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Home Energy Storage System

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About POWEROAD

Poweroad Renewable Energy Co., Ltd., established in 2001, specializes in the R&D and manufacturing of lithium-ion battery energy storage systems (BESS) for commercial & industrial (C&I), residential, and utility-scale applications. With over 1,000 C&I ESS projects delivered worldwide and more than 8 years of global operations, POWEROAD has built proven expertise in energy storage system design, manufacturing, and deployment.

With a strong focus on safety, reliability, and innovation, POWEROAD's solutions are deployed across 72 countries and regions. Through its European subsidiary, POWEROAD GmbH, the company continues to expand its local presence and support the growing energy storage market in Europe.

25 Years

Experience in Battery Industry

POWEROAD GmbH

Germany Subsidiary

5 R&D Centers

In-house BMS/PCS/EMS development

2

Manufacturing Bases

70+

Countries & Regions



Europe Presence, Local Support



POWEROAD GmbH
EU Headquarters in Germany

Warehouse
in Netherlands

Netherlands
Belgium
Germany

**Service Partner
& Warehouse**
in Belgium

Expanding local teams:
Poland, Italy, Spain...

Smart Energy Management

- Real-time monitoring, diagnostics and OTA updates.
- Supports multi user management for distributors and installers.



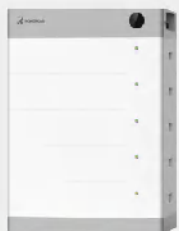
Lifecycle Partnership

From installation support to long-term collaboration



POWERROAD Home Energy Storage Solutions

Home Battery



Meta Node

Stacking Battery Solution

Low-voltage Battery System
5.12 ~ 245.76 kWh

High-voltage Battery System
20.48 ~ 245.76 kWh



Meta H1
10.65 ~ 212.8 kWh



Meta L2
5.22 ~ 255.78 kWh



Tervol L16
16.07 ~ 241.05 kWh

Inverter



1-phase inverter
3 ~ 6 kW



3-phase inverter
10 ~ 20 kW

Energy Management Software



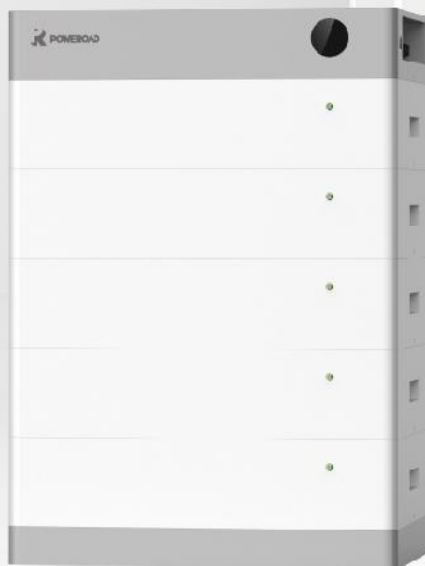
- APP For end users and installers
- Web Portal For distributors



META Node

Stacking Battery

Meta Node is Powerroad's new platform-based residential and small C&I ESS solution, with an unified 5kWh battery module, flexible low-voltage and high-voltage configurations, integrated fire safety protection, optional low-temperature charging down to -20°C, and optional high-efficiency DC EV charging.



Wider Applications, Less Stock

One module for HV series connection and LV parallel expansion, cover more applications with fewer SKUs



Multi-Layer Safety

Integrated fire safety module, BMS Monitoring



Grow with Your Needs

Max.12 packs per tower, 4 towers in parallel, 5-245 kWh capacity



EV DC Charging Ready

With direct DC EV charging support, this system enables faster, more efficient charging



All-Weather Reliability

Built-in heating & IP55 protection for indoor/outdoor reliability



Smart Energy Coordination

Hybrid inverter integration for solar self-consumption, backup power, peak shaving, and VPP-ready applications

Wider Applications, Less Stock.



