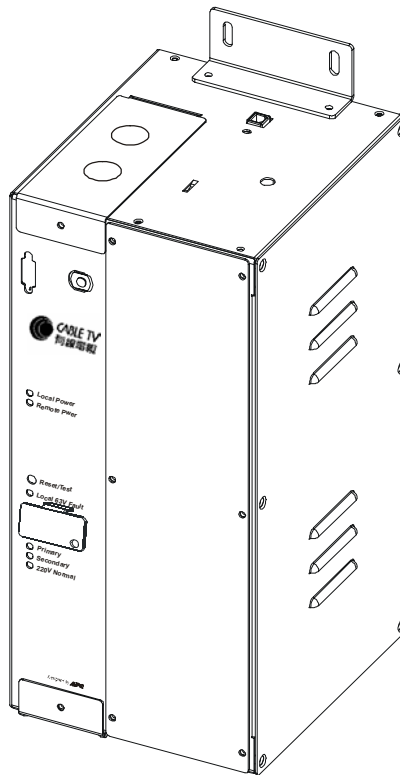


# Broadband Automatic Disconnect Switch

## User Manual





## Introduction

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### About this unit

Redundant power and output voltage monitoring for Broadband cable systems is provided with the use of two APC Automatic Disconnect Switches and two Ferroresonant Power Supplies (FRP).

### Safety

<b>Electrical Warnings</b>	<p>Do not work alone under hazardous conditions.</p> <p>High current through conductive materials could cause severe burns.</p> <p>Do not work alone under hazardous conditions.</p> <p>High current through conductive materials could cause severe burns.</p> <p>Do not handle any metallic connector before the power has been disconnected.</p> <p>When grounding cannot be verified disconnect the equipment from the utility power outlet before installing or connecting to other equipment. Reconnect the power cord only after all connections are made.</p> <p>Check that the power cord(s), plug(s), and socket(s) are in good condition.</p> <p>Replacement of fuses or other parts must be with identical types and ratings. Substitution of nonidentical parts may cause safety and fire hazards.</p> <p>In order to maintain compliance with the EMC directive for products sold in Europe, output cords attached to the UPS should not exceed 10 meters in length.</p>
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### Specifications

#### Environmental Specifications

<b>Temperature</b>	<p>Operating: 32° to 122°F (0° to 50°C)          Storage: 5° to 122°F (-15° to 50°C)</p>
<b>Humidity</b>	0 to 95%
<b>Elevation</b>	0 to 10,000 feet (0 to 3,000 meters)

## Electrical Specifications

	Utility Power	Cable
<b>Input</b>		
<i>Connection</i>	Three Position Terminal Block	Cable Adapter (5/8-24) Terminal Block to Coax Center Conductor
<i>Nominal Voltage</i>	220 V	63 V
<i>Allowable Input range</i>	165-270 V	40-75 V
<i>Maximum Current</i>	15 A	18 A
<i>Input Current Limiting</i>	10 A	N/A
<b>Output</b>		
<i>Connection</i>	Three Position Terminal Block	Cable Adapter (5/8-24) Terminal Block to Coax Center Conductor I
<i>Allowable Output range</i>		40-75 V
<i>Initial Connection Delay</i>		Primary - None Secondary - 5.5 seconds
<i>Time to connect attached FRP to cable system after output failure</i>	N/A	350 mS maximum

## Physical Specifications

Characteristic	Specification
Height/Width/Depth	15" x 7" x 8" (38.1 x 17.8 x 20.3 cm)
Weight	14 lbs (6.4 kg)

## Installation

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### Unpack

**Read the Safety Guide before installing this unit.** The User Manual and Safety Guide are accessible on the APC Web site, [www.apc.com](http://www.apc.com).

Inspect the unit upon receipt. Notify the carrier and dealer if there is damage.

