MINUTEMAN®
POWER TECHNOLOGIES
by Para Systems, Inc.

EnterprisePlus LCD™ Series Sine Wave UPS
Standard: E750RT2U / E1000RT2U / E1500RT2U / E2000RT2U / E3000RT2U
Extended: E750RTXL2U / E1000RTXL2U / E1500RTXL2U / E2000RTXL2U E3000RTXL2U
NC Models: **add NC** to model numbers for pre-installed network card

Power & Versatility - Enhanced

The latest in Minuteman's popular Enterprise Series, the EnterprisePlus LCD offers users more of what has made the series one of our best selling lines. New features include lower cost standard runtime models, an informative LCD Display, and additional outlets vs. previous models.

Pure Power for Sensitive Equipment

The EnterprisePlus LCD Series of UPSs offer complete protection from all electrical problems, including spikes, surges, sags, brownouts, and blackouts, in a versatile rack/tower convertible format. True sine wave electrical output ensures the best power for sensitive electronic equipment.

Upgraded Features

The EnterprisePlus LCD features many upgrades from previous generations, including an LCD status display which shows the following:

- Input / Output voltage and frequency
- UPS and battery mode / status
- Load capacity & Error Codes
- Estimated runtime based on connected load

In addition to the LCD display, EnterprisePlus LCD models offer users their choice of runtime:

- **Standard Runtime models (RT2U)** utilize only internal batteries and are available at a lower cost
- **Extended Runtime models (RTXL2U)** feature the ability to add external battery packs for greatly increased runtimes
- **Network Card models (NC)** feature a pre-installed SNMP-NV6 network card

Features

- **0.8 & greater power factor** - get increased capacity without migrating to larger models
- **Load shedding** - three power banks (2 switchable, 1 always-on for critical loads) allow equipment prioritizing for increased runtime
- **Independent Battery Bypass™** - provides voltage regulation with surge and spike protection even when batteries are weak or dead.
- **Virtually unlimited runtime with XL Models** - no limitation on the number of external battery packs
- **Alarm silence button on front panel**
- **Flexibility in installation** - rack or tower configurable; optional wallmount kits available
- **Small form factor** - 3.5-inch (2U) rack/tower case

Capacity
☐ Small   ☑ Midsize   ☑ Enterprise level

Applications
☑ Workstations   ☑ Network/Server   ☑ Phone & Security Systems

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- **Independent battery pack chargers** - reduces battery recharge times for XL Models
- **Simultaneous DB-9, USB and SNMP communications**
- **Minuteman® SentryHD™** - UPS monitoring and control software included
- **Easy to read LCD display** - with load/battery meter
- **Industry leading product protection** - with 3-year non-prorated warranty (including batteries)
- **Dedicated remote Emergency Power Off (EPO) port**
- **120V & 208V** - 208V models available (1500 & 3000VA models)
- **RoHS 2 compliant**

Go Green - RoHS 2 Compliant

In accordance with Minuteman's focus on environmental responsibility, EnterprisePlus LCD models were designed to meet the following standards:

- **RoHS 2:** compliant with the updated directive as defined by the European Economic Union for the reduction of hazardous substances in electronic equipment: 2011/65/EU

Guaranteed Reliability

- **3-year standard warranty** covering all parts and labor, as well as non-prorated coverage of batteries
- **5-year extended warranty** plans available
- **Platinum Protection Plan®** insures properly connected equipment up to $100,000 (U.S. 48 & Canada only)

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More Models to Maximize Your Value

Minuteman's EnterprisePlus LCD Series UPSs come in standard and extended runtime, giving you the best value for your needs.

Standard runtime models (RT2U) feature the same specifications and power output properties without extended runtime capability.

Extended runtime models (RTXL2U) add optional XL and EXL battery packs to increase runtimes dramatically. 208V also available.

Network card models (NC) feature a pre-installed SNMP-NV6 network card.

- **Standard Runtime:**
  E750RT2U, E1000RT2U, E1500RT2U, E2000RT2U, E3000RT2U

- **Extended Runtime (XL):**
  E750RTXL2U, E1000RTXL2U, E1500RTXL2U, E2000RTXL2U, E3000RTXL2U

- **208V (T):**
  E1500RTXLT2U, E3000RTXLT2U

- **Pre-installed Network Card:** Add NC to Model #'s

Electrical Characteristics

Output Power Factor

All EnterprisePlus LCD models feature a 0.8 or greater power factor, which increases the watt capacity of the units. Offering larger capacities in smaller UPS VA sizes reduces the overall cost of the UPS solution for a specific load requirement.