Master Module
High-voltage / Low-voltage

Unified Battery Module
5 kWh

Base

Up to 4 towers in parallel
Max. **245 kWh**



All-Weather Reliability

-20°C

Freezing Cold

55°C

Scorching Heat



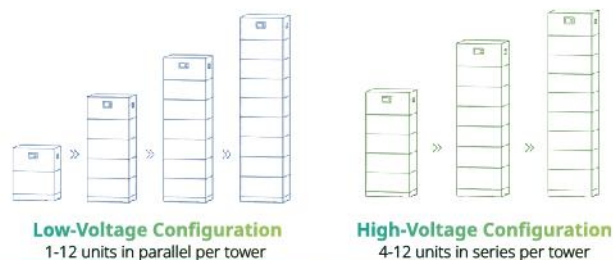
Unlock Value of Your Home Energy

- EV DC Charging*
- PV Self-consumption
- Backup Power
- VPP-ready

*Optional for HV Battery



PARAMETERS



High-voltage Battery System

System Voltage Range (V)	172.8 ~ 688.8
Single-Tower Capacity Range (kWh)	20.48 ~ 61.44
Maximum System Capacity (kWh)	245.76 (4 towers in parallel)
Max. Working Current (A)	100
Rated Working Current (A)	50
Operating Temperature (°C)	-20 ~ 55 (with heating)
Cooling Method	Natural Cooling
Altitude	<2000m
Communication	CAN, RS485 / WiFi / Bluetooth
Protection Rating	IP55
Certifications	IEC 62619, CE, UN 38.3, DGM, MSDS
Master Module Dimension (mm) (W x D x H)	590 × 390 × 132
Base Dimension (mm) (W x D x H)	590 × 390 × 73

Low-voltage Battery System

System Voltage Range (V)	43.2 ~ 57.6
Single-Tower Capacity Range (kWh)	5.12 ~ 61.44
Maximum System Capacity (kWh)	245.76 (4 towers in parallel)
Max. Working Current	100 A (5kWh), 200 A (≥ 10kWh)
Rated Working Current	50 A (5kWh), 100 A (10kWh), 150 A (15kWh), 200 A (≥ 20kWh)
Operating Temperature (°C)	-20 ~ 55 (with heating)
Cooling Method	Natural Cooling
Altitude	<2000m
Protection Rating	IP55
Communication	CAN, RS485 / WiFi / Bluetooth
Certifications	IEC 62619, CE, UN 38.3, DGM, MSDS
Master Module Dimension (mm) (W x D x H)	590 × 390 × 102
Base Dimension (mm) (W x D x H)	590 × 390 × 73

PARAMETERS

Unified Battery Module (Used for both LV and HV systems)

Cell Chemistry	LFP
Battery Module Capacity (kWh)	5.12
Scalability	12S or 12P
Max. Working Current (A)	100
Rated Working Current (A)	50
Module Balancing Current (A)	5
Operating Temperature (°C)	-20 ~ 55 (with heating)
Cooling Method	Natural Cooling
Altitude	<2000m
Cycle Life	8000
Protection Rating	IP55
Dimension (mm) (W x D x H)	590 × 390 × 133
Weight (kg)	50
Certifications	IEC 62619, CE, UN 38.3, DGM, MSDS

Smart Charging Module (Optional for HV Battery)

Power (kW)	20
Output Voltage Range (V DC)	200 ~ 500
Charging Cable (m)	3
Charging Port	CCS2
Cooling Method	Air Cooling
Function	Plug-and-charge
Operating Temperature (°C)	-20 ~ 55
Protection Rating	IP55
Dimension (mm) (W x D x H)	590 × 390 × 215



Low Voltage Battery



Meta L2

PARAMETERS

Model	H-S51100			
Configuration	1P	2P	3P	4P
Rated Voltage (V)	51.2			
Rated Capacity (Ah)	102	204	306	408
Rated Energy (kWh)	5.22	10.44	15.66	20.88
Voltage Range (V)	43.2 ~ 57.6			
Standard Charging Current (A)	51	102	153	160
Max. Charging Current (A)	160			
Peak Discharging Current (A)	200 (<3000ms)			
Communication	CAN, RS485 / WiFi, BLE (optional)			
Working Temperature (°C)	0 ~ 50			
Storage Temperature (°C)	-10 ~ 50			
Degree of Protection	IP55			
Dimensions (mm) (W × D × H)	550 × 315 × 305	550 × 315 × 545	550 × 315 × 785	550 × 315 × 1025
Weight (kg)	50	100	150	200
Certifications	MSDS, IEC 62619, CE, UN 38.3, DGM			

