



OWNER'S MANUAL

Model OMAX-6A-1B Single Bank Charger With Quick Disconnect
Model OMAX-12A-1B Single Bank Charger
Model OMAX-25A-1B Single Bank Charger
Model OMAX-50A-1B Single Bank Charger
Model OMAX-40AS-3B Three Bank Sequencing Charger
Model OMAX-50AS-3B Three Bank Sequencing Charger
For 12 Volt Odyssey™ Batteries

ODYSSEY™ Ultimizer™

CAUTION:

Read all Safety Rules and Operating Instructions,
and follow them with each use of this product.



Warrensburg, MO 64093 USA

Please call Customer Service at 800-964-2837 for
instructions on returning the charger.

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This Owner's Manual is for Models OMAX-6A-1B, OMAX-12A-1B, OMAX-25A-1B, OMAX-50A-1B, OMAX-40AS-3B, and OMAX-50AS-3B.

SAVE THIS OWNER'S MANUAL AND READ BEFORE EACH USE.

This device offers features to accommodate the needs for home or light commercial use. This manual will explain how to use the charger safely and effectively. Please read and follow these instructions and precautions carefully.

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 on and off, 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 technician for help.

IMPORTANT SAFETY INSTRUCTIONS

WARNING – RISK OF EXPLOSIVE GASES

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 EACH TIME BEFORE USING YOUR CHARGER, YOU READ THIS MANUAL AND FOLLOW THE INSTRUCTIONS EXACTLY.

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.

SAVE THESE INSTRUCTIONS

This manual contains important safety and operating instructions for battery charger Models OMAX-6A-1B, OMAX-12A-1B, OMAX-25A-1B, OMAX-50A-1B, OMAX-40AS-3B, and OMAX-50AS-3B.

- **WARNING:** Handling the cord on this product or cords associated with accessories sold with this product, may expose you to lead, a chemical known to the State of California to cause cancer and birth defects or other reproductive harm. **Wash hands after handling.**
- Read all instructions and cautions printed on the battery charger, battery, and vehicle or equipment using battery.
- Use charger only on ODYSSEY™ batteries. If you wish to use this charger with other lead acid batteries, please verify with that battery's manufacturer that this charger will not damage their battery. This charger is not intended to supply power to a low voltage electrical system other than in a starter-motor application.
- **Never** use charger for charging dry cell batteries that are commonly used with home appliances like radios, stereos, remote controls, etc. These batteries may burst and cause personal injury.
- Do not disassemble charger. Take it to a qualified service professional if service or repair is required. Incorrect assembly may result in fire or electrical shock.
- To reduce risk of electrical shock, unplug the charger from the outlet before attempting any maintenance or cleaning.
- Always charge battery in a well-ventilated area.
- **WARNING:** Battery chargers get hot during operation and must have proper ventilation. Air needs to flow around entire charger. Do not set charger on flammable materials like carpeting, upholstery, paper, cardboard, etc. Charger may damage leather, plastic and rubber.

HELP US HELP YOU —

Remember:

Place charger as far away from the battery being charged as the charger cables will permit.

Do not expose charger to rain or snow.

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 allow battery acid to drip on charger when reading specific gravity or filling battery.

Never set a battery on top of charger.

Never place charger directly above battery being charged. The gases from the battery will corrode and damage the charger.

Never touch the battery clamps together when the charger is on. You could cause a spark.

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.

Do not operate the charger if it has a damaged power cord or plug. Have the cord replaced.

PERSONAL SAFETY PRECAUTIONS

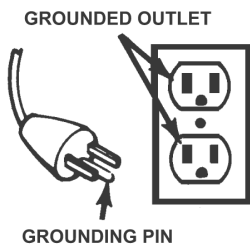
- **Wear complete eye and clothing protection** when working with lead-acid batteries.
- **Make sure** that someone is within range of your voice to come to your aid if needed while you work with or are near a lead-acid battery.
- **Have plenty of fresh water and soap** nearby for use in case battery acid contacts your eyes, skin, or clothing. If this happens, wash immediately with soap and water. Then get medical attention.
- **Avoid touching your eyes** while working with a battery. Acid particles (corrosion) may get into your eyes. If this occurs, flush eyes immediately with running cold water for at least 10 minutes. Then immediately get medical attention.
- **Never** charge a frozen battery.
- **Remove all personal metal items** from your body such as rings, bracelets, necklaces and watches, while working with a lead-acid battery. A battery can produce a short circuit current high enough to weld a ring (or the like) to metal, causing a severe burn.
- **Take care** not to drop any metal tool or metal object onto the battery. This may result in a spark or short circuit across the battery or another electrical device that may cause an explosion.
- **Always** operate the battery charger in an open, well-ventilated area.
- **Never** smoke or allow a spark or flame in the vicinity of the battery or engine. Batteries generate explosive gases.
- **Neutralize** any acid spills thoroughly with baking soda before attempting to clean up.

BEFORE USING YOUR BATTERY CHARGER

It is important to understand the charger's requirements. This section explains the charger's electrical requirements and how to prepare a battery for charging.

PLUGGING IT IN

Your charger requires a 120V AC receptacle installed according to all local codes and ordinances.



USING AN EXTENSION CORD

The use of an extension cord is not recommended. If you must use an extension cord, please make sure that you follow these guidelines:

- Make sure that pins on plug of extension cord are the same number, size, and shape as those of plug on charger.
- Check that the extension cord is properly wired and in good electrical condition.

- Make sure that the wire size is large enough for its length and for the AC ampere rating, as specified in the chart below.

MINIMUM RECOMMENDED EXTENSION CORD				
Length of Cord, in Feet	25	50	100	150
6A-1B, 12A-1B & 25A-1B AWG* Size of Cord	18	16	12	10
50A-1B, 40AS-3B and 50AS-3B AWG* Size of Cord	16	14	12	10

*AWG=American Wire Gauge

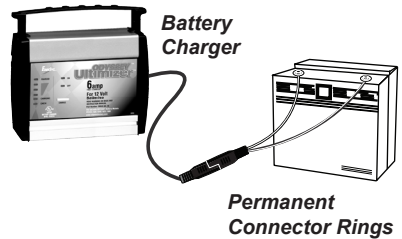
VERSATILE QUICK-HARNESS – MODEL OMAX-6A-1B ONLY

PERMANENT RING CONNECTORS

The ring connectors permanently attach to the battery providing easy access to quickly charge your battery. This application is appropriate for motorcycles, lawn tractors, ATVs and snowmobiles. To permanently attach to a battery, loosen and remove each nut from bolts at battery terminal. Connect the red

POSITIVE ring connector ring to the POSITIVE battery terminal. Connect the black NEGATIVE connector ring to the NEGATIVE battery terminal. Replace and tighten the nuts to secure. Take care to keep both wires and plug away from metal and the engine hood. Connect the end of the charger output cable to the free end of the ring connector cable. Plug the power cord into a 3-prong grounded 120V AC electrical wall outlet.

QUICK-DISCONNECT HARNESSES



PREPARING YOUR BATTERY TO BE CHARGED

It is important that you read and follow these guidelines while you are preparing to charge the battery.

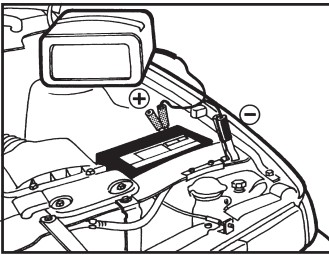
- Make sure that you have an Odyssey™ battery.
- Clean the battery terminals. Be careful to keep corrosion from getting in or around your eyes.
- Wear safety glasses. See additional “Personal Safety Precautions” on page 4.
- Take time to read all of the battery manufacturer’s specific precautions, such as removing or not removing vent caps while charging, and recommended rates of charge.
- Be sure that the area around the battery is well ventilated while it is being charged. Gas can be forcefully blown away by using a piece of cardboard or other nonmetallic material as a fan.
- If it is necessary to remove the battery from the vehicle to charge it, always remove the grounded terminal from the battery first. Turn off all vehicle accessories to avoid sparks from occurring.
- **NOTE:** A marine (boat) battery installed in a boat must be removed and charged on shore.

OPERATING INSTRUCTIONS

IMPORTANT: Follow all safety instructions and precautions when charging your battery. Wear complete eye protection and clothing protection. Charge your battery in a well-ventilated area.

CHARGING BATTERY IN THE VEHICLE:

1. Avoid personal injury by keeping clear of fan blades, belts, pulleys and other engine parts.
2. Avoid damaging the charger by keeping the power cord and output cords away from the hood, door or moving engine parts.
3. Note the polarity of the battery posts by checking the identification marks on the battery: POSITIVE (POS, P or +) and NEGATIVE (NEG, N or -). The positive post is usually larger than the negative post.
4. Identify which battery post is grounded or connected to the chassis. THIS IS NORMALLY THE NEGATIVE POST.



NEGATIVE GROUNDED SYSTEM

5. **Connecting to a negative-grounded system:** Connect the red (POSITIVE) output clamp to the POSITIVE post of the battery. Rock and twist the clamp back and forth to be sure a solid electrical connection is made. Then connect the black (NEGATIVE) output clamp to a heavy, unpainted metal part of the chassis or engine block, away from the battery (see figure left). DO NOT connect clamp to negative battery post, carburetor, and fuel line or sheet metal part.

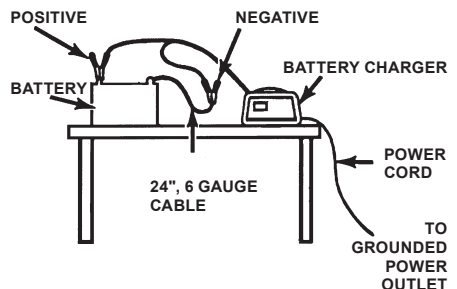
Connecting to a positive-grounded system: Connect the black (NEGATIVE) output clamp to the NEGATIVE post of the battery. Rock and twist the clamp

back and forth to be sure a solid electrical connection is made. Then connect the red (POSITIVE) output clamp to a heavy, unpainted metal part of the chassis or engine block, away from the battery. DO NOT connect clamp to positive battery post, carburetor, and fuel line or sheet metal part.

