

Capacitance of battery cabinet





Overview

What is an equivalent capacitance to a battery?

This logically suggests that when you talk about an "equivalent capacitance" to a battery that you mean a capacitor that stores or can deliver the same energy as the example battery. In theoretical terms your calculation is correct for an idealised battery (constant voltage throughout discharge, defined mAh capacity) and an idealised capacitor.

How do you determine the capacitance of a battery?

So to establish the required capacitance for a given battery use. In this case, discharge to 0.54V would increase capacitance needed only by about 5%. For an endpoint voltage of 1V you have remaining energy of $1V^2 / 2.7V^2 \approx 14\%$ energy remaining.

Is the energy content of a capacitor correct?

Your formula for energy content of a capacitor is correct. Whether the energy is all usable is another matter. Your battery energy formula is correct for an idealised battery. What you have calculated is not an equivalent capacitance but, instead, the capacitance required to store 9kJ of energy at 2.7V.

Is there a capacitor equivalent to a battery?

That fact that the battery may also store that much energy does not mean that there is a capacitor equivalent to a battery. While an ideal battery maintains the voltage across its terminals until the stored energy is exhausted, the voltage across an ideal capacitor will gradually approach zero as the stored energy is depleted.



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Keywords naturally included: energy storage cabinet, battery cabinet, energy storage system, lithium battery cabinet. 7) Conclusion - Choosing the Right Cabinet Is Mission-Critical The ...

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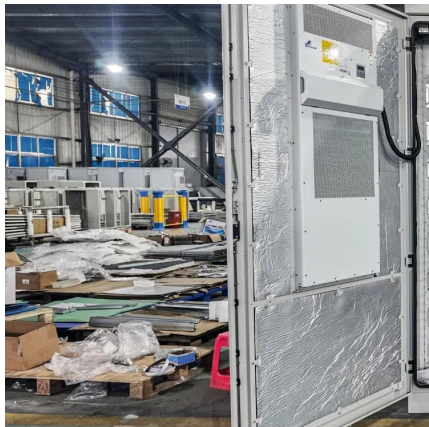
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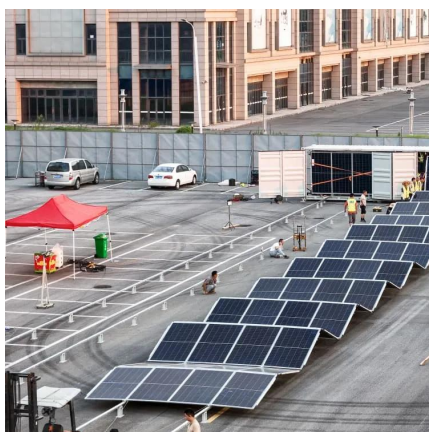
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