Battery Charger User Guide

MODEL: CT-3800
AC Input: 220-240VAC, 50-60Hz, 0.8A
DC Output: 6VDC, 3.5A;
12VDC, 3.5A;
12VDC, 1A;
Temperature Controlled

Please read and understand all important safety and operating instructions before using this charger. In addition, please read and follow all battery and vehicle manufacturer's instructions and cautionary markings.

IMPORTANT SAFETY INSTRUCTIONS

SAFETY PRECAUTIONS FOR WORKING IN THE VICINITY OF A BATTERY

1) Batteries generate explosive gases during normal operation. Use in well-ventilated area.

2) Consider having someone close enough or within the range of your voice to come to your aid when you work near a battery.

3) Do NOT smoke, strike a match, or cause a spark in vicinity of battery or engine. Avoid explosive gas, flames and sparks.

4) Remove all personal jewelry, such as rings, bracelets, necklaces, and watches while working with a vehicle battery. These items may produce a short-circuit that could cause severe burns.

5) Be extra cautious to reduce risk of dropping a metal tool onto the battery. It might spark or short-circuit a battery or other electrical hardware which may cause an explosion or fire.

6) Wear complete eye protection, hand and clothing protection. Avoid touching eyes while working near a battery.

7) Study all battery manufacturer's specific precautions such as removing or not removing cell caps while charging and recommended rates of charge.

8) Clean battery terminals before connected with the charger. Be careful to keep corrosion from coming in contact with eyes.

9) When it is necessary to remove a battery from vehicle to charge, always remove grounded terminal from battery first. Make sure all accessories in the vehicle are off in order to prevent an arc.

10) It is NOT intended to supply power to an extra-low-voltage electrical system or to charge dry-cell batteries. Charging dry-cell batteries may burst and cause injury to persons and property.

11) NEVER charge a frozen, damaged, leaking or non-rechargeable battery.

12) If battery electrolyte contacts skin or clothing, wash immediately with soap and water. If electrolyte enters eye, immediately flood eye with running clean cold water for at least 15 minutes and get medical attention immediately.

SAFETY PRECAUTIONS FOR USING THE CHARGER

1) Do NOT place the charger in the engine compartment or near moving parts or near the battery; place as far away from them as DC cable permits. NEVER place a charger directly above a battery being charged; gases or fluids from battery will corrode and damage charger.

2) Do NOT cover the charger while charging.

3) Do NOT expose to rain or wet conditions.

4) Connect and disconnect DC output only after setting AC cord from electric outlet.

5) Use of an attachment not recommended or sold by the manufacturer may result in a risk of fire, electric shock or injury to persons.

6) Do not overcharge batteries by selecting the wrong charge mode.

7) To reduce the risk of damage to electric plug and cord, pull by the plug rather than the cord when disconnecting charger.

8) To reduce risk of electric shock, unplug charger from outlet before attempting any maintenance or cleaning.

9) Operate with caution if the charger has received direct hit of force or been dropped. Have it checked and repaired if damaged.

10) Any repair must be carried out by the manufacturer or an authorized repair agent in order to avoid danger.

ABOUT CT-3800

1) The CT-3800 is designed for charging all types of 12V lead-acid,6V lead-acid and 12V lithium-ion batteries, including WET (Flooded), GEL, MF (Maintenance-Free), EFB (Enhanced Flooded Battery), AGM (Absorbed Glass Mat), and LIB (Lithium Ion) batteries.

2) Built-in intelligent microprocessor makes charging faster, easier and safer.

3) This charger has safety features, including spark proof, protection for reverse polarity, short circuit, overcurrent, overcharge and overheat.

4) It has auto-memory, which returns to last selected mode when restarted (except Standby Mode).

5) When battery level indicator turns to 100% solid Green LED, it will automatically switches from full charge to maintenance status to

maintain batteries during prolonged periods of storage without overcharging or damaging the battery.

6) The CT-3800 has four external holes for mounting. Mount the charger in a desired location with equipped self-drill screws. It is important to keep in mind the distance to the battery.

7) Following is the charger's technical specification:

AC Input	220VAC,50- 60Hz, 0.8A
DC Output	6VDC, 3.5A; 12VDC, 3.5A; 12VDC, 1A; Temperature Controlled
Charger Type	8 steps, Full-automatic Charging Cycle
Start Voltage	> 1V
Housing Protection	IP54
Battery Type	All Types of 6V & 12V Lead-acid Batteries, and 12V Lithium Ion Batteries
Battery Capacity	2-120Ah (6V), 2-120Ah (12V), Maintains All Battery Sizes
Accessories Included	Clamp Connectors, Ring Connectors
Ambient Temperature	0℃ ~ +40℃

CONNECTING TO THE BATTERY

1) Identify polarity of battery posts. The positive battery terminal is typically marked by these letters or symbol (POS,P,+). The negative battery terminal is typically marked by these letters or symbol (NEG,N,-).

2) Do not make any connections to the carburetor, fuel lines, or thin metal parts.

