

TOSHIBA

Leading Innovation >>>

UNINTERRUPTIBLE POWER SYSTEMS



3 Year
Warranty

G9000 Series

80/100/160/225/300/
500/750 KVA UPS



97%
Efficiency



- Next-Generation IGBT Technology
- True On-Line, Double-Conversion UPS
- Parallel up to Eight Units
- Input Power Factor > 0.99
- Input Current THD < 3%
- Output Power Factor to 1.0
- 100% Unbalanced Load Capability
- Wide Input Voltage Range +15%, -20% (Without Utilizing Batteries)
- High Efficiency for Lower Operational Cost
- Smallest Footprint & Highest Power Density in Industry
- Electronic Battery Isolation for Battery Longevity
- Generator-Friendly Design & Compatibility
- Complete Front-Access for Installation, Operation, & Service
- Handles Leading Power Factor Loads (Without Derating)
- SNMP/Web-Based Monitoring
- Three-Year Warranty for Lower Cost of Ownership

*See specifications on back.

Superior Service & Support

Factory Witness Testing

Toshiba has recently completed construction of a 1500 KW Witness Test Facility at its plant in Houston, Texas. Customers can now perform witness testing to validate their system's performance specifications in all operating modes prior to taking delivery.

Multi-module parallel configurations, including battery or flywheel backup, can be assembled and tested in all modes before shipment for final installation.



Toshiba UPS Witness Test Facility in Houston, Texas

Service Providers

Toshiba's growing network of more than 80 Authorized Service Providers supply factory trained technicians to service and support Toshiba UPSs throughout the contiguous United States, Canada, Caribbean, Mexico, Central and South America.

Maintenance Agreements

Three standard levels of maintenance agreement packages are available to provide the service support appropriate to your needs and budget while maximizing the performance and service life of your Toshiba UPS. Tailored, site-specific service agreements range from simple scheduled preventive maintenance programs to extended warranty programs with guaranteed response times, 24/7/365 coverage, and discounted replacement parts.

Preventive Maintenance

Derived Mean Time Between Failure (MTBF) rates are based on an ideal operating environment. Real operating environments vary from benign to outright hostile. Preventive maintenance will help ensure you get the maximum service out of your Toshiba system.

The maintenance needs of a UPS are minimal but crucial.

- Periodic inspection, calibration and adjustment of the UPS's control and monitoring systems are necessary to ensure continued optimal performance and the highest level of reliability
- Regular maintenance can help detect early signs of degradation in capacitors, fans, and other components, to allow for timely repair without the UPS unexpectedly failing. This is particularly important in harsh environments with excessive humidity, temperature extremes, frequent out-of-specification voltage excursions, and abrasive air particles.

Warranty

The G9000 UPS and the UPS backup battery system are supported by Toshiba's industry-leading three-year parts and labor warranty* and a 24/7/365 hotline. This ensures that customers get the quickest possible resolution to any warranty or service issues that may arise.

* Conditional to system startup by an Authorized Toshiba UPS Service Provider. See three-phase warranty for details.

Main Features

The Toshiba G9000 Uninterruptible Power System (UPS) utilizes state-of-the-art design and construction to deliver industry-leading efficiency, reliability, and flexibility to meet today's critical power demands.



100 KVA G9000 UPS

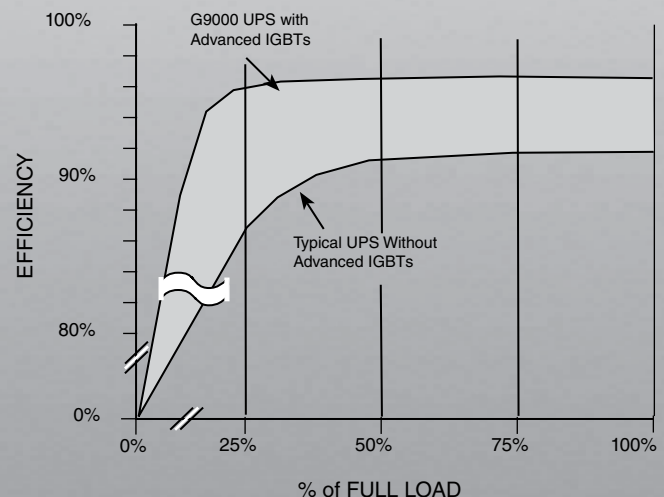
- Fast-switching IGBT control technology delivers up to 97% efficiency.
- Full IGBT rectifier & harmonic input filter reduce input total harmonic distortion (THD) which also reduces heat loss in associated feed equipment & increases component life.
- IGBT DC-DC chopper produces lower DC ripple on the charging circuit, extending battery & capacitor life.
- Hybrid static bypass switch offers efficiency & dependability.
- Improved output voltage regulation provides superior transient response, easily handling 100% step loads without requiring battery support.
- Generator friendly interface allows sizing a 1.1 KW generator capacity to a 1.0 UPS KVA load.
- The G9000 has the ability to combine up to eight modules for increased capacity/redundancy.
- Each module is self-contained with its own switching & control intelligence. This control redundancy increases system reliability.
- Toshiba's G9000 is robustly engineered with highest quality components to ensure reliability.