* Max. 7pcs in parallel in 1 tower, and max. 7 towers in parallel to achieve 255.78 kWh

Low Voltage Battery



Tervol L16

PARAMETERS

Model	H-L51314
Voltage (V)	51.2
Cell Capacity (Ah)	314
Battery Capacity (kWh)	16.07
Scalability	Max. 15 pcs in parallel (241.05 kWh)
Continuous Charge Current (A)	150
Max. Charge Current (A)	160 @ 60s
Continuous Discharge Current (A)	200
Peak Discharge Current (A)	210 @ 60s
Degree of Protection	IP20
Charging Temperature (°C)	0~50 (-20~50 with heating)
Discharging Temperature (°C)	-20 ~ 55
Heating	Optional
Fire Extinguisher	Aerosol (optional)
Humidity (%)	0 ~ 95 (No Condensing)
Weight (kg)	140
Dimensions (mm) (W × D × H)	440 × 240 × 970
Cycle Life*	8000
Communication	RS485, CAN / Wi-Fi / Bluetooth
Display	4.3-inch touch screen
Certificate	CE-EMC, UN38.3, MSDS, IEC62619

* Test conditions: 0.5C Charging& Discharging. @25°C, 80% DOD

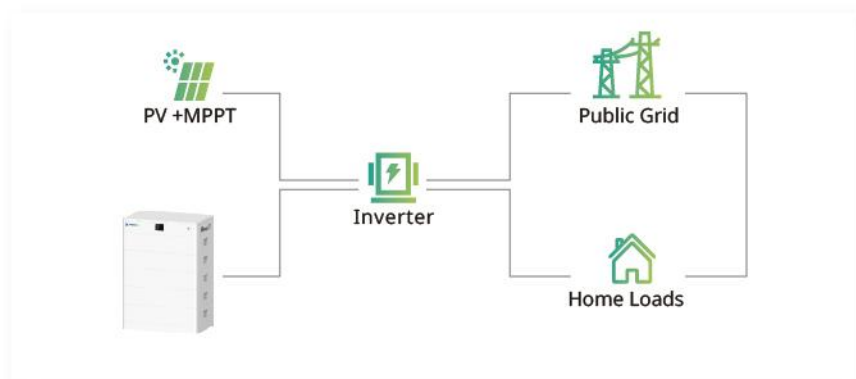
3~6 kW Single Phase Inverter

Compatible with low-voltage batteries



Product Advantages

- 98% Max. efficiency
- Max. Input current 18 A
- IP65 design for outdoor use
- Natural cooling for ultra silence
- 10ms on/off-grid switchover
- Flexible configuration for parallel connection



Compatible Inverters



PARAMETERS

Off-grid Output						
Nominal Output Power (kW)	3	3.6	4	4.6	5	6
Nominal Voltage (V)	220/230/240					
Nominal Frequency (Hz)	50/60					
Output THDu	< 2%					
On-grid Output						
Nominal Output Power (kW)	3	3.6	4	4.6	5	6
Max. Input Current from Grid (A)	16.4	22.7		27.2		
Voltage (V)	220/230/240 (184 ~ 276)					
Frequency Range (Hz)	45 ~ 65					
PV Input						
Max. Input Power (kWp)	6	7.2		8		9
Starting Voltage (V)	95					
Max. Input Voltage (V)	600					
MPPT Voltage Range (V)	80 ~ 550 (350 ~ 500 @ full load)					
Number of MPPTs / Max. Input Strings Per MPPT	2/1					
Nominal Input Voltage (V)	360					
Max. Input Current (A)	18 / 18					
Battery Parameters						
Battery Voltage Range (V)	75	85		100		
Max. Continuous Charging/Discharging Current (A)	42 ~ 58					
Nominal Battery Voltage (V)	51.2					
Max. Charging Voltage (V)	≤60					
Efficiency						
Max. Efficiency/European Efficiency	97.5% / 97.2%		97.8% / 97.3%		98% / 97.5%	
Max. Battery Charging/Discharging Efficiency	95.2%					
General Parameters						
Inverter Dimensions (mm) (W × H × D)	500 × 470 × 180					
Weight (kg)	21					
Noise (dBA)	< 25					
Operating Temperature Range (°C)	-25 ~ 60					
Cooling Method	Natural cooling					
Degree of Protection	IP65					
Protection and Certifications						
CE	IEC 62109-1, IEC 62109-2, EN 62109-1, EN 62109-2; EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4, EN 62920					
Grid	VDE-AR-N 4105, C10/11, G98/G99, CEI 0-21, EN 50549, NRS 097-2-1, R25, UNE 217001, UNE 217002, NTS 2.1, PEA, MEA, NC RfG					
Suggested Kitting Batteries						
Model	Meta Node, Meta L2 (H-S51100), Tervol L16 (H-L51314)					



