

6A SMART BATTERY CHARGER



This TRAVELLER® product has been carefully manufactured to give you dependable operation. Please read this manual thoroughly before operating your new product, as it contains the information you will need to become familiar with its features and obtain optimal performance. Please keep this manual on file for future reference.

USER MANUAL



1714477

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IMPORTANT SAFETY INFORMATION**SAVE THESE INSTRUCTIONS****⚠ WARNING: Risk of Explosive Gases, Electric Shock or Fire.**

- Keep out of reach of children.
- To reduce the risk of personal or property damage, read and understand all directions and warnings prior to use of this battery charger.
- Do not use in wet conditions or near combustible materials. Keep away from flames, smoke or sparks while charging. Never smoke in the area of the battery or engine.
- To reduce the risk of electric shock, connect to only properly grounded outlets. Use of an extension cord is not recommended and could result in fire.
- Use only in a well-ventilated area.
- Do not operate if cords or wires are frayed or defective, or if charger base is defective in any way. Do not attempt to open the charger as this could result in electric shock.
- This unit is comprised of switches which could produce sparks. Make sure you have adequate space to use this charger.
- Use only on lead-acid batteries. Do not use this charger for charging dry cell batteries, as this could result in personal injury or property damage due to battery explosion.
- Do not charge a frozen battery.
- Use of an attachment not recommended or sold by the battery charger manufacturer may result in a risk of fire, electric shock, or injury to persons.
- Do not operate charger with damaged cord/plug - replace the cord/plug immediately.
- Do not operate charger if it has received a sharp blow, been dropped, or otherwise damaged in any way; take it to a qualified serviceman.
- Do not disassemble charger; take it to a qualified serviceman when service or repair is required. Incorrect reassembly may result in a risk of electric shock or fire.
- To reduce risk of electric shock, unplug charger from outlet before attempting any repairs or cleaning. Turning off controls will not reduce this risk.

PERSONAL PRECAUTIONS

- Remove metal items such as rings, bracelets and necklaces while working with this charger. Lead acid batteries can produce a short circuit high enough to cause burns.
- Always wear protective eyewear and gloves when working with batteries. If battery acid comes in contact with your skin or clothing, immediately wash the area with soap and water and get medical attention right away.

WARNING – RISK OF EXPLOSIVE GASES.

- a) Working in vicinity of a lead-acid battery is dangerous. Batteries generate explosive gases during normal battery operation. For this reason, it is of utmost importance that you follow these 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. Review cautionary markings on these products and on engine.

IMPORTANT SAFETY INFORMATION



SHIELD EYES:

Explosive gases can cause eye injury or blindness.



CONTAINS SULFURIC ACID:

May cause severe burns and blindness.

- If it is necessary to remove the battery prior to charging, always remove the grounded terminal first. Ensure all electrical accessories are off prior to charging.
- It is best to clean the battery terminals prior to charging. Using a battery terminal brush is a good way to remove corrosion.
- When charging a lead-acid battery that is not sealed, it may be necessary to add distilled water into battery so the battery acid solution reaches the level as specified by manufacturer. Careful do not overfill the battery.
- Read individual precautions and warnings outlined by the battery manufacturer relative to charging and maintaining. Ensure that charger clamp make a tight connection.
- NEVER smoke or allow a spark or flame in the vicinity of the battery or engine.
- Use charger for charging LEAD-ACID batteries only.
- NEVER charge or maintain a frozen battery.

CHARGER LOCATION

- Make sure you have adequate space to use this charger. Position the charger as far away from the battery as permitted by DC Cable.
- Never place the charger directly above the battery that is being charged; as this may cause the charger to be damaged by gases expelled from the battery.
- Never set a battery or any other object on the charger.
- Use only in a well-ventilated area.
- Never allow battery acid to drip on the charger when reading electrolyte specific gravity or filling battery.
- Do not operate charger in a closed-in area or restrict ventilation in any way.

BATTERY TYPES

Three basic types of batteries can be given a charge with this charger:

Conventional and Low Maintenance Batteries

These are lead-acid batteries. Conventional/ Low Maintenance batteries require periodic addition of distilled water to the acid solution (electrolyte). Additional water may be added by removing the filler caps located on the top of the battery.

Note: When lead is known to be one of the materials used in the battery's construction, that battery is a Low Maintenance/ Conventional type.

Maintenance Free Batteries/ AGM batteries

These are lead-calcium batteries and normally do not require water additions. Therefore, filler caps have been removed from the battery surface. These batteries will have a smooth or sealed appearance.

Deep Cycle Batteries

These heavy duty batteries are used in boats, construction equipment, sump pumps, etc. They are normally marked DEEP CYCLE on the outside of the case.

Other Batteries

Only 14.4V (+/- 0.5V) Lithium Iron Phosphate (LiFePO₄) Batteries can be charged with this unit. Do not select a charging rate above 2 amps so as to extend the life of your battery. If Lithium Iron Phosphate (LiFePO₄) Battery voltage is under 10 volts, it is not recommended that you use this charger as the battery may be damaged.

