SCADA System for Industrial Manipulator PLC Trainer

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Abstract In most industrial application, the implementation of SCADA which consists of an HMI, computer system monitoring, data acquisition and processing, and advanced visualization is able to make ease for the industries. It is common to utilize a computer to control an automated system from the microcontroller such as PLC, Arduino and Raspberry Pi. These controllers must be able to receive and analyze signals in any way possible. The main aim of this research is to establish a communication between the Arduino microcontroller and the field device located at the Industrial Trainer for the purpose of data monitoring. This trainer implemented pneumatic based system with the presence of additional field device which is the infrared sensor, ultrasonic sensor and load cell. Then, the Arduino reads the parameter for real-time value for distance, weight, force, pressure from the ultrasonic and load cell sensors and sends the value to the MySQL database through a LAN network. The user interface also receives the input value from the sensors through the serial port communication. The results obtained will validate either the system is reliable or not through the comparison on the accuracy of the live data recorded either it is tally with the data that is exported in excel file result and the data that is stored in database result.

Keywords SCADA · PLC trainer · Arduino

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