



# CONVERTER/CHARGER

APC MODELS: 32, 45, 55 & 75 AMP

## ENGLISH

## •Installation •Operation •Maintenance

Effective 2/04/08

### SAFETY ALERT SYMBOLS

Safety Symbols alerting you to potential personal safety hazards. Obey all safety messages following these symbols.

#### ⚠ WARNING

avoid possible  
injury or death

#### ⚠ CAUTION

avoid possible  
injury and/or property damage

### FOR YOUR SAFETY READ ALL INSTRUCTIONS BEFORE INSTALLATION AND OPERATION

### INSTALLATION MUST COMPLY WITH ALL APPLICABLE STANDARDS AND CODES.

**Installer:** Provide these instructions to the consumer.  
**Consumer:** Keep documents for future reference.

The Converter/Charger is designed to convert 120 VAC to 12 VDC. This allows operation of 12 VDC devices while being connected to shore power; using power from a generator; or using power from on board storage batteries. It also provides exceptionally clean low voltage power for charging on board batteries. This Converter/Charger is a 'switch mode' type supply. Its high frequency electronic design is maintenance free with superior performance.

The APC Series offers a wide range of power - 32,45, 55 and 75 amp models - in a compact design weighing just six pounds. Atwood technology maintains safe, cool, reliable converter/charging operation, ensuring the performance of electrical systems with sophisticated controls. The thermostatically controlled cooling fan also reduces noise and increases warm weather performance. The APC's circuitry includes over-temperature and over-current protection, safeguarding against power supply damage. External fuses provide "reversed battery" protection, preventing damage from cross-wiring.

APC filtered power provides smooth, optimum DC appliance operation and the full output rating is available for battery charging.

### COMMON FEATURES

- Regulated output voltage ensures against erratic charging and damage to amenities.
- Over current protection prevents battery damage caused by over-charging.
- Short circuit protection prevents damage to power supply.
- Reverse battery hook-up protection prevents power supply damage due to cross-wiring.
- Fan cooled prevents unit from over-heating.
- 100% burn-in tested ensures stringent quality assurance.
- 2-year limited warranty.
- ETL listed to UL 458.

### INSTALLATION

- 1. DISCONNECT POWER.** Disconnect the RV battery POS (+) wire at the battery before connecting the Converter/Charger.

#### ⚠ WARNING

#### PERSONAL INJURY/PRODUCT DAMAGE

- Never store electrical devices in a compartment where flammable liquids are stored.
- Do not mount the unit in a compartment designed for the storage of batteries or flammable liquids (such as gasoline).

- 2. LOCATION.** Mounting location may be on any interior (out of direct weather) surface. Location chosen must be accessible after installation. When mounted inside a cabinet, the cabinet must be vented and large enough to allow dissipation of heated air. Make sure that there is a minimum of 1" (one inch) free air space from sides and back of the unit so that cooling air can move through the unit properly.

AVOID foreign contaminants such as dirt, metal particles or moisture.

- 3. MOUNTING.** Flanges with holes are provided for ease of mounting using standard fasteners. Surface must support the converter's weight (6 lbs) during vehicle operation.

### SPECIFICATIONS FOR CONVERTERS

PART NO.	MODEL	LBS.	AMPS	EXTERNAL DIM. IN INCHES	INPUT VOLTAGE AC	OUTPUT VOLTAGE DC	INPUT CURRENT AMPS	OUTPUT CURRENT AMPS	INPUT FREQ. HZ
35411	APC32	6	32	10.36 x 7.75 x 3.5	105-130	13.6	7	32	58 to 62
35412	APC45	6	45	10.36 x 7.75 x 3.5	105-130	13.6	10	45	58 to 62
35413	APC55	6	55	10.36 x 7.75 x 3.5	110-130	13.6	13	55	58 to 62
35414	APC75	6	75	10.36 x 7.75 x 3.5	110-130	13.6	15	75	58 to 62

**4. ELECTRICAL REQUIREMENTS.** A 120 VAC receptacle needs to be located within 36 inches of the converter to supply power. Electrical consideration should also be given to mounting near the locations of the RV batteries and the 12-volt distribution panel to minimize wiring lengths.

**5. ELECTRICAL CONNECTIONS.** Be sure to tighten all connections securely. A loose connection can quickly cause terminals and wires to overheat. Review unit labels for recommended terminal torque values.

**A. 12 VDC:** It is important to use the correct wire gauge for the specific model selected. As an example the APC-32 is a 32 amp Converter/Charger which would require a 10 AWG wire.