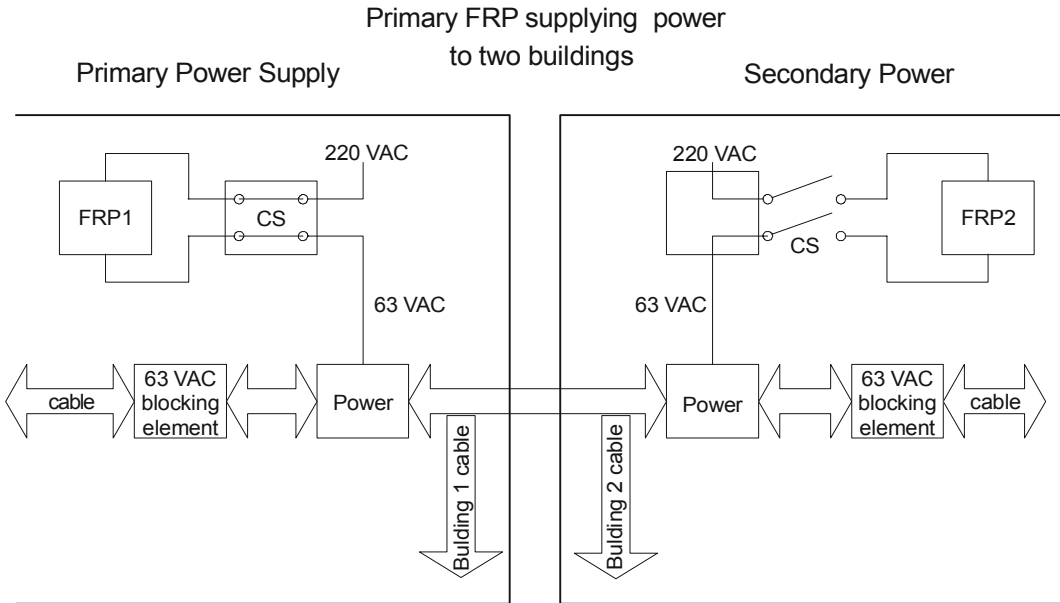
The packaging is recyclable; save it for reuse or dispose of it properly.

Check the package contents:

- Automatic Disconnect Switch enclosure
- Two mounting brackets
- Four screws
- One F Connector nut
- UPS literature kit containing:
  - product documentation
  - safety information warranty information

### Schematic Overview of the Automatic Disconnect Switch System

The user must designate the primary and secondary power supply. Refer to **Reset/Test** in the *Operation* section of this manual for details.



## Mount the Automatic Disconnect Switch on the Wall

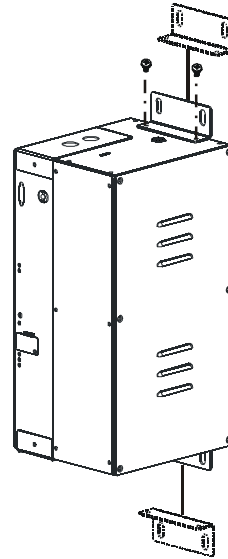
Do not operate the UPS where there is excessive dust or the temperature or humidity are outside the specified limits.

The Automatic Disconnect Switch enclosure has side vents. To ensure adequate air flow in and around the unit there must be 1" (2.5 cm) of space on the right and left sides of the enclosure.

Mount the Automatic Disconnect Switch enclosure on the wall using screws appropriate for the weight of the unit and the mounting surface material.

## Install the Mounting Brackets on the Automatic Disconnect Switch Enclosure

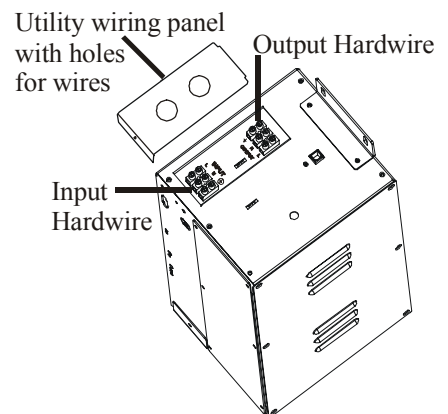
When securing the mounting brackets to the enclosure two screws must be used in each bracket.



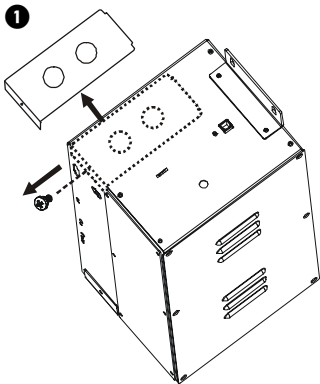
## Utility Power Connections

**Installation must be performed by a qualified electrician. Adhere to all local, state, federal, and/or National Electric Code (NEC) regulations regarding location, permits and electrical wiring.**

Install an approved 20 A high magnetic circuit breaker on the input side of the Automatic Disconnect Switch.

