

HANGZHOU VESTWOODS TECHNOLOGY CO., LTD.

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VESTWOODS
PRODUCT BROCHURE

ABOUT HAIER

Haier → Haier Energy → VESTWOODS

Founded in 1984, Haier Group is a leading global provider of better life and digital transformation solutions. Based on the purpose of "More Creation, More Possibilities", we are committed to co-create infinite possibilities for a better life with global users, and to co-create infinite possibilities for industrial development with the ecological partners.

200 Countries /Regions

1B User Households

35 Industrial Parks

163 Manufacturing Centers

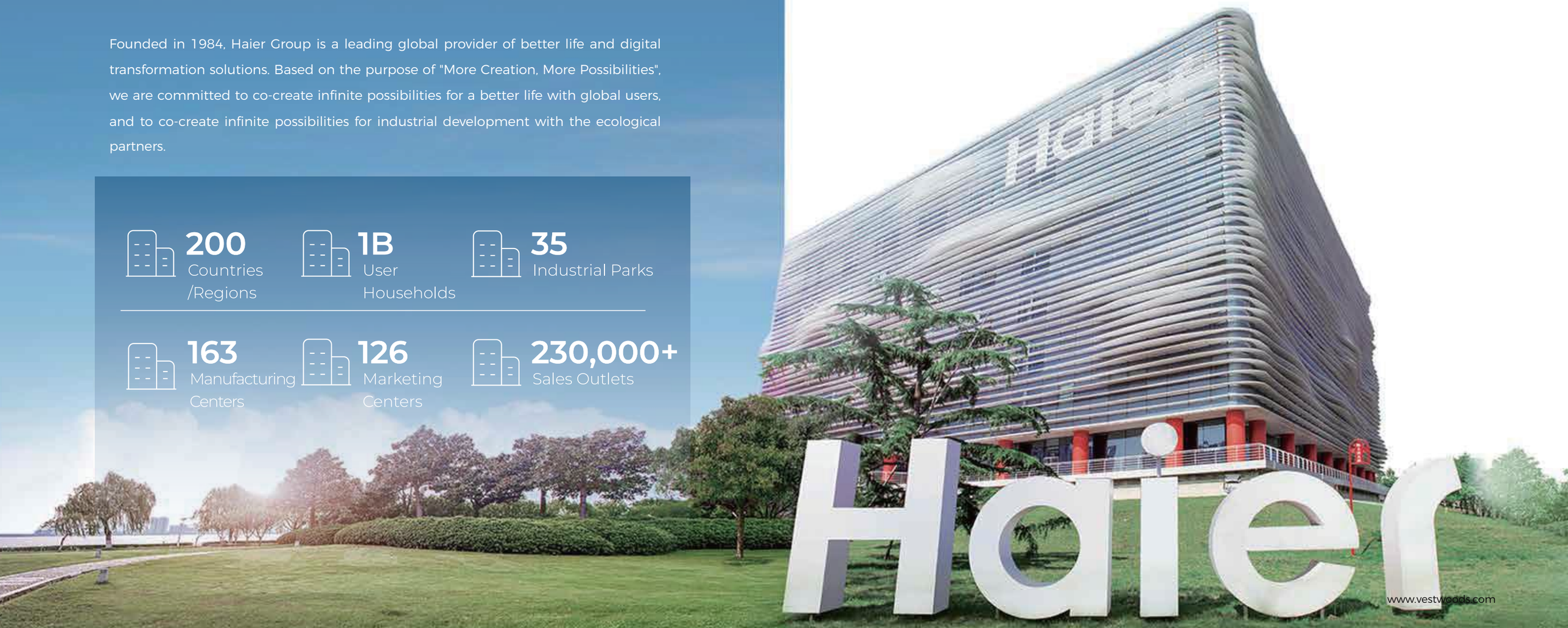
126 Marketing Centers

230,000+ Sales Outlets

ABOUT VESTWOODS

Hangzhou Vestwoods Technology Co., Ltd. a high-tech enterprise by Haier Energy, is its exclusive subsidiary specializing in lithium battery system integration for new We deliver one-stop green energy solutions and services to global customers energy solutions.

Founded in 2016, Vestwoods launched its overseas business at a fast pace, built out manufacturing bases, and secured a leading position in India's telecom backup power market. We have since expanded our footprint to over 50 countries across Europe, Asia and Africa and now operate a GWh-scale manufacturing base.



PRODUCTION AND R&D CENTERS

Qingdao R&D Center

Technology Industry Park R&D Center: Focusing on the new energy industry ecosystem, it integrates research and development, manufacturing, production and supply, market sales, and achievement display into one, creating an eco-friendly park for collaborative innovation across the entire industry chain.



Qingdao Manufacturing Center

Positioned as an intelligent energy controller IoT factory, the park covers a total area of 302 acres with a total investment of 6 billion yuan. It is an integrated park combining research, production, supply, sales, and exhibition, aiming to create the industry's first lighthouse factory for inverters.



Nantong Manufacturing Center

Covering an area of 40 acres, the modern production area spans 25,000 square meters, with an annual peak capacity exceeding 5 GWh. It is equipped with Industry 4.0 fully automated production lines, featuring an MES intelligent production management system, enabling full-process digital control from raw materials to finished products, empowering efficient and precise manufacturing.



Hangzhou R&D Center

It is certified as a provincial-level R&D center for high-tech enterprises by Zhejiang Provincial Science and Technology Department in 2023, focuses on communication backup power, residential & commercial energy storage, data center UPS, BMS and EMS. It realizes full-stack independent R&D of energy storage systems with over 200 core patents, nearly 100 global certifications and more than 20 awards.



GLOBALIZATION

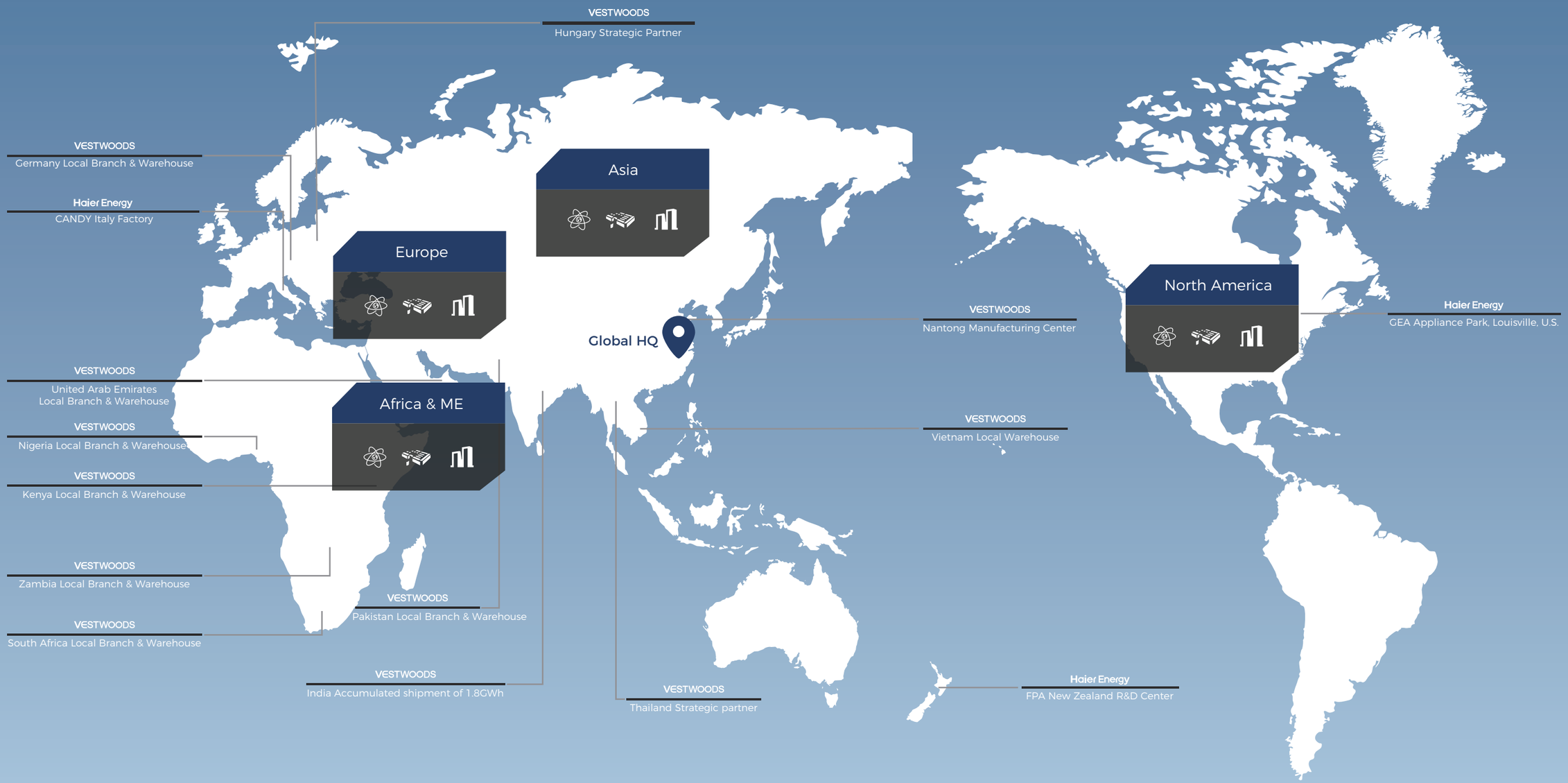
Service Network

Local Warehouse

Branches

Building a globalized multi-level and multi-mode industrial ecosystem

Adhering to the concept of “user-centered” to provide customized, scenario-based, intelligent new energy solutions for global users.



www.vestwoods.com

RESIDENTIAL ENERGY STORAGE SOLUTION



Rescube
0.5kW | 1kWh
1kW | 2kWh



Rescube Pro
1kW | 2kWh



Rescube Ultra
1.8kW | 2kWh



E-Bank
2.5kW | 5kWh



E-Harbor
5kW | 5kWh
8kW | 16kWh



E-Tower 2.0
4-15kW
4.8-28.8kWh



E-Tower 3.0
3.6-12kW (1P) | 8-64kWh
8-20kW (3P) | 8-64kWh



P Series
5kWh



L Series
5 | 10 | 16kWh



W Series
5 | 10 | 16kWh



Single Phase
3 - 12kW



Three Phase
5 - 20kW



Split Phase
3.8 - 11.5kW

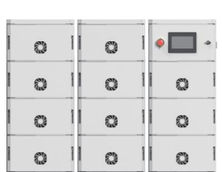


Single Phase
4 | 6 | 8kW



Villa Solution
22kW | 48kWh

C&I ESS SOLUTION



VEB 100-261kWh(AF/EU)



VEB 80-120kWh



VEB 140-261kWh



VED 500K-1044kWh-F



VED 500k-1044kWh-L



VED 125k-261kWh-L



VES 1MW-2MWh-F2

TELECOM PRODUCT & SOLUTION



VT4850



VT48100E



VT48150(3U)



VT48150(4U)



VT48200



VT48314



VT48100E-ST



VST48100



VST48150



VTS System

UPS BACKUP BATTERY SOLUTION



VES096020



FlexLi-512100V2



FlexLi-Ultra 51285

RESIDENTIAL ENERGY STORAGE SOLUTION

A smart residential energy solution centered around integrated solar and home storage systems, combining AI-powered energy management and cloud monitoring to optimize household energy costs and efficiency throughout the entire lifecycle - enabling a smarter, safer, and greener home microgrid.



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MINI HOME
POWER STATION

Your Reliable Home Energy Security.



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RESCUBE PRO

Install-free Home Power Backup

1 kW | 2 kWh | Off-grid

ES-Grade LFP Battery
Utilize 314Ah LFP battery guaranteeing energy station grade safety and duration

Fast Solar Charging
Up to 600W / 100V PV input allowing 2-3PV panels in series

Pure Sine Wave Output
Maximize energy transfer and minimize equipment failure

IP65 Level Cooling Design
Cooling by heat dissipation fin not by active out air preventing dust and insects going inside

Parallel Expansion
Support 2 units adding up to 2kW/4kWh



CE UN 38.3 IEC

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Model	PowerHelp-Mini
PV Input	
Max. PV Input Power	600W
PV Input Voltage Range	10~100V
Maximum Charge Current	16A
MPPT Efficiency	>99%
PV Input Port	1*MC4
AC Input	
Max. AC Input Power	1150W±5%
Input Voltage Range & Frequency	155-300V±5V, 45~65Hz
Max. Input Current	7.5A±10%
AC Input Port	1*Socket (optional)
AC Output	
Rated Output Power	1000W±5%
Peak Output Power	1500W±5%(15s)
Output Voltage Range	2*220~240V
AC Output Port	2*Sockets
Switch Time	<20ms
Battery Parameters	
Cell Type	LFP
Nominal Battery Voltage	6.4V
Nominal Battery Energy	2009.6Wh
General Specification	
Cooling Mode	Fins Dissipation
Altitude	≤2000m(Output Degradation over 2000m)
Noise	<25dB
Weight	19±0.5kg
Dimension(W*H*D)	304*200*310mm
IP Rating	IP20
Operating Temperature Range	Charging:0°C~45°C; Discharging:-20°C~45°C
Allowed Humidity Range	20%~85%



