



Residential Powermate ESS

Powering a Green Future

CYG SUNRI CO., LTD.

Add: NO.13, Keji North 1st Road, North Area of Hi-Tech Industrial Park, Nanshan District, Shenzhen 518057, China.

Tel: +86-755-33015155

E-mail: marketing@sunripower.com

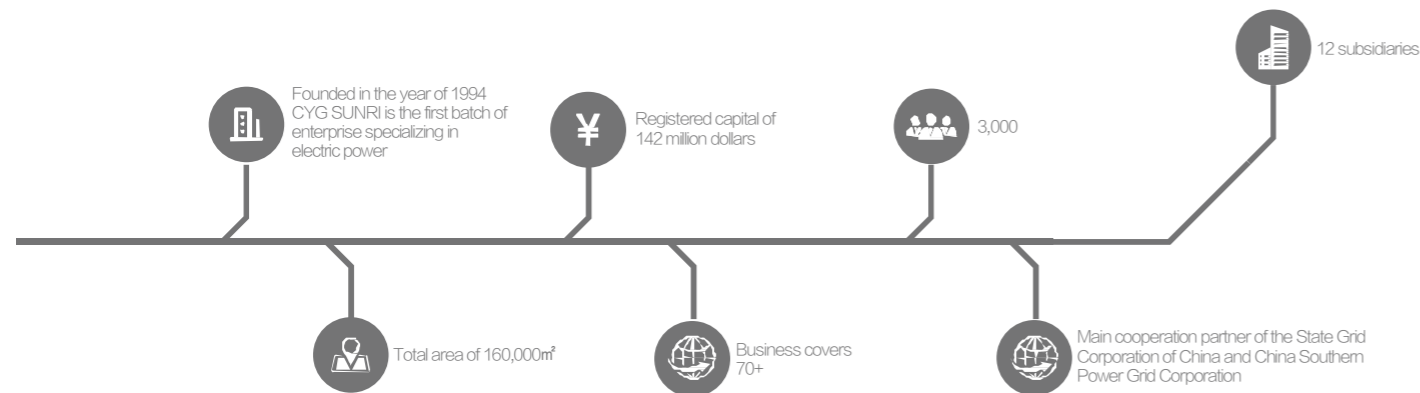
Website: www.sunripower.com

Company Profile

Established in 1994, CYG SUNRI, a famous enterprise specializing in power system automation and intelligentization, is dedicated to innovate power source technology and provide high-quality services all over the world and has its own deeds in building a safer and greener future.



