



EXR SERIES

LINE INTERACTIVE UPS

User's Manual

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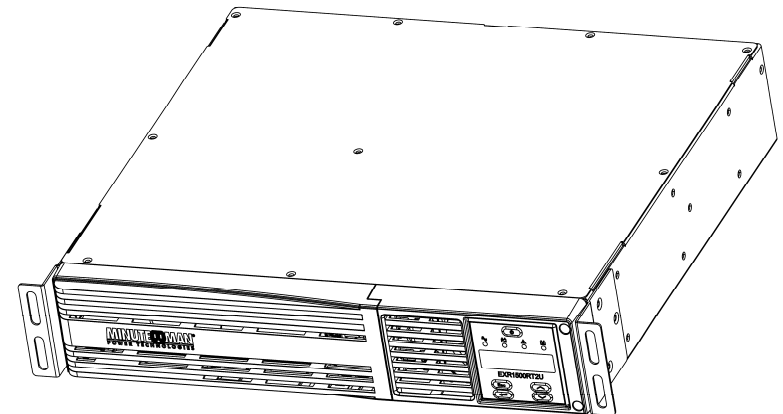


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Chapter 1: Introduction

Thank you for purchasing this power protection product. It has been designed and manufactured to provide many years of trouble-free service. Please read this manual before installing your EXR UPS Series, models EXR750RT2U, EXR1000RT2U, EXR1500RT2U, EXR2000RT2U, EXR3000RT2U, EXR1500RTHV, EXR3000RTHV, as it provides important information that should be followed during the installation and the maintenance of the UPS system 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 system, please refer to the Troubleshooting guide in this manual to correct the problem or collect enough information so that the Technical Support Department can assist you.

IMPORTANT SAFETY INSTRUCTIONS SAVE THESE INSTRUCTIONS! CONSIGNES DE SÉCURITÉ IMPORTANTES SAUVEGARDEZ CES CONSIGNES!

Veillez lire ce manuel avant l'installation de l'onduleur modèles EXR750RT2U, EXR1000RT2U, EXR1500RT2U, EXR2000RT2U, EXR3000RT2U, EXR1500RTHV, EXR3000RTHV. Il contient de l'information importante qui doit être respectée au cours de l'installation et de l'entretien de l'onduleur et des batteries. Cette information vous permettra de correctement installer le système pour atteindre son rendement maximum en toute sécurité.

CAUTION! The maximum ambient operating temperature for this UPS series is 40°C ("0 ~ 40°C" for Ambient Operation).

- The external vents and openings on the UPS are provided for ventilation. To ensure reliable operation of the UPS and to protect the UPS from over-heating, these vents and openings must not be blocked or covered. Do not insert any object into any of the vents or openings that may hinder the ventilation.
- Install the UPS system in a well-ventilated area, away from excess moisture, heat, dust, flammable gas, or explosives.
- Leave adequate space (at least 20cm) around all sides of the UPS system for proper ventilation.
- Do not mount the UPS system with its front or rear panel facing down at any angle.
- Before usage, you must allow the UPS system to adjust to room temperature (20°C~25°C or 68°F~77°F) for at least one hour to avoid moisture condensing inside the UPS.

CAUTION! This UPS series is **ONLY** intended to be installed in an indoor temperature-controlled environment that is free of conductive contaminants. This UPS series is not intended for use in a computer room as defined in the Standard for the Protection of Electronic Computer/Data Processing Equipment ANSI/NFPA 75.

CAUTION! Connect the UPS to a two pole, three wire, grounded, utility power 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 utility power circuit provided with 20 / 30 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: **Qualified Service Personnel ONLY** must perform the Installation and Servicing of these UPS systems. MINUTEMAN accepts no liabilities and is not limited to injury to the Service Personnel, or damages to; the UPS, or the connected equipment caused by the incorrect installation or servicing of the UPS system.

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! DO NOT USE THE MOUNTING BRACKETS TO LIFT THE UPS. The mounting brackets are **ONLY** for securing the UPS to the rack.

CAUTION! To de-energize the outputs of the UPS:

1. If the UPS is on press and release the On/Off/Test button. **NOTE:** Turn the input circuit breaker (on the rear panel) off for the 208V models.
2. Disconnect the UPS from the AC wall outlet.
3. To de-energize the UPS completely, disconnect the battery.



ON / OFF / TEST BUTTON: Press and release the On/Off/Test button during the audible alarm's first beep to turn the UPS On. Once the UPS successfully passes the twenty second self-test the load will be powered. **NOTE:** The input circuit breaker (on the rear panel) **MUST** be in the on position for the 208V models.

Press and release the On/Off/Test button during the audible alarm's first beep 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.

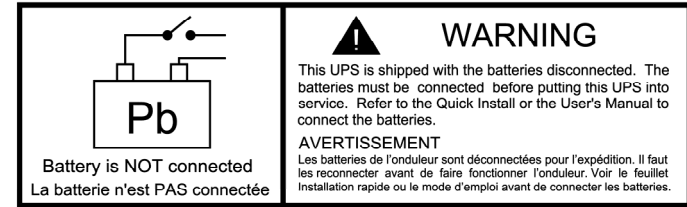
To perform a ten second battery test: With the UPS in the AC normal mode, press and hold the On/Off/Test button until the audible alarm sounds four beeps, and then release. During the test, the UPS will switch to the Battery mode, the On-Battery icon will illuminate, and the alarm will sound.

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 Subpart 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 Department of Communications. These limits are designed to provide reasonable protection against such interference in a residential installation. This equipment generates and uses radio frequency and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, this equipment may cause interference to radio and television reception. If this equipment 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:

- Reorient 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 approved by the party responsible for compliance could void the user's authority to operate the equipment.

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



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 shipping damage incurred when the system is returned, the original packing material is inexpensive insurance.

PLEASE SAVE THE PACKING MATERIALS!

Life Support Policy

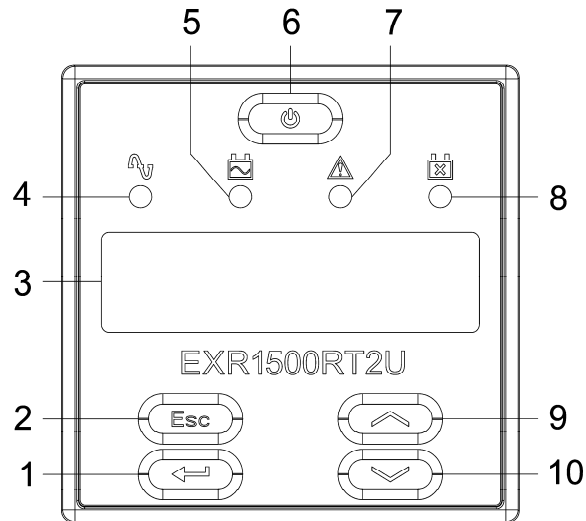
As a general policy, we do not recommend the use of any of our products in life support applications where failure or malfunction of the product can be reasonably expected to cause failure of the life support device or to significantly affect its safety or effectiveness. We do not recommend the use of any of our products in direct patient care. We will not knowingly sell our products for use in such applications unless Para Systems 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.

