



**PRINCETON
POWER SYSTEMS**
Clean Power Made Simple™

Grid-tied Inverter and Battery Controller (GTIB)

The 30kW hybrid inverter offers high efficiency, proven reliability, and unprecedented flexibility. The highly-configurable GTIB-30 can condition power from alternative energy source, as well as Energy Storage, AC loads and AC Microgrids.

Efficient

With up to 97.1% efficiency, the GTIB-30 is specifically designed with high round-trip efficiency for battery applications.

Advanced Functionality

Demand Response, Peak Shaving, Microgrid Mode, Demand Dispatch, and other functions are included in the GTIB-30.

Flexible

Compatible with advanced communication protocols and pre-configured for advanced battery compatibility. Integrated systems deployed with top-tier battery manufacturers.



US SYSTEM

Approvals

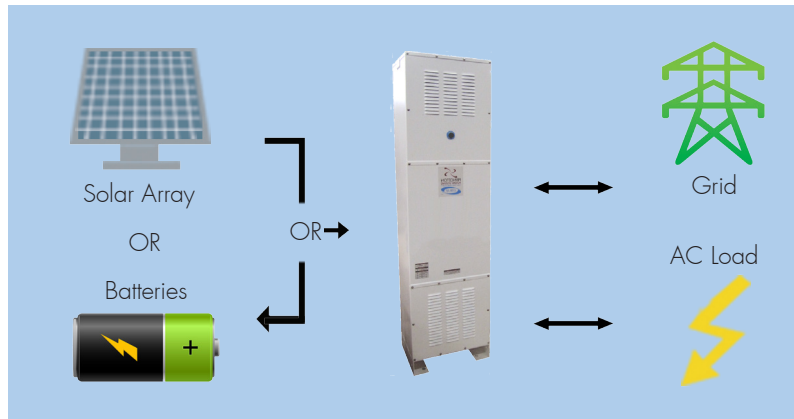
– UL 1741SA



AUSTRALIA SYSTEM

Approvals

– AS/NZS 4777.2:2015
– AS 62040.1.1-2003
– IEC 62109-1
– IEC 62109-2



Features

- Microgrid “off-grid” and back-up power capable
- Automatic transfer to off-grid with optional built-in transfer switch (ATS)
- Available in 208V, 400V or 480V 3-phase configuration
- Wide DC input voltage with dual DC port option
- Dark Start capable
- Integrated AC or DC pre-charge (start with only AC or only DC)
- Cluster configurable (side by side placement)
- TÜV® Certified

Options

- AC Voltage (option **-208**, **-400** or **-480**) (*208 and 400 require option -W*)
- Internal Isolation Transformer (option **-W**)
- Load Port with Automatic Transfer Switch (option **-ATS**)
- Internal AC or DC Pre-charge functionality (option **-GA**)
- Internal DC Input Fuses (option **-F**)
- Internal GFDI (Negative Ground) (option **-GN**) (*requires option -W*)
- HMI (OLED screen with keypad) (option **-H**)
- Dual DC ports (option **-2D**)

ABOUT PRINCETON POWER SYSTEMS

Princeton Power Systems, based in New Jersey and founded in 2001, designs and manufactures state-of-the-art technology solutions for energy management, microgrid operations and electric vehicle charging. The company is a global leader working with customers and partners across North America, Europe, Africa and the Caribbean. It manufactures UL and CE-certified power electronics that are used in advanced battery operations and alternative energy, with built-in smart functions for ancillary services. The company solves power issues to allow continued growth of distributed renewable energy by providing energy storage solutions that are proven to work, even in harsh environments. Princeton Power Systems builds integrated systems and designs, commissions and operates microgrids for leading and non-profit organizations, including Fortune 500 automakers and industrials. The company proudly manufactures its products in the USA. More information about Princeton Power Systems is available at www.princetonpower.com.

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Grid-Tied Inverter (GTIB-30)

GTIB-30 (G1.3)	US SYSTEMS	AUSTRALIA SYSTEMS
Power Terminals	2 DC** 2 AC*	2 DC 2 AC
Power-stage Technology	High-frequency PWM	High-frequency PWM
Size	20.3 W x 16 D x 78 H (in)	516 W x 406 D x 1981 H (mm)
Weight	450 lbs (690 lbs with optional internal transformer)	313 kg
Peak Efficiency	97.1% (Transformer-less)	96.5%
CEC Efficiency	95.5% (Transformer-less)	-

