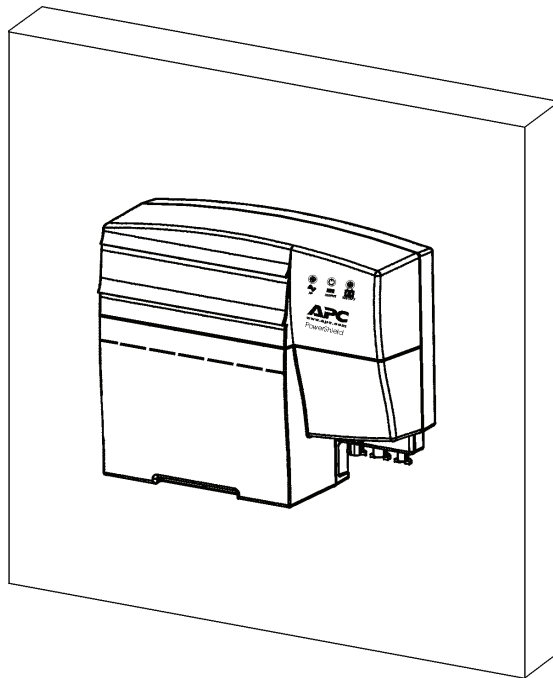




**BroadBand**

**PowerShield®**

# User Manual



990-0375G 12/2006



# Chapter 1 General Information

The PowerShield® provides a power source for broadband telephony and other DC applications.

## Safety

This Safety Guide contains important instructions that should be followed during installation and maintenance of the APC equipment and batteries. It is intended for APC customers who setup, install, relocate, or maintain APC equipment.

**Changes and modifications to this unit not expressly approved by APC could void the warranty.**

**Failure to observe these warnings may result in serious injury, death or damage to the equipment.**

### Electrical Warnings

Do not work alone under hazardous conditions.

Servicing this equipment may require working with protective covers removed and utility power connected. Use extreme caution during these procedures.

Check that the power cord(s), plug(s), and sockets are in good condition.

Replacement of fuses or other parts must be with identical types and ratings. Substitution of nonidentical parts may cause safety and fire hazards.

### Battery Warnings

Danger of explosion if battery is incorrectly connected or replaced. Use only APC replacement batteries.

## Specifications

<i>Model Number</i>	<i>Input</i>	<i>Output</i>	<i>Max Signal Voltage</i>	<i>Max Signal Current</i>	<i>Battery type Same for All Models</i>
CP15U48	100-240V 50-60Hz 1.0A	48V 15W	30V	5mA	12V 7.2Ahr Spill-Proof, Maintenance-Free, Sealed Lead Acid
CP24U12	100-240V 50-60Hz 1.0A	12V 24W	30V	5mA	
CP40U48	100-240V 50-60Hz 1.5A	48V 40W	30V	5mA	

## Environmental Specifications

<i>Operating Temperature</i>	32° F to 113° F (0° C to 45° C)
<i>Operating Humidity</i>	0 to 95% noncondensing within enclosure
<i>Max Operating Elevation</i>	10,000 ft (3,000 m)
<i>Max Storage Elevation</i>	50,000 ft (15,000 m)
<i>Storage Temperature</i>	-5° F to 113° F (-15° C to 45° C)

## Physical Specifications

<i>Characteristic</i>	<i>Specification</i>
<i>Height x Width x Depth</i>	
<i>UPS</i>	7.5 x 9.5 x 3 in (19 x 24 x 7.6 cm)
<i>UPS carton</i>	13.5 x 13.5 x 4.5 in (34 x 34 x 11 cm)
<i>Weight</i>	
<i>UPS</i>	7.5 lbs (3 kg)
<i>UPS with package materials</i>	9 lbs (4 kg)

## Unpacking

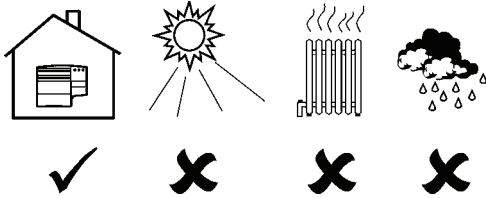
Inspect the unit upon receipt. Notify the shipping carrier or product supplier if there is damage.

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

Check the package contents. The package contains the enclosure, the battery (to be installed), one power cord, one seven-pin output connector, and product documentation.

