



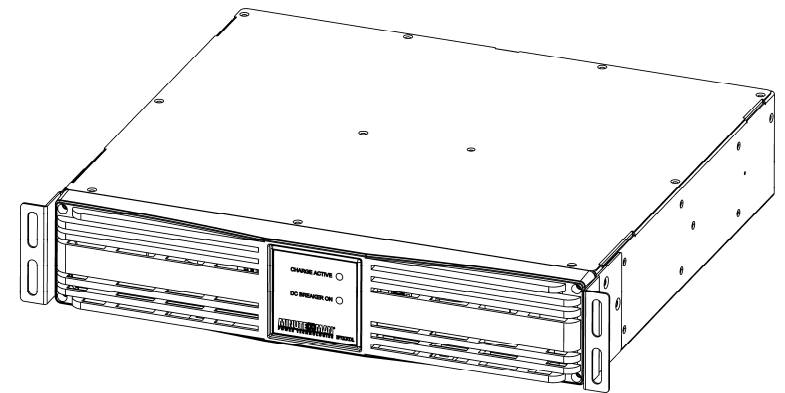
# EXR SERIES

LINE INTERACTIVE UPS

## Battery Packs

### User's Manual

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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 Series Battery Pack, models BP36CRTXL, BP72CRTXL, as it provides important information that should be followed during the installation and the maintenance of the Battery Pack 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 Battery Pack, 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!

Veuillez lire ce manuel avant l'installation de l'onduleur modèles BP36CRTXL, BP72CRTXL. 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 Battery Pack series is 40°C ("0 ~ 40°C" for Ambient Operation).

- The external vents and openings on the Battery Pack are provided for ventilation. To ensure reliable operation of the Battery Pack and to protect the Battery Pack from overheating, these vents and openings must not be blocked or covered. Do not insert any object into any of the vents or opening that may hinder the ventilation.
- Install the Battery Pack in a well-ventilated area, away from excess moisture, heat, dust, flammable gas, or explosives.
- Leave adequate space (at least 20cm) in the front and at the rear of the Battery Pack for proper ventilation.
- Do not mount the Battery Pack with its front or rear panel facing down at any angle.
- Before usage, you must allow the Battery Pack 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 Battery Pack.

**CAUTION!** This Battery Pack series is **ONLY** intended to be installed in an indoor temperature-controlled environment that is free of conductive contaminants. This Battery Pack 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 Battery Pack 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 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 Battery Pack and UPS 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 Battery Pack and 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 Battery Pack contains potentially hazardous voltages. Do not attempt to disassemble the Battery Pack beyond the battery replacement procedure. This Battery Pack 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 Battery Packs. MINUTEMAN accepts no liabilities and is not limited to injury to the Service Personnel, or damages to; the Battery Pack and the UPS, or the connected equipment caused by the incorrect installation or servicing of the Battery Pack.

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

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

**CAUTION!** To de-energize the Battery Pack:

1. If the UPS is On press and release the On/Off/Test button.
2. Disconnect the UPS and the Battery Pack from the wall outlet.
3. Turn off the DC breaker on the rear panel of the Battery Pack.
4. Disconnect the battery cable from the rear panel of the UPS.
5. To de-energize the Battery Pack completely, disconnect the batteries.

**WARNING: Qualified Service Personnel ONLY** must perform the Installation and Servicing of these Battery Packs. MINUTEMAN accepts no liabilities and is not limited to injury to the Service Personnel, or damages to; the Battery Pack, the UPS, or the connected equipment caused by the incorrect installation or servicing of the Battery Packs. These Battery Packs **MUST** be operated with their respective UPS models, see the table below:

| BP  | BP36CRTXL   |             | BP72CRTXL    |             |
|-----|-------------|-------------|--------------|-------------|
| UPS | E750RTXL2U  | EXR750RT2U  | E2000RTXL2U  | EXR2000RT2U |
|     | E1000RTXL2U | EXR1000RT2U | E3000RTXL2U  | EXR3000RT2U |
|     | E1500RTXL2U | EXR1500RT2U | E3000RTXL2U  | EXR3000RTHV |
|     | E1500RTXL2U | EXR1500RTHV | ED3000RTXL2U | ED3000RMT2U |

