

12V 1 AMP (1000 mA) Automatic Battery Charger & Maintainer

For lead-acid batteries

**THIS MANUAL CONTAINS IMPORTANT SAFETY
AND OPERATING INSTRUCTIONS FOR 12V BATTERY CHARGER:
YUA1201000 / INT1201000**

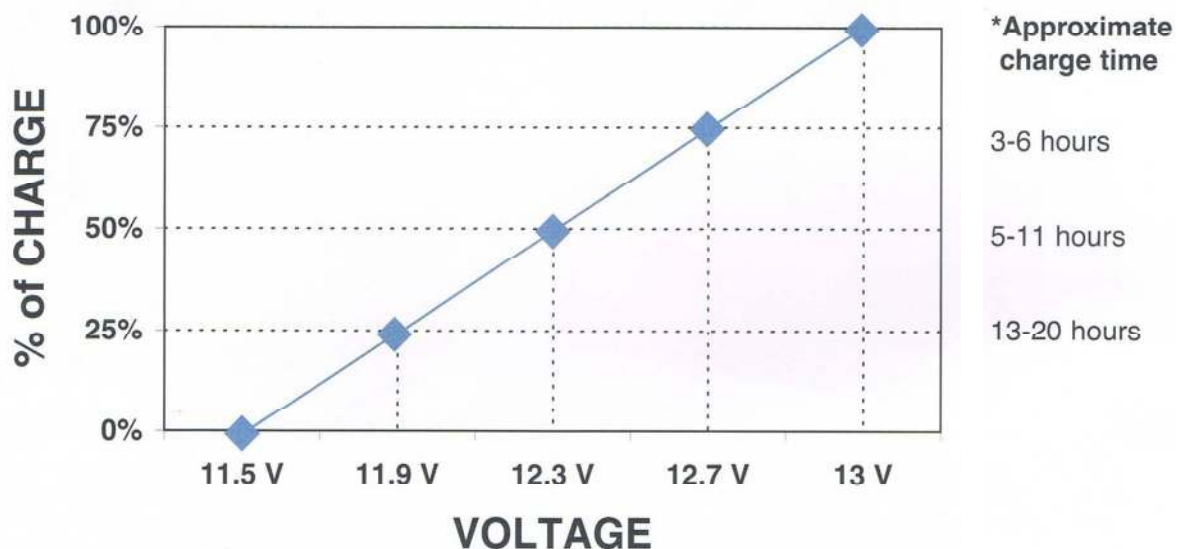
KEEP IT WITH OR NEAR CHARGER AT ALL TIMES.

IMPORTANT SAFETY INSTRUCTIONS

Please read this manual and follow the instructions carefully before using the charger.

WARNING - RISK OF EXPLOSIVE GASES. WORKING IN VICINITY OF A LEAD-ACID BATTERY IS DANGEROUS. EXPLOSIVE GASES DEVELOP DURING NORMAL BATTERY OPERATION. IT IS IMPORTANT THAT EACH TIME BEFORE USING YOUR CHARGER, YOU READ THIS MANUAL AND FOLLOW THE INSTRUCTIONS EXACTLY.

- **The charger is designed to charge all Yuasa brand 12V lead-acid batteries.**
- **Never charge lithium ion batteries on this charger.**
- The charge time will be dependent on the Ah rating of the individual battery. See chart below.



***Approximate charge time using a constant current charger at standard amps specified on the battery. Charging times may vary depending on the Ah rating of the battery.**

- We always recommend that you check the battery manufacturer's specifications before using this charger.
- 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 marking on these products and on engine.
- Do not expose charger to rain, snow, or liquids.
- Use of an attachment not recommended or sold by the battery charger manufacturer may result in a fire, electric shock, or personal injury.

- To reduce risk of electric shock, unplug charger from AC outlet before attempting any maintenance or cleaning. Turning off controls will not reduce this risk.
- Do not operate charger if it has received a sharp blow, been dropped, or otherwise damaged in any way; take it to a qualified service professional.
- Do not disassemble charger; take it to a qualified service center when service or repair is required. Incorrect reassembly may result in an electric shock or fire.

PERSONAL PRECAUTIONS

- Someone should be within range of your voice or close enough to come to your aid when you work near a lead-acid battery. Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing or eyes. Wear complete eye and clothing protection. Avoid touching eyes while working near battery.
- If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters eye, immediately flush eye with running cold water for at least 10 minutes and get medical attention immediately.
- NEVER smoke or allow a spark or flame in vicinity of battery or engine.
- Be extra cautious to reduce risk of dropping a metal tool onto battery. It might spark or short-circuit battery or other electrical part that may cause an explosion.
- When working with a lead-acid battery, remove personal metal items such as rings, bracelets, necklaces, watches, etc. A lead-acid battery can produce a short-circuit current high enough to weld a ring or the like to metal, causing a severe burn.
- **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 bodily injury and damage to property.
- **NEVER** charge a frozen battery.

