

Battery Maintenance Solutions Catalog



ADVANCETEC
INDUSTRIES INC

2012 Battery Charger Products

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www.advantec.com

AT12-1

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Company Profile

Established in 1987, AdvanceTec Industries has become a global leader in the design and manufacturing of solutions for wireless telecom, two-way radio and thermal imaging industries. From its fully integrated, state-of-the-art facility in Miami, Florida, the privately-held company manufactures innovative AdvanceTec-branded, private label and OEM solutions for a variety of organizations and corporations worldwide.

AdvanceTec clientele range from major metropolitan-area police forces, firefighters and EMS teams to Fortune 500 companies. The company's specialized product categories include advanced hands-free cellular kits (both vehicle-mounted and desktop-based) as well as two-way radio battery chargers/conditioners and analyzers.



Made in USA

All of AdvanceTec's products are proudly made in the USA. While most of the electronics industry has moved its production overseas to take advantage of low labor costs

and cheaper production costs, AdvanceTec continues to manufacture all of its products in the United States. This is done with the view of providing jobs at its highly automated manufacturing facility in Miami, Florida, maintaining strict quality controls, while remaining very price competitive.

DON'T BLAME THE BATTERY...

Before you contact your communications supplier to purchase a replacement battery, consider this: today's high-quality nickel cadmium (Ni-Cd), nickel metal hydride (Ni-MH) and Lithium Ion (Li-Ion) batteries are only as effective as the chargers on which they are placed at the end of the day. Not all chargers are the same and different chemistry batteries need to be charged differently.

There are 2 very important aspects to the charging of a battery that inevitably will determine how long it will last after the charge and how long it will last before it drops below an acceptable level:

- The method used to charge the battery.
- The method used to terminate the charge.

The AdvanceTec Reconditioning Charger

Ni-Cd and Ni-MH cell battery chargers

No matter how efficiently a "charger" for Ni-Cd and Ni-MH cell batteries seems to work, a charger is a "charge only" device. When charging Ni-Cd and Ni-MH cell batteries, each charge will result in gradual "memory" build up (in the form of destructive dendrite crystal formations and gas bubbles on cell plates). This will result in increasingly shorter talk and standby times. Sound familiar?

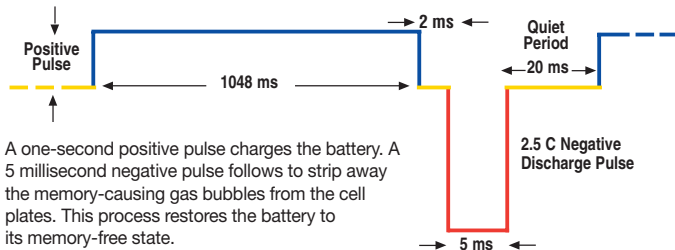
The AdvanceTec Conditioning Charger, also known as the "burp" charging system, uses patented negative pulse technology to simultaneously charge and condition your battery in a single process, keeping it memory-free.

During the charge process, oxygen is given off and accumulates as bubbles attached to the cell plates. These gas bubbles reduce the effective surface area and raise the internal impedance of the battery. A momentary

Our Advantage

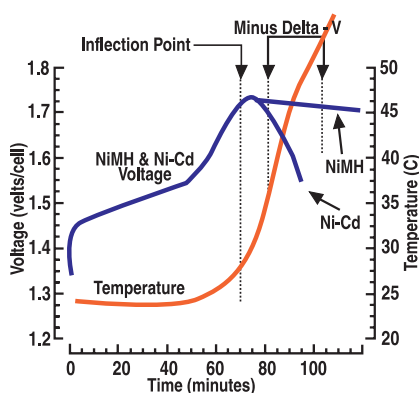
high-amplitude discharge (negative) pulse reverses the chemical process and strips the bubbles from the cell plates. The discharge pulse also has a relaxing effect on the battery, increasing charge acceptance and allowing a high-current fast charge at a lower temperature.

