TOSHIBA

NEW PRODUCT

1600/1600 Plus Series

On-Line Uninterruptible Power System

TOSHIBA SECURITY PLUS 3-YEAR ON-SITE WARRANTY

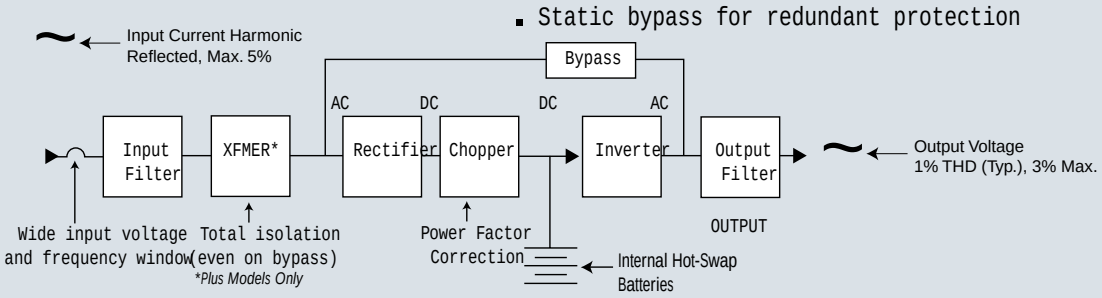
The Power of Performance -- The Performance of Power

2.4/3.6/6.0/8.0 KVA Single Phase

Ultimate Reliability...

Toshiba's 1600 Series:

Toshiba introduces an even smarter solution to power problems — the 1600 Series Uninterruptible Power Supply. From a name that is synonymous with quality, Toshiba offers a UPS with more monitoring capabilities, more flexibility and more features than previous models. This system combines true on-line technology, state of the art electronics and the Toshiba name to offer the most reliable UPS on the market.



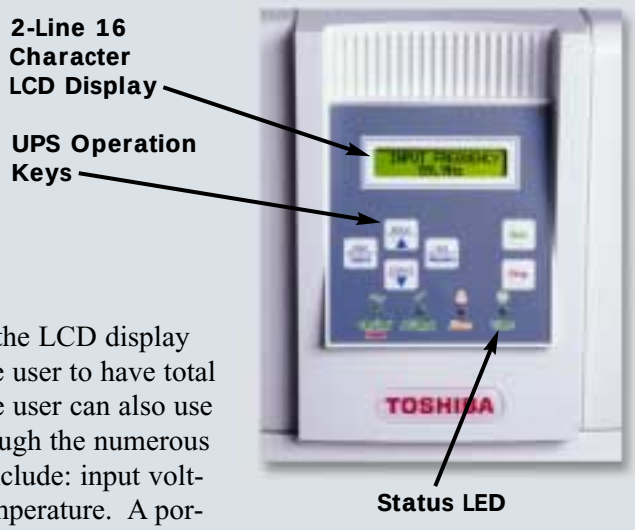
Electrical Specifications:

The 1600 Series improves upon the already very successful design of the 1400 Series. This model offers many more features to the user without compromising the Toshiba market leading electrical specifications. The complete line of Toshiba UPS product does more than provide battery backup for blackout conditions, it also enhances the existing power. The true on-line technology utilized takes the input AC power, converts to DC power and inverts back to AC power, totally recreating the existing utility power. This dual conversion design provides many advantages for critical load applications:

- Wide Input Voltage Window
- Wide Input Frequency Window
- Input Power Factor Correction
- Low Input THD
- High Overload Capabilities
- Low Output THD
- Regulated Output. Frequency & Voltage

NEW FEATURES:

LCD Display:



One of the greatest features of the new 1600 Series is the LCD display and keypad. This 2 line 16 character display allows the user to have total access to all the operating information of the UPS. The user can also use the display s keypad to schedule events and scroll through the numerous monitoring screens. Some of the monitoring screens include: input voltage, output current, battery install date and internal temperature. A portion of the data setting screens include: buzzer volume, output voltage adjust, time/date and battery test schedule. A complete listing of the LCD screen functions and displays can be found in the operation manual or on our website.

