

Smart-UPS Rack Mount Supplement

English

American Power Conversion

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Note: Specifications contained herein are subject to change without notice.

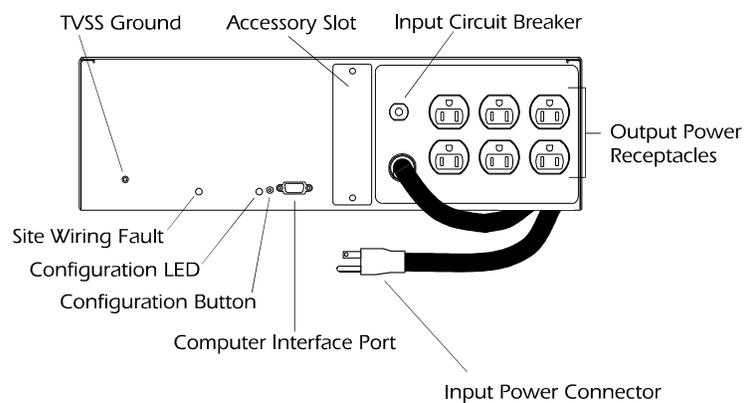
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1. Introduction

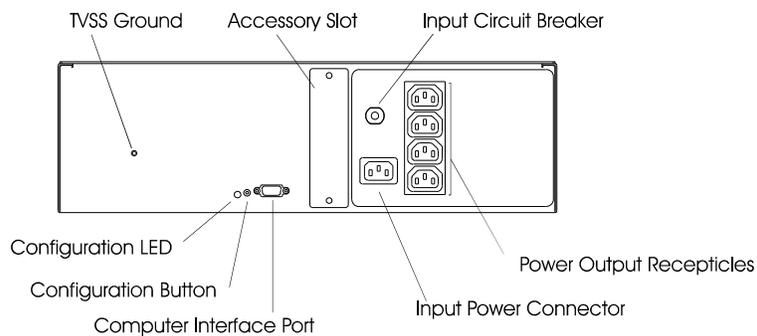
This supplement covers differences between the rack mount and stand alone versions of the UPS. Please refer to the *User's Manual* for basic information about the UPS.

