

Does the inverter increase power by boosting the voltage





Overview

Power, usually a boost system is added to the inverter to widen the voltage at its operating point. Can a triple two-level inverter boost AC voltage?

Currently, many inverters employ inductors to boost the AC voltage. However, this leads to increased current distortion and limits the voltage boosting capability of the inverter. To address the above issue, a triple two-level inverter is proposed in this paper.

How does an inverter generate a multi-level voltage?

The proposed inverter adopts a switched-capacitor boost circuit to boost the AC output voltage and to generate a multi-level voltage. Simultaneously, a three-phase full-bridge circuit is assigned to convert the DC voltage into AC voltage. In addition, a novel space vector modulation strategy is introduced to achieve capacitor voltage self-balance.

Why is a boost converter efficient in stepping up voltage levels?

Efficient regulation ensures that the boost converter can maintain a constant output voltage despite variations or changes in the input voltage which contributes performance and its reliability. Hence this working mode makes the boost converter efficiency in stepping up voltage levels.

Do you need a boost circuit for a DC-link inverter?

In specific industrial situations where the DC-link voltage is low, an additional boost circuit is required to generate an appropriate AC voltage. At present, the Z-source inverter is one of the most common boost circuits [4, 5, 6].



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