6. Plug power cord into an AC electrical outlet. The charger will be set to the Tester Mode. If the CHECK (red) LED is on, check for correct cable connections.
7. Press the CHARGE button. The CHARGING (yellow) LED should light and the charging process should start.
8. To disconnect the charger, unplug its power cord before attempting to disconnect the output clamps. Then, standing away from the battery, remove the output clamp from the chassis or engine block. Finally, remove the output clamp from the battery post.
9. Clean and store the charger in a dry location.

NOTE: Do not connect one OMAX-40AS-3B or OMAX-50AS-3B sequencing charger to two or more batteries connected in series. If the positive terminal of one battery is connected to the negative terminal of another battery, then they are connected in series and must not be connected to the same OMAX-40AS-3B or OMAX-50AS-3B charger.

CHARGING BATTERY REMOVED FROM THE VEHICLE:



1. Note the polarity of the battery posts by checking the identification marks on the battery: POSITIVE (POS, P or +) and NEGATIVE (NEG, N or -). The positive post is usually larger than the negative post.
2. Attach at least a 24-inch-long, 6-gauge (AWG), insulated battery cable to NEGATIVE (NEG, N or -) battery post. Rock and twist the clamp back and forth to be sure a solid electrical connection is made.
3. Connect the red (POSITIVE) output clamp to the POSITIVE battery post. Rock and twist the clamp back and forth to be sure a solid electrical connection is made.
4. Position yourself as far away from the battery as possible, and then connect the black (NEGATIVE) output clamp to the free end of the cable.
5. Plug the power cord into an AC electrical outlet. The charger will be set to the Tester Mode. If the CHECK (red) LED is on, check for correct cable connections.
6. Press the CHARGE button. The CHARGING (yellow) LED should light and the charging process should start.
7. To disconnect the charger, unplug its power cord before attempting to disconnect the charger clamps. Then, standing away from the battery, remove the output clamp from the NEGATIVE battery post. Finally, remove the output clamp from the POSITIVE battery post.
8. Clean and store the charger in a dry location.

NOTE: Do not connect one OMAX-40AS-3B or OMAX-50AS-3B sequencing charger to two or more batteries connected in series. If the positive terminal of one battery is connected to the negative terminal of another battery, then they are connected in series and must not be connected to the same OMAX-40AS-3B or OMAX-50AS-3B charger.

IMPORTANT: Follow all safety instructions and precautions when charging your battery. Wear complete eye protection and clothing protection. Charge your battery in a well-ventilated area.

CHARGER OPERATION

The Ultimizer charger is custom designed to safely and quickly charge your ODYSSEY™ battery using a three-step profile. It is very important that you not use this charger with any battery other than ODYSSEY™ as it can damage other lead acid batteries.

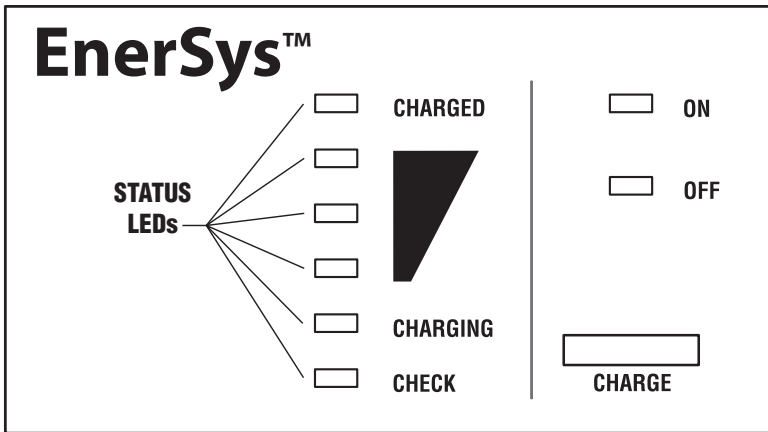
In the first step, called the *bulk phase*, the battery is charged at up to the nominal charge rate (6, 12, 25, 40 or 50 amps) until the voltage reaches about 14.7V. The charger then switches to the second step, called the *absorption phase*.

In this step the charger continues to charge the battery at about 14.7V until either the charge current drops to 100 milliamps or the charger has been in the absorption phase for 4 hours, whichever occurs first.

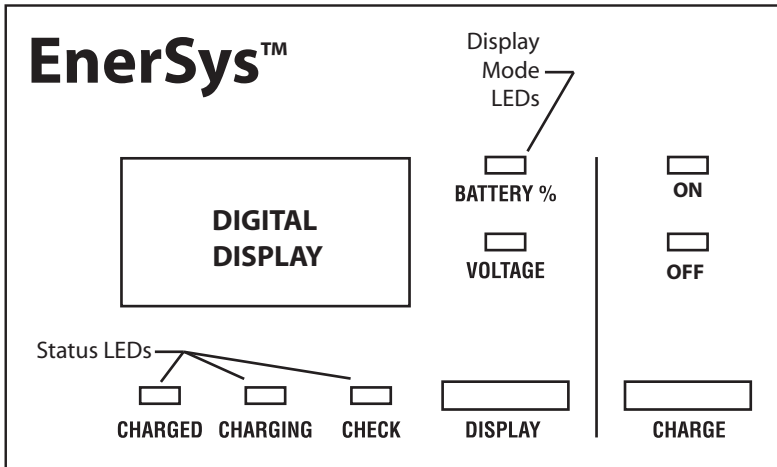
The charger then enters into the *trickle charge phase* at 13.5-13.8V. The battery can be left connected to the charger indefinitely.

