

WARRANTY AND REPAIR

Your INDI charger is guaranteed against workmanship and manufacturing defects for a period of 90 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, missed or serviced by an unauthorized service center.

NOTE: Freight charges are not covered by warranty.
Inspection fee within 90 days of purchase: \$10.00
Repair fee after 90 days of purchase: \$45.00

If your INDI charger needs repair:

1. Ship the charger in its original box, freight prepaid to:

**INTEGY INC.
1140 Centre Dr #E
City of Industry CA 91789**

or you may also contact us by e-mail at support@integy.com for other info.

Include your complete name and address information inside the box, and write address on the outer label/return address area.

2. Include a brief summary of the difficulty. Date your correspondence and be sure your name and address appear on this enclosure. Also, include a phone number where you can be reached during the day time.

To receive warranty service you must 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. We charge a flat fee of \$20.00 for handling, shipping & diagnostic if we can not detect any problem with the unit and the unit will only be returned via UPS GROUND C.O.D. Should your repair cost exceed 35% of the retail purchase cost, you will be provided with an estimate advising you of your options. 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. cash only. (C.O.D. charges are \$5.00 extra.) 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.

Distributed by Integy Inc.

INSTRUCTION MANUAL

**Important! Read Instruction Before Use
16X5v6 Is Designed For Expert Users Only**

16X5v6

Ni-Cd & Ni-MH Maintenance System

VESC Linear Charge, Discharge & Cycle
INDI Multitasking Full Charge Detection Algorithm
Minus Delta Voltage Full Charge Termination Method
User Selectable Voltage Drop Threshold 3mV-20mV
Pulse Count 16-Bit Analog to Digital Converter
65536 Steps Ultra High Resolution Counter
Up to 20.0 Amp Conditioning Discharging Current
0.1-7.0 Amps Adjustable Charging Current
Auto Detect Smart Lockout Timer
16-Bit Digital Signal Processing

***Just race,
no games!***

www.integy.com

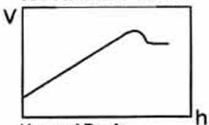
MICROPROCESSOR BASED 16-BIT DIGITAL CHARGER

INDI 16X5v6 Computerized Charger

Thank you for your purchase. This is the most advanced charge / discharge system for Ni-Cd & Ni-MH batteries. Our exclusive battery internal resistance detection accurately calculate battery IR in realtime during charging, discharging & cycling. New V6 software also allow users to set trickle charge on/off, store 10 battery profiles, recall last battery charge and discharge data, select 6 different ring tones, handle 1 to 10 cells with high performance switching circuitry, select partial charge, set auto timer for repeak, boost battery before race...etc The unit may seems complicated at first but once you start using it, you will find it very user friendly. The following user guide will be very helpful for both expert users and beginners.

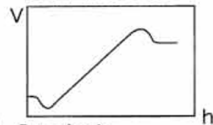
NEW FUNCTION

NORMAL PEAK



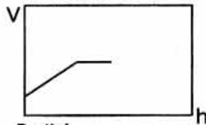
Normal Peak
Use this mode for all standard charging applications. You can setup the unit to perform one peak or two peaks. You can setup the auto repeak delay time within the USER SETUP MODE. To turn off the 2nd peak, set the repeak delay time to zero.

FUZZY LOGIC



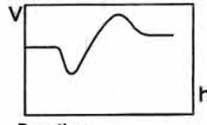
Fuzzy Logic
This charge mode is especially useful for packs with a partial charge. The unit would first discharge your pack according to your preset discharge rate and then fully charge your pack.

PARTIAL ..



Partial..
Use this mode only for Ni-MH cell(s). Certain Ni-MH batteries require a partial charge for long term storage. You can program the amount of partial charge in the USER SETUP MODE. 10 to 30% usually good for Ni-MH battery.

BOOSTING ..



Boosting..
This mode is developed for racing application. You can get the most capacity and power from your batteries using this boosting function. The unit first partial discharge your pack momentarily follow by a preprogrammed fast charge, this increase battery temperature as well as it's overall voltage output. We suggest that you only use this boosting feature when your pack is cool. Never use the Boosting function when your pack is still warm.

