



15Amp Intelligent Battery Charger

Suitable for SLA, Gel, Maintenance Free, AGM, Deep Cycle batteries



MB-3622



For indoor use



**READ THESE INSTRUCTIONS BEFORE USE
AND RETAIN FOR FUTURE REFERENCE!**

**CAUTION!**

When working near batteries, care should be taken at all times as batteries can generate explosive gases during charging and operation. Remove personal metal items prior to use. Use care when using metal tools.

**CAUTION!**

Some batteries require vent plugs to be removed before charging.

**CAUTION!**

Only to be used with 12V Lead-acid (Wet, Gel, and Sealed type) Batteries with 12-250Ahr capacity.

**CAUTION!**

For negative chassis-earthed vehicles, connect the positive lead from the charger to the battery positive terminal first. Then connect the negative lead from charger to the battery negative terminal, or the vehicle chassis. After charging is complete, disconnect the battery charger from the mains supply, then remove the negative lead from the battery, and lastly remove the positive lead from the battery.

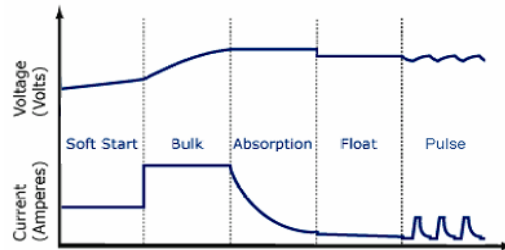
**CAUTION!**

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience or knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised and instructed not to play with the appliance.

INTRODUCTION

MB-3622 intelligent battery charger with 12-bit AD microprocessor

- Charges with 12 V, 15/10/2 A DC (22/15/3 A RMS)
- Self-identifying multi-stage characteristic charging curve



Soft Start tests the battery condition. Severely discharged batteries need the soft start step. The charging starts with a reduced current until the voltage reaches 10V.

Bulk is the main step where most of the charge is returned (60-80%). The charger delivers maximum current until the terminal voltage has risen to the set level of 14,2V for Normal battery selection and 14.0V for Gel battery selection and 14.4V for Deep Cycle battery selection.

Absorption completes the charge up to virtually 100% at a constant voltage. The current tapers off after the current reached the minimum level.

Float is maintenance charge at constant voltage, keeping the batteries at 100% charge. Normal charging mode is time-limited (max 10 days) while Supply mode goes on indefinite without damaging the battery.

Pulse is maintenance charge for maximum battery life. Charging varies between 80% and 100% state of charge. The battery receives a pulse, starting a new charge cycle, when voltage drops to set limit. This keeps the battery in perfect condition when it is not in use. The charger can be connected for months keeping the batteries fresh.

SPECIAL FEATURES

Temperature Control Fan

To protect the charger from overheating, a fan is included for heat dispensation. Also to increase the life span of the fan, a sensor will control the on off of the fan, where the fan will not use when the HFC is not in a hot condition.

Temperature Compensation

A sensor will automatically adjust the charging voltage if the temperature deviates between – 20°C to +50°C. At a high temperature environment the unit lowered the output voltage and at a freezing condition, the unit will adjust a higher output voltage.

Voltage compensation:

Because of some voltage drop in the cables, the actual voltage at the clamps of the battery can be lower than the charger output voltage. A special circuitry inside the unit will monitor the true input voltage to the battery and adjust the output voltage of the unit accordingly. This will maximize the charging efficiency.

Buzzer Warning

A built in buzzer will help to warn the user when connect the clamps to the battery wrongly.

Display

- Reverse Polarity - Reverse Polarity Connection to Battery Pole.
- Battery Fault – Faulty Battery Indicator.
- Charging – While Battery is Charging.
- Full Charge – When Battery is Fully Charged and in Maintenance Mode.
- 3 X 7 Segment LEDs Display for Charging Current, Battery Voltage, & Charging %.

Cable Management

The casing is designed with AC and DC cables storage compartment. This will help to avoid cable damage and subsequently any possible danger to user.

PROTECTIONS

- Full protection against sparks
- Short circuit protection
- Voltage compensation
- Overheating protection
- Polarity reversal protection

IMPORTANT SAFETY INSTRUCTIONS

Gases

When the NORMAL/LEAD ACID battery is being charged you may notice bubbling in the fluid caused by the release of gas. As the gas is flammable no naked lights should be used around the battery.