The OMAX-40AS-3B and OMAX-50AS-3B chargers were designed to charge up to and including three 12V batteries in sequence. When charging in sequence, only one of the three banks is on at a time. Every few minutes, the charger will alternate which output is on and which outputs are off. Each output will continue to turn on and off every few minutes as long as more than one bank is set to charge. If only one bank is connected to a battery and turned on, then it will charge continuously.

NOTE: Since each bank is on only half or one third of the time during charging, the absorption phase could last 8 or 12 hours instead of only 4 hours.



OMAX-6A-1B CONTROL PANEL



OMAX-12A-1B and OMAX-25A-1B CONTROL PANELS

DISPLAY BUTTON

(Models OMAX-12A-1B and OMAX-25A-1B only)

Press this button to set the function of the digital display to one of the following:

- **BATTERY %:** The digital display shows an estimate of the percent of charge of the battery connected to the charger battery clamps.
- **VOLTAGE:** The digital display shows the voltage at the charger battery clamps in DC volts.

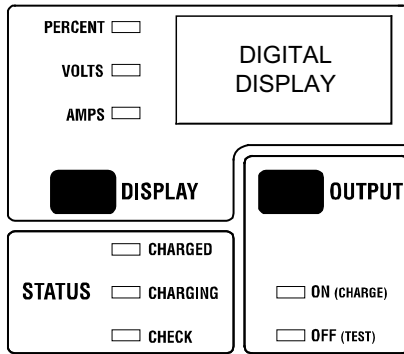
CHARGE BUTTON

(Models OMAX-6A-1B, OMAX-12A-1B and OMAX-25A-1B only)

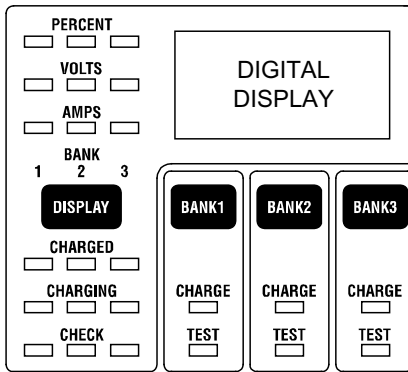
Press this button to set the charger for one of the following settings:

- **ON:** Activates the charge process and deactivates the tester.
- **OFF:** Deactivates the charger and activates the tester.

ULTIMIZER™ CONTROL PANELS (CONTINUED)



OMAX-50A-1B CONTROL PANEL



OMAX-40AS-3B and OMAX-50AS-3B CONTROL PANELS

DISPLAY BUTTON

(Models OMAX-50A-1B, OMAX-40AS-3B and OMAX-50AS-3B only)

Press this button to set the digital display to show one of the following:

- **PERCENT:** An estimate of the percent of charge of the battery connected to the charger battery clamps.
- **VOLTS:** The voltage at the charger battery clamps in DC volts.
- **AMPS:** The charge current provided by the charger in DC amperes.

(Models OMAX-40AS-3B and OMAX-50AS-3B only)

NOTE: When one of the LED's in the left column above the DISPLAY button is lit, the value shown on the display is for the battery on BANK1. The LED's in the center column indicate values shown for BANK2. The LED's in the right column indicate values for BANK3.

OUTPUT BUTTON

(Model OMAX-50A-1B only)

Press this button to set the charger for one of the following settings:

- **ON (CHARGE):** Activates the charging process and deactivates the tester.
- **OFF (TEST):** Deactivates the charger and activates the tester.

BANK1, BANK2, & BANK3 BUTTONS
(Models OMAX-40AS-3B and OMAX-50AS-3B only)

Press this button to set the charger for one of the following settings:

- **CHARGE:** Activates the charging process and deactivates the tester for the bank indicated on the button.
- **TEST:** Deactivates the charger and activates the tester for the bank indicated on the button.

OMAX-6A-1B CONTROL PANEL GUIDE

MODE OF OPERATION	Status LEDs				Charge LEDs			
	Check	Charging	Bottom	Middle	Top	Charged	ON	OFF
Initial power-up, battery not detected	O							O
No battery or reversed battery detected	O						User selected	
Battery tester activated								O
Battery tester with no battery (< 0.7V)	O							O
Battery tester with dead battery (0.7V ~ 12.0V)		O						O
Battery tester with weak battery (12.0V~12.4V)		O	O					O
Battery tester with low battery (12.4V~12.6V)		O	O	O				O
Battery tester with strong battery (12.6V~12.8V)		O	O	O	O			O
Battery tester with charged battery (>12.8V)						O		O
Battery charger activated							O	
Battery charger with no battery	O							O
Early bulk charge phase (< 13.2V)		O						O
Middle bulk charge phase (13.2V~14.2V)		O	O					O
Late bulk charge phase (14.2V~14.7V)		O	O	O				O
Absorption charge phase (14.7V)		O	O	O	O			O
Trickle charge (13.5V ~ 13.6V)						O		O
Charge aborted	B							

O indicates an LED that is on continuously.

