Three-phase inverter as buck

Overview

Based on the concept of modular three-phase inverters, a three-phase boost–buck dc/ac inverter (BBI) topology is presented in this paper and validated on a 10 kW prototype based on SiC MOSFETs. Detailed analyses on the operation and semiconductor component. Abstract—Driven by the needs of the continuously growing fuel- cell industry, a promising three-phase inverter topology, the Y- inverter, is proposed, which comprises three identical buck-boost DC/DC converter modules connected to a common star point. The BBI has the advantages of voltage step-up/step-down capability, high-quality/low-harmonic output voltage/current waveforms and high eficiency. Further, high efficiency and high compactness and the applicability of standard half- bridge and/or three-phase full-bridge (B6).

Three-phase inverter as buck

Three-phase two-leg buck-boost DC-AC inverter with differential ...

This paper presents a novel three-phase differential-mode buck-boost inverter based on two bidirectional buck-boost DC/DC converters and one differential power processor (DPP) unit.

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Design and Realization of a Novel Buck-Boost Phase-Modular Three-Phase

This section deals with the basic operating principle of the three-phase inverting buck-boost converter, starting from a DC-DC inverting buck-boost stage and proceeding to the three ...

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Three-phase modular boost buck inverter analysis and

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Three-Phase Buck-Boost Split-Source Inverter With Improved Bus

In this work, a novel variant of the converter buck-boost split source inverter (BSI), is introduced which improves the dc-bus utilization by modifying the conventional circuitry and enables ...

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Novel Bidirectional Single-Stage Isolated Three-Phase Buck ...

Abstract--Future three-phase ac-dc converter systems ideally allow for bidirectional power flow, provide high-frequency isola- tion, and feature buck-boost capability.

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Three-phase modular boost buck inverter analysis and

Based on the concept of modular three-phase inverters, a three-phase boost-buck dc/ac inverter (BBI) topology is presented in this paper and validated on a 10 kW prototype based on SiC MOSFETs.

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Three-phase double-grounded buck-boost PV inverter without shoot

In this paper, we have analyzed in detail the working principle of the proposed three-phase double-grounded buck-boost PV inverter without shoot-through problem and finally build a simulation.

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Three-Phase Buck-Boost Y-Inverter with Wide DC Input Voltage ...

A promising three-phase inverter topology towards highly efficient low voltage inverters for fuel-cell applications is presented within this paper. The Y-inverter is comprised of three buck-boost DC/DC ...

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Analysis and Design of a Modular Three-Phase Boost-Buck EV ...

Executive Summary three-phase inverter topology comprised of three identical Boost-Buck DC/DC converter modules is presented for EV traction inverter application. It allows step-up and/or step ...

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Novel Three-Phase Buck-Boost

Inverter with Reduced Input ...

Abstract- This article proposes a new single-stage three-phase buck-boost inverter and control scheme, which remarkably reduces both the low and high-frequency ripple components in the input current.

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