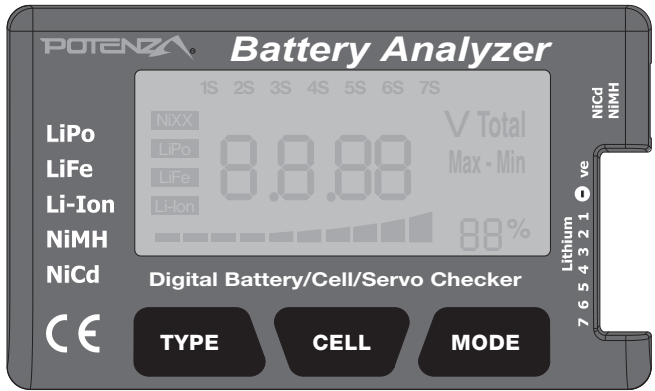




Digital Battery Analyzer

FPZA1010 | User Guide



SPECIAL LANGUAGE DEFINITIONS

The following terms are used throughout the product literature to indicate various levels of potential harm when operating this product:

- NOTICE:** Procedures, which if not properly followed, create a possibility of physical property damage AND a little or no possibility of injury.
- CAUTION:** Procedures, which if not properly followed, create the probability of physical property damage AND a possibility of serious injury.
- WARNING:** Procedures, which if not properly followed, create the probability of property damage, collateral damage, and serious injury OR create a high probability of serious

ATTENTION

Read the ENTIRE instruction manual to become familiar with the features of the product before operating. Failure to assemble or operate the product correctly can result in damage to the product, personal property, and cause serious or fatal injury.

All instructions, warranties and other collateral documents are subject to change at the sole discretion of Flex Innovations, Inc. For up-to-date product literature, please visit our website at www.flexinnovations.com and click on the support tab for this product.

WARNING

This product is not intended for use by children under 14 years without direct adult supervision.

WARNING

Appropriate battery chemistry MUST be selected. A difference in chemistry will result in erroneous readings and could cause a crash.

Thank you for purchasing your Potenza Digital Battery Analyzer. Its powerful 5-in-1 functionality, compact size, and ease of use will make it a staple for every flight box and a must-have for any serious electric enthusiast.

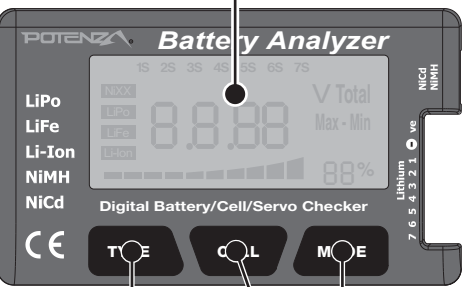
FEATURES

- Displays battery capacity (0-99%)
- Displays cell voltage of lithium chemistry batteries
- Balances lithium cells
- Servo/electronic speed control PP output tester

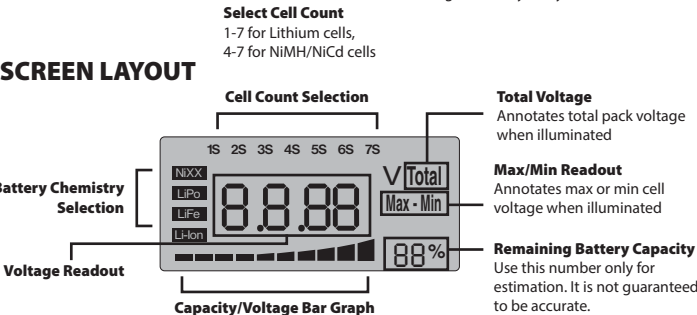
CELL VOLTAGE DISPLAY FEATURES

	Battery Type	LiPo	LiFe	Li-on	NiMH	NiCd
Cell Count		2-7	2-7	2-7	4-7	4-7
Total Voltage		✓	✓	✓	✓	✓
Total Cell/Battery Capacity		✓	✓	✓	X	X
Individual Cell Voltage		✓	✓	✓	X	X
Lowest Cell Voltage		✓	✓	✓	X	X
Highest Cell Voltage		✓	✓	✓	X	X
High/Low Cell Voltage Difference		✓	✓	✓	X	X
Balance Cells		✓	✓	✓	X	X
Measure Internal Resistance		✓	✓	✓	X	X

UNIT LAYOUT



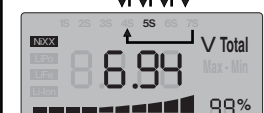
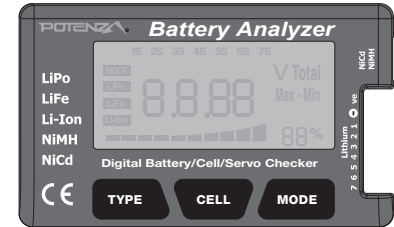
SCREEN LAYOUT



HOME SCREEN FUNCTIONS

The following functions are accessed directly from the home screen.