**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.

**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**

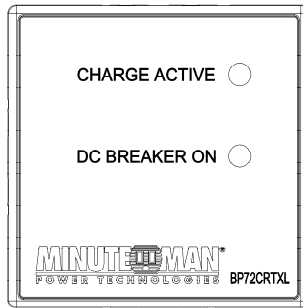
As a general policy, we do not recommend the use of any of our products in life support applications where failure or malfunction of the product can be reasonably expected to cause failure of the life support device or to significantly affect its safety or effectiveness. We do not recommend the use of 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

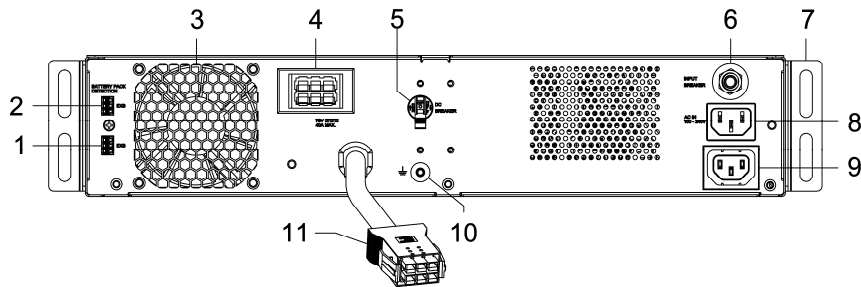
### CONTROL PANEL



The Charger Active (green) LED illuminates in a steady state when the Charger is on. The Charger Active LED will extinguish when there is no AC present or when the charger is not operating.

The DC Breaker On (green) LED illuminates in a steady state when the DC breaker is in the On position. The DC Breaker On LED will extinguish when the DC breaker is in the Off position.

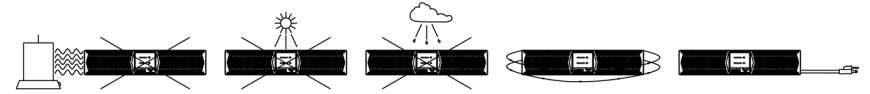
### REAR PANEL



1. The AC Input Breaker will trip if the Internal Charger draws excessive current.
2. The AC Inlet is for connecting the input power cord to operate the Charger.
3. The fan is for ventilation.
4. The External Battery connector is for Daisy Chaining additional Battery Packs.
5. The DC Breaker connects and disconnects the DC bus voltage from the Battery Pack to the UPS. The DC Breaker will trip in the event of a DC overcurrent condition.
6. The External Battery Pack Detection port (EXB) is for Daisy Chaining additional Battery Packs so that the UPS will automatically detect the External Battery Pack and calculate the estimated runtime.
7. The rackmount brackets are for attaching the UPS to rack.
8. The External Battery Pack Detection port (EXB) is for the UPS to automatically detect the External Battery Pack so that the UPS can calculate the estimated runtime.
9. The AC Outlet is for connecting the output cable to Daisy Chain additional Battery Packs.
10. The external Ground Stud is for connecting an external ground wire.
11. The External Battery cable is for connecting the Battery Pack to the UPS or Daisy Chaining additional Battery Packs.

9. The AC Outlet is for connecting the output cable to Daisy Chain additional Battery Packs.
10. The external Ground Stud is for connecting an external ground wire.
11. The External Battery cable is for connecting the Battery Pack to the UPS or Daisy Chaining additional Battery Packs.

## Chapter 3: Installation



### INSTALLATION PLACEMENT

This Battery Pack series is **ONLY** intended to be installed in an indoor temperature - controlled environment that is free of conductive contaminants. DO NOT operate the Battery Pack in extremely dusty and/or unclean areas, locations near heating devices, water, or excessive humidity, or where the Battery Pack is exposed to direct sunlight. Select a location, which will always provide good air circulation for the Battery Pack. Route power cords so they cannot be walked on or damaged. This Battery Pack series is not 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.

| 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) |
| Audible Noise at 1 m (3 ft.) | <45 dBA                        |

### INSTALLATION

Be sure to read the installation placement and all the cautions before installing the Battery Pack. Place the Battery Pack in the final desired location and complete the rest of the installation procedure.

**WARNING!** These Battery Packs are extremely heavy. Anytime the Battery Pack must be handled be sure to use, enough personnel, strong supports, and equipment to safely handle the Battery Pack.