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Chapter 2: Controls and Indicators

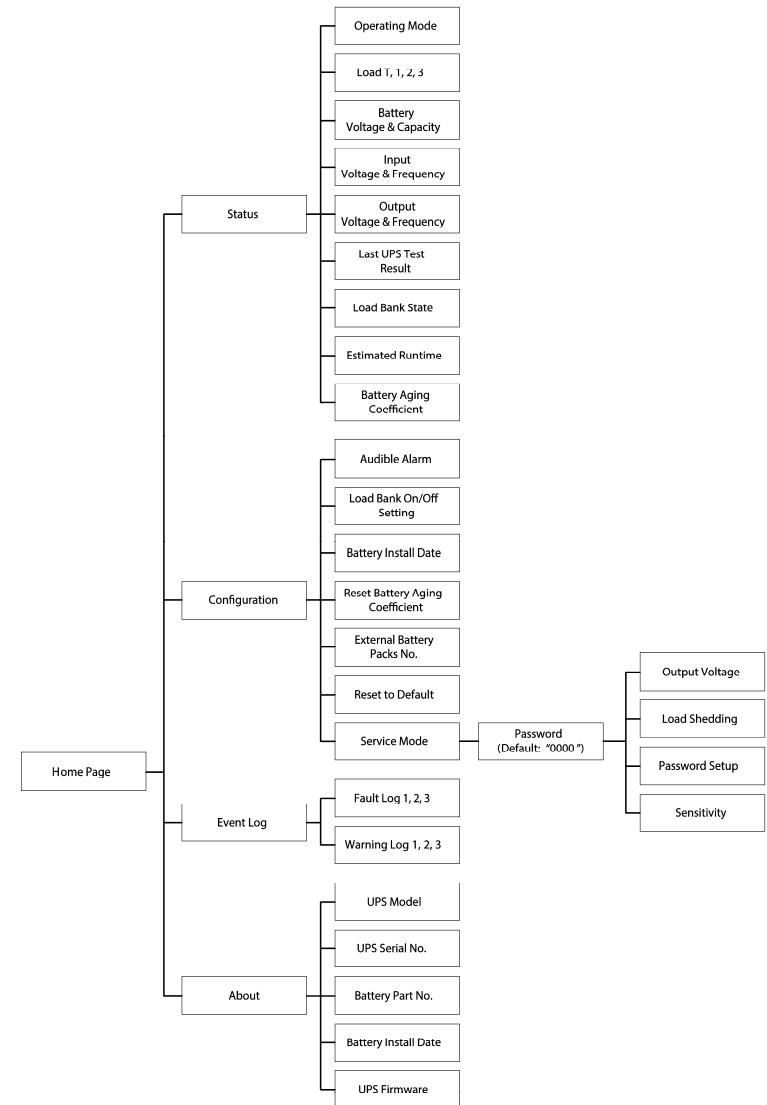
CONTROL PANEL



1. Pressing the Enter button saves the changes made to the UPS settings.
2. The Escape button will exit the current screen.
3. The LCD screen provides useful information about the UPS.
4. The AC normal icon illuminates when the UPS is on and operating in the AC normal mode. The AC normal icon will extinguish when operating in the Battery mode. The AC normal icon will blink when the UPS is operating in the Boost and/or the Buck mode.
5. The On-Battery icon illuminates when the UPS is operating in the Battery mode. The On-Battery icon will extinguish when operating in the AC normal, Boost and Buck modes.
6. The Multi-function On/Off/Test button is used to turn the UPS on or off or to perform a self-test.
7. The Fault icon illuminates when the UPS detects an internal fault. The Fault icon is extinguished when the UPS is operating properly.
8. The Weak/Bad/Disconnected Battery icon illuminates when the UPS detects a weak battery, bad battery or if the battery is disconnected. The Weak/Bad/Disconnected Battery icon is extinguished when the battery's condition is good.
9. The Scroll up button allows the user to scroll through the UPS parameters that are available on the LCD screen.
10. The Scroll down button allows the user to scroll through the UPS parameters that are available on the LCD screen.

LCD FLOWCHART

The following information is available on the LCD screen:



The LCD screen's Home Page has four sections:

- Status
- Configuration
- Event Log
- About

Status Page:

1. Operating Mode:
 - Standby mode (the UPS is connected to utility power, but is not turned on)
 - AC Normal mode
 - AVR mode Boost 1
 - AVR mode Boost 2
 - AVR mode Buck 1
 - AVR mode Buck 2
 - Battery mode
 - Fault mode
2. Load T (Combined total of the load on all three output banks), 1 (Load on output bank 1), 2 (Load on output bank 2), 3 (Load on output bank 3).
3. Battery: Voltage and Capacity.
4. Input: Voltage and Frequency.
5. Output: Voltage and Frequency.
6. Last UPS Test Results.
7. Load Bank Status: ON / OFF.
8. Estimated Runtime: The amount of estimated time the UPS will operate in the Battery mode.
9. Battery Aging Coefficient: Using the battery install date and periodic monitoring of the batteries to get early warning alarms for battery replacement.

Configuration Page:

1. Audible Alarm: Turn On/Off the audible alarm (for the Battery mode Only). **NOTE:** With the exception of the On-Battery alarm all the other Warning/Fault alarms cannot be silenced. Once the Warning/Fault condition has been corrected the alarm will reset to default.
2. Load Bank On/Off Setting: Enable or Disable the Load Shedding function.
3. Battery Install Date: Set the date the batteries were replaced.
4. Reset Battery Aging Coefficient: Reset the Battery Aging Coefficient once the batteries have been replaced.
5. External Battery Pack Number: Set the number of External Battery Packs that are connected to the UPS.
6. Reset to Default: Resets the changes to the Configuration back to the factory default settings (Must be in the Standby mode).
7. Service Mode (The UPS must be in the Standby mode to enter the Service mode): Enter the password (default 0000) and then hit the enter key.

Output Voltage: Set the Battery mode output voltage 120V (Default) / 125V. Once set hit the enter key to save the changes.

Load Shedding: Turn off Load Bank 1 and/or Load Bank 2. Once set hit the enter key to save the changes.

Password Setup: Change the password. Enter the old password first and then hit the enter key. Enter the new password and then hit the enter key to save the changes.

Sensitivity: Set the input sensitivity level to L1 or L2. Once set hit the enter key to save the changes.

Event Log Page:

1. Fault Log 1,2,3: View the current or previous faults.
2. Warning Log 1,2,3: View the current or previous warnings.

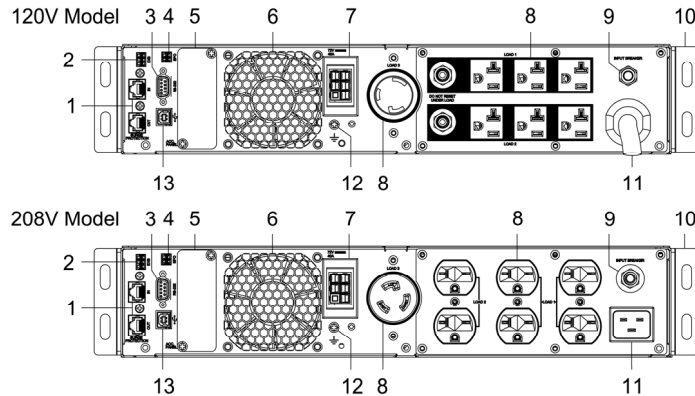
About Page:

1. UPS Model: Displays the model name of the UPS.
2. UPS Serial No.: Displays the serial number of the UPS.
3. Battery Part No.: Displays the battery module part number.
4. Battery Install Date: Displays the date the battery module was installed.
5. UPS Firmware: Displays the UPS's firmware version.

