

**DETERMINATION CHARACTERISTIC OF VOLTAGE SAGS
ON COMBINATION OF THREE PHASE INDUCION AND
SYNCHRONOUS MOTORS**

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ABSTRACT

This thesis focuses to the characteristics of voltage sags occur due to the combination of three phase induction and synchronous motors. Voltage sag basically described in magnitudes (voltage and current) and duration of time. These factors are important to determine the characteristics of three phase induction motor and synchronous motor. The study of voltage sag during starting motor is essential to minimize the risk of interruption. This project was performed with laboratory experimental work in order to obtain the corresponding waveform. With the aid of power quality probes, which is Fluke 1750 as detecting device, the waveforms of voltage sag were recorded by using Power Analyze version 2.2 software and the data is further analyzed in personal computer (PC). Based on the result, three phase induction motor had smooth waveforms and three phase synchronous motor had oscillating waveforms. However, combination of three phase induction and synchronous motor had relative low oscillating waveforms as compare to three phase synchronous motor. Finally, the characteristics of the voltage sag during starting motors are formulated based on thevenin equivalent and park's equations approach.

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