SPECIFICATION

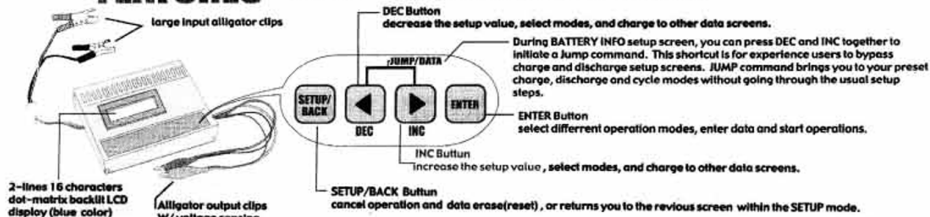
- ADD Specification**
- LCD.....2X16 Characters INDIGO blue backlit LCD display
 - BUTTONS.....Surface Panel Type
 - Battery IR.....mOhm
 - Auto Repeak.....On/Off 1-60 Minutes(1 minute step)
 - Partial Charge.....10-50%(10% step)
 - Alarm Sound.....6 Ring Tones (user selectable)
- Case Size**.....6.14"x 4.80"x 1.77" (15.6x12.2 4.5cm)
- Weight**.....24.54ounces(695g)
- Input Voltage(Power Source)**.....11.5-15 Volts DC
- Charge Battery Capacity**.....50-6000mAh (50mA step)
- Charge rate(Super linear)**.....0.1-7.0A(0.1A step)
- Auto Trickle**.....ON/OFF Auto Trickle Value
- Discharge Rate**.....0.1-20.0A(0.1Y step)
- Volt Threshold**.....3-20mV/cell for Ni-CD, 3-15mV/cell for Ni-MH,
- Cycle Number**.....1-9 times(1 time step)
- Delay Time For After Charge**.....1-10 Minutes(1 Minutes step)
- Delay Time For After Discharge**.....1-60 Minutes(1 Minutes step)

LCD Display

	Charge or Discharge capacity	Charge or Discharge time	Output Battery Voltage	Charging Current (Discharge Current)	Slow charging current	Input Voltage	Peak Voltage	Average Voltage (0.000V)	Battery Resistance (mΩ)
Charge mode	During charge	●	●	●	●	●	●	●	●
	After charge	●	●	●	●	●	●	●	●
Discharge mode	During discharge	●	●	●	●	●	●	●	●
	After discharge	●	●	●	●	●	●	●	●
Cycle mode	During initial discharge	●	●	●	●	●	●	●	●
	During discharge	●	●	●	●	●	●	●	●
	During charge	●	●	●	●	●	●	●	●
	After charge	●	●	●	●	●	●	●	●
	After test discharge	●	●	●	●	●	●	●	●
Data	●	●	●	●	●	●	●	●	●

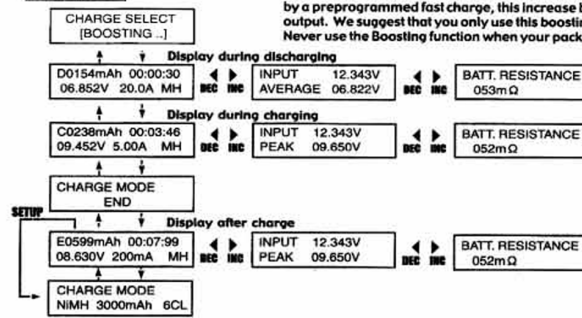
You can push DEC and INC together to access a special screen. This screen save previous battery charge and discharge information, data is available until power source is disconnected.

FEATURES

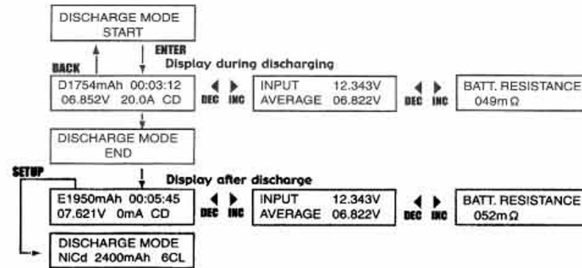


BOOSTING..

