



## PV INVERTER & CONTROLLER INTEGRATED MACHINE

Single-phase power frequency GSA series



### Product introduction

The photovoltaic control and inverter integrated machine (hereinafter referred to as the inverter control integrated machine) is a new type of photovoltaic power generation device that organically combines a photovoltaic charge controller and an inverter. It consists of a charge controller, an inverter and a protection circuit, and the output is a pure sine wave voltage. It has the advantages of small total installation space, few connection lines, safety and reliability.

Photovoltaic charge controller is a high-performance step-down device that uses MPPT (Maximum Power Point Tracking) algorithm to make full use of solar photovoltaic energy. The PV input voltage range is wide, which can charge a variety of batteries, and the three-stage charging effectively improves the life of the battery.

This series of integrated control and inverter power supplies is the first choice to solve the daily electricity consumption of residents in areas without public power grids or underdeveloped power grids.



### Performance characteristics

- MPPT charge controller (500W and 1000W are PWM controllers), with high utilization of photovoltaic modules;
- Three-stage charging, effectively prolonging the life of the battery;
- It has the functions of power generate record, Event recording,Time switch, Auto sleep function;
- Photovoltaic priority or utility power priority mode can be set by users;
- Pure sine wave output & completely protection;
- Low frequency circuit design,good system reliability, low breakdown rates and long life time;
- Higher ability to anti-attack from the loads;
- With AC interface/Diesel input interface(Optional);
- AC charger function (Optional).



### Technical parameters

Model		GSA96	GSA192/220	
Output Power(KVA)		6/8	6/10/15	20/25/30
Battery				
Rated Voltage (VDC)		96	220	
Low Voltage Protective Value(VDC)		86.4	194.4	
Low voltage recovery value(VDC)		104.0	234.0	
Over voltage protective value(VDC)		124.0	279.0	
Over voltage recovery value(VDC)		120.0	270.0	
PV Input				
Maximum Input Power(KWP)		5.7	12.8/25.6	
Maximum Charge Current(A)		50/100		
Start Voltage(VDC)		120	270	
MPPT Voltage Range(VDC)		110-280	260-450	
Maximum Open Circuit Voltage(VDC)		300	480	
Floating Voltage(VDC)	Adjustable	108.0	243.0	
Bulk Charge Voltage(VDC)		113.6	255.6	
Ac bypass(Optional)				
Allowable Input Voltage Range(VDC)		220±15%/110±15%Other input voltage can be customized )		
Input Frequency(HZ)		50/60±3%		
AC charger		Optional		
AC Output				
Output Waveform		L+N Pure Sine Wave		
Output Voltage		220VAC±1%; 110VAC±1% ( Other output voltage can be customized )		
Output Frequency(HZ)		50/60±1%		
Output waveform distortion rate (THD)		≤2% ( Liner Load )		
Convert Efficiency(80% Resistive load)		≥85%		
Current Peak Factor		3:1		
Overload Ability		105-110%, 600Seconds; 110-125%, 60Seconds; >125%, 1Second		
Display Method		LCD+LED		
Protection		Input reverse protection; Input low voltage protection; Input over voltage protection; Output overload protection; Output short circuit protection(do not recovery automatically need to restart machine); Machine over heating protection.		
Communication Function		Optional		
surroundings				
Protective Level		IP20		
Applied Altitude (M)		≤5000 ( above1000meters,rated power derating1% every 100meters )		
Allowable relative humidity		<95% Non-condensation		
Environment temperature(℃)		-10 ~ +50		
Noise ( 1 Meter )		≤50dB		
Size and weight				
D*W*H(mm)		650*310*770	650*310*770	690*405*980
Weight(KG)		55	55-100	135-155

The above data are for reference only and are subject to change without prior notice. Special voltage can be customized.



