

电力系统

不对称电压下PWM整流器的控制策略

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摘要:

传统的PWM(Pulse Width Modulation)整流器控制方式在电网对称情况下拥有良好的动态和稳态性能,但在不对称电网下存在显著的谐波功率,严重影响PWM整流器输出电压及输入电流品质。通过将不对称电压与电流进行对称分量法分解,本文提出了在正负序同步坐标变换下电网正负序电压分别定向的两种矢量控制策略。通过电压、电流和功率的关系,得到了正、负序d-q坐标系下的电流控制指令,仿真及实验结果表明,新的两种方法能分别保证整流器在故障电网下的直流电压稳定和输入电流正弦。

关键词:

Control Strategy of Pulse Width Modulation Rectifier Under Asymmetrical Input Voltages

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Abstract:

Traditional control method of PWM(Pulse Width Modulation) rectifier has Good dynamic and steady-state performance ,But when PWM Rectifier worked under unbalanced voltages, various harmony powers occurred. Quality of output voltage and input current had been affected. Analyze unbalanced voltage and current through the method of symmetrical component, and two vector-oriented control strategy based on positive and negative voltage -oriented respectively is proposed in this paper . The relation among voltage, current and power was used to get the current references under positive and negative d-q axis. The result of simulation and experiment shows that new methods can keep the DC voltage steady and the other can control the input current sine.

Keywords:

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