Ultimate Availability...

Slide-out Battery Trays:

Another popular feature of the 1600 Series is the slide-out battery trays. When combined with the hot-swappable feature, the slide-out battery trays allow the user to operate the Toshiba UPS during maintenance periods without interrupting the critical loads. Toshiba s battery trays are lightweight, easily accessed from the front of the UPS and have automatic slide-and-plug connections.

Hot-Swappable Batteries:

The term hot-swappable batteries refers to the ability to service the batteries while the UPS remains on-line. The batteries are located in a separate enclosure within the UPS. This design allows a technician to perform tests and replacements on the batteries without the danger of contacting surrounding electronics. The battery packs are accessed through a front-mounted hinged door and weigh a mere 39 lbs. making any battery change a one person job.

Isolated vs. Non-Isolated:

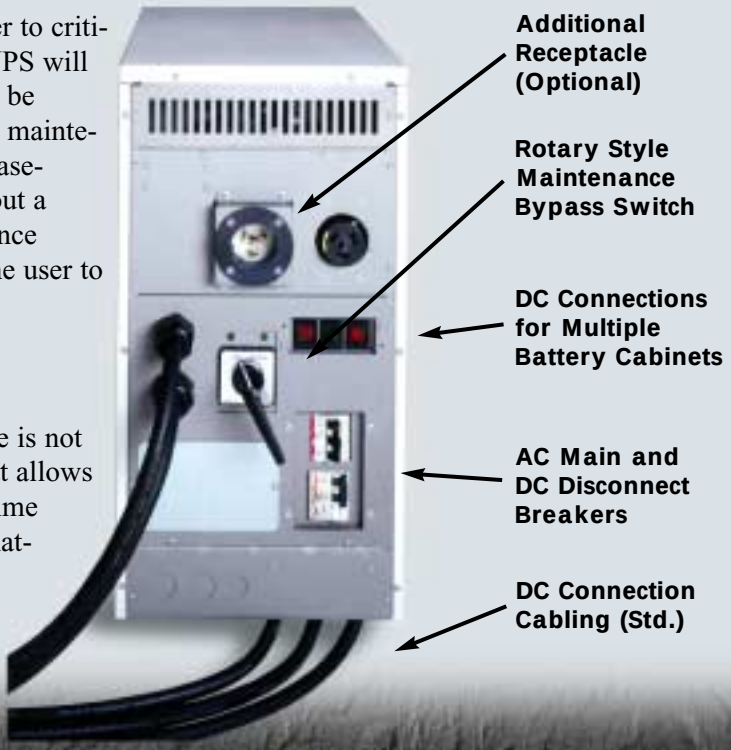
The 1600 Series was designed to handle most critical applications. Different applications require different degrees of protection and conditioning. The *Plus* model offers a low-impedance, input isolation transformer, bonding neutral to ground to reduce common mode and normal mode noise. Also available is a scaled down version, eliminating the isolation transformer therefore reducing cost and system weight. Both isolated and non-isolated units are available in all sizes, 2.4kVA through 8kVA.

Maintenance Bypass:

The main purpose for any UPS is the continuous supply of power to critical loads 24 hours a day. Like any other electronic system, the UPS will eventually require maintenance and therefore power will have to be removed. The user diverts power through the make-before-break maintenance bypass thus allowing loads to remain on-line. The new phase-matching design allows the maintenance bypass to operate without a phase-correction transformer. The optional rotary style maintenance bypass is located in the external battery cabinet which permits the user to remove the UPS from the site if necessary.

