the complete power products.

The off-grid systems vary with different applications, JFY provide suitable solutions as shown:

## Off-grid System (all-in-one)

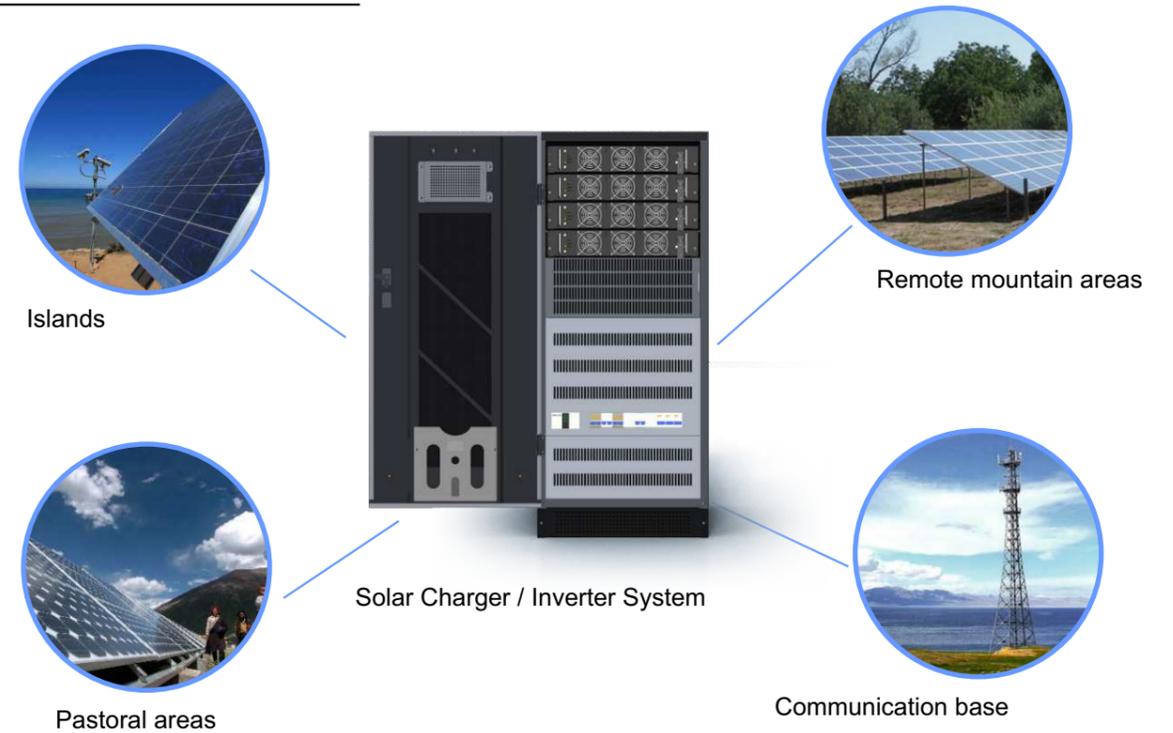


## MPPT Solar Controller



## Off-grid Inverter

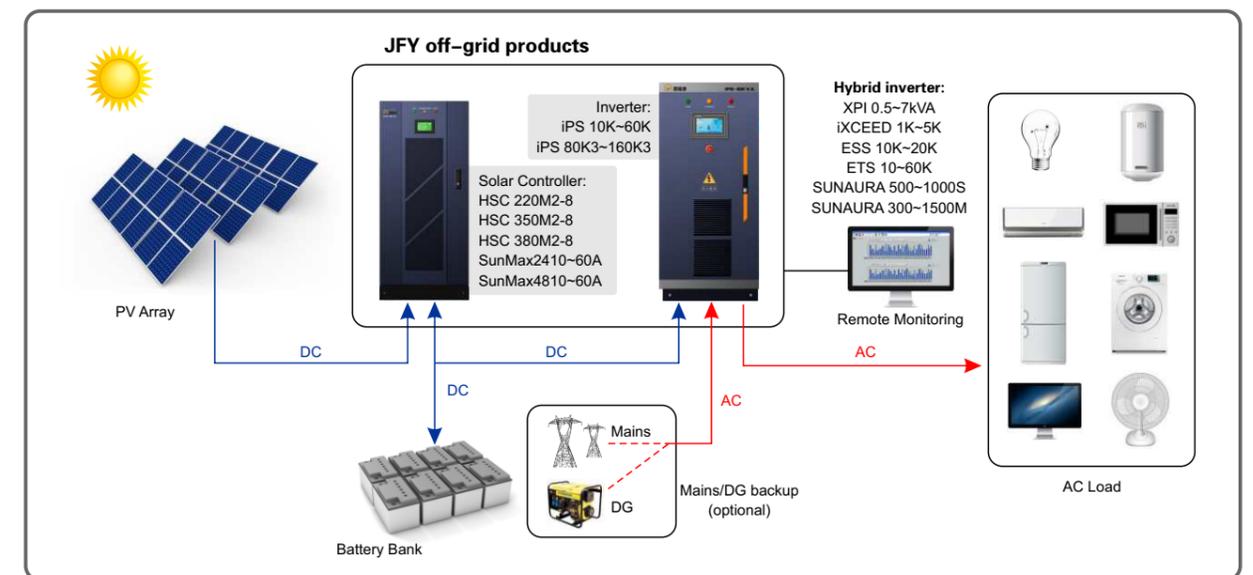
## Application Places



Off-grid solar power system is an independent renewable power supply system, widely applied in places without effective power such as remote mountain areas, pasturing areas, sea islands, communication base stations, filed operation areas and street lights, etc. The off-grid system consists of solar modules, solar controllers, battery bank, off-grid inverter, AC load etc.

In case of effective sun light, PV array will convert the solar light into electricity to supply the load and the rest to charge battery bank, in case of insufficient power generation, the battery supply power through inverter to AC load. The control system intelligently manages the battery bank and meets the power requirements as well.

## Products Network Architecture Diagram



# SUNAURA Series Solar Charge & Inverter

## SUNAURA 300M / 500M / 750M / 1000M / 1500M

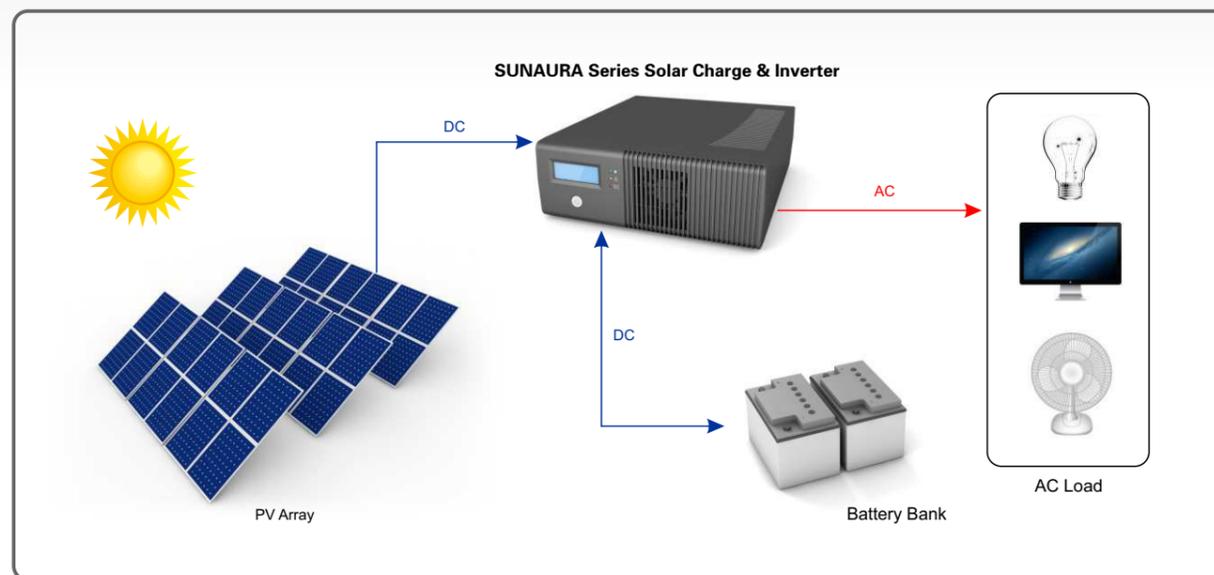
### Features

- Green energy, eco-friendly
- Integrated controller and inverter, easy installation
- Safety and stable power supply
- Intelligent battery management, modified sine wave output
- Multiple protections e.g. DC/AC over voltage, over current, over temperature, short circuit protections, etc
- LCD digital display
- Can support 30~80W electric fan based on the rated output power of SUNAURA series



### Description

SUNAURA series modified sine wave off-grid inverter integrates solar controller and inverter, easy installed, simple and useful. The system can directly converts DC electricity of solar modules to AC electricity of terminal load, solving the basic power supply problems. This series is especially applied for places without electricity or certain applications e.g. Family power supply, field work, travel sites, night market stalls, etc.