Output Voltage

All units in the EnterprisePlus LCD Series produce an electrical signal that does not vary from nominal voltage by more than 5%. Tightly regulating the output voltage increases the quality of power to connected equipment adding to its life expectancy, which lowers the total cost of ownership to users.

Total Harmonic Distortion (THD)

THD is the distortion of a normal AC electrical signal commonly caused when UPS connected loads near the capacity of the units. This distortion can cause internal heat to build up on sensitive equipment not designed to allow for these altered AC signals. The EnterprisePlus LCD UPS maintains an output AC signal, at all times and with linear loads, within 2% of a true sine wave.

Output Receptacle Control

Three banks of receptacles (one always-on for critical devices, two controllable via SentryHD™ and an SNMP card) allow users to increase runtime for more critical devices during an extended blackout.

Through the use of Minuteman's SentryHD software or communication with the UPS through an Ethernet connection, users can either turn on, off, or reset each segment independently. By reducing the connected load draw on the UPS, the runtime of critical devices can be extended significantly.

Communication Features

The EnterprisePlus LCD UPS provides users with the ability to communicate with the UPS simultaneously through three separate protocols: RS-232, USB and Ethernet. Users can directly connect and manage the UPS from multiple stand-alone, or networked computers. The UPS can provide detailed monitoring and management to many various environments.

Other Features

RoHS 2 Compliancy

Para Systems developed the EnterprisePlus LCD Series to be compliant with the updated RoHS2 Directive as defined by the European Economic Union directive on the reduction of hazardous substances in electronic equipment: 2011/65/EU.

Manual and Automatic Self-Testing

The EnterprisePlus LCD UPS is designed to proactively notify users of any impending faults or failures with the UPS. This allows for preemptive repair or replacement of components or batteries preventing unexpected downtime caused by the UPS.

Dedicated EPO Port

This direct access port allows users to perform an immediate remote shutdown of the UPS in cases of emergency or when access to the UPS is restricted or inconvenient.

[1]1500, 2000, and 3000VA models only

Rear View of E750RTXL2U

Rear View of E2000RTXL2U

1 Remote EPO Connection
2 USB Comm. Port
3 RS-232 Comm. Port
4 Output Voltage Dipswitch
5 Network/Phone Surge Protection
6 External Battery Connection
7 SNMP Option Slot
8 L5-20R 20 Amp Locking Output[1]
9 Output Receptacles (Load 1)
10 Output Receptacles (Load 2)
11 Output Receptacles (Load 3)[2]
12 Input Circuit Breaker
13 10 ft. Power Cord

[1] 2000VA Model Only, L5-30R on 3000VA
[2] 750, 1000, & 1500VA Models Only

Battery Characteristics

Extended Runtime Capability

All Extended Runtime (RTXL) models of the EnterprisePlus LCD UPS come standard with internal batteries. To protect critical devices through extended blackouts, the EnterprisePlus LCD UPS Series utilizes external battery packs that can be daisy-chained in unlimited quantities to provide a virtual unlimited amount of battery runtime.

Fast Battery Recharge (XL Battery Packs only)

With independent chargers in each battery pack offered for the EnterprisePlus LCD UPS Series, the maximum recharge time for depleted batteries is 8 hours, no matter how many battery packs are installed on a UPS. Without these chargers, battery charging could take more than an entire day if more than one battery pack is used.

Battery Pack Models

Because each UPS has different battery requirements to support its maximum load capacity, the EnterprisePlus LCD Series uses battery packs sized to match each UPS model:

MODELS:	XL	EXL
E750RTXL2U	BP36RTXL	BP36RTEXL
E1000RTXL2U	BP36RTXL	BP36RTEXL
E1500RTXL2U	BP36RTXL	BP36RTEXL
E2000RTXL2U	BP72RTXL	BP72RTEXL
E3000RTXL2U	BP72RTXL	BP72RTEXL
E1500RTXL2U	BP36RTXL	BM36RTEXL
E3000RTXLT2U	BP72RXTXL	BP72RXTEXL

Battery Technology

All EnterprisePlus LCD units and battery packs use valve-regulated lead-acid batteries (VRLA). These are safe for any type of freight transport. For added protection, all EnterprisePlus LCD UPS models ship with batteries disconnected. A "Quick Installation Guide" is included in each EnterprisePlus LCD box to detail how to connect the batteries before turning on the units.

Hot-Swappable Batteries

The EnterprisePlus LCD UPS offers battery replacement, through the front panel of the UPS, without having to remove the UPS from service. Connected loads are protected from voltage anomalies and spikes and surges while the batteries are being replaced.

