

8S BATTERY CAPACITY METER

BATTERY VOLTAGE CAPACITY CHECKER BALANCE DISCHARGER / SERVO TESTER

1. BATTERY METER INSTRUCTIONS

The 8S Battery Capacity Meter is a meter device which detects the status of your batteries. This device is compatible with the following battery types: Li-Ion, LiPo, LiFe, LiHV, NiCd and NiMH.

This device supports 2-8S Lithium batteries (LiPo, LiFe, Li-Ion and LiHV) without the need of an extra power supply. To test a 1S Lithium battery the capacity meter would need to have either a nickel battery of 3S or greater connected or a UBEC 5V connected to the NiCd/NiMH port in order for the device to power on.

This device supports 4-8S Nickel batteries (NiCd and NiMH) without the need of an extra power supply. To test a Nickel battery less than 4S the capacity meter would need to have a 2-8S Lithium battery connected in order for the device to power on.

2. BATTERY CONNECTION

Standard Lithium batteries can be plugged directly into the capacity meter using the balance plug, please ensure that this is connected with the negative wire in pin 1 (pin 1 being the closest to the NiCd/NiMH port).

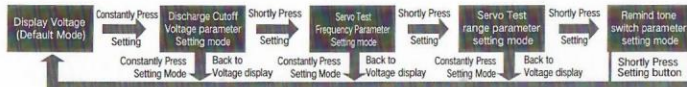
Standard Nickel batteries can be plugged directly into the capacity meter. Please ensure that the negative wire is align with the - symbol (closest to the top of the device).



Lithium battery and Nickel Battery Connection Diagram

2. PARAMETER SETTING

When you have connected either a Nickel or Lithium battery to the capacity meter the LCD screen will display. Press and hold the type (set) button. This will allow the user to enter the parameter setting mode. To go through the parameters press the type button. To alter any of the parameters use the cell button to decrease the value and the mode button to increase it. To exit the parameter settings press and hold the type button.



Voltage Display Mode



Discharge Cut-off Voltage Setting Mode
Discharge cut-off voltage setting range: 2.000-4.200V



Servo test Frequency Setting Mode
Servo Test Frequency Setting: 50Hz, 60Hz, 100Hz, 125Hz, 200Hz, 250Hz, 300Hz



Servo Test Range Setting
Servo Test Signal Range setting: 500-2500us



Remind Tone Switch Setting
Sound switch setting: on, off

4. LITHIUM BATTERY DETECT MODE

Connect the balance plug of the Lithium Battery (LiPo, LiFe, and LiHV). Once this is connected the LCD screen will display the lithium battery cells, the total battery voltage, the battery type, the percentage and a bar chart indicating the batteries remaining capacity. Please ensure that the correct chemistry of battery is selected to receive accurate information - press the type button to change between the lithium battery options.

When using a lithium battery the LCD screen will display the batteries total voltage. For the capacity meter to display the individual cell voltages of the battery simply press the cell button. This will take you through each cell one by one displaying each voltage.

When using a lithium battery the LCD screen will display the batteries total voltage. By pressing the mode button the LCD screen will display the voltage of the highest cell within the battery pack. By pressing the mode button again it will display the voltage of the lowest cell within the pack. If you press the mode button again the screen will display the voltage difference between these two cells (highest take the lowest).

5. NICKEL BATTERY DETECT MODE

Connect the plug of the Nickel Battery (NiCd and NiMH). Once this is connected the LCD screen will display the total voltage of the battery.

(Please note that individual cell voltage readings are not possible with Nickel batteries)

6. LITHIUM BALANCE DISCHARGE MODE

Connect the balance plug of the Lithium Battery (LiPo, LiFe, and LiHV). Once this is connected the LCD screen is displayed. By pressing and holding down the mode button the capacity meter will begin the balance discharge of the battery.

If any of the cells within the lithium battery are below the setting discharge voltage cut off then the capacity meter will not be able to carry out this task. You will instead hear a Beep tone as an error message to alert the user that the cut off voltage parameter is set incorrectly.

Once the balance discharge is completed the Beep tone sounds constantly to alert the user that the task is complete. Once complete please unplug the lithium battery. (If the battery is not unplugged once the task is complete then the capacity meter will continue to drain power from cells 1 and 2 causing the voltages of these cells to drop more and again become unbalanced.)

The Capacity Meter goes into balance mode when you press the Mode (Discharge) button once in the balance discharge mode. In balance mode the capacity meter uses the voltage of the lowest cell as the standard voltage value. The unit then discharges the other cells within the battery that are higher to the same value. The balance discharge is complete once all the cells are at the same value as the standard voltage value. Once the balance discharge is completed the Beep tone sounds constantly to alert the user that the task is complete. Once complete please unplug the lithium battery. (If the battery is not unplugged once the task is complete then the capacity meter will continue to drain.)

7. SERVO AND ESC TEST MODE

Servo Test: The Capacity Meter needs to be powered up by a minimum of 5V NiMH/NiCd battery or a UBEC 5V system. The screen displays once the power is connected. If a Nickel battery is being used for power then you would need to confirm that the voltage displayed on the screen and the working voltage of the servo is matched. If the voltage does not match then the power supply needs to be changed so that it is the same as the power supply for servo. If you fail to match the voltages the servo may over heat. Once you have confirmed the voltages match you can connect the servo into the top left of the capacity meter (PPM OUT) please ensure it is connected with the correct polarity and direction.

Once everything is connected, by pressing the CELL (servo) button, the Capacity meter will go into servo test mode. Once in this mode the PPM can be adjusted via the dial to change the Duty Ratio. The range of the dial is 500-2500Us or 1000-2000Us, this would be dependent on the settings of the servo test range.

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In the Manual Signal Test Mode, the capacity meter goes into Auto mode by shortly pressing the CELL (servo) or Mode (discharge) button. The Duty Ratio of the PPM (Pulse Phase Modulation) signal will automatically change from small to large and large to small. The speed in which the Duty Ratio changes the PPM signal can be altered by the user by manually adjusting the PPM on the dial to automatically test and aging of the servo tester.

In Automatic Signal Test Mode, the capacity meter goes into midpoint signal test mode by shortly pressing the CELL (servo) or MODE (discharge) button. The Duty Ratio or the PPM signal is constant at 1500uS.

ESC Test: Connect the ESC via the top left of the Capacity Meter (PPM OUT) please ensure it is connected with the correct polarity and direction. Please note that the capacity meter does not need a separate power source for this, it uses the 5V power supply of the BEC from the ESC. Once this is connected by constantly pressing the CELL (servo) button you will enter PPM signal output mode. The Duty Ratio adjustment of the PPM output is the same as when in Servo Test mode.



Total voltage and capacity of Lithium Battery



Lowest cell voltage of Lithium Battery



Highest cell voltage of Lithium battery



Difference between high and low cell voltage of Lithium battery



Total voltage and capacity of Ni-xx battery



Discharge Mode of Lithium battery



Balance Mode of Lithium battery



Servo Test Mode



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