



ALLIS ELECTRIC CO.,LTD.

**SOLAR
POWER**



Photovoltaic Inverter

Renewable Energy -
Environmentally Friendly and Low Cost Energy Solutions



Since 1968



Global Service

Allis Electric Co., Ltd

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About Allis Electric Co., Ltd.

Allis was established on September 25th, 1968 as the expert manufacturer of heavy electrical apparatus in Taiwan. Its steady operation led to the development of equipments for power solutions, such as Transformers, Switchgear, Uninterruptable Power Supply, Switching Mode Rectifier, and PV Inverter. Started as a producer of Low-voltage Switchgear, Motor Control Centers, High/Low-voltage Integrated Star-up Panels, AC/DC Industrial Control Equipment, and Transmission and Distribution Apparatus, Allis has 50 years experience across IT, Telecommunication, Industry, Railway, and Utility field. Allis' products are designed to meet the standard requirements of renowned corporations around the world, such as Los Angeles Department of Water and Power, Toshiba, Taiwan Semiconductor Manufacturing Company, etc. A successful public offering in Taiwan Stock Exchange (TWSE) since 1994 has allowed Allis Electric to continue its steady growth.

In response to recent trend on global warming and climate change, Allis continues to devote its research and development in years to provide high efficiency and reliable green and energy saving products to maintain the environmental sustainability of power generation. Based on 50 years professional experiences of offering and customizing the best power quality to facilities and systems, Allis' Photovoltaic (PV) Inverter series have been designed to provide high efficiency and reliable solar energy. With mission to pursuit continuation of customer satisfaction, Allis' PV Inverters have been designed to use in versatile applications: residential premises, commercial buildings, and power plants.



Since 1968



Solar Power System Demonstration

Feed-in Tariff Application at Yangmei Factory

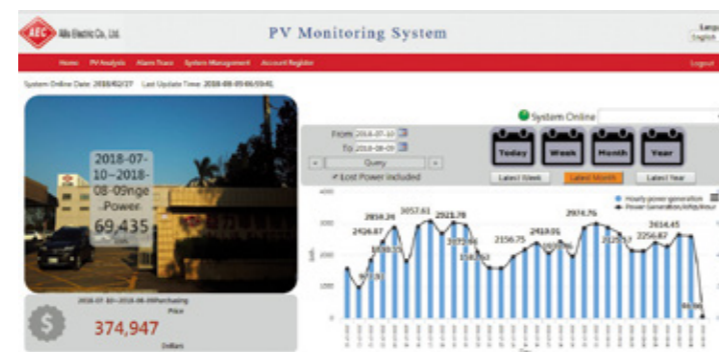
- System Capacity : 498 kW
- PV Modules : 295W × 1,961 pieces
- Inverter Model : Trinergy plus 30 kW × 14 units and 20 kW × 2 units
- Average power generation estimated by year: ≒ 492,104 kWh
(about 2.9 kWh/day/kW × 498 kW × 365days)



Rooftop Mounting PV System



Trinergy plus PV Inverter



Advanced Web Monitoring System

Why Solar Power...

- Electrical bill saving
- Safe, reliable and efficient power generator
- Reduce carbon footprint and emit no pollution
- Versatile and convenient
- Customized design

Why Allis' Inverter...

- Optimum productivity
- Wide range of MPPT voltage
- Full range product line from 3.3kW to 1,260kW, single to three phase
- 50 years stable operation company with professional experience in power electricity

Product Catalog

Model	Max. DC Voltage (d.c.V)	Max. Input Current (d.c.A)	Max. DC Input Power (W)	MPPT	Battery
Tough-3300	650	10 × 2	3,600	2	No
Tough-5000		15 × 2	5,300	2	
Trinergy Plus-10kW	1,000	12.5 × 2	11,000	2	
Trinergy Plus-20kW		25 × 2	20,800	2	
Trinergy Plus-30kW		33 × 2	33,000	2	
Trinergy Plus-40kW		74 × 1	55,000	1	
Trinergy Plus-50kW	1,100	90 × 1	66,000	1	
Trinergy Plus-60kW		120 × 1	72,000	1	
Trinergy Plus-70kW		120 × 1	77,000	1	
Selfnergy-3300	650	18 × 1	3,600	1	
Selfnergy-5000		24.5 × 1	5,300	1	
Selfnergy-L 3.6K	550	11 × 2	4,000	2	
Selfnergy- L 5K		11 × 2	5,500	2	
AEC500K-B	1,000	1,200 × 1	560,000	1	No
AEC630K-B		1,350 × 1	710,000	1	
AEC1000K-B	1,000	2 × 1,200 × 2	1,120,000	2	
AEC1260K-B		2 × 1,350 × 1	1,420,000	2	

