



## EnerSolis Series Grid-connected Photovoltaic Inverter

The EnerSolis series grid-connected Photovoltaic Inverter is delivered in a waterproof IP65 enclosure which can be installed in either a grid connected solar tracker system or a stationary PV system. By taking care of an accurate power conversion from solar panel to local grid, the EnerSolis series effects conversion process with minimal power loss and maximum reliability.

- Two Built-in Independent MPPT Boosters increase overall efficiency
- Convectional Cooling System provided to guarantee quiet operation
- Compact Size, Light Weight
- Up to 96% high conversion efficiency
- Advanced DSP Control Technology delivers accurate data
- Ease of Installation to Save Time and Money
- Mimic LCD Display
- Higher MTBF Components Used
- IP65 Cabinets for both Indoor and Outdoor Applications
- VDE Certified to Ensure Safe Operation
- Optional Monitoring Software provided to offer operational status and electricity generated data.



Parallel



DSP Control



Double MPPTs



IP65 outdoor

In general, solar system generates electricity then sells to public utility company via feed-in meter. The public utility company will provide electricity to electrical appliance via consumption meter.



If there is any redundant electricity left after feeding in those electrical appliance, it can be sold to the public Utility company and vice versa.



### Joint Box

Optional joint box with fast plug-and-play connection design may simplify your installation process.

Model	In put Connection(s)		Rated Current	Dimension(WxHxD)mm/inch	Weight (kgs/lbs)	Color	Remark
DAL312	DC	4	20A max.	450x435x165 / 17.8x17.2x6.5	16/35.3	White	Max. DC rated voltage: 630Vdc
	AC	1	30A max.				



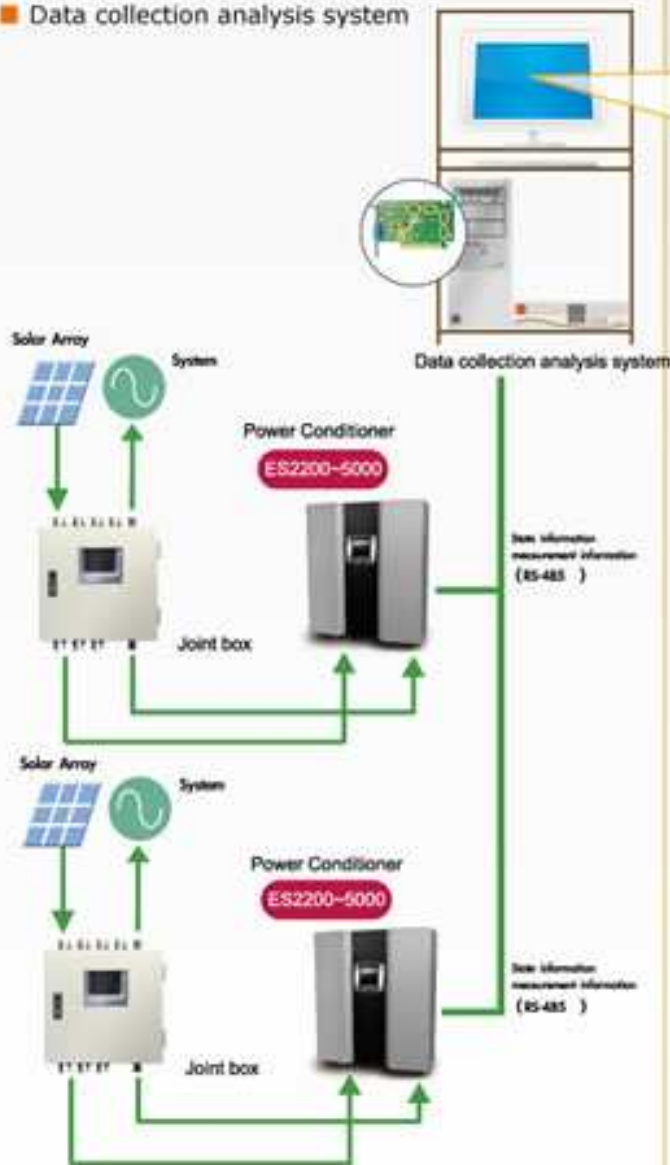


## Grid-connected PV Inverter

### ■ Communication System

An optional data collecting & analysis system may measure up to 20 units of EnerSolis PV inverters via RS485 communication interface.

