POWERPACK tesla commercial battery

Tesla has been building integrated battery systems in cars for over 10 years. The same degree of expertise, quality control and technological innovation has informed our process of developing high-performance energy storage systems. Powerpack offers commercial and utility customers a turn-key energy storage solution to maximize on-site clean power and energy savings. The Powerpack system scales to the space, power and energy requirements of any site from 100 kWh to 100 MWh+.



Powerpack System Includes a Bi-Directional Inverter and DC Battery Packs

FULLY INTEGRATED SYSTEM

A complete energy storage system including DC batteries, bi-directional inverter, and a Powerpack controller with intelligent software. This turnkey system is designed to maximize savings and prolong battery life.

OPTIMIZATION SOFTWARE

Powerpack systems have the most advanced battery technology and dispatch optimization software to quickly learn and predict a facility's energy patterns. Tesla's proprietary storage dispatch software can charge and discharge autonomously to maximize customer value.

ENHANCED SYSTEM SAFETY

Powerpack's battery architecture consists of a low voltage battery with a DC/DC converter for added electrical isolation and safety. It also has an integrated liquid cooling / heating system for thermal safety and enhanced performance and reliability.

APPLICATIONS



PEAK SHAVING

Discharge at times of peak demand to reduce expensive demand charges

LOAD SHIFTING

Shift energy consumption from one point in time to another

DEMAND RESPONSE

Discharge or charge in response to signals from a demand response administrator



EMERGENCY BACKUP Powers a facility when the grid goes down







ANCILLARY SERVICES

Provide service to the grid in response to signals sent



CAPACITY FIRMING

Smooth out the intermittency of renewables by storing and dispatching when needed



TRANSMISSION & DISTRIBUTION SUPPORT

Supply power at a distributed location to defer the need to upgrade aging infrastructure





POWERPACK DETAILS:

1 Powerpack includes 16 individual battery pods

Each pod has an isolated DC/DC inverter and thermal control system

Sensors to monitor cell-level performance in real-time

POWERPACK SPECIFICATIONS

MECHANICAL AND MOUNTING			
Enclosure	IP67 (Pod) NEMA 34 / IP35 (Powerpack) NEMA 3R / IP54 (Inverter) 1720 kg / 3800 lbs		
Powerpack Weight			
Powerpack Dimensions	L: 52" (1321mm) W: 38" (966mm) H: 86" (2185mm)		
Powerpack Area Requirements	50kW / 95kWh: 8.9m ² 100kW / 190kWh: 11.8m ² 250kW / 475kWh: 20.5m ² 500kW / 950kWh: 35m ²		
Inverter Dimensions	L: 39.9" (1014mm) W: 49.4" (1254mm) H: 86.3" (2192mm)		
Operating Ambient Temperature	-13°F to 122°F / -30°C to 50°C		
Installation	Requires a crane Unit ships on removable 130mm tall pallet		
COMMUNICATIONS			
Protocol	Modbus TCP DNP3 Rest API		

SYSTEM SPECIFICATIONS

ELECTRICAL		
AC Voltage		480VAC 3-phase 400VAC 3-phase
System Availability		50 Hz, 60 Hz
System Sizes		Scalable from 50kW - 500kW
Continuous Power Duration		2 hours
System Efficiency @ C/2		87% Roundtrip*
*Net energy delivered at 25 thermal control.	°C (77°F) ambier	at temperature including
REGULATORY		
Lithium-Ion Cells	NRTL listed to UL 1642	
System	NRTL listed to UL 1973, 9540, 1741 IEEE 1547	
	Compliant to grid codes and safety standards of all major markets. The full list can be provided upon request.	