2. Presentation

Rear Panel, 700, 1000, 1400 VA

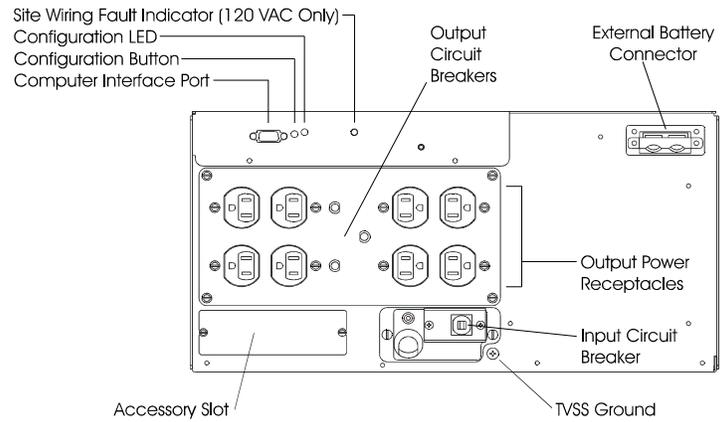


100/120 VAC

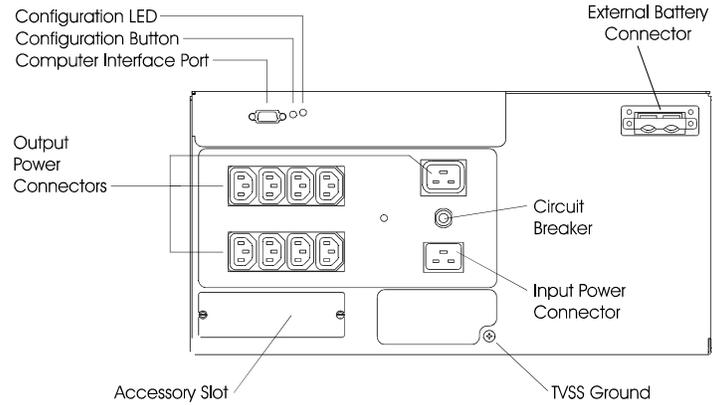


230 VAC

Rear Panel, 2200, 3000 VA



100/120 VAC

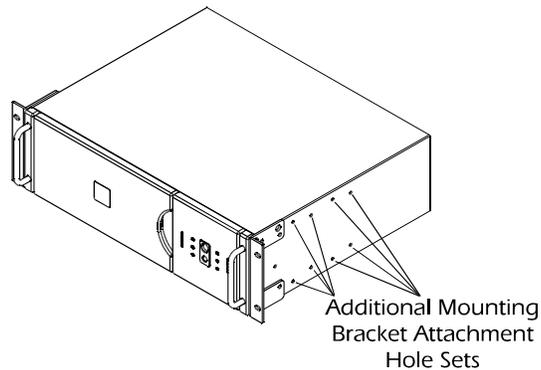


230 VAC

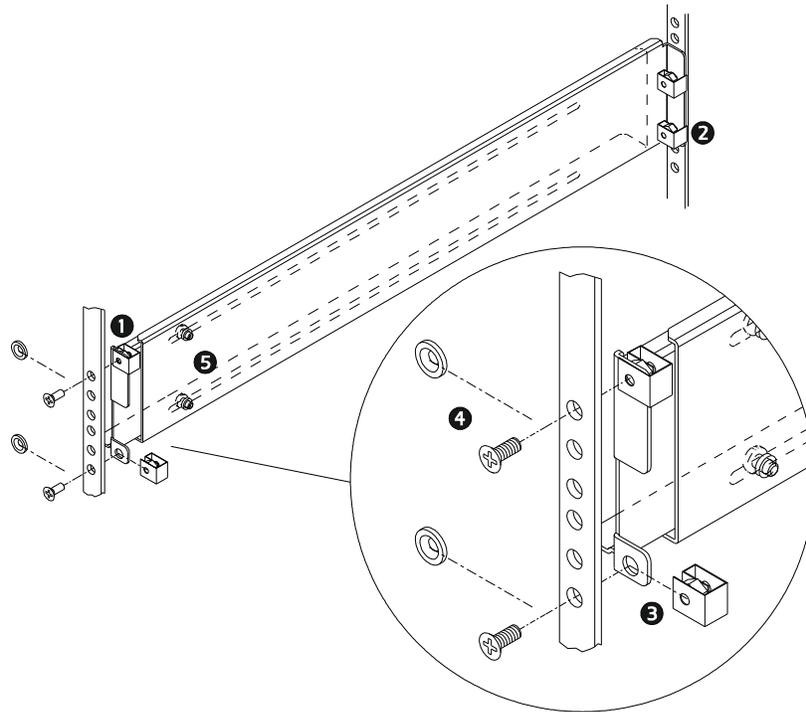
3. Installation Tips

Please observe the following items when installing the UPS.

- The UPS comes with standard 19" (46.5 cm) rack mount brackets installed. An accessory set of 23" (59.2 cm) brackets are available for the 700, 1000, and 1400 VA models. Contact your dealer or the factory at the number in the front of this manual for more information.
 - The 2200 and 3000 VA models of the UPS are supplied with L-channel supports. These supports may be used with these models to ease installation. The L-channel supports are available as an accessory for the 700, 1000, and 1400 VA models. Contact your dealer or the factory at the number in the front of this manual for more information.
 - **Caution:** The 2200 and 3000 VA models require two or more people to install due to their weight.
 - The UPS is not supplied with screws to attach the mounting brackets (ears) to the rack, as the size of screw varies according to the type of rack used.
 - UPSs are heavy. Select a rack location sturdy enough to handle the weight. Try to mount the UPS near the bottom of the rack.
 - Select a rack location with adequate air flow that is free from excessive dust. Ensure that the air vents on the sides of the UPS are not blocked. Do not operate the UPS where temperature or humidity are outside the limits in Section 12 of the *User's Manual*.
 - **Caution:** Remove the UPS before transporting the rack.
 - Two additional sets of bracket holes are located on the sides of the UPS (see below). These holes allow mounting the brackets with a three inch or six inch setback. Move the mounting brackets back if desired to optimize the esthetic or physical requirements of the rack.
- Caution:** Check the rack to make sure it won't tip after moving the mounting brackets.



Installing the Support Brackets



1. Verify the contents of the kit. It contains: two adjustable-length L-channel supports, eight clip nuts, eight 10-32 x 1/2" flat-head screws, and eight washers. The washers are for use with square rack holes only.
2. If the rack uses threaded holes, drill out the appropriate front rail rack holes with a 7/32" drill bit. This step is not required when mounting in racks with square holes.
3. Install clip nuts on the uppermost and lowermost holes at each end of the L-channel supports. Orient the clip nut as shown in the drawing above (3). The nuts should be to the inside of the cabinet when the supports are installed.
4. Secure the front of the support to the front cabinet rack using two 10-32 x 1/2 flat-head screws (4). Note that the front ear of the L-channel support has a square cutout on the mounting ear (1), and the rear ear has no cutout (2). For cabinets with square rack holes, use a washer under the head of each screw.
5. Loosen the two 10-32 x 5/16 pan-head screws that lock together the two halves of the L-channel support (5). Slide the outer half of the support to the rear until it contacts the rear rack of the cabinet. If the rack uses threaded holes, drill out the appropriate rear rail rack holes with a 7/32" drill bit (see Step 3). Secure the rear of the support to the rear cabinet rack using two 10-32 x 1/2 flat-head screws. For cabinets with square rack holes, use a washer under the head of each screw.
6. Securely tighten the two 10-32 x 5/16 pan-head screws that lock together the halves of the L-channel support (5).
7. Repeat steps 3 through 6 to install the other L-channel support.
8. Slide the UPS onto the L-channel supports and use rack hardware to secure the UPS mounting ears to the rack rails.