DC PORT SPECIFICATIONS - BATTERY

DC Voltage (Full Power)	280 - 830 VDC	280 - 780 VDC
DC Voltage (Full Range)	0 - 830 VDC	0 - 780 VDC
DC Current Max	60A/120A**	120A (2x60A or 1x120A)
Over Current Protection	Internal Fuse (optional)	Internal Fuse (optional)
SCCR	10kA/20kA**	5kA/10kA
Battery Charge Controller/ Battery Management System	Internal configurable 3-stage profile for lead-acid batteries. External manual control of DC volts/amps through RS232/485 Modbus RTU	Internal configurable 3-stage profile for lead-acid batteries. External manual control of DC volts/amps through RS232/485 Modbus RTU
DC Voltage Ripple	<1%	<1%
DC Precharge	Internal (optional)	Internal (optional)
DarkStart	Internal (requires external 24VDC power)	Internal (Requires external 24VDC power)
Grounding Configuration	Ungrounded (standard); Negative Grounded (optional)	Ungrounded or Negative Grounded

DC PORT SPECIFICATIONS - PV (not applicable to systems sold in Australia)

DC Voltage (Full Power)	280 - 830 VDC	280 - 780 VDC
DC Voltage (Full Range)	0 - 830 VDC	0 - 780 VDC
DC Voltage (Max Open Circuit)	830 VDC	780 VDC
DC Current Max	60A/120A** (MPPT)	120A (2x60A or 1x120A)
Over Current Protection	Internal Fuse (optional)	Internal Fuse (optional)
SCCR	10kA/20kA**	5kA/10kA
DC Voltage Ripple	<1%	<1%
Grounding Configuration	Ungrounded (standard); Negative Grounded (optional)	Ungrounded or Negative Grounded

AC GRID PORT SPECIFICATIONS

AC Line Voltage	208 VAC or 480 VAC, +10% -12%, 3Ø, 3/4 wire	400 VAC nom, 312 V min, 451 V max, 3Ø, 3/4 wire
AC Line Frequency	60 Hz nominal, 59.3-60.5 Hz (per UL requirement)	50 Hz nominal, 45-52 Hz (NZ), 47-52 Hz (OZ)
Continuous AC Current	95 A RMS (208 V system) 41 A RMS (480 V system)	49 A RMS
Continuous AC Power	30 kVA	30 kVA
Power Factor	Grid Tied > 0.95; Micro-Grid -1.00 to 1.00	> 0.99
Current Harmonics	IEEE 1547 compliant, <5%	AS 4777 compliant, <5%
Internal Isolation Transformer	208 V system: standard 480 V system: optional	standard
AC Precharge	Internal (optional)	Internal (optional)

AC LOAD PORT SPECIFICATIONS (optional on US systems)

Auto Transfer Switch	Internal (optional)	Internal (standard)
AC Line Voltage	208 VAC or 480 VAC, +10% -12%, 3Ø, 3/4 wire	400 VAC nom, 312 V min, 451 V max, 3Ø, 3/4 wire
AC Line Frequency	60 Hz nominal, 59.3-60.5 Hz (per UL requirement)	50 Hz nominal, 45-52 Hz (NZ), 47-52 Hz (OZ)
Continuous AC Current	95 A RMS (208 V system) 41 A RMS (480 V system)	49 A RMS
Continuous AC Power	30 kVA	30 kVA
Power Factor	-1.00 to 1.00	-1.00 to 1.00
Transfer to Backup Time	16 ms (adjustable)	16 ms (adjustable)
Off-Grid Control Feature	Grid-Forming Voltage Source	Grid Forming Voltage Source
AC Precharge	Internal (optional)	Internal (optional)
Micro-Grid Capabilities	Virtual Synchronous Generator, Parallel Generation Compatible, Autonomous Power Sharing without Centralized Control, Synchronized Start	Virtual Synchronous Generator, Parallel Generation Compatible, Autonomous Power Sharing without Centralized Control, Synchronized Start

ENVIRONMENTAL SPECIFICATIONS

Temperature Operating	0° to 50°C	0° to 50°C
Temperature Storage	-20°C to 60°C	-20°C to 60°C
Humidity	5-95% (non-condensing)	5-95% (non-condensing)
Cooling	Forced Air	Forced Air
Rated Max Elevation	3000 ft	1000 m
Enclosure	NEMA 3R (outdoor)	IP34, Class 3

USER INTERFACE FEATURES

Front Panel Interface	Run Indicator Lamp (standard) OLED screen with keypad HMI (optional)	Run Indicator Lamp (standard) OLED screen with keypad HMI (optional)
Communication	MODBUS over RS485 and/or RS232 native	MODBUS over RS485 and/or RS232 native
Performance Monitoring	Real-Time and local performance data and event storage, downloadable through MODBUS RTU interface. > 3 Years History retention.	Real-Time and local performance data and event storage, downloadable through MODBUS RTU interface. > 3 Years History retention.
Demand Response	-	Supports Mode DRM=0

NOTES * x1 grid port standard. x1 load port with automatic transfer optional.

** x1 60A/10kA DC port standard. x2 60A/10kA DC ports optional. Dual DC ports to be used independently or combined as one 120A/20kA port.