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Model	VEP05K-10B	VEP1K-20B
PV Input		
Max. PV Input Power	300W	500W
PV Input Voltage Range	11-55V	
Maximum Charge Current	10A	15A
MPPT Efficiency	＞99%	
PV Input Port	XT60 with MC-4 adaptor	
AC Input		
Max. AC Input Power	500W±5%	1000W±5%
Input Voltage Range & Frequency	90-280V±5V, 45-65Hz	
Max. Input Current	3.65A±10%	8A±10%
AC Input Port	1*Socket (optional)	
AC Output		
Rated Output Power	500W±5%	1000W±5%
Peak Output Power	1000W±5%(15s)	
Output Voltage Range	210-230V	2*220-240V
AC Output Port	1*Socket & 2*USB-A	2*Sockets & 4*USB-A & 4*USB-C
Switch Time	＜20ms	
Battery Parameters		
Cell Type	LFP	
Nominal Battery Voltage	3.2V	6.4V
Nominal Battery Energy	1004.8 Wh	2009.6Wh
General Specification		
Cooling Mode	Fan Cooling	
Altitude	<3000m	
Noise	<55dB	
Weight	11±0.5kg	18.5±0.5kg
Dimension(W*H*D)	300*200*150mm	350*210*250mm
IP Rating	IP20	
Operating Temperature Range	Charging:0°C~45°C; Discharging:-20°C~45°C	
Allowed Humidity Range	20~90%	10~90%



Model	VEP1.8K-22B
PV Input	
Max. PV Input Power	1200W
PV Input Voltage Range	18~110V
Maximum Charge Current	15A
MPPT Efficiency	88%
PV Input Port	XT60
AC Input	
Max. AC Input Power	1500W±5%
Input Voltage Range & Frequency	90-280V±5V, 45-65Hz
Max. Input Current	15A±10%
AC Input Port	1*Socket
AC Output	
Rated Output Power	1800W±5%
Peak Output Power	3200W±5%
Output Voltage Range	230V±5V
AC Output Port	3*Sockets
Switch Time	＜20ms
Battery Parameters	
Cell Type	LFP
Nominal Battery Voltage	12.8V
Nominal Battery Energy	2214Wh
General Specification	
Cooling Mode	Fan cooling
Altitude	<3000m
Noise	<65dB
Weight	21.5±0.5kg
Dimension(W*H*D)	390*270*250mm
IP Rating	IP20
Operating Temperature Range	Charging:0°C~45°C; Discharging:-20°C~60°C
Allowed Humidity Range	20%~80%(no condensation)

E-BANK

All-Scenario Micro All-in-One ESS

2.5 kW | 5 kWh | AC-Coupled

2.5 kW | 5 kWh | Hybrid PV

ES-Grade LFP Battery

Utilize 314Ah LFP battery guaranteeing energy station grade safety and duration

Minimal Installation

Plug-and-play deployment with AI self-networking and wire-free smart metering

Multi-Layer Safety Protection

24-channel temperature monitoring, glass-sealed NTC sensors, and hardware circuit-breaker protection

Smart Saving

Support dynamic tariff/ VPP, AI-driven optimization, and remote OTA upgrades



CE UN 38.3 IEC

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Model	HVA-2.5/5D2W
Basic Parameters	
Maximum PV Input Power	3.2kW
Battery Rated Capacity	5.02kWh
Rated AC Output Power	800W/2.5 kW (On-grid / Off-grid)
Overall Dimensions (W×H×D)	530**704**240mm
Overall Weight	67kg ± 3%
Cooling Method	Natural Cooling
Ingress Protection Rating	IP65 (Complete System)
Protection Level	I
Overvoltage/Voltage Withstand Level	II(PV), III(AC)
Design Service Life	10 years
PV Input Side (DC)	
Maximum PV Input Power	3.2kW
Number of MPPT	4
Maximum Power per MPPT	800W
Maximum Input Current per MPPT	22A
Short-Circuit Current per MPPT	27.5A
MPPT Operating Voltage Range	20~60V
Maximum DC Input Voltage	60V
MPPT Tracking Efficiency	>99.9%
Maximum Charging Efficiency (Single PV to Battery)	≥96%
Battery Side (DC)	
Battery Type	$LiFePO_4$
Cell Rated Capacity	314Ah
Battery Rated Capacity	5.02kWh
Battery Rated Voltage	16V
Battery Operating Voltage Range	15~ 17.5V
Maximum Charge / Discharge Power	2.5kW
Recommended Charge / Discharge Current	157A/157A (25°C)
Maximum Charge / Discharge Current	172A/180A (25°C)
Charge / Discharge Efficiency	≥94%
Usable Depth of Discharge (DoD)	90%
Cycle Life	>10000 cycles
Grid Side (AC) - Input/Output	
Rated Grid Voltage	220/ 230V (L/N/PE)
Rated Grid Frequency	50/ 60Hz
Rated Input Apparent Power	3.2kVA
Rated Output Apparent Power	2.5kVA/800VA
Maximum Input / Output Current	16A
Power Factor Range	0.8 (leading) ~ 0.8 (lagging)
THDi	＜3%
EPS Output	
Rated Output Voltage	220/230V (L/N/PE)
Rated Output Frequency	50/ 60Hz
Rated Output Apparent Power	2.5kVA
Maximum Output Current	16A
THDu（Linear Load）	＜3%
Communication	
Communication Interfaces	Wi-Fi, Bluetooth, RS485, CAN
Remote Upgrade	OTA
Environmental Adaptability	
Operating Temperature	-30°C ~ +60°C
Storage Temperature	-40°C ~ +60°C
Operating Humidity	0-95% RH (Non-condensing, 25±2°C)
Operating Altitude	≤4000 meters (Derated operation when >2000 meters)
Maximum Operating Noise	<30 dB
Safety & Certification	
Safety	IEC 62619; IEC 62109-1; IEC 62109-2; IEC 62477-1
EMC	IEC 61000; IEC 62920
Radio Equipment Directive	EN 300328 V2.2.2; EN 301489-1 V2.2.3; EN 301489-17 V3.2.4; EN 55011; EN 18031-1; EN 18031-2
Shipping Standards	UN38.3
Grid Connection Standards	VDE 4105; EN 50549-1; EN 50549-10
Material Safety	RoHS; REACH
Regulations	EU 2023/1542

ALL-IN-ONE ENERGY STORAGE

Your Smart Home Energy Ecosystem.

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E-HARBOR

LV All-in-one Residential ESS

5kW | 5kWh

8kW | 16kWh

IP54 High Protection
Better protection rating keeps humidity, dust and insects out of device, providing longer duration.

Self-developed BMS
Precise cell balancing, protection & real-time monitoring

Up to 8kW Output
Supports 1C charging/ discharging rate

Flexible PV Selection
Up to 18A per MPPT 70V startup voltage

Wide Grid Range
Wide grid voltage adaptation range of 90-280V



CE UN 38.3 IEC RoHS

Model	VEH512-S5KL1-LV	VEH160-S8KL1-LV
System Data		
Rated Power	5kW	8kW
Rated Voltage	51.2V	
Nominal Energy	5kWh	16kWh
Max. Charge/Discharge Current	100A	165A
Working Temp. Range	0~55°C(Charge) ; -20~55°C (Discharge)	
Dimensions (W*H*D)	550*850*180mm	550*1100*240mm
Weight	Approx. 60kg	Approx. 130kg
Expansion	Max. 6pcs in parallel	
Cooling	Fan Cooling	
IP	IP54	
PV Input		
Max. MPPT Input Power	10000W	12000W
Max. Input Voltage	500Vdc	
Rated Input Voltage	370Vdc	
MPPT Voltage Range	60~450Vdc	
No. Of MPPT/ String Per MPPT	2/1+1	
Max. Input Current Per MPPT	18+18A	
Max. Short Circuit Current Per MPPT	27+27A	
Grid Input		
Rated Grid Voltage	220/230/240±5%Vac	
Voltage Input Range	90~280Vac	
Rated Grid Frequency	50/60Hz	
Max. Input Current	40A	50A
THDi	<3% (of nominal power)	
Backup Data		
Rated Output Power	5000W	8000W
Rated Output Current	27A	35A
Rated Output Frequency	50/60±0.1%	
Overload Capability	1min@101-110%; 10s @110~150%; 5s@150~200%;100ms@ >200%	
THDv	<3%	
Efficiency		
Max. Efficiency	97.0%	
MPPT Tracking Efficiency	99.9%	
Others		
Installation	Floor-mounted	
Design Standards	IEC 62109-1:2010, EN IEC 61000-1:2019, UN38.3, IEC62619, Rohs	



E-TOWER 2.0

HV All-in-One System

4-15 kW | 4.8-28.8 kWh

Smart Control

Support dynamic tariffs/ VPP, and AI-powered fault self-monitoring and maintenance

Maximum Solar Harvest

Utilize a 2.0 DC:AC ratio and 3 MPPTs, maximizing solar generation across all roof layouts

Flexible Deployment

Wall or floor mounting with IP65 protection and scalable capacity up to 28.8kWh

Advanced Load Management

Up to 150% three-phase unbalanced loads for demanding applications

CE UN 38.3 IEC

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Model	HAH3P-4KB1/HU9	HAH3P-5KB1/HU9	HAH3P-6KB1/HU9	HAH3P-8KB1/HU9	HAH3P-10KB1/HU9	HAH3P-12KB1/HU9	HAH3P-15KB1/HU9
PV String Input Data							
Max. PV Input Power	8kW	10kW	12kW	16kW	20kW	22.5kW	22.5kW
Max PV Input Voltage	1100V						
Full load MPPT Voltage Range	140~950V						
Startup Voltage	85V						
Max. Input Current	16A/16A/16A/16A						
Max. Short Circuit Current	24A/24A/24A/24A						
Number of string per MPPT	1 / 1 / 1						
Battery port							
Battery Type	$LiFePO_4$						
Battery Voltage Range	90~700V						
Max. Charging Current	50A						
Max. Discharging Current	50A						
GRID PORT							
Rated Output Power	4kW	5kW	6kW	8kW	10kW	12kW	15kW
Max. Output Current	6.7A	8.3A	10A	13.3A	16.7A	20A	22.8A
Max. Output Apparent Power	4.4kVA	5.5kVA	6.6kVA	8.8kVA	11kVA	13.2kVA	15.75kVA
Max. Input Power	8kVA	10kVA	12kVA	16kVA	20kVA	20KVA	20kVA
Rated Grid Voltage	220V,230/400Vac, 3L/N/PE						
Grid Voltage Range	150~288Vac						
Rated Grid Frequency	50/60Hz						
Power Factor	Leading -0.8~Lagging+0.8						
THDi	<3%						
Backup port							
Grid Max Power	8kVA	10kVA	12kVA	16kVA	20kVA	20kVA	20kVA
Rated Backup Power	4kVA	5kVA	6kVA	8kVA	10kVA	12KVA	15kVA
Rated Backup Voltage	220/380Vac,230/400Vac,3L/N/PE						
Rated Backup Frequency	50/60Hz						
THDv	<3% (Linear Load) /<5% (Non-linear Load)						
Switching Time	<10ms						
Efficiency							
Max. Efficiency	98%	98%	98.2%	98.4%	98.4%	98.4%	98.4%
Europe Efficiency	97.5%	97.5%	97.7%	97.9%	97.9%	97.9%	98%
MPPT Efficiency	99.9%						
General data							
Operating Temperature Range	-25˚C~ 60˚C						
Relative Humidity	0~100% (No Condensing)						
Operating Altitude	<3000m(without Derating)						
Cooling	Natural Convection					Intelligent Air Cooling	
Noise	<30dB					<45dB	
Topology	Transformerless						
Dimensions (W*H*D)	620*485*206mm						
Protection Degree	IP65						
Weight	29kg						
Warranty	10Years						
HMI&COMM							
Communication With BMS	CAN/RS-485						
External Communication	RS-485/WIFI/Ethernet						
User Interface	LED/App						
Certificate							
Grid Regulation	VDE-AR-N 4105, G98, G99, C10/11:2021, NTS 631, RD647:2020 UNE 217002:2020, VDE 0126-1-1, NRS 097-2-1, AS/NZS 4777.2:2020, EN 50549-1						
Safety Regulation	IEC/EN62109-1&2,IEC/62477-1:2012						
EMC	IEC/EN61000-6-1,IEC/EN61000-6-2, IEC/EN61000-6-3,IEC/EN61000-6-4						
Battery module Model							
Battery Type	LiFePO4						
Rated Voltage	96V						
Rated Energy	4.8kWh						
Usable Capacity	4.8kWh						
Working Voltage Range	90~108V						
Rated Charging/ Discharging Current	50A						
Max.Charging/ Discharging Current	50A						
Depth Of Discharge(DoD)	100%						
Warranty	10Years						
Operating Temperature	Charging 0˚C<T<50˚C Discharging -10˚C<T<50˚C						
Dimensions (W*H*D)	620*430*206						
Protection Rate	IP65						
Communication	CAN						
Weight	57±2kg						
Certification	UN 38.3, EN 61000-6-1, EN 61000-6-2, EN 61000-6-3,EN 61000-6-47, IEC 62619						
Production Configuration	HBHS-4.8KB1/LPP	2*HBHS-4.8KB1/LPP	3*HBHS-4.8KB1/LPP	4*HBHS-4.8KB1/LPP	5*HBHS-4.8KB1/LPP	6*HBHS-4.8KB1/LPP	
System Capacity	4.8kWh	9.6kWh	14.4kWh	19.2kWh	24kWh	28.8kWh	
System Weight	85±2kg	139±2kg	193±2kg	247±2kg	301±2kg	355±2kg	
No. of battery modules	1	2	3	4	5	6	
Working Humidity	0~95% (No Condensing)						
Dimensions (W*H*D) (cluster 1)	620*990*206mm	620*1420*206mm	620*1850*206mm	620*1850*206mm	620*1850*206mm	620*1850*206mm	
Dimensions (W*H*D) (cluster 2)				620*510*206mm	620*940*206mm	620*1370*206mm	