CONNECTING BATTERY

Note: It is important to determine the battery type (maintenance free or conventional) before use.

BATTERY INSTALLED IN VEHICLE

1. Stay clear of moving engine parts.
2. Position the AC/DC cables to reduce the risk of damage by the moving engine parts. Never allow the clamp to touch each other.
3. If it is necessary to close the engine hood, please ensure the hood will not damage the cable insulation or touch the battery clamp to the hood.
4. Check the polarity of the battery posts.

Note: The positive (+) post is usually larger in diameter than the negative (-) post.

5. Determine which battery post is grounded.

Note: In most vehicles, the negative battery post is grounded to the chassis.

- For negative grounded vehicles, connect the red positive (+) clamp from the battery charger to positive (+) battery post. Connect the black negative (-) clamp to the vehicle chassis or engine block. NEVER connect the clamp to areas such as the carburetor, fuel lines or other metal body parts.
 - For positive grounded vehicles, connect the black negative (-) clamp from the battery charger to the negative (-) battery post. Connect the red positive (+) clamp to the vehicle chassis or engine block. NEVER connect the clamp to areas such as the carburetor, fuel lines or other metal body parts.
6. Plug the AC power cord/plug into a properly grounded outlet.
 7. When disconnecting the charger, first unplug the AC power cord from the outlet, remove the clamp from the vehicle chassis or engine block and then remove the clamp from the battery terminal.

BATTERY OUTSIDE OF VEHICLE

Note: If using this battery charger for a marine battery, the battery must be removed and charged on shore unless you have purchased special equipment designed for marine use to allow for onboard charging.

1. Check the polarity of the battery posts.

Note: The positive (+) post is usually larger in diameter than the negative (-) post.

2. Attach at least a 24 inch 6-gauge insulated battery cable to the negative (-) battery post.

3. Connect the red positive (+) charger clamp to the positive (+) battery post.
4. Place the free end of the battery cable as far away from the battery to be charged as the cables permit and then connect the black negative (-) charger clamp to the free end of the cable. NEVER face the battery when making the connection.
5. Plug the AC power cord/plug into a properly grounded outlet.
6. When disconnecting the charger, always use the reverse order from the connection process, staying as far away as possible from the battery.

AC POWER CORD/PLUG CONNECTIONS AND PROPER GROUNDING

- This battery charger is designed for use on a 120V circuit. Always plug the AC power cord/plug into a properly grounded outlet that follows all local ordinances. The plug pins must properly fit the grounded outlet. An improper connection can result in electric shock.
- NEVER change or alter the AC power cord or plug pins.
- If an extension be used, it should follow the listed recommendations:
 - 100 ft (30.5m) or less – 16 gauge
 - 100 ft (30.5m) or more – 14 gauge

FEATURES



1. Multi-functional switch
2. 6ft. DC cables

3. AC Power LED
4. Charging status LED

5. Reverse polarity/Error LED

CHARGER STATUS / FAULT INDICATOR

This charger has 3 easy-to-follow indicators. The charger will continuously monitor charging progress and collect feedback from the battery during charging.

LED Indicator	Status	Explanation
AC Power	Green (solid)	AC power on
Charging/Charged	Green (flash)	Charging
Charging/Charged	Green (solid)	Charged/Maintaining
Reverse polarity /Error	Red (solid)	Reverse polarity.
Reverse polarity /Error	Red (flash)	Fault/error. Charging aborted due to some abnormalities detected such as a defective battery or short circuit. (See error codes)

PROTECTION FEATURES**AUTOMATIC SHUT OFF**

The battery charger is designed to automatically shut off once battery charging is complete to prevent overcharging. When charging is complete, the Charging/Charged LED will illuminate and the charger has switched to Maintenance mode.

MAINTENANCE MODE

Once charging is complete, the charger will automatically switch into Maintenance mode (also known as float mode monitoring). In this mode, the charger keeps the battery fully charged by delivering a small amount of current to keep the battery at peak charge.

REVERSE POLARITY PROTECTION

If the cables are incorrectly connected to the battery, the Reverse Polarity indicator will illuminate. Note, the charger will not charge if the Reverse Polarity indicator is lit.

COOLING FAN OPERATION

The charger is designed to automatically control its high speed cooling fan for efficient operation. Therefore, it is normal for the fan to start and stop during charging.

OVERHEAT PROTECTION

The charger is designed to shut itself off if overheating is detected. Once the charger cools down, it will resume charging automatically.



OPERATING INSTRUCTIONS

SELECT CHARGING RATE

Move the manual switch to select desired charge rate as follows:

- 4A or 6A Charge Rate - Use for charging of small-to-large capacity automotive batteries.
- 2A Charge Rate - Use for charging motorcycle, ATV, snowmobile, personal watercraft, garden tractor and golf car batteries.