Negative Pulse charging method



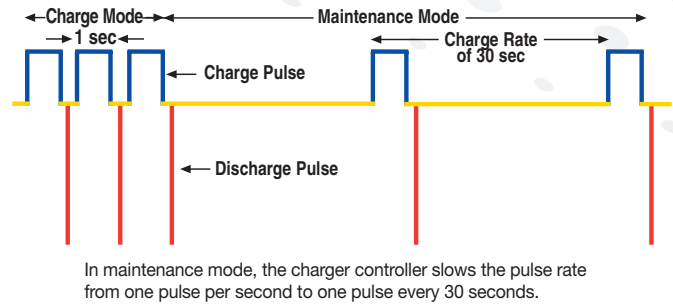
To avoid battery degradation and pressure build-up, it is essential that the charge be terminated prior to the battery reaching a state of overcharge. The AdvanceTec Conditioning Charger employs "Inflection Point Cut-off" as its primary termination method, which terminates the charge as soon as the battery reaches 100% capacity. Multiple secondary termination methods, including negative delta voltage and a timer are present to ensure fail safe and timely termination of the charge.

Charge Termination



Once the charge is terminated, the charger enters a "maintenance mode." Unlike in many other chargers, this maintenance mode is not a low-current trickle charge, but rather a series of extended charge/discharge pulses

Maintenance Mode

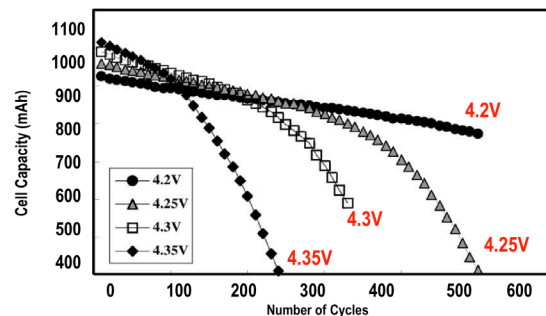


Li-Ion Specific chargers

Li-Ion batteries are lighter than other energy-equivalent secondary batteries, including both Ni-Cd and Ni-MH. However high charge levels and elevated temperatures from charging will hasten capacity loss. If overheated or overcharged, Li-ion batteries may suffer thermal runaway and cell rupture. In extreme cases this can lead to combustion. Deep discharge may short-circuit the cell, in which case recharging would be unsafe.

The AdvanceTec Li-Ion charger incorporates its proprietary negative pulse technology providing a 1 second positive pulse followed by a 5 millisecond negative pulse. (see graph above). The discharge pulse has a relaxing effect on the battery, increasing charge acceptance and allowing a charge at a lower temperature. Current is applied until the voltage limit per cell (as recommended by the cell manufacturer) is reached and then the precise voltage per cell limit ($\pm 2\%$) is applied until the current declines below 3% of rated charge current. If voltage is applied exceeding the recommended voltage, it will cause a rapid and permanent reduction in the number of cycles in the battery.

Excessive Charge Voltage Affects Battery Service Life



- Over Charge Shortens battery cycle life
- The Higher the voltage, the higher the initial capacity

Charger/Conditioner

Are your Batteries **Always Good To Go?**

Keep your **Li-Ion, Li-Poly, Ni-CD & Ni-MH Batteries** at **Peak Condition**



The **AdvanceTec** Single Bay Charger/Conditioner

Product Number: AT2000 IFD / AT2000 Li

Achieving maximum extended battery life, the Single Bay Charger/Conditioner will detect shorted or faulty cells instantly and charge/condition in a single process so you can safely top off the battery charge at any time.

The **AdvanceTec** Four Bay Charger/Conditioner

Product Number: AT4-4000 IFD / AT4-4000 Li

This Four Bay Charger/Conditioner holds up to 4 batteries, each working independent of the others. Leave them on the unit for extended periods of time without the risk of overcharging, and while achieving maximum extended battery life.