New LCD Front Panel Display

EnterprisePlus LCD UPS products now feature an informative LCD display. This display offers real-time feedback on the following areas:

- Input / Output Voltage and Frequency Display to monitor the status of your utility power
- UPS Battery Mode/Status Icons which eliminates guesswork with a straightforward display of the UPS status
- Load Capacity Indicator displays how much of a connected load is being placed on the unit
- Numeric Estimated Runtime Display which is based on the connected load to indicate how much backup time remains during a blackout

Unit Status
Load Meter
Battery Meter
Numeric Display (input, output voltage and frequency, estimated runtime, kVA, KW, error codes)
Power On/Off/Test
Alarm Silence
Display Scroll

Minuteman Support

- **Minutemanups.com** - Full product specifications, manuals, catalogs, FAQs, troubleshooting, & more
- **SizeMyUPS.com** - Easy-to-use interactive UPS sizing site offering an extensive database of equipment power ratings to guarantee proper UPS selection for your system

SentryHD™ Management Software Included

Minuteman's SentryHD™ UPS monitoring and control software comes included with each EnterprisePlus LCD UPS unit at no extra charge. With SentryHD™ software, users can monitor and control any new, and most legacy, Minuteman UPS products on a connected network from one application session. The ease of installation, ease of use, and backward compatibility makes it the best software of its kind.
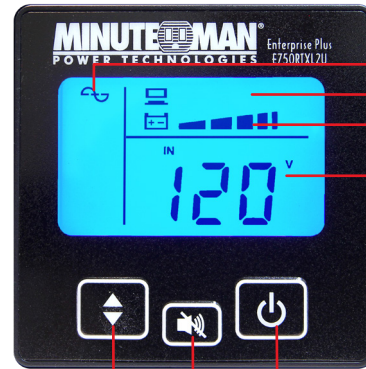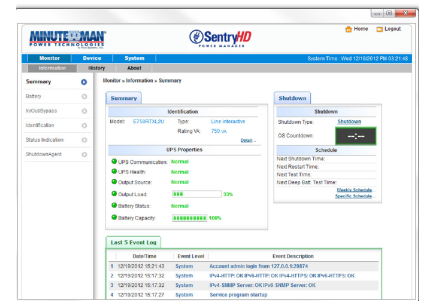
- Support for 32/64-bit operating systems Compatible with Windows
  (10 (32-bit/64-bit), 8 (32-bit/64-bit), 7 (32-bit/64-bit), Vista (32-bit/64-bit), XP SP2, Server 2012 R1/R2 (64-bit), Server 2008 R1 (32-bit/64-bit), Server 2008 R2 (64-bit), 2008 Server Core, Hyper-V 2008R2, Server 2003)
- Linux operating systems.
- Batch configuration
- SNMP, (v1, v2c, v3), trap support
- Combined with Minuteman's MM Shutdown Agent, can control up to 255 devices

- Supports scheduled UPS shutdown, restart and battery testing
- Send e-mail and SMS alarm notices
- Supports both RS232 and USB communication protocols
- Supports web browser access through HTTP and HTTPs

EnterprisePlus LCD™ UPS Models & Specifications

*Specifications are the same for standard (RT2U), extended runtime (RTXL2U), and network card (NC) models **except XL external battery packs***

MODELS:	STANDARD RUNTIME / EXTENDED RUNTIME 208V / EXTENDED RUNTIME (NC) / 208V (NC)	E750RT2U E750RTXL2U / E750RTXL2UNC	E1000RT2U E1000RTXL2U / E1000RTXL2UNC	E1500RT2U E1500RTXL2U (E1500RTXLT2U) E1500RTXL2UNC (E1500RTXLT2UNC)	E2000RT2U E2000RTXL2U / E2000RTXL2UNC	E3000RT2U E3000RTXL2U (E3000RTXLT2U) E3000RTXL2UNC (E3000RTXLT2UNC)
Maximum Power Capacity (VA/Watts)		750/600	1000/800	1500/1200	2000/1760	3000/2560
Topology		Line-Interactive, True Sine Wave Uninterruptible Power Supply				
Power Factor		0.8	0.8	0.8	0.88	0.853
Battery and Surge Protected Receptacles		8 - 5-15R	8 - 5-15R	8 - 5-15R (6 - 6-15R)	8 - 5-15/20R, 1 - L5-20R	7 - 5-15/20R, 1 - L5-30R (6 - 6-15/20R, 1 - L6-30R)
Input Connection (with 10 ft power cord)		5-15P	5-15P	5-15P (6-15P)	5-20P	L5-30P (L6-30P)
Mounting/Installation		Rackmount/Tower and Wallmount				

