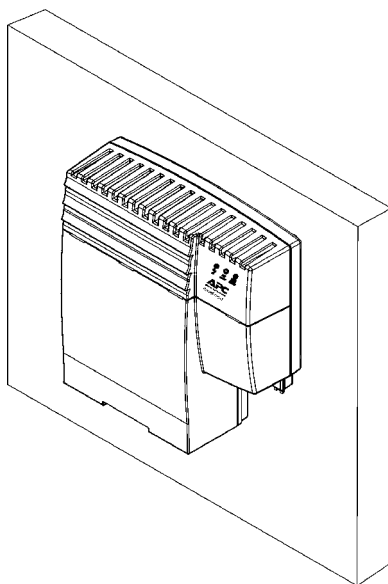


APC[®] **BroadBand**
www.apc.com

PowerShield[®]

20 AHr Battery

User Manual



990-1316A 10/2004

Chapter 1 General Information

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

Important Safety Instructions – Save These Instructions

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>
CP15B48	100-240V 50-60Hz 2.0A	48V 15W	30V	5mA	12V 20Ahr Spill-Proof, Maintenance-Free, Sealed Lead Acid
CP50B48	100-240V 50-60Hz 2.0A	48V 50W	30V	5mA	
CP24B12	100-240V 50-60Hz 2.0A	12V 24W	30V	5mA	
CP75B12	100-240V 50-60Hz 2.0A	12V 75W	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>	0 to 10,000 ft (3,000 m)
<i>Max Storage Elevation</i>	0 to 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>	11.6 x 11.6 x 3.7 in (28 x 28 x 10 cm)
<i>UPS carton</i>	16.4 x 16.4 x 8.6 in (41.6 x 41.6 x 21.8 cm)
<i>Weight</i>	
<i>UPS</i>	16.2 lbs (7.5 kg)
<i>UPS with package materials</i>	18.5 lbs (8.4 kg)

Unpacking

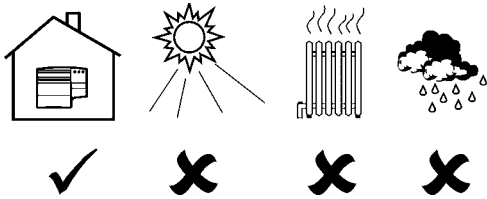
Inspect the unit upon receipt. Notify the shipping carrier or product supplier if there is damage.

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 connector, and product documentation.

Chapter 2 Installation

Enclosure Installation

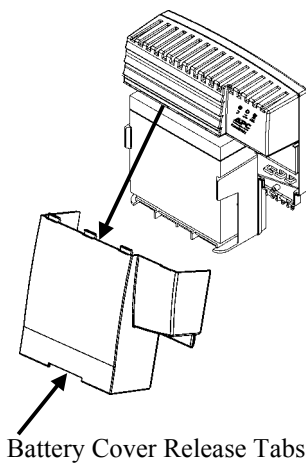


Install the UPS in a protected area that is free of excessive dust and has adequate airflow.

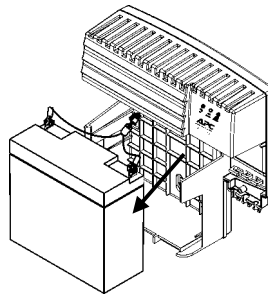
Do not operate the power supply where the temperature and humidity are outside the specified limits. Refer to *Specifications* in this manual.