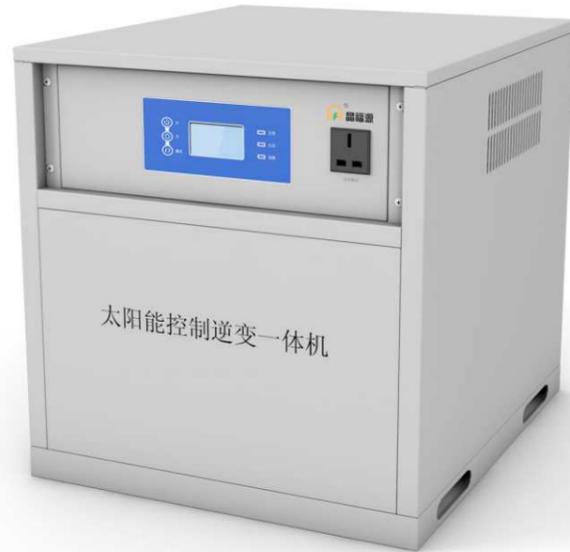


### Technical data

Model	SUNAURA 300M	SUNAURA 500M	SUNAURA 750M	SUNAURA 1000M	SUNAURA 1500M
<b>Battery</b>					
Battery type	Lead-acid battery				
Rated voltage (Vdc)	12			24	
Floating charge voltage (Vdc)	13.7			27	
<b>Solar Controller</b>					
Max. PV input power (W)	300	600	900	1200	1500
PV input voltage range (V)	14~30			27~55	
Max. charge current (A)	40				
<b>Inverter</b>					
Output voltage (Vac)	110/220/230/240±5%				
Output frequency (Hz)	50/60±3%				
Rated output power (VA)	300	500	750	1000	1500
Power factor	0.7				
Output wave	Modified sine wave				
Under voltage protection point (Vdc)	10			20	
Over load capacity	100~125% 10min, 125~150% 1min				
<b>System</b>					
Max. efficiency	>95.0%				
Display	LCD+LED				
Display content	PV indicator, battery capacity, AC voltage, load percentage				
Inverter protection	AC over voltage, AC short circuit, DC over voltage, DC under voltage, over temperature, etc				
Cooling method	Air cooling				
Operating temperature range (°C)	-10~+40 (>40°C derating)				
Relative humidity in operation	0~95% (no condensing)				
Storage temperature range (°C)	-25~+70				
Max. operating altitude	<6000 (>2000m derating)				
Noise emission [dB (A)]	<50 (at 1 meter)				
Ingress protection rating	IP20				
Dimension (W*H*D mm)	275*248*87				
Weight (kg)	1.65	1.75	1.85	1.95	2.15

Data may change without any notice.

# SUNAURA Series Sine Wave Off-grid Solar System



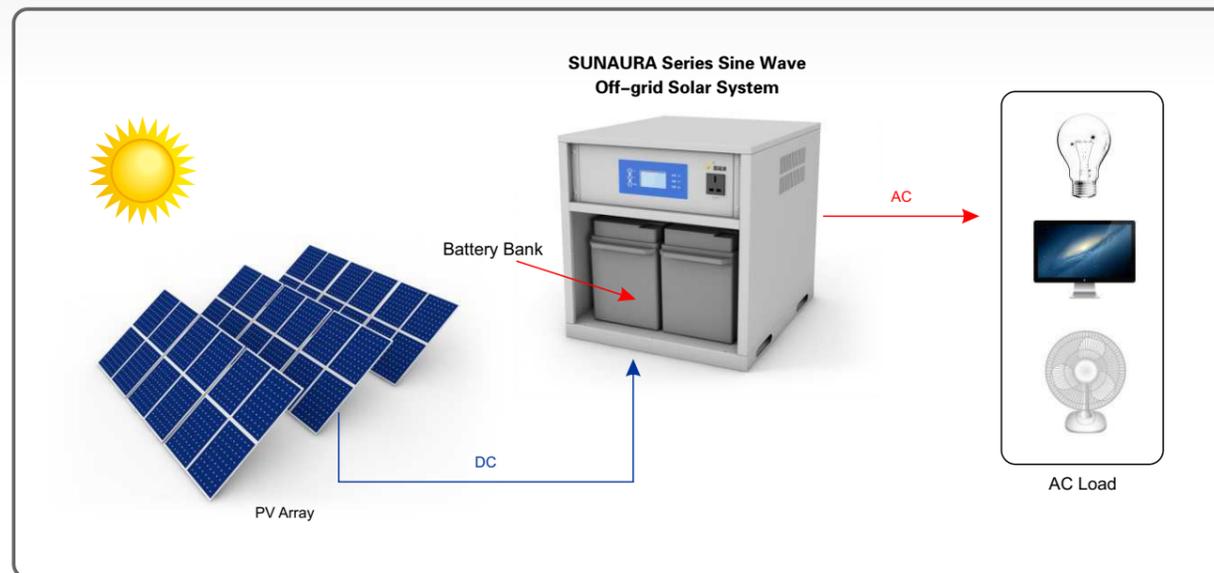
## SUNAURA 500S / 700S / 1000S

### Features

- Save energy, eco-friendly
- Integrated design with controller, inverter and battery box
- Easy installation, simple and useful
- Reliable power supply, safety performance
- Intelligent battery management
- Multiple protections: DC & AC over voltage, over current, over temperature, short circuit etc
- LCD smart display
- With isolation transformer, can support electric fan, washing machine, ice-box

### Description

SUNAURA series pure sine wave off-grid solar system integrates solar controller, inverter and battery box together, easy installation and useful. The system inverts DC to AC and directly supplies for terminal load, solving the basic problem of electricity. Mostly applied for places without electricity or certain applications e.g. residential power supply, field work, travel sites, night market stalls, etc.



### Technical data

Model	SUNAURA 500S	SUNAURA 700S	SUNAURA 1000S
<b>Solar Controller</b>			
Max. PV input power (W)	560		800
PV input voltage range (Vdc)	30~50		
Max. charge current (A)	20	30	
<b>Inverter</b>			
Rated Power (VA)	500	700	1000
Output voltage (Vac)	110/220/230/240±3%		
Output frequency (Hz)	50/60±3%		
Output wave type	Pure sine wave		
Voltage THD	<5% (linear load)		
Power factor	0.7		
Under voltage protection value (Vdc)	21.6		
Current crest factor	3:1		
Over load capacity	100~125% 10min; 125~150% 1min; 150~200% 10s		
<b>Battery</b>			
Battery type	Lead-acid battery		
Battery capacity	2*150AH/12V		
Rated voltage (Vdc)	24		
Floating charge voltage (Vdc)	28		
<b>System</b>			
Display	LCD+LED		
Display content	PV indicator, battery capacity, AC voltage, load percentage		
Inverter protection	AC over voltage, AC short circuit, DC over voltage, DC under voltage, over temperature, etc		
Cooling method	Air cooling		
Communication interface	RS232 (optional)		
Operating temperature range (°C)	-20~+50 (>50°C derating)		
Relative humidity in operation	0~95% (non-condensing)		
Storage temperature range (°C)	-25~+70		
Max. operating altitude	6000 (>3000m derating)		
Noise emission [dB (A)]	<55 (at 1 meter)		
Max. efficiency	>85%		
Ingress Protection rating	IP20		
Dimension (W*H*D mm)	450*470*520		
Weight [w/o battery (kg)]	24	24.5	25

Data may change without any notice.

# iXCEED Series Solar Inverter

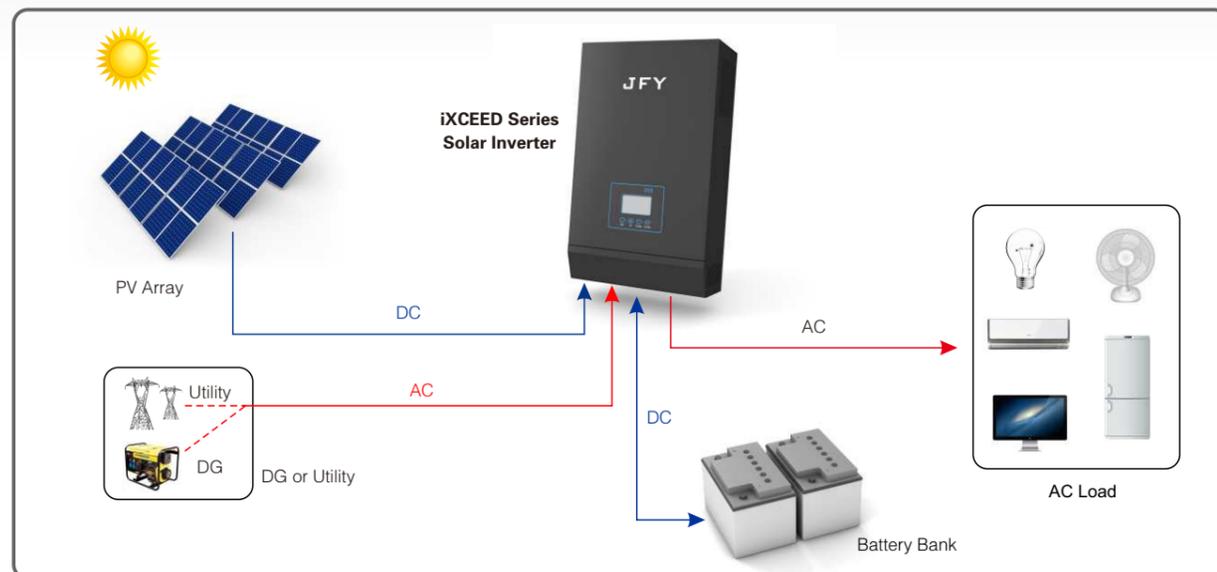


## Features

- Modular design, integrates solar controller, ac charger and inverter;
- MPPT charging control, making the largest use of solar module;
- Smart battery management;
- Pure sine wave inverter output
- Wide range of input voltage up to 150V;
- High-frequency isolated transformer, small in size, running safe and stable;
- Superior strong carrying load capacity;
- High power density design offer high efficiency output;
- Automatic restart function as mains supply restore;
- Wall mounted design, stylish appearance, simple install and easy operate;
- Overload, short circuit and many other important protection;
- LCD display + LED indicator;

## Description

JFY iXCEED series high frequency off-grid inverter is a high tech multifunctional inverter which integrates three functional modules: MPPT solar controller, AC charger and inverter. it has a small size, simple operation, easy maintenance, etc., which is a very cost-effective and comprehensive off-grid solar inverter. And widely used in remote areas where is without effective regional power supply, or the power supply is not stable, such as agriculture, animal husbandry, urban residents electricity, to solve the problem of their production and living electric power using.