PREPARING TO CHARGE

- If necessary to remove battery from vehicle to charge, always remove grounded terminal from battery first. Make sure all accessories in the vehicle are off, so as not to cause an arc. 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 non-metallic material as a fan.
- Clean battery terminals. Be careful to keep corrosion from coming into contact with eyes. Add distilled water in each cell until battery acid reaches level specified by battery manufacturer. This helps purge excessive gas from cells. Do not overfill. For a battery without caps, carefully follow manufacturer's recharging instructions.
- Study all battery manufacturer's specific precautions such as removing or not removing cell caps while charging and recommended rates of charge.
- Determine voltage of battery by contacting battery manufacturer and make sure it matches output ratings of battery charger.

CHARGER LOCATION

- Locate charger as far away from battery as DC cables permit.
- Never place charger directly above battery being charged; gases from battery will corrode and damage charger.
- Never allow battery acid to drip on charger when reading gravity or filling battery.
- Do not operate charger in a closed-in area or restrict ventilation in any way.
- Do not set battery on top of charger.
- If an extension cord is needed, it should be a grounded, heavy duty cord (12 gauge or better).

DC CONNECTION PRECAUTIONS

- Connect and disconnect DC output terminals only after removing charger from AC outlet.
- Never allow DC output terminals to touch each other.
- If problems arise connecting the output leads, ask for help from your dealer from where you purchased this product or the charger manufacturer for finding a suitable connection device for your application.

FOLLOW THESE STEPS WHEN BATTERY IS INSTALLED IN VEHICLE. A SPARK NEAR BATTERY MAY CAUSE BATTERY EXPLOSION. TO REDUCE RISK OF A SPARK NEAR BATTERY:

- Position AC and DC cords to reduce risk of damage by hood, door or moving engine part.
- Stay clear of fan blades, belts, pulleys, and any other parts that can cause injury to persons.
- Check polarity of battery posts **POSITIVE (POS.,P,+)** post usually has larger diameter than **NEGATIVE (NEG.,N,-)**.

- Determine which post of battery is grounded (connected) to chassis.
- For negative-grounded vehicle, first connect **POSITIVE (RED)** clip from charger to **POSITIVE (POS.,P,+)** ungrounded post of battery. Then connect **NEGATIVE (BLACK)** terminal to vehicle chassis or engine block away from battery.
- For positive-grounded vehicle, connect **NEGATIVE (BLACK)** clip from charger to **NEGATIVE (NEG.,N,-)** ungrounded post of battery. Connect **POSITIVE (RED)** clip to vehicle chassis or engine block away from battery keeping the battery terminal separated from the connection to the chassis.
- Do not connect any charger clips to carburetor, fuel lines, or sheet-metal body parts. Connect to a heavy gauge metal part of the frame or engine block.
- Connect AC supply cord charger to electric outlet.
- When disconnecting charger, turn switches (if supplied) to off, disconnect charger from AC power, remove clip from vehicle chassis, and then remove clip from battery terminal. See operating instructions for length of charge information.
- Make sure the battery type selection switch position is correct.
- See operating instructions for length of charge information.

FOLLOW THESE STEPS WHEN BATTERY IS OUTSIDE VEHICLE. A SPARK NEAR THE 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. Some batteries are equipped with "wing-nut" terminals allowing for easy placement of the terminals to these posts.
- Attach at least a 24 inch long 6 gauge (AWG) insulated battery cable to **NEGATIVE (NEG.,N,-)** battery post.
- Connect **POSITIVE (RED)** charger terminal to POSITIVE (**POS.,P,+**) post of battery.
- Position yourself and free end of cable as far away from battery as possible, then connect **NEGATIVE (BLACK)** terminal to free end of cable.
- Do not face battery when making final connection.
- Connect AC supply cord charger to power outlet.
- When disconnecting charger, always do so in reverse sequence of connecting procedure and break first connection while as far away from battery as possible.
- A marine (boat) battery must be removed and charged on shore. To charge it on board requires equipment specially designed for marine use.

SAFETY & FEATURES: Automatic Switching Mode Battery Charger & Maintainer

- **Never overcharge your battery**
- **Easy to Use:** The battery charger is easy to operate and requires no technical experience.
- **Charge & Maintain - Automatic Charge:** on power up, the charger will automatically go to charging system, then could be left unattended and never overcharge your batteries.
- **Charge & Maintain - Automatic Maintenance:** When the battery is charged to "full" state, the charger automatically switches to maintain the battery. It will monitor the battery voltage and continue to peak performance to the battery.
- **Short circuit protection:** The charger will automatically turn off when an output short circuit occurs to prevent any damage.
- **Output overload protection:** The charger employs the use of a 'Solid State Circuit Interrupter' that opens under severe overload. This condition may occur if attempting to charge any severely discharged or heavily sulfated battery. Once the Interrupter opens, the charger will stop charging for a short period and then resume charging automatically and the yellow. L.E.D. will be OFF, until resume charging. Overloading could be due to an external load, remove the load condition prior to attempting to recharge the battery.
- **Reverse Battery / Overload Condition:** The charger has reverse battery and short circuit protection. If a reverse battery condition exists (white L.E.D. will turn RED, while output leads are connected backwards), simply unplug charger from AC power and properly remake the connections as described in this manual.
- **Internal overheat protection:** The charger has internal overheat protection. The charger will turn off power until the temperature is down to a safe level and start charging again. All LEDs will be off.
- **Output clips and ring terminals provided:** It comes with a quick connect fly lead and 2 different kinds of connectors, alligator clips and ring terminals. The ring terminals are perfect for permanent connection to your battery. You can connect the lead to the battery and tuck the lead away while you are using your vehicle and when you get back to your garage simply plug the lead back into the charger.

