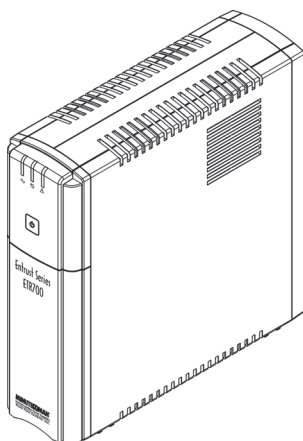**MINUTE☉MAN®**

Power Technologies

From Para Systems, Inc.
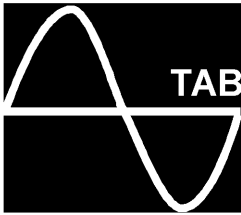
Entrust Series UPS

User's Manual

TABLE OF CONTENTS

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INTRODUCTION

1

Thank you for purchasing this power protection product. It has been designed and manufactured to provide many years of trouble free service.

IMPORTANT SAFETY INSTRUCTIONS
SAVE THESE INSTRUCTIONS !

Please read this manual before installing your Entrust Series UPS, models ETR500, ETR700, ETR1000, ETR1500, ETR700p15, ETR1500p15 as it provides important information that should be followed during installation and maintenance of the UPS and batteries allowing you to correctly set up your system for the maximum safety and performance. Included is information on customer support and factory service if it is required. If you experience a problem with the UPS please refer to the Troubleshooting guide in this manual to correct the problem or collect enough information so that the Technical Support Department can rapidly assist you.

This symbol indicates "ATTENTION"

This symbol indicates "Risk of Electrical Shock"

This symbol indicates "Alternating Current Supply Phase"

This symbol indicates "Alternating Current Supply"

This symbol indicates "Direct Current Supply"

This symbol indicates "Equipment Grounding Conductor"

CAUTION! Connect the UPS to a two pole, three wire grounding AC wall outlet. The receptacle must be connected to the appropriate branch protection (circuit breaker or fuse). Connection to any other type of receptacle may result in a shock hazard and violate local electrical codes. Do not use extension cords, adapter plugs, or surge strips.

CAUTION! To reduce the risk of fire, connect only to a circuit provided with 20 amperes maximum branch circuit over-current protection in accordance with the National Electric Code, ANSI/NFPA 70.

CAUTION! To reduce the risk of electrical shock with the installation of this UPS equipment and the connected equipment, the user must ensure that the combined sum of the AC leakage current does not exceed 3.5mA.

CAUTION! To reduce the risk of electrical shock in conditions where the load equipment grounding cannot be verified, disconnect the UPS from the AC wall outlet before installing a computer interface cable. Reconnect the power cord only after all signaling connections are made.

WARNING: This Uninterruptible Power Supply contains potentially hazardous voltages. Do not attempt to disassemble the UPS beyond the battery replacement procedure. This UPS contains no user serviceable parts. Repairs and Battery replacement must be performed by **QUALIFIED SERVICE PERSONNEL ONLY.**

WARNING: Risk of Electrical Shock. Hazardous live parts inside these power supplies are energized from the battery even when the AC input is disconnected.

CAUTION! To de-energize the outputs of the UPS:
1. If the UPS is on press and release the On/Off Button.
2. Disconnect the UPS from the AC wall outlet.
3. To de-energize the UPS completely, disconnect the battery.

English

NOTICE: This equipment has been tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Sub-part J of Part 15 of FCC Rules and the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference of the Canadian Depart-ment of Communications.   These limits are designed to provide reasonable protection against such interference in a residential installation.   This equip-ment generates and uses radio frequency and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, this equip-ment may cause interference to radio and television reception.   If this equip-ment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
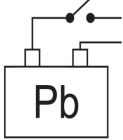
■   Re-orient the receiving antenna.
■   Relocate the computer with respect to the receiver.
■   Move the computer away from the receiver.
■   Plug the computer into a different outlet so that the computer and receiver are on different branch circuits.
■   Shielded communications interface cables must be used with this product.

⚠ **WARNING:** Changes or modifications to this unit not expressly ap-proved by the party responsible for compliance could void the user's authority to operate the equipment.

Receiving Inspection

After removing your UPS from its carton, it should be inspected for damage that may have occurred in shipping.   Immediately notify the carrier and place of purchase if any damage is found.   Warranty claims for damage caused by the carrier will not be honored.   The packing materials that your UPS was shipped in are carefully designed to minimize any shipping damage.   In the unlikely case that the UPS needs to be returned to the manufacturer, please use the original packing material.   Since the manufacturer is not responsible for ship-ping damage incurred when the system is returned, the original packing mate-rial is inexpensive insurance.   **PLEASE SAVE THE PACKING MATERIALS!**

⚠ CAUTION IF DAMAGED

Pb
Battery is NOT connected

BATTERIES, SEALED NON-SPILLABLE
Packages, crushed, punctured, or torn such that contents are revealed, should be set aside in an isolated area and be inspected by a qualified person. If the package is deemed to be not shippable, contents shall be promptly collected, segregated, and either the consignor or consignee contacted.

