

# APLIKASI MIKROKONTROLER SEBAGAI MODUL INPUT OUPUT PROGRAMMABLE LOGIC CONTROLLER DALAM MEDIA PEMBELAJARAN PRAKTIK KENDALI TERPROGRAM

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**Abstract:** The purpose of this article is to get result of design input output module programmable logic controller based microcontroller which can be used for programmable logic controller, to know its performance which congruent with common programnable logic controller and to know its capability in operating teaching aids to learn programmable control practices. On this research, the taken data, are collected by observation method that was done by monitoring and measurement. Research data result were analysed by descriptive technique. Testing was done by using teaching aids to learn programmable control practices module for running basic programming PLC. After known the data from result monitoring by input output module programmable logic controller based microcontroller, and data were collected on monitoring of outputs programs by PLC Zelio. So, from both of data, its can know the different that by compare of those variables. Then from the different of that, can be studied what is cause of that different. Result of the research are evince that the congruent level between input output logic this device was compared with the truth table and tested by software Zelio Soft is 100% value. That condition valid for all programs was tested. That's showing that after receive the same input logic, performance this device yield same output logic with output was yield from performance of factory's PLC. From the result tested, it can enable to combine digital basic logic gate become a complex application. With timing and counting capability was included on this device. On the testing with teaching job sheet, the result gained that showing between of truth table theory with this device has congruent 100% values.

**Kata kunci:** mikrocontroler, programmable logic controller

Dalam bidang industri penggunaan mesin otomatis dan pemrosesan secara otomatis merupakan hal yang sangat penting. Sistem pengontrolan dengan elektromekanik yang menggunakan relay-relay mempunyai banyak kelemahan, diantaranya kontak-kontak yang dipakai mudah aus karena panas atau terbakar atau karena hubung singkat (*short circuit*), membutuhkan biaya yang cukup besar saat instalasi, pemeliharaan dan modifikasi dari sistem yang telah dibuat jika kemudian hari diperlukan modifikasi.

Dengan Programmable Logic Controller (PLC) hal-hal ini dapat diatasi, karena sistem PLC mengintegrasikan berbagai macam komponen yang berdiri sendiri menjadi suatu sistem kendali terpadu dan mudah merenovasi. Adapun sistem kontrol dengan PLC di industri memenuhi berbagai kriteria diantaranya :

1. Pemrogramannya sederhana