B indicates an LED that blinks on and off.

OMAX-12A-1B and OMAX-25A-1B CONTROL PANEL GUIDE

MODE OF OPERATION	Charged		Charging		Check		Battery %		Voltage		On		Off		Digital Display		
Initial power-up, battery not detected																	0.0
No battery or reversed battery detected																	0% or 0.0V
Battery tester activated																	0~100%
Battery tester with charged battery																	100%
Battery tester with no battery																	0%
Voltage meter activated																	0.0~17.0V
Charge activated with battery detected																	xx% or xx.xV
Charge complete - Trickle Charge Mode started																	100% or xx.xV
Desulfation mode activated																	15% or 16V
Charge aborted																	18.8 (B)

O indicates an LED that is on continuously.

B indicates an LED that blinks on and off.

OMAX-50A-1B CONTROL PANEL GUIDE

MODE OF OPERATION	DISPLAY			STATUS			Digital Display	
	PERCENT	VOLTS	AMPS	CHARGED	CHARGING	CHECK		ON (CHARGE)
Initial power-up, battery not detected		○				○		○
Initial power-up, battery detected		○						○
PERCENT display selected:								0.0 0.1 ~ 16.9
OFF selected, charged battery detected	○			○				○
OFF selected, discharged battery detected	○							○
OFF selected, no battery detected	○					○		○
Charging, Desulfation activated	○				B		○	○
Charging not complete	○				○			○
Charge complete (Maintain Mode)	○			○				○
VOLTS display selected:								100 1 ~ 99 0 1 ~ 75 1 ~ 99 100
Less than 0.1 volts at clamps		○				○		○
0.1 to 16.9 volts at clamps		○		*	*			○
More than 17.0 volts at clamps		○		*	*			○
Charging, Desulfation activated		○			B			○
Charging, Bulk stage		○			○			○
Charging, Absorption stage		○			○			○
Charge complete (Maintain Mode)		○		○				○
AMPS display selected:								0.0 0.1 ~ 16.9 OL
OFF selected (not charging)			○					○
ON selected, charging paused			○		○			○
Charging, Desulfation activated			○		B			○
Charging, less than 0.4A			○		○			○
Charging, more than 0.4A			○		○			○
Charge complete (Maintain Mode)			○		○			○
Charging aborted						B		○

○ indicates an LED that is on continuously.

B indicates an LED that blinks on and off.

* indicates an LED that could be on or off.

OMAX-40AS-3B & OMAX-50AS-3B CONTROL PANEL GUIDE

MODE OF OPERATION	PERCENT		VOLTS		AMPS		CHARGED	CHARGING	CHECK	CHARGE	TEST	Digital Display
Initial power-up, battery not detected												0.0
Initial power-up, battery detected												0.1 ~ 16.9
PERCENT display selected:												
TEST selected, charged battery detected												100
TEST selected, discharged battery detected												1 ~ 99
TEST selected, no battery detected												0
Charging, Desulfation activated								B				1 ~ 75
Charging not complete												1 ~ 99
Charge complete (Maintain Mode)												100
VOLTS display selected:												
Less than 0.1 volts at clamps												0.0
0.1 to 16.9 volts at clamps							*	*				0.1 ~ 16.9
More than 17.0 volts at clamps							*	*				OL
Charging, Desulfation activated												12.0 ~ 15.1
Charging, Bulk stage												0.1 ~ 14.6
Charging, Absorption stage												14.6 ~ 14.8
Charge complete (Maintain Mode)												13.5 ~ 14.6
AMPS display selected:												
TEST selected (not charging)												OFF
CHARGE selected, charging paused												0.0
Charging, Desulfation activated												LO or 0.4 ~ 50.2
Charging, less than 0.4A												LO
Charging, more than 0.4A												0.4 ~ 52.5
Charge complete (Maintain Mode)												0.0 or LO
Charging aborted												8.8.8 (B)

NOTE: The table above applies for each of the 3 banks.
 O indicates an LED that is on continuously.
 B indicates an LED that blinks on and off.
 * indicates an LED that could be on or off.

OVERVIEW

(Model OMAX-6A-1B only)

The OMAX-6A-1B uses the six Status LEDs to indicate the battery's relative charge. See the OMAX-6A-1B Control Panel Guide (page 9) for details.

(All Models except OMAX-6A-1B)

The charger has a built-in battery tester that displays either an accurate battery voltage or an estimate of the battery's relative charge based on the battery voltage and a scale set by the Battery Council International.

(Model OMAX-50A-1B only)

The charger will show "OFF" on the digital display when AMPS is selected and the charger is set to OFF (TEST).

(Models OMAX-40AS-3B and OMAX-50AS-3B only)

The charger will show "OFF" on the digital display when AMPS is selected for a bank that is set to TEST.

TESTING SEQUENCE

There are three basic steps required to use the charger as a battery tester.