External Battery Interface:

Many times the standard 7-10 minutes of internal battery runtime is not sufficient. The 1600 Series includes a rear-mounted interface that allows the user to connect to an external battery bank for extended runtime requirements. This interface is a standard component thus eliminating long lead times associated with additional factory modifications. Having this Anderson Style“ connector factory installed allows for future runtime upgrades without the need for field modifications.



Ultimate Toshiba

Modular Receptacle Panel:

This feature makes the 1600 Series completely field upgradeable from a hardwire connection to a plug-n-play connection. The installation requires removing the panel that covers the terminal block and snapping the required receptacle panel in its place. This modular design allows for complete flexibility in the continually changing computer hardware environment. The connector for the optional receptacle panel is pre-wired and already located on the UPS . Installing the panel is a snap.

Multiple Configurations Available for Optional Receptacle Panels

Internal SNMP Device:

The ability to monitor the performance of UPS is becoming very important in today's market. The Simple Network Management Protocol (SNMP) device allows the user to connect the UPS to an existing network, creating worldwide visibility to the UPS information. Having the SNMP card as an internal option helps create a one-box solution.

3-Year On-Site Warranty*:

Toshiba continues to provide the market with the highest quality product available. The ***Security Plus*** 3-Year On-Site warranty accompanies every UPS Toshiba manufactures. This warranty is the best in the market and makes a bold statement regarding the reliability of the product.