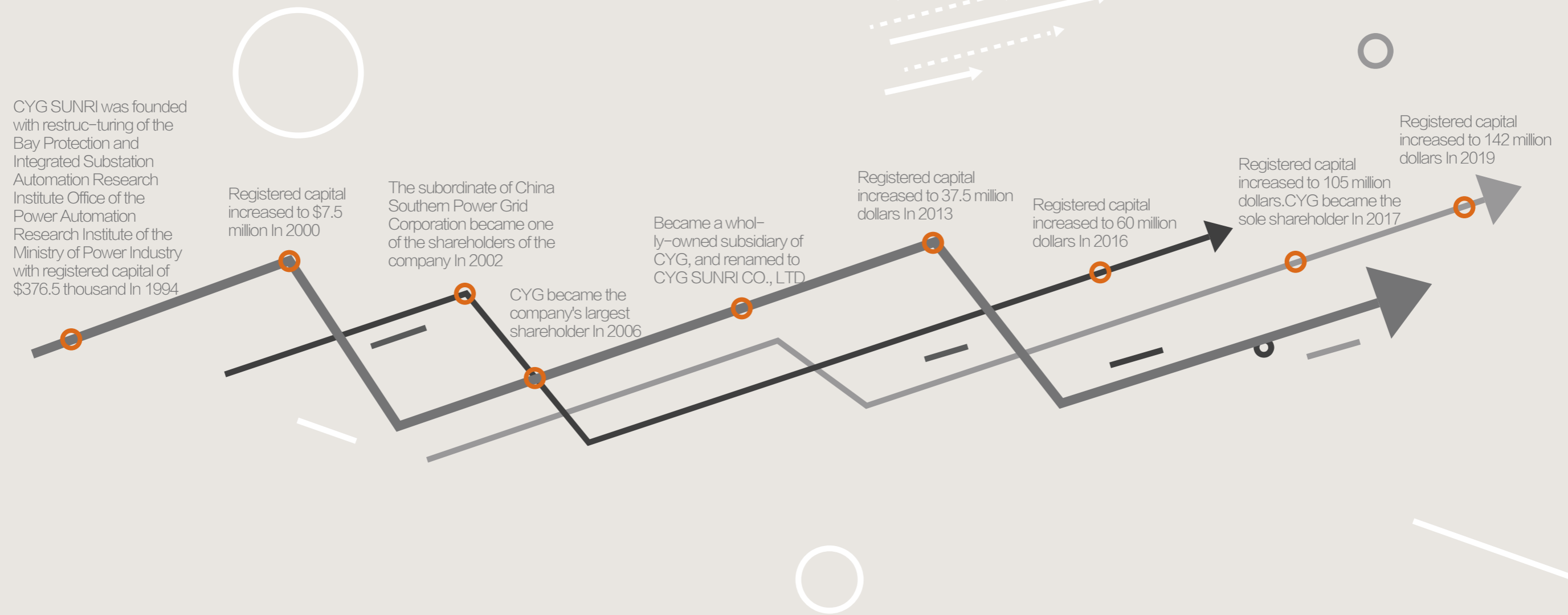
CYG SUNRI in Figures



Main Business Scope

- ▶ Traditional power generation system and the renewable energy field
- ▶ Traditional power transmission and transformation substation/smart grids
- ▶ Smart power distribution network
- ▶ Electrified railway and rail transit
- ▶ Non-ferrous metallurgy
- ▶ Petroleum and petrochemical
- ▶ International market

Company Development



Milestone Event

In 1995
The BP series Microprocessor-based Busbar Protection had been approved by Chinese Ministry of Electric Power, filling the gap of this area of China

In 2004
The PRS series High Voltage/Ultra High Voltage Protection and Monitoring System had been approved and widely used

In 2008
Won the bidding of demonstration project in the 1000kV EHV program argumentation

In 2010
Set up the project for research and development of Field Protection. Stable operation has been maintained

In 2012
Intelligent power transmission and distribution automation products had been successfully approved by China Electricity Council

In 2013-2015
Enter the power transmission, new energy and new industry areas Integrated services of engineering project completed system construction and related qualifications


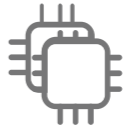



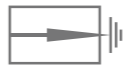


In 2016-2018
The full range of relay protection and monitoring systems covered voltage levels of 1000kV and below Field protection, intelligent operation and maintenance, centralized test and control passes appraisal. Many energy storage power station projects have been grid-connected and in operation

In 2019
Orienting ubiquitous IoT and digital power grid, we build a new generation of product system for smart power transmission, transformation, distribution and utilization In renewable energy field, we focus on multi-energy complementation, as well as customized services of source-grid-load cooperative control we completed many wind power and distributed PV generation projects, receiving good appraisal International business is in "full blossom"

CYG Powermate Power Your Green Life



New Generation Residential PV Inverter

- 
Higher Efficiency
- 
Dual MPPT
- 
Remote Control
- 
VPP Ready
- 
IP65 Protection Degree
- 
Type II DC SPD
- 
CATL Battery Cell
- 
Fanless Design & Lighter

Compatible with any type of Demand

- ▶ Our BluE series covers single phase 1 to 6kw, three phase 3-25kw and up to 20kwh Energy Storage System. This range is predominantly designed for modern house and small commercial energy demands.
- ▶ One App to monitor your power flow for different systems;
- ▶ One Call for pre-sales training & after-sales service;



Powermate ESS ALL-IN-ONE SOLUTION

Application of energy storage system

Powered by CATL

Lithium Ion batteries have received some negative press in recent years for their use of nickel and cobalt which are mined in countries with a poor record workers rights and use of child labour. There is currently a race to remove these materials from other manufacturers batteries worldwide. The CATL battery has already stopped using these materials and has moved to an LFP chemistry which has 0% cobalt or nickel. This same chemistry is being used in the Tesla Model 3 being supplied to China and EU.

