

# ***ANALYSIS OF THE USE OF CAPACITOR BANK IN 400V DISTRIBUTION SYSTEM IN PLTU SUMSEL 5***

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## ***ABSTRACT***

*The 400V distribution system is used as a power source for driving motors, both 1 phase and 3 phase. Using electric motors simultaneously will produce a large inductive load. Increasing inductive load causes increased reactive power which affects the power factor. A decrease in power factor causes a voltage drop. To overcome this problem the author conducted research aimed at overcoming the problems that occurred. In this research, the power compensation method used to overcome voltage drops is using a capacitor bank. In this research, the object that will be carried out is in the paddle feeder area, where this area is an area that is far from the generating system and often experiences voltage drops. Voltage drop repair is carried out using a capacitor bank. The capacitor bank capacity is obtained by using one of the tools in the etap software, this tool is the optimal capacitor placement method. Etap software is also used to create single line diagrams of the system and help obtain the value of the voltage drop that occurs. The etap simulation results show that the voltage drop value before repairs was 24.4 V or 6% after repairs were +3.6 or 0.9%. The capacitor capacity used is 825 Kvar, consisting of 3 capacitors, each with a capacity of 275.47 Kvar.*

**Keywords:** *Voltage drop, Etap, capacitor bank.*