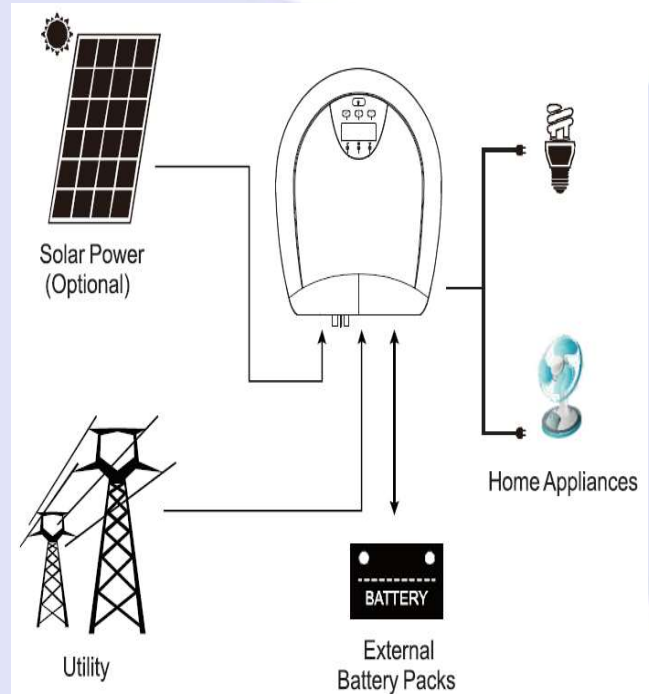


## Model # HG2024-PV

### 230V/50Hz, 2KVA, 24VDC Smart Solar-Inverter (Hybrid) with AC Charger & Built-in Solar Charge Controller (Dual Chargers)

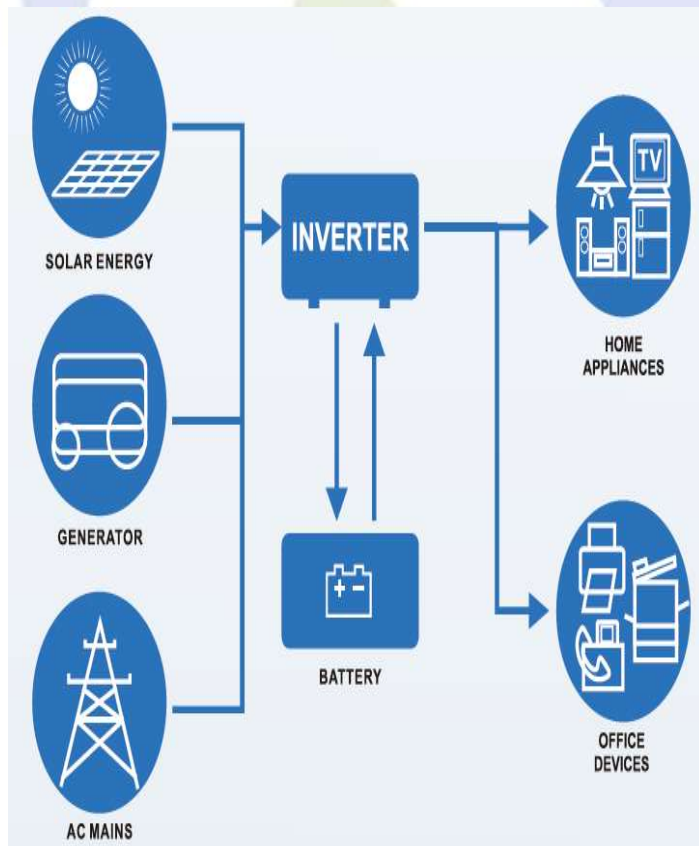


## Product Description

Magnizon HG2024-PV is a Smart DC-to-AC inverter with auto line-to-battery transfer and integrated Solar charge controller and AC-DC charging system (Dual charging system), serving as an extended run UPS, a standalone power source or an automotive inverter (Completely Hybrid and automatic operation). HG2024-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 absence 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.