3) Identify if you have a negative or positive grounded vehicle. This can be done by identifying which battery post (NEG or POS) is connected to the chassis.

4) For a negative grounded vehicle (most common): connect the RED POSITIVE clamp / ring connector first to the positive battery terminal, then connect the BLACK NEGATIV clamp / ring connector to the negative battery terminal or vehicle chassis.

5) For a positive grounded vehicle (very uncommon): connect the BLACK NEGATIV clamp / ring connector first to the negative battery terminal, then connect the RED POSITIVE clamp / ring connector to the positive battery terminal or vehicle chassis.
6) When disconnecting, disconnect in the reverse sequence, removing the negative first (or positive first for positive ground systems).
7) Follow these steps when using 12V accessory plug: keep the vehicle hood open. Connect the end of the 12V accessory plug to the charger; insert the 12V accessory plug into the vehicle's 12V outlet. If the vehicle's ignition key has to be on in order for the 12V outlet to supply / receive power, turn the key, without starting the engine.
8) A marine (boat) battery must be removed and charged on shore. To charge it on board requires equipment specially designed for marine use.

CHARGING MODES

CT-3800 has eight modes: 12V NORM, 12V COLD/AGM, 12V SMALL NORM, 12V SMALL COLD/AGM, 6V NORM, 12V LITHIUM and 12V REPAIR. Some charge modes must be held for three (3) seconds or / and pressed to enter the mode. Do not operate the charger until you confirm the appropriate charge mode for your battery.

Mode	Battery Size (Ah)	Explanation
Standby	——	Not charging or providing any power (Green LED)
12V NORM	2-120	Charging 12V WET/GEL/MF/EFB batteries (Green LED)
12V COLD/AGM	2-120	Charging 12V batteries below 10℃ (50℉) or 12V AGM battery (Green LED)
12V SMALL NORM	2-40	Charging 12V WET/GEL/MF/EFB batteries of small battery size (Green LED)
12V SMALL COLD/AGM	2-40	Charging 12V batteries below 10℃ (50℉) or 12V AGM battery of small battery size (Green LED)

6V NORM (Hold Mode button for 3 seconds to enter)	2-120	Charging 6V WET/GEL/MF/EFB batteries (Blue LED)
12V LITHIUM (Hold & Press)	2-120	Charging 12V lithium-ion batteries only, including LiFePO4 (White LED)
12V REPAIR (Hold & Press)	2-120	An advanced battery recovery mode for repairing old, idle, stratified or sulfated batteries. REPAIR Yellow LED + Green LED (12V)

These "Hold or / and Press" modes are advanced charging modes that require your full attention before selecting.

Using 6V NORM (Hold)

This mode is designed for 6V lead-acid batteries only. Consult the battery manufacturer before using this mode.

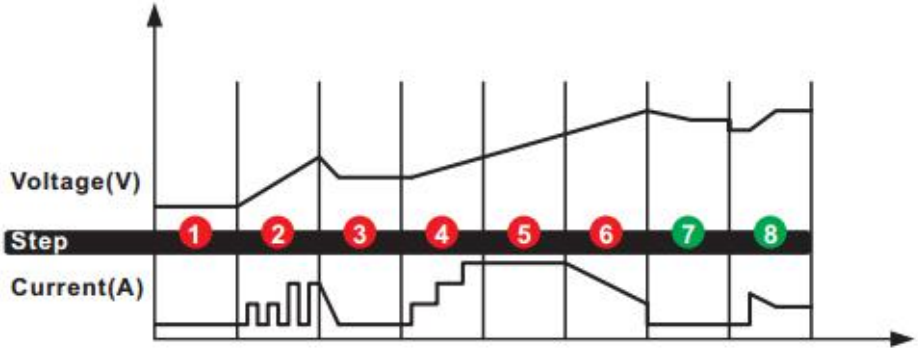
Using 12V LITHIUM (Hold & Press)

This mode is designed for 12V lithium-ion batteries only, including LiFePO4. Some lithium-ion batteries may be unstable and unsuitable for charging. Consult the lithium battery manufacturer before charging and ask for recommended charging voltage and current.

Using 12V REPAIR (Hold & Press)

This mode is for LEAD-ACID batteries only. It is an advanced battery recovery mode for repairing old, idle, stratified or sulfated batteries. NOT all batteries can be recovered. For optimal results, take the battery through a full charge cycle, bringing the battery to full charge, before using this mode. When this mode is chosen, do remember press Mode button for choosing appropriate 12V Mode(s). One REPAIR cycle can take up to **eight (8) hours** to complete the recovery process and will enter to charge (8 steps charging cycle) when completed. This mode uses a high charging voltage and may cause some water loss in WET cell batteries. Plus, some batteries and electronics may be sensitive to high charging voltages. To minimize risks, disconnect the battery from the vehicle before using this mode.