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

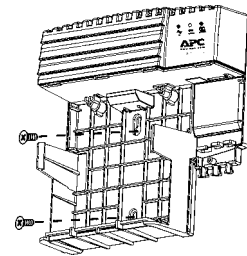
Step 1



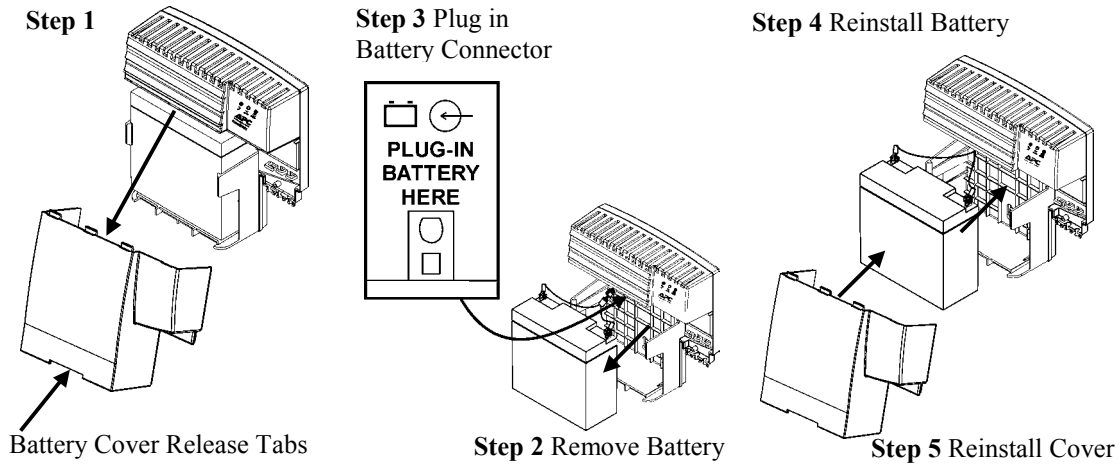
Step 2



Step 3



Battery Installation



Battery Replacement

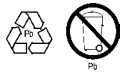
This UPS has an easy to replace, hot-swappable battery. Replacement is a safe procedure, isolated from electrical hazards. You may leave the UPS and connected equipment on for this procedure.

Replace the spent battery with replacement battery RBC39. See your dealer or refer to the APC Web site, www.apc.com for information on replacement battery modules.

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



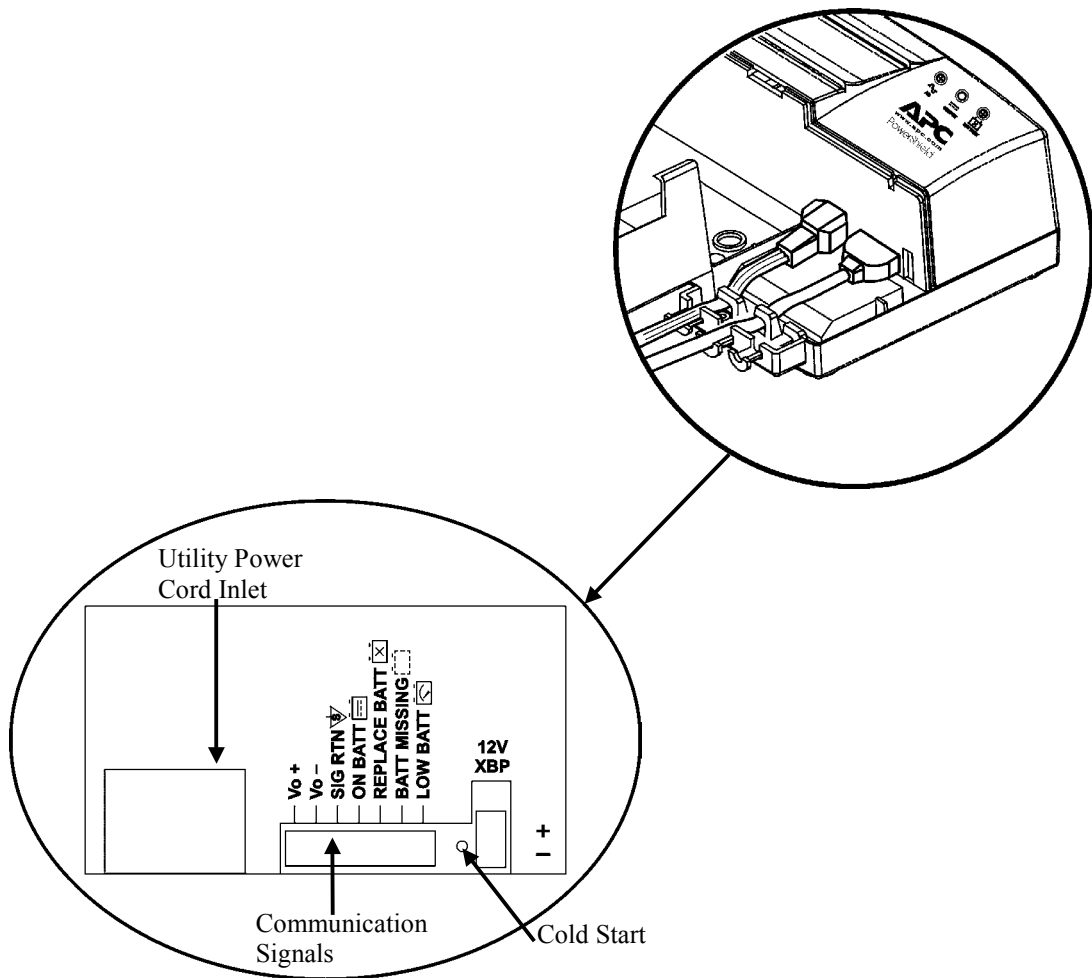
Once the battery is disconnected, the connected equipment is not protected from power outages.



