

## C615738 : MAJOR ELECTRICAL ENGINEERING

KEY WORD: HARMONIC CURRENT / POWER FACTOR CORRECTOR / SWITCHMODE RECTIFIER  
TEERAPON DACHOKIATAWAN : A THREE-PHASE POWER FACTOR CORRECTOR  
FOR RECTIFIER LOAD. THESIS ADVISOR: ASSO. PROF. GOTHOM ARYA, Dr.-Ing.  
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This thesis presents the design , construction and testing of a three-phase power factor corrector for rectifier load. This circuit supplies reactive power to the load and consists of a capacitor to store energy , inductors and power switches. If the capacitor voltage is higher than the amplitude of the phase voltage , the inductor current waveform can be controlled by controlling the switches. The current feedback aims at achieving sinusoidal line current which is in phase with phase voltage so that the power factor is nearly unity. A voltage feedback is used to regulate the capacitor voltage. The power factor corrector was tested with a three-phase rectifier which had a load power of 850W. The power factor corrector loss was found to be about 6% of the input power. The use of the corrector resulted in improving the THD from 19.9% to 2.9%

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