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33kw inverter loss





Overview

Can a simulation tool accurately estimate the power losses of an inverter?

Therefore, several commercial simulation tools have been established to accurately estimate the power losses of an inverter and improve its performance. The goal of this project is to design an application capable of estimating the power losses of a three-phase, hard-switched inverter using various power semi-conductor devices.

How does switching affect the efficiency of the inverter structure?

The switching behavior of the power devices generates power losses switching frequencies will contribute to further increase the power losses . As a result, applications improve the efficiency of the inverter structure . Power losses are divided into two main categories: the conduction and switching losses.

How is power loss simulation performed in a three-phase inverter model?

The result from the power loss simulation of the three-phase inverter model can be seen in Fig. 4. The simulation is performed using FOC oriented to a rotor flux. At the beginning of the simulation, the motor starts at its nominal speed. If the target speed is reached, the load is attached in a time of 2 s to the motor shaft.

How a three-phase inverter is used?

In this project, a three-phase inverter is used. Therefore, three voltage control signals the three different phases. are analyzed as mentioned in Section 2.2. For each of the following power modules, a specific datasheet is selected to show the step-by-step process for the power loss calculation.



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