

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 converters are three-phase voltage-source converters. 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 [1], the inverse system model of back-to-back converter is established by state feedback linearization. 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



Design and Implementation of a SiC-Based Multifunctional Back-to-Back

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DC Bus Control of Back-to-Back Connected Two-Level PWM ...

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Design and Simulation of Back to Back Converter for

Three phase voltage source PWM rectifier has two loops voltage loop and current loop, voltage loop resist disturbances and current loop provides high power factor [1], Space vector ...

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The back to back converter

A central subject for this thesis is the dc-link in back-to-back voltage- source converters. A back-to-back converter consists of a line converter and a load converter.

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Optimal Control Strategy of Back-to-Back Converter ...

The back-to-back converter is a converter system composed of two voltage source converters (VSC). Because VSC can regulate the output of ...

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Voltage Source Inverter (VSI) - Electricity - Magnetism

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The conventional voltage-source or

current-source BBC, which possesses the important capacity to work as a firewall in terms of power ...

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Modified back-to-back current source converter and its ...

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Back-to-back three-phase converter with grid-tied LCL filter

This application note details a possible control implementation for a back-to-back three-phase converter. In the proposed example, the rectifier is tied to the grid using an LCL ...



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Back to Back Connected Multilevel Converters: A Review

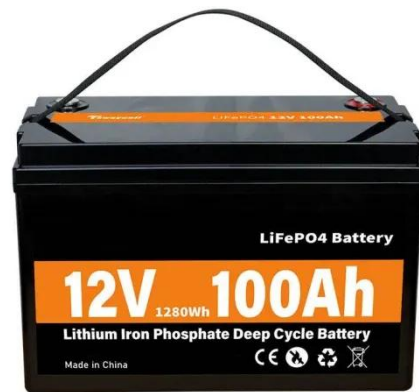
Fig.2 Classification of semiconductor family for high Power Application Large dv/dt , device voltage stress, common mode voltage, high switching frequency etc. are reasons for using multilevel ...

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What is a Voltage Source Inverter? A Comprehensive ...

Implementations These are some uses
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drivers with uninterruptible power supply
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CONTROL OF BACK-TO-BACK VOLTAGE SOURCE ...

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Design and Implementation of a SiC-Based Multifunctional Back ...

In this paper, the role of SS is replaced



by a SiC-based three-phase back-to-back (BTB) inverter system for seamless switching between grid-connected and standalone modes through ...

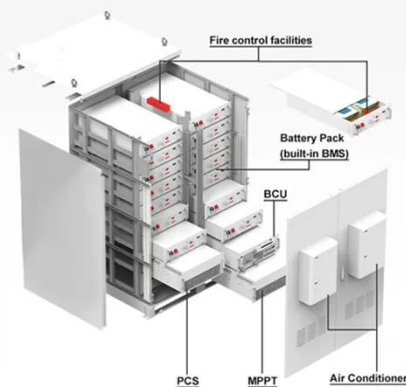
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Optimal Control Strategy of Back-to-Back Converter Based on ...

The back-to-back converter is a converter system composed of two voltage source converters (VSC). Because VSC can regulate the output of active and reactive power, the ...



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...

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Coordinated control of a back-to-back inverter

Control of 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.

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A comprehensive guide to voltage source inverter

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(PDF) Control of back-to-back voltage source converter

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which uses two-level series voltage connection ...

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