

基于 STC89C52 单片机的防火报警系统设计

摘要

本设计是基于 STC89C52 单片机的防火报警系统设计，其特点是简易，发生误报的情况比较低，而且操作方便，并且成本还不比较低。从内容上主要介绍了防火报警器各种功能功能以及如何实现这些功能的硬件原理及软件编程。

要完成预设的防火功能，本设计以 STC89C52 单片机为控制芯片核心，系统通过 AD590 模块采用多次采集温度以及烟雾信号，通过多次计算同时通过 SL900 进行比较，采用数学用多次判断的方法减少误报率。在软件设计方面，设计采用了 c 语言为主要编程语言的模块化程序设计方，对比汇编语言更加精炼，程序逻辑关系更清晰，即便于以后进一步扩展其功能，也更加方便后期的系统维护。

单片机控制的放火报警系统具有性能高安装便捷，适用于各种复杂的场合，所采用的材料都是易获得的，适用性比较强。

关键字：单片机；AD590；SL900

Abstract

This design is based on the STC89C52 MCU fire alarm system design, its features are simple, false alarm is relatively low, and easy to operate, and the cost is not relatively low. This paper mainly introduces the various functions of fire alarm and how to realize the hardware principle and software programming of these functions.

To complete the preset fire prevention function, this design takes STC89C52 MCU as the control chip core, the system adopts the AD590 module to collect temperature and smoke signal for many times, through many times of calculation at the same time through SL900 for comparison, and adopts the method of mathematical judgement for many times to reduce the false alarm rate. In terms of software design, c language is adopted as the main programming language for modular program design. Compared with assembly language, it is more refined and the program logic relationship is clearer. Even if its functions are further expanded in the future, it is also more convenient for system maintenance in the later period.

The single-chip microcomputer controlled arson alarm system has high performance and convenient installation. It is suitable for all kinds of complex occasions. The materials used are easy to be obtained and its applicability is relatively strong.

keyword; AD590; SL900

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