ALL-IN-ONE

The PowerBank ESS includes all the components needed to transform the energy produced by PV panels into usable energy for household consumption or to store it in the integrated battery and use it in the moment of real world.



TOP PERFORMANCES

Maximum efficiency of energy conversion.

Storage capacity up to 20 kwh



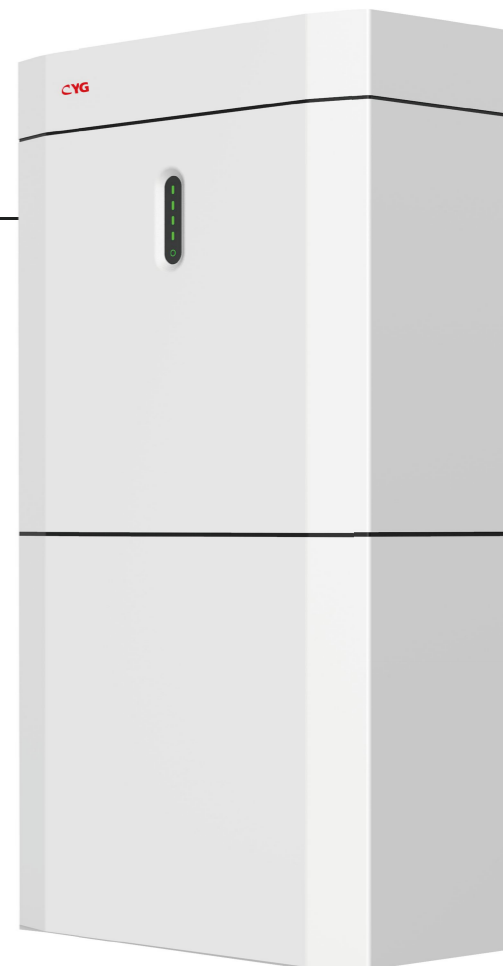
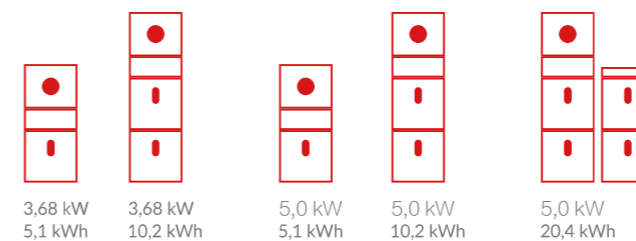
Powermate P3/P5 Hybrid Inverter