## PV INVERTER & CONTROLLER INTEGRATED MACHINE

Three phase power-frequency GSA model series



### Product introduction

Solar photovoltaic control and inverter integrated power supply is a new generation of special power supply for new energy power generation systems. It is mainly designed and manufactured according to the characteristics and requirements of new energy power generation systems, and is suitable for solar photovoltaic power generation systems. High quality and high reliability requirements of power supply equipment. The system uses photovoltaic cells to convert light energy into electric energy, and charges the battery through the charging circuit. At the same time, the battery supplies power to the inverter part, and the inverter part supplies the AC power to the AC load.

This series control inverter integrated power supply, with wide input DC voltage and constant output voltage and frequency. The products are widely used in households, substations, communication service industries or comprehensive system power generation, etc., and can realize real-time and online observation of remote data through remote communication functions. They are the core products in modern new energy power generation systems.



### Performance characteristics

- Advanced DSP digital control technology can effectively improve product performance and system reliability
- Excellent industrial environment protection performance
- Perfect protection function to provide safe and reliable power protection for the load
- Intelligent battery management function, can effectively detect whether the battery is good or bad, prolong the battery life
- Economical and safe mode operation can make the whole machine more efficient than 98%
- High-performance large-screen LCD interface, intuitive and convenient operation
- Powerful communication interface and network remote monitoring, etc.
- A wealth of optional accessories, which can be flexibly configured according to actual needs



### Technical parameters

Model	GSA-10KVA3	GSA-20KVA3	GSA-30KVA3	GSA-40KVA3	GSA-50KVA3	GSA-60KVA3
Nominal capacity	10KVA	20KVA	30 KVA	40 KVA	50 KVA	60 KVA
AC input						
Phase	Three phase+N+G					
Volt range	380/400VAC±20%					
Frequency range	50/60Hz±5%					
Soft-start	0 ~ 100% 5sec					
PV input						
MPPT volt range	230—450VDC					
Max. Open circuit volt	480VDC					
Input paths	1/2					
Rated power	10KW/20KW					
Full charge protection volt	The battery voltage can be set according to the actual configuration					
Floating volt	The battery voltage can be set according to the actual configuration					
DC						
Nominal volt	192/220/240VDC					
Inverter						
Phase	Three phase+N+G					
Nominal volt	380VAC/400VAC					
Nominal frequency	50±0.5 Hz ( Powered on by battery )					
Frequency Stability	< ±0.5 Hz (Battery mode)					
Peak factor	3: 1					
Output wave	Pure sine wave					
THD	Line load < 3%; Non-line load < 5%					
voltage transient	< ±3% ( steady state load ) , < ±5% ( dynamic load )					
Over-load ability	125% 10min, 150% 1min					
System						
Communication interface	RS232/RS485(USB、Network remote monitoring Option )					
interface and instructions	7-inch color touch screen, LED status indication, dry contact					
Operating environment	Temperature: 0 ~ 40℃; Relative Humidity: 20% ~ 90% (non-condensing); <1000 meters (power decreases by 1% for every 100 meters, maximum 4000 meters)					
cooling method	Forced ventilation					
Noise dB	( According to load size and ambient temperature ) 40 ~ 65					
Size (WxDxHmm )	600*600*1600			800*600*2000		

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## PV INVERTER & CONTROLLER INTEGRATED MACHINE

High frequency GSI series



### Product introduction

GSI series inverter& controller is a pure sine wave photovoltaic off-grid power generation equipment integrating the functions of photovoltaic controller, mains charger and high-frequency inverter.

The battery is charged through the controller or the mains charger, and the battery supplies power to the inverter part, which then supplies the AC power to the AC load.