1. Connect the charger battery clamps to the battery. Be sure to follow all of the precautions listed under "OPERATING INSTRUCTIONS".
2. Connect the charger power cord to a 120V AC electrical outlet. Again, be sure to follow all of the precautions listed under "OPERATING INSTRUCTIONS".
3. Read the Status LED's or the voltage on the digital display. If desired, press the DISPLAY button to set the tester for "Battery %" or "Percent" (depending on the model) and read the battery percent.

(Models OMAX-40AS-3B and OMAX-50AS-3B only)

If necessary, press the display button to select the voltage or percent for the desired bank (1, 2, or 3).

TESTER AND CHARGER

When first plugged in, the charger operates only as a tester, not as a charger. To continue to use it as only a tester, avoid pressing the CHARGE button (OUTPUT button for OMAX-50A-1B).

(Models OMAX-40AS-3B and OMAX-50AS-3B only)

When first plugged in, each bank operates as a tester, not a charger. To continue to use a bank as only a tester, avoid pressing the button for that bank (BANK1, BANK2, or BANK3).

POWER-UP IDLE TIME LIMIT

If no button is pressed within ten minutes after the charger is first powered up, the charger will automatically switch from tester to charger, if a battery is connected properly. The same applies to each bank of the OMAX-40AS-3B and OMAX-50AS-3B.

TESTER WITHOUT TIME LIMIT

(All models except OMAX-6A-1B)

If the DISPLAY button is pressed within the first ten minutes after the charger is powered up, the charger will remain a tester (not a charger) indefinitely, unless the charge button is pressed.

TESTING AFTER CHARGING

After the charger has been changed from tester to charger (by selecting CHARGE or OUTPUT), it can be changed back to tester by pressing the CHARGE or OUTPUT button. The same applies to each bank of the OMAX-40AS-3B and OMAX-50AS-3B.

TESTER STATUS LEDs

When the charger is operating as a battery tester, the status LEDs light under the following conditions.

- The CHARGED (green) LED will light if a fully charged battery is tested.
- The CHARGING (yellow) LED does not light in the battery test mode. NOTE: See page 10 for Model OMAX-6A-1B.
- The CHECK (red) LED will light if a battery is not properly connected.
- When the tester display mode is set to voltage, none of the Status LEDs light. (Not available for Model OMAX-6A-1B).

The notes above apply for the status LEDs of each bank of the OMAX-40AS-3B and OMAX-50AS-3B.

INITIAL PERCENT CALCULATION

(All Models except OMAX-6A-1B)

When a percent is calculated for the first time after connecting a battery, the digital display will show dashes ("--" or "- -" depending on the model) for several seconds while the tester analyzes the battery.

NOTES FOR TESTING PERCENT

(All Models except OMAX-6A-1B)

A recently charged battery could have a temporarily high voltage due to what is known as "surface charge". The voltage of

such a battery will gradually drop during the period immediately after the charging system is disengaged. Consequently, the tester could display inconsistent values for such a battery. For a more accurate reading, the surface charge should be removed by temporarily creating a load on the battery, such as by turning on lights or other accessories for about 1 minute.

The percent ranges from 0 to 100.

The battery tester is only designed to test 12V batteries. Testing a device with a rapidly changing voltage could yield unexpected or inaccurate results.

USING YOUR BATTERY CHARGER

OVERVIEW

Using the battery charger is very simple. First, connect the battery and AC power following the precautions listed under "OPERATING INSTRUCTIONS". Then push the CHARGE, OUTPUT, or BANK button (depending on the model) to start the charging process. The charger will then do everything automatically. This section explains a few details.

CHARGING: If the charger does not detect a properly connected battery, the CHECK (red) LED will light continuously until a battery is detected. Charging will not begin while the CHECK LED is on. When charging begins, the CHARGING LED will be lit. The same is true for each bank of the OMAX-40AS-3B and OMAX-50AS-3B.

ABORTED CHARGE: If charging can't be completed normally, charging will be aborted. When charging is aborted, the charger's output is shut off and the red CHECK LED and digital display (if present) blink on and off. In that state, the charger ignores all buttons. To reset from after an aborted charge, either disconnect the battery or unplug the charger. For the OMAX-40AS-3B and OMAX-50AS-3B, only the red CHECK LED for the bank that aborted will blink. To reset an aborted

bank without affecting the other banks, disconnect the clamps for the aborted bank from the battery.

DESULFATION MODE:

(All Models except OMAX-6A-1B)

If a battery is left discharged for an extended period, it could become sulfated and not accept a normal charge. If the charger detects a sulfated battery, the charger will switch to a special mode of operation designed for such batteries. Activation of the special desulfation mode is indicated by blinking the CHARGING LED. If successful, normal charging will resume after the battery is desulfated. The CHARGING LED will then stop blinking and light continuously. Desulfation could take up to 10 hours. If desulfation fails, charging will be aborted and the CHECK (red) LED will blink.

COMPLETION OF CHARGING: Charge completion is indicated by the CHARGED (green) LED; when lit, the charger has stopped charging and switched to the trickle charge mode of operation.

TRICKLE CHARGE MODE: When the CHARGED (green) LED is lit, the charger has started this mode. The battery can be left connected to the charger indefinitely without hurting the battery.