NOTE: These UPSs are shipped with the batteries disconnected.   The batter-ies must be connected before putting these UPSs into service.   Refer to Sec-tion 3 "Installation" for connecting the batteries.

Life Support Policy

As a general policy, we do not recommend the use of any of our products in life support applications where failure or malfunction of the product can be reasonably expected to cause failure of the life support device or to significantly affect its safety or effectiveness. We do not recommend the use of any of our products in direct patient care. We will not knowingly sell our products for use in such applications unless it receives in writing assurances satisfactory to us that (a) the risks of injury or damage have been minimized, (b) the customer assumes all such risks, and (c) our liability is adequately protected under the circumstances.

Examples of devices considered to be life support devices are neonatal oxygen analyzers, nerve stimulators (whether used for anesthesia, pain relief, or other purposes), auto transfusion devices, blood pumps, defibrillators, arrhythmia detectors and alarms, pacemakers, hemodialysis systems, peritoneal dialysis systems, neonatal ventilator incubators, ventilators for both adults and infants, anesthesia ventilators, and infusion pumps as well as any other devices designated as "critical" by the United States FDA.

Hospital grade wiring devices and leakage current may be ordered as options on many of our UPS systems. We do not claim that units with this modification are certified or listed as Hospital Grade by us or any other organization. Therefore, these units do not meet the requirements for use in direct patient care.

CONTROLS AND INDICATORS
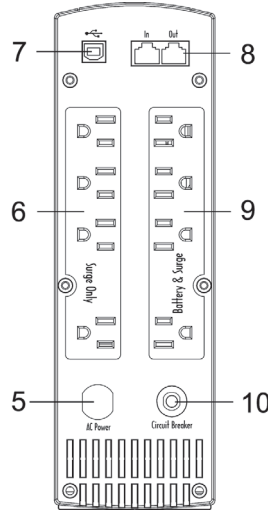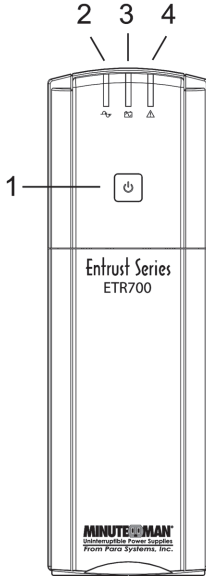
1. On/Off Button.
2. AC Mode (Green) LED.
3. On Battery (Yellow) LED.
4. Bad Battery/Overload/Fault (Red) LED.
5. Input power cord.
6. Surge Only output power receptacles.
7. The USB communications port is for UPS monitoring and control.
8. The RJ11/45 are used for phone/fax/modem and network protection.
9. Battery Backup and Surge output power receptacles.
10. Input circuit breaker.

Model #	Input Power Plug	Output Power Receptacles
ETR500	NEMA 5-15P W/6 ft cord	4-NEMA 5-15R Surge Only 4-NEMA 5-15R Battery Backup & Surge
ETR700		
ETR1000		
ETR1500		
ETR700p15	NEMA 5-15P W/15 ft cord	
ETR1500p15		

Status LED and Alarm Table				
UPS Status	Green LED	Yellow LED	Red LED	Alarm
Self-Test	All LEDs cycle (each LED Blinks 1/1.5seconds)			1-Beep/5-sec
AC Mode				
Normal	On	Off	Off	Off
Boost	1-Blink/1.5sec	Off	Off	Off
Buck	2-Blinks/sec	Off	Off	Off
Self low Battery	On	Off	2-Blinks/sec	3-Beeps/30-sec
Overload	On	Off	2-Blinks/sec	2-Beeps/sec
Battery Mode				
Normal	Off	On	Off	1-Beep/5-sec
Overload	Off	On	2-Blinks/sec	2-Beeps/sec
Low Battery	Off	2-Blinks/sec	Off	2-Beeps/5-sec
Short/Fault Mode	Off	Off	On	Continuous
Over-Bat/Bat Fault	Off	Off	2-Blinks/sec	3-Beeps/5-sec

INSTALLATION
3

INSTALLATION PLACEMENT
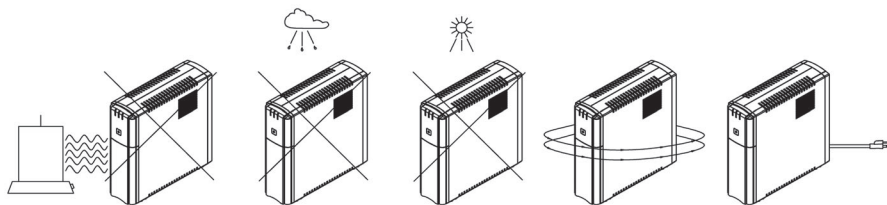
This UPS series is intended to be install in a temperature controlled environment that is free of conductive contaminants. Avoid locations near heating devices, water or excessive humidity, or where the UPS is exposed to direct sunlight. Select a location which will provide good air circulation for the UPS at all times. Route power cords so they cannot be walked on or damaged.

