

AE150E / AE300E / AE500E



# MULTI-USE SMART BATTERY CHARGER

## OWNER'S MANUAL

AE150E  
1.5AMP



AE300E  
3AMP



AE500E  
5AMP



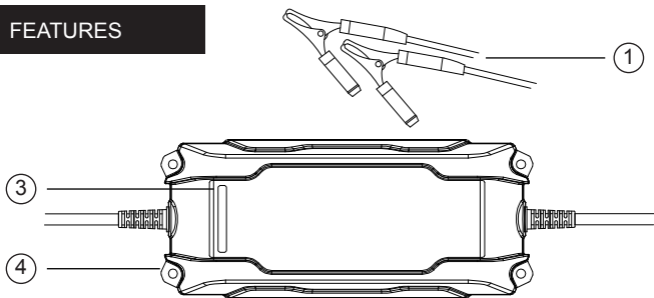
READ ENTIRE MANUAL BEFORE USING THIS PRODUCT

## MODEL NO. AE150E /AE300E /AE500E MULTI-USE SMART BATTERY CHARGER

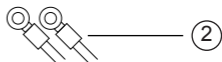
### SPECIFICATIONS

Input Voltage	AE150E	AE300E	AE500E
Output Current (Max.)	1.5A	3A	5A
Charge Voltage (Max.)	14.8V		
Weight	1.1 lbs		
Size (L x W x H)	170 x 73 x 48mm / 6.7" x 2.9" x 1.9"		

### FEATURES



1. Battery Clip Cable Assembly
2. Ring Terminal Cable Assembly
3. LED Indicators
4. Mounting Holes



## IMPORTANT SAFETY INSTRUCTIONS

### READ AND SAVE THIS SAFETY AND INSTRUCTION MANUAL

1. This manual contains important safety and operating instructions for this battery charger/maintainer. Please read, understand and follow these instructions and precautions carefully.
2. Use this charger only on 12 volts LEAD ACID, AGM and GELLED ELECTROLYTE (GEL-CELL) batteries. Do not attempt to use on other voltages and types of batteries (DRY CELL, NICKEL CADMIUM, NICKEL METAL HYDRIDE, etc.) commonly found in small home appliances. This may cause chargers and batteries to burst, resulting in damage or injury to person and property.
3. Do not expose this charger to direct sunlight, rain or snow.
4. If the battery is installed, please make sure that the vehicle is turned off all loads and no loads are presented.
5. Do not use attachments to this charger that are not recommended. Non-recommended attachments may result in injury, electric shock, or fire and voids the warranty.
6. To reduce risk of damage to electric plug and cord, pull by plug rather than cord when disconnecting charger.
7. If it is necessary to use an extension cord, it should be properly grounded cord. Use of improper extension cord could result in a risk of fire and electric shock.
  - a) That pins on plug of extension cord are the same number, size, and shape as those of plug on charger;
  - b) That extension cord is properly wired and in good electrical condition;
  - c) That wire size is large enough for ac ampere rating of charger as specified in Table.

AWG size of cord			
Length of cord, feet (m)			
25 (7.6)	50 (15.2)	100 (30.5)	150 (45.6)
18	18	18	16

8. Do not operate charger with damaged cord or plug – replace the cord or plug immediately.
9. Do not operate charger if it receives a sharp blow, been dropped, or otherwise damaged in any way; take it to an authorized service center for repair.
10. Do not disassemble charger; take it to an authorized service center for repair when service or repair is required. Incorrect reassembly may result in a risk of electric shock or fire.
11. To prevent injury during cleaning or maintenance, disconnect all batteries and move them to clear access to the unit. Unplug this charger from the wall outlet. Use a slightly dampened cloth to clean the housing and lead sets. Do not use solvents or soaps.
12. Place the power cords in a location where will not be stepped on, tripped over, or subjected to stress or abuse of any kind.
13. Never attempt to charge a frozen battery. Allow the battery to return to room temperature before connection. Suggested operation range 0 C (32 F) to 50 C (122 F) in ambient temperature.
14. Never use this charger in or on any boat or watercraft directly. You must remove the battery from the boat or watercraft and charge the battery at the properly installed location of this charger.
15. It is not suggested to expose the charger to moisture and should not be subjected to inclement weather.

## **WARNING – RISK OF EXPLOSIVE GASES.**

a) WORKING IN VICINITY OF A LEAD-ACID BATTERY IS DANGEROUS. BATTERIES GENERATE EXPLOSIVE GAS DURING NORMAL BATTERY OPERATION. FOR THIS REASON, IT IS OF UTMOST IMPORTANCE THAT YOU FOLLOW THE INSTRUCTIONS EACH TIME YOU USE THE CHARGER.

b) To reduce risk of battery explosion, follow these instructions and those published by battery manufacturer and manufacturer of any equipment you intend to use in vicinity of battery.

