



## Energy Storage System for Home

### Energy Self-Consumption

- Daytime: Stored energy generated by Solar Panel.
- Nighttime: Discharge stored energy for home use.

### High Efficiency

- Peak efficiency 97.3% Bi-directional DC-DC converter for Battery Pack.

### Peak Hours Shaving

- Reducing electricity consumption by using stored energy during electricity peak rate hours.

### High Reliability

- 48Vdc Battery system with isolation safety.
- Maximized Reliability through Lithium-ion cells from Samsung or Panasonic.

### On-Grid Application

- Integration with existing On-Grid PV System.
- Use with or without PV Panel.

### Communication

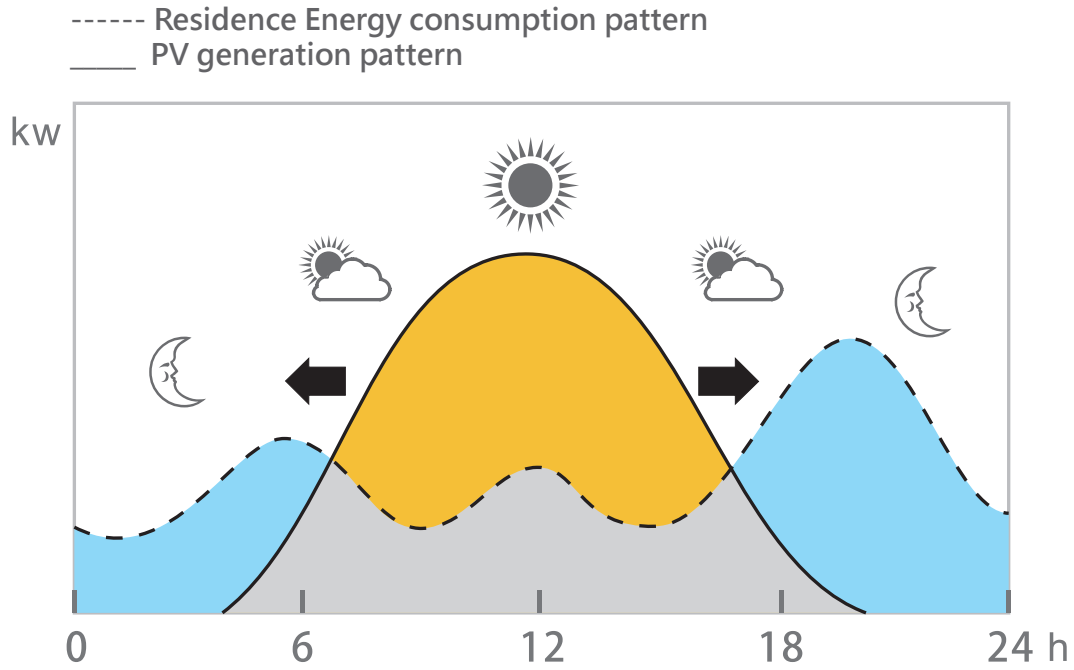
- Smart Metering (MET) to control and monitor battery storage and load demand.
- Cloud integration enables data access via the internet.

### Ease of Use

- All-in-one Solution.  
(PV Inverter + Isolation DC/DC Converter + Lithium-ion Battery Pack)
- Wall Mount Installation Type

