

INSTRUCTION MANUAL

**Important! Read Instruction Before Use
16X5 Is Designed For Expert Users Only**

16X5 ***Ni-Cd & Ni-MH Maintenance System***

VEESC 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

INTRODUCTION

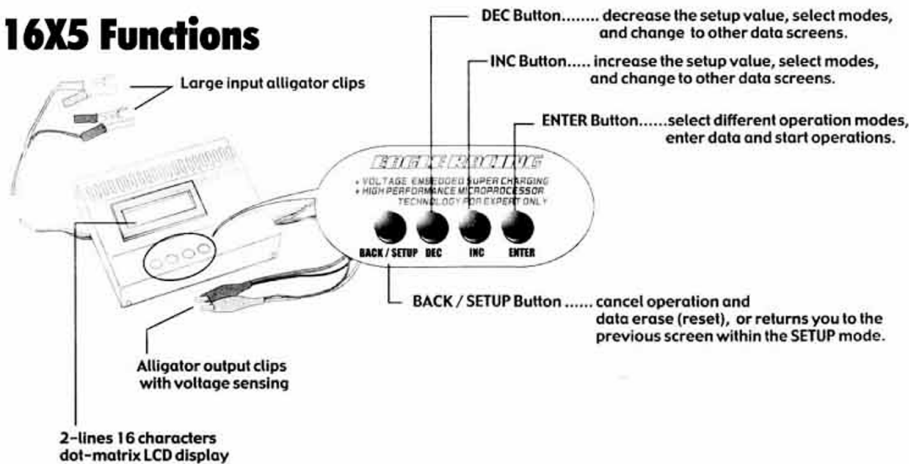
Thank you for purchasing the 16X5, it is the smallest and most accurate battery maintenance system ever developed. The Ni-MH and Ni-Cd are considered high maintenance batteries that require regular discharge cycles to prevent voltage depression. Crystalline formation which causes capacity loss is mainly generated by the nickel plate in both Ni-Cd & Ni-MH. The INDI 16X5 is a complete battery management system designed to get the best performance out of your battery packs. 16X5 gives you important battery information from an easy to read 2 lines 16 characters dot-matrix LCD display. 16X5 is equipped with VESC Linear CHARGE mode for all Ni-Cd and Ni-MH cells, DISCHARGE mode for emptying batteries before storage, CYCLE mode for battery testing and maintenance.

SPECIFICATION

Case Size: 6.14"x4.80"x1.77"
 Weight: 24.5oz
 Input: 11.5-15VDC
 Output: 4-8cell (4.8V-9.6V)
 Battery Capacity: 50-6000mA (50mA step)
 Charge Rate: 0.1-7.0A (0.1V step)
 Trickle Rate: 150mA
 Discharge Rate: 0.1-20.0A (0.1A step)
 Voltage Threshold: 3-20mV per cell
 Cycle: 1-9 times
 Delay After Charge: 1-10min (1min step)
 Delay After Discharge: 1-60min (1min step)

		Charge or Discharge capacity	Charge or Discharge time	Output battery voltage	Charging current	Slow charging current	Input voltage	Peak voltage	Average voltage (0.000V)
Charge mode	During charge	●	●	●	●		●	●	
	After charge	●	●	●		●	●	●	
Discharge mode	During charge	●	●	●	●		●		●
	After discharge	●	●	●		●	●		●
Cycle mode	During initial discharge	●	●	●	●		●		●
	After discharge	●	●	●	●		●		●
	During charge	●	●	●	●		●	●	
	After charge	●	●	●		●	●	●	
	After test discharge	●	●	●		●	●	●	●

16X5 Functions



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.

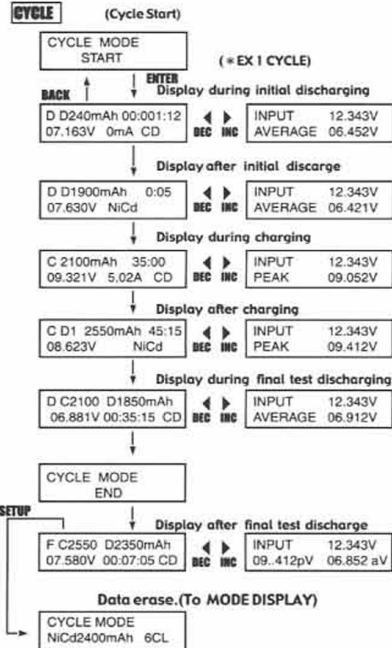
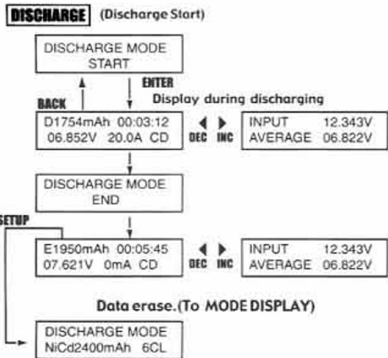
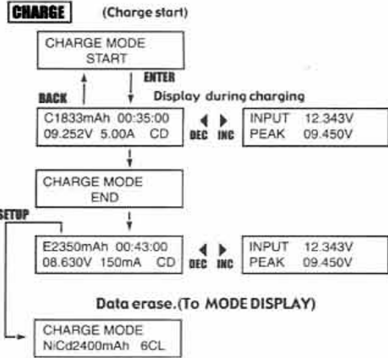
Include your complete name and address information inside the box, and write address on the outer label/return address area.

