

ABSTRACT**CONTROL CIRCUIT AND SYSTEM FOR A SWITCHED RELUCTANCE
MACHINE AND METHOD OF OPERATING**

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A control circuit for a switched reluctance machine comprises a switch connected with the machine winding across a rectified ac power supply. The switch controls the flow of current through the winding in a primary current path. A silicon controlled rectifier and a capacitor are serially connected across the power supply and a diode is connected from a point between the winding and the switch to a point between the silicon controlled rectifier and the capacitor. In the steady state, the capacitor is charged each time the switch is opened. The switch and the silicon controlled rectifier are actuated together so that the capacitor discharges through the silicon controlled rectifier and the winding until the capacitor is discharged below the supply voltage. Thereafter, the silicon controlled rectifier ceases conduction and energy is drawn from the supply. The circuit avoids the need for a dc link capacitor across the power supply to smooth the supply voltage.

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