

Energy Storage for Power Plants

Smart, Secure, and Efficient Energy Management

Pomega integrates security, performance, and efficiency in energy management through EMS and BMS software developed by local engineers. Our systems continuously monitor the voltage, current, and temperature of battery cells, optimizing charge and discharge processes, reducing consumption costs by learning energy usage patterns, and ensuring maximum safety through real-time component monitoring. Cell balancing extends battery life and enhances operational efficiency while keeping system security a top priority at all times.



Energy Storage Systems: A Key Enabler of Renewable Integration

The intermittent nature of renewable energy sources, such as solar and wind, poses a challenge in maintaining grid stability and meeting baseload demand. Traditional power grids rely on consistent baseload power from fossil fuel-fired plants, but renewable energy sources can contribute significantly to grid stability if effectively integrated.

Energy storage systems offer a transformative solution by enabling the storage of excess renewable energy when production is abundant and its distribution when demand peaks. This ability to store and dispatch energy on demand mitigates the intermittency of renewable sources, making them more predictable and reliable.

As the world transitions towards a sustainable energy future, energy storage systems assume a pivotal role in reducing reliance on fossil fuels and accelerating the integration of renewable energy sources. By enabling a more stable and reliable power grid, energy storage systems are paving the way for a cleaner and more sustainable future.

- Easy Integration
- Modular
- Mobile Plug
- Remote Control
- High Efficiency
- Multitasking

Services	
Operation and Maintenance	Adaptable for Different Energy Markets
Quick Malfunction Response	Capacity and warranty Augmentation

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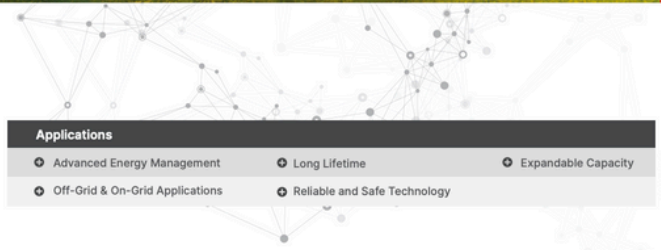
- Peak Shaving
- Load / Peak Shifting
- Spinning Reserve Displacement
- Ramp Rate Control
- Frequency Regulation
- Energy Arbitrage
- Black-Start
- UPS / Bridging Power
- Transitional Power
- Power Factor Correction

Stand-Alone Energy Storage

Embrace the Future of Energy Storage

Standalone energy storage facilities are essential for meeting the increasing demand for reliable energy storage as renewable energy sources gain prominence. These facilities capture excess renewable energy, contributing to grid stability and sustainability.

They offer comprehensive solutions that optimize energy utilization and reduce costs, providing a reliable energy source for both the national grid and new power plant investments. Equipped with advanced technology, these facilities ensure 24/7 monitoring and control for optimal performance. Key benefits include enhanced grid stability, scalability to meet evolving energy storage needs, cost-effectiveness, and reliability. These facilities are crucial for enabling a resilient and sustainable grid as the world transitions to cleaner energy sources.



High Voltage Liquid-Cooled Batteries



Basic Properties	PBQ-166300	PBQ-166300 Plus	PBQ-1331300
Cell Type	LiFePO ₄ - Prismatic		
Series/Parallel Configuration	1P52S	1P52S	1P416S
Nominal Voltage	166.4V	166.4V	1331.2V
Nominal Capacity	302Ah	304Ah	302Ah
Nominal Energy Capacity	50.252kWh	50.58kWh	402.022kWh
Operating Voltage Range	145.6V - 187.2V	140.4-187.2V	1164.8V - 1497.6V
Max. Charge Voltage	187.2V	187.2V	1497.6V
Standard Charge/Discharge Current	150A / 150A	304A / 304A	150A / 150A
Cycle Life	≥6000 cycles (*)	≥6000 cycles (**)	≥6000 cycles (*)
Normal Operating Temperature	25°C		
Charge Temperature	0-55°C	0-50°C	0-55°C
Discharge Temperature	-20-55°C	-30-60°C	-20-55°C
Storage Temperature	-10-60°C	-30-60°C	-10-60°C
Operational Temperature	-20-55°C		
Residual Capacity Loss (Capacity Retention)	Per month ≤ 3% (25°C)		
Warranty	10 years		
Functional Properties			
Communication	CAN, RS485	CAN, RS485	CAN
Scalability	Max. 8 units in series		Max. 16 units in parallel
Cooling	Liquid Cooling		
BMS Protections	UV, OV, OC, UT, OT, SC (with PDU)		UV, OV, OC, UT, OT, SC
LED Indicators	No		Alarm, Run, SOC
Circuit Breaker	No		Integrated to Master BMS Unit
Fuse	Yes		No
Mechanical Properties			
Protection Level	IP67		
Humidity	5% - 85% RH (non-condensing)		
Altitude	≤3000m		
Dimension (WxDxH)	848x1157x244.5 mm	1160x790x250mm	988x1200x2390 mm
Weight	370x10 kg	345x5kg	3400x50 kg

(*)Test Conditions: 25°C, 80% SOH
(**)Test Conditions: 25°C, 70% SOH

High Voltage Liquid Cooled Battery Containers



Basic Properties	PBQ20-416-1C
Cell Type	LiFePO ₄ - Prismatic
Series/Parallel Configuration	10P416S
Nominal Voltage	1331.2V
Nominal Current	304Ah
Nominal Energy Capacity	4046kWh
Operating Voltage Range	1123.2V - 1497.6V
Max. Charge Voltage	1497.6V
Cycle Life (*)	≥6000 cycles
Operational Temperature	-30-50°C
Functional Properties	
Communication	CAN
Cooling	Liquid Cooling (Integrated Closed Loop)
Fire Protection	Aerosol automatic fire protection, water mist
BMS Protections	UV, OV, OC, UT, OT, SC
LED Indicators	Alarm, Run, SOC
Circuit Breaker	Integrated to Master BMS of Each Cluster 1500 V
EMS	Optional
Physical Properties	
Protection Level	IP54
Humidity	0% - 85% RH (non-condensing)
Altitude	≤2000m
Dimension (WxDxH)	6800x2550x2896 mm
Weight	40 Tons

(*)Test Conditions: 25°C, 70%SOH