Selecting the 'Reset to Default' will reset the following items to the factory default settings:

Configurable Settings	Factory Default Settings
Audible Alarm	ON
Load Bank 1	ON
Load Bank 2	ON
Battery Install Date	Jan-20
Battery Aging Coefficient	1.0
External battery Packs No.	Auto
Output Voltage	120V
Load Shedding	Enabled
Password Setup	'0000'
Sensitivity L1	OFF
Sensitivity L2	OFF
Auto Restart	Enabled
Power On Delay Time	0 – Seconds
Fault Logs 1,2,3	Empty, no faults listed
Warning Logs 1,2,3	Empty, no warnings listed

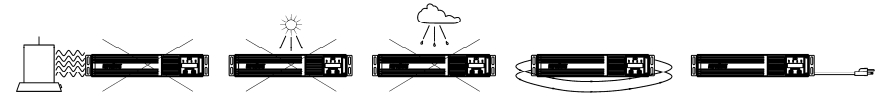
REAR PANEL



1. The R-J11/R-J45 modular connectors are used for 10/100/1000 Base-T Network/single line Phone/Fax/Modem protection.
2. The External Battery Pack detect port (EXB) is for the UPS to automatically detect the External Battery Pack so that the UPS can calculate the estimated runtime.
3. The RS232 Communications Port is for UPS monitoring and control.
4. The REPO (Remote Emergency Power Off) Port is for UPS control. This connection is not for telecommunication use.
5. The option slot is for option cards.
6. The fan is for ventilation.
7. The External Battery Connector is for connecting an External Battery Pack.
8. The Battery Backup output receptacles. The output receptacles are electrically wired into two segments to support the "Load Shedding Function" (Labeled Load 1 & Load 2). The locking and Always On receptacles (Labeled Load 3) do not support the "Load Shedding Function". **NOTE:** The locking receptacle is not on all models.
9. The input circuit breaker will trip in the event the load exceeds the UPS's power rating.
10. The rackmount brackets are for attaching the UPS to rack.
11. The input power cord (120V models). The AC Power Inlet IEC320 (208V models).
12. The External Ground Stud is for connecting an external ground wire.
13. The USB Communications Port is for UPS monitoring and control.

Model	Input Power Plug (All power cords are 10ft)	Output Power Receptacles
EXR750RT2U EXR1000RT2U EXR1500RT2U	NEMA 5-15P	6-NEMA 5-15R (Controllable) 2-NEMA 5-15R (Always On)
EXR2000RT2U	NEMA 5-20P	8-NEMA 5-15/20R (Controllable) 1-NEMA L5-20R (Always On)
EXR3000RT2U	NEMA L5-30P	6-NEMA 5-15/20R (Controllable) 1-NEMA L5-30R (Always On)
EXR1500RTHV	NEMA 6-15P	4-NEMA 6-15R (Controllable) 2-NEMA 6-15R (Always On)
EXR3000RTHV	NEMA L6-30P	6-NEMA 6-15/20R (Controllable) 1-NEMA L6-30R (Always On)

Chapter 3: Installation



INSTALLATION PLACEMENT

This UPS series is **ONLY** intended to be installed in an indoor temperature-controlled environment that is free of conductive contaminants. DO NOT operate the UPS in extremely dusty and/or unclean areas, locations near heating devices, water, or excessive humidity, or where the UPS is exposed to direct sunlight. Select a location, which will always provide good air circulation for the UPS. Route power cords so they cannot be walked on or damaged. This UPS series is not intended for use in a computer room as defined in the Standard for the Protection of Electronic Computer/Data Processing Equipment ANSI/NFPA 75. Typical battery life is 3 to 5 years. Environmental factors do affect battery life. High temperatures, poor utility power, and frequent, short duration discharges have a negative impact on battery life.

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

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 and then the "Rackmount Configuration" to install the UPS into the rack. **USE CAUTION:** The UPS is heavy. Use the appropriate number of personnel when installing the UPS.

CAUTION! DO NOT USE THE MOUNTING BRACKETS TO LIFT THE UPS. The mounting brackets are **ONLY** for securing the UPS to the rack.

NOTE: If you are using an External Battery Pack with this EXR UPS series, the UPS must be configured so that the UPS will report the correct estimated runtime on the LCD screen and in the Power Monitoring software and/or the SNMP card. See the UPS's, or the Power Monitoring software or the SNMP card's User's Manual to configure the UPS.

CONNECTING THE BATTERY

(QUALIFIED SERVICE PERSONNEL ONLY)

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

CAUTION! DO NOT USE THE MOUNTING BRACKETS TO LIFT THE UPS.

The mounting brackets are **ONLY** for securing the UPS to the rack.

WARNING: Use two or more people when installing the UPS, the UPS is extremely heavy.

1. Remove the UPS from the shipping box.
2. Place the UPS on a flat surface.
3. Remove the battery door and set aside (**FIG. 1**).
4. Verify proper polarity. Connect the red battery connectors together (**FIG. 2**).

NOTE: Some sparking may occur this is normal.

5. Reinstall the battery door onto the UPS.
6. Connecting the batteries is complete. See the Rackmount Configuration.

FIG. 1

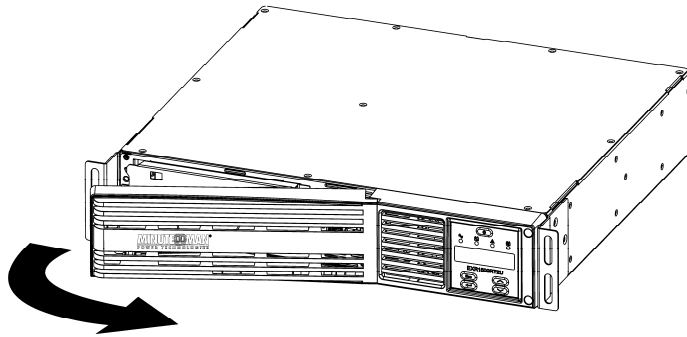
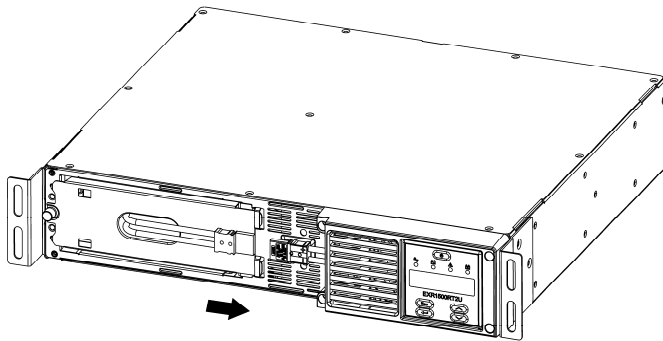