PRODUCT FEATURES

- **Dedicated charger for Li-Ion & Li-Poly chemistry batteries.**
- **Dedicated charger for Ni-CD & Ni-MH chemistry batteries.**
- Available as a single and 4 bay unit.
- Each bay on the 4 bay performs independently of the others.
- Switches into maintenance mode after charge reaches 100% capacity to keep batteries at peak condition for as long as they remain on the charger.
- Both single bay and 4 bay units can be used with supplied AC power supply in the office or optional DC power cable in the vehicle.
- Lightweight yet robust design and interchangeable battery adapters with a simple "snap-in"/"snap-out" feature.

Analyzer/Conditioning Charger

The performance of all batteries will diminish with use. If the battery is correctly charged and conditioned, it will last substantially longer than if it is abused. But eventually every battery's capacity will gradually decline, resulting in diminished talk and standby time. As a general rule a battery is considered serviceable when it delivers 80% of its original capacity. To ensure that a battery remains serviceable it is necessary to determine the capacity of the battery from time to time.



The AdvanceTec Single Bay Analyzer/Conditioning Charger

Product Number: AT5000 CPA

The Single Bay Analyzer/Conditioning Charger is the most accurate capacity measurement process for your single battery.

The AdvanceTec Four Bay Analyzer/Conditioning Charger

Product Number: AT45000 CPA

A dual purpose unit, this can be used for everyday use as a charger/conditioner, and periodically to analyze the current capacity of your battery. All bays fully independent of each other. No programming needed.

PRODUCT FEATURES

- Offers all the benefits of our Conditioning Charger, plus a Pulse Analyzer function.
- Capacity of the battery will be displayed clearly on the unit's digital readout with the press of a button.
- Switches to maintenance mode after charging, ensuring your battery remains in peak condition for as long as it remains on the charger.
- No need to worry about overcharging your battery upon completion of the charge sequence.
- No Software programming required.

Analyzer/Conditioning Charger

with Software Driven Monitoring System (SDMS)

Patented Technology

Achieve the maximum potential for every battery

AdvanceTec's complete Battery Maintenance Solution Analyzer/Conditioner/Charger units offer "real time" Software Driven Monitoring System (SDMS) via a PC/Laptop. These units will accommodate 1-4 batteries and are compatible with Ni-Cd, NiMH, Li-Ion and Li-Poly chemistry batteries.

EACH UNIT OFFERS THE FOLLOWING:

- Capable of automatically conditioning and rapidly charging Ni-Cd, NiMH, Li-Ion and Li-Poly batteries, in a single process in the same unit.
- Charge at current rates recommended by the battery manufacturers.
- Display in "real time" the process of conditioning and/or analyzing the capacity of the battery in mAh, showing charge status as "Soft Charge", "Full Charge", "Topping Charge" and "Maintenance Charge" indicating battery current, battery voltage, charge voltage, capacity check and phase time with the highest degree of accuracy.
- Provide a graph that charts the itemized process for each testing station.
- Select the number of cycles (up to three) in the capacity check phase.
- Switch to Maintenance Mode once the battery is fully charged, conditioned and analyzed. In the Maintenance Mode the battery is kept at peak condition for as long as it is left on the unit, without ever overcharging or overheating.
- Backed by a 1 year warranty.
- Proudly manufactured in the U.S.A.



AdvanceTec's complete Battery Maintenance Solution Analyzer/Conditioner/Charger units offer "real time" Software Driven Monitoring System (SDMS) via a PC/Laptop.