### Performance characteristics

- Small size and light weight
- High efficiency
- Pure sine wave inverter
- Selectable voltage input range, inverter output voltage can be used for home and personal computer
- Selectable charging current
- The priority of AC, solar battery charging can be set through LCD settings
- Compatible with mains voltage or generator power supply
- Auto restart function, can be not guarded
- Overload and short circuit protection

### Technical parameters

Model	GSi48-1K	GSi48-2K	GSi48-3K	GSi48-5K	GSi24-0.5K	GSi24-1K	GSi24-2K	GSi24-3K
Output voltage	1KVA	2KVA	3KVA	5KVA	0.5KVA	1KVA	2KVA	3KVA
Battery type (optional)								
Rated voltage(VDC)	48V				Lead-acid battery 24V, lithium battery 25.6V (default setting)			
Under voltage protection point (VDC)	Lead-acid battery 42V, lithium battery 46V (default setting)				Lead-acid battery 21V, lithium battery 23.6V (default setting)			
Under voltage Recovery Point (VDC)	Lead-acid battery 51.5V, lithium battery 51V (default setting)				Lead-acid battery 25.5V, lithium battery 26.5V (default setting)			
Over voltage Protection Point (VDC)	Lead-acid battery 58V, lithium battery 53V (default setting)				Lead-acid battery 27.5V, lithium battery 27.8V (default setting)			
Over voltage Recovery Point (VDC)	Lead-acid battery 56V, lithium battery 52V (default setting)				Lead-acid battery 27V, lithium battery 27V (default setting)			
PV input								
PV input power (W)	1500W (default)/3000W (optional)				1200W (default)/2400W (optional)			
Way of working					MPPT/PWM			
Starting voltage (VDC)					>53			
Voltage range(VDC)					53-150/53-94			
Maximum open circuit voltage (VDC)					150/94			
Float voltage (VDC)					52-54/53-56			
Equalizing Voltage (VDC)					53V			
M ains bypass (optional)								
Input voltage allowable range (Vac)					220±15%			
Input frequency (Hz)					50/60±3%			
Mains charging (optional)								
Mains charging current (A)					10			
AC output								
output waveform					L+N pure sine wave			
Output voltage					220VAC±3%			
Output frequency					50/60±1%			
Output waveform distortion (THD)					≤5% (linear load)			
Inverter efficiency					≥91%			
Current crest factor					1.5:1			
Overload capacity					10% 1 minute			
Display method					LCD+LED/LED			
Protective function	Input under-voltage protection, input over-voltage protection, output overload protection, output short-circuit protection (no automatic recovery, need to restart the machine), machine overheat protection.							
Environment								
Protection class					IP20			
Altitude (m)					≤5000 (1% derating for every 100m above 1000m)			
Allowable relative humidity					<95% non-condensing			
Ambient temperature (℃)					-10 ~ +55			
Noise (1m)					≤50dB			
Communication								
Communication method					CAN, RS232, RS485, Wi-Fi, GPRS			
Max. size(W*D*Hmm)					360*126*600			
Weight (KG)					9			

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## OFF GRID INVERTER

GSI series single phase inverter



### Product introduction

GSI series inverter power supply is the fourth generation power frequency intelligent inverter power supply developed with new digital technology. The system adopts SPWM pulse width modulation technology, IGBT power module and output isolation transformer, so that the output of the inverter power supply is a pure sine wave power supply with stable frequency and voltage regulation, filtering noise and low distortion. It has the characteristics of strong load capacity, good load compatibility, and wide DC input voltage range, which greatly meets the needs of various electrical environments. The perfect protection device improves the stability and reliability of the system operation; the user-friendly LCD liquid crystal interface design enables man-machine communication zero-distance .

### Performance characteristics

- Pure sine wave output, sufficient power output;
- Protection function: output overload protection; output short circuit protection; reverse polarity protection; input over/under voltage, over temperature protection and a series of alarm and protection;
- Power frequency circuit design, good system stability, low failure rate and long life;
- Good transient response, low waveform distortion, high inverter efficiency, stable output voltage, and excellent EMI indicators; this series of products have strong load resistance and load capacity. In addition to driving various resistive loads, they can also Load all kinds of inductive devices, such as motors, air conditioners, electric drills, fluorescent lamps, gas lamps, etc.; it can drive almost all loads;
- Intelligent empty load automatic sleep function.