Input					
Number of Phases	Single (1Ø 2W +G)				
Nominal Voltage•Voltage Range	120VAC (208VAC) • 80-164VAC (150-271VAC)				
Frequency Range / Acceptable Input Voltage	50/60Hz +/-6Hz Autosensing / 0-165VAC (0-300VAC)				
Low Voltage Transfer Point	80V (150V) resets to utility power at 85V (157V) or higher				
High Voltage Transfer Point	164V (271V) resets to utility power at 159V (264V) or lower				
Input Protection	Resettable circuit breaker				

Output Non-battery Operation					
Voltage Range • Voltage Regulation	120VAC: 101-136VAC • -15.8% to 11.7% (208VAC: 186-236VAC) / -10.6% to +13.5%				
Frequency Range • Efficiency (Line Mode)	60Hz/50Hz ±6Hz • >93% at full load		60Hz/50Hz ±6Hz • >97% at full load		

Output Battery Operation					
Nominal Voltage	120/125VAC (208/240VAC)				
Voltage Regulation	120VAC (208VAC) ±5% until low battery warning				
Frequency	±0.1Hz unless synchronized to line				
Voltage THD	<5% at full rated linear load / <12% at full rated non-linear load				
Dynamic Response • Transfer Time	±10% @ 100% Load change in 30 ms				
Waveform	True Sine wave				
Overload capacity	110% for 20 seconds, 125% for 10 seconds, 150% shutdown immediately				
Protection	Over current, Short circuit protection and Latching shutdown				

Battery System					
Battery Type	Sealed, non-spillable, maintenance free, valve regulated lead acid				
Typical Recharge Time	8 hours from total discharge to 90%				
Typical Battery Life	3-5 years, depending on discharge cycles and ambient temperature				
System Voltage	36VDC	36VDC	36VDC	72VDC	72VDC
Battery Module	BM0029	BM0029	BM0030	BM0031	BM0032
Runtime: Half •Full Load (minutes)	17 • 8	15 • 5	11 • 4	13 • 5	8 • 3

Surge Protection and Filtering					
Surge Energy Rating (Joules)	1000J (800J)				
Surge Current Capability	6500Amps total				
Surge Response time	0ns(instanaeous) normal mode: <5 ns common mode				
Noise Filter	normal and common mode EMI/RFI suppression				
Audible Noise at 1 m (3 ft.)	<45dBA	<45dBA	<45dBA	<60dBA	<60dBA

Environmental					
Temperature: Operating • Storage	+32° to +104°F (0° to 40°C) • +5° to +113°F (-15° to +45°C)				
Humidity: Operating/Storage	95% non-condensing				
Elevation: Operating•Storage	0 to 10,000ft. (0 to 3,000m) • 0 to 50,000ft. (0 to 15,000 m)				

Physical					
Size: Net (L x W x H) in (mm)	17.4 x 19.0 x 3.5 in (442.0 x 482.6 x 89.0 mm)			24.0 x 19.0 x 3.5 in (610.0 x 482.6 x 89.0 mm)	
Size: Shipping (L x W x H) in (mm)	23.6 x 21.7 x 9.1 in (600.0 x 551.0 x 230.0 mm)			39.4 x 23.6 x 9.1 in (1000.0 x 600.0 x 230.0 mm)	
Weight: Net / Shipping	41.2 lb (18.7 kg) / 49.8 lb (22.6 kg)	44.1 lb (20.0 kg) / 52.7 lb (23.9 kg)		72.1 lb (32.7 kg) / 88.2 lb (40.0 kg)	78.0 lb (35.4 kg) / 93.7 lb (42.5 kg)

External Battery Packs (XL & EXL EXTENDED RUNTIME MODELS ONLY)					
Battery Pack	BP36RTXL BP36RTEXL	BP36RTXL BP36RTEXL	BP36RTXL BP36RTEXL	BP72RTXL BP72RTEXL	BP72RTXL BP72RTEXL
Typical Recharge Time	8 hours to 90% after full load discharge				
Size: Net (L x W x H)	17.0 x 19.0 x 3.5 in (432.0 x 482.6 x 89.0 mm)				
Size: Shipping (L x W x H)	23.6 x 21.7 x 9.1 in (600.0 x 551.0 x 230.0 mm)				
Weight: Net • Shipping lb (kg)	56.0 lb (25.4 kg) • 66.1 lb (30.0 kg)				

Regulatory Compliance (UPS and Battery Packs)					
Safety and Approvals	RoHS2 Directive 2011/65/EU, cUL, CE, FCC Class B				
Warranty • Platinum Protection	Three-years parts, labor, & battery (non-prorated); 5-year extended plans available • $100,000				

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