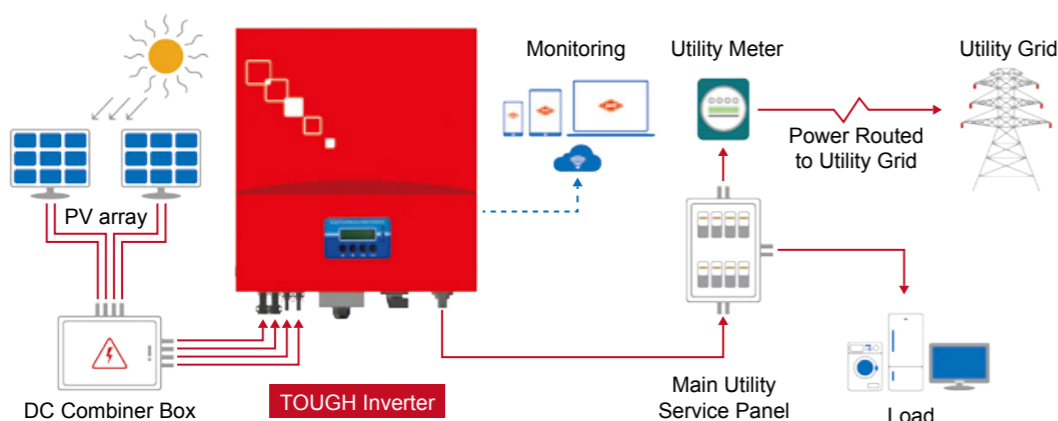
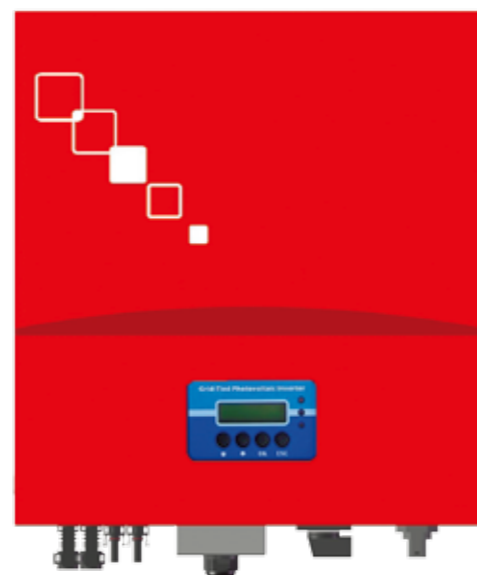
TOUGH SERIES

Single phase Grid-Tied

3.3 kW - 5kW

Features :

- Select Single/Dual MPPT (Maximum power point tracking) automatically, the range of MPPT: 150-500 Vdc
- Maximum DC voltage is up to 650V to design system on best MPPT easily
- Maintenance-free fan-less nature cooling design.
- Modbus RS485 supported for monitoring
- Conformity to the EMC, Low Voltage Directives and Standards, e.g. 2004 /108 / EC, 2006 / 95 / EC, IEC / EN 62109-1 / -2 and VDE-AR-N 4105.



Specification :

Model	Tough-3300	Tough-5000
Output Data (AC)		
Maximum AC Output	3,300W	5,000W*
Maximum AC Output Current	16.5 a.c.A	22 a.c.A
Nominal AC Voltage	220 a.c.V-240 a.c.V	
Grid AC Frequency	50/60Hz, auto-selection	
Power Factor	> 0.99 @ 20% load	
Reactive Power Factor	1 or adjustable from -0.9 to +0.9**	
Total Harmonic Distortion	< 3%	
AC connection / Grid forms	Single-Phase / TN-C, TN-S, TN-C-S	
Input Data (DC)		
Maximum DC Power	3,600W	5,300W
Maximum DC Input Current	2 x 10 d.c.A	2 x 15 d.c.A
Max. number of MPP Trackers	2	
Maximum DC Voltage	650 d.c.V	
MPP Tracking Voltage Range	150-500 d.c.V	
Peak Power Tracking Voltage Range	200-460 d.c.V	
Efficiency		
MPPT Efficiency	>99.9%	
Maximum Efficiency	96.5%	96.9%
Euro. Efficiency	96.1%	96.6%
Consumption: Standby / Night	<12.5W / <0.2W	
General Specification		
Dimensions (W x H x D) in mm	405 x 442 x 165	
Weight	25.8kg	
Cooling Concept	Natural Cooling	
Acoustic Noise Level	< 35dB	
Maximum Operating Temperature Range without derating	-25 °C to +60 °C	-20 °C to +55 °C
Ambient Temperature Range	-25 °C to +60 °C	
Relative Humidity	0 to 95%, non-condensing	
Protection Degree	IP65	
Topology	Transformerless	
Features		
DC Connection	MC4	
DC Disconnect	yes	
AC Connection	AC connectors	
Display	LCD screen	
Communication Interface	RS232 ,RS485 ; Bluetooth (Option)	
Safety	VDE-AR-N 4105 ; IEC 62109-1 / -2	
Warranty	5 years	