FIG. 2



RACKMOUNT CONFIGURATION

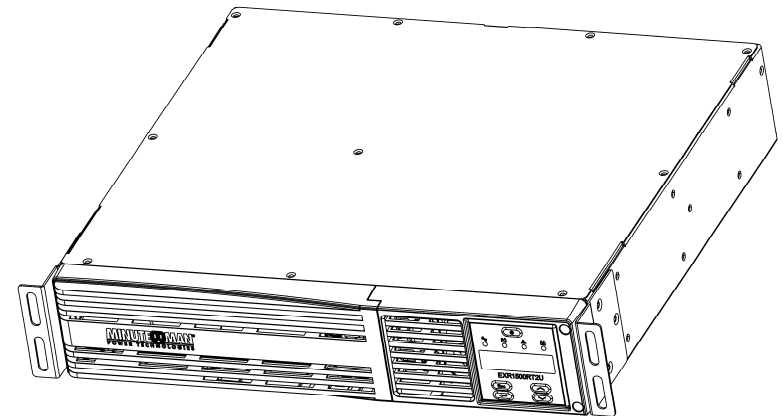
This UPS series comes with mounting brackets for the standard 19" (46.5cm) rack pre-installed on the UPS. The mounting brackets to fit a 23" (59.2cm) rack and Rail Kits for 4-post racks and cabinets are also available.

NOTE: The Rail Kits for a 4-post rack and/or cabinet are included with the EXR2000RT2U, EXR3000RT2U and the EXR3000RTHV.

CAUTION! DO NOT USE THE MOUNTING BRACKETS TO LIFT THE UPS. The mounting brackets are **ONLY** for securing the UPS to the rack.

NOTE: The mounting brackets can be mounted in the middle of the UPS.

1. Mount the UPS into the rack and secure with the retaining screws.
WARNING: Use two or more people when installing the UPS, the UPS is extremely heavy. Do not move the rack after the units have been installed. The rack may become unstable due to the weight distribution.
2. The Rackmount Configuration is complete. See Connecting your Equipment.



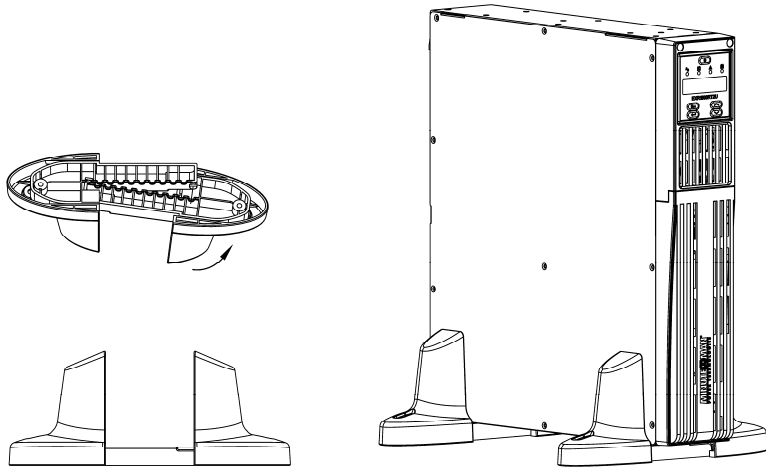
TOWER CONFIGURATION

The tower configuration allows the user to install the UPS in the upright position next to a tower computer. The tower brackets are provided with the UPS. **WARNING:** Use two or more people when installing the UPS, the UPS is extremely heavy.

1. Once the location of the UPS has been determined, place the UPS on a flat surface, remove the rackmount brackets from the UPS and then place the tower brackets in the desired location.
2. The LCD panel can be rotated to read in the upright position. Use a small flat blade screwdriver on the right-hand side of the LCD panel and gently pop out the LCD panel. Rotate the LCD panel so that it reads in the upright position and then reinstall it back into the front panel.

WARNING: The UPS must be installed in the proper upright position. If the UPS is not installed in the proper upright position the batteries will be damaged. Once the UPS is placed in the tower brackets, looking at the front panel the **YELLOW** Battery Disconnected label on the top cover of the UPS **MUST** be on your left-hand side.

3. Slide the UPS into the tower brackets. Make sure that the UPS is stable.
4. The Tower Configuration is complete. See Connecting your Equipment.



WALLMOUNT CONFIGURATION

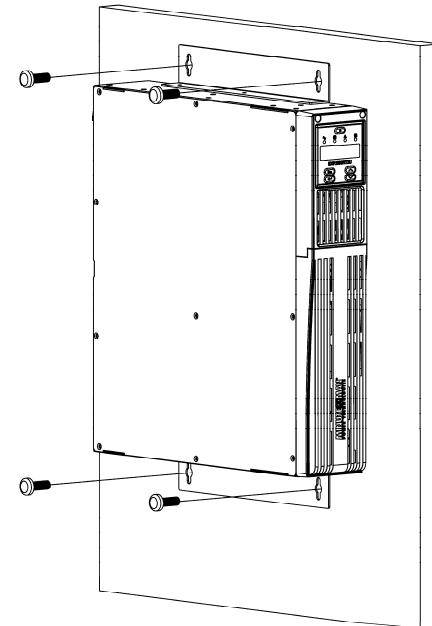
The wallmount configuration allows the user to mount the UPS on the wall. There is a wallmount bracket kit available for the UPS. The kit includes two wall mounting brackets, ten retaining screws, and the wallmount template. **WARNING:** Use two or more people when installing the UPS, the UPS is extremely heavy. The UPS's side panels have mounting bracket screw holes for attaching the wall mounting brackets.

1. Once the location of the UPS has been determined, place the UPS on a flat surface and remove the rackmount brackets from the UPS.

2. The LCD panel can be rotated to read in the upright position. Use a small flat blade screwdriver on the right-hand side of the LCD panel and gently pop out the LCD panel. Rotate the LCD panel so that it reads in the upright position and then reinstall it back into the front panel.

WARNING: The UPS must be installed in the proper upright position. If the UPS is not installed in the proper upright position the batteries will be damaged. Once the UPS is placed on the wall, looking at the front panel the **YELLOW** Battery Disconnected label on the top cover of the UPS **MUST** be on your left-hand side.

3. Align the mounting brackets with the mounting bracket screw holes on the side panels of the UPS and attach with the six retaining screws.
4. Attach a sheet of 3/4" plywood into structural material (wood or metal wall studs). **WARNING:** The plywood must be a minimum of 3/4" thick and the wall studs must be a minimum of 1.5" wide and 3.5" thick.
5. Use the template to mark the screw hole position on the sheet of plywood. **CAUTION,** you should always wear protective gear for your hands and eyes when operating power tools.
6. Attach the four retaining screws to the sheet of plywood and make sure that all the retaining screws are secure. Then clean the area of any loose material. Do not tighten the retaining screws all the way; leave approximately 3/8" of the retaining screws sticking out.
7. Use **CAUTION,** the UPS is extremely heavy. Position the UPS, so that the mounting bracket keyed holes line up with the four retaining screws. Slide the UPS down until its resting securely on the four retaining screws.
8. Tighten the four retaining screws to secure the UPS to the plywood.
9. The Wallmount Configuration is complete. See Connecting your Equipment.