# Chapter 2 Installation

## Enclosure Installation



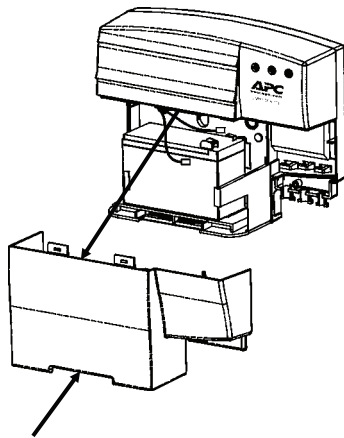
Install the UPS in a protected area that is free of excessive dust and has adequate airflow.

Do not operate the power supply where the temperature and humidity are outside the specified limits. Refer to *Specifications* in this manual.

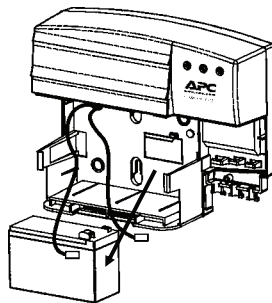
Install the UPS inside a building in a protected area that is free of excessive dust and has adequate airflow.

Use screws that are appropriate for the weight of this unit and the mounting surface material. Refer to *Specifications* in this manual.

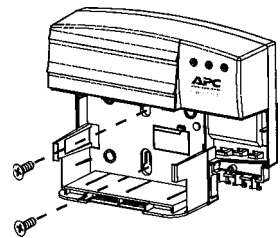
Step 1



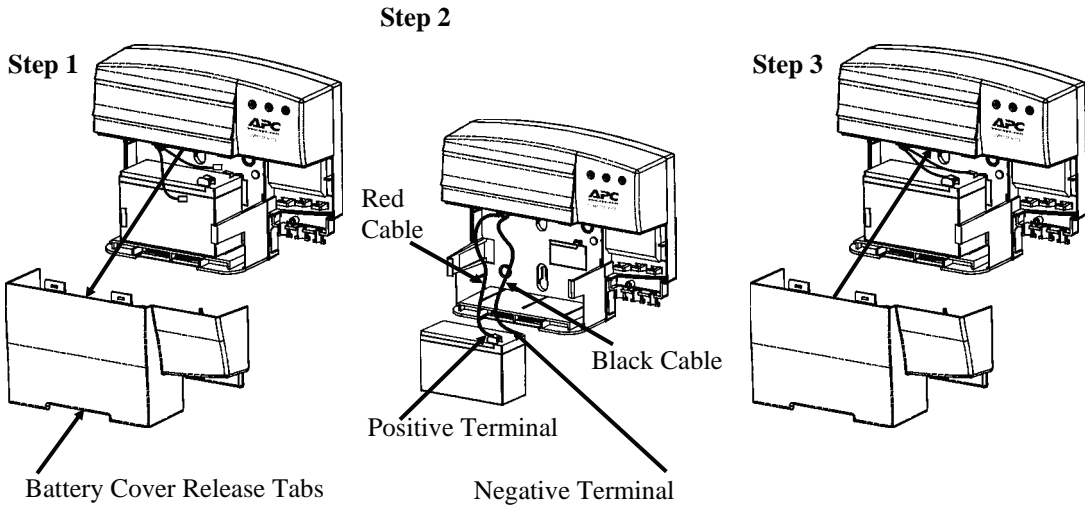
Step 2



Step 3



# Battery Installation



# Battery Replacement

This UPS has an easy to replace, hot-swappable battery. Replacement is a safe procedure, isolated from electrical hazards. You may leave the UPS and connected equipment on for this procedure.

Replace the spent battery with replacement battery RBC40. See your dealer or refer to the APC Web site, [www.apc.com](http://www.apc.com) for information on replacement battery modules.

To replace the battery module refer to *Battery Installation*, above.