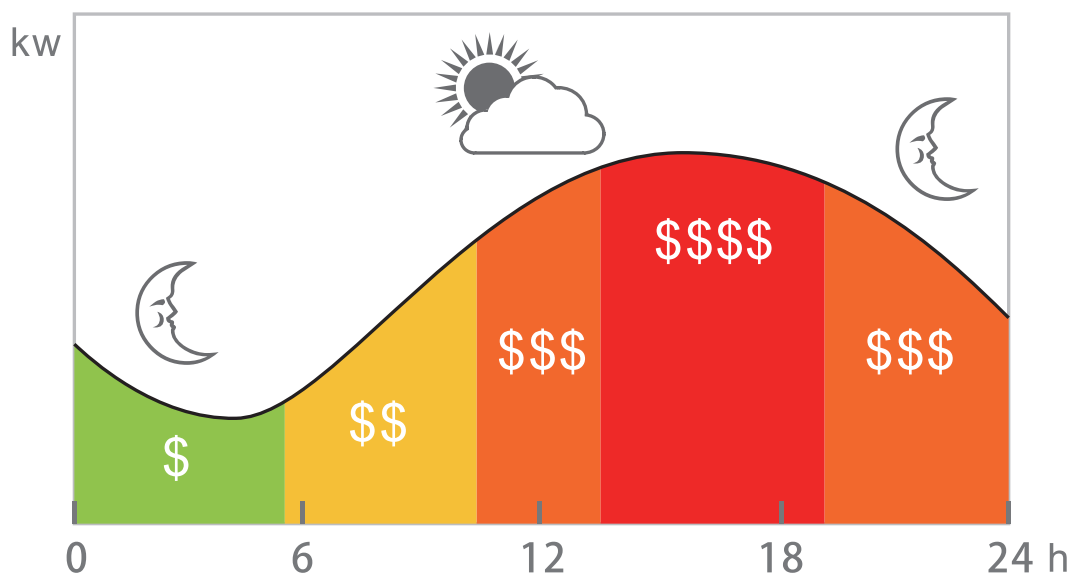
# Energy Storage System for Home

## Energy Self-Consumption



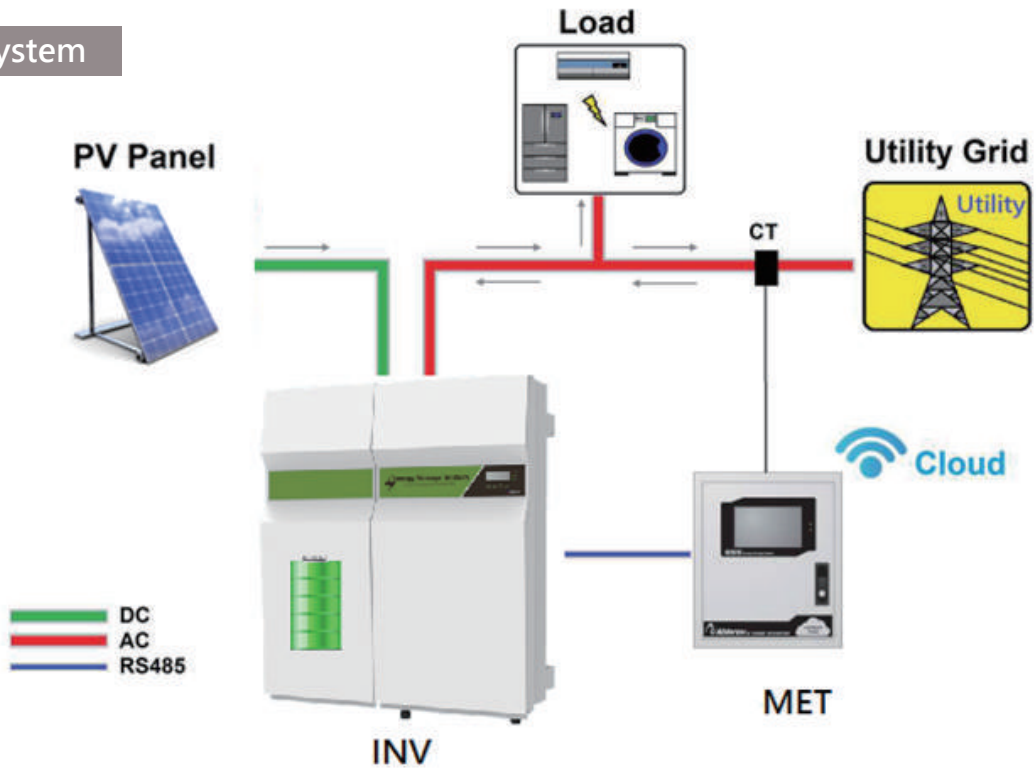
- Day: Charge and store energy generated by PV panel.
- Night: Consume the stored energy for home use.

## Peak Hours Shaving

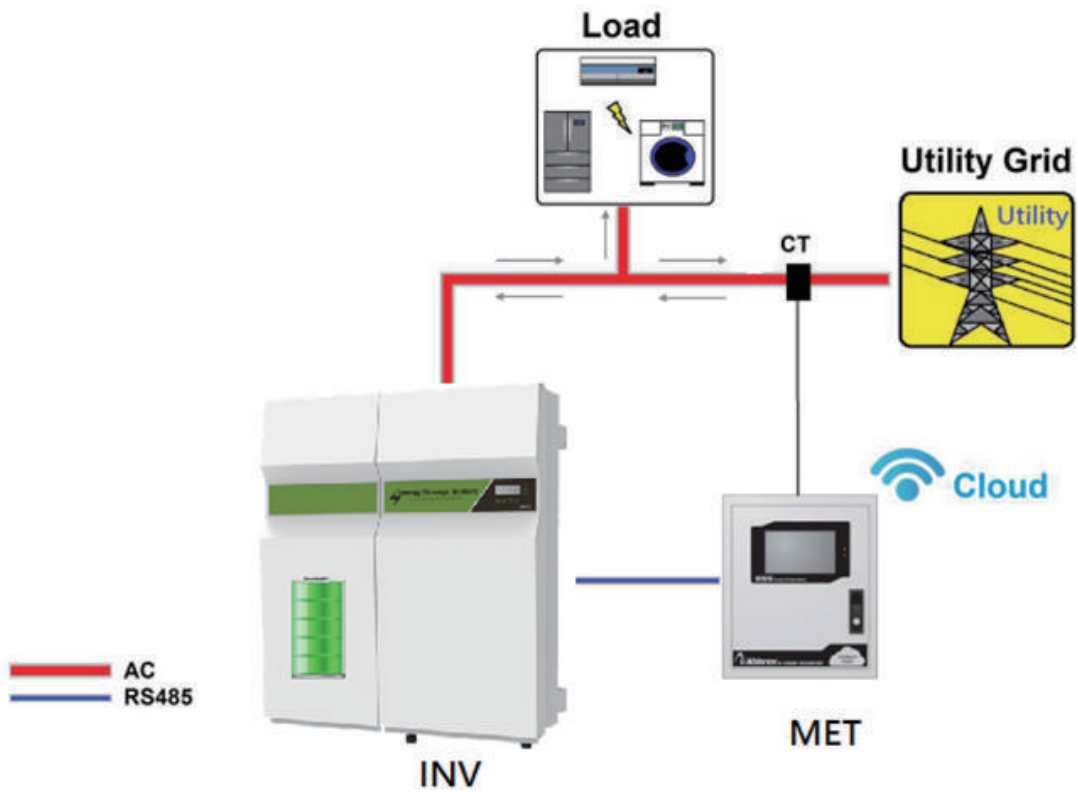


- Off-Peak Rate - Charge the battery pack during electricity off-peak rate hours.
- Peak Rate - Use the electricity from the battery pack during electricity peak rate hours.

