#611B

REEDY Quasar PRO

AC/DC CHARGER

SPECIFICATIONS

Input	120VAC or 12VDC
Output	4-8 cell (4.8V-9.6V)
Battery capacity	50maH-6000maH
Charging rate	0.1amp-6.5amp (0.1-1amp for 7 and 8 cells)
Threshold	Adjustable 3mV-10mV
Size	6.50" x 6.75" x 2.25"

- The Quasar is a versatile charger, which will charge both Ni-CD and Ni-MH battery packs.
- The charge rate is adjustable from 0.1 amp to 6.5 amp, allowing it to be used for charging packs with capacities ranging from 50mah to 6000mah.
- Quasar also has the option of either 120VAC input power or 12VDC input power.
- The Quasar charger may be used to charge 4-8 cell battery packs.
- The Quasar has adjustable discharge of .1amp-20amps.
- Programmable for up to three cycles for testing or breaking in packs.
- Cooling fans cycle on and off automatically as required.

AE-611B

Includes:

- Charger system.
- Power cord for 120V AC.
- Large alligator clips for 12V DC.

QUICK-START INSTRUCTIONS

1 Plug the power cord into the charger.
2 Plug the power cord into the power source.
3 Select the charge rate.
4 Connect the battery pack to the charger.
5 Select battery type and mode with up/down buttons.
6 Push Enter button to start.
7 Charge will emit several beeps when done.

POWERING THE CHARGER

WARNING! *To avoid overheating, never place charger and/or battery pack in direct sunlight, or on a soft surface (towel or carpet blocking airflow) while charging.*

DETERMINE THE TYPE OF INPUT POWER YOU WILL BE USING

- If using 120VAC then read the two steps of the 120VAC section following.
- If 12VDC then read the two steps of the 12VDC section below.

Left: DC adapter cord.
Right: AC cord.

IF USING 120VAC

1 **Plug the power cord into the charger**

- Plug the AC cord into the input socket located on the right side of the charger.

WARNING! *AC supply voltage must be between 102 VAC and 132VAC. Charging will halt with an error message "AC below 102v." if voltage drops below 102VAC.*

Go to step 2 at right.

For 120VAC operation, use the plug shown.

2 **Hook up the unit to your charging source**

- Plug the male plug on the AC cord into the AC source.

Go to step 3 below.

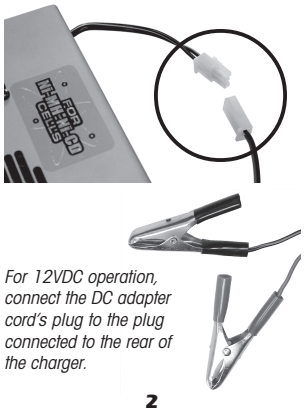
IF USING 12VDC

1 **Plug the power cord into the charger**

- Insert the DC adapter cord's female plug into the male DC input plug exiting the rear of the charger.

WARNING! *When using a lead acid battery, such as a car or motorcycle battery, as a power source, care must be taken as it may generate explosive gases during charging operation. To prevent this danger always unplug the DC adapter cord from the charger before disconnecting the alligator clips from the battery.*

Go to step 2 at right.



For 12VDC operation, connect the DC adapter cord's plug to the plug connected to the rear of the charger.

2 **Hook up the unit to your charging source**

- The power source must be a minimum of 12VDC and a maximum of 13.8VDC. Charging will halt with the error message "AC below 102v." if the 12VDC supply drops below 12VDC. If a power supply is used, a minimum of 7 amps output is required. The red wire alligator clip should be connected to the positive (+) on the 12VDC source and the black wire alligator clip connected to the (-) negative side.

Go to step 3.

OPERATING MODES

The Quasar Pro charger has program options built in that allow you to custom design the functions of the charger to your needs.

The Quasar Pro charger has three programmable operational modes: Charge mode, Discharge mode, and Cycle mode. The Cycle mode is not normally seen in a charger and is a useful tool in cycling up (breaking in) new cells and testing used packs to keep a record of their condition.

CHARGING MODE *programmable settings*	***DISCHARGING MODE*** *programmable settings*	***CYCLE MODE*** *programmable settings*
Battery type. Number of cells. Charge rate (continuously adjustable from 0.10 amp up). Maximum charge rates: 4-6 cells = 6.5 amps, 7-8 cells = 1 amps. Cell mAH rating. Over peak (delta) voltage cutoff (adjustable from 3mV/cell to 10mV/cell).	Discharge rate (adjustable 0.10amp to 20.0amp). Maximum discharge rates are: 4-6 cells = 20 amps, 7-8 cells = 15 amps.	Number of cycles. Delay time after charge. Delay time after discharge.

