

Battery Quick Reference Guide

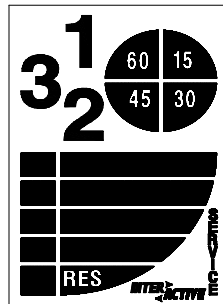


Customer Support Group

Digital Battery Real Time Display

The large numbers **1, 2** or **3** indicate remaining hours under current load. Only one number will display at any time.

When the 5 blocks on the left side of the Real Time display blink, the battery is requesting an AUTOCAL to update the battery's Learned Capacity.



The pie chart numbers (**15, 30, 45, 60**) indicates remaining minutes under current load. The highest number displayed is the number of minutes remaining.

Top Bar: Indicates 75% - 96% remaining

2nd Bar: Indicates 50% - 75% remaining

3rd BAR: Indicates 25% - 50% remaining

4th BAR: Indicates 7% - 25% remaining

'RES' BAR: Indicates 0% - 6% - Will flash until EOD (End Of Discharge)

"INTERACTIVE": Indicates 96% - 100% Appears when battery is 100% charged.

"SERVICE": - Return to Anton/Bauer Service Department for evaluation.

The **Real Time Display** shows the operational time remaining and is based on the current draw of the equipment against the battery's learned capacity. When the battery is off the charger, the time indicated is based on a simulated 20 - watt load. When the battery is put on a camera or the load changes, the Real Time will adjust immediately, but if a lower load is used the Real Time display adjusts every 8 seconds until the new load is calculated. The battery will learn this new load and retain the information in non-volatile memory. If the battery is removed from the camera it will retain this information for 30 minutes or until it is returned to the charger or sees a new load. After 30 minutes the battery will return to the default load of 20 watts. The maximum run time that the battery can display is 4 hours (3 + 60 min.), so depending on the battery, battery capacity and load, the battery may have longer run time than the Real Time display indicates. For example - Dionic 160 has 160 watt/hrs of power, and with a 20-watt load the battery can run for approximately 8 hours (160 w/h / 20 watts = 8 hrs) but will only indicate 4 hours until the remaining power drops below 80 w/h.

Learned Capacity - The learned capacity of a battery is the average of the last 5 complete discharge cycles. The learned capacity is what the Real Time fuel gauge is based on. As a battery ages it will have less capacity. By calibrating the battery, this will help maintain the accuracy of the Real Time fuel gauge.

AUTOCAL - Is requested by the battery because either it has not seen a complete charge/discharge cycle in 200 days/cycles or because the display skipped a bar or time (i.e. a heavy load surge at low voltage). An AUTOCAL (calibration) is needed to maintain fuel gauge accuracy. This is an automatic process with PowerChargers and should be allowed to complete if requested. The AUTOCAL can take up to 12 hrs and is the same as a Standard test. To calibrate a battery without a PowerCharger with DDM - charge the battery fully (solid green on the charger & InterActive is lit) then discharge the battery until only the blinking "15" pie segment is lit and flashes for a minimum of 5 seconds.

Guidelines for Optimum Performance and Maximum Life

Keep batteries cool or at room temperatures whenever possible. Sustained elevated temperatures are the primary reason for premature battery failure.

Charge batteries at room temperature. In warm climates - keep chargers in air-conditioned rooms that are maintained between 65 degrees F to 85 degrees F for best performance.

Do not leave batteries in a hot vehicle trunk or exposed to direct sunlight unnecessarily.

If batteries are not going to be used for several (6+) months, they should be fully discharged, sealed in a plastic bag and stored in a refrigerator or freezer. (NiCd and NiMH batteries only). Allow batteries to remain in plastic bag and return to room

temperature attempting to recharge. Dionic batteries should be charged to 50%, removed from the charger and stored at room temperature. Return the Dionic to the charger and recharge to 50% once a month if possible. Do not allow the battery to self discharge below 12V. If you are unable to maintain the battery at 50%, then leave it on the charger fully charged until needed.

Use only Anton/Bauer InterActive chargers and keep batteries on the charger and plugged in until just prior to being used. Please return batteries back to the charger as soon as possible after use, preferably within 24 hours.