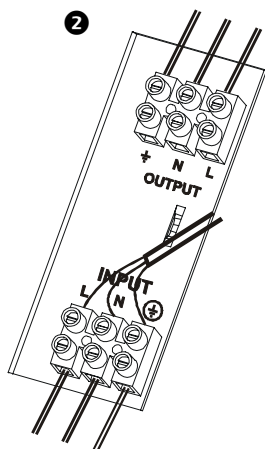


## Hardwire the Automatic Disconnect Switch



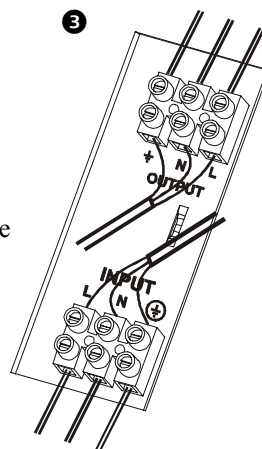
### Step 1

- Remove the utility wiring panel located on top of unit.
- When required apply a strain relief grommet to the utility wiring panel holes.



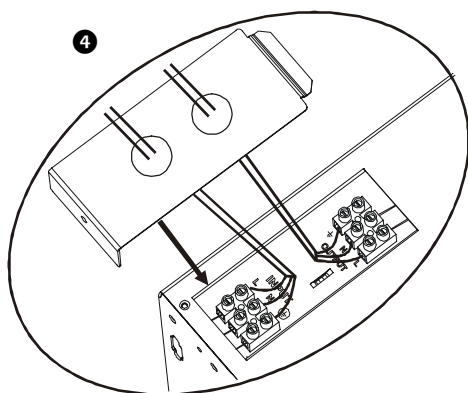
### Step 2

- Route the building wiring through the holes in the utility wiring panel.
- Connect the 220 V building wiring to the Input Hardwire terminal block.



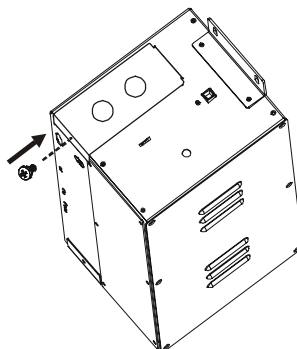
### Step 3

- Route the input wiring for the FRP/FLM through the hole in the utility wiring panel.
- Connect the FRP/FLM input wiring to the Output Hardwire terminal block.

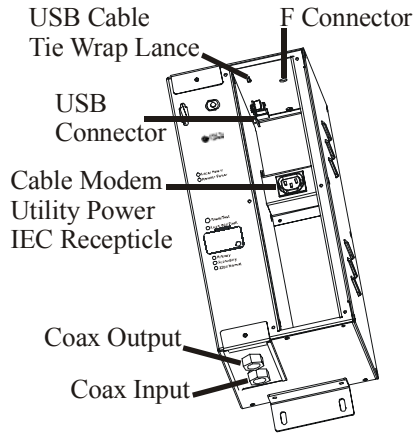


### Step 4

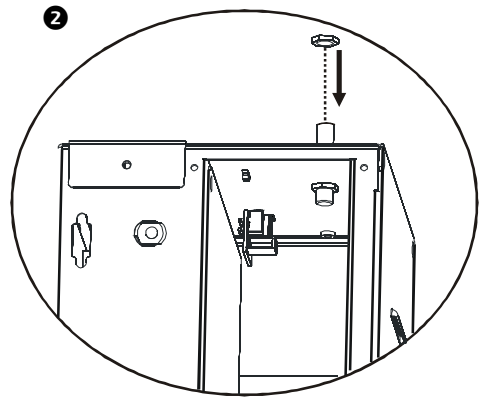
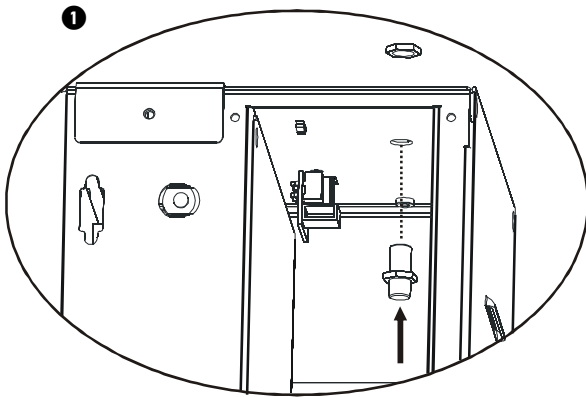
- Reinstall the utility wiring panel. Secure the panel with the screw removed in Step 1.