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

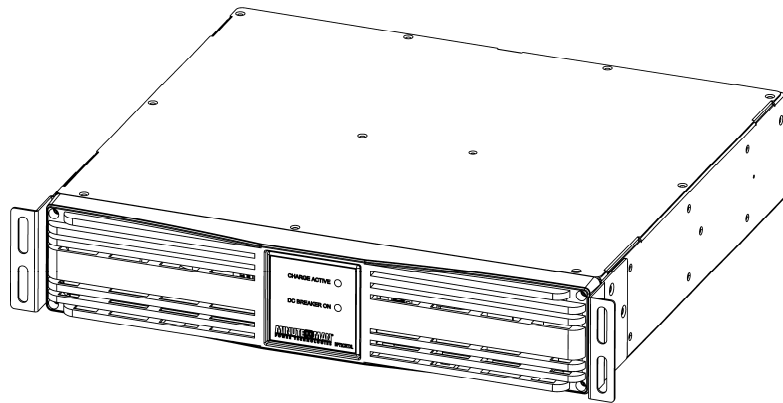
## **RACKMOUNT CONFIGURATION**

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

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

**NOTE:** The mounting brackets can be mounted in the middle of the Battery Pack.

1. Remove the Battery Pack from the shipping box.
2. Mount the Battery Pack into the rack and secure with retaining screws.  
**WARNING:** Use two or more people when installing the Battery Pack. Use **CAUTION**, the Battery Pack is extremely heavy. Do not move the rack after the units have been installed. The rack may become unstable due to the weight distribution.
3. The Rackmount Configuration is complete. See Connecting the Battery Pack.



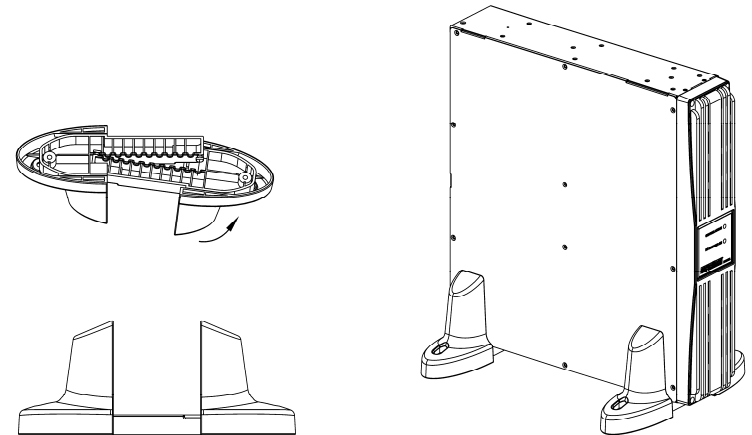
## **TOWER CONFIGURATION**

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

1. The Battery Packs come with the rackmount brackets pre-installed. Remove the rackmount brackets when installing in the Tower Configuration.
2. Once the location of the Battery Pack has been determined, place the tower brackets in the desired location.

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

3. Slide the Battery Pack into the tower brackets. Make sure that the Battery Pack is stable.
4. The LED 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 LED panel so that it reads in the upright position and then reinstall it back into the front panel.
5. The Tower Configuration is complete. See Connecting the Battery Pack.



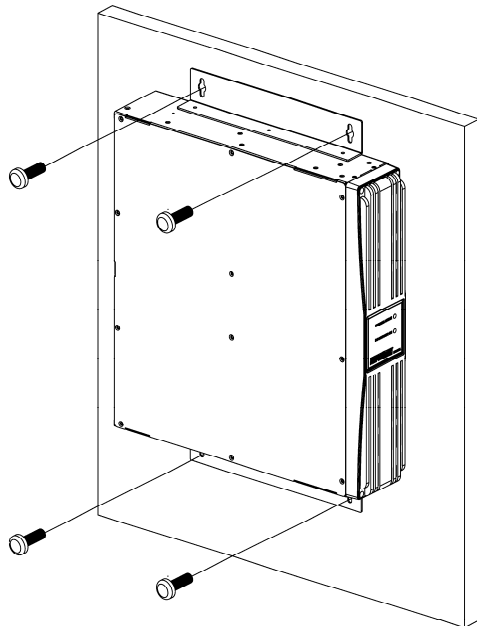
## **WALLMOUNT CONFIGURATION**

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

1. The Battery Packs come with the rackmount brackets pre-installed. Remove the rackmount brackets when installing in the Wallmount Configuration.
2. Once the location and position of the Battery Pack has been determined, lay the Battery Pack down flat.

