Amptricity™

Powering the Electrification of Things™

SolidAmp™

Product Specifications

Amptricity™ Energy Storage Features & Benefits Summary

LARGE CAPACITY	Solid State Batteries available in the following capacities: 500Ah, 750Ah, 1000Ah, 1500Ah, 2500Ah, 3000Ah.
LONG-DURATION ENERGY DISCHARGE RATE	Amptricity batteries discharge over 8 hours at rated power.
FULL CHARGES	11,000 cycles of full charge. Unlimited amount of shallow charges.
HIGH ENERGY STORAGE EFFICIENCY	No cooling system required. **The discharge retention rate is above 96%.** (See test results.)
HIGH SAFETY	The internal resistance of the core is no more than 0.2 milliohms; the core does not heat, increasing safety. The core is in the solid structure and there is no leakage combustion.
ULTRA LOW AND HIGH TEMPERATURE	Wide temperature range, good performance at low and high temperatures. The temperature ranges between -40℃ (-40°F) and 70℃ (158°F). For custom orders, temperature range can be increased.
LONG LIFE EXPECTANCY	Guaranteed 25 years, Design Life is 30 to 35 years.
BATTERY MANAGEMENT SYSTEM	The battery can be controlled at cell level. The batteries can be controlled either in parallel or in a series configuration.
TOTAL ENERGY STORAGE SOLUTION	Includes inverter, communications, software, supporting electrical equipment, and installation. BMS to cell level.

Amptricity Competitive Comparison: 1GWh Energy Storage System

Comparison of 1GWh Energy Storage Systems Solutions		
System Specification	Amptricity 1GWh Energy Storage System*	Tesla Hornsdale Wind Farm, S. Australia
Cell Type	Laminated Unit Cell, High-Capacity Solid Polymer Lithium Ion Batteries. 25+ years life expectancy	Lithium Battery 18650 or 21700
Capacity of Energy Storage System	125MW	100MW
Battery Management	Every Battery Can Be Monitored	Single Battery Cannot Be Monitored
Thermal Management System	Heat Free Management System, High Safety, Annual Loss Less Than 4%	Necessary Heat Dissipation System, Batteries in Series and Parallel, Many Connection Points, Poor Safety
Work Temperature Range	-40℃ (-°40F) to 70℃ (158°F). The system is tolerant to external temperatures up to 80°C. When the battery core reaches 80°C, the intelligent system will automatically shut down for protection and switch back on when the temperature goes to the normal range.	-30℃~50℃
Area Covered**	6000m2	>11000m2
*Detailed performance tests available upon request.		
**The foorprint can vary according to length, width and height based on client specifications.		

Amptricity Competitive Comparison: 1MW Energy Storage (details)

Comparison of 1MW Energy Storage Systems Solutions			
System Specification	**Amptricity 1MW Energy Storage System***	**Next Competitor**	**Comments**
Cell Type	Laminated unit cell, high-capacity solid polymer lithium ion batteries. 25+ years life expectancy	Lithium battery 18650 or 21700	Higher charging capacity, better storage efficiency
Capacity of Energy Storage System	1500Ah	~4.5Ah	Much larger capacity
S&P	The 1MW energy storage system **only needs 196 single cores in series**	**More than 10,000 batteries** in series and parallel. Many connection points and poor safety.	Far less wiring and connection points reducing maintenance costs.
Battery Management	Every battery can be monitored individually to cell	Single battery cannot be monitored	Able to monitor every battery individually for more precise monitoring.
Thermal Management System	Heat-free management system, high safety, annual loss less than 4%	Necessary heat dissipation system	No cooling system needed, heat breaks down batteries quicker.
Work Temperature Range	-40℃ (-°40F) to 70℃ (158°F). The system is tolerant to external temperatures up to 80°C. When the battery core reaches 80°C, the intelligent system will automatically shut down for protection and switch back on when the temperature goes to the normal range.	-30℃~50℃	Larger temperature range allowing for more environment options.
Operates Under Water	Yes	No	Capable of working under extreme weather conditions.
Area Covered**	4.4 m^2	5.6 m^2	Smaller, able-to-customize shape to fit any area.
Life Expectancy	Guaranteed 25-Years, Design Life is 30 to 35-Years	10 to 15+ years	Up to twice the life expectancy
Flammable or Explosive	Non flammable, non explosive	Product is flammable and explosive.	Able to install in many more locations.
Toxic	Zero toxicity (100% recyclable)	Toxic	Safer for people and environment
Critical Load	97% of 800 volts	89.5% of 480 volts	More critical load available in time of need.
Full Charges	11,000 cycles of full charge. Unlimited amount of shallow charges.	2,000 to 3,000 cycles	3-4 times more deep charges.
Maintenance	Operational cost reduced due to no thermal runoff.	Maintenance on cooling systems, etc.	Lower maintenance costs.
* Detailed performance tests available upon request.			
** The footprint can vary according to length, width and height based on client specifications.