

Building a Profinet communication model for controlling and monitoring a PLC – Inverter – AC Motor system for the practice room of the Faculty of Automation Technology.

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Abstract: This research aims to meet the need to improve the quality of technical training at the Faculty of Electronic Engineering - Power Electronics (CNTĐH) through the construction and deployment of a Profinet communication system. The main objective is to design, build, and test a control and monitoring model for PLC – Inverter – AC Motor devices in the laboratory. The research method combines industrial Ethernet communication technology theory with experimentation on hardware and software systems. It is expected that the application of this model will increase the efficiency of management and control of dynamics at the Faculty of CNTĐH, contributing to enhancing the competitiveness of students in the field of industrial electronic engineering.

Keywords: Profinet, PLC, AC motor, System testing, Industrial Ethernet technology