PRINCETON POWER SYSTEMS

Princeton Power Systems
Clean power made simple.™

Demand Response Inverter (DRI)

3-Phase, Grid-tied, Controllable
4-Terminal Power Conditioner

Princeton Power DRI

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	
Power Rating	100 kW
Inverter Technology	4-port PWM with central DC link
Size and Weight	90.5 W x 41 D x 70 H, 3500 lbs
Power Terminals	Four (4): DC PV or Battery, DC Battery, AC Grid, AC Load, or DC Port (optional car charge)
DC Power Terminal Specifications (x2)	
Voltage Range	280 — 600 VDC
PV MPPT Range	280 — 580 VDC
Power	100kW (bi-directional)
PV Array Configuration	Grounded
Nominal Voltage	480V
Max. Current	330 A
Control Functions	Battery charge/discharge/bulk/float for lead-acid, lithium-ion, and lead-carbon PV array control
AC Grid Power Terminal Specifications	
Voltage	480 VAC +10%, -12%
Maximum Current	133 A RMS
Power Factor	0.95 (lag) – 1 – 0.95 (lead) at rated power
Line Frequency	60Hz (59.0 – 61.0Hz compliant with UL 1741)
Harmonics	<5% THD IEEE 1547 Compliant
AC Load Power Terminal Specifications	
Voltage Range	480V + 10% - 12%
Maximum Current	133 A Continuous
Overload Capability	150% for 10 seconds, 10-minute duty cycle
Frequency Range	60Hz (59.0 – 61.0Hz compliant with UL 1741)
Environmental Specifications	
Temperature	Operating: 0 to 50°C Storage: -20 to 70°C
Humidity	5 – 95% (non-condensing)
Cooling	Forced-air cooled
Rated Max Elevation	6,000 feet (de-rated)
Enclosure	NEMA 3R Outdoor
Safety Features	
Faults	Over/Under Voltage/Frequency/Current/Temperature Ground Fault, Internal
Standards Compliance	IEEE 1547, CEC, UL 1741
Safety Features	Anti-islanding (grid fault detection, isolation, & auto-reconnect), Fused ground fault interrupter, UL-compliant trip points (factory adjustable), Password-protected parameters Battery over/under-charge protection
User Interface Features	
Front-Panel Interface	Touch screen viewable in and protected from sunlight
Communications	TCP/IP, MODBUS over RS485, DNP3
Performance Monitoring	Local performance data storage, downloadable Web-based historical performance data hosting options (*2)
Analog & Digital I/O	Analog: (1) inputs, (1) output; 0-10 V Digital: (4) inputs 0-24V, (7) output relays
Efficiency	
Peak Efficiency	96.0% (PV to Grid)
CEC Efficiency	95.0% (PV to Grid)
Energy-Saving Features	Smart load-shedding, dynamic motor control, Smart Relays

*2 - Advanced features with optional Site Controller

Princeton Power Systems, Inc.
3175 Princeton Pike, Lawrenceville, NJ 08648 USA
www.princetonpower.com
Tel: (609) 955-5390 • Fax: (609) 751-9225
info@princetonpower.com • Press Inquiries: press@princetonpower.com • Sales: sales@princetonpower.com

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Grid-tied, Controllable 4-Terminal Power Conditioner

Pre-configured Power Solution

The multi-terminal DRI is uniquely flexible to be more reliable, more efficient, and more cost-effective than currently available inverters. The DRI's distinctive 4-terminal architecture provides valuable grid-support functionality for high penetration of PV, energy storage, microgrids, vehicle charging, and grid support functions.

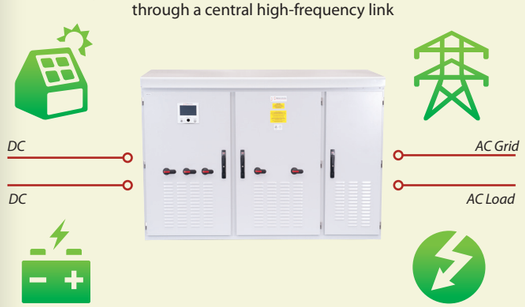
Efficient | Maximize energy.
Maximize energy and minimize cost.
Improves energy conversion efficiency. Programmable power curves and charge profiles also provide enhanced control for generators, AC loads, and batteries.

Reliable | Eliminate downtime.
Eliminate downtime and decrease demand.
Increased lifespan, and advanced, high-capacity switches allow the DRI to provide back-up power in times of need and during peak demand.

Flexible | Integrate quickly and easily.
Highly programmable and easily integrated.
E-Quad Technology allows power routing to the grid, DC energy storage, and dynamic AC loads. Multiple AC and DC terminals are ideal for microgrid and off-grid systems.

E-QUAD™ Power Flow Control Technology

Dynamic control of four bi-directional loads/sources through a central high-frequency link



Features & Options

- 5 Smart Relays automatically shed low-priority loads in response to price signals, or grid needs
- Ground fault detection and interruption (GFDI)
- Web-based performance monitoring.
- Revenue-grade kWh meter (optional)
- Manual AC and DC disconnects and combiner box (optional)
- CHAdeMO
- Utility interface communication modules for IEC 61850, Modbus, and CANbus.

For more options please see our website → www.princetonpower.com