### **RISK OF EXPLOSIVE GASES MIXTURE**

1. Connect and disconnect battery leads only when supply cord is disconnected.
2. For a battery installed in a vehicle, first connect charger output lead to ungrounded battery post – not connected to automobile chassis – in accordance with polarity identification and then opposite polarity lead to chassis away from battery; do not connect to carburetor or fuel lines. Disconnect chassis lead first.
3. Do not overcharge battery.
4. Do not smoke, strike a match, or cause a spark in vicinity of battery.
5. Use in well-ventilated area.

## **PERSONAL PRECAUTIONS**

### **RISK OF EXPLOSIVE GASES**

1. Working in the vicinity of a lead acid battery is dangerous. Battery generate explosive gases during operation. For this reason, it is of utmost importance that you follow the instructions each time you use the charger.
2. To reduce risk of battery explosion, follow these instructions and those published by the battery manufacturer and manufacturer of any equipment you intend to use in the vicinity of the battery. Observe cautionary markings on these items.
3. Someone should be within range of your voice or close enough to come to your aid when you work near a lead acid battery.
4. Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing or eyes.
5. Wear complete eye protection and protective clothing.
6. Avoid touching eyes while working near battery.

6. Avoid touching eyes while working near battery.
7. Be extra cautious to reduce risk of dropping a metal tool onto the battery. It could spark or short-circuit the battery or other electrical parts and could cause an explosion.
8. Remove personal metal items such as rings, bracelets, necklaces and watches when working with a lead acid battery. It can produce a short circuit current high enough to weld a ring or the like to metal causing a severe burn.
9. This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
10. Children should be supervised to ensure that they do not play with the appliance.
11. If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters eye, immediately flood eye with running cold water for at least 10 minutes and get medical attention immediately.
12. NEVER smoke or allow a spark or flame in vicinity of battery or engine.
13. Use charger for charging a LEAD-ACID battery only. It is not intended to supply power to a low voltage electrical system other than in a starter-motor application. Do not use battery charger for charging dry-cell batteries that are commonly used with home appliances. These batteries may burst and cause injury to persons and damage to property.
14. NEVER charge a frozen battery.

## PREPARING TO CHARGE

**RISK OF CONTACT WITH BATTERY ACID. BATTERY ACID IS A HIGHLY CORROSIVE SULFURIC ACID.**

1. Be sure area around battery is well ventilated while battery is being charged. Gas can be forcefully blown away by using a piece of cardboard or other nonmetallic material as a fan.
2. Clean battery terminals. Be careful to keep corrosion from coming in contact with eyes.
3. Inspect the battery for cracked or broken case or cover. If battery is damaged, do not use charger.
4. If the battery is not sealed maintenance free, add distilled water in each cell until battery acid reaches level specified by the manufacturer. This helps purge excessive gas from cells. Do not overfill. For a battery without cell caps, carefully follow manufacturer's recharging instructions.
5. If necessary to remove battery from vehicle to charge, always remove ground terminal from battery first. Make sure all accessories in the vehicle are off to ensure you do not cause any arcing.
6. Study all battery manufacturer's specific precautions such as removing or not removing cell caps while charging and recommended rates of charge.
7. Determine voltage of battery by referring to car owner's manual and make sure it matches output rating of battery charger.
8. If the battery and terminals have a white or bluish crust on them, the charging system may be having problem. These problems should be corrected before the battery is replaced after charging.

## CHARGER/MAINTAINER LOCATION

### **RISK OF EXPLOSION AND CONTACT WITH BATTERY ACID.**

1. Locate charger as far away from battery as DC cables permit.
2. Never place charger directly above battery being charged. Gases from battery will corrode and damage charger.
3. Never allow battery acid to drip on charger when reading gravity or filling battery.
4. Do not operate charger in a closed area or restrict ventilation in any way.

5. Do not set a battery on top of charger.

## SETTING UP & OPERATIONS

1. Make sure the room has plenty of ventilation.
2. Mount this charger away from any vehicle repair or service. Make sure never to start or run an engine near the batteries being charged.
3. Be sure the total amperage used by this charger should not exceed the amperage capacity of the supply source. If you do not know how to determine this, have a qualified electrician determine the capacity for you.
4. Connect and disconnect DC output clips only after setting any charger switches to off position and removing AC cord from electric outlet. Never allow clips to touch each other.
5. Make sure the battery terminals are clean. Wire brush them if necessary. Clamp the black end (NEG, -) to the negative battery terminal. Clamp the red end (POS, +) to the positive battery terminal.
6. Connect the charger to a grounded power receptacle that is wired in compliance with local electrical codes.