GENERAL CHARGING NOTES:

The voltage displayed during charging is the charging voltage and usually will be higher than the battery's resting voltage.

(Model OMAX-25A-1B only)

The charger is designed to control its cooling fan for efficient operation. Consequently, it is normal for the fan to start and stop when maintaining a fully charged battery. The fan does not normally run in Tester Mode.

(Models OMAX-50A-1B, OMAX-40AS-3B, and OMAX-50AS-3B only)

When the display is set to show AMPS, the number shown should not be treated as a precise measurement. However, it can be used to monitor the charging progress (see BATTERY PERCENT AND CHARGE TIME).

BATTERY PERCENT AND CHARGE TIME

This charger adjusts the charging time in order to charge the battery completely, efficiently and safely. The microprocessor automatically makes the necessary decisions. However, this section includes guidelines that can be used to estimate charging times.

The duration of the charging process depends on three factors:

1. **Battery State** – If a battery has only been slightly discharged, it can be charged in less than a few hours. The same battery could take up to 10 hours if very weak. The battery state can be estimated by using the built-in tester (see page 14). The lower the reading the longer charging will take.
2. **Battery rating** – A higher rated battery will take longer to charge than a lower rated battery under the same conditions. A battery is rated in ampere-hours (AH), reserve capacity (RC) and cold cranking amps (CCA). The lower the rating the faster the battery will be charged.
3. **Charge rate** – The charge rate is measured in amps. After the charging process has started, the digital display can be used to determine charging progress by selecting the percent mode. (All Models except OMAX-6A-1B).

NOTE: For the OMAX-6A-1B, the Status LEDs can be used to determine the charging progress.

There are some important facts to keep in mind when charging a battery.

NOTE: Model OMAX-6A-1B only.

- When the top yellow Status LED is lit, the battery has already been charged at least as much as by most other battery chargers.

NOTE: All Models except OMAX-6A-1B.

- When the digital display indicates 77% charged, the battery has been charged enough to start most vehicles and has already been charged as much as by many other battery chargers.
- When the digital display indicates 85% charged, the battery has already been charged at least as much as by most other battery chargers.
- The percent shown in tester mode is an estimate based on the battery voltage and a scale set by the Battery Council International. The percent shown in charger mode is an estimate of the relative charge in the battery compared to the charge it should have if the charging process is allowed to complete.
- The percent shown in tester mode can be used to estimate the relative charge time. The lower the percent shown, the longer the charge time for a given battery.
- The percent shown in charger mode is an indication of the relative progress of the charging process. The higher the percent displayed, the less charge time remains.

- The more a battery is discharged, the faster it absorbs charge from a charger. That means that the percent increases faster at the beginning of the charging process than at the end. In other words, it takes longer for the battery to absorb the last few percent of charge than the first several percent.

NOTE: Models OMAX-50A-1B, OMAX-40AS-3B, and OMAX-50AS-3B only.

- The AMPS value displayed is an estimate of the charge rate and can be used to monitor the charging progress. The AMPS display should not be treated as precise measurement.
- When the charging process starts, the charge rate will be very low and then gradually increase until the maximum charge rate is reached.
- The charge rate may be less than the charger's maximum, if the battery being charged is small or only partially discharged.

- After the charge rate and AMPS value displayed have stopped increasing, the percent will increase and the charge rate will decrease as the charging process gets closer to completion.
- When the charge rate is very low, the display will show "LO" (instead of a number) when set for AMPS. That usually indicates that charging is nearly complete (except at the very beginning of charging).
- If the desulfation mode has been activated, the AMPS display might increase instead of decrease as the battery starts to accept charge.

NOTE: Models OMAX-40AS-3B and OMAX-50AS-3B only.

- If two or three batteries are being charged (one battery per bank), they are being charged sequentially (see CHARGER OPERATION on page 7). In that case, the AMPS displayed for each bank will be 0.0 when one of the other banks is receiving current.

KNOW YOUR CHARGER

Read this entire manual before using your charger. The items below are additional features of your charger.

Relay:

(All Models except OMAX-25A-1B)

Your charger is equipped with a relay. This device turns the charge current on and off to the battery. It is normal to occasionally hear a clicking sound when the relay is turned on or off.

Fan:

(Model OMAX-25A-1B only)

It is normal for the fan to be on while the charger is charging (as long as the voltage is above 9V). The fan is normally off at other times but may cycle on and off due to temperature or other conditions (See Overtemperature Protection). Keep the area near the charger clear of obstructions to allow the fan to operate efficiently.

Overtemperature Protection:

(All Models except OMAX-6A-1B and OMAX-12A-1B)

Your charger is equipped with an internal thermocouple that monitors the temperature. If the temperature rises above a preset level, the charge current will be reduced to allow the charger to cool. If the temperature can not be reduced at the lower charge rate, the charge current will be turned off until the temperature is reduced to a normal level. The charger will then continue where it left off. For best results, do not place the charger in direct sunlight or enclosed spaces with high temperatures.