E-TOWER 3.0

HV All-in-One System

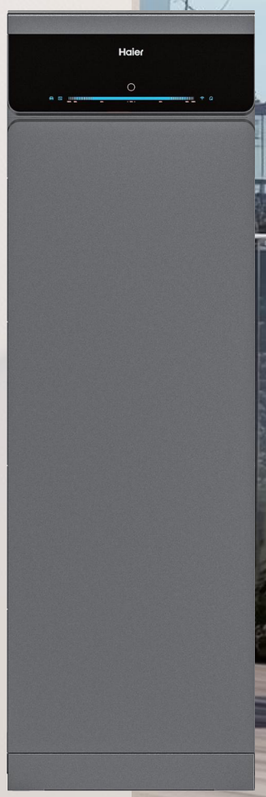
3.6-12 kW (1P) | 8-64 kWh
8-20 kW (3P) | 8-64 kWh

Smart Control
Leverage AI-driven diagnostics, TOU optimization, and whole-home energy management

Modular Design
Enable wire-free stacking and flexible system configuration with backup box and EV charging modules

All-Scenario Coverage
Support new installations, system retrofits, PV expansion, and diesel generator integration

Full-Stack Safety
Active fire protection and cell balancing, unafraid of low-temperature environments



CE UN 38.3 IEC

Model	HBHS-8KC1/ZP
Battery Data	
Battery Type	LiFePO4
Cell Capacity	314Ah
Total Energy	8kWh
Usable Energy	7.8kWh
Max. Charge/Discharge Power	5kW
Peak Discharge Current/Power,10s	6kW
Communication	CAN
Recommended Depth of Discharge (DOD)	100%
Max. Stack Quantity	4
Max. Parallel Quantity	2
General Data	
Dimensions (W*H*D)	620*360*255mm (single pack)
Weight	67kg
Mounting	Floor standing / Wall mounting
Installation Environment	Indoor / Outdoor
Charging/Discharging Temperature	-20 to +55 (>45 ℃, derating)
Protection Level	IP66
Cooling	Natural Cooling
Altitude	≤4000m
Warranty	10 Years

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Model	HAH1P-3.6KC1/HU	HAH1P-4.6KC1/HU	HAH1P-5KC1/HU	HAH1P-6KC1/HU	HAH1P-8KC1/HU	HAH1P-10KC1/HU	HAH1P-12KC1/HU
DC Input (PV side)							
Recommended Max. PV Power	7200W	9200W	10000W	12000W	16000W	20000W	24000W
Max. DC Input Voltage	600V						
Rated DC Input Voltage	390V						
Start-up Voltage	70V						
MPPT Voltage Range	50-550V						
Full Power MPPT Voltage Range	135-500V	170-500V	185-500V	225-500V	225-500V	280-500V	335-500V
Max. Input Current	18/18/18				18/18/18/18		
Max. Short Circuit Current	27/27/27				27/27/27/27		
Number of MPP. Trackers	3/3				4/4		
Battery Connection							
Battery Type	Li-ion						
Battery Voltage Range	390-550V						
Max. Charge/Discharge Current	9.4/9.9A	11.8/12.4A	12.8/13.5A	15.4/16.2A	20.5/21.5A	25.6/26.9A	30/30A
Communication	CAN						
Compatible Battery Model	HBHS-8KC1/ZP						
Number of Modules	1-8(1)						
AC Input and Output (On-grid)							
Ratedoutput Power	3680W	4600W	5000W	6000W	8000W	10000W	12000W
Max. On-grid Input/ Output Apparent Power	3680VA	4600VA	5000VA	6000VA	8000VA	10000VA	12000VA
Max. Output Current	16.7A	20.9A	22.7A	27.3A	36.4A	45.5A	54.5A
Grid Form	L/N/PE						
Rated AC Output Voltage	220/230/240V						
Rated Grid Frequency	50/60Hz						
Power Factor	>0.99 (0.8 leading - 0.8 lagging)						
Total Current Harmonic Distortion	THDi <3%						
AC Output (Off-grid)							
Rated Output Power	3680W	4600W	5000W	6000W	8000W	10000W	12000W
Max. Off-grid Output Apparent Power	5520VA, 10s	6900VA, 10s	7500VA, 10s	9000VA, 10s	12000VA, 10s	15000VA, 10s	18000VA, 10s
Grid Form	L/N/PE						
Rated AC Output Voltage	220/230/240V						
Rated Grid Frequency	50/60Hz						
Power Factor	>0.99 (0.8 leading - 0.8 lagging)						
THDv (@rated output)	<3%						
Back-up Switch Time (ms)	0						
Efficiency							
Max. Efficiency	98%						
European Efficiency	97.5%						
Protection							
Anti-islanding Protection	Integrated						
PV String Input Reverse Polarity Protection	Integrated						
Insulation Resistor Detection	Integrated						
Residual Current Monitoring Unit	Integrated						
AC Over Current Protection	Integrated						
AC Short-circuit Protection	Integrated						
AC Overvoltage and Undervoltage Protection	Integrated						
Surge Protection	DC Type II/AC Type II						
General							
Dimensions (W*H*D)	620*360*255mm						
Weight	<27kg						
Mounting	Floor / Wall mounting (Optional)						
Storage Temperature	-40 to 70℃						
Operating Temperature Range	-30 to +65 ℃ (>45℃ , derating)						
Relative Humidity	0-95%, no condensing						
Cooling	Natural Convection				Intelligent air cooling		
Topology	Non-isolation						
Operating Altitude	≤4000m						
System Ingress Protection Rating	IP 66						
Noise	<35db				<55db		
User Interface	LED & APP						
Communication	RS485, Bluetooth/Wifi/WLAN/4G (optional)						
Warranty	10 years						
Standard Compliance							
Standard	IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62477, IEC/EN 61000-6-1, IEC/EN 61000-6-2, ...						

Model	HAH3P-8KC1/HU	HAH3P-10KC1/HU	HAH3P-10KC1/HU(BE)	HAH3P-12KC1/HU	HAH3P-16KC1/HU	HAH3P-20KC1/HU
DC Input (PV Side)						
Recommended Max. PV Power	16000W	20000W	20000W	24000W	32000W	40000W
Max. DC Input Voltage	1000V					
Rated DC Input Voltage	720V					
Start-up Voltage	170V					
MPPT Voltage Range	150-900V					
Full Power MPPT Voltage Range	267-950V	333-950V	333-950V	333-950V	400-950V	500-950V
Max. Input Current	20/20/20A				20/20/20/20A	
Max. Short Circuit Current	30/30/30A				30/30/30/30A	
MPPT Number/Max. Input Strings Number	3/3				4/4	
Battery Connection						
Battery Type	Li-ion					
Battery Voltage Range	720-950V					
Max. Charge/Discharge Current	11.1/11.7A	13.9/14.6A	13.9/14.6A	16.7/17.5A	22.2/23.3A	27.8/29.2A
Communication	CAN					
Compatible Battery Model	HBHS-8KC1/ZP					
Number of Modules	1-8(1)					
AC Input and Output (On-grid)						
Rated Output Power	8000W	10000W	10000W	12000W	16000	20000W
Max. On-grid Input/ Output Apparent Power	8800VA	11000VA	10000VA	13200VA	17600VA	22000VA
Rated Input/Output Current	12.1A	15.2A	14.4A	18.2A	24.2A	30.3A
Max. Output Current	13.3A	16.7A	14.4A	20.0A	26.7A	33.3A
Grid Form	3L/N/PE					
Rated AC Output Voltage	220/380V, 230/400V					
Rated Grid Frequency	50/60Hz					
Power Factor	>0.99 (0.8 leading - 0.8 lagging)					
Total Current Harmonic Distortion	<3%					
AC Output (Off-grid)						
Rated Output Power	8000W	10000W	10000W	12000W	16000W	20000W
Max. Off-grid Output Apparent Power	12000VA, 10s	15000VA, 10s	15000VA, 10s	18000VA, 10s	24000VA, 10s	30000VA, 10s
Grid Form	3L/N/PE					
Rated AC Output Voltage	220/380V, 230/400V					
Rated Grid Frequency	50/60Hz					
Power Factor	>0.99 (0.8 leading - 0.8 lagging)					
THDv (@rated output)	<3%					
Back-up Switch Time (ms)	0					
Efficiency						
Max. Efficiency	98.50%					
European Efficiency	98.00%					
Protection						
Anti-Islanding Protection	Integrated					
PV String Input Reverse Polarity Protection	Integrated					
Insulation Resistor Detection	Integrated					
Residual Current Monitoring Unit	Integrated					
AC Over Current Protection	Integrated					
AC Short-Circuit Protection	Integrated					
AC Overvoltage and Undervoltage Protection	Integrated					
Surge Protection	DC Type II/AC Type II					
General						
Dimensions (W*H*D)	620*360*255mm					
Weight	31kg					
Mounting	Floor / Wall mounting (Optional)					
Storage Temperature	-40 to 70℃					
Operating Temperature Range	-30 to +65 ℃ (>45℃ , derating)					
Relative Humidity	0-95%, no condensing					
Cooling	Natural Convection			Intelligent air cooling		
Topology	Non-isolation					
Altitude	≤4000m					
Protection Degree	IP 66					
Noise	<35db			<55db		
User Interface	LED & APP					
Communication	RS485, Bluetooth/Wifi/WLAN/4G (optional)					
Warranty	10 years					

SMART
RESIDENTIAL ESS

Your Intelligent Home Energy Partner.



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P SERIES

LV Wall-mounted Battery

5 kWh

Ultimate Safety
1M self-developed protection boards shipped worldwide

Most Economical Choice
Optimized design for the best cost-performance

High Compatibility
Major inverter matched Convenient LCD display to choose different inverters

Self-developed BMS
Precise cell balancing, protection & real-time monitoring



Model	VT48100E-W
Cell Type	LFP
Nominal Energy	5.12kWh
Nominal Capacity	100Ah
Nominal Voltage	51.2V
Operating Voltage Range	42.0~57.6V
Nominal Charge Voltage	57.6V
Charge Current/Max.Continuous	100A
Discharge Cut-off Voltage	42.0V
Discharge Current/Max. Continuous	100A
Recommended Depth of Discharge	80% DOD
Operating Temp. Range/Charge	0°C~60°C
Operating Temp. Range/Discharge	-20°C~60°C
Dimension(W*H*D)	443*450*150mm
Weight	Approx. 43kg
IP Rating	IP20
Expansion	Max. 15 Units in Parallel
Communication	CAN/RS485
Cooling Mode	Natural Cooling
Cycle Life	6000 Cycles,80%DOD@25°C
Design Life	15+Years(25°C)
Installation	Floor/ Cabinet/ Rack Mounted
Allowed Humidity Range	≤95% RH
Protections	Over Charge/Over Discharge/Over Temperature Over Current/Short Circuit etc.
Compatible Inverters	Deye/Solis/Hoymiles/Senergy/Afore/Megarevo/SRNE/Inhenergy etc.
Certifications	UN38.3, CE-EMC, IEC 62619

L SERIES

LV Battery

5 | 10 | 16 kWh

Triple-layer Safety
Battery cell × electrical × structural protection integrated

Self-developed BMS
Precise cell balancing, protection & real-time monitoring

High Compatibility
Major inverter matched Convenient LCD display to choose different inverters

High-temp Resistance
Deliver stable power up to 55°C

Smart Monitoring
Optional large color touchscreen, Bluetooth, and APP connectivity for flexible monitoring



CE UN 38.3 RoHS IEC

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Model	VE51100L	VE51200L	VE51314L	VE51314L-P	VE51314L-S
Cell Type	LFP				
Nominal Energy	5.12kWh	10.24kWh	16.07kWh	16.07kWh	16.07kWh
Nominal Capacity	100Ah	200Ah	314Ah	314Ah	314Ah
Nominal Voltage	51.2V				
Operating Voltage Range	42.0~57.6V				
Nominal Charge Voltage	57.6V				
Charge Current/Max. Continuous	100A	200A	200A	200A	157A
Discharge Cut-off Voltage	42.0V				
Discharge Current/Max. Continuous	100A	200A	200A	200A	157A
Recommended Depth of Discharge	80%				
Ambient Temperature/Charge	0~60°C				
Ambient Temperature/Discharge	-20~60°C				
Dimension(W*H*D)mm	420*700*150	580*802*150	500*880*240	500*880*240	500*880*240
Weight	Approx. 45.0kg	Approx. 82.0kg	Approx. 114kg	Approx. 114kg	Approx. 114kg
IP Rating	IP20	IP20	IP20	IP65	IP65
Expansion	Max. 15 Units in Parallel				
Color	White				
Communication	CAN/RS485				
Interaction	LCD Screen				Color Touchscreen, Bluetooth and WiFi
Additional Features	Auto Addressing (VE51314L-S only), Electric Heating (Optional for VE51314L-S)				
Cooling Mode	Natural Cooling				
Cycle Life	6000 Cycles, 80%DOD@25°C		8000 Cycles, 70%DOD@25°C		
Design Life	15+ Years (25°C)				
Installation Method	Floor/Wall Mounted				
Allowed Humidity Range	≤95% RH				
Altitude	<2000m				
Protections	Over Charge/Over Discharge/Over Temperature Over Current/Short Circuit etc.				
Compatible Inverters	Deye/Solis/Hoymiles/Senergy/Afore/Megarevo/SRNE/Inhenergy etc.				
Certifications	UN38.3, IEC62619, CE-EMC, Rohs				

