

Enviro Energy Solutions Ltd
Your Gateway to the Sun

**EAC Series SOLAR
DC AIR CONDITIONERS**

...BECAUSE WITH ENVIROENERGY SOLUTIONS THE SUN SHINES FOR EVERYONE...

ENVIROENERGY SOLAR DC INVERTER AIR CONDITIONERS

Air conditioners are generally the most energy-consuming appliances in a house, office or building, accounting in many cases for up to 70% of the energy bill and a large amount of pollution. In hot and humid countries, it has become a necessity hard to go by, since Solar Air Conditioning Systems are used not only for cooling and heating but also for removing humidity. In countries with high electricity costs they can help to greatly reduce the energy bill.

Although a must in most cities, in rural areas and remote locations with no grid connection, it is very difficult if not impossible to sustain enough power for air conditioning purposes, so cooling and heating is just a dream for people living in these harsh conditions.

With its Solar DC Air Conditioning Systems, **ENVIROENERGY SOLUTIONS** finally places this dream within reach of people living in even the most remote locations. In such places, working completely independently from fuel generators or public grids, it is not only the most economical way, but very often the only way of cooling and heating houses, shops and buildings.

Particularly in the Middle-East, Africa, Southern Europe, the Caribbean's, Latin America and many other places with so much sunshine available, **ENVIROENERGY SOLUTIONS** Solar DC Air-Conditioning systems naturally find their place even in urban areas, reducing dependency on conventional power, very often unstable and unreliable.

All **ENVIROENERGY SOLUTIONS** Air Conditioners use Variable Frequency Technology (Inverter) and can change their working speeds depending on actual needs and conditions. They can heat/cool very quickly in high speed and remain at slow speed when the desired temperature is reached in order to keep a stable temperature.

They can operate under a wide range of input voltage, meaning that they can work even under unstable power supply conditions.

Furthermore, our Inverter type Air Conditioners work more silently and without frequent starting/stopping like ordinary A/C, making them even more economical and they control temperature with an accuracy of 0,5°C.

There are 2 different types of **ENVIROENERGY SOLUTIONS** Solar DC Air-Conditioning systems:

* **Hybrid Powered**, combining Solar Power and Public Utility Grid. They use solar power during the day and AC electricity (public utility grid) during the night. These systems can provide up to 80% economy of energy.

* **100% Solar Powered** for completely Off-grid installations. They operate directly on the DC power produced by the Solar Panels and do not require any inverter. They require battery storage to function during the night.

