Lightweight PPS
Specifications subject to change without notice, contact manufacturer for updated information.

About Princeton Power
Princeton Power Systems designs and manufactures high-performance power electronic converters and systems for commercial, industrial, and military distributed generation applications.

General Specifications
- Energy Storage Capacity: Up to 5 MWh, multiple chemistry options
- Rated Output Power: 100kW – 2MW
- Inverter Technology: Grid-tied Inverter (GTIB) OR Demand Response Inverter (DRI) 100kW
- Format: ISO Shipping container, 10 ft. / 20 ft. / 40 ft. / 45 ft. sizes available

Energy Storage Specifications
- Chemistry: Various (lead-acid, hybrid lead-acid, lithium-iron, other)
- Energy: Up to 5 MWh
- Battery Management System: Integrated BMS with over-charge/discharge protection, accurate state-of-charge reporting and optional active cell balancing

Grid Interface Specifications
- Voltaged Inverter Output Voltage: 480VAC ±1% to ±3%, 3-phase
- Rated Output Power: 100kW – 2MW, 100kW modules
- Line Frequency: 60 Hz nominal
- Harmonics: IEEE 1547 compliant, ±5%, Current THD
- Demand Response: -100% to +100% power control on demand
- Generator Start Signal: Starts/Stops generator connected to Grid Port or Microgrid Port automatically based on Battery state-of-charge

Optional PV Input Interface Specifications
- Maximum PV voltage: 600VDC
- MPPT voltage range: 280V – 580VDC
- DC Max Power: 2MW, 100kW modules

Backup Power/Microgrid Port Specifications
- Output Voltage: 480VAC 3-phase ±10%
- Output Frequency: 60Hz ±2.5Hz
- Power Rating: 115kVA – 690kVA (150 % overload for 2 seconds)
- Parallel Capacity: Parallel systems up to 2.3MVA of total capacity

Performance Monitoring & Data Logging
- Real time web-based performance data
- Performance Monitoring & Data Logging
- Front-Panel Interface: Color touchscreen industrial PC-based control interface
- User Interface Features:
  - Safety Features:
    - Faults: Ground Fault (optional)
    - Standards Compliance: IEEE 1547, CEC, UL 1973
    - UL 1741 Certified – Certificate 72090351.01 (Inverters)
    - Safety Features: Ground fault detector/interrupter, UL-compliant trip points (field adjustable), Password-protected interface, Battery over/under-charge protection, and automatic fire suppression (L5O systems)
  - Optional Site Controller Supports application-specific programmable functionality

Eﬃciency
- Peak Eﬃciency: 96.5% (Inverter)
- CEC Eﬃciency: 95.5% (Inverter)

Energy Saving Features:
- Automatic internal subsystems power-down, load shedding

Configuration Options
- Site Controller with communications options
- EV charging port
- EV Port
- Remote Wireless controls and monitoring

Battery Options
- High compatibility and easily integrated
- Compatible with various battery types such as lead-acid, lithium-iron-phosphate, and hybrid lead-acid

Industrial Energy Storage Solution
The Storage System provides advanced functionality for frequency regulation, demand response, backup power, micro-grids, and peak shaving. The system is integrated into a weatherproof, transportable container.

Power
Modules in 100kW increments
The system consists of multiple inverters and batteries, allowing it to be configured from 100 kW to 2 MW according to customer needs.

Energy
- Configurable based on Applications
- The system is capable of providing anywhere from 25 kW to 5MW. The amount of power combined with the amount of energy required will determine the container size and contribute to the overall configuration.

Electrical Specifications
- Voltage: 480VAC ±10%
- Frequency: 60Hz ±2.5Hz
- Power: 100kW – 2MW, 100kW modules

Trailer-mounted Large-Scale Advanced Multi-port Inverter System
Configurable from 100kW – 2 MW power, and up to 5 MWhs of energy.

Connects to generators, local electric grids, or alternative energy sources to provide advanced functionality, such as frequency regulation, demand response backup power (reduce fuel costs from your generator), micro-grids, and peak shaving.

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Battery Options
- 25kWh - 5mWh
- Lithium ion
  - Provides improvement in energy density
  - Provides improvement in cycle life
- Lead Acid (AGM)
  - Common Commercially-available battery chemistry
  - Cost-effective for several applications
- Other (Sodium Sulfide and Lead Carbon)

Generator Micro-grids
- Enables multiple generators to tie in to a micro-grid via AC-coupling
- Significantly reduces fuel consumption for typical systems (>30%)
- Reduces generator operating time, wear, and maintenance
- Enables monitoring and control of flexible grids with high power quality
- Built-in redundancies for highly-reliable micro-grid systems

Applications

Renewable Micro-grids
- Integrates solar, wind, or other generators (AC or DC) into micro-grids via AC-coupling for highest efficient and flexibility
- Compatible with solar, wind, multiple resources
- Reduces generator fuel usage even further, plug-and-play with multiple generator types
- Maintains high power quality on the entire grid

GTIB converter
- 100 kW - 2MW
- Sizes
  - 10 ft., 20 ft., 40 ft., 45 ft.

Container
Environmental (AC, Heat, Vent)
- Ventilation is included with all containers to regulate equipment temperature. Space air conditioning is included for both additional cooling and to provide comfort according to individual needs and container location (high temperature conditions). Space heating is included to provide comfort according to individual needs and container location (low temperature destinations).

Optional Upgrades
- PV port, DC port, AC EV charging port, DC-EV charging port
- Other
- Lighting, Mains Jct. box, doors, and fire suppression

Ancillary Services
- Provides distributed grid services in 100kW / 25kWh modules
  - Participates in Area Frequency Regulation and other ISO markets
  - Built-in DNP3, Modbus, and other communications for third party software compatibility

Grid-support Services
- Peak-power shaving, time-shifting, demand response
- Multi-megawatt utility-scale systems
- Enables high penetration levels of solar behind substations by resolving voltage issues
- Smooth intermittency, ramping, flicker from large wind farms