W SERIES

LV Battery

5 | 10 | 16 kWh

Convenient Commissioning
Wifi / Bluetooth / APP supported

Self-developed BMS
Precise cell balancing, protection & real-time monitoring

High Compatibility
Major inverter matched

Wide Temp Range
Stand from -20°C to 55°C



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Model	VE51100W	VE51200W	VE51314W
Cell Type		LFP	
Nominal Energy	5.12kWh	10.24kWh	16.07kWh
Nominal Capacity	100Ah	200Ah	314Ah
Nominal Voltage		51.2V	
Operating Voltage Range		42.0~57.6V	
Nominal Charge Voltage		57.6V	
Charge Current/Max. Continuous	100A	150A	150A
Discharge Cut-off Voltage		42.0V	
Discharge Current/Max. Continuous	100A	150A	150A
Recommended Depth of Discharge		80%	
Ambient Temperature/Charge		0~60°C	
Ambient Temperature/Discharge		-20~60°C	
Dimension(W*H*D)	410*665*206mm	530*762*260.5mm	607.4*842*261.5mm
Weight	Approx. 51.8kg	Approx. 91.0kg	Approx.127kg
IP Rating		IP65	
Expansion		Max. 15 Units in Parallel	
Color		White	
Communication		CAN/RS485	
Monitoring		APP	
Cooling Mode		Natural Cooling	
Cycle Life		6000 Cycles, 80%DOD@25°C	
Design Life		15+ Years (25°C)	
Installation Method		Floor/Wall Mounted	
Allowed Humidity Range		≤95% RH	
Altitude		<2000m	
Protections		Over Charge/Over Discharge/Over Temperature/Over Current/Short Circuit etc.	
Compatible Inverters		Deye/Solis/Hoymiles/Senergy/Afore/Megarevo/SRNE/Inhenergy etc.	
Certifications		UN38.3, IEC62619, CE-EMC, IEC RED, Rohs, IEC 62040	

LV SERIES

Single Phase Hybrid Inverter

3 - 8 kW

Up to 200% PV Oversizing
Large PV input maximizing yield & high performance

Flexible PV Selection
Up to 18A per MPPT
100V startup voltage

UPS Level Transition
Switching Time < 4ms

Overload Ability
200% for 10s



Model	VEH-S3KA3-LV	VEH-S3.6KA3-LV	VEH-S4.6KA3-LV	VEH-S5KA3-LV	VEH-S6KA3-LV	VEH-S8KA3-LV
Battery						
Battery Type	Li-ion/Lead-acid					
Battery Voltage Range	40-60V					
Max. Charge/Discharge Current	75/75A	90/90A	115/115A	120/120A	135/135A	140/140A
Max. Charge/Discharge Power	3000/3150W	3600/3800W	4600/4850W	5000/5250W	6000/6300W	8000/8300W
Charging Strategy For Li-ion Battery	Self-adaption to BMS					
Charging Curve	3 Stages/Equalization					
External Temperature Sensor	Optional					
Communication	CAN					
PV Input						
Recommended Max. PV Power	6000W	7200W	9200W	10000W	12000W	16000W
Max. Input Voltage	550V					
Rated Voltage	360V					
Start-up Voltage	100V					
MPPT Voltage Range	90-500V					
Max. Input Current	18/18A					
Max. Short Circuit Current	27/27A					
MPPT Number/Max. Input Strings Number	2/2					
AC Input and Output (On-grid)						
Rated Output Power	3000W	3680W	4600W	5000W	6000W	8000W
Max. Output Apparent Power	3300VA	3680VA	4600VA	5500VA	6600VA	8000VA
Max. Continuous AC Bypass Current	50A					
Grid Form	L/N/PE					
Rated AC Output Voltage/Range	220/154-264, 230/161-276, 240/168-288					
Rated Grid Frequency	50/60Hz					
Max. Output Current	15A	15A	20.9	25A	30A	36.4A
Power Factor	>0.99 (0.8 leading-0.8 lagging)					
AC Output (Off-grid)						
Rated Output Power	3000W	3680W	4600W	5000W	6000W	8000W
Max. Output Apparent Power	6000VA, 10s	7360VA, 10s	9200VA, 10s	10000VA, 10s	12000VA, 10s	16000VA, 10s
Back-up Switch Time	0ms					
Grid Form	L/N/PE					
Rated Output Voltage	220/230/240V					
Rated Output Frequency	50/60Hz					
Max. Continuous Output Current	13.6A	16.7A	20.9A	22.7A	27.3A	36.4A
THDv (@linear load)	<3%					
Efficiency						
MPPT Efficiency	99.9%					
Max. Efficiency	97.7%					97.5%
EU Efficiency	97.0%					
Protection						
Anti-islanding Protection	Integrated					
PV String Input Reverse Polarity Protection	Integrated					
Insulation Resistor Detection	Integrated					
Residual Current Monitoring Unit	Integrated					
AC Over Current Protection	Integrated					
AC Short Current Protection	Integrated					
AC Overvoltage and Undervoltage Protection	Integrated					
Surge Protection	DC Type II/AC Type III					
General						
Dimensions (W*H*D)	506*495*99mm					
Weight	17kg					
Mounting	Wall mounting					
Operating Temperature	-25°C to +65°C (>45°C, derating)					
Relative Humidity	0-95%, no condensing					
Cooling	Natural convection					
Topology (Solar/Battery)	Transformerless/High-frequency isolation					
Altitude	≤4000m					
Protection Degree	IP66					
Noise	<35dB					
User Interface	LED, App					
Digital Input/output	DRM, 1×DI, 2×DO					
Communication	RS485, Wi-Fi/Ethernet (optional)					
Certifications and Standards						
Grid Connection Standard	G98, G99, G100, EN 50549-1/-10, NF EN 50549-1/-10, CEI 0-21, PEA, MEA, IEC 62116, IEC 61727, IEC 60068, IEC 61683, DEWA, IEC 62109-1/-2, EN 61000-6-1/-3					
Safety/EMC Standard	IEC 62109-1/-2, EN 61000-6-1/-2/-3/-4					

LV SERIES

Single Phase Hybrid Inverter

8 - 12 kW

Up to 130% PV Oversizing
Large PV input maximizing yield & high performance

Flexible PV Selection
Up to 32A per MPPT
150V startup voltage

UPS Level Transition
Switching Time < 10ms

Overload Ability
200% for 10s



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Model	VEH-S8KA2-LV	VEH-S10KA2-LV	VEH-S12KA2-LV
Battery			
Battery Type		Li-ion/Lead-acid	
Battery Voltage Range		40-60V	
Max. Charge/Discharge Current	160/160A	200/200A	240/240A
Max. Charge/Discharge Power	8000/8000W	10000/10000W	12000/12000W
Charging Strategy For Li-ion Battery		Self-adaption to BMS	
Charging Curve		3 Stages/Equalization	
External Temperature Sensor		Optional	
Communication		CAN	
PV Input			
Recommended Max. PV Power	10400W	13000W	15600W
Max. Input Voltage		550V	
Rated Voltage		360V	
Start-up Voltage		150V	
MPPT Voltage Range		125-500V	
Max. Input Current		32/32A	
Max. Short Circuit Current		40/40A	
MPPT Number/Max. Input Strings Number		2/4	
AC Input and Output (On-grid)			
Rated Output Power	8000W	10000W	12000W
Max. Output Apparent Power	8800VA	11000VA	13200VA
Max. Input Power		23000W	
Grid Form		L/N/PE	
Rated AC Output Voltage/Range		220/230V, 154-276V	
Rated Grid Frequency		50/60Hz	
Max. Output Current	38.3A	47.8A	57.4A
Max. Input Current (A)		100A	
Power Factor		>0.99 (0.8 leading-0.8 lagging)	
THDi (@rated Output)		<3%	
AC Output (Off-grid)			
Rated Output Power	8000W	10000W	12000W
Max. Output Apparent Power	16000VA, 10s	20000VA, 10s	23000VA, 10s
Back-up Switch Time		<10ms	
Grid Form		L/N/PE	
Rated Output Voltage		220/230	
Rated Output Frequency		50/60Hz	
Max. Continuous Output Current	34.8A	43.5A	52.2A
THDv (@linear load)		<3%	
Efficiency			
MPPT Efficiency		99.9%	
Max. Efficiency		97.6%	
EU Efficiency		97.0%	
Max. Battery Discharge to AC Efficiency		95.0%	
Protection			
Anti-islanding Protection		Integrated	
PV String Input Reverse Polarity Protection		Integrated	
Insulation Resistor Detection		Integrated	
Residual Current Monitoring Unit		Integrated	
AC Over Current Protection		Integrated	
AC Short Current Protection		Integrated	
AC Overvoltage and Undervoltage Protection		Integrated	
Surge Protection		DC Type II/AC Type III	
General			
Dimensions (W*H*D)		502*740*202mm	
Weight		41kg	
Mounting		Wall mounting	
Operating Temperature		-25°C to +65°C (>45°C, derating)	
Relative Humidity		0-95%, no condensing	
Cooling		Smart cooling	
Topology (Solar/Battery)		Transformerless/High-frequency isolation	
Altitude		≤2000m	
Protection Degree		IP65	
Noise		<40dB	
User Interface		LED, App	
Digital Input/output		1×DI, 2×DO	
Max. Parallel		10	
Communication		RS485, Wi-Fi/Ethernet/4G (optional)	
Certifications and Standards			
Grid Connection Standard		EN 50549, NRS 097-2-1	
Safety/EMC Standard		IEC 62109-1/-2, IEC/EN 61000-6-1/-2/-3/-4	

LV SERIES

Three Phase Hybrid Inverter

5 - 20 kW

Up to 200% PV Oversizing
Large PV input maximiz-ing yield & high perfor-mance

Flexible PV Selection
Up to 20A per MPPT 4MPPTs

100% Unbalanced Output
Max output of each phase up to 50% rated power

Overload Ability
200% for 10s



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Model	VEH-T15KA3-LV	VEH-T20KA3-LV
Battery		
Battery Voltage Range	40-60V	
Max. Charge/Discharge Current	300/300A	350/350A
Charging Strategy For Li-ion Battery	Self-adaption to BMS	
Charging Curve	3 Stages/Equalization	
PV Input		
Recommended Max. PV Power	30000W	40000W
Max. Input Voltage	1000V	
Rated Voltage	720V	
Start-up Voltage	150V	
MPPT Voltage Range	150-900V	
Max. Input Current	20A/20A/20A/20A	
Max. Short Circuit Current	30A/30A/30A/30A	
MPPT Number/Max. Input Strings Number	4/4	
AC Input and Output (On-grid)		
Rated Output Power	15000W	20000W
Max. Output Apparent Power	16500VA	22000VA
Grid Form	3L/N/PE	
Rated AC Output Voltage/Range	380V/400V, 266V-480V	
Rated Grid Frequency	50/60Hz	
Max. Output Current	25A	33.3A
Power Factor	>0.99 (0.8 leading ... 0.8 lagging)	
THDi (@Rated Output)	<3%	
AC Output (Back-up)		
Rated Output Power	15000W	20000W
Max. Output Apparent Power	30000VA, 10s	40000VA, 10s
Back-up Switch Time	<10ms	
Grid Form	3L/N/PE	
Rated Output Voltage	380V/400V	
Rated Output Frequency	50/60Hz	
Max. Continuous Output Current	22.8A	30.4A
Max. Continuous AC Bypass Current	50A	
THDv (@linear load)	<3%	
Efficiency		
MPPT Efficiency	99.9%	
Max. Efficiency	98.5%	
EU Efficiency	98.0%	
Max. Battery Discharge to AC Efficiency	95.7%	
General		
Protection	Anti-islanding protection, PV string input reverse polarity protection, Insulation resistor detection, Residual current monitoring unit, AC over current protection, AC short current protection, AC overvoltage and undervoltage protection Surge protection (DC Type II/AC Type III)	
Dimension(W*H*D)	539*696*232mm	
Weight	41kg	
Mounting	Wall mounting	
Operating Temperature	-25°C to +65°C (>45°C, derating)	
Relative Humidity	0-95%, no condensing	
Cooling	Smart fan	
Topology (Solar/Battery)	Transformerless/High-frequency isolation	
Altitude	≤4000m (>2000m, derating)	
Protection Degree	IP66	
Noise	< 55dB	
User Interface	LED, App	
Digital Input/Output	DRM, 2 × DI, 2 × DO	
Communication	RS485, Wi-Fi/WL/4G (optional)	
Certifications and Standards		
Grid Connection Standard	IEC 61727, IEC 62116, EN 50549, VDE-AR-N 4105	
Software Approval	IEC 62109-1/-2, EN 61000-6-1/-2/-3/-4	

*This series is recommended to be compatible with VE-L & VE-W series of batteries.