## Cable System Connections

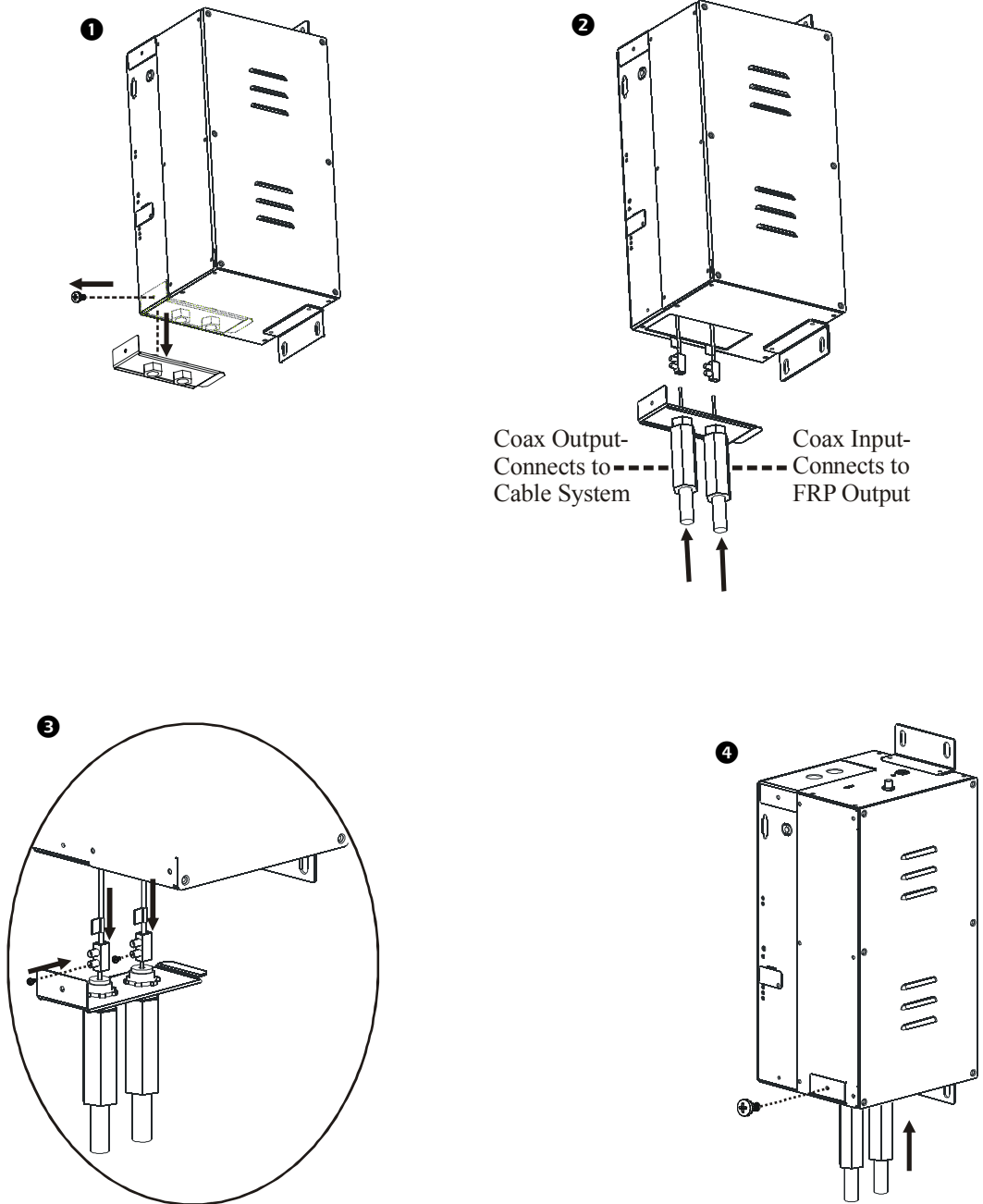


### F-Connector Installation

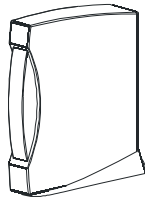
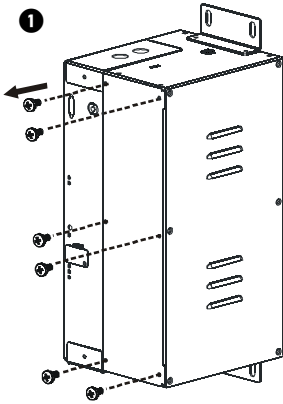