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

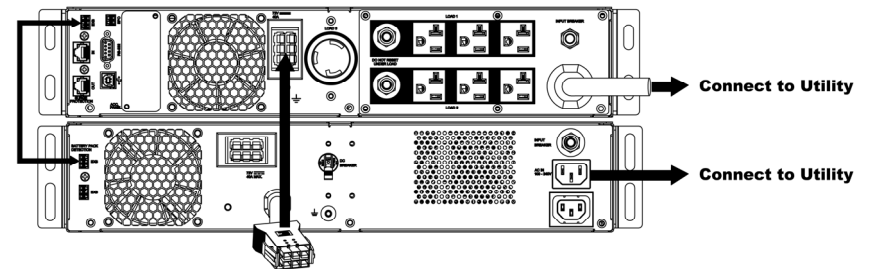
3. Align the mounting brackets with the mounting bracket screw holes on the side panels of the Battery Pack and attach with the six retaining screws.
4. Attach a sheet of 3/4" plywood into structural material (wood or metal wall studs). **WARNING:** The plywood must be a minimum of 3/4" thick and the 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 Battery Pack is extremely heavy. Position the Battery Pack, so that the mounting bracket keyed holes line up with the four retaining screws. Slide the Battery Pack down until its resting securely on the four retaining screws.
8. Tighten the four retaining screws to secure the Battery Pack to the plywood.
9. The LED 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 LED panel so that it reads in the upright position and then reinstall it back into the front panel.
10. The Wallmount Configuration is complete. See Connecting the Battery Pack.



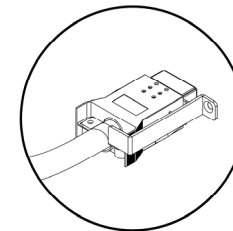
## CONNECTING THE BATTERY PACK (QUALIFIED SERVICE PERSONNEL ONLY)

**NOTE:** If you are using these Battery Packs with the EXR, Enterprise, or the Endeavor series UPS, 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. Connect the External Battery Pack Detection cable or see the UPS's or the Power Monitoring software or the SNMP card's User's Manual to configure the UPS.

1. Make sure that the DC breaker on the rear panel of the Battery Pack is in the Off position.
2. Turn the UPS off and disconnect the UPS's input power cord from the AC wall outlet.
3. Remove the External Battery Connector cover plate from the UPS's rear panel.
4. Verify, before connecting the Battery Pack's external battery cable into the UPS's external battery connector that they mate red to red and black to black.
5. Connect the external battery cable from the Battery Pack to the external battery connector on the UPS. **NOTE:** If connecting more than one Battery Pack see Daisy Chaining.
6. Connect one end of the External Battery Pack Detection cable to the External Battery Pack Detection Port on the rear panel of the UPS (if applicable).
7. Connect the other end of the External Battery Pack Detection cable to the top External Battery Pack Detection Port on the rear panel of the Battery Pack.
8. See Connecting the Battery Pack to an AC Source.



**NOTE:** The BP72CRTXL's External Battery Cable has a strain relief that must be attached (with the screw) to the rear panel of the UPS.



BP72CRTXL's External Battery Cable with strain relief.

## CONNECTING THE BATTERY PACK TO AN AC SOURCE

These Battery Packs have a universal input voltage range of 100 - 240VAC. Before connecting the Battery Pack to an AC source read all the Cautions and Warnings.

1. Connect the Battery Pack's input power cord into the AC Inlet on the rear panel of the Battery Pack.
2. Plug the other end of the Battery Pack's input power cord into the AC wall outlet, use a two pole, three wire, grounded AC wall outlet. The AC wall outlet shall be near the Battery Pack and shall be easily accessible. The input power cord on this Battery Pack series is intended to serve as a disconnect device. Do not use extension cords, adapter plugs, or surge strips. Do not connect the Battery Pack's input power cord into the output receptacles on the UPS.
3. Turn the DC breaker on the Battery Pack's rear panel to the On position. See the UPS User's Manual for the normal startup of the UPS. **NOTE:** If connecting more than one Battery Pack see Daisy Chaining.