### Technical parameters

Model	GSI96	GSI220
Output power(KVA)	6/8	6/10/15/20/25/30
Battery		
Rated voltage(VDC)	96	220
Under voltage protection value(VDC)	86.4	194.4
Under voltage recovery value(VDC)	104.0	234.0
Over voltage protection value(VDC)	124.0	279.0
Over voltage recovery value(VDC)	120.0	270.0
Mains bypass (optional)		
Input voltage allowable range (Vac)	220±15%	
Input frequency(Hz)	50/60±3%	
Mains charging	Optional	
AC output		
Output waveform	L+N Pure sine wave	
output voltage	220VAC±1%	
Output frequency(Hz)	50/60±1%	
Output waveform distortion rate	≤2% (Liner load)	
Inverter efficiency	≥85%	
Current peak factor	3:1	
Overload capacity	105-110%, 600seconds; 110-125%,60seconds; >125% 1second	
Display method	LCD+LED	
Protective function	Input reverse connection protection, input undervoltage protection, input overvoltage protection, output overload protection, Output short circuit protection (not automatically restored, the machine needs to be restarted), machine overheating protection.	
Communication function	RS485/GPRS (Optional)	
Environment		
Protection level	IP20	
Operating altitude (m)	≤5000 (1% derating for every 100m above 1000m)	
Allowable relative humidity	<95% No condensation	
Environment temperature (℃)	-10 ~ +50	
Noise (1 meter)	≤50dB	
Volume and weight		
Dimensions(W*D*H mm)	650*310*770/690*405*980	
Weight (Kg)	75-80	75-90/110-130

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# OFF GRID INVERTER

GSI series three phases inverter



## Product introduction

This series of three-phase off-grid inverters are high-efficiency and high-performance three-in-three-out inverter products. They are a new generation dedicated power supplies for new energy power generation systems. They integrate digitization, informatization and networking. They have powerful information acquisition system, signal processing system, detection system and perfect protection system. They have wide input DC voltage, stable output voltage and frequency, which are mainly used in photovoltaic power stations, wind power stations, wind, light, oil, storage complementary power generation systems ,household photovoltaic power supply system and other fields, especially places that require three-phase four-wire AC power.



## Performance characteristics

- Advanced DSP digital control technology effectively improve the product feature and system stability;
- Excellent industrial ambient protection performance, applicable to all kinds of working environment;
- High performance big LCD screen, smart boot prompts and operation error alert function, operate visually and easily;
- Powerful communication interfaces and network remote monitoring;
- Wealth of optionas can be flexibly configured according to the actual needs;
- Independent airtight duct, optimized ventilation design, internal modular installation, all devices required maintenance can be maintained from the front side. Machine can be installed three faces against the wall or parallel.



## Technical parameters

Rated power(KVA3)	GSI 10/15/20/30 KVA3	GSI 40/50/60 KVA3	GSI 80/100/120 KVA3	GSI 160/200 KVA3	GSI 250/300 KVA3
Rated DC voltage(VDC)	220/360/384	220/360/384	360/384	360/384	384
Phase	Three phases+N+G				
Nominal voltage	380VAC/400VAC				
Nominal frequency	50/60Hz				
Frequency stability: when out of sync	<±0.05%				
Frequency stability: when synchronized	<±5%				
Current peak factor	3:1				
Output waveform	Pure sine wave				
THD	Liner load < 3%; Non-liner load < 5%				
Dynamic load voltage transients (from 0 to 100%)	<±5%				
Load voltage	<±3%(Balanced Load); <±5% (unbalnced load)				
Overload capacity	125%10min, 150%1min				
Inverter efficiency,load 100%	>92%				
Computer communication interface	RS232 (485 Network remote monitoring Optional)				
Operating temperature	0~40℃				
Relative Humidity (No condensation)	20%~90%				
Altitude	≤5000 ( above 1000meters,rated power derating1% every 100meters )				
Cooling	Forced cool air				
Noise dB	45~65 (1m from the machine)				
Color	Black(Optional)				
Weight (kg)	190-340	450-750	750-950	1100-1600	1800-2300
Dimension(W*D*H mm)	600*600*1600	800*600*1600	805*800*1800	1005*900*1800	1100*1340*1920

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