

# High-Power Current Source Inverter

What is a current source inverter?

Current-source inverters, in which a large choke in the d.c. input forces an almost constant d.c. input current and hence square wave a.c. output currents, find use in very high power drives, for which the ratings of available 'turn-off' devices, such as bipolar transistors and GTOs, would be inadequate.

What is current source inverter (CSI)?

H.J. Kim In Current Source Inverter (CSI), the input side of the inverter is connected to a DC current source and hence, the polarity of the input current remains the same. The polarity of the input DC voltage, however, determines the direction of average power flow through the inverter.

Are multi-level current source converters a good candidate for high power applications?

Abstract--In medium voltage high power applications, multi-level current source converters (CSCs) are good candidates to increase system power region, reliability, and the quality of output waveforms.

What is the ideal DC current source for a current-source inverter?

Ideally, DC supplies of current-source inverters are constant current sources with infinite Thevenin impedances. However, ideal current sources do not commonly exist in practice. Generally, a controlled rectifier with feedback loop and a DC link with sufficiently large inductance are utilized to produce an approximate ideal DC current source.

Do current source inverters need a conversion stage?

On the contrary, current source inverters (CSIs) have inherent voltage-boost functionality and, therefore, do not require an additional conversion stage for voltage boosting (Table 1). The main advantages of VSIs include high efficiency and compactness with the highly mature power devices and packages, and continuously lowered cost levels.

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The energy performance of various types of voltage-source and current-source converters is examined. For fairness and completeness, efficiency is calculated for three major battleground ...

The current source inverter (CSI) is a power electronics topology that allows for the realization of variable speed drives (VSD). Compared to the most common voltage source inverter (VSI), ...

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