Note that side mounted batteries will require the insertion of a lead post adapter. Plain bolts are not safe. They will not allow for accurate reading and should not be used.

## DC CONNECTION PRECAUTIONS

1. Connect and disconnect dc output clips only after removing ac cord from electric outlet. Never allow clips to touch each other.
2. FOR A CHARGER HAVING AN OUTPUT VOLTAGE SELECTOR SWITCH, REFER TO THE CAR OWNER'S MANUAL IN ORDER TO DETERMINE THE VOLTAGE OF THE BATTERY AND TO MAKE SURE THE OUTPUT VOLTAGE IS SET AT THE CORRECT VOLTAGE. IF AN OUTPUT VOLTAGE SELECTOR SWITCH IS NOT PROVIDED, DO NOT USE THE BATTERY CHARGER UNLESS THE BATTERY VOLTAGE MATCHES THE OUTPUT VOLTAGE RATING OF THE CHARGER.



## CHARGE TIME CALCULATION

This charger has a rated output of Ampere. (by models) These outputs will vary with the age and condition of the battery being charged.

Find your battery's rating on the chart below, and note the charge time given for each charger setting.

Use the following table to more accurately determine the time it will take to bring a battery to 80% charge. Identify where your battery fits into the chart.

Battery Size		MODEL NO.		
Ampere Hours (AH)	Cold Cranking Amps (CCA)	AE150E	AE300E	AE500E
2	40	1 ~ 2 hrs	-	-
6	80	4 hrs	2 hrs	-
8	100	6 hrs	3 hrs	-
10	120	7 hrs	4 hrs	2 hrs
14	150	10 hrs	5 hrs	2 ~ 3 hrs
20	200	14 hrs	7 hrs	4 hrs
40	320	M	13 hrs	8 hrs
50	400	M	M	10 hrs
70	550	M	M	14 hrs
120	950	M	M	M
150	1170	M	M	M
200	1560	M	M	M

M: Maintenance

## CHARGING WHEN BATTERY IS INSTALLED IN VEHICLE

**A SPARK NEAR BATTERY MAY CAUSE BATTERY EXPLOSION. TO REDUCE RISK OF A SPARK NEAR BATTERY:**

1. Position the AC and DC cables to reduce the risk of damage by the hood, door and moving or hot engine parts.

NOTE that if it is necessary to close the hood during the charging process, ensure that the hood does not touch the metal part of the

battery clips or cut the insulation of the cables.

2. Stay clear of fan blades, belts, pulleys and other parts that can cause injury.

3. Determine which post of the battery is grounded (connected) to the chassis. If the negative post is grounded to the chassis (as in most vehicles), see step to **negative-grounded vehicle**. If the positive post is grounded to the chassis, see step to **positive-grounded vehicle**.

4. Check polarity of battery posts. POSITIVE (POS, P, +) battery post usually has larger diameter than NEGATIVE (NEG, N,-) post.

5. When disconnecting charger, disconnect AC cord, remove clip from vehicle chassis, and then remove clip from battery terminal.

### FOR A NEGATIVE-GROUNDED VEHICLE

Connect the POSITIVE (red) clip from the battery charger to the POSITIVE (POS, +) ungrounded post of the battery. Connect the NEGATIVE (black) clip to the vehicle chassis or engine block away from the battery. Do not connect the clip to the vehicle chassis or engine block sheet-metal body parts. Connect to a heavy gauge metal part of the frame or engine block.

### FOR A POSITIVE-GROUNDED VEHICLE

Connect the NEGATIVE (black) clip from the battery charger to the NEGATIVE (NEG, -) ungrounded post of the battery. Connect the POSITIVE (red) clip to the vehicle chassis or engine block away from the battery. Do not connect the clip to the carburetor, fuel lines or sheet-metal body parts. Connect to a heavy gauge metal part of the frame or engine block.

Connect the AC supply cord to the electrical outlet for processing the charging.