Smart Home Energy Storage Solutions



High Voltage Battery

Meta H1

PARAMETERS

Model	H-S10250HV		
Configuration	2S	3S	4S
Rated Voltage (V)	204.8	307.2	409.6
Rated Capacity (Ah)	52		
Battery Module Quantity (pcs)	2	3	4
Rated Energy (kWh)	10.64	15.96	21.28
Voltage Range (V)	172.8 ~ 230.4	259.2 ~ 345.6	345.6 ~ 460.8
Standard Charging Current (A)	26		
Max. Charging Current (A)	52		
Peak Discharging Current (A)	75 (< 3000ms)		
Communication	CAN, RS485 / WiFi, BLE (optional)		
Working Temperature (°C)	0 ~ 45		
Storage Temperature (°C)	-10 ~ 45		
Degree of Protection	IP55		
Dimensions (mm) (W × D × H)	600 × 155 × 1010	600 × 155 × 1385	600 × 155 × 1760
Weight (kg)	109	157	206
Certifications	MSDS, IEC 62619, CE, UN 38.3, DGM		

* Max. 4pcs in series in 1 tower, and max. 5 towers in parallel to achieve 106.4kWh

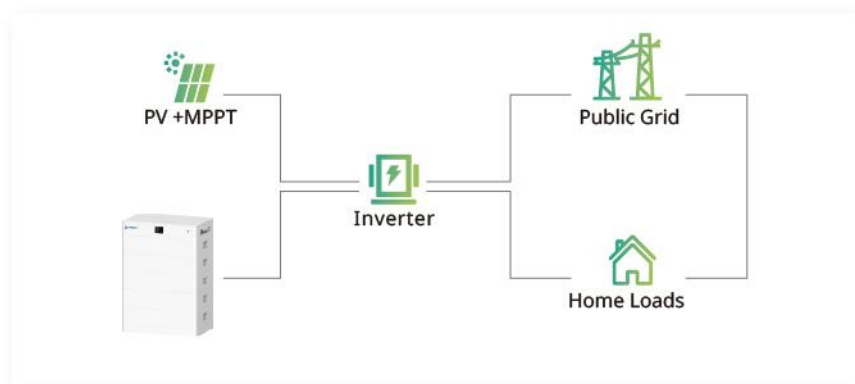
10~20 kW Three Phase Inverter

Compatible with high-voltage batteries



Product Advantages

- Max. 15 units parallel
- 98.2% Max. Efficiency
- IP65 design for outdoor use
- Support 100% three phase unbalance
- Support AC couple
- Support altitude 5000 m (>3000 m derating)
- Two independent battery ports for mixture use of old & new battery