## Technical Data

Model (iXCEED)	1KVA	2KVA	3KVA	4KVA	5KVA
Output power (kW)	0.8	1.6	2.4	3.2	4.0
Battery voltage (Vdc)	24			48	

### Solar Charger Parameters

Charger type	MPPT				
Rated input power (W)	1440		2880	5760	
PV input voltage (Vdc)	30~90		70~150		
Recommended input voltage (Vdc)	60		100		
Max. output current (A)	50				
Battery float voltage (Vdc)	27.2		54.4		
Battery equalizing charge voltage (Vdc)	28.6		57.2		

### AC Charger Parameters

Input voltage range (Vac)	170~280				
Input frequency (Hz)	50/60 ± 3%				
AC charging current	Standard: 10A; Max: 15A				

### Inverter Parameters

Output voltage (Vac)	220 ± 3% (or other output voltage)				
Output frequency (Hz)	50/60 ± 3%				
Max. efficiency	90%	92%	93%	93%	93%
Overload capacity	105~120%, 30S; 120~150%, 10S; >150%, 5S				
Current crest factor	3:1				
Output wave	Pure sine wave				

### General Parameters

Display	LCD display+LED indicator				
Display content	PV status, battery capacity, AC input voltage, AC output voltage, Load, running status				
Complete protections	DC&AC overload, under-voltage, SPD, short-circuit, overcharge, over discharge, over-temperature, etc				
Cooling	High-velocity fan cooling				
Communication	RS232				
Noise emission (dBA)	<60				
Operating temperature range (°C)	-20~50 (>50°C, derating)				
Storage temperature range (°C)	-15~70				
Relative humidity in operation	0~90% (non condensing)				
Max. operating altitude (m)	<5000 (>1000m, derating)				
Dimension (D/W/H mm)	120/270/360	120/285/470		120/300/500	
Weight (kg)	7.4	7.6	8	13	14.5

Data may change without any notice.

# XPI Series Hybrid Charger & Inverter



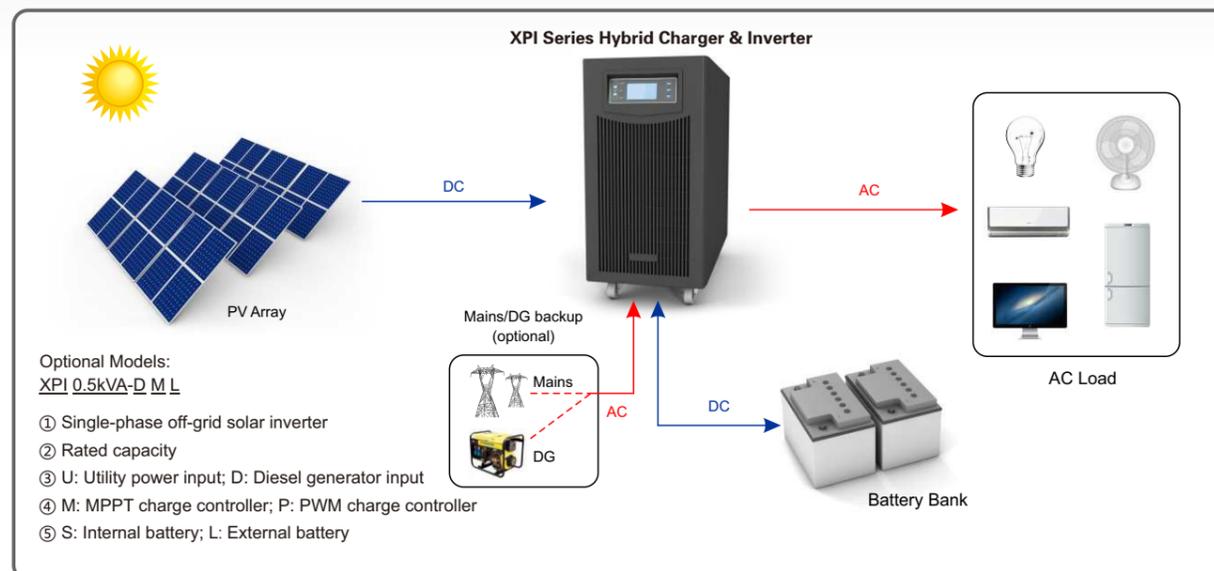
## XPI 0.5kVA~7kVA

### Features

- MPPT controller, maximize utilization of solar panels
- Integrated design with controller, inverter and transformer
- Pure sine wave output
- Output isolated transformer, safe and stable
- Mains/diesel generator input interface (optional)
- Excellent overload capacity
- Suitable for all sorts of electrical appliances
- Intelligent battery management function
- Complete protections
- LCD display + LED status indicator

### Description

- XPI series single-phase off-grid inverter consist of 3 functional modules: solar controller, pure sine wave inverter and insulated transformer. The controller adapts MPPT technology and intelligent battery management design which is very efficient and smart; integrated pure sine wave inverter and low frequency isolated transformer makes it with excellent overload performance, suitable for a variety of electrical appliances. It supports mains/generator input, take advantages of old diesel generators, saving initial investment and operation maintenance cost.
- XPI series is mainly applied in remote animal husbandry, fishery area and big family to solve people's electricity problems.



### Technical data

Model (XPI)	XPI _ _ _kVA-DMS/DML/ DPS/DPL/UMS/UML/UPS/UPL											
	0.5kVA	0.7kVA	1.0kVA	1.5kVA	1.5kVA	2.0kVA	3.0kVA	4.0kVA	4.0kVA	5.0kVA	6.0kVA	7.0kVA
Output power (kW)	0.4	0.6	0.8	1.2	1.2	1.5	2.5	3.0	3.0	4.0	5.0	6.0
Battery voltage (Vdc)	24			48			96					
Battery configuration	200AH/12V*2			200AH/12V*4			\					

#### Solar Charger Parameters

Charger type	PWM/MPPT		MPPT									
	Rated input power (W)	900/1440		1440		2880				5760		
PV input voltage (Vdc)	30~50/30~90		30~90		70~150				150~300			
Recommended input voltage (V)	30/60		60		90				180			
Max. input current (A)					50							
Max. output current (A)					50							
Battery float voltage (Vdc)	26.7				53.5				107			
Battery equalizing charge voltage (Vdc)	28.2				56.4				112.8			

#### AC Charger Parameters

Input voltage range (Vac)	180~250											
Input frequency (Hz)	50/60±3%											
AC charging current (A)	Standard: 10; Max: 20											

#### Inverter Parameters

Output voltage (Vac)	220/230±3% (or other output voltage)											
Output frequency (Hz)	50/60±3%											
Max. efficiency	>80%		>85%									
Overload capacity	105~120%, 30s; 120~150%, 10s; >150%, 5s											
Current crest factor	3:1											
Output wave	Pure sine wave											

#### General Parameters

Display	LCD+LED											
Display content	PV status, battery capacity, AC input voltage, AC output voltage, Load, running status											
Complete protections	DC&AC overload, Under-voltage, SPD, Short-circuit, Overcharge, Over discharge, Over-temperature, etc											
Cooling	High-velocity fan cooling											
Communication	RS232											
Noise emission [dB (A)]	<60 (1m)											
Operating temperature range (°C)	-20~50 (>50°C derating)											
Storage temperature range (°C)	-25~70											
Relative humidity in operation	0~90% (non condensing)											
Max. operating altitude (m)	<6000 (>1000m derating)											
Dimension (D*W*H mm) Bat. in	580*560*534			580*560*857			\					
Dimension (D*W*H mm) Bat. out	420*145*215			500*195*345			500*240*490					
Weight (Bat. in) kg	26.5	27.5	28.5	42	45	46	47	\				
Weight (Bat. out) kg	8	9	10	11	11	19	22	33	35	40	45	54

Data may change without any notice.