During charging the battery, the charging must be placed at a well ventilated area. Because of the risk of explosive gas, only connect, and disconnect, the battery leads when the mains supply is disconnected.

Types of Batteries

This charger is only suitable for the specified batteries and should not be used to recharge non-rechargeable, NICAD or any other type of battery.

Point of Notes

When not in use, the battery charger must be kept at a dry area to avoid moisture.

Keep away from any liquid, rain or snow at all times.

This battery charger is not designed as a caravan lead acid battery charger or power supply.

This battery charger is not designed for installation on to the vehicle as a fixture.

Danger

Avoid getting ELECTROLYTE on your skin or clothes. It is acidic and can cause burns. If this occurs you shall rinse the affected area with water immediately.

Never charge a frozen battery. If battery fluid (electrolyte) becomes frozen, bring battery into a warm area to allow battery to thaw before you begin charging. Never set a battery on top of charger or vice versa.

Do not touch the battery clamps together when the charger is on.

Never operate charger if it has received a hard blow, been dropped, or otherwise damaged. Take it to a qualified professional for inspection and repair.

Be sure to position the charger power cord to prevent it from being stepped on, tripped over, or damaged.

Never pull out the plug by the cord when unplugging the charger. Pulling on the cord may cause damage to the cord or the plug.

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.

PRE-CHARGE CHECKLIST

If the battery needs to be removed from the vehicle before charging, always remove the grounded terminal from the battery first, also ensure that all accessories in the vehicle are tuned off to prevent arcing.

Ensure that the surrounding area is well ventilated to allow dispersal of toxic fumes or gases.

Ensure the battery terminals are clean. If the battery has a removable vent cap, top up each battery cell with distilled water to the level recommended by the battery manufacturer, do not overfill.

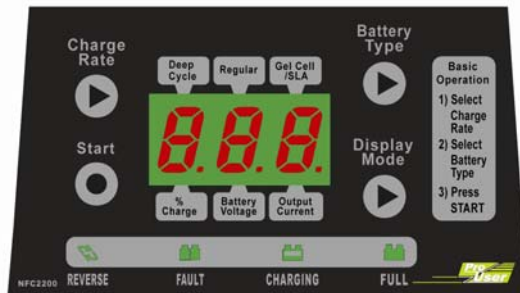
If the battery does not have caps, refer to the manufacturer's instructions regarding charging and charging rates.

OPERATING INSTRUCTIONS

Connection

1. Connect the DC Clamps to the battery poles in the following order:
2. Connect the positive charging lead (RED) to the positive terminal pole of the battery (marked P or +).
3. Connect the negative lead (BLACK) to the negative pole of the battery (marked N or -).
4. It is important to ensure that both DC Clamps are making good contact with their respective terminal poles.

Control Panel



1. **Charge Rate Button** sets the charge rate to one of the following:

2A DC Slow - Intended for charging small batteries such as those commonly used in garden tractors, snow mobiles and motorcycles. The 2A rate is not intended to be used as a trickle charger for larger batteries.



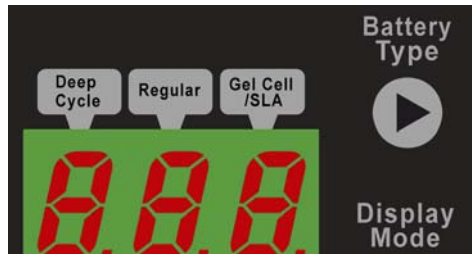
10A DC Normal - Use for charging automotive batteries, marine batteries, and deep cycle batteries at a normal rate.



15A DC Fast - Use for charging automotive batteries, marine batteries, and deep cycle batteries at a fast rate.

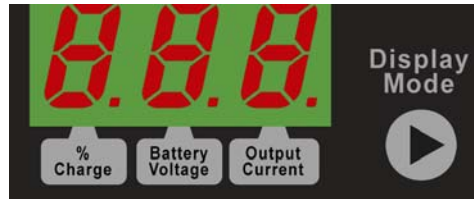


2. **Battery Selection Button** sets the type of battery to be charged to one of the following:



- GEL CELL / SLA** – All type of “gel cell”, “SLA” battery.
Regular – All type of “lead acid” battery, sealed or non-seal.
Deep Cycle – All type of Deep cycle battery

3. **Mode Display** sets and shows one of the following reading:



- Output current** – This shows the selected charging current.
Battery voltage – This shows the voltage of the battery in DC.
Charging % – This shows an estimate percent of charge.