CONNECTING YOUR EQUIPMENT

Plug the equipment into the output receptacles on the rear panel 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). **DO NOT PLUG EXTENSION CORDS, ADAPTER PLUGS OR SURGE STRIPS INTO THE OUTPUT RECEPTACLES OF THE UPS.**

CAUTION! DO NOT connect a laser printer to the output receptacles on the UPS unless the UPS is rated 2000VA or greater. A laser printer draws significantly more power when printing than at idle and may overload the UPS.

CONNECTING THE UPS TO AN AC SOURCE

Plug the UPS into a two pole, three wire, grounded AC wall outlet. The AC wall outlet shall be near the UPS and shall be easily accessible. The plug on the input power cord on this UPS series is intended to serve as a disconnect device. **DO NOT PLUG THE UPS INTO EXTENSION CORDS, ADAPTER PLUGS OR SURGE STRIPS. DO NOT CUT THE INPUT PLUG OFF AND ATTEMPT TO HARDWIRE THIS UPS; DOING SO WILL VOID THE WARRANTY.**

CHECKING THE SITE WIRING FAULT (120V Models)

After plugging the UPS into the AC wall outlet, check for the Site Wiring Fault error message on the LCD screen. If there is a SWF error message, the UPS is plugged into an improperly wired AC wall outlet. Have a qualified Electrician correct the problem.

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. **NOTE:** The input circuit breaker **MUST** be in the on position for the 208V models. 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 may be less than normally expected. **NOTE:** If the UPS is going to be out of service or stored for a prolonged period, the batteries must be recharged for at least twenty-four hours every ninety days.

NETWORK/PHONE/FAX/MODEM PROTECTION CONNECTION (OPTIONAL)

Connect a 10/100/1000 Base-T network, Single line phone, Fax, or Modem line to the RJ11/45 modular connectors on the rear panel of the UPS. This connection will require another length of telephone 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 Network/Phone/Fax/Modem modular connectors is optional. The UPS works properly without this connection.

COMMUNICATIONS PORT CONNECTION (OPTIONAL)

The Power Monitoring Software and interface cables can be used with the UPS. Use only the interface cables that come with these UPSs. Connect the interface cable (Serial or USB) to the appropriate communications port on the rear panel of the UPS. Connect the other end of the 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.

POWER MONITORING SOFTWARE

This UPS series supports Minuteman's SentryHD power monitoring software. Please go to our website at www.minutemanups.com/minuteman-software-download-center/ to download (Free of Charge) the latest version of the Minuteman SentryHD power monitoring software.

REPO (Remote Emergency Power Off) PORT (OPTIONAL)

Connect one end of a two-wire cable to the REPO port (two pin terminal block) and the other end of the two-wire cable to the EPO switch. Short pin1 to pin2 for approximately 0.5-seconds in the AC or the Battery mode to shutdown the UPS. The UPS must be turned off and then back on again to restart the UPS. **NOTE:** Connecting to the REPO port is optional. The UPS works properly without this connection.

EXTERNAL BATTERY PACK DETECTION PORT (OPTIONAL)

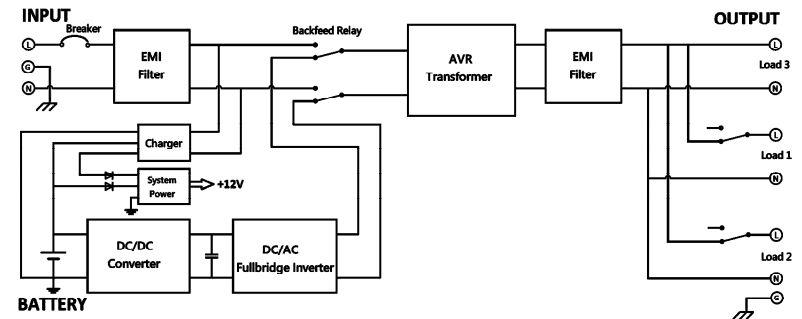
Connecting the External Battery Detection cable from the UPS to the Battery Pack allows the UPS to automatically detect the External Battery Pack. Once the UPS detects that there is an External Battery Pack connected it will automatically recalculate the estimated runtime based on the number of External Battery Packs detected and the attached load on the UPS. **NOTE:** The External Battery Pack can also be set through the LCD screen, the Power Monitoring Software, or the SNMP card. **NOTE:** Connecting to the External Battery Pack Detection port is optional. The UPS works properly without this connection.

Chapter 4: Operation

SYSTEM OVERVIEW

This Line-Interactive UPS protects computers, network, and telecommunications equipment from blackouts, brownouts, overvoltages, and surges. The AVR (Automatic Voltage Regulator) function continuously corrects the voltages, in-between the brownout and overvoltage transfer points (80 - 164VAC/150 - 271VAC), to a safe usable level without using the batteries. When the UPS is operating in the AVR mode the audible alarm will remain silent and the AC Normal icon will flash. 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 if the UPS is plugged into the wall outlet and there is an acceptable AC voltage present (80 - 164VAC/150 - 271VAC).

Block Diagram of the Basic Wiring and Internal Circuit Configuration



NOTE: The input circuit breaker MUST be in the on position for the 208V models. When a blackout, brownout, or an overvoltage condition occurs; the UPS will transfer to the battery mode, the On-Battery icon will illuminate, and the audible alarm will sound once every ten 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 UPS ON / OFF

ON / OFF / TEST BUTTON



Press and release the On/Off/Test Button after one beep to turn the UPS on and supply power to the load. **NOTE:** The input circuit breaker on the rear panel MUST be on for the 208V models. The load is immediately powered while the UPS runs a five second self-test. Press and release the On/Off/Test Button after one beep to turn the UPS off. **NOTE:** Turn the input circuit breaker (on the rear panel) off for the 208V models. The UPS will continue to charge the batteries whenever it is plugged into a wall outlet and there is acceptable AC voltage present. **NOTE:** The input circuit breaker (on the rear panel) MUST be on for the 208V models.

SELF-TEST

The self-test feature is useful to verify the correct operation of the UPS and the condition of the batteries. With the UPS in the AC normal mode, press and hold the On/Off/Test Button for four beeps, then release the button. The UPS will perform a ten second self-test. During the self-test, the UPS will switch to the battery mode and the On-Battery icon will illuminate and the audible alarm will sound. The UPS will automatically perform a five second inverter test on start-up to verify the correct operation of the UPS and the condition of the batteries. If the UPS fails a self-test, there will be an error message on the LCD screen indicating the type of problem.

ALARM SILENCER BUTTON

When the UPS is operating in battery mode, the audible alarm can be silenced. Press the Enter button on the front panel for three seconds. Once the UPS reaches a Low Battery Warning alarm the audible alarm will turn back on and cannot be silenced. The UPS audible alarm will be reset to default once the utility power returns. The alarm cannot be silenced during a general fault alarm.