“Plug and Play” – Cable Box

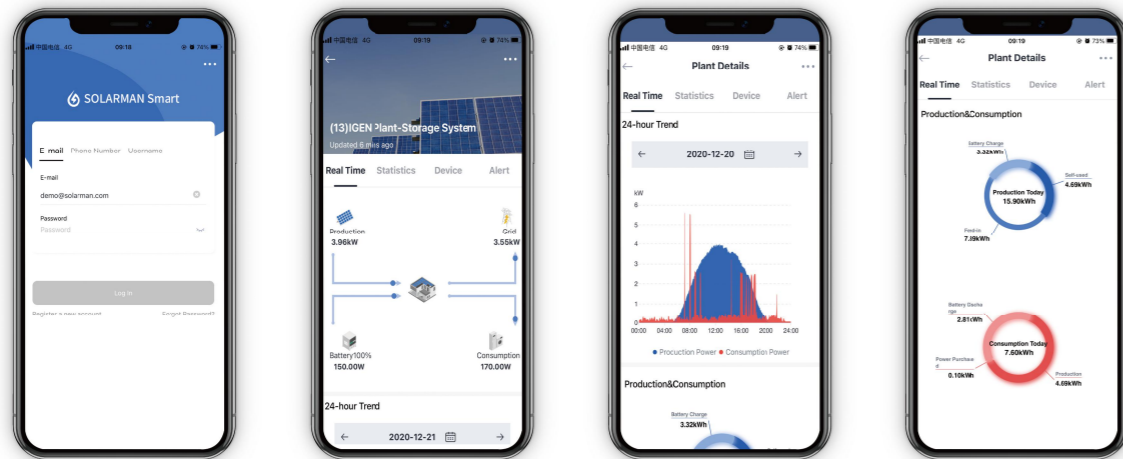


Powermate PACK 5.1



Energy Management System

Intelligent energy on your hands



SOLARMAN Smart home system with APP Remote access to the system

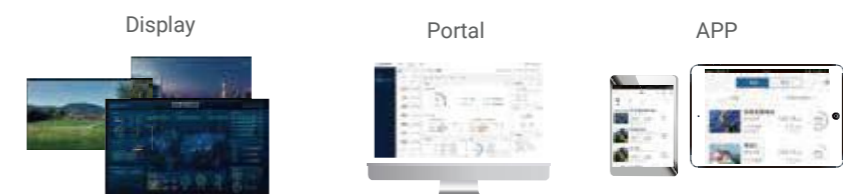
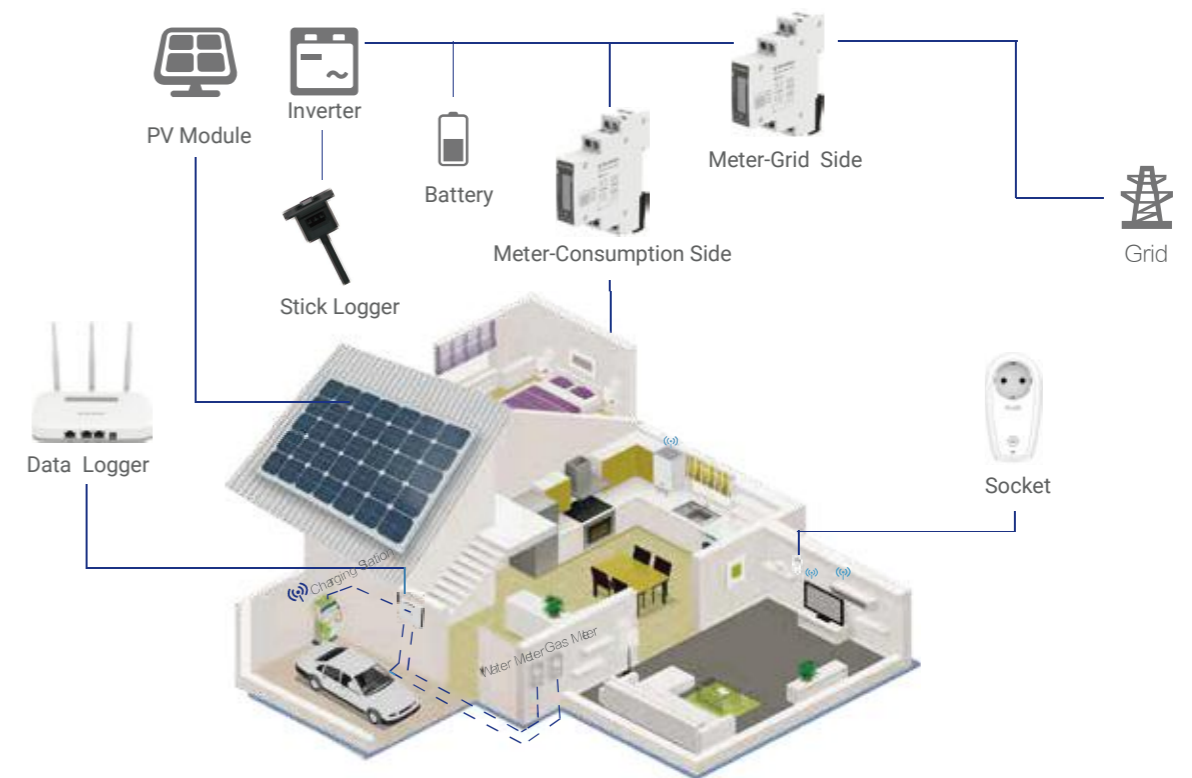
With the app you can monitor production and energy consumption of your home in real time. Set your preferences to optimize your energy independence, the protection against blackouts or energy savings.