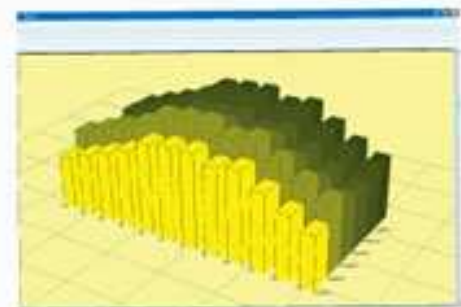
### ■ Data collection analysis system



Generation condition diagram



Daily photovoltaic generation trend graph

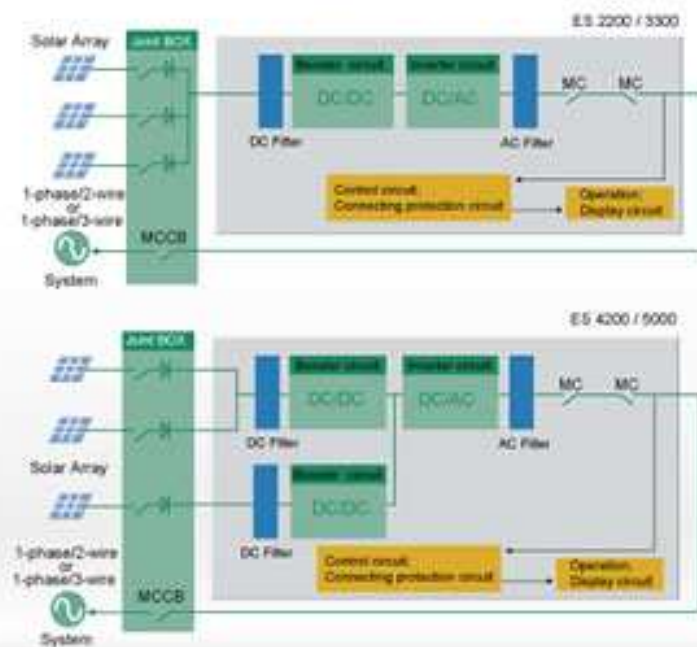


Monthly photovoltaic generation trend graph

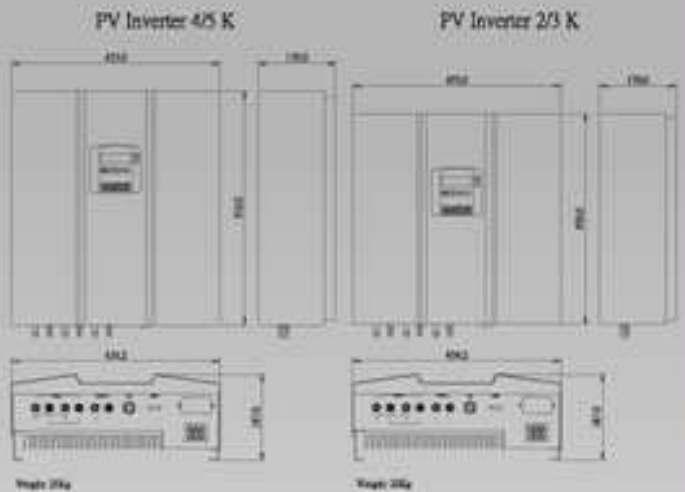


Status information, Measurement information

## System Block Diagram



## Dimensions (mm)



# Energy Management Device

Simply connecting the Energy Management Device with EnerSolis series PV Inverters, you may collect all the data from the inverter, such as event log, total output power...etc. Therefore, those useful data collected may be converted or formatted to precious analysis graph or information, such as daily Photovoltaic generation trend graph, monthly photovoltaic generation trend graph.