## CHARGING THE BATTERY

These Battery Packs will charge the internal batteries whenever the Battery Pack is connected to an AC source and there is an acceptable AC voltage present (100 - 240VAC). It is recommended that the Battery Packs be charged for a minimum of 4 hours before use. The Battery Pack maybe used immediately however, the "On-Battery" runtime of the UPS may be less than normally expected. **NOTE:** If the Battery Pack is going to be out of service or stored for a prolonged period, the batteries must be recharged for at least 24 hours every ninety days.

## DAISY CHAINING

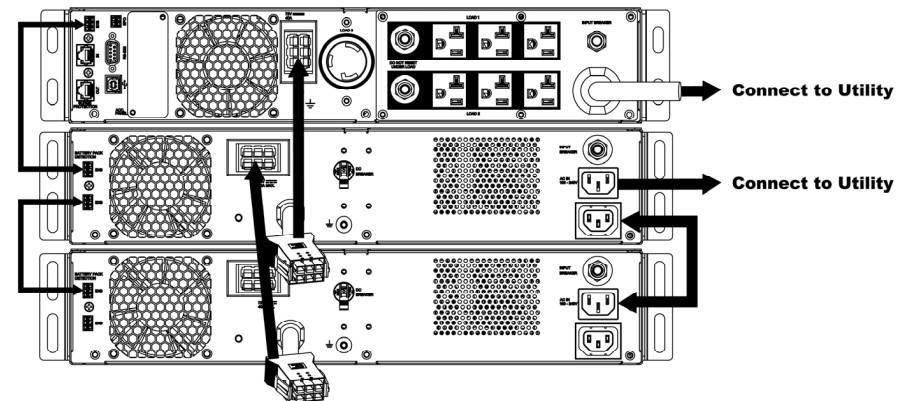
(QUALIFIED SERVICE PERSONNEL ONLY)

"Daisy Chaining" means connecting one Battery Pack to another Battery Pack; this chain could go on indefinitely. Follow the steps below to Daisy Chain the Battery Packs:

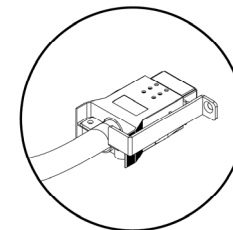
1. Be sure to read the installation placement procedure, all the cautions and the safety precautions before Daisy Chaining the Battery Pack(s).
2. Make sure that all, the Battery Pack's DC breakers and UPS's are turned Off. **CAUTION:** If the Battery Pack's DC breaker is in the On position, the battery voltage will be present at the open end of the Battery Pack's external battery cable and external battery connector. Unplug all the equipment that is plugged into the UPS's output receptacles. Disconnect the UPS's power cord from the AC wall outlet.
3. Remove the External Battery Connector's cover plate from the UPS's rear panel and the additional Battery Packs.
4. Verify, before plugging the external battery cable into the UPS's external battery connector or the Battery Pack's external connector that they mate red to red and black to black.
5. Connect the external battery cable from the first Battery Pack into the external battery connector on the rear panel of the UPS.
6. Connect the external battery cable from the second Battery Pack into the external battery connector on the rear panel of the first Battery Pack.

7. Connect one end of the first External Battery Detection cable to the External Battery Detection Port on the rear panel of the UPS.
8. Connect the other end of the first External Battery Detection cable to the top External Battery Detection Port on the rear panel of the first Battery Pack.
9. Connect one end of the second External Battery Detection cable to the bottom External Battery Detection Port on the rear panel of the first Battery Pack.
10. Connect the other end of the second External Battery Detection cable to the top External Battery Detection Port on the rear panel of the second Battery Pack.
11. Connect the Daisy Chain power cord from the AC Outlet of the first Battery Pack to the AC Inlet of the second Battery Pack.
12. Connect the input power cord with the NEMA 5-15P Plug into the AC Inlet on the first Battery Pack.
13. Connect the input power cord (with the NEMA 5-15P Plug) from the first Battery Pack into the AC wall outlet, use a two pole, three wire, grounded AC wall outlet. The AC wall outlet shall be near the UPS and shall be easily accessible. Do not use extension cords, adapter plugs, or surge strips. Do not connect the Battery Pack's input power cord into the output receptacles on the UPS.
14. Turn ALL of the DC breakers on the rear panel of all of the Battery Packs to the On position.
15. The Battery Packs are ready for normal operation, see the UPS's User's Manual for the normal startup of the UPS.