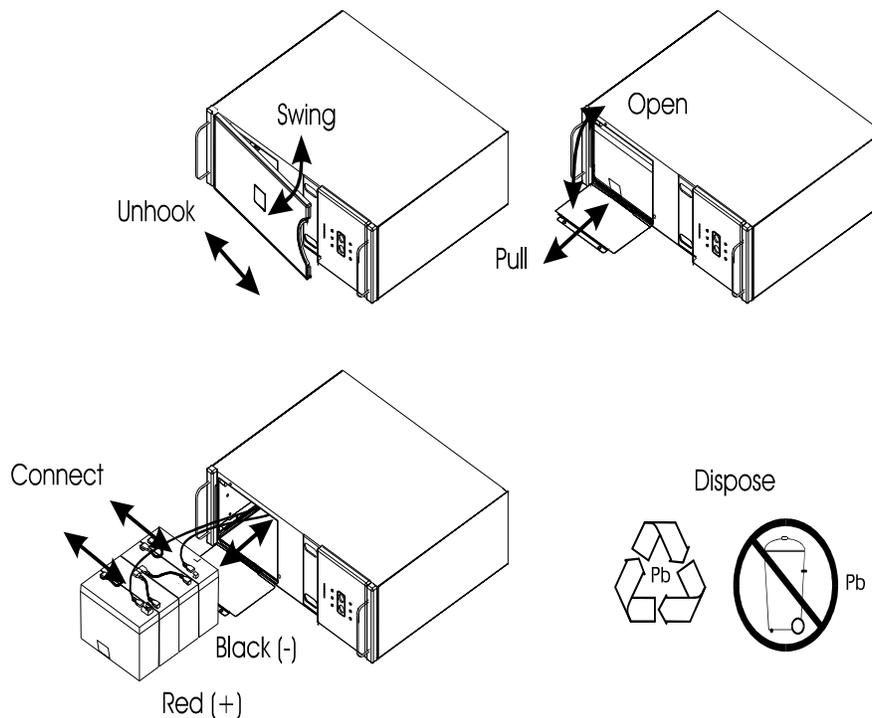
4. Options

Accessory receptacle plates are available for the 2200 VA and 3000 VA models. These plates offer different receptacle configurations and hard wire installation. Contact your dealer or the factory at the number in the front of this manual for more information.

5. Battery Replacement

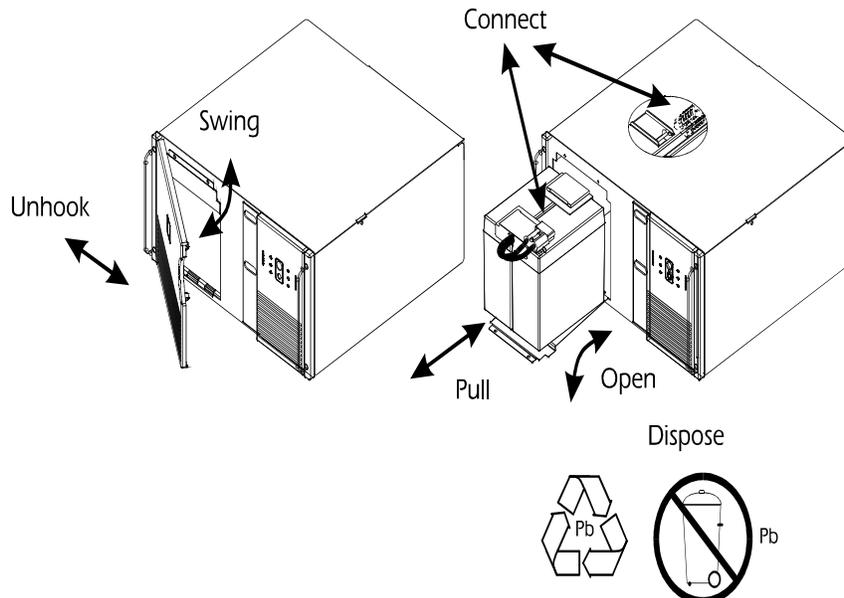
Battery replacement is a safe procedure, isolated from electrical hazards. You may leave the UPS and the loads on for the following procedure.

