

6KW 48V Energy Storage PCS Introduction

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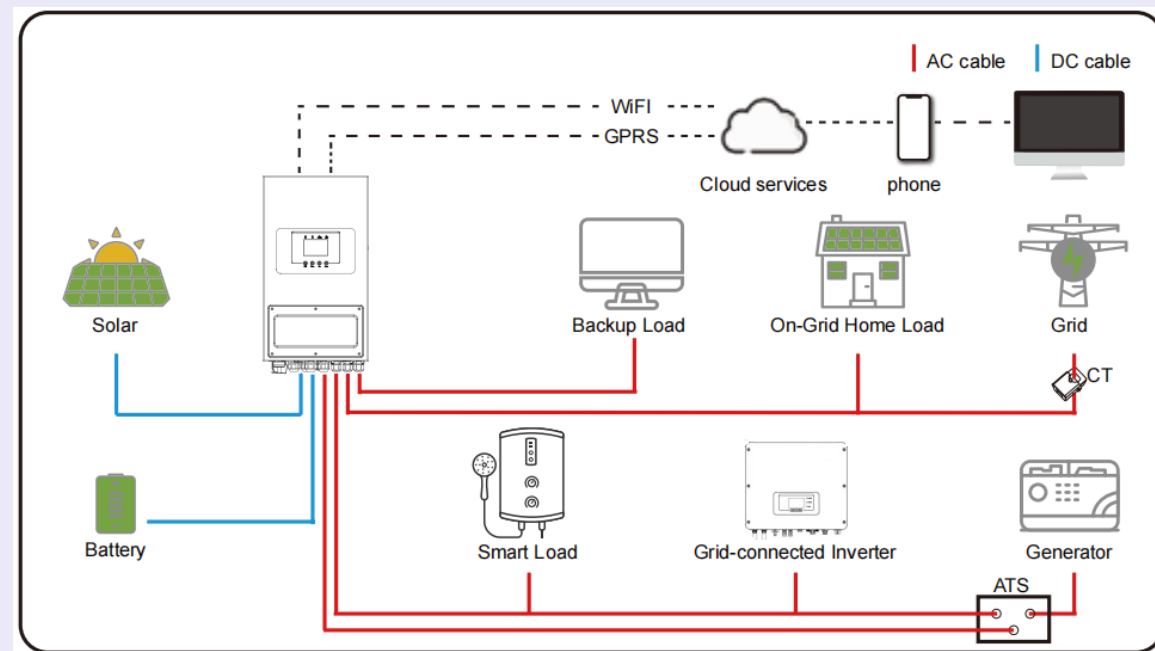
Product characteristics



- The most interface in the industry: photovoltaic, energy storage, diesel engine, load & grid.
- IP65 outdoor unit.
- Compatible with 48V lithium batteries and lead-acid batteries, the maximum charge and discharge current can reach 120A.
- Support multi-machine parallel, up to 16, the industry's largest.
- Supports remote online upgrade, parameter configuration, and remote command delivery.
- Flexible configuration enables charge and discharge operations for at least 6 periods per day.

Product function

- Programmable multiple working modes: grid-connected, off-grid and UPS.
- Intelligent battery charger design, with three level MPPT charging technology, optimize battery performance.
- Battery charging current/voltage can be configured based on LCD settings.
- Ac/solar/generator charger priority can be configured through LCD settings.
- It has a power generation limiting function to prevent excess power from spilling into the grid.
- The power grid restarts automatically when the AC power is restored.
- Solar power generation for self-use and feed into the grid.
- Compatible with grid voltage or generator power.
- Overload / overtemperature / short circuit protection.
- Support WIFI monitoring, built-in 2 high-efficiency MPP trackers.
- Use the time range configuration function
- Intelligent load function.
- Programmable power supply, battery or grid priority.



Main parameter



Model	3.6K-1PLVG1-EU	4K-1PLVG1-EU	4.6K-1PLVG1-EU	5K-1PLVG1-EU	6K-1PLVG1-EU	Model	3.6K-1PLVG1-EU	4K-1PLVG1-EU	4.6K-1PLVG1-EU	5K-1PLVG1-EU	6K-1PLVG1-EU
Battery Input Data						Efficiency					
Battery Type	Lead-acid or Lithium-ion					Max. Efficiency	97.60%				
Battery Voltage Range (V)	40~60					Euro Efficiency	96.50%				
Max. Charging Current (A)	90	100	110	120	140	MPPT Efficiency	99.90%				
Max. Discharging Current (A)	90	100	110	120	140	Protection					
Charging Curve	3 Stages / Equalization					PV Input Lightning Protection	Integrated				
External Temperature Sensor	Yes					Anti-islanding Protection	Integrated				
Charging Strategy for Li-Ion Battery	Self-adaption to BMS					PV String Input Reverse Polarity Protection	Integrated				
PV String Input Data						Insulation Resistor Detection	Integrated				
Max. DC Input Power (W)	4680	5200	5980	6500	7560	Residual Current Monitoring Unit	Integrated				
PV Input Voltage (V)	370 (100~500)					Output Over Current Protection	Integrated				
MPPT Range (V)	125~425					Output Shorted Protection	Integrated				
Full Load DC Voltage Range (V)	240~425					Output Over Voltage Protection	Integrated				
Start-up Voltage (V)	150					Surge protection	DC Type II / AC Type II				
PV Input Current (A)	13+13					Certifications and Standards					
Max. PV ISC (A)	17+17					Grid Regulation					
No.of MPPT Trackers	2					Certifications and Standards					
No.of Strings Per MPPT Tracker	1+1					Grid Regulation	IEC61727,IEC62116,IEC61683				
AC Output Data						Safety Regulation	IEC62109-1,IEC62109-2				
Rated AC Output and UPS Power (W)	3600	4000	4600	5000	6000	EMC	IEC61000-6-1,IEC61000-6-3				
Max. AC Output Power (W)	3960	4400	5060	5500	6600	General Data					
Peak Power (off grid)	2 times of rated power, 10 S					Operating Temperature Range (°C)	-25~60°C, >45°CDerating				
AC Output Rated Current (A)	15.7	17.4	20.0	21.7	26.1	Cooling	Natural cooling				
Max. AC Current (A)	18.0	19.1	22.0	25.0	30.0	Noise (dB)	<30 dB				
Max. Continuous AC Passthrough (A)	35					Communication with BMS	RS485; CAN				
Power Factor	0.8 leading to 0.8 lagging					Weight (kg)	20.5				
Output Frequency and Voltage	50/60Hz; 220/230 / 240Vac (single phase)					Size (mm)	330W×580H×232D				
Grid Type	Single Phase					Protection Degree	IP65				
Current Harmonic Distortion	THD<3% (Linear load<1.5%)					Installation Style	Wall-mounted				
						Warranty	5 years				