**NOTE:** The maximum number that can be Daisy Chained for the AC source is five Battery Packs. There is no maximum number for Daisy Chaining the DC bus voltage for the Battery Packs.



**NOTE:** The BP72CRTXL's External Battery Cable has a strain relief that must be attached (with the screw) to the rear panel of the UPS.



**BP72CRTXL's External Battery Cable with strain relief.**

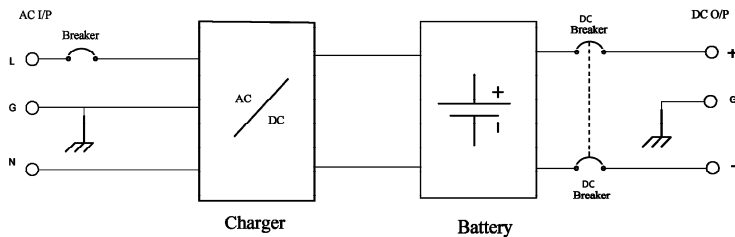


## Chapter 4: Operation

### SYSTEM OVERVIEW

These Battery Packs will extend the runtime capabilities of the UPS. These Battery Packs have internal chargers to properly maintain the internal batteries. These Battery Packs have a universal input voltage range of 100 - 240VAC. The Battery Pack will charge the batteries with the DC breaker in the On or Off position if the Battery Pack is plugged into the AC wall outlet and there is an acceptable AC voltage present (100 - 240VAC). When the commercial power is lost the charger will turn Off and the Battery Pack will extend the runtime of the UPS. When the commercial power returns the Battery Pack's internal charger will automatically start recharging the batteries. During normal AC operation, the UPS and Battery Pack will quietly and confidently protect your system from power anomalies.

### Block Diagram of the Basic Wiring and Internal Circuit Configuration



### TURNING THE BATTERY PACK ON/OFF

Turning the DC breaker to the On position will connect the DC bus voltage from the Battery Pack to the UPS. Turning the DC breaker to the Off position will disconnect the DC bus voltage from the Battery Pack to the UPS. The DC breaker does NOT turn on or turn off the internal charger. Plug the input power cord into the AC wall outlet to turn on the internal charger. Unplug the input power cord to turn off the internal charger. The Battery Pack's internal charger will continue to charge the batteries whenever it is plugged into an AC wall outlet and there is an acceptable AC voltage present (100 - 240VAC).

### EXTERNAL BATTERY PACK DETECTION PORT

Connecting the External Battery Detection cable from the Battery Pack(s) to the UPS allows the UPS to automatically detect the External Battery Pack(s). Once the UPS detects that there is an External Battery Pack(s) 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 by the LCD screen on the UPS, or the Power Monitoring Software or the SNMP card.

### INDICATORS

The Charger Active (green) LED illuminates in a steady state when the Charger is on. The Charger Active LED will extinguish when there is no AC present or when the charger is not operating.

The DC Breaker On (green) LED illuminates in a steady state when the DC breaker is in the On position. The DC Breaker On LED will extinguish when the DC breaker is in the Off position.

## Chapter 5: 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 the 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 6: Troubleshooting

| Symptom  | Possible Cause  | What To Do  |
|--|---|---|
| The Charger Active LED is not on.                        | <ol style="list-style-type: none"> <li>1. The input power cord is not plugged into the AC wall outlet.</li> <li>2. No commercial power available.</li> <li>3. No AC voltage at the AC wall outlet.</li> <li>4. Internal charger fault.</li> </ol> | <ol style="list-style-type: none"> <li>1. Plug the input power cord into the AC wall outlet.</li> <li>2. Once commercial power is available recheck the LED.</li> <li>3. Check the circuit breaker at the service panel to see if it is tripped.</li> <li>4. Call for Service.</li> </ol> |
| The DC Breaker On LED is not on.                         | <ol style="list-style-type: none"> <li>1. The DC breaker is in the Off position.</li> <li>2. The DC breaker is tripped.</li> <li>3. The internal battery wires are disconnected.</li> <li>4. Internal fault.</li> </ol>                           | <ol style="list-style-type: none"> <li>1. Turn the DC breaker to the On position.</li> <li>2. Reset the DC breaker.</li> <li>3. Reconnect the internal battery wires.</li> <li>4. Call for Service.</li> </ol>  |
| The charger is not providing the correct charge voltage. | <ol style="list-style-type: none"> <li>1. The input power cord is not plugged into the AC wall outlet.</li> <li>2. The charger has an internal fault.</li> </ol>  | <ol style="list-style-type: none"> <li>1. Plug the input power cord into the AC wall outlet.</li> <li>2. Call for Service.</li> </ol>   |