UNDERSTANDING FACTORS THAT AFFECT CHARGING TIME

The time it takes to fully recharge a battery depends on several factors including:

1. Battery Depth of Discharge

The greater the depth of discharge, the longer it will take to fully charge a battery. For example, a battery discharged to a level of 50% will take about twice as long to fully charge than a battery discharged only 25%.

2. Battery Size

If charged at the same current, a larger (higher capacity) battery will require more time to fully charge than a smaller (lower capacity) battery. This difference can be overcome by charging larger batteries at a higher current.

3. Battery Age and Condition

As a battery ages, its internal resistance will increase, impacting its ability to accept current. This effect is particularly noticeable in batteries that have not been well-maintained over their life.

4. Battery Type

Some battery chemistries, such as AGM and gel, have lower internal resistance which means they can accept charge better without generating damaging heat. Such batteries can charge up to 2 times faster than traditional wet battery types.

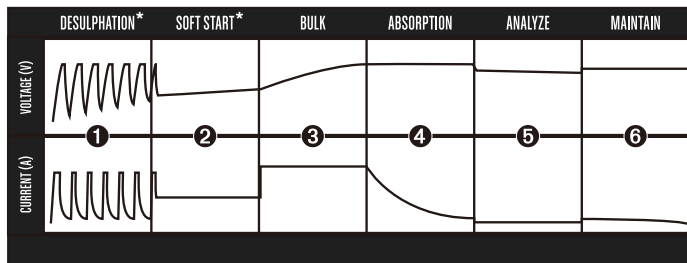
5. Charge Rate

The charge rate is measured in amperes (A). A battery charged at a lower rate will take longer to fully charge than a battery charged at a higher rate. This does not mean that one should always charge a battery at the highest ampere available as this can cause overheating and premature battery failure. A battery should be charged at a rate appropriate for its size—a good, safe rule of thumb is about 1/10 its Amp-hour capacity (e.g., 100 Ah battery $\times 1/10 = 10$ A).

6. Cold Temperature

Cold temperatures slow down the chemical reaction that takes place inside a battery when it is charging. Charging a battery at a cold temperature can greatly increase the amount of time required to charge the battery. Ideal charging temperature is between 10 to 25°C (50 to 77°F).

MULTI - STAGE CHARGING PROCESS



STAGE 1 DESULPHATION*

Pulses of voltage and current help recover sulphated or deeply discharged batteries.

STAGE 2 SOFT START*

Gently introduces current to condition deeply discharged batteries and prevent overheating that could damage the battery.

**STAGE 3 BULK**

Charging with maximum current to bring the battery to about 80% capacity.

STAGE 4 ABSORPTION

Charging with constant voltage while reducing current to safely bring the battery to 100% capacity. This stage is key to maximizing battery performance and battery life.

STAGE 5 ANALYZE

Tests if battery is holding charge.

STAGE 6 MAINTAIN

Monitors battery voltage and provides top-up charging when necessary to keep battery fully charged.

* If necessary

PRODUCT MAINTENANCE

- Wipe clean cords and clamps after each use.
- Store the power and output cables neatly to prevent damage.
- The charger housing may be cleaned using a damp cloth and mild cleaning agent.
- Always unplug the charger when not in use.
- Keep the charger stored in a cool, dry place.

ERROR CODES

Condition	Cause	Solution
No LEDs illuminate when plugged into AC outlet	Loose connection at AC outlet	Check connection.
	No AC power at outlet	Ensure power is present at AC outlet by plugging in a different appliance.
Red (flashing) error LED is illuminated	Poor clamp connection to battery posts	Check clamp connection. Ensure battery posts are clean and rock clamps back and forth to ensure a good connection.
	Battery voltage is too low (<1.5 V) to activate the charger	Check battery voltage with a volt meter. If less than 1.5 V, test or replace battery. (A battery discharged below 1.5 V is likely beyond salvage due to extreme sulphation or some other internal failure).
		The battery is defective. Test or replace the battery.
	Battery voltage is still less than 10 V after some time charging	Remove any loads on the battery while charging and try charging again.
	Battery has not reached full charge after 24 hours of charging	The battery is defective. Test or replace the battery.
		Charger current may be too low for the size (capacity) of the battery. Change to a charger with a higher charging rate.
		Remove any loads on the battery while charging and try charging again.
	Battery voltage is too high	Ensure the battery is 12 V, not 24 V.
	Overheat shutdown	Ensure ventilation to charger is not obstructed. Move charger to a cooler location. Charging will resume once charger cools down.
Red (solid) error LED is illuminated	Clamps are inversely connected to battery	Reverse clamp connections.



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SPECIFICATIONS

Input	120V AC, 60Hz, 2.4A
Output	12V DC, 2A /4A/6A
Charger Type	6-Stage
Compatible Battery Types	All lead-acid (Standard/AGM and Gel)
Compatible Battery Voltage	12 V (nominal)
Dimensions (L x W x H)	7.28" x 2.43" x 5.04" (18.50 x 6.15 x 12.80 cm)
Weight	1.83 lb (0.83 kg)



FCC STATEMENT

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Warning: Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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