SolarMax Energy Systems

Back-to-back voltage source inverter

Overview

What is a back-to-back converter?

A back-to-back converter consists of a line converter and a load converter. Usually, but not necessarily, both the line and load convertersare three-phase voltage-sourceconverters. Under certain assumptions the line converter can be viewed and analysed like a 4- quadrant dc/dc boost converter.

What is a back-to-back inverter?

A back-to-back configuration often involves a grid-tied rectifier, which controls the DC bus voltage to which an inverter is connected. The output of this inverter is then wired to a controlled load, which may be a variable-speed drive, a grid of another frequency, or any other load which couldn’t be connected directly to the original grid.

What is the inverse system model of back-to-back converter?

In reference , the inverse system model of back-to-back converter is established by state feedback internalization. Based on the sliding mode variable structure control theory, a new type of controller that back-to-back converter supply to the passive network is established. However, the above research is not systematic.

Is it possible to build a back-to-back power converter?

This chapter transforms the result into design suggestions and rules of thumb for back-to-back power converters. The conclusion is that it is certainly feasible to build a converter with a very small dc-link capacitor, making the use of plastic capacitors possible (and necessary!).

What are the control objectives of a back-to-back converter?

And according to the actual situation of back-to-back converter supplying power to three-phase asymmetric passive network, this article analyzes the control objectives of the rectifier side and the inverter side of back-to-back

converter, respectively. For the rectifier side converter, the main purpose is to achieve a constant DC voltage.

Is a back-to-back converter symmetrical?

Because VSC can regulate the output of active and reactive power, the back-to-back converter has a good dynamic and static performance. However, not all passive loads are three-phase symmetrical. The existing control strategy may lead to asymmetric output voltage when back-to-back converter is used to supply unbalance load.

Back-to-back voltage source inverter

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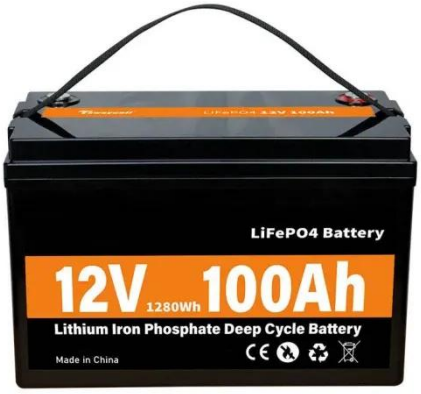

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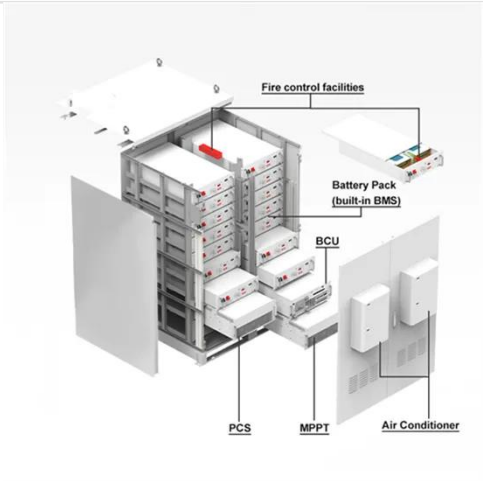

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