# ESS Series Hybrid Charger & Inverter (Single-phase)



## ESS 10K~20K / ESS-B 10K~20K

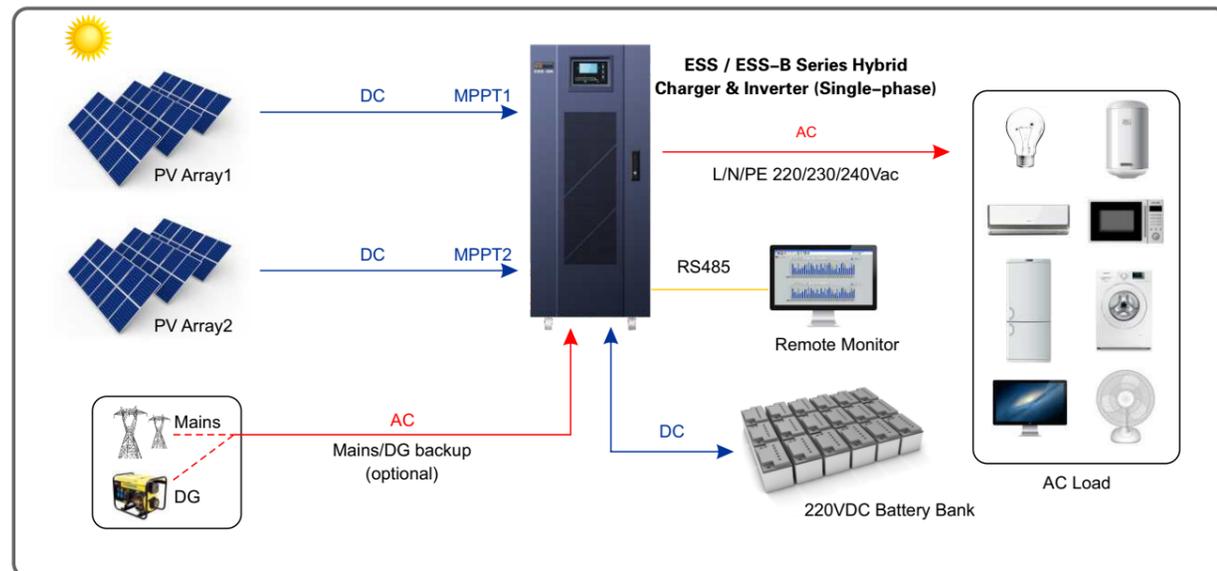
### Features

- Built-in MPPT solar controller, maximize the utilization of solar panel
- Integrated design with controller, inverter and isolated technique
- Solar controller modular design, hot plug function, flexible configuration, easy capacity expansion
- Intelligent battery management and temperature compensation function
- Pure sine wave output, output isolated transformer, safe and stable
- It supports mains/generator input (optional)
- Output isolated transformer, safe and stable
- LCD display + LED status indicator
- Perfect protection
- System efficiency up to 92%
- Strong environment adaptability



### Description

ESS series single-phase off-grid inverter adopts integrated design of solar controller, inverter and isolated transformer. The controller adopts MPPT technology and intelligent battery management design which is very efficient and smart; integrated pure sine wave inverter and low frequency isolated transformer make it with excellent overload performance, suitable for a variety of electrical appliances. ESS series controller adopts modular design with flexible configuration; the inverter is with output of 10kVA~20kVA, supplying power for the places without city power e.g. remote areas, pastoral areas, islands, communication base stations, bringing customer the optimized social, economical and environmental benefits. It supports mains/generator input (optional), take advantages of old diesel generators, saving initial investment and operation maintenance cost.



## Technical data

System (without AC bypass)			
Model	ESS 10K	ESS15K	ESS 20K
<b>DC Input (PV Side)</b>			
MPP voltage range (Vdc)	250~450		
Max. input voltage (Vdc)	460		
Recommended MPP voltage (Vdc)	330		
Rated power (kW)	20 (1~2*10kW module optional)		
<b>Inverter Output</b>			
Output voltage (Vac)	L/N/PE, 220/230/240		
Output wave	Pure sine wave		
Rated power (kVA)	10	15	20
Power factor	0.8		
AC current crest factor	3:1		
Overload capacity	105%~110%, 10mins; 110%~125%, 1min, >125%, 10s		
Voltage THD	THDU<3%, linear load; THDU<5%, nonlinear load		
Isolation	Low frequency transformer		
<b>Battery</b>			
Rated voltage (Vdc)	220		
Battery type	Lead-acid battery		
<b>General Data</b>			
Operating temperature range (°C)	-20~50 (>50°C derating)		
Relative humidity in operation	0~95% (non-condensing)		
Max. operating altitude (m)	6000 (>3000m derating)		
Display	LCD+LED		
Communication	RS485, dry contact		
Ingress protection rating	IP20		
Dimension (D*W*H mm)	610*455*1125		
Weight (kg)	101	114	124
<b>PV Control Module</b>			
Model	SC22050-ESS		
Control type	MPPT control		
MPPT efficiency	>99.5%		
MPP voltage range (Vdc)	250~450		
Max. input voltage (Vac)	460		
Max. input power (kW)	11		
Max. input current (A)	45		
Output voltage range (Vdc)	192~264		
Max. output current (A)	50		
Max. efficiency	98%		
Module dimension (D*W*H mm)	415*356*84.5		
Module weight (kg)	11		

Data may change without any notice.

## Technical data

System (with AC bypass)			
Model	ESS-B 10K	ESS-B 15K	ESS-B 20K
<b>DC Input (PV Side)</b>			
MPP voltage range (Vdc)	250~450		
Max. input voltage (Vdc)	460		
Recommended MPP voltage (Vdc)	330		
Max. power (kW)	20 (1~2 10kW module optional)		
<b>AC Input</b>			
AC input voltage range (Vac)	220/230/240±20%		
AC input voltage frequency (Hz)	50/60±5%		
<b>Inverter Output</b>			
Output voltage (Vac)	L/N/PE, 220/230/240		
Output wave	Pure sine wave		
Rated power (kW/kVA)	8/10	12/15	16/20
AC current crest factor	3:1		
Overload capacity	105%~110%, 10mins; 110%~125%, 1min; >125%, 10s		
Voltage THD	THDU<3%, linear load; THDU<5%, nonlinear load		
Isolation	Low frequency transformer		
<b>Battery</b>			
Rated voltage (Vdc)	220		
Battery type	Lead-acid battery		
<b>General Data</b>			
Operating temperature range (°C)	-20~50 (>50°C derating)		
Relative humidity in operation	0~95% (non-condensing)		
Max. operating altitude (m)	6000 (>3000m derating)		
Display	LCD+LED		
Communication	RS485, dry contact		
Dimension (D*W*H mm)	610*455*1125		
Weight (kg)	101	114	124
<b>PV Control Module</b>			
Model	SC22050-ESS		
Control type	MPPT control		
MPPT efficiency	>99.5%		
MPP voltage range (Vdc)	250~450		
Max. input voltage (Vdc)	460		
Max. input power (kW)	11		
Max. input current (A)	45		
Output voltage range (Vdc)	192~264		
Max. output current (A)	50		
Max. efficiency	98%		
Module dimension (D*W*H mm)	415*356*84.5		
Module weight (kg)	11		

## ETS Series Hybrid Charger & Inverter (Three-phase)



ETS 10K~60K / ETS-B 10K~60K

### Features

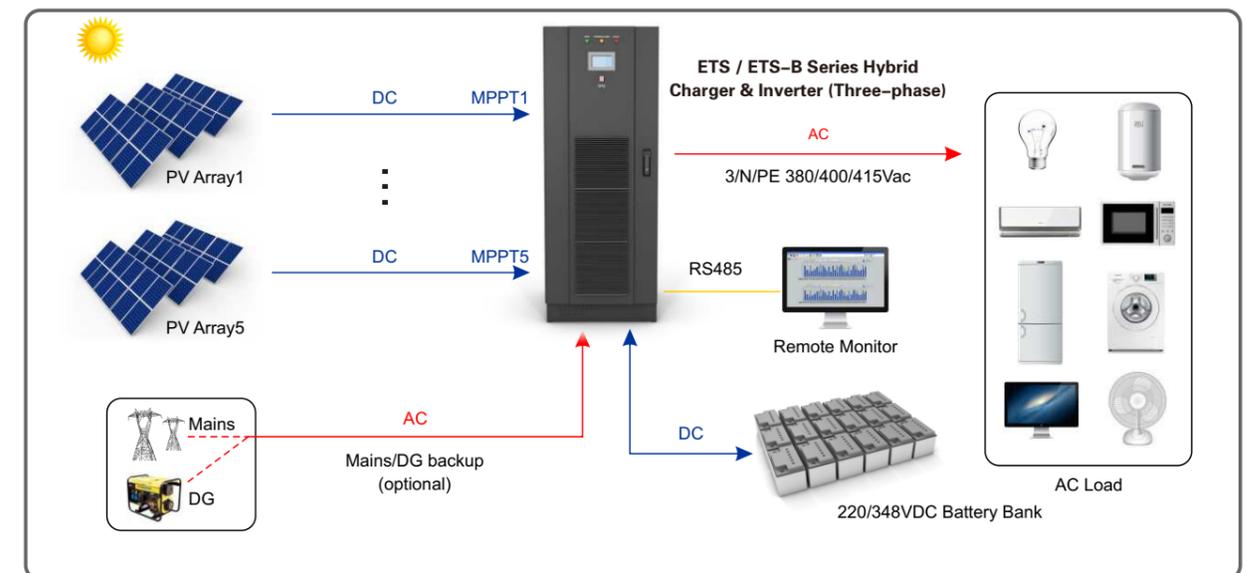
- > Built-in MPPT solar controller, maximize the utilization of solar panels
- > Integrated design with controller, inverter and isolated technique
- > Solar controller modular design, hot plug function, flexible configuration, easy capacity expansion
- > Pure sine wave output, output isolated transformer, safe and stable
- > It supports mains/generator input (optional)
- > Three phase AC output, support 100% unbalanced load
- > Intelligent battery management and temperature compensation function
- > LCD display + LED status indicator
- > Complete protections
- > System efficiency up to 92%
- > Strong environment adaptability



SC22050-ESS / SC22050 / SC35040

### Description

- > ETS series three-phase off-grid inverter adapts integrated design of solar controller, inverter and isolated transformer. The controller adapts MPPT technology and intelligent battery management design which is very efficient and smart; integrated pure sine wave inverter and low frequency isolated transformer make it with excellent overload performance, suitable for a variety of electrical appliances. It supports mains/generator input (optional), take advantages of old diesel generators, saving initial investment and operation maintenance cost.
- > ETS series controller adapts modular design with flexible configuration; the inverter output covers 10kVA~60kVA, supply power for places without city power e.g. remote areas, pastoral areas, islands, communication base stations, bring customer the optimized social, economical and environmental benefits.