* For VDE-AR-N4105, the inverter is rated 4,600VA

** Ajustable from 0.95 over-excited to 0.95 under-excited with VDE-AR-N 4105

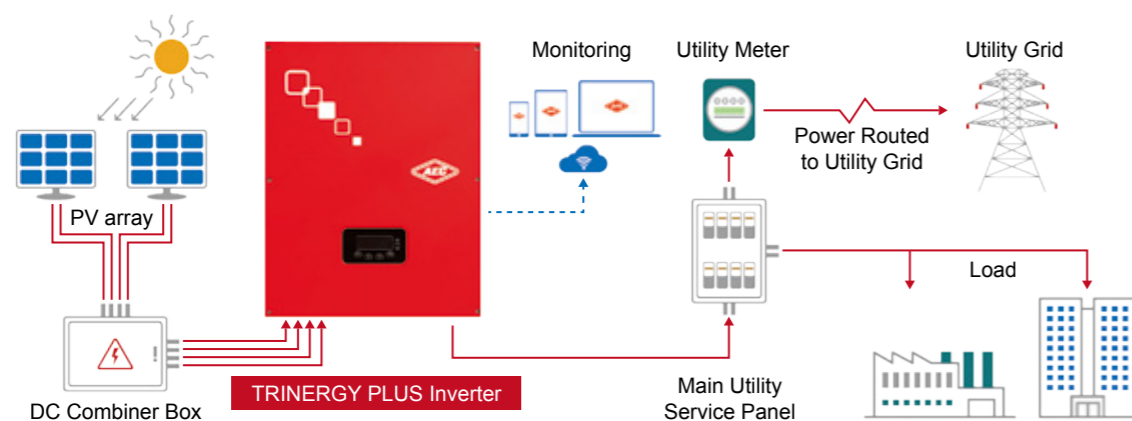
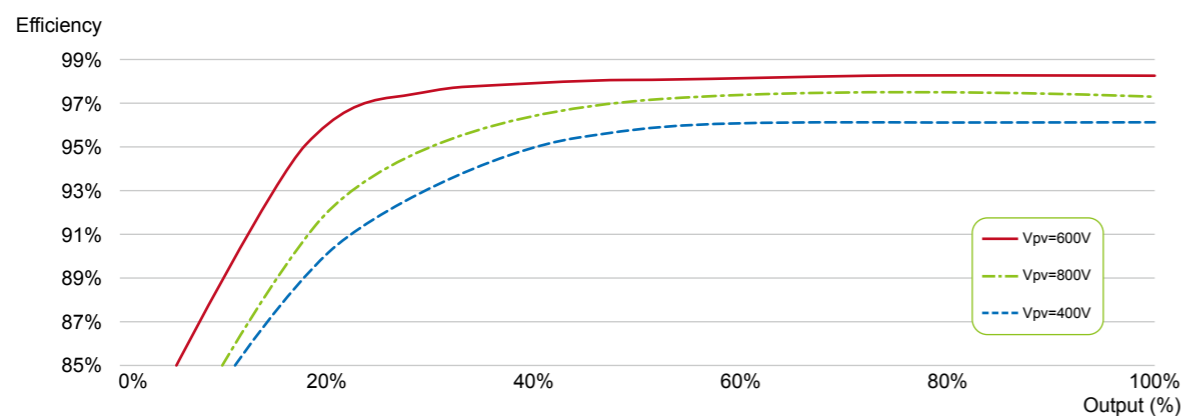
*** Specifications are subject to change without prior notice.

TRINERGY PLUS SERIES

Three phase Grid-Tide
10 kW – 70kW

Features :

- Dual independent MPPTs(10kw-30kw), each MPPT can work up to 60% of maximum DC power
- High efficiency and stable performance at entire input voltage and output power range
- Maximum efficiency is up to 98.5%
- Wide input voltage range gives more possibilities for applying wild range of PV modules
- BUS capacitor adopts advanced film capacitor, designed with the advanced thermal simulation technology for longer lifespan
- RS485 communication modes are optional for realizing multiple monitoring solutions via PC, mobile phones, internet etc. platforms
- Horizontal air flow design, easy for maintenance



Specification :

Model	Trinergy Plus-10kW	Trinergy Plus-20kW	Trinergy Plus-30kW	Trinergy Plus-40kW	Trinergy Plus-50kW	Trinergy Plus-60kW	Trinergy Plus-70kW
Output Data (AC)							
Rated power	10,000W	20,000W	30,000W	40,000W	50,000W	60,000W	66,000W
Maximum AC Output Current	14 a.c.A	32 a.c.A	48 a.c.A	64 a.c.A	80 a.c.A	96 a.c.A	96 a.c.A
Rated AC Voltage Range	3/PE,230/400V,(320~460V) ; 3/PE,220/380V,(320~460V)	3/N/PE, 230/400V , (320~460V) ; 3/N/PE, 220/380V , (320~460V)		3/N/PE,230/400V, (310~460V)			
Grid AC Frequency	50Hz (47 ~ 51.5Hz) / 60Hz (57 ~ 61.5Hz)						
Power Factor	- 0.8 ~ + 0.8 (Adjustable)						
Total Harmonic Distortion	< 3% (at rated power)						
AC connection / Grid forms	Three-phase (L1, L2, L3, PE) or (L1, L2, L3, N, PE)						
Input Data (DC)							
Maximum DC Voltage	1,000 d.c.V			1,100 d.c.V			
Starting voltage	220 d.c.V	300d.c.V		200d.c.V			
Min. operation voltage	150 d.c.V	280 d.c.V		570d.c.V			
MPPT Operating voltage range/Rated voltage	200~800 d.c.V/ 580 d.c.V	280~800 d.c.V / 610d.c.V		570~950 d.c.V/ 740d.c.V			
Maximum DC Power	11,000 W	20,800 W	33,000 W	55,000 W	66,000 W	72,000 W	77,000 W
Number of MPPT/ String per MPPT	2/1	2/3		1/10	1/12	1/14	
Number of MPPT × Maximum DC Current Per MPPT	2× 12.5 d.c.A	2×25 d.c.A	2×33 d.c.A	1×74 d.c.A	1×90 d.c.A	1×120 d.c.A	1×120 d.c.A
DC Switch	Optional	Integrated					
Efficiency							
MPPT Efficiency	99.9%						
Maximum Efficiency	98.3%	98.4%	98.5%	98.9%	98.9%	99.0%	99.0%
Euro. Efficiency	97.8%	98.0%	98.0%	98.5%	98.5%	98.5%	98.5%
Consumption at Night	< 0.5W						
General Specification							
Dimensions (H xW x D) in mm	575 × 360 × 150	660 × 520 × 250		810 × 645 × 235			
Weight	23kg	52kg		53kg			
Cooling Concept	Smart Cooling method						
Acoustic Noise Level	< 50dB			< 60dB			
Operating Temperature	-25 °C to +60 °C, > +45 °C derating						
Relative Humidity	0 to 95%, non-condensing						
Protection Degree	IP65						
Topology	Transformerless						
Features							
Display	LCD display, support backlit display						
Keyboard	Integrated						
Communication Interface	RS485 (Standard)						
Safety	IEC2109-1, IEC62109-2, IEC61000, VDE-AR-N4105:2011, DIN VDE V 0124-100:2012, DIN VDE 0126-1-1:2013	IEC62109-1, IEC62109-2, IEC61000, IEC61727, IEC62116 , IEC60068, IEC61683, VDE-AR-N4105:2011, DIN VDE V 0124-100:2012, DIN VDE 0126-1-1:2013	IEC2109-1, IEC62109-2, VDE-AR-N4105:2011, DIN VDE V 0124-100:2012, DIN VDE 0126-1-1:2013				
Warranty	5 years						

