摘要

皮带运输机是现代散状物料连续运输的主要设备，作为现代工业的重要组成部分，使用越来越广泛。随着现代社会科技的发展和进步，工业现场的皮带运输系统不再仅仅局限于单一的运输功能，还需要根据实际的情况实现一些其他的功能。为此，设计一个多功能适用于实际运输环境的运输系统变得特别的重要。

本文以设计多功能的皮带运输控制系统为目的，采用 PLC 为控制单元。本文首先通过对控制方案设计，确定了选用超声波距离传感和光电编码器为测量工具和利用变频器控制电机的方法。再通过对 PLC 软件程序的设计和软件程序的编写以及组态的搭建。基本实现了对皮带运输系统的启停，根据煤流量控速以及对系统监控的功能。

关键词：皮带运输机；PLC；传感器；组态

Abstract

The belt conveyor is the main equipment for the continuous transportation of modern bulk materials. As an important part of modern industry, it is used more and more widely. With the development and advancement of modern social science and technology, the belt transportation system of the industrial site is no longer limited to a single transportation function, but also needs to implement some other functions according to the actual situation. For this reason, it is particularly important to design a transportation system that is versatile for the actual transportation environment.

In this paper, the purpose of designing a multi-functional belt transport control system is to use PLC as the control unit. Firstly, through the design of the control scheme, the method of selecting ultrasonic distance sensing and photoelectric encoder as the measuring tool and using the frequency converter to control the motor is determined. Then through the design of the PLC software program and the preparation of the software program and the configuration of the configuration. Basically realized the start and stop of the belt transportation system, according to the coal flow rate control to monitor the system.

Key words: belt conveyor; PLC; sensor; configuration