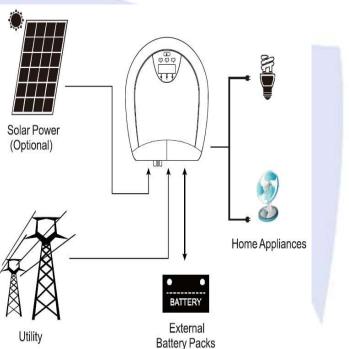


230V/50Hz, 1KVA, 12VDC Smart Solar-Inverter (Hybrid) with AC Charger & Built-in Solar Charge

Controller (Dual Chargers)





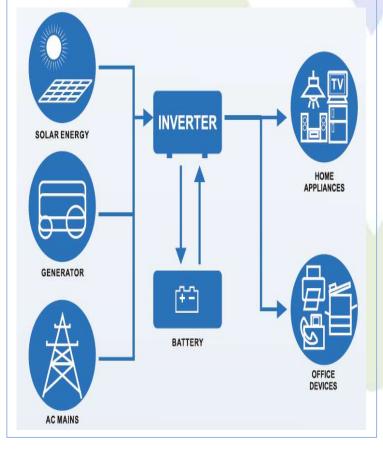
Product Description

Magnizon HG1012-PV is a Smart DC-to-AC inverter with auto line-to-battery transfer and integrated Solar charge controller and AC-DC caring system (Dual charging system), serving as an extended run UPS, a standalone power source or an automotive inverter (Completely Hybrid and automatic operation). HG1012-PV Smart Hybrid inverter supplies power from AC power and DC source. When AC cable is connected to a wall socket, utility power goes to connected equipment(s) and/or charges the battery set via charging system. In battery mode, Smart Hybrid inverter automatically converts battery energy into AC power for backing up the connected devices. Large LCD displays real time information along with operational schemes, and can also display error codes for easy repair and maintenance. Day time will be supported through solar panels and night time or rainy days will be with batteries and Utility power with intelligent microprocessor based automatic switching. Reliable transformer less IGBT based design and frequency controlled power, very much compatible to all domestic loads: refrigerators, TV's, Computers, and power tool and battery chargers. Smart micro controller based 3-stage built in charging system properly charge and maintain battery bank in the obscene of solar power or rainy days.



Applications

- Well designed for hybrid applications where solar energy systems connected along with grid or generator sets.
- Versatile inverter/charger with Sine wave system with seamless transfer switching serves as an automotive inverter for RVs, trucks, standalone alternative power source with high end back up times with various battery technologies(VRLA, GEL, Deep cycle and many more)
- Perfectly suitable for Off-grid and Hybrid applications.
- Small PV plants for houses/villas and small offices.
- Remote closets and small computer room applications.



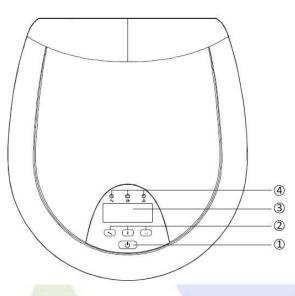
Key Feature

- 12V DC or 230V AC input; 230V, 50 Hz output
- 1KVA continuous output with double boost capacity.
- Microprocessor controlled Smart volume design
- Built in 40A Smart solar charge controller & Utility based charger
- Duel Operational Mode UPS/ Solar Inverter Mode
- Robust design for Hybrid configuration
- Sine wave output
- Automatic line-to-battery switchover
- Configurable Input voltage ranges via LCD setting
- High efficient DC-to-AC conversion, minimizing energy loss
- Rack design & wall-mounted design for flexible
 installation
- Intelligent 3-stage charger control for efficient charging and preventing overcharge of battery
- Auto restart while AC recovery
- User-friendly LCD+LED indications
- Multiple protection: low battery alarm, low battery shutdown, over
- charged protection, overload protection, over temperature protection, short circuit protection
- With the environmental temperature control charge management
- Quiet, high efficiency operation, high surge capacity and low idle current
- CE Safety
- Compatible to mains voltage or generator power
- Auto restart while AC is recovering
- Overload, over temperature and battery deep discharge protection
- Smart charging system optimizes battery performance
- Cold start function