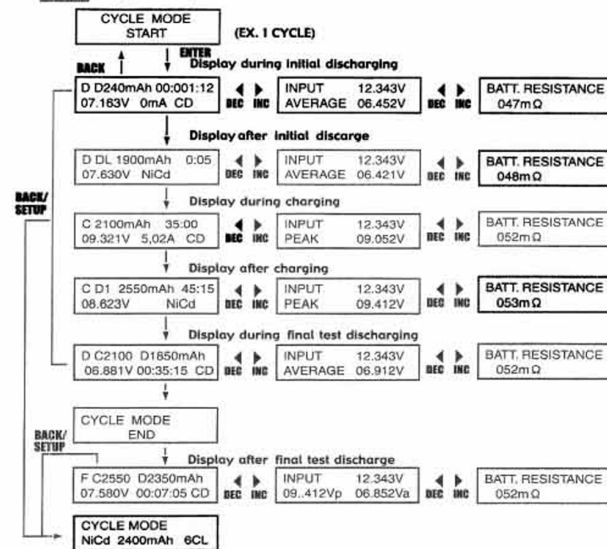
This mode is developed for racing application. You can get the most capacity and power from your batteries using this boosting function. The unit first partial discharge your pack momentarily follow by a preprogrammed fast charge, this increase battery temperature as well as it's overall voltage output. We suggest that you only use this boosting feature when your pack is cool. Never use the Boosting function when your pack is still warm.



DISCHARGE (Discharge Start)



CYCLE (Cycle Start)

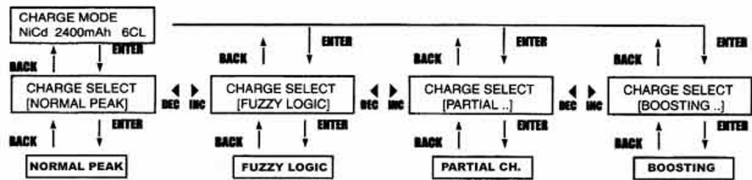


DISPLAY RESULT

You can push DEC and INC together to access a special screen. This screen save previous battery charge and discharge information, data is available until power source is disconnected.

INPUT 12.343V	PEAK 09.458V	CHG CAP. 3486mAh	BATT. RESISTANCE 052mΩ
OUTPUT 07.899V	AVERAGE 06.822V	DCH CAP. 3242mAh	

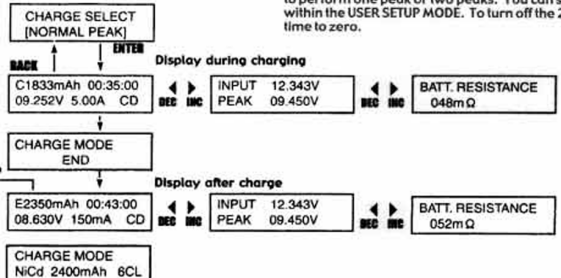
CHARGE



Change to CHARGE SELECT screen, when press "ENTER".
Choose charge selection control by DEC and INC buttons.
Then press "ENTER" to start.

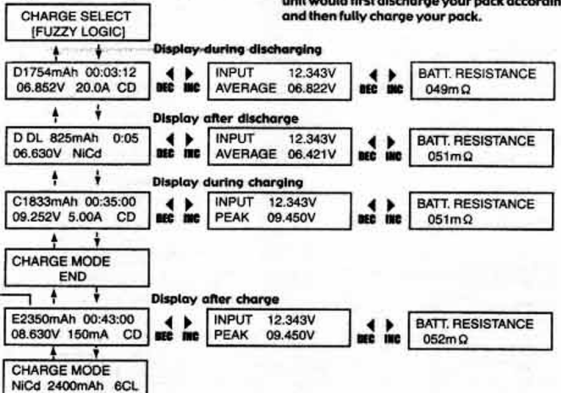
NORMAL PEAK

Normal Peak Use this mode for all standard charging applications. You can setup the unit to perform one peak or two peaks. You can setup the auto repeak delay time within the USER SETUP MODE. To turn off the 2nd peak, set the repeak delay time to zero.