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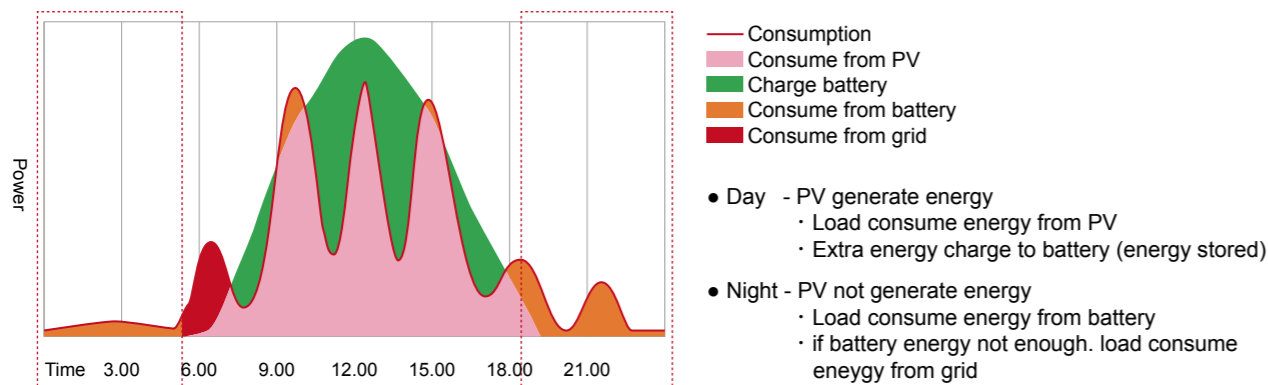
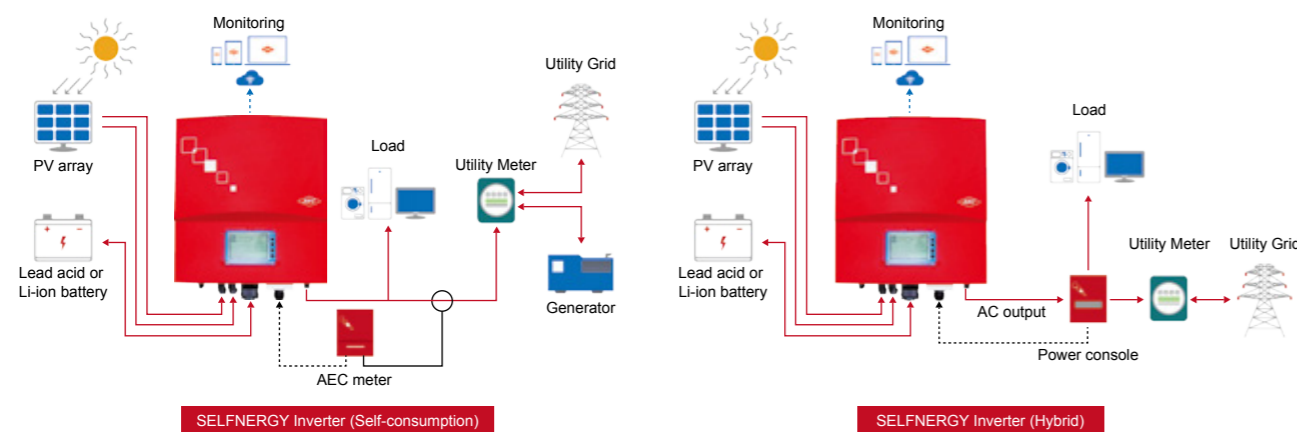
SELFNERGY SERIES

Single phase Self-Consumption Management

3.3 kW - 5kW

Features :

- Self consumption application of solar power energy storage system
- User-friendly-interface to monitor energy flow easily
- Intelligent load management with smart meter and split-core CT
- Special external capacitor modular design extends life span
- IP65 fan-less nature cooling design
- Work up to 50°C without derating
- High battery discharge power (5.3kW), charge/ discharge efficiency > 95%
- Applicable to connect with Genset to maximize fuel efficiency and reduce fuel cost



Specification :