INSTALLATION
Be sure to read the installation placement and all the cautions before installing the UPS. Place the UPS in the final desired location and complete the rest of the installation procedure. These UPSs are shipped with the internal batteries disconnected. The batteries must be connected before putting these UPSs into service. See the Connecting The Batteries procedure to connect the batteries.

CONNECTING THE BATTERIES

(QUALIFIED SERVICE PERSONNEL ONLY)

Please read all of the **WARNINGS** and **CAUTIONS** before attempting to connect the batteries.

1. Remove the UPS from the shipping box and set on a table or a bench top.
2. Remove the retaining screws from the bottom of the front panel of the UPS. (FIG. 1)
3. Gently push the top of the battery compartment cover inward and then slide the battery compartment cover off the UPS. (FIG. 2)
4. For the ETR500/700: Grasp the battery pull tab and gently pull the battery out far enough to connect the battery positive (Red) wire. (FIG. 3)

NOTE: The ETR1000/1500 have Red Anderson connectors to connect the battery.

5. Verify proper polarity. For the ETR500/700: Connect the battery positive (Red) wire to the battery positive (Red) terminal. For the ETR1000/1500: Connect the two Red Anderson connectors together. (FIG. 3)
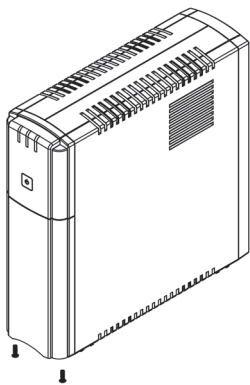
NOTE: Some sparking might occur, this is normal.

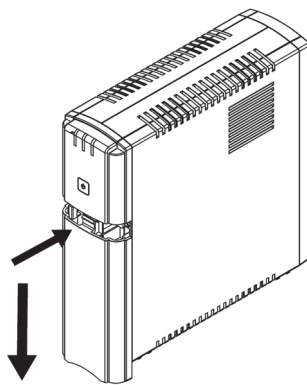6. Re-install the battery compartment cover onto the UPS.

WARNING: DO NOT pinch the battery wires with battery compartment cover.

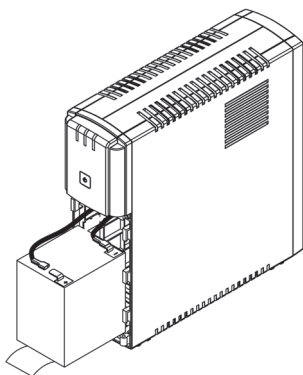7. Re-install the battery compartment cover retaining screws.
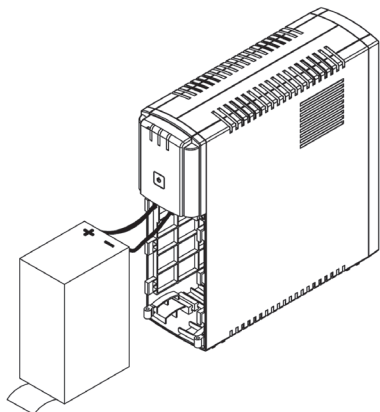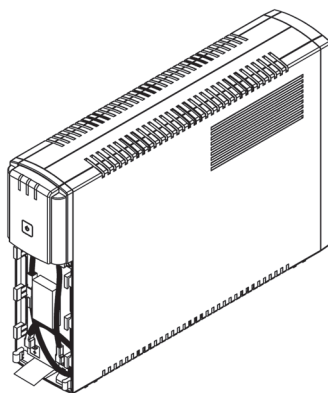8. Continue with the rest of the Installation.

FIG. 1

FIG. 2

FIG. 3: ETR500

FIG. 3: ETR700   **FIG. 3: ETR1000/1500**

CONNECTING YOUR EQUIPMENT

Plug the mission critical equipment into the Battery Backup & Surge output receptacles on the rear panel of the UPS. Plug the non-critical equipment into the Surge Only output receptacles on the rear panel of the UPS. Do not use extension cords, adapter plugs or surge strips on the output of the UPS. Ensure that you do not exceed the maximum output rating of the UPS (refer to the information label or the electrical specifications in this manual).