VOLTAGE CHECKING (NICD/NIMH)

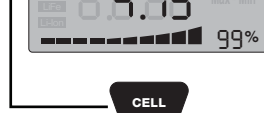


- Insert the battery connector into the unit. A two or three-wire lead may be used.
- Select NiXX battery type by pressing the TYPE button.
- Once the NiXX chemistry is chosen, select the appropriate cell count by pressing the "CELL" button. The range for NiCd and NiMH packs is 4-7 cells. Receiver and transmitter packs (with the appropriate adapter) can be checked with this analyzer.

NOTICE

Remaining capacity readout for NiCd and NiMH is based on voltage at no load. There will likely be a large difference between the loaded capacity and the no-load capacity displayed, therefore it should be used as a reference only.

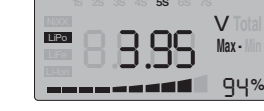
CELL VOLTAGE AND CAPACITY CHECKING (LITHIUM CHEMISTRIES)



- Connect the battery to the unit using the 8-pin JST-XH connector.
- Once the battery is connected, select the appropriate battery type by pressing the TYPE button.
- The voltage and capacity of the indicated cell will be displayed. Use the CELL button to view individual cell voltages and capacity in sequence.

NOTE: It is possible to also check 1S LiXX Pack/Cell voltages and capacities by using the 3-Pin Universal Connector (+/-) and selecting the proper LiXX chemistry.

FURTHER PACK DETAILS (LITHIUM CHEMISTRIES ONLY)

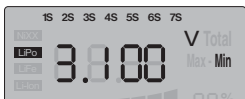


- From the Cell Voltage and Capacity Checking (Home) Screen press MODE to display the Pack Voltage screen.
- Press MODE again to view the High Cell Voltage screen. The high cell's voltage and corresponding cell number will be displayed, and the word MAX will illuminate to indicate that this is the highest voltage cell in the pack.
- Press MODE again to view the Low Cell Voltage screen. The cell's voltage and corresponding cell number will be displayed, and the word "MIN" will illuminate to indicate that this is the lowest voltage cell in the pack.
- Press MODE again to enter the high/low Differential Voltage screen. This screen will display the total voltage differential (imbalance) between the highest and lowest cell.
- Pressing MODE again will return back to the pack voltage screen.

Pressing CELL at any point in this loop will return to the individual cell voltage screen (Home Screen).

SETTING ALARM VOLTAGES (LITHIUM CHEMISTRIES ONLY)

This meter features an alarm voltage function that will give an audible warning when the voltage for any given cell in a pack is below the user-set limit OR if there is a max-min cell voltage imbalance greater than the pre-set limit.



- With the a lithium battery connected, depress the MODE button for a minimum of two seconds to enter the MIN cell voltage alarm screen.

Use the TYPE and CELL buttons to increase or decrease the cell voltage in 0.010v increments.
- Press the MODE button again to advance to the Vmax-Vmin (cell imbalance) alarm screen.

Use the TYPE and CELL buttons to increase or decrease the cell voltage in 0.010v increments.
- Press the MODE button again to advance to the alarm on/off screen. Use the TYPE and CELL buttons to select alarm on or off.

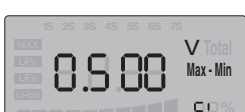
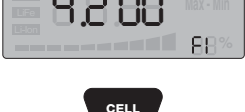
When the alarm settings are complete, press and hold the MODE button for more than 2 seconds to save your settings and exit to the HOME SCREEN.

ADVANCED MENU FUNCTIONS

Following functions are accessed from the Advanced Menu. To access the Advanced Menu, press and hold the CELL key for more than 2 seconds.

To Exit the Advanced Menu, press the CELL key for more than 2 seconds.

BATTERY BALANCING (LITHIUM CHEMISTRIES ONLY)



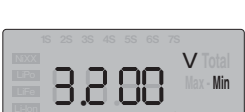
- From the Advanced Menu, use the MODE key to cycle to the Balance Cells (BAL).

The Balance item is noted by "F1" in the lower right corner
- Press the CELL button to go to the balance screen and start the balancing process. The device will automatically cycle between the pack and individual cell voltages and the bar at the bottom will display an animated 'balance' graphic.
- To adjust the imbalance (Vmax-Vmin) voltage, press the MODE button for more than two seconds. Use the TYPE and CELL buttons to decrease and increase the value. (The range is from 0.005v to 0.50V)

Press the MODE button for more than two seconds to return to the Balance Screen.

When the pack is balanced, the device will return to the Home Screen. To manually stop balancing and return to the Advanced Menu, press CELL button.

BATTERY DISCHARGING (LITHIUM CHEMISTRIES ONLY)



- From the Advanced Menu, use the MODE key to cycle to Battery Discharge (DIS).

The Discharge Item is denoted by "F2" in the lower right corner.
- Press the CELL button and the device will display the Discharge Screen, begin discharging, and automatically sequence through the pack's cells and show their voltages.
- To adjust the ending voltage during discharge:

A. From the Discharge Screen, press the MODE button for more than 2 seconds.
B. Use the TYPE and CELL buttons to adjust the ending voltage.
C. To return to the Discharge Screen, press the MODE button for more than two seconds.