Differentiation analysis of energy storage PCS

Item		Indeed	A	B	C	D
HW	Product platform	TI third generation platform technology (higher frequency, higher sampling accuracy, better control performance)	TI second generation platform technology	TI second generation platform technology	TI second generation platform technology	TI second generation platform technology
	Topology & technical parameter	D-T three-level + resonance LLC: compatible with the different voltages in countries to achieve low-voltage high-power output on the battery side	HERIC+BUCK-BOOST (Not compatible with the Japanese and American power grid)	HERIC+BUCK-BOOST (Not compatible with the Japanese and American power grid)	HERIC+BUCK-BOOST (Not compatible with the Japanese and American power grid)	HERIC+LLC (Not achieve low-voltage high-power output on the battery side)
SW	Functional algorithm	The droop control based on virtual impedance realizes product modularization	Voltage and current double closed loop (Modularization is not possible)	Voltage and current double closed loop (Modularization is not possible)	Voltage and current double closed loop (Modularization is not possible)	V & C double closed loop + master-slave multi-machine control



This product can meet different power requirements through multiple inverters in parallel, and has significant advantages in **system safety and reliability, low cost, long life, wide application, full load operation and so on.**

Product features



PV String Inverter (3-25KW, 30-50KW, 60-80KW, 100-150KW)

- Support high current components 15-20A (182/210 components)
- High ratio (up to 1.5~2.0)
- It has the functions of anti-arc detection, series current detection, anti-PID detection and so on
- Impedance remodeling algorithm to achieve lower SCR ($SCR < 1.2$)



Energy storage PCS

- Modular (for single-phase or three-phase inverter modules in North America and Japan, single-phase inverter modules in Europe, and low-voltage LLC bidirectional DCDC in Asia and Africa).
- Perfect monitoring, convenient for customers to do a variety of Settings (one day multiple mode Settings, with diesel engine Settings, etc.).
- Multi-machine parallel, a single product through parallel to adapt to various application scenarios.
- On the battery side (whether low or high voltage), the charging and discharging current is the highest in the industry (high voltage 30-40A, low voltage 200A), which can quickly charge and discharge the battery, bring better benefits to customers and meet more user side load needs.

Core Technology (1/2)

1, Based on virtual impedance sag control technology to achieve multiple inverters stable parallel

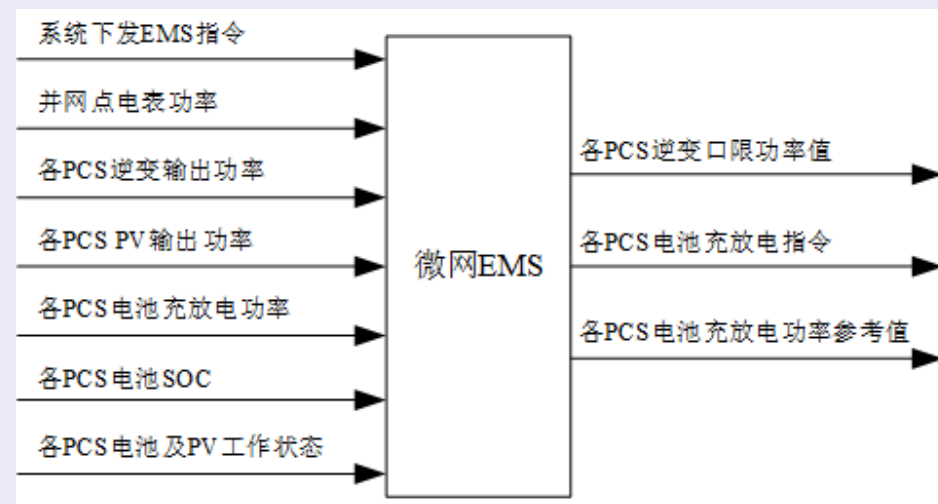
- Suitable for more application scenarios
- Flexible expansion



Multiple machines in parallel

2. Optimal operation strategy for PV microgrid energy management and integrated control system based on particle swarm optimization algorithm

- Efficient operation
- From passive to active decision making and optimization
- Reduce operation and maintenance costs by $\geq 60\%$



Core Technology (2/2)

3. Based on the innovative main circuit topology of the Double T tri-power & LLC to achieve unified access to different grids

- Compatible with the grid requirements of different countries
- High efficiency, low cost

4. The maximum power tracking algorithm of solar power generation based on fast three-point tracking can obtain higher power generation

- High power generation
- Increase power generation by 15% in cloudy environments

THANK YOU



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