High Efficiency Design Ensures Low Power Loss Even at Minimal Loads

An efficiency greater than 92.5% at 20% loading means lower power losses, reduced air conditioning needs, and reduced utility costs across a wide load range without sacrificing frequency or output voltage stability.

Smallest Footprint/Highest Power Density

The G9000's transformerless design makes it far lighter than conventional UPSs, and gives it a much smaller footprint compared to similar sized UPSs. With its compact size, the G9000 has the highest energy density per square foot of any UPS of similar capacity.



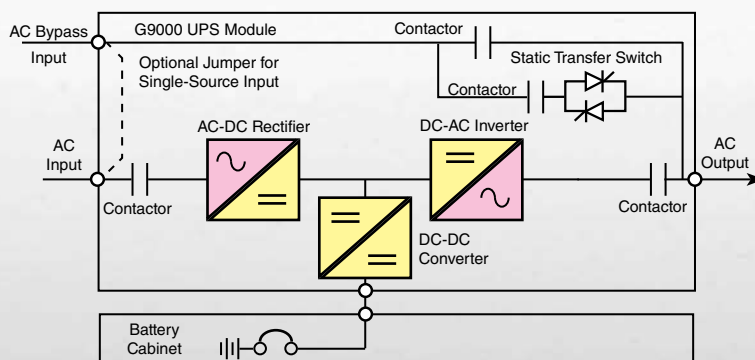
System Configurations

G9000 UPS Applications

- Power Conditioner
- Frequency Converter
- Line-Up-and-Match Backup Power Supplies:
 - VLRA & Wet-Cell Battery System: The robust recharge circuitry of the G9000 allows use of either VLRA or flooded wet-cell batteries without requiring a supplemental charger.
 - Rotary Energy Storage (flywheel): This green energy storage solution offers a twenty-year life expectancy, unlimited recharge cycles, & very low power consumption in ready mode.

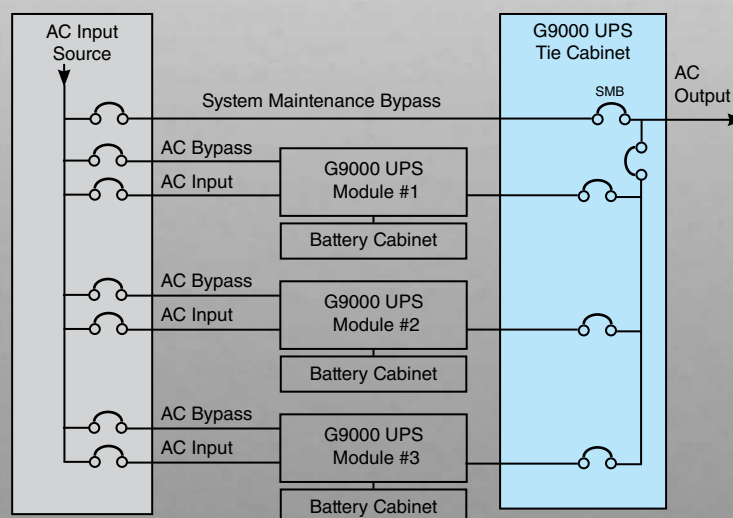
Single Module

- Single- or Dual-Source Input
- DC to DC Isolation
- Internal Hybrid Static Bypass Circuit
- Controllable at Local LCD Panel or Through Customer Supplied Interface
- Monitor UPS Locally or Remotely