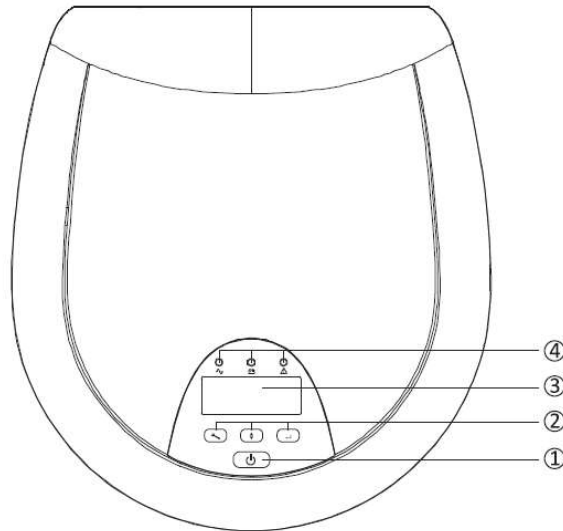


### Key Feature

- 24V DC or 230V AC input; 230V, 50 Hz output
- 2KVA continuous output with double boost capacity.
- Microprocessor controlled Smart volume design
- Built in 40A Smart solar charge controller & Utility based charger
- Dual 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

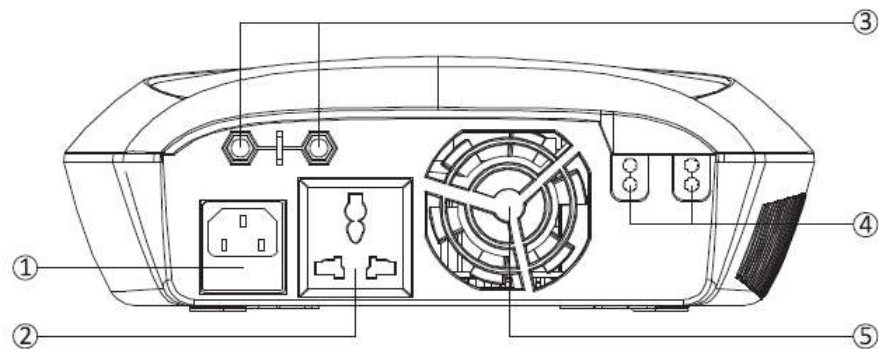
## HG Series Product Overview

### Front Panel



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

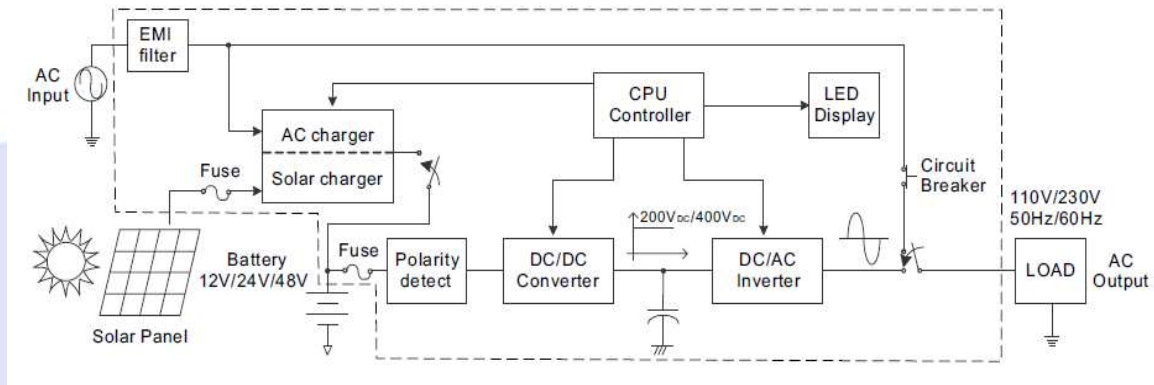
### Rear Panel



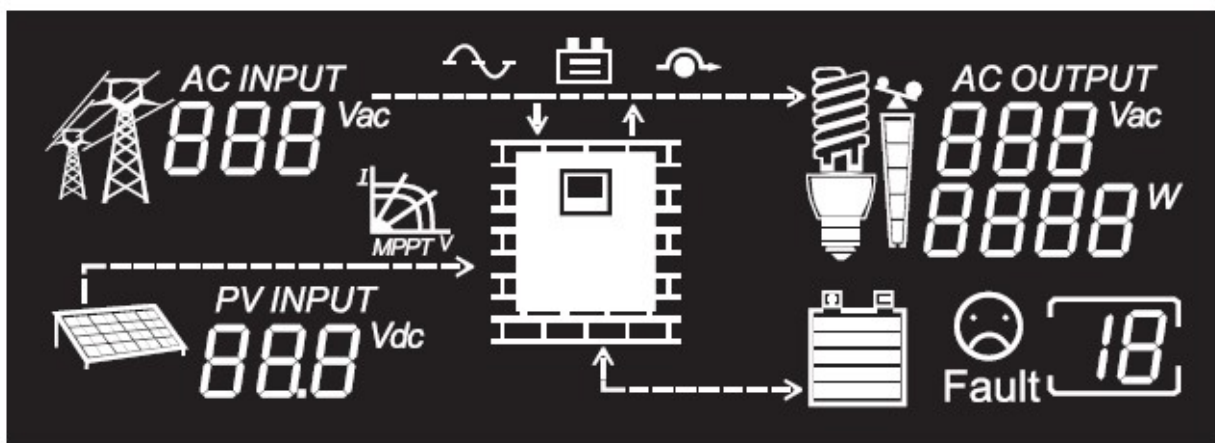
- ① AC input receptacle
- ② AC output receptacle
- ③ PV Input terminals
- ④ Battery terminals
- ⑤ DC Fan