Be sure to deliver spent batteries to a recycling facility or ship to the manufacturer in the replacement battery packing material.

Chapter 3 Operation

Connect Equipment and Power

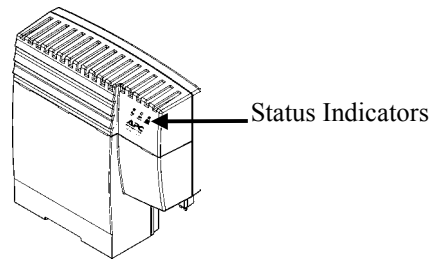


The UPS battery charges when it is connected to utility power. The battery charges fully during the first eight hours of normal operation.
Do not expect full battery run capability during this initial charge period.

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.

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 the need to replace the battery. Refer to *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.

Vo + —
Vo - —

+Voltage output
— Voltage output

SIG RTN  —


Signal return.

ON BATT  —

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

REPLACE BATT  —

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

BATT MISSING  —

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

LOW BATT  —

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

1. Contact APC Customer Support through the APC Web site, 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

In the USA ...	Outside the USA ...
Refer to the APC Web site, www.apc.com .	Refer to the APC Web site, www.apc.com . Select the appropriate country from the country selection field. Select the <i>Support</i> tab at the top of the web page.

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

2002
Declaration of Conformity

CE Declaration of Conformity

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:	EN 50091-1-1,1-2, EN 55022, EN 6100-3-2, 3-3, EN 60950, IEC 60950
Application of Council Directives:	73/23/EEC, 89/336/EEC, 91/157/EEC, 92/31/EEC
Type of Equipment:	Uninterruptible Power Supply
Model Numbers:	CP50B48, CP24B12
Manufacturer's Name and Address:	American Power Conversion 132 Fairgrounds Road West Kingston, Rhode Island, 02892, USA -or- American Power Conversion (A. P. C.) b. v. Ballybritt Business Park Galway, Ireland -or- American Power Conversion 2nd Street PEZA Cavite Economic Zone Rosario, Cavite Philippines -or- American Power Conversion Main Avenue, Peza Rosario, Cavite, Philippines -or- APC (Suzhou) UPS Co., Ltd 339 Subong Zhong Lu Suzhou Industrial Park Suzhou Jiangsu 215021 P. R. China
Importer's Name and Address:	American Power Conversion (A. P. C.) b. v. Ballybritt Business Park Galway, Ireland
Place: N. Billerica, MA U.S.A.	Richard J. Everett, Sr. Regulatory Compliance Engineer <i>Richard J. Everett</i> 5 Jan 02
Place: Galway, Ireland	Ray S. Ballard, Managing Director, Europe <i>Ray S. Ballard</i> 5 Jan 02

Entire contents copyright © 2002 by American Power Conversion Corporation. All rights reserved. Reproduction in whole or in part without permission is prohibited.

APC and the APC logo are registered trademarks of American Power Conversion Corporation. All other trademarks are the property of their respective owners.