The **AdvanceTec** **Four Bay** **Analyzer/Conditioning** **Charger**

with Software Driven
Monitoring System (SDMS)

Product Number: AT4-6000 PCD

The **AdvanceTec** **Twelve Bay** **Analyzer/Conditioning** **Charger**

with Software Driven
Monitoring System (SDMS)

Product Number: AT662A

PRODUCT FEATURES

- Displays in "real time" the process of Conditioning and/or Analyzing the capacity of the battery in mAh, showing status as, Soft charge, Full charge, Topping charge and Maintenance charge.
- Indicates battery voltage, charge voltage, capacity check and phase time with the highest degree of accuracy.
- Provides a graph that charts the itemized process for each testing station.
- Allows to select the number of cycles in the capacity check phase, up to three times.
- Keeps a test log on any identified battery for history storage.
- Can be daisy-chained together to have up to 120 bays run off one PC/laptop

The AdvanceTec 12 Bay Bar Code Scanner Battery Charger

Product Number: AT612 BCS

The new 12-bay Bar Code Scanner battery charger is designed to support today's Li-Ion batteries. As public support agencies and commercial enterprises deploy more and more Bar Code Scanners, the need to charge and maintain larger quantities of batteries rapidly becomes critical. Managing dozens of individual chargers is not practical and no longer necessary.

PRODUCT FEATURES

- Designed to support Li-Ion batteries
- Twelve charging stations that operate independently of each other
- Rapid and simultaneous charging
- Batteries can be charged anytime
- Supports most Symbol Palm and Enterprise Mobile Computing batteries
- Use as a desktop or wall mounted



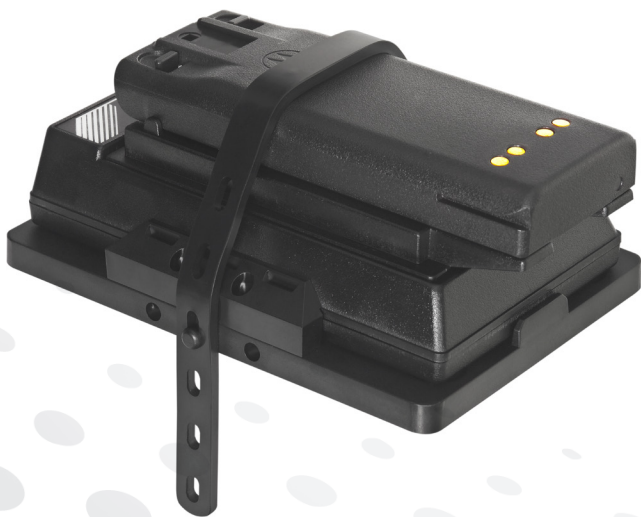
The AdvanceTec Single Bay Vehicular Mounting Bracket Kit

Product Number: AT9960

The AdvanceTec Vehicular Mounting Bracket is designed to securely hold the single bay charger in place in the vehicle. Supplied with a DC power cable (with in-line 3A fuse) which can be connected directly to the vehicle battery or ignition or alternatively a shorter power cable with a cigarette lighter plug to fit into a 12-24V DC power point in the vehicle. A heavy duty rubber strap is included to hold the battery securely in the charger even under the most extreme situations.

PRODUCT FEATURES

- A ruggedly designed bracket allowing you to permanently mount the charger in your vehicle.
- 12-24 VDC power cable with in-line fuse or cigarette lighter plug.
- Rubber strap to secure batteries in the charger.
- Provides fully charged back-up battery at all times.
- Backed by full 1 year warranty.
- Made in the U.S.A.



The AdvanceTec
AdvanceCase Charger™
12-24VDC powered Case Charger/Conditioner



6 Bay: AT7006A



12 Bay: AT7012A

The AdvanceCaseCharger™ is a versatile, MilSpec 6 and 12 bay case charger from AdvanceTec. It offers a robust multi chemistry battery reconditioning/charger housed in a waterproof, dustproof and crushproof carrying case.

