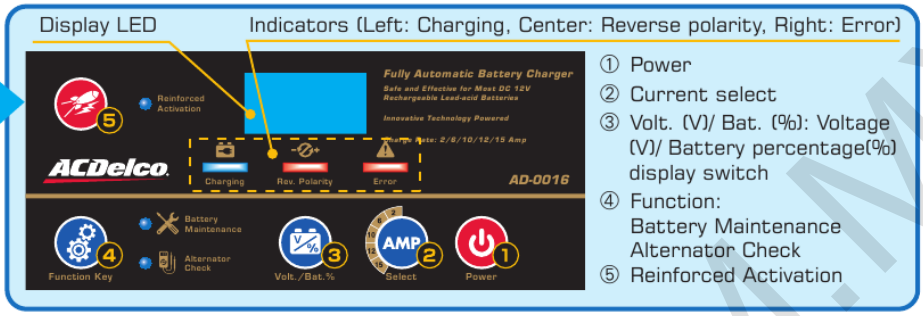
ACDelco Battery Charger AD-0016

Quick Start

Battery Charger Control Panel: "Name of Buttons"



① Power
② Current select
③ Volt. (V)/ Bat. (%): Voltage (V)/ Battery percentage(%) display switch
④ Function: Battery Maintenance Alternator Check
⑤ Reinforced Activation

Charging instruction

Before charging, please check battery capacity (Ah: Ampere hours) and select current.

Attach clamps to battery terminal first, and connect AC cord to electrical outlet. Press ① Power Button, display shows ON

1. If the clamps not connected to battery terminals, display will show "Er1"
2. Reverse polarity connection display will show "Er1", and Reverse polarity LED lit up. (Please check connection)

Begin to charge

Buttons for operation
② [Current select]
③ [Volt. (V)/ Bat. (%)]

1. Select the appropriate charging current based on battery capacity
2. Press operating button ②, display shows 2A (Current).

Press button within 1 second — Press button again within 1 second, you may select a higher charge rate. Changing current displays 2 => 6 => 10=> 12=> 15 circularly.

Chose the current close to battery capacity * 0.3

3. Select the required current rate. Charge will begin in about 1 second. (LED Indicators "Changing" lit up)

During Charging — Press once "Volt. (V)/ Bat. (%)" and the indicator will display a 3 Digital voltage measurement. Press the key again and it will display the % charge of the battery.

i.e.: Battery percentage 65%  Voltage 14.3V

4. The charger will display "**FUL**" till the battery is fully charged. The charger will enter Auto maintenance mode / Auto wake up mode automatically.

During charging, only ① "POWER" and ③ Volt. (V)/ Bat. (%) are functionable. All other buttons are invalid. Press ① "POWER", if needed to stop charging.

If display show Error, please check user manual P. 14 "Error code"

Reinforced Activation

Buttons for operation
⑤ [Reinforced Activation]

USE OF REINFORCED ACTIVATION MODE:

In certain cases, batteries can become depleted as a result of deposits that build up on the battery plates. In some cases, this will cause your battery to resist normal charging processes. When the normal charging mode fails or the Maintenance Mode does not reactivate the battery, the Reinforced Activation Mode may help remove the deposits on the battery plates and thereby permit battery charging. THIS MODE SHOULD BE USED ONLY WHEN NORMAL BATTERY CHARGING PROCESSES and THE MAINTENANCE MODE FAILS as use of this mode on a battery that would accept a normal charge may harm your battery. In addition, this mode will not work on all depleted batteries.

* Please read the charging instructions before charging

During charging display shows "Er1"/ "Er3" and stopped charging. Error might be caused by following conditions.

- Battery Voltage too low, cannot be charged automatically
- Bad Cell or sulfated plate(s)
- Battery is degraded. Internal resistance of the battery is too high.
- Bad battery plate (structural damage)

Maintenance mode could help to improve above battery condition.

* If the battery plate is damaged, the battery condition will not be improved.

Maintenance mode

Buttons for operation
④ [Function]

Charge the degraded or dysfunctional battery with constant voltage/ low current to reactivate the battery lowly.