The first time you use the charger you must set the values for these setups. To help you select the proper settings, see recommended settings at right. Once set, these values become the default settings and will automatically recall them each time you turn the charger on.

The default settings may be changed at any time by entering the program mode, scrolling to the appropriate screen and using the up and down buttons to make the changes. These new settings will automatically become the new default settings.

PROGRAMMING THE CHARGER

1 To start programming, hook up the charger to your power source according to steps 1-2 earlier in these instructions. Screen will read ➡

QUASAR PRO
VERSION 2.1

CHARGER MODE
XXXX XXXX XXXX

2 Push SETUP button. Screen will read ➡
Use Up and Down buttons to select NiCD or NiMH battery.

BATTERY TYPE IS
NiMH

RECOMMENDED SETTINGS

CHARGE RATES

Under 500mAH	0.5 amp
500mAH - 1100mAH	1.0 amp
1200mAH – 1600mAH	3.0 amp
1700mAH – 4000mAH	4.0 amp

DISCHARGE RATES

Less than 500mAH	0.3A or less
500mAH	0.5A or less
1100mAH	0.8A or less
1200-1700mAH	15A or less
1800-3000mAH	20A or less

OVER PEAK VOLTAGE CUTOFF

1100mAH or less	3mV
1200-2400mAH NiCD	10mV
3000-3600mAH NiMH	5mV

Delay time after charging	2 min.
Delay time after discharging	30 min.

Discharge cutoff is preset to 0.9volt per cell.

Trickle charging is not recommended for NiMH cells.

3	Push ENTER to store in memory. Screen will read ➡ Use Up and Down buttons to select number of cells.	**CELL NUMBER** **X CELL**
4	Push ENTER to store in memory. Screen will read ➡ Use Up and Down buttons to select mAH rating.	**BATTERY CAPACITY** **XXXX mAh**
5	Push ENTER to store in memory. Screen will read ➡ Use Up and Down buttons to select Charger Current.	**CHARGER CURRENT** **X.XA**
6	Push ENTER to store in memory. Screen will read ➡ Use Up and Down buttons to select Discharge Current.	**DISCHAR. CURRENT** **XX.XA**
8	Push ENTER to store in memory. Screen will read ➡ Use Up and Down buttons to select Trickle Current.	**TRICKLE CURRENT** **X.XXA**
9	Push ENTER to store in memory. Screen will read ➡ Use Up and Down buttons to select to select the mV/cell over peak cutoff. Charger will automatically adjust to number of cells.	**△PEAK AD. NiMH** **XmV/C. XXmV/P.**
10	Push ENTER to store in memory. Screen will read ➡ Use Up and Down buttons to select Number of Cycles (max. three).	**CYCLE NUMBER** **XTIME**
11	Push ENTER to store in memory. Screen will read ➡ Use Up and Down buttons to select Delay Time After Charge.	**DELAY TIME AFTER** **CHARGE XXMIN**
12	Push ENTER to store in memory. Screen will read ➡ Use Up or Down buttons to select Delay Time After Discharge. Reedy recommends at least thirty minutes. Push ENTER to store in memory.	**DELAY TIME AFTER** **DISCHARGE XXMIN**

This concludes the programming procedure. All settings will be stored in default memory and will automatically be recalled when charger is turned on (charger automatically comes on when the power source is hooked up). Any setting may be changed by entering the program mode with the SETUP button and scrolling through the screens until you reach the value you want to change and making your adjustments using the Up and Down buttons.

You may now proceed into operational mode.

CHARGING

The Quasar Pro charger is a competition charger and is supplied with alligator clip leads for the output harness. The red alligator clip connects to the positive (+) connection on the battery. The black connects to the negative (-).

Connect black to the negative end and red to the positive end

1 Connect the battery pack to be charged to the alligator clips protruding from the front of the charger.

WARNING! The early versions of Ni-MH batteries, and batteries that haven't been used for a long time, tend to false peak during the first ten minutes of the charging cycle. If you are charging this type of battery pack, it is recommended you monitor the charge during the first ten minutes. If the charger shuts off during that period and the pack is at room temperature, push the ENTER button to resume charging.