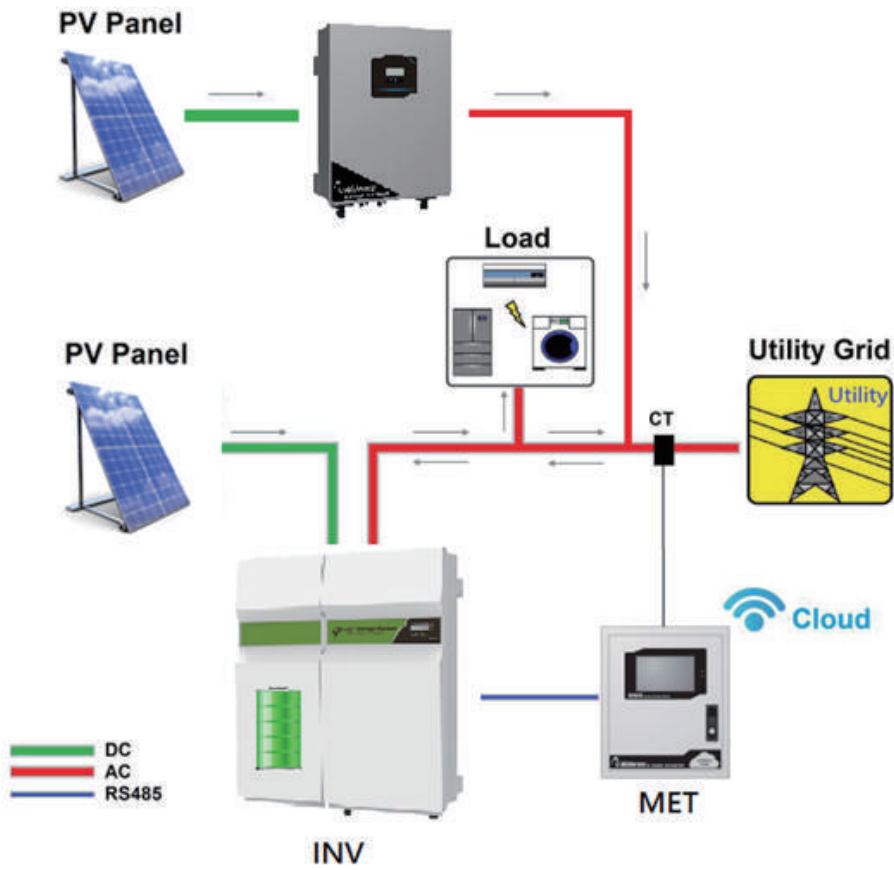
# ESS System



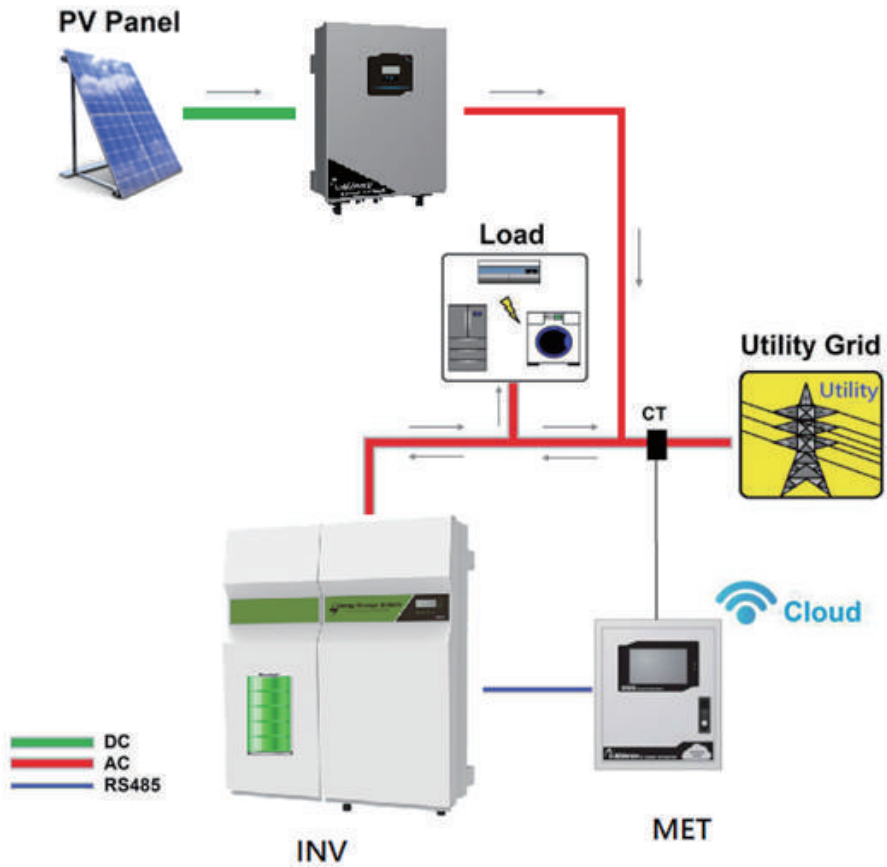
[Self-Consumption of Solar PV Power]



[Energy utilization without Solar PV Power]



[Integration with new and existing On Grid PV System]



[Integration with existing On Grid PV System]