SERVICE MODE

The UPS has a Service mode function activated through the LCD screen. The Service mode items are:
 Output Voltage Adjustment
 Load Shedding Function
 Password Setup
 Input Voltage Sensitivity Adjustment

INVERTER (ON-BATTERY) OUTPUT VOLTAGE ADJUSTMENT

The Inverter (On-Battery) output voltage setting can be either 120VAC (208VAC) default or 125VAC (240VAC). Changing the Inverter (On-Battery) output voltage to 125VAC will also change the Buck set point. Changing the Inverter (On-Battery) output voltage to 240VAC, will also change the Brownout, Boost, Buck, and Overvoltage set points. The UPS must be in the off position and connected to the AC outlet. Use the scroll buttons on the LCD screen scroll to the Service Mode screen and then press the Enter key. Then scroll to the Output Voltage Setting screen and press the Enter Key. Then scroll to the desired output voltage setting and press the Enter Key. Then press the Escape key to exit the Configuration screen. Now the UPS is ready for Normal operation. Press the On/Off/Test button to turn the UPS on.

LOAD SHEDDING FUNCTION

The output receptacles are electrically wired into two segments to support the "Load Shedding Function" (Labeled Load 1 & Load 2). The user can control the two segments individually or both at the same time. The Load Shedding Function is controllable by the LCD screen (look under the Service Mode screen), the Power Monitoring Software or the SNMP card. **NOTE:** The output segment labeled Load 3 does not support the "Load Shedding Function" it is Always ON.

PASSWORD SETUP

Changing the password: Enter the old password first and then hit the enter key. Enter the new password and then hit the enter key to save the changes.

INPUT VOLTAGE SENSITIVITY ADJUSTMENT

The input voltage sensitivity can be adjusted through the LCD screen. The when the input waveform distortion is causing the UPS to transfer to the Battery mode too often, adjusting the sensitivity will allow the UPS to remain in the AC mode without depleting the battery reserves. The following chart shows the adjustments for Level 1 and Level 2.

Mode	Level 1	Level 2
Brownout Transfer Point (120V model)	76VAC +2 / -4V	74VAC +2 / -4V
Brownout Reset Point (120V model)	80VAC ±4V	78VAC ±4V
Brownout Transfer Point (208V model)	138VAC ±4V	135VAC ±4V
Brownout Reset Point (208V model)	148VAC ±4V	145VAC ±4V
Brownout Transfer Point (240V model)	172VAC ±4V	168VAC ±4V
Brownout Reset Point (240V model)	182VAC ±4V	178VAC ±4V
Input Frequency Range (all models)	60Hz: 53.4~66.6Hz 50Hz: 43.5~56.5Hz	60Hz: 52.8~67.2Hz 50Hz: 43.0~57.0Hz

BATTERY AGING COEFFICIENT

Use the battery install date and periodic monitoring of the batteries to get early warning alarms for battery replacement. After replacing the batteries reset the Battery Aging Coefficient through the LCD screen.

OPTION SLOT

The option slot on the rear panel of the UPS is for option cards. Contact your local dealer for the available option cards or visit our web site at www.minutemanups.com.

EXTERNAL BATTERY PACK DETECTION PORT

Connecting the External Battery Detection cable from the UPS to the Battery Pack allows the UPS to automatically detect the External Battery Pack. Once the UPS detects that there is an External Battery Pack connected it will automatically recalculate the estimated runtime based on the number of External Battery Packs detected and the attached load on the UPS. **NOTE:** The External Battery Pack can also be set through the LCD screen, the Power Monitoring Software, or the SNMP card.

REPO (Remote Emergency Power Off) PORT

Connect one end of a two-wire cable to the REPO port (two pin terminal block) and the other end of the two-wire cable to the EPO switch. Short pin1 to pin2 for approximately 0.5-seconds in the AC or the Battery mode to shutdown the UPS. The UPS must be turned off and then back on again to restart the UPS. The LCD screen will display EPo for this function.

ALARMS

ON BATTERY

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

LOW BATTERY WARNING

The audible alarm 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/DISCONNECTED BATTERY

The UPS automatically tests the battery's condition. If the battery is weak, bad, or disconnected, the Weak/Bad/Disconnected Battery icon will illuminate, and the audible alarm will beep three times every five minutes until the battery is reconnected or replaced. This alarm will be repeated until the batteries pass a self-test. 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 110% of its power rating; the audible alarm will sound a constant alarm and the LCD screen will display the error message 'UPS is overloaded - UPS will shutdown'. This alarm and error message will remain on until the excess load is removed, or the UPS's self-protection circuit shuts the UPS down. If the UPS shuts down because of an Overload condition, the UPS must perform an Inverter function and/or a Self-Test to clear the Overload Alarm.

UPS FAULT

When the UPS detects a hardware fault, the Fault icon will illuminate, and the audible alarm will sound a constant alarm and the LCD screen will display an error message identifying the fault. The fault condition, in some instances, may be reset by turning the UPS off and then on.

Chapter 5: Configurable Parameters and Settings

(These items may require optional software or hardware)

Function	Factory Default	User Choices	Description
UPS ID	EXR Series	Up to 64 characters to define the UPS	Use this function to uniquely identify the UPS in your network environment
Battery Install Date	Date of manufacture	Date of battery replacement – month/day/year	Enter the current date of when the batteries were replaced
Battery life in days	1826	Up to 5 characters	At first battery replacement, reset to reflect actual number of days experienced in your environment or leave at factory default
Enable / Disable Auto Restart	Enabled	Enable or Disable	When enabled, the UPS will automatically restart from a low battery shutdown when normal AC returns
Set audible alarm state	Enabled	Enabled, at Low Battery, Disabled	<u>Enabled</u> – the UPS will emit a short beep when in the battery mode. <u>At Low Battery</u> - the UPS will emit two beeps from low battery warning until shutdown. <u>Disabled</u> - Use only when software is controlling the UPS or to silence the alarm
Shut-down type	Entire UPS	Entire UPS or UPS output	<u>Entire UPS</u> - Turns off the entire UPS. <u>UPS Output</u> - Turns off the UPS's output receptacles only.
Set inverter output voltage	120VAC (208VAC)	120, 125VAC (208, 240VAC)	Changes the output voltage for battery mode operation only.
Enable/Disable REPO	Disabled	Enable or Disable	<u>Enabled</u> - the UPS will be powered off and remain off until the UPS is reset.
Set External Battery Pack	0	0 - 10	Configures the UPS so that it will report the correct estimated runtime on the LCD screen and in the Power Monitoring software and/or the SNMP card.