Compatible Inverters



PARAMETERS

Off-grid Output					
Nominal Output Power (kW)	10	12	15	18	20
Nominal Voltage (Vac)	220/380, 230/400 (3/N/PE)				
Nominal Frequency (Hz)	50/60				
Nominal Output Current (A)	15	18	22.5	27	30
Output THDu	< 3%				
On-grid Output					
Nominal Output Power (kW)	10	12	15	18	20
Max. Output Power (kVA)	11	13.2	16.5	19.8	22
Max. Input Power from Grid (kVA)	20	24	30	36	40
Nominal Grid Voltage (Vac)	220/380, 230/400, 240/415 (3/N/PE)				
Grid Voltage Range (V)	184 ~ 276 / 320 ~ 480				
PV Input					
Max. Input Power (kWp)	20	24	30		
Max. Input Voltage (V)	1,000				
Number of MPPTs/Max. Input Strings Per MPPT	2/2				
MPPT Voltage Range (V)	130-960 (250/290/350/410/450 - 850 @ full load)				
Nominal Input Voltage (V)	600				
Starting Voltage (V)	200				
Max. Input Current (A)	25 / 25				
Battery Parameters					
Number of Battery Input	2				
Battery Voltage Range (V)	125-800 (210/250/300/360/400 - 800 @ full load)				
Peak Charging/Discharging Current (A)	35 / 35 for 60s				
Max. Charging/Discharging Current (A)	25 / 25				
Efficiency					
Max. Efficiency/European Efficiency	98.2% / 97.7%				
Max. Battery Charging/Discharging Efficiency	97.8%				
General Parameters					
Inverter Dimensions (mm) (W × H × D)	573 × 509 × 219				
Inverter Weight (kg)	35				
Noise (dBA)	< 45				
Operating Temperature Range (°C)	-25 ~ 60				
Cooling Method	Air cooling				
Degree of Protection	IP65				
Protection and Certifications					
CE	IEC 62109-1, IEC 62109-2, EN 62109-1, EN 62109-2, IEC62477-1; EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4, EN 62920				
Grid	VDE-AR-N 4105, C10/11, G98/G99, CEI 0-21, EN 50549, NRS 097-2-1, AS 4777.2, R25, UNE 217001, UNE 217002, NTS 2.1 AS 4777.2:2020+Amd 1:2021, PEA, MEA, IEC 61727, IEC 62116, NC RfG				
Suggested Kitting Batteries					
Model	Meta Node, Meta H1 (H-S10250HV)				

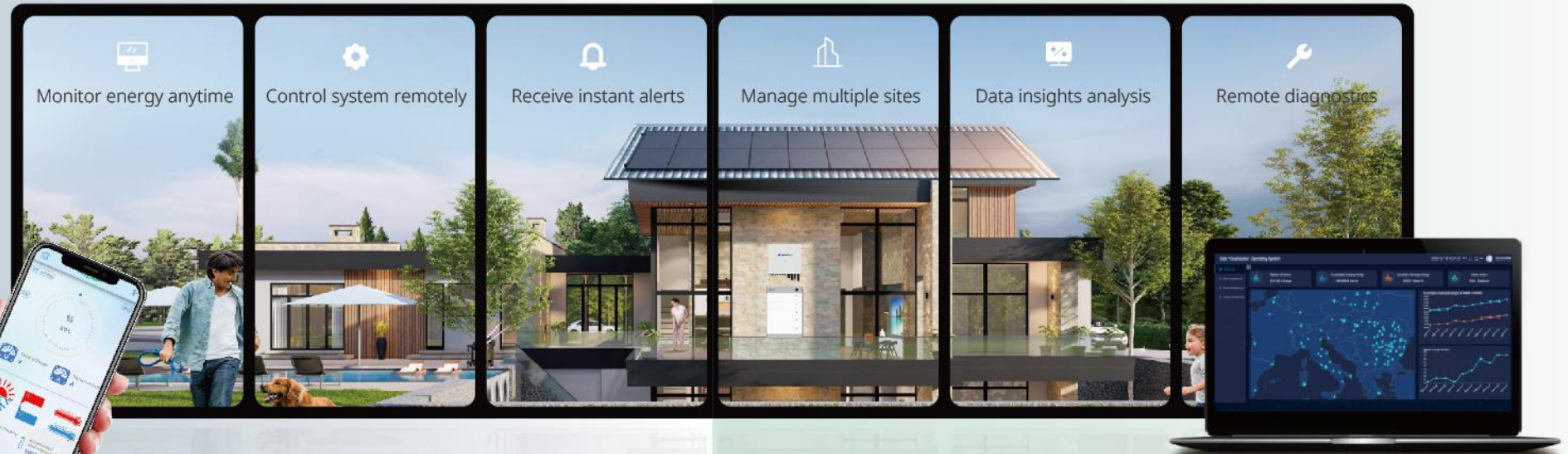
Poweroad APP & Web Portal

Poweroad IoE APP

For Homeowners & Installers

Unified Web Portal

For Distributors



Powerful digital tools to reduce O&M cost and improve energy efficiency.



Devices Management



Battery Data



OTA Update



Alarm Notifications



Enables real-time monitoring and control for distributors through a unified web portal