



SolarTech Power Solutions

Communication base station lead-acid battery parameters



Overview

This guide breaks down rated voltage, max charge/discharge currents, depth of discharge (DOD), cycle life, and power calculations to help you optimize battery lifespan and system design. 1. Rated Voltage Battery voltage is higher under no-load conditions and decreases under load. How do I choose a lead-acid battery?

Understanding core technical parameters is critical when selecting lead-acid batteries (especially gel or lead-carbon types). This guide breaks down rated voltage, max charge/discharge currents, depth of discharge (DOD), cycle life, and power calculations to help you optimize battery lifespan and system design. 1. Rated Voltage.

What is the capacity of a lead-acid battery?

Ordinary lead-acid (0.1C): Min. capacity = 1000Ah Lead-carbon (0.25C): Min. capacity = 400Ah Discharging Current (Load-dependent): *10kW load + 48V battery* → Max discharge current = 200A Lead-carbon battery($30I_{10}$): Min. capacity = >80Ah Gel battery ($3I_{10}$): Min. capacity = 800Ah 3. Depth of Discharge (DOD) & Cycle Life: Shallow Cycle: 10-30% DOD.

Are lead-carbon batteries better than gel batteries?

Lead-carbon batteries offer superior performance in high-current scenarios (0.25C charging, $30I_{10}$ discharge) and extended cycle life at partial DOD. For systems with space/weight constraints or dynamic loads, they provide a 40-60% capacity reduction advantage over gel batteries. Always match DOD to your cycle life requirements to maximize ROI.

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