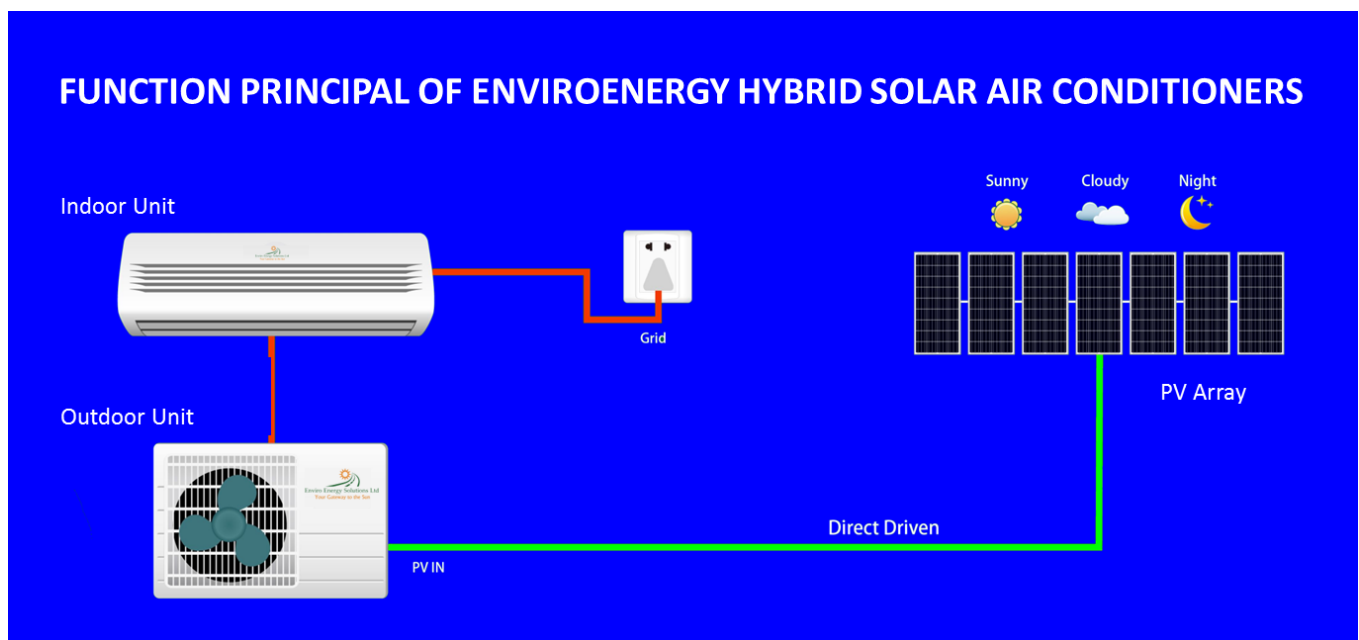
ENVIROENERGY HYBRID INVERTER AIR CONDITIONERS

ENVIROENERGY SOLUTIONS Hybrid Inverter Air Conditioners use both AC and DC electricity. Consisting of the DC Inverter Air Conditioner and a Solar PV panel array adapted to the size of the A/C unit, they are mainly powered by Solar Energy (DC) and are assisted by the utility grid (AC) during the night.

During sunny days, they are driven directly by the solar energy that provides almost 100% of the electricity consumed by the system.

During cloudy days, the Air Conditioner is powered by both the utility grid and solar energy, which provides up to 75% of the energy required by the system for normal operation.

During the night, the system operates only on AC electricity provided by the grid.



ENVIROENERGY SOLUTIONS Hybrid Inverter Air Conditioners are equipped with the most advanced Automated Controlling Technology for smooth, quiet and seamless transfer and complementarity between Direct Current (solar power) and Alternative Current (Grid) electricity.

ENVIROENERGY SOLUTIONS Hybrid Inverter Air Conditioners are ideal for countries with high electricity costs. Depending on the sunshine and the cost of electricity return on investment can be achieved in less than 2 years. Especially when used in offices and hotels, payback time can be reduced even further!

ENVIROENERGY 100% SOLAR POWERD DC INVERTER AIR CONDITIONERS

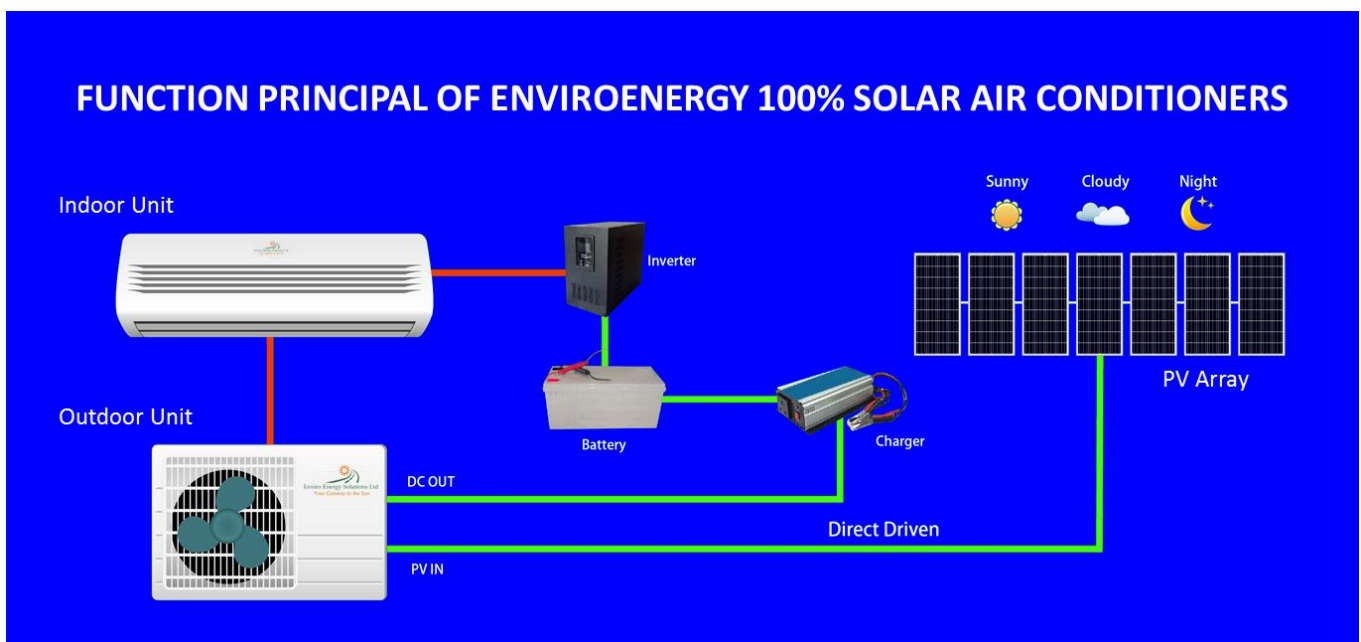
ENVIROENERGY SOLUTIONS 100% Solar Powered Inverter Air Conditioners use only Solar Energy. They consist of the DC Inverter Air Conditioner, a Solar PV panel array adapted to the size of the A/C unit, a Solar Charge Controller and a UPS system that includes batteries and inverter.

