



***Frequently Asked Questions: Why does my Bluetooth APP show a high State of Charge percentage, yet my battery is actually at a much lower state of charge or nearly empty?***



-In the example above, the State of Charge is showing 70% full, yet the battery has reached the Reserve Range or 10% or less remaining.

-The SoC is a 'metered reading' from an electronic Hall Effect Shunt and is a count-down meter that is most accurate on its first cycle after calibration\* but becomes less accurate over time. It simply counts amps-in and amps-out but some losses will occur. Being a metered value, it does not actually measure state of charge "real time" but instead "calculates" or estimates state of charge.

-Explanation: \*every two weeks, a full charge cycle in which the battery reaches 14.4 volts is required to trigger a recalibration of the internal Hall Effect Sensor shunt. When the battery exceeds 14.2 volts during charging, the SoC re-sets to 100%. (In order to fully charge a lithium ion battery, the DC loads may need to be reduced so the charge current exceeds the discharge current to allow a full battery charge.)

-Why does the meter "drift" and lose accuracy over time? When a consumer is micro-cycling a battery via a series of multiple discharge cycles and has partial charge cycles from solar or alternator charging, the SoC meter loses accuracy, called "sensor drift" over a two week time period. This is also called 'short charging' as the battery never fills and the SoC meter does not reach recalibration voltages of 14.2(12 Volt Battery, 28.4 (24V), 53.25 (48.0) or 56.8 (51V) batteries respectively.