LV SERIES

Split Phase Hybrid Inverter

3.8 - 11.5 kW

130% PV Oversizing
2/4 MPPTs
150V start-up voltage

Top-quality IGBT Components
UL Standard components
ensure long-term
safe and stable operation

UPS Level Transition
Switching Time 0ms

Overload Ability
200% for 10s



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Model	VEH-P11.5KA1-LV
Battery	
Battery Voltage Range	40-60V
Max. Charge/Discharge Current	200/200A
Max. Charge/Discharge Power	9600/9600W
Charging Strategy for Li-ion Battery	Self-adaption to BMS
Charging Curve	3 Stages/Equalization
PV Input	
Recommended Max. PV Power	14400W
Max. Input Voltage	550V
Rated Voltage	380V
Start-up Voltage	150V
MPPT Voltage Range	125-500V
Max. Input Current	32/32A
Max. Short Circuit Current	40/40A
MPPT Number/Max. Input Strings Number	2/4
AC Input and Output (On-grid)	
Rated Output Power	11520W
Max. Output Apparent Power	11520VA
Max. Input Power	19200W
Rated AC Output Voltage/Range	240V, 211-264/208V, 183-229V
Rated Grid Frequency	60Hz
Max. Output Current	48A
Max. Input Current	80A
Power Factor	>0.99 (0.8 leading ... 0.8 lagging)
THDi (@rated Output)	<3%
AC Output (Off-grid)	
Rated Output Power	9600W
Max. Output Apparent Power	19200VA, 10s
Back-up Switch Time	<40
Rated Output Voltage	120/240V (split phase), 120/208V
Rated Output Frequency	60Hz
Max. Continuous Output Current	40A
THDv (@linear load)	<3%
Efficiency	
MPPT Efficiency	99.9%
Max. Efficiency	97.6%
EU Efficiency	97.0%
Max. Battery Discharge to AC Efficiency	95.0%
General	
Protection	Anti-islanding protection, PV string input reverse polarity protection, Insulation resistor detection, Residual current monitoring unit, AC over current protection, AC short current protection, AC overvoltage and undervoltage protection Surge protection (DC Type II/AC Type III)
Dimensions (W*H*D [mm])	19.8*29.1*7.95 inch (502*740*202mm)
Weight	90.4 lbs (41kg)
Mounting	Wall mounting
Operating Temperature	-13°F to +149°F (>113°F, derating)/-25°C to +65°C (>45°C, derating)
Relative Humidity	0-95%, no condensing
Cooling	Natural convection
Topology (Solar/Battery)	Transformerless/High-frequency isolation
Altitude	≤6562 ft (2000 m)
Protection Degree	Type 4X
Noise	<40dB
User Interface	LED, App
Digital Input/Output	1 × DI, 2 × DO
Max. Parallel	10
Warranty	RS485, optional: Wi-Fi/Ethernet/4G
Communication	10 Years
Certifications and Standards	
Grid Connection Standard	IEEE 1547-2018, IEEE 1547.1-2020, SRD2.0
Safety/EMC Standard	UL 1741, CSA C22.2 No.107.1, UL 1741 CRD, UL 1741 SB, FCC Part 15 Class B
AFCI	UL 1699B
Software Approval	UL 1998

*This series is recommended to be compatible with VE-L & VE-W series of batteries.

LV SERIES

Single Phase Inverter (Off-grid)

4 | 6 | 8 kW

IP66 High Protection
Better protection rating keeps humidity, dust and insects out of device, providing longer duration.

High Expansion for Three Phase
Support up to 6 single-phase inverters or 9 three-phase inverters in a grid configuration

Up to 200% PV Oversizing
Large PV input maximiz-ing yield & high perfor-mance

Flexible PV Selection
Up to 18A per MPPT 70V startup voltage

Wide Grid Range
Wide grid voltage adapta-tion range of 90-280V



Model	VEH-S6KB4-LV	VEH-S8KB4-LV
Battery Data		
Battery Type	Lithium-ion & Lead-acid	
Rated Battery Voltage	48V	
Battery Voltage Range	40~60V	
Max. Charge/Discharge Current	125 / 125A	165 / 165A
Forced Wake-up by PV	YES	
PV Input		
Max. MPPT Input Power	12000W	
Max. Input Voltage	500V	
Rated Input Voltage	370V	
MPPT Voltage Range	60~450V	
No. Of MPPT/ Strings Per MPPT	2 / 1+1	
Max Input Current Per MPPT	18+18A	
Max. Short Circuit Current Per MPPT	27+27A	
Grid Input		
Rated Grid Voltage	220/230/240V±5%	
Voltage Input Range	90~280V	
Rated Grid Frequency	50 / 60Hz	
Max Input Current	40A	50A
Total Harmonic Distortion	<3% (of nominal power)	
Backup Data		
Rated Output Power	6000W	8000W
Rated Output Current	27A	35A
Rated Output Frequency	50/60Hz±0.1%	
Overload Capability	1min@101-110%;10s@110%~150%;5s@150%~200%;100ms@>200%	
Switch Time	10ms for Computer Equipment,20ms for Household Equipment	
Total Harmonic Distortion	<3%	
Efficiency		
Max. Efficiency	97.0%	
MPPT Tracking Efficiency	99.9%	
Protection		
Integrated	DC Polarity Reverse Connection Protection, AC Output Overcurrent Protection, Thermal Protection, AC Output Overvoltage Protection, AC Output Short Circuit Protection, DC Component Monitoring, Overvoltage Load Drop Protection, Power Network Monitoring, Earth Fault Detection,Surge protection level	
Surge Protection	TYPE II(DC), TYPE II(AC)	
Over Voltage Category	OVC II (DC), OVC III (AC)	
General Data		
Operating Temperature	-40~+60(Above 45°C Derating)	
Dimensions (W*H*D)	430*350*177.8mm	
Weight	16.0kg	
Inverter Topology	Non-Isolated	
Cooling	Smart cooling	
Altitude	≤3000m	
Protection Level	IP66	
Communication	RS485 / CAN / Dry contact/ External battery NTC/Parallel communication/WIFI(Built-in)	
Warranty	5 Years	
Standard		
Safety Standards	IEC 62109-1:2010, EN 62109-1:2010, IEC 62109-2:2011, EN 62109-2:2011	
EMC Standards	EN IEC 61000-6-1:2019;EN IEC 61000-6-3:2021;EN IEC 61000-3-11:2019;EN61000-3-12:2011	
Efficiency Standard	IEC 61683:1999	

LV SERIES

Residential Villa ESS

22 kW | 48 kWh

Energy Independence
Stable power to keep essentials running

Significant Cost Savings
Peak shaving to optimize energy consumption

Optimal Choice
Compared to high voltage system, achieves better stability and lower initial cost.

Intelligent Energy Management
Real-time monitoring to control energy usage



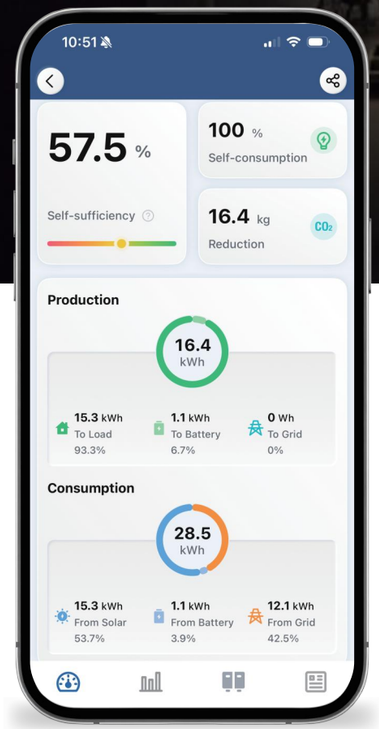
Model	VEC20K-48kWh
AC Parameters	
Max. DC Input Power	20kW
MPPT Range	150-950V
Rated DC Input Voltage	720V
No. of MPP Trackers	4
Rated Output Power	22kW
Max. Output Apparent Power	22kVA
Max. Charge/Discharge Current	350/350A
Output Frequency and Voltage	50/60Hz, 380V/400V, 266V-480V, 3L/N/PE
Max. Efficiency	98.5%
Dimensions (W*H*D)	539*696*232mm
System Parameters	
Battery Type	LFP
Nominal Battery Voltage	51.2V
Nominal Battery Energy	48kWh
Operating Voltage Range	42.0~57.6V
Charging Temp. Range	0˚C~55˚C
Discharging Temp. Range	-20˚C~55˚C
IP Rating	IP20
Expansion	Max. 10 Units in parallel
Communication	CAN
Design Standard	UN38.3, CE-EMC, Rohs
Battery Module Weight	Approx. 114*3kg
Battery Module	
Battery Type	LFP
Cell Capacity	314Ah
Communication	CAN
Module Capacity	16.07kWh
Rated Charge/Discharge Current	160A
Rated Voltage	48V
Dimension(W*H*D)	500*880*240mm
Weight	Approx. 114kg

VESTWOODS LIFE
YOUR AI-ASSISTANT

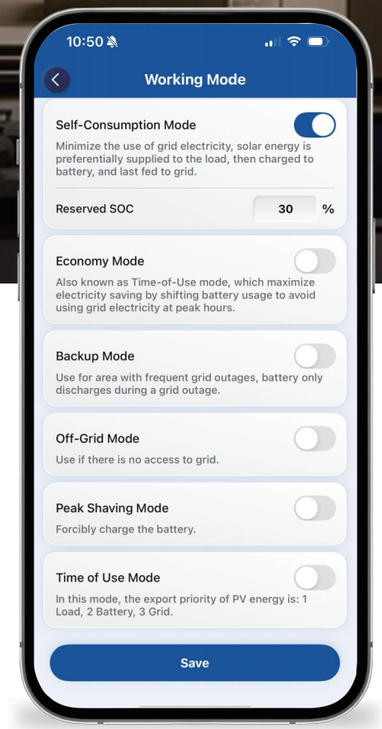
Get in Control of Your Energy Future.



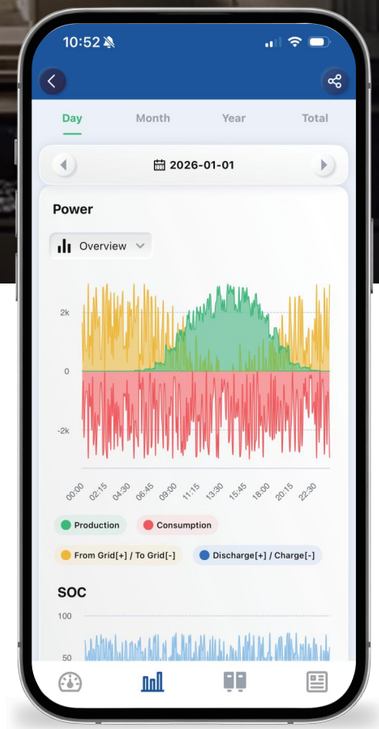
Designed for
Modern Households



System Health
& Security



Anytime,
Anywhere Control



Real-Time
Energy Tracking

www.vestwoods.com

C&I ESS SOLUTION

A modular, full-scenario smart energy system that integrates PV, battery storage, and intelligent EMS to deliver end-to-end customized solutions for mining sites, universities, hotels, factories, and other C&I scenarios—promoting sustainable growth and long-term energy strategic upgrades.

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APPLICATION SCENARIOS



Energy independence for Off-grid Mines

Green Mines
Smart Microgrid Solution

- Grid-forming technology for Continuous Power Supply
- Fuel Substitution for Significant Cost Reduction
- Stable Frequency & Voltage for Equipment Protection



No Outages No Losses

Green Factory
Smart Energy Solution

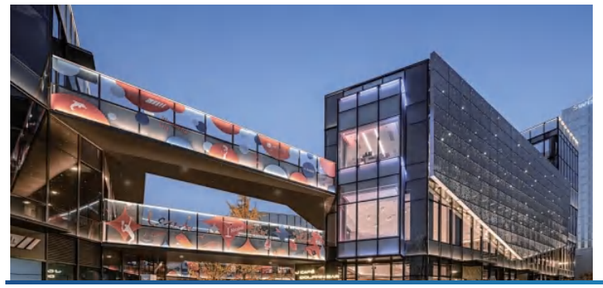
- Stable Power Quality for Extended Equipment Life
- Energy Optimization with Precise Cost Control
- Zero Downtime Zero Losses



Smart Energy Smart Minds

Green Campus
Smart Energy Solution

- Secure Backup for Reliable Campus Protection
- PV Savings Long-term Value Creation
- Green Demonstration for Educational Impact



Store More, Profit More

Green Mall
Smart Energy Solution

- Peak Shaving for Reduced Demand Charges
- Reliable Backup for Business Continuity
- Energy Cost Visibility for Smart Asset Management



Zero Downtime Zero Complaints

Green Hotel
Smart Energy Solution

- Uninterrupted Service for Superior Guest Experience
- Fast Payback with Stable Long-Term Returns
- Millisecond-Level Switching for Full Protection



Clean Energy for Sustainable Agriculture

Green Farm
Smart Energy Solution

- Off-Grid & Weak-Grid Adaptability for Remote Areas
- Diesel Substitute for Lower Operating Costs
- Stable Power Supply for Continuous Agricultural Production



Indoor C&I ESS Solution

Rack-Mounted Battery(HV)

Features and Advantages

Safer

- High-quality LFP batteries.
- Over-discharge, overcharge, overcurrent, and extreme temperature protection.
- Supports AC coupling, DC coupling, and microgrid scenarios.

Easy Installation

- Time-saving design
- Quick-Connect
- Support 4-13 packs.

Reliable

- Operating temp：-20~55℃.
- Operate up to 3000m altitude.
- Support up to 10 Cluster in parallel.
- Support up to 160A current output.

Intelligent

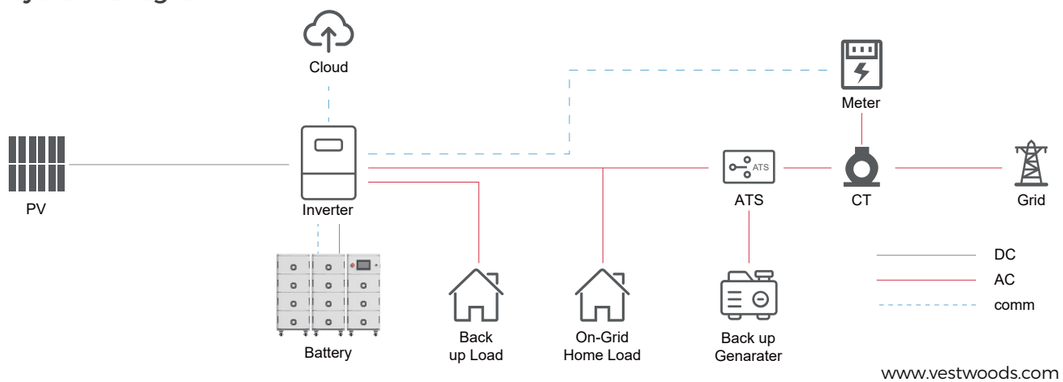
- LED display screen.
- Intelligent charge/discharge strategy.
- Support remote operation and maintenance.