Model	Selfnergy-3300	Selfnergy-5000
Output Data (AC)		
Maximum AC Output	3,300W	5,000W*
Maximum AC Output Current	16.5 a.c.A	24.5 a.c.A
Nominal AC Voltage	220 a.c.V-240 a.c.V	
Grid AC Frequency	50/60Hz, auto-selection	
Power Factor	> 0.99 @ 20% load	
Reactive Power Factor	1 or adjustable from -0.9 to +0.9**	
Total Harmonic Distortion	< 3%	
AC connection / Grid forms	Single-Phase / TN-C, TN-S, TN-C-S	
Input Data (DC)		
Maximum DC Power	3,600W	5,300W
Maximum DC Input Current	18 d.c.A	26.5 d.c.A
Max. number of MPP Trackers	1	
Maximum DC Voltage	650 d.c.V	
MPP Tracking Voltage Range	150 d.c.V - 500 d.c.V	
Peak Power Tracking Voltage Range	200 d.c.V - 460 d.c.V	
Input Data (Battery)		
Maximum Discharging Power	3,600W	5,300W
Maximum Discharging Current	18 d.c.A	24.5 d.c.A
Maximum Charging Current	20 d.c.A	
Maximum Battery Voltage	400 d.c.V	
Configurable Battery Voltage Range	198 d.c.V - 400 d.c.V	
Charge Control	Contant Current (CC), Constant Voltage (CV)	
Efficiency		
MPPT Efficiency	>99.9%	
Maximum Efficiency	96.5%	96.9%
Euro. Efficiency	96.1%	96.6%
Consumption: Standby / Night	<12.5W / <0.5W	
General Specification		
Dimensions (W x H x D) in mm	405 x 442 x 165	
Weight	25.8kg	
Cooling Concept	Natural Cooling	
Acoustic Noise Level	< 35dB(A)	
Maximum Operating Temperature Range without derating	-20 °C to +55 °C	-20 °C to +50 °C
Ambient Temperature Range	-25 °C to +60 °C	
Relative Humidity	0 to 95%, non-condensing	
Protection Degree	IP65	
Topology	Transformerless	
Features		
DC Connection	PV4 , MC4	
DC Disconnect	yes	
AC Connection	AC connectors	
Display	Graphic LCD screen	
Communication Interface	RS485 ; Ethernet (Option), WIFI (Option)	
Safety	VDE-AR-N 4105 ; IEC 62109-1 / -2	
Warranty	1 year	

* For VDE-AR-N4105, the inverter is rated 4,600VA

** Adjustable from 0.95 over-excited to 0.95 under-excited with VDE-AR-N 4105

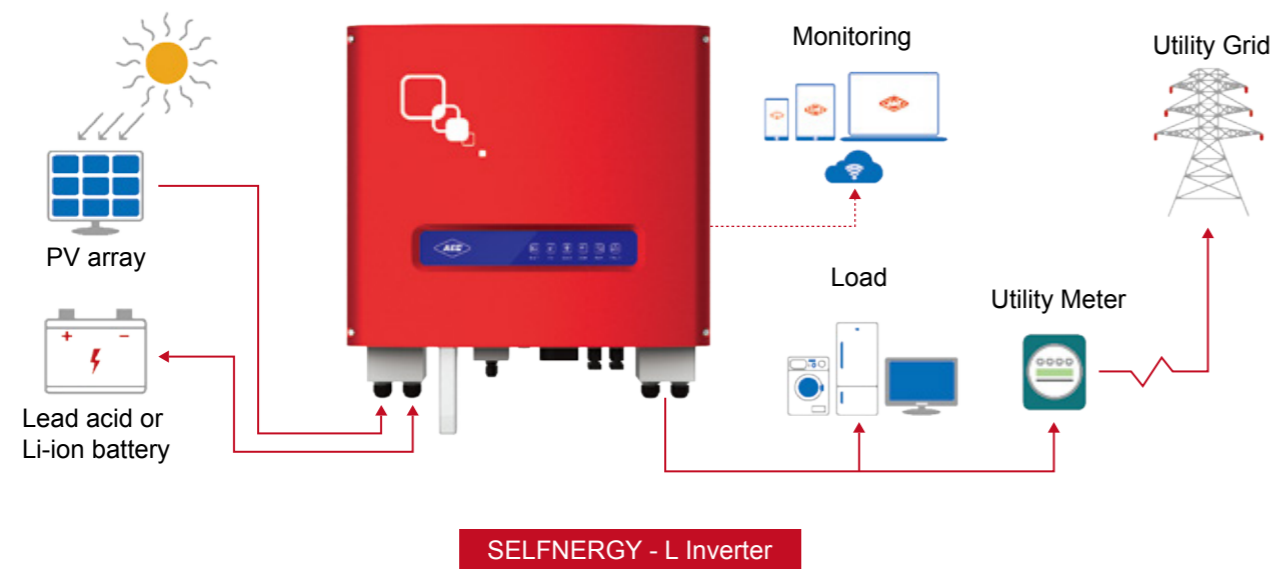
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SELFNERGY -L SERIES

Single phase 48VDC
3.6 kW -5kW

Features :

- Off-grid Application Compatible; Uninterrupted power supply
- Water and dust proof (IP65)
- Full automatic control, flexible energy management
- Maximize self-consumption to lower your bills
- Easy compatible with Lithium-ion, Pb, Pb-C, Flow Battery etc.
- Optional CT or Smart Meter increase power control precisely
- Wall mounted or rack mounted is available



Specification :