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.



SAFETY PRECAUTION

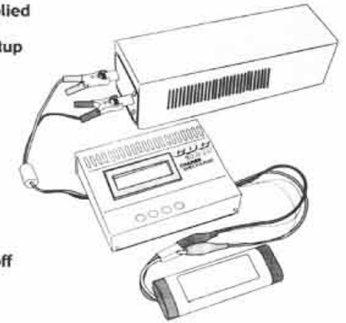
1. Do not leave the battery and the charger unattended while in use.
2. Do not operate the charger near water.
3. It is the users responsibility to follow battery mfg. suggested charging rate. Users must also closely monitor the pack temperature during fast charging. Overcharging may occur if the 16XS malfunction or when user does not follow battery mfg. recommended charges 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 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 11.5-15 volts DC with at least 10A capacity. 12V automotive charger also works fine. 16XS shows previous setup values when you connect the large input clips to power source.

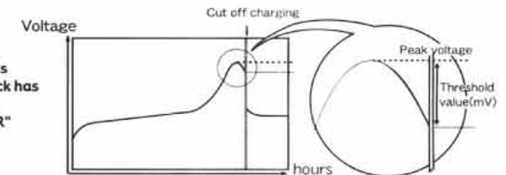
The RED Positive (+) large input clips to the POS (+) terminal of the power source, BLACK Negative (-) large input clips to the NEG (-) terminal of the power source



2. Connect the small alligator output clips to your NI-CD or NI-MH pack. The RED positive (+) alligator output clip to the positive (+) side of the battery pack, BLACK negative (-) alligator output clip to the negative (-) side of the battery pack. A poor connection can cause the charger to FALSE PEAK and turn off before the charge is completed.
3. Change to the SETUP MODE when you press the back button. Follows 4.-13.selection control by DEC and INC button.
4. Select the battery type, change to next screen when press "ENTER".
5. Select the number of cells, change to next screen by pressing "ENTER".
6. Select the proper battery capacity, change to next screen by pressing "ENTER".
7. Select the desire charge current, change to next screen by pressing "ENTER". Please see the RATE-SELECTABLE CHART.
8. Select the desire discharge current, change to next screen by pressing "ENTER". Please see the RATE-SELECTABLE CHART.
9. Select the desire value of volt threshold, change to next screen by pressing "ENTER".

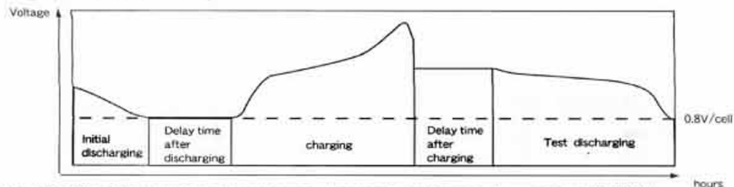
VOLT THRESHOLD SETTING

The volt threshold value entered is the drop in millivolts that the 16XS looks for to 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 "ENTER" button from the Volt threshold screen. Please see the RATE-SELECTABLE CHART.



- CAUTION:**
1. If you set up high volt threshold value that the rate is more than standard threshold value, The 16XS gives longer charge to 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 16XS will not works correctly.

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



11. Select the delay time for after charge, change to next screen by pressing "ENTER".

12. Select the delay time for after discharge, change to next screen by pressing "ENTER".

13. Select the operating mode, choose the mode which you want to run.

THEN PRESS THE ENTER BUTTON TO START >>

RATE-SELECTABLE CHART

	KIND OF BATTERY	Standard threshold value	Maximum threshold	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-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 RC3000H	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
	POWERS GT3000R	4mV	(6mV)	less than 5.0A	5.0A~20A

ERROR MESSAGECheck the ERROR MESSAGE CHART which error you have .

SPECIAL NOTES

SELECTION MENUS CHART

