**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+.

**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

- **MICROGRID**
  - Build a localized grid that can disconnect from the main power grid

- **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 SPECIFICATIONS

#### MECHANICAL AND MOUNTING

**Enclosure**
- IP67 (Pod)
- NEMA 3R / IP54 (Inverter)

**Powerpack Weight**
1720 kg / 3800 lbs

**Powerpack Dimensions**
- L: 52" (1321mm)
- W: 38" (966mm)
- H: 86" (2185mm)

**Powerpack Area Requirements**
- 50kW / 95kWh: 8.9m²
- 100kW / 190kWh: 11.8m²
- 250kW / 475kWh: 20.5m²
- 500kW / 950kWh: 35m²

**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°C (77°F) ambient temperature including thermal control.

**System Specifications**

**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.