CHARGING TIPS

Read this entire manual before using your charger. The tips below serve only as a guide for specific situations. **NOTE: All Models except OMAX-6A-1B.**

Reviving your battery: If you only wish to charge your battery enough to operate your vehicle; you don't need to wait for the entire charging process to be completed. When the charger displays a percent of 77 or more (see page 16), the battery has usually been charged enough for the vehicle to start and operate normally.

Completing an interrupted charge: If the charging process has been interrupted and restarted after the charger displays a percent of 85 or more, the charger may enter trickle charge (see page 15).

MAINTENANCE AND CARE

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

1. 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.
2. Coil the input and output cords neatly when storing the charger. This will help prevent accidental damage to the cords and charger.
3. Occasional cleaning of the case of the charger with a soft cloth will keep the finish shiny and help prevent corrosion.
4. Store the battery charger in a clean and dry location.

TROUBLESHOOTING

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

All Models

PROBLEM	POSSIBLE CAUSE	SOLUTION
Check (red) light is on.	The battery is not connected correctly. The battery is nearly zero volts.	Connect or adjust clips or rings. Check for correct polarity. Replace the battery or try using a manual charger close to 1V or higher.
The battery is connected and the charger is on, but it isn't charging.	The charger is not in charging mode.	Press CHARGE or OUTPUT button until ON light comes on.
Indicator lights are lit in an erratic manner not explained in the "Using Your Battery Charger" section.	A button may have been pressed as the charger was plugged in. The charger may be defective.	Make sure nothing is touching the control panel, then unplug the charger and plug it in again. Return to place of purchase for replacement.

All Models (continued)

PROBLEM	POSSIBLE CAUSE	SOLUTION
The CHECK (red) light always flashes before the battery is completely charged.	This will happen if the battery did not reach full charge within 24 hours. May be due to a very large battery or a bank of batteries requiring more power than the charger can deliver in 24 hours. Battery may also be faulty.	Reset the charger by briefly unplugging it and starting the charge cycle again. Reset the charger by briefly disconnecting the battery and starting the charge cycle again.
The green CHARGED light 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.
The measured current is much lower than expected.	The charger reached the maximum voltage and is reducing the current. The charger detected an over-temperature condition and has reduced the current to allow the charger to cool.	No problem, this is a normal condition. Make sure the charger does not have the side ventilation holes blocked. Move charger out of the sun and into the shade.
The CHECK (red) light is flashing. NOTE: The digital display (if present) blinks when the red LED blinks.	Charger in abort mode. Battery may be bad.	See "USING YOUR BATTERY CHARGER." Reset the charger by briefly disconnecting the battery and starting the charge cycle again.

MODELS: All Models Except OMAX-25A-1B

PROBLEM	POSSIBLE CAUSE	SOLUTION
The charger is making an audible clicking sound.	The charger has a relay that turns the current on and off to the battery.	No problem, this is a normal condition.

MODELS: OMAX-6A-1B and OMAX-12A-1B

PROBLEM	POSSIBLE CAUSE	SOLUTION
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 charger cables from the battery.

MODEL: OMAX-25A-1B

PROBLEM	POSSIBLE CAUSE	SOLUTION
The fan turns on and off unexpectedly.	The fan is turned on and off as determined by the software and temperature.	No problem, this is a normal condition.

MODEL: OMAX-40AS-3B and OMAX-50A-3B

PROBLEM	POSSIBLE CAUSE	SOLUTION
A battery is connected and the charger is on, but it isn't charging.	The battery is connected to a bank that is set to TEST. Two or more batteries are being charged in sequence.	Press the appropriate BANK button to set that bank for CHARGE. This is normal. The banks run one at a time for a few minutes at a time, then stop while the other banks run.
The AMPS value displayed is much less than the charge rate listed on the charger.	The battery is small or nearly at full charge.	It is normal for the charge rate not to reach the listed level for small or mostly charged batteries. It is normal for the charge rate to drop to a low level near the end of charging.
The AMPS value displayed does not match the value measured with an external meter.	AMPS values should be consistent for one unit, but variations between units prevent precise current measurement for every unit.	Use AMPS displayed to monitor charging progress, not for precise current measurement.

LIMITED WARRANTY

ENERSYS

617 N. RIDGEVIEW DRIVE
WARRENSBURG, MO 64093

MAKES THIS LIMITED WARRANTY TO THE ORIGINAL PURCHASER AT RETAIL OF THIS PRODUCT. THIS LIMITED WARRANTY IS NOT TRANSFERABLE.

EnerSys warrants this battery charger for five years from date of purchase at retail against defective material or workmanship. If such should occur, the charger will be repaired or replaced at the option of the manufacturer. It is the obligation of the purchaser to forward the charger together with proof of purchase, transportation and/or mailing charges prepaid to the manufacturer or its authorized representative.

This limited warranty is void if the product is misused, subjected to careless handling, or repaired by anyone other than the manufacturer or its authorized representative.

The manufacturer makes no warranty other than this limited warranty and expressly excludes any implied warranty including any warranty for consequential damages.

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SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LENGTH OF IMPLIED WARRANTY SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS THAT VARY FROM STATE TO STATE.

WARRANTY VALIDATION: The enclosed "Warranty Validation Card" must be completed and mailed within 10 days of product purchase to activate this limited warranty.