** Subject to country of installation*

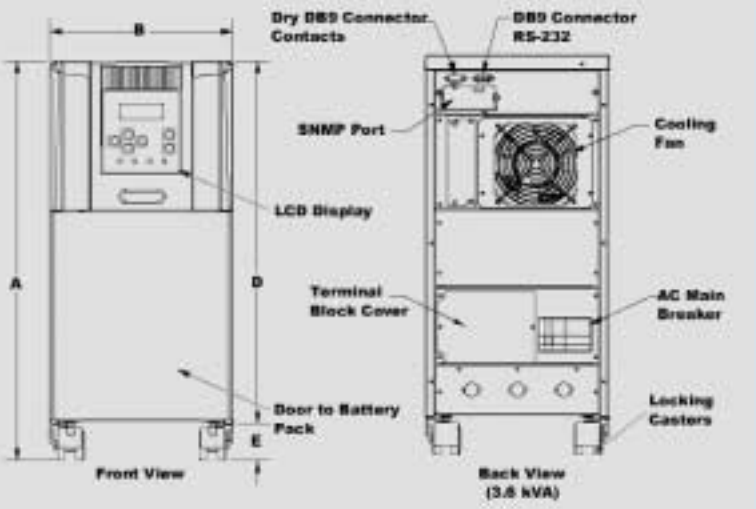
1600 Series UPS

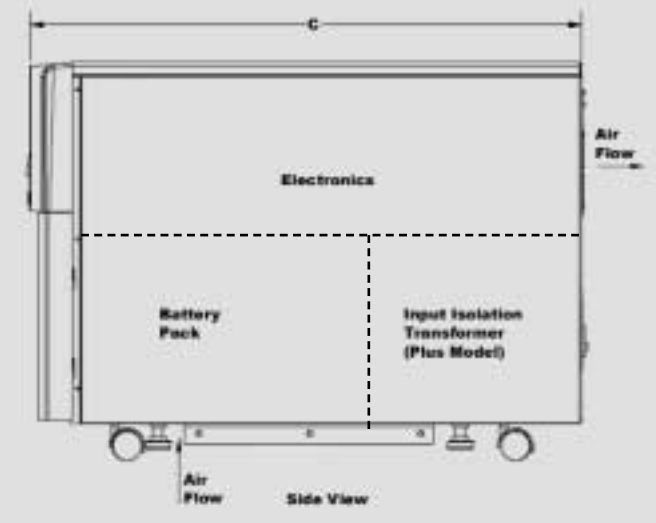
Battery Cabinet for Additional Runtime

UPS SPECIFICATIONS

CAPACITY	2.4kVA (1.68kW)	3.6kVA (2.52kW)	6kVA (4.2kW)	8kVA (5.6kW)
General				
Topology	True On-line, Isolation transformer on input of Plus models			
Certifications	UL 1778, CUL, FCC class A, IEEE 587, ANSI/C62.41, ISO 9001, NEMA/PE1-1993			
Input Characteristics				
Input Voltage	Single-phase 240/208Vac (4 wire input/L-L, N, G), +10%-30%; 220/230/240 Vac (3 wire input/L, N, G)			
Input Frequency	45-65Hz (auto-sensing)			
Input Capacity	2.4kVA	3.6kVA	6.0kVA	8.0kVA
Input Power Factor	> 0.95 for all loads			
Input Current THD	< 5%			
Battery Characteristics				
Battery Type	Valve Regulated Lead Acid, Flame Retardant (7.0 Amp Hr)			
Backup Time -- fully charged @ 0.7 power factor, 77 F	7 minutes minimum @ full load, 21minutes minimum @ half load			
Recharge Time	24 hr. (full), 12 hr. (90%)			
Output Characteristics	output phase-locked to input voltage			
Output Voltage	Single phase 240/208/120Vac (4 wire output/L-L, N, G)220/230/240 Vac (3 wire output L, N, G)			
Output Voltage Regulation	+/- 3% Max., +/- 1% (Typ.)			
Output Frequency	+/- 0.5Hz/1 Hz/1.5 Hz (factory or authorized service center selectable only)			
Output Voltage THD	< 3% for linear load; 1% (Typ.); < 6% for non-linear load			
Common Mode Noise	< 0.5V Peak			
Rated Load Power Factor	0.7 (0.6-1.0) lag			
Efficiency (ac-dc-ac)	> than 85%			
Voltage Transient	< +/- 8% (load of 0 to 100%)			
Rated Output Current @ 240V	10A	15A	25A	33.3A
Max. Peak Output Current	30A	45A	75A	100A
Overload Capacity	150% for 10 seconds/125% for 10 minutes/1000% for 1 cycle			
Operation Diagnostics				
Battery Check	Performed on start up, by schedule, on-demand (user configurable)			
Battery Lifetime LED and beeps)	UPS calculates battery replacement time based upon battery ambient temperature (LCD display,			
Internal Temperature	UPS gives indication of internal temperature, alarm when high temperature			
Event Data Storage	64-On-Line Mode, 32-Battery Backup, 16-Fault Condition			
Bypass Switch	Static switch <4msec, automatic with reverse transfer, manual			
User Interface				
RUN/STOP Disable	User can disable RUN/STOP; Selectable by keypad, also via SNMP option			
Remote ON/OFF	Standard, external terminal, also via SNMP option			
UPS Operation; 6 keys	RUN/STOP, SET/Monitor, shift/select, del/(page up), Reset (page.down)			
Power Connections	Hard Wire (Standard), snap-in receptacle panels (optional)			
Emergency Power Off	Standard (Terminal contacts only)			
Mechanical Design				
Enclosure	Enclosure of unit made from metal meeting NEMA 1 and UL Type 1			
Battery Packs				
Battery Pack Size	5" H x 7.3" W x 18.2" D (6 batteries of NP7-12FR per pack)			
Battery Pack Quantity	2	2	3	4

1600/1600 Plus Series
External Layouts/Dimensions/Shipping Weights





DIMENSIONS (INCHES)						SHIPPING WEIGHTS (LBS.)	
Model	A	B	C	D	E	1600 Plus Model	1600 Model
2.4kVA	21.75	10	30	18.95	2.8	280	265
3.6kVA	21.75	10	30	18.95	2.8	280	265
6.0kVA	27.5	10	33	24.7	2.8	385	370
8.0kVA	28.25	13	33.5	25.45	2.8	490	475

ADJUSTABLE SPEED DRIVES • CONTROLS • SWITCHGEAR • UPS • MOTORS • PLC

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