⚠ **CAUTION! DO NOT** connect a laser printer to the output receptacles on the UPS.

CONNECTING THE UPS TO AN AC SOURCE

CAUTION **-** To reduce the risk of fire, connect only to a circuit provided with 20 amperes maximum branch circuit over-current protection in accordance with the National Electric Code, ANSI/NFPA 70. Plug the UPS into a two pole, three wire, grounded receptacle only. Do not use extension cords, adapter plugs, or surge strips.

CHARGING THE BATTERY

The UPS will charge the internal batteries whenever the UPS is connected to an AC source and there is an acceptable AC voltage present (90 - 150VAC). It is recommended that the UPS's batteries be charged for a minimum of 4 hours before use. The UPS may be used immediately, however, the "On Battery" runtime maybe less than normally expected. **NOTE:** If the UPS is going to be out of service or stored for a prolonged period of time, the batteries must be recharged for at least twenty-four hours every ninety days.

USB COMMUNICATIONS PORT CONNECTION (OPTIONAL)

The Power Monitoring Software can be used with the UPS. Use the interface cable that comes with the UPS. Connect one end of the USB cable to the USB communications port on the rear panel of the UPS. Connect the other end of the USB cable to the device that will be monitoring/controlling the UPS. **NOTE:** Connecting to the communications port is optional. The UPS works properly without this connection.

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<u>**PHONE/FAX/MODEM/NETWORK PROTECTION CONNECTION**</u> (OPTIONAL)

Connect a 10/100 Base-T network, single line phone, fax or modem line to the RJ-11/45 modular connectors on the rear panel of the UPS. This connection will require another length of telephone cable (provided) or network cable. The cable coming from the telephone service or network system is connected to the port marked "IN". The equipment to be protected is connected to the port marked "OUT". **NOTE:** Connecting to the phone/fax/modem/network modular connectors is optional. The UPS works properly without this connection.

OPERATION

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<u>**SYSTEM OVERVIEW**</u>

This Line-Interactive UPS protects computers, internetworking, and telecommunications equipment from blackouts, brownouts, overvoltages, and surges. The AVR function continuously corrects the voltages, in-between the brownout and overvoltage transfer points (90 - 150VAC), to a safe usable level. When the UPS is operating in the AVR mode the audible alarm will remain silent and the AC Mode indicator will blink. During normal AC operation, the UPS will quietly and confidently protect your system from power anomalies.

The UPS will charge the batteries with the UPS in the on or off position when the UPS is plugged into the wall outlet and there is an acceptable AC voltage present (90 - 150VAC). When a blackout, brownout, or an overvoltage condition occurs; the UPS will transfer to the battery mode, the On Battery indicator will illuminate and the audible alarm will sound once every five seconds indicating that the commercial power is lost or unacceptable. When the commercial power returns or is at an acceptable level, the UPS will automatically transfer back to the AC normal mode and start recharging the batteries. During an extended outage when there is approximately two minutes of backup time remaining the audible alarm will sound twice every five seconds. This Low Battery Warning is letting the user know that they should save all open files and turn off their computer. When the batteries reach the predetermined level the UPS will automatically shutdown protecting the batteries from over discharging. Once the commercial power returns the UPS will automatically restart, providing safe usable power to the connected equipment and start recharging the batteries.

TURNING THE UNIT ON/OFF

On / Off Button

Press and release the On/Off Button to turn the UPS on. The alarm will sound one beep and the LEDs will cycle while the UPS performs a five second internal self-test. Once the UPS has passed its internal self-test the UPS will provide an output and the load will be powered. Press and release the On/Off Button to turn the UPS off. The UPS will continue to charge the batteries whenever it is plugged into a wall outlet and there is an acceptable AC voltage present.

USB COMMUNICATIONS PORT

The USB communications protocol is HID. The HID USB driver comes standard in the Windows OS. Simply plug the USB cable into the UPS and the computer then follow the prompts on the screen.

POWER MONITORING SOFTWARE

The UPS comes with power monitoring software. See the software CD for the installation of the power monitoring software.

ALARMS

ON BATTERY

When the UPS is operating on the batteries, the On Battery LED will illuminate and the audible alarm will sound once every five seconds. The alarm will stop once the UPS returns to the AC normal mode.

LOW BATTERY WARNING

The UPS will sound two beeps every five seconds when the battery reserve runs low. This condition will continue until AC returns or the UPS shuts down from battery exhaustion.
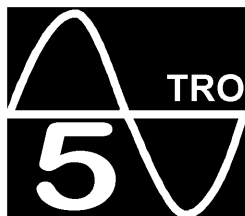
WEAK/BAD BATTERY

The UPS automatically tests the battery's condition and will illuminate the Bad Battery/Overload/Fault LED and sound the alarm. This alarm will be repeated until the batteries pass a self test. If the battery is weak, bad or disconnected, the Bad Battery/Overload/Fault LED will illuminate and the alarm will beep three times every thirty seconds until the battery is reconnected or replaced. It is recommended that the UPS be allowed to charge overnight before performing a battery test to confirm a Weak/Bad Battery condition.

