

POWER PRO OPERATING INSTRUCTIONS

WARNING

It is dangerous to work in the vicinity of a lead-acid battery since they generate explosive gases during charging. When charging and using a lead-acid battery, make sure you have good ventilation. To prevent an explosion, never charge a lead-acid battery while using the lead-acid battery as a power source for the Power Pro.

To reduce the risk of injury, use only high rate nickel cadmium batteries with the Power Pro. Any other type of battery may burst and cause personal injury.

Do not leave the Power Pro unattended. The remote possibility of an electronic failure could cause an extreme overcharge. This could cause the battery to burst and cause a fire hazard.

The Power Pro is designed to charge high rate rechargeable nickel cadmium batteries used in R/C car racing. In order to provide a quick charge, the Power Pro is designed to charge at high currents. While the charge rates used in the Power Pro are common, excessive cell heat generated during the process may cause damage to the cells or cause them to vent battery acid. To reduce the risk of injury, always wear safety glasses when operating the Power Pro.

Always make sure the batteries in the pack are in the same state of discharge before charging a pack. Otherwise, the cells that are partially charged before charging will get extremely hot and may be damaged or vent battery acid.

Check your battery pack occasionally for overheating. If the cells are too hot to touch, there is something wrong and the pack must be disconnected from the charger.

Competition Electronics, Inc. shall not be liable for any property damage or personal injury which may result from the failure to follow these instructions or other improper use of this product.

GENERAL DESCRIPTION

The Power Pro is a microprocessor based charger system for high-rate rechargeable batteries for use in R/C. It is a linear type using a high frequency buck switcher and can fully charge 1 to 12 cells at a pretable amperage up to a maximum of 10.0 amps using the peak detection method. By using the buck converter, the power dissipation is greatly reduced. Even single cells can be charged without excessive heat dissipation. The Power Pro employs our own version of reflex charging called Turbo Flex. Turbo Flex charging can recondition cells by lowering the internal resistance thru breaking up of the crystalline structure formed by aging cells. It can also reduce heat buildup during charging by reducing gas build up in the cells.

SUPPLY VOLTS

The Power Pro will operate from a 12 volt automobile battery (see above warning notes) or any DC supply within the voltage range of 10 to 24 volts and 10 amp or more capacity. It will operate with less amperage, but the charge current will be limited to the maximum capacity of the supply. Allow about two volts per cell for a supply voltage with a minimum of 10 volts. For example, to charge a 7 cell pack would require 14 volts. (7 cells times 2 volts)

CONNECTIONS

You must connect to the 4 foot supply first, then the battery pack. Otherwise the Power Pro will not work. The red alligator clip on the 4 foot lead connects to the positive (+) on your DC supply. The black lead connects to the negative (-). The leads supplied for the battery pack hookup are the alligator type. Be sure you observe polarity when connecting to your battery pack, positive (+) to red and negative (-) to black. Damage may result if polarity is not observed.

TURBO FLEX TYPE SELECTION

Before charging you may select one of two modes of Turbo Flex by pushing the Turbo Flex push button. The first mode is used for SCR type batteries (1400's). The second mode is for SCRC type batteries or any 1700mah battery. (SCRC,SCE,P-170). If neither one of the LED's are on, the charge is a standard linear type without Turbo Flex.

CHARGE MODES

The three types of charge modes are ... a standard charge, a long lockout type or a repeak type. Any one of the types may be selected with the charge push button (right hand button). Just keep pushing the charge button within 2 seconds of the last push, until the desired charge type is selected. After the 2 seconds have expired, the selected charge mode will begin.

Standard charge mode

The standard peak detect lockout time is 60 seconds. This means the charge will run 60 seconds even if the battery voltage is dropping.

Long lockout charge mode

A long peak detect lockout of 5 minutes can be selected. This means the charge will run 5 minutes even if the battery voltage is dropping. It therefore can be used only on fully discharged packs. It can overheat and vent a fully charged pack. The long peak detect lockout is meant to be used with packs that have a bad tendency to false peak, or a pack that is completely discharged.

Repeak charge mode

The repeak charge will provide a peak detection of twice that of a standard charge. It is used to heat up the pack just before racing. The peak detect lockout time is 60 seconds.

GENERAL CHARGE RATES

Most racers use a charge rate of 3 to 5 amps on the RED SCR (1400mah) Sanyo cells, the BLACK SCRC(1700mah) Sanyo cells or the PURPLE P-170 cells. Generally the higher the milliamp hour rating (mah) the more delicate the cell. Therefore, a lower charge rate is easier on the cell.

DICHARGING FOR PERFORMANCE

To get maximum performance from your batteries, discharge them fully after every use. We recommend using a .1ohm 10 watt or a 1ohm 5 watt resistor across each cell until the pack is cool. Any longer than that is not necessary and may cause them to false peak at the beginning of a charge.

FLASE PEAKS

False peaks can be caused by several things. Batteries that have been fully discharged can false peak for several minutes. Use the long lockout to alleviate this problem. Another cause is using alligator clips on solid leads. This can produce a poor connection that can't handle the charge current. It is best to clip onto braided wire or multi-strand wire where more area is contacted by the alligator clips. Using connectors that are worn or dirty can also produce false peaks because of poor connections. Turbo flexing can also cause batteries that haven't been flex charged before to false peak. Either continue to restart the Power Pro until the batteries continue to charge or use the long lockout so the batteries will charge 5 minutes before the peak detecting occurs.

TRICKLE CHARGE

To trickle charge your battery, set the amp adjustment to .15 amps and push the start button. The amp set pot is factory calibrated for .15 amps when completely turned counter clockwise.

FUSES

Sooner or later you will blow a fuse by hooking up the supply backwards. It is best to go out and buy extra 15 amp fuses at the automotive store now so you will have them on hand. To change the fuses, remove and replace with needle nose pliers.

IF IT DOESN'T WORK

Make sure that you have connected the supply leads first and then the battery leads.

Check the fuses to make sure that they are not blown.

Please call us before you send the unit back. We may be able to tell you if the unit is malfunctioning or if there is some operating consideration that needs further explanation. (815) 874-8001

Competition Electronics
3469 Precision Dr.
Rockford, IL 61109