

EnerSolis Photovoltaic Inverter



- Max 2 MPPT
- Easy Installation
- DSR Controller
- Friendly LCD Display
- High Efficiency
- High Reliability
- IP65 Protection
- Fan-Less Design
- High Safety



Grid Connected PV System

Solar energy is determined as an important part of the solution to achieve control of CO2 emissions level. This limitation on CO2 emission level will reduce Global Warming. The grid-connected PV system converts light source into electricity from the Sun, contributing directly as power supply. The system is suitable to be installed on the roof of house and creates a harmonious environment living condition. Residents will have the benefits derived from huge savings through price difference of electricity transaction; selling and buying of electricity.

Solar energy is widely used in the public area of numerous global cities because of its end-less resource. Building Photovoltaic (BIPV) combines solar modules and architectural requirements to incorporate the solar modules as part of the building structure. Solar powered system can easily be installed on buildings. In the day time, building will transmit the generated power to public grid in order for the building to receive power from the public grid during night time. Therefore, the effective use of this system will enhance the desired green and energy-saving living environment.

The block diagram of EnerSolis



Two Independent MPPT

EnerSolis PV Inverter can track the maximum power from any PV module. The higher power modules (ES 4200, ES 5000) allow two PV arrays to be connected to two independent Maximum Power Point Tracking (MPPT) circuits in order for the user to have more flexibility in designing the PV system according to the user specification. In the current building environment, architects and installers have the knowledge to design PV systems meeting exact power requirements, with the ability to create clean and professional outlook on the roof. The MPPT control algorithms are superbly efficient to ensure quick variations of irradiance can be carefully tracked resulting in the harvest of more energy compared to other conventional inverters.

Easy Operation and Install

EnerSolis represents a major leap of technological advancement in the arena of solar powered energy with easy to install and use functionality. All models are designed to the maximum flexibility to the user advantage; plug and play feature will allow the user to install the PV system without hassle. One person is sufficient to properly manage all EnerSolis models. System turn-on function is a fully automatic and fast process once the inverter is properly connected.



Ingenious DSP Control

Employing field-proven Digital Signal Processor (DSP), the EnerSolis PV Inverters performs as a truly user-friendly unit for easy operation and access to system information. All EnerSolis models are equipped with patent-owned MPPT and Anti-Island Control Technology. In the macro perspective, the combination of DSP control and EnerSolar advanced technology will yield the maximum energy from all types of modules.

Friendly LCD Display

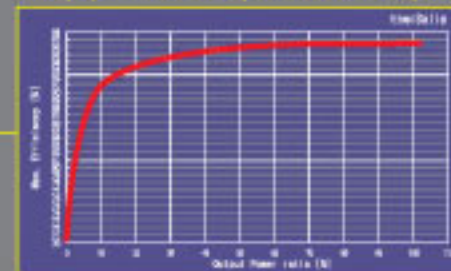
The EnerSolis models have an embedded data logger with graphical LCD and sensitive keypad for optimum viewing performance and operational data. The easy-to-read LCD/LED display provide real-time power reading status like Utility Voltage, Frequency, PV Arrays Voltage, Power Level, Temperature of Inner Cabinet, Error Code, PV Inverter Status and etc. The full-size graphical LCD display may provide advanced monitoring functions that greatly enhances smooth operating interface.



High Efficiency

EnerSolis models allow user system to yield more solar powered energy under part-load conditions. This unique feature propels EnerSolis to the top of the market for efficiency and energy harvesting; 96% Max efficiency and 95.4% Euro efficiency.

Industry top-class Max. Efficiency of 96%, Euro Efficiency 95.4%



High Reliability

EnerSolis models incorporate de-rating design concept for the reduction of electrical stress generated from each electrical component by the rated value according to actual use time, thus lowering product failure rate and ensuring reliability in the long term. These models are researched and designed in compliance with all international standards; EN5 compliant to the German VDE0126-1-1.

IP65 Protection

EnerSolis is designed specifically for use in the open environment and has been stringently tested to an IP65 degree of protection. This will ensure continuous circulation of air and prevent condensation from collection. The inverter is further protected against the entrance of solid particles and hose water penetration.

Fan-Less Design

EnerSolis uniqueness lies in its ability to achieve absolute silence during operation. Designed as an intelligent system, the EnerSolis inverter will reduce its energy output to ensure maximum component ratings are not exceeded once the heat sink on the inverter reaches the maximum temperature limit.



EnerSolis Technical Specifications

MODEL	ES 2200-EU-230	ES 3300-EU-230	ES 4200-EU-230	ES 5000-EU-230
Input data				
Recommended PV power	1500-2500 Wp	2500-3600 Wp	3500-4500 Wp	4000-5000 Wp
Maximum Power	2200 Wp	3300 Wp	4200 Wp	5000 Wp
Max. input voltage	500Vdc	500Vdc	500Vdc	500Vdc
MPP-voltage range	150-450Vdc	150-450Vdc	150-450Vdc	150-450Vdc
MPP tracker	1MPP tracker(dynamic)	1MPP tracker(dynamic)	2MPP trackers(dynamic)	2MPP trackers(dynamic)
Max. usable DC input current	14.6A	22A	28A	35.3A
Output data				
Maximum output power	2200Wp	3300Wp	4200Wp	5000Wp
Nominal AC output voltage	230Vac			
Maximum output current	9.6A	14.3A	18.26A	21.7A
Maximum output fault current	20A	20A	40A	40A
Operating AC voltage range	180-260Vdc		Germany:196-253/260Vdc*	
Nominal output frequency	50Hz			
Operating frequency range	45.5Hz-54.5Hz		Germany:47.55Hz-50.2Hz	
Total harmonic distortion	<3%			
Power factor	0.99			
General data				
Maximum efficiency	94%			
Consumption during stand-by	< 8W			
Consumption during night time	< 0.15W			
Anti-Islanding	Yes			
Operating ambient temperature	-25°C to +60°C (-13°F to 140°F)			
Enclosure type	IP65			
Audible Noise	<30dBA			
Cooling	Convection (no fan required)			
Size (height x width x depth)	350*302*120		420*302*120	
Weight	11.4Kg		16.4Kg	
Mounting	Wall Mount (mounting bracket included)			
Protections				
DC reverse polarity protection	Internal diode			
Islanding protection	Internal, in accordance with VDE 0126-1-1			
Over temperature	Output power derating			
Surge Protection	Internal DC & AC protection. Tested to 6 kV			
Compliance				
Safety	EN 50178			
EMI	EN 61000-6-2, EN 61000-6-3, EN 61000-3-2, EN 61000-3-3			
Anti-Islanding protection	VDE 0126-1-1			
Features				
Display	Information chargeable Function key on the panel			
Comm. Interface	USB standard, RS232, RS485, Dry Contact, TCP/IP, Zigbee, optional			
Warranty	5 years, 10 year extended warranty available			

High Safety

PV inverters are characteristically utilized under high voltage conditions and hazardous environments over extended period of time, resulting in malfunctions which may lead to fire threat. Abierex brand of EnerSolis systems are designed with Safety as the top priority to ensure user peace of mind whenever the inverter is in service.