Power: 12 – 24 VDC voltage

Wt: 20 LBS

Dim: 24" x 19.5" x 9"

APPLICATIONS:

- Natural Disaster Preparedness
- Command Vehicles
- Desert Training
- Extreme Weather
- Agency Training Exercises
- Worldwide Deployments

PRODUCT FEATURES:

- Multi chemistry and “drop-in” Motorola® IMPRES™ conditioning charger, incorporating AdvanceTec’s proprietary Negative Pulse Technology.
- Rugged protective case made of lightweight rugged HPX® Resin with double layered soft grip handles and double pad lockable clasps. It is designed to withstand harsh extreme temperatures and environments.
- Can be connected to suitable Solar Power Panel.
- Designed with easy interchangeable adapters to accommodate most major radio battery types.
- Covered by 1 year warranty.
- Proudly made in the USA.

Drop-In Four Bay Charger



The **AdvanceTec**
Drop-In Single Bay
Charger/Conditioner
including Motorola® IMPRES™

Product Number: AT2000 IMP



The **AdvanceTec**
Drop-In Four Bay
Charger/Conditioner
including Motorola® IMPRES™

Product Number: AT4000 IMP

The AdvanceTec Drop-In tri chemistry Charger Conditioner is designed to accommodate the radio with battery attached, including Motorola® IMPRES™ and charge from the outer battery contacts.

PRODUCT FEATURES

- Drop-In capability for Radio with battery attached or battery alone.
- Drop-In capability for Motorola® IMPRES™ radio with IMPRES™ and non IMPRES™ batteries
- Rapid charge from outer battery contacts.
- Automatically determines battery chemistry to provide correct accurate charging algorithm.
- Simultaneous Charge and Condition IMPRES™ batteries
- Maximize battery life and reliability.
- Precise charge termination at 100% charge.
- Maintenance mode once battery fully charged to keep battery at peak condition
- No draining of the battery causing battery down time and reduced battery life cycles
- Safely top off the battery charge at any time

**Radios Not Included, Adapter cups sold separately.*

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Testimonials



We are delighted that a battery can “sit-in” an AdvanceTec charger indefinitely without damaging the battery. Over this 11 year period, AdvanceTec has been there to answer our questions and have made themselves available via meetings and over the phone with a non-aggressive, sincere, “what can we do to help you” attitude. I have no reservations in recommending the AdvanceTec charging products that FHP has used for the AdvanceTec battery charging methods in general.

Fred Malfa
State of Florida Department
of Highway Safety and Motor Vehicles



The AdvanceTec charger/conditioner was the answer to our battery problems. The AdvanceTec Charger/conditioner repaired all my damaged batteries and restored their life cycle back to normal. I would like to thank everyone at AdvanceTec for their excellent product and service. Using their product has saved us thousands of dollars and solved our battery problems.

Michael J. Batt
Department of the Army
United States of America



We have been using the single and four bank vehicles mounted AdvanceTec charging systems for approximately two years and have seen a vast improvement in the overall condition of our batteries with regards to length of service and duration of usability.”

Captain Randy S. Bach
Hillsborough County Fire Rescue



American Red Cross

Our first introduction was to the AdvanceTec Reconditioning Charger and the speed with which we were able to top off our batteries. Then we added the Pulse Analyzer/Charger conditioner to the team. This certainly has added to the life of our batteries.

D. H. Shedd
American Red Cross



County desires to Commend AdvanceTec for your immediate response when twenty additional chargers were needed over night during last years Sniper episode. Your support meant that additional law enforcement personnel were not only supplied with radios but the means to have a charged conditioned battery on hand at all times.

John W. Brown
Spotsylvania County
Virginia



Since acquiring our first conditioning/charger and starting a rotation through this unit , battery life has increased significantly. Your product has reduced a significant firefighter safety issue at a minimal cost factor. Thanks for putting a excellent product in the public safety market.

Artie Ray
Winter Haven Fire Department
Florida



We have been very pleased with the performance of the charger/conditioner units. We have noticed a significant increase in battery life after using your chargers. We have even taken some batteries we thought were “dead” and cycled them through your units several times. Now the batteries are back up to capacity.

A. Shayne Lovitte
Saraland Fire Rescue Department
Saraland, AL



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