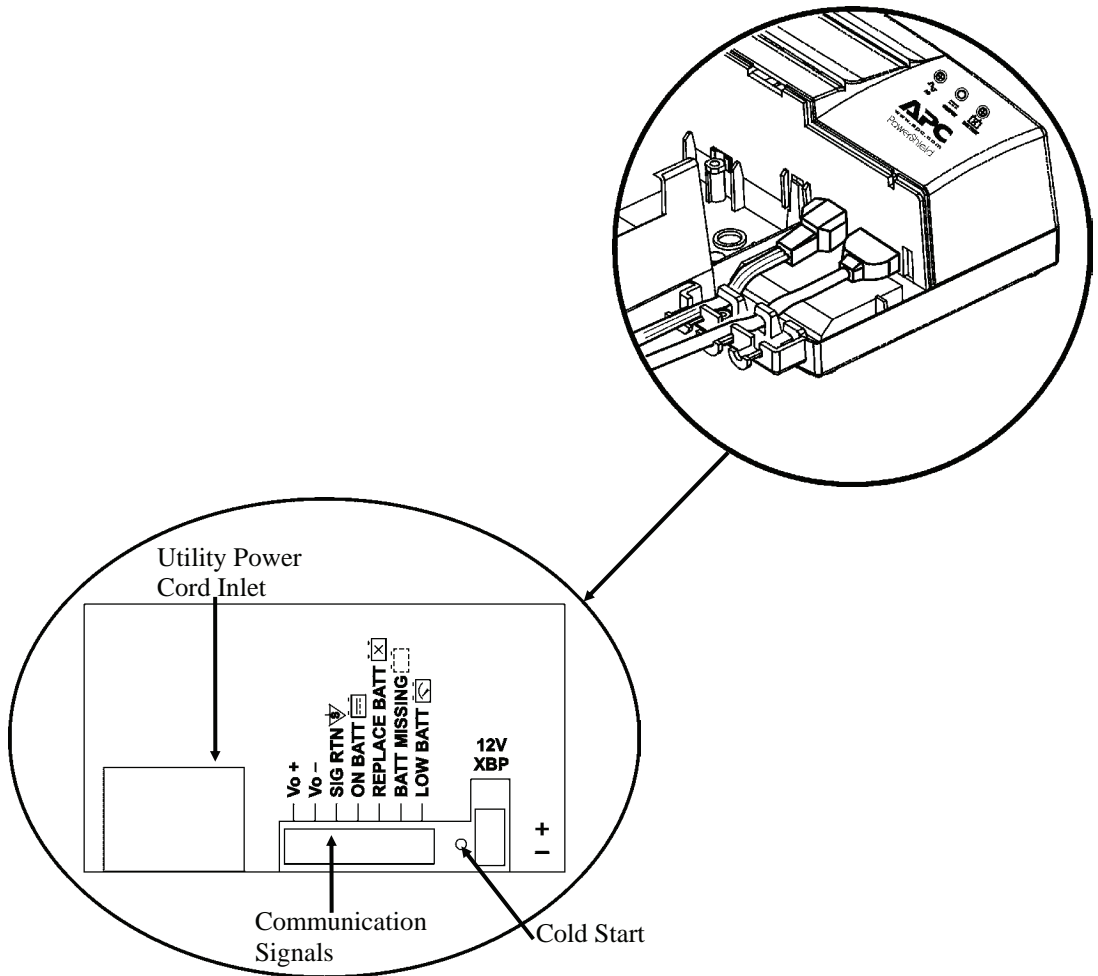
**Once the battery is disconnected, the connected equipment is not protected from power outages.**



**Be sure to deliver spent batteries to a recycling facility found on the *Used Battery Return Facilities* list included with the unit.**

# Chapter 3 Operation

## Connect Equipment and Power

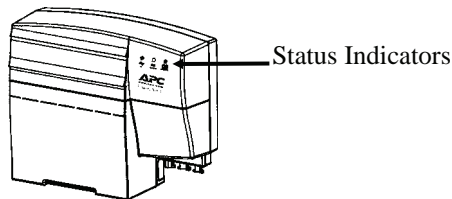


The UPS battery charges when it is connected to utility power. The battery charges fully during the first eight hours of normal operation.  
**Do not** expect full battery run capability during this initial charge period.

1. Connect equipment to the UPS communication signals via the seven-pin connector (included), or use an APC custom data cable, (must be ordered separately).
2. Plug the UPS power cord into the utility power cord inlet and then into the wall outlet.  
**NOTE: DO NOT overload the wall outlet or circuit.**

## Status Indicators

### UPS Front View



Green indicates the UPS is on utility power. Yellow indicates the UPS is on battery power.



Green indicates DC output power is provided by the battery or utility power.



Red indicates that the battery is not connected or the battery needs to be replaced. Refer to the *Battery Replacement* section.