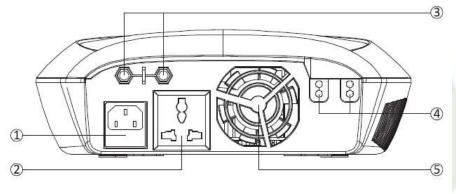
HG Series Product Overview

Front Panel



- ① Power ON/OFF button
- ② Setting function button
- 3 LCD
- ④ LED indicators

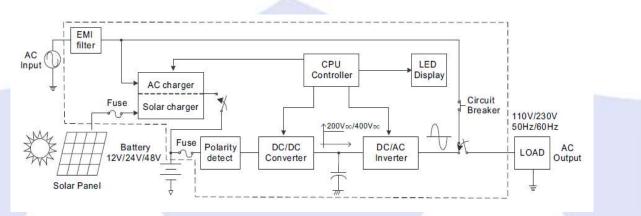




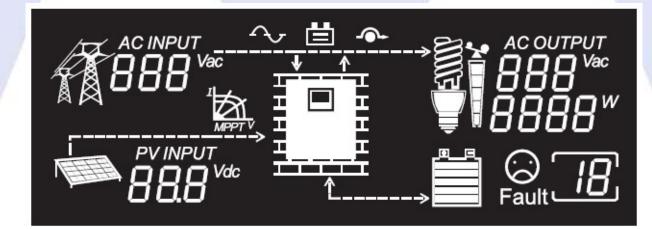
- ① AC input receptacle
- ② AC output receptacle
- ③ PV Input terminals
- (4) Battery terminals
- (5) DC Fan



System Control Scheme

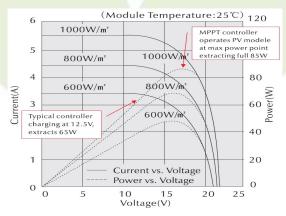


Smart LCD Display Panel



Smart Solar Charge Controller Function

The HG1012-PV hybrid inverter combined with Smart solar charge controller which is micro-processor based control system designed to implement smart logics. High engineered fuzzy logic control system increases the 30% additional charge current compared to traditional solar charge controller below is the graphical explanation pertaining to the charge currents. High efficiency (minimum of 92% at any given charge current) ensures the effective utilization of solar power being generated by the solar panels.





Specification

Model	HG1012-PV
Rated Power	1000VA
	INPUT AC
Nominal Input Voltage	230V AC
Level and Valtana	170V AC +/- 7V (UPS mode)
Low Loss Voltage	90V AC +/- 7V (Appliances mode)
Loui less return Voltore	180V AC +/- 7V (UPS mode)
Low loss return Voltage	100V AC +/- 7V (Appliances mode)
High loss Voltage	280VAC +/- 7V
High loss Return Voltage	270VAC +/- 7V
Max AC input voltage	300V AC
Frequency Range	50Hz/60Hz (auto sensing)
Low loss frequency	40+/-1Hz
Low loss return frequency	42+/-1Hz
High loss frequency	65+/-1Hz
High loss return frequency	63+/-1Hz
Efficiency	>97%
	OUTPUT
AC Voltage Regulation	230V AC +/- 5%
Rated Output Power	1KVA/750W
Output Voltage Waveform	Sine wave
Output Frequency	50Hz/60Hz (auto sensing)
Surge Power	2000VA
Efficiency	93-95%
Over Load protection	5sec @>150% load; 10sec@110~150% load
Nominal DC input Voltage	12V DC
Cold Start Voltage	11.5V DC
Lo	w DC Warning Voltage
@load < 20%	11.0V DC
@ 20% < load < 50%	10.7V DC
@ load > 50%	10.1V DC
Low D	OC Warning Return Voltage
@load < 20%	11.5V DC
@ 20% < load < 50%	11.2V DC