700, 1000, 1400 VA



1. Reach into the finger pull and open the front cover. **Swing** the cover open as shown.
2. **Unhook** the side of the cover from the chassis and lift it away to expose the battery door.-
3. Use a flat-blade or Phillips screwdriver or a coin to remove the two battery door screws and **open** the door.
4. Grasp the tab and gently **pull** the battery out of the UPS. **Note:** Be careful removing the batteries they are heavy.
5. Disconnect the battery leads. Loosen the connectors by gently wiggling them while pulling straight back from the battery connector.
6. **Connect** the battery leads to the new battery. Connect the **red** wire to the positive (+) terminal and the **black** wire to the negative () terminal. **Note:** Small sparks at the battery connectors are normal during battery connection.
Now slide the battery into the UPS, close the battery door, replace the battery compartment screws, and replace the front cover.
7. Dispose of the battery properly at an appropriate recycling facility or return it to the supplier in the packing material for the new battery. See the instructions supplied with the new battery for more information.

2200, 3000 VA



1. Reach into the finger pull and open the front cover. **Swing** the cover open as shown.
2. **Unhook** the side of the cover from the chassis and lift it away to expose the battery door.-
3. Use a flat-blade or phillips screwdriver or a coin to remove the three battery door screws and **open** the door.
4. Grip the wires for the front set of batteries and **pull** firmly to disconnect the wires. Remove the batteries. Set aside the foam spacer located between the batteries. Now reach into the battery compartment and grasp either the white cord (if it is present), or the wires for the other set of batteries. Again, **pull** firmly to disconnect the wires. Remove the second set of batteries. **Note:** Be careful removing the batteries they are heavy.
5. Slide the first set of new batteries into the unit. Hold the connector down below the top of the batteries and toward the door; otherwise the assembly will not fit. Guide the connector over the top of the batteries and connect it to the rear connector of the battery compartment. Set the foam spacer against the rear batteries to prevent the wires from being pinched. Slide the second set of batteries in, then guide the connector over the batteries and connect it to the front connector of the battery compartment. **Note:** Small sparks at the battery connectors are normal during battery connection. Close the battery compartment door, making sure that no wires are pinched. Replace the battery compartment screws and replace the front cover.



6. Dispose of the battery properly at an appropriate recycling facility or return it to the supplier in the packing material for the new battery. See the instructions supplied with the new battery for more information.

6. Specifications

Model	Size (H x W x D)	Net Weight (shipping)
SU700RM		18.2 (20.9) kg 40 (46) lb.
SU1000RM	13 x 48.3 x 38.1 cm 5.22 x 19 x 15 inches	20.8 (23.5) kg 46 (52) lb.
SU1400RM		25 (27.6) kg 55 (61) lb.
SU2200RM		54.5 (61.7) kg 120 (136) lb.
SU2200RMXL	22.2 x 48.3 x 50.8 cm 8.72 x 19 x 20 inches	58.5 (65.8) kg 129 (145) lb.
SU2200RMXLI		61 (68) kg 134 (150) lb.
SU3000RM		58.5 (65.8) kg 129 (145) lb.

7. How to Determine On-battery Run Time

This table will aid in estimating the length of run time that you may expect for a given load.

1. To calculate the on-battery run time, first determine the total load protected by the UPS in Volt-Amps. Obtain load figures from either the labelling on the protected equipment or the accompanying literature. For loads specified in watts, multiply the specified figure by 1.4. For loads specified in amps, multiply the specified figure by the line voltage.
2. Add the individual loads to determine the total load.
3. Compare the total load of the system to the run time table below.

Typical On-battery Run Time Versus Load, in Minutes

	SU700RM	SU1000RM	SU1400RM	SU2200RM	SU3000RM
50 VA	140	150	192	366	297
75 VA	113	125	152	309	258
100 VA	85	100	125	268	228
150 VA	55	75	90	209	183
200 VA	38	58	69	170	152
250 VA	26	44	54	142	128
300 VA	20	36	44	121	110
350 VA	17	28	36	104	96
400 VA	14	24	30	91	84
450 VA	11	20	25	80	75
500 VA	9	18	22	71	67
550 VA	7	15	19	64	60
600 VA	6	13	16	57	54
700 VA	5	11	13	46	44
800 VA	-	9	11	38	36
900 VA	-	7	9	32	31
1000 VA	-	6	8	27	26
1200 VA	-	-	6	21	20
1400 VA	-	-	5	17	16
1600 VA	-	-	-	14	13
2000 VA	-	-	-	10	10
2200 VA	-	-	-	8	8
2500 VA	-	-	-	-	7
3000 VA	-	-	-	-	5