Model	Selfnergy-L 3.6K	Selfnergy- L 5K
Output Data (AC)		
Rated Power	3,600W	5,000W
Rated Output Current	17 a.c.A	22.7 a.c.A
Rated Output Voltage	220 / 230 / 240 a.c.V	
Grid Voltage Range	184~265 a.c.V	
Grid Frequency Range	47.5~52.5Hz or 57.5~62.5Hz	
Power Factor	> 0.99	
Maximum Efficiency	97.5%	
Euro. Efficiency	96.5%	
Total Harmonic Distortion	< 2% (Full load)	
Input Data (DC)		
Maximum DC Power	4,000W	5,500W
Maximum DC Input Current	11 d.c.A × 2	11 d.c.A × 2
number of MPP Trackers / Strings	2/ 2 (can be parallel)	
Maximum DC Voltage	550 d.c.V	
MPP Tracking Voltage Range	125 d.c.V - 550 d.c.V	
Battery Inverter (Emergency Mode)		
Rated Output Voltage	220/ 230/ 240 a.c.V	
Output Frequency	50(60)±0.5 Hz	
Output Power	2500/3500 W	
Transfer Time	0ms	
Voltage Harmonic	< 2%(Ohmic load)	
Charge-Discharge		
Nominal Voltage	48 d.c.V	
Maximum Charging Power	2,500W (Settable)	
Maximum Charging Current	52 d.c.A (Settable)	
Maximum Discharging Power	2,500W	
Maximum Discharging Current	52 d.c.A	
Battery Type	Lithium / Pb-C/ Lead Acid	
System		
Isolation Mode(solar)	Transformerless	
Isolation Mode (battery)	High Frequency Transformer	
Cooling Concept	Natural Cooling	
Acoustic Noise Level	< 25dB	
Display	LED/ APP	
Ambient Temperature Range	-25 °C to +60 °C	
Relative Humidity	0 to 90%, non-condensing	
Protection Degree	IP65	
Operation Altitude	0~3000m	
Communication Interface	RS485 (Modbus)/ WIFI /DRM	
Accessories	CT, Smart meter (Optional)	
Dimensions (W x H x D) in mm	480 x 420 x 185	
Weight	25kg	
Certifications		
On-grid standard	G83/2, G59/3, EN50438, CEI 0-21, AS4777.2:2015	
Safety	IEC62109-1, IEC62109-2, AS6040-1-1	
EMC	EN61000-6-3, EN61000-6-2	
Warranty	3 years	

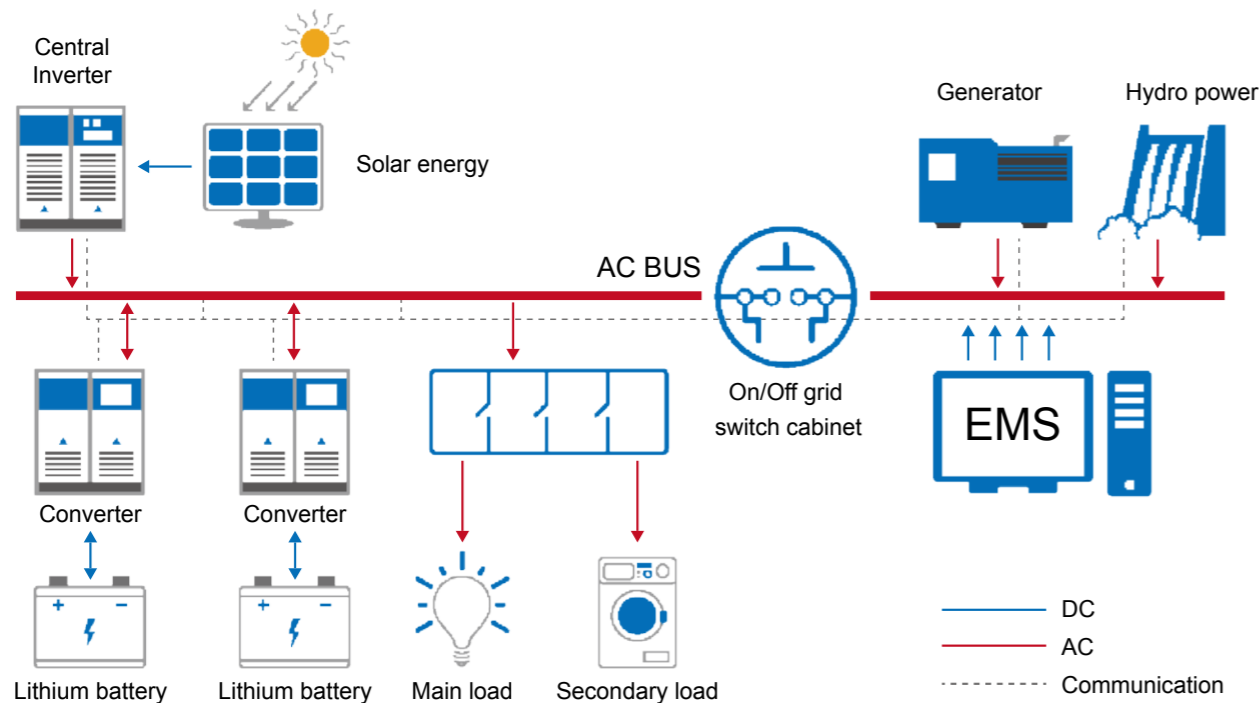
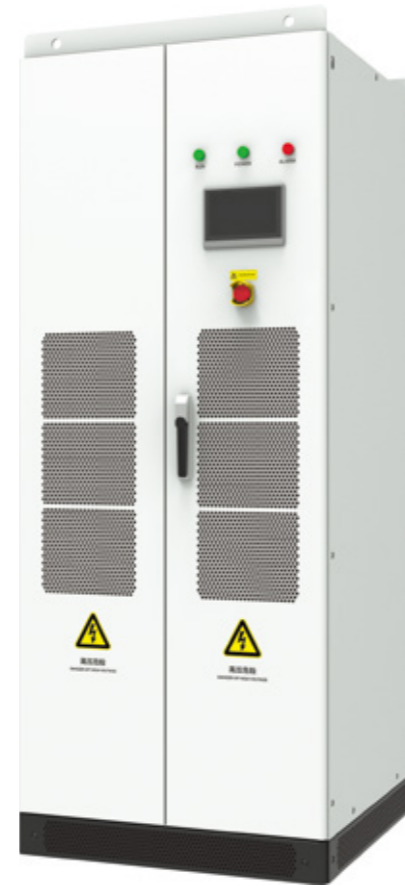
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CENTRAL INVERTER