Chapter 6: Obtaining Service

IF THE UPS REQUIRES SERVICE

1. Use the Troubleshooting section to eliminate obvious causes.
2. Verify there are no tripped circuit breakers and that the batteries are good. A tripped circuit breaker and defective batteries are the most common issues.
3. Call your dealer for assistance. If you cannot reach your dealer or if they cannot resolve the issue, call our Technical Support department at: (972) 446-7363 or send an email to support@minutemanups.com or visit our Web site at www.minutemanups.com the "Discussion Board". Before calling the Technical Support, Department have the following information available:
 - a) Contact name and address.
 - b) Where and when the unit was purchased.
 - c) All of the model information about your unit.
 - d) The serial number of your unit.
 - e) Any information on the failure, including LEDs that may be illuminated or error messages displayed.
 - f) A description of the protected equipment including model numbers, if possible.
 - g) A technician will ask you for the above information and if possible, help solve the issue over the phone. If unit requires factory service, the Technical Support Representative will issue you a Return Material Authorization Number (RMA #). **NOTE: We must have the model number and the serial number of the product to issue an RMA #.**
 - h) If the unit is under warranty, the repairs will be done at no charge. If the unit is not under warranty, there will be a charge for the repair.
4. Pack the unit in its original packaging. If the original packaging is no longer available, ask the Technical Support Representative about obtaining a new set. It is important to pack the unit properly to avoid damage in transit. Never use Styrofoam beads for a packing material.
 - a) Include a letter with your name, address, daytime 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 of the package.
6. Return the unit by insured prepaid carrier to:

Para Systems Inc.
 MINUTEMAN UPS
 1809 W. Frankford Road, Suite 150
 Carrollton, TX 75007
 ATTN: RMA # _____

Chapter 7: Troubleshooting

Symptom / Error Message	Cause / What to do
UPS will not turn on.	Press the On/Off button and release after one beep.
UPS operates in battery mode only, even though there is AC present.	Reset the input circuit breaker. If it trips after the UPS restarts, reduce the load on the UPS.
Bad Battery - PLS replace battery	Check the battery connections, charge the batteries for 8-hours and retest, or replace the batteries.
Battery Depleted - UPS has shutdown	The UPS's batteries have been depleted. The UPS has shutdown due to battery exhaustion. Charge the batteries for 24-hours.
Charger Failure - UPS has shutdown	The charger has failed, call for service.
Fan Failure - PLS replace fan	The fan has either failed or has stopped due to excessive dirt. If the fan has failed, call for service. If the fan is dirty, use a can of "Canned Air" to clean the fan.
High Input Current - PLS Reduce Load	The input voltage is very low, and the UPS is heavily loaded. Reduce the load.
High Internal Temperature - UPS has shutdown	The internal or ambient temperature has exceeded the temperature ratings. Check the specifications.
Internal Bus Fault - UPS has shutdown	The UPS has an internal problem, call for service.
Inverter / Output Failure - UPS has shutdown	The UPS has an internal problem, call for service.
Low Battery - Shutdown imminent	The UPS's battery reserve is low. This condition will continue until AC returns or the UPS shuts down from battery exhaustion.
Low Internal Temperature - UPS has shutdown	The internal or ambient temperature has exceeded the temperature ratings. Check the specifications.
Output Short Circuit - UPS has shutdown	Disconnect the attached equipment. If, the error does not clear the UPS has an internal problem. Call for service.
Site Wiring Fault - PLS check input connection	Have a qualified electrician correct the service wiring.
UPS is overloaded - UPS will shutdown	Check the specifications and remove part of the load. If, the UPS shuts down because of an Overload, the UPS must perform an Inverter function or a Self-Test to clear the Overload Alarm.

Chapter 8: Replacing the Battery

QUALIFIED SERVICE PERSONNEL ONLY

Please read all the **WARNINGS** and **CAUTIONS** before attempting to service the batteries. Typical battery life is 3 to 5 years. Environmental factors do affect battery life. High temperatures, poor utility power, and frequent, short duration discharges have a negative impact on battery life.

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: The battery system can present a risk of electrical shock. These batteries produce enough 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 the batteries with the same number and type as originally installed in the UPS. These batteries have pressure operated vents. These UPSs contain sealed non-spillable maintenance-free lead acid batteries.

Model #	EXR750RT2U EXR1000RT2U	EXR1500RT2U EXR1500RTHV	EXR2000RT2U	EXR3000RT2U EXR3000RTHV
Battery Module Part #	BM0086	BM0087	BM0088	BM0089

BATTERY REPLACEMENT PROCEDURE (QUALIFIED SERVICE PERSONNEL ONLY)

PLEASE READ THE CAUTIONS AND WARNINGS BEFORE ATTEMPTING TO REPLACE THE BATTERY MODULE

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

NOTE: If there is a power interruption while replacing the hot-swappable battery module, with the UPS on, the load will not be backed up. To hot swap the battery module, 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/Test button on the front panel to turn the UPS OFF.

NOTE: For the 208V models turn the input circuit breaker on the rear panel off.

3. Unplug the UPS's AC 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 rear panel of the UPS.
6. Remove the battery door and set aside. (FIG. 2)
7. Disconnect the red battery connectors. (FIG. 3)
8. Remove the retaining screw for the battery retaining bracket. (FIG. 3)
9. Remove the battery retaining bracket. (FIG. 4)

FIG. 1

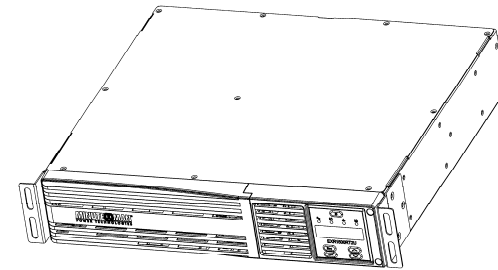
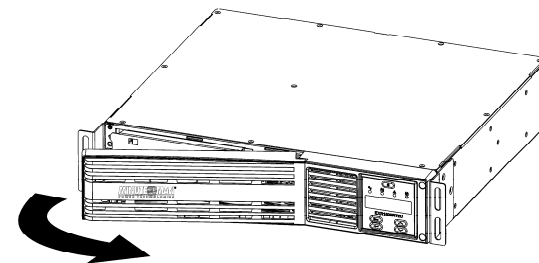


FIG. 2



10. Grasp the battery pull tab and gently pull the battery module out of the UPS and set aside. (FIG. 5)

NOTE: Use Caution, the battery module is heavy.

11. Slide the new battery module into the UPS.

12. Reinstall the battery retaining bracket.

13. Reinstall the retaining screw for the battery retaining bracket.

14. Verify proper polarity. Reconnect the red battery connectors together.

NOTE: Some sparking may occur this is normal.

15. Reinstall the battery door on the UPS.

16. The UPS is now ready for the normal operation.

17. Properly dispose of the old battery module at an appropriate recycling facility or return them to the supplier in the packing material that the new battery module came in.

NOTE: If the UPS has a Weak/Bad Battery Alarm after replacing the battery module, the user must initiate a self-test to clear the Weak/Bad Battery Alarm. To initiate a self-test, see section 4 "**SELF-TEST**".