Model	EMD(Energy Management Device)
CPU	266MHz SAMSUNG S3C2410A 32-bit ARM9
OS	Microsoft Windows CE 4.2
Host Interface	SDIO. Available SD/MMC card
Memory	40MB Flash RAM - 32 MB SDRAM
Audio Port	3.5 mm Speaker socket - 3.5 mm Headphone socket
Monitor	5.6" Color TFT-LCD, 26K color with back light and touch screen
Communication Port	USB host - USB device - UART x 2 - Ethernet
Power Consumption	200mA
Supply Voltage	DC12V
Weight(Kg/lbs)	2/4.4
WxHxD(mm/inch)	185x155x65 / 7.3x6.1x2.6



## EnerSolls Series Technical Specifications :

Model		ES2200	ES3300	ES4200	ES5000
Item					
Nominal AC Power		2000W	3000W	4000W	5000W
Maximum AC Power Output		2200W	3300W	4200W	5300W
System	Topology	High Frequency PWM Transformer-less			
DC Input	Rated voltage	DC360V			
	Maximum Voltage	DC500V			
	Operation Voltage	DC120V-DC500V			
	Max. power point tracking range	DC150V-DC450V			
	No. of input connection/max. current for each connection	1 /14.6A	1/22A	2/14A	2 /17.65A
AC Output	Phase/Wire	1-phase/2-wire or 1-phase/3-wire(LNG)			
	Rated voltage	AC230V(184~264.5Vac)			
	Rated frequency	50 or 60 Hz(47.5~50.2Hz or 59.3~60.5Hz)			
	Rated output	8.7A	13A	17.4A	21.7A
	Current THD	Total Harmonic current: less than 5% Single Harmonic current: less than 3%			
	Power factor	> 0.99			
Efficiency		96%			
Protection		Over voltage, Under voltage, Over frequency, Under frequency			
Islanding operation detection	Passive	Voltage phase jump detection			
	Active	Reactive power control			
Interface		RS232(Standard), USB, RS485, Dry contact.			
Physical	Dimension(mm/inch)	455x430x170 / 18x17x6.7		455x510x170 / 18x20x6.7	
	Net Weight(Kgs/lbs)	20/44		25/55	
Environment	Operation Temperature	-10°C~ +50°C/-14°F~ 122°F			
	Altitude	0~2000M/0~6600ft			
	Humidity	30-90% RH Maximum, Non-Condensing			
Safety Conformance	Quality Assurance	ISO9001 certified			
	EMC Standard	EN61000-6-1, EN61000-6-3, EN61000-3-3, EN61000-6-4, EN55022			
	Marks	VDE0126-1-1, EN50178, EN60146-1			





Ablerex Electronics Co., Ltd.

**Head Office:**

**Ablerex Electronics Co., Ltd.**

1F, No. 3, Lane 7, Paokao Rd., Hsintien, 23114, Taipei Hsien, Taiwan, R.O.C.

Tel: +886 2 2917-6857 · Fax: +886 2 2913-1705

<http://www.ablerex.com.tw>

E-mail: [ablerex@ablerex.com.tw](mailto:ablerex@ablerex.com.tw)





**Bureau Veritas Consumer  
Product Services GmbH**

Businesspark A96  
86842 Türkheim  
Germania  
+ 49 (0) 8245 96810-0  
cps-tuerkheim@de.bureauveritas.com

## Dichiarazione di conformità

**NOME ORGANISMO  
CERTIFICATORE:** Bureau Veritas Consumer Product Services GmbH

ACCREDITAMENTO n° ZLS II6/G3933-1/8/09

Rif. DIN EN 45011

Data validità: 30-Giugno-2013

**OGGETTO:** GUIDA PER LE CONNESSIONI ALLA RETE ELETTRICA DI ENEL  
DISTRIBUZIONE, Ed. I, dicembre 2008  
REGOLE TECNICHE DI CONNESSIONE DI CLIENTI PRODUTTORI ALLE RETI  
ENEL IN BASSA TENSIONE

TIPOLOGIA APPARATO A CUI SI RIFERISCE LA DICHIARAZIONE:			
DISPOSITIVO DI INTERFACCIA	PROTEZIONE DI INTERFACCIA	DISPOSITIVO DI CONVERSIONE STATICA	DISPOSITIVO DI GENERAZIONE ROTANTE
X	X	X	

