

基于 PLC 的切割机电气控制系统设计

摘 要

随着自动化、智能化时代的到来，人们对多功能切割机的自动化要求也越来越高。采用 PLC 的切割机控制系统能够满足人们对切割机的需求,方便人们控制。PLC 控制技术已在广泛的现代工业控制技术领域里使用，依据当今日益完善的 PLC 控制技术来完成切割机控制系统的设计，包括硬件电路、软件电路的设计及仿真。

采用博途软件对 PLC 进行组态以及编程、仿真的方法，PLC 控制的切割机能够完成横向、纵向、斜向、开槽切割功能。通过博途软件的仿真，可以清晰明了的看清程序通断状况以及各种输出口的启动关闭状态。通过控制强制表指令来完成对监视表中主切割机、油泵电机、回转电机、开槽电机等的一系列运行状况的展示。

基于 PLC 的切割机控制系统可以大大提高工作效率,满足人们日益增长的自动化需求。

关键词：切割机；控制系统；自动化；PLC

Abstract

With the coming of the era of automation and intelligence, people have higher and higher requirements for the automation of multi-functional cutting machine. The control system of cutting machine with PLC can meet people's demand for cutting machine and facilitate people's control. PLC control technology has been widely used in the field of modern industrial control technology. According to today's increasingly perfect PLC control technology to complete the design of cutting machine control system, including the design and Simulation of hardware circuit and software circuit.

The cutting machine controlled by PLC can complete the cutting functions of transverse, longitudinal, oblique and slotting. Through the simulation of Broadway software, the on-off status of the program and the start-up and shutdown status of various output ports can be clearly seen. A series of operation conditions of the main cutting machine, oil pump motor, rotary motor and slotting motor are displayed by controlling the command of the force meter.

The control system of cutting machine based on PLC can greatly improve the working efficiency and meet the increasing demand of automation.

Key Words:Cutting machine; control system; automation; PLC

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