### CHARGING WHEN BATTERY IS OUTSIDE VEHICLE

**A SPARK NEAR BATTERY MAY CAUSE BATTERY EXPLOSION. TO REDUCE RISK OF A SPARK NEAR BATTERY:**

**–Check polarity of battery posts. POSITIVE (POS, P, +) battery post usually has a larger diameter than NEGATIVE (NEG, N, –) post.**

**–Attach at least a 60 CM-long 6-gauge (AWG) insulated battery cable to NEGATIVE (NEG, N, –) battery post.**

**–Do not face battery when making final connection.**

**–POSITION YOURSELF AND THE FREE END OF CABLE AS FAR AWAY FROM BATTERY AS POSSIBLE, THEN CONNECT THE NEGATIVE (BLACK) CHARGER CLIP TO FREE END OF CABLE;**

**1. Connect the POSITIVE (red) charger clip to the POSITIVE (POS, +) post of the battery.**

**2. Connect the NEGATIVE (black) charger clip to the NEGATIVE (NEG, –) post of the battery.**

**3. Connect the AC supply cord to the electrical outlet.**

**4. When disconnecting the charger, always do so in the reverse order of the connecting procedure and break the first connection while as far away from the battery as practical.**

NOTE that a marine battery must be removed and charged on shore. To charge it onboard requires equipment specially designed for marine use.

## AC CONNECTIONS

**1. This battery charger is for use on 220-240 Vac. Check your AC volt and make sure the version you take is correct.**

**2. The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.**

**3. The plug pins must fit the receptacles. Do not use with an ungrounded system.**

**4. Never alter AC cord or plug provided. If it does not fit the outlet, have proper grounded outlet installed by a qualified electrician. Improper connection can result in a risk of an electric shock or electrocution.**

## CHARGING INDICATION (AE150E)

When the charger is being used, it shows LED lights as follows, indicating the status of the charging.

### **NO AC Power** (all lights off)

There is no AC power applied. Check the AC end.



### **STAND BY** (green blinking only)

The clamps are not connected to battery properly.



### **CHARGING** (both lights on)

The charger is charging the battery.



### **DEFECTIVE BATTERY** (red lit only)

The battery cannot hold a charge. Immediate replacement is recommended.



### **75% CHARGED** (green lit & red blinking)

The battery is 75% charged and ready for load test or can be returned to serve.



### **FULLY CHARGED** (green lit only)

The battery is fully charged. The charger will shift to the maintenance mode.



## CHARGING INDICATION (AE300E & AE500E)

When the charger is being used, it shows LED lights as follows, indicating the status of the charging.

### **NO AC Power** (all lights off)

There is no AC power applied. Check the AC end.



### **STAND BY** (green blinking only)

The clamps are not connected to battery properly.



### **CHARGING** (green & red lit)

The charger is charging the battery.



### **DEEPLY DISCHARGED BATTERY** (yellow blinking, green & red lit)

It takes more time to charge a deeply discharged battery. The indication goes to “yellow (defective battery)” after 36 hours’ charging.



### **DEFECTIVE BATTERY** (yellow lit only)

The battery cannot hold a charge. Immediate replacement is recommended.



### **75% CHARGED** (green lit & red light blinking)

The battery is 75% charged and ready for load test or can be returned to serve.



### **FULLY CHARGED** (green lit only)

The battery is fully charged. The charger will shift to the maintenance mode.



## TROUBLESHOOTING (AE150E)

### 1. Problem: **No LED lit.**

Possible Cause: **AC end is not making a good connection.**

Solution: **Check for poor connection at AC side.**

### 2. Problem: **Green LED keeps blinking.**

Possible Cause: **Clamps are not making a good connection.**

Solution: **Check for poor connection at battery and frame.**

### 3. Problem: **Red LED illuminated right away when connecting onto a battery.**

Possible Cause:

**a. Incorrect battery voltage.**

**b. Battery is at full charge capacity**

Solution:

**a. Verify that charger selector switch is in correct 12V position to match the battery's voltage. The charger will give you a warning if you are connecting to the incorrect application.**

**b. The battery is currently at full charge and will continue in maintenance/float mode until voltage drop occurs. At the time of voltage drop, charger will resume in maintenance charging mode.**

## TROUBLESHOOTING (AE300E/ AE500E)

**1. Problem: No LED lit.**

Possible Cause: **AC end is not making a good connection.**

Solution: **Check for poor connection at AC side.**

**2. Problem: Green LED keeps blinking.**

Possible Cause: **Clamps are not making a good connection.**

Solution: **Check for poor connection at battery and frame.**

**3. Problem: Yellow LED illuminated right away when connecting onto a battery.**

Possible Cause:

**a. Incorrect battery voltage.**

**b. Battery is at full charge capacity**

Solution:

**a. Determine if the battery is a 12V battery. The charger will give you a warning if you are connecting to the incorrect application.**

**b. The battery is currently at full charge and will continue in maintenance/float mode until voltage drop occurs. At the time of voltage drop, charger will resume in maintenance charging mode.**

**NOTE** that if the troubleshooting cannot fix the issue you have, please contact the distributor for the information.

## SUPPORT

Our professional customer support team is at your service.

Please send any enquiries to: [sales@tridon.com.au](mailto:sales@tridon.com.au)