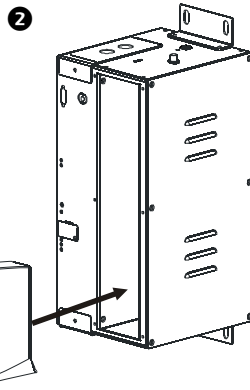
Coax Connection



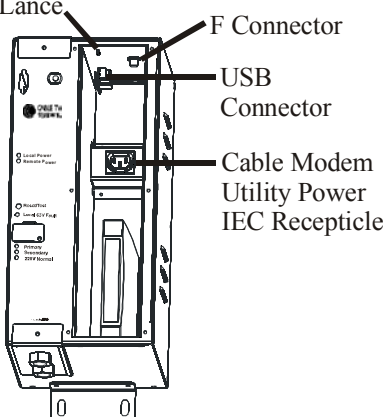
### Cable Modem Connection



The cable modem utility power, F-connector, and USB connectors are located on the back of the cable modem. Secure the appropriate cables to these connectors before installing the cable modem in the enclosure.



### 3 USB Cable Tie Wrap Lance



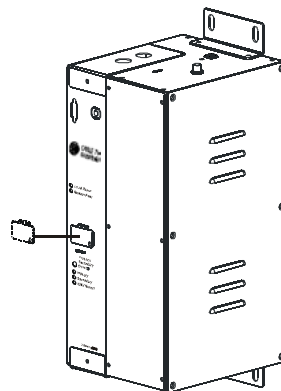
Connect the appropriate cables to the cable modem IEC receptacle, the USB port, and the F-connector located on inside the enclosure.

Using the lance on the enclosure secure a tie wrap to the USB cable if required.

## Start Up

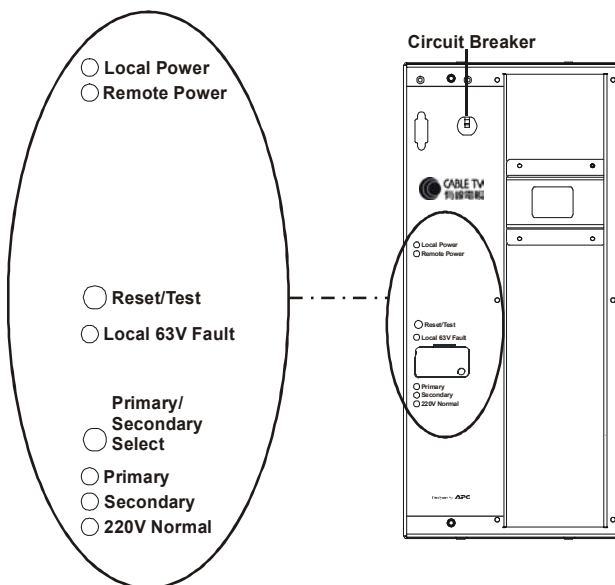
### Primary/Secondary Access Panel

To remove the access panel covering the Primary/Secondary Select button remove the screw that secures the panel to the enclosure. Slide the access panel slightly to the right and then pull the access panel toward you.



## Operation

### Indicators and Controls



**Circuit Breaker:** The circuit breaker protects the 220 V input from overload conditions.

**Local Power:** Green LED indicates that the Automatic Disconnect Switch is providing power to the cable system.

**Remote Power:** Green LED indicates the cable system is receiving power from a source other than the Automatic Disconnect Switch.

**Reset/Test:** Functionality of this control is dependant upon Automatic Disconnect Switch status.

#### Primary Status

- The primary Automatic Disconnect Switch is supplying power to the cable system. The Local Power LED will be illuminated. The Reset/Test button will do nothing.
- When the primary Automatic Disconnect Switch is not supplying power to the cable system the Remote Power LED will be illuminated. The Automatic Disconnect Switch will perform a test to measure the output voltage from the local FRP.

#### Secondary Status

- The secondary Automatic Disconnect Switch is supplying power to the cable system. The Local Power LED will be illuminated. The secondary Automatic Disconnect Switch will momentarily disconnect the local power from the cable system allowing the primary system to supply power. If the primary system begins to supply power, the secondary system will remain disconnected. If the primary system fails to supply power, the secondary system will immediately begin supplying power to the cable system.
- When the secondary Automatic Disconnect Switch is not supplying power to the cable system the Remote Power LED will be illuminated. The Automatic Disconnect Switch will perform a test to measure the output voltage from the local FRP.