Stand Alone
500kW-630kW

Features :

- LCD touch screen display
- Power factor 0.9 lead ~ 0.9 lags adjustable continuously
- Intelligent Management : active and reactive power scheduling
- Compact design for easy installation, light weight, high power density in 0.6m²
- High reliability with DSP control
- Advanced three-level topology, maximum conversion efficiency 99%



Specification :

Model	AEC500K-B	AEC630K-B
Input Data (DC)		
Maximum PV Power	560 kW	710 kW
Maximum PV Input Voltage	1000 d.c.V	
Maximum DC Current	1,200 d.c.A	1,350 d.c.A
PV Input Strings Number	6	8
No. of MPPTs	1	1
MPP Tracking Voltage Range	460 ~ 850d.c.V	520 ~ 850d.c.V
Start-up voltage	480d.c.V	540d.c.V
MPPT Efficiency	99.90%	
Output Data (AC)		
Rated Output Power	500 kW	630 kW
Max. Output Power	550 kW	693 kW
Rated Output Voltage	315a.c.V	360a.c.V
Rated AC Frequency	50/60Hz	
Maximum Output Current	1,008 a.c.A	1,111 a.c.A
Total Harmonic Distortion	<3% (nominal power)	
Power Factor	> 0.99	
PF Adjustable Range	0.9 (leading)~0.9 (lagging)	
Efficiency		
Maximum Efficiency	99.0%	
Euro. Efficiency	98.7%	
General Specification		
Dimensions (W x D x H) in mm	800 × 800 × 2,000	
Weight	700kg	
Night Consumption	< 20 W	
Cooling Concept	Intelligent Forced Air Cooling	
Ambient Temperature Range	-25 °C to +55 °C	
Relative Humidity	0 to 95%, non-condensing	
Altitude	6,000m (> 3,000m derating)	
Protection Degree	IP20	
Features		
Display	LCD	
Communication Interface	RS485 , Ethernet (Optional)	

*Specifications are subject to change without prior notice.

CONTAINER BASE

Turnkey Solution

1MW-1.26MW

Features :

- IP 54, sustained sand, dust and water proof
- Inverters front- easy maintenance design
- Safety with access door and emergency exit
- Efficiency up to 99%
- High design flexibility and reduced DC distribution losses for large scale PV plants
- Modular design, saving operation and maintenance cost



Specification :

Model	AEC1000K-B	AEC1260K-B
Input Data (DC)		
Maximum PV Power	2×560 kW	2×710 kW
Maximum PV Input Voltage	1000 d.c.V	
Maximum DC Current	2×1,200 d.c.A	2×1,350 d.c.A
PV Input Strings Number	2 × 6	2 × 8
No. of MPPTs	2	2
MPP Tracking Voltage Range	460 ~ 850d.c.V	520 ~ 850d.c.V
Start-up voltage	480 d.c.V	540 d.c.V
MPPT Efficiency	99.9%	
Output Data (AC)		
Rated Output Power	1,000 kW	1,260 kW
Max. Output Power	1,100 kW	1,386 kW
Rated Output Voltage	315a.c.V	360a.c.V
Rated AC Frequency	50/60Hz	
Maximum Output Current	2,016 a.c.A	2,222 a.c.A
Total Harmonic Distortion	<3% (nominal power)	
Power Factor	> 0.99 (Adjustable)	
PF Adjustable Range	0.9 (leading)~0.9 (lagging)	
Efficiency		
Maximum Efficiency	99.0%	
Euro. Efficiency	98.7%	
General Specification		
Dimensions (W x D x H) in mm	2,438 × 1,150 × 2,591	
Weight	2,800 kg	
Night Consumption	< 40 W	
Ambient Temperature Range	-25 °C to +55 °C	
Cooling Concept	Intelligent Forced Air Cooling	
Relative Humidity	0 to 95%, non-condensing	
Altitude	6,000m (> 3,000m derating)	
Protection Degree	IP54	
Features		
Display	LCD	
Communication Interface	RS485 / Ethernet (Optional)	

*Specifications are subject to change without prior notice.