## Technical data

System (without AC bypass)						
Model	ETS 10K	ETS 20K	ETS 30K	ETS 40K	ETS 50K	ETS 60K
<b>DC Input (PV Side)</b>						
MPP voltage range (Vdc)	250~450			420~650		
Max. input voltage (Vdc)	460			660		
Recommended rated voltage (Vdc)	330			480		
Max. controller module number	2	2	3	3	4	4
<b>Inverter Output</b>						
Output voltage (Vac)	3/N/PE, 380/400					
Output wave	Pure sine wave					
Rated power (kVA)	10	20	30	40	50	60
AC current crest factor	3:1					
Power factor	0.8					
Overload capacity	105%~110%, 10mins; 110%~125%, 1min; >125%, 10s					
Voltage THD	THDU<3%, linear load; THDU<5%, nonlinear load					
Isolation	Low frequency transformer					
<b>Battery</b>						
Rated voltage (Vdc)	220			348		
Battery type	Lead-acid battery					
<b>General Data</b>						
Operating temperature range (°C)	-20~50 (>50°C derating)					
Relative humidity in operation	0~95% (non-condensing)					
Max. operating altitude (m)	6000 (>3000m derating)					
Display	LCD+LED					
Communication	RS485, dry contact					
Protections	Input over/under voltage, output over/under voltage, overload, short circuit, over temperature, reverse polarity					
Ingress protection rating	IP20					
Dimension (D*W*H mm)	560*460*1040		600*550*1300		600*600*1450	
Weight (without PV module) (kg)	160	170	230	260	300	330
<b>PV Control Module</b>						
Model	SC22050-ESS		SC22050	SC35040		
Control type	MPPT control					
MPPT efficiency	99.5%					
MPP voltage range (Vdc)	250~450			420~650		
Max. input voltage (V)	460			660		
Max. input power (kW)	11			16		
Max. input current (A)	45			35		
Output voltage range (Vdc)	192~264			310~420		
Max. output current (A)	50			40		
Max. efficiency	98.0%					
Module dimension (D*W*H mm)	415*356*84.5		335*436*84.5			
Module weight (kg)	11					

Data may change without any notice.

## Technical data

System (with AC bypass)						
Model	ETS-B 10K	ETS-B 20K	ETS-B 30K	ETS-B 40K	ETS-B 50K	ETS-B 60K
<b>DC Input (PV side)</b>						
MPP voltage range (Vdc)	250~450			420~650		
Max. input voltage (Vdc)	460			660		
Recommended rated voltage (Vdc)	330			480		
Max. controller module number	2	2	4	4	5	5
<b>AC Input</b>						
AC input voltage range (Vac)	380/400±20%					
AC input frequency range (Hz)	50/60±5%					
Max. AC charger power (kW)	6	12	18	24	30	36
<b>Inverter Output</b>						
Output voltage (Vac)	3/N/PE, 380/400					
Output wave	Pure sine wave					
Rated power (kW/kVA)	10/10	20/20	30/30	40/40	50/50	60/60
AC current crest factor	3:1					
Overload capacity	105%~110%, 10mins; 110%~125%, 1min; >125%, 10s					
Voltage THD	THDU<3%, linear load; THDU<5%, nonlinear load					
Isolation	Low frequency transformer					
<b>Battery</b>						
Rated voltage (Vdc)	220			348		
Battery type	Lead-acid battery					
<b>General Data</b>						
Operating temperature range (°C)	-20~50 (>50°C derating)					
Relative humidity in operation	0~95% (non-condensing)					
Max. operating altitude (m)	6000 (>3000m derating)					
Display	LCD+LED					
Communication	RS485, dry contact					
Protections	Input over/under voltage, output over/under voltage, overload, short circuit, over temperature, reverse polarity					
Ingress protection rating	IP20					
Dimension (D*W*H mm)	560*460*1040		600*550*1450		600*600*1600	
Weight (without PV module) (kg)	160	170	230	260	300	330
<b>PV Control Module</b>						
Model	SC22050-ESS		SC22050	SC35040		
Control type	MPPT control					
MPPT efficiency	99.5%					
Max. input current (A)	45			35		
Output voltage range (Vdc)	192~264			310~420		
Max. output current (A)	50			40		
Max. efficiency	98.0%					
Module dimension (D*W*H mm)	415*356*84.5		335*436*84.5			
Module Weight (kg)	11					

Data may change without any notice.

# iPS Series Single-phase Off-grid Inverter



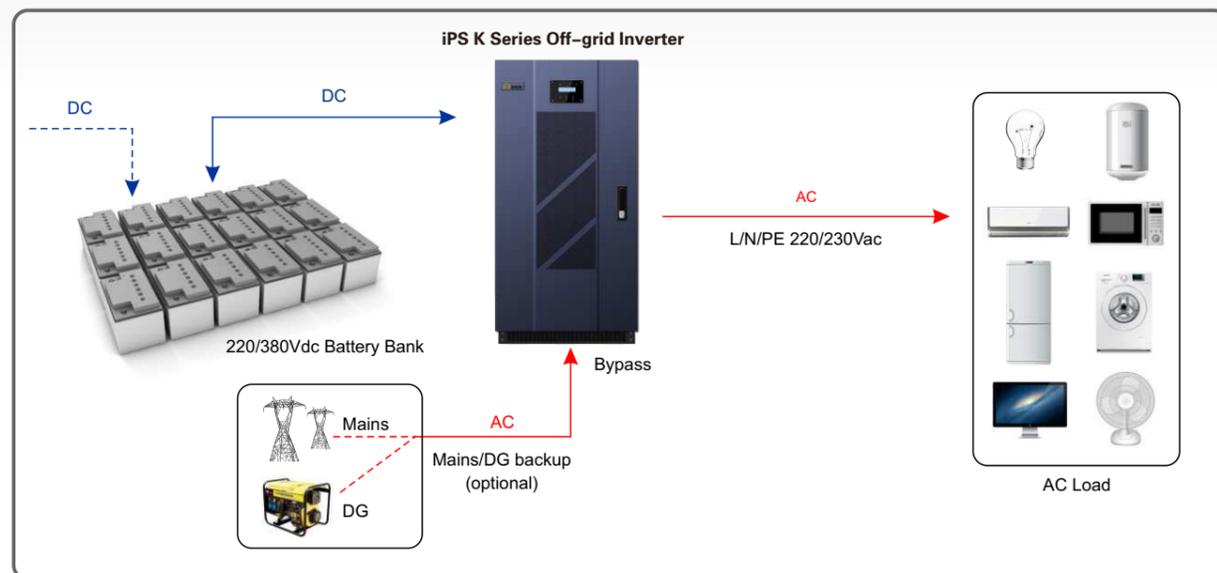
## iPS 10K~60K

### Features

- > Max. efficiency up to 95%
- > Isolated output transformer, durable load impact
- > Pure sine wave output, suitable for all sorts of electrical appliances
- > Excellent overload capacity
- > Complete protections e.g. Input and output over voltage, over temperature protection, overload protection, short circuit protection, etc.
- > LCD display + LED status indicator
- > Smart fan speed control and trouble shooting function
- > RS485, dry contact communication to realize remote monitoring
- > City power / diesel generator input (optional)

### Description

iPS series off-grid inverter is particularly designed for off-grid power system with high efficiency up to 95%. The excellent overload capacity and complete protection are suitable for all sorts of electrical appliances. The inverter can be used in harsh environments e.g. wide temperature range, high altitude, etc. This series can be applied for solar lighting, remote communication base, high way monitoring system, custom system of pastoral areas and less developed areas, etc.



### Technical data

Model	iPS 10K	iPS 20K	iPS 30K	iPS 40K	iPS 50K	iPS 60K
<b>DC Input</b>						
Rated voltage (Vdc)	220				348	
Rated current (A)	45	85	128	171	135	162
Voltage range (Vdc)	200~275				290~435	
<b>AC Input</b>						
AC input voltage range (Vac)	220/230/240±20%					
AC input frequency range (Hz)	50/60±1%					
<b>Output</b>						
Rated power (kVA)	10	20	30	40	50	60
Output voltage (VA)	220/230/240±2%					
Output frequency (Hz)	50/60±1%					
Output rated current (A)	37	73	109	146	182	218
Output voltage total harmonic distortion	THDU<3% (Full load, linear load) THDU<5% (Full load, nonlinear load)					
Output voltage regulation	<5% (Load 0~100%)					
Power factor	0.8					
Overload capacity	105~110%, 101mins; 110~125%, 1mins; 150%, 10S					
Crest factor	3:1					
<b>General Data</b>						
Max. efficiency	>95.0%					
Operating temperature range (°C)	-20~50 (>50°C derating)					
Relative humidity in operation	0~95% (non-condensing)					
Ingress protection rating	IP20					
Max. operating altitude (m)	6000 (>3000m derating)					
Display	LCD+LED					
Cooling method	Smart forced air cooling					
Protection	AC&DC over/under voltage, AC overload, AC short circuit, over temperature, etc					
EMC	EN 61000-4, EN55022(Class B),					
Safety	IEC60950					
Dimension (D*W*H mm)	350*700*950			555*750*1200		
Weight (kg)	81	103	181	206	231	256

\*120VAC/60Hz, 240VAC/60Hz single phase inverter can be customized  
Data may change without any notice.

