

PLC 控制的节水灌溉系统的研究设计

历史的变迁与时代的进步见证了数字化社会的发展，机械行业当中所运用的数字化信息已经屡见不鲜，这也为现代的浇灌系统铺下了一条明路，传统的浇灌方式不仅浪费水资源还不能够很好的浇灌相应的产品。老式的浇灌装置很多都是使用的继电器来操控的，维护调试的艰难工作对工作人员造成了很大的困扰，并且不能根据外界环境变化来浇灌的初衷得以实现。因此在这次的设计当中，为了实现这一初衷，并且让老式的浇灌设备除旧迎新，我们使用了可编程控制器，也就是我们平常所说的 PLC。

本次设计的课题是浇灌系统。浇灌系统设计与浇灌系统制造之间的关系是密不可分的，因此首先需要完成对浇灌系统的设计构想，紧接着完成设计方案，在指导老师的提点之下再迅速完成本次设计。首先我会将本次的设计进行简单的介绍，在了解的它的运行工作的状态之后，再对它的可能会出现的情况进行具体的分析，并且给出良好的解决方案。本文通过对浇灌系统制造的技术特点以及相应的制造技术还有它的制造现状来对未来机械制造的发展趋势进行相应简要的分析与研究。良好的机械设计会增强浇灌系统相应的机械性能，因此对浇灌系统产品的质量把控能够得到非常巨大的改善。

关键词： PLC， 传感器， 水泵

Abstract

The change of history and the advancement of the times have witnessed the development of a digital society. The digital information used in the machinery industry has become commonplace. This also paves the way for modern irrigation systems. Traditional irrigation methods not only waste water resources, but also cannot Good watering of corresponding products. Many of the old-fashioned irrigation devices are controlled by relays. The difficult work of maintenance and debugging has caused great confusion to the staff, and the original intention of irrigation cannot be realized according to changes in the external environment. Therefore, in this design, in order to realize this original intention, and to remove the old-fashioned irrigation equipment from the old to the new, we used a programmable controller, which is what we usually call a PLC.

The subject of this design is the irrigation system. The relationship between the design of the irrigation system and the manufacture of the irrigation system is inseparable. Therefore, the design concept of the irrigation system needs to be completed first, then the design plan is completed, and the design is quickly completed with the guidance of the instructor. First of all, I will briefly introduce the design of this time. After I understand the status of its operation, I will analyze it in detail and give a good solution. This paper analyzes and researches the development trend of future mechanical manufacturing by analyzing the technical characteristics of the irrigation system manufacturing, the corresponding manufacturing technology and its manufacturing status. Good mechanical design will enhance the corresponding mechanical performance of the irrigation system, so the quality control of the irrigation system products can be greatly improved.

Key words: **PLC, sensor, water pump**

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