They are completely autonomous for Off-Grid use, powered by Solar Energy (DC) either directly from the solar panels or in combination with the stored power through the UPS system.

During sunny days, they are driven directly from the solar PV panel array, which in the same time charges the batteries of the UPS through the charge controller, for use during the night.

During cloudy days, the Air Conditioner is powered by both the solar PV panel array and the UPS if required, while still charging the battery pack for night operation.

During the night, the system operates only on the UPS system.



ENVIROENERGY SOLUTIONS 100% Solar Powered Inverter Air Conditioners are ideal for countries with short or unstable supply of electricity and with the adapted PV array and battery pack, these systems can be used independently all through the night.

Furthermore, our systems can be used as an independent source of power to supply other home appliances such as TV, DVD, Radio, refrigerators, etc...

TECHNICAL CHARACTERISTICS

	EAC 12H/12S	EAC 18H/18S	EAC 24H/24S	
SYSTEM CAPACITY				
Cooling BTU/h	12.000	18.000	22.000	
Heating BTU/h	12.500	19.000	22.800	
SYSTEM PERFORMANCE				
SEER (W/W)	5,6	5,5	5,18	
SCOP (W/W)	3,8	3,61	3,51	
Air Flow Volume (m ³ /h)	630	920	1.000	
Area Coverage (m ²)	13 to 27	20 to 40	30 to 55	
Noise Level-Indoor Unit dB(A)	54	60	63	
3Noise Level-Outdoor Unit dB(A)	61	65	68	
ELECTRICAL REQUIRMENTS (220~240V - 50Hz – 1Ph)				
Power Input-Cooling (W)	1.092	1.600	1.982	
Power Input-Heating (W)	1.011	1.594	1.823	
Operating Current- Cooling (A)	4,98	7,96	9,6	
Operating Current- Heating (A)	4,83	7,93	9,0	
SOLAR PANELS				
Total Power (Wp)	Hybrid (H)	Poly 3x330w	Poly 4x330w	Poly 6x330w
	100% Solar (S) (Off Grid)	Poly 6x330w	Poly 8x330w	Poly 10x330w
Solar Panel Operating Temperature (°C)	-40 to +85 °C			
FOR OFF-GRID SYSTEM (100% SOLAR USE)				
Solar MPPT Controller	40A	50A	50A	
Gel Batteries	4x150Ah	4x200Ah	4x250Ah	
Cable and MC4 Connector	1 set	1 set	1 set	

Notes:

- a) The Number of solar panels of each system can be modified as per customers requirements with PV input voltage from 95V to 345VDC
- b) Brackets for solar the panels are not included
- c) 2 copper tubes (3m) and wires between indoor and outdoor units are included
- d) 2 cables from solar panels to controller (6mm² x 5 meters) and 2 cables from controller to air conditioner (6mm² x 3 meters) included

GENERAL CHARACTERISTICS

- Plug and Play kits
- All systems are for Heating and Cooling
- Variable Frequency Inverter
- Two layer condenser
- Condenser with Pure Copper Pipes
- Exclusive BOS (Balance of System) box
- Direct driven solar powered compressor
- High endurance Polypropylene fan
- Refrigerant type: R410A
- Indoor Units from 9.000~22.000 btu are wall mounted (High)
- Indoor Units from 36.000~48.000 btu are floor standing/wall mounted (Low)
- Special PV panels uniquely adapted for Solar Air Conditioners Only (Amps and voltage)

DIMENSIONS/WEIGHT

	EAC 12H/12S	EAC 18H/18S	EAC 24H/24S
NET DIMENSIONS AND WEIGHT			
Indoor Unit (WxHxD in mm)	870x200x280	940x220x300	1170x240x325
Outdoor Unit (WxHxD in mm)	760x260x530	800x300x680	900x320x770
Net Weight (kg) (Indoor/Outdoor)	10,5/33	12/45	12/46
GROSS DIMENSIONS AND WEIGHT (Packaged)			
Indoor Unit (WxHxD in mm)	950x350x260	1050x365x275	1300x440x380
Outdoor Unit (WxHxD in mm)	880x360x610	930x420x755	1040x425x860
Net Weight (kg) (Indoor/Outdoor)	12/35	14/49	19/60

ADVANTAGES

- The Variable Frequency Inverter gently adjusts the speed of the air compressor without frequent start/stop like ordinary air conditioners and makes the systems a lot more energy efficient.
- Direct Driven, Solar Powered Compressor: our air conditioners operate with direct input from the solar panels. They are not like DC48 systems, which require charging of battery pack first before they can operate. Therefore, Enviroenergy Solutions Solar Air Conditioners make full use of solar power and do not require a large battery pack.
- Exclusive BOS (Balance of System) box. Unlike any other direct solar power input air conditioner on the market, which cannot balance the power provided by the solar panels, and therefore can only use fixed speed, Enviroenergy Solutions Air Conditioners have a unique and specially designed system (BOS) that balances the power from the solar panels to provide a steady and smooth function with a Variable frequency Inverter system, making them the most economical air conditioners in the world.
- The Two Layer Condensers, Pure Copper Pipes, “Golden Fins” and Poly Propylene Fan make Enviroenergy Solutions Air Conditioners extremely resistant to harsh weather conditions and corrosive environments like near the sea. They are especially adapted for installations in industrial areas, Islands and near the coasts.
- Enviroenergy Solutions Air Conditioners are “Plug and Play” systems and are installed like ordinary electric A/C systems.



EAC Indoor Units 12.000-24.000 Btu



EAC Outdoor Units 12.000-24.000 Btu



CONVERSION TABLES

COOLING/HEATING CAPACITY		
BTU	KW	TONS
9.000	2,64	0,75
12.000	3,51	1
18.000	5,27	1,5
24.000	7,03	2
36.000	10,55	3
48.000	14,06	4

- 1 TON => 12.000 BTU
- 1 KW => 3.412,41 BTU
- 1 KW => 0,284 TONS

POWER CONSUMPTION	
HP	WATT
1	746
1,5	1.119
2	1.492
3	2.238
4	2.984
5	3.730
6	4.476

- 1 watt => 0,00134 hp

SURFACE AREA	
Sq. Meters	Sq. Feet
1	10,764
10	107,64
25	269,10
50	538,20
75	807,28
100	1.076,4
300	3.229,2
400	4.305,6
900	9.687,5

- 1 ft² => 0,0929 m²



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**“...We Do Not Inherit The Earth From Our Fathers
We Borrow It From Our Children...”**

...BECAUSE WITH ENVIROENERGY SOLUTIONS THE SUN SHINES FOR EVERYONE...



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