VEB 100kWh-261kWh(AF/EU)

Technical Parameters

Model	VEB series								
System									
Module Quantity	5	6	7	8	9	10	11	12	13
Nominal Capacity	100kWh	120kWh	140kWh	160kWh	180kWh	200kWh	221kWh	241kWh	261kWh
Nominal Voltage	320V	384V	448V	512V	576V	640V	704V	768V	832V
Operation Voltage Range	280-360V	336-432V	392-504V	448-576V	504-648V	560-720V	616-792V	672-864V	728-936V
Weight	813kg	963kg	1112kg	1261kg	1423kg	1572kg	1719kg	1868kg	2030kg
Battery Type	LFP								
Cell Capacity	314Ah								
Rated Charge/Discharge Current	160A(0.5C)								
Battery Module									
Module Capacity	20.09kWh								
Rated Voltage	64V								
Dimension(W*D*H)	483*941*261mm								
Weight	149kg								
General									
Cycle Life	6000 Cycles@80%DOD, 25℃								
Communication	CAN/RS485								
Altitude	<3000m								
Expansion	Max. 6 Cluster System in Parallel								
Charge/Discharge Temperature Range	Charge:0℃~55℃/Discharge:-20℃~55℃								
IP Rating	IP20								
Operating Humidity	5~95%RH(no condensation)								
Environment	Indoor								
Installation Type	Stackable Level Package((Rack Option)								
Cooling Concept	Natural Cooling								
Standard	UN38.3/CE-EMC/IEC62619/IEC 62477/IEC 63056								
Inverter Match	Deye/Solis/Megarevo etc.								
Transport testing requirement	UN38.3								

System Diagram





Small Outdoor C&I ESS Solution

VEB Series

Features and Advantages

Safe and Reliable

- High-quality LFP batteries.
- Equipped with a comprehensive fire protection system including smoke, heat, and water detection + suppression (aerosol).

High integration

- Factory pre-installed, full container shipping.
- Modular Design, Easy installation and maintenance.
- Simple wiring.

High Economy and Efficiency

- Supports DC coupling and AC coupling solutions.
- Supports peak-valley arbitrage.
- Support smart scene function.
- Seamless On/Off-Grid Connectivity.

High intelligence

- One-Click Savings.
- Support 7x24h remote O&M.
- Smart Energy Scheduling & Dispatch.
- Energy Trading.

VEB 80kWh-120kWh

Technical Parameters

Model	Solis 30kW Inverter	Solis 40kW Inverter	Solis 50kW Inverter
AC Parameters			
Max. DC Input Power	60kW	80kW	100kW
MPPT Range		150-850V	
Rated DC Input Voltage		600V	
No. of MPP Trackers	3	4	4
Rated output power	30kW	40kW	50kW
Maximum output apparent power	30kVA	40kVA	50kVA
Output Frequency and Voltage		50/60Hz; 3/N/PE, 220V/380V, 3/N/PE, 230V/400V	
Max. Efficiency		97.60%	
Dimensions (W*D*H)		530*290*880mm	

Model	VEB256-80kWh	VEB320-100kWh	VEB384-120kWh
System			
Module Quantity	4	5	6
Nominal Capacity	80kWh	100kWh	120kWh
Nominal Voltage	256V	320V	384V
Operation Voltage Range	224V~288V	280V~360V	336V~432V
Rated Charge/Discharge Current		157A	
Max. Charge/Discharge Current		160A/180A	
Anti-corrosion Grade		C3/C5(Optional)	
Cycle Life		6000 Cycles@80%DOD, 25℃	
Installation Environment		Outdoor	
Communication		CAN/LAN/RS485/4G	
Cooling Concept		Air Conditioning	
Altitude		＜3000m	
DC side expansion		Max. 10 Cabinets in parallel	
Charge/Discharge Temperature Range		Charge： 0-60℃, Discharge: -20-60℃	
Ingress Protection		IP55	
Dimension (W*D*H)		800*1350*2200mm	
Weight	Approx. 1056kg	Approx. 1203kg	Approx. 1350kg
Operating Humidity		≤95%RH(no condensation)	
Transport Test Requirement		UN38.3	
Battery Module			
Battery Type		LFP	
Cell Capacity		314Ah	
Module Capacity		20kWh	
Rated Voltage		64V	
Operation Voltage Range		56~72V	
Communication		CAN	
Max. Charge/Discharge Current		180A	
Dimension (W*D*H)		483*941*261mm	
Weight		147kg	



Outdoor C&I ESS Solution

VEB Series

Features and Advantages

Safe and Reliable

- High-quality LFP batteries.
- Equipped with a comprehensive fire protection system including smoke, heat, and water detection + suppression (aerosol).

High integration

- Factory pre-installed, full container shipping.
- Modular Design, Easy installation and maintenance.
- Simple wiring.

High Economy and Efficiency

- Supports DC coupling and AC coupling solutions.
- Supports peak-valley arbitrage.
- Support smart scene function.
- Seamless On/Off-Grid Connectivity.

High intelligence

- One-Click Savings.
- Support 7x24h remote O&M.
- Smart Energy Scheduling & Dispatch.
- Energy Trading.

VEB Series 140kWh-261kWh

Technical Parameters

Model	Solis 50kW Inverter	Solis 80kW Inverter	Solis 125kW Inverter
AC Parameters			
Max. DC Input Power	100kW	160kW	240kW
MPPT Range	150-850V	150-950V	150-950V
Rated DC Input Voltage	600V		
No. of MPP Trackers	4	10	10
Rated Output Power	50kW	80kW	125kW
Max. Output Apparent Power	50kVA	80kVA	125kVA
Output Frequency and Voltage	50/60Hz; 3/N/PE, 220V/380V, 3/N/PE, 230V/400V		
Max. Efficiency	97.8%	97.60%	97.60%
Dimensions (W*D*H)	530*290*880mm	1174*400*814mm	1174*400*814mm

Model	VEB448-140kWh	VEB512-160kWh	VEB576-180kWh	VEB640-200kWh	VEB704-221kWh	VEB768-241kWh	VEB832-261kWh
System Parameters							
Battery Type	LFP						
Module Quantity	7	8	9	10	11	12	13
Nominal Battery Voltage	448V	512V	576V	640V	704V	768V	832V
Nominal Battery Energy	140kWh	160kWh	180kWh	200kWh	221kWh	241kWh	261kWh
Operating Voltage Range	392-504V	448-576V	504-720V	560-720V	616-792V	672-864V	728-936V
Rated Charging Current	160A						
Rated Discharging Current	180A						
Charging Temp. Range	0°C~55°C						
Discharging Temp. Range	-20°C~55°C						
Anti-corrosion Level	C4(C5 option)						
IP Rating	IP55						
Expansion	Max. 10 Cabinets in parallel						
Communication	RS485, CAN, Ethernet						
Compatible Inverters	Solis, Deye, SAJ, Megareva etc.						
Design Certification	UN38.3/CE-EMC/IEC62619/IEC 62477/IEC 63056						
Firefighting	Aerosol, Perfluoro(optional)						
Dimension(W*D*H)	1200*1523*2300mm						
Weight(Approx.)	1790kg	1940kg	2090kg	2240kg	2390kg	2540kg	2690kg



Features and Advantages

Safer

- Flood, smoke and temperature detection systems, active exhaust and fire alarm batteries systems, aerosol fire extinguishing.
- LFP Battery, more than 6000 charging cycles.longer service life.

High stability

- Using pure off-grid and parallel-off-grid (parallel-off-grid handover time less than 20ms), in parallel grid scenarios.

High performance

- Wide temperature range: -20~55ºC suitable for severe cold and hot weather.
- IP55 protection level, outdoor use.
- No additional DC combiner cabinet or photovoltaic combiner cabinet is required; the PCS cabinet has reserved interfaces.

High intelligence

- Supports virtual power plants Configure local control and remote monitoring platform.
- Real-time collection and monitoring of each energy storage component status information.

VED 500K-1044kWh-F

Technical Parameters

Model	VED 500K-1044kWh-F	VED 1MW-2MWh-F	VED 1.5MW-3MWh-F
Battery Side			
Battery Type		LFP	
Module Energy		20.09kWh	
Number of Battery Module	52 Modules	104 Modules	156 Modules
Total Energy	1044kWh	2088kWh	3132kWh
Operating Voltage Range		728-936V	
Max. Charge/Discharge Current		0.5P	
Module Dimension(W*D*H)/Weight		483*941*261mm/147kg	
AC Side (On Grid)			
Rated AC Power	500kW	500kW*2	500kW*3
Max. AC Power	550kW	550kW*2	550kW*3
Rated AC Current	720A	720A*2	720A*3
Rated AC Voltage		400V,3W+N+PE	
Rated Frequency		50/60Hz±5Hz	
THDi		＜3% (rated power)	
PF Adjustable Range		-1 leading~+1 lagging	
AC Side (Off Grid)			
Rated AC Voltage		400V	
Rated AC Frequency		50/60Hz	
THDi		＜3% (linear load)	
Overload Capacity		110%, normal operation; 120%, 1 minute	
General			
Cooling Concept		Air Conditioning(Battery Cabinet) Smart Cooling(PCS)	
Noise		<78dB	
Humidity Range(No condensation)		0-95%	
Altitude		3000m(>2000m Derating)	
Isolation Mode		Isolation transformer	
Fire Protection		Aerosol, Perfluoro(optional)	
Communication		RS485/CAN/Ethernet	
Temperature Range		-30~60˚C(derating above 45˚C)(PCS) -20˚C to 55˚C(Battery Cabinet)	
IP Rating		IP55	
Dimension(W*D*H)		1350*1450*2300mm(PCS) 1200*1523*2300mm(Battery Cabinet)	
Weight		Approx. 2200kg(PCS) Approx. 2914kg(Battery Cabinet)	
Standard		VDE-AR-N 4110/CE-EMC/IEC62619/IEC 62477/IEC 63056 IEC 61000/IEC 62477-1:2012/IEC 61727/IEC 62116/GB/T 34120; EN 61000-6-1/EN 61000-6-2/EN 61000-6-3, GB/T 34133	
Transport Testing Requirement		UN38.3	



C&I ESS Solution

VED Series — Liquid cooled

Features and Advantages

High performance

- C4 corrosion resistant rating
- Wide temperature range: -20~55°C suitable for severe cold and hot weather.

High Economy and Efficiency

- Supports long-term backup power
- Supports peak-valley arbitrage.

Safe and Reliable

- High-quality LFP batteries.
- Equipped with a comprehensive fire protection system including smoke, heat, and water detection + suppression (aerosol).

High intelligence

- Supports virtual power plants
- Configure local control and remote monitoring platform.
- Real-time collection and monitoring of each energy storage component status information.

VED 500k-1044kWh-L

Technical Parameters

Model	VED 500k-1044kWh-L	VED 1MW-2MWh-L
Battery Side		
Battery Type	LFP	
Module Energy	52.2kWh	
Number of Battery Module	20Modules	40Modules
Total Energy	1044kWh	2088kWh
Operating Voltage Range	728-936V	
Max. Charge/Discharge Current	0.5P	
Module Dimension(W*D*H)/Weight	1140*790*244mm/330±10kg	
AC Side(On Grid)		
Rated AC Power	500kW	1000kW
Max.AC Power	550kW	1100kW
Rated Grid Output Current	720A	1440A
Rated Grid Voltage	400V(-15%~+10%), 3W+PE/3W+N+PE	
Rated Frequency	50/60Hz(±5Hz)	
THDi	<3%(rated power)	
Power Factor	-1(leading) ~ +1(lagging)	
General		
Cooling Concept	Liquid Cooling(Battery Cabinet) Smart Cooling(PCS)	
Noise	<78dB	
Humidity Range(No condensation)	0-95%	
Altitude	3000m (>2000m Derating)	
Isolation Mode	Isolation transformer	
Fire Protection	Aerosol	
Communication	RS485/CAN/Ethernet	
Temperature Range	-30~60°C(derating above 45°C)(PCS) -20°C to 55°C(Battery Cabinet)	
Anti-corrosion Grade	C4(C5 Optional)	
IP Rating	IP55	
Dimension(W*D*H)	1350*1450*2300mm(PCS)	1300*1000*2300mm(Battery Cabinet)
Weight	Approx. 2200kg(PCS)	Approx. 2075kg(Battery Cabinet)
Standard	VDE-AR-N 4110/CE-EMC/IEC62619/IEC 62477/IEC 63056 IEC 61000/IEC 62477-1:2012/IEC 61727/IEC 62116/GB/T 34120; EN 61000-6-1/EN 61000-6-2/EN 61000-6-3, GB/T 34133	
Transport Testing Requirement	UN38.3	



Small C&I ESS Solution

VED Series — All in One

Features and Advantages

Safe and Reliable

- Overvoltage and overcurrent protection for cells, packs, battery systems, and PCS.
- Multi-level fire protection design

Easy Installation

- Modular integrated design, factory pre-installed and tested.
- Plug-and-play for on-site installation, easy connection, and simple configuration.

High performance

- The entire cabinet integrates PCS, BMS, and EMS.
- Temperature difference less than 3°C

High intelligence

- Equipped with Vestwoods cloud platform
- Real-time monitoring and alerts;
- 24/7 remote maintenance available.

