

A Programmable SCR-Based AC Voltage Regulator

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Summary

This paper describes the design, simulation and implementation of a self adjustment programmable AC voltage regulator. The regulator hardware consists of thyristors, a signal conditioner and, an 8-bit microcontroller. The regulator monitors the voltage across a load. The firing angles of the thyristors are automatically adjusted to keep the voltage within the prescribed level independent of the load fluctuations. The regulator was tested for resistive and inductive loads. The results indicate acceptable accuracy levels depending on the control range specified by the user. The regulation range can be from 0-220 V AC

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