- An 8 AWG copper wire minimum must be connected from the vehicle chassis to the chassis lug.
- The terminal marked “-” is for the system 12 VDC negative connection.
- The terminal marked “+” is for the 12 VDC system positive connection.
- The APC series Converter/Charger is current limiting by design and therefore the output wiring does not require overcurrent protection. However, all electrical connections need to comply with the appropriate NEC code.

**B. 120 VAC Connections:** Using the power cord on the Converter/Charger, connect to the 120 VAC receptacle.

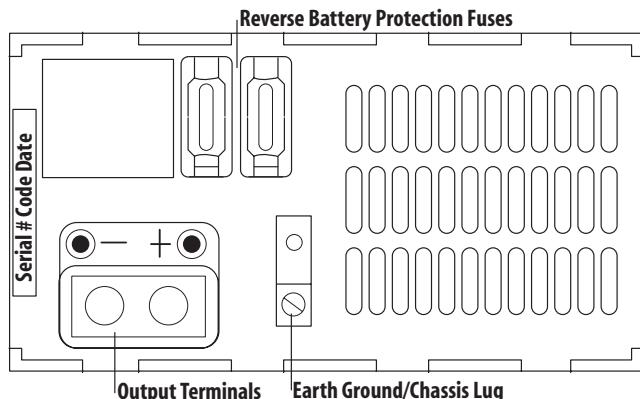
**6. TEST.** Energize the Converter circuit. To test for proper output power, use a multimeter and measure output voltage from the positive and negative terminals with no load on the converter (All DC fuses must be removed.) The voltage should read 13.6 +/- 0.2VDC. Replace fuses and turn on a load to about 2/3 of the rated capacity of the converter. Recheck voltage, which should remain approximately the same as at no load.

**7. BATTERY.** Connect the positive terminal to a known good battery. With the converter energized, measure the voltage at the converter and at the battery. The voltage should be about the same in both locations. As with any battery it is important that the fluid level be checked on a regular basis. When continuously connected to any charging source all batteries will “Gas” and lose some fluid.

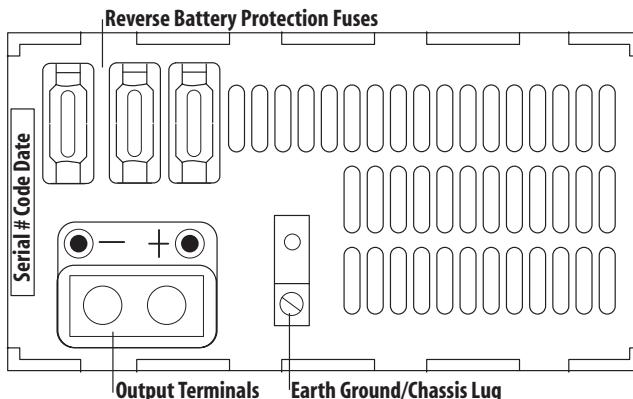
**8. HI-POT TESTING.** (RV Manufacturing Facilities Only) Do not Hi-Pot DC wiring with the Converter/Charger connected to the RV wiring.

## TROUBLESHOOTING

### MODELS: APC 32, 45 & 55



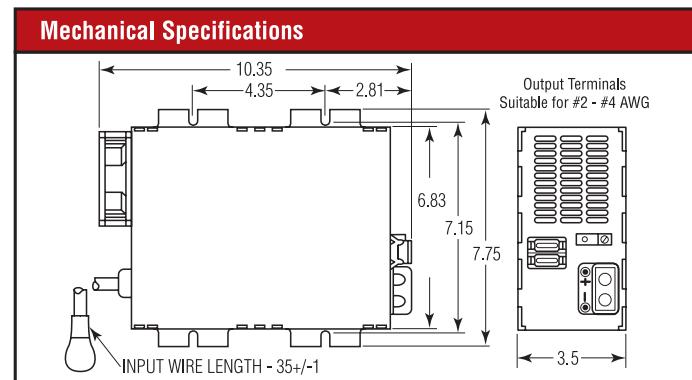
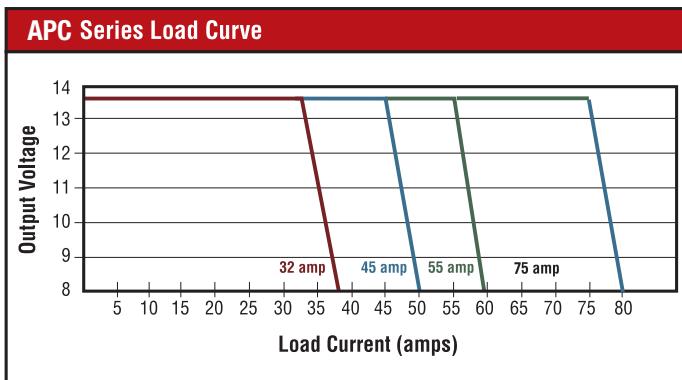
### MODELS: APC 75



