

论文

微型动模实验系统

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摘要:

针对目前动态模拟实验系统投资巨大、占地广、功耗高的缺点,提出利用工作电压更低、参数更小,但与实际电力系统具有类似动态特性的微型动模实验系统来模拟仿真实际电力系统的方法:用与发电机具有相似传递函数或动态响应的信号发生器来模拟发电机,利用低功率电感和电容组成的π形微电子电路对高压输电线路进行建模,智能的数据接口转换单元将使得该系统的输出数据格式能与继电保护等二次装置无缝连接等.与现有动模系统相比,微型动模系统具有投资少、功耗低、运行费用低和操作方便等优点.

关键词: 微型动模系统;同步发电机模型;π型等值输电线路;数据接口转换单元

Micro dynamic simulation system

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Abstract:

The dynamic simulation system is a very important method to analyze the electricity power system situation and to test the protective relaying together with a second device. The micro dynamic simulation system was put forth to simulate a power system. The synchronous generator was imitated by a signal enerator which has the similar transfer function or dynamic response with it. The transmission line was modeled by a π-shape circuit consisting of low power impedances and capacitances. An intelligent data interface conversion unit will seamlessly connect the output of the system with the second relay devices. Compared withthe present dynamic simulation system, the micro system has advantages of little investment, little power consumption, low performance expense and convenient operation.

Keywords: micro dynamic simulation system; synchronous generator model; π-shape equivalent circuit; data interface conversion unit

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