# iPS Series Three-phase Off-grid Inverter



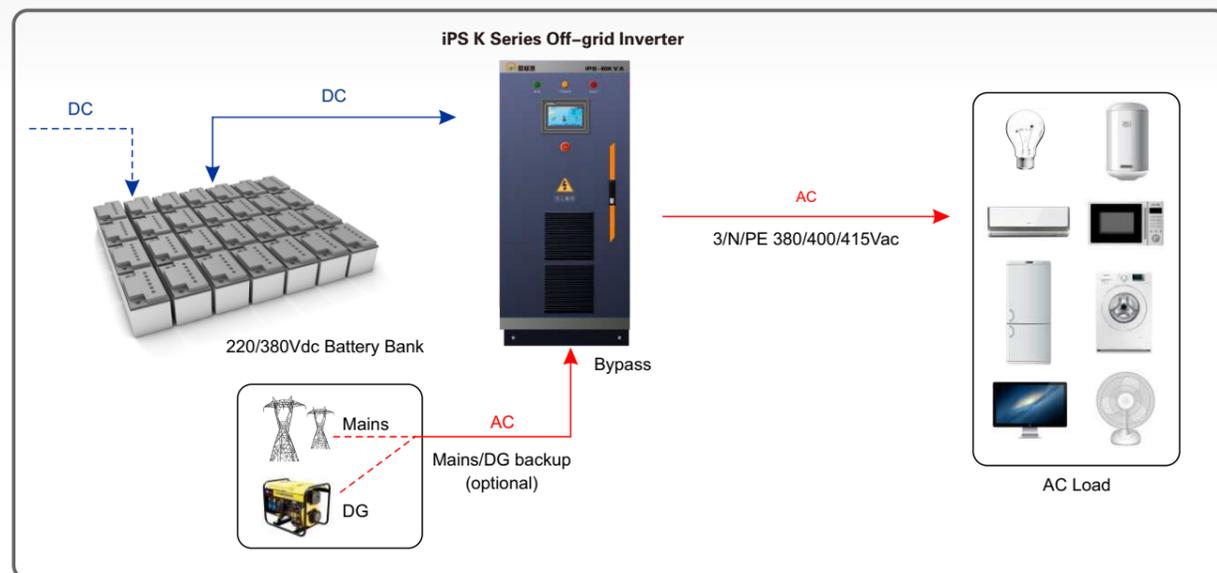
## iPS 80K3~160K3

### Features

- Max. efficiency up to 95%
- Three phase output support 100% unbalanced load
- Isolated output transformer, durable load impact
- Pure sine wave output, suitable for all sorts of electrical appliances
- Excellent overload capacity
- Complete protections e.g. Input and output over voltage, over temperature protection, overload protection, short circuit protection, etc
- LCD display + LED status indicator
- Smart fan speed control and trouble shooting function
- RS485, dry contact communication to realize remote monitoring
- City power / diesel generator input (optional)

### Description

iPS series off-grid inverter is particularly designed for off-grid power system with high efficiency up to 95%. The excellent overload capacity and complete protection are suitable for all sorts of electrical appliances. The inverter can be used in harsh environments e.g. wide temperature range, high altitude, etc. This series can be applied for solar lighting, remote communication base, high way monitoring system, custom system of pastoral areas and less developed areas, etc.



### Technical data

Model	iPS 80K3	iPS 100K3	iPS 120K3	iPS 160K3
<b>DC Input</b>				
Rated voltage (Vdc)	384	384	384	384
Rated current (A)	175	218	270	350
Voltage range (Vdc)	345~480			
<b>AC Input</b>				
AC input voltage range (Vac)	380/400±20%			
AC input frequency range (Hz)	50/60±5%			
Max. AC charging power (kW)	60	75	90	120
Max. charge current (A)	140	174	209	279
<b>Output</b>				
Rated power (kVA)	80	100	120	160
Output voltage (Vac)	3/N/PE, 380/400			
Output frequency (Hz)	50/60±1%			
Output wave	Pure sine wave			
Power factor	1			
Rated current (A)	121	152	182	242
Output voltage total harmonic distortion	THDU<3% (Full load, linear load)			
	THDU<5% (Full load, nonlinear load)			
Output voltage regulation	<5% (Load 0~100%)			
Overload capacity	105%~110%, 10min; 110%~125%, 1min; 150%, 10S			
Crest factor	3:1			
<b>General Data</b>				
Max. frequency	>95.0%			
Operating temperature range (°C)	-20~50 (>50°C derating)			
Relative humidity in operation	0~95% (non-condensing)			
Ingress protection rating	IP20			
Max. operating altitude (m)	6000 (>3000m derating)			
Display	LCD+LED			
Cooling method	Smart forced air cooling			
Protection	DC&AC over/under voltage, AC over load, AC short circuit, over temperature, etc			
EMC	EN 61000-4, EN55022 (Class B), IEC60950			
Dimension (D*W*H mm)	800*850*1700			900*800*1800
Weight (kg)	750	800	950	1100

\*220VAC/60Hz, 480VAC/60Hz three-phase inverter can be customized  
Data may change without any notice.

# SCM Series Solar Controller



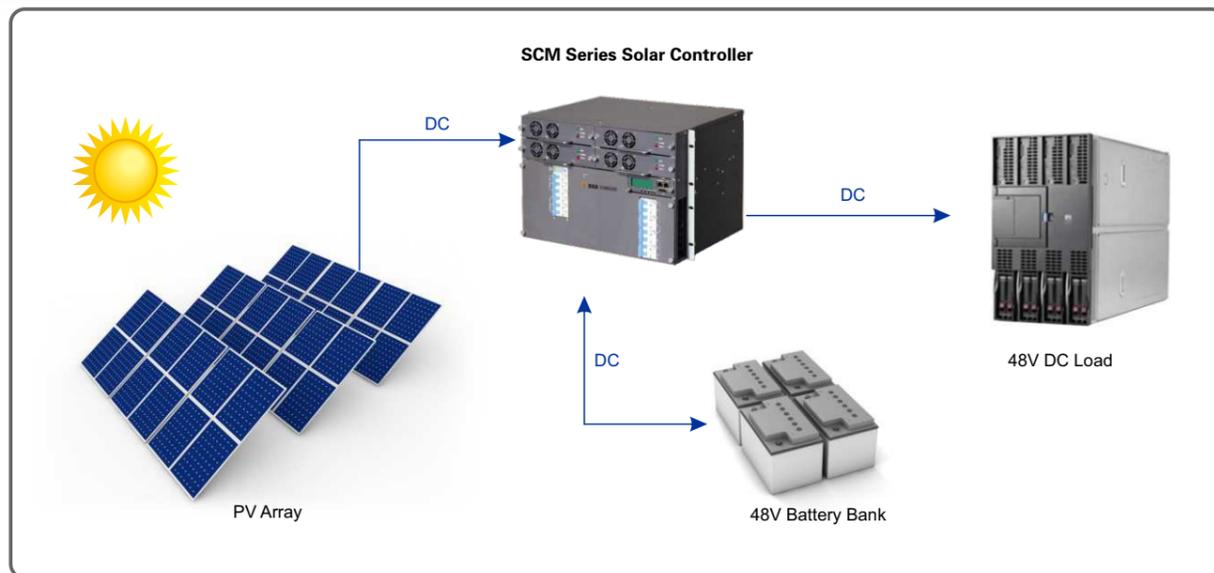
## SCM48100, SCM48200

### Features

- Standard 19 inch frame design
- Built-in MPPT solar controller, maximize the utilization of solar panels
- Advanced circuit topology design, efficiency up to 95%
- Intelligent battery management, oil machine management and power supply system monitoring functions
- Monitoring unit configuration, realize the analog detection, status report and control of the system, RS485/RS232 communication
- All the external interfaces and connection cables support pre-wiring

### Description

- SCM series solar controller covers SCM48100 and SCM48200, standard 19 inch frame design and can embed in 19 inch cabinet. The controller adopts MPPT technology and maximizes the utilization of solar panels; System sampling advanced circuit topology design brings ultra-high power conversion efficiency of equipment, system efficiency up to 95%, reducing energy loss process. Meanwhile it has intelligent battery management, monitoring alarm and DC distribution functions. The device meets the maintenance requirement, the control module and monitoring module are all modular design.
- The device is applied in BTS solar system and common off-grid solar system.



### Technical data

Model	SCM48100	SCM48200
<b>Input</b>		
System rated power (kW)	5	10
Module rated power (kW)	2.5	
Module model	SCM4850	
Number of input module	2	4
Module max. input power (kW)	2.63	
Module max. input current (A)	45	
MPP operating range (Vdc)	70~200	
Max. input voltage (Vdc)	250	
Recommended MPP voltage (Vdc)	150	
Module weight (kg)	5	
<b>Output</b>		
Battery voltage/range (Vdc)	48/43.2~57.6	
Rated current (A)	100	200
<b>General Data</b>		
Max. efficiency	>95.0%	
MPPT efficiency	>99.5%	
Standby consumption (W)	<30	
Noise emission [dB(A)]	<60 (1m)	
Cooling method	Forced air cooling	
Ingress protection rating	IP20	
Communication	RS485, RS232	
Display	LCD+LED display	
Storage capacity	Up to 200 alarm record	
Operating temperature range (°C)	-20~55 (>50°C derating)	
Storage temperature range (°C)	-40~70	
Relative humidity in operation	0~95% (non-condensing)	
Max. operating altitude (m)	6000 (>3000m derating)	
Module dimension (D*W*H mm)	222*443*350	310*443*357
Weight (kg)	20	30

Data may change without any notice.