VED 125k-261kWh-L

Technical Parameters

Model	VED 125k-261kWh-L
Battery Side	
Battery Type	Li-ion(LFP)
Cell Capacity	314Ah
Module Capacity	52.24kWh
Nominal Capacity	261kWh
Module Quantity	5
Operation Voltage Range	728-936V
Cycle Life	6000 Cycles @80%DOD, 25°C
Max.Charge/Discharge Current	0.5P
AC Side	
Rated AC Power	125kW
Max.AC Power	137.5kW
Rated AC Current	180A
Rated Grid Voltage	400V(-15%~+10%), 3W+PE/3W+N+PE
Rated Grid Frequency	50/60Hz(±5Hz)
Power Factor	<3%(rated power)
THDi	-1(leading) ~ +1(lagging)
General	
Cooling Concept	Liquid Cooling
Noise	<75dB(1m)
Operating Humidity(No condensation)	≤95%RH
Altitude	<3000m
Fire Protection	Aerosol, Perfluoro(optional)
Communication	RS485/CAN/Modbus TCP/RTU
Operating Temperature Range	-20°C~55°C(>45°C derating)
Anti-corrosion Grade	C4(C5 option)
Ingress Protection	Battery Pack: IP65 Cabinet: IP55
Dimension(W*D*H)	1000*1450*2300mm
Weight	Approx. 2500kg
Standard	IEC62619, IEC62477, CE-EMC, IEC63056
Transport Testing Requirement	UN38.3



Features and Advantages

Safe and Reliable

- Utilizing lithium iron phosphate batteries with abuilt-in multi-level protection system ensuresex-ceptional thermal stability.
- The system integrates an advanced fire protection system and achieves IP55 protection rating.

Plug-and-Play, Rapid Deployment

- Integrated design，PCS、BMS、EMS Integrated Full container shipping and installation.
- Significantly reduces installation time andcommissioning costs.

High Economy and Efficiency

- The optimized thermal management system extends product lifespan, lowers operating costs.and delivers a higher return on investment throughout the product lifecycle.

High intelligence

- Supports real-time online monitoring of system status.

VES 1MW-2MWh-F2

Technical Parameters

Model	VES 1MW-2MWh-F2
Battery Side	
Battery Type	LFP
Cell Specifications	314Ah/3.2V
Battery Module Grouping Method	1P18S
Battery Module Capacity	18.08kWh
Battery Cluster Grouping Method	1P252S
Battery Cluster Capacity	253kWh
Battery Stack Grouping Method	8P252S
Battery Stack Capacity	2025kWh
Battery Voltage Range	706~908V
Rated Charge and Discharge Rate	0.5P/0.5P
AC Side(On Grid)	
AC Side Rated Power	125*8 kW
Rated Voltage	400Vac
Rated Frequency	50/60Hz(±5Hz)
Rated Current	1443A
Power Factor	0.99/-1~1
Output THDi	<3%
General	
Cooling Method	Air Conditioning
Fire Protection Configuration	Combustible gas detection/explosion-proof exhaust/gas fire fighting/water fire fighting
Noise	＜70dB (at 1m)
Anti-corrosion Level	C4 (C5 optional)
Protection Level	IP55
Altitude	3000m (>2000m derating)
Temperature Range	-30℃~50℃
Humidity Range	0~95% (no condensation)
Communication	RS485/CAN2.0/Dry contact
Certification	IEC62619, GB/T36276, EN50549-2, VDE4110, VDE4120, G99, IEC62477/61000, etc.
Dimension(W*D*H)	6058*2438*2896mm
Total System Weight	Approx. 20t

TELECOM PRODUCT & SOLUTION

A modular, smart battery system designed for communication base station backup power applications. It integrates lithium-ion battery modules with intelligent BMS to deliver reliable, end-to-end customized backup power solutions for telecom towers, base stations, and other communication scenarios—ensuring uninterrupted operation and long-term power strategic upgrades.



www.vestwoods.com

Telecom Lithium-ion battery

VT4850

Intelligent lithium battery, integrated with self-designed BMS and long life LFP cells, which can be widely used in various telecom and energy storage system.

- Long design life
  up to 15 + years @ 25°C
- Mobile
  and flexible
- High rate
  charge-discharge
- Intelligent
  anti-theft solution
- Multiple
  protection methods



Model	VT4850
Connection Method	1P15S
Nominal Energy	2.4kWh
Nominal Capacity	50Ah
Nominal Voltage	48V
Voltage Range	40.5-54V
Max. Continuous Charge Current	50A@25°C
Max. Continuous Discharge Current	50A@25°C
Recommended Charge Current	10A@25°C
Allowed Operating Temperature Range	0~60°C(Charge) -20~60°C(Discharge)
Dimension(W*D*H)	480*400*86mm
Weight	28kg
Communication	RS485

Telecom Lithium-ion battery

VT48100E

Intelligent lithium battery, integrated with self-designed BMS and long life LFP cells, which can be widely used in various telecom and energy storage system.

- Long design life
  up to 15 + years @ 25°C
- Mobile
  and flexible
- High rate
  charge-discharge
- Intelligent
  anti-theft solution
- Multiple
  protection methods



Model	VT48100E
Connection Method	1P15S
Nominal Energy	4.8kWh
Nominal Capacity	100Ah
Nominal Voltage	48V
Voltage Range	40.5-54V
Max. Continuous Charge Current	100A@25°C
Max. Continuous Discharge Current	100A@25°C
Recommended Charge Current	20A@25°C
Allowed Operating Temperature Range	0~60°C(Charge) -20~60°C(Discharge)
Dimension(W*D*H)	482*400*130mm
Weight	39kg
Communication	RS485 CAN/SNMP(Optional)
Function(Optional)	GPS, Gyroscope, LCD etc

Telecom Lithium-ion battery

VT48150 (3U)

Intelligent lithium battery, integrated with self-designed BMS and long life LFP cells, which can be widely used in various telecom and energy storage system.

- Long design life
  up to 15 + years @ 25°C
- Mobile
  and flexible
- High rate
  charge-discharge
- Intelligent
  anti-theft solution
- Multiple
  protection methods



Model	VT48150
Connection Method	1P15S
Nominal Energy	7.2kWh
Nominal Capacity	150Ah
Nominal Voltage	48V
Voltage Range	40.5-54V
Max. Continuous Charge Current	100A@25°C
Max. Continuous Discharge Current	100A@25°C
Recommended Charge Current	30A@25°C
Allowed Operating Temperature Range	0~60°C(Charge) -20~60°C(Discharge)
Dimension(W*D*H)	482*520*130mm
Weight	55kg
Communication	RS485 CAN/SNMP(Optional)
Function(Optional)	150A,GPS, Gyroscope, LCD etc

Telecom Lithium-ion battery

VT48150 (4U)

Intelligent lithium battery, integrated with self-designed BMS and long life LFP cells, which can be widely used in various telecom and energy storage system.

- Long design life
  up to 15 + years @ 25°C
- Mobile
  and flexible
- High rate
  charge-discharge
- Intelligent
  anti-theft solution
- Multiple
  protection methods



Model	VT48150
Connection Method	1P15S
Nominal Energy	7.2kWh
Nominal Capacity	150Ah
Nominal Voltage	48V
Voltage Range	40.5-54V
Max. Continuous Charge Current	100A@25°C
Max. Continuous Discharge Current	100A@25°C
Recommended Charge Current	30A@25°C
Allowed Operating Temperature Range	0~60°C(Charge) -20~60°C(Discharge)
Dimension(W*D*H)	482*450*177mm
Weight	55kg
Communication	RS485 CAN/SNMP(Optional)
Function(Optional)	150A,GPS, Gyroscope, LCD etc

Telecom Lithium-ion battery

VT48200B

Intelligent lithium battery, integrated with self-designed BMS and long life LFP cells, which can be widely used in various telecom and energy storage system.

- Long design life up to 15 + years @ 25°C
- Mobile and flexible
- High rate charge-discharge
- Intelligent anti-theft solution
- Multiple protection methods



Model	VT48200
Connection Method	1P15S
Nominal Energy	9.6kWh
Nominal Capacity	200Ah
Nominal Voltage	48V
Voltage Range	40.5-54V
Max. Continuous Charge Current	100A@25°C
Max. Continuous Discharge Current	100A@25°C
Recommended Charge Current	40A@25°C
Allowed Operating Temperature Range	0~60°C(Charge) -20~60°C(Discharge)
Dimension(W*D*H)	482*490*222mm
Weight	78kg
Communication	RS485 CAN/SNMP(Optional)
Function(Optional)	200A,GPS, Gyroscope, LCD etc

Telecom Lithium-ion battery

VT48314

NEW

Intelligent lithium battery, integrated with self-designed BMS and long life LFP cells, which can be widely used in various telecom and energy storage system.

- Long design life up to 15 + years @ 25°C
- Mobile and flexible
- High rate charge-discharge
- Intelligent anti-theft solution
- Multiple protection methods



Model	VT48314
Connection Method	1P15S
Nominal Energy	15.07kWh
Nominal Capacity	314Ah
Nominal Voltage	48V
Voltage Range	40.5-54V
Max. Continuous Charge Current	100A@25°C
Max. Continuous Discharge Current	100A@25°C
Recommended Charge Current	60A@25°C
Allowed Operating Temperature Range	0~60°C(Charge) -20~60°C(Discharge)
Dimension(W*D*H)	445*600*222mm
Weight	103kg
Communication	RS485 CAN/SNMP(Optional)
Function(Optional)	200A,GPS, Gyroscope, LCD etc

Telecom Smart Lithium-ion Battery

VT48100E-ST

Intelligent telecom backup LFP battery, integrated with self-developed BMS, long-life LFP cells and DC-DC function, which can be widely used in various telecom and energy storage system.

- Long design life
  up to 15 + years @ 25°C
- DC-DC function
  compatible with VRLA
  & old LFP battery
- High rate
  charge-discharge
- Intelligent
  anti-theft solution
- Multiple
  protection methods



IEC CE UN 38.3

Model	VT48100E-ST
Connection Method	1P15S
Nominal Energy	4.8kWh
Nominal Capacity	100Ah
Nominal Voltage	48V
Voltage Range	40.5-54V
Max. Continuous Charge Current	100A@25°C
Max. Continuous Discharge Current	100A@25°C
Recommended Charge Current	15A@25°C
Allowed Operating Temperature Range	0~60°C(Charge) -20~60°C(Discharge)
Dimension(W*D*H)	482*450*130mm
Weight	43kg
Communication	RS485 CAN/SNMP(Optional)
Function(Optional)	Peak Shaving/Mix Up with Lead-acid/Normal Lithium Battery

Telecom Sodium-ion Battery

VST48100

NEW

Intelligent sodium-ion battery, integrated with self-developed BMS and advanced sodium-ion cell technology, which can be widely used in various telecom and energy storage systems. It delivers extraordinary cycle life, excellent wide-temperature performance, and enhanced safety for reliable communication backup power.

- Extraordinary long
  lifetime and cycle life
- Wide temperature
  tolerance
- Self-developed BMS
  and DCDC technology
- With SNMP and TCP/IP
  to remotemonitoring
- 3 levels protection
  from cel topack



IEC CE UN 38.3

Model	VST48100
Connection Method	1P10S
Nominal Energy	4.8kWh
Nominal Capacity	100Ah
Nominal Voltage	48V
Voltage Range	48-57V
Max. Continuous Charge Current	100A@25°C
Max. Continuous Discharge Current	100A@25°C
Recommended Charge Current	50A@25°C
Allowed Operating Temperature Range	-10°C~60°C(Charge) -20°C~60°C(Discharge)
Dimension(W*D*H)	480*550*200mm
Weight	46kg
Communication	RS485 CAN/SNMP(Optional)
Function(Optional)	GPS, Gyroscope, LCD etc

Telecom Sodium-ion Battery

VST48150

NEW

Intelligent sodium-ion battery, integrated with self-developed BMS and advanced sodium-ion cell technology, which can be widely used in various telecom and energy storage systems. It delivers extraordinary cycle life, excellent wide-temperature performance, and enhanced safety for reliable communication backup power.

- Extraordinary long lifetime and cycle life
- Self-developed BMS and DCDC technology
- With SNMP and TCP/IP to remotemonitoring
- 3 levels protection from cel topack



IEC CE UN 38.3

Model	VST48150
Connection Method	1P16S
Nominal Energy	7.2kWh
Nominal Capacity	150Ah
Nominal Voltage	48V
Voltage Range	48-57V
Max. Continuous Charge Current	100A@25°C
Max. Continuous Discharge Current	100A@25°C
Recommended Charge Current	75A@25°C
Allowed Operating Temperature Range	-10°C~60°C(Charge) -20°C~60°C(Discharge)
Dimension(W*D*H)	442*650*220mm
Weight	80kg
Communication	RS485 CAN/SNMP(Optional)
Function(Optional)	GPS, Gyroscope, LCD etc

Telecom Outdoor Cabinet

VTS SYSTEM

NEW

Intelligent outdoor telecom cabinet, integrated with self-designed power supply and thermal management system, which can be widely used in various telecom and energy storage scenarios.

- Remote monitoring
- Integrated design
- Scalable
- Three-level protection



IEC CE UN 38.3

Model	VTS System
Configuration	
Power Supply	36kW
Aircon	DC 48V, 3000W
Battery	48V100Ah
Specification	
Dimension (W*D*H)	750*750*2200mm
Operating Temperature Range	-40°C ~ +75°C
Storage Temperature Range	-50°C ~ +75°C
Relative Humidity	≤95%
Protection	IP55
AC Input Specifications	
Mains Input Configuration	3-Phase 380Vac
Power Factor	≥0.99
Frequency	45Hz ~ 65Hz
AC Input Breaker	125A/4P & 32A/4P
AC SPD	20kA（8/20us）
DC Output Specifications	
Nominal Output Voltage	48Vdc
Output Power	36kW
Efficiency	>96%(30-70% load)& 97% peak
Design Standards	
Electrical Safety	EN/IEC 62368
EMC	EN55022/CISPR22 Class B, EN61000-4-2/-3/-4/-5/-11

UPS BACKUP BATTERY SOLUTION

A high-reliability, full-range UPS power supply system integrating intelligent voltage regulation, seamless switching and multi-level protection, delivering stable, continuous and safe power guarantee for data centers, communication rooms, industrial workshops and commercial buildings, effectively preventing power anomalies and supporting secure operation and long-term stable development of core equipment.