@load > 50%Intervert of the term of t	Model # HG1012-PV		
@load < 20%	@ load > 50%	10.6V DC	
© 20% < load < 50%	Low DC Cut-off Voltage		
@ load > 50%9.6V DCHigh DC Recovery Voltage14.5V DCHigh DC Cut-off Voltage15.5V DCNo Load Power Consumption<100WSaving Mode Power Consumption<100WSaving Mode Power Consumption<5WTransfer Time6-10mSecEfficiency90°93%Battery Voltage12V DCFloating Charge Voltage12V DCFloating Charge Voltage12V DCFloating Charge Voltage12V DCBulk Charging Voltage (Flooded Battery)14.6V DCBulk Charging Voltage (AGM/GEL battery)14.1V DCBulk Charging Voltage (AGM/GEL battery)14.1V DCSolar Charging Mode SpecsMaximum PV Array Open Circuit VoltageSolar Charging Mode SpecsSOlar Charging Mode SpecsMaximum PV Array Open Circuit Voltage55V DCMaximum Charging Current400AMPBest Panel Configuration2×210WpMaximum Efficiency98%Battery Voltage Accuracy4/-0.3%PV Voltage Accuracy4/-0.2WVoltage Accuracy4/-2.VStandby Power Consumption2WattsCharging Algorithm3-Stage (CC-V-Floating)Battery Voltage Accuracy4/-2.VStandby Power Consumption2WattsCharging Algorithm3-Stage (CC-V-Floating)Battery Voltage Accuracy4/-2.VStandby Power Consumption2WattsCharging Algorithm3-Stage (CC-V-Floating)Battery ModeDisplays output power, Output Voltage etcBattery ModeD	@load < 20%	10.5V DC	
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ODNo Load Power Consumption<10W	@ load > 50%	9.6V DC	
No Load Power Consumption<10WSaving Mode Power Consumption<5W	High DC Recovery Voltage	14.5V DC	
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Charge Mode Specs (AC charger)Battery Voltage12V DCFloating Charge Voltage13.5V DCOvercharge Protection15.5V DCMaximum Charge Current20AmpBulk Charging Voltage (Flooded Battery)14.6V DCBulk Charging Voltage (AGM/GEL battery)14.1V DCBulk Charging Voltage (AGM/GEL battery)14.1V DCCharging Algorithm3-Stage (CC-CV-Floating)Solar Charging Mode SpecsMaximum PV Array PowerSolar Charging Mode Specs450WSolar charger-Operating Voltage10-55V DCMaximum PV Array Open Circuit Voltage55V DCMaximum Charging Current40AMPBest Panel Configuration2x210WpMaximum Efficiency98%Battery Voltage Accuracy+/- 0.3%PV Voltage Accuracy+/- 2VStandby Power Consumption2WattsCharging Algorithm3-Stage (CC-CV-Floating)Displays output power, Output Voltage etcBattery ModeBattery ModeYes. Battery symbol flickers every one secBattery ModeYes. Battery charge status	Transfer Time	6-10mSec	
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Maximum Charge Current20AmpBulk Charging Voltage (Flooded Battery)14.6V DCBulk Charging Voltage (AGM/GEL battery)14.1V DCBulk Charging Algorithm3-Stage (CC-CV-Floating)Charging Algorithm3-Stage (CC-CV-Floating)Solar Charging Mode Specs450WMaximum PV Array Power450WSolar charger-Operating Voltage10-55V DCMaximum PV Array Open Circuit Voltage55V DCMaximum Charging Current40AMPBest Panel Configuration2x210WpMaximum Efficiency98%Battery Voltage Accuracy+/- 0.3%PV Voltage Accuracy+/- 2VStandby Power Consumption2WattsCharging Algorithm3-Stage (CC-CV-Floating)Display IndicatorsAC/DC modeBattery ModeYes. Battery symbol flickers every one secBatteryDisplays Battery charge status	Floating Charge Voltage	13.5V DC	
Bulk Charging Voltage (Flooded Battery)14.6V DCBulk Charging Voltage (AGM/GEL battery)14.1V DCCharging Algorithm3-Stage (CC-CV-Floating)Charging Algorithm3-Stage (CC-CV-Floating)Maximum PV Array Power450WSolar charger-Operating Voltage10-55V DCMaximum PV Array Open Circuit Voltage55V DCMaximum Charging Current40AMPBest Panel Configuration2x210WpMaximum Efficiency98%Battery Voltage Accuracy+/-0.3%PV Voltage Accuracy4/-2VStandby Power Consumption2WattsCharging Algorithm3-Stage (CC-CV-Floating)Display IndicatorsAC/DC modeBattery ModeYes. Battery symbol flickers every one secBatteryDisplays Battery charge status	Overcharge Protection	15.5V DC	