CHARGING STEPS



STEP 1: DIAGNOSIS (Check if battery has connected with the charger and also check battery voltage)

STEP 2: DESULPHATION (If battery voltage is too low, programs automatically generate pulsing current to remove sulphate, **up to 5 hours**)

STEP 3: ANALYSE (Check if the battery voltage reaches to the threshold after desulphation, and charging begins if the battery voltage is OK)

STEP 4: SOFT START (Charge with echelon constant current)

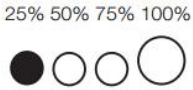
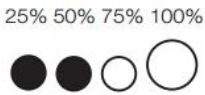
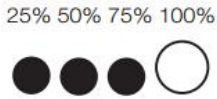
STEP 5: BULK (Charge with constant maximum current until battery voltage is reached to the threshold)

STEP 6: ABSORPTION (Provide gradually declining current charge for maximum battery voltage)

STEP 7: ANALYSE (Test if the battery can hold charge)

STEP 8: MAINTENANCE (Continuously monitor the battery, and charging current will intelligently adapt to the variable battery voltage)

BATTERY LEVEL INDICATOR

LED	Explanation
25% 	The 25% Charge Red LED will slowly flash when the battery level is less than 25%. When 25% is reached, the LED will be solid.
50% 	The 50% Charge Red LED will slowly flash when the battery level is less than 50%. When 50% is reached, the LED will be solid.
75% 	The 75% Charge Red LED will slowly flash when the battery level is less than 75%. When 75% is reached, the LED will be solid.
100% 	The 100% Charge Green LED will slowly flash when the battery level is less than 100%. When 100% is reached, the 100% Charge LED will be solid. The 25%, 50% and 75% Charge LEDs will turn off.

LED COMMUNICATION OF ABNORMAL RESULTS

No.	LIGHT(S) CONDITION	CAUSE(S)	SOLUTION(S)
1	Solid Red Warning! LED	Reverse Polarity	Exchange the red and black clamps or ring terminals to the correct battery posts
2	Flashing Red Warning! LED Corresponding charging mode LED	1) Open-circuit 2) Dirty Battery Posts 3) Dead Battery	1) Connect the red and black clamps or ring terminals to the battery posts 2) Clean the battery posts 3) Replace the battery with a new

			one immediately
3	Slow flashing Red Warning! LED + Corresponding charging mode LED	Charging in 6V Mode(s) for 12V battery	Please do manually press Mode button to choose correct charge mode. **CAUTION:** If you choose 12V Mode(s) for 6V battery, the 6V battery will be damaged!
4	Only charging mode LED is on, warning and four battery level indicator LEDs are flashing	Overheat protection	Current reduces when temperature in charger is too high. After cooling down, charge will begin
5	Solid yellow REPAIR LED + 12V corresponding charging mode LED	In 12V REPAIR mode	------
7	Quick flashing Red Warning! LED + Corresponding charging mode LED	Battery cannot store electric charge during charging process	Replace the battery with a new one immediately
8	Only corresponding charging mode LED + Four battery level indicator LEDs are all OFF	In Desulphation Process	------
9	Red Warning! LED light flashes 2x stop	Battery cannot be recovered through	1) Replace with a new battery

	for 3secs, 2x stop for 3 secs…	Desulphation Process or Battery cannot be recovered through Repair Mode	2) If battery cannot be recovered through Desulphation Process, try REPAIR Mode for recovery
10	Flashing Yellow Warning! LED	Heavily Corroded Battery (voltage is less than 3V), need Repair Mode	Replace with a new battery or try REPAIR Mode for recovery

NOTICE: following situation indicates that battery need to be replaced, although there is no abnormal result LED communication.

After full charging cycle and with 100% of battery level indicator, use this battery to start matched vehicle's engine. If engine cannot be activated (exclude the problem of vehicle itself), it indicates this battery has declined storage capacity and need to be replaced or try REPAIR Mode for recovery.

Nameplate icon description


:Class II


:For indoor use only


:Before charging, read the instructions

:Fuse


:Correct Disposal of this product

This marking indicates that this battery charger and batterypack should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmental safe recycling.

WARRANTY

1) This product is warranted to the original purchaser for a period of two (2) years from the original shipping date, to be free of defects in material and workmanship.

2) Warranty Performance: During the above two (2) years warranty period, a product with a defect will be replaced with a new one when the product is returned to the manufacturer. The replacement product will be in warranty for the balance of the original two (2) years warranty period.

3) This warranty is void if the product has been damaged by accident, in shipment, unreasonable use, misuse, neglect, improper service, commercial use, repairs by unauthorized personnel or other causes not arising out of defects in materials or workmanship.

Important safety instructions

1)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.

2)Children should be supervised to ensure that they do not play with the appliance.

3)If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

3)The battery terminal not connected to the chassis has to be connected first. The other connection is to be made to the chassis, remote from the

battery and fuel line. The battery charger is then to be connected to the supply mains;After charging, disconnect the battery charger from the supply mains. Then remove the chassis connection and then the battery connection.

4)Do not recharging non-rechargeable batteries.

5)During charging, the battery must be placed in a well ventilated area.