

Battery Bank Series Parallel Calculator

Models nominal battery-bank voltage, amp-hour capacity, and stored energy from identical batteries arranged in series and parallel.

Generated October 10, 2026

<https://www.elecatrix.com/solar-backup-power/battery-bank-series-parallel-calculator/>

Inputs

Input	Value	Unit
Individual battery voltage	12	V
Individual battery capacity	100	Ah
Batteries in series	4	batteries
Parallel strings	2	strings

Results

Result	Value	Unit
Nominal bank voltage	48	V
Nominal bank capacity	200	Ah
Nominal bank energy	9600	Wh
Nominal bank energy	9.6	kWh

Calculation details

Detail	Value	Unit
Calculation basis	Series connections add voltage. Parallel strings add amp-hour capacity. Nominal energy is system voltage multiplied by bank capacity.	
Selection boundary	Topology arithmetic only; verify identical batteries, chemistry, BMS limits, maximum series and parallel counts, balancing, protection, wiring, and manufacturer requirements.	

Formulas

$$V_{\text{bank}} = V_{\text{battery}} \times N_{\text{series}}$$

$$C_{\text{bank}} = C_{\text{battery}} \times N_{\text{parallel}}$$

$$E_{\text{nominal}} = V_{\text{bank}} \times C_{\text{bank}}$$

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Warnings and limitations

Use identical, manufacturer-compatible batteries only after checking chemistry, BMS, maximum series/parallel limits, protection, balancing, busbars, and installation requirements.