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UPS LFP HV-Battery Product Portfolio

VES096020

VES series LFP battery is specifically designed for small UPS systems, servers, and network devices. It supports >3C discharge for instant backup during outages. With drop-in compatibility, it directly replaces lead-acid batteries. It offers 2–3x longer life, 60% weight reduction, and a built-in BMS for full protection. Multiple units can be easily paralleled for higher capacity. Perfect for home offices, POS systems, and edge computing.

- Extraordinary long lifetime and cycle life
- Self-developed BMS and DCDC technology
- With SNMP and TCP/IP to remotemonitoring
- 3 levels protection from cel topack



Model	VES096020
Cell Type	LFP
Rated Battery Voltage	96V(1P30S)
Operating Battery Voltage	84~106V
Rated Capacity	20Ah
Battery Capacity	1920Wh
Rated CH Current	10A（0.5C）
Maximum Continuous CH Current	20A（1C）
Rated DCH Current	20A（1C）
Maximum Continuous DCH Current	60A（3C）
Altitude	≤2000m
Operating Temp. Range	CH：0~55°C, DCH：-20C~55°C
Humidity Range	≤95%RH
Communication	CAN, RS485, dry contact(DO*2, DI*2)
IP Rating	IP20
Dimension (W*D*H)	482*600*88mm
Design Certification	EN61000, IEC62619, UL1973, UL9540A
Paralleling	The maximum number of parallel connections is 24.
Series-parallel Connection	±96V, 192V, ±192V, 384V (Maximum 6 clusters in parallel)



Standby power duration of systems with different cluster numbers under different power UPS

The battery system adopts a standardized and modular design. Each cabinet constitutes an independent battery group, and the battery capacity can be flexibly expanded according to the load power. The maxi mum number of cabinets that can be connected in parallel is 20.

UPS(kW)	Operating Battery Voltage	UPS Efficiency	Power Factor	DOD/%	96V20Ah Battery Module Quantity		
					1	2	4
3	96V	92%	0.9	90%	41.7	/	/
5	192V	94%	1	90%	/	44.1	/
6	192V	94%	1	90%	/	36.8	/
8	±192V	94%	1	90%	/	/	55.1
10	±192V	94%	1	90%	/	/	44.1
15	±192V	94%	1	90%	/	/	29.4
20	±192V	94%	1	90%	/	/	22.1

UPS LFP HV-Battery Product Portfolio

FLEXLI SERIES 3C BATTERY

FlexLi series battery is designed for UPS systems requiring instant high power. It supports 3C discharge, ensuring seamless backup during grid interruptions. Compared to lead-acid, it offers 50% weight reduction, 10+ years life, and faster recharge. With an intelligent BMS for real-time monitoring, it provides a safe, maintenance-free, and compact solution for data centers and critical infrastructure.

- Extraordinary long lifetime and cycle life
- Self-developed BMS and DCDC technology
- With SNMP and TCP/IP to remotemonitoring
- 3 levels protection from cel topack



Model	FlexLi-512100V2
Battery Module	
Rated Battery Voltage	51.2V
Rated Capacity	100Ah
Dimension (W*D*H)	483*580*133mm
Weight	43.2kg
Battery System	
System Composition	10 modules + 1 high-voltage box + 1 communication box
Rated Battery Voltage	512V
Battery Capacity	51.2kWh
Maximum Continuous CH/DCH Current	100/300A
Dimension (W*D*H)	600*1000*2000mm
Weight	600kg
Communication	CAN, RS485, DI/DO, SNMP(Optional)
Operating Temp. Range	0~45°C
Protection	Excessive/insufficient voltage, excessive/ Insufficient temperature, overcurrent, short circuit, etc.



FlexLi series seamlessly integrates with most existing UPS systems, making it an ideal drop-in replacement for lead-acid batteries. Thanks to its advanced BMS, up to 8 units can be connected in parallel without complex external controls, allowing effortless power expansion. This design ensures high system redundancy and reliability, providing a flexible and scalable energy solution for data centers and industrial applications.

UPS Power (kW)	Power of Battery kW (n=96%)	512V/100Ah Number of battery system clusters									
		1	2	3	4	5	6	7	8	9	10
100	104.17	23.8	54.9	78.1	99.9	124.9	152.1	184.6	199.8	234.8	279.8
150	156.25	12.2	35	54.9	79.1	92	99.7	123.8	129.9	159.7	180.2
200	208.33		23.9	39.6	55.2	66.9	85.2	90.9	99.8	114.8	124.9
250	260.42		17.8	30.2	44.7	54.9	64.9	78	89.8	195	100.1
300	312.50		12.1	24.2	35.1	45.3	55.3	64.8	69.8	80	91.9
400	416.67			16.3	23.9	31.9	41.1	47.7	54.8	59.8	67.7
500	520.83				17.9	24.2	30	34.9	44.9	48.9	54.8
600	625.00				11.9	18.3	24.3	28.7	34.9	39.8	44.9
700	729.17					15.1	20.6	23.7	29.8	33.9	39.9
800	833.33						16	21.9	25.8	30.7	33.9

UPS LFP HV-Battery Product Portfolio

FLEXLI SERIES 7C BATTERY

FlexLi series battery is designed for UPS systems requiring instant high power. It supports 7C discharge, ensuring seamless backup during grid interruptions. Compared to lead-acid, it offers 50% weight reduction, 10+ years life, and faster recharge. With an intelligent BMS for real-time monitoring, it provides a safe, maintenance-free, and compact solution for data centers and critical infrastructure.

- Extraordinary long lifetime and cycle life
- Self-developed BMS and DCDC technology
- With SNMP and TCP/IP to remotemonitoring.
- 3 levels protection from cel topack.



Model	FlexLi-Ultra 51285
Battery Module	
Rated Battery Voltage	64V
Rated Capacity	85Ah
Dimension (W*D*H)	483*580*156mm
Weight	52.6kg
Battery System	
System Composition	8 modules + 1 high-voltage box + 1 communication box
Rated Battery Voltage	512V
Battery Capacity	43.52kWh
Maximum Continuous CH/DCH Current	85/600A
Dimension (W*D*H)	600*1000*2000mm
Weight	620kg
Communication	CAN, RS485, DI/DO, SNMP(Optional)
Operating Temp. Range	0~45°C
Protection	Excessive/insufficient voltage, excessive/ insufficient temperature, overcurrent, short circuit, etc.



FlexLi series seamlessly integrates with most existing UPS systems, making it an ideal drop-in replacement for lead-acid batteries. Thanks to its advanced BMS, up to 8 units can be connected in parallel without complex external controls, allowing effortless power expansion. This design ensures high system redundancy and reliability, providing a flexible and scalable energy solution for data centers and industrial applications.

Load Power (kW)	Number of battery system clusters (FlexLi-Ultra)							
					1	2	4	4
80	31.3	62.7	94.0	125.3	156.7	188.0	219.3	250.7
100	25.1	50.1	75.2	100.3	125.3	150.4	175.5	200.5
150	16.7	33.4	50.1	66.8	83.6	100.3	117.0	133.7
200	12.5	25.1	37.6	50.1	62.7	75.2	87.7	100.3
250	10.0	20.1	30.1	40.1	50.1	60.2	70.2	80.2
300		16.7	25.1	33.4	41.8	50.1	58.5	66.8
400		12.5	18.8	25.1	31.3	37.6	43.9	50.1
500		10.0	15.0	20.1	25.1	30.1	35.1	40.1
600			12.5	16.7	20.9	25.1	29.2	33.4
750			10.0	13.3	16.7	20.1	23.4	26.8
1000				10.0	12.5	15.0	17.5	20.1

VESTWOODS SELF-DEVELOPED BMS

A proprietary Battery Management System engineered with multi-layer protection, high-precision algorithms, and predictive modeling—delivering uncompromising safety and performance across the entire battery lifecycle.

MULTI-DIMENSIONAL CELL PROTECTION

Dual protection mechanism ensures safe operation throughout the entire battery lifecycle. Through MOS+ controllable protection devices on the power bus, the system remains within safe and controllable limits even under single-fault conditions.

HIGH-PRECISION ALGORITHMS

The underlying SOC, balancing algorithms, and related monitoring and protection logic are driven by high-precision hardware monitoring, data acquisition, and precise software processing for accurate and reliable performance.

BATTERY PREDICTION MODEL

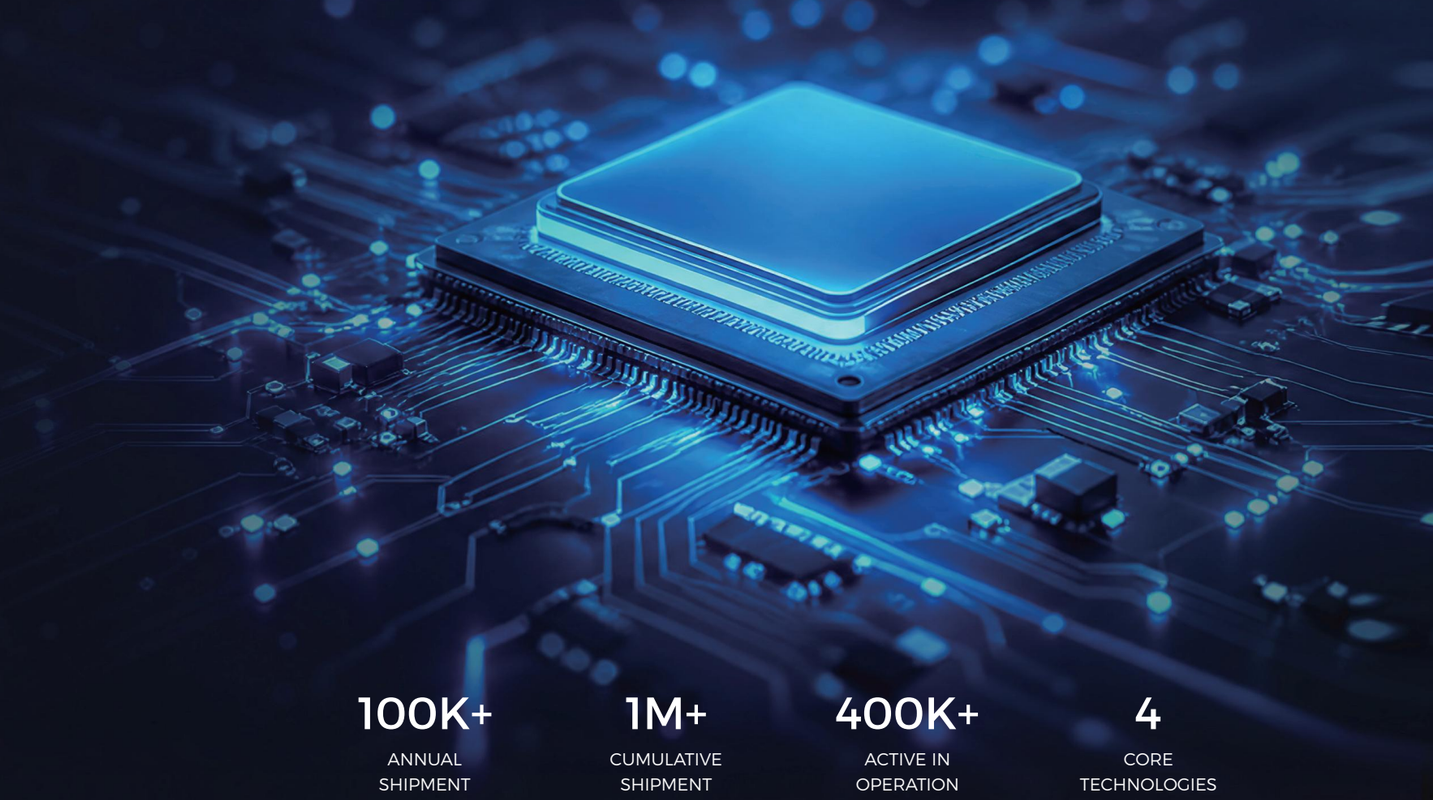
By fitting cell performance parameters and lab-tested cycling data into a model, combined with high-precision monitoring, SOH and SOP are simulated and calculated to enable early prediction, triggering protection mechanisms upon warning alerts.

FULL-TIME PASSIVE BALANCING

Through efficient and safe balancing hardware circuits with full-time balancing algorithms, cell consistency within the PACK is maintained while enhancing the overall cycle life of the system.

MARKET VALIDATION

Over 100,000 protection boards shipped annually, with cumulative shipments exceeding 1 million units and 400,000+ units in active dynamic operation—fully validated by the global market.



100K+	1M+	400K+	4
ANNUAL SHIPMENT	CUMULATIVE SHIPMENT	ACTIVE IN OPERATION	CORE TECHNOLOGIES

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TRUSTED
GLOBAL GUARANTEE

All batteries are covered by PAIC's global product liability insurance, providing reliable protection regardless of warranty status.



Product Liability Insurance Policy

Ping An Property & Casualty Insurance Company of China ,Ltd., Shenzhen Branch

Hangzhou Vestwoods Technology Co., Ltd:

Your company's manufactured lithium-ion batteries, battery energy storage systems, and the control systems and auxiliary equipment sold together with these products are covered by product liability insurance.

Policy Number: 10562003903041073925

Insurance Period: From 00:00 on July 1, 2025 to 24:00 on June 30, 2026

Ping An Property & Casualty Insurance Company of China ,Ltd., Shenzhen Branch

*PAIC: Ping An Insurance (Group) Company of China, Ltd., founded in 1988, is a Fortune Global 500 enterprise and one of the world's largest insurance groups.

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