With the exception of gel cell and calcium batteries, all other battery types may or may not have vent caps. Vent caps are located on top of the battery and provide a means to add distilled water when needed.

Batteries should be marked with their type. If charging a battery that is not marked, check the manual of the item that uses the battery. If the battery type is unknown, use the “Gel Cell / SLA” setting.

Charging

Insert the AC plug into the mains supply (220-240 Volts AC only).

The battery charger is now in the stand-by mode with the default choice of

Battery - "Gel Cell / SLA"

Current – "2A DC Slow"

If the **Start Charging Button** is now pressed, the charger will immediately go into the 2A DC, Gel Cell battery charging mode.

For alternative selection, please follow the following steps:

Step 1 – Press the **Charge Rate Button** to pick the battery type for charging.

Step 2 – Press the **Battery Selection Button** to pick the charging power.

Step 3 – Press the **Start Charging Button** to start the charging process.

LED INDICATORS

On the front panel there are also 4 LED indicators for the following function:



1. **Reverse Polarity** – The DC Clamps have been connected at the wrong pole on the battery. Simply disconnect and reconnect the DC clamps at the correct pole, restart the charging process.
2. **Battery Fault** – When this is light, this mean the battery can be broken. If the battery fault display persists after resetting the charger, the battery may be faulty. Please consult a nearby battery service centre.
3. **Charging** –This shows the battery is in charging process.
4. **Full Charge** – This shows the battery is fully charged and the battery charger is in maintenance mode.

COMPLETION OF CHARGING

When the battery “Full Charge” LED comes on, this mean the battery is fully charged. The battery charger will now goes into maintenance mode. No attention is required until the battery is required for use again.

If the AC plug is pulled off from the mains supply, the battery charger will turn off. The charging mode and status will be recorded in the charger’s memory for 15min. Afterward it will reset to standby mode. This feature will avoid any power failure, and once power comes back the charger will resume the charging process at the previous mode.

If the DC clamps were pulled off from the battery while the AC plug is still connected to the mains supply, the charger will automatically switch back to the standby mode. **Try to avoid disconnecting the DC clamps while the AC socket is still intact to power.**

CHARGING TIME

The table below is a guide to the typical charge time for varies size of 12V/6cells battery:

Battery Size	Charging Time
20Ah	2 hours
55Ah	4 hours
75Ah	6 hours
96Ah	7 hours
120Ah	9 hours
180Ah	13 hours
225Ah	16 hours

TROUBLE SHOOTING

Trouble often can be corrected by the user. Please read this chart for possible solutions to common problems.

PROBLEM	POSSIBLE CAUSE	SOLUTION
The battery is connected and the charger is on, but it isn't charging.	The charger is not in charging mode.	Press MODE DISPLAY button until Battery % or Voltage reading comes on.
Indicator lights are lit in an erratic manner not explained in the manual.	A button may have been pressed when the charger was plugged in. The charger may be defective.	Make sure nothing is touching the control panel, then unplug the unit and plug it in again. Return to place of purchase for replacement.
The green FULL CHARGE LED turns on a few minutes after connecting to the battery.	The battery may be fully charged or recently charged, leaving the battery voltage high enough to appear to be fully charged.	If the battery is in a vehicle, turn the headlights on for a few minutes to reduce the battery voltage and try charging again. Also try a lower CHARGE RATE selection.
The charger was unplugged from the wall but the display is still on.	The battery is supplying the power to the display.	Disconnect the battery.

MAINTENANCE AND CARE

A minimal amount of care can keep your battery charger working properly for years.

- Clean the clamps each time you are finished charging. Wipe off any battery fluid that may have come in contact with the clamps to prevent corrosion.
- Coil the input and output cords neatly when storing the charger. This will help prevent accidental damage to the cords and charger.
- Occasional cleaning of the case of the charger with a soft cloth will keep the finish shiny and help prevent corrosion.
- Store the battery charger in a clean and dry location.

ENVIRONMENTAL PROTECTION



Waste electrical products should not be disposed of with household waste.

Please recycle where facilities exist.

Check with your local authority or retailer for recycling advice.

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