



Projeto:

Topologies and Control Techniques in High-Power Modular UPS for Data Centers: Efficiency and Modulation Optimization

Participantes:

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Objetivo:

To investigate and develop topologies, modulation techniques, and control strategies applied to high-power modular UPS systems for data centers, aiming to maximize the overall energy efficiency of the system.

Descrição:

The project proposes the analysis and development of a high-power three-phase modular UPS architecture focused on applications such as data centers. Different converter topologies (AC–DC, DC–DC, and DC–AC), modulation strategies (SPWM, SVM, multilevel modulation, and phase-shifted carriers), and digital control techniques will be evaluated to reduce losses, increase efficiency, and improve power quality. The study will include mathematical modeling, computer simulations, and experimental implementation on laboratory prototypes.

Financiador: