



Grid-tied Inverter and Battery Controller (GTIB)

500 kW Grid-Tied Inverter for Energy Storage
with Built-in Smart Functions

Grid-Interactive Functions

The GTIB-500 is a 500kW grid-tied inverter that offers high efficiency, proven reliability, and unprecedented flexibility. This highly-configurable GTIB can condition power from alternative energy sources, as well as Energy Storage, various AC loads, and AC Microgrids.

Efficient

Maximize power and minimize cost.

With 96.5% efficiency, the GTIB has five independent built-in MPPTs for solar arrays and high round-trip efficiency for battery charging.

Advanced Functions

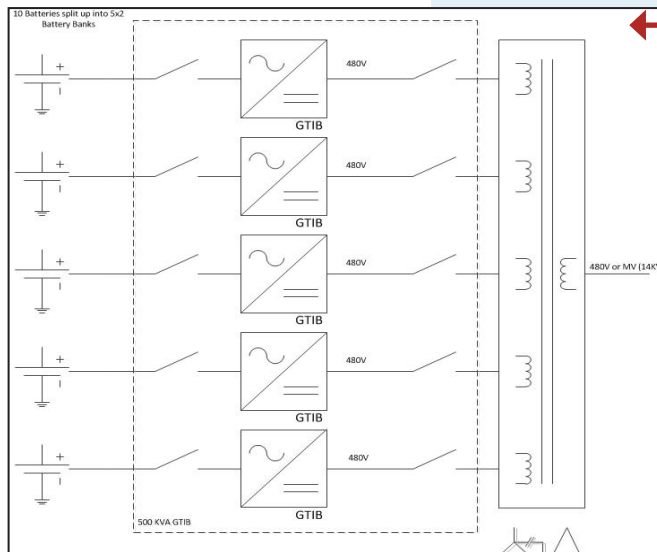
Built-in Smart Grid Functions

Demand Response, Peak Shaving, Island Mode, Demand Dispatch, Frequency Regulation and other Functions are built-in and easily configurable.

Flexible

Configurable for Various Applications

The GTIB is compatible with communication protocols including Modbus TCP. The GTIB offers a wide input voltage range and EV Fast-Charging options.



Features & Options

- Microgrid "off-grid" and back-up power capable
- AC and DC disconnects and combiner box
- Ethernet Compatible and Remote via Modbus TCP access
- Frequency Regulation
- Five independent DC inputs

For more options please see our website

www.princetonpower.com



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Princeton Power GTIB-500



Lead-Acid



Lithium-ion



Lead-Carbon

About Princeton Power

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

Specifications subject to change without notice, contact manufacturer for updated information.
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GENERAL SPECIFICATIONS

Inverter Technology	High-frequency PWM
Size Inches	112 W x 44 D x 77 H

INPUT SPECIFICATIONS (5 DC INPUTS)

DC Voltage	30-750 VDC (UL Certified to 600 VDC)
DC Maximum Power Voltage	380-750 VDC (UL Certified to 600VDC)

INPUT SPECIFICATIONS - PV

PV MPPT	280-580 VDC
PV Array Configuration	Transformerless: Ungrounded With Optional Isolation Transformer: Monopole positive or negative grounded or bipolar neutral grounded

DC Voltage Ripple	< 1%
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INPUT SPECIFICATION - BATTERY

Max Input Power (Discharge)	525kW
Max Output Power (Charging)	475kW
Charging Profile	3-stage, programmable
BMS Compatible	Modbus over RS485 or TCP/IP, CANbus, custom

GRID CONNECTION PORT SPECIFICATIONS *(1)

AC Line Voltage	480 VAC +10%, -12%, 3-phase
AC Line Frequency	60/50 Hz nominal 57-60.5/47-50.5 Hz range (field adjustable)

Continuous AC Current	665 A RMS
Continuous AC Power	500kVA
Power Factor	Adjustable -1.0 -> 1.0
Current Harmonics	IEEE 1547 Compliant, <5% THD

ENVIRONMENTAL SPECIFICATIONS

Temperature Operating	0 to 50°C
Storage:	-20 to 60°C
Humidity	5-95% (non-condensing)
Cooling	Forced-air cooled
Rated Max Elevation	3,000 Feet
Enclosure	NEMA 3R (Outdoor)

SAFETY FEATURES

Faults	Over/Under Voltage, Over/Under Frequency, Over Current, Overload, Over-temperature
Standards Compliance	IEEE 1547, CEC, UL 1741 Certified (#72090351.01)*Pending
Safety Features	Anti-islanding (grid fault detection, isolation & auto-reconnect) UL-compliant trip points (field adjustable)

USER INTERFACE FEATURES

Communication	We offer a wider variety of communication options
Performance Monitoring	Real-time & Historic, web-based performance data

EFFICIENCY

Peak Efficiency	96.5%
CEC Efficiency	95.0%
Nighttime TARE Losses	175W
Energy-saving Features	Automatic internal subsystems power-down, Nighttime transformer auto-disconnect

*(1) External transformer with 5 primary windings required

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