**Local 63 V Fault:** Green LED indicates:

- The FRP/FLM output is outside the specified range during a test.
- The output failed while the Automatic Disconnect Switch was supplying power.

**Primary/Secondary Select:** This control is used to establish the Automatic Disconnect Switch as the primary or secondary power source for the cable system.

**Primary:** Green LED indicates that the Automatic Disconnect Switch is the primary power source.

**Secondary:** Green LED indicates that the Automatic Disconnect Switch is the secondary power source.

**220 V Normal:** Green LED indicates that 220 V input is present and within specified limits.

#### Cable Modem

The cable modem functions only when power is supplied by the Automatic Disconnect Switch to an FRP. If the FRP fails the cable modem will continue to function.

## Troubleshooting, Service, Contact, Warranty and Regulatory Information

### Troubleshooting

Use this chart to solve minor installation and operation problems. Refer to the APC Web, site [www.apc.com](http://www.apc.com) with complex problems.

<b>Problem and/or Possible Cause</b>	<b>Solution</b>
<b><i>Unit is on and the 220 V Normal LED is not illuminated</i></b>	
The unit is not wired properly.	Check that the input and output wiring are not reversed.
The circuit breaker is tripped.	Reset the circuit breaker.
The 220 V power is outside the specified limits.	Check that the 220 V power is within specified limits. Refer to <i>Specifications</i> in this manual.
<b><i>Unit is on and the Local 63 V Fault LED is illuminated</i></b>	
The unit is not connecting power to the cable system.	Check that the coax connections are not reversed.  Check that the FRP/FLM output is within specified limits. Refer to <i>Specifications</i> in this manual.
<b><i>Secondary unit will not switch to Remote power when the Test button is pressed</i></b>	
Remote power system is not functioning.	This is normal operation. Verify that the Remote power system is working.
<b><i>Primary unit is indicating Remote power</i></b>	
Primary unit was powered up after the secondary unit.	This is normal operation. Press the Reset button on the secondary unit to transfer power to the primary unit.  The primary FRP/FLM output is not within specified limits. Refer to <i>Specifications</i> in this manual.

### Limited Warranty

American Power Conversion (APC) warrants its products to be free from defects in materials and workmanship for a period of two years from the date of purchase. Its obligation under this warranty is limited to repairing or replacing, at its own sole option, any such defective products. To obtain service under warranty you must obtain a Returned Material Authorization (RMA) number from customer support. Products must be returned with transportation charges prepaid and must be accompanied by a brief description of the problem encountered and proof of date and place of purchase. This warranty does not apply to equipment that has been damaged by accident, negligence, or misapplication or has been altered or modified in any way. This warranty applies only to the original purchaser who must have properly registered the product within 10 days of purchase.

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

EXCEPT AS PROVIDED ABOVE, IN NO EVENT WILL APC 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, APC is not liable for any costs, such as lost profits or revenue, loss of equipment, loss of use of equipment, loss of software, loss of data, costs of substitutes, claims by third parties, or otherwise.

## Service

If the unit requires service do not return it to the dealer. Follow these steps:

1. Review the problems discussed in *Troubleshooting* to eliminate common problems.
2. If the problem persists, contact APC Customer Support through the APC Web site, **www.apc.com**.
  - Note the model number of the unit, the serial number, and the date purchased. If you call APC Customer Support, a technician will ask you to describe the problem and attempt to solve it over the phone. If this is not possible, the technician will issue a Returned Material Authorization Number (RMA#).
  - If the unit is under warranty, repairs are free.
  - Procedures for servicing or returning products may vary internationally. Refer to the APC Web site for country specific instructions.
3. Pack the unit in its original packaging. If this is not available, refer to the APC Web site for information about obtaining a new set.
  - Pack the UPS properly to avoid damage in transit. Never use Styrofoam beads for packaging. Damage sustained in transit is not covered under warranty.
4. Mark the RMA# on the outside of the package.

Return the unit by insured, prepaid carrier to the address given to you by Customer Support.

## Contact APC

Refer to the APC Web site, **www.apc.com**. Select the appropriate country from the country selection field, and select the *Support* tab at the top of the web page.

## Regulatory Agency Approvals and Radio Frequency Warnings

### FCC Compliance Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy. If it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case users will be required to take whatever measures may be necessary to correct the interference at their own expense.



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