To manually exit the Discharging Screen and return to the Advanced Menu, press the CELL button.

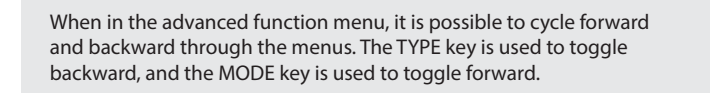
CELL RESISTANCE CHECKING (LITHIUM CHEMISTRIES ONLY)



- From the Advanced Menu, use the MODE key to cycle to Internal Resistance (Ir).

The Internal Resistance menu is denoted by "F3" in the lower right corner.
- Press the CELL button and the device will display the Internal Resistance screen and automatically sequence through the pack's cells and show their Internal Resistance values. A screen readout of 002o denotes 0.002ohm resistance.
- To exit Internal Resistance and return to the Advanced Menu, press the CELL button.

Connect the SERVO and an appropriate voltage BATTERY to the NiCD/NiMH port using a standard servo Y-harness. The connector orientation is shown in the NiCD/NiMH voltage checking section.



1. From the Advanced Menu use the MODE button to select the PP Item. Press the CELL button to display the PWM (Positive Pulse) Screen.

This menu is denoted by "F4" in the lower right corner.
2. Use the TYPE and MODE keys to increase or decrease the output values. Tapping the buttons will cause fine steps. Pressing and holding the buttons will cause faster sweeping.

This menu is denoted by "F4" in the lower right corner.

The output range is 900-2100ms.

Press the CELL key to exit to the advanced menu.

Warranty Coverage

Flex Innovations, Inc. and its authorized resellers ("Flex") warrant to the original purchaser that the product purchased (the "Product") it will be free from defects in materials and workmanship at the date of purchase.

This warranty is not transferable and does not cover:

- (a) Products with more than 45 days after purchased date.
- (b) Damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or due to improper use, installation, operation or maintenance
- (c) Modification of or to any part of the Product.
- (d) Product not compliant with applicable technical regulations.
- (e) Shipping damage.
- (f) Cosmetic damage

OTHER THAN THE EXPRESS WARRANTY ABOVE, FLEX MAKES NO OTHER WARRANTY OR REPRESENTATION, AND HEREBY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF NONINFRINGEMENT, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL SUITABLY MEET THE REQUIREMENTS OF THE PURCHASER'S INTENDED USE.

Flex's sole obligation and purchaser's sole and exclusive remedy shall be that Flex will, at its option, either (i) service, or (ii) replace, any Product determined by Flex to be defective. Flex reserves the right to inspect any and all Product(s) involved in a warranty claim. Service or replacement decisions are at the sole discretion of Flex. Proof of purchase is required for all warranty claims. **SERVICE OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE PURCHASER'S SOLE AND EXCLUSIVE REMEDY.**

FLEX SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY, REGARDLESS OF WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR ANY OTHER THEORY OF LIABILITY, EVEN IF FLEX HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Further, in no event shall the liability of Flex exceed the individual price of the Product on which liability is asserted. As Flex has no control over use, setup, assembly, modification or misuse, no liability shall be assumed nor accepted for any resulting damage or injury. By the act of use, setup or assembly, the user accepts all resulting liability. If you as the purchaser or user are not prepared to accept the liability associated with the use of the Product, purchaser is advised to return the Product immediately in new and unused condition to the place of purchase.

These terms are governed by Florida law (without regard to conflict of law principals). This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. **FLEX RESERVES THE RIGHT TO MODIFY THIS WARRANTY AT ANY TIME WITHOUT PRIOR NOTICE.**

Visit <http://www.flexinnovations.com/index.php/reseller-sub> for customer support in your region.

If this Product needs to be inspected or serviced and is compliant in the region you live and use the Product in, please contact your regional Flex authorized reseller. Pack the Product securely using a shipping carton. Please note that original boxes needs to be included, but are not designed to withstand the rigors of shipping without additional protection. Ship via a carrier that provides tracking and insurance for lost or damaged parcels, as Flex is not responsible for merchandise until it arrives and is accepted at our facility.

For Warranty consideration, you must include your original sales receipt verifying the proof of purchase date. Provided warranty conditions have been met, your Product will be replaced free of charge. Shipping charges are as follow: to Flex by customer, Flex out it is by Flex. Service or replacement decisions are at the sole discretion of Flex.

Declaration of Conformity (In accordance with ISO/IEC 17050-1)

Product(s): Digital Battery Analyzer
Item Number(s): FPZA1010

The object of declaration described above is in conformity with the requirements of the specifications listed below, following the provisions of the EMC Directive 2004/108/EC.

EN 61326-1:2006



Instructions for disposal of WEEE by users in the European Union

This product must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of their waste equipment by handing it over to a designated collections point for the recycling of waste and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where to drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or where you purchased the product.



© 2014 Flex Innovations, Inc.
Premier Aircraft™, Potenza™, and Top Value RC™ are trademarks
or registered trademarks of Flex Innovations, Inc.

Created 12/2014

[illegible]