

## Operation

Thank you for purchasing the 16X4-Pro, it is the smallest and most accurate battery maintenance system ever developed. The Ni-MH and Ni-Cd are considered high maintenance batteries that require regular discharge cycles to prevent voltage depression. Crystalline formation which causes capacity loss is mainly generated by the nickel plates in both Ni-Cd & Ni-MH. The INDI 16X4-Pro is a complete battery management system designed to get the best performance out of your battery packs. 16X4-Pro is equipped with VESC Linear CHARGE for all Ni-Cd and Ni-MH cells, DISCHARGE mode for emptying batteries before storage and CYCLE mode for battery maintenance. The INDI 16X4-Pro will operate from a 12 volt automobile battery or any 110-120V AC outlet with a minimum of 2 amps capacity. It will operate with less amperage, but the charge current will be limited to the maximum capacity of the supply. If the power source is not rated for at least 50% of the charge current set on the INDI 16X4-Pro, the charge may terminate early.

**CAUTION:** If you use an automotive battery as the power source, make sure you have good ventilation. Lead-acid batteries release explosive hydrogen gas when they are being charged.

If an overload occurs or improper connection is made, the fuse will blow. In this case, replace the fuse or send the unit to a service center for repair. NEVER attempt to repair or open the charging unit, the unit contains no user replaceable part.

The INDI 16X4-Pro is equipped with four optimized charge, cycle & discharge profiles. You can select the different modes by pressing the start button differently. Each time the start button is pressed, the charger waits 2 seconds to see which mode you would like to select. You may select the 4 different charge modes as follow:

### Mode 1, VESC Repeak

#### Press Once:

Use this mode for charging small pack like AAA size or smaller. This mode can also repeak your bigger battery packs like AA size and Sub-C size. Built-in timer logout is for approx. 30s, the red LED would start flashing when the peak detector is activated. When fast charging is completed, the unit goes back to trickle charge with green LED flashing. The unit looks for a voltage drop of 0.07V if the fast charge duration is less than 15 minutes. It will then progressively look for a lower voltage drop of 0.05V, 0.03V then 0.01V. When your pack is fully charged, it should be slightly warm. You can also use this mode for recharging before a car race. Always observed pack temperature during charging, when the temperature becomes too hot, disconnect the unit.

### Mode 2, VESC Coldstart Charge

#### Press 2 Times:

Do not use this mode for small cells like AAA size or smaller. This (coldstart) mode will discharge the battery pack at 4 amp and then automatically switch to fast charge, red LED will change from solid to flashing, a voltage drop of 0.07V during the first 15 minutes will cause fast charge to stop. The unit will then progressively look for a lower voltage drop of 0.05V, 0.03V and eventually 0.00V. When your battery pack is fully charged, it should be slightly warm. Sometimes, high internal resistance packs and older packs may false peak and, in this case, you can use mode 1 to continue fast charging.

### Mode 3, Discharge 4A

#### Press 3 Times:

This mode will perform an automatic 4A discharge. The cutoff voltage is automatically calculated based on the number of cells. The cutoff calculation is based on the total number of detected cells. This process will prevent damage caused by internal cell reversal. Never discharge pack with smaller than AAA size cells.

### Mode 4, MEMORY ERASER

#### Press 4 Times:

This cycle mode effectively reduce crystalline structure buildup with Ni-Cd and Ni-MH cells. The unit first discharge the packs, fully charge the pack and then recondition the pack by deep discharge it completely. The entire operation is fully automated and require no user intervention. The process may takes 2-3 hours and it is suggested the user do not leave the unit and battery unattended during this operation. It is usually a good idea to cycle your pack every two weeks, this would keep the capacity and voltage output of your battery pack from deteriorating. Again, do not use this mode if your battery pack contain smaller than AAA size cells.

## Safety Precautions

1. Do not leave the battery and charger unattended while in use.
2. Do not operate the charger near water.
3. It is the users responsibility to follow battery mfg. suggested charging rate. Users must also closely monitor the pack temperature during fast charging. Overcharging may occur if the 16X4 malfunction or, when user does not follow battery mfg. recommended charge rate.
4. Never connect the charger to an automobile while its engine is running.
5. This charger is not intended for use by unsupervised children.
6. This charger is designed for R/C car high power Ni-Cd & Ni-MH battery only.
7. When charging, always monitor the temperature of the charger. If the unit becomes too hot, disconnect the unit.

## Warranty and Repair

Your INDI charger is guaranteed against workmanship and manufacturing defects for a period of 30 days from the original date of purchase. This warranty is limited to the original purchaser of the charger and is not transferable. Warranty repair will not cover units which have been modified or serviced by an unauthorized service center.

Include your complete name and address information inside the box, and write address on the outer label/return address area. Also, include a brief summary of the difficulty. Also, include a phone number where you can be reached during the day time. Send the unit to: Integy Inc. 1140 Centre Dr #E, City of Industry CA 91789.

To receive warranty service, include your original dated sales receipt to verify your proof-of-purchase date. Providing that warranty conditions have been met, your charger will be repaired free of charge. Any return freight for non-warranty repairs will be charged to the customer. For non-warranty repairs, please advise us of the payment method you prefer to use. Specify Visa or MasterCard, or we can return C.O.D. with extra \$6 cod fee. If you prefer to use a credit card, include your card number and expiration date.

In no case shall our liability exceed the product's original cost. We reserve the right to modify the provisions of this warranty without notice.

Because Integy Inc. has no control over the use of the charger, no liability may be assumed nor will liability be accepted for any damage resulting from using this product. Every INDI charger is thoroughly tested and cycled before leaving our distribution facility and is, therefore, considered operational. By the act of operating this charger, the user accepts all resulting liability.