Multi-Module

- Parallel up to Eight Units Without Additional Control Circuitry
- Load Capacity 80 to 4000 KVA
- Distributed Bypass Eliminates Potential Single Point of Failure in Bypass Mode
- Tie Cabinet Requires No Sophisticated Control Circuitry for Ease of Future Expansion
- Both individual modules & the entire system can be monitored & controlled via local displays in each UPS, or through optional System display in TTC
- Load balance & synchronization intelligence is self-contained in each UPS module & not in an external sync controller, increasing system reliability & making expansion/reconfiguration of Parallel multi-module systems easy
- Self-Contained Modular Design for Easy Expansion/Reconfiguration of Parallel
- Multi-Module Installation into Multiple Independent Systems
- Each Module is Self-Contained with own Switching & Control Intelligence, Increasing System Reliability



G9000 Options



Remote Monitoring Support

The optional RemoteEye II interface offers remote monitoring & analysis of UPS operation via HTTP & SNMP.

- Detailed, real-time status of UPS
- Email notification of status & events
- Event & alarm history logging
- Remote control of UPS via internet

The optional Industrial Bus ProtoNode protocol adapter supports:

- SNMP
- RTU
- Metasys N2
- AB Ethernet IP
- TCP/IPMODBUS
- MSTP
- BACnet/BACnet IP

An optional hard-wired Remote Status Alarm Panel (RSAP) enables remote monitoring of UPS alarm /status points up to 1000 feet away.

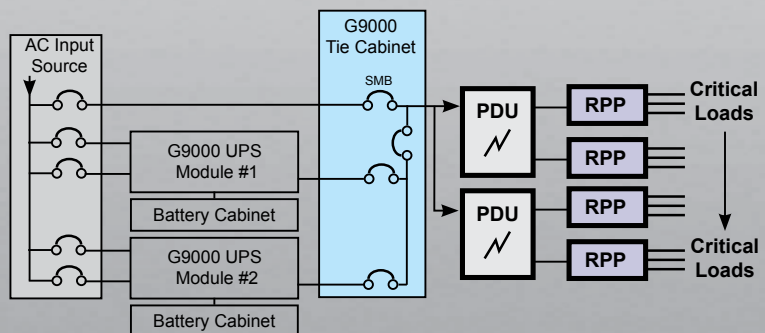


Battery Cabinets & Flywheels

Matching battery cabinets provide uniform appearance to your installation. The G9000 works equally well with either Valve-Regulated Lead Acid (VRLA) or flooded battery-backup. Rotary flywheel backup provides the ultimate in green power combined with long term reliability.

Toshiba Tie Cabinet

The G9000 UPS tie cabinet provides an attractive, simple landing point for a multi-module G9000 system's output. Toshiba's solution is a smaller, lighter option with no control electronics compared to those offered by competitors. An optional five-inch color LCD display is available for centralized monitoring of module and system status as a supplement to individual module monitors.



Maintenance Bypass Cabinet

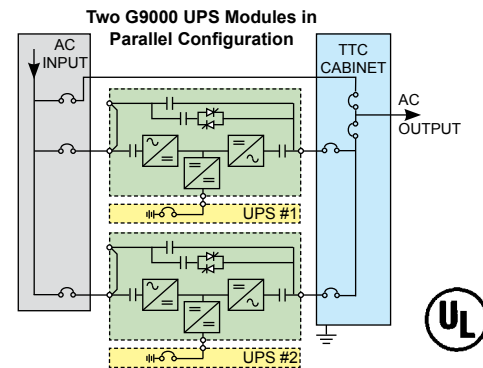
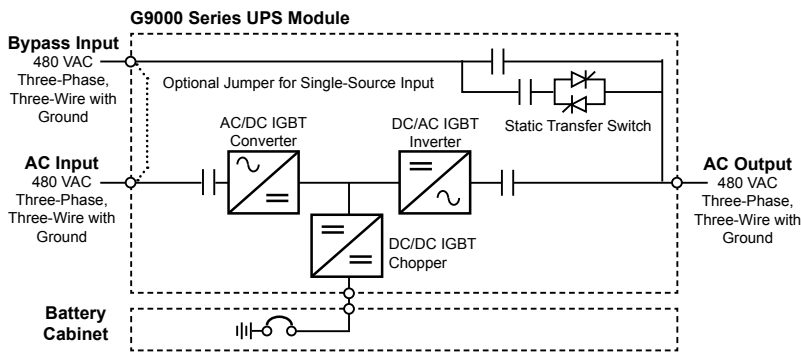
Maintenance bypass cabinets are available in wall mount and stand-alone versions as well as a custom designed slim-line version that matches the height and depth of the G9000 to seamlessly blend with the UPS

Power Distribution Unit/ Remote Power Panel

Optional Power Distribution Units (PDU) with internal 480/208 transformers and Remote Power Panels (RPP) are available in a range of sizes and capacities.