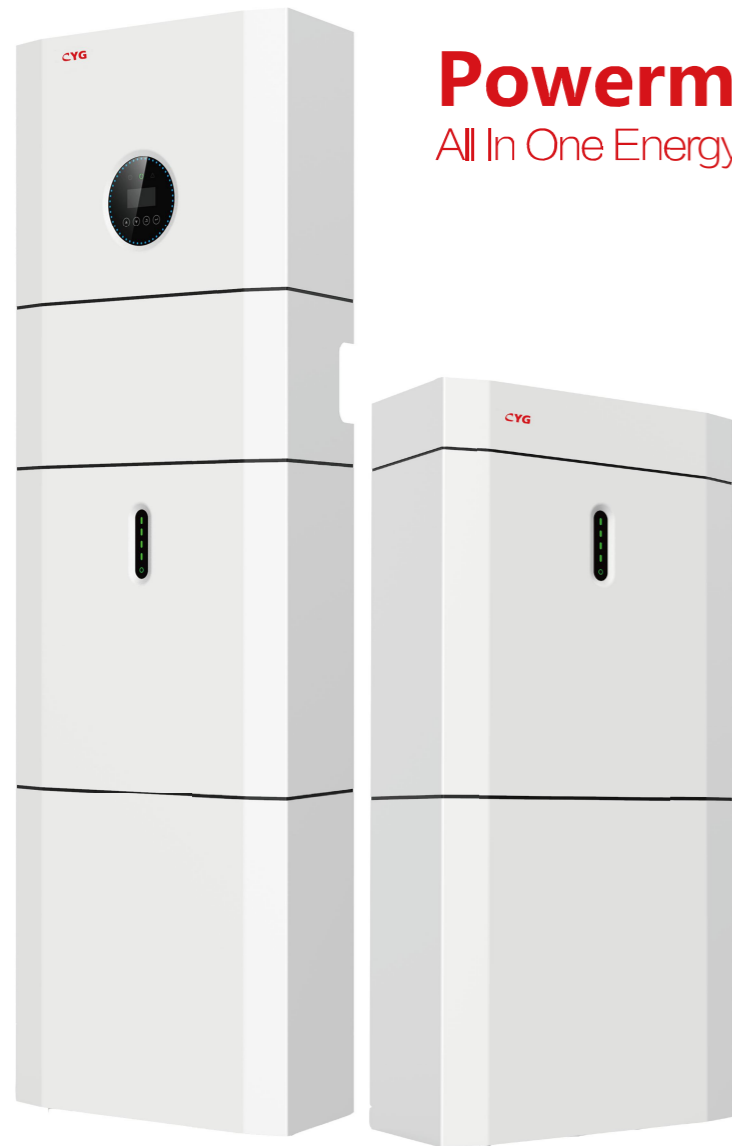
Thanks to instant alerts and access to distance, you can control your plant wherever you are.



Step Up Modern House Energy Supply

- ▶ Supply your home appliances fully automated.
- ▶ 100% Independence from grid with battery system.
- ▶ Manage the whole system via APP anytime or anywhere.
- ▶ Join the Energy Future-Virtual Power Plant.





Powermate Residential ESS

All In One Energy Storage System

All in One Design CATL Battery inside

- Safety
- Simple
- Interconnection



Battery Model		Powermate PACK5.1	
Physical			
Battery Type	LFP (LiFePO4)	Operation	
System Weight	54KG	Max. Charge/Discharge Current	50A/80A
Dimension (W x D x H)	540*490*240mm	Rated DC Power	4096W
IP Protection	IP65	Max. Charge/Discharge Power	2825W/4096W
Warranty	5 Year Product Warranty, 10 Year Performance Warranty	Operating Temperature Range	0 to 50°C charging -10 to 50°C discharging
Electrical			
Energy Capacity	5.12kwh	Humidity	0-95% (No condensation)
Usable Capacity	4.6kwh	BMS	
Depth of Discharge (DoD)	90%	Modules Connection	Max. 5
Nominal Voltage	51.2V	Capacity	100-400Ah
DC Circuit Breaker	125A	Power Consumption	<2W
Operating Voltage Range	44.8-56.5V	Communication	CAN & RS485
Internal Resistance	<20mΩ	Monitoring Parameters	System voltage, current, cell voltage, cell temperature, PCBA temperature measurement
Cycle Life	10000cycle	Certificate	
		Safety(Cell)	Pack: IEC/EN 62619;UN38.3 Cell: IEC/EN 62619;UN38.3;UL1973

*Maximum 4 battery pack in parallel.

