



# 基于物联网的电气设备自动监控系统设计

**摘要:** 随着 5G 通信技术的革新, 物联网技术也在突飞猛进的发展, 使得电气设备的自控监控能够得以实现。利用微电子技术、通信技术、自动控制技术、计算机技术等实现电气设备工作状态的实时监测, 解决了传统电气设备的信息不互通、管理僵化、安全监测性能低等缺陷。本文针对上述问题, 提出了基于物联网的电气设备自动监控系统设计, 该设计是以 STM32 单片机作为数据处理核心, 对变压器、发电机、电力线路等电气设备的电压与电流进行实时监测, 电压、电流、故障状况通过 OLED 进行实时显示, 同时通过以太网卡对上位机进行远程数据发送。当系统判定监测数据异常时, 对工作人员发出警报。监控系统通过嵌入式技术与电气设备进行连接, 若干个电气设备以固定的通信协议完成信息交换或通讯, 实现大范围、智能化、便捷性统一管理, 降低电气设备管理人工成本, 也提升了众多电气设备的工作安全性。

**ABSTRACT:** with the innovation of 5g communication technology, the Internet of things technology is also developing rapidly, which enables the automatic control and monitoring of electrical equipment to be realized. Using microelectronics technology, communication technology, automatic control technology, computer technology and so on to realize the real-time monitoring of the working state of electrical equipment, solves the defects of the traditional electrical equipment, such as the non communication of information, rigid management and low safety monitoring performance. Aiming at the above problems, this paper puts forward the design of automatic monitoring system for electrical equipment based on the Internet of things. The design uses STM32 single chip microcomputer as the core of data processing to monitor the voltage and current of electrical equipment such as transformer, generator and power line in real time. The voltage, current and fault status are displayed in real time through OLED, and the upper computer is far away through Ethernet card Process data transmission. When the system determines that the monitoring data is

以上内容仅为本文档的试下载部分，为可阅读页数的一半内容。

如要下载或阅读全文，请访问：

<https://d.book118.com/775031221311011333>