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Solar Charging Mode SpecsMaximum PV Array Power450WSolar charger-Operating Voltage10-55V DCMaximum PV Array Open Circuit Voltage55V DCMaximum Charging Current40AMPBest Panel Configuration2x210WpMaximum Efficiency98%Battery Voltage Accuracy+/- 0.3%PV Voltage Accuracy2WattsCharging Algorithm3-Stage (CC-CV-Floating)Display IndicatorsAC/DC modeDisplays output power, Output Voltage etcBattery ModeYes. Battery symbol flickers every one secBatteryDisplays Battery charge status		14.1V DC	
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Maximum PV Array Open Circuit Voltage55V DCMaximum Charging Current40AMPBest Panel Configuration2x210WpMaximum Efficiency98%Battery Voltage Accuracy+/- 0.3%PV Voltage Accuracy+/- 2VStandby Power Consumption2WattsCharging Algorithm3-Stage (CC-CV-Floating)Display IndicatorsAC/DC modeDisplays output power, Output Voltage etcBattery ModeYes. Battery symbol flickers every one secBatteryDisplays Battery charge status	Maximum PV Array Power	450W	
Maximum Charging Current40AMPBest Panel Configuration2x210WpMaximum Efficiency98%Battery Voltage Accuracy+/- 0.3%PV Voltage Accuracy+/- 2VStandby Power Consumption2WattsCharging Algorithm3-Stage (CC-CV-Floating)Display IndicatorsAC/DC modeDisplays output power, Output Voltage etcBattery ModeYes. Battery symbol flickers every one secBatteryDisplays Battery charge status	Solar charger-Operating Voltage	10-55V DC	
Best Panel Configuration2x210WpMaximum Efficiency98%Battery Voltage Accuracy+/- 0.3%PV Voltage Accuracy+/- 2VStandby Power Consumption2WattsCharging Algorithm3-Stage (CC-CV-Floating)Display IndicatorsAC/DC modeDisplays output power, Output Voltage etcBattery ModeYes. Battery symbol flickers every one secBatteryDisplays Battery charge status	Maximum PV Array Open Circuit Voltage	55V DC	
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PV Voltage Accuracy+/- 2VStandby Power Consumption2WattsCharging Algorithm3-Stage (CC-CV-Floating)Display IndicatorsDisplay IndicatorsAC/DC modeDisplays output power, Output Voltage etcBattery ModeYes. Battery symbol flickers every one secBatteryDisplays Battery charge status	Maximum Efficiency	98%	
Standby Power Consumption2WattsCharging Algorithm3-Stage (CC-CV-Floating)Display IndicatorsAC/DC modeDisplays output power, Output Voltage etcBattery ModeYes. Battery symbol flickers every one secBatteryDisplays Battery charge status	Battery Voltage Accuracy	+/- 0.3%	
Charging Algorithm3-Stage (CC-CV-Floating)Display IndicatorsAC/DC modeDisplays output power, Output Voltage etcBattery ModeYes. Battery symbol flickers every one secBatteryDisplays Battery charge status	PV Voltage Accuracy	+/- 2V	
Display Indicators AC/DC mode Displays output power, Output Voltage etc Battery Mode Yes. Battery symbol flickers every one sec Battery Displays Battery charge status	Standby Power Consumption	2Watts	
AC/DC modeDisplays output power, Output Voltage etcBattery ModeYes. Battery symbol flickers every one secBatteryDisplays Battery charge status	Charging Algorithm	3-Stage (CC-CV-Floating)	
Battery Mode Yes. Battery symbol flickers every one sec Battery Displays Battery charge status	Display Indicators		
Battery Displays Battery charge status	AC/DC mode	Displays output power, Output Voltage etc	
	Battery Mode	Yes. Battery symbol flickers every one sec	
Fault Displays fault codes (refer the service manual)	Battery	Displays Battery charge status	
	Fault	Displays fault codes (refer the service manual)	



Model # HG1012-PV		
Audible Alarm		
Low Battery at Battery Mode	Sounding every 2 seconds	
Over Load	Sounding every 0.5seconds	
Faults	Continuous sounding	
Protection		
Battery deep discharge Protection	Yes	
Battery Over charge protection	Yes	
Inverter Over load protection	Yes	
Over temperature protection	Yes	
General Specs		
Dimension (WxHxD-mm)	245x97.5x272	
Net Weight (kgs)	2.48	
Humidity	5% to 95% Relative Humidity (non-condensing)	
Operating Temperature	OdegC to 50deg C	
Storage Temperature	-15degC to 60degC	
Noise Level	less than 50dB	
Warranty/ Certifications		
Warranty	18 Months limited warranty	
Quality/Safety standards	ISO9001:2015/ISO14001:2015/CE/RoHS	

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