

Ee high frequency inverter power measurement





Overview

This article has introduced key considerations that come into play when measuring the efficiency and loss of inverters and motors while offering actual measurement examples, as well as related topic.

How can a motor drive inverter be used to measure power?

For motor drive inverters, which convert DC power to three-phase power, higher-precision power measurements can be made by securing the necessary measurement bandwidth, applying phase correction, and selecting dedicated accessories that apply to the higher frequency components and noise effects caused by PWM and current sensor errors.

How can a PWM inverter extract the impedance frequency response?

When the inverter is controlled by PWM, it naturally excites all the multiples of its switching frequency up to very high frequencies (i.e., above tens of megahertz), and thus we are able to extract the impedance frequency response of the machine phases using time measurements of voltages and currents. The proposed method consists of several steps.

What is a 3 phase PWM control inverter?

Three-phase PWM control inverters, used in many motor control systems, convert a DC input into a three-phase AC output power to control load motors. The output power has two main components, a fundamental frequency band related to the motor drive rotation frequency, and a carrier frequency band for PWM.

What is a pulse width modulated inverter?

Innovative measuring instruments are needed to be able to test and optimize the drive train of an electric vehicle. They must enable both highly accurate power measurements and calculation of various intermediate values. A pulse width modulated inverter converts a DC voltage into an AC voltage with variable frequency and amplitude.



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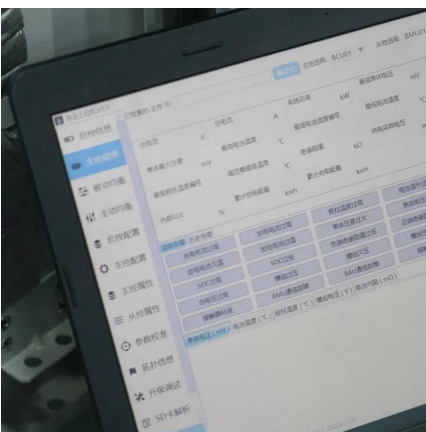


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Power measurements , Pulse Width Modulated Inverter , HBM

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