OVERLOAD

When the amount of load attached to the UPS exceeds its power rating, the Bad Battery/Overload/Fault LED will illuminate and the UPS will sound 1 beep every half second (AC and Battery modes). This alarm will remain on until the excess load is removed or the UPS's self protection circuit shuts the UPS down.

UPS FAULT

When the UPS detects a hardware fault, the Bad Battery/Overload/Fault LED will illuminate and the UPS will sound a constant alarm. The fault condition, in some instances, may be reset by turning the UPS off and then on.

English

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UNINTERRUPTIBLE POWER SUPPLIES

5 TROUBLESHOOTING

Symptom	Possible Cause	What To Do
UPS will not turn on	On/Off/ button not pressed	Press and release the On/Off button to start UPS
UPS operates in battery mode only, even though there is normal AC present	Input AC circuit breaker is tripped	Reset circuit breaker by pressing the plunger back in. If the AC circuit breaker trips after UPS starts up, reduce the load on the UPS
Fault LED is illuminated	UPS has detected an internal fault	Call for service
The AC Mode LED is illuminated, but there is no output	The UPS is being controlled via its communications port	Disconnect the computer cable from the UPS and press the On button. If UPS works normally, the software has control of the UPS
UPS does not provide expected runtime	The batteries may be weak or at the end of useful service life	Charge the batteries for 8-hours and retest. If the runtime is still less than expected, the batteries may need to be replaced, even though the Weak/Bad Battery LED is not illuminated
Bad Battery LED is illuminated	Loose connections at the batteries, Weak batteries, Bad batteries	Check battery connections, charge the batteries for 8-hours, replace the batteries
Overload LED is illuminated	The load has exceeded the UPS's capacity	Check the specifications (see section 8). Remove part of the load
The AC Mode LED is blinking once every second and the audible alarm is silent	The UPS is operating in the Boost Mode	The UPS is performing its intended function
The AC Mode LED is blinking twice every second and the audible alarm is silent	The UPS is operating in the Buck Mode	The UPS is performing its intended function

REPLACING THE BATTERY

6

REPLACING THE BATTERY
(QUALIFIED SERVICE PERSONNEL ONLY)

Please read all of the **WARNINGS** and **CAUTIONS** before attempting to service the batteries.

WARNING! This UPS contains potentially hazardous voltages. Do not attempt to disassemble the UPS beyond the battery replacement procedure. This UPS contains no user serviceable parts. Repairs and battery replacement must be performed by **QUALIFIED SERVICE PERSONNEL ONLY.**

CAUTION: Do not open or mutilate batteries. Released electrolyte is harmful to the skin and eyes and may be toxic.

CAUTION: Do not dispose of batteries in a fire. The batteries may explode. The batteries in this UPS are recyclable. Dispose of the batteries properly. The batteries contain lead and pose a hazard to the environment and human health if not disposed of properly. Refer to local codes for proper disposal requirements or return the battery to the supplier.

CAUTION: Although the battery system voltage is only 12VDC and 24VDC the battery system can still present a risk of electrical shock. These batteries produce sufficient current to burn wire or tools very rapidly, producing molten metal. Observe these precautions when replacing the batteries:
1. Remove watches, rings, or other metal objects.
2. Use hand tools with insulated handles.
3. Wear protective eye gear (goggles), rubber gloves and boots.
4. Do not lay tools or other metal parts on top of batteries.
5. Disconnect the charging source prior to connecting or disconnecting the battery terminals.
6. Determine if the battery is inadvertently grounded. If the battery is, remove the source of the grounding. Contact with any part of a grounded battery can result in an electrical shock. The likelihood of such shock will be reduced, if such grounds are removed during installation and maintenance.

CAUTION: Replace batteries with the same number and type as originally in-stalled in the UPS. These batteries have pressure operated vents. These UPSs contain sealed non-spillable maintenance-free lead acid batteries.

Model #	ETR500	ETR700 ETR700p15	ETR1000	ETR1500 ETR1500p15
Battery Qty/Rating	1-12V5Ah	1-12V7Ah	2-12V7Ah	2-12V9Ah
First Power Part #	FP1245	FP1270	FP1270	FP1290
CSB Part #	HR1221W	GP1272	GP1272	HR1234W

BATTERY REPLACEMENT PROCEDURE

PLEASE READ THE CAUTIONS AND WARNINGS BEFORE ATTEMPTING TO REPLACE THE BATTERIES

Hot-swappable batteries mean that the batteries can be replaced without powering down the whole UPS system.