Hybrid Inverter Model	Powermate P3	Powermate P5
PV String Input		
Max. DC Voltage	580V	580V
Nominal Voltage	400V	400V
MPPT Voltage Range	80V-560V	80V-560V
Start Voltage	130V	130V
Number of MPP Tracker	2	2
Strings Per MPP Tracker	1	1
Max. Input Current Per MPPT	15A	15A
Max. Short-circuit Current Per MPPT	18A	18A
AC Output (Grid)		
Nominal AC Output Power	3680W	5000W
Max. AC Apparent Power	7360VA (from grid)	7360VA (from grid)
Max. AC Output Power	3680W	5000W ¹
Nominal AC Voltage	230Vac	230Vac
AC Grid Frequency Range	50 / 60Hz ± 5Hz	50 / 60Hz ± 5Hz
Max. Output Current	16A	22A ²
Max. Input Current	32A	32A
Power Factor (cosΦ)	0.8leading-0.8lagging	0.8leading-0.8lagging
THDi	<3%	<3%
Battery Input		
Battery Type	LFP (LiFePO4)	LFP (LiFePO4)
Nominal Battery Voltage	48V	48V
Charging Voltage Range	40-60V	40-60V
Max. Charging Current	50A	100A
Max. Discharging Current	80A	100A
Battery Capacity	100-400Ah	100-400Ah
Charging Strategy for Li-ion Battery	Depend on the BMS	Depend on the BMS
AC Output (Backup)		
Max. Output Apparent Power	4000VA	5000VA
Peak Output Apparent Power	6900VA 10sec	6900VA 10sec
Max. Output Current	16A	20A
Nominal Output Voltage	230V	230V
Nominal Output Frequency	50/60Hz	50/60Hz
Output THDv (@Linear Load)	<3% (Linear Load)	<3% (Linear Load)
Efficiency		
Max. PV Efficiency	97.6%	97.6%
Euro. PV Efficiency	97.0%	97.0%
Protection		
DC Switch	Bipolar DC Switch (125A/Pole)	Bipolar DC Switch (125A/Pole)
Anti-islanding Protection	Yes	Yes
Output Over Current	Yes	Yes
DC Reverse Polarity Protection	Yes	Yes
String Fault Detection	Yes	Yes
AC/DC Surge Protection	DC Type II;AC Type III	DC Type II;AC Type III
Insulation Detection	Yes	Yes
AC Short Circuit Protection	Yes	Yes
General Specifications		
Dimensions W x H x D	540*590*240mm	
Weight	32kg	
Operating Temperature Range	-25°C ~+60°C	
Noise (dB)	<25	
Cooling Type	Natural Convection	
Max. Operation Altitude	2000m	
Operation Humidity	0-95% (No Condensation)	
IP Class	IP65	
Topology	Battery Isolation	
Communication	RS485/CAN2.0/WIFI/4G	
Display	LCD/APP	
Certification & Standard	IEC/EN 62109-1&2;IEC/EN61000-6-1;IEC/EN61000-6-2;EN61000-6-3; IEC/EN61000-6-4;IEC/EN61000-3-11; EN61000-3-12;IEC60529;IEC 60068;IEC61683;IEC62116;IEC61727;EN50549-1; AS 4777.2;NRS 097;VDE-AR-N-4105;CEI0-21;G98;G99;C10/C11	

*1. Nominal AC output power is 4999W for Australia and 4600W for Germany and South Africa.

*2. Maximum output current is 21.7A for Australia and 20A for Germany and South Africa.

PROJECT CASES