## Communication Signals

The PowerShield communication signals are isolated from its internal circuitry via open collector opto-coupled transistors. The connection labeled “Signal Return” is a common return point for all communication signals. In the typical application, the attached equipment digital ground connects to Signal Return, and pull-up resistors turn the open collector signals into logic levels.



+ Voltage output  
— Voltage output



Signal return.



Low when operating from utility line. Open when operating from battery.



Low when battery is charged. Open when battery fails the Self Test.



Low when battery is present. Open when battery is missing.



Low when battery is near full charge capacity. Open when operating from a battery with < 20% capacity.

## Cold Start

Use the cold start feature to apply power to the UPS and connected equipment when the UPS is off and there is no utility power. The battery must be charged for the cold start feature to work. To utilize the cold start feature, use a small pointed object to press the recessed cold start button.





## Chapter 4 Service, Contact and Warranty Information

### Service

APC makes every effort to ensure parts and equipment arrive in working condition. Occasionally, it may be necessary to return parts or equipment that are not in working condition.

If the UPS requires service, follow these steps:

1. Contact APC Customer Support through the APC Web site, [www.apc.com](http://www.apc.com).
  - Note the product model number, the serial number, and the date purchased. If you call APC Customer Support, a technician will ask you to describe the problem and try to solve it over the phone. If this is not possible the technician will issue a Returned Material Authorization Number (RMA#).
  - If the product is under warranty, repairs are free. If not, there is a repair charge.
  - Procedures for servicing or returning products may vary internationally. Refer to the APC Web site. Select the appropriate country from the country selection field. Select Support from the tab at the top of the web page.
2. Pack the product in its original packaging.
  - Pack the unit properly to avoid damage in transit. Never use Styrofoam beads for packaging. Damage sustained in transit is not covered under warranty.
3. Mark the RMA# on the outside of the package.
4. Return the unit by insured, prepaid carrier to the address given to you by Customer Support.



**Always DISCONNECT THE BATTERY before shipping in compliance with U.S. Department of Transportation (DOT) regulations.**

### How to Contact APC

Refer to the APC Web site, [www.apc.com](http://www.apc.com).

## 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.

## Regulatory Approval



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 and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

Shielded signal cables must be used with this product to ensure compliance with the Class A FCC limits.

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# EC Declaration of Conformity

2002

Date of product declaration

We, the undersigned, declare under our sole responsibility that the equipment specified below conforms to the following standards and directives:

**Standards to Which Conformity Declared:** EN62040-1-1; EN55022; EN55024; EN61000-3-2, 3-3; EN60950-1

**Application of Council Directives:** 73/23/EEC; 89/336EEC; 91/157/EEC; 92/81/EEC

**Type of Equipment:** Uninterruptible Power Supply


**Model Numbers:** CP15U48; CP24U12; CP40U48

**Manufacturers:**

American Power Conversion Ballybritt Business Park Galway, Ireland	American Power Conversion 2nd Street PEZA, Cavite Economic Zone Rosario, Cavite Philippines	APC (Suzhou) UPS Co., Ltd 339 Suhong Zhong Lu Suzhou Industrial Park Suzhou Jiangsu 215021 P. R. China
American Power Conversion Breaffy Rd. Castlebar Co Mayo, Ireland	American Power Conversion Lot 10, Block 16, Phase 4 PEZA, Rosario, Cavite Philippines	APC Brasil LTDA. Al. Xingu, 850 Barueri Alphaville/Sao Paulo 06455-030 Brazil
American Power Conversion 132 Fairgrounds Rd. West Kingston, RI 02892 USA	American Power Conversion Lot 3, Block 14, Phase 3 PEZA, Rosario, Cavite Philippines	
American Power Conversion 1600 Division Rd. West Warwick, RI 02892 USA		
American Power Conversion 40 Catamore Blvd. East Providence, RI 02914 USA		
APC India Pvt. Ltd. 187/3, 188/3, Jigani Industrial Area, Jigani Bangalore, 562106 Karnataka India		

**Importer:** American Power Conversion (A. P. C.) b. v.  
Ballybritt Business Park  
Galway, Ireland

**Place:** Galway, Ireland Ray S. Ballard, Managing Director, Europe

 5 Jan 02

**Place:** N. Billerica, MA U.S.A. Richard J. Everett, Sr. Regulatory Compliance Engineer

 5 Jan 02

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