

Drugstore Control System Design and Realization Based on Programmable Logic Controller (PLC)

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Abstract : Population growth and Chinese two-child policy will boost pharmaceutical market, and it will continue to maintain the growth for a period of time in the future, the traditional pharmacy dispensary has been unable to meet the growing medical needs of the peoples. Under the strong support of the national policy, the automatic transformation of traditional pharmacies is the inclination of the Times, the new type of intelligent pharmacy system will continue to promote the development of the pharmaceutical industry. Under this background, based on PLC control, the paper proposed an intelligent storage and automatic drug delivery system; complete design of the lower computer's control system and the host computer's software system has been present. The system can be applied to dispensing work for Chinese herbal medicinal and Western medicines. Firstly, the essential of intelligent control system for pharmacy is discussed. After the analysis of the requirements, the overall scheme of the system design is presented. Secondly, introduces the software and hardware design of the lower computer's control system, including the selection of PLC and the selection of motion control system, the problem of the human-computer interaction module and the communication between PC and PLC solves, the program design and development of the PLC control system is completed. The design of the upper computer software management system is described in detail. By analyzing of E-R diagram, built the establish data, the communication protocol between systems is customize, C++ Builder is adopted to realize interface module, supply module, main control module, etc. The paper also gives the implementations of the multi-threaded system and communication method. Lastly, each module of the lower computer control system is tested. Then, after building a test environment, the function test of the upper computer software management system is completed. On this basis, the entire control system accepts the overall test.

Keywords : automatic pharmacy, PLC, control system, management system, communication

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