NOTE: If there is a power interruption while replacing the hot-swappable batteries, with the UPS on, the load will not be backed up. To hot-swap the batteries start with step number 6.

1. Turn off the equipment that is plugged into the output receptacles of the UPS.
2. Press and release the On/Off Button to turn the UPS off.
3. Unplug the UPS's power cord from the AC wall outlet.
4. Unplug the equipment from the output receptacles of the UPS.
5. Unplug the computer interface cable from the the UPS.
6. Remove the retaining screws from the bottom of the front panel of the UPS. (FIG. 1)
7. Gently push the top of the battery compartment cover inward and then slide the battery compartment cover off the UPS. (FIG. 2)
8. For the ETR500/700: Grasp the battery pull tab and gently pull the battery out far enough to disconnect the battery positive (Red) wire. (FIG. 3)

NOTE: The ETR1000/1500 have Red Anderson connectors to connect the battery.

9. Disconnect the battery negative (Black) wire. (FIG. 3)

NOTE: DO NOT short the battery wires together.

10. Remove the battery and set aside.

NOTE: Orient the new battery in the same direction as the original battery.
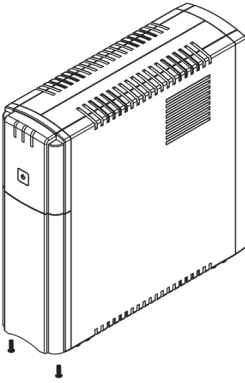
11. Place the new battery close enough to connect the battery wires.
12. Connect the battery negative (Black) wire to the battery negative terminal.
13. For the ETR500/700: Connect the battery positive (Red) wire to the battery posi-tive terminal. For the ETR1000/1500: Connect the Red Anderson connectors together

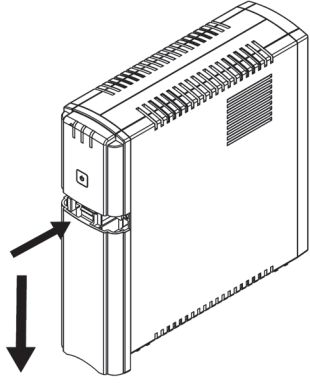**NOTE:** Some sparking might occur, this is normal.

14. Install the new battery into the UPS.
15. Re-install the battery compartment cover onto the UPS.

**WARNING:** DO NOT pinch the battery wires with battery compartment cover.

16. Re-install the battery compartment cover retaining screws.
17. Properly dispose of the old batteries at an appropriate recycling facility or return them to the supplier in the packing material for the new batteries.
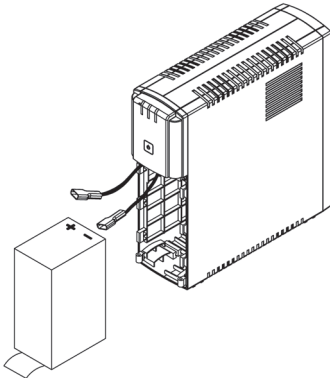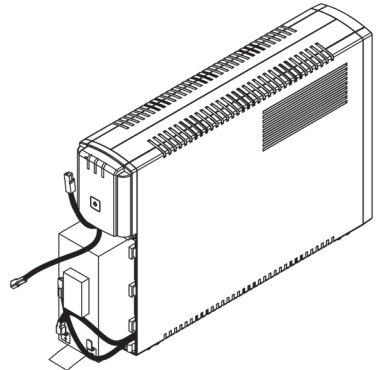18. The UPS is now ready for normal operation.

FIG. 1

FIG. 2

FIG. 3: ETR500

FIG. 3: ETR700

FIG. 3: ETR1000/1500

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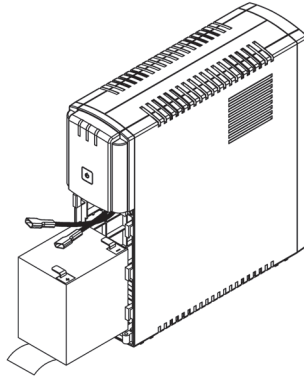
OBTAINING SERVICE