## Model # HG2024-PV

### System Control Scheme

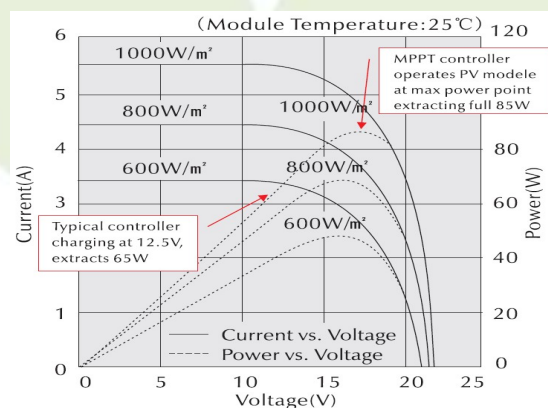


### Smart LCD Display Panel



### Smart Solar Charge Controller Function

The HG2024-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.



**Model # HG2024-PV**
**Specification**

Model	HG2024-PV
Rated Power	2000VA
INPUT AC	
Nominal Input Voltage	230V AC
Low Loss Voltage	170V AC +/- 7V (UPS mode)
	90V AC +/- 7V (Appliances mode)
Low loss return Voltage	180V AC +/- 7V (UPS mode)
	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	2KVA/1.5KW
Output Voltage Waveform	Sine wave
Output Frequency	50Hz/60Hz (auto sensing)
Surge Power	4000VA
Efficiency	95-97%
Over Load protection	5sec @>150% load; 10sec@110~150% load
Nominal DC input Voltage	24V DC
Cold Start Voltage	23.0V DC
Low DC Warning Voltage	
@load < 20%	22.0V DC
@ 20% < load < 50%	21.4V DC
@ load > 50%	20.2V DC
Low DC Warning Return Voltage	
@load < 20%	23.0V DC
@ 20% < load < 50%	22.4V DC



**Model # HG2024-PV**

@ load > 50%	21.2V DC
<b>Low DC Cut-off Voltage</b>	
@load < 20%	21.0V DC
@ 20% < load < 50%	20.4V DC
@ load > 50%	19.2V DC
High DC Recovery Voltage	29V DC
High DC Cut-off Voltage	31V DC
No Load Power Consumption	<10W
Saving Mode Power Consumption	<5W
Transfer Time	6-10mSec
Efficiency	90~93%
<b>Charge Mode Specs (AC charger)</b>	
Battery Voltage	24V DC
Floating Charge Voltage	27V DC
Overcharge Protection	31V DC
Maximum Charge Current	15A
Bulk Charging Voltage (Flooded Battery)	29.2V DC
Bulk Charging Voltage (AGM/GEL battery)	28.2V DC
Charging Algorithm	3-Stage (CC-CV-Floating)
<b>Solar Charging Mode Specs</b>	
Maximum PV Array Power	900W
Solar charger-Operating Voltage	20-80V DC
Maximum PV Array Open Circuit Voltage	80V DC
Maximum Charging Current	40AMP
Best Panel Configuration	4x210Wp
Maximum Efficiency	98%
Battery Voltage Accuracy	+/- 0.3%
PV Voltage Accuracy	+/- 2V
Standby Power Consumption	2Watts
Charging Algorithm	3-Stage (CC-CV-Floating)
<b>Display Indicators</b>	
AC/DC mode	Displays output power, Output Voltage etc
Battery Mode	Yes. Battery symbol flickers every one sec
Battery	Displays Battery charge status
Fault	Displays fault codes (refer the service manual)

**Model # HG2024-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)	2.78
Humidity	5% to 95% Relative Humidity (non-condensing)
Operating Temperature	0degC 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