1. Press ④ "Function" while the battery charger power on. After function started, LED lit up and display shows as following ①②③ circularly

2. If the display shows ③ and stopped changing, may complete charging or caused by battery issue.

Maintenance mode could be used continuously for 36 hours maximum. After using for 2 hours, please try to charge the battery with standard charging mode.

If the battery cannot be charged with standard charging mode, please try to use Maintenance mode again.

If the battery can be charged with standard charging mode, please keep charging.

"Maintenance mode" cannot guarantee to bring all batteries back to the condition for standard changing mode.

WARNING

To avoid personal injury and/or property damage:

- STAY CLEAR of fan belts and pulleys!
- NEVER charge a running vehicle!
- ONLY test 12 volt negative ground systems.

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Quick Start

Function: Alternator Check

Buttons for operation
④ [Function]

A simple voltage test for Alternator. You could check the charging ability for alternator while the engine started.

Check before running test
- Battery in good condition (Charged and the function normally)
- Warm-up completed and in the normal "idle operation"
- Air-conditioners (including air supply), defroster, lights, audio and other electronic equipment have been turned off

Test results will be based on two tests (battery in the no-load and on-load)

1st test: No-load test- not using electronic equipment

1. Attach clamps to battery terminal and connect AC cord to electrical outlet.
   (Display shows "OFF")
2. Press ① Power Button, display shows ON
3. Press button ④ twice and start to test.
   (Alternator check LED lit up)
4. Testing the alternator output voltage about 5 seconds
   (during the test°Adisplay as right)

Display shows the alternator output voltage

The condition of the Alternator is good
(The voltage is the average of 5 seconds)

Display shows "CHE"

If the display shows 'CHE', it is likely that further checking needs to be done by a qualified technician.

2nd test: Load test- using the electronic equipment

5. After 1st test, press ① "POWER" to turn off (display shows OFF)
6. Turn on headlight, Keep A/C "OFF" and turn air supply to "HIGH" (Please do not use other electronic equipment)
7. Press ① "Power", display shows "ON"
8. Press ④ "Function" twice and start testing
   (Alternator check LED lit up)
9. About 5 seconds, testing the alternator output voltage
   (during the test°Adisplay as right)

Display shows the alternator output voltage

The condition of the Alternator is good
(The voltage is the average of 5 seconds)

Display shows "CHE"

If the display shows 'CHE', it is likely that further checking needs to be done by a qualified technician.

10. Press ① "POWER" to turn off the charger, and dis-attached clamps

If the 1st test result is good but the 2nd test result shows "CHE", the fan belt might be loose, rectifier diode control circuit issue or Poor battery and generator contestation problem. It is likely that further checking needs to be done by a qualified technician

Danger
1. Do not perform "maintenance" or charging in the test. The charger may be damaged.
2. Do not run test on any vehicle other than 12V. The charger may be damaged.

* An Alternator should not be replaced based on the results of the above test. Leave diagnosis and repair work to qualified automotive technicians.
* For details, please refer to the instruction manual.

Error Code Description

Error Code		Reason	Solution
Er0		System Error	Contact Technical Support
Er1	Before connect	Reverse polarity connection, battery voltage too low or bad connection.	Confirm polarity and hookup accordingly, check and confirm clamp connection is clean and tight or replace battery if needed.
	When connected	Unrecognized battery	Internal resistance of the battery is too high, replace a new battery.
		Battery voltage is too low	Battery over discharged, replace a new battery.
	When charging	Battery voltage is too low, cannot be charged normally	Please follow the instructions, try to charge with "Maintenance mode". If there is no improvement, replace a new battery

Error Code	Reason	Solution
Er2	Excessive load on battery, check load.	Please try to charge with lower currant. If there is no improvement, replace a new battery.
Er3	Bad Cell or sulfated plate(s).	Operate Maintenance cycle for 24~48hrs, retest and replace battery if needed.
Er4	Overheated	Turn charger 'OFF', let charger cool for 45 minutes. Ensure that the vents on the charger housing are not obstructed. Try again, if overheating reoccurs, replace charger.
Er5	Cycle time exceeded	Battery charger has run continuously for 24 hours and has not taken a full charge, indicating that the battery may be bad, try again. If error repeats, replace battery. Or too low charge rate setting, set charger to higher rate.