7

IF THE UPS REQUIRES SERVICE

1. Use the **TROUBLESHOOTING** section to eliminate obvious causes.
2. Verify there are no circuit breakers tripped. A tripped circuit breaker is the most common problem.
3. Call your dealer for assistance. If you cannot reach your dealer, or if they cannot resolve the problem call or fax the Technical Support department at the following numbers; Voice phone (972) 446-7363, FAX line (972) 446-9011 or contact Minuteman UPS at mmsupport@minutemanups.com.
   Please have the following information available BEFORE calling the Technical Support Department.
   A. Your name and address.
   B. Where and when the unit was purchased.
   C. All of the model information about your UPS.
   D. Any information on the failure, including LEDs that may be illuminated.
   E. A description of the protected equipment, including model numbers if possible.
   F. A technician will ask you for the above information and, if possible, help solve your problem over the phone. In the event that the unit requires factory service, the technician will issue you a Return Material Authorization Number (RMA #).
   G. If the UPS is under warranty, the repairs will be done at no charge. If not, there will be a charge for repair.
4. Pack the UPS in its original packaging. If the original packaging is no longer available, ask the Technical Support Technician about obtaining a new set. It is important to pack the UPS properly in order to avoid damage in transit. Never use Styrofoam beads for a packing material.
   A. Include a letter with your name, address, day time phone number, RMA number, a copy of your original sales receipt, and a brief description of the problem.
5. Mark the RMA # on the outside of all packages. The factory cannot accept any package without the RMA # marked on the outside.
6. Return the UPS by insured, prepaid carrier to:

Para Systems Inc.
MINUTEMAN UPS
1455 LeMay Drive
Carrollton, TX 75007
ATTN: RMA # _____

SPECIFICATIONS

SYSTEM SPECIFICATIONS				
Model Number	ETR500	ETR700 ETR700p15	ETR1000	ETR1500 ETR1500p15
Topology	Line-Interactive, Simulated Sine Wave			
Maximum Power Capacity	500VA 300W	700VA 420W	1000VA 600W	1500VA 900W
INPUT				
Number of Phase	Single (1∅ 2W +G)			
Nominal Voltage	120VAC			
Acceptable Input voltage	0 - 160VAC			
Voltage Range	90 - 150VAC			
Frequency Limits	50 or 60 Hz, +/-5Hz, autosensing			
Low Voltage Transfer Point	90V resets to Utility Power at 94V or higher			
High Voltage Transfer Point	150V resets to Utility Power at 146V or lower			
Input Protection	Resettable Circuit Breaker			
OUTPUT NON-BATTERY OPERATION				
Voltage Range	105 - 130VAC			
Voltage Regulation	120VAC: -12.5% - +8.4%			
Frequency Range	60Hz: 55 - 65Hz or 50Hz: 45 - 55Hz			
Efficiency (Line Mode)	>90% (Full Load)			
OUTPUT BATTERY OPERATION				
Waveform Type	Simulated Sine Wave (Step Wave)			
Nominal Voltage	120VAC			
Voltage Regulation	Nominal +/-6% (until Low Battery Warning)			
Frequency	50/60Hz, +/-0.5Hz (unless synchronized to utility)			
Transfer Time	6 ms Typical			
Overload Capacity	110% for 10-seconds 120% Shutdown Immediately			
Protection	Over-Current, Short-Circuit Protected and Latching Shutdown			
REGULATORY COMPLIANCE				
Safety and Approvals	UL1778, cUL (CSA 22.2 no. 107.1)			
EMC Verification	FCC Class B, CE certified			

BATTERY SYSTEM

Battery Type	Sealed, Non-Spillable, Maintenance Free, Value Regulated Lead Acid			
Typical Recharge Time	8-hours from total discharge			
Typical Battery Life	3-5 years, depending on discharge cycles and ambient temp			
System Voltage	12VDC	12VDC	24VDC	24VDC
Battery: Quantity/Rating	1-12V5Ah	1-12V7Ah	2-12V7Ah	2-12V9Ah
Runtime: Half Load (minutes)	9	10	14	11
Runtime: Full Load (minutes)	2	3	4	3

SURGE PROTECTION AND FILTERING

| Surge Energy Rating	320 J
Surge Current Capability	6500 Amps total
Surge Response Time	0 ns (instantaneous) normal mode; <5 ns common mode
Surge voltage let-through (as a percentage of an applied ANSI C62.41 Cat. A +/-6 kV)	< 5%
10/100 Base-T surge protection let-through (as a percentage of an applied +/-6 kV 1.2/50 us, 500 a 8/20 uS test)	< 5%
Telephone line surge protection let-through (as a percentage of an applied +/-6 kV 1.2/50 us, 500a 8/20 uS test)	< 1%
Noise Filter	normal and common mode EMI/RFI suppression
Audible Noise at 1 m (3 ft.)	<45 dBA

ENVIRONMENTAL

Operating Temperature Operating Elevation	0 to 40 degrees C (+32 to +104 degrees F) at 0 to 1,500m (0 to +5,000 ft)
Operating Temperature Operating Elevation	0 to 35 degrees C (+32 to +95 degrees F) at 1501 to 3,000m (0 to +10,000 ft)
Storage Temperature	-15 to +45°C (+5 to +113°F)
Operating/Storage Humidity	95% Non-Condensing
Storage Elevation	0 to 15,000m (0 to +50,000 ft)