# Energy Storage System for Home

ENERGY STORAGE SYSTEM	ESS-3300	ESS-4000	ESS-5000
System components	ESS-INV-3	ESS-INV-4	ESS-INV-5
	ESS-BAT		
	ESS-MET		
Model	ESS-INV-3	ESS-INV-4	ESS-INV-5
<b>DC INPUT DATA</b>			
Nominal DC input power	3300 W	4000 W	5000 W
Nominal DC Voltage	360 VDC		
Maximum DC input Voltage	500 VDC		
Max DC input current Per MPPT	13A		
MPPT Range	150 - 450VDC		
MPPT Trackers	2		
<b>AC OUTPUT DATA</b>			
Nominal AC output power	3000 W	3680 W	4600 W
Nominal AC output voltage ` Frequency ` Voltage range	230Vac 50/60Hz 184~264Vac		
Nominal AC output current	13A	16A	20A
Maximum AC output current	14.34A	17.39A	21.7A
Current Distortion	Total Harmonic current: <3%		
<b>BATTERY</b>			
Max. charger power	3000 W		
Max. discharger power	3000 W		
<b>EFFICIENCY DATA</b>			
Maximum Efficiency of the whole system(PV-Grid)	>97.1%		
EU efficiency(PV-Grid)	>96.5%		
Maximum Efficiency of the wholesystem(Battery-Grid)	>94.3%		
<b>ENVIRONMENTAL DATA</b>			
Operating ambient temperature	-10°C to +40°C		
Relative Humidity	0 – 95 %non-condensing		
Altitude	0~2000M 0~6600ft		
<b>MECHANICAL</b>			
Size (height x width x depth)	810*455*270mm		
Weight	30kg		
Cooling	Natural		
Enclosure type	IP65		
Audible Noise	<25dBA		
Mounting	Wall Mount (mounting bracket included)		
<b>COMMUNICATION/FRONT PANEL</b>			
Comm. Interface	RS485		
Display	Graphic LCD+LED panel(4.5")		
<b>CERTIFICATION</b>			
Grid standard	VDE0126-1-1,VDE-AR-N 4105		
Safety	EN 62109-1,EN62109-2		
EMC	EN 61000-6-2, EN 61000-6-3, EN 61000-3-3, EN 61000-3-3, EN 61000-3-11,EN 61000-3-12		
Warranty	5 years(standard) /10/15/20/25years(optional)		

MODEL	ESS-BAT
<b>BATTERY Module</b>	
Manufacturer	Panasonic/Samsung
Battery Type	Li-ion
Size (height x width x depth)	810*366*270mm
Weight	60kg
Enclosure type	IP65
<b>BATTERY CHARGER SPECS</b>	
Max. charge Power	3000 W
Nominal Battery Voltage	51.2 VDC
Maximum Battery Voltage	54.6 VDC
Minimum Battery Amp Hours	40 Amp-hours/module
Max Battery Charging Current	55 Amps
Capacity	6kWh(3 modules) or 12kWh(6 modules)
Cycle Life	6000(80% DoD/0.3C)
Battery Charge Stages	CC,CV
Operating Temperature	-10°C to +40°C
<b>BATTERY DISCHARGER SPECS</b>	
Max. Discharge Power	3000 W
Max Battery discharging Current	55 Amps
Discharge End Voltage	45V
Operating Temperature	-10°C to +40°C
Warranty	10 years
<b>MODEL</b>	
<b>ESS-MET</b>	
Measures	P/Q/A/V/F
AC phases	1
Rated grid voltage/ voltage range	230 V/ 184...265 V
Rated grid frequency/ frequency range	50-60 Hz/ 45...65Hz
Power supply and consumption	Integrated, <5W
Size (height x width x depth)	403*343*106mm
Weight	7kg
Enclosure type	IP20
Safety and EMC	IEC 61010-1, IEC 61326-1
Operating ambient temperature	0°C to +40°C
Storage ambient temperature	-20°C to +70°C
Relative Humidity	0 – 95 % non-condensing
Display size	7 inch
Display resolution	800x480
Display touch	Resistive Touch Screen
Display operating system	WinCE 6.0
Communication interface	RS485-1, RS485-2, Ethernet 10/100(RJ45)
Storage	8G SD card (Up to 16G)

**Ablerex Electronics Co., Ltd.**

1F, No. 3, Lane 7, Pao Kao Road, Hsintien 23114, Taipei Hsien, Taiwan

Tel: +886-2-2917-6857 Fax: +886-2-2913-1705 <http://www.ablrex.com.tw> Email: [ablrex@ablrex.com.tw](mailto:ablrex@ablrex.com.tw)

