

## ABSTRACT

SCADA is a system of monitoring and controlling which are widely used in industry today. SCADA stands for Supervisory Control And Data Acquisition. The purpose of the SCADA monitoring, control and data collection. SCADA system is a combination of telemetry and data acquisition. This system consists of collecting information, data transfer is taken into the control center, control and decision analysis, and then displaying the data in the monitor.

3-phase AC motor is a device that is prevalent in the industry, so these devices should be monitored and controlled rotation speed. SCADA applications in this final project is used to realize system monitoring and controlling between the operator or technician with a 3 phase AC motor using inverter and PLC in realtime and which aims to control and monitor the rotation speed of 3 phase AC motor in accordance desired based on SCADA. In order to run the 3 phase AC motor with a 1 phase voltage source needed conversion voltage equipment such as inverter. Inverter can operate after a set point value of the input frequency, acceleration, and deselerasi by the users. For controlling the inverter by PLC using a ladder diagram program. To be able to communicate between SCADA and PLC for send and receive data with each other required communication protocol is called modbus.

The test result is a system of monitoring and controlling has been successfully performed and subjectively. By providing the input frequency varies from 10 Hz to 50 Hz through the inverter can be controlled 3-phase AC motor speed but there is a slip velocity varying from 52.72% to 20.63%.

Keywords : SCADA, *inverter*, *3 phase AC motor*, PLC, *monitoring*, and *controlling*