PHYSICAL

Size - Net L X W X H	10.91 x 3.43 x 10.80" 277.2 x 87 x 274.4 mm		16.4 x 3.43 x 10.80" 412.5 x 87 x 274.4 mm	
Weight - Net (ETR700p15, ETR1500p15)	13.23 lbs 6.0 Kgs	15.44 lbs 7.0 Kgs (16.14 lbs 7.32 Kgs)	28.89 lbs 13.1 Kgs	29.33 lbs 13.3 Kgs (30.12 lbs 13.66 Kgs)
Size - Shipping L X W X H (ETR700p15, ETR1500p15)	16.14 x 7.09 x 15.94" 410 x 180 x 405 mm (16.04 x 8.19 x 15.94" 410 x 208 x 405 mm)		21.26 x 7.09 x 15.94" 540 x 180 x 405 mm (21.26 x 8.19 x 15.94" 540 x 208 x 405 mm)	
Weight - Shipping (ETR700p15, ETR1500p15)	18.0 lbs 8.0 Kgs	20.0 lbs 9.0 Kgs (21.0 lbs 9.32 Kgs)	34.0 lbs 15.2 Kgs	34.0 lbs 15.4 Kgs (35.0 lbs 15.66 Kgs)
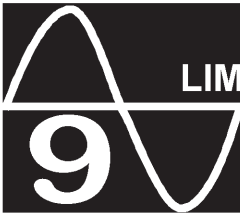
LIMITED PRODUCT WARRANTY

Para Systems, Inc. (Para Systems) warrants this equipment, when properly applied and operated within specified conditions, against faulty materials (excluding the batteries) or workmanship for a period of three years from the date of purchase. Para Systems Inc. (Para Systems) warrants the batteries for a period of two years from the date of purchase. For equipment sites within the United States and Canada, this warranty covers repair or replacement of defective equipment at the discretion of Para Systems. Repair will be from the nearest authorized service center. Replacement parts and warranty labor will be borne by Para Systems. For equipment located outside of the United States and Canada, Para Systems only covers faulty parts. Para Systems products repaired or replaced pursuant to this warranty shall be warranted for the unexpired portion of the warranty applying to the original product. This warranty applies only to the original purchaser who must have properly registered the product within 10 days of purchase.

The warranty shall be void if (a) the equipment is damaged by the customer, is improperly used, is subjected to an adverse operating environment, or is operated outside the limits of its electrical specifications; (b) the equipment is repaired or modified by anyone other than Para Systems or Para Systems approved personnel; or (c) has been used in a manner contrary to the product's User's Manual or other written instructions.

Any technical advice furnished before or after delivery in regard to use or application of Para Systems's equipment is furnished without charge and on the basis that it represents Para Systems's best judgment under the circumstances, but it is used at the recipient's sole risk.

EXCEPT AS PROVIDED HEREIN, PARA SYSTEMS MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Some states do not permit limitation of implied warranties; therefore, the aforesaid limitation(s) may not apply to the purchaser.

EXCEPT AS PROVIDED ABOVE, IN NO EVENT WILL PARA SYSTEMS BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF THIS PRODUCT, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. Specifically, Para Systems is not liable for any costs, such as lost profits or revenue, loss of equipment, loss of use of equipment, loss of software, loss of data, cost of substitutes, claims by third parties, or otherwise. The sole and exclusive remedy for breach of any warranty, expressed or implied, concerning Para Systems's products and the only obligation of Para Systems hereunder, shall be the repair or replacement of defective equipment, components, or parts; or, at Para Systems's option, refund of the purchase price or substitution with an equivalent replacement product. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

MINUTE☰☰MAN ⌇⌇⌇⏦━
UNINTERRUPTIBLE POWER SUPPLIES

A1.   DECLARATION OF CONFORMITY

Application of Council Directive(s): 89/336/EEC, 73/23/EEC

Standard(s) to which Conformity is declared: EN55022, EN55024
EN61000-6-1, EN61000-6-3
EN61000-4-5

Manufacturer's Name: Para Systems, Inc. (MINUTEMAN UPS)

Manufacturer's Address: 1455 LeMay Drive
Carrollton, Texas 75007 USA

Type of Equipment: Uninterruptible Power Supplies (UPS)
Model No: ETR500, ETR700, ETR1000, ETR1500, ETR700p15,
ETR1500p15

Year of Manufacture: Beginning February 1, 2007

I hereby declare that the equipment specified above conforms to the above
Directive(s).

Robert Calhoun   Manager Engineering
    (Name)   (Position)

Place: Carrollton, Texas, USA   Date: February 1, 2007

Notes:

Notes:

Para Systems, Inc.
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