WARNING! Severe power line spikes and and electrostatic discharges can force the charger to stop charging and reset the display. If you find that the charger has stopped and is not showing the normal charge-completed display described on page 6, do not resume charging. Discharge the pack, allow it to cool, and then recharge the pack.

MODE SELECTION

When turning the charger on, if you are not going to change any of the programmed settings, you may go directly into one of the operational modes. You can then select desired mode by procedure listed below.

2 Turn on the charger and connect the battery to the charger. One of the following screens will read:

CYCLE MODE XTIME	CHARGER MODE	DISCHARGE MODE

Use Up or Down buttons to select desired operating mode. Screen will display selected mode and start command.

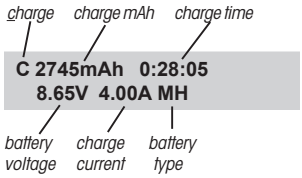
Push ENTER button. Charger will automatically start in the selected mode.

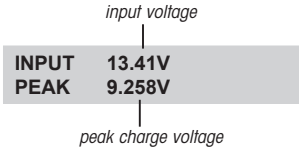
The charger may be stopped at any time in any of the operational modes by pushing the BACK/SETUP button.

SWITCHING SCREENS

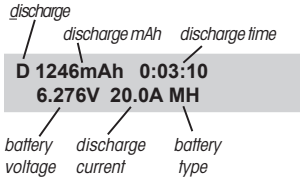
Two screens can be displayed for each mode while the cells are charging by selecting the Up and Down buttons.

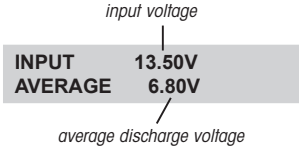
CHARGE MODE SCREENS



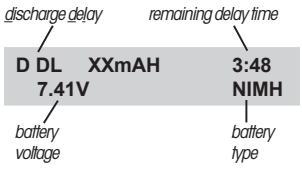


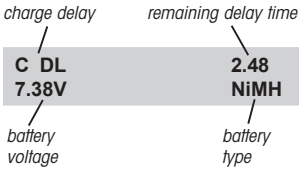
DISCHARGE MODE SCREENS



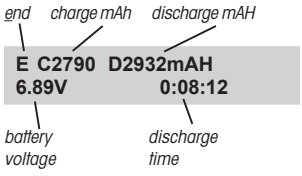


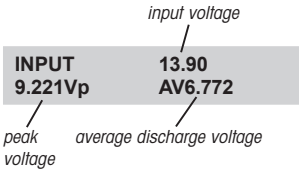
CYCLE MODE SCREENS





When done cycling, the screen will read following information.





Final screen information will be erased when you disconnect your battery pack.

WARNING

ASSOCIATED ELECTRICS, INC. AND REEDY MODIFIEDS HAVE NO CONTROL OVER THE USE AND APPLICATION OF THIS PRODUCT AND SHALL NOT BE LIABLE FOR ANY PROPERTY DAMAGE OR PERSONAL INJURY RESULTING FROM THE FAILURE TO FOLLOW THESE INSTRUCTIONS, OR FROM IMPROPER USE OR MODIFICATION OF THE PRODUCT.

DO NOT PLACE ANYTHING NEXT TO THE CHARGER THAT WILL BLOCK THE FREE FLOW OF AIR TO THE COOLING FAN AND AIR FLOW SLOTS.

NOT MEANT FOR USE BY ANYONE WITHOUT ADULT SUPERVISION.

AFTER USE, ALWAYS LET BATTERY COOL TO ROOM TEMPERATURE BEFORE RECHARGING. ATTEMPTING TO CHARGE A WARM BATTERY WILL CAUSE PERMANENT DAMAGE TO BATTERY.

THIS CHARGER WILL CHARGE Ni-CD OR Ni-MH BATTERIES ONLY. DO NOT ATTEMPT TO CHARGE ANY OTHER TYPE OF BATTERY, SUCH AS ALKALINE, LITHIUM, ETC.

USE ONLY WITH BATTERIES THAT ARE NO MORE THAN TWO YEARS OLD AND IN GOOD CONDITION.

Do not block the vent or fan openings.

LIMITED WARRANTY

ASSOCIATED ELECTRICS, INC. AND REEDY MODIFIEDS WARRANTS THIS CHARGER TO BE FREE OF ANY DEFECTS IN MATERIAL OR RESULTING FROM WORKMANSHIP FOR A PERIOD OF NINETY DAYS FROM DATE OF PURCHASE.