FIG. 3

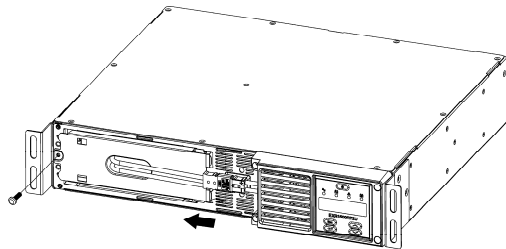


FIG. 4

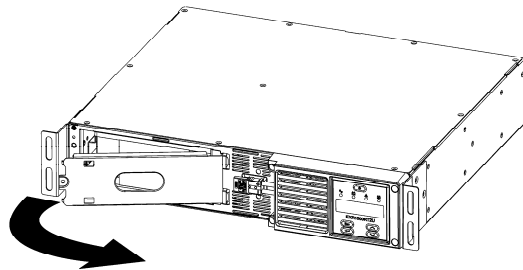
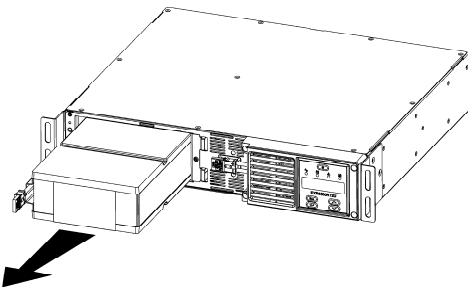


FIG. 5



Chapter 9: Specifications

SYSTEM SPECIFICATIONS					
Model Number	EXR750RT2U	EXR1000RT2U	EXR1500RT2U EXR1500RTHV	EXR2000RT2U	EXR3000RT2U EXR3000RTHV
Topology	Line-Interactive, Sine Wave				
Maximum Power Capacity	750VA 675W	1000VA 900W	1500VA 1350W	2000VA 1800W	3000VA 2700W
INPUT					
Number of Phase	Single (1Ø 2W +G)				
Nominal Voltage	120VAC (208VAC)				
Acceptable Input voltage	0 - 165VAC (0 - 300VAC)				
Voltage Range	80 - 164VAC (150 - 271VAC)				
Frequency Limits	50 or 60 Hz, ±6Hz, autosensing				
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	120VAC: 101 - 136VAC (208VAC: 186 - 236VAC)				
Voltage Regulation	120VAC: -15.8% - +11.7% (208VAC: -10.6% - +13.5%)				
Frequency Range	60Hz: 54 - 66Hz or 50Hz: 44 - 56Hz				
Efficiency (Line Mode)	>93% (Full Load)				
OUTPUT BATTERY OPERATION					
Waveform Type	Sine Wave				
Nominal Voltage	Default: 120VAC (208VAC), User selectable: 125VAC (240VAC)				
Voltage Regulation	Nominal ±5% (until Low Battery Warning)				
Frequency	50/60Hz, ±0.1Hz (unless synchronized to utility)				
Voltage T.H.D.	<5% (Linear Load)				
Dynamic Response	±10% @ 100% Load change in 30 ms				
Transfer Time	6 ms Typical				
Slew Rate	≤1Hz / second				
Overload Capacity	110% for 20-sec, 125% for 10-sec, 150% Shutdown Immediately				
Protection	Over-Current, Short-Circuit Protected, Latching Shutdown				
BATTERY SYSTEM					
Battery Type	Sealed, Non-Spillable, Maintenance Free, Value Regulated, Lead Acid				
Typical Recharge Time	8-hours to 90% capacity from a full load discharge				
Typical Battery Life	3 to 5 years, depending on discharge cycles and ambient temp				
System Voltage	36VDC			72VDC	
Battery Module Part #	BM0086	BM0086	BM0087	BM0088	BM0089
Runtime: Full Load (min)	7	4	2.5	4.5	2.5
Runtime: Half Load (min)	19	13	9	13	10

SURGE PROTECTION AND FILTERING					
Surge Energy Rating	1000 J (800 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 +/-2 kV)	<5%				
10/100/1000 Base-T surge protection let-through (as a percentage of an applied +/-2 kV 1.2/50 us, 500A 8/20 uS test)	<5%				
Telephone line surge protection let-through (as a percentage of an applied +/-2 kV 1.2/50 us, 500A 8/20 uS test)	<1%				
Noise Filter	>45db normal and common mode EMI/RFI suppression				
Audible Noise at 1 m (3 ft)	<45 dBA		<60 dBA		
ENVIRONMENTAL					
Operating Temperature (max)	0 to 40°C (+32 to +104°F)				
Storage Temperature	-15 to +45°C (+5 to +113°F)				
Operating/Storage Humidity	0 - 95% Non-Condensing				
Operating Elevation	0 to 3000m (0 to +10,000 ft)				
Storage Elevation	0 to 15,000m (0 to +50,000 ft)				
PHYSICAL					
Size – Net L X W X H (rackmount brackets installed)	17.32 x 18.96 x 3.48" 440 x 481.6 x 88.5 mm		23.62 x 18.96 x 3.48" 600 x 481.6 x 88.5 mm		
Weight - Net	41.7 lbs 18.9 Kgs	41.7 lbs 18.9 Kgs	43.0 lbs 19.5 Kgs	71.9 lbs 32.6 Kgs	77.6 lbs 35.2 Kgs
Size - Shipping L X W X H	23.67 x 21.89 x 9.76" 601 x 556 x 248 mm		31.50 x 23.46 x 9.37" 800 x 596 x 238 mm		
Weight - Shipping	51.4 lbs 23.3 Kgs	51.4 lbs 23.3 Kgs	52.7 lbs 23.9 Kgs	91.1 lbs 41.3 Kgs	96.8 lbs 43.9 Kgs
REGULATORY COMPLIANCE					
Safety and Approvals	cULus (UL1778 5th Edition & CSA 22.2 no. 107.3-14 / R: 2014), FCC Class B, CE & NOM certified, EnergyStar, RoHS2 (EU Directive 2011/65/EU & 2015/863/EU)				

Specifications are subject to change without prior notice.

Chapter 10: Limited Product Warranty

Para Systems, Inc. (Para Systems) warrants this equipment, when properly applied and operated within specified conditions, against faulty materials or workmanship for a period of three years from the date of purchase. For equipment sites within the United States and Canada, this warranty covers depot repair or replacement of defective equipment at the discretion of Para Systems. Depot repair will be from the nearest authorized service center. The customer pays for shipping the product to Para Systems. Para Systems pays ground freight to ship the product back to the customer. 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 that are depot repaired or replaced pursuant to this warranty shall only 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' equipment is furnished without charge and on the basis that it represents Para Systems' 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; labor for on-site installation, on-site maintenance or on-site service, 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' products and the only obligation of Para Systems hereunder, shall be depot repair or replacement of defective equipment, components, or parts; or, at Para Systems' 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.

No employee, salesman, or agent of Para Systems is authorized to add to or vary the terms of this warranty.

Please go to our website at www.minutemanups.com/warranty/ to fill out the Warranty Registration.

A1. Declaration of Conformity

Notes:

Application of Council Directive(s): 2014/30/EU

Standard(s) to which Conformity is declared: EN61000-3-2, EN61000-3-3, EN62040-2, IEC61000-2-2 IEC61000-4-2, IEC61000-4-3, IEC61000-4-4, IEC61000-4-5, IEC61000-4-6, IEC61000-4-8, IEEE C62.41 Category A1, UL1778, CSA 22.2 no. 107.3-14, FCC Class B

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: EXR750RT2U (Y), EXR1000RT2U (Y), EXR1500RT2U (Y), EXR2000RT2U (Y), EXR3000RT2U (Y), EXR1500RTHV (Y), EXR3000RTHV (Y)

Year of Manufacture: Beginning October 2020

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

Robert Calhoun
(Name)

Manager Engineering
(Position)

Place: Carrollton, Texas, USA

Date: October 1, 2020