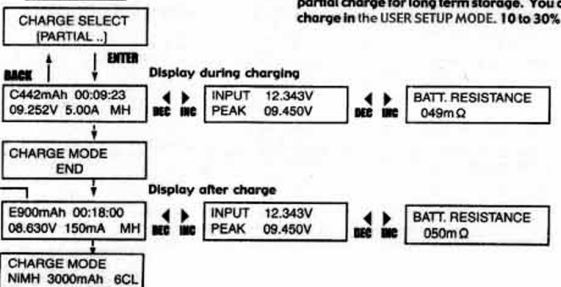
FUZZY LOGIC

Fuzzy Logic This charge mode is especially useful for packs with a partial charge. The unit would first discharge your pack according to your preset discharge rate and then fully charge your pack.



PARTIAL CH.

Partial.. Use this mode only for NI-MH cell(s). Certain NI-MH batteries require a partial charge for long term storage. You can program the amount of partial charge in the USER SETUP MODE. 10 to 30% usually good for NI-MH battery.



SAFETY PRECAUTION

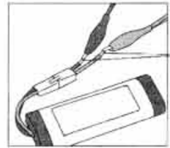
1. Do not leave the battery and the charger unattended while in use.
2. Do not operate the charger near water.
3. It is the users responsibility to follow battery mfg. suggested charge rate. Users must also closely monitor the pack temperature during fast charging. Overcharging may occur if the CDC malfunction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

CONNECTING THE POWER SOURCE & BATTERY PACK Please see the SELECTION MENU CHART.

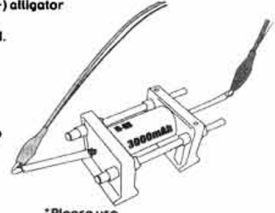
1. You can use any regulated supply or lead-acid battery which supplied 11.5-15volts DC with at least 10A capacity. 12V automotive charger also works fine. CDC shows Previous setup values when you connect the large input clips to power source.

The RED Positive (+) large input clips to the POS(+) terminal of the power source, BLACK Negative(-) large input clips to the NEG(-) terminal of the power source.

2. Connect the small alligator output clips to your NI-CD or NI-MH pack. The RED positive(+) alligator output clips to the positive(+) side of the battery wire, BLACK negative(-) alligator output clip to the negative (-) side of the battery wire. A poor connection can cause the charger to FALSE PEAK and turn off before a full charge is completed.



The connector wires must be different length, this would help prevent short circuit.



*Please use EAGLE BATTERY HOLDER when matching single cell batteries.

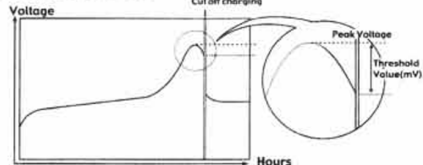
3. BATTERY INFORMATION

Change to the BATTERY INFORMATION SCREEN when you press the back button. Follows 1-9 selection control by DEC and INC.

- 1) Select the battery type, change to next screen when press "ENTER"
- 2) Select the number of cells, change to next screen by pressing "ENTER"
- 3) Select the proper battery capacity, change to next screen by pressing "ENTER"
- 4) Select the desire charge current, change to next screen by pressing "ENTER"
Please see the RATE-SELECTABLE CHART.
- 5) Select the desire discharge current, change to next screen by pressing "ENTER"
Please see the RATE-SELECTABLE CHART.
- 6) Select the desire value of volt threshold, change to next screen by pressing "ENTER"

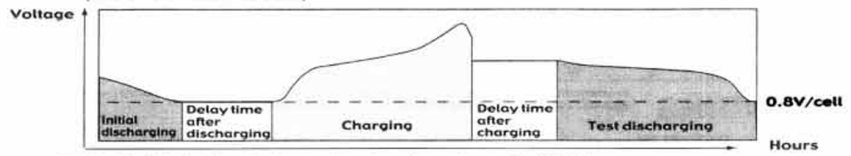
VOLT THRESHOLD SETTING

The volt threshold value entered the drop in millivolts that the CDC looks for determine that the battery pack has peaked. This is adjustable from 3 to 20mV/cell(NI-CD) and 3 to 15mV/cell(NI-MH). To adjust, push the DEC and INC buttons from the Volt Threshold screen. Please see the RATE-SELECTABLE CHART.



CAUTION: 1. If you setup higher volt threshold value than the rate is more than standard threshold value, the CDC gives longer charge to the battery. This may overcharge your pack, causing chemical leak & overheat, internal damage to your batteries will result.
2. Don't use "RATE-SELECTABLE CHART" value for old and damaged battery, The CDC will not work correctly.

