

5000W inverter and 400A battery





Overview

How do I power a 5000W inverter?

To power a 5000W inverter, you have to consider more than just the number of batteries. The battery capacity, the inverter voltage input and how long you need to use the inverter are important. Large inverters are used as emergency power backup, so determine how many hours the system will run.

How many lithium-ion batteries to run a 5000 watt power inverter?

Let's find out how many lithium-ion batteries you may need to run a 5000-watt power inverter. For this example, let's take 100Ah and 48V lithium batteries. $5000W / 48 V = 104.2 A$ [The current it will draw] $100Ah \times 1C = 100A$ [Charge & Discharge rate of 100Ah li-ion battery] $104.2A / 100A = 1.04 \approx 1$ Battery You can use a 48V 100Ah server rack.

How many 200Ah batteries do you need for a 5000 watt inverter?

We need three 200Ah batteries for a capacity 600Ah because $600Ah \times 0.2C = 120A$, which is higher than 104.2 of inverter current. However, we need a 48V 600Ah lead-acid battery to power a 5000-watt inverter effectively. A possible battery configuration is four 12V 200Ah batteries in series and parallel with two other strings for 4S 3P batteries.

How many hours does a 5000 watt inverter run?

Large inverters are used as emergency power backup, so determine how many hours the system will run. The formula is $\text{hours needed} \times \text{watts} = \text{total watts} / \text{volts} = \text{battery amps}$. A 5000W inverter requires at least one 450-500ah 12V battery or two 210ah 12V batteries to run for 30-45 minutes. A 750ah 12V battery is needed to run the inverter for 1 hour.



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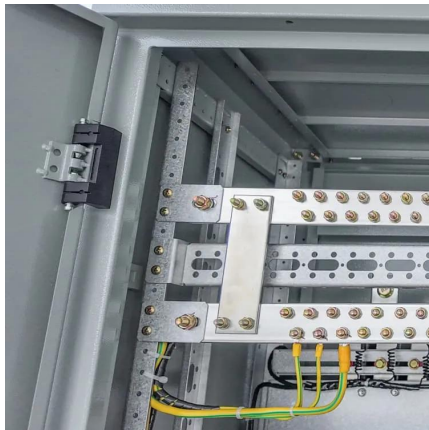
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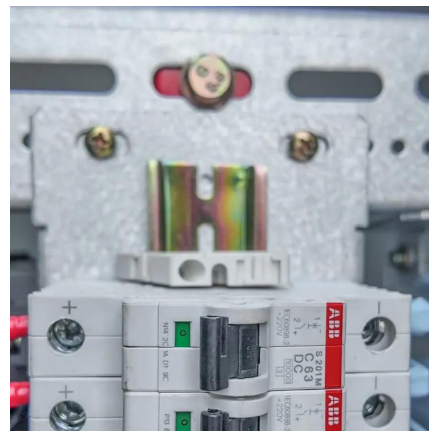


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