Success Applications

Oversea

- Project: 50kW Off-Grid System
- Model: Central Inverter Series
- Location: Indonesia
- Application: Micro grid for no utility island



- Project: 300kW Grid-tide System
- Model: Tough Series
- Location: Taichung
- Application Environment: Install on the roof of railway stations



- Project: 2MW Grid-tide System (FIT)
- Model: Trinery Plus Series
- Location: Taoyuan



Taiwan

- Project: 6kw Self-Consumption System
- Location: Central Japan International Airport, Nagoya



- Project: 45 kW Self-Consumption System
- Model: Selfnergy Series
- Location: Ho Chi Minh, Vietnam
- Application: PV-Genset Fuel saving solution



- Project: 30kW Self-Consumption System
- Model: Trinery plus Series
- Location: South Africa



- Project: 15kW Self-Consumption System
- Model: Tough Series
- Location: Philippines
- Application: Home power saving solution



- Project: 10kW net metering
- Model: Tough Series
- Location: Cebu, Philippines



- Project: 5kW Self-consumption system
- Model: Selfnergy Series
- Location: Cebu, Philippines



- Project: 5kW Self-Consumption System
- Model: Selfnergy Series
- Location: Philippines
- Application : Home power storage solution



- Project: 499kW Grid-tide System (FIT)
- Model: Trinery Plus Series
- Location: Changhua Coastal Industrial Park
- Application: Roof top PV site at a Belt Factory



- Project: 100kW Grid-tide System (FIT)
- Model: Tough Series
- Location: Gangshan District, Kaohsiung
- Application Environment: Piggery



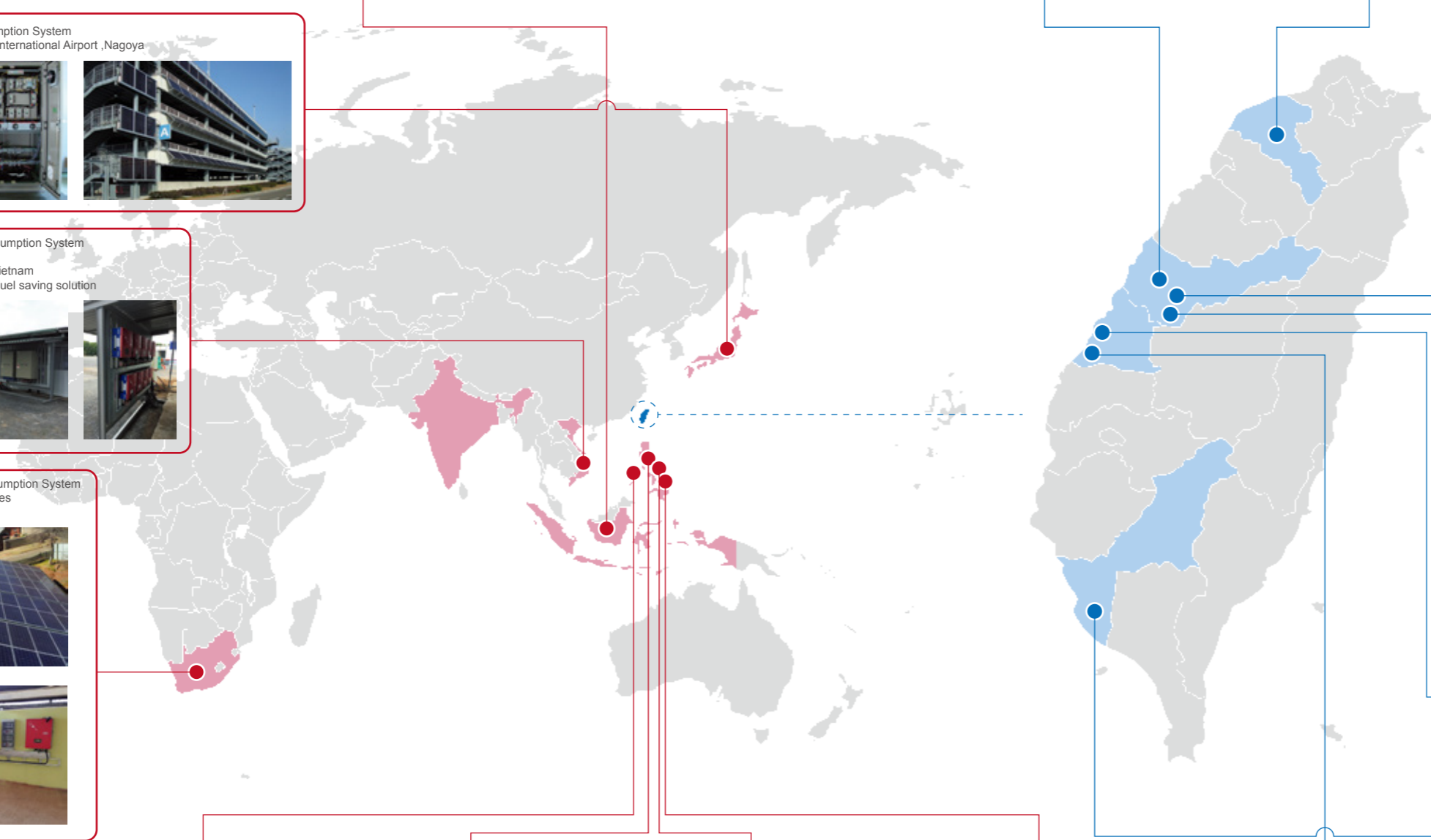
- Project: 70kW Grid-tide System (FIT)
- Model: Tough Series
- Location: Taichung
- Application: Roof top PV site of a Motor Factory



- Project: 850kW Grid-tide System (FIT)
- Model: Trinery Plus Series
- Location: Wufeng Industrial Park, Taichung
- Application: Roof top PV site at a Steel Factory



- Project: 1MW Grid-tide System (FIT)
- Model: Trinery Plus Series
- Location: Changhua Coastal Industrial Park
- Application: land mount PV site



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