# HSC Series Modular MPPT Solar Controller



## HSC220M4/6/8, HSC350M4/6/8, HSC380M4/6/8

### Features

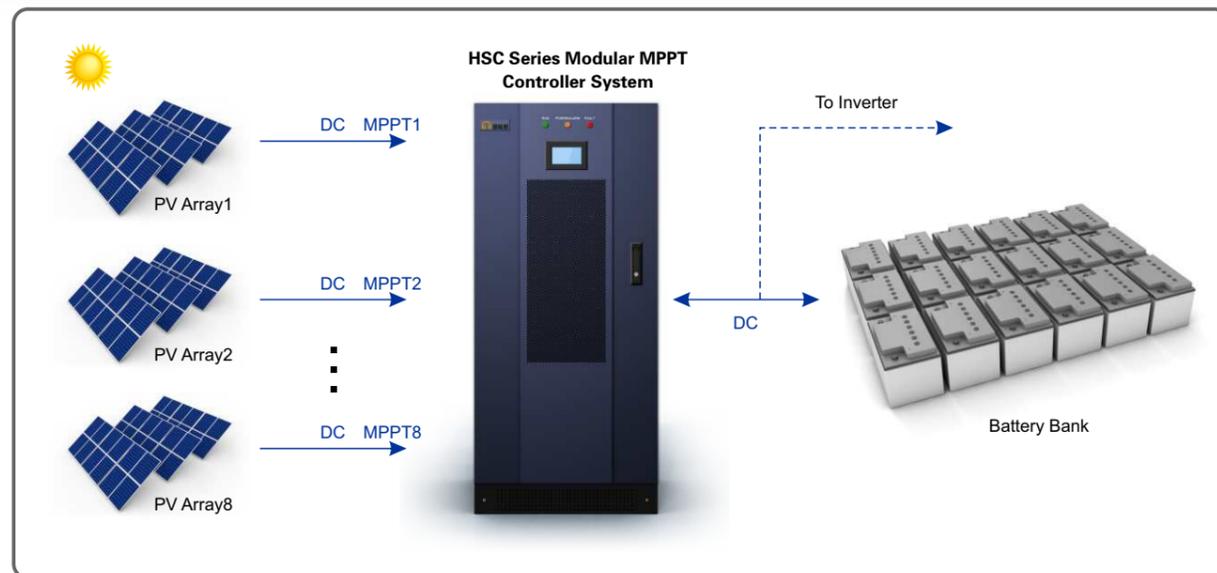
- MPPT solar controller, maximize the utilization of solar panels
- Modular design, hot plug function, flexible configuration, easy capacity expansion
- Intelligent battery management and temperature compensation function
- Complete protections e.g. Input and output over voltage, polarity counter-attack protection, lightning surge protection, etc.
- LCD display + LED status indicator
- RS485, dry contact communication to realize remote monitoring
- Max. efficiency up to 98%



SC22050 / SC35040 / SC38050

### Description

HSC series modular solar charger adapts MPPT technology. Large power modular design supports N+X parallel redundancy and capacity expansion of multi modules, convenient dilatation and easy maintenance. This series has complete protection function and intelligent battery management with abundant configured models applied for various off-grid solar power generation scenarios.



### Technical data

Model	HSC220M4				HSC220M6			HSC220M8	
<b>Input</b>									
System rated power (kW)	10	20	30	40	50	60	70	80	
Module model	SC22050								
Number of modules	1	2	3	4	5	6	7	8	
Each module rated power (kW)	10								
Each module max. input power (kW)	11								
Each module max. input current (A)	45								
MPP voltage range (Vdc)	250~450								
Max. input voltage (Vdc)	460								
Recommended MPP voltage (Vdc)	330								
Module dimension (D*W*H mm)	335*436*84.5								
Module weight (kg)	11								

### Output

Rated battery voltage/range (Vdc)	220/192~264								
Rated current (A)	50	100	150	200	250	300	350	400	

### General Data

Max. system efficiency	>98.0%								
MPPT efficiency	>99.5%								
Standby consumption (W)	<30								
Noise [dB(A)]	<60 (1m)								
Cooling	Forced air cooling								
Ingress protection rating	IP20								
Communication	RS485								
Display	LCD+LED								
Storage capacity	Up to 200 alarm record								
Operation temperature range (°C)	-20~55 (>50°C derating)								
Storage temperature (°C)	-25~+70								
Relative humidity in operation	0~95% (no condensing)								
Max. operating altitude (m)	<6000 (>3000m derating)								
Dimension (D*W*H mm)	550*580*900				550*580*1200			550*580*1400	
Weight (kg)	71	82	93	104	135	146	177	188	

Data may change without any notice.

## Technical data

Model	HSC350M4				HSC350M6			HSC350M8	
<b>Input</b>									
System rated power (kW)	15	30	45	60	75	90	105	120	
Module model	SC35040								
Number of modules	1	2	3	4	5	6	7	8	
Each module rated power (kW)	15								
Each module max. input power (kW)	16								
Each module max. input current (A)	35								
MPP voltage range (Vdc)	420~650								
Max. input voltage (Vdc)	660								
Recommended MPP voltage (Vdc)	480								
Module dimension (D*W*H mm)	335*436*84.5								
Module weight (kg)	11								
<b>Output</b>									
Rated battery voltage/range (Vdc)	348/310~420								
Rated current (A)	40	80	120	160	200	240	280	320	
<b>General Data</b>									
Max. system efficiency	>98.0%								
MPPT efficiency	>99.5%								
Standby consumption (W)	<30								
Noise [dB(A)]	<60 (1m)								
Cooling	Forced air cooling								
Ingress protection rating	IP20								
Communication	RS485								
Display	LCD+LED								
Storage capacity	Up to 200 alarm record								
Operation temperature range (°C)	-20~55 (>50°C derating)								
Storage temperature (°C)	-25~+70								
Relative humidity in operation	0~95% (no condensing)								
Max. operating altitude (m)	<6000 (>3000m derating)								
Dimension (D*W*H mm)	550*580*900			550*580*1200			550*580*1400		
Weight (kg)	72	83	94	105	136	147	178	189	

Data may change without any notice.

## Technical data

Model	HSC380M4				HSC380M6			HSC380M8	
<b>Input</b>									
System rated power (kW)	20	40	60	80	100	120	140	160	
Module model	SC38050								
Number of modules	1	2	3	4	5	6	7	8	
Each module rated power (kW)	20								
Each module max. input power (kW)	20.5								
Each module max. input current (A)	45								
MPP voltage range (Vdc)	450~750								
Max. input voltage (Vdc)	760								
Recommended MPP voltage (Vdc)	600								
Module dimension (D*W*H mm)	335*436*84.5								
Module weight (kg)	11								
<b>Output</b>									
Rated battery voltage/range (Vdc)	384/336~460								
Rated current (A)	50	100	150	200	250	300	350	400	
<b>General Data</b>									
Max. system efficiency	>98.0%								
MPPT efficiency	>99.5%								
Standby consumption (W)	<30								
Noise [dB(A)]	<60 (1m)								
Cooling	Forced air cooling								
Ingress protection rating	IP20								
Communication	RS485								
Display	LCD+LED								
Storage capacity	Up to 200 alarm record								
Operation temperature range (°C)	-20~55 (>50°C derating)								
Storage temperature (°C)	-25~+70								
Relative humidity in operation	0~95% (no condensing)								
Max. operating altitude (m)	<6000 (>3000m derating)								
Dimension (D*W*H mm)	550*580*900			550*580*1200			550*580*1400		
Weight (kg)	73	84	95	106	137	148	179	190	

Data may change without any notice.

# SunMAX Series Solar Controller

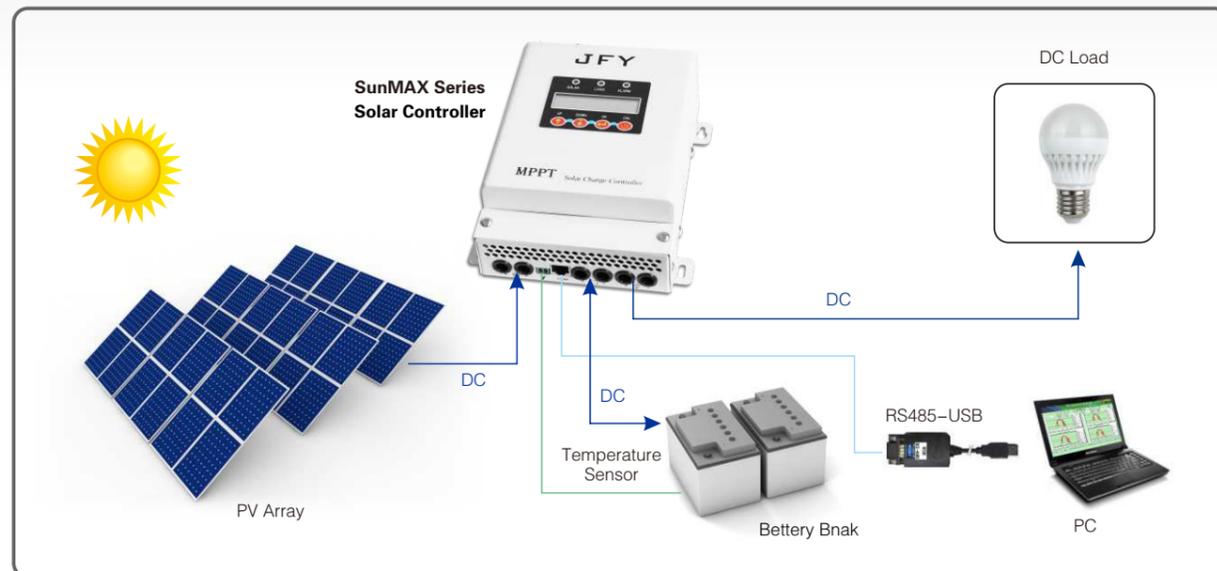


## Features

- MPPT efficiency up to 99%, improving the efficiency of PV modules generate electricity significantly;
- Smart battery management, the discharge segmented control, with temperature compensation function, improving battery use life;
- Wall-mounted, light weight, easy install and operate;
- Intelligent MCU control core technology, with professional control algorithms, reacting intelligent control;
- RS485 telecommunications and data transmission, could be remote control;
- Accurate monitor function, the total generating capacity of PV can be read real time;
- Historical record and inquiry function, The history data could be read at anytime;
- User could set parameters of the output. matched all kinds of common used batteries;
- Comprehensive protection, Including input anti-irrigation protection, under voltage protection, overvoltage protection, over temperature protection, output overvoltage protection, output over current protection, output short circuit protection, input, output, anti-reverse protection, low battery voltage protection etc.;
- LCD display all the functional parameters in English, LED indicate the running state, the controller could be real time managed by user;