## Chapter 7: 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 Battery Pack contains potentially hazardous voltages. Do not attempt to disassemble the Battery Pack beyond the battery replacement procedure. This Battery Pack 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 Battery Pack 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 Battery Pack. These batteries have pressure operated vents. These Battery Packs contain sealed non-spillable maintenance-free lead acid batteries.

|                                |           |           |
|--------------------------------|-----------|-----------|
| Model #                        | BP36CRTXL | BP72CRTXL |
| Internal Battery Module Part # | BM0090    | BM0091    |

## **BATTERY REPLACEMENT PROCEDURE**

(QUALIFIED SERVICE PERSONNEL ONLY)

### **PLEASE READ THE CAUTIONS AND WARNINGS BEFORE ATTEMPTING TO REPLACE THE BATTERY MODULES**

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 Battery Pack's battery modules 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.
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. Turn off all the DC breakers on the rear panel of all the Battery Packs.
7. Unplug all the Battery Pack's AC power cords from the AC wall outlet.
8. Disconnect all the external battery cables.
9. Remove the front panel retaining screws. (FIG. 1)
10. Remove the front panel and lay it on top of the Battery Pack.
11. Remove the retaining screws for the battery retaining brackets and disconnect the red battery connectors from each of the battery modules. (FIG. 2)
12. Remove the battery retaining brackets. (FIG. 3)
13. Grasp one of the battery module's pull tabs and gently pull the battery module out of the Battery Pack and set on the floor. (FIG. 4)
14. Grasp the other battery module's pull tab and gently pull the battery module out of the Battery Pack and set on the floor.

**NOTE:** Use Caution, the battery modules are heavy.

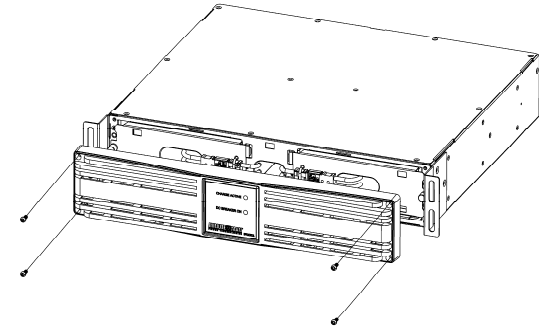
15. Slide the new battery modules into the Battery Pack.
16. Reinstall the battery retaining brackets.
17. Reinstall the retaining screws for the battery retaining brackets.
18. Verify proper polarity. Reconnect the red battery connectors together.

**NOTE:** Some sparking may occur this is normal.

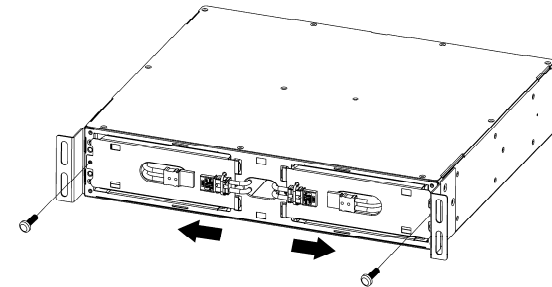
19. Reinstall the front panel on the Battery Pack.
20. Reinstall the front panel retaining screws.
21. Reconnect all the external battery cables.
22. Plug in all the Battery Pack's AC power cords into the AC wall outlet.
23. Turn on all the DC breakers on the rear panel of all the Battery Packs.
24. 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.
25. The Battery Pack is ready for normal operation.

