ABSTRACT

To support the implementation of the teaching and learning process of PID control material, the telkom university electrical engineering study program held a "Proportional, Integral and Derivative Control" practicum module under the Sistem Kendali Dasar laboratory (SKD). In practice practicum activities require an adequate instrument, but the availability of instrument in the lab is limited, while the price of commercial instrument is very expensive. Therefore, we need a instrument that are cheaper and meet the needs. The research in this final project focuses only on making intrument that are cheaper and meet the needs of practicum activities.

The system is made in the form of a close loop control system with several core parts, namely an analog PID control consisting of an op-amp, a hall effect sensor to detect motor speed which will later be displayed on an arduino serial monitor, and a DAC to return digital values back to analog which will later be compared with a setpoint.

The results achieved in this final project are instrument that are made worth less than 1/10 the price of commercial products, which is equal to Rp. 1.442.200,00, has a speed range of dc motors from 34 to 416 Rpm, and a resolution of 34,67 Rpm

Keywords : *Analog PID, Speed of DC motor*