- 7) Select the desire number of cycle, change to next screen by pressing "ENTER"
(THE ONE CYCLE PROCESS)



- 8) Select the delay time for after charge, change to next screen by pressing "ENTER"
- 9) Select the delay time for after discharge, change to next screen by pressing "ENTER"

During BATTERY INFO setup screen, you can press DEC and INC together to initiate a Jump command. This shortcut is for experience users to bypass charge and discharge setup screens. JUMP command brings you to your reset charge, discharge and cycle modes without going through the usual setup screens.

4. USER PROGRAM MODE

Change to the USER PROGRAM

- Select the slow charge ON or OFF, change to next screen by pressing "ENTER"
- Select the delay time for repeak charge, change to next screen by pressing "ENTER"
If you set up 0 MIN, there will be no 2nd auto repeak.
- Select the partial rate(10~50%), change to next screen by pressing "ENTER"
CAUTION: Auto repeak charge works for Normal Peak & Fuzzy Logic only.
We recommend select 10~30% for Ni-MH battery long term storage.
- Select the operation end melody, change to next screen by pressing "ENTER"
- Then press the ENTER to USER PROGRAM MODE again.
Change to other MODE when you control by DEC button.

5. CHARGE MODE

Change to the CHARGE MODE by pressing the DEC and INC buttons.
Change to CHARGE FUNCTION and press "ENTER"
Then you can select the charge function, control by DEC and INC.
Press "ENTER" to start. The rings will announce complete charge.

6. DISCHARGE MODE

Change to the DISCHARGE MODE by pressing the DEC and INC buttons.
Press "ENTER" to start. Check your battery info data & user program data.

7. CYCLE MODE

Change to the CYCLE MODE by pressing the DEC and INC buttons.
Press "ENTER" to start. Check your battery info data & user program data.

8. DISPLAY RESULT

You can push DEC and INC together to access a special screen.
This screen save previous battery charge and discharge information,
data is available until power source is disconnected.

	KIND OF BATTERY	Standard threshold value	Maximum threshold value	Charge current	Discharge current
NI-CD	SANYO less than 200mAh	3mV	(3mV)	less than 0.3A	less than 0.3A
	SANYO less than 500mAh	3mV	(3mV)	less than 0.3A	less than 0.3A
	SANYO 500mAh	3mV	(5mV)	less than 1.0A	less than 0.5A
	SANYO 600mAh	3mV	(5mV)	less than 1.0A	less than 0.5A
	SANYO 1100mAh	3mV	(5mV)	less than 1.0A	less than 0.8A
NI-MH	SANYO 700mAh(AAA)	3mV	(5mV)	less than 1.0A	less than 0.5A
	SANYO 1700mAh (AA)	3mV	(5mV)	less than 1.0A	less than 0.8A
NI-CD	SANYO RC1300	10mV	(15mV)	less than 4.0A	less than 15.0A
	SANYO RC1400	10mV	(15mV)	less than 4.0A	less than 15.0A
	SANYO RC1500	10mV	(15mV)	less than 4.0A	less than 15.0A
	SANYO RC1500HP	10mV	(15mV)	less than 4.0A	less than 15.0A
	SANYO RC1700	15mV	(20mV)	less than 5.0A	less than 20.0A
	SANYO RC2000	15mV	(20mV)	less than 5.0A	less than 20.0A
	SANYO RC2400	15mV	(20mV)	less than 5.0A	less than 20.0A
	SANYO RC2400HP	15mV	(20mV)	less than 5.0A	less than 20.0A
NI-MH	SANYO RC3000	8mV	(15mV)	less than 5.0A	5.0A~20A
	SANYO RC3000HV	8mV	(15mV)	less than 5.0A	5.0A~20A
	Panasonic P-3000	5mV	(8mV)	less than 5.0A	5.0A~20A
	Panasonic P-3000HV	5mV	(8mV)	less than 5.0A	5.0A~20A
	Panasonic P-3000HV ULTRA METAL	5mV	(8mV)	less than 5.0A	5.0A~20A
	POWERS GT3000R & GT R3300	4mV	(6mV)	less than 4.0A	5.0A~20A

ERROR MESSAGE Check the ERROR MESSAGE CHART which error you have.

SELECTION MENUS CHART