## Description

JFY second generation SunMAX series controller adopt MPPT (Maximum Power Point Tracking) control technology, conversion efficiency up to 99%, compared traditional solar PWM controller saving more than 30%~66% solar photovoltaic modules, this type controller uses intelligent battery charge and discharge management, with temperature compensation attached, better manage the battery and extend battery use life, Also it integrates RS485 communication interface, providing communication protocols, enabling customers to remote manage a unified and integrated, with comprehensive protection and brand material to make sure it a long time use.



## 48V/36V MPPT Solar Controller Technical Data

Model	SunMAX4860	SunMAX4850	SunMAX4840	SunMAX4830	SunMAX4820	SunMAX4810
<b>Input Data</b>						
MPP voltage range (Vdc)	55~150 (36V system) 70~150 (48V system)					
Max. voltage (Vdc)	160					
Max. input power (36V system) (W)	2750	1875	1500	1125	750	375
Max. input power (48V system) (W)	3000	2500	2000	1500	1000	500
Max. input current (A)	60	50	40	30	20	10
<b>Output Data</b>						
Battery type	Sealed lead acid, vented, Gel, NiCd battery (other types of the batteries also can be defined)					
Floating charge voltage (Vdc)	40.8 (36V system) 54.4 (48V system)					
Equalize charging voltage (Vdc)	42.9 (36V system) 57.2 (48V system)					
Over charge protection voltage (Vdc)	43.8 (36V system) 58.4 (48V system)					
Temperature factor	±0.02%/°C (can be defined)					
Rated output current (A)	60	50	40	30	20	10
Over discharge protection voltage (Vdc)	31.5 (36V system) 42 (48V system)					
Max. load current (A)	60	50	40	30	20	10
Max. load power (36V system) (W)	2750	1875	1500	1125	750	375
Max. load power (48V system) (W)	3000	2500	2000	1500	1000	500
<b>General Data</b>						
Charge mode	Maximum power point tracking					
Method	3 stages: fast charge (MPPT), constant voltage, floating charge					
System type	Automatic recognition					
Soft start time (S)	≤ 10					
Dynamic response recovery time (us)	500					
Conversion efficiency	96.50%					
PV modules utilization rate	≥99%					
Self-consumption (W)	<1.5					
Thermal methods	Forced air cooling, fan speed rate regulated by temperature, when inner temperature is too low, fan ran slowly or stop; when controller stop working, fan also stop ran					
Noise emission (dBA)	<30 (1m)					
Operating temperature range (°C)	-20~50					
Relative humidity in operation	0~95% (non condensing)					
Max. operating altitude (m)	<6000 (>2000m, derating)					
Ingress protection rating	IP20					
Dimension (D/W/H mm)	242.2/212/86.5			190/200/72		
Weight (kg)	3.2			2.5		

\* The battery management parameter table parameter defaults to lead-acid batteries, other types of battery charging and discharging parameters via the LCD panel can be customized. Data may change without any notice.

## 24V/12V MPPT Solar Controller Technical Data

Model	SunMAX2460	SunMAX2450	SunMAX2440	SunMAX2430	SunMAX2420	SunMAX2410
<b>Input Data</b>						
MPP voltage range (Vdc)	18~90 (12V system)					
	35~90 (24V system)					
Max. voltage (Vdc)	93					
Max. input power (12V system) (W)	750	625	500	375	250	125
Max. input power (24V system) (W)	1500	1250	1000	750	500	250
Max. input current (A)	60	50	40	30	20	10

### Output Data

Battery type	Sealed lead acid, vented, Gel, NiCd battery (other types of the batteries also can be defined)					
Floating charge voltage (Vdc)	13.6 (12V system)					
	27.2 (24V system)					
Equalize charging voltage (Vdc)	14.3 (12V system)					
	28.6 (24V system)					
Over charge protection voltage (Vdc)	14.6 (12V system)					
	29.2 (24V system)					
Temperature factor	±0.02%/°C (can be defined)					
Rated output current (A)	60	50	40	30	20	10
Over discharge protection voltage (Vdc)	10.5 (12V system)					
	21 (24V system)					
Max. load current (A)	60	50	40	30	20	10
Max. load power (12V system) (W)	750	625	500	375	250	125
Max. load current (24V system) (W)	1500	1250	1000	750	500	250

### General Data

Charge mode	Maximum power point tracking					
Method	3 stages: fast charge (MPPT), constant voltage, floating charge					
System type	Automatic recognition					
Soft start time (S)	≤10					
Dynamic response recovery time (us)	500					
Conversion efficiency	96.50%					
PV modules utilization rate	≥99%					
Self-consumption (W)	<1.5					
Thermal methods	Forced air cooling, fan speed rate regulated by temperature, when inner temperature is too low, fan ran slowly or stop; when controller stop working, fan also stop ran					
Noise emission (dBA)	<30 (1m)					
Operating temperature range (°C)	-20~50					
Relative humidity in operation	0~95% (non condensing)					
Max. operating altitude (m)	<6000 (>2000m, derating)					
Ingress protection rating	IP20					
Dimension (D/W/H mm)	182/205/81			170/190/72		
Weight (kg)	2			1.5		

\* The battery management parameter table parameter defaults to lead-acid batteries, other types of battery charging and discharging parameters via the LCD panel can be customized. Data may change without any notice.

## 96V/72V MPPT Solar Controller Technical Data

Model	SunMAX9660	SunMAX9650	SunMAX9640	SunMAX9630	SunMAX9620	SunMAX9610
<b>Input Data</b>						
MPP voltage range (Vdc)	120~300 (72V system)					
	150~300 (96V system)					
Max. voltage (Vdc)	310					
Max. input power (72V system) (W)	4400	3700	3000	2200	1500	800
Max. input power (96V system) (W)	6000	5000	4000	3000	2000	1000
Max. input current (A)	60	50	40	30	20	10

### Output Data

Battery type	Sealed lead acid, vented, Gel, NiCd battery (other types of the batteries also can be defined)					
Floating charge voltage (Vdc)	81.6V (72V System)					
	108.8V (96V System)					
Equalize charging voltage (Vdc)	85.8V (72V System)					
	114.4V (96V System)					
Over charge protection voltage (Vdc)	87.6V (72V System)					
	116.8V (96V System)					
Temperature factor	±0.02%/°C (can be defined)					
Rated output current (A)	60	50	40	30	20	10
Over discharge protection voltage (Vdc)	63 (12V system)					
	84 (24V system)					
Max. load current (A)	60	50	40	30	20	10
Max. load power (72V system) (W)	4400	3700	3000	2200	1500	800
Max. load current (96V system) (W)	6000	5000	4000	3000	2000	1000

### General Data

Charge mode	Maximum power point tracking					
Method	3 stages: fast charge (MPPT), constant voltage, floating charge					
System type	Automatic recognition					
Soft start time (S)	≤10					
Dynamic response recovery time (us)	500					
Conversion efficiency	96.50%					
PV modules utilization rate	≥99%					
Self-consumption (W)	<2					
Thermal methods	Forced air cooling, fan speed rate regulated by temperature, when inner temperature is too low, fan ran slowly or stop; when controller stop working, fan also stop ran					
Noise emission (dBA)	<30 (1m)					
Operating temperature range (°C)	-20~50					
Relative humidity in operation	0~95% (non condensing)					
Max. operating altitude (m)	<6000 (>2000m, derating)					
Ingress protection rating	IP20					
Dimension (D/W/H mm)	320/260/100			250/220/100		

\* The battery management parameter table parameter defaults to lead-acid batteries, other types of battery charging and discharging parameters via the LCD panel can be customized. Data may change without any notice.

## Partners & Cooperater

### Critical Component Brands



### Company Customers



**thank you**  
 More quality customers, limited space, can not be enumerated. Thank you for your trust and support!

## References

JFY off-grid solar systems have global reach with their excellent performance, providing the customers with stable, affordable and clear energy. Some off-grid inverter application cases are for your reference.

30kW Villa project in Middle East, ETS 30KVA/HSC 350M4



Off-grid 7KVA farm project in South Africa



Aid Tibet projects



7kW Off-grid project



60kW project in Thailand, ETS60K



2pcs 1.8kW projects in Muheli village, Tibet province, China, XPI-3.0kVA



5kW project in Arezzo city, Italy, XPI-7.0kVA



2kW project in Klang city, Malaysia, XPI-3.0kVA



1kW project in Changxin island, Liaoning province, China, XPI-1.5kVA



1kW project in Dehli, India, XPI-1.5kVA



4kW project in Munich city, Germany, XPI-6.0kVA