BATTERY TYPES & CAPACITY:

- Suits all lead-acid batteries. (Conventional, AGM & High Performance AGM)
- Battery capacity: The charger is designed to **charge all Yuasa brand 12V lead-acid batteries.**
- The maximum Ah capacities are to be used as a general guide only; some batteries may be able to handle a higher charge current. Check with the battery manufacturer when charging batteries with small capacity.

OPERATING INSTRUCTIONS:

STEP 1 - Pre Charge Check & Electrolyte Level Check

- Check the battery electrolyte level (not required on AGM batteries).

If necessary, remove the vent caps and add distilled water so the levels are halfway between the upper and lower fill lines.

STEP 2 - Connecting the Battery charger to your Battery

- If the battery is out of the vehicle:
 - Connect the red lead from the charger to the positive (+) battery terminal.
 - Connect the black lead from the charger to the negative (-) battery terminal.
- If the battery is still in the vehicle, determine if the vehicle is positively (+) or negatively (-) grounded.
 - If negatively grounded (most common) – FIRST connect the red (+) battery charger lead to the positive (+) battery post and then connect the black (-) battery charger lead to the vehicle's chassis and away from the fuel line.
 - If positively grounded – FIRST connect the black (-) battery charger lead to the negative (-) battery post and then connect the red (+) battery charger lead to the vehicle's chassis and far away from the fuel line.

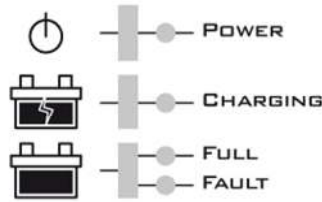
STEP 3 - Connect the battery charger to power outlet (120VAC)

- Connect the battery charger to a 120VAC power outlet.
- Turn on the 120VAC power outlet.
- The charger will automatically start when AC power is connected and switched on.

(Note: If the fault indicator LED illuminates red, please check your connections as it is likely that the positive and negative leads are reversed. Refer to troubleshooting page for further information).

THE CHARGING PROCESS:

The charging stages are as follows:



- **Bulk Charge:**

Charges using a constant maximum current (1A) until the battery reaches 14.4V. (12 Volt Batteries) - (LED Color - Yellow)

- **Fully / Float:**

Battery is fully charged and is being maintained. (LED Color - GREEN)

STEP 4 - Disconnecting the Battery charger from Battery

- Switch OFF and remove the AC power cord from the outlet.
- Remove the black lead and then the red lead.
- Check electrolyte levels if required (Conventional battery).

(As they may need topping up with distilled water after charging)

LED STATUS INDICATOR TABLE:

	Power (Red)	Charging (Yellow)	Full (Green)	Fault (Red)
A.C. power connected, battery disconnected	ON	OFF	OFF	OFF
Bulk charging	ON	ON	OFF	OFF
Level 1 charging	ON	ON	OFF	OFF
Level 2,3 charging	ON	OFF	ON	OFF
Battery reverse polarity connection	ON	OFF	OFF	ON
A.C. power OFF	OFF	OFF	OFF	OFF

ELECTRICAL PARTS:

Delivered with:

- Input connector:
 - 2 PIN plug
- Output cord:
 - 10 feet with quick connector
- Extension cord:
 - 2 feet inline 3A fused with alligator clips / ring terminals

SPECIFICATIONS:

- Input voltage: 100-120Vac
- Input Frequency: 50/60Hz
- Output: 1A @ 12V
- Size (L*W*H) in in: 3.9*2.6*1.4 / in mm: 100*65*36
- Weight: 0.9lbs / 0.4kg
- Approvals: UL/cUL/FCC/BC

ENVIRONMENTAL CHARACTERISTICS:

- Operating Temperature: 32 to 113°F / 0 to 45°C
- Storage Temperature: -13 to 185°F / -25 to 85°C
- Operating Humidity Range: 0 to 90% RH
- Cooling: Passive / Natural

TROUBLESHOOTING

Problem	Indication	Possible Causes	Suggested Solution
<u>Charger does not work?</u>	No indicator lights on	- No AC power	- Check AC connections and make sure power switch is switched ON
<u>Charger has no DC output?</u>	Fault LED is ON	- Output is short circuited - Reverse polarity connection to battery	- Check DC connection between charger and battery and make sure they are not short circuiting. - Check that the alligator clips haven't fallen off the battery. - Check that the alligator clips / ring terminals are connected to the correct polarity.

MAINTENANCE

Store in a clean, dry place. Occasionally clean the case and cords with a dry cloth. The charger should be disconnected from the power while cleaning. Do not disassemble charger, cord or any associated parts. Take it to a qualified service center when service or repair is required. Incorrect reassembly may result in an electric shock or fire.