**COSTRUTTORE:** Ablerex Electronics (SUZHOU) Co., Ltd.  
No. 36, Wangwu Road, Wuzhong District,  
Shuzhou City, Jiangsu Province  
P.R. China

<b>MODELLO:</b>	<b>ES 2200</b>	<b>ES 3300</b>	<b>ES 4200</b>	<b>ES 5000</b>
<b>POTENZA NOMINALE:</b>	<b>2,0kW</b>	<b>3,0kW</b>	<b>4,0kW</b>	<b>5,0kW</b>

**VERSIONE FIRMWARE:** PV00098C

**NUMERO DI FASI** monofase

**RIFERIMENTI DEI LABORATORI CHE HANNO ESEGUITO LE PROVE:**

Bureau Veritas Consumer Product Services GmbH

ACCREDITAMENTO n° ZLS II6/G3933-1/7/09

Rif. DIN EN ISO/IEC 17025

Data validità: 30-Giugno-2013




**Esaminati i Fascicoli Prove n°09TH0459-DK5940, emessi dal laboratorio Bureau  
Veritas Consumer Product Services GmbH**

**Si dichiara che il prodotto indicato è conforme alle prescrizioni ENEL**

**Numero di certificato:** U10-058

**Data di emissione:** 2010-03-05

Andreas Aufmuth  
**FIRMA RESPONSABILE**

<b>Specification of the Test Object (Oggetto Del Test)</b>				
<b>CEI 11-20 (2004-08) e alla norma ENEL DK 5940 Ed. 2.2 (Aprile 2007)</b>				
<b>Automatic disconnecting facility for photovoltaic installations</b>				
Rapporto prove numero.....:	09TH0459-DK5940_0			
Testato da (nome e firma) .....	Frederic Schmitt			
Approvato da (nome e firma) .....	Andreas Aufmuth			
Data d'emanazione .....	2010-02-25			
<b>Testing Laboratory Name .....</b>	<b>Bureau Veritas Consumer Product Services GmbH</b>			
<b>Nome del laboratorio di certificazione:</b>	<b>Bureau Veritas Consumer Product Services GmbH</b>			
Indirizzo .....	Businesspark A96, 86842 Türkheim, Germania			
Prove effettuate in.....	<b>Bureau Veritas Consumer Product Services GmbH</b>			
Indirizzo .....	Businesspark A96, 86842 Türkheim, Germania			
<b>Nome del Richiedente .....</b>	<b>Ablerex Electronics (SUZHOU) Co., Ltd.</b>			
Indirizzo .....	No. 36, Wangwu Road, Wuzhong District, Shuzhou City, Jiangsu Province, P.R. China			
<b>Specifica del test:</b>				
Standard .....	Test in accordo alla norma italiana CEI 11-20 (2004-08) e alla norma ENEL DK 5940 Ed. 2.2 (Aprile 2007) e GUIDA PER LE CONNESSIONI ALLA RETE ELETTRICA DI ENEL DISTRIBUZIONE			
Tipo di rapporto per il test .....	ENEL DK 5940 Ed. 2.2 (Aprile 2007)			
TRF creatore.....	Bureau Veritas			
Master TRF .....	Marzo-2008			
Copyright © 2007 Bureau Veritas E&E Product Service GmbH, All rights reserved. This publication may be reproduced in whole or in part for non-commercial purposes as long as the INNOVA Product Service GmbH is acknowledged as copyright owner and source of the material. INNOVA Product Service GmbH takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.				
<b>Descrizione dell'oggetto del test</b>	Solar Inverter			
Marchio.....				
Modell e/o referenza .....	ES2200, ES3300, ES4200, ES5000			
Numero di serie .....	Prototype			
Versione Firmware.....	PV00098C			
Valore nominale.....	ES2200	ES3300	ES4200	ES5000
Input Voltage-Tensione d'entrata:	120 – 500V (150V – 450V MPP)			
Input Current- Corrente d'entrata:	14,6A	22A	14A	14A
Output Voltage - Tensione d'uscita:	230V / 50Hz			
Output current - Corrente d'uscita:	8,7A	13A	17,4A	21,7A
Output Power - Potenza d'uscita:	nom 2000W	nom 3000W	nom 4000W	nom 5000W