**Input Fields & Their Meaning**

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| |  |  |  | | --- | --- | --- | | Field | How to Fill | Explanation | | Cycle Index | Enter the number of charge/discharge cycles completed (e.g., 150) | Lead-acid batteries typically have a **lifespan of 300-500 cycles**. Higher values indicate aging. | | Discharge Time (sec) | Time taken for battery discharge (e.g., 7200 sec = 2 hours) | Measures how long the battery holds charge under load. A shorter discharge time indicates degradation. | | Decrement 3.6–3.4V Time (sec) | Time taken for voltage to drop from **3.6V to 3.4V** during discharge (e.g., 500 sec) | Faster drops suggest internal resistance increase, leading to aging. | | Voltage Discharge (V) | Voltage measured at the end of discharge (e.g., 10.5V) | A healthy lead-acid battery shouldn’t drop below **10.5V** when fully discharged. | | Current (A) | Discharge current in Amperes (e.g., 5A) | Helps determine the battery’s real-time power consumption. | | Time at 4.15V (sec) | Time the battery holds at **4.15V** before transitioning to float charging (e.g., 300 sec) | Indicates charging efficiency; shorter time may indicate sulfation or aging. | | Time Constant Current (sec) | Time spent in **constant current** phase before switching to **constant voltage** mode (e.g., 1800 sec = 30 mins) | Determines how long the battery stays in bulk charging mode before switching to absorption. | |