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

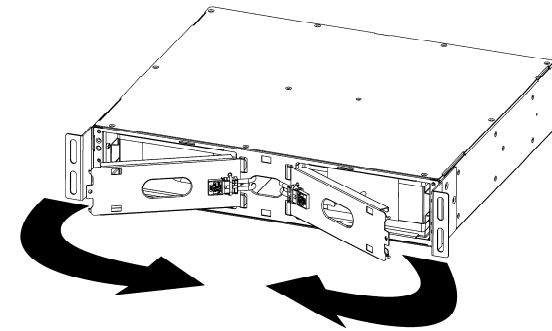
**FIG. 1**



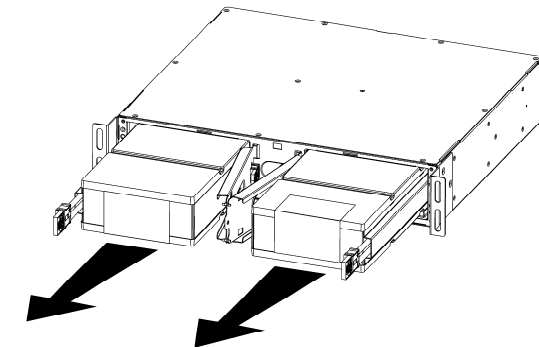
**FIG. 2**



**FIG. 3**



**FIG. 4**



## Chapter 8: Specifications

| SYSTEM SPECIFICATIONS                                  |  |                      |
|--|--|----------------------|
| Model Number   | <b>BP36CRTXL</b>   | <b>BP72CRTXL</b>     |
| Format   | Rack/Tower Convertible / Wallmount   |                      |
| CHARGER INPUT  |  |                      |
| Number of Phase  | Single (1Ø 2W +G)  |                      |
| Nominal Voltage  | 100 - 240VAC (universal)   |                      |
| Voltage Range  | 90 - 264VAC (universal)  |                      |
| AC Current   | 2.0 Amps   |                      |
| Frequency Limits                                       | 50 or 60 Hz, ±6Hz, autosensing   |                      |
| Input Protection                                       | Resettable Circuit Breaker   |                      |
| Input Power Cord                                       | NEMA 5-15P, 10ft   |                      |
| Daisy Chain Power Cord                                 | IEC320 C13 to IEC320 C14, 6ft  |                      |
| CHARGER OUTPUT   |  |                      |
| DC Voltage   | 41.4VDC ±3%  | 82.8VDC ±3%          |
| Dc Current   | 1.8Amps ±15%   | 1.1Amps ±15%         |
| Output Protection                                      | Resettable Circuit Breaker   |                      |
| SURGE PROTECTION                                       |  |                      |
| Surge Energy Rating                                    | 220 J (800 J)  |                      |
| Surge Current Capability                               | 6500 Amps total  |                      |
| Surge Response Time                                    | 0 ns (instantaneous) normal mode; <5 ns common mode  |                      |
| BATTERY SYSTEM   |  |                      |
| Battery Type   | Sealed, Non-Spillable, Maintenance Free, Value Regulated, Lead Acid  |                      |
| Typical Recharge Time                                  | 10-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 #                                  | BM0090   | BM0091               |
| PHYSICAL   |  |                      |
| Size – Net L X W X H<br>(rackmount brackets installed) | 17.32 x 18.96 x 3.48"<br>440 x 481.6 x 88.5 mm   |                      |
| Weight - Net   | 49.8 lbs<br>22.6 Kgs   | 52.5 lbs<br>23.8 Kgs |
| Size - Shipping<br>L X W X H                           | 23.67 x 21.89 x 9.76"<br>601 x 556 x 248 mm  |                      |
| Weight - Shipping                                      | 60.6 lbs<br>27.5 Kgs   | 63.3 lbs<br>28.7 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, RoHS2 (EU Directive 2011/65/EU & 2015/863/EU) |                      |

Specifications are subject to change without prior notice.

## Chapter 9: 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 web site at [www.minutemanups.com/support](http://www.minutemanups.com/support) 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: 2014, EN62040-2: 2006+AC: 2006, IEC61000-2-2: 2002, IEC61000-4-2: 2008, IEC61000-4-3: 2010, IEC61000-4-4: 2012, IEC61000-4-5: 2014, IEC61000-4-6: 2013, IEC61000-4-8: 2009, 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: External Battery Packs for Uninterruptible Power Supplies (UPS)

Model No: BP36CRTL, BP72CRTL

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