Do not over-discharge batteries. It is ok to discharge a battery until a low voltage warning in the camera is observed. However, a switch to a fresh battery should occur as soon as possible following such indication.

Discharging the battery for diagnostic purposes should only be performed on an occasional basis (once every 6-8 weeks at most). Unnecessary discharging only detracts from overall life.

All Lithium Ion batteries have a finite life. If the battery exhibits noticeably shortened run time the battery should be replaced immediately. Shortened runtime is indicative that at least one cell has reached the end of life. Under NO circumstances should you attempt to "recondition" the battery by repeated charging and discharging. Dionic batteries contain specialized electronic circuits which are designed to protect the Lithium-Ion cells from overcharge, over-discharge and overcurrent. Redundant protection devices are designed to operate if the battery voltage is abnormally high or low, and if the temperature of the battery exceeds operating specifications. These electronic devices can be damaged if the battery is subjected to abuse or damage. **DO NOT** use a battery that has been subjected to excessive shock or water damage.

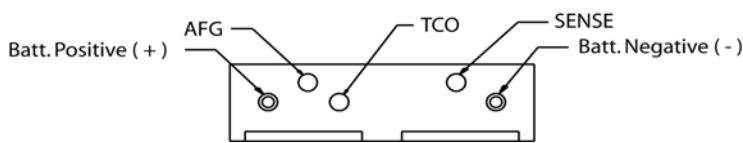
Troubleshooting and Maintenance

Blank Display - If the display is blank - the battery is in Sleep Mode. All Anton/Bauer batteries will enter Sleep Mode at 10 volts. This will not occur while on your camera as the camera will shut down prior to reaching 10 volts. Sleep mode can also be caused by the battery sitting off the charger for a long period of time. Depending on the remaining battery voltage, it may require you to leave the battery on the charger for several hours. The charger's LEDs will alternate Red and Green (and display REJUVE on PowerChargers) as the charger will try to bump up the battery voltage very slowly to awaken the battery. You may try the following with Dionic batteries: Place the battery on the charger for 2 minutes, remove it for ten seconds and then replace the battery back on the charger for another 2 minutes. Repeat this up to twelve times then leave the battery on the charger for 2 hours. If the Dionic does not start to charge (blinking red LED on InterActive Chargers), then send the battery to an Anton/Bauer Service Center for evaluation.

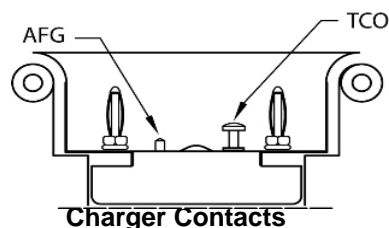
Lock Up - A Lock Up is when both the single top bar and the InterActive icon flashes simultaneously on the Real Time display. This means that either: the battery was not recognized by the charger, the battery did not communicate with the charger or that the battery was put on a charger that was not capable of charging the battery. This causes the protection circuit of the battery to open to protect the cells from damage. Reset the battery (see below) and place the battery on a communicating or capable charger. Partial connections can also cause lock ups so make sure that the battery is secured or firmly mounted on the charger.

Reset - There is a reset button located above the display under the hole in the case. This button should only be used if the battery display is not functioning or if there is a battery lock up. Using a paper clip or similar device, push and hold the button for 2 seconds to reset the battery. While holding the button you may see all the segments display. This is normal.

"HOLD" - Should the InterActive charger indicate "HOLD TEMP" or a steady red LED and the battery does not feel hot, then it could mean that either the battery or charger contacts are dirty. Clean the battery TCO pin (illustrated below) by lightly scraping the center of the pin with a blunt instrument, You may also clean the charger TCO pin on the Gold Mount bracket (illustrated below) with a pencil eraser. Periodic cleaning will ensure continued reliable operation.



Battery Contacts



Charger Contacts

Flashing LCD - If the entire LCD flashes during use, this indicates that the battery is being subjected to a high current load. While the battery will continue to operate normally, frequent high current loads will contribute to shortened battery longevity.