G9000 Series 80 to 750 KVA

Model Number		T90S3S08K-S6XSN	T90S3S10K-S6XSN	T90S3S16K-S6XSN	T90S3S22K-S6XSN	T90S3S30KS6XSN	T90S3S50KS6XSN	T90S3S75K-S6XSN	
Capacity	KVA/KW	80/72	100/90	160/144	225/202.5	300/300	500/500	750/750	
Topology	True On-Line, Double Conversion, Advanced Multi-Level IGBT Technology								
Input	Voltage	480 V, Three-Phase, Three-Wire + Ground/Bypass Input, 480 V, Three-Phase, Three-Wire + Ground							
	Voltage Range	480 V, -20% to +15% (384 to 552 V Without Utilizing Battery)							
	Power Factor	Greater than 0.99							
	Current THD	<3% at 100% Load (No Input Filter Required)							
	Frequency	60 Hz (± 10%)							
Output	Voltage	480 V, Three-Phase, Three-Wire + Ground							
	Frequency	60 Hz, ±0.01% (In Free-Running Mode)							
	Voltage Regulation	±1.0% (0.5% Typical)							
	Power Factor	0.9 Lagging				1.0 (Unity)			
	Power Factor Range	0.9 Lagging to 0.95 Leading							
	Voltage THD	< 2% for Linear Load; < 5% for Non-Linear Load							
	Overload (Inverter)	125% for 2 Minutes; 150% for 60 Seconds							
	Overload (Bypass)	1000% for One Cycle				500% for One Cycle			
Battery	DC Link	480 VDC							
	Ripple Voltage	±0.23%				±0.29%			
Environment	Temperature Range	32° to 104°F (0° to 40°C)							
	Relative Humidity	5% to 95% Non-Condensing							
	Heat Rejection	10.8 kBTU/Hour	13.5 kBTU/Hour	17.8 kBTU/Hour	25.1 kBTU/Hour	31.7 kBTU/Hour	52.8 kBTU/Hour	79.2 kBTU/Hour	
	Efficiency (Full Load)	95.8%	95.8%	96.5%	96.5%	97.0%	97.0%	97.0%	
	Efficiency (20% Load)	92.5%	92.5%	94.7%	94.9%	95.8%	95.8%	95.8%	
	Altitude	7380 Feet Maximum Without Derating (2250 Meters)							
	Audible Noise	70 DBA at 1 Meter				73 DBA at 1 Meter			
Dimensions	Dimensions (W x D x H)	27.6 x 32.8 x 80.6 in. (700 x 832 x 2047 mm)		35.4 x 32.8 x 80.6 in. (900 x 832 x 2047 mm)		51.2 x 32.7 x 80.7 in. (1300 x 832 x 2050 mm)		70.9 x 32.7 x 80.7 in. (1800 x 832 x 2050 mm)	90.6 x 32.7 x 80.7 in. (2300 x 832 x 2050 mm)
	Weight	855 lbs (388 kg)	855 lbs (388 kg)	1160 lbs (526 kg)	1230 lbs (558 kg)	2260 lbs (1025 kg)	3300 lbs (1500 kg)	4250 lbs (1928 kg)	
Features	Digital Signal Processor (DSP) Control, Fully Digital IGBT Converter & Inverter, High Efficiency Over Wide Load Range, Transformer-Less Design, N+1 and N+N (Up to Four in Parallel) Capability, Dual-Input Feed, Electronic Battery Isolation, RS232 and Dry Contact Interface, Small Footprint, Lightweight Design								
Standards	UL 1778, CUL, ISO9001, ISO14001, ANSI C62.41 (IEEE 587), FCC Class A, Article 47, Part 15.B								
Warranty	Three Years Onsite (Optional Two-Year Extended Warranty) See Toshiba Warranty Policy for Full Details								
Service	24-Hour, 365-Day Technical Support 1-877-867-8773								



UPS ADJUSTABLE SPEED DRIVES MOTORS CONTROLS INSTRUMENTATION PLC

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