#### Before replacing converter perform the following checks:

1. Disconnect the AC power from the coach.
2. Disconnect the wire from the “Positive Output Terminal”.
3. Re-connect the AC power.
4. Using the voltmeter read the DC voltage at the terminals on the converter.
  - If the reading is greater than 13.4 VDC, but less than 13.8 VDC the converter is operating properly.

PROBLEM	SOLUTION
No 12 VDC Output	<ul style="list-style-type: none"> <li>• 120 VAC not connected to coach.</li> <li>• Converter circuit breaker in OFF position.</li> <li>• Reverse battery fuses blown.</li> <li>• Internal converter failure.</li> <li>• Shorted output.</li> </ul>
Converter cycles on and off	<ul style="list-style-type: none"> <li>• Fan air flow inadequate.</li> <li>• Internal converter failure.</li> </ul>
Low Output	<ul style="list-style-type: none"> <li>• Load excessive for rating of converter.</li> <li>• Battery has bad cells.</li> <li>• Internal converter failure.</li> </ul>



## RV CONVERTER/CHARGER LIMITED WARRANTY POLICY

Atwood Mobile Products warrants to the original owner and subject to the below mentioned conditions, that this product will be free of defects in material or workmanship for a period of two years from the original date of purchase. Atwood's liability hereunder is limited to the replacement of the product, repair of the product, or replacement of the product with a reconditioned product at the discretion of Atwood Mobile Products. This warranty is void if the product has been damaged by accident, unreasonable use, neglect, tampering or other causes not arising from defects in material workmanship. This warranty extends to the original owner of the product only and is subject to the following conditions:

1. For two years from the date of the original purchase Atwood warrants that this product will be free of defects in material and workmanship with the exceptions noted below. This warranty includes reasonable labor charges required to remove and replace the part. Service calls to the customer's location are not considered part of these charges and are therefore the responsibility of the owner.
2. This warranty does not cover the following items classified as normal maintenance and/or customer damage.
  - The owner is not the original owner of the converter.
  - Atwood was not notified of the claim during the warranty period (2 years, from Date of Purchase).
  - Any wiring alterations to the unit.
  - Any product that has had the date code or serial number altered, defaced or removed.
  - Defacing the chassis by writing on it with markers.
  - Malice or neglect that resulted in metal damage to the unit.
  - Shipping damage occurs due to improper packaging of the unit.
  - Any act of God. (i.e. lightning damage).
3. In the event of warranty claim the owner must contact in advance either an authorized Atwood Service Station or the Atwood Service Department. Warranty claim service must be performed at an authorized Atwood

Service Station (a list will be provided at no charge) or as approved by the Atwood Service Department Atwood Mobile Products, 1120 North Main St, Elkhart, Indiana 46514 USA. Phone 866-869-3118.

4. Return parts must be shipped to Atwood Mobile Products "prepaid". Credit for shipping costs will be included with the warranty claim. The defective parts become the property of Atwood Mobile Products and must be returned to the Consumer Service Department, Atwood Mobile Products, Salt Lake Operations, 1874 South Pioneer Road Salt Lake City, UT 84104 USA.
5. This warranty applies only if the unit is installed according to the installation instructions provided and complies with local and state codes.
6. The warranty on replacement parts is the unused portion of the original warranty period.
7. Damage or failure resulting from misuse (including failure to seek proper repair service) misapplication, alterations or water damage are the owner's responsibility.
8. Atwood does not assume responsibility for any loss of use of vehicle, loss of time, inconvenience, expense for gasoline, telephone, travel, lodging, loss or damage to personal property or revenues. Some States do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.
9. Any implied warranties are limited to two (2) years. Some States do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. This warranty gives you specific legal rights and you may also have other rights, which may vary, from State to State.
10. Replacement parts purchased outside the original warranty carry a 90 day warranty. This includes the part at no charge and reasonable labor charges to replace it.

This Atwood product is designed for use in recreation vehicles for the purpose as stated in the 'data plate'. Any other use, unless authorized in writing by the Atwood Engineering Department, voids the warranty.