WARRANTY DOES NOT COVER:

- *DAMAGE DONE BY INCORRECT CONNECTING OF INPUT OR OUTPUT POWER CORDS.*
- *DAMAGE CAUSED BY EXCEEDING RECOMMENDED INPUT VOLTAGE.*
- *DAMAGE CAUSED BY EXCESSIVE OR ABUSIVE USE.*
- *DAMAGE CAUSED BY CHARGING MORE THAN RECOMMENDED NUMBER OF CELLS.*
- *DAMAGE CAUSED BY ANY MODIFICATIONS TO INPUT OR OUTPUT POWER CABLES.*
- *DAMAGE CAUSED BY ANY LIQUID OR FOREIGN MATERIAL ENTERING INTERIOR OF CHARGER.*

REPAIRS

All warranty work must be accompanied by a dated, itemized sales receipt.

Shipping charges are not covered by warranty. A Cashier's Check, Money Order, or credit card must be used to pay for shipping charges. Be sure to include:

1) a complete return address to a non-P.O. Box address (we do not ship by US Mail).

2) a phone number when you can be reached during business hours (to talk about any billing information). Also include email if possible.

3) an explanation of the problem.

Units under warranty, found to be faulty, will be fixed free of repair charges. But of units under warranty found to be free of any faults, owner will be charged a fee of $20.00 to cover handling, shipping, and testing.

Mail all warranty and repair work to:

Associated Electrics, Inc.
Customer Service
3585 Cadillac Ave.
Costa Mesa, CA 92626
USA

phone: (714) 850-9342
fax: (714) 850-1744
web: http://www.rc10.com/ *or* http://www.teamassociated.com/

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSES	SOLUTIONS
"AC below 102V" error	The voltage of the power source you are using is too low. This is a common problem at race events where too many chargers and power supplies share a common extension cord or receptacle.	Reduce charging current. *If using AC:* Find unused receptacle. Eliminate extension cord or use a short heavy-duty extension cord. *If using DC:* Use a DC supply that can maintain 12 volts at a 7amp load.
"Charger too hot" error	Charger in direct sunlight. One or both fans not functioning. Ventilation holes blocked. Ambient temperature too high.	Put charger in cool shaded area and clear area around charger. Reduce charge and discharge current. Check fan operation. Return to AE for service.
"Short or reverse" error	Battery connected backwards. Voltage sensing lead broken.	Connect battery pack properly. Check leads for breaks. Re-solder, or return to AE for service.
"No battery" error	Battery pack not connected. Bad connection to pack. Broken current lead.	Connect pack. Check leads for breaks. Re-solder, or return to AE for service.
Pack too hot after charging	Re-peaking a charged pack. Delta peak voltage set too high. Capacity set too high. Old or damaged pack. Insufficient ventilation around pack.	Monitor pack temperature when re-peaking. Reduce delta peak. Reduce capacity setting to 50maH. Replace pack. Remove from car before charging.
False peaking (charging stopped normally with data displayed, but pack not fully charged)	Charger overheating, causing current interruptions. New pack, or pack that hasn't been charged recently. Old or damaged pack.	Check fans and vent holes. See "Charger too hot" error solutions.
No data after charging	The charger "reset" instead of completing charge normally, usually the result of static discharge ("carpet sparks") or power line spikes. Pack was accidentally disconnected before data was checked.	Don't disconnect pack until data is checked. "Ground" yourself before touching charger or pack. Change to different wall socket. Use surge protection power strip.

TECHNICAL INFORMATION

1. DELTA PEAK SETTING. This charger operates by monitoring the pack voltage during the charging process. While charging, the pack voltage slowly increases. When the pack is fully charged, the voltage peaks, and starts to decrease. The decrease from the peak is called the "delta peak" voltage. A matched pack in good condition will charge properly with a delta peak setting of 3mV. Unmatched packs may require slightly higher settings.

2. CELL CAPACITY SETTING. To eliminate "false peaking", delta peak sensing is turned off for the first few minutes of charging. The length of time is determined by the Capacity and Charge settings. At a charge rate of 5 amps, this time ranges from 120 seconds for 50maH, to about 330 seconds for 3300maH. For this reason, re-peaking of a charged pack should be done with Capacity set to a low value to prevent overcharging.

3. VERSION 2.1 SOFTWARE. The new model 611B charger uses improved software that is more resistant to static discharge (ESD) and power line noise. Some additional safety measures were also added. Maximum delta is now 10mV for all types of cells, and maximum charge rate for 7 and 8 cell packs is 1 amp.